

Product Catalog Mobile Hydraulics

Part 3: Compact Hydraulics: mechanical, solenoid and proportional cartridge valves, integrated circuits



Product Catalog Mobile Hydraulics

Part 3: Compact Hydraulics: mechanical, solenoid and proportional cartridge valves, integrated circuits

Rexroth catalogs for the product range of hydraulic components

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Industrial applications	Part 5:	Control plates, hydraulic power units and accessories	RE 00112-05
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Industrial applications	Part 7:	ATEX units for potentially explosive atmospheres	RE 00112-07

Publisher

Bosch Rexroth AG

Hydraulics

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Cavities

Common and special cavities

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Mechanical cartridge valves

Relief and unloading

Designation	Description	Cavity	Code	Data sheet	Page
Relief direct acting poppet type	VS-5-CN	Special	041158X99Z	18318-19	7
Relief direct acting poppet type	VS-5-CF	Special	041157X99Z	18318-20	9
Relief direct acting poppet type	VSAN-08A	Size 08	041148X56Z	18318-01	11
Relief direct acting guided poppet type	VSBN-08A	Size 08	041149X56Z	18318-04	13
Relief direct acting guided poppet type	VSBN-08F	Special	041149X20Z	18318-18	15
Relief direct acting guided poppet type	VSBN-10A	Size 10	041155X85Z	18318-05	17
Relief direct acting guided poppet type	VS-30	Special	041118X99Z	18318-23	19
Relief direct acting guided poppet type hardened seat	VS-30-NCF	Special	041118X09Z	18318-24	21
Relief direct acting guided poppet type	VS-80	Special	041105X99Z	18318-25	23
Relief direct acting guided poppet type	VSBG-10A	Size 10	041156X85Z	18318-06	25
Relief direct acting poppet type differential area	VSDN-08A	Size 08	041522X56Z	18318-02	27
Relief direct acting poppet type differential area	VSDN-10A	Size 10	041523X85Z	18318-03	29
Relief direct acting poppet type differential area	VSD-350	Special	041504X99Z	18318-22	31
Relief bidirectional direct acting poppet type differential area	VSNG-10A	Size 10	041159X85Z	18318-07	33
Relief direct acting poppet type pressure compensated	VS-30-CC	Special	041127X99Z	18318-26	35

The latest information on products can also be found on Bosch Rexroth web-site: www.boschrexroth.com

Mechanical cartridge valves

Relief and unloading

Designation	Description	Cavity	Code	Data sheet	Page
Relief pilot operated spool type	VSPN-10A	Size 10	041208X85Z	18318-08	37
Relief pilot operated spool type	VSPN-12A	Size 12	041210X57Z	18318-09	39
Relief pilot operated spool type	VSPN-16A	Size 16	041211X27Z	18318-10	41
Relief pilot operated poppet type	VSPC-10A	Size 10	041209X85Z	18318-11	43
Relief pilot operated spool type external drain	VSPY-10A	Size 10	041305X85Z	18318-12	45
Relief pilot operated spool type external drain	VSPY-12A	Size 12	041307X57Z	18318-13	47
Relief pilot operated spool type external pilot	VSPX-12A	Size 12	041308X57Z	18318-14	49
Relief pilot operated spool type pressure compensated	VSP-CC-150	Special	041801X99Z	18318-27	51
Relief pilot operated spool type unloading	VSKD-10A	Size 10	041902X85Z	18318-15	53
Priority unloading pilot operated	VMSN-08A	Size 08	047521X56Z	18318-16	55
Priority unloading pilot operated	VMSP-78	Size 10	047510X99Z	18318-17	57

1/2

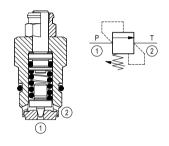
RE 18318-19/09.09 Replaces: RE 00162-02/01.06

Relief, direct acting poppet type

Special cavity, 348

VS-5-CN

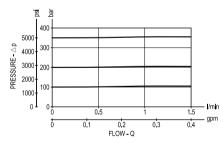




Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve. The cartridge is suitable only for pilot or thermal relief applications.

Performance



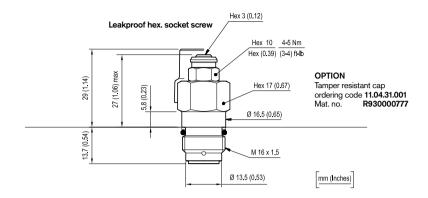
Technical data

bar (psi)	460 (6600)
	.00 (0000)
I/min. (gpm)	1.5 (0.4)
drops/min.	15
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	27-33 (20-24)
kg (lbs)	0.05 (0.11)
	348 see data sheet RE 18325-75
code material no.	RG0348010520100 R930001669
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	drops/min. °C (°F) Nm (ft-lbs) kg (lbs)

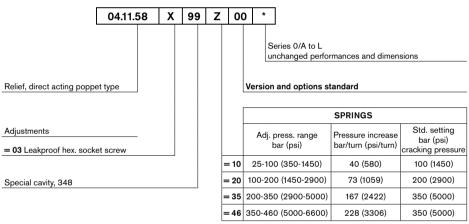
(*) at 80% of pressure setting

(**) Only external seals for 10 valves

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
04115803991000A	R901098796
041158039920000	R901113594
041158039935000	R901113597
041158039946000	R901098895

Type	Material number

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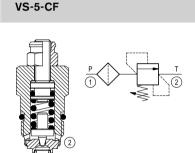
1/2

RE 18318-20/09.09 Replaces: RE 00162-02/01.06

Relief, direct acting poppet type

Special cavity, 348

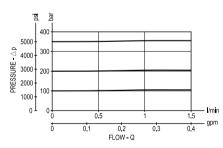
04.11.57 - X - 99 - Z



Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve. The cartridge is suitable only for pilot or thermal relief applications.

Performance



Technical data

bar (psi)	460 (6600)
I/min. (gpm)	1.5 (0.4)
drops/min.	15
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	27-33 (20-24)
kg (lbs)	0.05 (0.11)
	348 see data sheet RE 18325-75
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	l/min. (gpm) drops/min. °C (°F) Nm (ft-lbs)

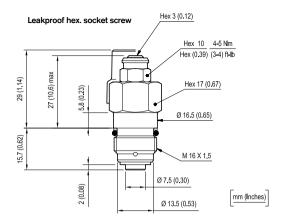
(*) at 80% of pressure setting

(**) Only external seals for 10 valves

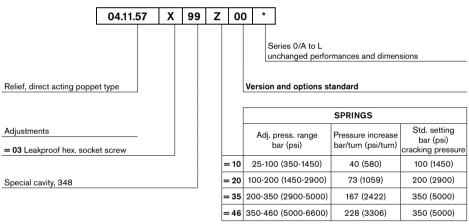
01

OPTION

Tamper resistant cap ordering code 11.04.31.001 Mat. no. R930000777



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
04115703991000A	R901099066
041157039920000	R901099072
041157039935000	R901099117
041157039946000	R901099135

Туре	Material number

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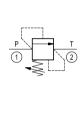
Relief, direct acting poppet type

Common cavity, Size 08

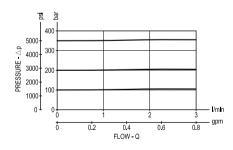
VSAN-08A

04.11.48 - X - 56 - Z





Performance



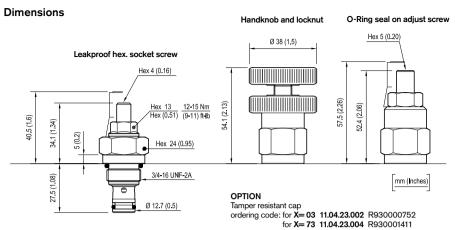
Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 2 to tank. Pressure at port 2 is additive to the relief setting of the valve. The cartridge is especially suited for pilot or thermal relief applications.

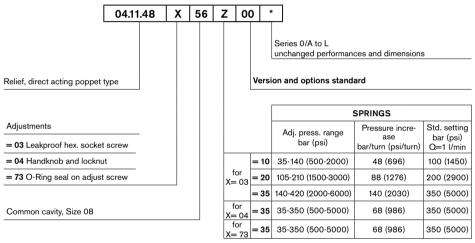
Technical data

Max. operating pressure port 1 (P)	bar (psi)	350 (5000); for X=03 420 (6000)
Max. pressure admitted port 2 (T)	bar (psi)	140 (2000)
Max. flow	I/min. (gpm)	3 (0.8)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight (**)	kg (lbs)	0.14 (0.31)
Cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	RG08A2010520100 R901101437
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical data		See data sheet RE 18350-50

- (*) Max. to 80% of nominal setting
- (**) Standard version X=03 type
- (***) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
041148035610000	R901104094
041148035620000	R901104097
041148035635000	R901104099
041148045635000	R901104100
041148735635000	R901161970

туре	Material number

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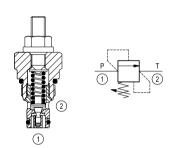
RE 18318-04/09.09 Replaces: RE 00162-02/01.06

Relief, direct acting guided poppet type

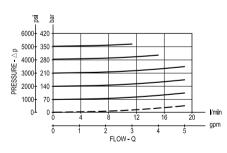
Common cavity, Size 08

VSBN-08A

04.11.49 - X - 56 - Z



Performance



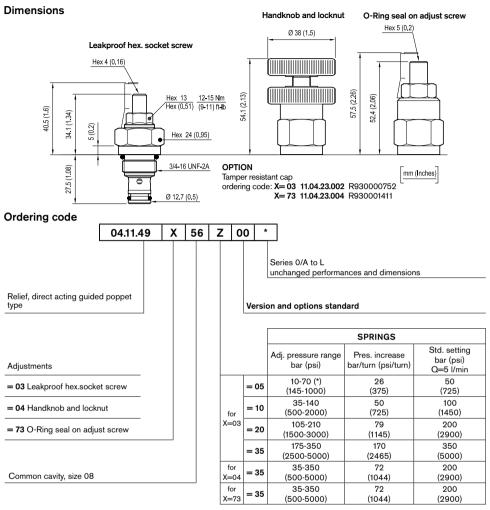
Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 2 to tank. Pressure at port 2 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

Technical data

bar (psi)	350 (5000)
bar (psi)	140 (2000)
I/min. (gpm)	20 (5.3)
drops/min.	15
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	34-41 (25-30)
kg (lbs)	0.14 (0.31)
	CA-08A-2N see data sheet RE 18325-70
	See data sheet RE 18325-85
code material no.	
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
lata	See data sheet RE 18350-50
	bar (psi) I/min. (gpm) drops/min. °C (°F) Nm (ft-lbs) kg (lbs) code material no.

- (*) Max. to 80% of nominal setting
- (**) Standard version X=03 type
- (***) Only external seals for 10 valves



Note: Special settings available. Contact factory authorized representative for ordering code (*) minimum pressure setting intended with Q=5 l/min (1.3 gpm)

Туре	Material number
041149035605000	R901113598
041149035610000	R901113599
041149035620000	R901097728
041149035635000	R901091914
041149045635000	R901113600

Туре	Material number	
041149735635000	R901113601	
		_

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- 1

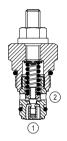
Relief, direct acting guided poppet type

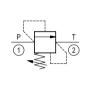
Special cavity

VSBN-08F

04.11.49 - X - 20 - Z



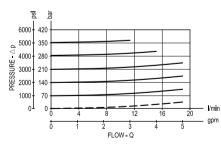




Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 2 to tank. Pressure at port 2 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

Performance



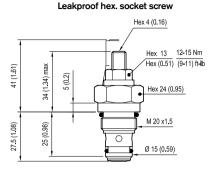
Technical data

icommour data		
Max. operating pressure port 1 (P)	bar (psi)	350 (5000)
Max. operating pressure port 2 (T)	bar (psi)	140 (2000)
Max. flow	l/min. (gpm)	20 (5)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	27-30 (20-22)
Weight	kg (lbs)	0.14 (0.31)
Cavity		CA-08F-2N
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) at 80% of pressure setting
- (**) Only external seals for 10 valves

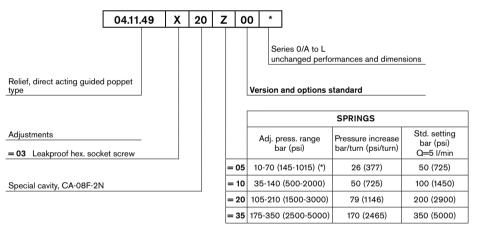
01

OPTION Tamper resistant cap ordering code 11.04.23.002 Mat. no. R930000752



mm (Inches)

Ordering code



(*) minimum pressure setting intended with Q=5 l/min (1.3 gpm)

Туре	Material number
041149032005000	R901126917
041149032010000	R901113602
041149032020000	R901113604
041149032035000	R901113605

Туре	Material number

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RE 18318-05/09.09 Replaces: RE 00162-02/01.06

01

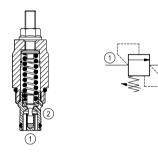
Relief, direct acting guided poppet type

Common cavity, Size 10

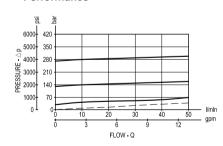
VSBN-10A

04.11.55 - X - 85 - Z





Performance



Description

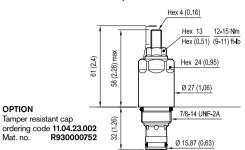
Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 2 to tank. Pressure at port 2 is additive to the relief setting of the valve. The unique Oil Control poppet design provides enhanced stability at all flows and pressures.

Technical data

Max. operating pressure port 1 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 2 (T)	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	50 (13)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical data		See data sheet RE 18350-50

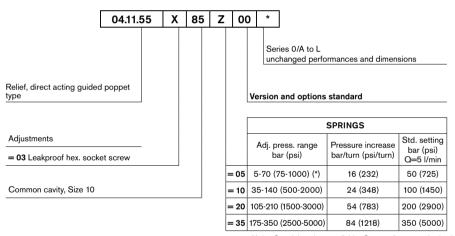
- (*) Max. to 80% of nominal setting.
- (**) Only external seals for 10 valves

Leakproof hex. socket screw



mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

(*) minimum pressure setting intended with Q=5 l/min (1.3 gpm)

Туре	Material number
041155038505000	R901191831
041155038510000	R901113609
041155038520000	R901113610
041155038535000	R901115702

Туре	Material number

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RE 18318-23/01.10 Replaces: RE 00162-02/01.06

01

Relief, direct acting guided poppet type

Special cavity, 008

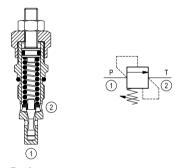


VS-30

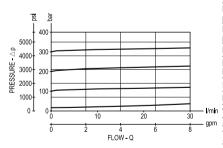
Description

04.11.18 - X - 99 - Z

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.



Performance



Technical data

bar (psi)	350 (5000)
bar (psi)	140 (2000)
I/min. (gpm)	30 (8)
drops/min.	15
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	45-50 (33-37)
kg (lbs)	0.17 (0.38)
	008 see data sheet RE 18325-75
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	bar (psi)

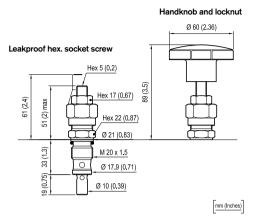
(*) at 80% of pressure setting

(**) Standard version 03 type

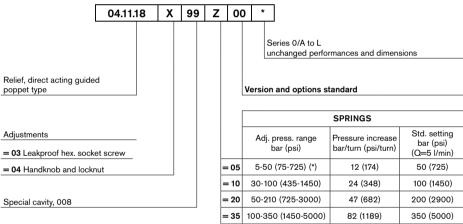
(***) Only external seals for 10 valves

OPTION

Tamper resistant cap ordering code 11.04.23.003 Mat. no. R930000754



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

(*) minimum pressure setting intended with Q=5 l/min (1.3 gpm)

Туре	Material number
041118039905000	R901113613
041118039910000	R901113614
041118039920000	R901226876
041118039935000	R901113617
041118049905000	R930000148

Туре	Material number
041118049910000	R930000149
041118049920000	R901127942
041118049935000	R930000151

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RE 18318-24/09.09 Replaces: RE 00162-02/01.06

Relief, direct acting guided poppet type, hardened seat

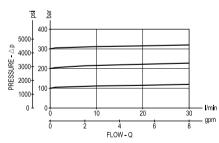
Special cavity, 008

VS-30-NCF

04.11.18 - X - 09 - Z



Performance



Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures. A hardened seat is provided for increased durability in high-pressure, high-cycle applications.

Technical data

Max. operating pressure port 1 (P)	bar (psi)	420 (6000)
Max. operating pressure port 2 (T)	bar (psi)	140 (2000)
Max. flow	l/min. (gpm)	30 (8)
Max. internal leakage (*)	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	45-50 (33-37)
Weight	kg (lbs)	0.17 (0.38)
Special cavity		008, see data sheet RE 18325-75
Seal kit (**)	code material no.	RG0008010520100 R930001693
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

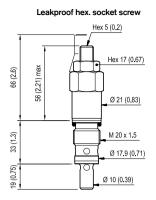
(*) at 80% of pressure setting

(**) Only external seals for 10 valves

Note: the pressure setting must be done after installation, because the spring cannot be compressed while the cartridge is out of the cavity. For the same reason the threaded adjuster must be fully released prior to unscrewing the cartridge from the cavity.

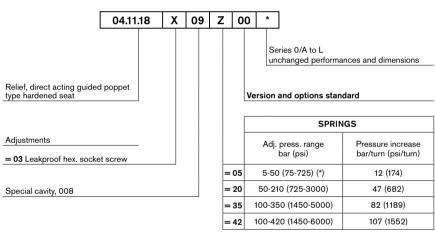
OPTION

Tamper resistant cap ordering code 11.04.23.003 Mat. no. R930000754



mm (Inches)

Ordering code



(*) minimum pressure setting intended with Q=5 l/min (1.3 gpm) **Note:** Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
04111803090500A	R930000129
04111803092000D	R930000132
04111803093500C	R901144794
041118030942000	R930000134

Туре	Material number

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RE 18318-25/09.09 Replaces: RE 00162-02/01.06

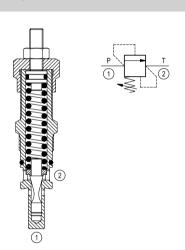
01

Relief, direct acting guided poppet type

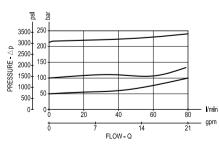
Special cavity, 009

VS-80

04.11.05 - X - 99 - Z



Performance



Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

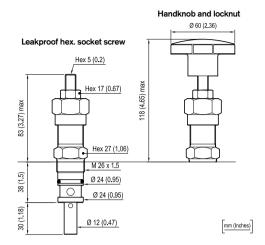
Technical data

Max. operating pressure port 1 (P)	bar (psi)	250 (3600)
Max. operating pressure port 2 (T)	bar (psi)	140 (2000)
Max. flow	l/min. (gpm)	80 (21)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	83-92 (61-68)
Weight	kg (lbs)	0.35 (0.77)
Special cavity		009, see data sheet RE 18325-75
Seal kit (**)	code material no.	RG0009010000100 R930001694
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

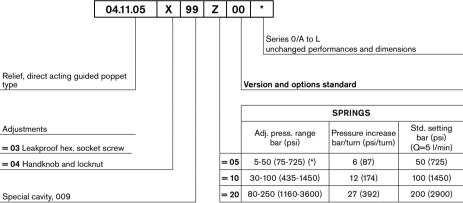
- (*) at 80% of pressure setting
- (**) Only external seals for 10 valves

OPTION

Tamper resistant cap ordering code 11.04.23.003 Mat. no. R930000754



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

(*) minimum pressure setting intended with Q=5 l/min (1.3 gpm)

Туре	Material number
041105039905000	R930000117
041105039910000	R930000119
041105039920000	R901113620

Туре	Material number

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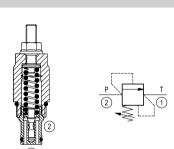
1/2

RE 18318-06/09.09 Replaces: RE 00162-02/01.06

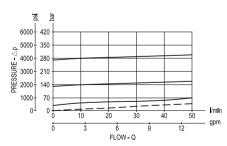
Common cavity, Size 10

VSBG-10A

04.11.56 - X - 85 - Z



Performance



Description

Flow is blocked from 2 to 1 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 1 to tank. Pressure at port 1 is additive to the relief setting of the valve. The unique Bosch rexroth oil control poppet design provides enhanced stability at all flows and pressures.

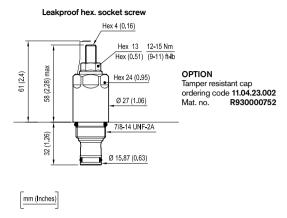
Technical data

Max. operating pressure port 1 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 2 (T)	bar (psi)	350 (5000)
Flow. range	l/min. (gpm)	50 (13)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50

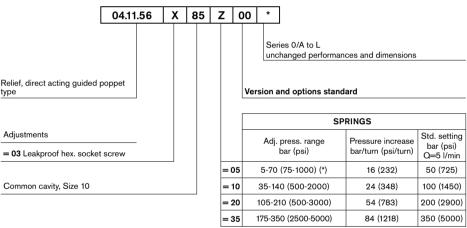
(*) Max. to 80% of nominal setting

(**) Only external seals for 10 valves

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

(*) minimum pressure setting intended with Q=5 l/min (1.3 gpm)

Туре	Material number
041156038505000	R901157894
041156038510000	R901113622
041156038520000	R901113624
041156038535000	R901113626

Туре	Material number

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RE 18318-02/09.09 Replaces: RE 00162-02/01.06

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Relief, direct acting poppet type differential area

Common cavity, Size 08

VSDN-08A

04.15.22 - X - 56 - Z



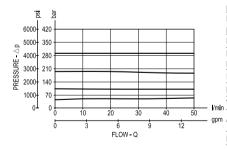




Description

Flow is blocked from 2 to 1 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 1 to tank. Pressure at port 1 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

Performance



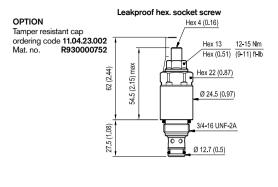
Technical data

Max. operating pressure port 2 (P)	bar (psi)	350 (5000)
Max. operating pressure port 1 (T)	bar (psi)	140 (2000)
Max. flow	l/min. (gpm)	50 (13)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.15 (0.33)
Common cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG08A2010520100 R901101437
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) at 80% of pressure setting

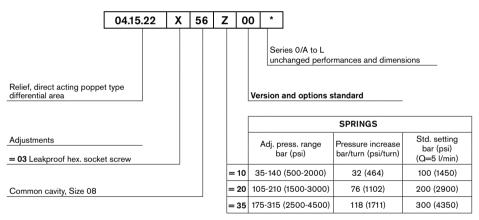
(**) Only external seals for 10 valves

01



mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
041522035610000	R930005640
041522035620000	R930005641
041522035635000	R930005642

Туре	Material number

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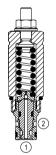
Relief, direct acting poppet type differential area

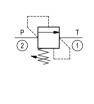
Common cavity, Size 10

VSDN-10A

04.15.23 - X - 85 - Z



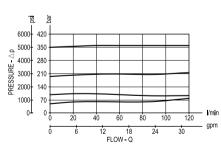




Description

Flow is blocked from 2 to 1 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through port 1 to tank. Pressure at port 1 is additive to the relief setting of the valve. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

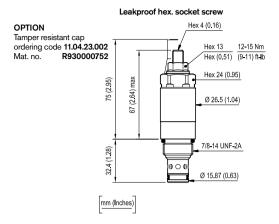
Performance



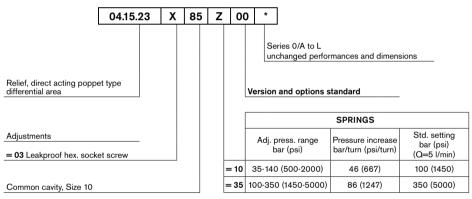
Technical data

bar (psi)	350 (5000)
bar (psi)	140 (2000)
I/min. (gpm)	120 (32)
drops/min.	15
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	41-47 (30-35)
kg (lbs)	0.2 (0.44)
	CA-10A-2N see data sheet RE 18325-70
	See data sheet RE 18325-85
code material no.	RG10A2010520100 R901111363
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	drops/min. °C (°F) Nm (ft-lbs) kg (lbs)

- (*) at 80% of cracking pressure
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
041523038510000	R930005643		
041523038535000	R930005644		

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RE 18318-22/09.09 Replaces: RE 00162-02/01.06

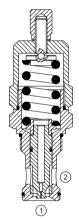
Relief, direct acting poppet type differential area

Special cavity, 004

VSD-350

04.15.04 - X - 99 - Z



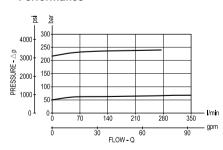




Description

Flow is blocked from 2 to 1 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through 1 to tank. Pressure at 1 is additive to the relief setting of the valve. The combination of stable poppet design and hardened seat provide excellent response, hysteresis and leakage characteristics.

Performance



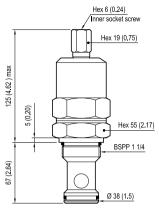
Technical data

Max. operating pressure port 2 (P)	bar (psi)	210 (3000)
Max. pressure admitted port 1 (T)	bar (psi)	140 (2000)
Max. flow	l/min. (gpm)	350 (93)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	245-264 (181-196)
Weight	kg (lbs)	1.5 (3.3)
Special cavity		004, see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) at 80% of pressure setting

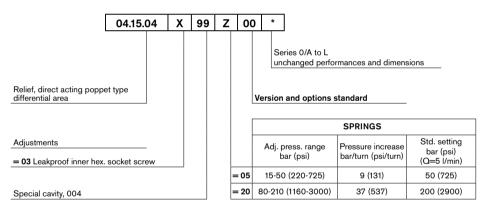
(**) Only external seals for 10 valves

Leakproof inner hex. socket screw



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
04150403990500A	R930000377		
04150403992000A	R901113637		

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RE 18318-07/09.09 Replaces: RE 00162-02/01.06

1/2

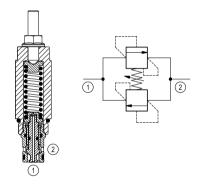
Relief, bi-directional direct acting poppet type differential area

Common cavity, Size 10

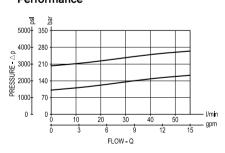
VSNG-10A

04.11.59 - X - 85 - Z





Performance



Description

Flow is blocked bi-directionally between 1 and 2 until pressure at either port increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow to the opposite port. The unique Bosch Rexroth Oil Control poppet design provides consistent cracking pressures at both ports and enhanced stability at all flows and pressures. Maximum difference for crack pressure in both direction: 10 bar (145 psi)

Technical data

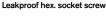
Max. operating pressure port 1 (P)	bar (psi)	240 (3500)
Max. pressure admitted port 2 (T)	bar (psi)	240 (3500)
Max. flow	I/min. (gpm)	56 (15)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	30 (1.8)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.25 (0.55)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG10A2010530100 R901111366
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50
(*) M	(0000)	*

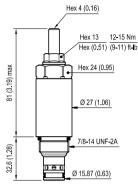
(*) Measured at 200 bar (2900 psi)

(**) Only external seals for 10 valves

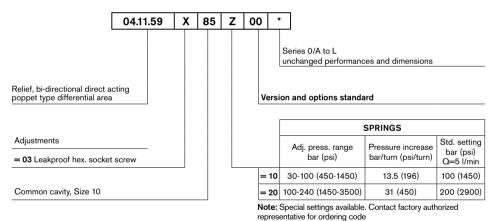
mm (Inches)

Dimensions





Ordering code



Туре	Material number	Туре	Material number
041159038510000	R901109725		
041159038520000	R901109726		

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RE 18318-26/09.09 Replaces: RE 00162-02/01.06

01

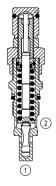
Relief, direct acting poppet type pressure compensated

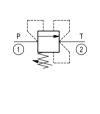
Special cavity, 008

VS-30-CC

04.11.27 - X - 99 - Z



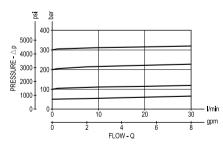




Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the poppet from its seat and allowing relief flow through 2 to tank. The valve applies a balanced piston design allowing consistent relief operation at the valve setting independent of back-pressure at 2. The unique Bosch Rexroth Oil Control poppet design provides enhanced stability at all flows and pressures.

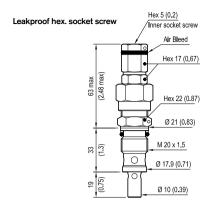
Performance



Technical data

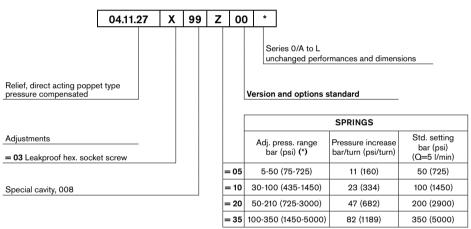
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	30 (8)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	46-51 (34-38)
Weight	kg (lbs)	0.17 (0.38)
Special cavity		008 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) at 80% of pressure setting
- (**) Only external seals for 10 valves



mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

(*) minimum pressure setting intended with Q=5 l/min (1.3 gpm)

Туре	Material number
04112703990500C	R901205122
04112703991000C	R930000163
04112703992000C	R901113629
04112703993500C	R987267936

туре	Material number

Matarial

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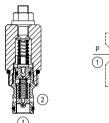
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Relief, pilot operated spool type

Common cavity, Size 10

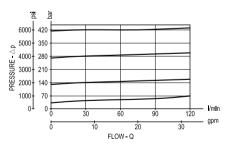
VSPN-10A

04.12.08 - X - 85 - Z





Performance



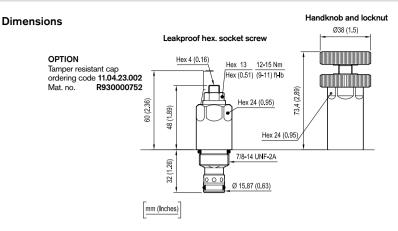
Description

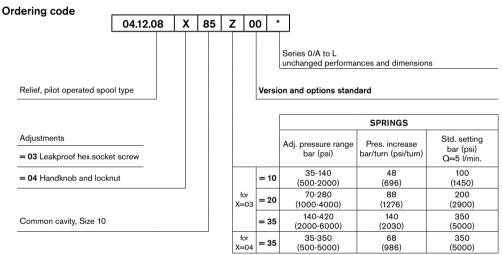
Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift and provide relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve.

Technical data

Max. operating pressure port 1 (P)	bar (psi)	420 (6000)
Max. pressure admitted port 2 (T)	bar (psi)	350 (5000) for version 03 210 (3000) for version 04
Flow range	l/min. (gpm)	3-120 (1-32)
Max. internal leakage (*) cm³/min.	. (cu.in./min.)	200 (12)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (**)	kg (lbs)	0.21 (0.46)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	RG10A2010530100 R901111366
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical d	lata	See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=03 type
- (***) Only external seals for 10 valves





Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре
041208038510000	R901097726	
041208038520000	R901097722	
041208038535000	R901104103	
041208048535000	R901104104	

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Material number

The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging. Subject to change.

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RE 18318-09/09.09

1/2 Replaces: RE 00162-02/01.06

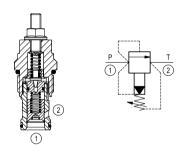
Relief, pilot operated spool type

Common cavity, Size 12

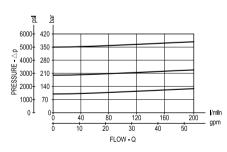
VSPN-12A

04.12.10 - X - 57 - Z





Performance



Description

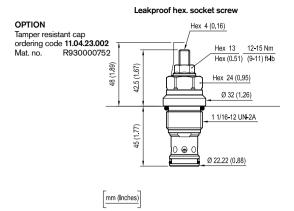
Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift and provide relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the

Technical data

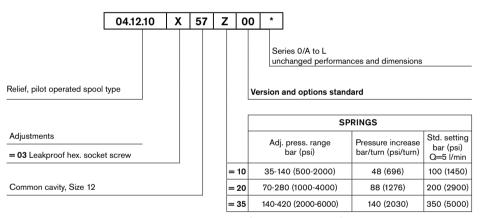
Max. operating pressure port 1 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 2 (T)	bar (psi)	140 (2000)
Flow range I/r	nin. (gpm)	5-200 (1.3-53)
Max. internal leakage (*) cm ³ /min. (c	u.in./min.)	350 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Vm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.2 (0.5)
Cavity		CA-12A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code aterial no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical data	a .	See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
041210035710000	R930000334		
041210035720000	R930000335		
041210035735000	R930000336		

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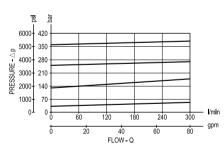
Common cavity, Size 16

VSPN-16A

04.12.11 - X - 27 - Z



Performance



Description

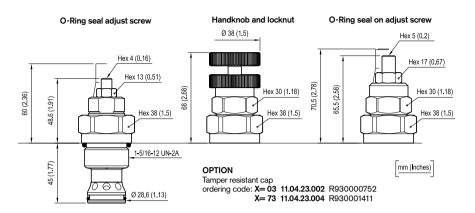
Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift and provide relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve. Pilot operation is protected from contamination by a filter screen at the bottom of the main piston.

Technical data

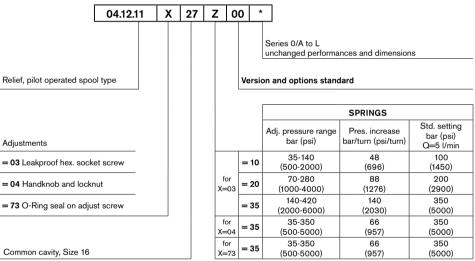
Max. operating pressure port 1 (P)	bar (psi)	420 (6000)
Max. pressure admitted port 2 (T)	bar (psi)	140 (2000)
Flow range	l/min. (gpm)	8-300 (2-79)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	350 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight (**)	kg (lbs)	0.45 (0.99)
Cavity		CA-16A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=03 type
- (***) Only external seals for 10 valves

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Ту	/pe	Material number
041211032710000	R930001025			
041211032720000	R930001026			
041211032735000	R930001027			
041211042735000	R930001024			
041211732735000	R930001028			

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RE 18318-11/09.09 Replaces: RE 00162-02/01.06

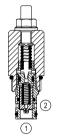
Relief, pilot operated poppet type

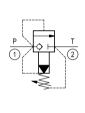
Common cavity, Size 10

VSPC-10A

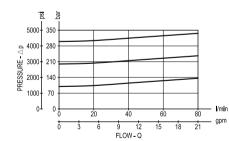
04.12.09 - X - 85 - Z







Performance



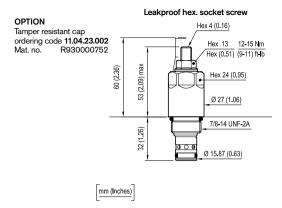
Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage poppet (low-leakage, seat type), allowing it to shift and provide relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve.

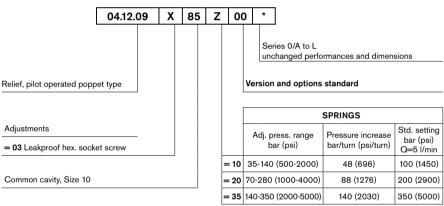
Technical data

Max. operating pressure port 1 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 2 (T)	bar (psi)	210 (3000)
Flow range	I/min. (gpm)	3-80 (1-21)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.21 (0.46)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical data		See data sheet RE 18350-50
(+) M	.1	

(*) Max. to 80% of nominal setting



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
041209038510000	R901109728
041209038520000	R901109729
041209038535000	R901109730

Туре	Material number

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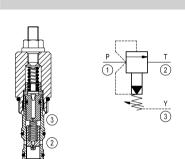
RE 18318-12/09.09 Replaces: RE 00162-02/01.06

Relief, pilot operated spool type external drain

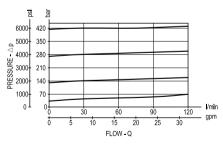
Common cavity, Size 10

VSPY-10A

04.13.05 - X - 85 - Z



Performance



Description

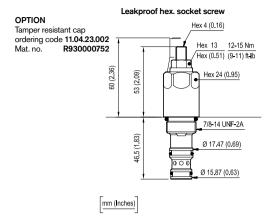
Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift and provide relief flow through 2 to tank. The spring chamber is drained to tank at 3 allowing a consistent relief setting independent of back-pressure at 2.

Technical data

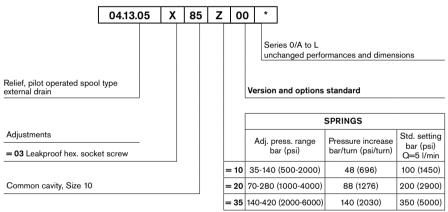
Max. operating pressure port 1 (P) and 2 (T)	bar (psi)	420 (6000)
Max. pressure admitted port 3 (Y)	bar (psi)	140 (2000)
Flow range	l/min. (gpm)	3-120 (0.8-32)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	200 (12)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.21 (0.46)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG10A3010520100 R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	•	No restrictions
Other general technical of	lata	See data sheet RE 18350-50

^(*) Measured at 200 bar (2900 psi)

^(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
041305038510000	R901106472		
041305038520000	R901097730		
041305038535000	R901106473		

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RE 18318-13/09.09 Replaces: RE 00162-02/01.06

Relief, pilot operated spool type external drain

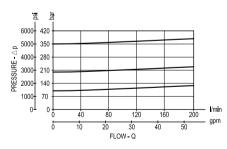
Common cavity, Size 12

VSPY-12A

04.13.07 - X - 57 - Z



Performance



Description

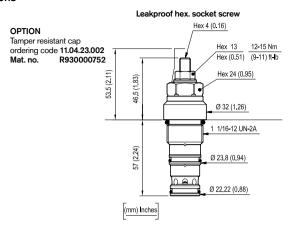
Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift and provide relief flow through 2 to tank. The spring chamber is drained to tank at 3 allowing a consistent relief setting independent of back-pressure at 2.

Technical data

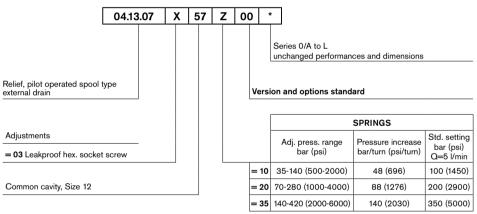
Max. operating pressure port 1 (P) and 2 (T)	bar (psi)	350 (5000)
Max. pressure admitted port 3 (Y)	bar (psi)	140 (2000)
Flow. range	I/min. (gpm)	5-200 (1.3-53)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	350 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.3 (0.66)
Cavity		CA-12A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG12A9010520100 R901111379
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	lata	See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
041307035710000	R930000356		
041307035720000	R930000357		
041307035735000	R930000358	-	

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01

RE 18318-14/09.09 Replaces: RE 00162-02/01.06

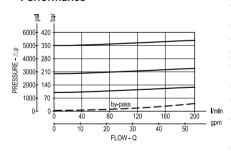
Common cavity, Size 12

VSPX-12A

04.13.08 - X - 57 - Z



Performance



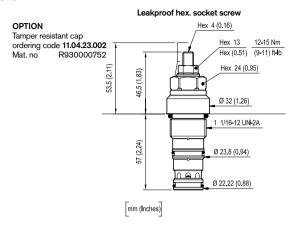
Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift and provide relief flow through 2 to tank. Pressure at 2 is additive to the reliefsetting of the valve. With port 3 fully drained to tank, the minimum relief setting of 2 bar (30 psi) is attained. To use the remote control feature, pressure at 3 may be varied externally in control of the main relief setting up to the selected maximum spring adjustment.

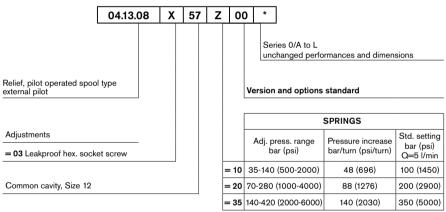
Technical data

Max. operating pressure port 1 (P) and 2 (T)	bar (psi)	350 (5000)
Max. pressure admitted port 3 (X)	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	5-200 (1.3-53)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	350 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.3 (0.66)
Cavity		CA-12A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)		RG12A9010520100 R901111379
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50
		•

(*) Measured at 200 bar (2900 psi)



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
041308035710000	R930000359		
041308035720000	R930000360		
041308035735000	R930000361		

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RE 18318-27/09.09 Replaces: RE 00162-02/01.06

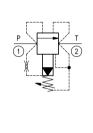
Relief, pilot operated spool type pressure compensated

Special cavity, 065

VSP-CC-150

04.18.01 - X - 99 - Z

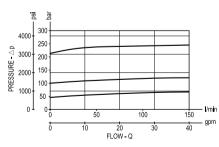




Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the pilot-stage ball check from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift and provide relief flow through 2 to tank. The valve applies a balanced piston design allowing consistent relief operation at the valve setting independent of back-pressure

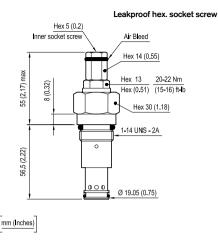
Performance



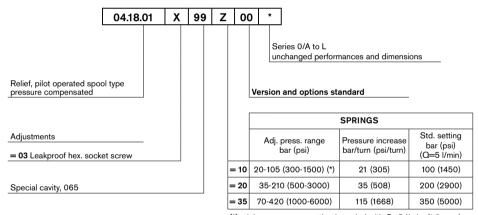
Technical data

Max. operating pressure port 1 (P)	bar (psi)	420 (6000)
Max. pressure admitted port 2 (T)	bar (psi)	140 (2000)
Flow range	I/min. (gpm)	5-150 (1.3-40)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	100 (6)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	121-133 (89-98)
Weight	kg (lbs)	0.28 (0.62)
Special cavity		065, see data sheet RE 18325-75
Seal kit (**)	code material no.	RG0065010520100 R930001958
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Measured at 200 bar (2900 psi)



Ordering code



(*) minimum pressure setting intended with Q=5 l/min. (1.3 gpm)

R930000402	
R930000403	
R930000404	

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RE 18318-15/09.09

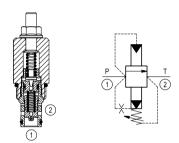
1/2 Replaces: RE 00162-02/01.06

Relief, pilot operated spool type unloading

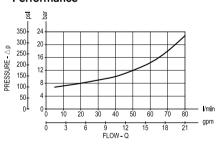
Common cavity, Size 10

VSKD-10A

04.19.02 - X - 85 - Z



Performance



Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the pilot-stage piston check from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift fully and unload flow from 1 through 2 with minimal pressure drop. The valve is held fully open until flow through the valve ceases. The spring chamber is drained to tank at 2. Any pressure at 2 will be additive to the valve setting.

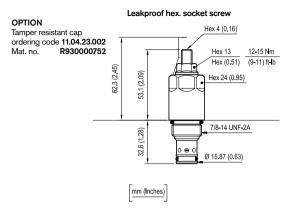
Technical data

Max. operating pressure port 1 (P)	bar (psi)	420 (6000)
Max. pressure admitted port 2 (T)	bar (psi)	140 (2000)
Flow range	I/min. (gpm)	5-80 (1.3-21)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	200 (12)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG10A2010530100 R901111366
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50
(*) Measured at 200 har	(2900 nsi)	

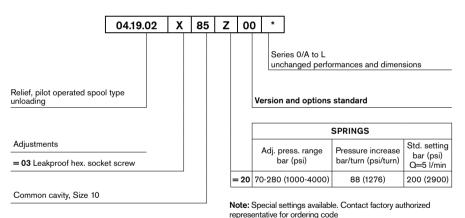
(*) Measured at 200 bar (2900 psi)

(**) Only external seals for 10 valves

01



Ordering code



Туре	Material number	Туре	Material number
041902038520000	R930000406		

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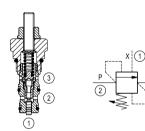
RE 18318-16/09.09 Replaces: RE 00162-02/01.06

Priority unloading pilot operated

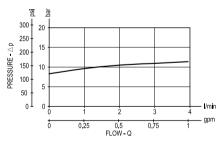
Common cavity, Size 08

VMSN-08A

04.75.21 - X - 56 - Z



Performance



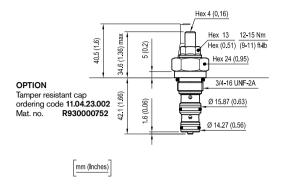
Description

Flow is blocked from 2 to 3 until pressure increases to meet the selected valve setting, lifting the small, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift fully and unload flow from 2 through 3 with minimal pressure drop. Similarly, when remote pilot pressure at 1 exceeds the pressure setting, a secondary piston lifts the pilot-stage poppet from its seat, again exhausting fluid from 2 through 3.

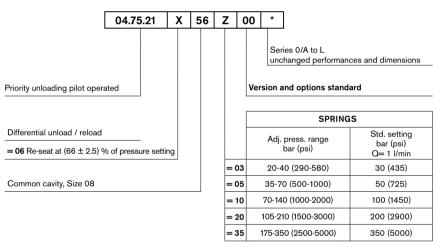
Technical data

Max. operating pressure port 1-2	bar (psi)	350 (5000)
Max. pressure admitted port 3	bar (psi)	50 (750)
Max. flow	l/min. (gpm)	3 (1)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.14 (0.31)
Cavity		CA-08A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	•	No restrictions
Other general technical of	data	See data sheet RE 18350-50
(*) -1.000/ -1	. 112	·

(*) at 80% of pressure setting



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
047521065603000	R901109763
047521065605000	R901109764
047521065610000	R901109765
047521065620000	R901109766
047521065635000	R901109767

Туре	Material number

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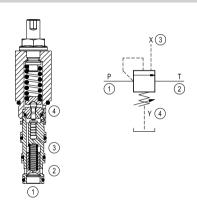
RE 18318-17/09.09 Replaces: RE 00162-02/01.06

Priority unloading pilot operated

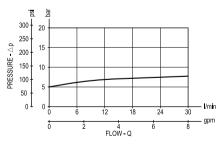
Common cavity, Size 10

VMSP-78

04.75.10 - X - 99 - Z



Performance



Description

Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the small, pilot-stage poppet from its seat. This action exhausts oil above the main-stage piston (spool type), allowing it to shift fully and unload flow from 1 through 2 with minimal pressure drop. Similarly, when remote pilot pressure at 3 exceeds the pressure setting, a secondary piston lifts the pilot-stage poppet from its seat, again exhausting fluid from 1 through 2. The spring chamber is drained to tank at 4. Any pressure at 4 will be additive to the valve setting.

Technical data

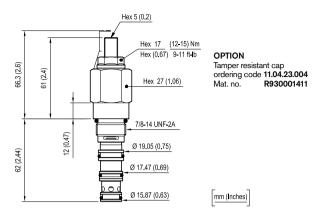
Max. operating pressure port 1-3	bar (psi)	350 (5000)
Max. pressure admitted port 2	bar (psi)	210 (3000)
Flow range	I/min. (gpm)	5-30 (1.3-8)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	25 (1.5)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.28 (0.62)
Cavity		CA-10A-4N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	lata	See data sheet RE 18350-50
(*) Massured at 000 box	(0000 poi)	•

(*) Measured at 200 bar (2900 psi)

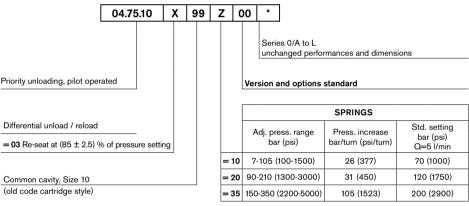
(**) Only external seals for 10 valves

Setting is performed pressurizing "X" port.

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
04751003991000C	R901106474
04751003992000C	R901106475
04751003993500B	R901106479

Туре	Material number

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Mechanical cartridge valves

Pressure reducing and relieving

Designation	Description	Cavity	Code	Data sheet	Page	0
Pressure reducing and relieving, direct acting spool type	VRPR-07A	Special	049508X99Z	18318-59	61	_
Pressure reducing and relieving, direct acting spool type	VRPR-08A	Size 08	0495118356Z	18318-52	63	
Pressure reducing and relieving, direct acting spool type	VRPR-10A	Size 10	049504X85Z	18318-53	65	
Pressure reducing and relieving, direct acting spool, damped type	VRPR-07A-S	Special	049509X99Z	18318-60	67	
Pressure reducing and relieving, direct acting spool, damped type	VRPR-10A-8	Size 10	0495098385Z	18318-54	69	
Pressure reducing , pilot operated spool type	VRPP-10A	Size 10	049306X85Z	18318-50	71	
Pressure reducing , pilot operated spool type	VRPP-12A	Size 12	049308X57Z	18318-51	73	
Pressure reducing and relieving, pilot operated spool type	VRPX-10A	Size 10	049307X85Z	18318-56	75	
Pressure reducing and relieving, with pilot controlled setting	VRPE-10A	Size 10	049507X85Z	18318-58	77	

RE 18318-59/01.10 Replaces: RE 00162-02/01.06

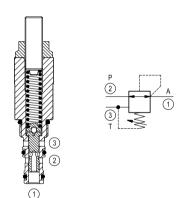
01

Pressure reducing and relieving, direct acting spool type

Special cavity

VRPR-07A

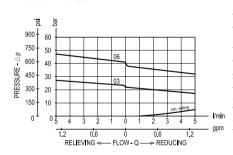
04.95.08 - X - 99 - Z



Description

Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the valve acts to restrict input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained.

Performance

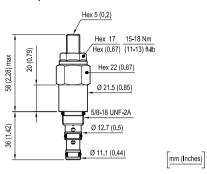


Technical data

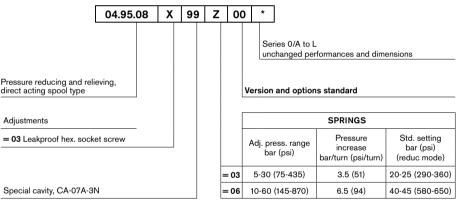
ooiiiiioai ac			
Max. operating port 2 (P)	pressure	bar (psi)	420 (6000)
Max. pressure a port 1 (A)	dmitted	bar (psi)	70 (1000)
Max. flow		I/min. (gpm)	5 (1.3)
Max. internal leakage (*)	cm ³ /min	. (cu.in./min.)	50 (3)
Fluid temperatu	re range	°C (°F)	-30 to 100 (-22 to 212)
Installation torqu	ue	Nm (ft-lbs)	24-27 (18-20)
Weight		kg (lbs)	0.14 (0.31)
Special cavity			CA-07A-3N see data sheet RE 18325-75
Seal kit (**)		code material no.	RG07A3010520100 R930001701
Fluids			Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration			Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation			No restrictions
Other general to	echnical c	lata	See data sheet RE 18350-50

(*) 1 - 3 to 80% of pressure setting

Leakproof hex. socket screw



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
049508039903000	R901114705
049508039906000	R901114707

Туре	Material number

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RE 18318-52/09.09 Replaces: RE 00162-02/01.06

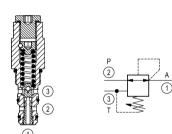
01

Pressure reducing and relieving, direct acting spool type

Common cavity, Size 08

VRPR-08A

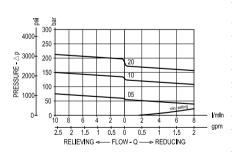
04.95.11.83.56 - Z



Description

Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the valve acts to restrict input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained.

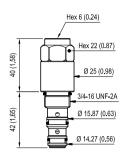
Performance



Technical data

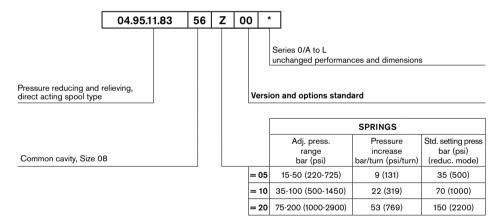
eciliicai data		
Max. operating pressure port 2 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 1 (A)	bar (psi)	210 (3000)
Max. flow	l/min. (gpm)	8 (2)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	100 (6)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-08A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG08A3010520100 R930000861
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50

(*) 1 - 3 to 80% of pressure setting





Ordering code



Туре	Material number
049511835605000	R930001133
049511835610000	R930001134
049511835620000	R930001120

Туре	Material number

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RE 18318-53/09.09 Replaces: RE 00162-02/01.06

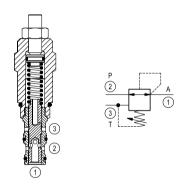
01

Pressure reducing and relieving, direct acting spool type

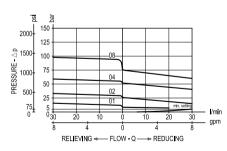
Common cavity, Size 10

VRPR-10A

04.95.04 - X - 85 - Z



Performance



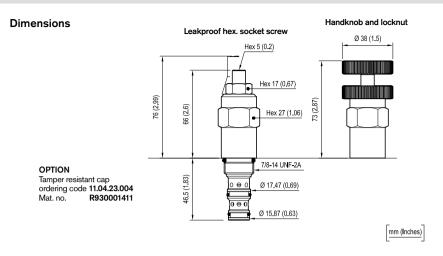
Description

Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the valve acts to restrict input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained.

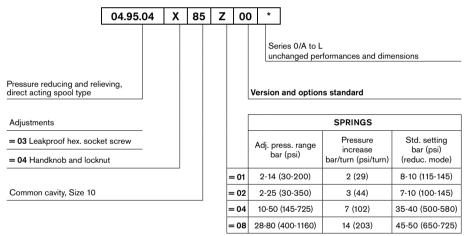
Technical data

Max. operating pressure port 2 (P)	bar (psi)	350 (5000) 210 (3000) for version Z=01
Max. pressure admitted port 1 (A)	bar (psi)	105 (1500)
Max. flow	l/min. (gpm)	30 (8)
Max. internal leakage (*) cm³/min.	. (cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (**)	kg (lbs)	0.26 (0.57)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	RG10A3010520100 R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	•	No restrictions
Other general technical d	lata	See data sheet RE 18350-50

- (*) 1 3 to 80% of pressure setting
- (**) Standard version X=03 type
- (***) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
04950403850100A	R901104066
04950403850200A	R901109740
04950403850400A	R901102333
04950403850800A	R901109742
049504048501000	R901109743

Material number
R901109744
R901109745
R901109747

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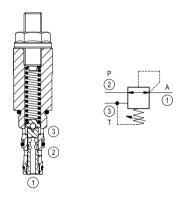
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Pressure reducing and relieving, direct acting spool damped type

Special cavity

VRPR-07A-S

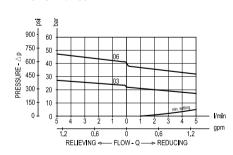
04.95.09 - X - 99 - Z



Description

Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the valve acts to restrict input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of backpressure against the spool. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained. VRPR-07A-S is equipped with a damped type spool especially designed for demanding applications.

Performance

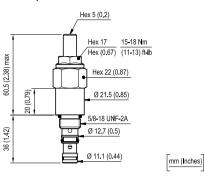


Technical data

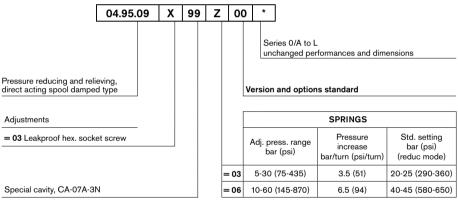
Max. operating pressure port 2 (P)	bar (psi)	420 (6000)
Max. pressure admitted port 1 (A)	bar (psi)	70 (1000)
Max. flow	l/min. (gpm)	5 (1.3)
Max. internal leakage (*) cm ³ /mi	n. (cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	24-27 (18-20)
Weight	kg (lbs)	0.14 (0.31)
Special cavity		CA-07A-3N see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical	data	See data sheet RE 18350-50

(*) 1 - 3 to 80% of pressure setting

Leakproof hex. socket screw



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
049509039903000			
049509039906000			
-		_	-

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RE 18318-54/09.09 Replaces: RE 00162-02/01.06

01

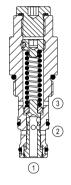
Pressure reducing and relieving, direct acting spool damped type

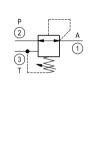
Common cavity, Size 10

VRPR-10A-8

04.95.09.83.85 - Z



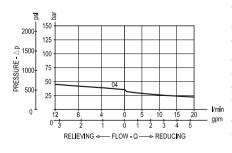




Description

Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the valve acts to restrict input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained. Compared to VRPR-10A it allows a smoother dynamic and lower flow rate.

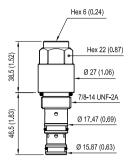
Performance



Technical data

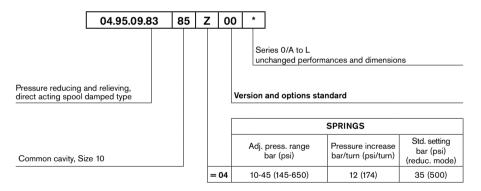
Max. operating pressure port 2 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 1 (A)	bar (psi)	50 (725)
Max. flow	l/min. (gpm)	20 (5)
Max. internal leakage (*) cm ³ /min	ı. (cu.in./min.)	130 (8)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.3 (0.6)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG10A3010520100 R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical	data	See data sheet RE 18350-50

(*) 1 - 3 to 80% of pressure setting





Ordering code



Туре	Material number	Туре	Material number
049509838504000	R930005668		
		_	
		_	

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RE 18318-50/09.09 Replaces: RE 00162-02/01.06

1/2

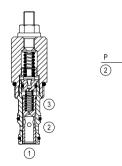
Pressure reducing, pilot operated spool type

Common cavity, Size 10

VRPP-10A

04.93.06 - X - 85 - Z

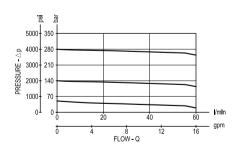




Description

Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the valve acts to restrict input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool.

Performance

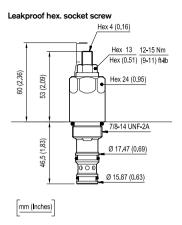


Technical data

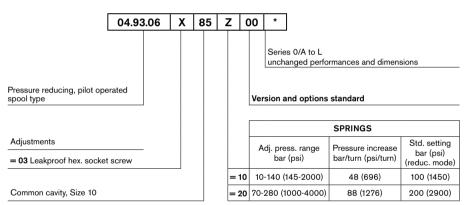
commour data		
Max. operating pressure port 2 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 1 (A)	bar (psi)	280 (4000)
Max. flow	I/min. (gpm)	60 (16)
Standard internal pilot or diameter	ifice mm	0.6
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.21 (0.46)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG10A3010520100 R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50

OPTION

Tamper resistant cap ordering code 11.04.23.002 Mat. no. R930000752



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
049306038510000	R901104112		
049306038520000	R901104113		

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1/2 RE 18318-51/09.09 Replaces: RE 00162-02/01.06

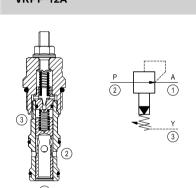
01

Pressure reducing, pilot operated spool type

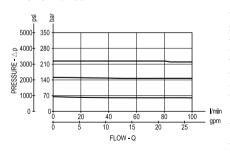
Common cavity, Size 12

VRPP-12A

04.93.08 - X - 57 - Z



Performance



Description

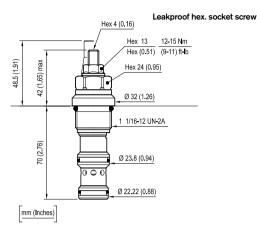
Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the valve acts to restrict input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool.

Technical data

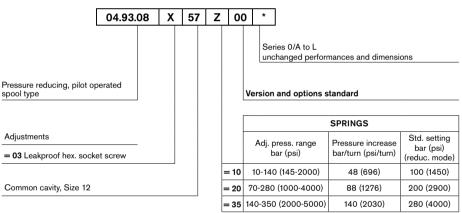
Max. operating pressure port 2 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 1 (A)	bar (psi)	280 (4000)
Max. flow	l/min. (gpm)	100 (26)
Standard internal pilot or diameter	ifice mm	0.6
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.4 (0.88)
Cavity		CA-12A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG12A3010520100 R930000941
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	•	No restrictions
Other general technical of	data	See data sheet RE 18350-50
(t) O - - (-	40 .1	

OPTION

Tamper resistant cap ordering code 11.04.23.002 Mat. no. R930000752



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
049308035710000	R901109737
049308035720000	R901109738
049308035735000	R901109739

Type	Material Humber

Material number

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RE 18318-56/09.09 Replaces: RE 00162-02/01.06

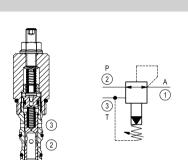
01

Pressure reducing and relieving, pilot operated spool type

Common cavity, Size 10

VRPX-10A

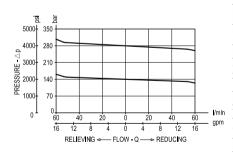
04.93.07 - X - 85 - Z



Description

Initially, flow passes freely from 2 to 1. When the pressure at 1 exceeds the pressure setting, the conical poppet in the upper, pilot stage is lifted from its seat. This allows the main-stage piston to shift, restricting input flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. The spring chamber is drained at 3 to prevent a build-up of back-pressure against the spool. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained.

Performance

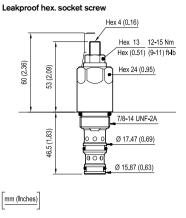


Technical data

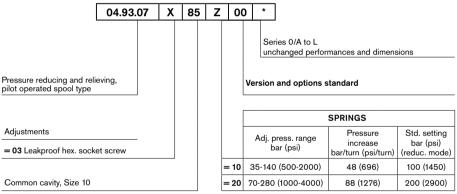
Max. operating pressure port 2 (P)	bar (psi)	350 (5000)
Max. pressure admitted port 1 (A)	bar (psi)	280 (4000)
Max. flow	l/min. (gpm)	60 (16)
Standard internal pilot or diameter	ifice mm	0.6
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG10A3010520100 R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50
(*) Only systemal apple for	r 10 volvos	

OPTION

Tamper resistant cap ordering code 11.04.23.002 Mat. no. R930000752



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
049307038510000	R901104118		
049307038520000	R901106468		

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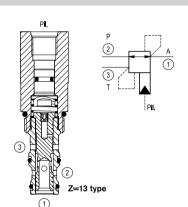
RE 18318-58/01.10 Replaces: RE 00162-02/01.06

Pressure reducing and relieving, with pilot controlled setting

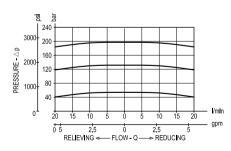
Common cavity, Size 10

VRPE-10A

04.95.07 - X - 85 - Z



Performance



Description

When a minimum pilot pressure is applied to port PIL, flow passes from 2 to 1. When the pressure at 1 exceeds the pressure setting (defined by pilot pressure times pilot ratio), the valve acts to restrict flow at 2. This increases the pressure drop through the valve and maintains consistent pressure at 1. Additionally, if pressure at 1 rises above the pressure setting, flow is relieved to 3 until the setting is re-attained.

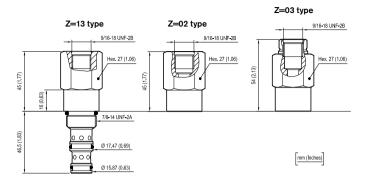
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. pilot pressure	bar (psi)	175 (2500) for Z=02 and Z=03 250 (3600) for Z=13
Max. flow	I/min. (gpm)	20 (5)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.28 (0.62)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG10A3010520100 R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	data	See data sheet RE 18350-50
1.		5

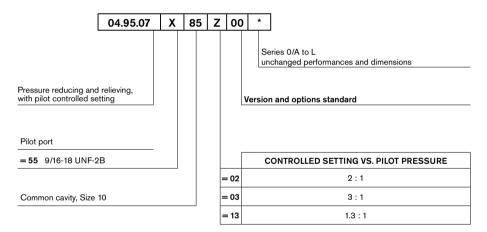
(*) 1-3 at 80% of pressure setting

(**) Only external seals for 10 valves

01



Ordering code



Туре	Material number	Туре	Material number
049507558502000	R930001183		
049507558503000	R930001184		
049507558513000	R930001185		

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~4

Mechanical cartridge valves

Check and pilot operated check

Designation	Description	Cavity	Code	Data sheet	Page
Check, poppet type	VUCN-04A	Special	0431310054Z	18318-88	81
Check, poppet type	VU-N-38	Special	0431190099Z	18318-99	83
Check, poppet type	VUCN-08A	Size 08	0431200056Z	18318-89	85
Check, poppet type	VUCN-10A	Size 10	0431230085Z	18318-90	87
Check, poppet type	VUCN-12A	Size 12	0431280057Z	18318-91	89
Check, poppet type	VUCN-16A	Size 16	0431250027Z	18318-92	91
Check, poppet type	VUCN-20A	Size 20	0431320058Z	18318-93	93
Check, poppet type with thermal relief	VUCN-10A-TR	Size 10	043137X85Z	18318-94	95
Check, poppet type with thermal relief	VUCN-12A-TR	Size 12	043137X57Z	18318-95	97
Check, poppet reverse type	VURN-08A	Size 08	0431210056Z	18318-96	99
Check, poppet reverse type	VURN-10A	Size 10	0431270085Z	18318-97	101
Check, poppet reverse type	VURN-12A	Size 12	0431360057Z	18318-98	103
Pilot operated check, pilot to open	VSON-08A	Size 08	043306X56Z	18319-30	105
Pilot operated check, pilot to open	VSON-10A	Size 10	043305X85Z	18319-31	107
Pilot operated check, pilot to open	VSON-08U	T-11 A	043306X20Z	18319-39	109
Pilot operated check, pilot to open	VSON-12A	Size 12	043307X57Z	18319-32	111

Mechanical cartridge valves

Check and pilot operated check

Designation	Description	Cavity	Code	Data sheet	Page
Pilot operated check, pilot to open	VSON-12U	T-2A	043307X86Z	18319-40	113
Pilot operated check, pilot to open	VSON-16A	Size 16	043308X27Z	18319-33	115
Pilot operated check, pilot to open	VSON-16U	T-17A	043309X47Z	18319-41	117
Pilot operated check, pilot to open	VSOA-08A	Size 08	043310X56Z	18319-34	119
Pilot operated check, pilot to open	VSOA-10A	Size 10	043310X85Z	18319-35	121
Dual pilot operated check, pilot to open	VSOD-10A	Size 10	043603X85Z	18319-38	123
Pilot operated check, pilot to close	VUPC-10A	Size 10	043404X85Z	18319-36	125
Pilot operated check, pilot to close	VUPC-12A	Size 12	043404X57Z	18319-37	127
Directional poppet type, shuttle	SELC-04A	Special	049407005400	18319-82	129
Directional poppet type, shuttle	SELB-08A	Size 08	049405005600	18319-80	131
Directional poppet type, shuttle	SELC-08A	Size 08	049406X5600	18319-81	133
Directional poppet type, shuttle, double check	VUDN-08A	Size 08	0439010056Z	18319-83	135
Check, double lock with mechanical pilot	VU-DT-D7-CM	Special	0443010000Z	18318-87	137

RE 18318-88/01.10 Replaces: RE 00162-02/01.06

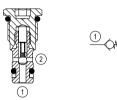
1/2

Check, poppet type

Special cavity

VUCN-04A

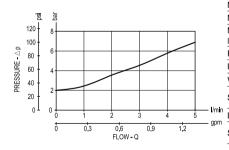
04.31.31.00.54 - Z



Description

When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance

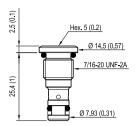


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	4 (1)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	10-12 (7-9)
Weight	kg (lbs)	0.013 (0.03)
Special cavity		CA-04A-2N see data sheet RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG04S2010520100 R930003786
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

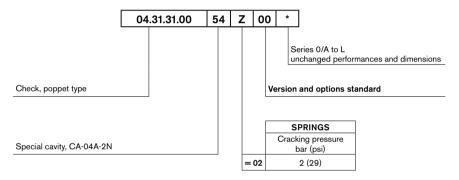
(*) Only external seals for 10 valves

01



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
043131005402000	R930000494		

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RE 18318-99/09.09 Replaces: RE 00162-02/01.06

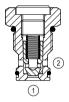
Check, poppet type

Special cavity, 690

VU-N-38

04.31.19.00.99 - Z



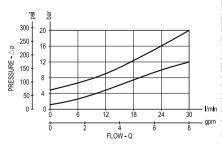




Description

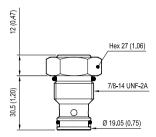
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



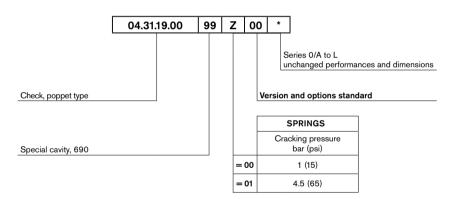
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	30 (8)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	78-85 (56-63)
Weight	kg (lbs)	0.1 (0.22)
Special cavity		690 see data sheet RE 18325-75
Seal kit (*)	code material no.	RG0690010520100 R930001702
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(t) O - - (-	40 .1	



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
043119009900000	R930000456		
043119009901000	R930000457		

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RE 18318-89/09.09 Replaces: RE 00162-02/01.06

Check, poppet type

Common cavity, Size 08

VUCN-08A

04.31.20.00.56 - Z



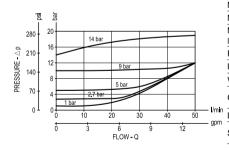




Description

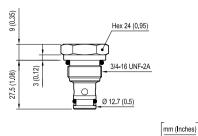
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance

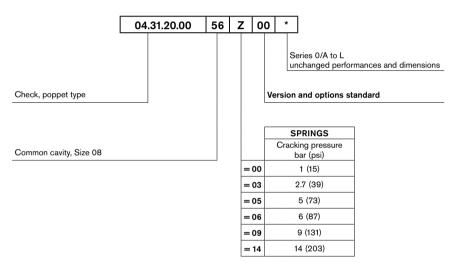


Technical data

Max. operating pressure	bar (psi)	420 (6000)
Max. flow	I/min. (gpm)	50 (13)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.12 (0.27)
Cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG08A2010520100 R901101437
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number
043120005600000	R901007308
043120005603000	R901162183
043120005605000	R901106550
043120005606000	R901116571
043120005609000	R930000961
043120005614000	R901106592

Туре	Material number

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RE 18318-90/09.09 Replaces: RE 00162-02/01.06

1/2

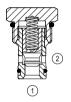
Check, poppet type

Common cavity, Size 10

VUCN-10A

04.31.23.00.85 - Z



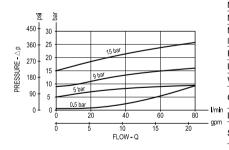




Description

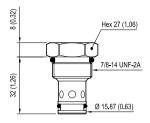
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



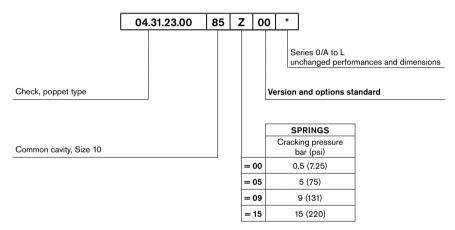
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	
Max. internal leakage	drops/min.	
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.15 (0.33)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG10A2010520100 R901111363
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
043123008500000	R901106596		
043123008505000	R901106601		
043123008509000	R930000962		
04312300851500A	R901106602		

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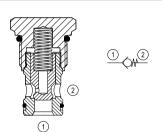
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Check, poppet type

Common cavity, Size 12

VUCN-12A

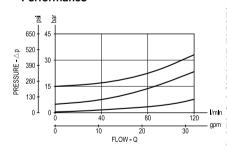
04.31.28.00.57 - Z



Description

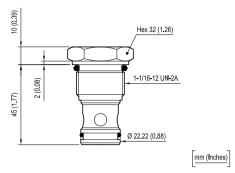
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance

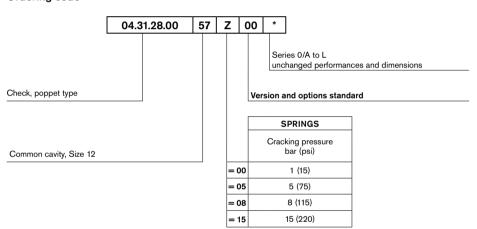


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	120 (32)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.18 (0.4)
Cavity		CA-12A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG12A2010520100 R901111377
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number
043128005700000	R901106613
043128005705000	R901106614
043128005708000	R930000490
043128005715000	R901106615

Туре	Material number

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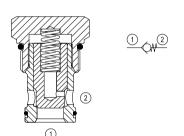
RE 18318-92/09.09 Replaces: RE 00162-02/01.06

Check, poppet type

Common cavity, Size 16

VUCN-16A

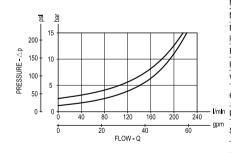
04.31.25.00.27 - Z



Description

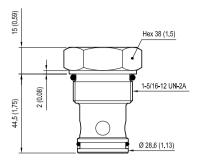
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



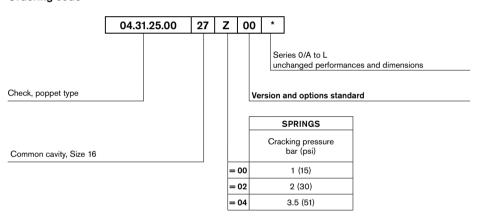
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	200 (53)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.27 (0.6)
Cavity		CA-16A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG16A2010520100 R901111386
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
		•



mm (Inches)

Ordering code



Туре	Material number
043125002700000	R901106616
043125002702000	R901106617
043125002704000	R930000481

Туре	Material number

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RE 18318-93/09.09 Replaces: RE 00162-02/01.06

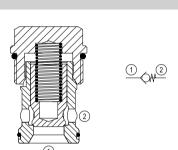
01

Check, poppet type

Common cavity, Size 20

VUCN-20A

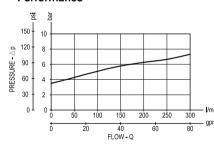
04.31.32.00.58 - Z



Description

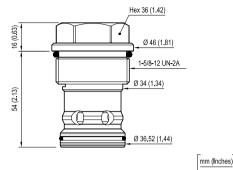
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance

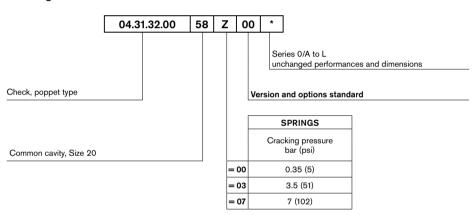


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	360 (95)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	128-149 (95-110)
Weight	kg (lbs)	0.38 (0.84)
Cavity		CA-20A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)		RG20A2010520100 R930005602
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number
0431320058000000	R901109780
043132005803000	R901109781
043132005807000	R901109783

туре	Material number

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RE 18318-94/01.10 Replaces: RE 00162-02/01.06

1/2

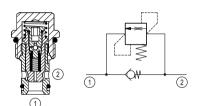
01

Check, poppet type with thermal relief

Common cavity, Size 10

VUCN-10A-TR

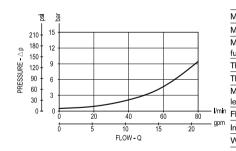
04.31.37 - X - 85 - Z



Description

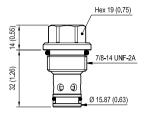
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. If the pressure at 2 increases to meet the thermal relief valve setting, a small amount of oil is allowed from 2 to 1, preventing damage from increasing pressure. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



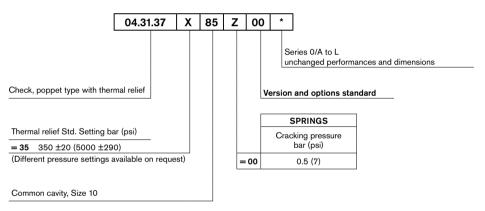
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	80 (21)
Max. flow relief function	l/min. (gpm)	1 (0.26)
Thermal relief setting	bar (psi)	350 ±20 (5000 ±290)
Thermal relief reseat	bar (psi)	270 (4000)
Max. internal leakage	drops/min.	15 at 250 bar (3600 psi)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.15 (0.33)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
04313735850000A	R930001003		

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Check, poppet type with thermal relief

Common cavity, Size 12

VUCN-12A-TR

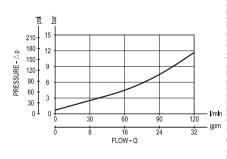
04.31.37 - X - 57 - Z



Description

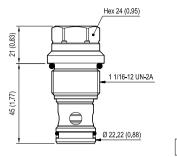
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. If the pressure at 2 increases to meet the thermal relief valve setting, a small amount of oil is allowed from 2 to 1, preventing damage from increasing pressure. Precision machining and hardening processes allow virtually leakfree performance in the checked condition.

Performance



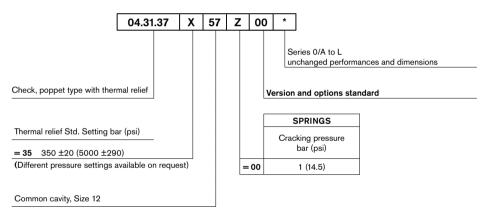
Technical data

Max. operating pressure	bar (psi)	350 (5000)
		<u>'</u>
Max. flow	l/min. (gpm)	120 (32)
Max. flow relief function	l/min. (gpm)	1 (0.26)
Thermal relief setting	bar (psi)	350 ±20 (5000 ±290)
Thermal relief reseat	bar (psi)	270 (4000)
Max. internal leakage	drops/min.	15 at 250 bar (3600 psi)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.2 (0.44)
0. 1		CA-12A-2N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG12A2010520100 R901111377
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(+) 0 1 1 1 1	40 1	



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
043137355700000	R930000280		
		<u> </u>	

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RE 18318-96/09.09 Replaces: RE 00162-02/01.06

Check, poppet reverse type

Common cavity, Size 08

VURN-08A

04.31.21.00.56 - Z



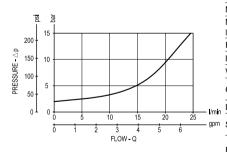




Description

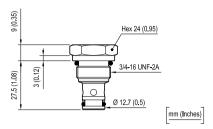
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is closed (checked) from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance

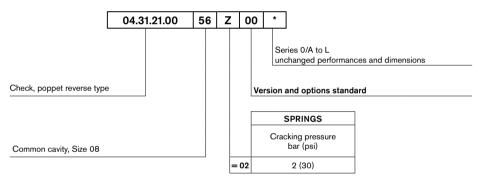


Technical data

Max. operating pressure	bar (psi)	420 (6000)
Max. flow	l/min. (gpm)	
Max. internal leakage		5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.13 (0.29)
Cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG08A2010520100 R901101437
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number	Туре	Material number
043121005602000	R901106619	<u> </u>	
		<u> </u>	
			

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1/2

RE 18318-97/09.09

Check, poppet reverse type

Common cavity, Size 10

VURN-10A

04.31.27.00.85 - Z



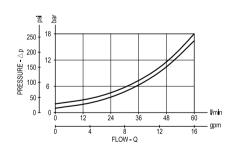




Description

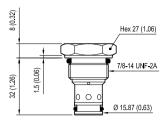
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is closed (checked) from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



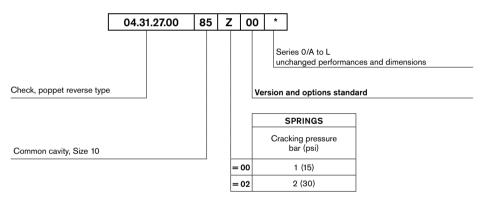
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.12 (0.27)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG10A2010520100 R901111363
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



mm (Inches)

Ordering code



Material number
R901106622
R901106623

Type	Material number

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RE 18318-98/09.09 Replaces: RE 00162-02/01.06

12

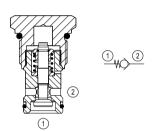
01

Check, poppet reverse type

Common cavity, Size 12

VURN-12A

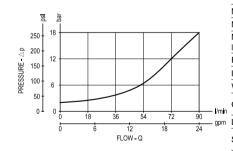
04.31.36.00.57 - Z



Description

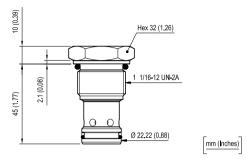
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is closed (checked) from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance

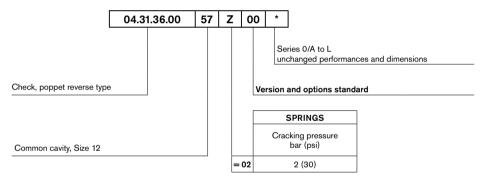


Technical data

Max approxima proceura	bar (psi)	350 (5000)
Max. operating pressure		· · · ·
Max. flow	l/min. (gpm)	90 (24)
Max. internal	drops/min.	5
leakage	drops/min.	3
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.2 (0.44)
Carrier.		CA-12A-2N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
O I L'1 (*)	code	RG12A2010520100
Seal kit (*)	material no.	R901111377
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	•	No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number	Туре	Material number
043136005702000	R930000502		
		<u> </u>	

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RE 18319-30/09.09 Replaces: RE 00162-02/01.06

1/2

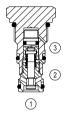
Pilot operated check, pilot to open

Common cavity, Size 08

VSON-08A

04.33.06 - X - 56 - Z



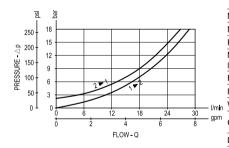




Description

When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance

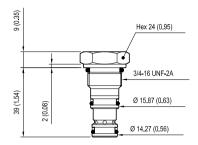


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	30 (8)
Pilot ratio		3:1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.12 (0.27)
Cavity		CA-08A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG08A9010520100 R901101592
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(±) O I I I I		•

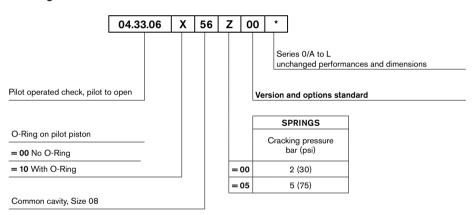
(*) Only external seals for 10 valves

01



mm (Inches)

Ordering code



Туре	Material number
04330600560000A	R901106627
043306005605000	R930000982
04330610560000A	R901099896
043306105605000	R930000818

Туре	Material number

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RE 18319-31/09.09 Replaces: RE 00162-02/01.06

1/2

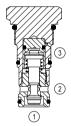
Pilot operated check, pilot to open

Common cavity, Size 10

VSON-10A

04.33.05 - X - 85 - Z



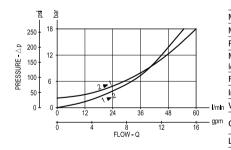




Description

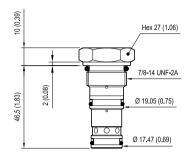
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



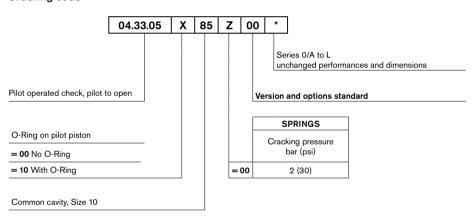
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	60 (16)
	i/min. (gpm)	. ,
Pilot ratio		3.2 : 1
Max. internal	drops/min.	5
leakage	игоралинг.	0
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.12 (0.27)
0. 1		CA-10A-3C
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG10A9010520100
Sear Kit ()	material no.	R901111367
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50





Ordering code



Туре	Material number	Туре	Material number
04330500850000A	R901106629		
04330510850000A	R901106632		

Bosch Rexroth Oil Control S.p.A.
Via Leonardo da Vinci 5
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cartridges@oilcontrol.com
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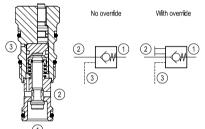
RE 18319-39/09.09 Replaces: RE 00162-02/01.06

Pilot operated check, pilot to open

SUN cavity interchange, T-11A

VSON-08U

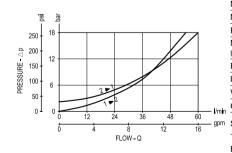
04.33.06 - X - 20 - Z



Description

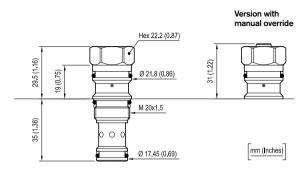
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition. Available with "manual override" option.

Performance

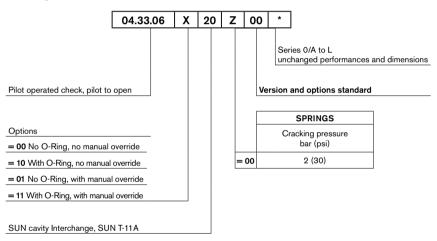


Technical data

bar (psi)	350 (5000)
l/min. (gpm)	60 (16)
	3.2:1
drops/min.	5
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	40-50 (30-37)
kg (lbs)	0.12 (0.27)
	SUN T-11A
code material no.	RG08U9020110100 R901193388
	Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	l/min. (gpm) drops/min. °C (°F) Nm (ft-lbs) kg (lbs) code



Ordering code



Туре	Material number
04330600200000A	R901106637
04330610200000A	R901104068
043306012000000	R930005647
043306112000000	R930001975

Туре	Material number

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RE 18319-32/09.09 Replaces: RE 00162-02/01.06

Pilot operated check, pilot to open

Common cavity, Size 12

VSON-12A

04.33.07 - X - 57 - Z

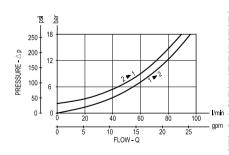


3 3

Description

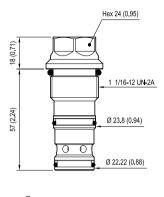
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



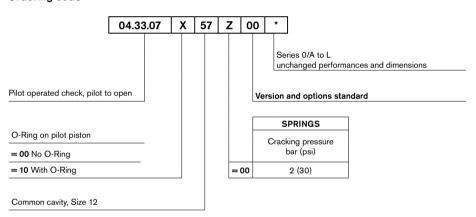
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	120 (32)
Pilot ratio		3.2 : 1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.25 (0.55)
Cavity		CA-12A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG12A9010520100 R901111379
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50





Ordering code



Туре	Material number	Туре	Material number
043307005700000	R930006106		
043307105700000	R901106634	_	

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RE 18319-40/09.09 Replaces: RE 00162-02/01.06

1/2

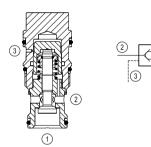
Pilot operated check, pilot to open

SUN cavity interchange, T-2A

VSON-12U

04.33.07 - X - 86 - Z

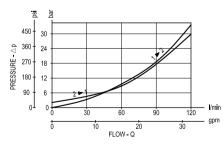




Description

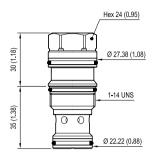
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



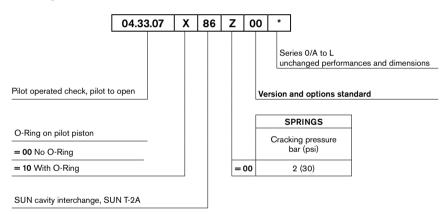
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	120 (32)
Pilot ratio		3.2:1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	60-70 (44-52)
Weight	kg (lbs)	0.25 (0.55)
Cavity		SUN T-2A
Seal kit (*)	code material no.	RG12U9020110100 R930005599
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(4) 0 1 1 1 1		



mm (Inches)

Ordering code



Туре	Material number	Туре
04330700860000A	R901106638	
04330710860000A	R901106639	

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Material number

1/2 RE 18319-33/09.09 Replaces: RE 00162-02/01.06

Pilot operated check, pilot to open

Common cavity, Size 16

VSON-16A

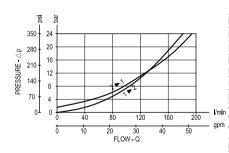
04.33.08 - X - 27 - Z



Description

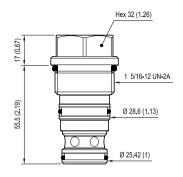
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



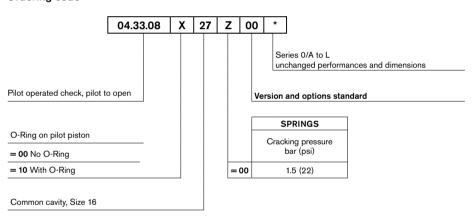
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	200 (53)
Pilot ratio		3:1
Max. internal leakage	drop/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.32 (0.71)
Cavity		CA-16A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG16A9010520100 R901111388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
043308002700000	R901106635		
043308102700000	R901106636		
			

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RE 18319-41/09.09 Replaces: RE 00162-02/01.06

01

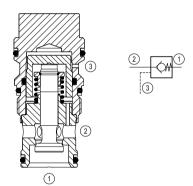
Pilot operated check, pilot to open

SUN cavity interchange, T-17A

VSON-16U

04.33.09 - X - 47 - Z

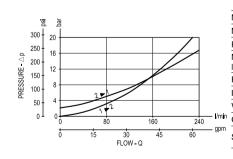




Description

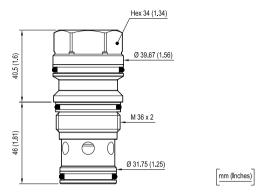
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1. The valve is normally closed (checked) from 1 to 2. When sufficient pilot pressure is present at port 3, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance

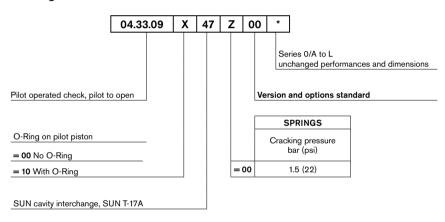


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	240 (63)
Pilot ratio		3:1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	200-215 (148-159)
Weight	kg (lbs)	0.67 (1.48)
Cavity		SUN T-17A
Seal kit (*)	code material no.	RG16U9020110100 R930000995
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number	Туре	Material number
043309004700000	R901106640		
043309104700000	R901106641		
			

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RE 18319-34/09.09 Replaces: RE 00162-02/01.06

01

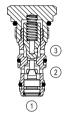
Pilot operated check, pilot to open

Common cavity, Size 08

VSOA-08A

04.33.10 - X - 56 - Z



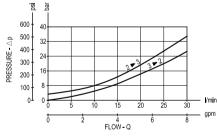




Description

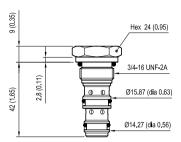
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 3. The valve is normally closed (checked) from 3 to 2. When sufficient pilot pressure is present at port 1, the pilot piston acts to push the poppet from its seat and flow is allowed from 3 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



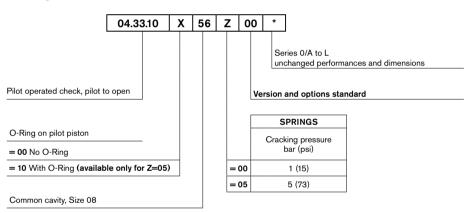
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	30 (8)
Pilot ratio		3.2:1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-45 (29-33)
Weight	kg (lbs)	0.08 (0.18)
Cavity		CA-08A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG08A3010520100 R930000861
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



mm (Inches)

Ordering code



Туре	Material number
043310005600000	R930000836
043310005605000	R930000846
043310105605000	R930000847

Туре	Material number

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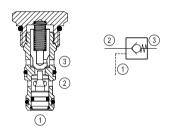
RE 18319-35/09.09 Replaces: RE 00162-02/01.06

Pilot operated check, pilot to open

Common cavity, Size 10

VSOA-10A

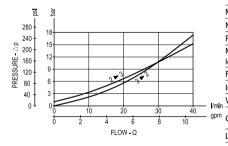
04.33.10 - X - 85 - Z



Description

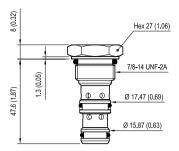
When pressure at 2 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 3. The valve is normally closed (checked) from 3 to 2. When sufficient pilot pressure is present at port 1, the pilot piston acts to push the poppet from its seat and flow is allowed from 3 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



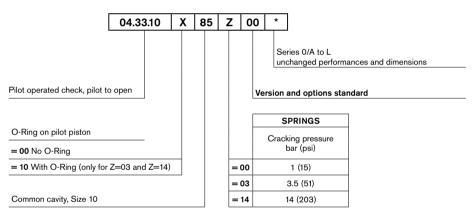
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	40 (11)
Pilot ratio		3:1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.11 (0.24)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)		RG10A3010530100 R930000990
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



mm (Inches)

Ordering code



Туре	Material number
043310008500000	R901117416
043310008503000	R901117420
043310008514000	R930000988
043310108500000	R901117418
043310108503000	R901117421

Туре	Material number
043310108514000	R930000989

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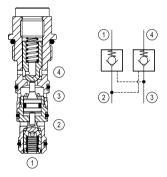
RE 18319-38/01.10 Replaces: RE 00162-02/01.06

Dual pilot operated check, pilot to open

Common cavity, Size 10

VSOD-10A

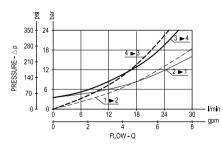
04.36.03 - X - 85 - Z



Description

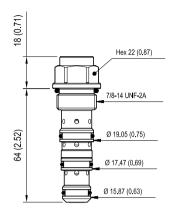
When pressure at port 2 or port 3 rises above the spring bias pressure, the poppet is pushed from its seat and flow is allowed from 2 to 1 or 3 to 4. The valve is normally closed (checked) from 1 to 2 and from 4 to 3. When sufficient pilot pressure is present at port 3 or port 2, the pilot piston acts to push the poppet from its seat and flow is allowed from 1 to 2 or from 4 to 3. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



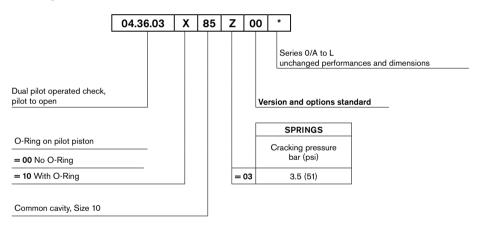
Technical data

Man anautina anautina	h = - / =:\	250 (5000)
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	30 (8)
Pilot ratio		3:1
Max. internal	dropo/min	5
leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.14 (0.31)
Carrier		CA-10A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG10A4010530100
Sear Kit ()	material no.	R901111373
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(4) 0 1 1 1 1		





Ordering code



Type	Material number	Type
043603008503000	R930000016	
043603108503000	R930000015	

Type Material number

Bosch Rexroth Oil Control S.p.A. Via Leonardo da Vinci 5 P.O. Box no. 5 41015 Nonantola – Modena, Italy Tel. +39 059 887 611 Fax +39 059 547 848 cartridges@oilcontrol.com www.boschrexroth.com

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RE 18319-36/01.10 Replaces: RE 00162-02/01.06

01

Pilot operated check, pilot to close

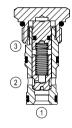
Common cavity, Size 10

VUPC-10A

04.34.04- X - 85 - Z

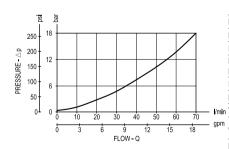


When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. When sufficient pilot pressure is present at port 3, the pilot piston acts to hold the poppet on its seat and flow is blocked from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.



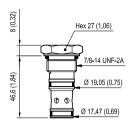


Performance



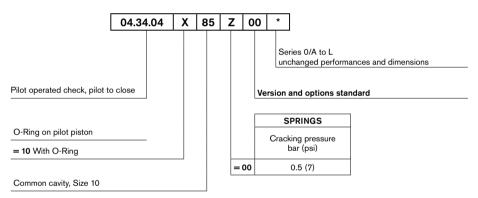
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	70 (18)
Pilot ratio		1.9:1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.15 (0.33)
Cavity		CA-10A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG10A9010530100 R901111368
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) O .	40 .1	•



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
043404108500000	R930000552		
			

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RE 18319-37/09.09 Replaces: RE 00162-02/01.06

Pilot operated check, pilot to close

Linear Motion and

Assembly Technologies

Common cavity, Size 12

VUPC-12A

04.34.04- X - 57 - Z

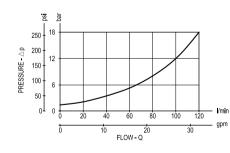


3 3

Description

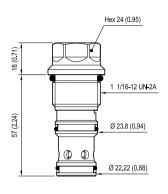
When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. When sufficient pilot pressure is present at port 3, the pilot piston acts to hold the poppet on its seat and flow is blocked from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Performance



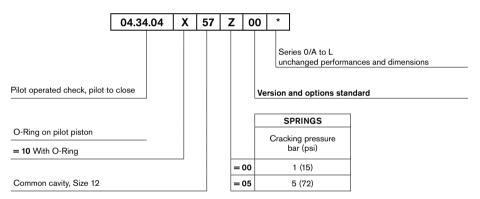
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	120 (32)
Pilot ratio		2:1
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.25 (0.55)
Cavity		CA-12A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG12A9010520100 R901111379
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) O .	40 .1	•



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
043404105700000	R901106642		
043404105705000	R901161977		
		<u> </u>	

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RE 18319-82/09.09 Replaces: RE 00162-02/01.06

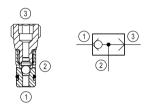
1/2

Directional poppet type, shuttle

Special cavity

SELC-04A

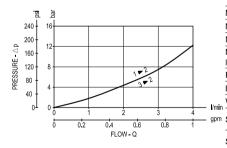
04.94.07.00.54.00



Description

The single ball shuttle allows flow from the higher pressure of two work ports 1 and 3 to the 2 port.

Performance

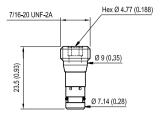


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	See performance graph
Nominal size		DN 2.5
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	10 (7)
Weight	kg (lbs)	0.01 (0.02)
Special cavity		CA-04A-3Y see data sheet RE 18325-75
Seal kit (*)	code material no.	RG0939010520100 R930001705
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) Only automal analyte	10	*

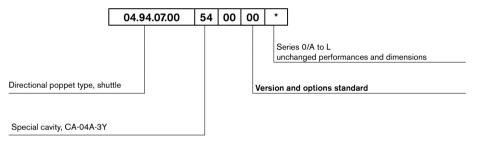
(*) Only external seals for 10 valves

01



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
049407005400000	R930005663		

Bosch Rexroth Oil Control S.p.A.
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RE 18319-80/09.09 Replaces: RE 00162-02/01.06

-

Directional poppet type, shuttle

Common cavity, Size 08

SELB-08A

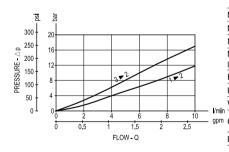
04.94.05.00.56.00



Description

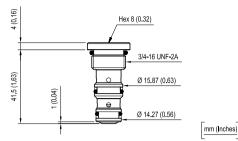
The single ball shuttle allows flow from the higher pressure of two work ports 1 and 3 to the 2 port.

Performance

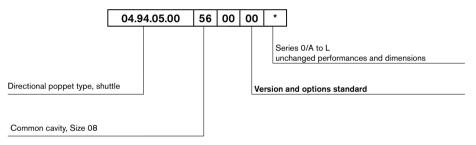


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	See performance graph
Nominal size		DN 3
Max. internal leakage	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.06 (0.13)
Cavity		CA-08A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18350-50
Seal kit (*)	code material no.	RG08A3010520100 R930000861
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number	Туре	Material number
049405005600000	R901161981		
		<u> </u>	
		 -	
			

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RE 18319-81/04.10 Replaces: RE 00162-02/01.06

2

Directional poppet type, shuttle

Common cavity, Size 08

SELC-08A

04.94.06 - X - 56.00



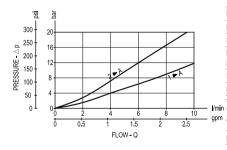
(A) (2) (2) (1)



Description

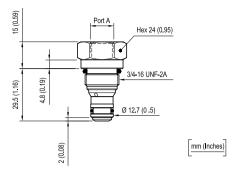
The single ball shuttle allows flow from the higher pressure of two work ports 1 and 2 to the A port, externally located in the hexagon of the cartridge.

Performance

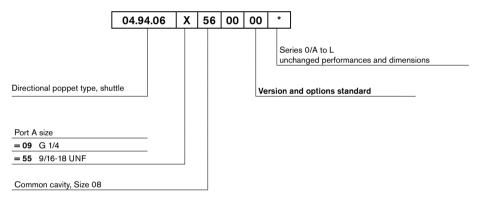


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	See performance graph
Nominal size		DN 3
Max. internal leakage	drop/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.06 (0.13)
Cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	11000112010000100
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Material number	Туре	Material number
R901161985		
R901161987		
	R901161985	R901161985

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1/2 RE 18319-83/09.09 Replaces: RE 00162-02/01.06

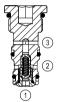
Directional poppet type, shuttle, double check

Common cavity, Size 08

VUDN-08A

04.39.01.00.56 - Z



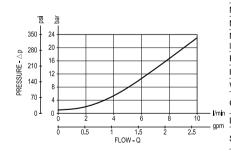




Description

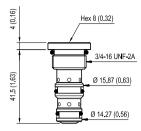
This valve combines two simple check valves into a single cartridge. It connects the work port with the higher pressure to the signal or common port. The signal is sensed at port 2.

Performance



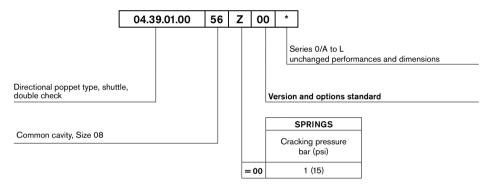
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	10 (2.6)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.06 (0.13)
Cavity		CA-08A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) Only external seals to	r 10 valvae	



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
043901005600000	R930000601		
		- -	

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RE 18318-87/01.10 Replaces: RE 00162-02/01.06

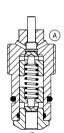
01

Check, double lock with mechanical pilot

Special cavity, 748

VU-DT-D7-CM

04.43.01.00.00 - Z

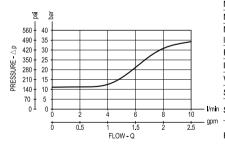




Description

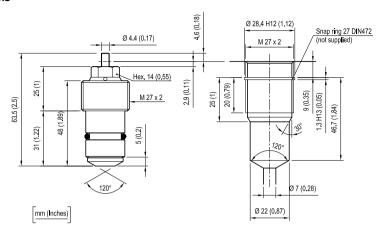
Flow is normally locked in both directions. When pressure at B rises above the spring bias pressure, and when the mechanical pilot in A is operated, flow is allowed from B to A. VU-DT-D7-CM allows cylinders working in 'master-slave' circuits to self correct for volume tolerances at the end of working strokes.

Performance

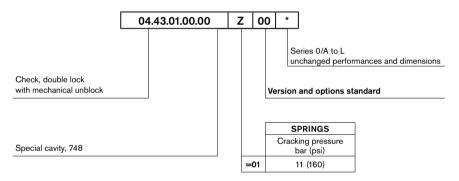


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	10 (2.5)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	80-90 (60-70)
Weight	kg (lbs)	0.14 (0.31)
Special cavity		748 see data sheet RE 18325-75
Seal kit (*)		RG0748010000100 R930002806
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number	Туре	Material number
044301000001000	R930000608		
			

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Mechanical cartridge valves

Counterbalance

Designation	Description	Cavity	Code	Data sheet	Page	0
Counterbalance, standard guided poppet type	VBSN-08AA	Size 08	045220X56Z	18320-01	143	
Counterbalance, standard guided poppet type, counterclockwise adjustment	VBSN-08UU-RS	T-11A	045242X20Z	18320-16	145	
Counterbalance, standard poppet type differential area	VBSN-10A	Size 10	045231X85Z	18320-02	147	
Counterbalance, standard poppet type differential area, counterclockwise adjustment	VBSN-08U-RS	T-11A	045243X20Z	18320-17	149	
Counterbalance, standard poppet type differential area	VBSN-12A	Size 12	045228X57Z	18320-03	151	
Counterbalance, standard poppet type differential area, counterclockwise adjustment	VBSN-12U-RS	T-2A	045244X86Z	18320-18	153	
Counterbalance, standard poppet type differential area	VBSN-16A	Size 16	045229X27Z	18320-04	155	
Counterbalance, standard poppet type differential area, counterclockwise adjustment	VBSN-16U-RS	T-17A	045245X47Z	18320-19	157	
Counterbalance, standard poppet type differential area	VBSN-20A	Size 20	045225X58Z	18320-05	159	
Counterbalance, relief compensated guided poppet type	VBSP-08AA	Size 08	045404X56Z	18320-06	161	
Counterbalance, relief compensated poppet type, differential area	VBSP-10A	Size 10	045409X85Z	18320-07	163	

The latest information on products can also be found on Bosch Rexroth web-site: www.boschrexroth.com

Mechanical cartridge valves

Counterbalance

		.			
Designation	Description	Cavity	Code	Data sheet	Page
Counterbalance, relief compensated poppet type, differential area, counterclockwise adjustment	VBSP-08U-RS	T-11A	045415X20Z	18320-20	165
Counterbalance, relief compensated poppet type, differential area	VBSP-12A	Size 12	045408X57Z	18320-08	167
Counterbalance, relief compensated poppet type, differential area, counterclockwise adjustment	VBSP-12U-RS	T-2A	045416X86Z	18320-21	169
Counterbalance, relief compensated poppet type, differential area	VBSP-16A	Size 16	045410X27Z	18320-09	171
Counterbalance, relief compensated poppet type, differential area, counterclockwise adjustment	VBSP-16U-RS	T-17A	045417X47Z	18320-22	173
Counterbalance, relief compensated poppet type, differential area	VBSP-20A	Size 20	045413X58Z	18320-10	175
Counterbalance, vented guided poppet type	VBST-08AA	Size 08	045908X56Z	18320-11	177
Counterbalance, vented guided poppet type	VBST-10A	Size 10	045916X85Z	18320-12	179
Counterbalance, vented guided poppet type, counterclockwise adjustment	VBST-08U-RS	T-11A	045929X20Z	18320-23	181
Counterbalance, vented guided poppet type	VBST-12A	Size 12	045926X57Z	18320-13	183
Counterbalance, vented guided poppet type, counterclockwise adjustment	VBST-12U-RS	T-2A	045930X86Z	18320-24	185
Counterbalance, vented guided poppet type	VBST-16A	Size 16	045927X27Z	18320-14	187

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Mechanical cartridge valves

Counterbalance

Designation	Description	Cavity	Code	Data sheet	Page	0
Counterbalance, vented guided poppet type, counterclockwise adjustment	VBST-16U-RS	T-17A	045931X47Z	18320-25	189	
Counterbalance, vented guided poppet type	VBST-20A	Size 20	045918X58Z	18320-15	191	
Counterbalance, 4 port vented, poppet type, external drain, counterclockwise adjustment	VBSY-08U-RS	T-21A	045932X20Z	18320-26	193	
Counterbalance, 4 port vented poppet type, external drain, counterclockwise adjustment	VBSY-12U-RS	T-22A	045933X86Z	18320-27	195	
Counterbalance, 4 port vented poppet type, external drain, counterclockwise adjustment	VBSY-16U-RS	T-23A	045934X47Z	18320-28	197	

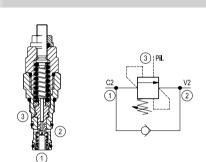
RE 18320-01/01.10 Replaces: RE 00162-02/01.06

Counterbalance, standard guided poppet type

Common cavity, Size 08

VBSN-08AA

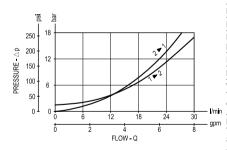
04.52.20 - X - 56 - Z



Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, thepressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2, and any back-pressure at 2 is additive to the pressure setting in all functions.

Performance



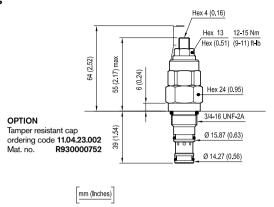
Technical data

Max. operating pressure bar (psi)		350 (5000)
Max. flow I/min. (gpm)		30 (8)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight kg (lbs)		0.18 (0.4)
Cavity		CA-08A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Spal kit (**)		RG08A9010520100 R901101592
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

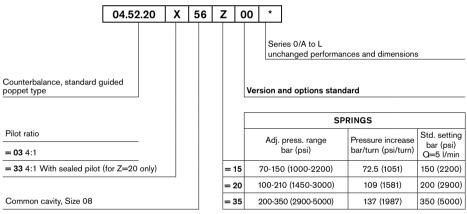
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045220035615000	R901161990
045220035620000	R901095960
045220035635000	R901095961
045220335620000	R930000761

Туре	Material number

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RE 18320-16/01.10 Replaces: RE 00162-02/01.06

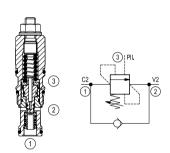
01

Counterbalance, standard guided poppet type, counterclockwise adjustment SUN cavity interchange, T-11A

VBSN-08UU-RS

04.52.42 - X - 20 - Z



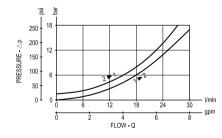


Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1.

When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2, and any back-pressure at 2 is additive to the pressure setting in all functions.

Performance

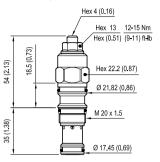


Technical data

Max. operating pressure	bar (psi)	280 (4000)
Max. flow	l/min. (gpm)	30 (8)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-50 (30-37)
Weight	kg (lbs)	0.18 (0.4)
Cavity		SUN T-11A
Seal kit (**)	code material no.	RG08U9020110100 R901193388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

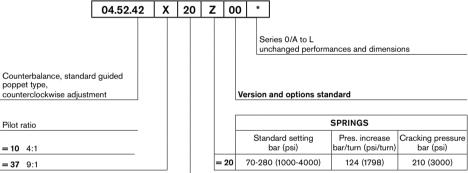
Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

SUN cavity interchange, SUN T-11A

Туре	Material number	Туре	Material number
045242102020000	R930006107		
045242372020000	R930006108		
		-	

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1/2 RE 18320-02/01.10

Replaces: RE 00162-02/01.06

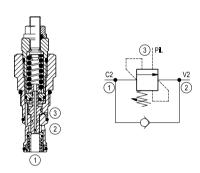
Counterbalance, standard poppet type differential area

Common cavity, Size 10

VBSN-10A

04.52.31 - X - 85 - Z

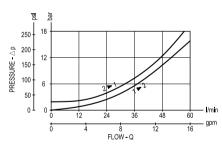




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2, and any back-pressure at 2 is additive to the pressure setting in all functions.

Performance



Technical data

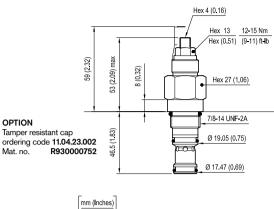
Max. operating pressure	bar (psi)	350 (5000)
		. ,
Max. flow I/min. (gpm)		60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight kg (lbs)		0.2 (0.44)
Carrier		CA-10A-3C
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
C11:4 (**)	code	RG10A9010520100
Seal kit (**)	material no.	R901111367
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

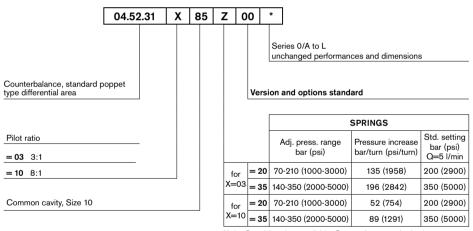
(*) At 70% of pressure setting

(**) Only external seals for 10 valves





Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
04523103852000A	R901096029
04523103853500A	R901096037
04523110852000A	R901096038
04523110853500A	R901096041

Туре	Material number

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RE 18320-17/01.10 Replaces: RE 00162-02/01.06

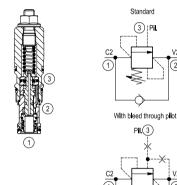
01

Counterbalance, standard poppet type, differential area, counterclockwise adjustment SUN cavity interchange, T-11A

VBSN-08U-RS

04.52.43 - X - 20 - Z

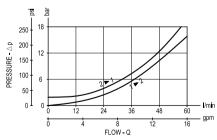




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. Any back-pressure at 2 is additive to the pressure setting in all functions.

Performance

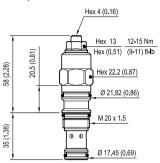


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-50 (30-37)
Weight	kg (lbs)	0.19 (0.42)
Cavity		SUN T-11A
Seal kit (**)	code material no.	RG08U9020110100 R901193388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	·	No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

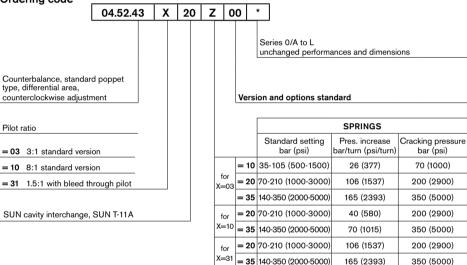
Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045243032010000	R930006109
045243032020000	R930006110
045243032035000	R930006111
045243102020000	R930006112
045243102035000	R930006113

Туре	Material number
045243312020000	R930006114
045243312035000	R930006115

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RE 18320-03/01.10 Replaces: RE 00162-02/01.06

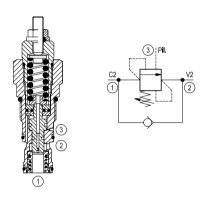
Counterbalance, standard poppet type differential area

Common cavity, Size 12

VBSN-12A

04.52.28 - X - 57 - Z

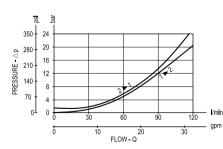




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. Withpilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2, and any back-pressure at 2 is additive to the pressure setting in all functions.

Performance



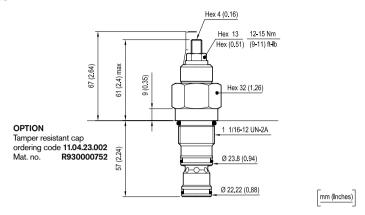
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	120 (32)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.39 (0.86)
Cavity		CA-12A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**) code material no.		RG12A9010520100 R901111379
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

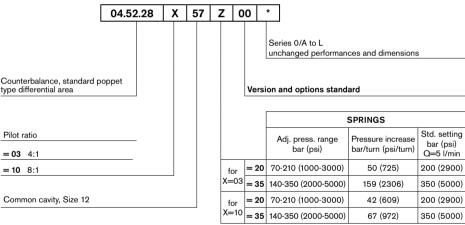
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045228035720000	R901096043
045228035735000	R901096044
045228105720000	R901096045
045228105735000	R901096046
<u> </u>	

Туре	Material number

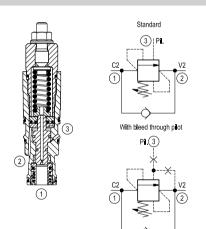
Bosch Rexroth Oil Control S.p.A.
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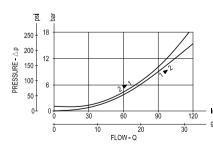
Counterbalance, standard poppet type, differential area, counterclockwise adjustment SUN cavity interchange, T-2A

VBSN-12U-RS

04.52.44 - X - 86 - Z



Performance



Description

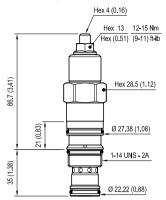
When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting) turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. Any back-pressure at 2 is additive to the pressure setting in all functions.

Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	120 (32)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	60-70 (44-52)
Weight	kg (lbs)	0.37 (0.82)
Cavity		SUN T-2A
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

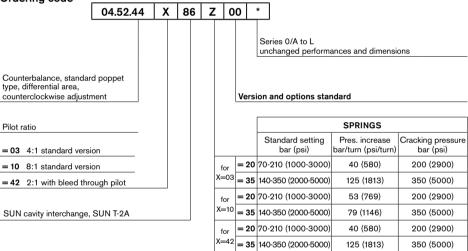
Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045244038620000	R930006116
045244038635000	R930006117
045244108620000	R930006118
045244108635000	R930006119
045244428620000	R930006120

Material number
R930006121

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1/2 RE 18320-04/01.10 Replaces: RE 00162-02/01.06

Counterbalance, standard poppet type differential area

Common cavity, Size 16

VBSN-16A

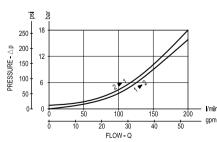
04.52.29 - X - 27 - Z



Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. Thespring chamber is drained to 2, and any back-pressure at 2 is additive to the pressure setting in all functions.

Performance



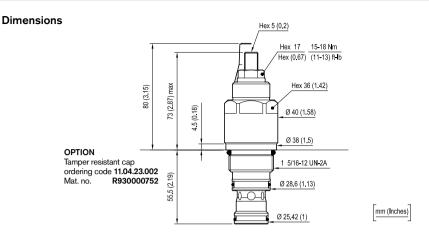
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	200 (53)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.82 (1.81)
Cavity		CA-16A-3C
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code	RG16A9010530100
	material no.	R930001200
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

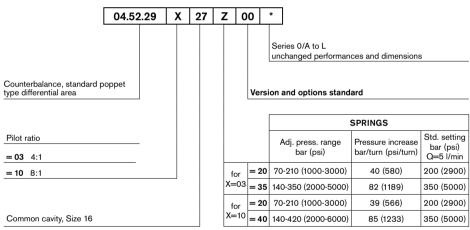
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045229032720000	R901096047
045229032735000	R901096048
045229102720000	R930000797
045229102740000	R901096049

Туре	Material number
	-

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1/2

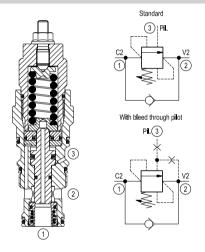
RE 18320-19/01.10 Replaces: RE 00162-02/01.06

Counterbalance, standard poppet type, differential area, counterclockwise adjustment SUN cavity interchange, T-17A

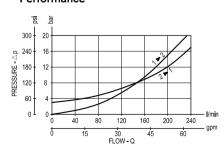
VBSN-16U-RS

04.52.45 - X - 47 - Z





Performance



Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. Any back-pressure at 2 is additive to the pressure setting in all functions.

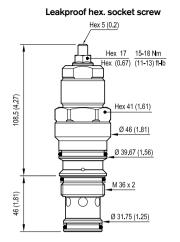
Technical data

Max. operating pressure	bar (psi)	420 (6000)
Max. flow	l/min. (gpm)	240 (63)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	200-215 (148-159)
Weight	kg (lbs)	0.8 (1.76)
Cavity		SUN T-17A
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	·	No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

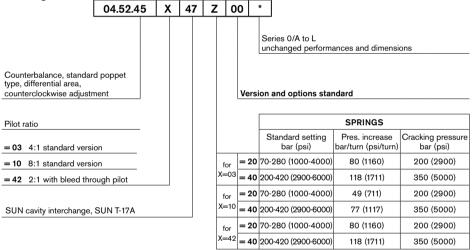
01



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045245034720000	R930000051
045245034740000	R930000052
045245104720000	R930000053
045245104740000	R930000054
045245424720000	R930000055

R93000056

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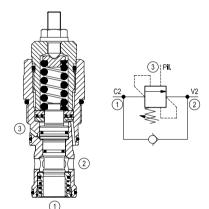
Counterbalance, standard poppet type differential area

Common cavity, Size 20

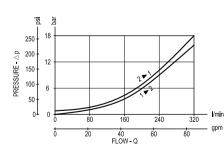
VBSN-20A

04.52.25 - X - 58 - Z





Performance



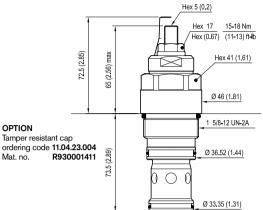
Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2, and any back-pressure at 2 is additive to the pressure setting in all functions.

Technical data

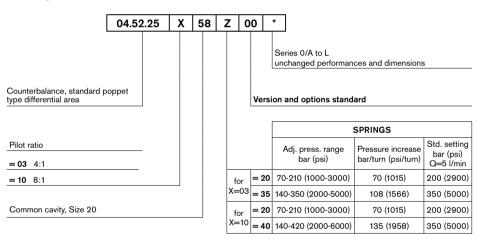
bar (psi)	350 (5000)
I/min. (gpm)	320 (85)
drops/min.	15
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	128-149 (95-110)
kg (lbs)	1.12 (2.5)
	CA-20A-3C see data sheet RE 18325-70
	See data sheet RE 18325-85
code material no.	RG20A9010530100 R901111397
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
•	See data sheet RE 18350-50
	l/min. (gpm) drops/min. °C (°F) Nm (ft-lbs) kg (lbs)

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves



mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045225035820000	R901096052
045225035835000	R901096053
045225105820000	R930000852
045225105840000	R901096057

Туре	Material number

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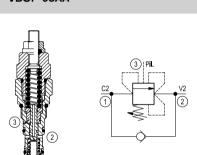
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Counterbalance, relief compensated guided poppet type

Common cavity, Size 08

VBSP-08AA

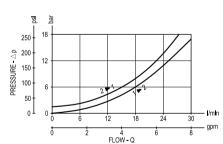
04.54.04 - X - 56 - Z



Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, thepressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent of back-pressureat 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

Performance



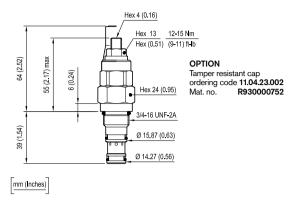
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	30 (8)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.18 (0.4)
Cavity		CA-08A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
D		1 11 1 1

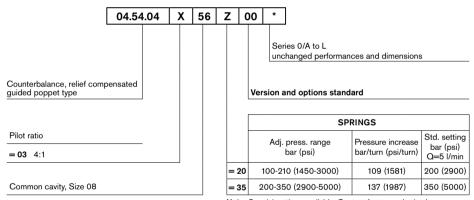
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045404035620000	R901096058		
045404035635000	R901096059		

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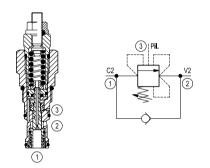
Counterbalance, relief compensated poppet type differential area

Common cavity, Size 10

VBSP-10A

04.54.09 - X - 85 - Z

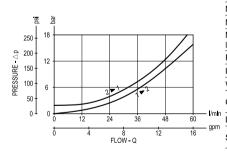




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. Withpilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2. The valve applies a balanced piston design allowing relief operation at the valve settingindependentofback-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

Performance



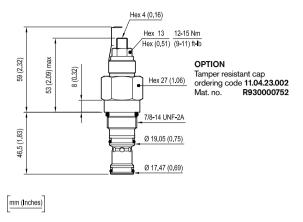
Technical data

1 / 2	252 (5222)
bar (psi)	350 (5000)
I/min. (gpm)	60 (16)
drops/min.	15
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	41-47 (30-35)
kg (lbs)	0.2 (0.44)
	CA-10A-3C see data sheet RE 18325-70
	See data sheet RE 18325-85
	RG10A9010520100 R901111367
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	drops/min. °C (°F) Nm (ft-lbs) kg (lbs)

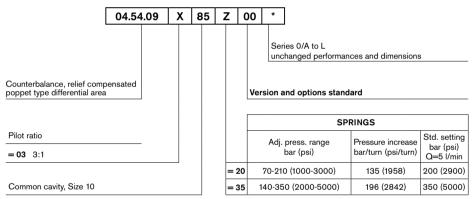
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
04540903852000A	R901096060		
04540903853500A	R901096062		
		_	

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RE 18320-20/01.10 Replaces: RE 00162-02/01.06

1/2

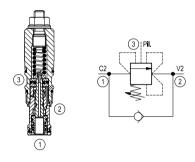
Counterbalance, relief compensated poppet type differential area, counterclockwise adjustment

SUN cavity interchange, T-11A

VBSP-08U-RS

04.54.15 - X - 20 - Z

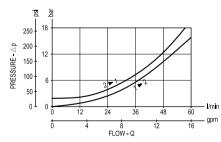




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent of back-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

Performance



Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-50 (30-37)
Weight	kg (lbs)	0.19 (0.42)
Cavity		SUN T-11A
Seal kit (**)	code material no.	RG08U9020110100 R901193388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

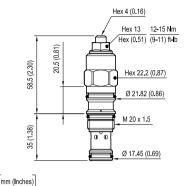
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves

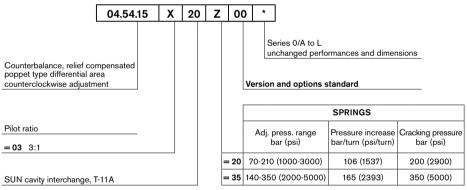
01

Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045415032020000	R930006122
045415032035000	R930006123

Туре	Material number

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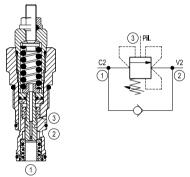
Counterbalance, relief compensated poppet type differential area

Common cavity, Size 12

VBSP-12A

04.54.08 - X - 57 - Z

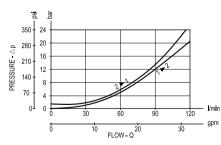




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent ofback-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

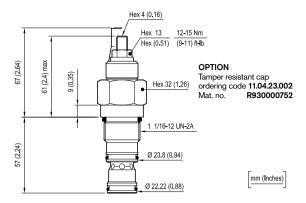
Performance



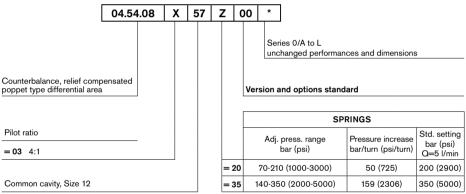
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	120 (32)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.39 (0.86)
Cavity		CA-12A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045408035720000	R901096063		
045408035735000	R901096064		
			

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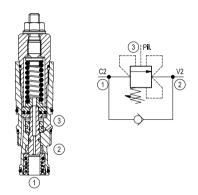
Counterbalance, relief compensated poppet type differential area, counterclockwise adjustment

SUN cavity interchange, T-2A

VBSP-12U-RS

04.54.16 - X - 86 - Z

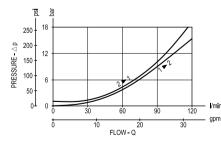




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent of back-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

Performance

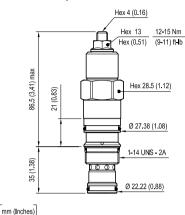


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	120 (32)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	60-70 (44-52)
Weight	kg (lbs)	0.37 (0.82)
Cavity		SUN T-2A
Seal kit (**)	code material no.	RG12U9020110100 R930005599
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

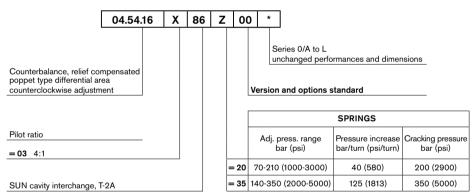
- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045416038620000	R930006124		
045416038635000	R930006125		

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1/2 RE 18320-09/01.10

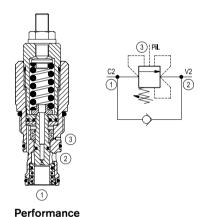
Replaces: RE 00162-02/01.06

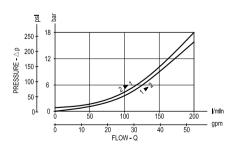
Counterbalance, relief compensated poppet type differential area

Common cavity, Size 16

VBSP-16A

04.54.10 - X - 27 - Z





Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent ofback-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

Technical data

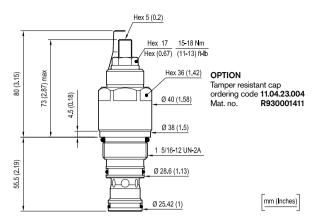
Max. operating pressure	bar (psi)	350 (5000)	
Max. flow	l/min. (gpm)	200 (53)	
Max. internal leakage (*)	drops/min.	15	
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)	
Installation torque	Nm (ft-lbs)	108-122 (80-90)	
Weight	kg (lbs)	0.82 (1.81)	
Covity		CA-16A-3C	
Cavity		see data sheet RE 18325-70	
Line bodies		See data sheet RE 18325-85	
Seal kit (**)	code	RG16A9010530100	
Jear Kit ()	material no.	R930001200	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)	
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
Installation		No restrictions	
Other Technical Data		See data sheet RE 18350-50	
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Pressure setting: at least 1.3 times the load induced pressure.

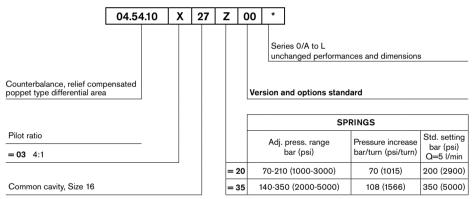
(*) At 70% of pressure setting

(**) Only external seals for 10 valves

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045410032720000	R901109804		
045410032735000	R901109805		

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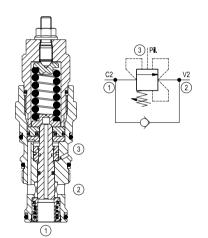
Counterbalance, relief compensated poppet type differential area, counterclockwise adjustment

SUN cavity interchange, T-17A

VBSP-16U-RS

04.54.17 - X - 47 - Z

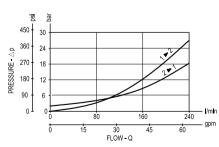




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent of back-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

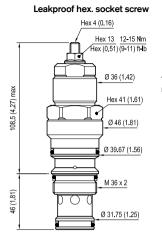
Performance



Technical data

Max. operating pressure bar (420 (6000)
Max. flow	l/min. (gpm)	240 (63)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	200-215 (147-159)
Weight	kg (lbs)	0.8 (1.76)
Cavity		SUN T-17A
Seal kit (**)	code material no.	RG16U9020110100 R930000995
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	·	No restrictions
Other Technical Data		See data sheet RE 18350-50

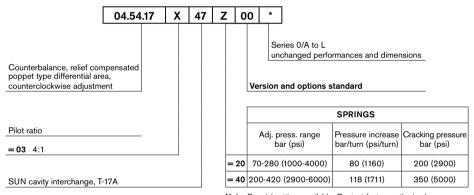
- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045417034720000	R930000059		
045417034740000	R930000060		

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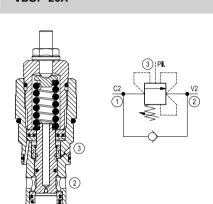
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Counterbalance, relief compensated poppet type differential area

Common cavity, Size 20

VBSP-20A

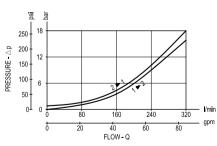
04.54.13 - X - 58 - Z



Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, differential area relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is drained to 2. The valve applies a balanced piston design allowing relief operation at the valve setting independent ofback-pressure at 2. However, the piloted opening of the valve remains subject to additive pressure at port 2.

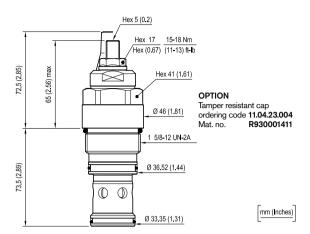
Performance



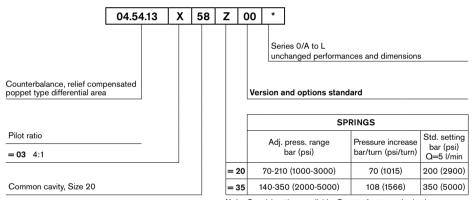
Technical data

bar (psi)	350 (5000)	
I/min. (gpm)	320 (85)	
drops/min.	15	
°C (°F)	-30 to 100 (-22 to 212)	
Nm (ft-lbs)	128-149 (95-110)	
kg (lbs)	1.12 (2.5)	
	CA-20A-3C see data sheet RE 18325-70	
	See data sheet RE 18325-85	
code material no.		
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)	
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
	No restrictions	
	See data sheet RE 18350-50	
	l/min. (gpm) drops/min. °C (°F) Nm (ft-lbs) kg (lbs)	

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045413035820000	R901099735		
045413035835000	R901099795		

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1/2 RE 18320-11/01.10 Replaces: RE 00162-02/01.06

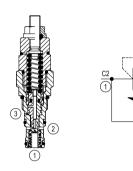
Counterbalance, vented guided poppet type

Common cavity, Size 08

VBST-08AA

04.59.08 - X - 56 - Z

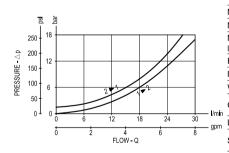




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to atmosphere allowing operation of all functions independent of back-pressure at 2.

Performance



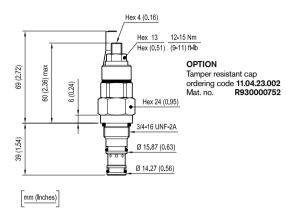
Technical data

Max. operating pressure bar (psi)		350 (5000)		
Max. flow I/min. (gpm)		30 (8)		
Max. internal leakage (*)	drops/min.	15		
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)		
Installation torque	Nm (ft-lbs)	34-41 (25-30)		
Weight	kg (lbs)	0.19 (0.42)		
Cavity		CA-08A-3C see data sheet RE 18325-70		
Line bodies		See data sheet RE 18325-85		
Seal kit (**) code material no.		RG08A9010520100 R901101592		
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)		
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14		
Installation		No restrictions		
Other Technical Data		See data sheet RE 18350-50		

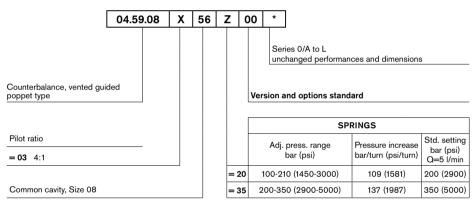
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
04590803562000B	R901096065		
04590803563500B	R901096066		
		_	

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RE 18320-12/01.10 Replaces: RE 00162-02/01.06

01

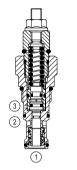
Counterbalance, vented guided poppet type

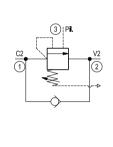
Common cavity, Size 10

VBST-10A

04.59.16 - X - 85 - Z



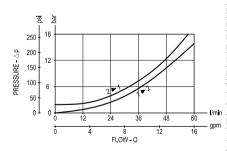




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, thepressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to atmosphere allowing operation of all functions independent of back-pressure at 2.

Performance



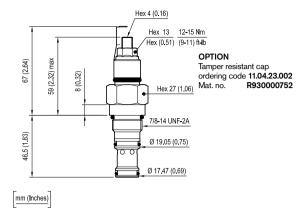
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.21 (0.46)
Cavity		CA-10A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG10A9010520100 R901111367
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data	·	See data sheet RE 18350-50

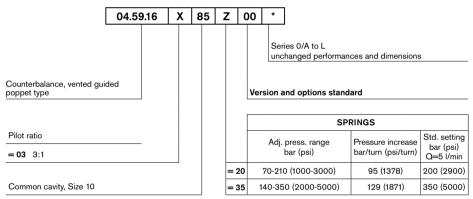
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045916038520000	R901096067		
045916038535000	R901096068		

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1/2

RE 18320-23/01.10 Replaces: RE 00162-02/01.06

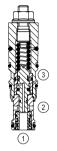
Counterbalance, vented guided poppet type, counterclockwise adjustment

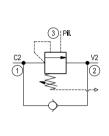
SUN cavity interchange, T-11A

VBST-08U-RS

04.59.29 - X - 20 - Z



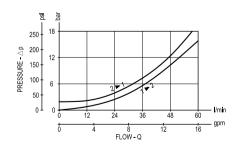




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to atmosphere allowing operation of all functions independent of back-pressure at 2.

Performance



Technical data

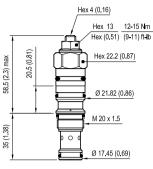
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-50 (30-37)
Weight	kg (lbs)	0.19 (0.42)
Cavity		SUN T-11A
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves

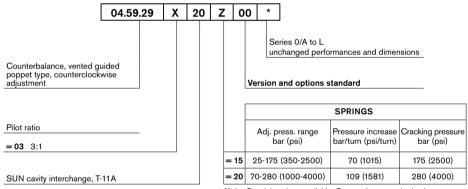
Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

Ordering code

mm (Inches)



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045929032015000	R930006129		
045929032020000	R930006130		

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RE 18320-13/01.10 Replaces: RE 00162-02/01.06

01

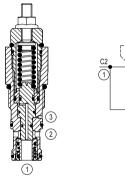
Counterbalance, vented guided poppet type

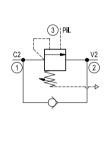
Common cavity, Size 12

VBST-12A

04.59.26 - X - 57 - Z



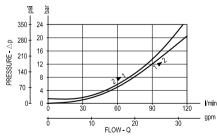




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, thepressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to atmosphere allowing operation of all functions independent of back-pressure at 2.

Performance

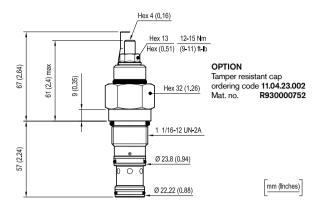


Technical data

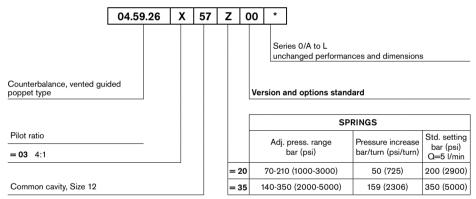
bar (psi)	350 (5000)
I/min. (gpm)	120 (32)
drops/min.	15
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	81-95 (60-70)
kg (lbs)	0.39 (0.86)
	CA-12A-3C see data sheet RE 18325-70
	See data sheet RE 18325-85
code material no.	
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	l/min. (gpm) drops/min. °C (°F) Nm (ft-lbs) kg (lbs)

Pressure setting: at least 1.3 times the load induced pressure.

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045926035720000	R901109818		
045926035735000	R901109819		

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RE 18320-24/01.10 Replaces: RE 00162-02/01.06

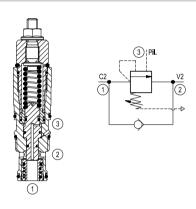
01

Counterbalance, vented guided poppet type, counterclockwise adjustment SUN cavity interchange, T-2A

VBST-12U-RS

04.59.30 - X - 86 - Z

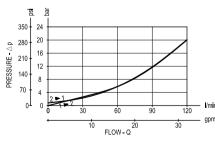




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to atmosphere allowing operation of all functions independent of back-pressure at 2.

Performance



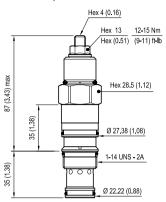
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	120 (32)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	60-70 (45-50)
Weight	kg (lbs)	0.4 (0.88)
Cavity		SUN T-2A
Seal kit (**)	code material no.	RG12U9020110100 R930005599
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

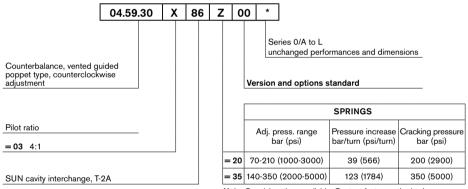
Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045930038620000	R930006131		
045930038635000	R930006132		
		,	

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RE 18320-14/01.10 Replaces: RE 00162-02/01.06

Counterbalance, vented guided

Common cavity, Size 16

poppet type

VBST-16A

04.59.27 - X - 27 - Z

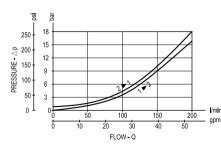


3) PI. V2 (2)

Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to atmosphere allowing operation of all functions independent of back-pressure at 2.

Performance



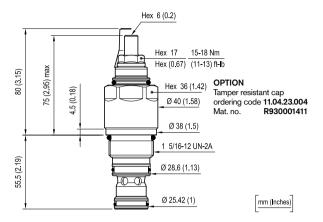
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	200 (53)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.55 (1.21)
Covity		CA-16A-3C
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code	RG16A9010530100
Searkit ()	material no.	R930001200
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

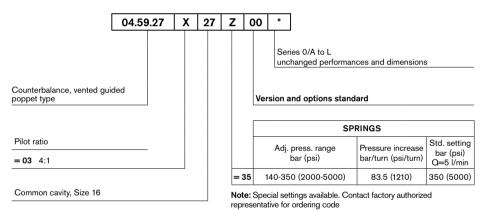
Pressure setting: at least 1.3 times the load induced pressure.

(*) At 70% of pressure setting

(**) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number
045927032735000	R901162012		
			

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RE 18320-25/01.10 Replaces: RE 00162-02/01.06

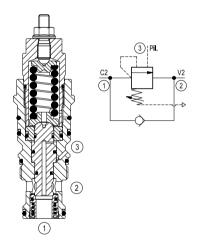
01

Counterbalance, vented guided poppet type, counterclockwise adjustment SUN cavity interchange, T-17A

VBST-16U-RS

04.59.31 - X - 47 - Z

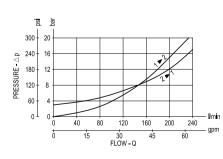




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to atmosphere allowing operation of all functions independent of back-pressure at 2.

Performance



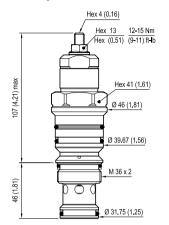
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	240 (63)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	200-215 (148-159)
Weight	kg (lbs)	0.8 (1.76)
Cavity		SUN T-17A
Seal kit (**)	code material no.	RG16U9020110100 R930000995
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

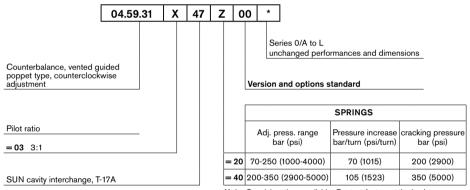
Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре
045931034720000	R930000061	
045931034740000	R930000063	

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Material number

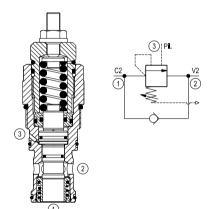
Counterbalance, vented guided poppet type

Common cavity, Size 20

VBST-20A

04.59.18 - X - 58 - Z

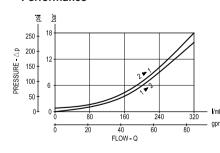




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting, the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, thepressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to atmosphere allowing operation of all functions independent of back-pressure at 2.

Performance

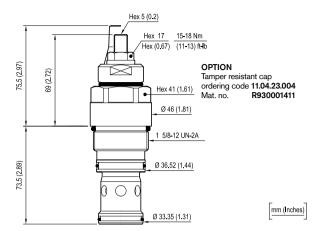


Technical data

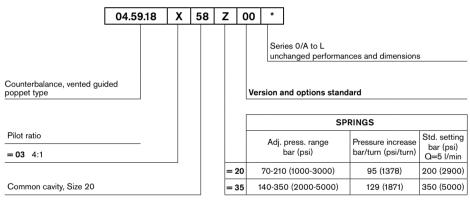
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	320 (85)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	128-149 (95-110)
Weight	kg (lbs)	1.12 (2.5)
Cavity Line bodies Seal kit Buna N		CA-20A-3C see data sheet RE 18325-70
		See data sheet RE 18325-85
	code material no.	RG20A9010530100 R901111397
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
045918035820000	R901096069		
045918035835000	R901096070		
		_	

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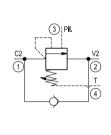
Counterbalance, 4 port vented poppet type external drain, counterclockwise adjustment SUN cavity interchange, T-21A

VBSY-08U-RS

04.59.32 - X - 20 - Z



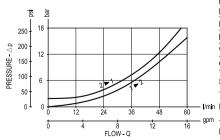




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to 4, allowing operation of all functions independent of back-pressure at 2. Any back-pressure at 4 is additive to the pressure setting in all functions.

Performance

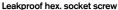


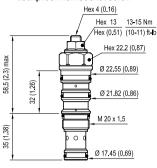
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-50 (30-37)
Weight	kg (lbs)	0.19 (0.42)
Cavity		SUN T-21A
Seal kit (**)	code material no.	RG08U4020110100 R930001201
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

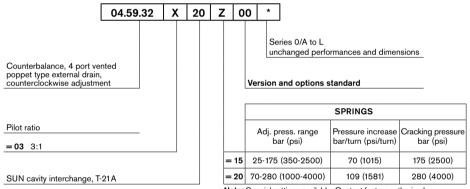




Turn adjustment clockwise to decrease setting and release load

Ordering code

mm (Inches)



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045932032015000	R930006133
045932032020000	R930006134

туре	Materiai number

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RE 18320-27/01.10 Replaces: RE 00162-02/01.06

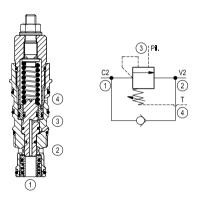
^2

Counterbalance, 4 port vented poppet type external drain, counterclockwise adjustment SUN cavity interchange, T-22A

VBSY-12U-RS

04.59.33 - X - 86 - Z

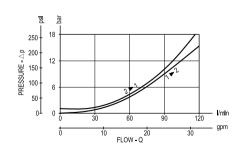




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to 4, allowing operation of all functions independent of back-pressure at 2. Any back-pressure at 4 is additive to the pressure setting in all functions.

Performance



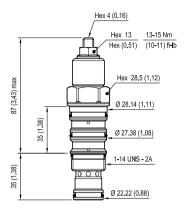
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	120 (32)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	60-70 (44-52)
Weight	kg (lbs)	0.37 (0.82)
Cavity		SUN T-22A
Seal kit (**)	code material no.	RG12U4020110100 R930001204
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	·	No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves

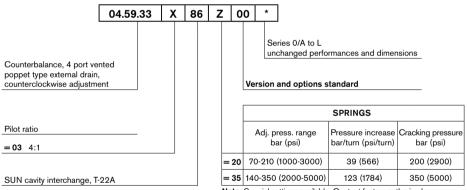
Leakproof hex. socket screw



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
045933038620000	R930006135
045933038635000	R930006136

туре	Material number

Bosch Rexroth Oil Control S.p.A.
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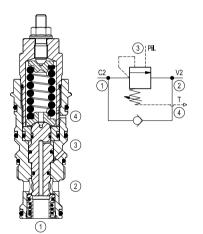
1/2 RE 18320-28/01.10 Replaces: RE 00162-02/01.06

Counterbalance, 4 port vented poppet type external drain, counterclockwise adjustment SUN cavity interchange, T-23A

VBSY-16U-RS

04.59.34 - X - 47 - Z

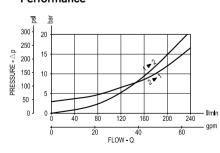




Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to 4, allowing operation of all functions independent of back-pressure at 2. Any back-pressure at 4 is additive to the pressure setting in all functions.

Performance

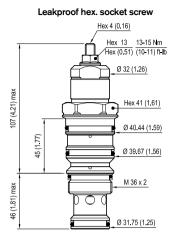


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	240 (63)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	200-215 (148-159)
Weight	kg (lbs)	0.8 (1.76)
Cavity		SUN T-23A
Seal kit (**)	code material no.	RG16U4020110100 R930000994
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	·	No restrictions
Other Technical Data		See data sheet RE 18350-50

Pressure setting: at least 1.3 times the load induced pressure.

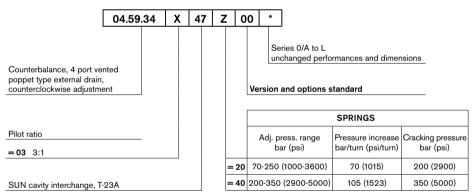
- (*) At 70% of pressure setting
- (**) Only external seals for 10 valves



Turn adjustment clockwise to decrease setting and release load

mm (Inches)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре
045934034720000	R930000067	
045934034740000	R930000069	

Type Material number

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Mechanical cartridge valves

Flow control

Designation	Description	Cavity	Code	Data sheet	Page
Flow control, cartridge restrictor	ST-C-06	Size 08	OD2101X56	18321-26	201
Flow control, cartridge restrictor	ST-C-10	Size 10	OD2101X36	18321-27	203
Flow control, cartridge restrictor	ST-C-12	Size 12	OD2101X89	18321-28	205
Flow control, cartridge restrictor	ST-C-16	Size 16	OD2101X75	18321-29	207
Needle restrictor, free reverse flow	STVU-08A	Size 08	040103X5600	18321-10	209
Needle restrictor, free reverse flow	STVU-10A	Size 10	040105X8500	18321-11	211
Needle restrictor, free reverse flow, fine adjustment	STFU-08A	Size 08	040106X5600	18321-09	213
Flow control, 2-way pressure compensated, fixed setting	VRFA-08A	Size 08	0402010056Z	18321-12	215
Flow control, 2-way pressure compensated, fixed setting	VRFA-10A-TF	Size 10	0402010085Z	18321-13	217
Flow control, 2-way pressure compensated, partially adjustable	VRFA-10A	Size 10	040201X85Z	18321-15	219
Flow control, 2-way pressure compensated fully adjustable	VRFB-10A	Size 10	040202X85Z	18321-16	221
Flow control, 2-way pressure compensated, fixed setting	VRFA-12A-TF	Size 12	0402030057Z	18321-14	223
Flow control, 2-way pressure compensated, fully adjustable	VRFE-12A	Size 12	040701X57Z	18321-30	225
Flow control, 3-way pressure compensated, fixed setting	VRFC-10A-TF	Size 10	0404010085Z	18321-18	227

Mechanical cartridge valves

Flow control

Designation	Description	Cavity	Code	Data sheet	Page
Flow control, 3-way pressure compensated, partially adjustable	VRFC-10A	Size 10	040401X85Z	18321-17	229
Flow control, 3-way pressure compensated, fully adjustable	VRFD-10A	Size 10	040402X85Z	18321-20	231
Flow control, 3-way pressure compensated, fixed setting	VRFC-12A-TF	Size 12	0404030057Z	18321-19	233
Flow control, 3-way pressure compensated, fully adjustable	VRFD-12A	Size 12	040404X57Z	18321-21	235
Flow divider	DSDN-10A	Size 10	0405040085Z	18321-22	237
Flow divider	DSDN-16A	Size 16	0405030027Z	18321-23	239
Flow divider and combiner	DRFN-10A	Size 10	0405010085Z	18321-24	241
Flow divider and combiner	DRFN-16A	Size 16	0405020027Z	18321-25	243

RE 18321-26/01.10 Replaces: RE 00162-02/01.06

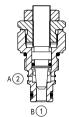
Flow control valve, cartridge restrictor

Common cavity, Size 08

ST-C-06

OD.21.01 - X - 56



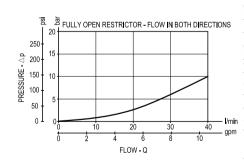




Description

Increasing the orifice value from fully closed to fully open, flow is permitted and regulated bi-directional from 1 to 2 and from 2 to 1.

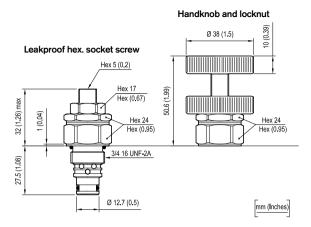
Performance



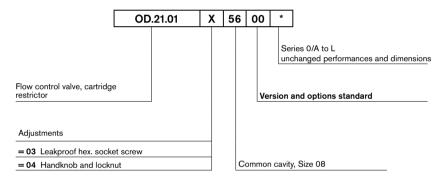
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Rated flow	l/min. (gpm)	40 (11)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Weight	kg (lbs)	0.09 (0.2)
Cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number
OD2101035600000	R901109366		
OD2101045600000	R901109367		

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1/2 RE 18321-27/01.10

Flow control valve, cartridge restrictor

Common cavity, Size 10

ST-C-10

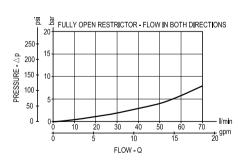
OD.21.01 - X - 36



Description

Increasing the orifice value from fully closed to fully open, flow is permitted and regulated bi-directional from 1 to 2 and from 2 to 1.

Performance



Technical data

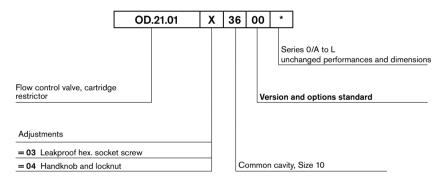
Max. operating pressure	bar (psi)	350 (5000)
Rated flow	I/min. (gpm)	70 (19)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	44-56 (33-41)
Weight	kg (lbs)	0.18 (0.4)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves

mm (Inches)

Dimensions Handknob and locknut 10 (0.39) Ø 38 (1.5) Leakproof hex, socket screw Hex 5 (0.2) Hex 17 Hex (0.67) 37.3 (1.5) max. (2) 4 (0.16) Hex 27 Hex 27 Hex (1.06) Hex (1.06) 7/8 14 UNF-2A 32 3 (1 27)

Ordering code



Ø 15.9 (0.63)

Туре	Material number	Туре	Material number
OD2101033600000	R901109830		
OD2101043600000	R901109831		

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RE 18321-28/01.10 Replaces: RE 00162-02/01.06

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Flow control valve, cartridge restrictor

Common cavity, Size 12

ST-C-12

OD.21.01 - X - 89

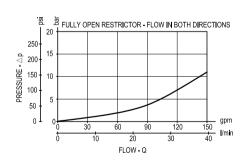


1 — 2 A2 B(1)

Description

Increasing the orifice value from fully closed to fully open, flow is permitted and regulated bi-directional from 1 to 2 and from 2 to 1.

Performance



Technical data

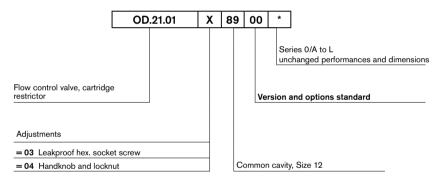
Max. operating pressure	bar (psi)	350 (5000)
Rated flow	l/min. (gpm)	150 (39)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Weight	kg (lbs)	0.31 (0.68)
0. 3		CA-12A-2N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
O	code	RG12A2010530100
Seal kit (*)	material no.	R930003374
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves

Dimensions Handknob and locknut 10 (0.39) Leakproof hex, socket screw Ø 38 (1.5) Hex 5 (0.2) Hex 17 33.8 (1.33) max Hex (0.67) 2 (0.08) Hex 32 Hex 32 Hex (1.26) Hex (1.26) 1 1/16-12 UN-2A mm (Inches)

Ø 22.22 (0.88)

Ordering code



Туре	Material number	Туре	Material number
OD2101038900000	R901109832		
OD2101048900000	R901109834		

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RE 18321-29/01.10 Replaces: RE 00162-02/01.06

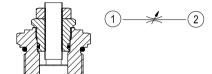
Flow control valve, cartridge restrictor

Common cavity, Size 16

ST-C-16

OD.21.01 - X - 75

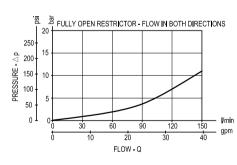




Description

Increasing the orifice value from fully closed to fully open, flow is permitted and regulated bi-directional from 1 to 2 and from 2 to 1.

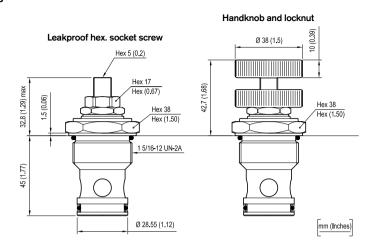
Performance



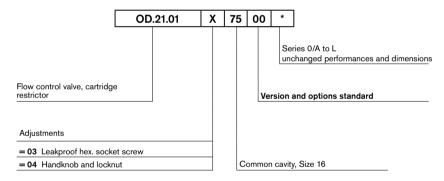
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Rated flow	I/min. (gpm)	150 (39)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Weight	kg (lbs)	0.31 (0.68)
Cavity		CA-16A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number
OD2101037500000	R901109837		
OD2101047500000	R901109838		
			

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1/2 RE 18321-10/11.09

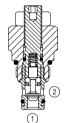
Replaces: RE 00162-02/01.06

Needle restrictor, free reverse flow

Common cavity, Size 08

04.01.03 - X - 56.00





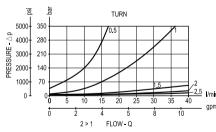
STVU-08A

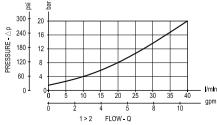


Description

With flow from 2 to 1, the valve provides a fully adjustable orifice restriction. Free flow is permitted from 1 to 2, regardless of valve adjustment, by when pressure overcomes the spring bias of the valve's check function.

Performance



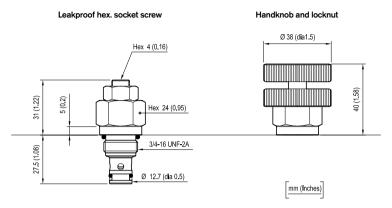


Technical data

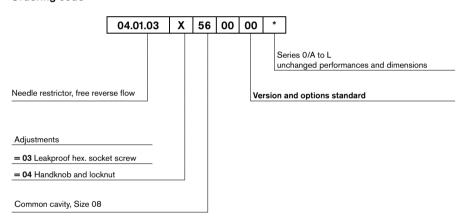
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	40 (11)
Max. internal leakage (*)	(drops/min.)	15 closed
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.16 (0.35)
Cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01



Ordering code



Туре	Material number	Туре	Material number
040103035600000	R930000002		
040103045600000	R930000003		
			

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RE 18321-11/01.10 Replaces: RE 00162-02/01.06

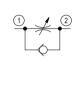
Needle restrictor, free reverse flow

Common cavity, Size 10

STVU-10A

04.01.05 - X - 85.00



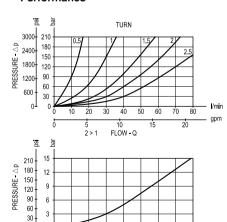


Description

With flow from 2 to 1, the valve provides a fully adjustable orifice restriction. Free flow is permitted from 1 to 2, regardless of valve adjustment, by when pressure overcomes the spring bias of the valve's check function.

Performance

ō



50 60 70

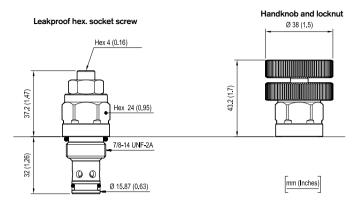
FLOW - Q

Technical data

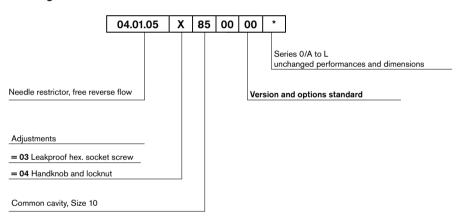
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	80 (22)
Max. internal leakage (*)	drops/min.	15 closed
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
1.		

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01



Ordering code



Туре	Material number	Туре	Material number
040105038500000	R930005606		
040105048500000	R930005607		

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1/2

RE 18321-09/01.10 Replaces: RE 00162-02/01.06

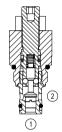
Needle restrictor, free reverse flow, fine adjustment

Common cavity, Size 08

STFU-08A

04.01.06 - X - 56.00





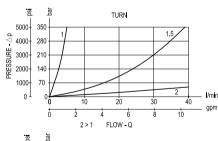


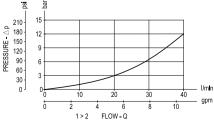
Description

With flow from 2 to 1, the valve provides a fully adjustable orifice restriction. Free flow is permitted from 1 to 2, regardless of valve adjustment, by when pressure overcomes the spring bias of the valve's check function.

STFU, compared to STVU, is suitable for applications requiring fine adjustments.

Performance



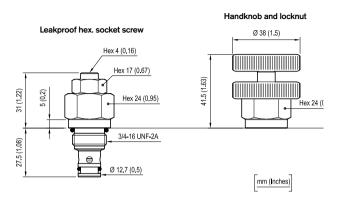


Technical data

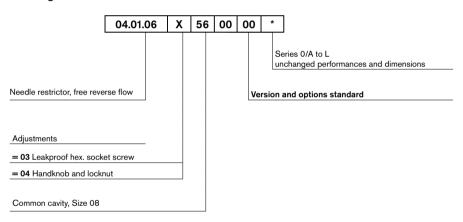
Max. operating pressure	bar (psi)	350 (5000)	
Max. flow	I/min. (gpm)	40 (11)	
Max. internal leakage (*)	(drops/min.)	15 closed	
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)	
Installation torque	Nm (ft-lbs)	34-41 (25-30)	
Weight	kg (lbs)	0.16 (0.35)	
Cavity		CA-08A-2N see data sheet RE 18325-70	
Line bodies		See data sheet RE 18325-85	
Seal kit (**) code material no.			
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)	
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
Installation		No restrictions	
Other Technical Data	•	See data sheet RE 18350-50	

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01



Ordering code



Туре	Material number	Туре	Material number
040106035600000	R930001067		
040106045600000	R930001068		

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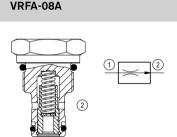
RE 18321-12/09.09 Replaces: RE 00162-02/01.06

-

Flow control, 2-way pressure compensated fixed setting

Common cavity, Size 08

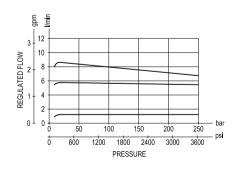
04.02.01.00.56 - Z



Description

A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 10 bar (145 psi) exists between the two ports. The valve cannot be adjusted for variable flow output. Flow from 2 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated.

Performance

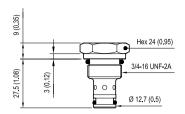


Technical data

Pressure min-max	bar (psi)	10-210 (145-3000)
Flow range	I/min. (gpm)	see "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.12 (0.27)
Cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)		RG08A2010520100 R901101437
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

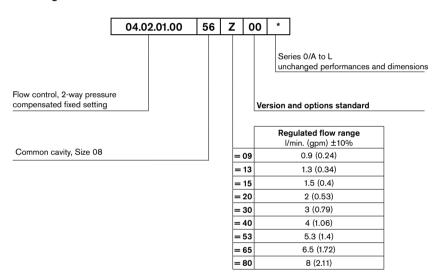
(*) Only external seals for 10 valves

01



mm (Inches)

Ordering code



Туре	Material number
040201005609000	R901109350
04020100561300A	R901109351
040201005615000	R901184436
04020100562000A	R901109352
040201005630000	R901109355

Туре	Material number
04020100564000A	R901109357
040201005653000	R901109360
04020100566500A	R901109361
04020100568000A	R901109362

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RE 18321-13/09.09 Replaces: RE 00162-02/01.06

:

Flow control, 2-way pressure compensated fixed setting

Common cavity, Size 10

VRFA-10A-TF

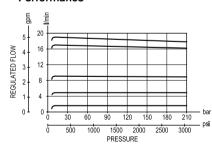
04.02.01.00.85 - Z



Description

A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. The valve cannot be adjusted for variable flow output. Flow from 2 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated.

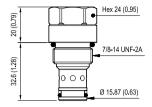
Performance



Technical data

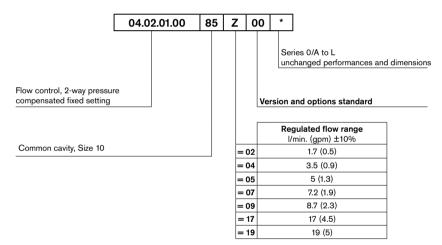
Pressure min-max	bar (psi)	14-350 (200-5000)
Flow range	I/min. (gpm)	See "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.14 (0.31)
		CA-10A-2N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
O I L'1 (*)	code	RG10A2010520100
Seal kit (*)	material no.	R901111363
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
		•

(*) Only external seals for 10 valves





Ordering code



Туре	Material number
040201008502000	R930005608
040201008504000	R930005609
040201008505000	R930005610
040201008507000	R930005611
040201008509000	R930005612

Material number
R930005613
R930005614

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RE 18321-15/09.09 Replaces: RE 00162-02/01.06

1/2

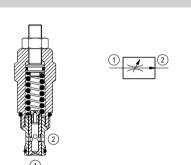
01

Flow control, 2-way pressure compensated partially adjustable

Common cavity, Size 10

VRFA-10A

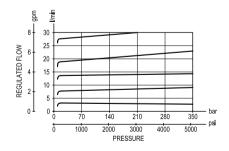
04.02.01 - X - 85 - Z



Description

A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. Output flow can be varied through a limited range of adjustment and coordinate change in minimum required pressure differential. Flow from 2 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated.

Performance

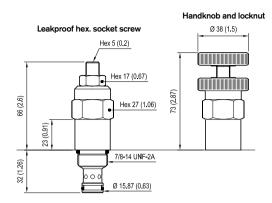


Technical data

Pressure min-max	bar (psi)	14-350 (200-5000)
Flow range	I/min. (gpm)	See "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (*)	kg (lbs)	0.26 (0.57)
Cavity		CA-10A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit Buna N	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
		*

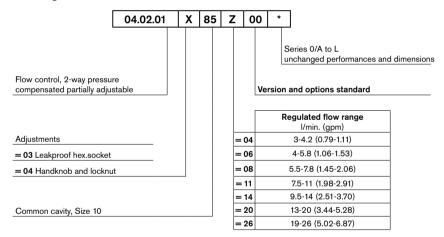
(*) Standard version X=03 type

(**) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number
040201038504000	R901109325
040201038506000	R901109327
040201038508000	R901109330
040201038511000	R901109333
040201038514000	R901109334
040201038520000	R901109335
040201038526000	R901109336

Туре	Material number
040201048504000	R901109339
040201048506000	R901109340
040201048508000	R901109341
040201048511000	R901109343
040201048514000	R901109344
040201048520000	R901109345
040201048526000	R901109347

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our products are subject to a natural process of wear and aging. Subject to change.

RE 18321-16/09.09 Replaces: RE 00162-02/01.06

Flow control, 2-way pressure compensated fully adjustable

Common cavity, Size 10

VRFB-10A

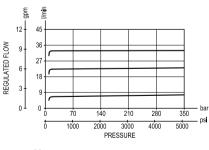
04.02.02 - X - 85 - Z

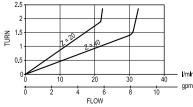


Description

A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. Output flow can be varied from closed to the nominal maximum rating for the valve. Flow from 2 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated.

Performance

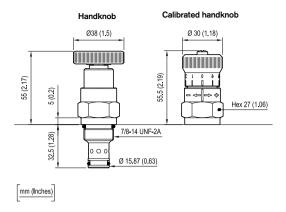




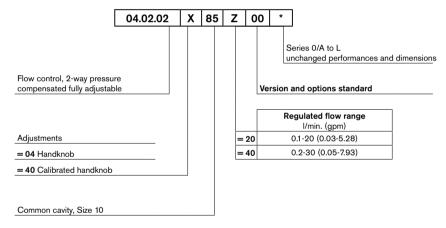
Technical data

bar (psi)	14-350 (200-5000)
l/min. (gpm)	See "Regulated flow range" table
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	41-47 (30-35)
kg (lbs)	0.27 (0.59)
	CA-10A-2N
	see data sheet RE 18325-70
	See data sheet RE 18325-85
code	RG10A2010520100
material no.	R901111363
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	l/min. (gpm) °C (°F) Nm (ft-lbs) kg (lbs)

- (*) Standard version X=04 type
- (**) Only external seals for 10 valves



Ordering code



Туре	Material number
040202048520000	R901106646
040202048540000	R901095981
040202408520000	R901106643
040202408540000	R901106645

туре	Material number

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RE 18321-14/09.09 Replaces: RE 00162-02/01.06

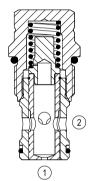
Flow control, 2-way pressure compensated fixed setting

Common cavity, Size 12

VRFA-12A-TF

04.02.03.00.57 - Z



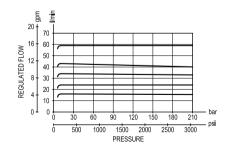




Description

A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. The valve cannot be adjusted for variable flow output. Flow from 2 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated.

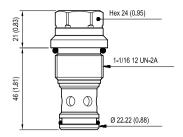
Performance



Technical data

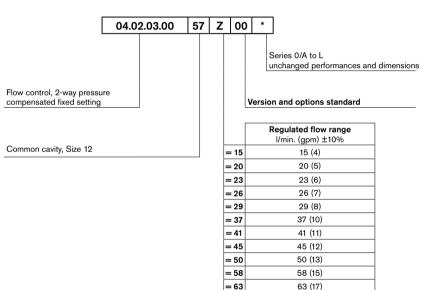
Pressure min-max	bar (psi)	14-350 (200-5000)
Flow range	I/min. (gpm)	See "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.26 (0.57)
Cavity		CA-12A-2N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG12A2010520100
Jear Kit ()	material no.	R901111377
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number
040203005715000	R930005616
040203005720000	R930005617
040203005723000	R930005618
040203005726000	R930005619
040203005729000	R930005620
040203005737000	R930005621

Туре	Material number
040203005741000	R930005622
040203005745000	R930005623
040203005750000	R930005624
040203005758000	R930005625
040203005763000	R930005626
	_

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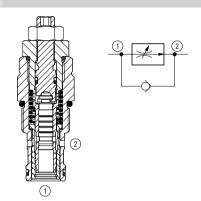
RE 18321-30/01.10 Replaces: RE 00162-02/01.06

Flow control valve, 2-way pressure compensated fully adjustable, free reverse flow

Common cavity, Size 12



04.07.01 - X - 57 - Z

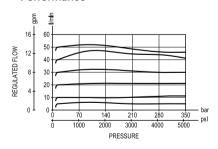


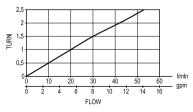
Description

A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. Output flow can be varied from closed to the nominal maximum rating for the valve.

Free flow is permitted from 2 to 1, regardless of valve adjustment, by when pressure overcomes the spring bias of the valve check function.

Performance

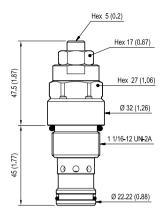




Technical data

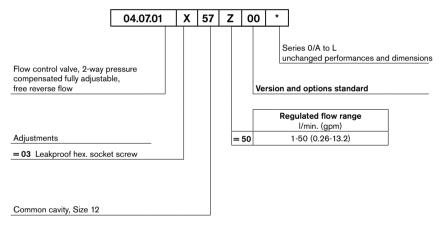
bar (psi)	14-350 (200-5000)
l/min. (gpm)	See "Regulated flow range" table
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	81-95 (60-70)
kg (lbs)	0.30 (0.66)
	CA-12A-2N
	see data sheet RE 18325-70
	See data sheet RE 18325-85
code	RG12A2010520100
material no.	R901111377
	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	l/min. (gpm) °C (°F) Nm (ft-lbs) kg (lbs)

(*) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
040701035750000	R930000009		

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RE 18321-18/09.09 Replaces: RE 00162-0201.06

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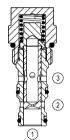
Flow control, 3-way pressure compensated, combination type fixed setting

Common cavity, Size 10

VRFC-10A-TF

04.04.01.00.85 - Z



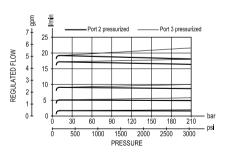




Description

A constant flow rate, regardless of system pressures, is established from 1 to 3 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. Input flow supplied to 1 in excess of the regulated output at 3 is bypassed to 2. The valve cannot be adjusted for variable flow output. Flow from 3 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated. Flow from 2 to 1 is not permitted.

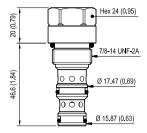
Performance



Technical data

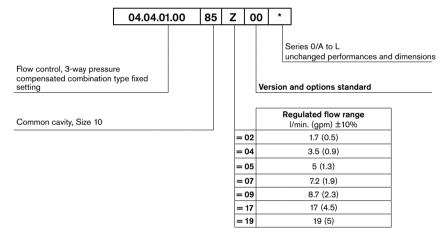
Pressure min-max	bar (psi)	14-350 (200-5000)
Max. inlet flow	l/min. (gpm)	60 (16)
Flow range	l/min. (gpm)	See "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.14 (0.31)
Covity		CA-10A-3N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG10A3010520100
Jear Kit ()	material no.	R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(+) 0 1 1 1 1	40 1	

(*) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number
040401008502000	R930005627
040401008504000	R930005628
040401008505000	R930005629
040401008507000	R930005630
040401008509000	R930005631

Material number
R930005632
R930005633

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RE 18321-17/09.09 Replaces: RE 00162-02/01.06

1/2

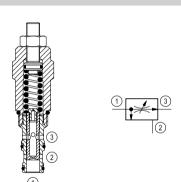
01

Flow control, 3-way pressure compensated combination type partially adjustable

Common cavity, Size 10

VRFC-10A

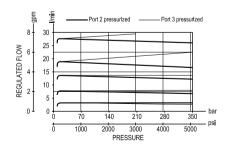
04.04.01 - X - 85 - Z



Description

A constant flow rate, regardless of system pressures, is established from 1 to 3 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. Input flow supplied to 1 in excess of the regulated output at 3 is bypassed to 2. Output flow can be varied through a limited range of adjustment and coordinate change in minimum required pressure differential. Flow from 3 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated. Flow from 2 to 1 is not permitted.

Performance

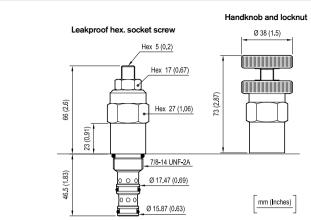


Technical data

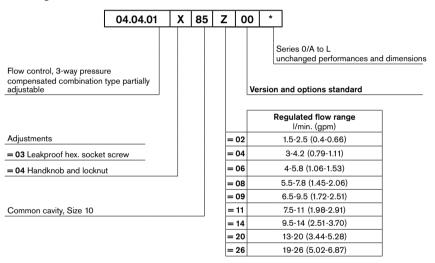
Pressure min-max	bar (psi)	14-350 (200-5000)
Maximum inlet flow	I/min. (gpm)	60 (16)
Flow range	I/min. (gpm)	See "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (*)	kg (lbs)	0.26 (0.57)
		CA-10A-3N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code	RG10A3010520100
Sear kit (***)	material no.	R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Standard version X=03 type

(**) Only external seals for 10 valves



Ordering code



Туре	Material number
040401038502000	R930000266
040401038504000	R901106648
040401038506000	R901106652
040401038508000	R901106657
040401038509000	R901106659
040401038511000	R901106660
040401038514000	R901106661
040401038520000	R901106662
040401038526000	R901106663

Туре	Material number
040401048504000	R901106664
040401048506000	R901106665
040401048508000	R901106666
040401048509000	R901106667
040401048511000	R901106668
040401048514000	R901106669
040401048520000	R901106670
040401048526000	R901106671

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Flow control, 3-way pressure compensated, combination type fully adjustable

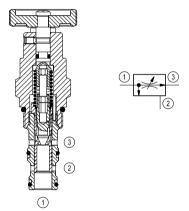
Linear Motion and

Assembly Technologies

Common cavity, Size 10

VRFD-10A

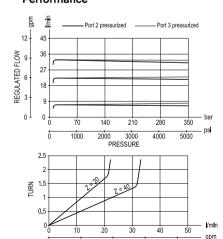
04.04.02 - X - 85 - Z



Description

A constant flow rate, regardless of system pressures, is established from 1 to 3 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. Input flow supplied to 1 in excess of the regulated output at 3 is by-passed to 2. Output flow can be varied from closed to the nominal maximum rating for the valve. Flow from 3 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated. Flow from 2 to 1 is not permitted.

Performance

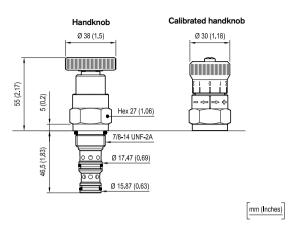


FLOW

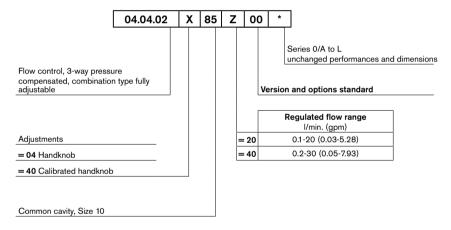
Technical data

Pressure min-max	bar (psi)	14-350 (200-5000)
Max. inlet flow	l/min. (gpm)	60 (16)
Flow range	l/min. (gpm)	See "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (*)	kg (lbs)	0.26 (0.57)
Carritor		CA-10A-3N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code	RG10A3010520100
Jear Kit ()	material no.	R901111369
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(+) O	241	

- (*) Standard version X=04 type
- (**) Only external seals for 10 valves



Ordering code



Туре	Material number
040402048520000	R901106674
040402048540000	R901106675
040402408520000	R901106672
040402408540000	R901106673

Туре	Material number

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1/2 RE 18321-19/09.09

Replaces: RE 00162-02/01.06

Flow control, 3-way pressure compensated, combination type fixed setting

Common cavity, Size 12

VRFC-12A-TF

04.04.03.00.57 - Z



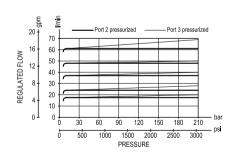
(2)

Description

A constant flow rate, regardless of system pressures, is established from 1 to 3 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. Input flow supplied to 1 in excess of the regulated output at 3 is bypassed to 2. The valve cannot be adjusted for variable flow output. Flow from 3 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated. Flow from 2 to 1 is not permitted.

Performance

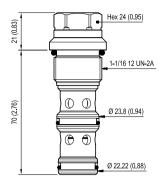
(1)



Technical data

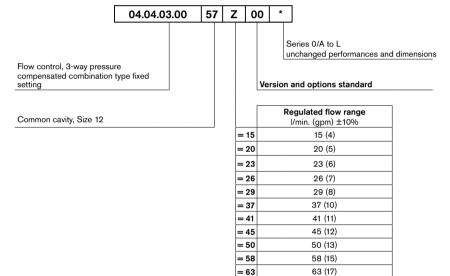
Pressure min-max	bar (psi)	14-350 (200-5000)
Max. inlet flow	l/min. (gpm)	130 (34)
Flow range	l/min. (gpm)	See "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.26 (0.57)
Carrière		CA-12A-3N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG12A3010520100
Sear Kit ()	material no.	R930000941
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves





Ordering code



Туре	Material number
040403005715000	R930000070
040403005720000	R930000071
040403005723000	R930000072
040403005726000	R930000073
040403005729000	R930000074
040403005737000	R930000075

Туре	Material number
040403005741000	R930000076
040403005745000	R930000077
040403005750000	R930000078
040403005758000	R930000079
040403005763000	R930000080

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1/2 RE 18321-21/09.09 Replaces: RE 00162-02/01.06

Flow control, 3-way pressure compensated, combination type fully adjustable

Common cavity, Size 12

VRFD-12A

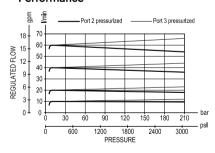
04.04.04 - X - 57 - Z

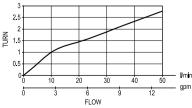


Description

A constant flow rate, regardless of system pressures, is established from 1 to 3 while a minimum pressure differential of 14 bar (200 psi) exists between the two ports. Input flow supplied to 1 in excess of the regulated output at 3 is bypassed to 2. Output flow can be varied from closed to the nominal maximum rating for the valve. Flow from 2 to 1 is not permitted.

Performance



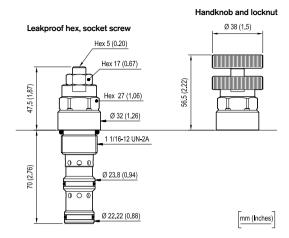


Technical data

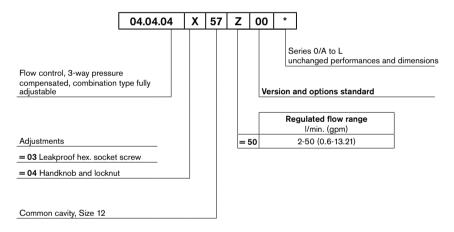
Pressure min-max	bar (psi)	14-350 (200-5000)
Max. inlet flow	I/min. (gpm)	120 (32)
Flow range	I/min. (gpm)	See "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight (*)	kg (lbs)	0.3 (0.66)
Carrier		CA-12A-3N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code	RG12A3010530100
Jear Kit ()	material no.	R930001668
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Standard version X=03 type
- (**) Only external seals for 10 valves

01



Ordering code



Туре	Material number	Туре	Material number
040404035750000	R930006092		
040404045750000	R930006093		

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RE 18321-22/09.09 Replaces: RE 00162-02/01.06

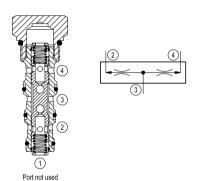
1/2

Flow divider

Common cavity, Size 10

DSDN-10A

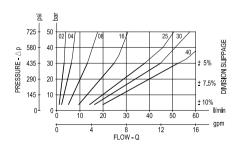
04.05.04.00.85 - Z



Description

Input flow at 3 will be divided and output equally to 2 and 4 independent of system pressures. Should either 2 or 4 become blocked in flow division mode, approximately 5% of the input flow will be transmitted to the open port. Flow combining is not permitted.

Performance



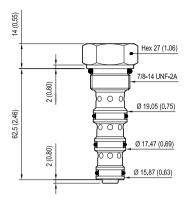
Technical data

Pressure min-max	bar (psi)	10-350 (145-5000)
Flow range	I/min. (gpm)	See "Range of total flow" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Division ratio		50% - 50%
Weight	kg (lbs)	0.28 (0.62)
Carrier		CA-10A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG10A4010520100
	material no.	R901111371
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) Only external scale for	r 10 valvas	

(*) Only external seals for 10 valves

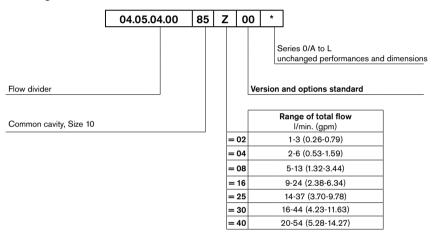
Slippage (tolerance) from theoretical divided flows: ±5% to ±10%, depending from inlet flow (see diagram).

N.B. Slippage is lowest toward upper limit of nominal range.



mm (Inches)

Ordering code



Туре	Material number
040504008502000	R901109840
040504008504000	R901109841
040504008508000	R901109843
040504008516000	R901109844
040504008525000	R901109845

Material number
R901109846
R901109849

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RE 18321-23/09.09 Replaces: RE 00162-02/01.06

1/2

Flow divider

Common cavity, Size 16

DSDN-16A

04.05.03.00.27 - Z

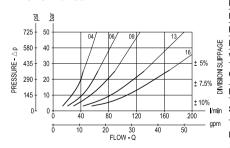


Port not used

Description

Input flow at 3 will be divided and output equally to 2 and 4 independent of system pressures. Should either 2 or 4 become blocked in flow division mode, approximately 5% of the input flow will be transmitted to the open port. Flow combining is not permitted.

Performance



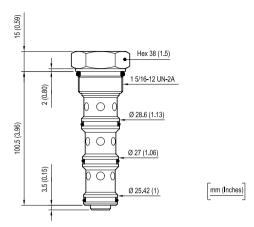
Technical data

Pressure min-max	bar (psi)	10-350 (145-5000)
Flow range	I/min. (gpm)	See "Range of total flow" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Division ratio		50% - 50%
Weight	kg (lbs)	0.41 (0.9)
Carritor		CA-10A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18350-50
Seal kit (*)	code	RG16A4010530100
Sear Kit ()	material no.	R930000973
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

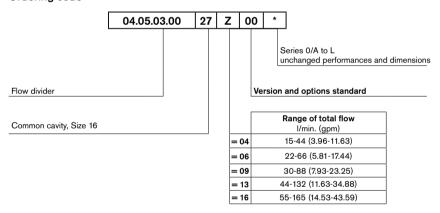
(*) Only external seals for 10 valves

Slippage (tolerance) from theoretical divided flows: ±5% to ±10%, depending from inlet flow (see diagram). N.B. Slippage is lowest toward upper limit of nominal range.

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Ordering code



Туре	Material number
040503002704000	R901109851
040503002706000	R901109852
040503002709000	R901109853
040503002713000	R901109857
040503002716000	R901109858

Туре	Material number

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RE 18321-24/09.09 Replaces: RE 00162-02/01.06

1/2

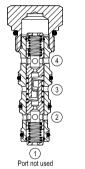
Flow divider and combiner

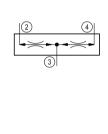
Common cavity, Size 10

DRFN-10A

04.05.01.00.85 - Z



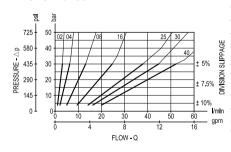




Description

Input flow at 3 will be divided and output equally to 2 and 4 independent of system pressures. Flow input at 2 and 4 will be combined and output at 3. Should either 2 or 4 become blocked in flow division mode, approximately 5% of the input flow will be transmitted to the open port.

Performance



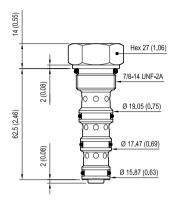
Technical data

Pressure min-max	bar (psi)	10-350 (145-5000)
Flow range	l/min. (gpm)	See "Range of total flow" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Division or combination	ratio	50% - 50%
Weight	kg (lbs)	0.28 (0.62)
Cavity		CA-10A-4N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
		•

(*) Only external seals for 10 valves

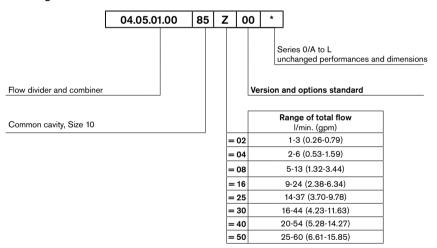
Slippage (tolerance) from theoretical divided flows: ±5% to ±10%, depending from inlet flow (see diagram).

N.B. Slippage is lowest toward upper limit of nominal range.



mm (Inches)

Ordering code



Туре	Material number
040501008502000	R901096072
040501008504000	R901096079
040501008508000	R901096080
040501008516000	R901096083
040501008525000	R901096085

Туре	Material number
040501008530000	R901096086
040501008540000	R901096087
040501008550000	R930000091

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RE 18321-25/09.09 Replaces: RE 00162-02/01.06

1/2

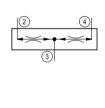
Flow divider and combiner

Common cavity, Size 16

DRFN-16A

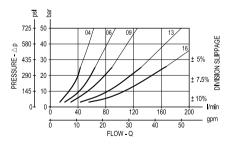
04.05.02.00.27 - Z





Port not used

Performance



Description

Input flow at 3 will be divided and output equally to 2 and 4 independent of system pressures. Flow input at 2 and 4 will be combined and output at 3. Should either 2 or 4 become blocked in flow division mode, approximately 5% of the input flow will be transmitted to the open port.

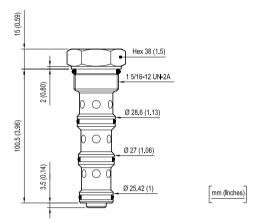
Technical data

Pressure min-max	bar (psi)	10-350 (145-5000)
Flow range	l/min. (gpm)	See "Range of total flow" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Division or combination i	ratio	50% - 50%
Weight	kg (lbs)	0.41 (0.9)
Cavity		CA-16A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG16A4010530100
Gear Rit ()	material no.	R930000973
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) Only sytemal apple to	r 10 values	

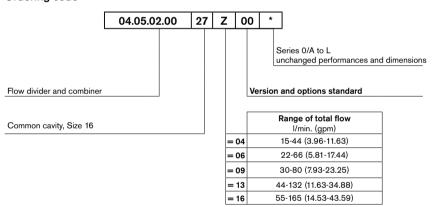
(*) Only external seals for 10 valves

Slippage (tolerance) from theoretical divided flows: $\pm 5\%$ to $\pm 10\%$, depending from inlet flow (see diagram).

N.B. Slippage is lowest toward upper limit of nominal range.



Ordering code



Туре	Material number		Туре	Material number
040502002704000	R901096089	_		
040502002706000	R901096090			
040502002709000	R901096091			
040502002713000	R901096092			
040502002716000	R901096093	_		
		_		

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01

Mechanical cartridge valves

Logic element and compensator

Designation	Description	Cavity	Code	Data sheet	Page
Flow and pressure control with external pilot	VLST-10A	Size 10	048401X85Z	18321-60	249
Flow and pressure control with external pilot	VLST-12A	Size 12	048401X57Z	18321-61	251
Flow and pressure control with external pilot	VLST-16A	Size 16	048401X27Z	18321-62	253
Flow and pressure control with external pilot	VLST-20A	Size 20	048401X58Z	18321-63	255
Flow and pressure control with internal pilot	VLSP-10A	Size 10	048403X85Z	18321-64	257
Flow and pressure control with internal pilot	VLSP-12A	Size 12	048403X57Z	18321-65	259
Flow and pressure control with internal pilot	VLSP-16A	Size 16	048403X27Z	18321-66	261
Flow and pressure control with internal pilot	VLSP-20A	Size 20	048403X58Z	18321-67	263
Flow control with external pilot	VLSC-10A	Size 10	048402X85Z	18321-68	265
Flow control with external pilot, damped type	VLSC-10A-8-TF	Size 10	048412X85Z	18321-71	267
Flow control with external pilot	VLSC-16A	Size 16	048402X27Z	18321-69	269
Flow control with external pilot	VLSC-20A	Size 20	048402X58Z	18321-70	271
Pressure control with internal pilot	VLSR-10A	Size 10	048404X85Z	18321-72	273

Mechanical cartridge valves

Logic element and compensator

Designation	Deceriation	Cowity	Code	Data sheet	Dogo
Designation	Description	Cavity	Code	Data sneet	Page
Pressure control with internal pilot	VLSR-12A	Size 12	048404X57Z	18321-73	275
Pressure control with internal pilot	VLSR-16A	Size 16	048404X27Z	18321-74	277
Pressure control with internal pilot	VLSR-20A	Size 20	048404X58Z	18321-75	279
Pressure compensator	VLSQ-10A	Size 10	048405X85Z	18321-77	281
Pressure compensator	VLSQ-12A	Size 12	048405X57Z	18321-78	283
Pressure compensator	VLSQ-16A	Size 16	048405X27Z	18321-79	285
Pressure compensator combination type	VCSQ-10A	Size 10	048406X85Z	18321-80	287
Pressure compensator combination type	VCSQ-12A	Size 12	048406X57Z	18321-81	289
Pressure compensator combination type	VCSQ-16A	Size 16	048406X27Z	18321-82	291
Pressure compensator with static load sense	VRLA-10A-S	Size 10	0484090085Z	18321-86	293
Pressure compensator with static load sense	VRLA-12A-S	Size 12	0484090057Z	18321-87	295
Pressure compensator with static load sense	VRLA-16A-S	Size 16	0484090027Z	18321-88	297
Pressure compensator with static load sense	VRLA-20A-S	Size 20	0484090058Z	18321-89	299
Pressure compensator with dynamic load sense	VRLA-10A-D	Size 10	048410X85Z	18321-90	301

The latest information on products can also be found on Bosch Rexroth web-site: www.boschrexroth.com

Mechanical cartridge valves

Logic element and compensator

Designation	Description	Cavity	Code	Data sheet	Page	01
Pressure compensator with dynamic load sense	VRLA-12A-D	Size 12	048410X57Z	18321-83	303	
Pressure compensator with dynamic load sense	VRLA-16A-D	Size 16	048410X27Z	18321-84	305	
Pressure compensator with dynamic load sense	VRLA-20A-D	Size 20	048410X58Z	18321-85	307	
Directional control, poppet type	VLDT-10A	Size 10	048407X85Z	18321-76	309	

RE 18321-60/01.10 Replaces: RE 00162-02/01.06

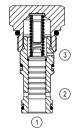
Logic element, flow and pressure control with external pilot

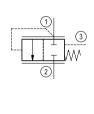
Common cavity, Size 10

VLST-10A

04.84.01 - X - 85 - Z



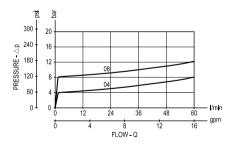




Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow flow from 1 to 2. Pilot pressure at 3 is additive to the spring bias pressure. The valve may be used in switching or compensation type applications.

Performance



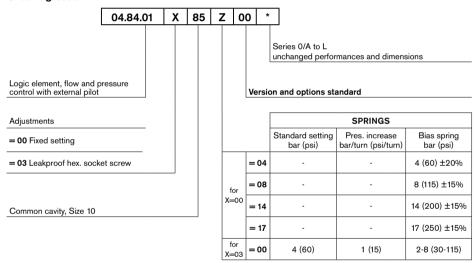
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	60 (16)
Max. internal leakage (*) cm³/min	(cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (**)	kg (lbs)	0.12 (0.27)
Cavity		CA-10A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	RG10A9010520100 R901111367
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=00 type
- (***) Only external seals for 10 valves

Dimensions Leakproof hex, socket screw Hex 4 (0.16) Fixed setting Fixed setting Fixed setting Hex 13 12-15 Nm Z=04 and Z=08 Z=14 version Z=17 version Hex (0.51) (9-11) ft-lb versions Hex 27 (1.06) 14 (0.55) Hex 27 (1.06) Hex 27 (1.06) 2 (0.77) 38 9.5 7/8-14 UNF-2A 2 (0.08) 46.5 (1.83) Ø 19.05 (0.75) 0 0 0 mm (Inches) Ø 17.47 (0.69)

Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
048401008504000	R901106800
048401008508000	R901106801
048401008514000	R930000190
048401008517000	R930000095
048401038500000	R901104079

Туре	Material number

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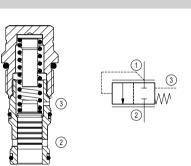
RE 18321-61/01.10 Replaces: 01.06 1/2

Logic element, flow and pressure control with external pilot

Common cavity, Size 12

VLST-12A

04.84.01 - X - 57 - Z

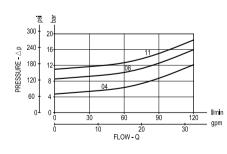


Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow flow from 1 to 2. Pilot pressure at 3 is additive to the spring bias pressure. The valve may be used in switching or compensation type applications.

Performance

(1)

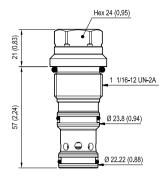


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	120 (32)
Max. internal leakage (*) cm³/mir	ı. (cu.in./min.)	350 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

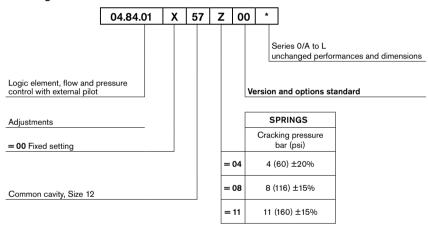
- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01





Ordering code



Туре	Material number
048401005704000	R930000049
048401005708000	R930000050
048401005711000	R930006101

Туре	Material number

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RE 18321-62/09.09

1/2 Replaces: RE 00162-02/01.06

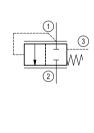
Logic element, flow and pressure control with external pilot

Common cavity, Size 16

VLST-16A

04.84.01 - X - 27 - Z

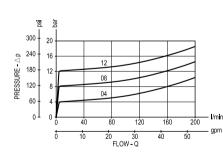




Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow flow from 1 to 2. Pilot pressure at 3 is additive to the spring bias pressure. The valve may be used in switching or compensation type applications.

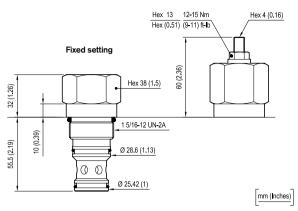
Performance



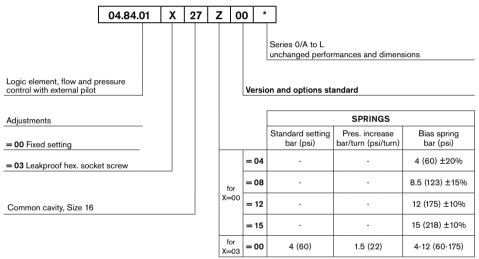
recrimour data		
Max. operating pressure bar (psi)		350 (5000)
Flow range	I/min. (gpm)	8-200 (2-53)
Max. internal leakage (*) cm³/mir	ı. (cu.in./min.)	200 (12)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight (**)	kg (lbs)	0.35 (0.77)
Cavity		CA-16A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=00 type
- (***) Only external seals for 10 valves

Leakproof hex. socket screw



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
048401002704000	R901109369
048401002708000	R901109370
048401002712000	R901109371
048401002715000	R930000999
048401032700000	R901109372

Туре	Material number

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Logic element, flow and pressure control with external pilot

Common cavity, Size 20

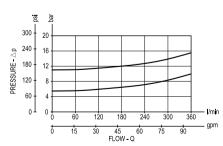
VLST-20A

04.84.01 - X - 58 - Z



(2) (1)

Performance

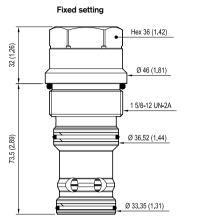


Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow flow from 1 to 2. Pilot pressure at 3 is additive to the spring bias pressure. The valve may be used in switching or compensation type applications.

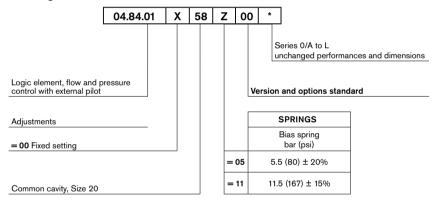
Max. operating pressure bar (psi)		350 (5000)
Flow range	l/min. (gpm)	10-360 (3-95)
Max. internal leakage (*) cm ³ /r	nin. (cu.in./min.)	200 (12)
Fluid temperature rang	ge °C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	128-149 (95-110)
Weight	kg (lbs)	0.8 (1.7)
Cavity		CA-20A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
048401005805000	R901109862		
048401005811000	R901109867		

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1/2

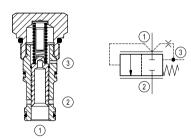
RE 18321-64/09.09 Replaces: RE 00162-02/01.06

Logic element, flow and pressure control with internal pilot

Common cavity, Size 10

VLSP-10A

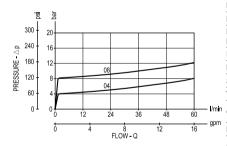
04.84.03 - X - 85 - Z



Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow flow from 1 to 2. The differential pressure between 1 and 3, across an internal orifice, is additive to the spring bias pressure. Note that flow, restricted by the internal orifice, can be transmitted from 3 to 1. The valve may be used in switching or compensation type applications.

Performance



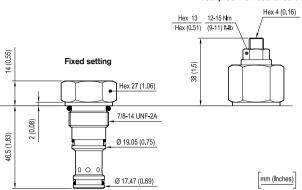
Technical data

Max. operating press	ure bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage (*) cm ³ /	min. (cu.in./min.)	50 (3)
Fluid temperature ran	ige °C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Standard internal orif	ice mm	0.6
Weight (**)	kg (lbs)	0.12 (0.27)
Cavity		CA-10A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

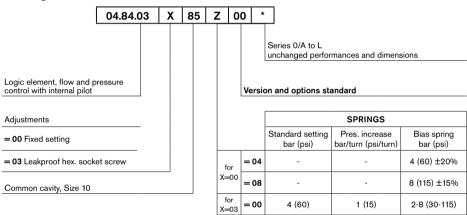
- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=00 type
- (***) Only external seals for 10 valves

01

Leakproof hex. socket screw



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
048403008504000	R901109373
048403008508000	R901109374
048403038500000	R901109375

Туре	Material number

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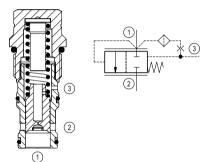
RE 18321-65/01.10 Replaces: RE 00162-02/01.06

Logic element, flow and pressure control with internal pilot

Common cavity, Size 12

VLSP-12A

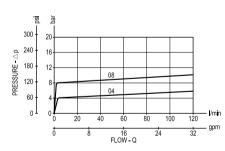
04.84.03 - X - 57 - Z



Description

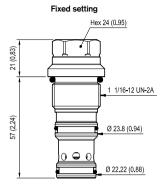
When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow flow from 1 to 2. The differential pressure between 1 and 3, across an internal orifice, is additive to the spring bias pressure. Note that flow, restricted by the internal orifice, can be transmitted from 3 to 1. The valve may be used in switching or compensation type applications.

Performance



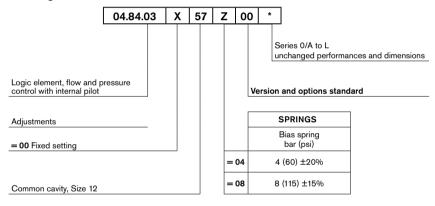
lecillical data		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	120 (32)
Max. internal leakage (*) cm³/mir	n. (cu.in./min.)	350 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.25 (0.55)
Standard internal orifice	mm	0.6
Cavity		CA-12A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG12A9010520100 R901111379
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves





Ordering code



Туре	Material number	Туре	Material number
048403005704000	R930001950		
048403005708000	R930001952		

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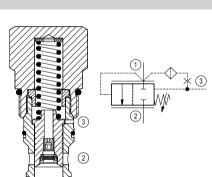
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Logic element, flow and pressure control with internal pilot

Common cavity, Size 16

VLSP-16A

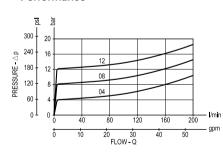
04.84.03 - X - 27 - Z



Description

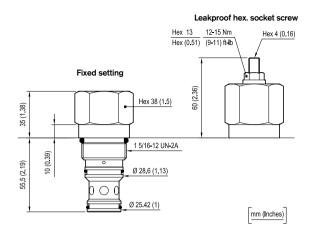
When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow flow from 1 to 2. The differential pressure between 1 and 3, across an internal orifice, is additive to the spring bias pressure. Note that flow, restricted by the internal orifice, can be transmitted from 3 to 1. The valve may be used in switching or compensation type applications.

① Performance

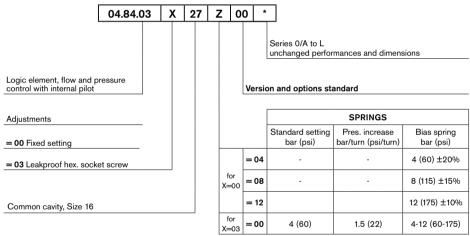


iccillical data		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	8-200 (2-53)
Max. internal leakage (*) cm³/mir	ı. (cu.in./min.)	200 (12)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Standard internal orifice	mm	0.6
Weight (**)	kg (lbs)	0.35 (0.77)
Carrier		CA-16A-3C
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	RG16A9010520100 R901111388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=00 type
- (***) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
048403002704000	R901109868
048403002708000	R901109869
048403002712000	R901109870
048403032700000	R901109871

Туре	Material number

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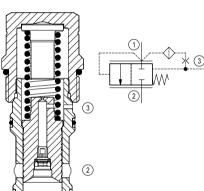
1/2 RE 18321-67/01.10 Replaces: RE 00162-02/01.06

Logic element, flow and pressure control with internal pilot

Common cavity, Size 20

VLSP-20A

04.84.03 - X - 58 - Z

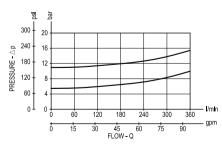


Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow flow from 1 to 2. The differential pressure between 1 and 3, across an internal orifice, is additive to the spring bias pressure. Note that flow, restricted by the internal orifice, can be transmitted from 3 to 1. The valve may be used in switching or compensation type applications.

Performance

(1)

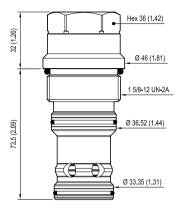


Technical data

recillical dat	a		
Max. operating pre	ssure bar (psi)	350 (5000)
Max. flow	l/min. (g _l	pm)	360 (95)
Max. internal leakage (*)	³ /min. (cu.in./m	nin.)	200 (12)
Fluid temperature r	ange °C	(°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-	lbs)	128-149 (95-110)
Weight	kg (lbs)	0.8 (1.7)
Cavity			CA-20A-3C see data sheet RE 18325-70
Line bodies			See data sheet RE 18325-85
Seal kit (**)	c material	ode no.	
Fluids			Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration			Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	-		No restrictions
Other Technical Da	ıta		See data sheet RE 18350-50

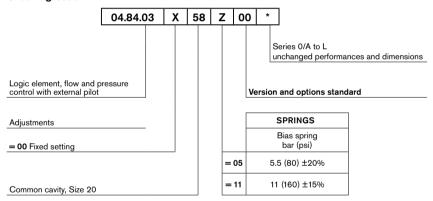
- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01





Ordering code



Туре	Material number	Туре	Material number
048403005805000	R901109872		
048403005811000	R901109873		

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RE 18321-68/09.09

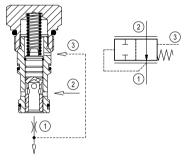
1/2 Replaces: RE 00162-02/01.06

Logic element, flow control with external pilot

Common cavity, Size 10

VLSC-10A

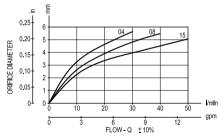
04.84.02 - X - 85 - Z



Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to block flow from 2 to 1. Pilot pressure at 3 is additive to the spring bias pressure. The valve may be used in switching or compensation type applications, and will maintain a constant pressure drop across a fixed (or variable) orifice downstream of 1 when installed and piloted per the diagram above.

Performance

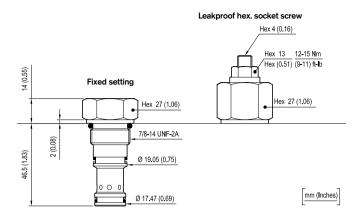


Technical data

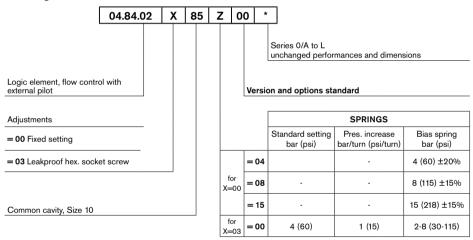
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	30 (8)
Max. internal leakage (*) cm³/mir	n. (cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (**)	kg (lbs)	0.12 (0.27)
Cavity		CA-10A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=00 type
- (***) Only external seals for 10 valves

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
04840200850400A	R901109874
04840200850800A	R901109875
048402008515000	R930001018
04840203850000A	R901109876

Туре	Material number

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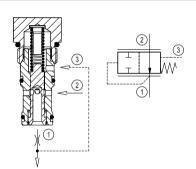
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Logic element, flow control with external pilot, fixed setting, damped type

Common cavity, Size 10

VLSC-10A-8-TF

04.84.12 - X - 85 - Z

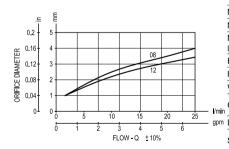


Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow block from 2 to 1. Pilot pressure at 3 is additive to the spring bias pressure. The valve may be used in switching or compensation type applications, and will maintain a constant pressure drop across a fixed (or variable) orifice downstream of 1 when installed and piloted per the diagram

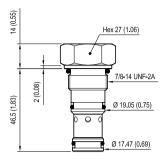
VLSC-10A-8-TF is provided of a damped type spool, especially designed for demanding applications.

Performance



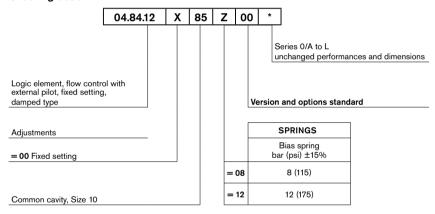
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	25 (7)
Max. internal leakage (*) cm³/mir	ı. (cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.15 (0.33)
Cavity		CA-10A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
048412008508000	R930000264		
048412008512000	R930000281		

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1/2

RE 18321-69/01.10 Replaces: RE 00162-02/01.06

Logic element, flow control with external pilot

Common cavity, Size 16

VLSC-16A

04.84.02 - X - 27 - Z

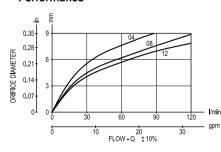


(3) (2)

Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to block flow from 2 to 1. Pilot pressure at 3 is additive to the spring bias pressure. The valve may be used in switching or compensation type applications, and will maintain a constant pressure drop across a fixed (or variable) orifice downstream of 1 when installed and piloted per the diagram

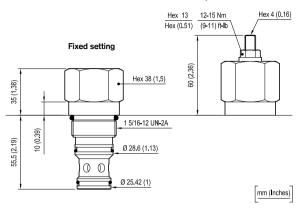
Performance



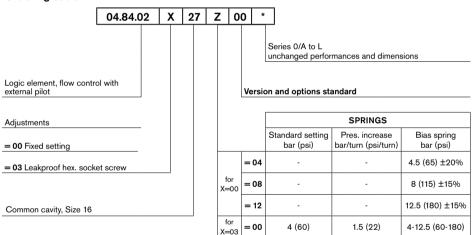
Max. operating pressure bar (psi)		bar (psi)	350 (5000)
Max. flow		I/min. (gpm)	120 (32)
Max. internal leakage (*)	m³/min.	(cu.in./min.)	200 (12)
Fluid temperature	range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque)	Nm (ft-lbs)	108-122 (80-90)
Weight (**)		kg (lbs)	0.35 (0.77)
Cavity			CA-16A-3C see data sheet RE 18325-70
Line bodies			See data sheet RE 18325-85
Seal kit (***)		code material no.	
Fluids			Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration			Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation			No restrictions
Other Technical Data			See data sheet RE 18350-50
(*) M	001	(0000)	

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=00 type
- (***) Only external seals for 10 valves

Leakproof hex. socket screw



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
04840200270400A	R901109376
04840200270800A	R901109377
04840200271200A	R901077638
04840203270000A	R901109379

Туре	Material number

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RE 18321-70/01.10 Replaces: RE 00162-02/01.06

1/2

Logic element, flow control with external pilot

Common cavity, Size 20

VLSC-20A

04.84.02 - X - 58 - Z

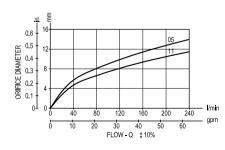


(2)

Description

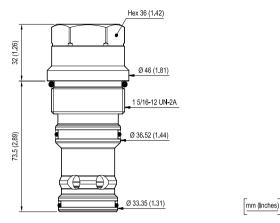
When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow block from 2 to 1. Pilot pressure at 3 is additive to the spring bias pressure. The valve may be used in switching or compensation type applications, and will maintain a constant pressure drop across a fixed (or variable) orifice downstream of 1 when installed and piloted per the diagram

Performance

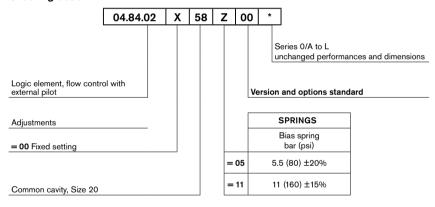


Max. operating pressur	re bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	240 (63)
Max. internal leakage (*) cm³/m	in. (cu.in./min.)	200 (12)
Fluid temperature rang	e °C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	128-149 (95-110)
Weight	kg (lbs)	0.65 (1.43)
Cavity		CA-20A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(4) 1.1	()	

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number
048402005805000	R930002631		
048402005811000	R930002687		

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RE 18321-72/01.10 Replaces: RE 00162-02/01.06

1/2

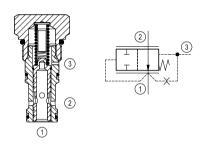
Logic element, pressure control with internal pilot

Common cavity, Size 10

VLSR-10A

04.84.04 - X - 85 - Z

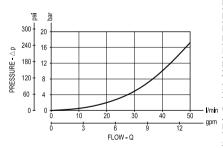




Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to block flow from 2 to 1. The differential pressure between 1 and 3, across an internal orifice, is additive to the spring bias pressure. Note that flow, restricted by the internal orifice, can be transmitted from 3 to 1 and 2. The valve may be used in switching or compensation type applications.

Performance

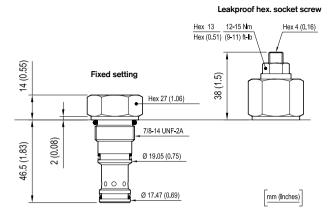


Technical data

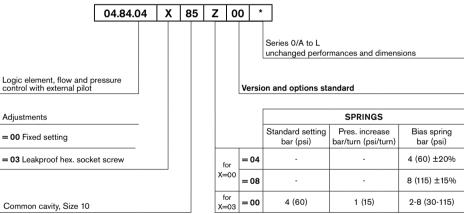
icciiiicai data		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	40 (11)
Max. internal leakage (*) cm³/min	ı. (cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight (**)	kg (lbs)	0.12 (0.27)
Standard internal orifice	mm	0.6
Covity		CA-10A-3C
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	RG10A9010520100 R901111367
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=00 type
- (***) Only external seals for 10 valves

01



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
04840400850400A	R901109380		
04840400850800A	R901109381		
04840403850000A	R901109382		

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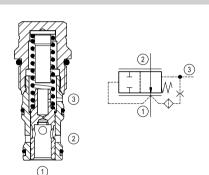
RE 18321-73/01.10 Replaces: RE 00162-02/01.06

Logic element, pressure control with internal pilot

Common cavity, Size 12

VLSR-12A

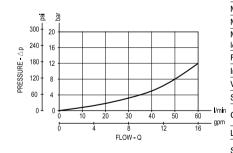
04.84.04 - X - 57 - Z



Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow block flow from 2 to 1. The differential pressure between 1 and 3, across an internal orifice, is additive to the spring bias pressure. Note that flow, restricted by the internal orifice, can be transmitted from 3 to 1 and 2. The valve may be used in switching or compensation type applications.

Performance

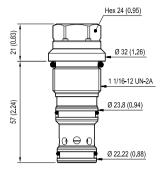


Technical data

icciiiicai data		
Max. operating pressu	re bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	60 (16)
Max. internal cm ³ /m	in. (cu.in./min.)	100 (6)
Fluid temperature rang	ge °C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.22 (0.49)
Standard internal orific	e mm	0.6
Cavity		CA-12A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	-	No restrictions
Other Technical Data		See data sheet RE 18350-50

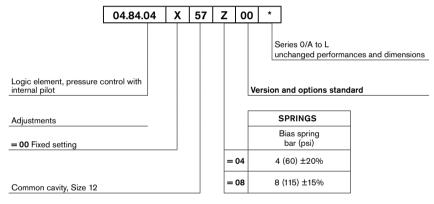
- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01





Ordering code



Туре	Material number	Туре	Material number
048404005704000	R901191617		
048404005708000	R901191615		
-			

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1/2 RE 18321-74/01.10 Replaces: RE 00162-02/01.06

Logic element, pressure control with internal pilot

Common cavity, Size 16

VLSR-16A

04.84.04 - X - 27 - Z

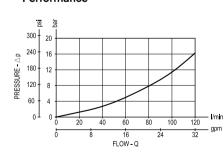


Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow block flow from 2 to 1. The differential pressure between 1 and 3, across an internal orifice, is additive to the spring bias pressure. Note that flow, restricted by the internal orifice, can be transmitted from 3 to 1 and 2. The valve may be used in switching or compensation type

Performance

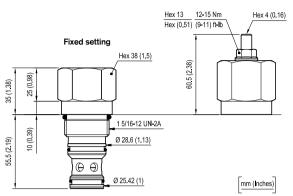
(1)



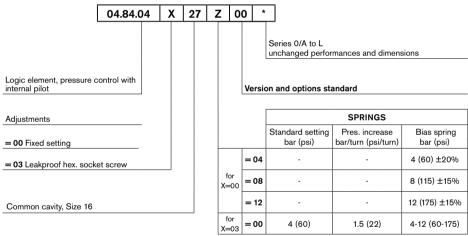
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	120 (32)
Max. internal cm ³ /min leakage (*)	. (cu.in./min.)	200 (12)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight (**)	kg (lbs)	0.5 (1.1)
Standard internal orifice	mm	0.6
Cavity		CA-16A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (***)	code material no.	RG16A9010520100 R901111388
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
		l .

- (*) Measured at 200 bar (2900 psi)
- (**) Standard version X=00 type
- (***) Only external seals for 10 valves

Leakproof hex, socket screw



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
048404002704000	R930002688
048404002708000	R930002691
048404002712000	R930002692
048404032700000	R930002784

Туре	Material number

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RE 18321-75/09.09

1/2 Replaces: RE 00162-02/01.06

Logic element, pressure control with internal pilot

Common cavity, Size 20

VLSR-20A

04.84.04 - X - 58 - Z



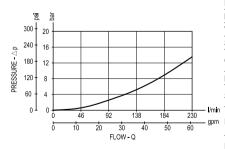
(2)

Description

When pressure at 1 rises above the selected spring bias pressure against the spool, the valve shifts to allow block flow from 2 to 1. The differential pressure between 1 and 3, across an internal orifice, is additive to the spring bias pressure. Note that flow, restricted by the internal orifice, can be transmitted from 3 to 1 and 2. The valve may be used in switching or compensation type

Performance

(1)

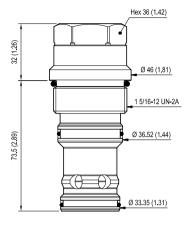


Technical data

rechnical data		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	230 (61)
Max. internal leakage (*) cm³/mi	n. (cu.in./min.)	75 (5)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	128-149 (95-110)
Weight	kg (lbs)	0.6 (1.32)
Standard internal orifice	mm	0.6
Cavity		CA-20A-3C see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG20A9010530100 R901111397
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

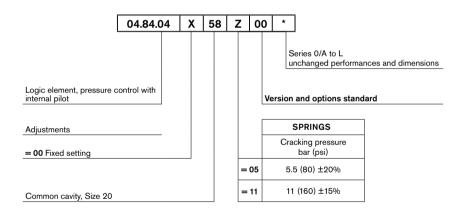
(*) Measured at 200 bar (2900 psi)

(**) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number	Туре
048404005805000	R901195553	
048404005811000	R930002786	

Type Material number

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RE 18321-77/01.10 Replaces: RE 00162-02/01.06

1/2

Logic element, pressure compensator

Common cavity, Size 10

VLSQ-10A

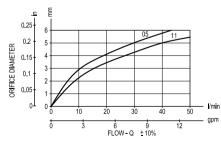
04.84.05 - X - 85 - Z



Description

Flow is normally allowed from 3 to 2. When pilot pressure at 1 rises above the combined pressure of the spring bias, plus pressure at 3, the valve shifts to block flow. The valve may be used in switching or compensation type applications, and will maintain a constant pressure drop across a fixed (or variable) orifice upstream of 3 when installed and piloted per the diagram above.

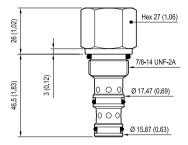
Performance



Technical data

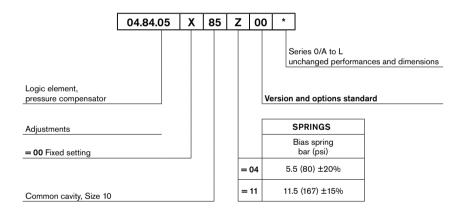
Max. operating pressure	bar (psi)	350 (5000)	
Max. flow	I/min. (gpm)	40 (11)	
Flow maintenance		±10%	
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)	
Installation torque	Nm (ft-lbs)	41-47 (30-35)	
Weight	kg (lbs)	0.13 (0.29)	
Covity		CA-10A-3N	
Cavity		see data sheet RE 18325-70	
Line bodies		See data sheet RE 18325-85	
Seal kit (*)	code	RG10A3010520100	
Sear Kit ()	material no.	R901111369	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)	
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
Installation		No restrictions	
Other Technical Data		See data sheet RE 18350-50	

(*) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
048405008505000	R901109383		
048405008511000	R901109384		
		_	

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RE 18321-78/01.10 Replaces: RE 00162-02/01.06

1/2

Logic element, pressure compensator

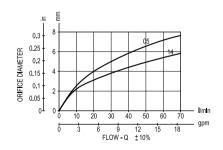
Common cavity, Size 12

VLSQ-12A

04.84.05 - X - 57 - Z



Performance



Description

Flow is normally allowed from 3 to 2. When pilot pressure at 1 rises above the combined pressure of the spring bias, plus pressure at 3, the valve shifts to block flow. The valve may be used in switching or compensation type applications, and will maintain a constant pressure drop across a fixed (or variable) orifice upstream of 3 when installed and piloted per the diagram above.

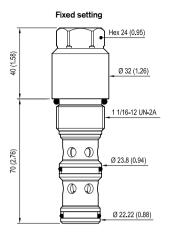
Technical data

Max. operating pressure	bar (psi)	350 (5000)	
Max. flow	l/min. (gpm)	70 (18)	
Flow maintenance		±10%	
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)	
Installation torque	Nm (ft-lbs)	81-95 (60-70)	
Weight	kg (lbs)	0.4 (0.88)	
Covity		CA-12A-3N	
Cavity		see data sheet RE 18325-70	
Line bodies		See data sheet RE 18325-85	
Seal kit (*)	code	RG12A3010520100	
Sear Kit ()	material no.	R930000941	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)	
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
Installation		No restrictions	
Other Technical Data		See data sheet RE 18350-50	
(4) 0 1 1 1 1			

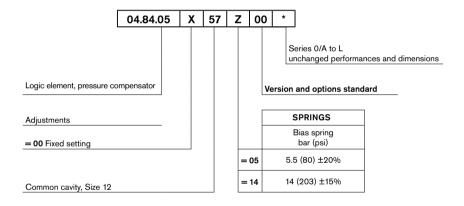
(*) Only external seals for 10 valves

mm (Inches)

Dimensions



Ordering code



Туре	Material number	Туре	Material number
04840500570500A	R901109877		
048405005714000	R930005661		

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1/2

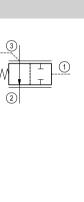
RE 18321-79/01.10 Replaces: RE 00162-02/01.06

Logic element, pressure compensator

Common cavity, Size 16

VLSQ-16A

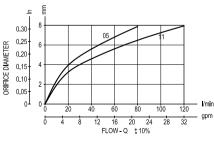
04.84.05 - X - 27 - Z



Description

Flow is normally allowed from 3 to 2. When pilot pressure at 1 rises above the combined pressure of the spring bias, plus pressure at 3, the valve shifts to block flow. The valve may be used in switching or compensation type applications, and will maintain a constant pressure drop across a fixed (or variable) orifice upstream of 3 when installed and piloted per the diagram above.

Performance

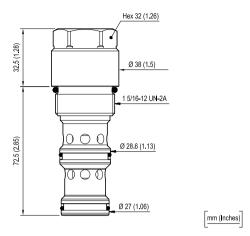


Technical data

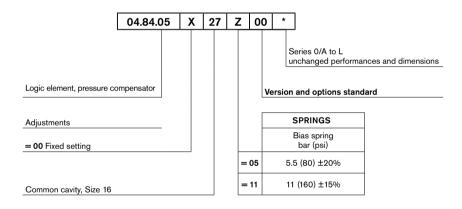
rechnical data		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow for Z=05	l/min. (gpm)	80 (21)
Max. flow for Z=11	l/min. (gpm)	120 (32)
Flow maintenance		±20% (Z=05) ±10% (Z=11)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.4 (0.88)
Cavity		CA-16A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG16A3010520100 R930001177
¹ Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves

01



Ordering code



Туре	Material number	Туре	Material number
048405002705000	R930000887		
048405002711000	R930006102		

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RE 18321-80/01.10

1/2 Replaces: RE 00162-02/01.06

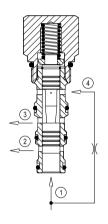
Logic element, pressure compensator combination type

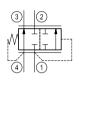
Common cavity, Size 10

VCSQ-10A

04.84.06 - X - 85 - Z



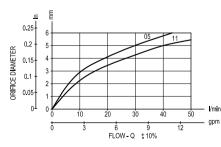




Description

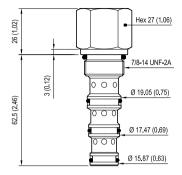
Flow is normally allowed from 4 to 3. When pilot pressure at 1 rises above the combined pressure of the spring bias, plus pressure at 4, the valve shifts to block flow between 3 and 4, while diverting flow from 1 to 2. A constant pressure drop is maintained across a fixed (or variable) orifice upstream of 4 when installed and piloted per the diagram above. In this case, flow priority is given to 3, with flow in excess of the orifice differential requirement being bypassed to 2.

Performance



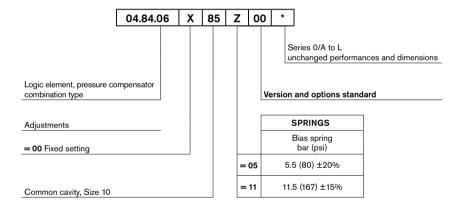
Technical data

roommoar aata		
Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	l/min. (gpm)	60 (16)
Max. priority flow	I/min. (gpm)	40 (11)
Flow maintenance		±10%
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.14 (0.31)
Cavity		CA-10A-4N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG10A4010530100 R901111373
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
// · · · · · · · · · · · · · · · · · ·		





Ordering code



Туре	Material number	Туре	Material number
048406008505000	R901109385		
048406008511000	R901109386		

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1/2 RE 18321-81/01.10

Replaces: RE 00162-02/01.06

Logic element, pressure compensator combination type

Common cavity, Size 12

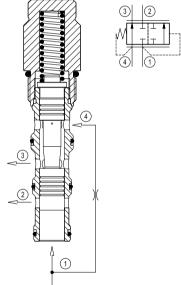
VCSQ-12A

04.84.06 - X - 57 - Z

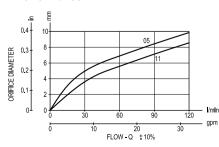


Description

Flow is normally allowed from 4 to 3. When pilot pressure at 1 rises above the combined pressure of the spring bias, plus pressure at 4, the valve shifts to block flow between 3 and 4, while diverting flow from 1 to 2. A constant pressure drop is maintained across a fixed (or variable) orifice upstream of 4 when installed and piloted per the diagram above. In this case, flow priority is given to 3, with flow in excess of the orifice differential requirement being bypassed to 2.

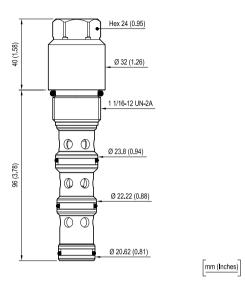


Performance

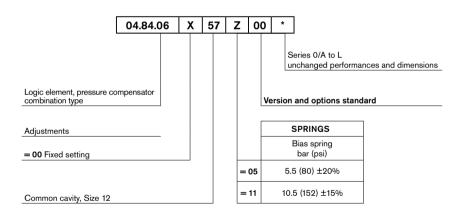


Technical data

recinited data		
Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	I/min. (gpm)	120 (32)
Max. priority flow	I/min. (gpm)	80 (21)
Flow maintenance		±10%
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.3 (0.66)
Cavity		CA-12A-4N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	RG12A4010530100 R930001660
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number	Туре	Material number
048406005705000	R901109889		
048406005711000	R930001073		

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RE 18321-82/01.10 Replaces: RE 00162-02/01.06

Logic element, pressure compensator combination type

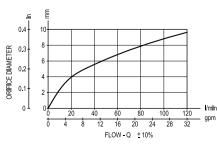
Common cavity, Size 16

VCSQ-16A

04.84.06 - X - 27 - Z



Performance

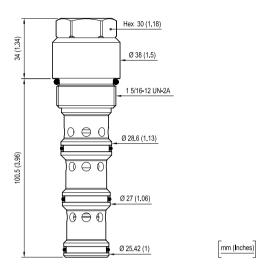


Description

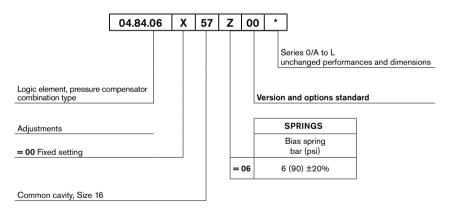
Flow is normally allowed from 4 to 3. When pilot pressure at 1 rises above the combined pressure of the spring bias, plus pressure at 4, the valve shifts to block flow between 3 and 4, while diverting flow from 1 to 2. A constant pressure drop is maintained across a fixed (or variable) orifice upstream of 4 when installed and piloted per the diagram above. In this case, flow priority is given to 3, with flow in excess of the orifice differential requirement being by-passed to 2.

Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	200 (53)
Max. priority flow	I/min. (gpm)	120 (32)
Flow maintenance		±10%
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.75 (1.65)
Cavity		CA-16A-4N
		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG16A4010530100
Sear Kit ()	material no.	R930000973
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) Only automal and fo	. 10	



Ordering code



Туре	Material number	Туре	Material number
048406002706000	R901162013		

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1/2 RE 18321-86/01.10

Replaces: RE 00162-02/01.06

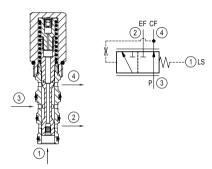
Logic element, pressure compensator with static load sense

Common cavity, Size 10

VRLA-10A-S

04.84.09.00 - 85 - Z

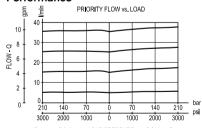




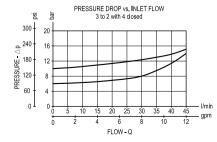
Description

The valve delivers priority flow, from 0 to max. available, on demand to port 4, while compensating for load changes downstream. In neutral, all input flow at 3 is given to the priority port 4. Pressure at 4 is applied to the spool against a spring force so that increasing pressure causes increasing by-pass of input flow to port 2. Load sense pressure at port 1, obtained between the downstream control and the load, assists the spring, and moves the spool back toward supplying priority flow. Comparison between priority outlet and LS pressure seeks a constant differential pressure over the control valve. As load and flow control change, the priority flow is increased or decreased to satisfy the demand establishing that differential.

Performance

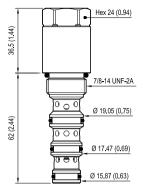


Bypass > Priority ← LOAD PRESSURE → Priority > Bypass



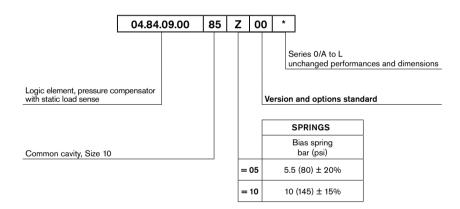
Technical data

roommour data		
Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	I/min. (gpm)	45 (12)
Max. priority flow	l/min. (gpm)	30 (8) for Z=05 version 40 (11) for Z=10 version
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.22 (0.49)
Cavity		CA-10A-4N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50





Ordering code



Туре	Material number	Туре	Material number
048409008505000	R930001191		
048409008510000	R930001192		
-			

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The state of the s

01

Logic element, pressure compensator with static load sense

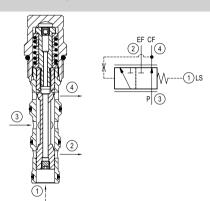
Linear Motion and

Assembly Technologies

Common cavity, Size 12

VRLA-12A-S

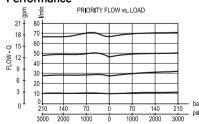
04.84.09.00 - 57 - Z



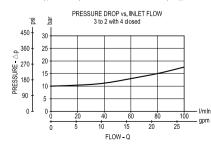
Description

The valve delivers priority flow, from 0 to max. available, on demand to port 4, while compensating for load changes downstream. In neutral, all input flow at 3 is given to the priority port 4. Pressure at 4 is applied to the spool against a spring force so that increasing pressure causes increasing by-pass of input flow to port 2. Load sense pressure at port 1, obtained between the downstream control and the load, assists the spring, and moves the spool back toward supplying priority flow. Comparison between priority outlet and LS pressure seeks a constant differential pressure over the control valve. As load and flow control change, the priority flow is increased or decreased to satisfy the demand establishing that differential.

Performance

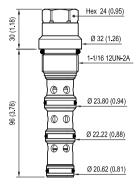


Bypass > Priority ← LOAD PRESSURE → Priority > Bypass



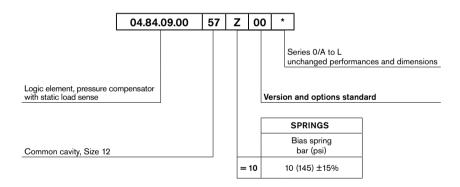
Technical data

roommour autu		
Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	l/min. (gpm)	100 (26)
Max. priority flow	I/min. (gpm)	80 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.32 (0.71)
0. 3		CA-12A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG12A4010530100
Sear Kit ()	material no.	R930001660
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(4) 0 1 1 1 1		





Ordering code



Туре	Material number	Туре	Material number
048409005710000	R930001081		

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Logic element, pressure compensator with static load sense

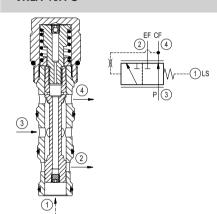
Linear Motion and

Assembly Technologies

Common cavity, Size 16

VRLA-16A-S

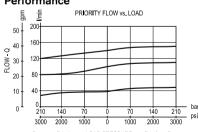
04.84.09.00 - 27 - Z



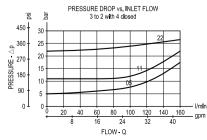
Description

The valve delivers priority flow, from 0 to max. available, on demand to port 4, while compensating for load changes downstream. In neutral, all input flow at 3 is given to the priority port 4. Pressure at 4 is applied to the spool against a spring force so that increasing pressure causes increasing by-pass of input flow to port 2. Load sense pressure at port 1, obtained between the downstream control and the load, assists the spring, and moves the spool back toward supplying priority flow. Comparison between priority outlet and LS pressure seeks a constant differential pressure over the control valve. As load and flow control change, the priority flow is increased or decreased to satisfy the demand establishing that differential.

Performance

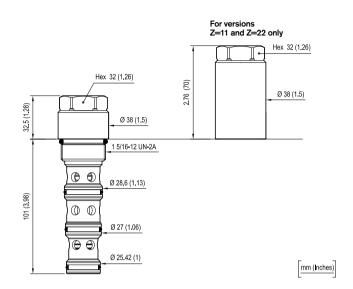


Bypass > Priority ← LOAD PRESSURE → Priority > Bypass

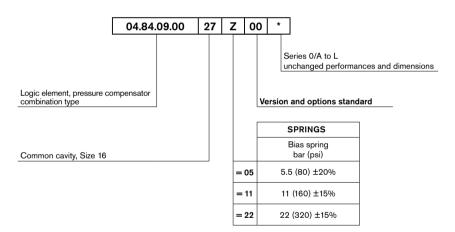


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	l/min. (gpm)	160 (42)
Max. priority flow	I/min. (gpm)	140 (37)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.5 (1.1)
Covity		CA-16A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG16A4010530100
material n		R930000973
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number	Туре	Material number
048409002705000	R930001078		
048409002711000	R930001079		
048409002722000	R930001080		

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RE 18321-89/09.09

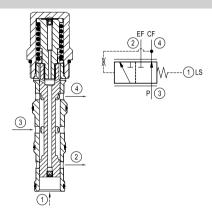
1/2 Replaces: RE 00162-02/01.06

Logic element, pressure compensator with static load sense

Common cavity, Size 20

VRLA-20A-S

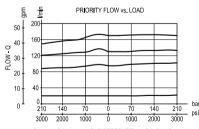
04.84.09.00 - 58 - Z



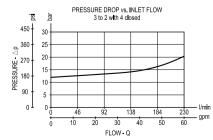
Description

The valve delivers priority flow, from 0 to max. available, on demand to port 4, while compensating for load changes downstream. In neutral, all input flow at 3 is given to the priority port 4. Pressure at 4 is applied to the spool against a spring force so that increasing pressure causes increasing by-pass of input flow to port 2. Load sense pressure at port 1, obtained between the downstream control and the load, assists the spring, and moves the spool back toward supplying priority flow. Comparison between priority outlet and LS pressure seeks a constant differential pressure over the control valve. As load and flow control change, the priority flow is increased or decreased to satisfy the demand establishing that differential.

Performance



Bypass > Priority ← LOAD PRESSURE → Priority > Bypass

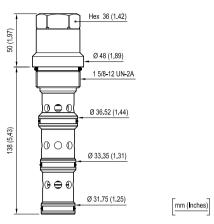


Technical data

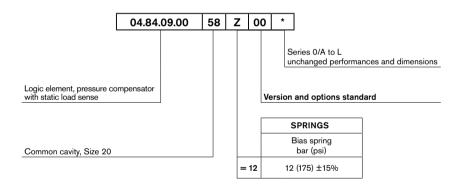
Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	l/min. (gpm)	230 (60)
Max. priority flow	l/min. (gpm)	170 (45)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	128-149 (95-110)
Weight	kg (lbs)	1.1 (2.4)
Cavity		CA-20A-4N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) Only external scale for	r 10 valvas	•

(*) Only external seals for 10 valves

01



Ordering code



Туре	Material number	Туре	Material number
048409005812000	R930001082		
		_	
		_	

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RE 18321-90/01.10 Replaces: RE 00162-02/01.06

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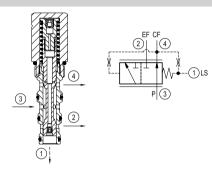
Logic element, pressure compensator with dynamic load sense

Common cavity, Size 10

VRLA-10A-D

04.84.10 - X - 85 - Z

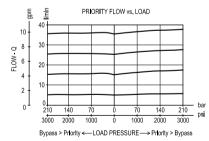


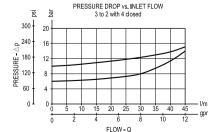


Description

The valve delivers priority flow, from 0 to max. available, on demand to port 4, while compensating for load changes downstream. In neutral, all input flow at 3 is given to the priority port 4. Pressure at 4 is applied to the spool against a spring force so that increasing pressure causes increasing by-pass of input flow to port 2. Load sense pressure at port 1, obtained between the downstream control and the load, assists the spring, and moves the spool back toward supplying priority flow. Comparison between priority outlet and LS pressure seeks a constant differential pressure over the control valve. As load and flow control change, the priority flow is increased or decreased to satisfy the demand establishing that differential. An orifice connects the priority outlet port and the spring chamber, giving a small pressure assist to the spring, enhancing response time to provide priority flow in the event that load sense pressure momentarily drops.

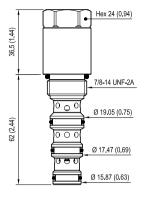
Performance



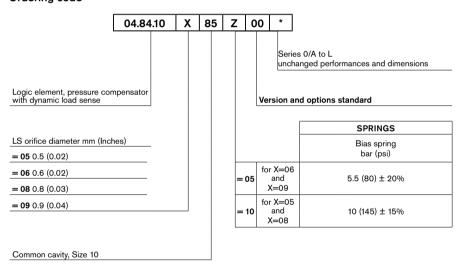


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	I/min. (gpm)	45 (12)
Man anianituffan	l/min. (gpm)	30 (8) for Z=05 version
Max. priority flow		40 (11) for Z=10 version
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.22 (0.49)
Covity		CA-10A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG10A4010530100
Jear Kit ()	material no.	R901111373
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number
048410058510000	R930001195
048410068505000	R930001193
048410088510000	R930001196
048410098505000	R930001194

Туре	Material number

mm (Inches)

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1/2 RE 18321-83/10.09 Replaces: RE 00162-02/01.06

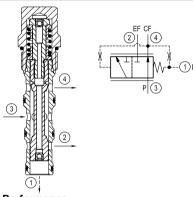
Logic element, pressure compensator with dynamic load sense

Common cavity, Size 12

VRLA-12A-D

04.84.10 - X - 57 - Z

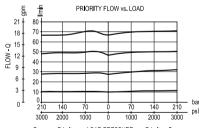




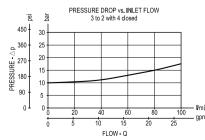
Description

The valve delivers priority flow, from 0 to max. available, on demand to port 4, while compensating for load changes downstream. In neutral, all input flow at 3 is given to the priority port 4. Pressure at 4 is applied to the spool against a spring force so that increasing pressure causes increasing by-pass of input flow to port 2. Load sense pressure at port 1, obtained between the downstream control and the load, assists the spring, and moves the spool back toward supplying priority flow. Comparison between priority outlet and LS pressure seeks a constant differential pressure over the control valve. As load and flow control change, the priority flow is increased or decreased to satisfy the demand establishing that differential. An orifice connects the priority outlet port and the spring chamber, giving a small pressure assist to the spring, enhancing response time to provide priority flow in the event that load sense pressure momentarily drops.

Performance

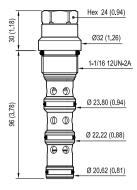


Bypass > Priority ← LOAD PRESSURE → Priority > Bypass



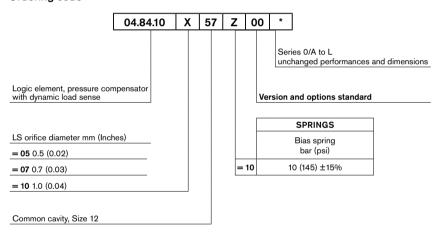
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	l/min. (gpm)	100 (26)
Max. priority flow	I/min. (gpm)	80 (21)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.32 (0.71)
Cavity		CA-12A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG12A4010530100
Ocal Kit ()	material no.	R930001660
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) O .	40 .1	•



mm (Inches)

Ordering code



Туре	Material number
048410055710000	R930001086
048410075710000	R930001089
048410105710000	R930001097

Туре	Material number

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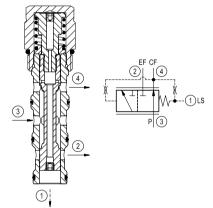
Logic element, pressure compensator with dynamic load sense

Common cavity, Size 16

VRLA-16A-D

04.84.10 - X - 27 - Z

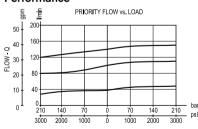




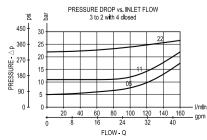
Description

The valve delivers priority flow, from 0 to max. available, on demand to port 4, while compensating for load changes downstream. In neutral, all input flow at 3 is given to the priority port 4. Pressure at 4 is applied to the spool against a spring force so that increasing pressure causes increasing by-pass of input flow to port 2. Load sense pressure at port 1, obtained between the downstream control and the load, assists the spring, and moves the spool back toward supplying priority flow. Comparison between priority outlet and LS pressure seeks a constant differential pressure over the control valve. As load and flow control change, the priority flow is increased or decreased to satisfy the demand establishing that differential. An orifice connects the priority outlet port and the spring chamber, giving a small pressure assist to the spring, enhancing response time to provide priority flow in the event that load sense pressure momentarily drops.

Performance

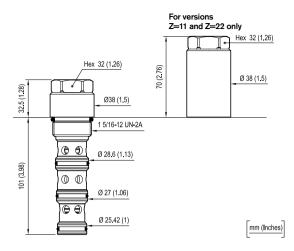


Bypass > Priority ← LOAD PRESSURE → Priority > Bypass

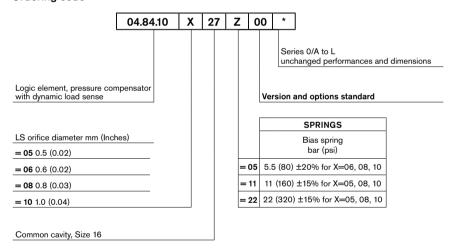


Technical data

iccillical data		
Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	l/min. (gpm)	160 (42)
Max. priority flow	I/min. (gpm)	140 (37)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.5 (1.1)
Carrier		CA-16A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG16A4010530100
Jeai Kit ()	material no.	R930000973
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



Ordering code



Туре	Material number	
048410052711000	R930001084	
048410052722000	R930001085	
048410062705000	R930001088	
048410082705000	R930001090	
048410082711000	R930001091	

Туре	Material number
048410082722000	R930001092
048410102705000	R930001094
048410102711000	R930001095
048410102722000	R930001096

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RE 18321-85/10.09 Replaces: RE 00162-02/01.06

Logic element, pressure compensator with dynamic load sense

Common cavity, Size 20

VRLA-20A-D

04.84.10 - X - 58 - Z

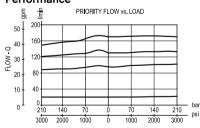


3 3 3 3 3

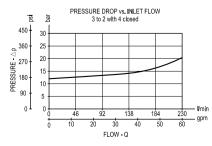
Description

The valve delivers priority flow, from 0 to max. available, on demand to port 4, while compensating for load changes downstream. In neutral, all input flow at 3 is given to the priority port 4. Pressure at 4 is applied to the spool against a spring force so that increasing pressure causes increasing by-pass of input flow to port 2. Load sense pressure at port 1, obtained between the downstream control and the load, assists the spring, and moves the spool back toward supplying priority flow. Comparison between priority outlet and LS pressure seeks a constant differential pressure over the control valve. As load and flow control change, the priority flow is increased or decreased to satisfy the demand establishing that differential. An orifice connects the priority outlet port and the spring chamber, giving a small pressure assist to the spring, enhancing response time to provide priority flow in the event that load sense pressure momentarily drops.

Performance

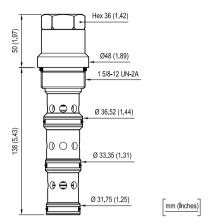


Bypass > Priority ← LOAD PRESSURE → Priority > Bypass

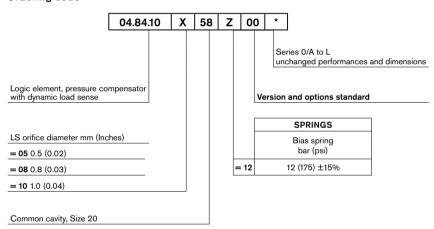


Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. intel flow	I/min. (gpm)	230 (60)
Max. priority flow	I/min. (gpm)	170 (45)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	128-149 (95-110)
Weight	kg (lbs)	1.1 (2.4)
Cavity		CA-20A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (*)	code	RG20A4010530100
Jeai Kit ()	material no.	R930001947
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(*) Only systemal and fo	. 10	•



Ordering code



Туре	Material number	Туре	Material number
048410055812000	R930001087	<u> </u>	
048410085812000	R930001093		
048410105812000	R930001098		

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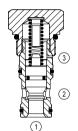
Logic element, directional control poppet type

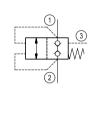
Common cavity, Size 10

VLDT-10A

04.84.07 - X - 85 - Z



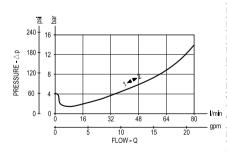




Description

Flow is blocked bi-directionally between 1 and 2, until pressure at either 1 or 2 rises above the combined pressure of the spring bias, plus pressure at 3. The poppet is balanced between pressures at 1 and 2 with a 1:1 area ratio, and held locked by pressure at 3 in a 2:1 ratio versus either 1 or 2.

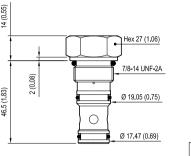
Performance



Technical data

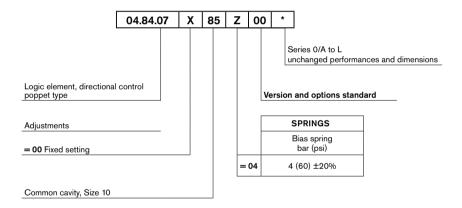
bar (psi)	350 (5000)
I/min. (gpm)	80 (21)
	2:1
drops/min.	5 - at 200 bar (2900 psi) closed
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	41-47 (30-35)
kg (lbs)	0.12 (0.27)
	CA-10A-3C see data sheet RE 18325-70
	See data sheet RE 18325-85
	Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	l/min. (gpm)

^(*) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
048407008504000	R901095969		

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Mechanical cartridge valves

Directional direct acting

Designation	Description	Cavity	Code	Data sheet	Page 0
Spool type, direct acting external pilot internal drain	VDSA-10A-6	Size 10	047729X85Z	18320-73	313
Spool type, direct acting external pilot internal drain	VDSA-10A	Size 10	047732X85Z	18320-83	315
Spool type, direct acting external pilot internal drain	VDSA-16A	Size 16	047732X27Z	18320-92	317
Spool type, direct acting external pilot internal drain	VDSB-10A-6	Size 10	047723X85Z	18320-74	319
Spool type, direct acting external pilot internal drain	VDSB-10A	Size 10	047733X85Z	18320-84	321
Spool type, direct acting internal pilot external drain	VDSR-10A-6	Size 10	047717X85Z	18320-82	323
Spool type, direct acting external pilot external drain	VDSE-10A-6	Size 10	047737X85Z	18320-88	325
Spool type, direct acting external pilot external vent	VDSC-10A	Size 10	047721X85Z	18320-77	327
Spool type, direct acting external pilot external vent	VDSC-12A	Size 12	047721X57Z	18320-91	329
Spool type, direct acting external pilot external vent	VDSC-16A	Size 16	047720X27Z	18320-78	331
Spool type, direct acting external pilot external vent	VDSD-10A	Size 10	047722X85Z	18320-79	333
Spool type, direct acting external pilot external vent	VDSD-16A	Size 16	047722X27Z	18320-80	335

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Mechanical cartridge valves

Directional direct acting

Designation	Description	Cavity	Code	Data sheet	Page
Spool type, direct acting external pilot internal drain	VDSH-10A	Size 10	047725X85Z	18320-75	337
Spool type, direct acting external pilot internal drain	VDSH-16A	Size 16	047725X27Z	18320-85	339
Spool type, direct acting external pilot internal drain	VDSK-10A	Size 10	047726X85Z	18320-76	341
Spool type, direct acting external pilot internal drain	VDSK-16A	Size 16	047726X27Z	18320-86	343
Spool type, direct acting external pilot external vent	VDSJ-10A	Size 10	047719X85Z	18320-87	345
Spool type, direct acting external pilot external vent	VDSJ-16A	Size 16	047719X27Z	18320-81	347
Spool type, 4-way	VDSP-20B	Special	047735X93Z	18320-89	349
Spool type, 4-way	VDSP-20B-R	Special	047736X93Z	18320-90	351

RE 18320-73/09.09 Replaces: RE 00162-02/01.06

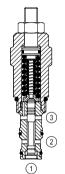
Directional spool type, direct acting external pilot internal drain

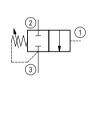
Common cavity, Size 10

VDSA-10A-6

04.77.29 - X - 85 - Z





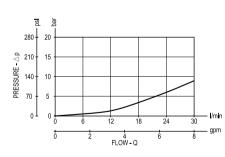


Description

Flow is blocked from 2 to 3 until the pressure at 1 rises to the selected spring setting. Upon reaching this pressure, the spool shifts upward, allowing flow from 2 to 3 until pressure at 1 drops below the set point. The spring chamber is drained to 3, thus any pressure at 3 is additive to the spring setting.

VDSA-10A-6 is especially designed for application requiring high valve of shifting pressure.

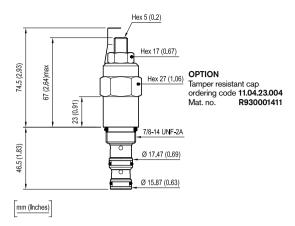
Performance



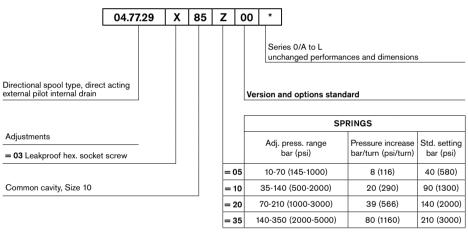
Technical data

Max. operating pre	ssure bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	30 (8)
Max. internal leakage (*)	n ³ /min. (cu.in./min.)	10 (0.6)
Fluid temperature	range °C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.27 (0.6)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Da	ata	See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
047729038505000	R901109943
047729038510000	R901109945
047729038520000	R901109947
047729038535000	R901109949

Туре	Material number

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RE 18320-83/11.09 Replaces: RE 00162-02/01.06

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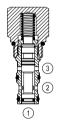
Directional spool type, direct acting external pilot internal drain

Common cavity, Size 10

VDSA-10A

04.77.32 - X - 85 - Z



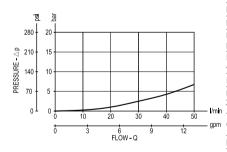




Description

Flow is blocked from 2 to 3 until the pressure at 1 rises to the selected spring setting. Upon reaching this pressure, the spool shifts upward, allowing flow from 2 to 3 until pressure at 1 drops below the set point. The spring chamber is drained to 3, thus any pressure at 3 is additive to the spring setting.

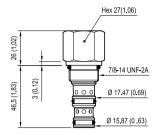
Performance



Technical data

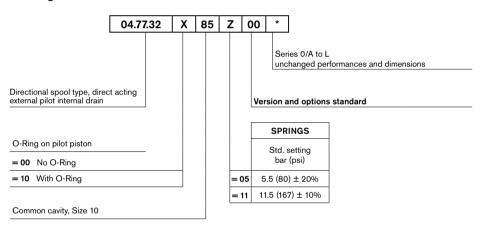
\ 50 (40)
pm) 50 (13)
nin.) 70 (4)
ı.in.) 0.28 (0.02)
(°F) -30 to 100 (-22 to 212)
-lbs) 41-47 (30-35)
(lbs) 0.22 (0.49)
CA-10A-3N
see data sheet RE 18325-70
See data sheet RE 18325-85
rode RG10A3010530100 I no. R930000990
Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
No restrictions
See data sheet RE 18350-50

(*) Measured at 200 bar (2900 psi)





Ordering code



Туре	Material number
047732008505000	R930002334
047732008511000	R930002463
047732108505000	R930005654
047732108511000	R930002602

Туре	Material number

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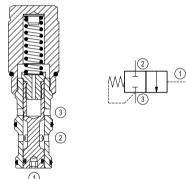
Directional spool type, direct acting external pilot internal drain

Common cavity, Size 16

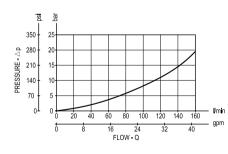
VDSA-16A

04.77.32 - X - 27 - Z





① Performance



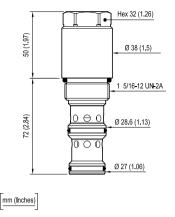
Description

Flow is blocked from 2 to 3 until the pressure at 1 rises to the selected spring setting. Upon reaching this pressure, the spool shifts upward, allowing flow from 2 to 3 until pressure at 1 drops below the set point. The spring chamber is drained to 3, thus any pressure at 3 is additive to the spring setting.

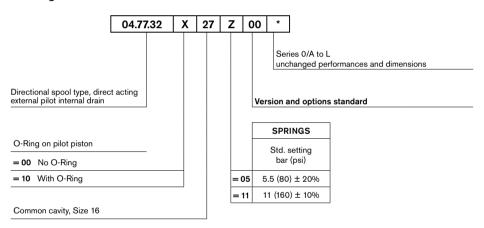
Technical data

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	160 (43)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	170 (10)
Pilot displacement volume	cm3 (cu.in.)	1.2 (0.05)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.6 (1.32)
Cavity		CA-16A-3N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)		RG16A3010530100 R930001178
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 210 bar (3000 psi)
- (**) Only external seals for 10 valves



Ordering code



Туре	Material number
047732002705000	R930001157
047732002711000	R930001159
047732102705000	R930001162
047732102711000	R930001163

Туре	Material number		

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RE 18320-74/10.09 Replaces: RE 00162-02/01.06

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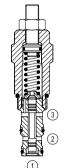
Directional spool type, direct acting external pilot internal drain

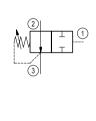
Common cavity, Size 10

VDSB-10A-6

04.77.23 - X - 85 - Z





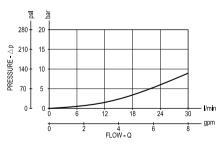


Description

Flow is allowed from 2 to 3 until the pressure at 1 rises to the selected spring setting. Upon reaching this pressure, the spool shifts upward, blocking flow until pressure at 1 drops below the set point. The spring chamber is drained to 3, thus any pressure at 3 is additive to the spring setting.

VDSB-10A-6 is especially designed for application requiring high value of shifting pressure.

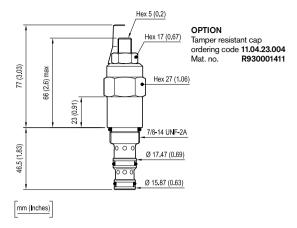
Performance



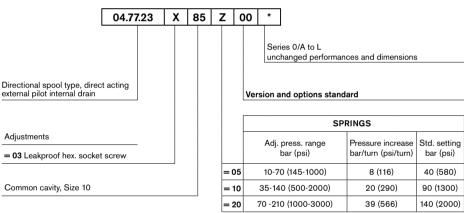
Technical data

Max. operating p	ressure	bar (psi)	350 (5000)	
Max. flow		I/min. (gpm)	30 (8)	
Max. internal leakage (*)	cm3/min (cu in /min)		10 (0.6)	
Fluid temperature	e range	°C (°F)	-30 to 100 (-22 to 212)	
Installation torque	Э	Nm (ft-lbs)	41-47 (30-35)	
Weight		kg (lbs)	0.27 (0.6)	
Cavity			CA-10A-3N see data sheet RE 18325-70	
Line bodies			See data sheet RE 18325-85	
Seal kit (**)		code material no.	RG10A3010520100 R901111369	
Fluids			Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)	
Filtration			Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
Installation			No restrictions	
Other Technical I	Data		See data sheet RE 18350-50	
(+) NA	200 1	(0000)		

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
047723038505000	R901109479
047723038510000	R901109481
047723038520000	R901109482

Туре	Material number		

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RE 18320-84/11.09 Replaces: RE 00162-02/01.06

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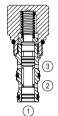
Directional spool type, direct acting external pilot internal drain

Common cavity, Size 10

VDSB-10A

04.77.33 - X - 85 - Z



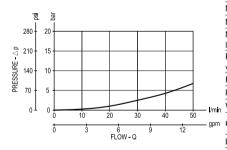




Description

Flow is allowed from 2 to 3 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, blocking flow at both 2 and 3. The spring chamber is drained to 3, thus any pressure at 3 is additive to the spring setting.

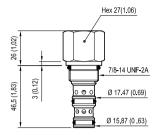
Performance



Technical data

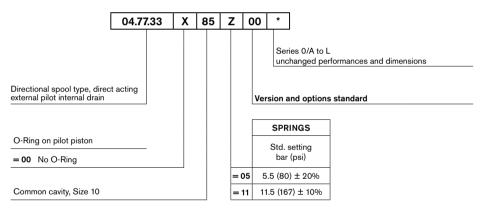
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	50 (13)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	25 (1.5)
Pilot displacemnt volume	cm3 (cu.in.)	0.28 (0.02)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-3N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)		RG10A3010530100 R930000990
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
		•

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves





Ordering code



Туре	Material number	Туре	Material number
047733008505000	R930000965		
047733008511000	R930002623		
-		_	

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RE 18320-82/01.10 Replaces: RE 00162-02/01.06

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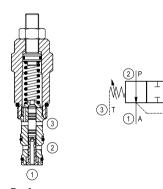
Directional spool type, direct acting internal pilot external drain

Common cavity, Size 10

VDSR-10A-6

04.77.17 - X - 85 - Z

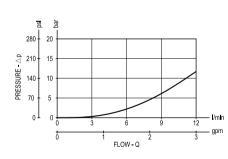




Description

Flow is allowed from 2 to 1 until the pressure at 1 rises to the selected spring setting. Upon reaching this pressure, the spool shifts upward, blocking flow until pressure at 1 drops below the set point. The spring chamber is drained to 3, thus any pressure at 3 is additive to the spring setting.

Performance

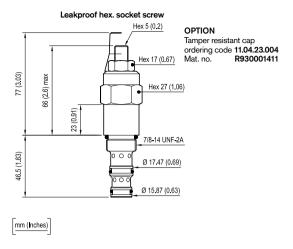


Technical data

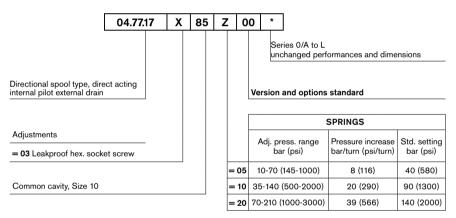
Max. operating pressure bar (psi)		350 (5000)	
Max. flow I/min. (gpm)		12 (3)	
Max. internal leakage (*) cm³/min. (cu.in./min.)		10 (0.6)	
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)	
Installation torque	Nm (ft-lbs)	41-47 (30-35)	
Weight	kg (lbs)	0.26 (0.57)	
Cavity		CA-10A-3N see data sheet RE 18325-70	
Line bodies		See data sheet RE 18325-85	
Seal kit (**) code material no.		RG10A3010520100 R901111369	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)	
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
Installation		No restrictions	
Other Technical Data		See data sheet RE 18350-50	

(*) Measured at 200 bar (2900 psi)

(**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
047717038505000	R901109500
047717038510000	R901109501
047717038520000	R901109502

Туре	Material number

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RE 18320-88/11.09 Replaces: RE 00162-02/01.06

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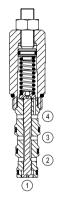
Directional spool type, direct acting external pilot external drain

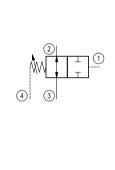
Common cavity, Size 10

VDSE-10A-6

04.77.37 - X - 85 - Z



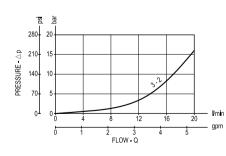




Description

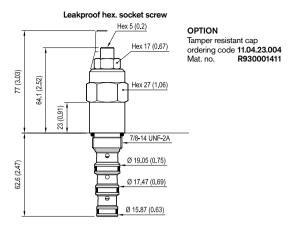
Flow is allowed from 2 to 3 until the pressure at 1 rises to the selected spring setting. Upon reaching this pressure, the spool shifts upward, blocking flow until pressure at 1 drops below the set point. The spring chamber is drained to 4 thus the setting is independent from any pressure in 3.

Performance

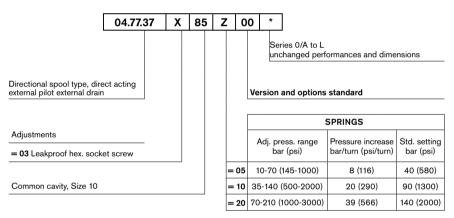


Max. operating pressure bar (psi)		bar (psi)	350 (5000)
Max. flow I/min. (gpm)		I/min. (gpm)	20 (5)
Max. internal leakage (*) cm³/min. (cu.in./min.)		(cu.in./min.)	10 (0.6)
Fluid temperatu	re range	°C (°F)	-30 to 100 (-22 to 212)
Installation torqu	ue	Nm (ft-lbs)	41-47 (30-35)
Weight		kg (lbs)	0.3 (0.66)
Cavity			CA-10A-4N see data sheet RE 18325-70
Line bodies			See data sheet RE 18325-85
Seal kit (**) code material no.			RG10A4010530100 R901111373
Fluids			Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration			Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation			No restrictions
Other Technical Data			See data sheet RE 18350-50
(4)		/aaaa :\	

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number
047737038505000	R930000977
047737038510000	R930000978
047737038520000	R930000980

Туре	Material number

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1/2 RE 18320-77/01.10 Replaces: RE 00162-02/01.06

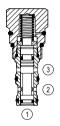
Directional spool type, direct acting external pilot external vent

Common cavity, Size 10

VDSC-10A

04.77.21 - X - 85 - Z



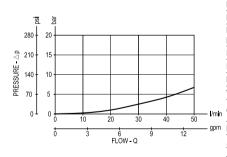




Description

Flow is blocked bi-directionally at 2 and 3 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing flow from 2 to 3, or 3 to 2. The spring chamber is sealed and vented to atmosphere, allowing consistent shifting with only spring bias pressure independent of conditions at 2 or 3.

Performance

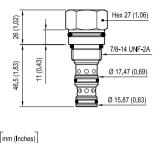


Technical data

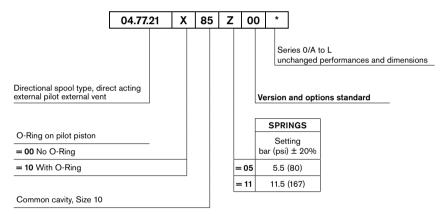
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	50 (13)
Max. internal leakage (*) cm³/min	ı. (cu.in./min.)	50 (3)
Pilot displacement volum	e cm³ (in³)	0.28 (0.02)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG10A3010530100 R930000990
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(#) 14	(0000 ')	•

(*) Measured at 200 bar (2900 psi)

(**) Only external seals for 10 valves



Ordering code



Туре	Material number
047721008505000	R901109490
047721008511000	R901109491
047721108505000	R901109950
047721108511000	R901109951

Туре	Material number

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RE 18320-91/01.10 Replaces: RE 00162-02/01.06

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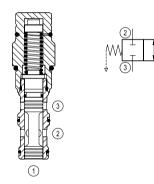
Directional spool type, direct acting external pilot external vent

Common cavity, Size 12

VDSC-12A

04.77.21 - X - 57 - Z

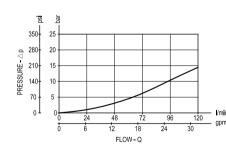




Description

Flow is blocked bi-directionally at 2 and 3 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing flow from 2 to 3, or 3 to 2. The spring chamber is sealed and vented to atmosphere, allowing consistent shifting with only spring bias pressure independent of conditions at 2 or 3.

Performance

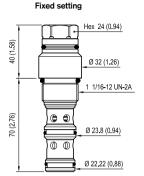


Technical data

Max. operating pressure bar (psi)		350 (5000)
Max. flow	l/min. (gpm)	120 (32)
Max. internal leakage (*) cm³/min. (cu.in./min.)		160 (10)
Pilot displacement volum	ie cm³ (in³)	1.12 (0.07)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Weight	kg (lbs)	0.35 (0.77)
Cavity		CA-12A-3N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG12A3010520100 R930000941
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

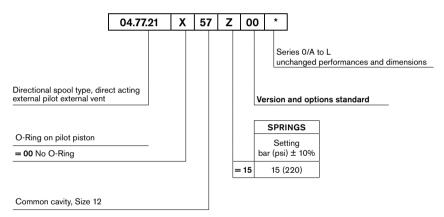
- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves

01



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
04772100571500A	R930000929		

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1/2 RE 18320-78/01.10 Replaces: RE 00162-02/01.06

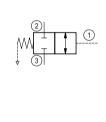
Directional spool type, direct acting external pilot external vent

Common cavity, Size 16

VDSC-16A

04.77.20 - X - 27 - Z

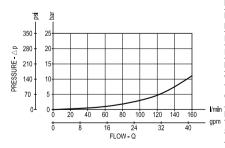




Description

Flow is blocked bi-directionally at 2 and 3 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing flow from 2 to 3, or 3 to 2. The spring chamber is sealed and vented to atmosphere, allowing consistent shifting with only spring bias pressure independent of conditions at 2 or 3.

Performance

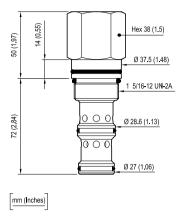


Technical data

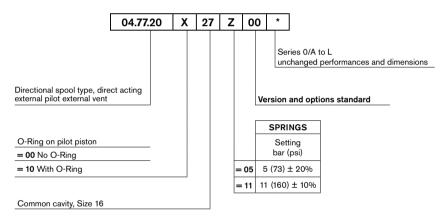
Max. operating pressure bar (psi)		350 (5000)	
Max. flow I/min. (gpm)		160 (43)	
Max. internal leakage (*) cm³/min. (cu.in./min.)		200 (12)	
Pilot displacement volume cm ³ (in ³)		1.61 (0.10)	
Fluid temperature rang	e °C (°F)	-30 to 100 (-22 to 212)	
Installation torque	Nm (ft-lbs)	108-122 (80-90)	
Weight	kg (lbs)	0.67 (1.48)	
Cavity		CA-16A-3N see data sheet RE 18325-70	
Line bodies		See data sheet RE 18325-85	
Seal kit (**)	code material no.	RG16A3010530100 R930001178	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)	
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
Installation		No restrictions	
Other Technical Data		See data sheet RE 18350-50	

(*) Measured at 200 bar (2900 psi)

(**) Only external seals for 10 valves



Ordering code



Туре	Material number
04772000270500A	R930000927
04772000271100A	R930000928
047720102705000	R930000956
047720102711000	R930000957

Туре	Material number

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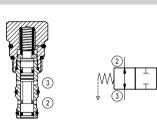
RE 18320-79/01.10 Replaces: RE 00162-02/01.06

Directional spool type, direct acting external pilot external vent

Common cavity, Size 10

VDSD-10A

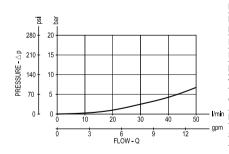
04.77.22 - X - 85 - Z



Description

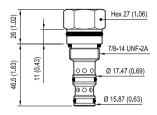
Flow is allowed bi-directionally between 2 and 3 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, blocking flow at both 2 and 3. The spring chamber is sealed and vented to atmosphere, allowing consistent shifting with only spring bias pressure independent of conditions at 2 or 3.

Performance



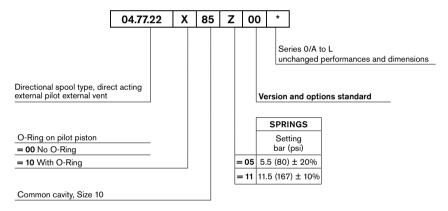
Max. operating	pressure	bar (psi)	350 (5000)
Max. flow	1/	min. (gpm)	50 (13)
Max. internal leakage (*)	cm ³ /min. (cu.in./min.)	25 (1.5)
Pilot displaceme	ent volume	cm³ (in³)	0.28 (0.02)
Fluid temperatur	re range	°C (°F)	-30 to 100 (-22 to 212)
Installation torqu	ue	Nm (ft-lbs)	41-47 (30-35)
Weight		kg (lbs)	0.2 (0.44)
Cavity			CA-10A-3N see data sheet RE 18325-70
Line bodies			See data sheet RE 18325-85
Seal kit (**)	r	code naterial no.	RG10A3010530100 R930000990
Fluids			Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration			Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation			No restrictions
Other Technical	Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number
04772200850500A	R901109495
04772200851100A	R901109497
047722108505000	R901162014
047722108511000	R901162015

Туре	Material number

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RE 18320-80/01.10 Replaces: RE 00162-02/01.06

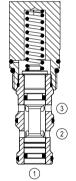
1/2

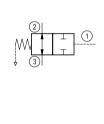
Directional spool type, direct acting external pilot external vent

Common cavity, Size 16

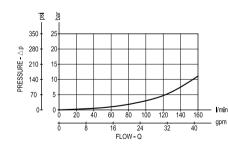
VDSD-16A

04.77.22 - X - 27 - Z





Performance



Description

Flow is allowed bi-directionally between 2 and 3 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, blocking flow at both 2 and 3. The spring chamber is sealed and vented to atmosphere, allowing consistent shifting with only spring bias pressure independent of conditions at 2 or 3.

Technical data

160 (43)
200 (12)
) 1.61 (0.1)
-30 to 100 (-22 to 212)
) 108-122 (80-90)
0.67 (1.48)
CA-16A-3N see data sheet RE 18325-70
See data sheet RE 18325-85
RG16A3010530100 R930001178
Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
No restrictions
See data sheet RE 18350-50
3

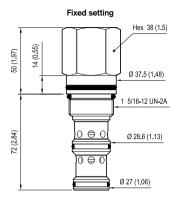
(*) Measured at 200 bar (2900 psi)

(**) Only external seals for 10 valves

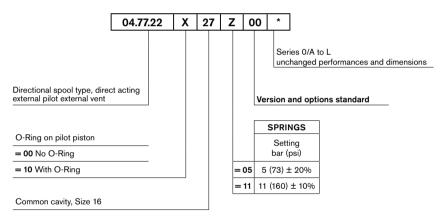
01

mm (Inches)

Dimensions



Ordering code



Туре	Material number
047722002705000	R930000925
047722002711000	R930000926
047722102705000	R930000921
047722102711000	R930000922

Туре	Material number

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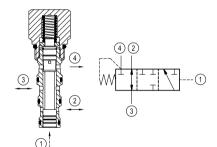
Directional spool type, direct acting external pilot internal drain

Common cavity, Size 10

VDSH-10A

04.77.25 - X - 85 - Z

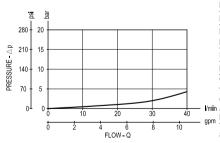




Description

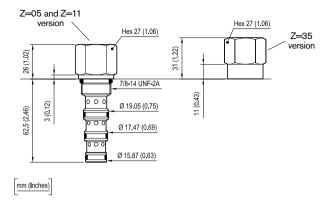
Flow is allowed bi-directionally between 2 and 3, and blocked at 4 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing bi-directional flow from 3 to 4 while blocking 2. The spring chamber is drained to 4, thus any pressure at 4 is additive to the spring bias and pilot pressure required for shifting.

Performance

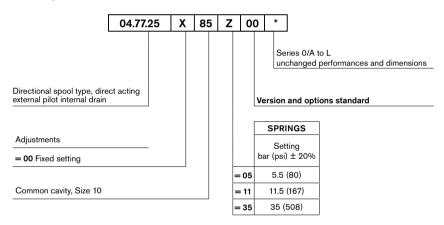


n) 40 (11)
150 (9) flow from 3 to 4 50 (3) flow from 3 to 2
F) -30 to 100 (-22 to 212)
s) 41-47 (30-35)
s) 0.2 (0.44)
CA-10A-4N see data sheet RE 18325-70
See data sheet RE 18325-85
RG10A4010530100 D. R901111373
Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
No restrictions
See data sheet RE 18350-50
1

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



Туре	Material number
047725008505000	R901109484
047725008511000	R901109485
047725008535000	R930000997

Туре	Material number

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1/2 RE 18320-85/10.09 Replaces: RE 00162-02/01.06

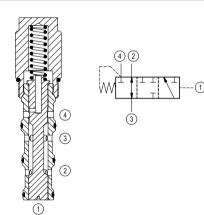
Directional spool type, direct acting external pilot internal drain

Common cavity, Size 16

VDSH-16A

04.77.25 - X - 27 - Z

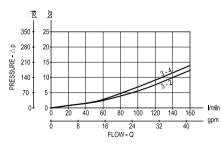




Description

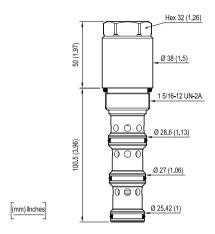
Flow is allowed bi-directionally between 2 and 3, and blocked at 4 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing bi-directional flow from 3 to 4 while blocking 2. The spring chamber is drained to 4, thus any pressure at 4 is additive to the spring bias and pilot pressure required for shifting.

Performance

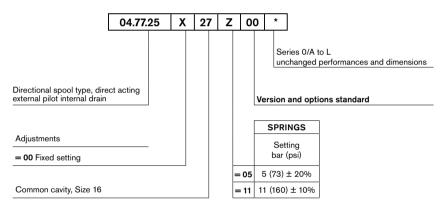


Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	160 (43)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	160 (10)
Pilot displacement volume	cm ³ (cu.in.)	1.61 (0.1)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.7 (1.54)
0. 1		CA-16A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



R930000971
R930000972

Туре	Material number

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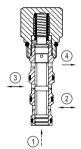
Directional spool type, direct acting external pilot internal drain

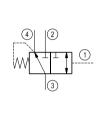
Common cavity, Size 10

VDSK-10A

04.77.26 - X - 85 - Z



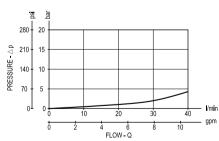




Description

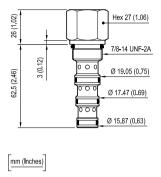
Flow is allowed from 3 to 4 and blocked at 2 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing bi-directional flow between 2 and 3 while blocking 4. The spring chamber is drained to 4, thus any pressure at 4 is additive to the spring bias and pilot pressure required for shifting.

Performance

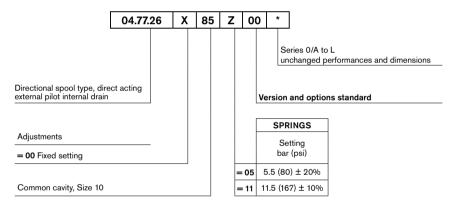


Max. operating press	ure bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	40 (11)
Max. internal leakage (*)	min. (cu.in./min.)	50 (3)
Fluid temperature ran	nge °C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
Cavity		CA-10A-4N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG10A4010530100 R901111373
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data	ı	See data sheet RE 18350-50
(4) 1.1	. (:)	·

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number
047726008505000	R901109486		
047726008511000	R901109487		

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1/2 RE 18320-86/10.09 Replaces: RE 00162-02/01.06

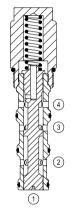
Directional spool type, direct acting external pilot internal drain

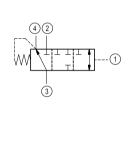
Common cavity, Size 16

VDSK-16A

04.77.26 - X - 27 - Z



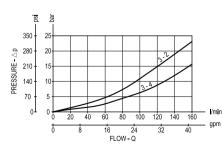




Description

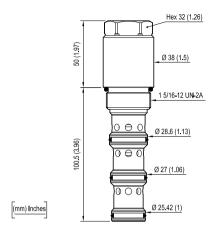
Flow is allowed from 3 to 4 and blocked at 2 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing bi-directional flow between 2 and 3 while blocking 4. The spring chamber is drained to 4, thus any pressure at 4 is additive to the spring bias and pilot pressure required for shifting.

Performance

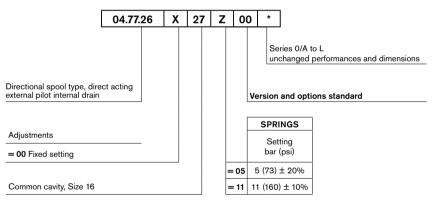


Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	160 (43)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	160 (10)
Pilot displacement volume	cm3(cu.in.)	1.61 (0.1)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	108-122 (80-90)
Weight	kg (lbs)	0.66 (1.46)
Carrier		CA-16A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit (**)	code material no.	RG16A4010530100 R930000973
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
(4)	("	

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



Note: Special settings available. Contact factory authorized representative for ordering code

Туре	Material number	Туре	Material number
047726002705000	R930000975		
047726002711000	R930000976		

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1/2 RE 18320-87/10.09 Replaces: RE 00162-02/01.06

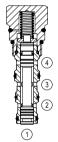
Directional spool type, direct acting external pilot external vent

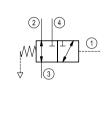
Common cavity, Size 10

VDSJ-10A

04.7719 - X - 85 - Z



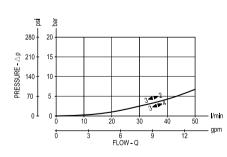




Description

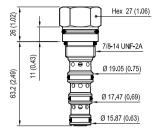
Flow is allowed bi-directionally between 2 and 3, and blocked at 4 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing bi-directional flow between 3 and 4 while blocking 2. The spring chamber is sealed and vented to atmosphere, allowing consistent shifting with only spring bias pressure independent of conditions at 2 or 3.

Performance



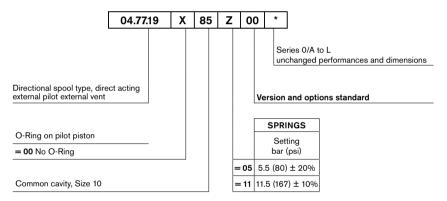
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	50 (13)
Max. internal leakage (*) cm³/mir	ı. (cu.in./min.)	50 (3)
Pilot displacement volume	cm³ (cu.in:)	0.28 (0.02)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Weight	kg (lbs)	0.2 (0.44)
0. 1		CA-10A-4N
Cavity		see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-80
Seal kit (**)	code	RG10A4010530100
Sear Kit ()	material no.	R901111373
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
047719008505000	R930000952		
047719008511000	R930000953		

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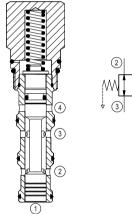
Directional spool type, direct acting external pilot external vent

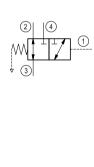
Common cavity, Size 16

VDSJ-16A

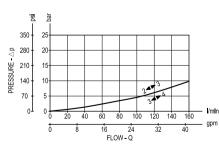
04.7719 - X - 27 - Z







Performance

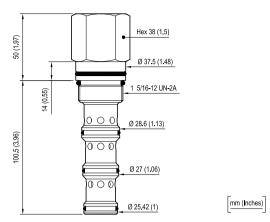


Description

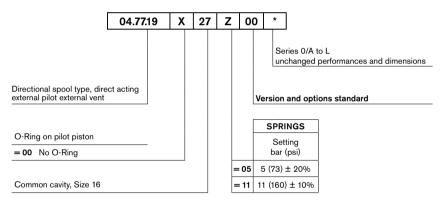
Flow is allowed bi-directionally between 2 and 3, and blocked at 4 until pressure at 1 rises to overcome the spring bias against the spool. When this bias pressure is surpassed, the spool shifts, allowing bi-directional flow between 3 and 4 while blocking 2. The spring chamber is sealed and vented to atmosphere, allowing consistent shifting with only spring bias pressure independent of conditions at 2 or 3.

Max. operating pressure bar (psi)	350 (5000)
Max. flow I/min. (gpm)	160 (43)
Max. internal leakage (*) cm³/min. (cu.in./min.)	80 (5)
Pilot displacement volume cm³ (in³)	1.61 (0.1)
Fluid temperature range °C (°F)	-30 to 100 (-22 to 212)
Installation torque Nm (ft-lbs)	108-122 (80-90)
Weight kg (lbs)	0.74 (1.63)
Cavity	CA-16A-4N
Cavity	see data sheet RE 18325-70
Line bodies	See data sheet RE 18325-85
Seal kit (**) code	
material no.	R930000973
ⁿ Fluids	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation	No restrictions
Other Technical Data	See data sheet RE 18350-50
(1) 1	

- (*) Measured at 200 bar (2900 psi)
- (**) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number
047719002705000	R901109498		
047719002711000	R901109499		
		_	

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1/2 RE 18320-89/11.09

Replaces: RE 00162-02/01.06

Directional spool type piloted, 4-way

Special cavity

VDSP-20B

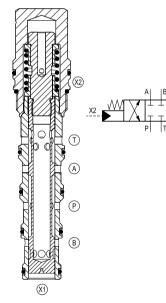
04.77.35 - X - 93 - Z



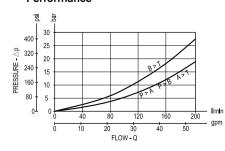
Description

In neutral position, all ports A, B, P, and T are blocked.

When remote pilot signal at port X1 rises to overcome the spring bias against the spool, the valve shifts to allow flow between P and A, and between T and B. When remote pilot signal at port X2 rises to overcome the spring bias against the spool, the valve shifts to allow flow between P and B, and between A and T.



Performance



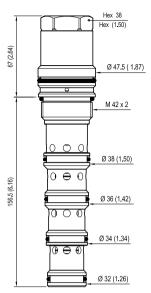
Technical data

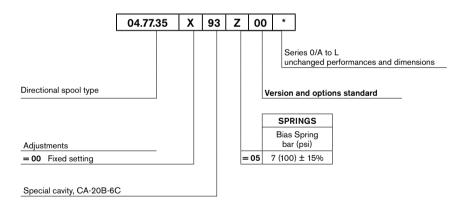
(5000) (5000) (53)
53)
.6)
1.7)
o 100 (-22 to 212)
155 (92-114)
3.08)
0B-6C
0B6010530100 0001706
ral-based or synthetics with atting properties at viscosities of 500 mm ² /s (cSt)
nal value max. 10µm (NAS 8) 4406 19/17/14
estrictions
data sheet RE 18350-50
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

(*) Measured at 300 bar (4500 psi) from A-B to P-T-X1-X2

(**) Only external seals for 10 valves

Ordering code





Туре	Material number	Туре	Material number
04773500930500A	R930000993		

Bosch Rexroth Oil Control S.p.A.
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mm (Inches)

1/2 RE 18320-90/11.09 Replaces: RE 00162-02/01.06

Directional spool type piloted, 4-way

Special cavity

VDSP-20B-R

04.77.36 - X - 93 - Z

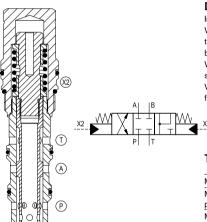


Description

In neutral position, all ports A, B, P, and T are blocked.

When remote pilot signal at port X1 rises to overcome the spring bias against the spool, the valve shifts to allow flow between port P, A and B, and port T is blocked.

When remote pilot signal at port X2 rises to overcome the spring bias against the spool, the valve shifts to allow flow between P and B, and between A and T. VDSP-20B-R, compared to VDSB-20B, should be used when regeneration of flow is requested.



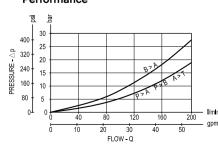
Technical data

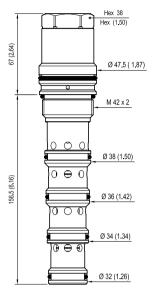
Max. operating pressure bar (psi)		350 (5000)
Max. pressure admitted ports X1 and X2	bar (psi)	210 (3000)
Max. flow	I/min. (gpm)	200 (53)
Max. internal leakage (*) cm ³ /m	in. (cu.in./min.)	10 (0.6)
Pilot displacement volume	cm ³ (cu.in.)	3.5 (1.7)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	125-155 (92-114)
Weight	kg (lbs)	1.4 (3.08)
Special cavity		CA-20B-6C
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Measured at 300 bar (4500 psi) from A-B to P-T-X1-X2

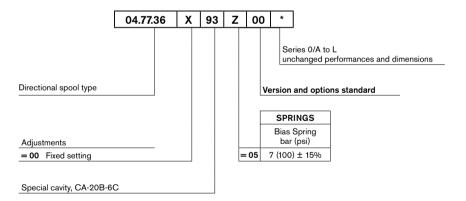
(**) Only external seals for 10 valves

Performance





Ordering code



Туре	Material number	Туре	Material number
04773600930500A	R930000832		

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mm (Inches)

Mechanical cartridge valves

Directional manual pilot operated

Designation	Description	Cavity	Code	Data sheet	Page 0
Manual operated, poppet 2-way normally closed	VMI-8A-2A-06-NC	Size 08	OD55X1837Z	18326-01	355
Manual operated, poppet 2-way normally closed	VMI-8A-2A-06-NC-VU	Special	OD55111937Z	18326-02	359
Manual operated, poppet 2-way normally closed	VMI-8A-2A-09-NC	Special	OD55X1737Z	18326-05	363
Manual operated, poppet 2-way normally closed	VMI-8A-2A-12-NC	Special	OD55X2137Z	18326-07	367
Manual operated, poppet 2-way normally open	VMI-8A-2A-06-NA	Size 08	OD55X181700	18326-03	371
Manual operated, poppet 2-way normally open	VMI-8A-2A-06-NA-VU	Special	OD55121917Z	18326-04	375
Manual operated, poppet 2-way normally open	VMI-8A-2A-09-NA	Special	OD55X171700	18326-06	379
Manual operated, poppet 2-way normally open	VMI-8A-2A-12-NA	Special	OD55X211700	18326-08	383

RE 18326-01/01.10 Replaces: 01.06 1/4

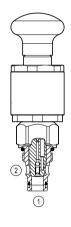
Directional control valves manual operated poppet 2-way normally closed

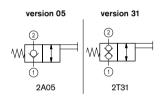
Common cavity, Size 08

VMI-8A-2A-06-NC

OD.55 - X - 18.37 - Z







General

deliciai			
Weight	kg (lbs)	0.28 (0.62)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

Hydraulic

пуштацііс		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit - version 05	code material no.	
Seal kit - version 31	code material no.	RG08A2010530100 R901101544
Other technical data		See data sheet RE 18350-50

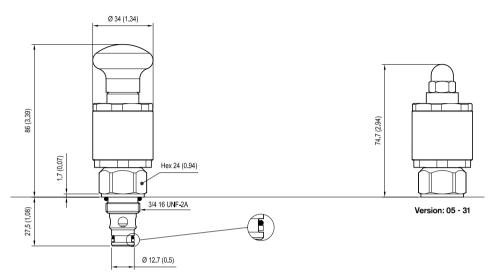
Only for cam-operated valves:

Operating stroke	mm (in) 3 (0.12)	2)
Max. overstroke	mm (in) 0.5 (0.02)	0.02)

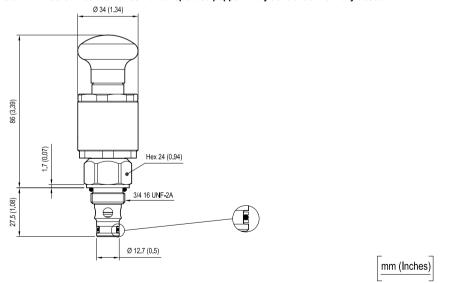
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 05)

01

Version 05: Directional control valves manual operated poppet 2-way normally closed

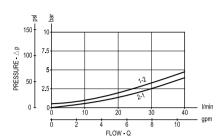


Version 31: Directional control valves manual operated poppet 2-way double lock normally closed

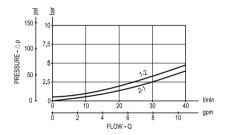


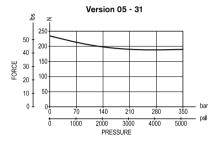
Performance graphs

Version 05

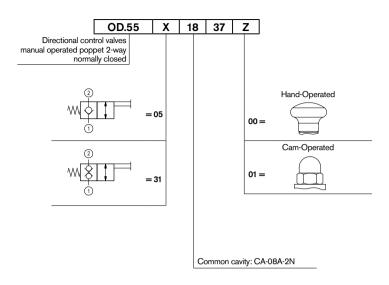


Version 31





Ordering code



Туре	Material number
OD550518370000	R901109436
OD550518370100	R901109443
OD553118370000	R901109444
OD553118370100	R901109445

Туре	Material number

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RE 18326-02/01.10 Replaces: 01.06

1/4

Directional control valves manual operated poppet 2-way normally closed

Special cavity, 019-E

VMI-8A-2A-06-NC-VU

OD.55.11.19.37 - Z









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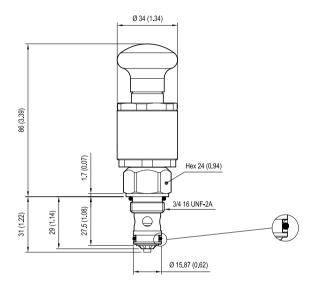
General			
Weight	kg (lbs)	0.28 (0.62)	Ī
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		019-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG19E201053010 R934003561
Other technical data		See data sheet RE 18350-50

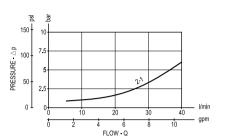
Only for cam-operated valves:

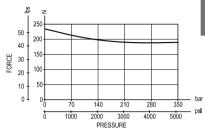
- ,	
Operating stroke	mm (in) 3 (0.12)
Max. overstroke	mm (in) 0.5 (0.02)

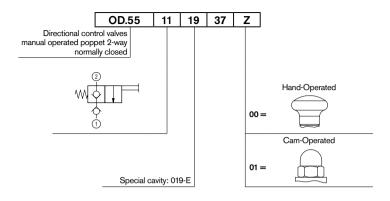
Directional control valves manual operated poppet 2-way normally closed - Special cavity



Version 11







Туре	Material number	Туре	Material number
OD551119370000	R934003668		
OD551119370100	R934003669		
		 _	

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RE 18326-05/01.10 Replaces: 01.06

1/4

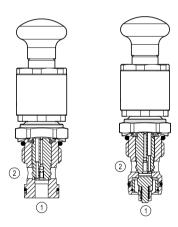
Directional control valves manual operated poppet 2-way normally closed

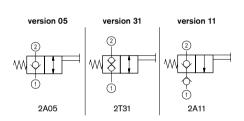
Special cavity, 017-E

VMI-8A-2A-09-NC

OD.55 - X - 17.37 - Z







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		n		

Weight	kg (lbs)	0.28 (0.62)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

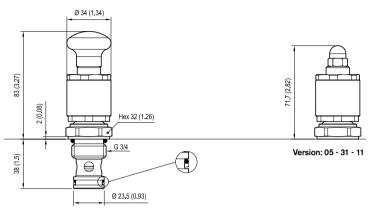
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	70 (19)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		017-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 05	code material no.	RG17E201052010 R934003562
Seal kit - version 31		RG17E201053010 R934003563
Other technical data		See data sheet RE 18350-50

Only for carri-operated valves.				
	Operating stroke	mm (in)	3 (0.12)	
	Max overstroke	mm (in)	0.5 (0.02)	

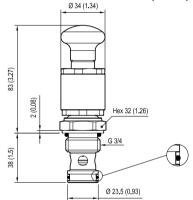
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 05)

01

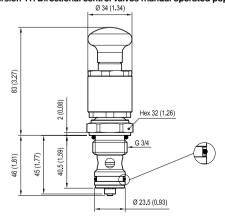
Version 05: Directional control valves manual operated poppet 2-way normally closed - Special cavity



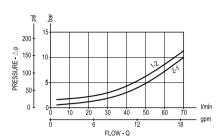
Version 31: Directional control valves manual operated poppet 2-way double lock normally closed - Special cavity



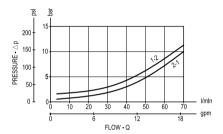
Version 11: Directional control valves manual operated poppet 2-way normally closed - Special cavity



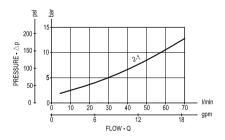
Version 05



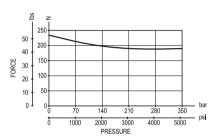
Version 31

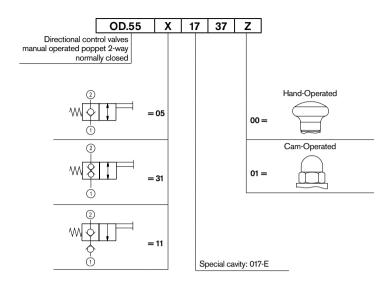


Version 11



Version 05 - 31 - 11





Туре	Material number
OD550517370000	R934001424
OD550517370100	R934001425
OD553117370000	R934001437
OD553117370100	R934001438
OD551117370000	
OD551117370100	R934003671

Туре	Material number		

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RE 18326-07/01.10 Replaces: 01.06

1/4

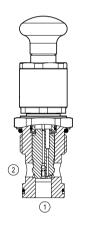
Directional control valves manual operated poppet 2-way normally closed

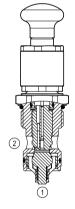
Special cavity, 021-E

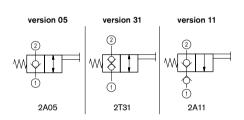
VMI-8A-2A-12-NC

OD.55 - X - 21.37 - Z









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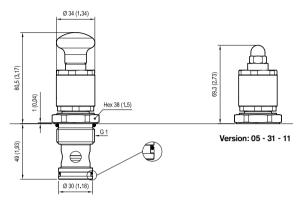
General		
Weight	kg (lbs)	0.5 (1.1)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	150 (39)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		021-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 05		RG21E201052010 R934003566
Seal kit - version 31		RG21E201053010 R934003567
Other technical data		See data sheet RE 18350-50

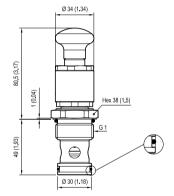
Only for carri operated			
Operating stroke	mm (in)	3 (0.12)	
Max overstroke	mm (in)	0.5 (0.02)	Ī

IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 05)

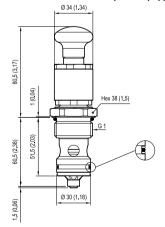
Version 05: Directional control valves manual operated poppet 2-way normally closed - Special cavity



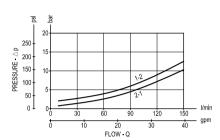
Version 31: Directional control valves manual operated poppet 2-way double lock normally closed - Special cavity



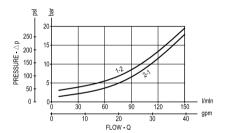
Version 11: Directional control valves manual operated poppet 2-way normally closed - Special cavity



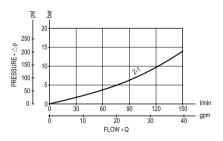
Version 05



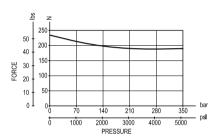
Version 31

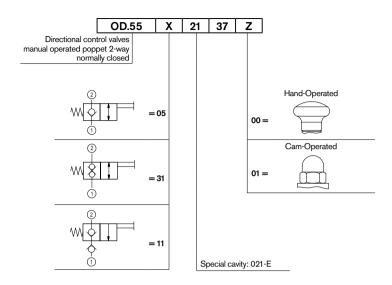


Version 11



Version 05 - 31 - 11





Material number
R934001430
R934001431
R934001441
R934001442

Туре	Material number	

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RE 18326-03/01.10 Replaces: 01.06 1/4

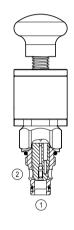
Directional control valves manual operated poppet 2-way normally open

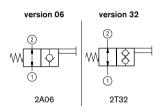
Common cavity, Size 08

VMI-8A-2A-06-NA

OD.55 - X - 18.17.00







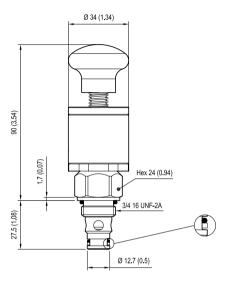
General

Weight	kg (lbs)	0.27 (0.6)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

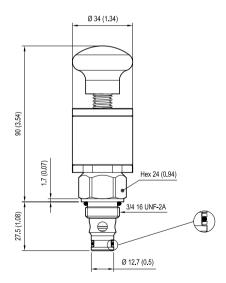
Hydraulic

bar (psi)	350 (5000)
I/min. (gpm)	40 (11)
drops/min.	20
°C (°F)	-20 to 80 (-4 to 176)
	Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Nm (ft-lbs)	39-51 (29-38)
	Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
	CA-08A-2N see RE 18325-70
	See data sheet RE 18325-85
code material no.	RG08A2010520100 R901101437
	RG08A2010530100 R901101544
	See data sheet RE 18350-50
	l/min. (gpm) drops/min. °C (°F) Nm (ft-lbs) code material no. code

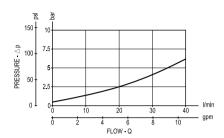
Version 06: Directional control valves manual operated poppet 2-way normally open



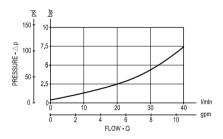
Version 32: Directional control valves manual operated poppet 2-way double lock normally open



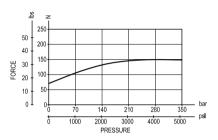


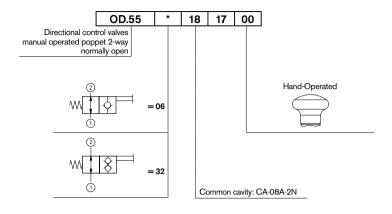


Version 32



Version 06 - 32





Туре	Material number	Туре	Material number
OD550618170000	R901109446		
OD553218170000	R901109447		

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cartridges@oilcontrol.com
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RE 18326-04/01.10

Replaces: 01.06

1/4

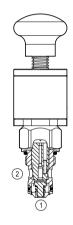
Directional control valves manual operated poppet 2-way normally open

Special cavity, 019-E

VMI-8A-2A-06-NA-VU

OD.55.12.19.17 - Z









2A12

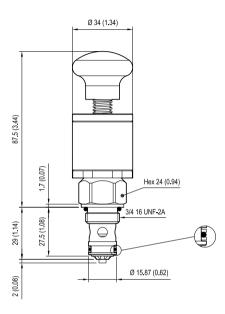
General		
Weight	kg (lbs)	0.27 (0.6)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

350 (5000)
40 (11)
20
-20 to 80 (-4 to 176)
Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
39-51 (29-38)
Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
019-E see RE 18325-75
See data sheet RE 18325-85
RG19E201053010 R934003561
See data sheet RE 18350-50

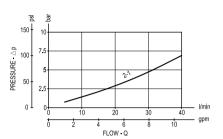
Only for cam-operated valves:

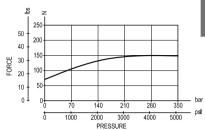
Operating	stroke	mm (in)	3 (0.12)
Max. overs	troke	mm (in)	0.5 (0.02)

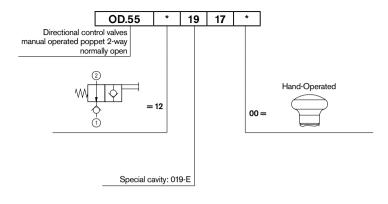
Directional control valves manual operated poppet 2-way normally open - Special cavity



Version 12







Material number	Туре	Material number
R934003670		
	<u> </u>	

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RE 18326-06/01.10 Replaces: 01.06 1/4

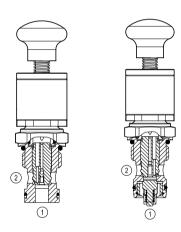
Directional control valves manual operated poppet 2-way normally open

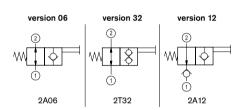
Special cavity, 017-E

VMI-8A-2A-09-NA

OD.55 - X - 17.17.00







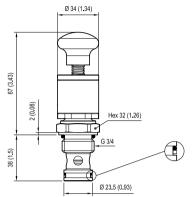
General

Weight	kg (lbs)	0.36 (0.79)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

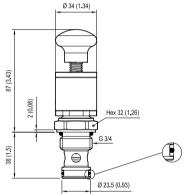
Hydraulic

Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	70 (19)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		017-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 06		RG17E201052010 R934003562
Seal kit - version 12		RG17E201053010 r934003563
Other technical data		See data sheet RE 18350-50

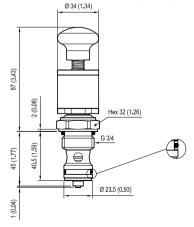
Version 06: Directional control valves manual operated poppet 2-way normally open - Special cavity



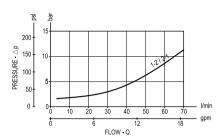
Version 32: Directional control valves manual operated poppet 2-way double lock normally open - Special cavity



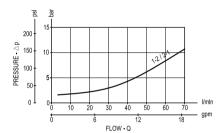
Version 12: Directional control valves manual operated poppet 2-way normally open - Special cavity



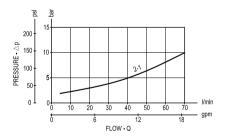
Version 06



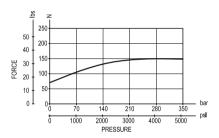
Version 32

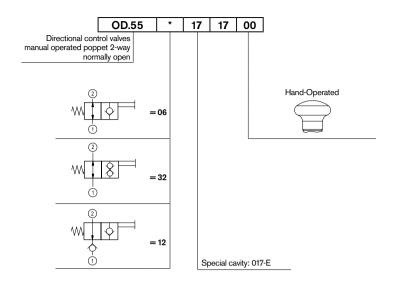


Version 12



Version 06 - 32 - 12





Туре	Material number	7	Гуре
OD550617170000	R934001433		
OD553217170000	R934003672		
OD551217170000	R934003673		
		_	

Туре	Material number
-	
-	
-	
-	

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RE 18326-08/01.10 Replaces: 01.06

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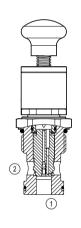
Directional control valves manual operated poppet 2-way normally open

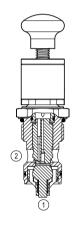
Special cavity, 021-E

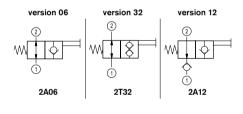
VMI-8A-2A-12-NA

OD.55 - X - 21.17.00







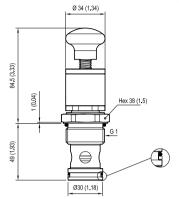


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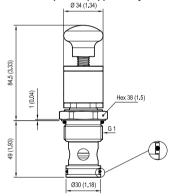
aciiciai			
Weight	kg (lbs)	0.5 (1.1)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	150 (39)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		021-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 06	code material no.	R934003566
Seal kit - version 32	code material no.	RG21E201053010 R934003567
Other technical data		See data sheet RE 18350-50

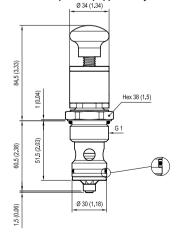
Version 06: Directional control valves manual operated poppet 2-way normally open - Special cavity



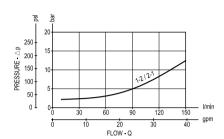
Version 32: Directional control valves manual operated poppet 2-way double lock normally open - Special cavity



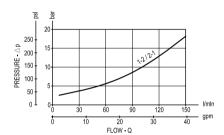
Version 12: Directional control valves manual operated poppet 2-way normally open - Special cavity



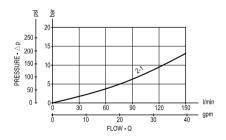
Version 06



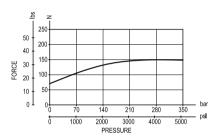
Version 32

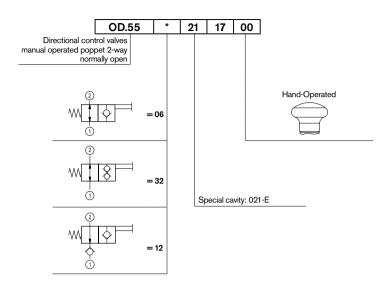


Version 12



Version 06 - 32 - 12





Туре	Material number	Туре	Material number
OD550621170000	R901122181		
		-	
		-	

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Mechanical cartridge valves

Directional hydraulic pilot operated

Designation	Description	Cavity	Code	Data sheet	Page (
Hydraulic operated, poppet 2-way normally closed	VOI-8A-2A-06-NC	Size 08	OD75X18Y00	18326-40	389
Hydraulic operated, poppet 2-way normally closed	VOI-8A-2A-06-NC-VU	Special	OD751119Y00	18326-41	393
Hydraulic operated, poppet 2-way normally closed	VOI-8A-2A-09-NC	Special	OD75X17Y00	18326-44	397
Hydraulic operated, poppet 2-way normally closed	VOI-8A-2A-12-NC	Special	OD75X21Y00	18326-46	401
Hydraulic operated, poppet 2-way normally open	VOI-8A-2A-06-NA	Size 08	OD75X18Y00	18326-42	405
Hydraulic operated, poppet 2-way normally open	VOI-8A-2A-06-NA-VU	Special	OD751219Y00	18326-43	409
Hydraulic operated, poppet 2-way normally open	VOI-8A-2A-09-NA	Special	OD75X17Y00	18326-45	413
Hydraulic operated, poppet 2-way normally open	VOI-8A-2A-12-NA	Special	OD75X21Y00	18326-47	417

RE 18326-40/01.10 Replaces: 01.06

IMPORTANT: When valve is not operated, flow from 1

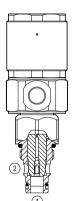
1/4

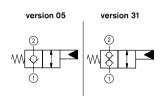
Directional control valves hydraulic operated poppet 2-way normally closed

Common cavity, Size 08

VOI-8A-2A-06-NC

OD.75 - X - 18 - Y - 00





Canaral

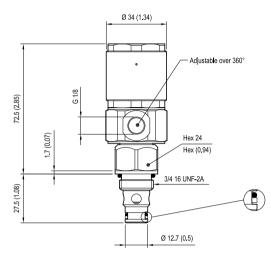
acriciai			
Weight	kg (lbs)	0.27 (0.58)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

to 2 is not recommended due to high opening pressure. (version 05)

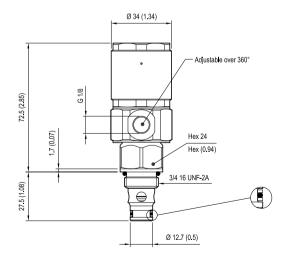
Hydraulic bar (psi) 350 (5000) Max. operating pressure Max. flow I/min. (gpm) 40 (11) Max. internal leakage drops/min. 20 Fluid temperature range °C (°F) -20 to 80 (-4 to 176) Mineral-based or synthetics with Fluids lubricating properties at viscosities of 20 to 380 mm²/s (cSt) Installation torque Nm (ft-lbs) 39-51 (29-38) Nominal value max. 25µm (NAS 8) Filtration ISO 4406 19/17/14 Cavity CA-08A-2N see RE 18325-70 Line bodies See data sheet RE 18325-85 code RG08A20110520100 Seal kit - version 05 R901101437 material no. code RG08A2010530100 Seal kit - version 31 material no. R901101544 See data sheet RE 18350-50 Other technical data

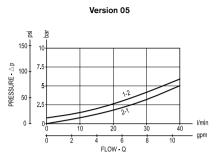
01

Version 05: Directional control valves hydraulic operated poppet 2-way normally closed

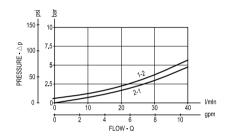


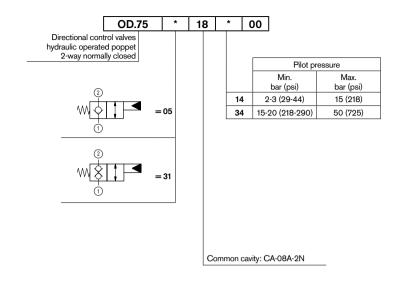
Version 31: Directional control valves hydraulic operated poppet 2-way double lock normally closed





Version 31





Туре	Material number
OD750518140000	R901109467
OD750518340000	R901109471
OD753118140000	R901109472
OD753118340000	R901109473

Туре	Material number

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RE 18326-41/01.10 Replaces: 01.06 1/4

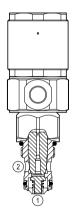
Directional control valves hydraulic operated poppet 2-way normally closed

Special cavity, 019-E

VOI-8A-2A-06-NC-VU

OD.75.11.19 - Y - 00









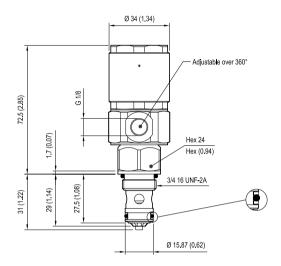
General

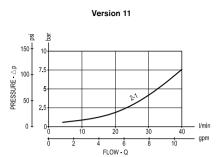
Weight	kg (lbs)	0.27 (0.58)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

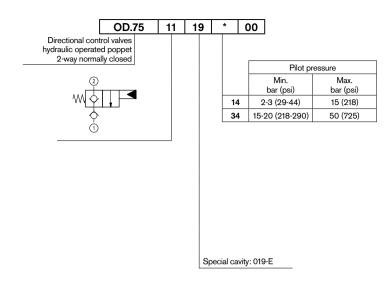
Hydraulic

rryuraunc		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		019-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG19E201053010 R934003561
Other technical data		See data sheet RE 18350-50

Directional control valves hydraulic operated poppet 2-way normally closed - Special cavity







Туре	Material number	Туре	Material number
OD751119340000	R934003674		

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RE 18326-44/01.10 Replaces: 01.06

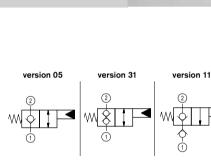
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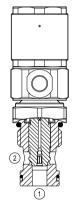
Directional control valves hydraulic operated poppet 2-way normally closed

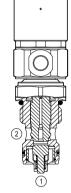
Special cavity, 017-E

VOI-8A-2A-09-NC

OD.75 - X - 17 - Y - 00







General

Other technical data

Weight	kg (lbs)	0.36 (0.79)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 05)

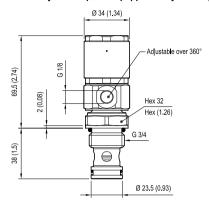
Hydraulic bar (psi) 350 (5000) Max. operating pressure Max. flow I/min. (gpm) 70 (19) Max. internal leakage drops/min. 20 Fluid temperature range °C (°F) -20 to 80 (-4 to 176) Mineral-based or synthetics with Fluids lubricating properties at viscosities of 20 to 380 mm²/s (cSt) Installation torque Nm (ft-lbs) 54-66 (40-49) Nominal value max. 25µm (NAS 8) Filtration ISO 4406 19/17/14 Cavity 017-E see RE 18325-75 Line bodies See data sheet RE 18325-85 code RG17E201052010 Seal kit - version 05-11 R934003562 material no. code RG17E201053010 Seal kit - version 31

R934003563

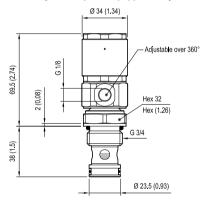
See data sheet RE 18350-50

01

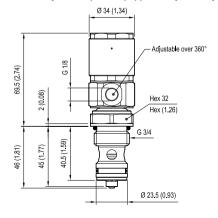
Version 05: Directional control valves hydraulic operated poppet 2-way normally closed - Special cavity



Version 31: Directional control valves hydraulic operated poppet 2-way double lock normally closed - Special cavity

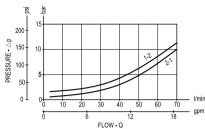


Version 11: Directional control valves hydraulic operated poppet 2-way normally closed - Special cavity



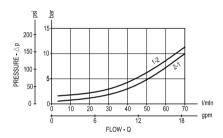
mm (Inches)



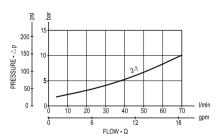


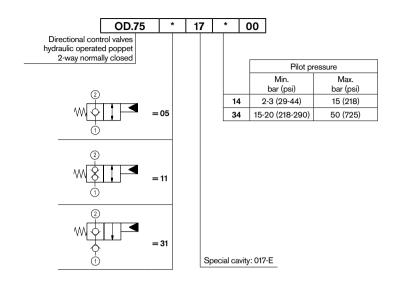
Version 05

Version 31



Version 11





Туре	Material number
OD750517140000	R934001466
OD750517340000	R934001467
OD753117140000	R934001482
OD753117340000	R987072045
OD751117340000	R934001478

Туре	Material number

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Subject to change.

RE 18326-46/01.10 Replaces: 01.06 1/4

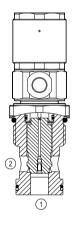
Directional control valves hydraulic operated poppet 2-way normally closed

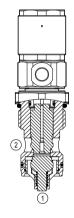
Special cavity, 021-E

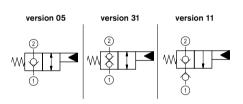
VOI-8A-2A-12-NC

OD.75 - X - 21 - Y - 00









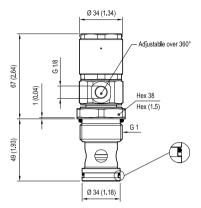
General

Weight	kg (lbs)	0.5 (1.1)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

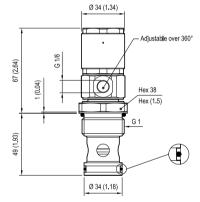
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 05)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	150 (39)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		021-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 05-11		RG21E201052010 R934003566
Seal kit - version 31		RG21E201053010 R934003567
Other technical data		See data sheet RE 18350-50

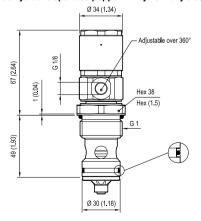
Version 05: Directional control valves hydraulic operated poppet 2-way normally closed - Special cavity



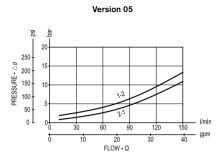
Version 31: Directional control valves hydraulic operated poppet 2-way double lock normally closed - Special cavity



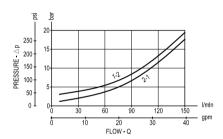
Version 11: Directional control valves hydraulic operated poppet 2-way normally closed - Special cavity



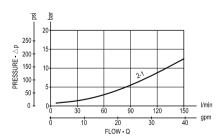
mm (Inches)

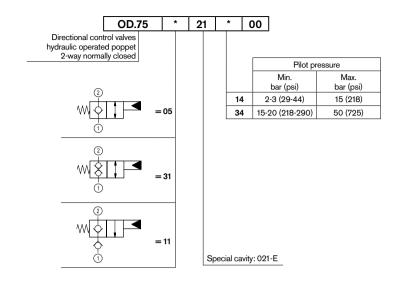


Version 31



Version 11





Туре	Material number			
OD750521140000	R934001470			
OD750521340000	R987246098			
OD753121140000	R934001486			
OD753121340000	R934001487			
OD751121340000	R934001479			

Туре	Material number	

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RE 18326-42/01.10 Replaces: 01.06

IMPORTANT: When valve is not operated, flow from 1

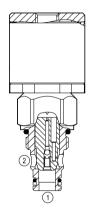
1/4

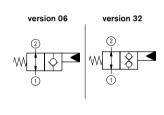
Directional control valves hydraulic operated poppet 2-way normally open

Common cavity, Size 08

VOI-8A-2A-06-NA

OD.75 - X - 18 - Y - 00





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u	c		c	ıa	ı

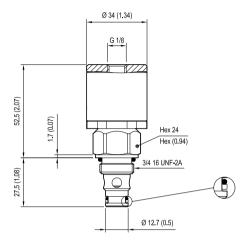
Weight	kg (lbs)	0.25 (0.55)
Installation orientation		Optional
Ambient temperature rang	e °C (°F)	-30 to 60 (-22 to 140)

to 2 is not recommended due to high opening pressure. (version 06)

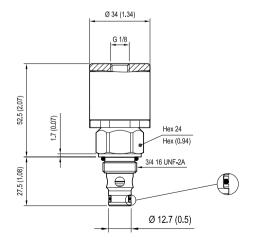
Hydraulic bar (psi) 350 (5000) Max. operating pressure Max. flow I/min. (gpm) 40 (11) Max. internal leakage drops/min. 20 Fluid temperature range °C (°F) -20 to 80 (-4 to 176) Mineral-based or synthetics with Fluids lubricating properties at viscosities of 20 to 380 mm²/s (cSt) Installation torque Nm (ft-lbs) 39-51 (29-38) Nominal value max. 25µm (NAS 8) Filtration ISO 4406 19/17/14 Cavity CA-08A-2N see RE 18325-70 Line bodies See data sheet RE 18325-85 code RG08A2010520100 Seal kit - version 06 R901101437 material no. code RG08A2010530100 Seal kit - version 32 material no. R901101544 See data sheet RE 18350-50 Other technical data

01

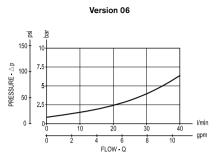
Version 06: Directional control valves hydraulic operated poppet 2-way normally open



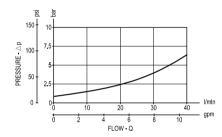
Version 32: Directional control valves hydraulic operated poppet 2-way double lock normally open

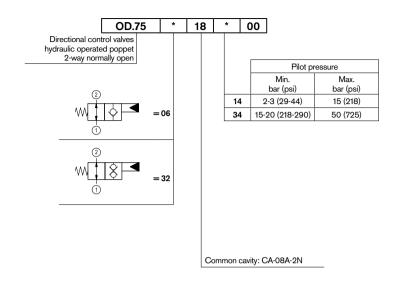


mm (Inches)



Version 32





Туре	Material number	Туре
OD750618140000	R901109474	
OD750618340000	R901109475	
OD753218340000	R901109478	

туре	lype Material number		
·			
-			

Material number

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RE 18326-43/01.10 Replaces: 01.06 1/4

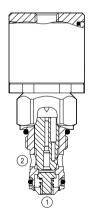
Directional control valves hydraulic operated poppet 2-way normally open

Special cavity, 019-E

VOI-8A-2A-06-NA-VU

OD.75.12.19 - Y - 00









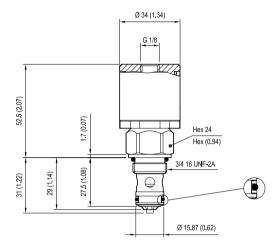
General

Weight	kg (lbs)	0.25 (0.55)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

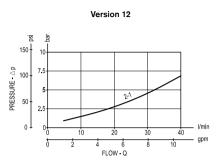
Hydraulic

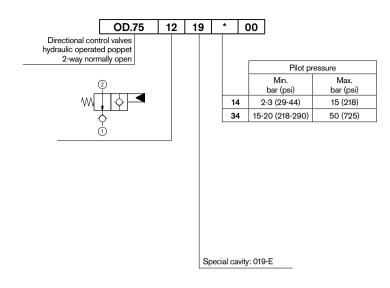
пушашіс		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		019-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG19E201052010 R934003560
Other technical data		See data sheet RE 18350-50

Directional control valves hydraulic operated poppet 2-way normally open - Special cavity



mm (Inches)





Туре	Material number	Туре	Material number
OD751219340000	R934003675		

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derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.

RE 18326-45/01.10 Replaces: 01.06 1/4

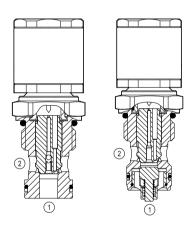
Directional control valves hydraulic operated poppet 2-way normally open

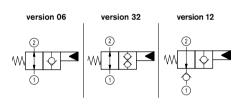
Special cavity, 017-E

VOI-8A-2A-09-NA

OD.75 - X - 17 - Y - 00







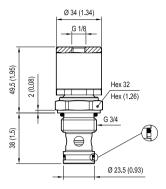
General

Weight	kg (lbs)	0.34 (0.75)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

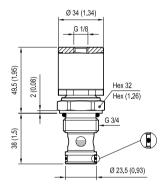
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 06)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	70 (19)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		017-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 06		RG17E201052010 R934003562
Seal kit - version 32-12		RG17E201053010 R934003563
Other technical data		See data sheet RE 18350-50

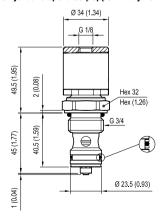
Version 06: Directional control valves hydraulic operated poppet 2-way normally open - Special cavity

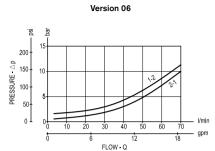


Version 32: Directional control valves hydraulic operated poppet 2-way double lock normally open - Special cavity

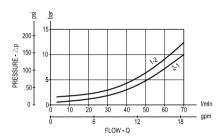


Version 12: Directional control valves hydraulic operated poppet 2-way normally open - Special cavity

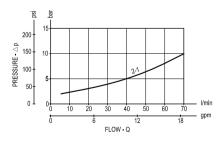


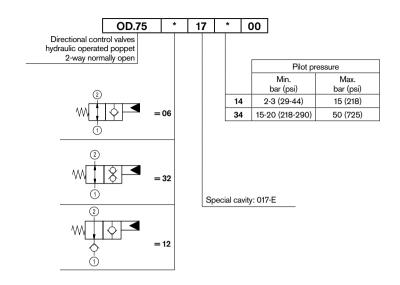


Version 32



Version 12





Туре	Material number	Туре
OD750617140000	R934001472	
OD750617340000	R987248645	
OD753217140000	R934001488	
OD753217340000	R934001490	

Туре	Material number		
<u> </u>			

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RE 18326-47/01.10 Replaces: 01.06 1/4

01

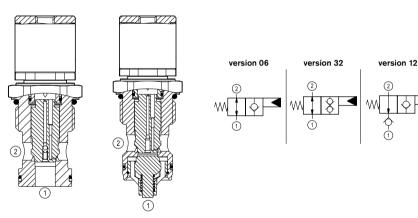
Directional control valves hydraulic operated poppet 2-way normally open

Special cavity, 021-E

VOI-8A-2A-12-NA

OD.75 -X - 21 - Y - 00





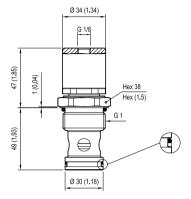
General

General			
Weight	kg (lbs)	0.48 (1.1)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

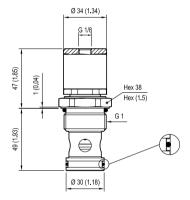
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 06)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	150 (39)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		021-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 06-12		RG21E201052010 R934003566
Seal kit - version 32		RG21E201053010 R934003567
Other technical data		See data sheet RE 18350-50

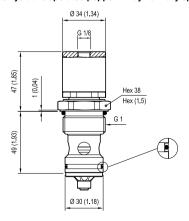
Version 06: Directional control valves hydraulic operated poppet 2-way normally open - Special Cavity

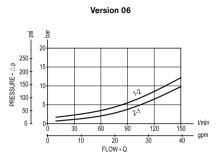


Version 32: Directional control valves hydraulic operated poppet 2-way double lock normally open - Special Cavity

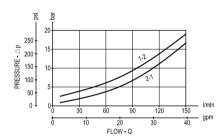


Version 12: Directional control valves hydraulic operated poppet 2-way normally open - Special cavity

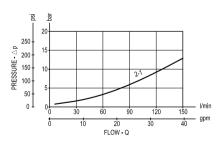


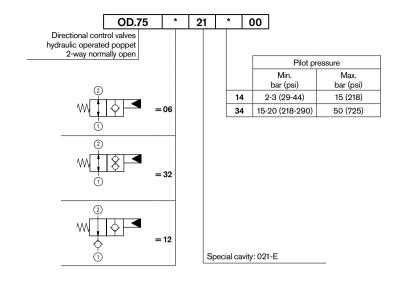


Version 32



Version 12





Туре	Material number
OD750621140000	R934001476
OD750621340000	R987246099
OD753221140000	R934001493
OD753221340000	R934001494
OD751221340000	R934001480

Туре	Material number

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Mechanical cartridge valves

Directional pneumatic pilot operated

Designation	Description	Cavity	Code	Data sheet	Page
Pneumatic operated, poppet 2-way normally closed	VPI-8A-2A-06-NC	Size 08	OD65X181400	18326-70	423
Pneumatic operated, poppet 2-way normally closed	VPI-8A-2A-06-NC-VU	Special	OD6511191400	18326-71	427
Pneumatic operated, poppet 2-way normally closed	VPI-8A-2A-09-NC	Special	OD65X171400	18326-74	431
Pneumatic operated, poppet 2-way normally closed	VPI-8A-2A-12-NC	Special	OD65X211400	18326-76	435
Pneumatic operated, poppet 2-way normally open	VPI-8A-2A-06-NA	Size 08	OD65X181400	18326-72	439
Pneumatic operated, poppet 2-way normally open	VPI-8A-2A-06-NA-VU	Special	OD6512191400	18326-73	443
Pneumatic operated, poppet 2-way normally open	VPI-8A-2A-09-NA	Special	OD65X171400	18326-75	447
Pneumatic operated, poppet 2-way normally open	VPI-8A-2A-12-NA	Special	OD65X211400	18326-77	451
Pneumatic operated, poppet 2-way normally open	VPI-8A-2A-12-NA-VU	Special	OD6512211400	18326-78	455

RE 18326-70/01.10 Replaces: 01.06

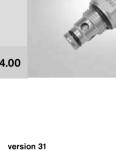
1/4

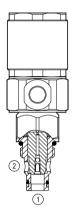
Directional control valves pneumatic operated poppet 2-way normally closed

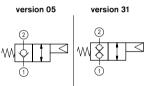
Common cavity, Size 08

VPI-8A-2A-06-NC

OD.65 - X - 18.14.00







Ganaral

aonorai			
Weight	kg (lbs)	0.27 (0.58)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit - version 05		RG08A2010520100 R901101437
Seal kit - version 31		RG08A2010530100 R901101544
Other technical data		See data sheet RE 18350-50

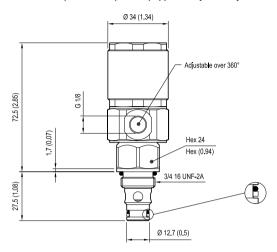
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 05)

Pilot pressure

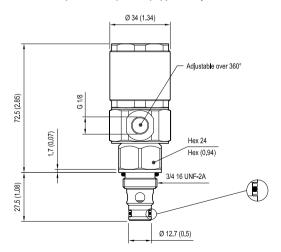
bar (psi) Max. 15 (218) bar (psi) Min. 4 (58)

01

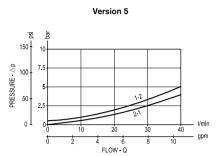
Version 05: Directional control valves pneumatic operated poppet 2-way normally closed



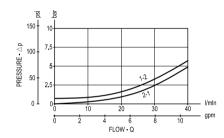
Version 31: Directional control valves pneumatic operated poppet 2-way double lock normally closed

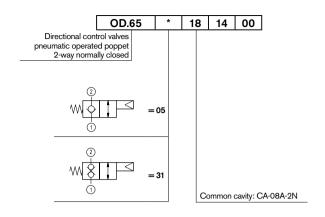


mm (Inches)



Version 31





Туре	Material number	Туре	Material number
OD650518140000	R901109457		
OD653118140000	R901109462		

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RE 18326-71/01.10 Replaces: 01.06

1/4

Directional control valves pneumatic operated poppet 2-way normally closed

Special cavity, 019-E

VPI-8A-2A-06-NC-VU

OD.65.11.19.14.00



General

acriciai			
Weight	kg (lbs)	0.27 (0.58)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

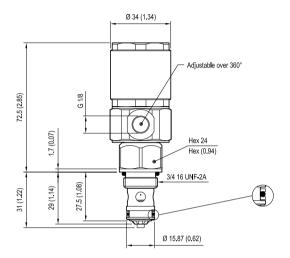
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		019-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG19E201053010 R934003561
Other technical data		See data sheet RE 18350-50

Pilot pressure

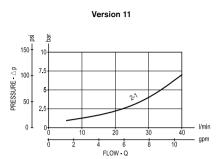
bar (psi) Max. 15 (218) bar (psi) Min. 4 (58)

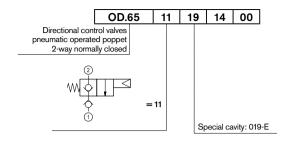
01

Version 11: Directional control valves pneumatic operated poppet 2-way normally closed - Special cavity









Туре	Material number	Туре	Material number
OD650518140000	R901109457		
OD653118140000	R901109462		

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RE 18326-74/01.10 Replaces: 01.06 1/4

Directional control valves pneumatic operated poppet 2-way normally closed

Special cavity, 017-E

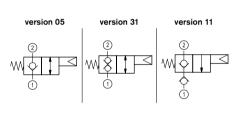
VPI-8A-2A-09-NC

OD.65 - X - 17.14.00









Conoral

donorai			
Weight	kg (lbs)	0.36 (0.79)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

Hydraulic bar (psi) 350 (5000) Max. operating pressure Max. flow I/min. (gpm) 70 (19) Max. internal leakage drops/min. 20 Fluid temperature range °C (°F) -20 to 80 (-4 to 176) Mineral-based or synthetics with Fluids lubricating properties at viscosities of 20 to 380 mm²/s (cSt) Installation torque Nm (ft-lbs) 54-66 (40-49) Nominal value max. 25µm (NAS 8) Filtration ISO 4406 19/17/14 Special cavity 017-E see RE 18325-75 Line bodies See data sheet RE 18325-85 code RG17E201052010 Seal kit - version 05-11 R934003562 material no. code RG17E201053010 Seal kit - version 31 R934003563 See data sheet RE 18350-50 Other technical data

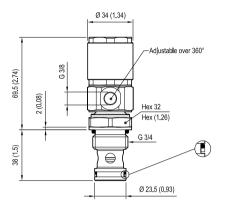
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 05)

Pilot pressure

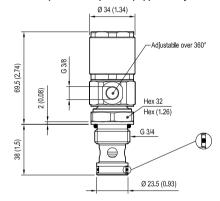
bar (psi) Max. 15 (218)

bar (psi) Min. 4 (58)

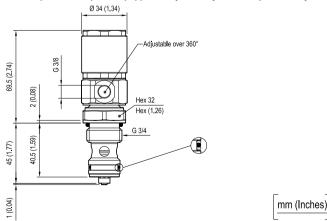
Version 05: Directional control valves pneumatic operated poppet 2-way normally closed - Special cavity

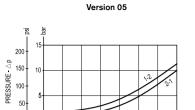


Version 31: Directional control valves pneumatic operated poppet 2-way double lock normally closed - Special cavity



Version 11: Directional control valves pneumatic operated poppet 2-way normally closed - Special cavity



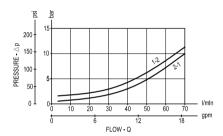


01 01 0

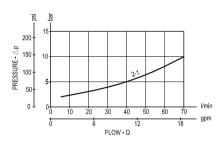
10 20 30 40 50 60

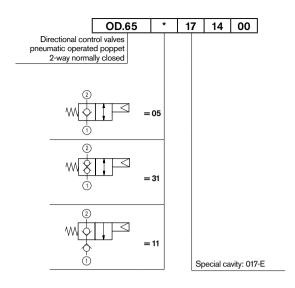
Version 31

12 FLOW - Q



Version 11





OD650517140000 R9			Material number
OD0000171700000 103	934001444		
OD653117140000 R9	934001457		
OD651117140000 R9	934001454		
		'	
		-	

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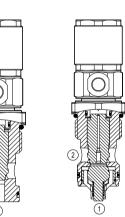
RE 18326-76/01.10 Replaces: 01.06 1/4

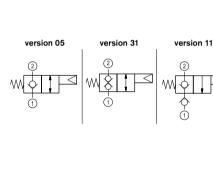
Directional control valves pneumatic operated poppet 2-way normally closed

Special cavity, 021-E

VPI-8A-2A-12-NC

OD.65 - X - 21.14.00





General

Gonorai			
Weight	kg (lbs)	0.5 (1.1)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

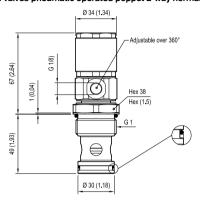
Hydraulic bar (psi) 350 (5000) Max. operating pressure Max. flow I/min. (gpm) 150 (39) Max. internal leakage drops/min. 20 Fluid temperature range °C (°F) -20 to 80 (-4 to 176) Mineral-based or synthetics with Fluids lubricating properties at viscosities of 20 to 380 mm²/s (cSt) Installation torque Nm (ft-lbs) 80-100 (59-74) Nominal value max. 25µm (NAS 8) Filtration ISO 4406 19/17/14 Special cavity 021-E see RE 18325-75 Line bodies See data sheet RE 18325-85 code RG21E201052010 Seal kit - version 05-11 R934003566 material no. code RG21E201053010 Seal kit - version 31 R934003567 See data sheet RE 18350-50 Other technical data

IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 05)

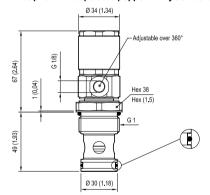
Pilot pressure

bar (psi) Max. 15 (218) bar (psi) Min. 4 (58) 01

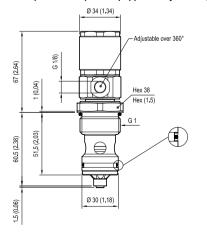
Version 05: Directional control valves pneumatic operated poppet 2-way normally closed - Special cavity

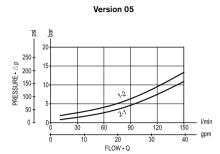


Version 31: Directional control valves pneumatic operated poppet 2-way double lock normally closed - Special cavity

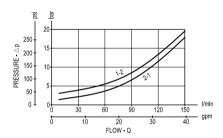


Version 11: Directional control valves pneumatic operated poppet 2-way normally closed - Special cavity

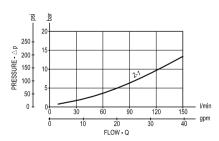


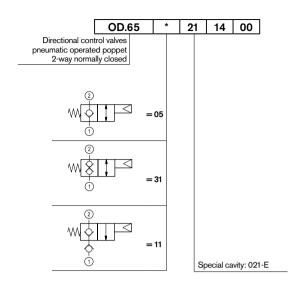


Version 31



Version 11





Туре	Material number	Туре	Material number
OD650521140000	R901166202		
OD653121140000	R934001459		
OD651121140000	R934001456		
			

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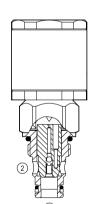
RE 18326-72/01.10 Replaces: 01.06 1/4

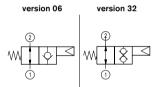
Directional control valves pneumatic operated poppet 2-way normally open

Common cavity, Size 08

VPI-8A-2A-06-NA

OD.65 - X - 18.14.00





General

General		
Weight	kg (lbs)	0.27 (0.58)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic

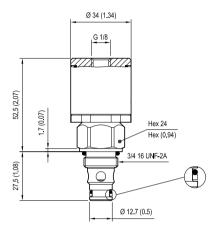
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit - version 06	code material no.	
Seal kit - version 32	code material no.	RG08A2010530100 R901101544
Other technical data		See data sheet RE 18350-50

IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 06)

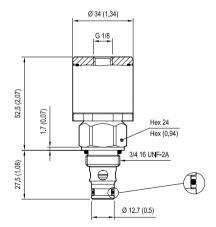
Pilot pressure

bar (psi) Max. 15 (218) bar (psi) Min. 4 (58) 01

Version 06: Directional control valves pneumatic operated poppet 2-way normally open

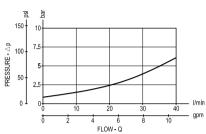


Version 32: Directional control valves pneumatic operated poppet 2-way double lock normally open

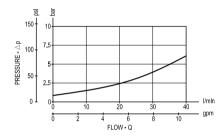


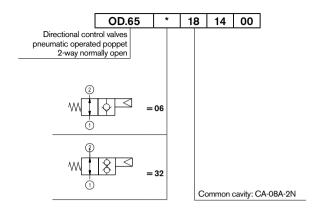
mm (Inches)





Version 32





Туре	Material number	Туре	Material number
OD650618140000	R901109464		
OD653218140000	R901109466		

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RE 18326-73/01.10 Replaces: 01.06

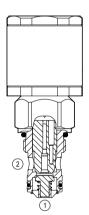
1/4

Directional control valves pneumatic operated poppet 2-way normally open

Special cavity, 019-E

VPI-8A-2A-06-NA-VU

OD.65.12.19.14.00







General

aciiciai			
Weight	kg (lbs)	0.27 (0.58)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

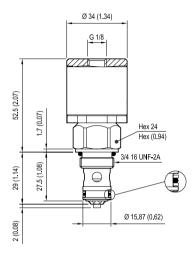
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		019-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG19E201053010 R934003561
Other technical data		See data sheet RE 18350-50

Pilot pressure

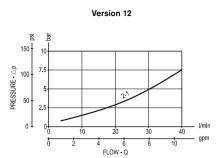
bar (psi) Max. 15 (218) bar (psi) Min. 4 (58)

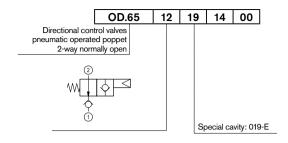
01

Version 12: Directional control valves pneumatic operated poppet 2-way normally open - Special cavity



mm (Inches)





Туре	Material number	Туре	Material number
OD651219140000	R934003677	<u> </u>	

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RE 18326-75/01.10 Replaces: 01.06

1/4

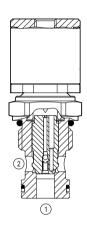
Directional control valves pneumatic operated poppet 2-way normally open

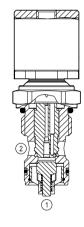
Special cavity, 017-E

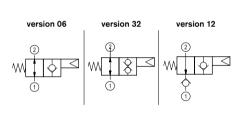
VPI-8A-2A-09-NA

OD.65 - X - 1714.00









Canaral

Seal kit - version 32

Other technical data

Gonorai			
Weight	kg (lbs)	0.34 (0.75)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

Hydraulic bar (psi) 350 (5000) Max. operating pressure Max. flow I/min. (gpm) 70 (19) Max. internal leakage drops/min. 20 Fluid temperature range °C (°F) -20 to 80 (-4 to 176) Mineral-based or synthetics with Fluids lubricating properties at viscosities of 20 to 380 mm²/s (cSt) Installation torque Nm (ft-lbs) 54-66 (40-49) Nominal value max. 25µm (NAS 8) Filtration ISO 4406 19/17/14 Special cavity 017-E see RE 18325-75 Line bodies See data sheet RE 18325-85 code RG17E201052010 Seal kit - version 06-12

material no.

R934003562

code RG17E201053010

R934003563

See data sheet RE 18350-50

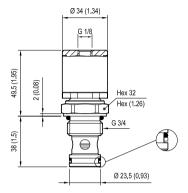
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 06)

Pilot pressure

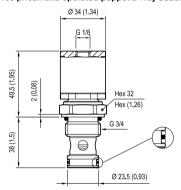
bar (psi) Max. 15 (218)

bar (psi) Min. 4 (58)

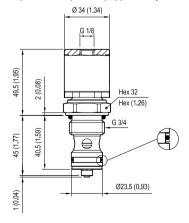
Version 06: Directional control valves pneumatic operated poppet 2-way normally open - Special cavity



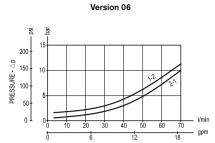
Version 32: Directional control valves pneumatic operated poppet 2-way double lock normally open - Special cavity



Version 12: Directional control valves pneumatic operated poppet 2-way normally open - Special cavity

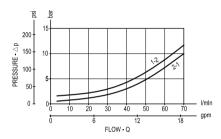


mm (Inches)

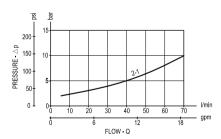


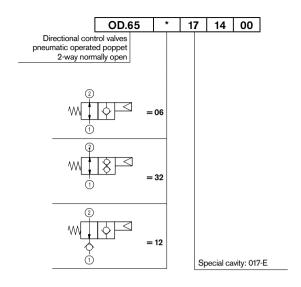
Version 32

FLOW - Q



Version 12





OD650617140000 R934001448 OD653217140000 R934001460 OD651217140000 R934003128	Туре	Material number	Туре	Material number
	OD650617140000	R934001448		
OD651217140000 R934003128	OD653217140000	R934001460		
	OD651217140000	R934003128		
				

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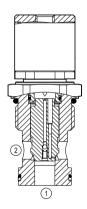
1/4

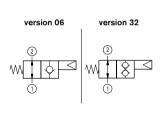
Directional control valves pneumatic operated poppet 2-way normally open

Special cavity, 021-E

VPI-8A-2A-12-NA

OD.65 - X - 21.14.00





General

Gonorai			
Weight	kg (lbs)	0.48 (1.1)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	150 (39)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		021-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 06		RG21E201052010 R934003566
Seal kit - version 32		RG21E201053010 R934003567
Other technical data		See data sheet RE 18350-50

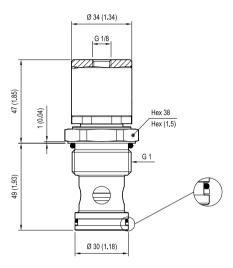
IMPORTANT: When valve is not operated, flow from 1 to 2 is not recommended due to high opening pressure. (version 06)

Pilot pressure

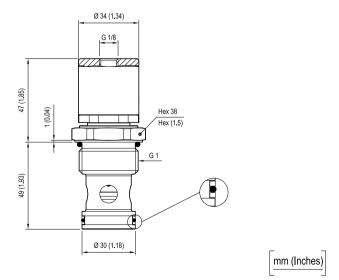
bar (psi) Max. 15 (218) bar (psi) Min. 4 (58)

01

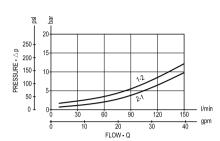
Version 06: Directional control valves pneumatic operated poppet 2-way normally open - Special cavity



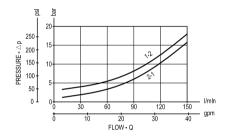
Version 32: Directional control valves pneumatic operated poppet 2-way double lock normally open - Special cavity

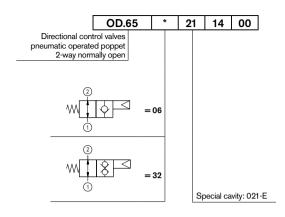






Version 32





Туре	Material number	Туре	Material number
OD650621140000	R934001452		

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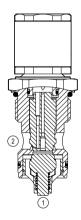
RE 18326-78/01.10 Replaces: 01.06 1/4

Directional control valves pneumatic operated poppet 2-way normally open

Special cavity, 021-E

VPI-8A-2A-12-NA-VU

OD.65.12.21.14.00



version 12



General

acriciai			
Weight	kg (lbs)	0.48 (1.1)	
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	

Hvdraulic

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	150 (39)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		021-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG21E201053010 R934003567
Other technical data		See data sheet RE 18350-50

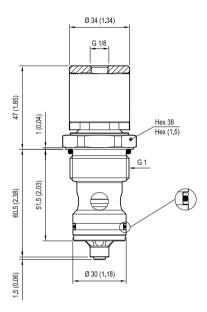
Only for cam-operated valves:

Only for carri operated	vaives.		
Operating stroke	mm (in)	3 (0.12)	
Max overstroke	mm (in)	0.5 (0.02)	

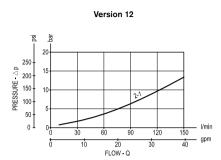
Pilot pressure

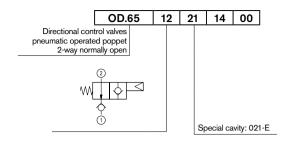
bar (psi) Max. 15 (218) bar (psi) Min. 4 (58) 01

Version 12: Directional control valves pneumatic operated poppet 2-way normally open - Special cavity



mm (Inches)





Туре	Material number	Туре	Material number
OD651221140000	R934003676	<u> </u>	

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Mechanical cartridge valves

Accessories

Designation	Description	Cavity	Code	Data sheet	Page	0
Automatic shut-off, pilot to close	VEM-5-C-N	Special	049803X99Z	18320-70	461	Ī
Hand pump	PM-06	Size 08	PM511000180	0 18321-95	463	

RE 18320-70/01.10 Replaces: RE 00162-02/01.06

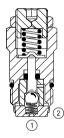
Automatic shut-off, pilot to close

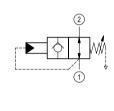
Special cavity, 348

VEM-5-C-N

04.98.03- X - 99 - Z







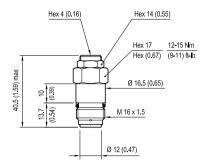
Description

Pilot flow is normally allowed bi-directionally between 1 and 2. When pressure at 1 rises above the selected pressure setting, the ball check seats and blocks flow from 1 to 2. The valve is intended to block undesirable pressure spikes in pilot control systems, particularly in counterbalance applications.

Technical data

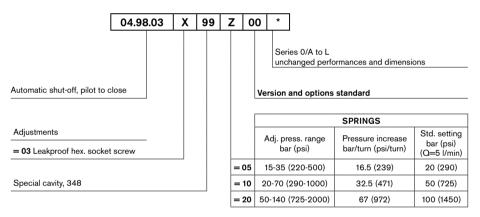
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	I/min. (gpm)	1 (0.26)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	20-23 (15-17)
Weight	kg (lbs)	0.05 (0.11)
Special cavity		348 see data sheet RE 18325-75
Seal kit (*)	code material no.	RG0348010520100 R930001669
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 500 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50
		1

(*) Only external seals for 10 valves



mm (Inches)

Ordering code



Туре	Material number
04980303990500A	R901113661
04980303991000A	R901113662
04980303992000A	R901113663

Туре	Material number

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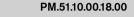
PM-06

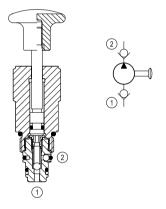
RE 18321-95/01.10 Replaces: RE 00162-02/01.06

1/2

Accessories, hand pump

Common cavity, Size 08

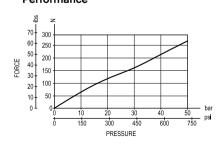




Description

When the operator is pushed PM-06 delivers hydraulic flow from port 1 to port 2. The inlet and outlet checks are integral to the cartridge.

Performance

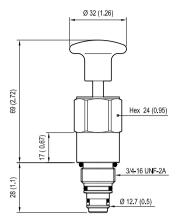


Technical data

icciiiicai data		
Max. operating pressure port 1	bar (psi)	210 (3000)
Max. operating pressure port 2	bar (psi)	50 (725)
Displacement	cm3 (cu.in.)	1 (0.06)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Weight	kg (lbs)	0.15 (0.33)
Cavity		CA-08A-2N see data sheet RE 18325-70
Line bodies		See data sheet RE 18325-85
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other general technical of	lata	See data sheet RE 18350-50
(*) Only external scale for	· 10 valvas	

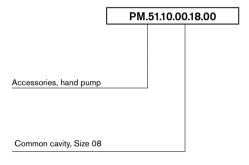
(*) Only external seals for 10 valves

01



mm (Inches)

Ordering code



Туре	Material number	Туре	Material number
PM511000180000	R934003665		

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Insert valves

Relief

Designation	Description	Cavity	Code	Data sheet	Page
Insert valve relief direct acting poppet type	VSA1.050	Special	0TM201X99ZW	18329-01	467
Insert valve relief direct acting and anti-cavitation function	VMA1.025	Special	0TM405X99ZW	18329-11	469
Insert valve relief direct acting and anti-cavitation function	VMA1.050	Special	0TM406X99ZW	18329-12	471
Insert valve relief direct acting and anti-cavitation function	VMA1.060	Special	0TM407X99ZW	18329-13	473
Insert valve relief direct acting and anti-cavitation function	VMA1.080	Special	0TM408X99ZW	18329-14	475
Insert valve relief direct acting and anti-cavitation function	VMA1.130	Special	0TM410X99ZW	18329-15	477
Insert valve relief direct acting and anti-cavitation function	VMA1.180	Special	0TM409X99ZW	18329-16	479
Insert valve relief direct acting adjustable anti-cavitation function	VRA1.025	Special	0TM601X99Z	18329-31	481
Insert valve relief direct acting adjustable anti-cavitation function	VRA1.050	Special	0TM602X99Z	18329-32	483
Insert valve relief direct acting adjustable anti-cavitation function	VRA1.060	Special	0TM603X99Z	18329-33	485
Insert valve relief direct acting adjustable anti-cavitation function	VRA1.080	Special	0TM604X99Z	18329-34	487



RE 18329-01/02.10 Replaces: RE 00162-02/01.06

Insert type, Relief, direct acting poppet type

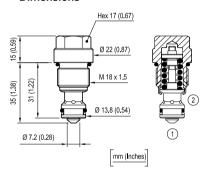
Special cavity, 730-A



VSA1.050

0T.M2.01 - X - 99 - Z - W

Dimensions

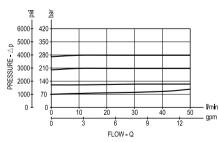


Description

Flow is blocked from 2 to 1 until pressure increases to meet the selected valve setting, lowering the poppet from its seat and allowing relief flow through port 1 to tank.



Performance

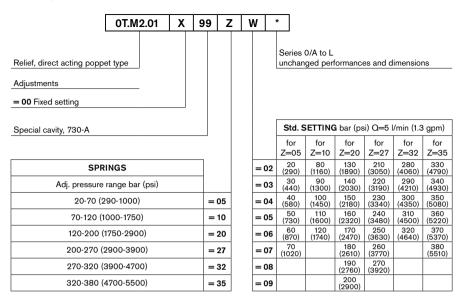


Technical data

Max. operating pressure	bar (psi)	380 (5500)
Max. flow	l/min. (gpm)	50 (13)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	40-45 (30-33)
Weight	kg (lbs)	0.07 (0.15)
Special cavity		730-A see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) at 80% of pressure setting

(**) Only external seals for 10 valves



Туре	Material number
0TM201009905020	R931002361
0TM201009905030	R931002362
0TM201009905040	R931002363
0TM201009905050	R931002364
0TM201009905060	R931002365
0TM201009905070	R931002366
0TM201009910020	R931002367
0TM201009910030	R931002369
0TM201009910040	R931002370
0TM201009910050	R931002371
0TM201009910060	R931002372
0TM201009920020	R931002373
0TM201009920030	R931002374
0TM201009920040	R931000034
0TM201009920050	R931002375
0TM201009920060	R931002376
0TM201009920070	R931002377
0TM201009920080	R931002378
0TM201009920090	R901170599
0TM201009927020	R931002380

Туре	Material number
0TM201009927030	R931002381
0TM201009927040	R931002382
0TM201009927050	R931002383
0TM201009927060	R931002384
0TM201009927070	R931002385
0TM201009927080	R931002386
0TM201009932020	R931002387
0TM201009932030	R931002388
0TM201009932040	R931002389
0TM201009932050	R931002390
0TM201009932060	R931002391
0TM201009935020	R931002392
0TM201009935030	R931002394
0TM201009935040	R931002395
0TM201009935050	R931002396
0TM201009935060	R931002397
0TM201009935070	R931002398

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02

RE 18329-11/02.10 Replaces: RE 00162-02/01.06

Insert type Relief, direct acting and anti-cavitation function

Special cavity, 869

VMA1.025

0T.M4.05 - X - 99 - Z - W

Description

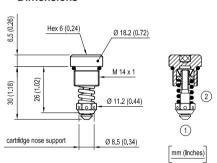
Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.049) as a coning tool.

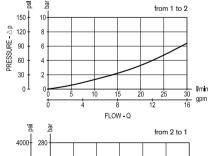
Torque to be applied: 4 ± 1 Nm.

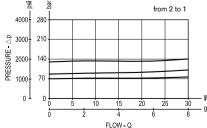


Dimensions



Performance

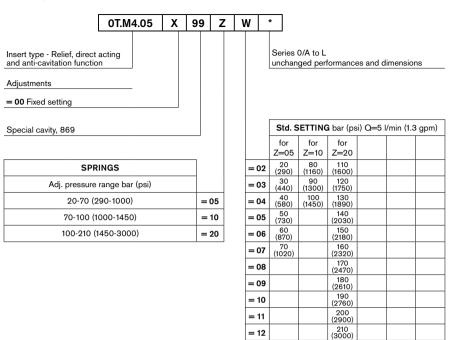




Technical data

Max. operating pressure	bar (psi)	210 (3000)
Max. flow	l/min. (gpm)	30 (8)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	25-30 (19-22)
Weight	kg (lbs)	0.03 (0.07)
Special cavity		869 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Vmin (*) at 80% of pressure setting gpm (**) Only external seals for 10 valves



Туре	Material number
0TM405009905020	R931002107
0TM405009905030	R931002109
0TM405009905040	R931002110
0TM405009905050	R931002111
0TM405009905060	R931002112
0TM405009905070	R931002115
0TM405009910020	R931002117
0TM405009910030	R931002118
0TM405009910040	R931002095
0TM405009920020	R931002119
0TM405009920030	R931002120
0TM405009920040	R931002121
0TM405009920050	R931002123
0TM405009920060	R931002097
0TM405009920070	R931002124
0TM405009920080	R931002125

Туре	Material number
0TM405009920090	R931002127
0TM405009920100	R931002128
0TM405009920110	R931002099
0TM405009920120	R931000064

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02

RE 18329-12/02.10 Replaces: RE 00162-02/01.06

Insert type Relief, direct acting and anti-cavitation function

Special cavity, 730

VMA1.050

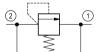
Dimensions

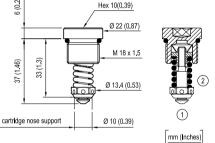
0T.M4.06 - X - 99 - Z - W



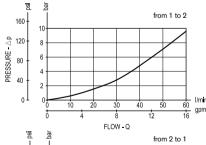
Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

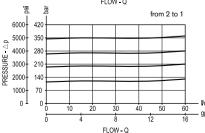
Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.005) as a coning tool. Torque to be applied: 4.5 ± 2 Nm.





Performance

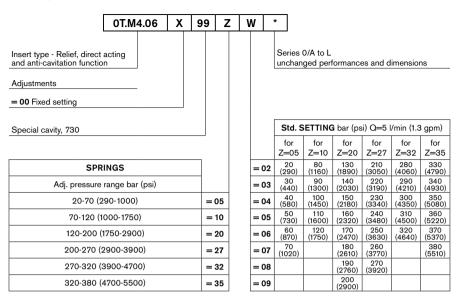




Technical data

Max. operating pressure	bar (psi)	380 (5500)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	35-40 (26-30)
Weight	kg (lbs)	0.05 (0.11)
Special cavity		730 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

I/min (*) at 80% of pressure setting gpm (**) Only external seals for 10 valves



Туре	Material number
0TM406009905020	R931002131
0TM406009905030	R931002132
0TM406009905040	R931000065
0TM406009905050	R931002133
0TM406009905060	R931002134
0TM406009905070	R931002091
0TM406009910020	R931002135
0TM406009910030	R931002136
0TM406009910040	R931002137
0TM406009910050	R931002138
0TM406009910060	R931002139
0TM406009920020	R931002141
0TM406009920030	R931002142
0TM406009920040	R931002143
0TM406009920050	R901159032
0TM406009920060	R931002144
0TM406009920070	R931002145
0TM406009920080	R931002147
0TM406009920090	R931002148

Туре	Material number
0TM406009927020	R931002150
0TM406009927030	R931002151
0TM406009927040	R931002153
0TM406009927050	R931002155
0TM406009927060	R931002156
0TM406009927070	R931002157
0TM406009927080	R931002158
0TM406009932020	R931002159
0TM406009932030	R931002160
0TM406009932040	R931002161
0TM406009932050	R901160150
0TM406009932060	R931002162
0TM406009935020	R931002163
0TM406009935030	R931002164
0TM406009935040	R931002165
0TM406009935050	R931002166
0TM406009935060	R931002167
0TM406009935070	R931000068
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02

RE 18329-13/02.10 Replaces: RE 00162-02/01.06

Insert type Relief, direct acting and anti-cavitation function

Special cavity, 808

VMA1.060

0T.M4.07 - X - 99 - Z - W

Description

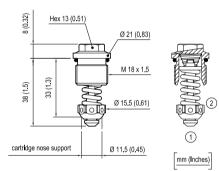
Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.036) as a coning tool.

Torque to be applied: 5 ± 2 Nm.

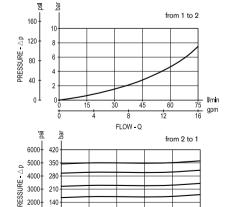


Dimensions



Performance

1000 70



60

10 FLOW - Q

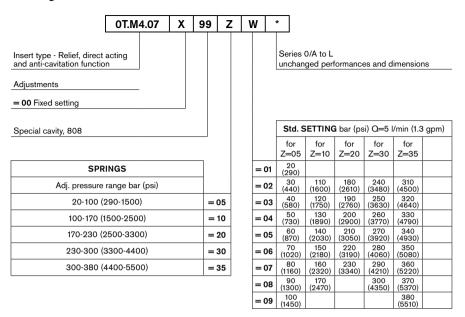
15

Technical data

Max. operating pressure	bar (psi)	380 (5500)
Max. flow	I/min. (gpm)	75 (20)
Max. internal leakage (*)	drops/min.	30
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	30-35 (22-26)
Weight	kg (lbs)	0.05 (0.11)
Cassial sovity		808
Special cavity		see data sheet RE 18325-75
Seal kit (**)	code	RG0730020000100
Jeai Kit ()	material no.	R931002406
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

I/min (*) at 80% of pressure setting

gpm (**) Only external seals for 10 valves



Туре	Material number
0TM407009905010	R931002169
0TM407009905020	R931002168
0TM407009905030	R931002170
0TM407009905040	R931002171
0TM407009905050	R931002172
0TM407009905060	R931002173
0TM407009905070	R931002174
0TM407009905080	R931002175
0TM407009905090	R931002176
0TM407009910020	R931002077
0TM407009910030	R931002177
0TM407009910040	R931002080
0TM407009910050	R931002179
0TM407009910060	R931002180
0TM407009910070	R931002181
0TM407009910080	R931002183
0TM407009920020	R931002204
0TM407009920030	R931002205
0TM407009920040	R931002206

Туре	Material number
0TM407009920050	R931002207
0TM407009920060	R931002208
0TM407009920070	R931002209
0TM407009930020	R931002210
0TM407009930030	R931002211
0TM407009930040	R931002212
0TM407009930050	R931001966
0TM407009930060	R931002213
0TM407009930070	R931001967
0TM407009930080	R931002214
0TM407009935020	R931002215
0TM407009935030	R931001427
0TM407009935040	R931001968
0TM407009935050	R931001969
0TM407009935060	R931002216
0TM407009935070	R931002217
0TM407009935080	R931001970
0TM407009935090	R931002218

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RE 18329-14/02.10 Replaces: RE 00162-02/01.06

Insert type Relief, direct acting and anti-cavitation function

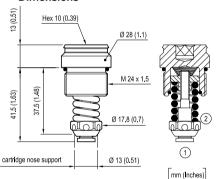
Special cavity, 870

VMA1.080

0T.M4.08 - X - 99 - Z - W

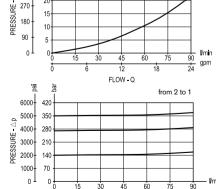


Dimensions



from 1 to 2

Performance



10

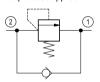
FLOW - Q

15

Description

Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.011) as a coning tool. Torque to be applied: 6.5 ± 2 Nm.

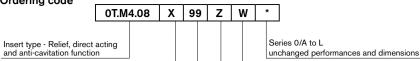


Technical data

Max. operating pressure	bar (psi)	400 (5800)
Max. flow	l/min. (gpm)	90 (24)
Max. internal leakage (*)	drops/min.	30
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	50-55 (37-41)
Weight	kg (lbs)	0.11 (0.23)
Special cavity		870 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

I/min (*) at 80% of pressure setting

gpm (**) Only external seals for 10 valves



Adjustments

= 00 Fixed setting

Special cavity, 870

SPRINGS	
Adj. pressure range bar (psi)	
90-140 (1300-2000)	= 10
140-270 (2000-3900)	= 20
270-350 (3900-5000)	= 35
350-400 (5000-5800)	= 40

	Std. S	ETTING	bar (psi) Q=10	l/min (2	.6 gpm)
	for Z=10	for Z=20	for Z=35	for Z=40		
= 01	90 (1310)					
= 02	100 (1450)	150 (2180)	280 (4060)	360 (5220)		
= 03	110 (1600)	160 (2320)	290 (4210)	370 (5370)		
= 04	120 (1740)	170 (2470)	300 (4350)	380 (5510)		
= 05	130 (1890)	180 (2610)	310 (4500)	390 (5660)		
= 06	140 (2030)	190 (2760)	320 (4640)	400 (5800)		
= 07		200 (2900)	330 (4790)			
= 08		210 (3050)	340 (4930)			
= 09		220 (3190)	350 (5080)			
= 10		230 (3340)				
= 11		240 (3480)				
= 12		250 (3630)				
= 13		260 (3770)				

270

(3920)

= 14

Туре	Material number
0TM408009910010	R931002087
0TM408009910020	R931002219
0TM408009910030	R931002220
0TM408009910040	R931002221
0TM408009910050	R931002222
0TM408009910060	R931002088
0TM408009920020	R931002223
0TM408009920030	R901191435
0TM408009920040	R931002224
0TM408009920050	R931002225
0TM408009920060	R931000754
0TM408009920070	R931002226
0TM408009920080	R901192838
0TM408009920090	R931002227
0TM408009920100	R931002228
0TM408009920110	R931002229

Туре	Material number
0TM408009920120	R931002230
0TM408009920130	R931002231
0TM408009920140	R931002232
0TM408009935020	R901196681
0TM408009935030	R931002233
0TM408009935040	R931002234
0TM408009935050	R931002235
0TM408009935060	R931002236
0TM408009935070	R931002237
0TM408009935080	R931002238
0TM408009935090	R931002239
0TM408009940020	R931002241
0TM408009940030	R931002242
0TM408009940040	R931002243
0TM408009940050	R931002244
0TM408009940060	R931002245

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02

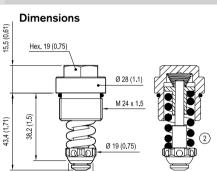
1/2 RE 18329-15/02.10 Replaces: RE 00162-02/01.06

Insert type Relief, direct acting and anti-cavitation function

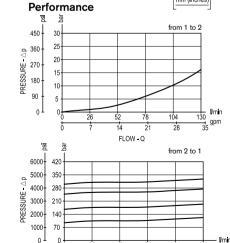
Special cavity, 924

VMA1.130

OT.M4.10 - X - 99 - Z - W



curtridge nose support Ø 13.5 (0.53) mm (Inches)

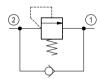


FLOW - Q

Description

Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.083) as a coning tool. Torque to be applied: 7 ± 2 Nm.



Technical data

Max. operating pressure	bar (psi)	400 (5800)
Max. flow	l/min. (gpm)	130 (34)
Max. internal leakage (*)	drops/min.	30
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	50-55 (37-41)
Weight	kg (lbs)	0.12 (0.27)
Special cavity		924 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Vmin (*) at 80% of pressure setting gpm (**) Only external seals for 10 valves

400 (5800)

.

Ordering code

Χ Z W 0T.M4.10 99 Series 0/A to L Insert type - Relief, direct acting

Adjustments

= 00 Fixed setting

and anti-cavitation function

Special cavity, 924

SPRINGS	
Adj. pressure range bar (psi)	
20-100 (300-1500)	= 05
100-180 (1500-2600)	= 10
180-250 (2600-3600)	= 20
250-300 (3600-4400)	= 30
300-400 (4400-5800)	= 35

	Std. SETTING bar (psi) Q=10 I/min (2.6 gpm)					6 gpm)
	for Z=05	for Z=10	for Z=20	for Z=30	for Z=35	
= 02	20 (290)	110 (1600)	190 (2760)	260 (3770)	310 (4500)	
= 03	30 (440)	120 (1750)	200 (2900)	270 (3920)	320 (4640)	
= 04	40 (580)	130 (1890)	210 (3050)	280 (4060)	330 (4790)	
= 05	50 (730)	140 (2030)	220 (3190)	290 (4210)	340 (4930)	
= 06	60 (870)	150 (2180)	230 (3340)	300 (4350)	350 (5080)	
= 07	70 (1020)	160 (2320)	240 (3480)		360 (5220)	
= 08	80 (1160)	170 (2470)	250 (3630)		370 (5370)	
= 09	90 (1300)	180 (2610)			380 (5510)	
= 10	100 (1450)				390 (5660)	

= 11

unchanged performances and dimensions

Туре	Material number
0TM410009905020	R931002246
0TM410009905030	R931002247
0TM410009905040	R931002248
0TM410009905050	R931001860
0TM410009905060	R931002253
0TM410009905070	R931001861
0TM410009905080	R931001864
0TM410009905090	R931002254
0TM410009905100	R931002089
0TM410009910020	R931002255
0TM410009910030	R931001587
0TM410009910040	R931002256
0TM410009910050	R931001869
0TM410009910060	R931002257
0TM410009910070	R931001870
0TM410009910080	R931001600
0TM410009910090	R931002090
0TM410009920020	R931002258
0TM410009920030	R931002259
0TM410009920040	R931001871

Туре	Material number
0TM410009920050	R931001659
0TM410009920060	R931002260
0TM410009920070	R931002261
0TM410009920080	R931002262
0TM410009930020	R931002263
0TM410009930030	R931001727
0TM410009930040	R931002264
0TM410009930050	R931002265
0TM410009930060	R931002266
0TM410009935020	R931002267
0TM410009935030	R931001779
0TM410009935040	R931002268
0TM410009935050	R931002269
0TM410009935060	R931002270
0TM410009935070	R931002271
0TM410009935080	R931001872
0TM410009935090	R931001780
0TM410009935100	R931002272
0TM410009935110	R931002273

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o Miles

1/2 RE 18329-16/02.10 Replaces: RE 00162-02/01.06

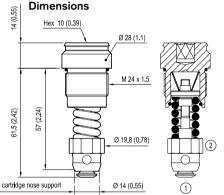
Insert type Relief, direct acting and anti-cavitation function

Special cavity, 871

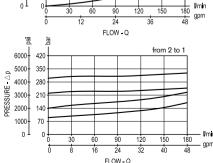
VMA1.180

180 10 90 5

OT.M4.09 - X - 99 - Z - W



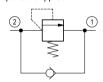
mm (Inches) Performance s from 1 to 2 450 30 360 270



Description

Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.050) as a coning tool. Torque to be applied: 7 ± 2 Nm.

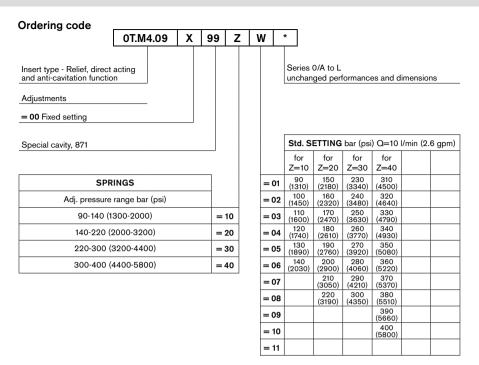


Technical data

Max. operating pressure	bar (psi)	400 (5800)
Max. flow	l/min. (gpm)	180 (48)
Max. internal leakage (*)	drops/min.	30
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	50-55 (37-41)
Weight	kg (lbs)	0.15 (0.33)
Special cavity		871 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) at 80% of pressure setting

(**) Only external seals for 10 valves



Туре	Material number
0TM409009910010	R931002340
0TM409009910020	R931001395
0TM409009910030	R931002341
0TM409009910040	R931002342
0TM409009910050	R931001844
0TM409009910060	R931000860
0TM409009920020	R931002343
0TM409009920030	R931002344
0TM409009920040	R931002345
0TM409009920050	R931000862
0TM409009920060	R931001850
0TM409009920070	R931002346
0TM409009920080	R931000921
0TM409009920090	R931002347
0TM409009930020	R931001851
0TM409009930030	R931002348

Туре	Material number
0TM409009930040	R931001852
0TM409009930050	R931002349
0TM409009930060	R931001390
0TM409009930070	R931001853
0TM409009930080	R931001854
0TM409009930090	R931002356
0TM409009940020	R931002350
0TM409009940030	R931002351
0TM409009940040	R931002352
0TM409009940050	R931002353
0TM409009940060	R931002354
0TM409009940070	R931001409
0TM409009940080	R931002355
0TM409009940090	R931002357
0TM409009940100	R931002358
0TM409009940110	R931002359

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RE 18329-31/02.10 Replaces: RE 00162-02/01.06

Insert type Relief direct acting adjustable, anti-cavitation function

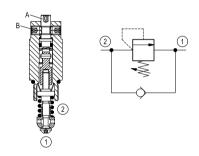
Special cavity, 869

VRA1.025

OT.M6.01 - X - 99 - Z



Dimensions



Description

Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.049) as a coning tool.

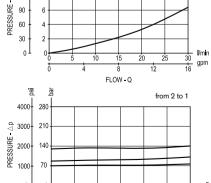
Torque to be applied: 4 ± 1 Nm.

Please be careful to the following instructions:

- 1) Screw the valve into the cavity using the mentioned installation torque;
- 2) Adjust the setting using the stem "A";
- 3) Ones the valve is adjusted to the required pressure setting, lock the screw "B". Be careful to make the pressure setting adjustment when the screw "B" is loose; block the screw with torque 2-4 Nm (1.5-3 ft-lbs) only when the pressure setting is adjusted.

Performance

150 10



FLOW - Q

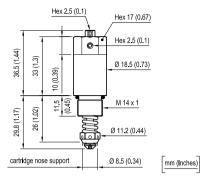
Technical data

from 1 to 2

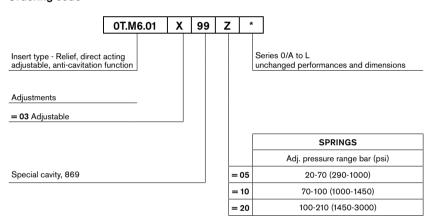
Max. operating pressure	bar (psi)	210 (3000)
Max. flow	I/min. (gpm)	30 (8)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	30-35 (22-26)
Weight	kg (lbs)	0.07 (0.15)
Special cavity		869 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

Vmin (*) at 80% of pressure setting

gpm (**) Only external seals for 10 valves



Ordering code



Туре	Material number
0TM601039905000	R931002274
0TM601039910000	R931002275
0TM601039920000	R931002276

Type	Material number

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RE 18329-32/02.10 Replaces: RE 00162-02/01.06

Insert type Relief, direct acting adjustable, anti-cavitation function

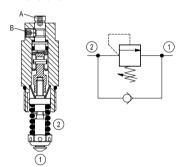
Special cavity, 730

VRA1.050

0T.M6.02 - X - 99 - Z



Dimensions



Description

Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.005) as a coning tool.

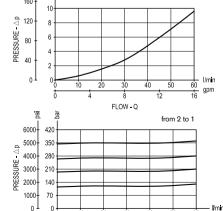
Torque to be applied: 4.5 ± 2 Nm.

Please be careful to the following instructions:

- 1) Screw the valve into the cavity using the mentioned installation torque;
- 2) Adjust the setting using the stem "A";
- 3) Ones the valve is adjusted to the required pressure setting, lock the screw "B". Be careful to make the pressure setting adjustment when the screw "B" is loose; block the screw with torque 2-4 Nm (1.5-3 ft-lbs) only when the pressure setting is adjusted.

Performance

S



FLOW - Q

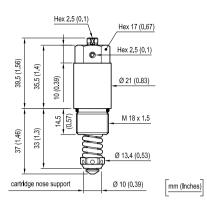
Technical data

from 1 to 2

Max. operating pressure	bar (psi)	380 (5500)
Max. flow	I/min. (gpm)	60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	35-40 (26-30)
Weight	kg (lbs)	0.08 (0.18)
Special cavity		730 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

I/min (*) at 80% of pressure setting

gpm (**) Only external seals for 10 valves



Z

Ordering code

OT.M6.02 X 99

Insert type · Relief, direct acting adjustable, anti-cavitation function

Adjustments

= 03 Adjustable

Special cavity, 730

Series 0/A to L unchanged performances and dimensions

	SPRINGS
	Adj. pressure range bar (psi)
= 05	20-70 (290-1000)
= 10	70-120 (1000-1750)
= 20	120-200 (1750-2900)
= 27	200-270 (2900-3900)
= 32	270-320 (3900-4700)
= 35	320-380 (4700-5500)

Туре	Material number	
0TM602039905000	R931002277	
0TM602039910000	R931002278	
0TM602039920000	R931002279	
0TM602039927000	R931002280	
0TM602039932000	R931002281	
0TM602039935000	R931002282	
		_

туре	waterial number
-	

Motorial number

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RE 18329-33/02.10 Replaces: RE 00162-02/01.06

Insert type Relief, direct acting adjustable, anti-cavitation function

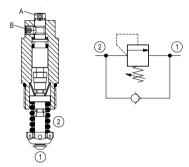
Special cavity, 808

VRA1.060

OT.M6.03 - X - 99 - Z



Dimensions



Description

Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.005) as a coning tool.

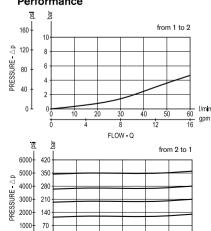
Torque to be applied: 4.5 ± 2 Nm.

Please be careful to the following instructions:

- 1) Screw the valve into the cavity using the mentioned installation torque;
- 2) Adjust the setting using the stem "A";
- 3) Ones the valve is adjusted to the required pressure setting, lock the screw "B". Be careful to make the pressure setting adjustment when the screw "B" is loose; block the screw with torque 2-4 Nm (1.5-3 ft-lbs) only when the pressure setting is adjusted.

Performance

0 I



12

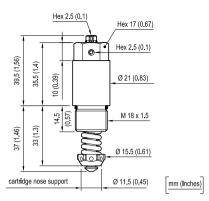
FLOW - Q

Technical data

Max. operating pressure	bar (psi)	380 (5500)
Max. flow	l/min. (gpm)	60 (16)
Max. internal leakage (*)	drops/min.	15
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	35-40 (26-30)
Weight	kg (lbs)	0.08 (0.18)
Special cavity		808 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) at 80% of pressure setting

gpm (**) Only external seals for 10 valves



Z

Ordering code

Special cavity, 808

Insert type - Relief, direct acting adjustable, anti-cavitation function

Adjustments

= 03 Adjustable

Series 0/A to L unchanged performances and dimensions

	SPRINGS
	Adj. pressure range bar (psi)
= 05	20-70 (290-1000)
= 10	70-120 (1000-1750)
= 20	120-200 (1750-2900)
= 27	200-270 (2900-3900)
= 32	270-320 (3900-4700)
= 35	320-380 (4700-5500)

Туре	Material number
0TM603039905000	R931002283
0TM603039910000	R931002284
0TM603039920000	R931002285
0TM603039927000	R931002286
0TM603039932000	R931002287
0TM603039935000	R931002288

туре	waterial number
-	

Motorial number

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RE 18329-34/02.10 Replaces: RE 00162-02/01.06

Insert type Relief, direct acting adjustable, anti-cavitation function

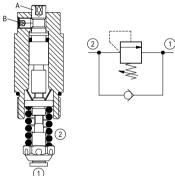
Special cavity, 870

VRA1.080

0T.M6.04 - X - 99 - Z

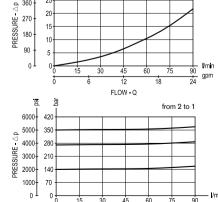


Dimensions



Performance

450 - 30



10

FLOW - Q

15

Description

Flow is free from 1 to 2 until pressure increases to meet the selected valve setting, allowing relief flow through port 1 to tank. This valve combine the typical function of shock relief valve (direct acting) and anticavitation function through the check valve. The direct action and the specific design allow a very fast opening and closing.

Note: to obtain a good leak proof performance coin the cavity seat using a loose valve seat (P/N 0F.S0.011) as a coning tool.

Torque to be applied: 6.5 ± 2 Nm.

Please be careful to the following instructions:

- 1) Screw the valve into the cavity using the mentioned installation torque;
- 2) Adjust the setting using the stem "A";
- 3) Ones the valve is adjusted to the required pressure setting, lock the screw "B". Be careful to make the pressure setting adjustment when the screw "B" is loose; block the screw with torque 2-4 Nm (1.5-3 ft-lbs) only when the pressure setting is adjusted.

Technical data

from 1 to 2

Max. operating pressure	bar (psi)	400 (5800)
Max. flow	l/min. (gpm)	90 (24)
Max. internal leakage (*)	drops/min.	30
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	45-50 (33-37)
Weight	kg (lbs)	0.18 (0.4)
Special cavity		870 see data sheet RE 18325-75
Seal kit (**)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

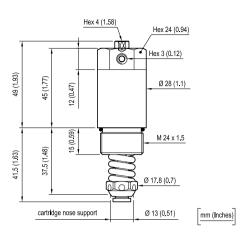
(*) at 80% of pressure setting

gpm (**) Only external seals for 10 valves

Ordering code

= 03 Adjustable

Special cavity, 870



Insert type - Relief, direct acting adjustable, anti-cavitation function

Adjustments

OT.M6.04 X 99 Z *

Series 0/A to L unchanged performances and dimensions

	SPRINGS
	Adj. pressure range bar (psi)
= 10	90-140 (1300-2000)
= 20	140-270 (2000-3900)
= 35	270-350 (3900-5000)
= 40	350-400 (5000-5800)

Туре	Material number
0TM604039910000	R931002289
0TM604039920000	R931002290
0TM604039935000	R931002291
0TM604039940000	R931002292

Туре	Material number

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Insert valves

Flow control

Designation	Description	Cavity	Code	Data sheet	Page
Insert valve flow control, 2-way pressure compensated partially adjustable	VCD1	Special	0TF301XYZ	18329-80	491
Insert valve flow control, 2-way pressure compensated fixed setting	SFC1	Special	0TF10100YZ	18329-75	495
Insert valve flow control, 2-way pressure compensated fixed setting	IFC2	Special	0TF1020009Z	18329-70	497
Insert valve hose burst	VPN1	Special	0TF401XYZ	18329-85	499

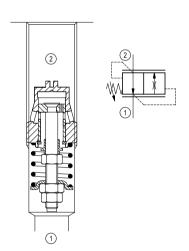
RE 18329-80/02.10 Replaces: RE 00162-02/01.06

Insert type Flow control, 2-way pressure compensated, partially adjustable



VCD1

0T.F3.01 - X - Y - Z



Description

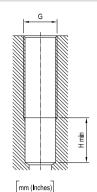
These valves can be used either as lowering control devices or as two ways flow regulators. In the firs option, they keep the lowering speed largely independent from the load, while, in the second option, they limit flow to the preset value which can be adjusted within the regulate flow path. On the opposite flow direction, from 2 to 1, the valve is acting as a free flow check reducing the pressure drop to low values (see diagram $\Delta P - \Omega$).

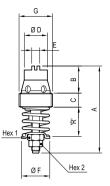
Technical data

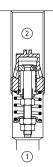
Max. operating pressure	bar (psi)	315 (4500)
Max. flow	l/min. (gpm)	see "Flow range adjustment" table and "Performance" graphs
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	see "Dimensions" table
Weight	kg (lbs)	see "Dimensions" table
Special cavity		see "Dimensions"
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

RE 18316-16 and RE 18316-17

Note: available also as "Sleeve valve for line mounting" See data sheets RE 18316-14, RE 18316-15,

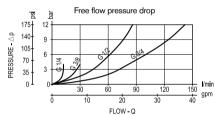






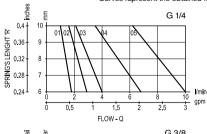
G	А	В	С	D	E	F	Hex 1	Hex 2	Н	Weight kg (lbs)	Inst. torque Nm (ft-lbs)	Flow max. I/min. (gpm)
G 1/4	38.3	12.5	7	10	4	10.3	5.5	4.5	22	0.012	6 (4)	10 (3)
G 1/4	(1.51)	(0.49)	(0.28)	(0.39)	(0.16)	(0.41)	(0.22)	(0.18)	(0.87)	(0.027)	6 (4)	10 (3)
G 3/8	43	13.5	7	11.5	4	14	7	6	23	0.025	0 (6)	25 (7)
G 3/6	(1.69)	(0.53)	(0.28)	(0.45)	(0.16)	(0.55)	(0.28)	(0.24)	(0.91)	(0.055)	8 (6)	25 (7)
G 1/2	49	16	8	15	6	18.2	7	6	27	0.038	10 (0)	67 (18)
G 1/2	(1.93)	(0.63)	(0.32)	(0.59)	(0.24)	(0.72)	(0.28)	(0.24)	(1.06)	(0.084)	12 (9)	67 (16)
C 2/4	60	21	10	20	6	23	7	6	31	0.070	15 (11)	150 (40)
G 3/4	(2.36)	(0.83)	(0.39)	(0.79)	(0.24)	(0.91)	(0.28)	(0.24)	(1.22)	(0.154)	15 (11)	150 (40)

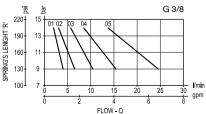
Performance

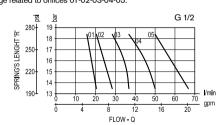


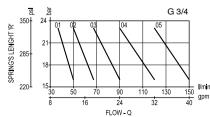
Performance curves: spring's lenght - flow (regulated flow) with nominal pressure of 50 bar (725 psi).

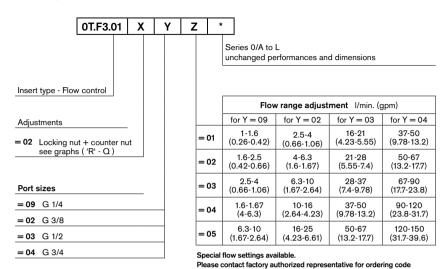
Curves rapresent the obtained flow range related to orifices 01-02-03-04-05.











Туре	Material number
0TF301020201000	R931002328
0TF301020202000	R931002329
0TF301020203000	R931000012
0TF301020204000	R931000013
0TF301020205000	R931000424
0TF301020301000	R931002330
0TF301020302000	R931002332
0TF301020303000	R931002034
0TF301020304000	R931000342
0TF301020305000	R931002333
0TF301020401000	R931000014
0TF301020402000	R931002334
0TF301020403000	R931002335
0TF301020404000	R931002336
0TF301020405000	R931002337
0TF301020901000	R931000015
0TF301020902000	R931002324
0TF301020903000	R931002325
0TF301020904000	R931002326
0TF301020905000	R931002327

Туре	Material number
-	
_	

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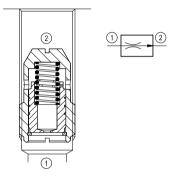
RE 18329-75/02.10 Replaces: RE 00162-02/01.06

Insert type Flow control, 2-way pressure compensated fixed setting

02

SFC1

0T.F1.01.00 - Y - Z



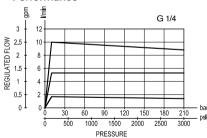
Description

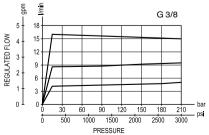
A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 145 psi exists between the two ports. The valve cannot be adjusted for variable flow output. Flow from 2 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated.

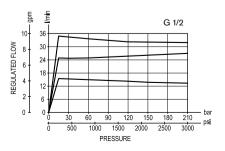
Technical data

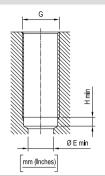
Max. operating pressure	bar (psi)	210 (3000)
Max. flow	l/min. (gpm)	see "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Weight	kg (lbs)	see "Dimensions" table
Special cavity		see "Dimensions"
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

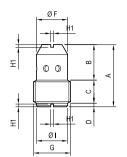
Performance

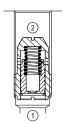












G	Α	В	С	D	E	F	- 1	Н	H1	Weight kg (lbs)	Flow max. I/min. (gpm)
G 1/4	25.5 (1)	13.5 (0.53)	8.5 (0.34)	3 (0.12)	8 (0.32)	10 (0.39)	11 (0.43)	5 (0.2)	1.5 (0.6)	0.011 (0.024)	10 (3)
G 3/8	28 (1.1)	15 (0.59)	10.5 (0.41)	2 (0.08)	11 (0.43)	14 (0.55)	14.5 (0.57)	5 (0.2)	1.5 (0.6)	0.024 (0.053)	16 (4)
G 1/2	35 (1.38)	19.5 (0.77)	13 (0.52)	2 (0.08)	14 (0.55)	17.5 (0.69)	17.5 (0.69)	5 (0.2)	1.5 (0.6)	0.048 (0.106)	40 (11)

Ordering code

Note: available also as "Sleeve valve for line mounting" See data sheets RE 18316-12 and RE 18316-13

Insert type - Flow control,
2-way pressure compensated fixed setting

Port sizes
= 09 G 1/4
= 02 G 3/8
= 03 G 1/2

0T.F1.01.00

 $Y \mid Z$

Series 0/A to L unchanged performances and dimensions

		Regulated flow range I/min. (gpm)											
	= 01	= 02	= 03	= 04	= 05	= 06	= 07	= 08	= 09	= 10			
for Y=09							7 (1.9) ± 15%			10 (2.6) ± 15%			
for Y=02	4 (1.1) ± 15%						14 (3.7) ± 10%		-	-			
for Y=03			20 (5.3) ± 10%				40 (10.6) ± 10%	1	i	-			

Туре	Material number
0TF101000201000	R931002311
0TF101000202000	R931002312
0TF101000203000	R931002313
0TF101000204000	R931002314
0TF101000205000	R931000009
0TF101000206000	R931002315
0TF101000207000	R931002316
0TF101000208000	R931002317
0TF101000301000	R931002318
0TF101000302000	R931002319
0TF101000303000	R931002320
0TF101000304000	R931002321
0TF101000305000	R931002322

Туре	Material number
0TF101000306000	R931002063
0TF101000307000	R931001404
0TF101000901000	R931002304
0TF101000902000	R931000010
0TF101000903000	R931000272
0TF101000904000	R931002305
0TF101000905000	R931002306
0TF101000906000	R931000011
0TF101000907000	R931002307
0TF101000908000	R931002308
0TF101000909000	R931002309
0TF101000910000	R931002310

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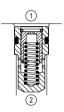
RE 18329-70/02.10 Replaces: RE 00162-02/01.06

Insert type Flow control, 2-way pressure compensated fixed setting

0T.F1.02.00.09 - Z



IFC₂

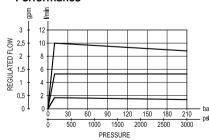




Description

A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 145 psi (10 bar) exists between the two ports. The valve cannot be adjusted for variable flow output. Flow from 2 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated.

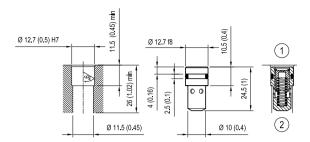
Performance



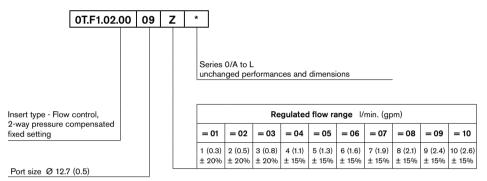
Technical data

Max. operating pressure	bar (psi)	210 (3000)
Max. flow	l/min. (gpm)	see "Regulated flow range" table
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Weight	kg (lbs)	0.013 (0.03)
Special cavity		see "Dimensions"
Seal kit (*)	code material no.	RGIFC2010000100 R931002403
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Other Technical Data		See data sheet RE 18350-50
(*) Only automal apple for	. 10	

(*) Only external seals for 10 valves



Ordering code



Type

Туре	Material number
0TF102000901000	R931002294
0TF102000902000	R931002295
0TF102000903000	R931002296
0TF102000904000	R931002297
0TF102000905000	R931002298
0TF102000906000	R931002299
0TF102000907000	R931002300
0TF102000908000	R931002301
0TF102000909000	R931002302
0TF102000910000	R931002303

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Material number

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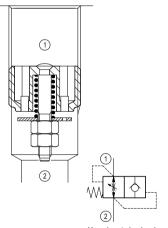
RE 18329-85/02.10

Insert type Hose burst



VPN1

0T.F4.01 - X - Y - Z



Hose burst check valve

Description

When the lowering speed exceeds preset value, as it might happen in case of hose failure, the flow is blocked. These valves should ideally be screwed directly into the actuator outlet port. Sealing parts are superfinished and enable to lock the load in the position where the actuator is in the moment of hose failure. These valves can be supplied, on request, with an orifice on the disc, allowing an emergency lowering of the load. It is recommended to fit a flow regulator valve downstream the hose burst valve, at the end of the flexible hose, to control the lowering speed at the nominal value. The "R" gap must be adjusted to allow a flow at least 50% over the nominal regulated flow from the actuator.



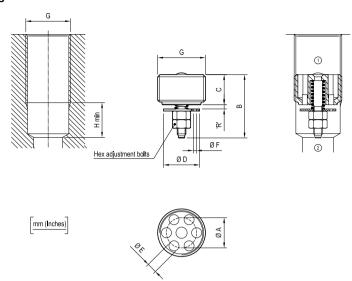
Hose burst check valve with orifice

The valve is only supposed to be operated in case of hose failure. Should this circumstance occur, we strongly recommend to verify the integrity of the valve and eventually to replace it in the event that the pressure spike generated by the hose failure was such to damage permanently some valve components.

Technical data

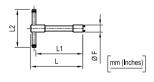
Note: available also as "Sleeve valve for line mounting" See data sheets RE 18316-85, RE 18316-86, RE 18316-87 and RE 18316-88

Max. operating pressure	bar (psi)	315 (4500)
Max. flow	I/min. (gpm)	see performance graphs ('R'-Q)
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	see "Dimensions" table
Weight	kg (lbs)	see "Dimensions" table
Special cavity		see "Dimensions"
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm ² /s (cSt)
Filtration		Nominal value max. 10μm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50



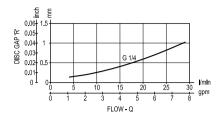
G	А	В	С	D	E	F	F H Hex	Weight kg (lbs)	Inst. torque Nm (ft-lbs)	Flow max. I/min. (gpm)		
										min.	max.	
G 1/4	8.5	17.5	8	9.5	2.4	on request	11	5.5	0.005	2 (1.5)	4 (1)	25 (7)
<u> </u>	(0.34)	(0.69)	(0.32)	(0.37)	(0.1)	(0.1)	(0.43)	(0.22)	(0.011)	2 (1.0)	. (.,	20 (//
G 3/8	10.5	23	10.5	12.5	3.5	on request	11	5.5	0.010	3 (2)	6 (2)	50 (13)
G 5/6	(0.41)	(0.91)	(0.41)	(0.49)	(0.14)	(0.14) Off request	(0.43)	(0.22)	(0.022)	3 (2)	0 (2)	30 (13)
G 1/2	13	25	12	15	4.5		15	7	0.020	4 (3)	16 (4)	80 (21)
G 1/2	(0.51)	(0.98)	(0.47)	(0.59)	(0.18)	on request	(0.59)	(0.28)	(0.044)	4 (3)	16 (4)	60 (21)
G 3/4	16	30.5	17	18	6		16	7	0.042	10 (7)	25 (7)	150 (40)
G 3/4	(0.63)	(1.2)	(0.67)	(0.71)	(0.24)	on request	(0.63)	(0.28)	(0.093)	10 (7)	25 (7)	150 (40)

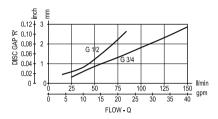
Fitting tool dimensions

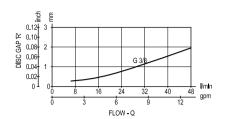


Туре	F	L	L1	L2	Tool code
VPN1.G14	11.3 (0.45)	120 (4.72)	110 (4.33)	60 (2.36)	AVA18
VPN1.G38	15 (0.59)	120 (4.72)	108 (4.25)	80 (3.15)	AVA18-01
VPN1.G12	18.8 (0.74)	120 (4.72)	108 (4.25)	80 (3.15)	AVA18-02
VPN1.G34	24 (0.95)	120 (4.72)	108 (4.25)	80 (3.15)	AVA18-03

Performance



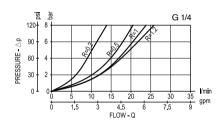


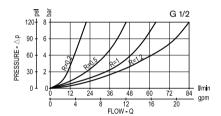


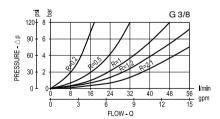
Performance curves R/flow (allowance can be ±10% from the curve) After assembling the valve are preadjustated at the following values

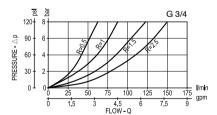
0.5 mm (0.02 in) for G 1/4 and G 3/8 0.7 mm (0.03 in) for G 1/2 and G 3/4

Flow performance from '1' to '2' depending on R-lenght

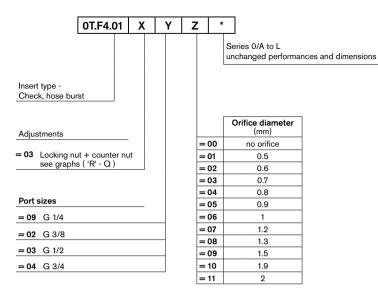








Special flow settings available.
Please contact factory authorized representative for ordering code



Туре	Material number
0TF401030200000	R931000017
0TF401030300000	R901127828
0TF401030400000	R901161819
0TF401030900000	R931000021

туре	Material number

Matarial muschau

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Insert valves

Check

Designation	Description	Cavitv	Code	Data sheet	Page	
Designation	Description	Cavity	Code	Data Sneet	Page	
Insert valve check poppet type	VUM1.025	Special	0TU6030099Z	18329-51	505	
Insert valve check poppet type	VUM1.050	Special	0TU6010099Z	18329-52	507	
Insert valve check poppet type	VUM1.060	Special	0TU6020099Z	18329-53	509	02
Insert valve check poppet type	VUH1	Special	0TU50100YZ	18329-61	511	
Insert valve check poppet type	VUB1	Special	0TU30100YZ	18329-65	513	



RE 18329-51/02.10 Replaces: RE 00162-02/01.06

Insert type Check, poppet type

Special cavity, 869

VUM1.025 0T.U6.03.00.99 - Z



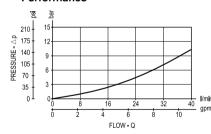




Description

When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

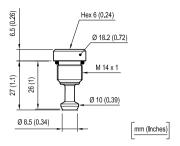
Performance



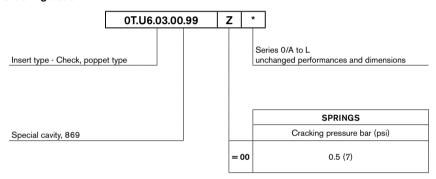
Technical data

bar (psi)	380 (5500)
l/min. (gpm)	40 (11)
drops/min.	5
°C (°F)	-30 to 100 (-22 to 212)
Nm (ft-lbs)	30-35 (22-26)
kg (lbs)	0.03 (0.07)
	869
code material no.	RG0869020000100 R931002405
	Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	No restrictions
	See data sheet RE 18350-50
	l/min. (gpm) drops/min. °C (°F) Nm (ft-lbs) kg (lbs) code

(*) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number
0TU603009900000	R931002250		

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The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that

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Subject to change.



RE 18329-52/02.10 Replaces: RE 00162-02/01.06

Insert type Check, poppet type

Special cavity, 730

VUM1.050 OT.U6.01.00.99 - Z



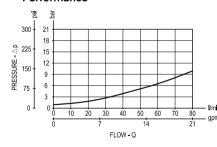




Description

When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

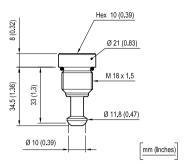
Performance



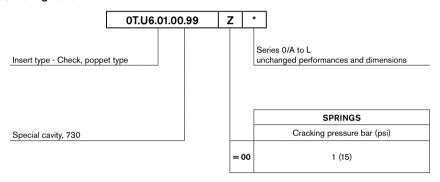
Technical data

Max. operating pressure	bar (psi)	380 (5500)
Max. flow	I/min. (gpm)	80 (21)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	35-40 (26-30)
Weight	kg (lbs)	0.05 (0.11)
Special cavity		730
Seal kit (*)	code material no.	RG0730020000100 R931002406
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm ² /s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number
0TU601009900000	0TU601009900000 R901109792		

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RE 18329-53/02.10 Replaces: RE 00162-02/01.06

Insert type Check, poppet type

Special cavity, 808

VUM1.060 0T.U6.02.00.99 - Z



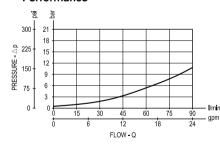




Description

When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

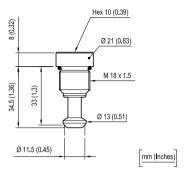
Performance



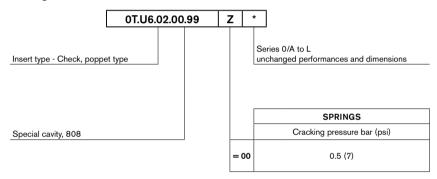
Technical data

Max. operating pressure	bar (psi)	380 (5500)
Max. flow	I/min. (gpm)	90 (24)
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	35-40 (26-30)
Weight	kg (lbs)	0.06 (0.13)
Special cavity		808
Seal kit (*)	code material no.	
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Installation		No restrictions
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves



Ordering code



Туре	Material number	Туре	Material number		
0TU602009900000	R931002323				

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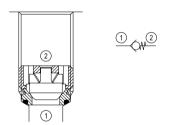
RE 18329-61/02.10 Replaces: RE 00162-02/01.06

Insert type Check, poppet type



VUH1

0T.U5.01.00 - Y - Z

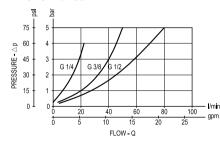


Description

When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Note: UNF and Metric versions available on request. Consult factory.

Performance

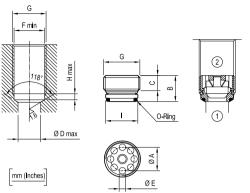


Technical data

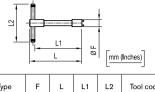
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	see "performance" graph
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	see "Dimensions" table
Weight	kg (lbs)	see "Dimensions" table
Special cavity		see "Dimensions"
Seal kit (*)	code material no.	see "Dimensions" table
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Other Technical Data		See data sheet RE 18350-50

(*) Only external seals for 10 valves





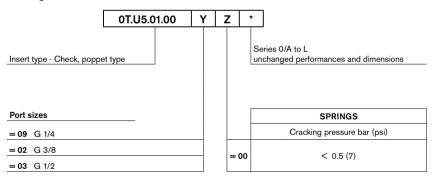
Fitting tool dimensions



Туре	F	L	L1	L2	Tool code
VUH1.G14	11.3 (0.45)	120 (4.72)	110 (4.33)	60 (2.36)	AVA17
VUH1.G38	14.9 (0.59)	120 (4.72)	108 (4.25)	80 (3.15)	AVA 17-01
VUH1.G12	18.6 (0.73)	120 (4.72)	108 (4.25)	80 (3.15)	AVA17-02

G	А	В	С	D	E	F	O-Ring dimensions	Seal kit	Н	ı	Weight kg (lbs)	Inst. torque Nm (ft-lbs)	Flow max. I/min. (gpm)
G 1/4	8.5 (0.34)	8.8 (0.35)	4.2 (0.17)	7 (0.28)	2.2 (0.09)	11.6 (0.46)	Ø 8.1x1.6 (0.32x0.06)	RG09UH010000100 R931002413	3 (0.12)	11.3 (0.45)	0.005 (0.011)	6 (4)	20 (5)
G 3/8	10.8 (0.43)	12 (0.47)	7 (0.28)	9 (0.35)	3 (0.12)	15.1 (0.6)	Ø 11x1.5 (0.43x0.06)	RG02UH010000100 R931002411	3 (0.12)	14.8 (0.58)	0.015 (0.033)	6 (4)	50 (13)
G 1/2	14.2 (0.56)	14.7 (0.58)	8 (0.32)	12 (0.47)	3.8 (0.15)	18.8 (0.74)	Ø 14x1.5 (0.55x0.06)	RG03UH010000100 R931002412	4.5 (0.18)	18.6 (0.73)	0.015 (0.033)	10 (7)	80 (21)

Ordering code



Туре	Material number	Туре
0TU501000200000	R901064101	
0TU501000300000	R901087794	
0TU501000900000	R900764338	

Type Material number

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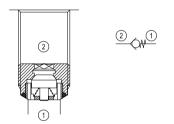
RE 18329-65/02.10 Replaces: RE 00162-02/01.06

Insert type Check, poppet type



VUB₁

0T.U3.01.00 - Y - Z

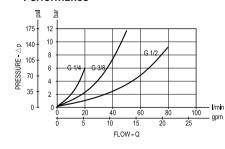


Description

When pressure at 2 rises above the spring bias pressure, the poppet is lifted and flow allowed from 2 to 1. The valve is closed (checked) from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.

Note: UNF and Metric versions available on request. Consult factory.

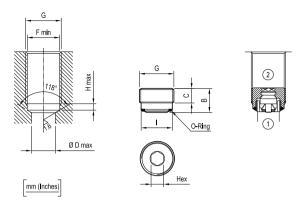
Performance



Technical data

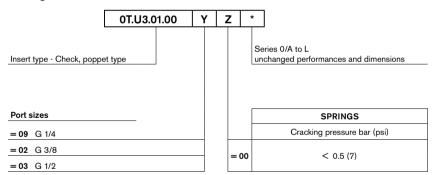
Max. operating pressure	bar (psi)	350 (5000)
Max. flow	l/min. (gpm)	see "performance" graph
Max. internal leakage	drops/min.	5
Fluid temperature range	°C (°F)	-30 to 100 (-22 to 212)
Installation torque	Nm (ft-lbs)	see "Dimensions" table
Weight	kg (lbs)	see "Dimensions" table
Special cavity		see "Dimensions"
Seal kit (*)	code material no.	see "Dimensions" table
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 5 to 800 mm²/s (cSt)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Other Technical Data		See data sheet RE 18350-50
(*) Only automal and for	. 10	•

(*) Only external seals for 10 valves



G	В	С	Hex.	D	ļ	F	O-Ring dimensions	O-Ring codes	Н	Weight kg (lbs)	Inst. torque Nm (ft-lbs)	Flow max. I/min. (gpm)
G 1/4	10 (0.39)	6 (0.24)	6 (0.24)	7 (0.28)	11.5 (0.45)	11.6 (0.46)	Ø 9 x 1 (0.35x0.04)	RG09UB010000100 R931002410	3 (0.12)	0.005 (0.011)	15 (11)	20 (5)
G 3/8	11.5 (0.45)	7 (0.28)	6 (0.24))	9 (0.35)	14.95 (0.59)	15.1 (0.6)	Ø 11x1.5 (0.43x0.06)	RG02UB010000100 R931002408	3 (0.12)	0.015 (0.033)	20 (15)	50 (13)
G 1/2	13.5 (0.53)	8 (0.32)	8 (0.32)	12 (0.47)	18.7 (0.74)	18.8 (0.74)	Ø 14x1.5 (0.55x0.06)	RG03UB020000100 R931002409	3 (0.12)	0.020 (0.044)	20 (15)	80 (21)

Ordering code



Туре	Material number	Туре	Material number
0TU301000200000	R901106625		
0TU301000300000	R901106626		
0TU301000900000	R901071238		

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Sleeve valves for line mounting

Flow control

Designation	Code	Ports	Data sheet	Page
Sleeve valves for line mounting fixed orifice restrictor with reverse flow check	VF-MF	G 1/4	18316-01	519
Sleeve valves for line mounting fixed orifice restrictor with reverse flow check	GSU	G 1/4; G 3/8; G 1/2	18316-02	521
Sleeve valves for line mounting fixed orifice restrictor with poppet type reverse flow check	SF	G 1/4; G 3/8; M 18X1,5; G 1/2; G 3/4; G 1	18316-03	523
Sleeve valves for line mounting adjustable bidirectional flow restrictor	RD	G 1/4; G 3/8; G 1/2; G 3/4	18316-04	525
Sleeve valves for line mounting adjustable bidirectional flow restrictor	RDF	G 1/4; G 3/8; G 1/2; G 3/4	18316-05	527
Sleeve valves for line mounting adjustable barrel type bidirectional restrictor	SD	G 1/4; G 3/8; M 18X1,5; G 1/2; G 3/4; G 1; G 1 1/4	18316-06	529
Sleeve valves for line mounting adjustable barrel type restrictor with poppet type reverse flow check	FO	G 3/8; G 1/2; G 3/4; G 1; G 1 1/4	18316-09	531
Sleeve valves for line mounting adjustable restrictor with ball type reverse flow check	SU	G 1/4; G 3/8; M 18X1,5; G 1/2; G 3/4; G 1	18316-08	533
Sleeve valves for line mounting adjustable restrictor with ball type reverse flow check	SUM38	G 3/8	18316-07	535
Sleeve valves for line mounting adjustable restrictor with poppet type reverse flow check	RU	G 1/4; G 3/8; G 1/2; G 3/4	18316-10	537
Sleeve valves for line mounting adjustable restrictor with poppet type reverse flow check	RUF	G 1/4; G 3/8; G 1/2; G 3/4	18316-11	539
Sleeve valves for line mounting pressure compensated fixed setting flow regulator	SFC-FF	G 1/4; G 3/8; G 1/2	18316-12	541

The latest information on products can also be found on Bosch Rexroth web-site: www.boschrexroth.com

Sleeve valves for line mounting

Flow control

Designation	Code	Ports	Data sheet	Page
Sleeve valves for line mounting pressure compensated fixed setting flow regulator	SFC-MF	G 1/4; G 3/8; G 1/2	18316-13	543
Sleeve valves for line mounting pressure compensated partially adjustable flow regulator	VCDC-H-MC	G 1/4; G 3/8	18316-14	545
Sleeve valves for line mounting pressure compensated partially adjustable flow regulator	VCDC-H-MC	G 1/2; G 3/4	18316-15	547
Sleeve valves for line mounting pressure compensated partially adjustable flow regulator	VCDC-H-MF	G 1/4; G 3/8	18316-16	549
Sleeve valves for line mounting pressure compensated partially adjustable flow regulator	VCDC-H-MF	G 1/2; G 3/4	18316-17	551
Sleeve valves for line mounting pressure compensated adjustable flow regulator with reverse flow check	VCST 1/4	G 1/4	18316-18	553
Sleeve valves for line mounting pressure compensated adjustable flow regulator with reverse flow check	VCST 3/8	G 3/8	18316-19	555
Sleeve valves for line mounting pressure compensated adjustable flow regulator with reverse flow check	VCST 1/2	G 1/2	18316-20	557
Sleeve valves for line mounting pressure compensated adjustable flow regulator with reverse flow check	VCD-RU	G 3/8	18316-21	559
Sleeve valves for line mounting hose burst valve	VPN-FF	G 1/4; G 3/8	18316-85	561
Sleeve valves for line mounting hose burst valve	VPN-FF	G 1/2; G 3/4	18316-86	563

Sleeve valves for line mounting

Flow control

Designation	Code	Ports	Data sheet	Page
Sleeve valves for line mounting hose burst valve	VPN-MF	G 1/4; G 3/8	18316-87	565
Sleeve valves for line mounting	VPN-MF	G 1/2; G 3/4	18316-88	567

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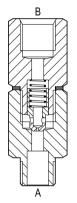
Flow control valves

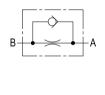
Fixed orifice restrictor with reverse flow check



VF-MF

04.46.03.00-Y-Z





Description

The "B-A" flow is restricted by a calibrated orifice, while flow "A-B" is always allowed through the incorporated check valve. Pressure compensation is not provided and flow depends from pressure drop and oil viscosity.

The valve is assembled with two hexagonal threaded sleeves and an internal check poppet. The drawing shows the valve with Male port A and Female port B: the two sleeves can be assembled in the reversed order and the result will be Female A port and Male B port.

Technical data

Port	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
G 1/4	350 (5000)	10 (3)	0.10 (0.22)

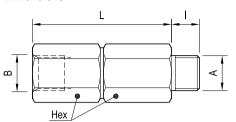
Steel body, zinc plated.

Installation torque: 33 - 37 Nm (24 - 27 ft-lb)

Advantages

-Very compact design and inline mounting for space saving.

-Mounting position is unrestricted.



Ports size / Dimensions

Y	Ports A-B	L mm (inches)	I mm (inches)	Hex mm (inches)
09	G 1/4	52 (2.05)	10.5 (0.41)	19 (0.75)

The valve is only available with G 1/4 ports, with different size restriction orifices, as indicated by the table of orifices.

	Calibrated orifices										
z	09	06	00	07	10	12	11	03	08	05	01
Calibrated orifice Ø mm (inches)	0.3* (0.012*)	0.4 (0.016)	0.5 (0.020)	0.6 (0.024)	0.7 (0.028)	0.8 (0.032)	0.9 (0.035)	1.0 (0.039)	1.3 (0.051)	1.5 (0.059)	1.75 (0.069)
mm (inches) (0.012*) (0.016) (0.020) (0.024) (0.028) (0.032) (0.035) (0.039) (0.051) (0.059) (

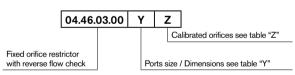
Applications

In a variety of cases when a one-way restrictor is needed, especially for cushioning a control circuit (like servo-controls), or delaying brake engagement, etc.

-Control of delay for brake disengagement.

- -Dampening of pressure peaks in joystick controlled lines.
- -Simple and cost-effective solution for a one-way flow control.

Ordering code



Туре	Material number	Туре	Material number	Туре	Material n
04460300090000A	R930000645	044603000912000	R930000655		
04460300090100A	R930000646				
04460300090300A	R930000647				
04460300090500A	R930000648				
04460300090600A	R930000649				
04460300090700A	R930000650				
04460300090800A	R930000651				
04460300090900A	R930000652				
04460300091000A	R930000653				
044603000911000	R930000654				

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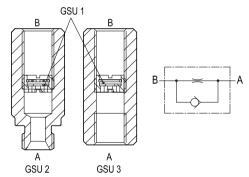
03

Flow control valves

Fixed orifice restrictors with reverse flow check



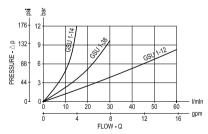
GSU Series



Description

The "B-A" flow is restricted by a calibrated orifice, while flow "A-B" is always allowed through the incorporated check valve. Pressure compensation is not provided and flow depends from pressure drop and oil viscosity. The valve is composed by an hexagonal threaded sleeve with a special inserted cartridge (GSU1): the cartridge is available in different orifice sizes, and can be fitted in either

Performance



Δp curves vs. flow in "A-B" free flow direction

Advantages

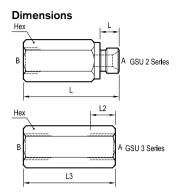
- -Compact design and inline mounting for space saving.
- -Three sizes provide great adaptability to the system.
- -Mounting position is unrestricted.
- -Low Δp in the free flow direction.

Technical data

direction (see drawing).

Code Pressure P max bar (psi)		Flow Q max I/min (gpm)	Weight kg (lbs)
GSU 2-14 300 (4300)		15 (4)	0.07 (0.15)
GSU 2-38	300 (4300)	30 (8)	0.1 (0.22)
GSU 2-12	300 (4300)	70 (18)	0.19 (0.42)
GSU 3-14	300 (4300)	15 (4)	0.08 (0.18)
GSU 3-38	300 (4300)	30 (8)	0.1 (0.22)
GSU 3-12	300 (4300)	70 (18)	0.17 (0.37)

Steel body, zinc plated



Ports size / Dimensions

Code	Ports size A-B	L mm (inches)	L1 mm (inches)	L2 mm (inches)	L3 mm (inches)	Hex mm (inches)
GSU 2-14	G 1/4	10 (0.39)	50 (1.96)	/	/	19 (0.75)
GSU 2-38	G 3/8	12 (0.47)	55 (2.17)	/	/	22 (0.87)
GSU 2-12	G 1/2	14 (0.55)	70	/	/	27 (1.06)
GSU 3-14	G 1/4	/	/	13 (0.51)	48 (1.89)	19 (0.75)
GSU 3-38	G 3/8	/	/	13 (0.51)	52 (2.05)	22 (0.87)
GSU 3-12	G 1/2	/	1	14 (0.55)	60 (2.36)	27 (1.06)

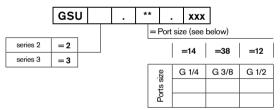
Application example

Applications

The GSU Series valve is a cost effective non-compensated flow control which can be employed in a variety of cases when a one-way restrictor is needed. The smallest sizes can be used also as dampeners for pressure peaks, control of brake engagement.



Ordering code



XXX: It identifies the I.D. of the requested orifice. (only mm value)

example 1: GSU2.14.200 = M/F - G 1/4 - hole 2 mm (0.079 inches) example 2: GSU3.14.075 = F/F - G 1/4 - hole 0.75 mm (0.030 inches)

Туре	Material number
GSU2.12.000	R932006954
GSU2.12.100	R932006953
GSU2.12.200	R932006955
GSU2.14.000	R932006926
GSU2.14.075	R932500236
GSU2.14.200	R932006956
GSU2.38.000	R932006927
GSU2.38.075	R932500237
GSU2.38.100	R932500239

Туре	Material number
GSU3.12.000	R932006958
GSU3.12.075	R932006957
GSU3.12.150	R932006958
GSU3.14.000	R932006960
GSU3.14.075	R932500245
GSU3.14.150	R932500248
GSU3.38.000	R932006961
GSU3.38.100	R932500249
GSU3.38.150	R932500250

Туре	Material number

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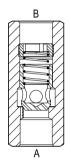
03

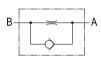
Flow control valves

Fixed orifice restrictors with poppet type reverse flow check

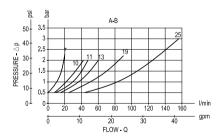


SF Series





Performance



 Δp curves vs. flow in "A-B" free flow direction (refer to the specific table).

Cracking pressure is always 0,5 bar.

Different size orifices, (with ID ≥ 0,4 mm) are available. The orifice ID must be specified when ordering (see order code).

Description

This line mounted valve provides a one-way fixed type restriction, in B-A direction. It has no pressure compensation and flow depends from pressure drop and oil viscosity. Free flow is allowed from A to B by an incorporated check valve, when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat.

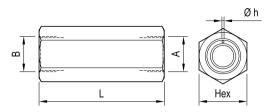
Technical data

Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
SF 7	350 (5000)	25 (7)	0.10 (0.22)
SF 10	350 (5000)	50 (13)	0.18 (0.40)
SF 11	350 (5000)	50 (13)	0.18 (0.40
SF 13	350 (5000)	80 (21)	0.22 (0.49)
SF 19	250 (3600)	100 (26)	0.48 (1.06)
SF 25	250 (3600)	160 (42)	0.93 (2.05)

Steel body, zinc plated

Advantages

- -Compact design and inline mounting for space saving.
- -Six sizes provide great adaptability to the system.
- -Cost effectiveness.
- -Mounting position is unrestricted.
- -Low Δp in the free flow direction.



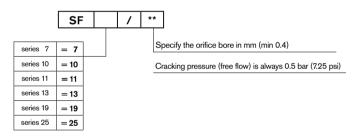
Ports size / Dimensions

Code	Ports size A-B	Hex mm (inches)	L mm (inches)
SF 7	G 1/4	19 (0.75)	62 (2.44)
SF 10	G 3/8	24 (0.95)	70 (2.76)
SF 11	M18x1.5	24 (0.94)	70 (2.76
SF 13	G 1/2	27 (1.06)	79 (3.11)
SF 19	G 3/4	36 (1.42)	94 (3.70)
SF 25	G 1	46 (1.81)	114 (4.49)

Applications

In a variety of cases when a one-way restrictor is needed like building-up some back pressure at the discharge side of of an hydraulic motor.

Ordering code



Туре	Material number
SF 7/0.5	R932500585
SF 7/0.8	R932500588
SF 7/1	R932500590
SF 7/1.5	R932006941
SF 7/2	R932006942
SF 10/0.5	R932500591
SF 10/0.8	R932500593
SF 10/1	R932500594
SF 10/2	R932500597
SF 11/1	R932006943

Туре	Material number
SF 11/1.5	R932006944
SF 11/2	R932006945
SF 13/0.5	R932006947
SF 13/1	R932500598
SF 13/1.5	R932006962
SF 19/1	R932500599
SF 19/1.5	R932006949
SF 25/2	R932006950
SF 25/3	R932006951

Туре	Material number
-	

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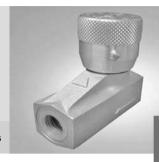
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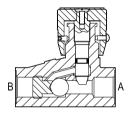
03

Flow control valves

Adjustable bidirectional flow restrictors





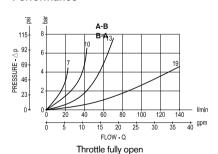




Description

This line mounted valve provides a fully adjustable orifice restriction. Even though the Performance curves shown in the tables refer to the A-B flow direction, the valve is actually bi-directional and the performance curves can be assumed almost accurate also for the reverse flow direction B-A. Pressure compensation is not provided and flow depends from pressure drop and oil viscosity.

Performance



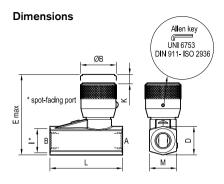
Advantages

- -Compact design
- -Four sizes provide great adaptability to the system.
- -Fine adjustment.
- -Mounting position is unrestricted.

Technical data

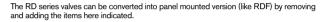
Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
RD 7	350 (5000)	25 (7)	0.28 (0.62)
RD 10	350 (5000)	45 (12)	0.48 (1.06)
RD 13	350 (5000)	70 (19)	0.85 (1.87)
RD 19	350 (5000)	140 (37)	1.58 (3.48)

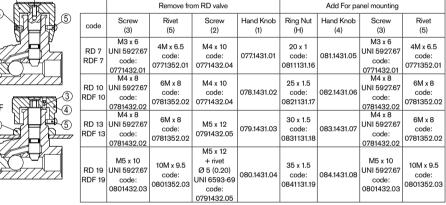
Cast iron, zinc plated with aluminium hand knob

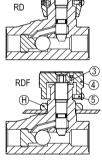


Post size / Dimensions

	Ports	I*	L	ØВ	E max	D	М
Code	size	mm	mm	mm	mm	mm	mm
	A-B	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
RD 7	G 1/4	21 (0.83)	64 (2.52)	33 (1.30)	63.5 (2.5)	24 (0.95)	24 (0.95)
RD 10	G 3/8	25 (0.98)	75 (2.95)	40 (1.58)	73 (2.87)	30 (1.18)	28 (1.10)
RD 13	G 1/2	29 (1.14)	92 (3.62)	45 (1.77)	93 (3.66)	36 (1.42)	35 (1.38)
RD 19	G 3/4	36.5 (1.44)	115 (3.62)	53 (2.09)	120 (4.72)	43 (1.69)	43 (1.69)







Ordering code



Adj. travel (only bar value see below)

	RD 7	RD 10	RD 13	RD 19
K mm (inch)	7 (0.28)	8 (0.31)	11 (0.43)	14 (0.55)

Туре	Material number	Туре
RD7	R932500528	
RD10	R932500529	
RD13	R932500530	

R932500531

lype	Material number

Αp	plic	at	ions
		_	

The RD Series valve is a fully and easily adjustable non-compensated flow control which can be employed many applications where a non-compensated bidirectional flow control is desired.

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RD19

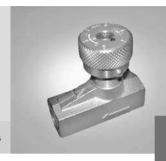
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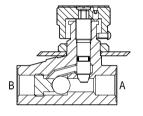
03

Flow control valves

Adjustable bidirectional flow restrictors



RDF Series





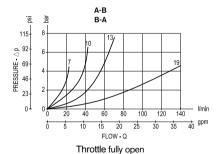
Description

This valve provides a fully adjustable orifice restriction. Even though the Performance curves shown in the tables refer to the A-B flow direction, the valve is actually bi-directional and the performance curves can be assumed almost accurate also for the reverse flow direction B-A.

Pressure compensation is not provided and flow depends from pressure drop and oil viscosity.

This RDF flow restrictor can be line mounted or panel mounted and the hand-knob can be locked after adjustment.

Performance



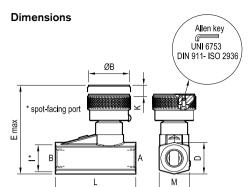
Advantages

- -Compact design.
- -Panel mounting.
- -Four sizes provide great adaptability to the system.
- -Fine adjustment.
- -Mounting position is unrestricted.

Technical data

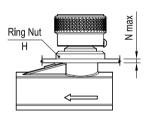
Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
RDF 7	350 (5000)	25 (7)	0.28 (0.62)
RDF 10	350 (500)	45 (12)	0.48 (1.06)
RDF 13	350 (5000)	70 (19)	0.85 (1.87)
RDF 19	350 (5000)	140 (37)	1.58 (3.48)

Cast iron, zinc plated with aluminium hand knob



Ports size / Dimensions

	Ports	I*	L	ØВ	E max	D	М
Code	size	mm	mm	mm	mm	mm	mm
	A-B	(inches)	(inches)	(inches)	(inches)	(inches)	(inches)
DDE 5	0.444	21	64	33	63.5	24	24
RDF 7	G 1/4	(0.83)	(2.52)	(1.30)	(2.5)	(0.95)	(0.95)
RDF 10	0.0/0	25	75	40	73	30	28
RDF 10	G 3/8	(0.98)	(2.95)	(1.58)	(2.87)	(1.18)	(1.10)
DDE 40	0.4/0	29	92	45	93	36	35
RDF 13	G 1/2	(1.14)	(3.62)	(1.77)	(3.66)	(1.42)	(1.38)
DDE 40	0.04	36.5	115	53	120	43	43
RDF 19	G 3/4	(1.44)	(3.62)	(2.09)	(4.72)	(1.69)	(1.69)

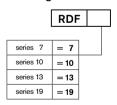


Code	N max mm (inches)	Н
RDF 7	5.5 (0.22)	M20 x 1
RDF 10	5.5 (0.22)	M25 x 1.5
RDF 13	7.5 (0.30)	M30 x 1.5
RDF 19	7.5 (0.30)	M35 x 1.5

Applications

The RDF Series valve is a fully and easily adjustable non-compensated flow control which can be employed many applications where a non-compensated bidirectional flow control is desired.

Ordering code



	-	, .		,	
		RDF 7	RDF 10	RDF 13	RDF 19
K (hodi)	(1011)	7 (0.28)	8 (0.31)	11 (0.43)	14 (0.55)

Туре	Material number
RDF7	R932500532
RDF10	R932500533
RDF13	R932500534
RDF19	R932500535

Туре	Material number

Туре	Material number

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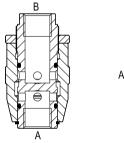
03

Flow control valves

Adjustable barrel type bidirectional restrictors



SD Series



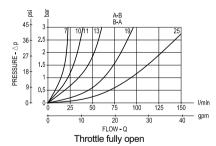


Description

This line mounted valve provides a fully adjustable restriction. Pressure compensation is not provided and flow depends from pressure drop and oil viscosity. Once the flow is adjusted, lock the knurled ring nut (H) in order to maintain the desired opening.

Minor leakage in both directions can be expected with valve fully closed.

Performance



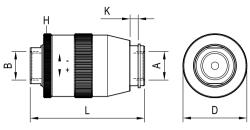
Advantages

- -Compact design and inline mounting for space saving.
- -Seven sizes provide great adaptability to the system.
- -Easiness of adjustment.
- -Mounting position is unrestricted.

Technical data

Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
SD 7	350 (5000)	12 (3)	0.29 (0.64)
SD 10	350 (5000)	30 (8)	0.39 (0.86)
SD 11	350 (5000)	30 (8)	0.40 (0.88)
SD 13	350 (5000)	45 (12)	0.69 (1.52)
SD 19	250 (3600)	80 (21)	1.08 (2.38)
SD 25	250 (3600)	140 (37)	3.0 (6.6)
SD 32	250 (3600)	250 (66)	2.9 (6.4)

Steel body, zinc plated



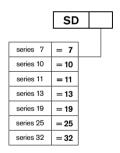
Ports size / Dimensions

Code	Ports size A-B	Ø D mm (inches)	L mm (inches)	K mm (inches)
SD 7	G 1/4	35 (1.38)	62 (2.44)	5 (0.20)
SD 10	G 3/8	38 (1.50)	72 (2.84)	7 (0.28)
SD 11	M18x1.5	38 (1.50)	72 (2.84)	7 (0.28)
SD 13	G 1/2	48 (1.89)	86 (3.39)	8 (0.32)
SD 19	G 3/4	55 (2.17)	100 (3.94)	11 (0.43)
SD 25	G 1	79 (3.11)	126 (4.96)	12 (0.47)
SD 32	G 1-1/4	79 (3.11)	143 (5.63)	12 (0.47)

Applications

The SD Series valve is a fully and easily adjustable non-compensated flow control which can be employed for meter-in (Port A connected to the actuator inlet) or meter-out (Port B connected to the actuator outlet in order to control the oil flow from the actuator). The cost effectiveness and the easiness of adjustment make it suitable for many circuits and many applications where a non-compensated flow control is desired.

Ordering code



Туре	Material number
SD 7	R932500579
SD 10	R932500580
SD 11	R932006966
SD 13	R932500581
SD 19	R932500582
SD 25	R932500583
SD 32	R932500584

Туре	Material number

Туре	oe Material number	

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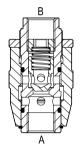
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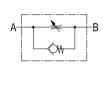
Flow control valves

Adjustable barrel type restrictors with poppet type reverse flow check

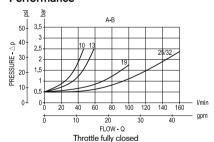


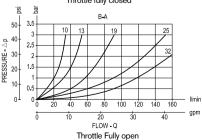
FO Series





Performance





Description

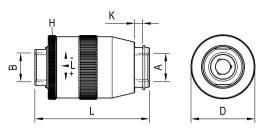
This line mounted restrictor throttles and limits the flow from B to A; it has an adjustable built-in restriction which can be tuned by rotating the external pinecone-type knurled sleeve from fully closed to fully open. Flow will increase by rotating the sleeve toward (+) direction. Once the desired adjustment is achieved, the sleeve can be locked by tightening the knurled ring nut (H) in order to prevent inadvertent changes or motion due to line vibrations. The maximum adjustment stroke is identified as K and, for different valve sizes, is shown by the specific table. This valve is a variable adjustable restriction, nonpressure-compensated: the actual flow through the valve will be determined by the pressure differential available between inlet B and outlet A, and also by the oil viscosity. Unrestricted reverse flow from A to B is permitted through a poppet type check valve, with cracking pressure 0,5 bar (7 psi) regardless of valve adjustment. The valve is available in different sizes for different flow ranges, as specified by the tables of the Technical data and Dimensions.

Minor leakage "B-A" can be expected with valve fully closed Free reverse flow "A-B" is always allowed through the incorporated poppet check valve with 0.5 bar cracking pressure.

Technical data

Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
FO 10	350 (5000)	50 (13)	0.42 (0.93)
FO 13	350 (5000)	80 (21)	0.74 (1.63)
FO 19	250 (3600)	100 (26)	1.18 (2.60)
FO 25	250 (3600)	160 (42)	2.9 (6.4)
FO 32	250 (3600)	160 (42)	3.0 (6.6)

Steel body, zinc plated



Ports size / Dimensions

Code	Ports size A-B	Ø D mm (inches)	L mm (inches)	K mm (inches)
FO 10	G 3/8	38 (1.50)	72 (2.84)	5.8 (0.23)
FO 13	G 1/2	48 (1.89)	86 (3.39)	8 (0.32)
FO 19	G 3/4	55 (2.17)	103 (4.06)	11 (0.43)
FO 25	G 1	79 (3.11)	123 (4.84)	12 (0.47)
FO 32	G 1-1/4	79 (3.11)	143 (5.63)	11.1 (0.44)

Advantages

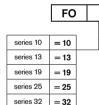
Advantages

- -Compact design and inline mounting for space saving.
- -Five sizes provide great adaptability to the system.
- -Easiness of adjustment.
- -Mounting position is unrestricted
- -Low Δp in the free flow direction

Applications

The FO Series valve is a fully and easily adjustable non-compensated flow control which can be employed for meter-in (Port A connected to the actuator inlet) or meter-out (Port B connected to the actuator outlet in order to control the oil flow from the actuator). The easiness of installation and of adjustment make it suitable for many circuits and many applications where a non-compensated flow control is desired.

Ordering code



Cracking pressure (free flow) is always 0.5 bar (7.25psi)

Туре	Material number	Туре	Material number	Туре	
FO 10	R932006925				
FO 13	R932500203				
FO 19	R932500204				
FO 25	R932500205				
FO 32	R932500206				

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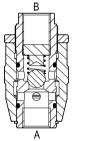
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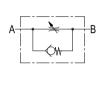
Flow control valves

Adjustable barrel type restrictors with ball type reverse flow check

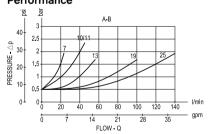


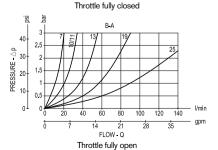
SU Series





Performance





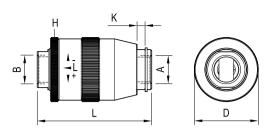
Description

This line mounted restrictor throttles and limits the flow from B to A; it has an adjustable built-in restriction which can be tuned by rotating the external pinecone-type knurled sleeve from fully closed to fully open. Flow will increase by rotating the sleeve toward (+) direction. Once the desired adjustment is achieved, the sleeve can be locked by tightening the knurled ring nut (H)in order to prevent inadvertent changes or motion due to line vibrations. The maximum adjustment stroke is identified as K and, for different valve sizes, is shown by the specific table. This valve is a variable adjustable restriction, nonpressure-compensated: the actual flow through the valve will be determined by the pressure differential available between inlet B and outlet A, and also by the oil viscosity. The valve is available in different sizes for different flow ranges, as specified by the tables of the Technical data and Dimensions. Minor leakage "B-A" can be expected with valve fully closed. Free reverse flow "A-B" is always allowed through the incorporated poppet check valve with 0.5 bar cracking pressure.

Technical data

ieciilicai uata			
Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
SU 7	350 (5000)	12 (3)	0.30 (0.66)
SU 10	350 (5000)	30 (8)	0.40 (0.88)
SU 11	350 (5000)	30 (8)	0.40 (0.88)
SU 13	350 (5000)	45 (12)	0.70 (1.54)
SU 19	250 (3600)	80 (21)	1.12 (2.47)
SU 25	250 (3600)	140 (37)	3.0 (6.6)

Steel body, zinc plated



Ports size / Dimensions

Code	Ports size A-B	Ø D mm (inches)	L mm (inches)	K mm (inches)
SU 7	G 1/4	35 (1.38)	62 (2.44)	5 (0.20)
SU 10	G 3/8	38 (1.50)	72 (2.84)	7 (0.28)
SU 11	M 18x1.5	38 (1.50)	72 (2.84)	7 (0.28)
SU 13	G 1/2	48 (1.89)	86 (3.39)	8 (0.32)
SU 19	G 3/4	55 (2.17)	100 (3.94)	11 (0.43)
SU 25	G 1	79 (3.11)	126 (4.96)	12 (0.47)

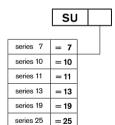
Advantages

- -Compact design and inline mounting for space saving. -Six sizes provide great adaptability to the system.
- -Easiness of adjustment.
- -Mounting position is unrestricted.
- -Low Δp in the free flow direction.

Applications

The SU Series valve is a fully and easily adjustable non-compensated flow control which can be employed for meter-in (Port A connected to the actuator inlet) or meter-out (Port B connected to the actuator outlet in order to control the oil flow from the actuator). The cost effectiveness and the easiness of adjustment make it suitable for many circuits and many applications where a noncompensated flow control is desired.

Ordering code



Cracking pressure (free flow) is always 0.5 bar (7.25psi)

Туре	Material number
SU7	R932500602
SU10	R932500603
SU11	R932500604
SU13	R932500605
SU19	R932500606
SU25	R932500607

Туре	Material number
	

Туре	Material number

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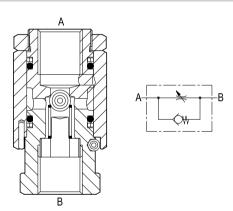
03

Flow control valves

Adjustable restrictors with ball type reverse flow check



SUM38



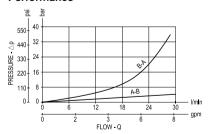
OE.21.01.04.02

Description

This line mounted restrictor throttles and limits the flow from B to A; it has an adjustable built-in restriction which can be tuned by rotating the external hexagonal 32mm (1.26 inches) sleeve from fully closed to fully open, as indicated by the arrow. Once the desired adjustment is achieved, the sleeve can be locked by tightening the hexagonal 30 mm (1.18 inches) ring nut in order to prevent inadvertent changes or motion due to line vibrations. This valve is a variable adjustable restriction, non-pressure-compensated: the actual flow through the valve will be determined by the pressure differential available between inlet B and outlet A, and also by the oil viscosity.

Minor leakage "B-A" can be expected with valve fully closed. Free reverse flow "A-B" is always allowed through the incorporated check valve with minimum cracking pressure.

Performance



Δp curves vs. flow in "A-B" free flow direction

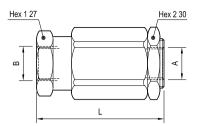
Technical data

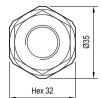
Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
210 (3000)	1-25 (0.3-7)	0.37 (0.82)

Steel body, zinc plated

Advantages

- -Very compact design and inline mounting for space saving.
 -Mounting position is unrestricted.
- -Low Δp in the free flow direction.





Ports size / Dimensions

Ports A-B	L mm (inches)
G 3/8	62 (2.44)

Applications

The SUM Series valve is a fully and easily adjustable non-compensated flow control which can be employed for meter-in (Port A connected to the actuator inlet) or meter-out (Port B connected to the actuator outlet in order to control the oil flow from the actuator). The cost effectiveness and the easiness of adjustment make it suitable for many circuits and many applications where a non-compensated flow control is desired.

Ordering code

OE.21.01.04.02

Adjustable restrictors with ball type reverse flow check

Туре	Material number	Туре	Material number	Туре	Material number
OE2101040200000	R934001678				

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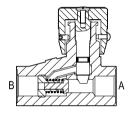
03

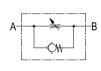


Adjustable restrictors with poppet type reverse flow check



RU Series



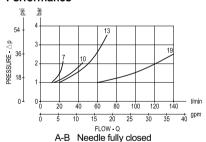


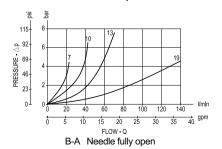
Description

With flow from B to A this line mounted valve provides a fully adjustable orifice restriction. Pressure compensation is not provided and flow depends from pressure drop and oil viscosity.

Free flow is allowed from A to B by an incorporated check valve, when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat.

Performance





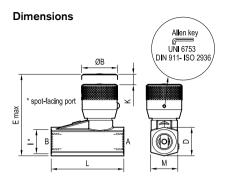
Technical data

iccinical data					
Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)		
RU 7	350 (5000)	25 (7)	0.28 (0.62)		
RU 10	350 (5000)	45 (12)	0.48 (1.06)		
RU 13	350 (5000)	70 (19)	0.85 (1.87)		
RU 19	350 (5000)	140 (37)	1.58 (3.48)		

Cast iron, zinc plated with aluminium hand knob

Advantages

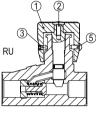
- -Compact design.
- -Four sizes provide great adaptability to the system.
- -Fine adjustment.



Ports size / Dimensions

Code	Ports size A-B	I* mm (inches)	L mm (inches)	Ø B mm (inches)	E max mm (inches)	D mm (inches)	M mm (inches)
RU 7	G 1/4	21 (0.83)	64 (2.52)	31 (1.22)	70.5 (2.78)	24 (0.95)	24 (0.95)
RU 10	G 3/8	25 (0.98)	75 (2.95)	37 (1.46)	81 (3.19)	30 (1.18)	28 (1.10)
RU 13	G 1/2	29 (1.14)	92 (3.62)	42 (1.65)	104 (4.09)	36 (1.42)	35 (1.38)
RU 19	G 3/4	36.5 (1.44)	115 (3.62)	50 (1.97)	134 (5.28)	43 (1.69)	43 (1.69)

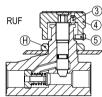
The RU series valves can be converted into panel mounted version (like RUF) by removing and adding the items here indicated.



		Remove from RU valve			Add For panel mounting				
)	code	Screw (3)	Rivet (5)	Screw (2)	Hand Knob (1)	Ring Nut (H)	Hand Knob (4)	Screw (3)	Rivet (5)
	RU 7 RUF 7	M3 x 6 UNI 5927.67 code: 0771432.01	4M x 6.5 code: 0771352.01	M4 x 10 code: 0771432.04	077.1431.01	20 x 1 code: 0811131.16	081.1431.05	M3 x 6 UNI 5927.67 code: 0771432.01	4M x 6.5 code: 0771352.01
	RU 10 RUF 10	M4 x 8 UNI 5927.67 code: 0781432.02	4M x 8 code: 0781352.02	M4 x 10 code: 0771432.04	078.1431.02	25 x 1.5 code: 0821131.17	082.1431.06	M4 x 8 UNI 5927.67 code: 0781432.02	6M x 8 code: 0781352.02
)	RU 13 RUF 13	M4 x 8 UNI 5927.67 code: 0781432.02	4M x 8 code: 0781352.02	M5 x 12 0791432.05	079.1431.03	30 x 1.5 code: 0831131.18	083.1431.07	M4 x 8 UNI 5927.67 code: 0781432.02	6M x 8 code: 0781352.02
7	RU 19 RUF 19	M5 x 10 UNI 5927.67 code: 0801432.03	10M x 9.5 code: 0801352.03	M5 x 12 + rivet Ø 5 (0.20) UNI 6593-69 code: 0791432.05	080.1431.04	35 x 1.5 code: 0841131.19	084.1431.08	M5 x 10 UNI 5927.67 code: 0801432.03	10M x 9.5 code: 0801352.03

Applications

control is desired.



Ordering code



Adj. travel (only bar value see below)

	RU 7	RU 10	RU 13	RU 19
K mm (inch)	7 (0.28)	8 (0.31)	11 (0.43)	14 (0.55)

Cracking pressure (free flow) is always 1 bar (14.5psi)

Material number
R932500550
R932500552
R932500553
R932500554

Туре	Material number
-	

Type Material number

The RU Series valve is a fully and easily adjustable non-compensated flow control

which can be employed for meter-in (Port A connected to the actuator inlet) or meter-out

(Port B connected to the actuator outlet in order to control the oil flow from the actuator).

make it suitable for many circuits and many applications where a non-compensated flow

The easiness of installation and of adjustment

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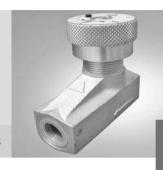
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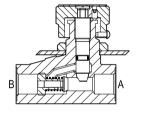
03



Adjustable restrictors with poppet type reverse flow check



RUF Series

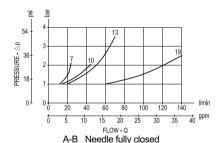


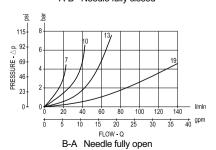


Description

With flow from B to A this valve provides a fully adjustable orifice restriction. Pressure compensation is not provided and flow depends from pressure drop and oil viscosity. Free flow is allowed from A to B by an incorporated check valve, when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat. This RUF flow restrictor can be line mounted or panel mounted and the hand-knob can be locked after adjustment.

Performance



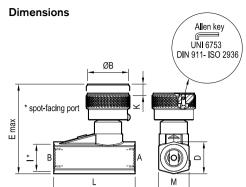


Technical data

Code	Pressure Flow Q max bar (psi) I/min (gpm)		Weight kg (lbs)
RUF 7	350 (5000)	25 (7)	0.28 (0.62)
RUF 10	350 (5000)	45 (12)	0.48 (1.06)
RUF 13	350 (5000)	70 (19)	0.85 (1.87)
RUF 19	350 (5000)	140 (37)	1.56 (3.48)

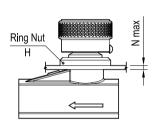
Cast iron, zinc plated with aluminium hand knob

- -Compact design.
- -Panel mounting.
- -Four sizes provide great adaptability to the system.
- -Fine adjustment.



Ports size / Dimensions

	Ports	l*	L	ØВ	E max	D	М
Code	size A-B	mm (inches)	mm (inches)	mm (inches)	mm (inches)	(inches)	mm (inches)
RUF 7	G 1/4	21 (0.83)	64 (2.52)	33 (1.30)	63.5 (2.5)	24 (0.95)	24 (0.95)
RUF 10	G 3/8	25 (0.98)	75 (2.95)	40 (1.58)	73 (2.87)	30 (1.18)	28 (1.10)
RUF 13	G 1/2	29 (1.14)	92 (3.62)	45 (1.77)	93 (3.66)	36 (1.42)	35 (1.38)
RUF 19	G 3/4	36.5 (1.44)	115 (3.62)	53 (2.09)	120 (4.72)	43 (1.69)	43 (1.69)

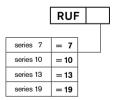


Code	N max mm (inches)	н
RUF 7	5.5 (0.22)	M20x1
RUF 10	5.5 (0.22)	M25x1.5
RUF 13	7.5 (0.30)	M30x1.5
RUF 19	7.5 (0.30)	M35x1.5

Applications

The RUF Series valve is a panel mounted fully and adjustable non-compensated flow control which can be employed for meter-in (Port A connected to the actuator inlet) or meter-out (Port B connected to the actuator outlet in order to control the oil flow from the actuator). The easiness of installation and of adjustment make it suitable for many circuits and many applications where a non-compensated flow control is desired.

Ordering code



Adj. travel (only bar value see below)

	RUF 7	RUF 10	RUF 13	RUF 19
K nm (inch)	7 (0.28)	8 (0.31)	11 (0.43)	14 (0.55)

Cracking pressure (free flow) is always 1 bar (14.5psi)

Туре	Material number
RUF7	R932500556
RUF10	R932500558
RUF13	R932500559
RUF19	R932500560

Туре	Material number

Туре	Material number

Bosch Rexroth Oil Control S.p.A. Fimma Division (Rge 2) Via G. Bovio, 7 Z.I. Mancasale 42124 Reggio Emilia, Italy Tel. +39 0522 517 277 Fax +39 0522 517 125 cartridges@oilcontrol.com www.boschrexroth.com

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RE 18316-12/10.09

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03

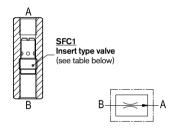
Flow control valves

Pressure compensated fixed setting flow regulators, with female sleeve



SFC-FF

OE.F1.01.01-Y-Z



Description

This valve is composed by a sleeve with an inserted pressure compensated flow regulator cartridge (SFC1); it controls the oil flow from B to A, and prevents it from exceeding the selected value regardless of working pressure, while establishing a minimum pressure differential between the two ports. The inserted cartridge is available in different sizes (as well as the sleeve), and each size is available with different orifices, each one for a pre-determined flow (see "Z" table of Regulated Flow. In the reverse direction, A to B, flow is locked.

Technical data

SFC1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
OT.F1.01.00.09	G 1/4	210 (3000)	10 (3)	0.01 (0.02)
0T.F1.01.00.02	G 3/8	210 (3000)	16 (4)	0.02 (0.04)
0T.F1.01.00.03	G 1/2	210 (3000)	45 (12)	0.05 (0.11)

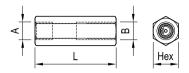
Steel body, zinc plated

Advantages

-Compact design and inline mounting for space saving.

-Mounting position is unrestricted.

-The inserted flow regulator cartridge can be purchased separately for easy service or for modifications to the original flow adjustment (see data sheet RE 18329-75).



Posts size / Dimensions

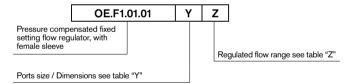
Υ	Ports A-B	L mm (inches)	Hex mm (inches)	Sleeve code
09	G 1/4	61 (2.40)	19 (0.75)	OC.51.02.023
02	G 3/8	63 (2.48)	22 (0.87)	OC.51.02.024
03	G 1/2	72.5 (2.85)	27 (1.06)	OC.51.02.025

z	REGULATED FLOW RANGE (± 10%) at 100 bar (1450 psi) I/min (gpm)									
_	01	02	03	04	05	06	07	08	09	10
G 1/4	1 (0.3)	2 (0.5)	3 (0.8)	4 (1.1)	5 (1.3)	6 (1.9)	7 (1.9)	8 (2.1)	9 (2.4)	10 (2.6)
G 3/8	4 (1.1)	5 (1.3)	6 (1.6)	8 (2.1)	10 (2.6)	12 (3.2)	14 (3.7)	16 (4.2)	-	-
G 1/2	12 (3.2)	16 (4.2)	20 (5.3)	25 (6.6)	30 (7.9)	35 (9.3)	40 (10.6)	45 (11.9)	-	-

Applications

Typical applications are the limitation of the flow into a line; it can also be used as a Meter-OUT device in order to limit the flow out from a one-way working line. The flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure.

Ordering code



Туре	Material number
OEF101010201	R932007157
OEF101010202	R932007158
OEF101010203	R932007159
OEF101010204	R932007160
OEF101010205	R932007161
OEF101010206	R932007162
OEF101010207	R932007163
OEF101010208	R932007164
OEF101010301	R932007165
OEF101010302	R932007166

Туре	Material number
OEF101010303	R932007167
OEF101010304	R932007168
OEF101010305	R932007169
OEF101010306	R932007170
OEF101010307	R932007171
OEF101010308	R932007172
OEF101010901	R932007147
OEF101010902	R932007148
OEF101010903	R932007149
OEF101010904	R932007150

Material number
R932007151
R932007152
R932007153
R932007154
R932007155
R932007156

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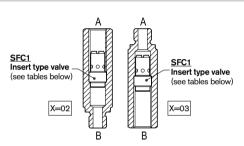
03

Flow control Valves

Pressure compensated fixed setting flow regulators, with male-female sleeve



SFC-MF



OE.F1.01-X-Y-Z

Description

This valve is composed by a sleeve with an inserted pressure compensated flow regulator cartridge (SFC1); it controls the oil flow from B to A, and prevents it from exceeding the selected value regardless of working pressure, while establishing a minimum pressure differential between the two ports. The inserted cartridge is available in different sizes (as well as the sleeve), and each size is available with different orifices, each one for a predetermined flow (see "Z" table of Regulated Flow. In the reverse direction, A to B, flow is locked. The valve can be ordered with MALE "A" port (X = 02), or FEMALE "A" port (X = 03).

X Male or female regulated port O2 female regulated port A O3 male regulated port A



Technical data

SFC1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
OT.F1.01.00.09	G 1/4	210 (3000)	10 (3)	0.01 (0.02)
OT.F1.01.00.02	G 3/8	210 (3000)	16 (4)	0.02 (0.04)
0T.F1.01.00.03	G 1/2	210 (3000)	45 (12)	0.05 (0.11)

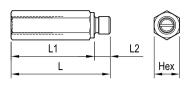
Steel body, zinc plated

Advantages

-Compact design and inline mounting for space saving.

-Mounting position is unrestricted.

The inserted flow regulator cartridge can be purchased separately for easy service or for modifications to the original flow adjustment (see data sheet RE 18329-75).



Ports size / Dimensions

Y	Ports	L mm (inches)	L1 mm (inches)	L2 mm (inches)	Hex mm (inches)	Sleeve code
09	G 1/4	74.5 (2.93)	62.5 (2.46)	12 (0.47)	19 (0.75)	OC.51.01.072
02	G 3/8	78.5 (3.09)	66.5 (2.62)	12 (0.47)	22 (0.87)	OC.51.01.073
03	G 1/2	93 (3.66)	79 (3.11)	14 (0.55)	27 (1.06)	OC.51.01.074

7		RE	GULATE	D FLOW	RANGE I/min		at 100 ba	ar (1450 p	ısi)	
	01	02	03	04	05	06	07	80	09	10
G 1/4	1 (0.3)	2 (0.5)	3 (0.8)	4 (1.1)	5 (1.3)	6 (1.9)	7 (1.9)	8 (2.1)	9 (2.4)	10 (2.6)
G 3/8	4 (1.1)	5 (1.3)	6 (1.6)	8 (2.1)	10 (2.6)	12 (3.2)	14 (3.7)	16 (4.2)	-	-
G 1/2	12 (3.2)	16 (4.2)	20 (5.3)	25 (6.6)	30 (7.9)	35 (9.3)	40 (10.6)	45 (11.9)	-	-

Applications

Typical applications are the limitation of the flow into a line; it can also be used as a Meter-OUT device in order to limit the flow out from a one-way working line. The flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure.

Ordering code

Ports size / Dimensions see table "Y"



Туре	Material number	Туре	Material numbe
OEF101020201	R932007094	OEF101020905	R932007131
OEF101020202	R932007095	OEF101020906	R932007132
OEF101020203	R932007096	OEF101020907	R932007133
OEF101020204	R932007097	OEF101020908	R932007134
OEF101020205	R932007098	OEF101020909	R932007135
OEF101020206	R932007099	OEF101020910	R932007136
OEF101020207	R932007100	OEF101030201	R932007102
OEF101020208	R932007101	OEF101030202	R932007103
OEF101020301	R932007111	OEF101030203	R932007104
OEF101020302	R932007112	OEF101030204	R932007105
OEF101020303	R932007113	OEF101030205	R932007106
OEF101020304	R932007114	OEF101030206	R932007107
OEF101020305	R932007115	OEF101030207	R932007108
OEF101020306	R932007116	OEF101030208	R932007109
OEF101020307	R932007117	OEF101030301	R932007119
OEF101020308	R932007118	OEF101030302	R932007120
OEF101020901	R932007127	OEF101030303	R932007121
OEF101020902	R932007128	OEF101030304	R932007122
OEF101020903	R932007129	OEF101030305	R932007123
OEF101020904	R932007130	OEF101030306	R932007124

Туре	Material number
OEF101030307	R932007125
OEF101030308	R932007126
OEF101030901	R932007137
OEF101030902	R932007138
OEF101030903	R932007139
OEF101030904	R932007140
OEF101030905	R932007141
OEF101030906	R932007142
OEF101030907	R932007143
OEF101030908	R932007144
OEF101030909	R932007145
OEF101030910	R932007146

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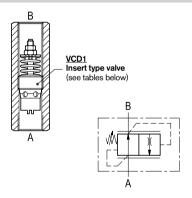
03

Flow control valves

Pressure compensated partially adjustable flow regulators, with female sleeve



VCDC-H-MC (G1/4 - G3/8)



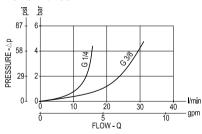
OE.22.03.01-Y-Z

Description

This valve is composed by a sleeve with an inserted pressure compensated flow regulator cartridge (VCD1); it controls the oil flow from B to A, and prevents it from exceeding the adjusted value regardless of working pressure, while establishing a minimum pressure differential between 3 bar and 8 bar (45 psi and 115 psi) approximately between the two ports. The inserted cartridge is available in different sizes (as well as the sleeve), and each size is available with different orifices, each one for a specific flow range (see Performance Diagram and Flow Range "Z" table). For each selected size and flow range, the pressure compensated flow can be tuned finely by changing the spring load (see table of Dimensions).

In the reverse direction, A to B, the valve behaves as a fixed restriction, and it allows free flow depending from the pressure available (see Performance diagram).

Performance



Technical data

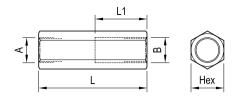
VCD1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.F3.01.02.09	G 1/4	315 (4500)	10 (3)	0.01 (0.02)
0T.F3.01.02.02	G 3/8	315 (4500)	25 (7)	0.03 (0.07)

Steel body, zinc plated

Special ports available on request.

Note: the inserted flow regulator cartridge is available with a number of different orifices for different flow ranges, as specified by the "Z" table: when ordering please specify the needed Flow Range ("Z table"), as well as the needed Port Size ("Y table"). Customer tailored flow adjustments are available on request: for details, please consult us.

- -Compact design and inline mounting for space saving. Mounting position is unrestricted
- -The inserted flow regulator cartridge can be purchased separately for easy service or for modifications to the original flow adjustment (see data sheet RE 18329-80).



Ports size / Dimensions

Y	Ports A-B	L mm (inches)	L1 mm (inches)	Hex mm (inches)	Sleeve code
09	G 1/4	66 (3.07)	39 (1.54)	19 (0.75)	OC.51.02.006
02	G 3/8	70 (2.76)	42 (1.65)	22 (0.87)	OC.51.02.007

z	REGUI	ATED FLOW	RANGE I/mi	n (gpm)
	G 1/4	G 3/8	G 1/2	G 3/4
~		2.5-4.0	16-21	37-50
01	-	(0.66-1.06)	(4.23-5.55)	(9.78-13.21)
02	1-1.6	4.0-6.3	21-28	50-67
02	(0.26-0.43)	(1.06-1.67)	(5.55-7.40)	(13.21-17.7)
	1.6-2.5	6.3-10	28-37	67-90
03	(0.43-0.66)	(1.67-2.64)	(7.40-9.78)	(17.7-23.78)
	2.5-4.0	10-16	37-50	90-120
04	(0.66-1.06)	(2.64-4.23)	(9.78-13.21)	(23.78-31.7)
05	4.0-6.3	16-25	50-67	120-150
US	(1.06-1.67)	(4.23-6.61)	(13.21-17.7)	(31.7-39.63)
06	6.3-10			
	(1.67-2.64)		_	

Applications

Typical applications are the control of the maximum speed of an actuator (double or single acting cylinder, or motor), which is generally achieved by regulating the maximum flow out from the actuator (or meter-OUT). The flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure.

Ordering code



Ports size / Dimensions see table "Y"

Regulated flow range see table "Z"

Туре	Material number
OE2203010902	R932007277
OE2203010903	R934001704
OE2203010904	R934001706
OE2203010905	R934001707
OE2203010906	R934001709
OE2203010201	R934003199
OE2203010202	R934001682
OE2203010203	R932007278
OE2203010204	R934001684
OE2203010205	R934001688

Туре	Material number

z

туре	wateriai number

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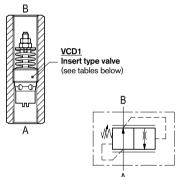
03

Flow control valves

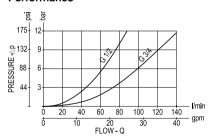
Pressure compensated partially adjustable flow regulators, with female sleeve



VCDC-H-MC (G1/2 - G3/4)



Performance



OE.22.03.01-Y-Z

Description

This valve is composed by a sleeve with an inserted pressure compensated flow regulator cartridge (VCD1); it controls the oil flow from B to A, and prevents it from exceeding the adjusted value regardless of working pressure, while establishing a minimum pressure differential between 3 bar and 8 bar (45 psi and 115 psi) approximately between the two ports. The inserted cartridge is available in different sizes (as well as the sleeve), and each size is available with different orifices, each one for a specific flow range (see Performance Diagram and Flow Range "Z" table). For each selected size and flow range, the pressure compensated flow can be tuned finely by changing the spring load (see table of Dimensions).

In the reverse direction, A to B, the valve behaves as a fixed restriction, and it allows free flow depending from the pressure available (see Performance diagram).

Technical data

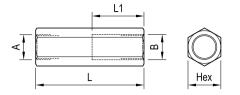
VCD1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.F3.01.02.03	G 1/2	315 (4500)	67 (18)	0.04 (0.09)
OT.F3.01.02.04	G 3/4	315 (4500)	150 (40)	0.07 (0.15)

Steel body, zinc plated

Special ports available on request.

Note: the inserted flow regulator cartridge is available with a number of different orifices for different flow ranges, as specified by the "Z" table: when ordering please specify the needed Flow Range ("Z table"), as well as the needed Port Size ("Y table"). Customer tailored flow adjustments are available on request: for details, please consult us.

- -Compact design and inline mounting for space saving.
- Mounting position is unrestricted
- -The inserted flow regulator cartridge can be purchased separately for easy service or for modifications to the original flow adjustment (see data sheet RE 18329-80).



Ports size / Dimensions

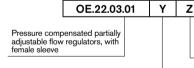
Υ	Ports A-B	L mm (inches)	L1 mm (inches)	Hex mm (inches)	Sleeve code
03	G 1/2	80 (3.15)	48 (1.89)	27 (1.06)	OC.51.02.008
04	G 3/4	100 (3.94)	59 (2.32)	32 (1.26)	OC.51.02.009

z	REGULATED FLOW RANGE I/min (gpm)					
4	G 1/4	G 3/8	G 1/2	G 3/4		
~		2.5-4.0	16-21	37-50		
01	-	(0.66-1.06)	(4.23-5.55)	(9.78-13.21)		
02	1-1.6	4.0-6.3	21-28	50-67		
02	(0.26-0.43)	(1.06-1.67)	(5.55-7.40)	(13.21-17.7)		
03	1.6-2.5	6.3-10	28-37	67-90		
	(0.43-0.66)	(1.67-2.64)	(7.40-9.78)	(17.7-23.78)		
04	2.5-4.0	10-16	37-50	90-120		
04	(0.66-1.06)	(2.64-4.23)	(9.78-13.21)	(23.78-31.7)		
05	4.0-6.3	16-25	50-67	120-150		
US	(1.06-1.67)	(4.23-6.61)	(13.21-17.7)	(31.7-39.63)		
06	6.3-10					
06	(1.67-2.64)	-	-	-		

Applications

Typical applications are the control of the maximum speed of an actuator (double or single acting cylinder, or motor), which is generally achieved by regulating the maximum flow out from the actuator (or meter-OUT). The flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure.

Ordering code



Matarial number

R932007281

Ports size / Dimensions see table "Y"

Regulated flow range see table "Z"

Motorial number

type	wateriai number
OE2203010301	R934001694
OE2203010302	R934001695
OE2203010303	R934001697
OE2203010304	R934001699
OE2203010305	R934001700
OE2203010401	R932007279
OE2203010402	R934001701
OE2203010403	R934001702
OE2203010404	R932007280

Material number		

Туре	Material number		

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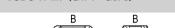
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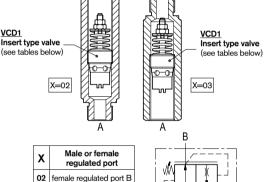
Flow control valves

Pressure compensated partially adjustable flow regulators, with male-female sleeve



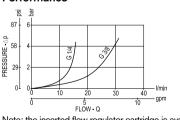
VCDC-H-MF (G1/4 - G3/8)





Performance

03 male regulated port B



OE.22.03-X-Y-Z

Description

This valve is composed by a sleeve with an inserted pressure compensated flow regulator cartridge (VCD1); it controls the oil flow from B to A, and prevents it from exceeding the adjusted value regardless of working pressure, while establishing a minimum pressure differential between 3 bar and 8 bar (45 psi and 115 psi) approximately between the two ports. The inserted cartridge is available in different sizes (as well as the sleeve), and each size is available with different orfices, each one for a specific flow range (see Performance Diagram and Flow Range "Z" table). For each selected size and flow range, the pressure compensated flow can be tuned finely by changing the spring load (see table of Dimensions).

In the reverse direction, A to B, the valve behaves as a fixed restriction, and it allows free flow depending from the pressure available (see Performance diagram).

The valve can be ordered with MALE "A" port (X = 02), or FEMALE "A" port (X = 03).

Technical data

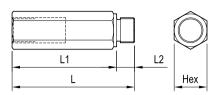
VCD1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.F3.01.02.09	G 1/4	315 (4500)	10 (3)	0.01 (0.02)
0T.F3.01.02.02	G 3/8	315 (4500)	25 (7)	0.03 (0.07)

Steel body, zinc plated

Special ports available on request.

Note: the inserted flow regulator cartridge is available with a number of different orifices for different flow ranges, as specified by the "Z" table: when ordering please specify the needed Flow Range ("Z table"), as well as the needed Port Size ("Y table"). Customer tailored flow adjustments are available on request: for details, please consult us.

- -Compact design and inline mounting for space saving.
- Mounting position is unrestricted
- -The inserted flow regulator cartridge can be purchased separately for easy service or for modifications to the original flow adjustment (see data sheet RE 18329-80).



Ports size / Dimensions

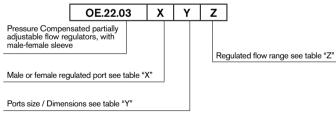
Υ	Ports	L mm (inches)	L1 mm (inches)	L2 mm (inches)	Hex mm (inches)	Sleeve code
09	G 1/4	78 (3.07)	66 (2.60)	12 (0.47)	19 (0.75)	OC.51.01.025
02	G 3/8	82 (3.23)	70 (2.76)	12 (0.47)	22 (0.87)	OC.51.01.026

Z	REGUI	REGULATED FLOW RANGE I/min (gpm)				
_	G 1/4	G 3/8	G 1/2	G 3/4		
01		2.5-4.0	16-21	37-50		
UI	-	(0.66-1.06)	(4.23-5.55)	(9.78-13.21)		
02	1-1.6	4.0-6.3	21-28	50-67		
02	(0.26-0.42)	(1.06-1.67)	(5.55-7.40)	(13.21-17.7)		
03	1.6-2.5	6.3-10	28-37	67-90		
03	(0.42-0.66)	(1.67-2.64)	(7.40-9.78)	(17.7-23.78)		
04	2.5-4.0	10-16	37-50	90-120		
04	(0.66-1.06)	(2.64-4.23)	(9.78-13.21)	(23.78-31.7)		
05	4.0-6.3	16-25	50-67	120-150		
US	(1.06-1.66)	(4.23-6.61)	(13.21-17.7)	(31.7-39.63)		
00	6.3-10					
06	(1.66-2.64)	_	_	_		

Applications

Typical applications are the control of the maximum speed of an actuator (double or single acting cylinder, or motor), which is generally achieved by regulating the maximum flow out from the actuator (or meter-OUT). The flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure.

Ordering code



Material number	Туре	Material number
R934003432	OE2203030201	R931000446
R932007287	OE2203030202	R931000447
R932007288	OE2203030203	R931000449
R932007289	OE2203030204	R931000450
R932007290	OE2203030205	R934001715
R934003200	OE2203030902	R932007285
R932007282	OE2203030903	R931000440
R934003433	OE2203030904	R931000442
R932007283	OE2203030905	R931000444
R932007284	OE2203030906	R932007286
	R934003432 R932007287 R932007288 R932007289 R932007290 R934003200 R932007282 R934003433 R932007283	R934003432 OE2203030201 R932007287 OE2203030202 R932007288 OE2203030203 R932007289 OE2203030204 R932007290 OE2203030204 R934003200 OE2203030902 R932007282 OE2203030903 R934003433 OE2203030904 R932007283 OE2203030905

Туре	Material number	Туре	Material number	Туре
OE2203020201	R934003432	OE2203030201	R931000446	
OE2203020202	R932007287	OE2203030202	R931000447	
OE2203020203	R932007288	OE2203030203	R931000449	
OE2203020204	R932007289	OE2203030204	R931000450	
OE2203020205	R932007290	OE2203030205	R934001715	
OE2203020902	R934003200	OE2203030902	R932007285	
OE2203020903	R932007282	OE2203030903	R931000440	
OE2203020904	R934003433	OE2203030904	R931000442	
OE2203020905	R932007283	OE2203030905	R931000444	
OE2203020906	R932007284	OF2203030906	R932007286	

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Material number

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Subject to change.

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1/9

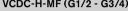
03

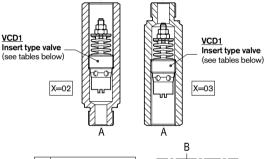
Flow control valves

Pressure compensated partially adjustable flow regulators, with male-female sleeve



VCDC-H-MF (G1/2 - G3/4)

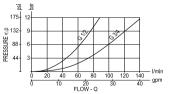








Performance



OE.22.03-X-Y-Z

Description

This valve is composed by a sleeve with an inserted pressure compensated flow regulator cartridge (VCD1); it controls the oil flow from B to A, and prevents it from exceeding the adjusted value regardless of working pressure, while establishing a minimum pressure differential between 3 bar and 8 bar (45 psi and 115 psi) approximately between the two ports. The inserted cartridge is available in different sizes (as well as the sleeve), and each size is available with different orifices, each one for a specific flow range (see Performance Diagram and Flow Range "Z" table). For each selected size and flow range, the pressure compensated flow can be tuned finely by changing the spring load (see table of Dimensions).

In the reverse direction, A to B, the valve behaves as a fixed restriction, and it allows free flow depending from the pressure available (see Performance diagram). The valve can be ordered with MALE "A" port (X = 02), or FEMALE "A" port (X = 03).

Technical data

VCD1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.F3.01.02.03	G 1/2	315 (4568)	67 (18)	0.04 (0.09)
0T.F3.01.02.04	G 3/4	315 (4568)	150 (40)	0.07 (0.15)

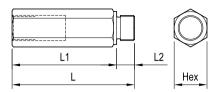
Steel body, zinc plated

Special ports available on request.

Note: the inserted flow regulator cartridge is available with a number of different orifices for different flow ranges, as specified by the "Z" table: when ordering please specify the needed Flow Range ("Z table"), as well as the needed Port Size ("Y table").

Customer tailored flow adjustments are available on request: for details, please consult us.

- -Compact design and inline mounting for space saving.
- -Mounting position is unrestricted
- -The inserted flow regulator cartridge can be purchased separately for easy service or for modifications to the original flow adjustment (see data sheet RE 18329-80).



7	REGULATED FLOW RANGE I/min (gpm)				
Z	G 1/4	G 3/8	G 1/2	G 3/4	
01		2.5-4.0	16-21	37-50	
UI	-	(0.66-1.06)	(4.23-5.55)	(9.78-13.21)	
02	1-1.6	4.0-6.3	21-28	50-67	
02	(0.26-0.42)	(1.06-1.67)	(5.55-7.40)	(13.21-17.7)	
03	1.6-2.5	6.3-10	28-37	67-90	
03	(0.42-0.66)	(1.67-2.64)	(7.40-9.78)	(17.7-23.78)	
04	2.5-4.0	10-16	37-50	90-120	
04	(0.66-1.06)	(2.64-4.23)	(9.78-13.21)	(23.78-31.7)	
05	4.0-6.3	16-25	50-67	120-150	
05	(1.06-1.66)	(4.23-6.61)	(13.21-17.7)	(31.7-39.63)	
06	6.3-10				
06	(1.66-2.64)	-	-	-	

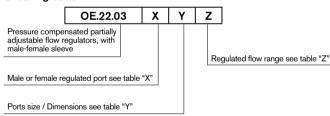
Ports size / Dimensions

Γ			L	L1	L2	Hex	
	Υ	Ports	mm	mm	mm	mm	Sleeve code
L			(inches)	(inches)	(inches)	(inches)	
	03	G 1/2	96 (3.78)	82 (3.23)	14 (0.55)	27 (1.06)	OC.51.01.027
	04	G 3/4	110 (4.33)	94 (3.70)	16 (0.63)	32 (1.26)	OC.51.01.028

Applications

Typical applications are the control of the maximum speed of an actuator (double or single acting cylinder, or motor), which is generally achieved by regulating the maximum flow out from the actuator (or meter-OUT). The flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure.

Ordering code



Туре	Material number	Туре	Material number
OE2203020301	R932007291	OE2203030301	R932007295
OE2203020302	R934001711	OE2203030302	R934001716
OE2203020303	R932007292	OE2203030303	R931000432
OE2203020304	R932007293	OE2203030304	R931000434
OE2203020305	R932007294	OE2203030305	R931001457
OE2203020401	R932007296	OE2203030401	R934001717
OE2203020402	R934001712	OE2203030402	R932007298
OE2203020403	R934001713	OE2203030403	R932007299
OE2203020404	R934001714	OE2203030404	R934001718
OE2203020405	R932007297	OE2203030405	R932007300

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Type

Material number

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Subject to change.

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RE 18316-18/10.09

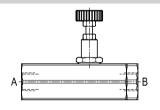
1/2

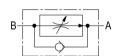
Flow control valves

Pressure compensated adjustable flow regulator with reverse flow check



VCST (G1/4) Series





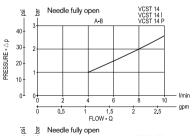
Description

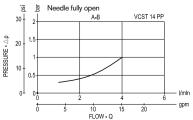
This pressure compensated flow regulator controls the oil flow from B to A, and prevents it from exceeding the adjusted value regardless of working pressure, while establishing a minimum pressure differential of approximately 5 bar (75 psi) between the two ports. The valve is available in different sizes and versions for different flow ranges, as specified by the tables of the Technical data, Dimensions and Performance diagrams. The fine setting of the output flow at A can be achieved by rotating the hand knob which can be locked in position by the locking nut in order to prevent inadvertent changes. Unrestricted reverse flow "A-B" is permitted through a check valve with zero cracking pressure, regardless of valve adjustment.

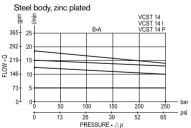
Technical data

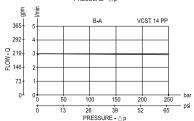
Code	Pressure P max bar (psi)	Flow Q I/min (gpm)	Weight kg (lbs)
VCST 14		4 40	
VCST 14 I		4 - 10 (1 - 3)	
VCST 14 P	250 (3600)	(1 - 3)	0.35 (0.77)
VCST 14 PP		1 - 4 (0.3 - 1)	

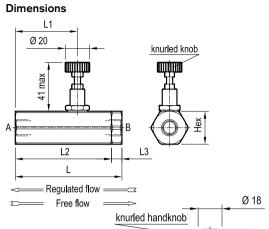
Performance











Ports size / Dimensions

	VCST 14	VCST 14 I	VCST 14 P	VCST 14 PP
knurled knob	х	х		х
hand knob			х	
Port size A-B	G 1/4			
L mm (inches)	87.5 (3.45)			
L3 mm (inches)	8.5 (0.34)			
L2 mm (inches)	79 (3.11)			
L1 mm (inches)	51 (2.01)			
Hex mm (inches)	27 (1.06)			

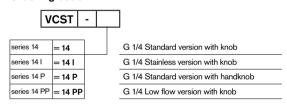
The "I" version is stainless steel made.

-Compact design and inline mounting for space saving.

- -Flow setting can be locked by the locking nut.
- -Mounting position is unrestricted.
- -Zero cracking pressure for free reverse flow "A-B".
- -Three sizes, each with hand knob or knurled hand knob, provide great adaptability to the system.

Ordering code

Advantages



Application

The VCST is a normally open, two ports, restrictive type flow regulator, with incorporated check valve for free reverse flow. Typical applications are the control of the maximum speed of an actuator (cylinder or motor), which is achieved by regulating the maximum flow A into or out from the actuator (meter-IN, or meter-OUT). The maximum flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure. If the valve is used to control the flow from a constant flow line, only the regulated flow will pass through the valve; any excess flow will normally be forced out of the line and delivered to tank through the system relief valve.

Туре	Material number	Туре	Material number	Туре	Material number
VCST-14	R932500617				
VCST-14I	R932500618				
VCST-14P	R932500619				
VCST-14PP	R932500620				
		'			
		-			

38 max

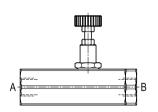
Bosch Rexroth Oil Control S.p.A. Fimma Division (Rge 2) Via G. Bovio, 7 Z.I. Mancasale 42124 Reggio Emilia, Italy Tel. +39 0522 517 277 Fax +39 0522 517 125 cartridges@oilcontrol.com www.boschrexroth.com © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth Oil Control S.p.a.. It may not be reproduced or given to third parties without its consent.

Flow control valves

Pressure compensated adjustable flow regulator with reverse flow check



VCST (G 3/8) Series



B

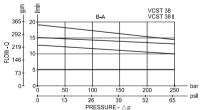
Description

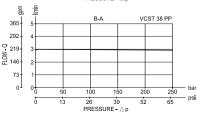
This pressure compensated flow regulator controls the oil flow from B to A, and prevents it from exceeding the adjusted value regardless of working pressure, while establishing a minimum pressure differential of approximately 5 bar (75 psi) between the two ports. The valve is available in different sizes and versions for different flow ranges, as specified by the tables of the Technical data, Dimensions and Performance diagrams. The fine setting of the output flow at A can be achieved by rotating the hand knob which can be locked in position by the locking nut in order to prevent inadvertent changes. Unrestricted reverse flow "A-B" is permitted through a check valve with zero cracking pressure, regardless of valve adjustment.

Technical data

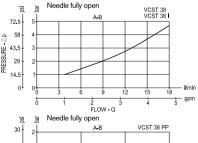
Code	Pressure P max bar (psi)	Flow Q I/min (gpm)	Weight kg (lbs)
VCST 38		4 - 18	
VCST 38 I	250 (3600)	(1 - 5)	0.34 (0.75)
VCST 38 PP	200 (0000)	1 - 4 (0.3 - 1)	0.0 1 (0.1 0)

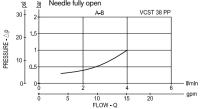
Steel body, zinc plated

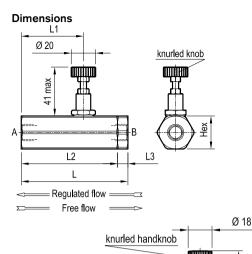




Performance







Advantages

- -Compact design and inline mounting for space saving.
- -Flow setting can be locked by the locking nut.
- -Mounting position is unrestricted.
- -Zero cracking pressure for free reverse flow "A-B".
- -Three sizes, each with hand knob or knurled hand knob, provide great adaptability to the system.

Material number

R932500621

R932500622

R932500625

Ordering code

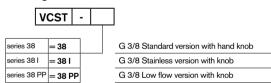
Type

VCST-38

VCST-38I

VCST-38PP

556



Type

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Fimma Division (Rge 2)				
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42124 Reggio Emilia, Italy				
Tel. +39 0522 517 277				
Fax +39 0522 517 125				
cartridges@oilcontrol.com				
www.boschrexroth.com				

Ports size / Dimensions

	VCST 38	VCST 381	VCST 38 PP
knurled knob		х	х
hand knob	х		
Port size A-B	G 3/8		
L mm (inches)	87.5 (3.45)		
L3 mm (inches)	8.5 (0.34)		
L2 mm (inches)	79 (3.11)		
L1 mm (inches)	51 (2.01)		
Hex mm (inches)	27 (1.06)		

The "I" version is stainless steel made.

Application

max 88

> The VCST is a normally open, two ports, restrictive type flow regulator, with incorporated check valve for free reverse flow. Typical applications are the control of the maximum speed of an actuator (cylinder or motor), which is achieved by regulating the maximum flow A into or out from the actuator (meter-IN, or meter-OUT). The maximum flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure. If the valve is used to control the flow from a constant flow line, only the regulated flow will pass through the valve; any excess flow will normally be forced out of the line and delivered to tank through the system relief valve.

Material number	Туре	Material number

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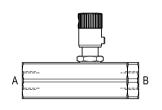
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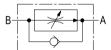
Flow control valves

Pressure compensated adjustable flow regulator with reverse flow check



VCST (G 1/2) Series





Description

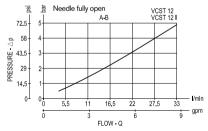
This pressure compensated flow regulator controls the oil flow from B to A, and prevents it from exceeding the adjusted value regardless of working pressure, while establishing a minimum pressure differential of approximately 5 bar (75 psi) between the two ports. The valve is available in different sizes and versions for different flow ranges, as specified by the tables of the Technical data, Dimensions and Performance diagrams. The fine setting of the output flow at A can be achieved by rotating the hand knob which can be locked in position by the locking nut in order to prevent inadvertent changes. Unrestricted reverse flow "A-B" is permitted through a check valve with zero cracking pressure, regardless of valve adjustment.

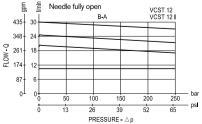
Code	Pressure P max bar (psi)	Flow Q I/min (gpm)	Weight kg (lbs)
VCST 12	250 (3600)	4 - 33	0.7 (1.54)
VCST 12 I	250 (3600)	(1 - 9)	0.7 (1.54)

Steel body, zinc plated

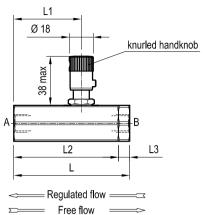
Technical data

Performance





- -Compact design and inline mounting for space saving.
- -Flow setting can be locked by the locking nut.
- -Mounting position is unrestricted.
- -Zero cracking pressure for free reverse flow "A-B".



Ports size / Dimensions

	VCST 12	VCST 12 I
Port size A-B	G	1/2
L mm (inches)	107 (4.21)	
L3 mm (inches)	11 (0.43)	
L2 mm (inches)	96 (3.78)	
L1 mm (inches)	61 (2.40)	
Hex mm (inches)	36 (1.42)	

The "I" version is stainless steel made.

Ordering code



G 1/2 Standard version with handknob

G 1/2 Stainless version with handknob

Application

The VCST is a normally open, two ports, restrictive type flow regulator, with incorporated check valve for free reverse flow. Typical applications are the control of the maximum speed of an actuator (cylinder or motor), which is achieved by regulating the maximum flow A into or out from the actuator (meter-IN, or meter-OUT). The maximum flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure. If the valve is used to control the flow from a constant flow line, only the regulated flow will pass through the valve; any excess flow will normally be forced out of the line and delivered to tank through the system relief valve.

Туре	Material number	Туре	Material number	Туре	Material number
VCST-12	R932500615				
VCST-12I	R932006952				
-		-		-	
-		-			

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1/2

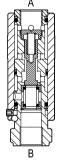
03

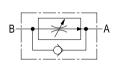
Flow control valves

Pressure compensated adjustable flow regulator with reverse flow check

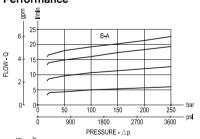


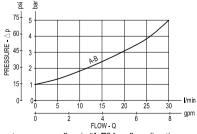
VCD-RU-38





Performance





Δp curves vs. flow in "A-B" free flow direction.

Description

OE.22.01.04.02

This line mounted pressure compensated flow regulator limits the flow from B to A to the preset value, regardless of inlet pressure at B port. The internal metering restriction can be enlarged or reduced by rotating the external cylindrical sleeve in the (+) or (-) direction in order to increase or decrease the regulated flow. Once the desired adjustment is achieved, the sleeve can be locked in position by tightening external locking screw (with a 2,5 mm Allen key) in order to prevent inadvertent changes of motion due to line vibrations. Minor leakage "B-A" can be expected with valve fully closed.

Free reverse flow "A-B" is always allowed when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat: cracking pressure is 1 bar.

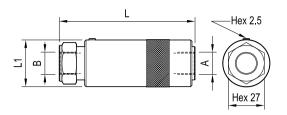
Technical data

Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
210 (3000)	1-18 (0.26-4.76)	0.33 (0.73)

Steel body, zinc plated

Advantages

-Very compact design and inline mounting for space saving.
 -Mounting position is unrestricted.



Ports size / Dimensions

Ports A-B	L mm (inches)	L1 mm (inches)
G 3/8	102 (4.02)	35 (1.38)

Applications

The VCD-RU is a normally open, two ports, restrictive type flow regulator, with incorporated check valve for free reverse flow. Typical applications are the control of the maximum speed of an actuator (cylinder or motor), which is achieved by regulating the maximum flow A into or out from the actuator (meter-IN, or meter-OUT). The maximum flow, and consequently the maximum actuator speed, will vary slightly with changes in fluid viscosity, but will be largely independent from the load and from the working pressure. If the valve is used to control the flow from a constant flow line, only the regulated flow will pass through the valve; any excess flow will normally be forced out of the line and delivered to tank through the system relief valve.

Ordering code

OE.22.01.04.02

Pressure compensated adjustable flow regulator with reverse flow check

Type OE2201040200000	Material number R934001680	Туре	Material number	Туре	Material number

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RE 18316-85/10.09

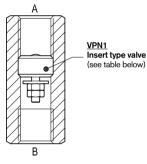
1/2

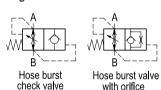
03

Hose burst insert type check valves
With female threaded sleeve



VPN-FF (G1/4 - G3/8)





OE.F4.01.01-Y-Z

Description

This valve is composed by a sleeve with an inserted "Hose Burst" steel made cartridge type VPN1 (refer to RE 18329-85). Flow is always allowed to pass from A to B according to the Δp curves included in the Performance diagrams. The reverse flow "B" to "A", or reaction flow, is unrestricted up to the pre-set value, above which the pressure drop across the floating disc will push the disc against the valve body, and will determine immediate closing of the line in a checked, leak free mode. The valve will remain closed (checked) from B to A until pressure is removed from the B, or until the A port pressure equalizes the B pressure. To help re-setting, or shorten the time for the disc to go back to the open position, the inserted cartridge can be supplied with the Extra Orifice "F" on request. The orifice diameter has to be specified when ordering (refer to table "Z"). Precision machining and hardening processes allow virtually leak free performance in the checked condition.

Technical data

VPN1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.F4.01.03.09	G 1/4	315 (4568)	4-25 (1-7)	0.01 (0.02)
0T.F4.01.03.02	G 3/8	315 (4568)	6-50 (2-13)	0.03 (0.07)

Steel body, zinc plated

Special, Metric, UNF: sizes available on request.

ORIFICE DIAMETER mm (inches)

06

07

08

09

10

11

Z

00

01

02

03

04

05

no orifice

0.5 (0.019)

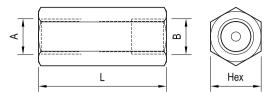
0.6 (0.023)

0.7 (0.027)

0.8 (0.031)

0.9 (0.035)

Dimensions



1 (0.039)

1.2 (0.047)

1.3 (0.051)

1.5 (0.059)

1.9 (0.074)

2 (0.078)

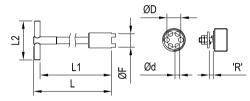
Ports size / Dimensions

Υ	Ports A-B	L mm (inches)	Hex mm (inches)	Sleeve code
09	G 1/4	48 (1.89)	19 (0.75)	OC.51.02.014
02	G 3/8	52 (2.05)	22 (0.87)	OC.51.02.010

Fitting tool dimension

VPN1 code thread	ØF	L	L1	L2	ØD	Ød	Inst. torque	Tool code
0T.F4.01.03.09 G 1/4	11.3 (0.45)	120 (4.72)	110 (4.33)	60 (2.36)	8.5 (0.34)	2.4 (0.10)	2 Nm (1.5)ft-lb	AVA18
0T.F4.01.03.02 G 3/8	15 (0.59)	120 (4.72)	108 (4.25)	80 (3.15)	10.5 (0.41)	3.5 (0.14)	3 Nm (2)ft-lb	AVA18-01

'R'= GAP corresponding to the maximum desired free flow.



Applications

In a variety of cases when oil flow must be immediately stopped in case of failure of an hose in order to prevent the load from falling freely. The smallest size G 1/4 is often employed in pressure pick-up lines from cylinders.

NOTE

The complete valve here shown is supplied with the Gap "R" Factory adjusted at 0.5 mm, corresponding to: Approx. (10–14) I/min, for size G1/4, and

Approx. (10–14) I/min, for size G 1/4, and Approx. (16–20) I/min, for size G 3/8, depending from oil

viscosity.
For special settings consult us.

Important: the pre-set R gap corresponds to the theoretical shut-off flow: please make sure that the selected shut-off flow is at least 50% higher than the actual Maximum Working Flow, in order to prevent inadvertent valve shutting with cold oil.

OEF401010908

OEF401010909

OEF401010910

OEF401010911

Material number

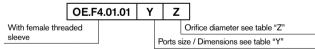
R932007223

R932007224

R932007225

R932007226

Ordering code



Туре	Material number	Туре	Material number
OEF401010200	R931001665	OEF401010210	R932007235
OEF401010201	R932007227	OEF401010211	R932007236
OEF401010202	R932007228	OEF401010900	R931001660
OEF401010203	R932007229	OEF401010901	R932007216
OEF401010204	R932007230	OEF401010902	R932007218
OEF401010205	R932007231	OEF401010903	R932007219
OEF401010206	R931001669	OEF401010904	R932007220
OEF401010207	R932007232	OEF401010905	R932007221
OEF401010208	R932007233	OEF401010906	R931001663
OEF401010209	R932007234	OEF401010907	R920207222

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Subject to change.

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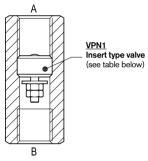
RE 18316-86/10.09

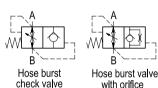
1/2

Hose burst insert type check valves
With female threaded sleeve



VPN-FF (G1/2 - G3/4)





OE.F4.01.01-Y-Z

Description

This valve is composed by a sleeve with an inserted "Hose Burst" steel made cartridge type VPN1 (refer to RE 18329-85). Flow is always allowed to pass from A to B according to the Δp curves included in the Performance diagrams. The reverse flow "B" to "A", or reaction flow, is unrestricted up to the pre-set value, above which the pressure drop across the floating disc will push the disc against the valve body, and will determine immediate closing of the line in a checked, leak free mode. The valve will remain closed (checked) from B to A until pressure is removed from the B, or until the A port pressure equalizes the B pressure. To help re-setting, or shorten the time for the disc to go back to the open position, the inserted cartridge can be supplied with the Extra Orifice "F" on request. The orifice diameter has to be specified when ordering (refer to table "Z"). Precision machining and hardening processes allow virtually leak free performance in the checked condition.

Technical data

VPN1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.F4.01.03.03	G 1/2	315 (4500)	16-80 (4-21)	0.04 (0.09)
0T.F4.01.03.04	G 3/4	315 (4500)	25-150 (7-40)	0.07 (0.15)

Steel body, zinc plated

Special, Metric, UNF: sizes available on request.

ORIFICE DIAMETER mm (inches)

06

07

08

09

10

11

Dimensions

Z

00

01

02

03

04

05

no orifice

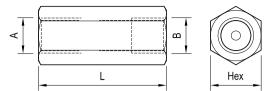
0.5 (0.019)

0.6 (0.023)

0.7 (0.027)

0.8 (0.031)

0.9 (0.035)



1 (0.039)

1.2 (0.047)

1.3 (0.051)

1.5 (0.059)

1.9 (0.074)

2 (0.078)

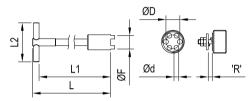
Ports size / Dimensions

Υ	Ports A-B	L mm (inches)	Hex mm (inches)	Sleeve code
03	G 1/2	60 (2.36)	27 (1.06)	OC.51.02.011
04	G 3/4 72 (2.84)		32 (1.26)	OC.51.02.017

Fitting tool dimension

VPN1 code thread	ØF	L	L1	L2	ØD	Ød	Inst. torque	Tool code
0T.F4.01.03.03	18.8	120	108	80	13	4.5	4 Nm	AVA18-02
G 1/2	(0.74)	(4.72)	(4.25)	(3.15)	(0.51)	(0.18)	(3)ft-lb	
0T.F4.01.03.04	24	120	108	80	16	6	10 Nm	AVA18-03
G 3/4	(0.95)	(4.72)	(4.25)	(3.15)	(0.63)	(0.24)	(7)ft-lb	

'R'= GAP corresponding to the maximum desired free flow.



Applications

In a variety of cases when oil flow must be immediately stopped in case of failure of an hose in order to prevent the load from falling freely.

NOTE

The complete valve here shown is supplied with the Gap "R" Factory adjusted at 0.7 mm, corresponding to: Approx. (32–37) I/min, for size G 1/2, and Approx. (53–58) I/min, for size G 3/4, depending from oil viscosity.

For special settings consult us.

Important: the pre-set R gap corresponds to the theoretical shut-off flow: please make sure that the selected shut-off flow is at least 50% higher than the actual Maximum Working Flow, in order to prevent inadvertent valve shutting with cold oil.

Ordering code

sleeve

OE.F4.01.01 Y Z
With female threaded

Orifice diameter see table "Z"

Ports size / Dimensions see table "Y"

Туре	Material number
OEF401010300	R931001656
OEF401010301	R932007237
OEF401010302	R932007238
OEF401010303	R932007239
OEF401010304	R932007240
OEF401010305	R932007241
OEF401010306	R932007242
OEF401010307	R932007243
OEF401010308	R932007244
OEF401010309	R932007245

Туре	Material number
OEF401010310	R932007246
OEF401010311	R932007247
OEF401010400	R931001664
OEF401010401	R932007248
OEF401010402	R932007249
OEF401010403	R932007250
OEF401010404	R932007251
OEF401010405	R932007252
OEF401010406	R932007253
OEF401010407	R932007254

Туре	Material number
OEF401010408	R932007255
OEF401010409	R932007256
OEF401010410	R932007257
OEF401010411	R932007258

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RE 18316-87/10.09

1/2

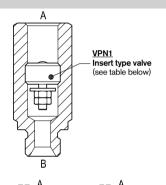
03

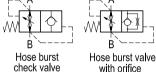
Hose burst insert type check valves

With male-female threaded sleeve



VPN-MF (G1/4 - G3/8)





OE.F4.01.02-Y-Z

Description

This valve is composed by a sleeve with an inserted "Hose Burst" steel made cartridge type VPN1 (refer to RE 18329-85). Flow is always allowed to pass from A to B according to the Δp curves included in the Performance diagrams. The reverse flow "B" to "A", or reaction flow, is unrestricted up to the pre-set value, above which the pressure drop across the floating disc will push the disc against the valve body, and will determine immediate closing of the line in a checked, leak free mode. The valve will remain closed (checked) from B to A until pressure is removed from the B, or until the A port pressure equalizes the B pressure. To help re-setting, or shorten the time for the disc to go back to the open position, the inserted cartridge can be supplied with the Extra Orifice "F" on request. The orifice diameter has to be specified when ordering (refer to table "Z"). Precision machining and hardening processes allow virtually leak free performance in the checked condition.

Technical data

VPN1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.F4.01.03.09	G 1/4	315 (4500)	4-25 (1-7)	0.01 (0.02)
0T.F4.01.03.02	G 3/8	315 (4500)	6-50 (2-13)	0.03 (0.07)

Steel body, zinc plated

Special, Metric, UNF: sizes available on request.

ORIFICE DIAMETER mm (inches)

06

07

08

09

10

11

Z

00

01

02

03

04

05

no orifice

0.5 (0.019)

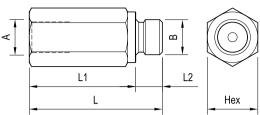
0.6 (0.023)

0.7 (0.027)

0.8 (0.031)

0.9 (0.035)

Dimensions



1 (0.039)

1.2 (0.047)

1.3 (0.051)

1.5 (0.059)

1.9 (0.074)

2 (0.078)

Υ Z

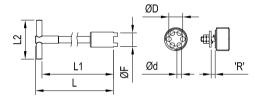
Ports size / Dimensions

	Ports	L	L1	L2	Hex	
Υ	A-B	mm	mm	mm	mm	Sleeve code
	Α-Β	(inches)	(inches)	(inches)	(inches)	
~~	G 1/4	50	40	10	19	OC.51.01.014
09	G 1/4	(1.97)	(1.58)	(0.39)	(0.75)	00.51.01.014
00	G 3/8	55	43	12	22	OC.51.01.015
02	G 3/8	(2.17)	(1.69)	(0.47)	(0.87)	00.51.01.015

Fitting tool dimension

VPN1 code thread	ØF	L	L1	L2	ØD	Ød	Inst. torque	Tool code
0T.F4.01.03.09	11.3	120	110	60	8.5	2.4	2 Nm	AVA18
G 1/4	(0.45)	(4.72)	(4.33)	(2.36)	(0.34)	(0.10)	(1.5)ft-lb	
0T.F4.01.03.02	15	120	108	80	10.5	3.5	3 Nm	AVA18-01
G 3/8	(0.59)	(4.72)	(4.25)	(3.15)	(0.41)	(0.14)	(2)ft-lb	

'R'= GAP corresponding to the maximum desired free flow.



Applications

In a variety of cases when oil flow must be immediately stopped in case of failure of an hose in order to prevent

the load from falling freely. The smallest size G 1/4 is often employed in pressure pick-up lines from cylinders.

NOTE

The complete valve here shown is supplied with the Gap "R" Factory adjusted at 0.5 mm, corresponding to: Approx. (10 - 14) I/min, for size G 1/4, and Approx. (16 - 20) I/min, for size G 3/8, depending from oil viscosity.

For special settings consult us.

Important: the pre-set R gap corresponds to the theoretical shut-off flow: please make sure that the selected shutoff flow is at least 50% higher than the actual Maximum Working Flow, in order to prevent inadvertent valve shutting with cold oil.

Ordering code

OE.F4.01.02 With male-female threaded sleeve

Orifice diameter see table "Z" Ports size / Dimensions see table "Y"

Туре	Material number	Туре	Material number
OEF401020200	R931001646	OEF401020210	R932007192
OEF401020201	R932007183	OEF401020211	R932007193
OEF401020202	R932007184	OEF401020900	R931001641
OEF401020203	R932007185	OEF401020901	R932007173
OEF401020204	R932007186	OEF401020902	R932007174
OEF401020205	R932007187	OEF401020903	R932007175
OEF401020206	R932007188	OEF401020904	R932007176
OEF401020207	R932007189	OEF401020905	R932007177
OEF401020208	R932007190	OEF401020906	R932007217
OEF401020209	R932007191	OEF401020907	R932007178

Туре	Material number
OEF401020908	R932007179
OEF401020909	R932007180
OEF401020910	R932007181
OEF401020911	R932007182

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Subject to change.

RE 18316-88/10.09

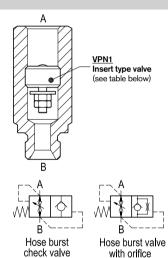
1/2

Hose burst insert type check valves

With male-female threaded sleeve



VPN-MF (G1/2 - G3/4)



OE.F4.01.02-Y-Z

Description

This valve is composed by a sleeve with an inserted "Hose Burst" steel made cartridge type VPN1 (refer to RE 18329-85). Flow is always allowed to pass from A to B according to the Δp curves included in the Performance diagrams. The reverse flow "B" to "A", or reaction flow, is unrestricted up to the pre-set value, above which the pressure drop across the floating disc will push the disc against the valve body, and will determine immediate closing of the line in a checked, leak free mode. The valve will remain closed (checked) from B to A until pressure is removed from the B, or until the A port pressure equalizes the B pressure. To help re-setting, or shorten the time for the disc to go back to the open position, the inserted cartridge can be supplied with the Extra Orifice "F" on request. The orifice diameter has to be specified when ordering (refer to table "Z"). Precision machining and hardening processes allow virtually leak free performance in the checked condition.

Technical data

VPN1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.F4.01.03.03	G 1/2	315 (4500)	16-80 (4-21)	0.04 (0.09)
0T.F4.01.03.04	G 3/4	315 (4500)	25-150 (7-40)	0.07 (0.15)

Steel body, zinc plated

Special, Metric, UNF: sizes available on request.

ORIFICE DIAMETER mm (inches)

06

07

08

09

10

Z

00

01

02

03

04

05

no orifice

0.5 (0.019)

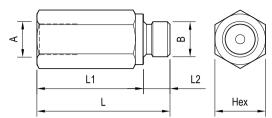
0.6 (0.023)

0.7 (0.027)

0.8 (0.031)

0.9 (0.035)

Dimensions



1 (0.039)

1.2 (0.047)

1.3 (0.051)

1.5 (0.059)

1.9 (0.074)

2 (0.078)

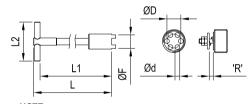
Ports size / Dimensions

ſ		Ports	L	L1	L2	Hex	
Υ		۸ D	mm	mm	mm	mm	Sleeve code
l		Α-D	(inches)	(inches)	(inches)	(inches)	
	^-	G 1/2	70	56	14	27	OC.51.01.016
ı	US	G 1/2	(2.76)	(2.21)	(0.55)	(1.06)	00.51.01.016
ſ		G 3/4	75	59	16	36	OC.51.01.017
ı	04	G 3/4	(2.95)	(2.32)	(0.63)	(1.42)	00.51.01.017

Fitting tool dimension

VPN1 code thread	ØF	L	L1	L2	ØD	Ød	Inst. torque	Tool code
0T.F4.01.03.03 G 1/2	18.8 (0.74)	120 (4.72)	108 (4.25)	80 (3.15)	13 (0.51)	4.5 (0.18)	4 Nm (3)ft-lb	AVA18-02
0T.F4.01.03.04 G 3/4	24 (0.95)	120 (4.72)	108 (4.25)	80 (3.15)	16 (0.63)	6 (0.24)	10 Nm (7)ft-lb	AVA18-03

'R'= GAP corresponding to the maximum desired free flow.



Applications

In a variety of cases when oil flow must be immediately stopped in case of failure of an hose in order to prevent the load from falling freely.

NOTE

The complete valve here shown is supplied with the Gap "R" Factory adjusted at 0.7 mm, corresponding to:

Approx. (32 – 37) I/min, for size G 1/2, and

Approx. (53 - 58) I/min, for size G 3/4, depending from oil viscosity.

For special settings consult us.

Important: the pre-set R gap corresponds to the theoretical shut-off flow:

please make sure that the selected shut-off flow is at least 50% higher than the actual Maximum Working Flow, in order to prevent inadvertent valve shutting with cold oil.

Ordering code

threaded sleeve

OE.F4.01.02 Y Z
With male-female

Orifice diameter see table "Z"
Ports size / Dimensions see table "Y"

Туре	Material number
OEF401020300	R931001639
OEF401020301	R932007194
OEF401020302	R932007195
OEF401020303	R932007196
OEF401020304	R932007197
OEF401020305	R932007198
OEF401020306	R932007199
OEF401020307	R932007200
OEF401020308	R932007201
OEF401020309	R932007202

Туре	Material number
OEF401020310	R932007203
OEF401020311	R932007204
OEF401020400	R931001644
OEF401020401	R932007205
OEF401020402	R932007206
OEF401020403	R932007207
OEF401020404	R932007208
OEF401020405	R932007209
OEF401020406	R932007210
OEF401020407	R932007211

Туре	Material number
OEF401020408	R932007212
OEF401020409	R932007213
OEF401020410	R932007214
OEF401020411	R932007215

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Sleeve valves for line mounting

Check and pilot operated check

Designation	Code	Ports	Data sheet	Page
Sleeve valves for line mounting poppet type with insert	VUH-FF	G 1/4; G 3/8; G 1/2;	18316-33	571
Sleeve valves for line mounting poppet type with insert	VUH-MF	G 1/4; G 3/8; G 1/2;	18316-34	573
Sleeve valves for line mounting ball type with insert	VULN-FF	G 1/4; G 3/8; G 1/2; G 3/4	18316-31	575
Sleeve valves for line mounting ball type with insert	VULN-MF	G 1/4; G 3/8; G 1/2; G 3/4	18316-32	577
Sleeve valves for line mounting poppet type with threaded sleeve	CA	G 1/4; G 3/8; M 18X1,5; G 1/2; G 3/4; G 1; G 1 1/4; G 1 1/2; G 2	18316-35	579
Sleeve valves for line mounting poppet type with threaded sleeve	VU-MF	G 1/2; G 3/4	18316-36	581
Sleeve valves for line mounting poppet type with threaded sleeve	VU-MF	G 1; G 1 1/4	18316-37	583
Sleeve valves for line mounting poppet type with adjustable cracking pressure	LCA 7 / 10	G 1/4; G 3/8;	18316-38	585
Sleeve valves for line mounting poppet type with adjustable cracking pressure	LCA 13 / 19	G 1/2; G 3/4	18316-39	587
Sleeve valves for line mounting bidirectional check valve	CAB	G 3/8; G 1/2; G 3/4	18316-45	589
Sleeve valves for line mounting single poppet p.o. check	OV	G 1/4; G 3/8; G 1/2; G 3/4; G 1; G 1 1/4	18316-50	591
Sleeve valves for line mounting poppet type p.o. check with pre-opening	OVP	G 1/2; G 3/4; G 1	18316-51	593

RE 18316-33/10.09

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03

Check valves

Poppet type with insert and female-female threaded sleeve



VUH-FF

В VUH1 Insert type valve (see table below)

OE.U5.01.01-Y-Z

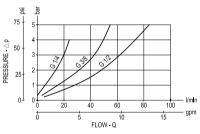
Description

This valve is composed by a sleeve with an inserted poppet

type check cartridge type VUH1. Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the ball is pushed from the seat. The valve is normally closed (checked) from B to A.

The inserted cartridge can be screwed-in or screwed-out with an Allen type key 6 or 8 mm, depending from the cartridge size.

Performance



Technical data

VUH1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.U5.01.00.09.00	G 1/4	350 (5000)	22 (6)	0.01 (0.02)
0T.U5.01.00.02.00	G 3/8	350 (5000)	50 (13)	0.02 (0.04)
0T.U5.01.00.03.00	G 1/2	350 (5000)	80 (21)	0.02 (0.04)

Steel body, zinc plated

Δp curves vs. flow in "A-B" free flow direction

As seen on the diagram, the cracking pressure is very low.

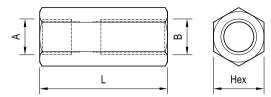
Advantages

-Very compact design and inline mounting for space saving.

-Mounting position is unrestricted.

-Three sizes provide great adaptability to the system.

-The inserted flow regulator cartridge can be purchased separately for easy service or for modifications to the original flow adjustment (ref. Catalogue RE 18329-61).



Ports size / Dimensions

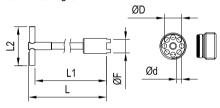
Y	Ports A-B	L mm (inches)	Hex mm (inches)	Sleeve code
09	G 1/4	48 (1.89)	19 (0.75)	OC.51.02.001
02	G 3/8	52 (2.05)	22 (0.87)	OC.51.02.002
03	G 1/2	62 (2.44)	27 (1.06)	OC.51.02.003

Fitting tool dimension

Z	Cracking pressure bar (psi)
00	< 0.5 (< 7)

VUH1 code thread	ØF	L	L1	L2	ØD	Ød	Inst. torque	Tool code
0T.U5.01.00.09.00	11.3	120	110	60	8.5	2.2	6 Nm	AVA17
G 1/4	(0.45)	(4.72)	(4.33)	(2.36)	(0.34)	(0.09)	(4)ft-lb	
0T.U5.01.00.02.00	14.9	120	108	80	10.8	3	6Nm	AVA17-01
G 3/8	(0.59)	(4.72)	(4.25)	(3.15)	(0.43)	(0.12)	(4)ft-lb	
0T.U5.01.00.03.00	18.6	120	108	80	14.2	3.8	10Nm	AVA17-02
G 1/2	(0.73)	(4.72	(4.25)	(3.15)	(0.56)	(0.15)	(7)ft-lb	

More details on RE 18329-61 catalogue.



Ordering code



Туре	Material number	Туре	Material number	Туре	Material number
OEU501010200	R932007302				
OEU501010300	R932007303				
OEU501010900	R932007301				
			·		
		-			
				-	

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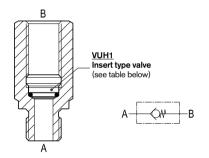
03

Check valves

Poppet type with insert and male-female threaded sleeve

VUH-MF

OE.U5.01.02-Y-Z



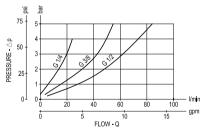
Description

This valve is composed by a sleeve with an inserted poppet type check cartridge type VUH1.
Flow is always allowed to pass from A to B when pressure at

Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the ball is pushed from the seat. The valve is normally closed (checked) from B to

The inserted cartridge can be screwed-in or screwed-out with an Allen type key 6 or 8 mm, depending from the cartridge size.

Performance



Technical data

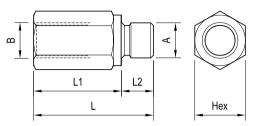
VUH1 Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.U5.01.00.09.00	G 1/4	350 (5000)	22 (6)	0.01 (0.02)
0T.U5.01.00.02.00	G 3/8	350 (5000)	50 (13)	0.02 (0.04)
0T.U5.01.00.03.00	G 1/2	350 (5000)	80 (21)	0.02 (0.04)

Steel body, zinc plated

Δp curves vs. flow in "A-B" free flow direction

As seen on the diagram, the cracking pressure is very low.

- -Very compact design and inline mounting for space saving.
- -Mounting position is unrestricted.
- -Three sizes provide great adaptability to the system.
- -The inserted flow regulator cartridge can be purchased separately for easy service or for modifications to the original flow adjustment (ref. Catalogue RE 18329-61).



Ports size / Dimensions

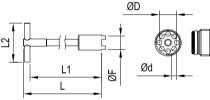
	Ports	L	L1	L2	Hex	
Y	A-B	mm	mm	mm	mm	Sleeve code
		(inches)	(inches)	(inches)	(inches)	
09	G 1/4	45 (1.77)	33 (1.30)	12 (0.47)	19 (0.75)	OC.51.01.068
02	G 3/8	47.5 (1.87)	35.5 (1.40)	12 (0.47)	22 (0.87)	OC.51.01.069
03	G 1/2	55.5 (2.19)	41.5 (1.63)	14 (0.55)	27 (1.06)	OC.51.01.070

Fitting tool dimension

Z	Cracking pressure	bar (psi)
00	< 0.5 (< 7)	

VUH1 code thread	ØF	L	L1	L2	ØD	Ød	Inst. torque	Tool code
0T.U5.01.00.09.00	11.3	120	110	60	8.5	2.2	6 Nm	AVA17
G 1/4	(0.45)	(4.72)	(4.33)	(2.36)	(0.34)	(0.09)	(4)ft-lb	
0T.U5.01.00.02.00	14.9	120	108	80	10.8	3	6Nm	AVA17-01
G 3/8	(0.59)	(4.72)	(4.25)	(3.15)	(0.43)	(0.12)	(4)ft-lb	
0T.U5.01.00.03.00	18.6	120	108	80	14.2	3.8	10Nm	AVA17-02
G 1/2	(0.73)	(4.72	(4.25)	(3.15)	(0.56)	(0.15)	(7)ft-lb	

More details on RE 18329-61 catalogue.



Ordering code

Poppet type with insert and male-female threaded sleeve

OE.U5.01.02 Y Z

Cracking pressure see table "Z"

Ports size / Dimensions see table "Y"

Туре	Material number	Туре	Material number	Туре	Material number
OEU501020200	R932007305				
OEU501020300	R932007306				
OEU501020900	R932007304				
	_				
				-	
-		-			

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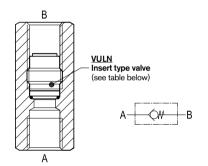
03

Check valves

Ball type with insert and female threaded sleeve



VULN-FF



Description

This valve is composed by a sleeve with an inserted ball type check cartridge.

Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the ball is pushed from the seat. The valve is normally closed (checked) from B to A. The inserted cartridge can be reached from either port in order to be screwed-in or screwed-out with an Allen type key 3-4-5-6-8 mm, depending from the cartridge size, and from the port used.

Performance

bsi þar 45 10 PRESSURE - Ap 30 15 I/min apm 10 20 30 40 FLOW - Q

Technical data

VULN Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)	
0T.U4.01.00.09.00	G 1/4	210 (3000) 15 (4)		0.02 (0.04)	
0T.U4.01.00.02.00	G 3/8	210 (3000)	30 (8)	0.03 (0.07)	
0T.U4.01.00.03.00	G 1/2	210 (3000)	50 (13)	0.04 (0.09)	
0T.U4.01.00.04.00	G 3/4	210 (3000)	80 (21)	0.07 (0.15)	

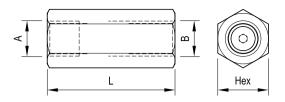
Steel body, zinc plated

Δp curves vs. flow in "A-B" free flow direction

As seen on the diagram, the cracking pressure is very low.

Advantages

- -Very compact design and inline mounting for space saving.
- -Mounting position is unrestricted.
- -Four sizes provide great adaptability to the system.



Ports size / Dimensions

Υ	Ports A-B	L mm (inches)	Hex mm (inches)	Sleeve code
09	G 1/4	48 (1.89)	19 (0.75)	OC.51.02.001
02	G 3/8	52 (2.05)	22 (0.87)	OC.51.02.002
03	G 1/2	62 (2.44)	27 (1.06)	OC.51.02.003
04	G 3/4	70 (2.76)	36 (1.42)	OC.51.02.004

_	CRACKING PRESSURE bar (psi)							
2	G 1/4	G 3/8	G 1/2	G 3/4				
00	2.3 (33.4)	1.75 (25.4)	1.75 (25.4)	0.3 (4.4)				

Ordering code

	OE.U	4.01.01	Υ	Z		
					Cr	acking pressure see table "Z"
Ball type with in female threaded	sert and d sleeve		Po	rts si	ize i	/ Dimensions see table "Y"

Туре	Material number	Туре	Material number	Туре	Material number
OEU401010201	R932007264				
OEU401010301	R932007265				
OEU401010401	R932007266				
OEU401010901	R932007263				
		'			

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03

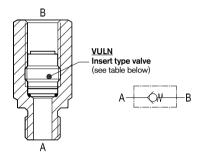
Check valves

Ball type with insert and male-female thereaded sleeve



VULN-MF

OE.U4.01.02-Y-Z

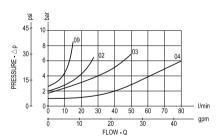


Description

This valve is composed by a sleeve with an inserted ball type check cartridge. Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the ball is pushed from the seat. The valve is normally closed (checked) from B to A.

The inserted cartridge can be reached from either port in order to be screwed-in or screwed-out with an Allen type key 3-4-5-6-8 mm, depending from the cartridge size, and from the port used.

Performance



Δp curves vs. flow in "A-B" free flow direction

For cracking pressure range refer to the specific table.

Advantages

-Very compact design and inline mounting for space saving.

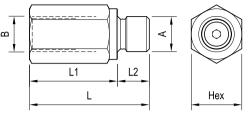
-Mounting position is unrestricted.

-Four sizes provide great adaptability to the system.

Technical data

VULN Code	Ports A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
0T.U4.01.00.09.00	G 1/4	210 (3000)	15 (4)	0.02 (0.04)
0T.U4.01.00.02.00	G 3/8	210 (3000)	30 (8)	0.03 (0.07)
0T.U4.01.00.03.00	G 1/2	210 (3000)	50 (13)	0.04 (0.09)
0T.U4.01.00.04.00	G 3/4	210 (3000)	80 (21)	0.07 (0.15)

Steel body, zinc plated

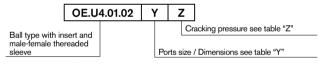


Ports size / Dimensions

			_			
Y	Ports A-B	L mm (inches)	L1 mm (inches)	L2 mm (inches)	Hex mm (inches)	Sleeve code
09	G 1/4	45 (1.77)	33 (1.30)	12 (0.47)	19 (0.75)	OC.51.01.068
02	G 3/8	47.5 (1.87)	35.5 (1.40)	12 (0.47)	22 (0.87)	OC.51.01.069
03	G 1/2	55.5 (2.19)	41.5 (1.63)	14 (0.55)	27 (1.06)	OC.51.01.070
04	G 3/4	62 (2.44)	46 (1.81)	16 (0.63)	36 (1.42)	OC.51.01.071

_	CRACKING PRESSURE I/min (gpm)						
Z	G 1/4	4 G 3/8	G 1/2	G 3/4			
00	2.3 (33.4)	1.75 (25.4)	1.75 (25.4)	0.3 (4.4)			

Ordering code



Туре	Material number	Туре	Material number	Туре	Material number
OEU401020200	R932007260				
OEU401020300	R932007261				
OEU401020400	R932007262				
OEU401020900	R932007259				

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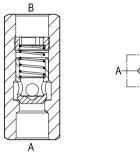
03

Check valves

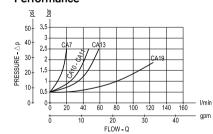
Poppet type with female threaded sleeve

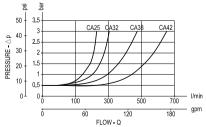


CA Series



Performance





Description

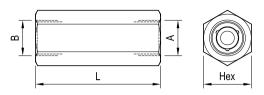
Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat. The valve is normally closed (checked) from B to A.

Technical data

Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)	
CA 7	350 (5000)	25 (7)	0.11 (0.24)	
CA 10	350 (5000)	50 (13)	0.19 (0.42)	
CA 11	350 (5000)	50 (13)	0.19 (0.42)	
CA 13	350 (5000)	80 (21)	0.25 (0.55)	
CA 19	250 (3600)	100 (26)	0.52 (1.15)	
CA 25	250 (3600)	160 (42)	1.04 (2.29)	
CA 32	250 (3600)	300 (79)	1.67 (3.68)	
CA 38	250 (3600)	450 (119)	2 (4.4)	
CA 42	250 (3600)	700 (185)	3.6 (7.9)	

Steel body, zinc plated

NOTE: the valve is available also with a choice of special cracking pressures, as shown by the relevant table: when ordering NON-Standard cracking pressure, please specify the desired cracking pressure expressed in "bar" value in the code position (**). Without such specification, the valve will be supplied with standard cracking pressure = 0.5 bar.



Advantages

- -Very compact design and inline mounting for space saving.
- -Nine sizes provide great adaptability to the system.
- -Mounting position is unrestricted.
- -Very low Δp in the free flow direction.
- -Different values of cracking pressure are available for A-B flow
- (see the relevant table).

Ports size / Dimensions

Code	Ports size A-B	Hex mm (inches)	L mm (inches)	
CA 7	G 1/4	19 (0.75)	62 (2.44)	
CA 10	G 3/8	24 (0.95)	70 (2.76)	
CA 11	M 18x1.5	24 (0.95)	71 (2.80)	
CA 13	G 1/2	27 (1.06)	79 (3.11)	
CA 19	G 3/4	36 (1.42)	94 (3.70)	
CA 25	G 1	46 (1.81)	114 (4.49)	
CA 32	G 1-1/4	55 (2.17)	138 (5.43)	
CA 38	G 1-1/2	60 (2.36)	148 (5.83)	
CA 42	G 2	75 (2.95)	168 (6.61)	

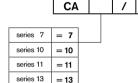
Ordering code

series 19

series 25

series 32

series 38



= 19

= 25

= 32 = 38

=42

= Cracking pressure (only bar value see table below)

	CA 7	CA 10	CA 11	CA 13	CA 19	CA 25	CA 32	CA 38	CA 42
	2 (29)	2 (29)	4 (58)	2 (29)	2 (29)	2 (29)	2 (29)	2 (29)	2 (29)
(isd	4 (58)	4 (58)		4 (58)	4 (58)	4 (58)	4 (58)	4 (58)	4 (58)
bar (psi)	5 (72.5)	5 (72.5)		5 (72.5)	5 (72.5)	5 (72.5)	5 (72.5)	5 (72.5)	8 (116)
le b	8 (116)	8 (116)		8 (116)	8 (116)	8 (116)	8 (116)	8 (116)	
pressure		15 (217.5)		10 (145)	10 (145)	10 (145)			
g pr				15 (217.5)	15 (217.5)				
Cracking p									
Š									

Do not specify for the standard cracking pressure 0.5 bar (7.25 psi)

Туре	Material number
CA7	R932500066
CA7/2	R932500067
CA7/4	R932500070
CA7/5	R932500071
CA7/8	R932500072
CA10	R932500074
CA10/2	R932500077
CA10/4	R932500080
CA10/5	R932500081
CA10/8	R932500083
CA10/15	R932500076
CA11	R932500085
CA11/4	R932006965
CA13	R932500086
CA13/2	R932500089
CA13/4	R932500092

Туре	Material number
CA13/5	R932500093
CA13/8	R932500094
CA13/10	R932500088
CA13/15	R932006923
CA19	R932500096
CA19/2	R932500102
CA19/4	R932500105
CA19/5	R932500106
CA19/8	R932500109
CA19/10	R932500100
CA19/15	R932500101
CA25	R932500114
CA25/2	R932500119
CA25/4	R932500122
CA25/5	R932500124
CA25/8	R932500125

•	
Туре	Material number
CA25/10	R932500118
CA32	R932500129
CA32/2	R932500132
CA32/4	R932500135
CA32/5	R932500136
CA32/8	R932500137
CA38	R932500138
CA38/2	R932500141
CA38/4	R932500143
CA38/5	R932500144
CA38/8	R932500145
CA42	R932500146
CA42/2	R932500147
CA42/4	R932500148
CA42/8	R932500149

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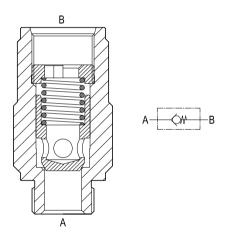
1/2

Check valves

Poppet type with male-female threaded sleeve



VU-MF (G1/2 - G3/4)



04.31.17.00-Y-Z

Description

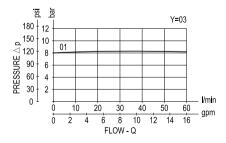
Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat. The valve is normally closed (checked) from B to A. Precision machining and hardening processes allow virtually leak free performance in the checked condition.

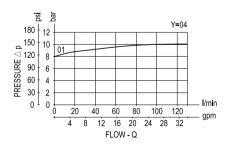
Technical data

Ports	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
G 1/2	350 (5000)	60 (16)	0.30 (0.66)
G 3/4	350 (5000)	130 (34)	0.44 (0.97)

Steel body, zinc plated

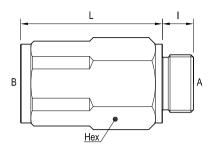
Performance





Δp curves vs. flow in "A-B" free flow direction

For cracking pressure range refer to the specific table.



Ports size / Dimensions

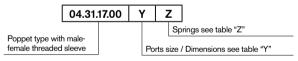
Υ	Ports A - B	L mm (inches)	I mm (inches)	Hex mm (inches)
03	G 1/2	57 (2.24)	14 (0.55)	30 (1.18)
04	G 3/4	69 (2.72)	16 (0.63)	36 (1.42)

Springs					
-	Cracking	presure	Ordering code	Ordering code	
-	bar	psi	Y=03	Y=04	
01	8	116	03.51.01.428	03.51.01.450	

Advantages

- -Very compact design and inline mounting for space saving.
- -Four sizes (see also next page) provide great adaptability to the system.
- -Mounting position is unrestricted. -Very low Δp in the free flow direction.

Ordering code



Туре	Material number	Туре	Material number	Туре	Material number
043117000301000	R930000444				
043117000401000	R930000445				
				-	
		-			

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03

Check valves

Poppet type with male-female threaded sleeve



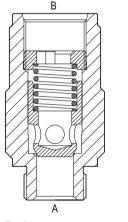
VU-MF (G1 - G1-1/4)



Description

Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat.

The valve is normally closed (checked) from B to A. Precision machining and hardening processes allow virtually leak free performance in the checked condition.

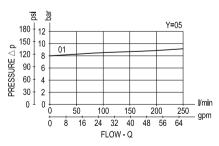


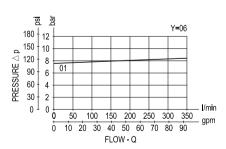


Technical data

Ports	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
G 1	350 (5000)	250 (66)	0.90 (1.98)
G 1-1/4	350 (5000)	350 (93)	1.50 (3.31)

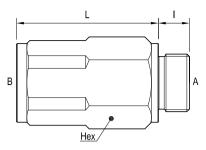
Performance





Δp curves vs. flow in "A-B" free flow direction

For cracking pressure range refer to the specific table.



Ports size / Dimensions

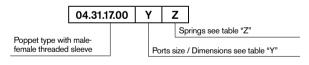
Y	Ports A - B	L mm (inches)	I mm (inches)	Hex mm (inches)
05	G 1	82 (3.23)	0.71 (46)	46 (1.81)
06	G 1-1/4	102 (4.02)	0.79 (55)	55 (2.17)

	Springs						
	Cracking	presure	Ordering code	Ordering code			
-	bar	psi	Y=05	Y=06			
01	8	116	03.51.01.430	03.51.01.429			

Advantages

- -Very compact design and inline mounting for space saving.
- -Four sizes (see also previous page) provide great adaptability to the system.
- -Mounting position is unrestricted. -Very low Δp in the free flow direction.

Ordering code



Туре	Material number	Туре	Material number	Туре	Material number
043117000501000	R930000446				
043117000601000	R930000447				
-					
		-			

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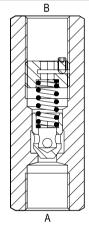
03

Check valves

Line mounted poppet type, with adjustable cracking pressure



LCA 7 Series/LCA 10 Series

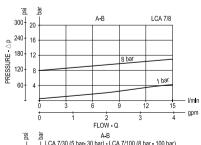


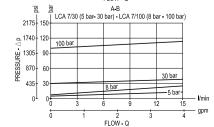


Description

Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat. The spring load is adjustable by turning the internal ring nut with a 4 mm allen wrench for LCA7 (5 mm allen wrench for LCA10): screwing down increases the spring load and increases the cracking pressure (in order to turn the Ring Nut, loosen first the little locking screw with a 1.5 mm Allen wrench; tighten it again once the spring load is adjusted). The valve is normally closed (checked) from B to A.

Performance



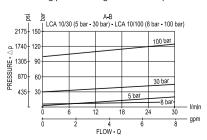


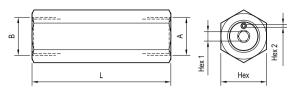
Technical data

Code	Pressure P max	Flow Q max				
	bar (psi)	I/min (gpm)				
LCA 7	350 (5000)	25 (7)				
LCA 10	350 (5000)	30 (8)				

Steel body, zinc plated

 Δp curves vs. flow in "A-B" free flow direction. For cracking pressure range refer to the specific table.





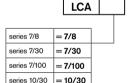
Ports size / Dimensions

	Ports size	L	Hex	Hex 1	Hex 2
Code	A-B	mm	mm	mm	mm
	A-D	(inches)	(inches)	(inches)	(inches)
	0.444	73	19	4	1.5
LCA 7	G 1/4	(2.87)	(0.75)	(0.16)	(0.06)
LCA 10	G 3/8	73	24	5	1.5
	_ 5,0	(2.87)	(0.95)	(0.20)	(0.06)

Note: when ordering the valves Factory set please, specify the desired cracking pressure expressed in "bar". Without such specification, the valves will be supplied non adjusted.

Ordering code

series 10/100



= 10/100

Pressure range (only bar value see below)

	LCA 7/8	LCA 7/30	LCA 7/100	LCA 10/30	LCA 10/100
re range (psi)	min 1 (14.5) max 8 (116)	min 5 (72.5) max 30 (435)	min 8 (116) max 100 (1450)	min 5 (72.5) max 30 (435)	min 8 (116) max 100 (1450)
sure ra ar (psi					
Pressur					

Туре	Material number	Туре	Material number	Туре	Material number
LCA 7/8	R932006929				
LCA 7/30	R932500275				
LCA 7/100	R932006928			-	
LCA10/30	R932500279				
LCA 10/100	R932500277				

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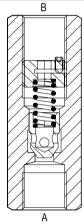
03

Check valves

Line mounted poppet type, with adjustable cracking pressure



LCA 13 Series/LCA 19 Series

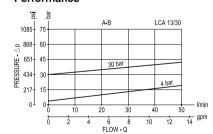


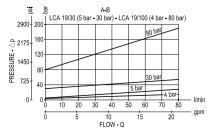


Description

Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat. The spring load is adjustable by turning the internal ring nut with an 8 mm Allen wrench: screwing down increases the spring load and increases the cracking pressure (in order to turn the Ring Nut, loosen first the little locking screw with a 2 mm Allen wrench; tighten it again once the spring load is adjusted). The valve is normally closed (checked) from B to A.

Performance



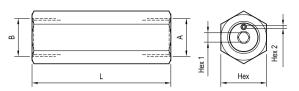


Technical data

Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)
LCA 13	250 (3600)	50 (13)
LCA 19	250(3600)	80 (21)

Steel body, zinc plated

Δp curves vs. flow in "A-B" free flow direction. For cracking pressure range refer to the specific table

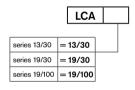


Ports size / Dimensions

Code	Ports size A-B	mm	Hex mm	Hex 1	Hex 2 mm
		(inches)	(inches)	(inches)	(inches)
LCA 13	G 1/2	110 (4.33)	27 (1.06)	8 (0.32)	2 (0.08)
LCA 19	G 3/4	110 (4.33)	36 (1.42)	8 (0.32)	2 (0.08)

Note: when ordering the valves Factory set please, specify the desired cracking pressure expressed in "bar". Without such specification, the valves will be supplied non adjusted.

Ordering code



Pressure range (only bar value see below)

	LCA 13/30	LCA 19/30	LCA 19/100
range isi)	min 4 (58) max 30 (435)	min 5 (72.5) max 30 (435)	min 4 (58) max 80 (1160)
l el q			
Press			

Туре	Material number	Туре	Material number	Туре	Material number
LCA 13/30	R932500281				
LCA 19/30	R932500288				
LCA 19/100	R932006930				

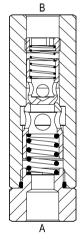
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03

Line mounted double acting poppet type

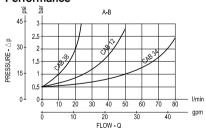


CAB Series





Performance



Advantages

- -Very compact design and inline mounting for space saving.
- -Three sizes provide great adaptability to the system.
- -Mounting position is unrestricted.
- -Very low Δp.
- -Different values of cracking pressure are available for B-A flow (see the relevant table).

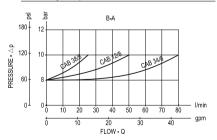
Description

Flow is always allowed to pass from A to B when pressure at A rises above 0.5 bar (7.25 psi). Reverse flow from B to A is possible only when pressure at B rises above the return spring bias pressure; the return B to A cracking pressure can be chosen among the various X values available (see table).

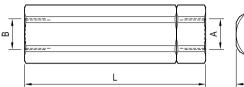
Technical data

Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
CAB 38	350 (5000)	25 (7)	0.48 (1.06)
CAB 12	350 (5000)	50 (13)	0.88 (1.94)
CAB 34	250 (3600)	80 (21)	1.71 (3.77)

Steel body, zinc plated



NOTE: the valve is available also with a choice of cracking pressures B-A, as shown by the relevant table: when ordering please specify the desired B-A cracking pressure expressed in "bar" value in the code position (**). In direction A-B the cracking pressure is always 0.5 bar.





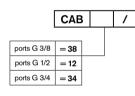
Ports size / Dimensions

Code	Ports size A-B	Hex mm (inches)	L mm (inches)
CAB 38	G 3/8	30 (1.18)	102 (4.02)
CAB 12	G 1/2	36 (1.42)	130 (5.12)
CAB 34	G 3/4	46 (1.81)	155 (6.10)

Applications

They can be fitted in line either when it is necessary to build-up some pressure "B-A" before feeding an actuator (ex.: opening of the mechanical safety brake before starting a motor), or they can be employed to allow free upstream flow "A-B", and build-up some back pressure "B-A" to hold or stabilize the reverse motion.

Ordering code



= Specify cracking pressure "B-A" (only bar value see table below)

	CAB 38	CAB 12	CAB 34
e (psi)	5 (72.5)	5 (72.5)	4 (58)
ar (p	8 (116)	8 (116)	8 (116)
ress v be	15 (217.5)	10 (145)	10 (145)
Cracking pressure Controlled flow bar (p		15 (217.5)	15 (217.5)
ackir Sed			
ğ ğ			
Ŏ			

Cracking pressure (free flow A-B) is always 0.5 bar (7.25 psi)

Туре	Material number
CAB 12/5	R932500159
CAB 12/8	R932500160
CAB 12/10	R932500158
CAB 12/15	R932500153
CAB 34/4	R932500154
CAB 34/8	R932500151
CAB 34/10	R932500152
CAB 34/15	R932006924
CAB 38/5	R932500157
CAB 38/8	R932500155

Туре	Material number
CAB 38/15	R932500156
-	
-	

Туре	Material number		

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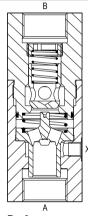
1/2

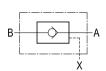
Pilot operated check valves

Single poppet type

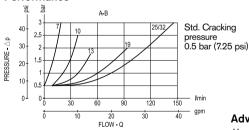


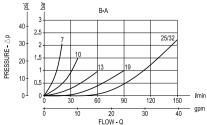
OV Series





Performance





Description

Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat. The valve is normally closed (checked) from B to A; when sufficient pilot pressure is present at Pil port (X), the annular pilot area pushes the poppet from its seat and flow is allowed from B to A. Precision machining and hardening process allow virtually leak-free performance in the checked condition. The valve is available in different sizes and versions for different flow ranges, as specified by the tables of the Technical data, Performance diagrams and Dimensions.

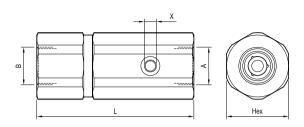
Technical data

ICCIIII	icai uata			
Code	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)	Pilot ratio
OV 7	350 (5000)	15 (4)	0.75 (1.65)	14 : 1
OV 10	350 (5000)	35 (9)	1.04 (2.29)	5:1
OV 13	350 (5000)	50 (13)	1.42 (3.13)	5:1
OV 19	250 (3600)	100 (26)	2.3 (5.1)	3.2 : 1
OV 25	250 (3600)	150 (40)	4.3 (9.5)	3.2 : 1
OV 32	250 (3600)	150 (40)	4.5 (9.9)	3.2 : 1

Steel body, zinc plated

Advantages

- -Very compact design and inline mounting for space saving.
- -Mounting position is unrestricted.
- -Different values of cracking pressure are available for A-B flow (see the relevant table).
- -Six sizes provide great adaptability to the system.



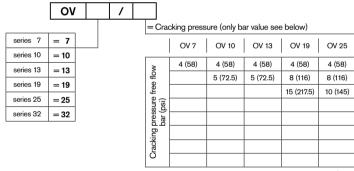
Ports size / Dimensions

	Ports si		Hex	L
Code	A-B	Х	mm (inches)	mm (inches)
OV 7	G 1/4	G 1/4	36 (1.42)	98 (3.86)
OV 10	G 3/8	G 1/4	41 (1.61)	106 (4.17)
OV 13	G 1/2	G 1/4	46 (1.81)	119 (4.69)
OV 19	G 3/4	G 1/4	55 (2.17)	139 (5.47)
OV 25	G 1	G 1/4	70 (2.76)	169 (6.65)
OV 32	G 1-1/4	G 1/4	70 (2.76)	177 (6.97)

Applications

Ideal to lock cylinders in a leak free mode in order lock or clamp loads. They are non-modulating ON-OFF valves suitable for holding applications, but unsuitable to control the motion of overrunning loads which would cause a loss of pilot pressure. They should not be used for paired cylinders and, when fitted to the cylinder annular chamber, the valve pilot ratio should be significantly higher than the cylinder ratio. In case of doubt, please consult us.

Ordering code



Do not specify for the standard pressure 0.5 bar (7.25 psi) Note: The OV32 cracking pressure is 0.5 bar (7.25 psi)

Туре	Material number
OV 7	R932500363
OV 7/4	R932006931
OV 10	R932500364
OV 10/4	R932006932
OV 10/5	R932006933
OV 13	R932500366
OV 13/4	R932006934
OV 13/5	R932006935
OV 19	R932500367
OV 19/4	R932500368

Туре	Material number
OV 19/8	R932006936
OV 19/15	R932006937
OV 25	R932500369
OV 25/4	R932006938
OV 25/8	R932006939
OV 25/10	R932006940
OV 32	R932500370

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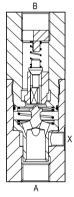
03

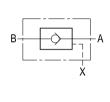
Pilot operated check valves

Poppet type, with pre-opening

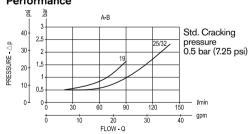


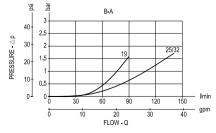
OVP Series





Performance





Description

Flow is always allowed to pass from A to B when pressure at A rises above the spring bias pressure and the poppet is pushed from the seat. The valve is normally closed (checked) from B to A; when sufficient pilot pressure is present at Pil port (X), the annular pilot area pushes the pre-opening poppet from its seat and oil starts flowing from B to A; as pilot pressure increases, also the main poppet is lifted from its seat and the opening area B-A becomes larger. Precision machining and hardening process allow virtually leak-free performance in the checked condition. The valve is available in different sizes and versions for different flow ranges, as specified by the tables of the Technical data, Performance diagrams and Dimensions.

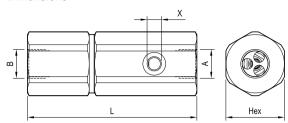
Technical data

	Pressure	Flow Weight Pilot ratio		ratio	
Code	P max bar (psi)	Q max I/min (gpm)	kg (lbs)	Main opening	Pre opening
OVP 19	250 (3600)	100 (26)	2.6 (5.8)	1:4.5	1:11
OVP 25	250 (3600)	150 (40)	5.0 (11)	1:4	1:13
OVP 32	250 (3600)	150 (40)	5.2 (11.5)	1:4	1:13

Steel body, zinc plated

Advantages

- -Very compact design and inline mounting for space saving.
- -Mounting position is unrestricted.
- -Three sizes provide great adaptability to the system.



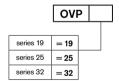
Ports size / Dimensions

Code	Ports	size	Hex	L
Code	A-B	Х	mm (inches)	mm (inches)
OVP 19	G 3/4	G 1/4	55 (2.17)	159 (6.26)
OVP 25	G 1	G 1/4	70 (2.76)	186 (7.32)
OVP 32	G 1-1/4	G 1/4	70 (2.76)	193 (7.60)

Applications

Ideal to lock cylinders in a leak free mode in order lock or clamp loads. They are ON-OFF valves suitable for holding applications; the pre-opening does provide a degree of smooth opening and allows some motion control, but these valves are not designed to control overrunning loads which would cause a loss of pilot pressure. They should not be used for paired cylinders and, when fitted to the cylinder annular chamber, the main pilot ratio should be significantly higher than the cylinder ratio. In case of doubt, please consult us.

Ordering code



Cracking pressure (free flow) is always 0.5 bar (7.25psi)

Туре	Material number	
OVP19	R932500377	
OVP25	R932500378	
OVP32	R932500379	

Bosch Rexroth Oil Control S.p.A.

Via G. Bovio, 7 Z.I. Mancasale 42124 Reggio Emilia, Italy

Туре	Material number
-	

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Material number

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Sleeve valves for line mounting

Sequence

Designation	Code	Ports	Data sheet	Page	
Sleeve valves for line mounting sequence valve direct acting poppet type	VSQ-20-LM	G 3/8	18316-60	597	
Sleeve valves for line mounting sequence valve direct acting poppet type	VSQ-30-LM	G 1/2	18316-62	599	
Sleeve valves for line mounting sequence valve direct acting poppet type	VSQ-60-LM	JIS	18316-61	601	
Sleeve valves for line mounting sequence valve direct acting poppet type	VSQ-30-LM	G 3/4	18316-63	603	
Sleeve valves for line mounting sequence valve direct acting poppet type pressure compensated	VSQ-CC-LM	G 3/8	18316-64	605	0
Sleeve valves for line mounting sequence valve direct acting poppet type pressure compensated	VSQ-CC-LM	G 1/2	18316-65	607	

RE 18316-60/10.09

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03

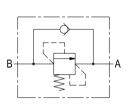
Sequence valves

Direct acting poppet type



VSQ-20-LM (G3/8)

A B



0T.S1.01.00.02-Z-W

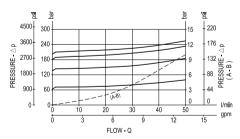
Description

They are composed by a relief valve (opening "B-A") and by a reverse flow check valve "A-B".

Initially the flow goes to a first line connected in parallel to the B side, not shown here, and pressure increases until reaching the selected relief setting; then the relief valve opens and the second circuit is supplied out of A port, while the actuator connected to the B side remains pressurized. The incorporated check valve allows the reverse motion of the actuators which happens without specific control of the sequence, only depending from the load/pressure conditions.

Note that pressure at A needed to operate the second actuator is additive to the relief setting, and, for this reason, this valve is successfully employed to energize a secondary actuator which only requires low pressure.

Performance



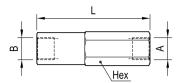
Advantages

- -Very compact design and inline mounting for space saving. -Mounting position is unrestricted.
- -Low Δp for B-A flow.
- -Different springs available for different pressure ranges (see the "Z" table).

Technical data

Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
350 (5000)	50 (13)	0.18 (0.40)

Steel body, zinc plated



Ports size / Dimensions

Ports A-B	L mm (inches)	Hex mm (inches)
G 3/8	85 (3.35)	22 (0.87)

Springs			
z	Adj. press. range bar (psi)		
05	20-70 (290-1015)		
10	80-130 (1160-1885)		
20	140-200 (2030-2900)		
35	210-350 (3045-5075)		

The valve is supplied with Factory set opening pressure and is non-adjustable. Refer to the table. Standard pressure setting are specified in the relevant "W" table. For special pressure settings, consult us.

Si	Std. SETTING bar (psi) Q= 5 l/m				
w	Z=05	Z=10	Z=20	Z=35	
01		80 (1160)	140 (2030)	210 (3045)	
02	20 (290)	90 (1305)	150 (2175)	220 (3190)	
03	30 (435)	100 (1450)	160 (2320)	230 (3335)	
04	40 (580)	110 (1595)	170 (2465)	240 (3480)	
05	50 (725)	120 (1740)	180 (2610)	250 (3625)	
06	60 (870)	130 (1885)	190 (2755)	260 (3770)	
07	70 (1015)		200(2900)	270 (3915)	

Applications

They are employed to control the sequence of two or more cylinders or motors, when the second actuator must be allowed to move only after the first actuator has performed a certain function. The incorporated check valve allows free reverse motion without specific control of the sequence.

Ordering code

OT.S1.01.00.02 Z W

Direct acting poppet type Std. setting see table "W"

Springs see table "Z"

Туре	Material number	Туре
0TS10100020502	R931000074	0TS
0TS10100020503	R931000075	0TS
0TS10100020504	R931000076	OTS
0TS10100020505	R931000077	OTS
0TS10100020506	R931000078	OTS
0TS10100020507	R931000079	OTS
0TS10100021001	R931000083	OTS
0TS10100021002	R931000084	OTS
0TS10100021003	R931000085	OTS
0TS10100021004	R931001978	OTS

Туре	Material number
DTS10100021005	R931000086
DTS10100021006	R931001980
OTS10100022001	R931000088
OTS10100022002	R931001981
OTS10100022003	R931000657
OTS10100022004	R931001982
OTS10100022005	R931000089
OTS10100022006	R931001983
OTS10100022007	R931001862
OTS10100023501	R931001985

Туре	Material number
0TS10100023502	R931000656
0TS10100023503	R931001988
0TS10100023504	R931001990
0TS10100023505	R931001991
0TS10100023506	R931001992
0TS10100023507	R931001993

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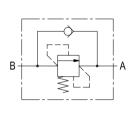
Sequence valves

Direct acting poppet type



VSQ-30-LM (G1/2)

A B



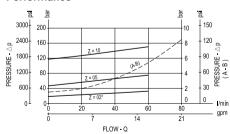
05.21.16.00.03-Z

Description

They are composed by a relief valve (opening "B-A") with hydraulic dampening, and by a reverse flow annular check valve "A-B". Initially the flow goes to a first line connected in parallel to the B side, not shown here, and pressure increases until reaching the selected relief setting; then the relief valve opens and the second circuit is supplied out of A port, while the actuator connected to the B side remains pressurized. The incorporated check valve allows the reverse motion of the actuators which happens without specific control of the sequence, only depending from the load/pressure conditions.

Note that pressure at A needed to operate the second actuator is additive to the relief setting, and, for this reason, this valve is successfully employed to energize a secondary actuator which only requires low pressure.

Performance



Advantages

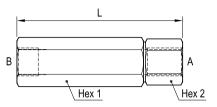
- -Very compact design and inline mounting for space saving.
- -Mounting position is unrestricted.
- -Low Δp for B-A flow.
- -Different springs available for different pressure ranges (see the "Z" table).

Technical data

Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
350 (5000)	80 (21)	0.6 (1.32)

Steel body, zinc plated

Pressure drop curves are shown with zero back pressure on "A" port.



Ports size / Dimensions

Ports A-B	L mm (inches)	Hex 1 mm (inches)	Hex 2 mm (inches)
G 1/2	124 (4.88)	32 (1.26)	30 (1.18)

	Springs					
	Z	Adj. press. range bar (psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) Q=5 I/min	Ordering code	Colour
(02*	10-30 (145-435)	9 (131)	20 (290)	03.51.01.155	green
	05	25-70 (360-1000)	21 (305)	50 (725)	03.51.01.106	green
	10	30-120 (435-1750)	47 (682)	120 (1750)	03.51.01.171	yellow

The relief setting is adjustable by turning the internal ring nut: to turn the nut loosen first the little locking screw, then tighten it again after the adjustment. For the spring selection, refer to the table.

(*) Z= 02 is only supplied for special applications.

This valve is successfully employed when the pressure needed to move the secondary actuator is not very high.

Applications

They are employed to control the sequence of two or more cylinders or motors, when the second actuator must be allowed to move only after the first actuator has performed a certain function. The incorporated check valve allows free reverse motion without specific control of the sequence.

Ordering code

05.21.16.00.03 Z
Direct acting poppet type

Туре	Material number	Туре	Material number	Туре	Material number
05211600030200A	R901187620				
05211600030500A	R930001441	•			
05211600031000A	R930001444				
,			·		
,				-	

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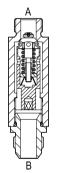
03

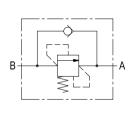
Sequence valves

JIC series direct acting poppet type



VSQ-60-LM





0T.S1.03.00.03-Z-W

Description

They are composed by a relief valve (opening "B-A") and by a reverse flow check valve "A-B".

Initially the flow goes to a first line connected in parallel to the B side, not shown here, and pressure increases until reaching the selected relief setting; then the relief valve opens and the second circuit is supplied out of A port, while the actuator connected to the B side remains pressurized. The incorporated check valve allows the reverse motion of the actuators which happens without specific control of the sequence, only depending from the load/pressure conditions.

Note that pressure at A needed to operate the second actuator is additive to the relief setting, and, for this reason, this valve is successfully employed to energize a secondary actuator which only requires low pressure.

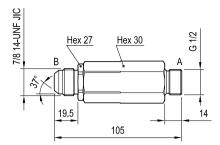
Technical data

Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
350 (5000)	60 (16)	0.37 (0.82)

Steel body, zinc plated

Advantages

- -Very compact design and inline mounting for space saving.
- -Mounting position is unrestricted.
- -Different springs available for different pressure ranges (see the "Z" , table).



	Springs
z	Adj. press. range bar (psi)
05	20-100 (290-1450)
10	110-170 (1595-2465)
20	180-230 (2610-3335)
35	240-350 (3480-5075)

The valve is supplied with the relief setting requested by the customer and is non-adjustable. Refer to the table. Standard pressure setting are specified in the relevant "W" table. For special pressure setting, consult us.

	Std. SETTING bar (psi) Q= 5 l/m							
w	Z=05	Z=05 Z=10		Z=35				
01	20 (290)	110 (1595)	180 (2610)	240 (3480)				
02	30 (435)	30 (435) 120 (1740)		250 (3625)				
03	40 (580)	130 (1885)	200 (2900)	260 (3770)				
04	50 (725)	140 (2030)	210 (3045)	270 (3915)				
05	60 (870)	150 (2175)	220 (3190)	280 (4060)				
06	70 (1015)	160 (2320)	230 (3335)	290 (4205)				
07 80 (1160)		170 (2465)		300 (4350)				
08	90 (1305)			310 (4495)				
09	100 (1450)			320 (4640)				

Material number

R931002025

R931002026

R931002027

R931002028

R931002029

R931002030

R931002031

Applications

They are employed to control the sequence of two or more cylinders or motors, when the second actuator must be allowed to move only after the first actuator has performed a certain function. The incorporated check valve allows free reverse motion without specific control of the sequence.

Ordering code

Jic series direct ac

	0T.S1.03.	00.03	- 4	Z	٧	V	
						Sto	d. Setting see table "W"
ctir	ng poppet type			Sp	ring	s se	e table "Z"

Туре	Material number
0TS10300030501	R931001994
0TS10300030502	R931001995
0TS10300030503	R931001996
0TS10300030504	R931001997
0TS10300030505	R931000099
0TS10300030506	R931001998
0TS10300030507	R931002000
0TS10300030508	R931002004
0TS10300030509	R931002005
0TS10300031001	R931002009
0TS10300031002	R931002010
0TS10300031003	R931002011

Туре	Material number
0TS10300031004	R931002012
0TS10300031005	R931002013
0TS10300031006	R931002014
0TS10300031007	R931002015
0TS10300032001	R931002016
0TS10300032002	R931002017
0TS10300032003	R931002018
0TS10300032004	R931002019
0TS10300032005	R931002020
0TS10300032006	R931002021
0TS10300033501	R931002022
0TS10300033502	R931002024

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0TS10300033503

0TS10300033504

0TS10300033505

0TS10300033506

0TS10300033507

0TS10300033508

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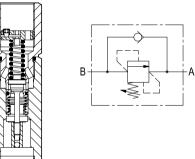
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03

Sequence valves

Direct acting poppet type





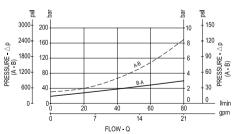
05.21.16.00.04-Z

Description

They are composed by a relief valve (opening "B-A") with hydraulic dampening, and by a reverse flow annular check valve "A-B". Initially the flow goes to a first line connected in parallel to the B side, not shown here, and pressure increases until reaching the selected relief setting; then the relief valve opens and the second circuit is supplied out of A port, while the actuator connected to the B side remains pressurized. The incorporated check valve allows the reverse motion of the actuators which happens without specific control of the sequence, only depending from the load/pressure conditions.

Note that pressure at A needed to operate the second actuator is additive to the relief setting, and, for this reason, this valve is successfully employed to energize a secondary actuator which only requires low pressure.

B Performance



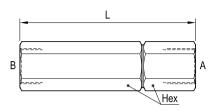
Advantages

- -Very compact design and inline mounting for space saving.
- -Mounting position is unrestricted.
- -Low Δp for B-A flow.
- -Different springs available for different pressure ranges (see the "Z" table).

Technical data

Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
350 (5000)	80 (21)	0.6 (1.32)

Steel body, zinc plated



Port size / Dimensions

Ports A - B	L mm (inches)	Hex mm (inches)
G 3/4	132 (5.2)	32 (1.26)

	Springs								
z	Adj. press. range bar (psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) Q=5 l/min	Ordering code	Colour				
05	05 20-70 (290-1000) 21 (305)		20 (290)	03.51.01.106	green				

The relief setting is adjustable by turning the internal ring nut: to turn the nut loosen first the little locking screw, then tighten it again after the adjustment. For the spring selection, refer to the table.

Applications

They are employed to control the sequence of two or more cylinders or motors, when the second actuator must be allowed to move only after the first actuator has performed a certain function. The incorporated check valve allows free reverse motion without specific control of the sequence.

Ordering code

Direct acting poppet type Springs see table "Z"

Type 052116000405010	Material number R930001447	Туре	Material number	Туре	Material number

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03

Sequence valves

Direct acting poppet type pressure compensated



VSQ-CC-LM (G3/8)

A Inner socket screw Hex 7 (0.28)

05.21.19.00-Y-Z

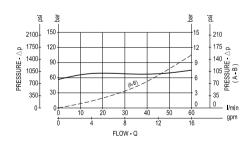
Description

They are composed by a pressure compensated relief valve (opening "B-A"), and by an annular check valve "A-B". Initially the flow goes to a first line connected in parallel to the B side, not shown here, and pressure increases until reaching the selected relief setting; then the relief valve opens and the second circuit is supplied out of A port, while the actuator connected to the B side remains pressurized.

The valve applies a balanced relief piston allowing relief operation at the valve setting independent of backpressure at A (back-pressure is not additive). With line pressure equal or higher than setting, after valve opening, the full pressure is transferred from B to A.

The incorporated check valve allows the reverse motion of the actuators which happens without specific control of the sequence, only depending from the load/pressure conditions.

Performance



Advantages

- -The pressure compensation allows to transfer the full system pressure to the second actuator.
- -Very compact design and inline mounting for space saving.
 -Mounting position is unrestricted.
- -Low Δp for B-A flow.

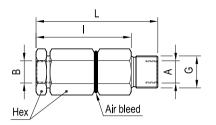
Technical data

Port A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)
G 3/8	350 (5000)	60 (16)	0.38 (0.84)

Steel body, zinc plated

Installation torque: 88 - 90 Nm (65 - 67 ft-lb)

For a good performance, the pressure in the secondary circuit should not drop below 20 bar (290 psi).



Ports size / Dimensions

Y	Port A-B	L mm (inches)	I mm (inches)	Hex mm (inches)	G
02	G 3/8	91.5 (3.6)	71.5 (2.82)	30 (1.18)	M24x1.5

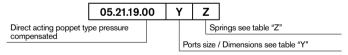
		Springs		
Z	Adj. press. range bar (psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) Q=5 I/min	Ordering code
01	50-140 (725-2000)	25 (363)	100 (1450)	03.51.01.256

The relief setting is adjustable by turning the internal ring nut (hexagon 7 mm): to turn the nut loosen first the little locking screw, then tighten it again after the adjustment. For the spring selection, refer to the table.

Applications

They are employed to control the sequence of two or more cylinders or motors, when the second actuator requires less pressure to move, but the pressure needed is not negligible. The pressure at A needed to operate the second actuator is not additive to the relief setting and this results also in energy saving. The incorporated check valve allows free reverse motion without specific control of the sequence.

Ordering code



Туре	Material number	Туре	Material number	Туре	Material number
052119000201000	R901187639				

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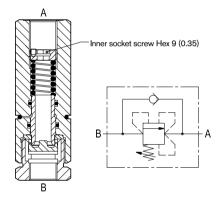
Sequence valves

Direct acting poppet type pressure compensated



VSQ-CC-LM (G1/2)

05.21.17.00-Y-Z



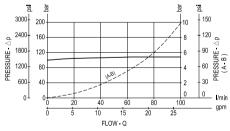
Description

They are composed by a pressure compensated relief valve (opening "B-A"), and by an annular check valve "A-B". Initially the flow goes to a first line connected in parallel to the B side, not shown here, and pressure increases until reaching the selected relief setting; then the relief valve opens and the second circuit is supplied out of A port, while the actuator connected to the B side remains pressurized.

The valve applies a balanced relief piston allowing relief operation at the valve setting independent of back-pressure at A (back-pressure is not additive). With line pressure equal or higher than setting, after valve opening, the full pressure is transferred from B to A.

The incorporated check valve allows the reverse motion of the actuators which happens without specific control of the sequence, only depending from the load/pressure conditions.

Performance



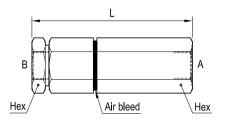
Advantages

- -The pressure compensation allows to transfer the full system pressure to the second actuator.
- -Very compact design and inline mounting for space saving.
- -Mounting position is unrestricted. -Low Δp for B-A flow.

Technical data

Port A-B	Pressure P max bar (psi)	Flow Q max I/min (gpm)	Weight kg (lbs)	
G 1/2	350 (5000)	100 (27)	0.38 (0.84)	

For a good performance, the pressure in the secondary circuit should not drop below 20 bar (290 psi).



Ports size / Dimensions

Υ	Port A-B	L mm (inches)	Hex mm (inches)	
03	G 1/2	120.5 (4.74)	36 (1.42)	

		Springs		
z	Adj. press. range bar (psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) Q=5 I/min	Ordering code
10	50-140 (725-2000)	20 (290)	100 (1450)	03.51.01.251

The relief setting is adjustable by turning the internal ring nut (hexagon 9 mm): to turn the nut loosen first the little locking screw, then tighten it again after the adjustment. For the spring selection, refer to the table.

Applications

They are employed to control the sequence of two or more cylinders or motors, when the second actuator requires less pressure to move, but the pressure needed is not negligible. The pressure at A needed to operate the second actuator is not additive to the relief setting and this results also in energy saving. The incorporated check valve allows free reverse motion without specific control of the sequence.

Ordering code

Direct acting poppet type pressure compensated

Springs see table "Z"

Ports size / Dimensions see table "Y"

Material number R930001451	Туре	Material number	Туре	Material number
			· · · · · · · · · · · · · · · · · · ·	

Bosch Rexroth Oil Control S.p.A. Fimma Division (Rge 2) Via G. Bovio, 7 Z.I. Mancasale 42124 Reggio Emilia, Italy Tel. +39 0522 517 277 Fax +39 0522 517 125 cartridges@oilcontrol.com www.boschrexroth.com

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Sleeve valves for line mounting

Shut-off pressure gauge

Designation	Code	Ports	Data sheet	Page
Sleeve valves for line mounting shut-off valve for in-line pressure gauge mounting	EM	G 1/4	18316-75	611
Sleeve valves for line mounting shut-off valve for 90° pressure gauge mounting	EMT	G 1/4	18316-76	613

RE 18316-75/10.09

1/2

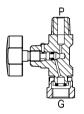
03

Shut-off valve for pressure gauge

Shut-off valves for in-line pressure gauge mounting



EM Series





Description

The port G for pressure gauge installation includes a swivelling nut in order to lock the gauge in the preferred direction; further, the G port is available with:

O-Ring (EM 14 version) for gauges with BSPP, cylindrical, thread

Copper washer (EM 14C version) for gauges with BSPT, tapered, thread.

The hand-knob can lock the P port and prevent the pressure gauge from being pressurized at all times.

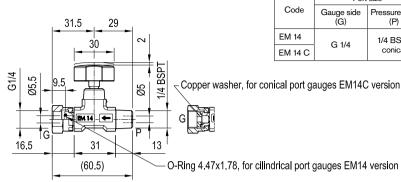
Technical data

Code	Pressure P max bar (psi)	Weight kg (lbs)
EM 14	350 (5000)	0.12 (0.26)
EM 14 C	350 (5000)	0.12 (0.26)

Brass body, plastic hand knob

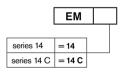
Advantages

-Mounting position is optional.



	Port	Hand Knob		
Code	Gauge side (G) Pressure side (P)		turns	
EM 14	G 1/4	1/4 BSPT	0	
EM 14 C	G 1/4	conical	2	

Ordering code



Туре	Material number
EM14	R932500182
EM14C	R932500183

Туре	Material number

Туре	Material number

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RE 18316-76/10.09

1/2

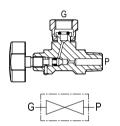
03

Shut-off valves for pressure gauge

Shut-off valves for 90° pressure gauge mounting



EMT Series



Description

The port G for pressure gauge installation includes a swivelling nut in order to lock the gauge in the preferred direction; further, the G port is available with:

O-Ring (EM 14 version) for gauges with BSPP, cylindrical, thread

Copper washer (EM 14C version) for gauges with BSPT, tapered, thread

The hand-knob can lock the P port and prevent the pressure gauge from being pressurized at all times.

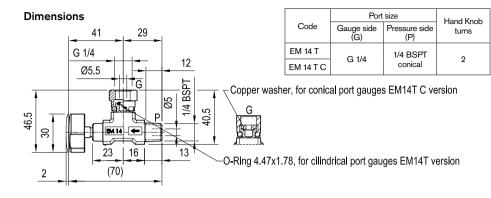
Technical data

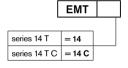
Code	Pressure P max bar (psi)	Weight kg (lbs)
EM 14 T	350 (5000)	0.12 (0.26)
EM 14 T C	350 (5000)	0.12 (0.26)

Brass body, plastic hand knob

Advantages

-Mounting position is optional.





Туре	Material number	Туре	Material number	Туре	Material num
EM14T	R932500184				
EM14TC	R932500185				
		. <u> </u>			
				-	

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Sleeve valves for line mounting

Ball type

Designation	Code	Ports	Data sheet	Page
Sleeve valves for line mounting ball type cut-off valves	AD	G 1/4; G 3/8; G 1/2; M18X1,5; G 3/4: G 1	18316-80	617

RE 18316-80/10.09

1/2

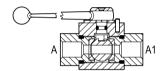
03



Ball type cut-off valves



AD Series

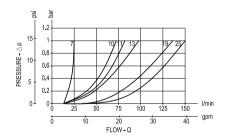


Description

They are 2 ways lever controlled cut-off valves which can be shifted from fully closed to fully open through a ½ turn rotation of the lever. A mechanical stroke limiter prevents the lever from being rotated behind the 90° adjustment range. Normally, the valve is fully open when the control lever is lined-up with the ports.



Performance



Advantages

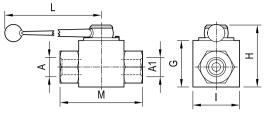
- Very compact design and inline mounting for space saving.
- Mounting position is optional.
- Six sizes provide great adaptability to the system.

Technical data

ieciiiicai uata					
Code	Pressure P max bar (psi)	Weight kg (lbs)			
AD 7-E	350 (5000)	0.43 (0.95)			
AD 10-E	350 (5000)	0.81 (1.79)			
AD 11-E	350 (5000)	0.81 (1.79)			
AD 13-E	350 (5000)	0.78 (1.72)			
AD 19-E	250 (3600)	1.24 (2.73)			
AD 25-E	250 (3600)	2.1 (4.6)			

Steel body, zinc plated; painted lever



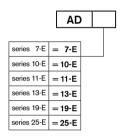


Ports size / Dimensions

		. –					
Code	Ø DN mm (inches)	Port size A-A1	G mm (inches)	H mm (inches)	I mm (inches)	L mm (inches)	M mm (inches)
AD7-E	7 (0.28)	G 1/4	35 (1.38)	47 (1.85)	35 (1.38)	104.5 (4.11)	61.5 (2.42)
AD10-E	10 (0.39)	G 3/8	45 (1.77)	63 (2.48)	35 (1.38)	158 (6.22)	80 (3.15)
AD11-E	11 (0.43)	M 18x1.5	45 (1.77)	63 (2.48)	35 (1.38)	158 (6.22)	80 (3.15)
AD13-E	13 (0.51)	G 1/2	45 (1.77)	63 (2.48)	35 (1.38)	158 (6.22)	80 (3.15)
AD19-E	19 (0.75)	G 3/4	53 (2.09)	71 (2.80)	45 (1.77)	158 (6.22)	100 (3.94)
AD25-E	25 (0.98)	G 1	70 (2.76)	88.5 (3.48)	55 (2.17)	197.5 (7.78)	115 (4.53)

note: Ø DN = flow area I.D. (nominal).

Ordering code



Port size (see below)

	AD 7-E	AD 10-E	AD 11-E	AD 13-E	AD 19-E	AD 25-E
size A1	G 1/4	G 3/8	M 18x1.5	G 1/2	G 3/4	G 1
ort si A-A1						
Α,						

Applications

They are employed to prevent or allow flow delivery to one line. The control lever can be easily rotated when the line is not pressurized.

Туре	Material number
AD7-E	R932500002
AD10-E	R932500004
AD11-E	R932006964
AD13-E	R932500005
AD19-E	R932500006
AD25-E	R932500007

туре	Material number
-	
-	
-	

Туре	Material number

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Solenoid cartridge valves

On-off pilot operated

Designation	Description	Cavity	Code	Data sheet	Page
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8I-06-NC	Size 08	OD15X18YS0	18323-01	623
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8A-06-NC	Size 08	OD15XYZS	18323-02	627
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8A-06-NC-ET	Size 08	OD15X183CZ	18323-09	631
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8A-10-NC	Size 10	OD15X36YZ	18323-11	635
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8A-09-NC	Special	OD15X17YZ	18323-03	639
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8A-12A-NC	Size 12	OD15X89YZ	18323-13	643
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8A-12-NC	Special	OD15X21YZ	18323-04	647
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8A-16A-NC	Size 16	OD15X75YS0	18323-17	651
Solenoid cartridge valves, pilot operated poppet 2 way normally closed	VEI-8A-2B-16-NC-NSS	Special	OD150304YS0	18323-15	655
Solenoid cartridge valves, pilot operated poppet 2 way normally open	VEI-8I-06-NA	Size 08	OD15X18YS0	18323-05	659

Solenoid cartridge valves

On-off pilot operated

Designation	Description	Cavity	Code	Data sheet	Page
Solenoid cartridge valves, pilot operated poppet 2 way normally open	VEI-8A-06-NA	Size 08	OD15XYZS0	18323-06	663
Solenoid cartridge valves, pilot operated poppet 2 way normally open	VEI-8A-10-NA	Size 10	OD15X36YS0	18323-12	667
Solenoid cartridge valves, pilot operated poppet 2 way normally open	VEI-8A-09-NA	Special	OD15X17YS0	18323-07	671
Solenoid cartridge valves, pilot operated poppet 2 way normally open	VEI-8A-12A-NA	Size 12	OD15X89YS0	18323-14	675
Solenoid cartridge valves, pilot operated poppet 2 way normally open	VEI-8A-12-NA	Special	OD15X21YS0	18323-08	679
Solenoid cartridge valves, pilot operated poppet 2 way normally open	VEI-8A-16A-NA	Size 16	OD15X75YS0	18323-18	683
Solenoid cartridge valves, pilot operated poppet 2 way normally open	VEI-8A-2B-16-NA-NSS	Special	OD150404YS0	18323-16	687
Solenoid operated valves, pilot operated poppet 2 way normally open proximity sensor	VEI-8A-2A-06-NA-S-M-NSS	Size 08	OD1506181DS2Z	18325-07	691
Solenoid operated valves, pilot operated poppet 2 way normally open proximity sensor	VEI-8A-2A-09-NA-S-M-NSS	Size 10	OD1506761DS2Z	18325-08	695
Solenoid operated valves, pilot operated poppet 2 way normally open proximity sensor	VEI-8A-2A-09-NA-S-M-NSS	Special	OD1506171DS0Z	18325-09	699

The latest information on products can also be found on Bosch Rexroth web-site: www.boschrexroth.com

Solenoid cartridge valves

On-off pilot operated

Designation	Description	Cavity	Code	Data sheet	Page
Solenoid operated valves, pilot operated poppet 2 way normally open proximity sensor	VEI-8A-2A-12-NA-S-M-NSS	Special	OD1506211DS2Z	18325-10	703
Solenoid operated valves, pilot operated poppet 2 way normally open double lock proximity sensor	VEI-8A-2T-09-NA-S-M-NSS	Special	OD1532171 DS2Z	18325-15	707

RE 18323-01/01.10 Replaces: 01.06

1/4

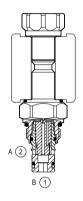
Solenoid operated valves pilot operated poppet type 2-way normally closed

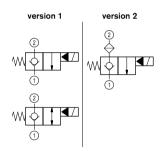
Common cavity, Size 08

VEI-8I-06-NC

OD.15 - X - 18 - Y - S0







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Weight	kg (lbs)	0.11 (0.24)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

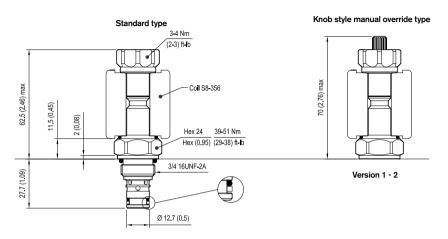
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	0.5-30 (0.1-8)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit version 1-2		RG08A201052100 R901101437
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Electrical

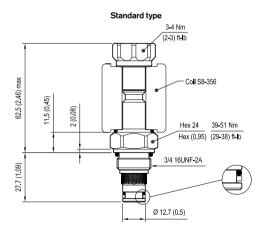
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

Note: Coils must be ordered separately.

Version 1: Solenoid operated valve, poppet 2-way normally closed

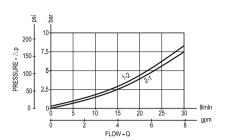


Version 2: Solenoid operated valve, poppet 2-way normally closed - filter

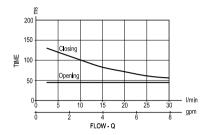


mm (Inches)

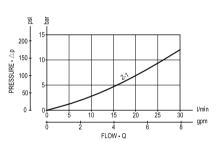
Performance graphs



Version 1

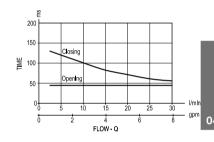


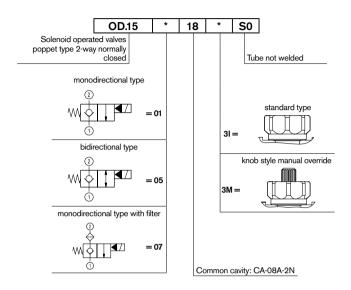
Standard



Version 2

Standard





Туре	Material number	Туре	Material number
OD1501183IS000	R901090962		
OD1501183MS00	R901090966	_	
OD1505183IS000	R901090953		
OD1505183MS00	R901090950		
OD1507183IS000	R901091142	-	
OD1507183MS00	R934003486		

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RE 18323-02/01.10 Replaces: 01.06 1/4

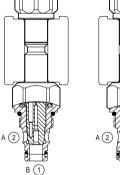
Solenoid operated valves pilot operated poppet type 2-way normally closed

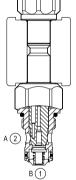
Common cavity, Size 08

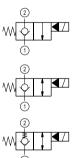
VEI-8A-06-NC

OD.15 - X - Y - Z - S

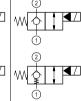


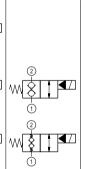




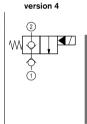


version 1





version 3



General

Weight	kg (lbs)	0.16 (0.35)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

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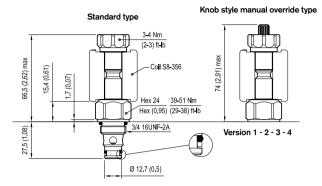
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	0.5-40 (0.1-11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N (version 4: 019-E)
Line bodies		See data sheet RE 18325-85
Seal kit version 1		RG08A2010520100 R901101437
Seal kit version 2-3		RG08A2010530100 R901101544
Seal kit version 4		RG19E201053010 R934003561
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Electrical

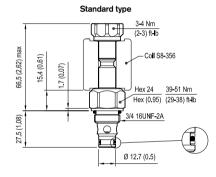
Coil type S8-356 see RE 18325-90 Supply voltage See data sheet RE 18325-90 Nominal voltage ± 10% Power consumption W 20 Duty cycle coil % See performance graphs Type of protection See data sheet RE 18325-90	Type of voltage		DC voltage
Nominal voltage	Coil type		S8-356 see RE 18325-90
Power consumption W 20 Duty cycle coil % See performance graphs	Supply voltage		See data sheet RE 18325-90
Duty cycle coil % See performance graphs	Nominal voltage		± 10%
	Power consumption	W	20
Type of protection See data sheet RE 18325-90	Duty cycle coil	%	See performance graphs
	Type of protection		See data sheet RE 18325-90

Note: Coils must be ordered separately.

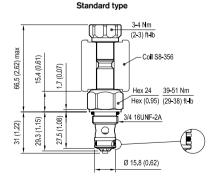
Version 1: Solenoid operated valve, poppet 2-way normally closed



Version 2: Solenoid operated valve, poppet 2-way normally closed
Version 3: Solenoid operated valve, poppet 2-way double lock normally closed

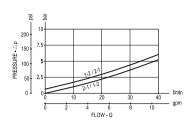


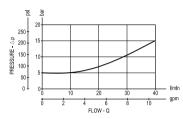
Version 4: Solenoid operated valve, poppet 2-way normally closed

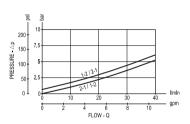


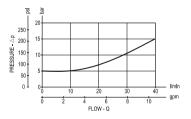
mm (Inches)

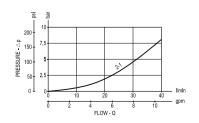
Performance graphs





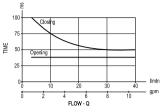




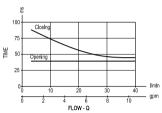


Version 1 - Version 2

Standard

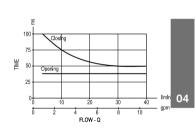


Extra spring

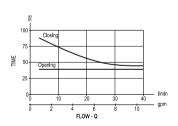


Version 3

Standard

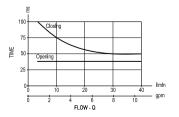


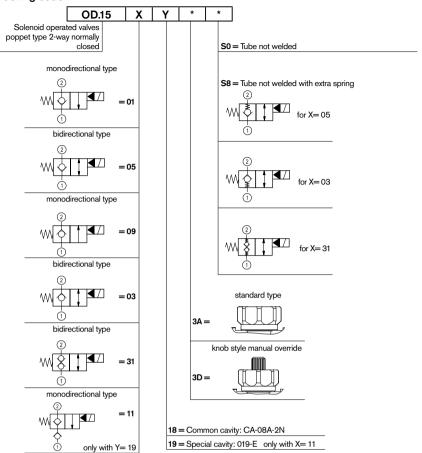
Extra spring



Version 4

Standard





Material number
R901091096
R901091101
R934000779
R934003063
R901091112
R934003064
R901083058
R934003080
R901087979

Туре	Material number
OD1509183AS000	R901091150
OD1509183DS000	R901091151
OD1531183AS000	R901082015
OD1531183AS800	R934000104
OD1531183DS000	R901091164
OD1511193AS000	R901091157
OD1511193DS000	R901091158

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RE 18323-09/04.10 Replaces: 01.06

1/4

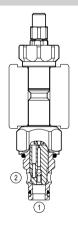
Solenoid operated valves pilot operated poppet 2-way normally closed

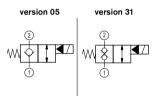
Common cavity, Size 08

VEI-8A-06-NC-ET

OD.15 - X - 18.3C - Z







General

Weight	kg (lbs)	0.13 (0.29)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

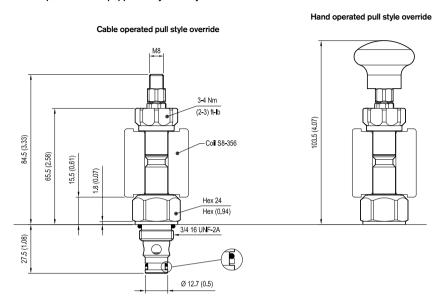
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Rated flow	I/min. (gpm)	40 (11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit - version 05		RG08A2010520100 R901101437
Seal kit - version 31		RG08A2010530100 R901101544
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Flectrical

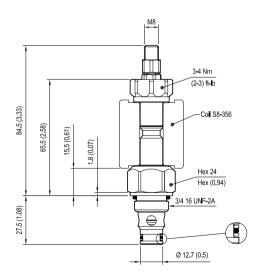
Liectrical	
Type of voltage	DC voltage
Coil type	S8-356 see RE 18325-90
Supply voltage	See data sheet RE 18325-90
Nominal voltage	± 10%
Power consumption W	20
Duty cycle coil %	See performance graphs
Type of protection	See data sheet RE 18325-90

Note: Coils must be ordered separately.

Version 05: Solenoid operated valves poppet 2-way normally closed

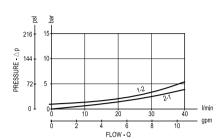


Version 31: Solenoid operated valves poppet 2-way double lock normally closed

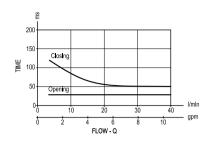


mm (Inches)

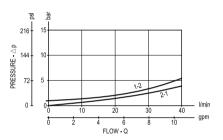
Performance graph

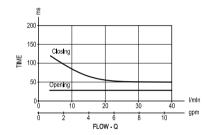


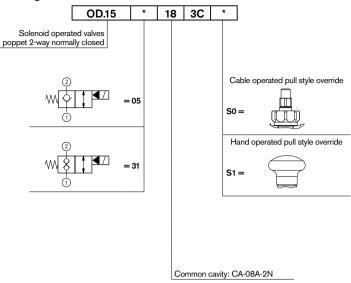
Version 05



Version 31







Туре	Material number	Туре
OD1505183CS000	R901094735	
OD1505183CS100	R901094737	
OD1531183CS000	R901109982	
OD1531183CS100	R901109983	
-		•

Туре	Material number

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RE 18323-11/01.09 Replaces: 01.06 1/4

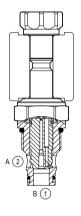
Solenoid operated valves pilot operated poppet type 2-way normally closed

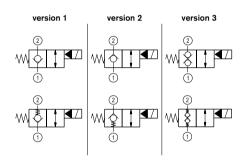
Common cavity, Size 10

VEI-8A-10-NC

OD.15 - X - 36 - Y - Z







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Other technical data

Weight	kg (lbs)	0.16 (0.35)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	2-70 (0.5-18)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	44-56 (33-42)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-2N see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit version 1		RG10A2010520100 R901111363
Seal kit version 2-3	material no.	RG10A2010530100 R901111366
Seal kit coil		RG12A1PNBR7000 R901111363

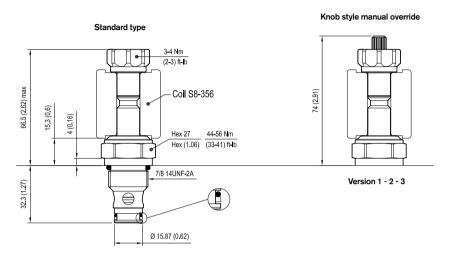
See data sheet RE 18350-50

Electrical

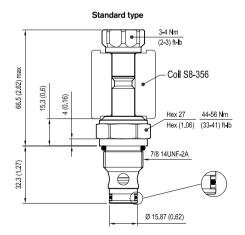
Type of voltage	DC voltage
Coil type	S8-356 see Re 18325-90
Supply voltage	See data sheet RE 18325-90
Nominal voltage	± 10%
Power consumption W	20
Duty cycle coil %	See performance graphs
Type of protection	See data sheet RE 18325-90

Note: Coils must be ordered separately.

Version 1: Solenoid operated valve, poppet 2-way normally closed



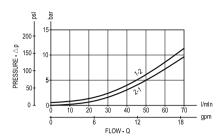
Version 2: Solenoid operated valve, poppet 2-way normally closed Version 3: Solenoid operated valve, poppet 2-way double lock normally closed



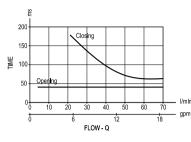
mm (Inches)

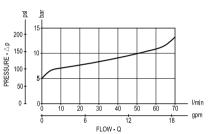
Performance graphs

Version 1 - Version 2

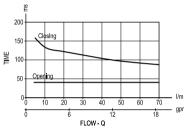




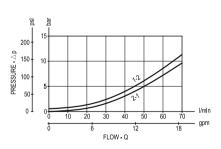




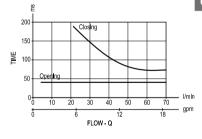
Extra spring

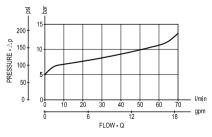


Version 3

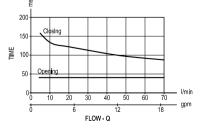


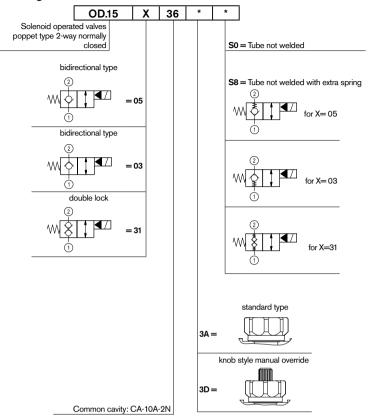






Extra spring





Туре	Material number
OD1503363AS000	R901091113
OD1503363AS800	R901091114
OD1503363DS800	R901109956
OD1505363AS000	R901090947
OD1505363AS800	R901090945
OD1505363DS000	R901080482
OD1505363DS800	R901109969
OD1531363AS000	R901091166
OD1531363AS800	R901109984

туре	wateriai number
OD1531363DS000	R901091167
OD1531363DS800	R901109985

Material number

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RE 18323-03/01.10 Replaces: 01.06

1/4

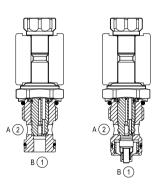
Solenoid operated valves pilot operated poppet type 2-way normally closed

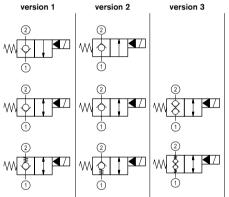
Special cavity, 017-E

VEI-8A-09-NC

OD15 - X - 17 - Y - Z







version 4	
J	(
	2

General

aciiciai		
Weight	kg (lbs)	0.24 (0.53)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Other technical data

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	2-70 (0.5-18)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		017-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 1		RG17E201052010 R934003562
Seal kit - version 2-3-4		RG17E201053010 R934003563
Seal kit coil		RG12A1PNBR7000 R934003591

See data sheet RE 18350-50

Electrical

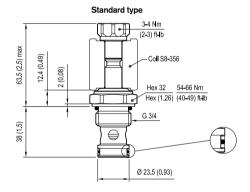
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

Note: Coils must be ordered separately.

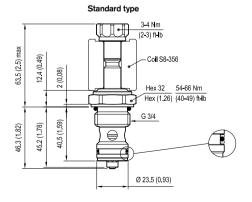
Version 1: Solenoid operated valve, poppet 2-way normally closed Knob style manual override type Standard type 3-4 Nm (2-3) ft-lb 71 (2.8) max 63.5 (2.5) max Coil S8-356 12.4 (0.49) 2 (0.08) Hex 32 54-66 Nm Hex (1.26) (40-49) ft-lb G 3/4 Version 1 - 2 - 3 - 4 38 (1.5) \ominus

Ø 23.5 (0.93)

Version 2: Solenoid operated valve, poppet 2-way normally closed Version 3: Solenoid operated valve, poppet 2-way double lock normally closed

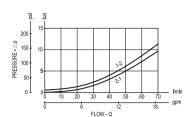


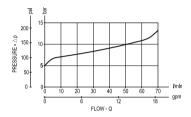
Version 4: Solenoid operated valve, poppet 2-way normally closed

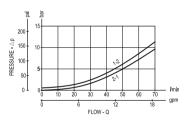


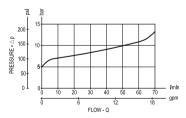
mm (Inches)

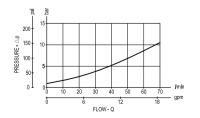
Performance graphs





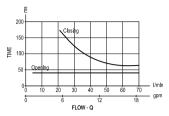




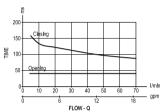


Version 1 - Version 2

Standard

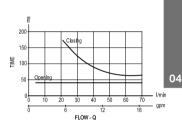


Extra spring

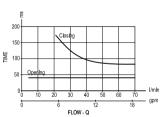


Version 3

Standard

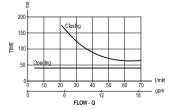


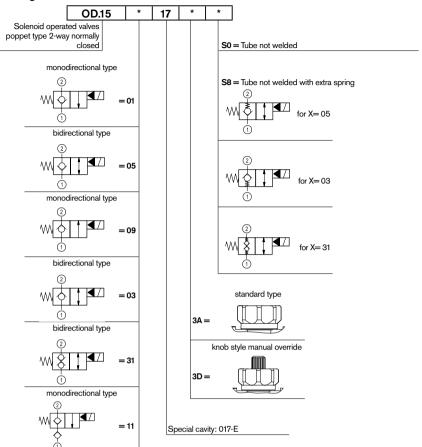
extra spring



Version 4

Standard





Туре	Material number
OD1501173AS000	R901176045
OD1501173DS000	R934000679
OD1503173AS000	R901113664
OD1503173AS800	R934000773
OD1503173DS000	R901180257
OD1503173DS800	R934003061
OD1505173AS000	R901113673
OD1505173AS800	R901119220
OD1505173DS000	R901125249

Туре	Material number
OD1505173DS800	R934000846
OD1509173AS000	R934001038
OD1509173DS000	R934001039
OD1511173AS000	R934001072
OD1511173DS000	R934001075
OD1531173AS000	R901113682
OD1531173AS800	R934001116
OD1531173DS000	R934001120
OD1531173DS800	R934003111

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RE 18323-13/01.10 Replaces: RE 00162-02/01.06

Solenoid operated valves pilot operated poppet type 2-way normally closed

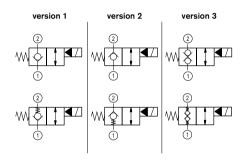
Common cavity, Size 12

VEI-8A-12A-NC

OD.15 X - 89 - Y - Z







General

Other technical data

acilorai		
Weight	kg (lbs)	0.22 (0.48)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	5-150 (1-40)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-12A-2N see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 1		RG12A2010520100 R901111377
Seal kit - version 2-3		RG12A2010530100 R930003374
Seal kit coil		RG12A1PNBR7000 R934003591

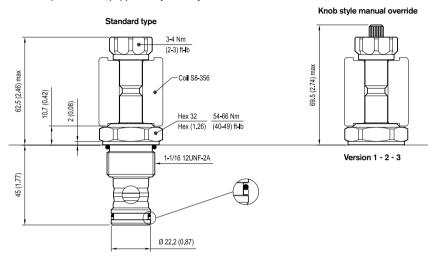
See data sheet RE 18350-50

Electrical

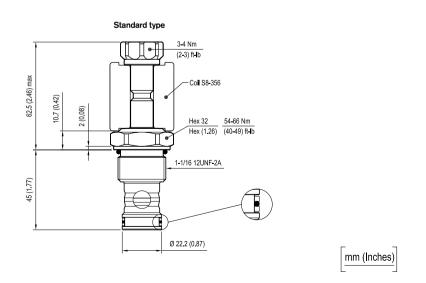
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

Note: Coils must be ordered separately.

Version 1: Solenoid operated valve, poppet 2-way normally closed

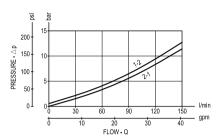


Version 2: Solenoid operated valve, poppet 2-way normally closed Version 3: Solenoid operated valve, poppet 2-way double lock normally closed

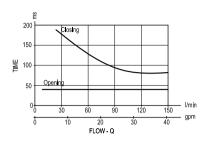


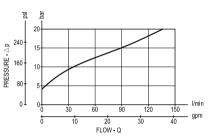
Performance graphs

Version 1 - Version 2

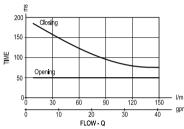




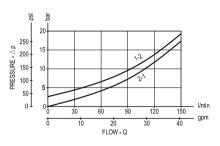




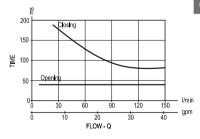
Extra spring

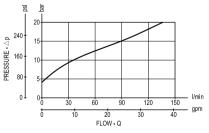


Version 3

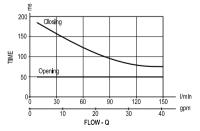


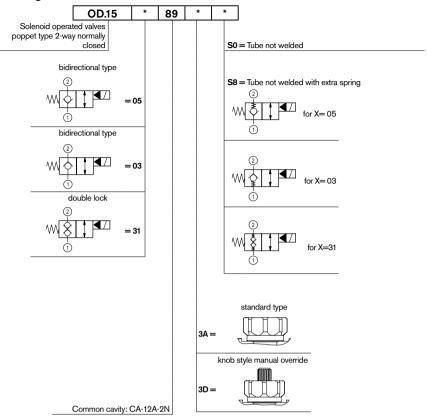






Extra spring





Туре	Material number
OD1503893AS000	R901091116
OD1503893AS800	R901109961
OD1503893DS000	R901091117
OD1503893DS800	R901109962
OD1505893AS000	R901091127
OD1505893AS800	R901091128
OD1505893DS000	R901091129
OD1505893DS800	R901109978
OD1531893AS000	R901091168

Туре	Material number
OD1531893AS800	R901091169
OD1531893DS000	R901091170
OD1531893DS800	R901109990

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The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging. Subject to change.

RE 18323-04/01.10 Replaces: 01.06 1/4

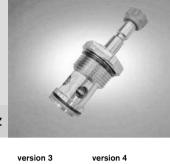
Solenoid operated valves pilot operated poppet type 2-way normally closed

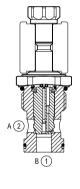
Special cavity, 021-E

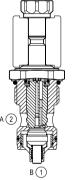
VEI-8A-12-NC

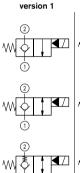
OD.15 - X - 21 - Y - Z

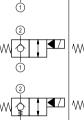
version 2

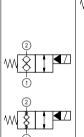












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04

General

Gonorai		
Weight	kg (lbs)	0.34 (0.75)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

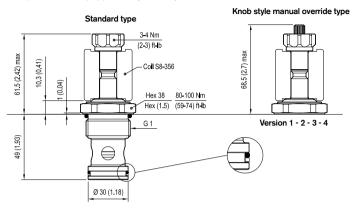
Hydraulic

bar (psi)	350 (5000)
I/min. (gpm)	5-150 (1-40)
drops/min.	20
°C (°F)	-20 to 80 (-4 to 176)
	Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Nm (ft-lbs)	80-100 (59-74)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	021-E see RE 18325-75
	See data sheet RE 18325-85
	RG21E201052010 R934003566
material no.	RG21E201053010 R934003567
	RG12A1PNBR7000 R934003591
	See data sheet RE 18350-50
	l/min. (gpm) drops/min. °C (°F) Nm (ft-lbs) code material no. code

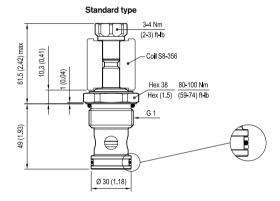
Electrical

_iootiioai		
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

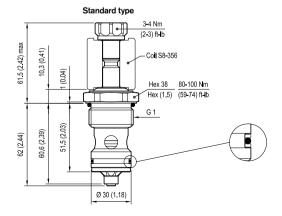
Version 1: Solenoid operated valve, poppet 2-way normally closed



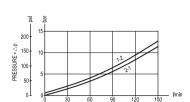
Version 2: Solenoid operated valve, poppet 2-way normally closed Version 3: Solenoid operated valve, poppet 2-way double lock normally closed



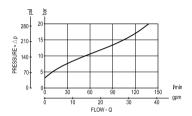
Version 4: Solenoid operated valve, poppet 2-way normally closed

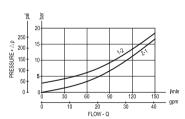


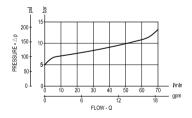
mm (Inches)

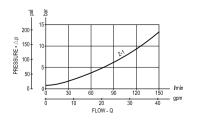


20 FLOW - Q



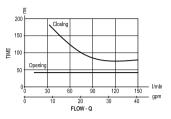




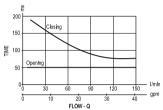


Version 1 - Version 2

Standard

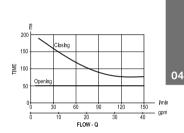


Extra spring

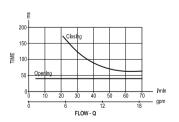


Version 3

Standard

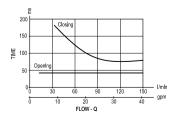


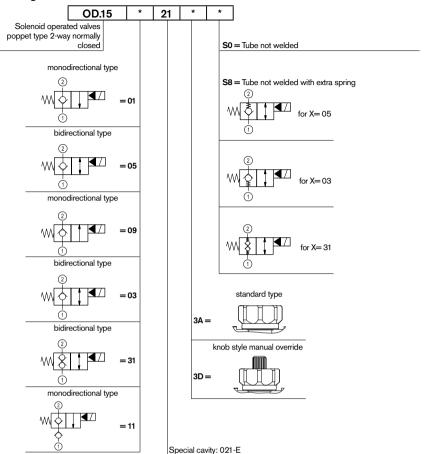
Extra spring



Version 4

Standard





Туре	Material number
OD1501213AS000	R901144300
OD1501213DS000	R901085462
OD1503213AS000	R901113666
OD1503213AS800	R934003065
OD1503213DS000	R934000792
OD1503213DS800	R934003066
OD1505213AS000	R901104395
OD1505213AS800	R901119221
OD1505213DS000	R901119267

Туре	Material number
OD1509213AS000	R901132881
OD1511213AS000	R901138183
OD1511213AS800	R934001086
OD1531213AS000	R901104412
OD1531213AS800	R901119002
OD1531213DS000	R901132876
OD1531213DS800	R901125793

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RE 18323-17/01.10 Replaces: RE 00162-02/01.06

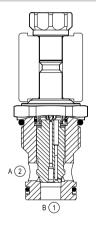
Solenoid operated valves pilot operated poppet type 2-way normally closed

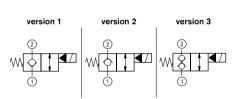
Common cavity, Size 16

VEI-8A-16A-NC

OD.15 - X - 75 - Y - S0







General

Other technical data

Weight	kg (lbs)	0.32 (0.71)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

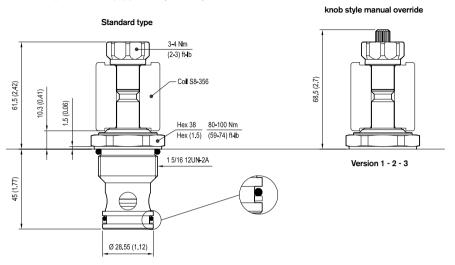
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	5-150 (1-40)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-16A-2N see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 1		RG16A2010520100 R901111386
Seal kit - version 2-3		RG16A2010530100 R930003262
Seal kit coil		RG12A1PNBR7000 R934003591

See data sheet RE 18350-50

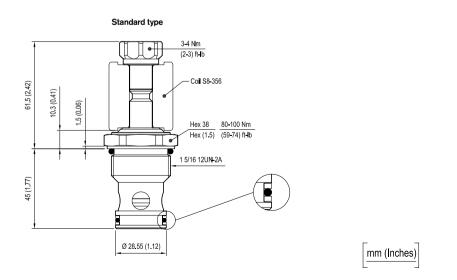
Electrical

Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

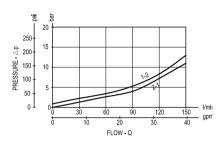
Version 1: Solenoid operated valve, poppet 2-way normally closed

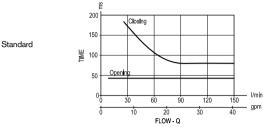


Version 2: Solenoid operated valve, poppet 2-way normally closed Version 3: Solenoid operated valve, poppet 2-way double lock normally closed

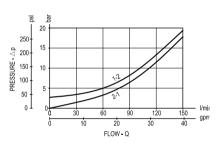


Version 1 - Version 2

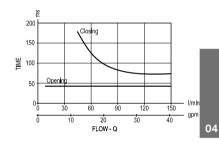


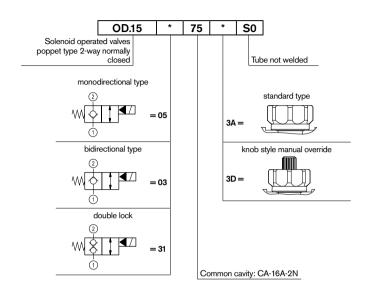


Version 3









Туре	Material number	Туре	Material number
OD1503753AS000	R901094726		
OD1505753AS000	R901094745		
OD1505753DS000	R901094746		
OD1531753AS000	R901094747		
OD1531753DS000	R901094748		
		<u> </u>	

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1/4 RE 18323-15/01.10 Replaces: RE 00162-02/01.06

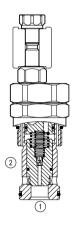
Solenoid operated valves pilot operated poppet type 2-way normally closed

Special cavity, 004

VEI-8A-2B-16-NC-NSS

OD.15.03.04 - Y - S0









Ge	ne	ral

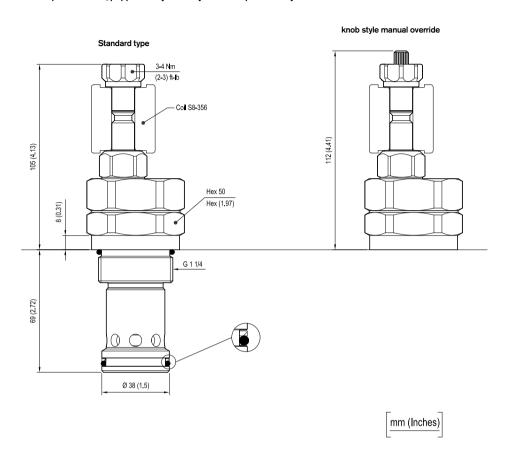
Weight	kg (lbs)	1.13 (2.5)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)
	°C (°F)	

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Rated flow	I/min. (gpm)	260 (69)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	110-130 (81-96)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		004 see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG0004020520100 R930001696
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

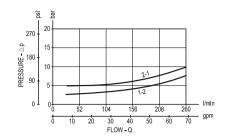
Electrical

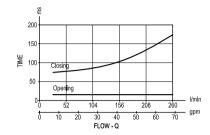
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	100 see RE 18325-90
Type of protection		See data sheet RE 18325-90

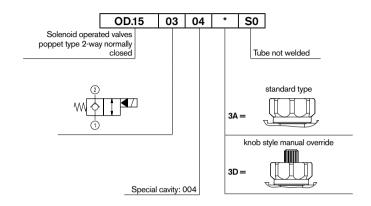
Solenoid operated valve, poppet 2-way normally closed - Special cavity



Version 03







Туре	Material number	Туре	Material number
OD1503043AS000	R934000764		
OD1503043DS000	R901091110		

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RE 18323-05/01.10 Replaces: 01.06 1/4

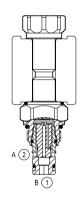
Solenoid operated valves pilot operated poppet type 2-way normally open

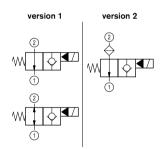
Common cavity, Size 08

VEI-8I-06-NA

OD-15 - X - 18 - Y - S0







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Weight	kg (lbs)	0.11 (0.24)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulid

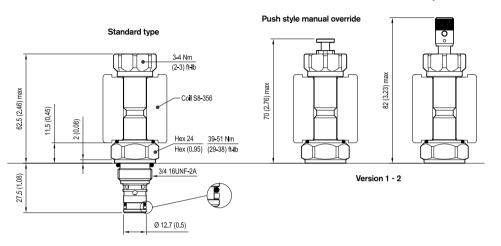
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	0.5-30 (0.1-8)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	RG08A2010520100 R901101437
Seal kit coil	code material no.	RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Electrical

Coil type S8-356 see RE 18325-90 Supply voltage See data sheet RE 18325-90	Type of voltage	DC voltage
Supply voltage See data sheet RF 18325-90	Coil type	S8-356 see RE 18325-90
cupply rollings	Supply voltage	See data sheet RE 18325-90
Nominal voltage ± 10%	Nominal voltage	± 10%
Power consumption W 20	Power consumption W	20
Duty cycle coil % See performance graphs	Duty cycle coil %	See performance graphs
Type of protection See data sheet RE 18325-90	Type of protection	See data sheet RE 18325-90

Version 1: Solenoid operated valve, poppet 2-way normally open

Push and twist style manual override

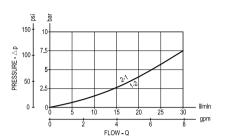


Version 2: Solenoid operated valve, poppet 2-way normally open - filter

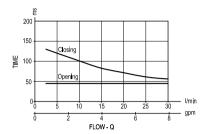
Standard type

3-4 Nm (2-3) ft-lb Coil S8-356 Hex 24 Hex 24 39-51 Nm Hex (0.95) (29-38) ft-lb

mm (Inches)

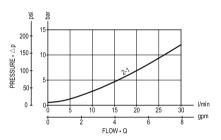


Version 1

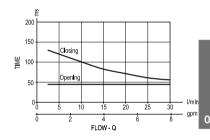


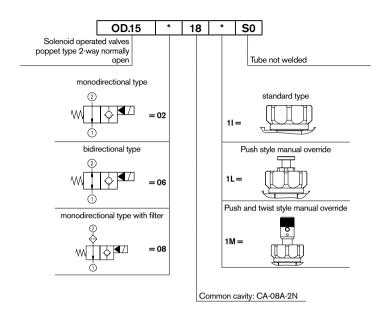
Standard





Standard





Туре	Material number
OD1502181IS000	R901091107
OD1502181LS000	R901091108
OD1502181MS000	R901094588
OD1506181IS000	R901091133
OD1506181LS000	R901091134
OD1506181MS000	R901091135
OD1508181IS000	R901091146
OD1508181LS000	R901091148
OD1508181MS000	R901091149

Туре	Material number

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RE 18323-06/01.10 Replaces: 01.06 1/4

Solenoid operated valves pilot operated poppet type 2-way normally open

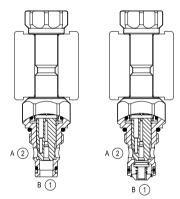
Common cavity, Size 08

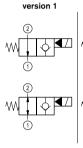
VEI-8A-06-NA

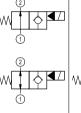
OD.15 - X - Y - Z - S0

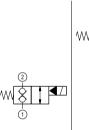
version 2



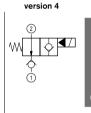








version 3



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Gi	en	e	ral	

Weight	kg (lbs)	0.12 (0.26)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulia

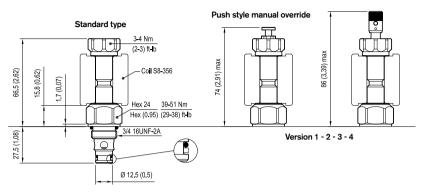
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	1.5-40 (0.4-11)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N / 019-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit version 1		RG08A2010520100 R901101437
Seal kit version 2-3		RG0842010530100 R901101544
Seal kit version 4		RG19E201053010 R934003561
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Electrical

Liectrical	
Type of voltage	DC voltage
Coil type	S8-356 see RE 18325-90
Supply voltage	See data sheet RE 18325-90
Nominal voltage	± 10%
Power consumption \	V 20
Duty cycle coil	% See performance graphs
Type of protection	See data sheet RE 18325-90

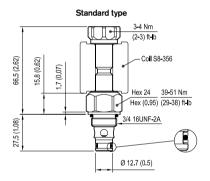
Version 1: Solenoid operated valve, poppet 2-way normally open

Push and twist style manual override

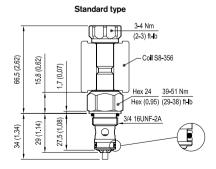


Version 2: Solenoid operated valve, poppet 2-way normally open

Version 3: Solenoid operated valve, poppet 2-way double lock normally open

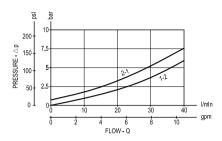


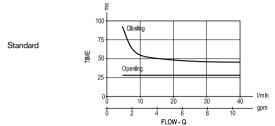
Version 4: Solenoid operated valve, poppet 2-way normally open



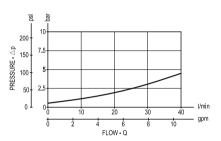
mm (Inches)

Version 1 - Version 2

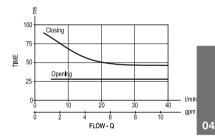




Version 3

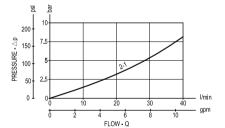


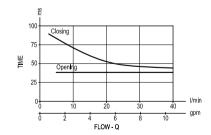


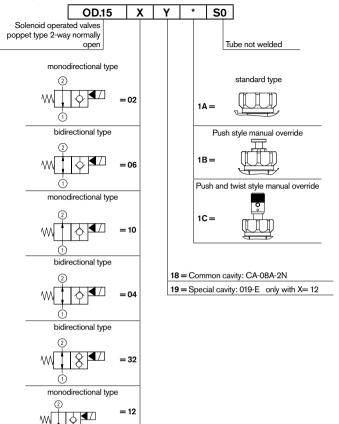


Version 4

Standard







Туре	Material number
OD1502181AS000	R901091102
OD1502181BS000	R901091105
OD1502181CS000	R901091106
OD1506181AS000	R901091130
OD1506181BS000	R901091131
OD1506181CS000	R901091132
OD1504181AS000	R901091121
OD1504181BS000	R901091122
OD1504181CS000	R901091123

only with Y= 19

Туре	Material number
OD1510181AS000	R901091152
OD1510181BS000	R901091154
OD1510181CS000	R901091155
OD1532181AS000	R901091171
OD1532181BS000	R901091173
OD1532181CS000	R901091174
OD1512191AS000	R901091159
OD1512191BS000	R901091161
OD1512191CS000	R901091162

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RE 18323-12/01.09 Replaces: 01.06 1/4

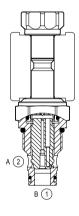
Solenoid operated valves pilot operated poppet type 2-way normally open

Common cavity, Size 10

VEI-8A-10-NA

OD.15 - X - 36 - Y - S0











version 3

General

Other technical data

Weight	kg (lbs)	0.16 (0.35)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	2-70 (0.5-18)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	44-56 (33-42)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-2N see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 1		RG10A2010520100 R901111363
Seal kit - version 2-3		RG10A2010530100 R901111366
Seal kit coil		RG12A1PNBR7000 R934003591

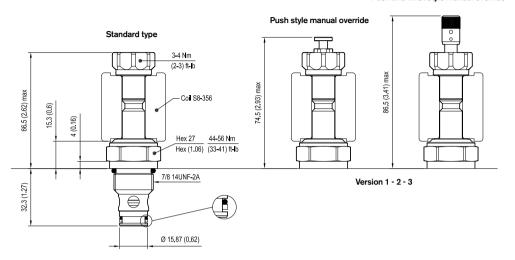
See data sheet RE 18350-50

Electrical

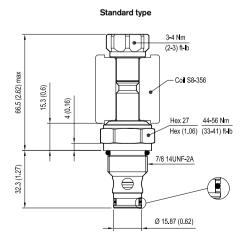
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

Version 1: Solenoid operated valve, poppet 2-way normally open

Push and twist style manual override

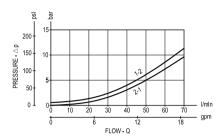


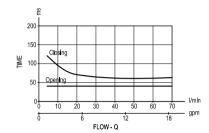
Version 2: Solenoid operated valve, poppet 2-way normally open Version 3: Solenoid operated valve, poppet 2-way double lock normally open



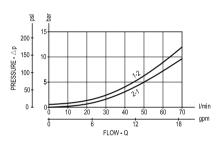
Version 1 - Version 2

Standard

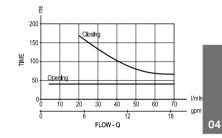


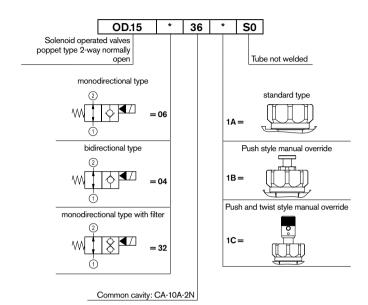


Version 3









Туре	Material number
OD1504361AS000	R901091124
OD1504361BS000	R901091125
OD1504361CS000	R901091126
OD1506361AS000	R901080489
OD1506361BS000	R901091136
OD1506361CS000	R901091137
OD1532361AS000	R901091175
OD1532361BS000	R901091176
OD1532361CS000	R901091178

Туре	Material number
-	

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RE 18323-07/01.10 Replaces: 01.06

1/4

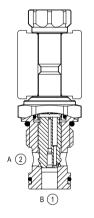
Solenoid operated valves pilot operated poppet type 2-way normally open

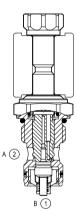
Special cavity, 017-E

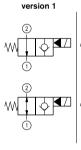
VEI-8A-09-NA

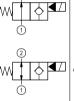
OD.15 - X - 17 - Y - S0



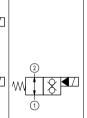




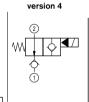




version 2



version 3



General

Weight	kg (lbs)	0.21 (0.46)	_
Installation orientation		Optional	
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)	_

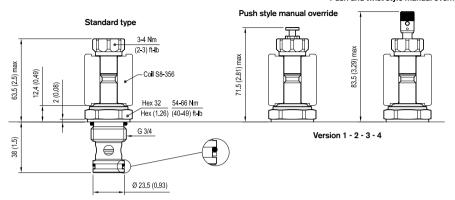
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	2-70 (0.5-18)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		017-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 1		RG17E201052010 R934003562
Seal kit - version 2-3-4		RG17E201053010 R934003563
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Electrical

Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

Version 1: Solenoid operated valve, poppet 2-way normally open

Push and twist style manual override



Version 2: Solenoid operated valve, poppet 2-way normally open

Version 3: Solenoid operated valve, poppet 2-way double lock normally open

Standard type 3.4 Nm (2-3) ft-lb (2-3) ft

Version 4: Solenoid operated valve, poppet 2-way normally open

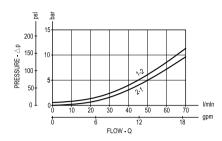
Standard type

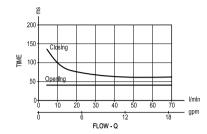
74 Nm (2-2) ft-b (2-7) max (2-7) ft-b (3-7) ft-b (40-49) ft-b (40-49) ft-b (40-49) ft-b (40-49) ft-b

mm (Inches

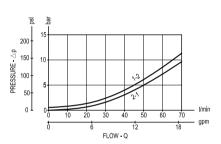
Version 1 - Version 2

Standard

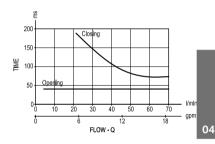




Version 3

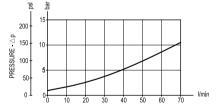






Version 4

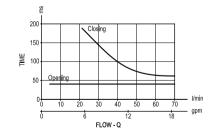
Standard



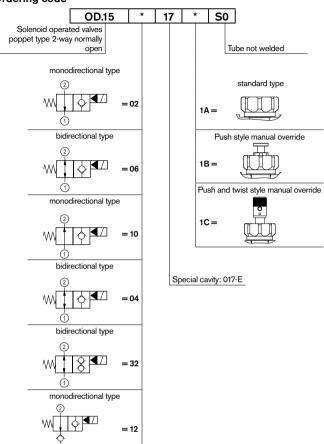
FLOW - Q

12

t







Туре	Material number
OD1502171AS000	R934000718
OD1502171BS000	R934000721
OD1502171CS000	R901177370
OD1506171AS000	R901113677
OD1506171BS000	R901113680
OD1506171 CS000	R934000956
OD1504171AS000	R901113668
OD1504171BS000	R901113669
OD1504171CS000	R934000809

Туре	Material number
OD1510171AS000	R934001051
OD1510171CS000	R934001052
OD1512171AS000	R934001090
OD1532171 AS000	R901113683
OD1532171BS000	R901113684
OD1532171 CS000	R934001189

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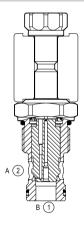
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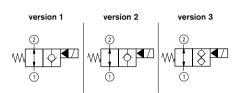
Common cavity, Size 12

VEI-8A-12A-NA

OD.15 - X - 89 - Y - S0







General

Weight	kg (lbs)	0.23 (0.51)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

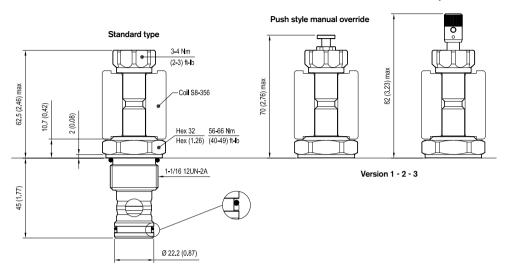
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	5-150 (1-40)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-12A-2N see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 1		RG12A2010520100 R901111377
Seal kit - version 2-3		RG12A2010530100 R930003374
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Electrical

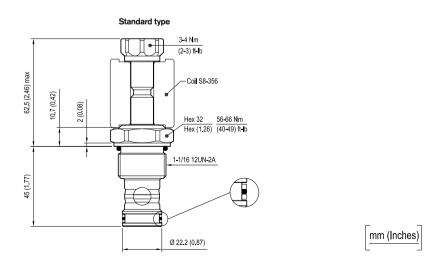
	DC voltage
	S8-356 see RE 18325-90
	See data sheet RE 18325-90
	± 10%
W	20
%	See performance graphs
	See data sheet RE 18325-90
	W %

Version 1: Solenoid operated valve, poppet 2-way normally open

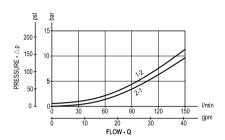
Push and twist style manual override



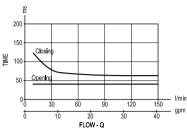
Version 2: Solenoid operated valve, poppet 2-way normally open Version 3: Solenoid operated valve, poppet 2-way double lock normally open



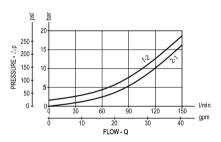
Version 1 - Version 2



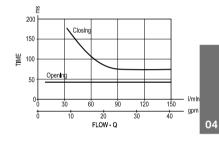


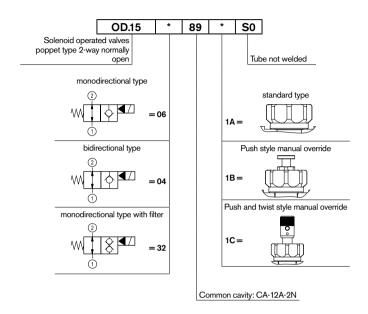


Version 3









Туре	Material number
OD1504891AS000	R901090961
OD1504891BS000	R901090960
OD1506891AS000	R901091139
OD1506891BS000	R901091140
OD1506891CS000	R901091141
OD1532891AS000	R901091179
OD1532891BS000	R901091180
OD1532891CS000	R901091182

Туре	Material number

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RE 18323-08/01.10 Replaces: 01.06 1/4

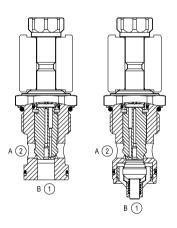
Solenoid operated valves pilot operated poppet type 2-way normally open

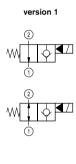
Special cavity, 021-E

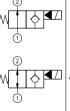
VEI-8A-12-NA

OD.15 - X - 21 - Y - S0

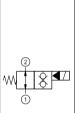




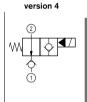




version 2



version 3



General

acriciai		
Weight	kg (lbs)	0.34 (0.75)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

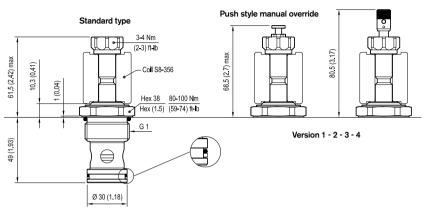
Hvdraulic

riyuraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	5-150 (1-40)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		021-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 1	code material no.	
Seal kit - version 2-3-4	code material no.	RG21E201053010 R934003567
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Electrical

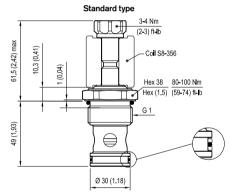
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

Version 1: Solenoid operated valve, poppet 2-way normally open

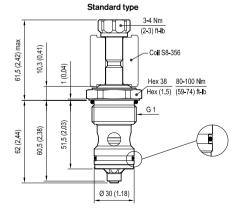


Version 2: Solenoid operated valve, poppet 2-way normally open

Version 3: Solenoid operated valve, poppet 2-way double lock normally open



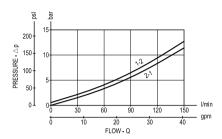
Version 4: Solenoid operated valve, poppet 2-way normally open

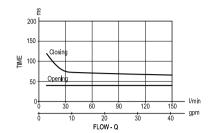


mm (Inches)

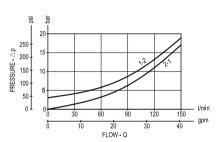
Version 1 - Version 2

Standard

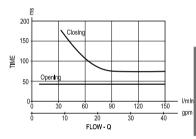




Version 3

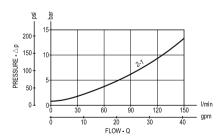


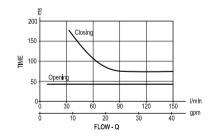
Standard

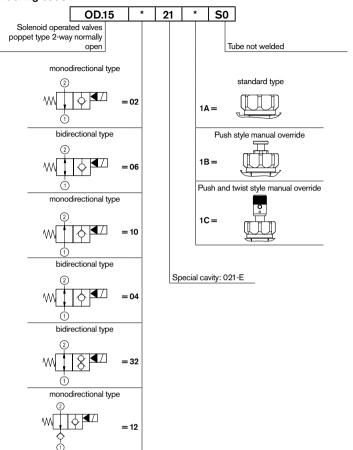


Version 4

Standard







Туре	Material number
OD1502211AS000	R987067733
OD1502211BS000	R901186074
OD1502211CS000	R934000758
OD1504211AS000	R901113671
OD1504211BS000	R901113672
OD1504211CS000	R934000820
OD1506211AS000	R901104409
OD1506211BS000	R901113681
OD1506211CS000	R901172041

Туре	Material number
OD1510211AS000	R901085464
OD1510211BS000	R934001061
OD1512211AS000	R934001100
OD1512211BS000	R934001101
OD1512211CS000	R934001102
OD1532211AS000	R901104415
OD1532211BS000	R901113685
OD1532211CS000	R901191824

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RE 18323-18/01.10 Replaces: 01.06 1/4

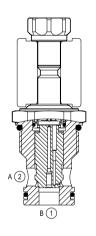
Solenoid operated valves pilot operated poppet type 2-way normally open

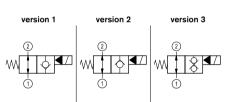
Common cavity, Size 16

VEI-8A-16A-NA

OD.15 - X - 75 - Y - S0







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Other technical data

Weight	kg (lbs)	0.32 (0.71)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	I/min. (gpm)	5-150 (1-40)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-100 (59-74)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-16A-2N see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit - version 1		RG16A2010520100 R901111386
Seal kit - version 2-3		RG16A2010530100 R930003262
Seal kit coil		RG12A1PNBR7000 R934003591

See data sheet RE 18350-50

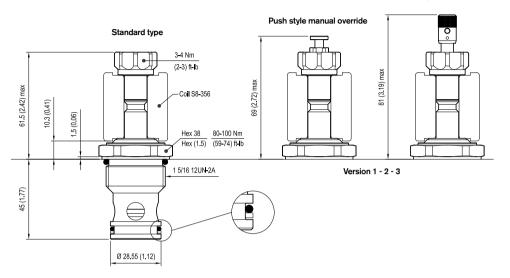
Electrical

Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

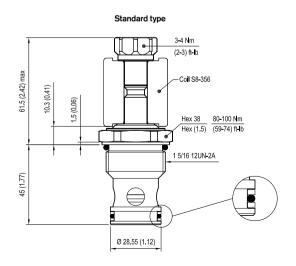
Note: Coils must be ordered separately.

Version 1: Solenoid operated valve, poppet 2-way normally open

Push and twist style manual override



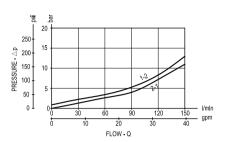
Version 2: Solenoid operated valve, poppet 2-way normally open Version 3: Solenoid operated valve, poppet 2-way double lock normally open



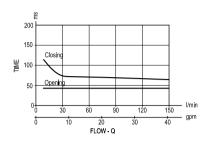


Performance graphs

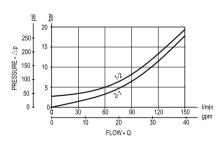
Version 1 - Version 2



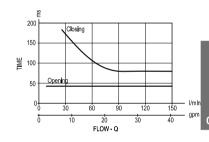


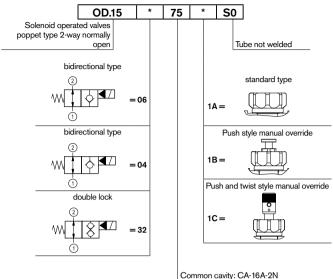


Version 3









Туре	Material number
OD1504751AS000	R901094731
OD1506751AS000	R901095953
OD1506751BS000	R901095955
OD1506751CS000	R901095956
OD1532751AS000	R901094753
OD1532751BS000	R901094754
OD1532751CS000	R901094755

Туре	Material number
-	

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1/4 RE 18323-16/01.10 Replaces: RE 00162-02/01.06

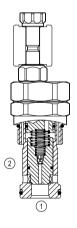
Solenoid operated valves pilot operated poppet 2-way normally open

Special cavity, 004

VEI-8A-2B-16-NA-NSS

OD.15.04.04 - Y - S0





version 04



General

Weight	kg (lbs)	1.13 (2.5)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Rated flow	I/min. (gpm)	260 (69)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	110-130 (81-96)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Special cavity		004 see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG0004020520100 R930001696
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RF 18350-50

Electrical

Liectrical		
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	100 see RE 18325-90
Type of protection		See data sheet RE 18325-90

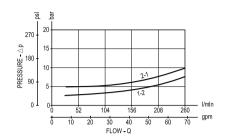
Note: Coils must be ordered separately.

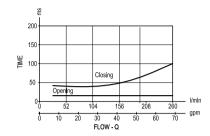
Solenoid operated valve, poppet 2-way normally open - Special cavity

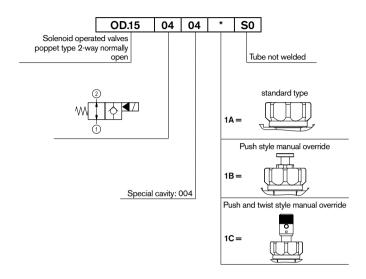
Push style manual override Push style manual override Ocid S8-356 Push style manual override Fig. 3-4 Nm (85 y 45 95 1 144 (87 y 15 95 1 144

Performance graphs

Version 04







Туре	Material number	Туре	Material number
OD1504041AS000	R901091118		
OD1504041BS000	R901091119		
OD1504041CS000	R901091120		
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RE 18325-07/01.10 Replaces: RE 00162-02/01.06

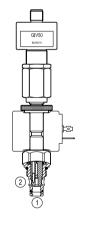
Solenoid operated valves pilot operated poppet 2-way normally open proximity sensor

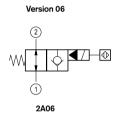
Common cavity, Size 08

VEI-8A-2A-06-NA-S-M-NSS

OD.15.06.18.1D.S2 - Z







Cal	neral

Gonorai		
Weight	kg (lbs)	0.75 (1.7)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

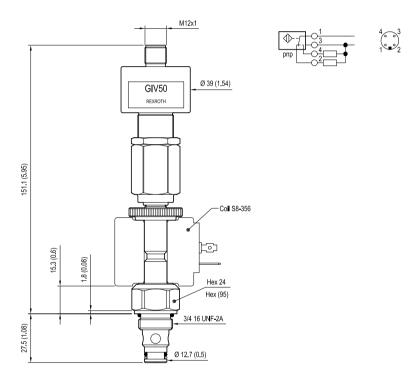
Hydraulic

Hydraulic		
Max. operating pressure	bar (psi)	350 (5075)
Flow range	l/min.(gpm)	2.5-40 (0.66-11)
Max. internal leakage	drops/min.	15
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	30-35 (22-26)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG08A201052010 R901101437
Other technical data		See data sheet RE 18350-50

Electrical

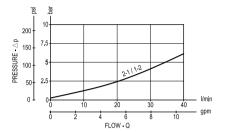
Licotricui	
Type of voltage	DC voltage
Coil type	S8-356
Supply voltage	See data sheet RE18325-90
Nominal voltage	± 10%
Power consumption	W 20
Duty cycle	% 100 see RE 18325-90
Type of protection	See data sheet RE 18325-90

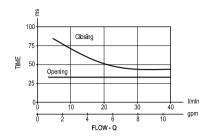
Solenoid operated valves poppet 2-way normally open proximity sensor

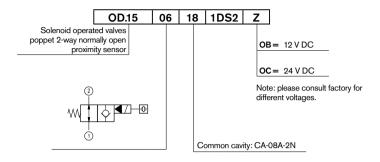


mm (Inches)

Performance graphs







Туре	Material number	Туре	Material number
OD1506181DS2OB	R934001226		
OD1506181DS2OC	R934001227		

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RE 18325-08/01.10 Replaces: RE 00162-02/01.06

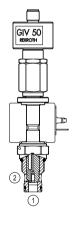
Solenoid operated valves pilot operated poppet 2-way normally open proximity sensor

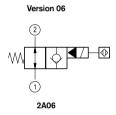
Common cavity, Size 10

VEI-8A-2A-09-NA-S-M-NSS

OD.15.06.76.1D.S2 - Z







General

Gonorai		
Weight	kg (lbs)	0.75 (1.7)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

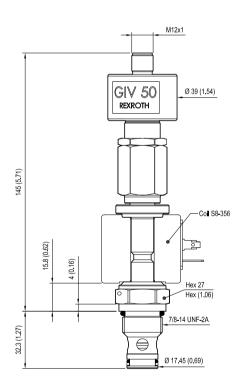
Hydraulic

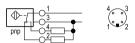
Hydraulic		
Max. operating pressure	bar (psi)	350 (5075)
Flow range	l/min.(gpm)	2.5-70 (0.66-18)
Max. internal leakage	drops/min.	15
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG10A201052010 R901111363
Other technical data		See data sheet RE 18350-50

Electrical

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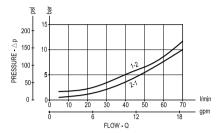
Solenoid operated valves poppet 2-way normally open proximity sensor

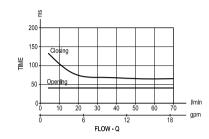


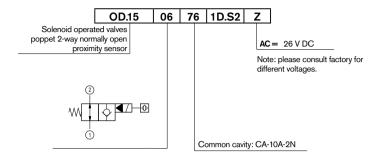


mm (Inches)

Performance graphs







Туре	Material number	Туре	Material number
OD1506761DS2AC	R934001233		
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1/4 RE 18325-09/01.10 Replaces: RE 00162-02/01.06

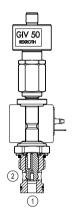
Solenoid operated valves pilot operated poppet 2-way normally open proximity sensor

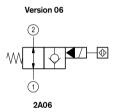
Special cavity, 017-E

VEI-8A-2A-09-NA-S-M-NSS

OD.15.06.17.1 D.S0 - Z







Cal	neral

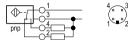
Gonorai		
Weight	kg (lbs)	0.75 (1.7)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

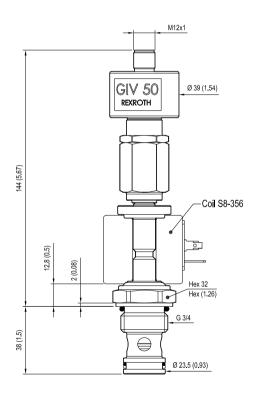
مثلب مسلمينا

Hydraulic		
Max. operating pressure	bar (psi)	350 (5075)
Flow range	l/min.(gpm)	3.5-70 (1-18)
Max. internal leakage	drops/min.	15
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	50-55 (37-41)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		017-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG17E201052010 R934003562
Other technical data		See data sheet RE 18350-50

Electrical	
Type of voltage	DC voltage
Coil type	S8-356
Supply voltage	See data sheet RE18325-90
Nominal voltage	± 10%
Power consumption V	V 20
Duty cycle	6 100 see RE 18325-90
Type of protection	See data sheet RE 18325-90

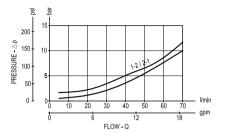
Solenoid operated valves poppet 2-way normally open proximity sensor

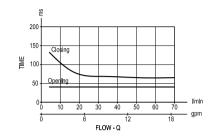


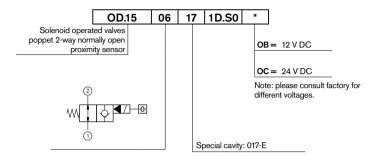


mm (Inches)

Performance graphs







Туре	Material number	Туре	Material number
OD1506171DS2OB	R934001215		
OD1506171DS2OC	R934001206		

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RE 18325-10/01.10 Replaces: RE 00162-02/01.06

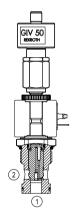
Solenoid operated valves pilot operated poppet 2-way normally open proximity sensor

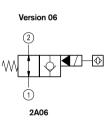
Special cavity, 021-E

VEI-8A-2A-12-NA-S-M-NSS

OD.15.06.21.1D.S2 - Z







General

aciiciai		
Weight	kg (lbs)	0.85 (1.9)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

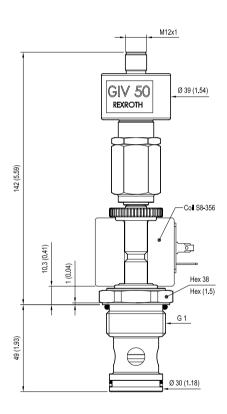
Hydraulic

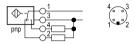
Hydraulic		
Max. operating pressure	bar (psi)	350 (5075)
Flow range	l/min.(gpm)	3.5-150 (0.9-40)
Max. internal leakage	drops/min.	15
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	80-85 (59-63)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		021-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG21E201052010 R934003566
Other technical data		See data sheet RE 18350-50

Electrical

Licotricui	
Type of voltage	DC voltage
Coil type	S8-356
Supply voltage	See data sheet RE18325-90
Nominal voltage	± 10%
Power consumption	W 20
Duty cycle	% 100 see RE 18325-90
Type of protection	See data sheet RE 18325-90

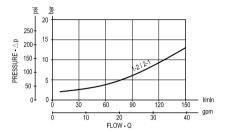
Solenoid operated valves poppet 2-way normally open proximity sensor

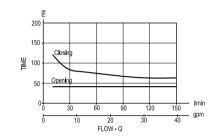


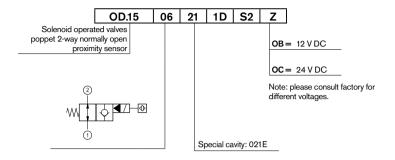




Performance graphs







Туре	Material number	Туре	Material number
OD1506211DS2OB	R934001228		
OD1506211DS2OC	R934001208		

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RE 18325-15/01.10 Replaces: RE 00162-02/01.06

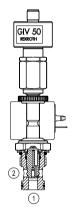
Solenoid operated valves pilot operated poppet 2-way normally open double lock proximity sensor

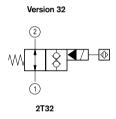
Special cavity, 017-E

VEI-8A-2T-09-NA-S-M-NSS

OD.15.32.17.1 D.S2 - Z







General

aciiciai		
Weight	kg (lbs)	0.75 (1.7)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic

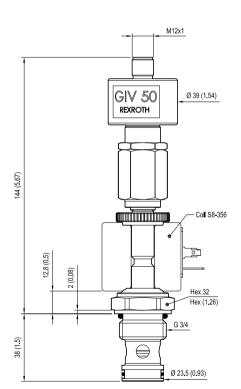
(*) (cSt 46)

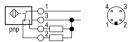
Hydraulic		
Max. operating pressure	bar (psi)	350 (5075)
Flow range	l/min.(gpm)	2.5-70 (0.66-18)
Max. internal leakage	drops/min.	15
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	50-55 (37-41)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		017-E see RE 18325-75
Line bodies		See data sheet RE 18325-85
Seal kit		RG17E201053010 R934003563
Other technical data		See data sheet RE 18350-50

Electrical

Licotifical		
Type of voltage		DC voltage
Coil type		S8-356
Supply voltage		See data sheet RE18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle	%	100 see RE 18325-90
Type of protection		See data sheet RE 18325-90

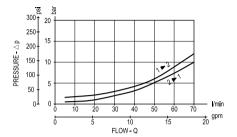
Solenoid operated valves poppet 2-way normally open double lock roximity sensor

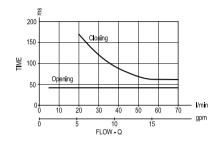


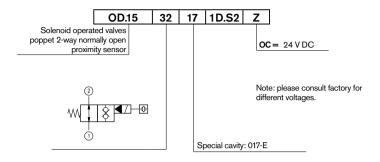




Performance graphs







Туре	Material number	Туре	Material number
OD1532171DS2OC	R934001235		

Bosch Rexroth Oil Control S.p.A.
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Solenoid cartridge valves

On-off direct acting

Designation	Description	Cavity	Code	Data sheet	Page
Solenoid cartridge valves direct acting 2 way poppet type normally closed	VED-8I-NC	Size 08	OD11X18Y00	18324-06	713
Solenoid cartridge valves direct acting 2 way poppet type normally open	VED-8I-NA	Size 08	OD11X18Y00	18324-07	717
Solenoid cartridge valves direct acting 2 way poppet type normally closed double lock	VEDT-08A-A-12.7-NC	Size 08	OD113118Y00	18324-01	721
Solenoid cartridge valves direct acting 2 way poppet type normally closed double lock	VEDT-08A-A-16-NC	Size 08	OD1131186Y00	18324-03	725
Solenoid cartridge valves direct acting 2 way poppet type double lock	VEDT-08F-A-16	Special	OD11X40Y00	18324-04	729
Solenoid cartridge valves direct acting poppet 3 way 2 position	VEDT-08A-32	Size 08	OD130151Y00	18324-05	733
Solenoid cartridge valves direct acting 3 way 2 position spool type	VEDS-08A-32	Size 08	OD13X51Y00	18324-50	737
Solenoid cartridge valves direct acting 4 way 2 position spool type	VEDS-08A-42	Size 08	OD14X58Y00	18324-51	741
Solenoid cartridge valves direct acting 4 way 3 position spool type	VEDS-08A-43	Size 08	OD14X582A00	18324-52	745
Solenoid cartridge valves direct acting 3 way 2 position spool type	VEDS-10A-32	Size 10	OD13X77Y00	18324-53	749
Solenoid cartridge valves direct acting 4 way 2 position spool type	VEDS-10A-42	Size 10	OD14X78Y00	18324-54	753
Solenoid cartridge valves direct acting 4 way 3 position spool type	VEDS-10A-43	Size 10	OD14X782A00	18324-55	757

The latest information on products can also be found on Bosch Rexroth web-site: www.boschrexroth.com

Solenoid cartridge valves

On-off direct acting

Designation	Description	Cavity	Code	Data sheet	Page
Solenoid cartridge valves direct acting 3 way 2 position spool type	VEDS-12A-32	Size 12	OD13X12Y00	18324-56	761
Solenoid cartridge valves direct acting 4 way 2 position spool type	VEDS-12A-42	Size 12	OD14X13Y00	18324-57	765

RE 18324-06/04.10

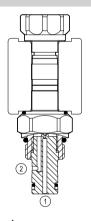
1/4

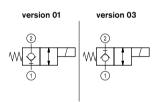
Solenoid operated valves direct acting poppet 2-way normally closed

Common cavity, Size 08

VED-8I-NC OD.11 - X - 18 - Y - 00







Weight	kg (lbs)	0.13 (0.29)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic

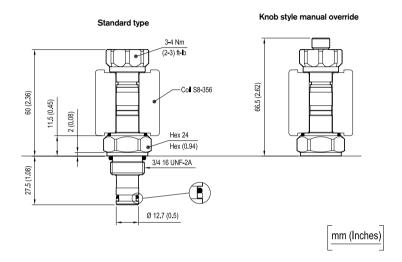
Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Rated flow	I/min. (gpm)	1.5 (0.4)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	material no.	RG08A2010520100 R901101437
Seal kit coil		RG1211PNBR7000 R934003590
Other technical data		See data sheet RE 18350-50

Electrical

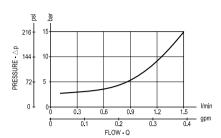
Liccuitoui		
Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

Note: Coils must be ordered separately.

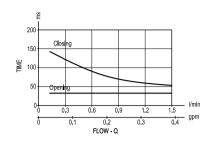
Solenoid operated valves poppet 2-way normally closed



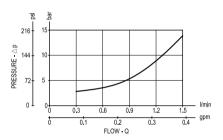
Performance graph

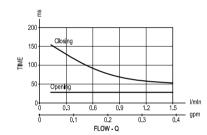


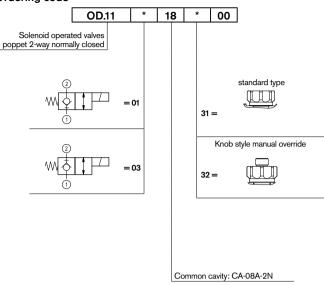
Version 01



Version 03







Туре	Material number
OD110118310000	R901090901
OD110118320000	R901090903
OD110318310000	R901090909
OD110318320000	R901090910

lype	Material number

.

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RE 18324-07/04.10 Replaces: RE 00162-02/01.06

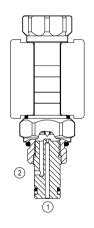
Solenoid operated valves direct acting poppet 2-way normally open

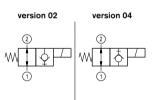
Common cavity, Size 08

VED-8I-NA

OD.11 - X - 18 - Y - 00







G	_	n	_	ra	ı
u	c		c	ıa	ı

Weight	kg (lbs)	0.13 (0.29)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Rated flow	I/min. (gpm)	1.5 (0.4)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 25µm (NAS 8) ISO 4406 19/17/14
Common cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	RG08A2010520100 R901101437
Seal kit coil		RG12I1PNBR7000 R934003590
Other technical data		See data sheet RE 18350-50

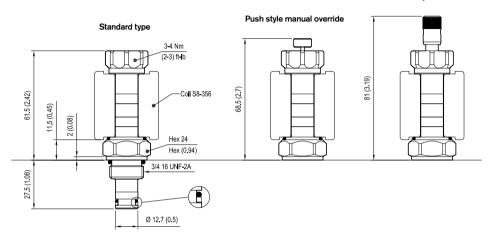
Electrical

Type of voltage		DC voltage
Coil type		S8-356 see RE 18325-90
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	100 see RE 18325-90
Type of protection		See data sheet RE 18325-90

Note: Coils must be ordered separately.

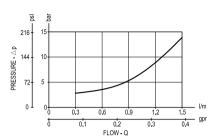
Solenoid operated valves poppet 2-way normally open

Push and twist style manual override

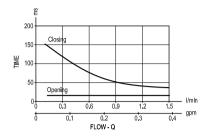


mm (Inches)

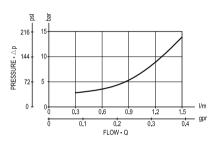
Performance graphs

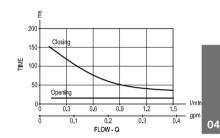


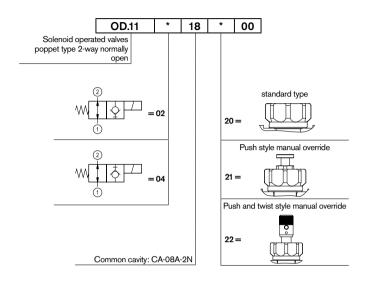
Version 02



Version 04







Туре	Material number	Туре
OD110218200000	R901090905	<u> </u>
OD110218210000	R901090906	
OD110218220000	R901090908	
OD110418200000	R901090911	
OD110418210000	R901090914	
OD110418220000	R901090915	

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Material number

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RE 18324-01/04.10 Replaces: 01.06 1/4

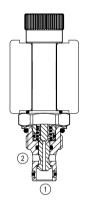
Solenoid operated valves direct acting poppet 2-way double lock normally closed

Common cavity, Size 08

VEDT-08A-A-12.7-NC

OD.11.31.18 - Y - 00







General

aonorai		
Weight	kg (lbs)	0.19 (0.42)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

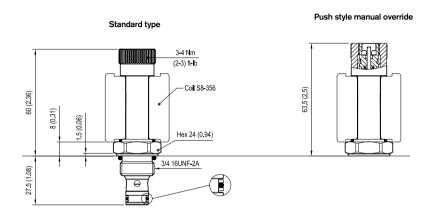
Hydraulic		
Max. operating pressure	bar (psi)	250 (3600)
Max. flow	l/min.(gpm)	15 (4)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Response time	ms.	40-60 at nominal flow (oil at 46 cSt)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	
Seal kit coil	code material no.	RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

Electrical		
Type of voltage		DC voltage
Coil type		S8-356
Supply voltage		See data sheet RE 18325-90
Nominal voltage		± 10%
Power consumption	W	20
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90

Note: Coils must be ordered separately.

All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valves poppet 2-way double lock normally closed



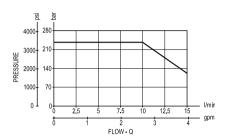


3/4

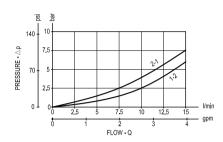
Performance graphs

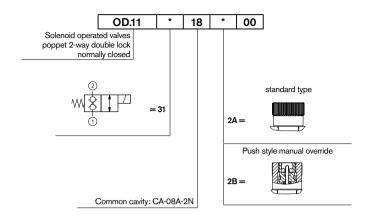
Performance limits

version 31



Characteristic curves





All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number	Туре	Material number
OD1131182A0000	R934003626		
OD1131182B0000	R934003627		

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RE 18324-03/04.10 Replaces: 01.06 1/4

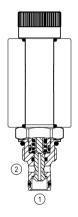
Solenoid operated valves direct acting poppet 2-way double lock normally closed

Common cavity, Size 08

VEDT-08A-A-16-NC

OD.11.31.18 - 6Y - 00







General

Weight	kg (lbs)	0.22 (0.48)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 30W
		-30 to 80 (-22 to 176) - coil 26W

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Hydraulic		
Max. operating pressure	bar (psi)	250 (3600)
Max. flow	I/min. (gpm)	25 (7)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Response time	ms.	40-60 at nominal flow (oil at 46 cSt)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	RG08A2010530100 R901101544
Seal kit coil		RG16A1PMVQ0000 R934003594
Other technical data		See data sheet RE 18350-50

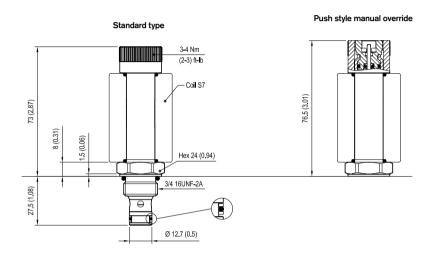
Electrical

Licotifical		
Type of voltage		DC voltage
Coil type		S7
Supply voltage		See data sheet RE 18325-90
Power consumption	W	30 or 26
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 26W	-15% +10%
Nominal voltage	coil 30W	-10% +10%

Note: Coils must be ordered separately.

All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valves poppet 2-way double lock normally closed

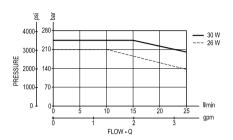


mm (Inches)

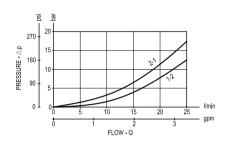
Performance graphs

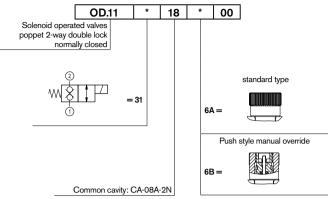
Performance limits

version 31



Characteristic curves





All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number	
OD1131186A0000	R934003624	
OD1131186B0000	R934003625	
		_
		_
		_
		_

Туре	Material number
-	
-	

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RE 18324-04/04.10

Replaces: 01.06

1/4

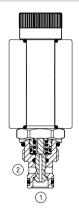
Solenoid operated valves direct acting poppet 2-way double lock

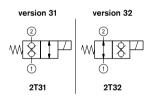
Special cavity, CA-08F-2N

VEDT-08F-A-16

OD.11 - X - 40 - Y - 00







General

Weight	kg (lbs)	0.22 (0.48)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 30W
		-30 to 80 (-22 to 176) - coil 26W

Hydraulic		
Max. operating pressure	bar (psi)	250 (3600)
Max. flow	I/min. (gpm)	25 (7)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Response time	ms.	40-60 at nominal flow (oil at 46 cSt)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Special cavity		CA-08F-2N
Seal kit	code material no.	
Seal kit coil	code material no.	RG16A1PMVQ0000 R934003594
Other technical data		See data sheet RE 18350-50

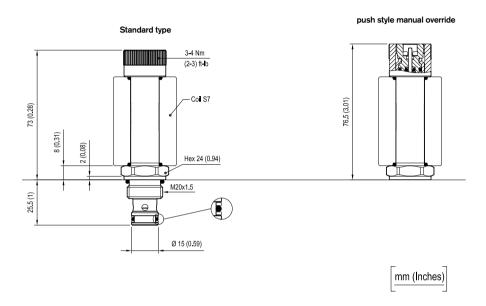
Electrical

Type of voltage		DC voltage
Coil type		S7
Supply voltage		See data sheet RE 18325-90
Power consumption	W	30 or 26
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 26W	-15% +10%
Nominal voltage	coil 30W	-10% +10%

Note: Coils must be ordered separately.

All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valves poppet 2-way double lock - Special cavity

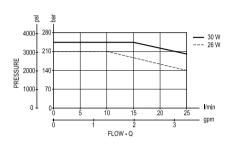


04

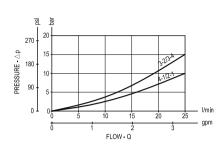
Performance graphs

Performance limits

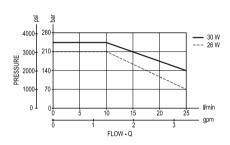
version 31 (NC)

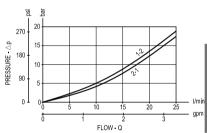


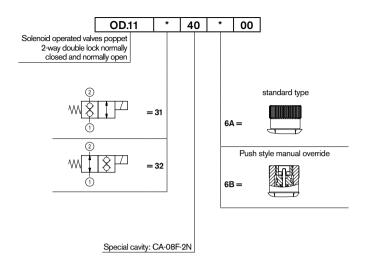
Characteristic curves



version 32 (NA)







All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number
OD1131406A0000	R934003630
OD1131406B0000	R934003631
OD1132406A0000	R934003628
OD1132406B0000	R934003629

Туре	Material number
-	
-	

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RE 18324-05/04.10

Replaces: 01.06

1/4

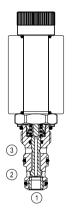
Solenoid operated valves direct acting poppet 3-way 2-position

Common cavity, Size 08

VEDT-08A-32

OD.13.01.51 - Y - 00







General	
---------	--

Weight	kg (lbs)	0.24 (0.53)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 30W
		-30 to 80 (-22 to 176) - coil 26W

Other technical data

Hydraulic		
Max. operating pressure	bar (psi)	250 (3600)
Max. flow	I/min. (gpm)	15 (4)
Max. internal leakage (*)	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Response time	ms.	40-60 at nominal flow (oil at 46 cSt)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-3N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	RG08A3010530100 R901101723
Seal kit coil		RG16A1PMVQ0000 R934003594

See data sheet RE 18350-50

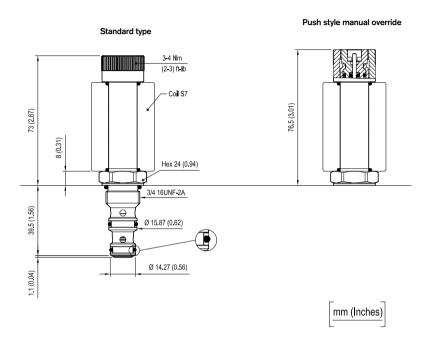
Electrical

Liectrical		
Type of voltage		DC voltage
Coil type		S7
Supply voltage		See data sheet RE 18325-90
Power consumption	W	30 or 26
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 26W	-10% +15%
Nominal voltage	coil 30W	-10% +10%

Note: Coils must be ordered separately.

All versions available by 09/2010; before 09/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

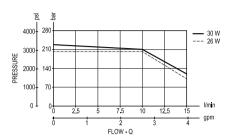
Solenoid operated valves poppet 3-way 2-position



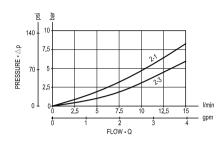
Performance graphs

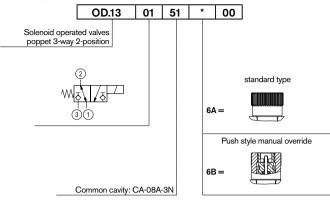
Performance limits

version 01



Characteristic curves





All versions available by 09/2010; before 09/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number	Туре	Material number
OD1301516A0000	R934003667		
OD1301516B0000	R934003666		

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RE 18324-50/04.10 Replaces: 01.06 1/4

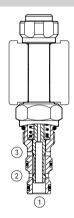
Solenoid operated valves direct acting spool 3-way 2-position

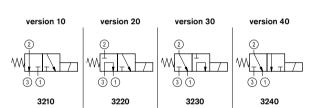
Common cavity, Size 08

VEDS-08A-32

OD.13 - X - 51 - Y - 00







General

Weight	kg (lbs)	0.13 (0.29)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 20W
		-30 to 80 (-22 to 176) - coil 17W

Hydraulic		
Max. operating pressure port 2-3	bar (psi)	315 (4568)
Max. operating pressure port 1	bar (psi)	210 (3000)
Max. flow	I/min. (gpm)	20 (5)
Max. internal leakage (*) cm ³ /mir	n. (cu.in/min.)	90 (5.5)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-3N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG08A301053010 R901101723
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

(*) Measured at 210 bar (3000 psi) (oil at 46 cSt)

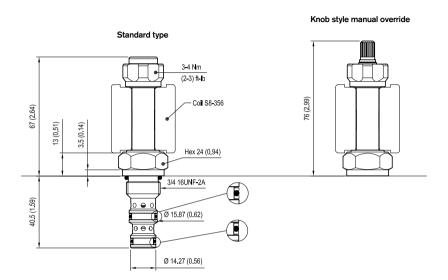
Electrical

	Type of voltage		DC voltage
	Coil type		S8-356
	Supply voltage		See data sheet RE 18325-90
	Power consumption	W	20 or 17
	Duty cycle coil	%	See performance graphs
	Type of protection		See data sheet RE 18325-90
	Nominal voltage	coil 20W	-15% +10%
	Nominal voltage	coil 17W	-15% +15%

Note: Coils must be ordered separately.

All versions available by 09/2010; before 09/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valve, spool 3-way 2-position



mm (Inches)

Performance graph

B

5000 350

4000

3000-

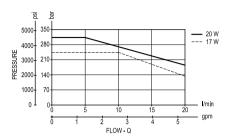
2000

1000 70

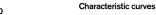
t

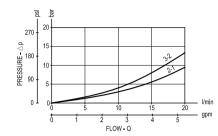
PRESSURE

Performance limits



Version 10

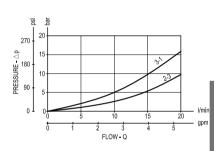




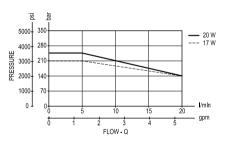
Version 20

--- 20 W





Version 30



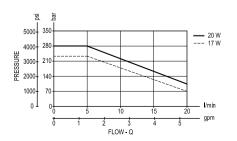
FLOW - Q

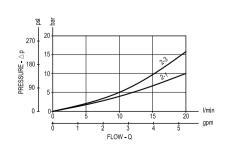
15

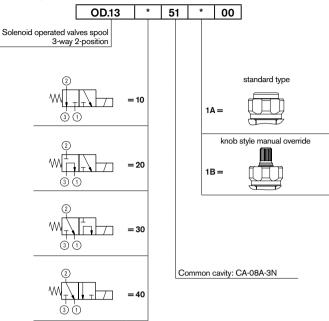
20

270 20 15 10 15 20 1mlr FLOW-Q

Version 40







All versions available by 09/2010; before 09/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number
OD1310511A0000	R934003541
OD1320511A0000	R934003542
OD1330511A0000	R934003543
OD1340511A0000	R934003544
OD1310511B0000	R934003545
OD1320511B0000	R934003546
OD1330511B0000	R934003547
OD1340511B0000	R934003548

Туре	Material number

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Subject to change.



RE 18324-51/04.10

1/4

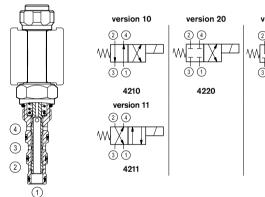
Solenoid operated valves direct acting spool 4-way 2-position

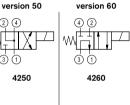
Common cavity, Size 08

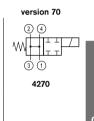
VEDS-08A-42

OD.14 - X - 58 - Y - 00









General

Weight	kg (lbs)	0.14 (0.31)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 20W
		-30 to 80 (-22 to 176) - coil 17W

Hydraulic		
Max. operating pressure port 2-3-4	bar (psi)	315 (4568)
Max. operating pressure port 1	bar (psi)	210 (3000)
Max. flow	I/min. (gpm)	20 (5)
Max. internal leakage (*) cm³/mir	n. (cu.in/min.)	90 (5.5)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	34-41 (25-30)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-4N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG08A4010530100 R930005582
Seal kit coil		RG12A1PNBR7000 R934003591
Other technical data		See data sheet RE 18350-50

(*) Measured at 210 bar (3000 psi) (oil at 46 cSt)

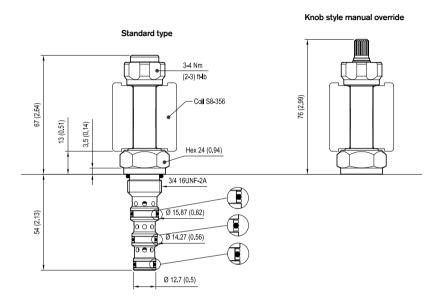
Flectrical

Liccuitcai		
Type of voltage		DC voltage
Coil type		S8-356
Supply voltage		See data sheet RE 18325-90
Power consumption	W	20 or 17
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 20W	-15% +10%
Nominal voltage	coil 17W	-15% +15%

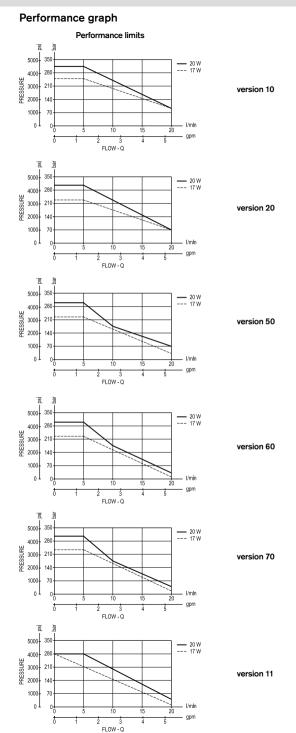
Note: Coils must be ordered separately.

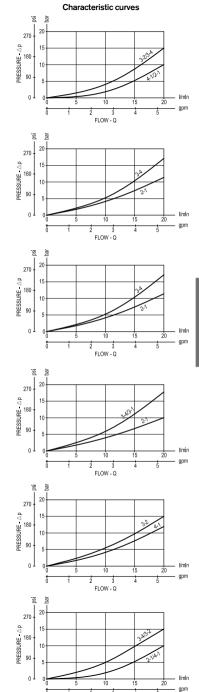
All versions available by 09/2010; before 09/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valve, spool 4-way 2-position

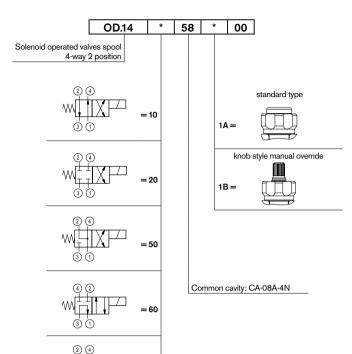


mm (Inches)





FLOW - Q



All versions available by 09/2010; before 09/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number
OD1410581A0000	R934003530
OD1420581A0000	R934003531
OD1450581A0000	R934003532
OD1460581A0000	R934003533
OD1470581A0000	R934003534
OD1410581B0000	R934003535
OD1420581B0000	R934003536
OD1450581B0000	R934003537
OD1460581B0000	R934003538

= 70

= 11

Туре	Material number
OD1470581B0000	R934003539

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RE 18324-52/04.10 Replaces: 01.06 1/4

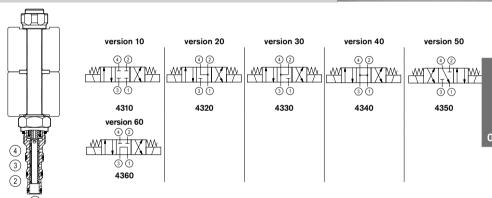
Solenoid operated valves direct acting spool 4-way 3-position

Common cavity, Size 08

VEDS-08A-43

OD.14 - X - 58.2A.00





General

Weight	kg (lbs)	0.13 (0.29)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 20W
		-30 to 80 (-22 to 176) - coil 17W

Hydraulic

Hydraulic		
Max. operating pressure port 2-3-4	bar (psi)	315 (4568) (see performance graph)
Max. operating pressure port 1	bar (psi)	140 (2000)
Flow range	I/min. (gpm)	20 (5)
Max. internal leakage (*) cm³/mir	n. (cu.in/min.)	90 (5.5)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-4N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG08A4010530100 R930005582
Seal kit coil		RG12A2PNBR7000 R934003593
Other technical data		See data sheet RF 18350-50

(*) Measured at 210 bar (3000 psi) (oil at 46 cSt)

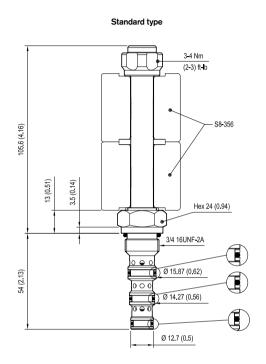
Electrical

Type of voltage		DC voltage
Coil type		S8-356
Supply voltage		See data sheet RE 18325-90
Power consumption	W	20 or 17
Duty cycle coil	%	See performance graphs
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 20W	-15% +10%
Nominal voltage	coil 17W	-15% +15%

Note: Coils must be ordered separately.

All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

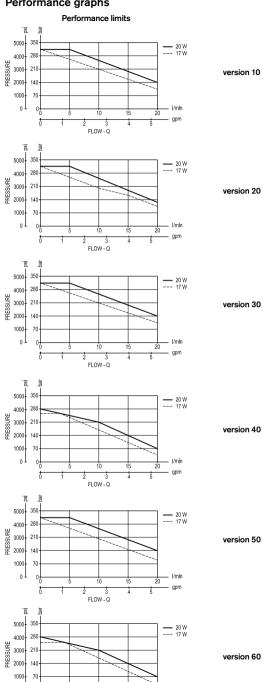
Solenoid operated valve, spool 4-way 3-position



mm (Inches)

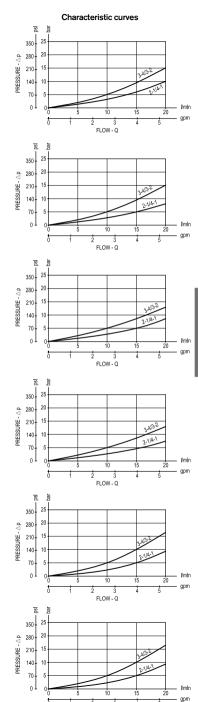
Performance graphs

₀ I

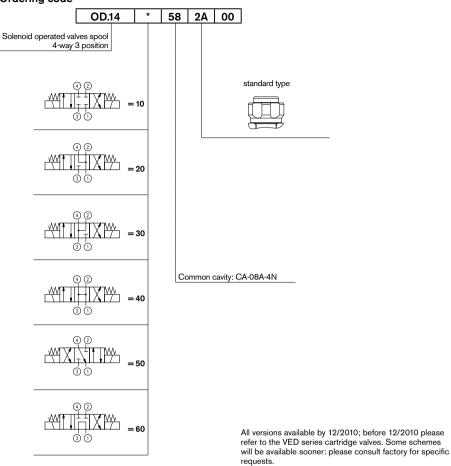


gpm

FLOW - Q







Material number
R934003504
R934003505
R934003506
R934003509
R934003507
R934003508

Туре	Material number

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RE 18324-53/04.10 Replaces: 01.06

1/4

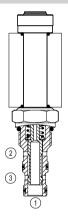
Solenoid operated valves direct acting spool 3-way 2-position

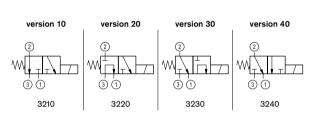
Common cavity, Size 10

VEDS-10A-32

OD.13 - X - 77 - Y - 00







General

Weight	kg (lbs)	0.31 (0.68)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 30W
		-30 to 80 (-22 to 176) - coil 26W

Hydraulic		
Max. operating pressure port 2-3	bar (psi)	315 (4500)
Max. operating pressure port 1		140 (2000)
Max. flow	I/min. (gpm)	30 (8)
Max. internal leakage (*) cm³/min.	(cu.in./min.)	120 (7)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-3N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG10A3010530100 R930000990
Other technical data		See data sheet RE 18350-50

(*) Measured at 210 bar (3000 psi) (oil at 46 cSt)

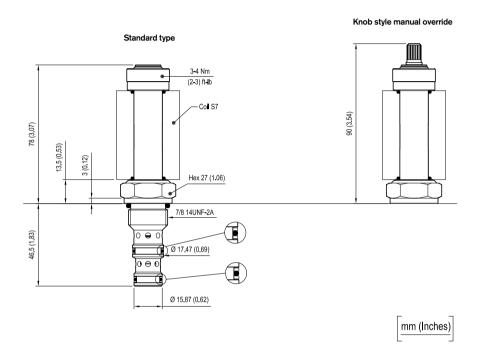
Electrical

Type of voltage		DC voltage
Coil type		S7
Supply voltage		See data sheet RE 18325-90
Power consumption	W	30 or 26
Duty cycle coil	%	100 see RE 18325-90
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 30W	-15% + 10%
Nominal voltage	coil 26W	-15% + 15%

Note: Coils must be ordered separately.

All versions available by 03/2011; before 03/2011 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

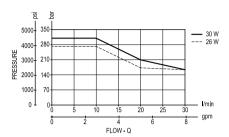
Solenoid operated valve, spool 3-way 2-position



Characteristic curves

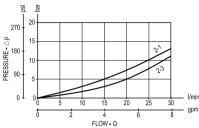
Performance graphs

Performance limits

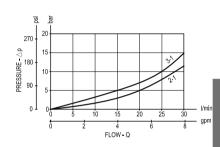


Version 10





Version 20

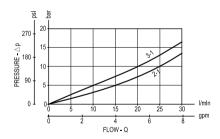


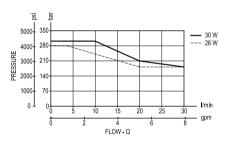
B 5000 350 --- 30 W --- 26 W 4000 PRESSURE 3000 2000 1000-70 0 1 20 25

FLOW - Q

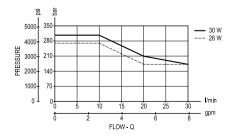
t

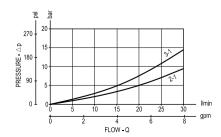
Version 30

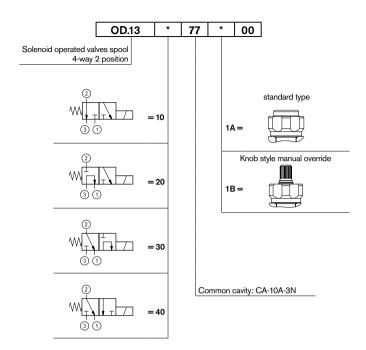




Version 40







All versions available by 03/2011; before 03/2011 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number
OD1310771A0000	R934003678
OD1320771A0000	R934003679
OD1330771A0000	R934003680
OD1340771A0000	R934003681
OD1310771B0000	R934003682
OD1320771B0000	R934003683
OD1330771B0000	R934003684
OD1340771B0000	R934003685

туре	Material number

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RE 18324-54/04.10 Replaces: 01.06 1/4

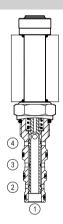
Solenoid operated valves direct acting spool 4-way 2-position

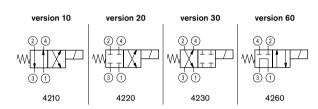
Common cavity, Size 10

VEDS-10A-42

OD.14 - X - 78 - Y - 00







General

Weight	kg (lbs)	0.32 (0.71)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 30W
		-30 to 80 (-22 to 176) - coil 26W

Hydraulic		
Max. operating pressure port 2-3-4	bar (psi)	315 (4500)
Max. operating pressure port 1		140 (2000)
Max. flow	I/min. (gpm)	30 (8)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	120 (7)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-4N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG10A4010530100 R901111373
Other technical data		See data sheet RE 18350-50

(*) Measured at 210 bar (3000 psi) (oil at 46 cSt)

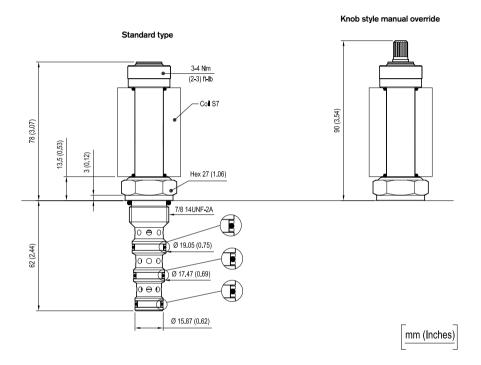
Electrical

Electrical			
	Type of voltage		DC voltage
	Coil type		S7
	Supply voltage		See data sheet RE 18325-90
	Power consumption	W	30 or 26
	Duty cycle coil	%	100 see RE 18325-90
	Type of protection		See data sheet RE 18325-90
	Nominal voltage	coil 30W	-15% + 10%
	Nominal voltage	coil 26W	-15% + 15%

Note: Coils must be ordered separately.

All versions available by 03/2011; before 03/2011 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valve, spool 4-way 2-position



B

4000

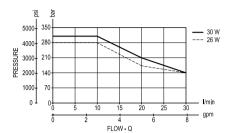
3000-

2000

1000-0 1

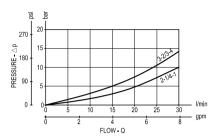
PRESSURE

Performance limits

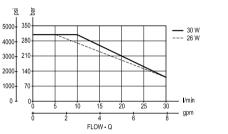


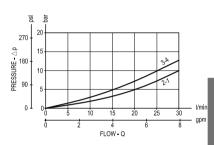
Version 10

Characteristic curves

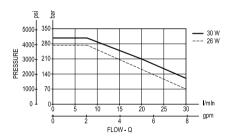


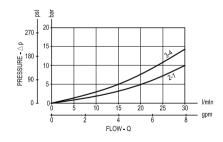
Version 20



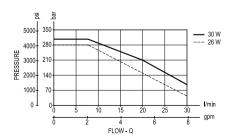


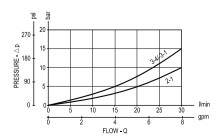
Version 30

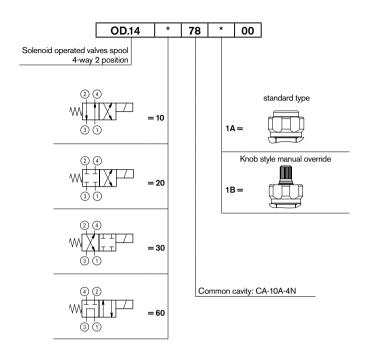




Version 60







All versions available by 03/2011; before 03/2011 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number
OD1410781A0000	R934003556
OD1420781A0000	R934003557
OD1430781A0000	R934003558
OD1460781A0000	R934003559
OD1410781B0000	R934003598
OD1420781B0000	R934003599
OD1430781B0000	R934003600
OD1460781B0000	R934003601

Туре	Material number

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RE 18324-55/04.10 Replaces: 01.06 1/4

Solenoid operated valves direct acting spool 4-way 3-position

Common cavity, Size 10

VEDS-10A-43

OD.14 - X - 78.2A.00





version 10	version 20	version 40	version 60
4310	4320	4340	4360

General

Weight	kg (lbs)	0.34 (0.75)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140) - coil 30W
		-30 to 80 (-22 to 176) - coil 26W

Hydraulic		
Max. operating pressure port 2-3-4	bar (psi)	280 (4000)
Max. operating pressure port 1		140 (2000)
Max. flow	I/min. (gpm)	30 (8)
Max. internal leakage (*) cm³/min	. (cu.in./min.)	120 (7)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	41-47 (30-35)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-4N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG10A4010530100 R901111373
Other technical data		See data sheet RE 18350-50

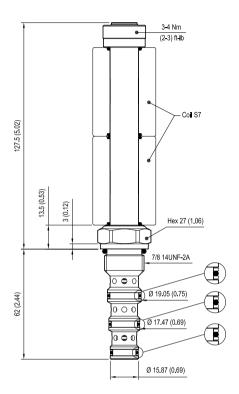
(*) Measured at 210 bar (3000 psi) (oil at 46 cSt)

Electrical

Type of voltage		DC voltage
Coil type		S7
Supply voltage		See data sheet RE 18325-90
Power consumption	W	30 or 26
Duty cycle coil	%	100 see RE 18325-90
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 30W	-15% + 10%
Nominal voltage	coil 26W	-15% + 15%

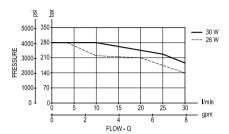
All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valves spool 4-way 3-position

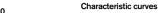


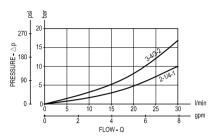
mm (Inches)

Performance limits

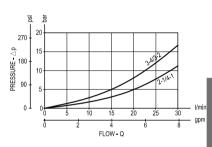


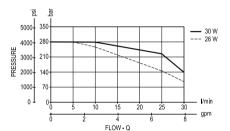
Version 10



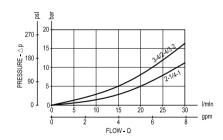


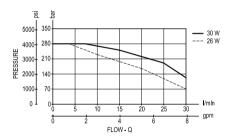
Version 20



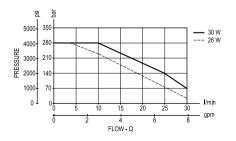


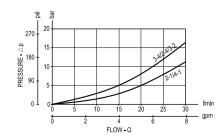
Version 40



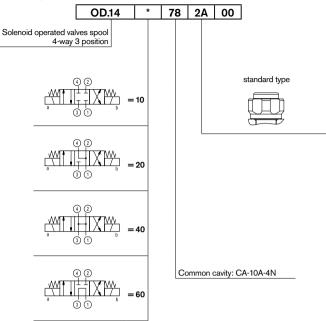


Version 60









All versions available by 12/2010; before 12/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Type

Туре	Material number
OD1410782A0000	R934003552
OD1420782A0000	R934003553
OD1440782A0000	R934003554
OD1460782A0000	R934003555

Type	wateriai number

Material number

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RE 18324-56/04.10

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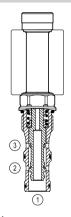
Solenoid operated valves direct acting spool 3-way 2-position

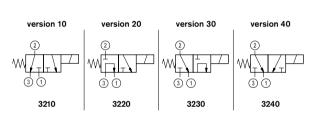
Common cavity, Size 12

VEDS-12A-32

OD.13 - X - 12 - Y - 00







General

Weight	kg (lbs)	0.39 (0.86)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	315 (4500)
Max. operating pressure port 1	bar (psi)	210 (3000)
Max. flow	l/min.(gpm)	60 (16)
Max. internal leakage (*) cm³/min	. (cu.in/min.)	180 (11)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	81-87 (60-64)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-12A-3N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG12A3010520100 R930000941
Seal kit coil	code material no.	RG19A1PNBR7000 R934003569
Other technical data		See data sheet RE 18350-50

(*) Measured at 210 bar (3000 psi) (oil at 46 cSt)

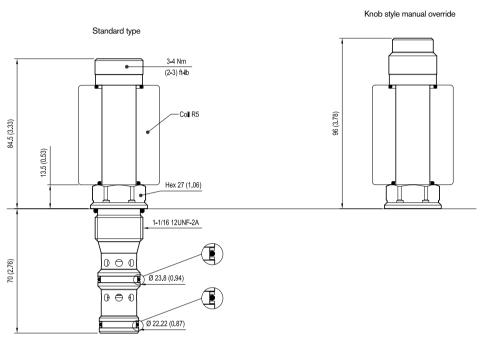
Electrical

Type of voltage		DC voltage
Coil type		R5
Supply voltage		See data sheet RE 18325-90
Power consumption	W	33
Duty cycle coil	%	100 see RE 18325-90
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 33W	-10%+10%

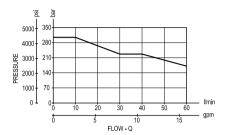
Note: Coils must be ordered separately.

All versions available by 09/2010; before 09/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valves direct acting spool 3-way 2-position

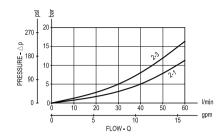


Performance limits

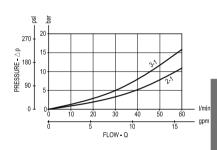


Version 10



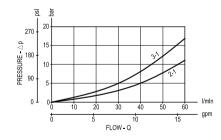


Version 20



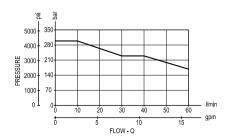
350 4000 280 280 2000 140 1000 70 0 10 20 30 40 50 60 gpm

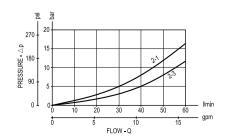
Version 30

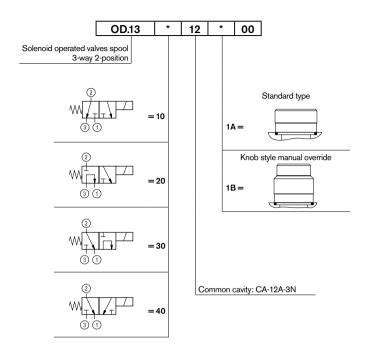


bs 5000 350 4000 280 PRESSURE 3000 2000 1000 70 01 20 50 t 15 10 FLOW - Q

Version 40







All versions available by 09/2010; before 09/2010 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number
OD1310121A0000	R934003616
OD1320121A0000	R934003617
OD1330121A0000	R934003618
OD1340121A0000	R934003619
OD1310121B0000	R934003620
OD1320121B0000	R934003621
OD1330121B0000	R934003622
OD1340121B0000	R934003623

-

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RE 18324-57/04.10 Replaces: 01.06

1/4

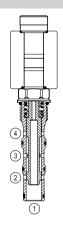
Solenoid operated valves direct acting spool 4-way 2-position

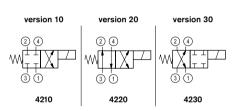
Common cavity, Size 12

VEDS-12A-42

OD.14 - X - 13 - Y - 00







General

Weight	kg (lbs)	0.41 (0.9)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	315 (4500)
Max. operating pressure port 1	bar (psi)	210 (3000)
Max. flow	l/min.(gpm)	60 (16)
Max. internal leakage (*) cm³/min	. (cu.in/min.)	180 (11)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	81-87 (60-64)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-12A-4N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG12A4010530100 R930001660
Seal kit coil		RG19A1PNBR7000 R934003569
Other technical data		See data sheet RE 18350-50

(*) Measured at 210 bar (3000 psi) (oil at 46 cSt)

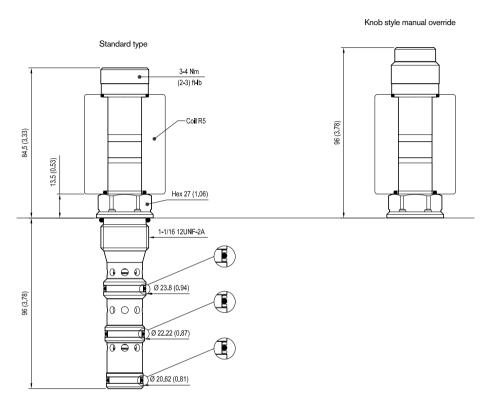
Flectrical

Liccuitai		
Type of voltage		DC voltage
Coil type		R5
Supply voltage		See data sheet RE 18325-90
Power consumption	W	33
Duty cycle coil	%	100 see RE 18325-90
Type of protection		See data sheet RE 18325-90
Nominal voltage	coil 33W	-10%+10%

Note: Coils must be ordered separately.

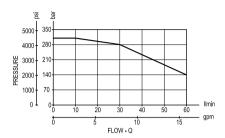
All versions available by 03/2011; before 03/2011 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Solenoid operated valves direct acting spool 4-way 2-position



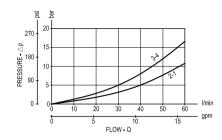
mm (Inches

Performance limits

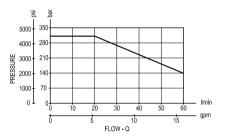


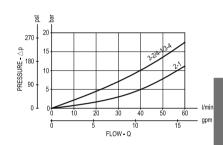
Version 10

Characteristic curves

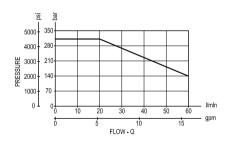


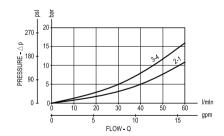
Version 20

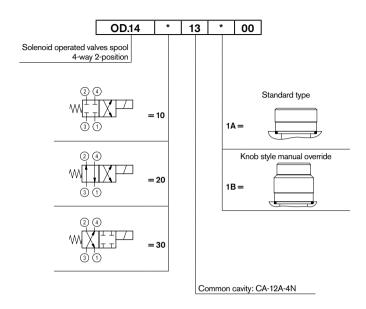




Version 30







All versions available by 03/2011; before 03/2011 please refer to the VED series cartridge valves. Some schemes will be available sooner: please consult factory for specific requests.

Туре	Material number
OD1410131A0000	R934003686
OD1430131A0000	R934003687
OD1420131A0000	R934003688
OD1410131B0000	R934003689
OD1430131B0000	R934003690
OD1420131B0000	R934003691

Туре	Material number

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Solenoid cartridge valves

Electro-proportional

Designation	Description	Cavity	Code	Data sheet	Page
Solenoid cartridge valves electro-proportional relief direct acting	VEP-5B-2S-D	Size 08	OD940118YZ	18323-65	771
Solenoid cartridge valves electro-proportional relief pilot operated	VEP-5B-2S-10A-P	Size 10	OD940536YZ	18323-66	775
Solenoid cartridge valves electro-proportional relief pilot operated	VEP-5B-2S-P	Special	OD940561YZ	18323-67	779
Solenoid cartridge valves electro-proportional direct acting pressure reducing	VEP-5A-3R-06	Size 10	OD910177Y00	18323-60	783
Solenoid cartridge valves electro-proportional pilot operated pressure reducing	VEP-5A-2R-06-P	Size 10	OD910677Y00	18323-61	787
Solenoid cartridge valves electro-proportional 2 way double lock normally closed	VEP-5A-2T-06-NC	Size 08	OD953118Y00	18323-68	791
Solenoid cartridge valves electro-proportional flow regulator not compensated	VEP-5A-2Q-09	Size 10	OD92X77YZ	18323-63	795
Solenoid cartridge valves electro-proportional flow regulator not compensated	VEP-5A-2Q-14	Size 12	OD92X12Y00	18323-62	799
Solenoid cartridge valves electro-proportional flow regulator not compensated	VEP-5A-2Q-09	Size 10	OD920277YZ	18323-64	803
Solenoid cartridge valves electro-proportional poppet type flow regulator not compensated	VEPN-12A	Size 12	OD9506897200	18323-69	807

1/4 RE 18323-65/01.10 Replaces: RE 00162-02/01.06

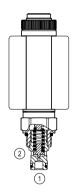
Proportional valves direct acting relief

Common cavity, Size 08

VEP-5B-2S-D

OD.94.01.18 - Y - Z









General

deliciai		
Weight	kg (lbs)	0.23 (0.51)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	l/min.(gpm)	See flow diagram
Max. internal leakage (*) cm³/min	. (cu.in./min.)	5 (0.3)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	
Seal kit coil	code material no.	RG19A1PNBR7000 R934003569
Other technical data		See data sheet RE 18325-90

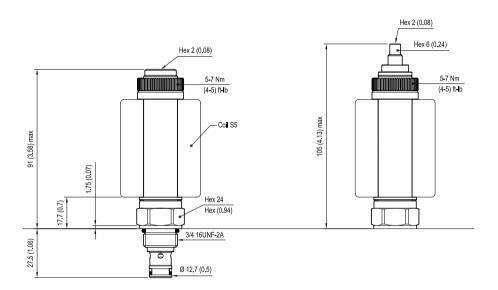
(*) at 20% of pressure setting. Oil at 46 cSt

Electrical

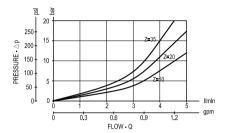
Ziooti iodi			
Type of voltage		DC voltage	
Coil type		S5	
Supply voltage		12 DC	
Nominal voltage		± 10%	
Power consumption	W	23	
Duty cycle	%	100	
Type of protection		See data sheet RE 18325-90	

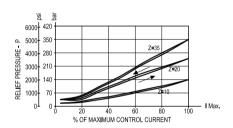
Note: Coils must be ordered separately.

Proportional valves direct acting relief





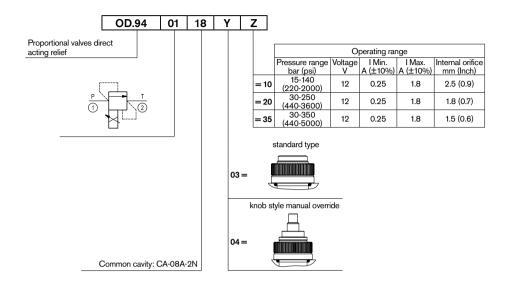




		I	P bar (psi)	Coils	
Z=10	I min:	0.2 A	15 (218)	12 DC	
2-10	I max:	1.5 A	140 (2030)	12 DC	
-	I min:	0.15 A	30 (435)	12 DC	
Z=20	I max:	1.7 A	250 (3625)	12 DC	
7-20	I min:	0.2 A	30 (435)	12 DC	
Z=30	I max:	1.7 A	350 (5075)	12 DC	
PMW Frequency: 120-150 Hz					
Hysteresis: < 5%					

Note (1): It is recommended to use coil 12 DC.

Note (2): It is recommended to bleed air carefully before operation.



Туре	Material number	Туре	Material number
OD940118032000	R934001531		
OD940118033500	R934001532		
0D940118043500	R934001535		
		_	

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RE 18323-66/01.10 Replaces: RE 00162-02/01.06

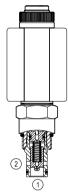
Proportional valves pilot operated relief

Common cavity, Size 10

VEP-5B-2S-10A-P

OD.94.05.36 - Y - Z









 General

 Weight
 kg (lbs)
 0.3 (0.66)

 Installation orientation
 Optional

 Ambient temperature range
 °C (°F)
 -30 to 60 (-22 to 140)

Hydraulic

riyuraunc		
Max. operating pressure	bar (psi)	350 (5000)
Flow range	l/min.(gpm)	7-120 (2-32)
Max. internal cm ³ /min.	(cu.in./min.)	200 (12)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	44-56 (33-41)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-2N see Re 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG10A2010530100 R901111366
Seal kit coil		RG19A1PNBR7000 R934003569
Other technical data		See data sheet RE 18350-50

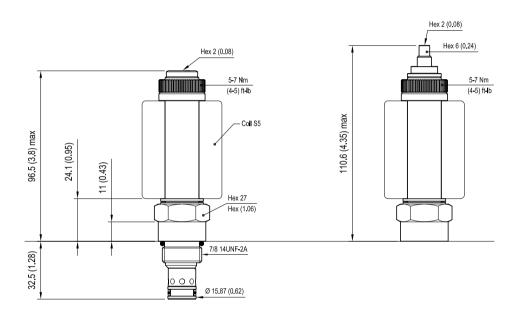
Other technical data | See c (*) at 20% of pressure setting. Oil at 46 cSt.

lectrical	

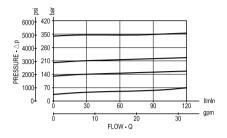
2.001.104.			
Type of voltage	DC voltage		
Coil type	S5		
Supply voltage	12 DC		
Nominal voltage	± 10%		
Power consumption W	23		
Duty cycle %	100		
Type of protection	See data sheet RE 18325-90		

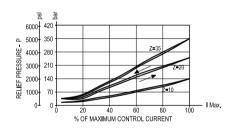
Note: Coils must be ordered separately.

Proportional valves pilot operated relief



mm (Inches)

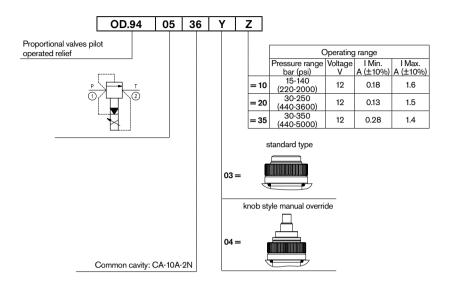




		I	P bar (psi)	Coils
Z=10	I min:	0.2 A	15 (218)	12 DC
Z=10	I max:	1.5 A	140 (2030)	12 DC
Z=20	I min:	0.15 A	30 (435)	12 DC
	I max:	1.7 A	250 (3625)	12 DC
Z=30	I min:	0.2 A	30 (435)	12 DC
Z=30	I max:	1.7 A	350 (5075)	12 DC
PMW Frequency: 120-150 Hz				
Hysteresis: <5%				

Note (1): It is recommended to use coil 12 DC.

Note (2): It is recommended to bleed air carefully before operation.



Material number	Туре	Material number
R934001537		
	R934001537	

Bosch Rexroth Oil Control S.p.A. Via Leonardo da Vinci 5 P.O. Box no. 5 41015 Nonantola – Modena, Italy Tel. +39 059 887 611 Fax +39 059 547 848 cartridges@oilcontrol.com www.boschrexroth.com

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RE 18323-67/01.10 Replaces: RE 00162-02/01.06

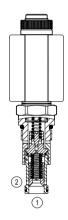
Proportional valves pilot operated relief

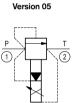
Special cavity, 065

VEP-5B-2S-P

OD.94.05.61 - Y - Z







Weight	kg (lbs)	0.36 (0.79)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

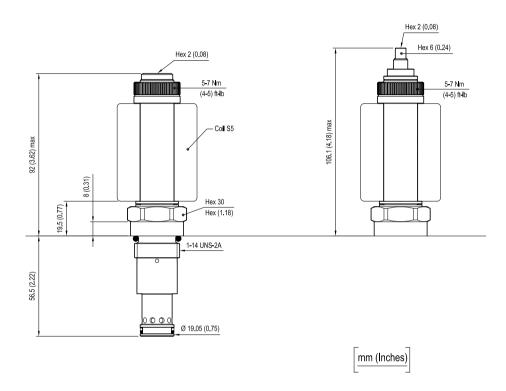
Hydraulic

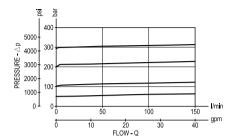
Hydraulic				
Max. operating pressure	bar (psi)	350 (5000)		
Flow range	I/min.(gpm)	8-150 (2-40)		
Max. internal leakage (*) cm ³ /min.	(cu.in./min.)	180 (11)		
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)		
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)		
Installation torque	Nm (ft-lbs)	121-133 (90-99)		
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14		
Cavity		065 see RE 18325-75		
Seal kit		RG61E201052010 R934003596		
Seal kit coil		RG19A1PNBR7000 R934003569		
Other technical data		See data sheet RE 18325-90		
(*) at 20% of pressure setting. Oil at 46 cSt.				

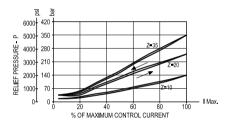
Electrical		
Type of voltage		DC voltage
Coil type		S5
Supply voltage		12 DC
Nominal voltage		± 10%
Power consumption	W	23
Duty cycle	%	100
Type of protection		See data sheet RE 18325-90

Note: Coils must be ordered separately.

Proportional valves pilot operated relief



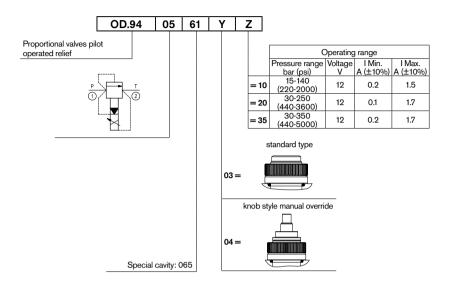




		I	P bar (psi)	Coils
Z=10	I min:	0.2 A	15 (218)	12 DC
Z=10	I max:	1.5 A	140 (2030)	12 DC
Z=20	I min:	0.15 A	30 (435)	12 DC
	I max:	1.7 A	250 (3625)	12 DC
Z=30	I min:	0.2 A	30 (435)	12 DC
Z=30	I max:	1.7 A	350 (5075)	12 DC
PMW Frequency: 120-150 Hz				
Hysteresis: < 5%				

Note (1): It is recommended to use coil 12 DC.

Note (2): It is recommended to bleed air carefully before operation.



Туре	Material number	Туре	Material number
OD940561032000	R934001542		
		-	
		-	
		-	

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1/4 RE 18323-60/01.10 Replaces: RE 00162-02/01.06

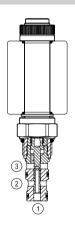
Proportional valves direct acting pressure reducing

Common cavity, Size 10

VEP-5A-3R-06

OD.91.01.77 - Y - 00







Cal	neral

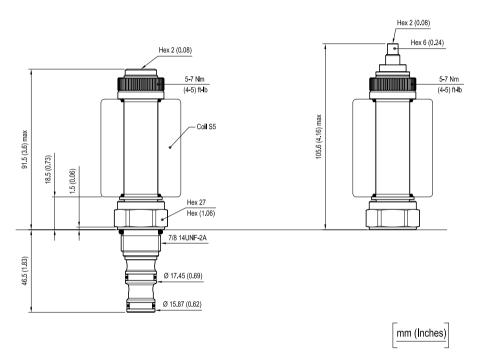
Gonorai		
Weight	kg (lbs)	0.3 (0.66)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	210 (3000)
Max. flow	l/min.(gpm)	10 (3)
Max. internal leakage cm ³ /mir	n. (cu.in./min.)	12 (0.7)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	44-56 (33-41)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-3N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	RG10A3010530100 R930000990
Seal kit coil	code material no.	RG19A1PNBR7000 R934003569
Other technical data		See data sheet RE 18325-90

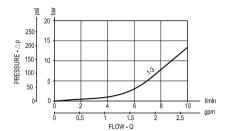
Electrical	
Type of voltage	DC voltage
Coil type	S5
Supply voltage	12 DC
Nominal voltage	± 10%
Power consumption W	23
Duty cycle %	100
Type of protection	See data sheet RE 18325-90

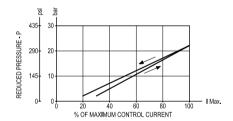
Note: Coils must be ordered separately.

Proportional valves direct acting pressure reducing



Allowed back pressure at port 3 (T): 5 bar (73 psi) max

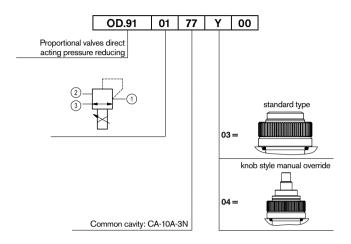




	I	P bar (psi)	Coils
I min:	0.45 A	2 (29)	12 DC
I max:	2.0 A	22 (319)	12 DC
PMW Frequency: 120-150 Hz			
Hysteresis: <5%			

Note (1): It is recommended to use coil 12 DC.

Note (2): It is recommended to bleed air carefully before operation.



Туре	Material number	Туре	Material number
OD910177030000	R934001495		
OD910177040000	R934003442		
		-	

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1/4 RE 18323-61/01.10 Replaces: RE 00162-02/01.06

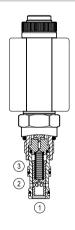
Proportional valves pilot operated pressure reducing

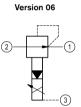
Common cavity, Size 10

VEP-5A-2R-06-P

OD.91.06.77 - Y - 00







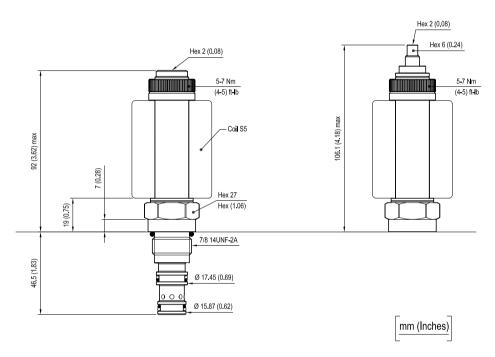
aciiciai		
Weight	kg (lbs)	0.3 (0.66)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic		
Max. operating pressure	bar (psi)	210 (3000)
Flow range	l/min.(gpm)	2-60 (0.5-16)
Max. internal leakage cm ³ /min.	(cu.in./min.)	50 (3)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	44-56 (33-41)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-10A-3N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	RG10A301052100 R901111369
Seal kit coil		RG19A1PNBR7000 R934003569
Other technical data		See data sheet RE 18325-90

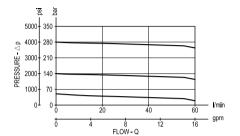
Electrical	
Type of voltage	12 DC voltage
Coil type	S5
Supply voltage	See data sheet RE 18325-90
Nominal voltage	± 10%
Power consumption W	23
Duty cycle %	100
Type of protection	See data sheet RE 18325-90

Note: Coils must be ordered separately.

Proportional valves pilot operated pressure reducing



Allowed back pressure at port 3 (Y): 5 bar (73 psi) max

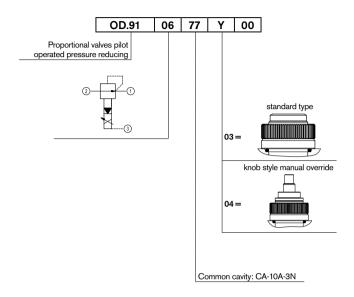


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3500 250	
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器 2500 1 150	
SS 2000 130	
1500 100	
ÿ 1000- 50	
<u> </u>	
01 00 20 40 60 80) 100 I Max.
% OF MAXIMUM CONTROL CURRE	:NT

	I	P bar (psi)	Coils
I min:	0.1 A	250 (3625)	12 DC
I max:	1.3 A	250 (3625)	12 DC
PMW Frequency: 120-150 Hz			
Hysteresis: <5%			

Note (1): It is recommended to use coil 12 DC.

Note (2): It is recommended to bleed air carefully before operation.



Туре	Material number	Туре	Material number
OD910677030000	R901118933		
OD910677040000	R901126868		

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RE 18323-68/01.10 Replaces: RE 00162-02/01.06

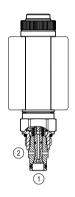
Proportional valves 2-way double lock normally closed

Common cavity, Size 08

VEP-5A-2T-06-NC

OD.95.31.18 - Y - 00







Cal	neral

aciiciai		
Weight - Valve	kg (lbs)	0.25 (0.55)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic

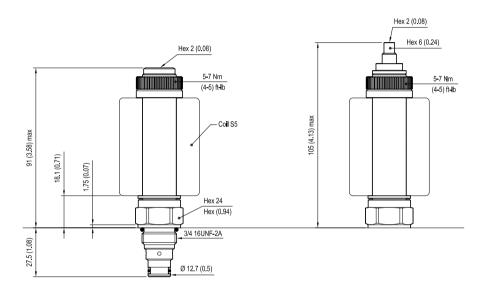
nyaraulic		
Max. operating pressure	bar (psi)	210 (3000)
Flow range	l/min.(gpm)	2-20 (0.5-5)
Max. internal leakage cm ³ /min.	(cu.in./min.)	1 (0.1)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	39-51 (29-38)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-08A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	
Seal kit coil	code material no.	RG19A1PNBR7000 R934003569
Other technical data		See data sheet RE 18325-90

Electrical

Licotricui		
Type of voltage		DC voltage
Coil type		S5
Supply voltage		12 DC
Nominal voltage		± 10%
Power consumption	W	23
Duty cycle	%	100
Type of protection		See data sheet RE 18325-90

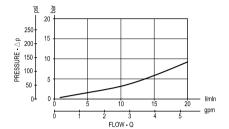
Dimensions

Proportional valves 2-way double lock normally closed



mm (Inches)

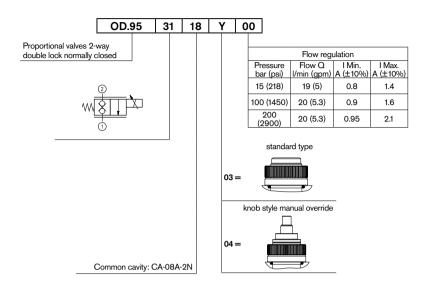
Performance graphs



	1	P bar (psi)	Coils	
I min:	0.2 A	15 (218)	12 DC	
I max:	1.5 A	140 (2030)	12 DC	
PMW Frequency: 120-150 Hz.				
Hysteresis: <5%				

Note: It is recommended to use coil 12 DC.

Ordering code



Туре	Material number	Туре	Material number
OD953118030000	R901113761		

Bosch Rexroth Oil Control S.p.A.
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RE 18323-63/01.10 Replaces: RE 00162-02/01.06

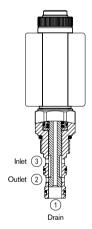
Proportional valves not compensated flow regulator

Common cavity, Size 10

VEP-5A-2Q-09

OD.92 - X - 77 - Y - Z









Version 05



Version 03: port 1 not used.

General

deliciai		
Weight	kg (lbs)	0.32 (0.71)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic

bar (psi)	210 (3000)
I/min.(gpm)	see flow diagram
(cu.in./min.)	100 (6)
°C (°F)	-20 to 80 (-4 to 176)
	Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Nm (ft-lbs)	44-56 (33-41)
	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
	CA-10A-3N see RE 18325-70
	See data sheet RE 18325-85
	RG10A3010520100 R901111369
code material no.	RG19A1PNBR7000 R934003569
	See data sheet RE 18325-90
	l/min.(gpm) (cu.in./min.) °C (°F) Nm (ft-lbs) code material no. code

(*) Measure at 210 bar (3000 psi). Oil at 46 cSt.

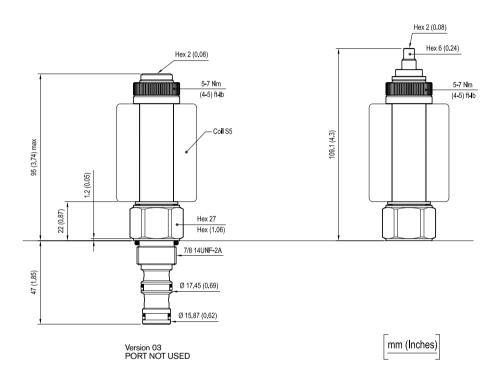
lootriool

Elec	trical		
Туре	of voltage		DC voltage
Coil t	уре		S5
Supp	ly voltage		12 DC
Nomi	nal voltage		± 10%
Powe	r consumption	W	23
Duty	cycle	%	100
Туре	of protection		See data sheet RE 18325-90

Note: Coils must be ordered sepately.

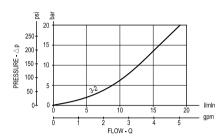
Dimensions

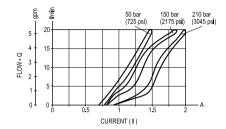
Proportional valves not compensated flow regulator



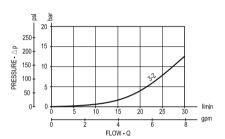
Performance graphs

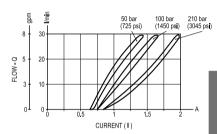
Z = 01



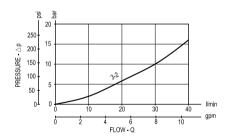


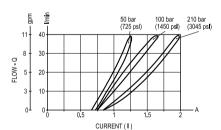
Z = 02





Z= 03



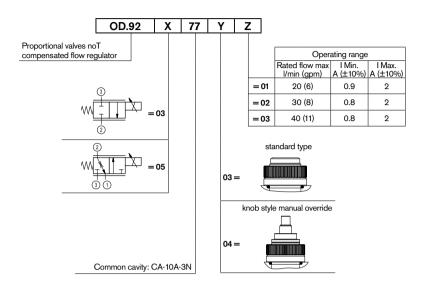


PMW Frequency: 120-150 Hz

Hysteresis: <5%

Note: It is recommended to use coil 12 DC.

Ordering code



Туре	Material number
OD920377030100	R934001518
OD920377030300	R934001520
OD920377040100	R934001521
OD920377040300	R934001522
OD920577030100	R934001524
OD920577040100	R934001526
0D920577040300	R934001528

Туре	Material number

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1/4 RE 18323-62/01.10 Replaces: RE 00162-02/01.06

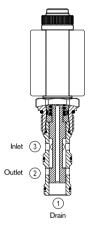
Proportional valves not compensated flow regulator

Common cavity, Size 12

VEP-5A-2Q-14

OD.92 - X - 12 - Y - 00









Version 03: port 1 not used.

Version 05



deliciai		
Weight	kg (lbs)	0.39 (0.86)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic

nyaraulic		
Max. operating pressure	bar (psi)	210 (3000)
Flow range	I/min.(gpm)	5-60 (1-16)
Max. internal leakage (*) cm ³ /min.	(cu.in./min.)	190 (12)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	81-95 (60-70)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-12A-3N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit		RG12A3010520100 R930000941
Seal kit coil		RG19A1PNBR7000 R934003569
Other technical data		See data sheet RE 18325-90

(*) Measured at 210 bar (3000 psi). Oil at 46 cSt.

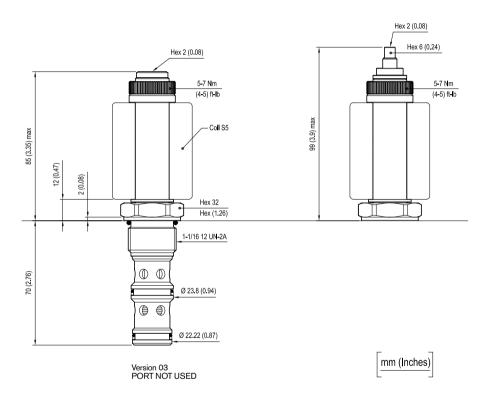
Flectrical

Electrical	
Type of voltage	DC voltage
Coil type	S5
Supply voltage	12 DC
Nominal voltage	± 10%
Power consumption W	23
Duty cycle %	100
Type of protection	See data sheet RE 18325-90

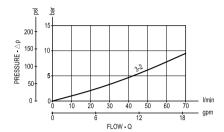
Note: Coils must be ordered separately.

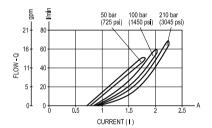
Dimensions

Proportional valves not compensated flow regulator



Performance graphs

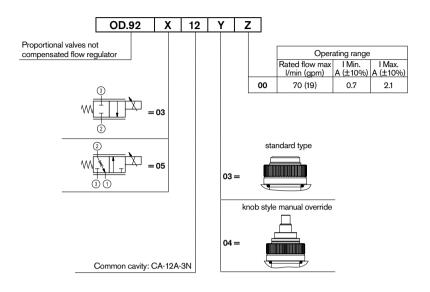




		ı	P bar (psi)	Coils	
Z=00	I min:	0.75 A	210 (3000)	12 DC	
Z=00	I max:	2.1 A	210 (3000)	12 DC	
PMW Frequency: 150-180 Hz					
Hysteresis: <5%					

Note: It is recommended to use coil 12 DC.

Ordering code



		Material number
R934001514		
R934001515		
R934001523		
	R934001515	R934001515

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RE 18323-64/01.10 Replaces: RE 00162-02/01.06

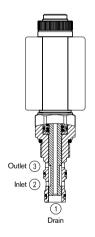
Proportional valves not compensated flow regulator

Common cavity, Size 10

VEP-5A-2Q-09

OD.92.02.77 - Y - Z







Port 1 not used

Cal	neral

aciiciai		
Weight	kg (lbs)	0.32 (0.71)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic

riyuraunc				
Max. operating pressure	bar (psi)	210 (3000)		
Flow range	l/min.(gpm)	See flow diagram		
Max. internal leakage (*) cm³/min	. (cu.in./min.)	100 (6)		
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)		
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)		
Installation torque	Nm (ft-lbs)	44-56 (33-41)		
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14		
Cavity		CA-10A-3N see RE 18325-70		
Line bodies		See data sheet RE 18325-85		
Seal kit		RG10A3010520100 R901111369		
Seal kit coil		RG19A1PNBR7000 R934003569		
Other technical data	-	See data sheet RE 18325-90		
(*) Management at 010 has (2000 and). Oil at 46 and				

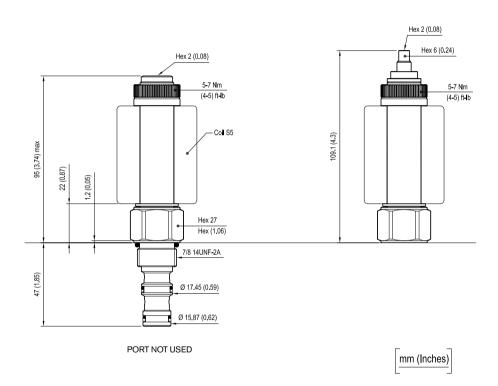
(*) Measured at 210 bar (3000 psi). Oil at 46 cSt.

Electrical

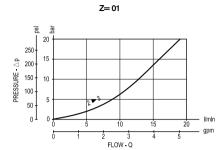
Liectrical		
Type of voltage		DC voltage
Coil type		S5
Supply voltage		12 DC
Nominal voltage		± 10%
Power consumption	W	23
Duty cycle	%	100
Type of protection		See data sheet RE 18325-90

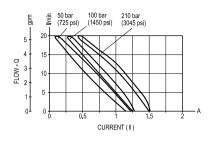
Dimensions

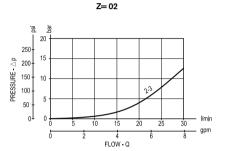
Proportional valves not compensated flow regulator

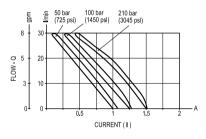


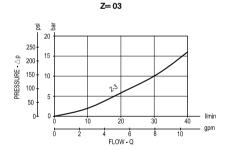
Performance graphs

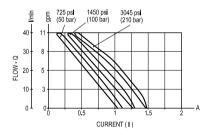








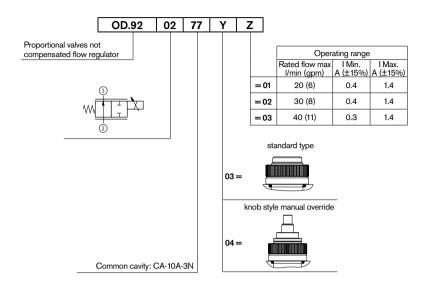




PMW Frequency: 120-150 Hz Hysteresis: <5%

Note: It is recommended to use coil 12 DC.

Ordering code



Туре	Material number	Туре	Material number
OD920277030100	R934001510		
OD920277040300	R934001513		

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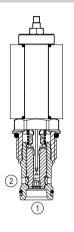
RE 18323-69/01.10 Replaces: RE 00162-02/01.06

Proportional valves poppet type not compensated flow regulator

Common cavity, Size 12

VEPN-12A OD.95.06.89.72.00







G	6	n	6	ra	ı

acilolai		
Weight	kg (lbs)	0.29 (0.64)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 90 (-22 to 194)

Hydraulic

пуагацію		
Max. operating pressure	bar (psi)	210 (3000)
Flow range	l/min.(gpm)	5-60 (1-16)
Max. internal leakage cm ³ /min.	(cu.in./min.)	10 (0.6)
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)
Fluids		Mineral-based or synthetics with lubricating properties at viscosities of 15 to 380 mm ² /s (cSt)
Installation torque	Nm (ft-lbs)	51-55 (38-41)
Filtration		Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14
Cavity		CA-12A-2N see RE 18325-70
Line bodies		See data sheet RE 18325-85
Seal kit	code material no.	RG12A2010520100 R901111377
Seal kit coil		RG16A1PMVQ0000 R934003594
Other technical data		See data sheet RE 18325-90

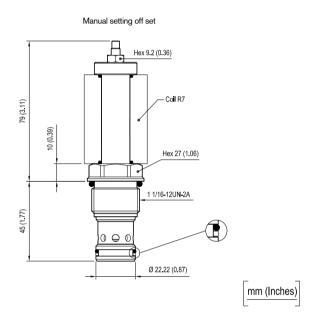
Electrical

Electrical		
Type of voltage		12 DC voltage
Coil type		R7
Supply voltage		12 DC
Nominal voltage		± 10%
Power consumption	W	18
Duty cycle	%	100
Type of protection		See data sheet RE 18325-90

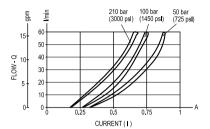
Note: Coils must be ordered separately.

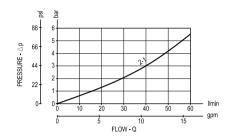
Dimensions

Proportional valves poppet type not compensated flow regulator



Performance graphs

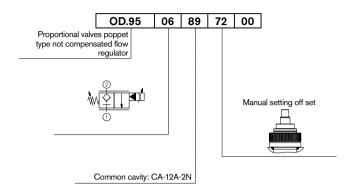




	I	P bar (psi)	Coils
I min:	0.3	210 (3000)	12 DC
I max:	0.85	210 (3000)	12 DC
PMW Frequency: 120-150 Hz			
Hysteresis: <5%			

Note: It is recommended to use coil 12 DC.

Ordering code



Туре	Material number	Туре	Material number
OD950689720000	R934001162		

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Solenoid cartridge valves

Coils and connectors

Designation	Data sheet	Page
Coils - connectors	18325-90	813

RE 18325-90/02.10 1/10 Replaces: RE 00162-02/01.06

Coils

Connectors



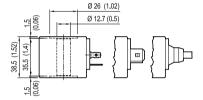
04

Summary

Description	Page
Coils	
Coil S8-356 - CLASS H - 20 W	2-3
Coil S8-356 - CLASS H - 17 W	4
Coil S5 - CLASS H	5
Coil S7 - CLASS H - 30 W	6
Coil S7 - CLASS H - 26 W	7
Coil R5 - CLASS H	8
Coil R7 - CLASS H	9

Description	Page
Connectors Connector IP67	10

COIL S8-356 - CLASS H - 20 W



mm / Inches

OD.02.17 - X - Y - Z

TECHNICAL DATA

Weight: 0.18 kg (0.40 lbs)

Heat insulation Class H: 180°C (356°F)

Ambient temperature range: -30/+60°C (-22/+140°F)

Inlet voltage fluctuations must not exceed $\pm 10\%$ of nominal voltage to obtain correct operation and long life coils.

Υ	Connections	Circuit	Voltage
30	DIN 43650 - ISO 4400	Standard	DC-RAC
30	AMP JUNIOR	Standard	DC
03	SINGLE LEAD	Standard	DC *
30	DIN 43650 - ISO 4400	Bidirectionl Diode	DC
30	AMP JUNIOR	Bidirectional Diode	DC
03	SINGLE LEAD	Bidirectional Diode	DC *
	30 03 30 30	30 DIN 43650 - ISO 4400 30 AMP JUNIOR 03 SINGLE LEAD 30 DIN 43650 - ISO 4400 30 AMP JUNIOR	30 DIN 43650 - ISO 4400 Standard 30 AMP JUNIOR Standard 03 SINGLE LEAD Standard 30 DIN 43650 - ISO 4400 Bidirectionl Diode 30 AMP JUNIOR Bidirectional Diode

* Length 300mm (11.8 inches). Ext. diameter 6.3mm (0.25 inches). External and internal Shealth Silicone rubber.

	Voltage V	Resistance Ohm (±7%)	Power W	Curr	ent A	ΔT °C (°F)
z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
	40.00				4.0	INOMINAL VOILAGE
OB	12 DC	7.2	20	1.7	1.2]
OG	14 DC	9.0	20	1.6	1.1	105-110 (221-230)
ос	24 DC	28.2	20	0.9	0.6	(221-230)
AC	26 DC	33.6	20	0.8	0.5	
OV	24 RAC	23.1	20	0.9	-	
ow	110 RAC	478.3	20	0.2	-	110-125 (230-257)
OZ	220 RAC	1919.9	20	0.1	-	(

Χ	Υ	Connections	Circuit	Voltage
20	30	DEUTSCH DT04-2P-L	Standard	DC
20	3P	DEUTSCH DT04-2P-V	Standard	DC
30	3P	AMP SUPERSEAL-V	Standard	DC
22	30	DEUTSCH DT04-2P-L	Bidirectionl Diode	DC
22	3P	DEUTSCH DT04-2P-V	Bidirectional Diode	DC
32	3P	AMP SUPERSEAL-V	Bidirectional Diode	DC

	Voltage V	Resistance Ohm (±7%)	Power W	Curre	ent A	ΔT °C (°F)
Z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
ОВ	12 DC	7.2	20	1.7	1.2	
ОС	24 DC	28.2	20	0.9	0.6	105-110 (221-230)
AC	26 DC	33.6	20	0.8	0.5	

These coils have passed the THERMAL SHOCK DUNK TEST

S8-DTL DEUTSCH DT04-2P-L IP69K	S8-DTV DEUTSCH DT04-2P-V IP69K	S8-ASV AMP SUPERSEAL-V IP69K
38.5 (1.52) 1.5 (0.06) (0.06)	Ø 26 (1.02) Ø 12.7 (0.5)	47.3 (1.86)
68 (2.68) 47.5 (1.87) 21.5 (0.85)	68.3 (2.69)	-63 (2.48)

3 (0.12)

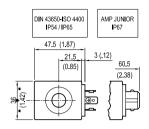
Preferred types (readily available)

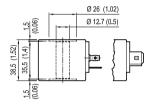
Туре	Material number
OD02170130AC00	R901058832
OD02170130OB00	R901090821
OD02170130OC00	R901083065
OD02170130OG00	R901144215
OD02170130OV00	R901090820
OD02170130OW00	R901087981
OD02170130OZ00	R901085466
OD02170730AC00	R934000494
OD02170730OB00	R901094604
OD02170730OC00	R901094607
OD02170730OG00	R934000498
OD02170G03OB00	R901100773
OD02170G03OC00	R901100775
OD02171430OB00	R901131889
OD02171430OC00	R901121821
OD02171530AC00	R901133139

Туре	Material number
OD02171530OB00	R901111032
OD02171530OC00	R901125292
OD02172030OB00	R901094609
OD02172030OC00	R901094611
OD0217203PAC00	R934000509
OD0217203POB00	R901110014
OD0217203POC00	R901110015
OD02172230OB00	R901130433
OD02172230OC00	R901130401
OD02172230OG00	R934003033
OD0217223POB00	R901120671
OD0217223POC00	R901114602
OD0217303PAC00	R934000516
OD0217303POB00	R901110016
OD0217323POB00	R934000519

Further types available by request

COIL S8-356 - CLASS H - 17 W





mm / Inches

OD.02.27 - X - Y - Z

TECHNICAL DATA

Weight: 0.18 kg (0.40 lbs)

Heat insulation Class H: 180°C (356°F)

Ambient temperature range: -30/+80°C (-22/+176°F)

Inlet voltage fluctuations must not exceed $\pm 10\%$ (not welded solenoid type) $\pm 15\%$ (other welded solenoid type) of nominal voltage to obtain correct operation and long life coils.

. . .

Х	Υ	Connections	Circuit	Voltage
01	30	DIN 43650 - ISO 4400	Standard	DC
07	30	AMP JUNIOR	Standard	DC

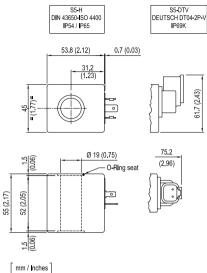
	Voltage V	Resistance Ohm (±7%)	Power W	Current A		ΔT °C (°F)
Z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
ОВ	12 DC	8.4	17	1.4	1.0	85-90
OG	14 DC	11.4	17	1.2	0.8	(185-194)
ОС	24 DC	33.7	17	0.7	0.5	

Preferred types (readily available)

Туре	Material number	Туре	Material number
OD02270730OG00	R934003645		
			·

Further types available by request

COIL S5 - CLASS H - 20 W



OD.02.09 - X - Y - Z - 01

TECHNICAL DATA

Weight: 0.47 kg (1.04 lbs)

Heat insulation Class H: 180°C (356°F)

Ambient temperature range: -30/+70°C (-22/+158°F)

Inlet voltage fluctuations must not exceed ±10% of nominal voltage to obtain correct operation and long life coils.

Х	Υ	Connections	Circuit	Voltage
20	3P	DEUTSCH DT-04-2P-V	Standard	DC
22	3P	DEUTSCH DT-04-2P-V	Bidirectional Diode	DC

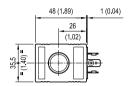
	Voltage V	Resistance Ohm (±7%)	Power W	Current A		ΔT °C (°F)
Z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
ОВ	12 DC	6.2	23	1.9	1.4	92-96 (198-205)
ОС	24 DC	24.9	23	1.0	0.7	(196-205)

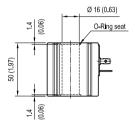
Preferred types (readily available)

Туре	Material number	Туре	Material number
OD02090130OB01	R901090827	OD0209203POC01	R901110012
OD02090130OC01	R901090828	OD0209223POB01	R901090829
OD0209203POB01	R901110011	OD0209223POC01	R901110013
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COIL S7 - CLASS H - 30 W

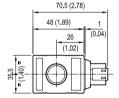


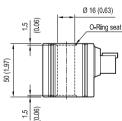




mm / Inches







mm / Inches

Preferred types (readily available)

Туре	Material number
OD02070130OB02	R901090824
OD02070130OC02	R901090825
OD02072030OB02	R901094589
OD02072030OG02	R934000349

OD.02.07 - X - Y - Z - 02

TECHNICAL DATA

Weight: 0.33 kg (0.73 lbs)

Heat insulation Class H: 180°C (356°F)

Ambient temperature range: -30/+60°C (-22/+140°F)

Inlet voltage fluctuations must not exceed ±10% of nominal voltage to obtain correct operation and long life coils.

Х	Υ	Connections	Circuit	Voltage	
01	30	DIN 43650 - ISO 4400	Standard	DC	

	Voltage V	Resistance Ohm (±7%)	Power W	Current A		ΔT °C (°F)
Z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
ОВ	12 DC	4.8	30	2.5	1.8	
ос	24 DC	18.8	30	1.2	0.9	120-140 (248-284)
						(240-284)

Х	Υ	Connections	Circuit	Voltage
20	30	DEUTSCH DT04-2P	Standard	DC
22	30	DEUTSCH DT04-2P	Bidirectionl Diode	DC

	Voltage V	Resistance Ohm (±7%)	Power W	Curre	ent A	ΔT °C (°F)
Z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
ОВ	12 DC	4.8	30	2.5	1.8	
OG	14 DC	6.5	30	2.1	1.4	120-140 (248-284)
ОС	24 DC	18.8	30	1.2	0.9	(= := == :,

Available on request: different voltages, working duty Ed 50 %

These coils have passed the THERMAL SHOCK DUNK TEST

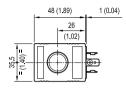
Note: for general information see "Section 7 - Techinal Data"

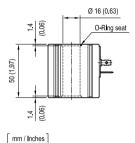
Туре	Material number
OD02072230OG02	R934000355
OD02072030OC02	R901094594
OD02072230OB02	R901094595
OD02072230OC02	R901094597

COIL S7 - CLASS H - 26 W

OD.02.37 - X - Y - Z - 02







TECHNICAL DATA

Weight: 0.33 kg (0.73 lbs) Encapsulating material: IXEF

Heat insulation Class H: 180°C (356°F)

Ambient temperature range: -30/+80°C (-22/+176°F)

Inlet voltage fluctuations must not exceed $\pm 15\%$ of nominal voltage to obtain correct operation and long life coils.

X	Υ	Connections	Circuit	Voltage
01	30	DIN 43650 - ISO 4400	Standard	DC

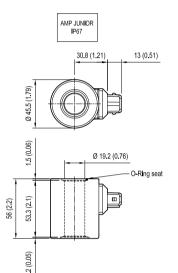
	Voltage V	Resistance Ohm (±7%)	Power W	Curr	ent A	ΔT °C (°F)
z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F)
						Nominal voltage
ОВ	12 DC	5.5	26	2.2	1.6	
ОС	24 DC	2.9	26	1.1	0.8	100-120 (212-248)
						(212-248)

Preferred types (readily available)

Туре	Material number	Туре	Material number
OD02370130OC02	R934003700		
-		-	
-			

COIL R5 - CLASS H - 33 W

OD.02.10 - X - Y - Z - 00



TECHNICAL DATA

Weight: 0.42 kg (0.93 lbs)

Heat insulation Class H: 180°C (356°F)

Ambient temperature range: -30/+60°C (-22/+140°F)

Inlet voltage fluctuations must not exceed $\pm 10\%$ of nominal voltage to obtain correct operation and long life coils.

X	Υ	Connections	Circuit	Voltage	
07	30	AMP JUNIOR	Standard	DC	
* Length 300mm (11.8 inches). Ext. diameter 6.3mm (0.25 inches). External and internal Shealth Silicone rubber.					

	Voltage V	Resistance Ohm (±7%)	Power W	Curre	ent A	∆T °C (°F)
Z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
ОВ	12 DC	4.3	33	2.7	1.9	120-140
ОС	24 DC	17.5	33	1.4	0.8	(248-284)

Preferred types (readily available)

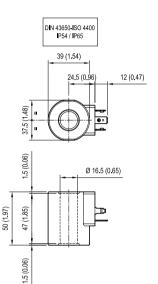
mm / Inches

Туре	Material number	Туре	Material number
OD02100730OB00	R934001175		
		· ·	

Further types available by request

COIL R7 - CLASS H - 18 W

OD.02.21 - X - Y - Z - 00



TECHNICAL DATA

Weight: 0.31 kg (0.71 lbs)

Heat insulation Class H: 180°C (356°F)

Ambient temperature range: -30/+80°C (-22/+284°F)

Inlet voltage fluctuations must not exceed $\pm 15\%$ of nominal voltage to obtain correct operation and long life coils.

Х	Υ	Connections	Circuit	Voltage
01	30	DIN 43650 - ISO 4400	Standard	DC

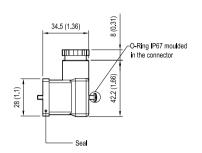
	Voltage V	Resistance Ohm (±7%)	Power W	Curre	ent A	ΔT °C (°F)
Z	Nominal	Ta = 20-25°C (68-77°F)	Cold coil	Cold coil	Hot coil	1 hour energized at Ta=20-25°C (68-77°F) Nominal voltage
ОВ	12 DC	7.9	18	1.5	1.1	90-105
						(194-221)

Preferred types (readily available)

mm / Inches

Туре	Material number	Туре	Material number
OD02210130OB00	R934001302		
		-	

CONNECTOR IP67 - EN 175301-803-A (DIN 43650) / ISO 4400



mm /	Inches	1

TECHNICAL DATA				
Number of poles		2 + Earth		
Nominal current capacity	10	А		
Max. current capacity	16	А		
Contact resistance	4	mΩ		
Max. wire section area	1.5 mm ²	(0.06 inches ²)		
Cable gland thread Pg 9		DIN 40430		
Tightening torque	3-4 Nm	(2.2-3.0 ft-lbs)		
Cable diameter	6-8 mm	(0.24-0.31 inches)		
Electrical insulation Class C		DIN VDE 0110		
Protection class IP67		DIN 40050 Part 9		
Only with protection seal properly mounted				
IMPORTANT: all products shown in this page are not avai-				

lable from stock and not included in our standard price list. Please contact our Sales Department for any information.

	STANDARD CIRCUIT		OD.01.68.01.00.00.00		
CIRCUIT WITH VDR		CUIT WITH VDR	OD.01.68.07.00 - Y - 00		
	Υ	VOL	LTAGE		
	OB	12 V DC			

Υ	VOLTAGE		
ОВ	12 V DC		
ос	24 V DC		

Туре	Material number
OD01680700OB00	R934003707
OD01680700OC00	R934003708

CIRCUIT WITH FULL RECTIFIER

220 RAC

OD.01.68.02 - X - Y - 00

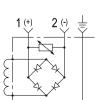
196 V DC

Х		DIODE CURRENT CAPACITY		
00	3 A	suitable for all coils		
01	1 A	only for S8 coils		
Υ	VOLTAGE	INLET	RECTIFIED	
ow	110 RAC	110 V AC	98 V DC	

220 V AC

WAVE

Material number
R934003709
R934003710
R934003711
R934003712





ΟZ

High pressure cartridge valves

Mechanical

Designation	Description	p _{max} in bar	q_v in I/min	Data sheet	Page
Pressure relief valve, pilot operated	MHDBV	420	240	64605	825
Pressure relief and anti-cavitation valve, pilot operated	MHDBN	420	400	64602	833
3-way pressure reducing valve, direct operated	MHDRDB	315	11	18111-04	845
Check valve, pilot-to-open	KED 2	350	120	18117-01	853
Check valve, pilot-to-close	KGD 2	350	160	18117-02	861
Shuttle valve	MHSU	420	10	18205	869
2-way logic element, direct operated	MH2DAD	420	2,5	64586	875

Pressure relief valve, pilot operated

RE 64605/03.09

1/8

Type MHDBV (high-performance)

Sizes 16 and 22 Component series 3X Maximum operating pressure 420 bar Maximum flow 240 l/min



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Contents Page Features Ordering code 2 2 Standard types Function, section, symbol 3 Technical data 4 Characteristic curves 5 Unit dimensions, sections 7 Mounting cavities 8 Available individual components

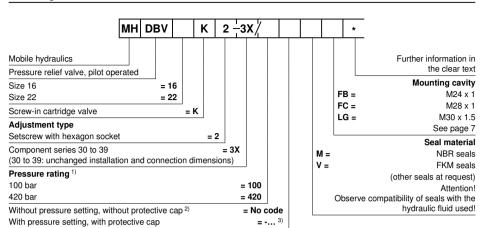
Features

- Cartridge valve
- For mobile applications
- Pressure ratings from 100 to 420 bar

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code



¹⁾ The values refer to the screw-in cartridge valve. When installing the valve into a housing, make sure that the set pressure of the screw-in cartridge valves does not exceed the potentially lower value of the housing!

Set to 300 bar: ...420-300...

(Pressure setting with q_{Vmax} = 10 l/min)

Attention!

Factory-set valves are secured by means of a protective cap. In case of subsequent adjustment, the warranty will forfeit!

Standard types

Туре	Material number	Mounting cavity (see page 7)	Characteristic curve (see page 5)
MHDBV 16 K2-3X/100MFB	R901188456	FB	D1
MHDBV 16 K2-3X/420MFB	R901188404	FB	D1
MHDBV 22 K2-3X/100MFC	R901188510	FC	D2
MHDBV 22 K2-3X/420MFC	R901188506	FC	D2

²⁾ Protective cap separately available, material no. **R900168151**

³⁾ Example:

Function, section, symbol

The pressure valve type MHDBV is a pilot operated pressure relief valve for installation in block constructions. It is used for limiting the system pressure. The system pressure is set via the adjustment element (4).

Pressure relief function

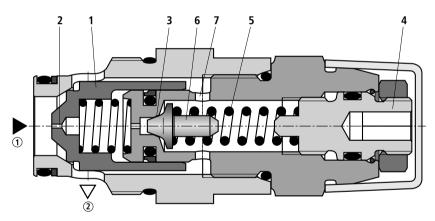
In its initial position, the valve is closed. The pressure in the main port $\widehat{0}$ acts on the spool (1). Simultaneously, the pressure is - via the orifice (2) - applied to the spring-loaded side of the spool (1) and to the pilot poppet (6). If the pressure in the main port $\widehat{0}$ exceeds the value set at the spring (5), the pilot poppet opens (6). Via the orifice (3) and the channel (7), the hydraulic fluid from the spring-loaded side of the spool flows into the main port $\widehat{0}$. The pressure drop created in this way moves the spool (1) and thus opens the connection of the main port $\widehat{0}$ to $\widehat{0}$ while maintaining the pressure set at the spring (5). The pilot oil is returned internally via the channel (7) to the main port $\widehat{0}$.

Mote!

- The maximum operating pressure is the sum of the set pressure and backpressure at main port ②.
- The pilot operated pressure valves are almost leak-free, according to their design.

Symbol





Type MHDBV...

- 1 = Main port 1 (P)
- 2 = Main port 2 (T)

Technical data (For applications outside these parameters, please consult us!)

general	
Weight kg	See page 6
Installation position	Any
Ambient temperature range °C	-20 to +80 (NBR seals) -20 to +80 (FKM seals)
Surface protection	The valve doesn't have any surface protection. Surface protection is to be ensured by painting the components and/ or the whole assembly (e.g. valve with housing).

hydraulic

Maximum operating	- Main port ① (P)	bar	100; 420		
pressure	- Main port ② (T)	bar	50		
Maximum flow		l/min	See characteristic curves on page 5		
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524 ¹⁾ ; Quickly biodegradable hydraulic fluids according to VDMA 24568 (also see RE 90221); HETG (rape seed oil) ¹⁾ ; HEPG (polyglycols) ²⁾ ; HEES (synthetic esters) ²⁾ ; other hydraulic fluids upon request		
Hydraulic fluid temperature range °C			-30 to +80 (NBR seals) -20 to +80 (FKM seals)		
Viscosity range mm ² /s			10 to 380		
	ee of contamination of the s according to ISO 4406		Class 20/18/15 ³⁾		
Load cycles			2 mio		

¹⁾ Suitable for NBR and FKM seals

For the filter selection, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

IF Note!

The technical data was determined at a viscosity of v = 41 mm²/s (HLP46, ϑ_{Oil} = 40 °C ±5 °C).

The minimum cracking pressure lies over 0.5 bar. Thus, a supply pressure \geq 4 bar is recommended.

The following documentation must be observed: RE 64020-B1 "Hydraulic valves for mobile applications"

Attention!

Under conditions of use at an operating pressure of < 30 bar and a flow of < 30 l/min, valves with another design are to be selected from our valve program.

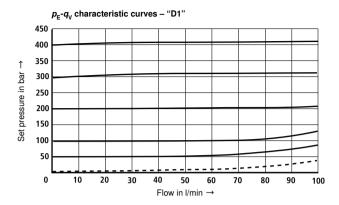
The maximum operating pressure is the sum of the set pressure and backpressure!

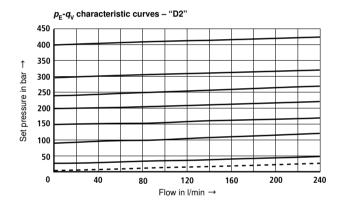
²⁾ Only suitable for FKM seals

³⁾ The cleanliness classes specified for the components must be complied with in hydraulic systems. Efficient filtration prevents malfunctions and simultaneously increases the service life of the components.

05

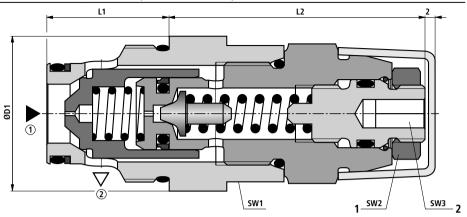
Characteristic curves (measured with HLP46, ϑ_{Oil} = 40 °C ± 5 °C)



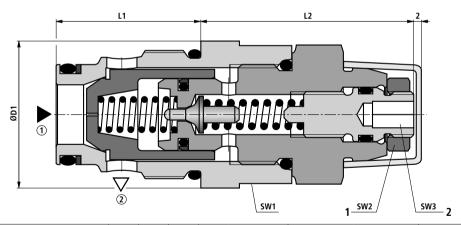


Performance limit

Unit dimensions, sections (dimensions in mm)



				Width across flats			Tightening to	Weight	
Туре	ØD1	L1	L2	SW1	SW2	SW3	SW1	SW2	in kg
MHDBV 16 K2-3X/100MFB	27.3	21.5	45.0	24	16	5	90	15	0.18
MHDBV 16 K2-3X/420MFB	27.3	21.5	45.0	30	16	5	90	15	0.18

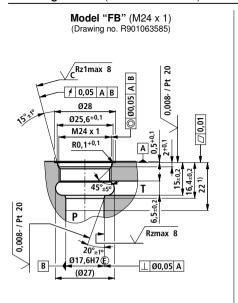


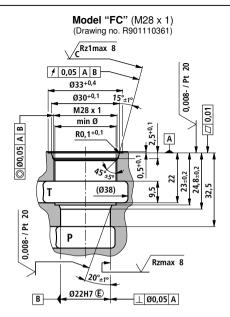
				Width across flats			Tightening to	orque in Nm 1)	Weight
Туре	ØD1	L1	L2	SW1	SW2	SW3	SW1	SW2	in kg
MHDBV 22 K2-3X/100MFC	32.0	31.5	46.4	30	16	5	100	15	0.24
MHDBV 22 K2-3X/420MFC	32.0	31.5	46.4	30	16	5	100	15	0.24

- 1 Lock nut
- 2 Hexagon socket
- 1 = Main port 1 (P)
- 2 = Main port 2 (T)

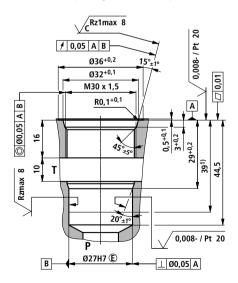
- 1) Friction coefficients, tightening torques and preload forces interact with each other. The friction coefficients are influenced by surface microstructure, material pairing, etc.
 - It is thus recommended to check the screwing behavior with original components and basic application conditions.

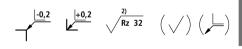
Mounting cavities (dimensions in mm)





Model "LG" (M30 x 1.5) (Drawing no. R901110408)



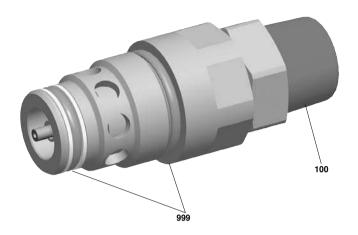


- 1) Depth of fit
- 2) Visual inspection

All seal ring insertion chamfers are rounded and free from burrs

Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances	DIN 1685/1686 GTB16
General tolerances for chip- producing processes	DIN ISO 2768-mk
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

Available individual components



Item	Designation	Seal material	Material no.
100	Protective cap separately available	_	R900168151
999	Seal kit of the valve for mounting cavity "FB"	FKM	R961003378
999	Seal kit of the valve for mounting cavity "FC"	FKM	R961003380
999	Seal kit of the valve for mounting cavity "LG"	FKM	R961003397

Seal kits with NBR seals upon request.

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 Fax +49 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent.

The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.

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Pressure relief and anti-cavitation valve, pilot operated

RE 64602/03.09

Type MHDBN (high-performance)

Sizes 16 to 32 Component series 3X Maximum operating pressure 420 bar Maximum flow 400 l/min



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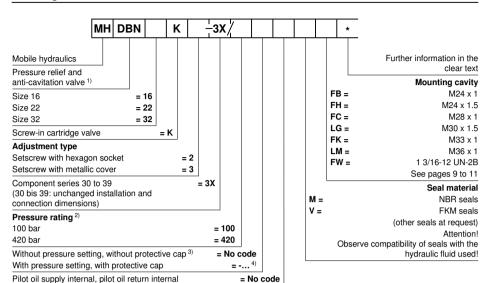
Features

- Screw-in cartridge valve
- For mobile applications
- Pressure ratings from 100 to 420 bar
- Versatile applications for pressure relief and anti-cavitation functions

05

Information on available spare parts: www.boschrexroth.com/spc

Ordering code



- Minimum cracking pressure see characteristic curve page 7 ("E1" – "E3").
- 2) The values refer to the screw-in cartridge valve. When installing the valve into a housing, make sure that the setting pressure of the screw-in cartridge valves does not exceed the potentially lower value of the housing!
- 3) Protective cap separately available, material no. R900168151
- 4) Example:
 Set to 300 bar: ...420-300...
 (Pressure setting at q_{Vmax} = 10 l/min)

Attention!

Factory-set valves are secured by means of a protective cap. In case of subsequent adjustment, the warranty will forfeit!

Standard types

Туре	Material number	Mounting cavity (see pages 9 to 11)	Characteristic curve (see pages 6 and 7)
MHDBN 16 K2-3X/100VFB	R901161659	FB	D1 / E1
MHDBN 16 K2-3X/100VFH	R901161672	FH	D1 / E1
MHDBN 16 K2-3X/420VFB	R901161947	FB	D1 / E1
MHDBN 16 K2-3X/420VFH	R901162185	FH	D1 / E1
MHDBN 22 K2-3X/100MFW	R901162201	FW	D2 / E2
MHDBN 22 K2-3X/100VFC	R901162202	FC	D2 / E2
MHDBN 22 K2-3X/420VFC	R901162378	FC	D2 / E2
MHDBN 22 K2-3X/420VLG	R901162524	LG	D2 / E2
MHDBN 32 K2-3X/100VFK	R901162658	FK	D3 / E3
MHDBN 32 K2-3X/420VFK	R901162717	FK	D3 / E3
MHDBN 32 K2-3X/420VLM	R901162838	LM	D3 / E3

Symbol

Pilot oil supply internal, pilot oil return internal Model "**No code**"



- 1 = Main port 1 (P)
- 2 = Main port 2 (T)

Function, sections

The pressure valve type MHDBN is a pilot operated pressure relief valve for installation in blocks. It is used for limiting the system pressure. The system pressure is set via the adjustment spindle (4).

Pressure relief function

In its initial position, the valve is closed. The pressure in main port 1 acts on the spool (1). Simultaneously, the pressure is - via the orifice (2) - applied to the spring-loaded side of the spool (1) and to the pilot poppet (6). If the pressure in the main port 1 exceeds the value set at the spring (5), the pilot poppet opens (6). Via the orifice (3) and the channel (7), hydraulic fluid from the spring-loaded side of the spool flows into the main port 2. The pressure drop created in this way moves the spool (1) and thus opens the connection of the main port 1 to 2 while maintaining the pressure set at the spring (5). The pilot oil is returned to the main port 2 internally via the channel (7).

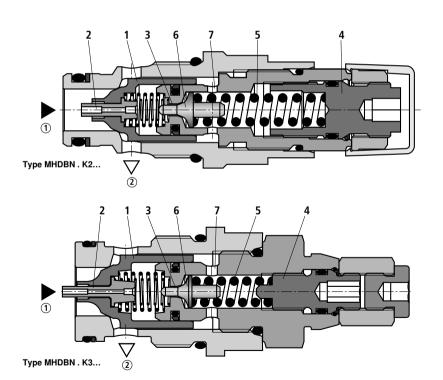
Feed function

The anti-cavitation function makes up for lacking oil volumes caused, for example, by leakage, when pressure valves respond or in the case of leading loads.

If the pressure at the main port ① is smaller than the one at the main port ②, the spool (1) is moved to the right. Hydraulic fluid flows from the main port ② to the main port ①.

Mote!

- The maximum operating pressure is the sum of setting pressure and backpressure at the main port ②.
- The pilot operated pressure valves are almost leak-free, according to their design.



- 1 = Main port 1 (P)
- 2 = Main port 2 (T)

Technical data (For applications outside these parameters, please consult us!)

general	
Weight kg	See page 8
Installation position	Any
Ambient temperature range °C	-20 to +80 (NBR seals) -20 to +80 (FKM seals)
Surface protection	The valve doesn't have any surface protection. Surface protection is to be ensured by painting the components and/ or the whole assembly (e.g. valve with housing).

hydraulic

Maximum	- Main port 1 (P)	bar	100; 420	
operating pressure	- Main port ② (T)	bar	50	
Maximum flow		l/min	See characteristic curves page 6 and 7	
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524 ¹⁾ ; quickly biodegradable hydraulic fluids according to VDMA 24568 (also see RE 90221); HETG (rape seed oil) ¹⁾ ; HEPG (polyglycols) ²⁾ ; HEES (synthetic esters) ²⁾ ; other hydraulic fluids upon request	
Hydraulic fluid temperatur	e range	°C	-30 to +80 (NBR seals) -20 to +80 (FKM seals)	
Viscosity range mm ² /s		10 to 380		
Max. admissible degree of fluid - cleanliness class ac		Class 20/18/15 ³⁾		
Load cycles		2 mio		

¹⁾ Suitable for NBR and FKM seals

For the filter selection, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

■ Note!

The technical data was determined at a viscosity of ν = 41 mm²/s (HLP46, ϑ_{Oil} = 40 °C ±5 °C).

Minimum cracking pressure see characteristic curve page 7.
The following documentation must be observed:
RE 64020-B1 "Hydraulic valves for mobile applications"

Attention!

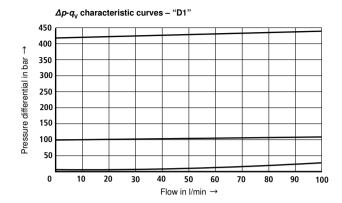
Under conditions of use with an operating pressure of < 30 bar and a flow of < 30 l/min, valves of another design are to be selected from our valve program.

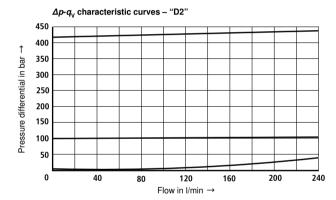
The maximum operating pressure is the sum of set pressure and backpressure!

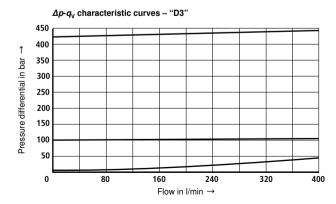
²⁾ Only suitable for FKM seals

³⁾ The cleanliness classes specified for the components must be complied with in hydraulic systems. Efficient filtration prevents malfunctions and simultaneously increases the service life of the components.

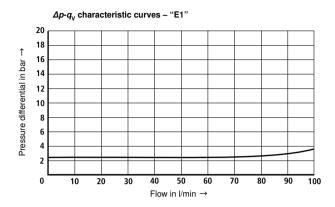
Characteristic curves (measured with HLP46, ϑ_{Oil} = 40 °C ± 5 °C)

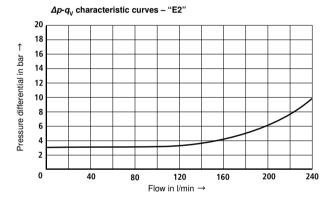


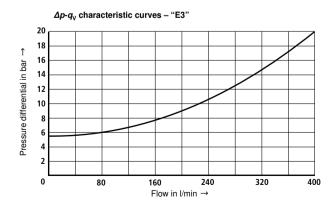




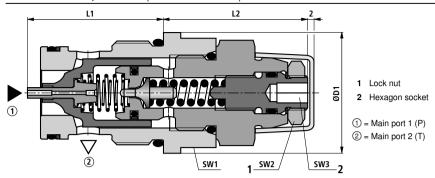
Characteristic curves (measured with HLP46, ϑ_{Oil} = 40 °C ± 5 °C)



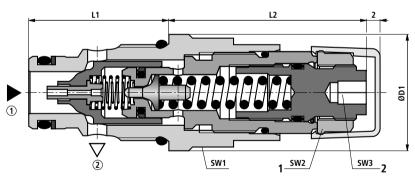




Unit dimensions, sections (dimensions in mm)



				Width across flats			Tightening torque in Nm 1)		Weight
Туре	ØD1	L1	L2	SW1	SW2	SW3	SW1	SW2	in kg
MHDBN 16 K2-3X/100VFB	27.3	24.3	45.0	24	16	5	90	15	0.17
MHDBN 16 K2-3X/420VFB	27.3	24.3	45.0	24	16	5	90	15	0.18
MHDBN 22 K2-3X/100MFW	34.0	33.7	41.8	32	16	5	100	15	0.30
MHDBN 22 K2-3X/100VFC	32.0	34.7	46.4	30	16	5	100	15	0.28
MHDBN 22 K2-3X/420VFC	32.0	34.7	46.4	30	16	5	100	15	0.28
MHDBN 32 K2-3X/100VFK	37.0	40.9	46.1	34	16	5	150	15	0.40
MHDBN 32 K2-3X/420VFK	37.0	40.9	46.1	34	16	5	150	15	0.40



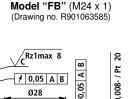
				Width across flats			Tightening to	Weight	
Туре	ØD1	L1	L2	SW1	SW2	SW3	SW1	SW2	in kg
MHDBN 16 K2-3X/100VFH	29.0	35.0	46.8	24	17	5	100	20	0.21
MHDBN 16 K2-3X/420VFH	29.0	35.0	46.8	24	17	5	100	20	0.21
MHDBN 22 K2-3X/420VLG	34.5	38.5	49.2	30	17	5	100	20	0.25
MHDBN 32 K2-3X/420VLM	41.0	47.4	46.0	36	17	5	150	20	0.45

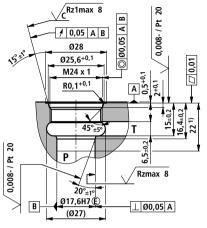
¹⁾ Friction coefficients, tightening torques and preload forces interact with each other. The friction coefficients are influenced by surface microstructure, material pairing, etc.

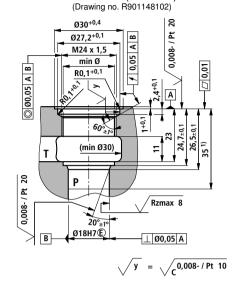
It is thus recommended to check the screwing behavior with original components and basic application conditions.

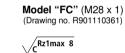
Model "FH" (M24 x 1.5)

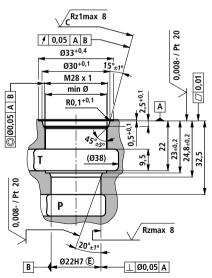
Mounting cavities (dimensions in mm)

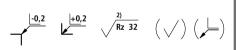










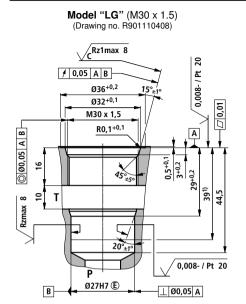


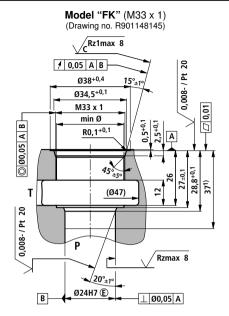
- 1) Depth of fit
- 2) Visual inspection

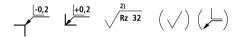
All seal ring insertion chamfers are rounded and free from burrs

Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances	DIN 1685/1686 GTB16
General tolerances for chip- producing processes	DIN ISO 2768-mk
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

Mounting cavities (dimensions in mm)







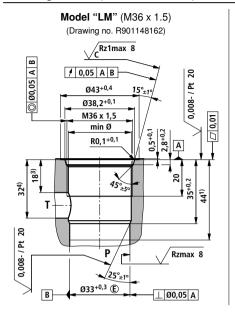
¹⁾ Depth of fit

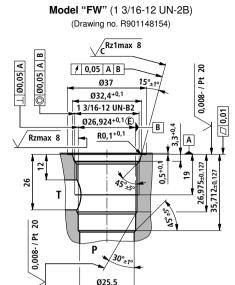
All seal ring insertion chamfers are rounded and free from burrs

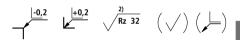
Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances	DIN 1685/1686 GTB16
General tolerances for chip- producing processes	DIN ISO 2768-mk
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

²⁾ Visual inspection

Mounting cavities (dimensions in mm)





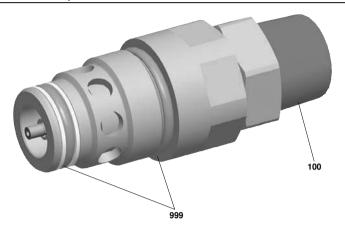


- 1) Depth of fit
- 2) Visual inspection
- 3) Minimum dimension
- 4) Maximum dimension

All seal ring insertion chamfers are rounded and free from burrs

Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances	DIN 1685/1686 GTB16
General tolerances for chip- producing processes	DIN ISO 2768-mk
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

Available individual components



Item	Designation	Seal material	Material no.
100	Protective cap separately available	-	R900168151
999	Seal kit of the valve for mounting cavity "FB"	FKM	R961003378
999	Seal kit of the valve for mounting cavity "FC"	FKM	R961003380
999	Seal kit of the valve for mounting cavity "FH"	FKM	R961003387
999	Seal kit of the valve for mounting cavity "FK"	FKM	R961003389
999	Seal kit of the valve for mounting cavity "FW"	FKM	R961003748
999	Seal kit of the valve for mounting cavity "LG"	FKM	R961003397
999	Seal kit of the valve for mounting cavity "LM"	FKM	R961003398

Seal kits with NBR seals upon request.

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1/8

3-way pressure reducing valve, direct operated

RE 18111-04/05.09

Replaces: 06.08

Type MHDRDB (Standard Performance)

Size 4
Component series 1X
Maximum operating pressure 315 bar
Maximum flow 11 l/min



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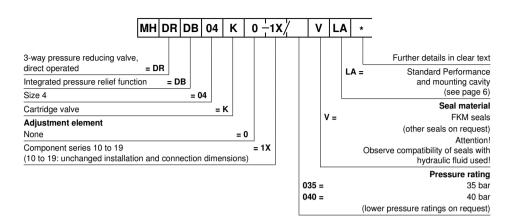
Features

- Cartridge valve
- Mounting cavity R/LA
- 2 pressure ratings, optional (35 and 40 bar)
- Versatile use for pressure reducing functions with leakage oil drain to channel T
 - Integrated pressure relief function

05

Information on available spare parts: www.boschrexroth.com/spc

Ordering code



Standard types

Pressure rating	Туре	Material number
35 bar	MHDRDB 04 K0-1X/035VLA	R900641606
40 bar	MHDRDB 04 K0-1X/040VLA	R900751628

Function, section, symbol

General

Direct operated 3-way pressure reducing valves of type MHDRDB are used to reduce a system pressure. They basically consist of control spool (1), compression spring (2) and spring plate (3).

Pressure reducing function

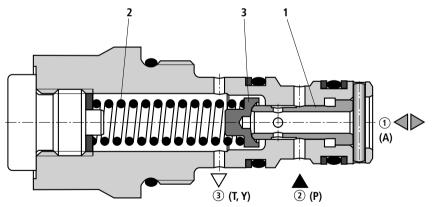
In the starting position the valve is closed. Hydraulic fluid flows from main port 0 to 0. When the pressure in main port 0 increases to the value preset on compression spring (2), the connection from 0 to 0 is closed. A further increase in the system pressure (main port 0) has no longer an influence on the pressure in main port 0 (pressure-holding function). Pressure losses in main port 0 (actuator) are compensated for by the valve.

Pressure relief function

When the pressure in main port ① exceeds the set value, control spool (1) is shifted against compression spring (2) and main port ① is connected to ③. An undesirable increase in pressure in main port ① is additionally prevented by lifting spring plate (3) off the control spool (1).

The pressure in main port 1 increases in dependence on the inlet pressure and flow (see characteristic curves on page 5).

Symbol (1)



- \bigcirc = main port 1 (A)
- ② = main port 2 (P)
- ③ = main port 3 (T, Y)

Technical data (for applications outside these parameters, please consult us!)

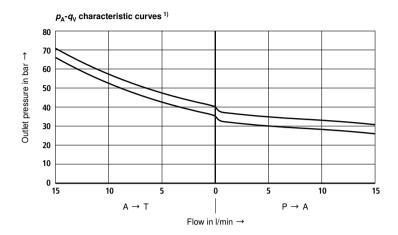
General		
Weight	kg	0.17
Installation position		Optional
Ambient temperature range	°C	-20 to +80
Surface protection		The valves are not provided with any surface protection. Surface protection must be ensured by paint-coating of the components or the entire assembly (e.g. valve with housing).
Hydraulic		
Maximum operating pressure - main port ② (P)	bar	315
Maximum control pressure 1) – main port ① (A)	bar	35, 40
Maximum tank pressure 1) - main port ③ (T, Y)	bar	10
Maximum flow	l/min	11
Hydraulic fluid		Mineral oil (HL, HLP) to DIN 51524; fast bio-de- gradable hydraulic fluids to VDMT 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polygly- cols); HEES (synthetic esters); other hydraulic fluids on request
Hydraulic fluid temperature range	°C	-20 to +80
Viscosity range	mm²/s	10 to 800
Permissible max. degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c)		Class 20/18/15 ²⁾
Load cycles		2 million

¹⁾ The tank pressure (main port ③) adds to the set control pressure (main port ①).

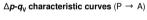
For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

²⁾ The cleanliness classes specified for components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, prolongs the service life of components.

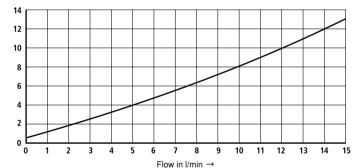
Characteristic curves (measured with HLP46, ϑ_{oil} = 40 ±5 °C)



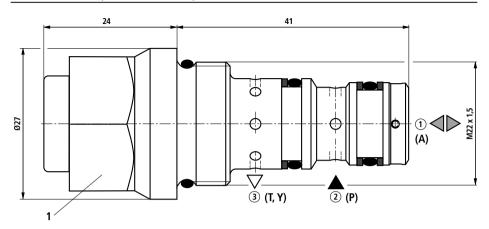
1) The characteristic curves for the pressure relief function are valid at an outlet pressure of 0 within the entire flow range!



Pressure differential in bar →



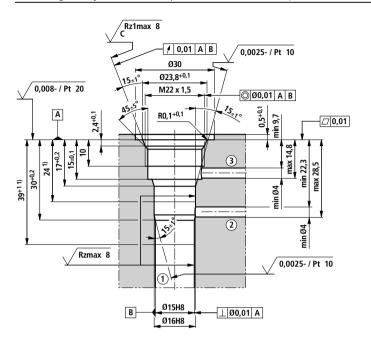
Unit dimensions (dimensions in mm)



1 Hexagon 24 A/F, tightening torque M_T = 60 ±5 Nm

Screw-in hole see page 7.

Mounting cavity R/LA: 3 main ports, thread M22 x 1.5 (dimensions in mm)











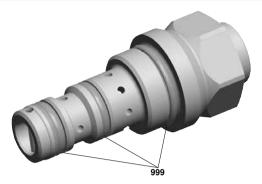


- 1 = main port 1 (A)
- 2 = main port 2 (P)
- ③ = main port 3 (T, Y)

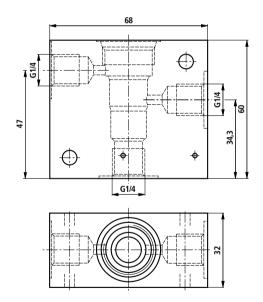
Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances for chip-pro- ducing processes	DIN ISO 2768-mK
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

¹⁾ Depth of fit

Available individual components



Item	Designation	Material no.
999	Valve seal kit	R900870592
	Housing FTDRE 4 G10/01 G1/4, M22X1.5 (see below)	R900862813



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1/8

Check valve, pilot-to-open

RE 18117-01/02.10

Replaces: 04.07

Type KED (High Performance)

Component size 2 Component series A Maximum operating pressure 350 bar Maximum flow 120 l/min



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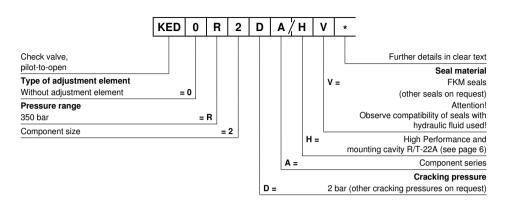
Features

- Cartridge valve
- Mounting cavity R/T-22A
- For installation into blocks
- Leak-free closure in one direction
- Pilot-to-open
- Various cracking pressures, on request
- Vented

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code



Standard types

Туре	Material number
KED0R2D A /HV	R901098783

Further standard types and components can be found in the EPS (standard price list).

Function, section, symbol

General

Cartridge valves of type KED are pilot-to-open check valves of poppet design without regulating function. They can be opened in the direction of checking.

They basically consist of housing (1), poppet (2), compression spring (3) and pilot spool (4).

These valves are used to isolate pressurised working circuits, to prevent loads from lowering in the case of pipe rupture or creeping movements of hydraulically isolated actuators

Function

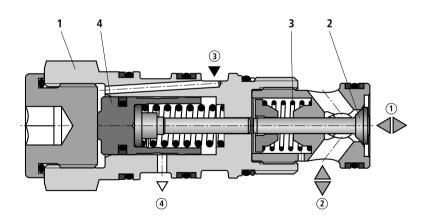
Cartridge valves of type KED allow a free flow from main port ② to main port ①. In the opposite direction, poppet (2) is held on its seat by the spring force of compression spring (3) and additionally by the system pressure. As main port ③ is pressurized, the sealed pilot spool (4) is shifted to the right. This causes poppet (2) to be pushed from its seat. The spring side of pilot spool (4) is always connected to main port ④. Now, fluid can also flow through the valve from main port ① to ②.

To allow reliable opening of the valve via pilot spool (4), a certain minimum pilot pressure is required (see characteristic curve on page 5).

To prevent malfunction, main port 4 (leakage port) must not be blocked.







- 1 = Main port 1 (B)
- (2) = Main port 2 (A)
- ③ = Main port 3 (X)
- (4) = Main port 4 (Y)

Technical data (for applications outside these parameters, please consult us!)

General		
Weight	kg	0.44
Installation position		Optional
Ambient temperature range	°C	-40 to +110

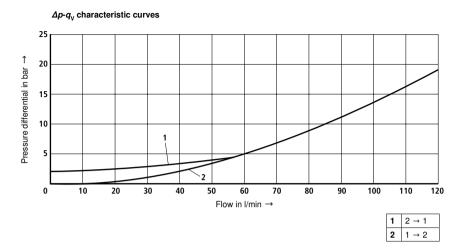
Hydraulic

, · · · ·		
Max. operating pressure - Main ports ①, ②, ④	bar	350
Maximum pilot pressure – Main port ③	bar	350
Maximum flow	l/min	120
Hydraulic fluid		Mineral oil (HL, HLP) to DIN 51524; fast bio-degradable hydraulic fluids to VDMA 24568 (see also data sheet 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids on request
Hydraulic fluid temperature range	°C	-40 to +110
Viscosity range	mm²/s	2.8 to 500
Permissible max. degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c)		Class 20/18/15 ¹⁾
Maximum leakage	cm ³ /min	< 0.05
Opening ratio		2.5:1

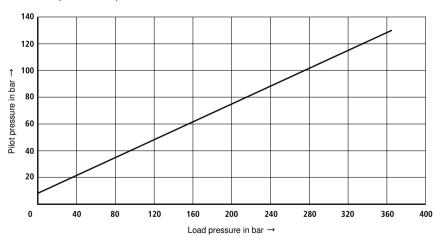
¹⁾ he cleanliness class stated for the components must be adhered too in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life.

For the selection of filters see catalogue sheets 50070, 50076, 50081, 50086, 50087 and 50088.

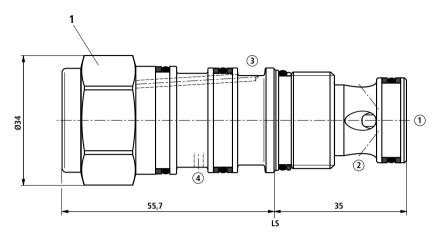
Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C)



Pilot pressure/load pressure characteristic curve



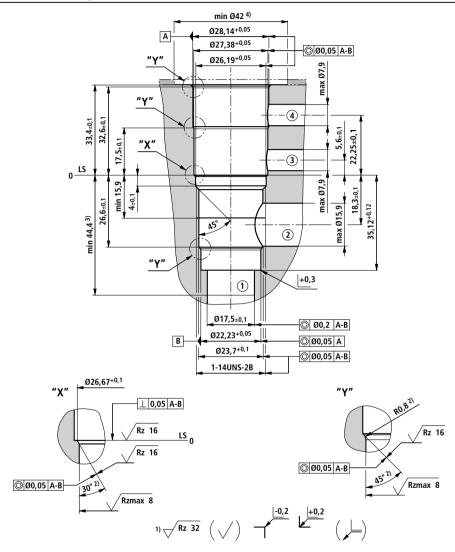
Unit dimensions (dimensions in mm)



- 1 30 A/F, tightening torque $M_T = 100^{+10} \text{ Nm}$
- 1 = Main port 1 (B)
- ② = Main port 2 (A)
- ③ = Main port 3 (X)
- (4) = Main port 4 (Y)
- LS = Location shoulder

Mounting cavity R/T-22A; 4 main ports; thread 1-14UNS-2B

(dimensions in mm)



¹⁾ Deviating from T-22A

Tolerance for all angles ±0.5°

²⁾ All seal ring insertion faces are rounded and free from burrs

³⁾ Depth for moving parts

⁴⁾ with countersink

^{1 =} Main port 1 (B)

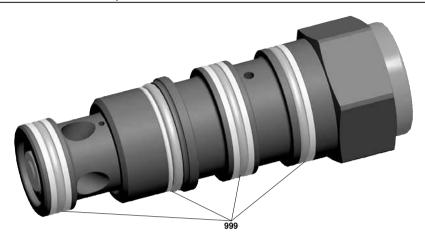
^{2 =} Main port 2 (A)

③ = Main port 3 (X)

^{4 =} Main port 4 (Y)

LS = Location shoulder

Available individual components



Item	Designation	Material no.
999	Valve seal kit	R961003252

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1/8

Check valve, pilot-to-close

RE 18117-02/02.10

Replaces: 04.07

Type KGD (High Performance)

Component size 2 Component series A Maximum operating pressure 350 bar Maximum flow 160 l/min



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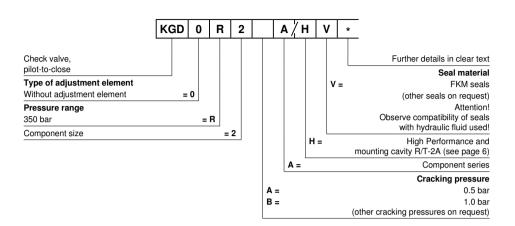
Features

- Cartridge valve
- Mounting cavity R/T-2A
- 2 For installation into blocks
- 2 Leak-free closure in one direction
 - Pilot-to-close
 - Various cracking pressures, on request

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code



Standard types

Туре	Material number
KGD0R2AA/HV	R901093734
KGD0R2BA/HV	R901093814

Further standard types and components can be found in the EPS (standard price list).

Function, section, symbol

General

Valves of type KGD are pilot-to-close check valves, which are closed in the initial position.

They basically consist of plug screw (1), piston (2), compression spring (3) and pilot spool (4).

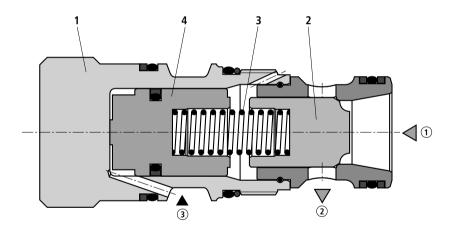
These valves are primarily used in rapid speed circuits.

Function

Cartridge valves of type KGD allow free flow from main port ① to main port ②. The reverse flow from main port ② to ① is impossible.

The pressure in main port ③ counteracts the pressure in main port 1 at a ratio of 1.8:1 and holds the cartridge valve closed (checking position).





- 1 = Main port 1 (A)
- 2 = Main port 2 (B)
- 3 = Main port 3 (X)

Technical data (for applications outside these parameters, please consult us!)

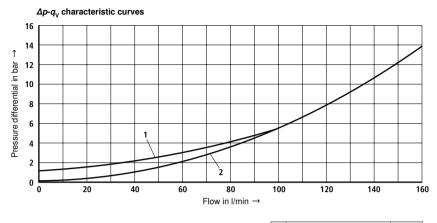
General		
Weight	kg	0.3
Installation position		Optional
Ambient temperature range	°C	-40 to +110
Hydraulic Max. operating pressure – Main ports ①, ②	bar	350
Maximum pilot pressure - Main port 3	bar	350
Maximum flow	l/min	160
Hydraulic fluid		Mineral oil (HL, HLP) to DIN 51524; fast bio-degradable

hydraulic fluids to VDMA 24568 (see also data sheet 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids on request °C Hydraulic fluid temperature range -40 to +110 mm²/s Viscosity range 2.8 to 500 Permissible max. degree of contamination of the Class 20/18/15 1) hydraulic fluid - cleanliness class to ISO 4406 (c) cm³/min Maximum leakage < 0.05 Closing ratio 1.8:1

For the selection of filters see catalogue sheets 50070, 50076, 50081, 50086, 50087 and 50088.

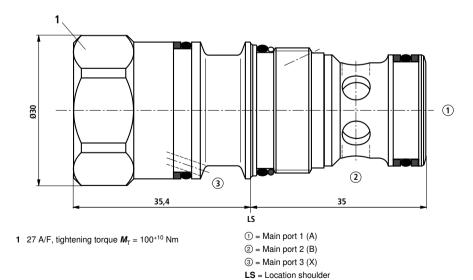
¹⁾ The cleanliness class stated for the components must be adhered too in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life.

Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C)

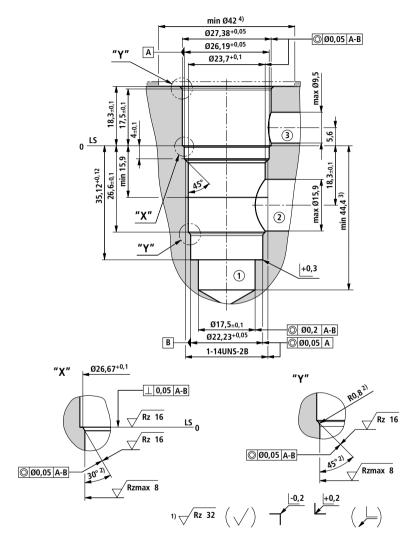


1	Cracking pressure 1.0 bar	1 → 2
2	Cracking pressure 0.5 bar	1 → 2

Unit dimensions (dimensions in mm)



Mounting cavity R/T-2A; 3 main ports; thread 1-14UNS-2B (dimensions in mm)



¹⁾ Deviating from T-2A

Tolerance for all angles ± 0.5°

 $^{^{\}rm 2)}$ All seal ring insertion faces are rounded and free from burrs

³⁾ Depth for moving parts

⁴⁾ with countersink

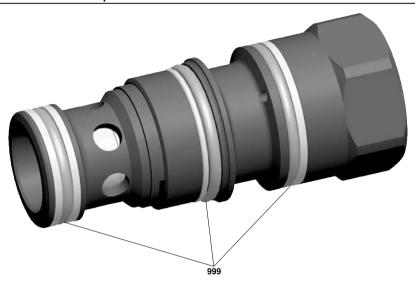
^{1 =} Main port 1 (A)

② = Main port 2 (B)

^{3 =} Main port 3 (X)

LS = Location shoulder

Available individual components



Item	Designation	Material no.
999	Valve seal kit	R961003250

Notes

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1/6

Shuttle valve

RE 18205/01.09

Type MHSU

Size 2 and 3 Component series 1X Maximum operating pressure 420 bar Maximum flow 10 l/min



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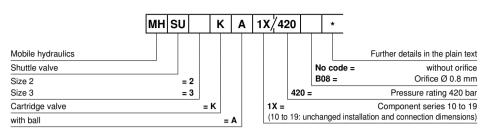
Features

- Cartridge valve
- For mobile applications
- Pressure rating 420 bar
- Available in 2 sizes (2 and 3)

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code



Standard types

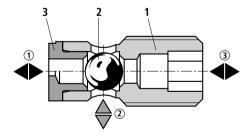
Туре	Material number
MHSU 2 KA1X/420	R900541374
MHSU 2 KA1X/420 B08	R900545233
MHSU 3 KA1X/420	R901071225

Function, section, symbol

The shuttle valve type MHSU is an isolator valve with two inputs ① and ③ as well as one output ②.

It basically comprises housing (1), ball (2) and pressed-in valve seat with/without orifice (3).

The input with the higher pressure is automatically connected with the joint output ② while the other input is blocked.





- 1 = Input "A"
- 2 = Output "B"
- 3 = Input "C"

Technical data (For applications outside these parameters, please consult us!)

general			
Size	NG	2	3
Weight	g	approx. 5	approx. 9
Installation position		Any	
Ambient temperature range	°C	-20 to +80	
Surface protection		Without	

hydraulic

Maximum operating pressure bar	420
Maximum flow I/min	see characteristic curves page 4
Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524; quickly bio- degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range °C	-30 to +80
Viscosity range mm ² /s	10 to 380
Maximum permitted degree of contamination of the hydraulic fluid – cleanliness class according to ISO 4406 (c)	Class 20/18/15 ¹⁾
Load cycles	2 Mio.

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Efficient filtration prevents malfunctions and at the same time prolongs the service life of components.

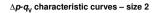
For the selection of the filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 5008, and RE 50088.

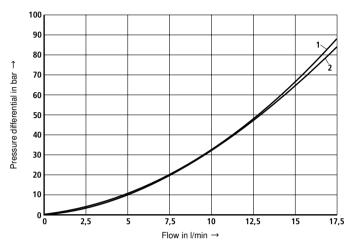
Mote!

The technical data was determined with a viscosity of ν = 41 mm²/s (HLP46, ϑ_{oil} = 40 °C \pm 5 °C).

The following documentation must be observed: RE 64020-B1 "Hydraulic valves for mobile applications"

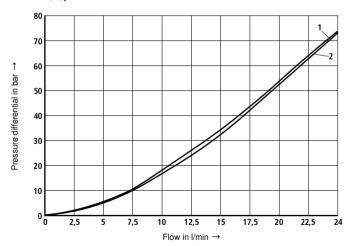
Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C)





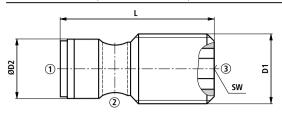


Δp - q_v characteristic curves – size 3



1	② → ③
2	1) → (3)

Unit dimensions (dimensions in mm)



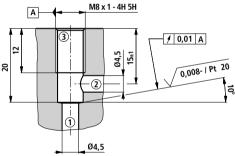
Size	L	D1	ØD2	sw	Tightening torque in Nm 1)
2	20	M8 x 1	6,4	4	7
3	22	M10 x1	8	5	10

¹⁾ The specified tightening torques are reference values. Friction coefficients, tightening torques, and preload forces interact with each other. The friction coefficients are influenced by the surface microstructure, material pairing, etc. Thus, we recommend checking the mounting characteristics with genuine parts and boundary conditions.

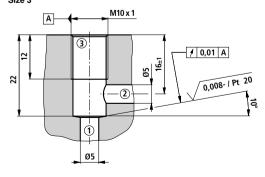
- 1 = Input "A"
- 2 = Output "B"
- (3) = Input "C"

Mounting cavities (dimensions in mm)



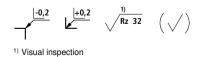


Size 3



Standards:

Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances for metal-cutting procedures	DIN ISO 2768-mK
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302



Available individual components



Description	Unit size	Material number	Flow	Weight in g
PLUG SCREW MHSU 2 A/B/C	2	R901221771	10/2/3	5.2
PLUG SCREW MHSU 3 A/B/C	3	R901149008	0/2/3	8.9
PLUG SCREW MHSU 2 A-B/C	2	R901221774	(1)-(2)/(3)	4.8
PLUG SCREW MHSU 3 A-B/C	3	R901081617	0-273	7.8
PLUG SCREW MHSU 2 A/B-C	2	R901221780	(1)/(2)-(3)	5.0
PLUG SCREW MHSU 3 A/B-C	3	R901081616	1 0/2-3	8.1

^{1 =} Input "A"

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^{2 =} Output "B"

③ = Input "C"



2-way logic element, direct operated

RE 64586/05.08 Replaces: 02.07

1/8

Type MH2DAD (Standard Performance)

Size 3 Component series 1X Maximum operating pressure 420 bar Maximum flow 2.5 l/min



Table of contents

Contents Page Features Ordering code 2 Standard types Function, section, symbol 3 Technical data Unit dimensions 5 Mounting cavity 7 Circuit example Available individual components 8

Features

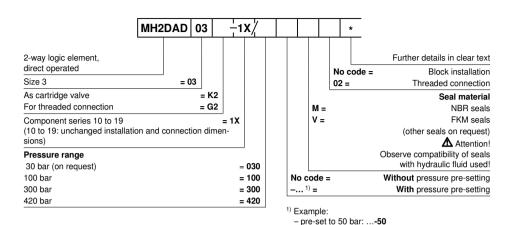
- As cartridge valve
- With pressure shut-off function for load-sensing pressure
- 2 For threaded connection
 - Mounting cavity R/MH2DAD
 - Various pressure ranges, optional

Information on available spare parts:

www.boschrexroth.com/spc

05

Ordering code



Standard types

Туре	Material number
MH2DAD 03 K2-1X/100M	R900521594
MH2DAD 03 K2-1X/300M	R900882730
MH2DAD 03 K2-1X/420M	R900905541

Туре	Material number
MH2DAD 03 G2-1X/100M02	R900571284
MH2DAD 03 G2-1X/300M02	R900979194
MH2DAD 03 G2-1X/420M02	R900906304

Further standard types and components can be found in the EPS (standard price list).

Function, section, symbol

General

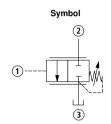
Logic elements with pressure shut-off function of type MH2DAD reduce the load-sensing pressure (in short: LS pressure) in proportion to an external pressure. As the pilot pressure increases, the LS pressure is proportionally reduced from $\boldsymbol{p}_{\text{max}}$ to zero.

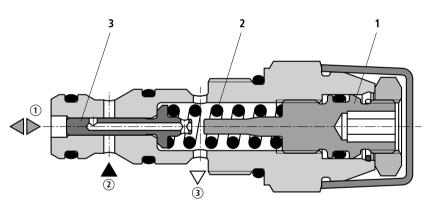
For the application of the valves, see circuit example on page 7.

The spring force is adjusted by means of the adjustment element (1) (for pressure adjustment, see page 4). The valves basically consist of adjustment element (1), control spring (2) and control spool (3).

Function

In the starting position, the valve is closed. When the pressure in main port \bigodot (P_{st}) increases to the value set by means of adjustment element (1), control spool (3) opens the connection from main port \bigodot (P) to main port \bigodot (T, Y). The pressure in port \bigodot (P) is reduced in proportion to the pressure increase in main port \bigodot (P_{st}).





- 1 = Main port 1 (P_{st})
- ② = Main port 2 (P)
- 3 = Main port 3 (T, Y)

Technical data (for applications outside these parameters, please consult us!)

General			
Weight - Cartri	idge valve	kg	0.1
- Hous	ing (without valve)	kg	0.6
Installation position	n		Optional
Ambient temperat	ure range	°C	-20 to +80
Surface protection			The valves are not provided with surface protection. Surface protection must be enured by painting the components or the entire assembly (e.g. valve with housing).
Hydraulic			
Maximum operat-	- Main port ① (P _{st})	bar	420
ing pressure	- Main port ② (P)	bar	350
	- Main port ③ (T, Y)	bar	50
Maximum pres-	- Version 030	bar	30
sure setting 1)	- Version 100	bar	100
	- Version 300	bar	300
	- Version 420	bar	420
Maximaler Volum	enstrom	l/min	2.5
Hydraulic fluid			Mineral oil (HL, HLP) to DIN 51524 ²⁾ ; fast bio-degradable hydraulic fluids to VDMA 24568 (see also RE 90221); HETG (rape-seed oil) ²⁾ ; HEPG (polyglycols) ³⁾ ; HEES (synthetic esters) ³⁾ ; other hydraulic fluids on enquiry
Hydraulic fluid temperature range °C		°C	-30 to +80 (NBR seals) -20 to +80 (FKM seals)
Viscosity range mm ² /s		mm ² /s	10 to 380
Permissible max. degree of contamination of the			Class 20/18/15 ⁴⁾

2 million

(Example: Pilot pressure **p**_{st} 300 bar → pressure range 420 bar)

hydraulic fluid - cleanliness class to ISO 4406 (c)

Load cycles

4) The cleanliness class stated for the components must be adhered too in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life.

For the selection of filters see catalogue sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

Adjustment of the pressure setting

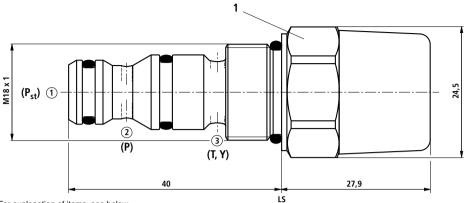
	bar/turns
Version 030	on request
Version 100	60
Version 300	160
Version 420	290

 $^{^{\}rm 1)}$ The pressure range must be selected so that the maximum spring force is greater than the maximum pilot pressure in port $\rm P_{st}$

²⁾ Suitable for NBR and FKM seals

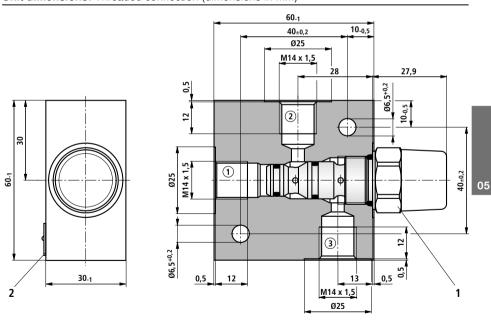
³⁾ Suitable only for FKM seals

Unit dimensions: Cartridge valve (dimensions in mm)



For explanation of items, see below

Unit dimensions: Threaded connection (dimensions in mm)

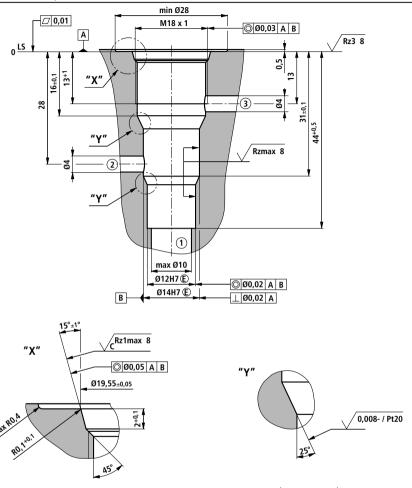


- 1 22 A/F, tightening torque $M_T = 60 \pm 10 \text{ Nm}$
- 2 Nameplate

- 1 = Main port 1 (P_{st})
- ② = Main port 2 (P)
- ③ = Main port 3 (T, Y)
- LS = Location shoulder

Mounting cavity R/MH2DAD.K; 3 main ports; thread M18 x 1

(dimensions in mm)



Tolerance for all angles ±0.5°

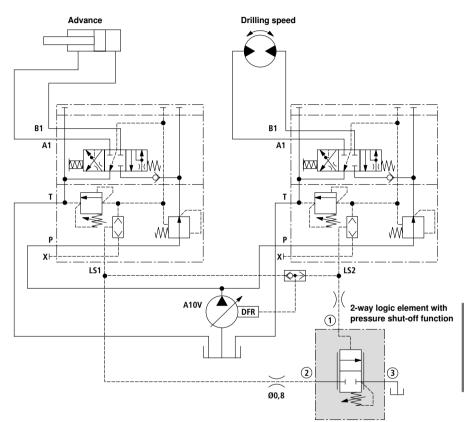
- 1 = Main port 1 (P_{st})
- ② = Main port 2 (P)
- 3 = Main port 3 (T, Y)
- LS = Location shoulder

¹⁾ All seal ring insertion faces are rounded and free from burrs

Circuit example

⚠ Attention!

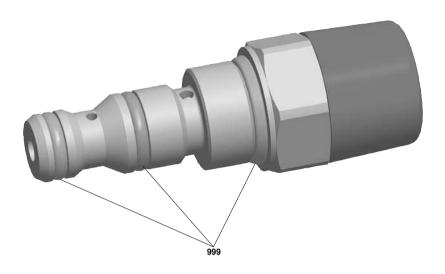
No system responsibility on the part of Bosch Rexroth can be derived from this circuit example!



- 1 = Main port 1 (P_{st})
- ② = Main port 2 (P)
- 3 = Main port 3 (T, Y)

This circuit example is suitable for an automatic anti-jamming system of a drill rig. When the drill rod jams, the rotational pressure increases and valve type MH2DAD reduces (limits) the LS pressure of the advance valve accordingly and the flow via the 2-way pressure compensator.

Available individual components



Item Designation		Material no.
999	DICHTUNGSSATZ R/MH2DAD.K1X/	R961003368
GEHAEUSE MH2DAD 03 G10/02 M14X1,5		R900826055

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High pressure cartridge valves

Solenoid on-off

Designation	Description	p _{max} in bar	q_V in I/min	Data sheet	Page
2/2 directional poppet valve, direct operated with solenoid actuation	KSDE U/R 8	500	5	18136-12	885
2/2 directional seat valve, direct operated with solenoid actuation	KSDE U/R 1	500	20	18136-20	893
3/2 directional seat valve, direct operated with solenoid actuation	KSDE U/R 1	500	12	18136-21	901
2/2 directional spool valve, direct operated with solenoid actuation	KKDER 8	350	45	18136-08	909
3/2 directional spool valve, direct operated with solenoid actuation	KKDER 8	350	30	18136-09	919
2/2 directional spool valve, direct operated with solenoid actuation	KKDER 1	350	55	18136-06	929
3/2 directional spool valve, direct operated with solenoid actuation	KKDER 1	350	60	18136-04	939
4/2 directional spool valve, direct operated with solenoid actuation	KKDER 1	350	40	18136-05	949
Pressure relief valve, pilot operated	MHDBW	420	400	64608	959

1/8

2/2 directional poppet valve, direct operated with solenoid actuation

RE 18136-12/06.08

Replaces: 04.07

Type KSDE (High Performance)

Component size 8 Component series B Maximum operating pressure 500 bar Maximum flow 5 I/min



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Ordering code	2
Valve types	2
Available coils	2
Function, section, symbols	3
Technical data	4
Voltage tolerance versus ambient temperature	5
Characteristic curves	5
Performance limits	5
Unit dimensions	6
Mounting cavity	7
Available individual components	8

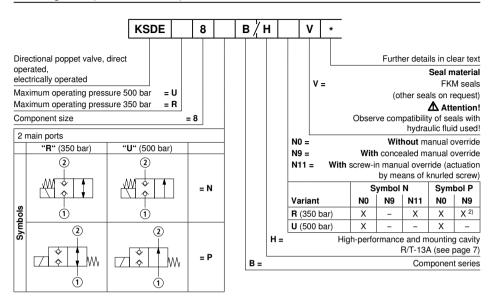
Features

- Pilot valve
- Mounting cavity R/T-8A
- 2 Direct operated directional poppet valve with solenoid actua-
- tion, leak-free on both sides
- Closed port is leak-free blocked
- Reliable operation even after longer periods of standstill
 - Wet-pin DC voltage solenoids
- Solenoid coil can be rotated

Available individual components: www.boschrexroth.com/spc

05

Ordering code (valve without coil) 1)



Valve types (without coil) 1)

	Operating pressure 350 bar				
Spool symbol	Туре	Material no.			
N	KSDER8NB/HN0V	R901085000			
IN	KSDER8NB/HN11V	R901207100			
Р	KSDER8PB/HN0V	R901085005			
P	KSDER8PB/HN9V	R901207098			

Operating pressure 500 bar				
Spool symbol	Туре	Material no.		
N	KSDEU8NB/HN0V	R901085007		
Р	KSDEU8PB/HN0V	R901085009		

Available coils (separate order) 1)

	Material no. for coil with component plug 3)				
DC voltage DC ⁴⁾	"K4" 03-pin (2+PE) DIN EN 175301-803	"K40" 02-pin K40 DT 04-2PA, make: Deutsch	"C4" 02-pin C4/Z30 AMP Junior-Timer		
12 V	R900991678	R900729189	R900315818		
24 V	R900991121	R900729190	R900315819		

¹⁾ Valves assembled completely with coil on request

²⁾ Screw-in manual override "N10" (actuation via hexagon socket with locknut) to be ordered separately, Material no. R901051231; ordering code "N9"!

³⁾ Mating connectors (separate order), see RE 08006

⁴⁾ Further voltages on request

Function, section, Symbols

General

2/2 directional poppet valves are direct operated, pressurebalanced cartridge valves. They basically consist of the screw-in section (1), solenoid (4) as well as closing element (3) and compression spring (2).

Function

The starting position of the valve (normally open "P" or normally closed "N") is determined by the position of closing element (3) and the arrangement of compression spring (2). Due to their constructive design, 2/2 directional poppet valves are always pressure-balanced in relation to the actuating forces. Main ports ① and ② can be loaded to an operating pressure of 350/500 bar (see page 4).

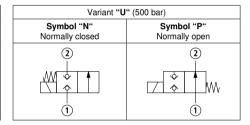
Attention!

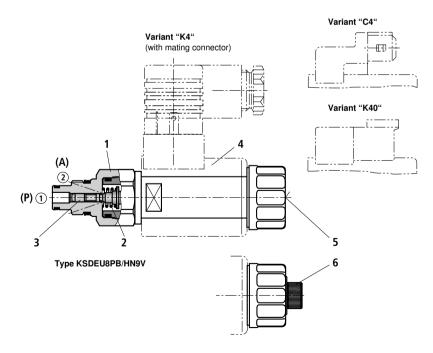
A flow is only permitted in the direction of the arrow (see Symbols)! With variant "U" (operating pressure 500 bar) main port ① must be connected to pump port P!

With symbol "P" closing element (3) is pressed onto the seat by solenoid (4), with symbol "N" by compression spring (2). The flow is leak-free blocked.

With the help of the manual override the valve can be operated without energization of the solenoid. The manual override is available as concealed variant "N9" (5) or as screw-in variant "N1" (6) (see page 2).

Variant "R" (350 bar)		
Symbol "N" Normally closed	Symbol "P" Normally open	
②		





Technical data (for applications outside these parameters, please consult us!)

General			
Weight	- Valve	kg	0.30
	– Coil	kg	0.25
Installation position			Optional
Ambient temperature range °C		°C	-40 to +110

Н١	d	ra	ııl	ic
	/u	a	u	

Maximum operating pres-	– Variant "U"	bar	500 (in all ports, if P ≥ A; for design-inherent reasons)	
sure	- Variant "R"	bar	350 (in all ports)	
Maximum flow	– Variant "U"	l/min	3 (see Performance limits on page 5)	
	- Variant "R"	l/min	5 (see Performance limits on page 5)	
Hydraulic fluid			Mineral oil (HL, HLP) to DIN 51524; fast bio-degradable hydraulic fluids to VDMT 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids on request	
Hydraulic fluid temperature	ange	°C	-40 to +80	
Viscosity range mm²/s		mm²/s	4 to 500	
Permissible max. degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c)		Class 20/18/15 ¹⁾		
Load cycles	- Variant "R" (350 bar)		10 million	
	- Variant "U" (500 bar)		5 million	

Electrical

2100111041			
Type of voltage		DC voltage	
Supply voltage 2)		V	12 DC; 24 DC
Voltage tolerance versus a	ambient temperature		see Characteristic curves on page 5
Power consumption		W	22
Duty cycle		%	see Characteristic curves on page 5
Maximum coil temperature 3) °C		150	
Switching time to ISO 6403 (solenoid horizontal)	– ON (1 → 2)	ms	≤ 80
	– OFF (2 → 1)	ms	≤ 80
Maximum	- Variant "R"	1/h	9000
switching frequency	- Variant "U"	1/h	3600
Type of protection to	- Variant "K4"		IP 65 with mating connector mounted and locked
VDE 0470-1 (DIN EN 60529) DIN 40050-9	- Variant "C4"		IP 66 with mating connector mounted and locked
			IP 69K with Rexroth mating connector (Material no. R901022127)
	- Variant "K40"		IP 69K with mating connector mounted and locked

¹⁾ The cleanliness classes specified for components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, prolongs the service life of components.

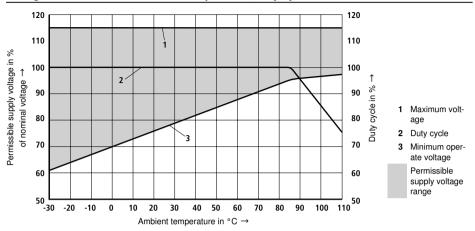
For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

When establishing electrical connection "K4", properly connect the protective earth conductor (PE $\frac{1}{2}$).

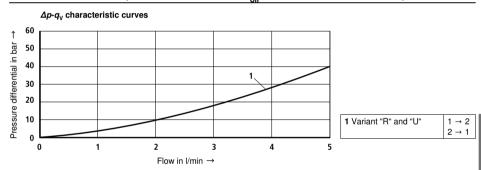
²⁾ Further voltages on request

³⁾ Due to the surface temperatures of the solenoid coils, observe standards ISO 13732-1 and EN 982!

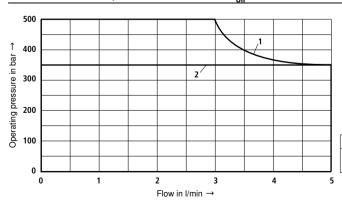
Voltage tolerance versus ambient temperature; duty cycle



Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ±5 °C and 24 V coil)



Performance limits (measured with HLP46, ϑ_{oil} = 40 °C ±5 °C and 24 V coil)

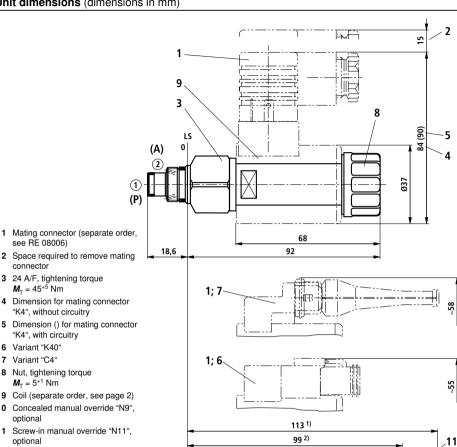


⚠ Attention!

The performance limit was established with solenoids at operating temperatures and at 10% undervoltage.

1 Variant "U"	1 → 2
2 Variant "R"	1 → 2
	2 → 1

Unit dimensions (dimensions in mm)



- see RE 08006) Space required to remove mating connector
- 3 24 A/F, tightening torque $M_{\rm T} = 45^{+5} \, \rm Nm$
- 4 Dimension for mating connector "K4", without circuitry
- 5 Dimension () for mating connector "K4", with circuitry
- 6 Variant "K40"
- 7 Variant "C4"
- Nut, tightening torque $M_{\rm T} = 5^{+1} \, \text{Nm}$
- 9 Coil (separate order, see page 2)
- 10 Concealed manual override "N9", optional
- 11 Screw-in manual override "N11", optional
- 12 Screw-in manual override "N10" (separate order, see page 2)
- 1 = main port 1, pump P 3)
- 2 = main port 2, actuator A 3)
- LS = location shoulder
- 1) Operated
- 2) Screwed in
- 3) Attention!

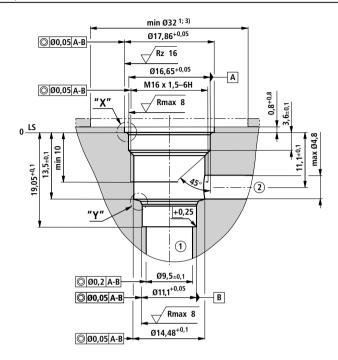
Defined pinout. P and A must not be interchanged or plugged!

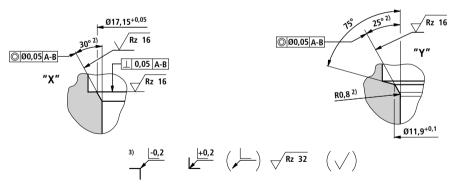
12

~128

Mounting cavity R/T-8A; 2 main ports; thread M16 x 1.5

(dimensions in mm)





¹⁾ Deviating from T-8A

²⁾ All seal insertion faces are rounded and free from burrs

³⁾ With countersunk

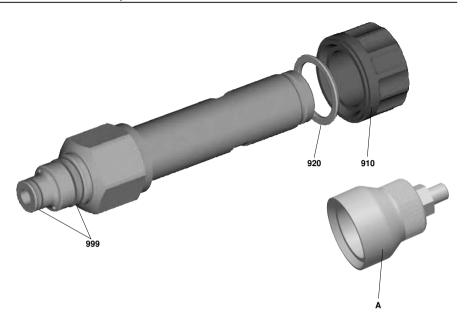
Tolerances for all angles ±0.5°

^{1 =} main port 1

^{2 =} main port 2

LS = location shoulder

Available individual components



item	Designation	Material no.
910	Nut	R900991453
920	O-ring for pole tube	R900004280
999	Valve seal kit	R961003237
Α	Manual override "N10" 1)	R901051231

Coils, separate order, see page 2

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¹⁾ Only for ordering code "N9", see page 2

1/8

2/2 directional seat valve, direct operated with solenoid actuation

RE 18136-20/08.09

Replaces: 11.07

Type KSDE (high-performance)

Component size 1 Component series B Maximum operating pressure 500 bar Maximum flow 20 l/min



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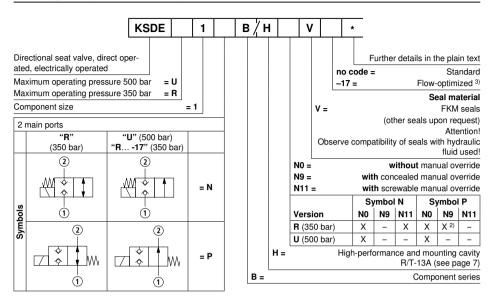
Features

- Mounting cavity R/T-13A
- Direct operated directional seat valve with solenoid actuation, tight on both sides
- Blocked connection tight in a leak-free form
- Safe switching also with longer standstill periods
- Wet-pin DC solenoids
 - Rotatable solenoid coil

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code (Valve without coil) 1)



Valve types (without coil) 1)

Operating pressure 350 bar			
Spool symbol	Туре	Material no.	
	KSDER1NB/HN0V	R901083194	
N	KSDER1NB/HN0V-17	R901176259	
IN	KSDER1NB/HN11V	R901151293	
	KSDER1NB/HN11V-17	R901206914	
	KSDER1PB/HN0V	R901083196	
Р	KSDER1PB/HN0V-17	R901176247	
	KSDER1PB/HN9V	R901151294	
	KSDER1PB/HN9V-17	R901206911	

Operating pressure 500 bar			
Spool symbol	Туре	Material no.	
N	KSDEU1NB/HN0V	R901083202	
Р	KSDEU1PB/HN0V	R901083203	

Available coils (separate order) 1)

	Material no. for coil with connector 4)			
Direct volt- age DC 5)	"K4" 03pol (2+PE) DIN EN 175301-803	"K40" 02pol K40 DT 04-2PA, make: Deutsch	"C4" 02pol C4/Z30 AMP Junior Timer	
12 V	R900991678	R900729189	R900315818	
24 V	R900991121	R900729190	R900315819	

¹⁾ Complete valves with mounted coil upon request

²⁾ Screwable manual override "N10" (actuation by means of internal hexagon with lock nut), possible as separate order, material no. R901051231; ordering code "N9"!

³⁾ Only version "R" (free-flowing on one side!)

⁴⁾ Mating connectors (separate order), see RE 08006

⁵⁾ Other voltages upon request

Function, section, symbols

General

The 2/2 directional seat valves are direct operated, pressure compensated cartridge valves. They basically comprises of screw-in section (4) with valve seat (1), solenoid (5), as well as closing element (3) and compression spring (2).

Function

The initial position of the valve (normally open "P" or normally closed "N") is determined by the position of the closing element (3) and the arrangement of the compression spring (2). Due to the structural design, the 2/2 directional seat valves are always pressure-compensated in relation to the actuating forces. The main ports ① and ② can be loaded with an operating pressure of 350 bar/500 bar (see Technical Data, page 4).

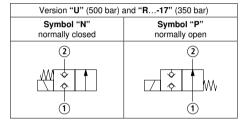
Attention!

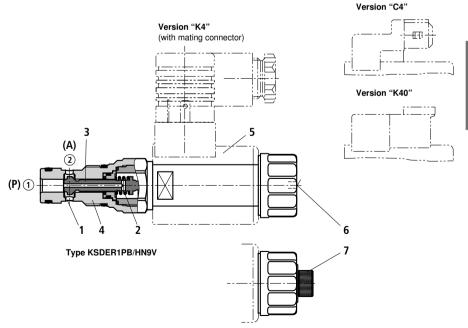
The flow is only permitted in the direction of arrow (see symbols)! With version "U" (operating pressure 500 bar) as well as with version "R...-17", main port ① must be connected with pump connection P! Valves with version "R...-17" are flow-optimized and thus achieve a higher pressure differential.

With symbol "P", the closing element (3) is pressed onto the seat by the solenoid (5), with symbol "N" by the compression spring (2). The flow is blocked in a leak-free form.

The manual override allows for the the switching of the valve without solenoid energization. It is available in concealed version "N9" (6) or in screwable version "N11" (7) (see page 2).

Version "R" (350 bar)		
Symbol "N"	Symbol "P"	
normally closed	normally open	
②	2	





Technical data (For applications outside these parameters, please consult us!)

general			
Weight	- Valve	kg	0.30
	– Coil	kg	0.25
Installation position			Any
Ambient temperature range °C		°C	-40 to +110

hydraulic

Maximum operating pressure	- Version "U"	bar	500 (at all ports if P ≥ A; for design reasons)
	- Version "R"	bar	350 (at all ports)
	- Version "R17"	bar	350 (at all ports if P ≥ A; for design reasons)
Maximum flow	- Version "U"	l/min	12 (see performance limits page 5)
	- Version "R"	l/min	20 (see performance limits page 5)
Hydraulic fluid		Mineral oil (HL, HLP) according to DIN 51524; quickly biodegradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request	
Hydraulic fluid temperature range °C			-40 to +80
Viscosity range mm²/s		4 to 500	
Maximum permitted degree of contamination of the hydraulic fluid – cleanliness class according to ISO 4406 (c)			Class 20/18/15 1)
Load cycles	- Version "R" (350 ba	r)	10 million
	- Version "U" (500 ba	ır)	5 million

electrical

Type of voltage			Direct voltage
Supply voltage 2) V			12 DC; 24 DC
Voltage tolerance against	ambient temperature		See characteristic curve page 5
Power consumption		W	22
Duty cycle		%	See characteristic curve page 5
Maximum coil temperature	3)	°C	150
Switching time according to ISO 6403 (solenoid horizontal)	- ON (① → ②)	ms	≤ 60 (≤ 95 with version "R17")
	- OFF (② → ①)	ms	≤ 60 (≤ 95 with version "R17")
Maximum switching frequency	- Version "R"	1/h	9000
	- Version "U"	1/h	3600
Protection class according	- Version "K4"		IP 65 with mating connector mounted and locked
to VDE 0470-1 (DIN EN 60529) DIN 40050-9	- Version "C4"		IP 66 with mating connector mounted and locked
			IP 69K with Rexroth mating connector (Material no. R901022127)
	- Version "K40"		IP 69K with mating connector mounted and locked

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

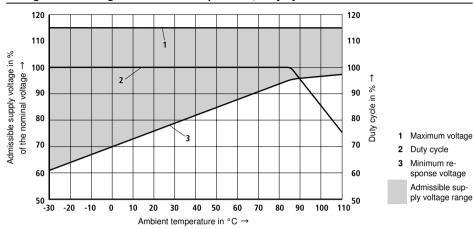
For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

At the electrical connection "K4", the protective earthing conductor (PE $\frac{1}{\pi}$) has to be connected properly.

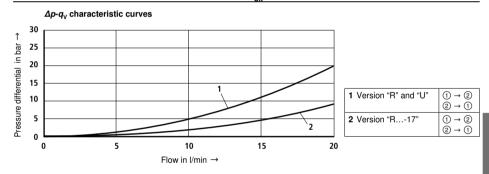
²⁾ Other voltages upon request

³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

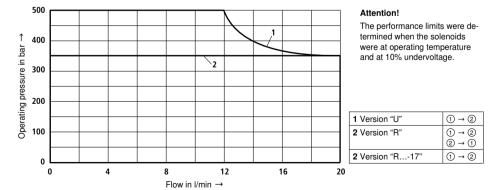
Voltage tolerance against ambient temperature; duty cycle



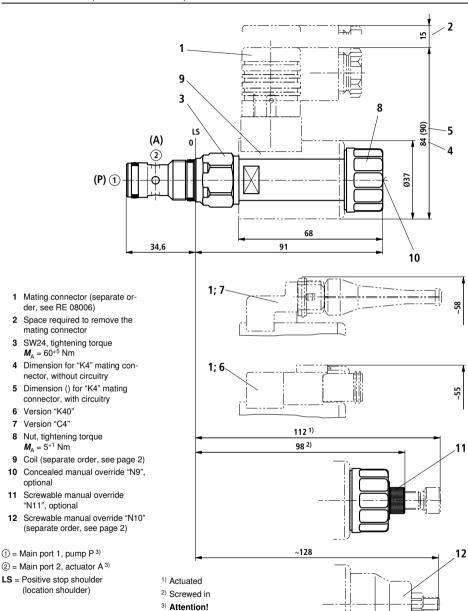
Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C and 24 V coil)



Performance limits (measured with HLP46, $\vartheta_{oil} = 40 \degree \text{C} \pm 5 \degree \text{C}$ and 24 V coil)



Unit dimensions (dimensions in mm)



Unambiguous pinout. P and A must not be exchanged or closed!

 $M_{\Delta} = 60^{+5} \text{ Nm}$

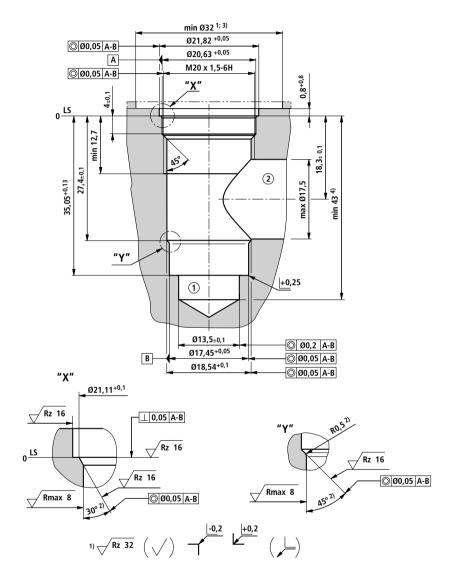
6 Version "K40" 7 Version "C4"

 $M_{\rm A} = 5^{+1} \, \rm Nm$

"N11", optional

optional

Mounting cavity R/T-13A; 2 main ports; thread M20 x 1.5 (dimensions in mm)



¹⁾ Differing from T-13A

LS = Positive stop shoulder (location shoulder)

Tolerance for all angles ±0.5°

 $^{^{\}rm 2)}$ All seal ring insertion chamfers are rounded and free of burrs

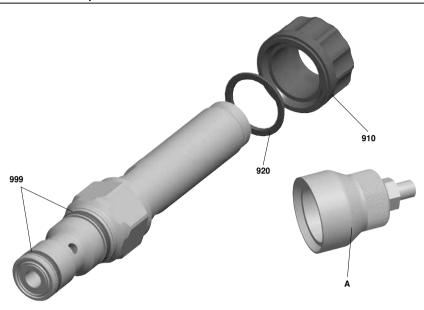
³⁾ with counterbore

⁴⁾ Depth for moving parts

^{1 =} Main port 1

^{2 =} Main port 2

Available individual components



Item	Description	Material no.
910	Nut	R900991453
920	O-ring for pole tube	R900004280
999	Seal kit of the valve	R961003236
Α	Manual override "N10" 1)	R901051231

Coils, separate order, see page 2

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¹⁾ Only with ordering code "N9", see page 2

1/8

3/2 directional seat valve, direct operated with solenoid actuation

RE 18136-21/08.09

Replaces: 11.07

Type KSDE (high-performance)

Component size 1 Component series B Maximum operating pressure 500 bar Maximum flow 20 l/min



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Available coils	2
Function, section, symbols	3
Technical data	4
Voltage tolerance against ambient temperature	5
Characteristic curves	5
Performance limits	5
Unit dimensions	6
Mounting cavity	7
Available individual components	8

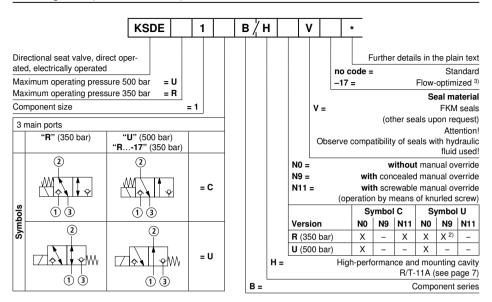
Features

- Mounting cavity R/T-11A
- Direct operated directional seat valve with solenoid actuation, tight on both sides
- Blocked connection tight in a leak-free form
- Safe switching also with longer standstill periods
- Wet-pin DC solenoids
 - Rotatable solenoid coil

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code (Valve without coil) 1)



Valve types (without coil) 1)

Operating pressure 350 bar				
Spool symbol	Туре	Material no.		
	KSDER1CB/HN0V	R901083205		
С	KSDER1CB/HN0V-17	R901176263		
"	KSDER1CB/HN11V	R901151279		
	KSDER1CB/HN11V-17	R901206917		
	KSDER1UB/HN0V	R901083191		
	KSDER1UB/HN0V-17	R901176251		
"	KSDER1UB/HN9V	R901151288		
	KSDER1UB/HN9V-17	R901206909		

Operating pressure 500 bar			
Spool symbol	Туре	Material no.	
С	KSDEU1CB/HN0V	R901083198	
U	KSDEU1UB/HN0V	R901083200	

Available coils (separate order) 1)

Direct	Material no. for coil with connector 4)				
voltage	"K4"	"K40"	"C4"		
voltage DC ⁵⁾	03pol (2+PE) DIN EN 175301-803	02pol K40 DT 04-2PA, make: Deutsch	02pol C4/Z30 AMP Junior Timer		
12 V	R900991678	R900729189	R900315818		
24 V	R900991121	R900729190	R900315819		

¹⁾ Complete valves with mounted coil upon request

²⁾ Screwable manual override "N10" (actuation by means of internal hexagon with lock nut), possible as separate order, material no. R901051231; ordering code "N9"!

³⁾ Only version "R" (free-flowing on one side!)

⁴⁾ Mating connectors (separate order), see RE 08006

⁵⁾ Other voltages upon request

Function, section, symbols

General

The 3/2 directional seat valves are direct operated, pressure compensated cartridge valves. They basically comprises of screw-in section (4) with valve seat (1), solenoid (5), as well as closing element (3) and compression spring (2).

Function

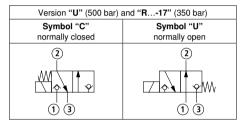
The initial position of the valve (normally open "U" or normally closed "C") is determined by the position of the closing element (3) and the arrangement of the compression spring (2). Due to the structural design, the 3/2 directional seat valves are always pressure-compensated in relation to the actuating forces. The main ports ① and ② can be loaded with an operating pressure of 350 bar/500 bar (see Technical Data, page 4) and are blocked in a leak-free form in the respective end position. During switching, the main ports are shortly connected (negative overlap).

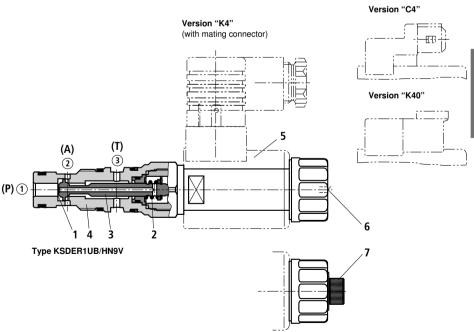
Attention!

The flow is only permitted in the direction of arrow (see symbols)! With version "U" (operating pressure 500 bar) as well as with version "R...-17", main port ① must be connected with pump connection P! Valves with version "R...-17" are flow-optimized and thus achieve a higher switching power.

The manual override allows for the the switching of the valve without solenoid energization. It is available in concealed version "N9" (6) or in screwable version "N11" (7) (see page 2).

Version "R" (350 bar)			
Symbol "C"	Symbol "U"		
normally closed	normally open		
(2)	2		
(1) (3)	1 3		





Technical data (For applications outside these parameters, please consult us!)

general					
Weight	- Valve		kg	0.30	
	– Coil		kg	0.25	
Installation po	sition			Any	
Ambient temp	erature range		°C	-40 to +110	
hydraulic					
Maximum ope	erating pressure	- Version "U"	bar	500 (at main port ① and ②, if P ≥ A ≥ T; for design reasons)	
		- Version "R"	bar	350 (at main port ① and ②)	
		- Version "R17"		350 (at main port ① and ②, if P ≥ A ≥ T; for design reasons)	
Maximum tank pressure		bar	≤ 50 (at main port ③)		
Maximum flow		- Version "U"	l/min	6 (see performance limits page 5)	
		- Version "R"	l/min	12 (see performance limits page 5)	
		- Version "R17"	l/min	20 (see performance limits page 5)	
Hydraulic fluid	i			Mineral oil (HL, HLP) according to DIN 51524; quickly bio- degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request	
Hydraulic fluid temperature range		°C	-40 to +80		
Viscosity range		mm²/s	4 to 500		
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)			Class 20/18/15 ¹⁾		
Load cycles		- Version "R"(350 bar)		10 million	

electrical

0.000.				
Type of voltage			Direct voltage	
Supply voltage 2) V			12 DC; 24 DC	
Voltage tolerance against amb	pient temperature		See characteristic curve page 5	
Power consumption		W	22	
Duty cycle		%	See characteristic curve page 5	
Maximum coil temperature 3)		°C	150	
Switching time according to	- ON	ms	≤ 60 (≤ 95 with version "R17")	
ISO 6403 (solenoid horizontal)	- OFF	ms	≤ 60 (≤ 95 with version "R17")	
Maximum switching frequency	- Version "R"	1/h	9000	
	- Version "U"	1/h	3600	
Protection class according to	- Version "K4"		IP 65 with mating connector mounted and locked	
VDE 0470-1	- Version "C4"		IP 66 with mating connector mounted and locked	
(DIN EN 60529) DIN 40050-9			IP 69K with Rexroth mating connector (Material no. R901022127)	
5	- Version "K40"		IP 69K with mating connector mounted and locked	

5 million

- Version "U" (500 bar)

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

At the electrical connection "K4", the protective earthing conductor (PE $\frac{1}{2}$) has to be connected properly.

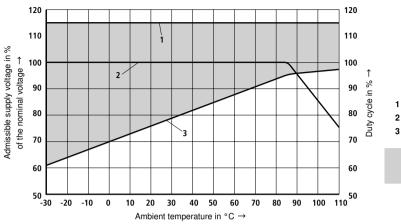
¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

²⁾ Other voltages upon request

³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

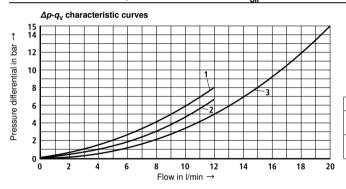
05

Voltage tolerance against ambient temperature; duty cycle



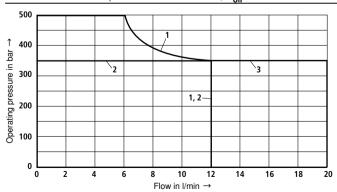
- 1 Maximum voltage
- 2 Duty cycle
- Minimum response voltage
 Admissible supply voltage range

Characteristic curves (measured with HLP46, $\vartheta_{nil} = 40 \,^{\circ}\text{C} \pm 5 \,^{\circ}\text{C}$ and 24 V coil)



1 Standard	② → ③
2 Standard	① → ② ② → ①
3 Version "R17"	① → ② ② → ③

Performance limits (measured with HLP46, $\vartheta_{oil} = 40 \,^{\circ}\text{C} \pm 5 \,^{\circ}\text{C}$ and 24 V coil)

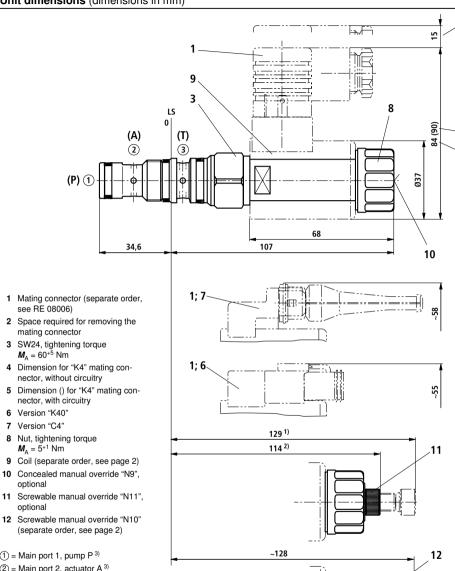


Attention!

The performance limits were determined when the solenoids were at operating temperature and at 10% undervoltage.

1 Version "U"	① → ②
2 Version "R"	① ↔ ② ② → ①
3 Version "R17"	① → ②

Unit dimensions (dimensions in mm)



1 = Main port 1, pump P 3)

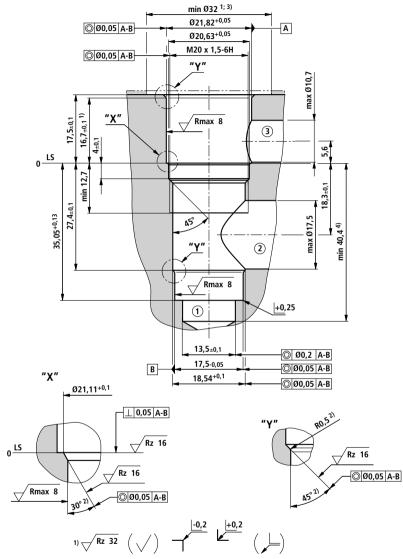
optional

optional

- (2) = Main port 2, actuator A 3)
- (3) = Main port 3, tank T 3)
- LS = Positive stop shoulder (location shoulder)

1) Actuated

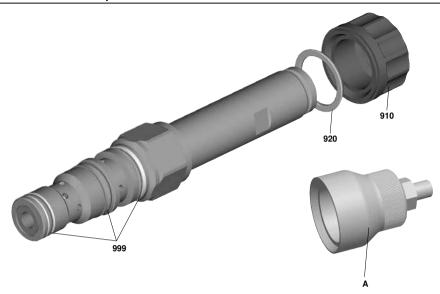
Mounting cavity R/T-11A; 3 main ports; thread M20 x 1.5 (dimensions in mm)



- 1) Differing from T-11A
- 2) All seal ring insertion chamfers are rounded and free of burrs
- 3) with counterbore
- 4) Depth for moving parts

- (1) = Main port 1
- (2) = Main port 2
- 3 = Main port 3
- **LS** = Positive stop shoulder (location shoulder) Tolerance for all angles $\pm 0.5^{\circ}$

Available individual components



Item	Description	Material no.
910	Nut	R900991453
920	O-ring for pole tube	R900004280
999	Seal kit of the valve	R961003235
Α	Manual override "N10" 1)	R901051231

Coils, separate order, see page 2

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¹⁾ Only with ordering code "N9", see page 2

1/10

2/2 directional spool valve direct operated with solenoid actuation

RE 18136-08/10.09

Replaces: 12.07

Type KKDE (high-performance)

Component size 8 Component series A Maximum operating pressure 350 bar Maximum flow 45 l/min



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Content Page Features Ordering code 2 Valve types 2 Available spools 2 3 Function, section, symbols Technical data Voltage tolerance against ambient temperature 5 Characteristic curves 6 Performance limits 7 Unit dimensions 8 Mounting cavity 9 Available individual components 10

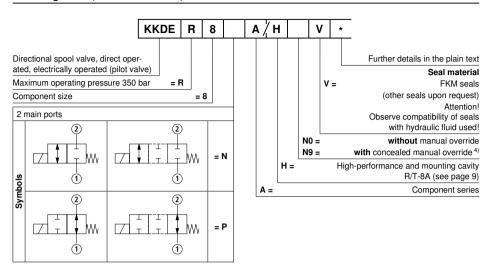
Features

- Pilot valve
- Mounting cavity R/T-8A
- Direct operated directional spool valve with solenoid actuation
- Free-flowing in both directions
- Positive overlap helps to avoid switching shocks
- Wet-pin DC solenoids
- Rotatable solenoid coil
- With concealed manual override

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code (Valve without coil) 1)



Valve types (without coil) 1)

	without manual override "N0"		with concealed manual override "N9"	
Spool variant	Type Material no.		Туре	Material no.
N	KKDER8NA/HN0V	R901069969	KKDER8NA/HN9V	R901069975
Р	KKDER8PA/HN0V	R901069973	KKDER8PA/HN9V	R901069978

Available coils (separate order) 1)

	Material no. for coil with connector 2)		
Direct voltage DC ³⁾	" K4 " 03pol (2+PE) DIN EN 175301-803	"K40" 02pol K40 DT 04-2PA, make. Deutsch	" C4 " 02pol C4/Z30 AMP Junior Timer
12 V	R900991678	R900729189	R900315818
24 V	R900991121	R900729190	R900315819

¹⁾ Complete valves with mounted coil upon request

²⁾ Mating connectors (separate order), see RE 08006

³⁾ Other voltages upon request

⁴⁾ Screwable manual override "N10" (actuation by means of internal hexagon with lock nut), possible as separate order, Material no. R901051231; ordering code "N9"!

Function, section, symbols

General

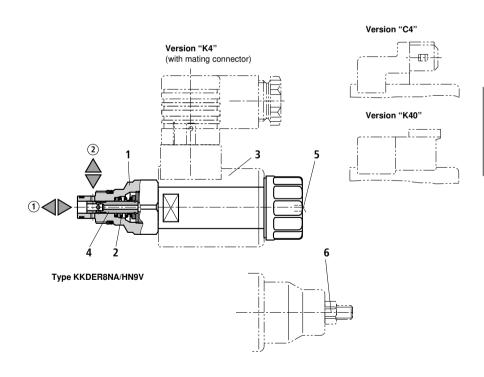
The 2/2 directional spool valves are direct operated, pressure compensated cartridge valves. They control the start, stop and direction of a flow and basically comprise a housing (1), the control spool (4) and a return spring (2).

Function

In the de-energized condition, control spool (4) is held in the initial position by the return spring (2). Control spool (4) is actuated by wet-pin DC solenoids (3). The various symbols are realized by corresponding spools (N and P). The main ports $\widehat{0}$ and $\widehat{0}$ are suitable for a continuous load with an operating pressure of 350 bar and the flow can be directed into both directions (see symbols).

The manual override (5) allows for the switching of the valve without solenoid energization. It is also available in screwable version "N10" (6) (see page 2).





Technical data (For applications outside these parameters, please consult us!)

Weight	- Valve kg	0.30
	– Coil kg	0.25
Installation position		Any
Ambient temperature range °C		-40 to +110

hydraulic

Maximum operating pressure bar	350 (at all ports)
Maximum flow I/min	45
Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524; quickly bio- degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range °C	-40 to +80
Viscosity range mm ² /s	4 to 500
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)	Class 20/18/15 1)
Load cycles	10 million (at 350 bar)

electrical

0.000			
Voltage type		Direct voltage	
Supply voltage 2)		٧	12 DC; 24 DC
Voltage tolerance against am	bient temperature		See characteristic curve page 5
Power consumption		W	22
Duty cycle		%	See characteristic curve page 5
Maximum coil temperature 3) °C		150	
Switching time according to ISO 6403 (solenoid horizontal)	– ON	ms	≤ 80
	- OFF	ms	≤ 50
Maximum switching frequency cy/h		15000	
Protection class according to VDE 0470-1 (DIN EN 60529) DIN 40050-9	- Version "K4"		IP 65 with mating connector mounted and locked
	- Version "C4"		IP 66 with mating connector mounted and locked
			IP 69K with Rexroth mating connector (Material no. R901022127)
	- Version "K40"		IP 69K with mating connector mounted and locked

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

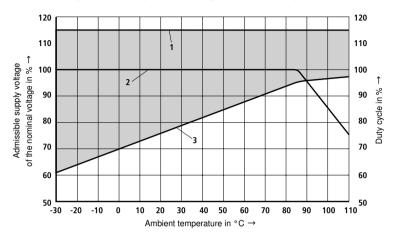
At the electrical connection "K4", the protective earthing conductor (PE $\frac{1}{2}$) has to be connected properly.

²⁾ Other voltages upon request

³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

Voltage tolerance against ambient temperature; duty cycle

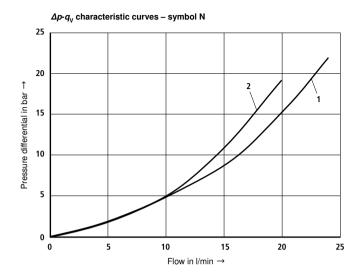
Voltage range and duty cycle depending on the ambient temperature



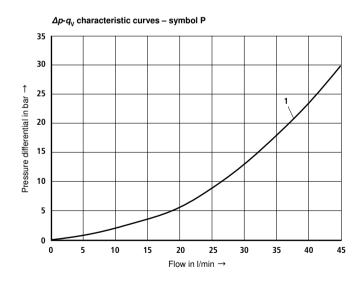
- Maximum voltage
- 2 Duty cycle
- 3 Minimum response voltage

Admissible supply voltage range

Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C and 24 V coil)

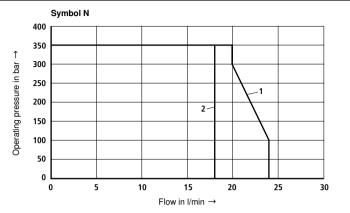




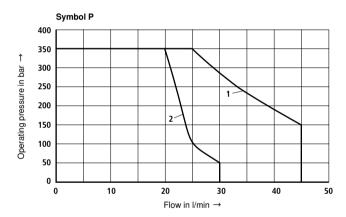


1 1 ↔ 2

Performance limits (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C and 24 V coil)





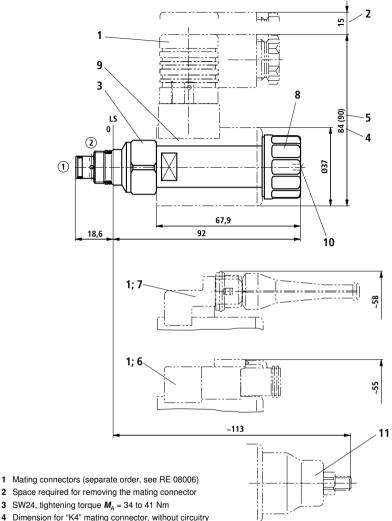




Attention!

The performance limits were determined when the solenoids were at operating temperature and at 10% undervoltage.

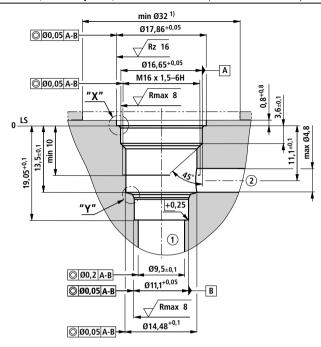
Unit dimensions (dimensions in mm)

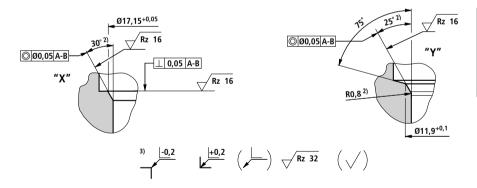


- 2 Space required for removing the mating connector
- 3 SW24, tightening torque $M_A = 34$ to 41 Nm
- 4 Dimension for "K4" mating connector, without circuitry
- 5 Dimension () for "K4" mating connector, with circuitry
- 6 Version "K40"
- 7 Version "C4"
- 8 Nut, tightening torque $M_A = 5^{+1}$ Nm
- 9 Coil (separate order, see page 2)
- 10 Concealed manual override "N9", optional
- 11 Screwable manual override "N10" (separate order, see page 2)

- 1 = Main port 1
- 2 = Main port 2
- LS = Location shoulder

Mounting cavity R/T-8A; 2 main ports; thread M16 x 1.5 (dimensions in mm)





¹⁾ with counterbore, deviating from T-8A

Tolerance for all angles ±0.5°

²⁾ All seal ring in sertion faces are rounded and free of burrs

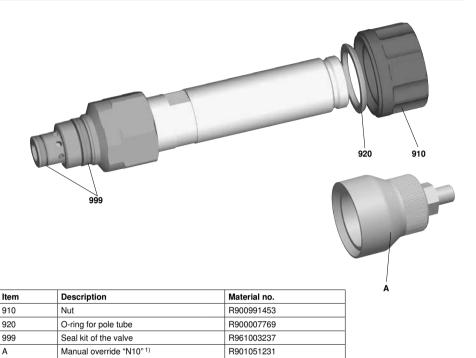
³⁾ Differing from T-8A

^{1 =} Main port 1

^{2 =} Main port 2

LS = Location shoulder

Available individual components



Coils, separate order, see page 2

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¹⁾ Only with ordering code "N9", see page 2

1/10

3/2 directional spool valve direct operated with solenoid actuation

RE 18136-09/10.09

Replaces: 05.08

Type KKDE (high-performance)

Component size 8 Component series A Maximum operating pressure 350 bar Maximum flow 30 l/min



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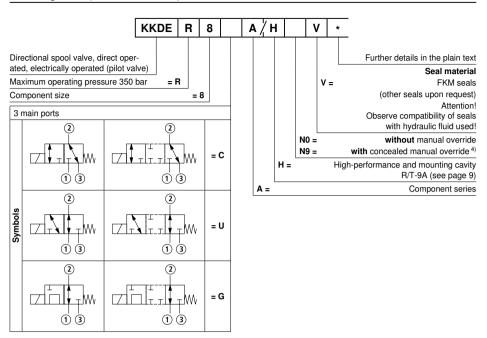
Features

- Pilot valve
- Mounting cavity R/T-9A
- Direct operated directional spool valve with solenoid actuation
- Free-flowing in both directions
- Wet-pin DC solenoids
- Rotatable solenoid coil
- With concealed manual override

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code (Valve without coil) 1)



Valve types (without coil) 1)

	without manua	ll override " N0 "	with concealed manual override "N9"	
Spool variant	Туре	Material no.	Туре	Material no.
С	KKDER8CA/HN0V	R901070049	KKDER8CA/HN9V	R901070055
U	KKDER8UA/HN0V	R901070050	KKDER8UA/HN9V	R901070068
G	KKDER8GA/HN0V	R901070051	KKDER8GA/HN9V	R901070072

Available coils (separate order) 1)

	Material no. for coil with connector 2)		
Direct voltage DC ³⁾	"K4" 03pol (2+PE) DIN EN 175301-803	"K40" 02pol K40 DT 04-2PA, make. Deutsch	"C4" 02pol C4/Z30 AMP Junior Timer
12 V	R900991678	R900729189	R900315818
24 V	R900991121	R900729190	R900315819

¹⁾ Complete valves with mounted coil upon request

²⁾ Mating connectors (separate order), see RE 08006

³⁾ Other voltages upon request

⁴⁾ Screwable manual override "N10" possible (Material no. R901051231, separate order)

Function, section, symbols

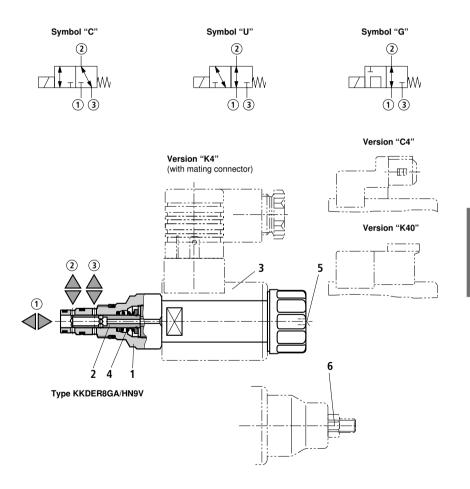
General

The 3/2 directional spool valves are direct operated, pressure compensated cartridge valves. They control the start, stop and direction of a flow and basically comprise a housing (1), the control spool (2) and a return spring (4).

Function

In the de-energized condition, control spool (2) is held in the initial position by the return spring (4). Control spool (2) is actuated by wet-pin DC solenoids (3). The various symbols are realized by corresponding spools (C, U, and G). The main ports ①, ②, and ③ are suitable for a continuous load with an operating pressure of 350 bar and the flow can be directed into both directions (see symbols).

The manual override (5) allows for the switching of the valve without solenoid energiaztion. It is also available in screwable version "N10" (6) (see page 2).



Technical data (For applications outside these parameters, please consult us!)

general			
Weight	- Valve	kg	0.3
	– Coil	kg	0.25
Installation position			Any
Ambient temperature range °C		°C.	-40 to ±110

hydrau	

Maximum operating pressure bar	350 (at all ports)
Maximum flow I/min	30
Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524; quickly bio- degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range °C	-40 to +80
Viscosity range mm ² /s	4 to 500
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)	Class 20/18/15 1)
Load cycles	10 million (at 350 bar)

electrical

0.000			
Voltage type			Direct voltage
Supply voltage ²⁾ V			12 DC; 24 DC
Voltage tolerance against ambient temperature			See characteristic curve page 5
Power consumption		W	22
Duty cycle		%	See characteristic curve page 5
Maximum coil temperature 3) °C		150	
Switching time according to ISO 6403 (solenoid horizontal)	– ON	ms	≤ 80
	- OFF	ms	≤ 50
Maximum switching frequency		cy/h	15000
Protection class according to VDE 0470-1 (DIN EN 60529) DIN 40050-9	- Version "K4"		IP 65 with mating connector mounted and locked
	- Version "C4"		IP 66 with mating connector mounted and locked
			IP 69K with Rexroth mating connector (Material no. R901022127)
	- Version "K40"		IP 69K with mating connector mounted and locked

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

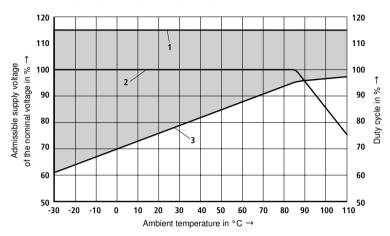
At the electrical connection "K4", the protective earthing conductor (PE $\frac{1}{2}$) has to be connected properly.

²⁾ Other voltages upon request

³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

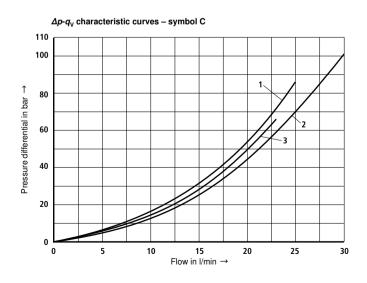
Voltage tolerance against ambient temperature; duty cycle

Voltage range and duty cycle depending on the ambient temperature



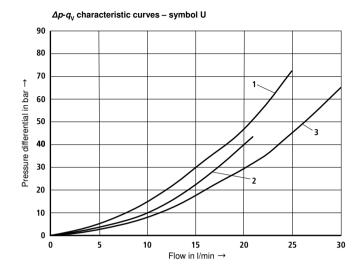
- Maximum voltage
- 2 Duty cycle
- 3 Minimum response voltage
- Admissible supply voltage range

Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C and 24 V coil)

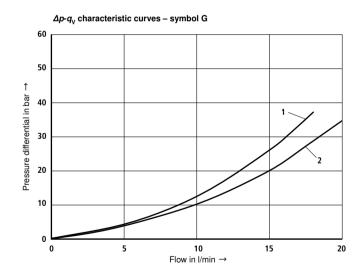


1	1 → 2 2 → 1
2	2 → 3
3	3 → 2

Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C \pm 5 °C and 24 V coil)

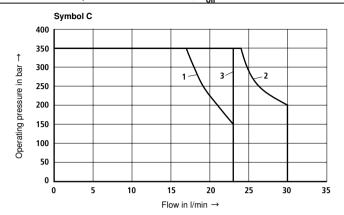


1	3 → 2
2	1 → 2
3	2 → 1
	2 → 3

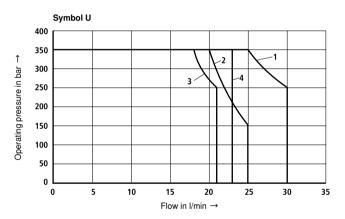


_		
	1	1 → 2
		3 → 1
ſ	2	1 → 3
		2 → 1

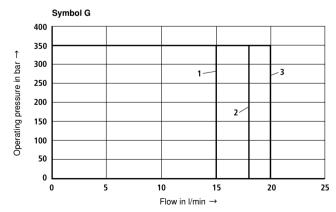
Performance limits (measured with HLP46, $\vartheta_{oil} = 40 \,^{\circ}\text{C} \pm 5 \,^{\circ}\text{C}$ and 24 V coil)



1	1 → 2 2 → 1
2	2 → 3
3	3 → 2

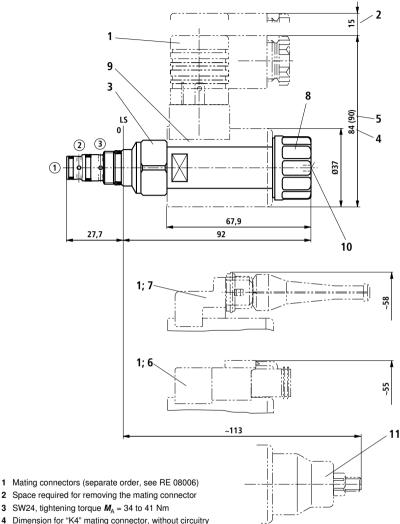






1	1 → 2
2	1 → 3
	3 → 1
3	2 → 1

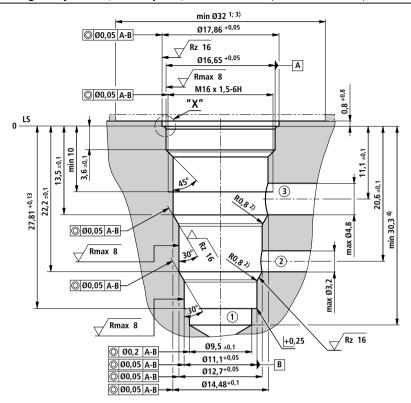
Unit dimensions (dimensions in mm)

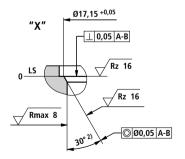


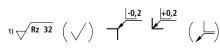
- 1 Mating connectors (separate order, see RE 08006)
- 3 SW24, tightening torque $M_A = 34$ to 41 Nm
- 4 Dimension for "K4" mating connector, without circuitry
- 5 Dimension () for "K4" mating connector, with circuitry
- Version "K40"
- 7 Version "C4"
- 8 Nut, tightening torque $M_A = 5^{+1}$ Nm
- 9 Coil (separate order, see page 2)
- 10 Concealed manual override "N9", optional
- 11 Screwable manual override "N10" (separate order, see page 2)

- 1 = Main port 1
- 2 = Main port 2
- 3 = Main port 3
- LS = Location shoulder

Mounting cavity R/T-9A; 3 main ports; thread M1 x 1.5 (dimensions in mm)





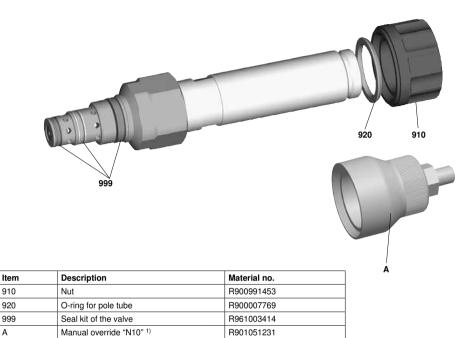


- 1) Differing from T-9A
- ²⁾ All seal ring in sertion faces are rounded and free of burrs
- 3) with counterbore
- 4) Depth for moving parts

- 1 = Main port 1
- 2 = Main port 2
- 3 = Main port 3
- LS = Location shoulder

Tolerance for all angles ±0.5°

Available individual components



Coils, separate order, see page 2

910

920

999

Α

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¹⁾ Only with ordering code "N9", see page 2

1/10

2/2 directional spool valve direct operated with solenoid actuation

RE 18136-06/10.09

Replaces: 05.08

Type KKDE (high-performance)

Component size 1 Component series A Maximum operating pressure 350 bar Maximum flow 55 l/min



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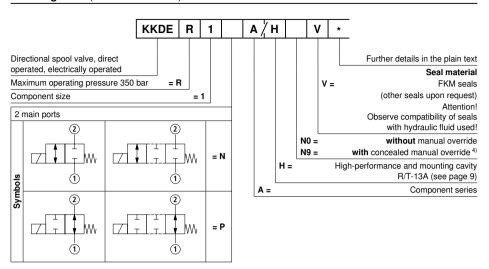
Features

- Mounting cavity R/T-13A
- Direct operated directional spool valve with solenoid actuation
- Free-flowing in both directions
- Very low flow resistance values
- Positive overlap helps to avoid switching shocks
 - Wet-pin DC solenoids
 - Rotatable solenoid coil
 - With concealed manual override

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code (Valve without coil) 1)



Valve types (without coil) 1)

	without manual override "N0"		with concealed manual override "N9"	
Spool variant	Type Material no.		Туре	Material no.
N	KKDER1NA/HN0V	R901069995	KKDER1NA/HN9V	R901069997
Р	KKDER1PA/HN0V	R901069996	KKDER1PA/HN9V	R901070000

Available coils (separate order) 1)

	Material no. for coil with connector 2)		
Direct voltage DC ³⁾	"K4" 03pol (2+PE) DIN EN 175301-803	"K40" 02pol K40 DT 04-2PA, make. Deutsch	" C4" 02pol C4/Z30 AMP Junior Timer
12 V	R900991678	R900729189	R900315818
24 V	R900991121	R900729190	R900315819

¹⁾ Complete valves with mounted coil upon request

²⁾ Mating connectors (separate order), see RE 08006

³⁾ Other voltages upon request

⁴⁾ Screwable manual override "N10" possible (Material no. R901051231, separate order)

Function, section, symbols

General

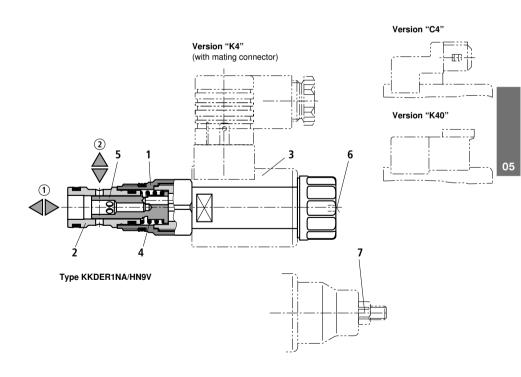
The 2/2 directional spool valves are direct operated, pressure compensated cartridge valves. They control the start, stop and direction of a flow and basically comprise a housing (1) with a movably mounted socket (2), the control spool (5) and a return spring (4).

Function

In the de-energized condition, control spool (5) is held in the initial position by the return spring (4). Control spool (5) is actuated by wet-pin DC solenoids (3). The various symbols are realized by corresponding spools (N and P). The main ports $\widehat{0}$ and $\widehat{0}$ are suitable for a continuous load with an operating pressure of 350 bar and the flow can be directed into both directions (see symbols).

The manual override (6) allows for the switching of the valve without solenoid energization. It is also available in screwable version "N10" (7) (see page 2).





Technical data (For applications outside these parameters, please consult us!)

general			
Weight	- Valve	kg	0.30
	– Coil	kg	0.25
Installation position			Any
Ambient temperature range °C		°C	-40 to +110

hydraulic

Maximum operating pressure bar	350 (at all ports)
Maximum flow I/min	55
Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524; quickly bio- degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range °C	-40 to +80
Viscosity range mm²/s	4 to 500
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)	Class 20/18/15 1)
Load cycles	10 million (at 350 bar)

electrical

0.00000.			
Voltage type			Direct voltage
Supply voltage ²⁾ V			12 DC; 24 DC
Voltage tolerance against ambient temperature			See characteristic curve page 5
Power consumption		W	22
Duty cycle %			See characteristic curve page 5
Maximum coil temperature 3) °C		150	
Switching time according to	– ON	ms	≤ 80
ISO 6403 (solenoid horizontal)	- OFF	ms	≤ 50
Maximum switching frequency cy/h		15000	
Protection class according to	- Version "K4"		IP 65 with mating connector mounted and locked
VDE 0470-1	- Version "C4"		IP 66 with mating connector mounted and locked
(DIN EN 60529) DIN 40050-9			IP 69K with Rexroth mating connector (Material no. R901022127)
5114 40000 0	- Version "K40"		IP 69K with mating connector mounted and locked

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

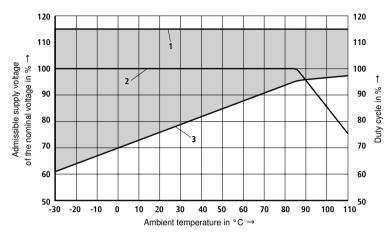
At the electrical connection "K4", the protective earthing conductor (PE \frac{1}{2}) has to be connected properly.

²⁾ Other voltages upon request

³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

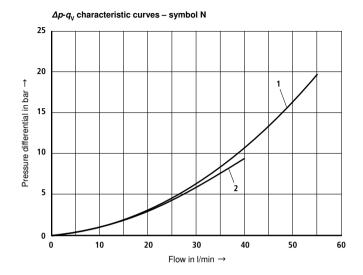
Voltage tolerance against ambient temperature; duty cycle

Voltage range and duty cycle depending on the ambient temperature

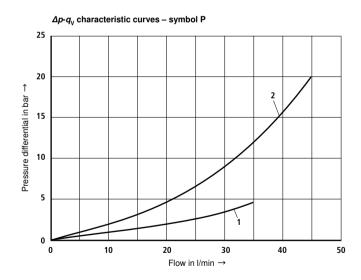


- Maximum voltage
- 2 Duty cycle
- 3 Minimum response voltage

Admissible supply voltage range

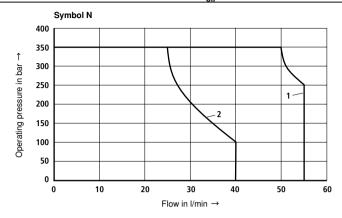




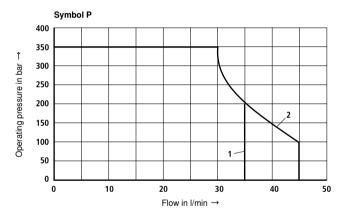




Performance limits (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C and 24 V coil)





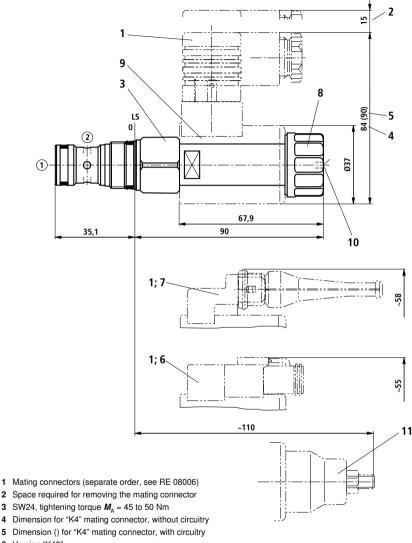


1 2 → 1 2 1 → 2

Attention!

The performance limits were determined when the solenoids were at operating temperature and at 10% undervoltage.

Unit dimensions (dimensions in mm)

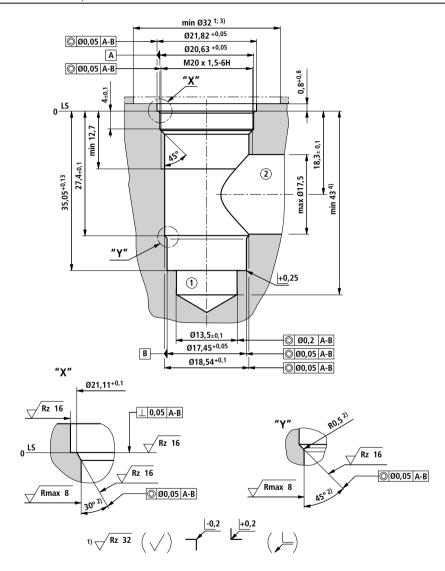


- 6 Version "K40"
- 7 Version "C4"
- 8 Nut, tightening torque $M_A = 5^{+1}$ Nm
- 9 Coil (separate order, see page 2)
- 10 Concealed manual override "N9", optional
- 11 Screwable manual override "N10" (separate order, see page 2)

- 1 = Main port 1
- 2 = Main port 2
- LS = Location shoulder

Mounting cavity R/T-13A; 2 main ports; thread M20 x 1.5 $\,$

(dimensions in mm)



¹⁾ Differing from T-13A

LS = Location Shoulder

Tolerance for all angles ±0.5°

²⁾ All seal ring in sertion faces are rounded and free of burrs

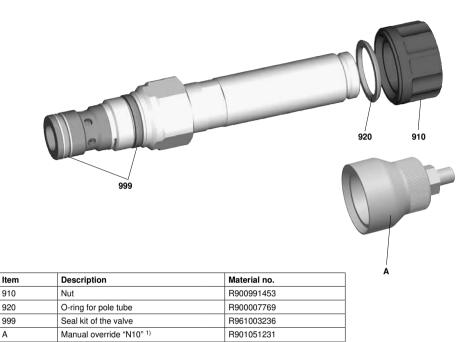
³⁾ with counterbore

⁴⁾ Depth for moving parts

^{1 =} Main port 1

^{1 =} Main port 2

Available individual components



Coils, separate order, see page 2

910

920

999

Α

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¹⁾ Only with ordering code "N9", see page 2

1/10

3/2 directional spool valve direct operated with solenoid actuation

RE 18136-04/10.09

Replaces: 05.08

Type KKDE (high-performance)

Component size 1 Component series A Maximum operating pressure 350 bar Maximum flow 60 l/min



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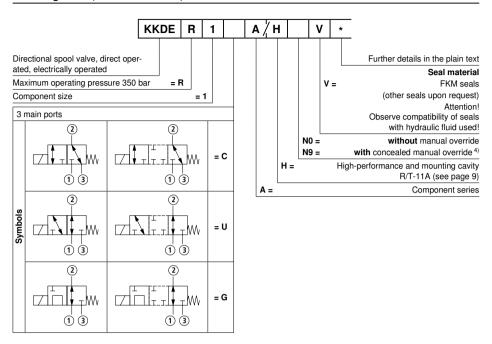
Features

- Mounting cavity R/T-11A
- Direct operated directional spool valve with solenoid actuation
- Free-flowing in both directions
- Wet-pin DC solenoids
- Rotatable solenoid coil
 - with concealed manual override

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code (Valve without coil) 1)



Valve types (without coil) 1)

	without manua	Il override "N0"	with concealed manual override "N9"	
Spool symbol	Туре	Material no.	Туре	Material no.
С	KKDER1CA/HN0V	R901070094	KKDER1CA/HN9V	R901070103
U	KKDER1UA/HN0V	R901070099	KKDER1UA/HN9V	R901070105
G	KKDER1GA/HN0V	R901070101	KKDER1GA/HN9V	R901070107

Available coils (separate order) 1)

	Material no. for coil with connector 2)		
Direct voltage DC ³⁾	" K4" 03pol (2+PE) DIN EN 175301-803	"K40" 02pol K40 DT 04-2PA, make. Deutsch	"C4" 02pol C4/Z30 AMP Junior Timer
12 V	R900991678	R900729189	R900315818
24 V	R900991121	R900729190	R900315819

¹⁾ Complete valves with mounted coil upon request

²⁾ Mating connectors (separate order), see RE 08006

³⁾ Other voltages upon request

⁴⁾ Screwable manual override "N10" possible (Material no. R901051231, separate order)

Function, section, symbols

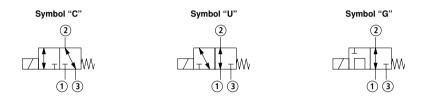
General

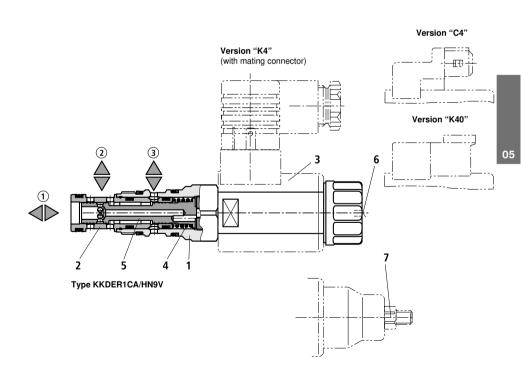
The 3/2 directional spool valves are direct operated, pressure compensated cartridge valves. They control the start, stop and direction of a flow and basically comprise a housing (1) with a movably mounted socket (2), the control spool (5) and a return spring (4).

Function

In the de-energized condition, control spool (5) is held in the initial position by the return spring (4). Control spool (5) is actuated by wet-pin DC solenoids (3). The various symbols are realized by corresponding spools (C, U, and G). The main ports \bigcirc , \bigcirc , and \bigcirc are suitable for a continuous load with an operating pressure of 350 bar and the flow can be directed into both directions (see symbols).

The manual override (6) allows for the switching of the valve without solenoid energization. It is also available in screwable version "N10" (7) (see page 2).





Technical data (For applications outside these parameters, please consult us!)

general			
Weight	- Valve	kg	0.3
	– Coil	kg	0.25
Installation position			Any
Ambient temperature range °C		°C	-40 to +110

hydraulic

Maximum operating pressure bar	350 (at all ports)
Maximum flow I/min	60
Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524; quickly bio- degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range °C	-40 to +80
Viscosity range mm ² /s	4 to 500
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)	Class 20/18/15 1)
Load cycles	10 million (at 350 bar)

electrical

Voltage type			Direct voltage
Supply voltage 2)		V	12 DC; 24 DC
Voltage tolerance against ambi	ent temperature		See characteristic curve page 5
Power consumption		W	22
Duty cycle		%	See characteristic curve page 5
Maximum coil temperature 3) °C			150
Switching time according to	- ON	ms	≤ 80
ISO 6403 (solenoid horizontal)	- OFF	ms	≤ 50
Maximum switching frequency		cy/h	15000
Protection class according to	- Version "K4"		IP 65 with mating connector mounted and locked
VDE 0470-1	- Version "C4"		IP 66 with mating connector mounted and locked
(DIN EN 60529) DIN 40050-9			IP 69K with Rexroth mating connector (Material no. R901022127)
DIIV 40030-9	- Version "K40"		IP 69K with mating connector mounted and locked

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

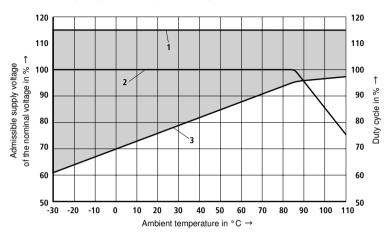
At the electrical connection "K4", the protective earthing conductor (PE $\frac{1}{2}$) has to be connected properly.

²⁾ Other voltages upon request

³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

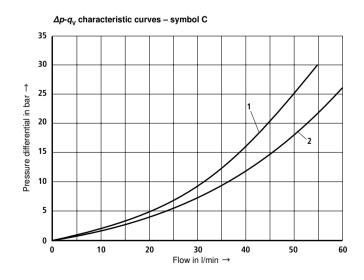
Voltage tolerance against ambient temperature; duty cycle

Voltage range and duty cycle depending on the ambient temperature

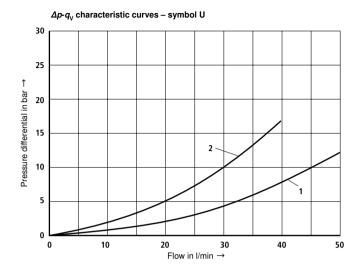


- Maximum voltage
- 2 Duty cycle
- 3 Minimum response voltage
- Admissible supply voltage range

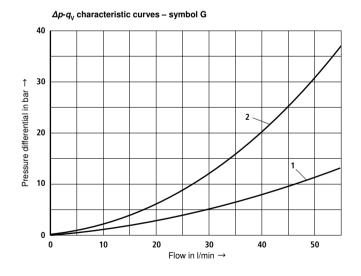
Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C and 24 V coil)



1	1 → 2 2 → 1
2	3 → 2 2 → 3

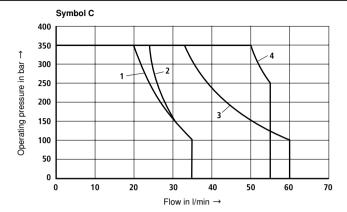






1	1 → 2
	2 → 1
2	1 → 3
	3 → 1

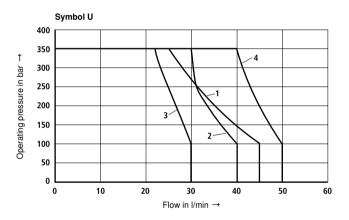
Performance limits (measured with HLP46, $\vartheta_{oil} = 40 \,^{\circ}\text{C} \pm 5 \,^{\circ}\text{C}$ and 24 V coil)



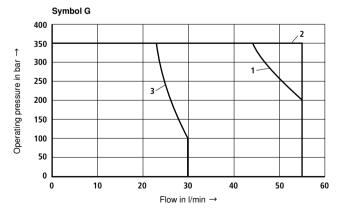
Attention!

The performance limits were determined when the solenoids were at operating temperature and at 10% undervoltage.

1	1 → 2
2	2 → 3
3	3 → 2
4	2 → 1

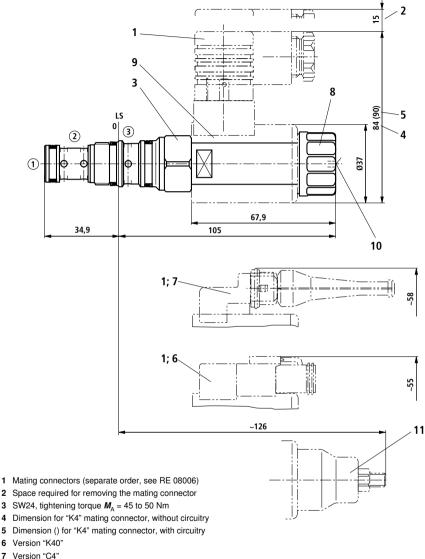


1	1 → 2
2	2 → 3
3	3 → 2
4	2 → 1





Unit dimensions (dimensions in mm)

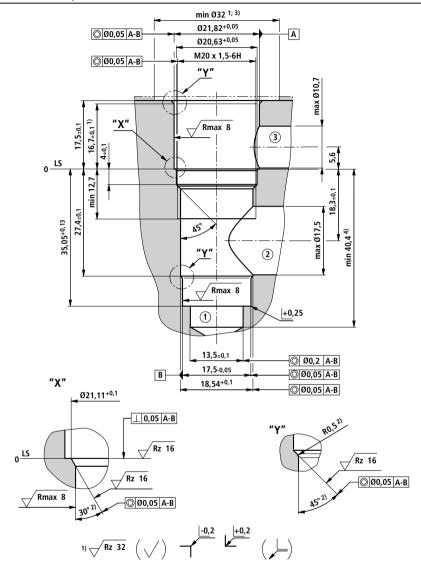


- 7 Version "C4"
- 8 Nut, tightening torque $M_A = 5^{+1}$ Nm
- 9 Coil (separate order, see page 2)
- 10 Concealed manual override "N9", optional
- 11 Screwable manual override "N10" (separate order, see page 2)

- 1 = Main port 1
- 2 = Main port 2
- 3 = Main port 3
- LS = Location shoulder

Mounting cavity R/T-11A; 3 main ports; thread M20 x 1.5

(dimensions in mm)



¹⁾ Differing from T-11A

1 = Main port 1

LS = Location shoulder

Tolerance for all angles ±0.5°

 $^{^{\}rm 2)}$ All seal ring in sertion faces are rounded and free of burrs

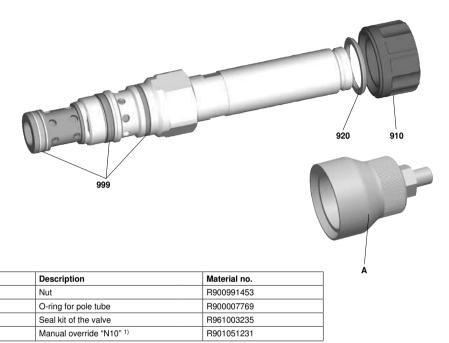
³⁾ with counterbore

⁴⁾ Depth for moving parts

^{2 =} Main port 2

^{3 =} Main port 3

Available individual components



Coils, separate order, see page 2

Item

910

920

999

Α

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 Fax +49 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent. The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.

¹⁾ Only with ordering code "N9", see page 2

1/10

4/2 directional spool valve direct operated with solenoid actuation

RE 18136-05/10.09

Replaces: 05.08

Type KKDE (high-performance)

Component size 1 Component series A Maximum operating pressure 350 bar Maximum flow 40 l/min



Table of contents

Content Page Features Ordering code 2 Valve types 2 Available spools 2 3 Function, section, symbols Technical data Voltage tolerance against ambient temperature 5 Characteristic curves 5, 6 Performance limits 7 Unit dimensions 8 9 Mounting cavity Available individual components 10

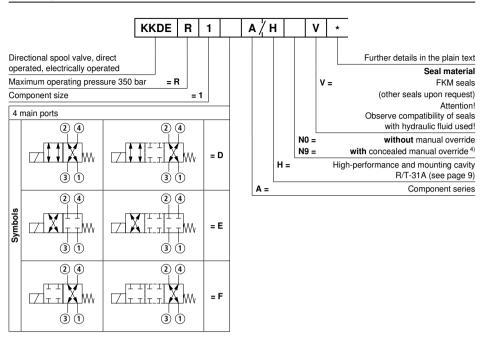
Features

- Mounting cavity R/T-31A
- Direct operated directional spool valve with solenoid actuation
- Free-flowing in both directions
- Wet-pin DC solenoids
- Rotatable solenoid coil
 - With concealed manual override

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code (Valve without coil) 1)



Valve types (without coil) 1)

	without manua	l override "N0"	with concealed manual override "N9"	
Spool symbol	Туре	Material no.	Туре	Material no.
D	KKDER1DA/HN0V	R901070118	KKDER1DA/HN9V	R901070125
E	KKDER1EA/HN0V	R901070123	KKDER1EA/HN9V	R901070127
F	KKDER1FA/HN0V	R901070124	KKDER1FA/HN9V	R901070129

Available coils (separate order) 1)

	Material no. for coil with connector 2)		
Direct voltage DC ³⁾	" K4" 03pol (2+PE) DIN EN 175301-803	"K40" 02pol K40 DT 04-2PA, make. Deutsch	" C4" 02pol C4/Z30 AMP Junior Timer
12 V	R900991678	R900729189	R900315818
24 V	R900991121	R900729190	R900315819

¹⁾ Complete valves with mounted coil upon request

²⁾ Mating connectors (separate order), see RE 08006

³⁾ Other voltages upon request

⁴⁾ Screwable manual override "N10" possible (Material no. R901051231, separate order)

Function, section, symbols

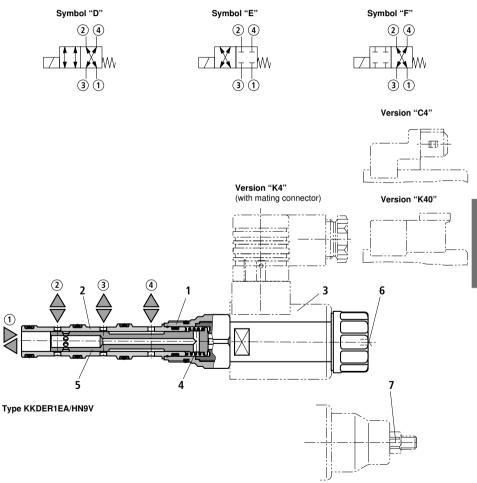
General

The 4/2 directional spool valves are direct operated, pressure compensated cartridge valves. They control the start, stop and direction of a flow and basically comprise a housing (1) with a movably mounted socket (2), the control spool (5) and a return spring (4).

Function

In the de-energized condition, control spool (5) is held in the initial position by the return spring (4). Control spool (5) is actuated by wet-pin DC solenoids (3). The various symbols are realized by corresponding spools (D; E, and F). The main ports $\widehat{\mathbb{Q}}$, $\widehat{\mathbb{Q}}$, and $\widehat{\mathbb{Q}}$ are suitable for a continuous load with an operating pressure of 350 bar and the flow can be directed into both directions (see symbols).

The manual override (6) allows for the switching of the valve without solenoid energization. It is also available in screwable version "N10" (7) (see page 2).



Technical data (For applications outside these parameters, please consult us!)

general			
Weight	- Valve	kg	0.35
	– Coil	kg	0.25
Installation position			Any
Ambient temperature range °C		°C	-40 to +110

/dı		

Maximum operating pressure bar	350 (at all ports)
Maximum flow I/min	40
Hydraulic fluid	Mineral oil (HL, HLP) according to DIN 51524; quickly bio- degradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range °C	-40 to +80
Viscosity range mm²/s	4 to 500
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)	Class 20/18/15 1)
Load cycles	10 million (at 350 bar)

electrical

Voltage type		Direct voltage
Supply voltage ²⁾ V		12DC; 24DC
Voltage tolerance against an	nbient temperature	See characteristic curve page 5
Power consumption	W	22
Duty cycle	%	See characteristic curve page 5
Maximum coil temperature 3) °C		150
Switching time according to ISO 6403 (solenoid horizontal)	– ON ms	≤ 80
	– OFF ms	≤ 50
Maximum switching frequency cy/h		15000
Protection class according to VDE 0470-1 (DIN EN 60529) DIN 40050-9	- Version "K4"	IP 65 with mating connector mounted and locked
	- Version "C4"	IP 66 with mating connector mounted and locked
		IP 69K with Rexroth mating connector (Material no. R901022127)
	- Version "K40"	IP 69K with mating connector mounted and locked

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

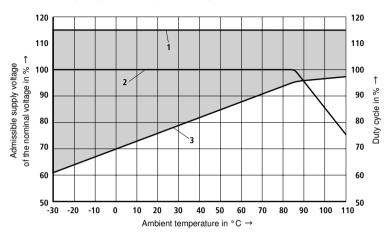
At the electrical connection "K4", the protective earthing conductor (PE ½) has to be connected properly.

²⁾ Other voltages upon request

³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

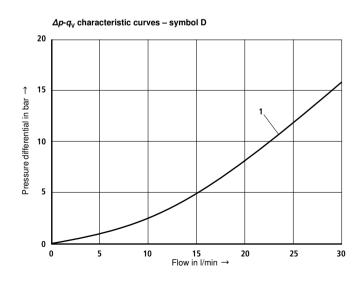
Voltage tolerance against ambient temperature; duty cycle

Voltage range and duty cycle depending on the ambient temperature



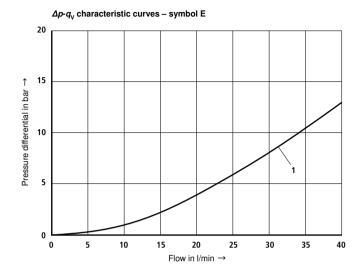
- Maximum voltage
- 2 Duty cycle
- 3 Minimum response voltage
- Admissible supply voltage range

Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C ± 5 °C and 24 V coil)

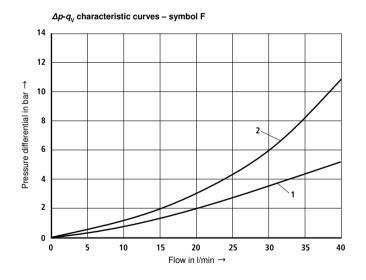


1	1 → 2
	2 → 1
	3 → 4
	4 → 3

Characteristic curves (measured with HLP46, ϑ_{oil} = 40 °C \pm 5 °C and 24 V coil)







1	1 → 2 2 → 1
2	3 → 4 4 → 3

Performance limits (measured with HLP46, $\vartheta_{oil} = 40 \,^{\circ}\text{C} \pm 5 \,^{\circ}\text{C}$ and 24 V coil)

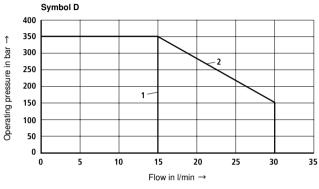
Attention!

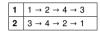
The specified performance limits are valid for operation with two directions of flow (e.g. symbol D: ① to ② and simultaneous return flow from ④ to ③).

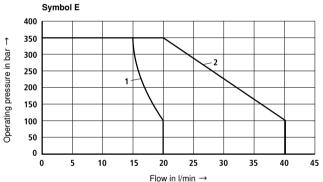
Due to the flow forces acting within the valves, the permissible performance limit may be considerably lower with

only one direction of flow (e. g. from ① to ② while port B is blocked)! In such cases, please consult us!

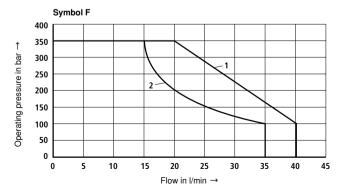
The performance limits were determined when the solenoids were at operating temperature and at 10 % undervoltage and without tank pre-loading.





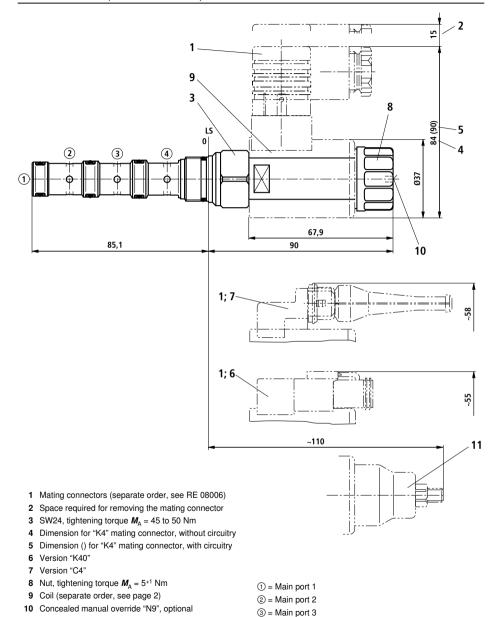








Unit dimensions (dimensions in mm)



4 = Main port 4

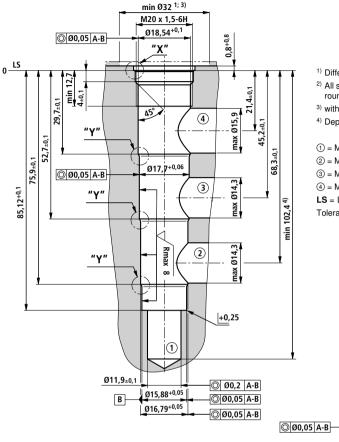
LS = Location shoulder

11 Screwable manual override "N10"

(separate order, see page 2)

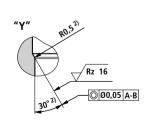
Mounting cavity R/T-31A; 4 main ports; thread M20 x 1.5

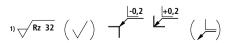
(dimensions in mm)

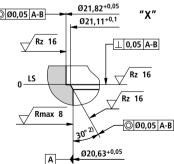


- 1) Differing from T-31A
- 2) All seal ring in sertion faces are rounded and free of burrs
- 3) with counterbore
- 4) Depth for moving parts
- 1 = Main port 1
- 2 = Main port 2
- 3 = Main port 3
- 4 = Main port 4
- LS = Location Shoulder

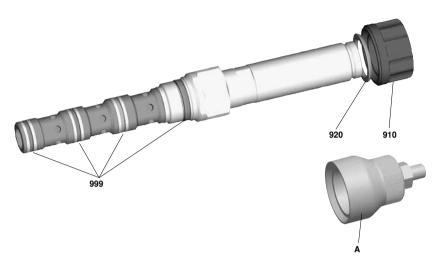
Tolerance for all angles ±0.5°







Available individual components



Item	Description	Material no.
910	Nut	R900991453
920	O-ring for pole tube	R900007769
999	Seal kit of the valve	R961003413
Α	Manual override "N10" 1)	R901051231

Coils, separate order, see page 2

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¹⁾ Only with ordering code "N9", see page 2

Pressure relief valve, pilot operated

RE 64608/07.09

1/10

Type MHDBW

Size 22 Component series 3X Maximum operating pressure 420 bar Maximum flow 400 l/min



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Contents Page Features Ordering code 2 Valve types 2 Available coils 2 Symbols 3 Function, sections Technical data 5.6 Voltage tolerance against ambient temperature 6 Characteristic curves 7 Unit dimensions 8 9 Mounting cavity Available individual components 10

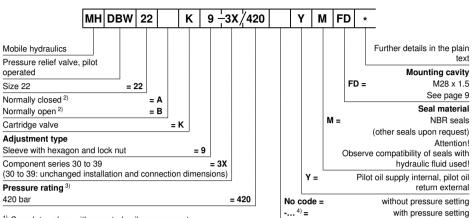
Features

- Pilot operated pressure relief valve with solenoid actuation
- Catridge valve
- for mobile applications
- in version "normally open" or "normally closed", optional
 - low circulation pressure

05

Information on available spare parts: www.boschrexroth.com/spc

Ordering code (Valve without coil) 1)



¹⁾ Complete valves with mounted coil upon request

Set to 300 bar: ...420-300... (Pressure setting with $q_{Vmax} = 10 \text{ l/min}$)

Valve types (without coil) 1)

Spool symbol	Туре	Material no.
Α	MHDBW 22 AK9-3X/420YMFD	R901231862
В	MHDBW 22 BK9-3X/420YMFD	R901231860

Available coils (separate order) 1)

	Material no. for coil with connector 5)			
Direct volt- age DC 6)	"K4" 03pol (2+PE) DIN EN 175301-803	"K40" 02pol K40 DT 04-2PA, make: Deutsch	"C4" 02pol C4/Z30 AMP Junior Timer	
12 V	R900991678	R900729189	R900315818	
24 V	R900991121	R900729190	R900315819	

¹⁾ Complete valves with mounted coil upon request

²⁾ Symbols see page 3.

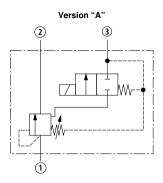
³⁾ The value refers to the cartridge valve. In case of installation into a housing, it has to be made sure that the set pressure of the cartridge valve does not exceed the value of the housing that might be lower!

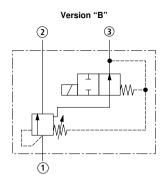
⁴⁾ Example:

⁵⁾ Mating connectors (separate order), see RE 08006

⁶⁾ Other voltages upon request

Symbols





- 1 = Main port 1 (P)
- ② = Main port 2 (T)
- 3 = Main port 3 (Y)

Function, sections

General

The pressure valve type MHDBW is a pilot operated pressure relief valve for installation in blocks. It is used to limit and unload a system pressure. The valve basically comprises housing (1), spool (2), poppet (3), and directional valve (4) with pilot spool (5).

Function

The pressure applied to main port $\widehat{\ \ }$ acts on the spool (2). Via orifice bores (6) and (7), the pressure is at the same time applied to poppet (3). If the pressure in main port $\widehat{\ \ }$ exceeds the value set at spring (8), poppet (3) opens against spring (8). Now, hydraulic fluid flows from main port $\widehat{\ \ }$ via orifice bores (6) and (7) into spring chamber (9) and from here, via main port $\widehat{\ \ }$, to the tank.

Due to the state of equilibrium at spool (2), hydraulic fluid flows, maintaining the set system pressure, from main port 1 to 2.

- Version "A":
 - By operating directional valve (4), unloading of main spool (2) and thus a connection ① and ② with low circulation pressure is achieved.
- Version "B":

Activating the directional valve (4) switches from circulation pressure function to pressure relief function.

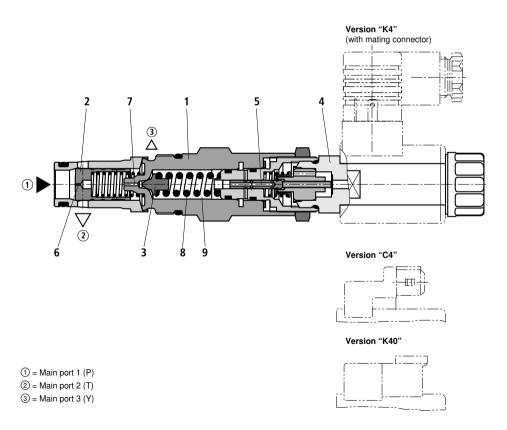
IF Note!

Pressures present in the main ports ② and ③ are added up 1:1 to the set pressure at the spring (8).

Attention!

- Version "A":
 - In case of power failure or cable break, the pressure relief function is activated.
- Version "B":

In case of power failure or cable break, the lowest settable pressure (circulation pressure) is reached.



Technical data (For applications outside these parameters, please consult us!)

general	
Weight kg	0.88
Installation position	Any
Ambient temperature range °C	-30 to +80
Surface protection	The valves don't have any surface protection. Surface protection has to be ensured by painting the components or the whole assembly (e.g. valve with housing).

hydraulic

Maximum operating	- Main port ① (P)	bar	420
pressure	- Main port ② (T)	bar	< 5 (permanent pressure; maximum pressure peak 25 bar)
	- Main port ③ (Y)	bar	< 5
Maximum set pressure		bar	420
Maximum flow		l/min	See characteristic curves page 7
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524; fast biodegradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperat	ture range	°C	-30 to +80
Viscosity range		mm²/s	10 to 380
	gree of contamination of the according to ISO 4406 (c)	e hydraulic	Class 20/18/15 ¹⁾
Load cycles			2 million
Maximum pressure buil	d-up speed	bar/s	30000
Hysteresis		%	< 5
Repeatability		%	< 5

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and at the same time increases the service life of the components.

For selecting the filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

Mote!

The technical data was determined at a viscosity of ν = 41 mm²/s (HLP46, ϑ_{Oil} = 40 \pm 5 °C).

Minimum cracking pressure > 0.5 bar.

Thus, a supply pressure \geq 4 bar is recommended.

The following documentation must be observed: RE 64020-B1 "Hydraulic valves for mobile applications"

Technical data (For applications outside these parameters, please consult us!)

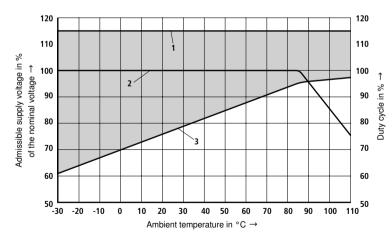
electrical			
Type of voltage			Direct voltage
Supply voltage 2)		V	12 DC; 24 DC
Voltage tolerance against amb	ent temperature		See characteristic curve below
Power consumption		W	22
Duty cycle %		See characteristic curve below	
Maximum coil temperature 3) °C		150	
Switching time according to	– ON	ms	≤ 80
ISO 6403 (solenoid horizontal)	- OFF	ms	≤ 50
Maximum switching frequency		1/h	15000
Type of protection according to VDE 0470-1 (DIN EN 60529) DIN 40050-9	- Version "K4"		IP 65 with mating connector mounted and locked
	- Version "C4"		IP 66 with mating connector mounted and locked
			IP 69K with Rexroth mating connector (material no. R901022127)
	- Version "K40"		IP 69K with mating connector mounted and locked

²⁾ Other voltages upon request

At the electrical connection "K4", the protective earthing conductor (PE \(\frac{1}{2} \)) has to be connected properly.

Voltage tolerance against ambient temperature; duty cycle

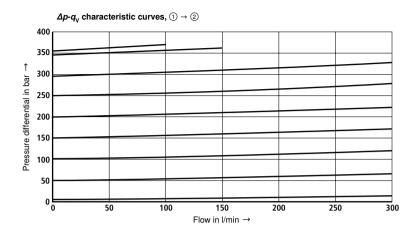
Voltage range and duty cycle depending on the ambient temperature



- 1 Maximum voltage
- 2 Duty cycle
- 3 Minimum response voltage
- Admissible supply voltage range

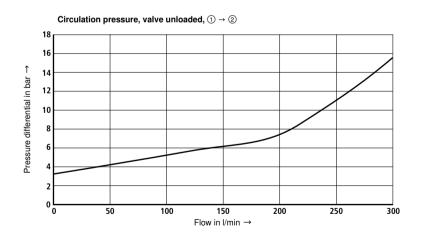
³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

Characteristic curves (measured with HLP46, ϑ_{Oil} = 40 ± 5 °C)

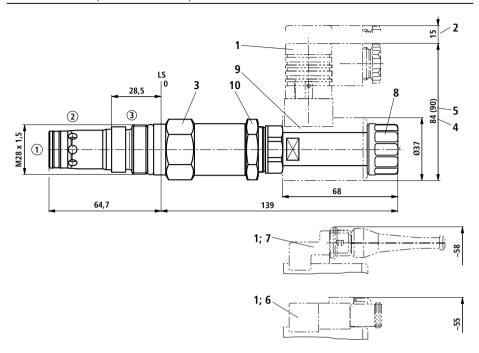


Attention!

The characteristic curves apply for a tank pressure $p_T = 0$ in the entire volume flow range and were measured without housing resistance!

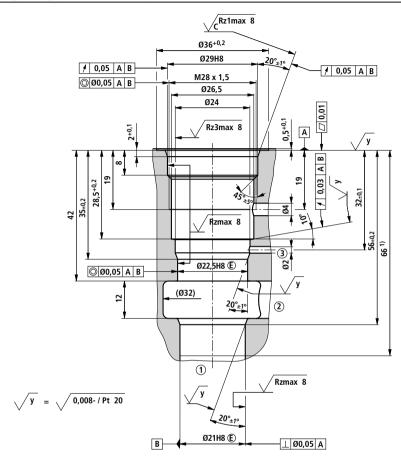


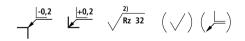
Unit dimensions (dimensions in mm)



- 1 Mating connector (separate order, see RE 08006)
- 2 Space required for removing the mating connector
- 3 30A/F, tightening torque $M_{\Delta} = 80 \text{ Nm}$
- 4 Dimension for mating connector "K4", without circuitry
- 5 Dimension () for mating connector "K4", with circuitry
- 6 Version "K40"
- 7 Version "C4"
- 8 Nut, tightening torque $M_A = 5^{+1}$ Nm
- 9 Coil (separate order, see page 2)
- 10 30A/F, tightening torque $M_A = 15 \text{ Nm}$
- 1 = Main port 1 (P)
- 2 = Main port 2 (T)
- 3 = Main port 3 (Y)
- LS = Location shoulder

Mounting cavity (dimensions in mm)





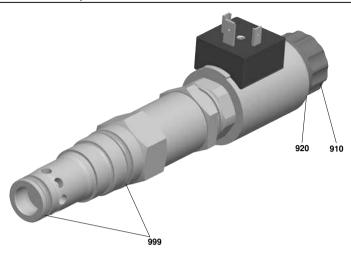
- 1) Depth of fit
- 2) Visual inspection

All seal ring insertion chamfers are rounded and free of burrs

Standards:

Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances for metal- cutting procedures	DIN ISO 2768-mK
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

Available individual components



Item	Description	Material no.
910	Nut	R900991453
920	O-ring for pole tube	R900004280
999	Seal kit of the valve	R961003382

Coils (separate order), see page 2

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 Fax +49 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent. The data specified above only serve to describe the product. No statement concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.

High pressure cartridge valves

Electro-proportional

Designation	Description	p_{max} in bar	q_V in I/min	Data sheet	Page
Proportional pressure relief valve, direct operated, rising characteristic curve	KBPS.8A	420	3	18139-04	971
Proportional pressure relief valve, direct operated, falling characteristic curve	KBPS.8B	420	3	18139-05	983
Proportional pressure relief valve, pilot operated, rising characteristic curve	KBVS.3A	350	200	18139-08	995
Proportional pressure relief valve, pilot operated, falling characteristic curve	KBVS.3B	350	200	18139-07	1005
Proportional flow control valve, with integrated pressure compensator	KUDSR.3	350	120	18702	1015
Plug-in proportional amplifier	VT-SSPA			30116	1025

Proportional pressure relief valve, directly operated, rising characteristic curve

Linear Motion and

RE 18139-04/09.07

Replaces: 06.05

Type KBPS.8A (High-Performance)

Component series A
Maximum operating pressure 420 bar
Maximum flow 3 l/min



Overview of contents

Table of contents Features Ordering code Preferred types Function, section, symbol Technical data Characteristic curves Unit dimensions Mounting cavity Available individual components

Features

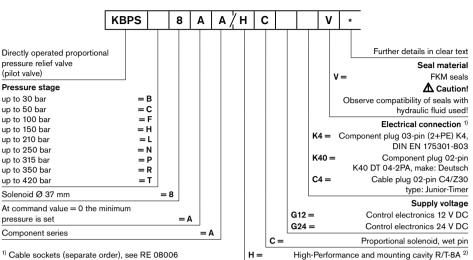
- Pilot valve

Page

- Mounting cavity R/T-8A
- 2 Directly operated valve for limiting a system pressure
- 2 Suitable for mobile and industrial applications
- 3 Operation by proportional solenoid
- 4, 5 Proportional solenoid with central thread and detachable coil
- 6 to 9 Cartridge valve
 - 10 Control electronics: Plug-in amplifier VT-SSPA1 ...
 - Fine balancing of the command value/pressure characteristic
 - curves possible externally on the control electronics
 - In the event of a power failure, the minimum pressure becomes effective

Information on available spare parts: www.boschrexroth.com/spc

Ordering code



¹⁾ Cable sockets (separate order), see RE 08006

Preferred types

Туре	Material number
KBPSC8AA/HCG24K4V	R901049804
KBPSF8AA/HCG24K4V	R901049817
KBPSH8AA/HCG24K4V	R901049868
KBPSL8AA/HCG24K4V	R901027408
KBPSN8AA/HCG24K4V	R901049877
KBPSP8AA/HCG24K4V	R901047007
KBPSR8AA/HCG24K4V	R901049860
KBPST8AA/HCG24K4V	R901049865

²⁾ See page 10

Function, section, symbol

General

Proportional pressure relief valves of the KBPS.8A type are remote control valves of poppet design and used to limit a system pressure. They basically consist of a pressure tube (3), a solenoid coil (4), the valve seat (5) and valve poppet (6).

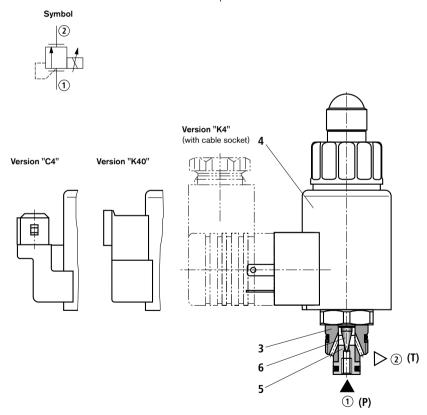
At a command value of 0 or in the event of a power failure, the minimum pressure is set. The actuation is performed by a proportional solenoid with central thread and detachable coil. The inner chamber of the solenoid is connected to main port 2 and filled with hydraulic fluid. These valves can be used to infinitely adjust the system pressure to be limited in dependence upon the electrical command value.

Basic principle

A command value is selected on the control electronics for adjusting the system pressure. The electronics that is required for operation controls the solenoid coil with electric current in proportion to the command value. The proportional solenoid converts the electric current into a mechanical force that acts via the armature on the valve poppet (6). The valve poppet (6) is pressed onto valve seat (5) and closes the connection between main ports 1 and 2. When the hydraulic force that acts on the valve poppet (6) is equal to the magnetic force, the valve regulates the set pressure by lifting the valve poppet (6) off the valve seat (5), thus allowing hydraulic fluid to flow from main port 1 to 2. In the event of a power failure, the minimum pressure becomes effective.

■ Note!

Any tank pressures (main port 2) add to the set value in main port 1.



Technical data (for applications outside these parameters, please consult us!)

general		
Weight	kg	0,45
Installation orientation		Optional, if it can be ensured that no air can collect upstream of the valve. Otherwise, we recommend that the valve be mounted in a suspended position.
Ambient temperature range	°C	-20 to +120
Storage temperature range	°C	-20 to +80
Environmental tests:		
Vibration test according to I	DIN EN 60068-2 / IEC 60068-2 /2	axes (X/Z)
DIN EN 60068-2-6: 05/96	Vibration, sinusoidal	10 cycles at 5 to 2000 to 5 Hz with a logarithmic frequency change rate of 1 Oct./min, 5 to 57 Hz, amplitude 1.5 mm (p-p), 57 to 2000 Hz, amplitude 10 g
IEC 60068-2-64: 05/93	Vibration (random) and broadband noise	20 to 2000 Hz, amplitude 0.05 g²/Hz (10 g RMS/30 g peak), testing time 30 min
DIN EN 60068-2-27: 03/95	Shock test	Half sine 15 g / 11 ms; 3 x in pos., 3 x in neg. direction (6 individual shocks in total)
DIN EN 60068-2-29: 03/95	Bump test	Half sine 25 g / 6 ms; 1000 x in pos., 1000 x in neg. direction (2000 individual shocks in total)
Details per axis		
Climatic test according to D	IN EN 60068-2 / IEC 60068-2 (er	vironmental testing):
DIN EN 60068-2-1: 03/95	Storage temperature	-40 °C, dwell time 16 h
DIN EN 60068-2-2: 08/94		+110 °C, dwell time 16 h
DIN EN 60068-2-1: 03/95	Cold test	2 cycles at −25 °C, dwell time 2 h
DIN EN 60068-2-2: 08/94	Dry heat test	2 cycles at +120 °C, dwell time 2 h

Salt spray test: 720 h according to DIN 50021

Damp heat, cyclical

IEC 60068-2-30: 1985

Variant 2/ +25 °C to +55 °C

93 % to 97 % relative humidity, 2 cycles, 24 h each

[→] Finish painting generally not required. Should you nevertheless wish to apply a finish coat, observe the reduced heat dissipation capacity.

Technical data (for applications outside these parameters, please consult us!)

hydraulic		
Max. operating pressure 1) (main port 1)	bar	420
Max. permissible return flow pressure (main port	2) bar	210
Maximum set pressure 2)		See command value/pressure characteristic curves on page 6
Minimum set pressure at command value 0		See characteristic curves on pages 7 and 8
Maximum flow	l/min	3 (see characteristic curves on page 7)
Hydraulic fluid		Mineral oil (HL, HLP) acc. to DIN 51524; fast bio-degradable hydraulic fluids acc. to VDMA 24568 (see also RE 90221); HETG (rape-seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range	°C	-20 to +80
Viscosity range	mm²/s	15 to 380
Max. permissible degree of contamination of the draulic fluid - cleanliness class acc. to ISO 4406		Class 20/18/15 ³⁾
Hysteresis		< 5 % of max. set pressure
Range of inversion		< 0.5 % of max. set pressure
Response sensitivity		< 0.5 % of max. set pressure
Tolerance of the command value/ - Command value 100 %		< 5 % of max. set pressure
pressure characteristic curve - Command value	0	< 2 % of max. set pressure
Step response $(T_u + T_g) 0 \rightarrow 100 \% \text{ or } 100 \% \rightarrow$	• 0 ms	70 (depends on system)

electrical

Supply voltage		V	12 DC 24 DC		
Maximum control current		mA	max. nominal current 1760 mA max. nominal current 1200		
Coil resistance – Cold value at 20 °C		Ω	2,3	4,8	
	- Max. hot value	Ω	3,65	7,2	
Duty cycle		%	100 4)		
Maximum coil temperature 5))	°C	150		
Type of protection acc. to	- Version "K4"		IP 65 with cable socket mounted and locked		
VDE 0470-1 - Version "C4"			IP 66 with cable socket mounted and locked		
(DIN EN 60529), DIN 40050-9			IP 69K with Rexroth cable socket (material no. R901022127)		
- Version "K40"			IP 69K with cable socket mounted and locked		
Control electronics 6)			Plug-in amplifier VT-SSPA1		
Rating according to VDE 05	80				

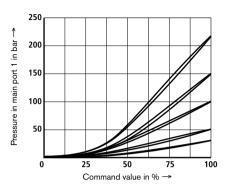
- 1) A Caution! The maximum operating pressure is added up from the set pressure and the return flow pressure!
- 2) If the valve is mounted in a mounting cavity made of non-ferrous, conductive material, the max. set pressure is by < 3 % lower. Caution! The valves are factory-set. In the case of subsequent re-adjustment, the warranty will become void!
- 3) The cleanliness class stated for the components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, increases the service life of components.

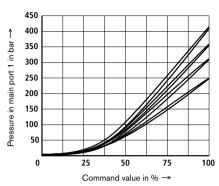
For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

- 4) In the case of use at heights > 2000 m above MSL we recommend that you consult the manufacturer.
- 5) Due to the surface temperatures occurring on solenoid coils, the European standards ISO 13732-1 and EN 982 must be observed!
- 6) Separate order, see RE 30116

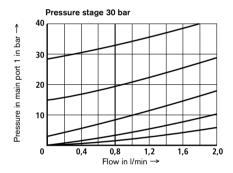
Characteristic curves (measured with HLP46, $\vartheta_{\rm oil} =$ 40 °C \pm 5 °C and 24 V coil)

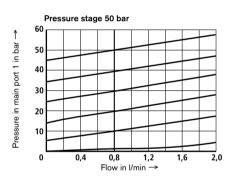
Pressure in main port 1 in dependence on command value. Flow = 0.8 l/min

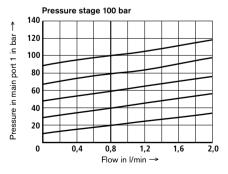


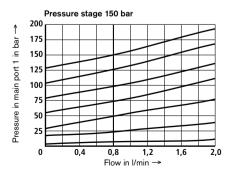


Pressure in main port 1 in dependence on flow.





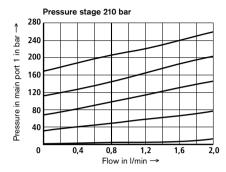


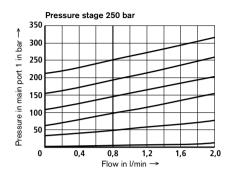


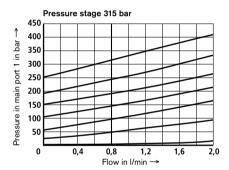
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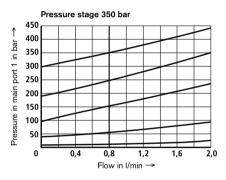
Characteristic curves (measured with HLP46, $\vartheta_{\rm oil} =$ 40 °C \pm 5 °C and 24 V coil)

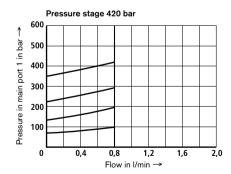
Pressure in main port 1 in dependence on flow.





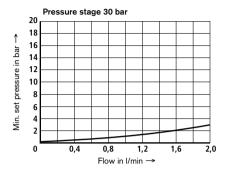


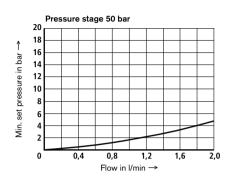


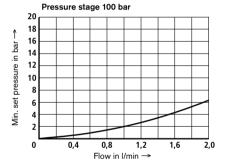


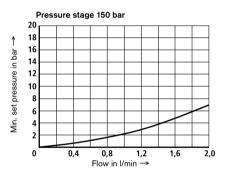
Characteristic curves (measured with HLP46, $\vartheta_{\rm oil} =$ 40 °C \pm 5 °C and 24 V coil)

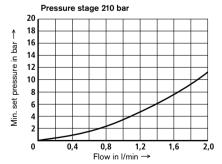
Minimum set pressure in main port 1 at command value 0.

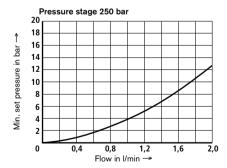






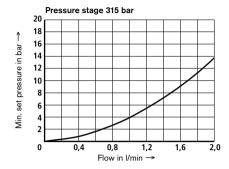


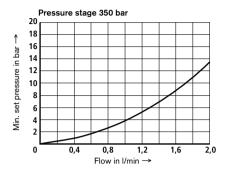


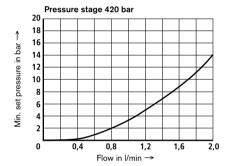


Characteristic curves (measured with HLP46, $\vartheta_{\rm oil}$ = 40 °C ± 5 °C and 24 V coil)

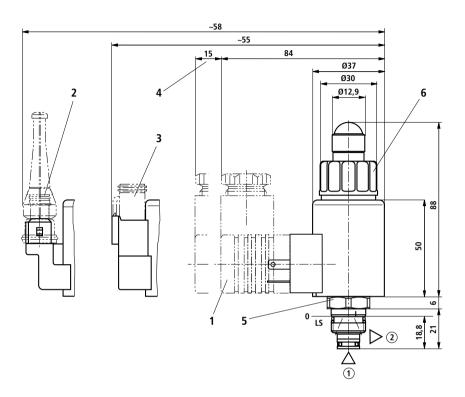
Minimum set pressure in main port 1 at command value 0.





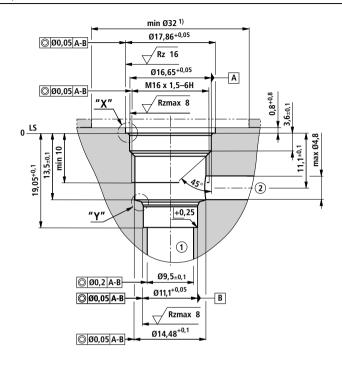


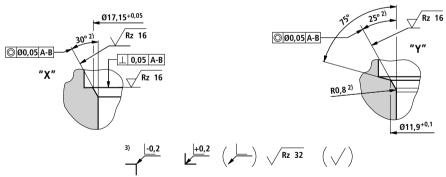
Unit dimensions (dimensions in mm)



- (1) = Main port 1
- 2 = Main port 2
- LS = Location shoulder
 - Cable socket for component plug "K4" (separate order, see RE 08006)
 - 2 Cable socket for component plug "C4" (separate order, see RE 08006)
 - 3 Cable socket for component plug "K40" (separate order, see RE 08006)
 - 4 Space required to remove the plug-in connector
 - 5 Hexagon SW22 for screwing in the pressure tube; tightening torque $M_{\rm A} = 40^{+6} \ {\rm Nm}$
 - 6 Solenoid nut, tightening torque $M_A = 5^{+1}$ Nm

Mounting cavity R/T-8A; 2 main ports; thread M16 x 1.5-6H (dimensions in mm)





¹⁾ When countersunk, different from T-8A

(2) = Main port 2

Tolerance for all angles $\pm~0.5^{\circ}$

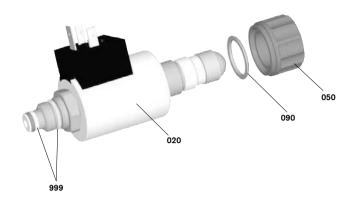
²⁾ All angled seal ring insertion faces are rounded and free from burrs

³⁾ Different from T-8A

^{1 =} Main port 1

LS = Location shoulder

Available individual components



Item	Designation		DC	Material no.
020	Coil for individual connection 1)	K4	12 V 24 V	R901002932 R901002319
		K40	12 V 24 V	R901003055 R901003053
		C4	12 V 24 V	R901003044 R901003026
050	Nut			R900992146
090	Seal ring for pressure tube			R900007769
999	Valve seal kit			R961000376

1) [6 Note!

After the solenoid coil was replaced, the factory-set pressure may change by ± 5 %.

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 Fax +49 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent.

The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.

1/12

Proportional pressure relief valve, directly operated, falling characteristic curve

RE 18139-05/09.07

Replaces: 06.05

Type KBPS.8B (High-Performance)

Component series A
Maximum operating pressure 420 bar
Maximum flow 3 l/min



Overview of contents

Table of contents Features Ordering code Preferred types Function, section, symbol Technical data Characteristic curves Unit dimensions Mounting cavity Available individual components

Features

- Pilot valve

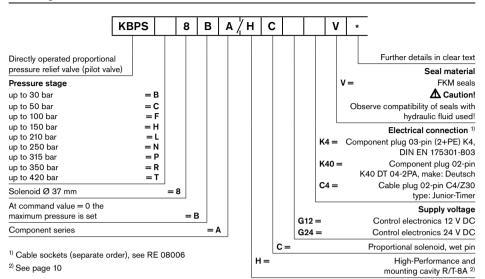
Page

- Mounting cavity R/T-8A
- 2 Directly operated valve for limiting a system pressure
- 2 Suitable for mobile and industrial applications
- 3 Operation by proportional solenoid
- 4, 5 Proportional solenoid with central thread and detachable coil
- 6 to 9 Cartridge valve
 - 10 Control electronics: Plug-in amplifier VT-SSPA1 ...
 - Fine balancing of the command value/pressure characteristic curves possible externally on the control electronics
 - Valves are adjusted to max. pressure by means of an adjustment screw
 - In the event of a power failure, the maximum set pressure becomes effective

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code



Preferred types

Туре	Material number
KBPSC8BA/HCG24K4V	R901018586
KBPSF8BA/HCG24K4V	R901018587
KBPSH8BA/HCG24K4V	R901049691
KBPSL8BA/HCG24K4V	R901018588
KBPSN8BA/HCG24K4V	R901018592
KBPSP8BA/HCG24K4V	R901018593
KBPSR8BA/HCG24K4V	R901018597
KBPST8BA/HCG24K4V	R901018598

Function, section, symbol

General

Proportional pressure relief valves of the KBPS.8B type are remote control valves of poppet design and used to limit a system pressure. They basically consist of a pressure tube (3), a solenoid coil (4), the valve seat (5) and valve poppet (6).

At a command value of 0 or in the event of a power failure, the maximum pressure becomes effective. The actuation is performed by a proportional solenoid with central thread and detachable coil. The inner chamber of the solenoid is connected to main port 2 and filled with hydraulic fluid. These valves can be used to infinitely adjust the system pressure to be limited in dependence upon the electrical command value.

Basic principle

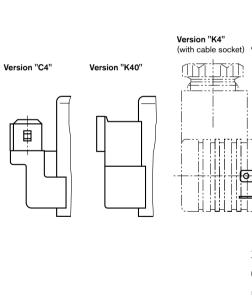
The mechanics of the valve is factory-set to the maximum pressure. A command value for the proportional reduction of the system pressure is selected on the control electronics. The electronics controls the solenoid coil with electric current in dependence upon the command value.

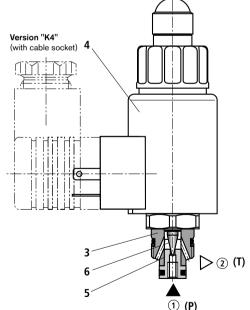
The proportional solenoid converts the electric current into a mechanical force that acts via the armature against the adjustment spring and hence reduces the force that acts on the valve poppet (6). The valve poppet (6) is pressed on the valve seat (5) and closes the connection between main ports 1 and 2. When the hydraulic force that acts on the valve poppet (6) is equal to the force differential between the adjustment spring and the magnetic force, the valve achieves the set pressure by lifting the valve poppet (6) off the valve seat, thus allowing hydraulic fluid to flow from main port 1 to 2. In the event of a power failure, the maximum pressure becomes effective.

■ Note!

Any tank pressures (main port 2) add to the set value in main port 1.







Technical data (for applications outside these parameters, please consult us!)

Weight	kg	0,45
Installation orientation		Optional, if it can be ensured that no air can collect upstream of the valve. Otherwise, we recommend that the valve be mounted in a suspended position.
Ambient temperature range	°C	-20 to +120
Storage temperature range	°C	-20 to +80

Environmental tests:

Vibration test according to DIN EN 60068-2 / IEC 60068-2 /2 axes (X/Z)			
DIN EN 60068-2-6: 05/96	Vibration, sinusoidal	10 cycles at 5 to 2000 to 5 Hz with a logarithmic frequency change rate of 1 Oct./min, 5 to 57 Hz, amplitude 1.5 mm (p-p), 57 to 2000 Hz, amplitude 10 g	
IEC 60068-2-64: 05/93	Vibration (random) and broadband noise	20 to 2000 Hz, amplitude 0.05 g ² /Hz (10 g RMS/30 g peak), testing time 30 min	
DIN EN 60068-2-27: 03/95	Shock test	Half sine 15 g / 11 ms; 3 x in pos., 3 x in neg. direction (6 individual shocks in total)	
DIN EN 60068-2-29: 03/95	Bump test	Half sine 25 g / 6 ms; 1000 x in pos., 1000 x in neg. direction (2000 individual shocks in total)	

Details per axis

Climatic test according to DIN EN 60068-2 / IEC 60068-2 (environmental testing):			
DIN EN 60068-2-1: 03/95	Storage temperature	-40 °C, dwell time 16 h	
DIN EN 60068-2-2: 08/94		+110 °C, dwell time 16 h	
DIN EN 60068-2-1: 03/95	Cold test	2 cycles at −25 °C, dwell time 2 h	
DIN EN 60068-2-2: 08/94	Dry heat test	2 cycles at +120 °C, dwell time 2 h	
IEC 60068-2-30: 1985	Damp heat, cyclical	Variant 2/ +25 °C to +55 °C	

Salt spray test: 720 h according to DIN 50021

[→] Finish painting generally not required. Should you nevertheless wish to apply a finish coat, observe the reduced heat dissipation capacity.

Technical data (for applications outside these parameters, please consult us!)

Hydraulic		
Max. operating pressure 1) (main port 1)	bar	420
Max. permissible return flow pressure (main port 2)	bar	210
Maximum set pressure 2)		See command value/pressure characteristic curves on page 6
Minimum set pressure at max. command value 3)		See characteristic curves on pages 7 and 8
Maximum flow	l/min	3 (see characteristic curves on page 7)
Hydraulic fluid		Mineral oil (HL, HLP) acc. to DIN 51524; fast bio-degradable hydraulic fluids acc. to VDMA 24568 (see also RE 90221); HETG (rape-seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range	°C	-20 to +80
Viscosity range	mm ² /s	15 to 380
Max. permissible degree of contamination of the hydraulic fluid - cleanliness class acc. to ISO 4406 (c)		Class 20/18/15 ⁴⁾
Hysteresis		< 4 % of max. set pressure
Range of inversion		< 0.5 % of max. set pressure
Response sensitivity		< 0.5 % of max. set pressure
Tolerance of the command value/ - Command value 100 g	%	< 2 % of max. set pressure
pressure characteristic curve - Command value 0		< 5 % of max. set pressure

Electrical

Supply voltage		٧	12 DC	24 DC	
Maximum control current mA		mA	max. nominal current 1760 mA	max. nominal current 1200 mA	
Coil resistance	 Cold value at 20 °C 	Ω	2,3	4,8	
	- Max. hot value	Ω	3,65	7,2	
Duty cycle		%	100 5)		
Maximum coil temperature 6)	°C	150		
Type of protection acc. to	- Version "K4"		IP 65 with cable socket mounted and locked		
VDE 0470-1	- Version "C4"		IP 66 with cable socket mounted and locked		
(DIN EN 60529), DIN 40050-9			IP 69K with Rexroth cable socket (material no. R901022127)		
	- Version "K40"		IP 69K with cable socket mounted and locked		
Control electronics 7)			Plug-in amplifier VT-SSPA1		
Rating according to VDE 05	580				

ms

1) **A Caution!** The maximum operating pressure is added up from the set pressure and the return flow pressure!

Step response ($T_{\rm u} + T_{\rm o}$) 0 \rightarrow 100 % or 100 % \rightarrow 0

- 2) A Caution! The valves are factory-set. In the case of subsequent re-adjustment, the warranty will become void!
- 3) If the valve is mounted in a mounting cavity made of non-ferrous, conductive material, the min. set pressure is slightly higher.
- 4) The cleanliness class stated for the components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, increases the service life of components.

For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

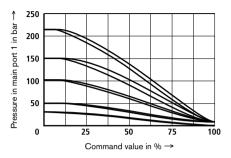
- 5) In the case of use at heights > 2000 m above MSL we recommend that you consult the manufacturer.
- 6) Due to the surface temperatures occurring on solenoid coils, the European standards ISO 13732-1 and EN 982 must be observed!
- 7) Separate order, see RE 30116

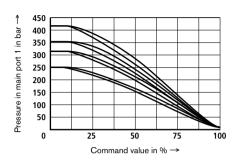
< 5 % of max. set pressure

70 (depends on system)

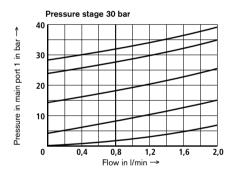
Characteristic curves (measured with HLP46, $\vartheta_{\rm oil} =$ 40 °C \pm 5 °C and 24 V coil)

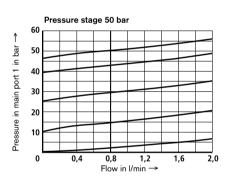
Pressure in main port 1 in dependence on command value. Flow = 0.8 l/min

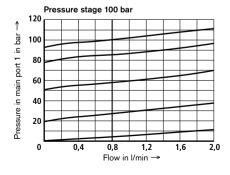


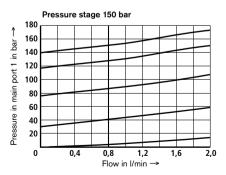


Pressure in main port 1 in dependence on flow.





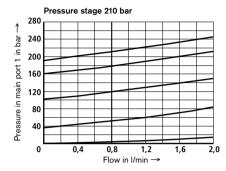


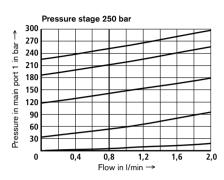


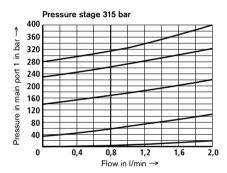
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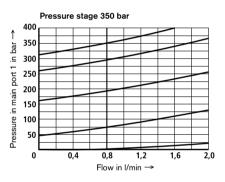
Characteristic curves (measured with HLP46, $\vartheta_{\rm oil} =$ 40 °C \pm 5 °C and 24 V coil)

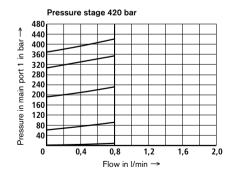
Pressure in main port 1 in dependence on flow.





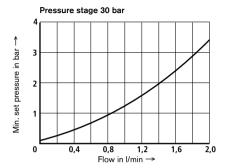


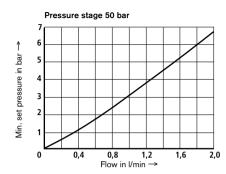


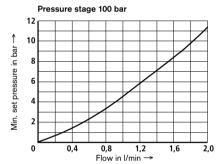


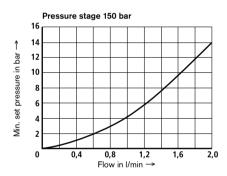
Characteristic curves (measured with HLP46, $\vartheta_{\rm oil} =$ 40 °C \pm 5 °C and 24 V coil)

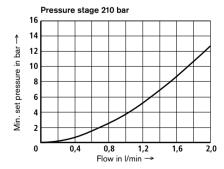
Minimum set pressure in main port 1 at command value 100 %.

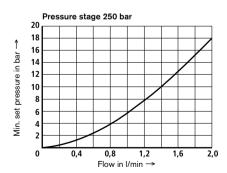






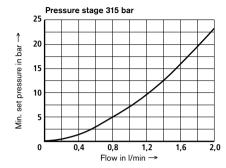


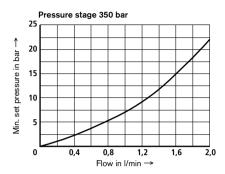


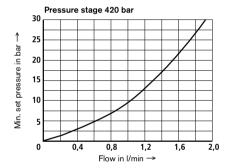


Characteristic curves (measured with HLP46, $\vartheta_{\rm oil}$ = 40 °C ± 5 °C and 24 V coil)

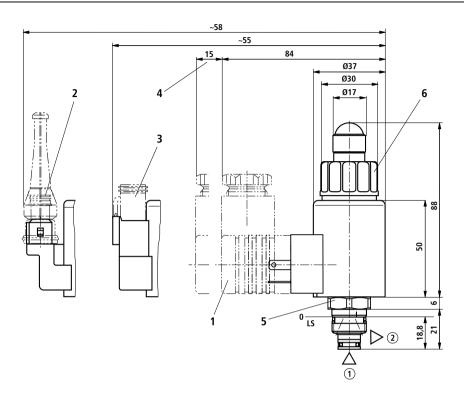
Minimum set pressure in main port 1 at command value 100 %.





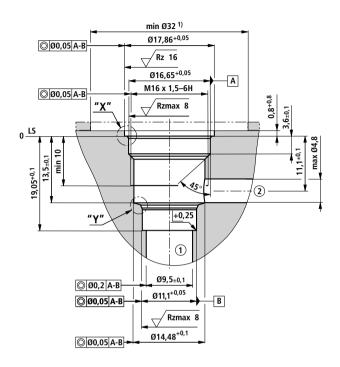


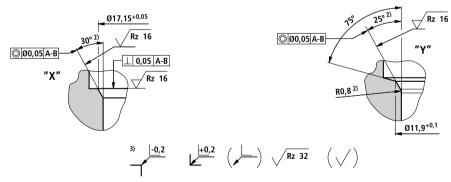
Unit dimensions (dimensions in mm)



- (1) = Main port 1
- 2 = Main port 2
- LS = Location shoulder
 - Cable socket for component plug "K4" (separate order, see RE 08006)
 - 2 Cable socket for component plug "C4" (separate order, see RE 08006)
 - 3 Cable socket for component plug "K40" (separate order, see RE 08006)
 - 4 Space required to remove the plug-in connector
 - 5 Hexagon SW22 for screwing in the pressure tube; tightening torque $M_{\rm A} = 40^{+6}~{\rm Nm}$
 - 6 Solenoid nut, tightening torque $M_A = 5^{+1}$ Nm

Mounting cavity R/T-8A; 2 main ports; thread M16 x 1.5-6H (dimensions in mm)



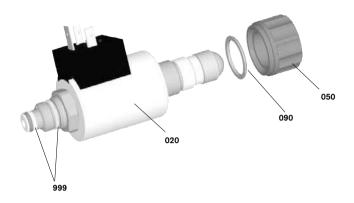


- 1) When countersunk, different from T-8A
- ²⁾ All angled seal ring insertion faces are rounded and free from hurrs
- 3) Different from T-8A

- \bigcirc = Main port 1
- (2) = Main port 2
- LS = Location shoulder

Tolerance for all angles ± 0.5°

Available individual components



Item	Designation		DC	Material no.
020	Coil for individual connection 1)	K4	12 V 24 V	R901002932 R901002319
		K40	12 V 24 V	R901003055 R901003053
		C4	12 V 24 V	R901003044 R901003026
050	Nut			R900992146
090	Seal ring for pressure tube			R900007769
999	Valve seal kit			R961000376

^{1) [6} Note!

After the solenoid coil was replaced, the factory-set pressure may change by ± 5 %.

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 Fax +49 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent.

The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.

Linear Motion and

Assembly Technologies

Bosch Group

Proportional pressure relief valve, pilot-operated, rising characteristic curve

RE 18139-08/09.07 1/10

Replaces: 08.05

Type KBVS.3A (High-Performance)

Component size 3 Component series A Maximum operating pressure 350 bar Maximum flow 200 l/min



Overview of contents

Contents Features Ordering code Preferred types Function, symbol Technical data Characteristic curves Unit dimensions Mounting cavity Available individual components

Features

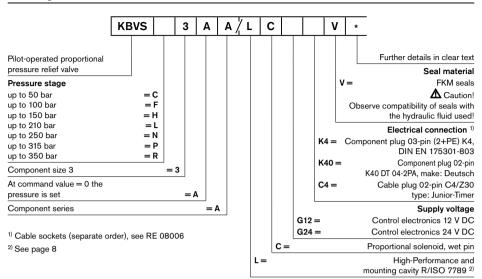
Page

- Mounting cavity R/ISO 7789-33-01-0-98
- Pilot-operated valve for limiting a system pressure
- 2 - Suitable for mobile and industrial applications
- 2 - Operation by proportional solenoid
- 3 - Proportional solenoid with central thread and detachable coil
- 4, 5 - Cartridge valve
 - Control electronics: plug-in amplifier VT-SSPA1 ...
 - Fine balancing of the command value/pressure characteristic
 - curves possible externally on the control electronics
 - In the event of a power failure, the minimum pressure becomes effective

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code



Preferred types

Туре	Material number
KBVSC3AA/LCG24K4V	R901061858
KBVSF3AA/LCG24K4V	R901061859
KBVSH3AA/LCG24K4V	R901061869
KBVSL3AA/LCG24K4V	R901061873
KBVSN3AA/LCG24K4V	R901061874
KBVSP3AA/LCG24K4V	R901061875
KBVSR3AA/LCG24K4V	R901061877

Function, Symbol

General

Valves of the KBVS type are pilot-operated proportional pressure relief valves of poppet design and used for limiting the pressure in hydraulic systems. They basically consist of a screwed-in proportional pilot valve (1) and the main valve (2).

These valves can be used for infinitely adusting the pressure to be limited in dependence upon the command value. At command value 0 or in the event of a power failure, the minimum pressure is set.

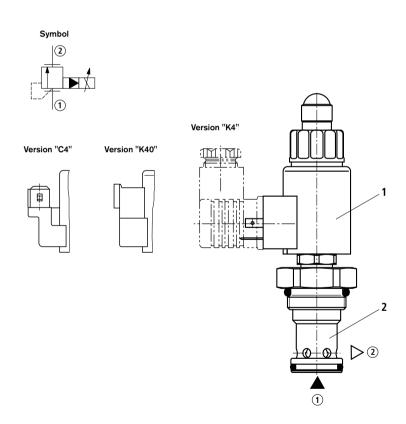
Basic principle

For the proportional increase in the system pressure, a command value is selected on the control electronics. The electronics controls the solenoid coil with electric current in dependence upon the command value, which causes the actual pressure adjustment in main port 1 via pilot valve (1) and main valve (2).

 $(p_{\text{max}} = \text{command value max}; p_{\text{min}} = \text{command value 0})$ Internal pilot oil supply and drain.

■ Note!

Any tank pressures (main port 2) add to the set value in main port 1.



Technical data (for applications outside these parameters, please consult us!)

general		
Weight	kg	0,7
Installation orientation		Optional, if it can be ensured that no air can collect upstream of the valve. Otherwise, we recommend that the valve be mounted in a suspended position.
Ambient temperature range	°C	-20 to +120
Storage temperature range	°C	-20 to +80
Environmental tests:		
Vibration test according to I	DIN EN 60068-2 / IEC 60068-2 /2	axes (X/Z)
DIN EN 60068-2-6: 05/96	Vibration, sinusoidal	10 cycles at 5 to 2000 to 5 Hz with a logarithmic frequency change rate of 1 Oct./min, 5 to 57 Hz, amplitude 1.5 mm (p-p), 57 to 2000 Hz, amplitude 10 g
IEC 60068-2-64: 05/93	Vibration (random) and broadband noise	20 to 2000 Hz, amplitude 0.05 g ² /Hz (10 g RMS/30 g peak), testing time 30 min
DIN EN 60068-2-27: 03/95	Shock test	Half sine 15 g / 11 ms; 3 x in pos., 3 x in neg. direction (6 individual shocks in total)
DIN EN 60068-2-29: 03/95	Bump test	Half sine 25 g / 6 ms; 1000 x in pos., 1000 x in neg. direction (2000 individual shocks in total)
Details per axis		
Climatic test according to D	IN EN 60068-2 / IEC 60068-2 (en	vironmental testing):
DIN EN 60068-2-1: 03/95	Storage temperature	-40 °C, dwell time 16 h
DIN EN 60068-2-2: 08/94	<u> </u>	+110 °C, dwell time 16 h
DIN EN 60068-2-1: 03/95	Cold test	2 cycles at -25 °C, dwell time 2 h
DIN EN 60068-2-2: 08/94	Dry heat test	2 cycles at +120 °C, dwell time 2 h

Salt spray test: 720 h according to DIN 50021

Damp heat, cyclical

IEC 60068-2-30: 1985

Variant 2/ +25 °C to +55 °C

93 % to 97 % relative humidity, 2 cycles, 24 h each

[→] Finish painting generally not required. Should you nevertheless wish to apply a finish coat, observe the reduced heat dissipation capacity.

Technical data (for applications outside these parameters, please consult us!)

hydraulic		
Max. operating pressure 1) (main port 1)	bar	350
Max. permissible return flow pressure (main port 2)	bar	210
Maximum set pressure 2)		See command value/pressure characteristic curves on page 6
Minimum set pressure at command value 0		See charateristic curves on page 6
Maximum flow	l/min	200 (with pressure stage 350 bar max. 100 l/min)
Hydraulic fluid		Mineral oil (HL, HLP) acc. to DIN 51524; fast bio-degradable hydraulic fluids acc. to VDMA 24568 (see also RE 90221); HETG (rape-seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range	°C	-20 to +80
Viscosity range	mm²/s	15 to 380
Max. permissible degree of contamination of the hydraulic fluid - cleanliness class acc. to ISO 4406 (c)		Class 20/18/15 3)
Hysteresis		< 6 % of max. set pressure
Range of inversion		< 0,5 % of max. set pressure
Response sensitivity		< 0,5 % of max. set pressure
Tolerance of the command value/ - Command value 100 %		< 5 % of max. set pressure
pressure characteristic curve - Command value 0		< 2 % of max. set pressure
Step response $(T_u + T_g) 0 \rightarrow 100 \% \text{ or } 100 \% \rightarrow 0$	ms	100 (depends on system)

electrical

Supply voltage		V	12 DC	24 DC	
Maximum control current		mA	max. nominal current 1760 mA	max. nominal current 1200 mA	
Coil resistance	 Cold value at 20 °C 	Ω	2,3	4,8	
	- Max. hot value	Ω	3,65	7,2	
Duty cycle		%	100 4)		
Maximum coil temperature 5))	°C	150		
Type of protection acc. to	- Version "K4"		IP 65 with cable socket mounted and locked		
VDE 0470-1	- Version "C4"		IP 66 with cable socket mounted and locked		
(DIN EN 60529), DIN 40050-9),		IP 69K with Rexroth cable sock	et (material no. R901022127)	
	- Version "K40"		IP 69K with cable socket mounted and locked		
Control electronics 6)			Plug-in amplifier VT-SSPA1 (30	00 Hz)	
Rating according to VDE 05	80				

- 1) A Caution! The maximum operating pressure is added up from the set pressure and the return flow pressure!
- 2) A Caution! The valves are factory-set. In the case of sub-sequent re-adjustment, the warranty will become void! 3) The cleanliness class stated for the components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, increases the service life of components.

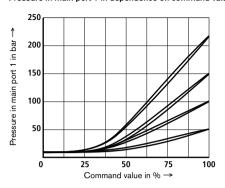
For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

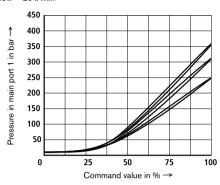
4) In the case of use at heights > 2000 m above MSL we recommend that you consult the manufacturer.

- 5) Due to the surface temperatures occurring on solenoid coils, the European standards ISO 13732-1 and EN 982 must be observed!
- 6) Separate order, see RE 30116

Characteristic curves (measured with HLP46, $\vartheta_{\rm oil} =$ 40 °C \pm 5 °C and 24 V coil)

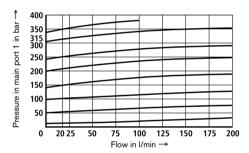
Pressure in main port 1 in dependence on command value. Flow = 20 I/min



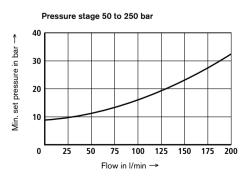


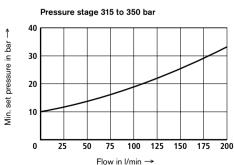
Pressure in main port 1 in dependence on flow.

(The characteristic curves were measured without backpressure in main port 2.)

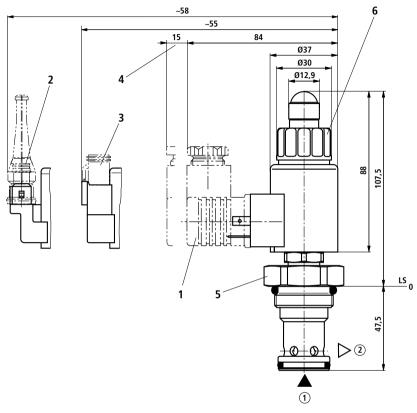


Minimum set pressure in main port 1 at command value 0.



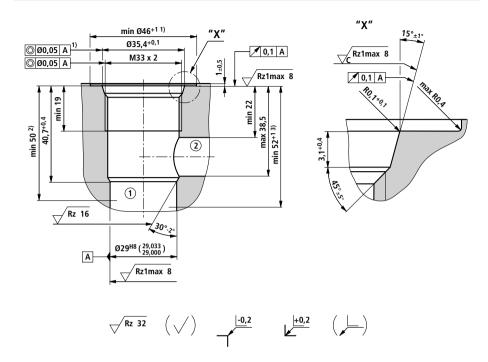


Unit dimensions (dimensions in mm)



- (1) = Main port 1
- 2 = Main port 2
- LS = Location shoulder
 - 1 Cable socket for component plug "K4" (separate order, see RE 08006)
 - 2 Cable socket for component plug "C4" (separate order, see RE 08006)
 - 3 Cable socket for component plug "K40" (separate order, see RE 08006)
 - 4 Space required to remove the plug-in connector
 - 5 Hexagon SW41;
 - Tightening torque $M_A = 100^{+20}$ Nm (< 250 bar) Tightening torque $M_A = 120^{+20}$ Nm (> 250 bar)
 - 6 Solenoid nut, tightening torque $M_A = 5^{+1}$ Nm

Mounting cavity R/ISO 7789-33-01-0-98; 2 main ports; thread M33 x 2 (dimensions in mm)



¹⁾ Different from ISO 7789-33-01-0-98

²⁾ Depth of fit

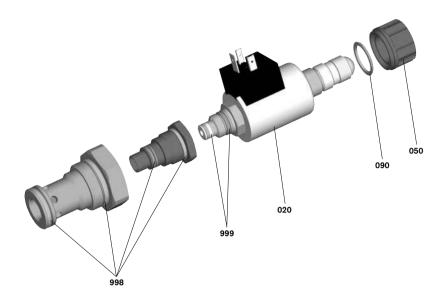
³⁾ Optional

⁽¹⁾ = Main port 1

^{2 =} Main port 2

LS = Location shoulder

Available individual components



Item	Designation		DC	Material no.
020	Coil for individual connection 1)	K4	12 V 24 V	R901002932 R901002319
		K40	12 V 24 V	R901003055 R901003053
		C4	12 V 24 V	R901003044 R901003026
050	Nut			R900992146
090	Seal ring for pressure tube			R900007769
998	Main stage seal kit			R961001025
999	Pilot valve seal kit			R961000376

^{1) [}F Note!

After the solenoid coil was replaced, the factory-set pressure may change by ± 5 %.

Notes

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 Fax +49 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent.

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Proportional pressure relief valve, pilot-operated, falling characteristic curve

RE 18139-07/06.08

Replaces: 09.07

Type KBVS.3B (High-Performance)

Component size 3 Component series A Maximum operating pressure 350 bar Maximum flow 200 l/min



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Features

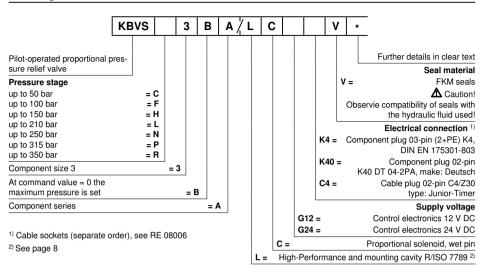
Page

- Mounting cavity R/ISO 7789-33-01-0-98
- Pilot-operated valve for limiting a system pressure
- 2 Suitable for mobile and industrial applications
- 2 Operation by proportional solenoid
- 3 Proportional solenoid with central thread and detachable coil
- 4, 5 Cartridge valve
 - Control electronics: plug-in amplifier VT-SSPA1..
 - 7 Fine balancing of the command value/pressure characteristic
 - curves possible externally on the control electronics
 - Valves are adjusted to max. pressure by means of an adjustment screw.
 - In the event of a power failure, the maximum set pressure becomes effective

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code



Preferred types

Туре	Material number
KBVSC3BA/LCG24K4V	R901042645
KBVSF3BA/LCG24K4V	R901042649
KBVSH3BA/LCG24K4V	R901047841
KBVSL3BA/LCG24K4V	R901032852
KBVSN3BA/LCG24K4V	R901041058
KBVSP3BA/LCG24K4V	R901042652
KBVSR3BA/LCG24K4V	R901022444

Function, Symbol

General

Valves of the KBVS type are pilot-operated proportional pressure relief valves of poppet design and used for limiting the pressure in hydraulic systems. They basically consist of a screwed-in proportional pilot valve (1) and the main valve (2).

These valves can be used for infinitely adusting the pressure to be limited in dependence upon the command value. At command value 0 or in the event of a power failure, the maximum pressure is set (fail-safe characteristics).

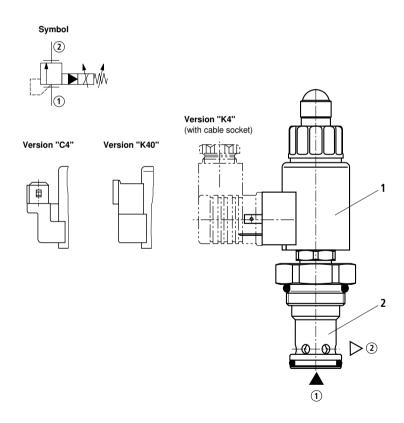
Basic principle

The mechanics of the valve is factory-set to the maximum pressure. A command value for the proportional reduction of the system pressure is selected on the control electronics. The electronics controls the solenoid coil with electric current in dependence upon the command value, which causes the actual pressure adjustment in main port ① via pilot valve (1) and main valve (2).

 $(\mathbf{p}_{\text{max}} = \text{command value 0}; \mathbf{p}_{\text{min}} = \text{command value max.})$ Internal pilot oil supply and drain.

™ Note!

Any tank pressures (main port 2) add to the set value in main port 1.



Technical data (for applications outside these parameters, please consult us!)

general		
Weight	kg	0,7
Installation orientation		Optional, if it can be ensured that no air can collect upstream of the valve. Otherwise, we recommend that the valve be mounted in a suspended position.
Ambient temperature range	°C	-20 to +120 (-40 to +110 for fan drives)
Storage temperature range	°C	-20 to +80
Environmental tests:		
Vibration test according to	DIN EN 60068-2 / IEC 60068-2 /2	axes (X/Z)
DIN EN 60068-2-6: 05/96	Vibration, sinusoidal	10 cycles at 5 to 2000 to 5 Hz with a logarithmic frequency change rate of 1 Oct./min, 5 to 57 Hz, amplitude 1.5 mm (p-p), 57 to 2000 Hz, amplitude 10 g
IEC 60068-2-64: 05/93	Vibration (random) and broadband noise	20 to 2000 Hz, amplitude 0.05 g²/Hz (10 g RMS/30 g peak), testing time 30 min
DIN EN 60068-2-27: 03/95	Shock test	Half sine 15 g / 11 ms; 3 x in pos., 3 x in neg. direction (6 individual shocks in total)
DIN EN 60068-2-29: 03/95	Bump test	Half sine 25 g / 6 ms; 1000 x in pos., 1000 x in neg. direction (2000 individual shocks in total)
Details per axis		
Climatic test according to	DIN EN 60068-2 / IEC 60068-2 (en	vironmental testing):
DIN EN 60068-2-1: 03/95	Storage temperature	-40 °C, dwell time 16 h
DIN EN 60068-2-2: 08/94		+110 °C, dwell time 16 h
DIN EN 60068-2-1: 03/95	Cold test	2 cycles at –25 °C, dwell time 2 h

Salt spray test: 720 h according to DIN 50021

Dry heat test

Damp heat, cyclical

DIN EN 60068-2-2: 08/94

IEC 60068-2-30: 1985

2 cycles at +120 °C, dwell time 2 h

93 % to 97 % relative humidity, 2 cycles, 24 h each

Variant 2/ +25 °C to +55 °C

[→] Finish painting generally not required. Should you nevertheless wish to apply a finish coat, observe the reduced heat dissipation capacity.

Technical data (for applications outside these parameters, please consult us!)

•		
Max. operating pressure 1) (main port 1)	bar	350
Max. permissible return flow pressure (main port ②)	bar	210
Maximum set pressure 2)		See command value/pressure characteristic curves on page 6
Minimum set pressure at max. command value		See charateristic curves on page 6
Maximum flow	l/min	200 (with pressure stage 350 bar max. 100 l/min)
Hydraulic fluid		Mineral oil (HL, HLP) acc. to DIN 51524; fast bio-de- gradable hydraulic fluids acc. to VDMA 24568 (see also RE 90221); HETG (rape-seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature range	°C	-20 to +80 (-20 to +110 for fan drives)
Viscosity range	mm²/s	12 to 800
Max. permissible degree of contamination of the hydraulic fluid - cleanliness class acc. to ISO 4406 (c)		Class 20/18/15 3)
Hysteresis		< 4 % of max. set pressure
Range of inversion		< 0.5 % of max. set pressure
Response sensitivity		< 0.5 % of max. set pressure
Tolerance of the command - Command value 100 %		< 2 % of max. set pressure
value/pressure – Command value 0 characteristic curve		< 5 % of max. set pressure
Step response $(T_u + T_g)$ 0 \rightarrow 100 % or 100 % \rightarrow 0	ms	100 (depends on system)

electrical

Supply voltage V			12 DC	24 DC			
Maximum control current mA		mA	max. nominal current max. nominal current 1760 mA 1200 mA				
Coil resistance	Cold value at 20 °C	Ω	2,3	4,8			
	- Max. hot value	Ω	3,65	7,2			
Duty cycle %		%	100 4)				
Maximum coil temperature 5) °C		°C	150				
Type of protection acc. to	- Version "K4"		IP 65 with cable socket mounted and locked				
VDE 0470-1	- Version "C4"		IP 66 with cable socket mounted and locked				
(DIN EN 60529), DIN 40050-9			IP 69K with Rexroth cable socket (material no. R901022127)				
DIN 40030-3	- Version "K40"		IP 69K with cable socket mounted and locked				
Control electronics ⁶⁾		Plug-in amplifier VT-SSPA1					
Rating according to VDE 0580							

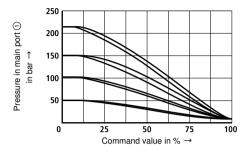
- 1) A Caution! The maximum operating pressure is added up from the set pressure and the return flow pressure!
- 2) A Caution! The valves are factory-set. In the case of subsequent re-adjustment, the warranty will become void!
- 3) The cleanliness class stated for the components must be adhered to in hydraulic systems. Effective filtration prevents malfunction and, at the same time, increases the service life of components.

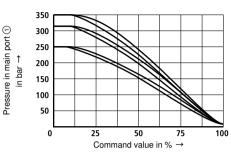
For the selection of filters, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

- 4) In the case of use at heights > 2000 m above MSL we recommend that you consult the manufacturer.
- 5) Due to the surface temperatures occurring on solenoid coils, the European standards ISO 13732-1 and EN 982 must be observed!
- 6) Separate order, see RE 30116

Characteristic curves (measured with HLP46, $\vartheta_{\rm oil}$ = 40 °C ±5 °C and 24 V coil)

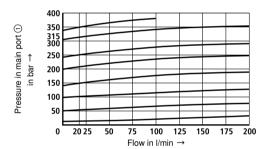
Pressure in main port ① in dependence on command value. Flow = 20 l/min





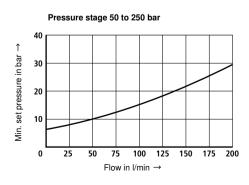
Pressure in main port ① in dependence on flow.

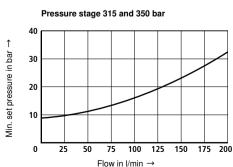
(The characteristic curves were measured without backpressure in main port 2).)



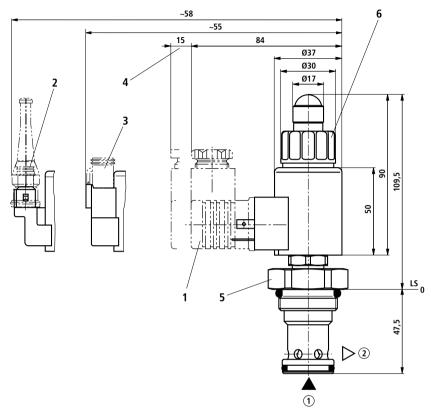
Minimum set pressure in main port ① at command value 100 %.

(The characteristic curves were measured without backpressure in main port 2).)





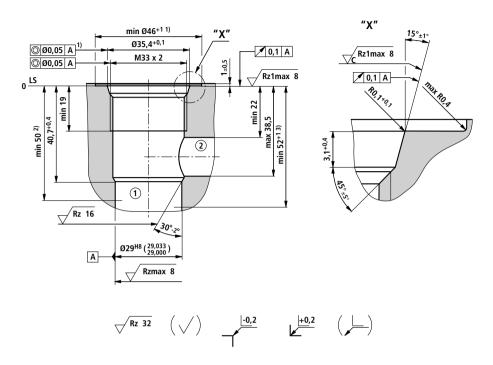
Unit dimensions (dimensions in mm)



- 1 = Main port 1
- 2 = Main port 2
- LS = Location shoulder
 - 1 Cable socket for component plug "K4" (separate order, see RE 08006)
 - 2 Cable socket for component plug "C4" (separate order, see RE 08006)
 - 3 Cable socket for component plug "K40" (separate order, see RE 08006)
 - 4 Space required to remove the plug-in connector
 - 5 Hexagon SW41;
 - Tightening torque $\mathbf{M}_{\rm A}$ = 100⁺²⁰ Nm (< 250 bar) Tightening torque $\mathbf{M}_{\rm A}$ = 120⁺²⁰ Nm (> 250 bar)
 - 6 Solenoid nut, tightening torque $M_A = 5^{+1}$ Nm

Mounting cavity R/ISO 7789-33-01-0-98; 2 main ports; thread M33 x 2

(dimensions in mm)



¹⁾ Different from ISO 7789-33-01-0-98

²⁾ Depth of fit

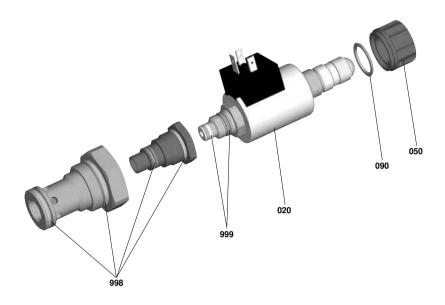
³⁾ Optional

^{1 =} Main port 1

^{2 =} Main port 2

LS = Location shoulder

Available individual components



Item	Designation		DC	Material no.
020	020 Coil for individual connection 1)	K4	12 V 24 V	R901002932 R901002319
		K40	12 V 24 V	R901003055 R901003053
		C4	12 V 24 V	R901003044 R901003026
050	Nut			R900992146
090	Seal ring for pressure tube			R900007769
998	Main stage seal kit			R961001025
999	Pilot valve seal kit			R961000376

¹⁾ **(F)** Note!

After the solenoid coil was replaced, the factory-set pressure may change by ± 5 %.

Notes

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 40 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent. The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.

Proportional flow control valve, with integrated pressure compensator

RE 18702/02.10

1/10

Type KUDSR

Component size 3 Component series A Maximum operating pressure 350 bar Maximum flow 120 l/min



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Content Page Features Ordering code 2 Valve types 2 Available coils Function, symbol 3 Technical data 4. 5 Characteristic curves 6 7 Minimum terminal voltage at the coil Unit dimensions 8 Mounting cavity Available individual components 10

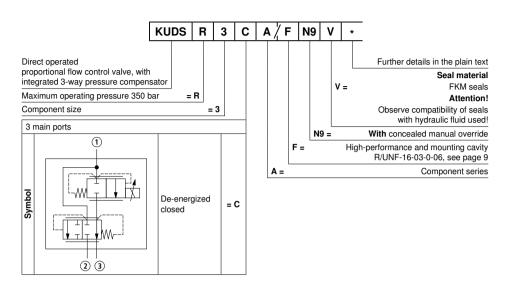
Features

- Mounting cavity R/UNF-16-03-0-06
- Direct operated proportional valve for controlling the flow size
- Operation by means of proportional solenoid with central
- thread and detachable coil
- Rotatable solenoid coil
- With concealed manual override
- Control electronics:
 - Module amplifier VT-MSPA1 ...
 - Plug-in amplifier VT-SSPA1 ...
 - Module amplifier RA2-1/10 ...

Information on available spare parts: www.boschrexroth.com/spc

05

Ordering code (Valve without coil) 1)



Valve types (without coil) 1)

Туре	Material no.
KUDSR 3 CA/FN9V	R901255657

Available coils (separate order) 1)

	Material no. for coil with connector 2)				
Direct voltage DC	"K4" 03pol (2+PE) DIN EN 175301-803	" C4 " 02pol C4/Z30 AMP Junior-Timer			
12 V	R901022180	R901022680			
24 V	R901022174	R901022683			

¹⁾ Complete valves with mounted coil upon request

²⁾ Mating connectors (order separately) see data sheet 08006

Function, symbol

General

The proportional flow control valve is a direct operated cartridge valve in spool design with integrated pressure compensator. It regulates the flow proportionally to the input signal in a continuous form from main port 1 to 3. Superfluous residual flow is lead to the tank or to another actuator via port 2.

The valve basically comprises of housing, control piston, control spring, pressure compensator piston, orifice bush, pressure compensator spring as well as proportional solenoid (1) with central thread and detachable coil.

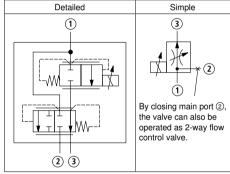
Function

With de-energized proportional solenoid (1), the control piston that is always pressure-compensated to the actuating forces due to its constructive design is held in the initial position by the control spring and blocks the flow between main port ①

and ③. By energizing the proportional solenoid (1), the control spool is adjusted directly proportional to the electrical input signal and, via orifice-like cross-sections (with progressive flow characteristic), connects the main ports ① and ③. Due to the integrated pressure compensator piston together with the pressure compensator spring, then pressure drop across the valve is kept constant, independent of the pressures at (1), ② and ③. In case of superfluous flow from ①, the pressure compensator piston moves to the right and opens the connection ① to ②. In case of de-excitation of the proportional solenoid (1), the control spring returns the control piston into its initial position. The whole flow is now directly lead from main port ① to main port ②.

The manual override (2) allows for the adjustment of the valve without solenoid energization.

Symbol



- (1) = Main port 1 (P)
- 2 = Main port 2 (T)
- 3 = Main port 3 (A)

(with mating connector) Version "C4"

Version "K4"

Technical Data (For applications outside these parameters, please consult us!)

general			T
Weight		kg	0.97
Installation position			Any - if it is ensured that no air can collect upstream the valve. Otherwise, we recommend suspended installation of the valve.
Ambient temperature range		°C	-40 to +110 (see minimum terminal voltage page 7)
Storage temperature range	-	°C	-20 to +80
Environmental audits			
Salt spray test according to DIN	V 50021	h	720
Surface protection Proportional solenoid			Coating according to DIN 50962-Fe//ZnNi with thick layer passivation
hydraulic			
Maximum operating pressure	- Main port ①	bar	350
Bypass pressure	- Main port ②	bar	350 with q _{Vmax}
Prio pressure	- Main port ③	bar	330 with q _{Vmax}
Control pressure differential	- ① to ③	bar	12 to 15
Minimum pressure differential	- ① to ③	bar	> 10
Maximum flow	- Main port ①	l/min	120
Nominal flow	- Main port ①	l/min	100 (for control area)
Rated flow	- ① to ③	l/min	> 80 (controlled)
Step response	0 to 100 %; 100 to 0 %	ms	< 180 (with $\Delta p = 10$ bar)
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524; quickly bio-degradable hydraulic fluids according to VDMA 24568 (see also data sheet 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids upon request
Hydraulic fluid temperature ran	ge	°C	-40 to +100 (preferably +40 to +50)
Viscosity range		mm²/s	5 to 400 (preferably 10 to 100)
Maximum permitted degree of fluid - cleanliness class accordi		raulic	Class 20/18/15 ¹⁾
Hysteresis ²⁾	<u> </u>	%	≤ 5
Range of inversion 2)		%	≤ 2
Response sensitivity 2)		%	≤1

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

Compensation time with maximum load change

(pressure compensator) 3)

System-dependent

For the selection of filters, see data sheets 50070, 50076, 50081, 50086, 50087 and 50088.

²⁾ Measured with analog amplifier RA2-1/10 acc. to data sheet 95230

³⁾ The compensation time is determined by the system set-up. With corresponding nozzle fitting, this can be optimized/adjusted.

Technical Data (For applications outside these parameters, please consult us!)

electrical

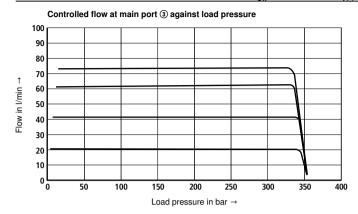
Voltage type		Direct voltage (DC)			
Supply voltage		V	12	24	
Maximum solenoid current		Α	1.8	1.2	
Coil resistance	- Cold value at 20 °C	Ω	3.3	7.2	
	- Max. hot value	Ω	5.8	13.0	
Duty cycle		%	100 (see minimum terminal voltage page 7)		
Maximum coil temperature 5)		°C	150		
Protection class according to VDE 0470-1 (DIN EN 60529)	- Version "K4"		IP 65 (with mating connector mounted and locked)		
	- Model "C4"		IP 66 (with mating connector mounted and locked)		
DIN 40050-9			IP 69K (with Rexroth mating connector, material no. R901022127		
Control electronics ⁶⁾			Analog amplifier RA2-1/10 see data sheet 95230 Plug-in amplifier VT-SSPA1-1 see data sheet 30116		
Design according to VDE 0580					

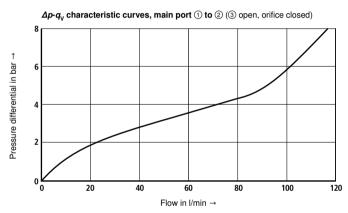
⁵⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!

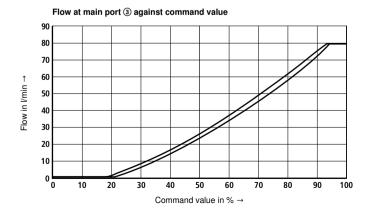
At the electrical connection "K4", the protective earthing conductor (PE \pm) has to be connected properly.

⁶⁾ Separate order

Characteristic curves (measured with HLP46, ϑ_{Oil} = 40 ± 5 °C, $q_{\text{V} \odot}$ = 80 l/min)

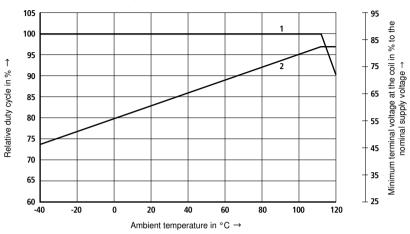




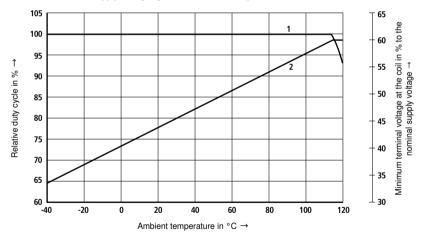


Minimum terminal voltage at the coil and relative duty cycle

- with 12 V supply voltage against the ambient temperature



- with 24 V supply voltage against the ambient temperature



- 1 Relative duty cycle
- 2 Minimum terminal voltage at the coil

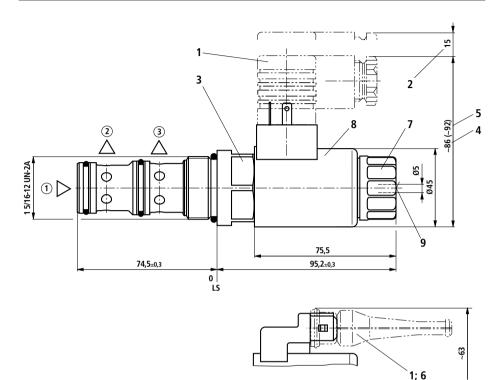
M Note!

The characteristic curves have been determined for coils with valve with medium test block size $(80 \times 80 \times 80 \text{ mm})$, without flow in calm air.

Depending on the installation conditions (block size, flow, air circulation, etc.) there may be a better heat dissipation. Thus, the range of application is broadened.

In single cases, there may be more unfavorable conditions leading to limitations of the range of application.

Unit dimensions (dimensions in mm)



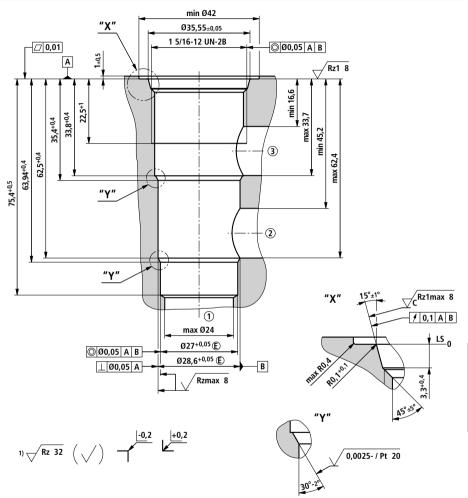
- 1 = Main port 1 (P)
- 2 = Main port 2 (T)
- 3 = Main port 3 (A)
- LS = Location shoulder

- 1 Mating connector "K4" without circuitry (separate order, see data sheet 08006)
- 2 Space required for removing the mating connector
- **3** SW36, tightening torque $M_A = 165^{+15}$ Nm
- 4 Dimension for "K4" mating connector, without circuitry
- 5 Dimension () for "K4" mating connector, with circuitry
- 6 Mating connector "C4" (separate order, see data sheet 08006)
- 7 Nut, tightening torque $M_A = 5^{+2}$ Nm
- 8 Coil (separate order, see page 2)
- 9 Concealed manual override "N9"

9/10

Mounting cavity R/UNF16-03-0-06; 3 main ports; thread 1 5/16-12 UN-2B

(dimensions in mm)



- 1 = Main port 1 (P)
- 2 = Main port 2 (T)
- 3 = Main port 3 (A)
- LS = Location shoulder

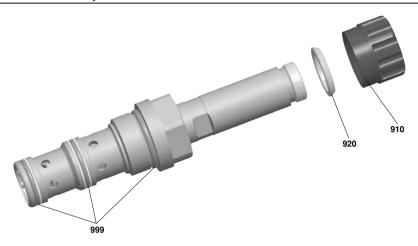
1) Visual inspection

All seal ring insertion faces are rounded and free of burrs

Standards:

Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances for metal-cutting procedures	DIN ISO 2768-mK
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

Available individual components



Item	Description	Direct voltage	Material no.
910	Nut		R900029574
920	O-ring for pole tube		R900002507
999	Seal kit of the valve		R961003236

Coils (separate order) see page 2.

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 Fax +49 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent. The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.

Plug-in proportional amplifier

RE 30116/04.09 1 Replaces: 30116/03.07

30265/04.07

Type VT-SSPA1-1, VT-SSPA1-5, VT-SSPA1-50, VT-SSPA1-100





with M12 component connector

with cable gland

Component series 1X

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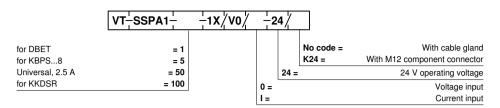
Content Page Features 1 Ordering code 2 Possible applications 3 Block circuit diagram 4 Characteristic curve 4 Function 4 Technical data 5 Electrical connection 6 Control elements / dimensions (dimensions in mm) 7 Engineering / maintenance notes / supplementary information 8

Features

- Used for controlling solenoid operated pressure control and directional valves without closed-loop position control
- Proportional command value / current characteristic curves for command values from 0 % to 100 %
- Regulated, adjustable maximum current for a command value greater than approx. 120 % (only with differential input)
- Differential input, optional current input
- Ramp generator, separate for up/down
- Zero potentiometer / biasing current
- Command value attenuator / maximum current
- Dither frequency potentiometer
- Operating voltage 24 V

05

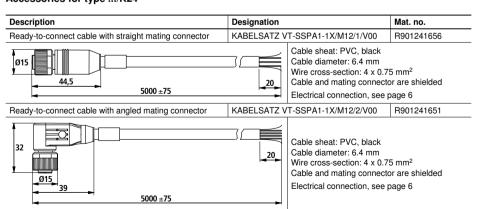
Ordering code



Overview of types

Туре	Mat. no.	U _B	I _{nom}	f at I _{nom}	Command value	For valve	Soleno	oid
VT-SSPA1-1-1X/V0/0-24	R900779643	24 V	1.6 A	340 Hz	010 V/24 V	DBET	5.5 Ω	1.6 A
VT-SSPA1-1-1X/V0/0-24/K24	R901238534	24 V	1.6 A	340 Hz	010 V/24 V	DBET	5.5 Ω	1.6 A
VT-SSPA1-5-1X/V0/0-24	R901024331	24 V	1.2	200 Hz	010 V/24 V	KBPS8	4.77 Ohm	1.2 A
VT-SSPA1-5-1X/V0/0-24/K24	R901238530	24 V	1.2	200 Hz	010 V/24 V	KBPS8	4.77 Ohm	1.2 A
VT-SSPA1-5-1X/V0/I-24	R901046147	24 V	1.2	200 Hz	420 mA	KBPS8	4.77 Ohm	1.2 A
VT-SSPA1-5-1X/V0/I-24/K24	R901238527	24 V	1.2	200 Hz	420 mA	KBPS8	4.77 Ohm	1.2 A
VT-SSPA1-50-1X/V0/0-24	R901005414	24 V	2.5 A	305 Hz	010 V/24 V	universal	> 2 Ω	2.5 A
VT-SSPA1-50-1X/V0/0-24/K24	R901238532	24 V	2.5 A	305 Hz	010 V/24 V	universal	> 2 Ω	2.5 A
VT-SSPA1-50-1X/V0/I-24	R901029783	24 V	2.5 A	305 Hz	420 mA	universal	> 2 Ω	2.5 A
VT-SSPA1-50-1X/V0/I-24/K24	R901238531	24 V	2.5 A	305 Hz	420 mA	universal	> 2 Ω	2.5 A
VT-SSPA1-100-1X/V0/0-24	R901030116	24 V	1.2	150 Hz	010 V/24 V	KKDSR1	7.2 Ohm	1.2 A
VT-SSPA1-100-1X/V0/0-24/K24	R901238528	24 V	1.2	150 Hz	010 V/24 V	KKDSR1	7.2 Ohm	1.2 A
VT-SSPA1-100-1X/V0/I-24	R901030114	24 V	1.2	150 Hz	420 mA	KKDSR1	7.2 Ohm	1.2 A
VT-SSPA1-100-1X/V0/I-24/K24	R901238529	24 V	1.2	150 Hz	420 mA	KKDSR1	7.2 Ohm	1.2 A

Accessories for type .../K24



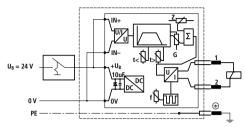
Possible applications

2-conductor technology (only with differential input)

- Switching applications with constant-current regulation
- Ramp function when switched on

The "IN+" input is to be bridged with the supply voltage $(+U_B)$ in the plug-in connector, the "IN-" input is to be bridged with the supply voltage $(0\ V)$ in the plug-in connector.

The maximum current must usually be matched according to the solenoid data using potentiometer "G". The ramp time "ramp up" (t<) can be adjusted within the range of t_{\min} ms to 5 s.

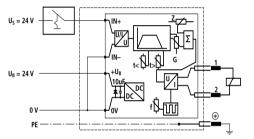


3-conductor technology (only with differential input)

- Switching applications with constant-current regulation
- Switching with low control power
- Ramp function, when the control voltage is switched on or off, can be separately adjusted

The "IN+" input is to be connected to the control voltage ($U_{\rm S}=24$ V), the "IN-" input is to be bridged with the supply voltage (0 V) in the plug-in connector.

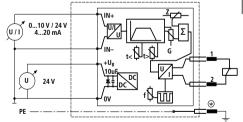
The maximum current must usually be matched according to the solenoid data using potentiometer "G". In the denergized condition ("IN+" = 0 V or "IN+" = open) a biasing current can be set on "Z". This biasing current can be used to reduce the switch-on delay, especially in conjunction with a ramp. If required, a value of between approx. 20 mA and approx. 15 % of the nominal current can be set. The ramp times "ramp up" (t <) and "ramp down" – (t >) can be adjusted within the range of $f_{\rm min}$ to 5 s.



4-conductor technology

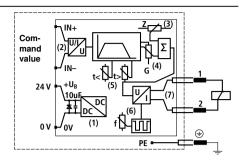
– The "IN+" input is to be connected to the control signal ($\rm U_S=0...10~V/24~V,~or~I_S=4~...20~mA$), the "IN-" input is to be connected to the reference potential of the control voltage.

The biasing current and the maximum current have to be adjusted by means of potentiometers "Z" and "G" before commissioning. The current can then be adjusted proportionally between the set biasing current and the set maximum current according to the control voltage. The biasing current can be adjusted within the range of approx. 0 mA to approx. 15 % of the nominal current, the maximum current within the range of 0 to $I_{\rm max}$ (see technical data on page 5).

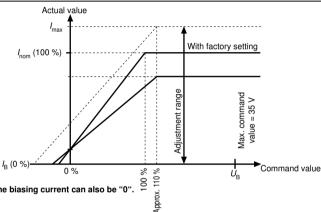


Block circuit diagram

- (1): Internal voltage adjustment
- (2): Command value input
- (3): Zero point potentiometer "Z" / biasing current / (IN = 0%)
- (4): Command value attenuator "G" / maximum current / (IN = 100%)
- (5): Ramp time potentiometers "t <" and "t >"
- (6): Frequency range correction "f"
- (7): Current output stage



Characteristic curve



Note:

Depending on the type, the biasing current can also be "0".

Function

The plug-in amplifier is suitable for mounting onto a valve connection base according to EN 175301-803. By turning the plug insert and the electronics in the housing, the plug-in amplifier can be mounted on the solenoid in 90° increments.

Command value feedforward

The command value range is between 0 and $U_{\rm B}$. In the command value range 0...10 V or 4...20 mA the solenoid current is proportional to the command value. From a command value of approx. 12 V up to $U_{\rm B}$ the solenoid current is almost constant according to the I_{max} setting (switching application).

Ramp generator

Ramp generator (5) limits the gradient of the control variable. The ramp times can be adjusted separately for up and down ramps. In switching applications, the ramps can be used to dampen the switch-on and switch-off impulse (in the case of switching off, with 3-conductor connection only, i.e. switching signal and supply are connected separately). This characteristic also depends on the valve and solenoid type. The downstream command value attenuator (4) has no influence on the ramp time.

Characteristic curve

Up to a command value of approx. 110 % the transfer characteristic curve rises linearly. The zero point can be corrected by means of potentiometer "Z", the maximum value using potentiometer "G".

Current output stage

Output stage (7) is self-clocking. The clock frequency depends on the current intensity, the operating voltage and the impedance of the controlled solenoid. The clock frequency can be re-adjusted by means of potentiometer "f". The current output stage generates a regulated current signal according to the control variable provided by summator (3). Too high a clock frequency results in an increase in the valve hysteresis. Too low a clock frequency increases the noise level of the hydraulic system.

Technical data (for applications outside these parameters, please consult us!)

Туре		VT-SSPA1-1	VT-SSPA1-5	VT-SSPA1-50	VT-SSPA1-100	
Operating voltage 24 V	$U_{\rm B}$	7. 00.7		VDC	7. 00.71. 100	
operating voltage 24 v	u(t) _{max}	35 V				
	u(t) _{min}	18 V				
Maximum cable inductance 1)	L _{max}) μΗ		
Current / power consumption	/ [A]	< 1.7	< 1.7	< 2.6	< 1.7	
(depending on solenoid data)	P _{max} [VA]	< 40	< 40	< 60	< 40	
Recommended back-up fuse	/ [A]	2; slow-blow	2; slow-blow	3,15; slow-blow	2; slow-blow	
Minimum coil inductance	L _{min} [mH]	15	15	10	15	
Biasing current (adjustment range)	I _R [mA]	0300	0300	0350	0250	
Biasing current (factory setting)	I _B [mA]	100	0	100	0	
Nominal current (factory setting)	/ [A]	1.6	1.2	2.5	1.2	
Maximum current (adjustment range)	I _{max} [A]	I _B 1,7	I _B 1.8	I _B 2.6	I _B 1.7	
Clock frequency at I _{max}	f [Hz]	340	200	305	150	
Command value input (voltage)						
Proportional range	U	010 V				
Switching range	U	12 V <i>U</i> _B				
Resistance	R	20 kΩ				
Option: Command value input (current) Proportional range	1	$420 \text{ mA} / R_{i} = 100 \Omega$				
Ramp time (adjustment range)	t	100 ms5 s 60 ms5 s				
Type of connection (cable gland)		4 screw terminals				
Cable diameter		4,5 11 mm				
Type of connection (M12 component connector)		Component connector, 4-pin, M12x1				
Type of connection (solenoid)		Base to EN 175301-803				
Number of pins (solenoid)		2 + PE				
Dimensions		see page 7				
Type of mounting		M3 x 40 mm				
Permissible operating temperature range (amplifier with cable gland)	ϑ [°C]	-25 +70	-25 +70	-25 +60	-25 +70	
Permissible operating temperature range (amplifier with M12 component connector)	ϑ [°C]	-25 +70	-25 +70	-25 +50	-25 +70	
Storage temperature range	θ		-25	+50 °C		
Type of protection		IP65 to EN 609	529 with cable mo	unted/mating conn	ector mounted	
Weight	m		0.12	25 kg		

¹⁾ Usually corresponds to a cable length of less than 100 m

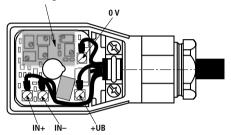
Electrical connection

Terminal / Pin		Terminal / Pin	
+UB / 1	Operating voltage <i>U</i> _B +24 V	IN+ / 2	command value input +24 V: 0+10 V / 420 mA
0 V / 3	0 V ground	IN-/4	Reference potential for command value

Terminal connection

Risk of malfunction in the case of EMC/ESD interference on the connection cable

Do not route command value connection cables through this section!



The protective earth conductor connection is accessible after the electronic printed-circuit board was removed.

Connection cross-section:

4 x 0.75 mm² shielded or

5 x 0.5 mm² shielded (connect shield in control cabinet)

For VT-SSPA1-50:

4 x 1.5 mm² shielded (connect shield in control cabinet)

Cable diameter: 4.5 ... 11 mm

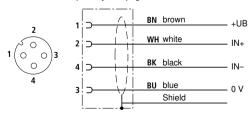
M12 plug-in connector connection

Component connector on amplifier



Mating connector and wire color of ready-to-connect cable kit

Please order cable kit separately, see page 2

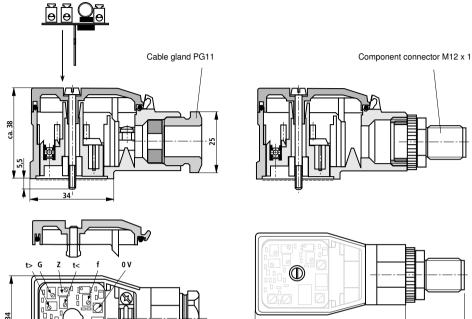


A protective earthing conductor connection is not provided

Connection cross-section:

4 x 0.75 mm² shielded (connect shield in control cabinet)

Control elements / dimensions (dimensions in mm)

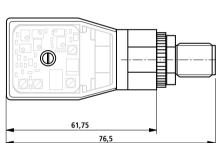


Top view on open housing:

G: Command value attenuator / maximum current

61,75 ca. 71

- Zero point potentiometer / biasing current
- t <: Ramp time "up"
- t >: Ramp time "down"
- Frequency range



Engineering / maintenance notes / supplementary information

- The plug-in amplifier may only be wired when disconnected from the power supply.
- Do not lay cables near power cables!
- The distance to aerial lines, radio sources and radar equipment must be at least 1m.
- Use a measuring adapter for adjusting the potentiometers and for checking the current values, and measure currents electrically isolated.
- The specified maximum solenoid currents must not be exceeded.
- Do not use solenoids with integrated free-wheeling diodes.
- The supply voltage must be protected by means of a fuse see technical data.

Note:

The solenoids are controlled with a clocked voltage. The intensity of the solenoid voltage impulse corresponds to the applied operating voltage $(+U_n)$.

Solenoids with integrated EMC suppressor circuit may only be used, if the permissible solenoid voltage - both, for positive and negative voltage - is greater than the actual operating voltage.

Please observe the manufacturer's information.

Note:

In the case of strongly fluctuating operating voltage, it may be required to provide an external smoothing capacitor having a capacitance of approx. $470 \mu F$ to $2200 \mu F$.

Recommendation: Capacitor module VT 11073 (see RE 29750) sufficient for up to 10 plug-in amplifiers

The cable length should not exceed 20 m. In the case of greater lengths, a capacitor of C \geq 100 μ F must be connected between U_n and 0 V at intervals of 10 to 20 m.

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Proportional pressure reducing valves and remote control manifolds

Electro-proportional pressure reducing and relieving cartridge valves

Designation	Description	p_{max} in bar	q_V in I/min	Data sheet	Page
Proportional pressure reducing valve, direct operated	MHDRE 02	30	2,5	64658	1035
Proportional pressure reducing valve, direct operated	MHDRE 04	30	6	64666	1045
Proportional pressure reducing valve, direct operated, rising characteristic curve	MHDRE 06	30	40	64655	1053
Proportional pressure reducing valve	FTDRE 2	18	2	58032	1063
Proportional pressure reducing valve	FTDRE 4	30	5	58038	1067
3/2 directional valve with solenoid actuation	FTWE 2	100	2	58007	1073
3/2 directional valve with solenoid actuation	FTWE 4	210	7	58008	1077

1/10

Proportional pressure reducing valve, direct operated

RE 64658/02.10

Type MHDRE 02 K

Size 2 Component series 1X Maximum control pressure 30 bar Maximum flow 2.5 l/min



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Content Page Features 1 Ordering code 2 2 Standard types Symbol 2 Function, section 3 Technical data 4. 5 Characteristic curves with tolerance band 6 7 Admissible working range Unit dimensions 8 Installation bores 9 Available individual components 10

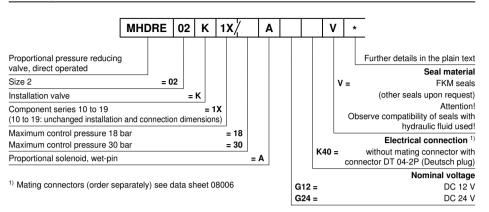
Features

- Direct operated proportional pressure reducing valve for reducing a system pressure
- Installation valve
- Suitable for mobile and industrial applications
- Operation by means of proportional solenoid
- In case of power failure, the minimum pressure is set
- Recommended control electronics:
 - · Mobile amplifier type RA and RC

Information on available spare parts: www.boschrexroth.com/spc

06

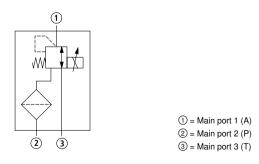
Ordering code



Standard types

	Material number		
Туре	12 V	24 V	
MHDRE 02 K1X/18AG K40V	R901123950	R901123965	
MHDRE 02 K1X/30AG K40V	R901048962	R901048970	

Symbol



Function, section

General

The proportional pressure reducing valve type MHDRE 02 K is a direct operated installation valve in 3-way design. It reduces the control pressure (main port ①) proportionally to the solenoid current and functions largely independently from the input pressure (main port ②).

With a command value of 0 or in case of power failure, the minimum pressure is set. Operation is effected by means of proportional solenoid. The solenoid's interior is connected to the main port ③ and filled with hydraulic fluid.

Depending on the electric command value, these valves can be used to reduce the system pressure continuously. The valve is suitable for controlling couplings, pumps and directional valves as well as for use in proportional pilot controls (particularly in the mobile area, however also for industrial applications).

Basic principle

The valve controls the pressure in the main port ① proportionally to the current at the solenoid.

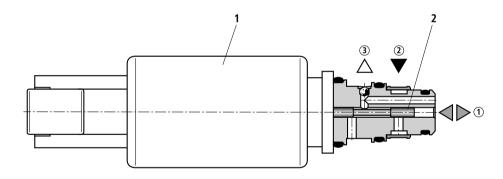
The proportional solenoid (1) converts the electric current into mechanical force that acts on the spool (2) via the armature. The spool controls the connection between the main ports.

T Note!

Occurring tank pressure (main port ③) is added up to the control pressure (main port ①).

Attention!

If the valve is not installed or installed in a system that is not completely bled, the valve must not be energized as otherwise, the entering air has a very negative effect on the valves' dynamic behavior.



- 1 = Main port 1 (A)
- 2 = Main port 2 (P)
- 3 = Main port 3 (T)

Technical Data (For applications outside these parameters, please consult us!)

general		
Weight	kg	approx. 0.24
Installation position		Any - if it is ensured that no air can collect upstream the valve. Otherwise, we recommend suspended installation of the valve (electric connection downwards).
Ambient temperature range	°C	See "admissible working range" page 7
Storage temperature range	°C	-30 to +80

Environmental audits:

Salt spray test according to EN ISO 9227	h	600 (NSS test)
Surface protection Solenoid		Coating according to DIN 50962-Fe//ZnNi with thick layer
		passivation

hydraulic

Maximum control pressure -	Main port ①	bar	18; 30
Maximum input pressure -	Main port ②	bar	50 (with mounting clip "50") 1)
laximum backpressure – Main port ③ bar		bar	At zero pressure (max. 3 bar with mounting clip "50"; occur ring tank pressures are added up to the control pressure (main port ①)) 1)
Maximum flow (Δp = 7 bar)		l/min	2.5
Maximum leakage -	Main port ③	ml/min	100 (50 bar in ②; I = 0 mA, 46 cSt)
Maximum pilot oil		ml/min	250 (50 bar in ②; I = I _{max} , 46 cSt)
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524; other hydraulic fluids upon request
Hydraulic fluid temperature rang	е	°C	-30 to +110
Viscosity range		mm²/s	5 to 400
Maximum permitted degree of co fluid - cleanliness class accordin		e hydraulic	Class 20/18/15 ²⁾
Hysteresis (within tolerance ban	d)	bar	≤ 1.5
Step response $(T_u + T_g)$ 0 % \rightarrow 100 %; 100 % \rightarrow 0 %		ms	≤ 60 (50 bar in ②; 46 cSt, $q_{\rm V}$ = 0 l/min, dead volume in ① 140 cm³)
Repeatability		%	< 2 % of the maximum control pressure
Load cycles			10 ⁷
Mesh size strainer element at th	e main port ②	μm	160

¹⁾ Attention! The specified value describes only the capability of the valve. In addition, the capability of the selected mounting clip must be observed:

Mounting clip "50" and fastening screw ISO 4762 - M5 x 14 - 8.8 (separate order), see page 10.

For the selection of filters, see data sheets 50070, 50076, 50081, 50086, 50087 and 50088.

For more information refer to data sheets:

- -07008
- 07800
- -07900
- 64020

²⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

Technical Data (For applications outside these parameters, please consult us!)

electrical

Supply voltage	V	12 DC	24 DC	
Maximum control current	Α	1.7	0.95	
Coil resistance at 20 °C	Ω	3.5	11.1	
Duty cycle (ED) 3) %		See "admissible working range" page 7		
Maximum coil temperature 4)	°C	185		
Protection class according to VDE 0470-1 (DIN EN 60529), DIN 40050-9		IP 69K (with mating connector mounted and locked)		
Chopper frequency (recommended) 5)	Hz	150		
Control electronics (separate order)		Control unit RA, see data sheet 95230 Control units RC, see data sheet 95200		
Design according to VDE 0580				

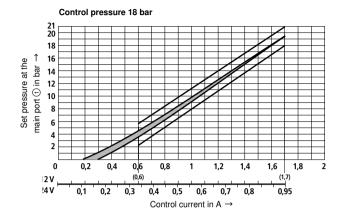
³⁾ In case of use at an altitude of more than 2000 m a.s.l., we recommend consulting the manufacturer.

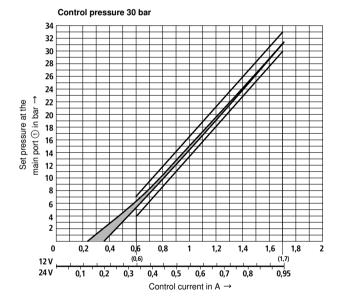
- 4) Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!
- 5) The chopper frequency is to be optimized depending on the application. In this regard, observe the temperature range of the application.

M Note!

- The technical data were determined at a viscosity of $v = 46 \text{ mm}^2/\text{s}$ (HLP46; 40 °C).
- You can find more information on the correct use of hydraulic products of Rexroth in the data sheet 64020-B, "Hydraulic valves for mobile applications - General information".

Characteristic curves with tolerance band (measured with HLPD46, ϑ_{oil} = 50 ± 5 °C)

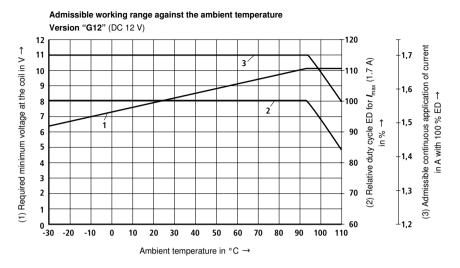


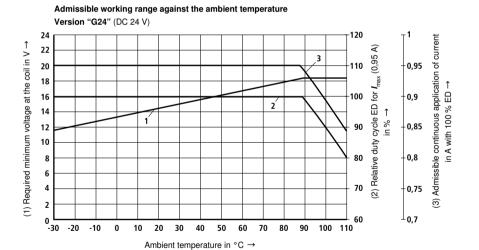


Measuring conditions:

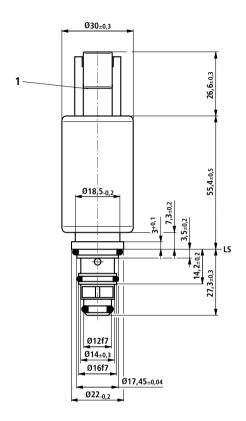
Amplifier:	Analog amplifier RA (data sheet 95230)
Chopper frequency:	150 Hz
Input pressure:	50 bar
Dead volume at the main port ①:	135 ml

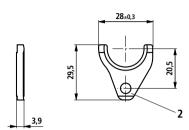
Admissible working range:





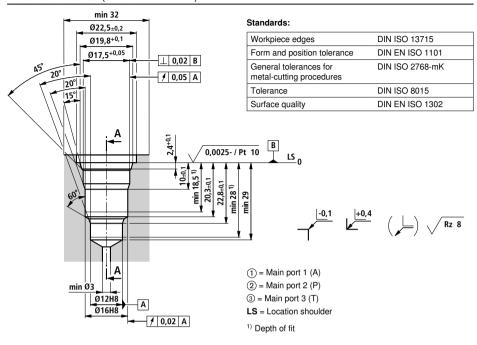
Unit dimensions (dimensions in mm)



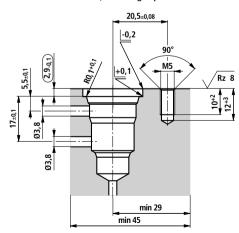


- Mating connector for connector "K40" (separate order, see data sheet 08006)
- 2 Mounting clip "50" and fastening screw ISO 4762 - M5 x 14 - 8.8 - to 30 bar (separate order), see page 10
- 1 = Main port 1 (A)
- 2 = Main port 2 (P)
- 3 = Main port 3 (T)
- LS = Location shoulder

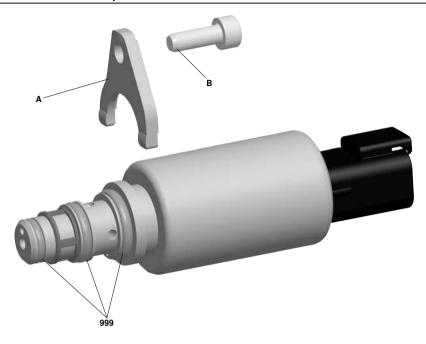
Installation bores (dimensions in mm)



Cut A - A, mounting clip "50"



Available individual components



Item	Description	Material no.
999	Seal kit of the valve (for 2 valves)	R961003681
Α	Mounting clip "50" (Maximum input pressure 50 bar)	R908105638
В	Hexagon socket head cap screws ISO 4762 - M5 x 14 - 8.8 (mounting clip "50")	2910141156

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Proportional pressure reducing valve, direct operated

RE 64666/02.10

1/8

Type MHDRE 04 K

Size 4 Component series 1X Maximum control pressure 30 bar Maximum flow 6 l/min



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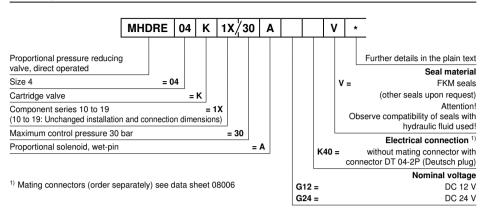
Features

- Direct operated proportional pressure reducing valve for reducing a system pressure
- Cartridge valve
- Suitable for mobile and industrial applications
- Operation by means of proportional solenoid
- In case of power failure, the minimum pressure is set
- Recommended control electronics:
 - · Mobile amplifier type RA and RC

Information on available spare parts: www.boschrexroth.com/spc

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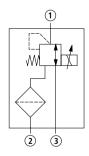
Ordering code



Standard types

	Material number			
Туре	12 V	24 V		
MHDRE 04 K1X/30AGK40V	R901059491	R901067641		

Symbol



- 1 = Main port 1 (A)
- ② = Main port 2 (P)
- 3 = Main port 3 (T)

Function, section

General

The proportional pressure reducing valve type MHDRE 04 K is a direct operated cartridge valve in 3-way design. It reduces the control pressure (main port $\widehat{\ \ }$) proportionally to the solenoid current and functions largely independently from the input pressure (main port $\widehat{\ \ }$).

With a command value of 0 or in case of power failure, the minimum pressure is set. Operation is effected by means of proportional solenoid. The solenoid's interior is connected to the main port ③ and filled with hydraulic fluid.

Depending on the electric command value, these valves can be used to reduce the system pressure continuously. The valve is suitable for controlling couplings, pumps and directional valves as well as for use in proportional pilot controls (particularly in the mobile area, however also for industrial applications).

Basic principle

The valve controls the pressure in the main port 1 proportionally to the current at the solenoid.

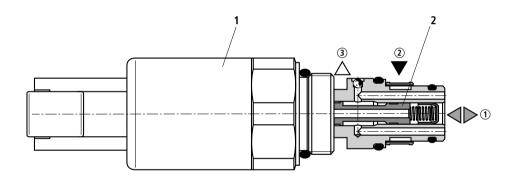
The proportional solenoid (1) converts the electric current into mechanical force that acts on the spool (2) via the armature. The spool controls the connection between the main ports.

T Note!

Occurring tank pressure (main port ③) is added up to the control pressure (main port ①).

Attention!

If the valve is not installed or installed in a system that is not completely bled, the valve must not be energized as otherwise, the entering air has a very negative effect on the valves' dynamic behavior.



- 1 = Main port 1 (A)
- 2 = Main port 2 (P)
- 3 = Main port 3 (T)

Technical Data (For applications outside these parameters, please consult us!)

general				
Weight		kg	approx. 0.25	
Installation position			Any - if it is ensured that no air can collect upstream the valve. Otherwise, we recommend suspended installation of the valve (electric connection downwards).	
Ambient temperature range		°C	See "admissible working range" page 6	
Storage temperature range		°C	-30 to +80	
Environmental audits:				
Salt spray test according to EN	ISO 9227	h	600 (NSS test)	
Surface protection Solenoid			Coating according to DIN 50962-Fe//ZnNi with thick layer passivation	
hydraulic				
Maximum control pressure -	Main port ①	bar	30	
Maximum input pressure -	Main port ②	bar	100	
Maximum backpressure -	Main port ③	bar	at zero pressure (max. 30 bar, occurring tank pressures are added up to the control pressure (main port ①))	
Maximum flow ($\Delta p = 7 \text{ bar}$)		l/min	6	
Maximum leakage -	Main port ③	ml/min	100 (50 bar in ②; I = 0 mA, 46 cSt)	
Maximum pilot oil		ml/min	350 (50 bar in ②; I = I _{max} , 46 cSt)	
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524; other hydraulic fluids upon request	
Hydraulic fluid temperature rang	е	°C	-30 to +110	
Viscosity range mm²/s			5 to 400	
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)			Class 20/18/15 1)	
Hysteresis (within tolerance ban	d)	bar	≤ 1.5	
Step response $(T_u + T_g)$ ms $0 \% \rightarrow 100 \%$; $100 \% \rightarrow 0 \%$			\leq 60 (50 bar in ②; 46 cSt, \textbf{q}_{V} = 0 l/min, dead volume in ① 140 cm³)	

%

μm | 160

 10^{7}

< 2 % of the maximum control pressure

For the selection of filters, see data sheets 50070, 50076, 50081, 50086, 50087 and 50088.

For more information refer to data sheets:

Mesh size strainer element at the main port ②

- 07008

Repeatability

Load cycles

- 07800
- 07900
- 64020

¹⁾ The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

Technical Data (For applications outside these parameters, please consult us!)

electrical

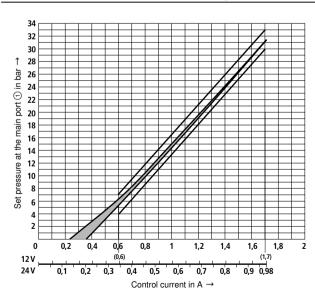
Supply voltage	V	12 DC	24 DC	
Maximum control current	Α	1.7	0.98	
Coil resistance at 20 °C	Ω	3.5	11.1	
Duty cycle (ED) 3)	%	100		
Maximum coil temperature 4) °C		185		
Protection class according to VDE 0470-1 (DIN DIN 40050-9	EN 60529),	IP 69K (with mating connector	mounted and locked)	
Chopper frequency (recommended) 5)	Hz	200		
Control electronics (separate order)		Control unit RA, see data shee Control units RC, see data she		
Design according to VDE 0580				

- 3) In case of use at an altitude of more than 2000 m a.s.l., we recommend consulting the manufacturer.
- 4) Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!
- 5) The chopper frequency is to be optimized depending on the application. In this regard, observe the temperature range of the application.

Mote!

- The technical data were determined at a viscosity of $v = 46 \text{ mm}^2/\text{s}$ (HLP46; 40 °C).
- You can find more information on the correct use of hydraulic products of Rexroth in the data sheet 64020-B, "Hydraulic valves for mobile applications - General information".

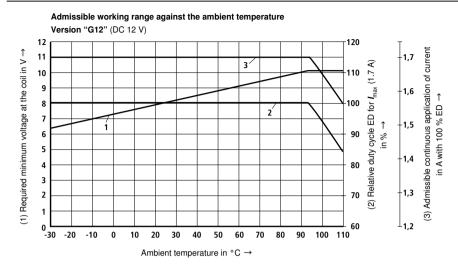
Characteristic curves with tolerance band (measured with HLPD46, ϑ_{oil} = 50 ± 5 °C)

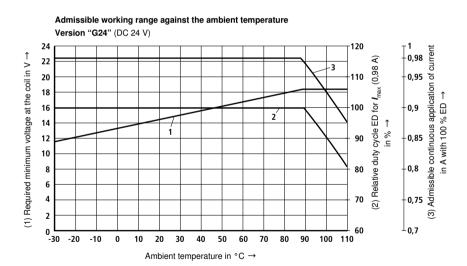


Measuring conditions:

Installation position:	horizontal
Amplifier:	Analog amplifier RA (data sheet 95230)
Chopper frequency:	200 Hz
Input pressure:	50 bar
Dead volume at the main port ①:	135 ml

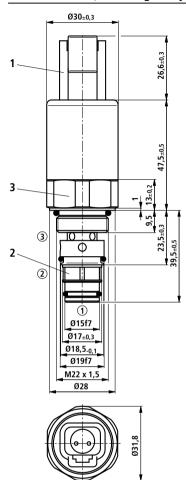
Admissible working range:





06

Unit dimensions, mounting cavity (dimensions in mm)



Ø23,8+0,1 # 0,05 A M22 x 1,5 ∮ 0,05 A Ø19H8 Α ⊥ 0,02 A Rz 16 3 27,5±0,1 30,8±0,1 34±0,1 min 40,5 1) min 42 2 Ø5±0,1 ∮ 0,02 A min Ø5 Ø15H8

Ø29

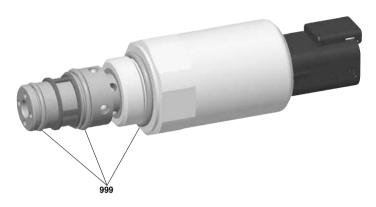
- Mating connector for connector "K40" (separate order, see data sheet 08006)
- 2 Strainer
- 3 Flat across widths SW30; $M_{\Delta} = 12^{+5} \text{ Nm}$
- 1 = Main port 1 (A)
- 2 = Main port 2 (P)
- 3 = Main port 3 (T)
- LS = Location shoulder

1) Depth of fit

Standards:

Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances for metal-cutting procedures	DIN ISO 2768-mK
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

Available individual components



Item	Description	Material no.
999	Seal kit of the valve	R961004421

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Proportional pressure reducing valve, direct operated, rising characteristic curve

RE 64655/03.09

Replaces: 06.03

1/10

Type MHDRE 06 SK (high-performance)

Size 6 Component series 3X Maximum control pressure 30 bar Maximum flow 40 l/min



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Contents Page Features Ordering code 2 Standard types 2 Symbol 2 Function, section 3 Technical data 4. 5 Admissible working range 5 6, 7 Characteristic curves Unit dimensions 8 Mounting cavity Available individual components 10

Features

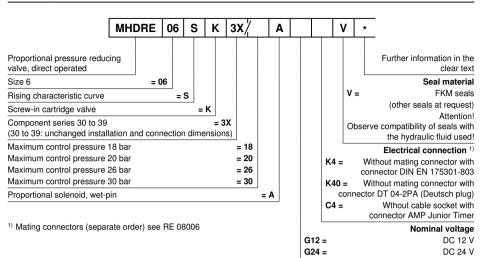
- Pilot valve
- Direct operated proportional pressure reducing valve for reducing system pressures
- As cartridge valve
 - Mounting cavity R/MHDRE 06
- Suitable for mobile applications
- Actuation by means of proportional solenoid
 - In case of power failure, the minimum pressure is set

 - Recommended control electronics:
 - · Mobile amplifier type RA and RC

Information on available spare parts: www.boschrexroth.com/spc

06

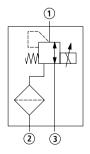
Ordering code



Standard types

	Material number		
Туре	12 V	24 V	
MHDRE 06 SK3X/18AG K40V	R901220628	R901156353	
MHDRE 06 SK3X/20AG K40V	R901150864	R901220641	
MHDRE 06 SK3X/26AG K40V	R901220722	R901220719	
MHDRE 06 SK3X/30AG K40V	R901220724	R901220723	

Symbol



- 1 = Main port 1 (A)
- 2 = Main port 2 (P)
- 3 = Main port 3 (T)

Function, section

General

The proportional pressure reducing valve type MHDRE 06 SK is a direct operated screw-in cartridge valve in 3-way design. It reduces the control pressure (main port ①) proportionally to the solenoid current and regarding its function is largely independent of the inlet pressure (main port ②).

With command value 0 and/or in the event of a power failure, the pressure is automatically reduced to minimum. Operation is effected by a proportional solenoid. The interior of the solenoid is connected with main port ③ and filled with hydraulic fluid.

By means of these valves, the system pressure can be continuously reduced depending on the electrical command value. The valve is suitable for controlling couplings, pumps, and directional valves as well as for the use in proportional pilot controls (particularly in the mobile area).

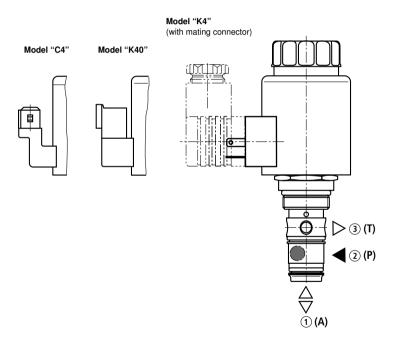
Basic principle

The valve regulates the pressure in main port ① according to the current at the solenoid. Model 'S' means rising characteristic curve, i.e. increasing current results in increasing pressure (see characteristic curves, page 6 and 7).

The proportional solenoid converts the electric power into mechanical force that - via the armature - acts on the spool. The spool controls the connection between the main ports.

M Note!

The tank pressure (main port 3) is added to the control pressure (main port 1).



- 1 = Main port 1 (A)
- 2 = Main port 2 (P)
- 3 = Main port 3 (T)

Technical data (For applications outside these parameters, please consult us!)

general		
Weight	kg	0.7
Installation position		Optional – if it is ensured that no air can collect in front of the valve. Otherwise, we recommend suspended installation of the valve.
Ambient temperature range	°C	See "admissible working range" page 5
Storage temperature range	°C	-40 to +80

Environmental tests:

Salt spray test according to ISO 9227 h	720 (NSS test)	
Surface protection of solenoid	Coating according to DIN 50962-Fe//ZnNi with thick film passivation	

hydraulic

nyuraunc				
Maximum control pressure	- Main port ①	bar	18; 20; 26; 30	
Maximum inlet pressure	- Main port ②	bar	100	
Maximum backpressure	– Main port ③	bar	At zero pressure (max. 100 bar, arising tank pressures are added up to the control pressure (main port ①)	
Maximum flow		l/min	See characteristic curves on page 6	
Maximum leakage	– Main port ③	ml/min	120 (50 bar in ②; I = 0 mA, 46 cSt)	
Maximum pilot oil		ml/min	120 (50 bar in ②; I = I _{max} , 46 cSt)	
Hydraulic fluid			Mineral oil (HL, HLP) according to DIN 51524; quickly bio- degradable hydraulic fluids according to VDMA 24568 (also see RE 90221); HFD-R (phosphate ester); other hydraulic fluids at request	
Hydraulic fluid temperature range °C			-40 to +120	
Viscosity range mm²/s		mm²/s	5 to 400	
Max. admissible degree of co-cleanliness class according	,	ulic fluid	Class 20/18/15 1)	
Hysteresis (within tolerance band) bar		bar	≤ 1.5 (control pressure 18; 20 bar) ≤ 2.0 (control pressure 26; 30 bar)	
Step response $(T_u + T_g)$ 0 %	→ 100 %; 100 % → 0 %	ms	\leq 60 (50 bar in ②; 46 cSt, $\textbf{\textit{q}}_{\rm V}$ = 0 l/min, dead volume in ① 140 cm³)	
Repeatability		%	< 2 % of the maximum control pressure	
Load cycles			10 ⁷	
Strainer element at the main	port ② (P)	μm	250	

¹⁾ The cleanliness classes specified for the components must be complied with in hydraulic systems. Efficient filtration prevents malfunctions and simultaneously increases the service life of the components.

For the filter selection, see data sheets RE 50070, RE 50076, RE 50081, RE 50086, RE 50087 and RE 50088.

Technical data (For applications outside these parameters, please consult us!)

electric

Supply voltage		V	12 DC	24 DC	
Maximum control current A		Α	1.45	0.7	
Coil resistance at 20 °C		Ω	5	22.5	
Duty cycle 2)	y cycle ²⁾ % 100				
Maximum coil temperature 3)	Maximum coil temperature 3)		185		
Protection type according to	- Model "K4"		IP 65 (with mating connector mounted and locked)		
VDE 0470-1	- Model "C4"		IP 66 (with mating connector mounted and locked)		
(DIN EN 60529),			IP 69K (with Rexroth mating connector, material no. R901022127)		
DIN 40050-9	- Model "K40"		IP 69K (with mating connector mounted and locked)		
Chopper frequency (recommended) 4) Hz		Hz	150		
Control electronics ⁵⁾			Control device RA, see RE 95230		
		Control device RC, see RE 95200			
Rating according to VDE 0580					

²⁾ In case of use in heights of more than 2,000 m above sea level, we recommend consulting the manufacturer.

- 3) Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!
- 4) The chopper frequency is to be optimized depending on the application. In this regard, observe the temperature range of the application.
- 5) Separate order, see RE 30116

M Note!

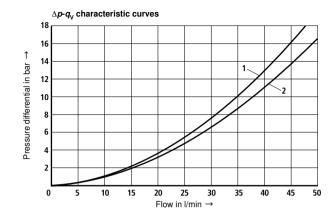
- The technical data was determined at a viscosity of $v = 46 \text{ mm}^2/\text{s}$ (HLP46; 40 °C).
- You can find more information on using the hydraulic products of Rexroth in the data sheet RE 64020-B, "Hydraulic valves for mobile applications - General information".

Admissible working range

Admissible working range depending on the ambient temperature 200 120 1 in % of the 180 Operating voltage in % of the nominal voltage 100 160 140 energization 80 120 nominal current 100 60 continuos 80 40 60 Admissible 40 20 n -30 -20 -10 10 30 50 60 90 100 110 120

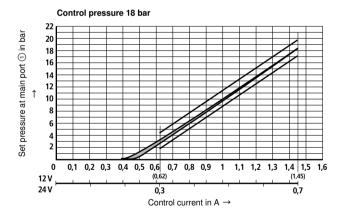
- 1 Required operating voltage in % of the nominal voltage
- 2 Admissible continuous energization in % of the nominal current

Ambient temperature in °C →



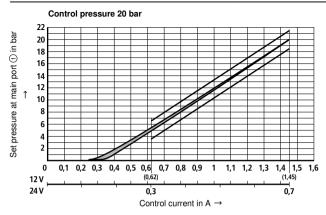


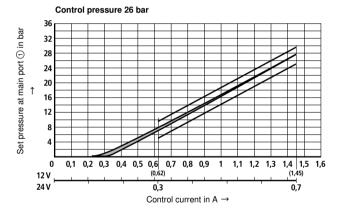
Characteristic curves with tolerance band (measured with HLP46, ϑ_{Oil} = 40 °C ± 5 °C)

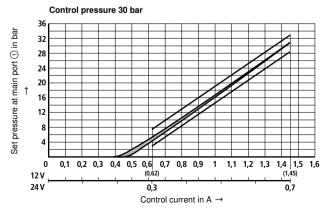


06

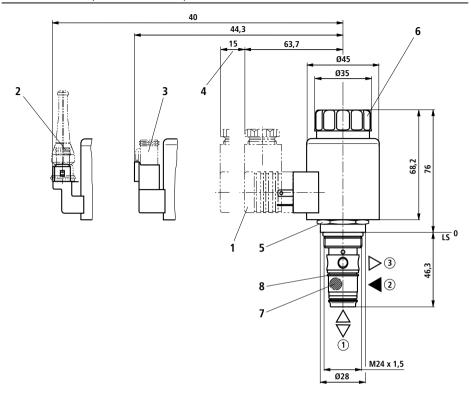
Characteristic curves with tolerance band (measured with HLP46, ϑ_{Oil} = 40 °C ± 5 °C)







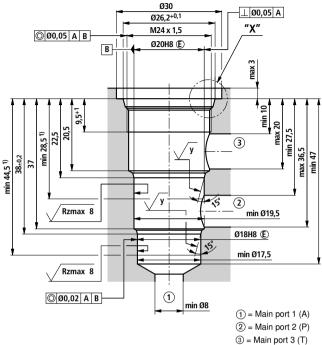
Unit dimensions (dimensions in mm)



- Mating connector for connector "K4" (separate order, see RE 08006)
- 2 Mating connector for connector "C4" (separate order, see RE 08006)
- 3 Mating connector for connector "K40" (separate order, see RE 08006)
- 4 Space required for removing the mating connector
- 5 Hexagon 28 A/F; tightening torque $M_T = 10^{+2}$ Nm
- **6** Solenoid nut, tightening torque $M_T = 5^{+1}$ Nm
- 7 Strainer element; when mounting the valve, make sure that the strainer element is in the correct position (resting against item 8)!
- 8 Collar

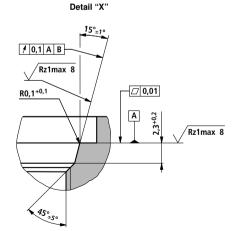
- 1 = Main port 1 (A)
- 2 = Main port 2 (P)
- 3 = Main port 3 (T)
- LS = Location shoulder

Mounting cavity R/MHDRE 06; 3 main ports (dimensions in mm)



LS = Location shoulder

²⁾ Visual inspection



Standards:

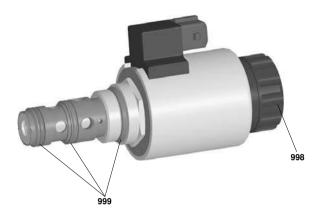
Workpiece edges	DIN ISO 13715
Form and position tolerance	DIN EN ISO 1101
General tolerances for chip- producing processes	DIN ISO 2768-mK
Tolerance	DIN ISO 8015
Surface quality	DIN EN ISO 1302

 $y = \sqrt{0,008- / Pt \ 10}$

06

¹⁾ Depth of fit

Available individual components



Item	Designation	Material no.
998	Nut GZ45-01V BG	R961004245
999	Seal kit of the valve	R961003854

Bosch Rexroth AG Hydraulics Zum Eisengießer 1 97816 Lohr am Main, Germany Phone +49 (0) 93 52 / 18-0 Fax +49 (0) 93 52 / 18-23 58 documentation@boschrexroth.de www.boschrexroth.de © This document, as well as the data, specifications and other information set forth in it, are the exclusive property of Bosch Rexroth AG. It may not be reproduced or given to third parties without its consent.

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RE 58 032/04.99

Replaces: 03.98

Proportional pressure reducing valve Type FTDRE 2 K

Nominal size 2
Series 3X
Maximum control pressure 18 bar
Maximum operating pressure 100 bar
Flow 2 L/min at $\Delta p = 7$ bar



Type FTDRE 2 K3X/18A...C4V

Overview of contents

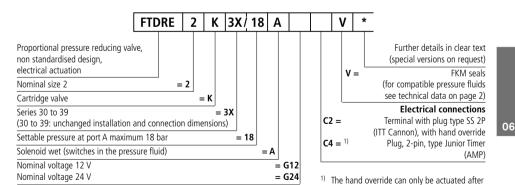
Contents	Page
Ordering details	1
Symbol	1
Function, section	2
Technical data	2 and 3
Characteristic curves	3
Unit dimensions	4

Symbol



the plug has been removed.

Ordering details



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Function, section

The proportional pressure reducing valve type FTDRE 2 K... reduces the pressure in port A in proportion to the solenoid current. It operates virtually independently from the pressure in port P.

The valve is suitable for the control of directional valves and hydraulic cylinders, particularly those in the mobile and automotive technology sectors

The hydraulic pressure in port A acts on a spool (1) against the solenoid force.

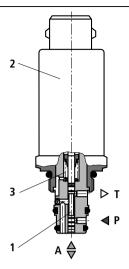
With the proportional solenoid (2) de-energised a return spring (3) at the spool (1) switches to the connection from A to T.

The valve can be supplied with the nominal voltages of 12 V and 24 V. Operation is only permissible with a suitable amplifier (see technical data).

∧ Attention!

For mains operation an isolating transformer with separated windings is required.

For optimum operation the solenoid must be filled with the pressure fluid (also see technical data "Installation").



Technical data (for applications outside these parameters please consult us!)

General		
Weight	kg	approx. 0.16
Installation		optional, preferably with the electrical connection hanging downwards, (when the valve is horizontally mounted or if the electrical connection is pointing upwards then a minimum back pressure $p_{\rm T}$ has to be created to ensure that the valve stays full of oil)
Ambient temperature range	°C	- 30 to + 120
Solenoid surface protection		coating to DIN 50 961-Fe/Zn 10C
Salt spray test to DIN 50 021	h	144
Hydraulic		
Set pressure (p _A)		see tolerance range on page 3
Input pressure (p _P)	bar	≤ 100
Back pressure (pressure p_T at port T)	bar	zero pressure (valve pressure tight up to 30 bar) attention: back pressure p_{T} increases the set pressure p_{Av} even with current $I=0$
Flow details valid for BP Dexron II and $+$ 80 °C $-$ Flow ($\Delta p = 7$ bar) $-$ Max. leakage flow at port T at $p_p = 100$ bar and control current $I = 0$ $-$ Max. control flow at $p_p = 100$ bar, $q_{VA} = 0$ and control current $I = I_{max}$ Stepped response with control current alteration (for test set-up see page 3)	L' min $ m cm^3/min$ $ m cm^3/min$ $ m t_{on}$ $ m t_{off}$	≥ 2 (max. permitted 7.5) ≤ 80 ≤ 350 max. 25 ms max. 20 ms reg 100% 1
Pressure fluid		mineral oils to DIN 51 524, ATF Dexron II, Fiat Tutela Multi F
Pressure fluid temperature range	°C	-30 to + 80
Degree of contamination		maximum permissible degree of contamination of the pressure fluid is to NAS 1638 class 9. We, therefore, recommended a filter with a minimum retention rate of $B_{10} \ge 75$.

Technical data (for applications outside these parameters please consult us!)

Electrical			
Voltage type		DC	
Amplifier nominal voltage	V	12	24
Max. control current	А	1.8	0.8
Coil resistance (20 °C)	Ω	2.4	12
Duty (with amplifier)	%	100	
Electrical connection		see ordering details	
Protection to DIN 40 050, part 9	SolenoidElectrical connection	IP 6K5 IP 6K5	
Chopper frequency (recommended) 1)	Hz	150	
Possible control electronics in plug-in amplifier housing ²⁾ (separate order)		FTE 0011 (see RE 58 011); FTE 0012 (see RE 58 012); FTE 0015 (see RE 58 015); FTE 0016 (see RE 58 016); FTE 0018 (see RE 58 018); FTE 0019 (see RE 58 019)	
Possible control electronics as carrier rail module ²⁾ (separate order)		Power supply modules:	017 and VT 11018 (see RE 29 762) VT 11005 (12 V, see RE 29 732) VT 11006 (24 V, see RE 29 729)

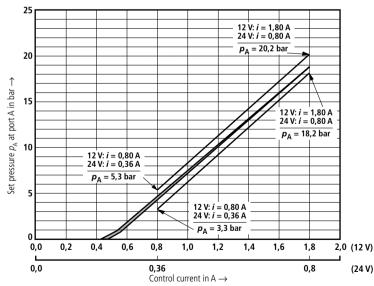
¹⁾ The chopper frequency must be suited to the application. Please take the application temperature into account.

2) The above mentioned control electronics type FTE... can be optionally operated with 12 V and 24 V. Thus the 12 V valve type may always be used independent from the supply voltage. When using the above mentioned control electronics types VT... the voltage must be considered.

Note:

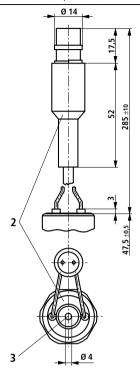
Further technical details (e.g. frequency response) on request.

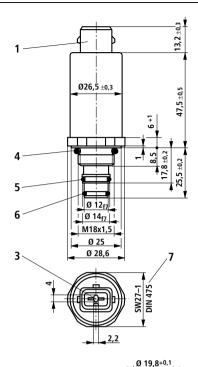
Characteristic curves with tolerance band



Amplifier: FTE 0011 Test medium: BP Dexron II Chopper frequency: $f_{\rm C} = 150~{\rm Hz}$ Test temperatuare: $\vartheta = 50~{\rm ^{\circ}C}$ Installation position during testing: horizontal Dead volume at port A: $V = 135~{\rm mL}$

Inlet pressure: $p_p = 50 \text{ bar}$





∕ 0.05 A

1 Version **C4** 2-pin plug, type Junior Timer (AMP)

2 Version C2 Terminal (AWG 18) with 2-pin plug, type SS 2P (ITT-Cannon)

- 3 Hand override
 With version C4 the hand override can only
 be actuated after the plug has been removed.
- 4 O-ring 15 x 2 (FKM)
- 5 O-ring 10.82 x 1.78 (FKM)
- 6 O-ring 9 x 1.5 (FKM)
- 7 Spanner flat 27A/F, $M_{\Delta} = 10 \text{ Nm} + 5 \text{ Nm}$
- 8 Minimum depth of fit

Note:

For new designs these installation cavities must be used! For existing designs the installation cavity to RE 58 031 remains valid.

R 0,1+0.1 15° 0,02 A 0,

M18x1.5

Ø 14H8

Required surface finish in the areas of fit and chamfer

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Fax: 0 14 80/21 90 52 E-mail: info@boschrexroth.co.uk The data specified above only serves to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The details stated do not release you from the responsibility for carrying out your own assessment and verification. It must be remembered that our products are subject to a natural process of wear and ageing.

0.02

RE 58 038/04.99

Proportional pressure reducing valve Type FTDRE 4 K

Nominal size 4 Series 1X Maximum control pressure 18 / 30 bar Maximum operating pressure 210 bar Flow 5 L/min at $\Delta p = 7$ bar



Type FTDRE 4 K1X/30A...C4V

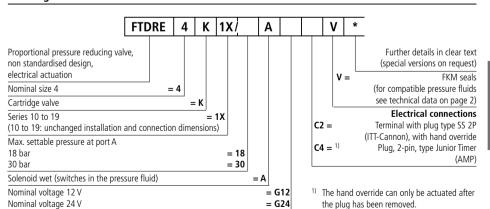
Overview of contents

Symbol

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Ordering details



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06

Function, section

The proportional pressure reducing valve type FTDRE 4 K... reduces the pressure in port A in proportion to the solenoid current. It operates virtually independently from the pressure in port P.

The valve is suitable for the control of directional valves and hydraulic cylinders, particularly those in the mobile and automotive technology sectors.

The hydraulic pressure in port A acts on the spool (1) against the solenoid force.

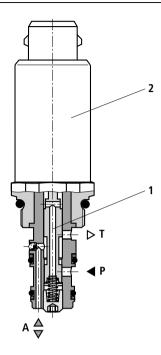
With the proportional solenoid (2) de-energised port P is closed and port A is connected to tank T.

The valve can be supplied with the nominal voltages of 12 V and 24 V. Operation is only permissible with a suitable amplifier (see technical data).

∧ Note!

For mains operation an isolating transformer with separated windings is required.

For optimum operation the solenoid must be filled with the pressure fluid (also see technical data "Installation").



Technical data (for applications outside these parameters please consult us!)

General Weight kg approx. 0.19 Installation optional, preferably with the electrical connection hanging downwards, (when the valve is horizontally mounted or if the electrical connection is pointing upwards then a minimum back pressure p_T has to be created to ensure that the valve stays full of oil) Ambient temperature range °C - 30 to + 120 Solenoid surface protection coating to DIN 50 961-Fe/Zn 10C Salt spray test to DIN 50 021 h 144

Technical data (for applications outside these parameters please consult us!)

Technical data (for applications outside th	icse paramete	13 picase consuit as:/	
Hydraulic			
Control pressure (p _A) at port A		see tolerance band on page 4	
Input pressure (p _P)	bar	≤ 210	
Back pressure (pressure $p_{\rm T}$ at port T)	bar	zero pressure (valve pressure tight up to attention: back pressure $p_{\rm T}$ increases the set p	
Flow details valid for BP Dexron II and $+$ 80 °C $-$ Flow ($\Delta p = 7$ bar) $-$ Max. leakage flow at port T at	L/min	≥5	
$p_P = 210$ bar and control current $I = 0$ - Max. control flow at $p_P = 210$ bar,	cm ³ /min	≤ 150	
$q_{\rm VA} = 0$ and control current $I = I_{\rm max}$	cm³/min	≤ 400	
Stepped response with control current alteration (for test set-up see page 4)	$t_{ m on} \ t_{ m off}$	max. 40 ms max. 20 ms	
		PAA 18 100% 95% 95% 5% 5% 5%	Control current in %
Pressure fluid		mineral oils to DIN 51 524, ATF Dexro	on II, Fiat Tutela Multi F
Pressure fluid temperature range	°C	- 30 to + 80	
Degree of contamination		maximum permissible degree of contar is to NAS 1638 class 9. We, therefore, filter with a minimum retention rate of	recommend a
Electrical			
Voltage type		DC	
Amplifier nominal voltage	V	12	24
Max. control current	А	1.8	0.8
Coil resistance (20 °C)	Ω	2.4	12

1)	The chopper frequency must be suited to the application. Please
	take the application temperature into account.

Possible control electronics in plug-in amplifier housing 2)

Possible control electronics as carrier rail module 2)

Solenoid

- Electrical connection

Duty (with amplifier)

Electrical connection

(separate order)

(separate order)

Protection to DIN 40 050, part 9

Chopper frequency (recommended) 1)

2) The above mentioned control electronics type FTE... can be optionally operated with 12 V and 24 V. Thus the 12 V valve type may always be used independent from the supply voltage. When using the above mentioned control electronics types VT... the voltage must be considered.

Note:

100

IP 6K5

IP 6K5

Hz 200

see ordering details

Power supply modules:

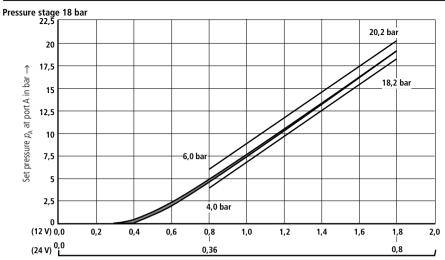
For technical details (e.g. frequency response) on request.

FTE 0011 (see RE 58 011); FTE 0012 (see RE 58 012);

FTE 0015 (see RE 58 015); FTE 0016 (see RE 58 016); FTE 0018 (see RE 58 018); FTE 0019 (see RE 58 019)

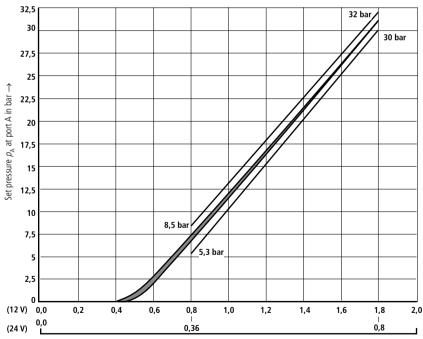
VT 11008, VT 11009, VT 11017 and VT 11018 (see RE 29 762)

VT 11005 (12 V, see RE 29 732) VT 11006 (24 V, see RE 29 729)



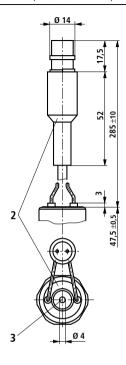
Control current in A \rightarrow

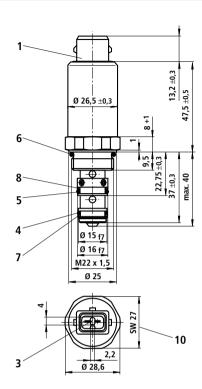




Control current in A \rightarrow

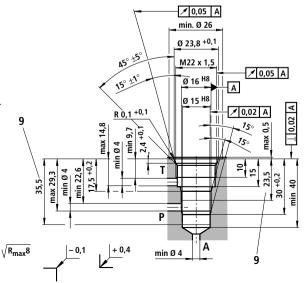
Amplifier: FTE 0011 Test medium: BP Dexron II $f_{\rm C} = 200 \; {\rm Hz}$ Chopper frequency: Test temperature: ϑ = 50 °C Installation position during testing: horizontal Dead volumn at port A: $V = 135 \, \text{mL}$ Inlet pressure: $p_p = 50 \text{ bar}$ Hysteresis: max. 5 %





- 1 Version **C4** 2-pin plug, type Junior Timer (AMP)
- 2 Version C2 Terminal (AWG 18) with 2-pin plug, type SS 2P (ITT-Cannon)
- 3 Hand override
 With version C4 the hand override can only
 be actuated after the plug has been removed.
- 4 O-ring 12 x 1.5 (FKM)
- 5 O-ring 12.42 x 1.78 (FKM)
- 6 O-ring 19.4 x 2.1 (FKM)
- **7** Back-up ring 16 x 13.4 x 1
- 8 Back-up ring 15 x 12.8 x 1
- 9 Minimum depth of fit
- **10** Spanner flat 27A/F, $M_{\Delta} = 12 \text{ Nm} + 5 \text{ Nm}$

Required surface finish in the areas of fit and chamfer



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3/2 Directional valve with solenoid actuation

RE 58 007/06.03 1/4 replaces: 03.96

Type FTWE 2 K

Size 2 Series 3X Operating pressure max. 100 bar Volume flow max. 2 L/min



Content analysis

Content	Page
Characteristics	1
Ordering code	2
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Operating Curves	3
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Characteristics

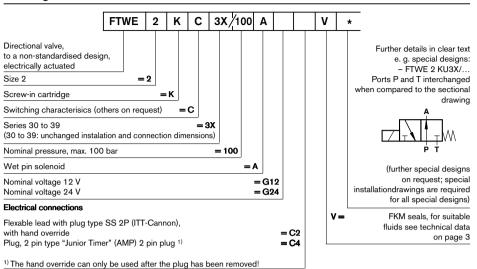
- Directly actuated directional spool valve with solenoid actuation
- Screw-in cartridge
- Minimised installation dimensions
- Wet pin DC solenoid
- Electrical connections:
 Plug, 2 pin, type "Junior Timer" (AMP) or flexable lead with plug
- Hand override
- Designed for use in vehicles and mobile machines
- Can be supplied for use on 12 V or 24 V supplies

Attention:

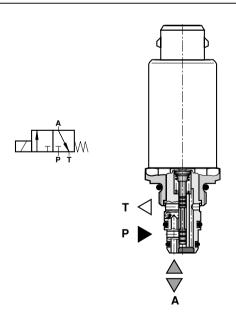
 For mains power operation, the valve must be supplied via an isolating transformer with separate windings

06

Ordering Code



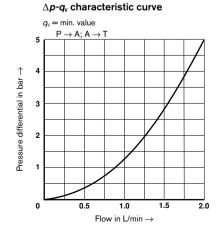
Symbol, Section



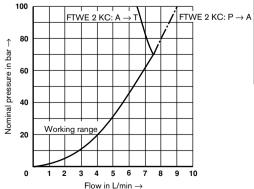
Technical Data (For applications outside these parameters, please consult us!)

General				
Installation position			optional	
Ambient temperature range °C		- 30 to + 80		
Solenoid surface protection			to DIN 50 961-Fe/Zn 8C	
Salt spay/mist test to DIN 50 021		hours	72	
Weight		kg	approx. 0.19	
Hydraulic				
Nominal pressure	- Ports P, A	bar	100 (static), higher inlet pressur	es on request
	- Port T	bar	30 (static)	
Flow rate at $\Delta p = 5$ bar		L/min	2	
Maximum leakage flow at $\Delta p = 100$ bar, cm ³ /min valid for $v = 11$ mm ² /s at $\vartheta = 80$ °C		cm ³ /min	≤ 65	
Pressure fluid		Mineral oil to DIN 51 524 ATF Dexron II Fiat Tutela Multi F		
Pressure fluid - temperature range		°C	- 30 to + 80	
Degree of fluid contamination		Maximum permissable degree of contamination of the fluid is to NAS 1638 class 9. We, therefore, recommend a filter with a minimum retention rate of $\beta_{10} \ge 75$.		
Electrical				
Type of supply		DC		
Nominal voltage		V	12	24
Power requirement at 20 °C		W	14.4	14.4
Coil resistance R ₂₀		ohms	10	40
Duty cycle %		100		
Switching time	- t on	ms	≥ 20	
	- t off	ms	≥ 30	
Insulation to DIN 40 050	OIN 40 050 - Solenoid		IP 6K5	
part 9	- Electrical connection		IP 6K5	
Switching frequency		Hz	5	
Service life			5 • 10 ⁶ operations	
Possible switching amplifiers in the plug housing (must be ordered separately)		FTE 0010 to RE 58 010 FTE 0014 to RE 58 014 FTE 0017 to RE 58 017		

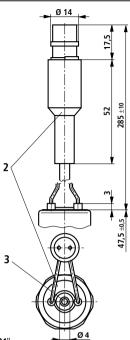
Characteristic curves (measured at $v = 27 \text{ mm}^2\text{/s}$ at $\vartheta = 50 \text{ °C}$)



Performance limits



Unit Dimensions (Dimensions in mm)



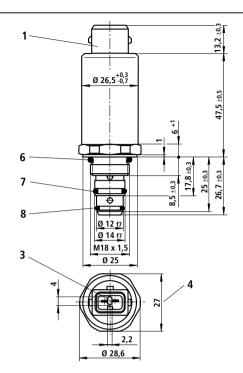
- 1 Model "C4" 2 pin plug type "Junior timer" (AMP)
- 2 Model "C2" flexable lead (AWG 18) with protective conduit (colour black) and 2 pin plug type SS 2P (ITT-Cannon) with cap connector

Required surface finish in

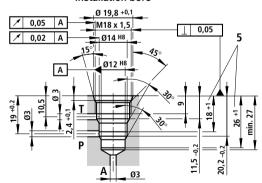
fit areas and chamfers

- 3 Hand override
- 4 Spanner size 27 A/F, Tightening torque M_A = 10 Nm + 5 Nm
- 5 Depth of fit
- 6 O-ring 15 x 2
- 7 O-ring 10.82 x 1.78
- 8 O-ring 9 x 1.5

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Installation bore



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06

RE 58 008/06.99

Replaces: 07.96

3/2-way directional valve Type FTWE 4 K

Nominal size 4

Series 1X

Maximum operating pressure 210 bar

Flow 7 L/min at $\Delta p = 5$ bar



Rexroth

Bosch Group

Type FTWE 4 KC1X/210A...C4V

Overview of contents

Contents	Page
Features	1
Ordering details	1
Symbol	2
Function, section	2
Technical data	2 and 3
Characteristic curves	3
Unit dimensions	4

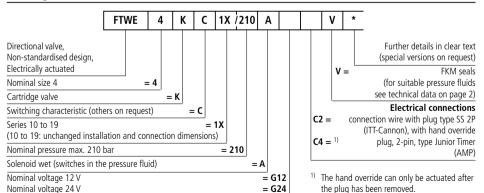
Features

- Direct operated directional spool valve with solenoid actuation
 - Cartridge valve
- Minimised installation size
- Wet pin DC solenoid
- Electrical connection: plug, 2-pin type Junior Timer (AMP) or
 - connection wire with plug
- Hand override
- Designed for use in vehicles, mobile applications
 - The valve is supplied for the nominal voltages of 12 V or 24 V

Attention!

For mains operation an isolating transformer with seperated windings is required!

Ordering details





by Bosch Rexroth AG, Industrial Hydraulics, D-97813 Lohr am Main

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FTWE 4 K 1/4 RE 58 008/06.99



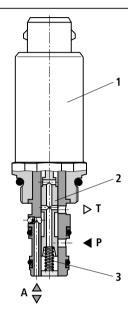
Function, section

The 3/2-way directional valve type FTWE 4 KC controls the start and stop of a flow.

With the solenoid (1) de-energised the control spool (2) is held in its initial position by the return spring (3).

The solenoid force acts on the control spool (2) and pushes it out of its normal position. The flow position from P to A is thereby opened.

The valve is particularly suitable for use in the mobile hydraulic and automotive technology branches.



Technical data (for applications outside these parameters, please consult us!)

General		
Weight	kg	approx. 0.19
Installation		optional
Ambient temperature range	°C	- 40 to + 80
Solenoid surface protection		coating to DIN 50961-Fe/Zn 10C
Salt spray / mist test to DIN 50 021	h	72

Hydraulic

Max. pressure	Ports P, A	bar	210 (static), pressure peaks up to 315 bar are permissible
	Port T	bar	30 (static)
Flow details are valid for BP Dexron II and + 80 °C			
- Flow ($\Delta p = 5$ bar)		L/min	≥7
Pressure fluid			mineral oil to DIN 51 524, BP Dexron II, Fiat Tutela Multi F
Pressure fluid temperature range		°C	- 40 to + 80
Degree of contamination			Maximum permissible degree of contamination of the pressure fluid is to NAS 1638 class 9. We, therefore, recommend a filter with a minimum retention rate of $B_{10} \ge 75$.

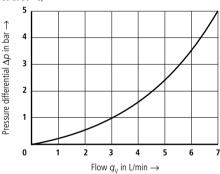
Technical data (for applications outside these parameters, please consult us!)

Electrical				
Voltage type			DC	
Amplifier nominal voltage		V	12	24
Power consumption (20 °C)		W	14.4	14.4
Coil resistance (20 °C)		Ω	10	40
Duty		%	100	
Switching time	t _{on}	ms	≤ 30	
valid at $\vartheta = 50$ °C and $v = 27$ mm ² /s	$\overline{t_{ m off}}$	ms	≤ 25	
Electrical connections			see ordering details	
Protection to DIN 40 050, part 9	SolenoidElectrical connection	ction	IP 6K5 IP 6K5	
Switching frequency		Hz	5	
Service life			1 x 10 ⁷ switchings	
Possible control electronics in the plug a (separate order)	amplifier housing		switching amplifier, type FTE 001 switching amplifier, type FTE 001 switching amplifier, type FTE 001	4 (see RE 58 014)

Characteristic curves (measured with BP Dexron II)

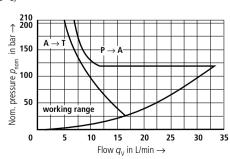
△**p-q**_v-characteristic curve (measured at 80 °C)

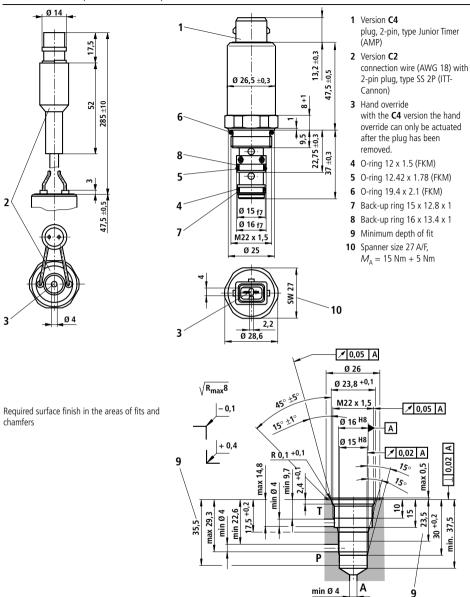
 $q_{\rm V}=$ minimum value



Performance limit (measured at 50 °C)

The switching performance limit was obtained with the solenoids at their operating temperature and with a 10 % under voltage.





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Proportional pressure reducing valves and remote control manifolds Remote control manifolds

Designation	Description	p _{max} in bar	q _V in I/min	Data sheet	Page
Remote control manifold	HICFP	30	40	64662	1083



Remote control manifold

RE 64662/02.10

1/8

Type HICFP

Sizes 02, 04 and 06 Component series 1X Maximum control pressure 30 bar Maximum flow 40 l/min



Table of contents

Content

Features

Ordering code

Technical data

Unit dimensions

Circuit example

Available individual components

Page

- Cost-effective solution variant for electrohydraulic proportional controls of mobile control blocks
- 2 Separate accommodation of the electrohydraulic units in the accessible and protected area of the machine
- 2, 3

 Easy retrofitting of hydraulic and electric control
 - Combines high performance and cost-effective design
 - 3 sizes

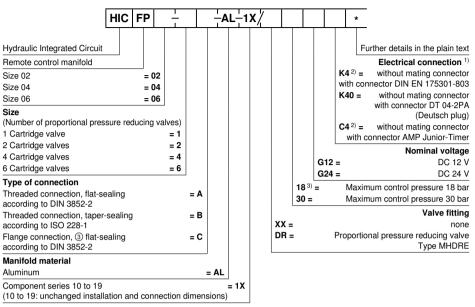
Features

- Different valve variants
- Can be adapted without any piping due to optional flange face with pilot oil, accumulator, filter and additional functions

Information on available spare parts: www.boschrexroth.com/spc

1083

Ordering code



¹⁾ Mating connectors (order separately) see data sheet 08006

Technical Data (For applications outside these parameters, please consult us!)

general				
Size		Size 02	Size 04	Size 06
Weight	kg	See table page 5		
Installation position		valves. Otherwise,	I that no air can colle we recommend insta a position with suspe	llation of the remote
Ambient temperature range	°C	See "voltage tolerar valves 1)	nce" in the data shee	ets of the cartridge
Storage temperature range	°C	-30 to +80		

^{1) -} Type MHDRE 02 according to data sheet 64658

²⁾ Only size 06

³⁾ Only sizes 02 and 06

⁽¹⁾ = Main port 1 (P)

② = Main port 2 (T)

③ = Main port 3 (A1, B1, A2, ...)

⁻ Type MHDRE 04 according to data sheet 64666

⁻ Type MHDRE 06 according to data sheet 64655

Technical Data (For applications outside these parameters, please consult us!)

hydraulic

Size			Size 02	Size 04	Size 06			
Maximum control pro	essure – Main port ③	bar	18; 30					
Maximum input pres	sure - Main port ①	bar	50	100	100			
Maximum backpress	sure – Main port ②		Recommended at zero pressure (occurring tank pressures are added up to the control pressure of the cartridge valves) at zero pressure up to a maximum of:					
		bar	3	100	100			
Maximum flow		l/min	See data sheets of	the cartridge valves 1)			
Hydraulic fluid			Mineral oil (HL, HL	P) according to DIN 5	1524			
Hydraulic fluid temp	erature range	°C	-30 to +110 -30 to +110 -40 to +120					
Viscosity range		mm²/s	5 to 400	5 to 400				
	degree of contamination of thass according to ISO 4406 (c)		See data sheets of the cartridge valves 1)					
Hysteresis (within to	lerance band)	bar	See data sheets of	the cartridge valves 1)			
Step response		ms	See data sheets of	the cartridge valves 1)			
Repeatability		%	See data sheets of	the cartridge valves 1)			
Load cycles	- Valves		10 million					
	- Flange		2 million					
Strainer element at to cartridge valves	the main port ① of the	μm	160	160	250			

electrical

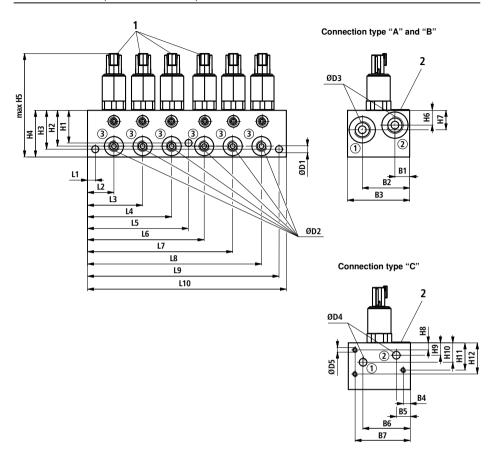
Size			Size 02	Size 04	Size 06	Size 02	Size 04	Size 06
Supply voltage	Supply voltage V			12 DC			24 DC	
Maximum control current		Α	1.7	1.7	1.45	0.95	0.95	0.7
Coil resistance at 20 °C		Ω	3.5	3.5	5	11.1	11.1	22.5
Duty cycle (ED) 2)		%	100					
Maximum coil temperature 3)		°C	185					
Protection class according	- Version "K4"		IP 65 (wit	h mating c	onnector m	nounted an	d locked)	
to VDE 0470-1	- Model "C4"		IP 66 (with mating connector mounted and locked)					
(DIN EN 60529), DIN 40050-9			IP 69K (with Rexroth mating connector, Material no. R901022127)					
	- Model "K40"		IP 69K (w	ith mating	connector	mounted a	ind locked)	
Chopper frequency (recomme	ended) 4)	Hz	150					
Control electronics 5)					e data she ee data sh			
Design according to VDE 058	30							

- 1) Type MHDRE 02 according to data sheet 64658
 - Type MHDRE 04 according to data sheet 64666
 - Type MHDRE 06 according to data sheet 64655
- ²⁾ In case of use at an altitude of more than 2000 m a.s.l., we recommend consulting the manufacturer.
- ³⁾ Due to the temperatures occurring at the surfaces of the solenoid coils, the standards ISO 13732-1 and EN 982 need to be adhered to!
- 4) The chopper frequency is to be optimized depending on the application. In this regard, observe the temperature range of the application.
- 5) Separate order, see data sheet 30116

TE Note!

- The technical data were determined at a viscosity of v = 46 mm²/s (HLP46; 40 °C).
- You can find more information on the correct use of hydraulic products of Rexroth in the data sheet 64020-B, "Hydraulic valves for mobile applications - General information".
- 1 = Main port 1 (P)
- 2 = Main port 2 (T)
- ③ = Main port 3 (A1, B1, A2, ...)

Unit dimensions (dimensions in mm)



- 1 Proportional pressure reducing valves
 - type MHDRE 02 according to data sheet 64658
 - type MHDRE 04 according to data sheet 64666
 - type MHDRE 06 according to data sheet 64655
- 2 Nameplate

- ① = Main port 1 (P)
- ② = Main port 2 (T)
- ③ = Main port 3 (A1, B1, A2, ...)

Dimensions see page 5.

M Note!

With size 02 and 04, orientation of the plug-in connectors may vary.

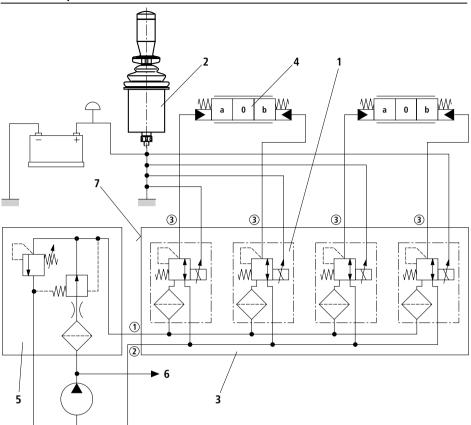
Unit dimensions

Size	Frame size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	ØD1	ØD2	ØD3	ØD4	ØD5
	1	10	34	-	-	-	-	-	-	55	65	6.6	G1/4	G3/8	8	M6/12
02	2	10	34	71	-	-	-	-	-	95	105	6.6	G1/4	G3/8	8	M6/12
02	4	10	34	71	-	91	112	149	-	170	180	6.6	G1/4	G3/8	8	M6/12
	6	10	34	71	108	129	149	186	223	245	255	6,6	G1/4	G3/8	8	M6/12
	1	10	34	-	-	-	-	-	-	55	65	9	G1/4	G1/2	10	M6/12
04	2	10	34	71	-	ı	-	-	-	95	105	9	G1/4	G1/2	10	M6/12
04	4	10	34	71	-	91	112	149	-	170	180	9	G1/4	G1/2	10	M6/12
	6	10	34	71	118	129	149	186	223	245	255	9	G1/4	G1/2	10	M6/12
	1	25	50	-	-	-	-	-	-	75	85	11	G3/8	G3/4	18	M8/16
06	2	25	50	95	-	-	-	-	-	120	130	11	G3/8	G3/4	18	M8/16
00	4	25	50	95	-	123	150	195	-	220	230	11	G3/8	G3/4	18	M8/16
	6	25	50	95	145	172	200	245	295	230	330	11	G3/8	G3/4	18	M8/16

Size	Frame size	H1	H2	Н3	H4	H5	H6	H7	Н8	H9	H10	H11	H12
	1	-	40	50	59	140	16	23	9	14	23	30	35
	2	-	40	50	59	140	16	23	9	14	23	30	35
02	4	36	40	50	59	140	16	23	9	14	23	30	35
	6	36	40	50	59	140	16	23	9	14	23	30	35
	1	-	45	50	59	140	19	25	9	16	25	35	40
	2	-	45	50	59	140	19	25	9	16	25	35	40
04	4	42	45	50	59	140	19	25	9	16	25	35	40
	6	42	45	50	59	140	19	25	9	16	25	35	40
	1	-	53	60	69	150	27	33	10	22	33	45	60
00	2	-	53	60	69	150	27	33	10	22	33	45	60
06	4	55	53	60	69	150	27	33	10	22	33	45	60
	6	55	53	60	69	150	27	33	10	22	33	45	60

	Frame									Weight in kg	
Size	size	B1	B2	В3	B4	B5	В6	B7	Manifold	per cartridge valve	Total
	1	17	58	80	9	18	58	71	0.8	0.25	1.1
02	2	17	58	80	9	18	58	71	1.3	0.25	1.8
02	4	17	58	80	9	18	58	71	2.2	0.25	3.2
	6	17	58	80	9	18	58	71	3.1	0.25	4.6
	1	19	61	80	9	18	61	71	0.8	0.25	1.1
04	2	19	61	80	9	18	61	71	1.3	0.25	1.8
04	4	19	61	80	9	18	61	71	2.2	0.25	3.2
	6	19	61	80	9	18	61	71	3.1	0.25	4.6
	1	92	32	110	10	27	81	100	1.6	0.7	2.3
06	2	92	32	110	10	27	81	100	2.5	0.7	3.9
00	4	92	32	110	10	27	81	100	4.5	0.7	7.3
	6	92	32	110	10	26	81	100	6.4	0.7	10.6

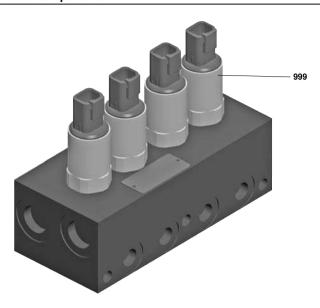
Circuit example



- 1 Proportional pressure reducing valves
 - type MHDRE 02 according to data sheet 64658
 - type MHDRE 04 according to data sheet 64666
 - type MHDRE 06 according to data sheet 64655
- 2 Electronic remote control and modules (see overview according to data sheet 64013)
- 3 Remote control manifold HICFP
- 4 Directional valve, hydraulic actuation
- 5 Pilot oil supply system (not included in scope of delivery). With connection type "C", a customer-specific pilot oil supply can be directly flanged to the remote control manifold (see item 7)
- 6 Work hydraulics
- 7 Optional connection flange (see item 5)

- 1 = Main port 1 (P)
- 2 = Main port 2 (T)
- ③ = Main port 3 (A1, B1, A2, ...)

Available individual components



		Date sheet no.						
Item	Description	Size 02	Size 04	Size 06				
999	Proportional pressure reducing valve	64658	64666	64655				

Notes

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Manifolds with mechanical cartridges

Designation	Description	Code	Data sheet	Page
Relief, direct acting (guided) poppet type	VSAN-08A-C / VSBN-08A-C	OR01KXYZW	18330-01	1095
Relief, direct acting guided poppet type	VSBN-10A-C	OR02KXYZW	18330-02	1099
Relief, direct acting poppet type differential area	VSDN-08A-C	OR12KXYZW	18330-10	1103
Relief, direct acting poppet type differential area	VSDN-10A-C	OR13KXYZW	18330-11	1107
Relief, bi-directional direct acting poppet type differential area	VSNG-10A-C	OR03KXYZW	18330-03	1111
Relief, pilot operated spool type	VSPN-C	OR04KXYZW	18330-04	1115
Relief, pilot operated poppet type	VSPC-10A-C	OR05KXYZW	18330-05	1119
Relief, pilot operated spool type external drain	VSPY-10A-C / VSPY-12A-C	OR06KXYZW	18330-06	1123
Pressure reducing and relieving, direct acting spool type	VRPR-C	OR08KXYZW	18330-08	1127
Pressure reducing, pilot operated spool type	VRPP-C	OR07KXYZW	18330-07	1131
Pressure reducing and relieving, pilot operated spool type	VRPX-10A-C	OR09KXYZW	18330-09	1135
Check poppet type	VUCN-08A-C	OU01K00YZW	18330-40	1139
Check poppet type	VUCN-C	OU02K00YZW	18330-41	1143
Pilot operated check, pilot to open	VSON-C	OY01KXYZW	18330-70	1147

The latest information on products can also be found on Bosch Rexroth web-site: www.boschrexroth.com

Manifolds with mechanical cartridges

Designation	Description	Code	Data sheet	Page
Dual pilot operated check	VSO-DE-C	2Y01KXYZW	18330-71	1151
Counterbalance, standard poppet type	VBSN-C	OY02KXYZW	18330-72	1155
Dual counterbalance, standard poppet type	VBSN-DE-C	2Y02KXYZW	18330-73	1159
Counterbalance, relief compensated poppet type	VBSP-C	OY03KXYZW	18330-74	1163
Dual counterbalance, relief compensated poppet type	VBSP-DE-C	2Y03KXYZW	18330-75	1167
Counterbalance, vented guided poppet type	VBST-C	OY04KXYZW	18330-76	1171
Dual counterbalance, vented guided poppet type	VBST-DE-C	2Y04KXYZW	18330-77	1175
Flow control, restrictor	ST-C-06-C	ON01KXY00W	18331-01	1179
Flow control, restrictor	ST-C-C	ON02KXY00W	18331-02	1183
Needle restrictor, free reverse flow	STVU-08A	ON03KXY00W	18331-03	1187
Needle restrictor, free reverse flow	STVU-10A	ON09K00YZW	18331-04	1191
Flow control, 2-way pressure compensated fully adjustable	VRFB-10A-C / VRFE-12A-C	ON05KXYZW	18331-05	1195
Flow control, 3-way pressure compensated combination type fully adjustable	VRFD-10A-C / VRFD-12A-C	ON06KXYZW	18331-06	1199
Flow divider	DSDN-C	ON07K00YZW	18331-07	1203

The latest information on products can also be found on Bosch Rexroth web-site: www.boschrexroth.com

Manifolds with mechanical cartridges

Designation	Description	Code	Data sheet	Page
Flow divider and combiner	DRFN-C	ON08K00YZW	18331-08	1207
Logic element, flow and pressure control, with internal pilot	VLSP-C	OU09K00YZW	18330-46	1211
Logic element, pressure compensator with static load sense	VRLA-S-C	OU06K00YZW	18330-43	1215
Logic element, pressure compensator with dynamic load sense	VRLA-D-C	OU05K00YZW	18330-42	1219
Directional spool type, diect acting external pilot, external vent	VDSD-C	OU07K00YZW	18330-44	1223
Directional spool type, diect acting external pilot, internal vent	VDSH-C	OU08K00YZW	18330-45	1227
Relief, direct acting guided poppet type special cavity	VSC-30	051301XYZ	18331-40	1231
Relief, direct acting guided poppet type special cavity	VSC-80	051302XYZ	18331-41	1235
Relief, direct acting poppet type differential area special cavity	VSDC-350	051204XYZ	18331-43	1239
Relief, direct acting poppet type pressure compensated special cavity	VSC-30-CC	OR1027XYZ	18331-44	1243



1/4

RE 18330-01/04.10

Replaces: RE 00199/11.07

Relief, direct acting (guided) poppet type

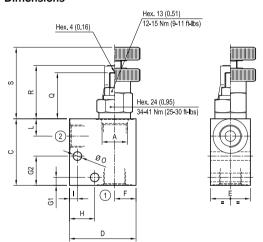
Common cavity Cartridge style in manifold

Hydraulics

VSAN-08A-C / VSBN-08A-C

OR.01 - K - X - Y - Z - W

Dimensions



Technical data

Max flow: up	to 20 I/min	(5 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow					DIM	ENSIO	NS mm	(Inche	s)				
Α	1	1 - 2		(gpm)	С	D	E	F	G1	G2	Н	- 1	L	0	a	R	s
SIZE	09	G 1/4		up to	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)	6.5 (0.26)	35.5	40	54
80	02	G 3/8		20 (5)	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)	6.5 (0.26)	(1.4)	(1.58)	(2.13)

Cartridge style

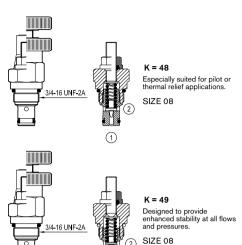


Table	e "K"		К				
DE	04	11	48	Х	56	Z	VSAN-08A
CARTRIDGE CODE	04	11	49	Х	56	Z	VSBN-08A
DGE							
RTR							
Ç							

Table "X"

Х	ADJUSTMEN	NTS	0	PTIONS
03	Leakproof hex. socket screw			
04	Handknob and locknut		Or	dering code
73	O-Ring seal on adjust screw		X=03	

CARTRIDGE TECHNICAL DATA

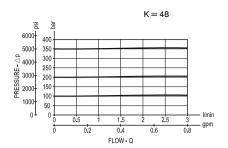
Common cavity: CA-08A-2N For other details see data sheet RE 18318-01 and RE 18318-04

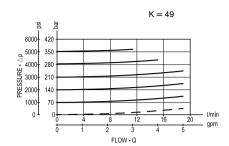
Table "Z"

				SF	RINGS						
		۲	=48 type	Э		K=49 typ	е				
	Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 1 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)				
	05				10-70 (145-1000)	26 (375)	50 (725)				
X=03	10	35-140 (500-2000)	48 (696)	100 (1450)	35-140 (500-2000)	50 (725)	100 (1450)				
#	20	105-210 (1500-3000)	88 (1276)	200 (2900)	105-210 (1500-3000)	79 (1145)	200 (2900)				
	35	140-420 (2000-6000)	140 (2030)	350 (5000)	175-350 (2500-5000)	170 (2465)	350 (5000)				
_	10										
X=04	20										
	35	35-350 (500-5000)	68 (986)	350 (5000)	35-350 (500-5000)	72 (1044)	200 (2900)				
X=73	35	35-350 (500-5000)	68 (986)	350 (5000)	35-350 (500-5000)	72 (1044)	200 (2900)				

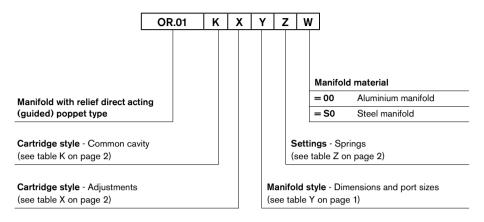
07

Performance graphs





Ordering code



Preferred types (readily available)

Туре	Material number	Туре	Material number
OR0148030210S0	R934001560		
OR0148030220S0	R934001148		
OR0148030235S0	R934001590		
OR014803091000	R934001013		
OR014803093500	R934003314		
OR0149030210S0	R934001607		
OR0149030220S0	R934001616		
OR0149030235S0	R934001629		
			

Further types available by request

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1/4

RE 18330-02/04.10 Replaces: RE 00199/11.07

Relief, direct acting guided poppet type

Hydraulics

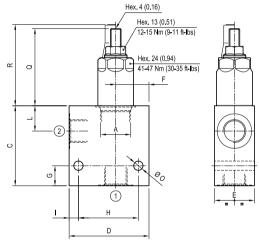
Common cavity

Cartridge style in manifold

VSBN-10A-C

OR.02 - K - X - Y - Z - W

Dimensions



Technical data

Max flow: up	to 50 I/min	(13 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

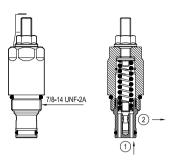
To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow I/min					DI	MENSI	ONS m	m (Inch	es)				
Α	ı	1 - 2		(gpm)	С	D	Е	F	G	Н	I	L	М	N	0	a	R
SIZE																	
08																	
SIZE	03	G 1/2		50 (13)	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.3)	19 (0.75)			7.5 (0.30)	58	61
10	04	G 3/4		50 (13)	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.3)	20 (0.79)			9 (0.35)	(2.28)	(2.4)
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	

Cartridge style



Tabl	le "K'	,	К				
DE	04	11	55	Х	85	Z	VSBN-10A
CARTRIDGE CODE							
DGE							
RTR							
ర							

Table "X"

х	ADJUSTMEN	NTS	OPTIONS
03	Leakproof hex. socket screw		
			Orderine and
			Ordering code 11.04.23.002

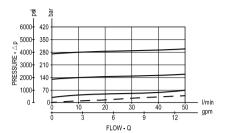
CARTRIDGE TECHNICAL DATA

Common cavity: **CA-10A-2N**For other details see data sheet RE 18318-05

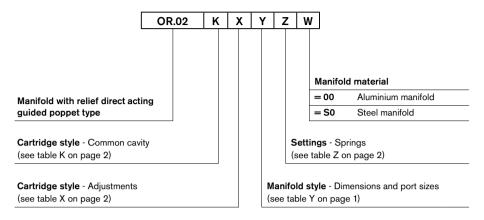
Table "Z"

									_				
							, ;	SPRING	S				
		SIZE 08			SIZE 10			SIZE 12		SIZE 16		SIZE 20	
Z	Adj. press. range bar(psi)	press lincrease setting press lincrease setting press lincrease setting press lincrease setting press lincrease								Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)		
05				5-70 (75-1000)	16 (232)	50 (725)							
10				35-140 (500-2000)	24 (348)	100 (1450)							
20				105-210 (1500-3000)	54 (783)	200 (2900)							
35				175-350 (2500-5000)	84 (1218)	350 (5000)							

Performance graph



Ordering code



Preferred types (readily available)

Туре	Material number
OR0255030420S0	R934001548
OR0255030435S0	R934001157

Further types available by request

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1/4

RE 18330-10/04.10 Replaces: RE 00199/11.07

Relief, direct acting poppet type differential area

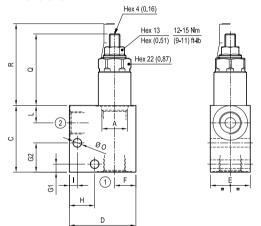
Common cavity

Cartridge style in manifold

VSDN-08A-C

OR.12 - K - X - Y - Z - W

Dimensions



Technical data

Max flow: up	to 50 I/min	(13 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	.,	PORT	SIZE	Max Flow					DIN	MENSI	ONS m	m (Inch	es)				
Α	Y	1 - 2		l/min (gpm)	С	D	E	F	G1	G2	Н	ı	L	0	Q	R	
SIZE	09	G 1/4		50 (13)	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)	6.5 (0.26)	53.5	61	
80	02	G 3/8		30 (13)	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)	6.5 (0.26)	(2.11)	(2.4)	
SIZE																	
10																	
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	

Cartridge style

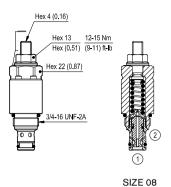


Table "X"

х	ADJUSTMEN	ITS	OPTIONS
03	Leakproof hex. socket screw		
			Ordering code 11.04.23.002

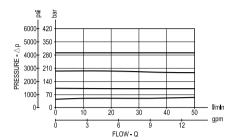
CARTRIDGE TECHNICAL DATA

Common cavity: **CA-08A-2N**For other details see data sheet RE 18318-02

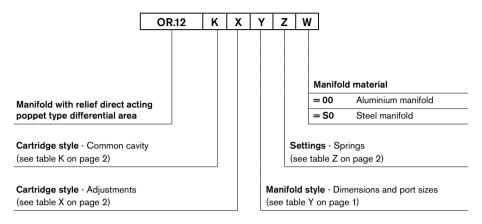
Table "Z"

								SPRING	S						
	8	SIZE 08			SIZE 10		:	SIZE 12			SIZE 16		:	SIZE 20	
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)												
10	35-140 (500-2000)	32 (464)	100 (1450)												
20	105-210 (1500-3000)	76 (1102)	200 (2900)												
35	175-315 (2500-4500)	118 (1711)	300 (4350)												

Performance graphs



Ordering code



Preferred types (readily available)

Туре	Material number	Туре	Material number
OR1222030210S0	R934003525		
OR1222030220S0	R934003526		
OR1222030235S0	R934003527		
		· ·	
		-	

Further types available by request

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RE 18330-11/04.10 Replaces: RE 00199/11.07

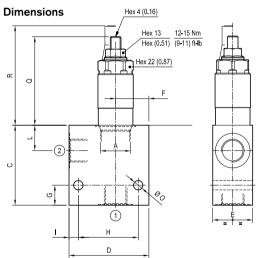
Relief, direct acting poppet type differential area

Common cavity

Cartridge style in manifold

VSDN-10A-C

OR.13 - K - X - Y - Z - W



Technical data

roommour aata		
Max flow: uj	p to 120 I/min	(32 gpm)
Max operating pressure for steel body:	9 350 bar	(5000 psi)
Max operating pressure for aluminium body:	e 210 bar	(3000 psi)

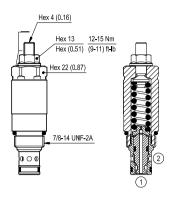
To order only manifold see data sheet RE 18325-85



Table "Y"

	٠.																
Cavity	Υ	PORT	SIZE	Max Flow I/min					DIN	MENSI	ONS m	m (Inch	es)				
Α	Ť	1 - 2		(gpm)	С	D	Е	F	G	Η	Ι	L	М	Ν	0	a	R
SIZE																	
80																	
SIZE	03	G 1/2		120 (32)	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.3)	19 (0.75)			7.5 (0.30)	66	74
10	04	G 3/4		120 (32)	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.3)	20 (0.79)			9 (0.30)	(2.6)	(2.9)
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	

Cartridge style



SIZE 10

Table "X"

х	ADJUSTMEN	ITS	OPTIONS
03	Leakproof hex. socket screw		
			Ordering code 11.04.23.002

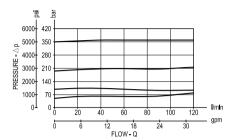
CARTRIDGE TECHNICAL DATA

Common cavity: **CA-10A-2N**For other details see data sheet RE 18318-03

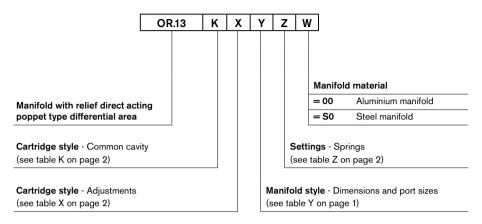
Table "Z"

	1							2001110								
				ı				SPRING	S	ı			1			
_		SIZE 08			SIZE 10		SIZE 12				SIZE 16			SIZE 20		
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)										
10				35-140 (500-2000)	46 (667)	100 (1450)										
35				100-350 (1450-5000)	86 (1247)	350 (5000)										

Performance graphs



Ordering code



Preferred types (readily available)

Туре	Material number	Туре	Material number
OR1323030410S0	R934003528		
OR1323030435S0	R934003529		
		<u> </u>	
		<u> </u>	

Further types available by request

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1/4

RE 18330-03/04.10 Replaces: RE 00199/11.07

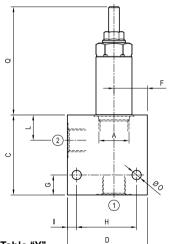
Relief, bi-directional direct acting poppet type differential area

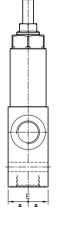
Common cavity Cartridge style in manifold

VSNG-10A-C

OR.03 - K - X - Y - Z - W

Dimensions





Technical data

Max flow: up	to 56 I/min	(15 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

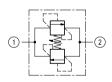
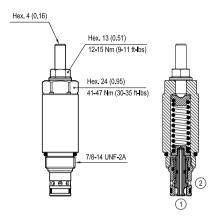


Table "Y"

Table	<u> </u>																
Cavity	Υ	PORT	SIZE	Max Flow					DI	MENSI	ONS m	m (Inch	es)				
Α	Ť	1 - 2		(gpm)	С	D	Е	F	G	Η	I	L	М	N	0	a	R
SIZE																	
08																	
SIZE	03	G 1/2		56 (15)	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.30)	19 (0.75)			7 (0.28)	81	
10	04	G 3/4		56 (15)	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.30)	20 (0.79)			9 (0.35)	(3.19)	
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	

Cartridge style



SIZE 10

Tabl	le "K'	,	К				
DE	04	11	59	Х	85	Z	VSNG-10A
CODE							
CARTRIDGE							
RTRI							
Š							

Table "X"

Х	ADJUSTMENTS	
03	Leakproof hex. socket screw	

CARTRIDGE TECHNICAL DATA

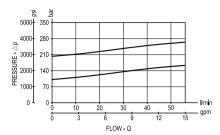
Common cavity: **CA-10A-2N**For other details see data sheet RE 18318-07

mm (inches)

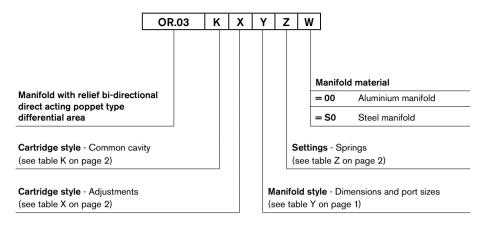
Table "Z"

								SPRING	e .						
		SIZE 08		۱ :	SIZE 10			SIZE 12	3		SIZE 16			SIZE 20	
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)		Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adi.	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)
10				30-100 (450-1450)	13.5 (196)	100 (1450)									
20				100-240 (1450-3500)	31 (450)	200 (2900)									

Performance graph



Ordering code



Preferred types (readily available)

ype Material number R0359030320S0 R934003476
OR0359030320S0 R934003476

Further types available by request

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RE 18330-04/04.10 Replaces: RE 00199/11.07

Relief, pilot operated spool type

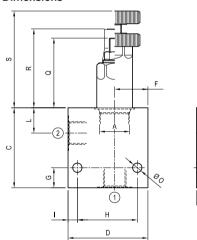
Common cavity

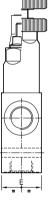
Cartridge style in manifold

VSPN-C

OR.04 - K - X - Y - Z - W

Dimensions





Technical data

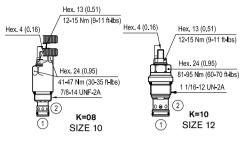
Max flow: up	to 300 I/min	(79 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

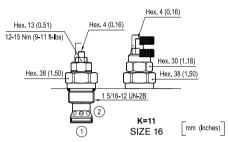
To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow					DIM	IENSIO	NS mm	(Inche	s)				
Α	T	1 - 2		l/min (gpm)	С	D	Е	F	G	Н	- 1	L	М	0	Q	R	s
SIZE																	
80																	
SIZE	03	G1/2		100 (00)	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.3)	19 (0.75)		7.5 (0.30)	48	60	74
10	04	G 3/4		120 (32)	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.3)	20 (0.79)		7.5 (0.30)	(1.89)	(2.36)	(2.91)
SIZE	04	G 3/4		200 (53)	75 (2.95)	80 (3.15)	40 (1.58)	35 (1.38)	20 (0.79)	60 (2.36)	10 (0.39)	26.5 (1.04)		9 (0.35)	42.5	48	
12	05	G 1		200 (53)	75 (2.95)	80 (3.15)	50 (1.97)	35 (1.38)	20 (0.79)	60 (2.36)	10 (0.39)	26.5 (1.04)		9 (0.35)	(1.67)	(1.89)	
SIZE	04	G 3/4		300 (79)	80 (3.15)	80 (3.15)	50 (1.97)	32 (1.26)	22 (0.87)	60 (2.36)	10 (0.39)	26 (1.02)		9 (0.35)	65.5	70.5	68
16	05	G 1		300 (79)	80 (3.15)	90 (3.54)	50 (1.97)	37 (1.46)	22 (0.87)	60 (2.36)	20 (0.79)	26 (1.02)		9 (0.35)	(2.58)	(2.78)	(2.68)
SIZE																	
20																	





Tabl	e "K"		к				
DE	04	12	08	Х	85	Z	VSPN-10A
CARTRIDGE CODE	04	12	10	Х	57	Z	VSPN-12A
DGE	04	12	11	Х	27	Z	VSPN-16A
RTR							
S							

Table "X"

х	ADJUSTMEN	ITS	0	PTIONS
03	Leakproof hex. socket screw			
04	Handknob and locknut (only for K=08 and K=11 types)		Or	dering code
73	O-Ring seal on adjust screw (only for K=11 type)		X=03	11.04.23.002 11.04.23.004

CARTRIDGE TECHNICAL DATA

Int. leakage ave.:

200 bar (2900 psi) - 200 cm³/min (12 in³/min) - for K=08 type

Int. leakage ave.:

200 bar (2900 psi) - 350 cm³/min (21 in³/min)

for K=10 and K=11 type

Common cavity: **CA-10A-2N** / **CA-12A-2N** / **CA-16A-2N** For other details see data sheet RE 18318-08, RE 18318-09

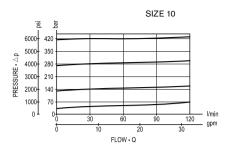
and RE 18318-10

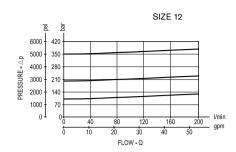
Table "Z"

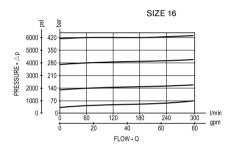
		SPRINGS														
	_		SIZE 08			SIZE 10			SIZE 12			SIZE 16			SIZE 20	
	Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)												
	10				35-140 (500-2000)	48 (696)	100 (1450)	35-140 (500-2000)	48 (696)	100 (1450)	35-140 (500-2000)	48 (696)	100 (1450)			
X=03	20				70-280 (1000-4000)	88 (1276)	200 (2900)	70-280 (1000-4000)	88 (1276)	200 (2900)	70-80 (1000-4000)	88 (1276)	200 (2900)			
	35				140-420 (2000-6000)	140 (2030)	350 (5000)	140-420 (2000-6000)	140 (2030)	350 (5000)	140-420 (2000-6000)	140 (2030)	350 (5000)			
X=04	35				35-350 (500-5000)	68 (986)	350 (5000)				35-350 (500-5000)	66 (957)	350 (5000)			
X=73	35										35-350 (500-5000)	66 (957)	350 (5000)			

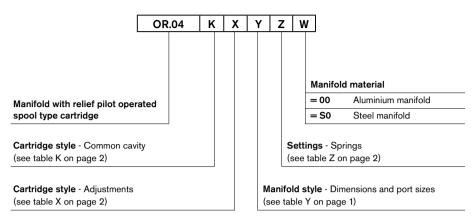
07

Performance graphs









Preferred types (readily available)

Туре	Material number	Туре	Material number
OR0408030410S0	R934001483		
OR0408030420S0	R934001484		
OR0408030435S0	R934000784		
OR0410030510S0	R934001517		
OR0410030520S0	R934001527		
OR0410030535S0	R934001546		
OR0411030510S0	R934003570		
OR0411030520S0	R934003571		
OR0411030535S0	R934003572		
		<u> </u>	

Further types available by request

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RE 18330-05/04.10 Replaces: RE 00199/11.07

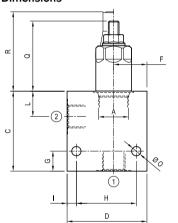
Relief, pilot operated poppet type

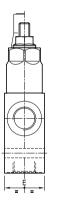
Common cavity
Cartridge style in manifold

VSPC-10A-C

OR.05 - K - X - Y - Z - W

Dimensions





Technical data

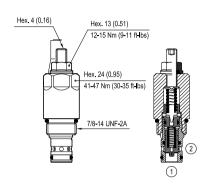
Max flow: up	to 80 I/min	(21 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow I/min					DI	MENSI	ONS m	m (Inch	es)				
Α	T	P-T		(gpm)	С	D	Е	F	G	Η	I	L	М	N	0	a	R
SIZE																	
80																	
SIZE	03	G 1/2		80 (21)	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.30)	19 (0.75)			7 (0.28)	53	60
10	04	G 3/4		80 (21)	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.30)	20 (0.79)			9 (0.35)	(2.09)	(2.36)
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	



SIZE 10

Table "X"

х	ADJUSTMEN	ITS	OPTIONS
03	Leakproof hex. socket screw		
			Ordering code 11.04.23.002

CARTRIDGE TECHNICAL DATA

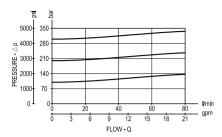
Common cavity: CA-10A-2N
For other details see data sheet RE 18318-11

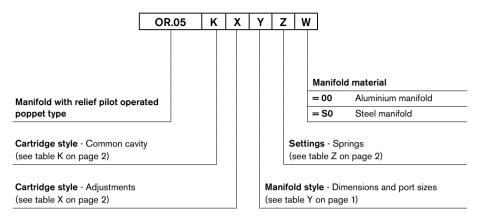
mm (inches)

Table "Z"

	1							SPRING							
									>				1		
_		SIZE 08			SIZE 10			SIZE 12			SIZE 16		SIZE 20		
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)
10				35-140 (500-2000)	48 (696)	100 (1450)									
20				70-280 (1000-4000)	88 (1276)	200 (2900)									
35				140-350 (2000-5000)	140 (2030)	350 (5000)									

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OR0509030410S0	R934001475		
OR0509030420S0	R934001477		
OR0509030435S0	R934000927		
		<u> </u>	
		<u></u>	
		·	
		·	
		·	
		·	
		·	

Further types available by request

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RE 18330-06/04.10 Replaces: RE 00199/11.07

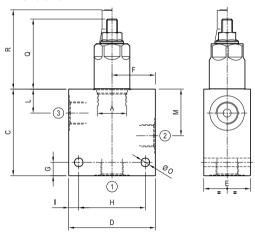
Relief, pilot operated spool type external drain

Common cavity
Cartridge style in manifold

VSPY-10A-C / VSPY-12A-C

OR.06 - K - X - Y - Z - W

Dimensions



Technical data

Max flow: up	to 200 I/min	(53 gpm)
Max operating pressure for steel body:	9 350 bar	(5000 psi)
Max operating pressure for aluminium body:	e 210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	v	PORT	SIZE	Max Flow	DIMENSIONS mm (Inches)												
Α	Y	1 - 2 - 3		l/min (gpm)	С	D	E	F	G	Н	I	L	М	N	0	a	R
SIZE																	
08																	
SIZE	02	G 3/8		120 (32)	65 (2.56)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.30)	18 (0.71)	35 (1.38)		6.5 (0.26)	53	60
10	03	G 1/2		120 (32)	70 (2.76)	70 (2.76)	35 (1.38)	35 (1.38)	15 (0.59)	50 (1.97)	10 (0.39)	18 (0.71)	35 (1.38)		6.5 (0.26)	(2.09)	(2.36)
SIZE	03	G1/2		200 (53)	80 (3.15)	75 (2.95)	40 (1.58)	40 (1.58)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	46.5	53.5
12	04	G 3/4		200 (53)	90 (3.54)	75 (2.95)	40 (1.58)	40 (1.58)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	(1.83)	(2.11)
SIZE																	
16																	
SIZE																	
20																	

Cartridge style Hex. 4 (0.16) Hex. 4 (0.16) Hex. 13 (0.51) Hex. 13 (0.51) 12-15 Nm (9-11 ft-lbs) 12-15 Nm (9-11 ft-lbs) Hex. 24 (0.95) Hex. 24 (0.95) 60-70 Nm (81-95 ft-lbs) 41-47 Nm (30-35 ft-lbs) 1 1/16-12 UN-2A 7/8-14 UNF-2A (3) (2) SIZE 10 SIZE 12

Tabl	le "K'	,	к				
DE	04	13	05	Х	85	Z	VSPY-10A
CARTRIDGE CODE	04	13	07	Χ	57	Z	VSPY-12A
IDGE							
RTR							
υŠ							

Table "X"

х	ADJUSTMEN	ITS	OPTIONS
03	Leakproof hex. socket screw		
			Ordering code 11.04.23.002
			Ordering code 11.04.23.002

CARTRIDGE TECHNICAL DATA

Int. leakage ave.:

200 bar (2900 psi) - 200 cm³/min (12 in³/min) for K=05

Int. leakage ave.:

200 bar (2900 psi) - 350 cm³/min (21 in³/min) for K=07

Common cavity: CA-10A-3N / CA-12A-3C

For other details see data sheet RE 18318-12 and RE 18318-13

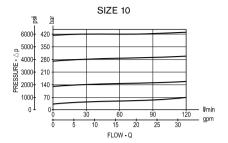
Table "Z"

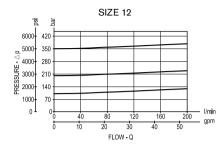
mm (inches)

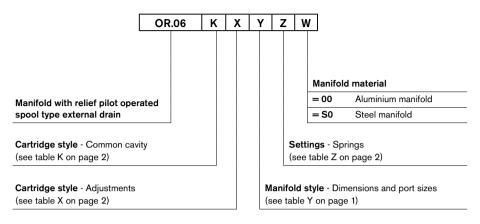
								SPRING	<u> </u>						
		SIZE 08		5	SIZE 10			SIZE 12	3		SIZE 16			SIZE 20	
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)												
10				35-140 (500-2000)	48 (696)	100 (1450)	35-140 (500-2000)	48 (696)	100 (1450)						
20				70-280 (1000-4000)	88 (1276)	200 (2900)	70-280 (1000-4000)	88 (1276)	200 (2900)						
35				140-420 (2000-6000)	140 (2030)	350 (5000)	140-420 (2000-6000)	140 (2030)	350 (5000)						

07

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material number
OR0605030310S0	R934001492		
OR0605030320S0	R934001506		
OR0605030335S0	R934001507		
OR0607030410S0	R934001508		
OR0607030420S0	R934001509		
OR0607030435S0	R934001516		
		<u> </u>	
-			
		<u> </u>	
		_	

Further types available by request

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RE 18330-08/04.10 Replaces: RE 00199/11.07

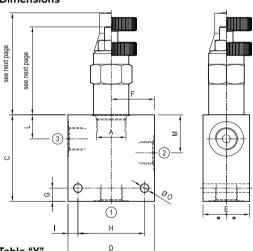
Pressure reducing and relieving, direct acting spool type

Common cavity Cartridge style in manifold

VRPR-C

OR.08 - K - X - Y - Z - W

Dimensions



Technical data

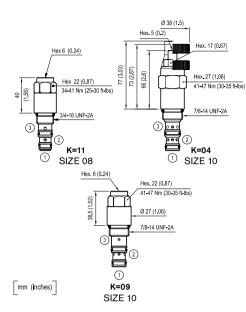
Max flow: up	to 30 I/min	(8 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



_			
Ta	h	۵١	"V

Cavity		PORT	SIZE	Max Flow					DIN	MENSI	ONS m	m (Inch	es)				
А	Y	1 - 2 - 3		l/min (gpm)	С	D	Е	F	G	Н	I	L	М	N	0	a	R
SIZE	09	G 1/4		8 (2)	65 (2.56)	60 (2.36)	30 (1.18)	30 (1.18)	10 (0.39)	40 (1.58)	10 (0.39)	15 (0.59)	28.5 (1.12)		6.5 (0.26)		
80	02	G 3/8		8 (2)	65 (2.56)	60 (2.36)	30 (1.18)	30 (1.18)	10 (0.39)	40 (1.58)	10 (0.39)	15 (0.59)	28.5 (1.12)		6.5 (0.26)		
SIZE	09	G 1/4		20 (8)	65 (2.56)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.30)	18 (0.71)	35 (1.38)		6.5 (0.26)		
10	02	G 3/8		30 (8)	65 (2.56)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.30)	18 (0.71)	35 (1.38)		6.5 (0.26)		
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	



Tabl	le "K"	Ì	К				
В В	04 95		11	83	56	Z	VRPR-08A
CARTRID	04	95	04	Х	85	Z	VRPR-10A
	04	95	09	83	85	Z	VRPR-10A-8

Table "X"

Х	ADJUSTMEN	TS	OPTIONS
03	Leakproof hex. socket screw (only for K=04)	4	
04	Handknob and locknut (only for K=04)		
83	Factory preset, adjustable (for K=09 and K=11)		only for K=04 Ordering code 11.04.23.004

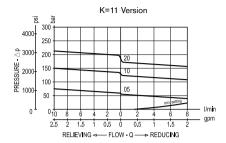
CARTRIDGE TECHNICAL DATA
Int. leakage ave.: 100 cm ³ /min (6 in ³ /min) - for K=11 type
Int. leakage ave.: 50 cm³/min (3 in³/min) - for K=04 type
Int. leakage ave.: 130 cm³/min (8 in³/min) - for K=09 type
Common cavity: CA-08A-3N / CA-10A-3N For other details see data sheet RE 18318-52, RE 18318-53 and RE18318-54

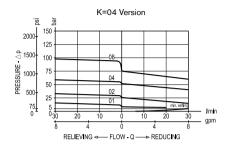
Table "Z"

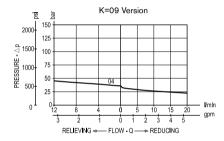
	SPRINGS														
	;	SIZE 08		SIZE '	10 (K=04	type)	SIZE	10 (K=09	type)		SIZE 16	3		SIZE 20	3
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) (reduc.mode)	range bar(psi)		bar (psi) (reduc.mode)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) (reduc.mode)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) (reduc.mode)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) (reduc.mode)
01				2-14 (30-200)	2 (29)	8-10 (115-145)									
02				2-25 (30-350)	3 (44)	7-10 (100-145)									
04				10-50 (145-725)	7 (102)	35-40 (500-580)	10-45 (145-650)	12 (174)	35 (500)						
05	15-50 (220-725)	9 (131)	35 (500)												
08				28-80 (400-1160)	14 (203)	45-50 (650-725)									
10	35-100 (500-1450)	22 (319)	70 (1000)												
20	75-200 (1000-2900)	53 (769)	150 (2200)												

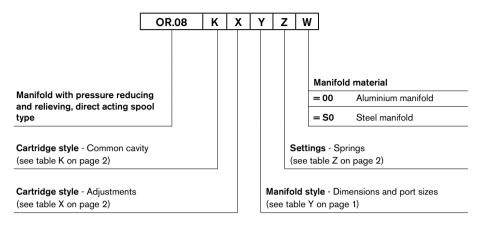
07

Performance graphs









Preferred types (readily available)

Туре	Material number	Туре	Material number
OR0804030202S0	R934000627		
OR0804030204S0	R934001152		
OR0804030208S0	R934000630		
			_
			

Further types available by request

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RE 18330-07/04.10 Replaces: RE 00199/11.07

Pressure reducing, pilot operated spool type

Common cavity

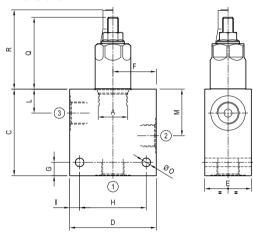
Cartridge style in manifold

Hydraulics

VRPP-C

OR.07 - K - X - Y - Z - W

Dimensions



Technical data

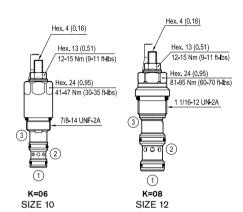
Max flow: up	to 100 I/min	(26 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow					DIN	MENSI	ONS m	m (Inch	es)				
Α	Y	1 - 2 - 3		l/min (gpm)	С	D	Е	F	G	Н	I	L	М	N	0	a	R
SIZE																	
08																	
SIZE	02	G 3/8		60 (16)	65 (2.56)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.30)	18 (0.71)	35 (1.38)		6.5 (0.26)	53	60
10	03	G 1/2		60 (16)	70 (2.76)	70 (2.76)	35 (1.38)	35 (1.38)	15 (0.59)	50 (1.97)	10 (0.39)	18 (0.71)	35 (1.38)		6.5 (0.26)	(2.1)	(2.36)
SIZE	03	G1/2		100 (26)	100 (3.94)	80 (3.15)	40 (1.58)	40 (1.58)	15 (0.59)	55 (2.17)	12.5 (0.49)	29 (1.14)	54 (2.13)		7 (0.28)	42	49
12	04	G 3/4		100 (20)	100 (3.94)	80 (3.15)	40 (1.58)	40 (1.58)	15 (0.59)	55 (2.17)	12.5 (0.49)	29 (1.14)	54 (2.13)		7 (0.28)	(1.65)	(1.93)
SIZE																	
16																	
SIZE																	
20																	



mm (inches)

Table "K" Κ 04 Z VRPP-10A 93 06 Χ 85 CARTRIDGE CODE 04 Χ Z VRPP-12A 93 08 57

Table "X"

Х	ADJUSTMEN	ITS	OPTIONS
03	Leakproof hex. socket screw	A	
			Ordering code
			11.04.23.002

CARTRIDGE TECHNICAL DATA

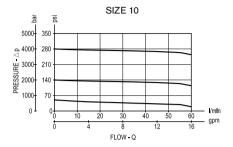
Common cavity: CA-10A-3N / CA-12A-3N For other details see data sheet RE 18318-50 and RE 18318-51

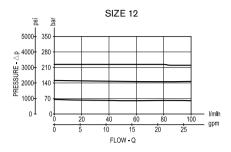
Table "Z"

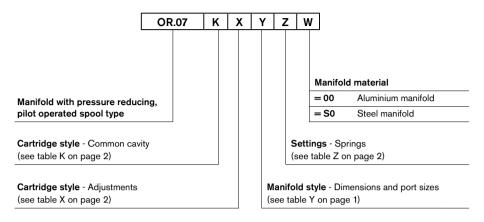
							SI	PRINGS							
		SIZE 08	3		SIZE 10			SIZE 12			SIZE 16	5		SIZE 20	
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) (reduc.mode)												
10				10-140 (145-2000)	48 (696)	100 (1450)	10-140 (145-2000)	48 (696)	100 (1450)						
20				70-280 (1000-4000)	88 (1276)	200 (2900)	70-280 (1000-4000)	88 (1276)	200 (2900)						
35							140-350 (2000-5000)	140 (2030)	280 (4000)						

07

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material nu
OR0706030310S0	R934001661		
OR0706030320S0	R934002152		
OR0708030410S0	R934002297		
OR0708030420S0	R934002303		
OR0708030435S0	R934002535		

Further types available by request

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RE 18330-09/04.10 Replaces: RE 00199/11.07

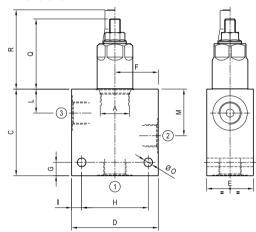
Pressure reducing and relieving, pilot operated spool type

Common cavity
Cartridge style in manifold

VRPX-10A-C

OR.09 - K - X - Y - Z - W

Dimensions



Technical data

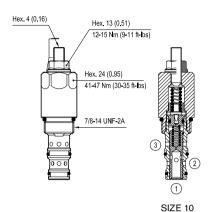
Max flow: up	to 60 I/min	(16 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow I/min					DIN	MENSI	ONS m	m (Inch	es)				
Α	ľ	1 - 2 - 3		(gpm)	С	D	Е	F	G	Η	I	L	М	N	0	a	R
SIZE																	
80																	
SIZE	02	G 3/8		60 (16)	65 (2.56)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.30)	18 (0.71)	35 (1.38)		6.5 (0.26)	53	60
10	03	G 1/2		00 (10)	70 (2.76)	70 (2.76)	35 (1.38)	35 (1.38)	15 (0.59)	50 (1.97)	10 (0.39)	18 (0.71)	35 (1.38)		6.5 (0.26)	(2.09)	(2.36)
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	



mm (inches)

Tab	le "K'	,	К				
DE	04	93	07	Х	85	Z	VRPX-10A
8							
CARTRIDGE CODE							
RTR							
δ							

Table "X"

Х	ADJUSTMEN	ITS	OPTIONS
03	Leakproof hex. socket screw		
			Ordering code
			11.04.23.002

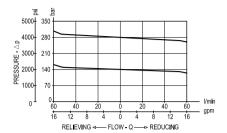
CARTRIDGE TECHNICAL DATA

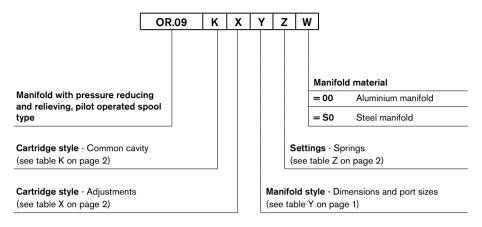
Common cavity: **CA-10A-3N**For other details see data sheet RE 18318-56

Table "Z"

								SPRING	s						
		SIZE 08		:	SIZE 10			SIZE 12			SIZE 16			SIZE 20	
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) (reduc mode)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting bar (psi) (reduc. mode)									
10				35-140 (500-2000)	48 (696)	100 (1450)									
20				70-280 (1000-4000)	88 (1276)	200 (2900)									
	_														

Performance graph





Preferred types (readily available)

Type Material number	1	уре
OR0907030310S0 R934000752		
OR0907030320S0 R934000631		
	_	_
	_	_
	_	_
	_	_
		_
		_
	_	
	_	
	-	= -
		-
		-

Further types available by request

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RE 18330-40/04.10 Replaces: RE 00199/11.07

Check poppet type

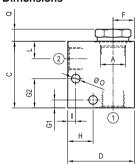
Hydraulics

Common cavity
Cartridge style in manifold

VUCN-08A-C

OU.01 - K - 00 - Y - Z - W

Dimensions





Technical data

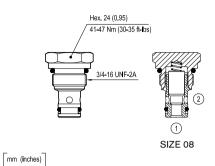
Max flow: up	p to 50 I/min	(13 gpm)				
Max operating pressure for steel body:	350 bar	(5000 psi)				
Max operating pressure for aluminium body:	210 bar	(3000 psi)				

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow					DIN	MENSI	ONS m	m (Inch	es)				
A	ĭ	1 - 2		(gpm)	С	D	E	F	G1	G2	Н	1	L	М	0	a	R
SIZE	09	G 1/4		up to	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)		6.5 (0.26)	9	
80	02	G 3/8		50 (13)	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)		6.5 (0.26)	(0.35)	
SIZE																	
10																	
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	



Tabl	le "K'	,	К				
DE	04	31	20	00	56	Z	VUCN-08A
CODE							
CARTRIDGE							
RTR							
Ö							

CARTRIDGE TECHNICAL DATA

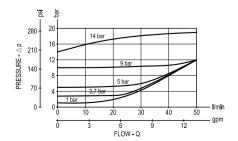
Common cavity: CA-08A-2N

For other details see data sheet RE 18318-89

Table "Z"

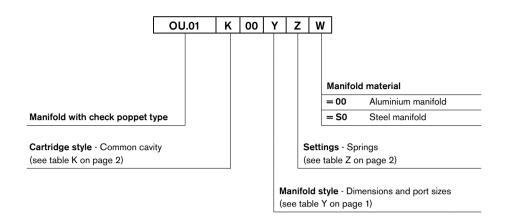
					s	PRINGS					
		SIZE 08		SIZE 10	1	SIZE 12	;	SIZE 16	8	SIZE 20	
Z	Cracking pressure bar(psi)										
00	1 (15)										
03	2.7 (39)										
05	5 (75)										
06	6 (87)										
09	9 (131)										
14	14 (200)										

Performance graph



07

Ordering code



Preferred types (readily available)

	Material number	Туре	Material number
000200S0	R934000856		
-			

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RE 18330-41/04.10 Replaces: RE 00199/11.07

Check poppet type

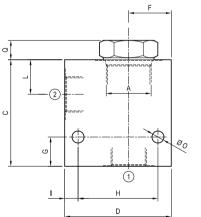
Hydraulics

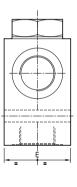
Common cavity
Cartridge style in manifold

VUCN-C

OU.02 - K - 00 - Y - Z - W

Dimensions





Technical data

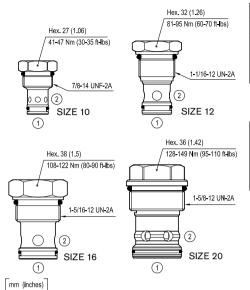
Max flow: up	to 360 I/min	(95 gpm)				
Max operating pressure for steel body:	350 bar	(5000 psi)				
Max operating pressure for aluminium body:	e 210 bar	(3000 psi)				

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity		PORT	SIZE	Max Flow		DIMENSIONS mm (Inches)											
Α	Y	1 - 2		l/min (gpm)	С	D	Е	F	G	Н	I	L	М	N	0	α	R
SIZE																	
08																	
SIZE	03	G 1/2		up to	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.30)	19 (0.75)			7 (0.28)	8	
10	04	G 3/4		80 (21)	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.30)	20 (0.79)			9 (0.35)	(0.32)	
SIZE	04	G 3/4		up to	75 (2.95)	80 (3.15)	40 (1.58)	35 (1.38)	20 (0.79)	60 (2.36)	10 (0.39)	26.5 (1.04)			9 (0.35)	10	
12	05	G 1		120 (32)	75 (2.95)	80 (3.15)	50 (1.97)	35 (1.38)	20 (0.79)	60 (2.36)	10 (0.39)	26.5 (1.04)			9 (0.35)	(0.39)	
SIZE	04	G 3/4		up to	80 (3.15)	80 (3.15)	50 (1.97)	32 (1.26)	22 (0.87)	60 (2.36)	10 (0.39)	26 (1.02)			9 (0.35)	15	
16	05	G 1		200 (53)	80 (3.15)	90 (3.54)	50 (1.97)	37 (1.46)	22 (0.87)	60 (2.36)	20 (0.79)	26 (1.02)			9 (0.35)	(0.59)	
SIZE	05	G 1		up to	100 (3.94)	100 (3.94)	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	32 (1.26)			11 (0.43)	16	
20	06	G 1-1/4		360 (95)	100 (3.94)	100 (3.94)	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	32 (1.26)			11 (0.43)	(0.63)	



Tab	le "K'	,	К				
H	04	31	23	00	85	Z	VUCN-10A
CARTRIDGE CODE	04	31	28	00	57	Z	VUCN-12A
DGE	04	31	25	00	27	Z	VUCN-16A
RTR	04	31	32	00	58	Z	VUCN-20A
5							

CARTRIDGE TECHNICAL DATA

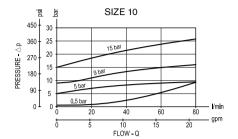
Common cavity: CA-10A-2N / CA-12A-2N / CA-16A-2N / CA-20A-2N
For other details see data sheet RE 18318-90, RE 18318-91,

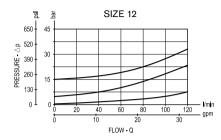
RE 18318-92 and RE 18318-93

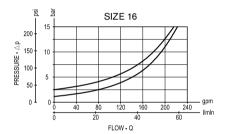
Table "Z"

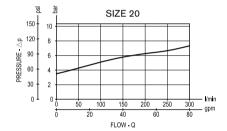
	SPRINGS												
		SIZE 08		SIZE 10	:	SIZE 12	;	SIZE 16		SIZE 20			
Z	Cracking pressure bar(psi)												
00			0.5 (7)		1 (15)		1 (15)		0.35 (5)				
02							2 (30)						
03									3.5 (51)				
04							3,5 (51)						
05			5 (75)		5 (75)								
07									7 (102)				
08					8 (116)								
09			9 (131)										
15			15 (220)		15 (220)								

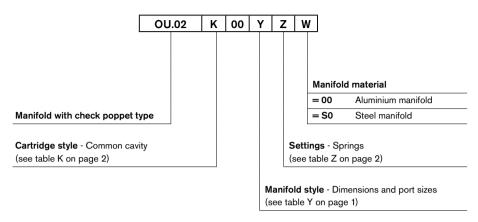
Performance graphs











Preferred types (readily available)

OU0223000400S0 R934001458 OU0228000500S0 R934001461 OU0225000500S0 R934000946 OU0232000500S0 R934000946	Туре	Material number	Туре	Materia
OU0228000500S0 R934001461 OU0225000500S0 R934001468			.,,,,,	material
OU0225000500S0 R934001468				
U00232000500S0 R934000946				
	00023200030030	K934000940		

Further types available by request

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RE 18330-70/04.10 Replaces: RE 00199/11.07

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Pilot operated check, pilot to open

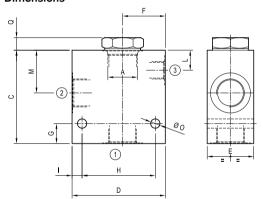
Common cavity

Cartridge style in manifold

VSON-C

OY.01 - K - X - Y - Z - W

Dimensions



Technical data

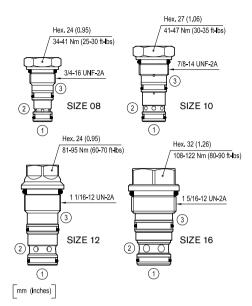
Max flow: u	p to 200 I/min	(53 gpm)
Max operating pressur for steel body:	e 350 bar	(5000 psi)
Max operating pressur for aluminium body:	e 210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow					DII	MENSI	ONS m	m (Inch	es)				
Α	T	1 - 2	3	l/min (gpm)	С	D	Е	F	G	Н	I	L	М	N	0	a	R
SIZE	09	G 1/4	G 1/4	30 (8)	60 (2.36)	60 (2.36)	30 (1.18)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.3)	13 (0.51)	27 (1.06)		7 (0.28)	9	
80	02	G 3/8	G 1/4	30 (6)	60 (2.36)	60 (2.36)	30 (1.18)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.3)	13 (0.51)	27 (1.06)		7 (0.28)	(0.35)	
SIZE	02	G 3/8	G 1/4	60 (16)	70 (2.76)	60 (2.36)	35 (1.38)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	10	
10	03	G 1/2	G 1/4	00 (10)	70 (2.76)	70 (2.76)	35 (1.38)	35 (1.38))	15 (0.59)	55 (2.17)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	(0.39)	
SIZE	03	G 1/2	G 1/4	120 (32)	80 (3.15)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	18	
12	04	G 3/4	G 1/4	120 (32)	90 (3.54)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	(0.71)	
SIZE	04	G 3/4	G 1/4	200 (53)	90 (3.54)	80 (3.15)	50 (1.97)	38 (1.50)	22 (0.87)	60 (2.36)	10 (0.39)	18.5 (0.73)	39 (1.54)		9 (0.35)	17	
16	05	G 1	G 1/4	200 (53)	90 (3.54)	90 (3.54)	50 (1.97)	40 (1.58)	22 (0.87)	70 (2.76)	10 (0.39)	18.5 (0.73)	39 (1.54)		9 (0.35)	(0.67)	
SIZE																	
20																	



Tab	le "K'	,	к				
DE	04	33	06	Х	56	Z	VSON-08A
CODE	04	33	05	Х	85	Z	VSON-10A
CARTRIDGE	04	33	07	Х	57	Z	VSON-12A
RTR	04	33	08	Х	27	Z	VSON-16A
ე გ							

Table "X"

х	O-RING ON PILOT PISTON					
00	No O-Ring					
10	With O-Ring					

CARTRIDGE TECHNICAL DATA

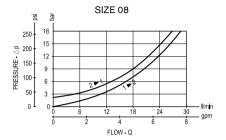
Common cavity: CA-08A-3C / CA-10A-3C / CA-12A-3C / CA-16A-3C

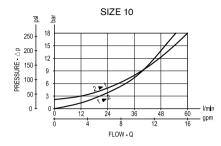
For other details see data sheet RE 18319-30, RE 18319-31, RE 18319-32 and RE 18319-33.

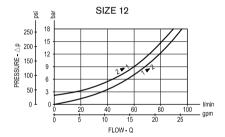
Table "Z"

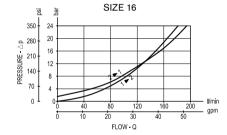
							SPRING	s						
SIZE 08		SIZE 10		SIZE 12		SIZE 16			SIZE 20					
Z	Cracking pressure bar(psi)		Cracking pressure bar(psi)			Cracking pressure bar(psi)			Cracking pressure bar(psi)			Cracking pressure bar(psi)		
00	2 (30)		2 (30)			2 (30)			1.5 (22)					
05	5 (75)													

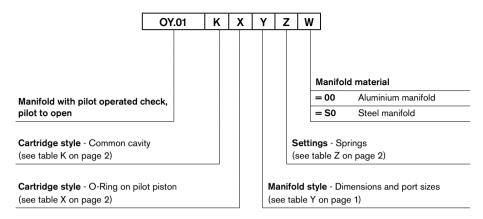
Performance graphs











Preferred types (readily available)

Туре	Material number	Туре	Material number
OY0106100200S0	R934000621		
OY0105100300S0	R934000618		
OY0107000400S0	R934001440		
OY0108000500S0	R934000931		
			

Further types available by request

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RE 18330-71/04.10 Replaces: RE 00199/11.07

Dual pilot operated check

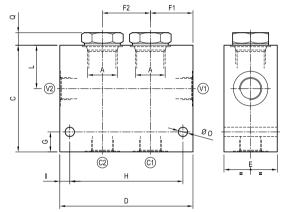
Double common cavity

Cartridge style in manifold

VSO-DE-C

2Y.01 - K - X - Y - Z - W

Dimensions



Technical data

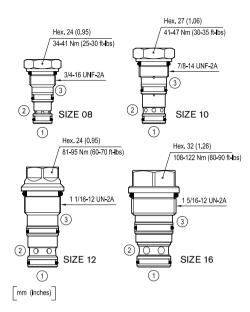
Max flow: u	p to 200 I/min	(53 gpm)		
Max operating pressur for steel body:	e 350 bar	(5000 psi)		
Max operating pressur for aluminium body:	e 210 bar	(3000 psi)		

To order only manifold see data sheet RE 18325-85



Table "Y"

IUDI	• •															
Cavity	Υ	PORT SIZE						DIM	IENSIC	NS mm	(Inche	s)				
Α	T	V1-V2-C1-C2	l/min (gpm)	С	D	Е	F1	F2	G	Н	- 1	L	М	0	α	R
SIZE	02	G 3/8	00 (0)	60 (2.36)	90 (3.54)	30 (1.18)	27 (1.06)	36 (1.42)	15 (0.59)	75 (2.95)	7.5 (0.3)	27.5 (1.08)		7 (0.28)	9 (0.35)	
80			30 (8)													
SIZE	02	G 3/8	60 (16)	80 (3.15)	100 (3.94)	40 (1.58)	32 (1.26)	36 (1.42)	15 (0.59)	85 (3.35)	7.5 (0.30)	32.5 (1.28)		7 (0.28)	10	
10	03	G 1/2	60 (16)	80 (3.15)	100 (3.94)	40 (1.58)	32 (1.26)	36 (1.42)	15 (0.59)	85 (3.35)	7.5 (0.30)	32.5 (1.28)		7 (0.28)	(0.39)	
SIZE	03	G 1/2	120 (32)	90 (3.54)	125 (4.92)	50 (1.97)	40 (1.58)	45 (1.77)	15 (0.59)	105 (4.13)	10 (0.39)	41.5 (1.63)		7 (0.28)	18	
12	04	G 3/4	120 (32)	90 (3.54)	125 (4.92)	50 (1.97)	40 (1.58)	45 (1.77)	15 (0.59)	105 (4.13)	10 (0.39)	41.5 (1.63)		7 (0.28)	(0.71)	
SIZE	05	G 1	200 (53)	90 (3.54)	145 (5.71)	50 (1.97)	45 (1.77)	55 (2.17)	22 (0.87)	125 (4.92)	10 (0.39)	38.5 (1.52)		9 (0.35)	17 (0.67)	
16			200 (53)													
SIZE																
20																



Tab	le "K'	,	К				
DE	04	33	06	Х	56	Z	VSON-08A
CARTRIDGE CODE	04	33	05	Х	85	Z	VSON-10A
DGE	04	33	07	Х	57	Z	VSON-12A
RTR	04	33	08	Х	27	Z	VSON-16A
ა							

Table "X"

х	O-RING ON PILOT PISTON
00	No O-Ring
10	With O-Ring

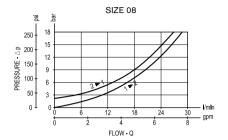
CARTRIDGE TECHNICAL DATA

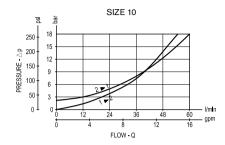
Common cavity: CA-08A-3C / CA-10A-3C / CA-12A-3C / CA-16A-3C

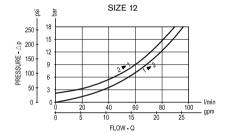
For other details see data sheet RE 18319-30, RE 18319-31, RE 18319-32 and RE 18319-33.

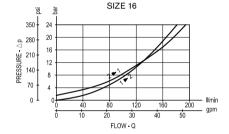
Table "Z"

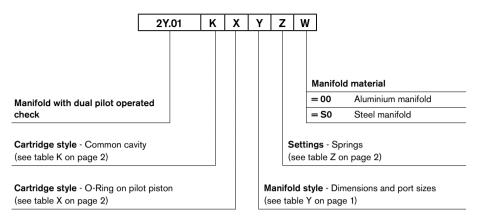
					5	PRING	S					
		SIZE 08		SIZE 10		SIZE 12			SIZE 16		SIZE 20	
Z	Cracking pressure bar(psi)		Cracking pressure bar(psi)		Cracking pressure bar(psi)			Cracking pressure bar(psi)		Cracking pressure bar(psi)		
00	2 (30)		2 (30)		2 (30)			1.5 (22)				
05	5 (75)											
	_											











Preferred types (readily available)

Туре	Material number	Туре	Material number
2Y0106000200S0	R934001443		
2Y0105000300S0	R934001445		
2Y0107000400S0	R934001447		
SY0108000500S0	R934001449		
			
			

Further types available by request

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RE 18330-72/04.10 Replaces: RE 00199/11.07

Counterbalance, standard poppet type

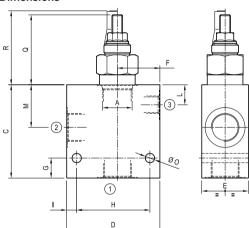
Common cavity

Cartridge style in manifold

VBSN-C

OY.02 - K - X - Y - Z - W

Dimensions



Technical data

Max flow:	up to 320 I/min	(85 gpm)
Max operating pressure for steel body:	re 350 bar	(5000 psi)
Max operating pressure for aluminium body:	re 210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

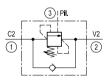
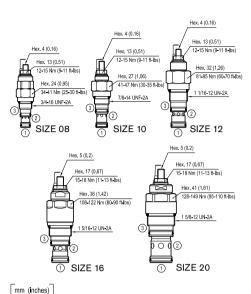


Table "Y"

Cavity		PORT	SIZE	Max Flow					IID	MENSI	ONS m	m (Inch	es)				
A	Y	1 - 2	3	l/min (gpm)	С	D	Е	F	G	Н	ı	L	М	N	0	Q	R
SIZE	09	G 1/4	G 1/4	30 (8)	60 (2.36)	60 (2.36)	30 (1.18)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.3)	13 (0.51)	27 (1.06)		7 (0.28)	55	64
80	02	G 3/8	G 1/4	30 (8)	60 (2.36)	60 (2.36)	30 (1.18)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.3)	13 (0.51)	27 (1.06)		7 (0.28)	(2.17)	(2.52)
SIZE	02	G 3/8	G 1/4	60 (16)	70 (2.76)	60 (2.36)	35 (1.38)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	53	59
10	03	G 1/2	G 1/4	60 (16)	70 (2.76)	70 (2.76)	35 (1.38)	32 (1.26)	15 (0.59)	55 (2.17)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	(2.09)	(2.32)
SIZE	03	G 1/2	G 1/4	100 (00)	80 (3.15)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	61	67
12	04	G 3/4	G 1/4	120 (32)	90 (3.54)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	(2.4)	(2.64)
SIZE	04	G 3/4	G 1/4	200 (53)	90 (3.54)	80 (3.15)	50 (1.97)	38 (1.50)	22 (0.87)	60 (2.36)	10 (0.39)	18.5 (0.73)	39 (1.54)		9 (0.35)	73	80
16	05	G 1	G 1/4	200 (53)	90 (3.54)	90 (3.54)	50 (1.97)	40 (1.58)	22 (0.87)	70 (2.76)	10 (0.39)	18.5 (0.73)	39 (1.54)		9 (0.35)	(2.87)	(3.15)
SIZE	05	G 1	G 1/4	200 (85)	110 (4.33)	100 (3.94)	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	21 (0.83)	51 (2.01)		11 (0.43)	65	72.5
20	06	G 1 1/4	G 1/4	320 (85)	110 (4.33)	100 (3,94)	60 (2,36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	21 (0.83)	51 (2.01)		11 (0.43)	(2.56)	(2.85)



Tabl	le "K'	,	к				
DE	04	52	20	Х	56	Z	VBSN-08AA
CODE	04	52	31	Х	85	Z	VBSN-10A
CARTRIDGE	04	52	28	Х	57	Z	VBSN-12A
RTR	04	52	29	Х	27	Z	VBSN-16A
ర	04	52	25	Х	58	Z	VBSN-20A

Table "X"

х		PILOT RATIO	ОРТ	IONS
03	4:1	3:1 only for K=31 version		
10	8:1			ing code
		With sealed pilot	K=20,31,28	11.04.23.002
33	4:1	(only for K=20 version)	K=29,25	11.04.23.004

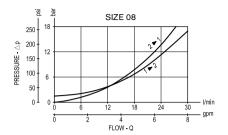
CARTRIDGE TECHNICAL DATA

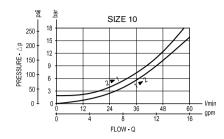
Common cavity: CA-08A-3C / CA-10A-3C / CA-12A-3C / CA-16A-3C / CA-20A-3C

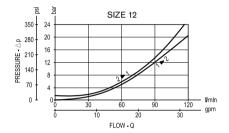
For other details see data sheet RE 18320-01, RE 18320-02, RE 18320-03, RE 18320-04 and RE 18320-05

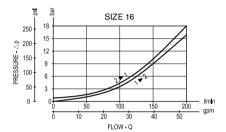
Table "Z"

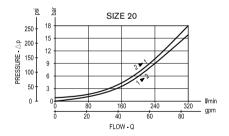
								SI	PRINGS							
		8	SIZE 08			SIZE 10		5	SIZE 12			SIZE 16		8	SIZE 20	
	Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	5 I/min	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	5 l/min	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	5 l/min
_	15	70-150 (1000-2200)	72.5 (1051)	150 (2200)												
X-02	20	100-210 (1450-3000)	109 (1581)	200 (2900)	70-210 (1000-3000)	135 (1958)	200 (2900)	70-210 (1000-3000)	50 (725)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)
Ĺ		200-350 (2900-5000)	137 (1987)	350 (5000)	140-350 (2000-5000)	196 (2842)	350 (5000)	140-350 (2000-5000)	159 (2306)	350 (5000)	140-350 (2000-5000)	108 (1566)	350 (5000)	140-350 (2000-5000)	108 (1566)	350 (5000)
	20				70-210 (1000-3000)	52 (754)	200 (2900)	70-210 (1000-3000)	42 (609)	200 (2900)	70-210 (1000-3000)	39 (566)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)
X = 40	35				140-350 (2000-5000)	89 (1291)	350 (5000)	140-350 (2000-5000)	67 (972)	350 (5000)						
Ĺ	40										140-420 (2000-6000)	135 (15958)	350 (5000)	140-420 (2000-6000)	135 (15958)	350 (5000)
0																
×-2	20	100-210 (1450-3000)	109 (1581)	200 (2900)												
L																

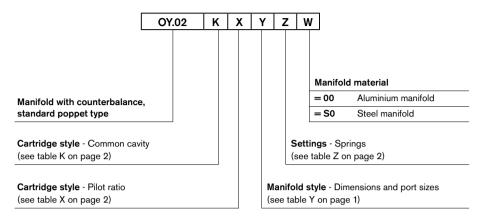












Preferred types (readily available)

Туре	Material number	Туре	Material number
OY0220030220S0	R934001402		
OY0220030235S0	R934001403		
OY0231030320S0	R934001404		
OY0231030335S0	R934001405		
OY0228030420S0	R934001406		
OY0228030435S0	R934001407		
OY0229030520S0	R934001408		
OY0229030535S0	R934001409		
OY0225030620S0	R934001413		
OY0225030635S0	R934001414		

Further types available by request

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RE 18330-73/04.10 Replaces: RE 00199/11.07

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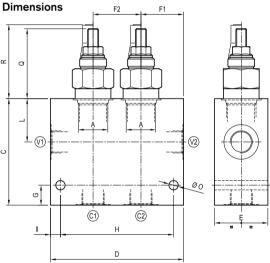
Dual counterbalance, standard poppet type

Hydraulics

Double common cavity Cartridge style in manifold

VBSN-DE-C

2Y.02 - K - X - Y - Z - W



Technical data

Max flow:	up to 320 I/min	(85 gpm)
Max operating pressure for steel body:	re 350 bar	(5000 psi)
Max operating pressure for aluminium body:	re 210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

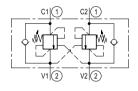
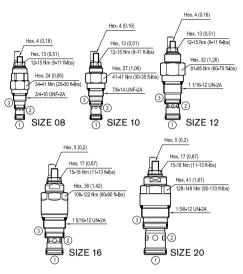


Table "Y"

Cavity	Υ	PORT SIZE	Max Flow													
Α	T	V1-V2-C1-C2	(gpm)	С	D	E	F1	F2	G	Н	- 1	L	М	0	Q	R
SIZE	02	G 3/8	30 (8)	60 (2.36)	90 (3.54)	30 (1.18)	27 (1.06)	36 (1.42)	15 (0.59)	75 (2.95)	7.5 (0.3)	27.5 (1.08)		7 (0.28)	55	64
80			30 (6)												(2.17)	(2.52)
SIZE	02	G 3/8	60 (16)	80 (3.15)	100 (3.94)	40 (1.58)	32 (1,26)	36 (1.42)	15 (0.59)	85 (3.35)	7.5 (0.30)	32.5 (1.28)		7 (0.28)	53	59
10	03	G 1/2	60 (16)	80 (3.15)	100 (3.94)	40 (1.58)	32 (1.26)	36 (1.42)	15 (0.59)	85 (3.35)	7.5 (0.30)	32.5 (1.28)		7 (0.28)	(2.09)	(2.32)
SIZE	03	G 1/2	120 (32)	90 (3.54)	125 (4.92)	50 (1.97)	40 (1.58)	45 (1.77)	15 (0.59)	105 (4.13)	10 (0.39)	41.5 (1.63)		7 (0.28)	61	67
12	04	G 3/4	120 (32)	90 (3.54)	125 (4.92)	50 (1.97)	40 (1.58)	45 (1.77)	15 (0.59)	105 (4.13)	10 (0.39)	41.5 (1.63)		7 (0.28)	(2.4)	(2.64)
SIZE	05	G 1	200 (53)	90 (3.54)	145 (5.71)	50 (1.97)	45 (1.77)	55 (2.17)	22 (0.87)	125 (4.92)	10 (0.39)	38.5 (1.52)		9 (0.35)	73	80
16			200 (53)												(2.87)	(3.15)
SIZE	06	G 1 1/4	320 (85)	120 (4.72)	175 (6.89)	60 (2.36)	55 (2.17)	65 (2.56)	25 (0.98)	150 (5.91)	12.5 (0.49)	51 (2.01)		11 (0.43)	65	72.5
20			320 (85)												(2.56)	(2.85)



		_					
Tabl	le "K'	,	к				
DE	04	52	20	Х	56	Z	VBSN-08AA
CODE	04	52	31	Х	85	Z	VBSN-10A
CARTRIDGE	04	52	28	Х	57	Z	VBSN-12A
RTR	04	52	29	Х	27	Z	VBSN-16A
ŏ	04	52	25	Х	58	Z	VBSN-20A

Table "X"

х		PILOT RATIO	ОРТ	IONS
03	4:1	3:1 only for K=31 version	-	
10	8:1			ing code
		With sealed pilot	K=20,31,28	11.04.23.002
33	4:1	(only for K=20 version)	K=29,25	11.04.23.004

CARTRIDGE TECHNICAL DATA

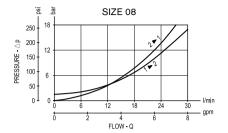
Common cavity: CA-08A-3C / CA-10A-3C / CA-12A-3C / CA-16A-3C / CA-20A-3C

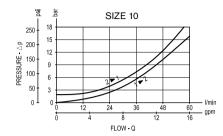
For other details see data sheet RE 18320-01, RE 18320-02, RE 18320-03, RE 18320-04 and RE 18320-05

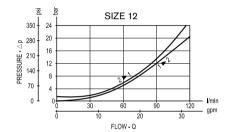
Table "Z"

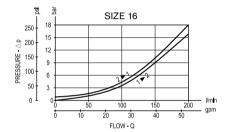
mm (inches)

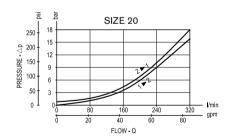
			SPRINGS													
		5	SIZE 08		5	SIZE 10			SIZE 12		5	SIZE 16		S	SIZE 20	
	Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	5 I/miñ	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	5 I/miň	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	5 l/miň
_	15	70-150 (1000-2200)	72.5 (1051)	150 (2200)												
X=03	20	100-210 (1450-3000)	109 (1581)	200 (2900)	70-210 (1000-3000)	135 (1958)	200 (2900)	70-210 (1000-3000)	50 (725)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)
	35	200-350 (2900-5000)	137 (1987)	350 (5000)	140-350 (2000-5000)	196 (2842)	350 (5000)	140-350 (2000-5000)	159 (2306)	350 (5000)	140-350 (2000-5000)	108 (1566)	350 (5000)	140-350 (2000-5000)	108 (1566)	350 (5000)
	20				70-210 (1000-3000)	52 (754)	200 (2900)	70-210 (1000-3000)	42 (609)	200 (2900)	70-210 (1000-3000)	39 (566)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)
X=10	35				140-350 (2000-5000)	89 (1291)	350 (5000)	140-350 (2000-5000)	67 (972)	350 (5000)						
	40										140-420 (2000-6000)	135 (15958)	350 (5000)	140-420 (2000-6000)	135 (15958)	350 (5000)
_																
X=33	20	100-210 (1450-3000)	109 (1581)	200 (2900)												

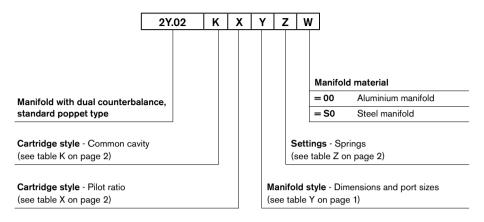












Preferred types (readily available)

Туре	Material number	Туре	Material number
2Y0220030220S0	R934001415		
2Y0220030235S0	R934001416		
2Y0231030320S0	R934001426		
2Y0231030335S0	R934001428		
2Y0228030420S0	R934001432		
2Y0228030435S0	R934001435		
2Y0229030520S0	R934001436		
2Y0229030535S0	R934003341		
2Y0225030620S0	R934001439		
2Y0225030635S0	R934003340		
			

Further types available by request

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RE 18330-74/04.10 Replaces: RE 00199/11.07

Counterbalance, relief compensated, poppet type

Common cavity

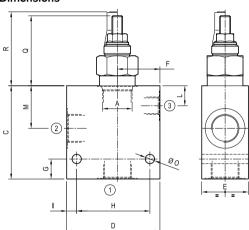
Cartridge style in manifold

Hydraulics

VBSP-C

OY.03 - K - X - Y - Z - W

Dimensions



Technical data

Max flow: u	p to 320 I/min	(85 gpm)
Max operating pressur for steel body:	e 350 bar	(5000 psi)
Max operating pressur for aluminium body:	e 210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

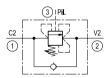
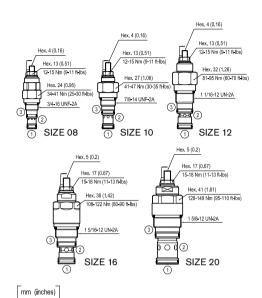


Table "Y"

Cavity	v	PORT SIZE Max Flow							DIM	IENSIO	NS mm	(Inche	s)				
Α	ı	1 - 2	3	(gpm)	С	D	Е	F	G	Н	- 1	L	М	N	0	a	R
SIZE	09	G 1/4	G 1/4	30 (8)	60 (2.36)	60 (2.36)	30 (1.18)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.3)	13 (0.51)	27 (1.06)		7 (0.28)	55	64
80	02	G 3/8	G 1/4	30 (6)	60 (2.36)	60 (2.36)	30 (1.18)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.3)	13 (0.51)	27 (1.06)		7 (0.28)	(2.17)	(2.52)
SIZE	02	G 3/8	G 1/4	60 (16)	70 (2.76)	60 (2.36)	35 (1.38)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	53	59
10	03	G 1/2	G 1/4	60 (16)	70 (2.76)	70 (2.76)	35 (1.38)	32 (1.26)	15 (0.59)	55 (2.17)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	(2.09)	(2.32)
SIZE	03	G 1/2	G 1/4	120 (32)	80 (3.15)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		7 (0.28)	61	67
12	04	G 3/4	G 1/4	120 (32)	90 (3.54)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	(2.4)	(2.64)
SIZE	04	G 3/4	G 1/4	200 (53)	90 (3.54)	80 (3.15)	50 (1.97)	38 (1.50)	22 (0.87)	60 (2.36)	10 (0.39)	18.5 (0.73)	39 (1.54)		9 (0.35)	73	80
16	05	G 1	G 1/4	200 (53)	90 (3.54)	90 (3.54)	50 (1.97)	40 (1.58)	22 (0.87)	70 (2.76)	10 (0.39)	18.5 (0.73)	39 (1.54)		9 (0.35)	(2.87)	(3.15)
SIZE	05	G 1	G 1/4	320 (85)	110 (4.33)	100 (3.94)	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	21 (0.83)	51 (2.01)		11 (0.43)	65	72.5
20	06	G 1 1/4	G 1/4	320 (83)	110 (4.33)	100 (3.94)	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	21 (0.83)	51 (2.01)		11 (0.43)	(2.56)	(2.85)



Tabl	le "K'	,	К				
DE	04	54	04	Х	56	Z	VBSP-08AA
CODE	04	54	09	Х	85	Z	VBSP-10A
CARTRIDGE	04	54	08	Х	57	Z	VBSP-12A
RTRI	04	54	10	Х	27	Z	VBSP-16A
Ç	04	54	13	Х	58	Z	VBSP-20A

Table "X"

х	ı	PILOT RATIO	ОРТ	IONS		
03	4:1	3:1 only for K=09 version				
			Order	ing code		
			K=04,09,08	11.04.23.002		
			K=10,13	11.04.23.004		

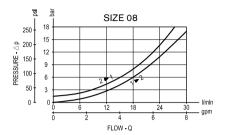
CARTRIDGE TECHNICAL DATA

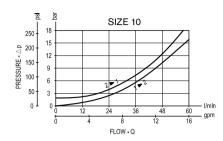
Common cavity: CA-08A-3C / CA-10A-3C / CA-12A-3C / CA-16A-3C / CA-20A-3C

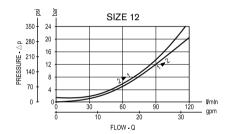
For other details see data sheet RE 18320-06, RE 18320-07, RE 18320-08, RE 18320-09 and RE 18320-10

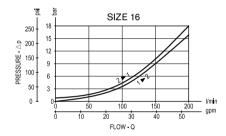
Table "Z"

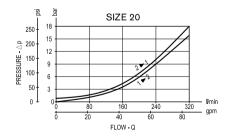
							S	PRINGS	;						
	8	SIZE 08		:	SIZE 10		:	SIZE 12		:	SIZE 16		SIZE 20		
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	5 I/miñ	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)
20	100-210 (1450-3000)	109 (1581)	200 (2900)	70-210 (1000-3000)	135 (1958)	200 (2900)	70-210 (1000-3000)	50 (725)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)
35	200-350 (2900-5000)	137 (1987)	350 (5000)	140-350 (2000-5000)	196 (2842)	350 (5000)	140-350 (2000-5000)	159 (2306)	350 (5000)	140-350 (2000-5000)	108 (1566)	350 (5000)	140-350 (2000-5000)	108 (1566)	350 (5000)
	1			1											

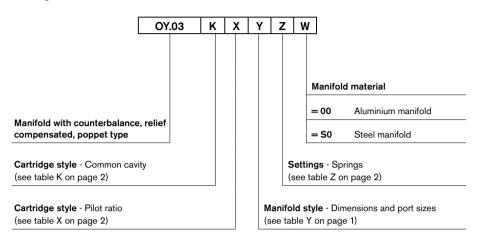












Preferred types (readily available)

Туре	Material number	Туре	Material number
OY0304030220S0	R934001351		
OY0304030235S0	R934001356		
OY0309030320S0	R934001363		
OY0309030335S0	R934001367		
OY0308030420S0	R934001368		
OY0308030435S0	R934001396		
OY0310030520S0	R934001399		
OY0310030535S0	R934001398		
OY0313030620S0	R934001400		
OY0313030635S0	R934001401		
		_	
		-	

Further types available by request

Bosch Rexroth Oil Control S.p.A. Via Leonardo da Vinci 5 P.O. Box no. 5 41015 Nonantola – Modena, Italy Tel. +39 059 887 611 Fax +39 059 547 848 integrated-circuits@oilcontrol.com

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RE 18330-75/04.10

Replaces: RE 00199/11.07

Dual counterbalance, relief compensated, poppet type

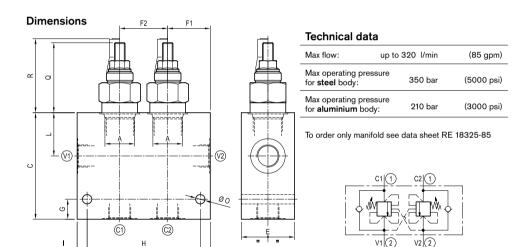
Double common cavity Cartridge style in manifold

D

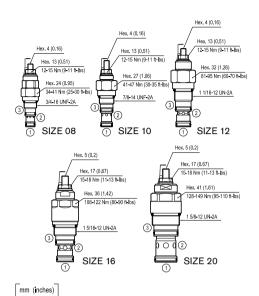
VBSP-DE-C

Table "Y"

2Y.03 - K - X - Y - Z - W



iubi	٠.	·														
Cavity	Υ	PORT SIZE	Max Flow					DII	MENSI	ONS m	m (Inch	es)				
Α	•	V1-V2-C1-C2	(gpm)	С	D	Е	F1	F2	G	Н	- 1	L	М	0	a	R
SIZE	02	G 3/8	30 (8)	60 (2.36)	90 (3.54)	30 (1.18)	27 (1.06)	36 (1.42)	15 (0.59)	75 (2.95)	7.5 (0.3)	27.5 (1.08)		7 (0.28)	55	64
80			30 (8)												(2.17)	(2.52)
SIZE	02	G 3/8	60 (16)	80 (3.15)	100 (3.94)	40 (1.58)	32 (1.26)	36 (1.42)	15 (0.59)	85 (3.35)	7.5 (0.30)	32.5 (1.28)		7 (0.28)	53	59
10	03	G 1/2	60 (16)	80 (3.15)	100 (3.94)	40 (1.58)	32 (1.26)	36 (1.42)	15 (0.59)	85 (3.35)	7.5 (0.30)	32.5 (1.28)		7 (0.28)	(2.09)	(2.32)
SIZE	03	G 1/2	120 (32)	90 (3.54)	125 (4.92)	50 (1.97)	40 (1.58)	45 (1.77)	15 (0.59)	105 (4.13)	10 (0.39)	41.5 (1.63)		7 (0.28)	61	67
12	04	G 3/4	120 (32)	90 (3.54)	125 (4.92)	50 (1.97)	40 (1.58)	45 (1.77)	15 (0.59)	105 (4.13)	10 (0.39)	41.5 (1.63)		7 (0.28)	(2.4)	(2.64)
SIZE	05	G 1	200 (53)	90 (3.54)	145 (5.71)	50 (1.97)	45 (1.77)	55 (2.17)	22 (0.87)	125 (4.92)	10 (0.39)	38.5 (1.52)		9 (0.35)	73	80
16			200 (53)												(2.87)	(3.15)
SIZE	06	G 1 1/4	320 (85)	120 (4.72)	175 (6.89)	60 (2.36)	55 (2.17)	65 (2.56)	25 (0.98)	150 (5.91)	12.5 (0.49)	51 (2.01)		11 (0.43)	65	72.5
20			320 (85)												(2.56)	(2.85)



Tab	le "K'	,	К				
DE	04	54	04	Х	56	Z	VBSP-08AA
CARTRIDGE CODE	04	54	09	Х	85	Z	VBSP-10A
DGE	04	54	08	Х	57	Z	VBSP-12A
RTR	04	54	10	Х	27	Z	VBSP-16A
δ	04	54	13	Х	58	Z	VBSP-20A

Table "X"

х	1	PILOT RATIO	ОРТ	IONS
03	4:1	3:1 only for K=09 version		
			Order	ing code
			K=04,09,08	11.04.23.002
			K=10,13	11.04.23.004

CARTRIDGE TECHNICAL DATA

Common cavity: CA-08A-3C / CA-10A-3C / CA-12A-3C / CA-16A-3C / CA-20A-3C

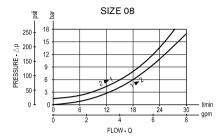
For other details see data sheet RE 18320-06, RE 18320-07, RE 18320-08, RE 18320-09 and RE 18320-10

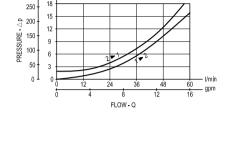
Table "Z"

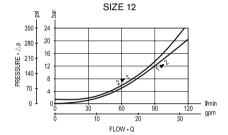
	s	SIZE 08		SIZE 10			;	SIZE 12			SIZE 16			SIZE 20		
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)										
20	100-210 (1450-3000)	109 (1581)	200 (2900)	70-210 (1000-3000)	135 (1958)	200 (2900)	70-210 (1000-3000)	50 (725)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)	70-210 (1000-3000)	70 (1015)	200 (2900)	
35	200-350 (2900-5000)	137 (1987)	350 (5000)	140-350 (2000-5000)	196 (2842)	350 (5000)	140-350 (2000-5000)	159 (2306)	350 (5000)	140-350 (2000-5000)	108 (1566)	350 (5000)	140-350 (2000-5000)	108 (1566)	350 (5000)	

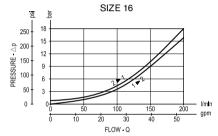
SIZE 10

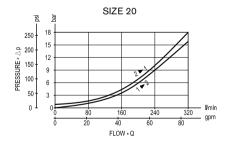
psi bar

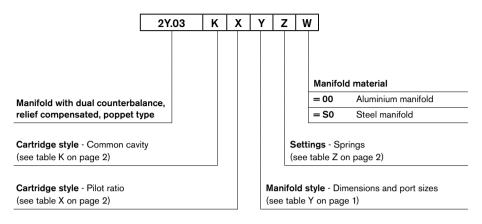












Preferred types (readily available)

Туре	Material number	Туре	Material number
2Y0304030220S0	R934001325		
2Y0304030235S0	R934001326		
2Y0309030320S0	R934001328		
2Y0309030335S0	R934001329		
2Y0308030420S0	R934001332		
2Y0308030435S0	R934001333		
2Y0310030520S0	R934001335		
2Y0310030535S0	R934001336		
2Y0313030620S0	R934001344		
2Y0313030635S0	R934001346		

Further types available by request

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RE 18330-76/04.10

Replaces: RE 00199/11.07

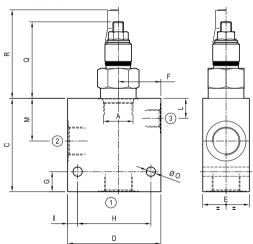
Counterbalance, vented guided poppet type

Common cavity Cartridge style in manifold

VBST-C

OY.04 - K - X - Y - Z - W

Dimensions



Technical data

	•	
Max flow:	up to 320 I/n	nin (85 gpm)
Max operating press for steel body:	ure 350 b	par (5000 psi)
Max operating press		par (3000 psi)

To order only manifold see data sheet RE 18325-85

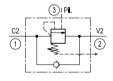
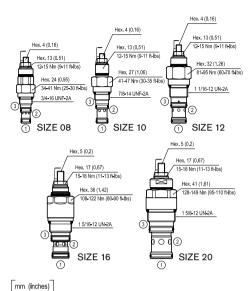


Table "Y"

Cavity	Υ	PORT	SIZE	Max Flow		DIMENSIONS mm (Inches)											
Α	'	1 - 2	3	(gpm)	С	D	Е	F	G	Н	- 1	L	М	N	0	Q	R
SIZE	09	G 1/4	G 1/4	30 (8)	60 (2.36)	60 (2.36)	30 (1.18)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.3)	13 (0.51)	27 (1.06)		7 (0.28)	60	69
80	02	G 3/8	G 1/4	30 (6)	60 (2.36)	60 (2.36)	30 (1.18)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.3)	13 (0.51)	27 (1.06)		7 (0.28)	(2.36)	(2.72)
SIZE	02	G 3/8	G 1/4	60 (16)	70 (2.76)	60 (2.36)	35 (1.38)	30 (1.18)	15 (0.59)	45 (1.77)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	59	67
10	03	G 1/2	G 1/4	00 (10)	70 (2.76)	70 (2.76)	35 (1.38)	32 (1.26)	15 (0.59)	55 (2.17)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	(2.32)	(2.64)
SIZE	03	G 1/2	G 1/4	120 (32)	80 (3.15)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		7 (0.28)	61	67
12	04	G 3/4	G 1/4	120 (32)	90 (3.54)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	(2.4)	(2.64)
SIZE	04	G 3/4	G 1/4	200 (53)	90 (3.54)	80 (3.15)	50 (1.97)	38 (1.50)	22 (0.87)	60 (2.36)	10 (0.39)	18.5 (0.73)	39 (1.54)		9 (0.35)	75	80
16	05	G 1	G 1/4	200 (53)	90 (3.54)	90 (3.54)	50 (1.97)	40 (1.58)	22 (0.87)	70 (2.76)	10 (0.39)	18.5 (0.73)	39 (1.54)		9 (0.35)	(2.95)	(3.15)
SIZE	05	G 1	G 1/4	320 (85)	110 (4.33)	100 (3.94)	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	21 (0.83)	51 (2.01)		11 (0.43)	69	75.5
20	06	G 1 1/4	G 1/4	320 (85)	110 (4.33)	100 (3.94)	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	21 (0.83)	51 (2.01)		11 (0.43)	(2.72)	(2.97)



Tabl	le "K'	,	К				
DE	04	59	08	Х	56	Z	VBST-08AA
CODE	04	59	16	Х	85	Z	VBST-10A
CARTRIDGE	04	59	26	Х	57	Z	VBST-12A
RTR	04	59	27	Х	27	Z	VBST-16A
δ	04	59	18	Χ	58	Z	VBST-20A

Table "X"

х		PILOT RATIO	ОРТ	IONS
03	4:1	3:1 only for K=16 version		
			Order	ing code
			K=08,16,26	11.04.23.002
			K=27,18	11.04.23.004

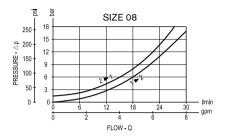
CARTRIDGE TECHNICAL DATA

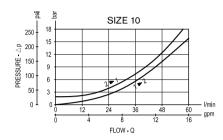
Common cavity: CA-08A-3C / CA-10A-3C / CA-12A-3C / CA-16A-3C / CA-20A-3C

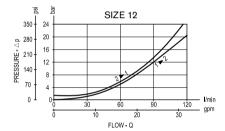
For other details see data sheet RE 18320-11, RE 18320-12, RE 18320-13, RE 18320-14 and RE 18320-15.

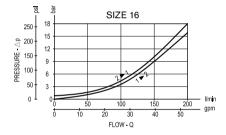
Table "Z"

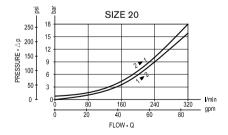
							SI	PRINGS	;							
		SIZE 08		SIZE 10				SIZE 12			SIZE 16			SIZE 20		
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)													
20	100-210 (1450-3000)	109 (1581)	200 (2900)	70-210 (1000-3000)	95 (1378)	200 (2900)	70-210 (1000-3000)	50 (725)	200 (2900)				70-210 (1000-3000)	95 (1378)	200 (2900)	
35	200-350 (2900-5000)	137 (1987)	350 (5000)	140-350 (2000-5000)	129 (1871)	350 (5000)	140-350 (2000-5000)	159 (2306)	350 (5000)	140-350 (2000-5000)	83.5 (1210)	350 (5000)	140-350 (2000-5000)	129 (1871)	350 (5000)	

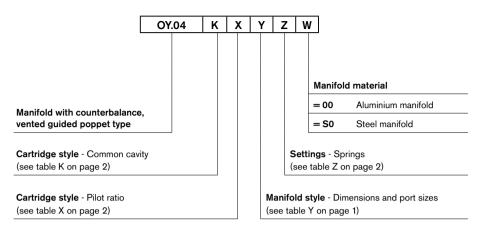












Preferred types (readily available)

Туре	Material number	Туре	Material number
OY0408030220S0	R934001303		
OY0408030235S0	R934001304		
OY0416030320S0	R934001306		
OY0416030335S0	R934001307		
OY0426030420S0	R934001308		
OY0426030435S0	R934001309		
OY0427030535S0	R934001311		
OY0418030620S0	R934001322		
OY0418030635S0	R934001323		
		-	

Further types available by request

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RE 18330-77/04.10 Replaces: RE 00199/11.07

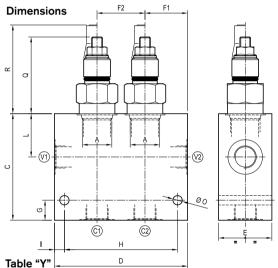
Dual counterbalance, vented guided poppet type

Double common cavity

Cartridge style in manifold

VBST-DE-C

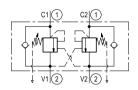
2Y.04 - K - X - Y - Z - W



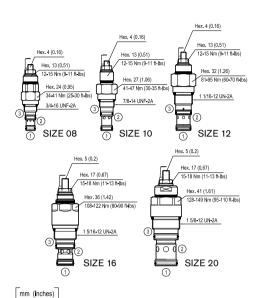
Technical data

Max flow:	up to 320 I/min	(85 gpm)
Max operating pressu for steel body:	re 350 bar	(5000 psi)
Max operating pressure for aluminium body:	re 210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



	•	1-			-1											
Cavity	Υ	PORT SIZE			DIMENSIONS mm (Inches)											
Α	T	V1-V2-C1-C2	l/min (gpm)	С	D	E	F1	F2	G	Н	I	L	М	0	a	R
SIZE	02	G 3/8	30 (8)	60 (2.36)	90 (3.54)	30 (1.18)	27 (1.06)	36 (1.42)	15 (0.59)	75 (2.95)	7.5 (0.3)	27.5 (1.08)		7 (0.28)	55	64
80			30 (8)												(2.17)	(2.52)
SIZE	02	G 3/8	00 (40)	80 (3.15)	100 (3.94)	40 (1.58)	32 (1.26)	36 (1.42)	15 (0.59)	85 (3.35)	7.5 (0.30)	32.5 (1.28)		7 (0.28)	53	59
10	03	G 1/2	60 (16)	80 (3.15)	100 (3.94)	40 (1.58)	32 (1.26)	36 (1.42)	15 (0.59)	85 (3.35)	7.5 (0.30)	32.5 (1.28)		7 (0.28)	(2.09)	(2.32)
SIZE	ZE 03	G 1/2	120 (32)	90 (3.54)	125 (4.92)	50 (1.97)	40 (1.58)	45 (1.77)	15 (0.59)	105 (4.13)	10 (0.39)	41.5 (1.63)		7 (0.28)	61 (2.4)	67
12	04	G 3/4	120 (32)	90 (3.54)	125 (4.92)	50 (1.97)	40 (1.58)	45 (1.77)	15 (0.59)	105 (4.13)	10 (0.39)	41.5 (1.63)		7 (0.28)		(2.64)
SIZE	05	G 1	200 (53)	90 (3.54)	145 (5.71)	50 (1.97)	45 (1.77)	55 (2.17)	22 (0.87)	125 (4.92)	10 (0.39)	38.5 (1.52)		9 (0.35)	73	80
16			200 (53)												(2.87)	(3.15)
SIZE	06	G 1 1/4	200 (85)	120 (4.72)	175 (6.89)	60 (2.36)	55 (2.17)	65 (2.56)	25 (0.98)	150 (5.91)	12.5 (0.49)	51 (2.01)		11 (0.43)	65	72.5
20			320 (85)			·										(2.85)



Tabl	le "K'	,	К				
DE	04	59	08	Х	56	Z	VBST-08AA
CODE	04	59	16	Х	85	Z	VBST-10A
CARTRIDGE	04	59	26	Х	57	Z	VBST-12A
RTR	04	59	27	Х	27	Z	VBST-16A
CA	04	59	18	Х	58	Z	VBST-20A

Table "X"

х		PILOT RATIO	ОРТ	IONS
03	4:1	3:1 only for K=16 version	[]	
			Order	ing code
			K=08,16,26	11.04.23.002
			K=27,18	11.04.23.004

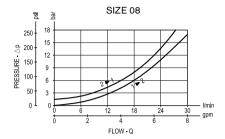
CARTRIDGE TECHNICAL DATA

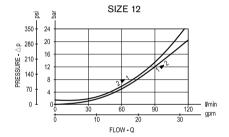
Common cavity: CA-08A-3C / CA-10A-3C / CA-12A-3C / CA-16A-3C / CA-20A-3C

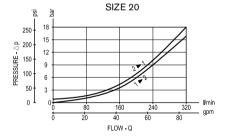
For other details see data sheet RE 18320-11, RE 18320-12, RE 18320-13, RE 18320-14 and RE 18320-15.

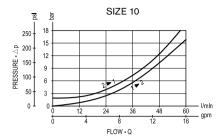
Table "Z"

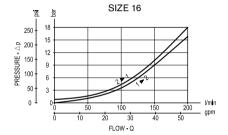
	s	SIZE 08		SIZE 10			;	SIZE 12		;	SIZE 16		8	SIZE 20		
Z	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 I/min bar (psi)	Adj. press. range bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)										
20	100-210 (1450-3000)	109 (1581)	200 (2900)	70-210 (1000-3000)	95 (1378)	200 (2900)	70-210 (1000-3000)	50 (725)	200 (2900)				70-210 (1000-3000)	95 (1378)	200 (2900)	
35	200-350 (2900-5000)	137 (1987)	350 (5000)	140-350 (2000-5000)	129 (1871)	350 (5000)	140-350 (2000-5000)	159 (2306)	350 (5000)	140-350 (2000-5000)	83.5 (1210)	350 (5000)	140-350 (2000-5000)	129 (1871)	350 (5000)	

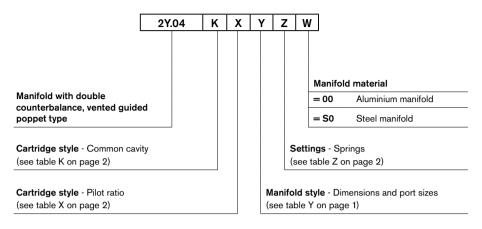












Preferred types (readily available)

уре	Material number	Туре	Material r
Y0408030220S0	R934001290		
Y0408030235S0	R934001291		
Y0416030320S0	R934001292		
0416030335S0	R934001293		
0426030420S0	R934001294		
/0426030435S0	R934001295		
/0427030535S0	R934001297		
Y0418030620S0	R934001298		
Y0418030635S0	R934001300		
			

Further types available by request

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RE 18331-01/04.10

1/4 Replaces: RE 00199/11.07

Flow control, restrictor

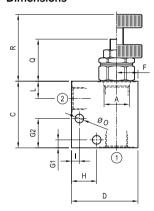
Hydraulics

Common cavity Cartridge style in manifold

ST-C-06-C

ON.01 - K - X - Y - 00 - W

Dimensions





Technical data

Max flow: up	to 40 I/min	(11 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Rated Flow I/min					DIN	MENSI	ONS m	m (Inch	es)			
Α	ĭ	1 - 2		(gpm)	С	D	Е	F	G1	G2	Н	- 1	L	0	a	R
SIZE	09	G 1/4		up to	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)	6.5 (0.26)	32	51
08	02	G 3/8		40 (11)	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)	6.5 (0.26)	(1.26) (2.00)	(2.00)
SIZE																
10																
SIZE																
12																
SIZE																
16																
SIZE																
20																

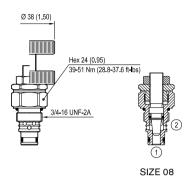


Table	e "K"			К			
DE	OD	21	01	Х	56	00	ST-C-06-C
CARTRIDGE CODE							
DGE							
RTRI							
Ö							

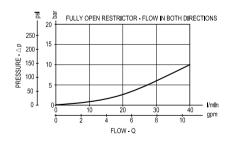
Table "X"

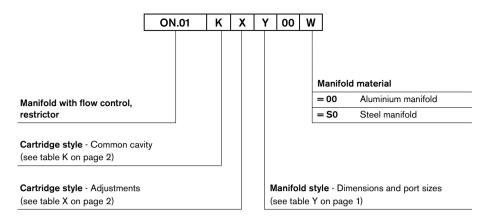
	х	ADJUSTMEN	TS
(03	Leakproof hex. socket screw	H
C)4	Handknob and locknut	

mm (inches)

CARTRIDGE TECHNICAL DATA

Common cavity: **CA-08A-2N**For other details see data sheet RE 18321-26





Preferred types (readily available)

Туре	Material number
ON0156030200S0	R934001279
ON0156040200S0	R934001280

Further types available by request

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RE 18331-02/04.10 Replaces: RE 00199/11.07

Flow control, restrictor

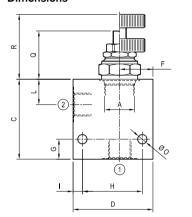
Hydraulics

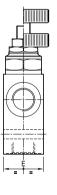
Common cavity
Cartridge style in manifold

ST-C-C

ON.02 - K - X - Y - 00 - W

Dimensions





Technical data

Max flow:	ıp to 150 l/min	(39 gpm)
Max operating pressur for steel body:	re 350 bar	(5000 psi)
Max operating pressur for aluminium body:	re 210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT	SIZE	Rated Flow I/min													
Α	T	1 - 2		(gpm)	С	D	E	F	G	Н	- 1	L	М	N	0	a	R
SIZE																	
80																	
SIZE	03	G 1/2		up to	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.30)	19 (0.75)			7 (0.28)	38	50
10	04	G 3/4		70 (19)	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.30)	20 (0.79)			9 (0.35)	(1.5)	(1.97)
SIZE	04	G 3/4		up to	75 (2.95)	80 (3.15)	40 (1.58)	35 (1.38)	20 (0.79)	60 (2.36)	10 (0.39)	26.5 (1.04)			9 (0.35)	34	44
12	05	G 1		150 (39)	75 (2.95)	80 (3.15)	50 (1.97)	35 (1.38)	20 (0.79)	60 (2.36)	10 (0.39)	26.5 (1.04)			9 (0.35)		(1.73)
SIZE	04	G 3/4		up to	80 (3.15)	80 (3.15)	50 (1.97)	32 (1.26)	22 (0.87)	60 (2.36)	10 (0.39)	26 (1.02)			9 (0.35)	33	43
16	05	G 1		150 (39)	80 (3.15)	90 (3.54)	50 (1.97)	37 (1.46)	22 (0.87)	60 (2.36)	20 (0.79)	26 (1.02)				(1.3)	(1.69)
SIZE																	
20																	

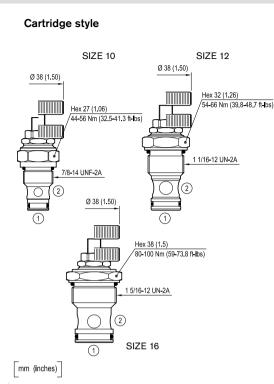


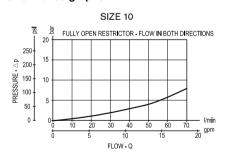
Table	e "K"			к			
CARTRIDGE CODE	OD	21	01	Х	36	00	ST-C-10A
	OD	21	01	Х	89	00	ST-C-12A
	OD	21	01	Х	75	00	ST-C-16A
RTR							
δ							

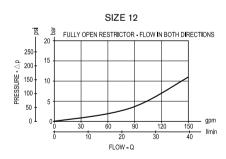
Table "X"

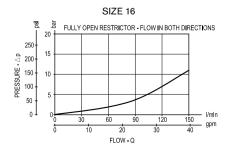
х	ADJUSTMENTS				
03	Leakproof hex. socket screw				
04	Handknob and locknut				

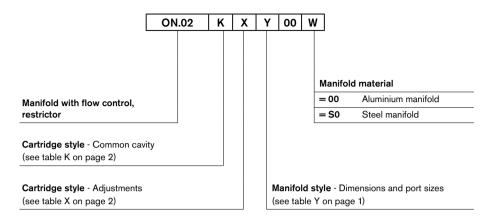
CARTRIDGE TECHNICAL DATA

Common cavity: ${\rm CA-10A-2N}$ / ${\rm CA-12A-2N}$ / ${\rm CA-16A-2N}$ For other details see data sheet RE 18321-27, RE 18321-28, and RE 18321-29









Preferred types (readily available)

Туре	Material number	Туре	Material number
ON0236030400S0	R934001281		
ON0236040400S0	R934001283		
ON0289030500S0	R934001284		
ON0289040500S0	R934001285		
ON0275030500S0	R934001070		
ON0275040500S0	R934001286		
		-	
		-	

Further types available by request

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RE 18331-03/04.10 _{1/} Replaces: RE 00199/11.07

Needle restrictor, free reverse flow

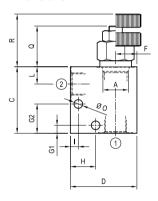
Common cavity
Cartridge style in manifold

Hydraulics

STVU-08A

ON.03 - K - X - Y - 00 - W

Dimensions





Technical data

Max flow: up	to 40 I/min	(11 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Cavity	y PORT SIZE Max			Max Flow I/min					DIN	MENSI	ONS m	m (Inch	es)			
Α	•	1 - 2		(gpm)	С	D	Е	F	G1	G2	Н	I	L	0	Q	R
SIZE	09	G 1/4		up to	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)	6.5 (0.26)	31	40
08	02	G 3/8		40 (11)	50 (1.97)	50 (1.97)	30 (1.18)	16 (0.63)	6 (0.24)	22 (0.87)	19 (0.75)	6 (0.24)	13 (0.51)	6.5 (0.26)	(1.22)	(1.58)
SIZE																
10																
SIZE																
12																
SIZE																
16																
SIZE																
20																

Cartridge style

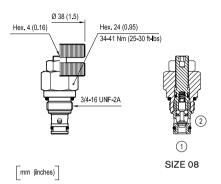


Table "X"

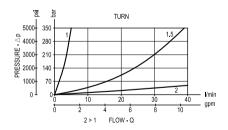
х	ADJUSTMENTS					
03	Leakproof hex. socket screw	冊				
04	Handknob and locknut					

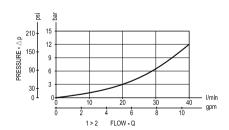
CARTRIDGE TECHNICAL DATA

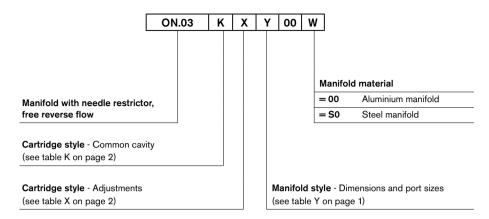
Common cavity: CA-08A-2N

For other details see data sheet RE 18321-10

Performance graphs







Preferred types (readily available)

Туре	Material number
ON0303030200S0	R334003576

Further types available by request

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RE 18331-04/04.10 Replaces: RE 00199/11.07

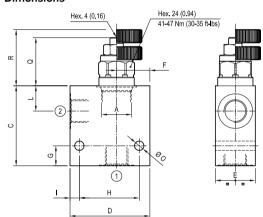
Needle restrictor, free reverse flow

Common cavity
Cartridge style in manifold

STVU-10A

ON.09 - K - X - Y - 00 - W

Dimensions



Technical data

Max flow: up	to 80 I/min	(22 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



Cavity	PORT SIZE		PORT SIZE Max Flow I/min							DIMENSIONS mm (Inches)							
Α	T	1 - 2		(gpm)	С	D	Е	F	G1	G2	Н	I	L		0	a	R
SIZE																	
08																	
SIZE	03	G 1/2		80 (22)	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.3)	19 (0.75)			7.5 (0.30)	37	43
10	04	G 3/4		80 (22)	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.3)	20 (0.79)			9 (0.30)	(1.46) (1.	(1.69)
SIZE																	
12																	
SIZE																	
16																	
SIZE																	
20																	

Cartridge style

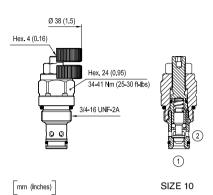


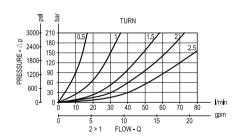
Table "X"

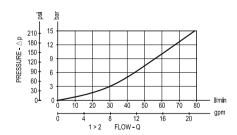
х	ADJUSTMEN	TS
03	Leakproof hex. socket screw	A
04	Handknob and locknut	

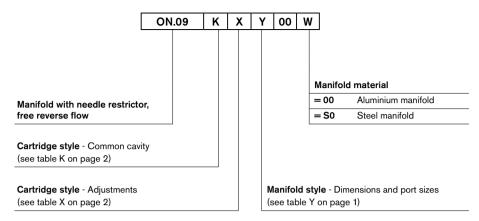
CARTRIDGE TECHNICAL DATA

Common cavity: **CA-10A-2N**For other details see data sheet RE 18321-11

Performance graphs







Preferred types (readily available)

Туре	Material number
ON0905030400S0	R934003577

Further types available by request

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RE 18331-05/04.10 Replaces: RE 00199/11.07

Flow control, 2-way pressure compensated fully adjustable

Common cavity

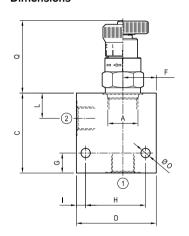
Cartridge style in manifold

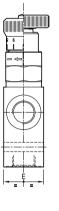
Hydraulics

VRFB-10A-C / VRFE-12A-C

ON.05 - K - X - Y - Z - W

Dimensions





Technical data

Flow: adjustable (see table "Z" and performance graph)

Max operating pressure for steel body:

Max operating pressure for aluminium body:

210 bar (3000 psi)

To order only manifold see data sheet RE 18325-85

K=02 type





Cavity	Υ	PORT	SIZE	Max Flow		DIMENSIONS mm (Inches)											
Α	Ť	1 - 2	l/min (gpm)	С	D	Е	F	G	Н	I	L			0	a	R	
SIZE																	
08																	
SIZE	03	G 1/2		see	60 (2.36)	60 (2.36)	35 (1.38)	25 (0.98)	15 (0.59)	45 (1.77)	7.5 (0.30)	19 (0.75)			7 (0.28)	55	
10	04	G 3/4		table "Z"	60 (2.36)	70 (2.76)	40 (1.58)	30 (1.18)	15 (0.59)	55 (2.17)	7.5 (0.30)	20 (0.79)			9 (0.35)	(2.17)	
SIZE	04	G 3/4		see	75 (2,95)	80 (315)	40 (1,58)	35 (1,38)	20 (0,79)	60 (2,36)	10 (0,39)	26,5 (1,04)			9 (0.35)	47,5	
12	05	G 1		table "Z"	75 (2,95)	80 (315)	50 (1,97)	35 (1,38)	20 (0,79)	60 (2,36)	10 (0,39)	26,5 (1,04)			9 (0.35)	(1,87)	
SIZE																	
16																	
SIZE																	
20																	

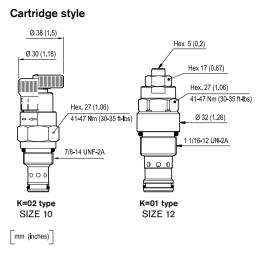


Table "K"			К				
DE	04	02	02	Х	85	Z	VRFB-10A
00	04	07	01	Х	57	Z	VRFE-12A
CARTRIDGE CODE							
RTRI							
ŏ							

Table "X"

х	ADJUSTMENTS	
40	Calibrated handknob (only for K=02)	
04	Handknob (only for K=02)	
03	Leakproof hex. socket screw (only for K=01)	4

CARTRIDGE TECHNICAL DATA

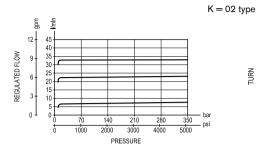
Common cavity: CA-10A-2N, CA-12A-2N For other details see data sheet RE 18321-16 and RE 18321-30

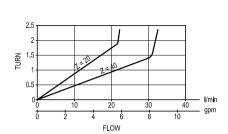
Table "Z"

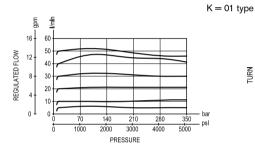
		R	EGULATED FLOW RANG	3E	
Z	SIZE 08	SIZE 10	SIZE 12	SIZE 16	SIZE 20
	l/min (gpm)	l/min (gpm)	I/min (gpm)	I/min (gpm)	I/min (gpm)
20		0.1-20 (0.03-5.28)			
40		0.2-30 (0.05-7.93)			
50			1-50 (0.26-13.2)		

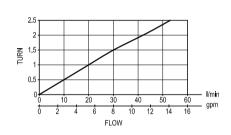
07

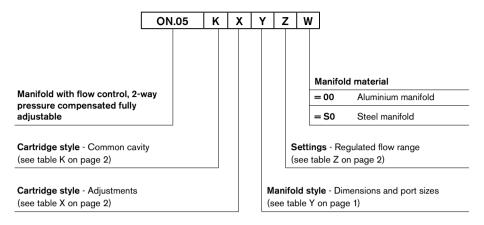
Performance graphs











Preferred types (readily available)

Туре	Material number	Туре	Material number
ON0502400320S0	R934000625		
ON0502400340S0	R934000622		
ON0501030450S0	R934003575		
		<u> </u>	
		<u> </u>	
		<u> </u>	
		<u> </u>	
		<u> </u>	

Further types available by request

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RE 18331-06/04.10 Replaces: RE 00199/11.07

Flow control, 3-way pressure compensated combination type fully adjustable

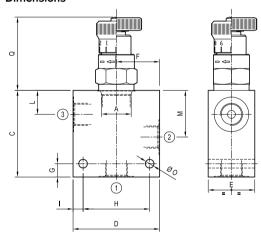
Common cavity

Cartridge style in manifold

VRFD-10A / VRFD-12A - C

ON.06 - K - X - Y - Z - W

Dimensions



Technical data

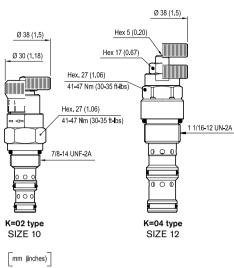
Flow: adjustable (see table "Z" and performance graph)						
Max operating pressure for steel body:	350 bar	(5000 psi)				
Max operating pressure for aluminium body:	210 bar	(3000 psi)				

To order only manifold see data sheet RE 18325-85



Cavity	Υ	PORT	SIZE	Max Flow					DII	MENSI	ONS m	m (Inch	es)			
Α	ľ	1 - 2 - 3		l/min (gpm)	С	D	Е	F	G	Η	I	L	М	0	Q	
SIZE																
08																
SIZE	09	G 1/4		see	65 (2.56)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.3)	18 (0.71)	35 (1.38)	6.5 (0.26)	55	
10	02	G 3/8		table "Z"	65 (2.56)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.3)	18 (0.71)	35 (1.38)	6.5 (0.26)	(2.17)	
SIZE	03	G 1/2		see	100 (3.94)	80 (3.15)	40 (1,58)	40 (1.58)	15 (0.59)	55 (2.17)	12.5 (0.49)	29 (1.14)	54 (2.13)	7 (0.28)	56.5	
12	04	G 3/4		table "Z"	100 (3.94)	80 (3.15)	40 (1,58)	40 (1.58)	15 (0.59)	55 (2.17)	12.5 (0.49)	29 (1.14)	54 (2.13)	7 (0.28)	(2.22)	
SIZE																
16																
SIZE																
20																

Cartridge style



Tabl	le "K'	,	К				
DE	04	04	02	Х	85	Z	VRFD-10A
CARTRIDGE CODE	04	04	04	Х	57	Z	VRFD-12A
DGE							
RTR							
Ö							

Table "X"

х	ADJUSTMENTS	
40	Calibrated handknob (only for K=02)	
04	Handknob	
03	Leakproof hex. socket screw (only for K=04)	

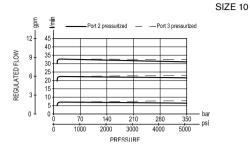
CARTRIDGE TECHNICAL DATA

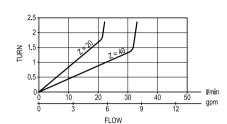
Common cavity: CA-10A-3N, CA-12A-3N For other details see data sheet RE 18321-20 and RE 18321-21

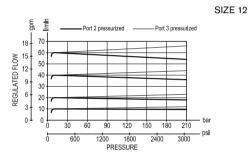
Table "Z"

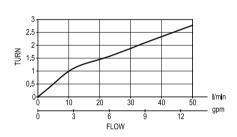
	·	RI	EGULATED FLOW RAN	GE	·
z	SIZE 08	SIZE 10	SIZE 12	SIZE 16	SIZE 20
	I/min (gpm)	I/min (gpm)	I/min (gpm)	I/min (gpm)	l/min (gpm)
20		0.1-20 (0.03-5.28)			
40		0.2-30 (0.05-7.93)			
50			2 - 50 (0.6 - 13.21)		

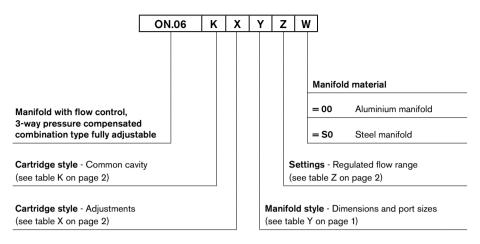
Performance graphs











Preferred types (readily available)

Туре	Material number	Туре	Material number
ON0602040220S0	R934001276		
ON0602040240S0	R934001277		
ON0604040450S0	R934003540		
		-	
		-	

Further types available by request

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RE 18331-07/04.10 Replaces: RE 00199/11.07

Flow divider

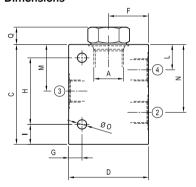
Common cavity

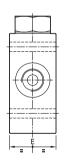
Cartridge style in manifold

DSDN-C

ON.07 - K - 00 - Y - Z - W

Dimensions





Technical data

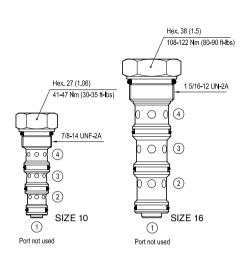
Range of rated total flow: see table "Z"								
Max operating pressure for steel body:	350 bar	(5000 psi)						
Max operating pressure for aluminium body:	210 bar	(3000 psi)						

To order only manifold see data sheet RE 18325-85



Cavity	v	PORT SIZE		Flow I/min					DIN	MENSI	ONS m	m (Inch	es)				
Α		2 - 3 - 4		(gpm)	С	D	Е	F	G	Η	I	L	М	N	0	α	
SIZE																	
80																	
SIZE	02	G 3/8		see	75 (2.95)	70 (2.95)	35 (1.38)	35 (1.38)	10 (0.39)	50 (1.97)	15 (0.59)	19 (0.75)	35 (1.38)	51 (2.01)	7 (0.28)	14	
10	03	G 1/2		table "Z"	75 (2.95)	70 (2.95)	35 (1.38)	35 (1.38)	10 (0.39)	50 (1.97)	15 (0.59)	19 (0.75)	35 (1.38)	51 (2.01)	7 (0.28)	(0.55)	
SIZE																	
12																	
SIZE	04	G 3/4		see	120 (4.72)	90 (3.54)	50 (1.97)	45 (1.77)	15 (0.59)	80 (3.15)	20 (0.79)	26 (1.02)	54.5 (2.15)	83 (3.27)	9 (0.35)	15	
16	05	G 1		table "Z"	120 (4.72)	100 (3.94)	50 (1.97)	50 (1.97)	15 (0.59)	80 (3.15)	20 (0.79)	26 (1.02)	54.5 (2.15)	83 (3.27)	9 (0.35)	(0.59)	
SIZE																	
20																	

Cartridge style



Tab	le "K'	,	K				
DE	04	05	04	00	85	Z	DSDN-10A
CARTRIDGE CODE	04	05	03	00	27	Z	DSDN-16A
DGE							
RTR							
Ö							

CARTRIDGE TECHNICAL DATA

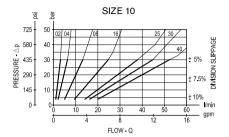
Common cavity: CA-10A-4N / CA-16A-4N For other details see data sheet RE 18321-22 and RE18321-23

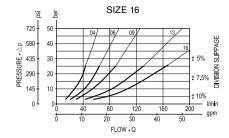
mm (inches)

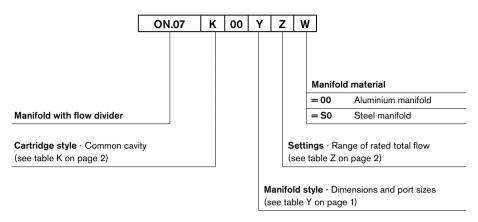
Table "Z"

		RAN	GE OF RATED TOTAL	FLOW	
z	SIZE 08	SIZE 10	SIZE 12	SIZE 16	SIZE 20
	I/min (gpm)	l/min (gpm)	I/min (gpm)	I/min (gpm)	I/min (gpm)
02		1-3 (0.26-0.79)			
04		2-6 (0.53-1.59)		15-44 (3.96-11.63)	
06				22-66 (5.81-17.44)	
08		5-13 (1.32-3.44)			
09				30-88 (7.93-23.25)	
13				44-132 (11.63-34.88)	
16		9-24 (2.38-6.34)		55-165 (14.53-43.59)	
25		14-37 (3.70-9.78)			
30		16-44 (4.23-11.63)			
40		20-54 (5.28-14.27)			
			·		

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material number
ON0704000204S0	R934001260		
ON0704000216S0	R934001261		
ON0704000330S0	R934001262		
ON0703000406S0	R934001263		
ON0703000413S0	R934001264		
ON0703000516S0	R934001265		
ON070400020400	R934001111		
<u> </u>			

Further types available by request

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RE 18331-08/04.10 Replaces: RE 00199/11.07

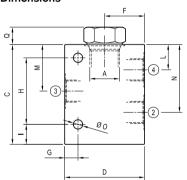
Flow divider and combiner

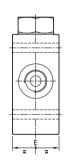
Common cavity
Cartridge style in manifold

DRFN-C

ON.08 - K - 00 - Y - Z - W

Dimensions





Technical data

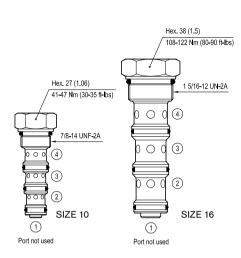
Range of rated total flow: see table "Z"							
Max operating pressure for steel body:	350 bar	(5000 psi)					
Max operating pressure for aluminium body:	210 bar	(3000 psi)					

To order only manifold see data sheet RE 18325-85



Cavity	v	PORT	SIZE			DIMENSIONS mm (Inches)											
Α	Υ	2 - 3 - 4		l/min (gpm)	С	D	Е	F	G	Н	I	L	М	N	0	a	R
SIZE																	
08																	
SIZE	02	G 3/8		see	75 (2.95)	70 (2.76)	35 (1.38)	30 (1.18)	10 (0.39)	50 (1.97)	15 (0.59)	19 (0.75)	35 (1.38)	51 (2.01)	7 (0.28)	14	
10	03	G 1/2		table "Z"	75 (2.95)	70 (2.76)	35 (1.38)	30 (1.18)	10 (0.39)	50 (1.97)	15 (0.59)	19 (0.75)	35 (1.38)	51 (2.01)	7 (0.28)	(0.55)	
SIZE																	
12																	
SIZE	04	G 3/4		see	120 (4.72)	90 (3.54)	50 (1.97)	45 (1.77)	15 (0.59)	80 (3.15)	20 (0.79)	26 (1.02)	54.5 (2.15)	83 (3.27)	9 (0.35)	15	
16	05	G 1		table "Z"	120 (4.72)	100 (3.94)	50 (1.97)	50 (1.97)	15 (0.59)	80 (3.15)	20 (0.79)	26 (1.02)	54.5 (2.15)	83 (3.27)	9 (0.35)	(0.59)	
SIZE																	
20																	

Cartridge style



Tabl	le "K'	,	К				
DE	04	05	01	00	85	Z	DRFN-10A
SARTRIDGE CODE	04	05	02	00	27	Z	DRFN-16A
DGE							
RTR							
Š							

CARTRIDGE TECHNICAL DATA

Common cavity: CA-10A-4N / CA-16A-4N For other details see data sheet RE 18321-24 and RE 18321-25

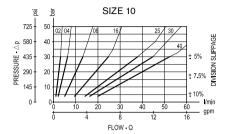
mm (inches)

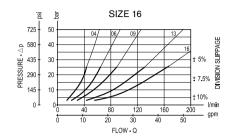
Table "Z"

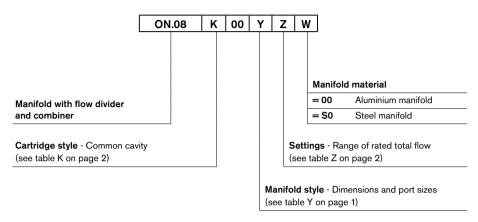
		RANG	E OF RATED TOTAL	FLOW		
z	SIZE 08	SIZE 10	SIZE 12	SIZE 16	SIZE 20	
	I/min (gpm)	l/min (gpm)	I/min (gpm)	l/min (gpm)	I/min (gpm)	
02		1-3 (0.26-0.79)				
04		2-6 (0.53-1.59)		15-44 (3.96-11.63)		
06				22-66 (5.81-17.44)		
08		5-13 (1.32-3.44)				
09				30-88 (7.93-23.25)		
13				44-132 (11.63-34.88)		
16		9-24 (2.38-6.34)		55-165 (14.53-43.59)		
25		14-37 (3.70-9.78)				
30		16-44 (4.23-11.63)				
40		20-54 (5.28-14.27)				
50		25-60 (6.61-15.85)				

07

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material number
ON0801000204S0	R934001267		
ON0801000216S0	R934001268		
ON0801000330S0	R934001269		
ON0802000406S0	R934001271		
ON0802000413S0	R934001272		
ON0802000516S0	R934001273		
			

Further types available by request

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RE 18330-46/04.10 Replaces: RE 00199/11.07

Logic element, flow and pressure control, with internal pilot

Common cavity

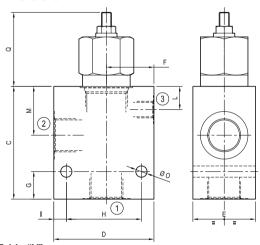
Cartridge style in manifold

Hydraulics

VLSP-C

OU.09 - K - X - Y - Z - W

Dimensions



Technical data

Max flow:	up to 360 I/min	(43 gpm)
Max operating pressi for steel body:	ure 350 bar	(5000 psi)
Max operating pressi for aluminium body:		(3000 psi)

To order only manifold see data sheet RE 18325-85

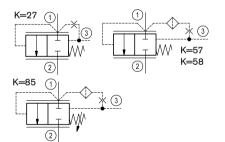
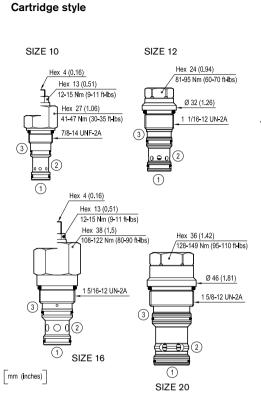


Table "Y"

Cavity	Y	PORT	SIZE	Max Flow					DIM	IENSIC	NS mm	(Inche	s)				
Α	Ţ	1 - 2	3	(gpm)	С	D	Е	F	G	Н	- 1	L	М	N	0	a	R
SIZE																	
08																	_
SIZE	02	G 3/8	G 1/4	00 (40)	70 (2.76)	60 (2.36)	35 (1.38)	30 (1.18)	15 (0,59)	45 (1.77)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	37	
10	03	G 1/2	G 1/4	60 (16)	70 (2.76)	70 (2.76)	35 (1.38)	32 (1.26)	15 (0,59)	55 (2.17)	7.5 (0.30)	15 (0.59)	32 (1.26)		7 (0.28)	(1.46)	_
SIZE	03	G 1/2	G 1/4	100 (00)	80 (3.15)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	20	
12	04	G 3/4	G 1/4	120 (32)	90 (3.54)	75 (2.95)	40 (1.58)	35 (1.38)	15 (0.59)	55 (2.17)	10 (0.39)	24 (0.95)	42 (1.65)		9 (0.35)	(0.79)	_
SIZE	04	G 3/4	G 1/4	000 (50)	90 (3.54)	80 (3.15)	50 (1.97)	38 (1.50)	(0.87)	60 (2.36)	10 (0.39)	18.5	39 (1.54)		9 (0.35)	59	
16	05	G 1	G 1/4	200 (53)	90 (3.54)	90 (3.54)	50 (1.97)	40 (1.58)	(0.87)	70 (2.76)	10 (0.39)	18.5 (0.73)	39 (1.54)		(0.35)	(2.32)	
SIZE	05	G 1	G 1/4	222 (25)	110 (4.33)	100	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5	21 (0.83)	51 (2.01)		11 (0.43)	31	
20	06	G 1 1/4	G 1/4	360 (95)	110 (4.33)	100 (3.94)	60 (2.36)	45 (1.77)	25 (0.98)	75 (2.95)	12.5 (0.49)	21 (0.83)	51 (2.01)		11 (0.43)	(1.22)	



Tab	le "K'	,		K			
DE	04	84	03	Х	85	Z	VLSP-10A
CARTRIDGE CODE	04	84	03	Х	57	Z	VLSP-12A
DGE	04	84	03	Х	27	Z	VLSP-16A
RTR	04	84	03	Х	58	Z	VLSP-20A
ő							

Table "X"

Х	ADJUSTMENTS							
00	Fixed setting							
03	Leakproof hex. socket screw (only for K=85 and K=27)							

CARTRIDGE TECHNICAL DATA

Int. leakage ave.:

200 bar (2900 psi) - 200 cm3/min (12 in3/min)

for K=27 and K=58 type

Int. leakage ave.:

200 bar (2900 psi) - 50 cm3/min (3 in3/min)

for K=85 type

Int. leakage ave.:

200 bar (2900 psi) - 350 cm³/min (21 in³/min)

for K=57 type

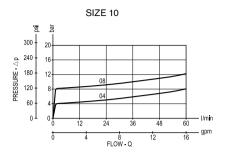
Common cavity: CA-10A-3C / CA-12A-3C / CA-16A-3C / CA-20A-3C.

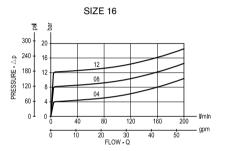
For other details see data sheets RE 18321-64, RE 18321-65, RE 18321-66 and RE 18321-67.

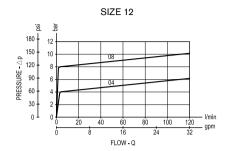
Table "Z"

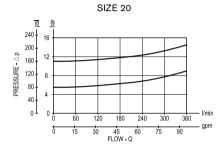
								SP	RINGS							
			SIZE 08			SIZE 10			SIZE 12			SIZE 16			SIZE 20	
	Z	Cracking press. bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Cracking press.	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Cracking press.	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min bar (psi)	Cracking press.	Pres. increase bar/turn (psi/turn)		Cracking press. bar(psi)	Pres. increase bar/turn (psi/turn)	Std. setting 5 l/min
r	04	bai (poi)	(pos tarri)	bai (poi)	4±20% (60±20%)	(pos turn)	bai (poi)	4±20% (60±20%)	(postani)	bai (poi)	4±20% (60±20%)	(pontarri)	Ба (роі)	bui (poi)	(pos tam)	bai (poi)
	05													5.5 (80)		
X=00	08				8 ± 15% (115 ± 15%)			8 ± 15% (115 ± 15%)			8 ± 15% (115 ± 15%)					
ľ	11													11 (160)		
	12										12± 10% (175 ± 10%)					
X=03	00				2-8 (30-115)	1 (15)	4 (60)				4-12 (60-175)	1.5 (22)	4 (60)			
×																

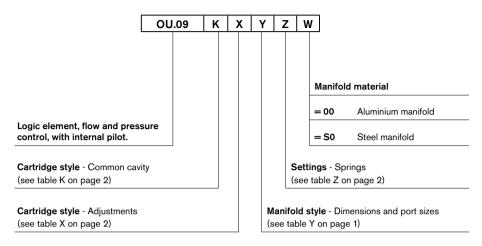
Performance graphs











Preferred types (readily available)

Туре	Material number	Туре	Material number
OU0985030300S0	R934000948		

Further types available by request

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RE 18330-43/04.10 Replaces: RE 00199/11.07

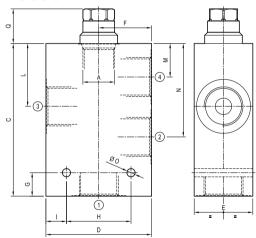
Logic element, pressure compensator, with static load sense

Common cavity
Cartridge style in manifold

VRLA-S-C

OU.06 - K - 00 - Y - Z - W

Dimensions



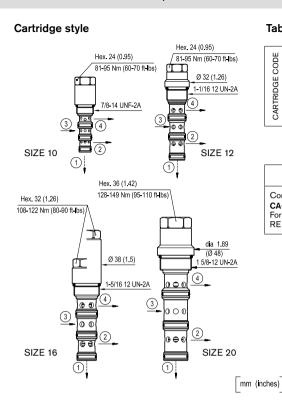
Technical data

Max inlet flow:	up to 230 I/min	(60 gpm)
Max priority flow:	up to 170 I/min	(45 gpm)
Max operating pres for steel body:	sure 350 bar	(5000 psi)
Max operating pres		(3000 psi)

To order only manifold see data sheet RE 18325-85



Cavity	Υ	PORT SIZE	Inlet Flow	Priority Flow					DIM	IENSIC	NS mm	(Inche	s)				
Α	ť	1 - 2 - 3 - 4	l/min (gpm)	l/min (gpm)	С	D	Е	F	G	Н	I	L	М	N	0	Q	R
SIZE																	
08																	
SIZE	09	G 1/4	45	40	80 (3,15)	65 (2,56)	35 (1,38)	32,5 (1,28)	10 (0,39)	50 (1,97)	7,5 (0,30)	35 (1,38)	18 (0,71)	50 (1,97)	6,5 (0,26)	36,5	
10	02	G 3/8	(12)	(11)	80 (3,15)	65 (2,56)	35 (1,38)	32,5 (1,28)	10 (0,39)	50 (1,97)	7,5 (0,30)	35 (1,38)	18 (0,71)	50 (1,97)	6,5 (0,26)	(1,44)	
SIZE	04	G 3/4	100	80	125 (4.92)	80 (3.15)	40 (1.58)	40 (1.58)	20 (0.79)	55 (2.17)	12.5 (0.49)	53.5 (2.11)	28.5 (1.12)	79.5 (3.13)	7 (0.28)	29	
12	05	G 1	(26)	(21)	130 (5.12)	90 (3.54)	50 (1.97)	45 (1.77)	20 (0.79)	55 (2.17)	17.5 (0.69)	53.5 (2.11)	28.5 (1.12)	79.5 (3.13)	7 (0.28)	(1.14)	
SIZE	04	G 3/4	160	140	130 (5.12)	90 (3.54)	50 (1.97)	45 (1.77)	20 (0.79)	60 (2.36)	15 (0.59)	54.5 (2.15)	26 (1.02)	83 (3.27)	10.5 (0.41)	31.5	
16	05	G 1	(42)	(37)	130 (5.12)	100 (3.94)	50 (1.97)	50 (1.97)	20 (0.79)	60 (2.36)	20 (0.79)	54.5 (2.15)	26 (1.02)	83 (3.27)	10.5 (0.41)	(1.24)	
SIZE	05	G1	230	170	175 (6.89)	120 (4.72)	60 (2.36)	60 (2.36)	18 (0.71)	75 (2.95)	22.5 (0.89)	72.5 (2.85)	32 (1.26)	114.5 (4.51)	11 (0.43)	50	
20	06	G1 1/4	(60)	(45)	175 (6.89)	120 (4.72)	60 (2.36)	60 (2.36)	18 (0.71)	75 (2.95)	22.5 (0.89)	72.5 (2.85)	32 (1.26)	114.5 (4.51)	11 (0.43)	(1.97)	



Tabl	le "K'	•		к			
DE	04	84	09	00	85	Z	VRLA-10A-S
CARTRIDGE CODE	04	84	09	00	57	Z	VRLA-12A-S
DGE	04	84	09	00	27	Z	VRLA-16A-S
RTR	04	84	09	00	58	Z	VRLA-20A-S
Ö							

CARTRIDGE TECHNICAL DATA

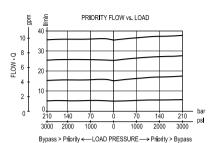
Common cavity: CA-10A-4N / CA-12A-4N / CA-16A-4N / CA-20A-4N
For other details see data sheet RE 18321-86, RE 18321-87,

RE 18321-88 and RE 18321-89

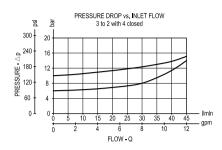
Table "Z"

							S	PRING	iS						
	SIZE 08			SIZE 10			SIZE 12			SIZE 16			SIZE 20		
Z	Bias spring bar(psi)			Bias spring bar(psi)			Bias spring bar(psi)			Bias spring bar(psi)			Bias spring bar(psi)		
05				5,5±20% (80)±20%						5,5±20% (80)±20%					
10				10±15% (145)±15%			10±15% (145)±15%								
11										11±15% (160)±15%					
12													12±15% (175)±15%		
22										22±15% (320)±15%					

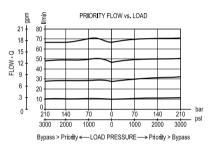
Performance graphs

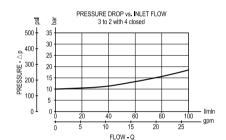


SIZE 10

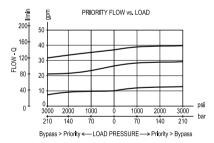


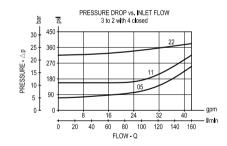
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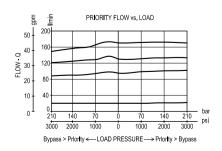


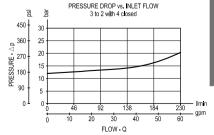
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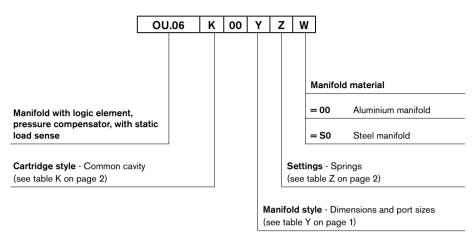




SIZE 20







Preferred types (readily available)

Туре	Material number	Туре	Material number
OU065700041000	R934001471		
OU062700051100	R934001473		
OU065800051200	R934001474		
OU068500021000	R934003573		

Further types available by request

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RE 18330-42/04.10
Replaces: RE 00199/11.07

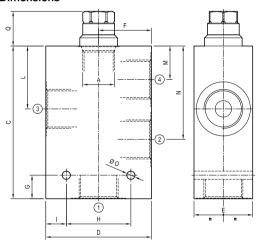
Logic element, pressure compensator, with dynamic load sense

Common cavity
Cartridge style in manifold

VRLA-D-C

OU.05 - K - X - Y - Z - W

Dimensions



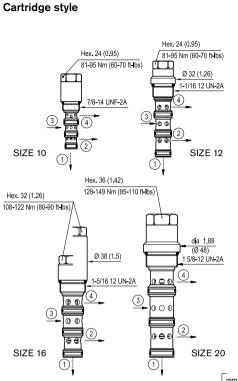
Technical data

Max inlet flow:	up to 230 I/min	(60 gpm)
Max priority flow:	up to 170 I/min	(45 gpm)
Max operating pres for steel body:	sure 350 bar	(5000 psi)
Max operating pres		(3000 psi)

To order only manifold see data sheet RE 18325-85



Cavity	Υ	PORT SIZE	Inlet Flow	Priority Flow					DIM	IENSIO	NS mm	(Inche	s)				
Α	Y	1 - 2 - 3 - 4	l/min (gpm)	I/min (gpm)	С	D	Е	F	G	Н	I	L	М	N	0	α	R
SIZE																	
08																	
SIZE	09	G 1/4	45	40	80 (3,15)	65 (2,56)	35 (1,38)	32,5 (1,28)	10 (0,39)	50 (1,97)	7,5 (0,30)	35 (1,38)	18 (0,71)	50 (1,97)	6,5 (0,26)	36,5	
10	02	G 3/8	(12)	2) (11)	80 (3,15)	65 (2,56)	35 (1,38)	32,5 (1,28)	10 (0,39)	50 (1,97)	7,5 (0,30)	35 (1,38)	18 (0,71)	50 (1,97)	6,5 (0,26)	(1,44)	
SIZE	04	G 3/4	100	80	125 (4.92)	80 (3.15)	40 (1.58)	40 (1.58)	20 (0.79)	55 (2.17)	12.5 (0.49)	53.5 (2.11)	28.5 (1.12)	79.5 (3.13)	7 (0.28)	30	
12	05	G 1	(26)	(21)	130 (5.12)	90 (3.54)	50 (1.97)	45 (1.77)	20 (0.79)	55 (2.17)	17.5 (0.69)	53.5 (2.11)	28.5 (1.12)	79.5 (3.13)	7 (0.28)	(1.18)	
SIZE	04	G 3/4	160	140	130 (5.12)	90 (3.54)	50 (1.97)	45 (1.77)	20 (0.79)	60 (2.36)	15 (0.59)	54.5 (2.15)	26 (1.02)	83 (3.27)	10.5 (0.41)	up to 70	
16	05	G 1	(42)	(37)	130 (5.12)	100 (3.94)	50 (1.97)	50 (1.97)	20 (0.79)	60 (2.36)	20 (0.79)	54.5 (2.15)	26 (1.02)	83 (3.27)	10.5 (0.41)	(2.76)	
SIZE	05	G1	230	170	175 (6.89)	120 (4.72)	60 (2.36)	60 (2.36)	18 (0.71)	75 (2.95)	22.5 (0.89)	72.5 (2.85)	32 (1.26)	114.5 (4.51)	11 (0.43)	50	
20	06	G1 1/4	(60)	(45)	175 (6.89)	120 (4.72)	60 (2.36)	60 (2.36)	18 (0.71)	75 (2.95)	22.5 (0.89)	72.5 (2.85)	32 (1.26)	114.5 (4.51)	11 (0.43)	(1.97)	



Tabl	le "K'	,		к			
DE	04	84	10	Х	85	Z	VRLA-10A-D
CARTRIDGE CODE	04	84	10	Χ	57	Z	VRLA-12A-D
DGE	04	84	10	Χ	27	Z	VRLA-16A-D
RTR	04	84	10	Х	58	Z	VRLA-20A-D
ŏ							

Х	LS Orifice D	iameter mm (inches)
05	0.5 (0.02)	
06	0.6 (0.02)	only for SIZE 10 and 16
07	0.7 (0.03)	only for SIZE 12
08	0.8 (0.03)	only for SIZE 10, 16 and 20
09	0.9 (0.04)	only for SIZE 10
10	1 (0.04)	only for SIZE 12, 16 and 20

CARTRIDGE TECHNICAL DATA

Common cavity: CA-10A-4N / CA-12A-4N / CA-16A-4N / CA-20A-4N

For other details see data sheet RE 18321-90, RE 18321-83,

RE 18321-84 and RE 18321-85

mm (inches)

Table "Z"

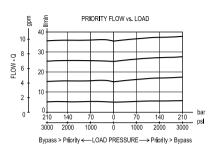
							S	PRING	iS					
	SIZE 08			SIZE 10			SIZE 12			s	IZE 16	s	IZE 20	
Z	Bias spring bar(psi)			Bias spring bar(psi)			Bias spring bar(psi)			Bias spring bar(psi)		Bias spring bar(psi)		
05				*5,5±20% (80)±20%						5,5±20% (80)±20%				
10				**10±15% (145)±15%			10±15% (145)±15%							
11										11±15% (160)±15%				
12												12±15% (175)±15%		
22										22±15% (320)±15%				

^{*} only for X=06 and X=09 versions

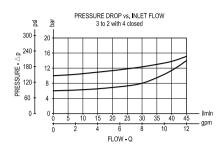
^{**} only for X=05 and X=08 versions

07

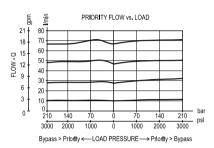
Performance graphs

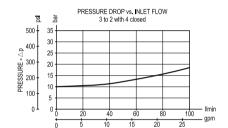






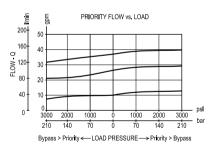
SIZE 12

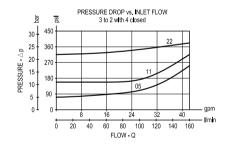




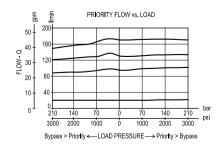
FLOW - Q

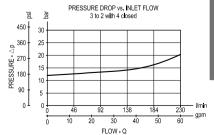
SIZE 16

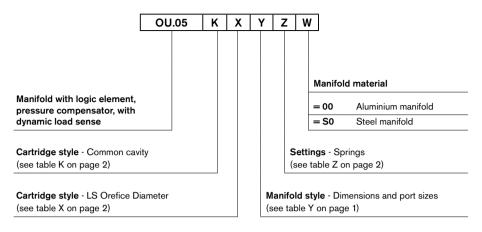




SIZE 20







Preferred types (readily available)

Туре	Material number	Туре	Material number
OU055707041000	R934003338		
OU052708051100	R934001469		
OU055808051200	R934000926	_	
OU058508021000	R934003574		

Further types available by request

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RE 18330-44/04.10 Replaces: RE 00199/11.07

Directional spool type, direct acting external pilot, external vent

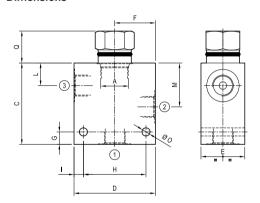
Common cavity

Cartridge style in manifold

VDSD-C

OU.07 - K - X - Y - Z - W

Dimensions



Technical data

roommour data		
Max flow:	ıp to 160 I/min	(43 gpm)
Max operating pressur for steel body:	re 350 bar	(5000 psi)
Max operating pressur	re 210 bar	(3000 psi)

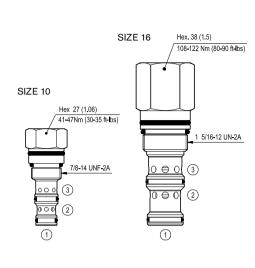
To order only manifold see data sheet RE 18325-85



Table "Y"

Cavity	Υ	PORT SIZE	Max Flow I/min					DIM	IENSIO	NS mm	(Inche	s)				
Α	Y	1 - 2 - 3	(gpm)	С	D	E	F	G	Н	I	L	М	N	0	a	R
SIZE																
80																
SIZE	02	G 3/8	50	65 (2.56)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.30)	18 (0.71)	35 (1.38)		6.5 (0.26)	25.5	
10	03	G 1/2	(13)	70 (2.76)	70 (2.76)	35 (1.38)	35 (1.38)	15 (0.59)	50 (1.97)	10 (0.39)	18 (0.71)	35 (1.38)		6.5 (0.26)	(1)	
SIZE																
12																
SIZE	04	G 3/4	160	100 (3.94)	90 (3.54)	50 (1.97)	45 (1.77)	20 (0.79)	60 (2.36)	15 (0.59)	26 (1.02)	54.5 (2.15)		10.5 (0.41)	49.5	
16	05	G 1	(4)	105 (4.13)	100 (3.94)	50 (1.97)	50 (1.97)	20 (0.79)	60 (2.36)	20 (0.79)	26 (1.02)	54.5 (2.15)		10.5 (0.41)	(1.95)	
SIZE																
20																

Cartridge style



Tabl	le "K'	,			K		
DE	04	77	22	Х	85	Z	VDSD-10A
SARTRIDGE CODE	04	77	22	Х	27	Z	VDSD-16A
DGE							
RTR							
CA							

Table "X"

х	O-Ring on pilot piston	
00	No O-Ring	
10	With O-Ring	

CARTRIDGE TECHNICAL DATA

Common cavity: CA-10A-3N / CA-16A-3N

For other details see data sheet RE 18320-79 and RE 18320-80 $\,$

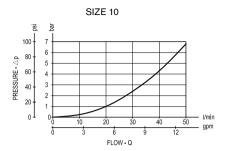
Table "Z"

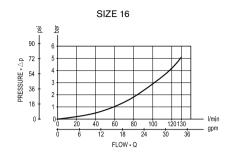
mm (inches)

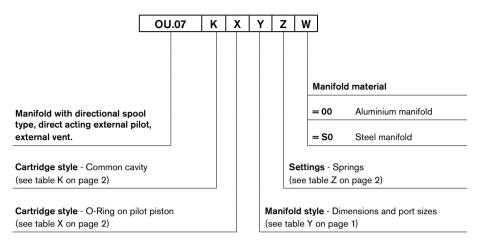
					S	PRING	s					
	SIZE 08		s	IZE 10	s	IZE 12		s	IZE 16	8	SIZE 20	
Z	Setting pressure bar(psi)		Setting pressure bar(psi)		Setting pressure bar(psi)			Setting pressure bar(psi)		Setting pressure bar(psi)		
05			5.5 ±20% (80 ±20%)					5 ±20% (73 ±20%)				
11			11.5 ±10% (167 ±10%)					11 ±10% (160 ±10%)				

07

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material number
OU0727000505S0	R934003578		

Further types available by request

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The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging. Subject to change.

1/4

RE 18330-45/04.10 Replaces: RE 00199/11.07

Directional spool type, direct acting external pilot, internal vent

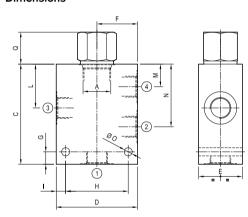
Common cavity

Cartridge style in manifold

VDSH-C

OU.08 - K - X - Y - Z - W

Dimensions



Technical data

Max flow: up	to 160 I/min	(43 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

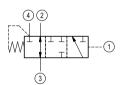
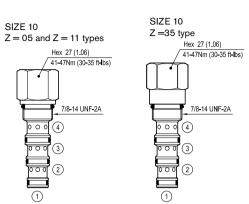


Table "Y"

Cavity	Υ	PORT SIZE	Max Flow I/min					DIM	IENSIO	NS mm	(Inche	s)				
Α	ľ	1 - 2 - 3 -4	(gpm)	С	D	Е	F	G	Н	I	L	М	N	0	a	R
SIZE																
80																
SIZE	09	G 1/4	40	80 (3.15)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.30)	35 (1.38)	18 (0.71)	50 (1.97)	7.5 (0.30)	31	
10	02	G 3/8	(11)	80 (3.15)	65 (2.56)	35 (1.38)	32.5 (1.28)	10 (0.39)	50 (1.97)	7.5 (0.30)	35 (1.38)	18 (0.71)	50 (1.97)	7.5 (0.30)	(1.22) max.	
SIZE																
12																
SIZE	04	G 3/4	160	130 (5.12)	90 (3.54)	50 (1.97)	45 (1.77)	20 (0.79)	60 (2.36)	15 (0.59)	54.5 (2.15)	26 (1.02)	83 (3.27)	10.5 (0.41)	50	
16	05	G 1	(43)	130 (5.12)	100 (3.94)	50 (1.97)	50 (1.97)	20 (0.79)	60 (2.36)	20 (0.79)	54.5 (2.15)	26 (1.02)	83 (3.27)	10.5 (0.41)	(1.97)	
SIZE																
20																

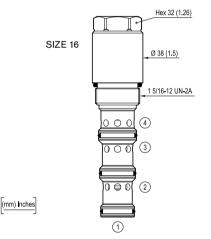




Tabl	le "K'	,			K		
DE	04	77	25	Х	85	Z	VDSH-10A
CARTRIDGE CODE	04	77	25	Х	27	Z	VDSH-16A
DGE							
RTRI							
Ö							

Table "X"

х	Adjustments	
00	Fixed setting	



CARTRIDGE TECHNICAL DATA

Common cavity: CA-10A-4N / CA-16A-4N

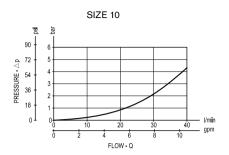
For other details see data sheet RE 18320-75 and RE 18320-85

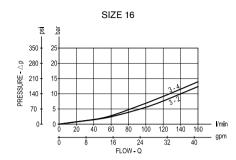
Table "Z"

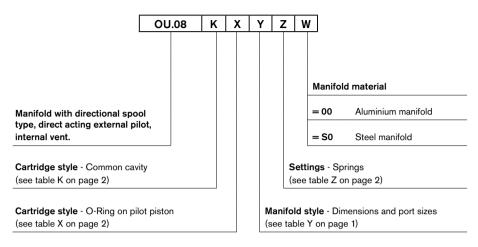
						s	PRING	s					
	SIZE 08		SIZE 10		SIZE 12		SIZE 16		SIZE 20				
Z	Setting pressure bar(psi)		Setting pressure bar(psi)			Setting pressure bar(psi)			Setting pressure bar(psi)		Setting pressure bar(psi)		
05			5.5 ±20% (80 ±20%)						5 ±20% (73 ±20%)				
11			11.5 ±10% (167 ±10%)						11 ±10% (160 ±10%)				
35			35 ±10% (508 ±10%)										

07

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material number
OU0827000505S0	R934003579		
		•	

Further types available by request

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RE 18331-40/04.10 Replaces: RE 00199/11.07

Relief, direct acting guided poppet type

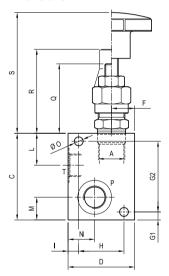
Special cavity

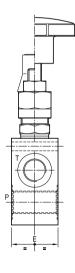
Cartridge style in manifold

VSC-30

05.13.01 - X - Y - Z

Dimensions





Technical data

Max flow: up to 30 l/min (8 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium.

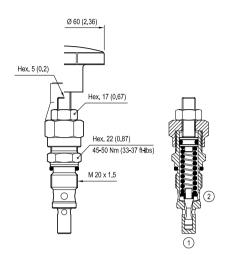
For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.



Table "Y"

Special Cavity	Υ	PORT SIZE		DIMENSIONS mm (Inches)													
Α		P-T	С	D	Е	F	G1	G2	Н	ı	L	М	N	0	a	R	s
	09	G 1/4	65 (2.56)	50 (1.97)	35 (1.38)	18 (0.71)	6 (0.24)	53 (2.09)	34 (1.34)	8 (0.32)	24 (0.95)	17 (0.67)	22 (0.87)	6.5 (0.26)	51 (2.01)	61 (2.40)	89 (3.50)
008	02	G 3/8	65 (2.56)	50 (1.97)	35 (1.38)	18 (0.71)	6 (0.24)	53 (2.09)	34 (1.34)	8 (0.32)	24 (0.95)	17 (0.67)	20 (0.79)	6.5 (0.26)	51 (2.01)	61 (2.40)	89 (3.50)
	03	G 1/2	65 (2.56)	50 (1.97)	35 (1.38)	18 (0.71)	6 (0.24)	53 (2.09)	34 (1.34)	8 (0.32)	24 (0.95)	17 (0.67)	18 (0.71)	6.5 (0.26)	51 (2.01)	61 (2.40)	89 (3.50)

Cartridge style



Cartridge code: 04.11.18 - X - 99 - Z

mm (inches)

Table "X"

х	ADJUSTMENTS								
03	Leakproof hex. socket screw								
04	Handknob and locknut								

OPTIONS									
Ordering code	Description								
11.04.23.003	Tamper resistant cap								

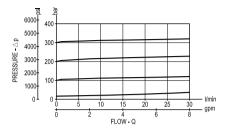
CARTRIDGE TECHNICAL DATA

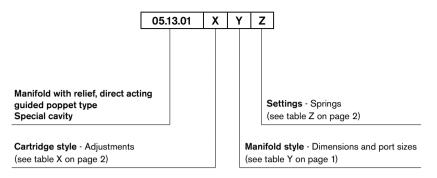
Special cavity: **008**For other details see data sheet RE 18318-23

Table "Z"

	T											
	SPRINGS											
Z	Adjust pressure range bar (psi)	Pressure increase bar (psi)	Standard setting bar (psi) Q = 5 l/min									
05	5-50 (75-725)	12 (174)	50 (725)									
10	30-100 (435-1450)	24 (348)	100 (1450)									
20	50-210 (725-3000)	47 (682)	200 (2900)									
35	100-350 (1450-5000)	82 (1189)	350 (5000)									

Performance graph





Preferred types (readily available)

051301030905000 R930001280 051301030910000 R930001281 051301030920000 R930001282 051301030935000 R930001283 051301030205000 R930001263 051301030210000 R930001264 051301030220000 R930001266 051301030235000 R930001269 051301030305000 R930001271 051301030310000 R930001274 051301030335000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288 051301040220000 R930001289	Туре	Material number
051301030920000 R930001282 051301030935000 R930001283 051301030205000 R930001263 051301030210000 R930001264 051301030220000 R930001266 051301030235000 R930001269 051301030305000 R930001271 051301030310000 R930001274 051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030905000	R930001280
051301030935000 R930001283 051301030205000 R930001263 051301030210000 R930001264 051301030220000 R930001266 051301030235000 R930001269 051301030305000 R930001271 051301030310000 R930001274 051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030910000	R930001281
051301030205000 R930001263 051301030210000 R930001264 051301030220000 R930001266 051301030235000 R930001269 051301030305000 R930001271 051301030310000 R930001274 051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030920000	R930001282
051301030210000 R930001264 051301030220000 R930001266 051301030235000 R930001269 051301030305000 R930001271 051301030310000 R930001274 051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030935000	R930001283
051301030220000 R930001266 051301030235000 R930001269 051301030305000 R930001271 051301030310000 R930001274 051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030205000	R930001263
051301030235000 R930001269 051301030305000 R930001271 051301030310000 R930001274 051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030210000	R930001264
0513010303305000 R930001271 051301030310000 R930001274 051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030220000	R930001266
051301030310000 R930001274 051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030235000	R930001269
051301030320000 R930001275 051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030305000	R930001271
051301030335000 R930001278 051301040205000 R930001287 051301040210000 R930001288	051301030310000	R930001274
051301040205000 R930001287 051301040210000 R930001288	051301030320000	R930001275
051301040210000 R930001288	051301030335000	R930001278
	051301040205000	R930001287
051301040220000 R930001289	051301040210000	R930001288
	051301040220000	R930001289

Туре	Material number
051301040235000	R930001290
051301040305000	R930001291
051301040320000	R930001292
051301040335000	R930001293

Further types available by request

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RE 18331-41/04.10 Replaces: RE 00199/11.07

Relief, direct acting guided poppet type

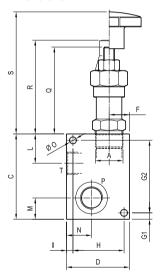
Special cavity

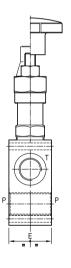
Cartridge style in manifold

VSC-80

05.13.02 - X - Y - Z

Dimensions





Technical data

Max flow:	up to	o 80 I/min	(21 gpm)
Max operating pr	essure:	210 bar	(3000 psi)

Standard manifolds in high strength aluminium.

For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.



Table "Y"

Special Cavity	Υ	PORT SIZE		DIMENSIONS mm (Inches)													
Α		P-T	С	D	Е	F	G1	G2	Н	I	L	М	N	0	a	R	s
	03	G 1/2	80 (3.15)	59 (2.32)	40 (1.58)	19 (0.75)	6 (0.24)	68 (2.68)	48 (1.89)	5 (0.20)	27.5 (1.08)	20 (0.79)	23.5 (0.93)	6.5 (0.26)	83 (3.27)	88 (3.47)	118 (4.65)
009	04	G 3/4	80 (3.15)	59 (2.32)	40 (1.58)	19 (0.75)	6 (0.24)	68 (2.68)	48 (1.89)	5 (0.20)	27.5 (1.08)	22 (0.87)	21 (0.83)	6.5 (0.26)	83 (3.27)	88 (3.47)	118 (4.65)

Cartridge style

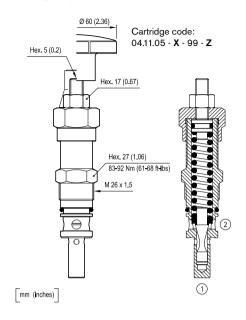


Table "X"

х	ADJUSTMENTS							
03	Leakproof hex. socket screw							
04	Handknob and locknut							

OPTIONS									
Ordering code	Description								
11.04.23.003	Tamper resistant cap								

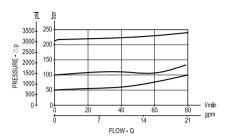
CARTRIDGE TECHNICAL DATA

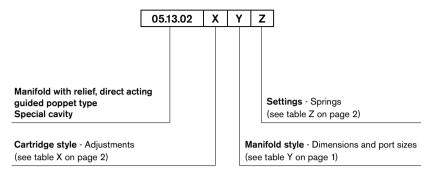
Special cavity: **009**For other details see data sheet RE 18318-25

Table "Z"

Z	Adjust pressure range bar (psi)	Pressure increase bar (psi)	Standard setting bar (psi) Q = 5 l/min	
05	5-50 (75-725)	6 (87)	50 (725)	
10	30-100 (435-1450)	12 (174)	100 (1450)	
20	80-250 (1160-3600)	27 (392)	200 (2900)	

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
051302030305000	R930001296		
051302030310000	R930001297		
051302030320000	R930001298		
051302030405000	R930001299		
051302030410000	R930001300		
051302030420000	R930001301		
051302040310000	R930001304		
051302040320000	R930001305		
051302040410000	R930001306		
051302040420000	R930001307		

Further types available by request

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RE 18331-43/04.10 Replaces: RE 00199/11.07

Relief, direct acting poppet type, differential area

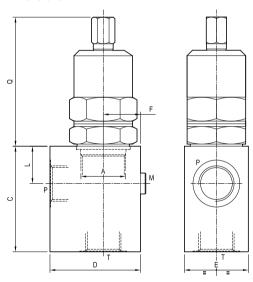
Special cavity

Cartridge style in manifold

VSDC-350

05.12.04 - X - Y - Z

Dimensions



Technical data

Max flow:	up to	350 I/min	(93 gpm)
Max operating pres	ssure:	210 bar	(3000 psi)

Standard manifolds in high strength aluminium.

For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.



Table "Y"

Special Cavity Y		PO SI	RT ZE						DIMEN	ISION	S mm (Inches)					
A		P-T	М	С	D	Е	F	G	Н	ı	L	М	N	0	a	R	s
	05	G 1	G 1/4	99 (3.90)	85 (3.35)	60 (2.36)	35 (1.38)				35 (1.38)				121 (4.76)		
004	06	G 1 1/4	G 1/4	99 (3.90)	85 (3.35)	60 (2.36)	35 (1.38)				35 (1.38)				121 (4.76)		

Cartridge style

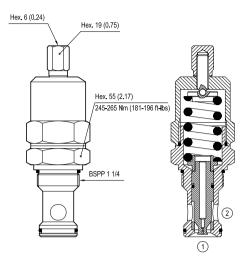


Table "X"

Х	ADJUSTMENTS										
03	Leakproof inner hex. socket screwv										

[mm (inches)] Cartridge code: 04.15.04 - X - 99 - Z

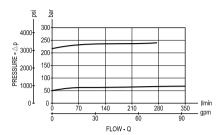
CARTRIDGE TECHNICAL DATA

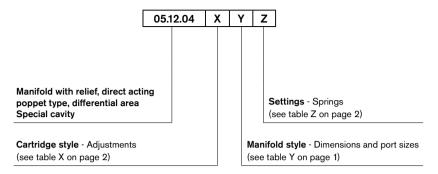
Special cavity: **004**For other details see data sheet RE 18318-22

Table "Z"

_	SPRINGS											
Z	Adjust pressure range bar (psi)	Pressure increase bar (psi)	Standard setting bar (psi) Q = 5 l/min									
05	15-50 (220-725)	9 (131)	50 (725)									
20	80-210 (1160-3000)	37 (537)	200 (2900)									

Performance graph





Preferred types (readily available)

Туре	Material number
051204030505000	R930000252
051204030520000	R930001259
051204030605000	R930001260
051204030620000	R930001261

Further types available by request

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RE 18331-44/04.10 Replaces: RE 00199/11.07

Relief, direct acting poppet type, pressure compensated

Special cavity

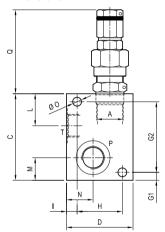
Cartridge style in manifold

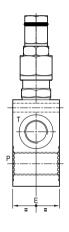
Hydraulics

VSC-30-CC

OR.10.27 - X - Y - Z

Dimensions





Technical data

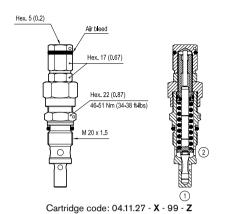
Max flow: up	to 30 I/min	(8 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)



Table "Y"

Special Cavity	Y	PORT SIZE	DIMENSIONS mm (Inches)														
Α		P-T	С	D	Е	F	G1	G2	Н	ı	L	М	N	0	a	R	s
	09	G 1/4	65 (2.56)	50 (1.97)	35 (1.38)	18 (0.71)	6 (0.24)	53 (2.09)	34 (1.34)	8 (0.32)	24 (0.95)	17 (0.67)	22 (0.87)	6.5 (0.26)	63 (2.48)		
800	02	G 3/8	65 (2.56)	50 (1.97)	35 (1.38)	18 (0.71)	6 (0.24)	53 (2.09)	34 (1.34)	8 (0.32)	24 (0.95)	17 (0.67)	20 (0.79)	6.5 (0.26)	63 (2.48)		
	03	G 1/2	65 (2.56)	50 (1.97)	35 (1.38)	18 (0.71)	6 (0.24)	53 (2.09)	34 (1.34)	8 (0.32)	24 (0.95)	17 (0.67)	18 (0.71)	6.5 (0.26)	63 (2.48)		

Cartridge style



[mm (inches)]

Table "X"

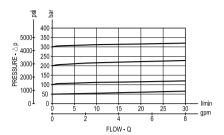
х	ADJUSTMENTS											
03	Leakproof inner hex. socket screw											

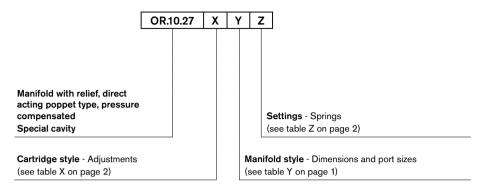
CARTRIDGE TECHNICAL DATA
Special cavity: 008 For other details see data sheet RE 18318-26

Table "Z"

			SPRINGS	
Z	Adjust pressure range bar (psi)	Pressure increase bar (psi)	Standard setting bar (psi) Q = 5 l/min	
05	5-50 (75-725)	11 (160)	50 (725)	
10	30-100 (435-1450)	23 (334)	100 (1450)	
20	50-210 (725-3000)	47 (682)	200 (2900)	
35	100-350 (1450-5000)	82 (1189)	350 (5000)	

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OR102703022000	R934003317		
		<u> </u>	
		_	
			

Further types available by request

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Manifolds with solenoid cartridges

Designation	Description	Code	Data sheet	Page
Solenoid operated valves, 2-way 2-positions	VED-CS-7A/8I-06	OS11K18YZW	18331-70	1249
Solenoid operated valves, 2-way 2-positions	VEI-CS-8A/8I-06	OS15K18YZW	18331-71	1253
Solenoid operated valves, 2-way 2-positions	VEI-CS-8A-10A	OS15K36YZW	18331-72	1257
Solenoid operated valves, 2-way 2-positions	VEI-CS-8A-12A	OS15K89YZW	18331-73	1261
Solenoid operated valves, 2-way 2-positions	VEI-CS-7A/8A-16A	OS15K75YZW	18331-74	1265
Solenoid operated valves, 3-way 2-positions	VED-CS-8I-32-06	OS13K51YZW	18331-75	1269
Solenoid operated valves, 3-way 2-positions	VED-CS-7I-32-06	OS13K77YZW	18331-76	1273
Solenoid operated valves, 4-way 2-positions	VED-CS-8I-42-06	OS14K58YZW	18331-77	1277
Solenoid operated valves, 4-way 2-positions	VED-CS-7I-42-09	OS14K78YZW	18331-78	1281
Solenoid operated valves, 4-way 3-positions	VED-CS-8I-43-06	OS14K58YZW	18331-79	1285
Solenoid operated valves, 4-way 3-positions	VED-CS-7I-43-09	OS14K78YZW	18331-80	1289
Solenoid operated valves, 2-way 2-positions special cavity	VEI-CS-8A-06	OS15K19YZW	18331-81	1293

Manifolds with solenoid cartridges

Designation	Description	Code	Data sheet	Page
Solenoid operated valves, 2-way 2-positions special cavity	VEI-CS-8A-09	OS15K17YZW	18331-82	1297
Solenoid operated valves, 2-way 2-positions special cavity	VEI-CS-7A/8A-12	OS15K21YZW	18331-83	1301



1/4

RE 18331-70/12.09 Replaces: RE 00199/11.07

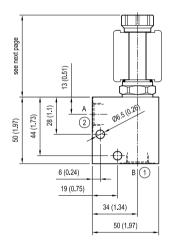
Solenoid operated valves 2-way 2-positions

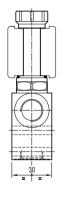
Common cavity size 08
Cartridge style in manifold

VED-CS-7A/8I-06

OS.11 - K - 18 - Y - Z - W

Dimensions







Cartridge schemes

monodirectional type	bidirectional type
	W
	WIDT

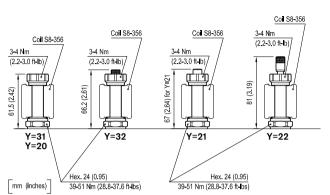
mm (inches)

Technical data

Max flow:	up to 1,5 I/min	(0,4 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

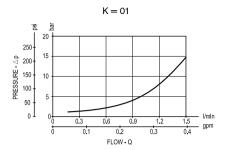
Dimensions

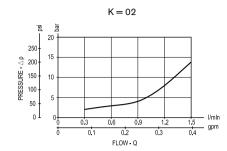


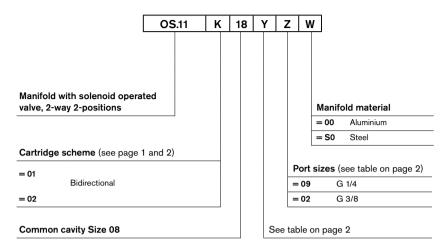
CARTRIDGE TECHNICAL DATA
Common cavity: CA-08A-2N
Filtration: 25 μm nominal or better
Minimum voltage required: 90% of nominal value
Coil : must be ordered separately see data sheet RE 18325-90
Mounting position: unrestricted
For other details see cartridge data sheet

OS11		- K -		18		- Y -		- 2	z -	- V	٧ -	CARTR	IDGE SCHEME
					R	ated Flo	w	Ports s	ize 1-2	Mate	erial	CARTR	IDGE SCHEWE
		monodir.	bidir.		1.5 l/min (0.4 gpm)			G 1/4	G 3/8	Aluminium	Steel	monodir.	bidir.
	OD11		01	18	31			09	02	00	S0		
	OD11		01	18	32			09	02	00	S0		MAIT
	OD11		02	18	20			09	02	00	S0		
	OD11		02	18	21			09	02	00	S0		
	OD11		02	18	22			09	02	00	S0		
CARTRIDGE CODE													
) E O													
RDG													
ART													

Performance graphs







Preferred types (readily available)

Гуре	Material number
OS110118310200	R934002748
OS110218200900	R934002750

Further types available by request

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RE 18331-71/12.09 Replaces: RE 00199/11.07

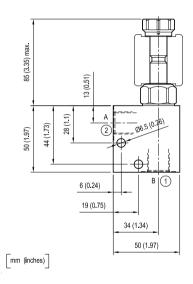
Solenoid operated valves 2-way 2-positions

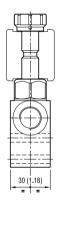
Common cavity size 08
Cartridge style in manifold

VEI-CS-8A/8I-06

OS.15 - K - 18 - Y - Z - W

Dimensions







Cartridge schemes

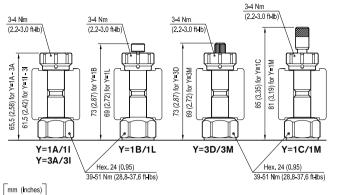
monodirectional type	bidirectional type
W • 1	W T
W • • • • • • • • • • • • • • • • • • •	W J
	W S I T
	W 8 47

Technical data

Max flow:	up to 40 I/min	(11 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

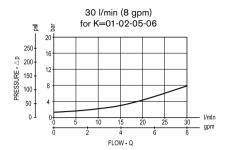
Dimensions

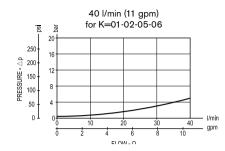


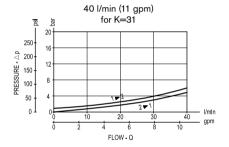
CARTRIDGE TECHNICAL DATA
Common cavity: CA-08A-2N
Filtration: 25 μm nominal or better
Minimum voltage required: 90% of nominal value
Coil: S8-356 must be ordered separately see data sheet RE 18325-90
Mounting position: unrestricted
For other details see cartridge data sheet

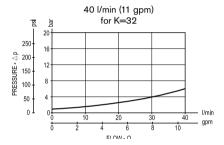
C	OS15	- K	(-	18	- \	Y -	- 2	Z -	- w	1 -	CARTRIDO	E SCHEME
					Rated	Flow	Ports s	size 1-2	Mate	erial	CARTRIDG	E SCHEME
		monodir.	bidir.			40 l/min (11 gpm)	G 1/4	G 3/8	Aluminium	Steel	monodir.	bidir.
	OD15	01	05	18	31	3A	09	02	00	S0		W T T
	OD15	01	05	18	ЗМ	3D	09	02	00	S0	MATT	
	OD15	02	06	18	11	1A	09	02	00	S0		
	OD15	02	06	18	1L	1B	09	02	00	S0	W V	W V
	OD15	02	06	18	1M	1C	09	02	00	S0		
CARTRIDGE CODE	OD15		31	18		3A	09	02	00	S0		w x 1 1
) H	OD15		31	18		3D	09	02	00	S0		
RID	OD15		32	18		1 A	09	02	00	S0		
ART	OD15		32	18		1B	09	02	00	S0		W 3 4
	OD15		32	18		1C	09	02	00	S0		

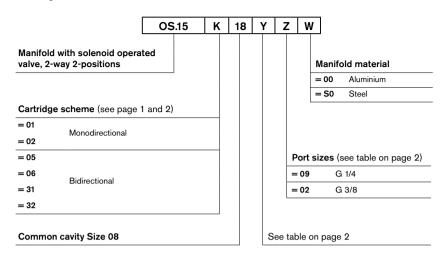
Performance graphs











Preferred types (readily available)

Туре	Material number
OS1501183l0200	R934002825
OS1501183I0900	R934002826
OS1501183M0200	R934002830
OS1502181 C0200	R934002835
OS1502181 C0900	R934002836
OS1502181 C09S0	R934002837
OS1502181I0200	R934002838
OS1502181I02S0	R934000418
OS150218110900	R934002839
OS1502181L0200	R934002842
OS1502181M0200	R934002844
OS1505183A0200	R934002868
OS1505183A0900	R934002872
OS1505183D0200	R934002876

Туре	Material number
OS1505183D09S0	R934000727
OS1505183l0200	R934002878
OS1505183I0900	R934002881
OS1505183L0200	R934002888
OS1516181A0200	R934002922
OS1506181A0900	R934002925
OS1506181B0200	R934002927
OS1506181C0200	R934002929
OS1506181C0900	R934002934
OS150618110900	R934002937
OS1531183A0200	R934002972
OS1531183A0900	R934002976
OS1532181A0200	R901132028
OS1532181A0900	R934002998

Further types available by request

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RE 18331-72/12.09 Replaces: RE 00199/11.07

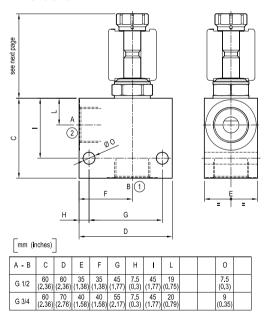
Solenoid operated valves 2-way 2-positions

Common cavity size 10
Cartridge style in manifold

VEI-CS-8A-10A

OS.15 - K - 36 - Y - Z - W

Dimensions



Technical data

Max flow:	up to 70 I/min	(19 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

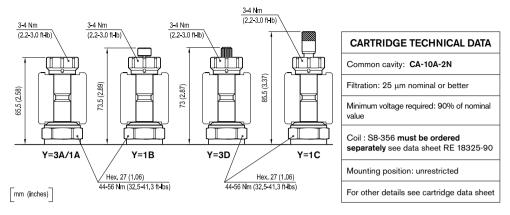
To order only manifold see data sheet RE 18325-85



Cartridge schemes

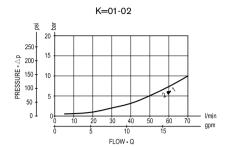
	ı
monodirectional type	bidirectional type
W 47	W T
W • • • •	W J
	W S I T
	W 8 47

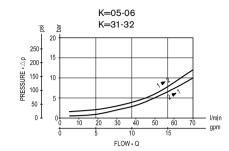
Dimensions

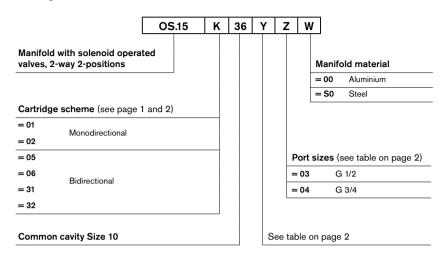


	- K -		36	- Y -	- 2	Z -	- w -		CARTRIDGE SCHEME	
			Rated Flow	Ports size 1-2		Material		CARTRIDGE SCHEME		
	monodir.	bidir.		70 l/min (19 gpm)	G 1/2	G 3/4	Aluminium	Steel	monodir.	bidir.
DD15	01	05	36	3A	03	04	00	S0	-W	W T
DD15	01	05	36	3D	03	04	00	S0		
DD15	02	06	36	1A	03	04	00	S0	W → ▼7	w \$\delta \delta
DD15	02	06	36	1B	03	04	00	S0		
DD15	02	06	36	1C	03	04	00	S0		
DD15		31	36	3A	03	04	00	S0		w \$ 1 4/
DD15		31	36	3D	03	04	00	S0		
DD15		32	36	1A	03	04	00	S0		
DD15		32	36	1B	03	04	00	S0		W
DD15		32	36	1C	03	04	00	S0		
	DD15 DD15 DD15 DD15 DD15 DD15 DD15 DD15	0D15	0D15 01 05 0D15 01 05 0D15 02 06 0D15 02 06 0D15 02 06 0D15 31 0D15 31 0D15 32	0D15 01 05 36 0D15 01 05 36 0D15 02 06 36 0D15 02 06 36 0D15 02 06 36 0D15 31 36 0D15 31 36 0D15 32 36 0D15 32 36 0D15 32 36	monodir. bidir. 70 l/min (19 gpm) 0.015 01 05 36 3A 0.015 01 05 36 3D 0.015 02 06 36 1A 0.015 02 06 36 1B 0.015 02 06 36 1C 0.015 31 36 3A 0.015 31 36 3A 0.015 32 36 1A	monodir. bidir. 70 l/min (19 gpm) G 1/2 0D15 01 05 36 3A 03 0D15 01 05 36 3D 03 0D15 02 06 36 1A 03 0D15 02 06 36 1B 03 0D15 02 06 36 1C 03 0D15 31 36 3A 03 0D15 31 36 3D 03 0D15 32 36 1A 03 0D15 32 36 1B 03	monodir. bidir. 70 l/min (19 gpm) G 1/2 G 3/4 0D15 01 05 36 3A 03 04 0D15 01 05 36 3D 03 04 0D15 02 06 36 1A 03 04 0D15 02 06 36 1B 03 04 0D15 02 06 36 1C 03 04 0D15 31 36 3A 03 04 0D15 31 36 3D 03 04 0D15 32 36 1A 03 04 0D15 32 36 1B 03 04	monodir. bidir. 70 l/min (19 gpm) G 1/2 G 3/4 Aluminium 0D15 01 05 36 3A 03 04 00 0D15 01 05 36 3D 03 04 00 0D15 02 06 36 1A 03 04 00 0D15 02 06 36 1B 03 04 00 0D15 02 06 36 1C 03 04 00 0D15 31 36 3A 03 04 00 0D15 31 36 3D 03 04 00 0D15 32 36 1A 03 04 00 0D15 32 36 1B 03 04 00	monodir. bidir. 70 l/min (19 gpm) G 1/2 G 3/4 Aluminium Steel 0D15 01 05 36 3A 03 04 00 S0 0D15 01 05 36 3D 03 04 00 S0 0D15 02 06 36 1A 03 04 00 S0 0D15 02 06 36 1B 03 04 00 S0 0D15 02 06 36 1C 03 04 00 S0 0D15 31 36 3A 03 04 00 S0 0D15 31 36 3D 03 04 00 S0 0D15 32 36 1A 03 04 00 S0 0D15 32 36 1B 03 04 00 S0 0D15 32 36 1B 03 04 00 <td> Rated Flow Ports size 1-2 Material Material Material Material Material Material Material Material Material Material Material Material Material Material Materi</td>	Rated Flow Ports size 1-2 Material Material Material Material Material Material Material Material Material Material Material Material Material Material Materi

Performance graphs







Preferred types (readily available)

-	
Туре	Material number
OS1502361B0300	R934003362
OS1502361B03S0	R934000379
OS1505363A0400	R934000617
OS1505363D03S0	R934000614
OS1505363D04S0	R934000593
OS1506361A0300	R901137967
OS1506361B0300	R901137969
OS1506361B03S0	R934000588
OS1506361B04S0	R934000589
OS1531363A03S0	R934001194
OS1531363D03S0	R934000436
OS1531363D04S0	R934000567
OS1532361B03S0	R934000583
OS1532361B04S0	R934000585

Further types available by request

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RE 18331-73/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 2-way 2-positions

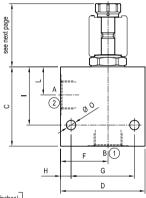
Common cavity size 12

Cartridge style in manifold

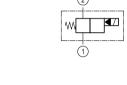
VEI-CS-8A-12A

OS.15 - K - 89 - Y - Z - W

Dimensions







mm (inches)

A - B	С	D	Е	F	G	Н	ı	L		0	
G 3/4	75 (2.95)	80 (3.15)	40 (1.58)	45 (1.77)	60 (2.36)	10 (0.39)	55 (2.17)	26.5 (1.04)		9 (0.35)	
G 1	75 (2.95)	80 (3.15)	50 (1.97)	45 (1.77)	60 (2.36)	10 (0.39)	55 (2.17)	26.5 (1.04)		9 (0.35)	

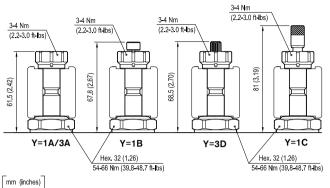
Cartridge schemes

monodirectional type	bidirectional type
W O T	W O T
W A	W J J
	W S T T
	1 1 1 1 1 1 1

Technical data

Max flow:	up to 150 I/min	(40 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

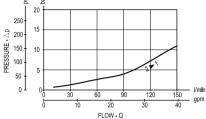


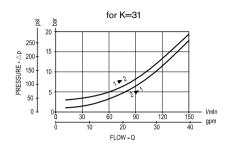
CARTRIDGE TECHNICAL DATA
Common cavity: CA-12A-2N
Filtration: 25 µm nominal or better
Minimum voltage required: 90% of nominal value
Coil: S8-356 must be ordered separately see data sheet RE 18325-90
Mounting position: unrestricted
For other details see cartridge data sheet

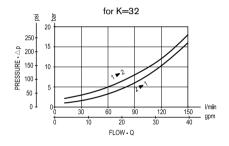
OS15		- K -		- К -		- K -		89	- Y -	- 2	<u>z</u> -	- w	-	CARTRIDGE SCHEME	
					Rated Flow	Ports s	ize 1-2	Mate	rial	CARTRIDG	E SCHEWE				
		monodir. bidir.		monodir. bidir.		monodir. bidir.			150 l/min (40 gpm)	G 3/4	G 1	Aluminium	Steel	monodir.	bidir.
	OD15	01	05	89	3A	04	05	00	S0						
	OD15	01	05	89	3D	04	05	00	S0	WI Y I					
	OD15	02	06	89	1A	04	05	00	S0						
CODE	OD15	02	06	89	1B	04	05	00	S0	w J	W D				
	OD15	02	06	89	1C	04	05	00	S0						
CARTRIDGE	OD15		31	89	3A	04	05	00	S0		W X T I				
XAR!	OD15		31	89	3D	04	05	00	S0						
	OD15		32	89	1A	04	05	00	S0						
	OD15		32	89	1B	04	05	00	S0		W 1844				
	OD15		32	89	1C	04	05	00	S0						

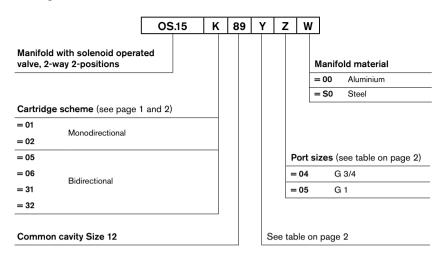
Performance graphs

for K=01-02 sd – par 20 -250 15









Preferred types (readily available)

Туре	Material number	Туре	Material number
OS1505893D05S0	R934000599		
OS1506891B05S0	R934000590		
OS1531893D05S0	R934000571		
OS1532891B05S0	R934000586		

Further types available by request

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RE 18331-74/12.09 Replaces: RE 00199/11.07

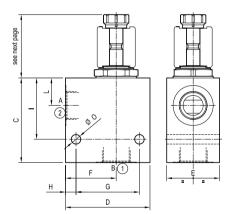
Solenoid operated valves 2-way 2-positions

Common cavity size 16
Cartridge style in manifold

VEI-CS-7A/8A-16A

OS.15 - K - 75 - Y - Z - W

Dimensions



mm (inches)												
A - B	С	D	Е	F	G	Н	I	L			0	
G 3/4	80 (3.15)	80 (3.15)	50 (1.97)	48 (1.89)	60 (2.36)	10 (0.39)	58 (2.28)	26 (1.02)			9 (0.35)	
G 1	80 (3.15)	90 (3.54)	50 (1.97)	53 (2.09)	60 (2.36)	20 (0.79)	58 (2.28)	26 (1.02)			9 (0.35)	

Technical data

Max flow:	up to 150 I/min	(40 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

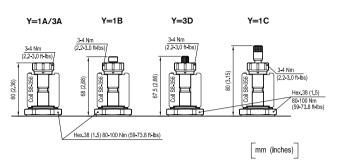
To order only manifold see data sheet RE 18325-85



Cartridge schemes

monodirectional type	bidirectional type
W T	W D
W A	W A
	w \$ 1 4/
	W 8 47

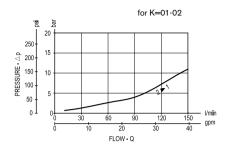


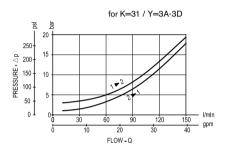


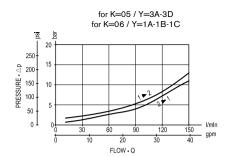
CARTRIDGE TECHNICAL DATA
Common cavity: CA-16A-2N
Filtration: 25 μm nominal or better
Minimum voltage required: 90% of nominal value
Coil : must be ordered separately (see data sheets RE 18325-90)
Mounting position: unrestricted

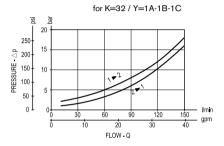
OS15		615 - K -		- K -		75	- Y		- Z	=	- w		CARTRIDG	E SCHEME
		monodir.	bidir.		150 l/min (40 gpm)	11000			Aluminium	Steel	monodir.	bidir.		
	OD15	01	05	75	3A		04	05	00	S0				
	OD15	01	05	75	3D		04	05	00	S0				
l	OD15	02	06	75	1A		04	05	00	S0	ſ			
CODE	OD15	02	06	75	1B		04	05	00	S0	W T			
GEC	OD15	02	06	75	1C		04	05	00	S0				
CARTRIDGE	OD15		31	75	3A		04	05	00	S0				
CAR	OD15		31	75	3D		04	05	00	S0		W Q I + I		
	OD15		32	75	1A		04	05	00	S0				
	OD15		32	75	1B		04	05	00	S0		W \&\ \		
	OD15		32	75	1C		04	05	00	S0				

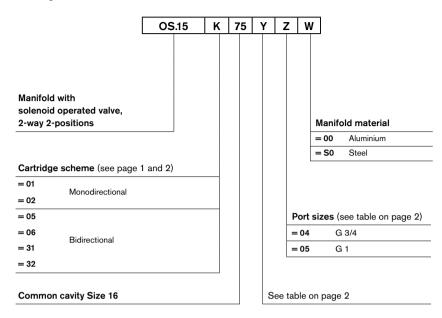
Performance graphs











Preferred types (readily available)

Гуре	Material number
OS1531753A0500	R934003386

Further types available by request

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RE 18331-75/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 3-way 2-positions

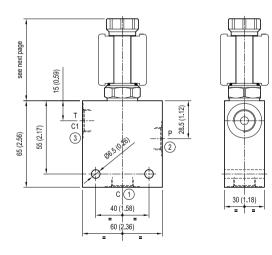
Common cavity size 08
Cartridge style in manifold

VED-CS-81-32-06

OS.13 - K - 51 - Y - Z - W

Dimensions

IMPORTANT NOTE: current data sheet refers to the VED series cartridge valves; by December 2010 a new data sheet will be published with reference to the new VEDS series of direct acting solenoid cartridge valves.





Cartridge schemes

monodirectional type	bidirectional type
	WITT
	W
	W
	W

mm (inches)

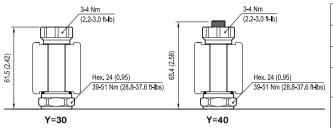
Technical data

Max flow: up to 10 1/min (3 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**. To order only manifold see data sheet RE 18325-85 07

mm (inches)



CARTRIDGE TECHNICAL DATA

Common cavity: CA-08A-3N

Filtration: 25 µm nominal or better

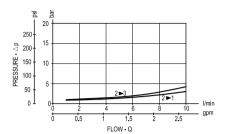
Minimum voltage required: 90% of nominal value

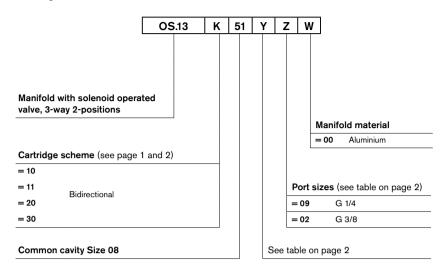
Coil: S8-356 must be ordered separately see data sheet RE 18325-90

Mounting position: unrestricted

S13	- K -		- K -		- K -		51	- Y -			- v	v -	CARTE	IDGE SCHEME
				Rated Flow		Ports size 1-2-3		Material		CARTRIDGE SCHEWE				
	monodir.	bidir.		10 l/min (3 gpm)	G 1/4	G 3/8	Aluminium		monodir.	bidir.				
OD13		10	51	30	09	02	00			WHY				
OD13		10	51	40	09	02	00			[VVV] - [-V]				
OD13		11	51	30	09	02	00							
OD13		11	51	40	09	02	00							
OD13		20	51	30	09	02	00			WHILE				
OD13		20	51	40	09	02	00							
OD13		30	51	30	09	02	00							
OD13		30	51	40	09	02	00							
	OD13 OD13 OD13 OD13 OD13 OD13	monodir. OD13 OD13 OD13 OD13 OD13 OD13 OD13 OD13	monodir. bidir. OD13 10 OD13 10 OD13 11 OD13 11 OD13 20 OD13 20 OD13 30	monodir. bidir. OD13 10 51 OD13 10 51 OD13 11 51 OD13 20 51 OD13 20 51 OD13 30 51	Monodir. bidir. Rated Flow 10 l/min (3 gpm) OD13 10 51 30 OD13 10 51 40 OD13 11 51 30 OD13 11 51 40 OD13 11 51 40 OD13 20 51 30 OD13 20 51 40 OD13 30 51 30	Rated Flow Ports 1-5	Rated Flow	Rated Flow Ports size 1-2-3 Aluminium	Rated Flow Ports size 1-2-3 Material	Rated Flow Ports size 1-2-3 Material CARTR Material Mate				

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OS131051300200	R934002763		
OS131051300900	R934002765		
OS131051400200	R934002767		
OS131051400900	R934002768		
OS131151400900	R934001324		
OS132051300200	R934002776		
OS132051300900	R934002777		
OS132051400200	R934002779		
OS132051400900	R934002781		
OS133051300200	R934002785		
OS133051300900	R934002787		
OS133051400900	R934002792		

Further types available by request

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RE 18331-76/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 3-way 2-positions

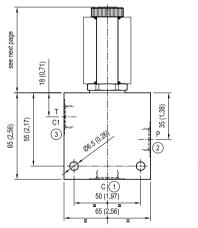
Common cavity size 10
Cartridge style in manifold

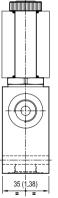
VED-CS-71-32-09

OS.13 - K - 77 - Y - Z - W

Dimensions

IMPORTANT NOTE: current data sheet refers to the VED series cartridge valves; by December 2010 a new data sheet will be published with reference to the new VEDS series of direct acting solenoid cartridge valves.







Cartridge schemes

•	
monodirectional type	bidirectional type
	W
	W
	W
	W

mm (inches)

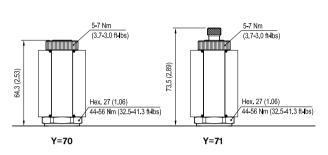
Technical data

Max flow: up to 20 I/min (6 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**. To order only manifold see data sheet RE 18325-85

07



CARTRIDGE TECHNICAL DATA

Common cavity: CA-10A-3N

Filtration: 25 μm nominal or better

Minimum voltage required: 90% of nominal value

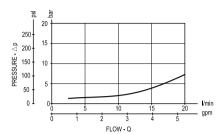
Coil: S7 must be ordered separately see data sheet RE 18325-90

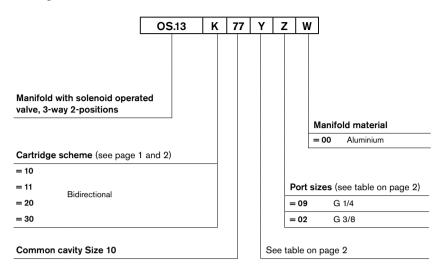
Mounting position: unrestricted

mm (inches)

C	OS13	- K -		77	- Y -	- 2	- Z -		- W -		CARTRIDGE SCHEME	
					Rated Flow	Ports size 1-2-3		Material		,		
		monodir.	bidir.		20 l/min (6 gpm)	G 1/4	G 3/8	Aluminium		monodir.	bidir.	
	OD13		10	77	70	09	02	00				
	OD13		10	77	71	09	02	00			VVV	
	OD13		11	77	70	09	02	00				
	OD13		11	77	71	09	02	00				
	OD13		20	77	70	09	02	00				
ODE	OD13		20	77	71	09	02	00			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
jë C(OD13		30	77	70	09	02	00				
CARTRIDGE CODE	OD13		30	77	71	09	02	00				
ART												

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OS131077700200	R934002769		
OS131077710200	R934002773	_	
OS132077700200	R934002783		
OS132077700900	R934002784		
OS133077700200	R934002794		
		_	
		_	
		_	
		_	

Further types available by request

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RE 18331-77/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 4-way 2-positions

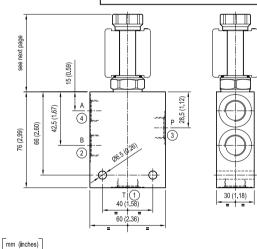
Common cavity size 08
Cartridge style in manifold

VED-CS-8I-42-06

OS.14 - K - 58 - Y - Z - W

Dimensions

IMPORTANT NOTE: current data sheet refers to the VED series cartridge valves; by December 2010 a new data sheet will be published with reference to the new VEDS series of direct acting solenoid cartridge valves.





Cartridge schemes

monodirectional type	bidirectional type
	WHX
	WHIXF

Technical data

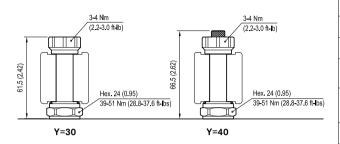
Max flow: up to 10 1/min (3 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**.

To order only manifold see data sheet RE 18325-85

07

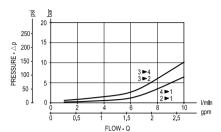


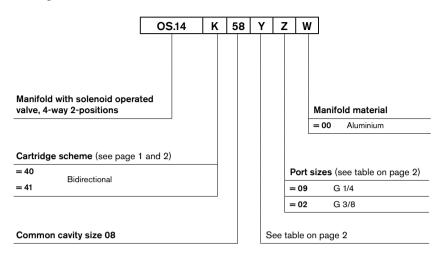
CARTRIDGE TECHNICAL DATA
Common cavity: CA-08A-4N
Filtration: 25 μm nominal or better
Minimum voltage required: 90% of nominal value
Coil: S8-356 must be ordered separately see data sheet RE 18325-90
Mounting position: unrestricted

[mm (inches)]

C	OS14	- К -		58	- Y -	- 2 Ports s	z - ize 1-2-	- v Mate	CARTI	RIDGE SCHEME
		monodir.	bidir.		10 l/min (3 gpm)			Aluminium	monodir.	bidir.
	OD14		40	58	30	09	02	00		
	OD14		40	58	40	09	02	00		
	OD14		41	58	30	09	02	00		WHY I
	OD14		41	58	40	09	02	00		
) E										
li O										
CARTRIDGE CODE										
ARTI										

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OS144058300200	R934002811		
OS144058300900	R901195776		
OS144058400200	R934002814		
		<u> </u>	

Further types available by request

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RE 18331-78/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 4-way 2-positions

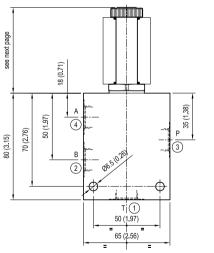
Common cavity size 10
Cartridge style in manifold

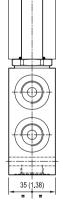
VED-CS-7I-42-09

OS.14 - K - 78 - Y - Z - W

Dimensions

IMPORTANT NOTE: current data sheet refers to the VED series cartridge valves; by December 2010 a new data sheet will be published with reference to the new VEDS series of direct acting solenoid cartridge valves.







Cartridge schemes

monodirectional type	bidirectional type
	WHIXE
	WHIN

mm (inches)

Technical data

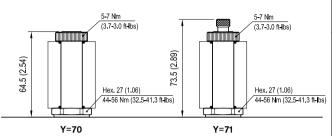
Max flow: up to 20 1/min (6 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**.

To order only manifold see data sheet RE 18325-85

07



CARTRIDGE TECHNICAL DATA

Common cavity: CA-10A-4N

Filtration: 25 µm nominal or better

Minimum voltage required: 90% of nominal value

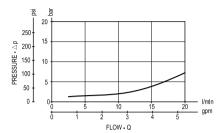
Coil : S7 must be ordered separately see data sheet RE 18325-90

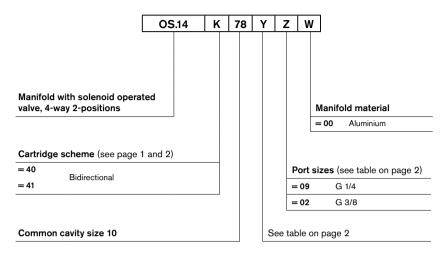
Mounting position: unrestricted

mm (inches)

C)S14	- H	(-	78	- Y - Rated Flow	- Z Ports s		- v		CARTRIDGE SCHEME	
		monodir.	bidir.		20 l/min (6 gpm)			Aluminium		monodir.	bidir.
	OD14		40	78	70	09	02	00			
	OD14		40	78	71	09	02	00			
	OD14		41	78	70	09	02	00			
	OD14		41	78	71	09	02	00			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
ODE											
CARTRIDGE CODE											
RIDG											
ART											

Performance graph





Preferred types (readily available)

ре	Material number
OS144078700200	R934002816

Further types available by request

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Subject to change.



RE 18331-79/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 4-way 3-positions

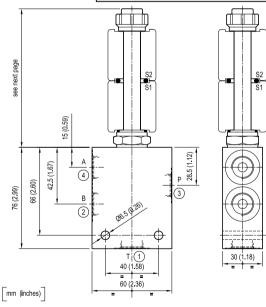
Common cavity size 08
Cartridge style in manifold

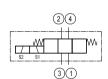
VED-CS-8I-43-06

OS.14 - K - 58 - Y - Z - W

Dimensions

IMPORTANT NOTE: current data sheet refers to the VED series cartridge valves; by December 2010 a new data sheet will be published with reference to the new VEDS series of direct acting solenoid cartridge valves.





Cartridge schemes

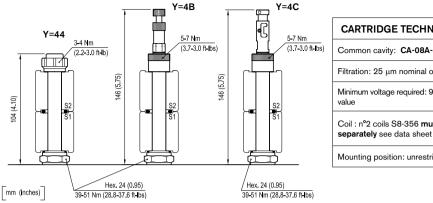
monodirectional type	bidirectional type
	\$2 S1 TT
	S2 S1

Technical data

Max flow: up to 10 1/min (3 gpm)

Max operating pressure: 210 bar (3000 psi)

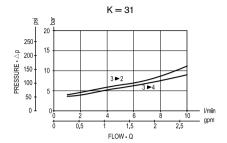
Standard manifolds in high strength **aluminium**. To order only manifold see data sheet RE 18325-85 07

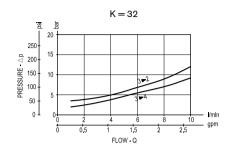


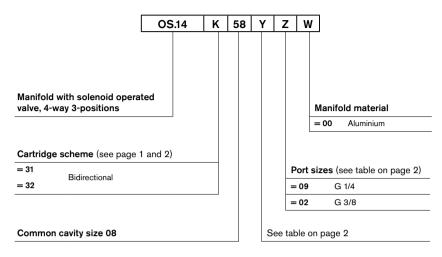
CA	RTRIDGE TECHNICAL DATA
Com	nmon cavity: CA-08A-4N
Filtra	ation: 25 µm nominal or better
Minir value	num voltage required: 90% of nominal
	: n°2 coils S8-356 must be ordered arately see data sheet RE 18325-90
Mou	nting position: unrestricted

()S14	- H	ζ-	58	- Y -	- 2	<u>z</u> -	- v	V -	CADT	DIDOE COLIEME
					Rated Flow	Ports s	ize 1-2- -4	Mate	erial	CARII	RIDGE SCHEME
		monodir.	bidir.		10 l/min (3 gpm)	G 1/4	G 3/8	Aluminium		monodir.	bidir.
	OD14		31	58	44	09	02	00			
	OD14		31	58	4B	09	02	00			
	OD14		31	58	4C	09	02	00		1	S2 S1
	OD14		32	58	44	09	02	00			S2 S1 T
	OD14		32	58	4B	09	02	00			
) SE	OD14		32	58	4C	09	02	00			
E C											
CARTRIDGE CODE											
ARTI											
0											

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material num
OS143158440200	R934002796		
OS143158440900	R934002797		
		_	
		_	

Further types available by request

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RE 18331-80/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 4-way 3-positions

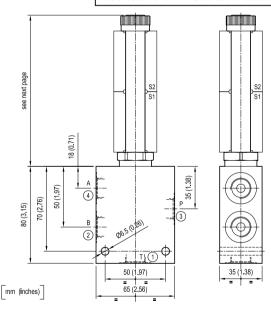
Common cavity size 10
Cartridge style in manifold

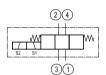
VED-CS-7I-43-09

OS.14 - K - 78 - Y - Z - W

Dimensions

IMPORTANT NOTE: current data sheet refers to the VED series cartridge valves; by December 2010 a new data sheet will be published with reference to the new VEDS series of direct acting solenoid cartridge valves.





Cartridge schemes

monodirectional type	bidirectional type
	S2 S1 T T
	\$2 S1 T

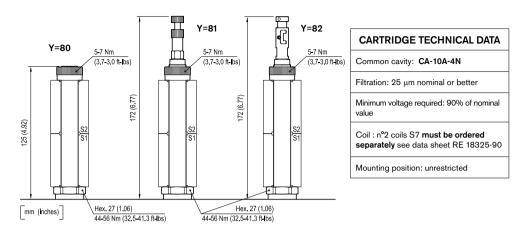
Technical data

Max flow: up to 20 1/min (6 gpm)

Max operating pressure: 210 bar (3000 psi)

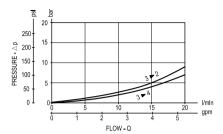
Standard manifolds in high strength **aluminium**. To order only manifold see data sheet RE 18325-85

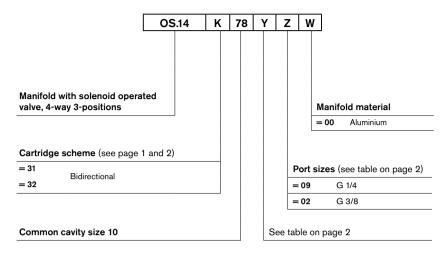
07



(DS14	- F	(-	78	Υ		Z - izo 1-9-	- V		CARTI	RIDGE SCHEME
		monodir. bidir.			20 l/min	Ports size 1-2- 3-4 G 1/4 G 3/8			1	monodir. bidir.	
	OD14		31	70	(5 gpm) 80	09	02	00			
	OD14			78							4400
	OD14		31	78	81	09	02	00			\$2 \$1 \$\frac{1}{3} \frac{1}{3} \frac{1} \frac{1}{3} \frac{1}{3} \frac{1}{3} \frac{1}{3} \frac{1}{3} \f
	OD14		31	78	82	09	02	00			S2 S1
	OD14		32	78	80	09	02	00			S2 S1 T X
	OD14		32	78	81	09	02	00			
ODE	OD14		32	78	82	09	02	00			
E C											
RIDG											
CARTRIDGE CODE											
	1										

Performance graph





Preferred types (readily available)

pe	Material number
OS143278800200	R934001147
-	

Further types available by request

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RE 18331-81/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 2-way 2-positions

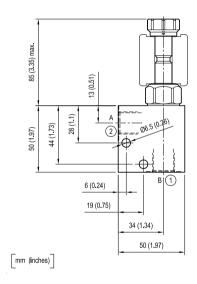
Special cavity

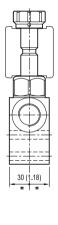
Cartridge style in manifold

VEI-CS-8A-06

OS.15 - K - 19 - Y - Z - W

Dimensions







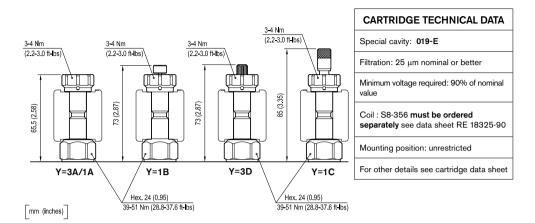
Cartridge schemes

monodirectional type	bidirectional type
W T	
W	
•	

Technical data

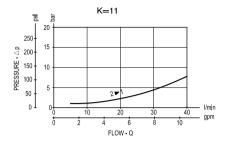
Max flow:	up to 40 I/min	(11 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

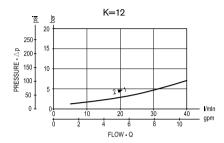
To order only manifold see data sheet RE 18325-85

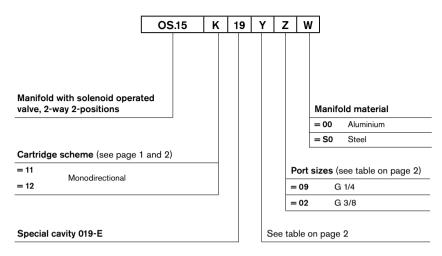


C	OS15	- K -		19	- Y -	_	Z -	- W		CARTRIDGE SCHEME	
		monodir. bidir.			Rated Flow 40 l/min (11 gpm)	Ports s G 1/4	l	Material Aluminium Steel		monodir. bidir.	
	OD15	11		19	3A	09	02	00	S0	WITTE	
	OD15	11		19	3D	09	02	00	S0		
	OD15	12		19	1A	09	02	00	S0		
	OD15	12		19	1B	09	02	00	S0		
	OD15	12		19	1C	09	02	00	S0	<u> </u>	
ODE											
CARTRIDGE CODE											
RIDG											
ART											

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material number
OS1512191A0200	R934002960		
OS1512191A02S0	R934000887		
OS1512191A09S0	R934002961		
	·		

Further types available by request

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RE 18331-82/12.09 Replaces: RE 00199/11.07

Solenoid operated valves 2-way 2-positions

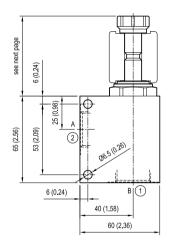
Special cavity

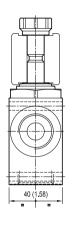
Cartridge style in manifold

VEI-CS-8A-09

OS.15 - K - 17 - Y - Z - W

Dimensions







Cartridge schemes

monodirectional type	bidirectional type
W • 1	W T
W • • • • • • • • • • • • • • • • • • •	W \$ 47
W • 1	
W 47	
	W81.47

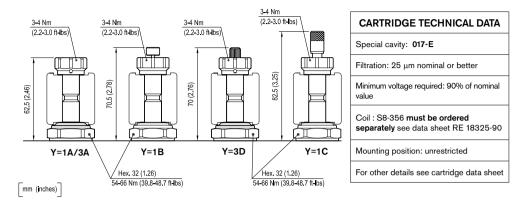
mm (inches)

Technical data

Max flow:	up to 70 I/min	(19 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

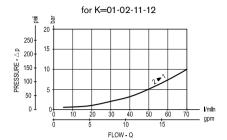
07

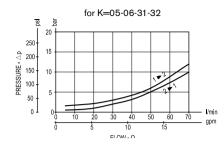


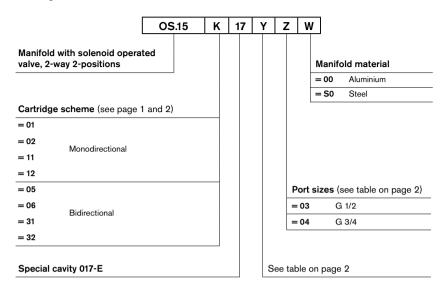
C	OS15	- P	‹ -	17	- Y -	- 2	Z -	- w	1 -	CARTRIRO	FOOLIEME
					Rated Flow	Ports s	size 1-2 Material		CARTRIDGE SCHEME		
		monodir.	bidir.		70 l/min (19 gpm)	G 1/2	G 3/4	Aluminium	Steel	monodir.	bidir.
	OD15	01	05	17	3A	03	04	00	S0		
	OD15	01	05	17	3D	03	04	00	S0	WY THE	
	OD15	02	06	17	1A	03	04	00	S0		
	OD15	02	06	17	1B	03	04	00	S0	W J J	w J
	OD15	02	06	17	1C	03	04	00	S0		
] BE	OD15	11		17	3A	03	04	00	S0	W TIME	
CODE	OD15	11		17	3D	03	04	00	S0	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
CARTRIDGE	OD15	12		17	1A	03	04	00	S0		
RTR	OD15	12		17	1B	03	04	00	S0		
S	OD15	12		17	1C	03	04	00	S0		
	OD15		31	17	3A	03	04	00	S0		W 2 1 4/
	OD15		31	17	3D	03	04	00	S0		W ALL
	OD15		32	17	1A	03	04	00	S0		
	OD15		32	17	1B	03	04	00	S0		W 3 4/
	OD15		32	17	1C	03	04	00	S0		

. .

Performance graphs







Preferred types (readily available)

Туре	Material number	
OS1501173D0400	R934000429	
OS1502171B0300	R934001259	
OS1502171 C0400	R934002832	
OS1505173A0300	R901201266	
OS1505173A0400	R934002859	
OS1505173B0300	R901100629	
OS1505173D0300	R934002863	_
OS1505173D0400	R934002865	_
OS1506171A0300	R934002901	_
OS1506171A0400	R934002904	_
OS1506171B0300	R934002906	_
OS1506171B0400	R934002909	_
OS1506171C0300	R934002911	_
OS1506171C0400	R934002917	_
OS1531173A0300	R934002963	_

Туре	•	Material number
OS1	532171 A0300	R934002987
OS1	532171 A0400	R934002991
OS1	532171B0400	R934002887
OS1	532171B04S0	R934002938
OS1	532171 C0300	R934002995

Further types available by request

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RE 18331-83/12.09
Replaces: RE 00199/11.07

Solenoid operated valves 2-way 2-positions

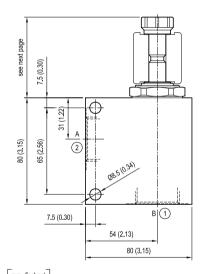
Special cavity

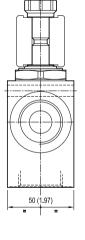
Cartridge style in manifold

VEI-CS-7A/8A-12

OS.15 - K - 21 - Y - Z - W

Dimensions







Cartridge schemes

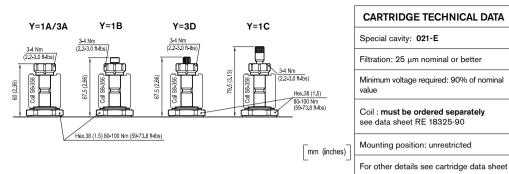
monodirectional type	bidirectional type
W • 1	W T
W • • • •	W T
W • ¶ 7	
W 47	
	W81147

mm (inches)

Technical data

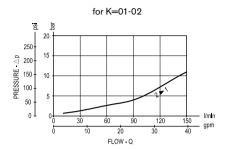
Max flow:	up to 150 I/min	(40 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

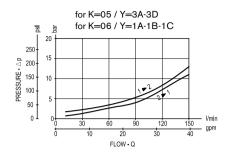
To order only manifold see data sheet RE 18325-85

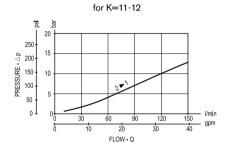


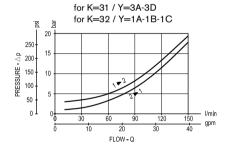
C)S15	- K	(-	21	- \	<i>(</i> -	- 2	<u>z</u> -	- w	-	CARTRIDO	E SCHEME
					Rated	Flow	Ports s	ize 1-2	Mate	rial	CARTRIDG	E SCHEME
		monodir.	bidir.		150 l/min (40 gpm)		G 3/4	G 1	Aluminium	Steel	monodir.	bidir.
	OD15	01	05	21	3A		04	05	00	S0		
	OD15	01	05	21	3D		04	05	00	S0	WATTE.	***
	OD15	02	06	21	1A		04	05	00	S0		
	OD15	02	06	21	1B		04	05	00	S0	W T	w \$\dag{\Pi}
	OD15	02	06	21	1C		04	05	00	S0		
DE	OD15	11		21	3A		04	05	00	S0	W D T	
CARTRIDGE CODE	OD15	11		21	3D		04	05	00	S0	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
DGE	OD15	12		21	1A		04	05	00	S0		
RTR	OD15	12		21	1B		04	05	00	S0		
S	OD15	12		21	1C		04	05	00	S0	<u> </u>	
	OD15		31	21	3A		04	05	00	S0		W 2 1 4/
	OD15		31	21	3D		04	05	00	S0		W ALL
	OD15		32	21	1A		04	05	00	S0		
	OD15		32	21	1B		04	05	00	S0		W
	OD15		32	21	1C		04	05	00	S0		

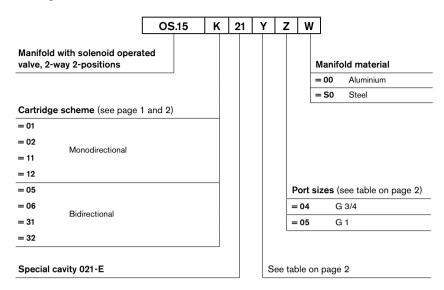
Performance graphs











Preferred types (readily available)

Туре	Material number	Туре	Material number
OS1502211A0400	R394002850	OS1532211C0400	R934003005
OS1502211A0500	R394002851		
OS1502211C0500	R394002853		
OS1505213A0400	R394002893		
OS1505213A0500	R394002894		
OS1505213A05S0	R394003493		
OS1506211A0400	R394002943		
OS1506211A0500	R394002946		
OS1506211B0500	R394002950		
OS1506211C0400	R394002951		
OS1506211C04S0	R394002953		
OS1506211C0500	R394002954		
OS1531213A0400	R394002884		
OS1531213A04S0	R394003031		
OS1532211A0500	R394003003		

Further types available by request

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Manifolds with emergency by-pass screw and solenoid cartridges

Designation	Description	Code	Data sheet	Page
Solenoid operated valves, 2-way 2-positions normally closed	VED-CE-7A/8I-06	OE11K18YZW	18332-10	1307
Solenoid operated valves, 2-way 2-positions normally closed	VEI-CE-8A/8I-06	OE15K18YZW	18332-11	1311
Solenoid operated valves, 2-way 2-positions	VEI-CN-8A/8I-06	OE17K18YZW	18332-12	1315
Solenoid operated valves, 2-way 2-positions normally closed special cavity	VEI-CE-8A-12	OE15K21YZW	18332-13	1319
Solenoid operated valves, 2-way 2-positions normally closed special cavity	VEI-CE-8A-09	OE15K17YZW	18332-14	1323



1/4

RE 18332-10/12.09 Replaces: RE 00199/11.07

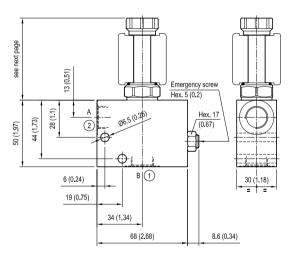
Solenoid operated valves 2-way 2-positions, normally closed

Common cavity size 08 in emergency manifold

VED-CE-7A/8I-06

OE.11 - K - 18 - Y - Z - W

Dimensions





Cartridge schemes

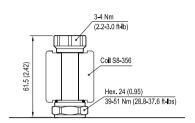
monodirectional type	bidirectional type
	W

mm (inches)

Technical data

Max flow:	up to 1,5 I/min	(0,4 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



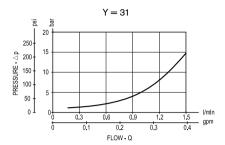
[mm (inches)]

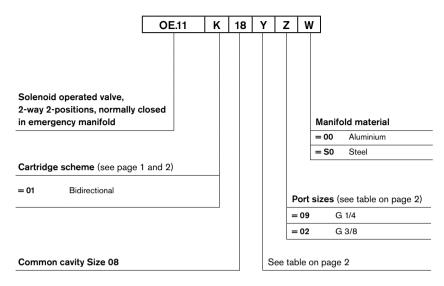
CARTRIDGE TECHNICAL DATA
Common cavity: CA-08A-2N
Filtration: 25 µm nominal or better
Minimum voltage required: 90% of nominal value
Coil: must be ordered separately see data sheet RE 18325-90
Mounting position: unrestricted

OE11	- P	- K -			- Y -		- 2	<u>z</u> -	- W	ı -	CARTRIDGE SCHEME	
						Ports size 1-2		Mate	erial	CARTRIDGE SCHEME		
	monodir.	bidir.		1.5 l/min (0.4 gpm)	15 l/min (4 gpm)	25 l/min (7 gpm)	G 1/4	G 3/8	Aluminium	Steel	monodir.	bidir.
OD1	1	01	18	31			09	02	00	S0		
ODE												
JE C												
RIDG												
ART												
CARTRIDGE CODE												

07

Performance graph





Preferred types (readily available)

ре	Material number
OE110118310900	R934001550

Further types available by request

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Subject to change.



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RE 18332-11/12.09 Replaces: RE 00199/11.07

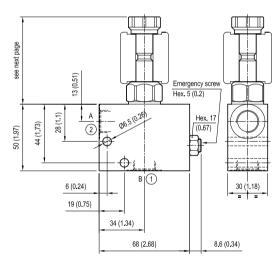
Solenoid operated valves 2-way 2-positions, normally closed

Common cavity size 08 in emergency manifold

VEI-CE-8A/8I-06

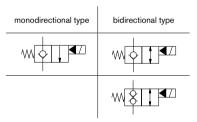
OE.15 - K - 18 - Y - Z - W

Dimensions





Cartridge schemes

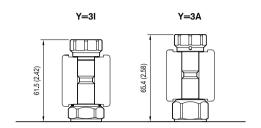


mm (inches)

Technical data

Max flow:	up to 40 I/min	(11 gpm)	
Max operating pressure for steel body:	350 bar	(5000 psi)	
Max operating pressure for aluminium body:	210 bar	(3000 psi)	

To order only manifold see data sheet RE 18325-85

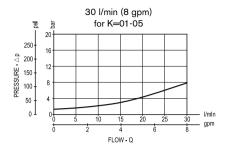


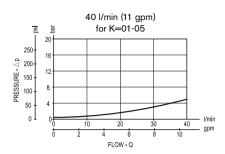
mm (inches)

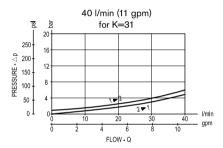
CARTRIDGE TECHNICAL DATA
Common cavity: CA-08A-2N
Filtration: 25 μm nominal or better
Minimum voltage required: 90% of nominal value
Coil: S8-356 must be ordered separately see data sheet RE 18325-90
Mounting position: unrestricted
For other details see cartridge data sheet
Minimum voltage required: 90% of nominal value Coil: S8-356 must be ordered separately see data sheet RE 18325-90 Mounting position: unrestricted

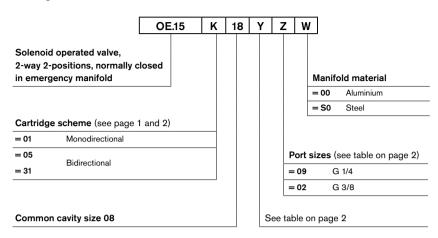
C)E15	- K - 18		- K - 18 - Y Z - Rated Flow Ports size		- W		CARTRIDGE SCHEME				
		monodir.	bidir.		30 l/min (8 gpm)	40 l/min (11 gpm)	G 1/4	G 3/8	Aluminium	Steel	monodir.	bidir.
	OD15	01	05	18	31	3A	09	02	00	S0	W D T	
												\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	OD15		31	18		3A	09	02	00	S0		
												\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
CARTRIDGE CODE												
) H C												
RBC												
ART												

Performance graph









Preferred types (readily available)

Туре	Material number
OE1501183A0200	R934001571
OE1501183I0200	R934001572
OE1501183I0900	R934001573

Further types available by request

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RE 18332-12/12.09 Replaces: RE 00199/11.07

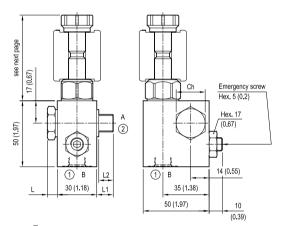
Solenoid operated valves 2-way 2-positions

Common cavity size 08 in emergency manifold

VEI-CN-8A/8I-06

OE.17 - K - 18 - Y - Z - W

Dimensions



mm (inches)

7.5 (0.3)	14 (0.55)	10.9 (0.43)	22 (0.87)		G 1/4	30 (22)
8.5 (0.34)	15 (0.59)	11.9 (0.47)	22 (0.87)		G 3/8	60 (44)
L	L1	L2	Ch		Ports Size	Tightening Torque Nm (ft-lb)

Technical data

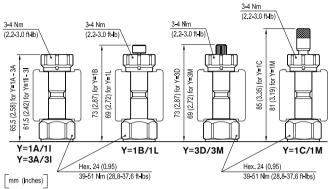
Max flow:	up to 40 I/min	(11 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



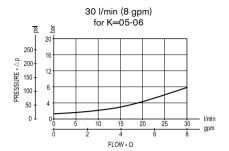
Cartridge schemes

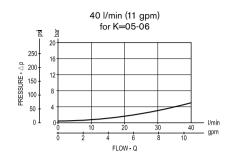
monodirectional type	bidirectional type
	W D
	W
	W S I T
	W 8 47

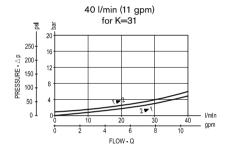


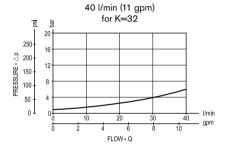
(DE17	- K -		18	- ١	Y -	- 2	Z -	- W	-	CARTRIRC	E SCHEME
					Ratec	Flow	Flow Ports size 1-2		Material		CARTRIDGE SCHEME	
		monodir.	bidir.		30 l/min (8 gpm)	40 l/min (11 gpm)	G 1/4	G 3/8	Aluminium	Steel	monodir.	bidir.
	OD15		05	18	31	3A	09	02	00	S0		W T T
	OD15		05	18	3M	3D	09	02	00	S0		I WILLIAM
	OD15		06	18	11	1A	09	02	00	S0		
	OD15		06	18	1L	1B	09	02	00	S0		W J D
	OD15		06	18	1M	1C	09	02	00	S0		
ODE	OD15		31	18		3A	09	02	00	S0		W X T I
li O	OD15		31	18		3D	09	02	00	S0		
CARTRIDGE CODE	OD15		32	18		1A	09	02	00	S0		ı
ART	OD15		32	18		1B	09	02	00	S0		W
	OD15		32	18		1C	09	02	00	S0		

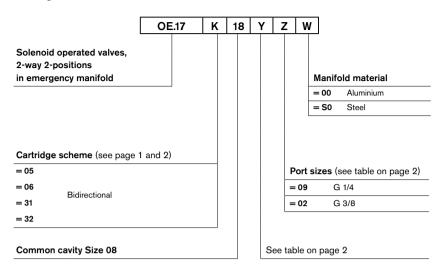
Performance graphs











Preferred types (readily available)

Туре	Material number	Туре	Material number
OE1705183A0200	R934001669		
OE1705183A0900	R934001670		
OE1705183I0200	R934001672		
OE1731183A0200	R934001674		
OE1732181A0200	R934001676		
-			

Further types available by request

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1/4

RE 18332-13/12.09 Replaces: RE 00199/11.07

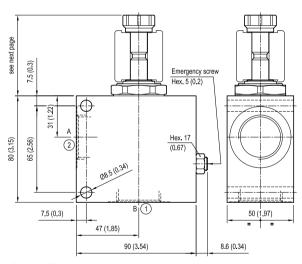
Solenoid operated valves 2-way 2-positions, normally closed

Special cavity in emergency manifold

VEI-CE-8A-12

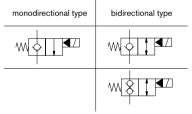
OE.15 - K - 21 - Y - Z - W

Dimensions





Cartridge schemes

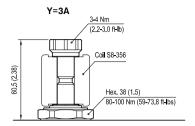


mm (inches)

Technical data

Max flow:	up to 150 I/min	(40 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85

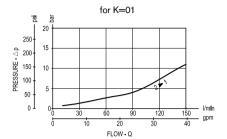


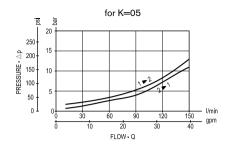
mm (inches)

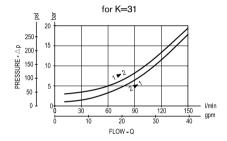
CARTRIDGE TECHNICAL DATA Special cavity: 021-E Filtration: 25 µm nominal or better Minimum voltage required: 90% of nominal value Coil: must be ordered separately see data sheet RE 18325-90 Mounting position: unrestricted For other details see cartridge data sheet

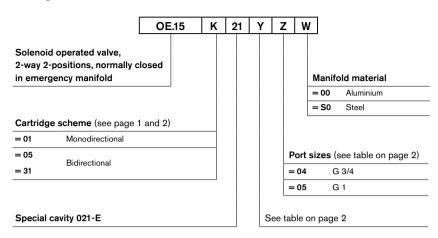
C	DE15	- H	(-	21	- Y	/ -	- 2	<u>?</u> -	- W	ı -	CARTRIDGE SCHEME	
					Rated	Flow	Ports s	ize 1-2	Mate	erial		
		monodir.	bidir.		150 l/min (40 gpm)		G 3/4	G 1	Aluminium	Steel	monodir.	bidir.
	OD15	01	05	21	3A		04	05	00	S0	W TIME	
											MAIN	
	OD15		31	21	3A		04	05	00	S0		M 2 1 4/
CARTRIDGE CODE												
) E												
RIDG												
ART												

Performance graphs









Preferred types (readily available)

Туре	Material number	Туре	Material number
OE1501213A0500	R934001575		
OE1505213A0500	R934001603		
OE1531213A0500	R934001647		
			

Further types available by request

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RE 18332-14/12.09 Replaces: RE 00199/11.07

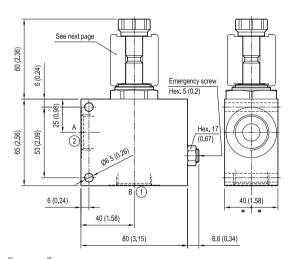
Solenoid operated valves 2-way 2-positions, normally closed

Special cavity in emergency manifold

VEI-CE-8A-09

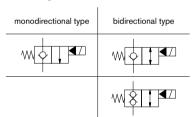
OE.15 - K - 17 - Y - Z - W

Dimensions





Cartridge schemes

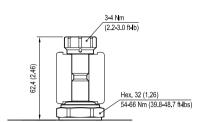


[mm (inches)]

Technical data

Max flow:	up to 70 I/min	(19 gpm)
Max operating pressure for steel body:	350 bar	(5000 psi)
Max operating pressure for aluminium body:	210 bar	(3000 psi)

To order only manifold see data sheet RE 18325-85



CARTRIDGE TECHNICAL DATA

Special cavity: 017-E

Filtration: 25 µm nominal or better

Minimum voltage required: 90% of nominal value

Coil: S8-356 must be ordered separately see data sheet RE 18325-90

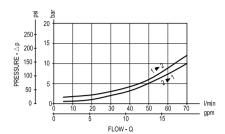
Mounting position: unrestricted

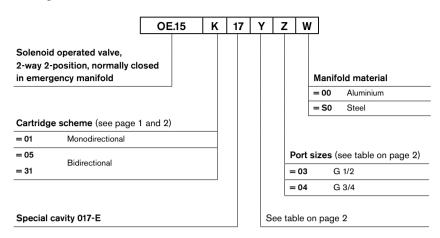
For other details see cartridge data sheet

[mm (inches)]

C	DE15	- 14	(-	17	- Y - Rated Flow	- z - Ports size 1-2		- w - Material		CARTRIDG	E SCHEME
		monodir.	bidir.		70 l/min (19 gpm)	G 1/2	G 3/4	Aluminium	Steel	monodir.	bidir.
	OD15	01	05	17	3A	03	04	00	S0	W	W TIM
	OD15		31	17	3A	03	04	00	S0		
CARTRIDGE CODE											
) H											
RIDG											
ART											
0											

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OE1501173A0300	R934001569		
OE1501173A0400	R934001570		
OE1505173A0300	R901204289		
OE1505173A0400	R934001585		
OE1531173A0300	R934001632		
OE1531173A0400	R934001635		
			

Further types available by request

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Subject to change.

Standard multi-function manifolds

Designation	Description	Code	Data sheet	Page
Relief valve with solenoid by-pass	VEI8A-VSBN-08A	OLKYZW00_19_20_VSBN	18332-40	1329
Relief valve with solenoid by-pass	VEI8A-VS30	OLKYZW00_19_20_VS30	18332-41	1333
Solenoid operated ventable relief valve	VSP-19-VEI8A	OLKYZW00_27_28	18332-42	1337
Solenoid operated ventable relief valve	VSP-25-VEI8A	OLKYZW00_29_30	18332-43	1341
Standard integrated circuits for single-acting cylinder	VEI8A-VU-VS-ST-06	OLKYZW00_51_52_ST-06	18332-44	1345
Standard integrated circuits for single-acting cylinder	VEI-VCDCBL-8A-06	OL17K18YZW	18332-45	1349

RE 18332-40/12.09

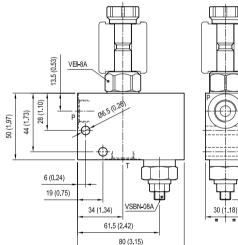
1/4 Replaces: RE 00199/11.07

Standard integrated circuits relief valve with solenoid by-pass

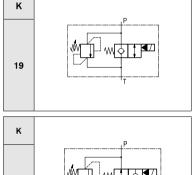
VEI8A-VSBN-08A

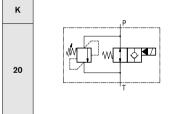
OL - K - Y - Z - W - 00

Dimensions









mm (inches)

Technical data

Max flow: up to 20 I/min (5 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium.

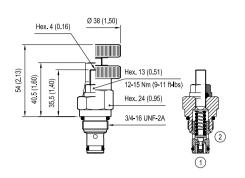
For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Weight: 0.5 kg (1.1 lbs)

These integrated circuit contains one relief valve type VSBN-08A operating from P to T and one solenoid valve type VEI-8A (see next page).

07

VSBN-08A Cartridge valve (code 04.11.49.X.56.Z)



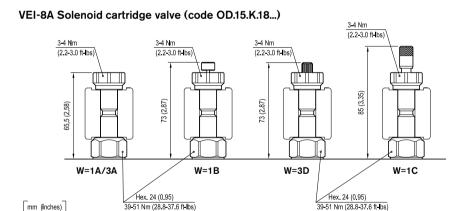
		1						
Z		VSBN-08A SETTING						
		Adj. pressure range bar (psi)	Press. increase bar/turn (psi/turn)	Std. setting bar (psi) (Q=5 l/min)				
	04	35-140 (500-2000)	50 (725)	100 (1450)				
	07	105-210 (1500-3000)	79 (1145)	200 (2900)				
1 1 1	10	175-350 (2500-5000)	170 (2465)	350 (5000)				
	08	35-350 (500-5000)	72 (1044)	200 (2900)				
11 11								
	z	04 07 10 08	Adj. pressure range bar (psi) 04 35-140 (500-2000) 07 105-210 (1500-3000) 10 175-350 (2500-5000) 08 35-350 (500-5000)	Adj. pressure range bar/turn (psi/turn) 04 35-140 (500-2000) 50 (725) 07 105-210 (1500-3000) 79 (1145) 10 175-350 (2500-5000) 170 (2465) 08 35-350 (500-5000) 72 (1044)				

ADJUSTMENTS	OPTIONS	
Leakproof hex. socket screw		
Handknob and locknut		Ordering code 11.04.23.002

mm (inches)

VSBN-08A TECHNICAL DATA

See table "Z", for other details see data sheet RE 18318-04

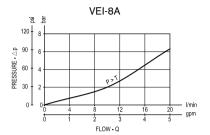


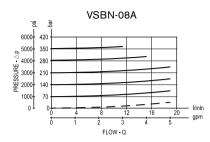
w	MANUAL OVERRIDE OPTIONS					
	K = 19	K = 20				
1A	/	No override				
1B	/	Push style				
1C	/	Push and twist style				
3A	No override	1				
3D	Knob style	1				

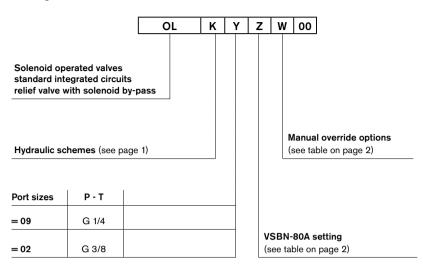
VEI-8A TECHNICAL DATA
Internal leakage: max. 1cm³/min (0.06 inch³/min)
Filtration: 25 µm nominal or better
Minimum voltage required: 90% of nominal value
Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)
For other details see cartridge data sheet

07

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре
OL1909043A0000	R934002544	OL2002071C00
OL1909073A0000	R934002545	OL2002101A000
OL1909103A0000	R934002546	
OL1902043A0000	R934002529	
OL1902073A0000	R934002530	
OL1902073D0000	R934003301	
OL1902103A0000	R934002532	
OL2009041A0000	R934002560	
OL2009041B0000	R934002561	
OL2009071A0000	R934002563	-
OL2009071C0000	R934002565	-
OL2009101A0000	R934002567	
OL2002041A0000	R934002547	
OL2002041B0000	R934002548	
OL2002071A0000	R934002549	

Туре	Material number
OL2002071C0000	R934002550
OL2002101A0000	R934002551

Further types available by request

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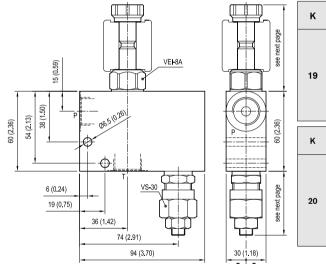
RE 18332-41/12.09 Replaces: RE 00199/11.07

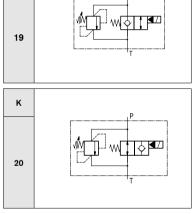
Standard integrated circuits relief valve with solenoid by-pass

VEI8A-VS30

OL - K - Y - Z - W - 00

Dimensions





mm (inches)

Technical data

Max flow: up to 30 I/min (8 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium.

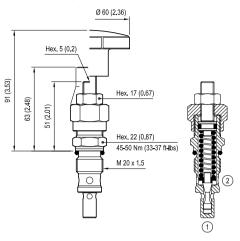
For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Weight: 0.65 kg (1.4 lbs)

These integrated circuit contains one relief valve type VS-30 operating from P to T and one solenoid valve type VEI-8A (see next page).

mm (inches)

VS-30 Cartridge valve (code 04.11.18.X.99.Z)



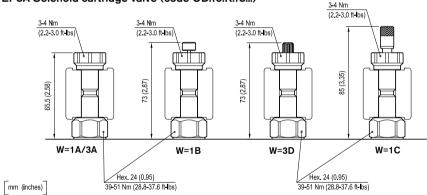
ing ii) nin)
0)
0)
0)
0)
0)
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֡

ADJUSTMENTS	OPTIONS
Leakproof hex. socket screw	
Handknob and locknut	Tamper resistant cap 11.04.23.003

VS-30 TECHNICAL DATA

See table "Z", for other details see data sheet RE 18318-23

VEI-8A Solenoid cartridge valve (code OD.15.K.18...)

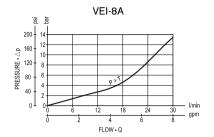


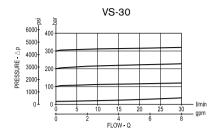
w	MANUAL OVER	RIDE OPTIONS
	K = 19	K = 20
1A	/	No override
1B	/	Push style
1C	/	Push and twist style
3A	No override	1
3D	Knob style	/

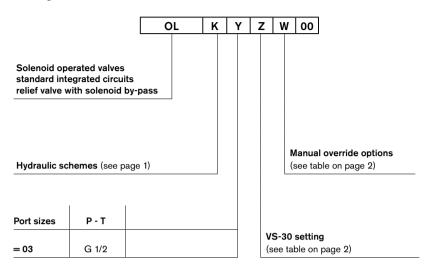
	VEI-8A TECHNICAL DATA
	Internal leakage: max. 1cm³/min (0.06 inch³/min)
	Filtration: 25 µm nominal or better
	Minimum voltage required: 90% of nominal value
	Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)
1	For other details see cartridge data sheet

07

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material number
OL1903043A0000	R934002533		
OL1903073A0000	R901208390		
OL1903103A0000	R934002538		
OL1903113D0000	R934002543		
OL2003041A0000	R934002552		
OL2003071A0000	R934002554		
OL2003071B0000	R934002555		
OL2003071C0000	R934002556		
OL2003081B0000	R934002557		
OL2003101A0000	R934002558		
OL2003101C0000	R934002559		

Further types available by request

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RE 18332-42/12.09 Replaces: RE 00199/11.07

Standard integrated circuits solenoid operated ventable relief valve

VSP-19-VEI8A

OL - K - Y - Z - W - 00

Dimensions 50 (1.97) 18 (0.71) Κ VENT G 1/4 see next page VENT 16 (0.63) 27 ₩QTIP 1.89) 84 85 (3.35) VSAN-08A Κ VENT 28 50 (1.97) 50 (1.97) 68 (2.68) 120 (4.72)

mm (inches)

Technical data

Max flow: up to 200 I/min (53 gpm)

Max operating pressure: 210 bar (3000 psi)

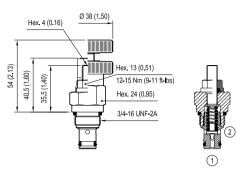
Standard manifolds in high strength aluminium.

For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Weight: 1.3 kg (2.9 lbs)

These integrated circuit contains one relief valve type VSAN-08A operating from P to T and one solenoid valve type VEI-8A (see next page).

VSAN-08A Cartridge valve (code 04.11.48.X.56.Z)



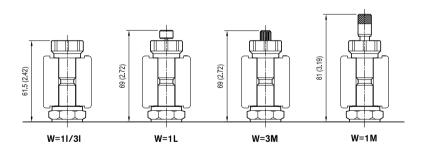
)			VSAN	N-08A SETTIN	IG
	Z		Adj. pressure range bar (psi)	Press. increase bar/turn (psi/turn)	Std. setting bar (psi) (Q=5 l/min)
		01	35-140 (500-2000)	48 (696)	100 (1450)
		04	105-210 (1500-3000)	88 (1276)	200 (2900)
	07	07	140-420 (2000-6000)	140 (2030)	350 (5000)
		08	35-350 (500-5000)	68 (986)	350 (5000)
	11 11				

ADJUSTMENTS		OPTIONS
Leakproof hex. socket screw	4	
Handknob and locknut		Ordering code 11.04.23.002

VSAN-08A TECHNICAL DATA

See table "Z", for other details see data sheet RE 18318-01

VEI-8A Solenoid cartridge valve (code OD.15.K.18...)



mm (inches)

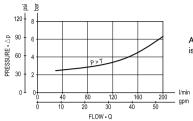
mm (inches)

w	MANUAL OVERRIDE OPTIONS		
••	K = 27	K = 28	
11	/	No override	
1L	1	Push style	
1M	1	Push and twist style	
31	No override	1	
3M	Knob style	1	

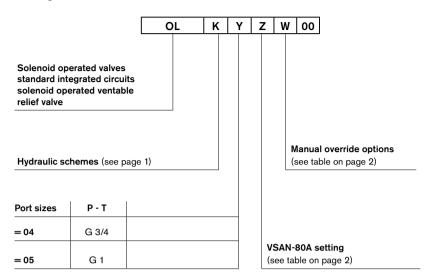
l	VEI-8	BA TECHNICAL D	AIA
]	Internal leakage:	100 cm ³ /min	(0.06 inch ³ /min)
]	Filtration: 25 μm nomi	nal or better	
]	Minimum voltage requi	red: 90% of nominal va	alue
	Coil: S8-356 (must b (see data sheet RE 18)
	For other details see of	artridge data sheet	

07

Performance graph



A pressure of approximately 2 bar (29 psi) is required to open the main poppet.



Preferred types (readily available)

Гуре	Material number	Туре	Material number
OL2704073I00S0	R934001289	OL2805071A0000	R934002599
OL2804011I0000	R934002573		
OL2804041I0000	R934002578		
OL2804041L0000	R934002579		
OL2804041M0000	R934003303		
OL2804071I0000	R934002586		
OL2804071M0000	R934002588		
OL2805011L0000	R934002590		
OL2805041I0000	R934002594		
OL2805041L0000	R934002595	<u> </u>	
OL2805041M0000	R934002596		
OL280507110000	R934002600		
OL2805081L0000	R934002601		

Further types available by request

Bosch Rexroth Oil Control S.p.A. Via Leonardo da Vinci 5 P.O. Box no. 5 41015 Nonantola – Modena, Italy Tel. +39 059 887 611 Fax +39 059 547 848 integrated-circuits@oilcontrol.com

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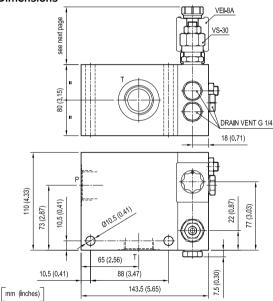
RE 18332-43/12.09 Replaces: RE 00199/11.07

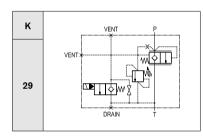
Standard integrated circuits solenoid operated ventable relief valve

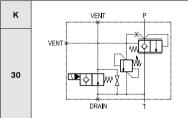
VSP-25-VEI8A

OL - K - Y - Z - W - 00

Dimensions







Technical data

Max flow: up to 300 I/min (80 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium.

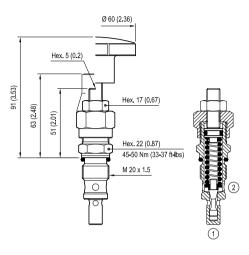
For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Weight: 3.2 kg (7.1 lbs)

These integrated circuit contains one relief valve type VS-30 operating from P to T and one solenoid valve type VEI-8A (see next page).

mm (inches)

VS30 Cartridge valve (code 04.11.18.X.99.Z)



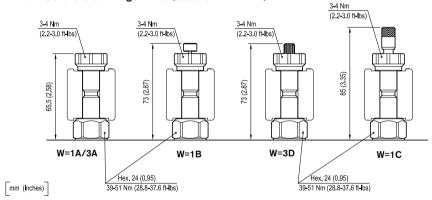
Z		VS-30 SETTING			
		Adj. pressure range bar (psi)	Press. increase bar/turn (psi/turn)	Std. setting bar (psi) (Q=5 l/min)	
_	01	5-50 (75-725)	12 (174)	50 (725)	
	04	30-100 (435-1450)	24 (348)	100 (1450)	
	07	50-210 (725-3000)	47 (682)	200 (2900)	
	10	100-350 (1450-5000)	82 (1189)	350 (5000)	
02		5-50 (75-725)	12 (174)	50 (725)	
	05	30-100 (435-1450)	24 (348)	100 (1450)	
	08	50-210 (725-3000)	47 (682)	200 (2900)	
	11	100-350 (1450-5000)	82 (1189)	350 (5000)	

ADJUSTMENTS	OPTIONS	
Leakproof hex. socket screw		
Handknob and locknut		Tamper resistant cap 11.04.23.003

VS-30 TECHNICAL DATA

See table "Z", for other details see data sheet RE 18318-23

VEI-8A Solenoid cartridge valve (code OD.15.K.18...)

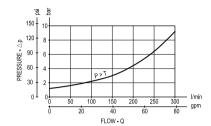


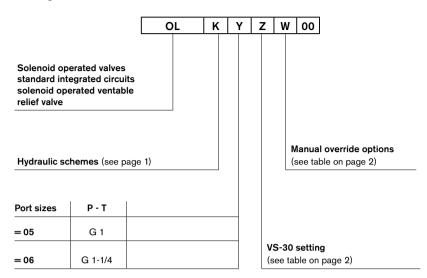
w	MANUAL OVERRIDE OPTIONS			
••	K = 29	K = 30		
1A	/	No override		
1B	/	Push style		
1C	/	Push and twist style		
3A	No override	/		
3D	Knob style	1		

	VEI-8A TECHNICAL DATA				
	Internal leakage: max. 1cm³/min (0.06 inch³/min)				
	Filtration: 25 µm nominal or better				
	Minimum voltage required: 90% of nominal value				
	Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)				
1	For other details see cartridge data sheet				

07

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OL2906073A0000	R934002602		
OL3006071A0000	R934002604		
OL3006071B0000	R934002605		
OL3006101A0000	R934002607		
OL3006101B0000	R934002608		
		·	
		<u>-</u>	
		<u></u>	

Further types available by request

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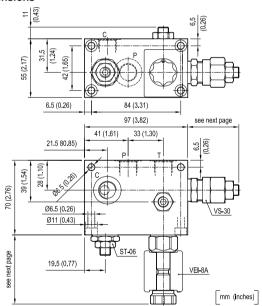
RE 18332-44/12.09 Replaces: RE 00199/11.07

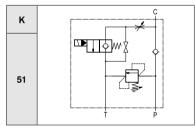
Standard integrated circuits for single-acting cylinder

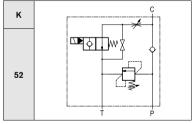
VEI8A-VU-VS-ST-06

OL - K - Y - Z - W - 00

Dimensions







Technical data

Max flow: up to 25 I/min (7 gpm)

Max operating pressure: 210 bar (3000 psi)

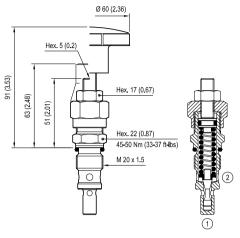
Standard manifolds in high strength aluminium.

For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Weight: 1.3 kg (2.9 lbs)

These integrated circuit contains one relief valve type VS-30 operating from P to T and one solenoid valve type VEI-8A (see next page).

VS30 Cartridge valve (code 04.11.18.X.99.Z)

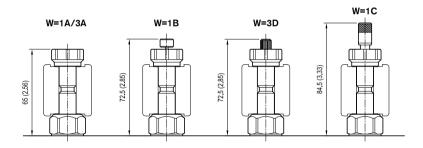


Z		VS-30 SETTING			
		Adj. pressure range bar (psi)	Press. increase bar/turn (psi/turn)	Std. setting bar (psi) (Q=5 l/min)	
	04 30-100 (435-1450)		24 (348)	100 (1450)	
	07	50-210 (725-3000)	47 (682)	200 (2900)	
	10	100-350 (1450-5000)	82 (1189)	350 (5000)	
	05 30-100 (435-1450)		24 (348)	100 (1450)	
	80	50-210 (725-3000)	47 (682)	200 (2900)	
\	11	100-350 (1450-5000)	82 (1189)	350 (5000)	

ADJUSTMENTS	OPTIONS	
Leakproof hex. socket screw		
Handknob and locknut		Tamper resistant cap 11.04.23.003

VS-30 TECHNICAL DATA
See table "Z", for other details see data sheet RE 18318-23

VEI-8A Solenoid cartridge valve (code OD.15.K.18...)



mm (inches)

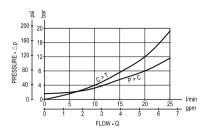
mm (inches)

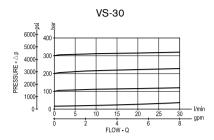
w	MANUAL OVERRIDE OPTIONS		
	K = 51	K = 52	
1A	/	No override	
1B	/	Push style	
1C	/	Push and twist style	
3A	No override	/	
3D	Knob style	/	

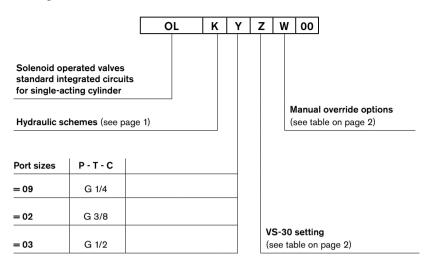
	VEI-8A TECHNICAL DATA					
1	Internal leakage: max. 1 cm ³ /min	(0.06 inch ³ /min)				
	Filtration: 25 µm nominal or better					
	Minimum voltage required: 90% of nominal value					
	Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)					
1	For other details see cartridge data sheet					

07

Performance graphs







Preferred types (readily available)

Туре	Material number	Туре	Material number
OL5109043A0000	R934002639	OL5202071A0000	R934002640
OL5109073A0000	R934003305	OL5202101A0000	R934002641
OL5109103A0000	R934003306	OL5203071A0000	R934002642
OL5102043A0000	R934002611	OL5203071B0000	R934002643
OL5102073A0000	R934002612		
OL5102073B0000	R934002613		
OL5102083A0000	R934000442		
OL5102103A0000	R934000505		
OL5103043A0000	R934002619		
OL5103073A0000	R934002620		
OL5103073B0000	R934002623		
OL5103073D0000	R934002625		
OL5103103A0000	R934002627		
OL5103103B0000	R934002628		
OL5103103D0000	R934003304		

Further types available by request

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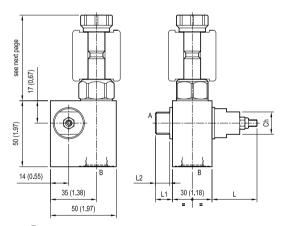
RE 18332-45/12.09 Replaces: RE 00199/11.07

Standard integrated circuits for single acting cylinder

VEI-VCDCBL-8A-06

OL.17 - K - 18 - Y - Z - W

Dimensions



mm (inches)

30.2 (1.19)	12.5 (0.49)	11 (0.43)	14 (0.55)		G 1/4	30 (22)
33.6 (1.32)	12.5 (0.49)	12 (0.47)	17 (0.67)		G 3/8	60 (44)
L	L1	L2	Ch		Ports Size	Tightening Torque Nm (ft-lb)

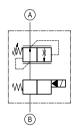
Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium.

For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

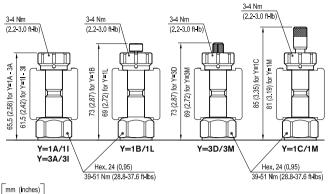


Cartridge schemes

monodirectional type	bidirectional type
	W T
	W A
	W
	W 8 47

0.

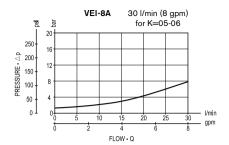
Cartridge style

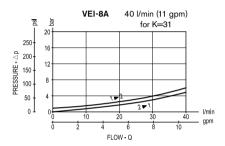


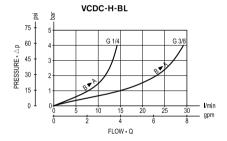
CARTRIDGE TECHNICAL DATA
Common cavity: CA-08A-2N
Filtration: 25 μm nominal or better
Minimum voltage required: 90% of nominal
Coil : S8-356 must be ordered separately (see data sheet RE 18325-90)
Mounting position: unrestricted
For other details see cartridge data sheet

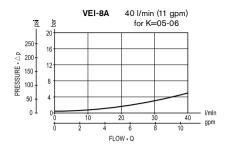
OL17		- K	(-	18	- N			z - ize A-B	CARTRIDGE SCHEME	- W -	FLOW RAI	LATED NGE A > B pm/min)
		monodir.	bidir.			40 l/min (11 gpm)		G 3/8	bidir.		G 1/4	G 3/8
	OD15		05	18	31	3A	09	02		00	1-1.6	,
	OD15		05	18	ЗМ	3D	09	02	WY	√ 1 02	(0.26-0.42)	/
	OD15		06	18	11	1A	09	02	I		1.6-2.5	2-10
CODE	OD15		06	18	1L	1B	09	02	W J J	03	(0.42-0.66)	(0.53-2-64)
	OD15		06	18	1M	1C	09	02				
CARTRIDGE	OD15		31	18		3A	09	02	,,,,(\$\frac{1}{2}\frac{1}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}			10-16 (2.64-4.23)
ART	OD15		31	18		3D	09	02	W(\$ [] =//		(3122 3123)	(=== ,==,
	OD15		32	18		1A	09	02	W \$ ₹7	05	4-6.3 (1.06-1.67)	16-25 (4.23-6.61)
	OD15		32	18		1B	09	02			6.3-10	
	OD15		32	18		1C	09	02		06	(1.67-2.64)	/

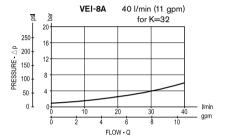
Performance graphs

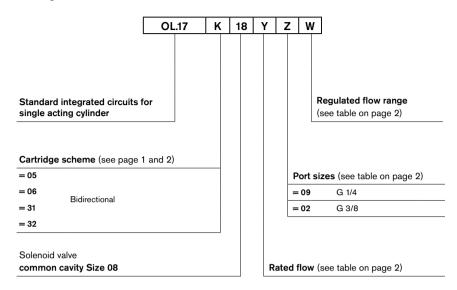












Preferred types (readily available)

Туре	Material number	Туре
OL1731183D0204	R934003391	
		

Further types available by request

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Sandwich valve modules

Designation	Description	Code	Data sheet	Page
Module with solenoid valve	EM-VEI8A/8I-CETOP 3-A	OP14K1829Y	18332-70	1355
Module with solenoid valve	EM-VEI8A/8I-CETOP 3-B	OP16K1829Y	18332-71	1359
Module with solenoid valve	EM-VEI8A/8I-CETOP 3-A/B	OP15K1829Y	18332-72	1363
Relief valve module	EM-VS30-CETOP 3	OP0101X29Z	18332-73	1367
Module with relief and solenoid by-pass	EM-VEI8A/8I-VSBN-CETOP 3	OP35KX29Y	18332-74	1371
Relief valve module	EM-VSBN-08A-CETOP 3	OP0201X29Z	18332-75	1375
Module with solenoid valve and flow restrictor	EM-VEI8A/8I-ST-CETOP 3-P1	OP63KX29Y	18332-76	1379
Module with solenoid valve and flow restrictor	EM-VEI8A/8I-ST-CETOP 3-A1	OP61KX29Y	18332-77	1383
Module with solenoid valve and flow restrictor	EM-VEI8A/8I-ST-CETOP 3-A	OP65KX29Y	18332-78	1387
Module with solenoid valve and flow restrictor	EM-VEI8A/8I-ST-CETOP 3-B1	OP62KX29Y	18332-79	1391
Module with solenoid valve and flow restrictor	EM-VEI8A/8I-ST-CETOP 3-B	OP64KX29Y	18332-80	1395
Module with solenoid valve and flow restrictor	EM-VEI8A/8I-ST-CETOP 3-T	OP60KX29Y	18332-81	1399



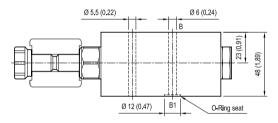
RE 18332-70/12.09 Replaces: RE 00199/11.07

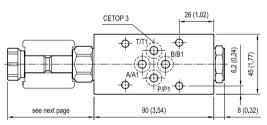
Sandwich valves, module with solenoid valve

EM-VEI8A/8I-CETOP3-A

OP.14-K-18-29-Y

Dimensions





mm (inches)

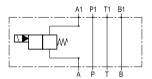
Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium.

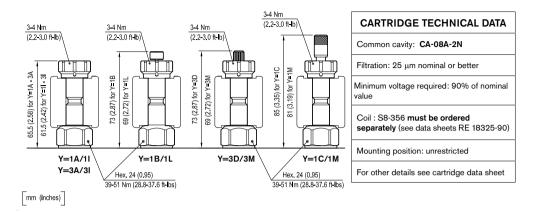
For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.



Cartridge schemes

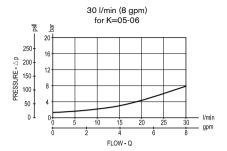
monodirectional type	bidirectional type
	W T
	W TO T
	W S I T
	W 8 47

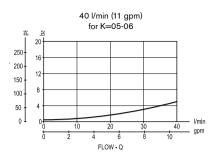
Dimensions

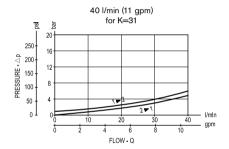


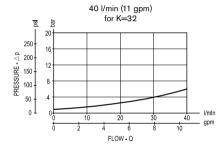
(OP14	- к -		18	29	- Y - Rated Flow		CARTRIDG	E SCHEME	
		monodir.	bidir.			30 l/min 40 l/min (8 gpm) (11 gpm)		monodir.	bidir.	
	OD15		05	18	29	31	3A		W T T	
	OD15		05	18	29	3M	3D		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
	OD15		06	18	29	11	1A			
	OD15		06	18	29	1L	1B		W J	
	OD15		06	18	29	1 M	1C			
ODE	OD15		31	18	29		3A		W 2 1 4	
ii C	OD15		31	18	29		3D		\v\\\ \\	
CARTRIDGE CODE	OD15		32	18	29		1A			
ART	OD15		32	18	29		1B		W 3 47	
	OD15		32	18	29		1C			

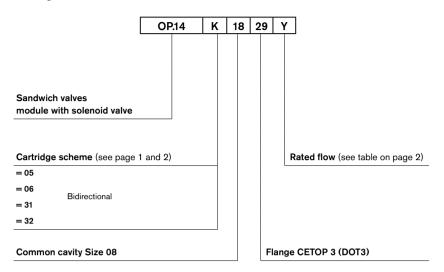
Performance graphs











Preferred types (readily available)

Туре	Material number	Туре	Materia
OP140518293A00	R934002682		
OP140518293B00	R934002683		
OP140518293D00	R934002684		
OP140618291B00	R934002686		
OP143118293A00	R934002687		
OP143118293B00	R934002688		
OP143118293C00	R934002689		
OP143218291A00	R934002690		
		_	

Further types available by request

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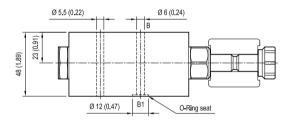
RE 18332-71/12.09 Replaces: RE 00199/11.07

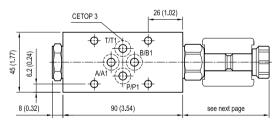
Sandwich valves, module with solenoid valve

EM-VEI8A/8I-CETOP 3-B

OP.16 - K - 18 - 29 - Y

Dimensions





mm (inches)

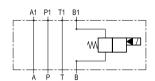
Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium.

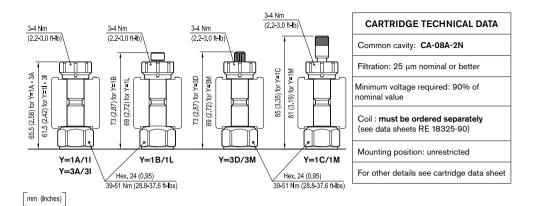
For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.



Cartridge schemes

· ·	
monodirectional type	bidirectional type
	W O I
	W Q
	W S I I
	W S T

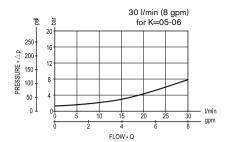
Dimensions

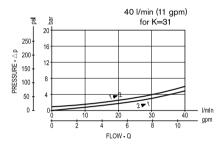


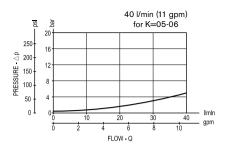
(OP16	- К -		18	29	- Y - Rated Flow		CARTRIDG	E SCHEME
		monodir.	bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.
	OD15		05	18	29	31	3A		w to the state of
	OD15		05	18	29	3M	3D		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	OD15		06	18	29	11	1A		
	OD15		06	18	29	1L	1B		W J W
	OD15		06	18	29	1 M	1C		
ODE	OD15		31	18	29		3A		W 2 1 4
Ä C	OD15		31	18	29		3D		
CARTRIDGE CODE	OD15		32	18	29		1A		
ART	OD15		32	18	29		1B	1	W
	OD15		32	18	29		1C		

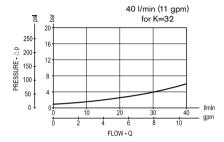
07

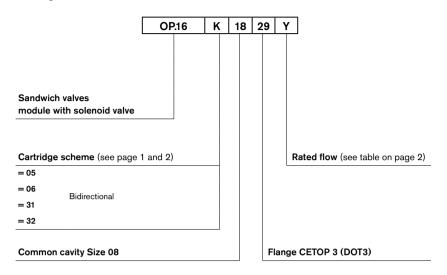
Performance graphs











Preferred types (readily available)

Туре	Material number
OP160518293A00	R934002701
OP160618291A00	R934003475
OP163118293A00	R934002702
OP163118293D00	R934003312
OP163218291A00	R934002704
OP163218291B00	R934003313

Further types available by request

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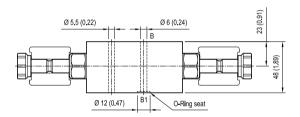
RE 18332-72/12.09 Replaces: RE 00199/11.07

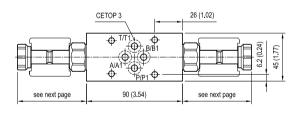
Sandwich valves, module with solenoid valve

EM-VEI8A/8I-CETOP 3-A/B

OP.15-K-18-29-Y

Dimensions





mm (inches)

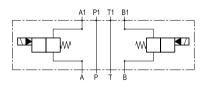
Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium.

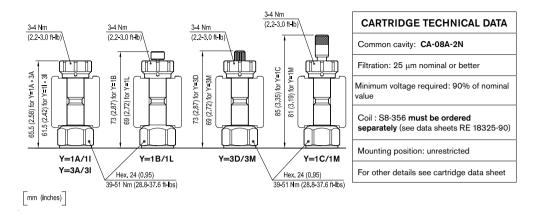
For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.



Cartridge schemes

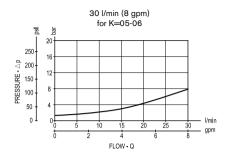
monodirectional type	bidirectional type
	W D
	W A
	w \$ 1 4/
	W 8 47

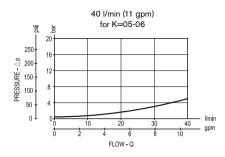
Dimensions

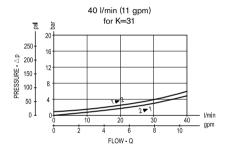


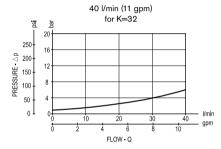
DP14	- K -		18	29	- Y - Rated Flow		CARTRIDG	E SCHEME
	monodir.	bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.
OD15		05	18	29	31	3A		W \$ 1
OD15		05	18	29	3M	3D		
OD15		06	18	29	11	1A		
OD15		06	18	29	1L	1B		W T
OD15		06	18	29	1 M	1C		
OD15		31	18	29		3A		
OD15		31	18	29		3D		W \$
OD15		32	18	29		1A		
OD15		32	18	29		1B		W 1844
OD15		32	18	29		1C		
	OD15 OD15 OD15 OD15 OD15 OD15 OD15 OD15	Monodir. OD15 OD15	monodir. bidir. OD15 05 OD15 05 OD15 06 OD15 06 OD15 06 OD15 31 OD15 31 OD15 32 OD15 32	Monodir. bidir. OD15 05 18 OD15 05 18 OD15 06 18 OD15 06 18 OD15 06 18 OD15 31 18 OD15 31 18 OD15 32 18 OD15 32 18	Monodir. bidir. OD15 05 18 29 OD15 05 18 29 OD15 06 18 29 OD15 06 18 29 OD15 06 18 29 OD15 31 18 29 OD15 31 18 29 OD15 32 18 29 OD15 32 18 29	Monodir. bidir. Rated 30 l/min (8 gpm) OD15 05 18 29 3I OD15 05 18 29 3M OD15 06 18 29 1I OD15 06 18 29 1L OD15 06 18 29 1M OD15 31 18 29 OD15 31 18 29 OD15 32 18 29 OD15 32 18 29	Rated Flow Rated Flow 30 l/min (8 gpm) 40 l/min (11 gpm) OD15 05 18 29 3I 3A OD15 05 18 29 3M 3D OD15 06 18 29 1I 1A OD15 06 18 29 1L 1B OD15 06 18 29 1M 1C OD15 31 18 29 3A OD15 31 18 29 3D OD15 32 18 29 1A OD15 32 18 29 1B	Rated Flow CARTRIDG Monodir. bidir. Rated Flow CARTRIDG 30 l/min (8 gpm) 40 l/min (11 gpm) monodir. OD15 05 18 29 3I 3A OD15 05 18 29 3M 3D OD15 06 18 29 1L 1B OD15 06 18 29 1M 1C OD15 31 18 29 3A OD15 31 18 29 3D OD15 32 18 29 1A OD15 32 18 29 1B

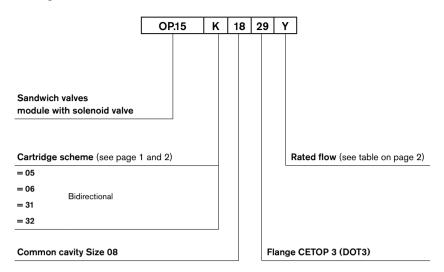
Performance graphs











Preferred types (readily available)

уре	Material number
OP150518293A00	R934002694
OP150518293D00	R934003310
OP150618291A00	R934002695
OP153118293A00	R934002696
OP153118293D00	R934003311
OP153218291A00	R934002697
OP153218291B00	R934002698

Further types available by request

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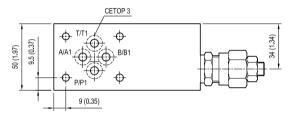
RE 18332-73/12.09 Replaces: RE 00199/11.07

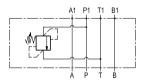
Sandwich valves, relief valve module

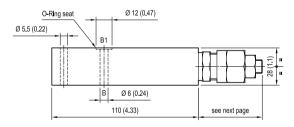
EM-VS30-CETOP 3

OP.01.01 - X - 29 - Z

Dimensions







mm (inches)

Technical data

Max flow: up to 30 I/min (8 gpm)

Max operating pressure: 210 bar (3000 psi)

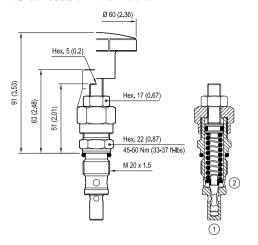
Standard manifolds in high strength aluminium.

For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Weight: 0.53 kg (1.17 lbs)

07

VS-30 code 04.11.18-X-99-Z



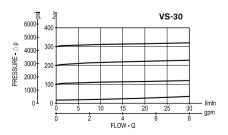
х		VS-30 ADJUSTMENTS					
03	Leakproof hex. socket screw						
04	Handknob a						
		OPTIONS					
Orde	ering code	Description					
11.04.23.003		Tampe	er resistant cap				

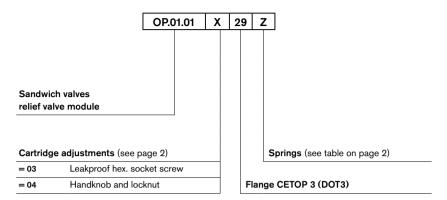
For other details see data sheet RE 18318-23

mm (inches)

	SPRINGS						
Z	Adjust pressure range bar (psi)	Pressure increase bar (psi)	Standard setting bar (psi) Q = 5 l/min				
05	5-50 (75-725)	12 (174)	50 (725)				
10	30-100 (435-1450)	24 (348)	100 (1450)				
20	50-210 (725-3000)	47 (682)	200 (2900)				
35	100-350 (1450-5000)	82 (1189)	350 (5000)				

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OP0101032910	R934002666		
OP0101032920	R934002667	<u> </u>	
OP0101032935	R934002668		
OP0101042910	R934003308		

Further types available by request

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1/4

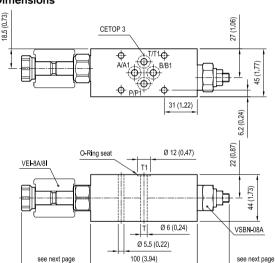
RE 18332-74/12.09 Replaces: RE 00199/11.07

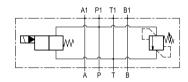
Sandwich valves, module with relief valve and solenoid by-pass

EM-VEI8A/8I-VSBN-CETOP 3

OP.35 - K - X - 29 - Y

Dimensions





Technical data

Max flow: up to 20 I/min (5 gpm)

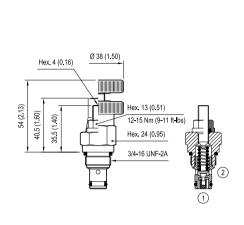
Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**. For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

mm (inches)

L									
•	OP35	- 1	K -	- X -	29	- Y - Rated Flow		CARTRIDGE SCHEME	
		monodir.	bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.
CODE	OD15	01		е	18	31	3A	W	
	OD15	01		pag	18	3M	3D	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
DGE	OD15	02		next	18	11	1A	1	
CARTRIDGE	OD15	02		see n	18	1L	1B	WITTE	
CA	OD15	02		SS	18	1 M	1C		

VSBN-08A code 04.11.49-X-56-Z



x		VSBN-08A SETTING				
		Adj. pressure range bar (psi)	Press. increas bar/turn (psi/turn)	Std. setting bar (psi) (Q=5 I/min)		
	04	35-140 (500-2000)	50 (725)	100 (1450)		
	07	105-210 (1500-3000)	79 (1145)	200 (2900)		
	10	175-350 (2500-5000)	170 (2465)	350 (5000)		
	08	35-350 (500-5000)	72 (1044)	200 (2900)		
		ADJUSTMENTS		OPTIONS		

ADJUSTMENTS

Leakproof hex. socket screw

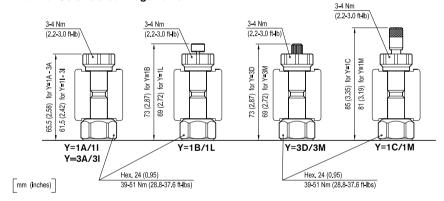
Handknob and locknut

Ordering code 11.04.23.002

For other details see data sheet RE 18318-04

mm (inches)

VEI-8A/8I Solenoid cartridge valve

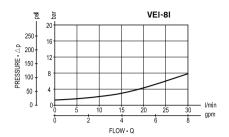


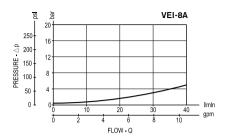
Υ	MANUAL OVERRIDE OPTIONS			
	K = 01	K = 02		
1A/1I	1	No override		
1B/1L	1	Push style		
1C/1M	1	Push and twist style		
3A/3I	No override	/		
3D/3M	Knob style	/		

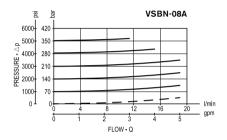
VEI	VEI-8A TECHNICAL DATA							
Internal leakage:	max.	1cm ³ /min	(0.06 inch ³ /min)					
Filtration: 25 µm nominal or better								
Minimum voltage req	uired: 90º	% of nominal	value					
Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)								
For other details see	For other details see cartridge data sheets							

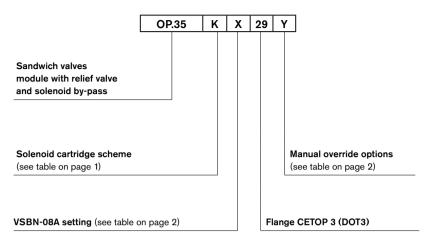
07

Performance graphs









Preferred types (readily available)

Туре	Material number	Туре	Material number
OP350110293A00	R934002715		
OP350204291A00	R934002716		
OP350207291A00	R934002717		
OP350207291C00	R934002718		
OP350210291A00	R934002719		
		_	
		_	
		_	
		_	
		_	

Further types available by request

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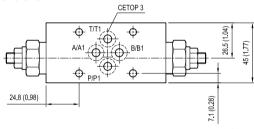
RE 18332-75/12.09 Replaces: RE 00199/11.07

Sandwich valves, relief valve module

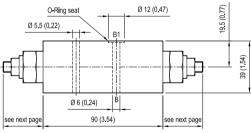
EM-VSBN-08A-CETOP 3

OP.02.01 - X - 29 - Z

Dimensions







mm (inches)

Technical data

Max flow: up to 20 I/min (5 gpm)

Max operating pressure: 210 bar (3000 psi)

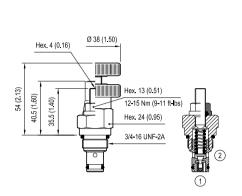
Standard manifolds in high strength aluminium.

For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Weight: 0.53 kg (1.17 lbs)

07

VSBN-08A code 04.11.49-X-56-Z



х	VSBN-08A ADJUSTMENTS				
03	Leakproof hex. socket screw				
04	Handknob and locknut				

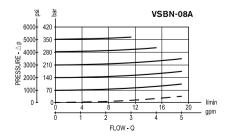
OPTIONS						
Ordering code	Description					
11.04.23.002	Tamper resistant cap					

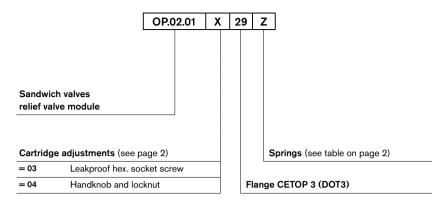
For other details see data sheet RE 18318-04

mm (inches)

z -		SPRINGS			
		Adjust pressure range bar (psi)	Pressure increase bar (psi)	Standard setting bar (psi) Q = 5 l/min	
	04	10-70 (145-1000)	26 (375)	50 (725)	
	10	35-140 (500-2000)	50 (725)	100 (1450)	
	20	105-210 (1500-3000)	79 (1145)	200 (2900)	
11 11	35	175-350 (2500-5000)	170 (2465)	350 (5000)	
	35	35-350 (500-5000)	72 (1044)	200 (2900)	

Performance graph





Preferred types (readily available)

Туре	Material number	Туре	Material number
OP0201032910	R934002674		
OP0201032920	R934002675		
OP0201032935	R934002676		
		_	
		_	
		_	
		_	
		_	
		_	
		_	
		_	

Further types available by request

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1/4

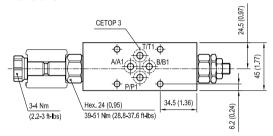
RE 18332-76/12.09 Replaces: RE 00199/11.07

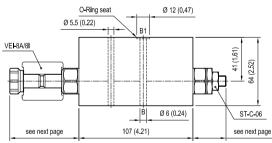
Sandwich valves, module with solenoid valve and flow restrictor

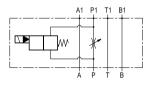
EM-VEI8A/8I-ST-CETOP3-P1

OP.63-K-X-29-Y

Dimensions







Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**. For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

mm (inches)

_												
	(OP63	- K - - X - 29 - Y -		- x -		0.107010.0					
							Rated Flow		Rated Flow		CARTRIDG	E SCHEME
			monodir.	bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.		
	CODE	OD15	01		<u>e</u>	18	31	3A	W TIM			
		OD15	01		pag	18	3M	3D	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
	DGE	OD15	02		next	18	11	1A	1			
	CARTRIDGE	OD15	02		see n	18	1L	1B	W J			
	S	OD15	02		ଁ	18	1M	1C				

ST-C-06 FLOW RESTRICTOR code OD.21.01.X.56.Z

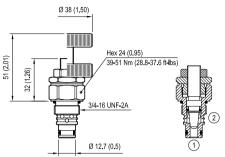


Table "X"

х	ST-C-06 ADJUSTMENTS							
03	Leakproof hex. socket screw							
04	Handknob and locknut							

For other details see data sheet RE 18321-26

mm (inches)

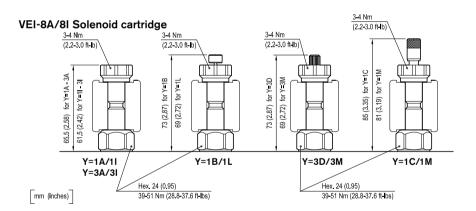


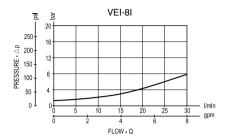
Table "Y"

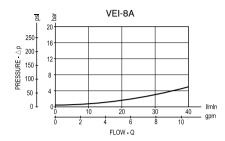
Y	MANUAL OVERRIDE OPTIONS							
	K = 01	K = 02						
1A/1I	1	No override						
1B/1L	1	Push style						
1C/1M	1	Push and twist style						
3A/3I	No override	1						
3D/3M	Knob style	1						

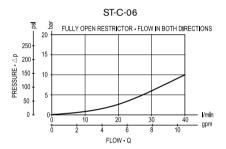
	VEI-	BA TECHNICAL D	DATA								
	Internal leakage:	max. 1cm ³ /min	(0.06 inch ³ /min)								
	Filtration: 25 µm nominal or better										
	Minimum voltage requ	Minimum voltage required: 90% of nominal value									
	Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)										
1	For other details see cartridge data sheet										
ı											

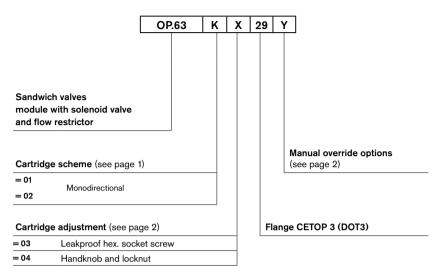
07

Performance graph









Preferred types (readily available)

Туре	Material number	Туре	Material number
OP630103293A00	R934002733		
OP630104293A00	R934002734		
OP630203291A00	R934002735		
OP630204291A00	R934003392		
		_	

Further types available by request

Bosch Rexroth Oil Control S.p.A. Via Leonardo da Vinci 5 P.O. Box no. 5 41015 Nonantola – Modena, Italy Tel. 439 059 887 611 Fax +39 059 547 848 integrated-circuits@oilcontrol.com

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RE 18332-77/12.09

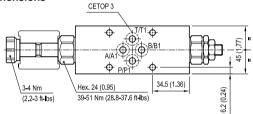
1/4 Replaces: RE 00199/11.07

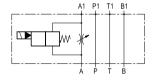
Sandwich valves, module with solenoid valve and flow restrictor

EM-VEI8A/8I-ST-CETOP3-A1

OP . 61 - K - X - 29 - Y

Dimensions





24 (0.95) Ø 12 (0.47) O-Ring seat Ø 5.5 (0.22) VEI-8A/8I 10 (1.58) (2.48) ST-C-06 Ø 6 (0.24) see next page 107 (4.21) see next page

Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium. For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Note: meter-in control

mm (inches)

OP61 - K -		- x -	29	- '	Y -	CARTRIDO	E SCHEME		
					Rated	l Flow	CARTRIDG	E SCHEME	
monodi		monodir.	bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.
CODE	OD15		05	<u>e</u>	18	31	3A		
ЕСС	OD15		05	pag	18	3M	3D		
DGE	OD15		06	next	18	11	1A		
CARTRIDG	OD15		06	see n	18	1L	1B		W J J
CA	OD15		06	SS	18	1 M	1C		

ST-C-06 FLOW RESTRICTOR code OD.21.01.X.56.Z

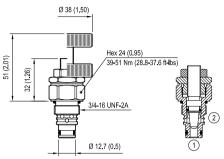


Table "X"

х	ST-C-06 ADJUSTMENTS							
03	Leakproof hex. socket screw							
04	Handknob and locknut							

For other details see data sheet RE 18321-26

mm (inches)

VEI-8A/8I Solenoid cartridge

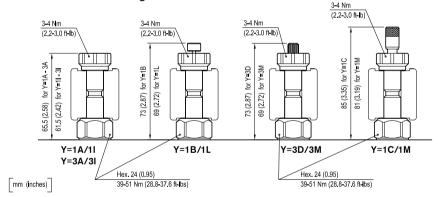


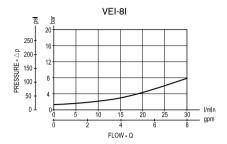
Table "Y"

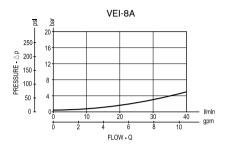
Y	MANUAL OVERRIDE OPTIONS						
	K = 05	K = 06					
1A/1I	/	No override					
1B/1L	/	Push style					
1C/1M	/	Push and twist style					
3A/3I	No override	1					
3D/3M	Knob style	1					

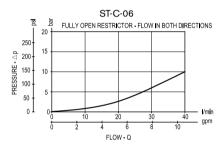
VEI-8A TECHNICAL DATA							
Internal leakage:	max.	1cm ³ /min	(0.06 inch ³ /min)				
Filtration: 25 µm nominal or better							
Minimum voltage req	uired: 90º	% of nominal	value				
Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)							
For other details see cartridge data sheet							

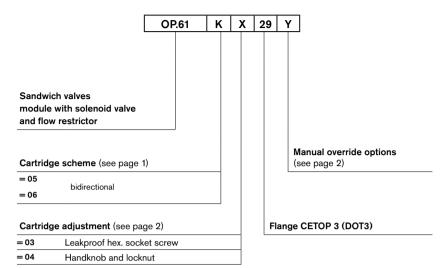
07

Performance graphs









Preferred types (readily available)

Туре	Material number	Туре	Material number
OP610503293A00	R934002726		
OP610503293B00	R934002727		
OP610603291A00	R934002728		
		<u> </u>	
		<u> </u>	

Further types available by request

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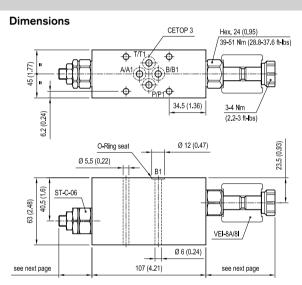
1/4

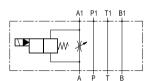
RE 18332-78/12.09 Replaces: RE 00199/11.07

Sandwich valves, module with solenoid valve and flow restrictor

EM-VEI8A/8I-ST-CETOP3-A

OP.65-K-X-29-Y





Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**. For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Note: meter-out control

mm (inches)

OP65 - K -		- X -	29	. 1	/ -	0.4.0.70.10.0	- 00U-14-		
				Rateo	I Flow	CARTRIDG	E SCHEME		
monodir.		bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.	
CODE	OD15		05	e	18	31	3A		
00	OD15		05	pag	18	3M	3D		
DGE	OD15		06	next	18	11	1A		
CARTRIDG	OD15		06	see n	18	1L	1B		W
CA	OD15		06	8	18	1 M	1C		

ST-C-06 FLOW RESTRICTOR code OD.21.01.X.56.Z

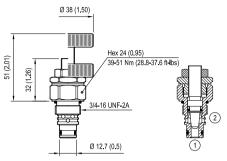


Table "X"

х	ST-C-06 ADJUSTMENTS							
03	Leakproof hex. socket screw							
04	Handknob and locknut							

For other details see data sheet RE 18321-26

mm (inches)

VEI-8A/8I Solenoid cartridge

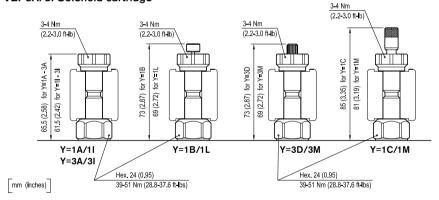
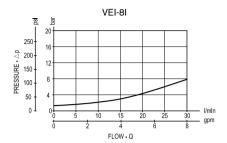


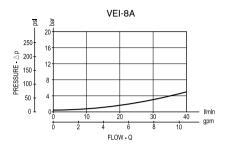
Table "Y"

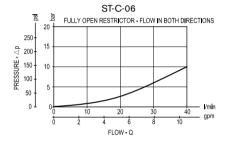
Y	MANUAL OVERRIDE OPTIONS					
	K = 05	K = 06				
1A/1I	1	No override				
1B/1L	1	Push style				
1C/1M	1	Push and twist style				
3A/3I	No override	/				
3D/3M	Knob style	/				

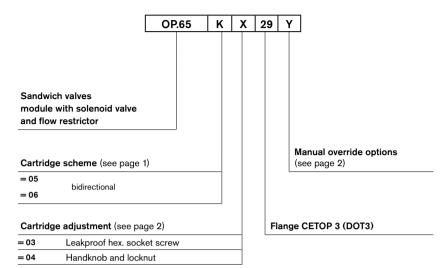
VEI-8A TECHNICAL DATA						
Internal leakage:	max.	1 cm ³ /min	(0.06 inch ³ /min)			
Filtration: 25 µm nominal or better Minimum voltage required: 90% of nominal value						
					Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)	
For other details see cartridge data sheet						

Performance graphs









Preferred types (readily available)

Туре	Material number
OP650503293A00	R934002743
-	

Further types available by request

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1/4

RE 18332-79/12.09 Replaces: RE 00199/11.07

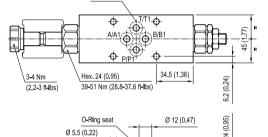
Sandwich valves, module with solenoid valve and flow restrictor

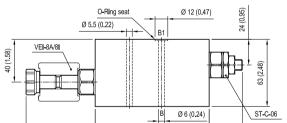
CETOP 3

EM-VEI8A/8I-ST-CETOP3-B1

OP.62-K-X-29-Y

Dimensions





107 (4.21)

A1 P1 T1 B1

Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**. For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Note: meter-in control

mm (inches)

see next page

OP62		- P	(-	- X -	29		r - I Flow	CARTRIDG	E SCHEME
		monodir.	bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.
CODE	OD15		05	<u>o</u>	18	31	3A		
	OD15		05	pag	18	3M	3D		
DGE	OD15		06	next	18	11	1A		
CARTRIDGE	OD15		06	see n	18	1L	1B		W
CA	OD15		06	8	18	1 M	1C		

see next page

ST-C-06 FLOW RESTRICTOR code OD.21.01.X.56.Z

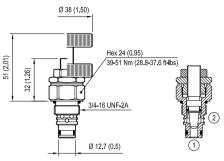


Table "X"

х	ST-C-06 ADJUSTMENTS						
03	Leakproof hex. socket screw						
04	Handknob and locknut						

For other details see data sheet RE 18321-26

mm (inches)

VEI-8A/8I Solenoid cartridge

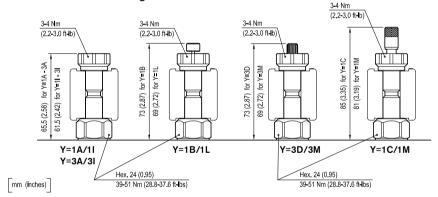
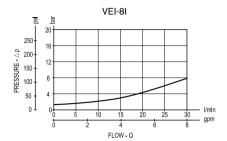


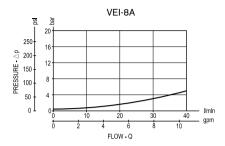
Table "Y"

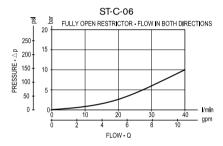
Υ	MANUAL OVERRIDE OPTIONS					
·	K = 05	K = 06				
1A/1I	1	No override				
1B/1L	1	Push style				
1C/1M	1	Push and twist style				
3A/3I	No override	1				
3D/3M	Knob style	1				

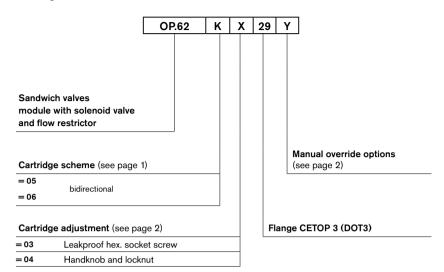
VEI-8A TECHNICAL DATA							
Internal leakage: max. 1 cm³/min (0.06 inch³/min)							
Filtration: 25 μm nominal or better							
Minimum voltage required: 90% of nominal value							
Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)							
For other details see cartridge data sheet							

Performance graphs









Preferred types (readily available)

Туре	Material number
OP620503293A00	R934002729
OP620503293B00	R934002730
OP620603291A00	R934002731

Further types available by request

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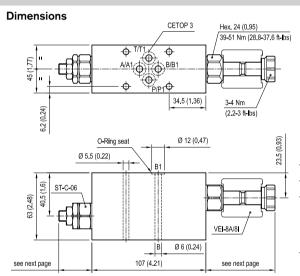


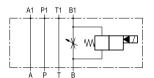
RE 18332-80/12.09
Replaces: RE 00199/11.07

Sandwich valves, module with solenoid valve and flow restrictor

EM-VEI8A/8I-ST-CETOP3-B

OP.64-K-X-29-Y





Technical data

Max flow: up to 40 I/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength **aluminium**. For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

Note: meter-out control

mm (inches)

OP64 - K -		- x -	29	٠-,	/ -				
					Rated	l Flow	CARTRIDG	E SCHEME	
		monodir.	bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.
CODE	OD15		05	<u>e</u>	18	31	3A		
В СО	OD15		05	pag	18	3M	3D		
DGE	OD15		06	next	18	11	1A		
CARTRIDG	OD15		06	see n	18	1L	1B		W TO
Š	OD15		06	8	18	1 M	1C		

ST-C-06 FLOW RESTRICTOR code OD.21.01.X.56.Z

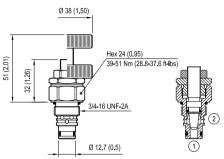


Table "X"

х	ST-C-06 ADJUSTMENTS						
03	Leakproof hex. socket screw						
04	Handknob and locknut						

For other details see data sheet RE 18321-26

mm (inches)

VEI-8A/8I Solenoid cartridge

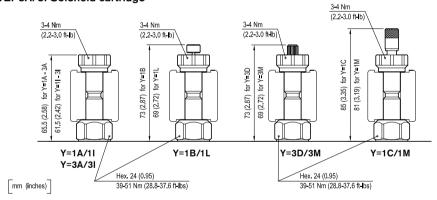
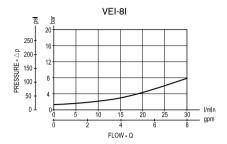


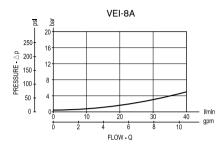
Table "Y"

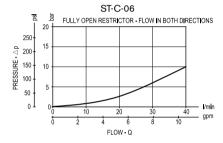
Υ	MANUAL OVERRIDE OPTIONS					
·	K = 05	K = 06				
1A/1I	/	No override				
1B/1L	/	Push style				
1C/1M	/	Push and twist style				
3A/3I	No override	1				
3D/3M	Knob style	1				

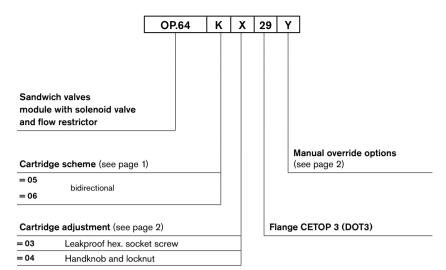
VEI-8A TECHNICAL DATA									
		Internal leakage: max. 1cm³/min	(0.06 inch ³ /min)						
		Filtration: 25 µm nominal or better							
		Minimum voltage required: 90% of nominal value							
Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)									
1		For other details see cartridge data sheet							

Performance graphs









Preferred types (readily available)

Гуре	Material number
OP640503293A00	R934002740
OP640603291A00	R934002741

Further types available by request

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1/4

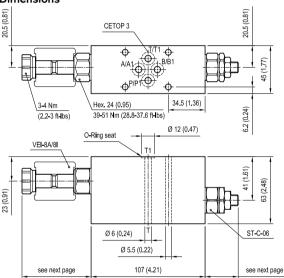
RE 18332-81/12.09 Replaces: RE 00199/11.07

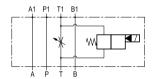
Sandwich valves, module with solenoid valve and flow restrictor

EM-VEI8A/8I-ST-CETOP3-T

OP.60-K-X-29-Y

Dimensions





Technical data

Max flow: up to 40 1/min (11 gpm)

Max operating pressure: 210 bar (3000 psi)

Standard manifolds in high strength aluminium. For working pressure up to 350 bar (5000 psi) and for fatigue applications with any working pressure, steel manifolds are available upon request.

mm (inches)

	OP60	- P	< -	- X -	29	-,	Y -	0.157515.0		
						Rated	d Flow	CARTRIDG	E SCHEME	
		monodir.	bidir.			30 l/min (8 gpm)	40 l/min (11 gpm)	monodir.	bidir.	
CODE	OD15	01		<u>e</u>	18	31	3A	W		
	OD15	01		pag	18	3M	3D) WIYI		
CARTRIDGE	OD15	02		next	18	11	1A			0
ZTRI	OD15	02		see n	18	1L	1B	W T T		
CA	OD15	02] %	18	1 M	1C			

ST-C-06 FLOW RESTRICTOR code OD.21.01.X.56.Z

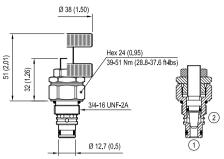


Table "X"

х	ST-C-06 ADJUSTN	IENTS
03	Leakproof hex. socket screw	
04	Handknob and locknut	

For other details see data sheet RE 18321-26

mm (inches)

VEI-8A/8I Solenoid cartridge

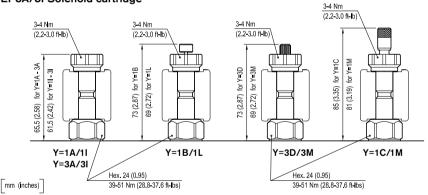
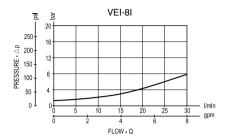


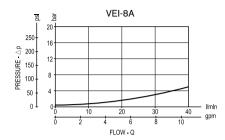
Table "Y"

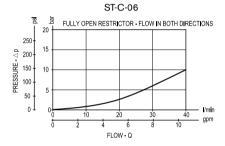
Υ	MANUAL OVER	RIDE OPTIONS
	K = 01	K = 02
1A/1I	1	No override
1B/1L	1	Push style
1C/1M	1	Push and twist style
3A/3I	No override	/
3D/3M	Knob style	/

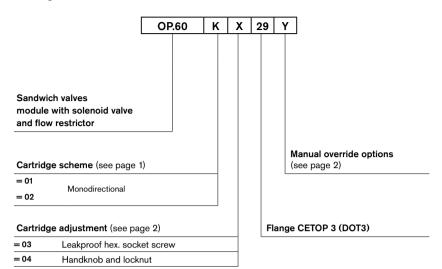
VEI-8A TECHNICAL DATA	
Internal leakage: max. 1cm³/min ((0.06 inch ³ /min)
Filtration: 25 μm nominal or better	
Minimum voltage required: 90% of nominal value	
Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)	
For other details see cartridge data sheet	
	Internal leakage: max. 1 cm³/min Filtration: 25 µm nominal or better Minimum voltage required: 90% of nominal value Coil: S8-356 (must be ordered separately) (see data sheet RE 18325-90)

Performance graphs









Preferred types (readily available)

Туре	Material number
OP600103293A00	R934002722
OP600104293A00	R934002723
OP600203291A00	R934002724
OP600203291B00	R934001059
OP600203291M00	R934000808

Further types available by request

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Manifolds

Designation	Data sheet	Page
Standard manifolds (common cavity, special cavity, with emergency screw)	18325-85	1405



Manifolds

RE 18325-85/02.10 Replaces: RE 00199/11.07 1/16

Standard manifolds common cavity Standard manifolds special cavity Manifolds with emergency screw



Summary

Description	Page
Standard manifold common cavity aluminium or steel	
Size 08	2-3
Size 10	4-5
Size 12	6-7
Size 16	8-9
Size 20	10-11
Standard manifold special cavity aluminium or steel	
017-E	12
021-E	12
019-E	12
004	13
Manifold with emergency screw aluminium or steel	
Size 08	14
017-E	14
021-E	14

General specifications

•	Max operating pressure for steel body:	350 bar (5000 psi)
•	Max operating pressure for aluminium body:	210 bar (3000 psi)

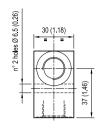
Note: aluminium bodies are often strong enough for operating pressures exceeding 210 bar (3000 psi), depending from the fatigue life expected in the specific application. If in doubt, consult our Service Network.

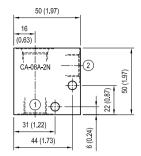
07

Standard manifolds - Common cavity Size 08 - Aluminium / Steel

CAVITY: CA-08A-2N

	Ordering code	Ports 1-2	Weight kg (lbs)
Aluminium	OC1009009 R901090786	G 1/4	0.17 (0.38)
Alum	OC1009004 R901082022	G 3/8	0.16 (0.35)
Steel	OC1009067 R901090800	G 1/4	0.47 (1.04)
ğ	OC1009066 R901090799	G 3/8	0.45 (0.99)

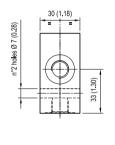


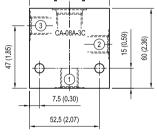


mm / Inches

CAVITY: CA-08A-3C

	Ordering code	Ports		Weight
		1-2	3	kg (lbs)
inium	OC1009262 R934000223	G 1/4	G 1/4	0.25 (0.55)
Aluminium	OC1009260 R934000221	G 3/8	G 1/4	0.25 (0.55)
e	OC1009263 R934000224	G 1/4	G 1/4	0.71 (1.57)
Steel	OC1009261 R934000222	G 3/8	G 1/4	0.69 (1.52)





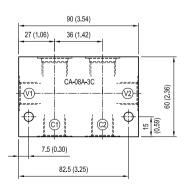
60 (2.36)

[mm / Inches]

CAVITY: CA-08A-3C (DOUBLE CAVITY)

	Ordering code	Ports	Weight
		V1-V2-C1-C2	kg (lbs)
Aluminium	OC1009185 R934000146	G 3/8	0.36 (0.79)
Alum			
Steel	OC1009184 R934000145	G 3/8	1.00 (2.21)
Ste			·



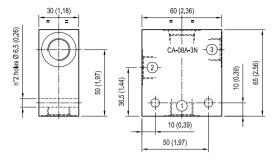


mm / Inches

Standard manifolds - Common cavity Size 08 - Aluminium / Steel

CAVITY: CA-08A-3N

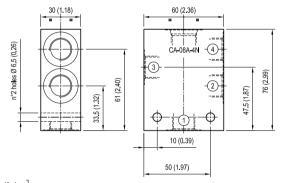
	Ordering code	Ports 1-2-3	Weight kg (lbs)
minm	OC1009042 R901100471	G 1/4	0.30 (0.66)
Aluminium	OC1009048 R901100497	G 3/8	0.27 (0.60)
Steel	OC1009225 R934000186	G 1/4	0.78 (1.72)
Ste	OC1009153 R934000140	G 3/8	0.74 (1.63)



mm / Inches

CAVITY: CA-08A-4N

	Ordering code	Ports 1-2-3-4	Weight kg (lbs)
minm	OC1009047 R901100531	G 1/4	0.33 (0.73)
Aluminium	OC1009046 R901100524	G 3/8	0.29 (0.64)
<u></u>	OC1009236 R934000197	G 1/4	0.93 (2.05)
Steel	OC1009237 R934000198	G 3/8	0.81 (1.79)



[mm / Inches]

G 3/4

(0.35) (1.58)

Q

R S PORTS

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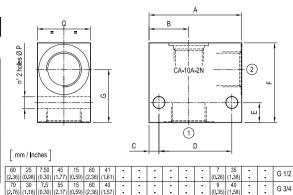
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N

Standard manifolds - Common cavity Size 10 - Aluminium / Steel

CAVITY: CA-10A-2N

	Ordering code	Ports 1-2	Weight kg (lbs)
minm	OC1009209 R934000170	G 1/2	0.28 (0.62)
Aluminium	OC1009211 R934000172	G 3/4	0.36 (0.79)
Steel	OC1009210 R934000171	G 1/2	0.77 (1.70)
Ste	OC1009212 R934000173	G 3/4	1.00 (2.21)



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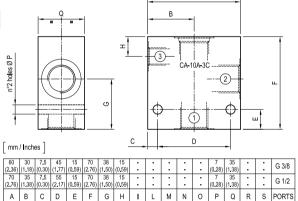
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Ε F G Н

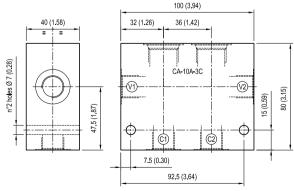
С

	Ordering code	Ports		Weight
		1-2	3	kg (lbs)
minm	OC1009264 R934000225	G 3/8	G 1/4	0.34 (0.75)
Aluminium	OC1009266 R934000227	G 1/2	G 1/4	0.39 (0.86)
<u></u>	OC1009265 R934000226	G 3/8	G 1/4	0.94 (2.07)
Stee	OC1009267 R934000228	G 1/2	G 1/4	1.10 (2.43)



CAVITY: CA-10A-3C (DOUBLE CAVITY)

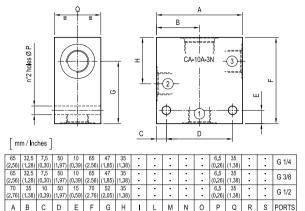
	Ordering code	Ports	Weight
		V1-V2-C1-C2	kg (lbs)
minm	OC1009187 R934000148	G 3/8	0.75 (1.65)
Aluminium	OC1009189 R934000150	G 1/2	0.72 (1.59)
Steel	OC1009186 R934000147	G 3/8	2.10 (4.63)
šť	OC1009188 R934000149	G 1/2	2.03 (4.48)



Standard manifolds - Common cavity Size 10 - Aluminium / Steel

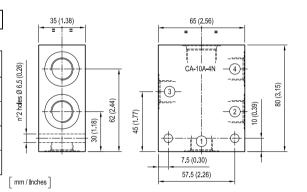
_	
CAVITY:	CA-10A-3N

	Ordering code	Ports 1-2-3	Weight kg (lbs)
E	OC1009116 R901100626	G 1/4	0.35 (0.77)
Aluminium	OC1009115 R901100638	G 3/8	0.34 (0.75)
Æ	OC1009283 R934000244	G 1/2	0.38 (0.84)
	OC1009226 R934000187	G 1/4	0.98 (2.16)
Steel	OC1009227 R934000188	G 3/8	0.95 (2.09)
-*	OC1009284 R934000245	G 1/2	1.07 (2.36)



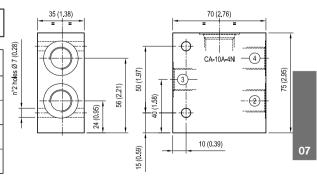
CAVITY: CA-10A-4N

	Ordering code	Ports 1-2-3-4	Weight kg (lbs)
Aluminium	OC1009117 R901100734	G 1/4	0.43 (0.95)
Alum	OC1009118 R901100747	G 3/8	0.41 (0.90)
Steel	OC1009238 R934000199	G 1/4	1.21 (2.67)
š	OC1009239 R934000200	G 3/8	1.15 (2.54)



CAVITY: CA-10A-4N (Port 1 closed)

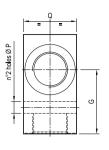
	Ordering code	Ports 1-2-3-4	Weight kg (lbs)
Aliminim	OC1009252 R934000213	G 3/8	0.42 (0.93)
Alla	OC1009254 R934000215	G 1/2	0.40 (0.88)
Steel	OC1009253 R934000214	G 3/8	1.18 (2.60)
Ť	OC1009255 R934000216	G 1/2	1.12 (2.47)

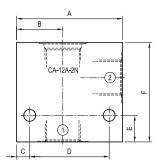


Standard manifolds - Common cavity Size 12 - Aluminium / Steel

CAVITY: CA-12A-2N

	Ordering code	Ports 1-2	Weight kg (lbs)
nium	OC1009213 R934000174	(5.3/4	
Aluminium	OC1009215 R934000176	G 1	0.64 (1.41)
<u></u>	OC1009214 R934000175	G 3/4	1.46 (3.22)
Stee	OC1009216 R934000177	G 1	1.79 (3.95)



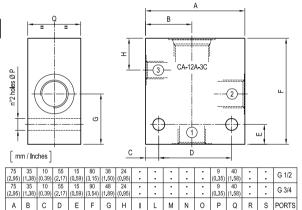


mm / Inches

80	35	10	60	20	75	48.5							9	40			G 3/4
(3.15)	(1.38)	(0.39)	(2.36)	(0.79)	(2.95)	(1.91)	-	-	-	-	-	-	(0.35)	(1.58)	-	-	G 3/4
80	35	10	60	20	75	48.5							9	50			G 1
(3.15)	(1.38)	(0.39)	(2.36)	(0.79)	(2.95)	(1.91)	-	-	-	-	-	-	(0.35)	(1.97)	-	-	GI
Α	В	С	D	Е	F	G	Н	1	L	М	N	0	Р	Q	R	s	PORTS

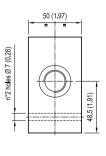
CAVITY: CA-12A-3C

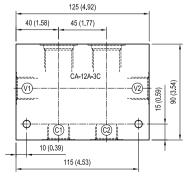
	Ordering code	Po	rts	Weight
		1-2	3	kg (lbs)
Aluminium	OC1009268 R934000229	G 1/2	G 1/4	0.54 (1.19)
Alum	OC1009270 R934000231	G 3/4	G 1/4	0.59 (1.30)
96	OC1009269 R934000230	G 1/2	G 1/4	1.51 (3.33)
Steel	OC1009271 R934000232	G 3/4	G 1/4	1.65 (3.64)



CAVITY: CA-12A-3C (DOUBLE CAVITY)

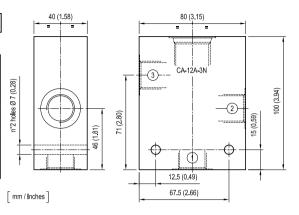
	Ordering code	Ports	Weight
		V1-V2-C1-C2	kg (lbs)
Aluminium	OC1009191 R934000152	G 1/2	1.31 (2.89)
Alum	OC1009193 R934000154	G 3/4	1.26 (2.78)
<u> </u>	OC1009190 R934000151	G 1/2	3.69 (8.14)
Steel	OC1009192 R934000153	G 3/4	3.54 (7.80)





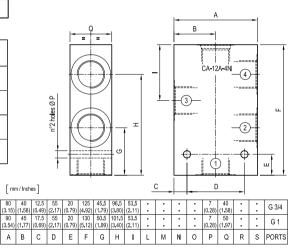
CAVITY: CA-12A-3N

	Ordering code	Ports 1-2-3	Weight kg (lbs)
Aluminium	OC1009205 R934000166	G 1/2	0.73 (1.61)
Alum	OC1009208 R934000169	G 3/4	0.69(1.52)
<u>_</u>	OC1009206 R934000167	G 1/2	2.04 (4.50)
Steel	OC1009207 R934000168	G 3/4	1.93 (4.26)



CAVITY: CA-12A-4N

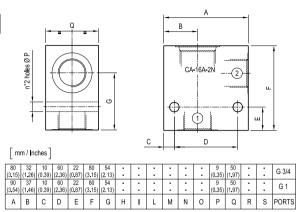
	Ordering code	Ports 1-2-3-4	Weight kg (lbs)	
Aluminium	OC1009240 R934000201	G 3/4 0.85 (1.8		
Alum	OC1009242 R934000203	G 1	1.26 (2.78)	
Steel	OC1009241 R934000202	G 3/4	2.40 (5.29)	
Ste	OC1009243 R934000204	G 1	3.53 (7.78)	



Standard manifolds - Common cavity Size 16 - Aluminium / Steel

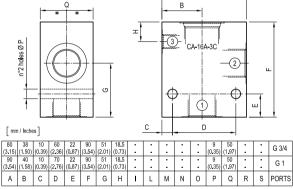
CAVITY: CA-16A-2N

	Ordering code	Ports 1-2	Weight kg (lbs)
Aluminium	OC1009217 R934000178	G 3/4	0.69 (1.52)
Alum	OC1009219 R934000180	G 1	0.75 (1.65)
Steel	OC1009218 R934000179	G 3/4	1.94 (4.28)
ş	OC1009220 R934000181	G 1	2.11 (4.65)



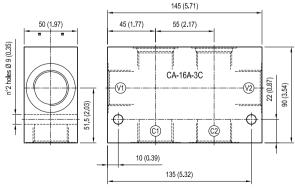
CAVITY: CA-16A-3C

	Ordering code	Po	rts	Weight		
		1-2	3	kg (lbs)		
nium	OC1009274 R934000235	G 3/4	G 1/4	0.80 (1.76)		
Aluminium	OC1009272 R934000233	G 1	G 1/4	0.87 (1.92)		
Steel	OC1009275 R934000236	G 3/4	G 1/4	2.23 (4.92)		
Ste	OC1009273 R934000234	G 1	G 1/4	2.45 (5.40)		



CAVITY: CA-16A-3C (DOUBLE CAVITY)

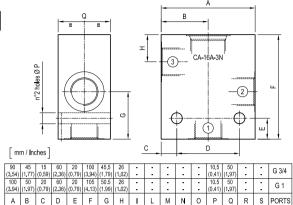
	Ordering code	Ports	Weight
		V1-V2-C1-C2	kg (lbs)
Aluminium	OC1009195 R934000156	G 1	1.34 (2.95)
Alum			
Steel	OC1009194 R934000155	G 1	3.74 (8.25)
Şţ			



Standard manifolds - Common cavity Size 16 - Aluminium / Steel

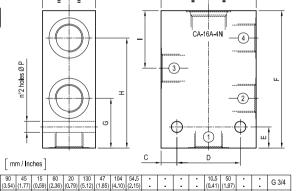
CAVITY: CA-16A-3N

	Ordering code	Ports 1-2-3	Weight kg (lbs)
Aluminium	OC1009228 R934000189	G 3/4	0.98 (2.16)
Alum	OC1009230 R934000191	G 1	1.11 (2.45)
le le	OC1009229 R934000190	G 3/4	2.76 (6.09)
Steel	OC1009231 R934000192	G 1	3.11 (6.86)



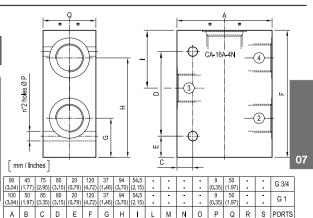
CAVITY: CA-16A-4N

	Ordering code	Ports 1-2-3-4	Weight kg (lbs)
minm	OC1009244 R934000205	G 3/4	1.28 (2.82)
Aluminium	OC1009246 R934000207	G 1	1.36 (3.00)
<u></u>	OC1009245 R934000206	G 3/4	3.59 (7.92)
Steel	OC1009247 R934000208	G 1	3.81 (8.40)



CAVITY: CA-16A-4N (Port 1 closed)

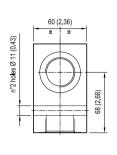
	Ordering code	Ports 1-2-3-4	Weight kg (lbs)
E in	OC1009256 R934000217	G 3/4	1.19 (2.62)
Aluminium	OC1009258 R934000219	G 1	1.28 (2.82)
4	OC1009257 R934000218	G 3/4	3.34 (7.36)
Steel	OC1009259 R934000220	G 1	3.58 (7.89)

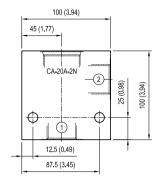


Standard manifolds - Common cavity Size 20 - Aluminium / Steel

CAVITY: CA-20A-2N

	Ordering code	Ports 1-2	Weight kg (lbs)
nium	OC1009223 R934000184	G 1	1.3 (2.87)
Aluminium	OC1009221 R934000182	G 1-1/4	1.21 (2.67)
<u>e</u>	OC1009224 R934000185	G 1	3.65 (8.05)
Steel	OC1009222 R934000183	G 1-1/4	3.40 (3.50)

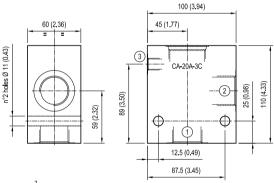




mm / Inches

CAVITY: CA-20A-3C

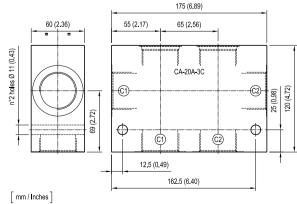
	Ordering code	Po	rts	Weight
		1-2	3	kg (lbs)
Aluminium	OC1009278 R934000239	G 1	G 1/4	1.43 (3.15)
Alum	OC1009276 R934000237	G 1-1/4	G 1/4	1.35 (2.98)
<u>e</u>	OC1009279 R934000240	G 1	G 1/4	4.02 (8.86)
Stee	OC1009277 R934000238	G 1-1/4	G 1/4	3.78 (8.33)



mm / Inches

CAVITY: CA-20A-3C (DOUBLE CAVITY)

	Ordering code	Ports V1-V2-C1-C2	Weight kg (lbs)
Aluminium	OC1009197 R934000158	G 1-1/4	2.53 (5.58)
Alum			
Steel	OC1009196 R934000157	G 1-1/4	7.11 (15.68)
Ste			

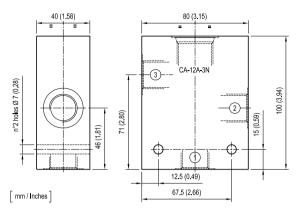


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Standard manifolds - Common cavity Size 20 - Aluminium / Steel

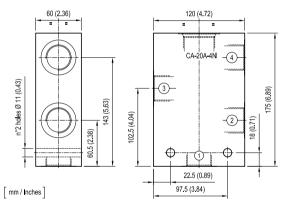
CAVITY: CA-20A-3N

	Ordering code	Ports 1-2-3	Weight kg (lbs)
Aluminium	OC1009234 R934000195	G 1	2.15 (1.61)
Alumi	OC1009232 R934000193	G 1-1/4	2.02(1.52)
le le	OC1009235 R934000196	G 1	6.02 (4.50)
Steel	OC1009233 R934000194	G 1-1/4	5.66 (4.26)



CAVITY: CA-20A-4N

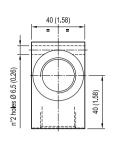
	Ordering code	Ports 1-2-3-4	Weight kg (lbs)
nium	OC1009248 R934000209	G 1	2.78 (6.13)
Aluminium	OC1009250 R934000211	G 1-1/4	2.60 (5.73)
<u></u>	OC1009249 R934000210	G 1	7.80 (17.20)
Steel	OC1009251 R934000212	G 1-1/4	7.30 (16.10)

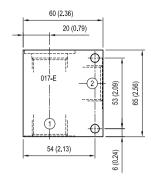


Standard manifolds - Special cavity Aluminium / Steel

CAVITY: 017-E

	Ordering code	Ports 1-2	Weight kg (lbs)
Aluminium	OC1009015 R901180260	G 1/2	0.32 (0.71)
Alum	OC1009012 R900990630	G 3/4	0.30 (0.66)
le l	OC1009074 R988004951	G 1/2	0.90 (1.98)
Steel	OC1009073 R901184887	G 3/4	0.83 (1.83)

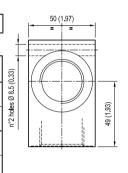


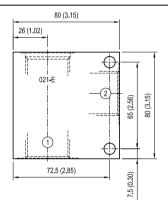


mm / Inches

CAVITY: 021-E

		Ordering code	Ports 1-2	Weight kg (lbs)	
	Aluminium	OC1009017 R934000102	G 3/4	0.68 (1.50)	
		OC1009019 R900068903	G 1	0.65 (1.43)	
	<u></u>	OC1009075 R900766822	G 3/4	1.89 (4.17)	
	Steel	OC1009076 R901132883	G 1	1.78 (3.92)	

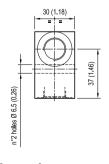


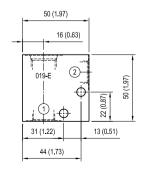


mm / Inches

CAVITY: 019-E

	Ordering code	Ports	Weight
		1-2	kg (lbs)
Aluminium	OC1009103 R901090812	G 1/4	0.17 (0.38)
Alum	OC1009054 R901090792	G 3/8	0.16 (0.35)
Steel	OC1009102 R901090811	G 1/4	0.46 (1.01)
St	OC1009101 R901090810	G 3/8	0.44 (0.97)

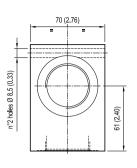


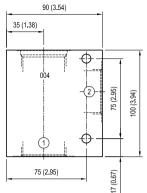


CAVITY: 004

Standard manifolds - Special cavity Aluminium / Steel

	CAVII 1. 004					
	Ordering code	Ports 1-2	Weight kg (lbs)			
Aluminium	OC1009040 R901090789	G 1	1.35 (2.98)			
Alum	OC1009041 R901090791	G 1-1/4	1.28 (2.82)			
eel	OC1009122 R901090813	G 1	3.74 (8.25)			
Steel	OC1009056 R901090794	G 1-1/4	3.52 (7.76)			

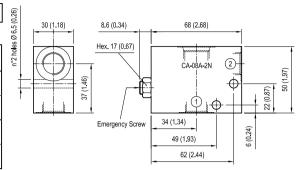




Manifolds with emercency screw Aluminium / Steel

CAVITY: CA-08A-2N

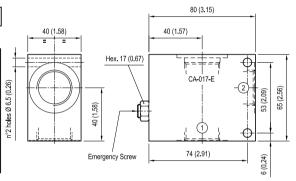
	Ordering code	Ports 1-2	Weight kg (lbs)
Aluminium	OE150009 R934001566	G 1/4	0.26 (0.57)
Alum	OE150002 R934001554	G 3/8	0.25 (0.55)
	OE1500090055 R934001567	G 1/4	0.69 (1.52)
Stee	OE1500020055 R934001555	G 3/8	0.66 (1.46)



mm / Inches

CAVITY: 017-E

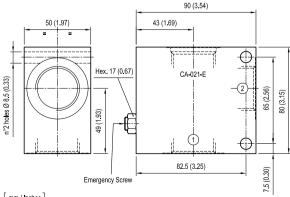
	Ordering code	Ports 1-2	Weight kg (lbs)
Aluminium	OE150003 R934001557	G 3/4	0.48 (1.06)
Alumi	OE150004 R901121824	G 1	0.47 (1.04)
<u></u>	OE1500030055 R934001558	G 1/2	1.32 (2.91)
Steel	OE1500040055 R934001561	G 3/4	1.24 (2.73)



mm / Inches

CAVITY: 021-E

	Ordering code	Ports 1-2	Weight kg (lbs)
Aluminium	OE150005 R934001563	G 1	0.77 (1.70)
Steel	OE1500050055 R934001564	G 1	2.10 (4.63)



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The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging. Subject to change.



RE 18350-50/04.10

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Technical data

1. General

Bosch Rexroth Oil Control proposes a wide range of hydraulic components for applications in hydraulic circuits of mobile and industrial machinery. Detailed information about product performance, selection, installation and technical data can be obtained from our Customer Service Organization; here you may find a summary of general specifications which apply to all our DCOC hydraulic products with the aim to provide general guidance only.

2. Hydraulic fluids

Mineral oil based hydraulic fluids suitable for hydraulic systems can be used; they should have physical lubricating and chemical properties as specified by:

- MINERAL OIL BASED HYDRAULIC FLUIDS HL (DIN 51524 part 1)
- MINERAL OIL BASED HYDRAULIC FLUIDS HLP (DIN 51524 part 2).

For use of environmentally friendly fluids (vegetable or polyglycol base), or other fluids, please consult DCOC.

2.1 Fluid viscosity

When not differently specified in theindividual data sheet, and with the exception of "Compact Power Modules", the fluid viscosity should remain within the range 3 to 400 cSt (centistokes).

Hydraulic fluids are available in different viscosity classes identified by the ISO VG number, which corresponds to the kinematic viscosity at 40°C (104°F). Here is a table showing typical viscosity changes between 0°C and 100°C (32°F and 212°F) for mineral oil based fluids having various viscosity classes. The fluid should be selected with the aim to achieve an appropriate operating viscosity at the expected working temperatures.

VISCOSITY CLASS	KINEMATIC VISCOSITY - (cSt)						
VISCOSII I CLASS	MAX at 0°C (32°F)	MED at 40°C (104°F)	MIN at 100°C (212°F)				
ISO VG 10	90	10	2.4				
ISO VG 22	300	22	4.1				
ISO VG 32	420	32	5				
ISO VG 46	780	46	6.1				
ISO VG 68	1400	68	7.8				
ISO VG 100	2560	100	9.9				

Note: all main performance curves and specifications shown in DCOC technical literature are obtained using mineral based fluid ISO VG 46, i.e. 46 cSt at 40°C (104°F), with an oil temperature of 30-40°C (86-104°F).

More detailed technical characteristics are available at DCOC.

2.2 Fluid temperature recommendation

DCOC components are generally equipped with BUNA-N seals and, for this reason, the fluid temperature should remain within the -30°C and +100°C range (-22°F and +212°F). In case of temperatures outside this range, consult DCOC.

2.3 Fluid cleanliness requirements

The cause of malfunctions in hydraulic systems and components is often found to be excessive fluid contamination. The hard contaminant particles in the fluid wear the hydraulic components and prevent the poppets from re-seating, with consequent internal leakage and system inefficiency. For the correct operation of DCOC components it is necessary to adopt filtration methods which guarantee for life the specified fluid cleanliness level. It is important to ensure that hydraulic fluids are brought to the appropriate cleanliness level prior filling up the systems, and, when in doubt, also to flush the hydraulic components prior to installation. Fluid filtration must comply with the specifications given by the following table, where different cleanliness measuring standards are mentioned.

ISO 4406:1999 presently is the preferred standard; it defines the fluid cleanliness by three numbers respectively representing the maximum number of particles larger than **4µm**, **6µm** and **14µm** contained in one ml of fluid.

	OIL FILTRATION RECOMMENDATIONS				
TYPE OF SYSTEM TYPE OF VALVE	Cleanline	Absolute filtration			
	ISO 4406 : 1999	NAS 1638 (*)	(micron rating)		
Systems / components operating at HIGH PRESSURE > 250 bar (3600 psi) HIGH DUTY CYCLE APPLICATIONS Systems / components with LOW dirt tolerance	18 / 16 / 13	7 - 8	5		
Systems / components operating at MEDIUM HIGH PRESSURE Systems / components with moderate dirt tolerance	19 / 17 / 14	9	10		
Systems / components operating at LOW PRESSURE < 100 bar (1500 psi) LOW DUTY CYCLE APPLICATIONS Systems / components with GOOD dirt tolerance	20 / 18 / 15	10 - 11	20		

^(*) Contamination class NAS 1638 (National Aerospace Standard, conceived in the early 60's, officially superseded since June 2001): it is still followed and it is determined by counting the total particles of different size ranges contained in 100 ml of fluid.

3. Internal leakage

Here is a table with general information about the sealing properties of DCOC valves and components with leak proof seat design; the allowed leakage tolerance may change depending on the design, number of poppets and valve size; this general information is given for guidance only and, for many valves, specific details about the permissible leakage tolerance can be found in the relevant data sheet.

The AVERAGE LEAKAGE for different valve families is expressed in cm³/min, or drops/min and is measured in the specified test conditions.

The ratio between cm³ and drops is approximately: 1 cm³ (or 0.06 in³) = 15 - 18 drops.

For pressure relief valves the leakage is indicated at re-seating conditions, identified as X% of pressure relief setting.

^(**) Absolute filtration: is a characteristic of each type of filter; approximately, it refers to the size (expressed in microns) of the largest spherical particle which may pass through the filter.

	CHART OF SEALING PROPERTIES								
HYDRAULIC FUNCTION	Valve type	Flow I/min (gpm)	Max pressure bar (psi)	Operation type	Average leakage				
Pressure relief	Direct acting poppet type (leak proof seat design)	3-30 (1-8)	350 (5000)	CONTINUOUS	5-10 drops at 80% of std pressure setting				
PTT	Direct acting differential type (leak proof seat design)	40-350 (11-93)	350 (5000)	INTERMITTENT	(Z=20-35) (max 40 drops/min)				
	Direct acting poppet type	20-200 (5-53)	350 (5000)	CONTINUOUS	5-10 cm ³ /min (0.31-0.61 in ³ /min) at 80% of std pressure setting (Z=20-35)				
	Pilot controlled spool type	150 (40)	420 (6000)	CONTINUOUS	100 cm ³ /min (6.1 in ³ /min) at 90% of std pressure setting				
Check valve	Poppet type (leak proof seat design)	30-100 (8-26)	350 (5000)	CONTINUOUS	0-5 drops/min				
	Ball type (leak proof seat design)	60 (16)	350 (5000)	INTERMITTENT	(max 20 drops/min)				
Pilot assisted counterbalance		30-320 (8-85)	350 (5000)	CONTINUOUS	5-10 drops/min at 80% of pressure setting (max 40 drops/min)				

4. Pressure setting

DCOC valves are supplied pre-set at the standard pressure setting shown by the relevant catalogue sheet. Whenever the application requires a re-adjustment, please ensure that the limits of the indicated pressure range and maximum working pressure are never exceeded.

5. Sealing of valve adjusters

Special plastic sealing caps for service are available for most DCOC valves and cartridges. Upon request, valves can be supplied factory sealed.

6. Storage of new components

The components shall not be exposed to direct sun light nor to sources of heat or ozone (like electric motors running), and should be stored in their original, protective packing at ambient temperature within the range -20°C and +50°C (-4°F and 122°F).

7. Ports

G type ports (ISO 228-1) are often standard on components with body for line connection; SAE sizes (straight thread), JIS or metric ports can be manufactured upon request.

8. Body materials

- Valves and integrated manifolds for high pressure and/or heavy duty applications are manufactured with high quality leaded steel, zinc plated with yellow trivalent chrome treatment.
- Valves and integrated manifolds for medium working pressure (up to 210 bar) can be made of high strength wrought aluminium, black anodized upon request.
- Housings for modular, solenoid operated directional valves and flow diverters are made of high strength cast iron, zinc plated with yellow trivalent chrome treatment.

9. Seals

O-Rings: Buna N (acrylonitrile butadiene), also named NBR (according to ASTM), compatible with fluids having mineral oil base, water-in-oil emulsions, and water-glycol fluids. These seals are standard for temperatures within the range -30°C and +100°C (-22°F and +212°F).

Back-up rings and Slide rings: strengthened PTFE (Politetrafluoroetilene like Teflon®, Lubriflon®, Ecoflon®, or similar).

Special FPM (Viton®) seals are available on request.

Note: the seal materials are compatible with the fluids normally used in hydraulic systems; in case of special fluids, if you suspect incompatibility between the fluid used and the standard seals, contact the DCOC service network.

9.1 Seal kits

- for cartridge valves: the kits include all the external seals;
- for components assembled as parts in bodies or housings: the kits include all external seals for flange fitting, or for matching different units together.

10. Installation

- Ensure that all matching surfaces are clean, without contamination.
- Ensure that all seals and back-up rings for the matching surfaces are flawless and correctly placed.
- Do not put any sealing material other than the standard seals.
- Place in position the valve, then, by hand, insert the fittings and the locating screws.
- In case of cartridge valve, check that the cavity is clean, without sharp edges or chips. Dip the
 cartridge in clean oil, then insert it into the cavity and screw it in by hand, until you begin to
 compress the top O-Ring.
- Finally tighten with a calibrated torque wrench and torque up to the specifications shown in the catalogue.

Cavities for screw-in cartridges

DCOC has developed a complete range of cartridges which fit the cavity patterns with UN/UNF threads, according to SAE standards, nominal sizes 08-10-12-16-20. Internal parts of cartridges are designed with a global view of our comprehensive variety of hydraulic products; accordingly, our technology has been optimized in order to employ few basic parts for many different valves for best reliability, cost effectiveness and availability. Further, we can propose our cartridges in different versions, with a variety of external shells in order to fit other cavity patterns, such as ISO/METRIC, or special industrial patterns.

12. Coils

12.1 Coil installation on solenoid cartridges

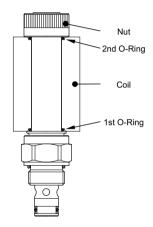
COIL INSTALLATION

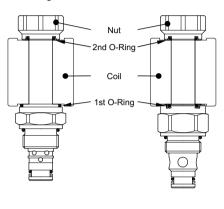
COIL WITH O-RING SEATS (S7-S5-R7)

- It is recommended to follow these steps:
- Insert 1st O-Ring (see drawing)
- Insert coil
- · Insert 2nd O-Ring (see drawing)
- Tighten BY HAND coil retaining nut to the torque specified in the cartridge catalogue page.

OIL WITHOUT O-RING SEATS (S8-356)

- · It is recommended to follow these steps:
- Insert 1st O-Ring (see drawing)
- Insert coil
- Tighten BY HAND coil retaining nut to the torque specified in the cartridge catalogue page. The 2nd O-Ring is fixed inside the nut.





IMPORTANT: O-Rings are the only protection against water infiltration between tube and coil, which may lead in short time to coil failure. The proper mounting of both O-Rings is therefore necessary to ensure normal life of coils when operating in presence of water, ice, moisture etc. Oil Control cannot guarantee any IP protection degree if both O-Rings are not properly mounted on coils.

12.2 Working duty (DIN VDE 0580)

The working duty ED of a coil is the ratio between energized time ti and full cycle time tc where tc = ti + tr, and tr = de-energized time.

$$ED = (ti / tc) \cdot 100\%$$

All DCOC coils are rated for **ED = 100**% (i.e. always energized), provided that the temperature limits of their insulation classes are not exceeded.

12.3 Protection rating (DIN 40050 - Part 9 IEC 60529)

Protection class is designated by the letter IP followed by two digits: the first digit refers to resistance against penetration of surrounding or foreign solid objects, the second against penetration of water. Protection class doesn't apply to explosion risks or to conditions such as moisture, corrosive agents, mildew etc.

- IP65 means water protection against LOW PRESSURE JETS:water at 0.3 bar (43.5 psi) pressure sprayed from a distance of 2.5 3 m (8.2 9.8 ft) from every direction IP65 coils CANNOT BE PLUNGED INTO WATER OR REMAIN UNDER WATER.
- IP67 means water protection against 30 MINUTES IMMERSION under water 1 m (3.3 ft) deep.
- IP69K means water protection against HIGH PRESSURE JETS:

water at high pressure and temperature, 80-100 bar (1160-1450 psi) and 75-85°C (167°F-185°F), sprayed from a distance of 100-150 mm (3.9-5.9 in) from every direction.

12.4 Coil resistance to thermal shock dunk test

This test, well known and commonly applied in the construction, agricultural and mobile equipment markets, includes several steps:

- 1) Coil is maintained energized for 1 hour at nominal voltage and ambient temperature 25°C (77°F), or is not energized but heated for 2 hours in oven at 105°C (221°F).
- 2) Coil is immediately immersed in water at 20 25°C (68 77°F) for 30 minutes, at minimum depth 300 mm (11.8 in).
- 3) Coil, when still wet, is tested for moisture ingression and dielectric breakdown with a dielectric tester, like the "Hypot". With this tester, a voltage differential of 500V DC is applied between the winding and the coil external surface in order to measure the current leakage which must not exceed 100µA (micro-amps).
- 4) The complete test is performed on samples of 10 coils minimum, and is repeated at least five times.

All coils with EN 175301-803 (ex DIN 43650) connector correctly mounted comply with IP65 protection class. Coils with integrated Deutsch DT04-2P connector have IP69K protection class, and pass the thermal shock dunk test.

12.5 Heat insulation (DIN VDE 0580)

The actual coil temperature **T** is the result of $(TA + \Delta T)$, where:

TA = ambient temperature, and ΔT = temperature rise due to coil operation.

Example: with TA = 40° C (104° F) and Δ Tmax = 115° C (239° F), T = 155° C (311° F); with TA = 40° C (104° F) and Δ Tmax = 140° C (284° F), T = 180° C (365° F).

The coil ΔT is determined following a standard procedure (DIN VDE 0580):

- the coil is mounted on a standard cartridge, inserted in a standard steel manifold placed on a wooden surface.
- the coil is maintained energized for 1 hour at nominal voltage, with ambient temperature TA = 20-25°C (68-77°F) and with natural ventilation.

CLASS H coils are rated for T max = 180°C (356°F):

if ambient temperature exceeds the value Tx = 180°C (356°F) - ΔT , a class H coil cannot be used under continuous duty cycle (ED = 100%); the coil must be periodically de-energized to prevent exceeding the MAX temperature.

In any case, for the correct operation of coils, it is always necessary to provide means for heat dissipation and, at least, natural ventilation.

Caution: when energized, the coil surface temperature can reach quickly (in few minutes of continuous operation) temperature levels of 80-100°C (176-212°F), which is not directly related to the coil ΔT : care should be taken to avoid any accidental contact of people with the coil surface.

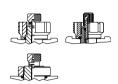
12.6 AC Service

All DCOC solenoid valves are designed to operate exclusively with DC power supply. All coil windings are DC. AC operation is possible using EN 175301-803 (ex DIN 43650) connectors with rectifier.

12.7 Optional manual emergency for solenoid cartridges

Upon request, the solenoid cartridges can be equipped with tubes incorporating a manual emergency device for valve operation when the coil cannot be energized, like in case of voltage shortage. Here is a summary of the different options available:

SCREW-OUT KNOB STYLE



AVAILABLE ON FOLLOWING MODELS:

- 2 way 2 position pilot operated normally closed series 8A / 8I
- 2 way 2 position direct acting poppet style normally closed series 8l
- 2 way 2 position direct acting double lock normally open series 8I
- 3 way 2 position spool style series 8l / 7l
- 4 way 2 position spool style series 8I / 7I

OPERATION

To operate manual override, screw out the knob turning it counterclockwise. To return to normal valve operation, turn the knob clockwise.

SCREW-IN STYLE



AVAILABLE ON FOLLOWING MODELS:

Proportional valves series 5A

OPERATION

To operate manual override, screw in the pin turning it clockwise with wrench. To return to normal valve operation, turn the bolt counterclockwise.

PUSH STYLE



AVAILABLE ON FOLLOWING MODELS:

- 2 way 2 position pilot operated normally open series 8A / 8I
- 2 way 2 position direct acting poppet style normally open series 8I
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

To operate manual override, push and hold override button. To return to normal valve operation, simply release the button.

AVAILABLE ON FOLLOWING MODELS:

- · 2 way 2 position direct acting double lock normally closed series 7A
- 3 way 2 position direct acting poppet style series 7A

ODEDATION

To operate manual override, push and hold override button with tool. To return to normal valve operation, simply release the button.

PUSH AND TWIST STYLE



AVAILABLE ON FOLLOWING MODELS:

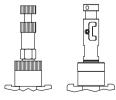
- 2 way 2 position pilot operated normally open series 8A / 8I
- · 2 way 2 position direct acting poppet style normally open series 8I
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

To operate manual override button, turn clockwise and release.

To return to normal valve operation, push override button, turn counterclockwise and release.

PUSH AND PULL STYLE



AVAILABLE ON FOLLOWING MODELS:

4 way 3 position spool style series 8A / 7I

OPERATION

To operate manual override, push to override S2 coil or pull to override S1 coil and hold override button.

To return to normal valve operation, simply release the button.

SCREW-OUT KNOB STYLE

CABLE OPERATED

HAND OPE-RATED





AVAILABLE ON FOLLOWING MODELS:

2 way 2 position pilot operated normally closed series 8A size 06

OPERATION

To operate manual override, pull and hold the knob. This override is not detented. Force required to operate is approximately 50 N (11.2 lbs).

This override can also be remote operated by a cable fixed to the M8 thread. In this case the spring may not provide enough force to overcome internal cable friction and the user must provide an external means of returning the cable.

SAFETY PUSH STYLE

AVAILABLE ON FOLLOWING MODELS:



- 2 way 2 position pilot operated normally open series 8A / 8I
- 2 way 2 position direct acting poppet style normally open series 8I
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

To operate manual override, screw out the knob protection after removing wirelocking and push and hold override button.

To return to normal valve operation, simply release the button.

SAFETY PUSH AND TWIST STYLE

AVAILABLE ON FOLLOWING MODELS:

- 2 way 2 position pilot operated normally open series 8A / 8I
- 2 way 2 position direct acting poppet style normally open series 8l
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

To operate manual override, screw out the knob protection after removing wirelocking and turn clockwise and release override button.

To return to normal valve operation, push override button, turn counterclockwise and release.



13. Technical data for Proportional valves DCOC

GLOSSARY OF TERMS AND DEFINITIONS

Current is the flow of electrons in a conductor, measured in Amperes (A) or milli-amperes (mA) and abbreviated "I".

Voltage is the potential for current flow in an electrical circuit. It is measured in Volts (V) and abbreviated "V."

Resistance is a material's opposition to the flow of electrical current. It depends on physical properties as well as temperature, size and shape of the material. It is measured in Ohms (Ω) and abbreviated "R". The tolerance allowed on resistance at ambient temperature 20-25°C (68 - 77°F) is \pm 7 %.

Hysteresis is the difference in regulated hydraulic parameter (flow / pressure) at a fixed current level when current is increasing vs. when current is decreasing. It is normally expressed as a percentage of the total change in regulated hydraulic parameter (flow / pressure).

Example: With 900 mA input current and increasing current, 20 bar (290 psi) regulated pressure is achieved. With 900 mA input current and decreasing current, 20.8 bar (302 psi) regulated pressure is achieved. There is a 0.8 bar (12 psi) difference in regulated pressure achieved with the same current depending on whether current is increasing or decreasing.

If Maximum Regulated Pressure = 25 bar (363 psi) and Minimum Regulated Pressure = 4 bar (58 psi), the total regulated parameter change is 25 (363) - 4 (58) = 21 bar (305 psi). Hysteresis = $(0.8 / 21) \times 100 = 3.8\%$.

Proportional Controller is a device that converts a low-power input signal into an output signal that is capable of operating the valve. This output signal can be modified to include PWM, ramping, etc.

Pulse Width Modulation (PWM) is a method used to vary the average current induced in a coil using a square wave of fixed frequency, and variable ratios of on/off times.

Dither is a method used to reduce hysteresis by applying a square or triangle wave to the coil voltage. It can be applied to straight DC or PWM.

Maximum Control Current is the point where increasing current input no longer results in an increase in regulated hydraulic parameter (flow / pressure).

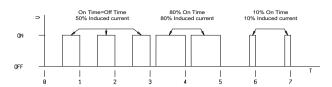
I-Min and I-Max represent the minimum and maximum control current induced into a proportional valve coil. The tolerance allowed is ± 10 % and depends largely from coil's resistance tolerance.

Ramping is the ability to control the rate of change of the output of an electronic controller.

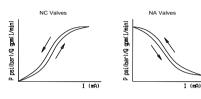
VERY IMPORTANT:

- a. It is strongly recommended to use pulse-width-modulation (PWM) as input signal to coils rather than straightDC. Our tests indicate that PWM input signal allows best valve performance, significantly reducing hysteresis and response times of all our proportional valves. All features shown and explained in next pages are available from many industry-common electronic controllers, including Proportional Controllers described in this catalogue.
- b. Oil Control recommends to use always 12 V DC coils in combination with 24 V DC supply voltage to the electronic controller. This allows to use a much wider control current range independently from coil temperature, since anyway current is regulated by the electronic controller and there is no coil overheating risk.

PULSE WIDTH MODULATION

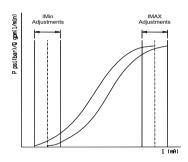


HYSTERESIS CHARACTERISTIC WITH 120 Hz PWM



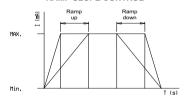
For normally closed proportional valves, the hysteresis curve with increasing current is always lower than the curve with decreasing current. The opposite is true for normally open proportional valves as shown.

REPEATABILITY RANGE



An important control feature of electronic controllers is I-Min / I-Max adjustment. This feature allows control of the regulated hydraulic parameter across the full range of the electronic controller by eliminating deadband.

RAMP SLOPE CONTROL



Many commercially available controllers also offer a ramping control feature. This feature allows to adjust the current rate of change between the I-Min and I-Max setpoints.

14. European machine directive 2006/42/CE

The DCOC valves or components described in this catalogue can be employed in machinery or systems which need to comply with the European Machine Directive

In such case, the DCOC valves, manifolds, components and assemblies must be fitted in compliance with all the relevant technical data sheet applicable to the product, and shall not be operated, adjusted or disassembled before the complete machinery where they are incorporated has been declared to be in compliance with the Machine Directive 2006/42/CE.

15. General technical data for compact power modules

Through the years DCOC has developed a highly evolved modular system resulting in powerful, flexible and cost effective power pack range, identified as "compact power modules". In its easier configuration, a "compact power module" is an assembly of electric motor, central manifold with valves, pump, oil tank and a few connection elements. The central manifold, with its built-in valves, allows to achieve a large variety of hydraulic control circuits. If more complex circuits are needed, modular integrated blocks can be added by flange mounting, or interfacing, to the central manifold to extend its capabilities.

15.1 Power module selection

- · Choose the circuit which meets your application requirements.
- Take note of all dimensions resulting from the basic components chosen for your application.
 NOTE: dimensions may vary slightly and should be confirmed by DCOC, if the assembly is to be installed in a space with narrow clearance.
- The tank capacity and the tank dimensions need to be large enough to assure proper pump suction: there
 must always be a reserve of oil in the tank when all cylinders are fully extended and avoid overflow when
 cylinders are fully retracted.
- The tank must be evaluated also for best separation of air from oil, and for settling down oil contamination. It should be placed in a space with, at least, natural ventilation and it should permit enough heat dissipation to prevent fluid temperature from exceeding 60°C (140°F).
- Select the electric motor by evaluating the power needed and the motor compliance with the heat developed during the expected run time (or "duty cycle").
 Motor performance diagrams for "continuous running" (S1), "short time running" (S2) or "intermittent periodic running" (S3) are available in the catalogue. In case of doubt, consult DCOC.

15.2 Power module installation

The mounting position is basically un-restricted; just avoid installations that could compromise the pump suction. It is recommended to support the power module on vibration dampening blocks when the mounting structure is expected to vibrate.

15.3 Hydraulic fluid for power module

It should meet all specifications given for the other DCOC valves and components, except that:

- the viscosity should remain within the range 10 to 300 cSt (centistokes); best 15 to 120 cSt.
- the temperature should remain within the range -15°C and +80°C (5°F and176°F). In fact, these are the
 temperature limits generally recommended for the gaskets employed in these power modules.

15.4 Cleaning and maintenance

All components of the hydraulic circuit, including hoses and actuators, must be flushed clean before assembling, because the power module only has a suction filter.

The hydraulic fluid should be replaced after the first 100 hours, and then every 3000 hours, or, at least, once a year.

15.5 Wiring and starting-up

The wiring between battery and electric motor should be selected in order to avoid excessive voltage drop (recommended less than 1 V).

It is strictly forbidden to allow the backwards rotation of the pump even at the first starting: to prevent reverse rotation, the wiring polarities must be correctly connected.

Caution: when energized, the surface temperature of the electric motor could reach temperature levels of 60–80°C (140–176°F): care should be taken to avoid any accidental contact of people with the motor surface.

16. European machine directive 2006/42/CE

According to the Machine Directive 2006/42/CE, a complete power module, as described in paragraph 15 and made available to the European market, enters into the definition of "partly completed machinery". Instead, the power module sub-assemblies (motor, pump, reservoir, central manifold, ...), when not assembled into a complete power pack, are considered "components" which can be employed in a "machinery" or a "partly completed machinery". In this case, the DCOC components and sub-assemblies must be fitted in compliance with all the relevant technical data sheet applicable to the product, and shall not be operated, adjusted or disassembled before the complete machinery where they are incorporated has been declared to be in compliance with the Machine Directive 2006/42/C

Important note: above technical data do not apply to the following sections:

- High pressure cartridge valves and Proportional pressure reducing valves & Remote control manifolds (RE 90005-03 chapter 5 and 6). Please refer to the information included on the individual data sheet and/or contact DCH-CO sales network for any doubts.
- Compact Directional Valves (RE 90005-04 chapters 2, 3 and 4). Please refer to the information included on the individual data sheets for technical and usage details or contact DCOC sales network for any doubts.

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Cavities

Common and special cavities

Designation	Data sheet	Page
Common cavities & Tooling	18325-70	1435
Special cavities	18325-75	1441



Common cavities & Tooling

1/6

RE 18325-70/02.10

Replaces: RE 00162-02/01.06

2-way

3-way / 3-way short

4-way

Summary

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	Common cavity 3-way	
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2	CA-10A-3N	4
2	CA-12A-3N	4
2	CA-16A-3N	4
2	CA-20A-3N	4
2	Tools	4
	Common cavity 4-way	
3	CA-08A-4N	5
3	CA-10A-4N	5
3	CA-12A-4N	5
3	CA-16A-4N	5
3	CA-20A-4N	5
3	Tools	5
	2 2 2 2 2 2 2 3 3 3 3 3	Common cavity 3-way CA-08A-3N CA-10A-3N CA-12A-3N CA-16A-3N CA-20A-3N Common cavity 4-way CA-08A-4N CA-10A-4N CA-12A-4N CA-16A-4N CA-16A-4N CA-16A-4N

Common cavities - Tools 2-way

1 mm = 0.03937 in 1 in = 25.4 mm

TWO WAY		CA-08A-2N	CA-10A-2N	CA-12A-2N	CA-16A-2N	CA-20A-2N
	Α	3/4-16 UNF-2B	7/8-14 UNF-2B	1-1/16 12 UN-2B	1-5/16 12 UN-2B	1-5/8 12 UN-2B
	В	26	30	35	42	48
øc A	С	20.6 10.1	23.9 :01	29.2 :01	35.5 :0.1	43.5 :01
20,	D1	12.7 10.06	15.87 10.05	22.22 +0.06	28.60 10.06	36.52 10.05
ØB \(\frac{3.2}{3.2}\)	Е	2.6 -0.3	2.6 +0.3	3.3 +0.3	3.3 +0.3	3.4 +0.3
ш	F	13	15	20	20	22
R 0.15	G	9	12	18	19	25
450	G1	12	15	19	24	35
	H1	14	18	26	25	31
	L1	20.5	25.5	36.5	36	46
	L2	29	34.5	48	49	59
	М	1.5	1.5	-	-	-
① — ØD1						
Ø G1 max						
© 0.03 General tolerance: ± 0.3 mm						
General tolerance: ± 0.3 mm						

TOOLS (ALUMINIUM/STEEL *)	ORDERING CODE					
DRILL CONTROL OF THE PARTY OF T	Ø G1	Ø G1	Ø G1	Ø G1	ØG1	
FORM DRILL	P-CA-08A-2N	P-CA-10A-2N	P-CA-12A-2N	P-CA-16A-2N	P-CA-20A-2N	
FORM REAMER	A-CA-08A-2N	A-CA-10A-2N	A-CA-12A-2N	A-CA-16A-2N	A-CA-20A-2N	
PLUG TAP	M-CA-08A	M-CA-10A	M-CA-12A	M-CA-16A	M-CA-20A	

Common cavities - Tools 3-way short

1 mm = 0.03937 in 1 in = 25.4 mm

THREE WAY SHORT		CA-08A-3C	CA-10A-3C	CA-12A-3C	CA-16A-3C	CA-20A-3C
200	Α	3/4-16 UNF-2B	7/8-14 UNF-2B	1-1/16 12 UN-2B	1-5/16 12 UN-2B	1-5/8 12 UN-2B
øc 🚽	В	26	30	35	42	48
13.2/	С	20.6 :01	23.9 :01	29.2 *0.1	35.5 *0.1	43.5 10.1
\ \frac{1}{\sqrt{1}}	D1	15.87 10.05	19.05 10.05	23.80 10.05	28.60 :0.05	36.52 +0.05
ØB W R 0.15	D2	14.27:0.06	17.47 :0.05	22.22-0.05	25.42 -0.06	33.35.05
	Е	2.6 : 0.3	2.6.03	3.3 :03	3.3 :0.3	3.4 :03
45.11	F	12	13	21	16.5	20
	G	8	14	14	15	28
	G1	3	4	5	5	7
	G2	12	15	19	24	30
\\ \frac{\pi}{\pi} \ \frac{\pi}	H1	12.5	14	22.5	17.5	20
	H2	26.5	31.5	40.5	38	50
<u> </u> 2	L1	16	18	26.5	22	25.5
	L2	32	40	49.5	47.5	65.5
ØG 22 1	L3	40	49	60	58	78
	М	-	-	-	2	-
1 <u>Ø D2</u>	M1	-	-	-	2	-
Ø G2 max						
© 0.03						
General tolerance: ± 0.3 mm						

TOOLS (ALUMINIUM/STEEL *)	ORDERING CODE						
DRILL	Ø G2	Ø G2	Ø G2	Ø G2	ØG2		
FORM DRILL	P-CA-08A-3C	P-CA-10A-3C	P-CA-12A-3C	P-CA-16A-3C	P-CA-20A-3C		
FORM REAMER	A-CA-08A-3C	A-CA-10A-3C	A-CA-12A-3C	A-CA-16A-3C	A-CA-20A-30		
PLUG TAP	M-CA-08A	M-CA-10A	M-CA-12A	M-CA-16A	M-CA-20A		

Common cavities - Tools 3-way

1 mm = 0.03937 in 1 in = 25.4 mm

THREE WAY		CA-08A-3N	CA-10A-3N	CA-12A-3N	CA-16A-3N	CA-20A-3N
(a)	Α	3/4-16 UNF-2B	7/8-14 UNF-2B	1-1/16 12 UN-2B	1-5/16 12 UN-2B	1-5/8 12 UN-2B
øc - d	В	26	30	35	42	54
3.2/	С	20.6 10.1	23.9 :0.1	29.2 +0.1	35.5 101	43.5 101
	D1	15.87 -0.06	17.47 10.05	23.80 :05	28.60 :0.06	36.52 -0.05
øв ^ш	5 D2	14.27 -0 14.27	15.87 :0.05	22.22 +0.05	27.00 :0.05	33.35 :0.05
αΔ	Е	2.6 :03	2.6 :03	3.3 +0.3	3.3 :0.3	3.4 +0.3
 	F	13	14	20	20	22
	G	6	8	14	17	25
	G1	12	15	19	24	30
	H1	15	18	28	25.5	31
	H2	29	34	53	54	72
øg S	L1	19.5	23.5	36.5	35.5	46
	L2	33.5	39.5	61.5	64	87.5
ØD1 ∑ Z	L3	43	48.5	73	75	100
ØG * 100 100 100 100 100 100 100 100 100 1	М	-	(1.5)	-	-	-
	M1	-	-	-	-	-
1 Ø D2	*	-	-	-	-	25.5
Ø G1 max						
General tolerance : ± 0.3 mm						
General tolerance : ± 0.3 mm						

TOOLS (ALUMINIUM/STEEL *)	ORDERING CODE				
DRILL	Ø G1	Ø G1	Ø G1	Ø G1	ØG1
FORM DRILL	P-CA-08A-3N	P-CA-10A-3N	P-CA-12A-3N	P-CA-16A-3N	P-CA-20A-3N
FORM REAMER	A-CA-08A-3N	A-CA-10A-3N	A-CA-12A-3N	A-CA-16A-3N	A-CA-20A-3N
PLUG TAP	M-CA-08A	M-CA-10A	M-CA-12A	M-CA-16A	M-CA-20A
* NOTE: Special heavy duty tools are available upon reques	t, for steel drilling.				-

Common cavities - Tools 4-way

1 mm = 0.03937 in 1 in = 25.4 mm

FOUR WAY			CA-08A-4N	CA-10A-4N	CA-12A-4N	CA-16A-4N	CA-20A-4N
	øc A	Α	3/4-16 UNF-2B	7/8-14 UNF-2B	1-1/16 12 UN-2B	1-5/16 12 UN-2B	1-5/8 12 UN-2B
2		В	26	30	35	42	48
137		С	20.6 :0.1	23.9 10.1	29.2 :01	35.5 :01	43.5 :01
ØB W		D1	15.87 +0.05	19.05 -0.05	23.80 +0.06	28.60 :0.06	36.52 +0.06
ØA → T	450	D2	14.27:0.05	17.47 :0.05	22.22 :0.06	27.00 :006	33.35 :0.06
	حاب	D3	12.70 10.05	15.87 :0.05	20.62 :0.05	25.42 :0.05	31.75 10.05
	\(\frac{\pi}{2}\) \(\frac{\pi}	Е	2.6 +0.3	2.6 +0.3	3.3 +0.3	3.3 +0.3	3.4 +0.3
		F	13	15	19	20	22
		G	6	8	14	16	25
g ØG		G1	12	15	19	24	30
		H1	15	18	28	25	32
 	1 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		29	34	53	53.5	72
Ø G 15 1 1 25 1	1 1	НЗ	43	50	78	82	114
② Ø D2	MZ	L1	19.5	23.5	36.5	35.5	46
ø _G	<u></u>	L2	33.5	39.5	61.5	64	87
25 A28	†]	L3	47.5	55.5	87.5	92.5	128.5
Ø G1 max		L4	56	64.5	99	104	142
D GT IIIAX		М	-	-	•	-	-
C	0.002 (0.03)	M1	-	-	-	-	-
General tolerance : ± 0.012 (0.3 mm)	⊥ 0.008 (0.02)	M2	-	-	-	-	-

TOOLS (ALUMINIUM/STEEL *)	ORDERING CODE						
DRILL	Ø G1	Ø G1	Ø G1	Ø G1	Ø G1		
FORM DRILL	P-CA-08A-4N	P-CA-10A-4N	P-CA-12A-4N	P-CA-16A-4N	P-CA-20A-4N		
FORM REAMER	A-CA-08A-4N	A-CA-10A-4N	A-CA-12A-4N	A-CA-16A-4N	A-CA-20A-4N		
PLUG TAP	M-CA-08A	M-CA-10A	M-CA-12A	M-CA-16A	M-CA-20A		

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Special cavities

1/6

RE 18325-75/02.10

Replaces: RE 00162-02/01.06

004 - 008 - 009 - 065 - 348 - 690

730 - 730-A - 808 - 869 - 870 - 871

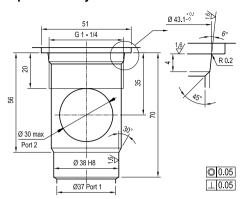
924 - CA-07A-3N - CA-04A-3Y

017-E - 019-E - 021-E - 081-E

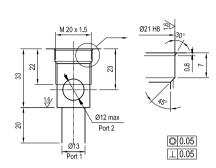
Summary

Description	Page	Description	Page
Cavity 004	2	Cavity 924	4
Cavity 008	2	Cavity CA-07A-3N	4
Cavity 009	2	Cavity CA-04A-3Y	4
Cavity 065	2		
Cavity 348	2		
Cavity 690	2	Cavity CA-20B-6C	5
Cavity 730	3	Cavity 017-E	6
Cavity 730-A	3	Cavity 019-E	6
Cavity 808	3	Cavity 021-E	6
Cavity 869	3	Cavity 081-E	6
Cavity 870	3		
Cavity 871	3		

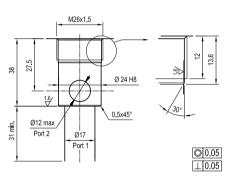
Special cavity 004



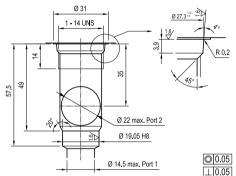
Special cavity 008



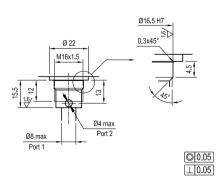
Special cavity 009



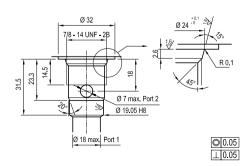
Special cavity 065



Special cavity 348

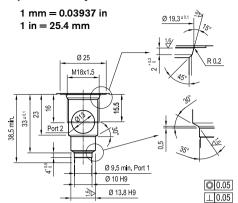


Special cavity 690

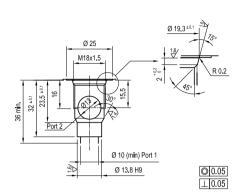


- 1 mm = 0.03937 in
- 1 in = 25.4 mm

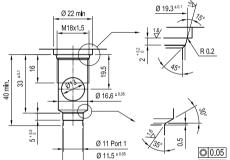
Special cavity 730



Special cavity 730-A

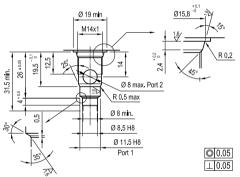


Special cavity 808

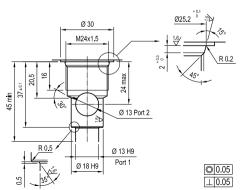


上 0.05

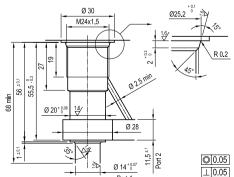
Special cavity 869



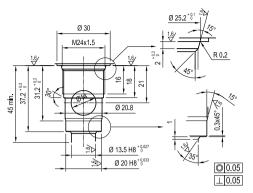
Special cavity 870



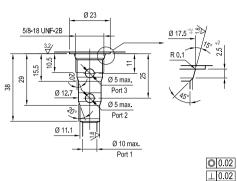
Special cavity 871



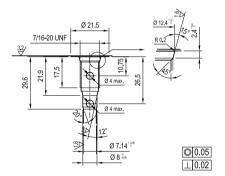
Special cavity 924



Special cavity CA-07A-3N



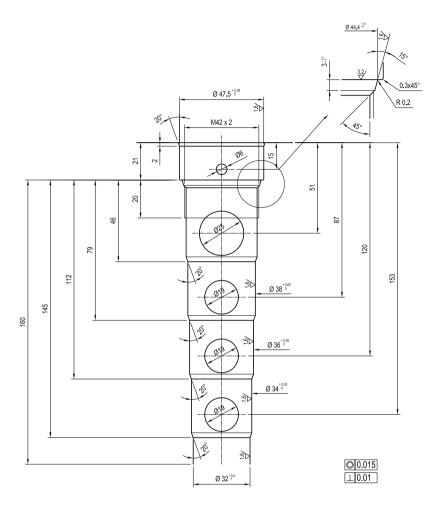
Special cavity CA-04A-3Y



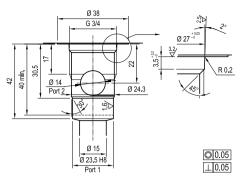
¹ mm = 0.03937 in

¹ in = 25.4 mm

Special cavity CA-20B-6C



Special cavity 017-E



To assemble cartridges with internal revers check valve

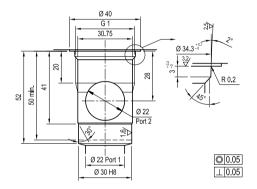
(VEI-8A-2A-06-VU etc.)

minimum diameter Ø 11 mm

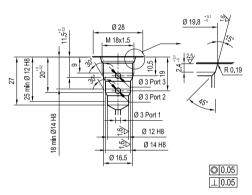
* minimum lenght 32 mm

○ 0.05
⊥ 0.05

Special cavity 021-E



Special cavity 081-E



1 mm = 0.03937 in 1 in = 25.4 mm

Note: For further details please consult factory

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