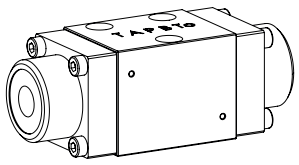
Spool valve

Flange construction

- hydraulically operated
- 4/2-way impulse execution, detented
- 4/3-way with spring centred mid position
- 4/2-way with spring reset
- Q_{max} = 8 l/min
- p_{max} = 350 bar

NG3-Mini



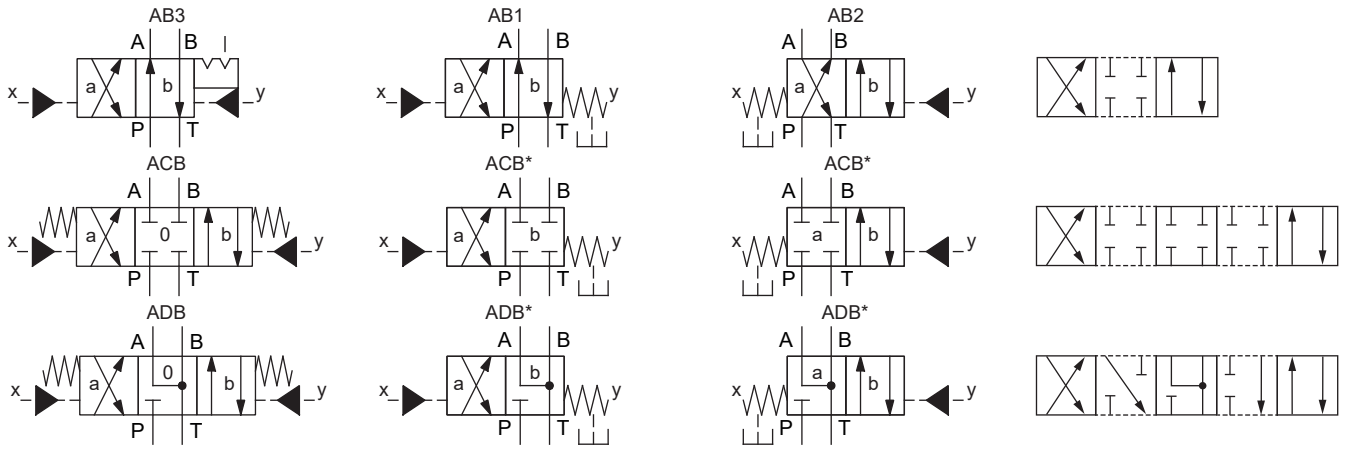
DESCRIPTION

Direct operated spool valve hydraulically operated via pilot port with 4 connections in a 5 chamber system. Spool detented or with spring. Without actuation, the spool is held in the center position by the spring (4/3), or switched back to the offset position (4/2). With the detent, the spool is held in the last switching position selected. Precise spool fit, low leakage, long service life time. Spool made from hardened steel, body from high quality hydraulic cast steel.

APPLICATION

Spool valves are mainly used for controlling direction of movement and stopping of hydraulic cylinders and motors. The direction of movement is determined by the position of the spool and its symbol. Miniature values are used where both, reduced dimensions and weight are important.

SYMBOL



* These 4/2-way valves with spring reset are being delivered as 4/3-way valves.

Note! When the pilot ports are not actuated (without pressure), or not needed, the leakage oil must be discharged.

TYPE CODE

WD F F A03 - [ ] - [ ] # [ ]

- Spool valve, directly operated
- Hydraulically operated
- Flange construction
- Mounting interface acc. to Wandfluh standard, NG3-Mini
- Designation of symbols acc. to table
- Sealing material: NBR [ ]; FKM (Viton) [D1]
- Design index (subject to change)

1.7-15

GENERAL SPECIFICATIONS

Designation	4/2-, 4/3-spool valve
Construction	Direct operated
Mounting	Flange construction
Nominal size	NG3-Mini according to Wandfluh standard
Actuation	Hydraulically operated
Ambient temperature	-25…+70 °C
Weight	0,38 kg
MTTFd	150 years

ACTUATION

Actuation	Hydraulically operated
Pilot pressure	p_{min} = 10 bar p_{max} = 100 bar
Control volume	V = 0,08 cm³

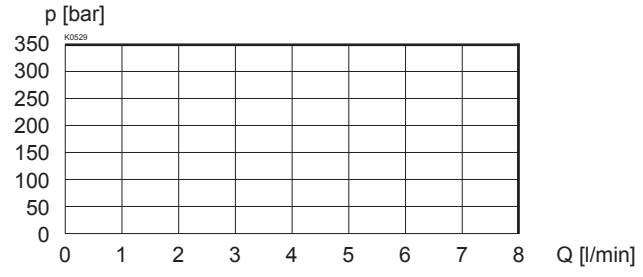
HYDRAULIC SPECIFICATIONS

Working pressure	p_{max} = 350 bar (p_T < 20 bar) p_{max} = 315 bar (p_T > 20 bar)
Tank pressure	$p_{T\,max}$ = 90 bar Resp. 10 bar lower than the control pressure
Maximum volume flow	Q_{max} = 8 l/min, see characteristics
Leakage oil	See characteristics
Fluid	Mineral oil, other fluid on request
Viscosity range	12 mm²/s…320 mm²/s
Temperature range fluid	-25…+70 °C (NBR) -20…+70 °C (FKM)
Contamination efficiency	Class 20 / 18 / 14
Filtration	Required filtration grade ß 10…16 ≥ 75, see data sheet 1.0-50

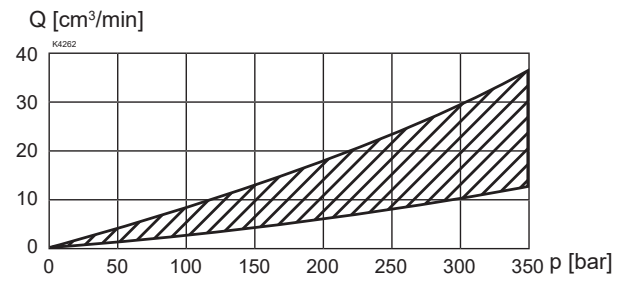
PERFORMANCE SPECIFICATIONS

Oil viscosity υ = 30 mm²/s

p = f (Q) **Performance limits**



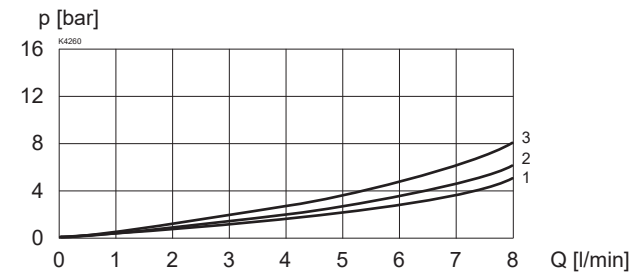
Q_L = f (Q) **Leakage volume flow characteristics** per control edge



PERFORMANCE SPECIFICATIONS

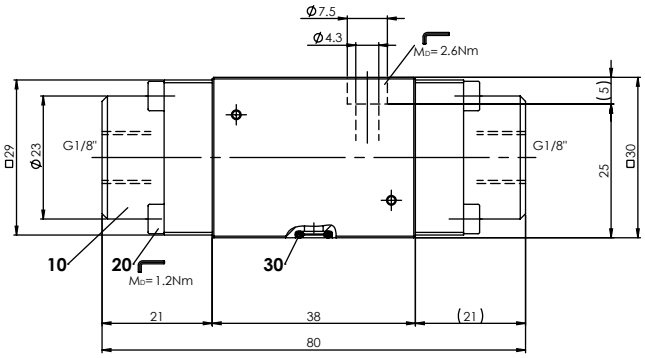
Oil viscosity υ = 30 mm²/s

Δp = f (Q) **Pressure drop-volume flow characteristics**

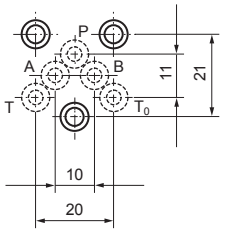


	Volume flow direction				
Symbol	P - A	P - B	P - T	A - T	B - T
AB1 / AB2 / AB3	3	3	-	2	2
ACB	3	3	-	1	1
ADB	2	2	-	1	1

DIMENSIONS



HYDRAULIC CONNECTION



PARTS LIST

Position	Article	Description
10	056.4701	Cover
20	246.0114	Socket head screw M3 x 14 DIN 912
80	160.2045	O-ring ID 4,50 x 1,50 (NBR)

ACCESSORIES

Fixing screws	Data sheet 1.0-60
Threaded subplates	Data sheet 2.9-05
Multi-station subplates	Data sheet 2.9-45
Horizontal mounting blocks	Data sheet 2.9-85
Technical explanations	Data sheet 1.0-100
Filtration	Data sheet 1.0-50

SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

STANDARDS

Mounting interface	Wandfluh standard
Contamination efficiency	ISO 4406

INSTALLATION NOTES

Mounting type	Flange mounting 3 fixing holes for socket head screws M4 x 30
Mounting position	Any, preferably horizontal
Tightening torque	Fixing screws M_D = 2,6 Nm (quality 8.8, zinc coated)

Note! The length of the fixing screw depends on the base material of the connection element.

SURFACE TREATMENT

- The valve body is painted with a two component paint
- The covers are zinc-nickel coated

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