Hydraulic Dampers

Multi-talent in speed control

The hydraulic dampers are similar in appearance to the ACE industrial gas springs but are adjusted in the end position and work differently to the DVC family with individual speed adjusters for the push and pull direction. This provide users with the maximum flexibility.

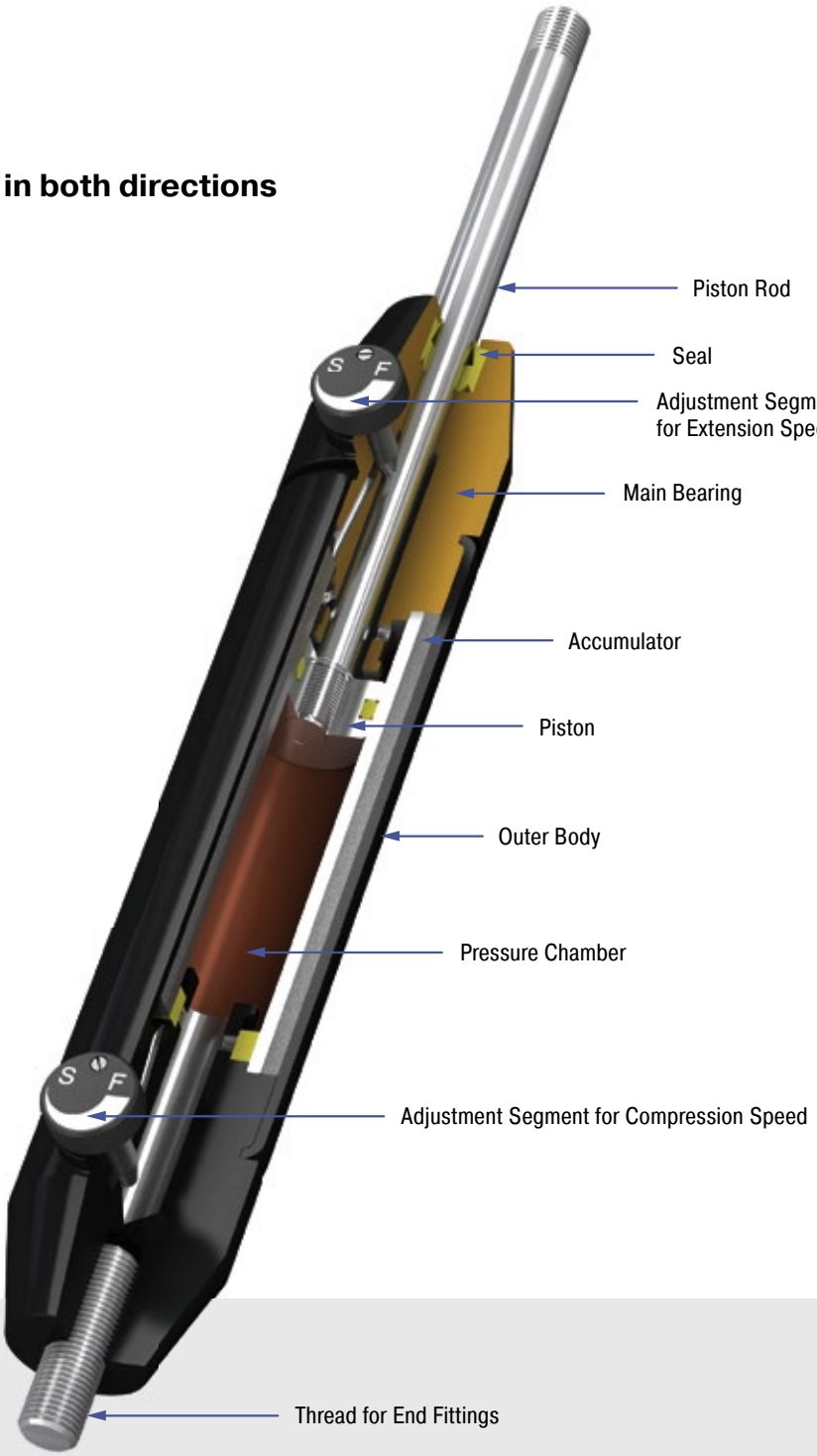
Whether used as drive compensation or safety elements, the retraction and extension speed of these ACE solutions can always be precisely set. This means that the speed of movement can be controlled, synchronisation regulated in both directions and pivoting loads can be compensated. Depending on the model, the push and pull forces are between 30 and 40,000 N. These maintenance-free, ready-to-install products are available in body diameters of 12 to 70 mm and in stroke lengths up to 800 mm.

DVC-32
Hydraulic Dampers
Individual speed adjustment in both directions

Can be regulated separately in any stroke position: The hydraulic dampers in the DVC-32 model are the first model to have the ability to have the in and out speeds adjusted independently from the outside and therefore more precisely. With their individual adjustment segments for the push and pull direction as well as the double-sided action, these are suitable as safety or control elements.

The great number of mounting accessories makes assembly of these hydraulic dampers by ACE easier and allows these maintenance-free, ready-to-install and self-contained systems universally applicable. Qualitatively high grade, and at the same time simple to use; one of their uses is to absorb swinging loads.

These machine elements are used, for one, in the automotive sector and industrial applications as well as in mechanical engineering and the electronics industry.



Technical Data

Compression and extension force: 42 N to 2,000 N

Outer body diameter: Ø 32 mm

Piston rod diameter: Ø 8 mm

Lifetime: Approx. 10,000 m

Operating temperature range: 0 °C to 65 °C

Adjustment: Steplessly adjustable

Positive stop: External positive stops 1 mm to 1.5 mm before the end of stroke provided by the customer.

Damping medium: Automatic Transmission Fluid (ATF)

Material: Outer body: Coated aluminium; Piston rod: Black anodized aluminium; End fittings: Zinc plated steel

Mounting: In any position

Application field: Cylinder speed controls, Absorption control, Finishing and processing centres

Note: Increased break-away force if unit has not moved for some time. Damping force can be adjusted after installation.

End fittings: They are interchangeable and must be positively secured by the customer to prevent unscrewing.

On request: Special oils and other special options. Alternative accessories available on request.

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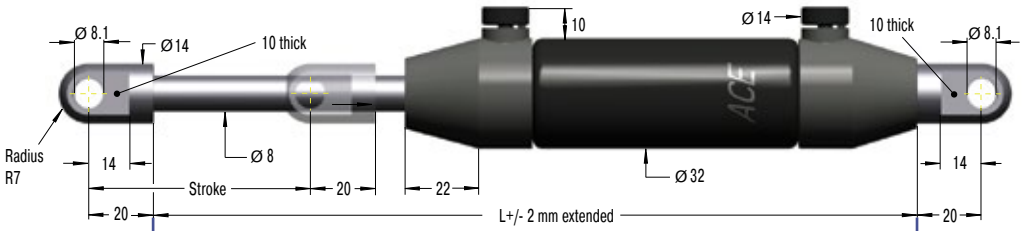
Adjustable, Without Free Travel, Compression and extension force 42 N to 2,000 N

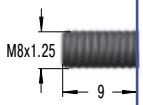
End Fitting | **Standard Dimensions** | **End Fitting**

A8



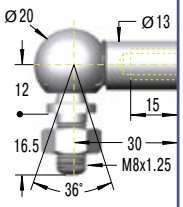
Eye A8
max. force 3.000 N

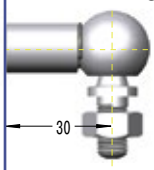
B8



Stud Thread B8

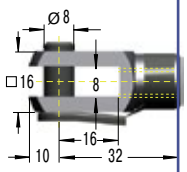
C8

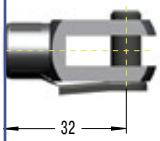




Angle Ball Joint C8
max. force 1,200 N

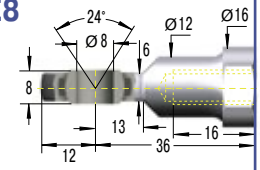
D8

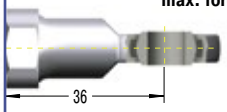




Clevis Fork D8
max. force 3,000 N

E8





Swivel Eye E8
max. force 3,000 N

Performance and Dimensions

TYPES	Stroke mm	L extended mm	[1] Compression Force max. N
DVC-32-50EU	50	240	2,000
DVC-32-100EU	100	340	1,670
DVC-32-150EU	150	440	1,335

[1] Max. extension force for all stroke lengths 2,000 N.

Ordering Example — DVC-32-50EU-DD-P

Type (Hydraulic Damper)
Body Ø (32 mm)
Stroke (50 mm)
EU Compliant
Piston Rod End Fitting D8
Body End Fitting D8
Damping Direction (P = both directions)

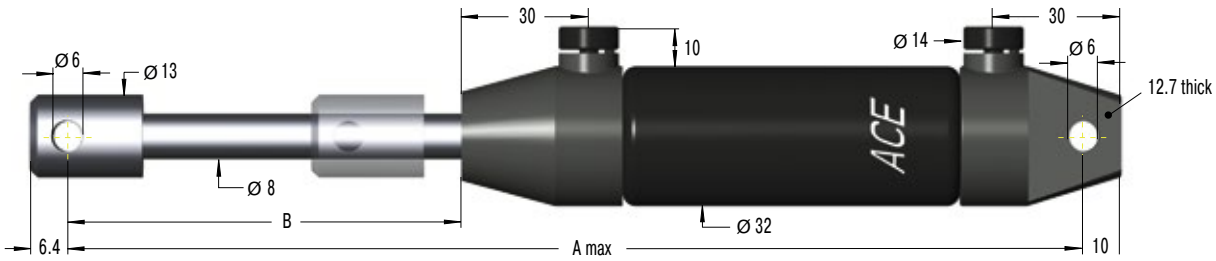
Model Type Prefix

P: Damping in both directions (standard model)
M: Damping on out stroke only (adjustment knob at “rear end” free flow)
N: Damping on in stroke only (adjustment knob at “piston rod end” free flow)

End fittings: They are interchangeable and must be positively secured by the customer to prevent unscrewing.

Mounting accessories see from page 194.

DVC-32EU-xx



Performance and Dimensions

TYPES	Stroke mm	A max. mm	B mm	Compression Force max. N	Traction Force Range max. N
DVC-32-50EU-XX	50	250	75.2	2,000	2,000
DVC-32-100EU-XX	100	350	124.4	1,670	2,000
DVC-32-150EU-XX	150	450	173.6	1,335	2,000

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TD-28

Model Type Prefix

F: Automatic return with return spring
D: Without return spring. When one piston is pushed in, the piston rod at the other end is pushed out (thus the damper must be impacted from alternate ends to sequence correctly).

Ordering Example **TD-28-50-50**

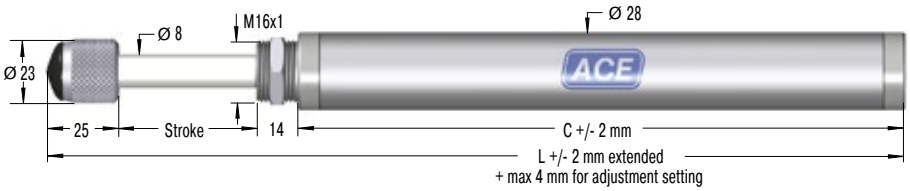
Type (Door Damper)
Body Ø (28 mm)
Stroke A (50 mm)
Stroke B (50 mm)

Performance and Dimensions

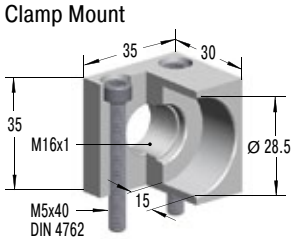
TYPES	Energy Capacity Nm/cycle	Reacting Force N	Impact Mass max. kg	Stroke A mm	Stroke B mm	C mm	L extended mm	Return Force max. N	[1] Return Type
TD-28-50-50-F	75	1,550	150	50	50	220	402	30	F
TD-28-70-70-F	70	1,500	200	70	70	260	482	30	F
TD-28-100-100-F	80	1,500	250	100	100	220	502	40	F
TD-28-120-120-D	165	3,800	250	120	120	208	410	-	D

[1] Standard model. Other models available on request.

TDE-28



MB-16
Clamp Mount



Ordering Example **TDE-28-50**

Type (Door Damper)
Body Ø (28 mm)
Stroke (50 mm)

Performance and Dimensions

TYPES	Energy Capacity Nm/cycle	Reacting Force N	Impact Mass max. kg	Stroke mm	C mm	L extended mm	Return Force max. N
TDE-28-50	80	2,400	4,000	50	130	221	30
TDE-28-70	112	2,400	5,600	70	158	269	30
TDE-28-100	160	2,400	8,000	100	193	333	30
TDE-28-120	190	2,400	7,000	120	214	373	40

Technical Data

Outer body diameter: Ø 28 mm

Piston rod diameter: Ø 8 mm

Free travel: TDE: Marginal

Operating temperature range: -20 °C to 80 °C

Adjustment: Pull the piston rod fully out and turn the knurled rod end button. The internal toothed adjustment allows the damping to be separately adjusted for each side. As a result of the adjustment mechanism the overall length L can be increased by up to 4 mm.

Material: Outer body: Zinc plated steel; Piston rod: Hard chrome plated steel

Impact velocity range: 0.1 m/s to 2 m/s

Strokes per minute: Max. 10

Application field: Lift doors, Automatic doors, Doors

Note: ACE door dampers are single ended or double ended adjustable hydraulic shock absorbers.

On request: Special oils, other special options and special accessories are available on request.

Issue 08.2016 – Specifications subject to change

Hydraulic Feed Controls

Regulate feed rates in the best way

Hydraulic feed controls from ACE are recommended as the perfect solution e.g. when sawing, cutting, drilling and in order to prevent the stick-slip effect on pneumatic cylinders, amongst others. They can be precisely adjusted and provide speeds from 12 mm/min. with a very low feed force or up to 38 m/min. with a high feed rate.

The maintenance-free, ready-to-install hydraulic feed controls are self-contained, hydraulic elements regulated by a precision throttle. The feed rate is set from the outside by turning the setting adjuster. The tried-and-testing rolling diaphragms used in many ACE shock absorbers also serve as a dynamic sealing element for a hermetic seal as well as volume compensation for the piston rod and resetting element.

Hydraulic Feed Controls

VC25

Page 210

Adjustable
For precision adjustment of feed rates
Handling modules, Linear slides, Automatic machinery, Conveyor equipment

MA, MVC

Page 212

Adjustable
Designed for applications with low precision requirements
Handling modules, Linear slides, Automatic machinery, Conveyor equipment

Shorter processing times

Different feed rates

Adjustment segment at the lower end of the feed control

Most accurate calibrations

Available immediately

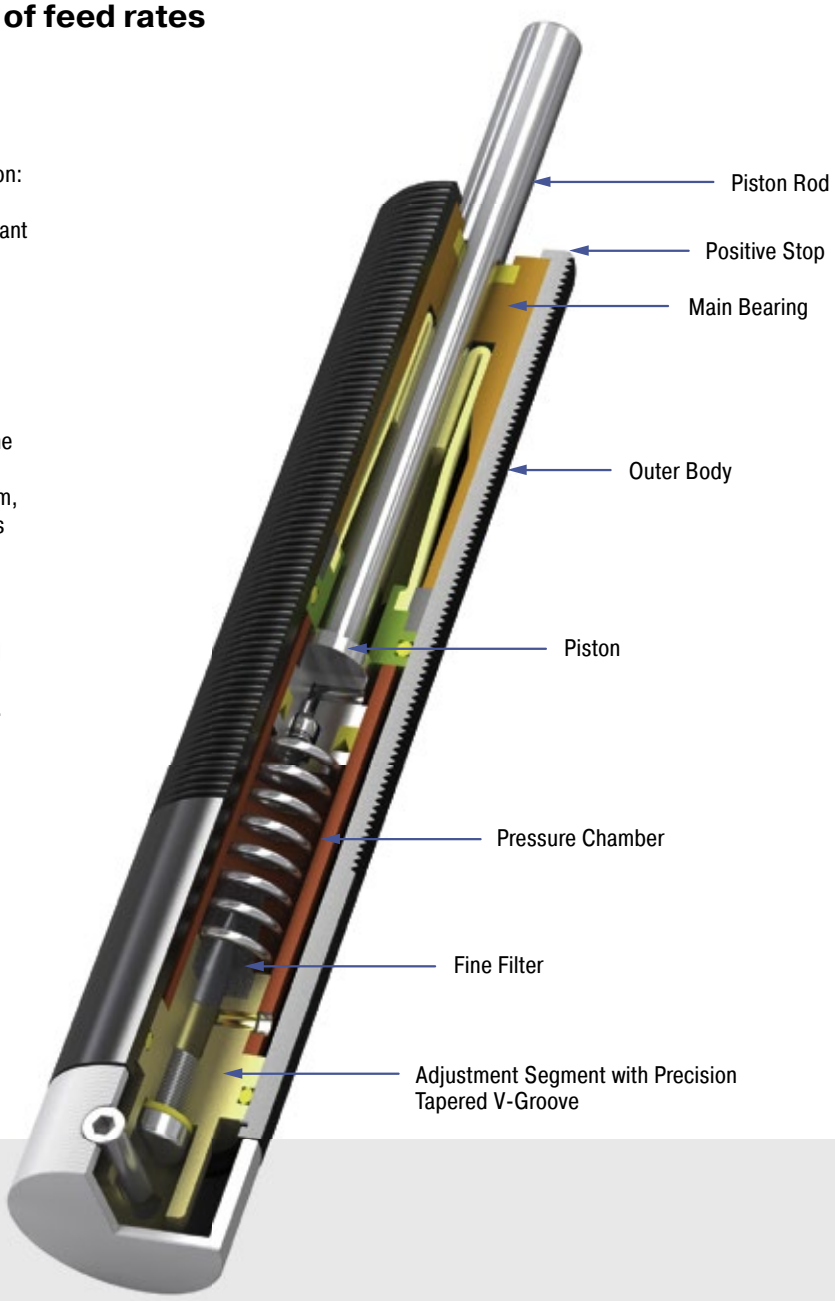
Easy to mount

VC25
Hydraulic Feed Controls
For precision adjustment of feed rates

Precise adjustment for any type of application: The VC model of hydraulic feed controls is ideally suited for the precise tuning of constant feed rates. The thread of the outer body of this closed hydraulic element allows simple assembly. Designs with a smooth body can also be supplied.

As the hydraulic oil is forced out through the throttle opening, a constant feed rate is achieved on the stroke, which also avoids the stick-slip effect. In the models up to 55 mm stroke, the tried and tested rolling diaphragm, known from ACE shock absorbers, serves as a dynamic seal, as volume compensation of the piston rod and as a reset element.

The VC model of precision hydraulic feed controls is used in automotive and industrial applications as well as in automation and machine building and electronics industries.



Technical Data

Compression force: 30 N to 3,500 N

Execution: F = Ø 23.8 mm without thread
FT = M25x1.5 threaded body

Piston rod diameter: Ø 8 mm

Feed rate/Compression force: Min. 0.013 m/min. at 400 N; Max. 38 m/min. at 3,500 N

Impact velocity range: At speeds of 0.3 m/s the maximum allowed energy is approx. 1 Nm for units up to 55 mm stroke and approx. 2 Nm for units 75 mm to 125 mm stroke. Where higher energies occur use a shock absorber for the initial impact. Avoid high impact velocities.

Adjustment: Infinitely adjustable

Positive stop: External positive stops 1 mm to 1.5 mm before the end of stroke provided by the customer.

Damping medium: Oil, temperature stable

Material: Outer body: Black anodized aluminium; Piston rod: Hard chrome plated steel; Accessories: Steel with black oxide finish or nitride hardened

Mounting: In any position

Operating temperature range: 0 °C to 60 °C

Application field: Handling modules, Linear slides, Automatic machinery, Conveyor equipment

Note: Nylon button PP600 can be fitted onto piston rod. Unit may be mounted in any position.

Safety instructions: Do not rotate piston rod, if excessive rotation force is applied rolling seal may rupture. External materials in the surrounding area can attack the seal components and lead to a shorter service life. Please contact ACE for appropriate solution suggestions.

On request: Special oil and other special options available on request.

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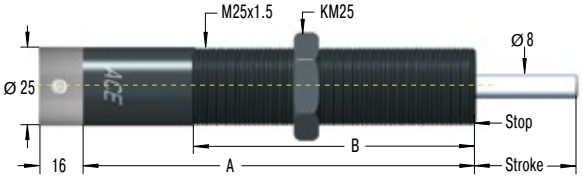
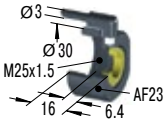
VC25EUFT

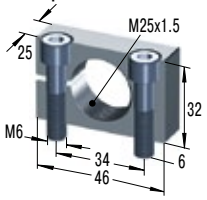


SP25
Air Bleed Collar



For VC2515FT to VC2555FT reduction of the stroke 6.4 mm

MB25
Clamp Mount



Additional accessories, mounting, installation ... see from page 42.

Complete details required when ordering

Load to be decelerated: m (kg)
Impact velocity: v (m/s)
Propelling force: F (N)
Operating cycles per hour: c (/hr)
Number of absorbers in parallel: n
Ambient temperature: °C

Ordering Example **VC 25 55 EUFT**

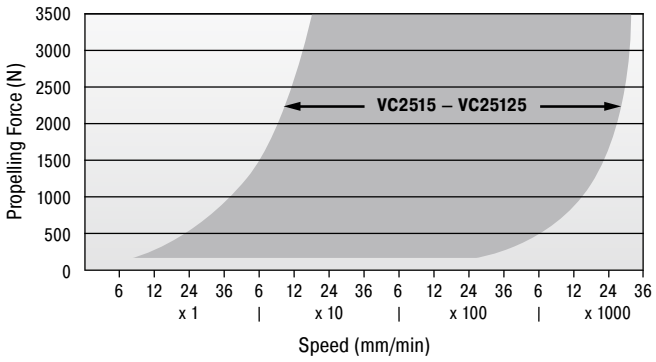
Type (Feed Control)
Thread Size M25
Stroke (55 mm)
EU Compliant
FT = mit Gewinde M25x1,5
F = without thread, plain body (Ø 23.8 mm)

Performance and Dimensions

TYPES	Stroke mm	A mm	B mm	Compression Force min. N	Compression Force max. N	Return force min. N	Return force max. N	Return time s	Side Load Angle max. °	Weight kg
VC2515EUFT	15	128	80	30	3,500	15	30	0.2	3	0.350
VC2530EUFT	30	161	110	30	3,500	5	30	0.4	2	0.450
VC2555EUFT	55	209	130	35	3,500	5	40	1.2	2	0.423
VC2575EUFT	75	283	150	50	3,500	10	50	1,7	2	0.681
VC25100EUFT	100	308	150	60	3,500	10	50	2.3	1	0.794
VC25125EUFT	125	333.5	150	70	3,500	10	60	2.8	1	0.908

Suffix FT: M25x1.5 threaded body.
Suffix F: plain body 23.8 mm dia. (without thread), with optional clamp type mounting block.

Operating Range VC



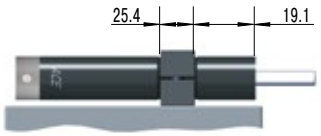
Accessories with Mounting Example

Mounting with clamp mount MB25

Installed with air bleed collar SP25

Installed with switch stop collar inc. proximity switch and steel button AS25 plus PS25

Alternative circlip grooves



Bulkhead mounting for VC25...F with mounting block KB... (23.8 mm plain body option)

MA, MVC

Hydraulic Feed Controls

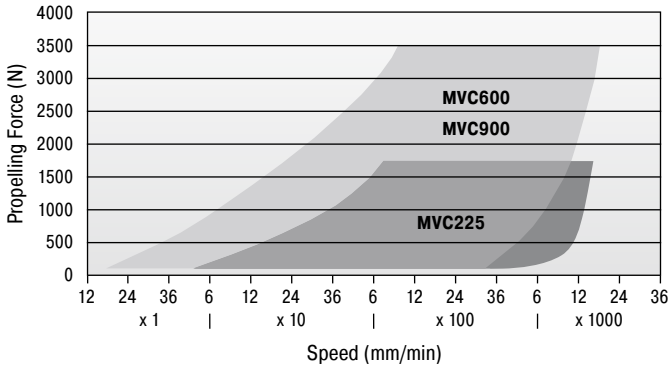
Designed for applications with low precision requirements

Many application options: The hydraulic feed controls in models MA and MVC are similar to that of the VC model. However, these hydraulic controls have been designed for applications that require less precision.

There are also plenty of accessories for the MA and MVC models. All products are ready-to-install, maintenance-free, stable in temperature and avoids stick-slip effect. Speeds from 12 mm/min. can be driven at a low thrust force using the adjustment screw on the base of the hydraulic control.

Hydraulic feed controls with the designations MA and MVC are especially used in handling modules or linear carriages and also for applications with changing usage data.

Operating Range MVC225 to MVC900



Performance and Dimensions

TYPES	Stroke mm	Compression Force min. N	Compression Force max. N	Return force min. N	Return force max. N	Return time s	[1] Side Load Angle max. °	Weight kg
MA30EUM	8	8	80	1.7	5.3	0.3	2.0	0.013
MA50EUM	7.2	40	160	3.0	6.0	0.3	2.0	0.025
MA35EUM	10.2	15	200	5.0	11.0	0.2	2.0	0.043
MA150EUM	12.7	20	300	3.0	5.0	0.4	2.0	0.060
MVC225EUM	19	25	1,750	5.0	10.0	0.65	2.0	0.150
MVC600EUM	25	65	3,500	10.0	30.0	0.85	2.0	0.300
MVC900EUM	40	70	3,500	10.0	35.0	0.95	2.0	0.400

[1] For applications with higher side load angles consider using the side load adaptor (BV) pages 38 to 45.

Technical Data

Compression force: 8 N to 3,500 N

Execution: Thread M8 to M25

Impact velocity range: At speeds of 0.3 m/s the maximum allowed energy is approx. 2 Nm. Where higher energies occur use a shock absorber for the initial impact. Avoid high impact velocities.

Adjustment: Hard impact at the start of stroke, turn towards 9 or PLUS. Hard impact at the end of stroke, turn towards 0 or MINUS.

Positive stop: Integrated

Damping medium: Oil, temperature stable

Material: Outer body: Nitride hardened steel; Piston rod: Steel with black oxide finish or nitride hardened

Mounting: In any position

Operating temperature range: 0 °C to 66 °C

Application field: Handling modules, Linear slides, Automatic machinery, Conveyor equipment

Note: Damper is preset at delivery in a neutral position between hard and soft.

Safety instructions: External materials in the surrounding area can attack the seal components and lead to a shorter service life. Please contact ACE for appropriate solution suggestions.

On request: Nickel-plated, weartec finish (seawater resistant) or other special options available on request.

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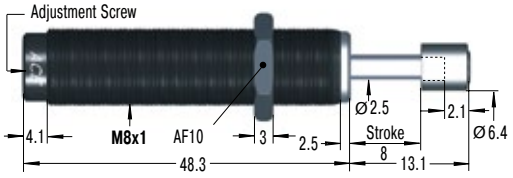
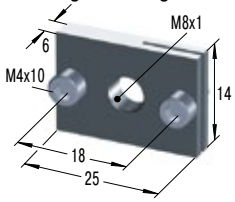
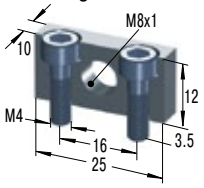
MA30EUM



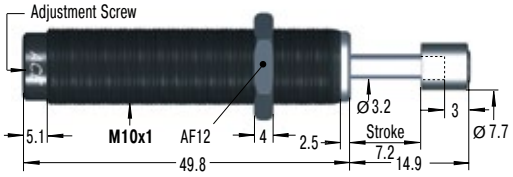
RF8
Rectangular Flange



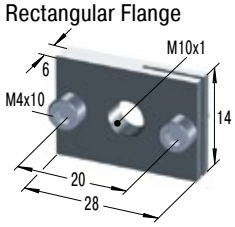
MB8SC2
Mounting Block



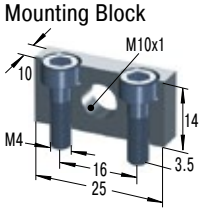
MA50EUM



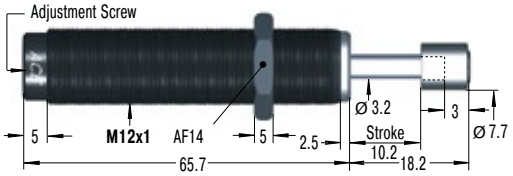
RF10
Rectangular Flange



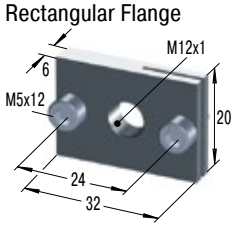
MB10SC2
Mounting Block



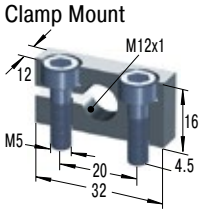
MA35EUM



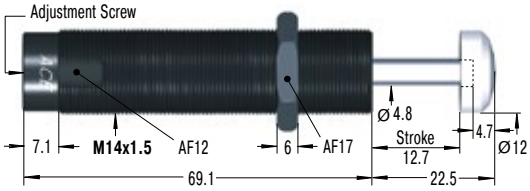
RF12
Rectangular Flange



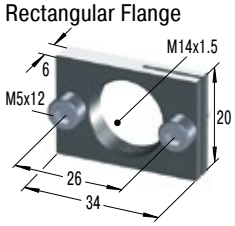
MB12
Clamp Mount



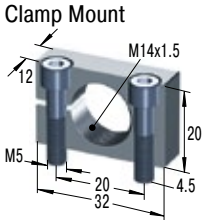
MA150EUM



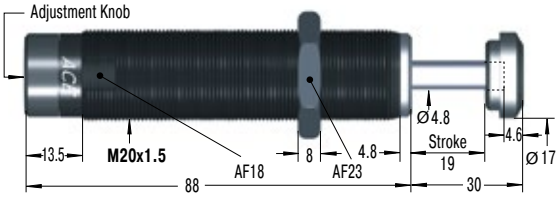
RF14
Rectangular Flange



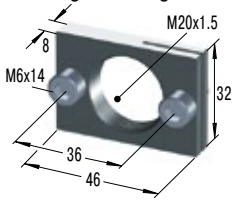
MB14
Clamp Mount



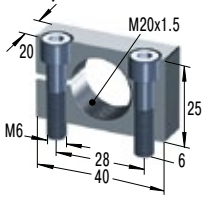
MVC225EUM



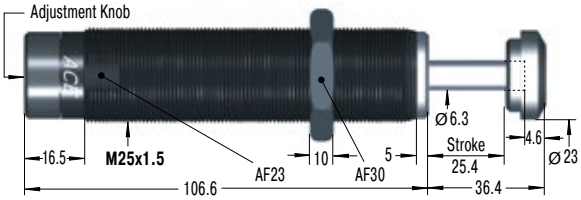
RF20
Rectangular Flange



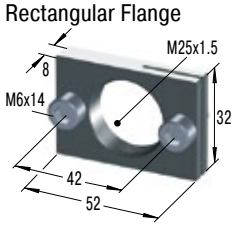
MB20
Clamp Mount



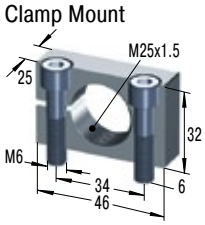
MVC600EUM



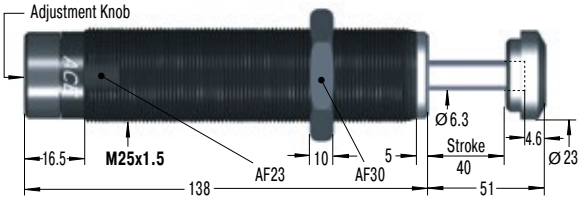
RF25
Rectangular Flange



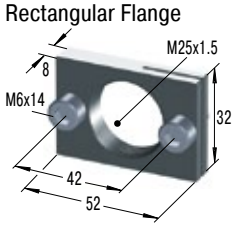
MB25
Clamp Mount



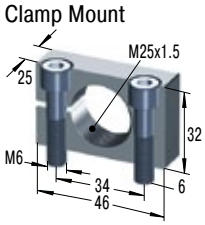
MVC900EUM



RF25
Rectangular Flange



MB25
Clamp Mount



Additional accessories, mounting, installation ... see from page 38.