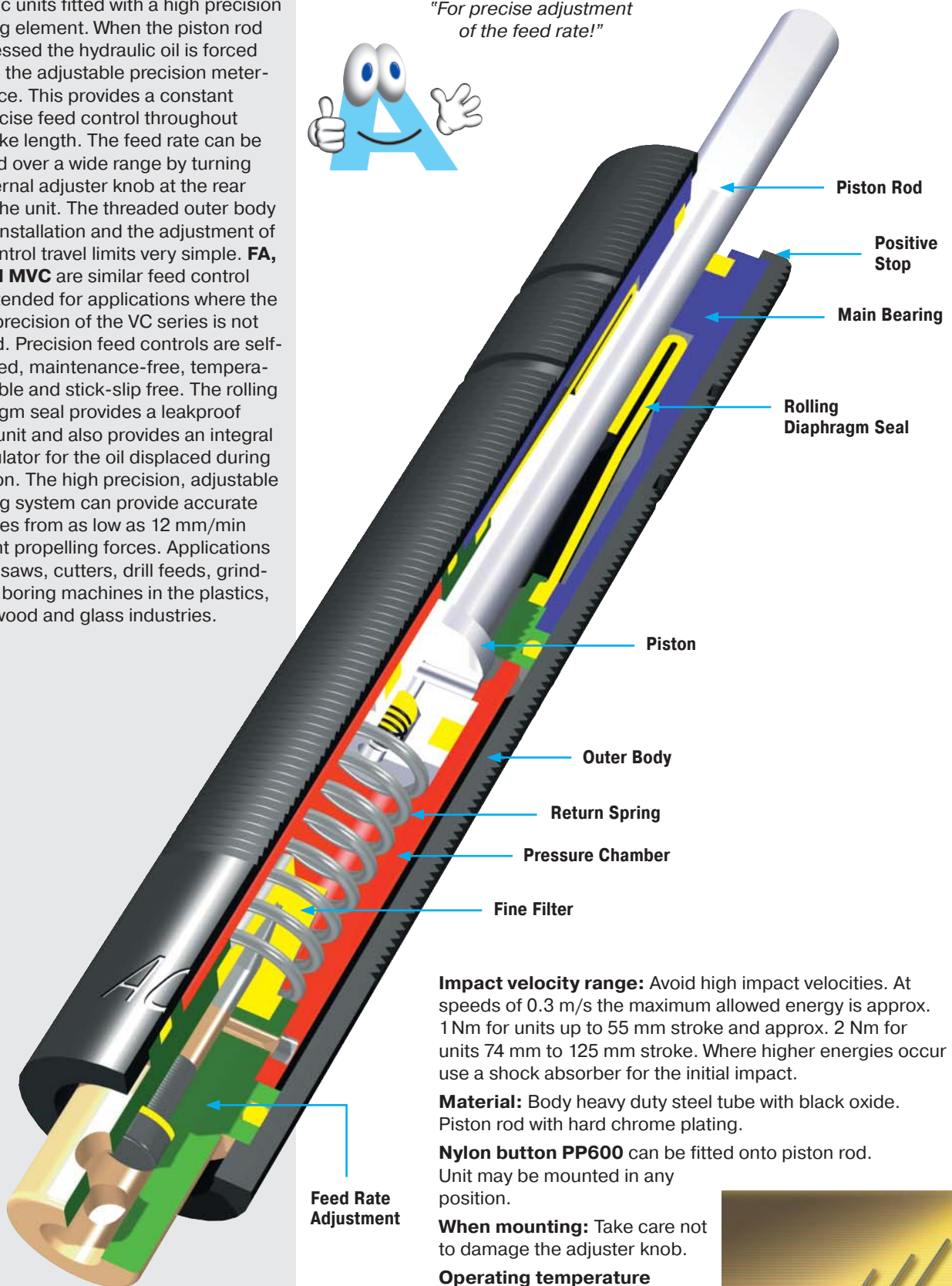


VC precision feed controls are sealed hydraulic units fitted with a high precision metering element. When the piston rod is depressed the hydraulic oil is forced through the adjustable precision metering orifice. This provides a constant and precise feed control throughout the stroke length. The feed rate can be adjusted over a wide range by turning the external adjuster knob at the rear end of the unit. The threaded outer body makes installation and the adjustment of feed control travel limits very simple. **FA, MA and MVC** are similar feed control units intended for applications where the higher precision of the VC series is not required. Precision feed controls are self-contained, maintenance-free, temperature stable and stick-slip free. The rolling diaphragm seal provides a leakproof sealed unit and also provides an integral accumulator for the oil displaced during operation. The high precision, adjustable metering system can provide accurate feed rates from as low as 12 mm/min with light propelling forces. Applications include saws, cutters, drill feeds, grinding and boring machines in the plastics, metal, wood and glass industries.

"For precise adjustment of the feed rate!"



Feed Rate Adjustment

Impact velocity range: Avoid high impact velocities. 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 74 mm to 125 mm stroke. Where higher energies occur use a shock absorber for the initial impact.

Material: Body heavy duty steel tube with black oxide. Piston rod with hard chrome plating.

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

When mounting: Take care not to damage the adjuster knob.

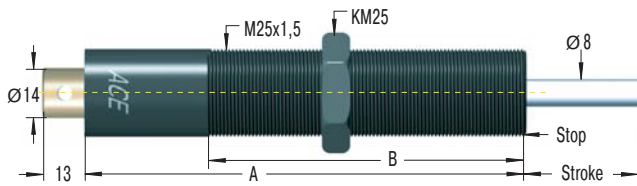
Operating temperature range: 0 °C to 60 °C

Only VC2515 to VC2255:

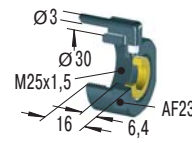
Do not rotate piston rod, if excessive rotation force is applied rolling seal may rupture. In contact with petroleum base oils or cutting fluids specify optional neoprene rolling seal or install air bleed adaptor type SP.



VC25



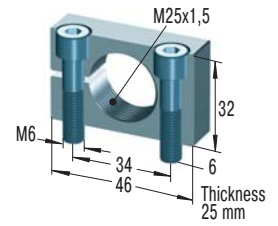
SP25



Air Bleed Collar

for VC2515FT to VC2555FT
Reduction of the stroke 6.4 mm

MB25



Clamp Mount

Accessories, mounting, installation ... see pages 32 to 35.

Capacity Chart

Type Part Number	Stroke mm	A	B	Min. Propelling Force N	Max. Propelling Force N	Min. Return Force N	Max. Return Force N	Rod Reset Time s	Max. Side Load Angle °	Weight kg
VC2515FT	15	128	80	30	3 500	5	10	0.2	3	0.350
VC2530FT	30	161	110	30	3 500	5	15	0.4	2	0.450
VC2555FT	55	209	130	35	3 500	5	20	1.2	2	0.600
VC2575FT	75	283	150	50	3 500	10	30	1.7	2	0.681
VC25100FT	100	308	150	60	3 500	10	35	2.3	1	0.794
VC25125FT	125	333.5	150	70	3 500	10	40	2.8	1	0.908

Suffix "FT" signifies a M25x1.5 threaded body.

Suffix "F" signifies a plain body 23.8 mm dia. (without thread) also available, with optional clamp type mounting block.

Technical Data

Feed rate range: Min. 0.013 m/min with 400 N propelling force, max. 38 m/min with 3500 N propelling force.

Outer body: Plain body 23.8 mm dia. (without thread) is also available.

Mounting Examples



Mounting with clamp mount MB25

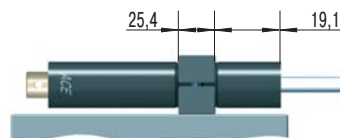


Installed with air bleed collar SP25



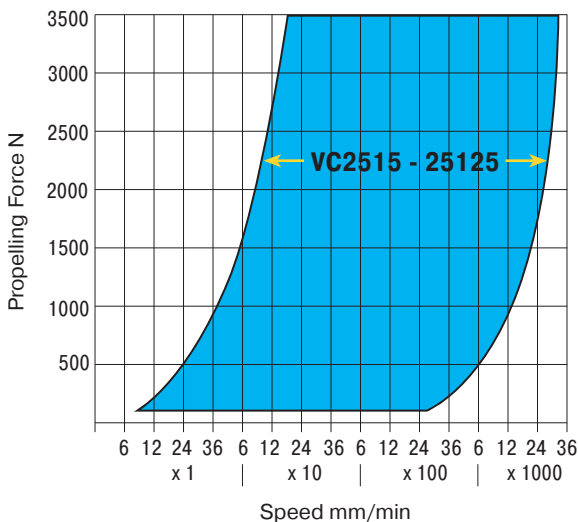
Installed with switch stop collar inc. proximity switch and steel button AS25 plus PS25

Alternative circlip grooves



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

Operating Range VC



Capacity Chart

Type Part Number	Stroke mm	Propelling Force N		Min. Return Force N	Max. Return Force N	Rod Reset Time s	¹ Max. Side Load Angle °	Weight kg
		min. N	max. N					
MA30M	8	8	80	1.7	5.3	0.3	2	0.013
MA50M	7	40	160	3	6	0.3	2	0.025
FA1008V-B	8	10	180	3	6	0.3	2.5	0.024
MA35M	10	15	200	5	11	0.2	2	0.043
MA150M	12	20	300	3	5	0.4	2	0.06
MVC225M	19	25	1 750	5	10	0.65	2	0.15
MVC600M	25	65	3 500	10	30	0.85	2	0.3
MVC900M	40	70	3 500	10	35	0.95	2	0.4

¹ For applications with higher side load angles consider using the side load adaptor (BV) page 34.

Technical Data

Positive stop: Install mechanical stop 0.5 - 1 mm before end of stroke on model FA1008V-B.

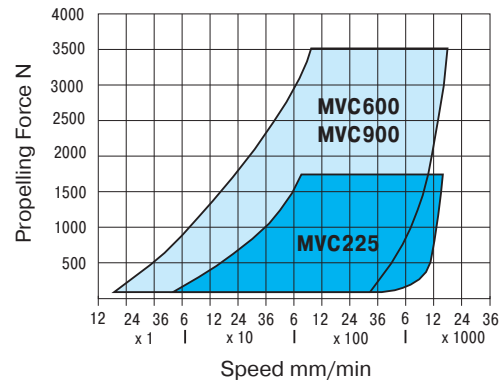
Operating temperature range: 0 °C to 66 °C

Mounting: In any position

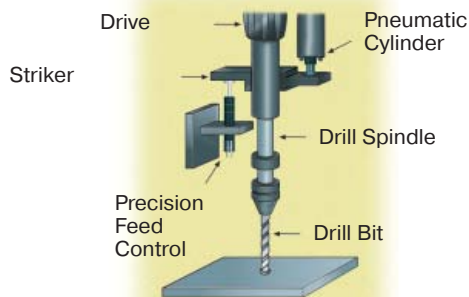
Impact velocity range: Avoid high impact velocities. At speeds of 0.3 m/s the maximum allowed energy is approx. 2 Nm. Where higher energies occur use a shock absorber for the initial impact.

Material: Steel body with black oxide finish. Stainless steel piston rod.

Operating Range MVC225 to 900



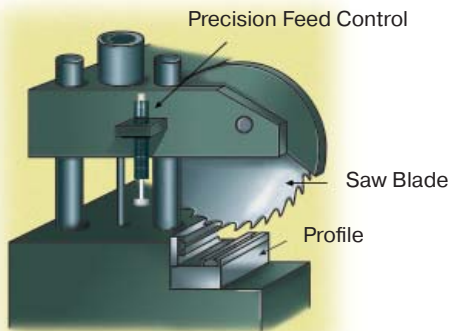
Application Examples



Drilling sheet metal

A high force is necessary at the start of drilling when the drill first contacts the sheet. After the initial cut this high force causes the drill to break through. This results in jagged edges rather than a smooth clean hole and also causes tool breakage.

By installing an **ACE VC feed control** it is possible to precisely control the rate of drill advance. As a result the drilled holes are clean and consistent and drill breakage is considerably reduced.



Sawing aluminium and plastic profiles

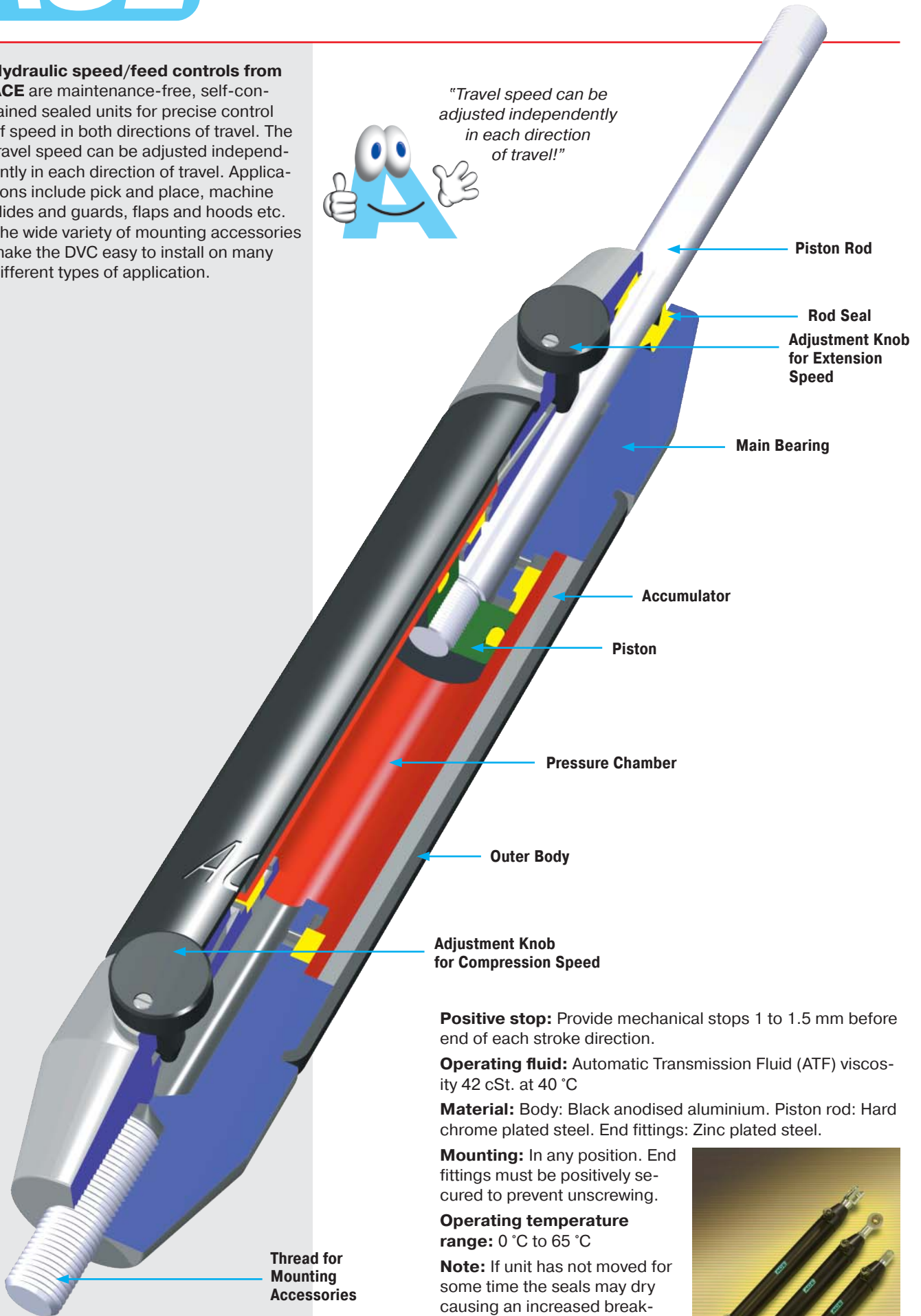
Varying material types, hardness and wear on the saw blade causes the cutting pressure to vary greatly. However the saw advance speed should remain constant as changes cause breakage of the material being cut or of the saw blade.

An **ACE VC feed control** fitted directly to the cutting head provides a simple and low cost solution. The cutting speed remains constant and can be easily preset.

Hydraulic speed/feed controls from ACE are maintenance-free, self-contained sealed units for precise control of speed in both directions of travel. The travel speed can be adjusted independently in each direction of travel. Applications include pick and place, machine slides and guards, flaps and hoods etc. The wide variety of mounting accessories make the DVC easy to install on many different types of application.



"Travel speed can be adjusted independently in each direction of travel!"



Positive stop: Provide mechanical stops 1 to 1.5 mm before end of each stroke direction.

Operating fluid: Automatic Transmission Fluid (ATF) viscosity 42 cSt. at 40 °C

Material: Body: Black anodised aluminium. Piston rod: Hard chrome plated steel. End fittings: Zinc plated steel.

Mounting: In any position. End fittings must be positively secured to prevent unscrewing.

Operating temperature range: 0 °C to 65 °C

Note: If unit has not moved for some time the seals may dry causing an increased break-away force on the initial cycle.

On request: Special oils and external finishes. Uni-directional damping (free flow in reverse direction).

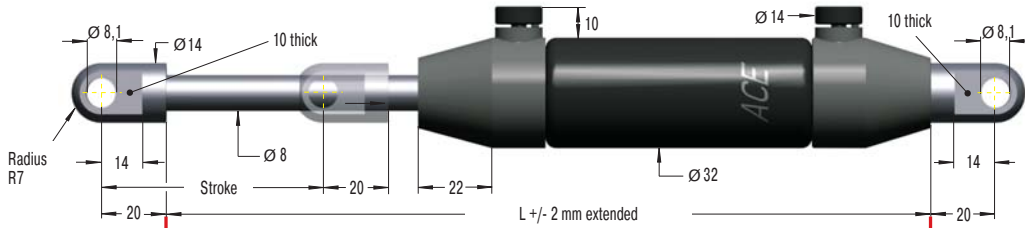


End Fitting

Standard Dimensions

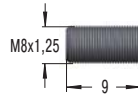
End Fitting

A8



Eye A8

B8



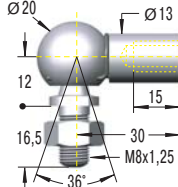
Dimensions

Propelling Force N

Type	Stroke mm	A max	B	L	Propelling Force N			
					Extension		Compression	
DVC-32-50	50			240	42	2 000	42	2 000
DVC-32-50-XX	50	250	75.2		42	2 000	42	2 000
DVC-32-100	100			340	42	2 000	42	1 670
DVC-32-100-XX	100	350	124.4		42	2 000	42	1 670
DVC-32-150	150			440	42	2 000	42	1 335
DVC-32-150-XX	150	450	173.6		42	2 000	42	1 335

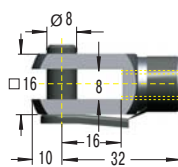
Stud Thread B8

C8



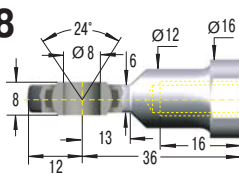
Angle Ball Joint C8
(max. force 1 200 N)

D8



Clevis Fork D8
(max. force 3 000 N)

E8



Swivel Eye E8
(max. force 3 000 N)

Ordering Example

DVC-32-50-DD-P

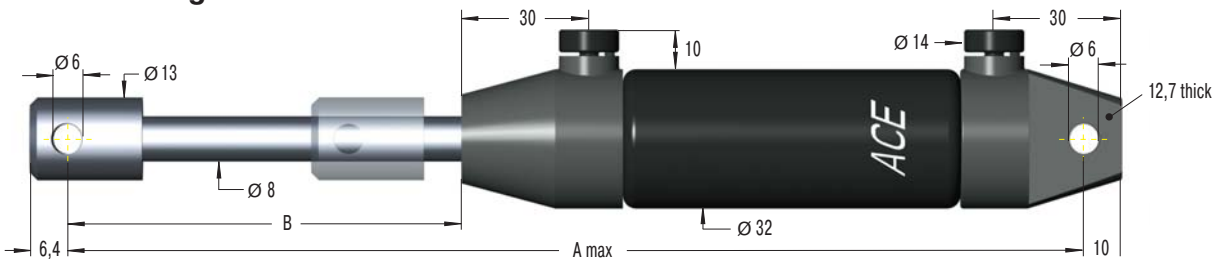
Type (Hydraulic Damper) _____
 Body Ø (32 mm) _____
 Stroke (50 mm) _____
 Piston Rod End Fitting D8 _____
 Body End Fitting D8 _____
 Damping Direction (P = both directions) _____

Damping Options

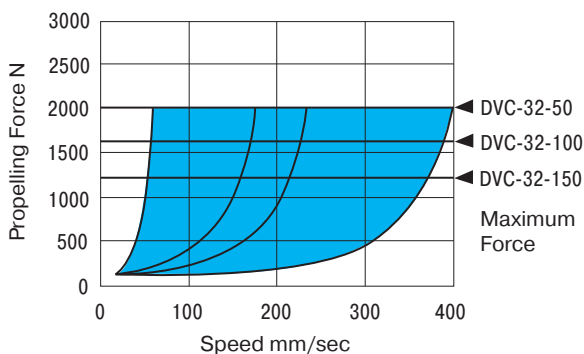
- P = Damping in both directions (standard model)
- M = Damping on out stroke only
(adjustment knob at "rear end" free flow)
- N = Damping on in stroke only
(adjustment knob at "piston rod end" free flow)

The end fittings are interchangeable and must be positively secured by the customer to prevent unscrewing (i. e. Loctite). For mounting accessories see page 156.

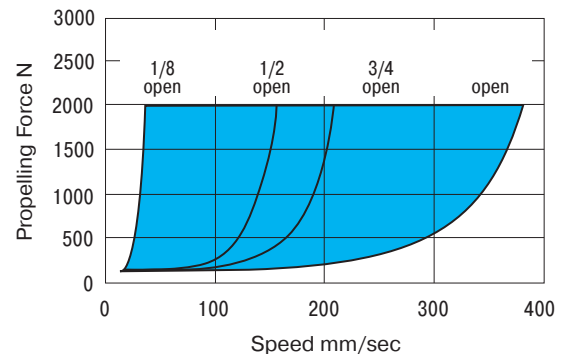
Fixed End Fitting -XX



Compression Speed Control Chart



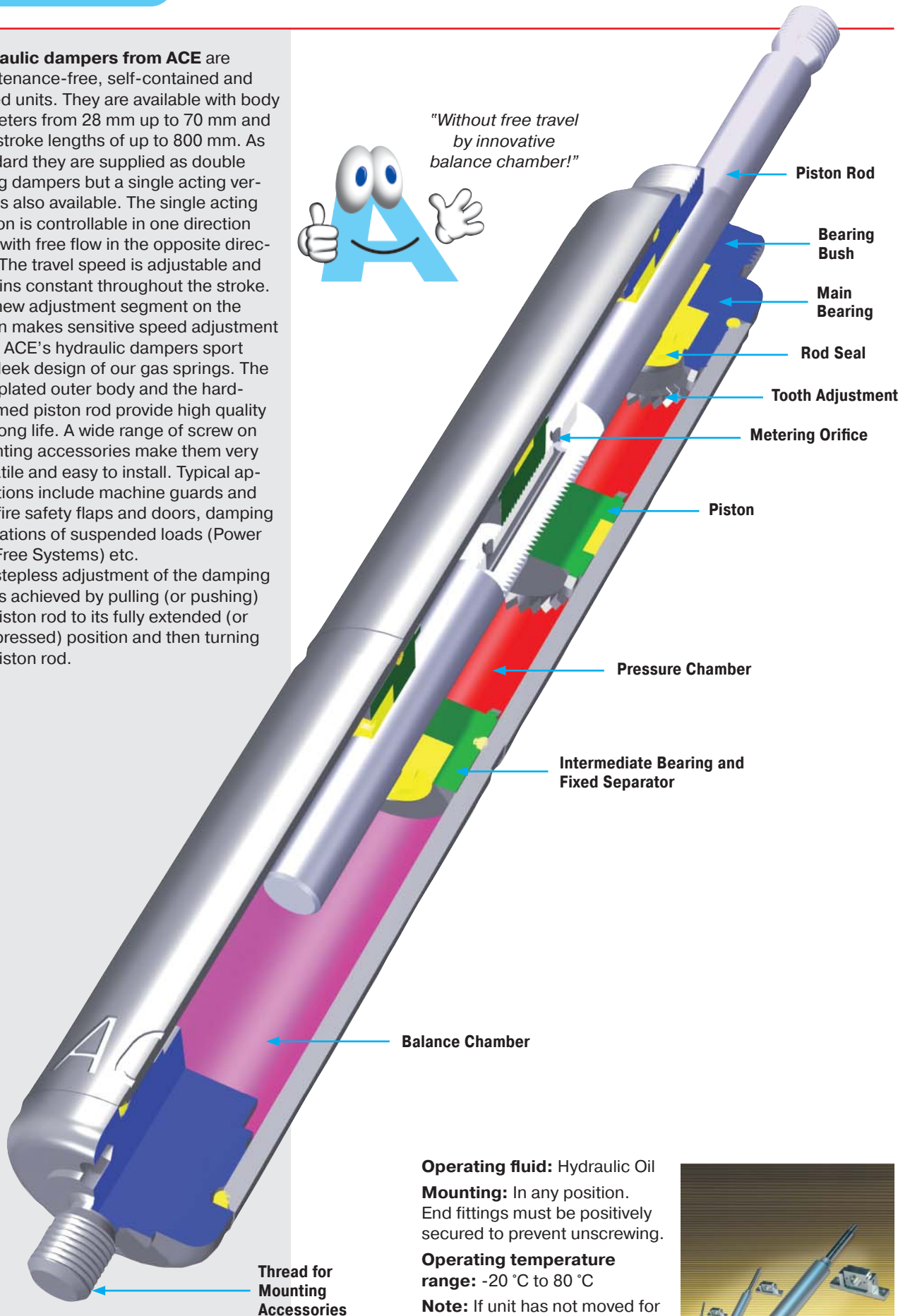
Tension Speed Control Chart



Hydraulic dampers from ACE are maintenance-free, self-contained and sealed units. They are available with body diameters from 28 mm up to 70 mm and with stroke lengths of up to 800 mm. As standard they are supplied as double acting dampers but a single acting version is also available. The single acting version is controllable in one direction only, with free flow in the opposite direction. The travel speed is adjustable and remains constant throughout the stroke. The new adjustment segment on the piston makes sensitive speed adjustment easy. ACE's hydraulic dampers sport the sleek design of our gas springs. The zinc-plated outer body and the hard-chromed piston rod provide high quality and long life. A wide range of screw on mounting accessories make them very versatile and easy to install. Typical applications include machine guards and lids, fire safety flaps and doors, damping oscillations of suspended loads (Power and Free Systems) etc. The stepless adjustment of the damping rate is achieved by pulling (or pushing) the piston rod to its fully extended (or compressed) position and then turning the piston rod.



*"Without free travel
by innovative
balance chamber!"*



Operating fluid: Hydraulic Oil

Mounting: In any position. End fittings must be positively secured to prevent unscrewing.

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

Note: If unit has not moved for some time the seals may dry causing an increased break-away force on the initial cycle.

On request: Special lengths, alternative seals and end fittings.



End Fitting

Standard Dimensions

End Fitting

End Fitting Options:
 Eye A8, Stud Thread B8, Angle Ball Joint C8 (max. force 1200 N), Clevis Fork D8 (max. force 3000 N), Swivel Eye E8 (max. force 3000 N), Ball Socket G8 (max. force 1200 N).
 Rod Shroud: no retrofit, Ø 32, L = Stroke + 50

Dimensions

Type	Stroke mm	L extended	¹ Max. Compression Force N	¹ Max. Compression Force with MBS N
HBS-28-50	50	295	3 000	3 000
HBS-28-100	100	445	1 550	3 000
HBS-28-150	150	595	900	3 000
HBS-28-200	200	745	600	3 000
HBS-28-250	250	895	440	3 000
HBS-28-300	300	1 045	330	3 000
HBS-28-350	350	1 195	260	2 500
HBS-28-400	400	1 345	200	2 000

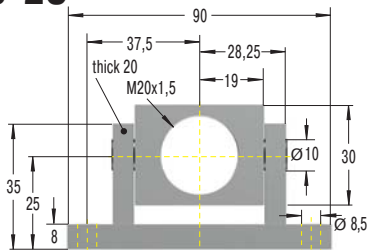
¹ Max. extension force for all stroke lengths 3000 N.

Ordering Example
HBS-28-150-DD-M
 Type (Hydraulic Damper) _____
 Body Ø (28 mm) _____
 Stroke (150 mm) _____
 Piston Rod End Fitting D8 _____
 Body End Fitting D8 _____
 Damping Direction (M = out stroke only) _____

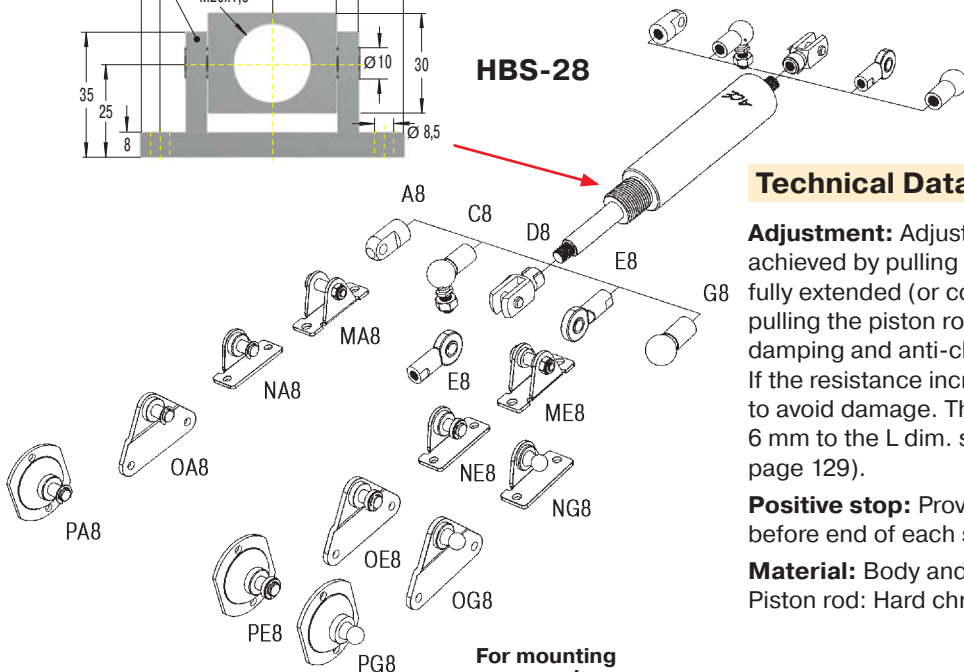
Damping Options
 P = Damping in both directions
 M = Damping on out stroke only
 N = Damping on in stroke only
 X = Special model suffix

The end fittings are interchangeable and must be positively secured by the customer to prevent unscrewing (i. e. Loctite). For mounting accessories see page 156.

Swivel Mounting Block MBS-28



HBS-28



For mounting accessories see page 156.

Technical Data

Adjustment: Adjustment of the damping rate is achieved by pulling (or pushing) the piston rod to its fully extended (or compressed) position. Whilst still pulling the piston rod turn it clockwise to increase damping and anti-clockwise to decrease damping. If the resistance increases noticeably, stop adjusting to avoid damage. The adjustment can add a max. of 6 mm to the L dim. shown (adjustment instruction see page 129).

Positive stop: Provide mechanical stops 1 to 1.5 mm before end of each stroke direction.

Material: Body and end fittings: Zinc plated steel. Piston rod: Hard chrome plated.

End Fitting

Standard Dimensions

End Fitting

A10 **Eye A10**

B10 **Stud Thread B10**

C10 **Angle Ball Joint C10**
(max. force 1 800 N)

D10 **Clevis Fork D10**
(max. force 10 000 N)

E10 **Swivel Eye E10**
(max. force 10 000 N)

Swivel Mounting Block MBS-35

Rod Shroud
no retrofit
Ø 40, L = Stroke + 50

Dimensions

Type	Stroke mm	L extended	¹ Max. Compression Force N	¹ Max. Compression Force with MBS N
HBS-35-100	100	485	10 000	10 000
HBS-35-150	150	635	7 500	10 000
HBS-35-200	200	785	5 150	10 000
HBS-35-300	300	1 085	2 850	10 000
HBS-35-400	400	1 385	1 800	10 000
HBS-35-500	500	1 685	1 240	10 000
HBS-35-600	600	1 985	910	8 600
HBS-35-700	700	2 285	690	6 500
HBS-35-800	800	2 585	540	5 100

¹ Max. extension force for all stroke lengths 10 000 N.

Ordering Example **HBS-35-300-EE-N**

Type (Hydraulic Damper) _____
 Body Ø (35 mm) _____
 Stroke (300 mm) _____
 Piston Rod End Fitting E10 _____
 Body End Fitting E10 _____
 Damping Direction (N = in stroke only) _____

Damping Options
 M = Damping on out stroke only
 N = Damping on in stroke only
 P = Damping in both directions
 X = Special model suffix

Dimensions

Type	Stroke mm	L extended	¹ Max. Compression Force N	¹ Max. Compression Force with MBS N
HBS-35-100	100	485	10 000	10 000
HBS-35-150	150	635	7 500	10 000
HBS-35-200	200	785	5 150	10 000
HBS-35-300	300	1 085	2 850	10 000
HBS-35-400	400	1 385	1 800	10 000
HBS-35-500	500	1 685	1 240	10 000
HBS-35-600	600	1 985	910	8 600
HBS-35-700	700	2 285	690	6 500
HBS-35-800	800	2 585	540	5 100

¹ Max. extension force for all stroke lengths 10 000 N.

Ordering Example

HBS-35-300-EE-N

Type (Hydraulic Damper) _____
 Body Ø (35 mm) _____
 Stroke (300 mm) _____
 Piston Rod End Fitting E10 _____
 Body End Fitting E10 _____
 Damping Direction (N = in stroke only) _____

Damping Options
 M = Damping on out stroke only
 N = Damping on in stroke only
 P = Damping in both directions
 X = Special model suffix

The end fittings are interchangeable and must be positively secured by the customer to prevent unscrewing (i.e. Loctite). For mounting accessories see page 156.

HBS-35

For mounting accessories see page 156.

Technical Data

Adjustment: Adjustment of the damping rate is achieved by pulling (or pushing) the piston rod to its fully extended (or compressed) position. Whilst still pulling the piston rod turn it clockwise to increase damping and anti-clockwise to decrease damping. If the resistance increases noticeably, stop adjusting to avoid damage. The adjustment can add a max. of 6 mm to the L dim. shown (adjustment instruction see page 129).

Positive stop: Provide mechanical stops 1 to 1.5 mm before end of each stroke direction.

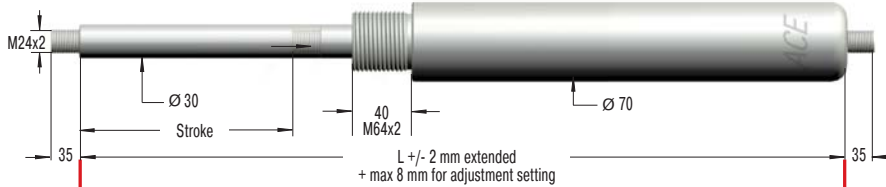
Material: Body and end fittings: Zinc plated steel. Piston rod: Hard chrome plated.

End Fitting

Standard Dimensions

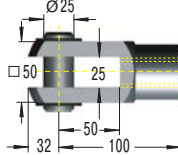
End Fitting

B24



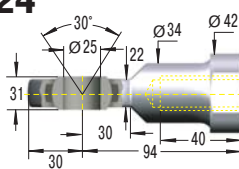
Stud Thread **B24**

D24



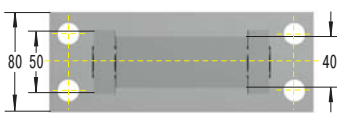
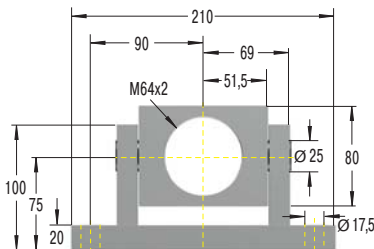
Clevis Fork D24
(max. force 50 000 N)

E24



Swivel Eye E24
(max. force 50 000 N)

Swivel Mounting Block MBS-70



Dimensions

Type	Stroke mm	L extended	¹ Max. Compression Force N	¹ Max. Compression Force with MBS N
HBS-70-100	100	561	40 000	40 000
HBS-70-200	200	861	40 000	40 000
HBS-70-300	300	1 161	40 000	40 000
HBS-70-400	400	1 461	30 300	40 000
HBS-70-500	500	1 761	21 600	40 000
HBS-70-600	600	2 061	16 200	40 000
HBS-70-700	700	2 361	12 600	40 000
HBS-70-800	800	2 661	10 100	40 000

¹ Max. extension force for all stroke lengths 40 000 N.

Ordering Example

HBS-70-300-EE-N

Type (Hydraulic Damper) _____
 Body Ø (70 mm) _____
 Stroke (300 mm) _____
 Piston Rod End Fitting E24 _____
 Body End Fitting E24 _____
 Damping Direction (N = in stroke only) _____

Damping Options

- M = Damping on out stroke only
- N = Damping on in stroke only
- P = Damping in both directions
- X = Special model suffix

The end fittings are interchangeable and must be positively secured by the customer to prevent unscrewing (i. e. Loctite). For mounting accessories see page 157.

Rod Shroud W24-70
Ø 80, L = Stroke + 130

Technical Data

Adjustment: Adjustment of the damping rate is achieved by pulling (or pushing) the piston rod to its fully extended (or compressed) position. Whilst still pulling the piston rod turn it clockwise to increase damping and anti-clockwise to decrease damping. If the resistance increases noticeably, stop adjusting to avoid damage. The adjustment can add a max. of 8 mm to the L dim. shown (adjustment instruction see page 129).

Positive stop: Provide mechanical stops 5 to 6 mm before end of each stroke direction.

Material: Body: Black powder coated steel or zinc plated steel. Piston rod: Hard chrome plated. End fittings: Zinc plated steel.

For mounting accessories see page 157.

