

## HBS-28 to HBS-70

Direction change backlash free  
linear motion regulation

**Adjustable, Without Free Travel**

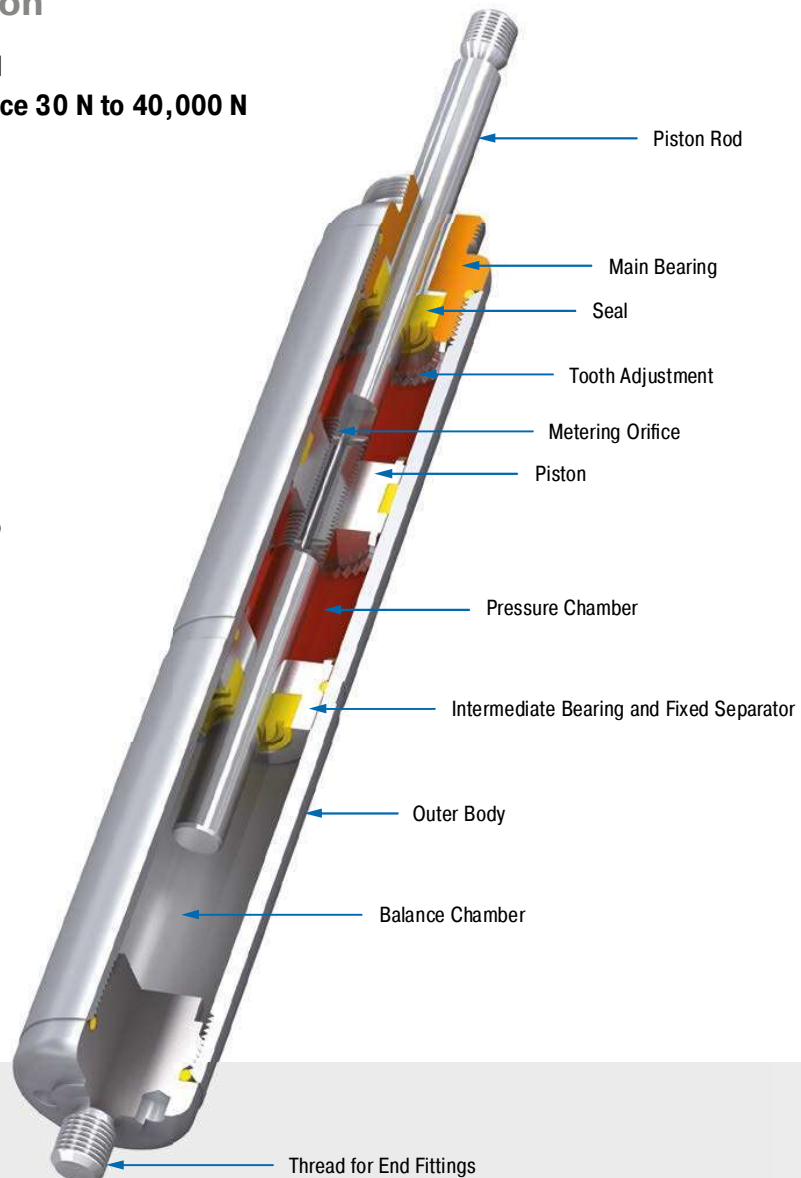
**Compression and extension force 30 N to 40,000 N**

**Stroke 50 mm to 800 mm**

Damping either in one or both directions: The HBS models of hydraulic dampers are made in a slim gas spring design and are compact and high in performance. Maintenance-free and ready-to-install they allow precise setting of retraction and extension speeds without any free travel when changing direction.

These hydraulic dampers offer constant feeding rates and can be finely tuned via the screw adjustment. A control segment on the piston makes the adjustment at the end position child's play. Thanks to many add-on components the assembly is easy to mount, so that the damper can be universally deployed for damping back and forth swinging masses, such as in power or free conveyors.

In addition to the automotive sector, the application areas are industrial applications, classic mechanical engineering, the electronics and furniture industry and medical technology.



### Technical Data

**Compression and extension force:** 30 N to 40,000 N

**Outer body diameter:** Ø 28 mm to Ø 70 mm

**Piston rod diameter:** Ø 8 mm to Ø 30 mm

**Lifetime:** Approx. 10,000 m

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

**Adjustment:** Achieved by turning the piston rod in its fully extended or compressed position.

**Positive stop:** External positive stops 1 mm to 6 mm before the end of stroke provided by the customer.

**Damping medium:** Hydraulic oil

**Material:** Outer body: Zinc plated or coated steel; Piston rod: Hard chrome plated steel; End fittings: Zinc plated steel

**Mounting:** In any position

**Application field:** Oscillation insulation, Chairlift impact control, Fairground rides, Cylinder speed controls, Absorption control

**Note:** Increased break-away force if unit has not moved for some time.

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

**Safety instructions:** For long strokes with high forces use swivel mounting block MBS.

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

Adjustable, Without Free Travel, Compression and extension force 30 N to 3,000 N

**End Fitting**

**Standard Dimensions**

**End Fitting**

**Performance and Dimensions**

TYPES	Stroke mm	L extended mm	<sup>1</sup> Compression force max. N	<sup>1</sup> Compression force with MBS max. N
HBS-28-50	62	297	3,000	3,000
HBS-28-100	112	447	1,550	3,000
HBS-28-150	162	597	900	3,000
HBS-28-200	212	747	600	3,000
HBS-28-250	262	897	440	3,000
HBS-28-300	312	1,047	330	3,000
HBS-28-350	362	1,197	260	2,500
HBS-28-400	412	1,347	200	2,000

<sup>1</sup> Max. extension force for all stroke lengths 3,000 N.

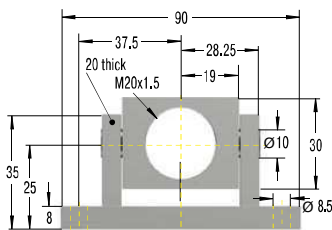
**Ordering Example**

**HBS-28-150-DD-M**

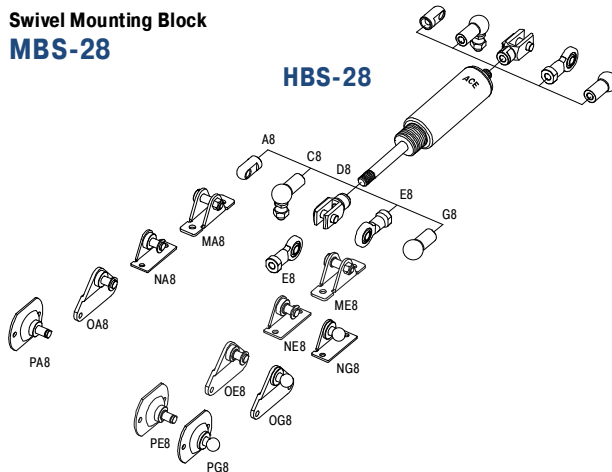
Type (Hydraulic Damper) \_\_\_\_\_  
 Body Ø (28 mm) \_\_\_\_\_  
 Stroke (150 mm) \_\_\_\_\_  
 Piston Rod End Fitting D8 \_\_\_\_\_  
 Body End Fitting D8 \_\_\_\_\_  
 Damping Direction (M = out stroke only) \_\_\_\_\_

**End Fitting Options:**

- A8 Eye** max. force 3,000 N
- B8 Stud Thread**
- C8 Angle Ball Joint** max. force 1,200 N
- D8 Clevis Fork** max. force 3,000 N
- E8 Swivel Eye** max. force 3,000 N
- G8 Ball Socket** max. force 1,200 N
- Rod Shroud** no retrofit Ø 32, L = Stroke + 80



**Swivel Mounting Block MBS-28**



**Model Type Prefix**

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

**Mounting accessories see from page 200.**

**Technical Data**

**Compression and extension force:** 30 N to 3,000 N

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

**Adjustment:** Achieved by turning the piston rod in its fully extended or fully compressed position.

Clockwise rotation = increase of the damping

Anti-clockwise rotation = decrease of the damping

Damping force adjustable before installation. The adjustment can add a max. of 5 mm to the L dimension.

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

**Material:** Outer body: Zinc plated or coated steel; Piston rod: Hard chrome plated steel; End fittings: Zinc plated steel

**Mounting:** In any position

**Note:** Increased break-away force if unit has not moved for some time.

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

**Safety instructions:** For long strokes with high forces use swivel mounting block MBS.

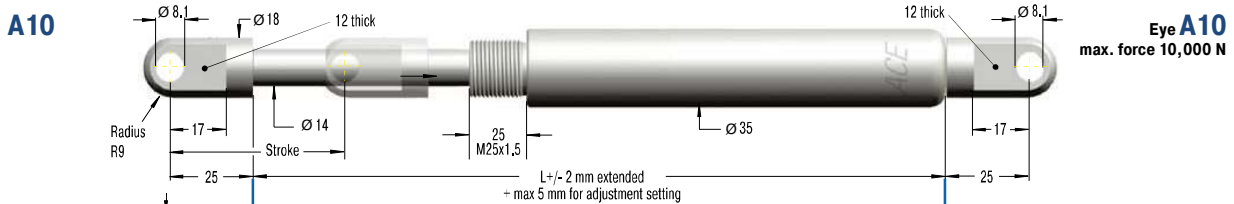
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Adjustable, Without Free Travel, Compression and extension force 30 N to 10,000 N

End Fitting

Standard Dimensions

End Fitting



B10

Stud Thread B10

C10

Angle Ball Joint C10 max. force 1,800 N

D10

Clevis Fork D10 max. force 10,000 N

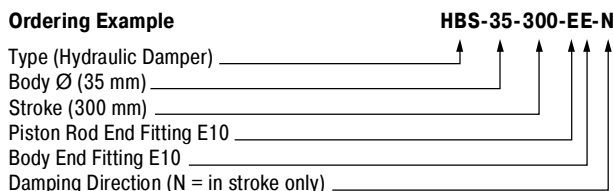
E10

Swivel Eye E10 max. force 10,000 N

**Performance and Dimensions**

TYPES	Stroke mm	L extended mm	<sup>1</sup> Compression force max. N	<sup>1</sup> Compression force with MBS max. N
HBS-35-100	117	487	10,000	10,000
HBS-35-150	167	637	7,500	10,000
HBS-35-200	217	787	5,150	10,000
HBS-35-300	317	1,087	2,850	10,000
HBS-35-400	417	1,387	1,800	10,000
HBS-35-500	517	1,687	1,240	10,000
HBS-35-600	617	1,987	910	8,600
HBS-35-700	717	2,287	690	6,500
HBS-35-800	817	2,587	540	5,100

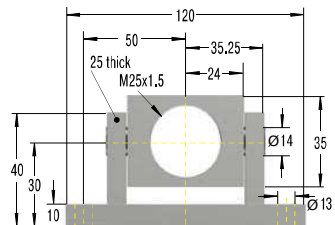
<sup>1</sup> Max. extension force for all stroke lengths 10,000 N.



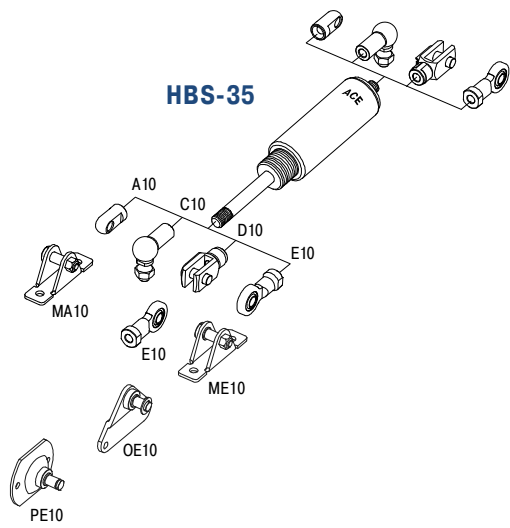
**Model Type Prefix**

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

Mounting accessories see from page 200.



Swivel Mounting Block MBS-35



Technical Data

**Compression and extension force:** 30 N to 10,000 N  
**Operating temperature range:** -20 °C to +80 °C  
**Adjustment:** Achieved by turning the piston rod in its fully extended or fully compressed position.  
 Clockwise rotation = increase of the damping  
 Anti-clockwise rotation = decrease of the damping  
 Damping force adjustable before installation. The adjustment can add a max. of 5 mm to the L dimension.  
**Positive stop:** External positive stops 1 mm to 1.5 mm before the end of stroke provided by the customer.  
**Material:** Outer body: Zinc plated or coated steel; Piston rod: Hard chrome plated steel; End fittings: Zinc plated steel  
**Mounting:** In any position  
**Note:** Increased break-away force if unit has not moved for some time.  
**End fittings:** They are interchangeable and if necessary must be positively secured by the customer to prevent unscrewing.  
**Safety instructions:** For long strokes with high forces use swivel mounting block MBS.

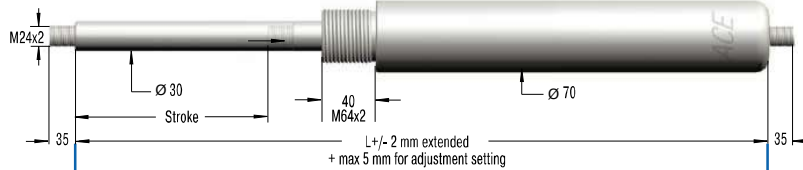
Adjustable, Without Free Travel, Compression and extension force 2,000 N to 40,000 N

**End Fitting**

**Standard Dimensions**

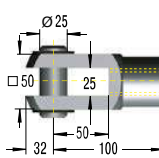
**End Fitting**

**B24**



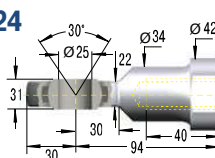
**Stud Thread B24**

**D24**



**Clevis Fork D24**  
max. force 50,000 N

**E24**



**Swivel Eye E24**  
max. force 50,000 N

**Performance and Dimensions**

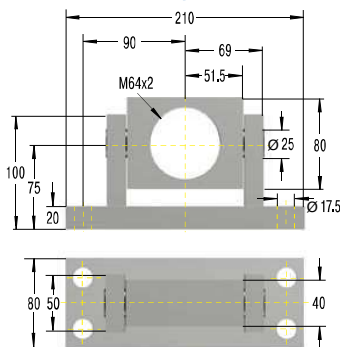
TYPES	Stroke mm	L extended mm	<sup>1</sup> Compression force max. N	<sup>1</sup> Compression force with MBS max. N
HBS-70-100	111	561	40,000	40,000
HBS-70-200	211	861	40,000	40,000
HBS-70-300	311	1,161	40,000	40,000
HBS-70-400	411	1,461	30,300	40,000
HBS-70-500	511	1,761	21,600	40,000
HBS-70-600	611	2,061	16,200	40,000
HBS-70-700	711	2,361	12,600	40,000
HBS-70-800	811	2,661	10,100	40,000

<sup>1</sup> 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) \_\_\_\_\_



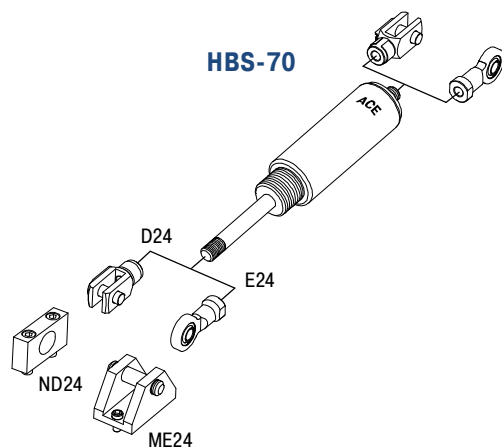
**Swivel Mounting Block MBS-70**

**Model Type Prefix**

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

Mounting accessories see from page 200.

**Rod Shroud W24-70**  
Ø 80, L = Stroke + 180



**Technical Data**

**Compression and extension force:** 2,000 N to 40,000 N

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

**Adjustment:** Achieved by turning the piston rod in its fully extended or fully compressed position.

Clockwise rotation = increase of the damping

Anti-clockwise rotation = decrease of the damping

Damping force adjustable before installation. The adjustment can add a max. of 5 mm to the L dimension.

**Positive stop:** External positive stops 5 mm to 6 mm before the end of stroke provided by the customer.

**Material:** Outer body: Zinc plated or coated steel; Piston rod: Hard chrome plated steel; End fittings: Zinc plated steel

**Mounting:** In any position

**Note:** Increased break-away force if unit has not moved for some time.

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

**Safety instructions:** For long strokes with high forces use swivel mounting block MBS.

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