

# HBS-28 to HBS-70

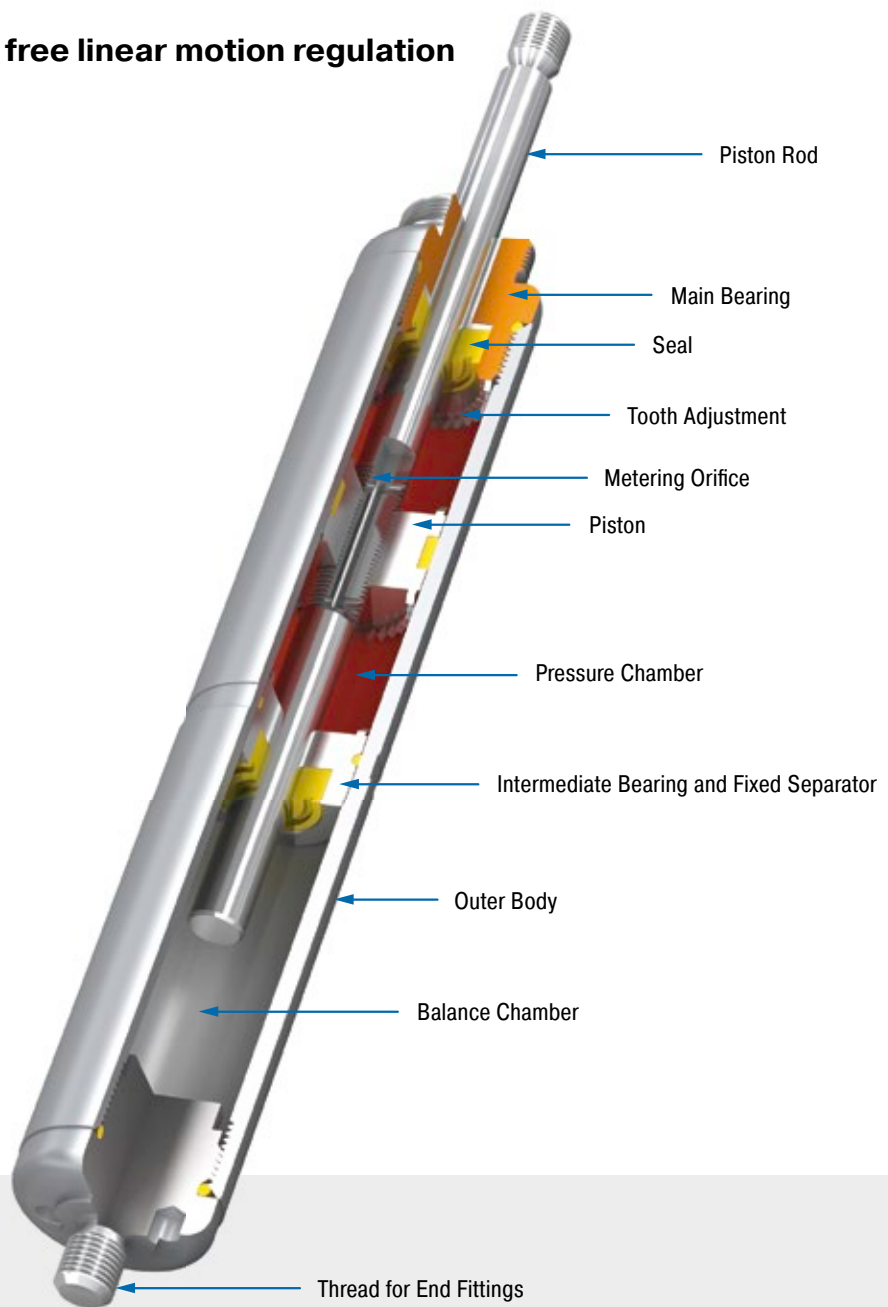
## Hydraulic Dampers

### Direction change backlash free linear motion regulation

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

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

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

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

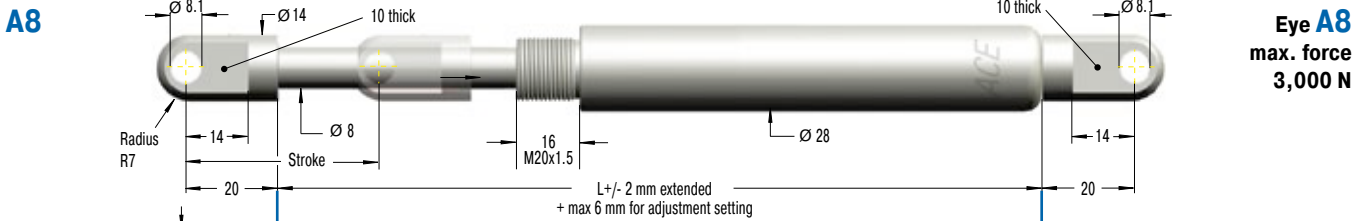
**On request:** Special oils and other special options. Alternative accessories available on request.

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

### End Fitting

### Standard Dimensions

### End Fitting



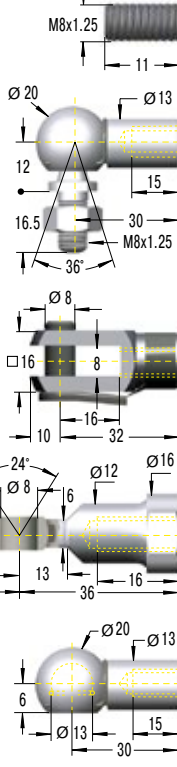
### B8

### C8

### D8

### E8

### G8



### 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	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

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

### Ordering Example

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

### 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 194.

### Stud Thread B8

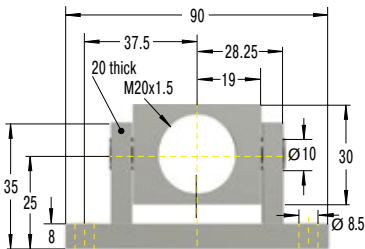
### Angle Ball Joint C8 max. force 1,200 N

### Clevis Fork D8 max. force 3,000 N

### Swivel Eye E8 max. force 3,000 N

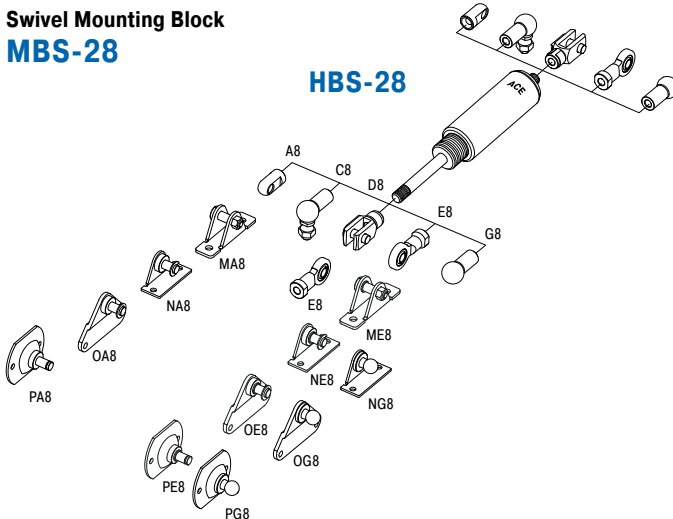
### Ball Socket G8 max. force 1,200 N

**Rod Shroud**  
 no retrofit  
 Ø 32, L = Stroke + 50



### Swivel Mounting Block MBS-28

### HBS-28



### 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 6 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 must be positively secured by the customer to prevent unscrewing.

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

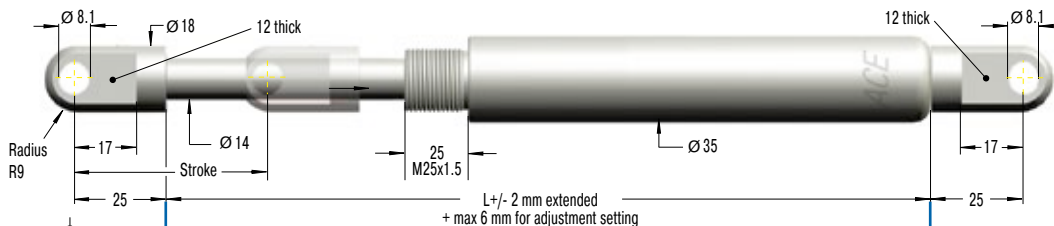
Adjustable, Without Free Travel, Compression and extension force 30 N to 10,000 N

End Fitting

Standard Dimensions

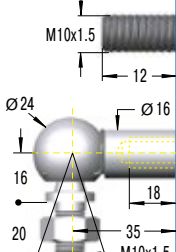
End Fitting

A10



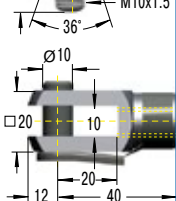
Eye A10  
max. force  
10,000 N

B10  
C10



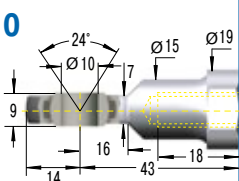
Stud Thread B10  
Angle Ball Joint C10  
max. force 1,800 N

D10



Clevis Fork D10  
max. force 10,000 N

E10



Swivel Eye E10  
max. force 10,000 N

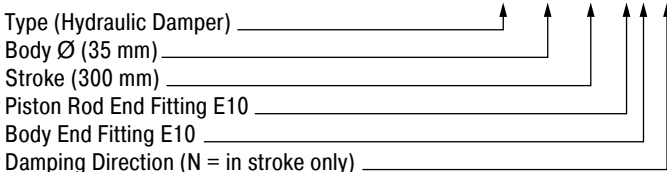
**Performance and Dimensions**

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	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

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

Ordering Example

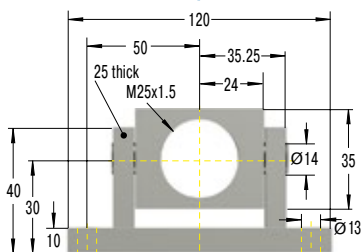
HBS-35-300-EE-N



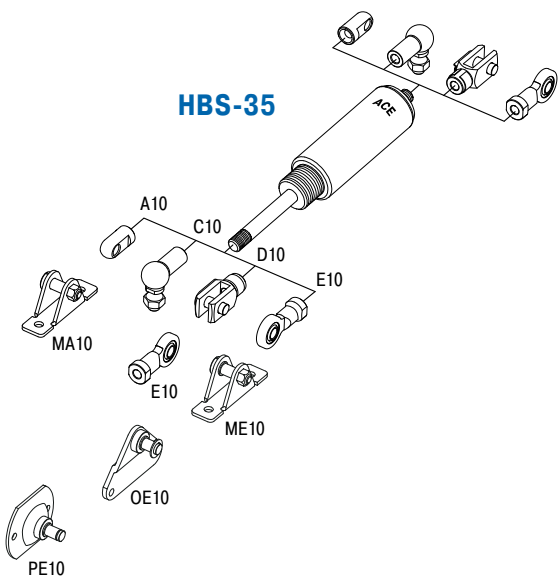
Model Type Prefix

- 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 194.



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 6 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 must be positively secured by the customer to prevent unscrewing.
- Safety instructions:** For long strokes with high forces use swivel mounting block MBS.

Issue 08.2016 – Specifications subject to change

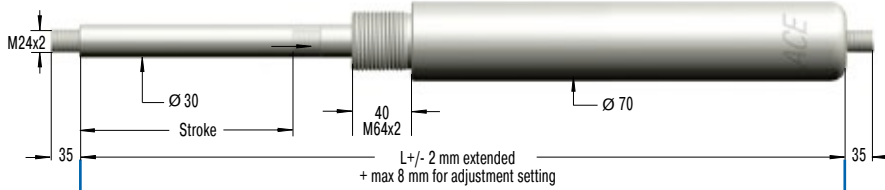
Adjustable, Without Free Travel, Compression and extension force 2,000 N to 40,000 N

End Fitting

Standard Dimensions

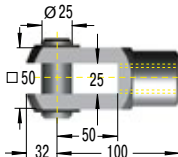
End Fitting

B24



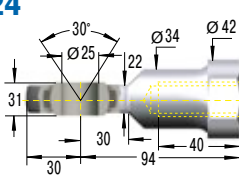
Stud Thread B24

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	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

<sup>1</sup> Max. extension force for all stroke lengths 40,000 N.

### Ordering Example

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) \_\_\_\_\_

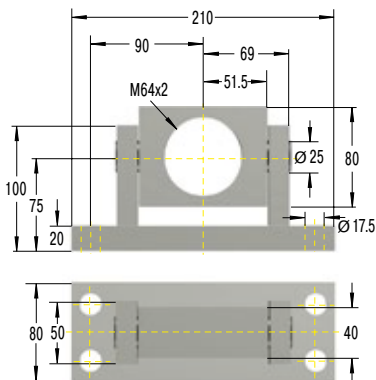
**HBS-70-300-EE-N**

### Model Type Prefix

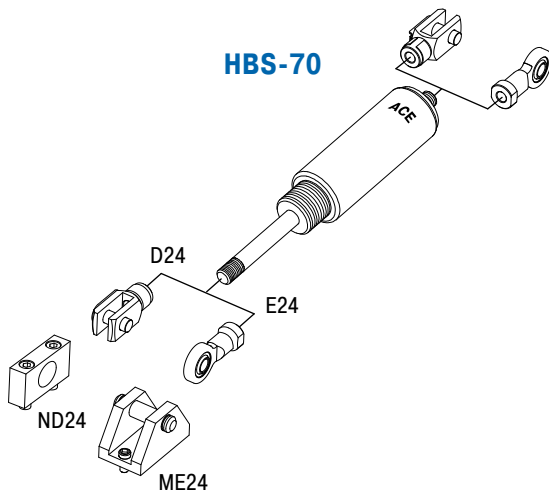
P: Damping in both directions  
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 M: Damping on out stroke only  
 X: Special model suffix

Mounting accessories see from page 194.

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



Swivel Mounting Block  
**MBS-70**



### 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 8 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 must be positively secured by the customer to prevent unscrewing.

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