

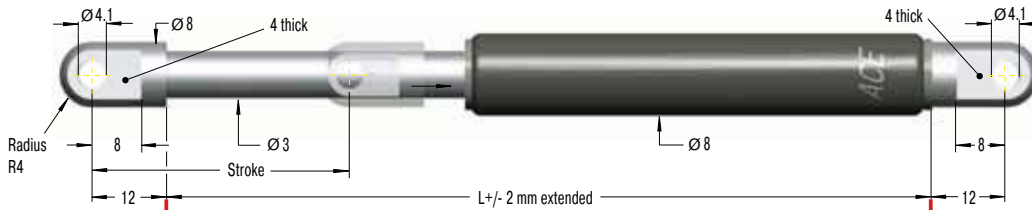
Extension Forces 10 N to 100 N  
(when Piston Rod Compressed up to 130 N)

### End Fitting

### Standard Dimensions

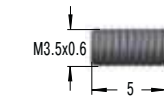
### End Fitting

**A3,5**



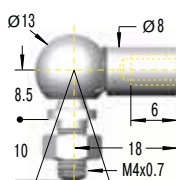
**Eye A3,5**  
max. force 370 N

**B3,5**



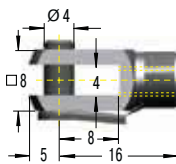
**Stud Thread B3,5**

**C3,5**



**Angle Ball Joint C3,5**  
max. force 370 N

**D3,5**



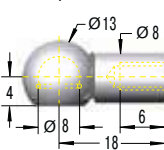
**Clevis Fork D3,5**  
max. force 370 N

**E3,5**



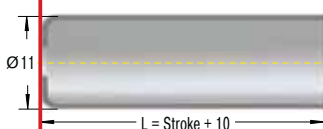
**Swivel Eye E3,5**  
max. force 370 N

**G3,5**



**Ball Socket G3,5**  
max. force 370 N

**Rod Shroud W3,5-8**



### Dimensions

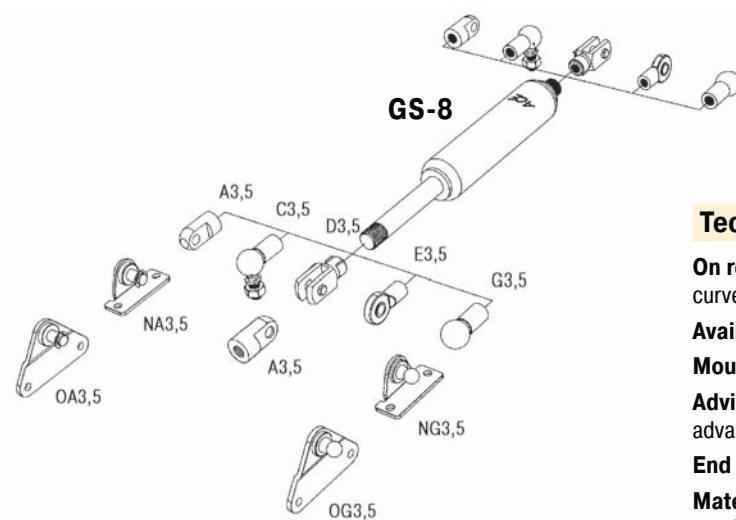
Type	Stroke mm	L extended
GS-8-20	20	72
GS-8-30	30	92
GS-8-40	40	112
GS-8-50	50	132
GS-8-60	60	152
GS-8-80	80	192

### Ordering Example

**GS-8-30-AC-30**

Type (Push Type) \_\_\_\_\_  
 Body Ø (8 mm) \_\_\_\_\_  
 Stroke (30 mm) \_\_\_\_\_  
 Piston Rod End Fitting A3,5 \_\_\_\_\_  
 Body End Fitting C3,5 \_\_\_\_\_  
 Nominal Force F<sub>1</sub> 30 N \_\_\_\_\_

The end fittings are interchangeable.  
For mounting accessories see page 199.



For mounting accessories see page 199.

### Technical Data

**On request:** Without damping, extended length damping, special force curves, special lengths, alternative end fittings.

**Available force range F<sub>1</sub> at 20 °C:** 10 N to 100 N

**Mounting:** In any position

**Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

**End position damping length:** Approx. 5 mm

**Material:** Body: Black coated steel. Piston rod: Stainless steel (1.4305). End fittings: Zinc plated steel.

**Progression:** Approx. 28 %, F<sub>2</sub> max. 130 N

### End Fitting

### Standard Dimensions

### End Fitting

**A3,5**



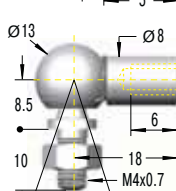
**Eye A3,5**  
max. force 370 N

**B3,5**



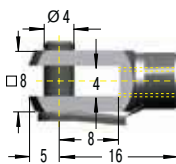
**Stud Thread B3,5**

**C3,5**



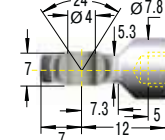
**Angle Ball Joint C3,5**  
max. force 370 N

**D3,5**



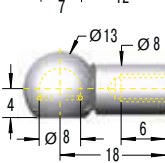
**Clevis Fork D3,5**  
max. force 370 N

**E3,5**



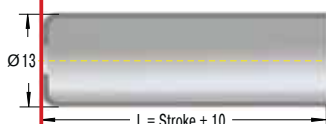
**Swivel Eye E3,5**  
max. force 370 N

**G3,5**



**Ball Socket G3,5**  
max. force 370 N

**Rod Shroud W3,5-10**



### Dimensions

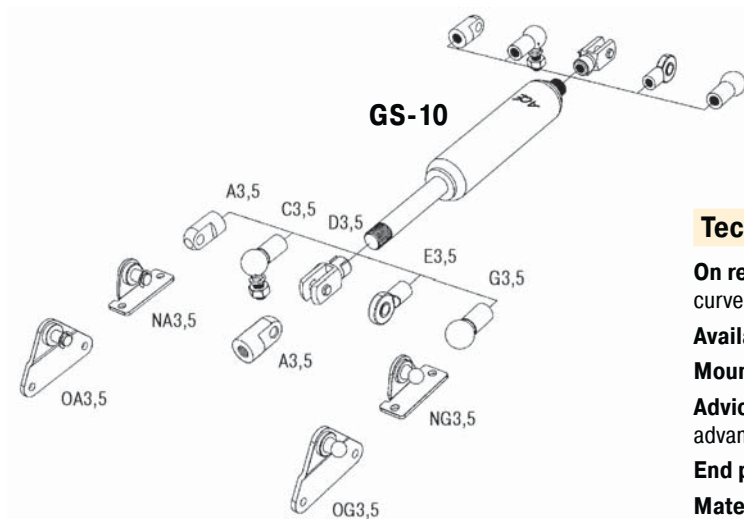
Type	Stroke mm	L extended
GS-10-20	20	72
GS-10-30	30	92
GS-10-40	40	112
GS-10-50	50	132
GS-10-60	60	152
GS-10-80	80	192

### Ordering Example

**GS-10-80-AC-60**

Type (Push Type) \_\_\_\_\_  
 Body Ø (10 mm) \_\_\_\_\_  
 Stroke (80 mm) \_\_\_\_\_  
 Piston Rod End Fitting A3,5 \_\_\_\_\_  
 Body End Fitting C3,5 \_\_\_\_\_  
 Nominal Force F<sub>1</sub> 60 N \_\_\_\_\_

The end fittings are interchangeable.  
For mounting accessories see page 199.



For mounting accessories see page 199.

### Technical Data

**On request:** Without damping, extended length damping, special force curves, special lengths, alternative end fittings.

**Available force range F<sub>1</sub> at 20 °C:** 10 N to 100 N

**Mounting:** In any position

**Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

**End position damping length:** Approx. 5 mm

**Material:** Body: Black coated steel. Piston rod: Stainless steel (1.4305). End fittings: Zinc plated steel.

**Progression:** Approx. 20%, F<sub>2</sub> max. 120 N

Extension Forces 10 N to 180 N  
(when Piston Rod Compressed up to 225 N)

### End Fitting

### Standard Dimensions

### End Fitting

**A3,5**



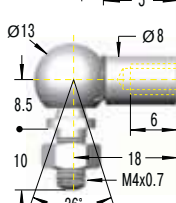
**Eye A3,5**  
max. force 370 N

**B3,5**



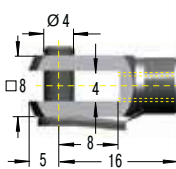
**Stud Thread B3,5**

**C3,5**



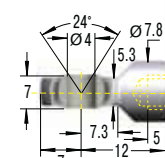
**Angle Ball Joint C3,5**  
max. force 370 N

**D3,5**



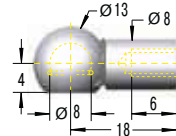
**Clevis Fork D3,5**  
max. force 370 N

**E3,5**



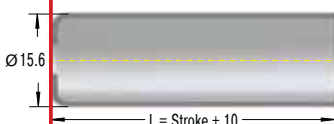
**Swivel Eye E3,5**  
max. force 370 N

**G3,5**



**Ball Socket G3,5**  
max. force 370 N

**Rod Shroud W3,5-12**



**Adjuster Knob U3,5**  
See page 163.

### Dimensions

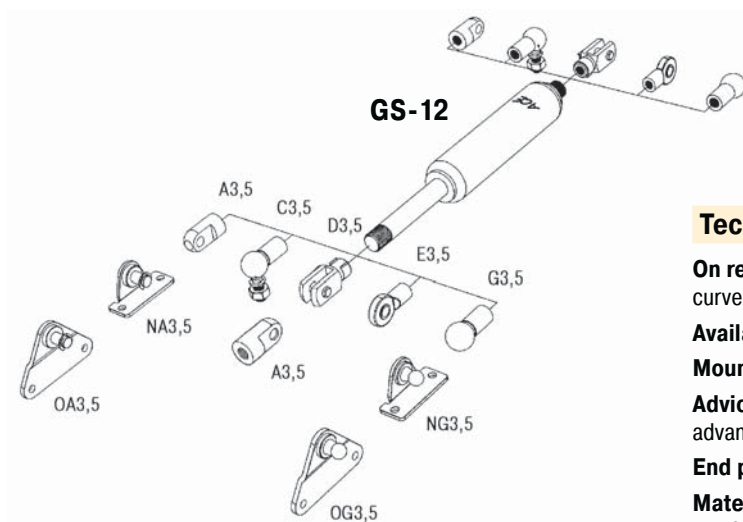
Type	Stroke mm	L extended	F <sub>1</sub> max. N
GS-12-20	20	72	180
GS-12-30	30	92	180
GS-12-40	40	112	180
GS-12-50	50	132	180
GS-12-60	60	152	180
GS-12-80	80	192	150
GS-12-100	100	232	150
GS-12-120	120	272	120
GS-12-150	150	332	100

### Ordering Example

**GS-12-100-AA-30**

Type (Push Type) \_\_\_\_\_  
 Body Ø (12 mm) \_\_\_\_\_  
 Stroke (100 mm) \_\_\_\_\_  
 Piston Rod End Fitting A3,5 \_\_\_\_\_  
 Body End Fitting A3,5 \_\_\_\_\_  
 Nominal Force F<sub>1</sub> 30 N \_\_\_\_\_

The end fittings are interchangeable.  
For mounting accessories see page 199.



For mounting accessories see page 199.

### Technical Data

**On request:** Without damping, extended length damping, special force curves, special lengths, alternative end fittings.

**Available force range F<sub>1</sub> at 20 °C:** 10 N to 180 N

**Mounting:** In any position

**Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

**End position damping length:** Approx. 10 mm

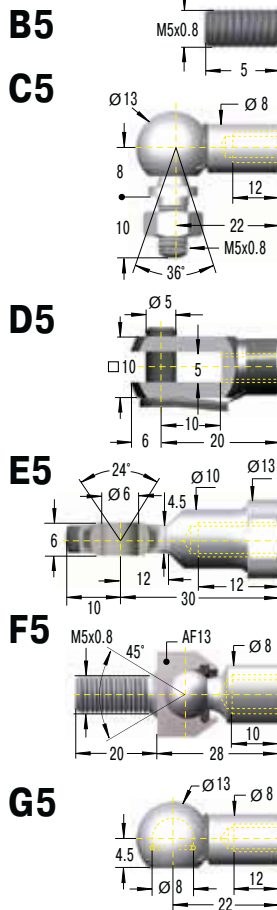
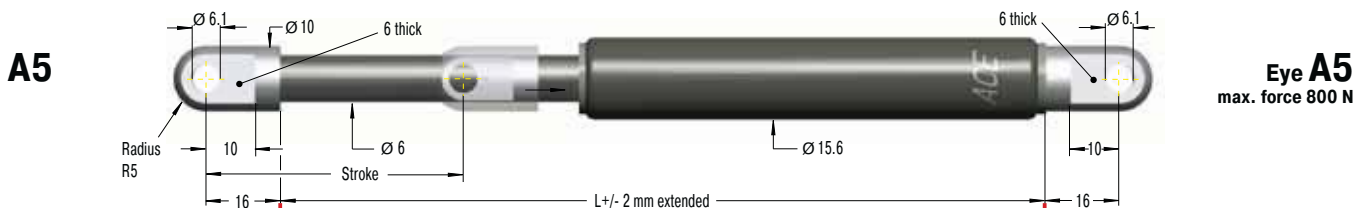
**Material:** Body: Black coated steel. Piston rod: Stainless steel (1.4305). End fittings: Zinc plated steel.

**Progression:** Approx. 25%, F<sub>2</sub> max. 225 N

### End Fitting

### Standard Dimensions

### End Fitting

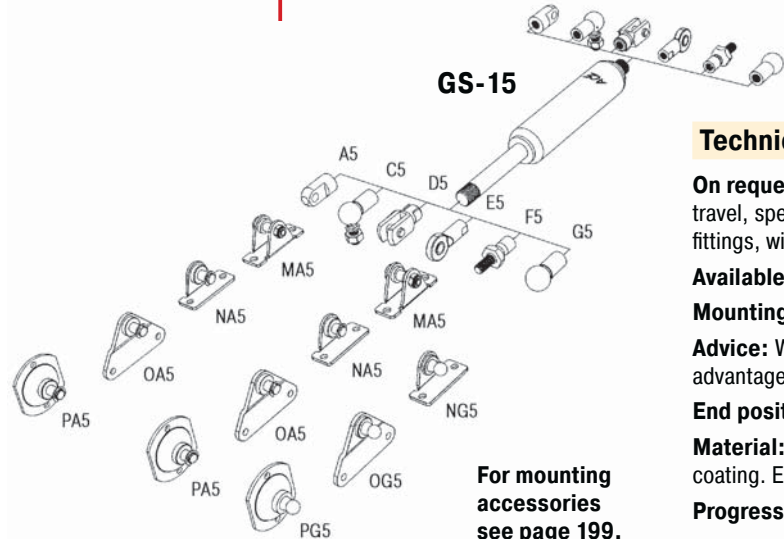
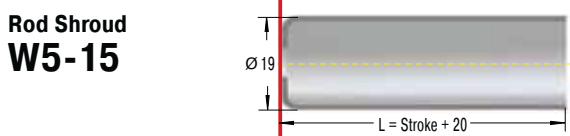


Dimensions		
Type	Stroke mm	L extended
GS-15-20	20	67
GS-15-40	40	107
GS-15-50	50	127
GS-15-60	60	147
GS-15-80	80	187
GS-15-100	100	227
GS-15-120	120	267
GS-15-150	150	327
GS-15-200	200	427

**Ordering Example** **GS-15-150-AC-150**

Type (Push Type) \_\_\_\_\_  
 Body Ø (15.6 mm) \_\_\_\_\_  
 Stroke (150 mm) \_\_\_\_\_  
 Piston Rod End Fitting A5 \_\_\_\_\_  
 Body End Fitting C5 \_\_\_\_\_  
 Nominal Force  $F_1$  150 N \_\_\_\_\_

The end fittings are interchangeable.  
For mounting accessories see page 199.



For mounting accessories see page 199.

### Technical Data

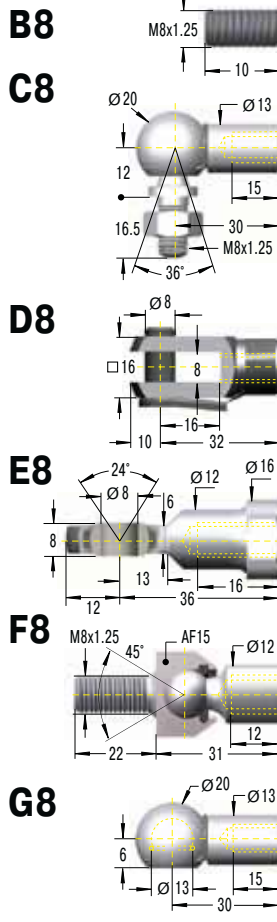
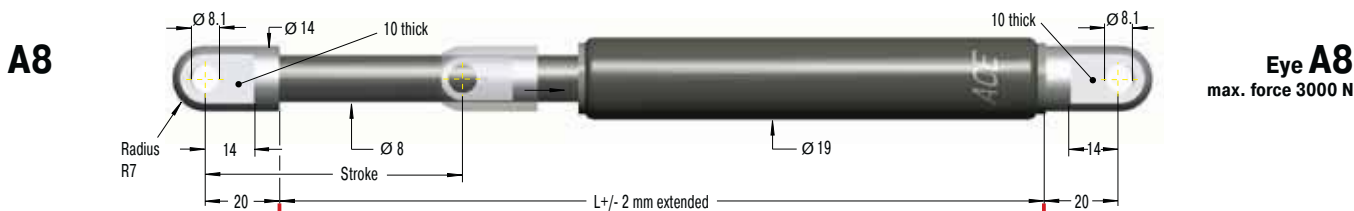
- On request:** Without damping, increased damping action at end of travel, special force curves, special lengths, strokes, alternative end fittings, wiper, stainless steel (see pages 179 to 186).
- Available force range  $F_1$  at 20 °C:** 40 N to 400 N
- Mounting:** In any position
- Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.
- End position damping length:** Approx. 10 mm
- Material:** Body: Black coated steel. Piston rod: With wear-resistant coating. End fittings: Zinc plated steel.
- Progression:** Approx. 27%,  $F_2$  max. 500 N

Issue 6.2011 Specifications subject to change

### End Fitting

### Standard Dimensions

### End Fitting

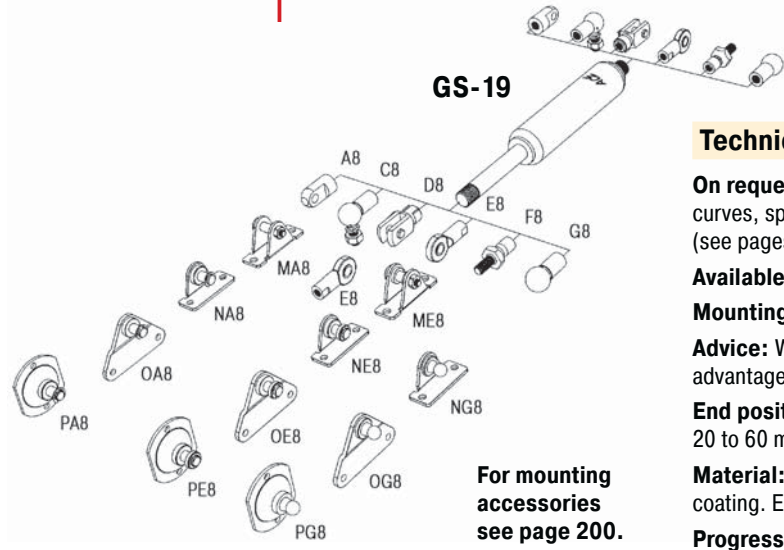
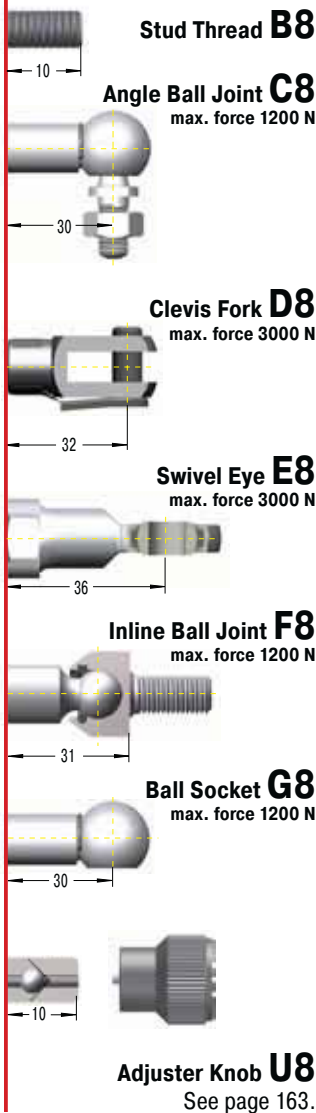
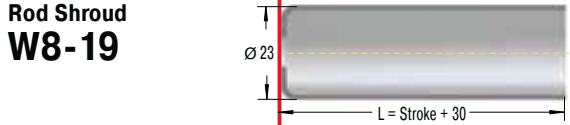


Dimensions		
Type	Stroke mm	L extended
GS-19-50	50	164
GS-19-100	100	264
GS-19-150	150	364
GS-19-200	200	464
GS-19-250	250	564
GS-19-300	300	664

**Ordering Example** **GS-19-150-AC-600**

Type (Push Type) \_\_\_\_\_  
 Body Ø (19 mm) \_\_\_\_\_  
 Stroke (150 mm) \_\_\_\_\_  
 Piston Rod End Fitting A8 \_\_\_\_\_  
 Body End Fitting C8 \_\_\_\_\_  
 Nominal Force F<sub>1</sub> 600 N \_\_\_\_\_

The end fittings are interchangeable.  
For mounting accessories see page 200.



**For mounting accessories see page 200.**

### Technical Data

**On request:** Without damping, standard length damping, special force curves, special lengths, alternative end fittings, wiper, stainless steel (see pages 179 to 186).

**Available force range F<sub>1</sub> at 20 °C:** 50 N to 700 N

**Mounting:** In any position

**Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

**End position damping length:** Strong end position damping approx. 20 to 60 mm (depending on the stroke) and slow extension speed.

**Material:** Body: Black coated steel. Piston rod: With wear-resistant coating. End fittings: Zinc plated steel.

**Progression:** Approx. 36% to 42%, F<sub>2</sub> max. 995 N

Issue 6.2011 Specifications subject to change

### End Fitting

### Standard Dimensions

### End Fitting

**A8**

max. force 3000 N

**Dimensions**

Type	Stroke mm	L extended
GS-22-50	50	164
GS-22-100	100	264
GS-22-150	150	364
GS-22-200	200	464
GS-22-250	250	564
GS-22-300	300	664
GS-22-350	350	764
GS-22-400	400	864
GS-22-450	450	964
GS-22-500	500	1 064
GS-22-550	550	1 164
GS-22-600	600	1 264
GS-22-650	650	1 364
GS-22-700	700	1 464

**Ordering Example**

GS-22-150-AE-800

Type (Push Type) \_\_\_\_\_  
 Body Ø (23 mm) \_\_\_\_\_  
 Stroke (150 mm) \_\_\_\_\_  
 Piston Rod End Fitting A8 \_\_\_\_\_  
 Body End Fitting E8 \_\_\_\_\_  
 Nominal Force F<sub>1</sub> 800 N \_\_\_\_\_

**The end fittings are interchangeable.  
For mounting accessories see page 200.**

**B8**

Stud Thread B8

**C8**

Angle Ball Joint C8  
max. force 1200 N

**D8**

Clevis Fork D8  
max. force 3000 N

**E8**

Swivel Eye E8  
max. force 3000 N

**F8**

Inline Ball Joint F8  
max. force 1200 N

**G8**

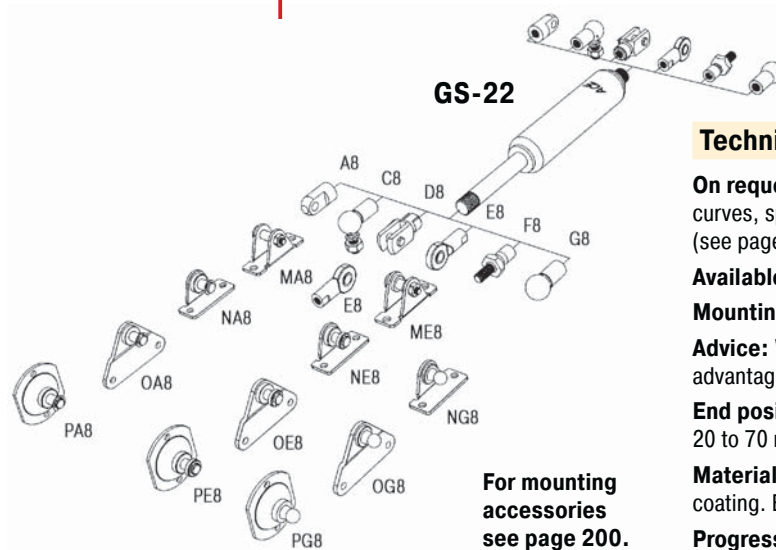
Ball Socket G8  
max. force 1200 N

**U8**

Adjuster Knob U8  
See page 163.

**Rod Shroud W8-22**

Ø 28  
L = Stroke + 30



**For mounting accessories see page 200.**

### Technical Data

**On request:** Without damping, standard length damping, special force curves, special lengths, alternative end fittings, wiper, stainless steel (see pages 179 to 186).

**Available force range F<sub>1</sub> at 20 °C:** 80 N to 1300 N

**Mounting:** In any position

**Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

**End position damping length:** Strong end position damping approx. 20 to 70 mm (depending on the stroke) and slow extension speed.

**Material:** Body: Black coated steel. Piston rod: With wear-resistant coating. End fittings: Zinc plated steel.

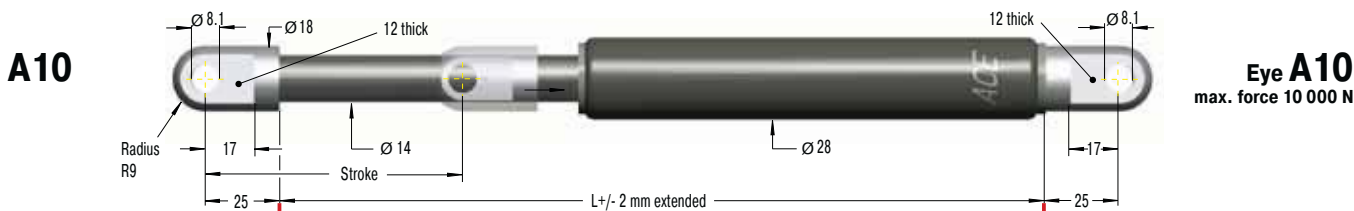
**Progression:** Approx. 39% to 50%, F<sub>2</sub> max. 1950 N

Issue 6.2011 Specifications subject to change

### End Fitting

### Standard Dimensions

### End Fitting

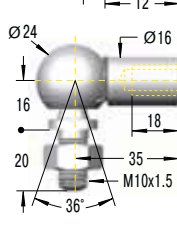


### B10



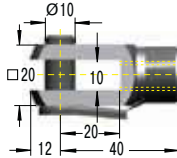
### Stud Thread B10

### C10



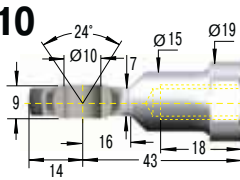
### Angle Ball Joint C10

### D10



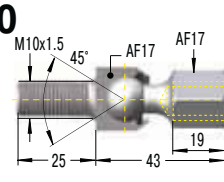
### Clevis Fork D10

### E10



### Swivel Eye E10

### F10



### Inline Ball Joint F10

Dimensions		
Type	Stroke mm	L extended
GS-28-100	100	262
GS-28-150	150	362
GS-28-200	200	462
GS-28-250	250	562
GS-28-300	300	662
GS-28-350	350	762
GS-28-400	400	862
GS-28-450	450	962
GS-28-500	500	1 062
GS-28-550	550	1 162
GS-28-600	600	1 262
GS-28-650	650	1 362
GS-28-700	700	1 462
GS-28-750	750	1 562

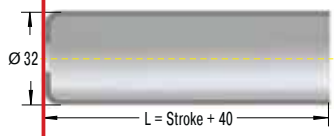
### Ordering Example

**GS-28-150-EE-1200**

Type (Push Type) \_\_\_\_\_  
 Body Ø (28 mm) \_\_\_\_\_  
 Stroke (150 mm) \_\_\_\_\_  
 Piston Rod End Fitting E10 \_\_\_\_\_  
 Body End Fitting E10 \_\_\_\_\_  
 Nominal Force F<sub>1</sub> 1200 N \_\_\_\_\_

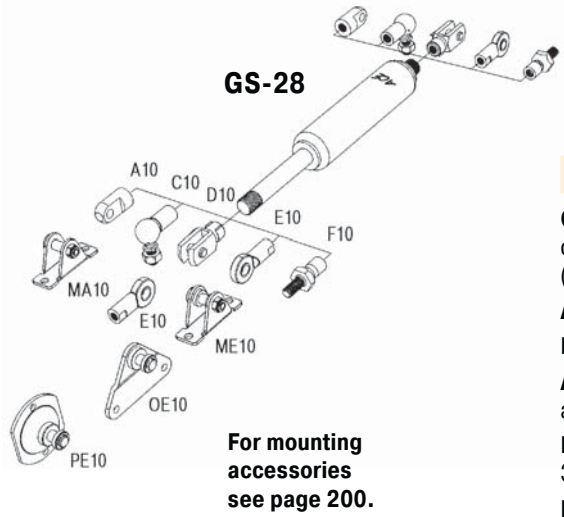
The end fittings are interchangeable.  
For mounting accessories see page 200.

### Rod Shroud W10-28



### Adjuster Knob U10

See page 163.



For mounting accessories see page 200.

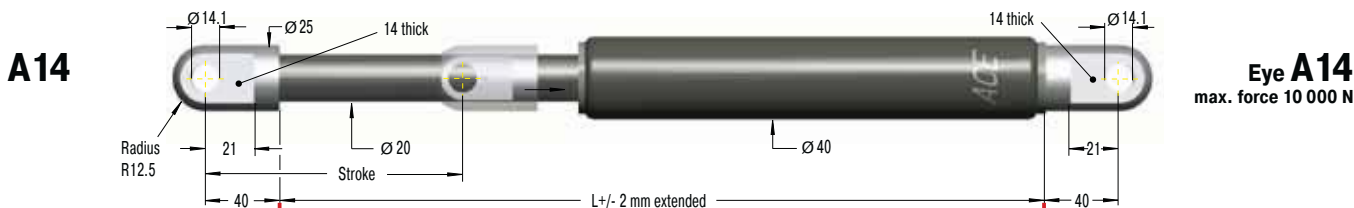
### Technical Data

- On request:** Without damping, standard length damping, special force curves, special lengths, alternative end fittings, wiper, stainless steel (see pages 179 to 186).
- Available force range F<sub>1</sub> at 20 °C:** 150 N to 2500 N
- Mounting:** In any position
- Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.
- End position damping length:** Strong end position damping approx. 30 to 70 mm (depending on the stroke) and slow extension speed.
- Material:** Body: Black coated steel. Piston rod: With wear-resistant coating. End fittings: Zinc plated steel.
- Progression:** Approx. 60% to 95%, F<sub>2</sub> max. 4875 N

### End Fitting

### Standard Dimensions

### End Fitting

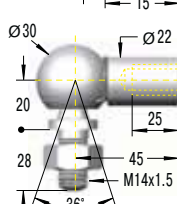


### B14



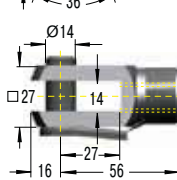
### Stud Thread B14

### C14



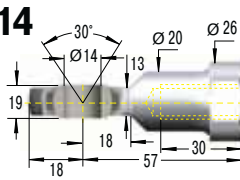
### Angle Ball Joint C14

### D14



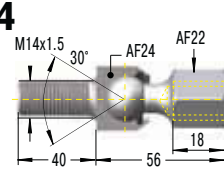
### Clevis Fork D14

### E14



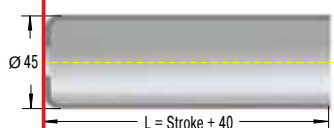
### Swivel Eye E14

### F14



### Inline Ball Joint F14

### Rod Shroud W14-40



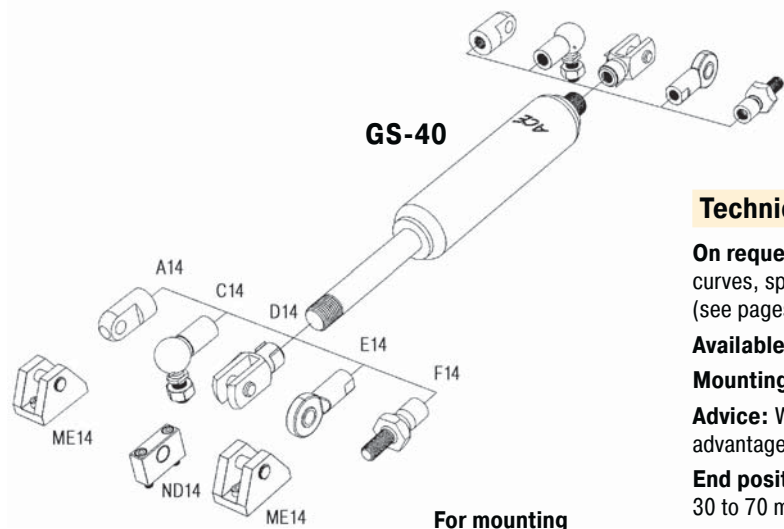
Dimensions		
Type	Stroke mm	L extended
GS-40-100	100	317
GS-40-150	150	417
GS-40-200	200	517
GS-40-300	300	717
GS-40-400	400	917
GS-40-500	500	1 117
GS-40-600	600	1 317
GS-40-800	800	1 717
GS-40-1000	1 000	2 117

### Ordering Example

GS-40-150-DD-3500

Type (Push Type) \_\_\_\_\_  
 Body Ø (40 mm) \_\_\_\_\_  
 Stroke (150 mm) \_\_\_\_\_  
 Piston Rod End Fitting D14 \_\_\_\_\_  
 Body End Fitting D14 \_\_\_\_\_  
 Nominal Force F<sub>1</sub> 3500 N \_\_\_\_\_

The end fittings are interchangeable.  
 For mounting accessories see page 201.



For mounting accessories see page 201.

### Technical Data

**On request:** Without damping, standard length damping, special force curves, special lengths, alternative end fittings, wiper, stainless steel (see pages 179 to 186).

**Available force range F<sub>1</sub> at 20 °C:** 500 N to 5000 N

**Mounting:** In any position

**Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

**End position damping length:** Strong end position damping approx. 30 to 70 mm (depending on the stroke) and slow extension speed.

**Material:** Body: Black coated steel. Piston rod: With wear-resistant coating. End fittings: Zinc plated steel.

**Progression:** Approx. 47 % to 53 %, F<sub>2</sub> max. 7650 N

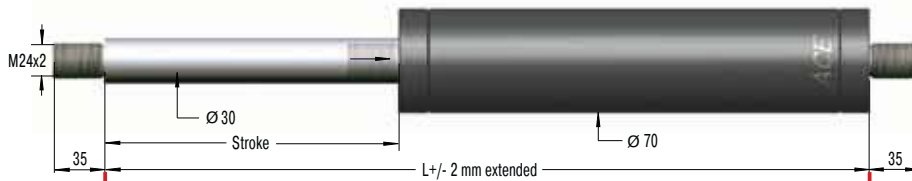
Issue 6.2011 Specifications subject to change

### End Fitting

### Standard Dimensions

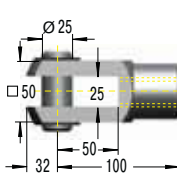
### End Fitting

**B24**



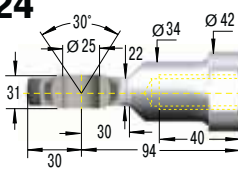
Stud Thread **B24**

**D24**



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

**E24**



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

#### Dimensions

Type	Stroke mm	L extended
GS-70-100	100	320
GS-70-200	200	520
GS-70-300	300	720
GS-70-400	400	920
GS-70-500	500	1 120
GS-70-600	600	1 320
GS-70-700	700	1 520
GS-70-800	800	1 720

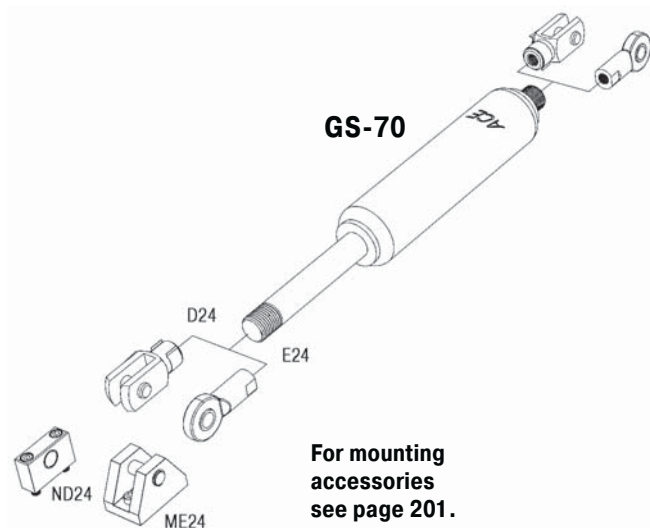
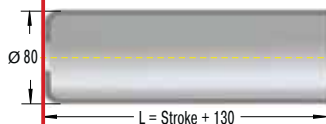
#### Ordering Example

**GS-70-200-EE-8000**

Type (Push Type) \_\_\_\_\_  
 Body Ø (70 mm) \_\_\_\_\_  
 Stroke (200 mm) \_\_\_\_\_  
 Piston Rod End Fitting E24 \_\_\_\_\_  
 Body End Fitting E24 \_\_\_\_\_  
 Nominal Force  $F_1$  8000 N \_\_\_\_\_

The end fittings are interchangeable.  
 For mounting accessories see page 201.  
 Standard gas spring with valve.

Rod Shroud  
**W24-70**



For mounting  
accessories  
see page 201.

#### Technical Data

**On request:** Without damping, extended length damping, special force curves, special lengths, alternative end fittings, wiper, stainless steel.

**Available force range  $F_1$  at 20 °C:** 2000 N to 13 000 N

**Mounting:** In any position

**Advice:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

**End position damping length:** Approx. 10 mm

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

**Progression:** Approx. 25 %,  $F_2$  max. 16 250 N