

GS-8 to GS-70

Individual stroke length and extension forces

Valve Technology

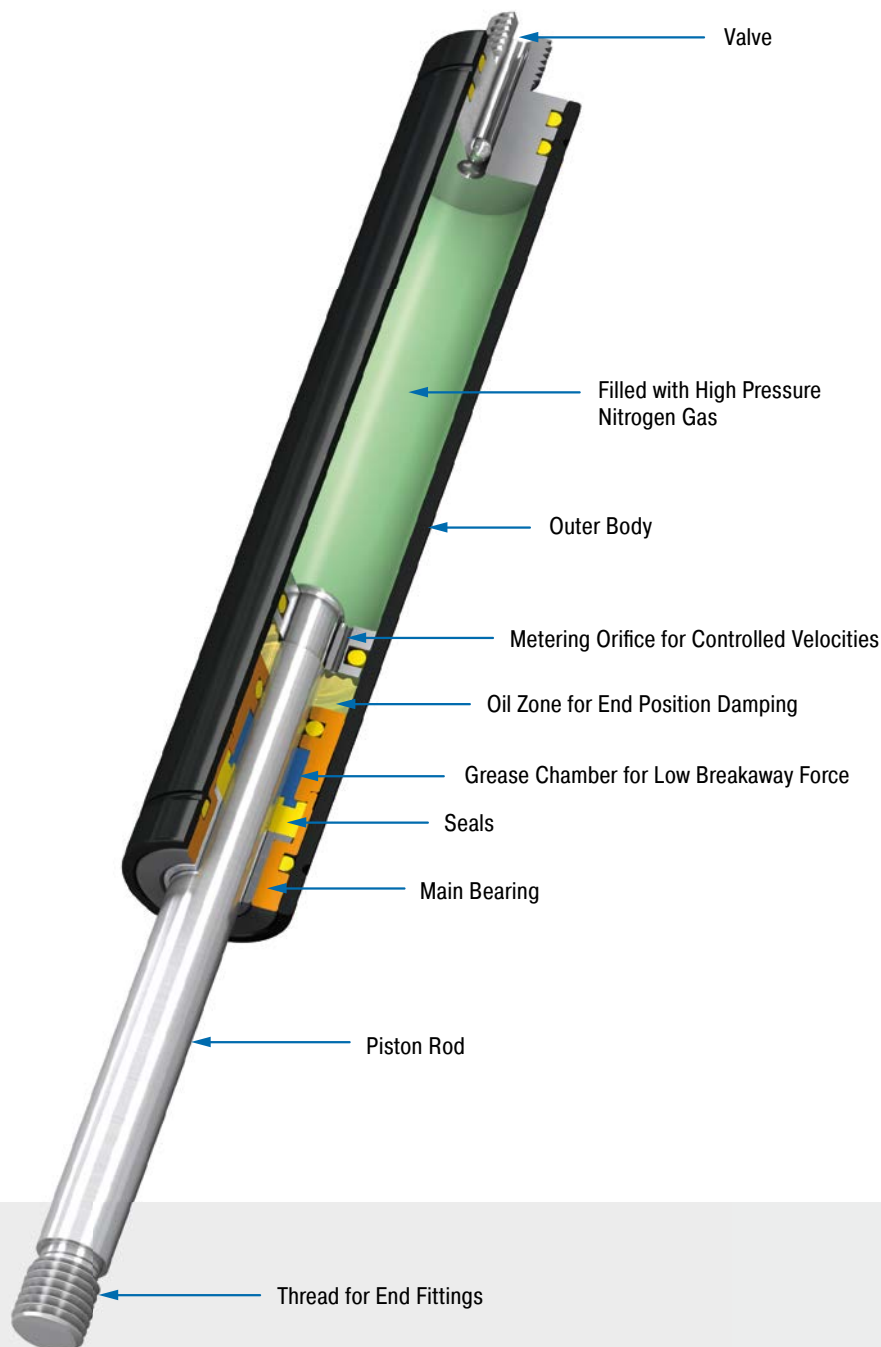
Extension force 10 N to 13,000 N

Stroke 20 mm to 1,000 mm

Universal and tailor made: ACE industrial gas springs offer perfect support of muscle power with forces from 10 to 13,000 N (2 to 2,923 lbs.) with body diameter of 8 to 70 mm (0.31" to 2.76"). These durable and sealed systems are ready for installation, maintenance-free and filled with pressurized nitrogen gas.

They are filled according to individual customer pressure requirements and may be adjusted later by use of a built-in valve. ACE provides free calculation support and designs the gas springs with mounting points specifically for the particular application. A variety of accessories makes assembly even easier and allows universal application of the gas springs.

ACE industrial gas push type springs are used on covers, lids, or other components. They are used in industrial applications, automation and machine building, medical technology as well as in the electronics, automobile and furniture industries.



Technical Data

Extension force: 10 N to 13,000 N

Piston rod diameter: Ø 3 mm to Ø 30 mm

Progression: Approx. 13 % to 76 %
(depending on size and stroke)

Lifetime: Approx. 10,000 m

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

Material: Outer body: Coated steel; Piston rod: Steel or stainless steel with wear-resistant coating; End fittings: Zinc plated steel

Operating fluid: Nitrogen gas and oil

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

End position damping length: Approx. 5 mm to 70 mm (depending on the stroke)

Positive stop: External positive stop at the end of stroke provided by the customer.

Application field: Hoods, Shutters, Machine housing, Conveyor systems, Control boxes, Furniture industry, Jacking applications, Assembly stations, Vehicle technology, Folding elements

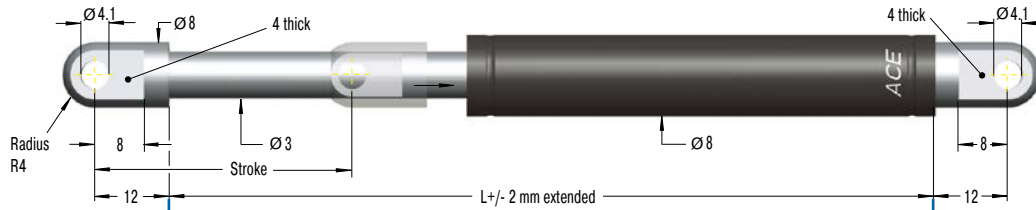
Note: Increased break-away force if unit has not moved for some time.

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

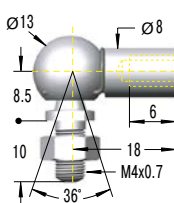
Safety information: Gas springs (push type) should not be installed under pre-tension.

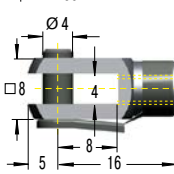
On request: Special oils and other special options. Alternative accessories. Different end position damping and extension speed.

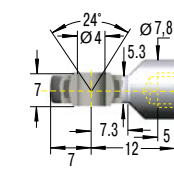
Valve Technology, Extension force 10 N to 100 N (compressed up to 133 N)

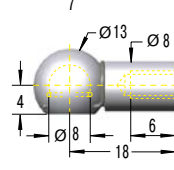
End Fitting
Standard Dimensions
End Fitting
A3.5

Eye A3.5
max. force 370 N

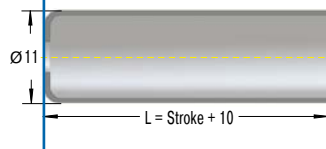
B3.5

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

Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force max. N
GS-8-20	20	72	100
GS-8-30	30	92	100
GS-8-40	40	112	100
GS-8-50	50	132	100
GS-8-60	60	152	100
GS-8-80	80	192	100

Ordering Example

Type (Push Type) _____
 Body 0.31" (8 mm) _____
 Stroke 1.18" (30 mm) _____
 Piston Rod End Fitting A3.5 _____
 Body End Fitting C3.5 _____
 Nominal Force F₁ 7 lbs (30 N) _____

GS-8-30-AC-30

Mounting accessories see from page 212.

Adjuster Knob DE-GAS-3.5
See page 191.

Technical Data
Extension force: 10 N to 100 N (compressed up to 133 N)

Progression: Approx. 29 % to 33 %

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

Material: Outer body: Coated steel; Piston rod: Stainless steel (1.4301/1.4305, AISI 304/303); End fittings: Zinc plated steel

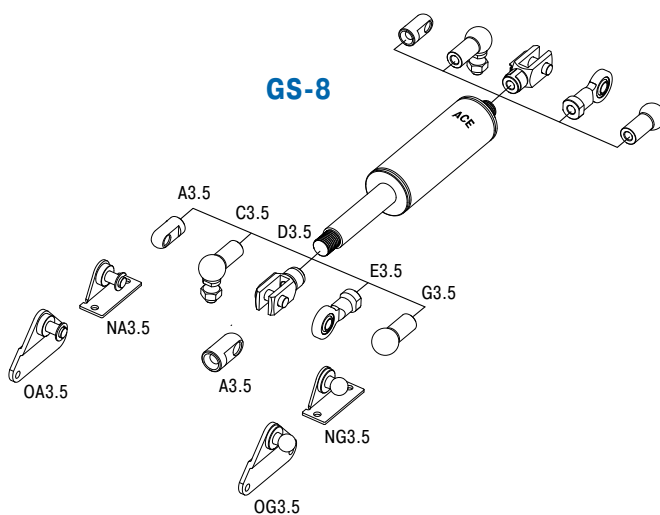
Mounting: We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

End position damping length: approx. 5 mm (depending on the stroke)

Positive stop: External positive stop at the end of stroke provided by the customer.

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 information: Gas springs (push type) should not be installed under pre-tension.


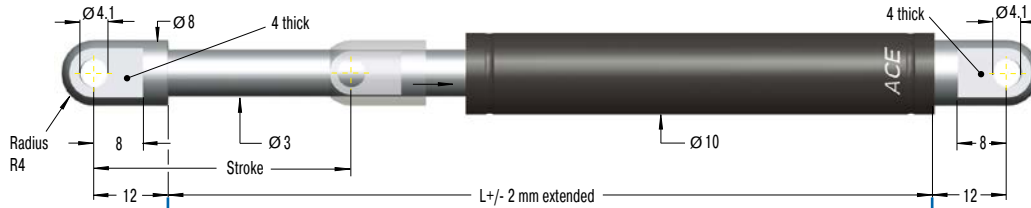
Valve Technology, Extension force 10 N to 100 N (compressed up to 116 N)

End Fitting

Standard Dimensions

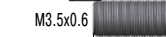
End Fitting

A3.5



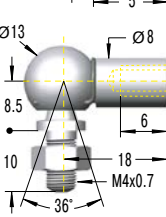
Eye A3.5
max. force 370 N

B3.5



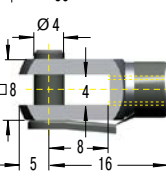
Stud Thread B3.5

C3.5



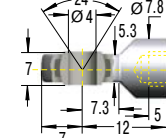
Angle Ball Joint C3.5
max. force 370 N

D3.5



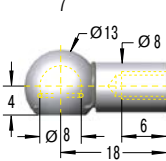
Clevis Fork D3.5
max. force 370 N

E3.5



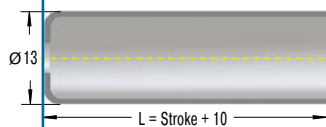
Swivel Eye E3.5
max. force 370 N

G3.5



Ball Socket G3.5
max. force 370 N

Rod Shroud
W3.5-10



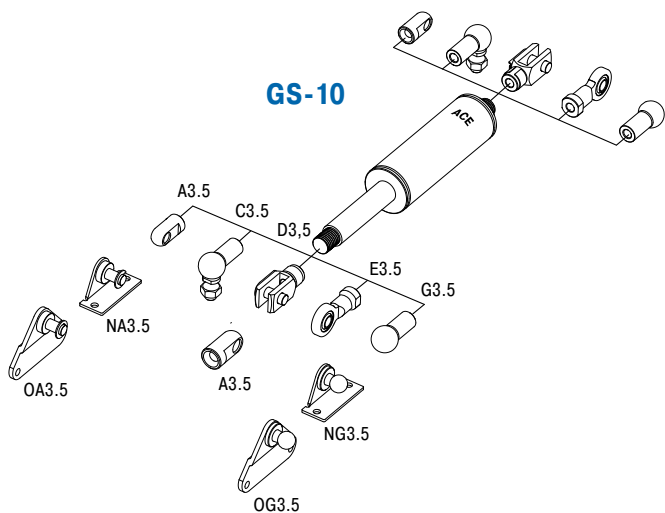
Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force max. N
GS-10-20	20	72	100
GS-10-30	30	92	100
GS-10-40	40	112	100
GS-10-50	50	132	100
GS-10-60	60	152	100
GS-10-80	80	192	100

Ordering Example

Type (Push Type) → GS-10-80-AC-60
 Body 0.39" (10 mm)
 Stroke 3.15" (80 mm)
 Piston Rod End Fitting A3.5
 Body End Fitting C3.5
 Nominal Force F₁ 13 lbs (60 N)

Mounting accessories see from page 212.



Technical Data

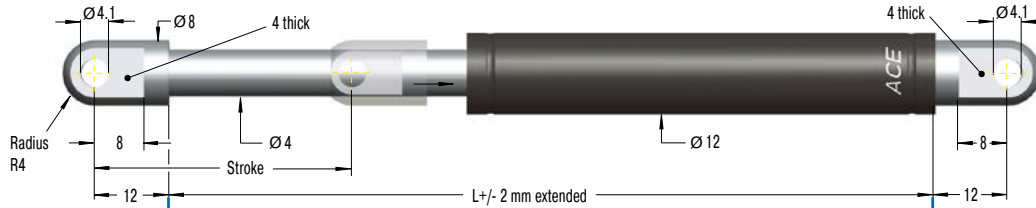
- Extension force:** 10 N to 100 N (compressed up to 116 N)
- Progression:** Approx. 13 % to 16 %
- Operating temperature range:** -20 °C to 80 °C
- Material:** Outer body: Coated steel; Piston rod: Stainless steel (1.4301/1.4305, AISI 304/303); End fittings: Zinc plated steel
- Mounting:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.
- End position damping length:** approx. 5 mm (depending on the stroke)
- Positive stop:** External positive stop at the end of stroke provided by the customer.
- 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 information:** Gas springs (push type) should not be installed under pre-tension.

Valve Technology, Extension force 15 N to 180 N (compressed up to 243 N)

End Fitting

Standard Dimensions

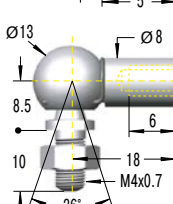
End Fitting

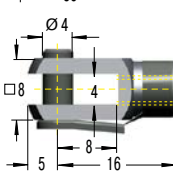
A3.5

Eye A3.5
max. force 370 N

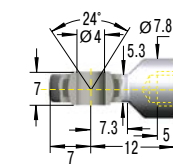
B3.5

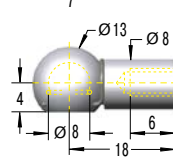

Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force 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

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

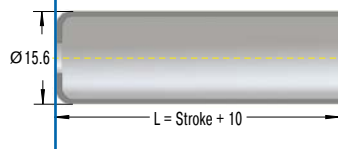
G3.5

Ball Socket G3.5
max. force 370 N

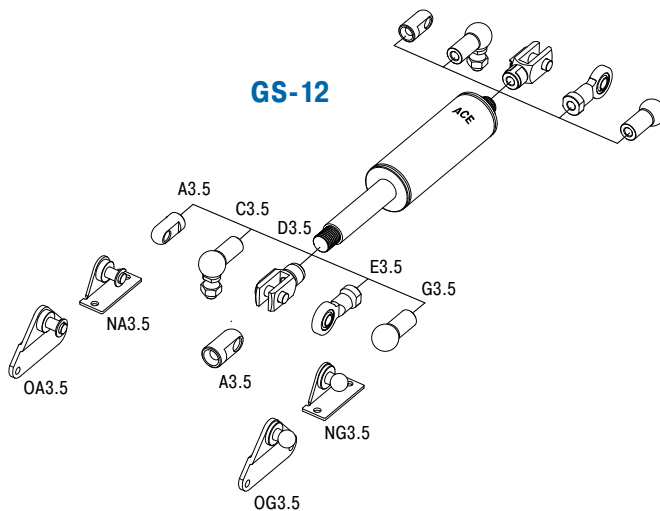
Ordering Example

GS-12-100-AA-30

Type (Push Type) _____
 Body 0.47" (12 mm) _____
 Stroke 3.94" (100 mm) _____
 Piston Rod End Fitting A3.5 _____
 Body End Fitting A3.5 _____
 Nominal Force F₁ 7 lbs (30 N) _____

Mounting accessories see from
page 212.

**Rod Shroud
W3.5-12**

**Adjuster Knob
DE-GAS-3.5**
See page 191.

GS-12


Technical Data

Extension force: 15 N to 180 N (compressed up to 243 N)

Progression: Approx. 20 % to 35 %

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

Material: Outer body: Coated steel; Piston rod: Stainless steel (1.4301/1.4305, AISI 304/303); End fittings: Zinc plated steel

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

End position damping length: approx. 10 mm (depending on the stroke)

Positive stop: External positive stop at the end of stroke provided by the customer.

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 information: Gas springs (push type) should not be installed under pre-tension.

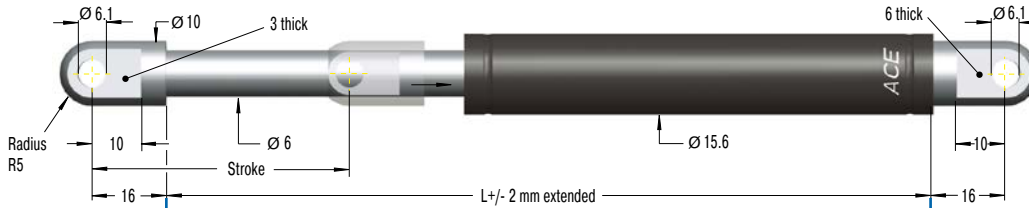
Valve Technology, Extension force 40 N to 400 N (compressed up to 560 N)

End Fitting

Standard Dimensions

End Fitting

A5



Eye A5
max. force 800 N

B5

C5

D5

E5

F5

G5

Rod Shroud
W5-15

Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force max. N
GS-15-20	20	67	400
GS-15-40	40	107	400
GS-15-50	50	127	400
GS-15-60	60	147	400
GS-15-80	80	187	400
GS-15-100	100	227	400
GS-15-120	120	267	400
GS-15-150	150	327	400
GS-15-200	200	427	350

Ordering Example

Type (Push Type) _____
 Body 0.61" (15.6 mm) _____
 Stroke 5.91" (150 mm) _____
 Piston Rod End Fitting A5 _____
 Body End Fitting C5 _____
 Nominal Force F₁ 34 lbs (150 N) _____

GS-15-150-AC-150

Mounting accessories see from page 212.

Adjuster Knob
DE-GAS-5
See page 191.

Stud Thread B5

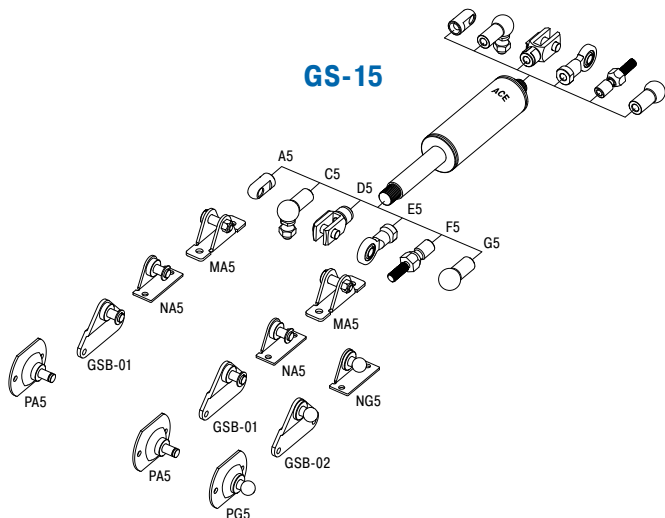
Angle Ball Joint C5
max. force 500 N

Clevis Fork D5
max. force 800 N

Swivel Eye E5
max. force 800 N

Inline Ball Joint F5
max. force 500 N

Ball Socket G5
max. force 500 N



Technical Data

- Extension force:** 40 N to 400 N (compressed up to 560 N)
- Progression:** Approx. 30 % to 40 %
- Operating temperature range:** -20 °C to 80 °C
- Material:** Outer body: Steel coated with UV paint; Piston rod: Steel with wear-resistant coating; End fittings: Zinc plated steel
- Mounting:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.
- End position damping length:** approx. 10 mm (depending on the stroke)
- Positive stop:** External positive stop at the end of stroke provided by the customer.
- 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 information:** Gas springs (push type) should not be installed under pre-tension.

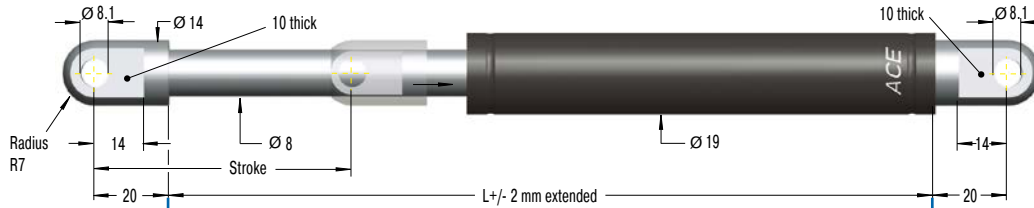
Valve Technology, Extension force 50 N to 700 N (compressed up to 560 N)

End Fitting

Standard Dimensions

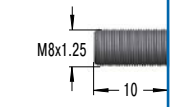
End Fitting

A8



Eye A8
max. force 3,000 N

B8

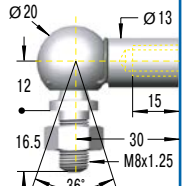


Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force max. N
GS-19-50	50	164	700
GS-19-100	100	264	700
GS-19-150	150	364	700
GS-19-200	200	464	700
GS-19-250	250	564	600
GS-19-300	300	664	450

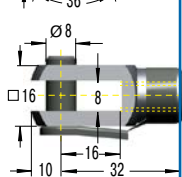
Stud Thread B8

C8



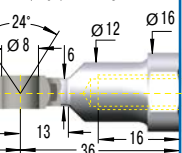
Angle Ball Joint C8
max. force 1,200 N
Also available with UNF thread 5/16-18.
Order G5/16.

D8



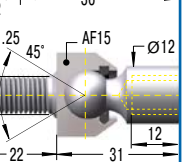
Clevis Fork D8
max. force 3,000 N

E8



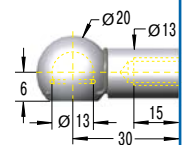
Swivel Eye E8
max. force 3,000 N

F8



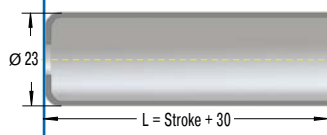
Inline Ball Joint F8
max. force 1,200 N

G8



Ball Socket G8
max. force 1,200 N

Rod Shroud W8-19



Adjuster Knob DE-GAS-8
See page 191.

Ordering Example

GS-19-150-AC-600

Type (Push Type) _____
 Body 0.75" (19 mm) _____
 Stroke 5.91" (150 mm) _____
 Piston Rod End Fitting A8 _____
 Body End Fitting C8 _____
 Nominal Force F₁ 135 lbs (600 N) _____

Mounting accessories see from page 212.

Technical Data

Extension force: 50 N to 700 N (compressed up to 560 N)

Progression: Approx. 24 % to 35 %

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

Material: Outer body: Steel coated with UV paint; Piston rod: Steel with wear-resistant coating; End fittings: Zinc plated steel

Mounting: In any position. Hint: We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

End position damping length: approx. 20 mm to 60 mm (depending on the stroke)

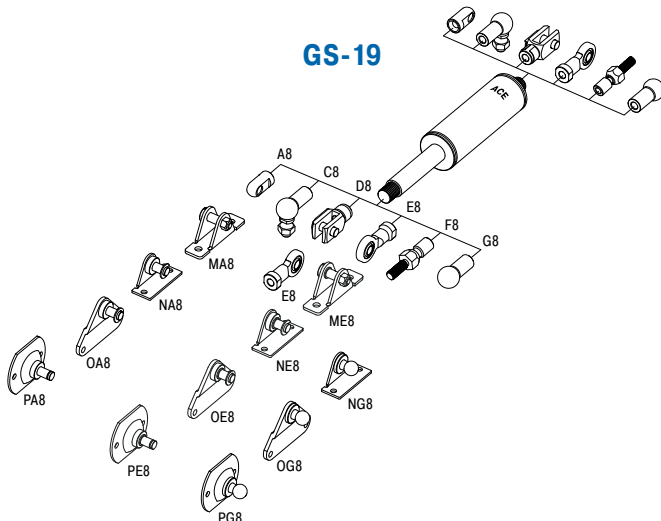
Positive stop: External positive stop at the end of stroke provided by the customer.

Note: Integrated grease chamber reduces friction and wear and optimizes lubrication.

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

Safety information: Gas springs (push type) should not be installed under pre-tension.

GS-19



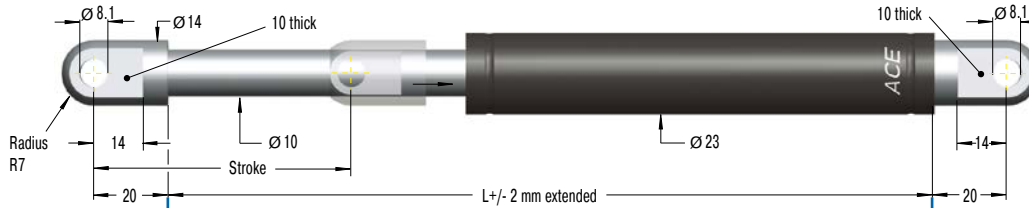
Valve Technology, Extension force 80 N to 1,300 N (compressed up to 1,820 N)

End Fitting

Standard Dimensions

End Fitting

A8



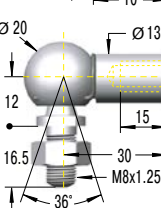
Eye A8
max. force 3,000 N

B8



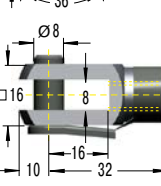
Stud Thread B8

C8



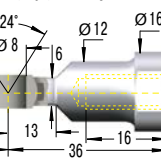
Angle Ball Joint C8
max. force 1,200 N
Also available with UNF thread 5/16-18.
Order G5/16.

D8



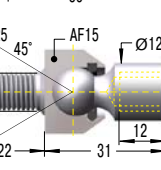
Clevis Fork D8
max. force 3,000 N

E8



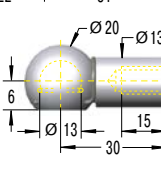
Swivel Eye E8
max. force 3,000 N

F8



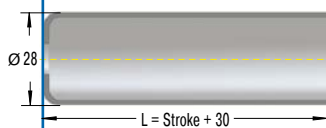
Inline Ball Joint F8
max. force 1,200 N

G8



Ball Socket G8
max. force 1,200 N

Rod Shroud W8-22



Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force max. N
GS-22-50	50	164	1,300
GS-22-100	100	264	1,300
GS-22-150	150	364	1,300
GS-22-200	200	464	1,300
GS-22-250	250	564	1,300
GS-22-300	300	664	1,100
GS-22-350	350	764	850
GS-22-400	400	864	650
GS-22-450	450	964	550
GS-22-500	500	1,064	450
GS-22-550	550	1,164	400
GS-22-600	600	1,264	350
GS-22-650	650	1,364	300
GS-22-700	700	1,464	250

Ordering Example

GS-22-150-AE-800

Type (Push Type) _____
 Body 0.91" (23 mm) _____
 Stroke 5.91" (150 mm) _____
 Piston Rod End Fitting A8 _____
 Body End Fitting E8 _____
 Nominal Force F₁ 180 lbs (800 N) _____

Mounting accessories see from page 212.

Adjuster Knob DE-GAS-8
See page 191.

Technical Data

Extension force: 80 N to 1,300 N (compressed up to 1,820 N)

Progression: Approx. 30 % to 40 %

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

Material: Outer body: Steel coated with UV paint; Piston rod: Steel with wear-resistant coating; End fittings: Zinc plated steel

Mounting: In any position. Hint: We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

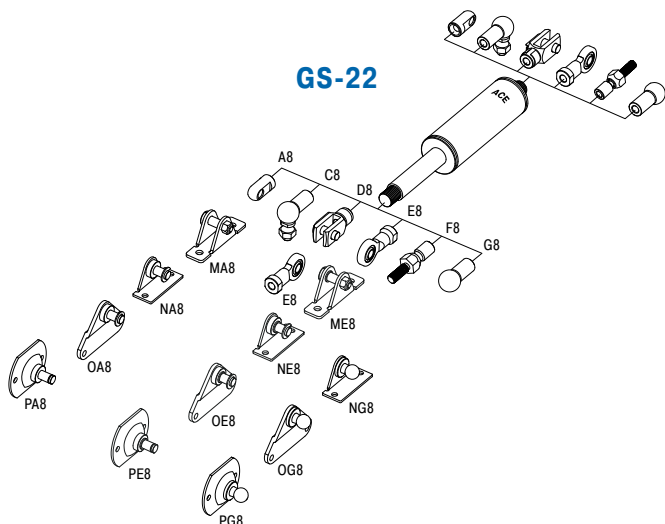
End position damping length: approx. 20 mm to 70 mm (depending on the stroke)

Positive stop: External positive stop at the end of stroke provided by the customer.

Note: Integrated grease chamber reduces friction and wear and optimizes lubrication.

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

Safety information: Gas springs (push type) should not be installed under pre-tension.



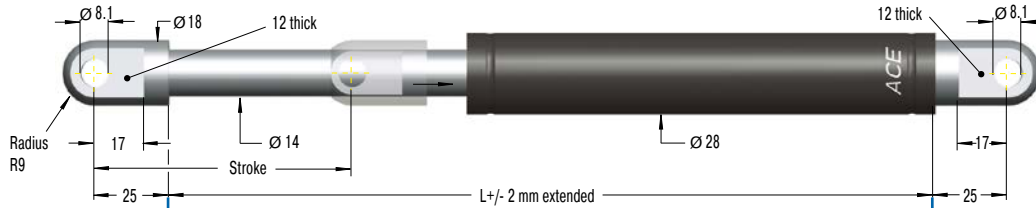
Valve Technology, Extension force 150 N to 2,500 N (compressed up to 4,400 N)

End Fitting

Standard Dimensions

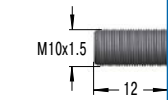
End Fitting

A10



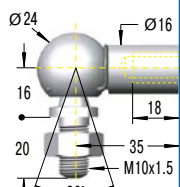
Eye A10
max. force 10,000 N

B10



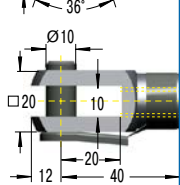
Stud Thread B10

C10



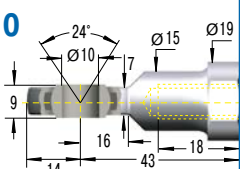
Angle Ball Joint C10
max. force 1,800 N

D10



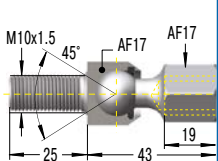
Clevis Fork D10
max. force 10,000 N

E10



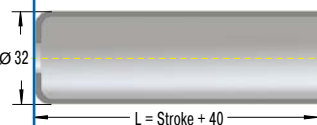
Swivel Eye E10
max. force 10,000 N

F10



Inline Ball Joint F10
max. force 1,800 N

Rod Shroud W10-28



Adjuster Knob DE-GAS-10
See page 191.

Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force max. N
GS-28-100	100	262	2,500
GS-28-150	150	362	2,500
GS-28-200	200	462	2,500
GS-28-250	250	562	2,500
GS-28-300	300	662	2,500
GS-28-350	350	762	2,500
GS-28-400	400	862	2,400
GS-28-450	450	962	1,950
GS-28-500	500	1,062	1,600
GS-28-550	550	1,162	1,350
GS-28-600	600	1,262	1,150
GS-28-650	650	1,362	1,000
GS-28-700	700	1,462	900
GS-28-750	750	1,562	800

Ordering Example

GS-28-150-EE-1200

Type (Push Type) _____
 Body 1.1" (28 mm) _____
 Stroke 5.91" (150 mm) _____
 Piston Rod End Fitting E10 _____
 Body End Fitting E10 _____
 Nominal Force F₁ 270 lbs (1,200 N) _____

Mounting accessories see from page 212.

Technical Data

Extension force: 150 N to 2,500 N (compressed up to 4,400 N)

Progression: Approx. 63 % to 76 %

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

Material: Outer body: Steel coated with UV paint; Piston rod: Steel with wear-resistant coating; End fittings: Zinc plated steel

Mounting: In any position. Hint: We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

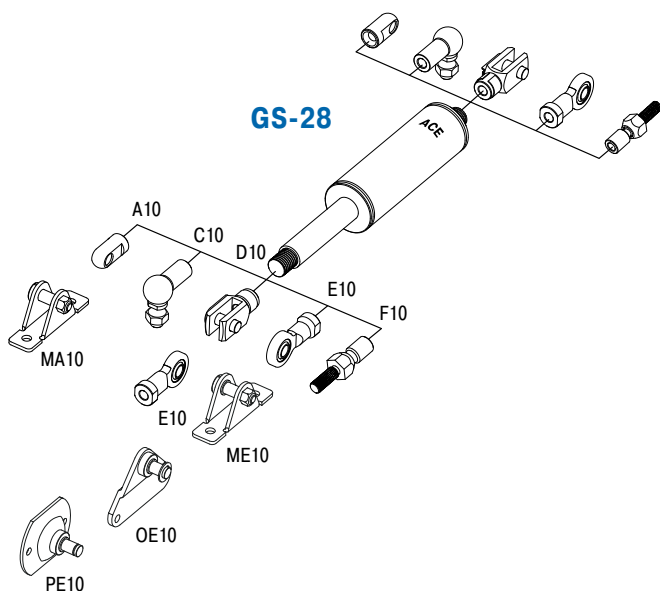
End position damping length: approx. 30 mm to 70 mm (depending on the stroke)

Positive stop: External positive stop at the end of stroke provided by the customer.

Note: Integrated grease chamber reduces friction and wear and optimizes lubrication.

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

Safety information: Gas springs (push type) should not be installed under pre-tension.



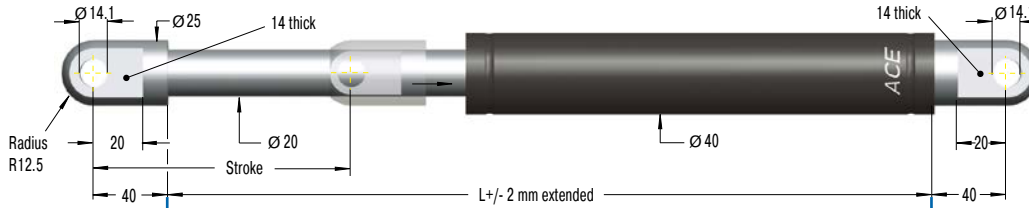
Valve Technology, Extension force 500 N to 5,000 N (compressed up to 7,500 N)

End Fitting

Standard Dimensions

End Fitting

A14



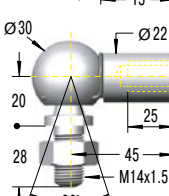
Eye A14
max. force 10,000 N

B14



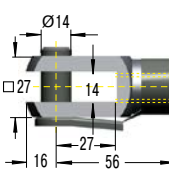
Stud Thread B14

C14



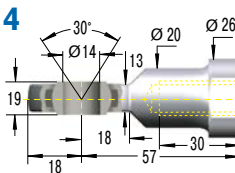
Angle Ball Joint C14
max. force 3,200 N

D14



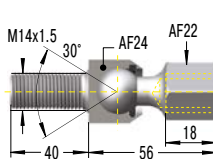
Clevis Fork D14
max. force 10,000 N

E14



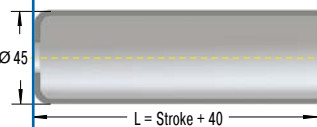
Swivel Eye E14
max. force 10,000 N

F14



Inline Ball Joint F14
max. force 3,200 N

Rod Shroud
W14-40



Performance and Dimensions

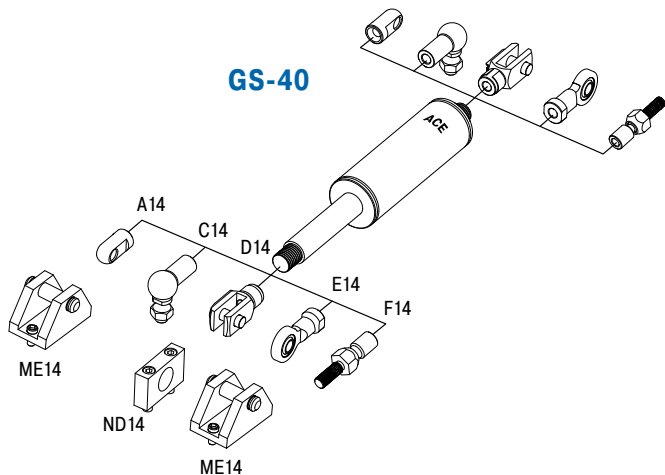
TYPES	Stroke mm	L extended mm	Extension force max. N
GS-40-100	100	317	5,000
GS-40-150	150	417	5,000
GS-40-200	200	517	5,000
GS-40-250	250	617	5,000
GS-40-300	300	717	5,000
GS-40-400	400	917	5,000
GS-40-500	500	1,117	5,000
GS-40-600	600	1,317	4,150
GS-40-800	800	1,717	2,550
GS-40-1000	1,000	2,117	1,700

Ordering Example

GS-40-150-DD-3500

Type (Push Type) _____
 Body 1.57" (40 mm) _____
 Stroke 5.91" (150 mm) _____
 Piston Rod End Fitting D14 _____
 Body End Fitting D14 _____
 Nominal Force F₁ 787 lbs (3,500 N) _____

Mounting accessories see from page 212.



Technical Data

Extension force: 500 N to 5,000 N (compressed up to 7,500 N)

Progression: Approx. 38 % to 50 %

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

Material: Outer body: Steel coated with UV paint; Piston rod: Steel with wear-resistant coating; End fittings: Zinc plated steel

Mounting: In any position. Hint: We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

End position damping length: approx. 30 mm to 70 mm (depending on the stroke)

Positive stop: External positive stop at the end of stroke provided by the customer.

Note: Integrated grease chamber reduces friction and wear and optimizes lubrication.

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

Safety information: Gas springs (push type) should not be installed under pre-tension.

Adjuster Knob
DE-GAS-14

See page 191.

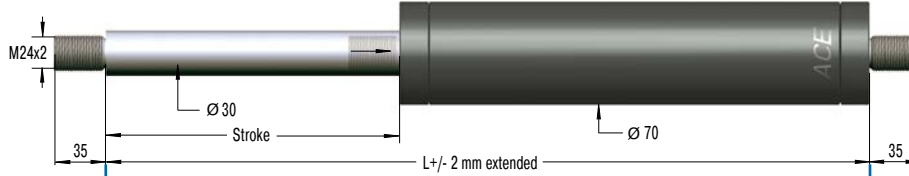
Valve Technology, Extension force 2,000 N to 13,000 N (compressed up to 16,250 N)

End Fitting

Standard Dimensions

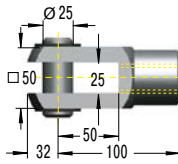
End Fitting

B24

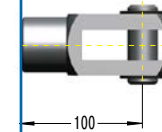


Stud Thread B24

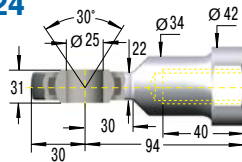
D24



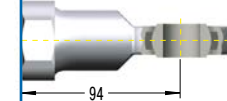
Clevis Fork D24
max. force 50,000 N



E24



Swivel Eye E24
max. force 50,000 N



Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force max. N
GS-70-100	100	320	13,000
GS-70-200	200	520	13,000
GS-70-300	300	720	13,000
GS-70-400	400	920	13,000
GS-70-500	500	1,120	13,000
GS-70-600	600	1,320	13,000
GS-70-700	700	1,520	13,000
GS-70-800	800	1,720	11,550

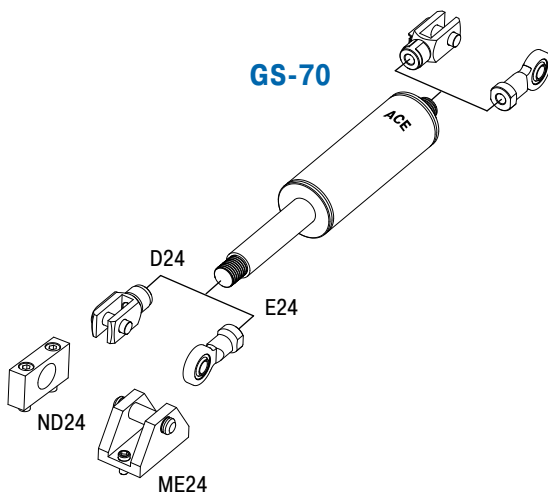
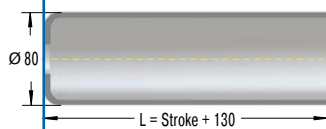
Ordering Example

GS-70-200-EE-8000

Type (Push Type) _____
 Body 2.76" (70 mm) _____
 Stroke 7.87" (200 mm) _____
 Piston Rod End Fitting E24 _____
 Body End Fitting E24 _____
 Nominal Force F₁ 1,798 lbs (8,000 N) _____

Mounting accessories see from page 212.

Rod Shroud W24-70



Technical Data

Extension force: 2,000 N to 13,000 N (compressed up to 16,250 N)

Progression: Approx. 25 %

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

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

Mounting: In any position. Hint: We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

End position damping length: approx. 10 mm to 20 mm (depending on the stroke)

Positive stop: External positive stop at the end of stroke provided by the customer.

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 information: Gas springs (push type) should not be installed under pre-tension.