GS-8 to GS-70

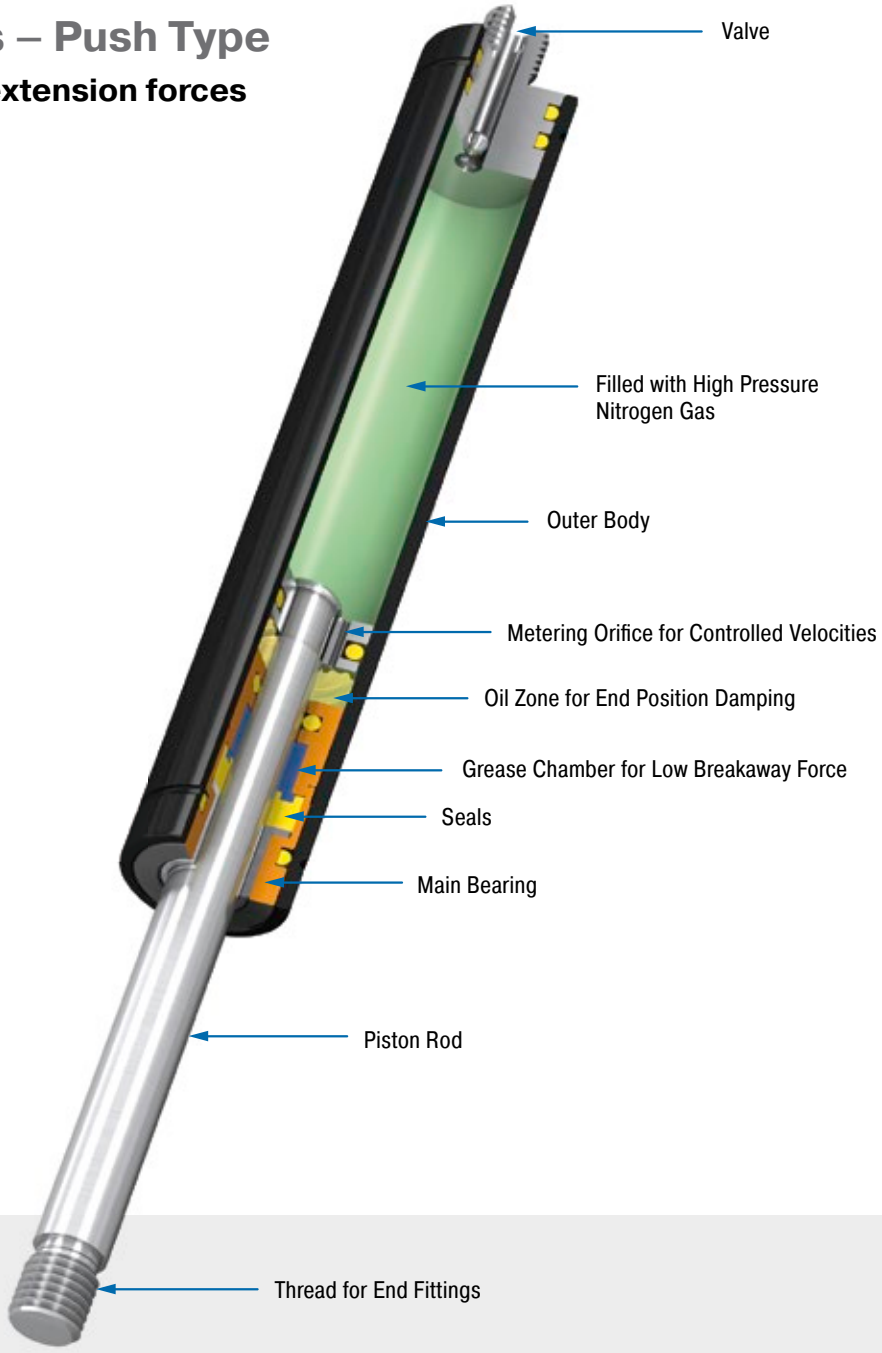
Industrial Gas Springs – Push Type

Individual stroke length and extension forces

Universal and tailor made: ACE industrial gas push type springs of the NEWTONLINE family offer perfect support of muscle power with forces from 10 to 13,000 N with body diameter of 8 to 70 mm. With their high quality features the NEWTONLINE gas springs form the industry standard. These durable and sealed systems are ready for installation, maintenance-free and filled with pressurised nitrogen gas.

They are supplied filled according to individual customer pressure requirements and maybe adjusted later by use of the inbuilt valve. The free of charge ACE calculation service designs the gas springs with mounting points specifically for the particular application. A variety of additional components makes assembly even easier and allows universal application of the gas springs.

ACE industrial gas push type springs are used in industrial applications, mechanical engineering and medical technology as well as in the electronics, automobile and furniture industries.



Technical Data

Force range: 10 N to 13,000 N

Piston rod diameter: Ø 3 mm to Ø 30 mm

Progression: Approx. 20 % to 67 % (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

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.

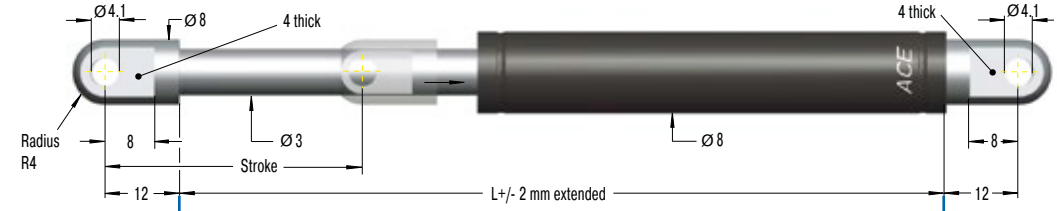
Safety instructions: Gas springs (push type) should not be installed under pre-tension.

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

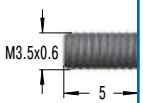
Issue 08.2016 – Specifications subject to change

End Fitting

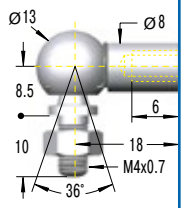
A3,5



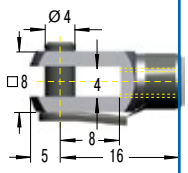
B3,5



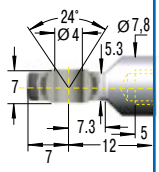
C3,5



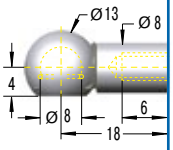
D3,5



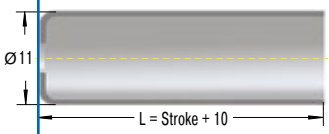
E3,5



G3,5



Rod Shroud W3,5-8



Standard Dimensions

Performance and Dimensions

TYPES	Stroke mm	L extended mm	Force Range 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

GS-8-30-AC-30

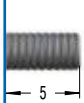
- Type (Push Type)
- Body Ø (8 mm)
- Stroke (30 mm)
- Piston Rod End Fitting A3,5
- Body End Fitting C3,5
- Nominal Force F_1 30 N

Mounting accessories see from page 194.

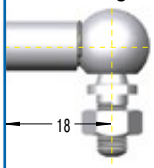
End Fitting

Eye A3,5
max. force 370 N

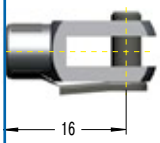
Stud Thread B3,5



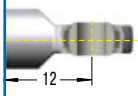
Angle Ball Joint C3,5
max. force 370 N



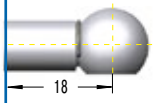
Clevis Fork D3,5
max. force 370 N

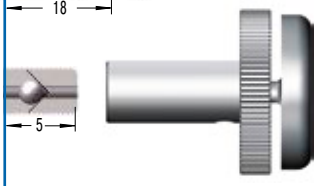


Swivel Eye E3,5
max. force 370 N

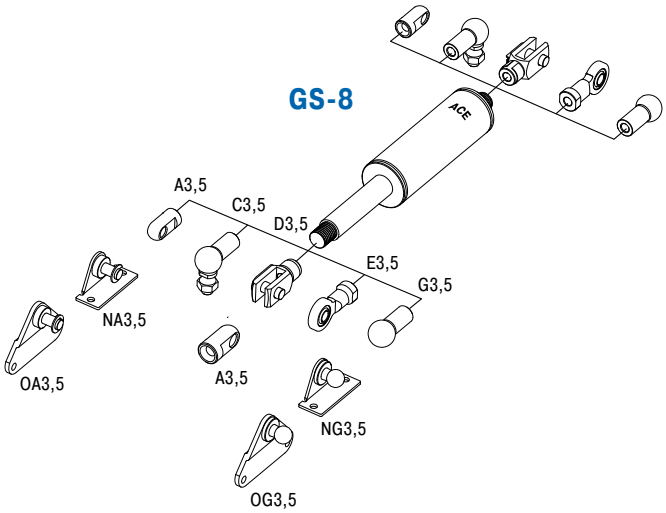


Ball Socket G3,5
max. force 370 N





Adjuster Knob
DE-GAS-3,5
See page 171.



Technical Data

Force range: 10 N to 100 N (compressed up to 130 N)

Progression: Approx. 28 %

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 must be positively secured by the customer to prevent unscrewing.

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

Issue 08.2016 – Specifications subject to change

Industrial Gas Springs – Push Type GS-10

Valve Technology, Force range 10 N to 100 N (compressed up to 120 N)

End Fitting

A3,5

B3,5

C3,5

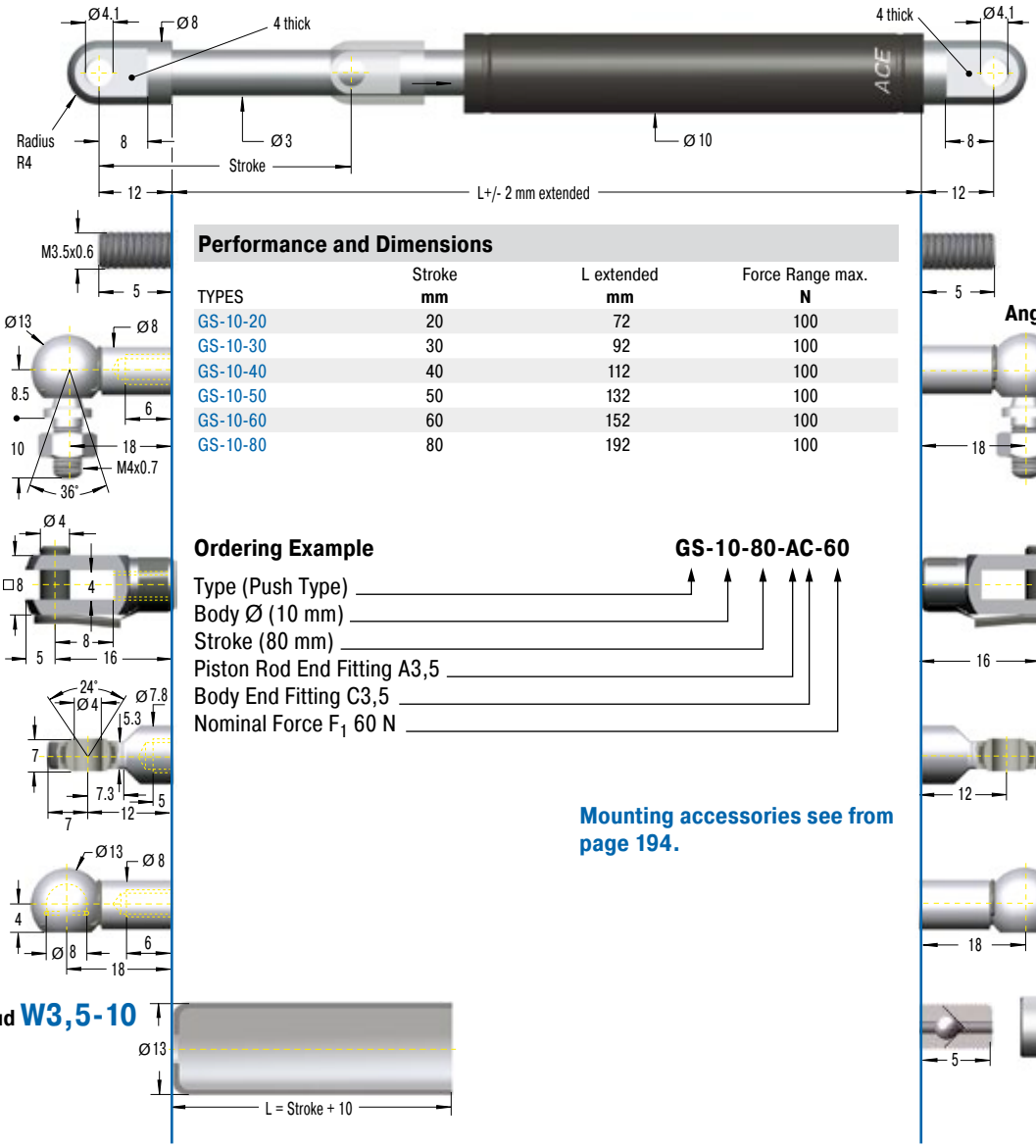
D3,5

E3,5

G3,5

Rod Shroud W3,5-10

Standard Dimensions



Performance and Dimensions

TYPES	Stroke mm	L extended mm	Force Range 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 **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_1 60 N

Mounting accessories see from page 194.

End Fitting

Eye A3,5
max. force 370 N

Stud Thread B3,5

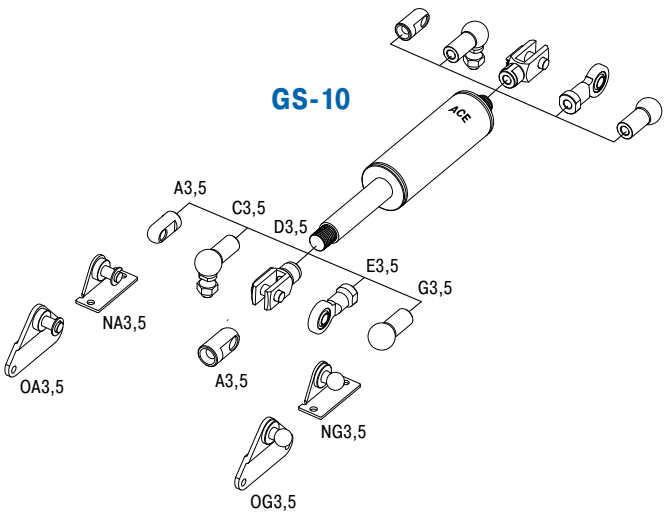
Angle Ball Joint C3,5
max. force 370 N

Clevis Fork D3,5
max. force 370 N

Swivel Eye E3,5
max. force 370 N

Ball Socket G3,5
max. force 370 N

Adjuster Knob
DE-GAS-3,5
See page 171.



Technical Data

Force range: 10 N to 100 N (compressed up to 120 N)

Progression: Approx. 28 %

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 must be positively secured by the customer to prevent unscrewing.

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

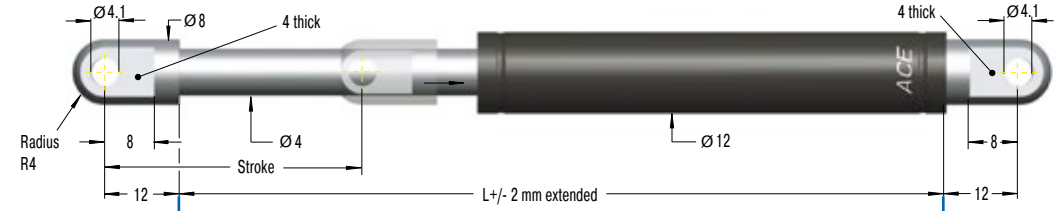
Issue 08.2016 – Specifications subject to change

End Fitting

Standard Dimensions

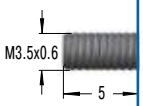
End Fitting

A3,5



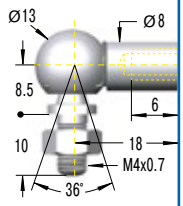
Eye A3,5
max. force 370 N

B3,5

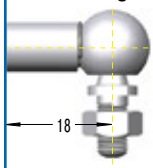


Stud Thread B3,5

C3,5



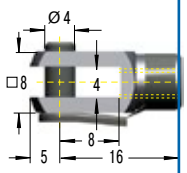
Angle Ball Joint C3,5
max. force 370 N



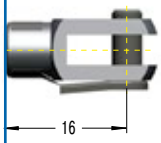
Performance and Dimensions

TYPES	Stroke mm	L extended mm	Force Range 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

D3,5



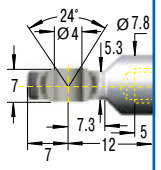
Clevis Fork D3,5
max. force 370 N



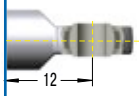
Ordering Example **GS-12-100-AA-30**

Type (Push Type)
Body Ø (12 mm)
Stroke (100 mm)
Piston Rod End Fitting A3,5
Body End Fitting A3,5
Nominal Force F_1 30 N

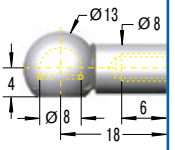
E3,5



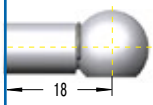
Swivel Eye E3,5
max. force 370 N



G3,5

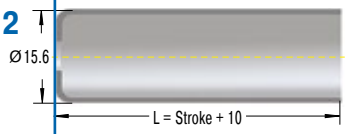


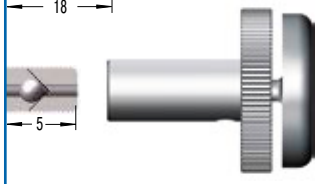
Ball Socket G3,5
max. force 370 N



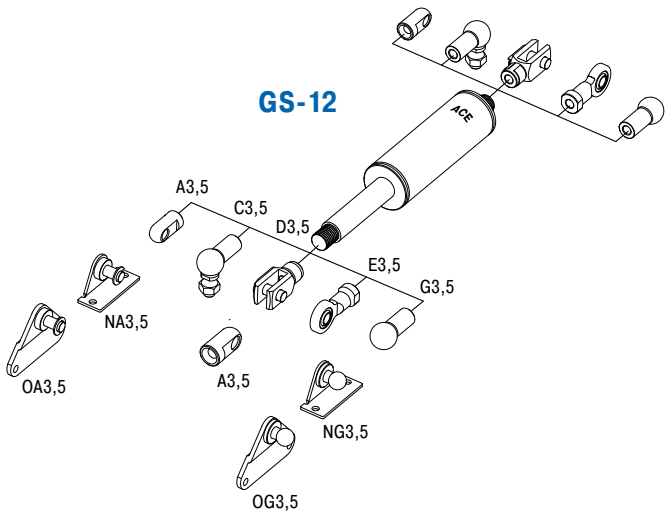
Mounting accessories see from page 194.

Rod Shroud W3,5-12





Adjuster Knob
DE-GAS-3,5
See page 171.



Technical Data

Force range: 15 N to 180 N (compressed up to 225 N)

Progression: Approx. 25 %

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 must be positively secured by the customer to prevent unscrewing.

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

Issue 08.2016 – Specifications subject to change

Industrial Gas Springs – Push Type GS-15

Valve Technology, Force range 40 N to 400 N (compressed up to 500 N)

End Fitting

A5

B5

C5

D5

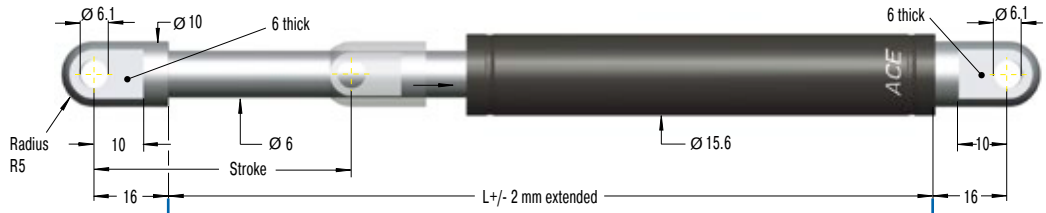
E5

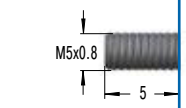
F5

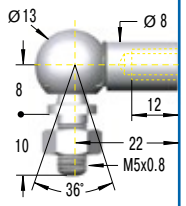
G5

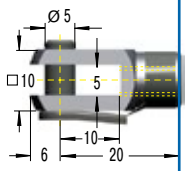
Rod Shroud W5-15

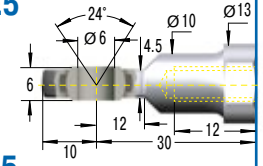
Standard Dimensions

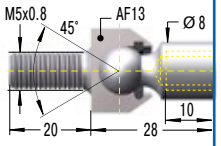


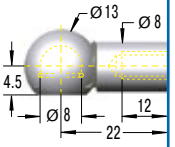


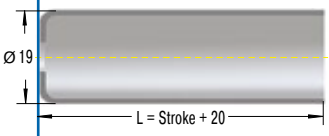












Performance and Dimensions

TYPES	Stroke mm	L extended mm	Force Range 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	400

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

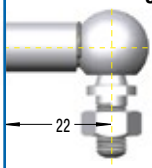
- Type (Push Type)
- Body Ø (15.6 mm)
- Stroke (150 mm)
- Piston Rod End Fitting A5
- Body End Fitting C5
- Nominal Force F_1 150 N

Mounting accessories see from page 194.

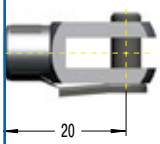
End Fitting

Eye A5
max. force 800 N

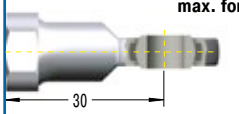
Stud Thread B5



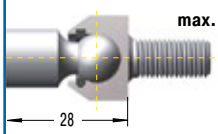
Angle Ball Joint C5
max. force 500 N



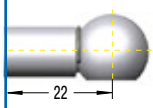
Clevis Fork D5
max. force 800 N



Swivel Eye E5
max. force 800 N

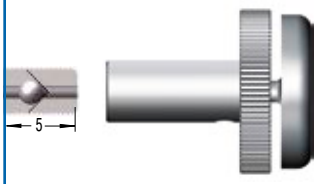


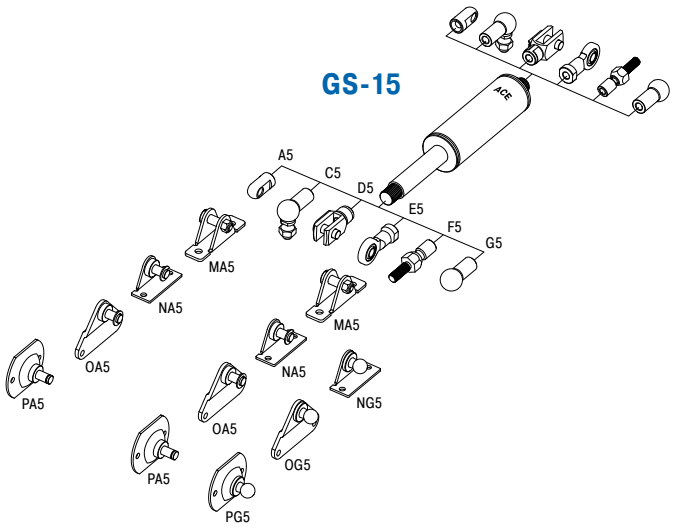
Inline Ball Joint F5
max. force 500 N



Ball Socket G5
max. force 500 N

Adjuster Knob
DE-GAS-5
See page 171.





Technical Data

Force range: 40 N to 400 N (compressed up to 500 N)

Progression: Approx. 27 %

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 must be positively secured by the customer to prevent unscrewing.

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

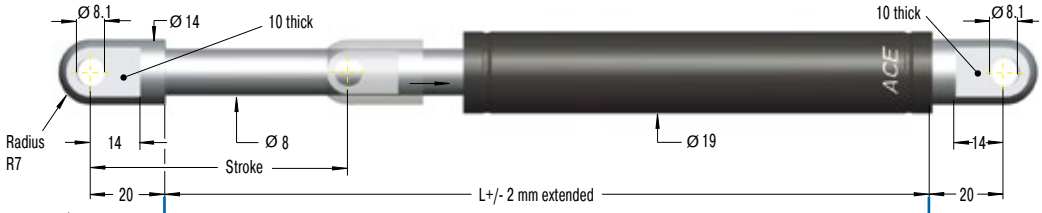
Issue 08.2016 – Specifications subject to change

End Fitting

Standard Dimensions

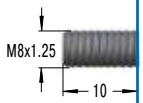
End Fitting

A8



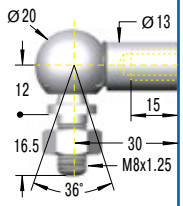
Eye A8
max. force 3.000 N

B8

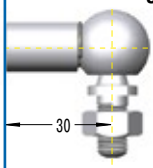


Stud Thread B8

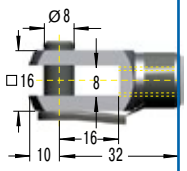
C8



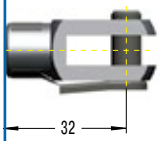
Angle Ball Joint C8
max. force 1,200 N



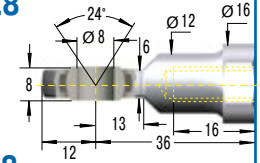
D8



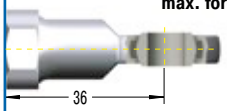
Clevis Fork D8
max. force 3,000 N



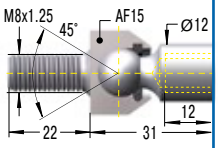
E8



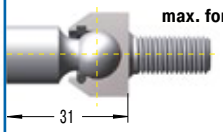
Swivel Eye E8
max. force 3,000 N



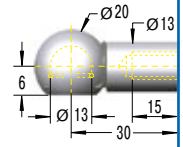
F8



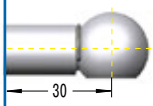
Inline Ball Joint F8
max. force 1,200 N



G8



Ball Socket G8
max. force 1,200 N



Performance and Dimensions

TYPES	Stroke mm	L extended mm	Force Range 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	700
GS-19-300	300	664	700

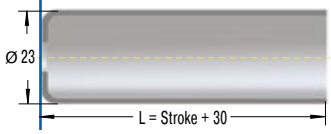
Ordering Example

GS-19-150-AC-600

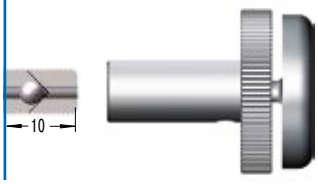
- Type (Push Type)
- Body Ø (19 mm)
- Stroke (150 mm)
- Piston Rod End Fitting A8
- Body End Fitting C8
- Nominal Force F_1 600 N

Mounting accessories see from page 194.

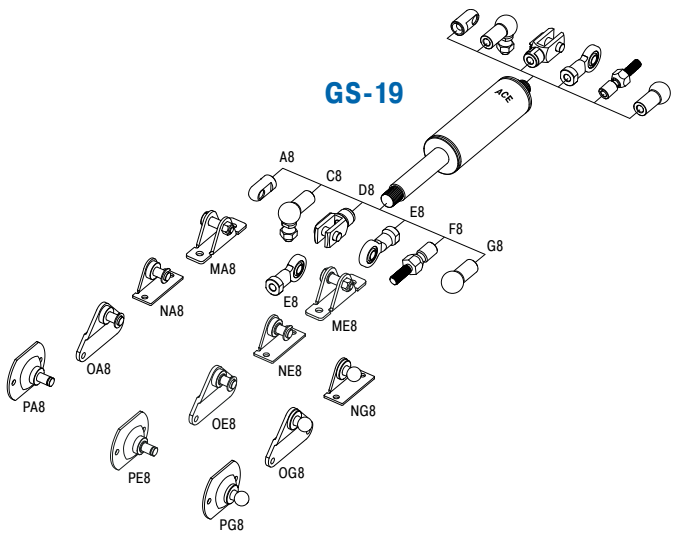
Rod Shroud W8-19



Adjuster Knob DE-GAS-8
See page 171.



Technical Data



Force range: 50 N to 700 N (compressed up to 970 N)

Progression: Approx. 26 % to 39 %

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 optimises lubrication.

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

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

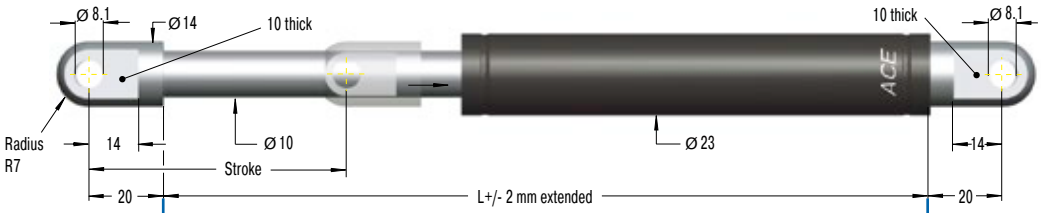
Issue 08.2016 – Specifications subject to change

Industrial Gas Springs – Push Type GS-22

Valve Technology, Force range 80 N to 1,300 N (compressed up to 1,820 N)

End Fitting

A8

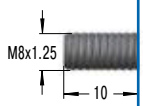


Standard Dimensions

End Fitting

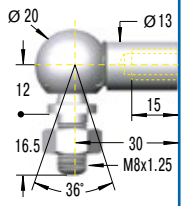
Eye A8
max. force 3.000 N

B8

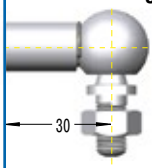


Stud Thread B8

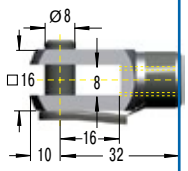
C8



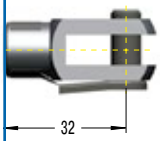
Angle Ball Joint C8
max. force 1,200 N



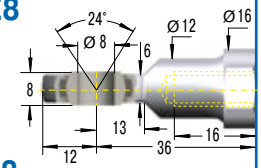
D8



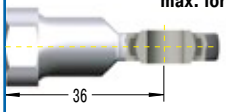
Clevis Fork D8
max. force 3,000 N



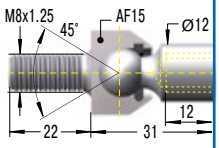
E8



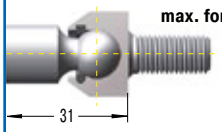
Swivel Eye E8
max. force 3,000 N



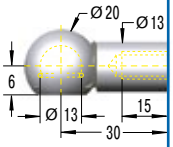
F8



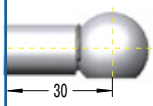
Inline Ball Joint F8
max. force 1,200 N



G8



Ball Socket G8
max. force 1,200 N



Performance and Dimensions

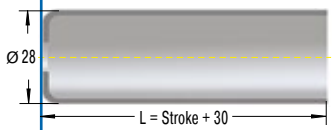
TYPES	Stroke mm	L extended mm	Force Range max. N
GS-22-50	50	164	1,300
GS-22-100	100	264	1,300
GS-22-150	150	364	1,300
GS-22-200	200	464	1,300
GS-22-250	250	564	1,300
GS-22-300	300	664	1,300
GS-22-350	350	764	1,300
GS-22-400	400	864	1,300
GS-22-450	450	964	1,300
GS-22-500	500	1,064	1,300
GS-22-550	550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

Ordering Example **GS-22-150-AE-800**

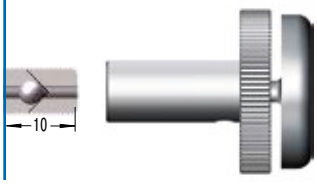
- Type (Push Type)
- Body Ø (23 mm)
- Stroke (150 mm)
- Piston Rod End Fitting A8
- Body End Fitting E8
- Nominal Force F_1 800 N

Mounting accessories see from page 194.

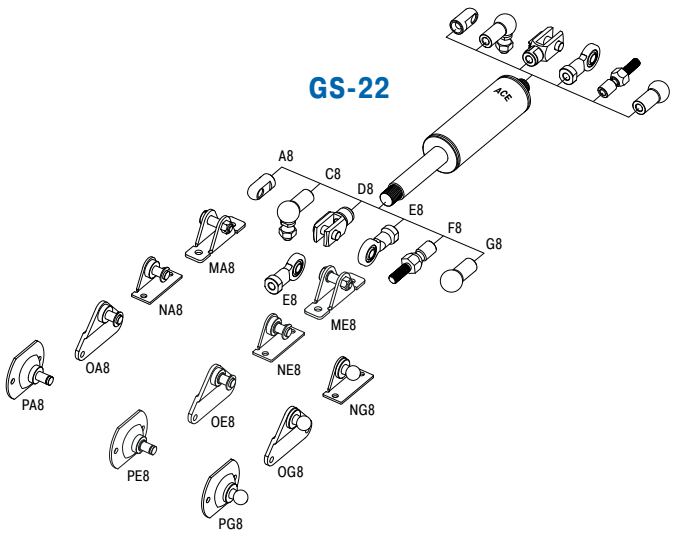
Rod Shroud W8-22



Adjuster Knob DE-GAS-8
See page 171.



GS-22



Technical Data

Force range: 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 optimises lubrication.

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

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

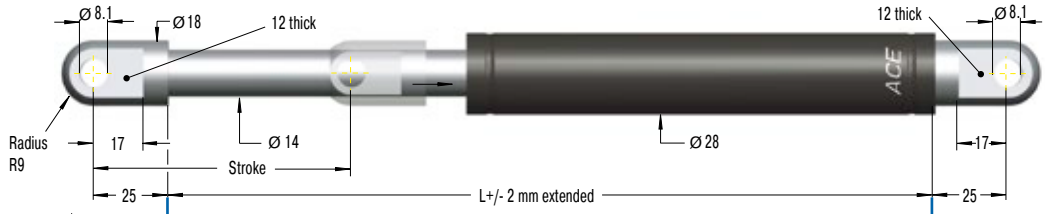
Issue 08.2016 – Specifications subject to change

End Fitting

Standard Dimensions

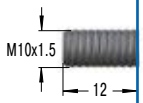
End Fitting

A10



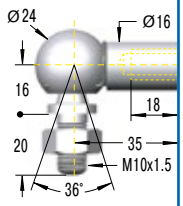
Eye A10
max. force 10,000 N

B10

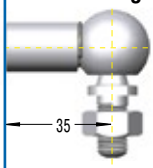


Stud Thread B10

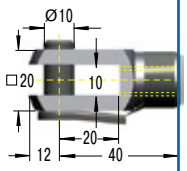
C10



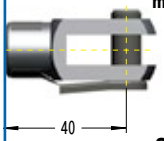
Angle Ball Joint C10
max. force 1,800 N



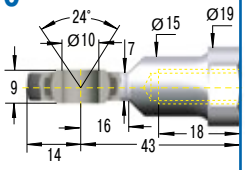
D10



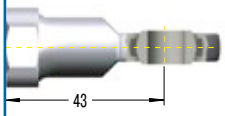
Clevis Fork D10
max. force 10,000 N



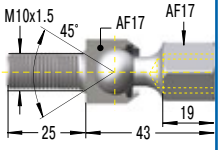
E10



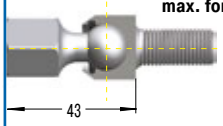
Swivel Eye E10
max. force 10,000 N



F10



Inline Ball Joint F10
max. force 1,800 N



Performance and Dimensions

TYPES	Stroke mm	L extended mm	Force Range 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	2,500
GS-28-450	450	962	2,500
GS-28-500	500	1,062	2,500
GS-28-550	550	1,162	2,500
GS-28-600	600	1,262	2,500
GS-28-650	650	1,362	2,500
GS-28-700	700	1,462	2,500
GS-28-750	750	1,562	2,500

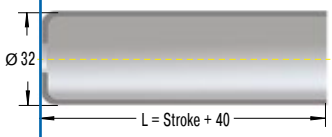
Ordering Example

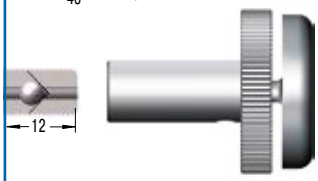
GS-28-150-EE-1200

- Type (Push Type)
- Body Ø (28 mm)
- Stroke (150 mm)
- Piston Rod End Fitting E10
- Body End Fitting E10
- Nominal Force F_1 1200 N

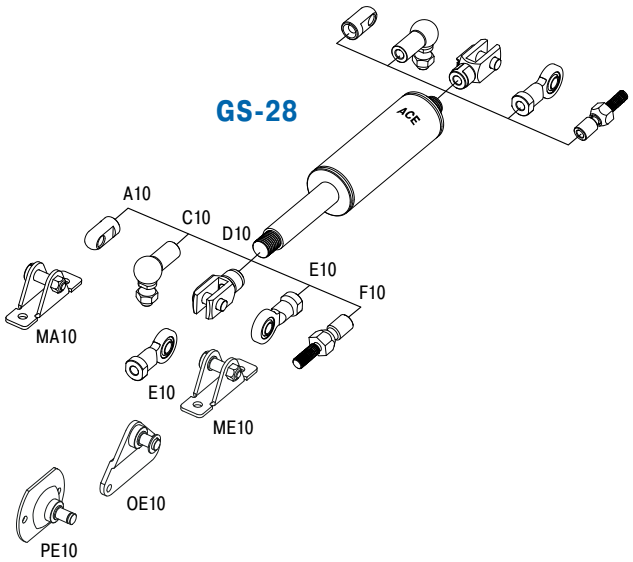
Mounting accessories see from page 194.

Rod Shroud W10-28





Adjuster Knob DE-GAS-10
See page 171.



Technical Data

Force range: 150 N to 2,500 N (compressed up to 4,175 N)

Progression: Approx. 58 % to 67 %

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 optimises lubrication.

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

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

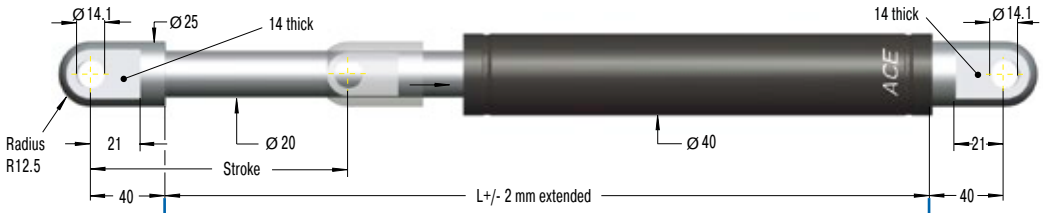
Issue 08.2016 – Specifications subject to change

Industrial Gas Springs – Push Type GS-40

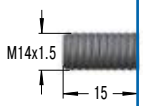
Valve Technology, Force range 500 N to 5,000 N (compressed up to 7,450 N)

End Fitting

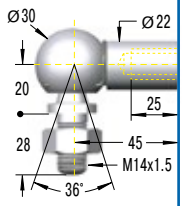
A14



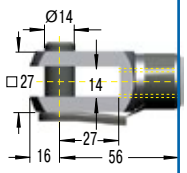
B14



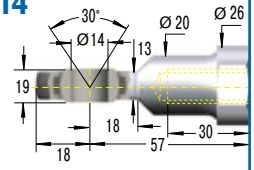
C14



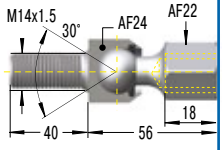
D14



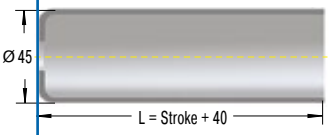
E14



F14



Rod Shroud W14-40



Standard Dimensions

Performance and Dimensions

TYPES	Stroke mm	L extended mm	Force Range 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	5,000
GS-40-800	800	1,717	5,000
GS-40-1000	1,000	2,117	5,000

Ordering Example **GS-40-150-DD-3500**

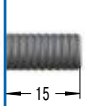
- Type (Push Type)
- Body Ø (40 mm)
- Stroke (150 mm)
- Piston Rod End Fitting D14
- Body End Fitting D14
- Nominal Force F_1 3500 N

Mounting accessories see from page 194.

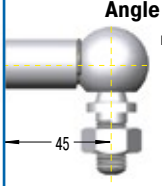
End Fitting

Eye A14
max. force 10,000 N

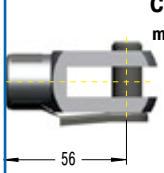
Stud Thread B14



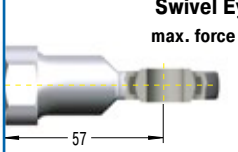
Angle Ball Joint C14
max. force 3,200 N



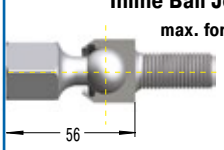
Clevis Fork D14
max. force 10,000 N

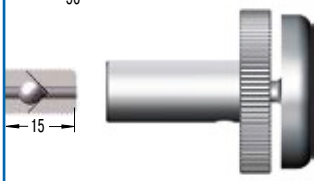


Swivel Eye E14
max. force 10,000 N

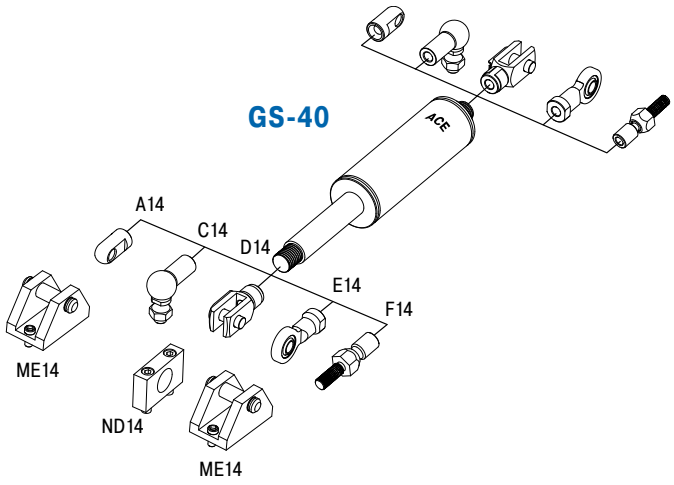


Inline Ball Joint F14
max. force 3,200 N





Adjuster Knob DE-GAS-14
See page 171.



Technical Data

Force range: 500 N to 5,000 N (compressed up to 7,450 N)

Progression: Approx. 37 % to 49 %

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 optimises lubrication.

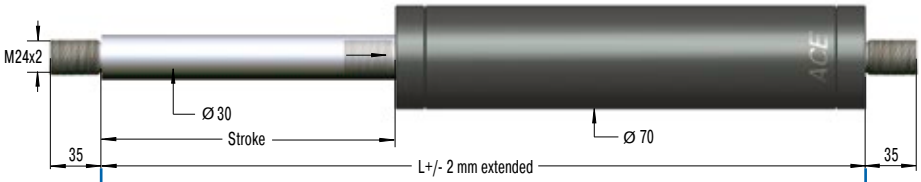
End fittings: They are interchangeable and must be positively secured by the customer to prevent unscrewing.

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

Issue 08.2016 – Specifications subject to change

End Fitting — Standard Dimensions — End Fitting

B24

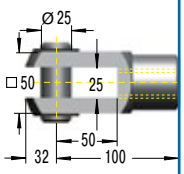


Stud Thread B24

Performance and Dimensions

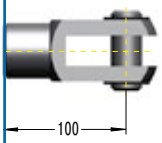
TYPES	Stroke mm	L extended mm	Force Range max. N
GS-70-100	100	320	13,000
GS-70-200	200	520	13,000
GS-70-300	300	720	13,000
GS-70-400	400	920	13,000
GS-70-500	500	1,120	13,000
GS-70-600	600	1,320	13,000
GS-70-700	700	1,520	13,000
GS-70-800	800	1,720	13,000

D24



Clevis Fork D24

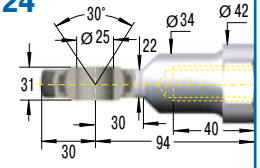
max. force 50,000 N



Ordering Example **GS-70-200-EE-8000**

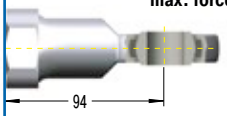
- Type (Push Type)
- Body Ø (70 mm)
- Stroke (200 mm)
- Piston Rod End Fitting E24
- Body End Fitting E24
- Nominal Force F_1 8000 N

E24



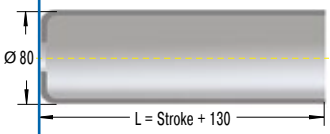
Swivel Eye E24

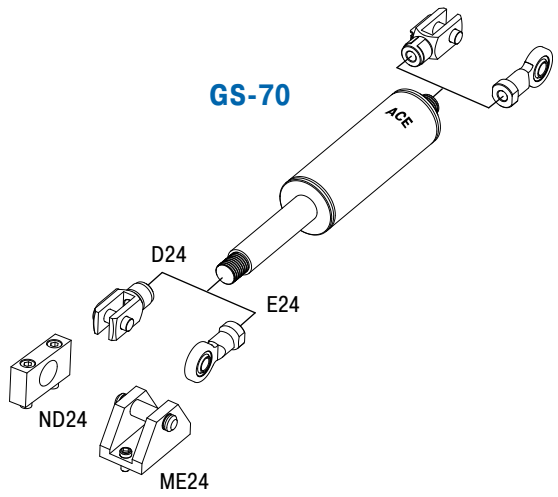
max. force 50,000 N



Mounting accessories see from page 194.

Rod Shroud W24-70





Technical Data

Force range: 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 must be positively secured by the customer to prevent unscrewing.

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