

Industrial Gas Springs – Push Type

The smart way to lift and lower

Anyone who wants to lift or lower loads with control and without excessive strength relies on the industrial gas springs from ACE. These maintenance-free, ready-to-install machine elements, which are available from stock, support sheer muscle power, reliably open and hold.

Available with body diameters of 8 to 70 mm (0.31" to 2.76") and forces from 0 to 13,000 N (2 to 2,925 lbs.), ACE push type gas springs offer a huge variety and maximum service life. The first is achieved thanks to the number of available connections and fittings for simple attachment and the latter with high quality design and materials. Whether they are made of steel or stainless steel, these components make any work easier and are also visually appealing.

Ready-to-install and universally applicable

Modular end fittings and mounting brackets

Calculation program for individual design

Standard with fill/DE-Gas valve

Maintenance-free

Large variety in stock



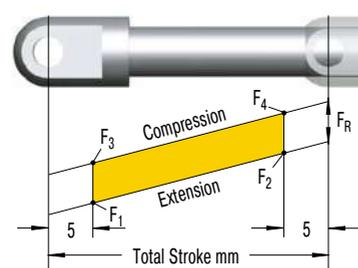
Function of a Gas Spring – Push Type

ACE gas springs are individually filled to a predetermined pressure to suit a customer's requirement (extension Force F_1). The cross-sectional area of the piston rod and filling pressure determines the extension force.

During the compression of the piston rod, nitrogen flows through an orifice in the piston from the full bore side of the piston to the annulus. The nitrogen is compressed by the volume of the piston rod. As the piston rod is compressed the pressure increases, so increasing the reaction force (progression). The force depends on the proportional relationship between the piston rod and the inner tube diameter, which is approximately linear.

Calculation Principles

Force-Stroke Characteristics of Gas Spring (Push Type)



Free calculation service see page 188!

F_1 = nominal force at 20 °C (this is the pressure figure normally used when specifying the gas spring)

F_2 = force in the complete compressed position

When compressing the piston rod, there is an additional friction force caused by the contact pressure of the seals (this **only** occurs **during the compression stroke**):

F_3 = force at the beginning of the compression stroke

F_4 = force at the end of the compression stroke

Gas Springs (Push Type)

TYPES	Progression approx. %	¹ Friction F_R approx. in N
GS-8	29 - 33 ²	10
GS-10	13 - 16 ²	10
GS-12	20 - 35 ²	20
GS-15	30 - 40 ²	20
GS-19	24 - 35 ²	30
GS-22	30 - 40 ²	30
GS-28	63 - 76 ²	40
GS-40	38 - 50 ²	50
GS-70	25	50

¹ Depending on the filling force

² Depending on the stroke

Progression: (the slope of the force line in the diagram above) is due to the reduction of the internal gas volume as the piston rod moves from its initial position to its fully stroked position. The approx. progression values given above for standard springs can be altered on request.

Effect of temperature: The nominal F_1 figure is given at 20 °C. An increase of 10 °C will increase force by 3.4 %.

Filling tolerances: -20 N to +40 N or 5 % to 7 %. Depending on size and extension force the tolerances can differ.

Industrial Gas Springs – Push Type



GS-8 to GS-70

Valve Technology

Individual stroke length and extension forces

Hoods, Shutters, Machine housing, Conveyor systems

Page 150



GS-8-V4A to GS-40-VA

Valve Technology, Stainless Steel

With food grade oil according to FDA approval

Hoods, Shutters, Machine housing, Conveyor systems

Page 160



GST-40 Tandem

Valve Technology

Optimized dual force for heavy flaps and wide angle applications

Hoods, Shutters, Machine housing, Conveyor systems

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GS-8 to GS-70

Individual stroke length and extension forces

Valve Technology

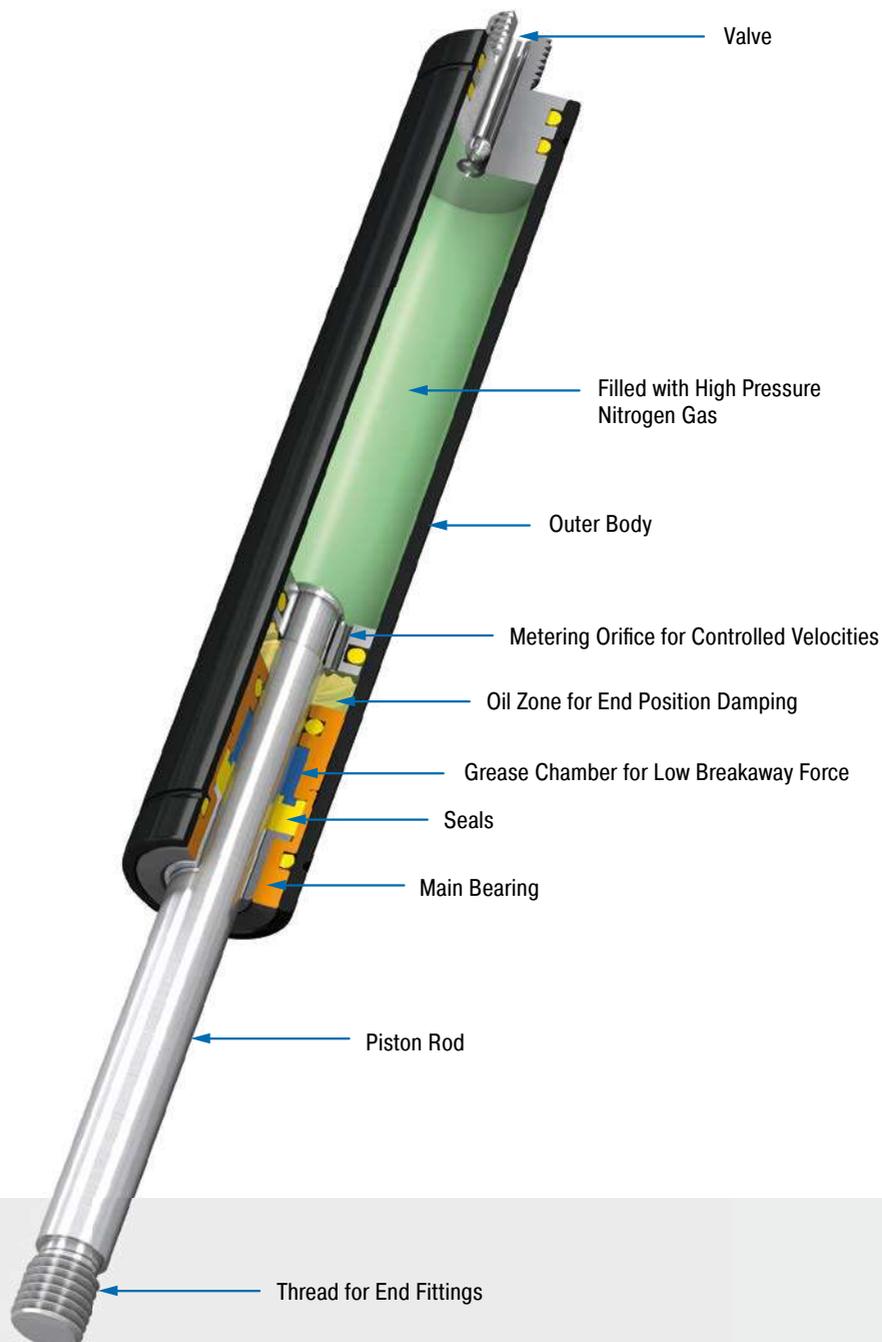
Extension force 10 N to 13,000 N

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.

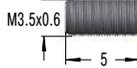
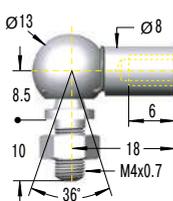
Safety information: Gas springs (push type) should not be installed under pre-tension.

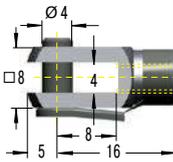
On request: Special oils and other special options. Alternative accessories. Different end position damping and extension speed.

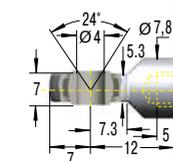
Valve Technology, Extension force 10 N to 100 N (compressed up to 133 N)

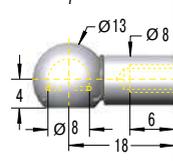
End Fitting
Standard Dimensions
End Fitting
A3.5

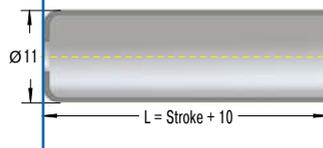
Eye A3.5
max. force 370 N

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.

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

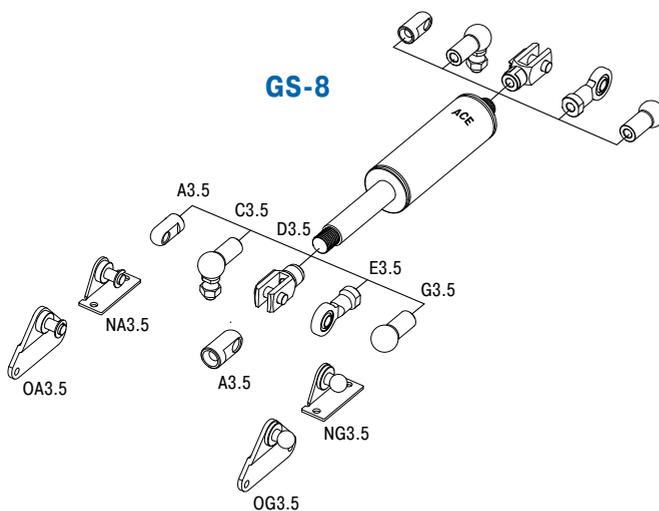
Mounting: We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.

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



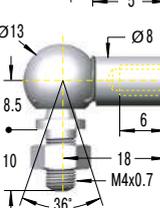
Eye A3.5
max. force 370 N

B3.5



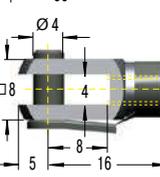
Stud Thread B3.5

C3.5



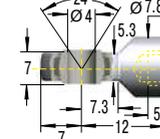
Angle Ball Joint C3.5
max. force 370 N

D3.5



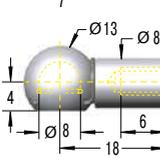
Clevis Fork D3.5
max. force 370 N

E3.5



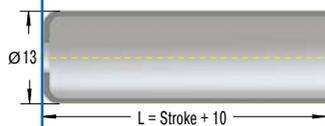
Swivel Eye E3.5
max. force 370 N

G3.5



Ball Socket G3.5
max. force 370 N

Rod Shroud
W3.5-10



Performance and Dimensions

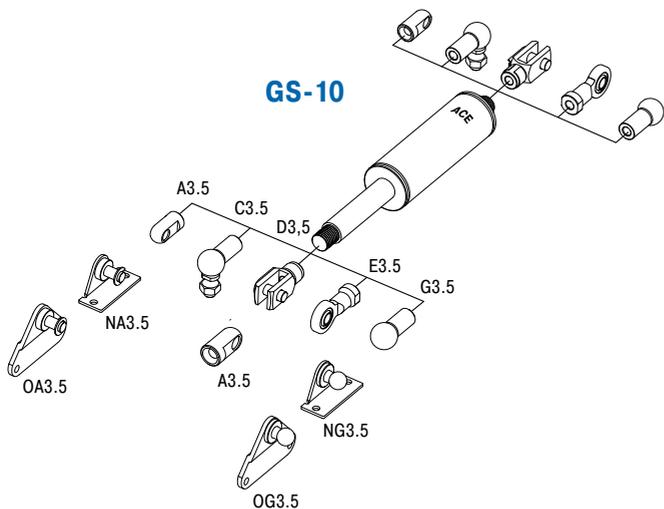
TYPES	Stroke mm	L extended mm	Extension force max. N
GS-10-20	20	72	100
GS-10-30	30	92	100
GS-10-40	40	112	100
GS-10-50	50	132	100
GS-10-60	60	152	100
GS-10-80	80	192	100

Ordering Example

Type (Push Type) _____
 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) _____

GS-10-80-AC-60

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.

Issue 04.2018 – Specifications subject to change

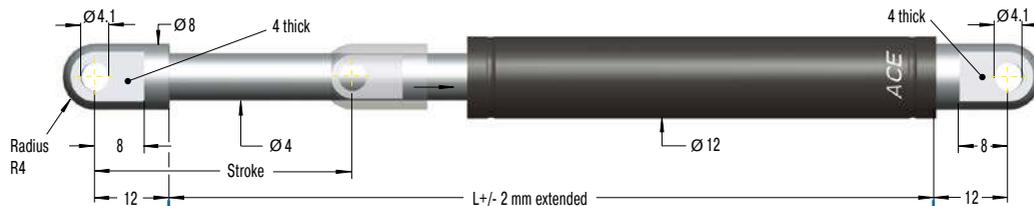
Valve Technology, Extension force 15 N to 180 N (compressed up to 243 N)

End Fitting

Standard Dimensions

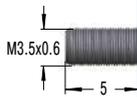
End Fitting

A3.5



Eye A3.5
max. force 370 N

B3.5

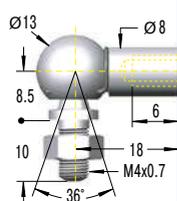


Performance and Dimensions

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

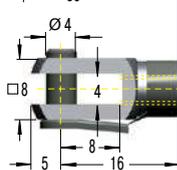
Stud Thread B3.5

C3.5



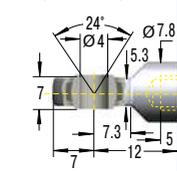
Angle Ball Joint C3.5
max. force 370 N

D3.5



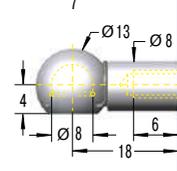
Clevis Fork D3.5
max. force 370 N

E3.5



Swivel Eye E3.5
max. force 370 N

G3.5



Ball Socket G3.5
max. force 370 N

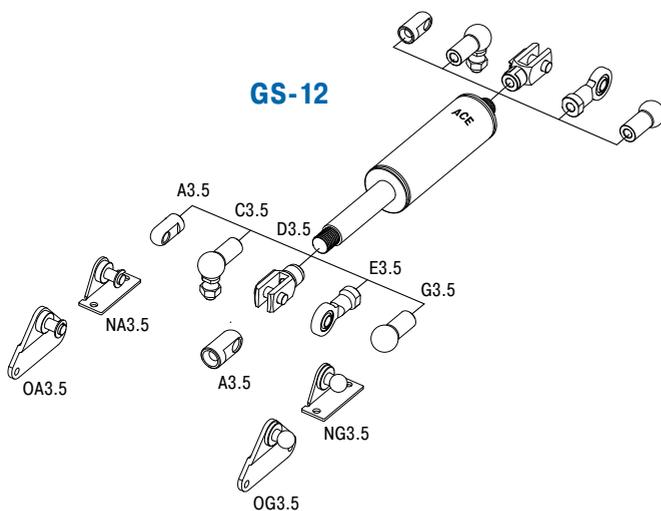
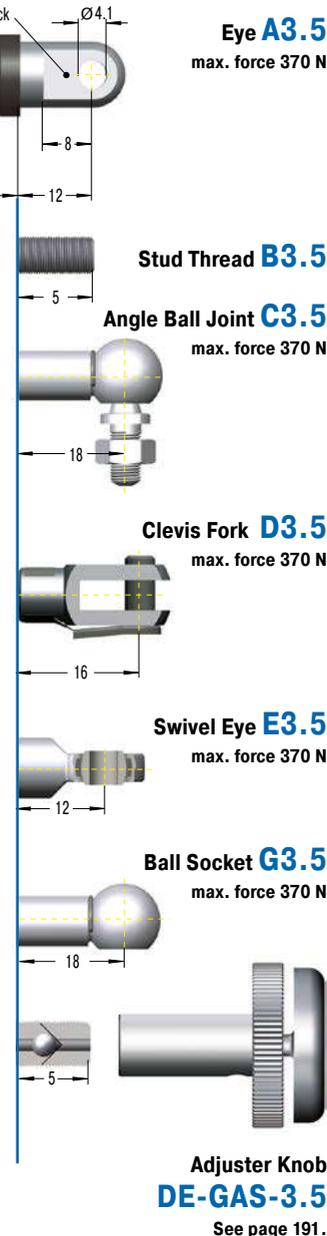
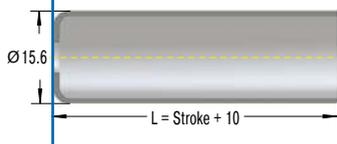
Ordering Example

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



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.

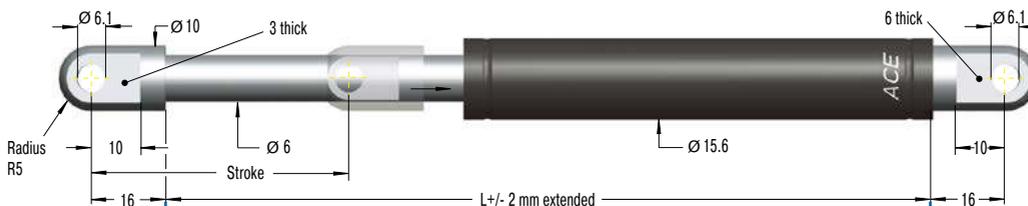
Valve Technology, Extension force 40 N to 400 N (compressed up to 560 N)

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

GS-15-150-AC-150

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) _____

Mounting accessories see from page 212.

Adjuster Knob
DE-GAS-5
See page 191.

Stud Thread B5

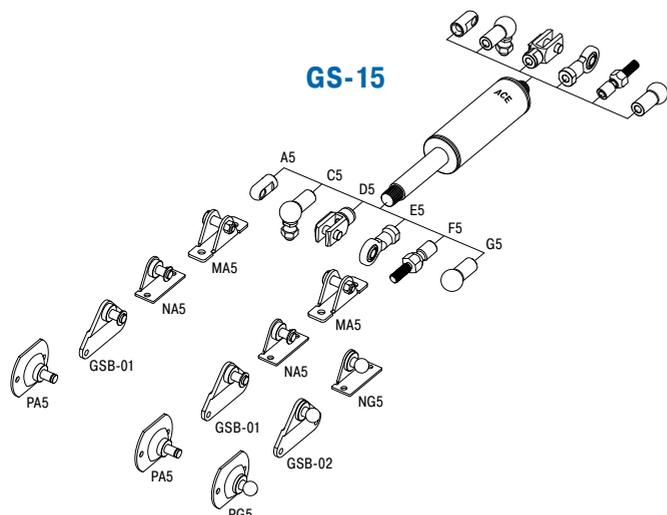
Angle Ball Joint C5
max. force 500 N

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

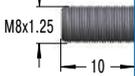
End Fitting

A8



Eye A8
max. force 3,000 N

B8

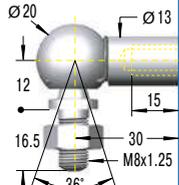


Performance and Dimensions

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

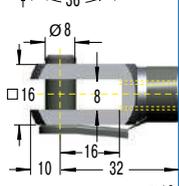
Stud Thread B8

C8



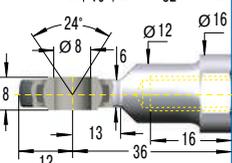
Angle Ball Joint C8
max. force 1,200 N
Also available with UNF thread 5/16-18.
Order G5/16.

D8



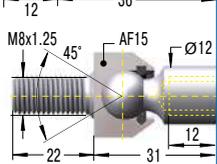
Clevis Fork D8
max. force 3,000 N

E8



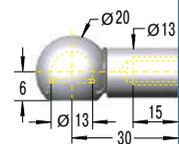
Swivel Eye E8
max. force 3,000 N

F8



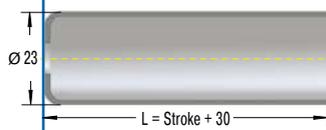
Inline Ball Joint F8
max. force 1,200 N

G8



Ball Socket G8
max. force 1,200 N

Rod Shroud W8-19



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) _____

GS-19-150-AC-600

Mounting accessories see from page 212.

Adjuster Knob DE-GAS-8

See page 191.

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)

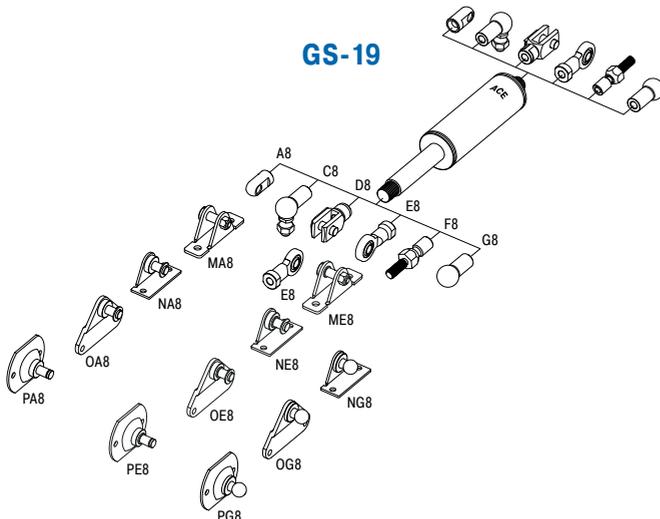
Positive stop: External positive stop at the end of stroke provided by the customer.

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

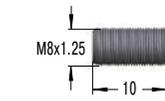
End Fitting

A8



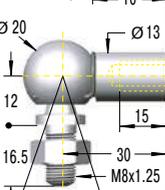
Eye A8
max. force 3,000 N

B8



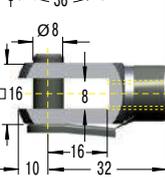
Stud Thread B8

C8



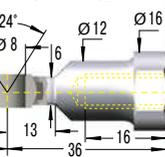
Angle Ball Joint C8
max. force 1,200 N
Also available with UNF thread 5/16-18.
Order G5/16.

D8



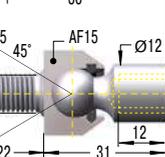
Clevis Fork D8
max. force 3,000 N

E8



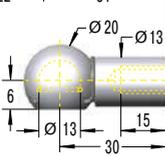
Swivel Eye E8
max. force 3,000 N

F8



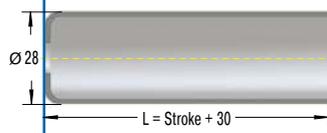
Inline Ball Joint F8
max. force 1,200 N

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.

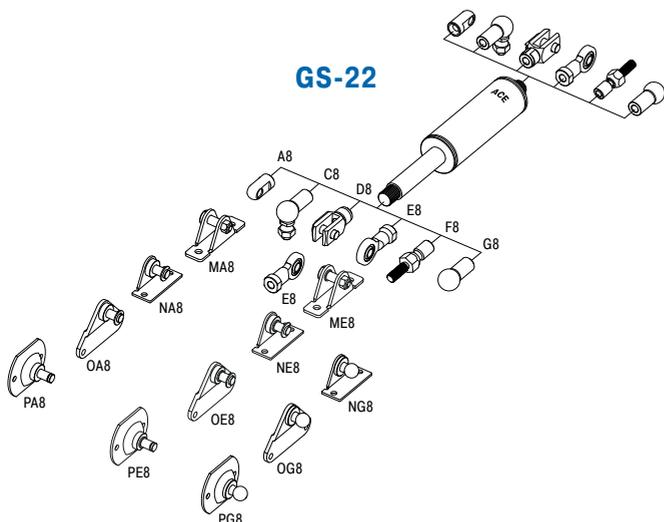
End position damping length: approx. 20 mm to 70 mm (depending on the stroke)

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)

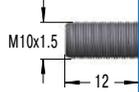
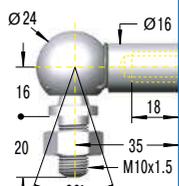
End Fitting

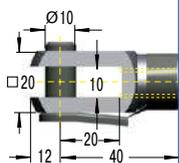
Standard Dimensions

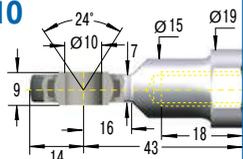
End Fitting

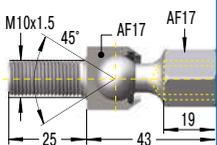
A10

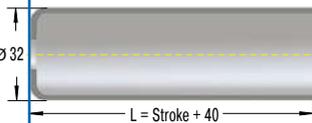
Eye A10
max. force 10,000 N

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.

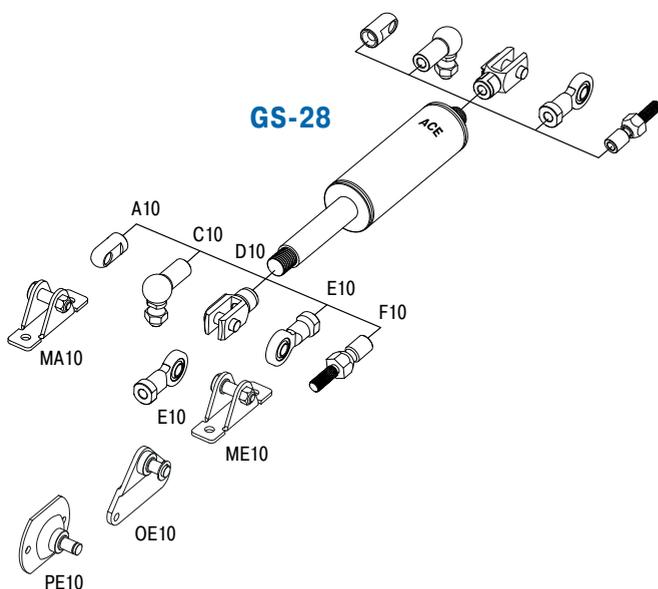
End position damping length: approx. 30 mm to 70 mm (depending on the stroke)

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.



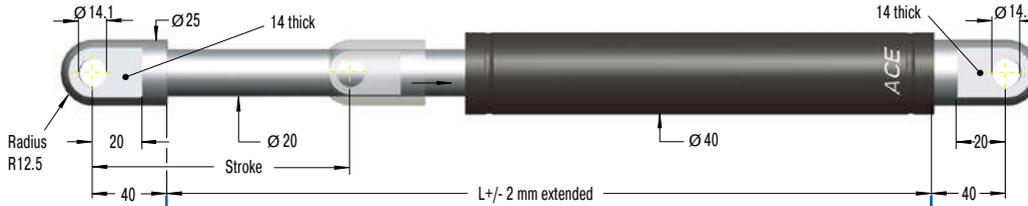
Valve Technology, Extension force 500 N to 5,000 N (compressed up to 7,500 N)

End Fitting

Standard Dimensions

End Fitting

A14



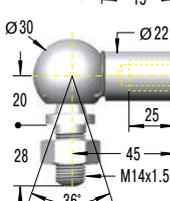
Eye A14
max. force 10,000 N

B14



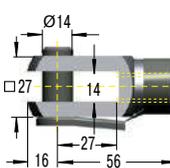
Stud Thread B14

C14



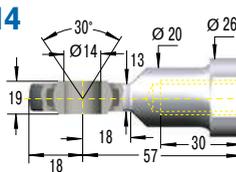
Angle Ball Joint C14
max. force 3,200 N

D14



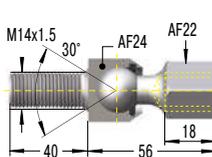
Clevis Fork D14
max. force 10,000 N

E14



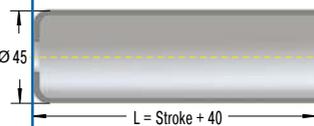
Swivel Eye E14
max. force 10,000 N

F14



Inline Ball Joint F14
max. force 3,200 N

Rod Shroud
W14-40



Performance and Dimensions

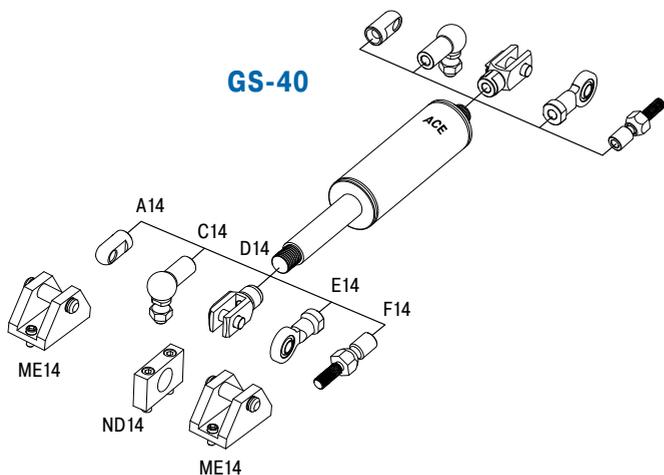
TYPES	Stroke mm	L extended mm	Extension force max. N
GS-40-100	100	317	5,000
GS-40-150	150	417	5,000
GS-40-200	200	517	5,000
GS-40-250	250	617	5,000
GS-40-300	300	717	5,000
GS-40-400	400	917	5,000
GS-40-500	500	1,117	5,000
GS-40-600	600	1,317	4,150
GS-40-800	800	1,717	2,550
GS-40-1000	1,000	2,117	1,700

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

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

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

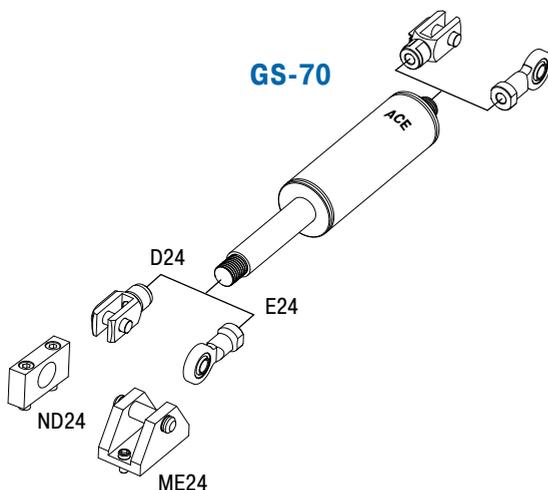
Ordering Example **GS-70-200-EE-8000**

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.

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.



GS-8-V4A to GS-40-VA

With food grade oil for FDA compliance

Valve Technology, Stainless Steel

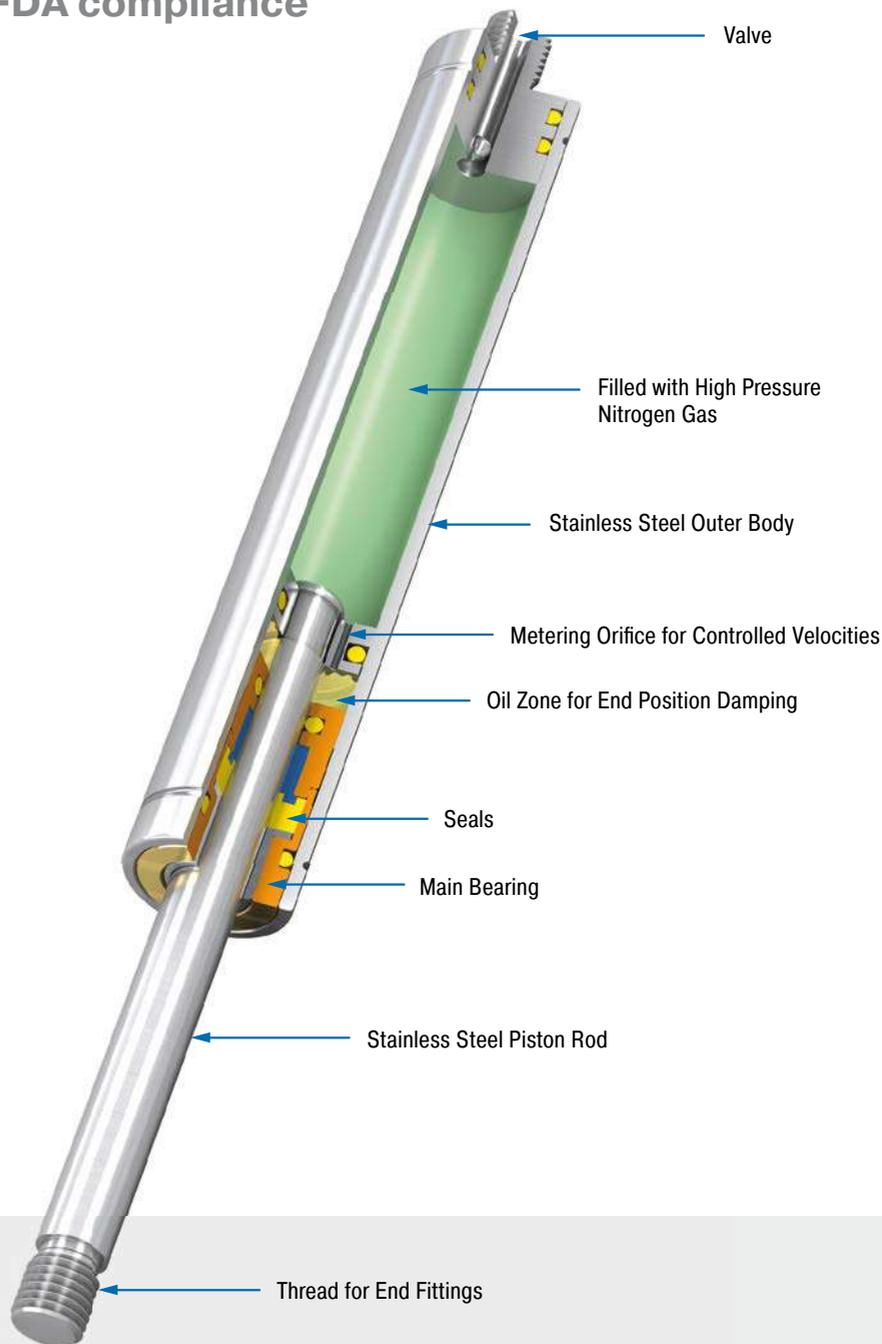
Extension force 10 N to 5,000 N

Stroke 20 mm to 700 mm

Protection against corrosion and superior visual appearance for even more sophisticated requirements: Based on ACE's industrial gas springs GS-8 to 40 made of steel, these models combine all advantages of stainless steel: they look great and are rust free. They are filled with food-grade oil as standard, which conforms to the requirements of FDA 21 CFR 178.3570.

These ACE gas springs not only look good, they are also available in various stroke lengths and extension forces. A comprehensive range of accessories in stainless steel guarantees easy assembly and a broad range of uses.

ACE stainless steel industrial gas springs are used in the automotive sector, in industrial applications, automation and machine building and medical clean room technology as well as in the food, electronics and shipbuilding industries.



Technical Data

Extension force: 10 N to 5,000 N

Piston rod diameter: Ø 3 mm to Ø 20 mm

Progression: Approx. 13 % to 59 %
(depending on size and stroke)

Lifetime: Approx. 10.000 m

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

Material: Outer body, Piston rod, End fittings:
Stainless steel (1.4301/1.4305, AISI 304/303
and 1.4404/1.4571, AISI 316L/316Ti)

Operating fluid: Nitrogen gas and HLP oil
according to DIN 51524, part 2

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 30 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, Shipbuilding, Food industry,
Pharmaceutical industry, Folding elements

Note: Special oil according to FDA 21 CFR
178.3570 of the food industry

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

Safety information: Gas pressure springs
should not be installed under pre-tension.

On request: Special oils and other special
options. Alternative accessories. Different end
position damping and extension speed. Other
gas springs material 1.4404/1.4571, AISI
316L/316Ti (V4A) available on request.

Valve Technology, Stainless Steel, Extension force 10 N to 100 N (compressed up to 131 N)

End Fitting

Standard Dimensions

End Fitting

B3.5 Stud Thread **B3.5**

A3.5-V4A Eye **A3.5-V4A** max. force 370 N

C3.5-V4A Angle Ball Joint **C3.5-V4A** max. force 370 N

D3.5-V4A Clevis Fork **D3.5-V4A** max. force 370 N

G3.5-V4A Ball Socket **G3.5-V4A** max. force 370 N

Adjuster Knob DE-GAS-3.5 See page 191.

Performance and Dimensions			
TYPES	Stroke mm	L extended mm	Extension force max. N
GS-8-20-V4A	20	72	100
GS-8-30-V4A	30	92	100
GS-8-40-V4A	40	112	100
GS-8-50-V4A	50	132	100
GS-8-60-V4A	60	152	100
GS-8-80-V4A	80	192	100

Ordering Example **GS-8-30-AC-30-V4A**

Type (Push Type) _____

Body 0.31" (8 mm) _____

Stroke 1.18" (30 mm) _____

Piston Rod End Fitting A3.5-V4A _____

Body End Fitting C3.5-V4A _____

Nominal Force F₁ 7 lbs (30 N) _____

Material (1.4404/1.4571, AISI 316L/316Ti, V4A) _____

Mounting accessories see from page 220.

Technical Data

Extension force: 10 N to 100 N (compressed up to 131 N)

Progression: Approx. 28 % to 31 %

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

Material: Outer body, Piston rod, End fittings: Stainless steel (1.4404/1.4571, AISI 316L/316Ti)

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)

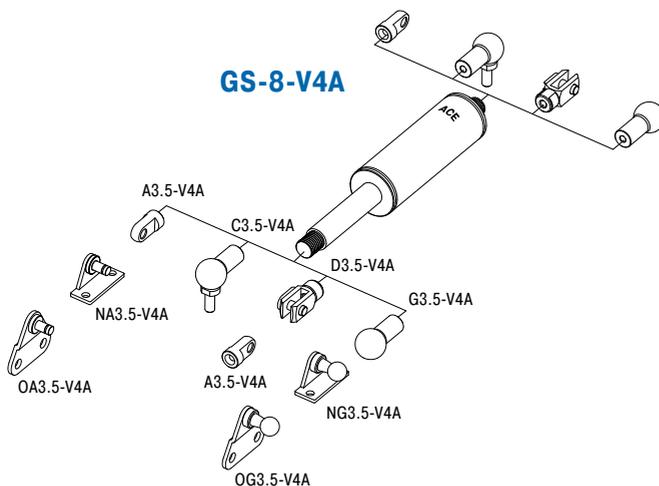
Positive stop: External positive stop at the end of stroke provided by the customer.

Note: Special oil according to FDA 21 CFR 178.3570 of the food industry

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

Safety information: Gas pressure springs should not be installed under pre-tension.

GS-8-V4A



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

End Fitting

Standard Dimensions

End Fitting

B3.5 Stud Thread **B3.5**

A3.5-V4A Eye **A3.5-V4A**
max. force 370 N

C3.5-V4A Angle Ball Joint **C3.5-V4A**
max. force 370 N

D3.5-V4A Clevis Fork **D3.5-V4A**
max. force 370 N

G3.5-V4A Ball Socket **G3.5-V4A**
max. force 370 N

Adjuster Knob DE-GAS-3.5
See page 191.

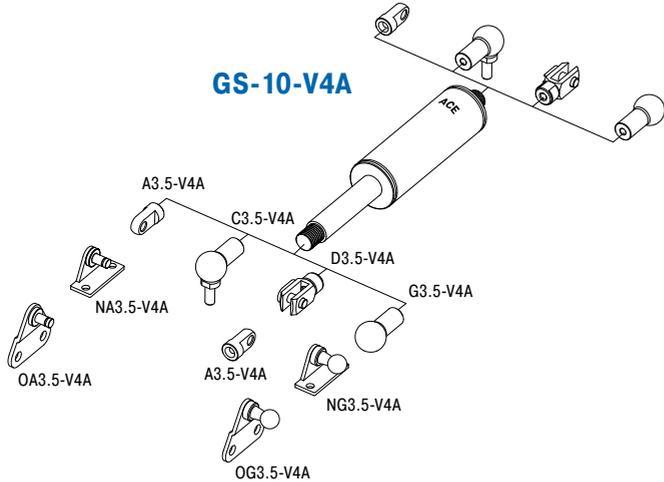
Performance and Dimensions			
TYPES	Stroke mm	L extended mm	Extension force max. N
GS-10-20-V4A	20	72	100
GS-10-30-V4A	30	92	100
GS-10-40-V4A	40	112	100
GS-10-50-V4A	50	132	100
GS-10-60-V4A	60	152	100
GS-10-80-V4A	80	192	100

Ordering Example

GS-10-30-AC-30-V4A

Type (Push Type) _____
 Body 0.39" (10 mm) _____
 Stroke 1.18" (30 mm) _____
 Piston Rod End Fitting A3.5-V4A _____
 Body End Fitting C3.5-V4A _____
 Nominal Force F₁ 7 lbs (30 N) _____
 Material (1.4404/1.4571, AISI 316L/316Ti, V4A) _____

Mounting accessories see from page 220.



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, Piston rod, End fittings: Stainless steel (1.4404/1.4571, AISI 316L/316Ti)
- 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:** Special oil according to FDA 21 CFR 178.3570 of the food industry
- End fittings:** They are interchangeable and if necessary must be positively secured by the customer to prevent unscrewing.
- Safety information:** Gas pressure springs should not be installed under pre-tension.

Valve Technology, Stainless Steel, Extension force 15 N to 180 N (compressed up to 225 N)

End Fitting
Standard Dimensions
End Fitting

B3.5

A3.5-V4A

C3.5-V4A

D3.5-V4A

G3.5-V4A

Performance and Dimensions			
TYPES	Stroke mm	L extended mm	Extension force max. N
GS-12-20-V4A	20	72	180
GS-12-30-V4A	30	92	180
GS-12-40-V4A	40	112	180
GS-12-50-V4A	50	132	180
GS-12-60-V4A	60	152	180
GS-12-80-V4A	80	192	150
GS-12-100-V4A	100	232	150
GS-12-120-V4A	120	272	120
GS-12-150-V4A	150	332	100

Ordering Example

GS-12-100-AA-30-V4A

Type (Push Type) _____

Body 0.47" (12 mm) _____

Stroke 3.94" (100 mm) _____

Piston Rod End Fitting A3.5-V4A _____

Body End Fitting A3.5-V4A _____

Nominal Force F₁ 7 lbs (30 N) _____

Material (1.4404/1.4571, AISI 316L/316Ti, V4A) _____

Mounting accessories see from page 220.

Stud Thread B3.5

Eye A3.5-V4A
max. force 370 N

Angle Ball Joint C3.5-V4A
max. force 370 N

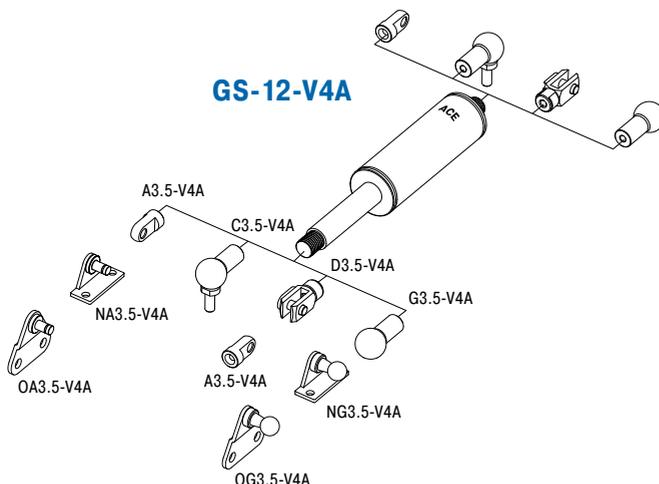
Clevis Fork D3.5-V4A
max. force 370 N

Ball Socket G3.5-V4A
max. force 370 N

Adjuster Knob DE-GAS-3.5
See page 191.

Technical Data

- Extension force:** 15 N to 180 N (compressed up to 225 N)
- Progression:** Approx. 20 % to 25 %
- Operating temperature range:** -20 °C to 80 °C
- Material:** Outer body, Piston rod, End fittings: Stainless steel (1.4404/1.4571, AISI 316L/316Ti)
- 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:** Special oil according to FDA 21 CFR 178.3570 of the food industry
- End fittings:** They are interchangeable and if necessary must be positively secured by the customer to prevent unscrewing.
- Safety information:** Gas pressure springs should not be installed under pre-tension.

GS-12-V4A


Valve Technology, Stainless Steel, Extension force 40 N to 400 N (compressed up to 612 N)

End Fitting

Standard Dimensions

End Fitting

B5

A5-VA

C5-VA

D5-VA

E5-VA

G5-VA

Rod Shroud W5-15-VA

Performance and Dimensions

TYPES	Stroke mm	L extended mm	Extension force max. N
GS-15-20-VA	20	74	400
GS-15-40-VA	40	114	400
GS-15-50-VA	50	134	400
GS-15-60-VA	60	154	400
GS-15-80-VA	80	194	400
GS-15-100-VA	100	234	400
GS-15-120-VA	120	274	400
GS-15-150-VA	150	334	400

Ordering Example

GS-15-150-AC-150-VA

Type (Push Type) _____

Body 0.61" (15.6 mm) _____

Stroke 5.91" (150 mm) _____

Piston Rod End Fitting A5-VA _____

Body End Fitting C5-VA _____

Nominal Force F₁ 34 lbs (150 N) _____

Material (1.4301/1.4305, AISI 304/303, VA) _____

Stud Thread **B5**

Eye A5-VA
max. force 490 N

Angle Ball Joint C5-VA
max. force 430 N

Clevis Fork D5-VA
max. force 490 N

Swivel Eye E5-VA
max. force 490 N

Ball Socket G5-VA
max. force 430 N

Adjuster Knob DE-GAS-5
See page 191.

Mounting accessories see from page 220.

Technical Data

Extension force: 40 N to 400 N (compressed up to 612 N)

Progression: Approx. 30 % to 53 %

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

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

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

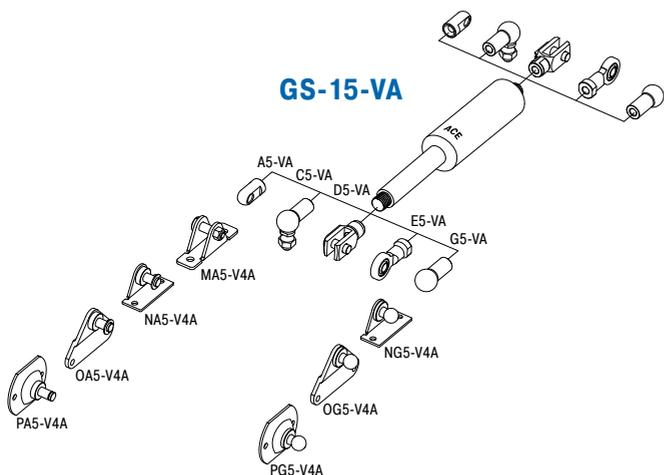
End position damping length: approx. 20 mm (depending on the stroke)

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

Note: Special oil according to FDA 21 CFR 178.3570 of the food industry

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

Safety information: Gas pressure springs should not be installed under pre-tension.



Valve Technology, Stainless Steel, Extension force 50 N to 700 N (compressed up to 924 N)

End Fitting

Standard Dimensions

End Fitting

B8

A8-VA

C8-VA

D8-VA

E8-VA

G8-VA

Rod Shroud W8-19-VA

Performance and Dimensions

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

Ordering Example

GS-19-150-AC-600-VA

Type (Push Type) _____

Body 0.75" (19 mm) _____

Stroke 5.91" (150 mm) _____

Piston Rod End Fitting A8-VA _____

Body End Fitting C8-VA _____

Nominal Force F₁ 135 lbs (600 N) _____

Material (1.4301/1.4305, AISI 304/303, VA) _____

Stud Thread B8

Eye A8-VA
max. force 1,560 N

Angle Ball Joint C8-VA
max. force 1,140 N

Clevis Fork D8-VA
max. force 1,560 N

Swivel Eye E8-VA
max. force 1,560 N

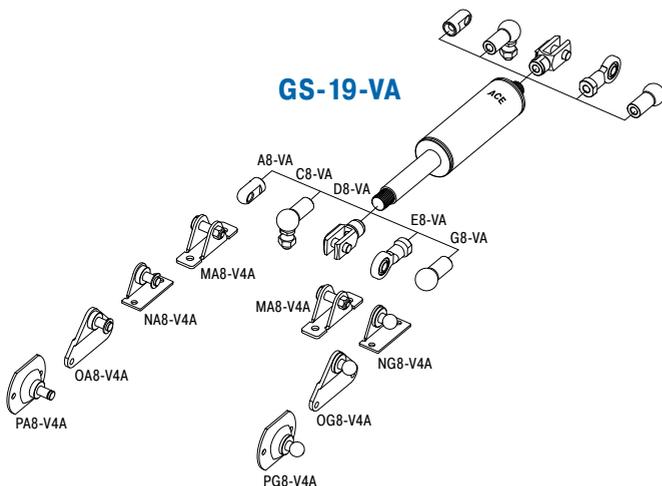
Ball Socket G8-VA
max. force 1,140 N

Adjuster Knob DE-GAS-8
See page 191.

Mounting accessories see from page 220.

Technical Data

- Extension force:** 50 N to 700 N (compressed up to 924 N)
- Progression:** Approx. 28 % to 32 %
- Operating temperature range:** -20 °C to 80 °C
- Material:** Outer body, Piston rod, End fittings: Stainless steel (1.4301/1.4305, AISI 304/303)
- Mounting:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.
- End position damping length:** approx. 20 mm (depending on the stroke)
- Positive stop:** External positive stop at the end of stroke provided by the customer.
- Note:** Special oil according to FDA 21 CFR 178.3570 of the food industry
- End fittings:** They are interchangeable and if necessary must be positively secured by the customer to prevent unscrewing.
- Safety information:** Gas pressure springs should not be installed under pre-tension.



End Fitting

Standard Dimensions

End Fitting

B8

A8-VA

C8-VA

D8-VA

E8-VA

G8-VA

Rod Shroud W8-22-VA

Performance and Dimensions

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

Ordering Example

GS-22-150-AE-800-VA

Type (Push Type) _____

Body 0.91" (23 mm) _____

Stroke 5.91" (150 mm) _____

Piston Rod End Fitting A8-VA _____

Body End Fitting E8-VA _____

Nominal Force F₁ 180 lbs (800 N) _____

Material (1.4301/1.4305, AISI 304/303, VA) _____

Stud Thread B8

Eye A8-VA
max. force 1,560 N

Angle Ball Joint C8-VA
max. force 1,140 N

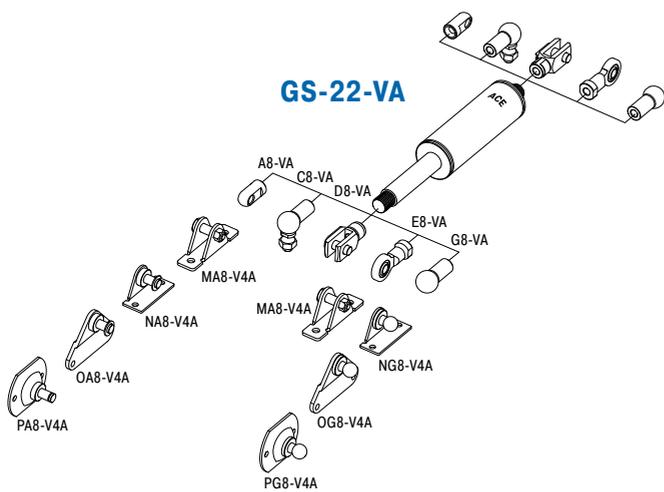
Clevis Fork D8-VA
max. force 1,560 N

Swivel Eye E8-VA
max. force 1,560 N

Ball Socket G8-VA
max. force 1,140 N

Adjuster Knob DE-GAS-8
See page 191.

Mounting accessories see from page 220.



Technical Data

- Extension force:** 100 N to 1,200 N (compressed up to 1,596 N)
- Progression:** Approx. 29 % to 33 %
- Operating temperature range:** -20 °C to 80 °C
- Material:** Outer body, Piston rod, End fittings: Stainless steel (1.4301/1.4305, AISI 304/303)
- Mounting:** We recommend mounting with piston rod downwards to take advantage of the built-in end position damping.
- End position damping length:** approx. 20 mm (depending on the stroke)
- Positive stop:** External positive stop at the end of stroke provided by the customer.
- Note:** Special oil according to FDA 21 CFR 178.3570 of the food industry
- End fittings:** They are interchangeable and if necessary must be positively secured by the customer to prevent unscrewing.
- Safety information:** Gas pressure springs should not be installed under pre-tension.

Valve Technology, Stainless Steel, Extension force 150 N to 2,500 N (compressed up to 3,975 N)

End Fitting

Standard Dimensions

End Fitting

B10

A10-VA

C10-VA

D10-VA

E10-VA

Rod Shroud W10-28-VA

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

Ordering Example

GS-28-150-EE-1200-VA

Type (Push Type) _____

Body 1.1" (28 mm) _____

Stroke 5.91" (150 mm) _____

Piston Rod End Fitting E10-VA _____

Body End Fitting E10-VA _____

Nominal Force F₁ 270 lbs (1,200 N) _____

Material (1.4301/1.4305, AISI 304/303, VA) _____

Mounting accessories see from page 220.

Adjuster Knob DE-GAS-10
See page 191.

Stud Thread B10

Eye A10-VA
max. force 3,800 N

Angle Ball Joint C10-VA
max. force 1,750 N

Clevis Fork D10-VA
max. force 3,800 N

Swivel Eye E10-VA
max. force 3,800 N

Technical Data

Extension force: 150 N to 2,500 N (compressed up to 3,975 N)

Progression: Approx. 53 % to 59 %

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

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

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

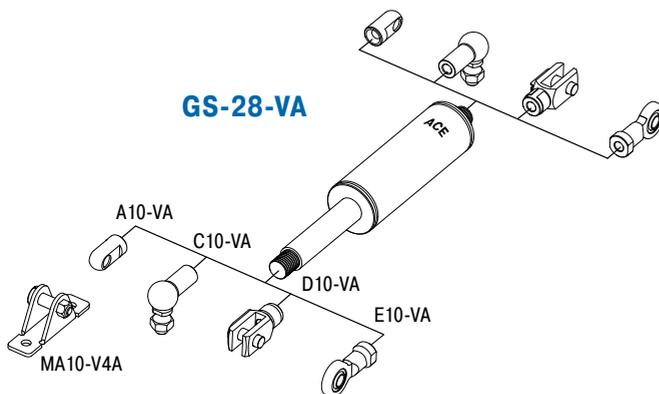
End position damping length: approx. 20 mm (depending on the stroke)

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

Note: Special oil according to FDA 21 CFR 178.3570 of the food industry

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

Safety information: Gas pressure springs should not be installed under pre-tension.



Stainless Steel Gas Springs (Push Type), V4A

TYPES	Stroke mm	L extended mm	Dimensions see Page
GS-15-20-V4A	20	74	164
GS-15-40-V4A	40	114	164
GS-15-50-V4A	50	134	164
GS-15-60-V4A	60	154	164
GS-15-80-V4A	80	194	164
GS-15-100-V4A	100	234	164
GS-15-120-V4A	120	274	164
GS-15-150-V4A	150	334	164
GS-19-50-V4A	50	164	165
GS-19-100-V4A	100	264	165
GS-19-150-V4A	150	364	165
GS-19-200-V4A	200	464	165
GS-19-250-V4A	250	564	165
GS-19-300-V4A	300	664	165
GS-22-50-V4A	50	164	166
GS-22-100-V4A	100	264	166
GS-22-150-V4A	150	364	166
GS-22-200-V4A	200	464	166
GS-22-250-V4A	250	564	166
GS-22-300-V4A	300	664	166
GS-22-350-V4A	350	764	166
GS-22-400-V4A	400	864	166
GS-22-450-V4A	450	964	166
GS-22-500-V4A	500	1,064	166
GS-22-550-V4A	550	1,164	166
GS-22-600-V4A	600	1,264	166
GS-22-650-V4A	650	1,364	166
GS-22-700-V4A	700	1,464	166
GS-28-100-V4A	100	262	167
GS-28-150-V4A	150	362	167
GS-28-200-V4A	200	462	167
GS-28-250-V4A	250	562	167
GS-28-300-V4A	300	662	167
GS-28-350-V4A	350	762	167
GS-28-400-V4A	400	862	167
GS-28-450-V4A	450	962	167
GS-28-500-V4A	500	1,062	167
GS-28-550-V4A	550	1,162	167
GS-28-600-V4A	600	1,262	167
GS-28-650-V4A	650	1,362	167
GS-40-100-V4A	100	317	168
GS-40-150-V4A	150	417	168
GS-40-200-V4A	200	517	168
GS-40-300-V4A	300	717	168
GS-40-400-V4A	400	917	168
GS-40-500-V4A	500	1,117	168
GS-40-600-V4A	600	1,317	168

Stainless Steel Accessories, V4A

TYPES	Dimensions see Page
A5-V4A	222
C5-V4A	222
D5-V4A	222
E5-V4A	222
G5-V4A	222
A8-V4A	223
C8-V4A	223
D8-V4A	223
E8-V4A	223
G8-V4A	224
A10-V4A	224
C10-V4A	224
D10-V4A	224
E10-V4A	224
A14-V4A	225
C14-V4A	225
D14-V4A	225
E14-V4A	225

GST-40 Tandem

Optimized dual force for heavy flaps and wide angle applications

Valve Technology

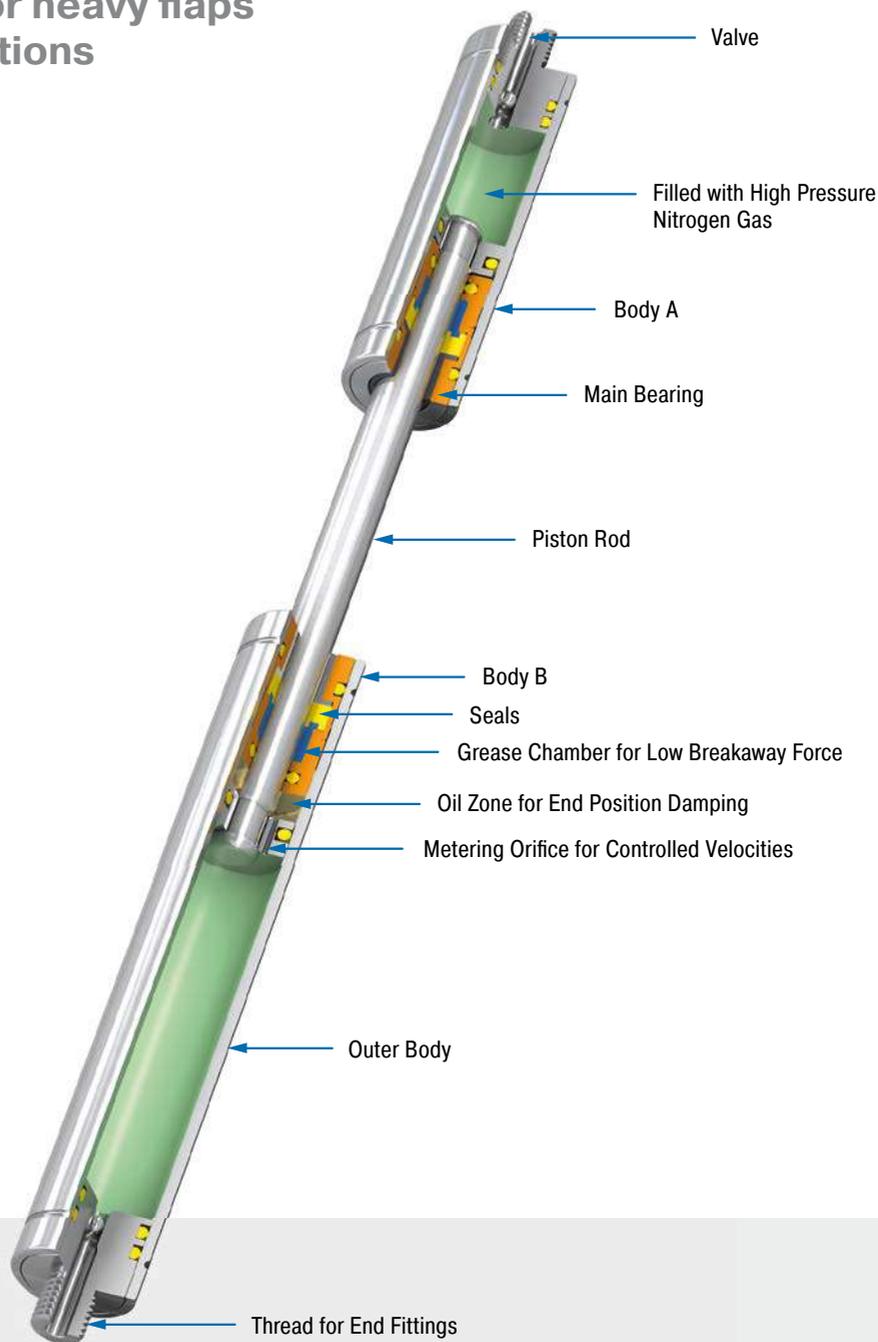
Extension force 300 N to 5,000 N

Stroke 50 mm to 400 mm

Cover two differing force ranges: Tandem gas springs by ACE are maintenance-free and ready-to-install. Two pressure tubes deliver different extension forces and progression curves. With this type of gas spring you cover the different force ranges between the start and end of an application. ACE provides free specification support to deliver a gas spring that meets your specific application needs. We manufacture and adjusted precisely to the required dynamics of the application.

A comprehensive range of accessories guarantees easy assembly and a broad range of uses, are specifically suitable for heavy loads with large opening angle. Stainless steel versions are available to meet environmental or appearance requirements.

Tandem push type gas springs from ACE are used in industrial applications such as in automation and machine building, in the automobile, electronics and furniture industries, but also in medical technology as well as for service hatches.



Technical Data

Extension force: 300 N to 5,000 N

Piston rod diameter: Ø 20 mm

Progression: According to calculation relating to your application.

Lifetime: Approx. 10,000 m

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

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

Operating fluid: Nitrogen gas and oil

Mounting: In any position. Please adopt the mounting points determined by ACE.

End position damping length: Application-specific end position damping and extension speed.

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

Application field: Hoods, Shutters, Machine housing, Conveyor systems, Folding elements, Loading and lifting equipment

Note: These gas springs are tailored to the relevant application and are therefore not available ex stock.

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

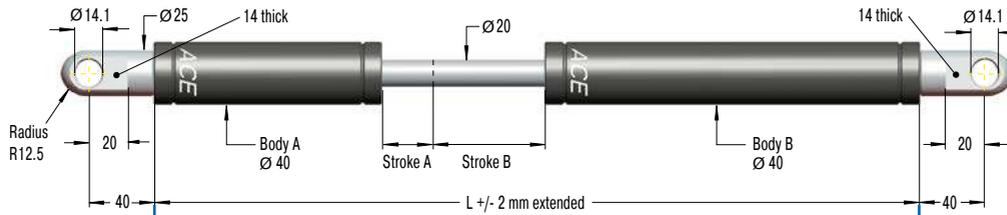
On request: Special oils and other special options. Alternative accessories. Material 1.4301/1.4305, AISI 304/303 (V2A) and 1.4404/1.4571, AISI 316L/316Ti (V4A).

End Fitting

Standard Dimensions

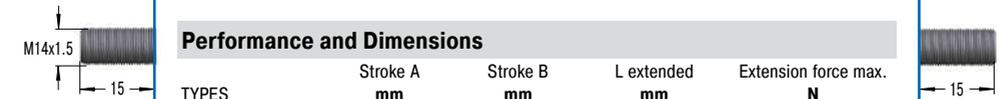
End Fitting

A14



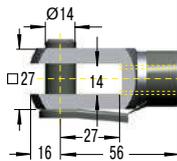
Eye A14
max. force 10,000 N

B14



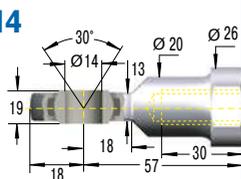
Stud Thread B14

D14



Clevis Fork D14
max. force 10,000 N

E14



Swivel Eye E14
max. force 10,000 N

Performance and Dimensions

TYPES	Stroke A mm	Stroke B mm	L extended mm	Extension force max. N
GST-40-50-100	50	100	485	5,000
GST-40-50-150	50	150	585	5,000
GST-40-50-200	50	200	685	5,000
GST-40-70-250	70	250	825	5,000
GST-40-70-300	70	300	925	5,000
GST-40-70-350	70	350	1,025	5,000
GST-40-70-400	70	400	1,125	5,000

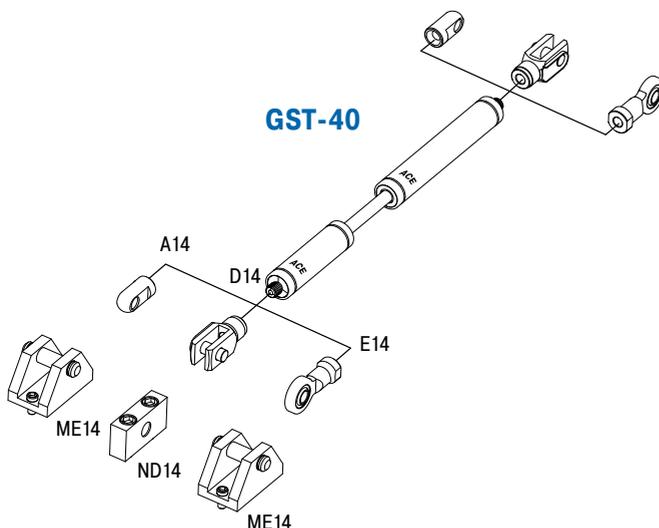
Ordering Example

GST-40-50-150-AD-900N-2500N

Type (Tandem Gas Spring) _____
 Body 1.57" (40 mm) _____
 Stroke A 1.97" (50 mm) _____
 Stroke B 5.91" (150 mm) _____
 Body A End Fitting, A14 _____
 Body B End Fitting, D14 _____
 Nominal Force Body A, 202 lbs (900 N) _____
 Nominal Force Body B, 562 lbs (2,500 N) _____

Mounting accessories see from page 220.

GST-40



Technical Data

Extension force: 300 N to 5,000 N

Progression: According to calculation relating to your application.

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

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

Mounting: In any position. Please adopt the mounting points determined by ACE.

End position damping length: Application-specific end position damping and extension speed.

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

Note: These gas springs are tailored to the relevant application and are therefore not available ex stock.

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

Application Examples

GS-12

Safe opening and closing

ACE industrial gas springs (push type) protect samples in an incubator, which is used for chemical and biochemical applications. The plexiglass hood, under which may be found valuable laboratory goods, is securely held open by two maintenance-free, ready-to-install ACE industrial gas springs (push type) of the type GS-12-60-AA-X. With an end-position damping of 5 mm and an extension force of 10 to 180 N, they help to handle the forces generated. The hood is always easily opened and remains in this position. It also remains securely shut when the incubator is in operation.



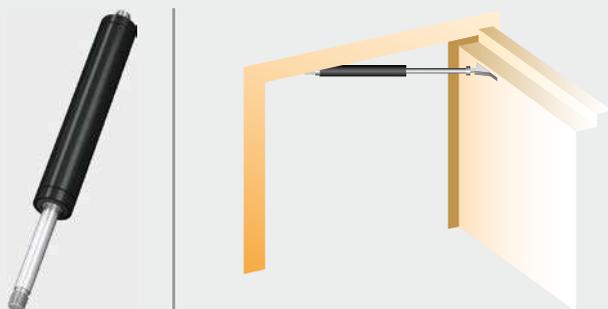
Very small ACE industrial gas springs (push type) enable careful opening and closing movements of a mini-incubator hood, under which may be found laboratory products

GFL Gesellschaft für Labortechnik mbH, 30938 Burgwedel, Germany

GS-19

Doors open and close safely

ACE industrial gas springs make opening and closing doors of rescue helicopters easier. The maintenance-free, sealed systems are installed in the access doors of helicopters of the type EC 135. There, they allow the crew to enter or exit the helicopter quickly, thus contributing to enhanced safety. The GS-19-300-CC gas springs provide a defined retraction speed and secure engagement of the door lock. The integrated end position damper allows gentle closing of the door and saves wear and tear on the valuable, lightweight material.

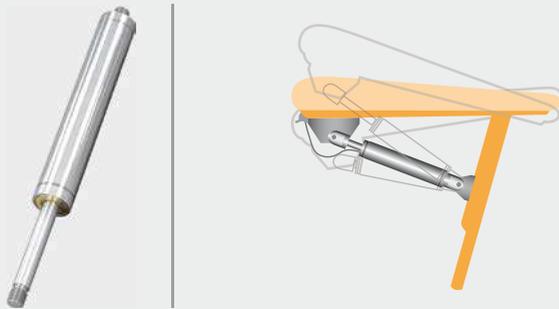


Industrial gas springs: For safe entry and exit

GS-22-VA

Made-to-measure stainless steel gas springs

A special hygiene and toilet chair, designed for children and young people with disabilities, must be firmly lockable in the sit and tilt positions. The practical aid thereby provided for relatives and carers can be attributed to two lockable ACE industrial gas springs (push type) which were especially developed and manufactured for this application and operate on the basis of the so-called tilt-in-space function. This allows the chair to be tilted forwards and backwards and provides significantly more convenience for users and patients. In order to meet all hygiene requirements, the gas springs are constructed in stainless steel.



With inclination angles of 15 degrees to the front and rear, the ACE stainless steel gas springs facilitate the work of nurses
Rifton Equipment, Rifton, New York 12471, USA

GST-40

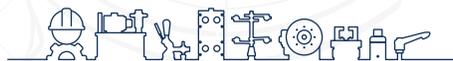
Tandemly-operated large flaps securely under control

Underground distribution systems are visually advantageous. To facilitate their servicing, the heavy covers of the often large supply systems are brought back to the surface with the help of ACE industrial tandem gas springs (push type). This is quite easily achieved thanks to the use of two pressure pipes, the result of which is two different force ranges. This means fitters must not endure laborious bending and a downward passage into the system of channels. In addition to these advantages, the springs benefit from their long service life and their capacity to be used, as stainless steel variants, in even the most hygienically-sensitive areas.



ACE industrial tandem gas springs (push type) enable easy maintenance of supply boxes by making the heavy flaps easier to operate
Langmatz GmbH, 82467 Garmisch-Partenkirchen, Germany

Issue 04.2018 – Specifications subject to change



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