LDA GAS SPRINGS

Solutions for Life

Gas Springs catalog

V.2025-05_01

Visit our website for more detailed information about LDA. You will also find detailed information about our product ranges and our suppliers.

Visit our LDA Web Site!

Contents

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Gas spring production is a highly competitive market with only a few innovative, high quality manufacturers who can do the job right. Our supplier is one of the few. What makes them different? As a forward-looking company, it has invested significant amounts in research and development for its customers. For them it means more than lids, covers and other weights, they also support their customers on their way into the future providing them individual solutions to help them move the world. Together with our supplier are we proud to say that we've become an active partner of our customers.

Modern testing facilities as well as special materials engineering laboratories ensure the continuous development and improvement of all product lines and confirm the innovative force of our supplier. These strengths have helped our supplier grow from a small manufacturer in 1987 to a global player in gas springs. This growth was only possible thanks to the employees and the customers. Our company strives to improve their service and capabilities for the customers and uphold this as their primary goal. Based on their years of experience they operate in different industries; automotive-, furniture-, machine-, and transport industry.

Thanks to their developed technologies they obtained a good reputation. No matter how impressive their equipment and control systems are, it is the people that make the greatest difference. Every day these employees strive to achieve the standards of quality and service for each customer. Worldwide well-known companies, both OEM as well as aftermarket companies, rely on this know-how. This manufacturer exports to over 40 countries in 5 continents: Europe (Belgium, the Netherlands, Germany, Greece, Italy, United Kingdom, France, Austria, Denmark, etc.), America, the Far East, the Middle East and Africa.

LDA

Long lasting relationships with the customers and vendors is fundamental. In cooperation with our supplier LDA helps their customers design new products, redesign an existing project and investigate cost savings.

This catalog will support you finding the right gas spring for your application. Our employees at LDA are always available for further support. Additionally are supplier is capable to replace your old gas spring in to an identical new one. We only need a technical drawing or an example.

Quality assurance at each stage of manufacture:

Although gas springs and end fittings are often a small component of the overall equipment package which they are included in, their function and reliability are paramount to the performance of the system as a whole. For this our supplier operates a stringent quality assurance system, which ensures that scrupulous attention to detail is built in at every stage of design and manufacture of our products.

Accreditation:

Because of their stringent quality assurance system, they are certified in accordance with ISO9000.

Quality tests :

Our gas springs are continuously tested to ensure reliability, long life and over all, product safety for your highest satisfaction.

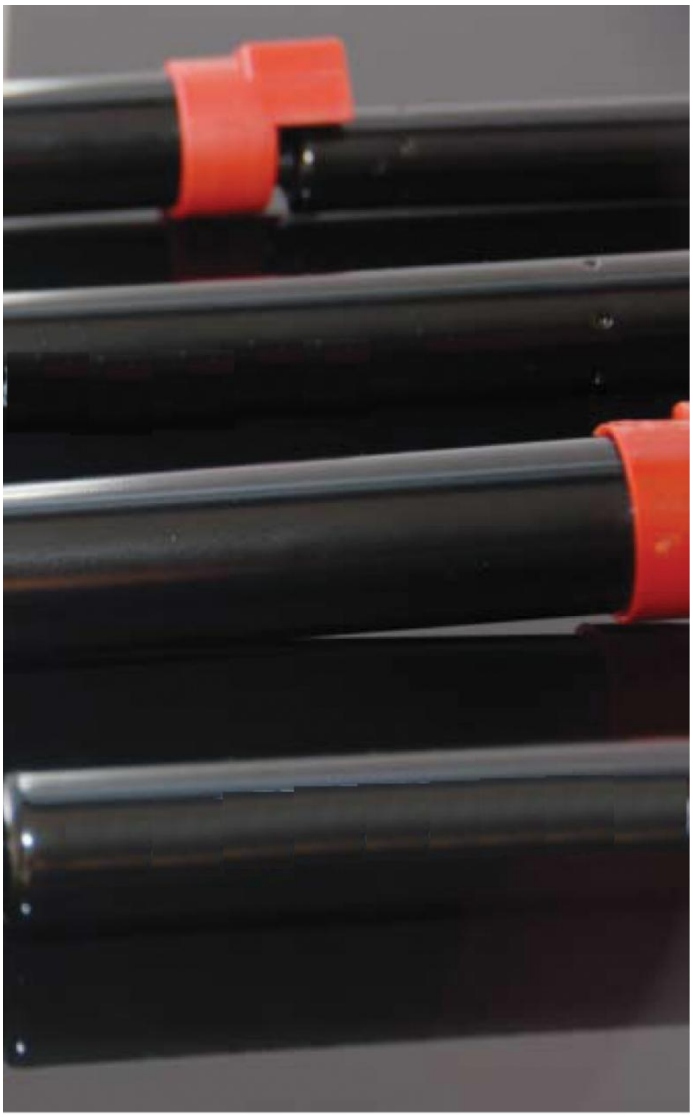
Following test are made by our in-house test equipment and by officially registered laboratories:

- Control of damping
- Control of extension speed
- Control of extension force
- Thermal tests
- Salt spray tests
- Life cycle tests
- Test of actual application
- Test of mechanical strength

Quality Policy :

Our quality policy is to satisfy requirements of our customers. To achieve this, our goals are:

- Improve the quality of our products
- Respect the established quality system
- Implement a system to motivate and train our employees
- Optimize ergonomics and productivity
- Ensure zero tolerance for errors at every stage of production
- • Improve productivity
- Adapt to global standards



Basic

A gas spring is an energy-storage device filled with nitrogen. A gas springs stores energy by compressing the nitrogen gas within the gas spring. Once the gas spring is compressed, the gas chamber volume is reduced due to the intrusion of the shaft into the gas spring tube; thereby causing the gas pressure to rise-storing more energy.

Lift

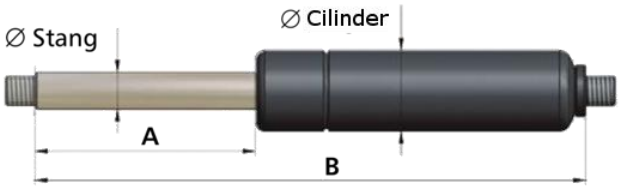
The 'lift' type is the most popular gas spring. This type of gas spring is used as a counterbalance of weights and as a speed control device. They meet the highest worldwide standards for lifting, counterbalancing, lowering, tilting and damping lids and covers.

There are thousands of applications where the lift type can be used. The most known are on the car hatchbacks and engine hoods, on furniture, machinery, etc.

The table below shows standard dimensions which ensure optimum function and service life.

Ø Rod*	Ø Cylinder*	A	B	Power	Progression
3	8	10-80	65-192	10 –100N	20%
3	10	10-80	65-192	10 – 100N	20%
4	12	20-150	65-325	10 – 180N	20%
6	15	20-200	80-450	50 – 400N	30%
8	18	20-400	87-852	100 – 800N	35%
10	22	50-500	154-1060	100 – 1200N	40%
10	28	50-500	160-1065	150 – 1200N	20%
14	28	50-800	160-1710	150 – 1200N	50%
20	40	50-1000	220-2120	500 – 5000N	45%
25	55	100-700	340-1540	500 – 7500N	/
30	70	100-700	340-1540	1000 – 10000N	/

*Ø rod / Ø cylinder (Other combinations are available like non-standard)



GT-Lift (Traction gas springs)

The working principle of the GT-Lift is the opposite of the Lift type gas spring. While the Lift type gas spring is always prepared to extend (i.e. to open lid and covers) the GT-Lift's function is to retract itself.

Inoxlift (Ressort à Gas en acier inoxydable)

For high corrosion resistance a wide range of stainless steel gas springs are available for « LIFT », « STOPLIFT » and « GT-LIFT ». These gas spring are developed for the external application like : marine industry and where hygiene is very important.(example: food industry). For the case where inoxydable is necessary LDA will provide gas springs in steel SAE304 or SAE 316L.

Stoplift (Gas springs enabling variable positioning)

"Stoplift" type gas springs have a special internal structure enabling the gas spring variable positioning on the application. On applications where the Stoplift is used you will be able to stop the gas spring at any desired position.

STEP-STOP

The Step-Stop is a multi-section operating gas spring dividing the opening stroke into multi distinct sections for desired flap positioning. Grooves inside the tube allow the Step-Stop gas spring to stop at various angles depending on how many stop points are required.

Lift & Lock

Lift&Lock type gas springs are regular Lift types but with additional end positioning locking feature. Depending on the tupe you choose the end locking is available at extended, compressed or extended and compressed positions.

LKD

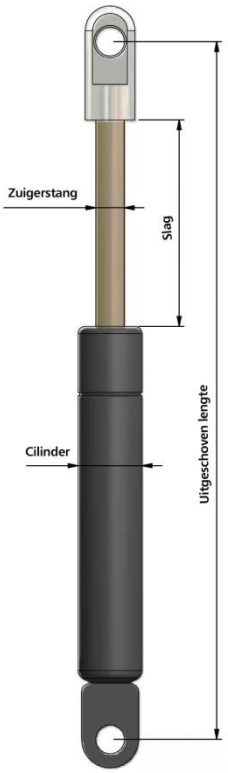
Use benefits of our LKD type gas springs for heavy duty applications requiring lifting forces from 750 kg to 5000 kg. The LKD is ideally suited for a wide variety of applications in the machinery industry.

GENERAL TECHNICAL SPECIFICATIONS

Tube finishing:

Black Painted (standard)

- Different colours our request (acc. to RAL code)
- Galvanized
- Stainless Steel (SAE304 of SAE316L)



Piston Rod:

- Black (Tennifer / Nitriding) Hard Chrome plated
- Chrome
- Stainless Steel (SAE304 of SAE316L)

End Fittings:

If not otherwise stated material of the end fittings is metal..

Damping:

The spring comfort of a gas spring can be regulated according to your individual requirement. Damping in extension, in compression, in both directions or without any damping.

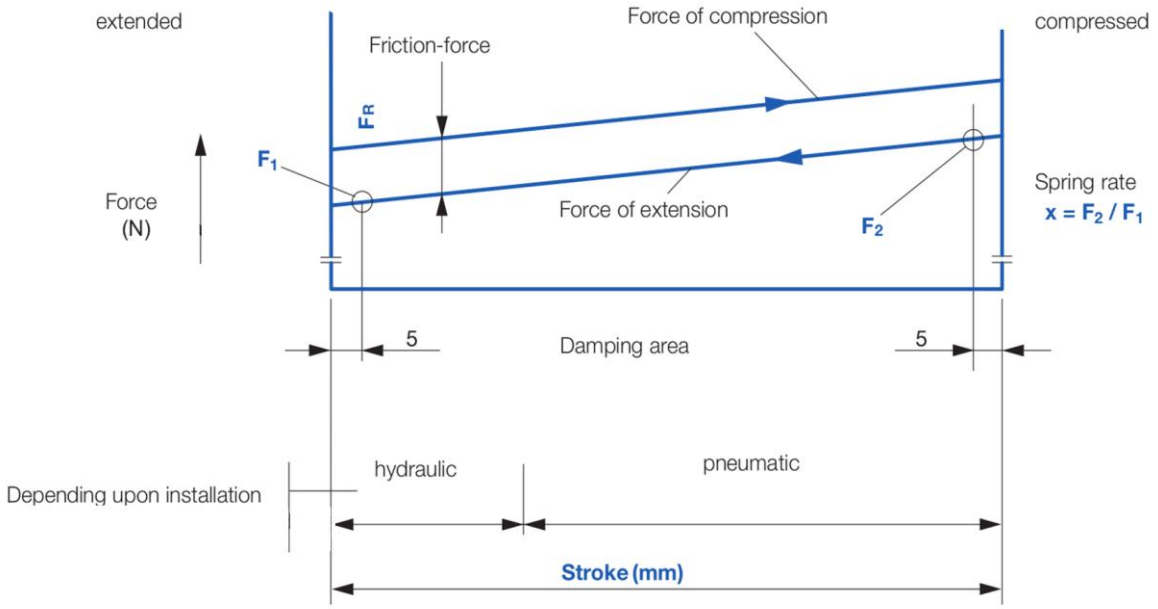
Extension speed:

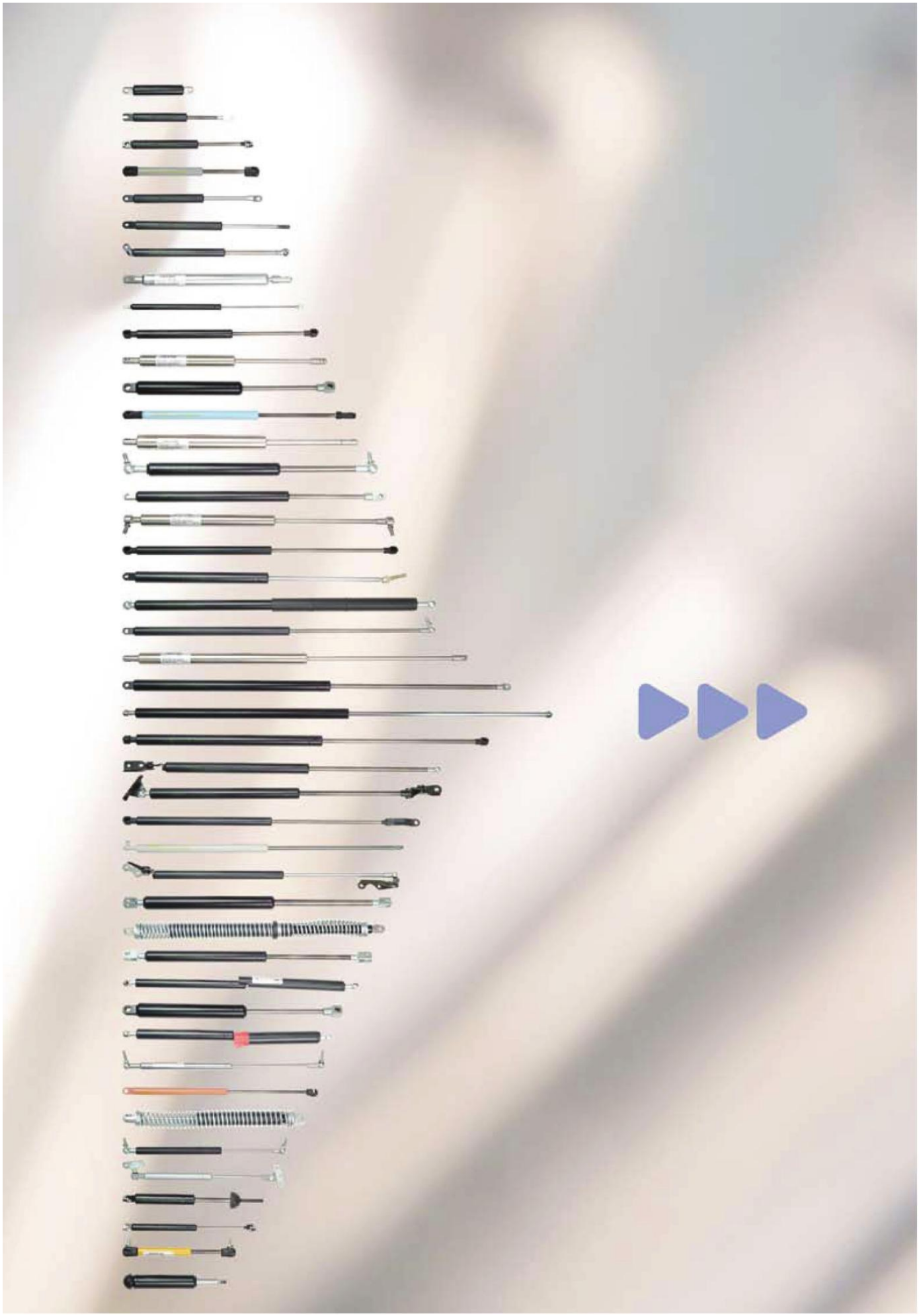
The extension speed is adjustable, within the physical limits, according to your individual request.

Working Temperature

- Standard -30°C to + 80°C
- On request up to - 45°C
- On request up to + 200°C

Gas spring behavior





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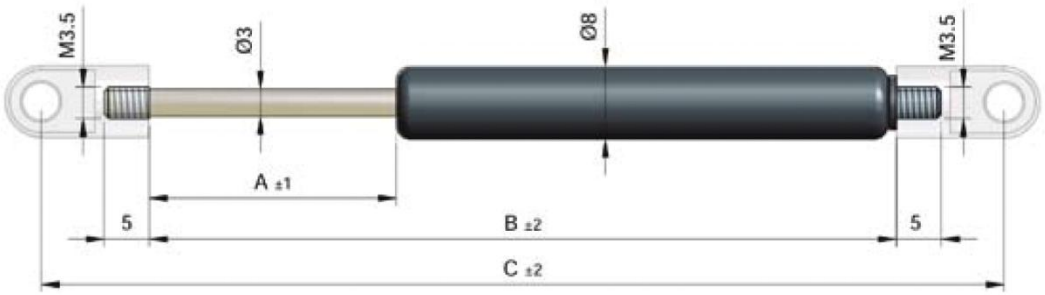


Standard		
A	**B**	**F1(N)**
10	65	<100
20	72	<100
30	92	<100
40	112	<100
50	132	<100
60	152	<100
80	192	<100

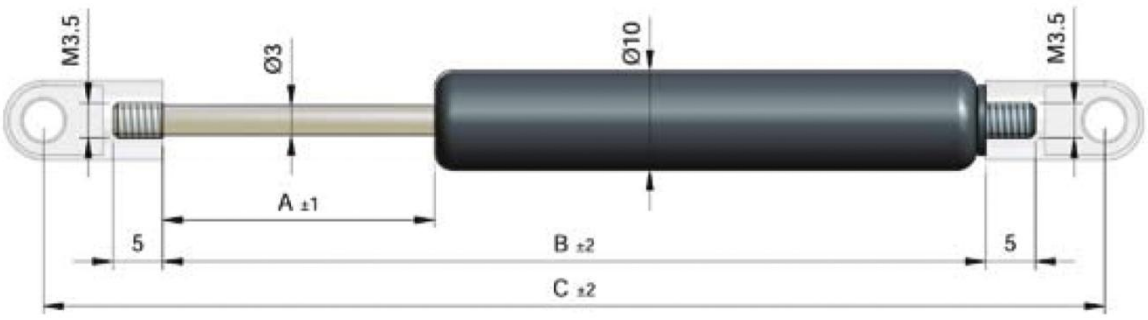
Extras	See p.
Protection Tube	55
Valve	58
Special Damping	56-57
Special Extension Speed	57
Other	60
Fittings	61-70

A: 10 min. – 80 max.
Progression: ~ 20 %

Ordering Example

D3/8 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D3/8 – Group



Standard

Extras	See p.
Protection Tube	55
Valve	58
Special Damping	56-57
Special Extension Speed	57
Other	60
Fittings	61-70

A	B	F1(N)
10	65	<100
20	72	<100
30	92	<100
40	112	<100
50	132	<100
60	152	<100
80	192	<100

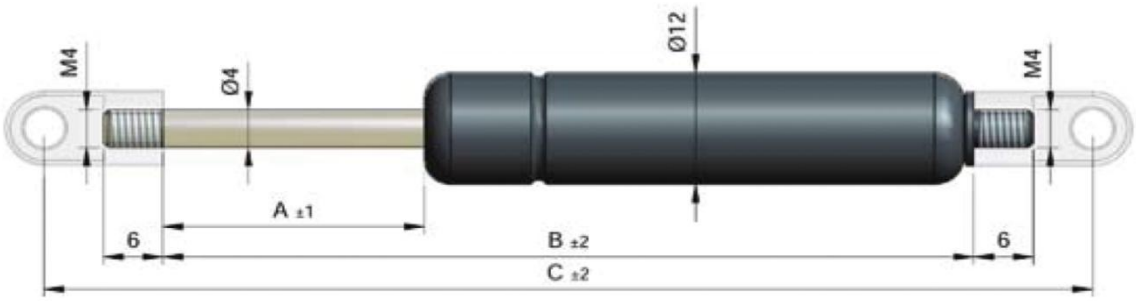
A: 10min. – 80max.

Progression: ~ 20 %

Ordering Example

D3/10 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D3/10 – Group



Standard		
A	**B**	**F1(N)**
56	65	<180
59	85	<180
57-58	105	<180
58	125	<180
61	145	<180
62-67	185	<180
100	225	<180
120	265	<180
150	325	<180

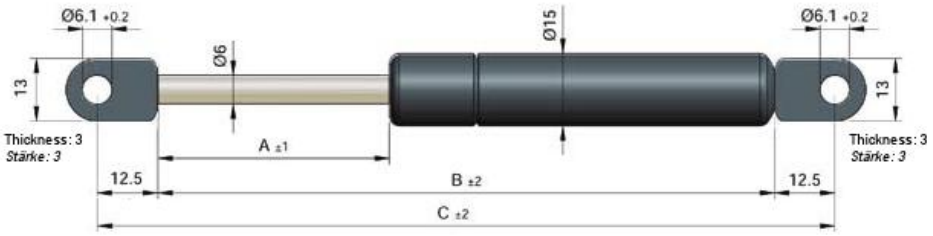
Extras	See p.
Protection Tube	55
Valve	58
Special Damping	56-57
Special Extension Speed	57
Other	60
Fittings	61-70

A: 20 min. – 200 max.
F1(N): min. 10N / max. 180N
Progression: ~ 20 %

Ordering Example

D4/12 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D4/12 – Group

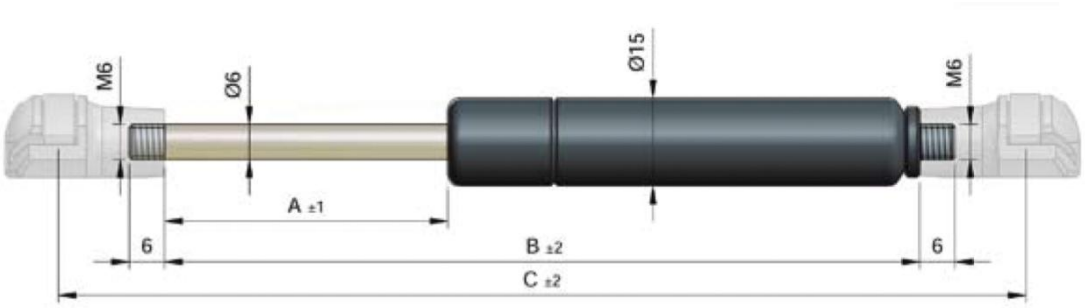


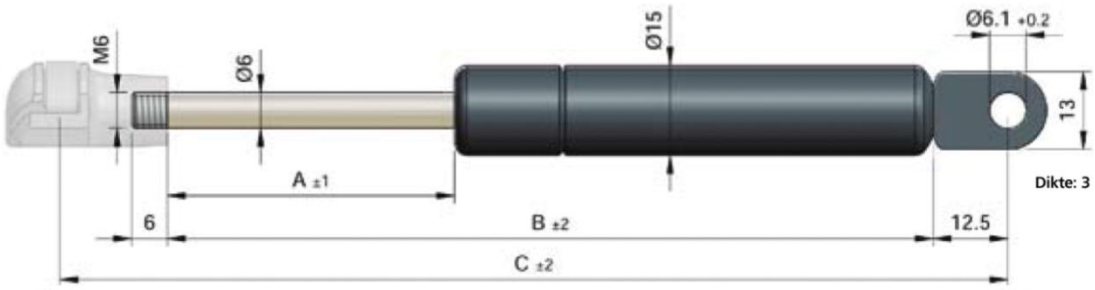
Standard serie D6/15A (standards measures)		
A – Stroke in mm	**C – lenghte in mm**	**F1(N)**
20	94	<250
20	106	<350
40	145	<400
60	185	<400
100	225	<400
120	265	<400
150	365	<400

Ordering Example

D6/15 - A - C - D - D - F1 - Extra

- F1 – Force in Newton
- D – Fitting on cylinder
- D – Fitting on piston rod
- C – Extended length
- A – Stroke
- D6/15 – Group





Standard		
A	**B**	**F1(N)**
20	80	<400
40	120	<400
60	160	<400
80	200	<400
100	240	<400
120	280	<400
150	340	<400
180	410	<400
200	450	<400

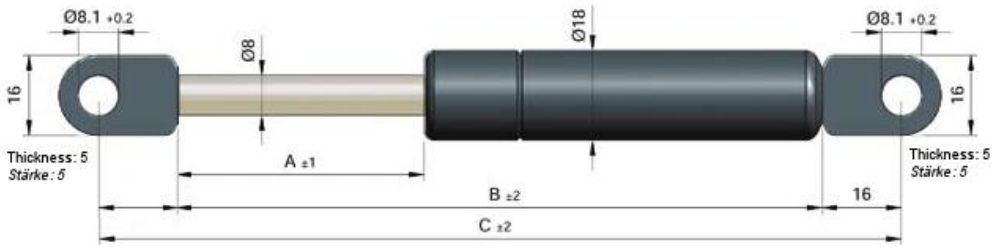
Extras	**See p.**
Protection Tube	55
Valve	58
Special damping	56-57
Speciale Extension Speed	57
Other	60
Fittings	61-70
End position Locking	49

A: 20 min. – 400 max.
F1(N): min. 50N / max. 400N
Progressie: ~ 30%

Ordering Example

D6/15 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D6/15 – Group



Standard serie D8/18A (standards measures)		
A - Stroke in mm	**C – Length in mm**	**F1 (N)**
40	155	<750
60	205	<750
72	225	<750
80	235	<750
80	245	<750
85*	275	<750
90	255	<750
100	285	<750
120	325	<750
140	365	<750
150	385	<750
160	405	<750
180	445	<700
200*	485	<700
200	500	<700
220	525	<700
250	585	<700
250	600	<700

Ordering Example

D8/18 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D8/18 – Group

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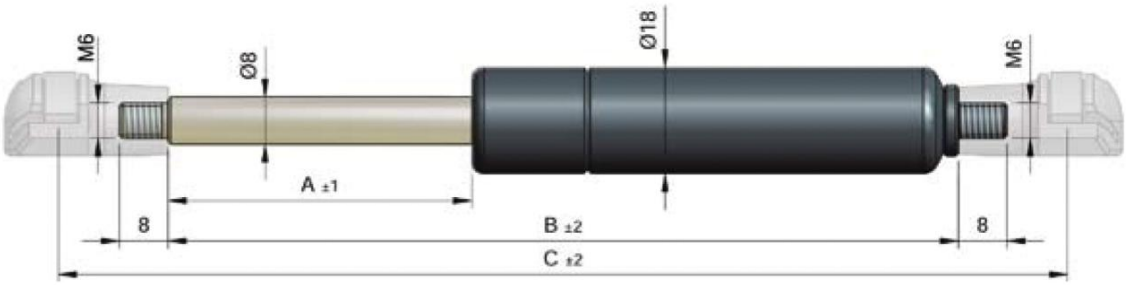
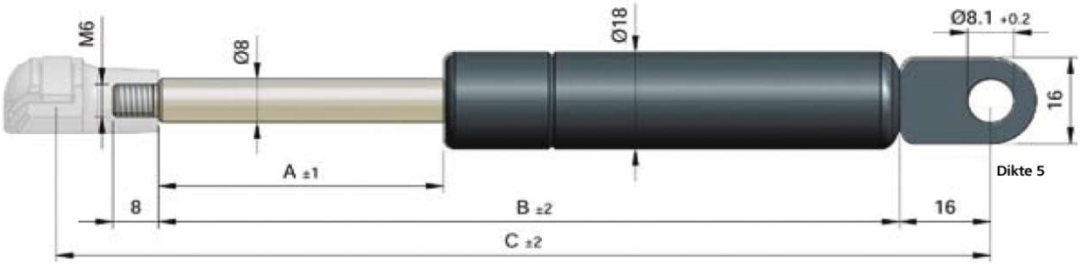




Standard		
A	**B**	**F1(N)**
20	90	800
40	130	800
50	150	800
60	170	800
80	210	800
100	250	800
120	290	800
140	330	800
150	350	800
160	370	800
180	410	800
200	450	800
220	490	800
250	550	<800
300	655	<400
350	755	<400
400	855	<300

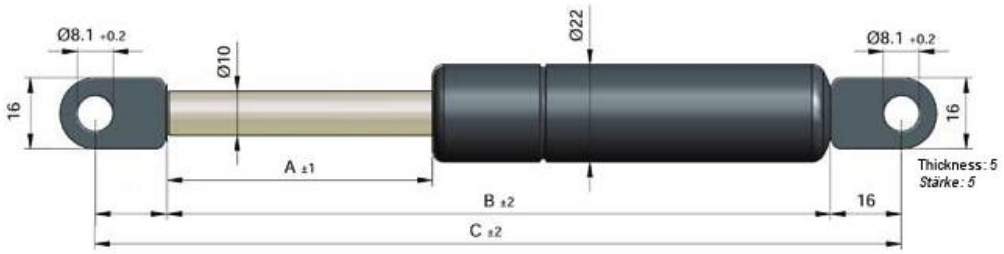
Extras	**See p.**
Protection Tube	55
Valve	58
Special Damping	56-57
Special Extension Speed	57
Other	60
Fittings	61-70
End position Locking	49

A: 20 min. – 600 max.
F1(N): min. 100N / max. 800N
Progression: ~ 35 %

Ordering Example

D8/18 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D8/18 – Group

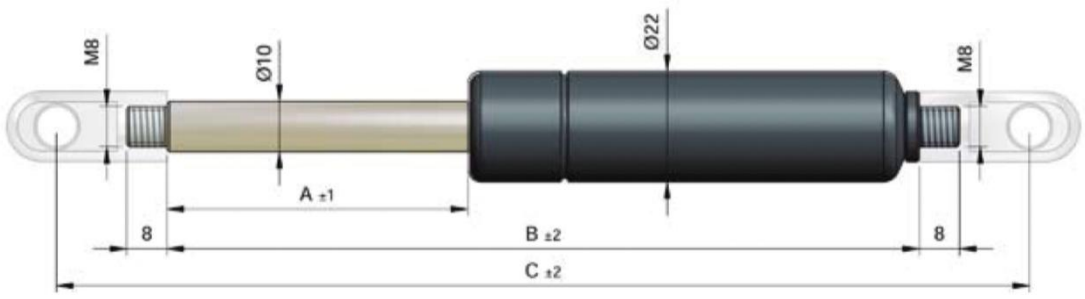


Standard serie D10/22A (standards measures)		
A – Stroke in mm	**C – Length in mm**	F1 (N)
100	285	<1150
150	385	<1150
200	485	<1150
250	585	<1050
300	685	<1050
330	740	<1050
350	785	<1000
400	885	<900

Ordering Example

D10/22 - A - C - GZ - GZ - F1 - Extras

- Force in Newton
- Fitting on cylinder
- Fitting on piston rod
- C – Extended length
- A –Stroke
- Group



Standard		
A	**B**	**F1(N)**
50	154	*
60	174	*
80	214	*
100	254	*
120	294	*
150	354	
180	414	
200	454	
250	554	
300	655	<1000
350	755	<1000
400	860	<900
500	1060	<800

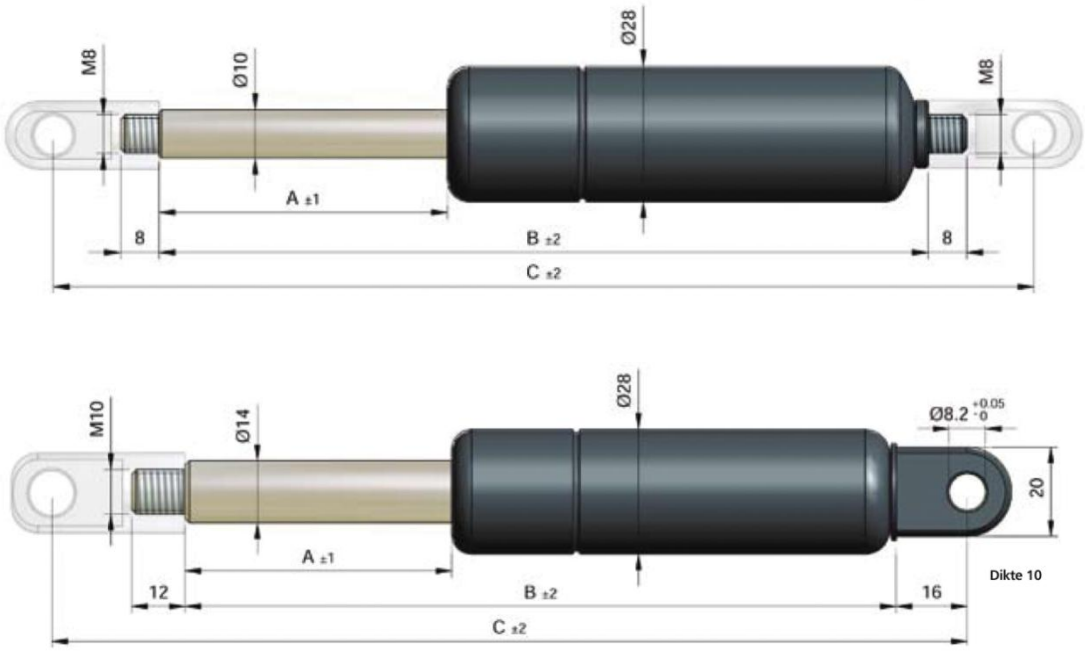
Extras	See p.
Protection Tube	56
Valve	59
Special Damping	57-58
Special Extension Speed	58
Other	61
Fittings	62-67
End position Locking	50

A: 20 min. – 800 max.
F1(N): min. 100N / max. 1200N
Progression: ~ 40 %

Ordering Example

D10/22 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D10/22 – Group



Standard		
A	**B**	**F1(N)**
50	160	*
100	260	*
150	360	*
200	460	*
250	560	*
300	665	<1000
350	765	<1000
400	865	<900
500	1065	<800

Options	Voir p.
Protection Tube	55
Valve special	58
Special Damping	56-57
Special Extension Speed	57
Other	60
Fitings	61-70
End position Locking	49

A: 40 min. – 800 max.
Progression: ~ 20 %

Ordering Example

D14/28 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D14/28 – Group

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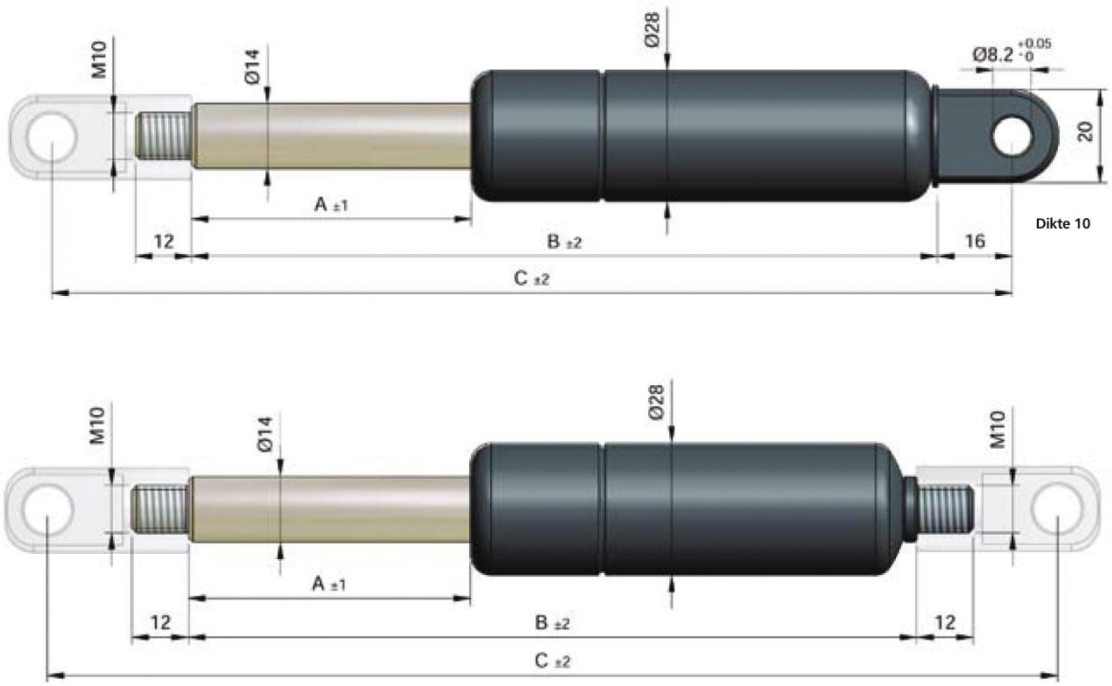


Standard		
A	**B**	**F1(N)**
50	160	*
100	260	*
150	360	*
200	460	*
250	560	*
300	660	*
400	860	*
450	960	<2000
500	1060	<2000
600	1310	<1800
700	1510	<1600
800	1710	<1500
800	1710	<1500

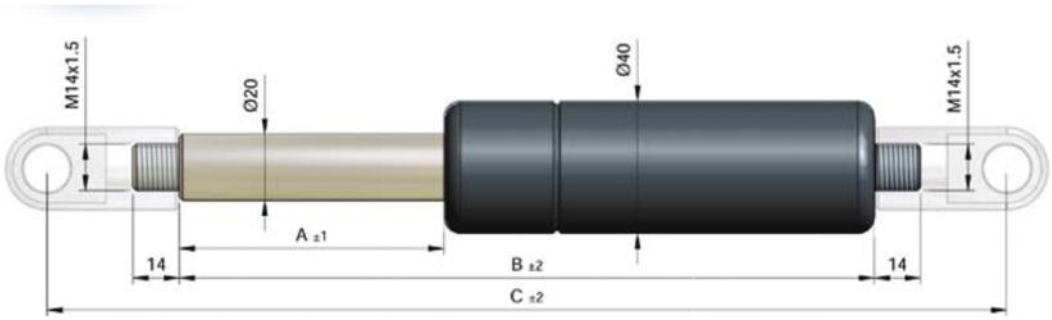
Extras	**See p.**
Protection Tube	55
Valve special	58
Special Damping	56-57
Special Extension Speed	57
Other	60
Fittings	61-70
End position Locking	49

A: 40 min. – 1000 max.
F1(N): min. 250N / max. 2500N
Progression: ~ 50 %

Ordering Example

D40 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D40 – Group



Standard		
A (mm)	**B (mm)**	**F1(N)**
50	220	<5000
100	270	<5000
120	360	<5000
150	420	<5000
200	520	<5000
250	620	<5000
300	720	<5000
350	820	<5000
400	920	<5000
450	1020	<5000
500	1120	<5000
600	1320	<5000
700	1520	<5000
800	1720	<5000
900	1920	<5000
1000	2120	<5000

Extra	**See p..**
Protection Tube	55
Special damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A (mm): 50 tot 1500
F1 (N): 50 tot 5000
Progression: **~ 45%**

Ordering Example

D20/40 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D20/40 – Group

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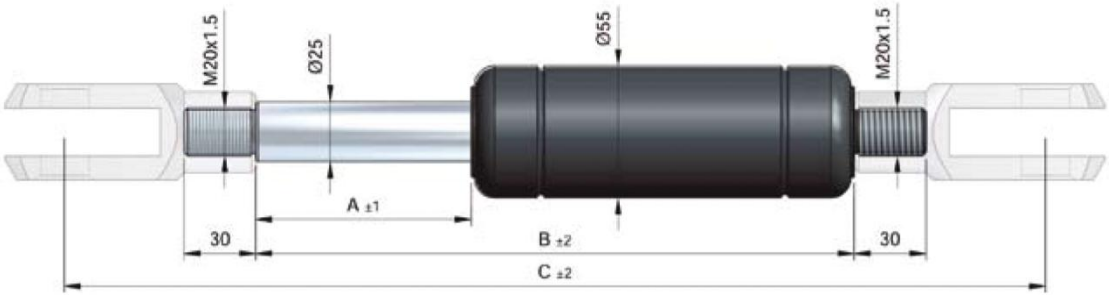


Standard	
A	**B**
50	220
100	270
120	360
150	420
200	520
250	620
300	720
350	820
400	920
450	1020
500	1120
600	1320
700	1520
800	1720
900	1920
1000	2120

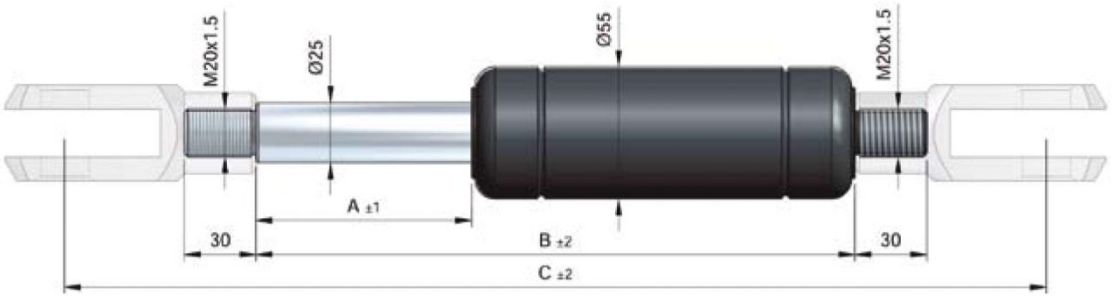
Extras	See p.
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 50 min. – 1500 max.
F1(N): min. 500N / max. 5000N
Progression: ~ 45 %

Ordering Example

D20/40 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D20/40 – Group



Standard	
A	**B**
100	340
150	440
200	540
250	640
300	740
400	940
450	1040
500	1140
600	1340
700	1540

Extras	See p.
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 100 min. – 700 max.
F1(N): min. 500N / max. 7500N

Ordering Example

D20/55 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D20/55 – Group

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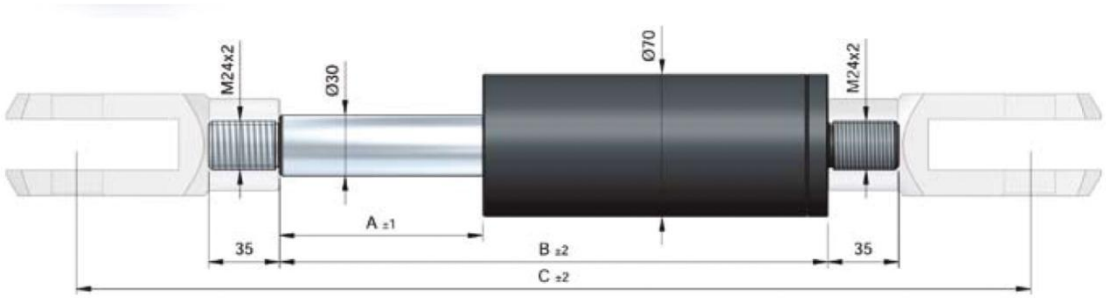


Standard	
A	**B**
100	360
150	460
200	560
250	660
300	760
350	860
400	960
450	1060
500	1160
600	1560
700	1760

Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70
End position lock	49

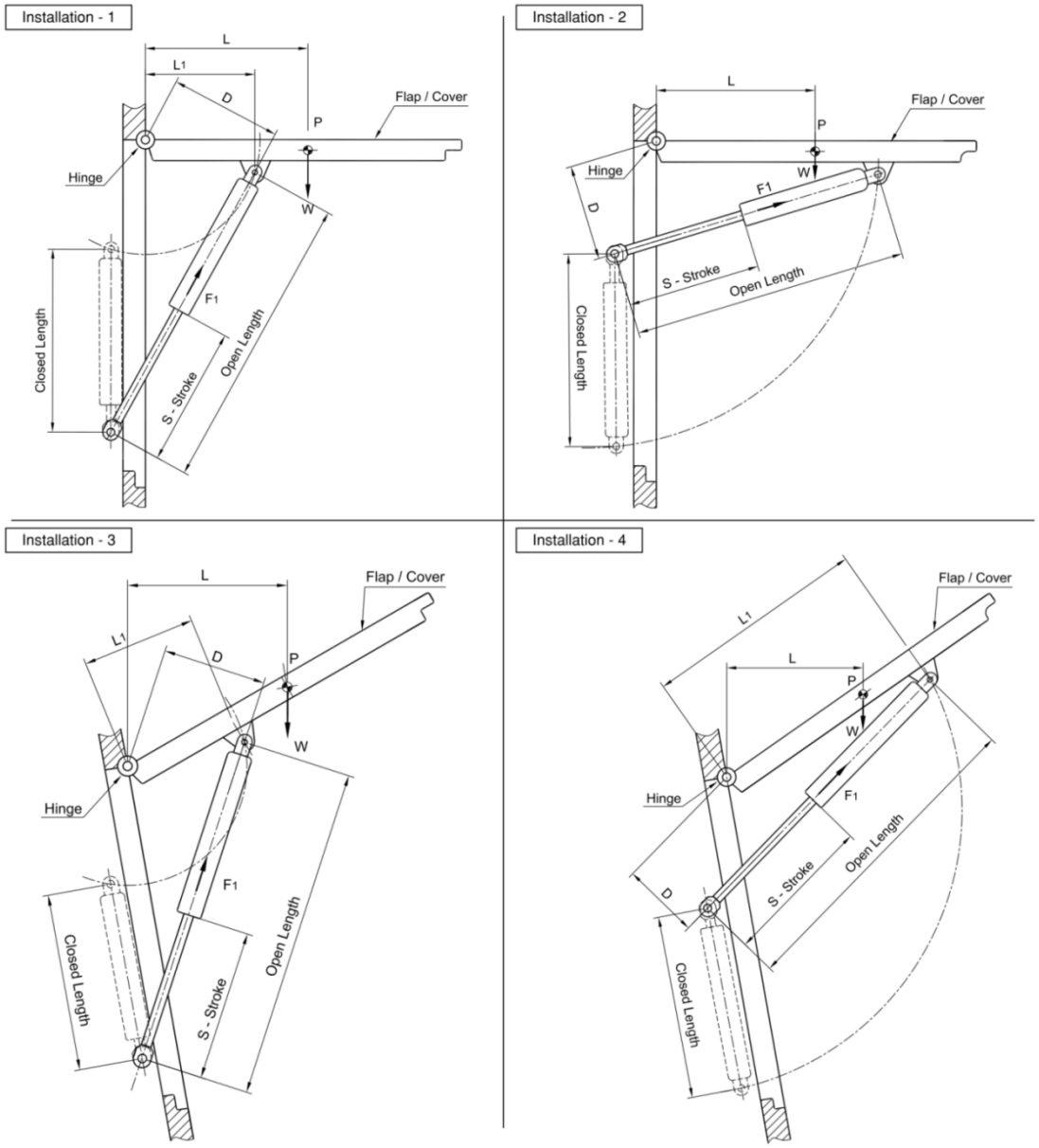
A: 100 min. – 800 max.
F1(N): min. 1000N / max. 10000N

Ordering Example

D20/55 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- D20/55 – Group

Calculation sheet



P = center of gravity
L1 = Horizontal distance between gas spring and pivot point
For installation according to 1 & 3 it is recommended that L1 = 2/3 L and D = 0.8 stroke
For installation according to 2 & 4 it is recommended that D = 1/3 to 2/3 of L1
W = Weight of the cover in Newton
L = Vertical distance of F1
D = Horizontal distance between center of gravity and pivot point
n = Number of gas springs
F1=(W x L)/(D x n)+10%

$$\mathbf{F1} = \frac{\boldsymbol{W\ x\ L}}{\mathbf{D\ x\ n}} + \mathbf{10\%}$$

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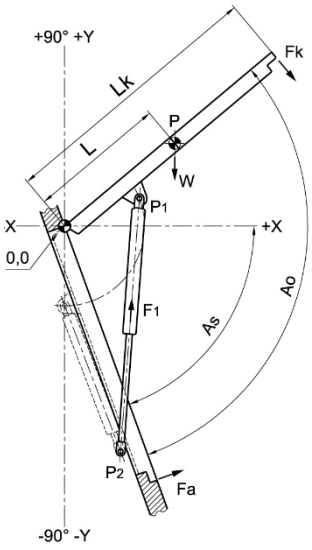
Gas spring calculation request sheet
Companie :
Name of applicant :
Email :
Address :
City :
Phone Number :
Delevery time :



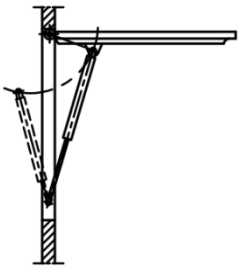
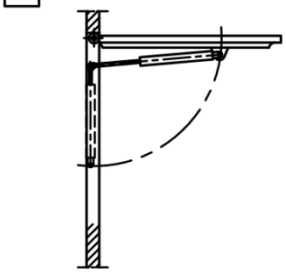
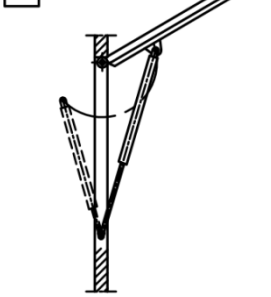
P1	Fixing point of flap	X: Y:
P2	Fixing point of frame	X: Y:
0.0	Pivot point	
LK	Length of lid from pivot point	
L	Length of centre of gravity from pivot	mm
As	Closed position angle of lid Degrees	(0° to -90° 0° to +90°)
Ao	Required opening angle of lid	degres
FK	Weight of lid	Kg
F1	Nominal force of gas springs	N
FK	External force to close the flap	N
Fa	External force to open the flap	N

Function of gas spring	☐ Moment/Force balancing	☐ Holding at open/closed position
Is there a separate locking device	☐ In open position	☐ In closed position
The flap is mainly	☐ Open	☐ Closed
Do you need damping?	☐ In extension …… mm	☐ In compression …. mm/in
Ambient Temperature Range	☐ ……°C to……. °C	☐ ……..°F to ……..°F
Operating environment	☐ Aerial ☐ Water	☐ Food-medical ☐ Other
Does the application require biological/foodgrade oil?	☐ Yes	☐ No
RVS	☐ Yes	☐ No
Blocked	☐ Yes	☐ No

Gas spring calculation

Technical specification :

Vertical: ☐
Piston rod downwards: ☐
Piston rod upwards: ☐
Horizontal: ☐
Application: ☐

☐  ☐  ☐  ☐

Damping	Speed
☐ Demping on extension	☐ Speed: …… m/s
☐ Normal ☐ No ☐ Strong	☐ Normal ☐ Slow ☐ Fast
☐ Hydraulische Stroke …. …….mm	
☐ Damping on compression ☐ No ☐ Yes	☐ Compression speed

If not stated above : the production will be	
Installation	Rod down wards
Damping on extension	Normal
Hydraulic Stroke	Normal
Extension Speed	Normal
Compression Speed	Fast

Traction

The working principle of the GT-Lift is the opposite of the Lift type gas spring. While the Lift type gas spring is always prepared to extend (i.e. to open lid and covers) the GT-Lift's function is to retract itself, in other words the gas pressure inside the tube pulls the piston rod inward. In its resting position, the spring is compressed; the piston rod must be pulled to extend it.GT-Lift gas springs are great for use on doors, lids, hatches and hoods that need to stay closed.

Basis

GT-Lift gas springs are having a standard fast extension speed.GT-Lift gas springs should be mounted with the piston rod pointing upwards. Standard GT-Lift gas springs are without damping.

T- Lift with valve

Depending on the GT-Lift group the valve is either on the piston rod or on the tube end. The valve enables releasing of the gas pressure if necessary.

T-Lift gas springs with protection tube

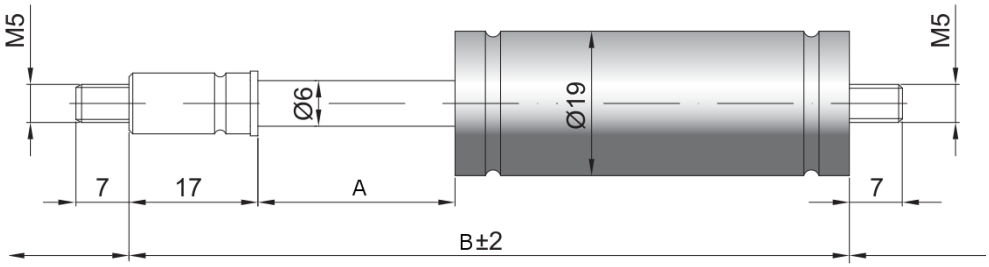
Protection tubes are used to protect the piston rod against shocks, dirt and all kinds of scratches which are affecting the lifetime of the gas spring.

T-Lift with end damping option.

Standard T-Lift gas springs are without damping.
T-Lift with damping option is available on request.

Inox T-Lift (Stainless Steel T-Lift)

T-Lift type gas springs are also available in stainless steel for superior corrosion protection.



Standard	
A	**B**
30	160
50	200
60	220
70	240
80	260
100	300
120	340
140	380
150	400
180	460
200	500
250	600
300	700

Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70
End position lock	49

A: 30 min. – 300 max.
F1(N): min. 30N / max. 330N
Progression : 10%

Ordering Example

Z06/19 - A - C - GZ - GZ - F1 - Extra

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- Z06/19 – Group

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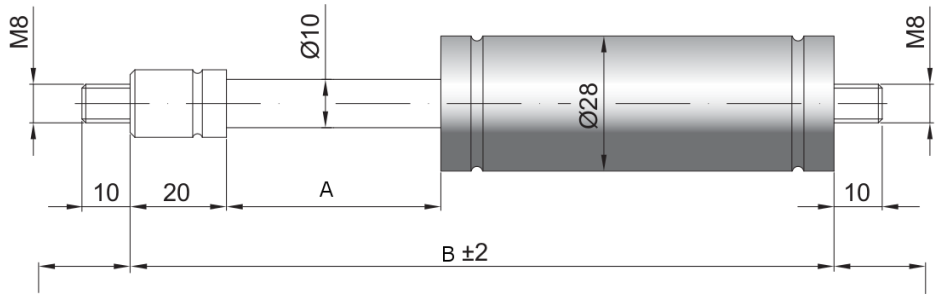


Standard	
A	**B**
20	140
50	200
60	220
70	240
80	260
100	300
110	320
120	340
130	360
150	400
160	420
180	460
200	500
210	520
220	540
250	600
260	620
300	700
350	800
360	820
400	900
500	1100
600	1300

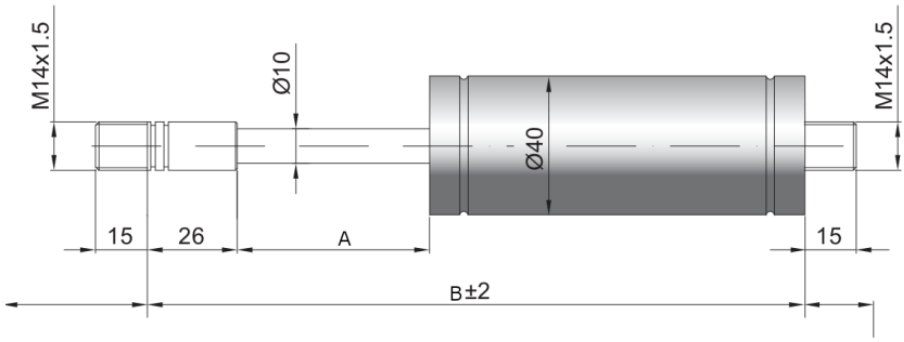
Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70
End position lock	49

A: 20 min. – 600 max.
F1(N): min. 150N / max. 1200N
Progression : 20%

Ordering Example

Z10/28 - A - C - GZ - GZ - F1 - Extra

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Stroke
- Z10/28 – Group



Standard	
A	**B**
10	170
40	230
50	250
60	270
70	290
90	330
100	350
110	370
120	390
140	430
150	450
170	490
190	530
200	550
210	570
240	630
250	650
290	730
340	830
350	850
390	930
440	1030
490	1130
590	1330

Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70
End position lock	49

A: 10 min. – 590 max.
F1(N): min. 200N / max. 2000N
Progression : 40%

Ordering Example

Z10/40 - A - C - GZ - GZ - F1 - Extra

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Stroke
- Z10/40 – Group

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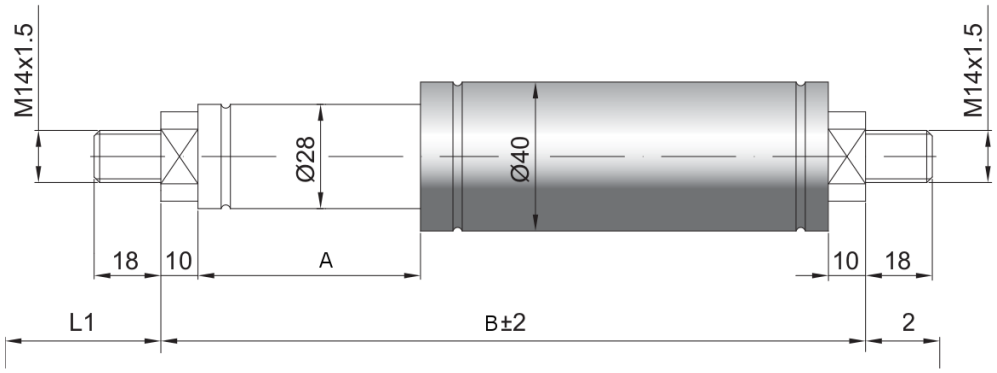


Standard	
A	**B**
50	250
80	325
100	375
120	425
150	500
200	625
250	750
300	875
350	1000
400	1125
450	1250
500	1375
600	1625
700	1875

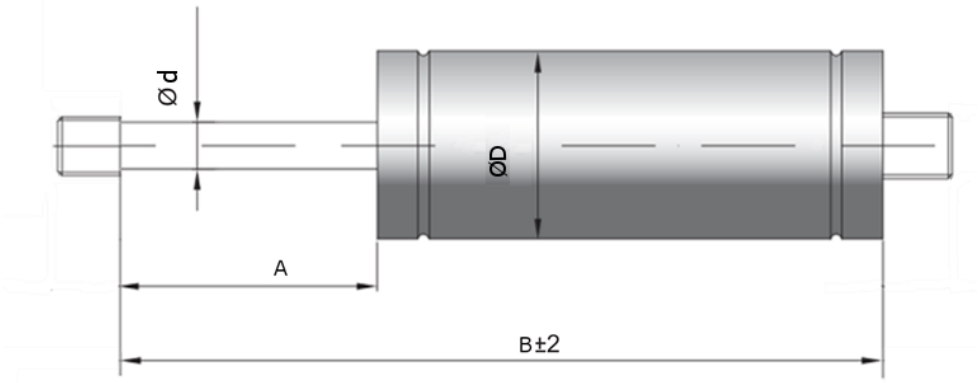
Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70
End position lock	49

A: 50 min. – 700 max.
F1(N): min. 500N / max. 5000N
Progression : 40%

Ordering Example

Z28/40 - A - C - GZ - GZ - F1 - Extra

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Storke
- Z28/40 – Group



Ød	ØD	Group	A	B	Force F1	Progression
8	18	GT 8/18	10 – 250	2 x A + 64	50 – 500	Min. % 25
8	22	GT 8/22	10 – 250	2 x A + 64	50 – 500	Min. % 15
10	28	GT 10/28.A	50 - 700	2 x A + 95	150 – 1200	Min. % 20
10	28	GT 10/28.B	50 – 500	2 x A + 95	150 – 1200	Min. % 60
14	40	GT 14/40	10 – 650	2 X a +125	200 – 2000	Min. % 20
28	40	GT 28/40	10 – 650	2,5 x A +125	500 – 5000	Min. % 40

You can find the available fittings on the pages below:

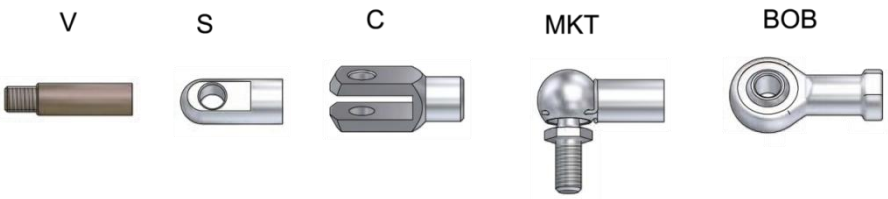
Group	P.
GT 8/18	61-70
GT 8/22	
GT 10/28.A	
GT 10/28.B	
GT 14/40	
GT 28/40	

Ordering Example

GT10/28.A - A - C - GZ - GZ - F1 - Extra

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Stroke
- GT10/28.A – Group

Available Fixations



Stainless Steel (RVS)?

The many unique values provided by stainless steel makes it a powerful candidate in materials selection. Engineers, specifiers and designers often underestimate or overlook these values because of what is viewed is the higher initial cost of stainless steel. However, for specific applications such as in the marine, chemical and food industries, stainless steel is often the best value option.

INOXLIFT – stainless steel gas springs

Need protection against corrosion, erosion and the ravage of time? We offer you springs made of SAE304 or SAE316L grade stainless steel for superior corrosion protection. It's the ideal corrosion fighter in wash down areas for the food and packaging industries as well as outdoor environments.

The "Inoxlift" type is the stainless steel made of, our most popular gas spring the "Lift". They are preferred if corrosion resistance is paramount and a high level protection against corrosive environments is mandatory.

There are thousands of applications where the Inoxlift type can be used. Basic applications are wherever harsh conditions or environment are a concern, where a high level cleanliness and hygiene is necessary, where an aesthetic appearance is preferred.

Most common applications are in the marine/ship building, on medical equipment, chemical and food industries. Basic extras such as various valve systems, protection tubes, special extension speed, special Temperature range (up to -45°C or up to +200°C) and special damping are also available for Inoxlift gas springs.

Importante Notice

As minor quantities of fluid may leak from gas springs we suggest using food grade lubricating oils in place of industrial grade hydraulic fluids for applications in FOOD and/or MEDICAL industries.

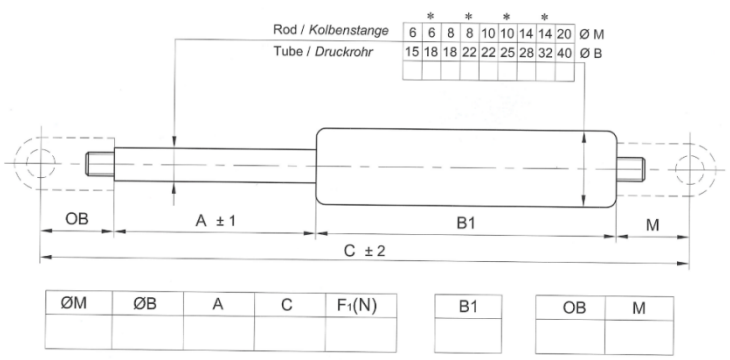
A wide range of size options and alternative end fittings and brackets are available to fulfill your demands for your individual application.

Gas Spring application

Compagny:
Name of applicant:
e-mail:
Adress:
City:
Phone Number:
Delevery time:

Standard version : ☐
Stainless steel SAE 304 ☐
Stainless steel SAE 316L ☐

Installation		
Vertical	☐ Piston rod downwards	☐ Piston rod upwards
Horizontal		
Demping on extension	☐ Yes ☐ No	
Hydraulic stroke		
Speed	☐ Normal	☐ Slow ☐ Speed
Retraction speed	☐ Slow	☐ Speed
0 Standard (if not stated, standard features will be considered as valid).		



Order												
ØM	**-**	**ØB**	**-**	**A**	**-**	**C**	**-**	**GZ**	**-**	**GZ**	**-**	**F1(N)**
	-		-		-		-		-		-	

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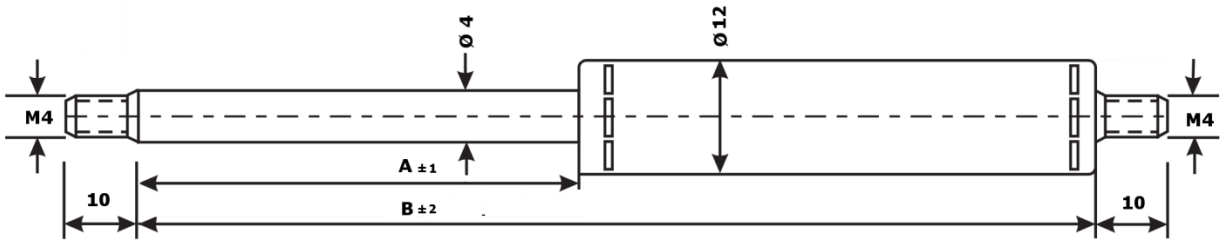


Standard		
A	**B**	**F1(N)**
10	60	*
20	80	*
30	100	*
40	120	*
50	140	*
60	160	<125
70	180	<125
80	200	<100
90	220	<100
100	240	<100

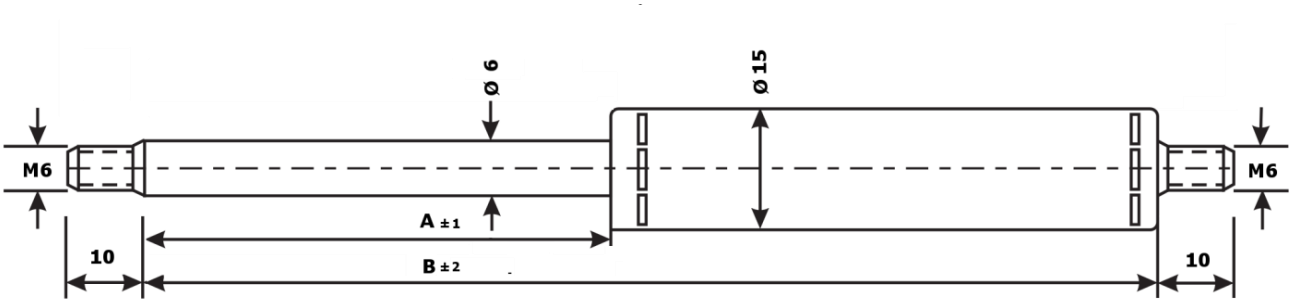
Extras	**Zie p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 10min – 100 max.
F1(N): min. 10 / max. 100N
Progression: ~ 19 %

Ordering Example

D4/12 - A - C - GZ - GZ - F1 - RVS - Extra

- RVS – Rod/Tube RVS 316
- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Storke
- D4/12 – Group



Standard		
A	**B**	**F1(N)**
25	106	*
50	156	*
75	206	<375
100	256	<350
125	306	<325
150	356	<300

Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 25min – 300 max.
F1(N): min. 25 / max. 400N
Progression: ~ 27 %

Ordering Example

D6/15 - A - C - GZ - GZ - F1 - RVS - Extra

- RVS – Rod/Tube RVS 316
- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Storke
- D6/15 – Group

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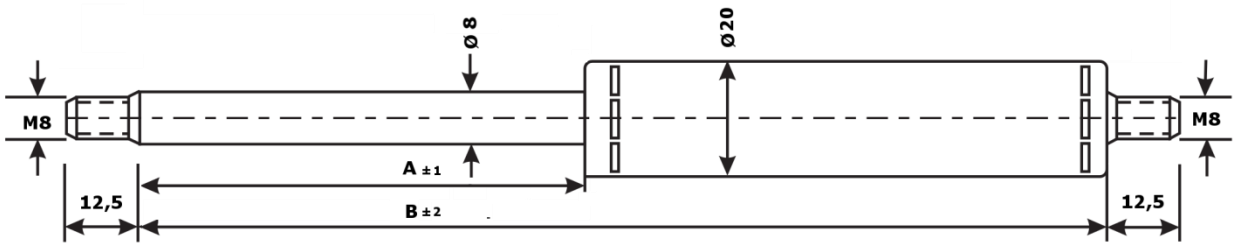


Standard		
A	**B**	**F1(N)**
25	115	*
50	165	*
75	215	*
100	265	*
150	365	<325
200	465	<300
250	250	<565

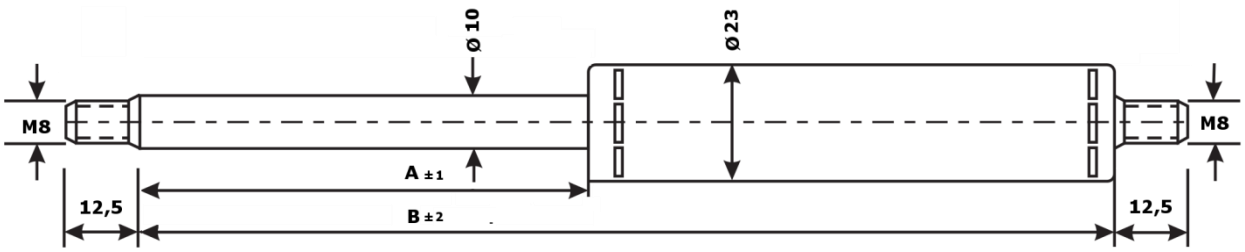
Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 25min – 300 max.
F1(N): min. 25 / max. 375N
Progression: ~ 33 %

Ordering Example

D8/20 - A - C - GZ - GZ - F1 - RVS - Extra

- RVS – Rod/ Tube RVS 316
- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Storke
- D8/20 – Group



Standard		
A	**B**	**F1(N)**
100	265	*
150	365	*
200	465	*
250	565	*
300	665	<0700
350	765	<0600
400	865	<0550
500	1065	<0500

Extras	**Seee p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 100min – 265 max.
F1(N): min. 100 / max. 1150N

Progression: ~ 33 %

Ordering Example

D10/23 - A - C - GZ - GZ - F1 - RVS - Extra

- RVS – Rod/Tube RVS 316
- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Storke
- D10/23 – Group

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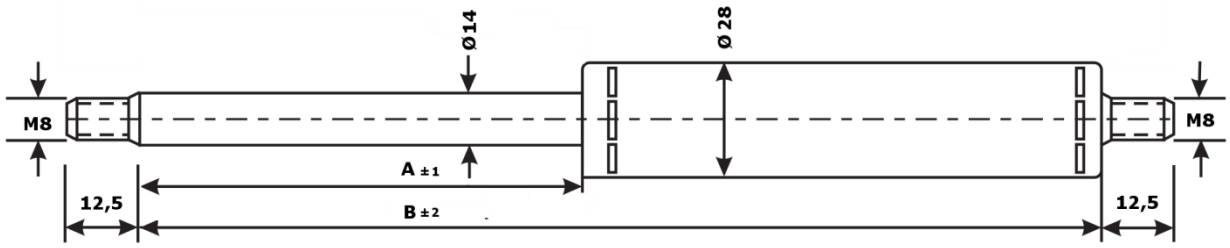


Standard		
A	**B**	**F1(N)**
100	265	*
150	365	*
200	465	*
250	565	*
300	665	*
350	765	<1700
400	865	<1600
450	965	<1550
500	1065	<1500

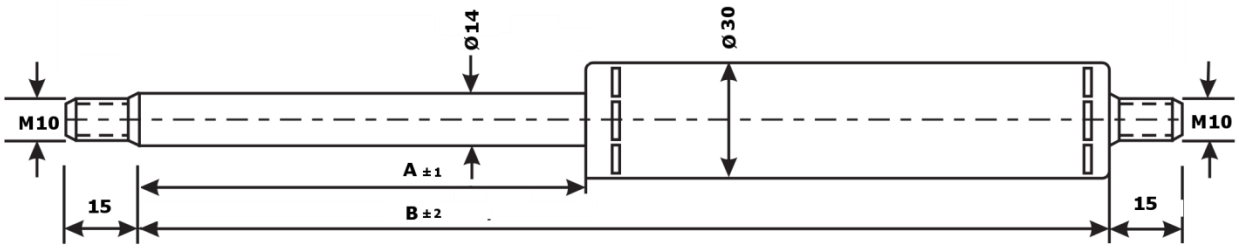
Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 100min – 265 max.
F1(N): min. 100 / max. 2500N
Progression: ~ 52 %

Ordering Example

D14/28 - A - C - GZ - GZ - F1 - RVS - Extra

- RVS – Rod/Tube RVS 316
- F1 – Force in Newton
- GZ – Fitting op cilinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Storke
- D14/28 – Group



Standard		
A	**B**	**F1(N)**
50	155	*
100	255	*
150	355	<2250
200	455	<2000

Extras	**See p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 50min – 165 max
F1(N): min. 150 / max. 3000N
Progression: 52%

Ordering Example

D14/30 - A - C - GZ - GZ - F1 - RVS - Extra

- RVS – Rod/Tube RVS 316
- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Storke
- D14/30 – Group

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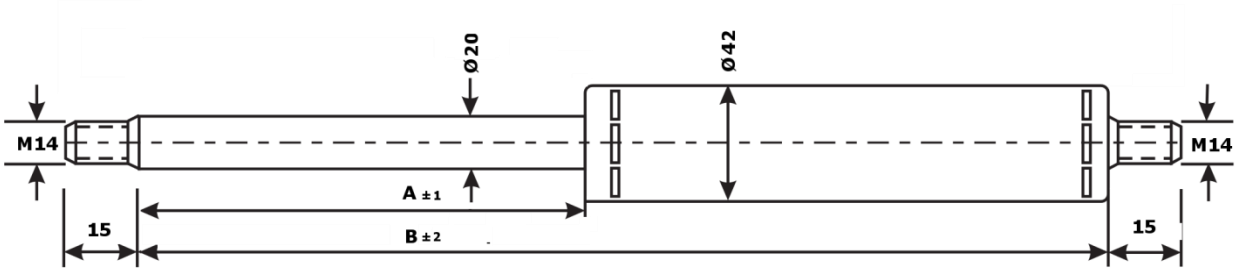


Standard		
A	**B**	**F1(N)**
100	335	*
150	435	*
200	535	*
250	635	*
300	735	*
350	835	*
400	935	<4000
500	1135	<3500
600	1335	<3000
700	1535	<2800
800	1735	<2700
900	1935	<2600
1000	2135	<2500

Extras	**Zie p.**
Protection Tube	55
Special Damping	56-57
Special Extension Speed	58
Other	60
Fittings	61-70

A: 100min – 335 max.
F1(N): min. 500 / max. 5000N
Progression: ~ 45 %

Ordering Example

D20/42 - A - C - GZ - GZ - F1 - RVS - Extra

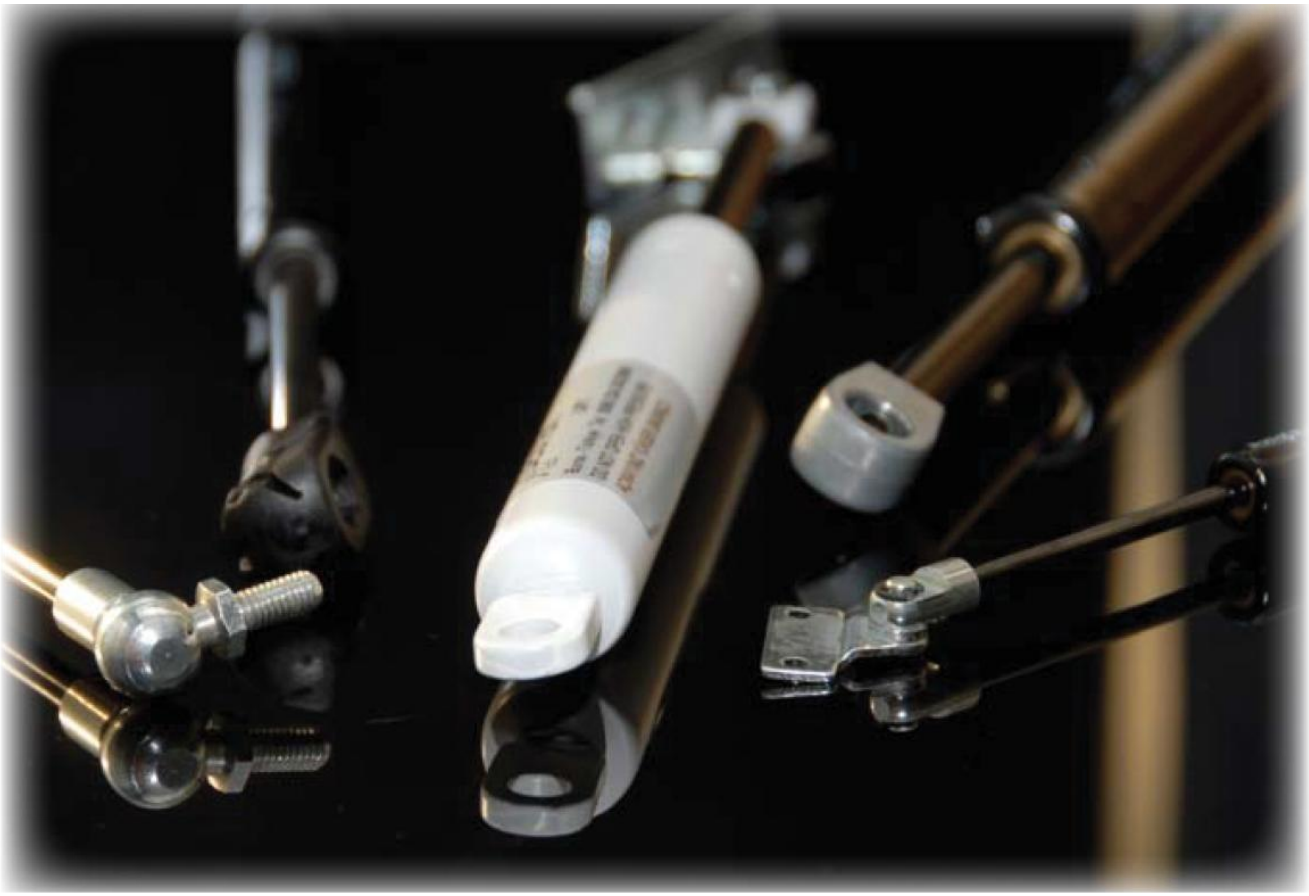
- RVS – Rod/Tube RVS 316
- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extented length
- A – Storke
- D20/42 – Group

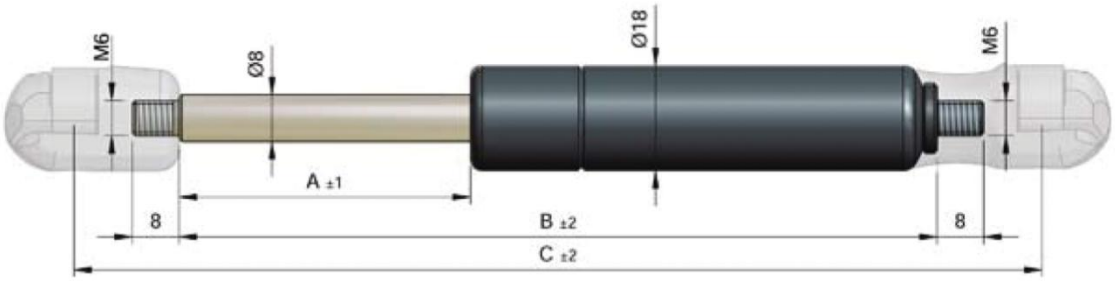
STOPLIFT (Gas spring enabling variable positioning)

All gas springs are force supplying units which provide easy control for lifting, counterbalancing, lowering, tilting and damping lids, covers and weights. Some applications require multi-position holding capability over the entire stroke range in addition to the force supply feature of gas springs .For such applications we offer our Stoplift gas spring which enables multi-position holding without need of an outside stop or support. The only difference to the Lift type gas spring is a special locking element integrated in the piston package.

Designed and engineered to fit your individual application the Stoplift allows fingertip control and easy movement of the weight to any desired position between open and closed. For example, delicatessen counter doors that swing upward are held open at any angle. Once the position is set by the user, the gas spring will remain in its position until an additional force is applied to re-set the position.

The Stoplift is ideally suited for a wide variety of applications where a weight must be able to be raised and held at any angle without an outside stop or support. Common applications are for sunbeds (solarium), monitor arms, delicatessen counters, automotive hatchback doors, etc.





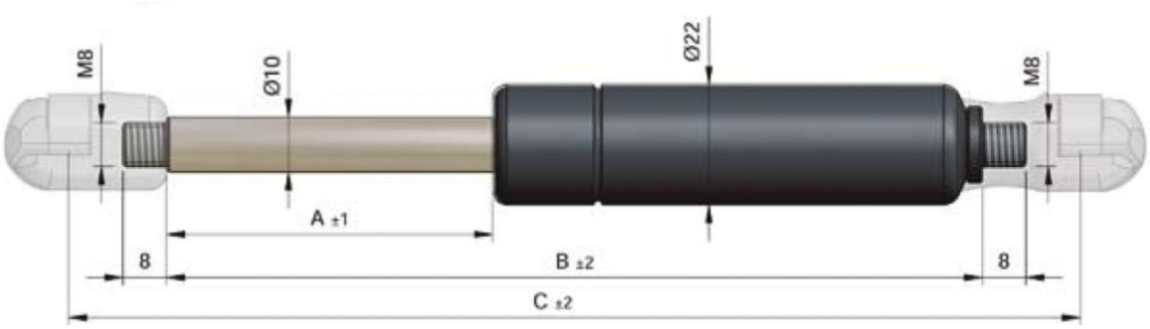
A-stroke	min.50 – max.300
C – Extended length	min.200 – max.750
F1 Force	min.200N – max.700N
Fs holding force **Standard** **Option 1** **Option 2** **Fs – Max.**	 F1+ 250N F1 + 100N F1 + 450N 800N

Extra	**See p.**
Protection Tube	55
Valve	58
Other	60
Fittings	61-70

Ordering Example

SL18 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- SL18 – Group



A-Stroke	Min.50 – max.300
C-Extension Lenght	Min.200 – max.750
F1 – Force	Min.200N – max.1000N
Fs Holding Force **Standard** **Option 1** **Option 2** **Fs – Max**	 F1 + 250N F1 + 100N F1 + 450N 1200N

Extras	**See p.**
Protection Tube	55
Valve	58
Other	60
Fittings	61-70

Ordering Example

SL10/22 - A - C - GZ - GZ - F1 - Extras

- F1 – Force in Newton
- GZ – Fitting on cylinder
- GZ – Fitting on piston rod
- C – Extended length
- A – Stroke
- SL10/22 – Group

STEP – STOP

Gas springs with multi stroke section

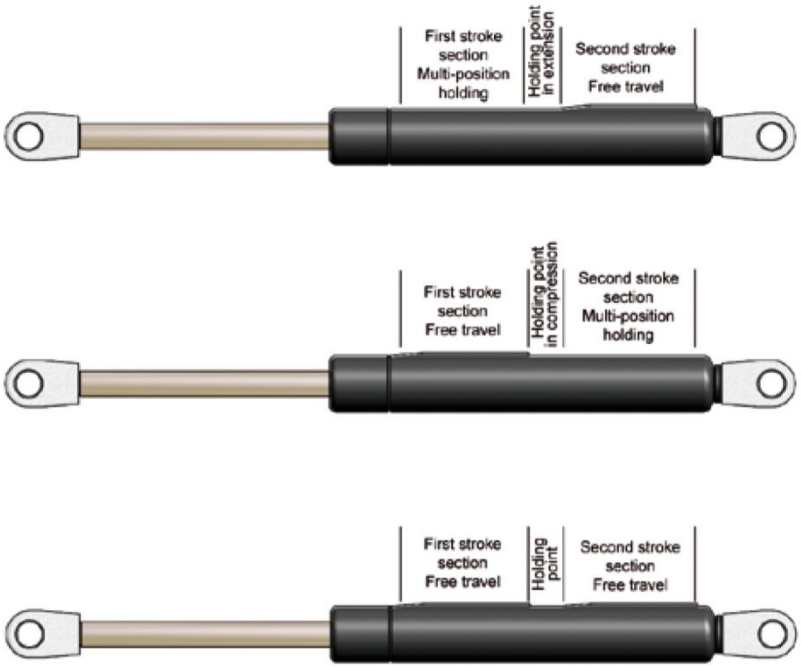
The Step Stop is a multi-section operating gas spring dividing the opening stroke into multi distinct sections for desired flap positioning. The Steop-Stop operates much like a normal gas spring in that it allowas a lid or door to popen to a desired position and lock internally.

The multi stroke sections are achieved by grooves and holding points on the tube. The Step-Stop gas spring stops at each holding point and will not operate until it is reactivated by an additional break awat force, thus enabling multi poisioning on your applications flap, etc.

Technical Details

- Steop-Stop gas springs are available with as many stroke sections as required.
- The travel of the gas spring within holding points can be either
- With free travel (like normal Lift gas springs)
- With multi-position holding capability over the selected stroke section (like Stoplift gas springs)

As mentioned, the number of stroke sections is limitless and the behavior in these stroke sections can be various. Popular alternatives are as illustrated below:



LIFT &LOCK

gasveren met eindstand vergrendeling

Lift type gas springs have two main positions; the fully extended and the fully closed positions. Some applications require rigid holding at these positions due to:

- Legal requirements demanding safety precautions against unintentional movement
- Necessity of extra security to prevent closing of the gas spring without the users' control
- Applications where the gas spring is subjected to uncontrollable forces which are exceeding its extension force.

Lift gas springs with additional end position locking feature are the ideal choice for such applications.

Variants of Lift with end position locking feature are:

- Lift&lockt-LT: provides end position locking at fully extended position by an additional automatic locking / safety tube.
- Lift&lock-LE: provides end position locking at fully extended position by an integrated locking element.
- Lift&lock-LC: provides end position locking at fully compressed position by an integrated locking element.
- Lift&lock-LD: provides end position locking at fully extended and fully compressed position by an integrated locking element.

The advantages of an additional end position lock are :

- Rigidness at extended and/or closed position of the gas spring
- Eliminates the need of additional mechanical locking elements on the application thus reducing production and installation costs
- Safe and easy to use self-contained units which operate automatically and thus providing locking and unlocking controlled directly on the gas spring
- Additional protection against uncontrolled closing and/or opening
- Absorption of uncontrollable or unforeseeable external forces (ie. snow load or under a heavy wind)
- Maintenance Free
- Custom sized to fit your individual application

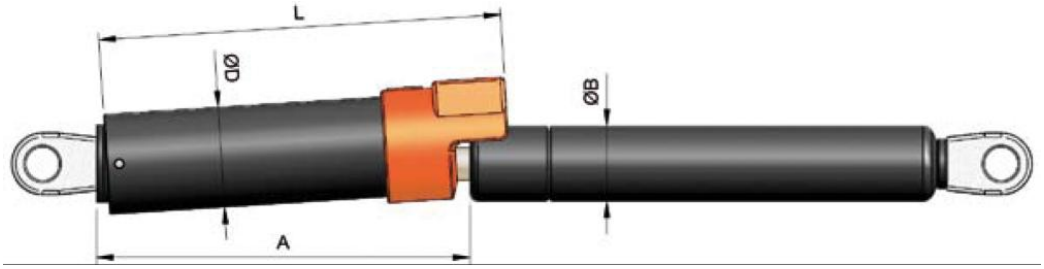
LIFT&LOCK-LT

The Lift&Lock-LT is equipped with an automatic locking/safety tube which is an external mechanical locking device mounted over the piston rod. It is simple to use and operates automatically. When the gas spring is fully extended the spring-loaded automatic locking/safety tube springs into place and blocks the moving way of the piston rod, thus preventing the gas spring from compressing. To compress the gas spring again, the operator has to press the marked “PRESS” button. The automatic locking/safety tube moves over the pressure tube when the gas spring closes. An additional feature of the automatic locking/safety tube is that it protects the piston rod against dirt, scratches, paint and all kinds of damage.

Technical advice

If more than one gas spring is used in an application it is usually sufficient to use the Lift&Lock-LT in conjunction with a regular Lift type gas spring.

The Lift&Lock-LT is available in any desired length for the most common Lift groups.



Group	Ø Body	Lenght	Loss of working stroke
8/18	24	A + 7mm	20mm
10/22	28	A + 7mm	20mm
10/28	32	A + 20mm	20mm
14/28	32	A + 20mm	20mm

Lift & Lock with integrated locking mechanism

Another Lift&Lock type as spring features various locking alternatives achieved by an integrated locking mechanism. It is simple to use and operates automatically. The mechanical lock consists of two parts, one on the piston rod and one inside the tube, and locks the gas spring at the required end position (either at extended, compressed or at extended and compressed positions), thus preventing the gas spring from uncontrolled extending and/or closing. To release the locking, the piston rod must be briefly pushed in (in direction of compression) for approximately 10mm.

Variants of Lift&Lock with integrated locking mechanism are:

- Lift&lock-LE: provides end position locking at fully extented position by an integrated locking element.
- Lift&lock-LC: provides end position locking at fully compressed position by an integrated locking element.
- Lift&lockt-LD: provides end position locking at fully extended and fully compressed position by an integrated locking element.

Technical advice

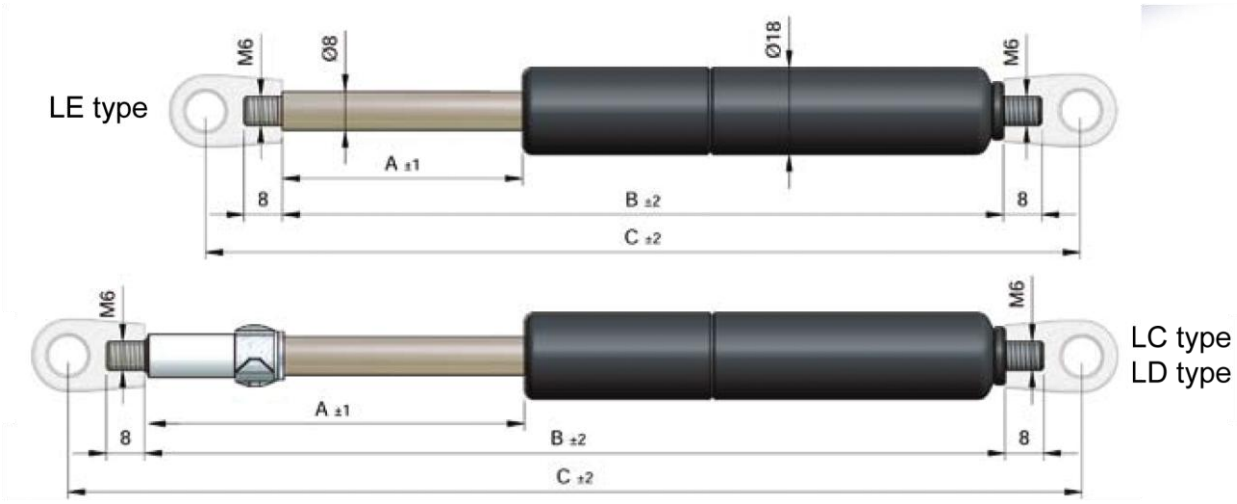
- If more than one gas spring is used in an application, it is usually sufficient to use the Lift&Lock in conjunction with a regular Lift type gas spring.
- A major advantage of the Lift&Lock with integrated locking mechanism is that releasing the gas spring and adjusting the application can be done with one hand.

Technical details

Lift&lock with integrated locking mechanism are available in 8/18, 8/22 and 10/22. Group 8/22 and 10/22 are special order items.

Important notice:

1. To ensure that the locking mechanism does not release unintentionally, tje external load exerted by the application onto the gas spring must be hreater that the F1 (extension force) of the gas spring.
2. In order that the gas spring can be unlocked, a free play of ~10mm in compression direction must be allowed at the gas springs'locked position.
3. Overload in locked position should be avoided as this may cause bending of the piston rod.



STANDARD			
A	B LE-LC	B LD	F1 (N)
50	180	210	*
60	200	203	*
80	240	270	*
100	280	310	*
120	310	340	*
140	360	390	*
150	380	410	*
160	400	430	*
180	440	470	*
200	480	510	*
220	510	540	*
250	580	610	*

Ordering Example

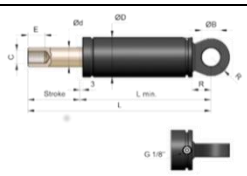
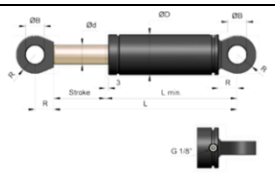
LE8/18
LC8/18 - A - C - GZ - GZ - F1 - Extra
LD8/18

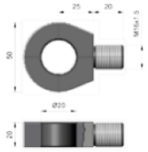
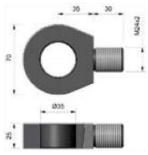
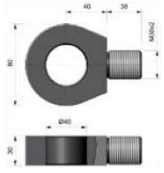
- Force in Newton
- Fitting on cylinder
- Fitting on piston rod
- C – Extented length
- A – Storke
- Group

LKD – gasveren voor “heavy duty” toepassingen

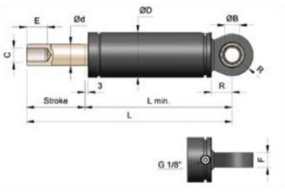
The LKD range is our heavy duty range of gas springs. This range is built of piston rod diameters ranging from 25 to 65 mm and tube diameters ranging from 50 to 120 mm. They are designed and engineered to fit heavy duty applications requiring forces from 740 kg to 5000 kg. The LKD is ideally suited for a wide variety of applications in the machinery industry. The LKD type is, due to its very high pressure, subject to the European Pressure Equipment Directive. The design, manufacture and testing of the Gas Springs have been approved according to the European Pressure Equipment Directive (97/23/EC) also known as PED. The Pressure Equipment Directive (PED) replaces all previous European legislative laws covering the design, manufacture and testing of pressure vessels.

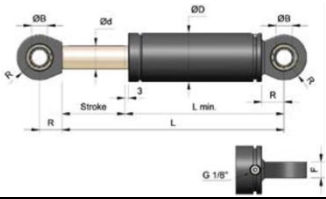
End fittings with bushing

	
Ordering example LKD2 750 - 013	**Ordering example** LKD2 750 – 013 – B375
Pressure Medium : Nitrogen N2 **Max. filling pressure** : 150 bar **Min. Filling pressure** : 25 bar	**Working temperature** : 20°C ile + 80°C **Temperature related to force variation** : +- % 0.3 / °C **Max. recommendencycles/min:** approx..15 to 40 (at 20°C)

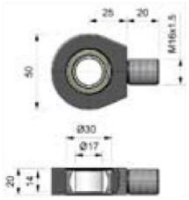
Reference	Stroke mm	L mm	L.min mm	Ød	ØD	ØB	C	E	F	R	F0 daN-max	F2 daN	
LKD1 750 - 013	13	145.4	132.7	25	50	20	M16x1.5	22	20	25	740	1200	 LKD1 750 - xxx
LKD1 750 - 025	25	170	145									1200	
LKD1 750 – 038	38	196	158									1200	
LKD1 750 – 050	50	220	170									1200	
LKD1 750 – 063	63	247	183.5									1200	
LKD1 750 – 080	80	280	200									1200	
LKD1 750 – 100	100	320	220									1200	
LKD1 750 – 125	125	370	245									1210	
LKD1 750 – 160	160	440	280									1210	
LKD1 750 – 200	200	520	320									1210	
LKD1 750 – 250	250	620	370									1210	
LKD1 750 - 300	300	720	420									1210	
LKD1 1500 – 025	25	195	170	36	75	35	M24x2	32	22	35	1500	2300	 LKD1 1500 - xxx
LKD1 1500 – 038	38	221	183									2300	
LKD1 1500 – 050	50	245	195									2300	
LKD1 1500 – 063	63	272	208.5									2300	
LKD1 1500 – 080	80	305	225									2300	
LKD1 1500 – 100	100	345	245									2300	
LKD1 1500 – 125	125	395	270									2300	
LKD1 1500 – 160	160	465	305									2300	
LKD1 1500 – 200	200	545	345									2300	
LKD1 1500 – 250	250	645	395									2300	
LKD1 1500 – 300	300	745	445									2300	
LKD1 3000 – 025	25	210	185	50	95	40	M30x2	40	30	40	3000	4200	 LKD1 3000 - xxx
LKD1 3000 – 038	38	236	198									4300	
LKD1 3000 – 050	50	260	210									4400	
LKD1 3000 – 063	63	287	223.5									4500	
LKD1 3000 – 080	80	280	240									4600	
LKD1 3000 – 100	100	360	260									4700	
LKD1 3000 – 125	125	410	285									4700	
LKD1 3000 – 160	160	480	320									4700	
LKD1 3000 – 200	200	560	360									4800	
LKD1 3000 – 250	250	660	410									4800	
LKD1 3000 – 300	300	760	460									4800	

Eindstukken zonder lager





Ordering example: LKD2 750 - 013	**Ordering example** : LKD2 750 – 013 – B366
Pressure Medium : Nitrogen N2 **Max. filling pressure** : 150 bar **Min. Filling pressure** : 25 bar	**Working temperature** : 20°C ile + 80°C **Temperature related to force variation** : +- % 0.3 / °C **Max. recommendencycles/min:** approx..15 to 40 (at 20°C)

Refference	Stroke mm	L mm	L.min mm	Ød	ØD	ØB	C	E	F	R	F0	F2	
LKD2 750 - 013	13	145.4	132.7	25	50	20	M16x1.5	22	20	25	740	1200	 LKD2 750 - xxx
LKD2 750 - 025	25	170	145									1200	
LKD2 750 – 038	38	196	158									1200	
LKD2 750 – 050	50	220	170									1200	
LKD2 750 – 063	63	247	183.5									1200	
LKD2 750 – 080	80	280	200									1200	
LKD2 750 – 100	100	320	220									1200	
LKD2 750 – 125	125	370	245									1210	
LKD2 750 – 160	160	440	280									1210	
LKD2 750 – 200	200	520	320									1210	
LKD2 750 – 250	250	6520	370									1210	
LKD2 750 - 300	300	720	420									1210	
LKD2 1500 – 025	25	195	170	36	75	35	M24x2	32	22	35	1500	2300	 LKD2 1500 - xxx
LKD2 1500 – 038	38	221	183									2300	
LKD2 1500 – 050	50	245	195									2300	
LKD2 1500 – 063	63	272	208.5									2300	
LKD2 1500 – 080	80	305	225									2300	
LKD2 1500 – 100	100	345	245									2300	
LKD2 1500 – 125	125	395	270									2300	
LKD2 1500 – 160	160	465	305									2300	
LKD2 1500 – 200	200	545	345									2300	
LKD2 1500 – 250	250	645	395									2300	
LKD2 1500 – 300	300	745	445									2300	
LKD2 3000 – 025	25	195	170	50	95	40	M30x2	40	30	40	3000	4200	 LKD2 3000 - xxx
LKD2 3000 – 038	38	221	183									4300	
LKD2 3000 – 050	50	245	195									4400	
LKD2 3000 – 063	63	272	208.5									4500	
LKD2 3000 – 080	80	305	225									4600	
LKD2 3000 – 100	100	345	245									4700	
LKD2 3000 – 125	125	395	270									4700	
LKD2 3000 – 160	160	465	305									4700	
LKD2 3000 – 200	200	545	345									4800	
LKD2 3000 – 250	250	645	395									4800	
LKD2 3000 – 300	300	745	445									4800	
LKD2 5000 – 025	25	245	220	65	120	45	M36x2	43	40	55	5000	7100	 LDK2 5000 - xxx
LKD2 5000 – 038	38	271	233									7500	
LKD2 5000 – 050	50	295	245									7700	
LKD2 5000 – 063	63	322	258.5									8000	
LKD2 5000 – 080	80	355	275									8100	
LKD2 5000 – 100	100	395	295									8200	
LKD2 5000 – 125	125	445	320									8200	
LKD2 5000 – 160	160	515	355									8300	
LKD2 5000 – 200	200	595	395									8400	
LKD2 5000 – 250	250	695	445									8400	
LKD2 5000 – 300	300	795	449									8400	

Protection Tube

As the piston rod has to be protected against dirt, scratches, paint and all kinds of damage, we offer you, for your risky applications, our Lift type gas spring with a protection tube. The protection tube is available, according to your request, in plastic, metal (painted or galvanized) or stainless steel.

Working principle

The protection tube covers the whole piston rod. When the gas spring is compressed the protection tube moves over the pressure tube.

This precaution device is appropriate for applications .

1. Near to engine parts
2. Open to the environment (dust, rain, snow, etc.)
3. In dirty surroundings
4. In machinery and agricultural equipment

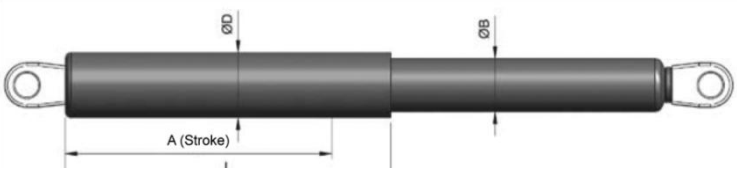
Technical details

In the table you will see our standard dimensions for Protection Tubes.

Our standard colour for metal protection tubes is Black. On request this can be in any desired colour. If a special colour is required please advise the RAL code. Protection tubes are also available “galvanized” or in “stainless steel”.

METAL			
Group	**ØD**	**L**	Stroke
6/15	18	A+20	A-5
8/18	22	A+30	A-5
10/22	28	A+30	A-5
10/28	32	A+30	A-5
14/28	32	A+40	A-5
20/40	45	A+40	A-5
25/55	On request		
30/70			

PLASTIC			
Group	**ØD**	**L**	Stroke
8/18	25	A+30	A-5
10/22	25	A+30	A-5
10/28	32	A+40	A-5
14/28	32	A+40	A-5



How to order

To include a Protection Tube to your individual gas spring simply add to your order description the shortcut “KM” for metal and “KP” for plastic protection tubes.If you are interested in special colored, galvanized or stainless steel protection tubes please don’t hesitate to contact our sales team.

Damping

LDA Gas Springs are filled with a defined amount of oil for lubrication of the seal package and for smooth end position damping in the final section of the gas spring stroke. Without damping, rapid extension could cause:

- Possible product failure
- Associated damage
- Injury
- Uncomfortable final positioning of the gas spring application

The damping of LDA springs can be adapted to customer requirements. There are 3 types of damping: linear, progressive and regressive damping.

Linear Damping

- Hydraulic damping in push-out direction
- Dynamic damping in push-out direction
- Dynamic damping in both directions

All gas springs are supplied with a defined linear damping length in push-out direction. Standard gas springs are equipped with hydraulic damping which is achieved by a piston nozzle (transfer chamber). The standard hydraulic stroke length (damping length) for push-out damping of a Lift is chosen to ensure comfortable damping, suitable for most applications, and for a comfortable progressivity of the gas spring. The hydraulic damping can only be utilized when the gas spring is installed with the piston rod downwards.

Another linear damping is the dynamic damping which is achieved by a groove inside the tube of the gas spring. The extension speed and the damping range of the gas spring can be adjusted by the geometry and length of the groove. Contrary to hydraulic damping, dynamic damping can be utilized while the gas spring is mounted in any desired position. In some applications, a stroke controlled force supply is required instead of linear damping. For such applications we offer you our Lift type gas spring with progressive or degressive damping. While the linear damping feature is achieved through oil; progressive and digressive damping features are achieved through an internal coil spring.

Progressif Damping

This type of damping is suitable where a higher force or strong damping at the end of the stroke in the push-in direction is needed. This solution is also suitable where a higher extension force at the beginning of the push-out stroke is needed. The force and the damping length can be customized to your application.

Degressif Damping

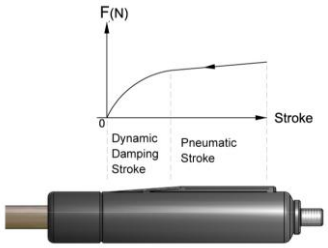
This damping solution is suitable where a reduction of the force or a strong damping at the end of the stroke in push-out direction is needed. At the same time, this solution provides a higher extension force at the beginning of the push-in stroke. Also on this damping feature the force and the damping length can be determined according to application.

On request, a combination of both, progressive and degressive damping is also available.

Please contact our sales department for your special damping requests.

Dynamic Damping

Standard gas springs are equipped with hydraulic damping which is achieved by a piston nozzle (transfer hole). The standard hydraulic damping provides push-out damping to ensure comfortable extension and a comfortable progressivity of the gas spring. However, in some occasions the hydraulic damping doesn't fulfill the motion requirements of your applications. For such applications we developed the "dynamic damping" feature. Dynamic damping is achieved by a groove inside the tube of the gas spring. The extension speed and the damping range of the gas spring can be adjusted by the geometry and length of the groove



Benefits of dynamic damping compared to hydraulic damping	
Dynamic Damping	Hydraulic Damping
Damping is effective in any mouting position of the gas spring	Damping will only be effective when the gas spring is installed with the piston rod downwards.
Smoother extension of gas spring over the entire stroke.	Different motion of pistion rod at hydraulic stroke and pneumatic stroke ranges.
The extension speed and the damping range can be adjusted by geometry ans length of the groove.	Limeted possibility to adjust damping range ans extension speed.

Lift gas springs with dynamic damping feature are available as 8/18 and 10/22. These gas springs are available with the same standard sizes of these groups as given on pages 14 to 18.

How to order?

To order a gas spring with dynamic damping feature simply add the shortcut "DYN" to your order description. The gas spring will then be supplied with the standard dynamic damping (in extension only) which is defined to match most applications. Please don't hesitate to contact our sales department if you have special dynamic damping requests such as is in compression direction, special extension speed, etc.

Speed

Although the main function of a gas spring is to provide force support they also provide a kind of speed control. When ordering a LDA Gas Spring without mentioning your special speed requirement, it will be produced with our standard extension speed which is selected to suit most applications.

Depending on your application, gas springs can be manufactured with a special extension speed to reduce or ton increase the opening/closing speed of your application.

Please contact our sales department for your special speed requirements.

Valve

If the exact extension force cannot be specified or if the same gas spring is used on different applications where each has a different extension force, we offer gas springs with two different valve systems:

RV Valve

Gas springs with this valve are loaded with the maximum or with the required pressure. If the force of the gas spring is too high on the application, the end user will be able to release the force by releasing the screw placed at the tube end. The advantage of the RV Valve is that the pressure can be adjusted while the gas spring is mounted on the application. Refilling is possible through the unit inside the thread by using a LDA approved refilling unit.

AV Valve

The AV Valve enables you to release and/or to refill the pressure of the gas spring. The valve is located inside the thread on the tube end. The pressure can be released by usage of a suitable depressurizing unit. The force of gas springs equipped with AV Valve can only be adjusted while the end fittings are not assembled, in other words while the gas spring is not mounted on the application. Refilling is possible through the unit inside the thread by using a LDA approved refilling unit.

To release pressure from the AV valve, a depressurizing unit as shown below can be used. This is available on request.

Advantages of the valve system

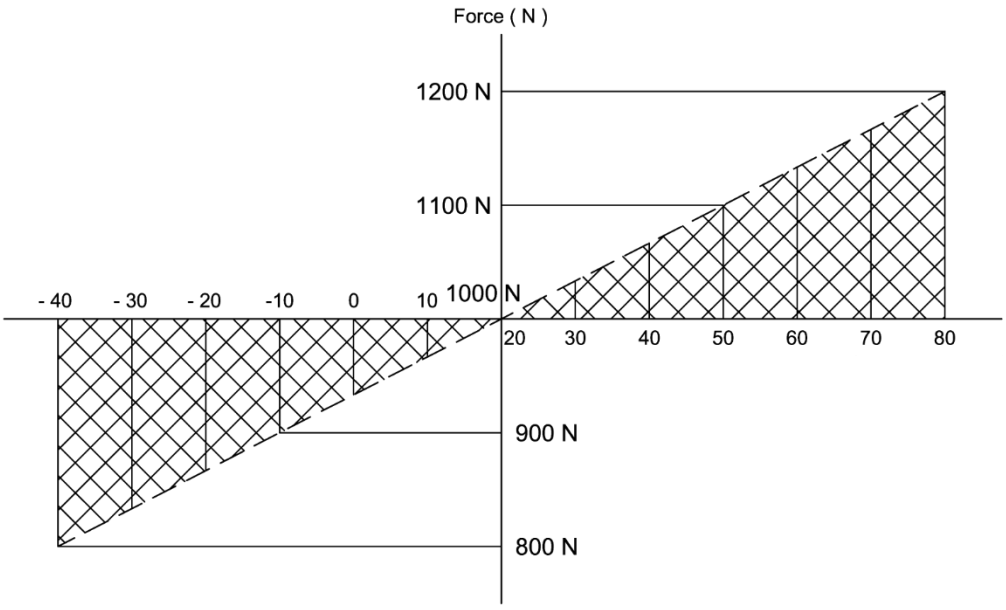
- Once you have determined the correct force for your application, you can return the gas spring to us. We will measure the exact force and provide you with a fixed gas spring with the required force in the future.
- Gas springs with a valve make it easier for you when you have different applications with the same gas spring. This way you can keep the gas spring in stock with maximum force and only adjust the pressure (force) just before installing the gas spring.

Important Notice

- Refill gas spring only with a refill device approvedby LDA. Any usage of an unapproved refill device will cause expiration of any warranty.
- For correct treatment regarding refill and release of the extension force, we ask you to request our operation instructions. Any treatment which is done without this operation instruction will cause expiration of any warranty.

Standard gas Springs are intended for an operating temperature of -30°C and + 80°C.

The nominal force of a gas spring is measured at 20°C. The properties of nitrogen, in respect to temperature, change and this affects the F1 Force of the gas spring. Just like a thermometer, the pressure inside a gas spring rises and falls with temperature. For every 10°C change in temperature, the force changes apprix. %3.3 in the same way. The change of force is presented in the figure below:



Example

In the above figure a gas spring with F1 – 1000N at 20°C is presented. If temperature rises to 50°C the effective F1 will increase to 1100N. If the temperature falls down to -10°C the effective F1 will decrease to 900N.

Important Notice

The change of force not only affects the force of the gas spring, it may affect also the structure of internal compounds and thus may cause failure of the gas spring. Standard gas springs are made for an ambient temperature of -30°C to + 80°C. Moreover, special sealings for temperatures of -45°C to +200°C are available.

Please contact our sales department for your special requirements.

LDA is offering you dozens of solutions for your individual application. Some of these are:

Gas spring with an external coil spring for safety

All gas springs lose their force over time. Many factors are affecting the rate of force loss, such as: size of gas spring, mounting position, number of cycles, ambient temperature, vibration, non-axial forces (side loads) and the geometry of the application. Considering all of the variables, it is very difficult to estimate the lifetime of the gas spring and thus they are not and must not be considered as safety parts. In some particular applications gas springs have to ensure some safety and rapid falling of the weight has to be avoided. For such applications we offer our gas spring with an external coil spring to ensure smooth falling of the weight.
Please contact our sales department for further information.

Special colours

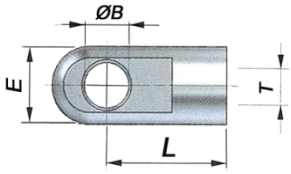
De LDA Gas Springs are painted black. On request we are able to paint the gas spring according to your choice in any color defined with RAL code.

Lift type gas spring with High Friction

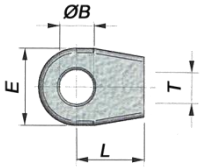
For some applications a variable positioning capability over the entire stroke is needed. The “High Friction Lift” is suitable for such applications. In addition to our standard Lift type gas springs a friction element is integrated in the piston package, which increases the force for pushing in the piston rod. At the same time this friction element reduces the extension force of the gas spring which ensures variable positioning. Please contact our sales department for further information. Common applications For High Friction Lifts are sunbeds (solarium), monitor arms, retail refrigerators, table lamps etc.

Voor meer informatie kan u onze verkopers contacteren.

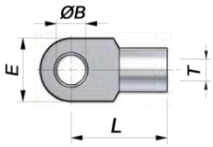
Fittings



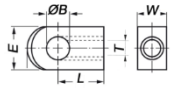
Reference	T	L	ØB	E	W(dikte)
D01	M3.5	12	4.1	8	4
D02	M4	12	4.1	8	4
D03	M5	16	6.1	10	6
D04	M5	20	6.1	12	3
D05	M6	16	6.1	10	6
D06	M6	22	8.1	14	10
D07	M8	19	8.1	14	8
D08	M8	19	8.1	14	10
D09	M8	22	8.1	14	10
D10	M8	25		14	10
D11	M8	30	8.1	18	5
D12	M8	30	12.1	18	6
D13	M10	27	8.1	18	10
D14	M10	30	10.1	20	10
D15	M10	32	10.1	18	10
D16	M14.5	40	14.2	25	14



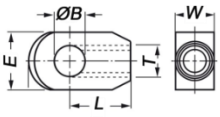
Reference	T	L	ØB	E	W(dikte)
D18	M6	13	6.1	15	10
D19	M6	13	8.1	15	10
D20	M6	16	6.1	15	10
D21	M6	16	8.1	15	10
D22	M8	16	8.1	15	10
D23	M8	16	8.1	18	12
D24	M8	16	10.1	18	12
D25	M10	16	8.1	18	12
D26	M10	16	10.1	18	12



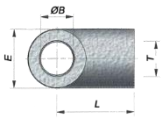
Reference	T	L	ØB	E	W(dikte)
D27	M6	20	6.1	13	3
D28	M6	22	8.1	15	5
D29	M8	22	8.1	15	5



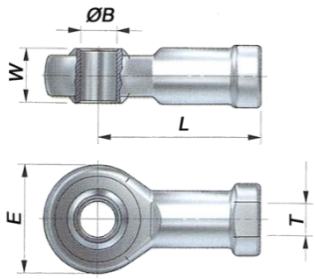
Reference	T	L	ØB	E	W(dikte)
D30	M8	19	8.1	15	10
D31	M8	20	10.1	25	10



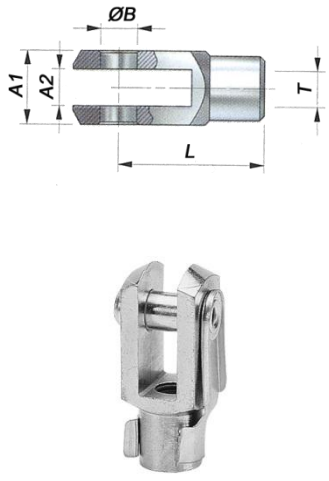
Reference	T	L	ØB	E	W(dikte)
D32	M5	16	8	15	10
D33	M8	16	8	15	10
D34	M8	19	8	15	10
D35	M8	27	8	15	10



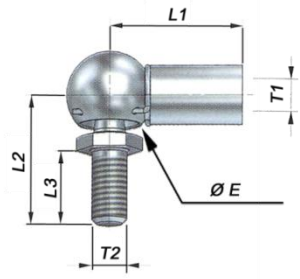
Reference	T	L	ØB	E	W(dikte)
D36	M8	24	10	18	18
D37	M10	24	10	18	18



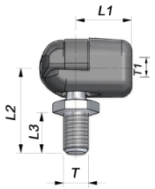
Référence	T	L	ØB	W	W
SK01	M5	27	5		8
SK02	M6	30	6	20	9
SK03	M8	36	8	24	12
SK04	M10	43	10	28	14
SK05	M14x1.5	57	14	36	19
SK06	M20x1.5	77	20	50	25
SK07	M24x2	94	25	60	31



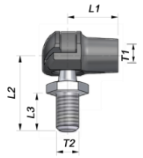
Reference	T	L	A1	A2	ØB
GA01	M3.5	16	8	4	4.1
GA02	M4	16	8	4	4.1
GA03	M5	30	10	5	5.1
GA04	M5	20	10	5	5.1
GA05	M6	20	10	5	5.1
GA06	M6	24	12	6	6.1
GA07	M6	32	16	8	8.1
GA08	M6	36	12	6	6.1
GA09	M8	32	16	8	8.1
GA10	M8	48	16	8	8.1
GA11	M10	40	20	10	10.1
GA12	M10	60	20	10	10.1
GA13	M14x1.5	56	27	14	14
GA14	M20x1.5	80	40	20	20
GA15	M24x2	100	50	25	25



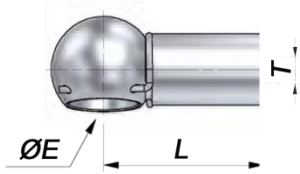
Reference	T1	T2	L1	L3	ØE
WG01	M3.5	M4	18	10	4
WG02	M4	M4	18	10	8
WG03	M5	M5	22	10	8
WG04	M6	M5	22	15	10
WG05	M6	M6	18	13	10
WG06	M6	M6	22	10	8
WG07	M6	M6	25	12	10
WG08	M6	M8	18	13	10
WG09	M6	M8	20	16	10
WG10	M6	M8	25	13	10
WG11	M6	M8	30	15	13
WG12	M8	M8	18	14	10
WG13	M8	M8	20	16.5	13
WG14	M8	M8	22	16	13
WG15	M8	M8	25	16.5	13
WG16	M8	M8	30	16.5	13
WG17	M8	M10	35	35	16
WG18	M10	M8	25	20	13
WG19	M10	M10	25	20	13
WG20	M10	M10	35	20	16
WG21	M14	14	45	28	19



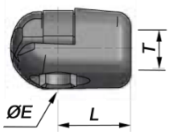
Reference	T	L1	L2	L3	ØE
WG22	M6	M6	18	13	10
WG23	M8	M6	18	13	10
WG24	M8	M8	18	13	10



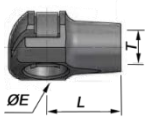
Reference	T1	T2	L1	L3	ØE
WG25	M6	M8	18	13	10
WG26	M6	M8	18	13	10
WG27	M8	M8	19	13	10



Reference	T	L	ØE
W01	M3.5	18	8
W02	M4	18	8
W03	M5	22	8
W04	M6	18	10
W05	M6	20	10
W06	M6	22	8
W07	M6	25	10
W08	M6	30	13
W09	M8	18	10
W10	M8	20	13
W11	M8	22	13
W12	M8	25	13
W13	M8	30	13
W14	M8	35	16



Reference	T	L	ØE
W15	M6	18	10
W16	M8	18	10



Reference	T	L	ØE
W17	M6	18	10
W18	M6	18	10
W19	M8	19	10

Ordering example

Gas spring type lift with stroke 200mm
Diameter of the rod & body: 8mm/18mm
Extended center mounting to center mounting: 494mm
End pieces: 2 metal eyes with passage 8mm
Thrust force: 300N

Gas Spring type lift D8/18-200-450-GZ-GZ-300N + oog D06 + oog D06 = **D8/18-200-494-D206-D06-300N**

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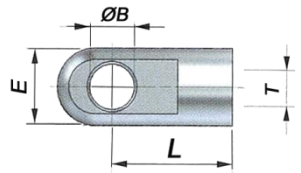
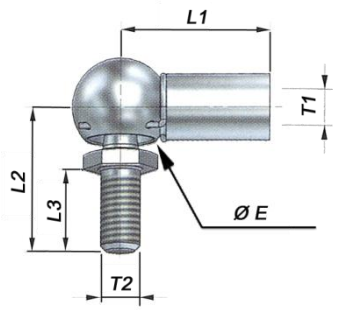
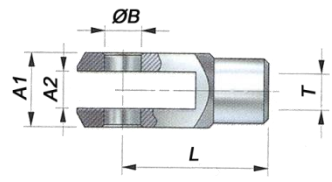
RVS Fittings						
Reference	T	L	E	W	ØB	AISI
K01	M4	12	8	4	4	304
K02	M5	16	14	6	6	303
K03	M6	16	10	6	6	316
K04	M6	26	14	5	6	304
K05	M6	26	14	5	8	304
K06	M8	26	14	5	8	316
K07	M8	19	15	10	8	316
K08	M8	19	14	10	8	303
K09	M8	16	15	10	8	316
K10	M8	26	15	10	8	304
K11	M8	27	14	10	8	303
K12	M8	27,5	18	10	8	303
K13	M8	30	18	10	8	316
K14	M8	30	18	10	10	316
K15	M10	30	18	10	8	304
K16	M10	30	18	10	10	304
K17	M14	38	22	14	14	304
K18	M14	42	20	14	14	316



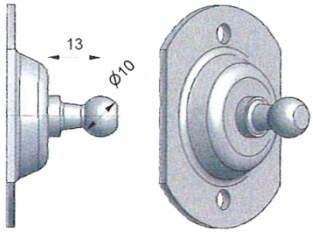
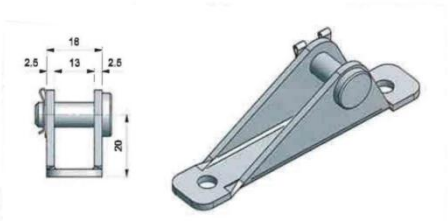
Reference	T1	T2	L1	L3	Ø E	AISI
WX01	M4	M4	17	6	6	316
WX02	M5	M5	22	7	8	316
WX03	M6	M6	25	13	10	316
WX04	M8	M8	20	16	13	316
WX05	M8	M8	25	16	13	316
WX06	M8	M8	30	16	13	316
WX07	M8	M10	35	20	16	316
WX08	M10	M10	35	20	16	316
WX09	M5	M6	22	11	8	304
WX10	M10	M10	35	20	16	304
WX11	M14x1.5	M14x1.5	45	28	19	304
WX12	M14x2	M14x2	45	28	19	304
WX13	M5	M5	8	10	5	316
WX14	M8	M8	30	16	8	316
WX15	M10	M10	35	20	10	316
WX16	M10	M10	35	20	10	303
WX17	M8	M8	35	14	8	303
WX18	M5	M5	22	10	5	303
WX19	M6	M6	25	12	6	303
WX20	M8	M8	30	16	8	303

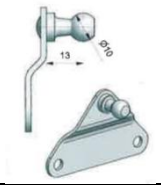


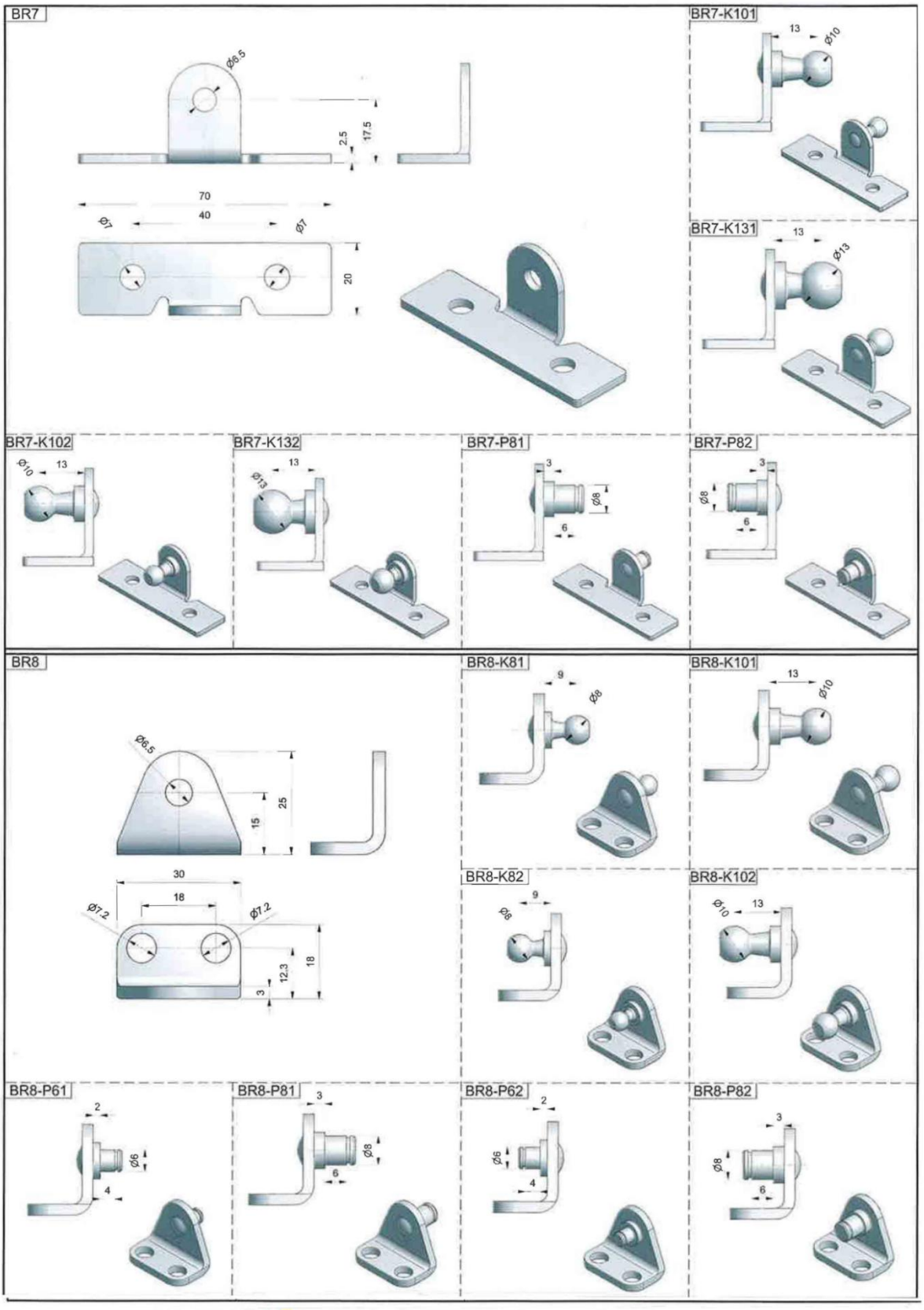
Reference	T	L	A1	A2	ØB
GX01	M4	18	9	4	4
GX02	M5	26	10	5	5
GX03	M6	24	12	6	6
GX04	M8	32	16	6	8
GX05	M10	40	20	10	10
GX06	M14	56	28	14	14
GX07	M14.5X1.5	56	28	14	14

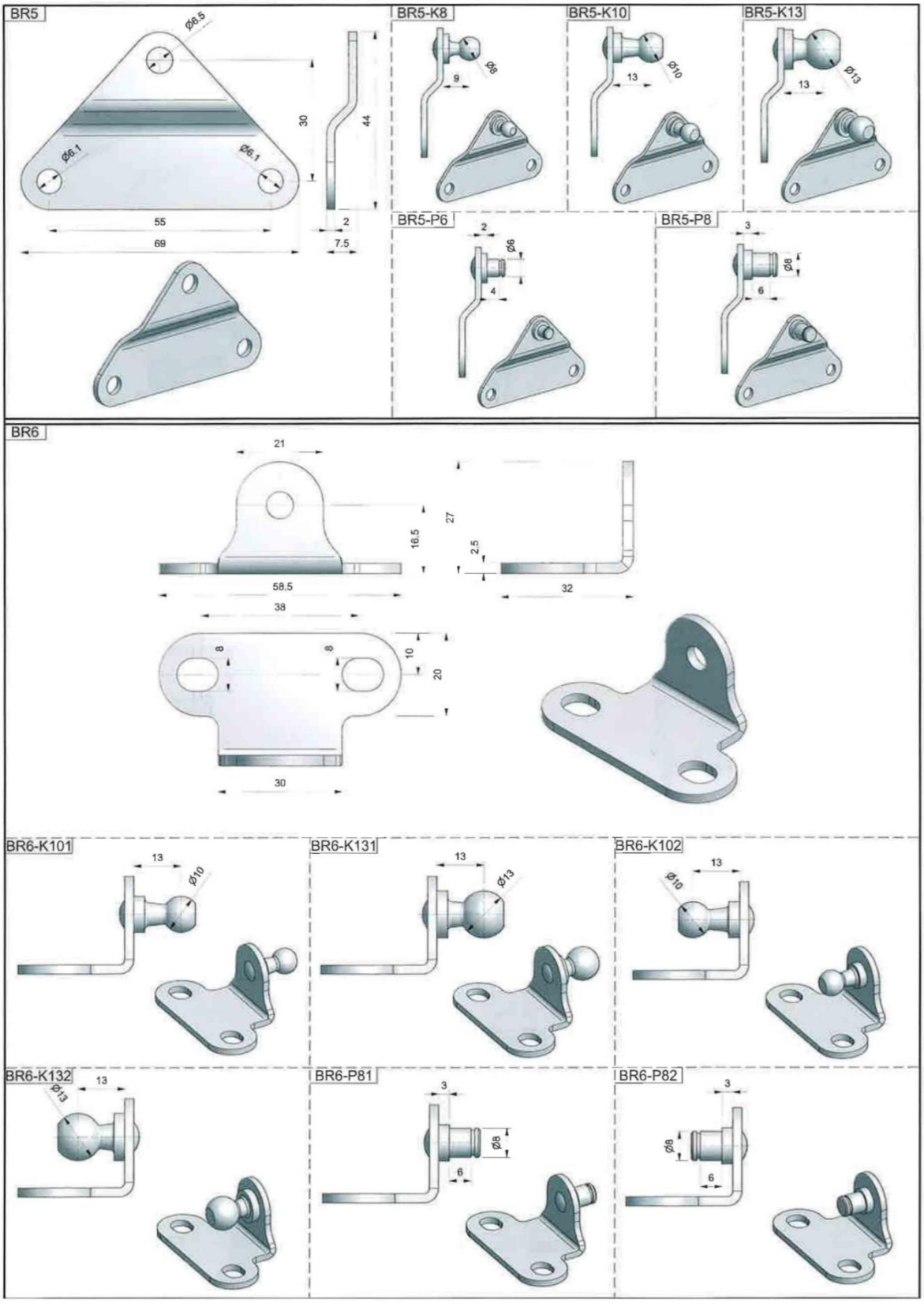


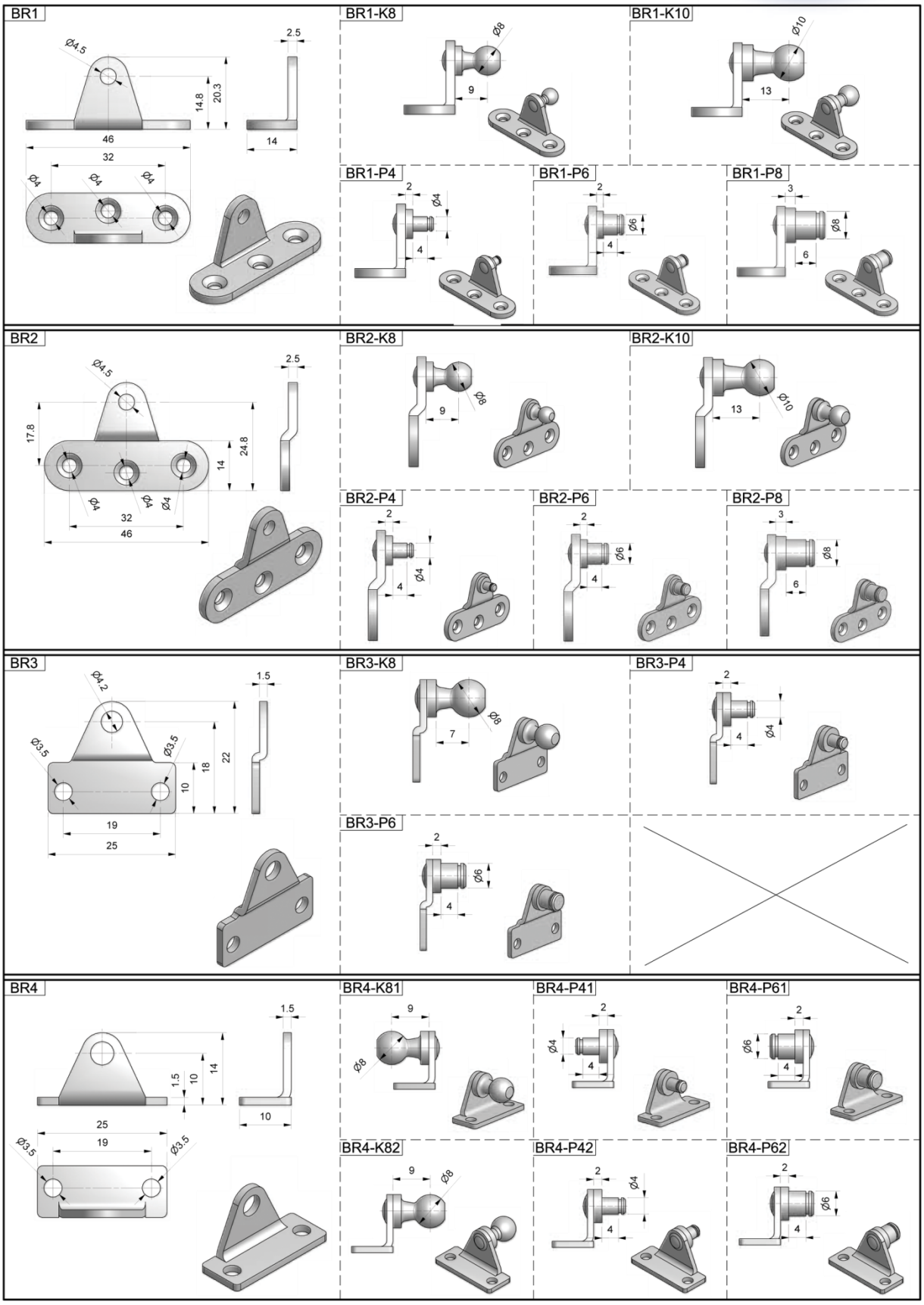
MOUNTING BRACKETS AND MOUNTING PLATES

BR9-K10	BR10-P1
	
	PE-8Mx75
In stock	*In stock*

BR5-K10	BR5-P6	BR5-P8
		
	PP-6Mx55	**PP-8Mx55**
In stock	*Instock*	*In stock*


BR7
Ø6.5
2.5
17.5
70
40
Ø7
Ø7
20
BR7-K101
13
Ø10
BR7-K131
13
Ø13
BR7-K102
Ø10
13
BR7-K132
13
Ø13
BR7-P81
3
Ø8
6
BR7-P82
3
Ø8
6
BR8
Ø6.5
15
25
30
18
Ø7.2
Ø7.2
3
12.3
18
BR8-K81
9
Ø8
BR8-K101
13
Ø10
BR8-K82
9
Ø8
BR8-K102
Ø10
13
BR8-P61
2
Ø6
4
BR8-P81
3
Ø8
6
BR8-P62
2
Ø6
4
BR8-P82
3
Ø8
6


BR5
BR5-K8
BR5-K10
BR5-K13
BR5-P6
BR5-P8
BR6
BR6-K101
BR6-K131
BR6-K102
BR6-K132
BR6-P81
BR6-P82


BR1
BR1-K8
BR1-K10
BR1-P4
BR1-P6
BR1-P8
BR2
BR2-K8
BR2-K10
BR2-P4
BR2-P6
BR2-P8
BR3
BR3-K8
BR3-P4
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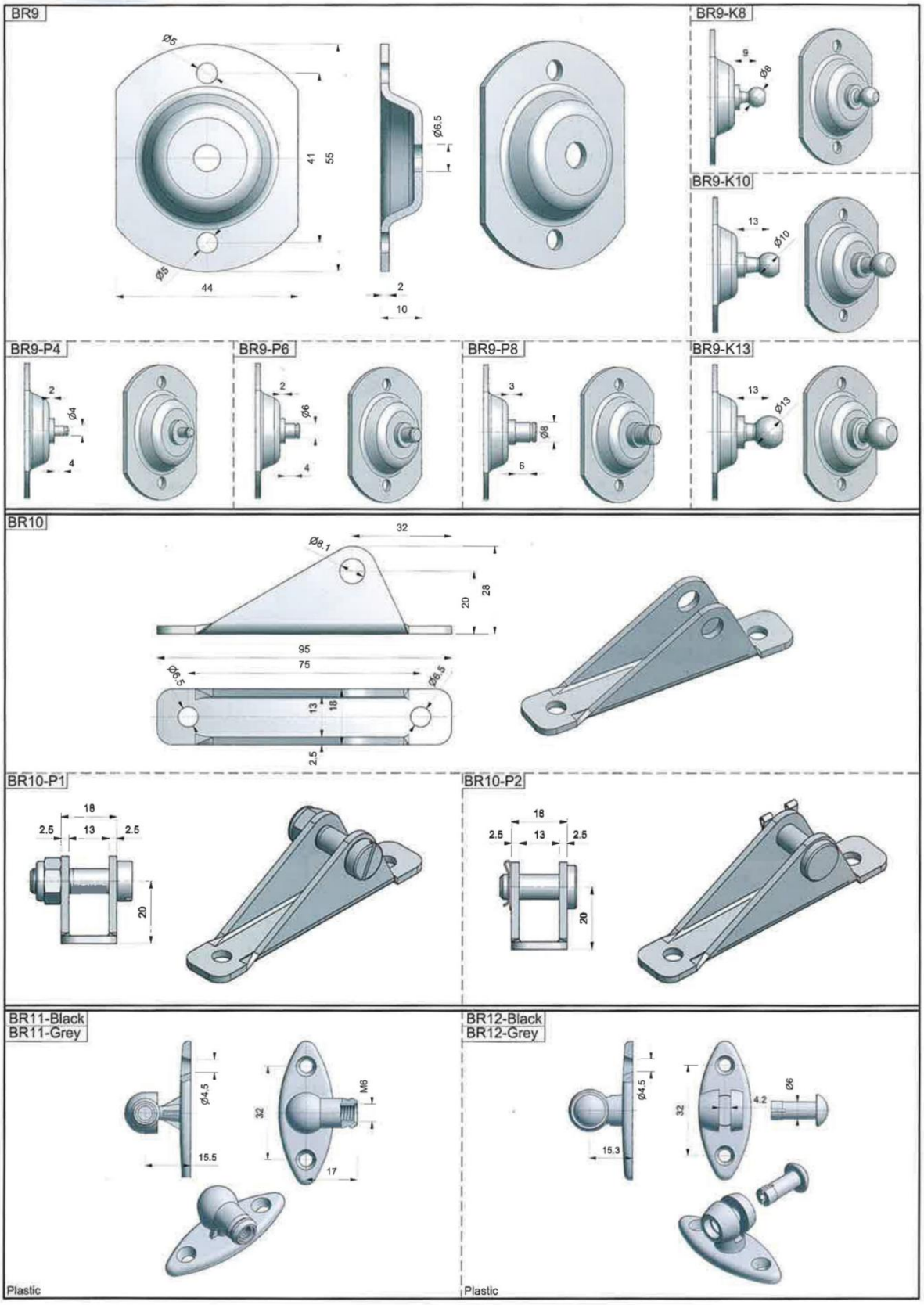
BR4
BR4-K81
BR4-P41
BR4-P61
BR4-K82
BR4-P42
BR4-P62


BR9
BR9-K8
BR9-K10
BR9-P4
BR9-P6
BR9-P8
BR9-K13
BR10
BR10-P1
BR10-P2
BR11-Black
BR11-Grey
BR12-Black
BR12-Grey
Plastic
Plastic

Technical advice

General

1. Standard gas springs are designed for surrounding temperatures from-30ºC to +80ºC.
2. Standard gas springs should not be used in the food industry. Special gas springs for food industry (food grade) are available on request.
3. Non-axial (side) forces must be avoided.
4. In cases of long stroke, an additional guidance is recommended.
5. Gas springs and dampers are not safety parts. If gas springs are fitted in applications where their failing would mean a risk of health or life, additional locking mechanisms must be employed.
6. Gas springs can be used as a limit stop (in both directions), but it is not recommended that the gas spring is retracted or extended over their respective stroke, in both directions. Where possible, physical stops should be employed. Please ask for details.
7. Minor quantities of hydraulic fluid may leak from the products.
8. All gas springs are marked with the warning 'Do not open', 'High Pressure' with part number and production date beside it. We refuse any liability for every kind of damage if the marking is removed or unreadable (e.g. due to influences of the surrounding).

Mounting

1. If not determined otherwise gas springs should be mounted with the piston rod downwards. If the gas spring pivots around the horizontal during adjustment, the mounting orientation of the gas spring depends on the most frequent application end position. If the gas spring rotates around a horizontal axis, it should be mounted with the gas spring rod pointing downwards and this in the most common position of the gas spring.
2. GT-Lift type gas springs must be installed with the piston rod upwards.

Maintenance

1. Gas Springs are maintenance free. It is not necessary to grease or oil the piston rod.
2. For longer lifetime expectancy please consider the following points:
   a. The piston rod of the gas spring should be protected against shocks, dirt and all kinds of scratches. Even minor damage (like small scratches) or dirt (like paint) may result in the failure of the unit (destruction of the sealing unit).
   b. The pressure tube of the gas spring should not be damaged or deformed.
   c. Do not use a standard gas spring in wet surroundings. Avoid corrosion.
   d. Do not tilt or bend gas springs.
   e. Any change of the gas spring through third parties will cause expire of warranty.

Recycling

1. Do not open the gas spring without written instructions from LDA.
2. Gas springs consist mostly of metal and could, with regard to the metal, be recycled.
3. Gas springs should not be placed over heat or in open fire. Do not throw the gas spring into fire!

Stockage

1. LDA gas springs can be stored in any position.
2. Loss of pressure due to long storage is not to be expected, however storage of more than 1 year is not recommended.
3. After long storage the retraction or compression will be higher than the given nominal force. This is because of an initial breakaway force of the sealings sticking effect (slip-stick).
4. Storage of gas springs should be made according to "First in – First out (FIFO)" method.

LDA

Solutions for Life

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