

# Gas Springs and Fittings Stock Range

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# Introduction.

The Lesjöfors Group are global leaders in spring manufacturing, with over 50 companies in the group our knowledge and capability in spring manufacturing is unrivalled.

The Lesjöfors gas spring division, produces the markets largest range of gas springs. Engineered across our global network of manufacturing facilities, our gas springs are used in multiple applications in multiple industries.

Our expertise and experience in gas spring design, manufacture, supply and service makes Lesjöfors your ideal partner for any gas spring project.

A key factor in our success is directly attributable to our well trained, experienced, enthusiastic staff combined with our extensive range of products. Lesjöfors can help you with your application and special project requirements, from design and modelling, through to supply of prototypes and production volumes.

Key reasons why Lesjöfors is your ideal supply partner:

- Global sales network & product support
- Technical support for application design
- Multiple manufacturing locations and expertise
- Largest range of gas springs from micro 4mm to heavy duty industrial solutions.
- CE marked products available conforming to PED 2014/68/EU
- Large local stocks for rapid shipping and delivery
- Ecommerce solutions for easy ordering
- Excellence in customer service

Our gas spring design service can turn a difficult job into a simple task, where drawings are supplied with both a parts list and fixing instructions.

## We offer our customers:

- On site engineering back up
- Project design with CAD drawings
- Custom designs to suit your application
- Sales team support with real product knowledge and technical back up
- Stock, Kanban and JIT supply systems to suit customer requirements
- Extensive range of gas springs including:
  - Variable
  - Stainless
  - Locking
  - Traction
  - Dampers
- Comprehensive range and stock of accessories including:
  - End fittings
  - Brackets
  - Locking tubes
  - Protection tubes
  - Dust covers







Lesjöfors has the capability to supply quantities ranging from 1 to 100,000s. Working alongside our customers, we are able to offer stock call-off orders so that parts are always available for immediate dispatch from our local warehouses.

This offers major advantages including:

- Reduced capital tied up in stock
- Next day delivery times when stock is called off
- Inventory management to avoid running out of parts
- Resilience in supply chain with multiple manufacturing facilities

As well as supplying OEMs we specialise in aftermarket replacement springs for existing equipment. Variable and fixed force gas springs give us the flexibility to provide a suitable replacement from stock.

The replacement spring forms are available upon request.

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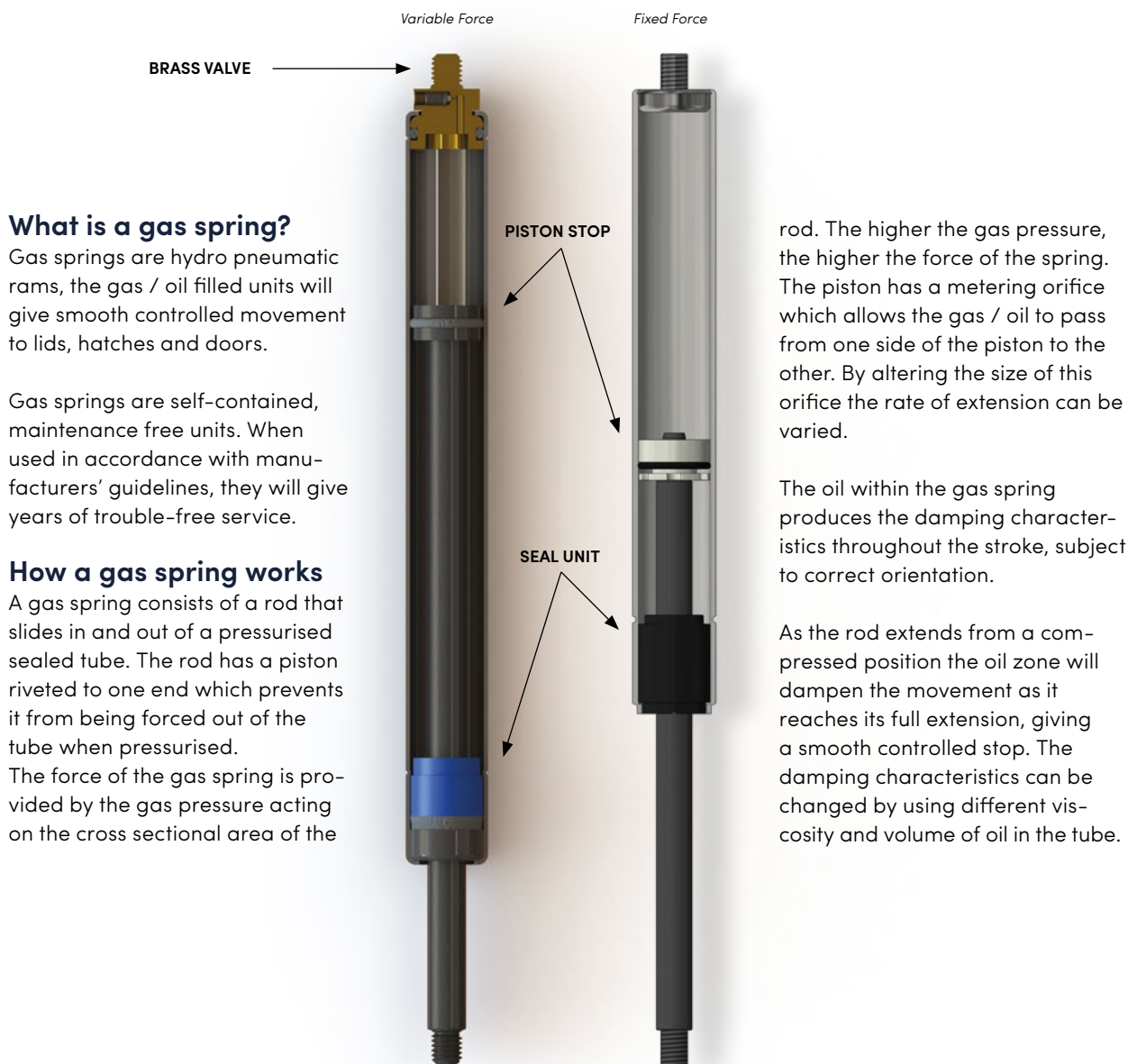
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# Features.



## What is a gas spring?

Gas springs are hydro pneumatic rams, the gas / oil filled units will give smooth controlled movement to lids, hatches and doors.

Gas springs are self-contained, maintenance free units. When used in accordance with manufacturers' guidelines, they will give years of trouble-free service.

## How a gas spring works

A gas spring consists of a rod that slides in and out of a pressurised sealed tube. The rod has a piston riveted to one end which prevents it from being forced out of the tube when pressurised.

The force of the gas spring is provided by the gas pressure acting on the cross sectional area of the

rod. The higher the gas pressure, the higher the force of the spring. The piston has a metering orifice which allows the gas / oil to pass from one side of the piston to the other. By altering the size of this orifice the rate of extension can be varied.

The oil within the gas spring produces the damping characteristics throughout the stroke, subject to correct orientation.

As the rod extends from a compressed position the oil zone will dampen the movement as it reaches its full extension, giving a smooth controlled stop. The damping characteristics can be changed by using different viscosity and volume of oil in the tube.

# Characteristics of a Gas Spring.

As a gas spring is compressed, the force increases from an initial value to a final force. This increase can be expressed as **force progression values** which are shown on the product specification pages.

Values are given for standard gas spring sizes. By modifying the design of the spring, the force progression can be altered to suit the application.





# Applications.

## Where are gas springs used?

Gas springs are used in a wide variety of industries.

- Marine
- Lorries and Trailers
- Industrial Machinery
- Furniture
- Bus and Coach
- Machine Guards
- Caravans and Motorhomes
- Roof lights and Access Hatches
- And many more

## How can a gas spring be used?

Gas springs are used to:

- Aid and assist in lifting
- Aid controlled movement
- Counterbalance when raising and lowering
- Damp movement
- Support an object in position
- Adjust position of an object

## Which gas spring should be used?

There are a variety of gas springs available to suit different applications.

- Fixed Force
- Variable Force
- Traction
- Pin Locking / Mechanical Locking / Auto Locking
- Dampers / Dampened
- Stainless Steel





# Frequently asked questions.

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## **What is the difference between a variable and fixed force spring?**

A fixed force spring is charged to a specific pressure, prior to dispatch, this would be at the request of the customer. A variable gas spring is supplied at full charge pressure which allows the customer to release the pressure a little at a time until they are happy with the force once the spring is installed in their application.

## **How do I know which spring to order and how do I install it?**

If installing a spring on a new application or replacing a spring with different dimensions or force we always recommend using our gas spring design service. We are unable to accurately suggest a specific gas spring unless we have full details of the application on which it is going to be installed.

## **Which end fittings & brackets should I use?**

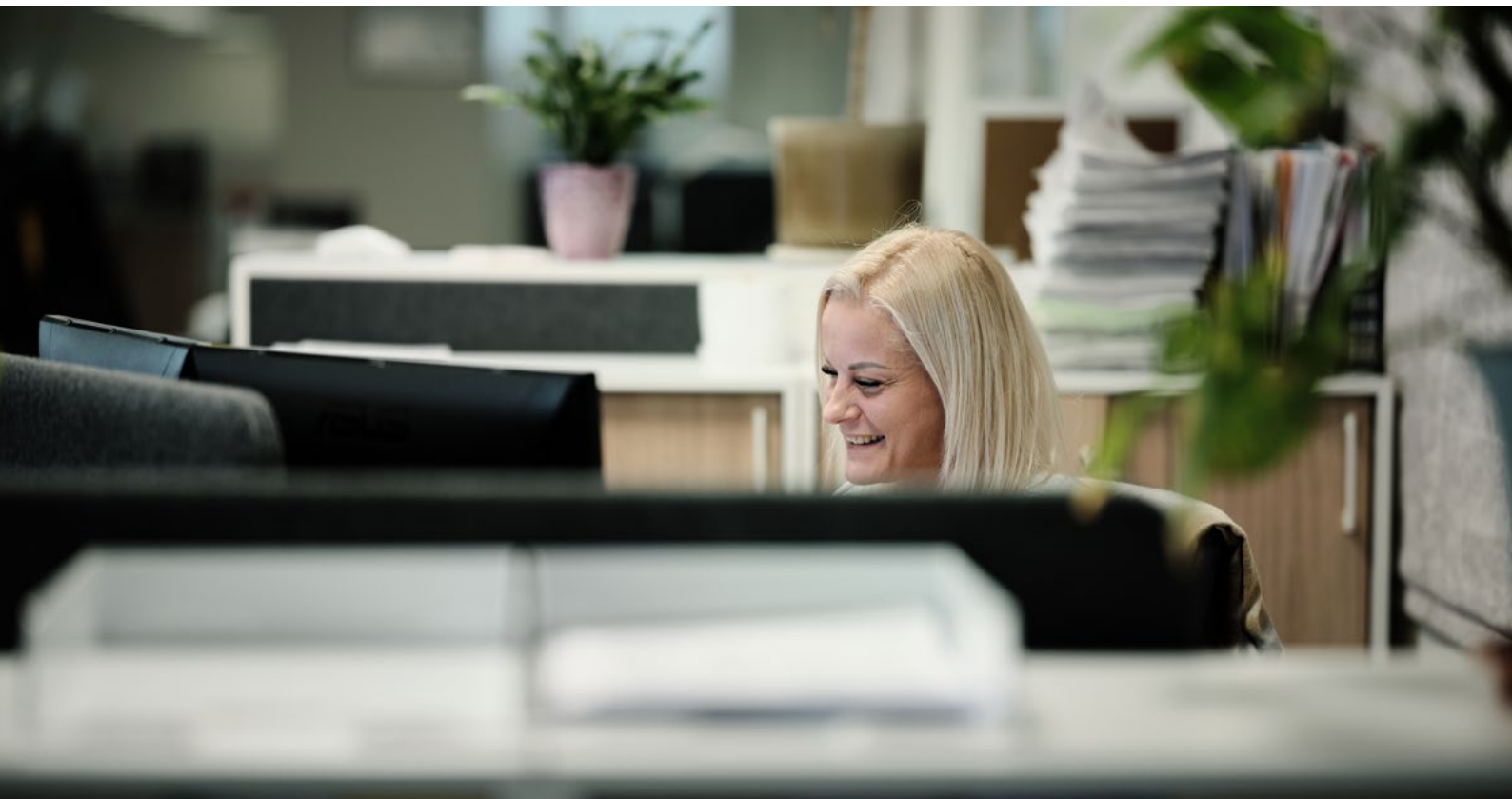
If you are unsure which end fittings or brackets to use, please refer to our free gas spring design service. We advise the use of ball joints where possible. Utilising ball joints enables you to prolong the life of the gas spring and reduces strain on the end fittings, by removing the risk of side loading.

## **I've purchased a variable Gas Spring, how do I degas it?**

To degas your variable force gas spring, insert the allen key in the valve at the base of the spring (the brass coloured collar) and turn anti-clockwise a quarter turn, venting the gas for 1 second at a time. This will release a small amount of gas to allow fine adjustments. For more information see page 10.

## **Are you able to manufacture custom Gas Springs?**

If you cannot find the specific size you are looking for amongst our standard range of gas springs, please get in touch and we can discuss your requirements for a custom made gas spring.





## Force adjustment instructions

# Variable Force.

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- Fit the gas springs with the cylinder uppermost; this prevents oil escaping while venting, and keeps the internal seals lubricated for optimum lifespan.
- Using the allen key provided, undo the grub screw anti-clockwise a quarter turn and vent gas for 1 second, retightening the grub screw. Do not over tighten the grub screw.
- Repeat this process on the second gas spring, venting an equal amount. Only release the pressure in short bursts to avoid venting too much gas. Each 1 second burst will lower the force by approximately 20N - 50N depending on the range.
- Test the application by attempting to close the panel and repeat the venting process if the springs are still too powerful.
- Once the gas springs have been adjusted, gently brush the grub screw with washing up liquid. If gas can be seen bubbling through the liquid then the grub screw requires further tightening.

For advice on how to safely mount gas springs please contact us.

Gas springs are filled with high pressure nitrogen, they should be protected from damage; never open, modify, drill, weld or subject gas springs to excessive heat.



## Instructions

# Installation.

For standard compression gas springs we advise the use of ball joints to alleviate possible side loading, and uneven wearing of the piston rod/seals.

Install the spring, piston rod down, for optimum lubrication of the guide and sealing system at all times (see figure 1). Always install the spring in its relaxed state.

It is advisable to keep the spring in a single plane of movement. Failure to adhere to this advice may result in a reduced lifespan of the spring.

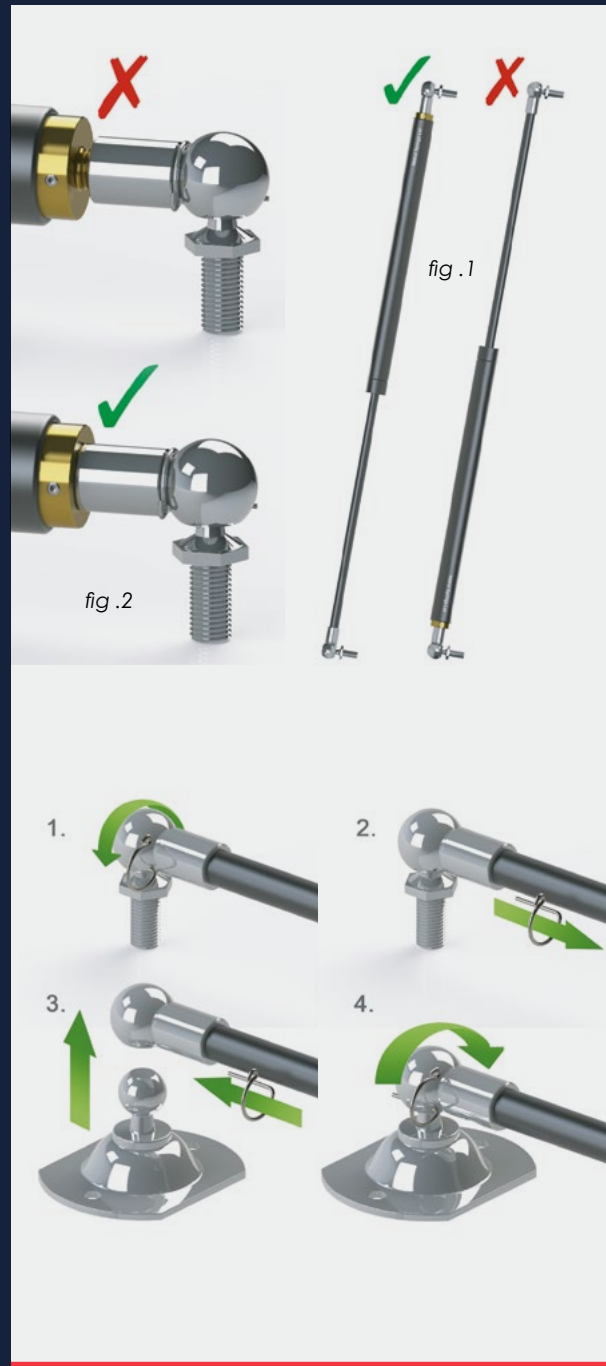
Ensure that the end fittings are tightly fastened onto the thread of the gas springs prior to fitting. If the end fittings require aligning, the piston rod of the gas spring can rotate inside the body (cylinder). Place and hold the piston end fixing on a flat surface, grip the cylinder and firmly twist it until the end fitting is aligned correctly (see figure 2).

### Fitting brackets

When utilising a bracket with a ball stud/end, the procedure to fit it to the relevant ball joint fitting is as follows:

1. Remove the retaining clip from the ball socket by rotating it from around the collar of the socket, and then pull it out from the two locating holes.
2. Ensure the ball socket is fully tightened onto the thread of the spring. Then, using a vice or pair of pliers, grip the ball stud and with a rotating motion, remove the ball stud from the socket.
3. Once removed, place the ball socket over the corresponding bracket and press firmly downwards until a positive 'click' is heard.
4. Once the ball of the bracket is firmly located inside the socket, reinsert the retaining clip into the two locating holes, and clip it back over the collar of the socket.

If in any doubt as to the installation procedure please contact us.



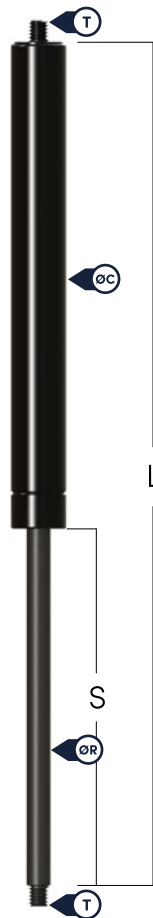
# Gas Springs | 4mm Rods

CUSTOM FORCES AND STANDARD SET FORCES

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F400-xxxN	10 - 140N	20	72
F408-xxxN		30	92
F416-xxxN		40	112
F424-xxxN		50	132
F432-xxxN		60	152
F440-xxxN		70	172
F448-xxxN		80	192
F456-xxxN		100	232

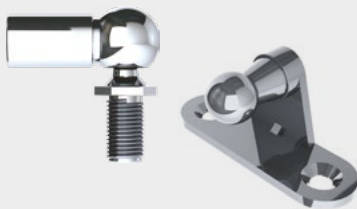
How to Order a Custom Force	
Lesjöfors Example Code	Example Force (xxxN)
F400-140N	140N

Range Overview	
Rod Diameter (ØR):	4mm
Body Diameter (ØC):	12mm
Threads (T):	M4x0.7x4mm
Force Range:	10 - 140N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects



Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
400	10	20	72
401	20		
402	30		
403	40		
404	60		
405	80		
406	110		
407	140		
408	10	30	92
409	20		
410	30		
411	40		
412	60		
413	80		
414	110		
415	140		
416	10	40	112
417	20		
418	30		
419	40		
420	60		
421	80		
422	110		
423	140		
424	10	50	132
425	20		
426	30		
427	40		
428	60		
429	80		
430	110		
431	140		
432	10	60	152
433	20		
434	30		
435	40		
436	60		
437	80		
438	110		
439	140		
440	10	70	172
441	20		
442	30		
443	40		
444	60		
445	80		
446	110		
447	140		
448	10	80	192
449	20		
450	30		
451	40		
452	60		
453	80		
454	110		
455	140		
456	10	100	232
457	20		
458	30		
459	40		
460	60		
461	80		
462	110		

Please note: adding end fittings to a spring will increase its extended length.



**End Fixings**  
Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



**Protection**  
Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available

# Gas Springs | 4mm Rods

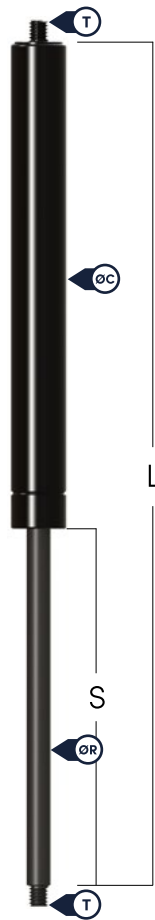
CUSTOM FORCES AND STANDARD SET FORCES



Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F200-xxxN	10 - 140N	25	80
F208-xxxN		35	100
F216-xxxN		45	120
F224-xxxN		55	140
F232-xxxN		75	180
F240-xxxN		95	220

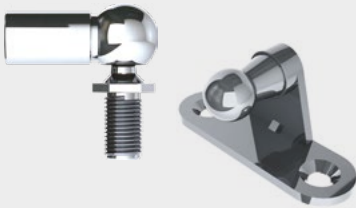
How to Order a Custom Force	
Lesjöfors Example Code	Example Force (xxxN)
F200-140N	140N

Range Overview	
Rod Diameter (ØR):	4mm
Body Diameter (ØC):	12mm
Threads (T):	M4x0.7x4mm
Force Range:	10 - 140N
Extension Speed:	~0.15m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects



Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
200	10	25	80
201	20		
202	30		
203	50		
204	70		
205	90		
206	110	35	100
207	140		
208	10		
209	20		
210	30		
211	50		
212	70		
213	90		
214	110		
215	140		
216	10	45	120
217	20		
218	30		
219	50		
220	70		
221	90		
222	110		
223	140		
224	10	55	140
225	20		
226	30		
227	50		
228	70		
229	90		
230	110		
231	140		
232	10	75	180
233	20		
234	30		
235	50		
236	70		
237	90		
238	110		
239	140		
240	10	95	220
241	20		
242	30		
243	50		
244	70		
245	90		
246	110		
247	140		

Please note: adding end fittings to a spring will increase its extended length.



### End Fixings

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### Protection

Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



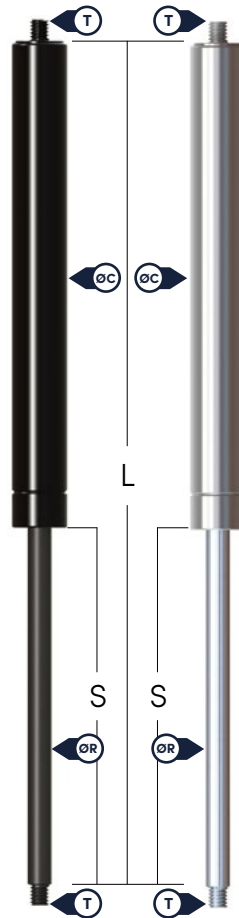
Proline Protection

# Gas Springs | 6mm Rods

## CUSTOM FORCES

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F9002-xxxN	40 - 400N	20	77.5
F9010-xxxN		40	117.5
F9018-xxxN		60	156.5
F9026-xxxN		80	197
F9034-xxxN		100	235
F9042-xxxN		120	278
F9050-xxxN		150	337.5
F61421-xxxN		200	435

Stainless Steel 316 - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
FS1160-xxxN	40 - 400N	60	156.5
FS1168-xxxN		80	197
FS1176-xxxN		100	235
FS1184-xxxN		120	278
FS1192-xxxN		150	337.5
FS61200-xxxN		200	435



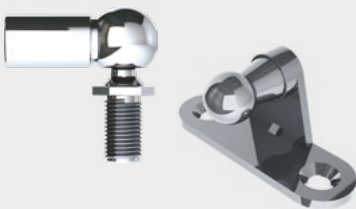
How to Order a Custom Force	
Lesjöfors Example Code	Example Force
F9002-400N	400N

How to Order a Custom Force	
Lesjöfors Example Code	Example Force
FS1160-400N	400N

Range Overview	
Rod Diameter (ØR):	6mm
Body Diameter (ØC):	15mm
Threads (T):	M6x1x8mm
Force Range:	40 - 400N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	6mm
Body Diameter (ØC):	15mm
Threads (T):	M6x1x8mm
Force Range:	40 - 400N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	AISI 316L
Rod:	Chrome Plated AISI 316L
Body Finish:	Polished
Guarantee:	2 years against manufacturing defects

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**Protection**  
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Additional Damping



Proline Protection

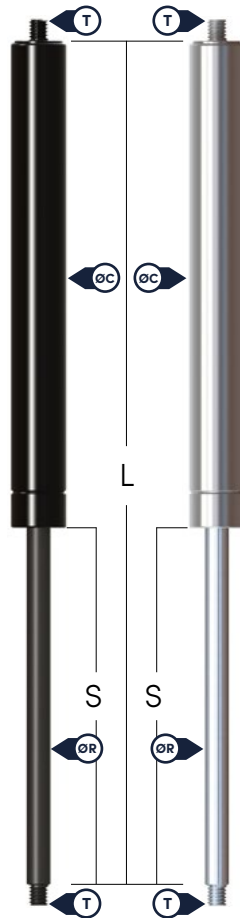


Stainless Steel Available

# Gas Springs | 6mm Rods

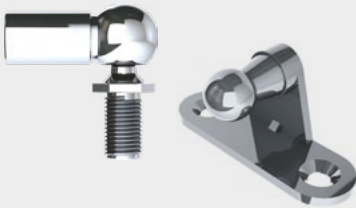
## STANDARD SET FORCES

Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
9002	50	20	77.5
9003	100		
9004	150		
9005	200		
9006	250		
9007	300		
9008	350		
9009	400		
9010	50		
9011	100		
9012	150		
9013	200		
9014	250		
9015	300		
9016	350		
9017	400		
9018	50	60	156.5
9019	100		
9020	150		
9021	200		
9022	250		
9023	300		
9024	350		
9025	400		
9026	50		
9027	100		
9028	150		
9029	200		
9030	250		
9031	300		
9032	350		
9033	400		
9034	50	100	235
9035	100		
9036	150		
9037	200		
9038	250		
9039	300		
9040	350		
9041	400		
9042	50		
9043	100		
9044	150		
9045	200		
9046	250		
9047	300		
9048	350		
9049	400		
9050	50	150	337.5
9051	100		
9052	150		
9053	200		
9054	250		
9055	300		
9056	350		
9057	400		



Stainless Steel 316 - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
S1160	50	60	156.5
S1161	100		
S1162	150		
S1163	200		
S1164	250		
S1165	300		
S1166	350		
S1167	400		
S1168	50		
S1169	100		
S1170	150		
S1171	200		
S1172	250		
S1173	300		
S1174	350		
S1175	400		
S1176	50	100	235
S1177	100		
S1178	150		
S1179	200		
S1180	250		
S1181	300		
S1182	350		
S1183	400		
S1184	50		
S1185	100		
S1186	150		
S1187	200		
S1188	250		
S1189	300		
S1190	350		
S1191	400		
S1192	50	150	337.5
S1193	100		
S1194	150		
S1195	200		
S1196	250		
S1197	300		
S1198	350		
S1199	400		

Please note: adding end fittings to a spring will increase its extended length.



### End Fixings

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### Protection

Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available

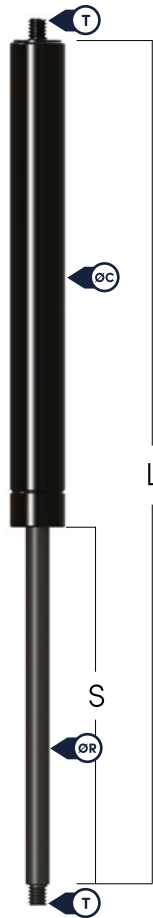
# Gas Springs | 6mm Rods

CUSTOM FORCES AND STANDARD SET FORCES WITH ADDITIONAL DAMPING

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F4461-xxxN	40 - 400N	45	127
F4470-xxxN		60	156
F4478-xxxN		70	181
F4486-xxxN		90	221
F8101-xxxN		100	236
F4829-xxxN		105	273
F4500-xxxN		135	303
F8109-xxxN		170	378

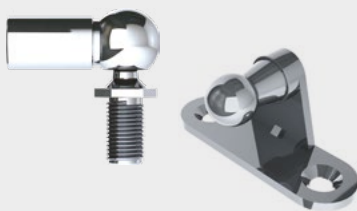
How to Order a Custom Force	
Lesjöfors Example Code	Example Force (xxxN)
F4461-400N	400N

Range Overview	
Rod Diameter (ØR):	6mm
Body Diameter (ØC):	15mm
Threads (T):	M6x1x8mm
Force Range:	40 - 400N
Extension Speed:	~0.1m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects



Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
4461	40	45	127
4462	80		
4463	120		
4464	160		
4465	200		
4466	240	60	156
4468	280		
4469	350		
4470	40		
4471	80		
4472	120	70	181
4473	160		
4474	200		
4475	240		
4476	280		
4477	350	90	221
4478	40		
4479	80		
4480	120		
4481	160		
4482	200	100	236
4483	240		
4484	280		
4485	350		
4486	40		
4487	80	105	273
4488	120		
4489	160		
4490	200		
4491	240		
4492	280	135	303
4493	350		
4494	40		
4495	80		
4496	120		
4497	160	170	378
4498	200		
4499	240		
4500	280		
4501	350		
4502	40	170	378
4503	80		
4504	120		
4505	160		
4506	200		
4507	240	170	378
4508	280		
4509	350		
4510	40		
4511	80		
4512	120	170	378
4513	160		
4514	200		
4515	240		
4516	280		
4517	350		

Please note: adding end fittings to a spring will increase its extended length.



**End Fixings**  
Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



**Protection**  
Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available



# Gas Springs | 6mm Rods

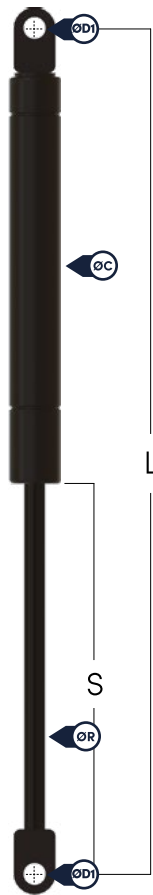


MILD STEEL CUSTOM FORCES AND STANDARD SET FORCES WITH WELDED

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F9058-xxxN	40 - 400N	20	106
F9066-xxxN		40	146
F9074-xxxN		60	186
F9082-xxxN		80	224
F9090-xxxN		100	264
F9098-xxxN		120	305.5
F9106-xxxN		150	366
F61208-xxxN		200	466

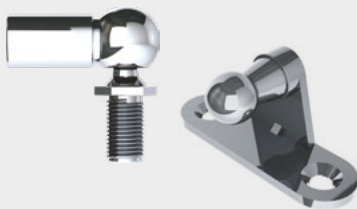
How to Order a Custom Force	
Lesjöfors Example Code	Example Force
F9058-400N	400N

Range Overview	
Rod Diameter (ØR):	6mm
Body Diameter (ØC):	15mm
Eye Holes (ØD1):	6.1mm
Force Range:	40 - 400N
Extension Speed:	~0,3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects



Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
9058	50	20	106
9059	100		
9060	150		
9061	200		
9062	250		
9063	300		
9064	350	40	146
9065	400		
9066	50		
9067	100		
9068	150		
9069	200		
9070	250	60	186
9071	300		
9072	350		
9073	400		
9074	50		
9075	100		
9076	150	80	224
9077	200		
9078	250		
9079	300		
9080	350		
9081	400		
9082	50	100	264
9083	100		
9084	150		
9085	200		
9086	250		
9087	300		
9088	350	120	305.5
9089	400		
9090	50		
9091	100		
9092	150		
9093	200		
9094	250	150	366
9095	300		
9096	350		
9097	400		
9098	50		
9099	100		
9100	150		
9101	200		
9102	250		
9103	300		
9104	350		
9105	400		
9106	50		
9107	100		
9108	150		
9109	200		
9110	250		
9111	300		
9112	350		
9113	400		

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**End Fixings**  
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Additional Damping



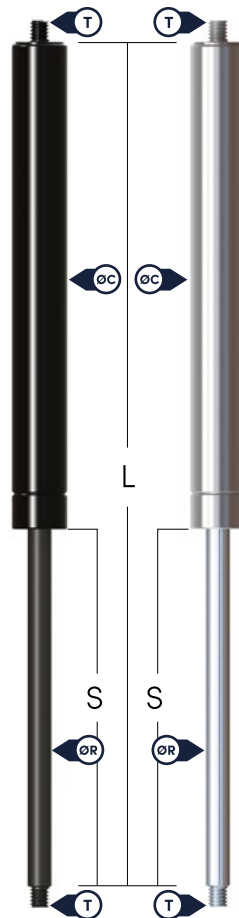
Proline Protection

# Gas Springs | 8mm Rods

## CUSTOM FORCES

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F9114-xxxN	80 - 750N	60	168
F61429-xxxN		80	206
F9117-xxxN		100	248
F61439-xxxN		120	288
F9120-xxxN		140	328
F9338-xxxN		160	367
F61443-xxxN		180	407
F9124-xxxN		200	447
F9134-xxxN		220	489
F9144-xxxN		250	547.5
F61452-xxxN		280	607
F61462-xxxN		300	647

Stainless Steel 316 - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
FS1000-xxxN	80 - 750N	60	168
FS1007-xxxN		80	206
FS1014-xxxN		100	248
FS61432-xxxN		120	288
FS1021-xxxN		140	328
FS1028-xxxN		160	367
FS61224-xxxN		180	407
FS1035-xxxN		200	447
FS1042-xxxN		220	489
FS1049-xxxN		250	547.5
FS61231-xxxN		280	607
FS61238-xxxN		300	647



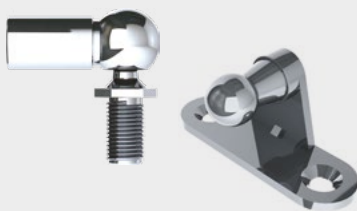
How to Order a Custom Force	
Lesjöfors Example Code	Example Force
F9114-750N	750N

How to Order a Custom Force	
Lesjöfors Example Code	Example Force
FS1000-750N	750N

Range Overview	
Rod Diameter (ØR):	8mm
Body Diameter (ØC):	18mm
Threads (T):	M6x1x8mm
Force Range:	80 - 750N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	8mm
Body Diameter (ØC):	18mm
Threads (T):	M6x1x8mm
Force Range:	80 - 750N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	AISI 316L
Rod:	Chrome Plated AISI 316L
Body Finish:	Polished
Guarantee:	2 years against manufacturing defects

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**Protection**  
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Additional Damping



Proline Protection



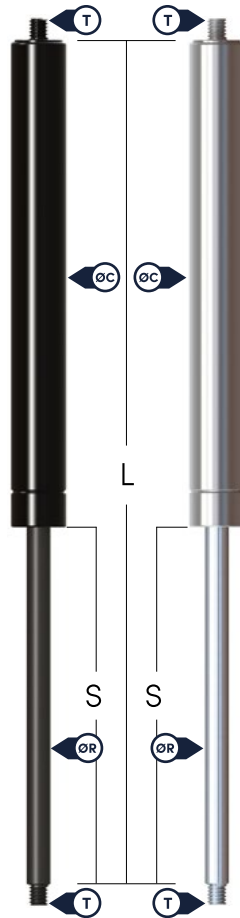
Stainless Steel Available

# Gas Springs | 8mm Rods



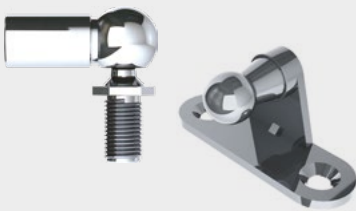
## STANDARD SET FORCES

Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
9114	500	60	168
9115	600		
9116	750		
9117	500	100	248
9118	600		
9119	750		
9120	400	140	328
9121	500		
9122	600		
9123	750		
9338	100	160	367
9339	150		
9340	200		
9341	250		
9342	300		
9343	350		
9344	400		
9345	500		
9346	600		
9347	750		
9124	100	200	447
9125	150		
9126	200		
9127	250		
9128	300		
9129	350		
9130	400		
9131	500		
9132	600		
9133	750		
9134	100	220	489
9135	150		
9136	200		
9137	250		
9138	300		
9139	350		
9140	400		
9141	500		
9142	600		
9143	750		
9144	100	250	547.5
9145	150		
9146	200		
9147	250		
9148	300		
9149	350		
9150	400		
9151	500		
9152	600		
9153	750		



Stainless Steel 316 - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
S1000	100	60	168
S1001	200		
S1002	300		
S1003	400		
S1004	500		
S1005	600		
S1006	750	80	206
S1007	100		
S1008	200		
S1009	300		
S1010	400		
S1011	500		
S1012	600	100	248
S1013	750		
S1014	100		
S1015	200		
S1016	300		
S1017	400		
S1018	500	140	328
S1019	600		
S1020	750		
S1021	100		
S1022	200		
S1023	300		
S1024	400	160	367
S1025	500		
S1026	600		
S1027	750		
S1028	100		
S1029	200		
S1030	300	200	447.5
S1031	400		
S1032	500		
S1033	600		
S1034	750		
S1035	100		
S1036	200	220	489
S1037	300		
S1038	400		
S1039	500		
S1040	600		
S1041	750		
S1042	100	250	547.5
S1043	200		
S1044	300		
S1045	400		
S1046	500		
S1047	600		
S1048	750	250	547.5
S1049	100		
S1050	200		
S1051	300		
S1052	400		
S1053	500		
S1054	600		
S1055	750		

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### Protection

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Additional Damping



Proline Protection



Stainless Steel Available

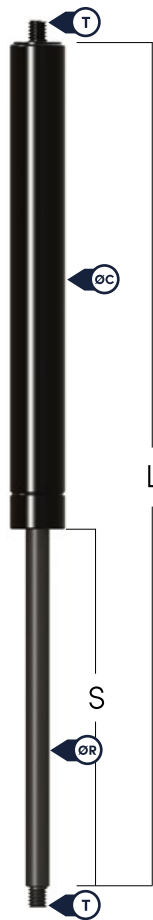
# Gas Springs | 8mm Rods

CUSTOM FORCES AND STANDARD SET FORCES WITH ADDITIONAL DAMPING

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F4508-xxxN	80 - 750N	50	153
F4831-xxxN		80	201
F4513-xxxN		100	238
F4516-xxxN		125	293
F4522-xxxN		150	353
F8117-xxxN		175	398
F4529-xxxN		200	453
F8124-xxxN		225	503
F4536-xxxN		255	556

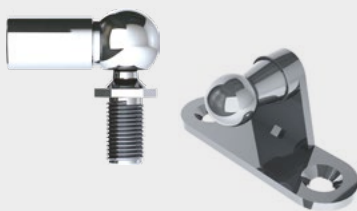
How to Order a Custom Force	
Lesjöfors Example Code	Example Force (xxxN)
F4508-750N	750N

Range Overview	
Rod Diameter (ØR):	8mm
Body Diameter (ØC):	18mm
Threads (T):	M6x1x8mm
Force Range:	80 - 750N
Extension Speed:	~0.1m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects



Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
4508	400	50	153
4509	500		
4852	750		
4831	400	80	201
4511	500		
4512	750		
4513	400	100	238
4708	500		
4515	750		
4516	100	125	293
4517	150		
4518	200		
4553	300		
4519	400		
4520	500		
4521	750		
4522	100	150	353
4523	150		
4524	200		
4525	300		
4526	400		
4527	500		
4528	750		
8117	100	175	398
8118	150		
8119	200		
8120	300		
8121	400		
8122	500		
8123	750		
4529	100	200	453
4530	150		
4531	200		
4532	300		
4533	400		
4534	500		
4535	750		
8124	100	225	503
8125	150		
8126	200		
8127	300		
8128	400		
8129	500		
8130	750		
4536	100	255	556
4810	150		
4538	200		
4510	300		
4853	400		
4540	500		
4550	750		

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Additional Damping



Proline Protection



Stainless Steel Available

# Gas Springs | 8mm Rods



MILD STEEL CUSTOM FORCES AND STANDARD SET FORCES WITH WELDED

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F9154-xxxN	100 - 750N	60	206.5
F9157-xxxN		80	246.5
F9160-xxxN		100	285.5
F9163-xxxN		120	326.5
F9166-xxxN		140	364.5
F9170-xxxN		160	407.5
F9180-xxxN		180	447
F9190-xxxN		200	485.5
F9200-xxxN		220	525.5
F9210-xxxN		250	586.5

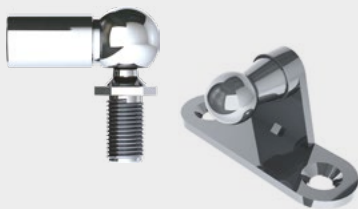
How to Order a Custom Force	
Lesjöfors Example Code	Example Force
F9154-750N	750N

Range Overview	
Rod Diameter (ØR):	8mm
Body Diameter (ØC):	18mm
Eye Holes (ØD1):	8.1mm
Force Range:	100 - 750N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects



Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
9154	500	60	206.5
9155	600		
9156	750		
9157	500	80	246.5
9158	600		
9159	750		
9160	500	100	285.5
9161	600		
9162	750		
9163	500	120	326.5
9164	600		
9165	750		
9166	400	140	364.5
9167	500		
9168	600		
9169	750	160	407.5
9170	100		
9171	150		
9172	200		
9173	250		
9174	300		
9175	350	180	447
9176	400		
9177	500		
9178	600		
9179	750		
9180	100		
9181	150	200	485.5
9182	200		
9183	250		
9184	300		
9185	350		
9186	400		
9187	500	220	525.5
9188	600		
9189	750		
9190	100		
9191	150		
9192	200		
9193	250	250	586.5
9194	300		
9195	350		
9196	400		
9197	500		
9198	600		
9199	750		
9200	100	250	586.5
9201	150		
9202	200		
9203	250		
9204	300		
9205	350		
9206	400		
9207	500		
9208	600		
9209	750		
9210	100		
9211	150		
9212	200		
9213	250		
9214	300		
9215	350		
9216	400		
9217	500		
9218	600		
9219	750		

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Additional Damping



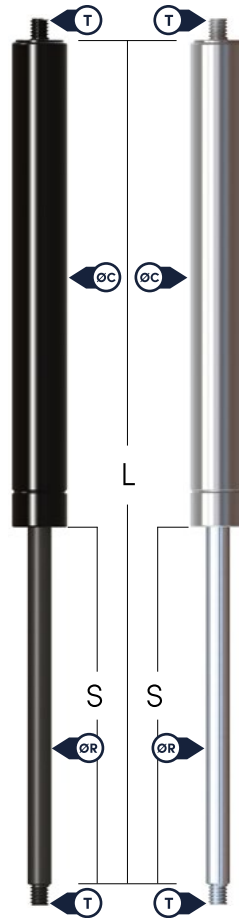
Proline Protection

# Gas Springs | 10mm Rods

## CUSTOM FORCES

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F9220-xxxN	150 - 1200N	100	248
F9223-xxxN		150	348
F9226-xxxN		200	448
F9229-xxxN		250	548
F9232-xxxN		300	648
F9245-xxxN		350	748
F9258-xxxN		400	848
F61482-xxxN		450	948
F61600-xxxN		500	1048

Stainless Steel 316 - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
FS1066-xxxN	200 - 1200N	100	248
FS1075-xxxN		150	348
FS1084-xxxN		200	448
FS1093-xxxN		250	548
FS1102-xxxN		300	648
FS1111-xxxN		350	748
FS1120-xxxN		400	848
FS61257-xxxN		450	948
FS61256-xxxN		500	1048



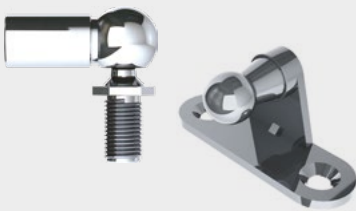
How to Order a Custom Force	
Lesjöfors Example Code	Example Force
F9220-1200N	1200N

How to Order a Custom Force	
Lesjöfors Example Code	Example Force
FS1066-1200N	1200N

Range Overview	
Rod Diameter (ØR):	10mm
Body Diameter (ØC):	23mm
Threads (T):	M8x1.25x9.5mm
Force Range:	150 - 1200N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	10mm
Body Diameter (ØC):	23mm
Threads (T):	M8x1.25x9.5mm
Force Range:	200 - 1200N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	AISI 316L
Rod:	Chrome Plated AISI 316L
Body Finish:	Polished
Guarantee:	2 years against manufacturing defects

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Additional Damping



Proline Protection



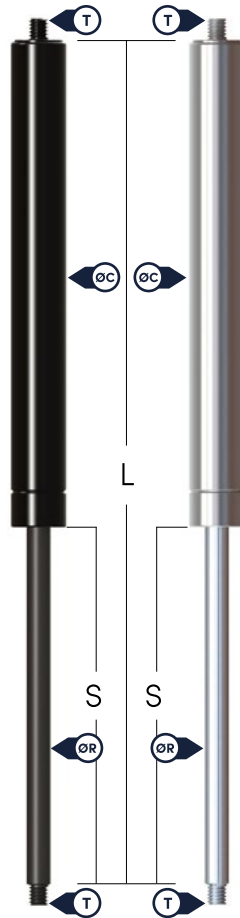
Stainless Steel Available

# Gas Springs | 10mm Rods



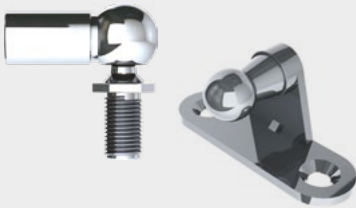
## STANDARD SET FORCES

Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
9220	900	100	248
9221	1000		
9222	1200		
9223	900	150	348
9224	1000		
9225	1200		
9226	900	200	448
9227	1000		
9228	1200		
9229	900	250	548
9230	1000		
9231	1200		
9232	150	300	648
9233	200		
9234	250		
9235	300		
9236	350		
9237	400		
9238	500		
9239	600		
9240	700		
9241	800		
9242	900	350	748
9243	1000		
9244	1200		
9245	150		
9246	200		
9247	250		
9248	300		
9249	350		
9250	400		
9251	500		
9252	600	400	848
9253	700		
9254	800		
9255	900		
9256	1000		
9257	1200		
9258	150		
9259	200		
9260	250		
9261	300		
9262	350		
9263	400		
9264	500		
9265	600		
9266	700		
9267	800		
9268	900		
9269	1000		
9270	1200		



Stainless Steel 316 - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
S1066	200	100	248
S1067	300		
S1068	400		
S1069	500		
S1070	600		
S1071	700		
S1072	850		
S1073	1000		
S1074	1200		
S1075	200		
S1076	300		
S1077	400		
S1078	500		
S1079	600		
S1080	700		
S1081	850		
S1082	1000		
S1083	1200		
S1084	200	200	448
S1085	300		
S1086	400		
S1087	500		
S1088	600		
S1089	700		
S1090	850		
S1091	1000		
S1092	1200		
S1093	200		
S1094	300		
S1095	400		
S1096	500		
S1097	600		
S1098	700		
S1099	850		
S1100	1000		
S1101	1200		
S1102	200	300	648
S1103	300		
S1104	400		
S1105	500		
S1106	600		
S1107	700		
S1108	850		
S1109	1000		
S1110	1200		
S1111	200		
S1112	300		
S1113	400		
S1114	500		
S1115	600		
S1116	700		
S1117	850		
S1118	1000		
S1119	1200		
S1120	200	400	848
S1121	300		
S1122	400		
S1123	500		
S1124	600		
S1125	700		
S1126	850		
S1127	1000		
S1128	1200		

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Additional Damping



Proline Protection



Stainless Steel Available

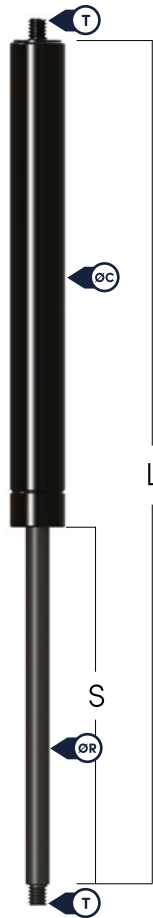
# Gas Springs | 10mm Rods

CUSTOM FORCES AND STANDARD SET FORCES WITH ADDITIONAL DAMPING

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F4542-xxxN	150 - 1200N	85	218
F4545-xxxN		110	263
F8131-xxxN		125	293
F4548-xxxN		150	338
F8134-xxxN		175	393
F4551-xxxN		200	453
F4554-xxxN		250	553
F4558-xxxN		300	653
F4566-xxxN		365	783
F8236-xxxN		400	874

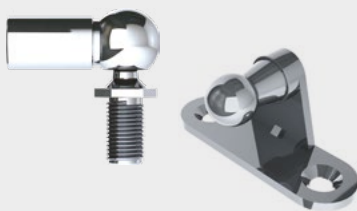
How to Order a Custom Force	
Lesjöfors Example Code	Example Force (xxxN)
F4542-1200N	1200N

Range Overview	
Rod Diameter (ØR):	10mm
Body Diameter (ØC):	23mm
Threads (T):	M8x1.25x9.5mm
Force Range:	150 - 1200N
Extension Speed:	~0.1m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects



Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
4542	700	85	218
4543	850		
4544	1200		
4545	700	110	263
4546	850		
4547	1200		
8131	700	125	293
8132	850		
8133	1200		
4548	700	150	338
4808	850		
4541	1200		
8134	700	175	393
8135	850		
8136	1200		
4551	700	200	453
4552	850		
4539	1200		
4554	700	250	553
4555	850		
4557	1200		
4558	200	300	653
4559	300		
4560	400		
4561	500		
4562	600		
4563	700		
4564	850		
4565	1200		
4566	200	365	783
4567	300		
4568	400		
4569	500		
4570	600		
4571	700		
4572	850		
4573	1200		
8236	200	400	874
8237	300		
8238	400		
8239	500		
8240	600		
8137	700		
8138	850		
8139	1200		

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Additional Damping



Proline Protection



Stainless Steel Available



# Gas Springs | 10mm Rods

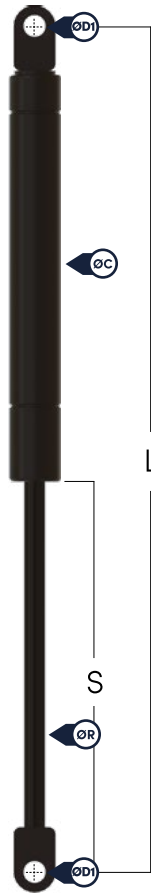
MILD STEEL CUSTOM FORCES AND STANDARD SET FORCES WITH WELDED



Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F9284-xxxN	120 - 1200N	95	283
F9287-xxxN		145	383
F9290-xxxN		195	483
F9293-xxxN		245	586
F9296-xxxN		295	683
F9309-xxxN		345	783
F9322-xxxN		395	883

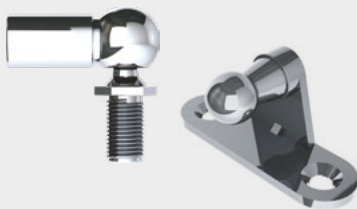
How to Order a Custom Force	
Lesjöfors Example Code	Example Force
F9284-1200N	1200N

Range Overview	
Rod Diameter (ØR):	10mm
Body Diameter (ØC):	23mm
Eye Holes (ØD1):	8.1mm
Force Range:	120 - 1200N
Extension Speed:	~0,3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects



Mild Steel - Standard Set Forces					
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm		
9284	900	95	283		
9285	1000				
9286	1200				
9287	900	145	383		
9288	1000				
9289	1200				
9290	900	195	483		
9291	1000				
9292	1200				
9293	900	245	586		
9294	1000				
9295	1200				
9296	150			295	683
9297	200				
9298	250				
9299	300				
9300	350				
9301	400				
9302	500				
9303	600	345	783		
9304	700				
9305	800				
9306	900				
9307	1000				
9308	1200				
9309	150			395	883
9310	200				
9311	250				
9312	300				
9313	350				
9314	400				
9315	500				
9316	600				
9317	700				
9318	800				
9319	900				
9320	1000				
9321	1200				
9322	150	95	283		
9323	200				
9324	250				
9325	300				
9326	350				
9327	400				
9328	500				
9329	600				
9330	700				
9331	800				
9332	900				
9333	1000				

Please note: adding end fittings to a spring will increase its extended length.



**End Fixings**  
Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



Additional Damping



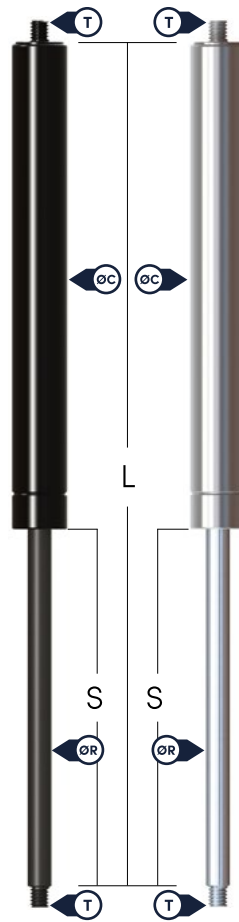
Proline Protection

# Gas Springs | 14mm Rods

## CUSTOM FORCES

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F61303-xxxN	250 - 2400N	100	268
F61492-xxxN		150	368
F61307-xxxN		200	468
F61496-xxxN		250	568
F61311-xxxN		300	668
F61610-xxxN		350	768
F61315-xxxN		400	874
F61615-xxxN		450	974
F61239-xxxN		500	1070

Stainless Steel 316 - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
FS61330-xxxN	250 - 2400N	100	268
FS61334-xxxN		150	368
FS61338-xxxN		200	468
FS61342-xxxN		250	568
FS61346-xxxN		300	668
FS61350-xxxN		350	768
FS61354-xxxN		400	874
FS61358-xxxN		450	974
FS61319-xxxN		500	1070



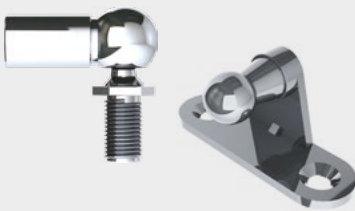
How to Order a Custom Force	
Lesjöfors Example Code	Example Force
F61303-2400N	2400N

How to Order a Custom Force	
Lesjöfors Example Code	Example Force
FS61330-2400N	2400N

Range Overview	
Rod Diameter (ØR):	14mm
Body Diameter (ØC):	29mm
Threads (T):	M10x1.5x11mm
Force Range:	250 - 2400N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	14mm
Body Diameter (ØC):	29mm
Threads (T):	M10x1.5x11mm
Force Range:	250 - 2400N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	AISI 316L
Rod:	Chrome Plated AISI 316L
Body Finish:	Polished
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length.



**End Fixings**  
Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



**Protection**  
Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available

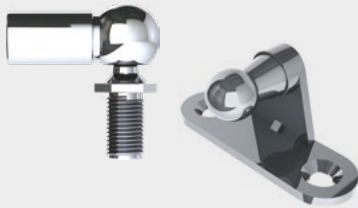
# Gas Springs | 14mm Rods

## STANDARD SET FORCES

Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
61303	1300	100	268
61304	1500		
61305	1700		
61306	2000		
61307	1300	200	468
61308	1500		
61309	1700		
61310	2000		
61311	1300	300	668
61312	1500		
61313	1700		
61314	2000		
61315	1300	400	874
61316	1500		
61317	1700		
61318	2000		
61239	500	500	1070
61293	600		
61294	700		
61295	800		
61296	900		
61297	1000		
61298	1100		
61299	1300		
61300	1500		
61301	1700		
61302	2000		



Please note: adding end fittings to a spring will increase its extended length.



### End Fixings

Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



### Protection

Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



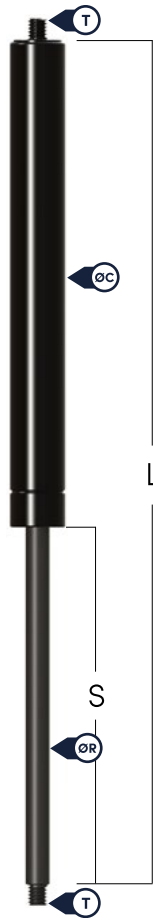
Stainless Steel Available

# Gas Springs | 14mm Rods

CUSTOM FORCES AND STANDARD SET FORCES WITH ADDITIONAL DAMPING

Mild Steel - Custom Forces			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
F61362-xxxN	250 - 2400N	100	258
F61365-xxxN		125	308
F61368-xxxN		150	368
F61371-xxxN		175	408
F61374-xxxN		200	468
F61377-xxxN		250	568
F61380-xxxN		300	668
F61383-xxxN		350	768
F61386-xxxN		400	874

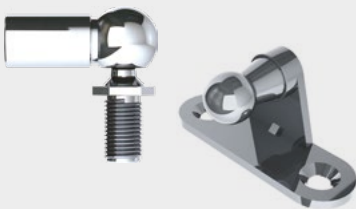
Mild Steel - Standard Set Forces			
Catalogue Code	Force N (F1)	Stroke Length (S) mm	Extended Length (L) mm
61362	1200	100	258
61363	1600		
61364	2000		
61365	1200	125	308
61366	1600		
61367	2000		
61368	1200	150	368
61369	1600		
61370	2000		
61371	1200	175	408
61372	1600		
61373	2000		
61374	1200	200	468
61375	1600		
61376	2000		
61377	1200	250	568
61378	1600		
61379	2000		
61380	1200	300	668
61381	1600		
61382	2000		
61383	1200	350	768
61384	1600		
61385	2000		
61386	1200	400	874
61387	1600		
61388	2000		



How to Order a Custom Force	
Lesjöfors Example Code	Example Force (xxxN)
F61362-2400N	2400N

Range Overview	
Rod Diameter (ØR):	14mm
Body Diameter (ØC):	29mm
Threads (T):	M10x1.5x11mm
Force Range:	250 - 2400N
Extension Speed:	~0.1m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length.



**End Fixings**  
Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



**Protection**  
Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available

# Gas Springs | 6mm Rods

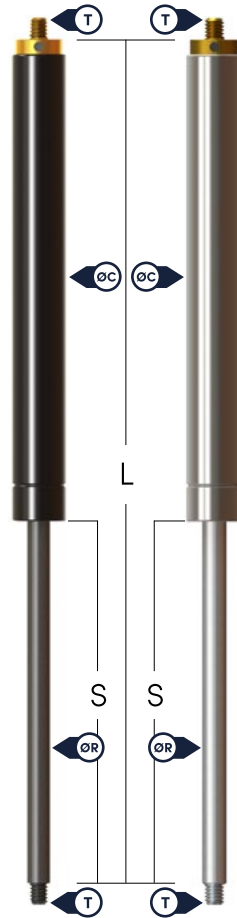
VARIABLE FORCE



Mild Steel - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61220	50 - 400N	60	160
61221		100	240
61222		150	340
61223		197	440

Variable gas springs are supplied at full pressure. If you would like a specific force, please let us know when you order.

For degassing instructions please refer to page 10.

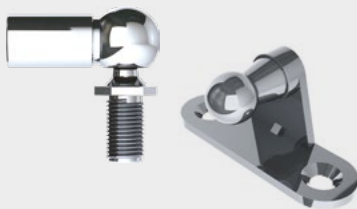


Stainless Steel 316 - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61216	50 - 400N	60	160
61217		100	240
61218		150	340
61219		200	440

Range Overview	
Rod Diameter (ØR):	6mm
Body Diameter (ØC):	15mm
Threads (T):	M6x1x9mm
Valve Location:	Side
Force Range:	50 - 400N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	6mm
Body Diameter (ØC):	15mm
Threads (T):	M6x1x9mm
Valve Location:	Side
Force Range:	50 - 400N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	SS 316L
Rod:	Chrome Plated SS 316
Body Finish:	Polished
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length.



**End Fixings**  
Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



**Protection**  
Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available

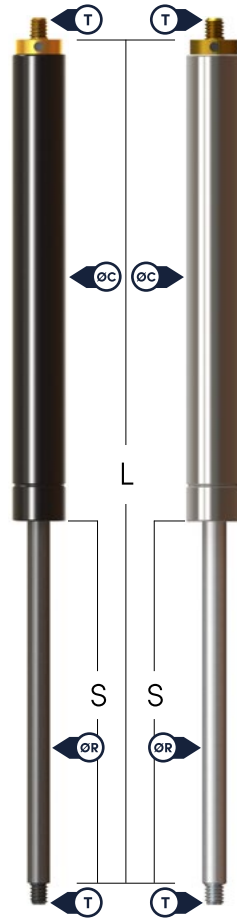
# Gas Springs | 8mm Rods

VARIABLE FORCE

Mild Steel - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61249	50 - 650N	100	250
61250		120	290
61251		150	350
61252		180	410
61253		200	450
61254		250	550
61255		300	650

Variable gas springs are supplied at full pressure. If you would like a specific force, please let us know when you order.

For degassing instructions please refer to page 10.

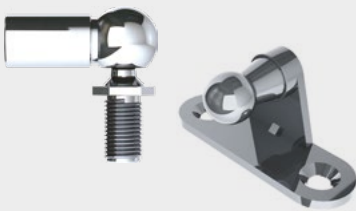


Stainless Steel 316 - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61244	50 - 650N	100	250
61245		150	350
61246		200	450
61247		250	550
61248		300	650

Range Overview	
Rod Diameter (ØR):	8mm
Body Diameter (ØC):	18mm
Threads (T):	M6x1x9mm
Valve Location:	Side
Force Range:	50 - 650N
Extension Speed:	~0,3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	8mm
Body Diameter (ØC):	18mm
Threads (T):	M6x1x9mm
Valve Location:	Side
Force Range:	50 - 650N
Extension Speed:	~0,3m/s
Working Temp. Range:	-30°C to 80°C
Material:	SS 316L
Rod:	Chrome Plated SS 316
Body Finish:	Polished
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length.



### End Fixings

Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



### Protection

Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available

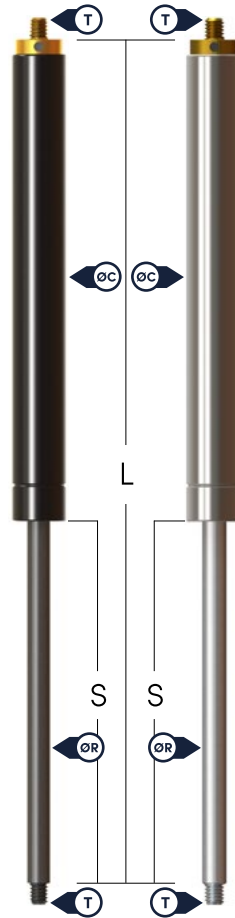
# Gas Springs | 10mm Rods

VARIABLE FORCE



Mild Steel - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61275	70 - 1200N	100	250
61276		150	350
61277		200	450
61278		250	550
61279		300	650
61280		350	750
61281		393	850
61274		494	1050

Stainless Steel 316 - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61267	70 - 1200N	100	250
61268		150	350
61269		200	450
61270		250	550
61271		300	650
61272		350	750
61273		393	850
61266		500	1050



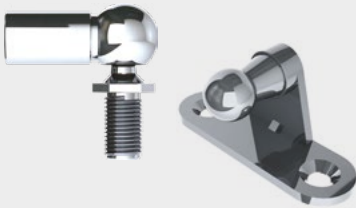
Variable gas springs are supplied at full pressure. If you would like a specific force, please let us know when you order.

For degassing instructions please refer to page 10.

Range Overview	
Rod Diameter (ØR):	10mm
Body Diameter (ØC):	21mm
Threads (T):	M8x1.25x9mm
Valve Location:	Side
Force Range:	70 - 1200N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	10mm
Body Diameter (ØC):	21mm
Threads (T):	M8x1.25x9mm
Valve Location:	Side
Force Range:	70 - 1200N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	SS 316L
Rod:	Chrome Plated SS 316
Body Finish:	Polished
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length.



### End Fixings

Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



### Protection

Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



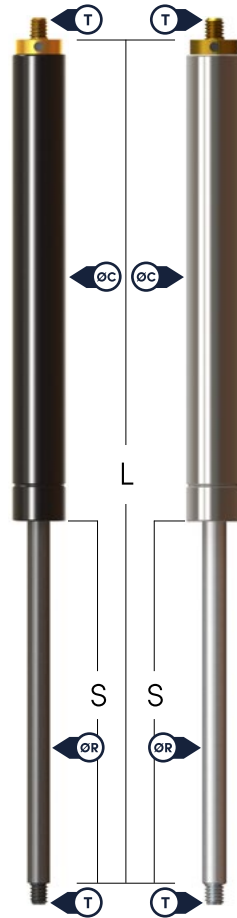
Stainless Steel Available

# Gas Springs | 14mm Rods

## VARIABLE FORCE

Mild Steel - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61397	150 - 2500N	100	280
61398		150	380
61399		200	480
61400		250	580
61401		300	680
61402		350	780
61403		400	880
61396		500	1080

Stainless Steel 316 - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61390	150 - 2500N	100	280
61391		150	380
61392		200	480
61393		250	580
61394		300	680
61395		400	880
61389		500	1080



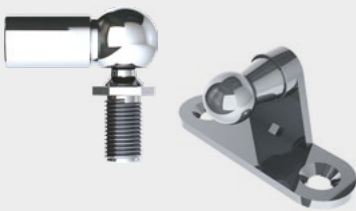
Variable gas springs are supplied at full pressure. If you would like a specific force, please let us know when you order.

For degassing instructions please refer to page 10.

Range Overview	
Rod Diameter (ØR):	14mm
Body Diameter (ØC):	27mm
Threads (T):	M10x1.5x11mm
Valve Location:	Side
Force Range:	150 - 2500N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	14mm
Body Diameter (ØC):	27mm
Threads (T):	M10x1.5x11mm
Valve Location:	Side
Force Range:	150 - 2500N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	SS 316L
Rod:	Chrome Plated SS 316
Body Finish:	Polished
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length.



### End Fixings

Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



### Protection

Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available



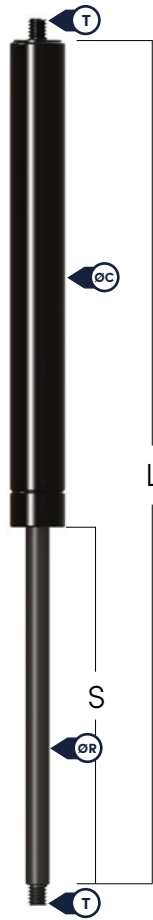
# Gas Springs | 20mm Rods

VARIABLE FORCE

Mild Steel - Variable Force			
Catalogue Code	Force Range N	Stroke Length (S) mm	Extended Length (L) mm
61408	300 - 5000N	100	311
61409		150	411
61410		200	511
61411		300	711
61412		400	911
61404		500	1111
61405		600	1311
61406		700	1511
61407		800	1711

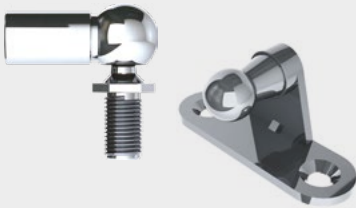
Variable gas springs are supplied at full pressure. If you would like a specific force, please let us know when you order.

For degassing instructions please refer to page 10.



Range Overview	
Rod Diameter (ØR):	20mm
Body Diameter (ØC):	40mm
Threads (T):	M14x1.5x15mm
Valve Location:	Thread
Force Range:	300 - 5000N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length.



### End Fixings

Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



Additional Damping



Proline Protection



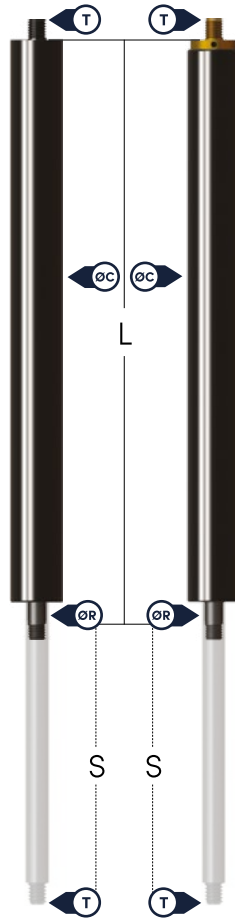
Stainless Steel Available

# Traction Gas Springs | 8mm Rods

FIXED AND VARIABLE FORCE

Mild Steel - Custom Forces				
Catalogue Code	Force Range N	Stroke Length (S)	Length (L)	
		mm	Compressed (L)	Extended
61282	50 - 600N	60	145	205
61283		100	185	285
61284		150	235	385
61285		200	285	485
61286		250	335	585

Mild Steel - Variable Force				
Catalogue Code	Force Range N	Stroke Length (S)	Length (L)	
		mm	Compressed (L)	Extended
61892	50 - 600N	60	150	210
61893		100	190	290
61894		150	240	390
61895		200	290	490
61896		250	340	590



Variable gas springs are supplied at full pressure. If you would like a specific force, please let us know when you order.

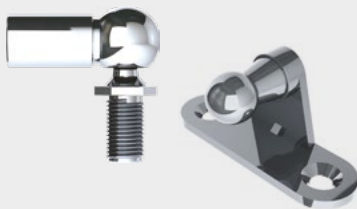
For degassing instructions please refer to page 10.

How to Order a Custom Force	
Lesjöfors Example Code	Example Force
61282-600N	600N

Range Overview	
Rod Diameter (ØR):	8mm
Body Diameter (ØC):	22mm
Threads (T):	M8x1.25x9.5mm
Valve Location:	Side
Force Range:	50 - 600N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	8mm
Body Diameter (ØC):	22mm
Threads (T):	M8x1.25x9.5mm
Valve Location:	Side
Force Range:	50 - 600N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length. Supplied without damping, additional damping available upon request.



## End Fixings

Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



## Protection

Safety Locking Tubes, Protection Tubes and Dust Covers - safety and durability of gas springs.



Additional Damping



Proline Protection



Stainless Steel Available

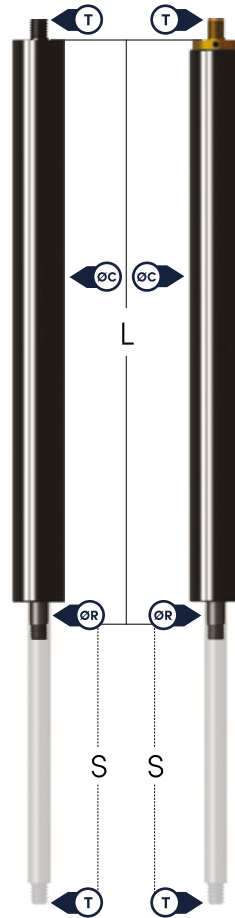
# Traction Gas Springs | 10mm Rods

FIXED AND VARIABLE FORCE



Mild Steel - Custom Forces				
Catalogue Code	Force Range N	Stroke Length (S)	Length (L)	
		mm	Compressed (L)	Extended
61288	150 - 1500N	100	197	297
61289		150	247	397
61290		200	297	497
61291		250	347	597
61292		300	397	697
60269		400	497	897

Mild Steel - Variable Force				
Catalogue Code	Force Range N	Stroke Length (S)	Length (L)	
		mm	Compressed (L)	Extended
61898	150 - 1500N	100	200	300
61899		150	250	400
61900		200	300	500
61901		250	350	600
61902		300	400	700
61903		400	500	900
61897		500	600	1100



Variable gas springs are supplied at full pressure. If you would like a specific force, please let us know when you order.

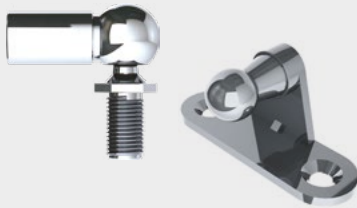
For degassing instructions please refer to page 10.

How to Order a Custom Force	
Lesjöfors Example Code	Example Force
61288-1500N	1500N

Range Overview	
Rod Diameter (ØR):	10mm
Body Diameter (ØC):	28mm
Threads (T):	M10x1.5x11mm
Valve Location:	Side
Force Range:	150 - 1500N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Range Overview	
Rod Diameter (ØR):	10mm
Body Diameter (ØC):	28mm
Threads (T):	M10x1.5x11mm
Valve Location:	Side
Force Range:	150 - 1500N
Extension Speed:	~0.3m/s
Working Temp. Range:	-30°C to 80°C
Material:	Steel
Rod:	QPQ
Body Finish:	Powder Coating
Guarantee:	2 years against manufacturing defects

Please note: adding end fittings to a spring will increase its extended length. Supplied without damping, additional damping available upon request.



### End Fixings

Ball Joints, Eye Ends, Clevis Forks, Rose Eyes and a vast array of bracketry for our full gas spring range.



### Protection

Safety Locking Tubes, Protection Tubes and Dust Covers – safety and durability of gas springs.



Additional Damping



Proline Protection

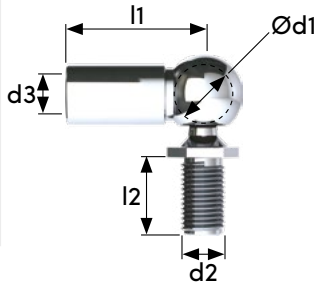


Stainless Steel Available

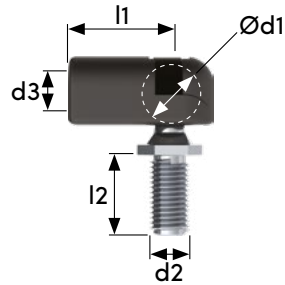
# End Fittings

## BALL JOINTS

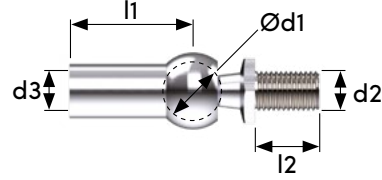
### Steel Ball Joint



### Plastic Ball Joint



### In-Line Ball Joint



#### Steel Ball Joints

Catalogue Code	Product Code	d3	l1	d2	l2	Ød1	ØRod
			mm		mm	mm	
60200	B0	M6	22	M5	13	8	6 & 8mm
60201	B1	M6	18	M6	13	10	6 & 8mm
60202	B2	M6	20	M6	13	10	6 & 8mm
60203	B3	M6	25	M6	13	10	6 & 8mm
60204	B4	M6	30	M6	13	10	6 & 8mm
60205	B5	M6	18	M8	13	10	6 & 8mm
60217	B5-10S	M8	18	M8	13	10	10mm
60206	B6	M6	20	M8	13	10	6 & 8mm
60207	B7	M6	25	M8	13	10	6 & 8mm
60218	B7-10S	M8	25	M8	13	10	10mm
60208	B8	M6	30	M8	13	10	6 & 8mm
60209	B9	M8	18	M8	16.5	13	10mm
60210	B10	M8	20	M8	16.5	13	10mm
60211	B11	M8	25	M8	16.5	13	10mm
60212	B12	M8	30	M8	16.5	13	10mm
60213	B13	M10	25	M10	20	16	14mm
60219	B13-A	M10	25	M8	14	13	14mm
60214	B14	M10	30	M10	20	16	14mm
60220	B14-A	M10	30	M8	14	13	14mm
60215	B15	M10	35	M10	20	16	14mm
60221	B15-A	M10	35	M8	14	13	14mm
62102	CS3	M14	45	M14	28	20	20mm

#### Plastic Ball Joints

Catalogue Code	Product Code	d3	l1	d2	l2	Ød1	ØRod
			mm		mm	mm	
60248	PB1	M6	18	M6	13	10	6 & 8mm
60249	PB2	M6	25	M6	13	10	6 & 8mm
60250	PB3	M6	18	M8	13	10	6 & 8mm
60251	PB4	M6	25	M8	13	10	6 & 8mm
60252	PB5	M8	18	M8	13	10	10mm

#### In-line Ball Joints

Catalogue Code	Product Code	d3	l1	d2	l2	Ød1	ØRod
			mm		mm	mm	
8960	AX1	M6	25	M6	12.5	10	6 & 8mm
8961	AX2	M8	30	M8	16.5	13	6 & 8mm

#### Stainless Steel 316 Ball Joints

Catalogue Code	Product Code	d3	l1	d2	l2	Ød1	ØRod
			mm		mm	mm	
60253	SSB1	M6	18	M6	13	10	6 & 8mm
S1131	CS1	M6	25	M6	13	10	6 & 8mm
60255	SSB5	M6	18	M8	13	10	6 & 8mm
60305	SSB6	M6	20	M8	13	10	6 & 8mm
60256	SSB7	M6	25	M8	13	10	6 & 8mm
60257	SSB9	M8	18	M8	16.5	13	10mm
60306	SSB10	M8	20	M8	16.5	13	10mm
60258	SSB11	M8	25	M8	16.5	13	10mm
S1135	CS2	M8	30	M8	15	13	10mm
60259	SSB15	M10	35	M10	20	16	14mm

#### Key

Label	Product Code	Description
d3	Internal Thread	Where the end fitting screws onto the spring
l1	Fitting Length	From the centre of the socket to the end of the fitting
d2	Stud Thread	Where the end fitting attaches to the application
l2	Stud Thread Length	Length of the thread that attaches to the application
d1	Ball Diameter	Diameter of the spherical ball attached to the stud
l3	Full Stud Length	From the end of the thread to the centre of the ball

#### Advice on using end fittings

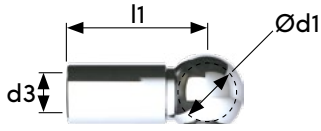
- Where possible use ball joints to avoid side loading
- Ensure end fittings are fully screwed to the spring
- Ensure end fittings are in line to avoid side loading
- When using ball joints ensure the stud is fixed to the socket and the clip is in position
- Ensure the gas spring matches the chosen end fittings



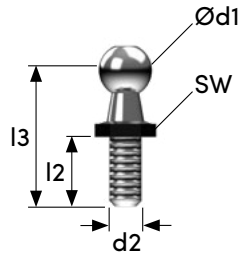
# End Fittings

## BALL SOCKETS AND STUDS

### Ball Socket



### Steel Stud



#### Ball Sockets

Catalogue Code	Product Code	Material	Finish	d3	l1 mm	Ød1 mm
603	BC1	Steel	Galvanised	M4	18	8
4597	BC2	Plastic	Black	M6	18	10
1114	BC3	Plastic	Grey	M6	18	10
4629	BC9	Plastic	Black	M6	18	10
5661	BC10	Plastic	Black	M6	18	10
4594	BC4	Steel	Black chrome	M6	19	10
4615	BC5	Steel	Galvanised	M6	25	10
5662	BC11	Plastic	Black	M8	18	10
4602	BC6	Steel	Galvanised	M8	19	10
6651	BC7	Steel	Black chrome	M8	25	13
4599	BC8	Steel	Galvanised	M8	30	13

#### Steel Studs

Catalogue Code	Product Code	Material	Finish	d2	l2 mm	Ød1 mm	l3 mm	SW mm
604	BS1	Steel	Galvanised	M4	10	8	19	7
4616	BS2	Steel	Galvanised	M6	13	10	24	8
4610	BS3	Steel	Galvanised	M8	13	10	25	13
62600	BS7	Steel	Galvanised	M8	16.5	13	29.5	11
8272	BS5	Steel	Black chrome	M10	20	13	36	17

#### Key

Label	Product Code	Description
d3	Internal Thread	Where the end fitting screws onto the spring
l1	Fitting Length	From the centre of the socket to the end of the fitting
d2	Stud Thread	Where the end fitting attaches to the application
l2	Stud Thread Length	Length of the thread that attaches to the application
d1	Ball Diameter	Diameter of the spherical ball attached to the stud
l3	Full Stud Length	From the end of the thread to the centre of the ball

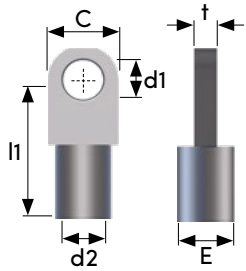
#### Advice on using end fittings

- Where possible use ball joints to avoid side loading
- Ensure end fittings are fully screwed to the spring
- Ensure end fittings are in line to avoid side loading
- When using ball joints ensure the stud is fixed to the socket and the clip is in position
- Ensure the gas spring matches the chosen end fittings

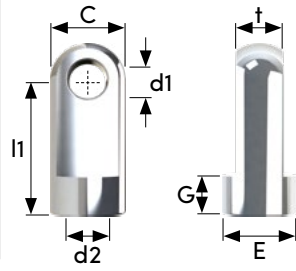
# End Fittings

## EYE ENDS

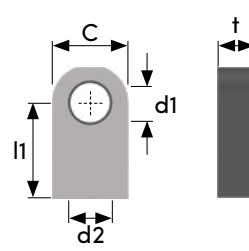
Type 1



Type 2



Type 3



Steel Eye Ends Type 1

Catalogue Code	Product Code	d2	l1	C	d1	E	t	G	ØRod
		mm	mm	mm	mm	mm	mm	mm	
60222	E0	M6	17	13	6	9	2.8	10	6 & 8mm
60223	E1	M6	18	15	8.5	12	4.8	11	6 & 8mm
60224	E2	M6	20	15	8.5	11	4.8	12	6 & 8mm
60225	E3	M6	22	15	8.5	9	4.8	12	6 & 8mm
60226	E4	M6	25	15	8.5	11	4.8	12	6 & 8mm
60227	E5	M6	30	15	8.5	12	4.8	16	6 & 8mm

Steel Eye Ends Type 2

Catalogue Code	Product Code	Finish	d2	l1	C	d1	E	t	G	ØRod
			mm	mm	mm	mm	mm	mm	mm	mm
600	L-E1	Galvanised Steel	M4	12	8	4.1	8	4	5	4mm
4612	L-E2	Black Chrome	M6	19	9	6	9	3.9	11	6 & 8mm
4225	L-E6	Aluminium	M6	18	10	6.1	10	6.1	9	6 & 8mm
60228	E6	Zinc	M8	18	18	8	18	9.8	6	10mm
60229	E7	Zinc	M8	20	14	8	14	9.8	7	10mm
4012	L-E10	Aluminium	M8	20	16	8.1	16	10	10.5	10mm
60230	E8	Zinc	M8	22	14	8	14	9.8	10	10mm
60231	E9	Zinc	M8	25	18	8.5	18	9.8	5	10mm
60232	E10	Zinc	M8	30	18	8	18	9.8	14	10mm
60233	E11	Zinc	M10	22	20	10	20	11.8	10	14mm
60234	E12	Zinc	M10	30	20	10	20	11.8	14	14mm
60235	E13	Zinc	M10	35	20	10	20	11.8	16	14mm
62100	L-E24	Galvanised Steel	M14	40	25	14	25	13.8	20	20mm

Steel Eye Ends Type 3

Catalogue Code	Product Code	d2	l1	C	Ød1	E	t	G	ØRod
		mm	mm	mm	mm	mm	mm	mm	mm
4595	L-E7	M6	16	12	6.2	-	8	-	6 & 8mm
4596	L-E8	M6	16	12	8.2	-	8	-	6 & 8mm
60307	CE2	M6	16	16	8.25	-	8	-	6 & 8mm
60308	CE5	M6	20	16	8.25	-	7.8	-	6 & 8mm

### Key

Label	Product Code	Description
d2	Internal Thread	Where the end fitting screws onto the spring
l1	Fitting Length	From the centre of the eye to the end of the fitting
C	Outer Radius	Outer eye radius
d1	Eye Hole Diameter	The measurement of the internal diameter of the eye
E	Shoulder Width	Width of the shoulder
t	Thickness	Eye thickness
G	Shoulder Height	Height of the shoulder

### Advice on using end fittings

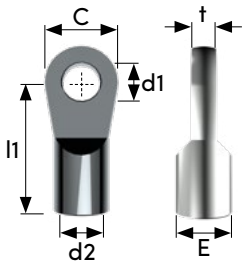
- Where possible use ball joints to avoid side loading
- Ensure end fittings are fully screwed to the spring
- Ensure end fittings are in line to avoid side loading
- When using ball joints ensure the stud is fixed to the socket and the clip is in position
- Ensure the gas spring matches the chosen end fittings



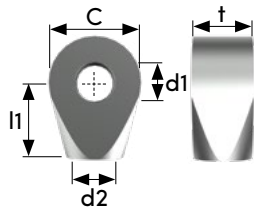
# End Fittings

## EYE ENDS AND ROSE EYES

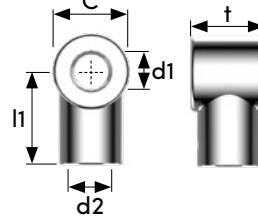
Type 4



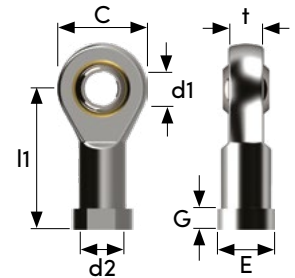
Type 5



Type 6



Rose Eyes



### Zinc Eye Ends Type 4

Catalogue Code	Product Code	d2	l1	C	Ød1	E	t	G	ØRod
			mm		mm	mm	mm		
4592	L-E3	M6	28	R8	6.2	12	5	-	6 & 8mm
4593	L-E4	M6	28	R8	8.2	12	5	-	6 & 8mm
4601	L-E5	M8	28	R8	8.2	12	5	-	10mm

### Zinc Eye Ends Type 5

Catalogue Code	Product Code	d2	l1	C	Ød1	E	t	G	ØRod
			mm		mm	mm	mm		
6599	L-E11	M6	13	R7.5	8.2	-	10	-	6 & 8mm
8243	L-E12	M6	16	R9.5	6.2	-	12	-	6 & 8mm
8244	L-E13	M6	16	R9.5	8.2	-	12	-	6 & 8mm
4614	L-E14	M6	16	R9.5	12.2	-	12	-	6 & 8mm
6600	L-E9	M8	13	R9	8	-	10	-	10mm
4603	L-E15	M8	16	R9.5	8.2	-	12	-	10mm
8245	L-E16	M8	16	R9.5	10.2	-	12	-	10mm
4606	L-E17	M8	16	R9.5	12.2	-	12	-	10mm

### Zinc Eye Ends Type 6

Catalogue Code	Product Code	d2	l1	ØC	Ød1	E	t	G	ØRod
			mm	mm	mm	mm	mm	mm	
6649	L-E18	M8	22	18	8.2	15	18	-	10mm
6650	L-E19	M8	22	18	10.2	15	18	-	10mm

### Steel Rose Eyes

Catalogue Code	Product Code	d2	l1	ØC	Ød1	E	t	G	ØRod
			mm	mm	mm	mm	mm	mm	
9444	L-E30	M6	30	20	6	11	6.75	5	6 & 8mm
9445	L-E31	M8	36	24	8	14	9	6	10mm
60239	RE12	M10	43	28	10	19	10.5	6.5	14mm
62101	L-E25	M14	57	36	14	22	19	8	20mm

### Key

Label	Product Code	Description
d2	Internal Thread	Where the end fitting screws onto the spring
l1	Fitting Length	From the centre of the eye to the end of the fitting
C	Outer Radius	Outer eye radius
d1	Eye Hole Diameter	The measurement of the internal diameter of the eye
E	Shoulder Width	Width of the shoulder
t	Thickness	Eye thickness
G	Shoulder Height	Height of the shoulder

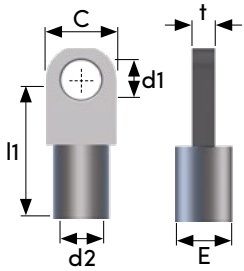
### Advice on using end fittings

- Where possible use ball joints to avoid side loading
- Ensure end fittings are fully screwed to the spring
- Ensure end fittings are in line to avoid side loading
- When using ball joints ensure the stud is fixed to the socket and the clip is in position
- Ensure the gas spring matches the chosen end fittings

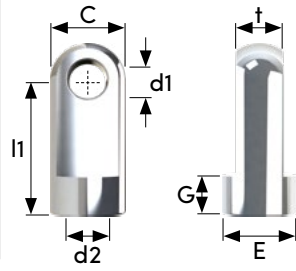
# End Fittings

## STAINLESS STEEL EYE ENDS

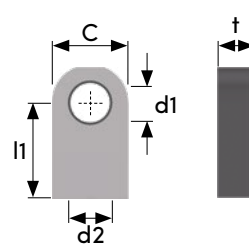
Type 1



Type 2



Type 3



**Stainless Steel 316 Eye Ends Type 1**

Catalogue Code	Product Code	d2	l1	C	d1	E	t	G	ØRod
			mm	mm	mm	mm	mm	mm	
60260	SSE1	M6	18	15	8.5	12	4.8	11	6 & 8mm
60261	SSE2	M6	20	15	8.5	11	4.8	12	6 & 8mm
60262	SSE3	M6	22	15	8.5	9	4.8	12	6 & 8mm
60263	SSE4	M6	25	15	8.5	11	4.8	12	6 & 8mm
60264	SSE5	M6	30	15	8.5	12	4.8	16	6 & 8mm

**Stainless Steel 316 Eye Ends Type 2**

Catalogue Code	Product Code	d2	l1	C	d1	E	t	G	ØRod
			mm	mm	mm	mm	mm	mm	
S1137	L-E20	M6	18	10	6.2	10	6.1	9	6 & 8mm
60265	SSE6	M8	18	18	8	18	9.8	6	10mm
S1138	L-E23	M8	20	16	8.1	16	10	10.5	10mm
60266	SSE9	M8	25	18	8.5	18	9.8	5	10mm
60267	SSE10	M8	30	18	8	18	9.8	14	10mm
60268	SSE13	M10	35	20	10	20	11.8	16	14mm

**Stainless Steel 316 Eye Ends Type 3**

Catalogue Code	Product Code	d2	l1	C	d1	E	t	G	ØRod
			mm	mm	mm	mm	mm	mm	
S1129	L-E21	M6	16	12	6.2	-	8	-	6 & 8mm
S1133	L-E22	M8	16	14	8.2	-	10	-	10mm

### Key

Label	Product Code	Description
d2	Internal Thread	Where the end fitting screws onto the spring
l1	Fitting Length	From the centre of the eye to the end of the fitting
C	Outer Radius	Outer eye radius
d1	Eye Hole Diameter	The measurement of the internal diameter of the eye
E	Shoulder Width	Width of the shoulder
t	Thickness	Eye thickness
G	Shoulder Height	Height of the shoulder

### Advice on using end fittings

- Where possible use ball joints to avoid side loading
- Ensure end fittings are fully screwed to the spring
- Ensure end fittings are in line to avoid side loading
- When using ball joints ensure the stud is fixed to the socket and the clip is in position
- Ensure the gas spring matches the chosen end fittings

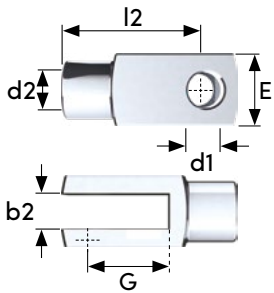




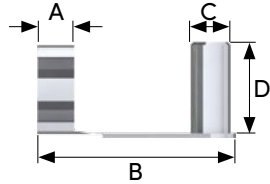
# End Fittings

## CLEVIS FORKS AND CLIPS

### Steel Clevis Fork



### Steel Clevis Fork Clip



#### Steel Clevis Forks

Catalogue Code	Product Code	d2	l2	Ød1	b2	E	G	ØRod
		mm	mm	mm	mm	mm	mm	
601	G1	M4	16	4	4	8	8	4mm
4620	G3	M6	24	6	6	12	12	6 & 8mm
4996	G5	M6	36	6	6	12	24	6 & 8mm
4605	G7	M8	32	8	8	16	16	10mm
4214	G9	M8	48	8	8	16	32	10mm
60244	C3	M10	40	10	10	20	20	14mm
62103	G13	M14	56	14	14	27	28	20mm

#### Stainless Steel 316 Clevis Forks

Catalogue Code	Product Code	d2	l2	Ød1	b2	E	G	ØRod
		mm	mm	mm	mm	mm	mm	
S1130	G11	M6	24	6	6	12	12	6 & 8mm
S1134	G12	M8	32	8	8	16	16	10mm
60270	SSC3	M10	40	10	10	20	20	14mm

#### Steel Clevis Fork Clips

Catalogue Code	Product Code	A	B	ØC	D
		mm	mm	mm	mm
602	G2	4.5	15	4	9.5
4621	G4	-	23	6	14
5089	G6	-	35	6	14
4619	G8	-	31	8	19
4215	G10	-	46	8	19
60245	C3-CLIP	10	39	10	23
60247	C4-CLIP	14	54	14	31

#### Key

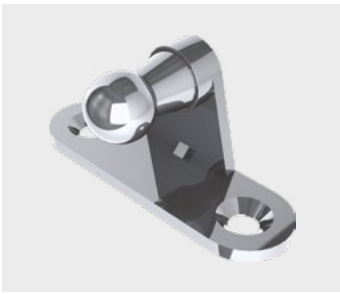
Label	Product Code	Description
d2	Internal Thread	Where the end fitting screws onto the spring
l2	Fitting Length	From the centre of the eye to the end of the fitting
d1	Eye Hole Diameter	The measurement of the internal diameter of the eye
b2	Gap Width	Width of the fork gap
E	External Width	External width of the fork
G	Fork Depth	Depth of the fork

#### Advice on using end fittings

- Where possible use ball joints to avoid side loading
- Ensure end fittings are fully screwed to the spring
- Ensure end fittings are in line to avoid side loading
- When using ball joints ensure the stud is fixed to the socket and the clip is in position
- Ensure the gas spring matches the chosen end fittings

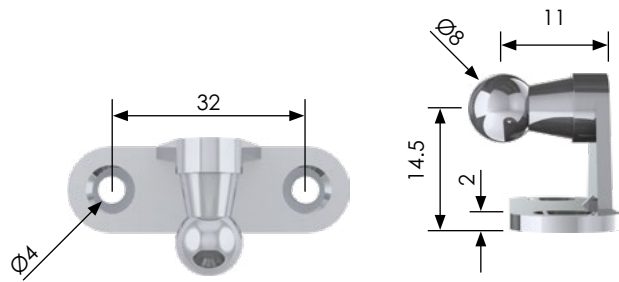
# Brackets

## BRACKETS FOR BALL JOINTS



**Mild Steel**  
 Product Code: BK-16  
 Catalogue Code: 606

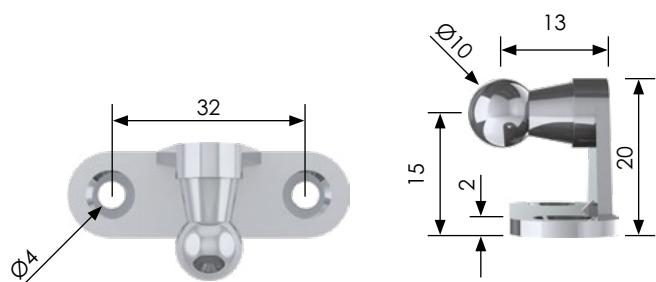
Compatibility: 6 & 8mm rods



**Mild Steel**  
 Product Code: BK-11  
 Catalogue Code: 4626

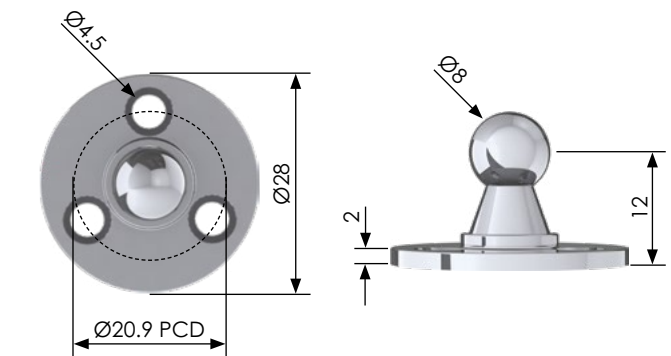
**Stainless Steel 316**  
 Product Code: SSBRK-1  
 Catalogue Code: 60292

Compatibility: 6 & 8mm rods



**Mild Steel**  
 Product Code: BK-17  
 Catalogue Code: 607

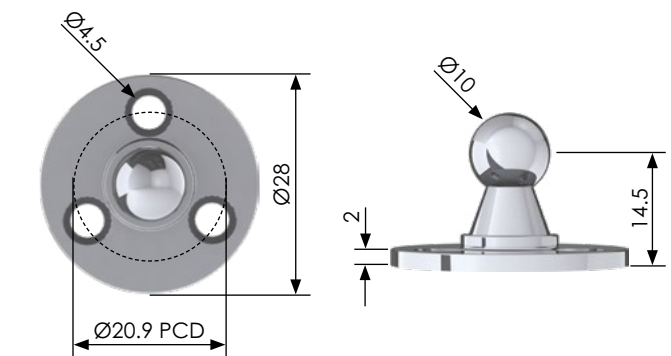
Compatibility: 6 & 8mm rods



**Mild Steel**  
 Product Code: BK-12  
 Catalogue Code: 4627

**Stainless Steel 316**  
 Product Code: SSBRK-2  
 Catalogue Code: 60293

Compatibility: 6 & 8mm rods



# Brackets

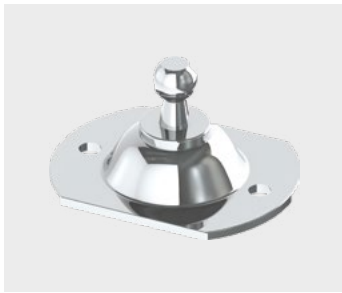
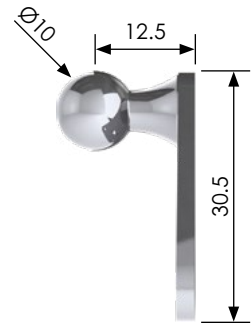
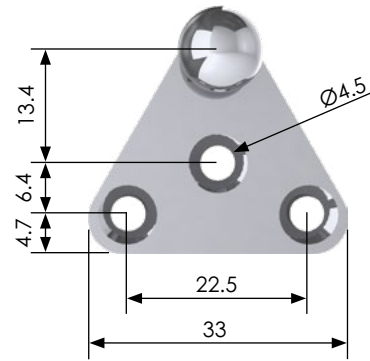
## BRACKETS FOR BALL JOINTS



**Mild Steel**  
Product Code: BRK-3  
Catalogue Code: 60273

**Stainless Steel 304**  
Product Code: SSBRK-3  
Catalogue Code: 60294

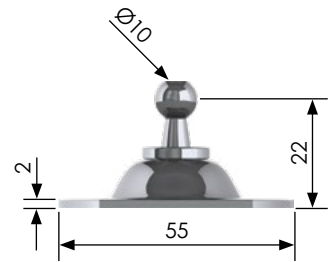
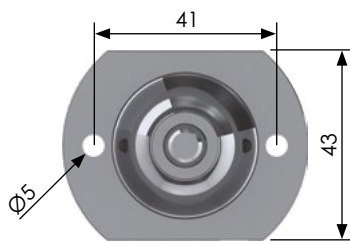
Compatibility: 6 & 8mm rods



**Mild Steel**  
Product Code: BRK-4  
Catalogue Code: 60274

**Stainless Steel 304**  
Product Code: SSBRK-4  
Catalogue Code: 60295

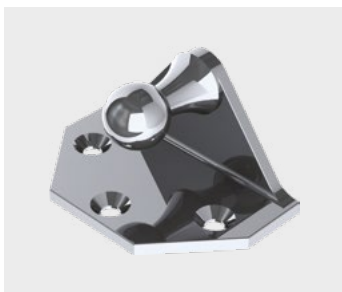
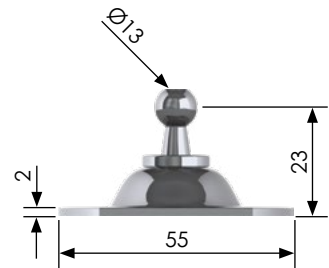
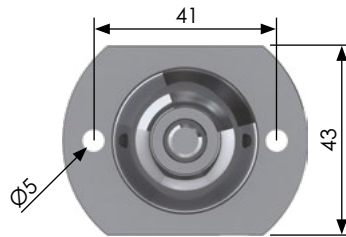
Compatibility: 6 & 8mm rods



**Mild Steel**  
Product Code: BRK-4A  
Catalogue Code: 60275

**Stainless Steel 304**  
Product Code: SSBRK-4A  
Catalogue Code: 60296

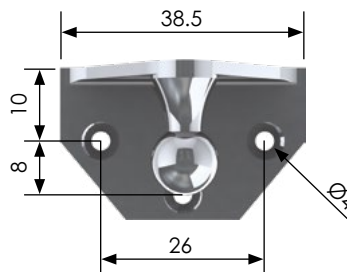
Compatibility: 8, 10 & 14mm rods



**Mild Steel**  
Product Code: BRK-5  
Catalogue Code: 60277

**Stainless Steel 304**  
Product Code: SSBRK-5  
Catalogue Code: 60297

Compatibility: 6 & 8mm rods



# Brackets

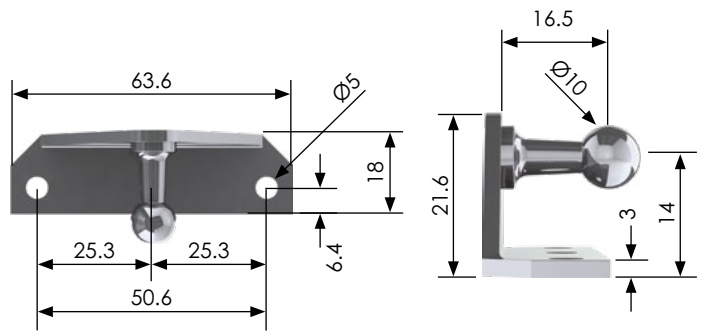
## BRACKETS FOR BALL JOINTS



**Mild Steel**  
Product Code: BRK-052-L  
Catalogue Code: 60278

**Stainless Steel 316**  
Product Code: SSBRK-052-L  
Catalogue Code: 60298

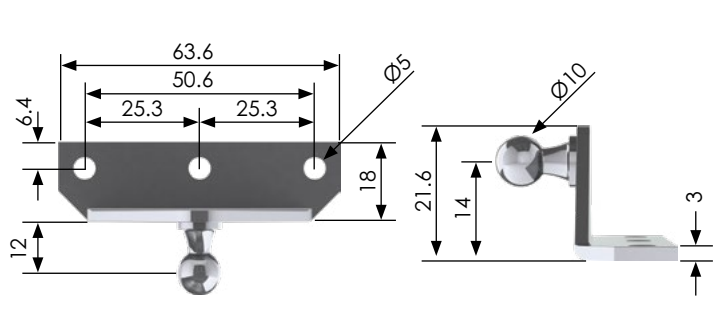
Compatibility: 6 & 8mm rods



**Mild Steel**  
Product Code: BRK-052-R  
Catalogue Code: 60279

**Stainless Steel 316**  
Product Code: SSBRK-052-R  
Catalogue Code: 60299

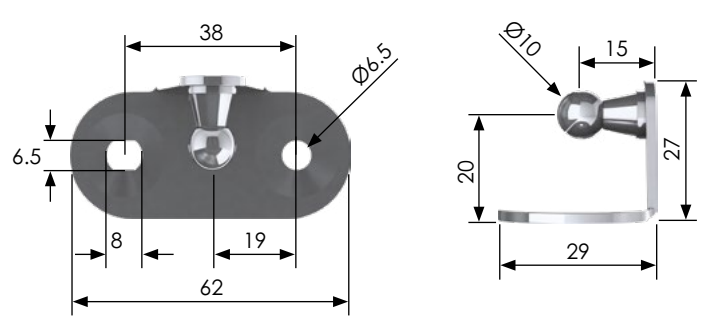
Compatibility: 6 & 8mm rods



**Mild Steel**  
Product Code: BRK-6  
Catalogue Code: 60280

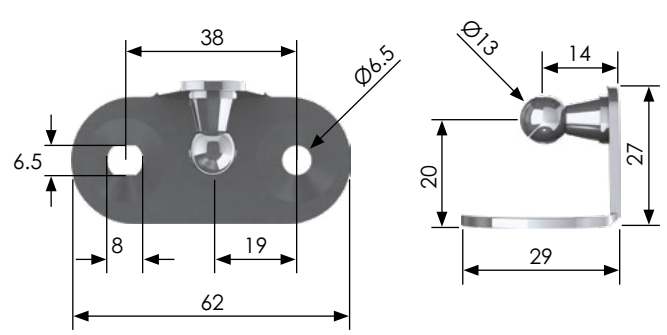
**Stainless Steel 304**  
Product Code: SSBRK-6  
Catalogue Code: 60300

Compatibility: 6 & 8mm rods



**Mild Steel**  
Product Code: BRK-6A  
Catalogue Code: 60281

Compatibility: 8 & 10mm rods



# Brackets

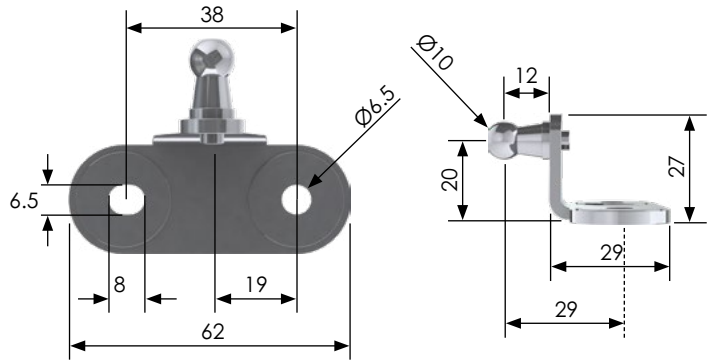
## BRACKETS FOR BALL JOINTS



**Mild Steel**  
 Product Code: BRK-6R  
 Catalogue Code: 60282

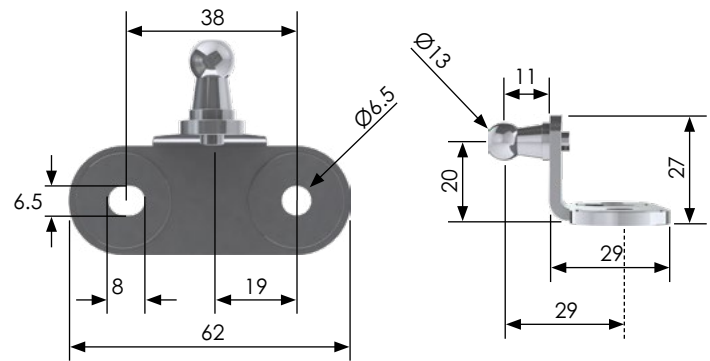
**Stainless Steel 316**  
 Product Code: SSBRK-6R  
 Catalogue Code: 60301

Compatibility: 6 & 8mm rods



**Mild Steel**  
 Product Code: BRK-6R-A  
 Catalogue Code: 60283

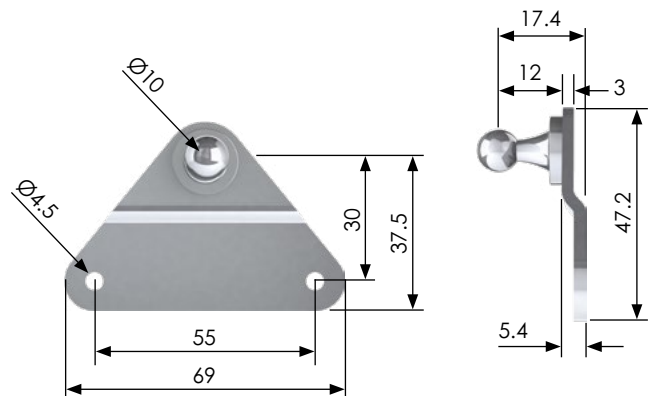
Compatibility: 8 & 10mm rods



**Mild Steel**  
 Product Code: BRK-7  
 Catalogue Code: 60284

**Stainless Steel 304**  
 Product Code: SSBRK-7  
 Catalogue Code: 60302

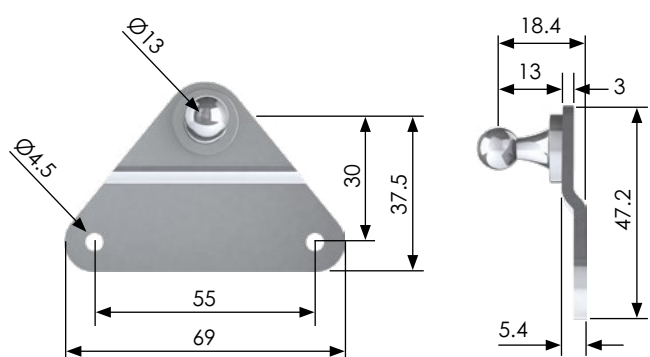
Compatibility: 6 & 8mm rods



**Mild Steel**  
 Product Code: BRK-7A  
 Catalogue Code: 60285

**Stainless Steel 304**  
 Product Code: SSBRK-7A  
 Catalogue Code: 60303

Compatibility: 8, 10 & 14mm rods



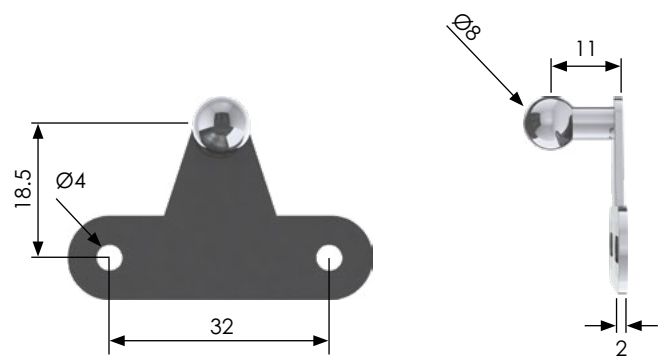
# Brackets

## BRACKETS FOR BALL JOINTS



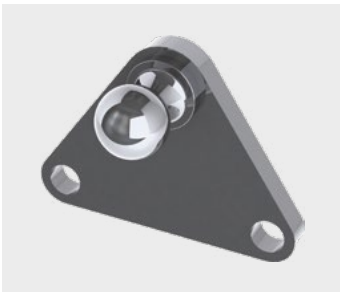
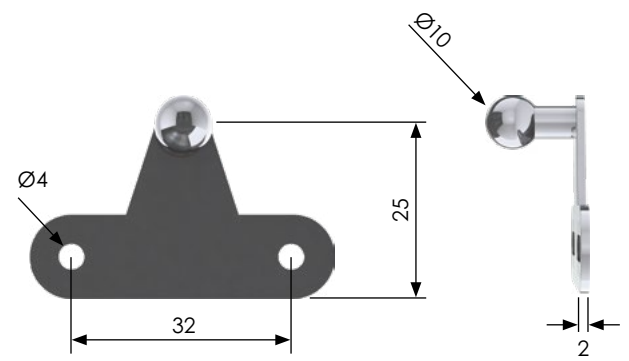
**Mild Steel**  
 Product Code: BK-15  
 Catalogue Code: 605

Compatibility: 6 & 8mm rods



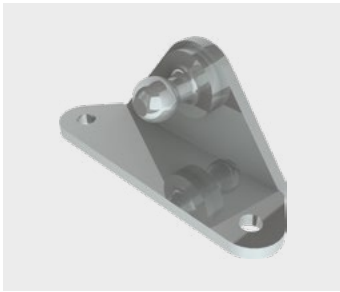
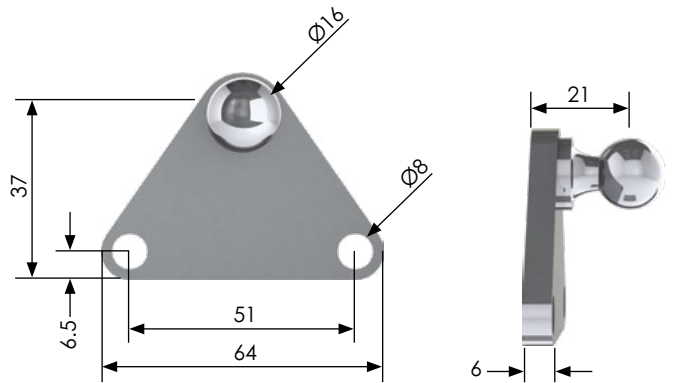
**Mild Steel**  
 Product Code: BK-10  
 Catalogue Code: 4625

Compatibility: 6 & 8mm rods



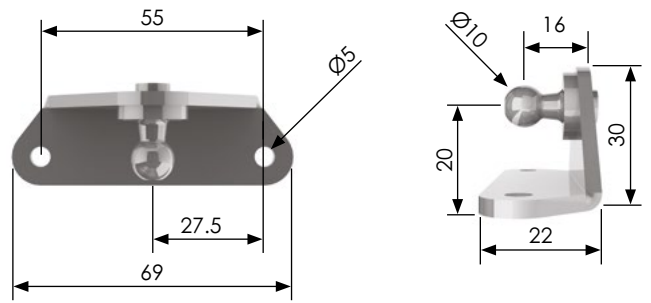
**Mild Steel**  
 Product Code: BRK-11  
 Catalogue Code: 60288

Compatibility: 10 & 14mm rods



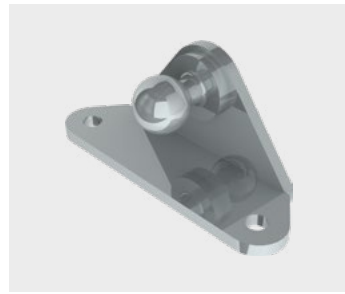
**Mild Steel**  
 Product Code: BRK-12  
 Catalogue Code: 60290

Compatibility: 6 & 8mm rods



# Brackets

## BRACKETS FOR BALL JOINTS

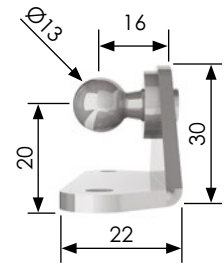
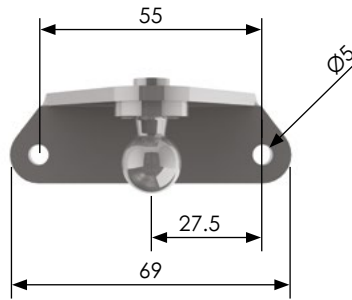


Compatibility: 8, 10 & 14mm rods

### Mild Steel

Product Code:  
BRK-12A

Catalogue Code:  
60291



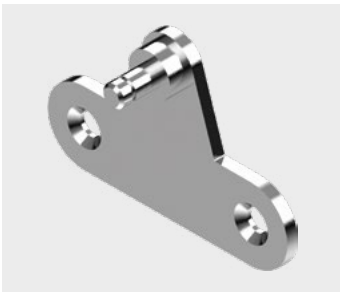
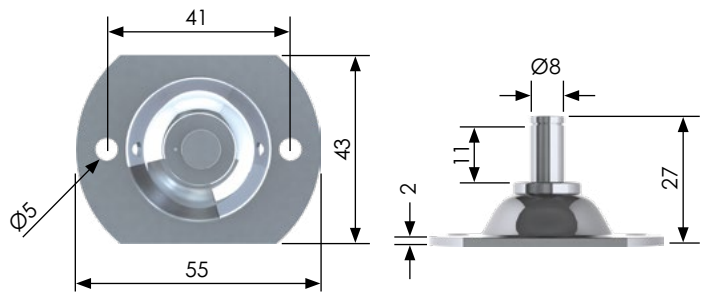
# Brackets

## BRACKETS FOR EYE ENDS



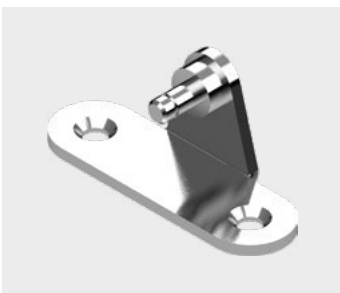
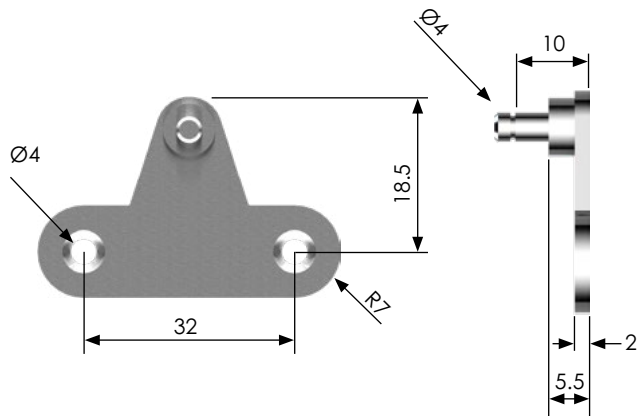
**Mild Steel**  
 Product Code: BRK-4B  
 Catalogue Code: 60276

Compatibility: 6, 8 & 10mm rods



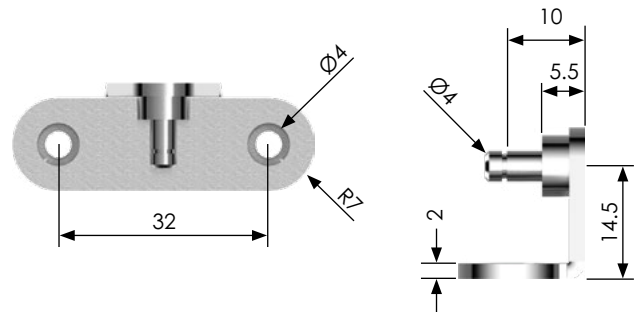
**Mild Steel**  
 Product Code: BK18  
 Catalogue Code: 608

Compatibility: 4mm rods



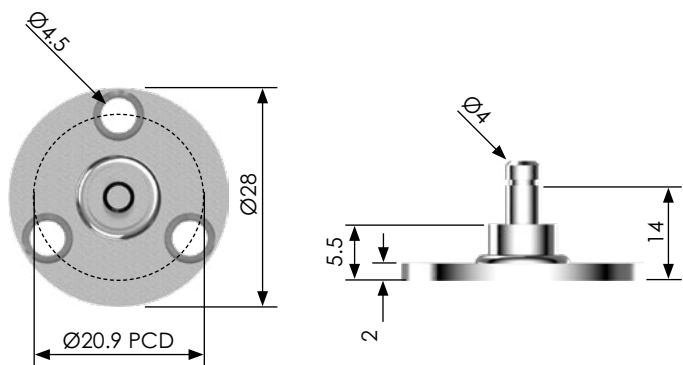
**Mild Steel**  
 Product Code: BK19  
 Catalogue Code: 609

Compatibility: 4mm rods



**Mild Steel**  
 Product Code: BK20  
 Catalogue Code: 610

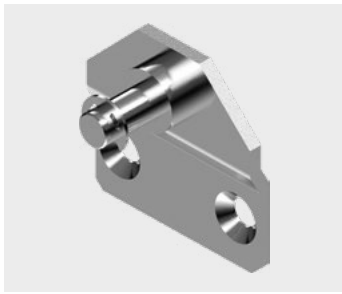
Compatibility: 4mm rods





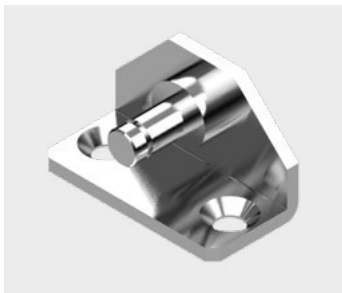
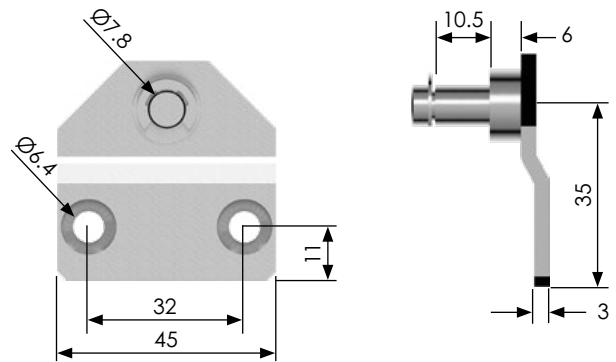
# Brackets

## BRACKETS FOR EYE ENDS



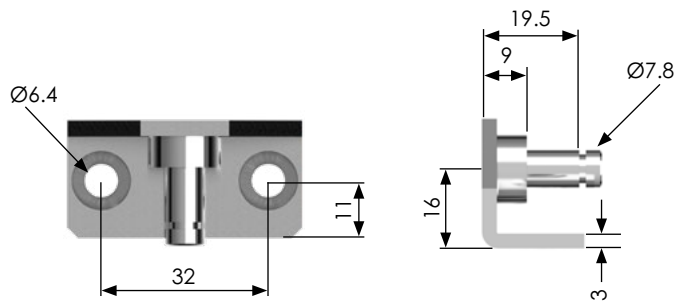
**Mild Steel**  
 Product Code: BK5  
 Catalogue Code: 4623

Compatibility: 6, 8 & 10mm rods



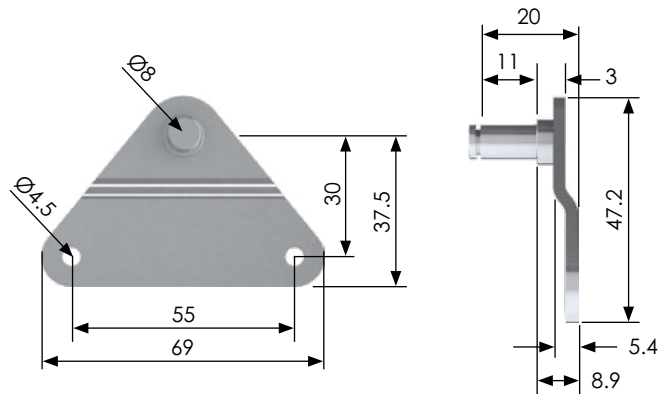
**Mild Steel**  
 Product Code: BK6  
 Catalogue Code: 4624

Compatibility: 6, 8 & 10mm rods



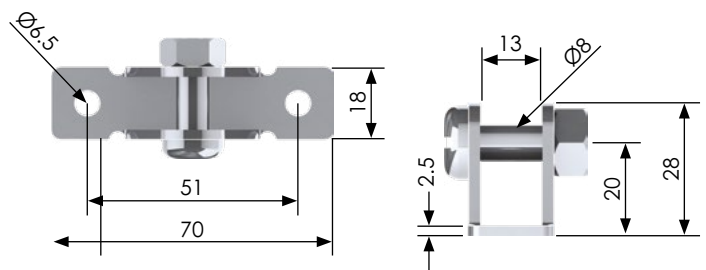
**Mild Steel**  
 Product Code: BRK-7B  
 Catalogue Code: 60286

Compatibility: 6, 8 & 10mm rods



**Mild Steel**  
 Product Code: BRK-8-90  
 Catalogue Code: 60289

Compatibility: 6, 8 & 10mm rods



**Stainless Steel 316**  
 Product Code: SSBRK-8-90  
 Catalogue Code: 60304

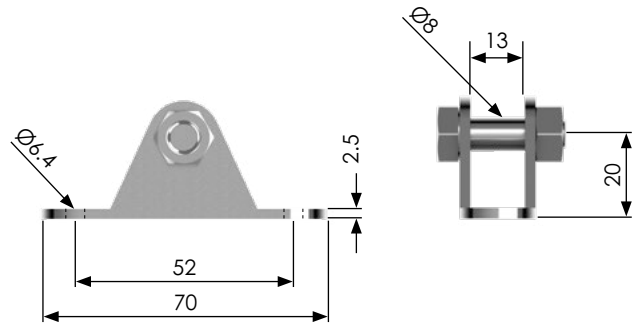
# Brackets

## BRACKETS FOR EYE ENDS



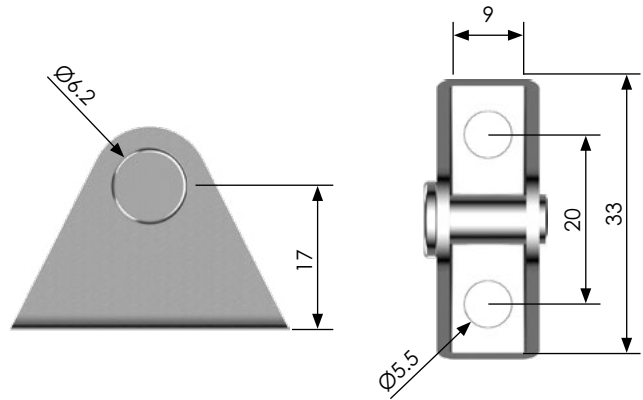
**Mild Steel**  
 Product Code: BK7  
 Catalogue Code: 4628

Compatibility: 6, 8 & 10mm rods



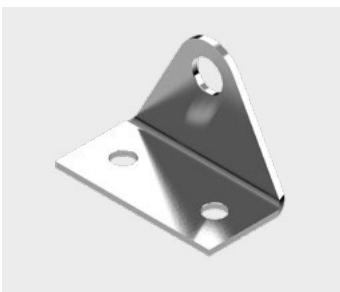
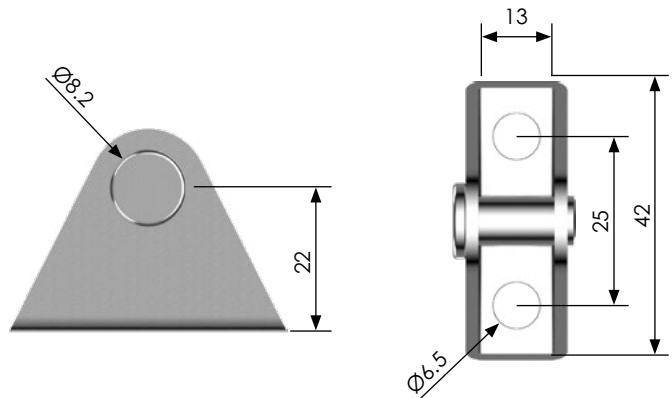
**Mild Steel**  
 Product Code: BK1  
 Catalogue Code: 6408

Compatibility: 6 & 8mm rods



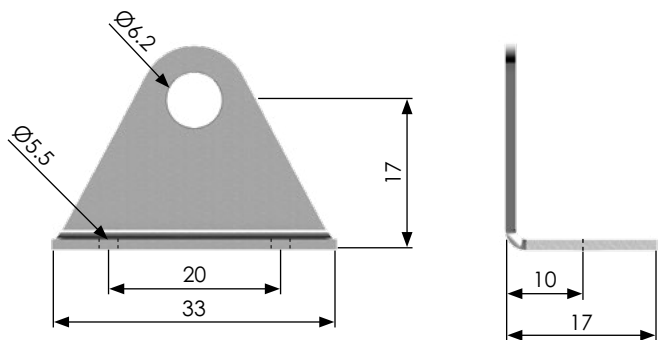
**Mild Steel**  
 Product Code: BK2  
 Catalogue Code: 6407

Compatibility: 6, 8 & 10mm rods



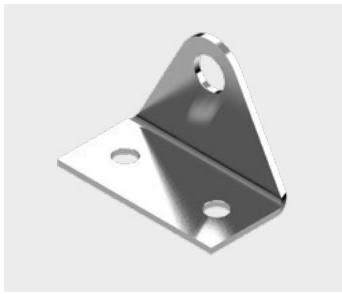
**Mild Steel**  
 Product Code: BK3  
 Catalogue Code: 6410

Compatibility: 6 & 8mm rods



# Brackets

BRACKETS FOR EYE ENDS

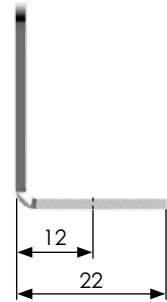
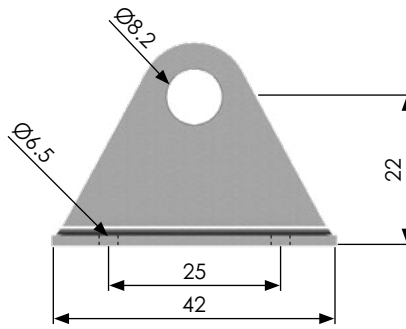


Compatibility: 6, 8 & 10mm rods

## Mild Steel

Product Code:  
BK4

Catalogue Code:  
6409



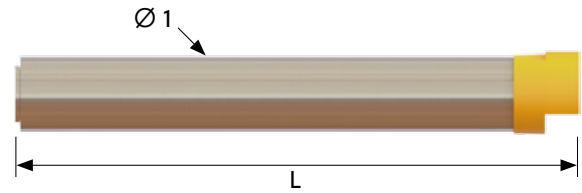
# Accessories

## SAFETY LOCKING TUBES

### Steel



### Stainless Steel 316



#### Steel Safety Locking Tubes

Catalogue Code	Product Code	L mm	Ø 1 mm	ØRod mm
61846	SL-18-100	100	25	8mm
61847	SL-18-120	120	25	8mm
61848	SL-18-150	150	25	8mm
61849	SL-18-180	180	25	8mm
61850	SL-18-200	200	25	8mm
61851	SL-18-250	250	25	8mm
61852	SL-18-300	300	25	8mm
61853	SL-22-100	100	28	10mm
61854	SL-22-150	150	28	10mm
61855	SL-22-200	200	28	10mm
61856	SL-22-250	250	28	10mm
61857	SL-22-300	300	28	10mm
61858	SL-22-350	350	28	10mm
61859	SL-22-400	400	28	10mm
61860	SL-22-500	500	28	10mm

#### Stainless Steel 316 Safety Locking Tubes

Catalogue Code	Product Code	L mm	Ø 1 mm	ØRod mm
61869	SSL-18-100	100	25	8mm
61870	SSL-18-150	150	25	8mm
61871	SSL-18-200	200	25	8mm
61872	SSL-18-250	250	25	8mm
61873	SSL-22-100	100	28	10mm
61874	SSL-22-150	150	28	10mm
61875	SSL-22-200	200	28	10mm
61876	SSL-22-250	250	28	10mm
61877	SSL-22-300	300	28	10mm
61878	SSL-22-350	350	28	10mm
61879	SSL-22-400	400	28	10mm



### Features

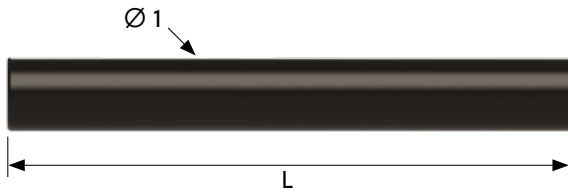
Gas spring safety locking tubes are designed to be simple to use and prevent injury to the operator in the unlikely event of a loss of gas pressure in the spring.

- The unit positively locks on full extension of the gas spring.
- Simple to use, locks automatically on extension and is released by pushing the safety tube at the correct point to allow the spring to compress.
- Single locking gas spring can be used in conjunction with a standard gas spring on an application.
- No need for separate safety locking mechanisms, keeping the unit neat and easy to use.
- Ensure peace of mind when working under a heavy object.

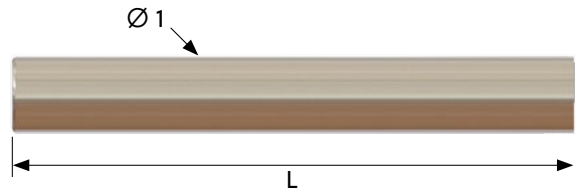
# Accessories

## PROTECTION TUBES

### Steel/Plastic



### Stainless Steel 316



Steel/Plastic Protection Tubes						
Steel		Plastic		L mm	Ø 1 mm	ØRod mm
Catalogue Code	Product Code	Catalogue Code	Product Code			
61823	MPT-18-100	61800	PPT-18-100	100	25	8mm
61824	MPT-18-120	61801	PPT-18-120	120	25	8mm
61825	MPT-18-150	61802	PPT-18-150	150	25	8mm
61826	MPT-18-180	61803	PPT-18-180	180	25	8mm
61827	MPT-18-200	61804	PPT-18-200	200	25	8mm
61828	MPT-18-250	61805	PPT-18-250	250	25	8mm
61829	MPT-18-300	61806	PPT-18-300	300	25	8mm
61830	MPT-22-100	61807	PPT-22-100	100	28	10mm
61831	MPT-22-150	61808	PPT-22-150	150	28	10mm
61832	MPT-22-200	61809	PPT-22-200	200	28	10mm
61833	MPT-22-250	61810	PPT-22-250	250	28	10mm
61834	MPT-22-300	61811	PPT-22-300	300	28	10mm
61835	MPT-22-350	61812	PPT-22-350	350	28	10mm
61836	MPT-22-400	61813	PPT-22-400	400	28	10mm
61837	MPT-22-500	61814	PPT-22-500	500	28	10mm

Stainless Steel 316 Protection Tubes				
Catalogue Code	Product Code	L mm	Ø 1 mm	ØRod mm
61624	SSMPT-18-100	100	25	8mm
61625	SSMPT-18-150	150	25	8mm
61626	SSMPT-18-200	200	25	8mm
61627	SSMPT-18-250	250	25	8mm
61628	SSMPT-22-100	100	28	10mm
61629	SSMPT-22-150	150	28	10mm
61630	SSMPT-22-200	200	28	10mm
61631	SSMPT-22-250	250	28	10mm
61632	SSMPT-22-300	300	28	10mm
61633	SSMPT-22-350	350	28	10mm
61634	SSMPT-22-400	400	28	10mm



### Features

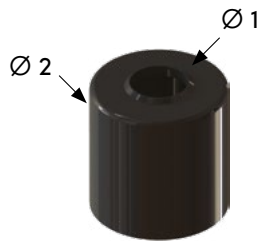
Protection tubes are fitted to gas springs when they are to be used in an environment where the gas spring piston can be damaged from scratches or dents, or where contamination of the piston rod can damage the seals.

- Available in plastic, metal and stainless steel.
- Suitable for use with fixed force, variable force and stainless steel gas springs.
- Protection tubes can prolong the life of the gas spring in dirty and dusty environments.

# Accessories

## DUST COVERS

### Plastic

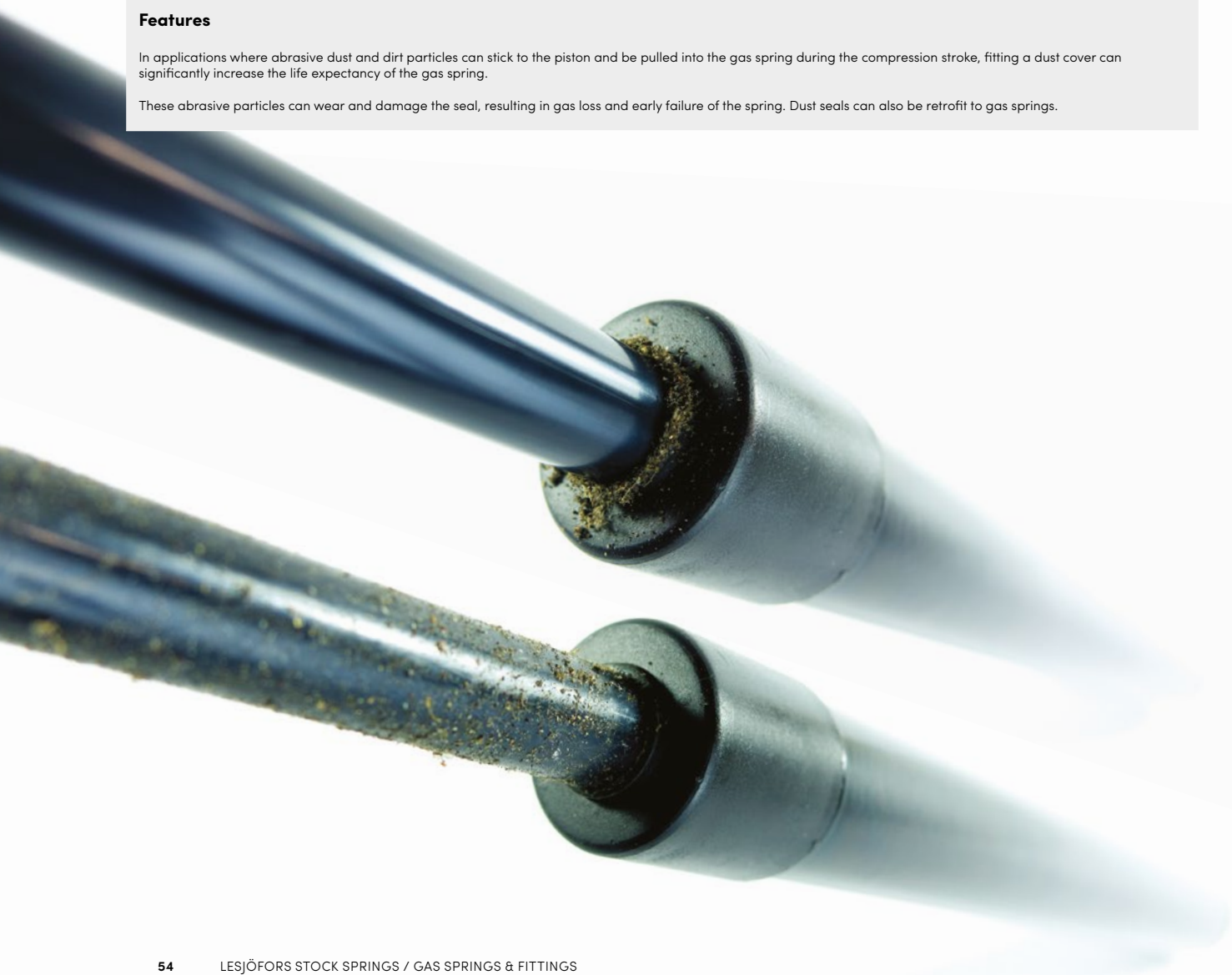


Dust Covers				
Catalogue Code	Product Code	Ø 1 mm	Ø 2 mm	ØRod
61887	DC-15	6.10	16.70	6mm
61888	DC-18	8.20	19.50	8mm
61889	DC-22	10.20	22.50	10mm
61891	DC-22-T	8.00	23.50	8mm

### Features

In applications where abrasive dust and dirt particles can stick to the piston and be pulled into the gas spring during the compression stroke, fitting a dust cover can significantly increase the life expectancy of the gas spring.

These abrasive particles can wear and damage the seal, resulting in gas loss and early failure of the spring. Dust seals can also be retrofitted to gas springs.





Liepaja, Latvia – Lesjöfors is the largest spring manufacturing company in the Baltics and the factory of 11,300 m<sup>2</sup> in Liepaja comprises all Lesjöfors' manufacturing of springs, gas springs and pressings in Latvia.



Metrol Springs Ltd specialises in the design and manufacture of Gas Springs and Gas Struts, offering technical support and stock market leading products including Accuride Drawer Slides, Quality Hardware Components, Agathon Guiding Elements, TiMotion Linear Actuators and Porter Precision Punches.

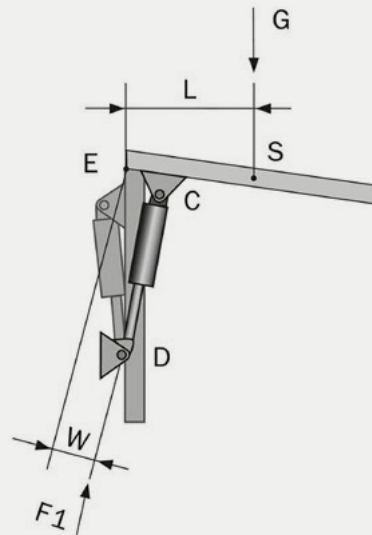
# Force calculations of gas springs.

With our proprietary software package, developed in-house, Lesjöfors has the capability to simulate a diverse range of applications. This advanced tool enables us to calculate the precise force requirements tailored to the unique specifications of your application's design.

For less complex scenarios, the required gas spring force may be determined by entering relevant values into the following formula:

$$F1 = (G \times L) / (W \times n) + 10 - 15\% \text{ margin of error}$$

VARIABLE	DESCRIPTION
F1	Gas spring force in Newton
G	Gravitational pull in Newton of the moving part
C	Connection point on the moving part
D	Connection point on the fixed part
E	Swivel point
S	Centre of gravity
L	Horizontal distance from E to S in open position
W	Smallest distance to E
n	Number of gas springs





# Notes.

A large rectangular area filled with a grid of small, light gray dots, intended for writing notes.

# Look to the future with Lesjöfors.

## Who are we?

Committed to excellence, reliability and customer service, we are dedicated to delivering sustainable solutions with our world-leading products.

Delivering impact to every industry, you can rely on our local network of expert component part manufacturers, on our teams' problem-solving abilities and on our flexibility to extend your capabilities.

## Why choose us?

Market-leaders in spring and pressing manufacture, we deliver solutions that help you optimise your performance and success.

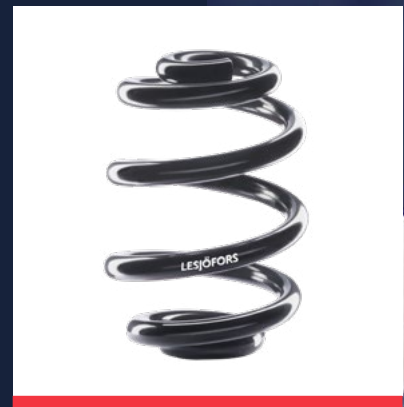
With a 170 year spring manufacturing legacy, we provide the greatest expertise in state-of-the-art production facilities in springs, pressings, gas springs and metal belt manufacturing.

Did you know that in addition to our custom-made product solutions, we have over 12,000 standard stock items available for immediate purchase?

## Sustainability in mind

Our ambition is to be the most sustainable spring and pressing company in the world. We know manufacturing has a major impact on our environment and this is why we are striving towards a more sustainable future and why we have committed to science based targets in line with the Paris Agreement.

## Welcome to Lesjöfors.





# Looking for a Spring, Pressing or Gas Spring?

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We deliver engineering excellence with a quality, personal service guaranteeing Lesjöfors as your trusted world-wide partner for all spring and pressing solutions.



**LESJÖFORS**  
Springs & Pressings

[lesjoforsab.com](http://lesjoforsab.com)

