

READY

THE INNOVATOR OF OUR INDUSTRY®

Nitrogen Gas Springs

They truly are ... Better by Design



*We have one of the
Largest Selections of
Gas Springs in North America*

We are proud to announce our extended and expanded range of gas springs to meet all of our customers' gas spring requirements. We now offer 10 separate series of standard pre-engineered gas springs available from stock for quick delivery.

Our expanded range includes both SinterLube® self-lubricating and conventional design gas springs, all built with the finest materials and assembled with exacting precision to provide reliability and long life in your dies.

Try DESIGN₂-TITE® and experience for yourself the benefits of this superior line of nitrogen products.

***They truly are...
Better by Design.***

READY Nitrogen Gas Springs -

Now Expanded into 10 Series

1. B and BE Series	
<i>Extra Compact Line</i>	<i>page 6</i>
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3. P and PE Series	
<i>Performance Line</i>	<i>page 22</i>
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Design A Spring Program Order Worksheet

Cross over worksheet for READY Gas Springs

For FAST QUOTES ... copy this and fax READY the details.

READY can manufacture special gas springs in as little as 3-5 days (quantity of springs will affect delivery).

Company: _____

Contact Name: _____ Title: _____

Address: _____

City, State, Zip: _____

Phone: _____ Fax: _____

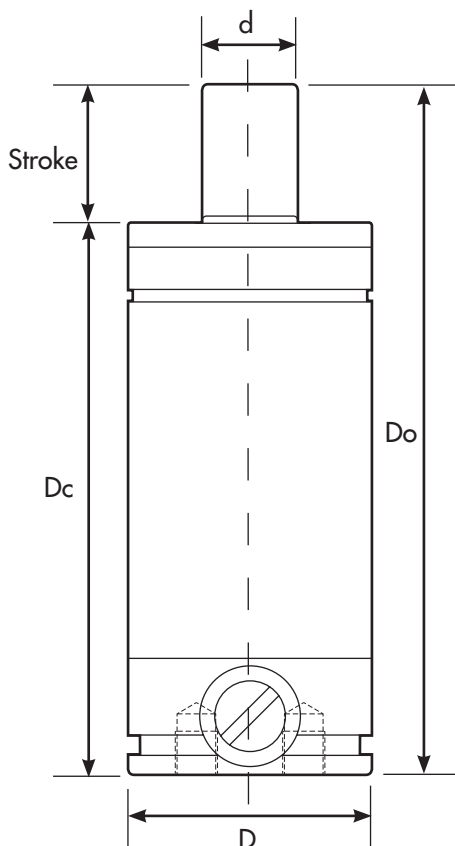
Email Address: _____

In addition to our complete line of standard gas springs, we offer what no other gas spring manufacturer offers: a re-engineer custom gas spring manufacturing service with incomparably quick delivery.

That's right. With our "Design a Spring Program", we can special manufacture gas springs to provide an exact cross to most other gas spring models or to your application specifications.

Simply fax us a completed Design A Spring Program Order Worksheet, and Ready will promptly respond with a design solution for your requirement. We invite you to try our new and remarkable Design a Spring Program for yourself.

Experience for yourself the benefits of DESIGN₂-TITE® gas springs.



Selection Criteria

Ø d _____

Ø D _____

Stroke _____

Do _____

Dc _____

Stroke _____

Force Required at Do _____

Threaded Body ☐ yes ☐ no

Mounting Pattern _____

READY TECHNOLOGY

333 Progress Rd. • Dayton, OH 45449
937.866.7200 • 800.543.4355
fax: 937.866.7226

www.readytechnology.com

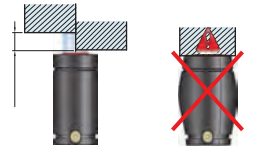
***They truly are...
Better by Design.***

Please read the following safety information carefully. We have designed a number of safety features into our gas springs, but ultimately there is no substitute for caution and good shop practice.

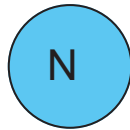
Gas springs are elements that contain gas subjected to high pressure. It is therefore very important to adhere to the following warnings and recommendations. Any unauthorised operation carried out may bring about serious material damage and personal injuries. It is therefore essential to handle such elements with care and to respect these instructions.



We strongly recommend that you stay within 90% of the total stroke available. This will improve spring life and safety. If you use the maximum stroke available the spring could be over-stroked if any foreign matter becomes lodged between the top of the piston and its striker, and a crushed spring or explosion could result.



Gas springs must only be loaded with nitrogen gas (N₂). The use of any other medium is expressly forbidden.



To be on the safe side, the piston should be inserted completely into the body without coming up again.



Protect the gas spring body or stem from blows. Any resulting imperfection could bring about the loss of pressure and affect the useful life of the gas spring. If the gas spring has been dented in its structure, discharge it completely before carrying out any rework or handling.



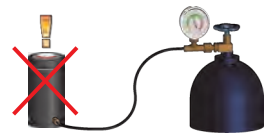
During gas spring discharging, the discharging point should be placed as high as possible. The use of protective goggles is recommended.



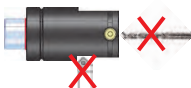
Carry and stock the gas spring in a way that it does not hit other gas springs.



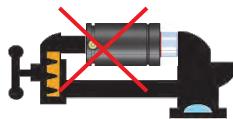
The gas spring should never be charged unless the piston has been extended to its full upstroke position (otherwise there is a risk of structural damage). It is first necessary to carry out a 5-to -10 bar precharge, checking the gas spring before carrying out the complete charge. Each model's maximum and minimum charging pressures should be respected, as indicated in the specifications for each gas spring model.



Any mechanical operation (machining, drilling, welding...) on the gas spring is strictly prohibited.



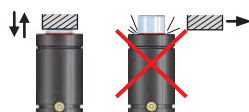
There are specific tools to measure gas spring force. Never knock the stem with a hammer to check its pressure. Gas springs should not be improperly compressed in order to check their force.



Once the useful life of the gas spring is over it should be completely discharged. The piston should remain fully inserted into the body.



Avoid sudden gas spring piston release to avoid sudden discharge or component damage.

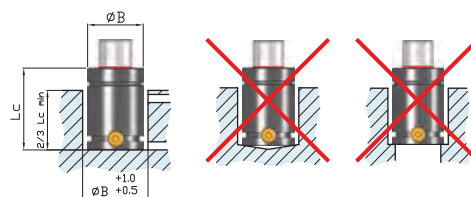


All gas springs are capable of repair. All handling or maintenance operations should be carried out by authorised personnel, who should be especially trained for this purpose. Original components and accessories should always be used. For any doubts regarding the maintenance of the gas spring, please consult our Technical Department.



ASSEMBLY ON THE TOOL: FLAT SUPPORT

There should be a flat surface under the gas spring base. Inadequate support causes structural damage or reduces gas spring useful life.



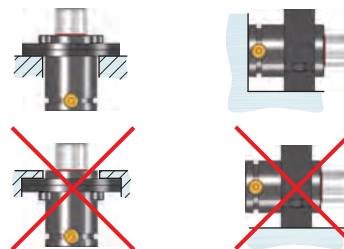
ASSEMBLY IN THE TOOL: CORRECT FIXTURE

Fix the gas spring solidly onto the tool. If possible, fix the gas spring onto the tool using the fixing threaded holes at the bottom of the body or fixing accessories. Do not use the tapped hole in the piston for fixing onto the tool. This hole is only to be used in maintenance operations. Make sure the length of the screws is such that the base of the gas spring sits flatly on the tool.



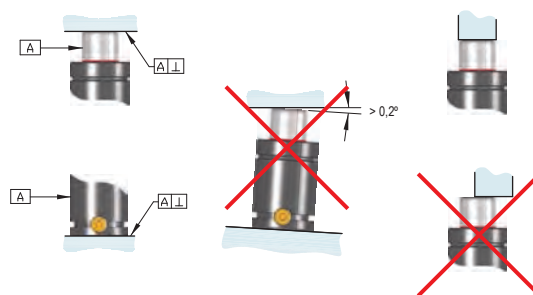
ASSEMBLY ON THE TOOL: FIXING ELEMENTS

Follow the recommended methods for mounting gas springs to your tool. READY offers a wide variety of assembly options to satisfy different application needs.



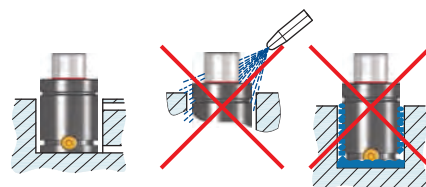
ASSEMBLY ON THE TOOL: ASSEMBLY MUST BE PERPENDICULAR TO THE WORKING AXIS

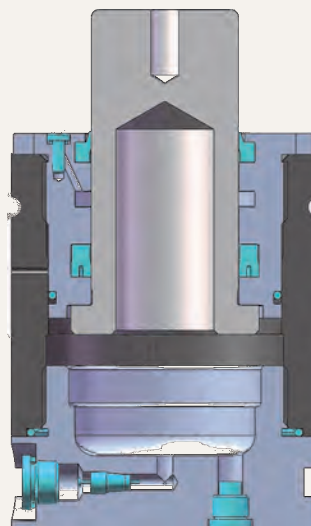
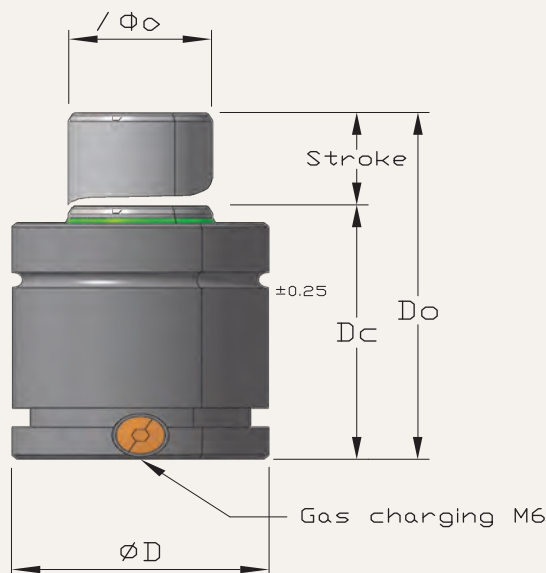
Gas springs must always work completely perpendicular to the contact surface. Lateral forces produced by a badly aligned press can cause irreparable damage.



ASSEMBLY ON THE TOOL: PROTECTION FROM POLLUTANTS

Protect gas springs from liquid or solid pollution. Avoid particles making direct contact with the gas spring. Box cavities are to be cleaned regularly and should be equipped with drainage holes.





Important!

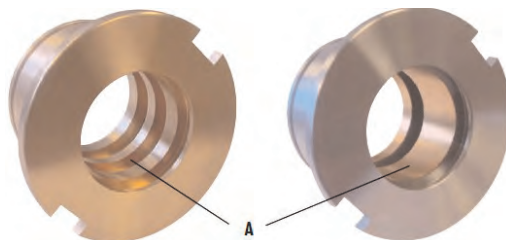
Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Extra Compact Line (B series)

Every DESIGN₂-TITE® Extra Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

SinterLube® Top Cap

- Solid steel top cap with revolutionary SinterLube® lining.
- Designed with greater bearing area for improved support and guiding
- Threaded construction creates greater structural strength and safety.



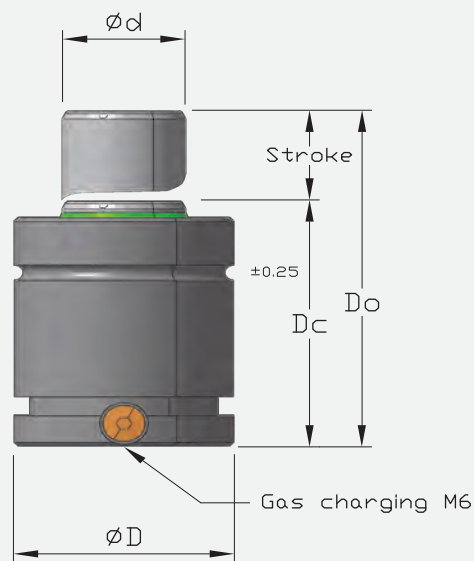
SinterLube® is a proprietary alloy material having good sliding lubricity and hardness which we have successfully used for years in guide bushings. We have now adapted this same technology to manufacturing a new line of top caps for our B series of nitrogen gas springs.

Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for spare parts kit
B-350	15	180	50	B-350-SK
B-500	15	150	50	B-500-SK
B-750	15	150	50	B-750-SK
B-925	15	150	50	B-1000-SK
B-1500	15	150	50	B-1500-SK

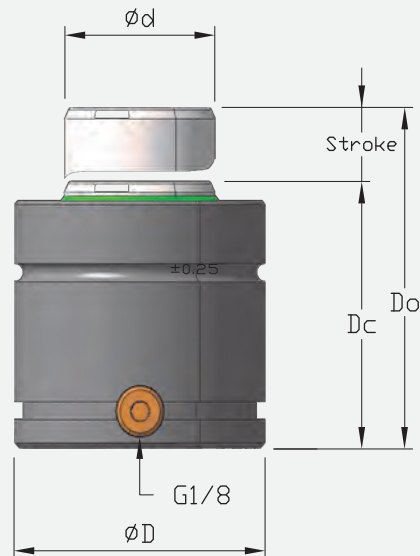
Part N°						
B-350	✓	✓	SR 32	P 32	—	—
B-500	✓	✓	SR / SC 38	P 38	—	—
B-750	✓	✓	SR / SC 45	P 45	B 45	I 45
B-925	✓	✓	SR / SC 50	P 50	B 50	I 50
B-1500	✓	✓	SR / SC 63	P 63	B 63	I 63



Part N° Model x stroke (mm)	Do mm	Dc mm	ØD mm	Ød mm	P mm	r mm						Cylinders
B-350 x 10	50	40	32	16	12.5	1	180	362	586	.21	—	
13	56	43							598	.22		
16	62	46							606	.23		
19	68	49							612	.24		
25	80	55							620	.26		
32	94	62							626	.29		
38	106	68							629	.31		
50	130	80							637	.35		
63	156	93							652	.40		
75	180	105							662	.44		
80	190	110							666	.46		
100	230	130							677	.54		
125	280	155							686	.64		
B-500 x 10	50	40	38	20	12.5	1	150	470	779	.30	—	
13	56	43							801	.31		
16	62	46							817	.33		
19	68	49							828	.34		
25	80	55							844	.37		
32	94	62							856	.40		
38	106	68							863	.43		
50	130	80							872	.49		
63	156	93							881	.55		
75	180	105							900	.62		
80	190	110							907	.65		
100	230	130							927	.76		
125	280	155							946	.90		
B-500 x 10	52	42	45	25	15.5	1	150	736	1286	.44	—	
13	58	45							1300	.46		
16	64	48							1325	.48		
19	70	51							1344	.50		
25	82	57							1370	.54		
32	96	64							1389	.58		
38	108	70							1400	.62		
50	132	82							1415	.70		
63	158	95							1425	.78		
75	182	107							1452	.87		
80	192	112							1468	.92		
100	232	132							1518	.108		
125	282	157							1563	1.29		
B-925 x 13	64	51	50	28	15.5	2	150	925	1543	.65	—	
16	70	54							1585	.67		
19	76	57							1617	.69		
25	88	63							1662	.74		
32	102	70							1697	.80		
38	114	76							1718	.84		
50	138	88							1747	.94		
63	164	101							1767	1.04		
75	188	113							1815	1.16		
80	198	118							1837	1.21		
100	238	138							1910	1.42		
125	288	163							1978	1.68		
B-1500 x 13	70	57	63	36	19	2	150	1527	2411	1.14	—	
16	76	60							2493	1.17		
19	82	63							2558	1.21		
25	94	69							2655	1.29		
32	108	76							2733	1.38		
38	120	82							2783	1.45		
50	144	94							2852	1.61		
63	170	107							2902	1.77		
75	194	119							2934	1.92		
80	204	124							2945	1.99		
100	244	144							3059	2.31		
125	294	169							3207	2.74		



B-2400



B-4200, 6600

Important!

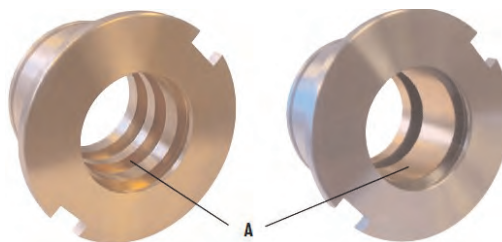
Pressure medium:	Nitrogen Gas (N₂)
Operating temperature:	0 to +80°C
Force increase by temperature:	0,33% / °C

The Extra Compact Line (B series)

Every DESIGN₂-TITE® Extra Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

SinterLube® Top Cap

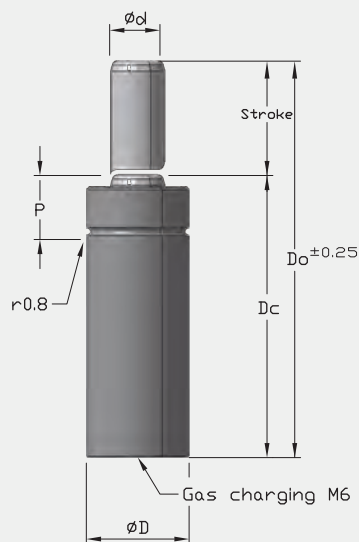
- Solid steel top cap with revolutionary SinterLube® lining.
- Designed with greater bearing area for improved support and guiding
- Threaded construction creates greater structural strength and safety.



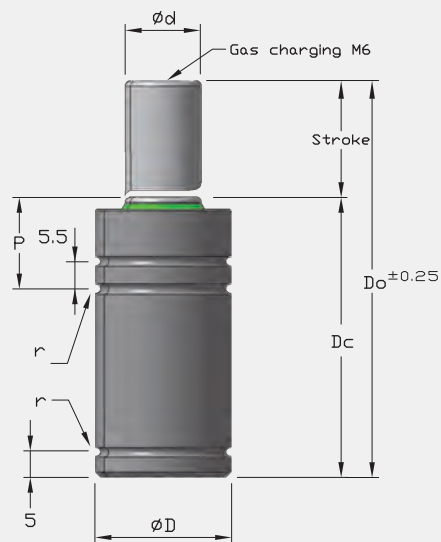
SinterLube® is a proprietary alloy material having good sliding lubricity and hardness which we have successfully used for years in guide bushings. We have now adapted this same technology to manufacturing a new line of top caps for our B series of nitrogen gas springs.

Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for spare parts kit
B-2400	15	150	50	B-2400-SK
B-4200	15	150	50	B-4200-SK
B-6600	15	150	50	B-6600-SK

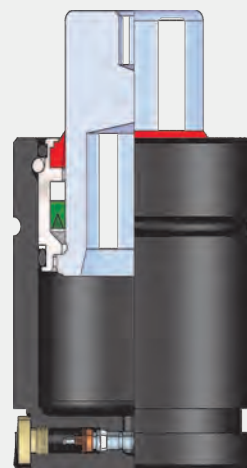
Part N°						
B-2400	✓	✓	SR / SC 75	P 75	B 75	I 75
B-4200	✓	✓	SR / SC 95	P 95	B 95	I 95
B-6600	✓	✓	SR / SC 120	P 120	B 120	I 120



BE-90, 140



BE-275



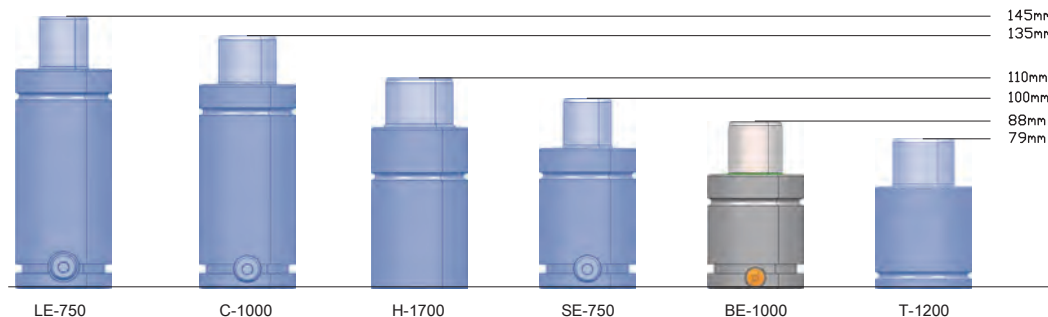
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Extra Compact Line (BE series)

Every Extra Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

BODY DIAMETER 50mm - STROKE 25mm

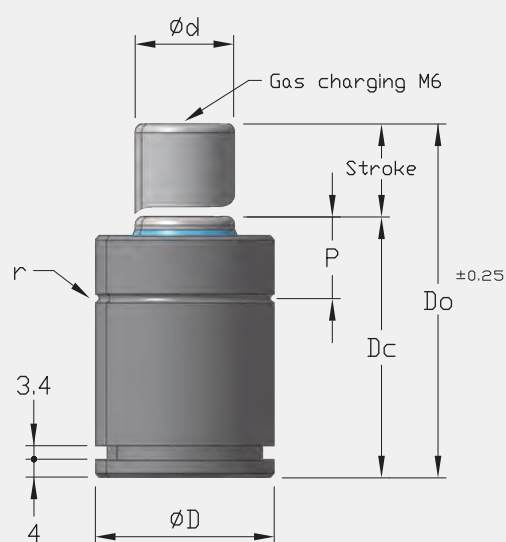


Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for spare parts kit
BE-90	0,5	175	50	Kit BE-00090
BE-140	0,5	175	25	Kit BE-00140
BE-275	0,5	175	50	Kit BE-00275

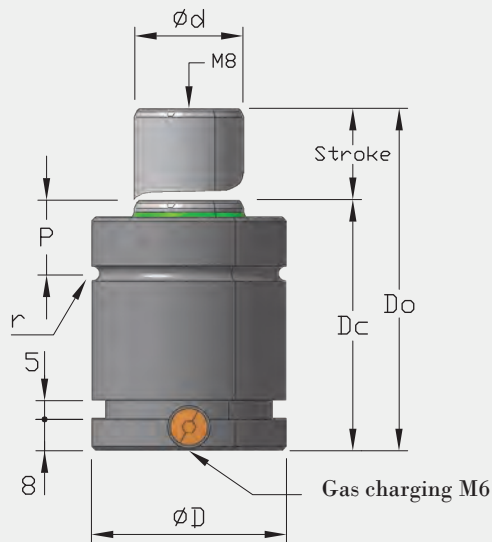
Part N°						
BE-90	✓	✓	—	—	—	—
BE-140	✓	✓	SR 19	—	—	—
BE-275	✓	✓	SR / SC 25	—	—	—



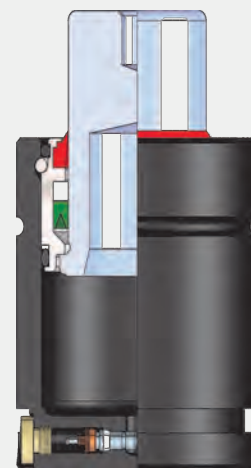
BE series



BE-350, 500, 750



BE-925, 1000



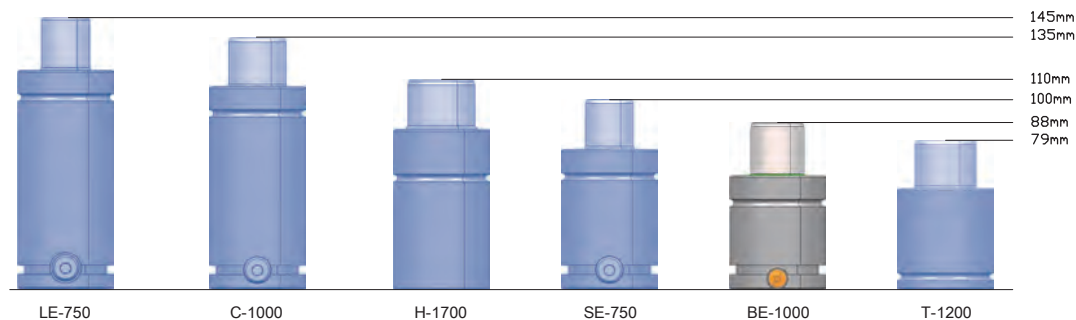
Important!

Pressure medium: **Nitrogen Gas (N_2)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Extra Compact Line (BE series)

Every Extra Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

BODY DIAMETER 50mm - STROKE 25mm

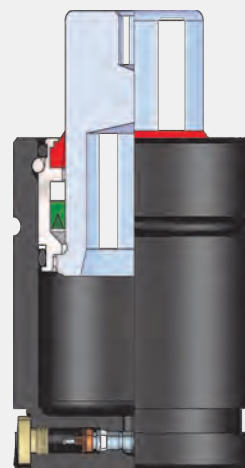
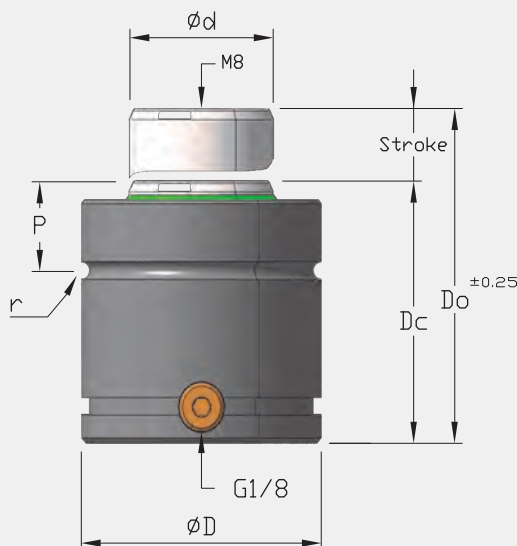


Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for spare parts kit
BE-350	1	175	25	Kit BE-00350
BE-500	1	150	35	Kit BE-00500
BE-750	0,8	150	35	Kit BE-00750
BE-925	0,8	150	35	Kit BE-00925
BE-1500	1	150	35	Kit BE-01500

Part N°						
BE-350	✓	✓	SR 32	P 32	—	—
BE-500	✓	✓	SR / SC 38	P 38	—	—
BE-750	✓	✓	SR / SC 45	P 45	B 45	I 45
BE-925	✓	✓	SR / SC 50	P 50	B 50	I 50
BE-1500	✓	✓	SR / SC 63	P 63	B 63	I 63



Part N° Model x stroke (mm)	Do mm	Dc mm	ØD mm	Ød mm	P mm	r mm	bar	daN	daN			Cylinders
BE-350 x 10	50	40	32	16	12,5	1	175	350	525	0,16	—	
13	56	43							530	0,17		
16	62	46							530	0,18		
19	68	49							530	0,19		
25	80	55							530	0,20		
32	94	62							530	0,22		
38	106	68							530	0,24		
50	130	80							530	0,28		
63	156	93							535	0,33		
75	180	105							535	0,36		
80	190	110							535	0,38		
100	230	130							535	0,44		
125	280	155							535	0,51		
BE-500 x 10	50	40	38	20	12,5	1	150	470	650	0,25	—	
13	56	43							655	0,26		
16	62	46							670	0,27		
19	68	49							670	0,28		
25	80	55							675	0,32		
32	94	62							680	0,34		
38	106	68							685	0,38		
50	130	80							690	0,42		
63	156	93							690	0,46		
75	180	105							695	0,50		
80	190	110							700	0,53		
100	230	130							700	0,55		
125	280	155							710	0,68		
BE-750 x 13	58	45	45	25	16,5	1	150	740	1245	0,35	—	
16	64	48							1245	0,39		
19	70	51							1250	0,40		
25	82	57							1255	0,44		
32	96	64							1255	0,47		
38	108	70							1255	0,50		
50	132	82							1260	0,59		
63	158	95							1260	0,65		
75	182	107							1265	0,80		
80	192	112							1265	0,85		
100	232	132							1265	0,98		
125	282	157							1270	1,15		
BE-925 x 13	64	51	50	28	17,5	2	150	925	1295	0,53	—	
16	70	54							1310	0,55		
19	76	57							1340	0,58		
25	88	63							1385	0,62		
32	102	70							1410	0,67		
38	114	76							1445	0,72		
50	138	88							1470	0,82		
63	164	101							1485	0,93		
75	188	113							1495	1,10		
80	198	118							1510	1,15		
100	238	138							1525	1,25		
125	288	163							1540	1,45		
BE-1500 x 13	70	57	63	36	19	2	150	1500	2250	0,95	—	
16	76	60							2280	0,97		
19	82	63							2345	1,15		
25	94	69							2400	1,27		
32	108	76							2455	1,35		
38	120	82							2470	1,40		
50	144	94							2495	1,55		
63	170	107							2530	1,71		
75	194	119							2560	1,83		
80	204	124							2575	1,95		
100	244	144							2590	2,32		
125	294	169							2610	2,82		



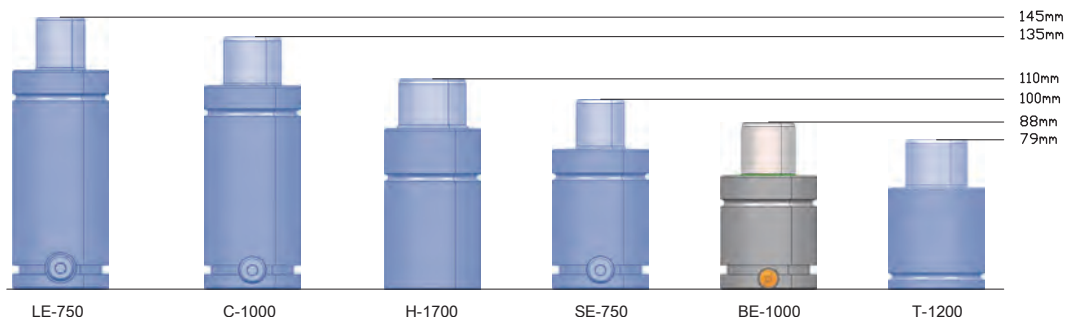
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Extra Compact Line (BE series)

Every Extra Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

BODY DIAMETER 50mm - STROKE 25mm

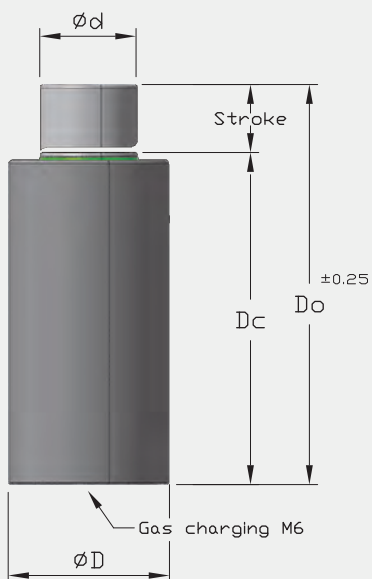


Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for spare parts kit
BE-2400	0,8	150	35	Kit BE-02400
BE-4200	0,8	150	35	Kit BE-04200
BE-6600	0,6	150	35	Kit BE-06600
BE-9500	0,6	150	35	Kit BE-09500
BE-20000	0,5	150	35	Kit BE-20000

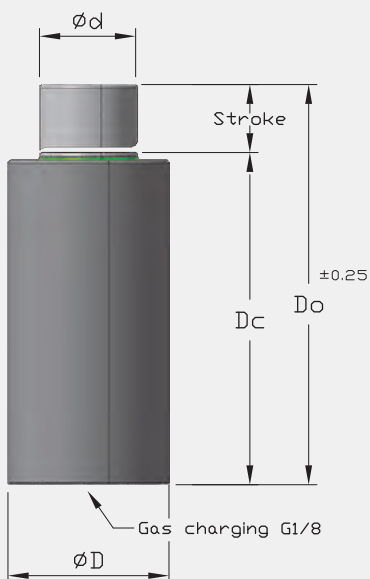
Part N°						
BE-2400	✓	✓	SR / SC 75	P 75	B 75	I 75
BE-4200	✓	✓	SR / SC 95	P 95	B 95	I 95
BE-6600	✓	✓	SR / SC 120	P 120	B 120	I 120
BE-9500	✓	✓	SR / SC 150	P 150	B 150	I 150
BE-20000	✓	✓	SR / SC 195	P 195	B 195	—



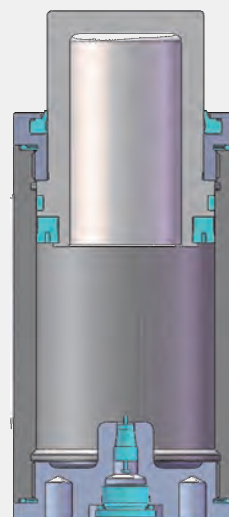
Part N° Model x stroke (mm)	Do mm	Dc mm	ØD mm	Ød mm	P mm	r mm	bar	daN	daN	Kg		Cylinders bases
BE-2400 x 16	77	61	75,2	45	21	2,5	150	2400	3540	1,40	✓	
19	83	64							3585	1,43		
25	95	70							3645	1,45		
32	109	77							3700	1,65		
38	121	83							3730	1,70		
50	145	95							3770	1,80		
63	171	108							3790	2,10		
75	195	120							3820	2,15		
80	205	125							3845	2,25		
100	245	145							3865	2,60		
125	295	170							3895	3,10		
BE-4200 x 16	90	74	95	60	24	2,5	150	4200	6140	2,80	✓	
19	96	77							6275	2,90		
25	108	83							6465	3,10		
32	122	90							6625	3,25		
38	134	96							6745	3,70		
50	158	108							6880	3,90		
63	184	121							6990	4,40		
75	208	133							7060	4,75		
80	218	138							7100	4,90		
100	258	158							7175	6,00		
125	308	183							7225	6,50		
BE-6600 x 16	100	84	120	75	25,5	2,5	150	6600	8775	5,20	✓	
19	106	87							8995	5,35		
25	118	93							9345	5,40		
32	132	100							9650	5,60		
38	144	106							9855	5,95		
50	168	118							10160	6,30		
63	194	131							10400	6,70		
75	218	143							10585	7,05		
80	228	148							10620	7,55		
100	268	168							10805	8,40		
125	318	193							10940	9,45		
BE-9500 x 16	110	94	150	90	27,5	2,5	150	9500	12950	9,50	✓	
19	116	97							13200	9,60		
25	128	103							13620	9,85		
32	142	110							13950	10,50		
38	154	116							14155	10,85		
50	178	128							14475	11,45		
63	204	141							14690	12,05		
75	228	153							14865	12,45		
80	238	158							14910	13,70		
100	278	178							15105	14,80		
125	328	203							15210	15,75		
BE-20000 x 16	142	126	195	130	33,5	2,5	150	20000	25405	20,85	✓	
19	148	129							25925	21,45		
25	160	135							26840	22,10		
32	174	142							27635	22,85		
38	186	148							28160	23,45		
50	210	160							28970	24,70		
63	236	173							29585	26,10		
75	260	185							30025	27,25		
80	270	190							30110	28,20		
100	310	210							30525	31,10		
125	360	235							30900	35,20		



C-1000



C-1800, 4700



Important!

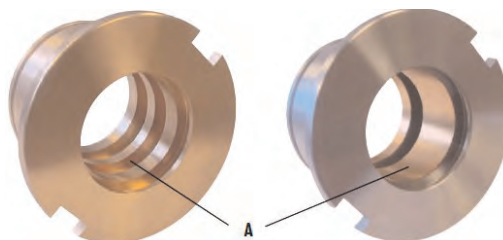
Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Sub Compact Line (C series)

Every DESIGN₂-TITE® Sub Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

SinterLube® Top Cap

- Solid steel top cap with revolutionary SinterLube® lining.
- Designed with greater bearing area for improved support and guiding
- Threaded construction creates greater structural strength and safety.



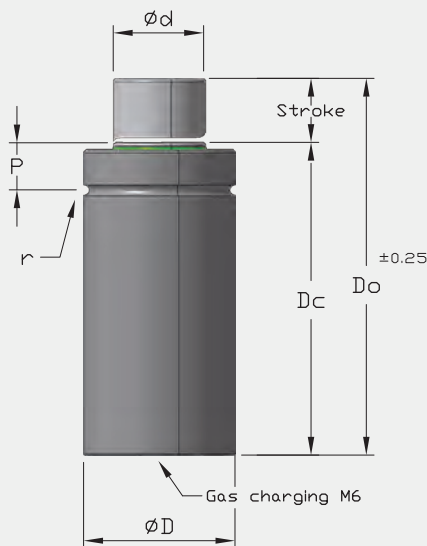
SinterLube® is a proprietary alloy material having good sliding lubricity and hardness which we have successfully used for years in guide bushings. We have now adapted this same technology to manufacturing a new line of top caps for our C series of nitrogen gas springs.

Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
C-1000	15	150	50	C-1000-SK
C-1800	15	150	50	C-1800-SK
C-4700	15	150	50	C-4700-SK

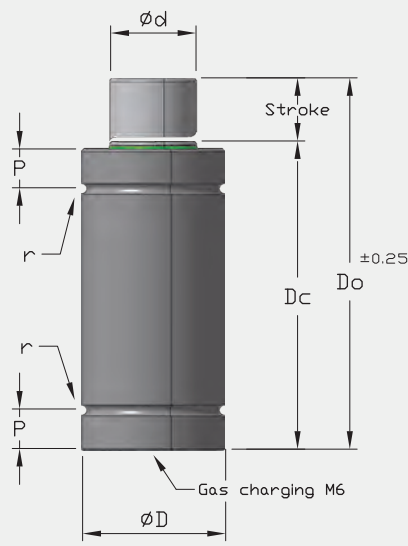
Part N°						
C-1000	✓	✓	—	—	—	—
C-1800	✓	✓	—	—	—	I 50
C-4700	✓	✓	—	—	—	I 75



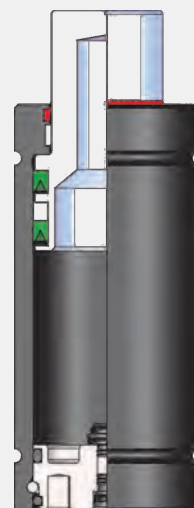
C series



CE-420



CE-750, 1000, 1800, 3000



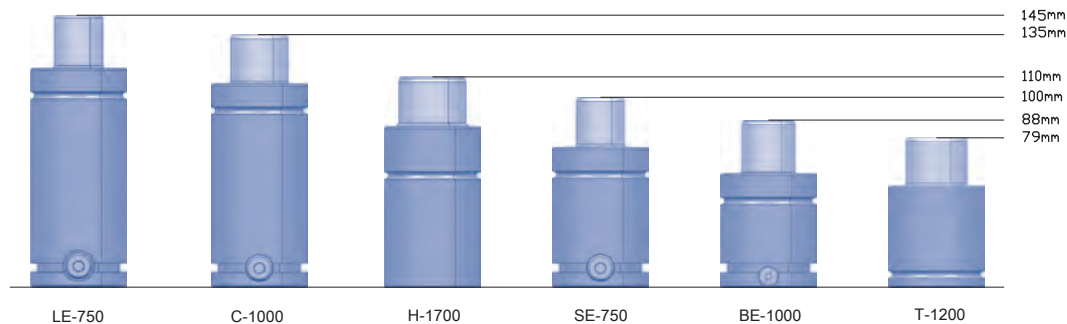
Important!

Pressure medium: **Nitrogen Gas (N_2)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Sub Compact Line (CE series)

Every Sub Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

BODY DIAMETER 50mm - STROKE 25mm

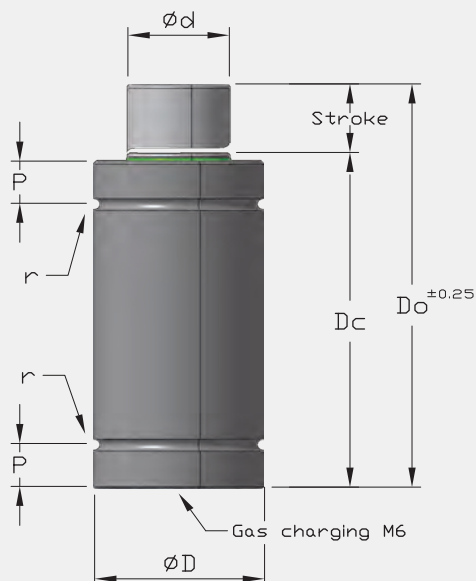


Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
CE-420	20	150	50	Kit CE-00420
CE-750	20	150	50	Kit CE-00750
CE-1000	20	150	50	Kit CE-01000
CE-1800	20	150	50	Kit CE-01800
CE-3000	20	150	50	Kit CE-03000

Part N°						
CE-420	✓	✓	SR 25	—	—	—
CE-750	✓	✓	SR / SC 32	—	—	—
CE-1000	✓	✓	SR / SC 38	—	—	—
CE-1800	✓	✓	SR / SC 50	—	—	I 50
CE-3000	✓	✓	SR / SC 63	—	—	—



CE series



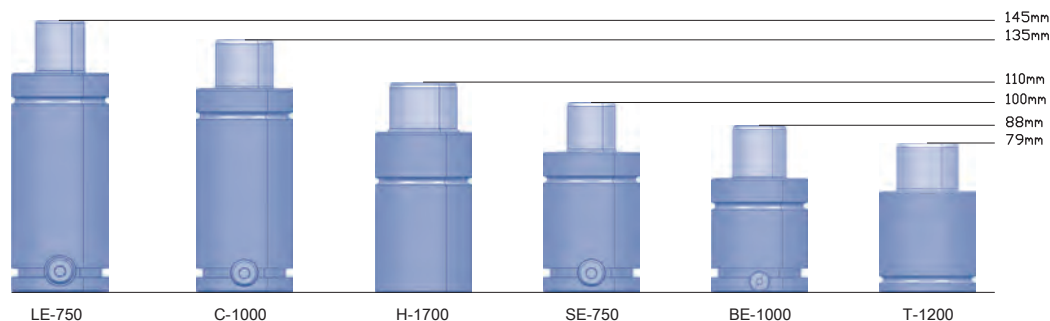
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Extra Compact Line (CE series)

Every Extra Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

BODY DIAMETER 50mm - STROKE 25mm

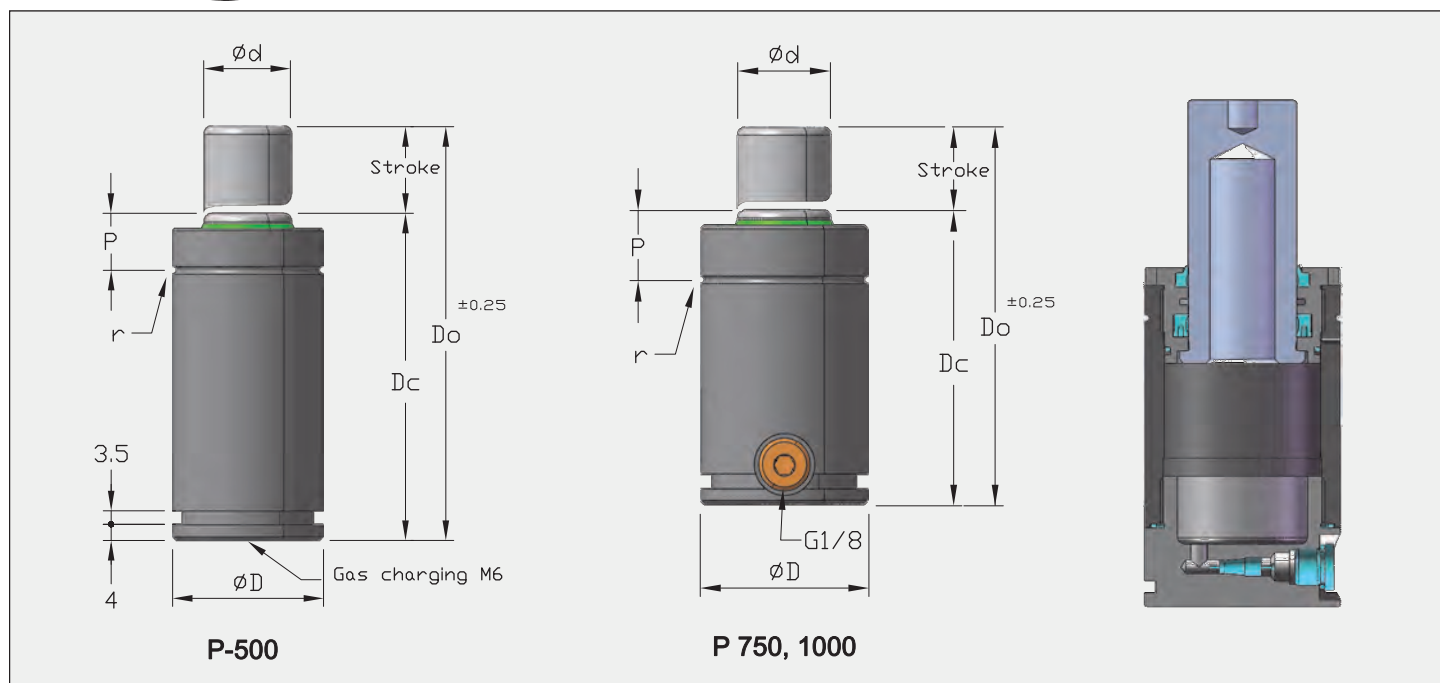


Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
CE-4700	20	150	50	Kit CE-04700
CE-7500	20	150	50	Kit CE-07500
CE-11800	20	150	50	Kit CE-11800
CE-18300	20	150	50	Kit CE-18300

Part N°						
CE-4700	✓	✓	SR / SC 75	—	—	I 75
CE-7500	✓	✓	SR / SC 95	—	—	I 95
CE-11800	✓	✓	SR / SC 120	—	—	I 120
CE-18300	✓	✓	SR / SC 150	—	—	—



Part N° Model x stroke (mm)	Do mm	Dc mm	ØD mm	Ød mm	P mm	r mm	bar	daN	daN	Kg		Cylinders bases
CE-4700 x 10	80	70	75	45	18	2,5	150	4700	7490	1,50	—	
16	106	90							7175	1,78		
25	135	110							7500	2,10		
32	167	135							7150	2,32		
40	200	160							7045	2,65		
50	240	190							7010	3,05		
CE-7500 x 10	90	80	95	60	21	2,5	150	7500	11720	3,10	—	
16	116	100							11350	3,30		
25	145	120							12025	3,85		
32	182	150							11160	4,46		
40	210	170							11315	4,69		
50	255	205							11040	5,50		
CE-11800 x 10	100	90	119,5	70	22,5	2,5	150	11800	17650	5,60	—	
16	126	110							17480	6,39		
25	155	130							18140	7,15		
32	187	155							17630	7,96		
40	220	180							17420	8,91		
50	260	210							17395	10,15		
CE-18300 x 10	110	100	149,5	90	24,5	2,5	150	18300	25050	9,10	—	
16	136	120							25395	9,95		
25	165	140							26640	10,80		
32	197	165							26180	13,26		
40	235	195							25795	15,10		
50	270	220							26275	16,80		



Important!

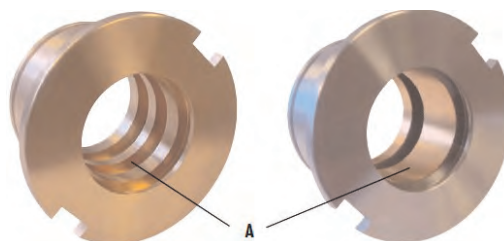
Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Performance Line (P series)

Every DESIGN₂-TITE® Performance gas spring provides greater force in a smaller body than the S and L series gas springs.

SinterLube® Top Cap

- Solid steel top cap with revolutionary SinterLube® lining.
- Designed with greater bearing area for improved support and guiding
- Threaded construction creates greater structural strength and safety.

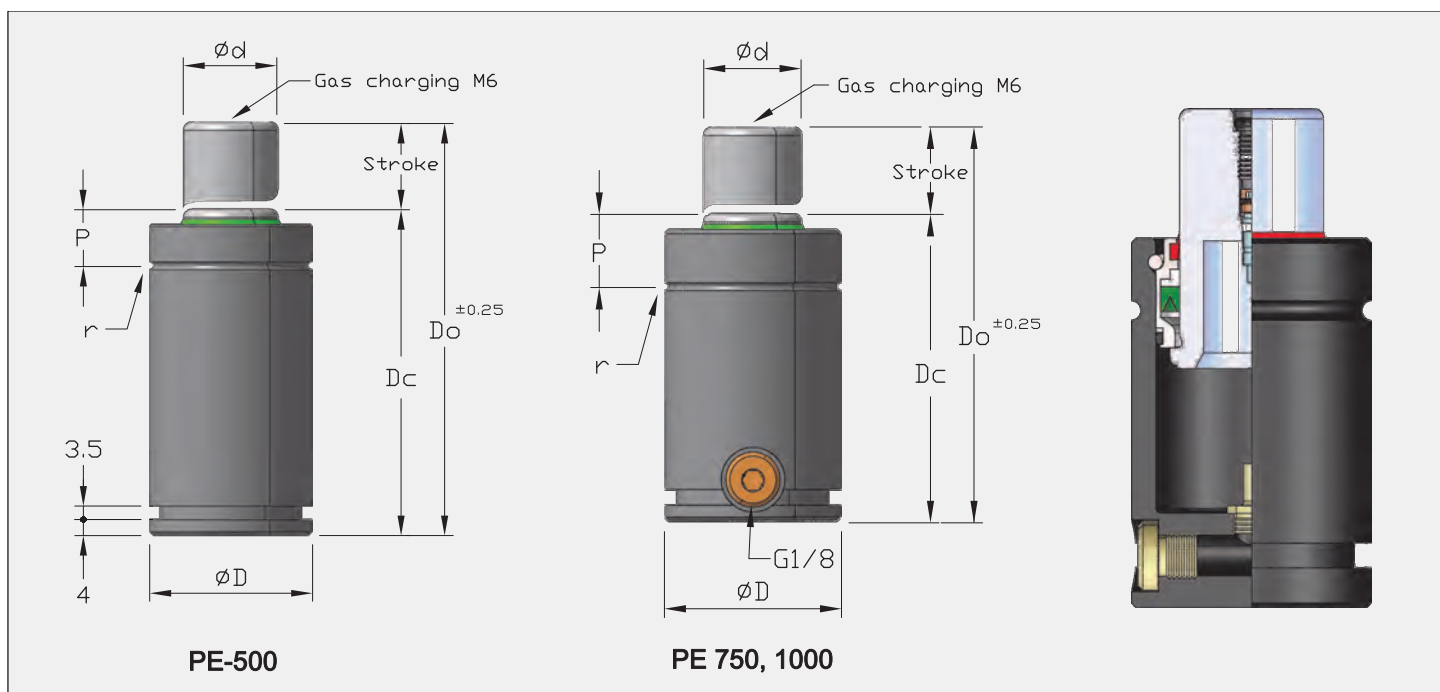


SinterLube® is a proprietary alloy material having good sliding lubricity and hardness which we have successfully used for years in guide bushings. We have now adapted this same technology to manufacturing a new line of top caps for our P series of nitrogen gas springs.

Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
P-500	15	150	50	P-500-SK
P-750	15	150	50	P-750-SK
P-1000	15	150	50	P-1000-SK

Part N°						
P-500	✓	✓	SR / SC 38	P 38	—	—
P-750	✓	✓	SR / SC 45	P 45	B 45	I 45
P-1000	✓	✓	SR / SC 50	P 50	B 50	I 50

Technical drawing of a circular plate with a diameter of 20mm. The plate features two holes, each with a diameter of 2xM8(12mm). The holes are spaced 20mm apart.



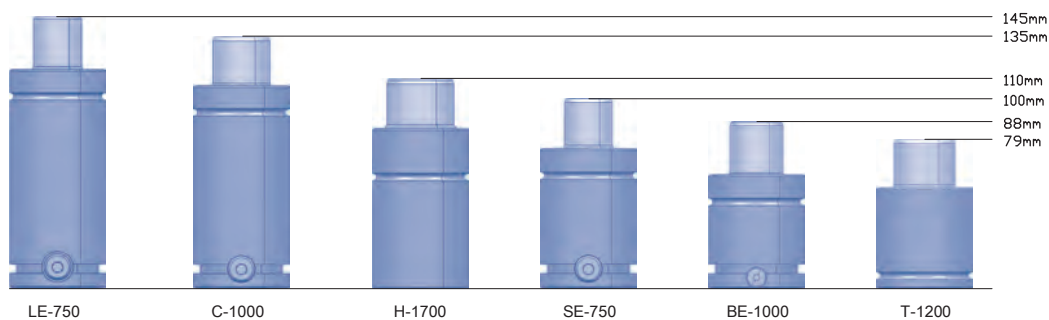
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Performance Line (PE series)

Every gas spring provides greater force in a smaller body than the SE and LE series gas springs.

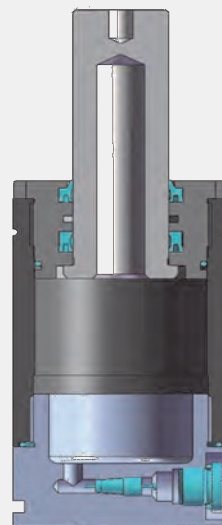
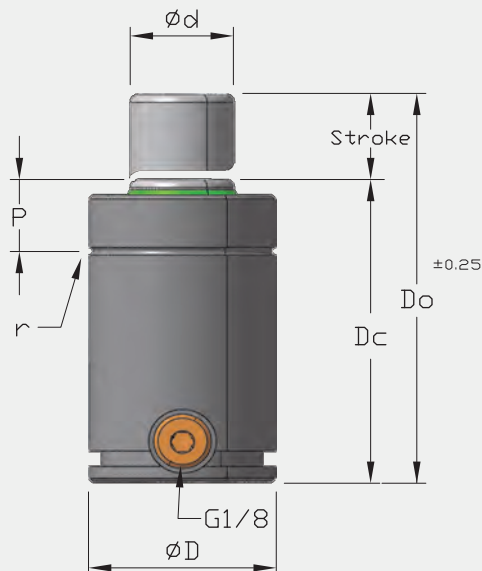
BODY DIAMETER 50mm - STROKE 25mm



Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
PE-500	1	150	35	Kit PE-0500
PE-750	0,8	150	35	Kit PE-0750
PE-1000	1	150	35	Kit PE-1000

Part N°						
PE-500	✓	✓	SR / SC 38	P 38	—	—
PE-750	✓	✓	SR / SC 45	P 45	B 45	I 45
PE-1000	✓	✓	SR / SC 50	P 50	B 50	I 50

[illegible]



Important!

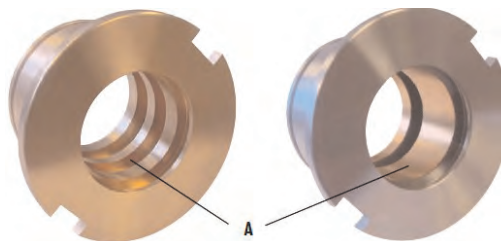
Pressure medium: **Nitrogen Gas (N_2)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The North American Line (S series)

Every DESIGN₂-TITE® North American gas spring meets all ISO and VDI piston rod and body diameter standards, in addition to mounting and charge port specifications and features the shorter body height common in North America.

SinterLube® Top Cap

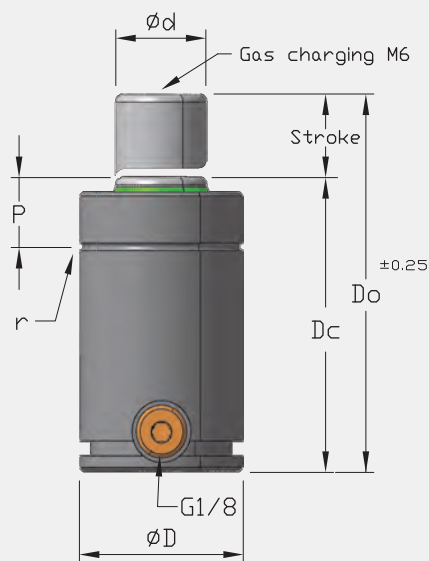
- Solid steel top cap with revolutionary SinterLube® lining.
- Designed with greater bearing area for improved support and guiding
- Threaded construction creates greater structural strength and safety.



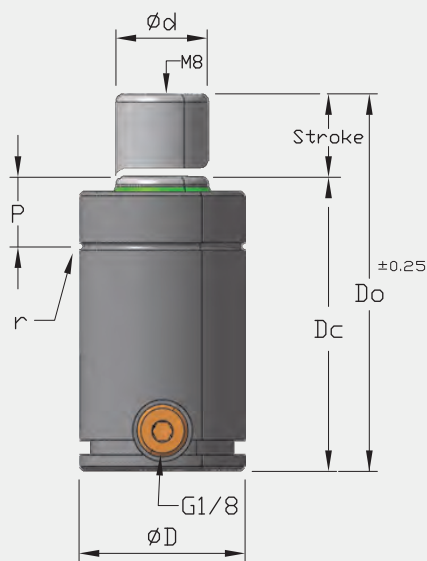
SinterLube® is a proprietary alloy material having good sliding lubricity and hardness which we have successfully used for years in guide bushings. We have now adapted this same technology to manufacturing a new line of top caps for our S series of nitrogen gas springs.

Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
S-500	15	150	50	S/L-500-SK
S-750	15	150	50	S/L-750-SK
S-1500	15	150	50	S/L-1500-SK

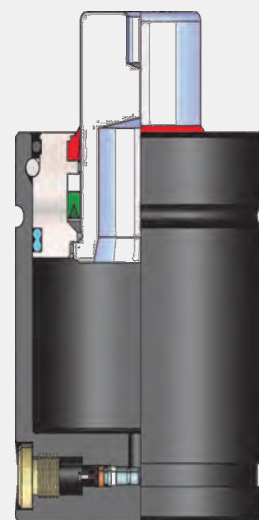
Part N°						
S-500	✓	✓	SR / SC 45	P 45	B 45	I 45
S-750	✓	✓	SR / SC 50	P 50	B 50	I 50
S-1500	✓	✓	SR / SC 75	P 75	B 75	I 75



SE-500, 750



SE-1500, 3000



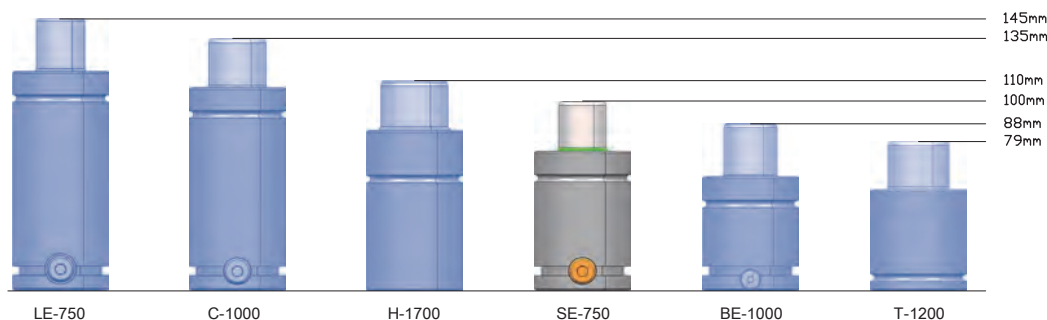
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Renault Line (SE series)

Renault line gas spring meets all ISO and VDI piston rod and body diameter specification, and they conform to the mounting, charge port, and body height specifications of the Renault norms.

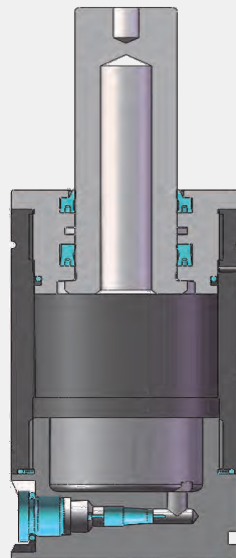
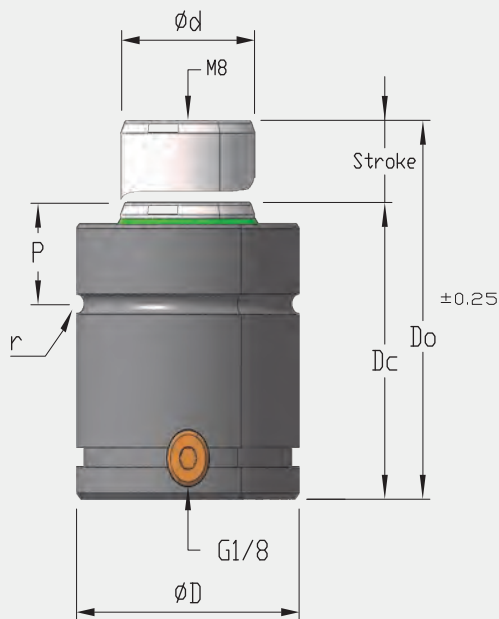
BODY DIAMETER 50mm - STROKE 25mm



Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
SE-500	1	150	35	Kit SE-00500
SE-750	1	150	35	Kit SE-00750
SE-1500	1	150	35	Kit SE-01500
SE-3000	0,8	150	35	Kit SE-03000

Part N°						
SE-500	✓	✓	SR / SC 45	P 45	B 45	I 45
SE-750	✓	✓	SR / SC 50	P 50	B 50	I 50
SE-1500	✓	✓	SR / SC 75	P 75	B 75	I 75
SE-3000	✓	✓	SR / SC 95	P 95	B 95	I 95

Product improvement through research and development is an ongoing process. All specifications are subject to change without notice.



Important!

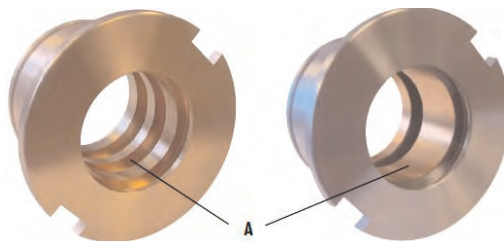
Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The ISO Line (L series)

Every DESIGN₂-TITE® ISO gas springs meets all ISO and VDI piston rod, body and height standards, in addition to mounting and charge port specifications.

SinterLube® Top Cap

- Solid steel top cap with revolutionary SinterLube® lining.
- Designed with greater bearing area for improved support and guiding
- Threaded construction creates greater structural strength and safety.



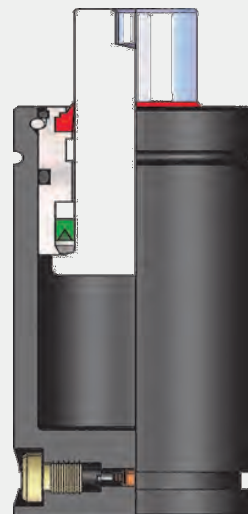
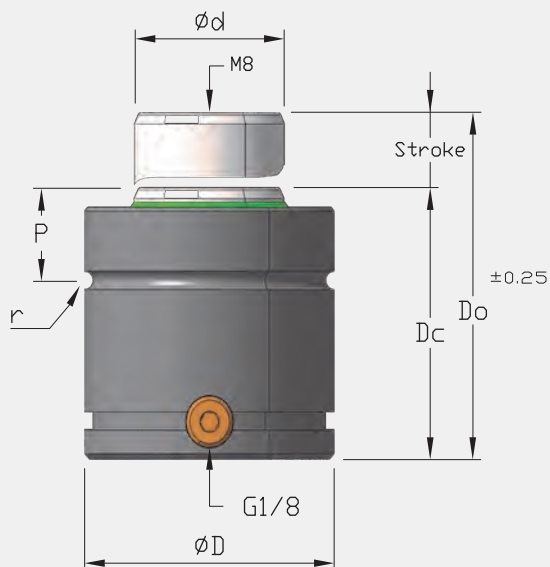
SinterLube® is a proprietary alloy material having good sliding lubricity and hardness which we have successfully used for years in guide bushings. We have now adapted this same technology to manufacturing a new line of top caps for our L series of nitrogen gas springs.

Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
L-500	15	150	50	S/L-500-SK
L-750	15	150	50	S/L-750-SK
L-1500	15	150	50	S/L-1500-SK
L-3000	15	150	50	S/L-3000-SK
L-5000	15	150	50	S/L-5000-SK

Part N°						
L-500	✓	✓	SR / SC 45	P 45	B 45	I 45
L-750	✓	✓	SR / SC 50	P 50	B 50	I 50
L-1500	✓	✓	SR / SC 75	P 75	B 75	I 75
L-3000	✓	✓	SR / SC 95	P 95	B 95	I 95
L-5000	✓	✓	SR / SC 120	P 120	B 120	I 120



Part N° Model x stroke (mm)	Do mm	Dc mm	ØD mm	Ød mm	P mm	r mm	bar	daN	daN	Kg		Cylinders bases
L-500 x 10	105	95	45	20	16,5	1	150	470	539	.94	✓	
13	111	98							553	.96		
25	135	110							564	.93		
38	161	123							625	1.12		
50	185	135							646	1.20		
63	211	148							664	1.29		
80	245	165							682	1.41		
100	285	185							697	1.55		
125	335	210							711	1.72		
160	405	245							725	1.97		
L-750 x 13	121	108	50	25	17,5	2	150	736	866	1.26	✓	
25	145	120							944	1.35		
38	171	133							1003	1.46		
50	195	145							1043	1.56		
63	221	158							1077	1.66		
80	255	175							1115	1.81		
100	295	195							1156	1.99		
125	345	220							1196	2.25		
160	415	255							1237	2.55		
200	495	295							1271	2.95		
L-1500 x 13	136	123	75	36	21	2,5	150	1527	1745	3.25	✓	
25	160	135							1887	3.45		
38	186	148							2001	3.70		
50	210	160							2081	3.95		
63	236	173							2151	4.20		
80	270	190							2222	4.50		
100	310	210							2285	4.90		
125	360	235							2362	5.45		
160	430	270							2459	6.20		
200	510	310							2543	7.15		
L-3000 x 25	170	145	95	50	24	2,5	150	2945	3780	6.10	✓	
38	196	158							4240	6.85		
50	220	170							4434	7.20		
63	246	183							4596	7.60		
80	280	200							4756	8.10		
100	320	220							4897	8.75		
125	370	245							5030	9.50		
160	440	280							5290	10.85		
200	520	320							5519	12.40		
L-5000 x 25	190	165	120	65	25,5	2,5	150	4977	6138	10.65	✓	
38	216	178							6566	11.30		
50	240	190							6891	11.90		
63	266	203							7185	12.55		
80	300	220							7503	13.45		
100	340	240							7804	14.45		
125	390	265							8105	15.75		
160	460	300							8656	18.05		
200	540	340							9181	20.70		



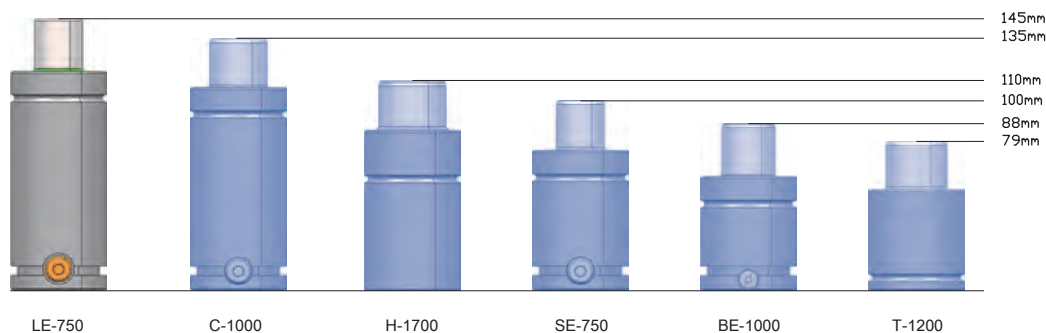
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The ISO Line (LE series)

Every ISO gas springs meets all ISO and VDI piston rod, body and height standards, in addition to mounting and charge port specifications.

BODY DIAMETER 50mm - STROKE 25mm

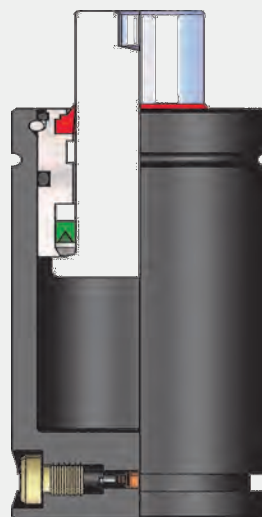
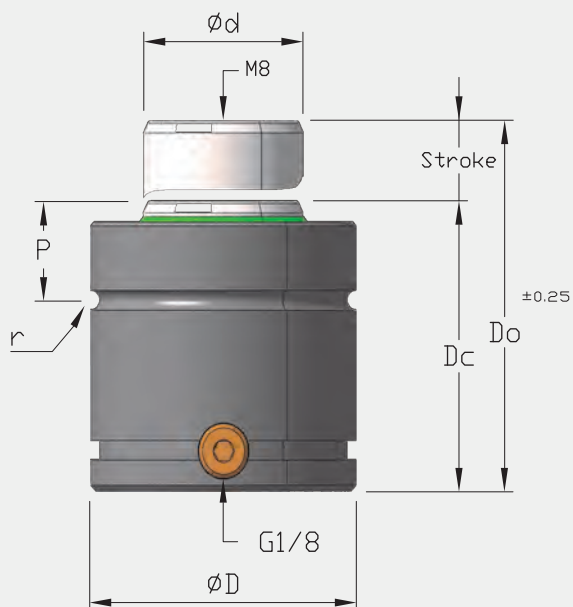


Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
LE-500	0,8	150	35	Kit LE-00500
LE-750	0,8	150	35	Kit LE-00750
LE-1500	0,8	150	35	Kit LE-01500
LE-3000	0,8	150	35	Kit LE-03000
LE-5000	0,5	150	35	Kit LE-05000

Part N°						
LE-500	✓	✓	SR / SC 45	P 45	B 45	I 45
LE-750	✓	✓	SR / SC 50	P 50	B 50	I 50
LE-1500	✓	✓	SR / SC 75	P 75	B 75	I 75
LE-3000	✓	✓	SR / SC 95	P 95	B 95	I 95
LE-5000	✓	✓	SR / SC 120	P 120	B 120	I 120



Part N° Model x stroke (mm)	Do mm	Dc mm	ØD mm	Ød mm	P mm	r mm	bar	daN	daN	Kg		Cylinders bases
LE-500 x 10	105	95	45,2	20	16,5	1	150	470	575	0,87	✓	
13	110,4	97,7							595	0,95		
25	135	110							645	0,99		
38	161	123							680	1,12		
50	185	135							710	1,21		
63	212	149							730	1,34		
80	245	165							745	1,50		
100	285	185							760	1,68		
125	335	210							780	2,00		
160	405	245							800	2,15		
LE-750 x 13	120,4	107,7	50	25	17,5	2	150	750	895	1,20	✓	
25	145	120							965	1,35		
38	171	133							990	1,40		
50	195	145							1030	1,52		
63	222	159							1070	1,70		
80	255	175							1085	1,82		
100	295	195							1095	1,85		
125	345	220							1160	2,20		
160	415	255							1175	2,30		
200	495	295							1180	3,10		
250	595	345							1205	3,60		
300	695	395							1230	4,15		
LE-1500 x 13	135,4	122,7	75	36	21	2,5	150	1500	1740	3,15	✓	
25	160	135							1845	3,30		
38	186	148							1900	3,50		
50	210	160							1940	3,65		
63	237	174							1980	3,90		
80	270	190							2075	4,45		
100	310	210							2095	4,80		
125	360	235							2125	5,36		
160	430	270							2150	6,10		
200	510	310							2185	7,15		
250	610	360							2200	7,86		
300	710	410							2225	8,86		
LE-3000 x 25	170	145	95	50	24	2,5	150	3000	3615	5,75	✓	
38	196	158							3760	6,15		
50	220	170							3875	6,53		
63	247	184							4960	6,91		
80	280	200							4020	7,25		
100	320	220							4275	8,00		
125	370	245							4340	8,15		
160	440	280							4390	9,24		
200	520	320							4450	10,31		
250	620	370							4495	11,90		
300	720	420							4525	14,87		
LE-5000 x 25	190	165	120	65	25,5	2,5	150	5000	6275	12,01	✓	
38	216	178							6600	12,85		
50	240	190							6830	13,60		
63	267	204							7010	14,50		
80	300	220							7195	15,39		
100	340	240							7340	16,48		
125	390	265							7495	18,05		
160	460	300							7610	19,83		
200	540	340							7700	21,70		
250	640	390							7795	23,85		
300	740	440							7850	25,60		



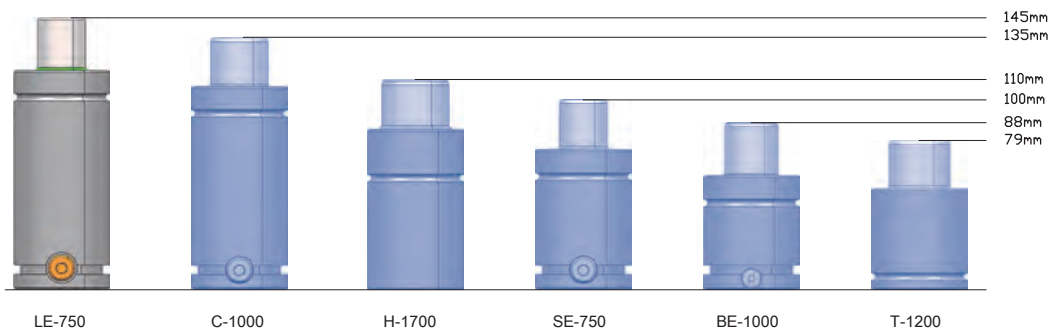
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The ISO Line (LE series)

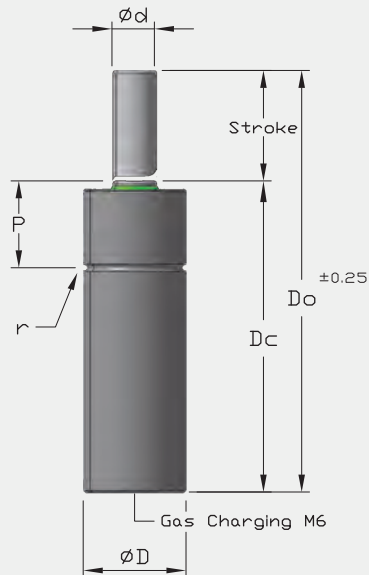
Every ISO gas springs meets all ISO and VDI piston rod, body and height standards, in addition to mounting and charge port specifications.

BODY DIAMETER 50mm - STROKE 25mm

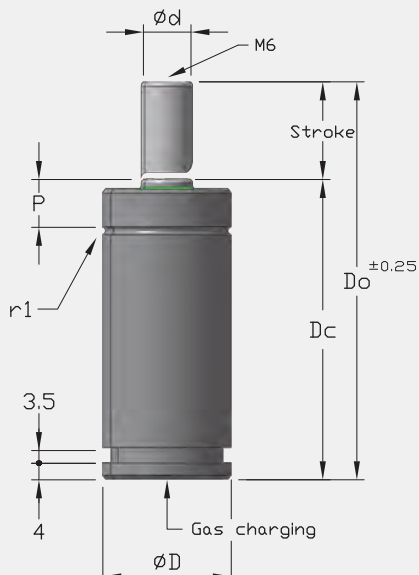


Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
LE-7500	0,5	150	35	Kit LE-07500
LE-10000	0,5	150	35	Kit LE-10000

Part N°						
LE-7500	✓	✓	SR / SC 150	RLP 150	B 150	I 150
LE-10000	✓	✓	SR / SC 195	RLP 195	B 195	—



M-90, 180



M-230, 300



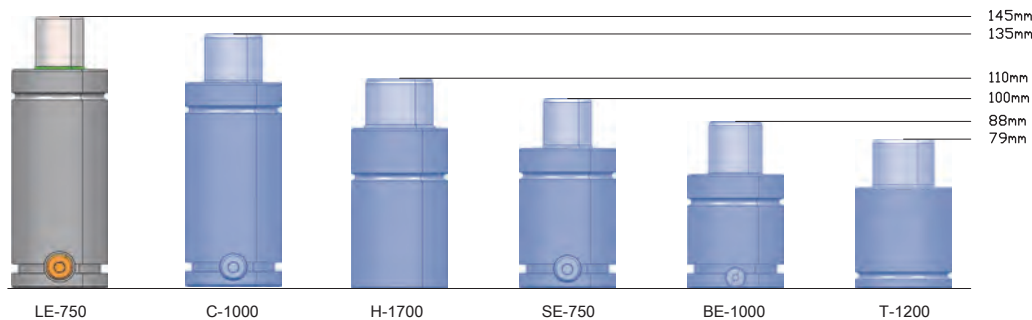
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The small ISO Line (M series)

Every small ISO gas springs meets all ISO and VDI piston rod, body and height standards, in the smallest models.

BODY DIAMETER 50mm - STROKE 25mm

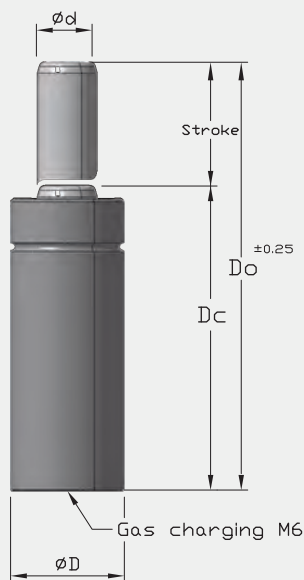


Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
M-42	0.3	150	20	Kit M-00042
M-50	0.3	175	50	Kit M-00050
M-90	0.5	175	25	Kit M-00090
M-180	0.6	175	25	Kit M-00180
M-230	0.6	175	25	Kit M-00230

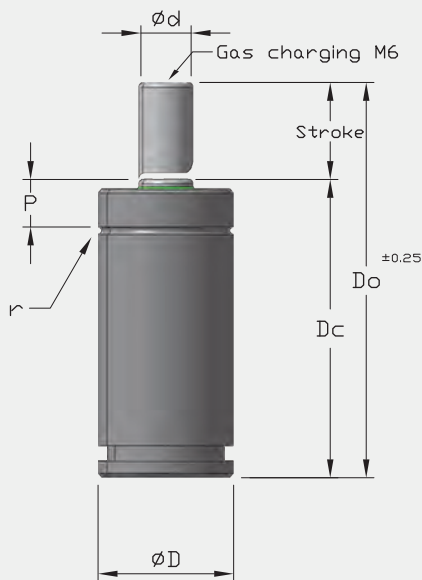
Part N°						
M-42	✓	✓	—	—	—	—
M-50	✓	✓	—	—	—	—
M-90	✓	✓	SR 19	—	—	—
M-180	✓	✓	SR 25	—	—	—
M-230	✓	✓	SR 32	P 32	—	—

M6(5mm)

M6(8mm)



M-42, 50



M-350, 500, 1000



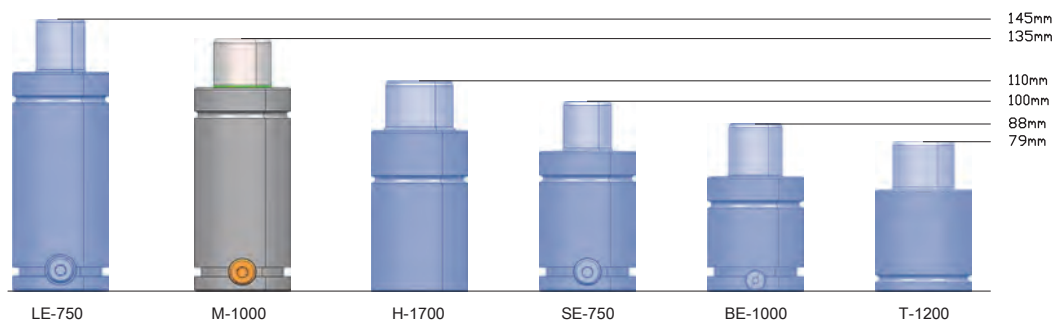
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Semi Compact Line (M series)

Every Semi Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

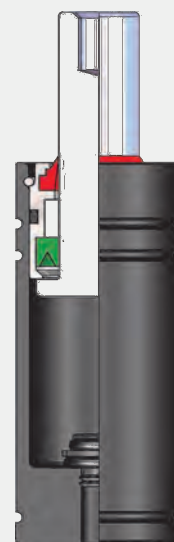
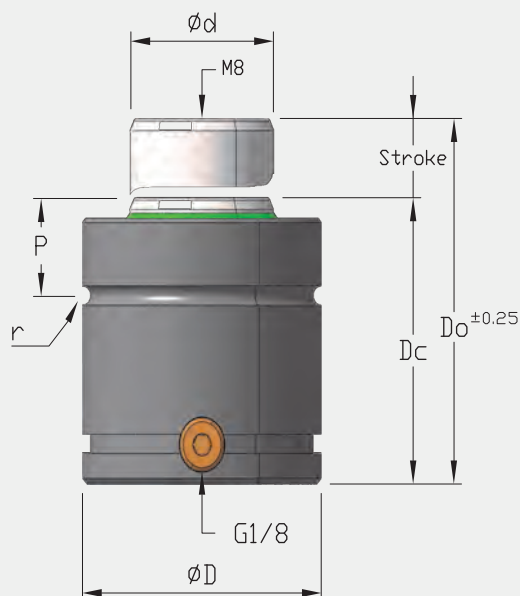
BODY DIAMETER 50mm - STROKE 25mm



Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
M-300	0.8	150	50	Kit M-00300
M-350	0.8	150	35	Kit M-00350
M-500	1	150	35	Kit M-00500
M-1000	0.5	150	35	Kit M-01000

Part N°						
M-300	✓	✓	SR / SC 38	P 38	—	—
M-350	✓	✓	SR 32	P 32	—	—
M-500	✓	✓	SR / SC 38	P 38	—	—
M-1000	✓	✓	SR / SC 50	P 50	B 50	I 50

Technical drawing of the front view of a gas charging M6 cap. The cap is circular with a diameter of 20 mm. It features six holes: two M6 holes (8 mm diameter) at the top, two M8 holes (8 mm diameter) in the center, and two M6 holes at the bottom. The overall width is 18 mm.



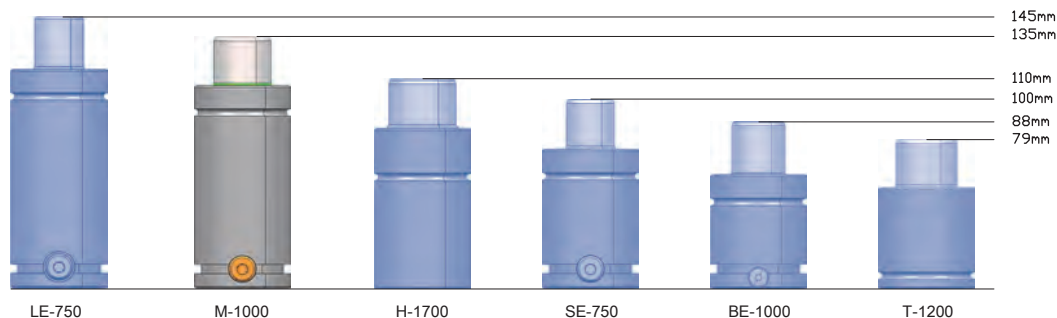
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Semi Compact Line (M series)

Every Semi Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and shorter body height of a bore seal cylinder.

BODY DIAMETER 50mm - STROKE 25mm

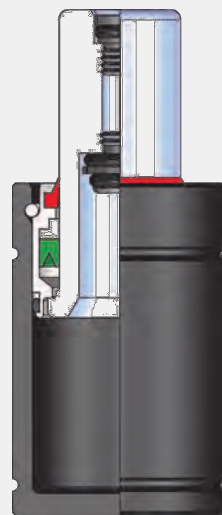
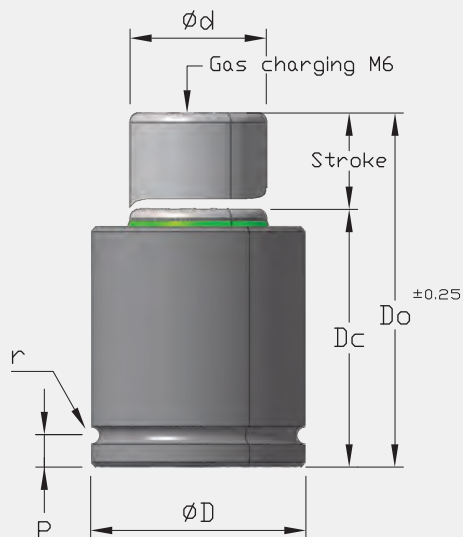


Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for Spare Parts Kit
M-1500	0,5	150	35	Kit M-01500
M-2500	0,8	155	35	Kit M-02500
M-3000	0,5	150	35	Kit M-03000
M-4000	0,5	150	35	Kit M -04000
M-6500	0,6	150	35	Kit M-06500

Part N°						
M-1500	✓	✓	SR / SC 63	P 63	B 63	—
M-2500	✓	✓	SR / SC 75	P 75	B 75	I 75
M-3000	✓	✓	SR / SC 75	P 75	B 75	I 75
M-4000	✓	✓	SR / SC 95	P 95	B 95	I 95
M-6500	✓	✓	SR / SC 120	P 120	B 120	I 120



Part N° Model x stroke (mm)	Do mm	Dc mm	ØD mm	Ød mm	P mm	r mm			daN			Cylinders bases
M-1500 x 25	135	110	63	36	19	2	148	1500	1990	1,86	✓	
38	161	123							2110	2,10		
50	185	135							2195	2,25		
63	211	148							2275	2,30		
80	245	165							2310	2,55		
100	285	185							2560	3,15		
125	345	220							2545	4,06		
160	415	255							2390	5,23		
M-2500 x 25	145	120	75,2	45	19	2,5	155	2500	3095	2,50	✓	
38	171	133							3250	3,25		
50	195	145							3340	4,00		
63	221	158							3425	4,40		
80	255	175							3510	5,05		
100	300	200							3605	5,55		
125	350	225							3680	5,98		
M-3000 x 25	145	120	75,2	50	19	2,5	150	3000	3900	2,70	✓	
38	171	133							4165	3,30		
50	195	145							4335	4,10		
63	221	158							4490	4,50		
80	255	175							4615	5,10		
100	300	200							4725	5,90		
125	350	225							4845	6,50		
160	425	265							5575	7,40		
200	510	310							5570	7,85		
M-4000 x 25	155	130	95	60	22	2,5	142	4000	5050	4,20	✓	
38	181	143							5345	4,90		
50	205	155							5525	5,30		
63	236	173							6710	6,10		
80	270	190			25	2,5	142	4000	5915	7,20		
100	310	210							6050	7,80		
125	370	245							6205	8,30		
160	440	280							6350	9,50		
M-6500 x 25	165	140	120	75	24,5	2,5	147	6500	7750	9,45	✓	
38	191	153							8180	10,05		
50	215	165							8500	10,75		
63	241	178							8745	11,67		
80	275	195							9125	12,28		
100	315	215							9210	13,35		
125	375	250							9595	14,29		



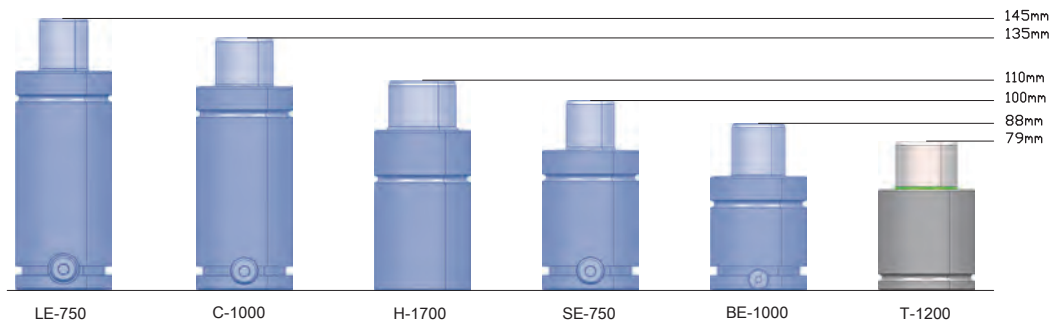
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Super Compact Line (T series)

Every Super Compact gas spring combines the convenience of a self-contained gas spring with the increased on-contact force and a very shorter body height of a bore seal cylinder.

BODY DIAMETER 50mm - STROKE 25mm

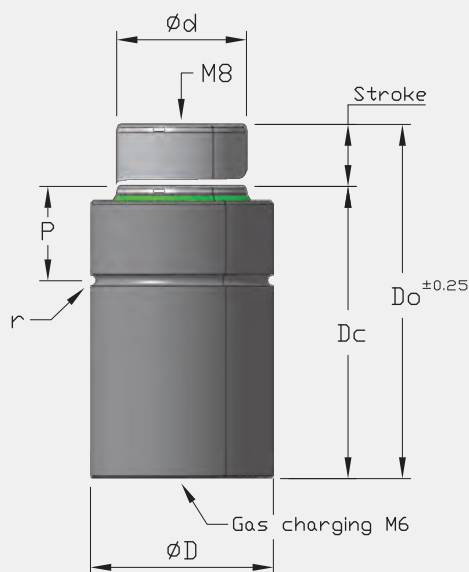


Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for spare parts kit
T-500	15	200	25	Kit T-00500
T-750	15	200	25	Kit T-00750
T-1200	15	150	50	Kit T-01200
T-2100	15	150	50	Kit T-02100
T-3000	15	150	50	Kit T-03000

Part N°						
T-500	✓	—	SR 32	—	—	—
T-750	✓	—	SR / SC 38	—	—	—
T-1200	✓	✓	SR / SC 50	—	B 50	I 50
T-2100	✓	✓	SR / SC 63	—	B 63	—
T-3000	✓	✓	SR / SC 75	—	B 75	I 75



T series



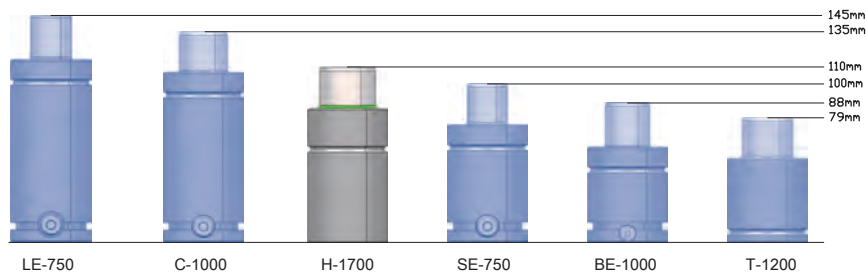
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

The Maximum Force Line (H series)

Every Maximum Force gas spring provides the maximum force in a self-contained gas spring with the increased on-contact force of a bore seal cylinder.

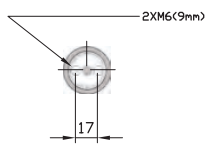
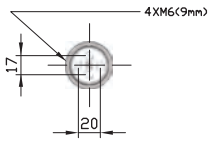
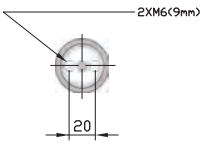
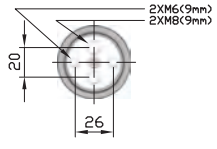
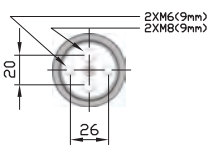
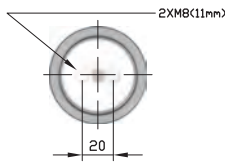
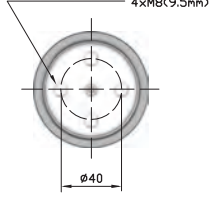
BODY DIAMETER 50mm - STROKE 25mm

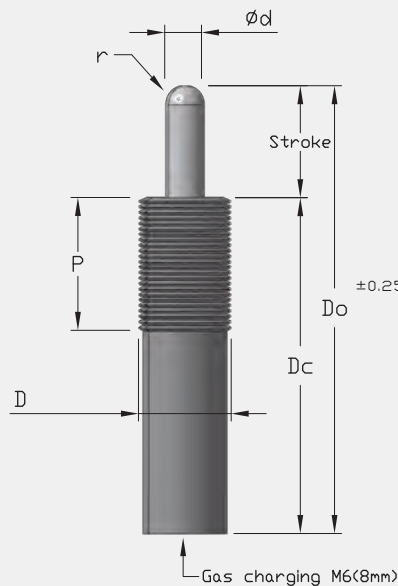


Part N°	Max. stem speed m/min	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for spare parts kit
H-850	20	175	35	Kit H-00850
H-1000	15	200	35	Kit H-01000
H-1250	20	175	35	Kit H-01250
H-1700	20	175	35	Kit H-01700
H-2000	15	200	35	Kit H-02000
H-2800	20	175	35	Kit H-02800
H-4300	20	175	35	Kit H-04300

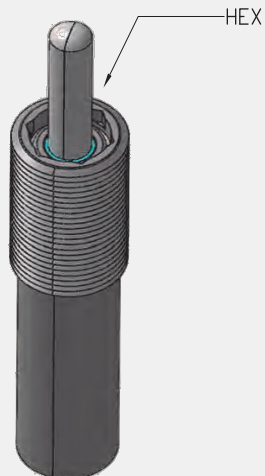
Part N°						
H-850	✓	✓	SR / SC 38	—	—	—
H-1000	✓	✓	SR / SC 38	—	—	—
H-1250	✓	✓	SR / SC 45	—	—	I 45
H-1700	✓	✓	SR / SC 50	—	B 50	I 50
H-2000	✓	✓	SR / SC 50	—	B 50	I 50
H-2800	✓	✓	SR / SC 63	—	B 63	—
H-4300	✓	✓	SR / SC 75	—	B 75	I 75



Part N° Model x stroke (mm)	Do mm	Dc mm	ØD mm	Ød mm	P mm	r mm	 bar	 daN	 daN	 Kg		Cylinders bases
H-850 x 12	74	62	38	25	21,5	1	175	850	1280	0,40		
25	100	75							1435	0,45		
38	130	92							1450	0,52		
50	155	105							1485	0,64		
63	185	122							1480	0,75		
80	225	145							1475	0,86		
H-1000 x 25	105	80	38	25	21,5	1	185	1000	1570	0,50		
38	135	97							1600	0,57		
50	160	110							1675	0,69		
63	205	142							1540	0,80		
80	240	160							1600	0,91		
H-1250 x 12	79	67	45	30	23,5	1	175	1250	1800	0,62		
25	105	80							2050	0,75		
38	135	97							2120	0,83		
50	160	110							2150	0,91		
63	190	127							2195	1,10		
80	230	150							2120	1,17		
H-1700 x 12	84	72	50	35	26,5	2	175	1700	2485	0,82		
25	110	85							2800	0,91		
38	140	102							2895	1,12		
50	165	115							2960	1,25		
63	195	132							2975	1,35		
80	235	155							2970	1,48		
H-1925 x 25	135	110	50	35	26,5	2	185	1925	2610	1,02		
38	165	127							2780	1,32		
50	190	140							2910	1,45		
63	220	157							2995	1,55		
80	255	175							3120	1,68		
H-2800 x 12	94	82	63,2	45	28	2	175	2800	3825	1,31		
25	120	95							4410	1,52		
38	150	112							4595	1,85		
50	175	125							4630	1,97		
63	210	147							4695	2,05		
80	250	170							4740	2,22		
H-4300 x 12	94	82	75,2	56	29	2,5	175	4300	5910	1,82		
25	120	95							6795	2,10		
38	150	112							7095	2,42		
50	175	125							7365	2,61		
63	210	147							7270	2,70		
80	250	170							7345	3,05		



HEX11 - R-16 & R16.1
HEX17,5 - R-24 & R24.1

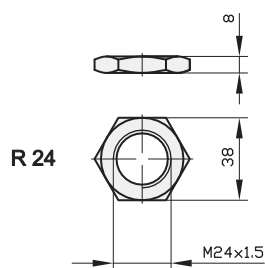
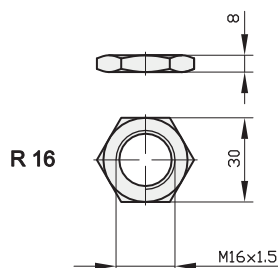


Important!

Pressure medium: **Nitrogen Gas (N₂)**
Operating temperature: **0 to +80°C**
Force increase by temperature: **0,33% / °C**

The Threaded Line (R series)

Every threaded gas spring provides a



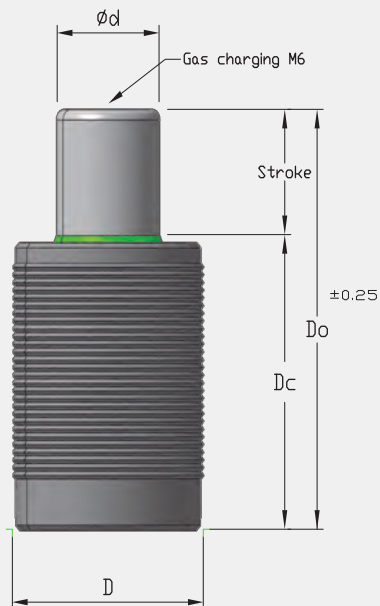
Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for spare parts kit
R-16	0,5	175	35	Kit R-16
R-16.1	0,5	175	35	Kit R-16
R-24	0,5	175	25	Kit R-24
R-24.1	0,5	175	25	Kit R-24

Part N°		
R-16	✓	R 16
R-16.1	✓	R 16
R-24	✓	R 24
R-24.1	✓	R 24



Here's How to order the KEY
R16KEY, for R-16 & R-16.1 model
R24KEY, for R-24 & R-24.1 model

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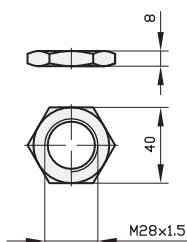
Important!

Pressure medium: **Nitrogen Gas (N₂)**
 Operating temperature: **0 to +80°C**
 Force increase by temperature: **0,33% / °C**

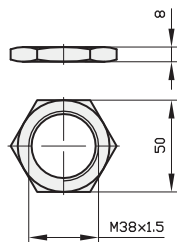
The Threaded Line (R series)

Every threaded gas spring provides a

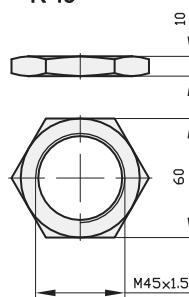
R 28



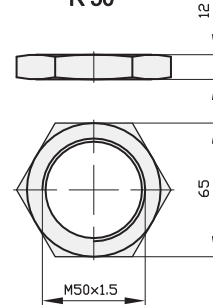
R 38



R 45



R 50



Part N°	Max. stem speed m/s	Max. charging pressure (bar)	Min. charging pressure (bar)	Order No for
R-200	0,6	175	25	Kit R-200
R-250	0,8	150	50	Kit R-250
R-750	0,8	150	35	Kit R-750
R-1000	0,8	150	35	Kit R-1000

Part N°		
R-200	R 28	R 28
R-250	R 38	R 38
R-750	R 45	R 45
R-1000	R 50	R 50





Cylinders with Controlled Movement

Most gas springs cycle in phase with the ram of the press, and for many if not most applications that is perfectly adequate. However, there are certain applications where greater flexibility of movement is needed. Our K Series gas springs provide that flexibility. K Series pistons can be stopped and restarted in their motion at any point in the upstroke.

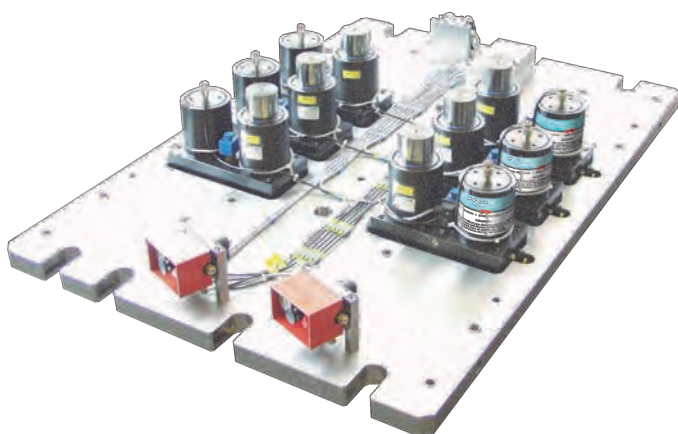
Each unit contains the following components:

- . Working cylinder
- . Pressure accumulator
- . Adaptor plate
- . Hydraulic valve

The adaptor plate is the base plate of each K Series unit. It is mounted to the master platen in any configuration that is needed. That can be in an irregular pattern as illustrated in the second photograph on this page, or in a regular array as in the third photograph. In addition to housing the other components of the spring the adaptor plate connects its spring to the others in the system.

The working cylinder is filled with hydraulic oil. As the press ram descends the oil is displaced to the pressure accumulator. Under normal circumstances, when the press ram begins its upstroke the oil returns to the working cylinder. However, if desired, the oil can be inhibited in its return flow. An electric signal can be sent to the hydraulic valve to shut. That stops the return flow and stops the upward movement of the piston. That electric signal can be triggered at any point in the upstroke. When the hydraulic valve is reopened the hydraulic oil returns to the working cylinder, and the piston returns to its extended stand-by position.

The return flow pressure in the accumulator is provided by nitrogen gas, which is charged to 150 bar.



Operation

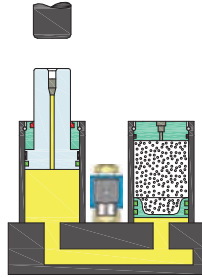
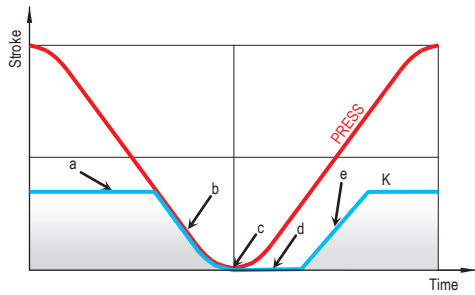


Figure a

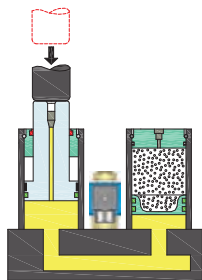


Figure b

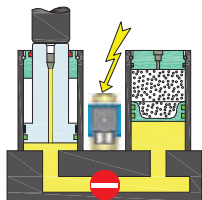


Figure c

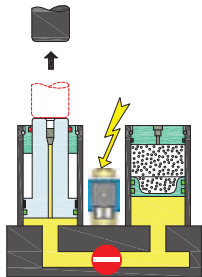


Figure d

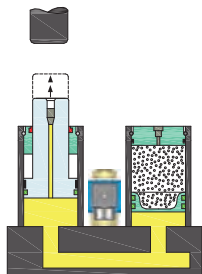
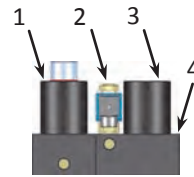
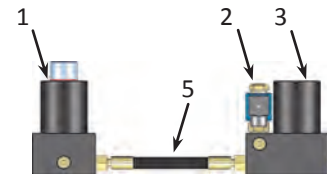


Figure e

Description of Components:



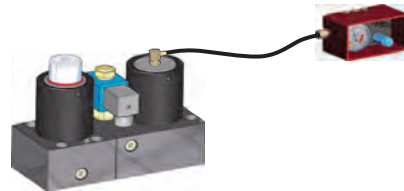
Compact Application



Modular Application

- 1 Working cylinder
- 2 Hydraulic valve
- 3 Pressure accumulation cylinder
- 4 Adaptation plate
- 5 Hydraulic hoses

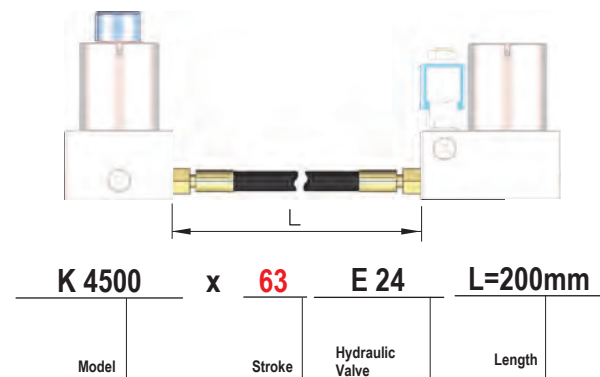
Example of an application connected to a control panel



Example of an application of a connected modular version

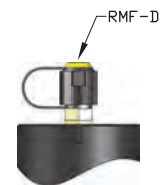
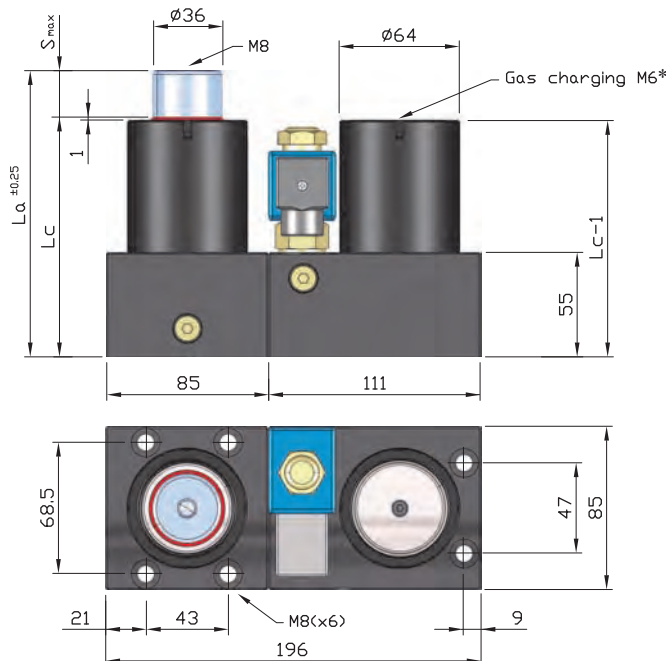


How to Order a Modular Application



Model: K1500, K 3000, K 4500, K 6500
 Stroke: 12, 25, 38, 50, 63, 80, 100, 125 (other strokes under order)
 Hydraulic Valve: · Hydraulic valve: E 24, E 110, E 220
 Length: · distance between modules (min. 175mm)

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* The K 1500 model is also available equipped with RMF-D. When placing an order, please indicate the reference: K 1500x ... C



Model	S max	L _a mm	L _c mm	F _a daN	F _c daN
K 1500x12	12	124	112	1500 (±5%)	1715
K 1500x25	25	150	125		1875
K 1500x38	38	176	138		2000
K 1500x50	50	200	150		2100
K 1500x63	63	226	163		2190
K 1500x80	80	260	180		2285
K 1500x100	100	300	200		2375
K 1500x125	125	350	225		2465

Hydraulic Valve	Supply Voltage	Power Consumption
E 24	24V DC	17w
E 110	110V AC	17w
E 220	220V AC	17w

Medium Pressure

Nitrogen Gas (N₂) / oil

Maximum Charging Pressure **150 Bar**

Minimum Charging Pressure **50 Bar**

N₂ Nominal Pressure **150 Bar**

Rod Seal Area **10.18 cm²**

Maximum Working Temperature **60°C**

Force Increase by Temperature **33/°C**

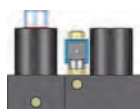
Maximum Stern Speed **10 m/min**

Required information:

- Working stroke:
- Press speed:
- Maximum press rate:

_____ mm
_____ m/min
_____ strokes/min

Assembly Possibilities

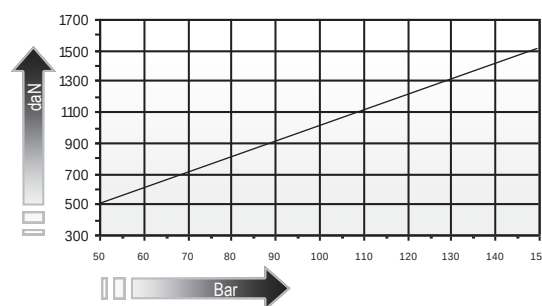


Compact application



Modular application

Force / Pressure Ratio



How To Order:

K 1500

x 25

E 24

Model

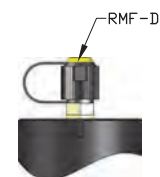
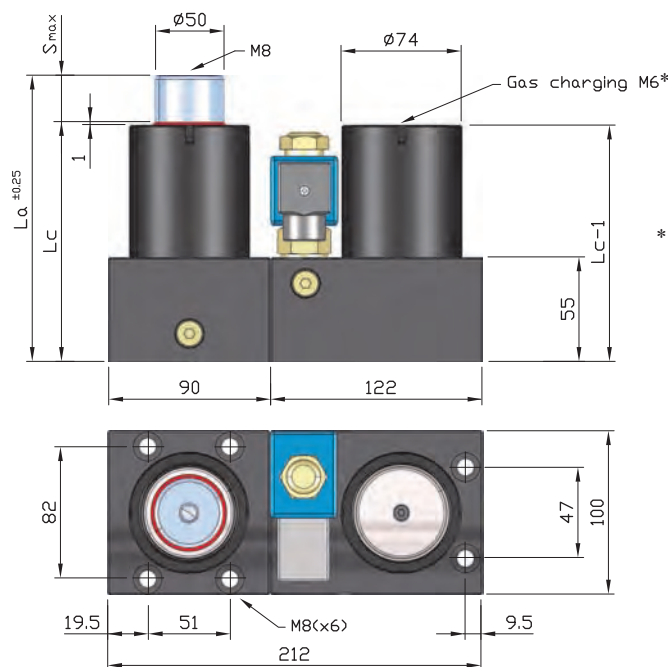
Stroke

Hydraulic Valve

E 24 : 24V DC
E 110 : 110V AC
E 220 : 220V AC

Stroke : 12, 25, 38, 50, 63, 80, 100, 125 (other strokes under order)

PED 97/23/CE



* K3000 model is also available equipped with RMF-D. When placing an order, please indicate the reference: K 3000x ... C



Model	S max	La mm	Lc mm	Fa daN	Fc daN
K 3000x12	12	129	117	3000 (±5%)	3360
K 3000x25	25	155	130		3740
K 3000x38	38	181	143		4065
K 3000x50	50	205	155		4320
K 3000x63	63	231	168		4560
K 3000x80	80	265	185		4835
K 3000x100	100	305	205		5100
K 3000x125	125	355	230		5380

Medium Pressure

Nitrogen Gas (N₂) / oil

Maximum Charging Pressure	150 Bar
Minimum Charging Pressure	50 Bar
N ₂ Nominal Pressure	150 Bar
Rod Seal Area	19.63 cm ²
Maximum Working Temperature	60°C
Force Increase by Temperature	33°C
Maximum Stern Speed	10 /min

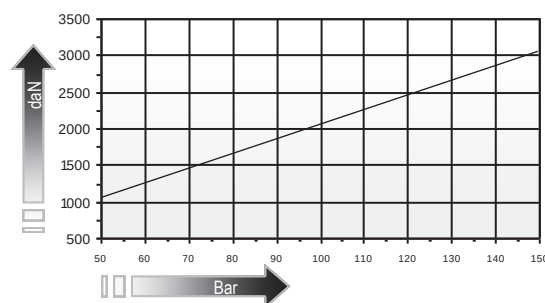
Hydraulic Valve	Supply Voltage	Power Consumption
E 24	24V DC	17w
E 110	110V AC	17w
E 220	220V AC	17w

Required information:

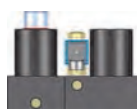
- Working stroke:
- Press speed:
- Maximum press rate:

mm
m/min
strokes/min

Force / Pressure Ratio



Assembly Possibilities



Compact Application



Modular Application

How to Order

K 3000 x 50 E 110
Model Stroke Hydraulic Valve

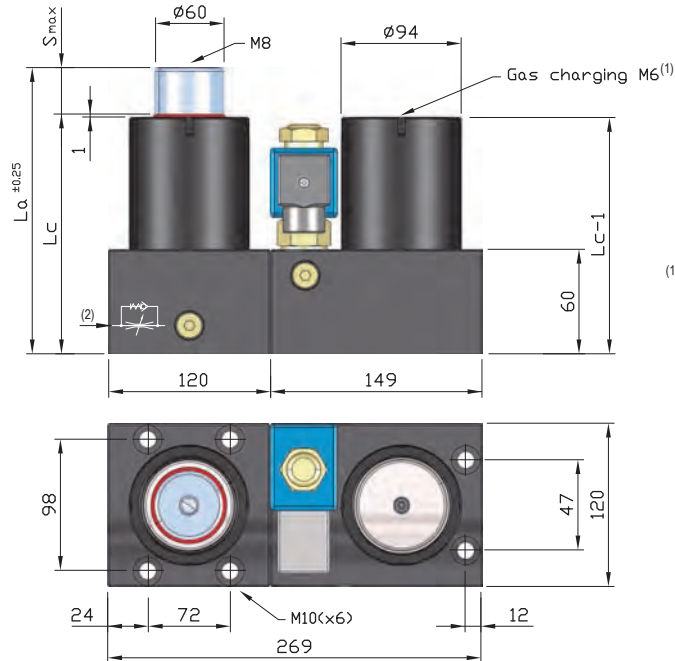
Stroke 12, 25, 38, 50, 63, 80, 100, 125 - other strokes under order)

E 24 - 24V DC
E 110 - 110V AC
E 220 - 220V AC

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(2) Flow regulator for controlling stem expansion speed



(1) The K 4500 model is also available equipped with RMF-D. When placing an order, please indicate the reference: K 4500x ... C



Model	S _{max}	La mm	Lc mm	Fa daN	Fc daN
K 4500x12	12	140	128	4500 (±5%)	4710
K 4500x25	25	166	141		5130
K 4500x38	38	192	154		5490
K 4500x50	50	216	166		5775
K 4500x63	63	242	179		6040
K 4500x80	80	276	196		6340
K 4500x100	100	316	216		6635
K 4500x125	125	366	241		6935

Hydraulic Valve	Supply Voltage	Power Consumption
E 24	24V DC	17w
E 110	110V AC	17w
E 220	220V AC	17w

Medium Pressure

Nitrogen Gas (N₂) / oil

Maximum Charging Pressure	150 Bar
Minimum Charging Pressure	50 Bar
N ₂ Nomial Pressure	150 Bar
Rod Seal Area	28.27 cm ²
Maximum Working Temperature	60°C
Force Increase by Temperature	33 /°C
Maximum Stem Speed	10 m/min

Required information:

- Working stroke:
- Press speed:
- Required gas spring expansion speed:
- Maximum press rate:

mm
m/min
m/min
strokes/min

Assembly Possibilities



Compact Application



Modular Application

How to Order

K 4500 x 125 E 220

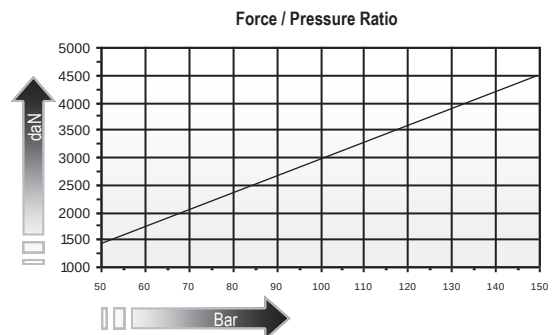
Model

Stroke

Hydraulic Valve

E 24 - 24V DC
E 110 - 110V AC
E 220 - 220V AC

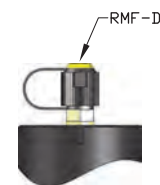
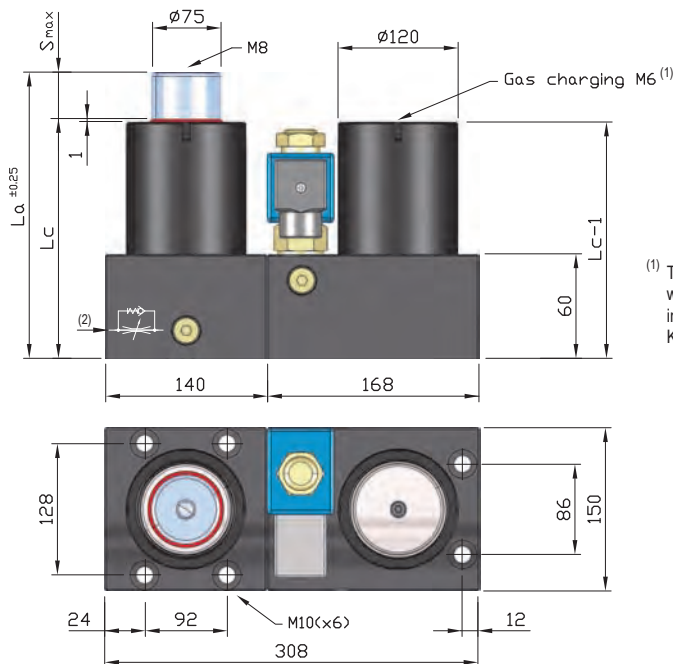
Stroke: 12, 25, 38, 50, 63, 80, 100, 125 (other strokes under order)



PED 97/23/CE



(2)
Flow regulator for controlling stem expansion speed



(1) The K 6500 model is also available equipped with RMF-D. When placing an order, please indicate the reference: K 6500x ... C



Model	S max	La mm	Lc mm	Fa daN	Fc daN
K 6500x12	12	152	140	6500 (±5%)	7280
K 6500x25	25	178	153		7885
K 6500x38	38	204	166		8405
K 6500x50	50	228	178		8825
K 6500x63	63	254	191		9220
K 6500x80	80	288	208		9670
K 6500x100	100	328	228		10120
K 6500x125	125	378	253		10585

Hydraulic Valve	Supply Voltage Supply voltage	Power Consumption
E 24	24V DC	17w
E 110	110V AC	17w
E 220	220V AC	17w

Medium Pressure

Nitrogen Gas (N₂) / oil

Maximum Charging Pressure **150 Bar**

Minimum Charging Pressure **50 Bar**

N₂ Nominal Pressure **150 Bar**

Rod Seal Area **44.18 cm²**

Maximum Working Temperature **60°C**

Force Increase by Temperature **0.33 %/°C**

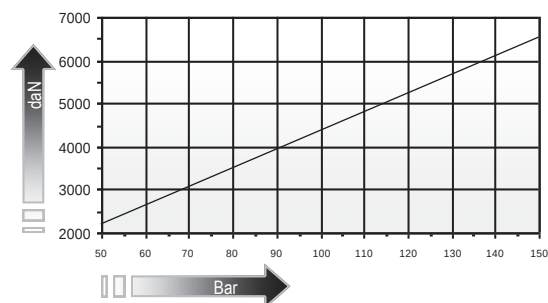
Maximum Stem Speed **10 m/min**

Required data:

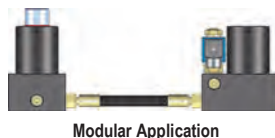
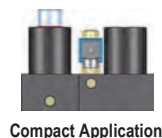
- Working stroke:
- Press speed:
- Required gas spring expansion speed:
- Maximum press rate:

mm
m/min
m/min
strokes/min

Force / Pressure Ratio



Assembly Possibilities



How to Order

K 6500 x 38 E 24

Model

Stroke

Hydraulic Valve

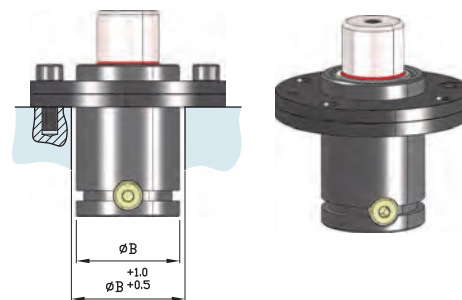
E 24 · 24V DC
E 110 · 110V AC
E 220 · 220V AC

Stroke 12, 25, 38, 50, 63, 80, 100, 125 (other strokes under order)

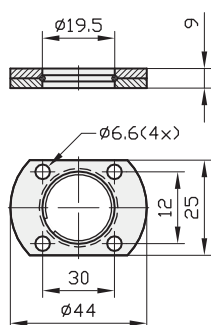
Flanges for attaching gas springs onto tools



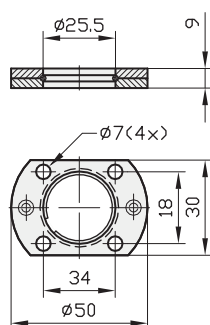
FLANGE FS



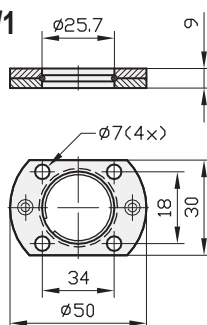
FS 19



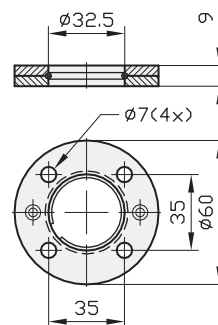
FS 25



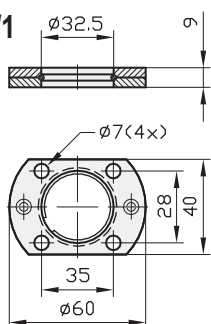
FS 25/1



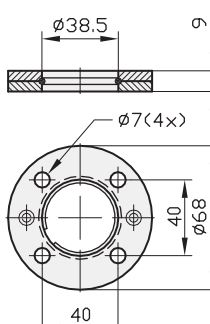
FS 32



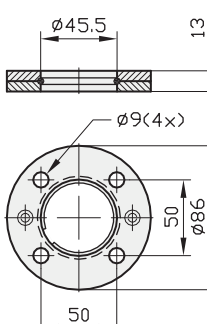
FS 32/1



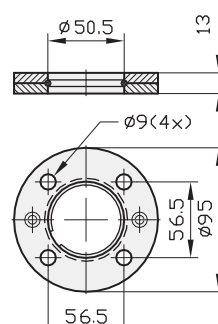
FS 38



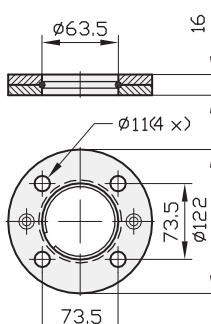
FS 45



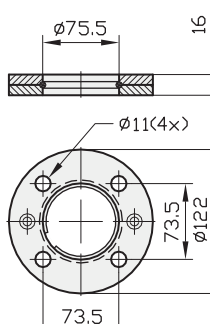
FS 50



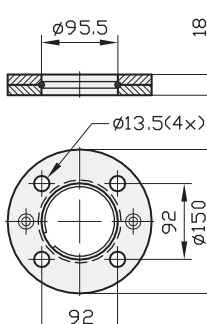
FS 63



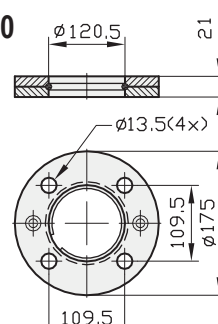
FS 75



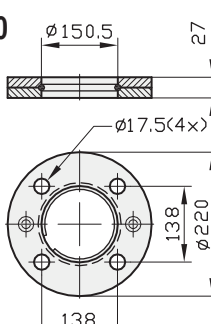
FS 95



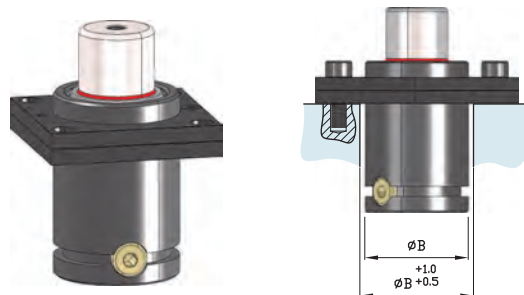
FS 120



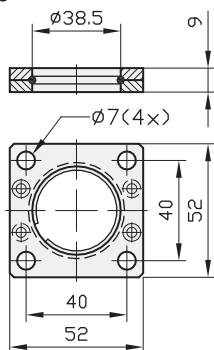
FS 150



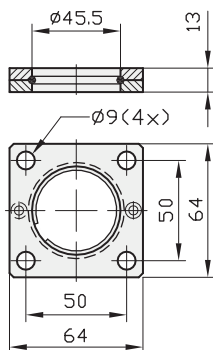
FLANGE FSC



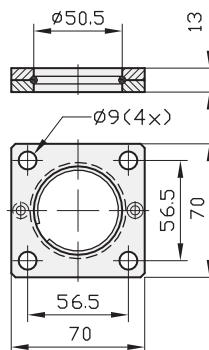
FSC 38



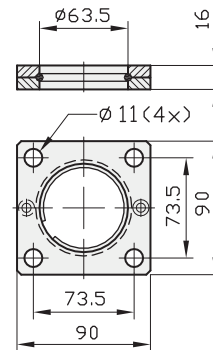
FSC 45



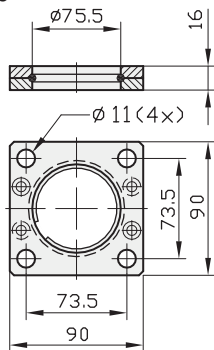
FSC 50



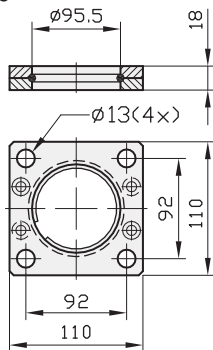
FSC 63



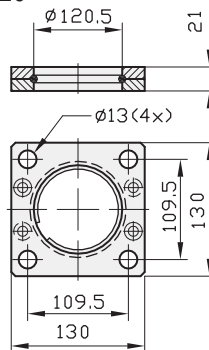
FSC 75



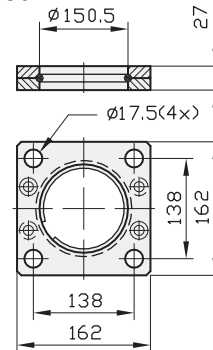
FSC 95



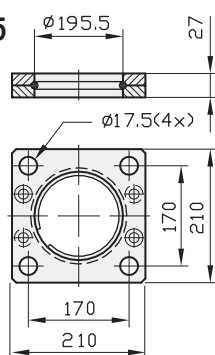
FSC 120



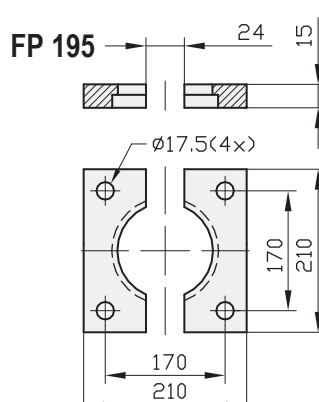
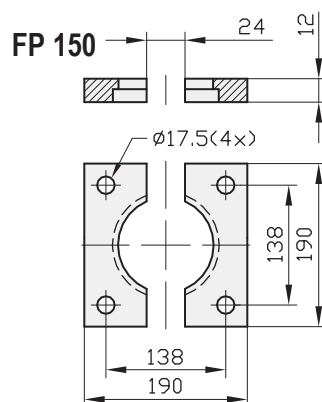
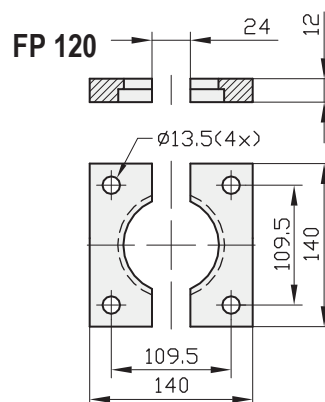
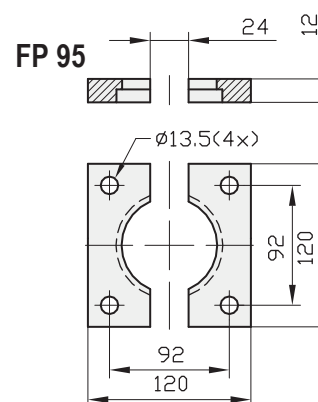
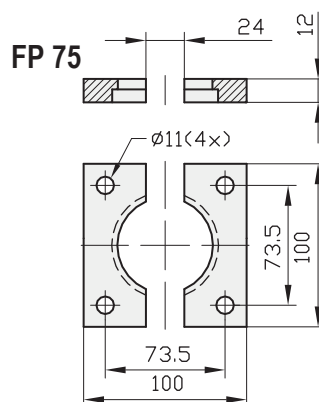
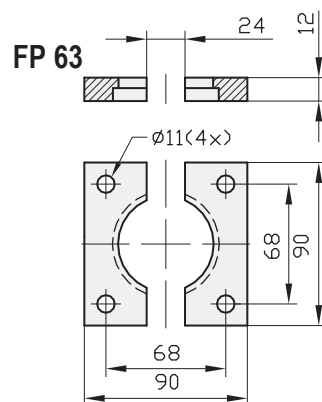
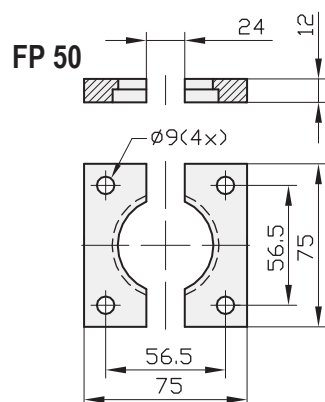
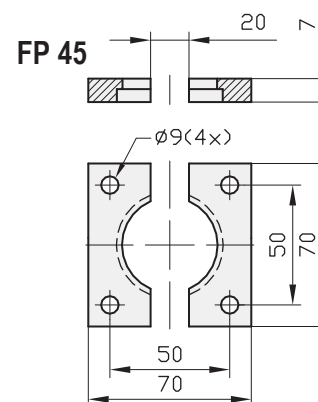
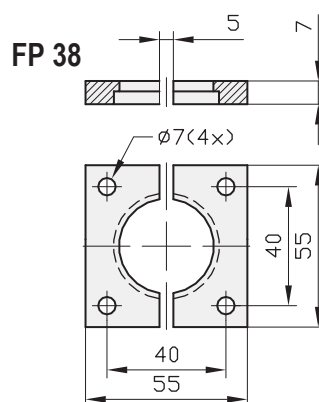
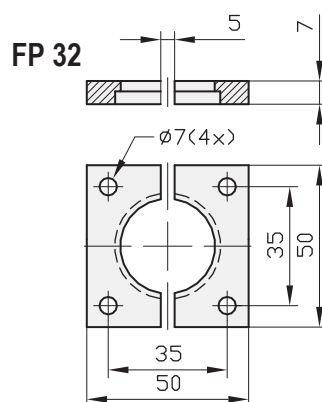
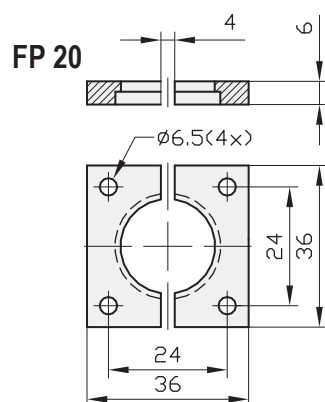
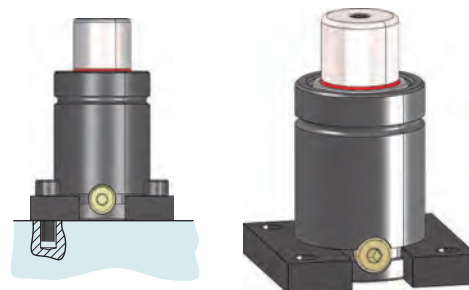
FSC 150



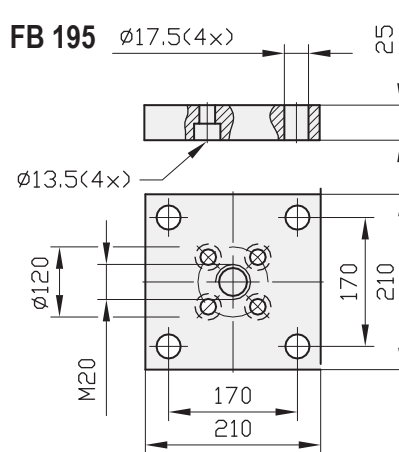
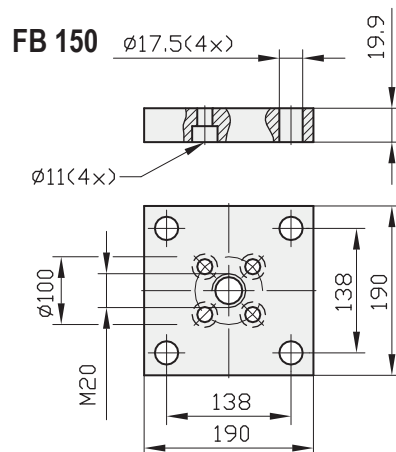
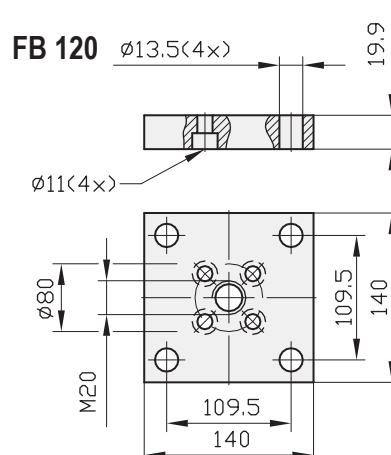
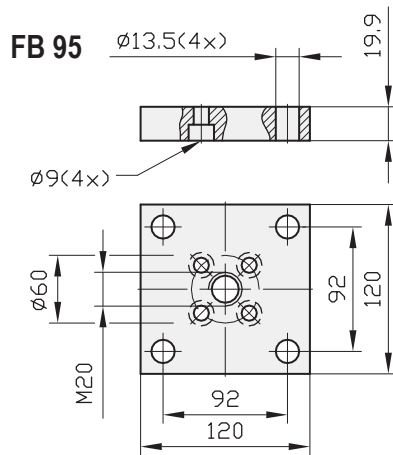
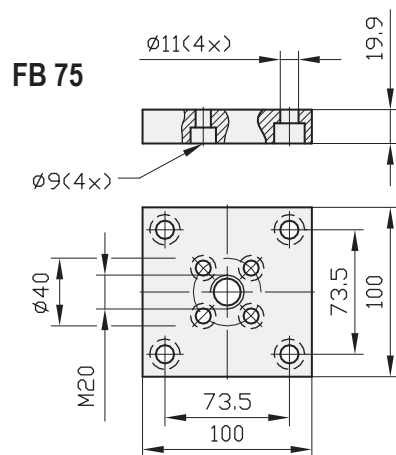
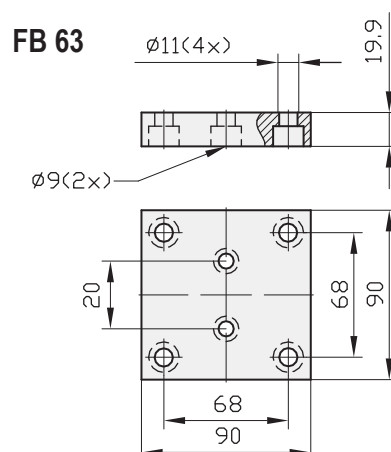
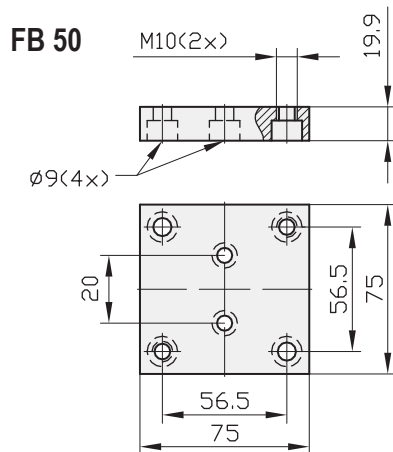
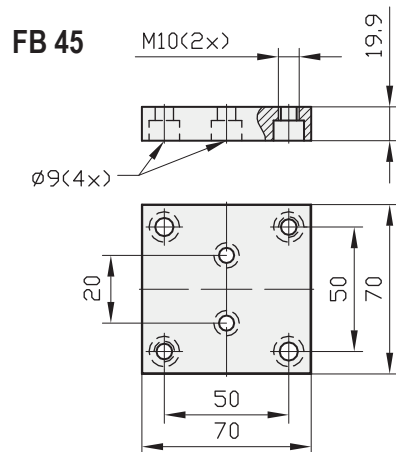
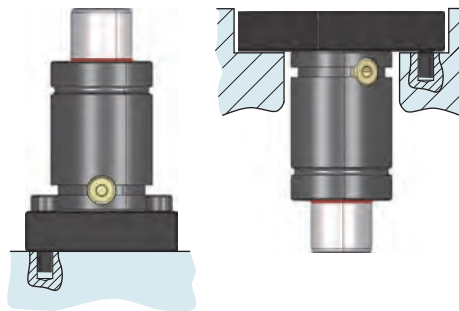
FSC 195



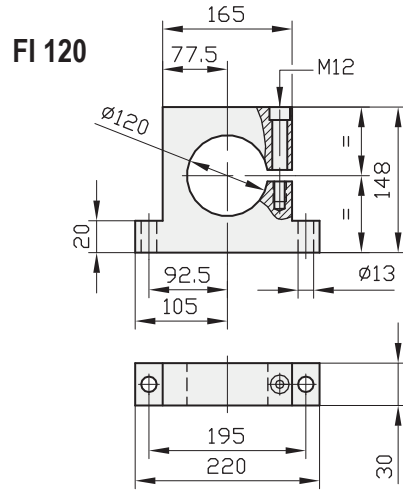
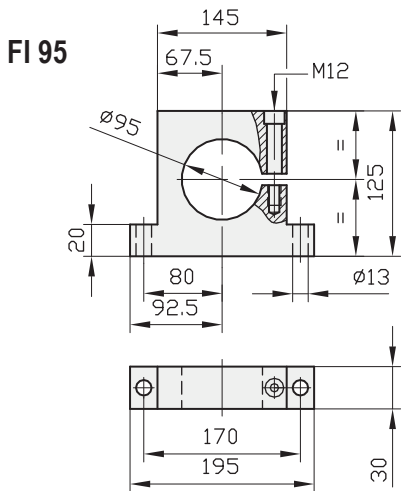
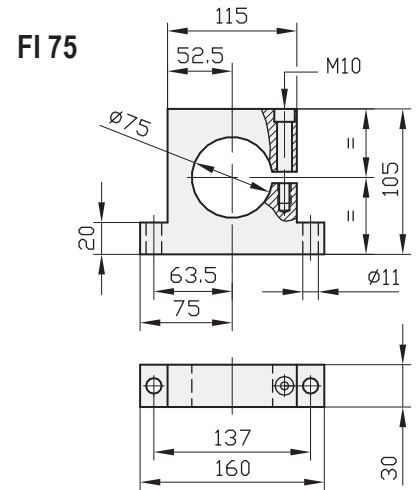
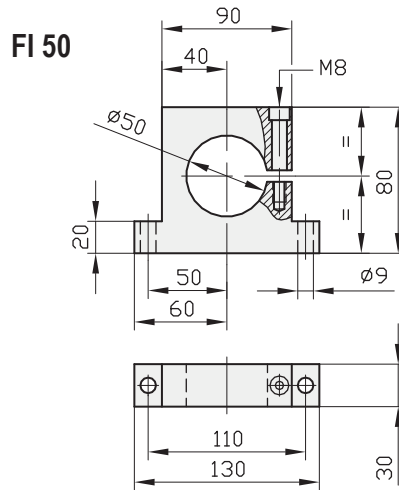
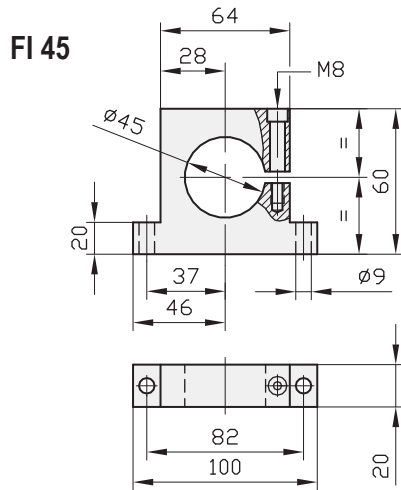
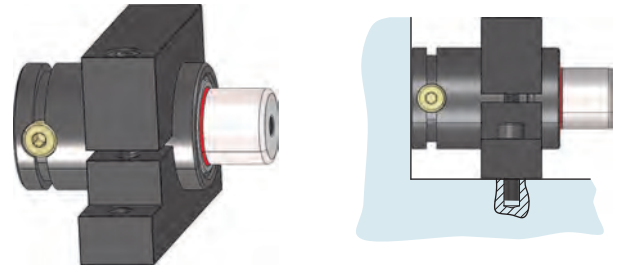
FLANGE FP



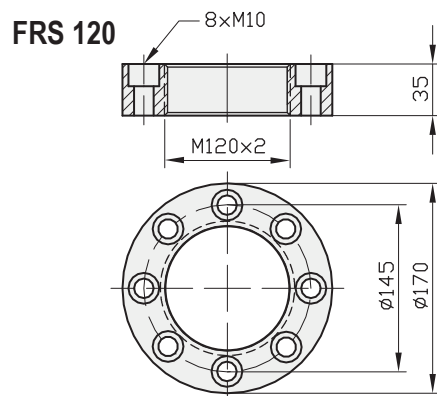
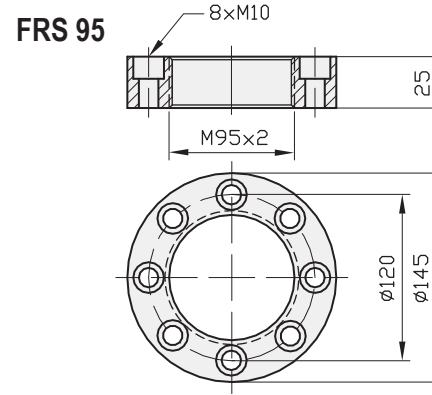
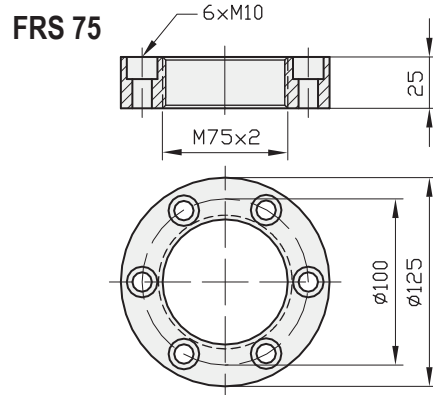
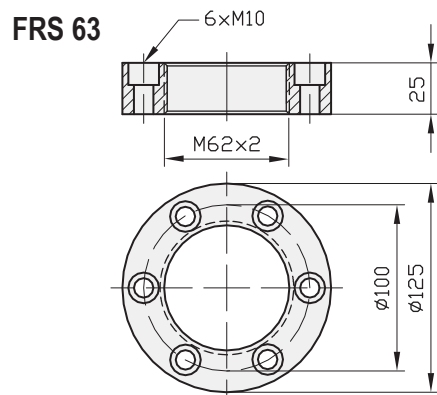
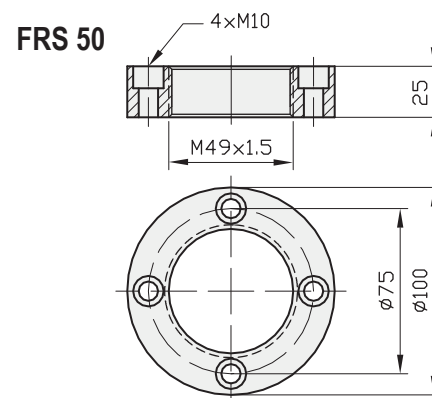
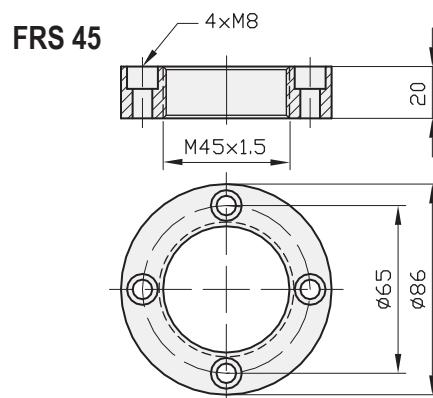
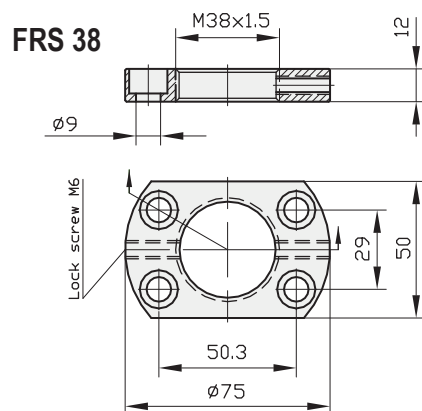
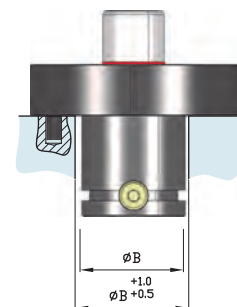
FLANGE FB



FLANGE FI

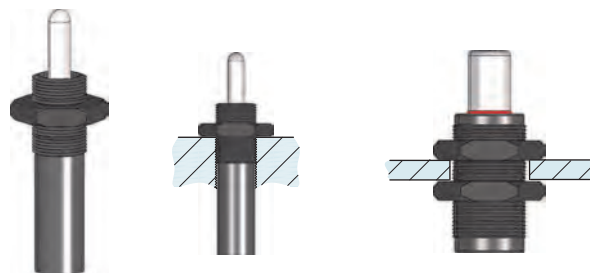


FLANGE FRS

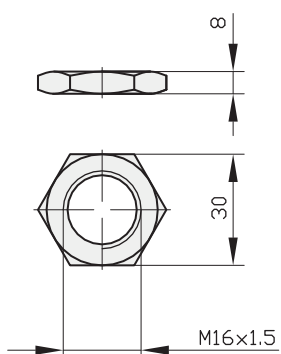




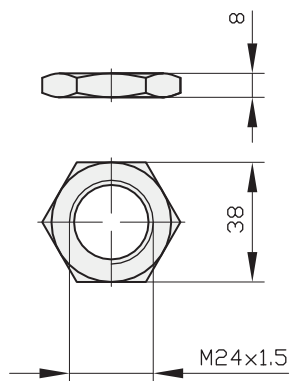
FLANGE FR



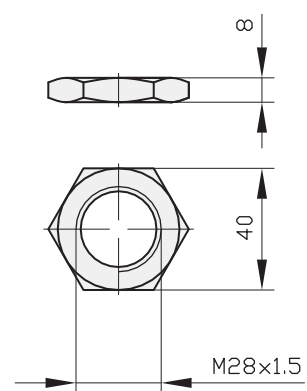
FR 16



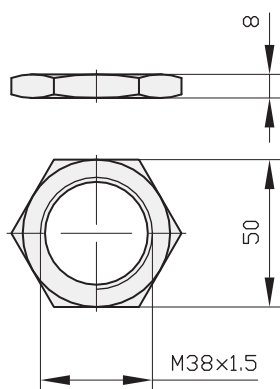
FR 24



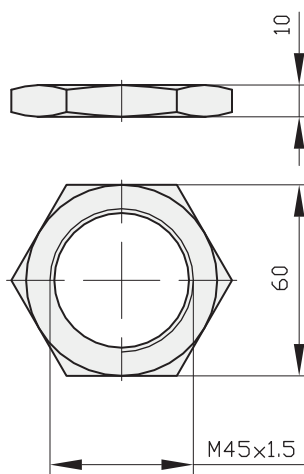
FR 28



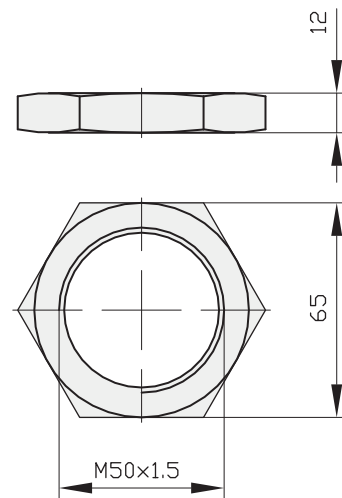
FR 38



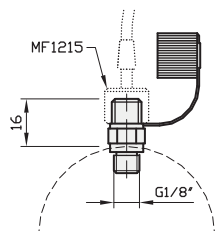
FR 45



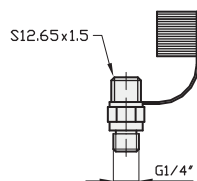
FR 50



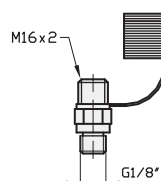
FITTING RMF-D1



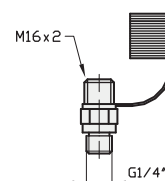
FITTING RMF-D2



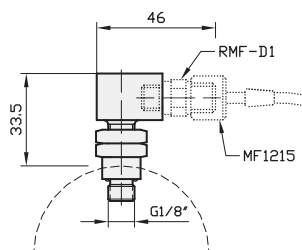
FITTING RMF-D3



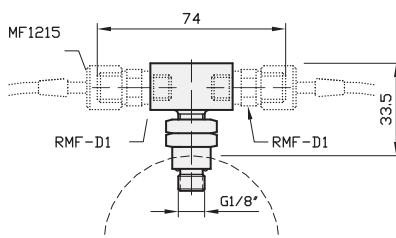
FITTING RMF-D4



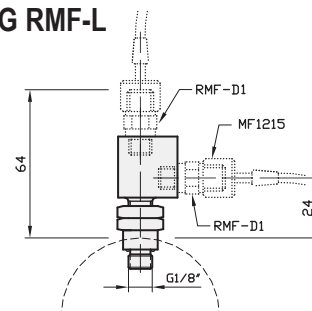
FITTING RMF-C



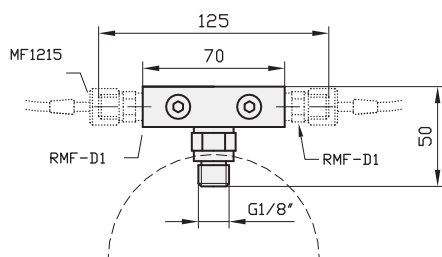
FITTING RMF-T



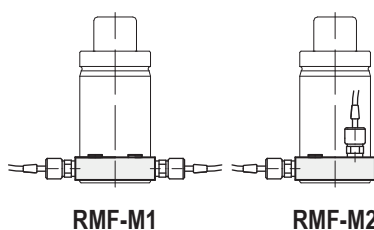
FITTING RMF-L



FITTING RMF-M

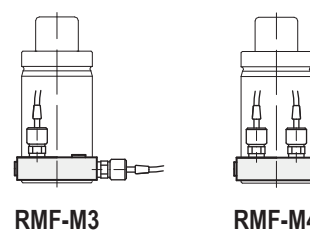


How to order



RMF-M1

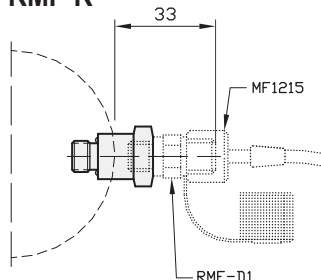
RMF-M2



RMF-M3

RMF-M4

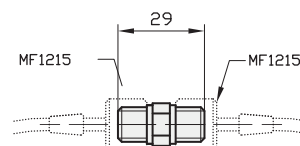
FITTING RMF-R



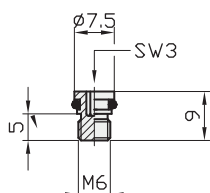
Models:

P & PE 1000, S & SE 750, X & XE 2400

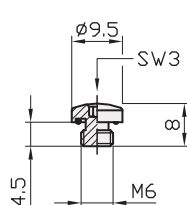
FITTING RMF-FH



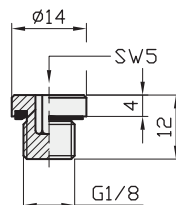
PLUG M6-1



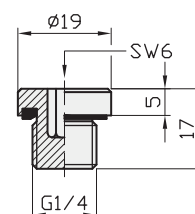
PLUG M6-2



PLUG G1/8



PLUG G1/4



FILLING VALVE TPFV1



FILLING VALVE TPFV2



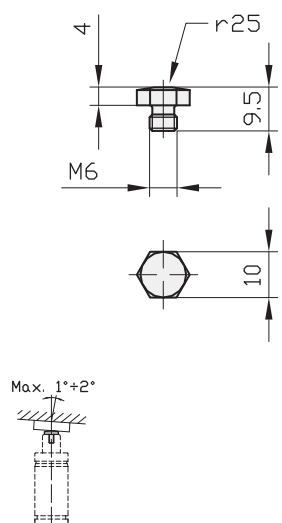
FILLING VALVE TPFV3



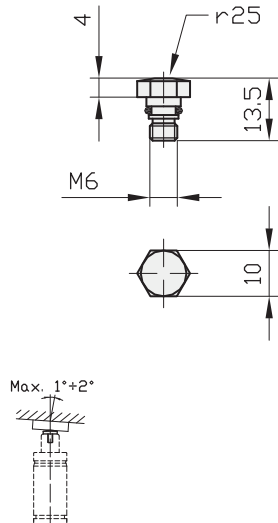
FILLING VALVE TPFV4



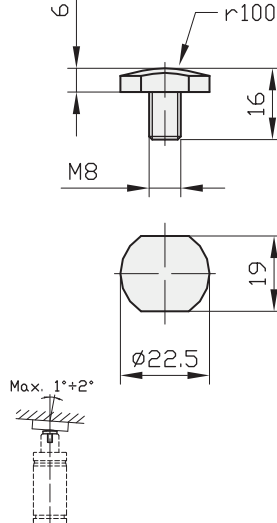
THRUST PLATE TPSC-M6



THRUST PLATE TPSC-M6OR



THRUST PLATE TPSC-M8L



THRUST PLATE TPSC-M8C

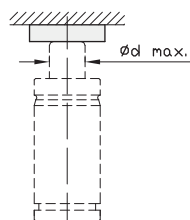
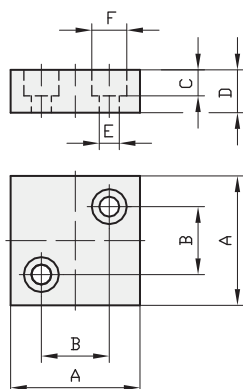
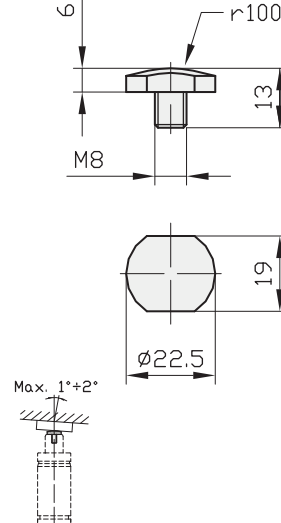


PLATE TPSP

Modelo Model	Ø d max	A mm	B mm	C mm	D mm	E mm	F mm
TPSP 22	22	40	21	10	15	9	15
TPSP 36	36	56	32	13	20	11	18
TPSP 65	65	71	48	13	20	11	18
TPSP 95	95	84	60	13	25	11	18

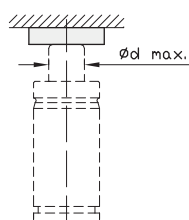
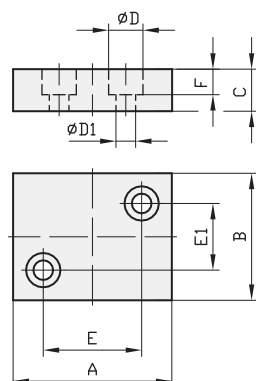
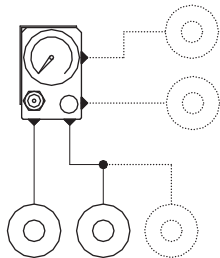
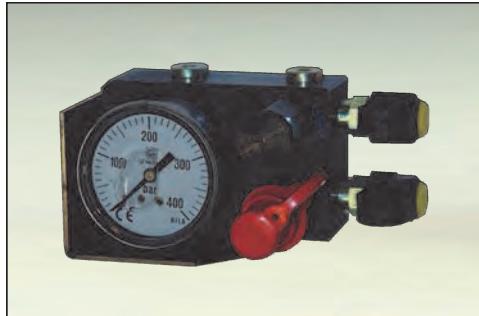


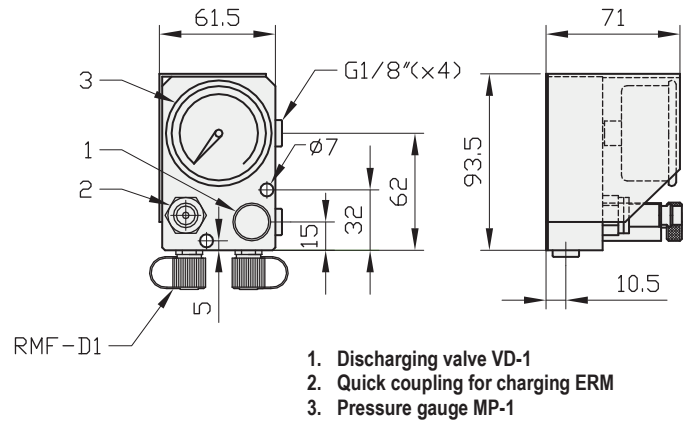
PLATE TPSPR

Modelo Model	Ø d max	A mm	B mm	C mm	Ø D1 mm	Ø D mm	E mm	E1 mm	F mm
TPSPR-1	15	50	25	12	7	11	32	8	7
TPSPR-2	20	55	50	12	7	11	40	14	7
TPSPR-3	25	70	35	15	9	15	48	14	9
TPSPR-4	36	75	50	15	9	15	56	30	9
TPSPR-5	50	85	60	15	9	15	66	40	9
TPSPR-6	65	100	80	20	11	18	72	56	11
TPSPR-7	80	110	100	20	11	18	85	75	11

MINI CONTROL PANEL P110

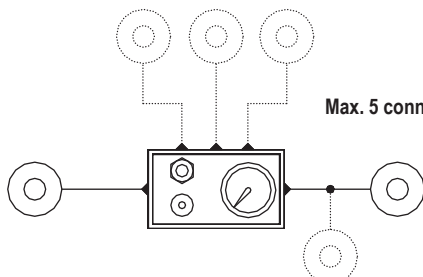


Max. 4 connectors

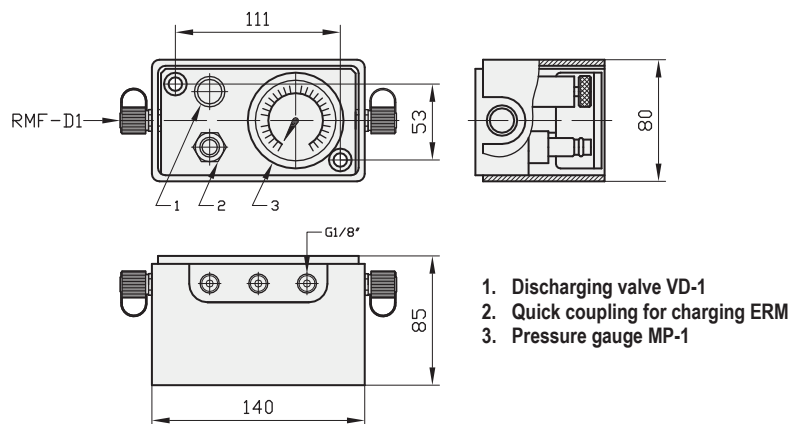


Mini-control panel: this small-sized device is used for the permanent control of gas-spring pressure. It is equipped with a quick-fit socket for gas charging and a discharging valve for decompression. P110 control panels have up to 4 G1/8" outlets for a gas spring interconnection. Pressure gauge range is from 0 to 400 Bar.

CONTROL PANEL P100

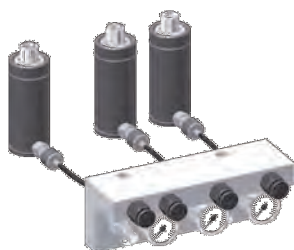
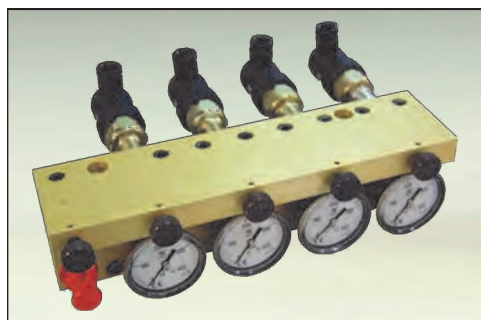


Max. 5 connectors



Standard control panel. This device is used for permanently controlling gas spring pressure. It is equipped with a quick-fit socket and discharging valve for decompression. The P100 control panel has up to 5 G 1/8 outlets for interconnecting gas springs. Pressure gauge range is from 0 to 400 Bar.

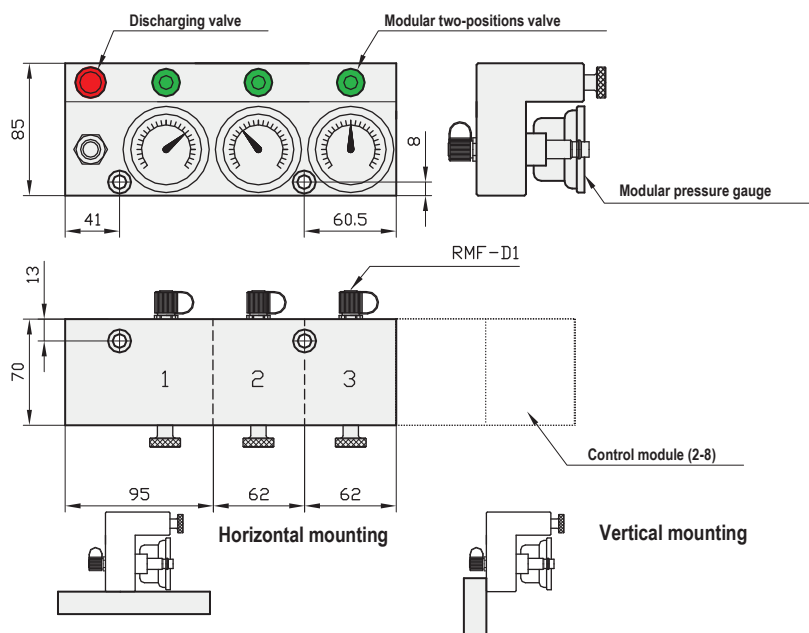
MULTIPLE CONTROL PANEL PM101



How to order

Reference control panel - number of units

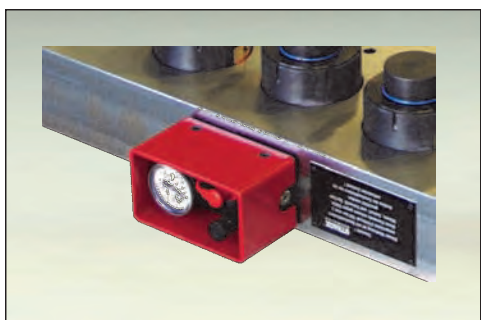
Example: PM101 - 3



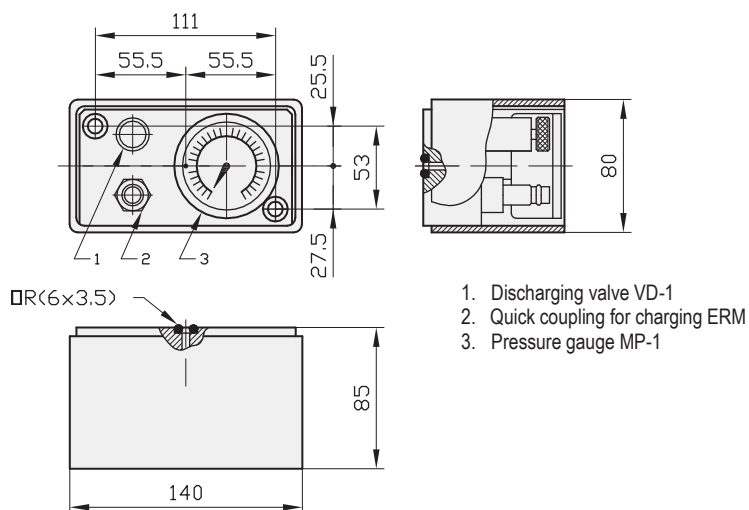
This is the PM101 modular multiple control panel, for controlling nitrogen systems. Each module individually controls each gas spring or gas-spring system, making individual or group charging or discharging possible.

CHARACTERISTICS: each module has a G1/8 outlet for interconnection. The control panel can be assembled on its lower base or on its back. Each model has pressure gauge with a range from 0 to 400 Bar.

CONTROL PANEL FOR MANIFOLD PLATE P100M



Standard control panel with a rear outlet for manifold plates; this device is used for the permanent control of gas springs interconnected by means of a manifold plate. It is equipped with a quick-fit socket for gas charging and a discharging valve for decompression. Pressure gauge range is from 0 to 400 Bar.



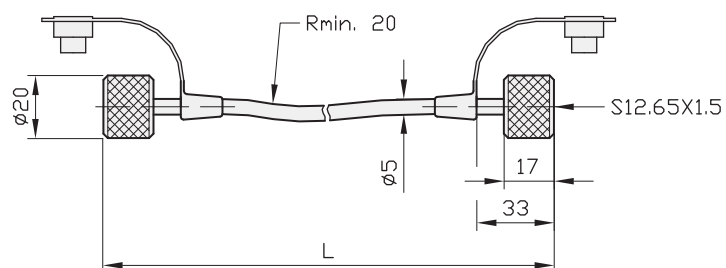
1. Discharging valve VD-1
2. Quick coupling for charging ERM
3. Pressure gauge MP-1

FLEXIBLE HOSE MF1215-RR



MF1215-RR - **L**

Model Length

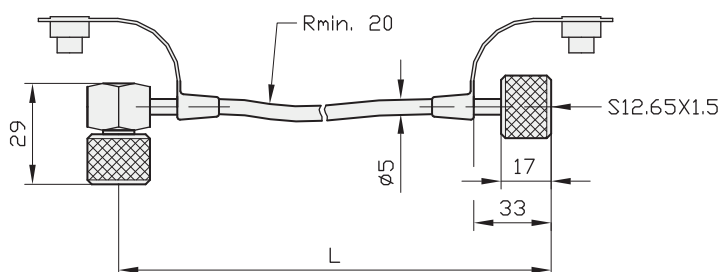


FLEXIBLE HOSE MF1215-RC



MF1215-RC - **L**

Model Length

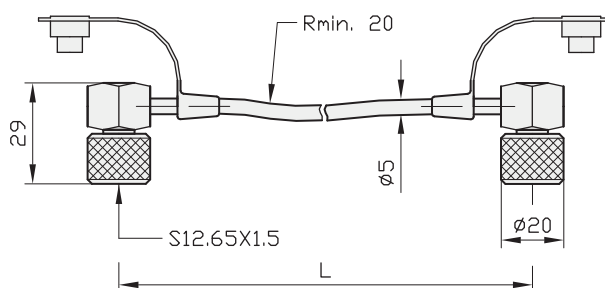


FLEXIBLE HOSE MF1215-CC

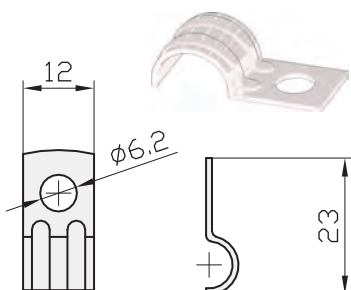


MF1215-CC - **L**

Model Length



FLANGE FOR HOSE FIXTURE BL-1

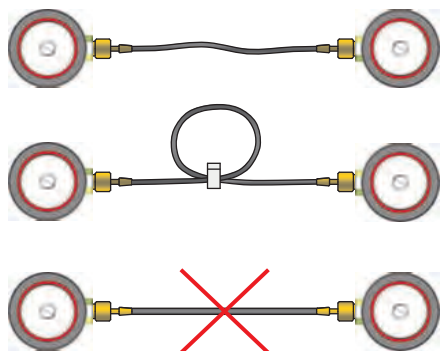


FLANGE FOR HOSE FIXTURE BL-2

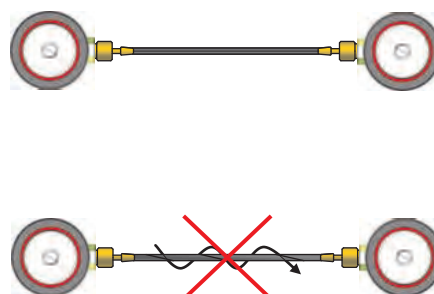


HOSE INSTALLATION GUIDELINES

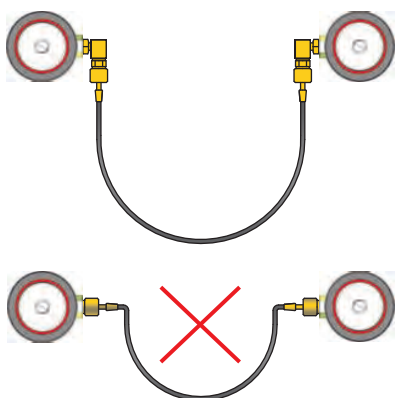
In order to avoid pressure losses during the interconnected gas spring connection process, the two ends of the hose are to be screwed in simultaneously.



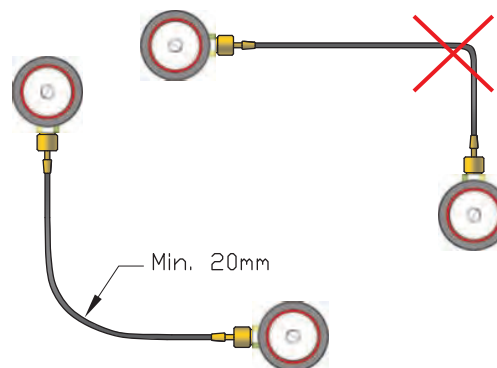
Hose length should be a little more than the exact length (10 or 20% more).



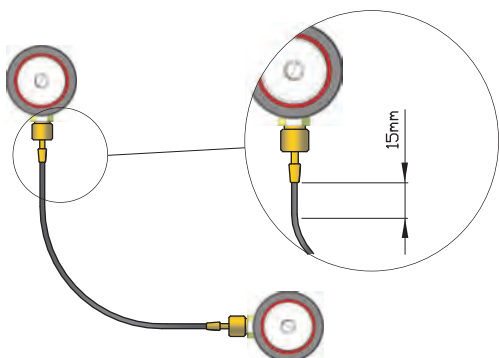
The hose must not be twisted during the installation process.



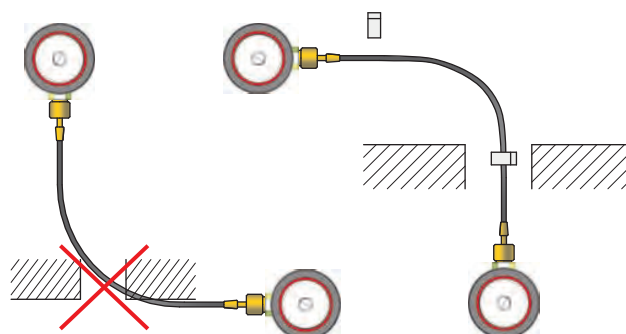
Avoid sharp bends in the hose.



During the installation the minimum curve radius should be respected, 20mm.

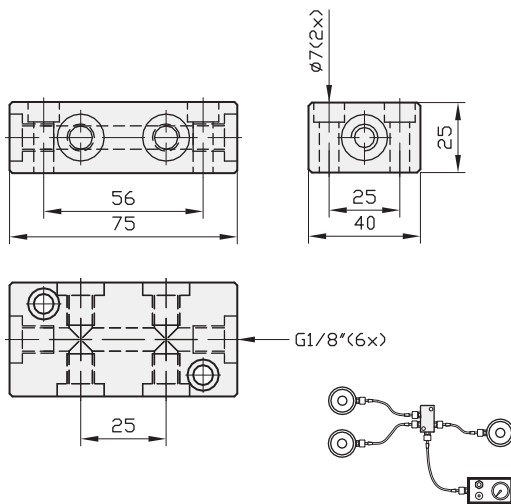


To avoid damage in the connection, the hose should extend in a straight line for at least 15 mm.



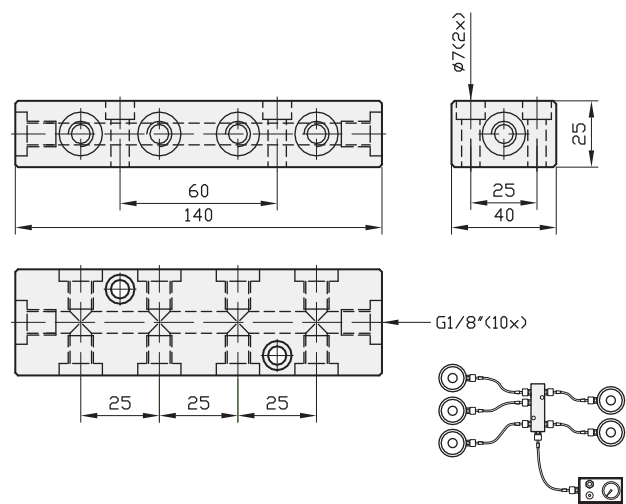
Flange the hose so as to avoid mechanical damage due to vibration, with BL-1 or BL-2 flange.

DISTRIBUTION BLOCK BD 6



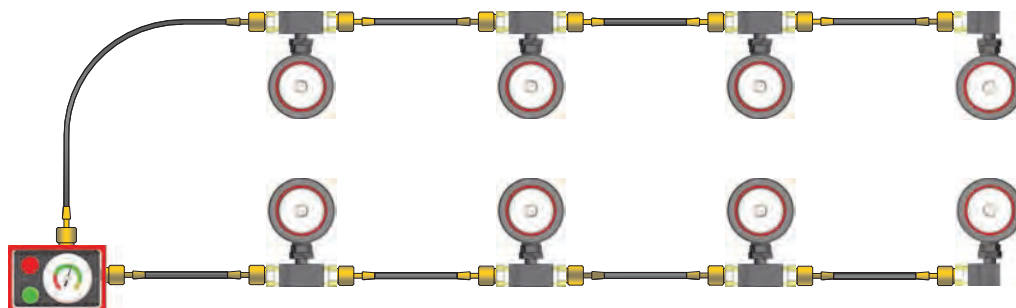
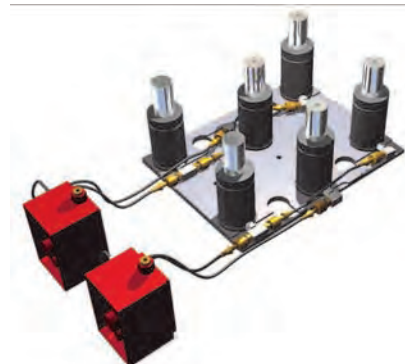
On delivery, all ports are fitted with sealing plugs

DISTRIBUTION BLOCK BD 10

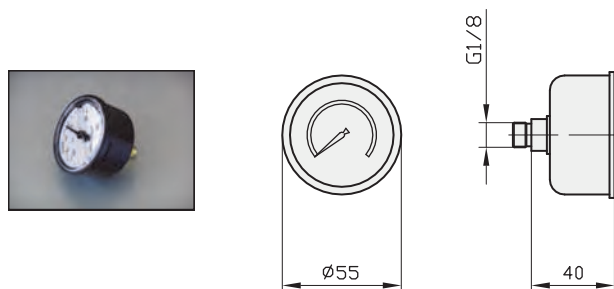


On delivery, all ports are fitted with sealing plugs

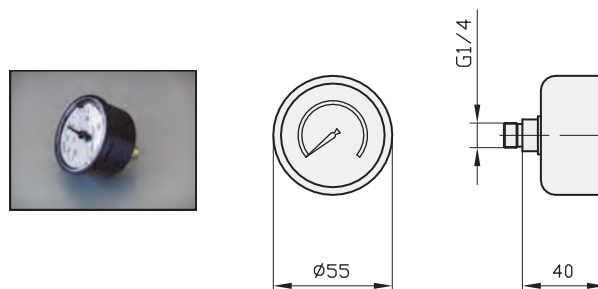
INTERCONNECTED GAS SPRINGS EXAMPLES



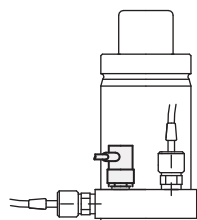
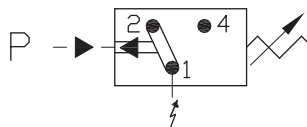
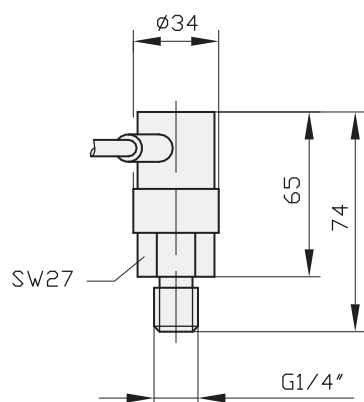
PRESSURE GAUGE MP-1



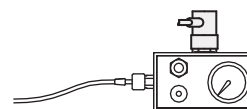
PRESSURE GAUGE MP-2



PRESSURE SWITCH



Technical data:
 Work field: 50-200 Bar
 Working temperature: -30°C - 100°C
 Operation Voltage: 4A / 250V
 Operating frequency: < 200 min⁻¹



ERM



MALE QUICK-COUPLING FOR CHARGING

ERH



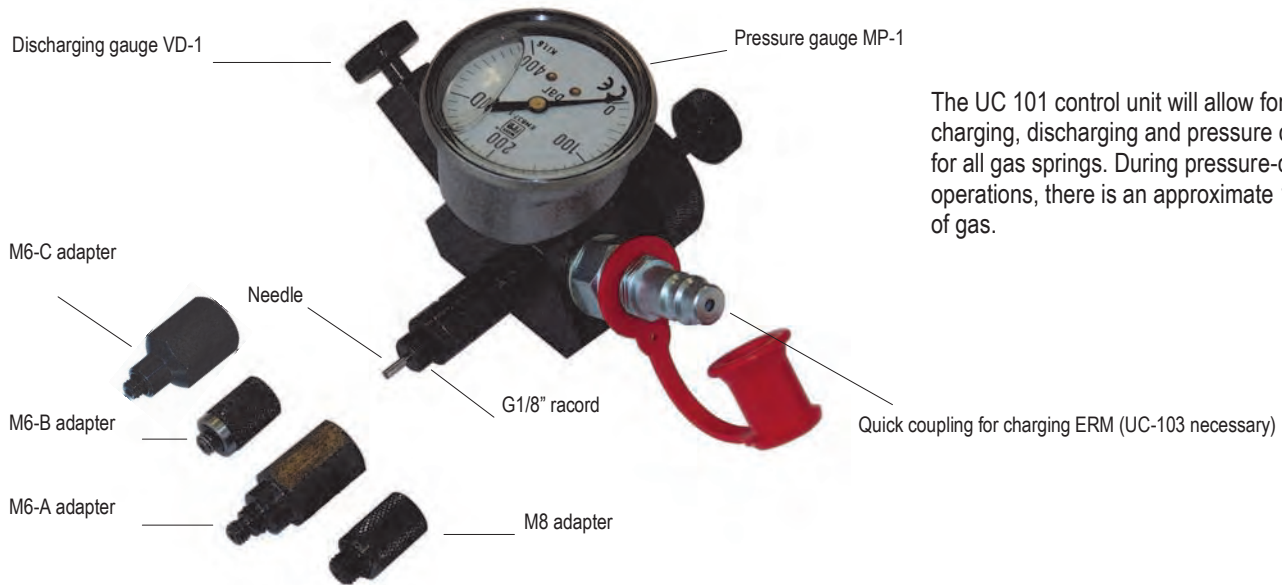
FEMALE QUICK-COUPLING FOR CHARGING

VD-1



DISCHARGING VALVE

UC-101 CONTROL UNIT



The UC 101 control unit will allow for charging, discharging and pressure control for all gas springs. During pressure-checking operations, there is an approximate 10% loss of gas.

MOUNTING INSTRUCTIONS

For gas springs with a G1/8" thread

- Step 1: unscrew the G1/8"spindle half-way until the needle goes in fully.
- Step 2: screw the gas spring on to the G1/8"connector.

For gas springs with a M6 or M8 thread

- Step 1: screw an M6-A or M8 adaptor (as necessary) onto the G1/8" connector thread. If necessary, also screw in a M6-B or M6-C adaptor to the M6-A adaptor.
- Step 2: screw the gas spring in the charging tool on to the M6-A or M6-B or M6-C or M8 connector (as necessary).
- Step 3: plug the UC-103 charging hose into the quick coupling fitting.

Charge to the recommended pressure in accordance with the safety instructions on page 4.

UC-102



The UC-102 charging unit is a charging device for autonomous gas springs. It is supplied with G1/8, M6A, M6-B, M6-C and M8 poses and charging couplings.

UC-103



The UC-103 charging unit is a charging device for gas springs that are interconnected by means of a control panel.

TPN2-AA30 NITROGEN GAS CHARGER



Maximum compression pressure	200 Bar
Pump feed (not lubricated air)	Air 7.0 Bar
Oil flow	2.8 l/min
Weight	12Kg

Nitrogen gas charger TPN2-AA30 allows an optimum use of nitrogen bottles until a residual pressure of 20 bar is reached. Simple and safe to use, it has been designed to charge or complete gas charging for gas springs or manifold systems. The TPN2-AA30 charger uses pressurised air (max. 7 bar) and is composed of a hydro-mechanic pump, the piston accumulator for the compression of nitrogen, inlet and release decompression valves. The system is assembled on a base with handles for easy transportation.

UM-102 PRESS (TABLETOP VERSION)

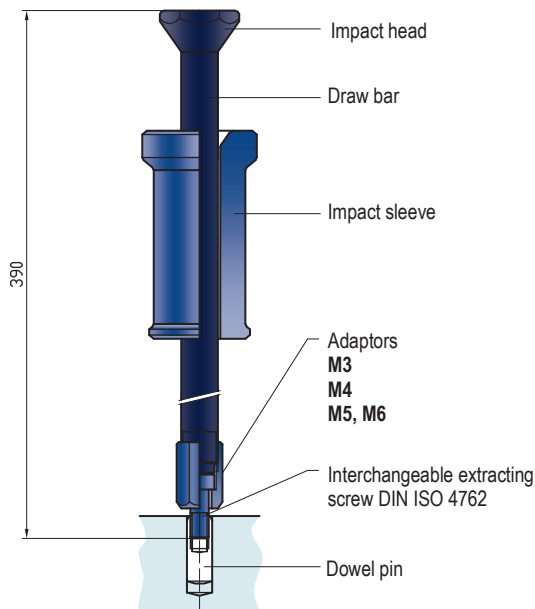


This is a specific tool for measuring the force of the gas spring, designed to periodically check gas spring normal force.

It is quick and simple to use, and reliable. The digital pressure gauge requires connection to the electrical mains (220V AC). To check the force of a gas spring, it is necessary to compress it 1-3mm in the press. The initial force (daN) of the gas spring appears in the digital pressure gauge.

Measuring capacity: 0-10Ton.
Resolution: 5 daN
Maximum gas spring height: 380 mm

EXP-01 DOWEL PIN EXTRACTOR



Content:
355 mm draw bar
Sliding impact sleeve
Adaptor with interchangeable screw M3 (DIN ISO 4762)
Adaptor with interchangeable screw M4 (DIN ISO 4762)
Adaptor with interchangeable screw M5 y M6 (DIN ISO 4762)
Adaptor with interchangeable screw M8 y M10 (DIN ISO 4762)
M12 adaptor
M16 adaptor

UM-103 PRESS (STANDING VERSION)



This is a specific tool for measuring the force of the gas spring, designed to periodically check gas spring normal force.

It is quick and simple to use, and reliable. The digital pressure gauge requires connection to the electrical mains (220V AC). To check the force of a gas spring, it is necessary to compress it 1-3mm in the press. The initial force (daN) of the gas spring appears in the digital pressure gauge.

Measuring capacity: 0-10Ton.
Resolution: 5 daN
Maximum gas spring height: 800 mm

M6 EXTRACTOR KEY EM6



M8 EXTRACTOR KEY EM8



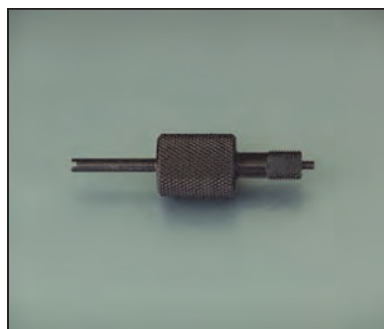
MAINTENANCE KIT



VALVE DEVICE DV-M6



VALVE DEVICE DV-G1/8



VALVE DEVICE DV-M6B



IDENTIFICATION PLATE



LEAK DETECTOR SPRAY





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