

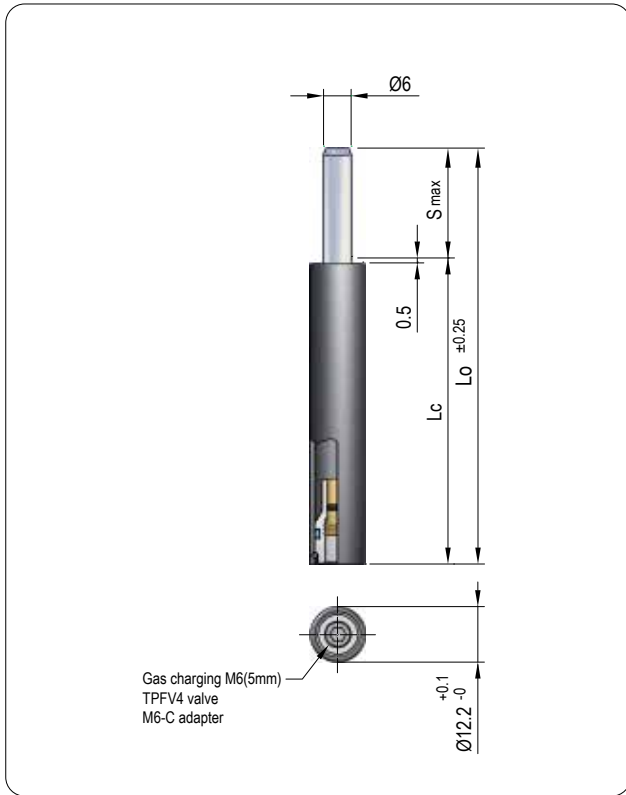
READY DESIGN-TITE® M Series Semi-Compact Line Nitrogen Gas (N₂) Springs

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

Body Diameter: 38mm to 50mm
Open Force: 560 lbs to 14,625 lbs
Closed Force: 925 lbs to 21,600 lbs



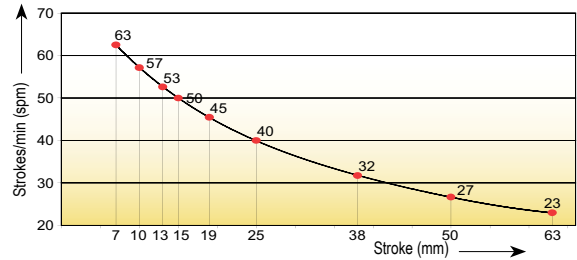
MODEL	ØBody mm	Strokes mm	Fo daN					ISO STANDARD
M-42	12	7 - 63	42	✓	✓		✓	
M-50	14	15 - 80	50	✓	✓		✓	
M-90	19	7 - 125	90	✓	✓		✓	
M-180	25	7 - 160	200	✓	✓		✓	
M-230	32	10 - 125	200	✓	✓		✓	✓
M-300	38	10 - 125	250	✓	✓		✓	✓
M-350	32	10 - 125	350	✓	✓		✓	
M-500	38	10 - 80	500	✓	✓		✓	
M-1000	50	25 - 100	1000	✓	✓	✓	✓	✓
M-1500	63	25 - 160	1500	✓	✓	✓	✓	✓
M-2500	75	25 - 125	2500	✓	✓	✓	✓	✓
M-3000	75	25 - 200	3000	✓	✓	✓	✓	✓
M-4000	95	25 - 100	4000	✓	✓	✓	✓	✓
M-6500	120	25 - 160	6500	✓	✓	✓	✓	✓



Pressure medium	Gas Nitrogen (N ₂)
Max. charging pressure	150 Bar
Min. charging pressure	20 Bar
Rod seal area	0,28 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	0,5 m/s
Maintenance kit	Kit C12



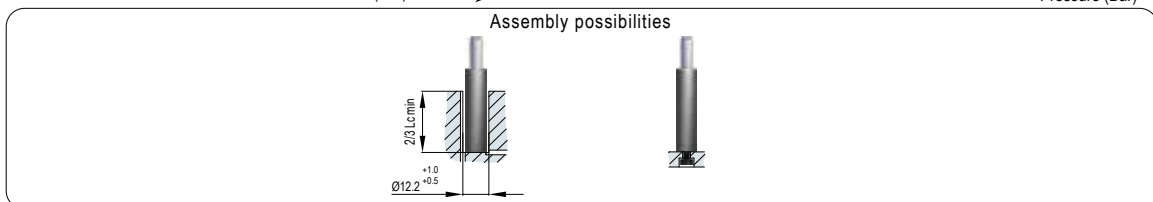
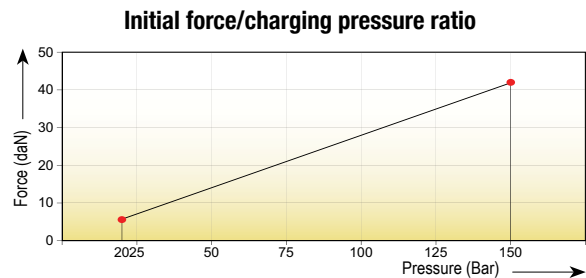
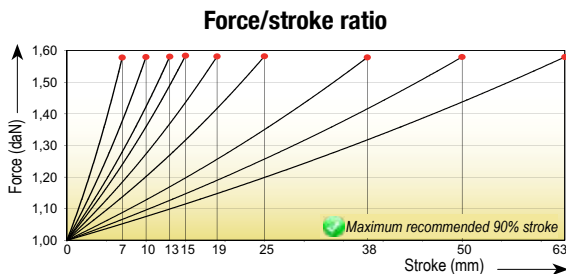
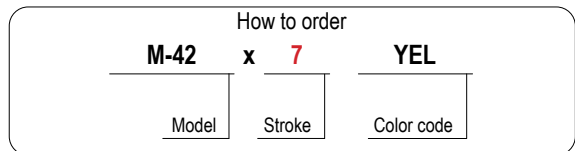
Maximum strokes / minute (at 20°C)



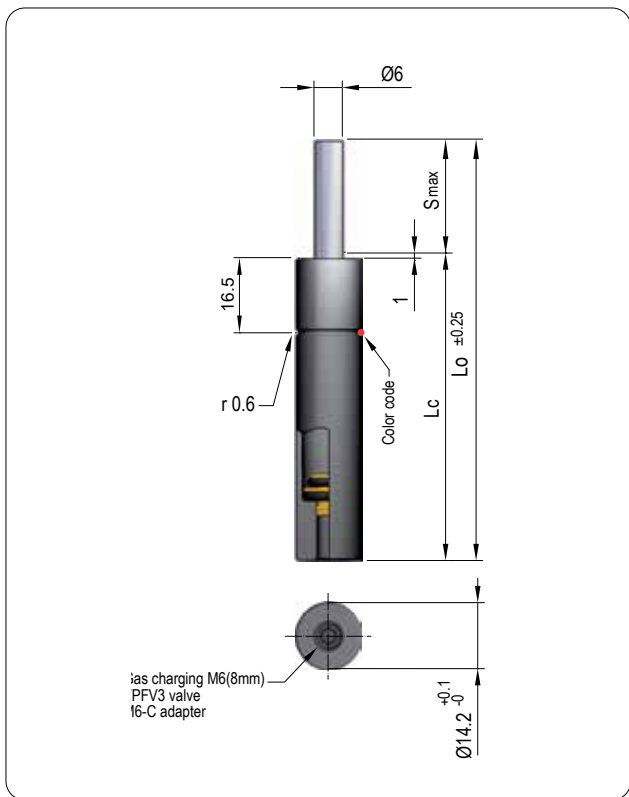
MODEL	Smax mm	Lo mm	Lc mm	V I	Kg
M-42x7	7	56	49	0,001	0,03
M-42x10	10	62	52	0,001	0,03
M-42x13	13	68	55	0,001	0,03
M-42x15	15	72	57	0,001	0,04
M-42x19	19	80	61	0,001	0,05
M-42x25	25	92	67	0,002	0,05
M-42x38	38	118	80	0,003	0,06
M-42x50	50	142	92	0,004	0,06
M-42x63	63	172	109	0,005	0,07

Color code	Fo daN	Fc daN	P Bar
GRN (Green)	13 (±5%)	≈ 20	45
BLU (Blue)	25 (±5%)	≈ 40	90
RED (Red)	38 (±5%)	≈ 60	135
YEL (Yellow)	42 (±5%)	≈ 65	150
(Other forces)	6 - 42	≈ 10 - 65	20 - 150

The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure (20Bar) and the maximum charging pressure (150Bar). If not otherwise specified, the gas spring will be supplied in the yellow code version.



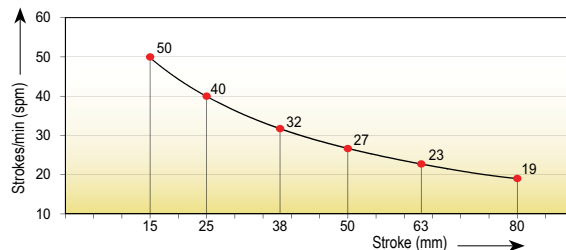
M-50



Pressure medium	Gas Nitrogen (N ₂)
Max. charging pressure	175 Bar
Min. charging pressure	50 Bar
Rod seal area	0,28 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	0,5 m/s
Maintenance kit	Kit C14



Maximum strokes / minute (at 20°C)



MODEL	Smax mm	Lo mm	Lc mm	V l	Kg
M-50x15	15	72	57	0,002	0,06
M-50x25	25	92	67	0,003	0,08
M-50x38	38	118	80	0,005	0,09
M-50x50	50	142	92	0,006	0,10
M-50x63	63	169	106	0,007	0,12
M-50x80	80	205	125	0,009	0,15

Color code	Fo daN	Fc daN	P Bar
GRN (Green)	20 (±5%)	≈ 25	70
BLU (Blue)	30 (±5%)	≈ 40	110
RED (Red)	40 (±5%)	≈ 50	142
YEL (Yellow)	50 (±5%)	≈ 65	175
(Other forces)	14 - 50	≈ 20 - 65	50 - 175

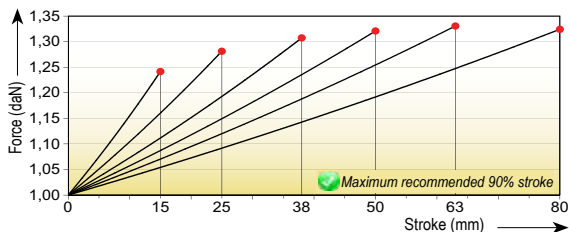
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure (50Bar) and the maximum charging pressure (175Bar). If not otherwise specified, the gas spring will be supplied in the yellow code version.

How to order

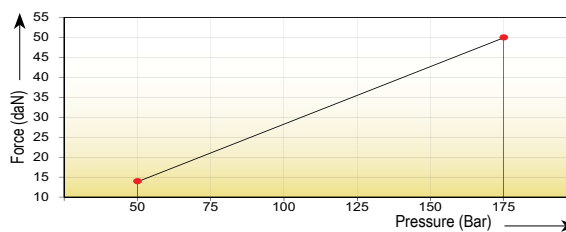
M-50 x **15** **YEL**

Model Stroke Color code

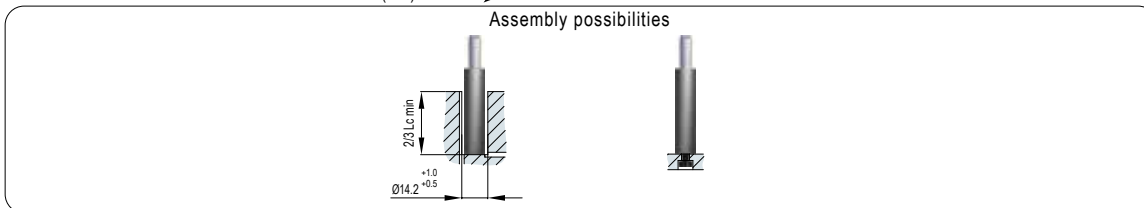
Force/stroke ratio

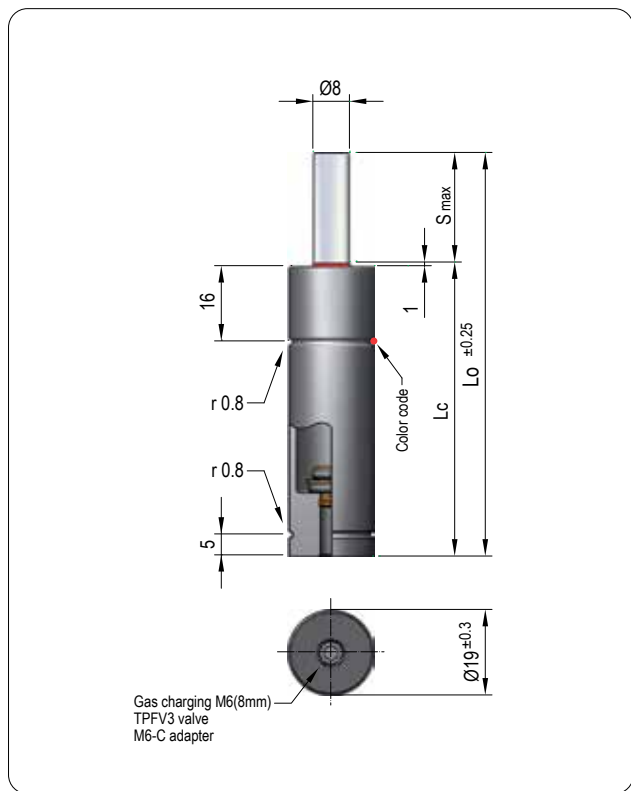


Initial force/charging pressure ratio



Assembly possibilities

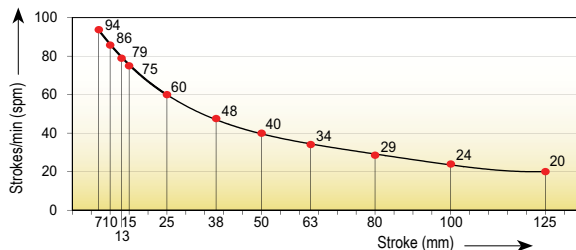




Pressure medium	Gas Nitrogen (N ₂)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	0,50 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit C19.1



Maximum strokes / minute (at 20°C)



MODEL	Smax mm	Lo mm	Lc mm	V l	Kg
M-90x7	7	56	49	0,002	0,08
M-90x10	10	62	52	0,003	0,08
M-90x13	13	67,4	54,4	0,003	0,08
M-90x15	15	72	57	0,004	0,09
M-90x25	25	92	67	0,006	0,10
M-90x38	38	118	80	0,008	0,12
M-90x50	50	142	92	0,011	0,13
M-90x63	63	168	105	0,013	0,15
M-90x80	80	202	122	0,016	0,16
M-90x100	100	245	145	0,021	0,18
M-90x125	125	295	170	0,026	0,21

Color code	Fo daN	Fc daN	P Bar
GRN (Green)	30 (±5%)	≈ 38	60
BLU (Blue)	50 (±5%)	≈ 65	100
RED (Red)	70 (±5%)	≈ 90	140
YEL (Yellow)	90 (±5%)	≈ 112	175
(Other forces)	13 - 90	≈ 16 - 112	25 - 175

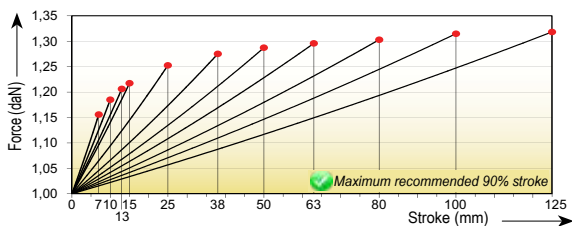
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure (25Bar) and the maximum charging pressure (175Bar). If not otherwise specified, the gas spring will be supplied in the yellow code version.

How to order

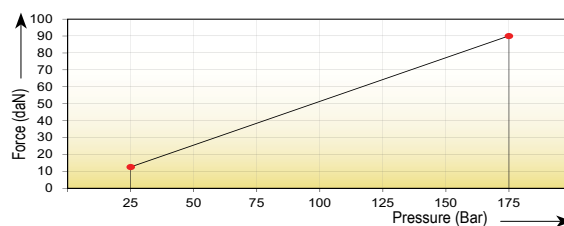
M-90 x 125 YEL

Model Stroke Color code

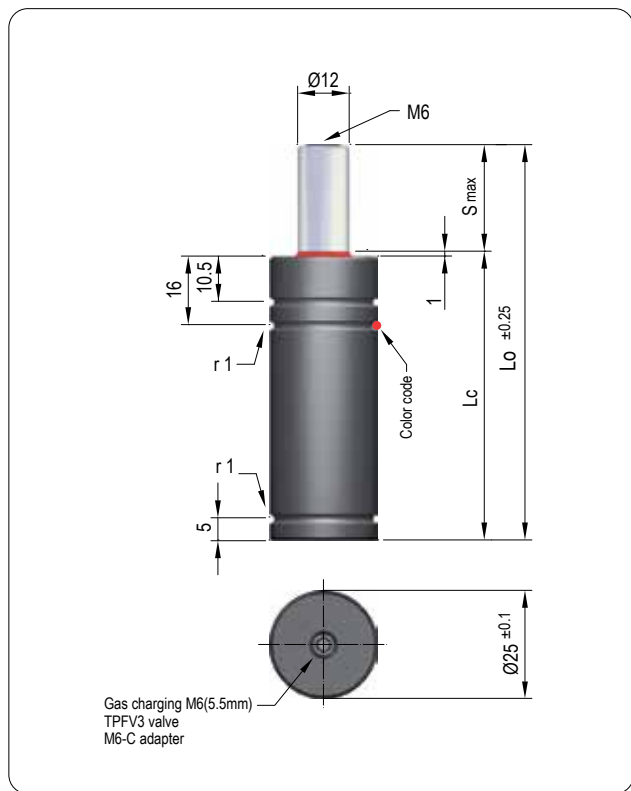
Force/stroke ratio



Initial force/charging pressure ratio



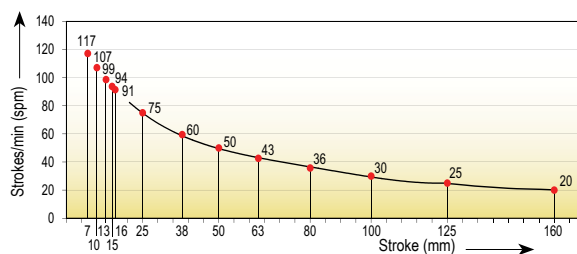
M-180



Pressure medium	Gas Nitrogen (N ₂)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit C25



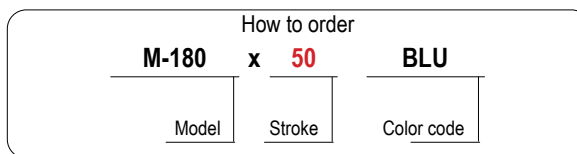
Maximum strokes / minute (at 20°C)



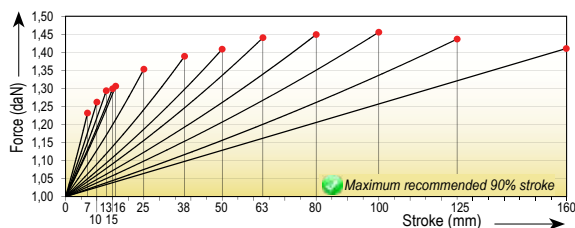
MODEL	Smax mm	Lo mm	Lc mm	V l	Kg
M-180x7	7	56	49	0,004	0,13
M-180x10	10	62	52	0,005	0,14
M-180x13	13	67,4	54,7	0,006	0,14
M-180x15	15	72	57	0,006	0,15
M-180x16	16	74,3	58,3	0,007	0,15
M-180x25	25	92	67	0,010	0,16
M-180x38	38	118	80	0,014	0,19
M-180x50	50	142	92	0,019	0,21
M-180x63	63	172	109	0,022	0,25
M-180x80	80	205	125	0,028	0,26
M-180x100	100	245	145	0,035	0,29
M-180x125	125	295	170	0,046	0,33
M-180x160	160	373	213	0,063	0,33

Color code	Fo daN	Fc daN	P Bar
GRN (Green)	50 (±5)	≈ 71	45
BLU (Blue)	100 (±10)	≈ 143	90
RED (Red)	150 (±15)	≈ 214	135
YEL (Yellow)	200 (±20)	≈ 277	175
(Other forces)	28 - 200	≈ 40 - 277	25 - 175

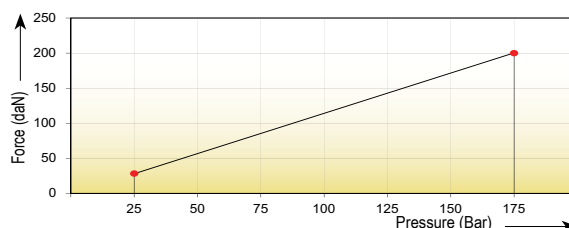
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure (25Bar) and the maximum charging pressure (175Bar). If not otherwise specified, the gas spring will be supplied in the yellow code version.



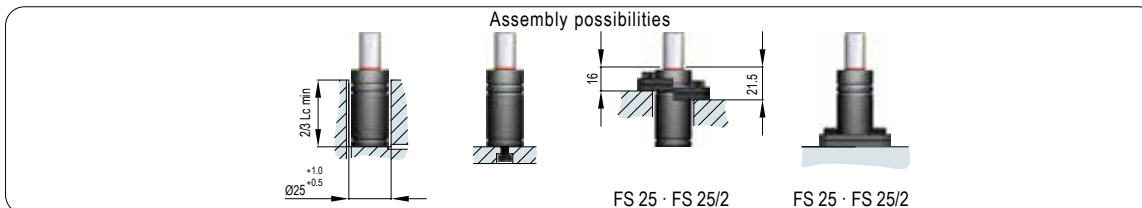
Force/stroke ratio



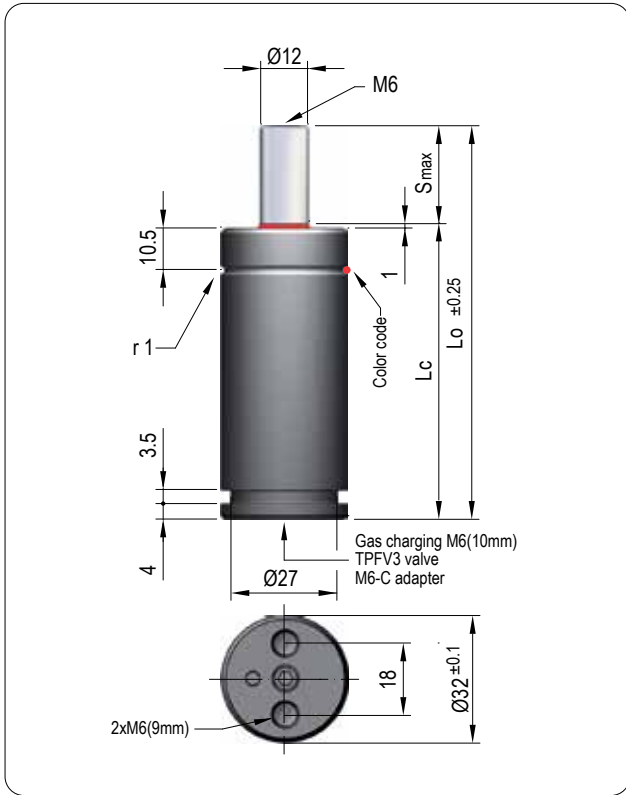
Initial force/charging pressure ratio



Assembly possibilities



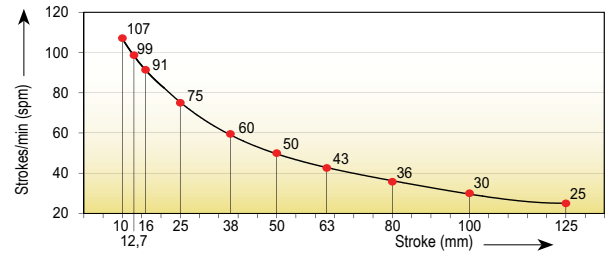
M-230



Pressure medium	Gas Nitrogen (N ₂)
Max. charging pressure	175 Bar
Min. charging pressure	25 Bar
Rod seal area	1,13 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit S32.1



Maximum strokes / minute (at 20°C)



MODEL	Smax mm	Lo mm	Lc mm	V l	Kg
M-230x10	10	70	60	0,006	0,30
M-230x13	12,7	75,4	62,7	0,007	0,32
M-230x16	16	82	66	0,008	0,33
M-230x25	25	100	75	0,011	0,37
M-230x38	38	126	88	0,015	0,42
M-230x50	50	150	100	0,019	0,47
M-230x63	63	177	114	0,024	0,52
M-230x80	80	210	130	0,030	0,60
M-230x100	100	250	150	0,037	0,75
M-230x125	125	300	175	0,045	0,85

Color code	Fo daN	Fc daN	P Bar
GRN (Green)	50 (±5)	≈ 70	45
BLU (Blue)	100 (±10)	≈ 140	90
RED (Red)	150 (±15)	≈ 210	135
YEL (Yellow)	200 (±20)	≈ 270	175
(Other forces)	28 - 200	≈ 40 - 270	25 - 175

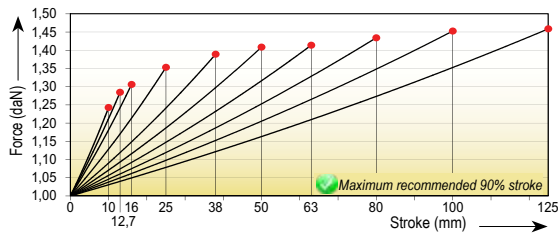
The black color code denotes a different pressure from that which the customer could choose when ordering between the minimum charging pressure (25Bar) and the maximum charging pressure (175Bar). If not otherwise specified, the gas spring will be supplied in the yellow code version.

How to order

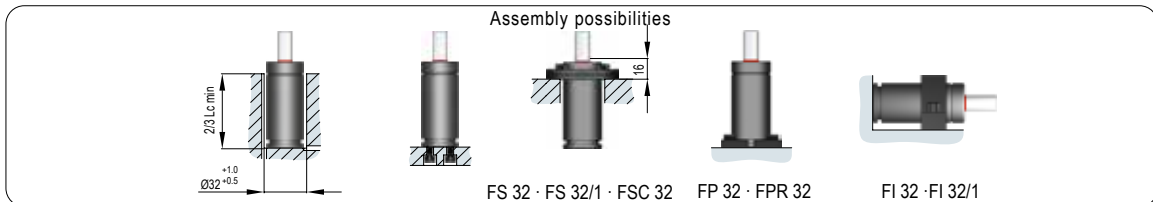
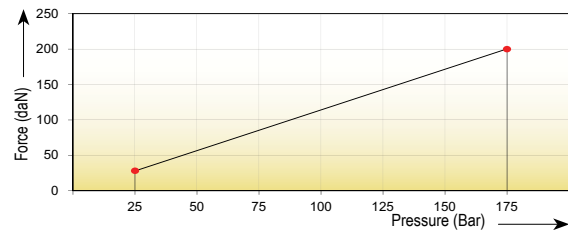
M-230 x 63 RED

Model Stroke Color code

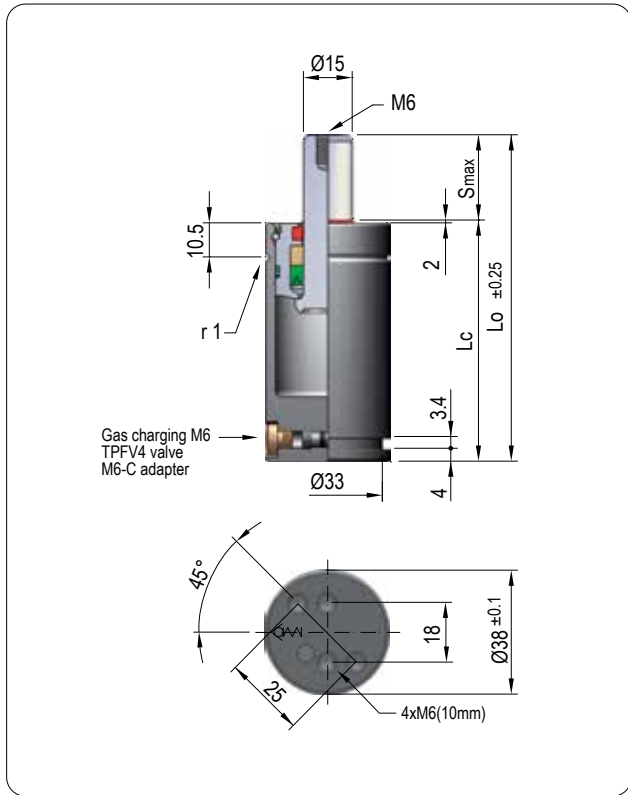
Force/stroke ratio



Initial force/charging pressure ratio



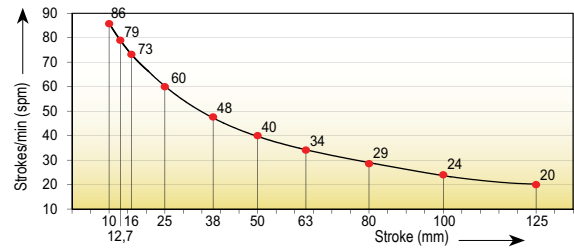
M-300



Pressure medium	Gas Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	50 Bar
Rod seal area	1,77 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit S250.1

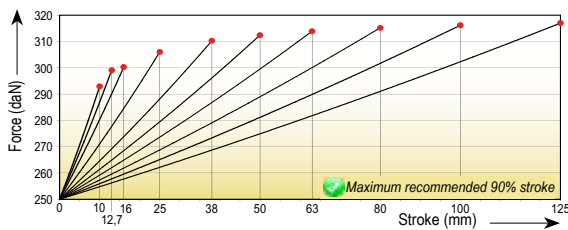


Maximum strokes / minute (at 20°C)

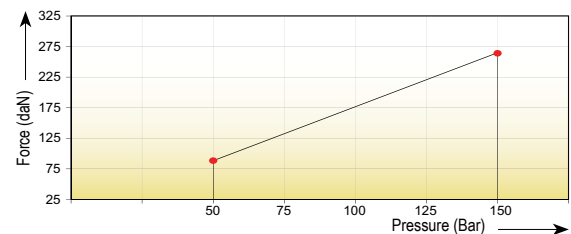


MODEL	S_{max} mm	L_o mm	L_c mm	F_o daN	90% F daN	100% F_c daN	P Bar	V l	Kg
M-300x10	10	70	60	250 ±5% (20°C)	290	295	142 (20°C)	0,012	0,43
M-300x13	12,7	75,4	62,7		295	300		0,014	0,44
M-300x16	16	82	66		295	300		0,017	0,46
M-300x25	25	100	75		300	305		0,024	0,51
M-300x38	38	126	88		305	310		0,035	0,59
M-300x50	50	150	100		305	315		0,044	0,66
M-300x63	63	177	114		305	315		0,055	0,73
M-300x80	80	210	130		310	315		0,068	0,83
M-300x100	100	250	150		310	315		0,085	0,96
M-300x125	125	300	175		310	320		0,105	1,05

Force/stroke ratio

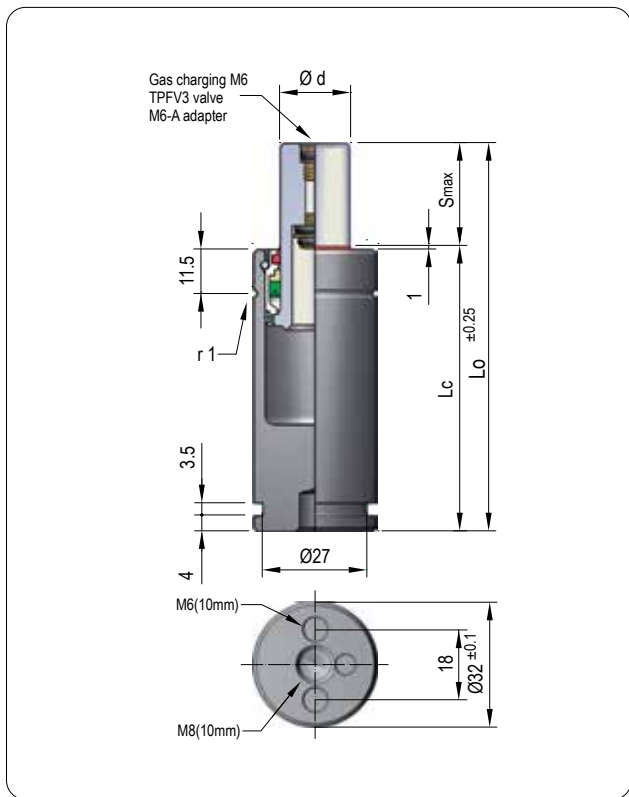


Initial force/charging pressure ratio



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

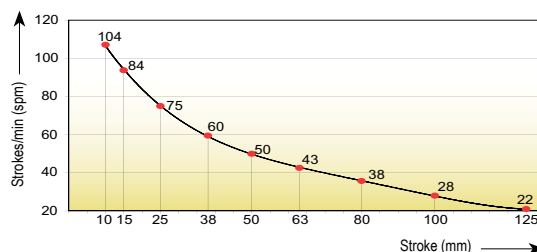
M-350



Pressure medium	Gas Nitrogen (N ₂)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	$\varnothing 18\text{mm} - 2,54 \text{ cm}^2$ $\varnothing 16\text{mm} - 2,01 \text{ cm}^2$
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	$\varnothing 18\text{mm} - \text{KIT C350 /18}$ $\varnothing 16\text{mm} - \text{KIT C350 /16}$

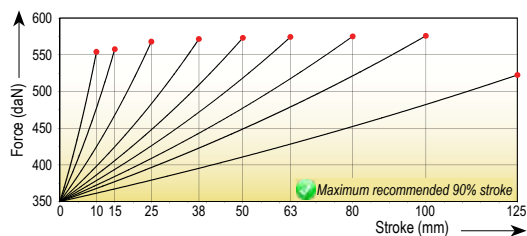


Maximum strokes / minute (at 20°C)

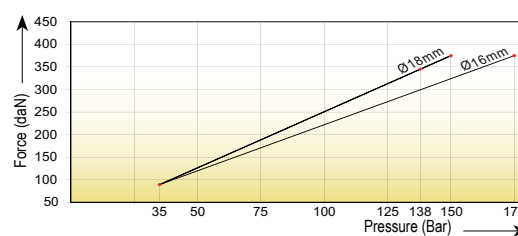


MODEL	S _{max} mm	L ₀ mm	L _c mm	d mm	F ₀ daN	90% F daN	100% F _c daN	P Bar	V l	Kg
M-350x10	10	70	60	18	350 ±5% (20°C)	520	550	138 (20°C)	0,007	0,28
M-350x15	15	80	65	18		525	555		0,010	0,30
M-350x25	25	100	75	18		535	565		0,017	0,32
M-350x38	38	126	88	18		535	570		0,025	0,36
M-350x50	50	150	100	18		537	570		0,033	0,40
M-350x63	63	176	113	18		540	570		0,041	0,44
M-350x80	80	210	130	18		540	575		0,052	0,50
M-350x100	100	250	150	18	540	575	175 (20°C)	0,065	0,57	
M-350x125	125	300	175	16	500	520		0,076	0,65	

Force/stroke ratio



Initial force/charging pressure ratio

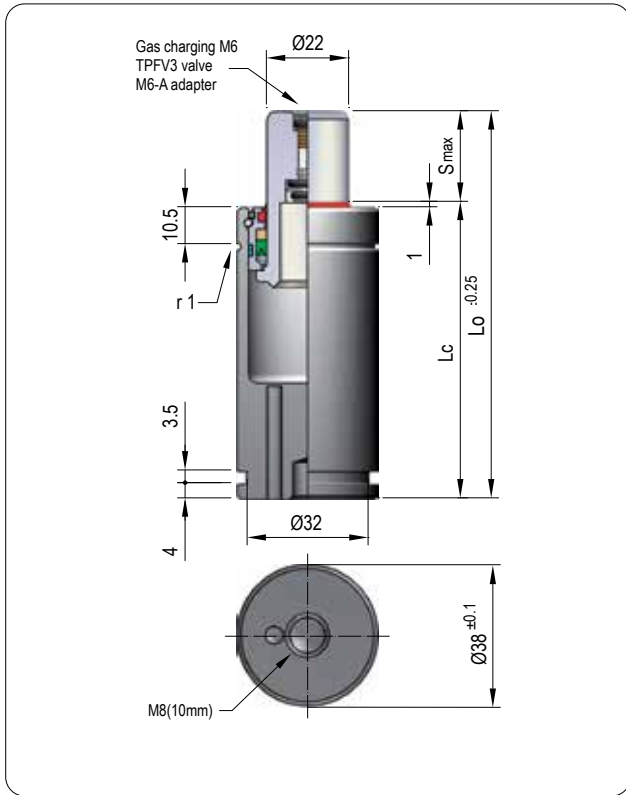


Assembly possibilities



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

M-500



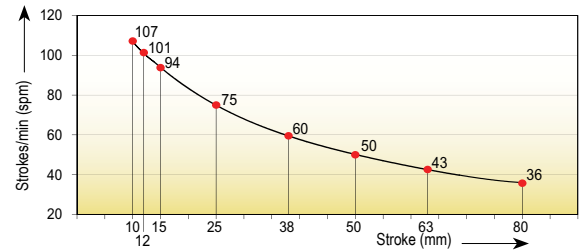
Pressure medium	Gas Nitrogen (N₂)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	3,80 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	Kit C500



VDI SAFETY

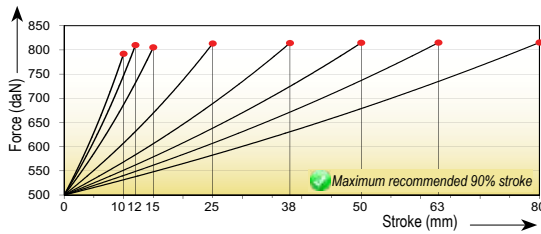


Maximum strokes / minute (at 20°C)

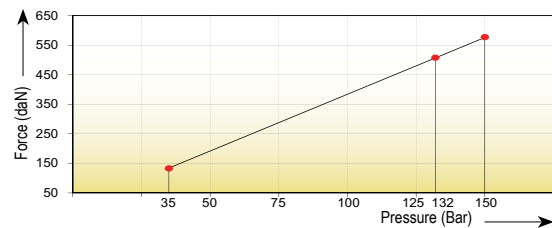


MODEL	Smax mm	Lo mm	Lc mm	Fo daN	90% F daN	100% Fc daN	P Bar	V l	Kg
M-500x10	10	75	65	500 ±5% (20°C)	750	795	132 (20°C)	0,010	0,38
M-500x12	12	79	67		765	815		0,012	0,40
M-500x15	15	85	70		760	810		0,015	0,43
M-500x25	25	105	80		770	815		0,025	0,45
M-500x38	38	131	93		770	815		0,037	0,52
M-500x50	50	155	105		770	820		0,049	0,55
M-500x63	63	186	123		770	820		0,062	0,62
M-500x80	80	220	140		770	820		0,079	0,69

Force/stroke ratio

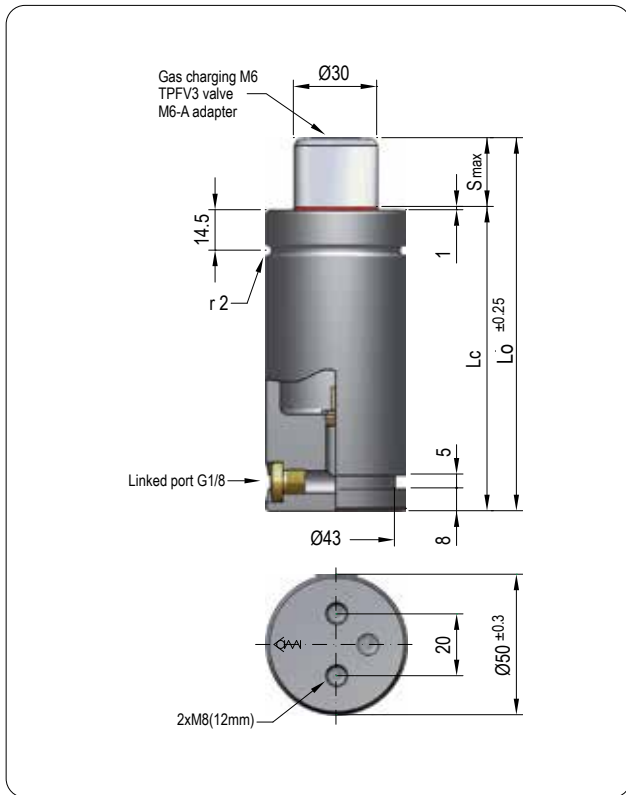


Initial force/charging pressure ratio



Assembly possibilities

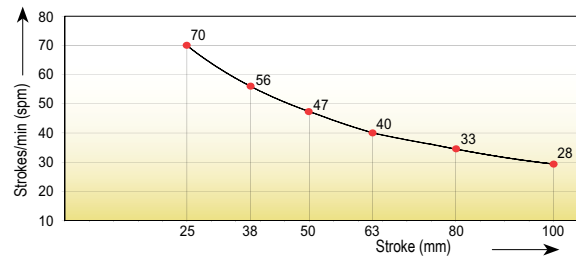




Pressure medium	Gas Nitrogen (N₂)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	7,07 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,2 m/s
Maintenance kit	Kit C1000

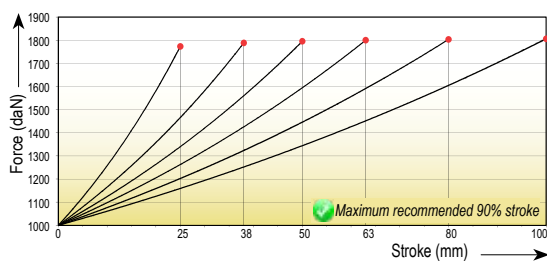


Maximum strokes / minute (at 20°C)

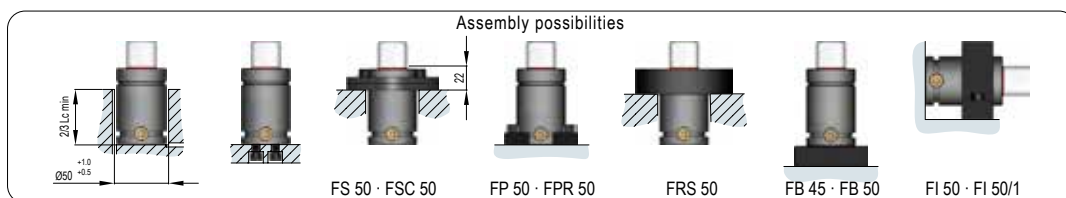
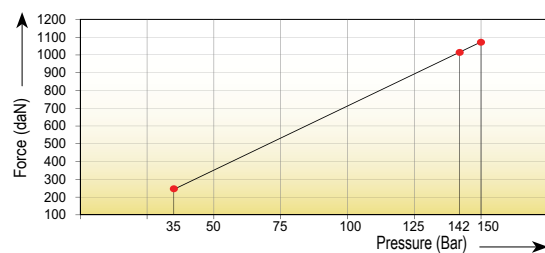


MODEL	S _{max} mm	Lo mm	Lc mm	Fo daN	90% F daN	100% Fc daN	P Bar	V l	Kg
M-1000x25	25	135	110	1000 ±5% (20°C)	1650	1780	142 (20°C)	0,041	1,20
M-1000x38	38	161	123		1665	1795		0,061	1,35
M-1000x50	50	185	135		1670	1800		0,080	1,46
M-1000x63	63	211	148		1675	1805		0,100	1,52
M-1000x80	80	245	165		1675	1810		0,127	1,73
M-1000x100	100	295	195		1680	1815		0,158	2,41

Force/stroke ratio

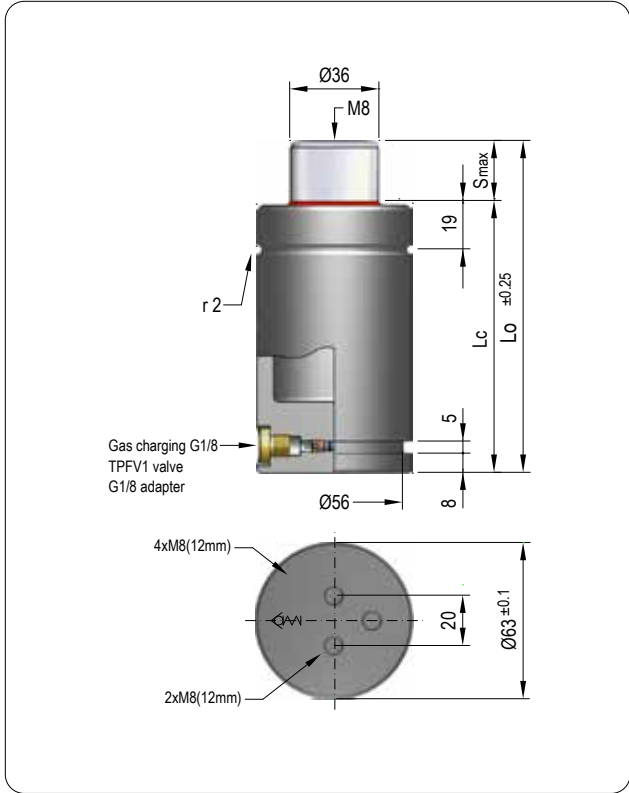


Initial force/charging pressure ratio



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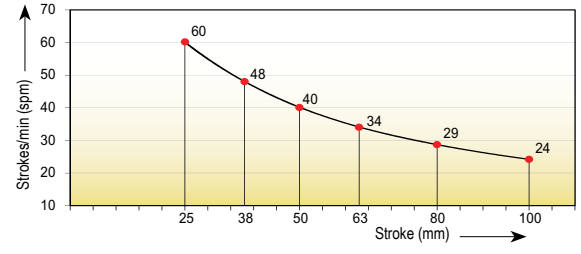
M-1500



Pressure medium	Gas Nitrogen (N_2)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	10,18 cm^2
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit C1500

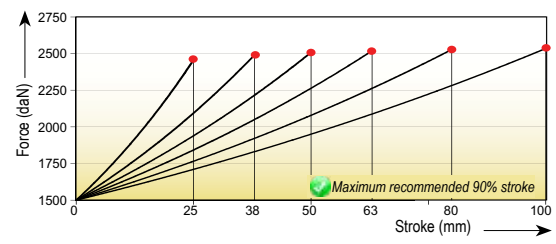


Maximum strokes / minute (at 20°C)

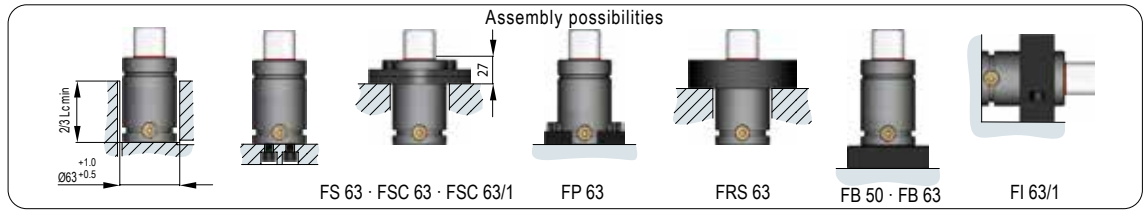
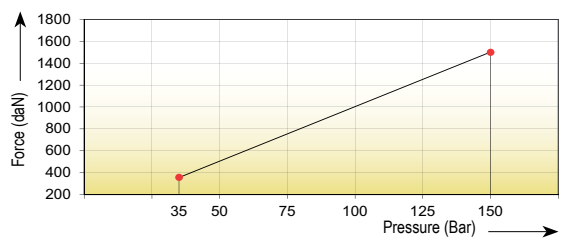


MODEL	S_{max} mm	L_o mm	L_c mm	F daN	90% F daN	100% Fc daN	P Bar	V l	Kg
M-1500x25	25	135	110	1500 $\pm 5\%$ (20°C)	2275	2420	148 (20°C)	0,065	1,86
M-1500x38	38	161	123		2300	2450		0,097	2,10
M-1500x50	50	185	135		2310	2470		0,127	2,25
M-1500x63	63	211	148		2320	2480		0,159	2,30
M-1500x80	80	245	165		2330	2485		0,200	2,55
M-1500x100	100	285	185		2335	2495		0,249	3,15

Force/stroke ratio

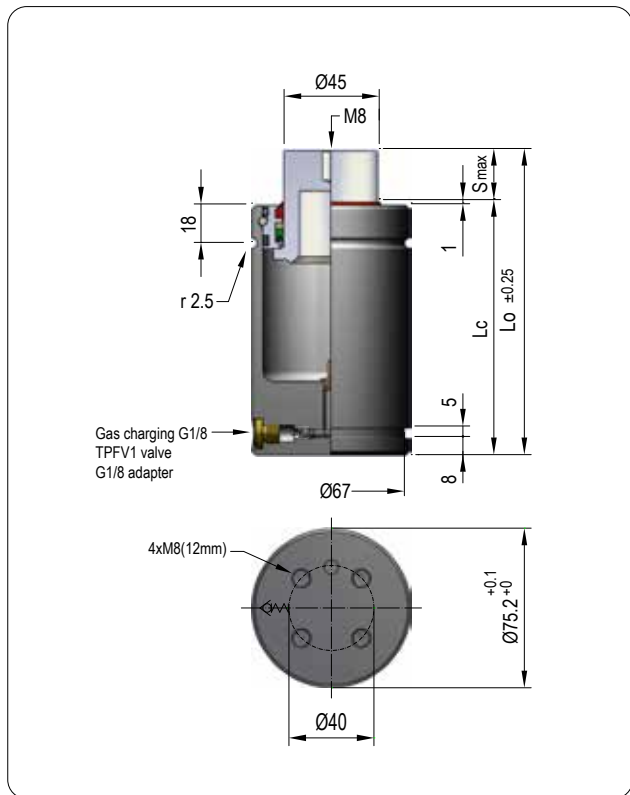


Initial force/charging pressure ratio



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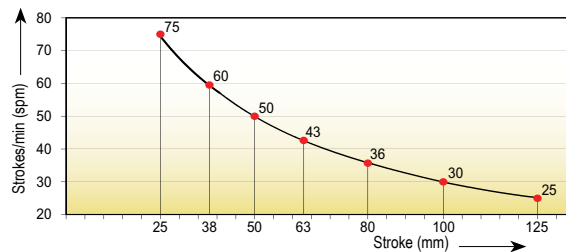
M-2500



Pressure medium	Gas Nitrogen (N₂)
Max. charging pressure	155 Bar
Min. charging pressure	35 Bar
Rod seal area	15,90 cm²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit C2500

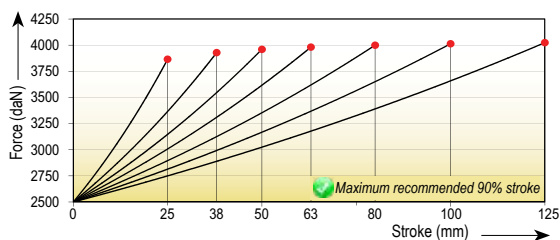


Maximum strokes / minute (at 20°C)

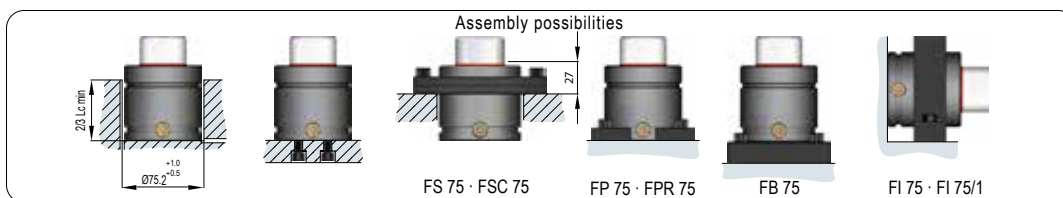
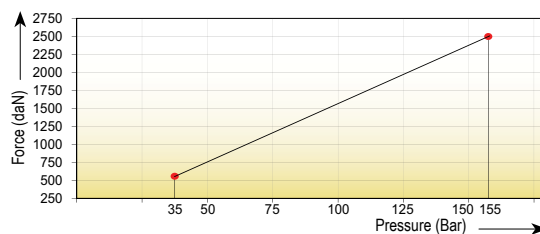


MODEL	Smax mm	Lo mm	Lc mm	Fo daN	90% F daN	100% Fc daN	P Bar	V l	Kg
M-2500x25	25	145	120	2500 ±5% (20°C)	3655	3855	155 (20°C)	0,113	2,50
M-2500x38	38	171	133		3710	3920		0,167	3,25
M-2500x50	50	195	145		3735	3950		0,216	4,00
M-2500x63	63	221	158		3750	3975		0,270	4,40
M-2500x80	80	255	175		3765	3990		0,340	5,05
M-2500x100	100	300	200		3780	4005		0,422	5,55
M-2500x125	125	350	225		3785	4020		0,525	5,98

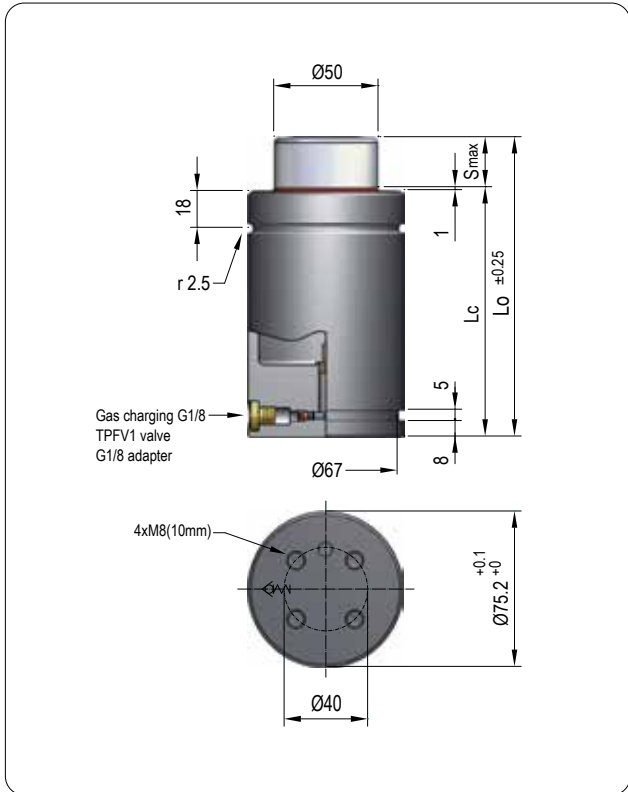
Force/stroke ratio



Initial force/charging pressure ratio



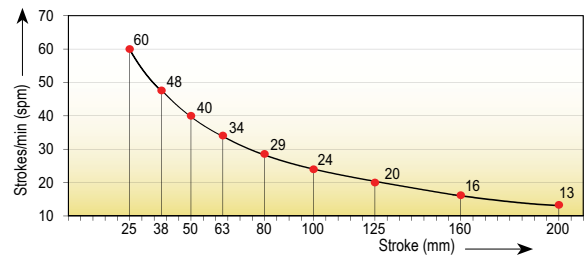
M-3000



Pressure medium	Gas Nitogeno (N ₂)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	19,63 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	0,8 m/s
Maintenance kit	Kit C3000

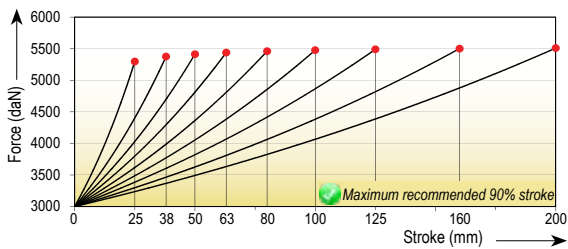


Maximum strokes / minute (at 20°C)

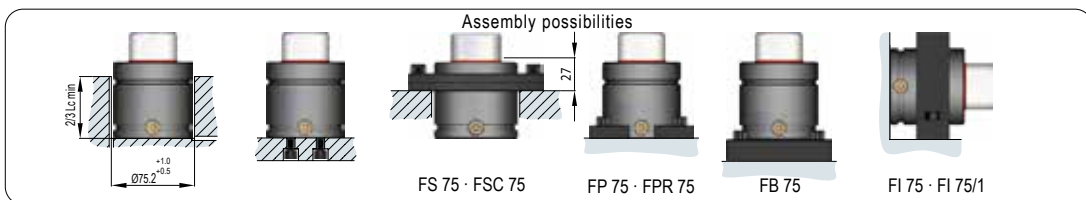
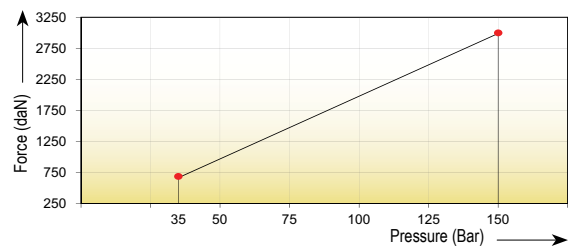


MODEL	Smax mm	Lo mm	Lc mm	Fo daN	90% F daN	100% Fc daN	P Bar	V l	Kg
M-3000x25	25	145	120	3000 ±5% (20°C)	4925	5305	150 (20°C)	0,113	2,70
M-3000x38	38	171	133		4990	5380		0,169	3,30
M-3000x50	50	195	145		5015	5420		0,221	4,10
M-3000x63	63	221	158		5035	5445		0,276	4,50
M-3000x80	80	255	175		5055	5470		0,349	5,10
M-3000x100	100	300	200		5065	5485		0,434	5,90
M-3000x125	125	350	225		5075	5495		0,541	6,50
M-3000x160	160	425	265		5085	5510		0,691	7,40
M-3000x200	200	510	310		5090	5515		0,862	7,85

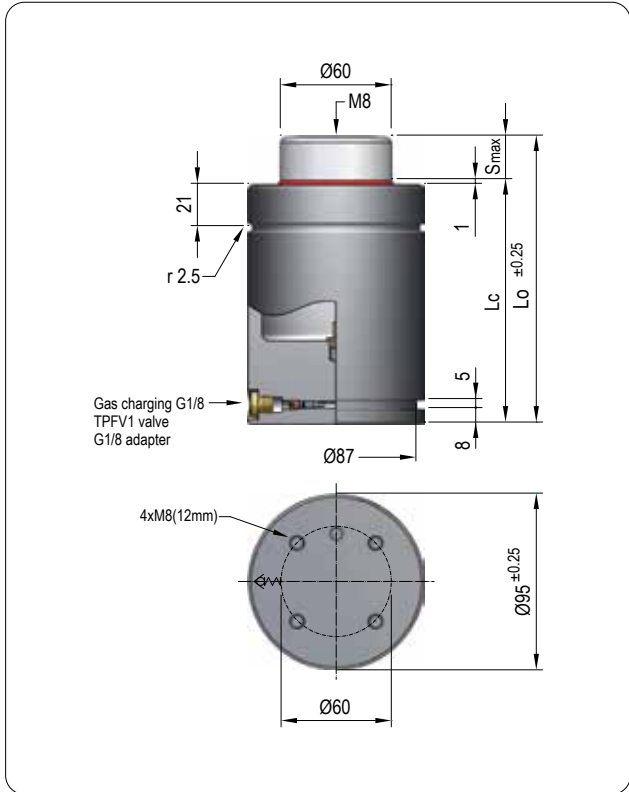
Force/stroke ratio



Initial force/charging pressure ratio



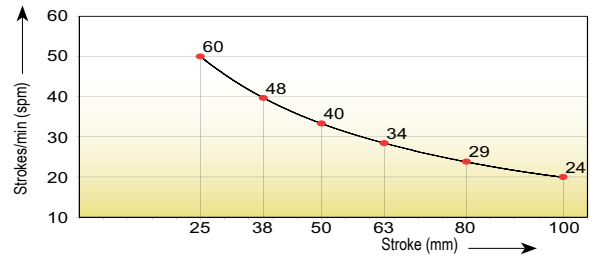
M-4000



Pressure medium	Gas Nitrogen (N ₂)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	28,27 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit C4000

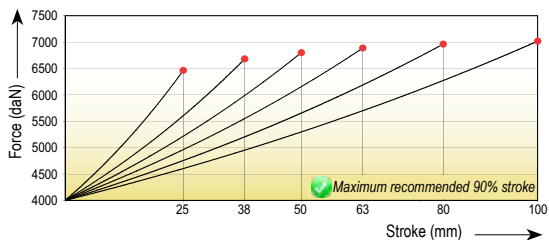


Maximum strokes / minute (at 20°C)

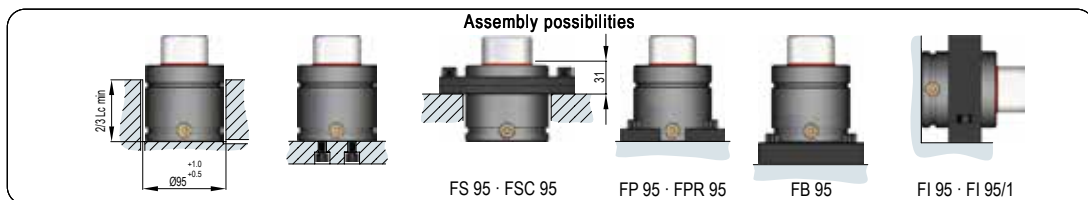
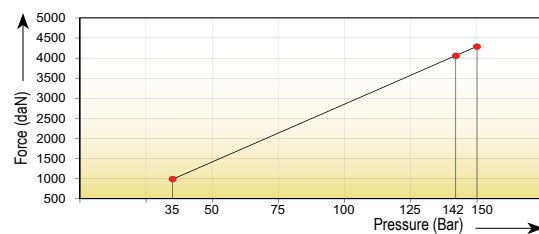


MODEL	Smax mm	Lo mm	Lc mm	Fo daN	90% F daN	100% Fc daN	P Bar	V l	Kg
M-4000x25	25	155	130	4000 ±5% (20°C)	6115	6490	142 (20°C)	0,185	4,20
M-4000x38	38	181	143		6285	6705		0,268	4,90
M-4000x50	50	205	155		6380	6830		0,343	5,30
M-4000x63	63	236	173		6450	6915		0,425	6,10
M-4000x80	80	270	190		6505	6990		0,532	7,20
M-4000x100	100	310	210		6550	7045		0,657	7,80

Force/stroke ratio

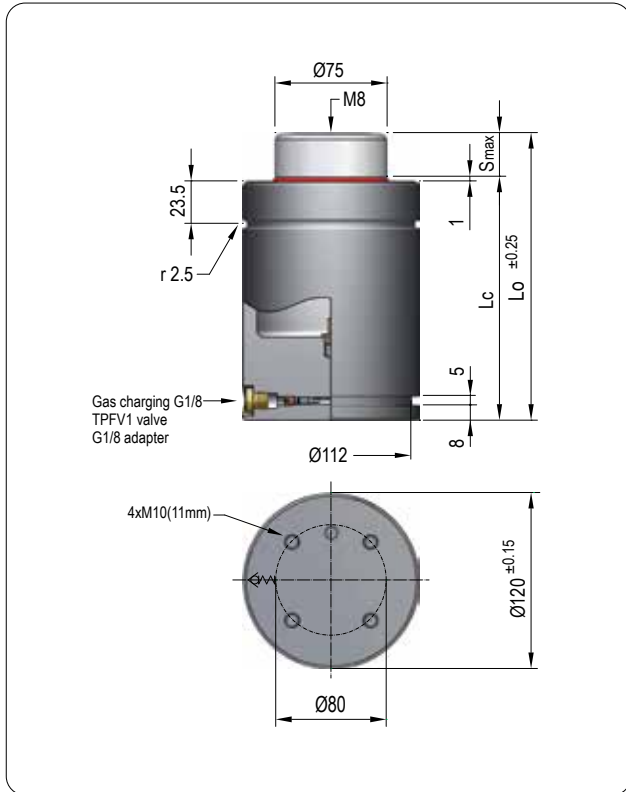


Initial force/charging pressure ratio



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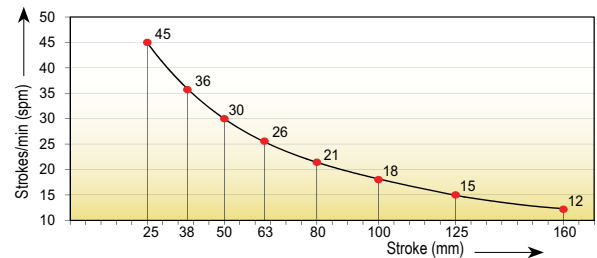
M-6500



Pressure medium	Gas Nitrogen (N ₂)
Max. charging pressure	150 Bar
Min. charging pressure	35 Bar
Rod seal area	44,18 cm ²
Operating temperature	0°C - 80°C
Force increase by temperature	0,33 %/°C
Max. stem speed	1,6 m/s
Maintenance kit	Kit C6500

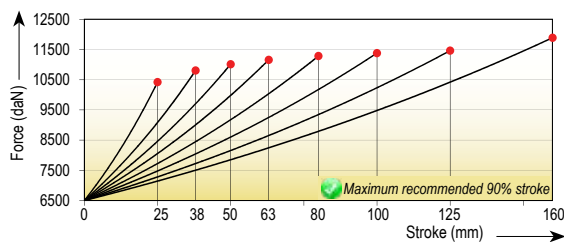


Maximum strokes / minute (at 20°C)

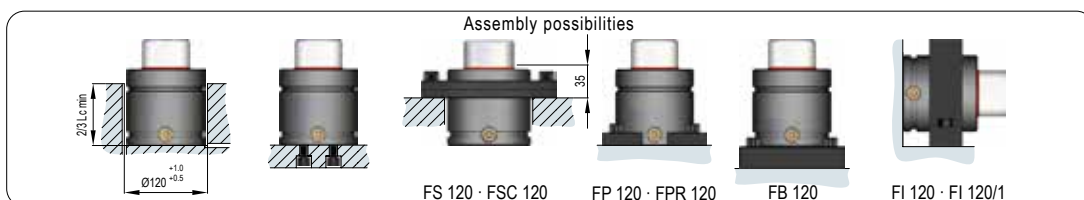
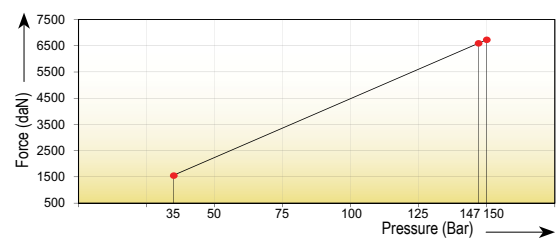


MODEL	Smax mm	Lo mm	Lc mm	Fo daN	90% F daN	100% Fc daN	P Bar	V l	Kg
M-6500x25	25	165	140	6500 ±5% (20°C)	9820	10400	147 (20°C)	0,294	9,45
M-6500x38	38	191	153		10125	10800		0,421	10,05
M-6500x50	50	215	165		10290	11000		0,539	10,75
M-6500x63	63	241	178		10405	11150		0,667	11,67
M-6500x80	80	275	195		10500	11275		0,834	12,28
M-6500x100	100	315	215		10580	11375		1,030	13,35
M-6500x125	125	375	250		10640	11455		1,275	14,29
M-6500x160	160	450	290		10970	11880		1,559	17,53

Force/stroke ratio



Initial force/charging pressure ratio



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