

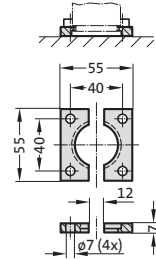


Gas Spring STANDARD SERIES

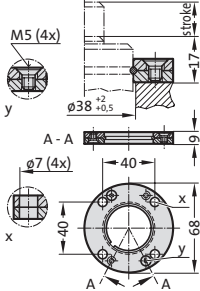
- Temperature upto 80°C

Gas Spring, Standard Mounting variations

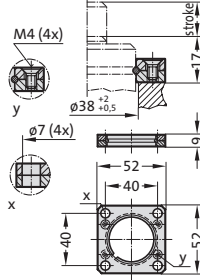
2480.022.00250



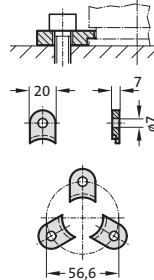
2480.055.00250



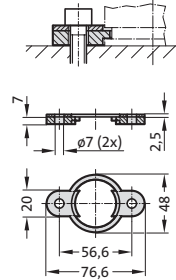
2480.057.00250



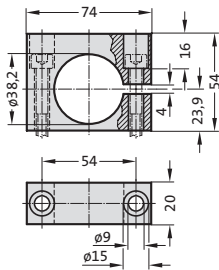
2480.007.00250



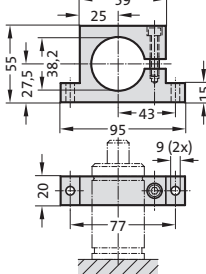
2480.008.00250³⁾



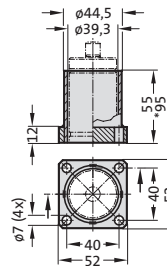
2480.044.03.00250²⁾



2480.044.00250²⁾



2480.010.00250.055³⁾
2480.010.00250.095³⁾



Note:

- 2) Attention:
The spring force must be absorbed by the stop surface!
- 3) Not for use with composite connection.

Gas spring, Standard

Note:

Initial spring force at 150 bar = 250 daN

Order No for spare parts kit: 2480.13.00250

Pressure medium: Nitrogen N₂

Max. filling pressure: 150 bar

Min. filling pressure: 50 bar

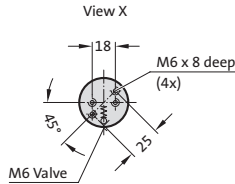
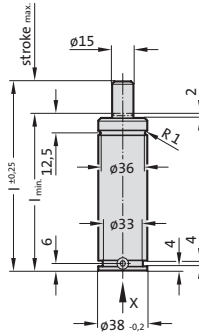
Working temperature: 0°C to +80°C

Temperature related force increase: ± 0.3%/°C

Max. recommended extensions per minute: approx. 80 to 100 (at 20°C)

Max. piston speed: 1.6 m/s

2480.13.00250.

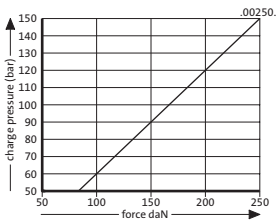


2480.13.00250.

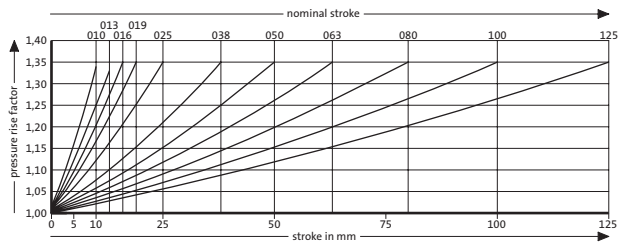
Gas spring, Standard

Order No	Stroke _{max}	l _{min}	l
2480.13.00250.010	10	60	70
2480.13.00250.013	12.7	62.7	75.4
2480.13.00250.016	16	66	82
2480.13.00250.019	19	69	88
2480.13.00250.025	25	75	100
2480.13.00250.038	38.1	88.1	126.2
2480.13.00250.050	50	100	150
2480.13.00250.063	63.5	113.5	177
2480.13.00250.080	80	130	210
2480.13.00250.100	100	150	250
2480.13.00250.125	125	175	300

Initial spring force versus charge pressure



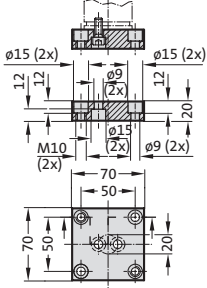
Spring force Diagram displacement versus stroke rise



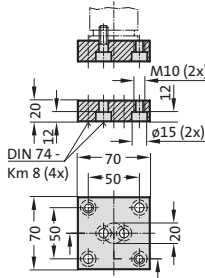
Pressure rise factor accounts for displacement but not external influences!

Gas Spring, Standard Mounting variations

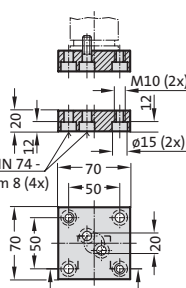
2480.011.00500.2



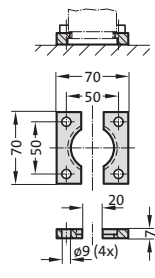
2480.011.00500



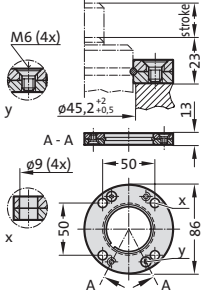
2480.011.00500.1



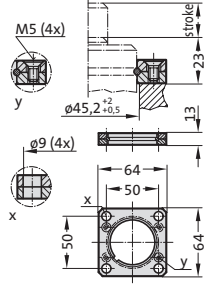
2480.022.00500



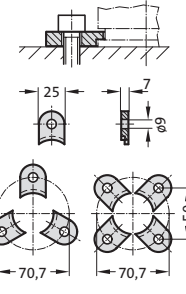
2480.055.00500



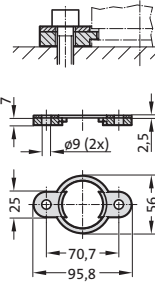
2480.057.00500



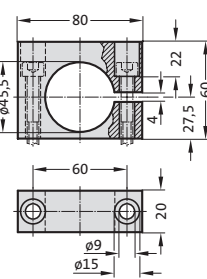
2480.007.00500



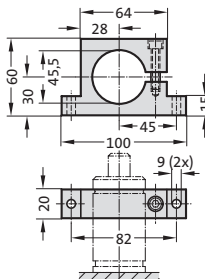
2480.008.00500³⁾



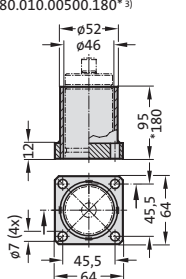
2480.044.03.00500²⁾



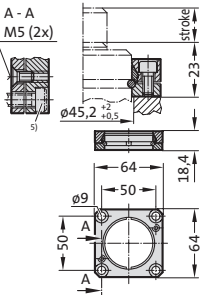
2480.044.00500³⁾



2480.010.00500.095³⁾
2480.010.00500.180³⁾



2480.064.00500⁴⁾



Note:

- 2) Attention:
The spring force must be absorbed by the stop surface!
- 3) Not for use with composite connection.

Gas spring, Standard

Note:

Initial spring force at 150 bar = 470 daN

Order No for spare parts kit: 2480.13.00500

Pressure medium: Nitrogen N₂

Max. filling pressure: 150 bar

Min. filling pressure: 50 bar

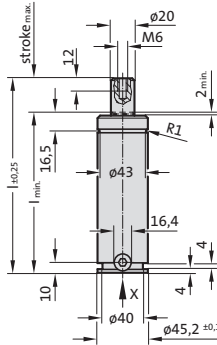
Working temperature: 0°C to +80°C

Temperature related force increase: ± 0.3%/°C

Max. recommended extensions per minute: approx. 40 to 80 (at 20°C)

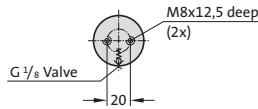
Max. piston speed: 1.6 m/s

2480.13.00500.



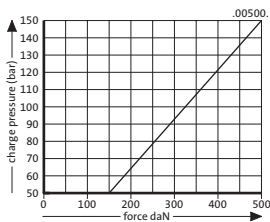
2480.13.00500. Gas spring, Standard

View X

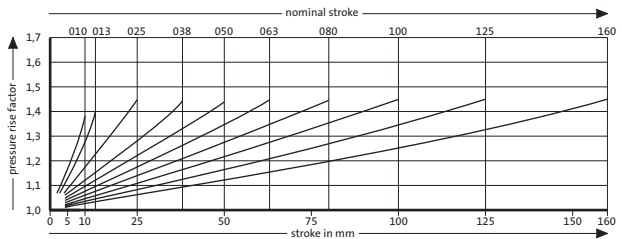


Order No	Stroke _{max}	l _{min}	l
2480.13.00500.010	10	95	105
2480.13.00500.013	12.7	97.7	110.4
2480.13.00500.025	25	110	135
2480.13.00500.038	38.1	123.1	161.2
2480.13.00500.050	50	135	185
2480.13.00500.063	63.5	148.5	212
2480.13.00500.080	80	165	245
2480.13.00500.100	100	185	285
2480.13.00500.125	125	210	335
2480.13.00500.160	160	245	405

Initial spring force
versus charge pressure



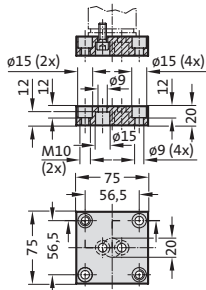
Spring force Diagram displacement versus stroke rise



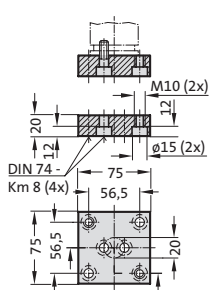
Pressure rise factor accounts for displacement but not external influences!

Gas Spring, Standard Mounting variations

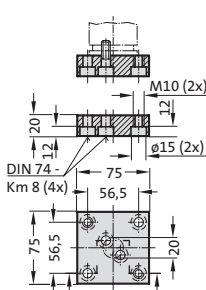
2480.011.00750.3



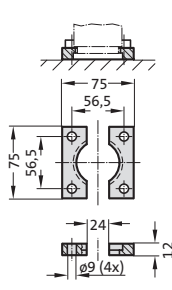
2480.011.00750



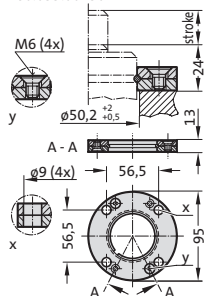
2480.011.00750.1



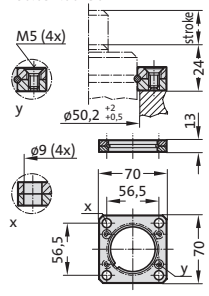
2480.022.00750



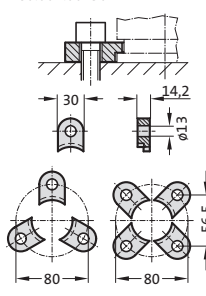
2480.055.00750



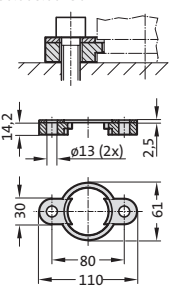
2480.057.00750



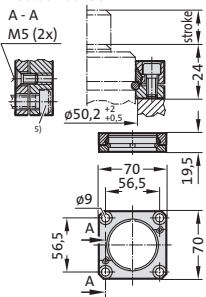
2480.007.00750



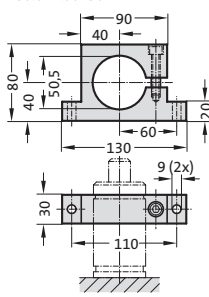
2480.008.00750³⁾



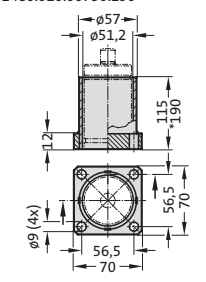
2480.064.00750⁴⁾



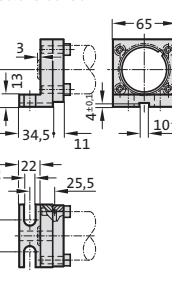
2480.044.00750²⁾



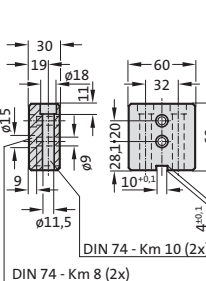
2480.010.00750.115³⁾
2480.010.00750.190³⁾



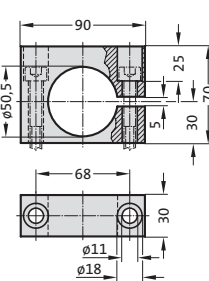
2480.045.00750²⁾



2480.047.00750²⁾



2480.044.03.00750²⁾

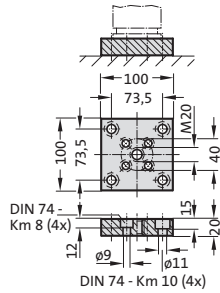


Note:

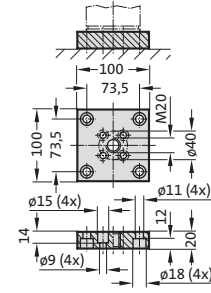
- 2) Attention:
The spring force must be absorbed by the stop surface!
- 3) Not for use with composite connection.
- 4) Square collar flange, non-rotating, fixing for composite connection.
- 5) Machine screws with hexagonal socket (compact head recommended)

Gas Spring, Standard Mounting variations

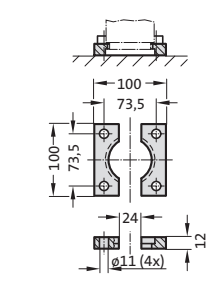
2480.011.01500



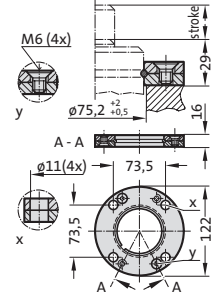
2480.011.01500.2



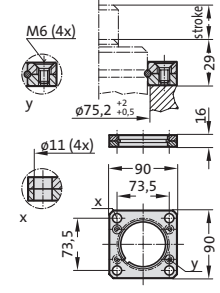
2480.022.01500



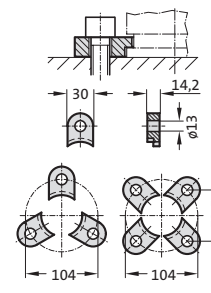
2480.055.01500



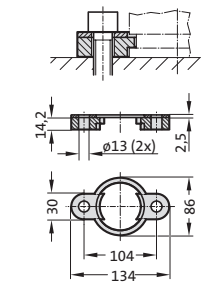
2480.057.01500



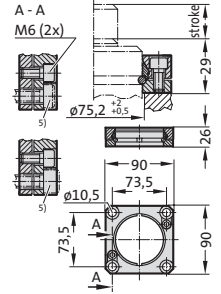
2480.007.01500



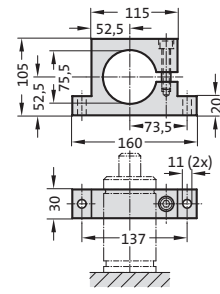
2480.008.01500³⁾



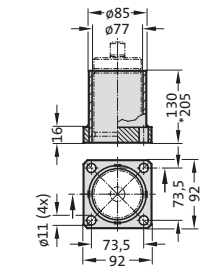
2480.064.01500⁴⁾



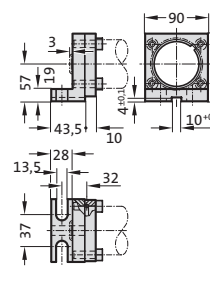
2480.044.01500²⁾



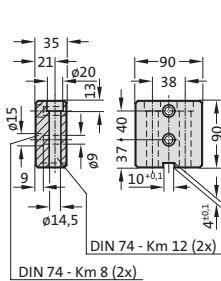
2480.010.01500.130³⁾
2480.010.01500.205*³⁾



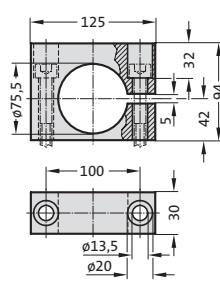
2480.045.01500²⁾



2480.047.01500²⁾



2480.044.03.01500²⁾



Note:

- 2) Attention:
The spring force must be absorbed by the stop surface!
- 3) Not for use with composite connection.
- 4) Square collar flange, non-rotating, fixing for composite connection.
- 5) Machine screws with hexagonal socket (compact head recommended)

Gas spring, Standard

Note:

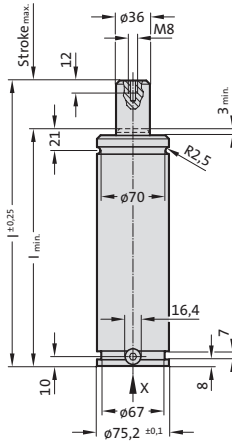
Initial spring force at 150 bar = 1500 daN

Order No for spare parts kit: 2480.12.01500
 Order No for spare parts kit: to Renault standard EM24.54.700 2480.12.01500.R
 Gas spring to Renault standard EM24.54.700
 Order No (example): 2480.12.01500..R

1) Special stroke lengths
 Not for gas springs to Renault Standard EM24.54.700.

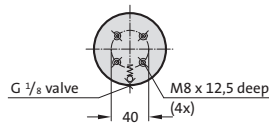
Pressure medium: Nitrogen N₂
 Max. filling pressure: 150 bar
 Min. filling pressure: 25 bar
 Working temperature: 0°C to +80°C
 Temperature related force increase: ± 0.3%/°C
 Max. recommended extensions per minute:
 approx. 15 to 40 (at 20°C)
 Max. piston speed: 1.6 m/s
 for 2480.R: 2.0 m/s

2480.12.01500.



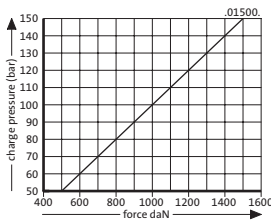
2480.12.01500. Gas spring, Standard

View X - Gas spring

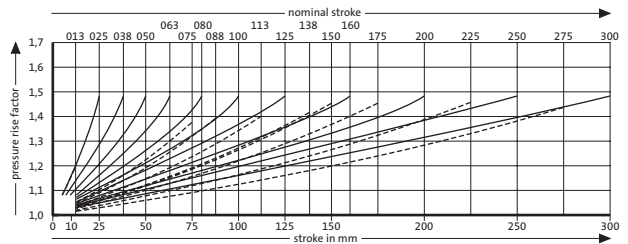


Order No	Stroke _{max}	I _{min}	I
2480.12.01500.013 1)	12.7	122.3	135
2480.12.01500.025	25	135	160
2480.12.01500.038	38.1	148.1	186.2
2480.12.01500.050	50	160	210
2480.12.01500.063	63.5	173.5	237
2480.12.01500.075 1)	75	185	260
2480.12.01500.080	80	190	270
2480.12.01500.088 1)	87.5	197.5	285
2480.12.01500.100	100	210	310
2480.12.01500.113 1)	112.5	222.5	335
2480.12.01500.125	125	235	360
2480.12.01500.138 1)	137.5	247.5	385
2480.12.01500.150 1)	150	260	410
2480.12.01500.160	160	270	430
2480.12.01500.175 1)	175	285	460
2480.12.01500.200	200	310	510
2480.12.01500.225 1)	225	335	560
2480.12.01500.250	250	360	610
2480.12.01500.275	275	385	660
2480.12.01500.300	300	410	710

Initial spring force
versus charge pressure



Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!

Gas spring, Standard

Note:

Initial spring force at 150 bar = 3000 daN

Order No for spare parts kit: 2480.13.03000

Order No for spare parts kit: to Renault standard EM24.54.700 2480.13.03000.R

Gas spring to Renault standard EM24.54.700

Order No (example): 2480.13.03000..R

1) Special stroke lengths

Not for gas springs to Renault Standard EM24.54.700.

Pressure medium: Nitrogen N₂

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

Working temperature: 0°C to +80°C

Temperature related force increase: ± 0.3%/°C

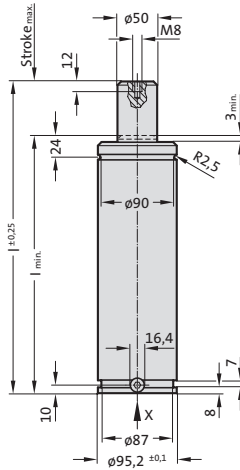
Max. recommended extensions per minute:

approx. 15 to 40 (at 20°C)

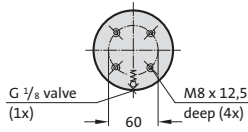
Max. piston speed: 1.6 m/s

for 2480...R: 2.0 m/s

2480.13.03000.



View X - Gas spring

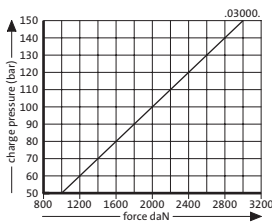


2480.13.03000.

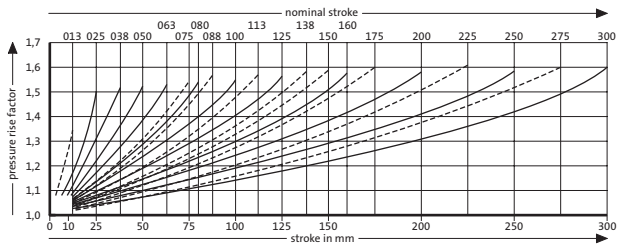
Gas spring, Standard

Order No	Stroke _{max.}	I _{min.}	I
2480.13.03000.013	1) 12.7	132.3	145
2480.13.03000.025	25	145	170
2480.13.03000.038	38.1	158.1	196.2
2480.13.03000.050	50	170	220
2480.13.03000.063	63.5	183.5	247
2480.13.03000.075	1) 75	195	270
2480.13.03000.080	80	200	280
2480.13.03000.088.1	1) 87.5	207.5	295
2480.13.03000.100	100	220	320
2480.13.03000.113	1) 112.5	232.5	345
2480.13.03000.125	125	245	370
2480.13.03000.138	1) 137.5	257.5	395
2480.13.03000.150	1) 150	270	420
2480.13.03000.160	160	280	440
2480.13.03000.175	1) 175	295	470
2480.13.03000.200	200	320	520
2480.13.03000.225	1) 225	345	570
2480.13.03000.250	250	370	620
2480.13.03000.275	1) 275	395	670
2480.13.03000.300	300	420	720

Initial spring force versus charge pressure



Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!



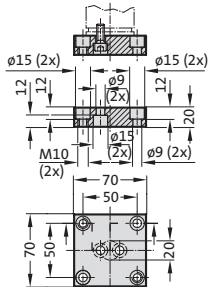
Gas Spring HEAVY DUTY

- Temperature upto 80°C

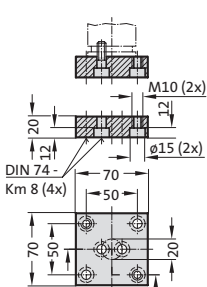
Gas Spring, HEAVY DUTY

Mounting variations

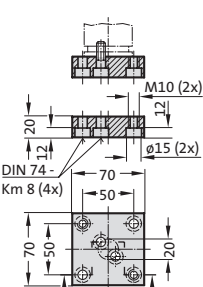
2480.011.00500.2



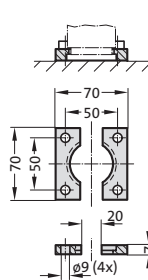
2480.011.00500



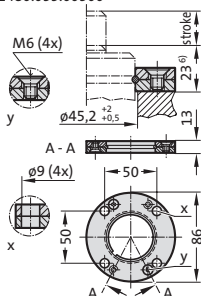
2480.011.00500.1



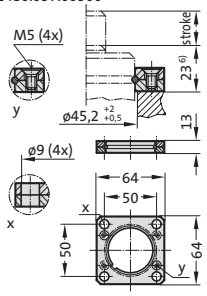
2480.022.00500



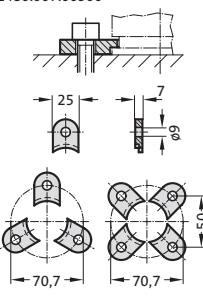
2480.055.00500



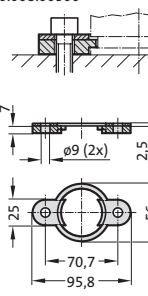
2480.057.00500



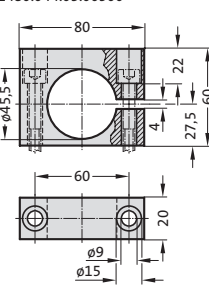
2480.007.00500



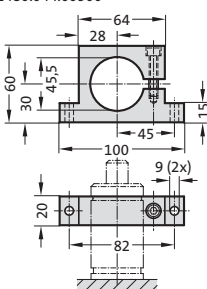
2480.008.00500³⁾



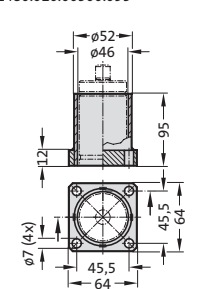
2480.044.03.00500²⁾



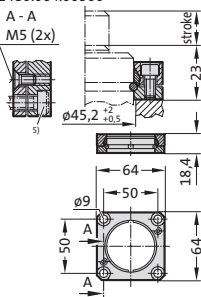
2480.044.00500³⁾



2480.010.00500.095³⁾



2480.064.00500⁴⁾



Note:

- 2) Attention:
The spring force must be absorbed by the stop surface!
- 3) Not for use with composite connection.
- 4) Square collar flange, non-rotating, fixing for composite connection.
- 5) Machine screws with hexagonal socket (compact head recommended)
- 6) Installation height increased from 22 mm to 23 mm according to VDI 3003.

Gas spring HEAVY DUTY

Note:

Initial spring force at 150 bar = 740 daN

Order No for spare parts kit: 2488.13.00750

Pressure medium: Nitrogen N₂

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

Working temperature: 0°C to +80°C

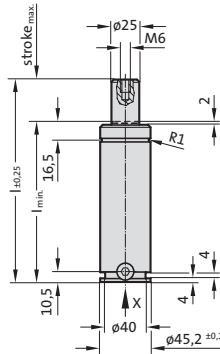
Temperature related force increase: ± 0.3%/°C

Max. recommended extensions per minute:

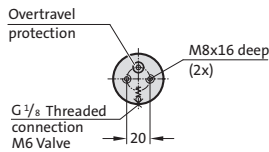
approx. 15 to 100 (at 20°C)

Max. piston speed: 1.6 m/s

2488.13.00750.



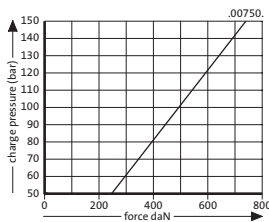
View X



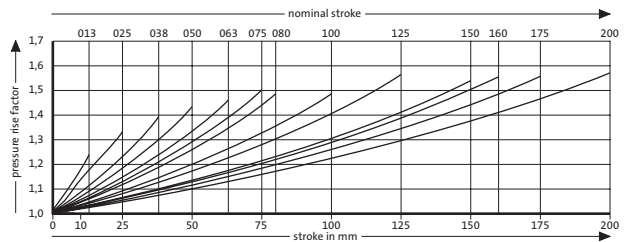
2488.13.00750. Gas spring HEAVY DUTY

Order No	Stroke _{max}	l _{min}	l
2488.13.00750.013	13	98	111
2488.13.00750.025	25	110	135
2488.13.00750.038	38	123	161
2488.13.00750.050	50	135	185
2488.13.00750.063	63	148	211
2488.13.00750.075	75	160	235
2488.13.00750.080	80	165	245
2488.13.00750.100	100	185	285
2488.13.00750.125	125	210	335
2488.13.00750.150	150	235	385
2488.13.00750.160	160	245	405
2488.13.00750.175	175	260	435
2488.13.00750.200	200	285	485

Initial spring force
versus charge pressure



Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!

Gas spring HEAVY DUTY

Note:

Initial spring force at 150 bar = 920 daN

Order No for spare parts kit: 2488.13.01000

Pressure medium: Nitrogen N₂

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

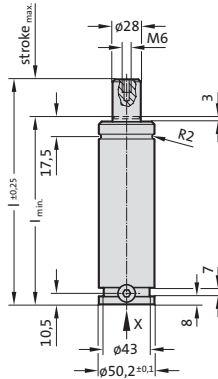
Working temperature: 0°C to +80°C

Temperature related force increase: ± 0.3%/°C

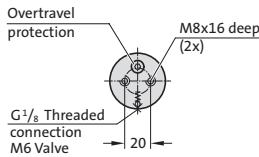
Max. recommended extensions per minute: approx. 15 to 100 (at 20°C)

Max. piston speed: 1.6 m/s

2488.13.01000.



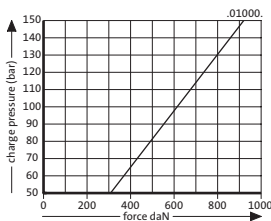
View X



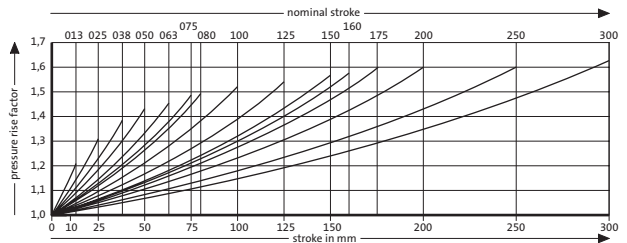
2488.13.01000. Gas spring HEAVY DUTY

Order No	Stroke _{max}	l _{min}	l
2488.13.01000.013	13	108	121
2488.13.01000.025	25	120	145
2488.13.01000.038	38	133	171
2488.13.01000.050	50	145	195
2488.13.01000.063	63	158	221
2488.13.01000.075	75	170	245
2488.13.01000.080	80	175	255
2488.13.01000.100	100	195	295
2488.13.01000.125	125	220	345
2488.13.01000.150	150	245	395
2488.13.01000.160	160	255	415
2488.13.01000.175	175	270	445
2488.13.01000.200	200	295	495
2488.13.01000.250	250	345	595
2488.13.01000.300	300	395	695

Initial spring force
versus charge pressure



Spring force Diagram displacement versus stroke rise

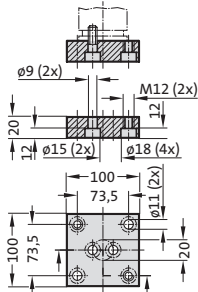


Pressure rise factor accounts for displacement but not external influences!

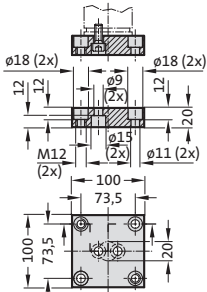
Gas spring HEAVY DUTY

Mounting variations

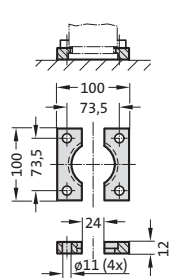
2480.011.01000



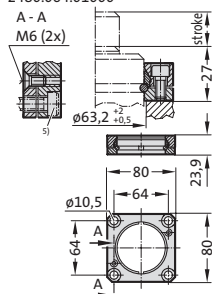
2480.011.01000.2



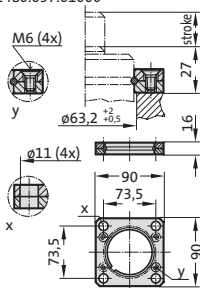
2480.022.01000



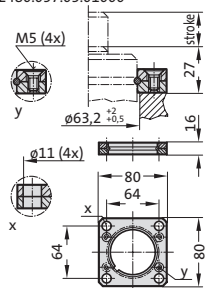
2480.064.01000⁴⁾



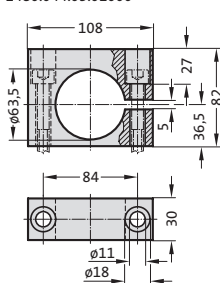
2480.057.01000



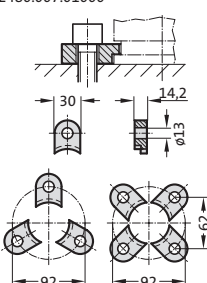
2480.057.03.01000



2480.044.03.01000²⁾



2480.007.01000



Note:

- 2) Attention:
The spring force must be absorbed by the stop surface!
- 4) Square collar flange, non-rotating, fixing for composite connection.
- 5) Machine screws with hexagonal socket (compact head recommended)

Gas spring HEAVY DUTY

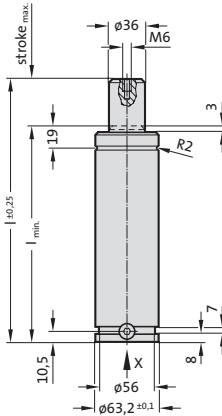
Note:

Initial spring force at 150 bar = 1500 daN

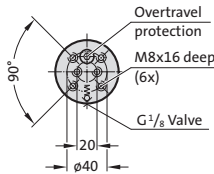
Order No for spare parts kit: 2488.13.01500

Pressure medium: Nitrogen N₂
 Max. filling pressure: 150 bar
 Min. filling pressure: 25 bar
 Working temperature: 0°C to +80°C
 Temperature related force increase: ± 0.3%/°C
 Max. recommended extensions per minute:
 approx. 15 to 100 (at 20°C)
 Max. piston speed: 1.6 m/s

2488.13.01500.



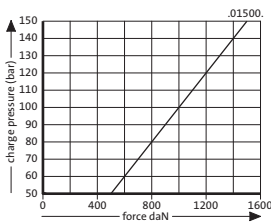
View X



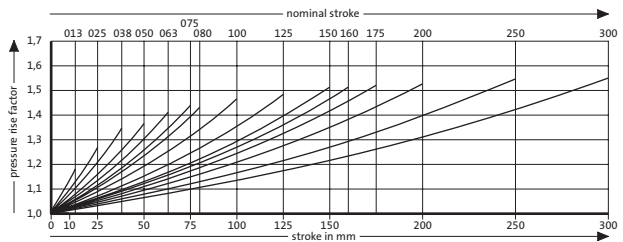
2488.13.01500. Gas spring HEAVY DUTY

Order No	Stroke _{max.}	l _{min.}	l
2488.13.01500.013	13	108	121
2488.13.01500.025	25	120	145
2488.13.01500.038	38	133	171
2488.13.01500.050	50	145	195
2488.13.01500.063	63	158	221
2488.13.01500.075	75	170	245
2488.13.01500.080	80	175	255
2488.13.01500.100	100	195	295
2488.13.01500.125	125	220	345
2488.13.01500.150	150	245	395
2488.13.01500.160	160	255	415
2488.13.01500.175	175	270	445
2488.13.01500.200	200	295	495
2488.13.01500.250	250	345	595
2488.13.01500.300	300	395	695

Initial spring force
versus charge pressure



Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!



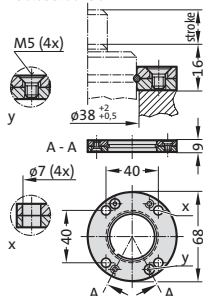
Gas Springs WITH THROUGH BORE PASSAGE

- Temperature upto 80°C

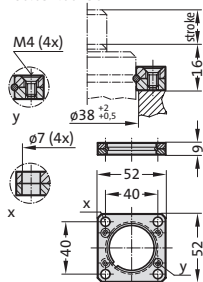
FIBRO Gas Spring with through bore passage

Mounting variations

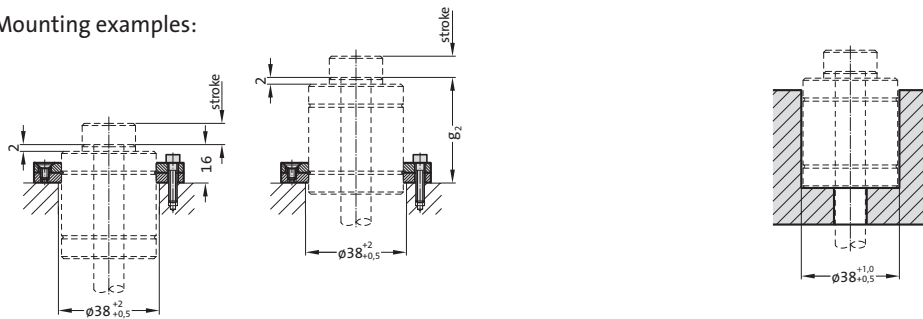
2480.055.00250



2480.057.00250



Mounting examples:



Gas spring with through bore passage

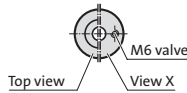
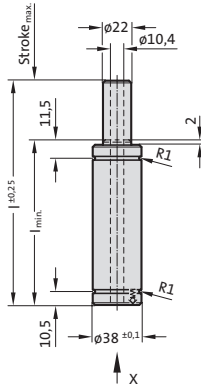
Note:

Initial spring force at 150 bar = 270 daN

Order No for spare parts kit: 2496.12.00270

Pressure medium: Nitrogen N₂
 Max. filling pressure: 150 bar
 Min. filling pressure: 50 bar
 Working temperature: 0°C to +80°C
 Temperature related force increase: ± 0.3%/°C
 Max. recommended extensions per minute: approx. 15 to 40 (at 20°C)
 Max. piston speed: 0.5 m/s

2496.12.00270.

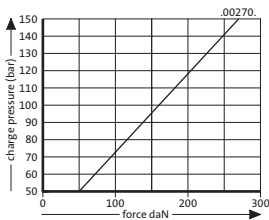


2496.12.00270.
 Gas spring with through bore passage

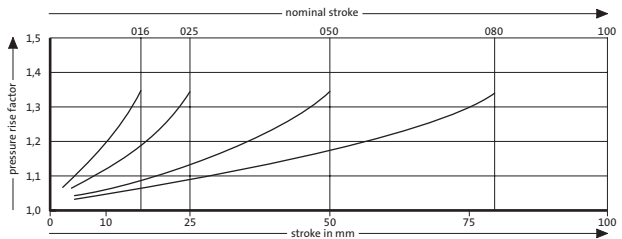
Order No	Stroke _{max.}	l _{min.}	l	g ₂ *
2496.12.00270.016	16	92	108	86
2496.12.00270.025	25	101	126	95
2496.12.00270.050	50	126	176	120
2496.12.00270.080	80	156	236	150

*see mounting example

Initial spring force versus charge pressure



Spring force Diagram displacement versus stroke rise



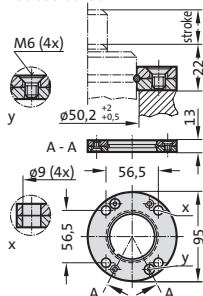
Pressure rise factor accounts for displacement but not external influences!

FIBRO

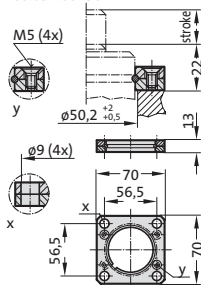
Gas spring with through bore passage

Mounting variations

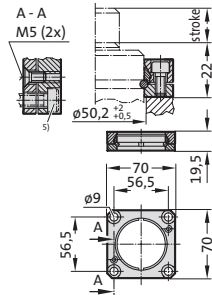
2480.055.00750



2480.057.00750



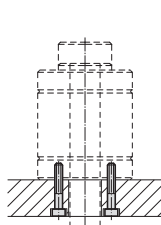
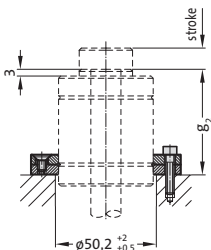
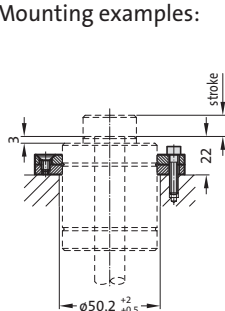
2480.064.00750⁴⁾



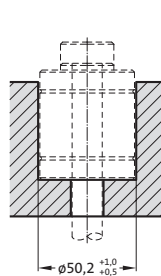
Note:

- ⁴⁾ Square collar flange, non-rotating, fixing for composite connection.
- ⁵⁾ Machine screws with hexagonal socket (compact head recommended)

Mounting examples:



see Note!



Gas spring with through bore passage

Note:

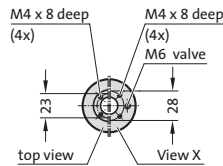
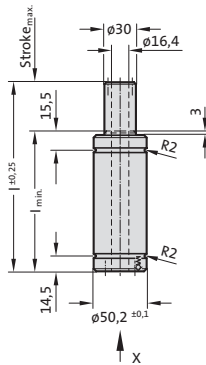
Initial spring force at 150 bar = 490 daN

When mounting to floor, contact over the entire floor of the cylinder tube must be ensured!

Order No for spare parts kit: 2496.12.00490

Pressure medium: Nitrogen N₂
 Max. filling pressure: 150 bar
 Min. filling pressure: 50 bar
 Working temperature: 0°C to +80°C
 Temperature related force increase: ± 0.3%/°C
 Max. recommended extensions per minute: approx. 15 to 40 (at 20°C)
 Max. piston speed: 0.5 m/s

2496.12.00490.

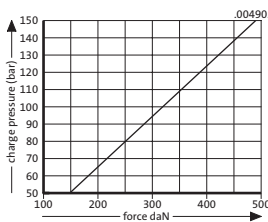


2496.12.00490.
 Gas spring with through bore passage

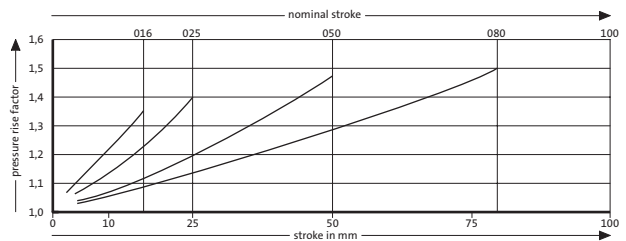
Order No	Stroke _{max.}	l _{min.}	l	g ₂ [*]
2496.12.00490.016	16	96	112	88
2496.12.00490.025	25	105	130	97
2496.12.00490.050	50	130	180	122
2496.12.00490.080	80	160	240	152

*see mounting example

Initial spring force versus charge pressure



Spring force Diagram displacement versus stroke rise

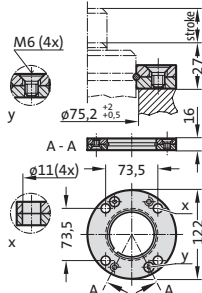


Pressure rise factor accounts for displacement but not external influences!

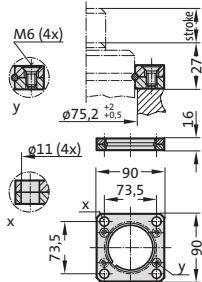
FIBRO Gas Spring with through bore passage

Mounting variations

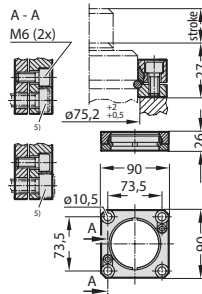
2480.055.01500



2480.057.01500



2480.064.01500⁴⁾

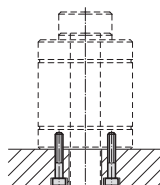
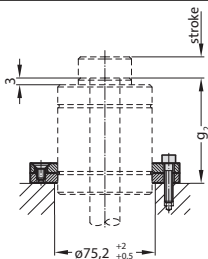
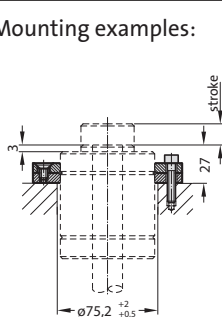


Notes:

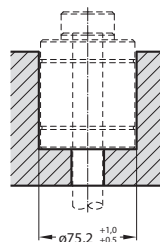
⁴⁾ Square collar flange, non-rotating, fixing for composite connection.

⁵⁾ Machine screws with hexagonal socket (compact head recommended).

Mounting examples:



see Note!



Gas spring with through bore passage

Note:

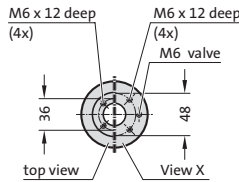
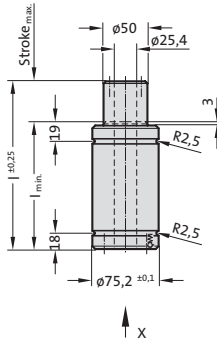
Initial spring force at 150 bar = 1060 daN

When mounting to floor, contact over the entire floor of the cylinder tube must be ensured!

Order No for spare parts kit: 2496.12.01060

Pressure medium: Nitrogen N₂
 Max. filling pressure: 150 bar
 Min. filling pressure: 50 bar
 Working temperature: 0°C to +80°C
 Temperature related force increase: ± 0.3%/°C
 Max. recommended extensions per minute: approx. 15 to 40 (at 20°C)
 Max. piston speed: 0.5 m/s

2496.12.01060.

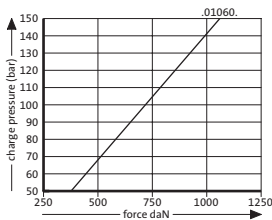


2496.12.01060.
 Gas spring with through bore passage

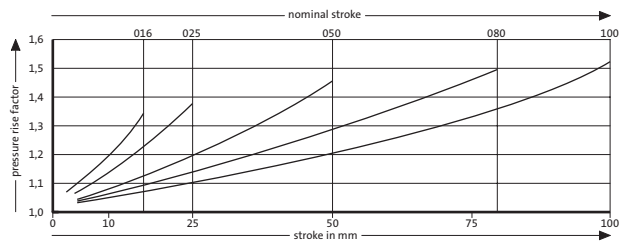
Order No	Stroke _{max.}	l _{min.}	l	g ₂ [*]
2496.12.01060.016	16	106	122	96
2496.12.01060.025	25	115	140	105
2496.12.01060.050	50	140	190	130
2496.12.01060.080	80	170	250	160
2496.12.01060.100	100	190	290	180

*see mounting example

Initial spring force versus charge pressure



Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!