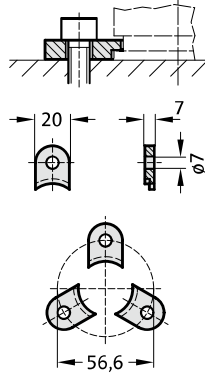


GAS SPRINGS STANDARD

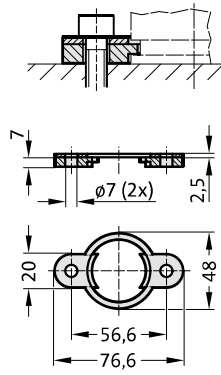


GAS SPRING, STANDARD MOUNTING VARIATIONS

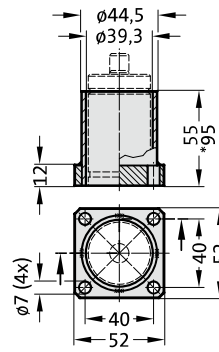
2480.007.00250



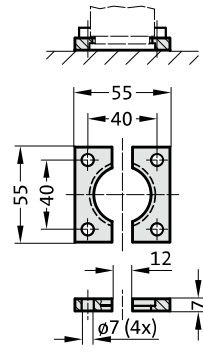
2480.008.00250³⁾



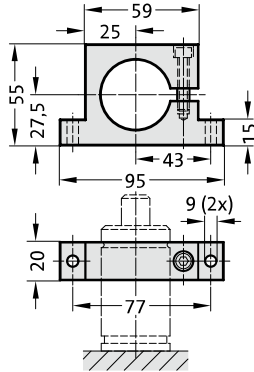
2480.010.00250.055³⁾
2480.010.00250.095³⁾



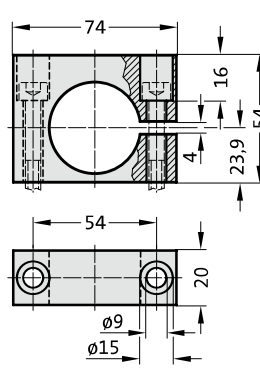
2480.022.00250



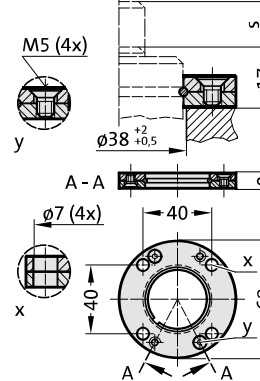
2480.044.00250²⁾



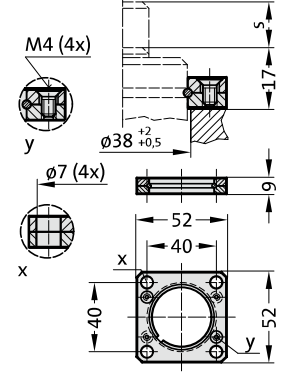
2480.044.03.00250²⁾



2480.055.00250



2480.057.00250



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

Gas spring without valve

Order No (example): 2480.13.00250. .P

Pressure medium: Nitrogen N₂

Max. filling pressure: 150 bar

Min. filling pressure: 50 bar

Working temperature: 0°C to +80°C

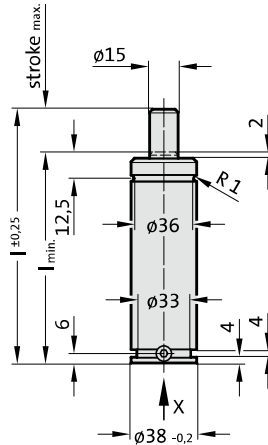
Temperature related force increase: ± 0.3%/°C

Max. recommended extensions per minute:

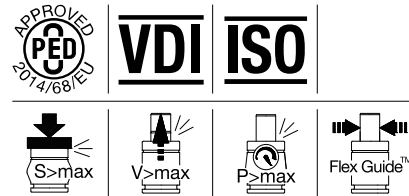
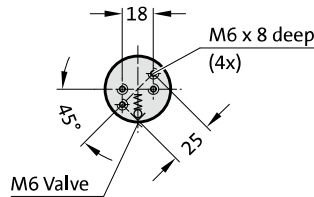
approx. 80 to 100 (at 20°C)

Max. piston speed: 1.6 m/s

2480.13.00250.



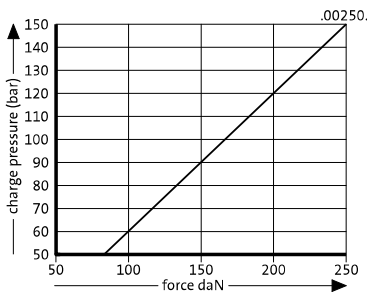
View X



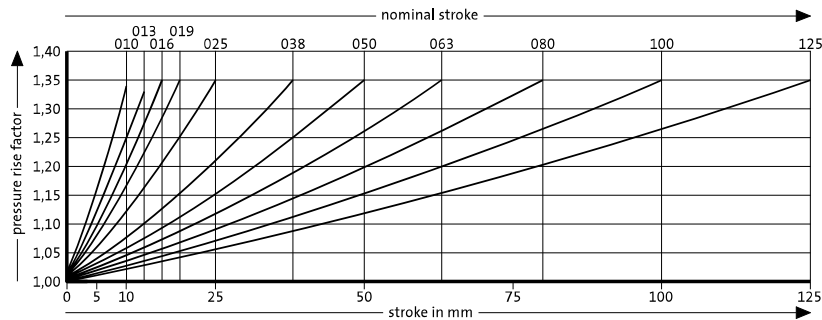
2480.13.00250.
Gas spring, Standard

Order No	Stroke _{max} (s)	I _{min}	I
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



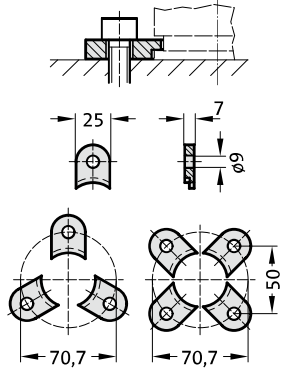
Spring force Diagram displacement versus stroke rise



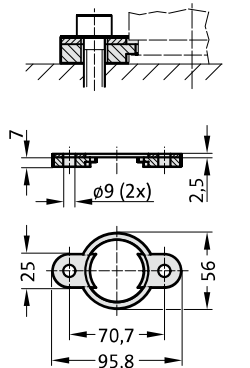
Pressure rise factor accounts for displacement but not external influences!

GAS SPRING, STANDARD MOUNTING VARIATIONS

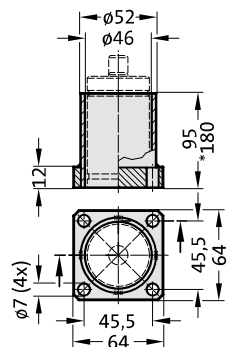
2480.007.00500



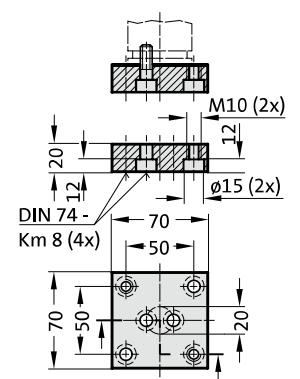
2480.008.00500³⁾



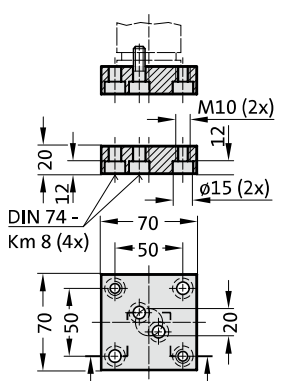
2480.010.00500.095³⁾
2480.010.00500.180*³⁾



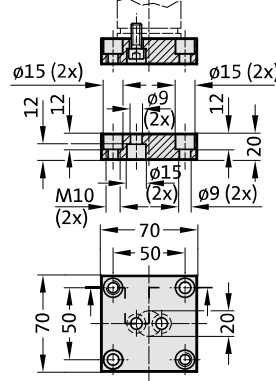
2480.011.00500



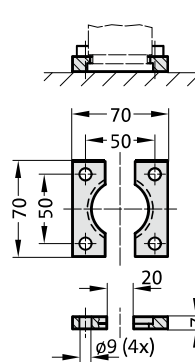
2480.011.00500.1



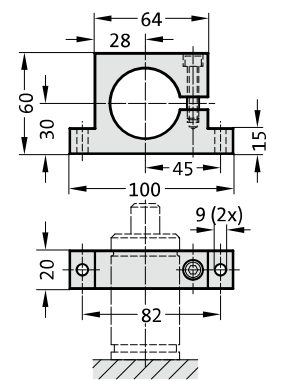
2480.011.00500.2



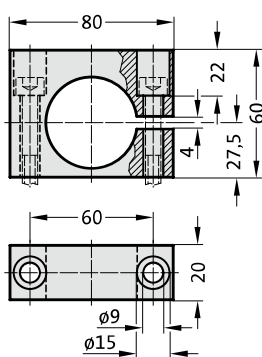
2480.022.00500



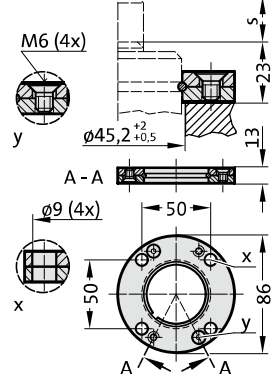
2480.044.00500²⁾



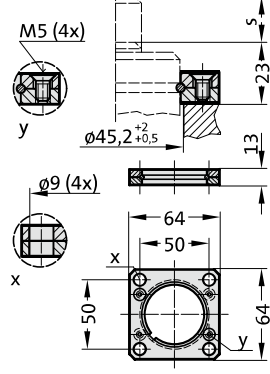
2480.044.03.00500²⁾



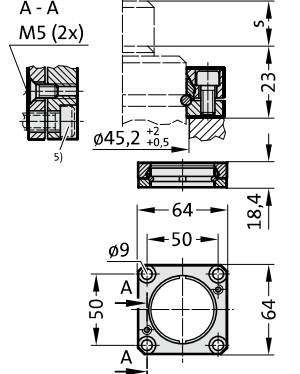
2480.055.00500



2480.057.00500



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)

GAS SPRING, STANDARD

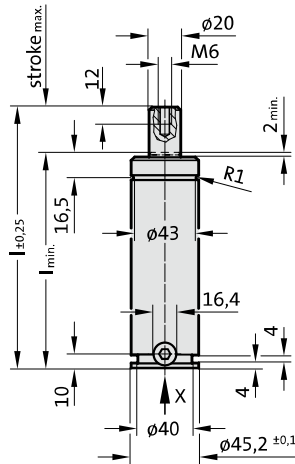
Note:

Initial spring force at 150 bar = 470 daN

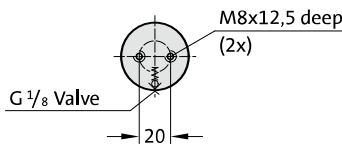
Order No for spare parts kit: 2480.13.00500
 Gas spring without valve
 Order No (example): 2480.13.00500. .P

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.



View X

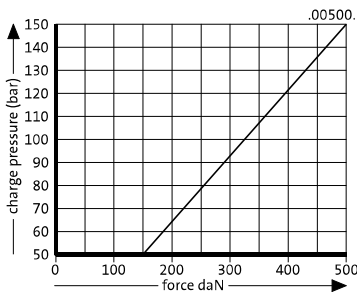


2480.13.00500.

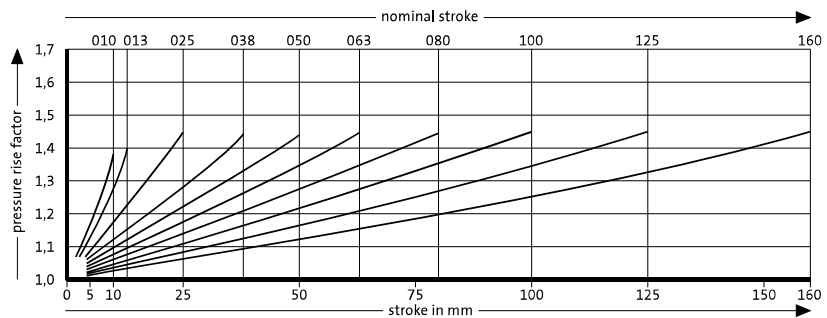
Gas spring, Standard

Order No	Stroke _{max} (s)	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





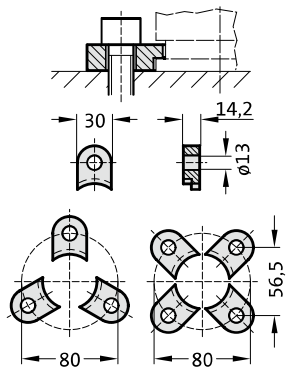
Spring force Diagram displacement versus stroke rise





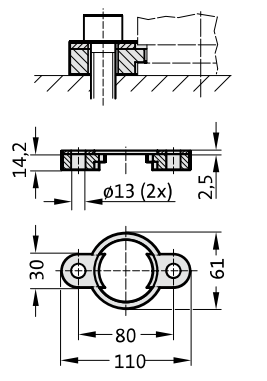
Pressure rise factor accounts for displacement but not external influences!



GAS SPRING, STANDARD MOUNTING VARIATIONS

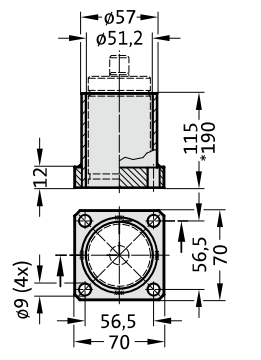
2480.007.00750  





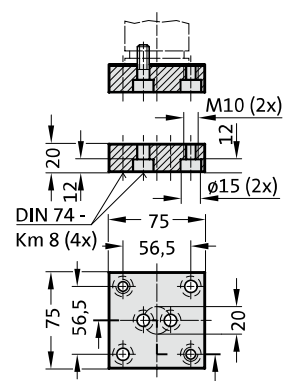
2480.008.00750³⁾  





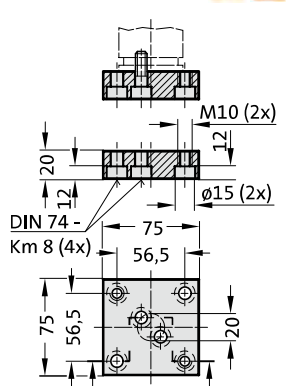
2480.010.00750.115³⁾  
2480.010.00750.190*³⁾




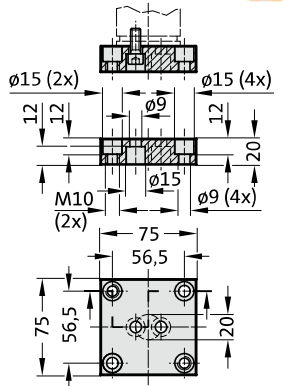
2480.011.00750  





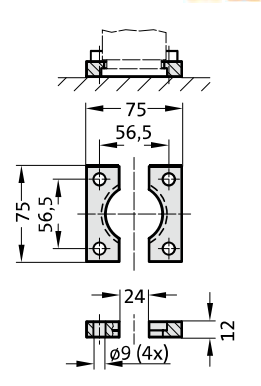
2480.011.00750.1  





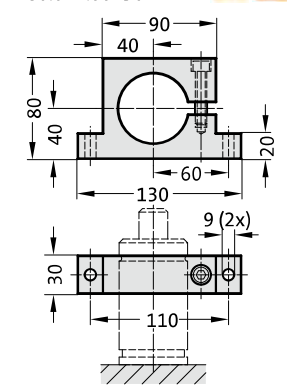
2480.011.00750.3 





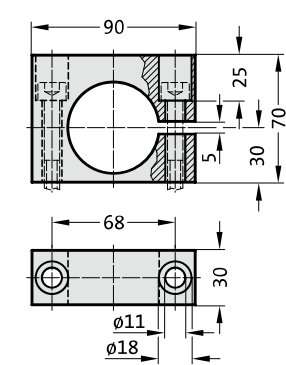
2480.022.00750  





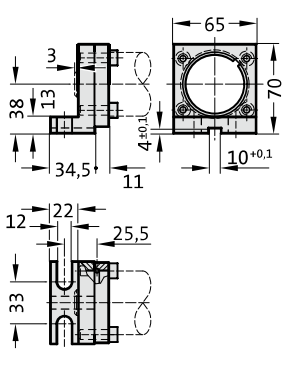
2480.044.00750²⁾  





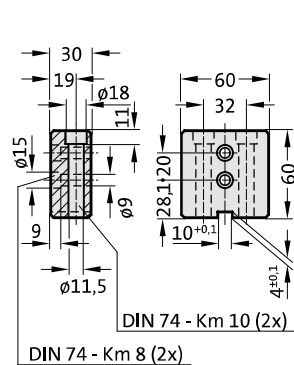
2480.044.03.00750²⁾  





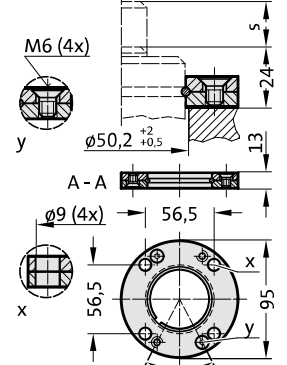
2480.045.00750²⁾  





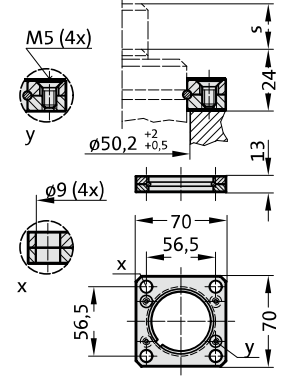
2480.047.00750²⁾  





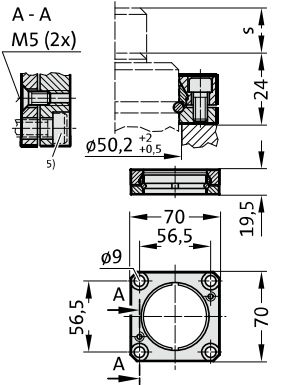
2480.055.00750  



2480.057.00750  



2480.064.00750⁴⁾  



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 = 750 daN

Order No for spare parts kit: 2480.13.00750
 Order No for spare parts kit: to Renault standard EM24.54.700 2480.13.00750.R

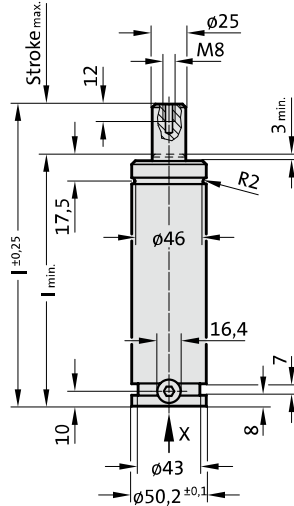
Gas spring without valve
 Order No (example): 2480.13.00750. .P

Gas spring to Renault standard EM24.54.700
 Order No (example): 2480.13.00750. .R
 Gas spring to Renault standard EM24.54.700 without valve
 Order No (example): 2480.13.00750. .R.P

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

2480.13.00750.

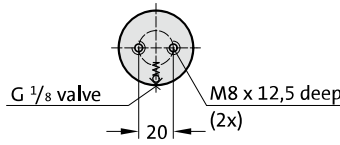


APPROVED PED 2014/68/EU VDI ISO

S>max V>max P>max Flex Guide™

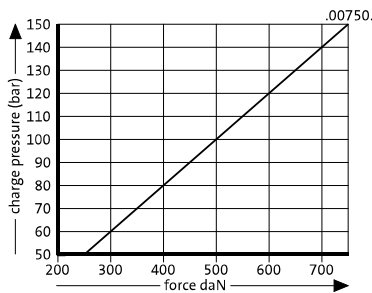
2480.13.00750.
Gas spring, Standard

View X - Gas spring

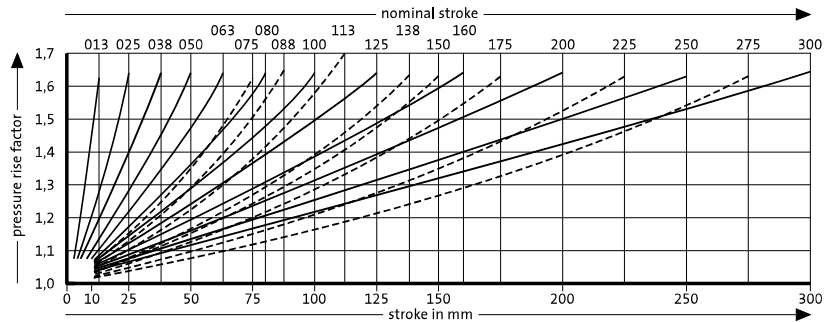


Order No	Stroke _{max} (s)	I _{min}	I
2480.13.00750.013	12.7	107.7	120.4
2480.13.00750.025	25	120	145
2480.13.00750.038	38.1	133.1	171.2
2480.13.00750.050	50	145	195
2480.13.00750.063	63.5	158.5	222
2480.13.00750.075 1)	75	170	245
2480.13.00750.080	80	175	255
2480.13.00750.088 1)	87.5	182.5	270
2480.13.00750.100	100	195	295
2480.13.00750.113 1)	112.5	207.5	320
2480.13.00750.125	125	220	345
2480.13.00750.138 1)	137.5	232.5	370
2480.13.00750.150 1)	150	245	395
2480.13.00750.160	160	255	415
2480.13.00750.175 1)	175	270	445
2480.13.00750.200	200	295	495
2480.13.00750.225 1)	225	320	545
2480.13.00750.250	250	345	595
2480.13.00750.275	275	370	645
2480.13.00750.300	300	395	695

Initial spring force versus charge pressure



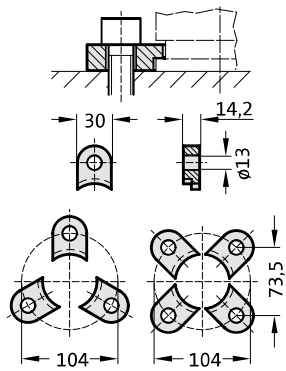
Spring force Diagram displacement versus stroke rise



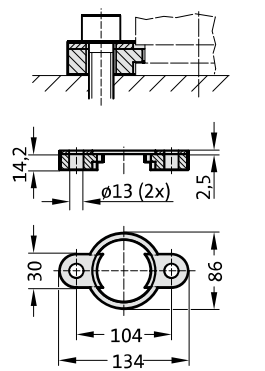
Pressure rise factor accounts for displacement but not external influences!

GAS SPRING, STANDARD MOUNTING VARIATIONS

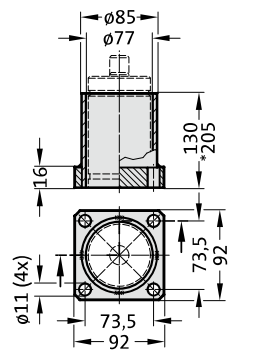
2480.007.01500



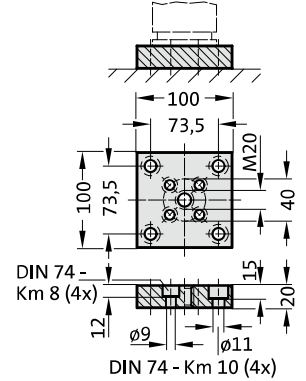
2480.008.01500³⁾



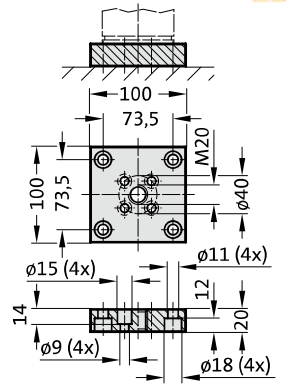
2480.010.01500.130³⁾
2480.010.01500.205³⁾



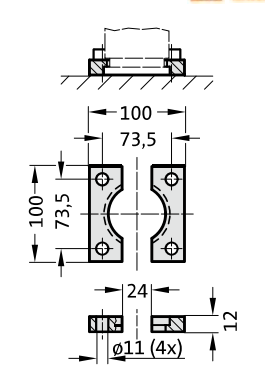
2480.011.01500



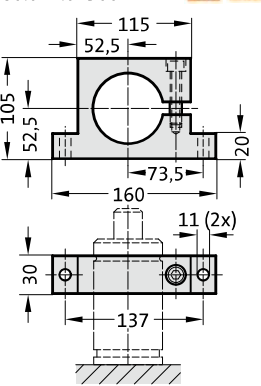
2480.011.01500.2



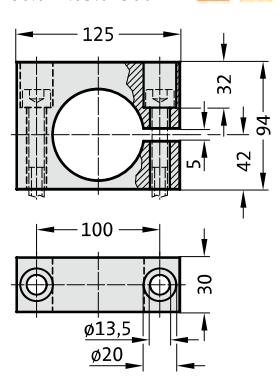
2480.022.01500



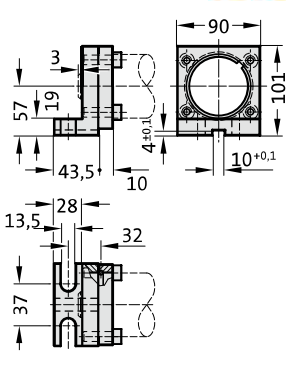
2480.044.01500²⁾



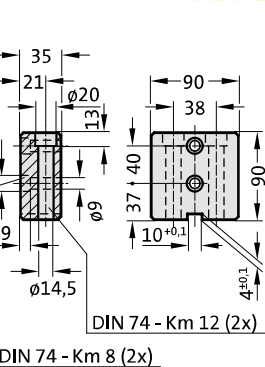
2480.044.03.01500²⁾



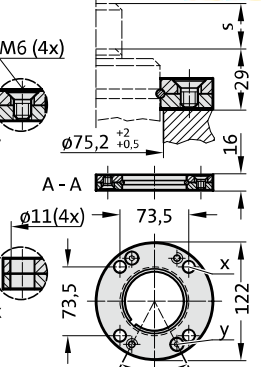
2480.045.01500²⁾



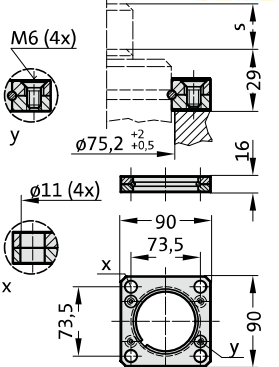
2480.047.01500²⁾



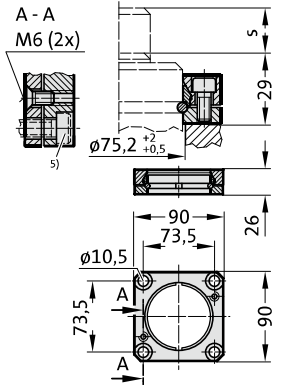
2480.055.01500



2480.057.01500



2480.064.01500⁴⁾



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

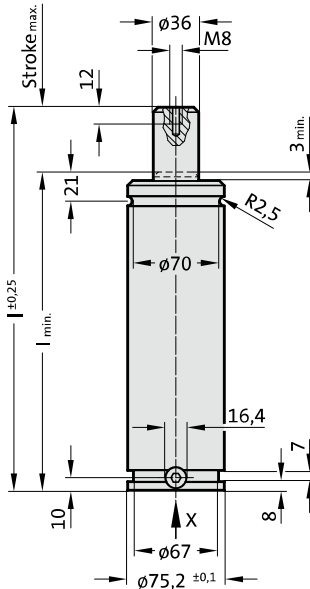
Gas spring without valve
 Order No (example): 2480.13.01500. .P

Gas spring to Renault standard EM24.54.700
 Order No (example): 2480.12.01500. .R
 Gas spring to Renault standard EM24.54.700 without valve
 Order No (example): 2480.13.01500. .R.P

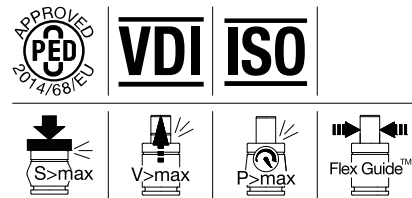
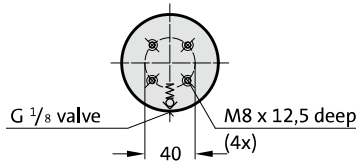
1) Special stroke lengths
 Not for gas springs to Renault Standard EM24.54.700.

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.



View X - Gas spring

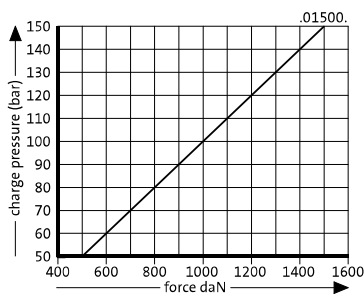


2480.12.01500.

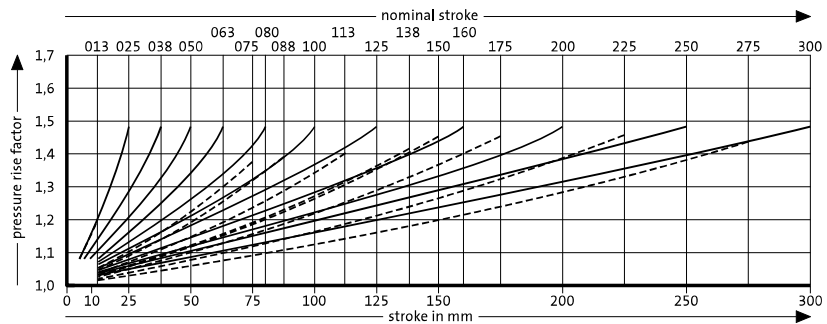
Gas spring, Standard

Order No	Stroke _{max} (s)	l _{min}	l
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





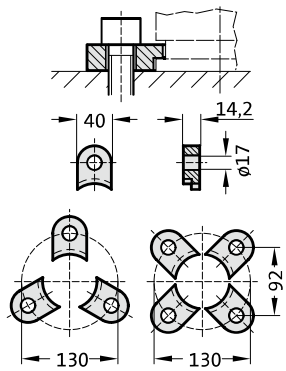
Spring force Diagram displacement versus stroke rise





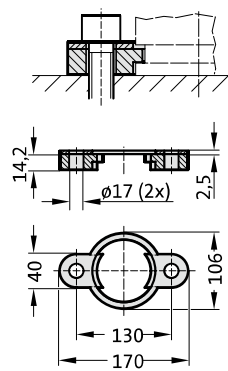
Pressure rise factor accounts for displacement but not external influences!



GAS SPRING, STANDARD MOUNTING VARIATIONS

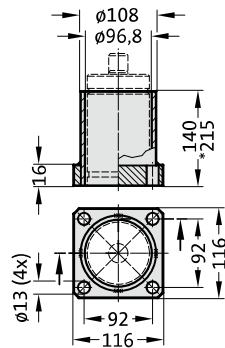
2480.007.03000  





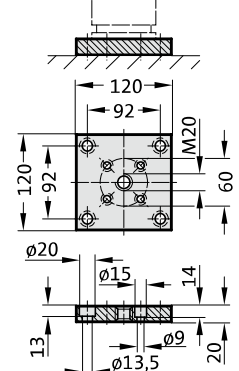
2480.008.03000³⁾  




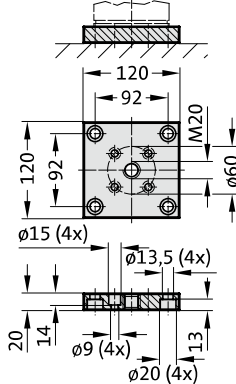
2480.010.03000.140³⁾  
2480.010.03000.215³⁾





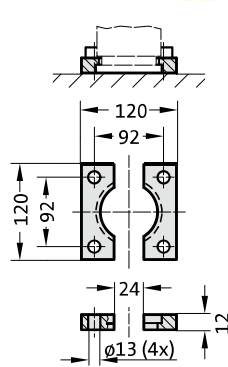
2480.011.03000  





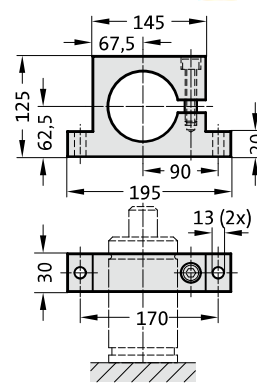
2480.011.03000.2 





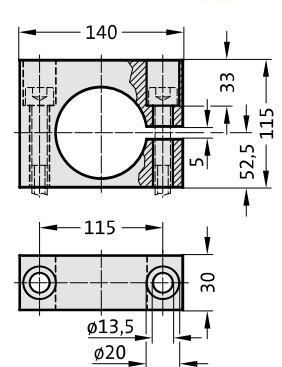
2480.022.03000  





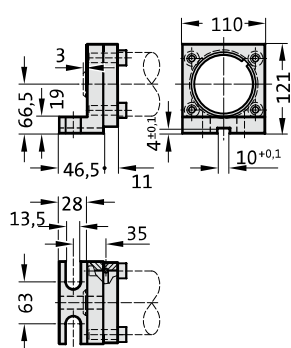
2480.044.03000²⁾  





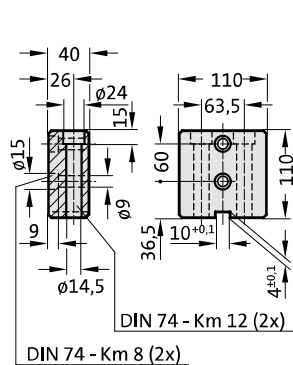
2480.044.03.03000²⁾  





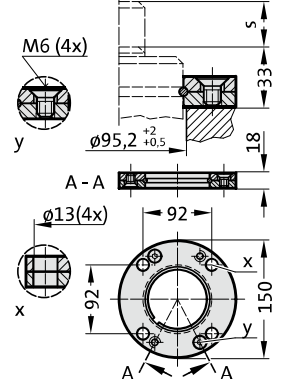
2480.045.03000²⁾  





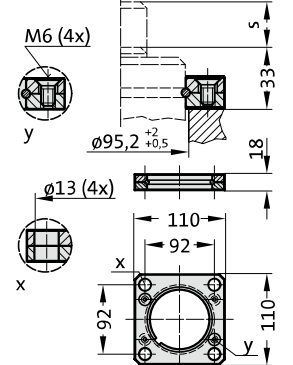
2480.047.03000²⁾  





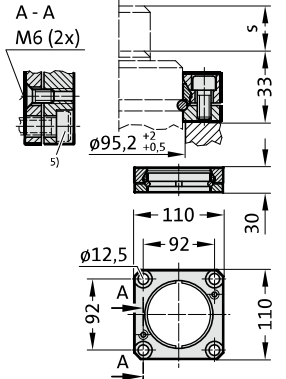
2480.055.03000  



2480.057.03000  



2480.064.03000⁴⁾  



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 = 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

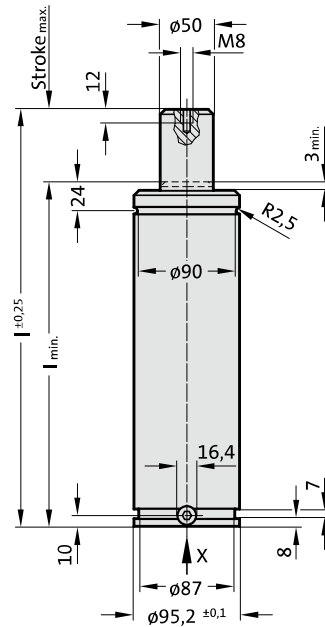
Gas spring without valve
 Order No (example): 2480.13.03000. .P

Gas spring to Renault standard EM24.54.700
 Order No (example): 2480.13.03000. .R
 Gas spring to Renault standard EM24.54.700 without valve
 Order No (example): 2480.13.03000. .R.P

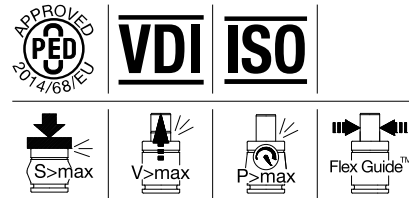
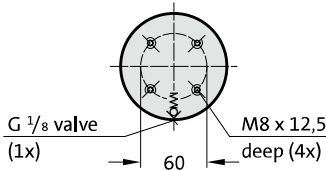
1) Special stroke lengths
 Not for gas springs to Renault Standard EM24.54.700.

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.



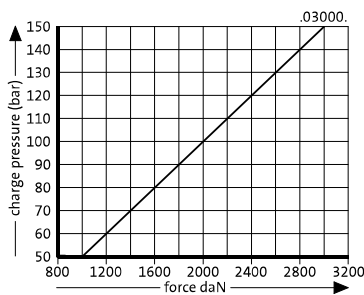
View X - Gas spring



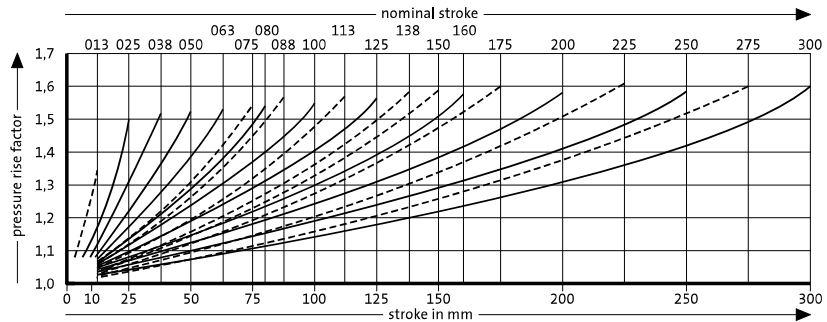
2480.13.03000.
Gas spring, Standard

Order No	Stroke _{max.} (s)	l _{min.}	l
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
2480.13.03000.088.11)		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



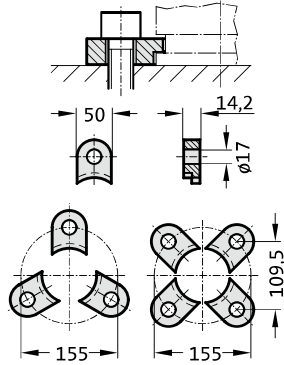
Spring force Diagram displacement versus stroke rise



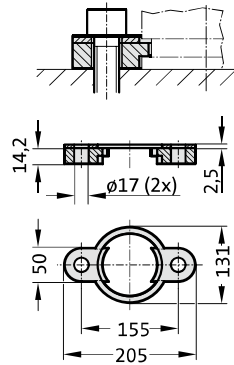
Pressure rise factor accounts for displacement but not external influences!

GAS SPRING, STANDARD MOUNTING VARIATIONS

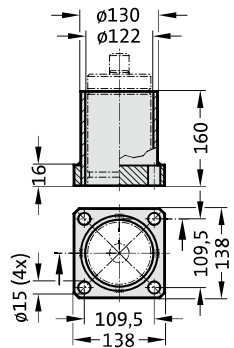
2480.007.05000



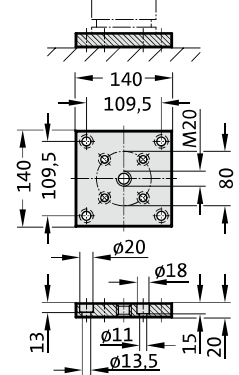
2480.008.05000³⁾



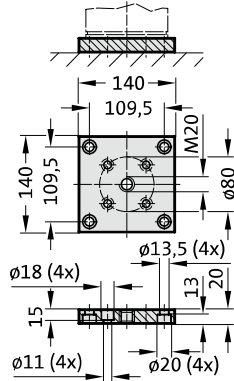
2480.010.05000.160³⁾



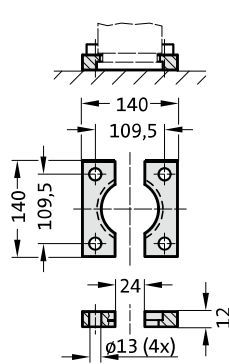
2480.011.05000



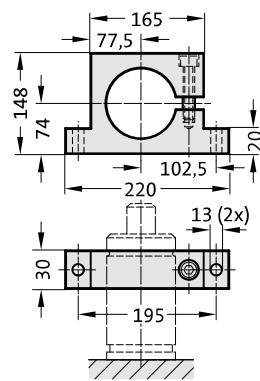
2480.011.05000.2



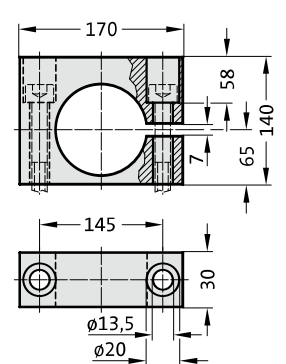
2480.022.05000



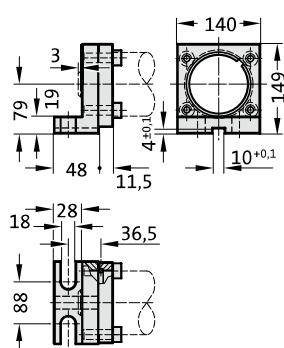
2480.044.05000²⁾



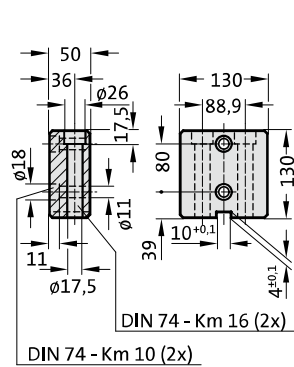
2480.044.03.05000²⁾



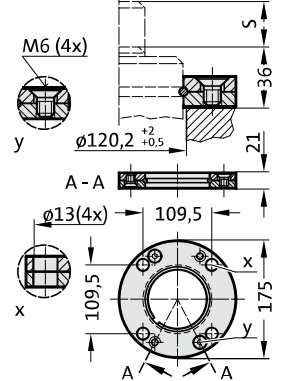
2480.045.05000²⁾



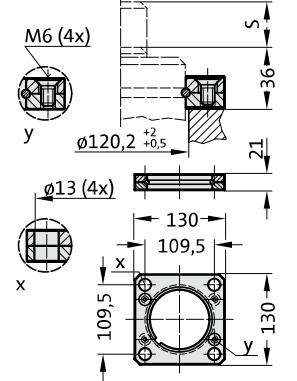
2480.047.05000²⁾



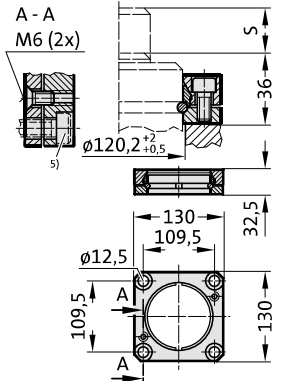
2480.055.05000



2480.057.05000



2480.064.05000⁴⁾



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 = 5000 daN

Order No for spare parts kit: 2480.13.05000
 Order No for spare parts kit: to Renault standard EM24.54.700 2480.13.05000.R

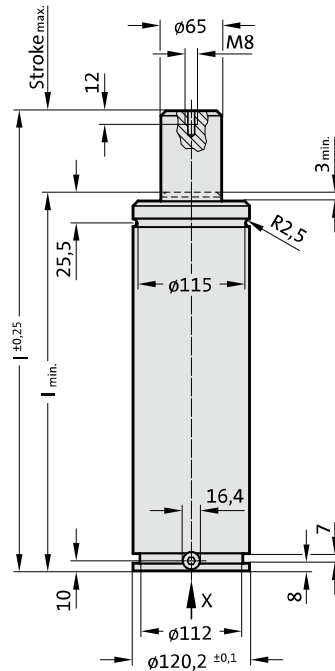
Gas spring without valve
 Order No (example): 2480.13.05000. .P

Gas spring to Renault standard EM24.54.700
 Order No (example): 2480.13.05000. .R
 Gas spring to Renault standard EM24.54.700 without valve
 Order No (example): 2480.13.05000. .R.P

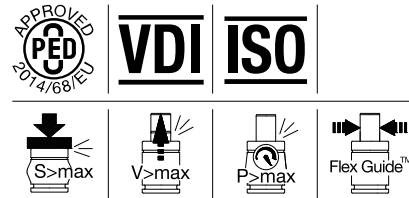
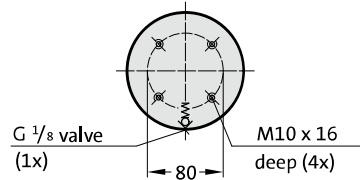
1) Special stroke lengths
 Not for gas springs to Renault Standard EM24.54.700.

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

2480.13.05000.



View X - Gas spring

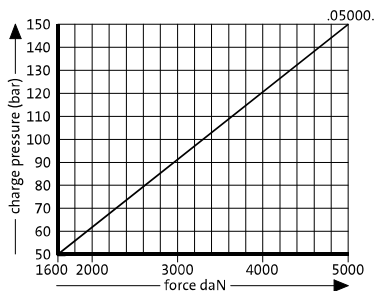


2480.13.05000.

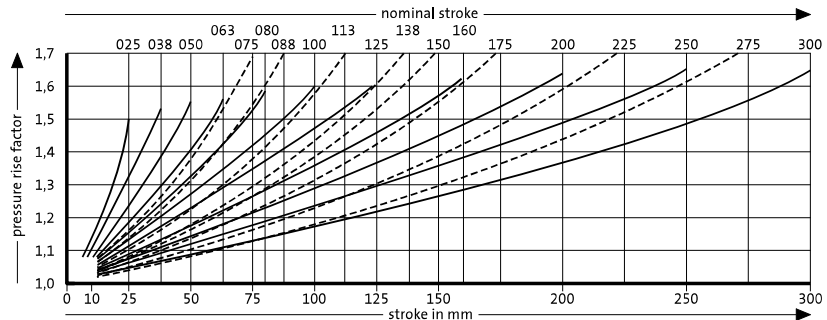
Gas spring, Standard

Order No	Stroke _{max.} (s)	l _{min.}	l
2480.13.05000.025	25	165	190
2480.13.05000.038	38.1	178.1	216.2
2480.13.05000.050	50	190	240
2480.13.05000.063	63.5	203.5	267
2480.13.05000.075 1)	75	215	290
2480.13.05000.080	80	220	300
2480.13.05000.088 1)	87.5	227.5	315
2480.13.05000.100.	100	240	340
2480.13.05000.113. 1)	112.5	252.5	365
2480.13.05000.125.	125	265	390
2480.13.05000.138. 1)	137.5	277.5	415
2480.13.05000.150. 1)	150	290	440
2480.13.05000.160.	160	300	460
2480.13.05000.175. 1)	175	315	490
2480.13.05000.200.	200	340	540
2480.13.05000.225. 1)	225	365	590
2480.13.05000.250.	250	390	640
2480.13.05000.275. 1)	275	415	690
2480.13.05000.300.	300	440	740

Initial spring force versus charge pressure



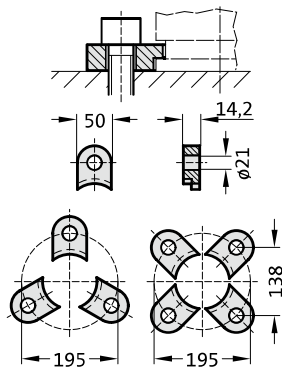
Spring force Diagram displacement versus stroke rise



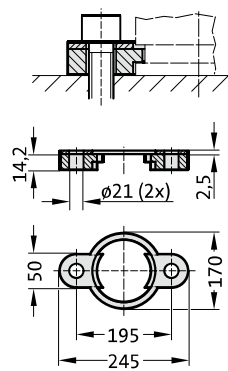
Pressure rise factor accounts for displacement but not external influences!

GAS SPRING, STANDARD MOUNTING VARIATIONS

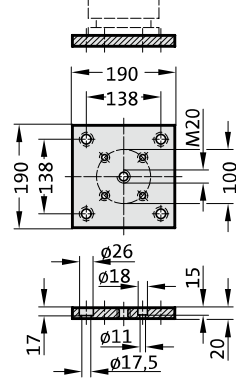
2480.007.07500



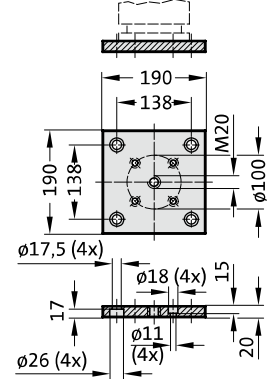
2480.008.07500³⁾



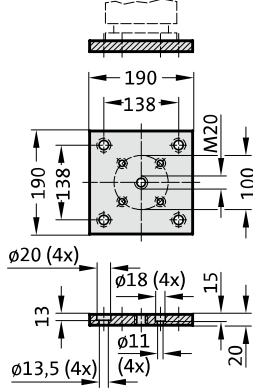
2480.011.07500



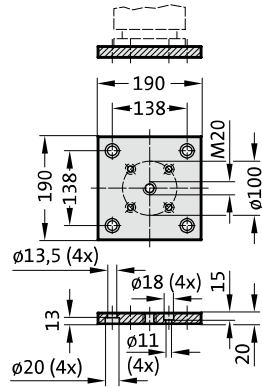
2480.011.07500.2



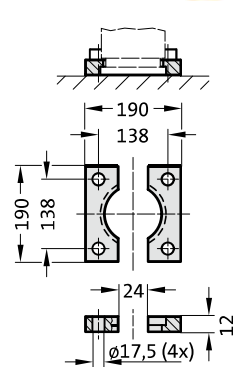
2480.011.03.07500



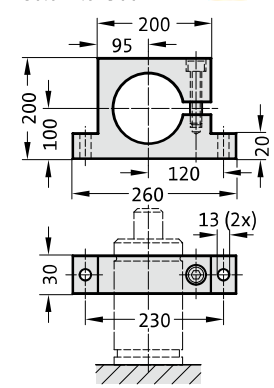
2480.011.03.07500.2



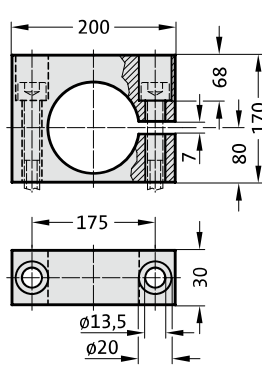
2480.022.07500



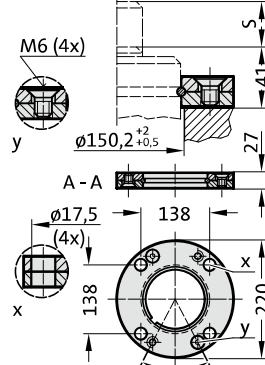
2480.044.07500²⁾



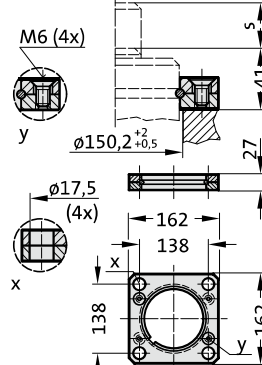
2480.044.03.07500²⁾



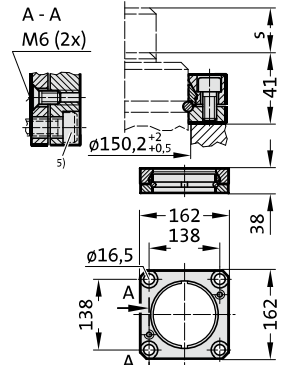
2480.055.07500



2480.057.07500



2480.064.07500⁴⁾



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 = 7500 daN

Order No for spare parts kit: 2480.13.07500
 Order No for spare parts kit: to Renault standard EM24.54.700 2480.13.07500.R

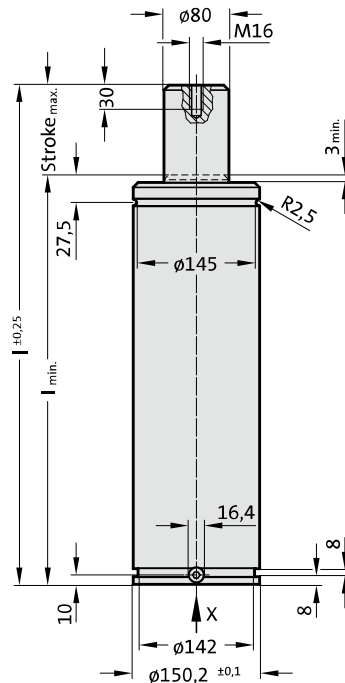
Gas spring without valve
 Order No (example): 2480.13.07500. .P

Gas spring to Renault standard EM24.54.700
 Order No (example): 2480.13.07500. .R
 Gas spring to Renault standard EM24.54.700 without valve
 Order No (example): 2480.13.07500. .R.P

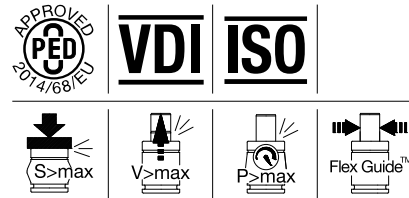
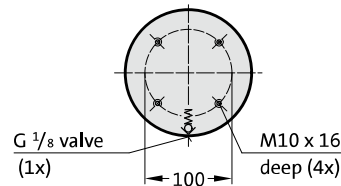
1) Special stroke lengths
 Not for gas springs to Renault Standard EM24.54.700.

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

2480.13.07500.



View X - Gas spring

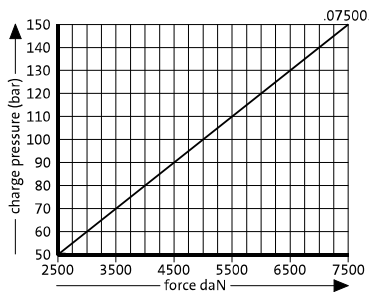


2480.13.07500.

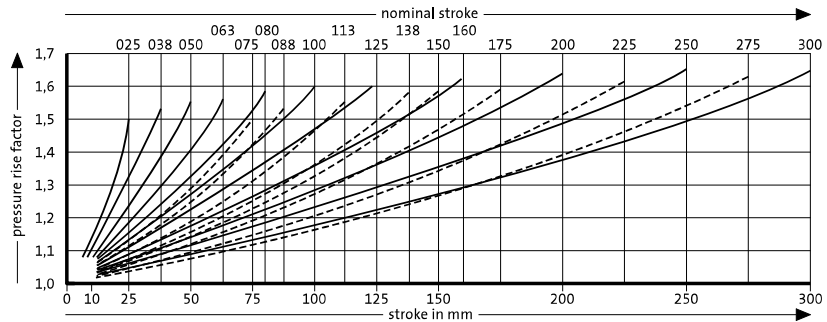
Gas spring, Standard

Order No	Stroke _{max.} (s)	l _{min.}	l
2480.13.07500.025	25	180	205
2480.13.07500.038	38.1	193.1	231.2
2480.13.07500.050	50	205	255
2480.13.07500.063	63.5	218.5	282
2480.13.07500.075 1)	75	230	305
2480.13.07500.080	80	235	315
2480.13.07500.088 1)	87.5	242.5	330
2480.13.07500.100.	100	255	355
2480.13.07500.113. 1)	112.5	267.5	380
2480.13.07500.125.	125	280	405
2480.13.07500.138. 1)	137.5	292.5	430
2480.13.07500.150. 1)	150	305	455
2480.13.07500.160.	160	315	475
2480.13.07500.175. 1)	175	330	505
2480.13.07500.200.	200	355	555
2480.13.07500.225. 1)	225	380	605
2480.13.07500.250.	250	405	655
2480.13.07500.275. 1)	275	430	705
2480.13.07500.300.	300	455	755

Initial spring force versus charge pressure



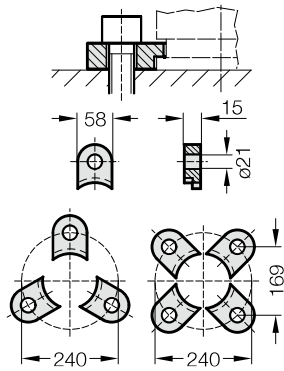
Spring force Diagram displacement versus stroke rise



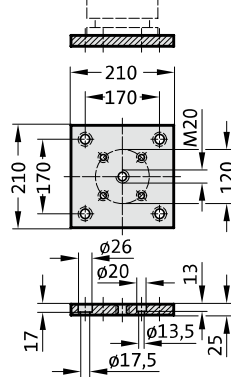
Pressure rise factor accounts for displacement but not external influences!

GAS SPRING, STANDARD MOUNTING VARIATIONS

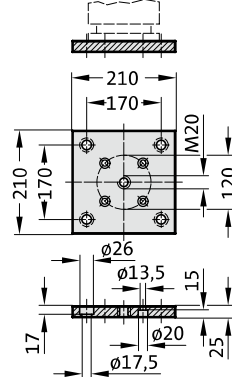
2480.007.10000



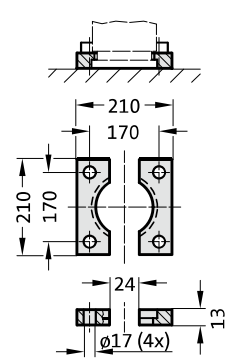
2480.011.10000



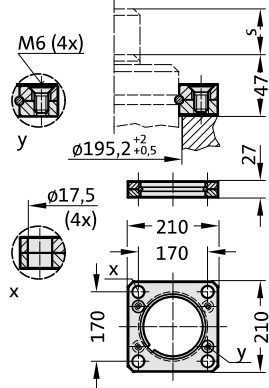
2480.011.10000.2



2480.022.10000



2480.057.10000



GAS SPRING, STANDARD

Note:

Initial spring force at 150 bar = 10000 daN

Order No for spare parts kit: 2480.12.10000

Gas spring without valve

Order No (example): 2480.12.10000..P

Gas spring to Renault standard EM24.54.700

Order No (example): 2480.12.10000..R

Gas spring to Renault standard EM24.54.700 without valve

Order No (example): 2480.12.10000..R.P

Pressure medium: Nitrogen N₂

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

Working temperature: 0°C to +80°C

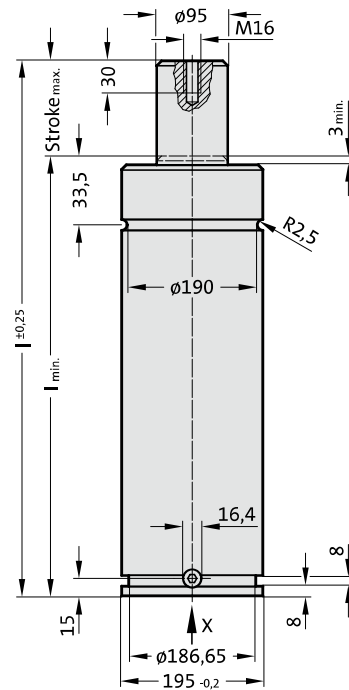
Temperature related force increase: ± 0.3%/°C

Max. recommended extensions per minute:

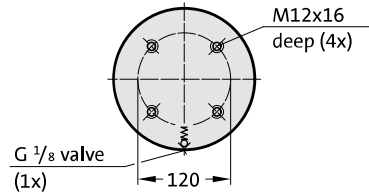
approx. 15 to 40 (at 20°C)

Max. piston speed: 1.6 m/s

2480.12.10000.



View X - Gas spring

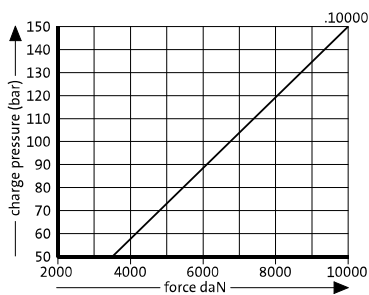


2480.12.10000.

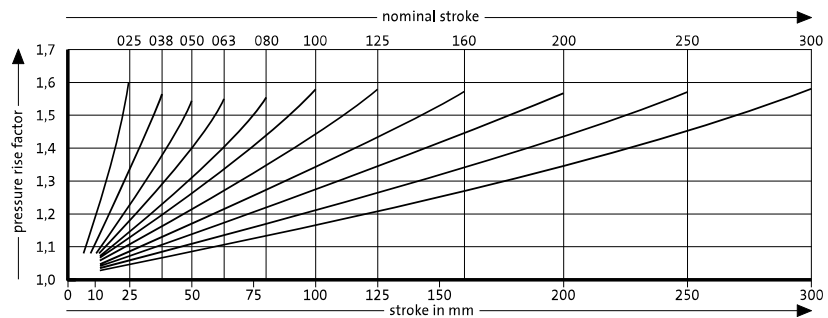
Gas spring, Standard

Order No	Stroke _{max.} (s)	I _{min.}	I
2480.12.10000.025	25	185	210
2480.12.10000.038	38.1	198.1	236.2
2480.12.10000.050	50	210	260
2480.12.10000.063	63.5	223.5	287
2480.12.10000.080	80	240	320
2480.12.10000.100	100	260	360
2480.12.10000.125	125	285	410
2480.12.10000.160	160	320	480
2480.12.10000.200	200	360	560
2480.12.10000.250	250	410	660
2480.12.10000.300	300	460	760

Initial spring force versus charge pressure



Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!