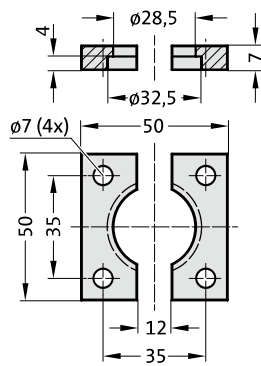


# GAS SPRINGS POWERLINE, WITH REINFORCED SPRING BASE

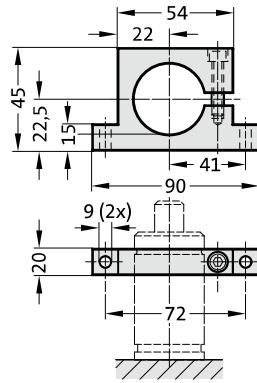


# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE MOUNTING VARIATIONS

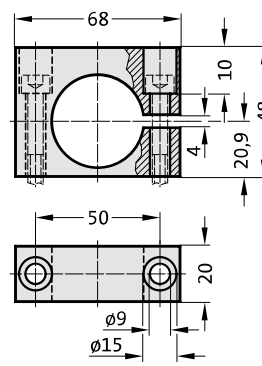
2480.022.00150



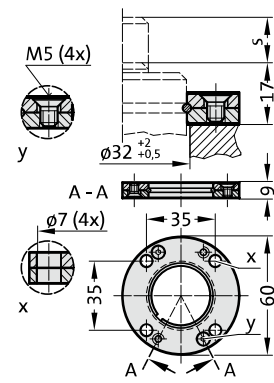
2480.044.00150<sup>2)</sup>



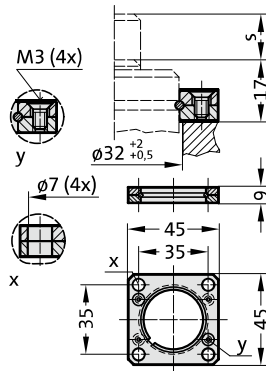
2480.044.03.00150<sup>2)</sup>



2480.055.00150



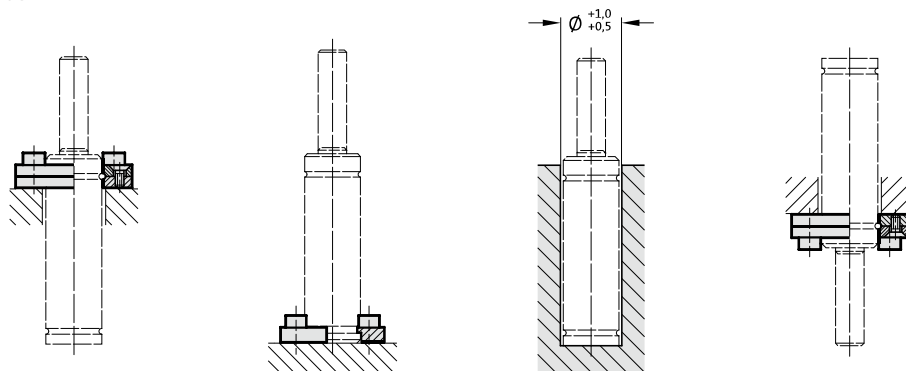
2480.057.00150



## Note:

<sup>2)</sup> Attention:  
The spring force must be absorbed by the stop Surface!

## Mounting examples:



# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE

**Note:**

Initial spring force at 180 bar = 350 daN

Order No for spare parts kit: 2487.12.00350

Pressure medium: Nitrogen N<sub>2</sub>

Max. filling pressure: 180 bar

Min. filling pressure: 25 bar

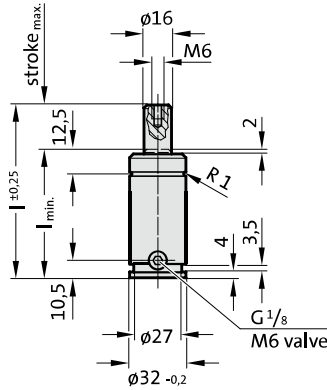
Working temperature: 0°C to +80°C

Temperature related force increase: ± 0.3%/°C

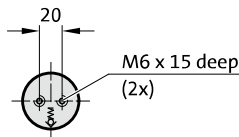
Max. recommended extensions per minute: approx. 20 to 100 (at 20°C)

Max. piston speed: 1.6 m/s

2487.12.33.00350.



View X

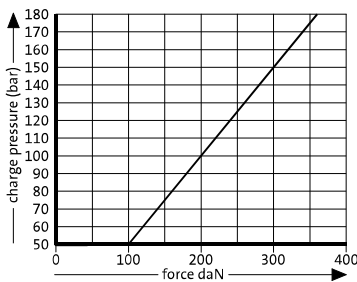


2487.12.33.00350.

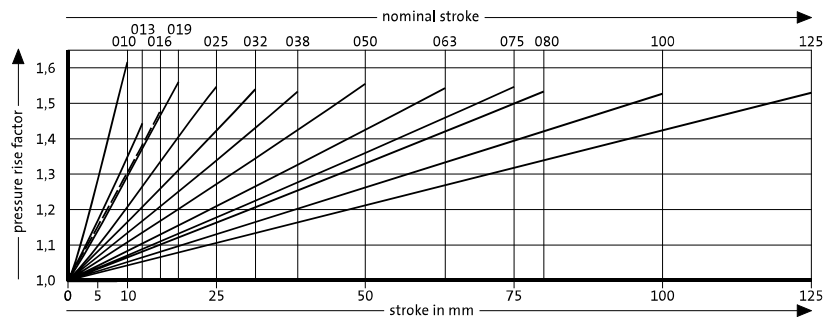
**Gas spring POWERLINE with reinforced spring base**

Order No	Stroke <sub>max.</sub> (s)	l <sub>min.</sub>	l
2487.12.33.00350.010	10	50	60
2487.12.33.00350.013	13	53	66
2487.12.33.00350.016	16	56	72
2487.12.33.00350.019	19	59	78
2487.12.33.00350.025	25	65	90
2487.12.33.00350.032	32	72	104
2487.12.33.00350.038	38	78	116
2487.12.33.00350.050	50	90	140
2487.12.33.00350.063	63	103	166
2487.12.33.00350.075	75	115	190
2487.12.33.00350.080	80	120	200
2487.12.33.00350.100	100	140	240
2487.12.33.00350.125	125	165	290

Initial spring force versus charge pressure



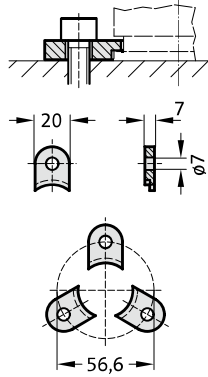
Spring force Diagram displacement versus stroke rise



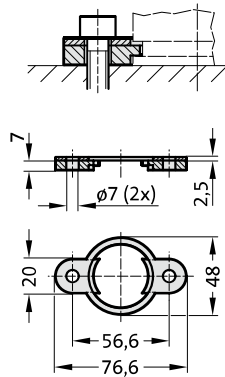
Pressure rise factor accounts for displacement but not external influences!

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE MOUNTING VARIATIONS

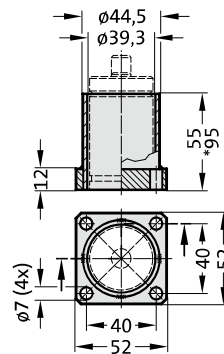
2480.007.00250



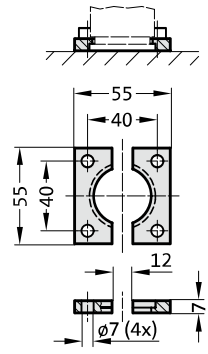
2480.008.00250<sup>3)</sup>



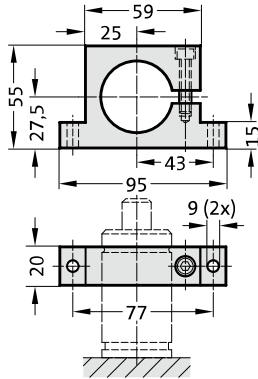
2480.010.00250.055<sup>3)</sup>  
2480.010.00250.095<sup>3)</sup>



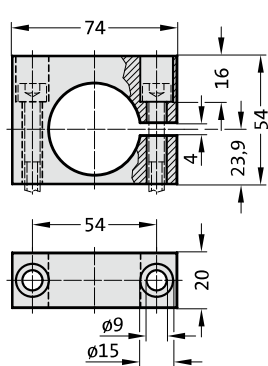
2480.022.00250



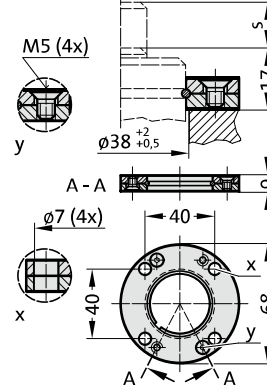
2480.044.00250<sup>2)</sup>



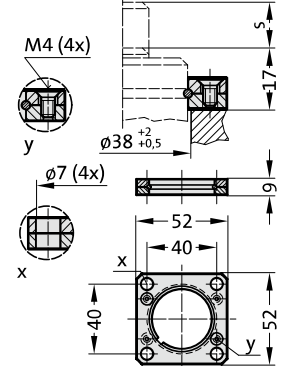
2480.044.03.00250<sup>2)</sup>



2480.055.00250



2480.057.00250



## Note:

- <sup>2)</sup> Attention:  
The spring force must be absorbed by the stop Surface!
- <sup>3)</sup> Not for use with composite connection.

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE

**Note:**

Initial spring force at 150 bar = 470 daN

Order No for spare parts kit: 2487.12.00500

Pressure medium: Nitrogen N<sub>2</sub>

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

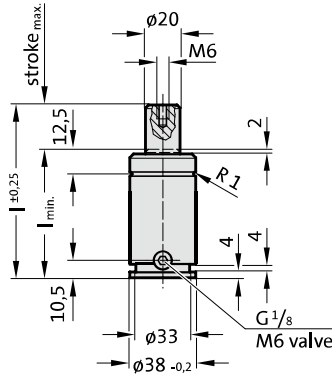
Working temperature: 0°C to +80°C

Temperature related force increase: ± 0.3%/°C

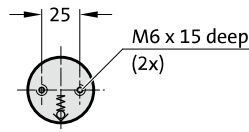
Max. recommended extensions per minute: approx. 20 to 100 (at 20°C)

Max. piston speed: 1,6 m/s

2487.12.33.00500.



View X

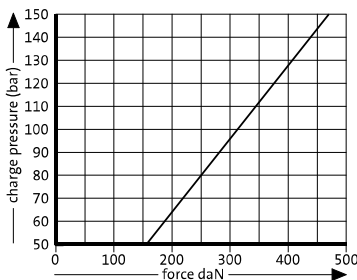


2487.12.33.00500.

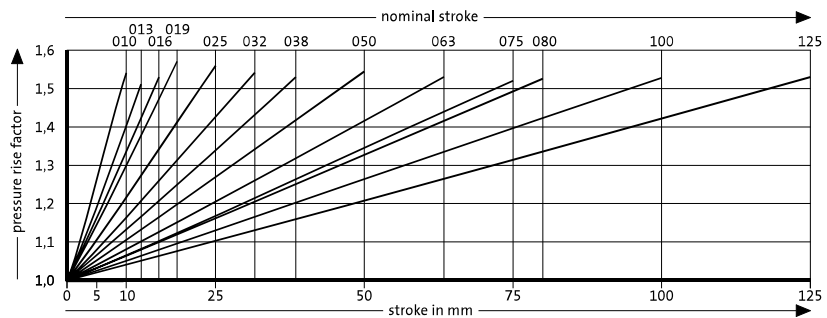
**Gas spring POWERLINE with reinforced spring base**

Order No	Stroke <sub>max.</sub> (s)	l <sub>min.</sub>	l
2487.12.33.00500.010	10	50	60
2487.12.33.00500.013	13	53	66
2487.12.33.00500.016	16	56	72
2487.12.33.00500.019	19	59	78
2487.12.33.00500.025	25	65	90
2487.12.33.00500.032	32	72	104
2487.12.33.00500.038	38	78	116
2487.12.33.00500.050	50	90	140
2487.12.33.00500.063	63	103	166
2487.12.33.00500.075	75	115	190
2487.12.33.00500.080	80	120	200
2487.12.33.00500.100	100	140	240
2487.12.33.00500.125	125	165	290

Initial spring force versus charge pressure

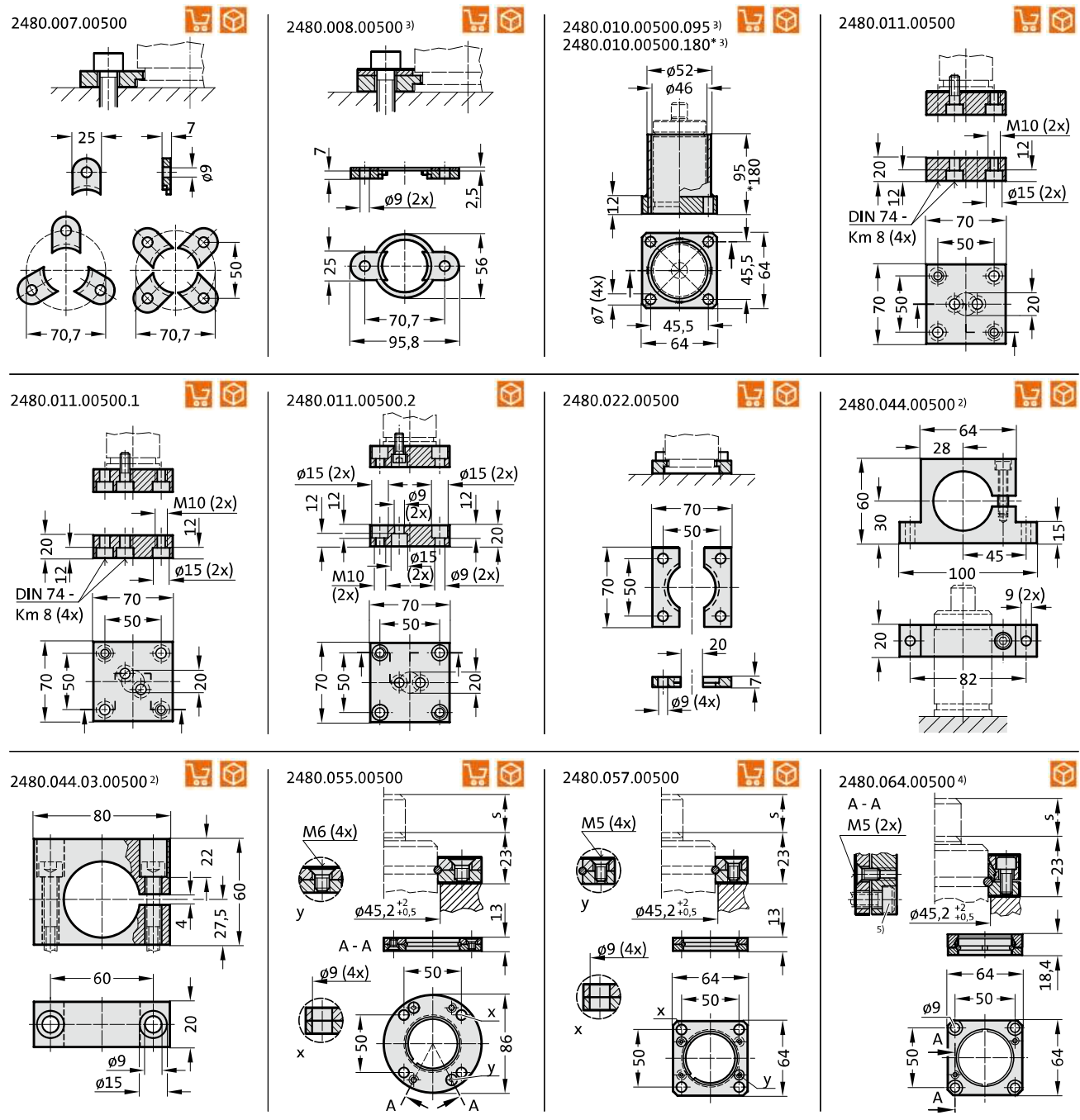


Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE MOUNTING VARIATIONS



**Note:**

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

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE

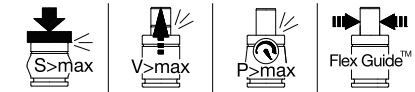
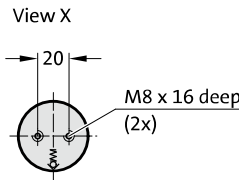
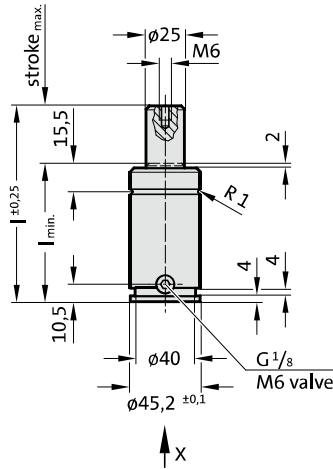
**Note:**

Initial spring force at 150 bar = 750 daN

Order No for spare parts kit: 2487.12.00750

Pressure medium: Nitrogen N<sub>2</sub>  
 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. 20 to 100 (at 20°C)  
 Max. piston speed: 1.6 m/s

2487.12.33.00750.

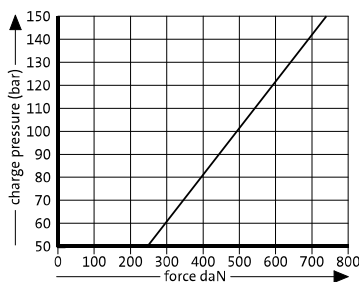


2487.12.33.00750.

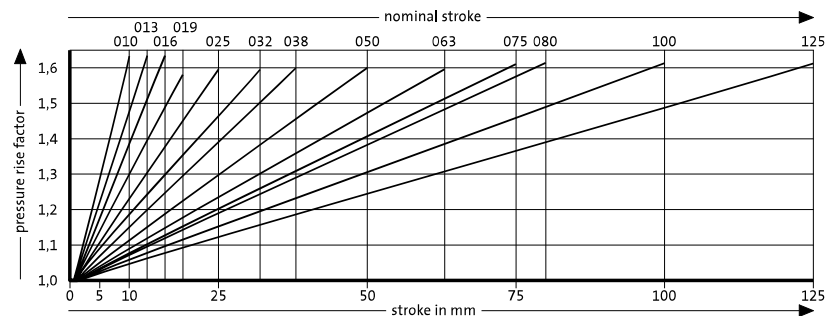
**Gas spring POWERLINE with reinforced spring base**

Order No	Stroke <sub>max.</sub> (s)	l <sub>min.</sub>	l
2487.12.33.00750.010	10	57	67
2487.12.33.00750.013	13	60	73
2487.12.33.00750.016	16	63	79
2487.12.33.00750.019	19	66	85
2487.12.33.00750.025	25	72	97
2487.12.33.00750.032	32	79	111
2487.12.33.00750.038	38	85	123
2487.12.33.00750.050	50	97	147
2487.12.33.00750.063	63	110	173
2487.12.33.00750.075	75	122	197
2487.12.33.00750.080	80	127	207
2487.12.33.00750.100	100	147	247
2487.12.33.00750.125	125	172	297

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 POWERLINE WITH REINFORCED SPRING BASE MOUNTING VARIATIONS

<p>2480.007.00750</p>	<p>2480.008.00750<sup>3)</sup></p>	<p>2480.010.00750.115<sup>3)</sup> 2480.010.00750.190<sup>*3)</sup></p>	<p>2480.011.00750</p>
<p>2480.011.00750.1</p>	<p>2480.011.00750.3</p>	<p>2480.022.00750</p>	<p>2480.044.00750<sup>2)</sup></p>
<p>2480.044.03.00750<sup>2)</sup></p>	<p>2480.045.00750<sup>2)</sup></p>	<p>2480.047.00750<sup>2)</sup></p>	<p>2480.055.00750</p>
<p>2480.057.00750</p>	<p>2480.064.00750<sup>4)</sup></p>	<p><b>Note:</b></p> <ul style="list-style-type: none"> <li><sup>2)</sup> Attention: The spring force must be absorbed by the stop Surface!</li> <li><sup>3)</sup> Not for use with composite connection.</li> <li><sup>4)</sup> Square collar flange, non-rotating, fixing for composite connection.</li> <li><sup>5)</sup> Machine screws with hexagonal socket (compact head recommended)</li> </ul>	



# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE

## Note:

Initial spring force at 150 bar = 920 daN

Order No for spare parts kit: 2487.12.01000

Pressure medium: Nitrogen N<sub>2</sub>

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

Working temperature: 0°C to +80°C

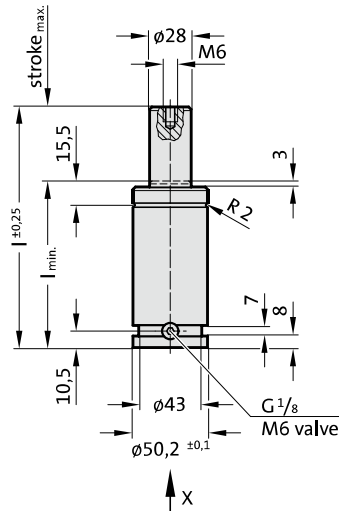
Temperature related force increase: ± 0.3%/°C

Max. recommended extensions per minute:

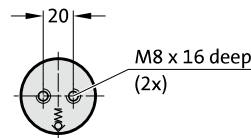
approx. 20 to 100 (at 20°C)

Max. piston speed: 1,6 m/s

2487.12.33.01000.



View X

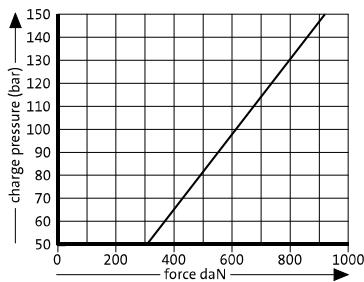


2487.12.33.01000.

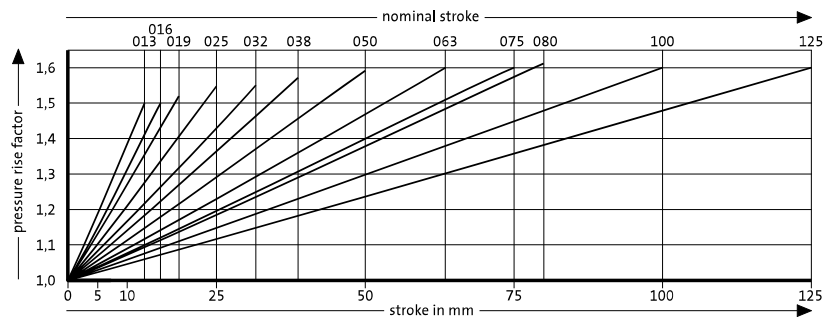
Gas spring POWERLINE with reinforced spring base

Order No	Stroke <sub>max.</sub> (s)	l <sub>min.</sub>	l
2487.12.33.01000.013	13	65	78
2487.12.33.01000.016	16	68	84
2487.12.33.01000.019	19	71	90
2487.12.33.01000.025	25	77	102
2487.12.33.01000.032	32	84	116
2487.12.33.01000.038	38	90	128
2487.12.33.01000.050	50	102	152
2487.12.33.01000.063	63	115	178
2487.12.33.01000.075	75	127	202
2487.12.33.01000.080	80	132	212
2487.12.33.01000.100	100	152	252
2487.12.33.01000.125	125	177	302

Initial spring force versus charge pressure



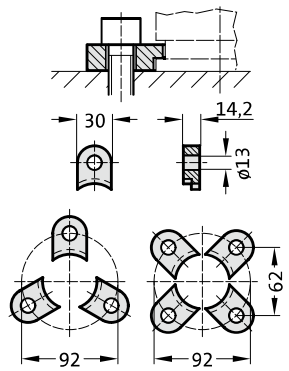
Spring force Diagram displacement versus stroke rise



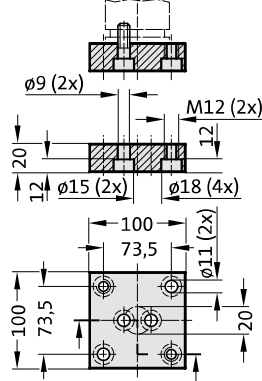
Pressure rise factor accounts for displacement but not external influences!

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE MOUNTING VARIATIONS

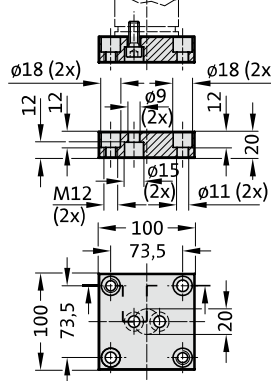
2480.007.01000



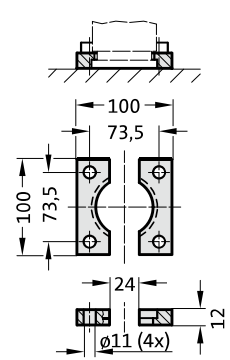
2480.011.01000



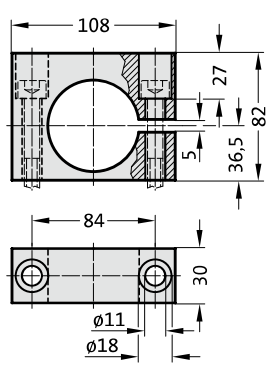
2480.011.01000.2



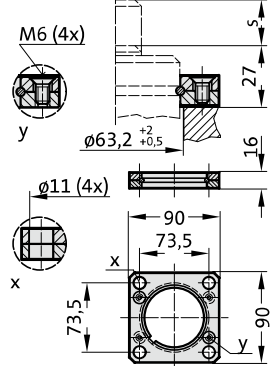
2480.022.01000



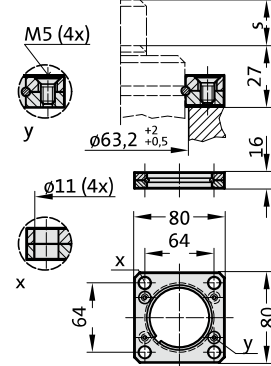
2480.044.03.01000<sup>2)</sup>



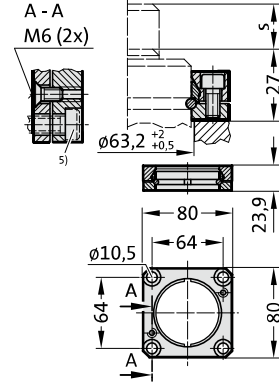
2480.057.01000



2480.057.03.01000



2480.064.01000<sup>4)</sup>



**Note:**

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

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE

**Note:**

Initial spring force at 150 bar = 1500 daN

Order No for spare parts kit: 2487.12.01500

Pressure medium: Nitrogen N<sub>2</sub>

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

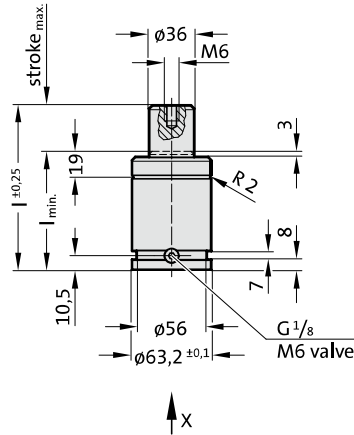
Working temperature: 0°C to +80°C

Temperature related force increase: ± 0.3%/°C

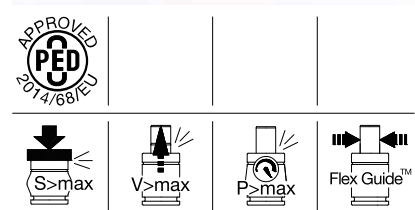
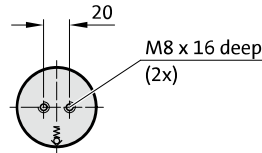
Max. recommended extensions per minute:  
approx. 50 to 100 (at 20°C)

Max. piston speed: 1.6 m/s

2487.12.33.01500.



View X

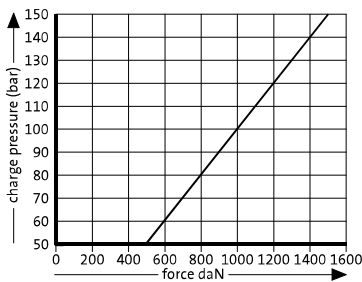


2487.12.33.01500.

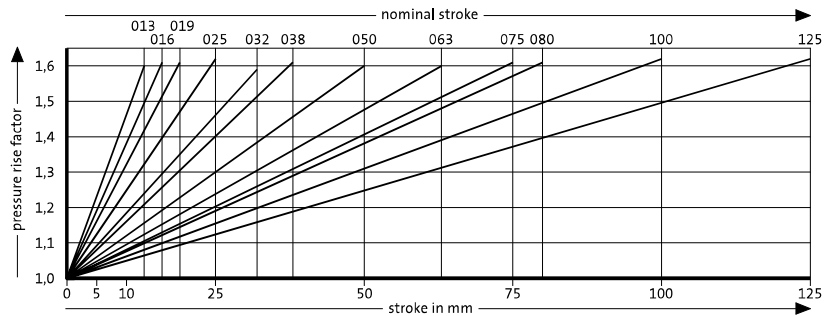
Gas spring POWERLINE with reinforced spring base

Order No	Stroke <sub>max</sub> (s)	l <sub>min</sub>	l
2487.12.33.01500.013	13	65	78
2487.12.33.01500.016	16	68	84
2487.12.33.01500.019	19	71	90
2487.12.33.01500.025	25	77	102
2487.12.33.01500.032	32	84	116
2487.12.33.01500.038	38	90	128
2487.12.33.01500.050	50	102	152
2487.12.33.01500.063	63	115	178
2487.12.33.01500.075	75	127	202
2487.12.33.01500.080	80	132	212
2487.12.33.01500.100	100	152	252
2487.12.33.01500.125	125	177	302

Initial spring force versus charge pressure

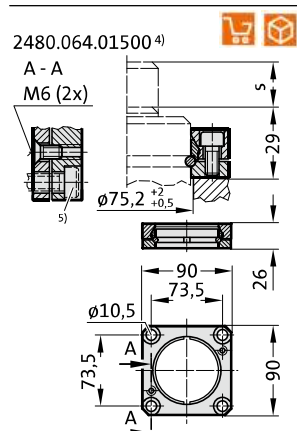
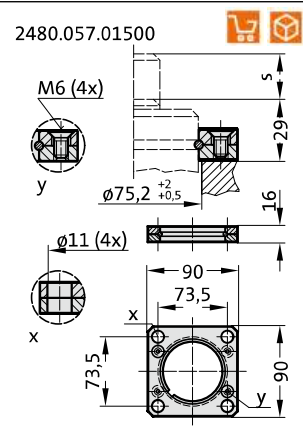
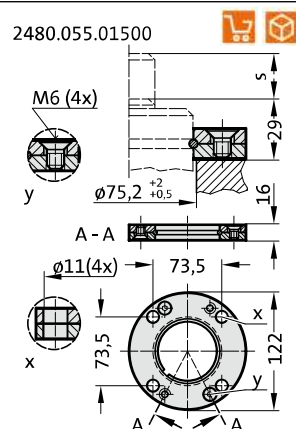
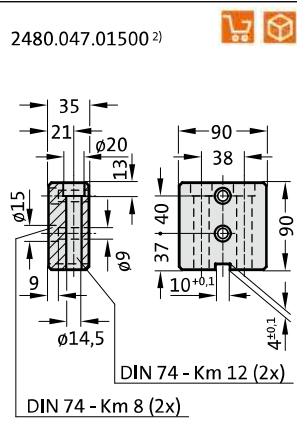
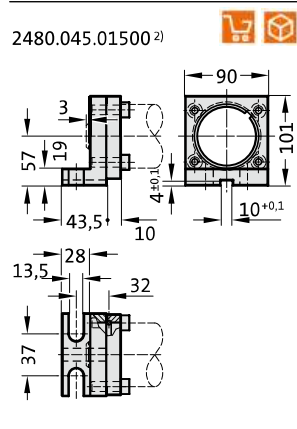
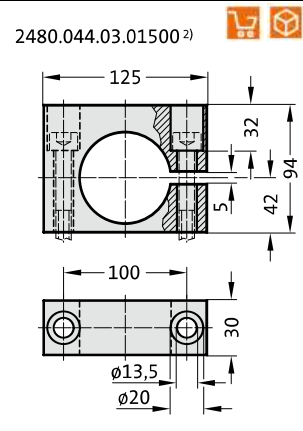
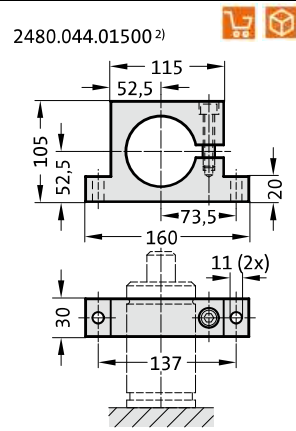
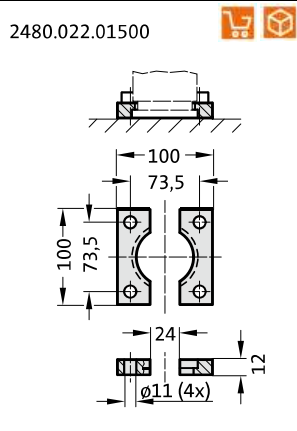
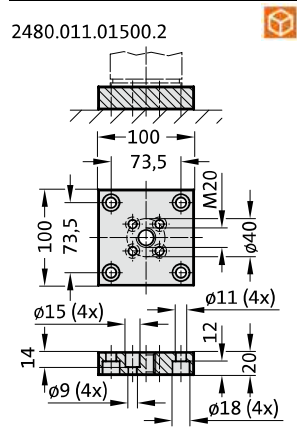
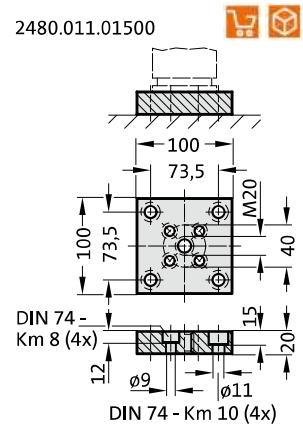
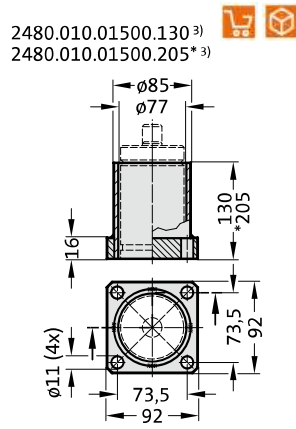
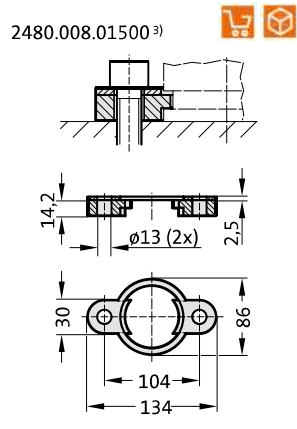
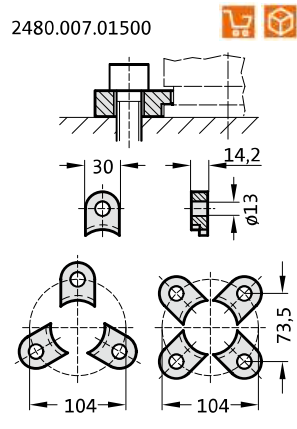


Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE MOUNTING VARIATIONS



**Note:**

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

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE

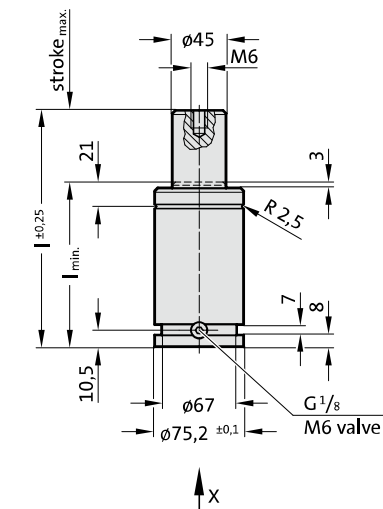
## Note:

Initial spring force at 150 bar = 2400 daN

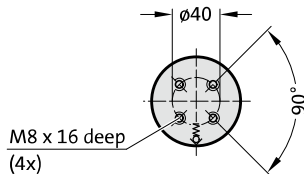
Order No for spare parts kit: 2487.12.02400

Pressure medium: Nitrogen  $N_2$   
 Max. filling pressure: 150 bar  
 Min. filling pressure: 25 bar  
 Working temperature:  $0^\circ C$  to  $+80^\circ C$   
 Temperature related force increase:  $\pm 0.3\%/^\circ C$   
 Max. recommended extensions per minute:  
 approx. 20 to 100 (at  $20^\circ C$ )  
 Max. piston speed: 1.6 m/s

2487.12.33.02400.



View X

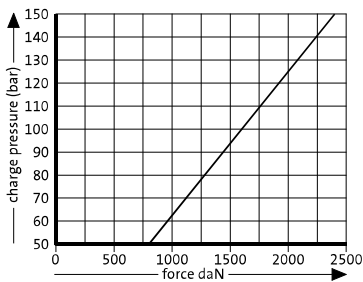


2487.12.33.02400.

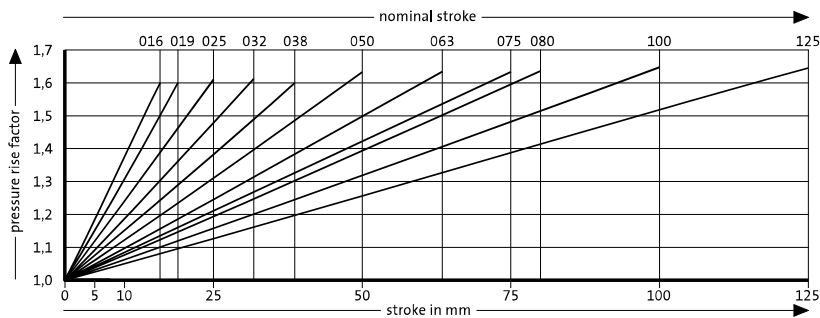
Gas spring POWERLINE with reinforced spring base

Order No	Stroke <sub>max.</sub> (s)	l <sub>min.</sub>	l
2487.12.33.02400.016	16	75	91
2487.12.33.02400.019	19	79	98
2487.12.33.02400.025	25	84	109
2487.12.33.02400.032	32	91	123
2487.12.33.02400.038	38	97	135
2487.12.33.02400.050	50	109	159
2487.12.33.02400.063	63	122	185
2487.12.33.02400.075	75	134	209
2487.12.33.02400.080	80	139	219
2487.12.33.02400.100	100	159	259
2487.12.33.02400.125	125	184	309

Initial spring force versus charge pressure



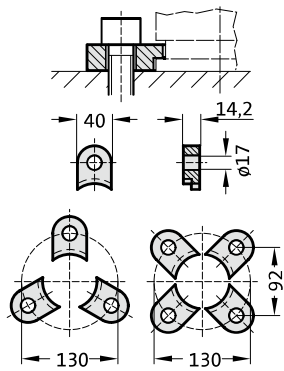
Spring force Diagram displacement versus stroke rise





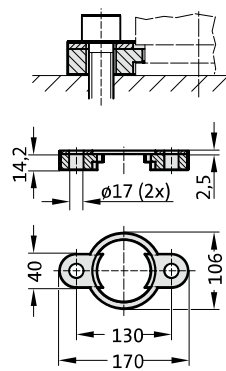
Pressure rise factor accounts for displacement but not external influences!



# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE MOUNTING VARIATIONS

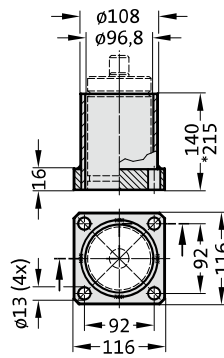
2480.007.03000  





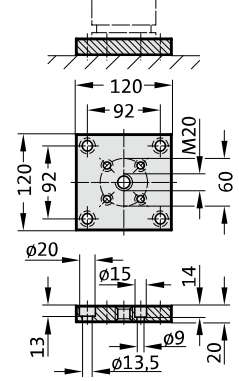
2480.008.03000<sup>3)</sup>  




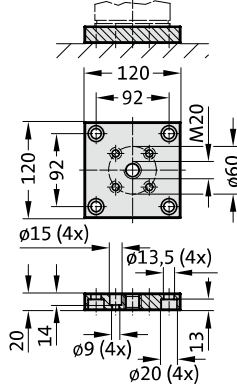
2480.010.03000.140<sup>3)</sup>    
2480.010.03000.215\*<sup>3)</sup>





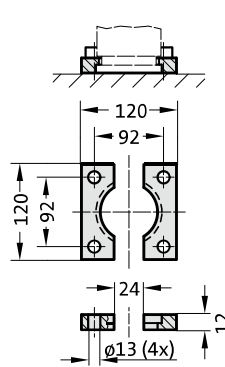
2480.011.03000  





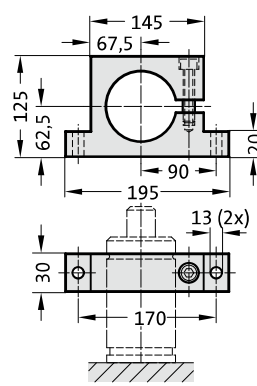
2480.011.03000.2 





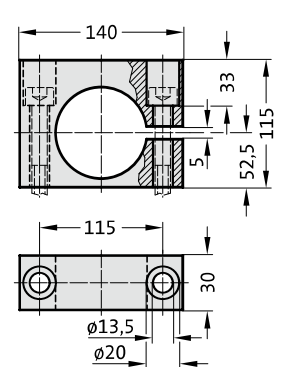
2480.022.03000  





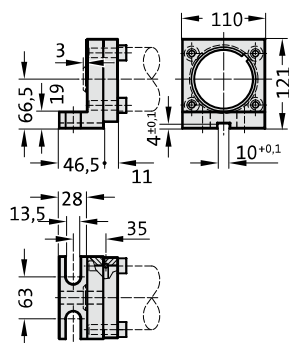
2480.044.03000<sup>2)</sup>  





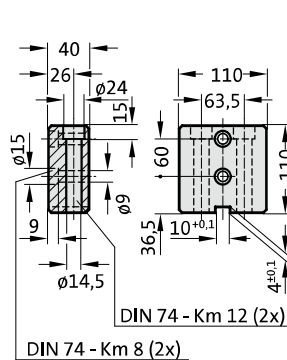
2480.044.03.03000<sup>2)</sup>  





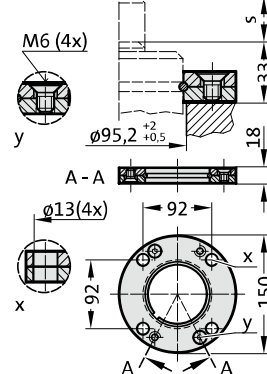
2480.045.03000<sup>2)</sup>  





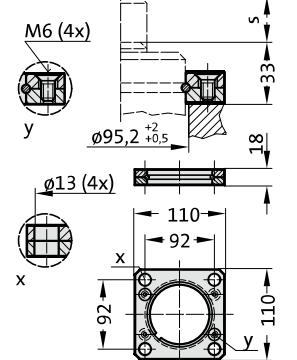
2480.047.03000<sup>2)</sup>  





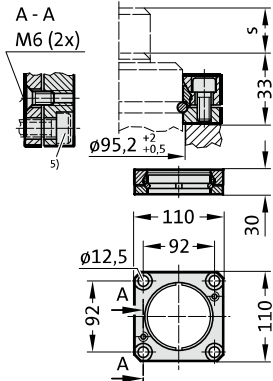
2480.055.03000  



2480.057.03000  



2480.064.03000<sup>4)</sup>  



## Note:

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

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE

**Note:**

Initial spring force at 150 bar = 4200 daN

Order No for spare parts kit: 2487.12.04200

Pressure medium: Nitrogen N<sub>2</sub>

Max. filling pressure: 150 bar

Min. filling pressure: 25 bar

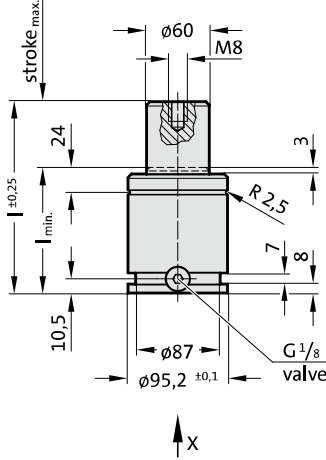
Working temperature: 0°C to +80°C

Temperature related force increase:  $\pm 0.3\%/^{\circ}\text{C}$

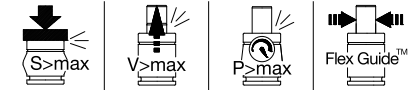
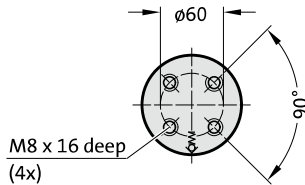
Max. recommended extensions per minute: approx. 20 to 100 (at 20°C)

Max. piston speed: 1.6 m/s

2487.12.33.04200.



View X

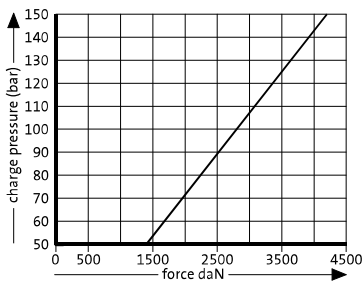


2487.12.33.04200.

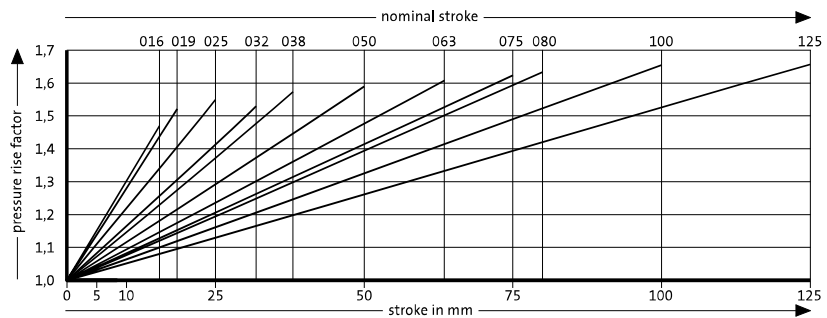
**Gas spring POWERLINE with reinforced spring base**

Order No	Stroke <sub>max.</sub> (s)	l <sub>min.</sub>	l
2487.12.33.04200.016	16	78	94
2487.12.33.04200.019	19	81	100
2487.12.33.04200.025	25	87	112
2487.12.33.04200.032	32	94	126
2487.12.33.04200.038	38	100	138
2487.12.33.04200.050	50	112	162
2487.12.33.04200.063	63	125	188
2487.12.33.04200.075	75	137	212
2487.12.33.04200.080	80	142	222
2487.12.33.04200.100	100	162	262
2487.12.33.04200.125	125	187	312

Initial spring force versus charge pressure



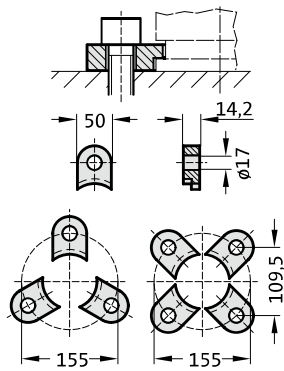
Spring force Diagram displacement versus stroke rise



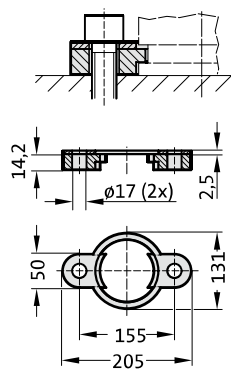
Pressure rise factor accounts for displacement but not external influences!

# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE MOUNTING VARIATIONS

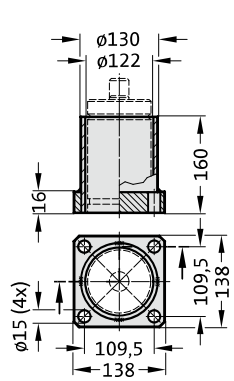
2480.007.05000



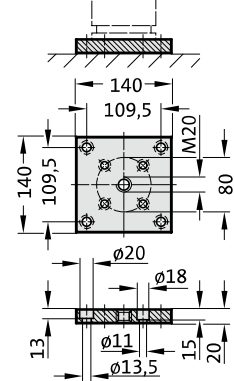
2480.008.05000<sup>3)</sup>



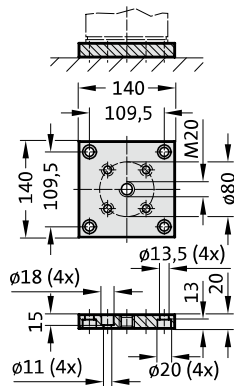
2480.010.05000.160<sup>3)</sup>



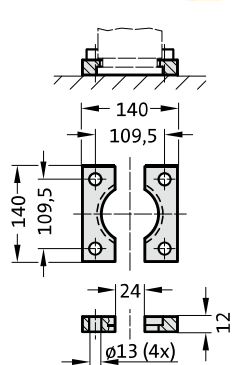
2480.011.05000



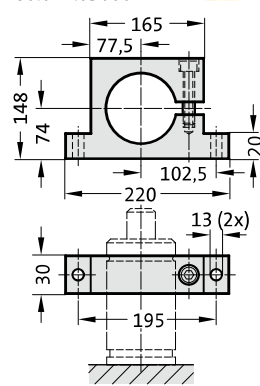
2480.011.05000.2



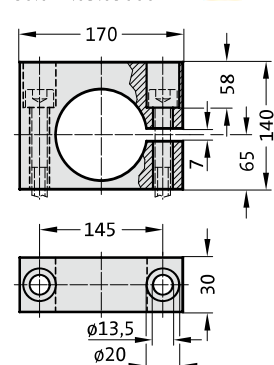
2480.022.05000



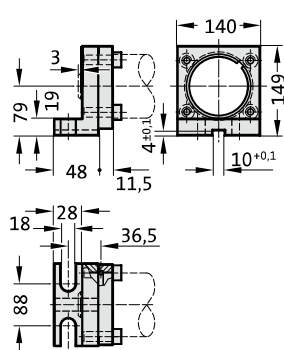
2480.044.05000<sup>2)</sup>



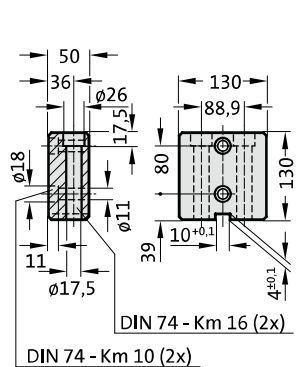
2480.044.03.05000<sup>2)</sup>



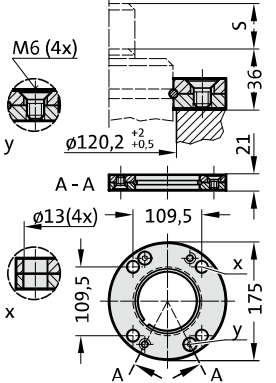
2480.045.05000<sup>2)</sup>



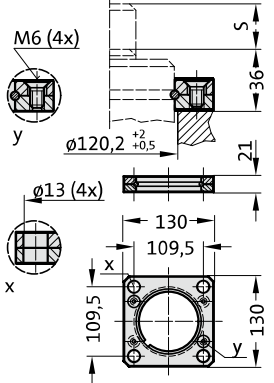
2480.047.05000<sup>2)</sup>



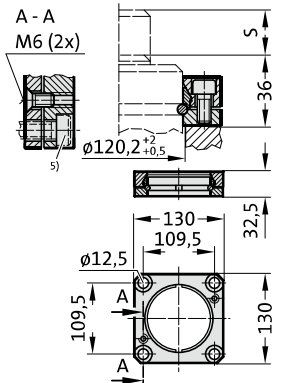
2480.055.05000



2480.057.05000



2480.064.05000<sup>4)</sup>



## Note:

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



# GAS SPRING POWERLINE WITH REINFORCED SPRING BASE

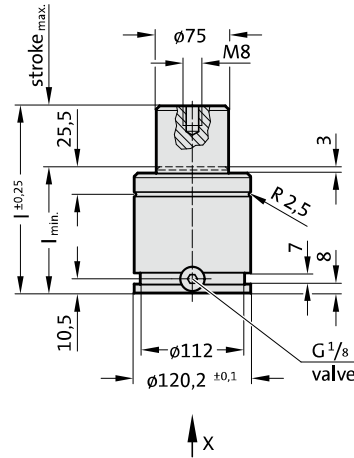
**Note:**

Initial spring force at 150 bar = 6630 daN

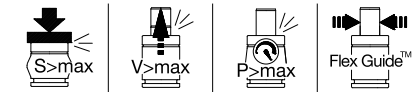
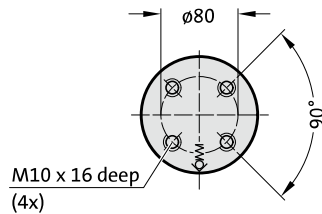
Order No for spare parts kit: 2487.12.06600

- Pressure medium: Nitrogen N<sub>2</sub>
- 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. 20 to 100 (at 20°C)
- Max. piston speed: 1.6 m/s

2487.12.33.06600.



View X

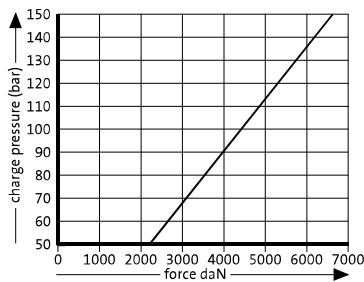


2487.12.33.06600.

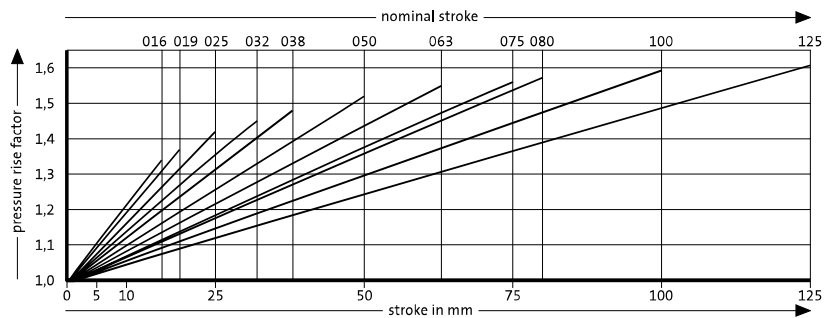
**Gas spring POWERLINE with reinforced spring base**

Order No	Stroke <sub>max.</sub> (s)	l <sub>min.</sub>	l
2487.12.33.06600.016	16	88	104
2487.12.33.06600.019	19	91	110
2487.12.33.06600.025	25	97	122
2487.12.33.06600.032	32	104	136
2487.12.33.06600.038	38	110	148
2487.12.33.06600.050	50	122	172
2487.12.33.06600.063	63	135	198
2487.12.33.06600.075	75	147	222
2487.12.33.06600.080	80	152	232
2487.12.33.06600.100	100	172	272
2487.12.33.06600.125	125	197	322

Initial spring force versus charge pressure



Spring force Diagram displacement versus stroke rise



Pressure rise factor accounts for displacement but not external influences!