Push Type Gas Springs

DICTATOR high-performance push type gas springs make life easier by lifting loads smoothly and effortlessly. We have a vast product range with many potential applications. We manufacture your gas spring according to your individual application requirements - either as a single unit, in small or large batches.

DICTATOR high-performance gas springs can be used in all applications where the movement or keeping open of certain parts requires support or as a counter weight.

Possible applications for push type gas springs are covering guards for machines, windows also for smoke ventilation, hatches in the floor or roof, flaps in vehicles, as counter weights or overload safety devices in hoists for scaffolds, in medical equipment and many other applications.

As well as high quality, DICTATOR push type gas springs also offer numerous additional features such as valve, oil chamber, protective tubes, or biological oil, which all considerably increase application possibilities.

**Technical Data**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Piston rod diameter</td>
<td>3, 4, 6, 8, 10, 14, 20, 25, 30 mm</td>
</tr>
<tr>
<td>Cylinder diameter</td>
<td>10, 12, 15, 19, 23, 28, 40, 55, 65 mm</td>
</tr>
<tr>
<td>Force</td>
<td>10 N - 10000 N</td>
</tr>
<tr>
<td>Stroke length</td>
<td>10 mm - 1000 mm</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-10 °C (with special oil -30 °C) to +80 °C</td>
</tr>
<tr>
<td>Change in pressure</td>
<td>0.37 % per 1 °C: first filling at approx. 18° - 20 °C</td>
</tr>
<tr>
<td>Gas</td>
<td>nitrogen (N), (non-flammable)</td>
</tr>
<tr>
<td>Maximum number of strokes</td>
<td>6 strokes per minute</td>
</tr>
</tbody>
</table>
Push Type Gas Springs

**Summary of Push Type Gas Springs**

DICTATOR industrial push type gas springs are usually manufactured according to your requirements. The table below gives you a short summary of the range of push type gas springs available. The normal progressivity of 30 - 40% (please see page 06.009.00) is obtained by adding the given fixed measurements to the stroke, which gives the total length. If a higher progressivity is accepted, the fixed measurements can slightly be decreased.

You will find information about additional options below. More detailed data concerning each individual diameter range can be found on the following pages, which will help you choose the appropriate gas spring. Alternatively you always can use our Advisory Service.

**Technical Data**

<table>
<thead>
<tr>
<th>Ø Piston rod</th>
<th>Ø Cylinder</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>14</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. stroke (mm)</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>40</td>
<td>40</td>
<td>50</td>
<td>50</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Max. stroke (mm)</td>
<td>80</td>
<td>200</td>
<td>300</td>
<td>500</td>
<td>700</td>
<td>700</td>
<td>600</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Damping</td>
<td>0, 1</td>
<td>0, 1</td>
<td>0, 1, 2, 3</td>
<td>0, 1, 2, 3</td>
<td>0, 1, 2, 3</td>
<td>0, 1, 2, 3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. force</td>
<td>10/15 N</td>
<td>10 N</td>
<td>40 N</td>
<td>80 N</td>
<td>100 N</td>
<td>150 N</td>
<td>300 N</td>
<td>500 N</td>
<td>750 N</td>
<td>750 N</td>
</tr>
<tr>
<td>Max. force</td>
<td>100N</td>
<td>180 N</td>
<td>400 N</td>
<td>700 N</td>
<td>1200 N</td>
<td>2500 N</td>
<td>5000 N</td>
<td>7500 N</td>
<td>10000 N</td>
<td>10000 N</td>
</tr>
<tr>
<td>Comp. L (GZ-GZ) *</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
<td>ext. L - S</td>
</tr>
<tr>
<td>Ext. L (GZ-GZ) *</td>
<td>2x S + 32</td>
<td>2x S + 32</td>
<td>2x S + 30</td>
<td>2x S + 45</td>
<td>2x S + 45</td>
<td>2x S + 46</td>
<td>2x S + 100</td>
<td>2x S + 140</td>
<td>2x S +160</td>
<td></td>
</tr>
<tr>
<td>Oil chamber (4) *</td>
<td>n/a</td>
<td>n/a</td>
<td>L + 15</td>
<td>L + 15</td>
<td>L + 15</td>
<td>L + 15</td>
<td>L + 15</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Valve (5)</td>
<td>option</td>
<td>option</td>
<td>option</td>
<td>option</td>
<td>option</td>
<td>option</td>
<td>option</td>
<td>option</td>
<td>option</td>
<td></td>
</tr>
<tr>
<td>Protective tube (6) *</td>
<td>L + 5</td>
<td>L + 5</td>
<td>L + 5</td>
<td>L + 5</td>
<td>L + 5</td>
<td>L + 5</td>
<td>L + 5</td>
<td>L + 5</td>
<td>L + 5</td>
<td></td>
</tr>
<tr>
<td>Helical spring (7) *</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>L + 30</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Ø Protective tube</td>
<td>12</td>
<td>15</td>
<td>19</td>
<td>23</td>
<td>28</td>
<td>32</td>
<td>45</td>
<td>60</td>
<td>70</td>
<td></td>
</tr>
</tbody>
</table>

* Stroke (S) or length (L) + additional length in mm [Example: 8-19 range; stroke 50; ext. L = 2 x 50 + 45 = 145 mm]

**Additional Options**

In push type gas springs the piston rod should ideally point downwards in a vertical position. If this is not possible, please order an oil chamber with your gas spring. The oil chamber ensures the seal is always surrounded by oil and cannot become porous. For oil chamber use code 4. (The total length increases by 15 mm.) (06.010.00)

If you are not entirely sure which pressure you require, it is best to order a valve with your gas spring (or begin with a valve if you are ordering a large number of gas springs). By using a valve pressure can be released on site, until the required force is reached. Should you release too much pressure, we can refill the gas spring for you. A valve can save you time and money. For valve use code 5 (see pages 06.010.00 and 06.011.00).

If your gas spring will be exposed to dirt, paint, other such hazards, or if there is danger of mechanical damage, please order a protective tube with your gas spring. The protective tube slides over the cylinder and piston rod and prevents damages. The gas spring can also be supplied with 2 protective tubes on request. The protective tube has code no. 6. (The total length increases by 5 mm per protective tube). (Please also see page 06.011.00).

Gas springs in the 10-23 diameter range can be supplied with a built in helical spring on request. This is recommended for gas springs which are very rarely used, e.g. on windows with smoke vents. The helical spring has code no. 7. (The total length increases by 30 mm). (Please also see page 06.012.00).
D 3-10 Push Type Gas Springs
Force 5 N - 100 N

The smallest gas springs we supply have a 3.5 mm diameter piston rod and 10 mm diameter cylinder. These have extremely low forces: 10 N without damping, 15 N with damping! D 3-10 gas springs are available with a valve.

The piston rod on these gas springs is made from stainless steel (AISI 303) and the cylinder from brass.

Just like the slightly larger D 4-12 gas springs, those in the D 3-10 range can also be used in precise mechanical, optical, or even medical equipment.

### End Fittings

<table>
<thead>
<tr>
<th>On piston rod</th>
<th>On cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threaded end GZ</td>
<td>Threaded end GZ</td>
</tr>
<tr>
<td>Eyelet A</td>
<td>Eyelet A</td>
</tr>
<tr>
<td>Fork G</td>
<td>Fork G</td>
</tr>
<tr>
<td>Ball and socket joint WG</td>
<td>Ball and socket joint WG</td>
</tr>
</tbody>
</table>

### Types of damping for 3-10 range
0 = without damping
1 = damping on extending stroke

### Determining Your D 3-10 Gas Springs

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length.

<table>
<thead>
<tr>
<th>Type D</th>
<th>See page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø 3.5 mm</td>
<td>3.5 mm</td>
</tr>
<tr>
<td>Ø 10 mm</td>
<td>10 mm</td>
</tr>
<tr>
<td>3.5 mm</td>
<td>06.080.00</td>
</tr>
<tr>
<td>10 mm</td>
<td>06.080.00</td>
</tr>
<tr>
<td>06.080.00</td>
<td>06.080.00</td>
</tr>
<tr>
<td>06.005.00</td>
<td>06.081.00</td>
</tr>
<tr>
<td>06.081.00</td>
<td>06.081.00</td>
</tr>
<tr>
<td>06.082.00</td>
<td>06.082.00</td>
</tr>
<tr>
<td>06.082.00</td>
<td>06.082.00</td>
</tr>
<tr>
<td>06.059.00</td>
<td>06.059.00</td>
</tr>
<tr>
<td>06.059.00</td>
<td>06.059.00</td>
</tr>
<tr>
<td>06.010.00</td>
<td>06.010.00</td>
</tr>
<tr>
<td>06.011.00</td>
<td>06.011.00</td>
</tr>
</tbody>
</table>

### Additional details:

- Valve (5)
- Protective tube (6) (+ 5 mm)
D 4-12 Push Type Gas Springs
Force 10 N - 180 N

The second smallest gas springs available have a 4 mm piston rod diameter and 12 mm cylinder diameter. These have extremely low forces. 4-12 gas springs are also available with a valve.

The piston rod is made from stainless steel (AISI 303).

D 4-12 gas springs are mainly used in precise mechanical and medical equipment (e.g., the plastic covers in photocopiers).

End Fittings

<table>
<thead>
<tr>
<th>On piston rod</th>
<th>On cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>M3,5</td>
<td>M3,5</td>
</tr>
<tr>
<td>Threaded end GZ</td>
<td>Threaded end GZ</td>
</tr>
<tr>
<td>Eyelet A</td>
<td>Eyelet A</td>
</tr>
<tr>
<td>Fork G</td>
<td>Fork G</td>
</tr>
<tr>
<td>Ball and socket joint WG</td>
<td>Ball and socket joint WG</td>
</tr>
</tbody>
</table>

Determining Your D 4-12 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length.

<table>
<thead>
<tr>
<th>Type D</th>
<th>See page</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.080.00</td>
<td></td>
</tr>
<tr>
<td>06.080.00</td>
<td></td>
</tr>
<tr>
<td>06.080.00</td>
<td></td>
</tr>
<tr>
<td>06.005.00</td>
<td></td>
</tr>
<tr>
<td>06.081.00</td>
<td></td>
</tr>
<tr>
<td>06.081.00</td>
<td></td>
</tr>
<tr>
<td>06.082.00</td>
<td></td>
</tr>
<tr>
<td>06.082.00</td>
<td></td>
</tr>
<tr>
<td>06.099.00</td>
<td></td>
</tr>
<tr>
<td>06.099.00</td>
<td></td>
</tr>
<tr>
<td>06.010.00</td>
<td></td>
</tr>
<tr>
<td>06.011.00</td>
<td></td>
</tr>
</tbody>
</table>

Types of damping for 4-12 range

0 = without damping
1 = damping on extending stroke

Additional details:

Valve (5)  Protective tube (6) (+ 5 mm)
**D 6-15 Push Type Gas Springs**

**Force 40 N - 400 N**

The gas springs available in the next size up have a 6 mm piston rod diameter and 15 mm cylinder diameter. In spite of their small dimensions and possibility of extremely low forces, D 6-15 gas springs are available with a large variety of fittings and additional functions.

D 6-15 gas springs are mainly used in the construction of gadgets and devices, and in machine construction.

---

### Determining Your D 6-15 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length.

<table>
<thead>
<tr>
<th>End Fittings</th>
<th>On piston rod</th>
<th>On cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threaded end</td>
<td>GZ</td>
<td>GZ</td>
</tr>
<tr>
<td>Ø 6 mm</td>
<td>9 mm</td>
<td></td>
</tr>
<tr>
<td>Eyelet A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fork G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ø 20 mm</td>
<td>Ø 22 mm</td>
<td>Ø 27 mm</td>
</tr>
<tr>
<td>Ball and socket joint</td>
<td>WG</td>
<td>Ball and socket joint</td>
</tr>
<tr>
<td>Ø 28 mm</td>
<td>Ø 38 mm</td>
<td>Ø 42 mm</td>
</tr>
<tr>
<td>Hinge ball and socket joint</td>
<td>KGA</td>
<td>Hinge ball and socket joint</td>
</tr>
<tr>
<td>Ø 27 mm</td>
<td>Ø 32 mm</td>
<td>Ø 37 mm</td>
</tr>
<tr>
<td>Rose bearing</td>
<td>GK</td>
<td>GK</td>
</tr>
</tbody>
</table>

Exact measurement drawings for the above end fittings can be found on pages 06.059.00 - 06.062.00.

#### Types of damping for 6-15 range

0 = without damping  
1 = damping on extending stroke  
2 = damping on compression stroke  
3 = damping on both extending and compression strokes

<table>
<thead>
<tr>
<th>Types of damping</th>
<th>See page</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>06.080.00</td>
</tr>
<tr>
<td>1</td>
<td>06.080.00</td>
</tr>
<tr>
<td>2</td>
<td>06.080.00</td>
</tr>
<tr>
<td>3</td>
<td>06.005.00</td>
</tr>
<tr>
<td>6</td>
<td>06.081.00</td>
</tr>
<tr>
<td>7</td>
<td>06.081.00</td>
</tr>
<tr>
<td>8</td>
<td>06.081.00</td>
</tr>
</tbody>
</table>

#### Additional details:

- Oil chamber [4] (+ 15 mm)  
- Valve [5]  
- Protective tube [6] (+ 5 mm)
D 8-19 Push Type Gas Springs
Force 80 N - 700 N

Gas springs with an 8 mm piston rod diameter and 19 mm cylinder diameter and those in the next size up (10-23 range) are the most frequently used gas springs. Both ranges have the same end fittings (identical measurements). Different mounting devices are available. (Please see page 06.063.00).

D 8-19 gas springs are frequently used in machine and building construction (e.g. in smoke extraction installations).

Determining Your D 8-19 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length. The same applies for additional options.

### End Fittings

<table>
<thead>
<tr>
<th>On piston rod</th>
<th>On cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threaded end GZ</td>
<td>Threaded end GZ</td>
</tr>
<tr>
<td>Eyelet A</td>
<td>Eyelet A</td>
</tr>
<tr>
<td>Fork G</td>
<td>Fork G</td>
</tr>
<tr>
<td>Ball and socket joint WG</td>
<td>Ball and socket joint WG</td>
</tr>
<tr>
<td>Inline ball and socket joint KGA</td>
<td>Inline ball and socket joint KGA</td>
</tr>
<tr>
<td>Rose bearing GK</td>
<td>Rose bearing GK</td>
</tr>
</tbody>
</table>

Exact dimensioned drawings for the above end fittings can be found on pages 06.059.00 - 06.062.00.

### Types of damping for 8-19 range

0 = without damping  
1 = damping on extending stroke  
2 = damping on compression stroke  
3 = damping on both extending and compression strokes

### Determining Your D 8-19 Gas Spring

1. Piston rod diameter: ____________  Type D: 8 mm  [(See page 06.080.00)]
2. Cylinder diameter: _______  Type D: 19 mm  [(See page 06.080.00)]
3. Stroke (40 - 500 mm): ____________  [(See page 06.080.00)]
4. Type of damping: ____________________________  [(choice between damping types 0, 1, 2, 3)]  [(See page 06.081.00)]
5. Force (80 - 700 N): _______  [(See page 06.081.00)]
6. Compressed length (= extended length - stroke): ____________  [(See page 06.082.00)]
7. Extended length (total length):  
   (min. 2 x stroke + 45 mm + measurement D of end fittings + measurement of additional options)  
   ____________  [(See page 06.082.00)]
8. Piston rod end fitting [see drawing for symbol]:  
   ____________  [(See page 06.059.00)]
9. Cylinder end fitting [see drawing for symbol]:  
   ____________  [(See page 06.059.00)]
10. Additional options:  
    - Oil chamber (4) (+ 15 mm)  
      [(See page 06.010.00)]
    - Valve (5)  
      [(See page 06.010.00)]
    - Protective tube (6) (+ 5 mm)  
      [(See page 06.011.00)]

### Additional details:

© DICTATOR TECHNIK GMBH • Gutenbergstr. 9 • D - 86356 Neusäß • Germany  
Tel. (0821)24673 - 0 • Fax (0821) 24673 - 90 • E-Mail info@dictator.de • 1091
D 10-23 Push Type Gas Springs

Force 100 N - 1200 N

Gas springs with a 10 mm piston rod diameter and 23 mm cylinder diameter are middle-of-range gas springs which offer the largest and most diverse area of application. They are available with forces up to 1200 N. The measurements of the end fittings are the same as those for the D 8-19 range. A variety of mounting brackets is available in both ranges (please see page 06.063.00).

D 10-23 gas springs are frequently used in machine and building construction (e.g. in smoke extraction installations).

Determining Your D 10-23 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length. The same applies for additional options.

### End Fittings

<table>
<thead>
<tr>
<th>On piston rod</th>
<th>On cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threaded end GZ</td>
<td>Threaded end GZ</td>
</tr>
<tr>
<td>Eyelet A</td>
<td>Eyelet A</td>
</tr>
<tr>
<td>Fork G</td>
<td>Fork G</td>
</tr>
<tr>
<td>Ball and socket joint WG</td>
<td>Ball and socket joint WG</td>
</tr>
<tr>
<td>Inline ball and socket joint KGA</td>
<td>Inline ball and socket joint KGA</td>
</tr>
<tr>
<td>Rose bearing GK</td>
<td>Rose bearing GK</td>
</tr>
</tbody>
</table>

Exact dimensioned drawings for the above end fittings can be found on pages 06.059.00 - 06.062.00.

### Types of damping for 10-23 range

- 0 = without damping
- 1 = damping on extending stroke
- 2 = damping on compression stroke
- 3 = damping on both extending and compression strokes

### Additional options:

- Oil chamber (4) (+ 15 mm) 06.010.00
- Valve (5) 06.010.00
- Protective tube (6) (+ 5 mm) 06.011.00
- Helical spring (7) (+ 30 mm) 06.012.00
D 14-28 Push Type Gas Springs
Force 150 N - 2500 N

Inspite of their relatively small measurements gas springs with a 14 mm piston rod diameter and 28 mm cylinder diameter allow for more than double the force as D 10-23 gas springs. The stroke lengths reach up to 1600 mm. For these large lenghts a rod guide should be installed to prevent the piston rod from bending. Mounting devices for D 14-28 gas springs can be found on pages 06.065.00 - 06.066.00.

D 14-28 gas springs are mainly used on heavy skylight windows, machine guards, trap doors and sports equipment (i.e. basketball baskets).

Determining Your D 14-28 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length. The same applies for additional options.

**End Fittings**

<table>
<thead>
<tr>
<th>On piston rod</th>
<th>On cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>M10</td>
<td>M10</td>
</tr>
<tr>
<td>Threaded end GZ</td>
<td>Threaded end GZ</td>
</tr>
<tr>
<td>30 mm</td>
<td>16 mm</td>
</tr>
<tr>
<td>Eyelet A</td>
<td>Eyelet A</td>
</tr>
<tr>
<td>40 mm</td>
<td>40 mm</td>
</tr>
<tr>
<td>Fork G</td>
<td>Fork G</td>
</tr>
<tr>
<td>35 mm</td>
<td>35 mm</td>
</tr>
<tr>
<td>Ball and socket joint WG</td>
<td>Ball and socket joint WG</td>
</tr>
<tr>
<td>43 mm</td>
<td>43 mm</td>
</tr>
<tr>
<td>Rose bearing GK</td>
<td>Rose bearing GK</td>
</tr>
<tr>
<td>43 mm</td>
<td>43 mm</td>
</tr>
</tbody>
</table>

Exact dimensioned drawings for the above end fittings can be found on pages 06.059.00 - 06.062.00.

**Types of damping for 14-28 range**

0 = without damping  
1 = damping on extending stroke  
2 = damping on compression stroke  
3 = damping on both extending and compression strokes

**Determining Your D 14-28 Gas Spring**

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length. The same applies for additional options.

1. Piston rod diameter: __________  14 mm  06.080.00  
2. Cylinder diameter: __________  28 mm  06.080.00  
3. Stroke (50 - 700 mm): __________  06.080.00  
4. Type of damping: __________
   (choice between damping types 0, 1, 2, 3)  
5. Force (150 - 2500 N): __________  06.081.00  
6. Compressed length (= extended length - stroke): __________  06.082.00  
7. Extended length (total length): __________  06.082.00  
   (min. 2 x stroke + 46 mm + measurement D of end fittings + measurement of additional options)  
8. Piston rod end fittings (see drawing for symbol): __________  06.059.00  
9. Cylinder end fittings (see drawing for symbol): __________  06.059.00  
10. Additional options:  
    - Oil chamber (4) (+ 15 mm)  06.010.00  
    - Valve (5)  06.010.00  
    - Protective tube (6) (+ 5 mm)  06.011.00  

**Additional details:**
D 20-40 Push Type Gas Springs
Force 300 N - 5000 N

Gas springs with a 20 mm piston rod diameter and 40 mm cylinder diameter are the largest range for which all end fittings and additional options are available, even though they can have a very large force up to 5000 N.

D 20-40 gas springs are used on very heavy applications, e.g. grids fit for traffic.

Determining Your D 20-40 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length. The same applies for additional options.

End Fittings

On piston rod  On cylinder

<table>
<thead>
<tr>
<th>Threaded end</th>
<th>Threaded end</th>
</tr>
</thead>
<tbody>
<tr>
<td>GZ</td>
<td>GZ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eyelet</th>
<th>Eyelet</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fork</th>
<th>Fork</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ball and socket joint</th>
<th>Ball and socket joint</th>
</tr>
</thead>
<tbody>
<tr>
<td>WG</td>
<td>WG</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inline ball and socket joint</th>
<th>Inline ball and socket joint</th>
</tr>
</thead>
<tbody>
<tr>
<td>KGA</td>
<td>KGA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rose bearing</th>
<th>Rose bearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>GK</td>
<td>GK</td>
</tr>
</tbody>
</table>

Exact measurement drawings for the above end fittings can be found on pages 06.059.00 - 06.062.00.

Types of damping for 20-40 range

- 0 = without damping
- 1 = damping on extending stroke
- 2 = damping on compression stroke
- 3 = damping on both extending and compression strokes

Types of damping

- 0 = without damping
- 1 = damping on extending stroke
- 2 = damping on compression stroke
- 3 = damping on both extending and compression strokes

Determining Your D 20-40 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length. The same applies for additional options.

1. Piston rod diameter: ___________________________
2. Cylinder diameter: ___________________________
3. Stroke (50 - 600 mm): _________________________
4. Type of damping: (choice between damping types 0, 1, 2, 3) _________________________
5. Force (300 - 5000 N): _________________________
6. Compressed length (= extended length - stroke): _________________________
7. Extended length (total length): (min. 2 x stroke + 100 mm + measurement D of end fittings + measurement of additional options) _________________________
8. Piston rod end fitting (see drawing for symbol): _________________________
9. Cylinder end fitting (see drawing for symbol): _________________________
10. Additional options:  □ Oil chamber (4) (+ 15 mm)  □ Valve (5)  □ Protective tube (6) (+ 5 mm) _________________________

Additional details:

© DICTATOR TECHNIK GMBH • Gutenbergstr. 9 • D - 86356 Neusäß • Germany
Tel. (0821) 24673 - 0 • Fax (0821) 24673 - 90 • E-Mail info@dictator.de • 1091
D 25-55 Push Type Gas Springs
Force 500 N - 7500 N

Gas springs with a 25 mm piston rod diameter and 55 mm cylinder diameter are the second largest range. They can achieve forces up to 7500 N. All D 25-55 gas springs are supplied with a valve as standard - it does not need to be ordered separately. Due to the high force only threaded ends and forks are available as end fittings.

D 25-55 gas springs are also available with a lateral valve with an outside thread (M10 x 1) on request. This lateral valve permits to release pressure even when the gas spring is installed.

D 25-55 gas springs are used in the automotive industry for example.

Determining Your D 25-55 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length. The same applies for additional options.

Exact dimensioned drawings for the above end fittings can be found on pages 06.059.00 - 06.062.00.

Types of damping for 25-55 range
1 = damping on extending stroke

Additional details:

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D 30-65 Push Type Gas Springs
Force 750 N - 10000 N

Gas springs with a 30 mm piston rod diameter and 65 mm cylinder diameter are the largest range available. They can reach forces up to 10000 N. All D 30-65 gas springs are supplied with a valve as standard - it does not need to be ordered separately. Due to the high force, only threaded ends and forks are available as end fittings.

D 30-65 gas springs are also available with a lateral valve with an outside thread (M10 x 1) on request. This lateral valve permits to release pressure even when the gas spring is installed.

D 30-65 gas springs are mainly used in the automotive and materials handling industries.

Determining Your D 30-65 Gas Spring

With help of the following table you can easily find the correct gas spring if you already know the necessary stroke and end fittings.

If you require a gas spring not only with threaded ends, but also, for example, an eyelet on the piston rod or both ends, then simply add the measurement D given in the drawings of the end fittings to the extended length to achieve the total length. The same applies for additional options.

### End Fittings

<table>
<thead>
<tr>
<th>Threaded end</th>
<th>Fork</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threaded end GZ</td>
<td>Fork G</td>
</tr>
</tbody>
</table>

**Types of damping for 30-65 range**

1 = damping on extending stroke

<table>
<thead>
<tr>
<th>Type D</th>
<th>See page</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 mm</td>
<td>06.080.00</td>
</tr>
<tr>
<td>65 mm</td>
<td>06.080.00</td>
</tr>
<tr>
<td>100 - 1000 mm</td>
<td>06.080.00</td>
</tr>
<tr>
<td>1</td>
<td>06.005.00</td>
</tr>
<tr>
<td>06.081.00</td>
<td></td>
</tr>
<tr>
<td>100 - 10000 N</td>
<td>06.081.00</td>
</tr>
<tr>
<td>Compressed length (= extended length - stroke):</td>
<td>06.081.00</td>
</tr>
<tr>
<td>Extended length (total length):</td>
<td>06.082.00</td>
</tr>
<tr>
<td>Protective tube [6] ( + 5 mm)</td>
<td>06.059.00</td>
</tr>
</tbody>
</table>

Additional options:

- Lateral valve
- Protective tube [6] ( + 5 mm)

Exact dimensioned drawings for the above end fittings can be found on pages 06.059.00 - 06.062.00.