Die Separation
Gas Springs
DS 3000 - DS 7500
Edition 5.2015
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Features and benefits of KALLER Die Separation Gas Springs

KALLER Die Separation Gas Springs range from model sizes DS 3000 to DS 7500. Using the new DS springs is an excellent way to avoid unnecessary wear of the die, press and gas springs. A 70-80% energy saving compared to using traditional springs is an additional benefit.

- Initial forces from 30,000 to 75,000 N.
- Stroke lengths of 80 mm up to 300 mm
- Upper C-groove, lower U-groove and bottom threaded holes allow for various standard mounting possibilities.
- Suitable for both top up and bottom up working position in the tool
- A very slow return speed compared to traditional springs
- All KALLER Safety features included

<table>
<thead>
<tr>
<th>Model</th>
<th>Initial Force (N)</th>
<th>End Force (N)</th>
<th>Ø A</th>
<th>Ø B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>Ø G</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS 3000</td>
<td>30,000</td>
<td>48,000</td>
<td>50</td>
<td>95.2</td>
<td>24</td>
<td>8</td>
<td>7</td>
<td>42.4</td>
<td>60</td>
<td>M8</td>
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<tr>
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<td>50,000</td>
<td>82,000</td>
<td>65</td>
<td>120.2</td>
<td>25.5</td>
<td>8</td>
<td>7</td>
<td>56.6</td>
<td>80</td>
<td>M10</td>
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<tr>
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<td>124,000</td>
<td>80</td>
<td>150.2</td>
<td>27.5</td>
<td>8</td>
<td>8</td>
<td>70.7</td>
<td>100</td>
<td>M10</td>
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</tbody>
</table>

* at full stroke

Basic information

- Pressure medium: Nitrogen
- Max. charging pressure: 150 bar (at 20°C)
- Min. charging pressure: 25 bar (at 20°C)
- Operating temperature: 0 - +80°C
- Force increase by temperature: ±0.3%/°C
- Recommended max. strokes/min: 20 - 50 (at 20°C)
- Max. piston rod velocity: 1.6 m/s
- Return speed variation: ±3%
- Tube surface: Black oxide
- Repair kit DS 3000: 3026825
- Repair kit DS 5000: 3026826
- Repair kit DS 7500: 3026827

Mounting possibilities

- Base mount
- Drop-in
- Top mount
- Foot mount
<table>
<thead>
<tr>
<th>Stroke</th>
<th>[ mm ]</th>
<th>80</th>
<th>100</th>
<th>125</th>
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<th>200</th>
<th>250</th>
<th>300</th>
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<td>320</td>
<td>370</td>
<td>440</td>
<td>520</td>
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<td>220</td>
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<td>240</td>
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<td>755</td>
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<tr>
<td></td>
<td>L min</td>
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<td>255</td>
<td>280</td>
<td>315</td>
<td>355</td>
<td>405</td>
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**Application example**

When using traditional springs, for example four TU 5000 with a 250 stroke length for die separation in a die, each stroke applies an initial force of 20 ton ending with a force of 30 ton. *Diagram 1.*

When using Die Separation Gas Springs in the same application, the force of each stroke is merely 10% compared to the TU springs. *Diagram 2.*

The return speed of the DS springs, 1-2 minutes to full return stroke, is very slow. However, this speed does not have a negative impact on the springs to return to the standby position when the production is completed. Depending on the production rate, the piston rod will oscillate approximately 10% of its total stroke length during production.

**Return speed variation**

Since we can not guarantee an absolute equal return speed, the DS gas springs are suitable for line dies, i.e. dies with not more than four pillars. Some progressive dies with multiple die sets are more sensitive to drawer effects and therefore not suitable for DS gas springs.
The Safer Choice

Introduced in 1983, the KALLER gas spring technology quickly led to worldwide demand. The Safer Choice – Training, Safety and Reliability – has always been a KALLER top priority for providing the safer working environment. We recommend looking through all available KALLER features when selecting gas springs and gas or hose linked systems.

KALLER Training Program

TRAINING. Without doubt the KALLER Training Program is the best and most creative way to fully understand and appreciate the importance of the safety and reliability features.

KALLER Safety App

SAFETY. Fake or KALLER original? With the KALLER Safety App you can identify and verify your specific KALLER gas springs.

Overstroke Protection System

SAFETY. When a gas spring is overstroked, this helps reduce the risk of tool damage or injury.

Overload Protection System

SAFETY. Jammed cam or tool part being forced by gas springs? This will help reducing such risks.

Overpressure Protection System

SAFETY. Vents the spring if the internal gas pressure exceeds the maximum allowable limit to prevent accidents.

PED approved for a minimum of 2 million strokes

RELIABILITY. Our 2 million stroke PED approval ensures safer component cycle life.

Flex Guide™ System

RELIABILITY. Prolongs service life, allows more strokes per minute, and offers greater tolerance to lateral tool movements.

Dual Seal™ Link Systems

RELIABILITY. Fewer production interruptions due to leakage caused by vibration. Simplified installation thanks to the non-rotation feature.