

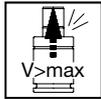


2486.22. Gas Springs DS for Die Separation

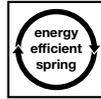


FIBRO - The Safer Choice: Properties of the Gas Spring DS

Safety features



Reliability features



FIBRO Training



For additional information, refer to the fold out page of the flyer or visit www.fibro.de

Description:

In line of reducing the set-up time while installing the tool in the press there are used autonomous acted gas springs for tool spacing.

While using conventional gas springs they are activated with every press stroke about the whole stroke length.

The new FIBRO gas spring, DS (Die Separation) have been developed especially for tool spacing.

Because of the slow return stroke speed, the gas spring DS does not need the total stroke length.

The FIBRO gas spring, DS minimises unwanted friction in the tool, press and in the gas spring itself.

A further benefit is that they use up to 80% less energy than "conventional" standard gas springs.

Properties:

- Initial spring forces of 3000 daN to 7500 daN
- Stroke lengths of 80 mm to 300 mm
- Standardised dimensions in accordance with ISO, VDI, CNOMO
- Very slow return stroke speed compared to standard gas springs: 0,2 m/min.
- Standard safety features (FIBRO Safer Choice)
 - Safety piston rod
 - Overpressure protection
- High flexibility during fixing from the top mounting notch and lower fixing groove, together with the tapped bores in the spring base

Spring force in daN at 150 bar* / +20°C

Spring type	Initial spring force	Final spring force*	øA	øB	C	D	E	øG	M
2486.22.03000.	3000	4800	50	95.2	24	8	7	60	M8
2486.22.05000.	5000	8200	65	120.2	25.5	8	7	80	M10
2486.22.07500.	7500	12400	80	150.2	27.5	8	8	100	M10

* at full stroke

Stroke

Spring type	80	100	125	160	200	250	300
2486.22.03000.	280	320	370	440	520	620	720
	$l_{min.}$	200	220	245	280	320	370
2486.22.05000.	300	340	390	460	540	640	740
	$l_{min.}$	220	240	265	300	340	390
2486.22.07500.	315	355	405	475	555	655	755
	$l_{min.}$	235	255	280	315	355	405

Diagram 1

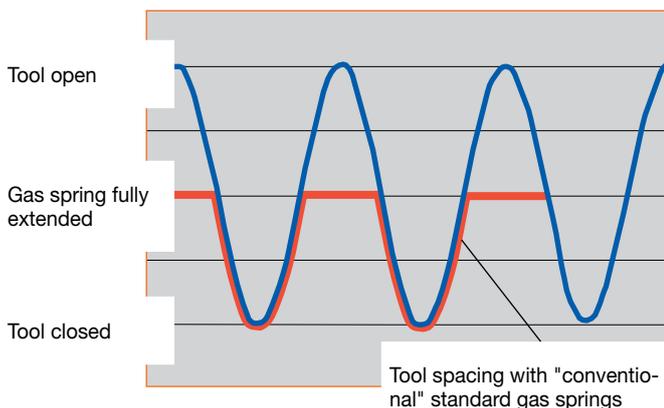
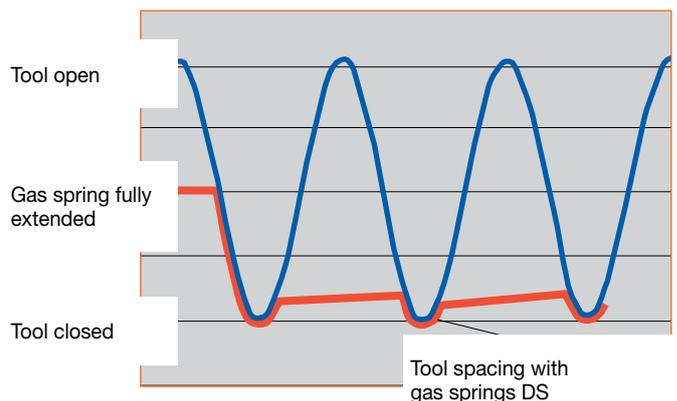


Diagram 2



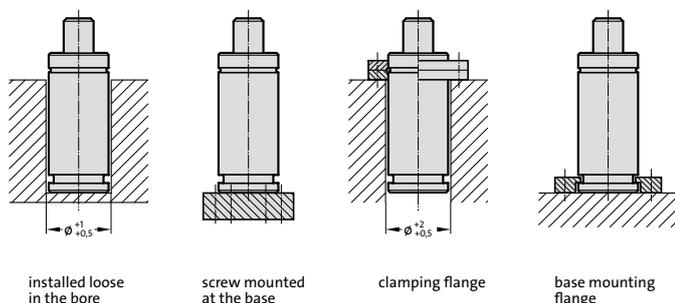
Application example:

When using "conventional" standard gas springs (such as 2480.13.05000.250) for creating spacing between the top and bottom parts of the tool, additional initial forces of 20 t are exercised when each stroke is performed. This force may rise to up to 30 t at the end of the stroke (see diagram 1). When you use the "new" gas springs, DS (for example, 2486.22.05000.250), the force in every stroke is reduced to less than 10% in the same application (diagram 2).

The return stroke speed in the gas springs, DS is very slow. The complete return stroke takes 1-2 minutes.

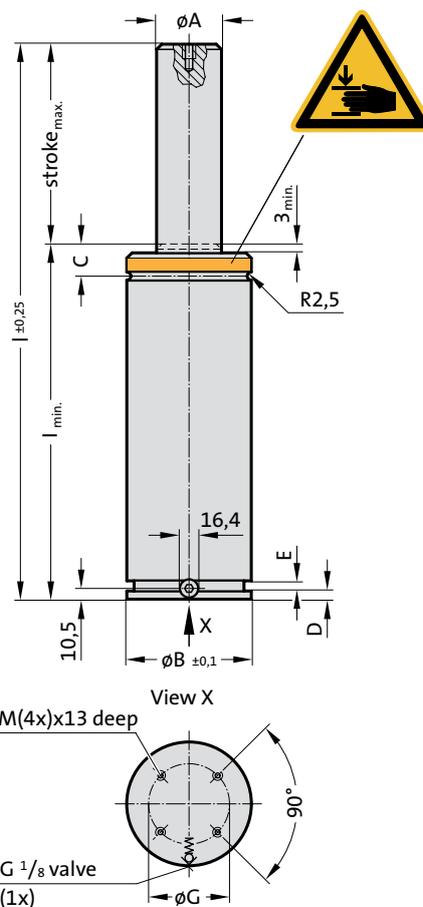
However, this slow speed does not have any negative impact on the end position (gas springs fully extended) of the return stroke at the end of production. The piston rod is actuated oscillating up to 10% of the entire stroke, depending on the production rate.

Mounting variations



Technical data

Pressure medium	Nitrogen - N ₂
Max. filling pressure	150 bar
Min. filling pressure	25 bar
Working temperature	0°C to +80°C
temperature related force increase	±0.3%/°C
Strokes/min.	~20 to 50 (at 20°C)
Max. piston speed	1.6 m/s
Max. return stroke speed	0.2 m/min.



Order code (example):

Gas spring DS for Die Separation	= 2486.22.
Spring force	= 3000 daN = 03000.
Stroke	= 160 mm = 160
Order No	= 2486.22.03000.160



FIBRO Reliability Features



Flexible guides: The Flex Guide™ System

The Flex Guide™ System is a flexible guide in the gas spring which absorbs lateral movements of the piston rod. It minimises friction and lowers the operating temperature.

The benefits are:

- Extended service life
- Increased stroke frequency, i.e. more strokes per minute



Safe hose connections: The Dual Seal™ System

The FIBRO Dual Seal™ System combines a metal seal with a soft elastomer seal. On hose connection systems, the system provides two leak-tight connections and prevents rotation.

The benefits are:

- Leak-tight connection, even under vibrations
- High process reliability
- Minimised tool down time
- Simple installation thanks to anti-rotation function



Wireless monitoring:

The Wireless Pressure Monitoring (WPM) System

The optional Wireless Pressure Monitoring System (WPM) (patent pending) wirelessly monitors the pressure and temperature of FIBRO gas springs. Before a defective part is produced, the press operator receives a message from the WPM and can take appropriate action.

The benefits are:

- Preventative quality assurance
 - High process reliability
 - Minimised tool down time
 - Reduced maintenance and costs
- Potential faults are individually displayed. As a result, service intervals can be extended. Maintenance and repair costs are reduced.



Protected piston rods: FIBRO Concertina Shrouds

The FIBRO Piston Rod Protection (patent pending) reliably protects the piston rods in gas springs against dirt, oil and emulsion. In this way, the system prevents damage to the piston rod surface and leaks at internal seals.

The benefit is:

- Significantly longer service life for gas springs under harsh operating conditions



Energy saving: Gas spring DS

The Gas Spring DS will not be displaced by every stroke of the top tool. This saves the energy expenditure of the press for the whole stroke of the spring.

The benefits are:

- Significantly longer service life for the gas spring
- Minimised tool down time due to reduced wear
- Up to 70-80% less energy than "conventional" standard gas springs for tool spacing.
- Reduced maintenance and costs



FIBRO Training

Use FIBRO training programmes to learn about and implement the safety and reliability of FIBRO gas springs.

FIBRO safety features

FIBRO - The Safer Choice

At FIBRO, safety and reliability are paramount. Particularly when it comes to our gas springs. With their unique range of safety features, FIBRO gas springs are the safest on the market.



PED approval for 2 million strokes

FIBRO gas springs are developed, manufactured and tested for 2 million full strokes* in accordance with DGRL97/23/EG. The springs deliver this full performance at the maximum permissible limits in terms of filling pressure and operating temperature - even when combined with any of the various mounting types available.

* Unless specified otherwise on the spring

The benefit is:

- Guaranteed safety and reliability for the entire service life of the spring. Repair kits and qualified training sessions available through FIBRO Service offer increased effectiveness and process reliability.



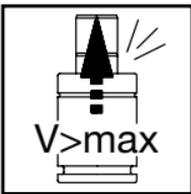
Overstroke protection

Conventional gas springs can burst in the event of an over-extended stroke. If this happens, parts flying around can become dangerous projectiles.

FIBRO gas springs are different: in the event of an overstroke and depending on the spring type the patented protection system will ensure that either the cylinder wall of the gas spring is deformed in a predefined manner (A) or the piston rod destroys a rupture bolt in the floor of the cylinder (B), thereby allowing the gas to escape into the atmosphere.

The benefit is:

- No risk of parts flying around in the event of an overstroke.



Return stroke protection

A particularly dangerous situation can arise with conventional gas springs if tool components become jammed and the pressure on the compressed piston rod is then abruptly released: in this case, the piston rod is then fired out of the cylinder like a missile.

FIBRO gas springs are different: special guides and a patented safety stop in the piston rods ensure your safety. If the speed is too high during the return stroke, the collar on the piston rod will automatically break. The integrated safety stop then destroys the seal, which allows the gas to escape into the atmosphere and the gas spring to become depressurised.

The benefit is:

- No risk of a piston rod firing out if the return stroke is too fast.



Overpressure protection

Conventional gas springs can burst if the internal pressure rises above a maximum permitted value. If this happens, parts flying around can become dangerous projectiles.

FIBRO gas springs are different: if the pressure rises above the maximum permitted value, the safety collar on the sealing set is automatically destroyed. The gas then escapes into the atmosphere and the gas spring is depressurised.

The benefit is:

- No risk of bursting parts in the event of overpressure

The safety features mentioned here have been implemented – with few exceptions – on all FIBRO gas springs.

Please refer to the relevant data sheets to check the current safety equipment which is provided with the gas spring you are interested in, or contact FIBRO GmbH directly for more information.

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