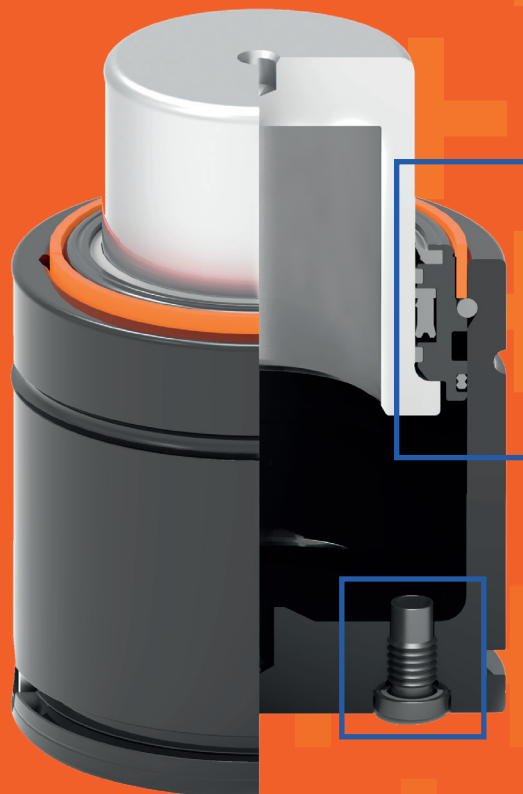


# Gas springs – New generation FOR YOUR SAFETY

## Optimum safety for tools and operators



# Gas springs – New generation FOR YOUR SAFETY

Maximum safety for persons and tools: 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 one of the safest on the market.

## FIBRO safety features 1)



### PED approval for 2 million strokes

FIBRO gas springs are developed, manufactured and tested for a minimum of 2 million\* full strokes in accordance with PED 2014/68/EU. 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.

\* Calculation value for durability

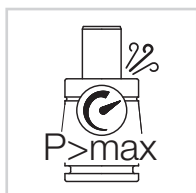
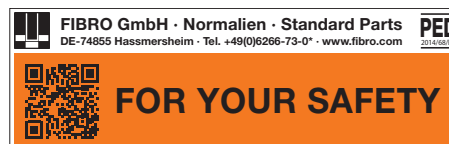
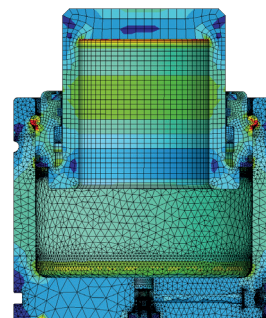
### The benefit for you:

- **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.

### Manuals

All current operating instructions are available under the link [www.gassprings.fibro.com](http://www.gassprings.fibro.com) or can now also be scanned from the QR code of the label.



### 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:

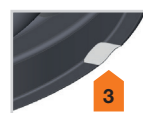
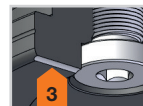
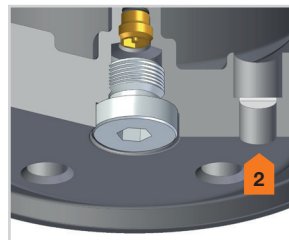
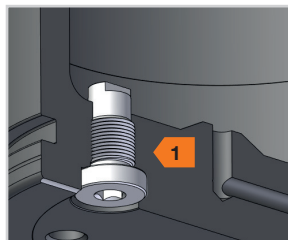
if the pressure rises above the maximum permitted value, the safety collar on the sealing set is automatically destroyed. The gas then escapes into the atmosphere and the gas spring is depressurised.

### The benefit for you:

- **No risk of bursting parts in the event of overpressure**

### Possible causes of triggering:

Incorrect filling (max. filling pressure 150 or 180 bar, nitrogen), infeed of liquid operating material, etc.



- 1 Bursting screw
- 2 Overpressure membrane
- 3 Evacuation groove

**This is standard for:** 2482.77. - 2480.24. - 2480.25. - 2480.15. - 2488.15. - 2487.15. - 2487.15.33. - 2485.15. - 2490.15. - 2497.15.

After a protection function is triggered, the spring cannot be repaired and can no longer be used. It must be replaced completely.

1) 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. For the safe handling of gas springs and other nitrogen products, the safety regulations must be observed. Maintenance work on the product may only be done, if nitrogen gas is no longer contained in the gas spring.

# Gas springs – New generation FOR YOUR SAFETY



## Overstroke protection

Conventional gas springs may burst in the event of an over-extended stroke. Components may come loose and be ejected.

FIBRO gas springs are different:

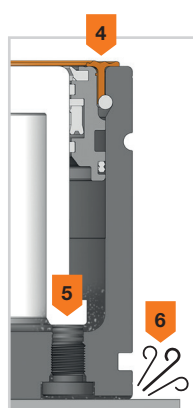
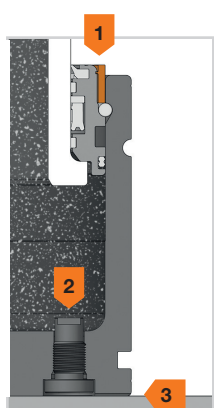
In the event of an over-extended stroke, the patented protection system (depending on the spring type) ensures that either the piston rod destroys a bursting screw in the base of the cylinder (A) or the seal on the cylinder wall of the gas spring loses its sealing function in a specific way (B).

## The benefit for you:

▶ **No risk of parts flying around in the event of an overstroke**

## Possible causes of triggering:

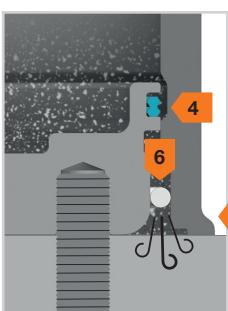
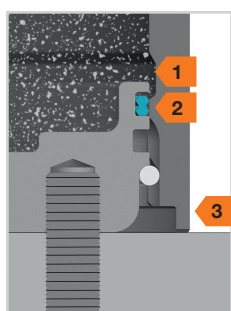
Lack of stroke limitations in the tool/machine and placing the piston rods under a load (e.g. sheet-metal holder, slide reset, etc.), double sheet, incorrect installation position, etc.



- 1 Over-extended stroke marking ring
- 2 Bursting screw
- 3 Evacuation groove

- 4 Marking ring deformed
- 5 Bursting screw triggered
- 6 Nitrogen escapes via evacuation groove

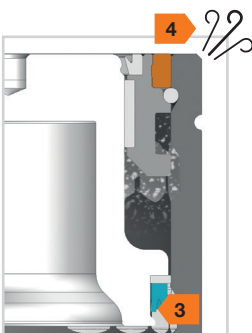
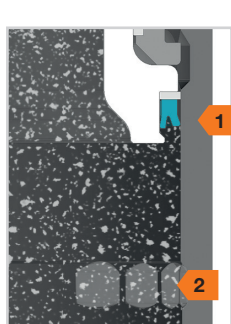
This is standard for: 2482.77. - 2480.24. - 2480.25. - 2480.15.  
- 2488.15. - 2487.15. - 2487.15.33. - 2485.15.



- 1 Recess
- 2 Seal
- 3 Deformation area

- 4 Release of seal
- 5 Targeted deformation
- 6 Nitrogen escapes via evacuation groove

This is standard for: 2497.15.



- 1 Seal
- 2 Overflow openings

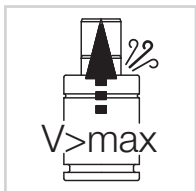
- 3 No sealing function
- 4 Nitrogen gas escapes into the atmosphere

This is standard for: 490.15.

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## FIBRO safety features 1)



### Return stroke protection

If, for any reason, tool components should get stuck and the piston rod should be freely released from its compressed position, conventional gas springs may pose a safety risk as the piston may not be retained in the gas spring.

FIBRO gas springs are different:

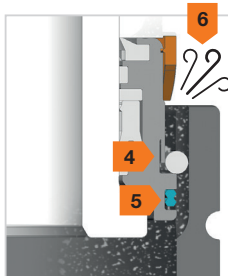
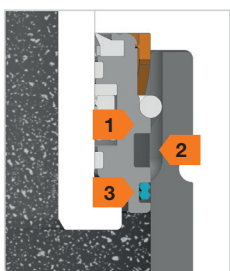
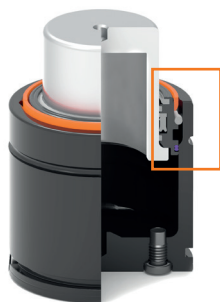
Special sealing inserts in combination with evacuation grooves ensure safety. If the speed is too high during the return stroke, the collar in the sealing insert will automatically break. The integrated evacuation grooves in the cylinder tube allow the gas to escape into the atmosphere and the gas spring becomes depressurised.

### The benefit for you:

▶ **No risk of a piston rod firing out if the return stroke is too fast**

### Possible causes of triggering:

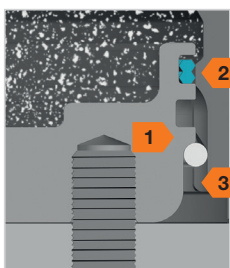
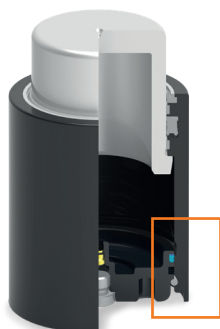
Sudden loosening of jammed components, such as sheet-metal holder, slide, ejector, scraper function, etc.



- 1 Safety collar
- 2 Evacuation groove
- 3 Seal

- 4 Deformation of the safety collar
- 5 Release of seal
- 6 Nitrogen gas escapes into the atmosphere

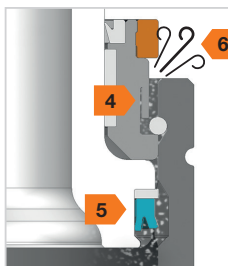
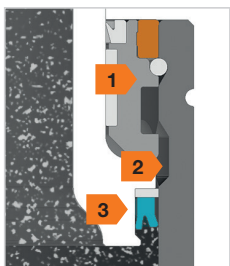
This is standard for: 2482.77. - 2480.24. - 2480.25. - 2480.15. - 2488.15. - 2487.15. - 2487.15.33. - 2485.15.



- 1 Safety collar
- 2 Seal
- 3 Evacuation groove

- 4 Deformation of the safety collar
- 5 Release of seal
- 6 Nitrogen gas escapes into the atmosphere

This is standard for: 2497.15.



- 1 Safety collar
- 2 Evacuation groove
- 3 Seal

- 4 Deformation of the safety collar
- 5 Release of seal
- 6 Nitrogen gas escapes into the atmosphere

This is standard for: 2490.15.

# Gas springs – New generation FOR YOUR SAFETY

## FIBRO reliability features



### Wireless monitoring:

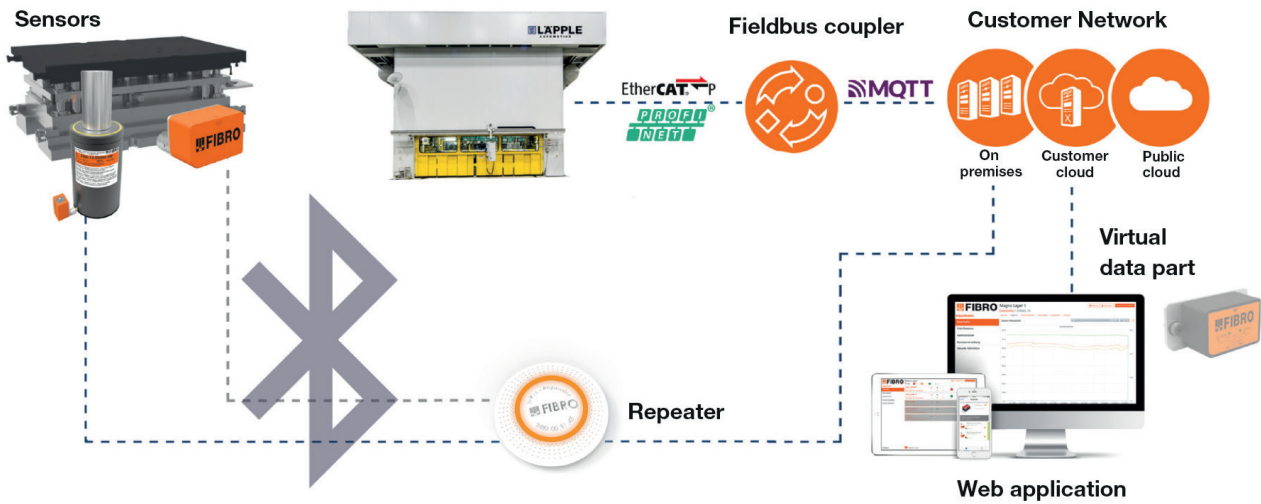
#### The Wireless Pressure Monitoring (WPM) System

The 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 for you:

- ▶ 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.



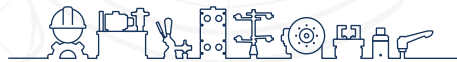
### Protected piston rods: The FIBRO-TEX

The FIBRO piston rod protection, FIBRO-TEX reliably protects the piston rod of the gas spring against dirt, oil, and emulsion. This prevents damage to the surface of the piston rod and leakage at the inner seals.

### The benefit for you:

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





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