

OPTIMUM SAFETY
FOR TOOLS AND OPERATORS
**FIBRO GAS SPRINGS –
THE SAFER CHOICE**



for
2 Million strokes





FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.06600.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 660 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.09500.075**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 9500 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.20000.075**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 20000 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.04200.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 4200 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.00500.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 500 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.00750.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 750 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.01000.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 1000 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

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D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.01500.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 1500 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.02400.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 2400 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.00170.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 170 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

FIBRO GmbH - Normalien - Standard Parts
D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.00320.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 320 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

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D-74855 Hasmersheim - Tel. +49(0) 9266-73-0* - Fax +49(0) 9266-73-237
Bestell-Nr. / Order-No. **2487.12.00350.063**
Fülldruck / Filling pressure: 150 bar
Federkraft / Spring force: 350 daN
PEZ-Dauerlast für 2.000.000 Hub- oder Hubauslastung / PEZ-draw force for 2,000,000 strokes at full stroke load

Gasdruckfeder - Warnung! Nicht öffnen - hoher Druck; Fülldruck max. 150 bar. Bitte Bedienungsanleitung beachten!
Gas spring - Warning! Do not open - high pressure; filling pressure max. 150 bar. Please follow instructions for use!
Resort à gaz - Attention! Ne pas ouvrir - haute pression; pression de remplissage max. 15 MPa. Veuillez observer les instructions d'emploi.
Molle a gas - Attenzione! Non aprire - pressione alta massima: pressione di riempimento max. 150 bar. Si prega di osservare le istruzioni per l'uso.
Muelle de gas - Atención! No abrir - alta presión; cargado a max. 150 bar. Por favor observar las instrucciones.

Gasdruckfeder - Warnung! Nicht öffnen - hoher Druck; Fülldruck max. 150 bar. Bitte Bedienungsanleitung beachten!
Gas spring - Warning! Do not open - high pressure; filling pressure max. 150 bar. Please follow instructions for use!
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Muelle de gas - Atención! No abrir - alta presión; cargado a max. 150 bar. Por favor observar las instrucciones.

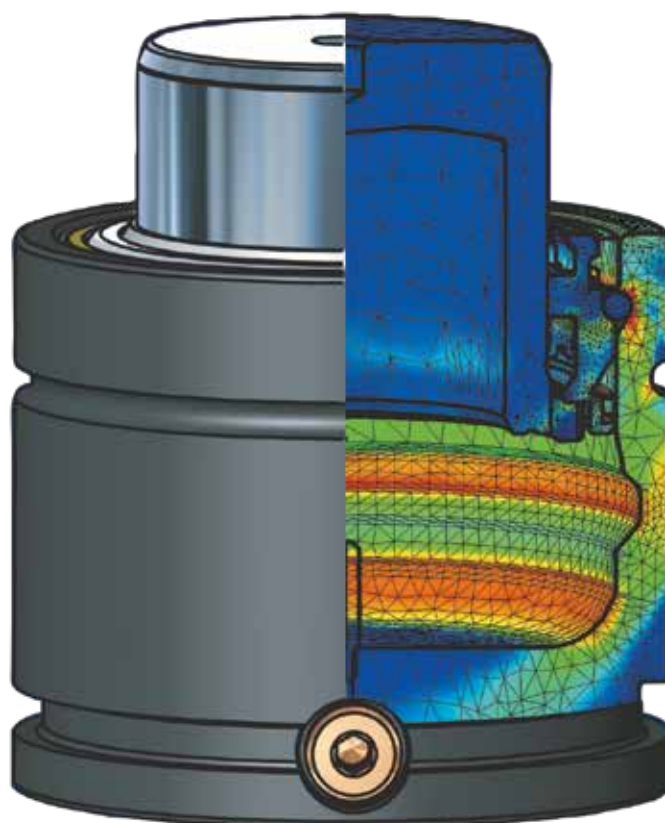
FIBRO GAS SPRINGS

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 ONE OF THE SAFEST ON THE MARKET. 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.

AFTER A PROTECTION FUNCTION IS TRIGGERED, THE SPRING CANNOT BE REPAIRED AND CAN NO LONGER BE USED. IT MUST BE REPLACED COMPLETELY.

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.



THE SAFER CHOICE

SAFETY FEATURES



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

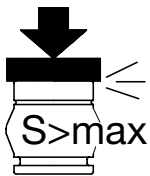
Repair kits and qualified training sessions available through FIBRO Service offer increased effectiveness and process reliability.

Normalien · Standard Parts · DE-74855 Hassmersheim **FIBRO**
 T +49(0)6266-73-0 · F +49(0)6266-73-237

Bestell-Nr.: **2480.13.05000.050**
 Order-No.: **2480.13.05000.050**
 Fülldruck: **150 bar** Federkraft: **5000 daN**
 Filling pressure: **150 bar** Spring Force: **5000 daN**

PED-zugelassen für 2.000.000 Hübe bei voller Hubauslastung.
 PED-approved for 2,000,000 strokes at full stroke load.

Gasdruckfeder – Warnung! Nicht öffnen - hoher Druck; Fülldruck max. 150 bar. Bitte Bedienungsanleitung beachten!
Gas Spring – Warning! Do not open-high pressure; filling pressure max. 150 bar. Please follow instructions for use!
Ressort à gaz – Attention! Ne pas ouvrir - haute pression de remplissage max. 15 MPa. Veuillez observer les instructions de remplissage.
Molle a gas – Attenzione! Non aprire - alta pressione di riempimento max. 150 bar. Si prega di osservare attentamente le istruzioni.
¡Muelle de gas – Atención! No abrir - alta presión a mass. 150 bar. ¡Por favor observar las instrucciones!



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:

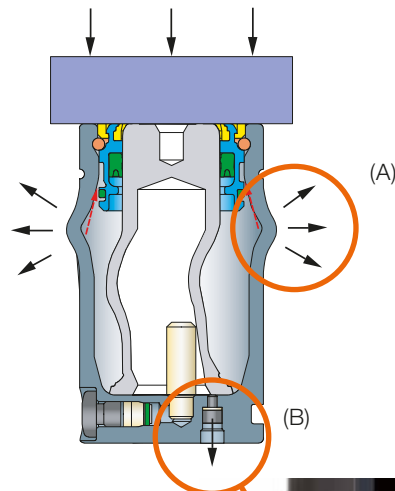
in the event of an overstroke and depending on the spring type the patented protection system will ensure that either the cylinder wall of the gas spring is deformed in a predefined manner (A) or the piston rod destroys a rupture bolt in the floor of the cylinder (B), thereby allowing the gas to escape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

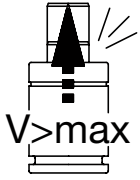
THE BENEFIT FOR YOU:

- Safe working environment and reduced risk of damage to the tool

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.





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:

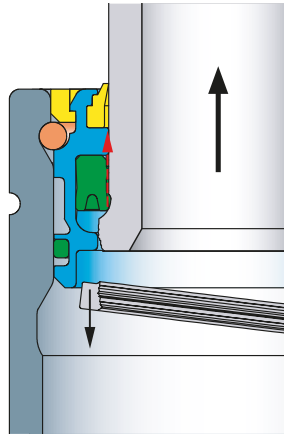
Special guides and a patented safety stop in the piston rods ensure your safety. If the speed is too high during the return stroke, the collar on the piston rod will automatically break. The integrated safety stop then destroys the seal, which allows the gas to escape into the atmosphere and the gas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

THE BENEFIT FOR YOU:

- Safe working environment and reduced risk of damage to the tool

POSSIBLE CAUSES OF TRIGGERING:

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



OVERPRESSURE PROTECTION

Conventional gas springs can burst if the internal pressure rises above a maximum permitted value. This may pose a safety risk for operators and tools.

FIBRO GAS SPRINGS ARE DIFFERENT:

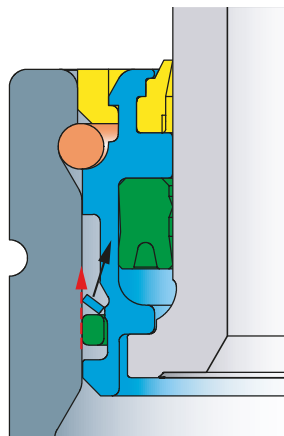
if the pressure rises above the maximum permitted value, the safety collar on the sealing set is automatically destroyed. The gas then escapes into the atmosphere and the gas spring is depressurised.

THE BENEFIT FOR YOU:

- Safe working environment and reduced risk of damage to the tool

POSSIBLE CAUSES OF TRIGGERING:

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



THE SAFER CHOICE

RELIABILITY FEATURES



FLEXIBLE GUIDES: THE FLEX GUIDE™ SYSTEM

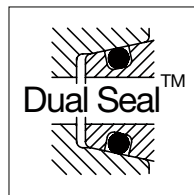
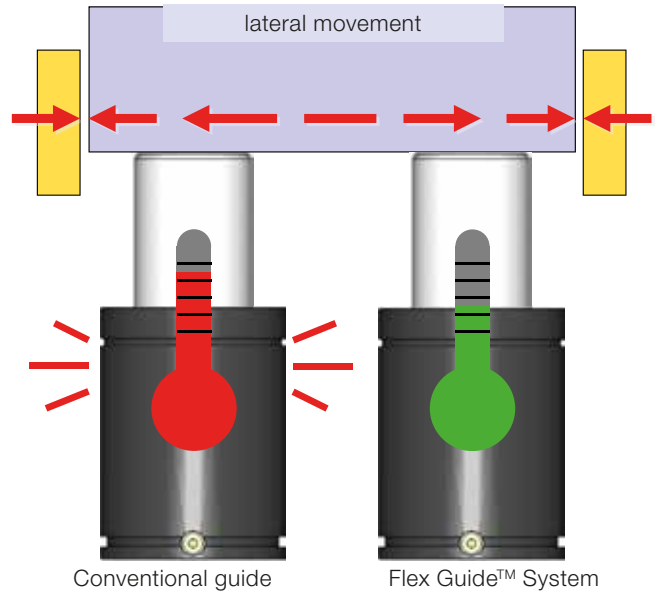
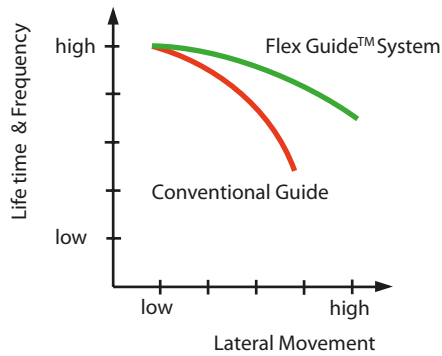
Flex Guide™

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 FOR YOU:

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



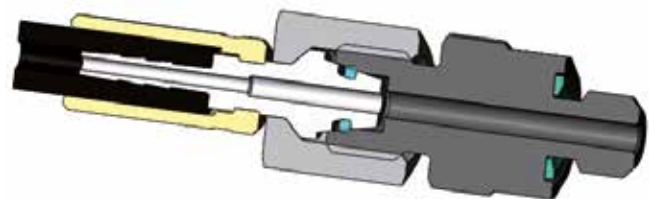
SAFE HOSE CONNECTIONS: THE DUAL SEAL™ SYSTEM

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 FOR YOU:

- 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**

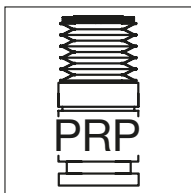
The optional Wireless Pressure Monitoring System (WPM) (patented) wirelessly monitors the pressure and temperature of FIBRO gas springs. Before a defective part is produced, the press operator receives a message from the WPM and can take appropriate action.

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.

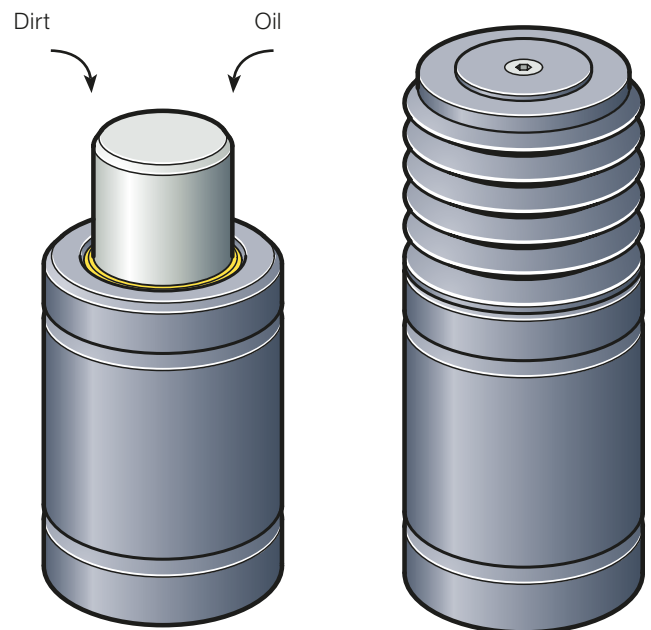


**PROTECTED PISTON RODS:
FIBRO CONCERTINA SHROUDS**

The FIBRO Piston Rod Protection (patented) 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 BENEFITS FOR YOU:

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



FIBRO GMBH

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 info@fibro.de

THE LÄPPLE GROUP

LÄPPLE AUTOMOTIVE
 FIBRO
 FIBRO LÄPPLE TECHNOLOGY
 LÄPPLE AUS- UND WEITERBILDUNG

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 info@fibro-india.com

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FIBRO Asia Pte. Ltd.

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