

Air Springs

General Information

Permissible working media for air springs

- Compressed air (also containing oil)
- Nitrogen
- Water (also with glycol) for air springs with corrosion-resistant metal parts

Chemical resistance

Weforma air springs are resistant to:

- compressed air containing oil
- chemically non-aggressive dust and contaminants
- alkaline and acidic cleaning agents
- glycol-based hydraulic fluids
- the effects of weathering

In general, Weforma air springs should not be exposed to mineral oils, synthetic ester oils and solvents. This does not apply however to the temperature-resistant convoluted air springs made of epichlorhydrin (ECO), which are also resistant to mineral oils. Please ask for the Weforma chemical resistance list.

Temperature resistance

- Standard convoluted air springs and rolling lobe air springs: -40 to $+50^{\circ}\text{C}$ ($+70^{\circ}\text{C}$)
- Temperature resistant convoluted air springs (ECO): -20 to $+115^{\circ}\text{C}$ ($+130^{\circ}\text{C}$)
- Sleeve type air springs (WSR): -30 to $+70^{\circ}\text{C}$ ($+90^{\circ}\text{C}$)

The numbers in brackets represent the maximum permissible operating temperature. When operated at this temperature, however, the spring may have a reduced service life.

Storage

Weforma air springs should be stored in dark, dry conditions at normal room temperature (DIN 7716).

Weforma air springs are products designed to provide long, reliable service. Their durability and performance also depend of course on careful consideration of the design requirements and on correct handling during service.

The following should be considered when designing and fitting, ensuring that all of the benefits provided by Weforma air actuators are exploited to the fullest, in both pneumatic systems and vibration isolation.

Safety Information

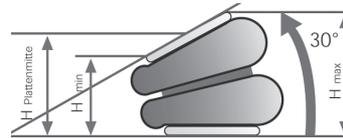
- Before installing the air spring, check it carefully for any damage it may have suffered from transport or improper storage.
- Do not inflate the air spring until it has been secured properly. There must be an upper height stop.
- The maximum operating pressure for the standard model is 8 bar. Reinforced products suitable for pressures up to 16 bar are available on request.
- The full surface of the metal parts is to be used to bear the forces.
- Air springs must be equipped with lateral guides.
- Deflate the air springs fully before removing.
- Ensure that the bellows is not constantly in contact with hydraulic oil, lubricants, solvents, metal cuttings and welding sparks.
- Should the air spring be subjected to special media in an application, ask Weforma Dämpfungstechnik GmbH for further information, specifying the medium, temperature and concentration.

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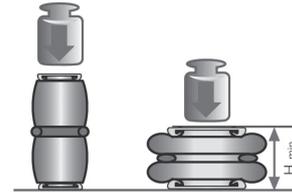
Tilt angle

Tilt angles from 5° to 30° are possible, depending on the spring design.



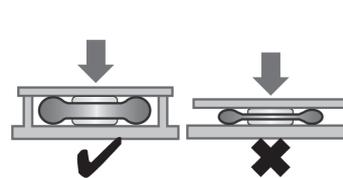
Return

The air spring is a single-action pneumatic cylinder. The return stroke must be actuated by external forces, for instance a load, a counter cylinder or a spring.



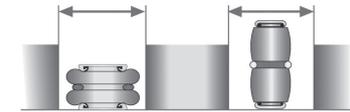
Down stops

Mechanical down stops prevent the spring from being damaged as a result of overcompression.



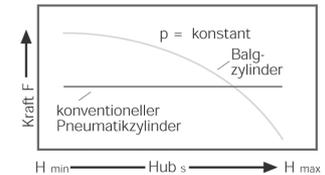
Installation space

The installation space is to be constructed such that the bellows does not rub against the machine.



Force

The force depends directly on the stroke positions. At a constant pressure, the force decreases as the stroke increases.



Up stops

Mechanical up stops prevent the actuator from being overstressed or bursting.

