GAS SPRINGS/STRUTS
DESCRIPTION & INSTRUCTIONS FOR USE

General description

A gas spring/strut consists of a cylinder and a piston with a poston rod and is filled with (highly) pressurised nitrogen. An end plug seals the cylinder at the point where the piston rod comes to rest at the back on being compressed. The front end where the rod extends out is also sealed.

The pressure at the front end and the back end of the piston is equalized by (small) quantities of contained oil flowing through channels, thereby providing a damping medium for both the compression and traction/extension strokes. The filling pressure x the surface area of the piston rod determines the traction/extension force.

1. The traction/extension force Fl is measured at + 20 degrees Celsius. A deviation of +/- 3.4% pressure increase/decrease applies per 10 degrees Celsius.
2. Gas Springs / Struts must be absolutely free from lateral forces, shocks and vibrations to work properly and the piston rods must be kept damage and dirt free. Aggressive cleaning agents and/or cleaning methods are not permitted.
3. The vent hole in gas – traction/extension- springs/ struts should not be allowed to clog up. Gas-traction/extension- spring/ struts can only be mounted when in an unloaded state. Do not use Loctite to secure the grub screw in the bottom section. Prevent the piston rod and/or the cylinder from shooting back unloaded.
4. A gas spring/strut is not a product without risks, which means that additional safety measures must be taken if gas springs/struts are used in places where failure could pose a risk to people and/or the environment.
5. A gas spring/strut must not be used as an end stop. The gas springs / struts can be loaded with a maximum extra load of 25 percent above the maximum traction/extension or compression load of the corresponding type of gas spring/strut.
6. Gas springs/struts can only be used in the aviation and aerospace industry after manufacturer's written consent.
7. Stock management: filled gas spring/struts can be stored horizontally for a maximum of 3 months under normal ambient temperatures. If the gas springs/struts are going to be stored for longer periods, the piston rod has to be facing downwards. Storage for more than 1 year must be avoided.

Where to mount the gas springs/struts?
The SpringMasters mounting instructions give the coordinates where the gas springs/ struts have to be mounted. Coordinate R is where the gas spring/strut must be mounted onto the fixed application. The mounting point of the gas spring/strut onto the moveable part is indicated with a K. Both coordinates should be viewed from the perspective of the hinge point of your application.

How to mount the gas springs/struts?
The gas springs/struts must be mounted with the piston rod (the narrow part) pointing down. This will enable a high damping effect at the end of the stroke.

The end damping slows the gas spring/strut down at the end so that the hinges are not subjected to forces.
This will be to the benefit of the gas spring/strut as well as the application.

What to look out for when mounting?
Check properly whether the connection parts have been tightened properly on the piston rod side as well as on the cylinder side. Incorrect tightening of the connection parts may result in the screw threads being damaged. Ensure that the gas springs/struts are not subject to side load forces.

Gas springs/struts must be mounted linearly between the pivot points. It is also essential that the gas springs/struts can rotate around the pivot points. Selecting the correct connection and mounting parts will facilitate proper mounting.

NB: Always avoid damaging the piston rod in any way. Damage will result in the seals failing and consequently the nitrogen can escape from the gas spring/strut. After a while, the gas springs/struts will not function properly and will need to be replaced. Damaging the piston is not covered by our warranty.

Note:
1) Gas compression springs/struts: Mount the piston rod downwards.
   Gas traction/extension springs/struts: Mount the piston rod upwards.
2) Take any free play of the connection points into consideration – avoid side load forces on the piston rod.
3) The gas springs/struts will malfunction due to any minor damage or due to paint residues on the piston rod.
4) If possible, mount the gas spring/strut after the application has been completed and has been painted.
5) The guarantee will become null and void if no notice is taken of the above mentioned points.
6) Highly pressurised – do not open, do not heat.
7) The use of Loctite is forbidden unless discussed and indicated otherwise.

Instructions for the removal of used gas springs/struts by a properly equipped workshop.
The handling of gas springs/struts
- Gas springs/struts are highly pressurised. They may not be opened – may not be heated.
- Gas springs/struts are filled with nitrogen and oil. Rejected gas springs/struts have to be disposed of via specialised waste collection points. Especially the drained oil. Oil (Synthetic and HLP) must not be released into the environment.
- Do not place gas springs/struts with household waste! Beware, danger!

General note: delivery takes place in accordance with our registered General Terms and Conditions of Sale, Delivery and Payment; we can send you a copy of this upon request.