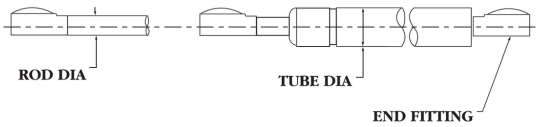
Gas Spring Safety Requirements

Please read carefully before installing. Failure to do so could invalidate your warranty.

Gas Springs are filled with nitrogen at very high pressures and under no circumstances should they be opened or tampered with, or subjected to excessive heat or tension.

Gas Springs should always be treated with respect to the inherent properties associated with any pressurized product.



The nature of a gas spring is to lose pressure over a long period of time. It is highly advisable to periodically check its ability to operate as initially intended, and to include this check as part of a planned maintenance program. Immediately replace the gas spring if, and when necessary.

For optimum performance, we advise the use of ballsocket connections to alleviate possible side load. Always ensure end fittings are fully screwed onto the gas spring thread ends before installation.

Mount with the piston rod in the down position, preferably within 60 degrees to vertical, and avoid the spring traveling through a large arc. It is advisable to keep the spring in a single plane of movement. Failure to adhere to this advice may result in reduced life of the gas spring.

Please contact Guden for more information or advice.

Adjustable Gas Spring Instructions

NOTE: *A slight mist of oil may sometime be seen escaping when venting gas. This is normal. To minimalize the amount of oil released, always keep the tube above the rod when releasing pressure.*

Fit the gas spring with the cylinder or tube uppermost. The adjustable gas spring will be seen at the top of the cylinder (X).

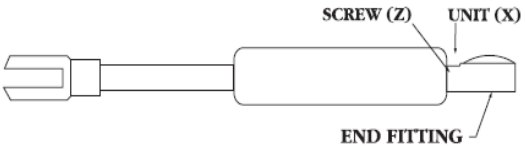
Adjustment of the Screw

Ensure the 2mm allen key (provided) is located in the screw (Z) to its maximum depth. Undo the screw carefully by rotating counter-clockwise until gas is heard escaping. When re-tightening, care should be taken to ensure that excessive force is not applied, as this will damage the hexagon in the screw and make it inoperative.

Repeat the process releasing a tiny amount of gas at a time until the required spring action is acquired. It is advisable to add approximately 10% to the weight being supported when adjusting the gas spring. This will reduce the chance of releasing too much gas.

If the application is using two Adjustable Gas Springs, care should be taken to release pressure at as close to an equal rate as possible in both springs to avoid buckling, or over stressing of the cover.

Under no circumstances should the screw be removed.



Friction Stop Gas Spring Instructions

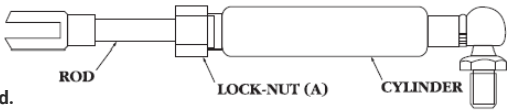
When initially fitting the gas spring, position with the rod down wherever possible.

To adjust a gas spring's degree of hold and ability to stay in various positions, it is necessary to adjust lock nut (A) as shown on spring tube.

Turn clockwise to increase hold, turn counter-clock-wise to decrease hold. Progressively adjust the locknut by small increments until the required gas spring action is achieved.

NOTE: Under no circumstances should excessive force be used.

For FrictionStop fitted with an adjustable valve feature, release the friction locking nut prior to releasing any gas. This will prevent releasing too much gas due to increased friction from the locknut device.



GUDEN
H.A. Guden Co., Inc.
99 Raynor Avenue, Ronkonkoma
NY 11779-6634
631-737-2900
info@guden.com
www.guden.com

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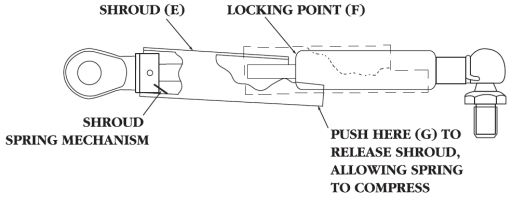
Locking Gas Spring Operating Instructions

WARNING: *If Gas Spring is STUD ended it will have a retaining nut on the shroud end for transportation only. This nut MUST be removed before applying an end fitting or installing into the application.*

Locking Gas Springs eliminate the need for separate safety rods in critical lift assist applications. They lock in place when fully extended, protecting the operator from potential injury in the unlikely event of gas spring failure through overload or misuse.

The locking feature occurs automatically when the gas spring is fully extended by a spring loaded locking shroud (E), moving into place (F), thereby preventing the gas spring from compressing.

The shroud is manually released by applying thumb pressure to the designated area of the locking shroud (G), allowing the gas spring to compress in a controlled manner.



The locking feature is not to be substituted for, or cause the elimination of a planned maintenance program. Gas springs must still be checked for performance, and the lock should not be used when the gas spring fails to operate on its own.

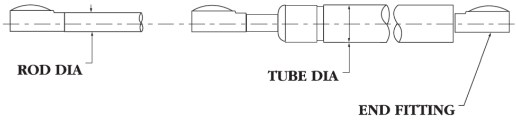
Damper Operating Instructions

Dampers should never be forced to extend or compress with any additional pressure other than the weight of the lid or door they are being used on.

Compression dampers operate best in the shaft (rod) up position so that the internal piston remains in the oil. The lid or door should be closed before full compression is reached.

Dampers operating only in a horizontal plane should be custom made as "non-cavitating" to insure that damping is effective. Always ensure end fittings are fully screwed onto the damper thread ends before installation.

Extension dampers operate best in the shaft (rod) down position to effectively slow the motion when extending. It is recommended to have an outside positive stop for the lid or door in addition to the damper.



Gas Spring and Damper Safety and Design

IMPORTANT RULES ABOUT GAS SPRINGS AND DAMPERS

- Never allow a single gas spring or damper to be the only thing preventing a fall on to a persons body or limb. Always add redundant units, props, or supports.
- Always take care to account for forces at the mounting points, and provide sufficient strength in connectors, mounting brackets and fasteners.
- Always store and mount the gas spring or damper roughly vertical with the rod end down (except compression dampers, which should be rod up).
- Always align your design such that all forces or loads are purely axial in direction.
- Never allow any sideways forces on the rod or tube, and never allow any contact against rod or tube.
- Never allow any bending torque around the mounting points, they should be free swiveling.
- Although common practice, it is not recommended to use the gas spring or damper to stop travel.
- Never chip, bend, dent, paint or scratch the rod as this will damage the seals.
- Keep cycles-per-minute under 4; faster cycling will overheat and/or over wear the seals.
- Never attempt to puncture or burn the gas spring or damper.

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