

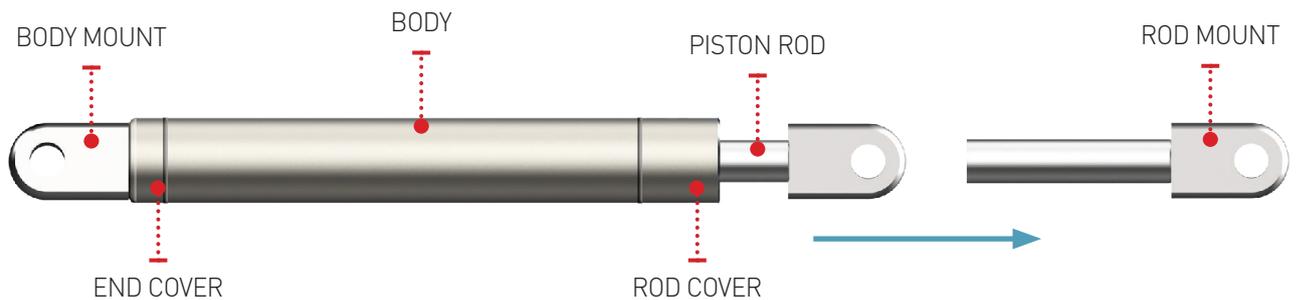
Instruction Manual

Gas Spring

※ Details could be changed without prior notice subject to the performance upgrade.

2. Features of KGP(Extension type) Gas Spring

- 1) KGP is pull type gas spring. It is widely used for the open/close cover of machine, and the open/ close cover of tank container which is horizontally moving. And it is used on semiconductor equipments.
- 2) Temperature ranges : Standard (-10~60°C), Special (-30~100°C)

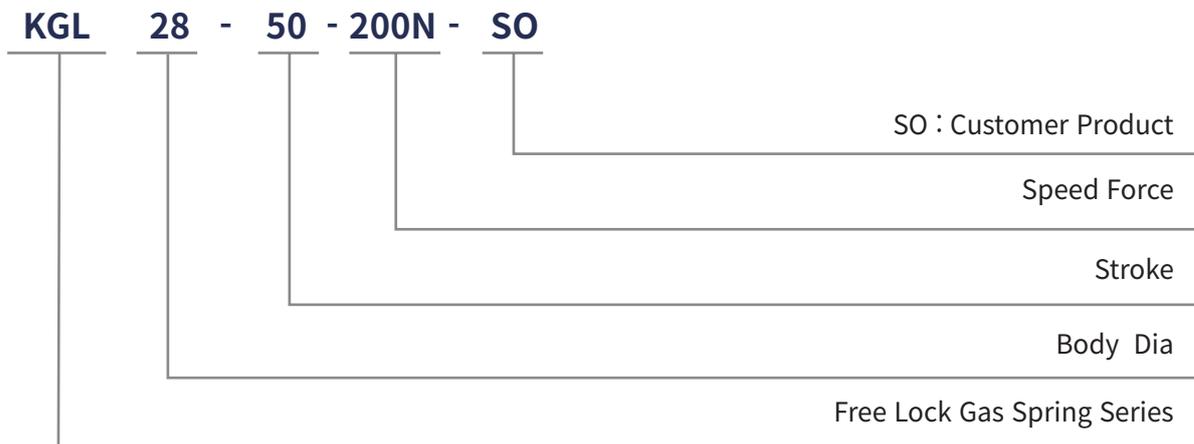


3. Features of KGL(Free Lock type) Gas Spring

- 1) Free Lock Gas Spring series has all merits of general Gas Spring. KGL Series have a free lock function that operators can decide a stroke at wanted location where operators want to install. Order made is possible according to size, stroke, force, material, etc.
- 2) Temperature ranges : Standard (-10~60°C), Special (-30~100°C)



3) KGL Series Ordering Information



4. Operation instrucion

KOBA's Gas Spring is designed to use a long service life, and be careful for the following cases in mind.

- 1) Never disassemble the Gas Spring.
 - It is very dangerous because compressed nitrogen gas is enclosed.
 - We would inform you that we are not obligated to compensate for any accidents that occurred during the disassembly process at the customer's discretion.
- 2) Do not leave the Gas Spring in a fire.
 - Nitrogen gas compressed inside the gas spring is not flammable, but the body could be tortured due to the increase in gas pressure by heating, and there is a possibility that the oil and components inside may protrude, which may cause a safety accident.
- 3) Do not use in the state of gas leakage.
 - When the internal gas pressure is lowered, there is a risk of damage by the collided object as the mounted heavy object may fall or not be able to effectively decelerate it. It can also be a reason of safety accident risk.
- 4) Do not apply excessive force beyond the maximum stroke of the gas spring.
 - Gas Spring does not have the strength to withstand excessive force in the tensile direction. Pulling with excessive force can be dangerous due to gas leakage.
- 5) The installation and selection of the gas spring should be decided after fully considering the application conditions.
 - Please consult us for any other unclear parts, such as product specifications and application conditions.
- 6) Be careful not to paint the piston rod or contaminate the surface.
 - If the surface is painted or foreign substances and dust accumulate, the packing will be damaged, and the output force will be lowered due to the leakage of gas and oil, and it will not be able to play an effective buffer role.
- 7) Use within the operating temperature range (-10 to 60°C).
 - Affected by temperature, the output force changes, which may cause damage to the falling support and collision objects. Consult with us when using the product in the condition of out range of the operating temperature.
- 8) Do not use the gas spring at a rapid speed (more than 1m/sec).
 - It may damage the product and cause gas leakage.
- 9) Do not expose the Gas Spring to rain or water.
 - The fixed supporting parts are galvanized and painted, but they cannot be perfect in corrosion.
- 10) Do not tighten the body of the product with bolts or make holes.
 - Internal gas and oil may leak and cause product failure.
- 11) Install the safety fixture on the gas spring installation part.
 - Since the gas spring is a device that helps the opening and closing of heavy objects, it cannot serve as a prop by itself. When it left as opened for a long time, be sure to use a safety fixture additionally to prevent heavy objects from falling.
- 12) Operate the installed gas spring once or twice a month to check for any abnormalities.
 - If an abnormality occurs after operation inspection, inject or exchange gas into the product.
- 13) Be sure to remove the product protection net for piston rod protection before use.



5. General Checking

1) Regular Checking

- Check the below things regularly.

Since this product cannot be disassembled and repaired, replace the gas spring in case of malfunction. Also, if the oil enclosed in the gas spring is thrown away carelessly, it will pollute the environment.

Please dispose of it according to oil waste recycling rules.

2) Checking Point

- Lock Nut fastening condition
- Condition of Piston Rod (Damage or Scratch)
- Checking the Stroke
- Outer Appearance of shock absorber
- Oil Leakage
- Noise on operation

If any trouble to be found, please refer the below “3) Trouble and Count measure”.

3) Trouble and Count measure

Trouble	Cause	Counter Measure
Fixed Nut, Loose Hinge	Insufficient tightening torque	Tighten Nuts or Bolts properly .
	The loosen device by vibration, etc.	Please adjust the vibration of the device.
Oil leakage	Oil Seal is damaged because of foreign material on the Piston Rod	Clean Piston Rod and cover the Piston Rod.
	Ambient temperature is too low	Set the gas spring temperature to -10°C or higher or replace it for cold resistance.
	Life span is over	The product has reached the end of its life time. Please replace the gas spring.
Rod is not returned	Ambient temperature is too low	Set the gas spring temperature to -10°C or higher or replace it for cold resistance
	Life span is over	The product has reached the end of its life time. Please replace the gas spring.

※ If you have any other questions, please contact KOBA Headquarters.



This product is manufactured through strict quality control.
The product warranty period is 12 months from the date of purchase.

1. Free Service

In case the trouble comes within the warranty period, please contact our distributor or head quarter for free maintenance service or replacement.

2. Service on cost

Following cases are out of free service and it requires to pay for the service cost.

- 1) Mishandling on operation
- 2) Passing warranty period
- 3) When abnormal operation occurs or the product cannot be used again by applying it on abnormal conditions
- 4) Failure or damage due to user negligence (arbitrarily disassembled, assembled, or modified)
- 5) Failure and damage due to natural disasters
- 6) In case of damage caused by mistake during transportation
- 7) Failure or damage due to external shock, damage, or leakage



6F KOBABEST TOWER, 869, Buil-ro, Guro-gu, Seoul, Korea
TEL : +82-2-3397-7800 / FAX : +82-2-2611-5970 / E-Mail : koba@koba.co.kr