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GS-01

User Manual

TABLE OF CONTENTS

Safety Precautions	3
Specifications	4
Dimensions	5
Performance Graphs	7
Installation	8

Have any queries? Our expert engineers are here to help!



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SAFETY PRECAUTIONS

When installing and using your Progressive Automations gas springs, basic safety precautions should always be followed. Please read all safety precautions thoroughly and be familiar with all functions of the product before use. Apply all other relevant precautions when operating electrical and moving mechanical devices.

DANGER

To reduce the risk of electrical shock and injuries:

- Do not attempt to modify or repair the actuator.
- Avoid using the actuator in environments with explosive gases or flammable materials.
- Avoid using the actuator beyond its specified Ingress Protection rating.
- Make sure that the power source is properly grounded. Neglecting proper grounding can result in a dangerous electrical hazard.

WARNING

To reduce personal harm and injury:

- Follow recommended load ratings and specifications for the actuator.
- Avoid leaving the actuator unattended during operation.
- Avoid operating the actuator in areas with high levels of airborne contaminants.
- Ensure a clear path for full extension and retraction of the actuator.
- Keep hands and body parts clear of the actuator while it is in motion.
- Exercise caution around pinch points and moving components during the actuator's operation.
- Keep all loose clothing, jewelry, and personal items away from the actuator's moving parts.

OPERATING NOTES

Warranty

Any attempts to disassemble or tamper with the actuator's internal components or operation outside of the advertised usage limitations will result in voiding the product's warranty. For more information on our warranty terms, visit:

<https://www.progressiveautomations.com/pages/warranty-terms>

Force Restrictions

Gas Springs must be used within the specified force rating outlined in this documentation. Load must be evenly distributed. Exceeding the recommended force rating may result in failure of the gas spring. It may also damage the product and void the warranty. Please note that the weight of the load does not always equal the total force due to mechanical advantage, wherein the force may increase or decrease depending on the application.

Operation Time

Gas Springs must be operated within the specified operation time and frequency. Exceeding the duty cycle rating can significantly reduce the actuator's expected lifespan and will void the warranty.

SPECIFICATIONS

RATED LOAD CONFIGURATIONS

Rated Load (lbf)		Speed ¹ (inch/sec)	
Dynamic	Static	No Load	Full Load
56	56	5.51	4.09
169	169	1.57	1.26

¹ Speed specifications have a ±10% tolerance.

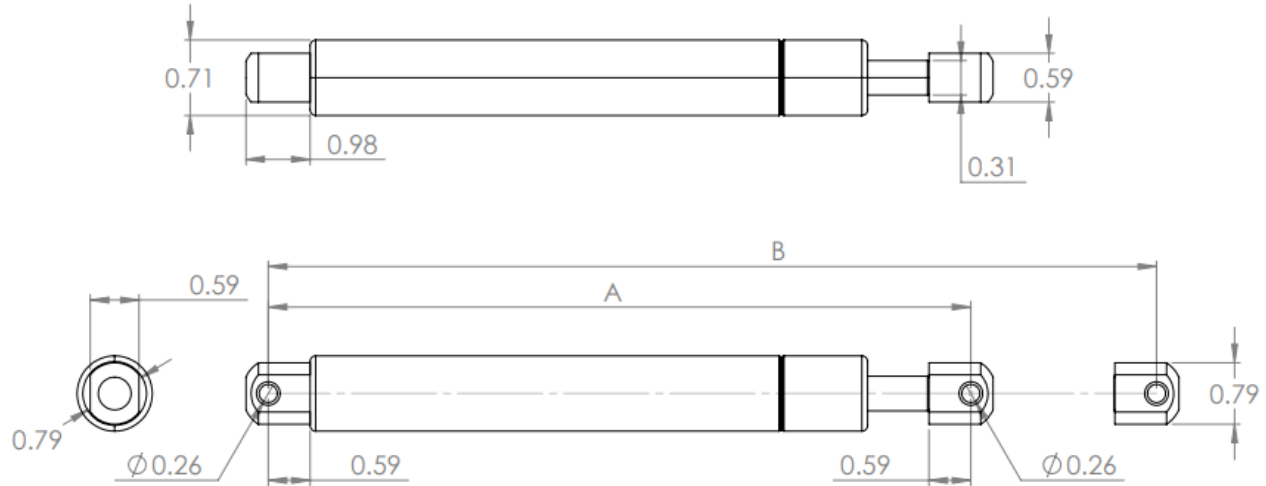
SPECIFICATIONS

Stroke	3.0" to 13.0"
Features	Mounting Ends for BRK-14
Duty Cycle	10% (2 minutes on, 18 minutes off)
Weather Protection	None
Operational Temperature	-30°C to 80°C (-22°F to 176°F)
Front Mounting Hole Size	0.26"
Rear Mounting Hole Size	0.26"
Type	Gas Spring
Stroke Rod Material	#45 Carbon Steel
Housing Material	#20 Carbon Steel
Mounting End Material	08AL Carbon Steel
Surface Treatment	Powder Coated
Compatible Mounting Brackets	BRK-14
Warranty	18 Months

DIMENSIONS

Note: All dimensions are listed in inches.

DIAGRAM (56 LBS)



HOLE TO HOLE LENGTH (56 LBS)

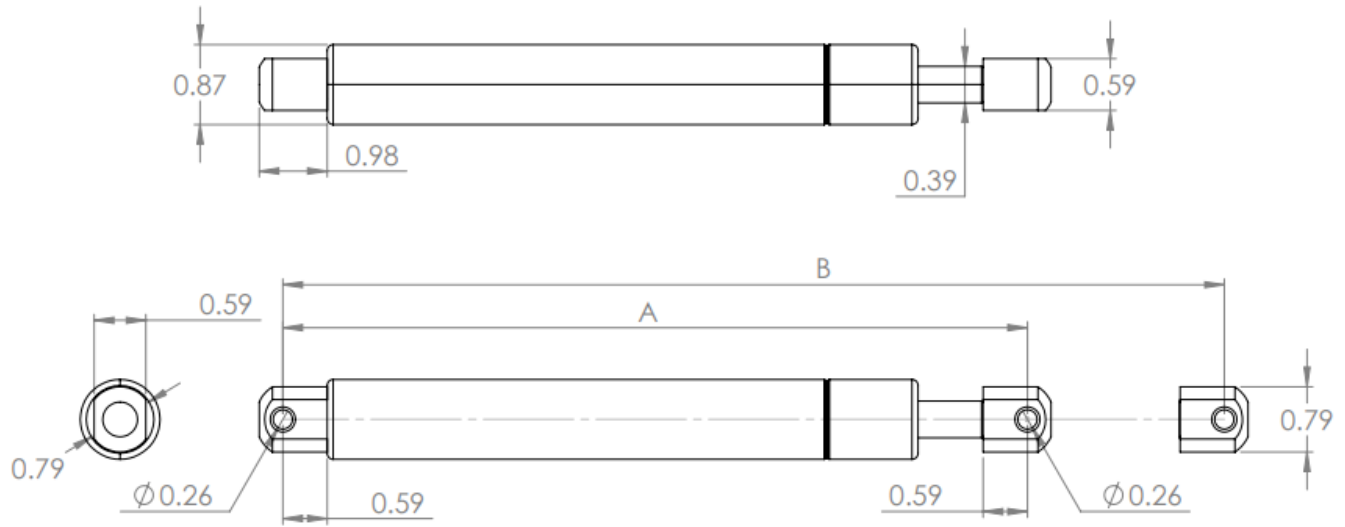
Stroke Length	2"	3"	4"	5"	7"	9"	10"	11"	13"
A (Fully Retracted)	4.76"	5.79"	6.77"	7.72"	9.76"	11.77"	12.80"	13.78"	15.79"
B (Fully Extended)	6.76"	8.79"	10.77"	12.72"	16.76"	20.77"	22.80"	24.78"	28.79"

1" ≤ Stroke Length ≤ 13"

A (Fully Retracted) = Stroke Length + 2.76"

B (Fully Extended) = Stroke Length x 2 + 2.76"

DIAGRAM (169 LBS)



HOLE TO HOLE LENGTH (169 LBS)

Stroke Length	2"	3"	4"	5"	7"	9"	10"	11"	13"
A (Fully Retracted)	4.92"	5.94"	6.93"	7.87"	9.92"	11.93"	12.95"	13.94"	15.94"
B (Fully Extended)	6.92"	8.94"	10.93"	12.87"	16.92"	20.93"	22.95"	24.94"	28.94"

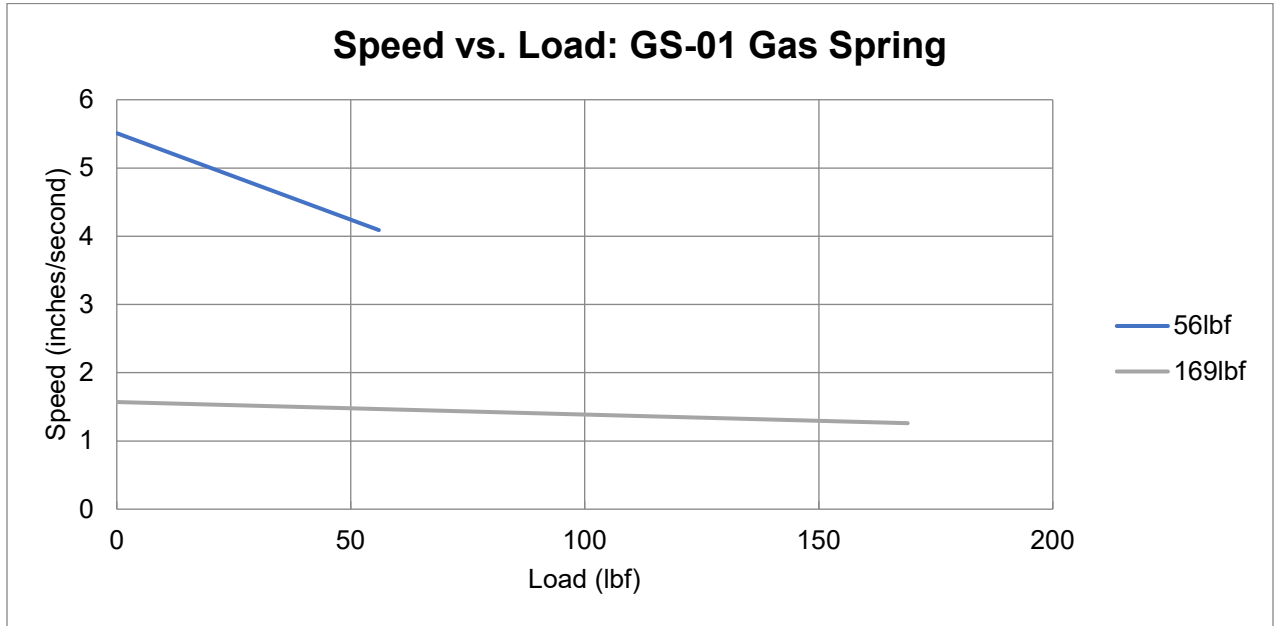
1" ≤ Stroke Length ≤ 13"

A (Fully Retracted) = Stroke Length + 2.91"

B (Fully Extended) = Stroke Length x 2 + 2.91"

PERFORMANCE GRAPHS

SPEED VS LOAD

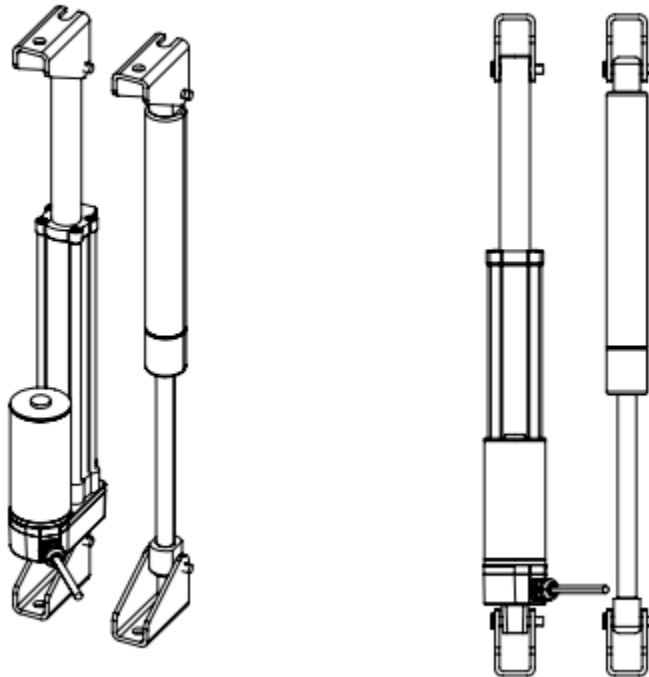


INSTALLATION

The GS-01 Gas Spring is designed to boost the performance of the PA-01 Mini Linear actuator lineup. The performance expected is up to the PA-01 Actuator's no-load speed and current.

VALID MOUNTING

1. For applications that move vertically up and down with a constant load, mount the actuator and gas spring combination side by side. It is recommended that the gas spring be mounted rod-side down to increase the life of the shaft seal. The actuator can also be mounted rod side down if the wire location can be accommodated.



2. If the actuator is to be used for articulated applications, ensure that the actuator and gas spring combination does not exceed an angle of 45 degrees between the length of the gas spring and the horizontal during travel. Exceeding this limit may cause the combination to become unloaded, affecting the actuator's ability to retract the gas spring.

INVALID MOUNTING

Never use the gas spring and actuator combination for loads that require pulling against gravity. The gas spring in this setting works with the load against the actuator. This will affect whether the actuator can fully retract.