



GAS SPRINGS

YANTRANSH GAS SPRING LLP.

www.gasspring.in

COMPANY PROFILE

Yantransh Group situated in Rajkot, Gujarat, India, is a well-established manufacturing company with a strong foundation in producing a diverse range of industrial components viz. Gas springs, Cabinet hinges, Faucet Cartridges / Spindles, Valves, Cable Glands, Watch cases, and Various Customized Casting/Forging/machined/Molded Parts.



ABOUT US

We Yantransh Gas Spring LLP manufacture different types of Quality gas springs related to Furniture, Hardware, Machinery/Industrial, automotive, Medical & Food industry applications etc.

Here at YANTRANSH, our business idea is to offer a wide variety of INDIAN-made gas springs. Our team strive for better designs and processes to ensure the delivery of the best possible product. Our customers' satisfaction is our success!

YGSL continually strives to provide the widest selection of gas springs in the global marketplace by investing in the latest technologies and setting sights on quality improvements. Through constant evaluation and testing, we bring our customers the most cost-effective products with more features, greater performance, and improved ease of use.

YGSL provides a unique combination of product selection, engineering excellence, and technical support to Original Equipment Manufacturers (OEMs) and aftermarket applications.

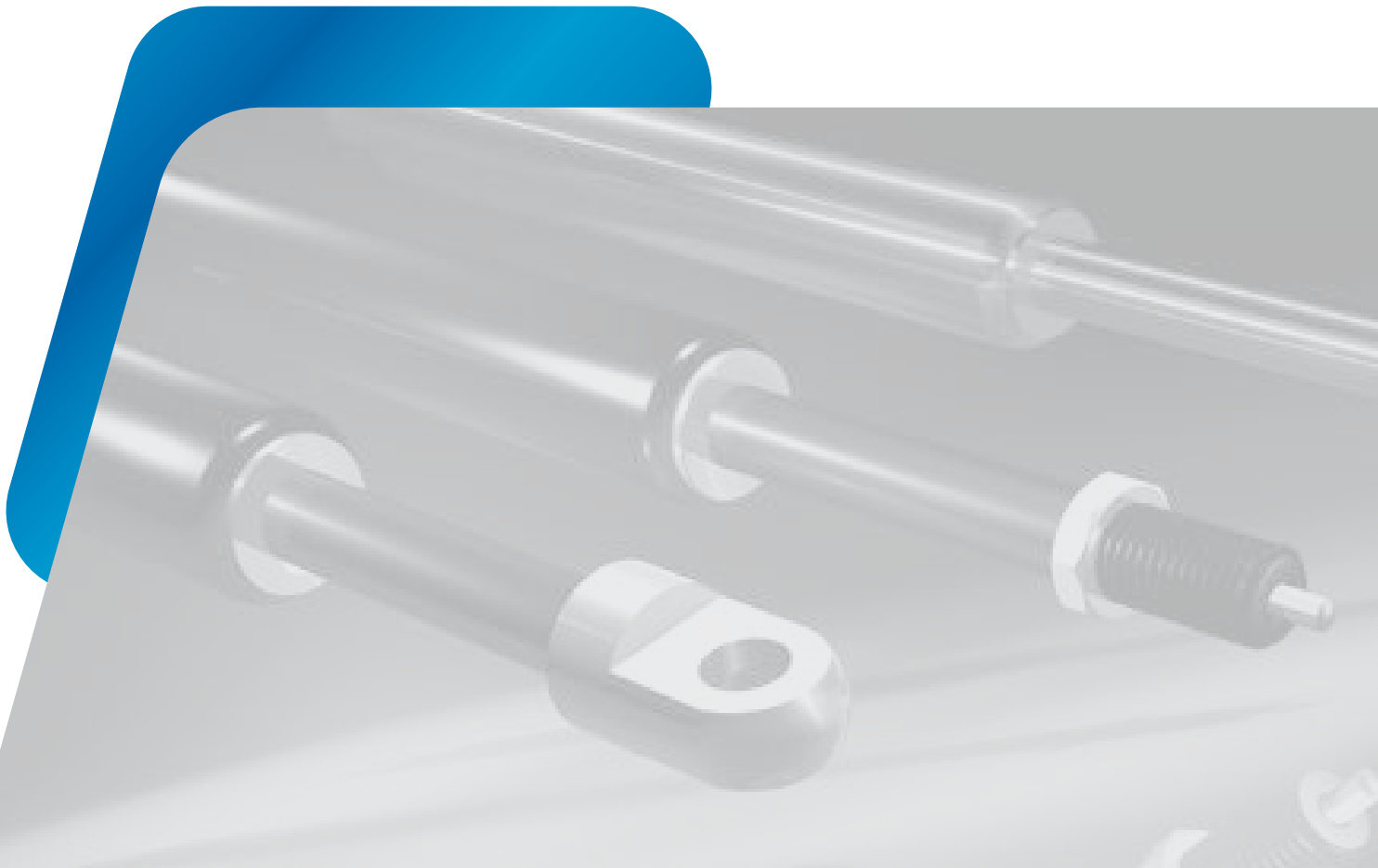


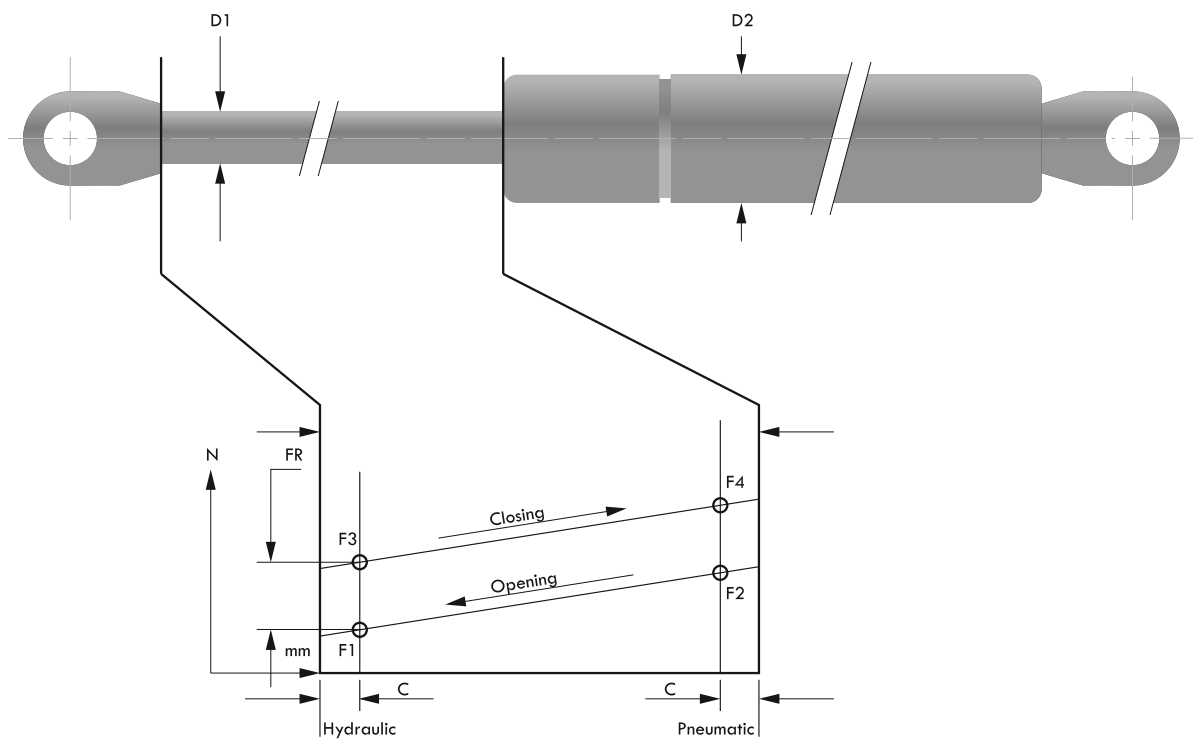
How a Gas Spring Works

A gas spring is essentially a pressurized cylinder filled with nitrogen gas. A piston rod, equipped with seals, moves within this cylinder. When the gas spring is extended, the nitrogen gas is compressed, creating a force that resists further extension. This force can be precisely adjusted by varying the amount of nitrogen gas within the cylinder.

Key Components

- Pressure Cylinder: The main housing that contains the pressurized nitrogen.
- Piston Rod: The moving part that extends and retracts.
- Pistons: Seals within the cylinder that separate the gas from the oil and control the flow.
- Nitrogen Gas: The compressed gas that provides the force.
- Guide & Seal: Guides the Piston Rod During Extension & compression.

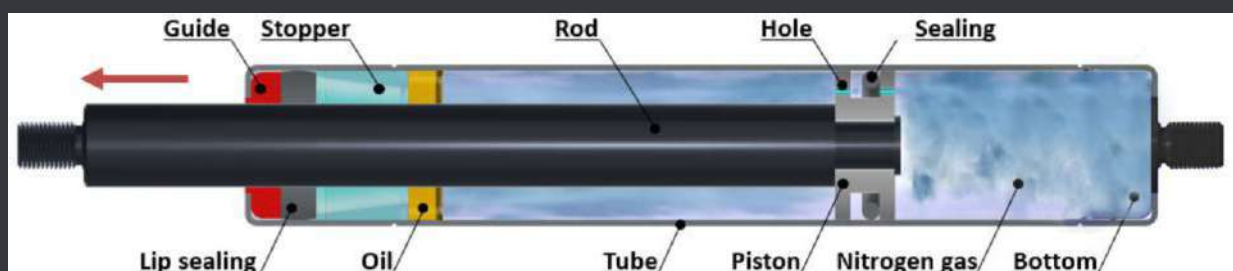




Force diagram

- The forces «F1» and «F3» are measured at the distance «C» from the ends.
- The difference between the extension force and the compression force of the spring at the same rod position is due to internal friction «FR».
- The **Progression X = F2/F1**.

D1 (mm)	D2 (mm)	Force (F1 en N)	Max stroke (mm)	X (~)	C (mm)	Max FR (N)
6	15	400	150	1.30	5	50
8	18	750	250	1.35	5	60
10	22	1150	400	1.40	5	80
14	28	2100	500	1.50	5	150



How Force is Generated

The force exerted by a gas spring is determined by:

- **Pressure of the nitrogen gas:** Higher pressure equates to greater force.
- **Cross-sectional area of the piston:** A larger piston area results in a stronger force.

Advantages of Gas Springs

- **Consistent Force:** Provides a constant force throughout the entire stroke.
- **Smooth Operation:** Offers controlled and damped movement.
- **Compact Design:** Relatively small size for the amount of force generated.
- **Durability:** Resistant to wear and tear.
- **Versatility:** Can be used in various applications.



IMPORTANT INFORMATION

(Please read carefully)

The Gas Spring is not a safety component.

All dimensions are stated in millimeters (mm), all pressures/forces in Newtons (N/F1), and all temperatures in degrees Celsius (°C).

Mount and dismount gas springs according to safety guidelines; To achieve long-life expectancy with reduced fatigue strength, employ sound mounting.

If gas springs are fitted in applications where failure means risk of health or life, we recommend using additional locking mechanisms. This is the customer's responsibility.

Allow for sufficient movement in the end fittings. If the mounts are subject to vibration, fittings must be secured. Fittings must be screwed on completely.

Gas springs units are wear parts and thus should be replaced depending on the stress and the area of the application.

Avoid side loading of gas springs. Long strokes may require additional support to avoid bending and tilting. Avoid non-axial forces.

Minor damage, corrosion, or paint residue on the shaft may damage the unit's seal and result in rapid failure.

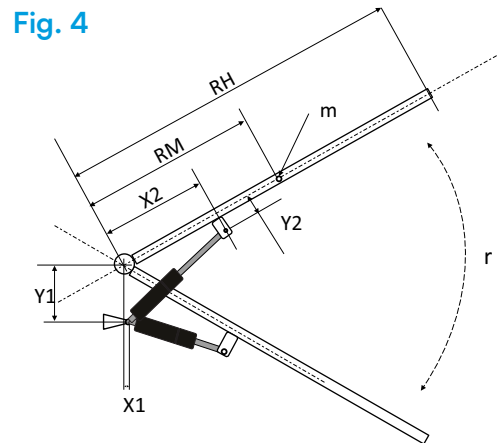
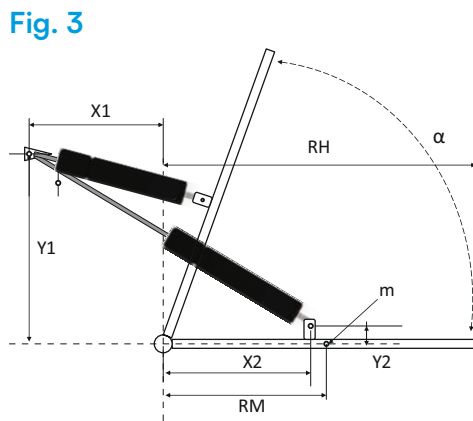
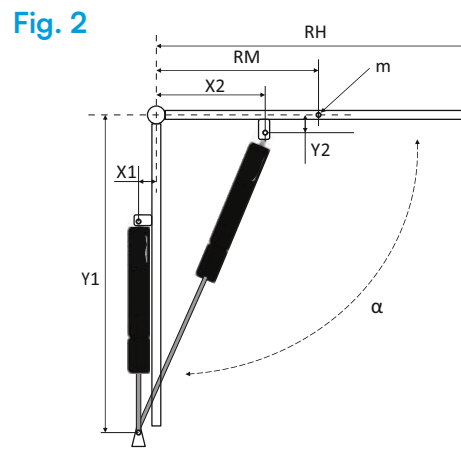
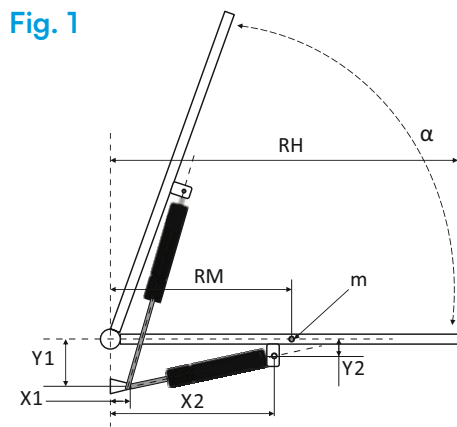
Do not extend or retract gas springs beyond their design specifications. Gas springs are not to be used as a dead stop.

ASSEMBLY PRECAUTIONS

Protect the rods against strikes, electrical arc flashing, grinding sparks, paint and corrosive products. Do not tighten the rods with pliers or in a vice without using protective jaws.

STORAGE CONDITIONS BEFORE USAGE

- For a maximum period of three months, the devices can be stored horizontally, in a room at ambient temperature..
- For storage over a longer period of time, or in a hot country, store vertically, with the rod downwards.
- Store gas springs in a shaft-down position to ensure lubrication of the seal.



Gas spring - Calculation of FORCE (in Newtons)

$$F1 (N) = 9,81 \times \frac{RH \times m}{2 \times N \times (X2)} + 5$$

N = Number of gas springs

RH = Length of the opening in meters (M)

m = Mass or Weight of the hatch in kilos (KG)

X2 = Lever arm on meters (M)

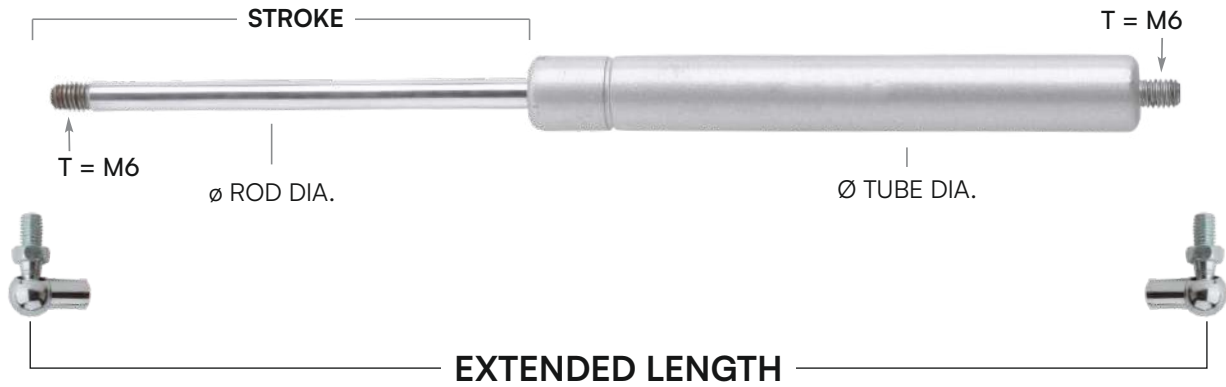
Warning, we recommend round up to the upper tolerance of the result

The gas spring stroke has a relation with the opening angle of the hatch, and we apply ourself the following recommendation: STROKE = 1/3 of RH for an angle of 90°

The above recommendations are given as an indication and do not engage the responsibility of the company in any way, given the empirical nature of the method.

This calculation method nevertheless gives good results in the majority of cases.

11" Inch (275 mm)



TUBE DIA	ROD DIA	EXTENDED LENGTH	STROKE LENGTH	AVAILABLE FORCE (1kg~10N)
15 mm	6 mm	275 mm	105 mm	10, 15, 20, 25, 30, 35 Kg

Ordering Example

YG 15 - 06 - 275 - 105 - **0100 N**

TUBE DIA

ROD DIA

EXTENDED LENGTH

STROKE LENGTH

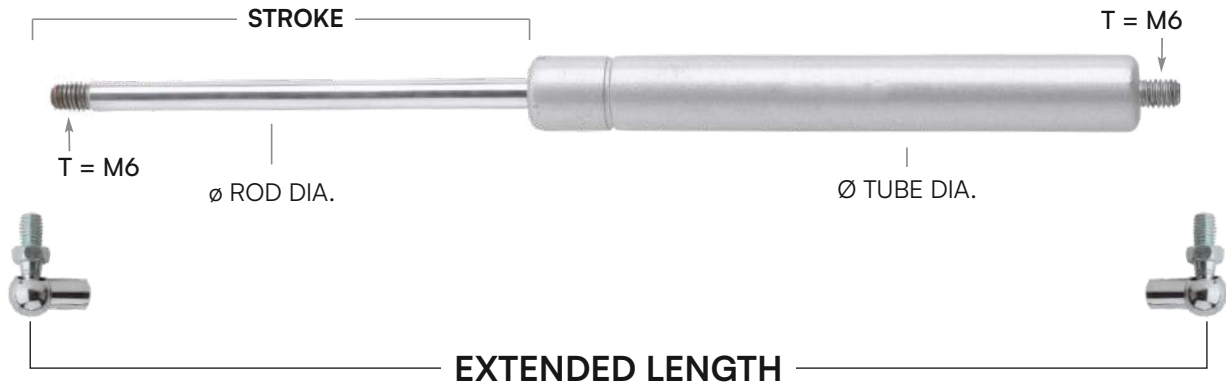
FORCE (1kg~10N)

Please Specify Force When Ordering.

Material MS Standard (Stainless Steel Also Available)

Special Size/Colour Available On Request.*

12" Inch (300 mm)



TUBE DIA	ROD DIA	EXTENDED LENGTH	STROKE LENGTH	AVAILABLE FORCE (1kg~10N)
18 mm	8 mm	300 mm	115 mm	10, 15, 20, 25, 30, 35 Kg

Ordering Example

YG 18 - 08 - 300 - 115 - **0100 N**

TUBE DIA

ROD DIA

EXTENDED LENGTH

STROKE LENGTH

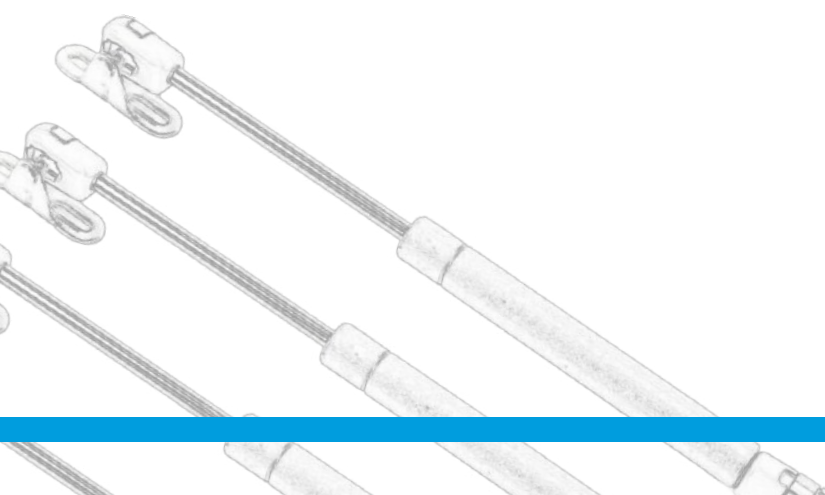
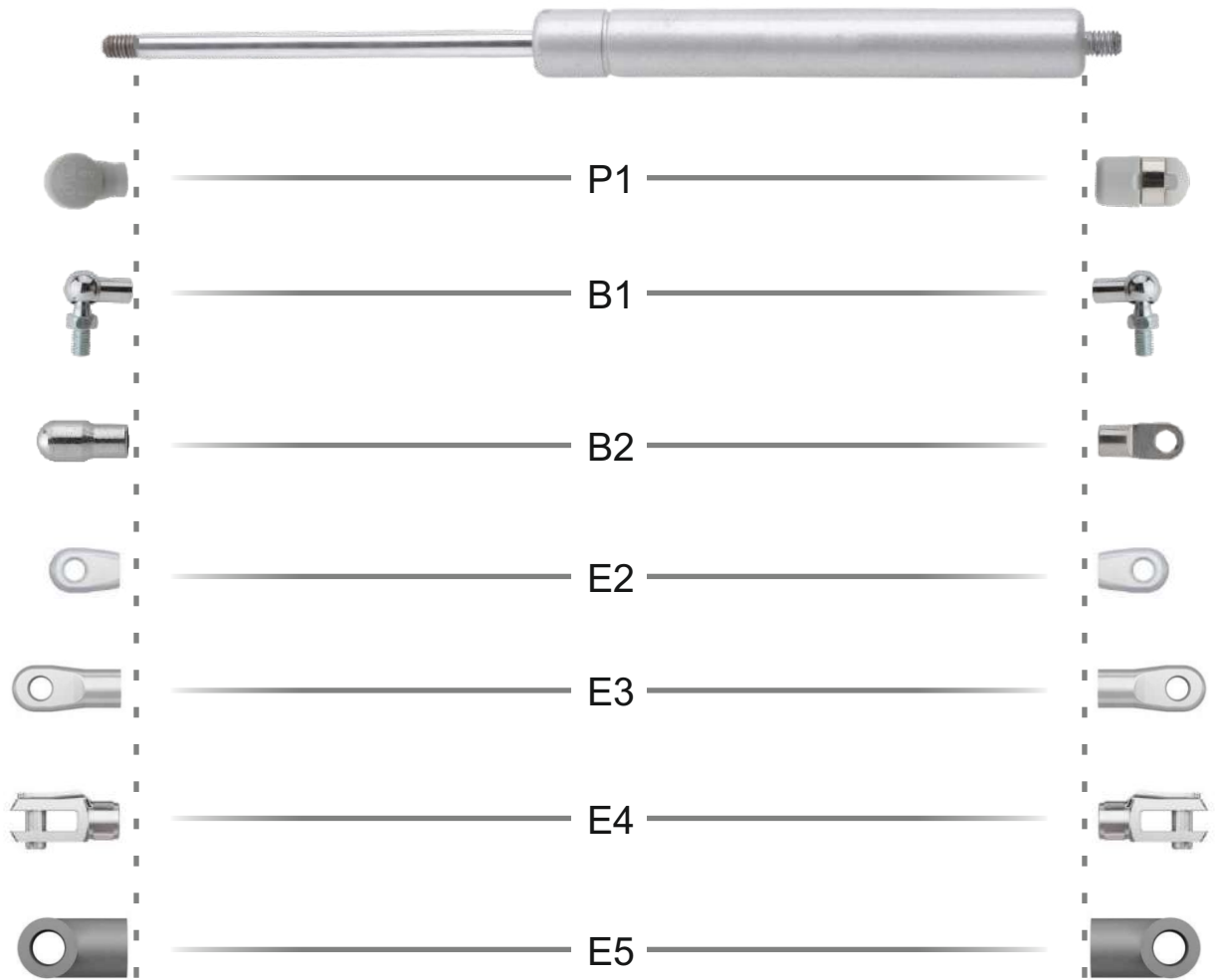
FORCE (1kg~10N)

Please Specify Force When Ordering.

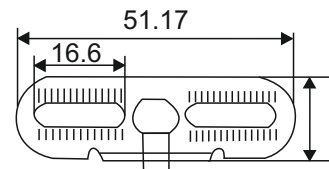
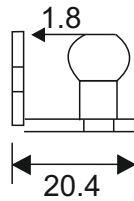
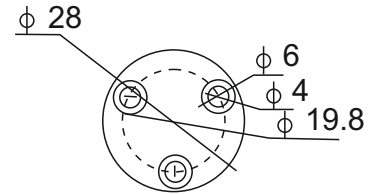
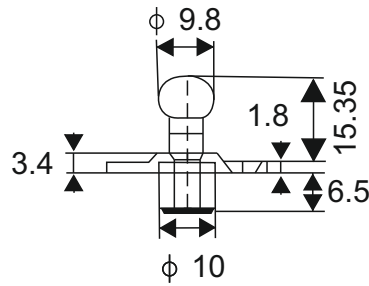
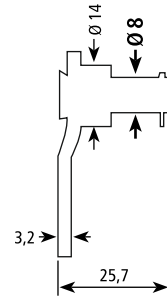
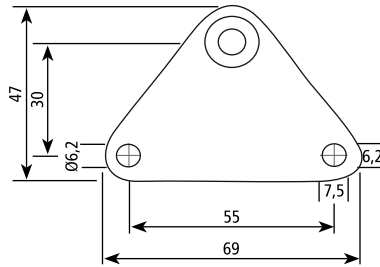
Material MS Standard (Stainless Steel Also Available)

Special Size/Colour Available On Request.*

CUSTOMIZE BALL JOINT



BRACKETS





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