



### Step 1 - Safety & Set-Up

Ensure you have the correct strut by comparing it to the original.

Compare the part numbers on the gas struts. If the gas struts do not match, then do not attempt to use the replacement gas strut. Each gas strut is specific to an application and/or vehicle. There is danger in using a gas strut that is not specifically made for an application. Damage can be done to the vehicle and/or bodily injury can result.

Below is two methods of calculating the safety factor of weight of application to gas strut strength ratio.

Although it is highly advisable to consult a qualified expert or someone whos is experienced in changing gas struts if possible.

#### Simple Method:

Gas strut strength is measured in Newtons.

As a general rule,

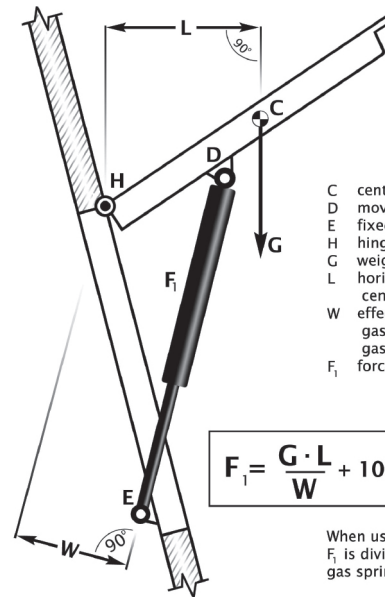
**100N = 10kg of strength.**

In other words, the weight of your hatch/door x 10 = strength of gas strut required

#### Note:

- Always install after painting, welding etc.
- The gas strut should always be fitted with the piston pointing down.
- Temperature range -30°C to +80°C
- Use suitable end fittings and angle joints to avoid coupling jamming.
- Gas strut are maintenance free, do not grease or lubricate shaft.
- Install without twisting.
- Avoid lateral forces.
- Protect piston against dirt, paint or damage.
- Output forces will vary approximately 4% for every 10°C change in temperature.

#### Precise Method:



- C centre of gravity
- D moveable pivot
- E fixed pivot
- H hinge
- G weight
- L horizontal distance from centre of gravity to hinge
- W effective lever arm of gas spring = smallest distance gas springs to hinge E
- F<sub>1</sub> force of gas spring

$$F_1 = \frac{G \cdot L}{W} + 10 \text{ to } 15\% \text{ safety factor}$$

When using several gas springs, F<sub>1</sub> is divided by the number of gas springs

### Step 2 – Remove old support strut

Have an assistant support the panel for you so that the liftgate, hood, trunk and /or lid to full extension of gas strut.

The application is held open as the gas strut is being replaced. If the application has 2 gas struts, one gas strut does not have enough output force to hold open the application. Therefore, to avoid injury and damage, a second person is required to hold application open.



**SAFETY CLIP**

First, you need to remove the safety clip (see above). You can do this by hand or using a pair of pliers to grab on and unwind the safety clip. Unthread the clip from the gas strut hood and remove. Now you may pop the ball head of your attachment out of the gas strut unit. Repeat for the opposite side.

### Step 3 – Install new support strut

Take the replacement strut and press the clip onto the mounting point on the body. Re-insert safety clip.

### Step 4 – Repeat and check operation

Repeat the procedure for the opposite side. Always replace support struts in pairs. Then lower the bonnet or boot to check the struts are now operating correctly.

#### Note:

A variety of brackets and end fittings are appropriate for different applications. They should all have a ball head and can be applied the same way.

