

01 DOOR LIFTING

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01 DOOR LIFTING



DOOR LIFTING

GAS STRUTS - GENERAL INFORMATION

- Please use the below information and our 'Guide to Ordering' on the following pages to ensure you receive the correct gas strut, mounting points and opening angle for your installation. Our gas struts have a one way valve; once gassed we cannot remove force, nor accept them back for return.
- Our standard gas struts are supplied with female ball socket ends & male ball stud mounting brackets with M8x12mm thread (M10x19mm for C14 gas struts) and a hex collar for tightening. However we also stock a wide range of alternative gas strut ends and mounting bracket options.
- Most of our standard gas strut extended lengths can be increased by up to 20mm, in 5mm increments by changing the socket ends. It is important to remember increasing extended length also increases the minimum compressed length by the same, so you should check you have sufficient space between mounting points throughout door closing to accommodate this.
- **Gas struts should be mounted cylinder up - shaft down** where possible. This enables the best damping effect and also allows internal oil to lubricate the seal and shaft, prolonging gas strut life.
- **Our gas struts have a 12 month warranty.** Gas strut life varies hugely depending on installation environment and use. A gas strut that is compressed and extended regularly enables the internal oil to lubricate and protect the shaft. A gas strut used infrequently, or subject to a dusty or damp environment, or subject to corrosive elements (e.g. cleaners) will deteriorate more quickly. As the smooth surface of the shaft corrodes or pulls debris through the seal then the seal will become damaged and gas (force) will be lost.
- Our gas struts are rated for use in temperatures between -20°C to +80°C, however temperature changes will change gas strut force. As a rough guide, a 10°C reduction in temperature will reduce force by approximately 4%, and vice versa.
- Actual gas strut force may vary from nominal force; tolerance is approximately +/- 7% of the labelled force.

Some concepts often misunderstood:

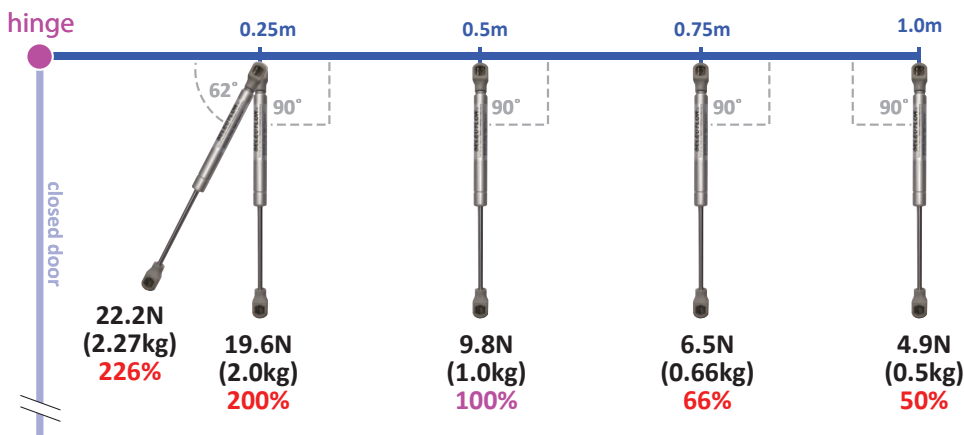
Gas struts are not rated in "newton metres". Newton metres (Nm) is a measurement of Torque which is a rotational force about a pivot. An example of Torque: A 1.0m high Vertical Door (hinged across the top) with a Centre of Gravity of 0.5m, with a total mass of 1kg lifted to horizontal (open) position has gravity acting upon it creating torque: $0.5\text{m} \times 1\text{kg} \times 9.8 = 4.9\text{Nm}$ of Torque.

By contrast, a gas strut has Force which is measured in newtons (N). The gas strut force required to hold this door at horizontal varies depending on the mounting distance from the centre of hinge and the angle the gas strut is on. A gas strut mounted vertically at the COG (0.5m from hinge) would require 9.8N of force to make the door weightless: $4.9\text{Nm} / 0.5\text{m} = 9.8\text{N}$; obviously more force would be required to securely hold it up against wind and vibrations. Additionally, for doors which rotate around a pivot, the gas struts cannot be mounted perpendicular to the door which reduces the gas strut efficiency, so even more force is required to hold the door up.

Below is a representation of the force required just to counteract gravity (make the door weightless) at different distances from the hinge.

Diagram showing a vertical door 1.0m High, 1kg total weight with 0.5m COG, open at horizontal position = 4.9Nm Torque

At the centre of gravity the perpendicular force required to counter gravity equals total door weight (100%). Out at the opening edge only 50% is required because the hinge is holding half the weight. By comparison, the angled strut close to hinge requires 226% of door weight.



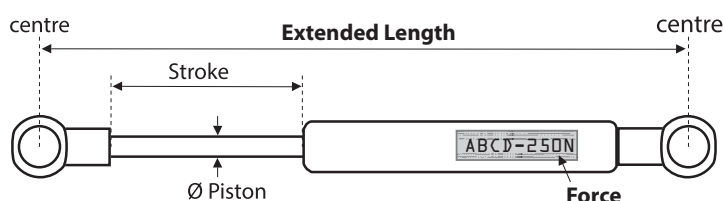
DOOR LIFTING

GAS STRUTS - GUIDE TO ORDERING PLEASE READ BEFORE ORDERING

The following detailed information is provided to ensure new door designs and gas strut fit-outs go smoothly and without wasting unnecessary time and expense. We recommend you read the following pages and ask us any questions before ordering.

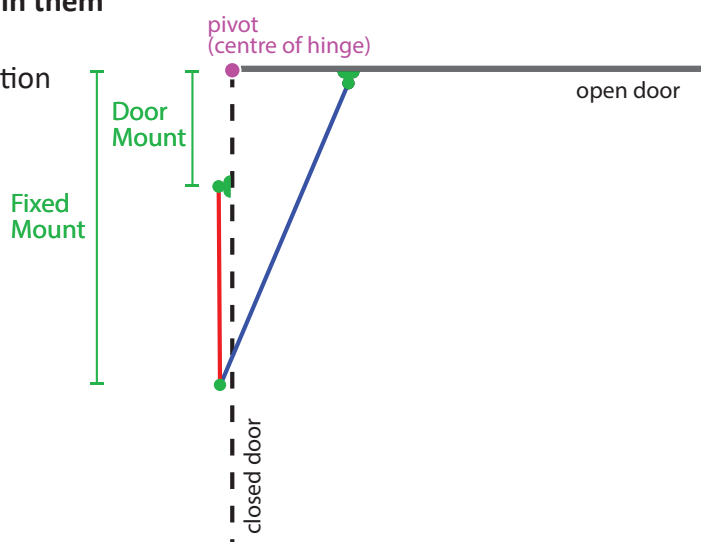
1. Situations:

- 1a. If you are replacing existing gas struts** please check the label to see if a force is noted. This could be shown in Newtons, for example "250N", "1000N", or it could be shown in pounds "30lb". If you have this information then we only need this and the extended length of the gas strut (centre to centre of end connections) and a photo showing the type of end connection (socket, eyelet, clevis, etc).



- 1b. If your existing gas struts do not have the force noted on the label** but they have some force remaining, then it is best to use them to get us two measurements - weigh your door / hatch out at the opening edge with the door up at horizontal: (1) with your old struts fitted and (2) without your old struts fitted. Then you need to send us your old struts for testing what force remains in them. Once we know the force remaining in your old struts and the difference in weight at the end of the door / hatch, then we can fairly accurately calculate out what force to put in new struts for you.

- 1c. If your existing gas struts have no force left in them at all** then you will need to read on the following pages and provide further information as well as the distances from centre of hinge to the centre of each mounting point (Door Mount and Fixed Mount).



- 1d. If it is a new design** then we need you to supply the information on the following pages and we will specify the gas strut and advise where to position the mounting brackets. If you have any restrictions or preferences for where the mounting points need to go, we need to know before doing the calculation and specifying the gas strut - please send us a detailed drawing / photos demonstrating your requirements.

DOOR LIFTING

GAS STRUTS - GUIDE TO ORDERING PLEASE READ BEFORE ORDERING

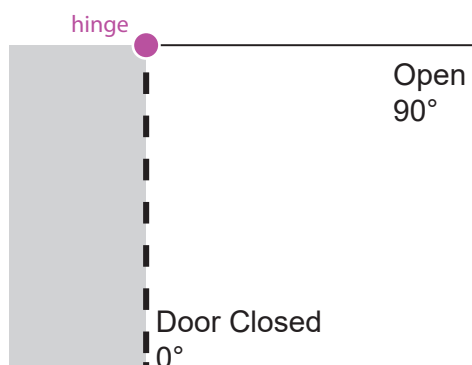
2. Type of Door:

We need to know what type of door (or other) you are using the gas struts on. Different door designs will have different COGs (Centre of Gravity) and have different torque values throughout their rotation. This can completely change where the mounting points need to be and what gas strut force is required.

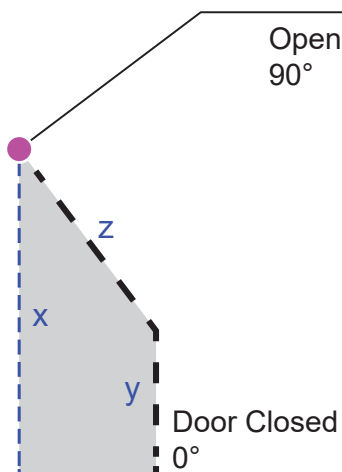
Below are the five most common door types. Please advise which type you have and send us a **detailed drawing with all dimensions** (including dimensions: **z, y, x, w, v, u, t, s** shown below, where applicable).

Photos of your door in open and closed positions are very helpful to identify any potential issues in advance.

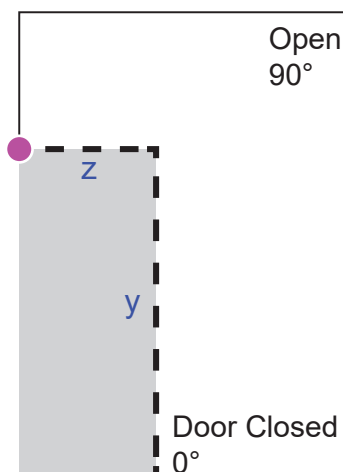
VERTICAL DOOR



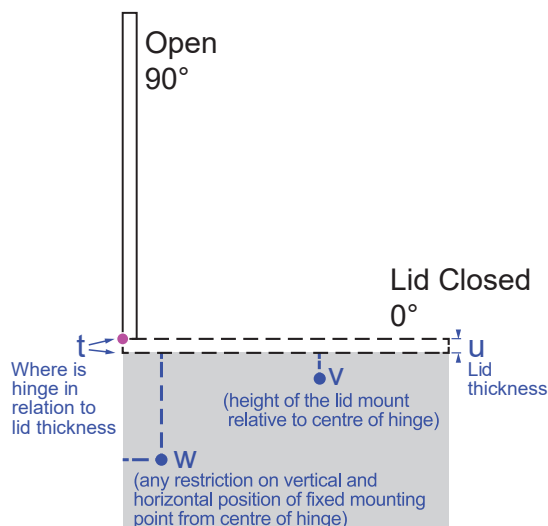
SLOPED DOOR



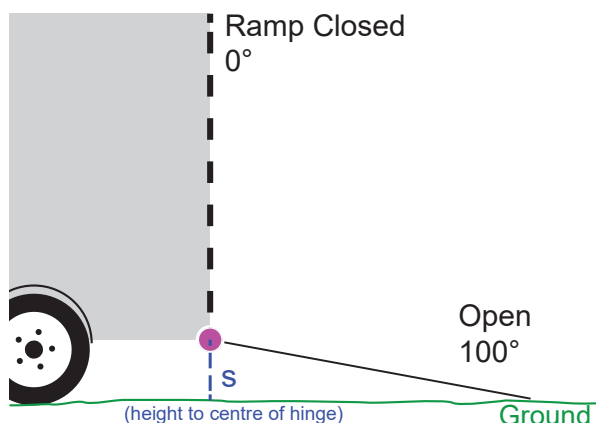
GULLWING DOOR / GULLWING LID



HATCH / LID



RAMP DOOR



DOOR LIFTING

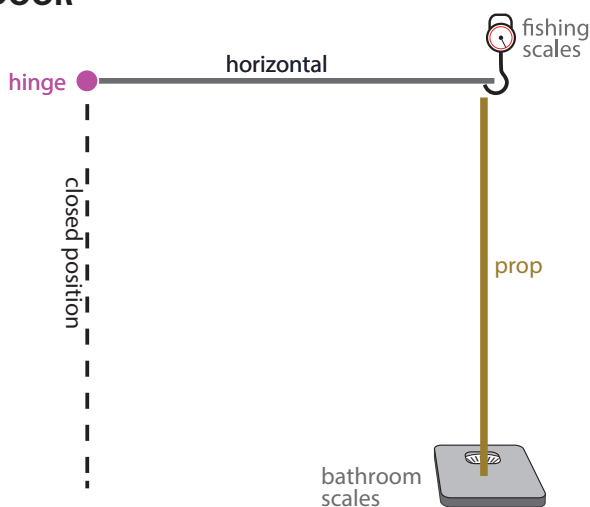
GAS STRUTS - GUIDE TO ORDERING PLEASE READ BEFORE ORDERING

Door Weight and COG:

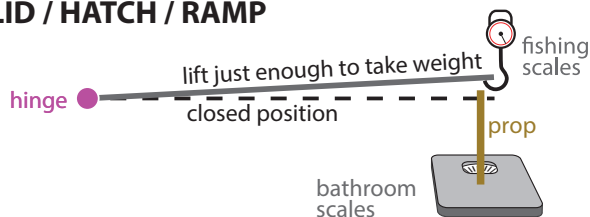
We must have accurate weight and measurements in order to give you the desired result. If you guess and under / over estimate any specifications, then you may end up with gas struts that do not function correctly. Our gas struts have a one-way valve; **once we add gas to suit your specification we cannot remove it - so we cannot accept gas struts back for return.** Note that while under-estimating may seem a safe gamble, a lower force specification may see you end up with a smaller diameter gas strut with a maximum force capability below what is required for your application.

- 2a. If the door is not yet installed weigh the whole **finished** door including hardware on some platform (or bathroom) scales.
- 2b. If the door / hatch is already installed on the hinge then (remove any existing gas struts and) hook the bottom / opening edge of the door / hatch using some hanging scales (fishing / luggage type) and lift to horizontal to get a weight. If the door is too heavy to hold with hanging scales you can use a pole to prop the door up on some platform scales - see diagrams below:

DOOR



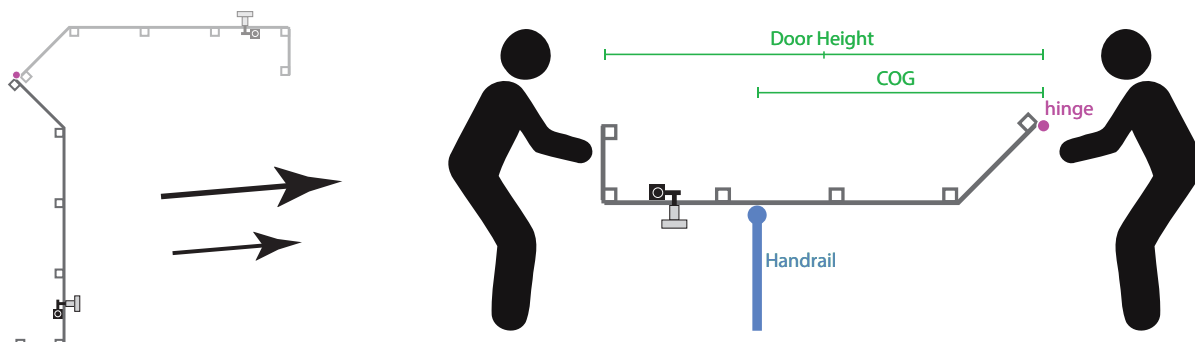
LID / HATCH / RAMP



Important Note: The weight measured out at the opening edge needs to be doubled to get the total door weight because the hinge is holding half the weight. **Be sure to confirm with us whether you are giving us the measured weight or the total weight.**

- 2c. **COG (Centre of Gravity):** If the door / hatch is not evenly constructed from hinge to opening edge, or if there is door hardware installed this can shift the COG from the middle of the door. We need to know this so we can allow for it in the calculation.

To estimate the COG of an irregularly constructed door, with the door off the hinge, two people can position it on top of a round hand rail (or similar) and move it back and forth (hinge to opening edge) until it balances. The COG is the distance measured from the hinge to the balancing point. See diagram below showing a bent door with handle and hardware:



Note: Specifications can change from time to time without notice.
Cut-outs & construction should only be done with the products onsite.

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DOOR LIFTING

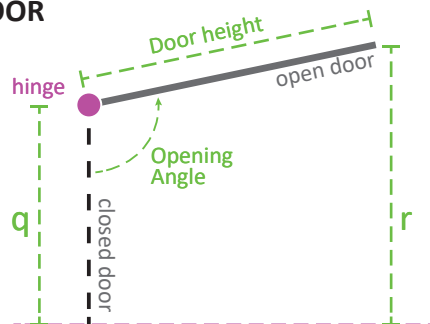
GAS STRUTS - GUIDE TO ORDERING PLEASE READ BEFORE ORDERING

- 3. Height:** Measure the distance from the centre of hinge to the opening edge as shown in diagram beside.

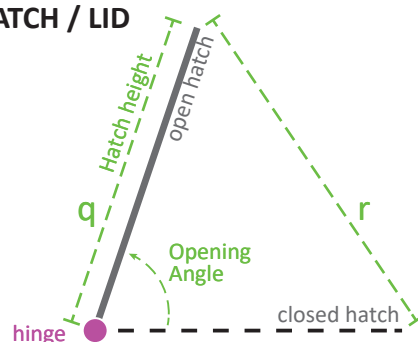
Note: We do not ask for the length of the hinged side because it is not part of the calculation except whether to use one or two gas struts. You should only consider using one gas strut per door if you have a very lightweight door with a short hinge side, or a door with an extremely strong frame, body and hinge. Otherwise you should always have two to balance forces.

- 4. Opening angle:** We need to know what opening angle you require for your door / hatch. Because this can be difficult to measure, if the angle is critical, it is better to give us a drawing showing the door in both closed and open position and the measurements for **r** and **q** in the diagram(s) beside. If a door is not vertical when closed, or if a hatch is not horizontal when closed, you need to advise us.

DOOR



HATCH / LID

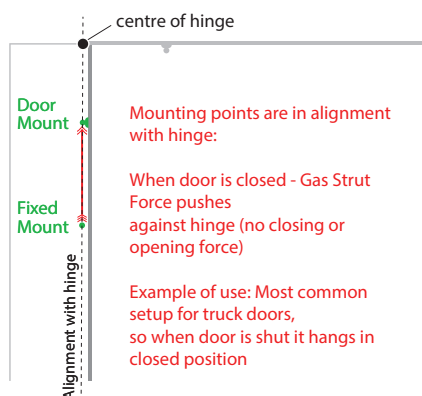
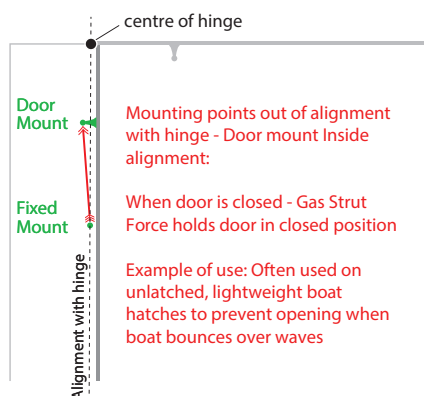
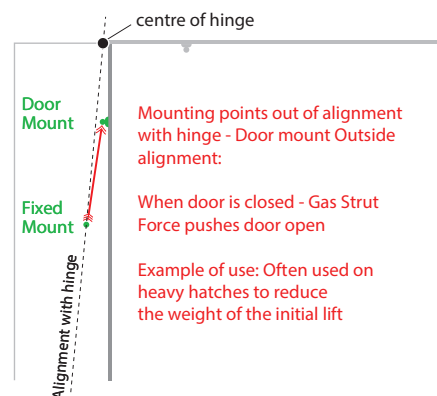


Note: When we input your desired opening angle into our standard calculator it will return mounting point positions which will ensure the door mounting point moves through your specified opening angle. If you have a thick door, or large brackets which offset your mounting points then this will affect the actual angle the door opens to. To solve this for you we need a detailed drawing showing all measurements from the centre of hinge: door thickness, mounting bracket offsets, door closed and open positions.

When we specify mounting point dimensions, follow these instructions to confirm they will work for your installation:

- Open the door to the desired opening angle
- Mark the door mounting point position that we have specified on the door (allowing for bracket offsets)
- From this door mounting point, measure the extended length of the gas strut down to the body / frame and mark where the fixed mounting point position needs to go (allowing for bracket offsets)
- Now check that throughout door closing rotation the distance between the two mounting points is always larger than the minimum compressed length of the gas strut.

In addition to this, offset mounting points will effect how the door performs in closed position. The gas strut may push the door open, or, hold the door closed (see below diagram). This should be considered when designing/choosing mounting brackets.

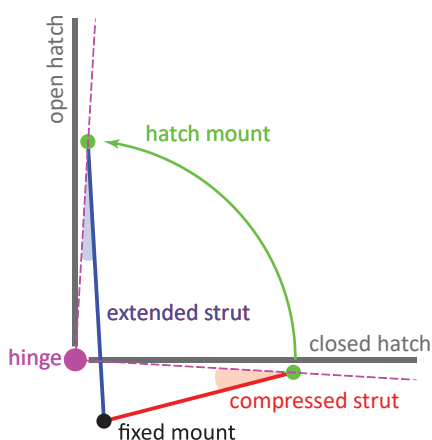


DOOR LIFTING

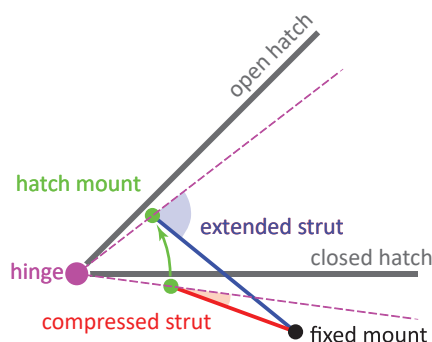
GAS STRUTS - GUIDE TO ORDERING PLEASE READ BEFORE ORDERING

5. **Hatches / Lids** require more consideration of mounting positions to achieve the correct gas strut performance. However, as long as you provide us with accurate weight and measurements and install the mounting points exactly where we specify - we can make a hatch weightless to lift, or with a little weight remaining to keep it closed, or design it so the gas strut force can hold the hatch closed.

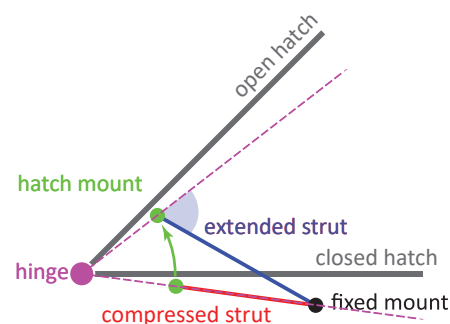
The appropriate gas strut setup for a hatch will depend on the hatch weight, opening angle and how it is to be used. See some common examples below:



For heavy hatches opening up close to vertical
Hatch Closed: strut angled up to help initial lift
Hatch Open: strut close to hinge to reduce efficiency and make easy to close



For heavy hatches with shallow opening angle
Hatch Closed: strut angled up to help initial lift
Hatch Open: strut almost perpendicular to lid to increase efficiency to hold open



For light hatches with shallow opening angle
Hatch Closed: strut angled at hinge so no upward force
Hatch Open: strut almost perpendicular to lid to increase efficiency to hold open

Note: The pink dashed lines emanating from the centre of hinge and passing through the centre of the hatch mounting point. The angle which the gas strut makes with the pink dashed line dictates the efficiency of the gas strut force and contributes to the overall size of the lever arm creating the desired hatch rotation. The closer the angle is to 90°, the more efficient the gas strut is. The shallower the angle the less efficient the gas strut is.

So, while a hatch mounting point further from the hinge can contribute to a larger lever arm, if it results in a shallow gas strut angle it can undermine the gain. The tricky part is to get the right balance between the two for both open and closed hatch positions. We have the tools and skills to achieve this.

DOOR LIFTING

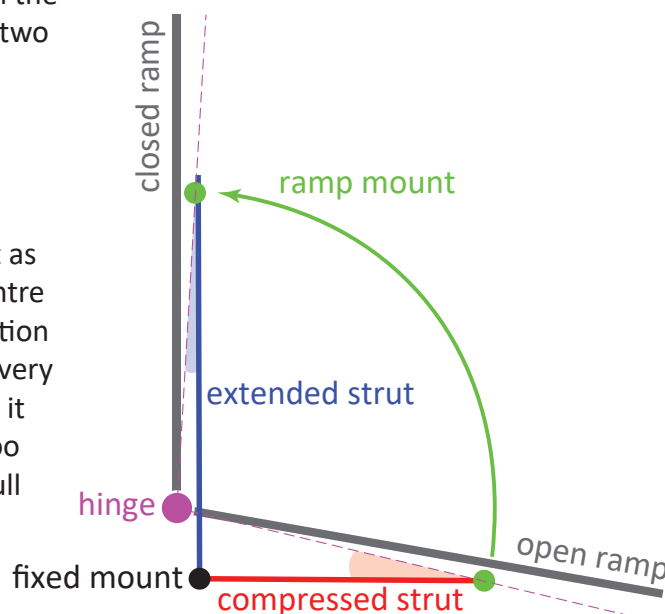
GAS STRUTS - GUIDE TO ORDERING PLEASE READ BEFORE ORDERING

6. Ramp Doors (e.g. horse float, race trailer)

These require a mounting point below the hinge such that the gas strut has some angle and efficiency when the ramp is down (at it's largest Torque value). There are two options:

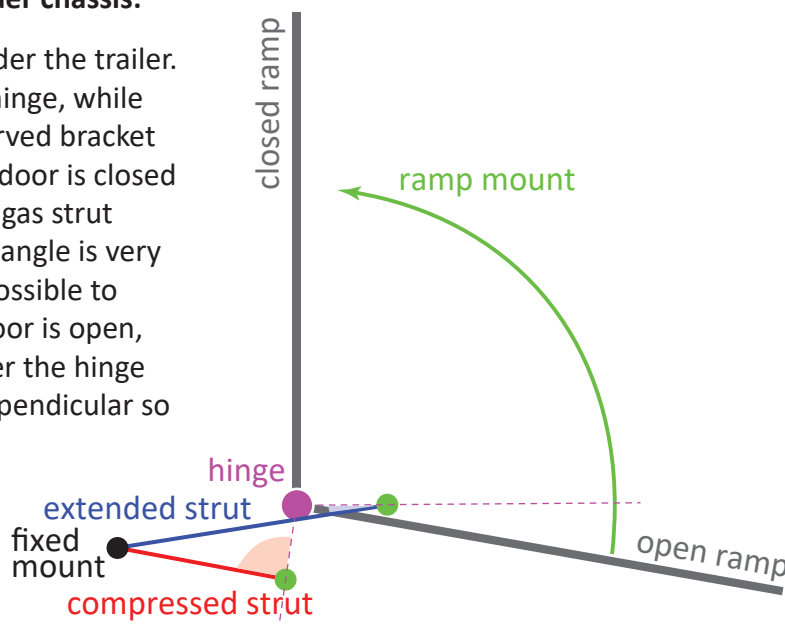
7a. Traditional mounting - vertically up the door:

The fixed mounting point is below the door hinge but as close as possible to the vertical plane through the centre of hinge so that when the ramp door is in closed position (where the Torque value is close to zero) the angle is very shallow so the gas strut is as inefficient as possible so it is not too difficult to open the door. If the strut has too much angle in closed position it will be too hard to pull open.



7b. Underbody mounting - horizontally under chassis:

Gas struts can also be setup horizontally under the trailer. The fixed mounting point is forward of the hinge, while the door mounting point is attached to a curved bracket off the bottom of the ramp door. When the door is closed (Torque value is close to zero) the extended gas strut needs to pass close to the hinge so that the angle is very shallow so the gas strut is as inefficient as possible to make door opening easy. When the ramp door is open, the door mounting point rotates down under the hinge and the strut angle needs to be close to perpendicular so the gas strut has maximum efficiency.



This setup gives better ground clearance when the vehicle is moving as the door bracket protrudes to the rear when the door is closed. Depending on height clearance off the ground, some fitters will recess the struts into the rear box section or create skids that hit the ground before the struts to prevent damage.

DOOR LIFTING

GAS STRUTS - STANDARD

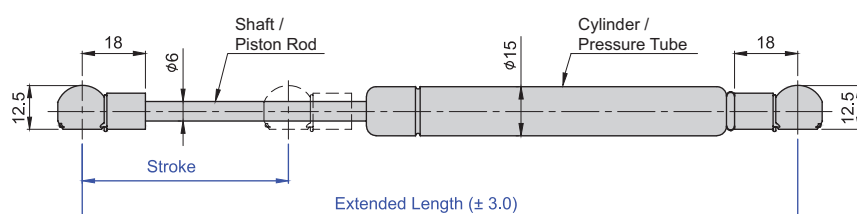
6mm PISTON 300N (MAX)

NI-SLIDE STEEL

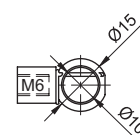
- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 10mm ball studs with 13mm M8 thread
- Piston treated with Ni-slide nitrating process for corrosion resistance
- Cylinder rolled, not welded, for optimal seal
- Superior damping control with patented labyrinth piston



C6

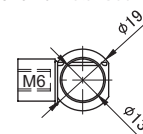


C920M6 Metal Socket

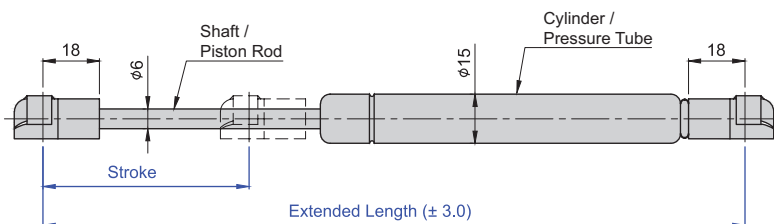


Alternative:

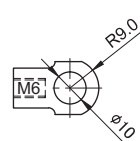
C1920M6 Metal Socket



B8-1-090251



B10 Plastic Socket



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
C6-060195-XXXN	50 - 300	195	60	135	6
C6-080240-XXXN	50 - 300	240	80	160	6
B8-1-090251-XXXN	60 - 300	251	90	161	6
B10-100280-XXXN	50 - 300	280	100	180	6

Lengths of most gas struts can be increased up to 20mm, in 5mm increments.

Note: Specifications can change from time to time without notice.
Cut-outs & construction should only be done with the products onsite.

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DOOR LIFTING

GAS STRUTS - OUTDOOR / MARINE

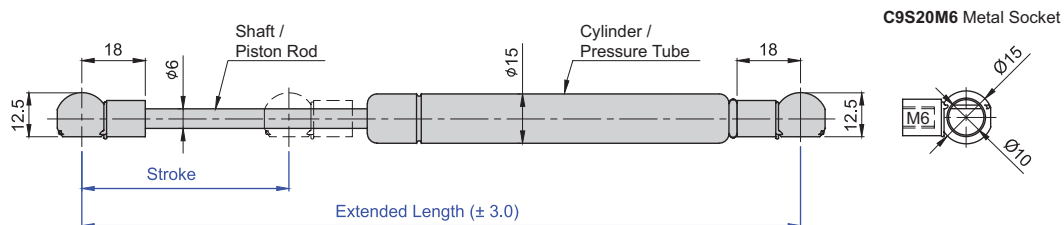
6mm PISTON 300N (MAX)

STAINLESS STEEL

- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 10mm ball studs with 13mm M8 thread
- 316 stainless steel shaft & cylinder, 303 stainless steel socket ends and ball stud brackets
- High corrosion resistance, non-magnetic
- Rolled not welded for optimal seal
- Superior damping control with patented labyrinth piston



S6



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
S6-060195-XXXN	50 - 300	195	60	135	6
S6-080240-XXXN	50 - 300	240	80	160	6
S6-100280-XXXN	50 - 300	280	100	180	6

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DOOR LIFTING

GAS STRUTS - STANDARD

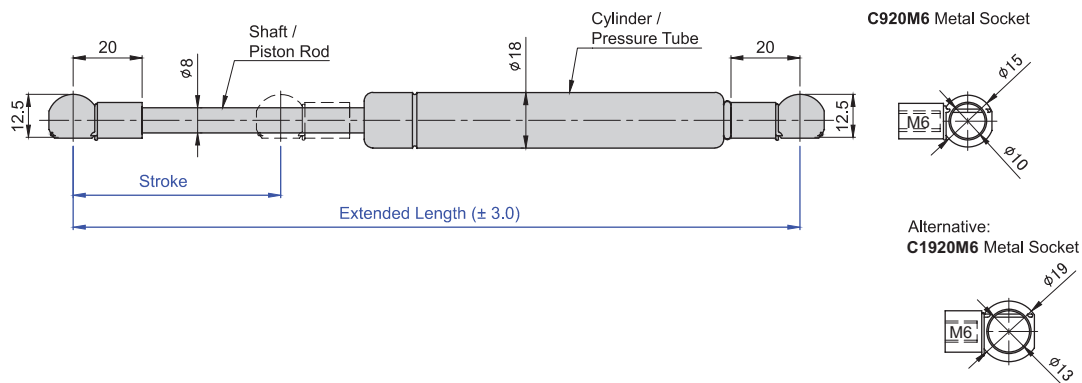
8mm PISTON 700N (MAX)

NI-SLIDE STEEL

- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 10mm ball studs with 13mm M8 thread
- Piston treated with Ni-slide nitrating process for corrosion resistance
- Cylinder rolled, not welded, for optimal seal
- Superior damping control with patented labyrinth piston



C8



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
C8-075230-XXXN	100 - 700	230	75	155	8
C8-080245-XXXN	50 - 700	245	80	165	8
C8-090260-XXXN	50 - 700	260	90	170	8
B10-100275-XXXN	115 - 700	275	100	175	8
C8-110290-XXXN	150 - 700	290	110	180	8
C8-100295-XXXN	100 - 700	295	100	195	8
C8-115310-XXXN	50 - 700	310	115	195	8
B10-125330-XXXN	145 - 700	330	125	205	8
C8-125330-XXXN	50 - 700	330	125	205	8
C8-135350-XXXN	50 - 700	350	135	215	8
B10-140365-XXXN	150 - 700	365	140	225	8
C8-148375-XXXN	50 - 700	375	148	227	8
B10-150395-XXXN	150 - 700	395	150	245	8
C8-165405-XXXN	50 - 700	405	165	240	8
C8-165410-XXXN*	100 - 700	410	165	245	8
C8-177430-XXXN	50 - 700	430	177	253	8

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Lengths of most gas struts can be increased up to 20mm, in 5mm increments.

*Gas strut already has 5mm extension end(s).

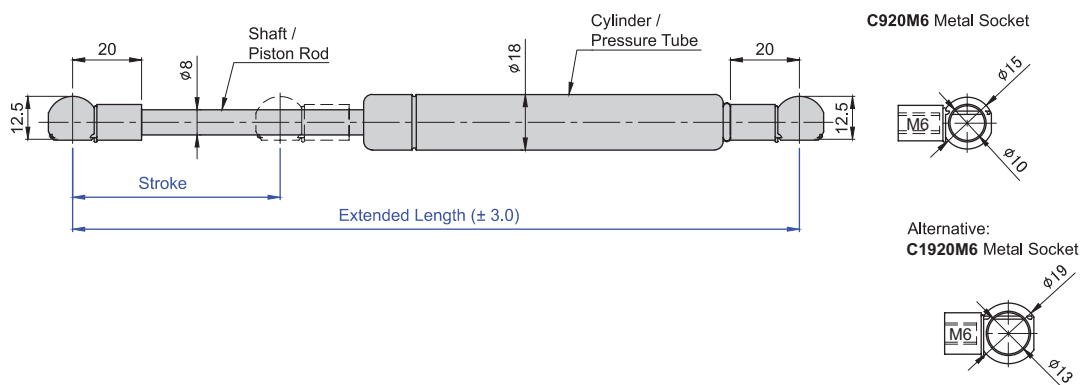
DOOR LIFTING

GAS STRUTS - STANDARD

8mm PISTON 700N (MAX)

NI-SLIDE STEEL

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C8

Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
...Continued from previous page...					
C8-185450-XXXN	100 - 700	450	185	265	8
B10-190460-XXXN	200 - 700	460	190	270	8
C8-190460-XXXN	100 - 700	460	190	270	8
C8-200485-XXXN	100 - 700	485	200	285	8
C8-210500-XXXN	30 - 700	500	210	290	8
C8-210505-XXXN*	30 - 700	505	210	295	8
B10-225525-XXXN	80 - 700	525	220	305	8
C8-225525-XXXN	100 - 700	525	220	305	8
C8-230540-XXXN	100 - 700	540	230	310	8
C8-240560-XXXN	100 - 700	560	240	320	8
C8-250575-XXXN	100 - 700	575	250	325	8
C8-250585-XXXN	100 - 700	585	250	335	8
C8-265610-XXXN	100 - 700	610	265	345	8
C8-275630-XXXN	100 - 700	630	275	355	8
C8-295670-XXXN	100 - 700	670	295	375	8
C8-310700-XXXN	100 - 700	700	310	390	8

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DOOR LIFTING

GAS STRUTS - OUTDOOR / MARINE

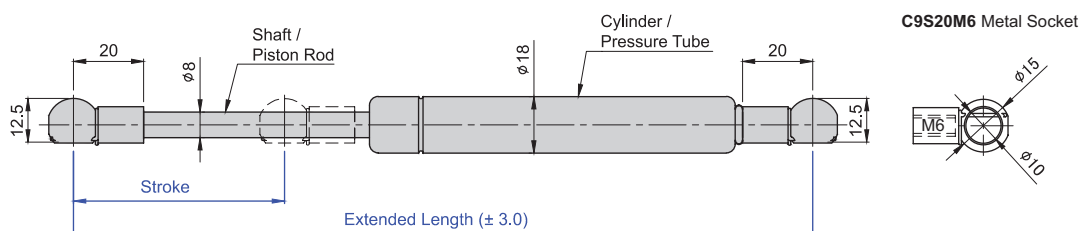
8mm PISTON 650N (MAX)

STAINLESS STEEL

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- 316 stainless steel shaft & cylinder, 303 stainless steel socket ends and ball stud brackets
- High corrosion resistance, non-magnetic
- Rolled not welded for optimal seal
- Superior damping control with patented labyrinth piston



S8



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
S8-120325-XXXN	100 - 650	325	120	205	8
S8-160405-XXXN	100 - 650	405	160	245	8
S8-160410-XXXN*	100 - 650	410	160	250	8
S8-215510-XXXN	100 - 650	510	215	295	8
S8-220525-XXXN	100 - 650	525	220	305	8
S8-265610-XXXN	100 - 650	610	265	345	8
S8-320710-XXXN	100 - 650	710	320	390	8
S8-365810-XXXN	100 - 650	810	365	445	8

Lengths of most gas struts can be increased up to 20mm, in 5mm increments.

Note: Specifications can change from time to time without notice.
Cut-outs & construction should only be done with the products onsite.

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DOOR LIFTING

GAS STRUTS - STANDARD

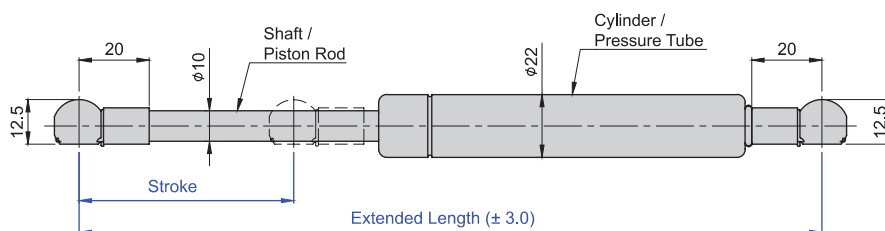
10mm PISTON 1100N (MAX)

NI-SLIDE STEEL

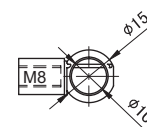
- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 10mm ball studs with 13mm M8 thread
- Piston treated with Ni-slide nitrating process for corrosion resistance
- Cylinder rolled, not welded, for optimal seal
- Superior damping control with patented labyrinth piston



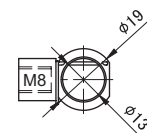
C10



C920M8 Metal Socket



Alternative:
C1920M8 Metal Socket



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
C10-100285-XXXXN	100 - 1100	285	100	185	10
C10-100300-XXXXN***	100 - 1100	300	100	200	10
C10-125330-XXXXN	100 - 1100	330	125	205	10
C10-150385-XXXXN	100 - 1100	385	150	235	10
C10-160405-XXXXN	450 - 1100	405	160	245	10
C10-185450-XXXXN	100 - 1100	450	185	265	10
C10-210500-XXXXN	100 - 1100	500	210	290	10
C10-210520-XXXXN****	100 - 1100	520	210	310	10
C10-230540-XXXXN	100 - 1100	540	230	310	10
C10-250585-XXXXN	100 - 1100	585	250	335	10
C10-250600-XXXXN***	100 - 1100	600	250	350	10
C10-280650-XXXXN	100 - 1100	650	280	370	10
C10-280670-XXXXN	100 - 1100	670	280	390	10

...Continued next page...

Lengths of most gas struts can be increased up to 20mm, in 5mm increments.

***Gas strut already has 15mm extension end(s).

****Gas strut already has 20mm extension end(s).

DOOR LIFTING

GAS STRUTS - STANDARD

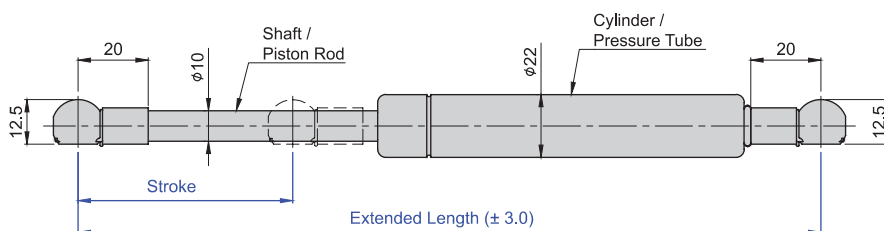
10mm PISTON 1100N (MAX)

NI-SLIDE STEEL

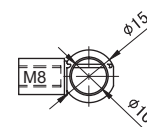
- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 10mm ball studs with 13mm M8 thread
- Piston treated with Ni-slide nitrating process for corrosion resistance
- Cylinder rolled, not welded, for optimal seal
- Superior damping control with patented labyrinth piston



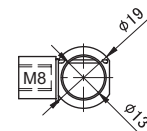
C10



C920M8 Metal Socket



Alternative:
C1920M8 Metal Socket



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
...Continued from previous page...					
C10-300700-XXXXN	100 - 1100	700	300	400	10
C10-325730-XXXXN	100 - 1100	730	325	405	10
C10-325735-XXXXN*	100 - 1100	735	325	410	10
C10-330750-XXXXN	100 - 1100	750	330	420	10
C10-350785-XXXXN	100 - 1100	785	350	435	10
B10A-350795-XXXXN	300 - 1100	795	350	445	10
C10-350800-XXXXN***	100 - 1100	800	350	450	10
C10-370830-XXXXN	100 - 1100	830	370	460	10
C10-400885-XXXXN	100 - 1100	885	400	485	10
C10-400900-XXXXN***	100 - 1100	900	400	500	10

Lengths of most gas struts can be increased up to 20mm, in 5mm increments.

*Gas strut already has 5mm extension end(s).

***Gas strut already has 15mm extension end(s).

Note: Specifications can change from time to time without notice.
Cut-outs & construction should only be done with the products onsite.

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DOOR LIFTING

GAS STRUTS - OUTDOOR / MARINE

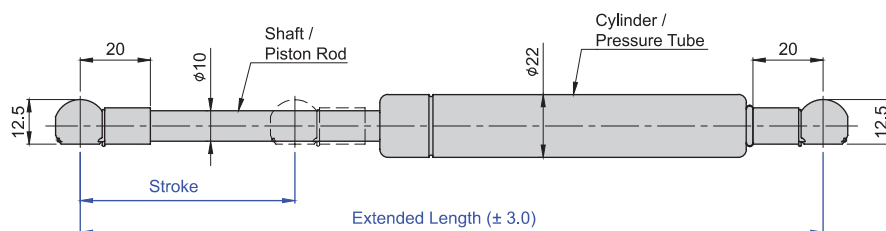
10mm PISTON 1000N (MAX)

STAINLESS STEEL

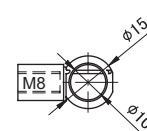
- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 10mm ball studs with 13mm M8 thread
- 316 stainless steel shaft & cylinder, 303 stainless steel socket ends and ball stud brackets
- High corrosion resistance, non-magnetic
- Rolled not welded for optimal seal
- Superior damping control with patented labyrinth piston



S10

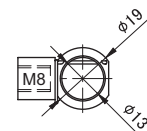


C9S20M8 Metal Socket



Alternative:

C19S20M8 Metal Socket



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
S10-160410-XXXN	100 - 1000	410	160	250	10
S10-250585-XXXN	100 - 1000	585	250	335	10
S10-250605-XXXN****	100 - 1000	605	250	355	10
S10-350785-XXXN	100 - 1000	785	350	435	10
S10-350805-XXXN****	100 - 1000	805	350	455	10
S10-400885-XXXN	100 - 1000	885	400	485	10
S10-400905-XXXN****	100 - 1000	905	400	505	10

Lengths of most gas struts can be increased up to 20mm, in 5mm increments.

****Gas strut already has 20mm extension end(s).

Note: Specifications can change from time to time without notice.
Cut-outs & construction should only be done with the products onsite.

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DOOR LIFTING

GAS STRUTS - STANDARD

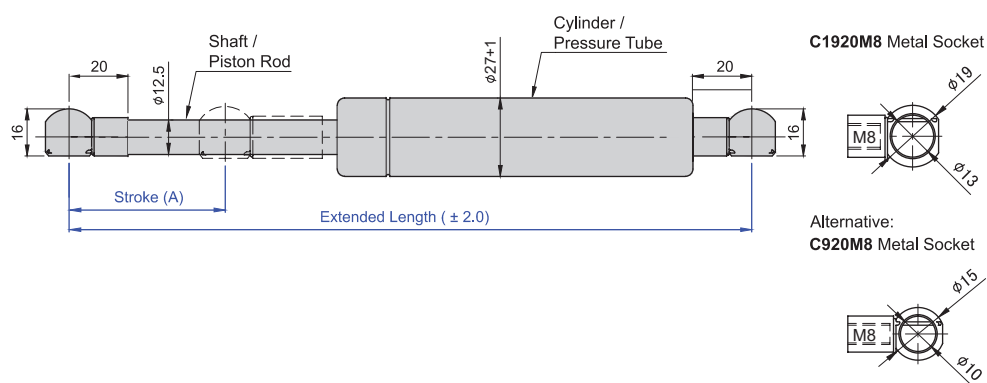
12mm PISTON 2000N (MAX)

NI-SLIDE STEEL

- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 13mm ball studs with 13mm M8 thread
- Piston treated with Ni-slide nitrating process for corrosion resistance
- Cylinder rolled, not welded, for optimal seal
- Superior damping control with patented labyrinth piston



C12



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
C12-150385-XXXXN	100-2000	385	150	235	12.5
C12-150395-XXXXN**	100 - 2000	395	150	245	12.5
C12-220530-XXXXN	100 - 2000	530	220	310	12.5
C12-260620-XXXXN	100 - 2000	620	260	360	12.5
C12-280670-XXXXN	100 - 2000	670	280	390	12.5
C12-300700-XXXXN	100 - 2000	700	300	400	12.5
C12-325730-XXXXN	100 - 2000	730	325	405	12.5
C12-325750-XXXXN****	100 - 2000	750	325	425	12.5
C12-350785-XXXXN	100 - 2000	785	350	435	12.5
C12-370830-XXXXN	100 - 2000	830	370	460	12.5
C12-370850-XXXXN****	100 - 2000	850	370	480	12.5
C12-400900-XXXXN	100 - 2000	900	400	500	12.5

Lengths of most gas struts can be increased up to 20mm, in 5mm increments.

**Gas strut already has 10mm extension ends.

****Gas strut already has 20mm extension end(s).

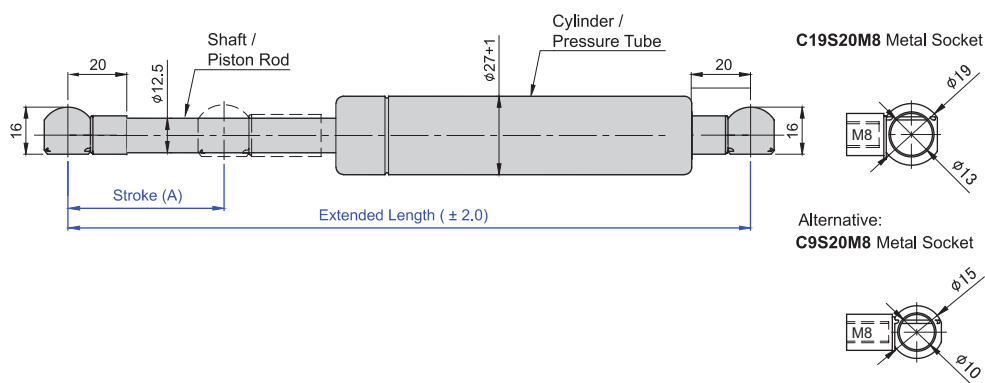
DOOR LIFTING

GAS STRUTS - OUTDOOR / MARINE

12mm PISTON 1800N (MAX)

STAINLESS STEEL

- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 13mm ball studs with 13mm M8 thread
- 316 stainless steel shaft & cylinder, 303 stainless steel socket ends and ball stud brackets
- High corrosion resistance, non-magnetic
- Rolled not welded for optimal seal
- Superior damping control with patented labyrinth piston



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
S12-220530-XXXXN	100 - 1800	530	220	310	12.5
S12-300700-XXXXN	100 - 1800	700	300	400	12.5
S12-400900-XXXXN	100 - 1800	900	400	500	12.5

Lengths of most gas struts can be increased up to 20mm, in 5mm increments.

S12

DOOR LIFTING

GAS STRUTS - STANDARD

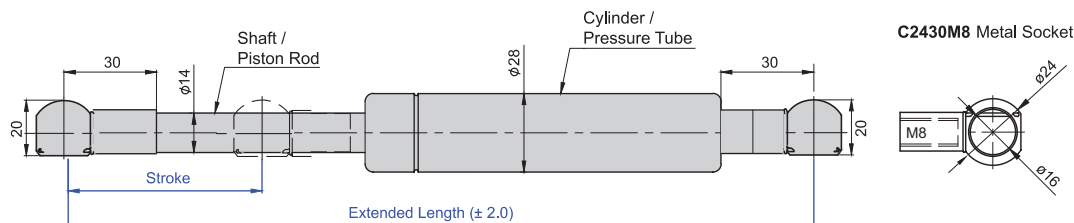
14mm PISTON 2500N (MAX)

NI-SLIDE STEEL

- High quality German specification & Japanese quality management
- All struts supplied with female ball socket ends & male 16mm ball studs with 20mm M8 thread
- Piston treated with Ni-slide nitrating process for corrosion resistance
- Cylinder rolled, not welded, for optimal seal
- Superior damping control with patented labyrinth piston



C14



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
C14-100320-XXXXN ⁺	100 - 2500	320	100	220	14
C14-190500-XXXXN	100 - 2500	500	190	310	14
C14-250605-XXXXN	100 - 2500	605	250	355	14
C14-350815-XXXXN ⁺⁺	100 - 2500	815	350	465	14
C14-400920-XXXXN ⁺	100 - 2500	920	400	520	14
C14-4501030-XXXXN	100 - 2500	1030	450	580	14
C14-5001135-XXXXN ^{**}	100 - 2500	1135	500	635	14
C14-5501300-XXXXN	100 - 2000	1300	550	750	14

Lengths of most C14 struts can be decreased 10mm, or increased up to 10mm, in 5mm increments.

⁺Gas strut already has 5mm shorter end.

⁺⁺Gas strut already has 10mm shorter ends.

^{**}Gas strut already has 10mm extension ends.

DOOR LIFTING

GAS STRUTS - OUTDOOR / MARINE

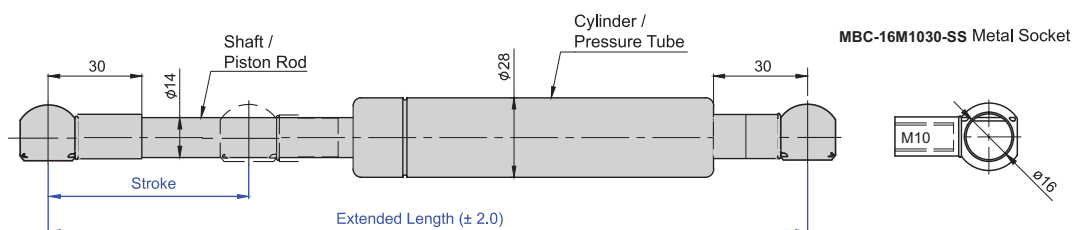
14mm PISTON 2500N (MAX)

STAINLESS STEEL

- All struts supplied with female ball socket ends (M10 thread) & male 16mm ball studs with 20mm M10 thread
- 316 stainless steel shaft & cylinder, 304 stainless steel socket ends and ball stud brackets
- High corrosion resistance



S14



Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
S14-290700-XXXXN	150 - 2500	700	290	410	14
S14-385900-XXXXN	150 - 2500	900	385	515	14
S14-5751300-XXXXN	150 - 2500	1300	575	725	14

Note: Specifications can change from time to time without notice.
Cut-outs & construction should only be done with the products onsite.

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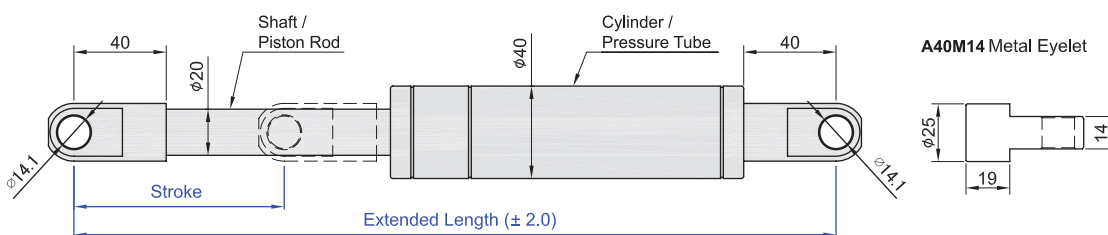
DOOR LIFTING

GAS STRUTS - STANDARD

20mm PISTON 5000N (MAX)

NI-SLIDE STEEL

- High quality German specification & Japanese quality management
- C20 gas struts supplied with aluminium eyelet ends with 14mm hole
- Piston treated with Ni-slide nitrating process for corrosion resistance
- Cylinder rolled, not welded, for optimal seal
- Superior damping control with patented labyrinth piston



C20

Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Ø Piston (mm)
C20-150500-XXXXN*	600 - 5000	500	150	350	20
C20-350900-XXXXN*	600 - 5000	900	350	550	20
C20-5001200-XXXXN*	600 - 5000	1200	500	700	20

* Special order product

DOOR LIFTING

GAS STRUTS - ADJUSTABLE FORCE

8mm, 10mm, 14mm PISTON

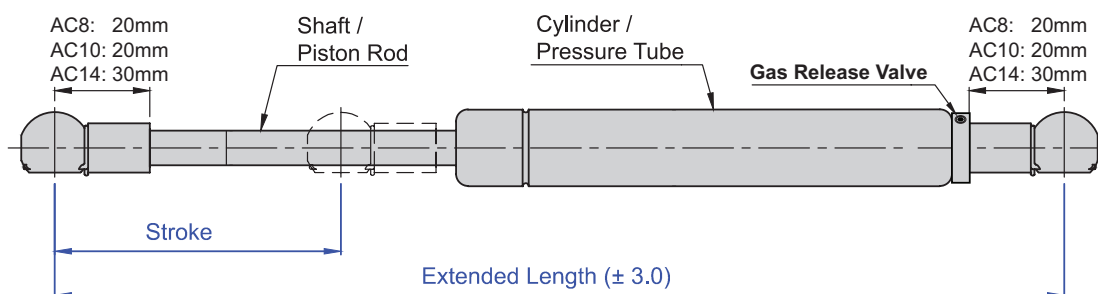
STEEL

- Adjustable struts have an Allen key grub screw valve so gas can be bled off to reach desired force while installed. Bleed off gas progressively with split second open & close technique
- Desirable for remote or difficult access installations where it is impractical to get accurate measurements required for gas strut design calculations
- Handy for trailer and horse float manufacturers to carry in stock to quickly resolve time sensitive jobs
- All struts supplied with female ball socket ends & male ball stud brackets

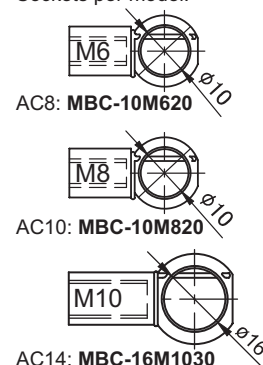
Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Piston / Cyl Ø (mm)	Strut Thread
AC8-100300-800N	100 - 800	300	100	200	8/18	M6
AC8-175450-800N	100 - 800	450	175	275	8/18	M6
AC8-200500-800N	100 - 800	500	200	300	8/18	M6
AC8-290680-800N	100 - 800	680	290	390	8/18	M6
AC10-115325-1200N	100 - 1200	325	115	210	10/22	M8
AC10-195485-1200N	100 - 1200	485	195	290	10/22	M8
AC10-240575-1200N	100 - 1200	575	240	335	10/22	M8
AC10-340785-1200N	100 - 1200	785	340	445	10/22	M8
AC10-390885-1200N	100 - 1200	885	390	495	10/22	M8
AC10-4851095-1200N	100 - 1200	1095	485	610	10/22	M8
AC14-190500-2500N	150 - 2500	500	190	310	14/28	M10
AC14-290700-2500N	150 - 2500	700	290	410	14/28	M10
AC14-315750-2500N	150 - 2500	750	315	435	14/28	M10
AC14-345815-2500N	150 - 2500	815	345	470	14/28	M10
AC14-395920-2500N	150 - 2500	920	395	525	14/28	M10
AC14-4901135-2500N	150 - 2500	1135	490	645	14/28	M10
AC14-5751300-2500N	150 - 2500	1300	575	725	14/28	M10
AC14-7251600-2500N	150 - 2500	1600	725	875	14/28	M10



AC10



Sockets per model:



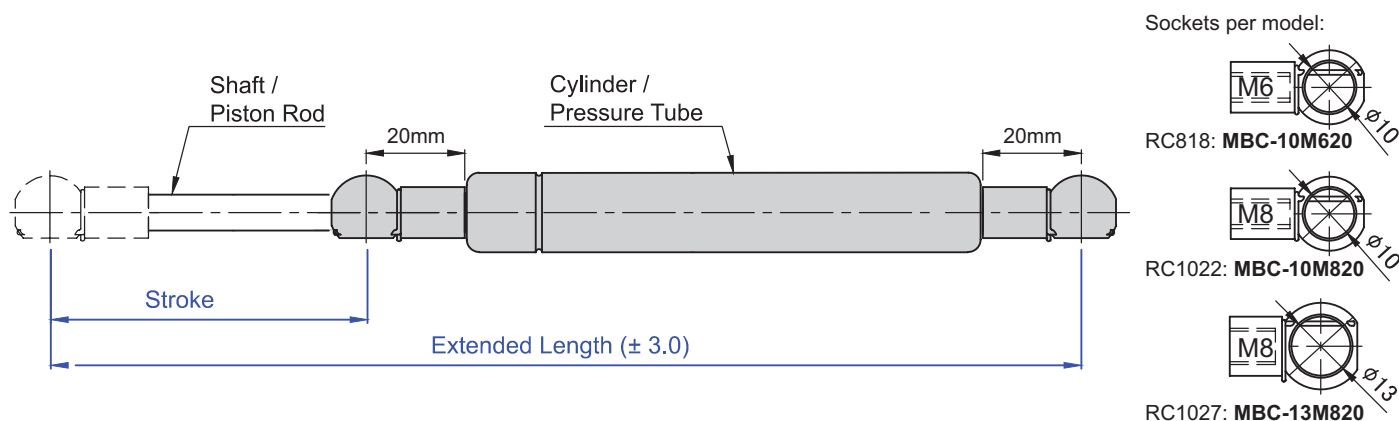
Note: Specifications can change from time to time without notice.
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DOOR LIFTING

GAS STRUTS - TRACTION / TENSION (REVERSE) TYPE 8/18mm, 10/22mm, 10/27mm PISTON/CYLINDER STEEL

- Traction / Tension (Reverse) gas struts function in the opposite manner to standard “compression” gas struts: The force pulls the two ends together instead of pushing the two ends apart
- All struts supplied with female ball socket ends & male ball stud brackets



RC1022

Code	Force Range (N)	Extended (mm)	Stroke (mm)	Compressed (mm)	Piston / Cyl Ø (mm)
RC818-100305-100N	100 - 800	305	100	205	8/18
RC818-200505-100N	100 - 800	505	200	305	8/18
RC818-300705-100N	100 - 800	705	300	405	8/18
RC1022-140415-100N	100 - 1200	415	140	275	10/22
RC1022-190515-100N	100 - 1200	515	190	325	10/22
RC1022-240615-100N	100 - 1200	615	240	375	10/22
RC1022-350835-100N	100 - 1200	835	350	485	10/22
RC1027-375895-100N	100 - 1500	895	375	520	10/27
RC1027-6001345-100N	100 - 1500	1345	600	745	10/27



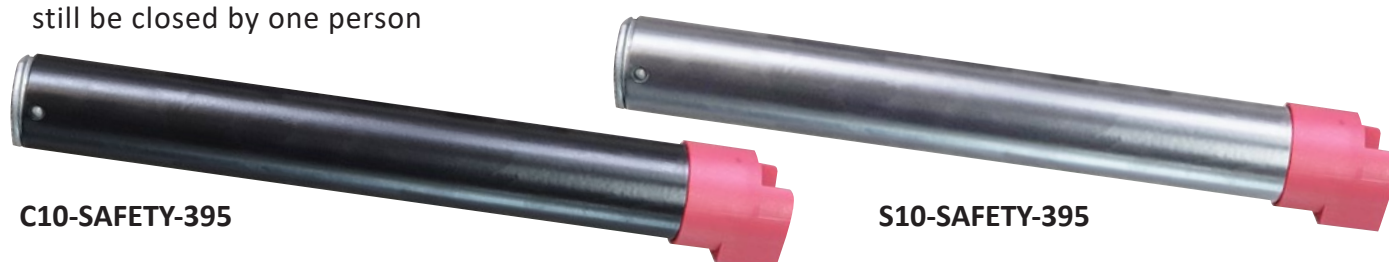
DOOR LIFTING

GAS STRUTS - SAFETY LOCKING TUBE

MULTI-FIT - SUITS ALL 10mm PISTON GAS STRUTS

STEEL & STAINLESS STEEL

- Safety lock out tubes to fit model 10mm shaft gas struts
- Prevents unintentional closing of doors and lids due to wind or accidental knocking
- Spring loaded to be out of alignment so that the safety tube jams against the bottom of the gas strut cylinder preventing it compressing
- To close the door or lid, you must push the thumb press on the red plastic collar to align the safety tube with the gas strut cylinder and then begin pulling the door / lid closed
- The safety tube is fitted to only one of the pair of gas struts on the door, so that the door can still be closed by one person



Multi-fit safety tube supplied 395mm long to fit C10-400885 / C10-400900 / S10-400885 / S10-400900 gas struts. To fit shorter gas strut models the tube must be cut to length to suit.

Instructions for fitting:

- Determine stroke (travel) of gas strut (e.g. 210mm).
- Cut safety tube to length of stroke less 5mm (e.g. $210-5 = 205\text{mm}$). For steel safety tubes it is best to paint the cut edge.
- Remove ball socket end from shaft end of gas strut and insert into safety cylinder.
- Push the zinc alloy end of safety cylinder against a flat surface to straighten it (against the spring tension).
- Push / screw the M8 thread on the shaft end of the gas strut into the grey zinc alloy end piece inside the safety tube.
- Slide red plastic collar over cylinder end of gas strut and fit to cut end of safety tube, aligning it so that the thumb press is angled up away from the gas strut. Test operation, then remove and refit the red plastic collar applying a couple of drops of super glue to hold in place.

Important Note:

- When using the safety tube, it must be factored into the design that the effective stroke of the gas strut is reduced by 35mm. For example, gas strut model C10-210500 with 210mm stroke would become 175mm stroke.



Showing **C10-210500-XXXN** Gas Strut with **C10-SAFETY-395** cut to suit



Showing **C10-125330-XXXN** Gas Strut with **C10-SAFETY-395** cut to suit

Code	Material	Gas Strut Ø Piston (mm)	Force Range (N)	Length (mm)	Ø Tube (mm)	Ø Red Collar (mm)
C10-SAFETY-395	Steel / Black	10	100 - 1100	395	28mm	37
S10-SAFETY-395	316 S/Steel	10	100 - 1000	395	28mm	37

Note: Specifications can change from time to time without notice.
Cut-outs & construction should only be done with the products onsite.

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DOOR LIFTING

GAS STRUTS - ANTI-DUST BOOTS RUBBER

- Rubber dust boots protect gas strut shaft and seal from foreign particles
- Helps protect seal seat from corrosion and prolongs gas strut life
- To fit - remove socket end of gas strut, slide boot up shaft and cover cylinder end



Code	Compatible Gas Strut Models
AN-450	C10, C12, C14

AN-450
Can be secured
with cable ties



Code	Compatible Gas Strut Models
RB-0818-30	C8, S8
RB-1022-30	C10, S10
RB-1222-30	C12 (a few models)
RB-1228-35	C12, S12
RB-1428-35	C14



RB-1428



RB-1228



RB-1022



RB-0818

GAS STRUTS - FEMALE SOCKET ENDS QUICK RELEASE ENDS STEEL & STAINLESS STEEL

- Spring loaded quick release female socket end for gas strut. Fits 10mm Dia balls
- Ideal for lids that need to be removed (ute lids, boat hatches)
- Knurled for easy grip



QRE10M#
Steel



QRE10M#-SS
304 S/Steel



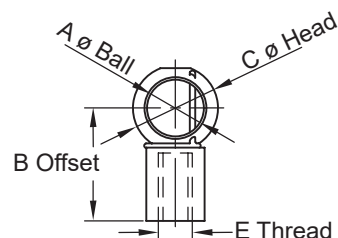
Showing **QRE10M8** connected to **SW12** male ball stud bracket (available separately)



Code	Ball A (mm)	Thread E (mm)	Offset B (mm)	Overall Dia C (mm)	Max Force (N)	Material / Finish
QRE10M6	10	M6	24.6	14.3	1100	Steel / Black
QRE10M8	10	M8	28.6	15.9	1100	Steel / Black
QRE10M6-SS	10	M6	24.6	14.3	1100	304 S/Steel
QRE10M8-SS	10	M8	28.6	15.9	1100	304 S/Steel

DOOR LIFTING

GAS STRUTS - FEMALE SOCKET ENDS STEEL & STAINLESS STEEL



- Female socket ends for gas struts to fit male ball bracket



B10##M#



M9##M#



C9##M#



C9S##M#

Code	Ball A (mm)	Thread E (mm)	Offset B (mm)	Head C (mm)	Max Force (N)	Material / Finish
B1020M6	10	M6	20	18x18	650	Plastic / Black
B1020M6-20DEG*	10	M6	20	18x18	650	Plastic / Black
B1020M8	10	M8	20	18x18	1000	Plastic / Black
B1020M8-20DEG*	10	M8	20	18x18	1000	Plastic / Black
M918M6	10	M6	18	15	1100	Steel / Black
M920M6	10	M6	20	15	1100	Steel / Black
M925M6	10	M6	25	15	1100	Steel / Black
M930M6	10	M6	30	15	1100	Steel / Black
M918M8	10	M8	18	15	1100	Steel / Black
M920M8	10	M8	20	15	1100	Steel / Black
M925M8	10	M8	25	15	1100	Steel / Black
M930M8	10	M6	30	15	1100	Steel / Black
C918M6	10	M6	18	15	1100	Steel / Black
C920M6	10	M6	20	15	1100	Steel / Black
C925M6	10	M6	25	15	1100	Steel / Black
C930M6	10	M6	30	15	1100	Steel / Black
C918M8	10	M8	18	15	1100	Steel / Black
C920M8	10	M8	20	15	1100	Steel / Black
C925M8	10	M8	25	15	1100	Steel / Black
C930M8	10	M8	30	15	1100	Steel / Black
C9S20M6	10	M6	20	15	1000	303 S/Steel
C9S25M6	10	M6	25	15	1000	303 S/Steel
C9S30M6	10	M6	30	15	1000	303 S/Steel
C9S20M8	10	M8	20	15	1000	303 S/Steel
C9S25M8	10	M8	25	15	1000	303 S/Steel
C9S30M8	10	M8	30	15	1000	303 S/Steel

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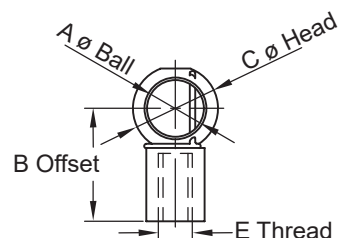
Codes in **bold** are the socket ends supplied with standard length gas struts.
*Ball entry is 20 degrees off perpendicular - for some automotive setups.

Note: Specifications can change from time to time without notice.
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GAS STRUTS - FEMALE SOCKET ENDS STEEL & STAINLESS STEEL



- Female socket ends for gas struts to fit male ball bracket



M19##M#



C19##M8



C19S##M8



C24##M8

Code	Ball A (mm)	Thread E (mm)	Offset B (mm)	Head C (mm)	Max Force (N)	Material / Finish
...Continued from previous page...						
M1918M6	13	M6	18	19	1100	Steel / Black
M1920M6	13	M6	20	19	1100	Steel / Black
M1925M6	13	M6	25	19	1100	Steel / Black
M1930M6	13	M6	30	19	1100	Steel / Black
M1918M8	13	M8	18	19	1100	Steel / Black
M1920M8	13	M8	20	19	1100	Steel / Black
M1925M8	13	M8	25	19	1100	Steel / Black
M1930M8	13	M8	30	19	1100	Steel / Black
C1920M8	13	M8	20	19	2000	Steel / Black
C1925M8	13	M8	25	19	2000	Steel / Black
C1930M8	13	M8	30	19	2000	Steel / Black
C19S20M8	13	M8	20	19	1800	303 S/Steel
C19S25M8	13	M8	25	19	1800	303 S/Steel
C19S30M8	13	M8	30	19	1800	303 S/Steel
C2425M8	16	M8	25	24	2500	Steel / Black
C2430M8	16	M8	30	24	2500	Steel / Black

Codes in **bold** are the socket ends supplied with standard length gas struts.

*Ball entry is 20 degrees off perpendicular - for some automotive setups.

GAS STRUTS - FEMALE SOCKET ENDS & MALE BALL STUDS FOR NEW AC, RC & S14 MODEL GAS STRUTS



Ball Socket (Strut End) Code	Offset (mm)	Thread (mm)	Matching Ball Stud (Bracket) Code	Ball (mm)	Thread (mm)	Offset (mm)
MBC-10M620	20	M6	MBS-10M820	10	M8 x 20	14.5
MBC-10M820	20	M8	MBS-10M820	10	M8 x 20	14.5
MBC-13M820	20	M8	MBS-13M820	13	M8 x 20	15
MBC-16M1030	30	M10	MBS-16M1020	16	M10 x 20	17
MBC-16M1030-SS	30	M10	MBS-16M1020-SS	16	M10 x 20	17



DOOR LIFTING

GAS STRUTS - MOUNTING BRACKETS

MALE BALL STUDS

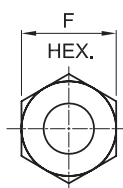
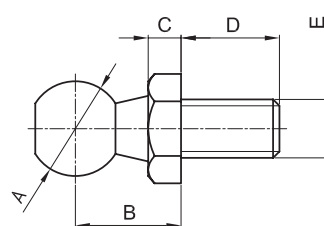
STEEL & STAINLESS STEEL



SW18



TN-M8x17-ZP



SW-LS016

Code	Ball A (mm)	Thread E (mm)	Offset B (mm)	C (mm)	D (mm)	F (mm)	Max Force (N)	Material / Finish	Matching Socket End
SW11	10	M6	14.2	4.9	12.5	12	400	Steel / Black	C9##M#
SW13-SHORT	10	M8	15	4.7	8	13	1200	Steel / Zinc	C9##M#
SW12	10	M8	14.5	4.5	13.5	12	1200	Steel / Black	C9##M#
SW12-16L	10	M8	14.5	4.5	16	12	1200	Steel / Black	C9##M#
BS-002S2	10	Rivet	12.5	3	4	11*	1000**	303 S/Steel	C9S##M#
SWS-13	10	M8	12.5	3	12	13	1200	303 S/Steel	C9S##M#
SWS-12	10	M8	14.5	4.5	12	12	1200	303 S/Steel	C9S##M#
SWS-12-18L	10	M8	14.5	4.5	18	12	1200	303 S/Steel	C9S##M#
SW14	13	M8	15	4.5	12.5	13	1800	Steel / Black	C19##M8
SW4611	13	M8	14	3	15	13	1800	Steel / Zinc	C19##M8
SW8272	13	M10	14	3	20	17	2000	Steel / Zinc	C19##M8
SW14-L	13	M8	22	10	20	13	2000	Steel / Y/Zinc	C19##M8
SW-LS016	13	M10	31	20	45	14	2000	Steel / Zinc	C19##M8
SWS-14	13	M8	15	4.5	12.5	13	1800	303 S/Steel	C19S##M8
SW18	16	M10	17	3	19	13*	2500	Steel / Y/Zinc	C24##M8

*Not hex shape **Depends on plate and riveting quality

Code	Description	Material / Finish
TN-M8X17-ZP	Pronged T-Nut to create M8x17mm thread in timber	Steel / Zinc

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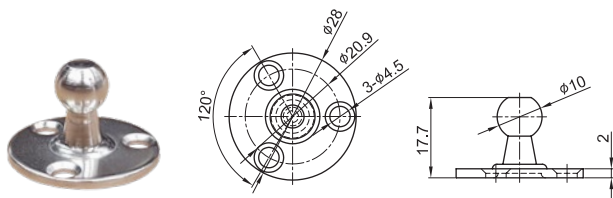
SELECTLOK
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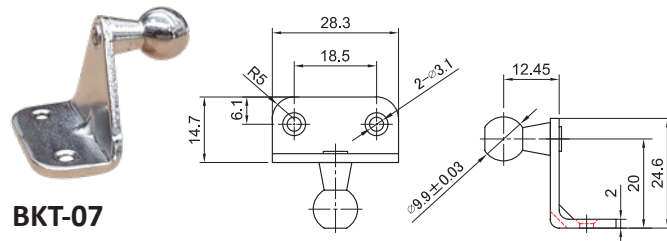
GAS STRUTS - MOUNTING BRACKETS

PLATE BRACKETS

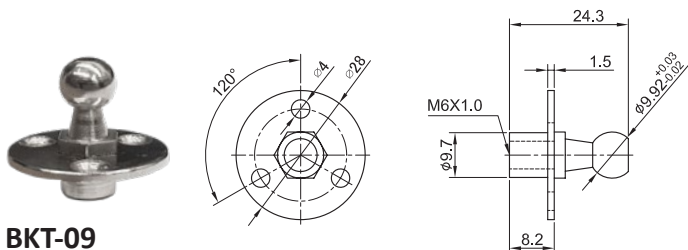
STEEL & STAINLESS STEEL



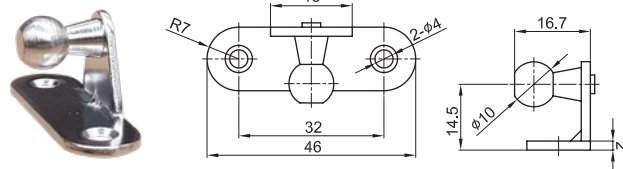
BKT-09A



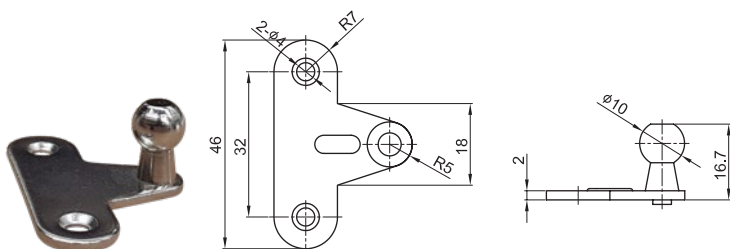
BKT-07



BKT-09



BKT-06
BKT-06SS



BKT-08
BKT-08SS

Code	Ball A (mm)	Ball Stud Angle to Mounting Surface	Ball Stud Offset to Mounting Surface (mm)	Max Force (N)	Material / Finish	Matching Socket End
BKT-09A	10	Perpendicular	13.5	300	Steel / Zinc	C9##M#
BKT-09	10	Perpendicular	13.5	400	Steel / Zinc	C9##M#
BKT-08	10	Perpendicular	12.5	300	Steel / Zinc	C9##M#
BKT-07	10	Parallel	18.5	200	Steel / Zinc	C9##M#
BKT-06	10	Parallel	14.5	300	Steel / Zinc	C9##M#
BKT-08SS	10	Perpendicular	12.5	300	303 S/Steel	C9S##M#
BKT-06SS	10	Parallel	14.5	300	303 S/Steel	C9S##M#

DOOR LIFTING

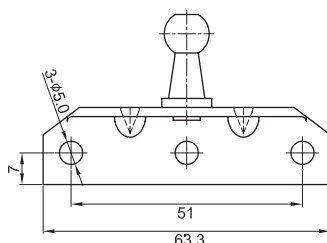
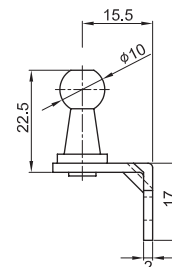
GAS STRUTS - MOUNTING BRACKETS

PLATE BRACKETS

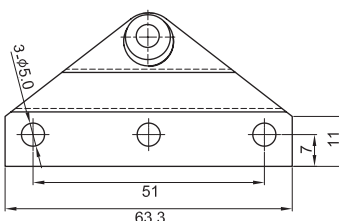
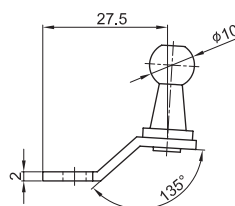
STEEL



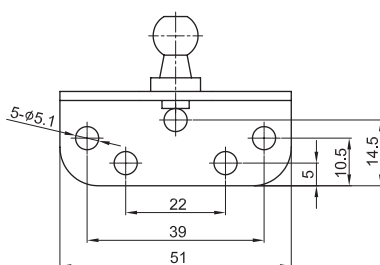
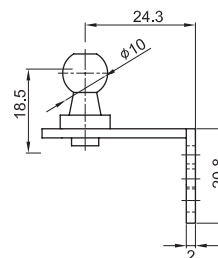
BKT-01



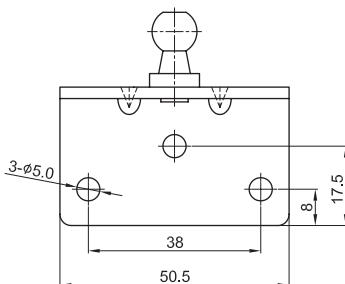
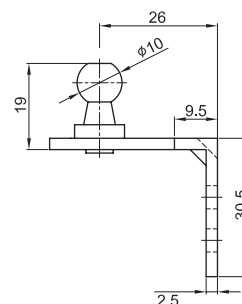
BKT-02



BKT-03



BKT-04



Code	Ball A (mm)	Ball Stud Angle to Mounting Surface	Ball Stud Offset to Mounting Surface (mm)	Max Force (N)	Material / Finish	Matching Socket End
BKT-01	10	Parallel	15.5	600	Steel / Zinc	C9##M#
BKT-02	10	94°	25.5	600	Steel / Zinc	C9##M#
BKT-03	10	Parallel	24.3	600	Steel / Zinc	C9##M#
BKT-04	10	Parallel	26	700	Steel / Zinc	C9##M#

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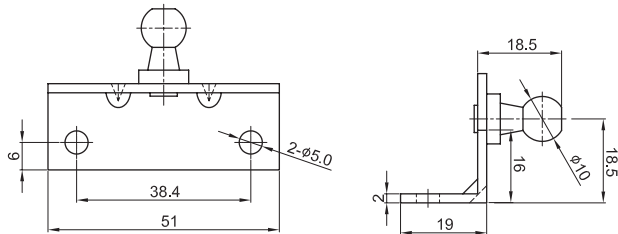
GAS STRUTS - MOUNTING BRACKETS

PLATE BRACKETS

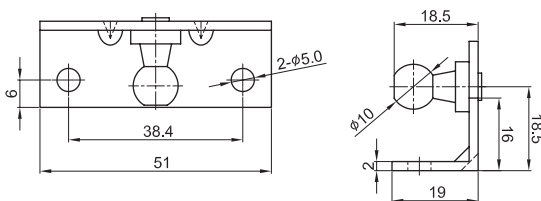
STEEL & STAINLESS STEEL



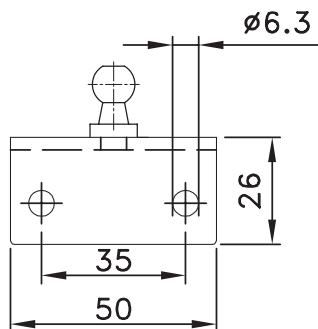
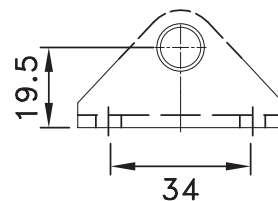
BKT-10-O
BKT-10-OSS



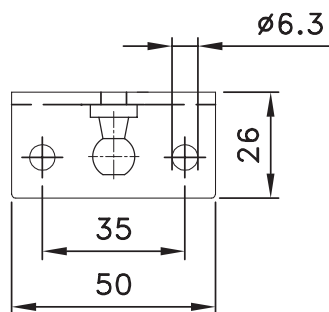
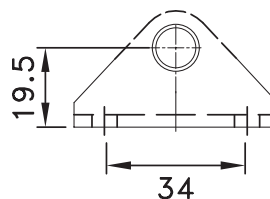
BKT-10-I
BKT-10-ISS



BKT-10-OHDSS



BKT-10-IHDSS



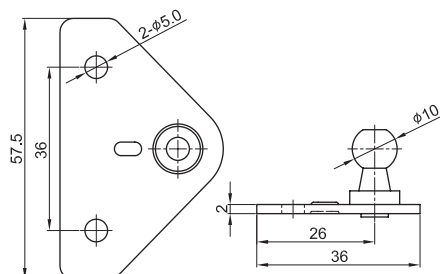
Code	Ball A (mm)	Ball Stud Angle to Mounting Surface	Ball Stud Offset to Mounting Surface (mm)	Max Force (N)	Material / Finish	Matching Socket End
BKT-10-O	10	Parallel	18.5	600	Steel / Zinc	C9##M#
BKT-10-I	10	Parallel	18.5	600	Steel / Zinc	C9##M#
BKT-10-OSS	10	Parallel	18.5	600	304/303 S/Steel	C9S##M#
BKT-10-ISS	10	Parallel	18.5	600	304/303 S/Steel	C9S##M#
BKT-10-OHDSS	10	Parallel	19.5	700	304/303 S/Steel	C9S##M#
BKT-10-IHDSS	10	Parallel	19.5	700	304/303 S/Steel	C9S##M#

DOOR LIFTING

GAS STRUTS - MOUNTING BRACKETS

PLATE BRACKETS

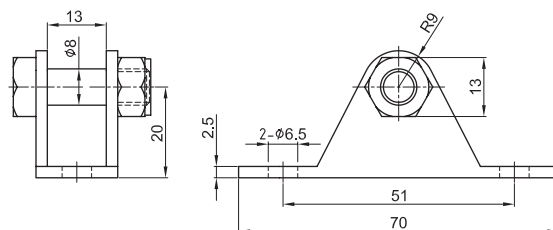
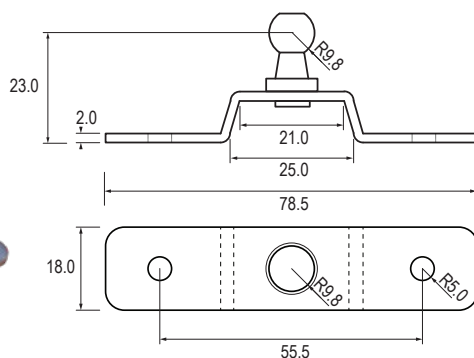
STEEL & STAINLESS STEEL



BKT-05
BKT-05SS



BKT-13
BKT-13SS



BKT-15SS

Code	Ball A (mm)	Ball Stud Angle to Mounting Surface	Ball Stud Offset to Mounting Surface (mm)	Max Force (N)	Material / Finish	Matching Socket End
BKT-05	10	Perpendicular	14	600	Steel / Zinc	C9##M#
BKT-13	Axle	Parallel	20	2500	Steel / Zinc	Eyelet
BKT-05SS	10	Perpendicular	14	600	304/303 S/Steel	C9S##M#
BKT-13SS	Axle	Parallel	20	2500	304/303 S/Steel	Eyelet
BKT-15SS	10	Perpendicular	23	500	304/303 S/Steel	C9S##M#

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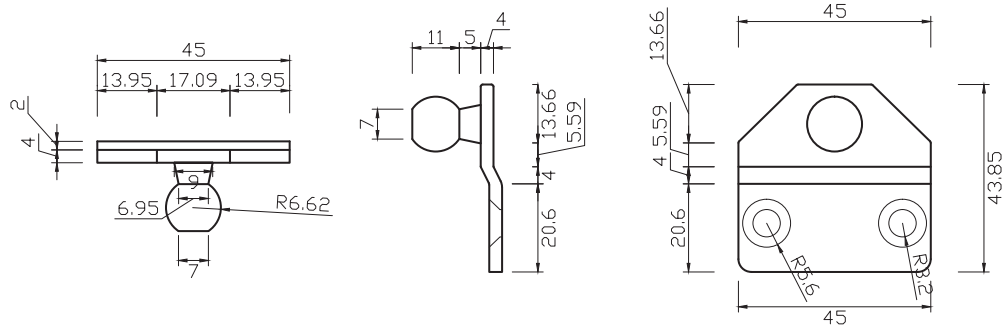
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GAS STRUTS - MOUNTING BRACKETS

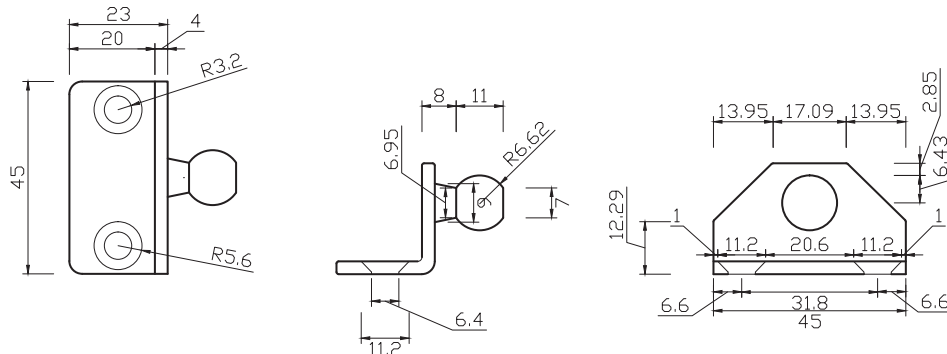
HEAVY DUTY PLATE BRACKETS

STEEL & STAINLESS STEEL



BKT12-13

BKT12-13SS*



BKT11-13-O

BKT11-13-OSS*

Code	Ball A (mm)	Ball Stud Angle to Mounting Surface	Ball Stud Offset to Mounting Surface (mm)	Max Force (N)	Material / Finish	Matching Socket End
BKT12-13	13	Perpendicular	16.5	2000	Steel / Zinc	C19##M8
BKT11-13-O	13	Parallel	17	2000	Steel / Zinc	C19##M8
BKT12-13SS*	13	Perpendicular	16.5	2000	304/303 S/Steel	C19S##M8
BKT11-13-OSS*	13	Parallel	17	2000	304/303 S/Steel	C19S##M8

*Special order product

DOOR LIFTING

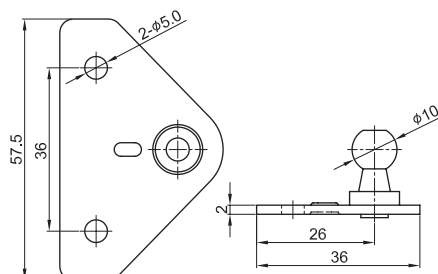
GAS STRUTS - MOUNTING BRACKETS

PLATE BRACKETS

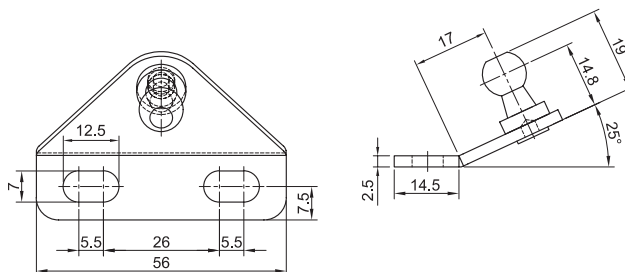
STEEL BLACK & STAINLESS STEEL



BKT-05BLK

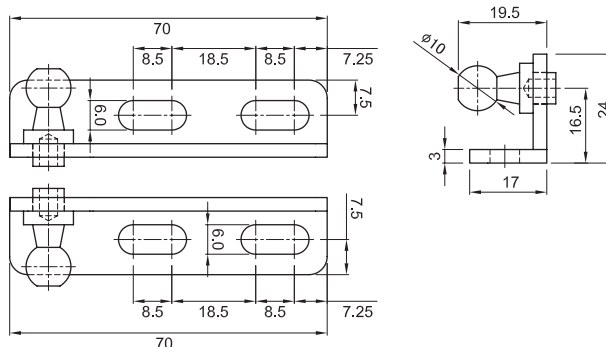


BKT-52
BKT-52SS



BKT-26-R

BKT-26-L



Code	Ball A (mm)	Ball Stud Angle to Mounting Surface	Ball Stud Offset to Mounting Surface (mm)	Max Force (N)	Material / Finish	Matching Socket End
BKT-05BLK	10	Perpendicular	14	600	Steel / Black	C9##M#
BKT-52	10	65°	22.5	700	Steel / Black	C9##M#
BKT-26-R	10	Parallel	16.5	1100	Steel / Black	C9##M#
BKT-26-L	10	Parallel	16.5	1100	Steel / Black	C9##M#
BKT-52SS	10	65°	16.5	700	304/303 S/Steel	C9S##M#

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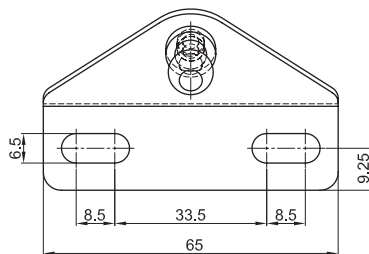
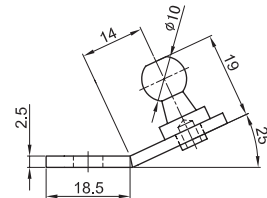
GAS STRUTS - MOUNTING BRACKETS

PLATE BRACKETS

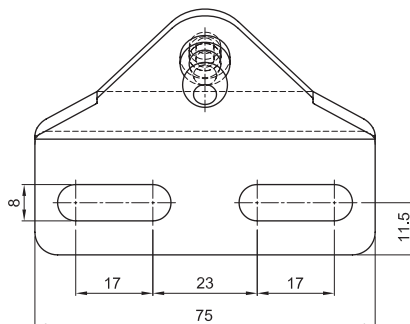
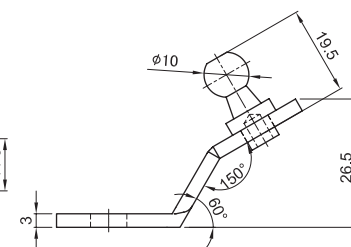
STEEL BLACK



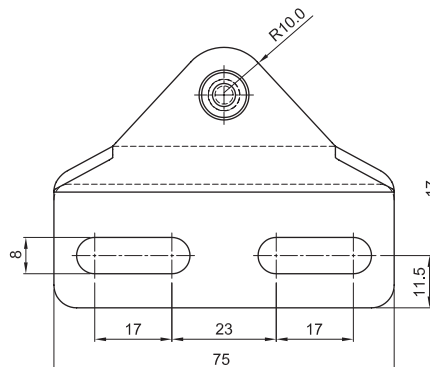
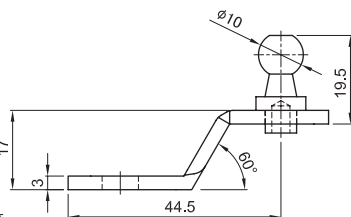
BKT-23A



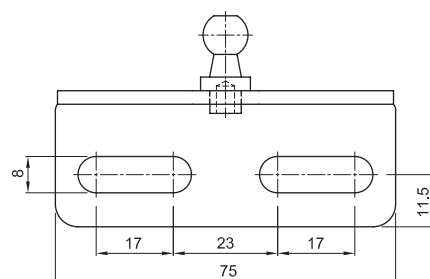
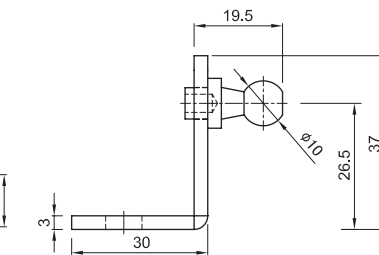
BKT-25-B



BKT-25-C



BKT-25-O



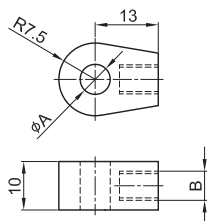
Code	Ball A (mm)	Ball Stud Angle to Mounting Surface	Ball Stud Offset to Mounting Surface (mm)	Max Force (N)	Material / Finish	Matching Socket End
BKT-23A	10	65°	20	700	Steel / Black	C9##M#
BKT-25-B	10	60°	32	1100	Steel / Black	C9##M#
BKT-25-C	10	Perpendicular	30	1100	Steel / Black	C9##M#
BKT-25-O	10	Parallel	26.5	1100	Steel / Black	C9##M#

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GAS STRUTS - MOUNTING BRACKETS

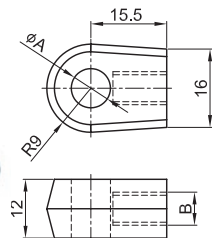
EYELET ENDS

ZINC ALLOY



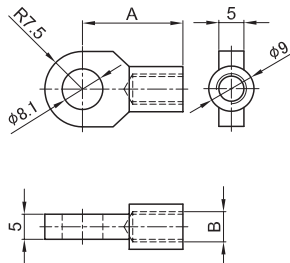
D7A

Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
D7A	8.1	M6	13	12	600	Zinc / Zinc



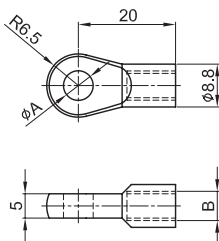
D8
D10
D13

Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
D8	8.1	M8	15.5	12	2000	Zinc / Zinc
D10	10.1	M8	15.5	12	2000	Zinc / Zinc
D13	13	M8	15.5	12	1500	Zinc / Zinc



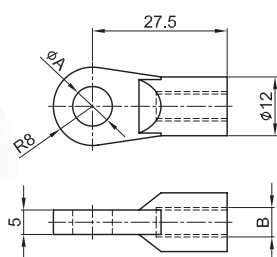
A7
BLACK

Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
A7 BLACK	8.1	M6	20	5	700	Zinc / Black



D6

Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
D6	6.1	M6	20	5	300	Zinc / Zinc



D8A
D8A2
D8A5
D8A6

Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
D8A	8.1	M8	27.5	5	700	Zinc / Zinc
D8A2	8.1	M6	27.5	5	700	Zinc / Zinc
D8A5	10.1	M8	27.5	5	700	Zinc / Zinc
D8A6	10.1	M6	27.5	5	700	Zinc / Zinc

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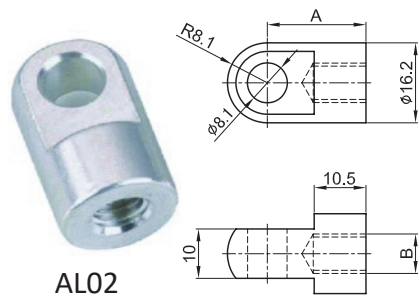
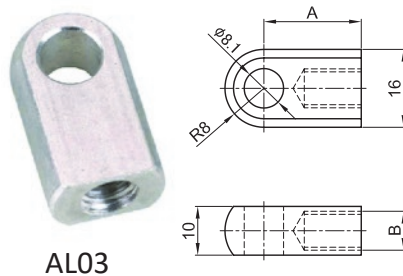
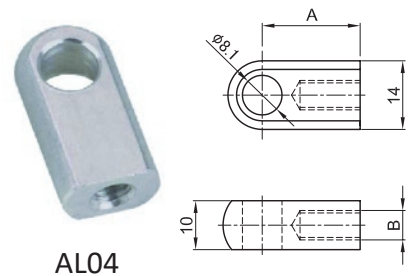
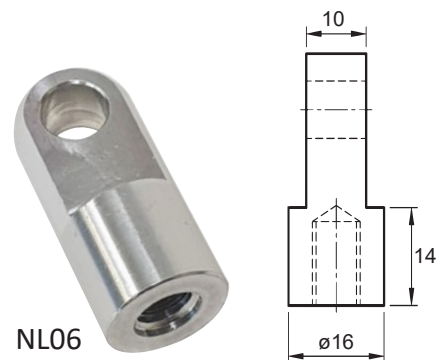
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DOOR LIFTING

GAS STRUTS - MOUNTING BRACKETS

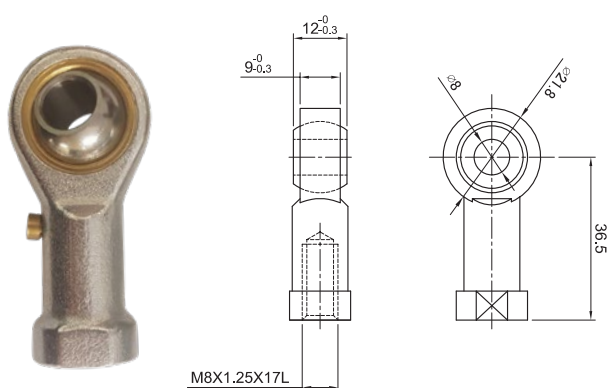
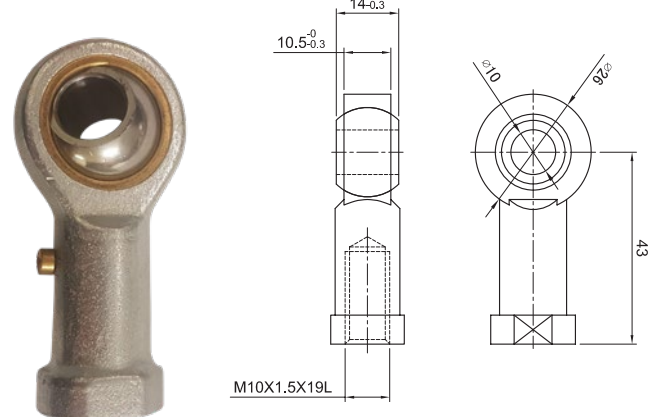
EYELET ENDS

ZINC ALLOY & ALUMINIUM



Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
NL06	8.1	M8	28	10/20	1100	Aluminium
AL02	8.1	M8	20	10/20	1100	Aluminium
AL03	8.1	M8	20	10	1100	Aluminium
AL04	8.1	M6	20	10	700	Aluminium

- Swivel eyelet (pillow ball)



Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
PHS8	8	M8	36.5	9	2000	Zinc / Zinc
PHS10	10	M10	43	10	2500	Zinc / Zinc

DOOR LIFTING

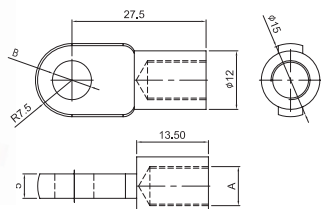
GAS STRUTS - MOUNTING BRACKETS

EYELET ENDS

STAINLESS STEEL



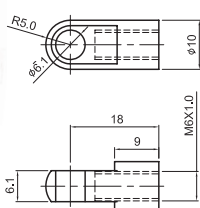
A15S08



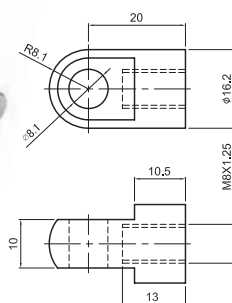
Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
A15S08M6	8.1	M6	27.5	5	700	303 S/Steel
A15S08M8	8.1	M8	27.5	5	1000	303 S/Steel



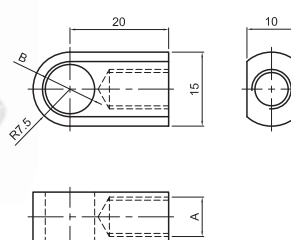
L1S



L2S



L5SM608
L5SM808



Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
L1S	6.1	M6	18	6.1	700	303 S/Steel
L2S	8.1	M8	20	10	2500	303 S/Steel
L5SM608	8.1	M6	20	10	700	303 S/Steel
L5SM808	8.1	M8	20	10	1100	303 S/Steel

Note: Specifications can change from time to time without notice.
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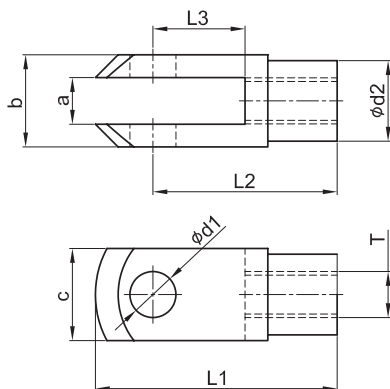
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DOOR LIFTING

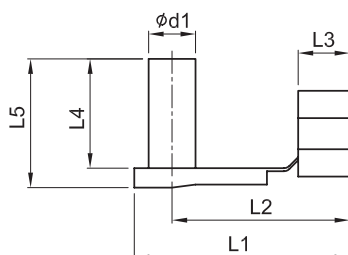
GAS STRUTS - MOUNTING BRACKETS

CLEVIS ENDS

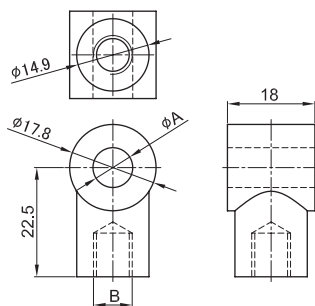
STEEL



Code	Eye Dia (mm)	Thread T (mm)	L1 Overall (mm)	L2 Offset (mm)	L3 (mm)	a Gap (mm)	b & c (mm)	Max Force (N)	Material / Finish
U7	10.1	M8	52	40	23	10	20	2500	Steel / Zinc
U6	8.1	M8	41	32	16	8	16	2500	Steel / Zinc
U5	6.1	M6	32	25	12	5.8	12	700	Steel / Zinc



Code	Pin Dia (mm)	L2 (mm)	L4 (mm)	Material / Finish
U7-PIN	10	38	23	Steel / Zinc
U6-PIN	8	29.5	19	Steel / Zinc
U5-PIN	6	22	14	Steel / Zinc



Code	Eye Dia (mm)	Thread (mm)	Offset (mm)	Thick (mm)	Max Force (N)	Material / Finish
T10	10.1	M8	22.5	18	2500	Steel / Zinc
T8	8.1	M8	22.5	18	2500	Steel / Zinc





The new class of electromechanical drives

DOOR LIFTING

POWERISE ELECTRIC DRIVE ACTUATORS INTRODUCTION

- Electric drive actuators which can be paired with a gas strut to automate door opening and closing
- Slim inline design requires minimal installation space compared with traditional electric actuators



Powerise was introduced in 2002 to automate the passenger doors on the Mercedes-Maybach

- Since 2002, over 50 million units have been produced and used by most vehicle manufacturers, as vehicle door automation has flowed down from luxury class vehicles to mainstream brands
- Today, automated doors are becoming more and more common on boot / trunk doors to assist the user when they have luggage in hand



Automated doors are now common on affordable mainstream vehicles

- The last 20 years of development in Powerise has led to the production of Industrial Series Powerise, “opening the door” for custom design and engineering into other applications and industries, where door automation or other silent motorised adjustment is required...

DOOR LIFTING

POWERISE ELECTRIC DRIVE ACTUATORS

INDUSTRIAL SERIES

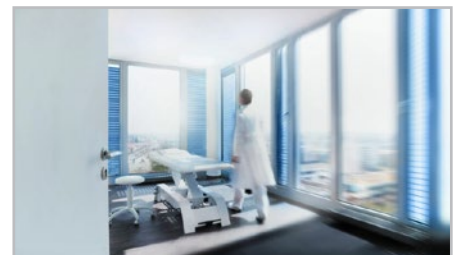


The new class of electromechanical drives

- Control by external ECU or choose “Smart” models with integrated control of up to four Powerise drives
- Models to suit up to 2500N or 5000N force
- One-click installation or variety of end connections
- Wide range of spindle pitches from 2 - 30mm
- Self-locking or adjustable with manual override during power failure
- Modular and configurable for each application

Industrial Powerise applications:

- Lifting doors/lids/hatches on industrial machines
- Door opening/closing on vehicles
- Solar tracking
- High window opening/closing
- Glasshouse ventilation
- Robotics
- Medical furniture



- When pairing Powerise with a gas strut, careful specification of the gas strut mounting geometry and force is required to ensure dynamic load compensation (e.g. throughout door rotation).
- Strong door panel and hinge design is required to prevent twisting due to the uneven force loading from side to side (gas strut to Powerise actuator).
- Powerise industrial actuators are best suited for new design and builds, not for retrofitting into existing automotive boot door setups or replacing twin gas strut boot door setups due to space limitations, lengths available and power requirements.

DOOR LIFTING

HATCH STAY

LIGHT DUTY

STAINLESS STEEL

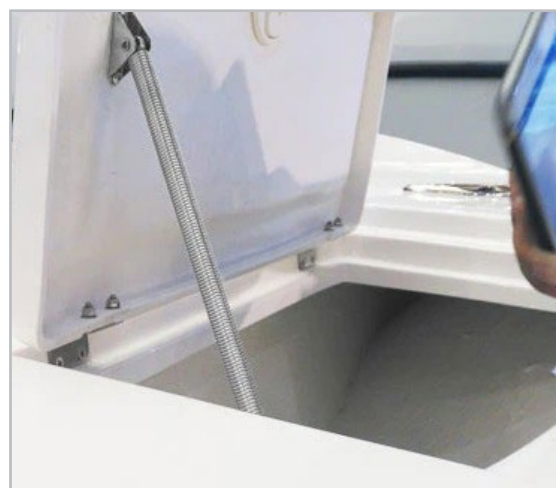
- Spring stay for lighter weight hatches
- Suitable for marine applications
- Push sideways on tension spring to create bend and close hatch - spring loops down inside closed hatch



Showing furniture application with lid open



Showing furniture application with lid closed



Showing boat hatch application with lid open

Code	Description	Fixing method
DX316-HS260	260mm long hatch stay	M4 CSK + M5 CSK screws

Note: Specifications can change from time to time without notice.
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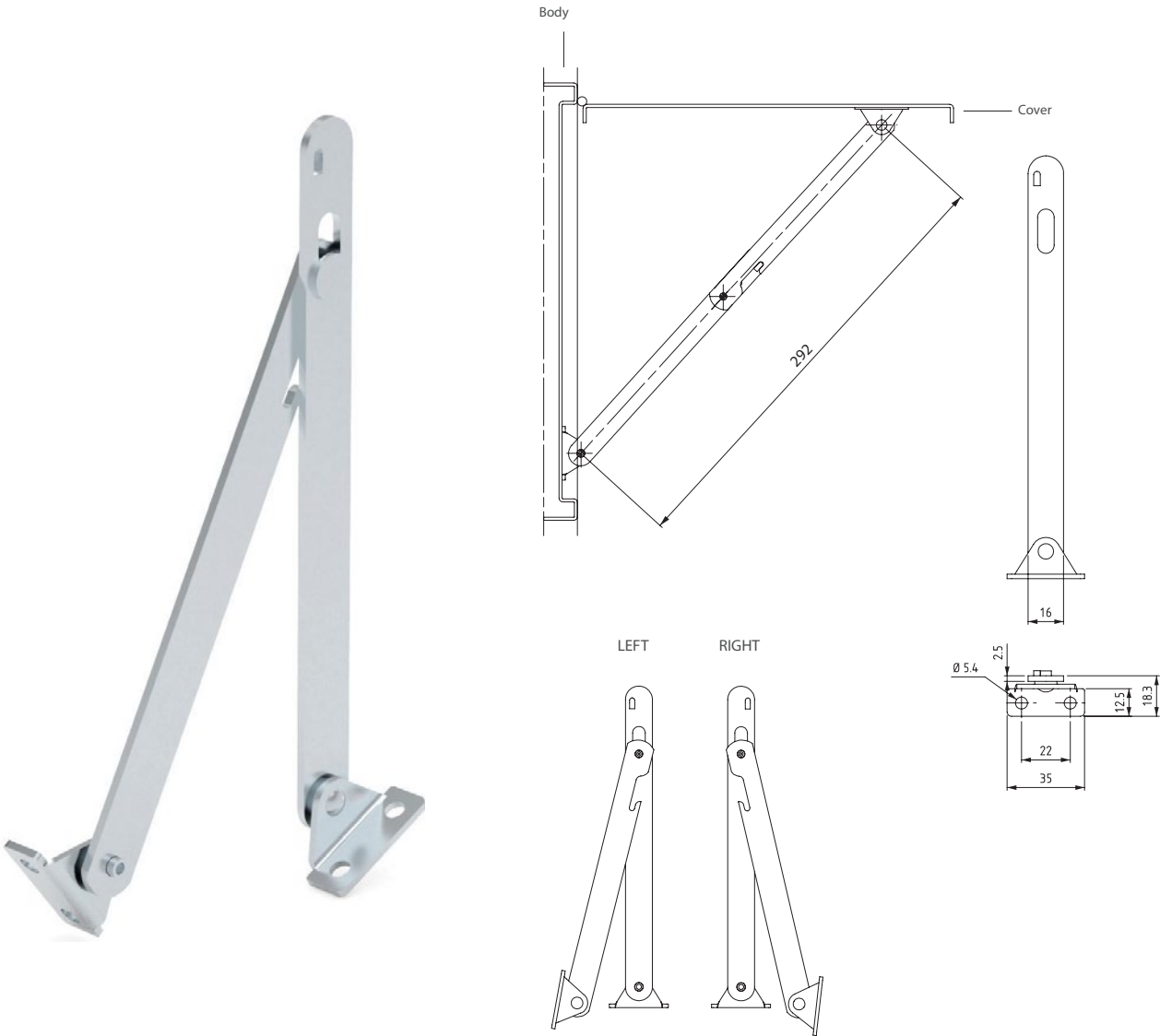
DOOR LIFTING

COVER STAY

MILD DUTY

STEEL & STAINLESS STEEL

- For light to medium duty applications
- Available to suit left or right hand applications



Code	<div>Left</div> <div>Right</div>	Material / Finish	Open Length (mm)
M-079-6-3-292-001	Right	Steel / Zinc	292
M-079-6-3-292-002	Left	Steel / Zinc	292
M-079-4-0-292-001	Right	304 S/Steel	292
M-079-4-0-292-002	Left	304 S/Steel	292

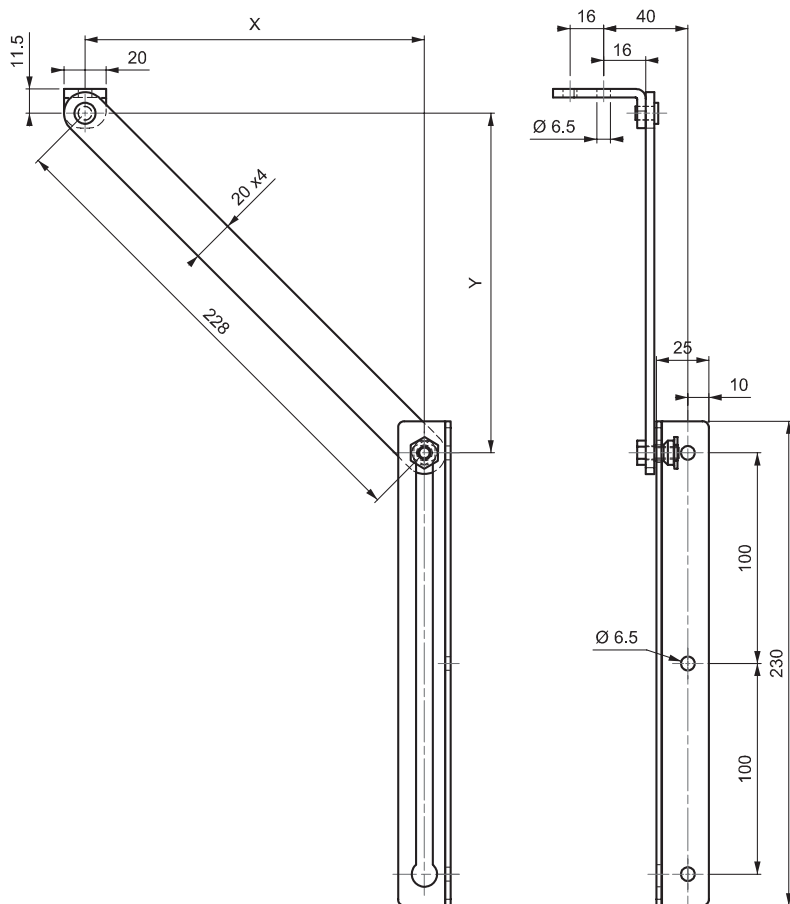
DOOR LIFTING

COVER STAY

HEAVY DUTY

STEEL & STAINLESS STEEL

- For medium to heavy duty applications
- Automatic lock to keep door open



Installation Dimensions:

Opening Angle (°)	Dimensions (mm)		Minimum Door Width Required
	X	Y	
140	140	180	403
120	120	166	389
110	110	150	373
100	100	146	369

For other opening angles use formula: $Y = X + \min.40$

Code	Material / Finish	Open Length (mm)
M-179-6-3	Steel / Zinc	228
M-179-4-0	304 S/Steel	228

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DOOR LIFTING

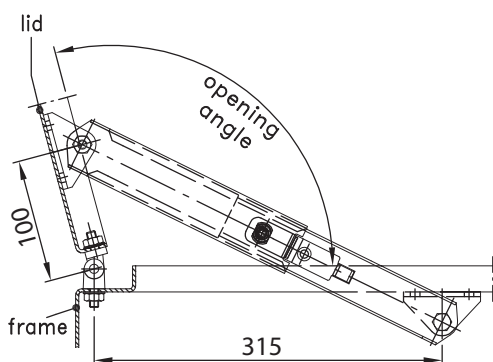
COVER STAY

HEAVY DUTY

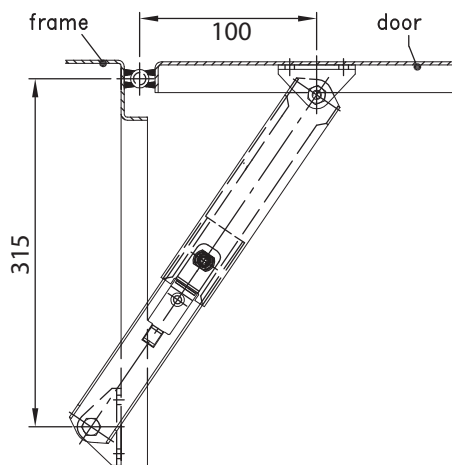
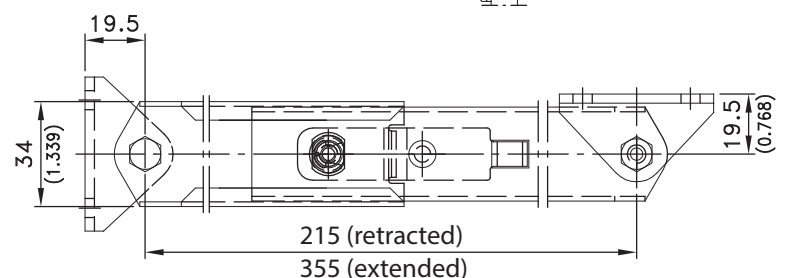
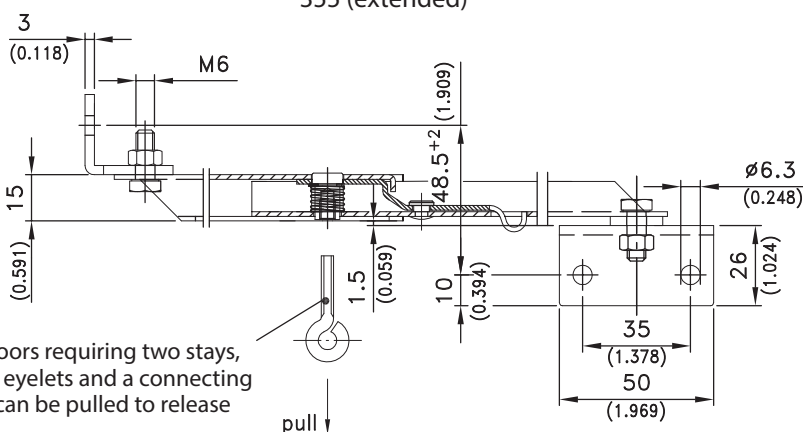
STAINLESS STEEL

- For heavy duty applications
- Telescopic push button release

Hatch / Lid:



Vertical Door:



For heavy doors requiring two stays, connect M4 eyelets and a connecting wire which can be pulled to release



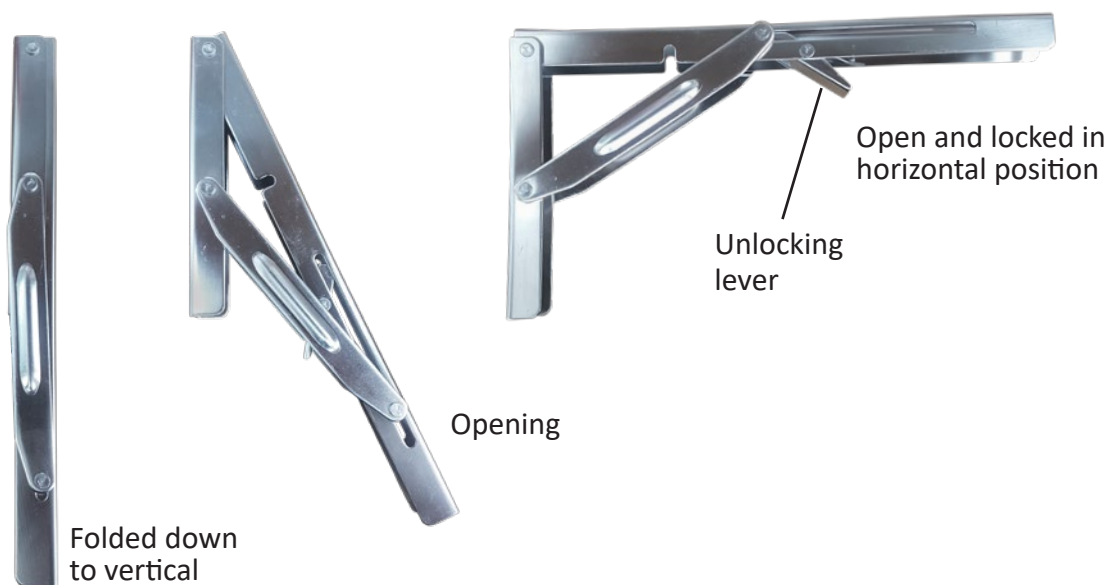
Code	Material / Finish	Open Length (mm)
230-9502	304 S/Steel	355

DOOR LIFTING

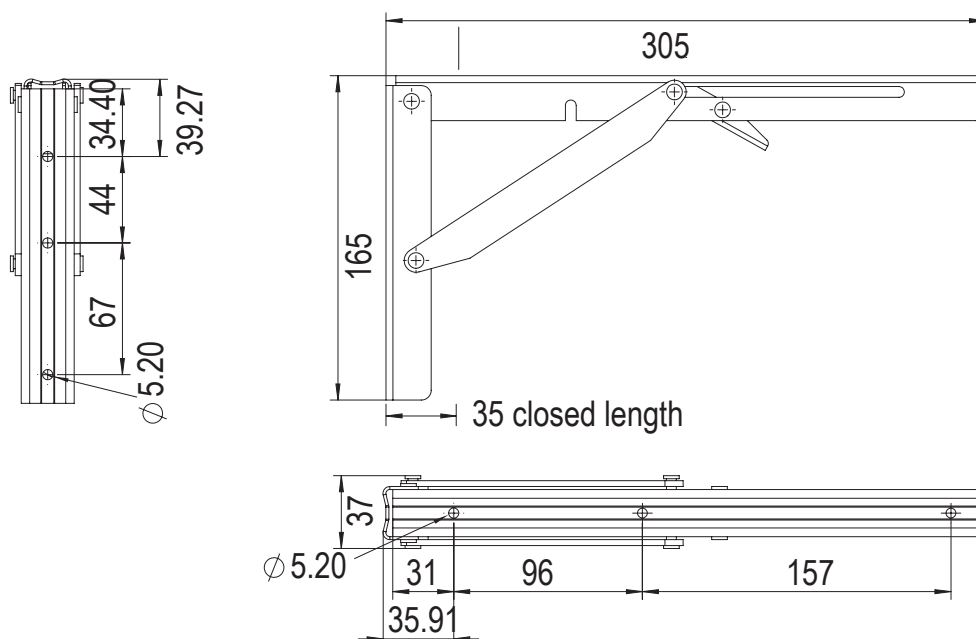
FOLDING TABLE / SEAT BRACKET

316 STAINLESS STEEL

- Folding table / chair bracket
- 150kg Max load per pair
- 90° Rotation, locks in up position only
- 316 Stainless steel



Code	Wall plate (mm)	Table Plate (mm)	Mounting Type
DX316-TB	160H x 24W	300 L x 24W	6x 12G / M5 Screws



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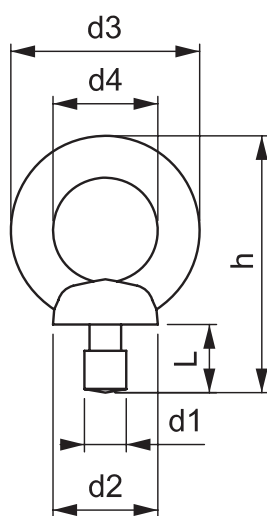
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DOOR LIFTING

LIFTING EYE BOLTS

STEEL

- Creates easy lifting / moving of enclosures, machines and trailer bodies, cages and covers



Code	Thread (mm)	Safe Load at 90° (kg)	d2 (mm)	d3 (mm)	d4 (mm)	h (mm)	L (mm)	Material / Finish
M-2451	M8	140	20	36	20	49	13.0	Steel / Zinc
M-2452	M10	230	25	45	25	63	17.0	Steel / Zinc
M-2453	M12	340	30	54	30	73.5	20.5	Steel / Zinc
M-2455	M16	700	35	63	35	89	27.0	Steel / Zinc