

Gas Springs & Fittings

Catalog CT-29 · 2026 Edition

Calibrated force 11-110 lb (5-50 kg) · Five standard lengths · Seven end fittings · MS & stainless

01 NITROGEN GAS SPRING

TOOL BOX LID, ROD DOWN

04

03 BALL STUD + ANGLED BRACKET

02 FIVE STANDARD LENGTHS

SEVEN END FITTINGS

03

CT-29

Nitrogen gas springs · End fittings · Mounting brackets · Cabinets, hatches, machinery, vehicles, marine and OEM
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WHERE IT INSTALLS

01 | The Gas Spring

How a nitrogen gas spring works: components, force generation and why the format wins

- Lift-up cabinet doors, lids and hatches
- Machine guards and equipment covers
- Truck, RV and marine compartments
- Medical and food-industry equipment

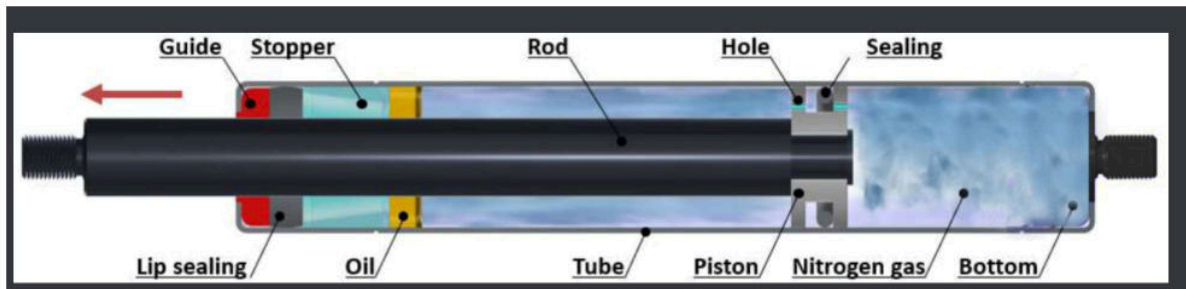
IN THIS SECTION Construction · components · why a gas spring

THE GAS SPRING

01

How a nitrogen gas spring works — components, force generation and why the format wins

A gas spring is a pressurized cylinder filled with nitrogen. A sealed piston rod moves inside the cylinder; as the spring is compressed the nitrogen is pressurized, creating a force that resists further travel. That force is set precisely by the amount of nitrogen charged into the cylinder — higher pressure means greater force, and a larger piston cross-section gives a stronger unit.



INTERNAL CONSTRUCTION — guide, lip seal, oil, tube, piston, nitrogen charge

KEY COMPONENTS

■ Pressure cylinder

The main housing holding the pressurized nitrogen.

■ Piston rod

The moving part that extends and retracts.

■ Piston & seals

Separate gas from oil and control the flow.

■ Nitrogen gas

The compressed charge that provides the force.

■ Guide & seal

Guide the rod through extension and compression.

■ End fittings

Seven interchangeable connection options — Section 03.

WHY A GAS SPRING

■ Consistent force

Near-constant force throughout the entire stroke.

■ Smooth operation

Controlled, damped movement — no slam, no drop.

■ Compact design

Small envelope for the force generated.

■ Durable

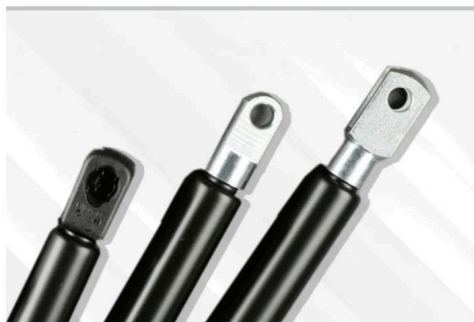
Resistant to wear across the service life.

■ Versatile

Cabinets, hatches, machinery, medical and food-industry equipment.

■ Serviceable

Standard sizes and fittings make replacement straightforward.



WHERE IT INSTALLS

02 | Specifications & Ordering

Five standard lengths, calibrated forces from 11 to 110 lb (5-50 kg): dual-unit specifications

- Five standard lengths, 6.30 to 14.76 in. (160-375 mm)
- Calibrated forces 11-110 lb (5-50 kg)
- M6 thread both ends on all standard sizes
- MS (mild steel) standard, stainless available

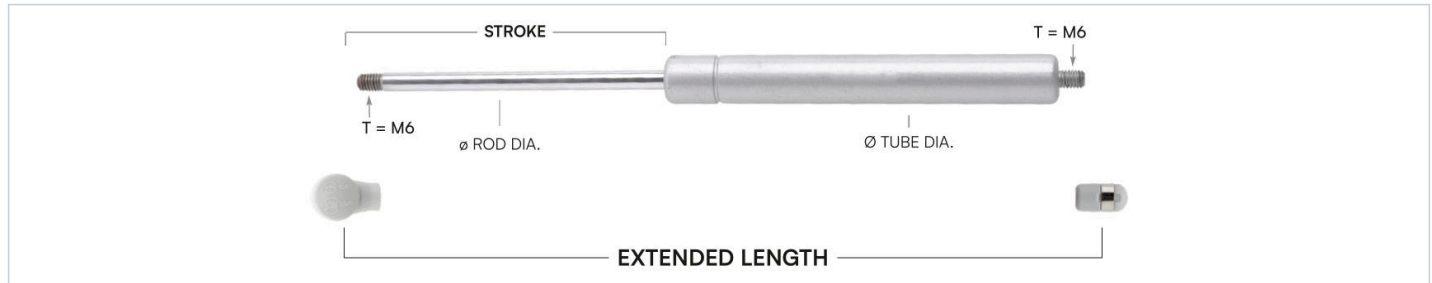
IN THIS SECTION CT-GS series · engineering data · force diagram

SPECIFICATIONS & ORDERING

02

Five standard lengths, calibrated forces from 11 to 110 lb (5–50 kg) — dual-unit specifications

Standard program below; special sizes, forces and colors are available on request. Material is MS (mild steel) standard with stainless available. Forces are calibrated in Newtons — a 1 kg load $\approx$ 10 N $\approx$ 2.2 lbf. Specify force when ordering.



$$S = \text{STROKE} \cdot L = \text{EXTENDED LENGTH} \cdot \text{THREAD } T = \text{M6 BOTH ENDS}$$

Standard Gas Springs

CT-GS SERIES

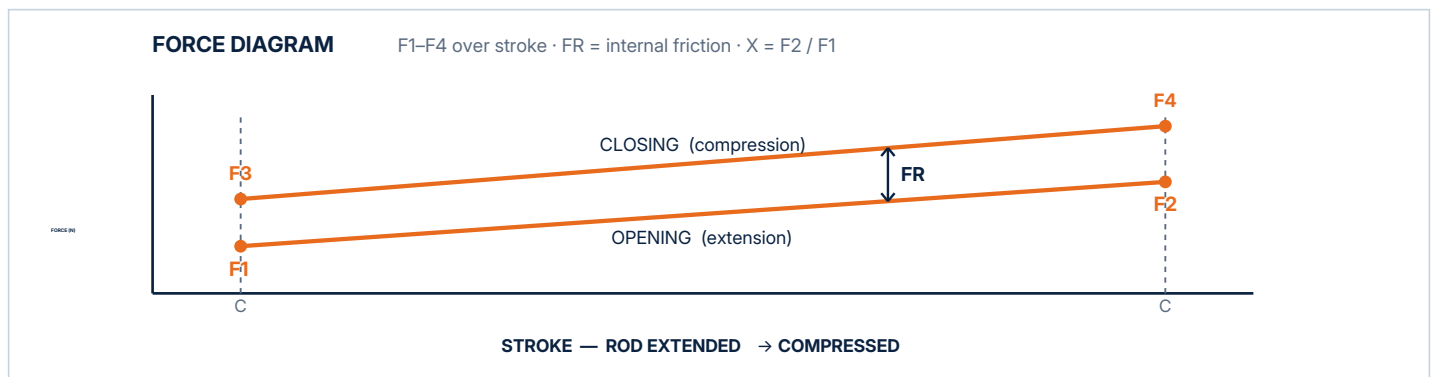
PART NO. BASE	TUBE Ø	ROD Ø	EXTENDED LENGTH	STROKE	AVAILABLE FORCES
	IN. (MM)	IN. (MM)	IN. (MM)	IN. (MM)	LB (KG)
CT-GS15-06-160-050	0.59 (15)	0.24 (6)	6.30 (160)	1.97 (50)	11 / 22 / 33 lb (5 / 10 / 15 kg)
CT-GS15-06-250-085	0.59 (15)	0.24 (6)	9.84 (250)	3.35 (85)	11 / 22 / 33 / 44 / 55 lb (5 / 10 / 15 / 20 / 25 kg)
CT-GS15-06-275-105	0.59 (15)	0.24 (6)	10.83 (275)	4.13 (105)	22 / 33 / 44 / 55 / 66 / 77 lb (10 / 15 / 20 / 25 / 30 / 35 kg)
CT-GS18-08-300-115	0.71 (18)	0.31 (8)	11.81 (300)	4.53 (115)	22 / 33 / 44 / 55 / 66 / 77 lb (10 / 15 / 20 / 25 / 30 / 35 kg)
CT-GS18-08-375-165	0.71 (18)	0.31 (8)	14.76 (375)	6.50 (165)	22 / 33 / 44 / 55 / 66 / 77 / 110 lb (10 / 15 / 20 / 25 / 30 / 35 / 50 kg)

Thread T = M6 both ends on all standard sizes. Complete the part number with the force code in Newtons: CT-GS15-06-250-085-0100N is the 9.84 in. (250 mm) spring at 100 N — approximately a 22 lb (10 kg) rating. Then add end-fitting codes from Section 03.

PLATFORM ENGINEERING DATA — BY ROD DIAMETER

ROD Ø D1	TUBE Ø D2	MAX FORCE F1	MAX STROKE	PROGRESSION X	MEASURE PT C	MAX FRICTION FR
IN. (MM)	IN. (MM)	N (LBF)	IN. (MM)	~	IN. (MM)	N (LBF)
0.24 (6)	0.59 (15)	400 (90)	5.91 (150)	1.30	0.20 (5)	50 (11)
0.31 (8)	0.71 (18)	750 (169)	9.84 (250)	1.35	0.20 (5)	60 (13)
0.39 (10)	0.87 (22)	1150 (259)	15.75 (400)	1.40	0.20 (5)	80 (18)
0.55 (14)	1.10 (28)	2100 (472)	19.69 (500)	1.50	0.20 (5)	150 (34)

Forces F1 and F3 are measured at distance C from the ends. The gap between extension and compression force at the same rod position is internal friction FR; progression $X = F2 / F1$. Rod Ø 10 and 14 mm platforms are available for custom builds — contact engineering.



WHERE IT INSTALLS

03 | End Fittings & Brackets

Seven interchangeable end fittings and a full bracket range complete the assembly

- Ball sockets and ball studs for lids and hatches
- Eyelets and clevis forks for machinery pins
- Plate, base and strap brackets for panels and frames
- Mix any two end fittings on one spring

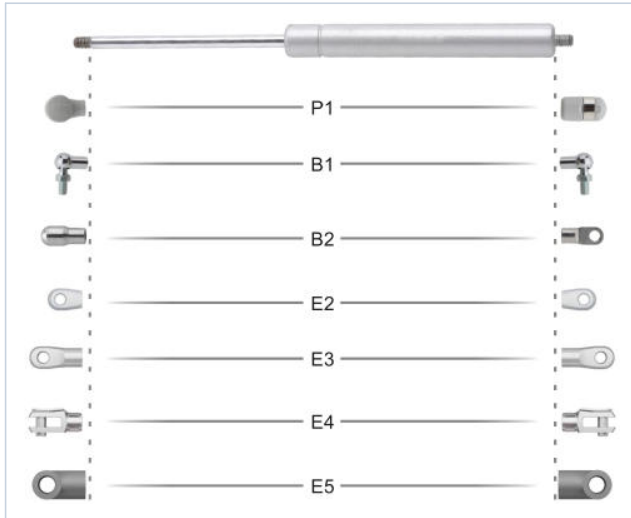
IN THIS SECTION CT-P1 · CT-B1/B2 · CT-E2 to E5 · CT-GSB-1 to -5

END FITTINGS & MOUNTING BRACKETS

03

Seven interchangeable end fittings and a full bracket range complete the assembly

Mix any two end fittings to suit your mount — specify left and right codes with the order (e.g. CT-GS15-06-250-085-0100N-B1/E3). Brackets below are dimensioned in millimeters; order as CT-GSB series by position number.

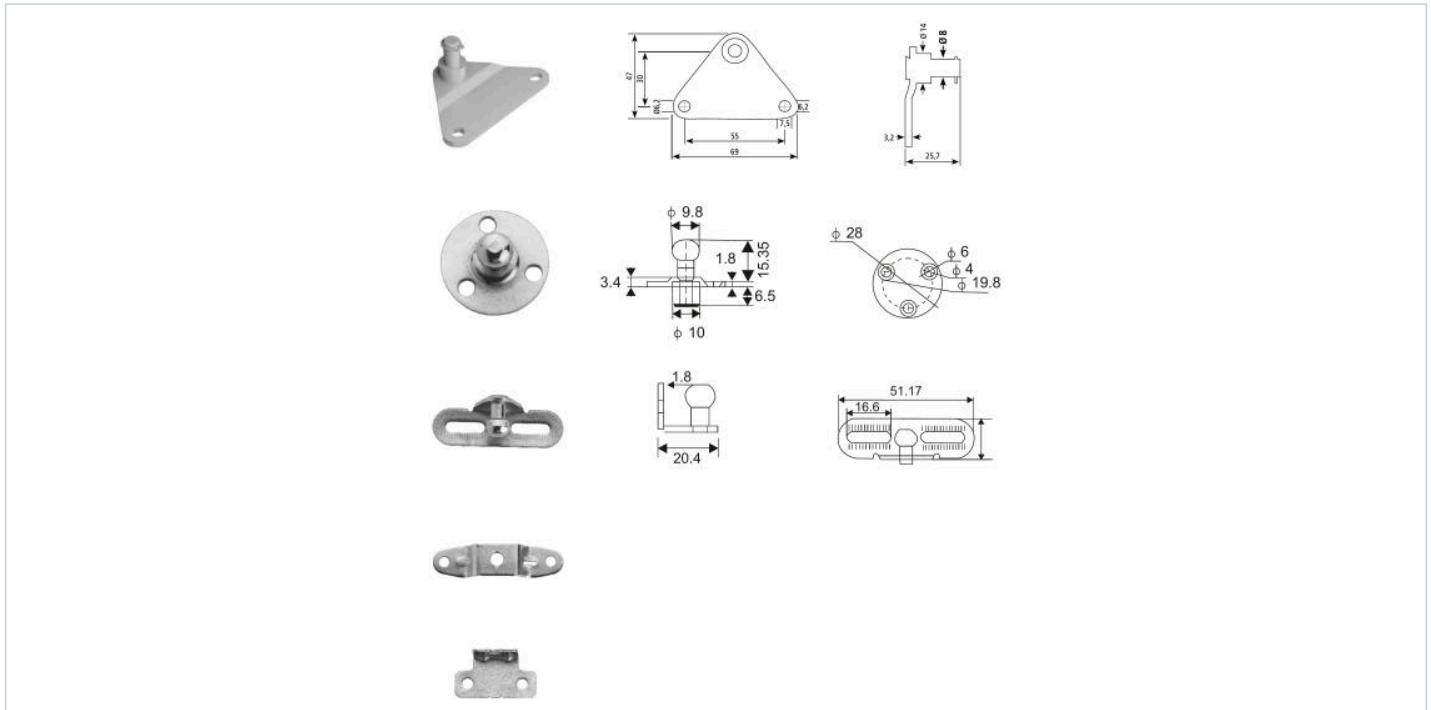


CODE	END FITTING
CT-P1	Ball-stud cap
CT-B1	Angled ball-socket bracket
CT-B2	Threaded ball stud
CT-E2	Eyelet — compact
CT-E3	Eyelet — oval
CT-E4	Clevis / fork
CT-E5	Eyelet — heavy

Mounting Brackets

CT-GSB SERIES

- Plate, base and strap brackets for panel, frame and machine mounting — dimensioned drawings below.
- Order as CT-GSB-1 through CT-GSB-5 by position (top to bottom); zinc-plated steel standard.
- Allow free articulation at both fittings; secure threaded fittings completely where vibration is present.



CT-GSB BRACKET RANGE — DIMENSIONS IN MM

WHERE IT INSTALLS

04 | Sizing & Force Calculation

Four typical mounting geometries and the force formula: engineering will verify your numbers

- Lids, hatches and flap doors
- Plan stroke at about one-third of the opening length for 90°
- Round up to the next available force
- Free force, stroke and mounting verification from engineering

IN THIS SECTION Four mounting geometries · force formula

SIZING & FORCE CALCULATION

04

Four typical mounting geometries and the force formula — engineering will verify your numbers

Four typical mounting geometries for a lid or hatch are shown below. Calculate the required force per spring with the formula, round up to the next available force, and plan stroke at roughly one-third of the opening length RH for a 90° opening. Figures are indicative — send your dimensions to engineering and we will verify force, stroke and mounting positions at no charge.

FIG. 1

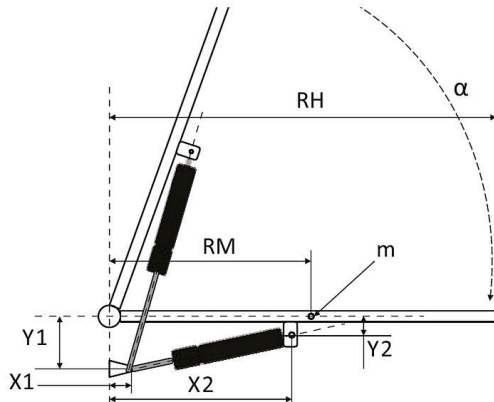


FIG. 2

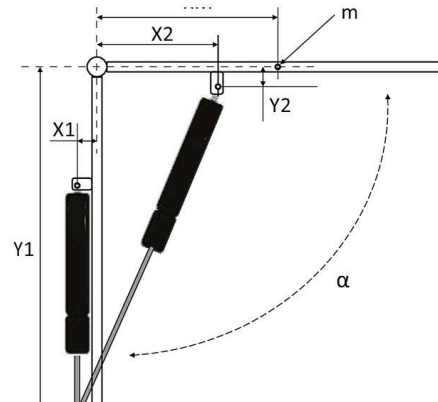


FIG. 3

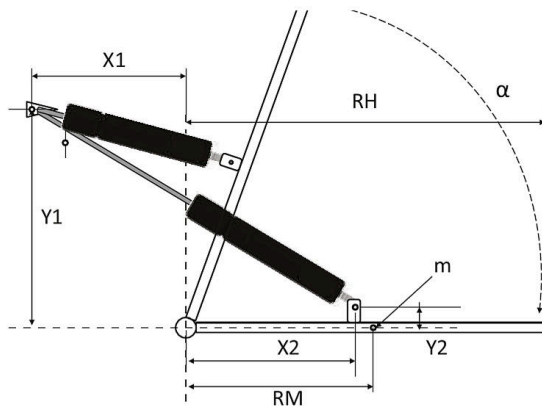
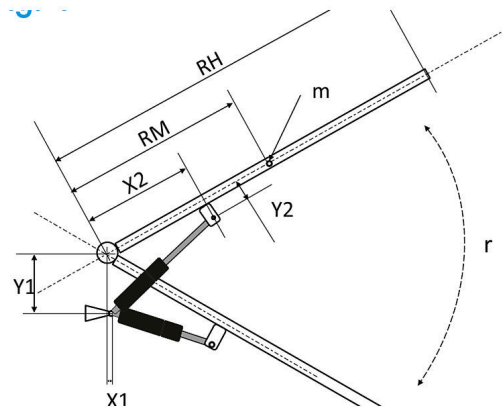


FIG. 4



GAS-SPRING FORCE (NEWTONS)

$$F1 (N) = 9.81 \times (RH \times m) / (2 \times N \times X2) + 5$$

N = number of gas springs · m = mass of the hatch (kg) · RH = opening length (m) · X2 = lever arm (m)

Round up to the next available force. Recommended stroke $\approx RH / 3$ for a 90° opening. 1 kg ≈ 10 N ≈ 2.2 lbf. Figures are indicative — verify for your application.

WHERE IT INSTALLS

05 | Safety, Handling & Storage

Read before installation: mounting practice, handling precautions and storage

- Not a safety component: add an independent lock where needed
- Avoid side loads; keep the rod surface clean and undamaged
- Store rod-down to keep the seal lubricated
- Gas springs are wear parts: replace by duty and stress

IN THIS SECTION Mounting practice · handling · storage · how to order

SAFETY, HANDLING & STORAGE

05

Read before installation — mounting practice, handling precautions and storage

IMPORTANT INFORMATION — PLEASE READ CAREFULLY

- A gas spring is **not a safety component**. Where failure would risk health or life, add an independent locking mechanism — this is the customer's responsibility.
- All dimensions are in millimeters (with inch equivalents shown), forces in Newtons (F1), temperatures in °C.
- Mount and dismount per safety guidelines. For long life with reduced fatigue, use sound mounting.
- Allow sufficient movement in the end fittings. If subject to vibration, secure the fittings; screw them on completely.
- Gas springs are wear parts — replace according to the stress and application.
- Avoid side loading and non-axial forces. Long strokes may need extra support to prevent bending and tilting.
- Minor damage, corrosion or paint on the rod can ruin the seal and cause rapid failure.
- Do not extend or retract beyond the design specification. Do not use as a dead stop.

HANDLING

- Protect the rods from impacts, electrical arcing, grinding sparks, paint and corrosive products.
- Do not grip the rods with pliers or a vice without protective jaws.
- Keep the rod surface clean through installation — the seal runs on it.
- Confirm free articulation at both end fittings after mounting.

STORAGE

- Up to three months: store horizontally at ambient temperature.
- Longer periods, or hot climates: store vertically, rod downwards.
- Store rod-down to keep the seal lubricated.
- Inspect force and travel on stored stock before installation.

HOW TO ORDER

Build the part number: **CT-GS[tube]-[rod]-[extended length]-[stroke]-[force N]-[left fitting]/[right fitting]**. Example:

CT-GS18-08-300-115-0100N-B1/E3. Quote requests and volume pricing: **cs@conversiontech.com** — responses within 48 hours with pricing, lead time and force-sizing verification.



APPLICATION Machine guard: hinged cover held open by a gas spring each side, eyelet fittings on pins, free articulation at both ends

Where CT-29 installs

One spring platform covers cabinet doors, furniture lids, equipment covers and machine guards. Pick the length and force from Section 02 and the fittings from Section 03. Typical installations:



Lift-up kitchen wall cabinet: cylinder on the door, rod down to an angled bracket on the side panel



Storage bed: the platform lifts on a gas spring each side and stays open



Food-service equipment: stainless lid held open, stainless springs available



Machine guard: hinged cover on eyelet fittings, free articulation at both ends

Vehicles, marine & RV

Compartment doors and hatches on trucks, RVs and boats are opened often and in all weather. Use two springs per lid to avoid side load, and specify stainless for wet or corrosive locations.



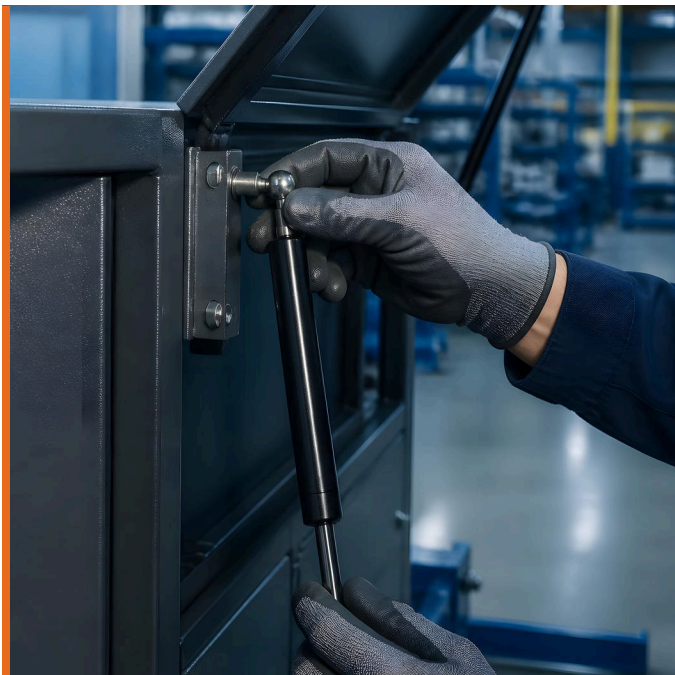
Work truck service body: upper compartment door held open on two springs



RV exterior storage bay: lift-up door that stays open while loading



Boat deck hatch: a spring each side, mounted between lid and frame



Service: the ball socket presses onto the ball stud by hand, no hammer or pliers

Gas spring sizing worksheet

Fill in your lid or hatch details and send to cs@conversionstech.com. Engineering will verify force, stroke and mounting positions at no charge and reply within 48 hours with pricing and lead time.

COMPANY / CONTACT

EMAIL / PHONE

PROJECT OR APPLICATION

SHIP-TO CITY, STATE

YOUR LID OR HATCH

m Mass of the lid / hatch

 kg

RH Opening length (hinge to free edge)

 m

X2 Lever arm

 m

N Number of gas springs

 pcs

Opening angle

 deg

Mounting (sketch position, rod end, fixed end)

$$F1(N) = 9.81 \times (RH \times m) / (2 \times N \times X2) + 5$$

Round up to the next available force. Stroke $\approx RH / 3$ for a 90° opening. 1 kg ≈ 10 N ≈ 2.2 lbf.

PART NO. BASE	FORCE (N)	LEFT / RIGHT FITTING	MATERIAL	QTY	NOTES

Example: CT-GS18-08-300-115-0100N-B1/E3 · Material MS standard, stainless on request · Custom size, force and color on request

Ordering & support

WEB	conversionstech.com: stock, pricing and product pages
EMAIL	cs@conversionstech.com: quotes, force sizing and order status
PHONE	(307) 206-0534
LOCATION	Oxnard, CA
MAIL	41 S. Wake Forest Ave. #3129, Ventura CA 93003

HOW TO ORDER

- Build the part number: CT-GS[tube]-[rod]-[extended length]-[stroke]-[force N]-[left fitting]/[right fitting], e.g. CT-GS18-08-300-115-0100N-B1/E3.
- Send the sizing worksheet (page 14) to cs@conversionstech.com; our team responds within 48 hours with pricing, lead time and force-sizing verification.
- Custom size, force and color on request; OEM volume programs and one-off replacements alike.
- Contractor, Distributor and Wholesale pricing tiers with net terms for qualified accounts: conversionstech.com/pages/wholesale.

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Force-matched to your job: engineering help sizing force and stroke, OEM volume programs and one-off replacements

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A gas spring is not a safety component. Where failure would risk health or life, add an independent locking mechanism.
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