Super Compact Load Cell

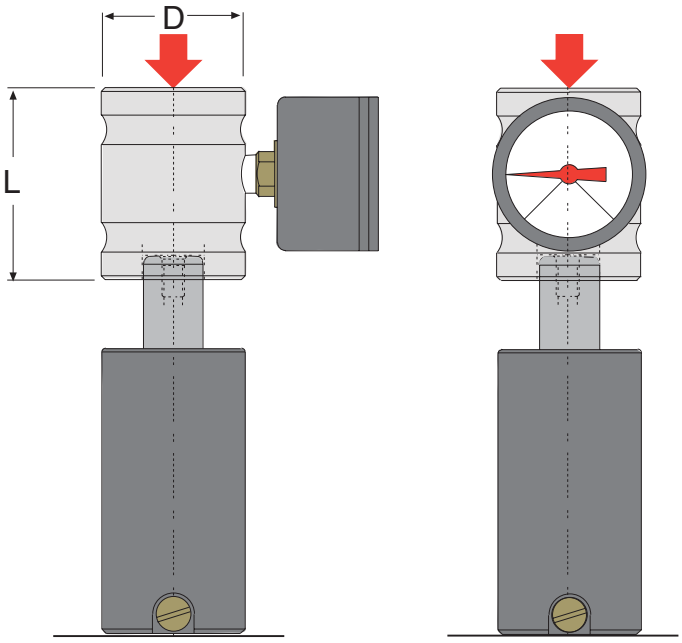
A DADCO Super Compact Load Cell may be used to check the internal pressure of a DADCO Super Compact (SC Series) Nitrogen Gas Spring and quickly determine if the gas spring is charged to the desired pressure.

Operating Instructions

1. Position the DADCO Super Compact Load Cell with its counterbored base on top of the gas spring.

2. Place both the load cell and gas spring on the plate of the DADCO Standard Test Stand (90.305.3). An Arbor press or another press may be used.
   Note: 90.300.11800 and 90.300.18300 load cells cannot be used with the Standard Test Stand.

3. **Apply the load to the gas spring, depressing the gas spring rod only 2 mm** (additional travel may damage the load cell) and read the gauge on the front of the load cell. The gauge reflects the precise pressure inside the spring. Reading should not exceed 2175 psi (150 bar).



Side and front views of a DADCO Load Cell in testing position on top of a DADCO Nitrogen Gas Spring.

Determining Force

To determine the force (F) that a DADCO Super Compact Nitrogen Gas Spring will deliver at the start of the stroke, use one of the following formulas:

F (lbs.) = A (in²) x P (psi)

U.S. Customary Unit Example:
If testing an SC.01000 gas spring at 2000 psi, the force is calculated as follows:
1.097 in² x 2000 psi = 2194 lbs.

F (N) = A (cm²) x P (bar) x 10

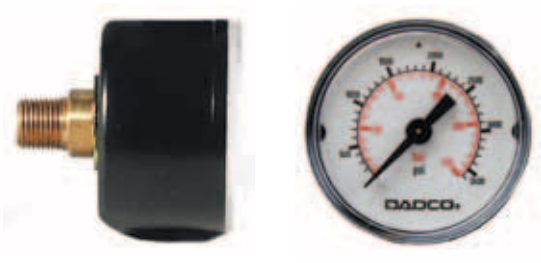
Metric Example:
If testing an SC.01000 gas spring at 150 bar, the force is calculated as follows:
7.08 cm² x 150 bar x 10 = 10620 N or 10.62 kN.

DADCO Super Compact Gas Spring Model*	DADCO Load Cell	Rod Dia. mm/in	Piston Area (A) cm²/in²	D mm/in	L mm/in
SC.00420	98.300.00420	12 *0.47*	2.828 *0.438*	34.3 *1.35*	40.1 *1.58*
SC.00740	90.300.0750	20 *0.79*	4.91 *0.761*	38 *1.50*	51 *2.00*
SC.01000	98.300.01000	20 *0.79*	7.08 *1.097*	48 *1.89*	55 *2.17*
SC.01800	98.300.01800	30 *1.18*	12.59 *1.951*	59.9 *2.36*	60 *2.26*
SC.03500	98.300.03500	45 *1.77*	21.24 *3.292*	66.7 *2.63*	65 *2.56*
SC.04700	98.300.04700	50 *1.97*	31.19 *4.834*	74.9 *2.95*	65 *2.56*
SC.07500	98.300.07500	63 *2.48*	50.31 *7.798*	95 *3.74*	65 *2.56*
SC.11800	98.300.11800	80 *3.15*	78.60 *12.183*	119.9 *4.72*	70 *2.76*
SC.18300	98.300.18300	100 *3.94*	122.78 *19.031*	150.1 *5.91*	75 *2.96*

* For information on DADCO's Standard Load Cells for use with DADCO's Mini, **Ultra Force**®, SCR and Large Series Nitrogen Gas Springs visit www.dadco.net.

Rebuild (Gauge Replacement) Instructions

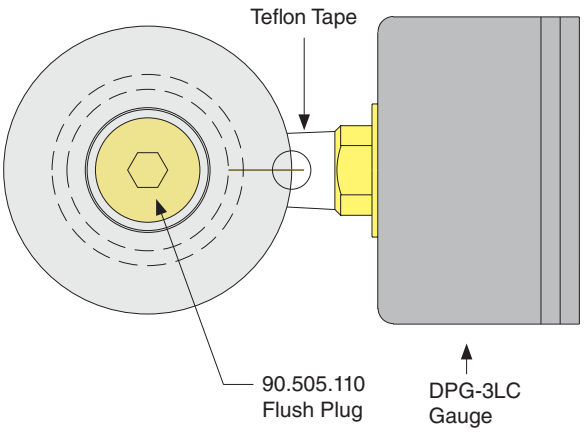
Order a replacement DPG-3LC Gauge.



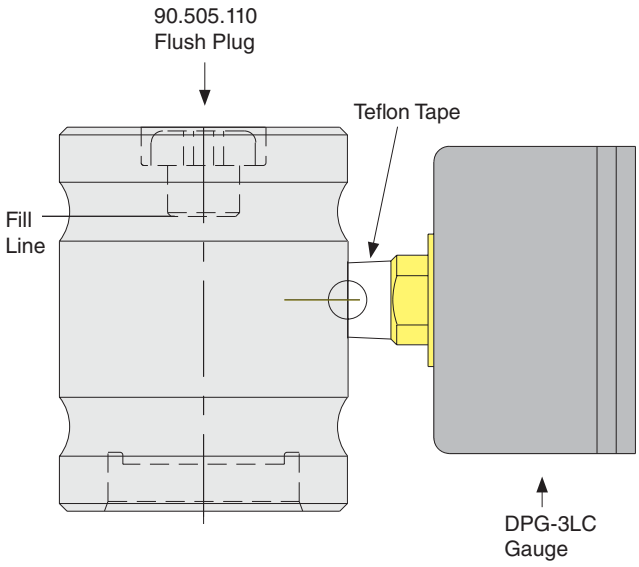
DPG-3LC Gauge

1. Remove the Flush Plug *(90.505.110)* from the load cell bodyand set aside for reassembly (Fig. 1).
2. Empty the oil out of the body and wipe with a lint-free cloth.
3. Unthread the old gauge and discard.
4. In a clockwise direction, apply thread seal tape to the new gauge thread, about 1 ½ - 2 wraps. Ensure that the tape does not cover the access hole.
5. Thread the gauge into the body approximately 2 turns past hand-tight (lettering should be right-side-up).
6. Fill the body with oil, noting the fill line, (DADCO recommends ISO 32 hydraulic oil) until the oil level reaches the base of the flush plug (Fig. 2).
7. Install the Flush Plug *(90.505.110)* into the top of the load cell body and watch for needle movement on the gauge. If movement occurs, stop and remove a small quantity of oil with an eye dropper. Repeat this step until the flush plug is installed with no needle movement.
8. Test the new gauge by using it on the appropriate spring with a known pressure; see Operating Instructions on reverse.

Figures



Overhead View
Fig. 1



Side View
Fig. 2

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