

DADCO®

Compact Nitrogen Gas Springs

SCR Series



High Force in a Compact Package!

- Up to 3.2 tons of force on contact
- Completely serviceable
- Operates self-contained or linked



The global leader in nitrogen gas spring technology

DADCO produces top quality products at competitive prices and provides a superior level of customer service. Founded in 1958, DADCO is the highest volume producer of gas springs for press tools. DADCO's products are widely approved and used in global operations for many industries including metal stamping, automotive and plastic injection molding.



SCR Series

DADCO's SCR Series is ideal for applications that require a high force in a small space. The SCR Series consists of four models providing force up to 3.2 tons on contact with short stroke availability and small diameters.

The SCR Series can be operated in both self-contained or linked systems. All models have side-port enabling linking without the addition of sub-plates. A variety of stroke lengths and mount options are available for new or existing applications.

Model	Diameter	Maximum Force on Contact
SCR.0500	32 mm (1.260")	1026 lb. (458 daN)
SCR.0800	38 mm (1.496")	1978 lb. (883 daN)
SCR.1900	50 mm (1.968")	3877 lb. (1731 daN)
SCR.3200	63 mm (2.480")	6409 lb. (2862 daN)

Adjustable Force

For convenience, self-contained cylinders usually are delivered pre-charged to the desired force and ready to install. If force adjustment is ever needed, a filling/draining port is located in the cylinder for safe, easy access.

High Quality Construction

To ensure their exceptionally long service life, DADCO's SCR Series Gas Springs feature a cartridge assembly with a rod seal to ensure sealability. All DADCO gas springs have high quality construction features for excellent load capacity and resistance to wear.

Mini Piping System

DADCO offers the *MINILink*[®] System, an extremely compact piping system that does not require special ordering information or factory preparation. Self-contained SCR Series Gas Springs may be converted at any time to a linked system mode by adding DADCO's exclusive Mini-fittings, *MINIFLEX*[®] hose and the 90.407.11 mini control panel. For additional information on piping see pages 12 and 13.

Customer Satisfaction

DADCO's motto is "Whatever It Takes To Satisfy Our Customers." DADCO will assist in any way possible to ensure that customers are completely satisfied. DADCO's salespeople and distributors are solution-oriented, product-knowledgeable, and eager to assist customers. DADCO's engineers are available to help customers with specific applications.

DADCO continues to develop new solutions that exceed industry expectations. DADCO offers a full range of nitrogen gas spring, nitrogen gas lifter and ISO/metric air cylinder products and accessories. DADCO products are widely approved and used in global operations for many industries including metal stamping, automotive, and plastic injection molding.

Rapid Delivery

DADCO's modern 11,600 m² main production facility as well as satellite facilities permit the fastest deliveries in the industry. Products are available both directly and through a network of trained distributors providing worldwide support.

Warranty

DADCO warrants its SCR Series Nitrogen Gas Springs to be free from defects in workmanship or materials for a period of one year from date of manufacture.

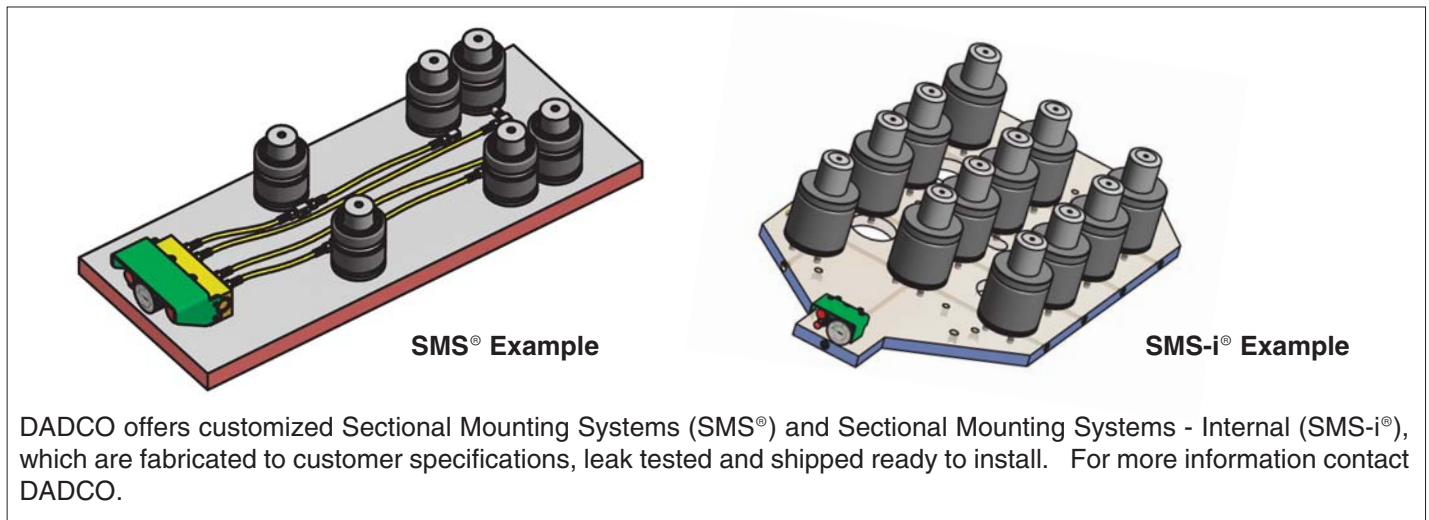
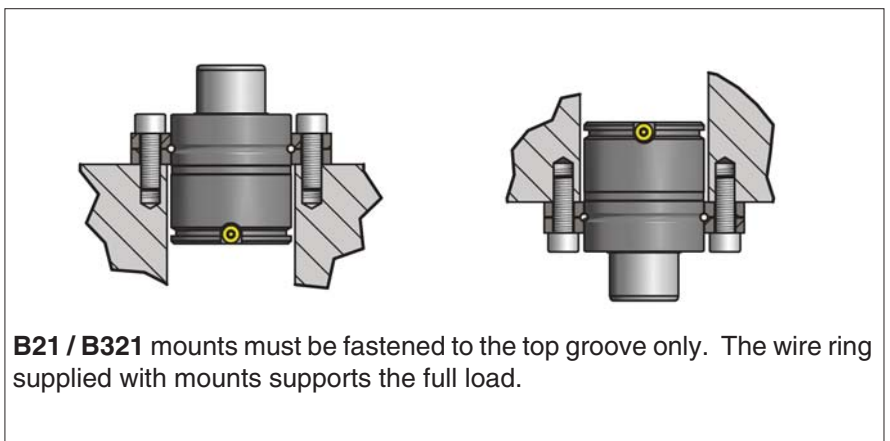
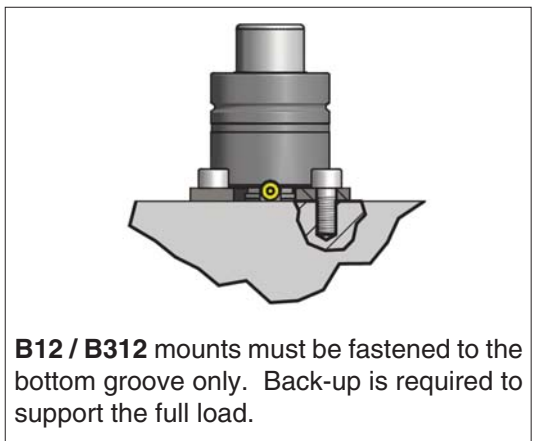
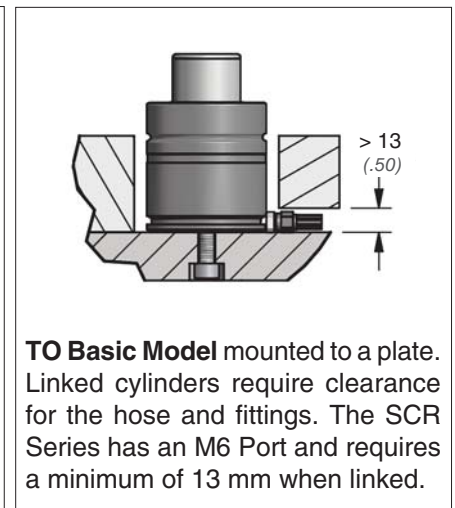
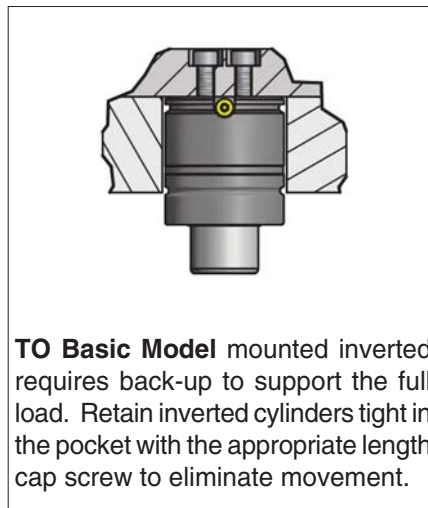
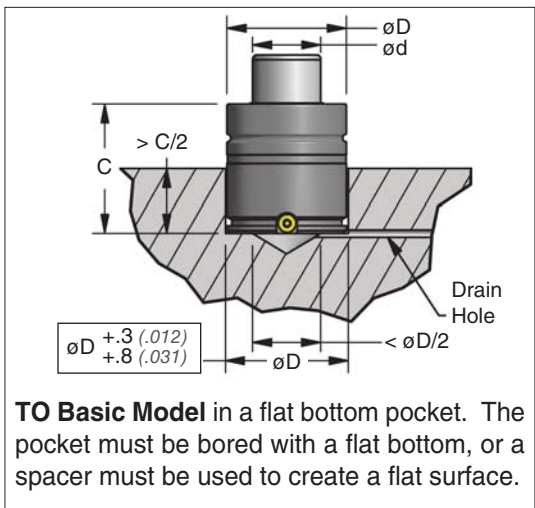
CAD Templates On-line

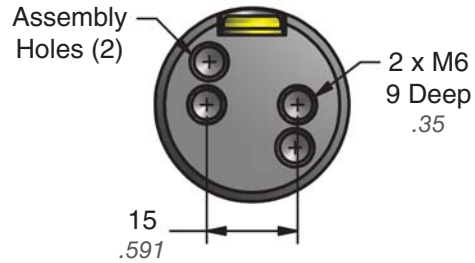
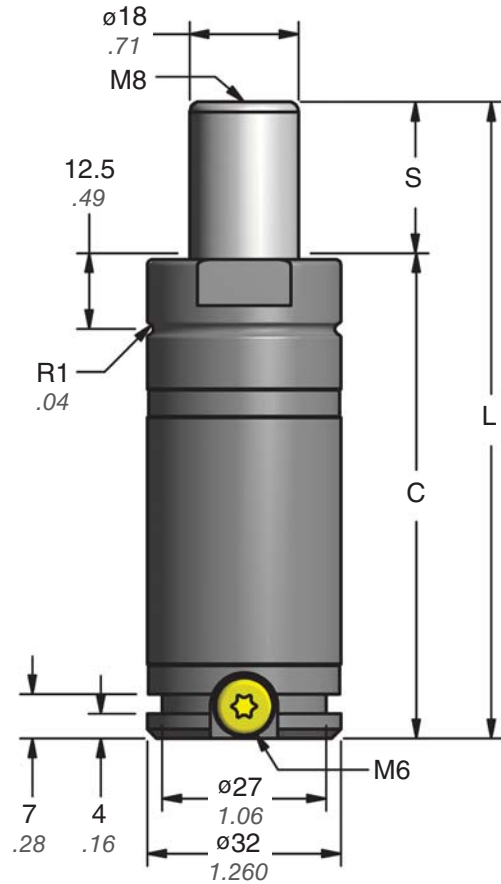
DADCO's entire product line is available on-line in solid models and 2D CAD formats. For more information, visit our website, www.dadco.net, or contact DADCO.

Installation Examples

DADCO Gas Springs can be installed with the piston rod in any position. However, DADCO Gas Springs should be installed in a manner that avoids lateral pressure, as any substantial lateral or oblique force will shorten the spring's service life. To maximize gas spring life, there should be a stroke reserve of at least 10% of the length of the stroke when the gas spring is installed in the press tool.

DADCO offers a variety of mount options to meet specific customer applications. Installation and fastening of the gas springs should take into consideration load support, fastener selection and torque values. For additional information on installation requirements see page 15. Cylinder and mount dimensions are shown on pages 4-11.





TO - Basic Model

Part No.	S mm inch	C	L ± 0.25 $\pm .010$
SCR.0500.010	10 0.39	65 2.56	75 2.953
SCR.0500.015	15 0.59	70 2.76	85 3.346
SCR.0500.025	25 0.98	80 3.15	105 4.134
SCR.0500.032	32 1.26	87 3.43	119 4.685
SCR.0500.038	37.5 1.48	92.5 3.64	130 5.118
SCR.0500.050	50 1.97	105 4.13	155 6.102
SCR.0500.063	62.5 2.46	117.5 4.63	180 7.087
SCR.0500.080	80 3.15	135 5.31	215 8.465

Ordering Example:

SCR.0500.025. TO. C. 180

Part Number:

Includes Series, Model and Stroke Length.

Mount Option:

TO = Basic Model. When not specified, default is TO.

B319 and B21 mounts ordered with cylinder will be attached at the factory.

Charging Pressure:

15–180 bar (200–2600 psi).

When not specified, default is 180 bar.

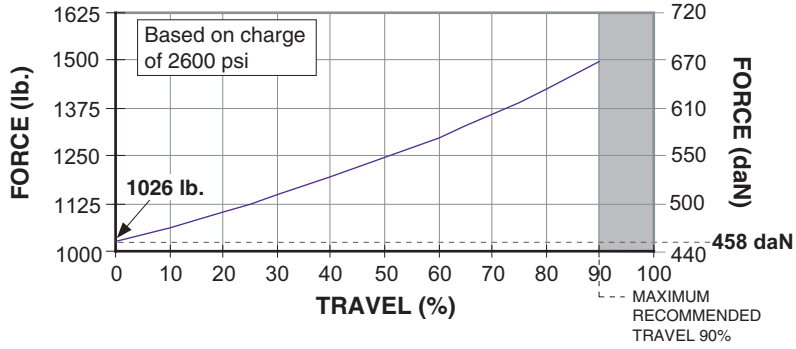
Operating System: C = Self-contained,

F = Open Flow Fitting. When not specified, default is C, self-contained.

Force Charts

On-Contact Force

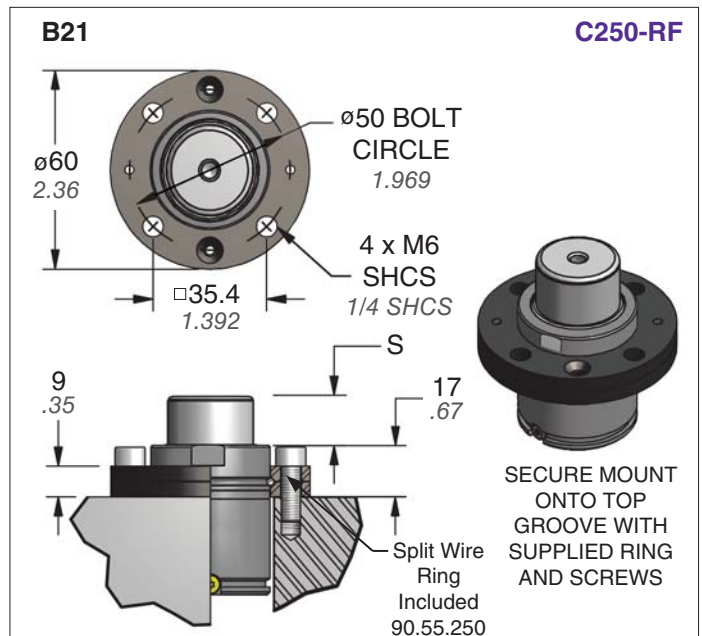
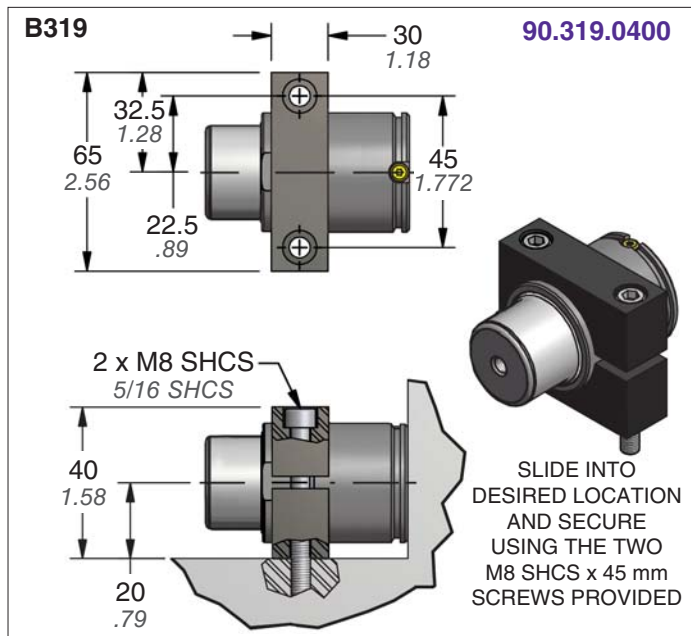
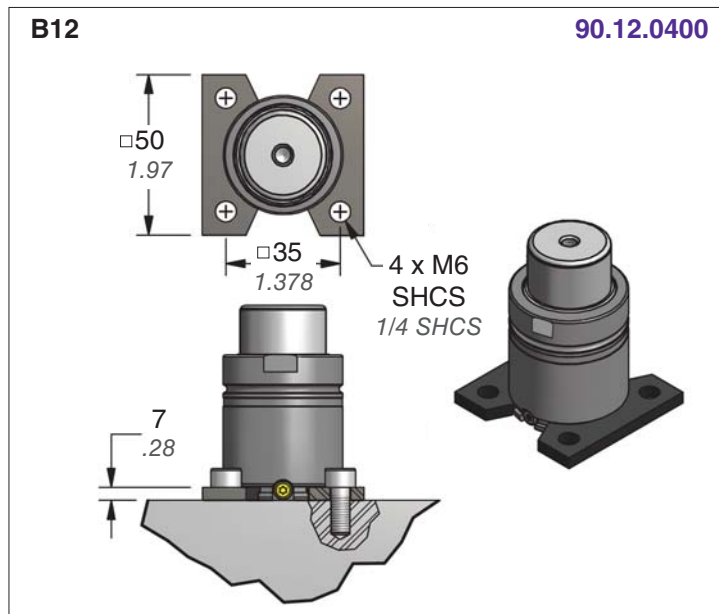
psi	lb.
2600	1026
2175	858
2000	789
1750	690
1500	592
1000	394
500	197
250	99



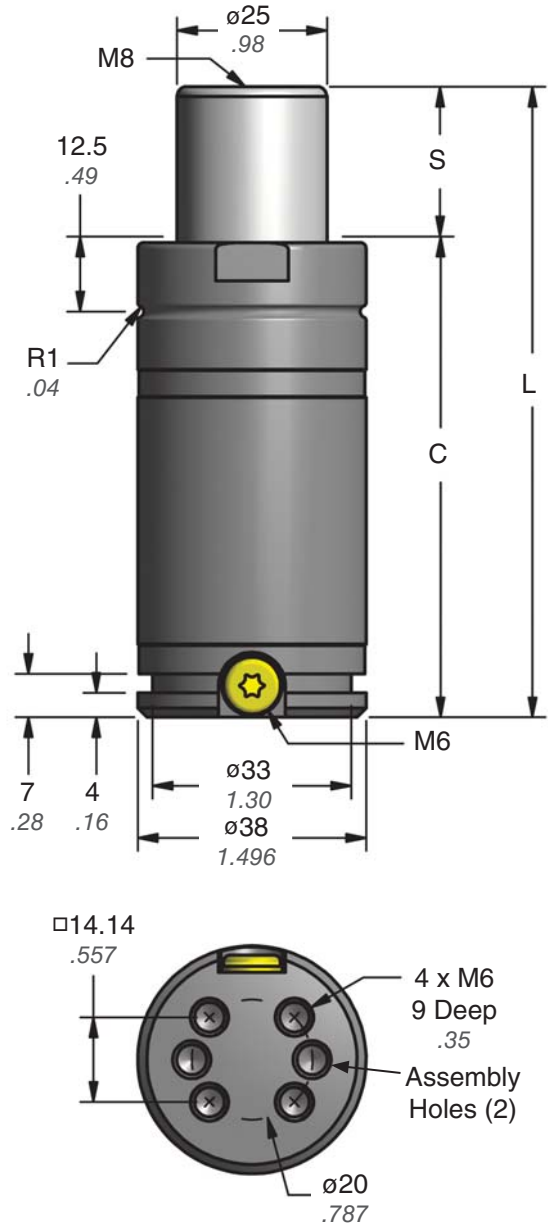
On-Contact Force

bar	daN
180	458
150	382
125	318
100	254
75	191
50	127
25	64
20	51

Mount Options



Ordering Example: **Cylinder with Mount: SCR.0500.025.B12.C.180** **Mount Only: 90.12.0400**



Part No.	S mm inch	C	L ±0.25 ±.010
SCR.0800.010	10 0.39	65 2.56	75 2.953
SCR.0800.015	15 0.59	70 2.76	85 3.346
SCR.0800.025	25 0.98	80 3.15	105 4.134
SCR.0800.032	32 1.26	87 3.43	119 4.685
SCR.0800.038	37.5 1.48	92.5 3.64	130 5.118
SCR.0800.050	50 1.97	105 4.13	155 6.102
SCR.0800.063	62.5 2.46	117.5 4.63	180 7.087
SCR.0800.080	80 3.15	135 5.31	215 8.465

TO - Basic Model

Ordering Example:

SCR.0800.025. TO. C. 180

Part Number:

Includes Series, Model and Stroke Length.

Mount Option:

TO = Basic Model. *When not specified, default is TO.*

B19 and B21 mounts ordered with cylinder will be attached at the factory.

Charging Pressure:

15–180 bar (200–2600 psi).

When not specified, default is 180 bar.

Operating System: C = Self-contained,

F = Open Flow Fitting. *When not specified, default is C, self-contained.*

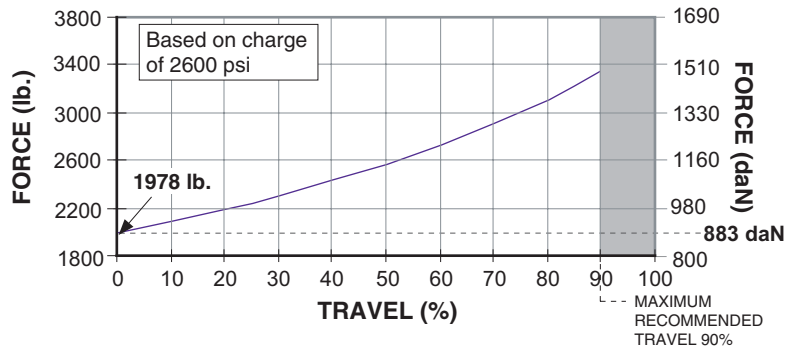
SCR.0800 — 8.8 kN / 1 ton

Compact Nitrogen Gas Springs

Force Charts

On-Contact Force

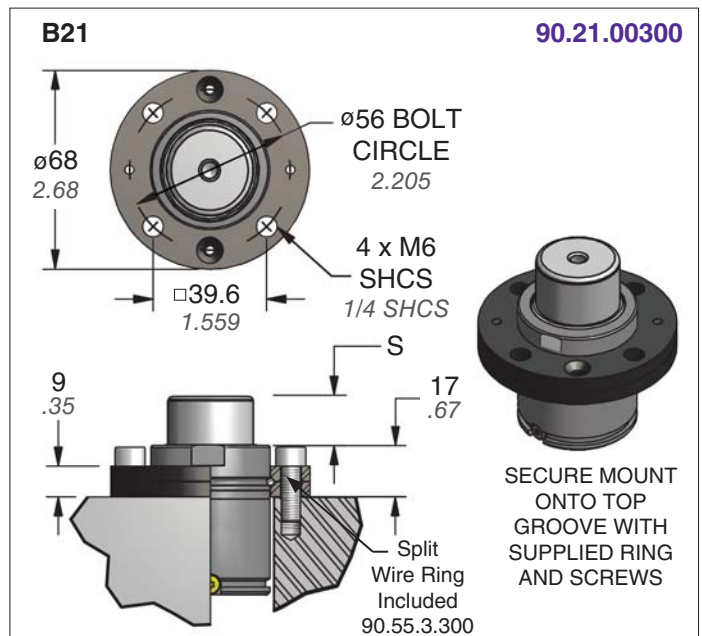
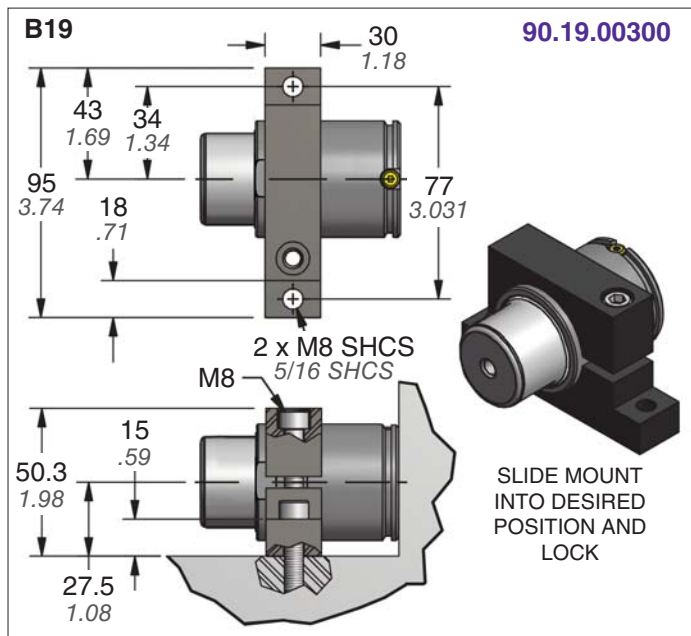
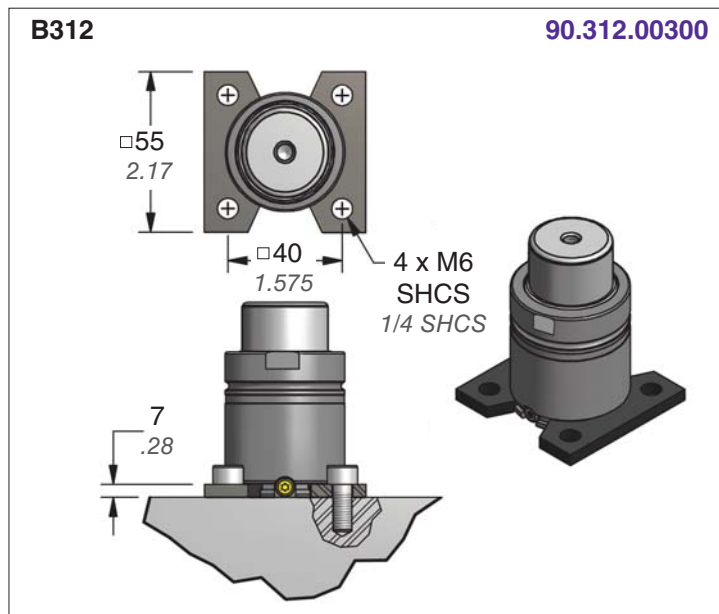
psi	lb.
2600	1978
2175	1655
2000	1522
1750	1331
1500	1141
1000	761
500	380
250	190



On-Contact Force

bar	daN
180	883
150	736
125	613
100	491
75	368
50	245
25	123
20	98

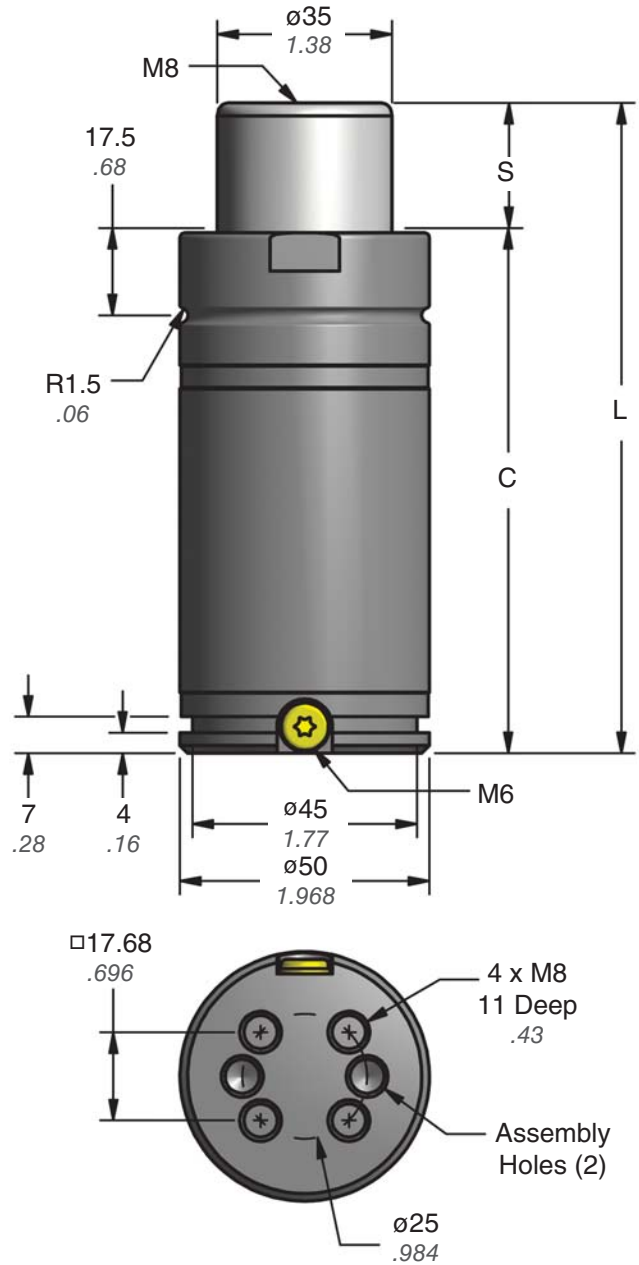
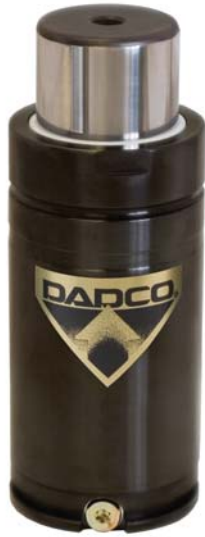
Mount Options



Ordering Example: Cylinder with Mount: SCR.0800.025.B312.C.180 **Mount Only:** 90.312.00300

Compact Nitrogen Gas Springs

SCR.1900 — 17.3 kN / 1.9 ton



TO - Basic Model

Part No.	S mm inch	C	L ± 0.25 $\pm .010$
SCR.1900.010	10 0.39	90 3.54	100 3.937
SCR.1900.015	15 0.59	95 3.74	110 4.331
SCR.1900.025	25 0.98	105 4.13	130 5.118
SCR.1900.032	32 1.26	112 4.41	144 5.669
SCR.1900.038	37.5 1.48	117.5 4.63	155 6.102
SCR.1900.050	50 1.97	130 5.12	180 7.087
SCR.1900.063	62.5 2.46	142.5 5.61	205 8.071
SCR.1900.080	80 3.15	160 6.30	240 9.449

Ordering Example:

SCR.1900.025. TO. C. 180

Part Number:

Includes Series, Model and Stroke Length.

Mount Option:

TO = Basic Model. When not specified, default is TO.

B19 and B321 mounts ordered with cylinder will be attached at the factory.

Charging Pressure:

15–180 bar (200–2600 psi).

When not specified, default is 180 bar.

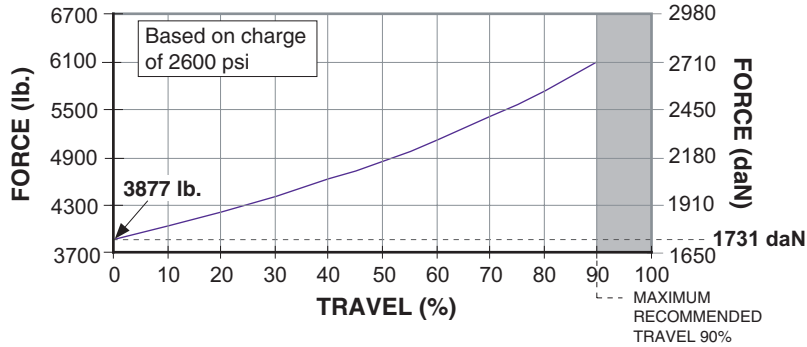
Operating System: C = Self-contained,

F = Open Flow Fitting. When not specified, default is C, self-contained.

Force Charts

On-Contact Force

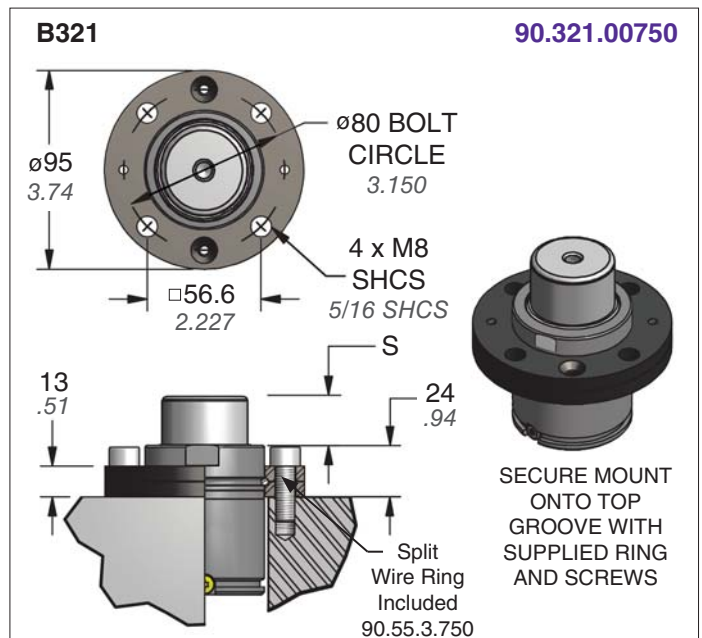
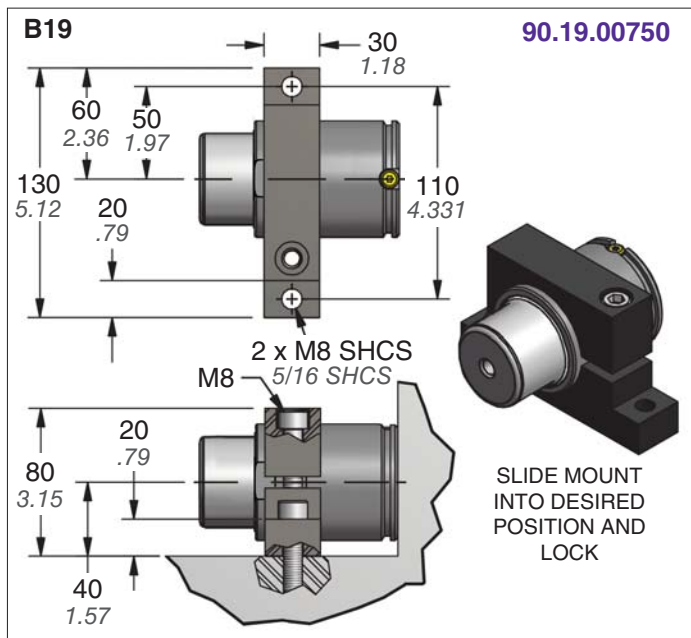
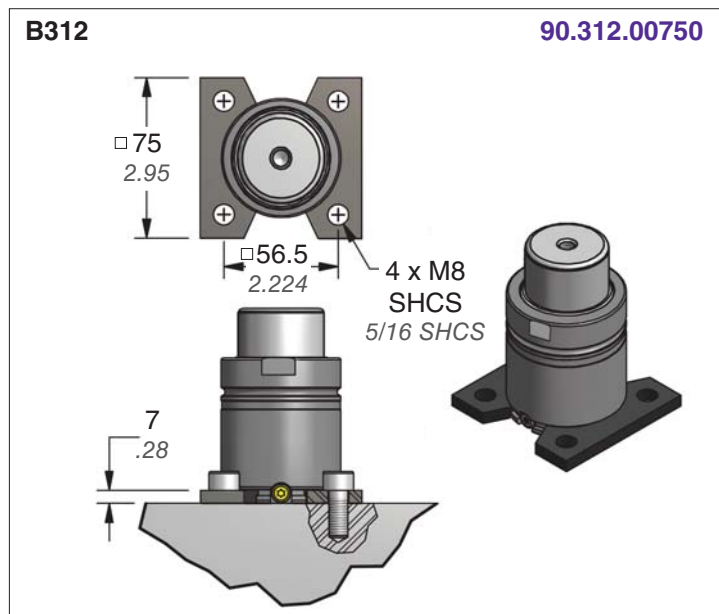
psi	lb.
2600	3877
2175	3244
2000	2983
1750	2610
1500	2237
1000	1491
500	746
250	373



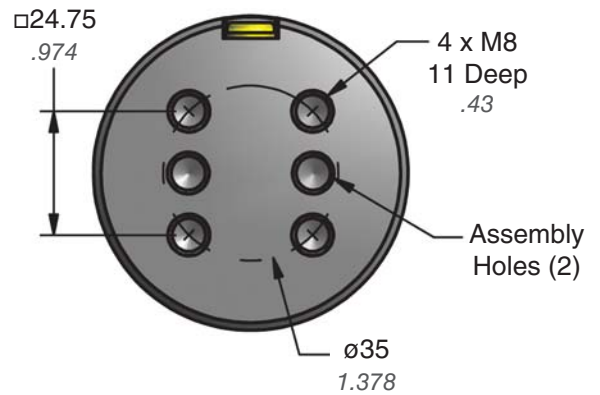
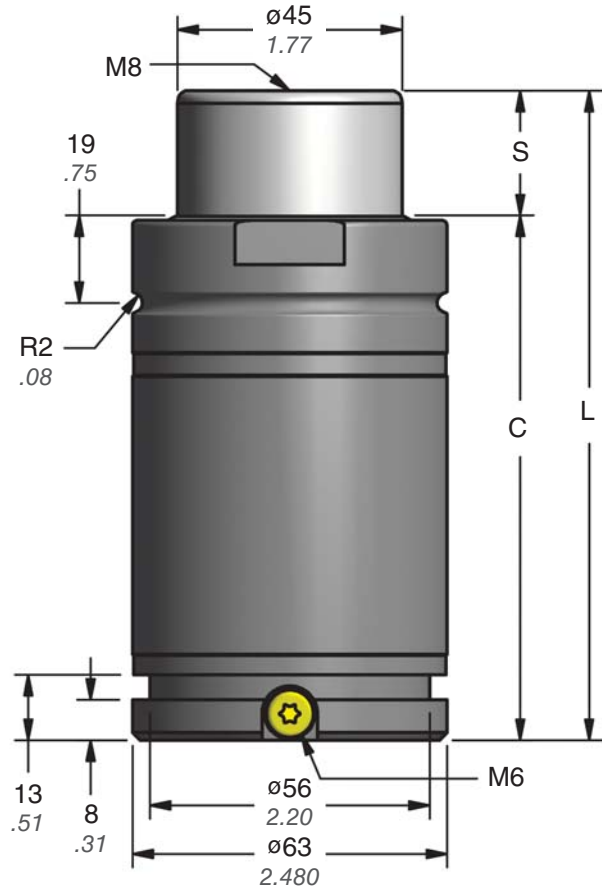
On-Contact Force

bar	daN
180	1731
150	1443
125	1202
100	962
75	721
50	481
25	240
20	192

Mount Options



Ordering Example: **Cylinder with Mount: SCR.1900.025.B312.C.180** **Mount Only: 90.312.00750**



TO - Basic Model

Part No.	S mm inch	C	L ± 0.25 $\pm .010$
SCR.3200.016	16 0.63	96 3.78	112 4.409
SCR.3200.025	25 0.98	105 4.13	130 5.118
SCR.3200.032	32 1.26	112 4.41	144 5.669
SCR.3200.038	37.5 1.48	117.5 4.63	155 6.102
SCR.3200.050	50 1.97	130 5.12	180 7.087
SCR.3200.063	62.5 2.46	142.5 5.61	205 8.071
SCR.3200.080	80 3.15	160 6.30	240 9.449

Ordering Example:

SCR.3200.025. TO. C. 180

Part Number:

Includes Series, Model and Stroke Length.

Mount Option:

TO = Basic Model. When not specified, default is TO.

B319 and B21 mounts ordered with cylinder will be attached at the factory.

Charging Pressure:

15–180 bar (200–2600 psi).

When not specified, default is 180 bar.

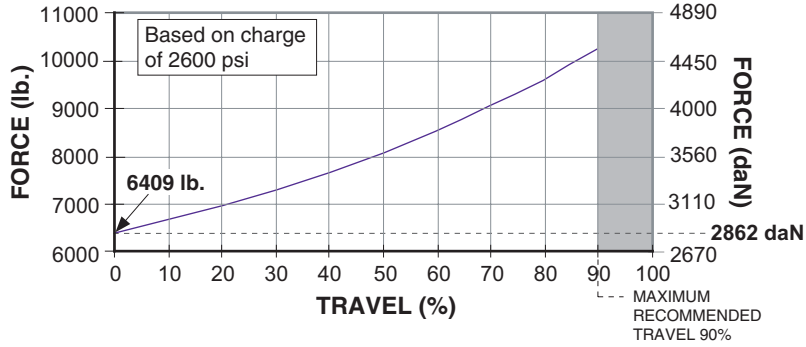
Operating System: C = Self-contained,

F = Open Flow Fitting. When not specified, default is C, self-contained.

Force Charts

On-Contact Force

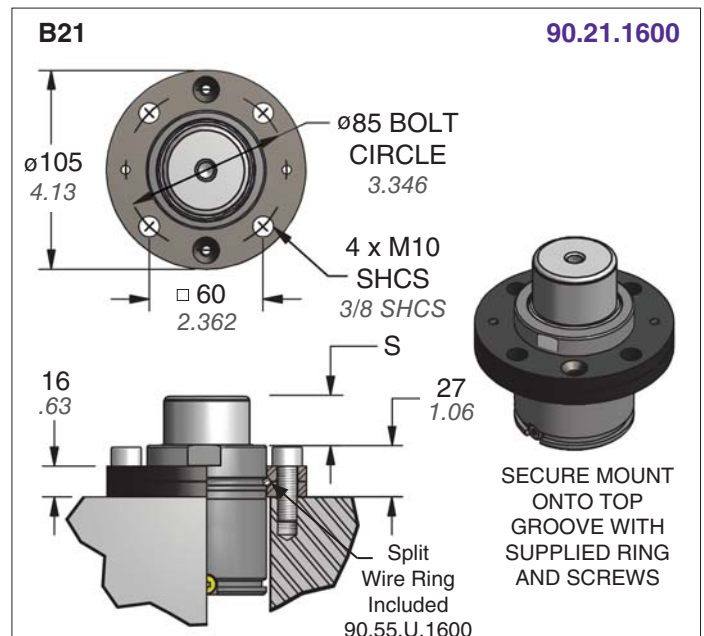
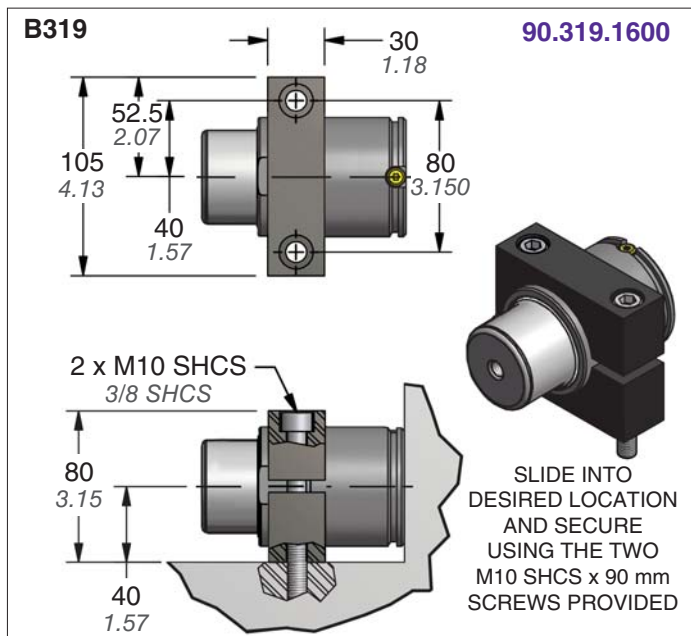
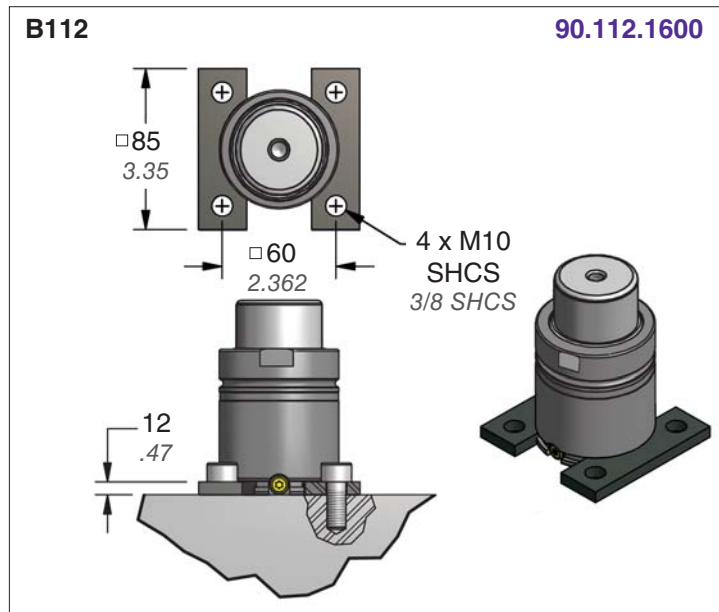
psi	lb.
2600	6409
2175	5362
2000	4930
1750	4314
1500	3698
1000	2465
500	1233
250	616



On-Contact Force

bar	daN
180	2862
150	2385
125	1987
100	1590
75	1192
50	795
25	397
20	318

Mount Options



Ordering Example: Cylinder with Mount: SCR.3200.025.B112.C.180 **Mount Only:** 90.112.1600

Converting from Self-Contained mode to Linked mode

CAUTION

Always wear safety glasses when maintaining nitrogen gas springs. When exhausting pressure, place the gas spring with the port up for safety.

Remove Screw

- Remove the protective screw from the M6 port (A.1).

Exhausting the Spring

- Keeping the face and hands clear of the port, depress the valve stem using the Valve Bleed Tool, 90.360.4, detailed on page 14 (A.2).
- After all the gas pressure is exhausted, be sure that the piston rod will retract into the tube manually. If not, try depressing the valve stem again. If still unsuccessful **STOP** and contact your DADCO Service Representative.

Remove Compact Valve

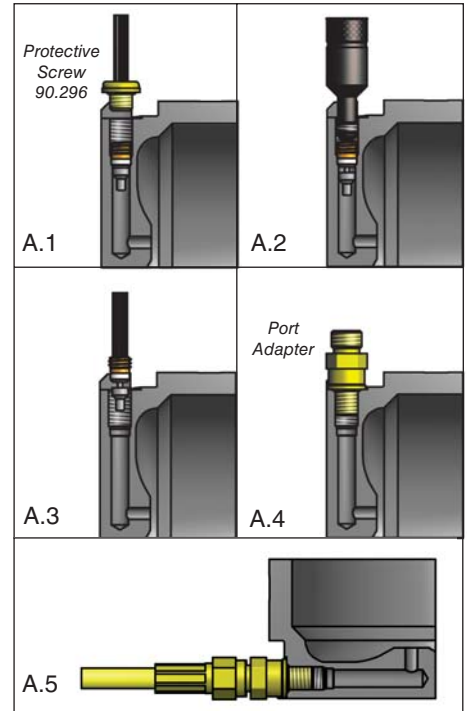
- Remove the Compact Valve (90.260) by unscrewing it using the Port Servicing Tool, 90.320.8, detailed on page 14 (A.3).

Ready to Pipe

- Install a port adapter into the open M6 port (A.4). A wide variety of port adapters and fittings are available, see page 13.

Linked

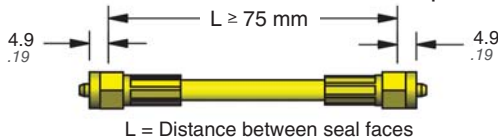
- Attach a 90.700 hose assembly onto the port adapter (A.5). The gas spring is now ready for linked operation with DADCO's Mini Control Panel, 90.407.11.



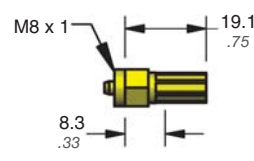
DADCO MINIFLEX® Hose

90.700.____(meters)

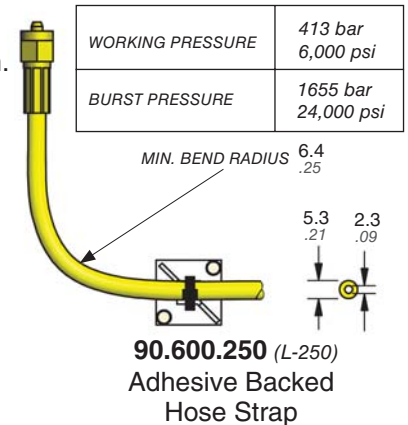
DADCO's MINIFLEX® hose is used to connect gas springs together as a linked system. DADCO offers complete hose assemblies that include two 90.601.943 Hose Adapters and a standard length of MINIFLEX™ hose, or you can build to suit in the field. For more information on hose assemblies request bulletin 99B105D.



90.731.____ (100, 200, 300, 400, or 500 mm)
L For non-standard lengths contact DADCO.
Hose Assembly



90.601.943 (L-943)
Permanent Hose Adapter



Hose Assembly Tools

Mini-Crimp

90.710.1 (MC-1)

DADCO's Mini-Crimp allows users to easily construct MINIFLEX® hose assemblies in the field. Use it with hydraulic or pneumatic crimp machines. No additional die ring is required. For further details, reference bulletin B00106A.



Hose Assembly Clamp

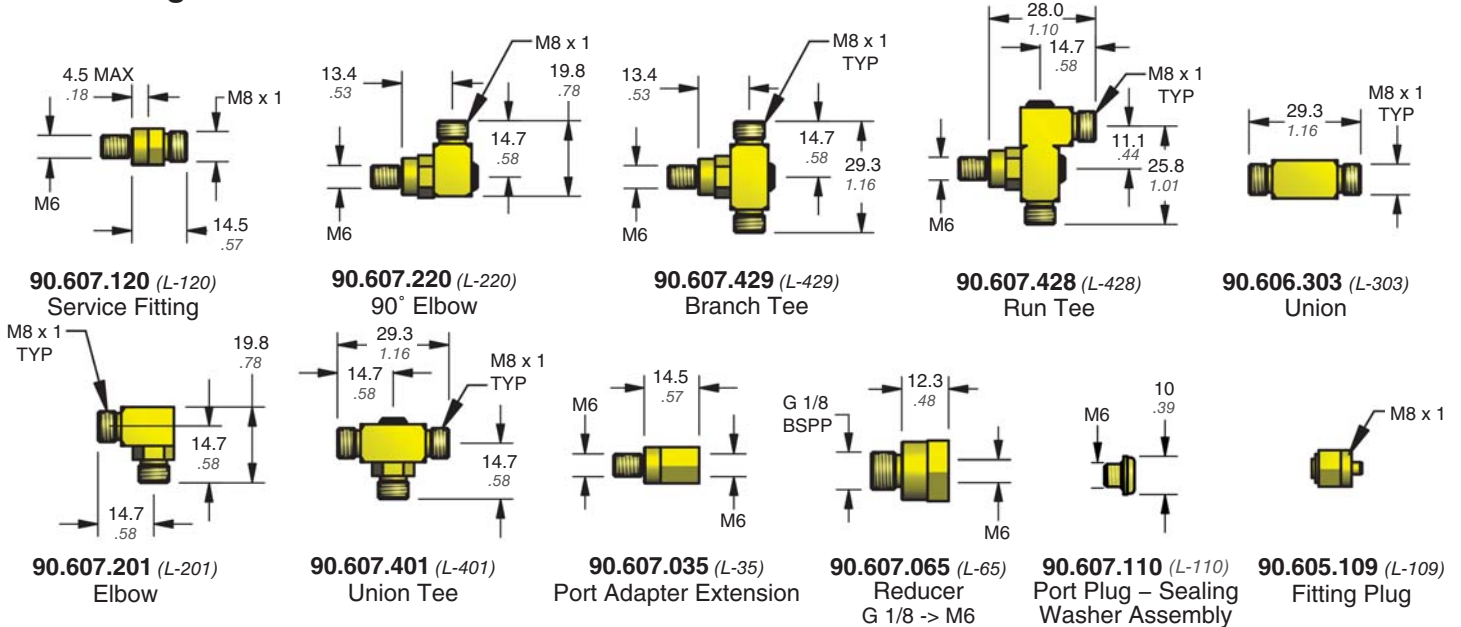
HAC

Insert into bench vise and use to secure hose to prepare for crimping. For more information, request bulletin B00109B.



Piping Accessories

Mini-fittings



Mini Control Panel

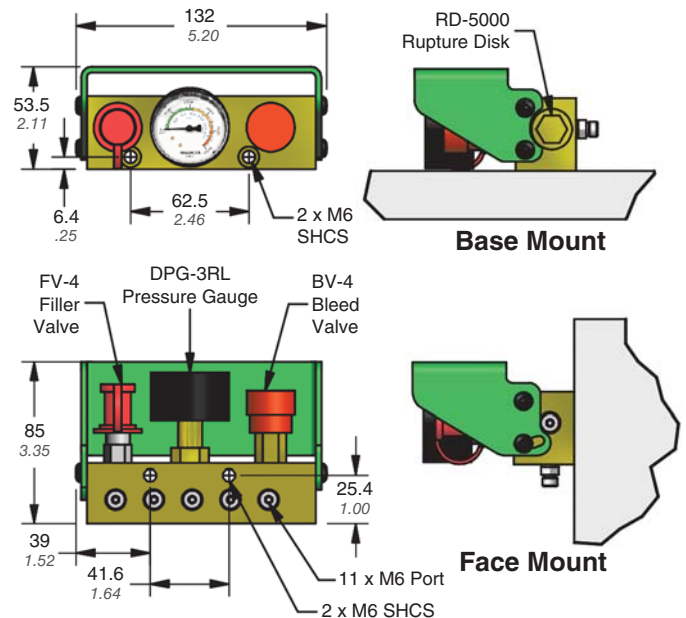
90.407.11



The DADCO 90.407.11 Mini Control Panel is used to fill, drain and monitor the pressure of linked DADCO SCR Nitrogen Gas Springs from outside the die. The panel consists of a high pressure gauge, quick disconnect fill valve, a bleed valve and a rupture disk to prevent overpressurization. To allow for maximum versatility when linking, the panel also contains eleven different port locations.



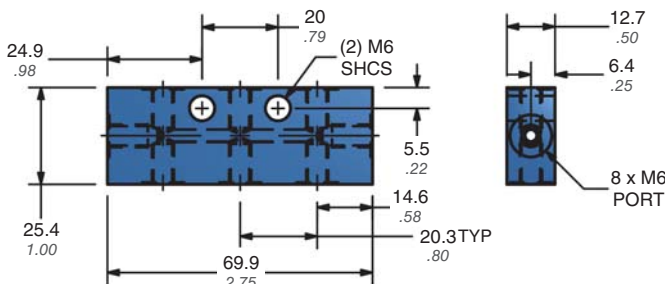
For convenience, the Convertible Control Panel 90.406.P1N can also be linked to DADCO SCR Series by installing the 90.607.065 (L-65) Reducer (see above). Contact DADCO for more information.



Mini Distribution Block

90.410.08

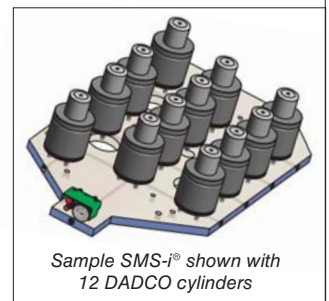
The Mini Distribution Block, with eight port locations, is used with a Control Panel to simplify piping to multiple cylinders. Plug unused ports with 90.607.110.



Specialty Linked Systems

SMS® – DADCO's popular Sectional Mounting System (SMS®) includes cylinders mounted to a SMS® plate and linked using hose, fittings and a control panel. For details, request bulletin B09114.

SMS-i® – DADCO's Sectional Mounting System - Internal (SMS-i®) consists of an internally piped plate with mounted cylinders, a cost effective alternative to traditional manifold systems. For more information, request bulletin B07104.



Port Servicing Tool 90.320.8

To perform all necessary servicing to the valve compartment. For more information request bulletin B05110.



Valve Bleed Tool 90.360.4

Use the DADCO Valve Bleed Tool to slowly discharge a spring to the desired pressure. For more information contact DADCO.



Portable Test Stand 90.305.3

Use the Portable Test Stand in conjunction with a Standard Load Cell for precise measurement of gas spring force on contact. For more information refer to bulletin 97B121.



Standard Load Cell 90.301.0500 (SCR.0500) 90.300.0750 (SCR.0800) 90.300.1900 (SCR.1900) 90.300.2600 (SCR.3200)



When used with a DADCO Test Stand, the Standard Load Cell gives precise measurement of gas spring charging pressure. Each model requires its specified load cell. For more information request bulletin 97B119F.

DADCO Pressure Analyzer 90.315.5

Use the DADCO Pressure Analyzer to easily charge, discharge, and gauge the pressure in DADCO's SCR Series Gas Springs. For more information request bulletin B01133D.



Quick Disconnect Charging Nipple 90.310.143 (CN-4)

Use the DADCO Quick Disconnect Charging Nipple to charge the SCR Series Gas Springs. For more information contact DADCO.



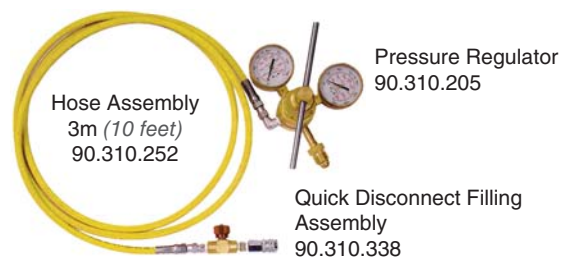
Digital Load Cell 90.305.BG (Meter) 90.305.LC.05 (22.2 kN Load Cell) 90.305.LC.50 (222 kN Load Cell)

The DADCO Digital Load Cell Meter can display force in Newtons, Kg or lbs. The 90.305.LC.05 Load Cell may be used to measure gas spring force up to 5,000 lbs and the 90.305.LC.50 Load Cell may be used to measure up to 50,000 lbs. Both Load Cell units are supplied with connector. For more information request bulletin B04106A.



High Pressure Quick Disconnect Charging Assembly 90.310.041 (CA-41)

Use the DADCO High Pressure Quick Disconnect Charging Assembly, 90.310.041, with the 90.310.143 Charging Nipple or 90.315.5 Charging Adapter to charge self-contained gas springs. The 90.310.041 includes the 90.310.205 Pressure Regulator, 90.310.252 Hose Assembly and the 90.310.338 Quick Disconnect Filling Assembly. A standard pressure charging assembly, 90.310.040 is available for pressures below 2200 psi. For more information contact DADCO.



CAUTION
DO NOT attempt maintenance on spring until internal pressure is exhausted.

Operating Specifications	
Charging Medium:	Nitrogen Gas
Charging Pressure:	15 – 180 bar (200 psi – 2600 psi)
Operating Temperature:	-6°C – 71°C (20°F – 160°F)
Maximum Speed:	.5 m/sec (20 in/sec)

Installation Requirements

Provide Stroke Reserve

- DADCO SCR Series gas springs will permit travel of the full nominal stroke; however, at least a 10% stroke reserve is recommended to achieve optimal performance (F.1 and F.2).

Avoid Side Loading

- A misaligned press or die can cause side loading that increases wear on the bearing, seal, and piston rod (F.3). Therefore, avoid side loading when possible (F.4).

Rod End Thread

- The end of the piston rod has a construction thread intended for assembly and disassembly purposes only, and should never be used to mount or secure the gas spring (F.4). Die vibration and/or misalignment will damage the spring.

Protect From Fluids

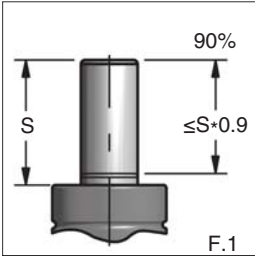
- Direct contact with certain die lubricants and cleaners should be avoided (F.6). Protect gas springs by providing adequate drainage in gas spring pockets (F.5).

Discharging Self-Contained Gas Spring

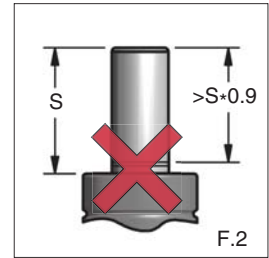
- The DADCO Pressure Analyzer (90.315.5) allows for charging, discharging and gauging of the pressure of the SCR Series gas springs (F.7). For information on completely exhausting the gas spring see page 12.

Recharging Self-Contained Gas Spring

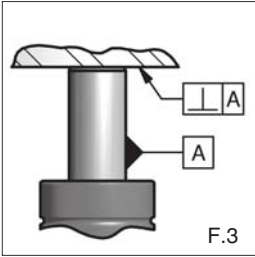
- Hold the spring vertically at all times during filling. Never compress the gas spring in a vice or clamp outside of the die or application as damage to the gas spring can result (F.8).
- Never fill a gas spring unless the rod is in the fully extended position (F.10). Thread the T-handle (90.320.1) into the rod end and depress the valve stem with the Valve Bleed Tool (90.360.4) or Port Servicing Tool (90.320.8). Pull the rod cartridge assembly up until it is seated firmly against the retaining ring (F.9). Remove the T-handle from the rod and charge the gas spring to the desired pressure.
- Contact DADCO for repair of the SCR Series gas springs.



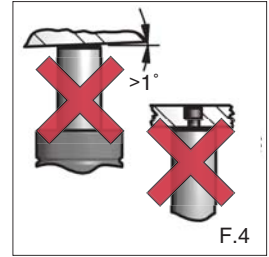
F.1



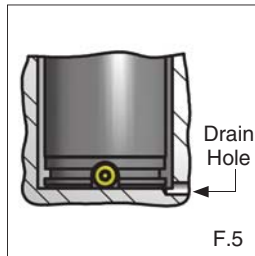
F.2



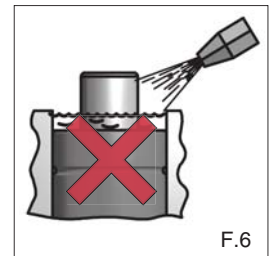
F.3



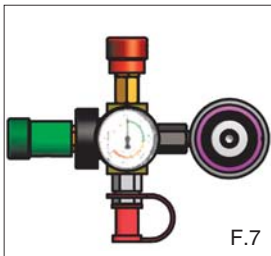
F.4



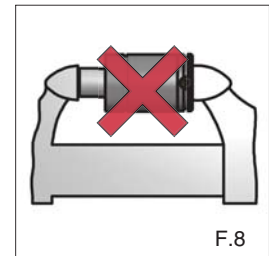
F.5



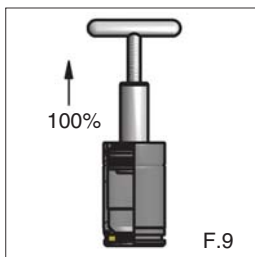
F.6



F.7



F.8



F.9



F.10

Other DADCO Products



SL2.090 and SL2.180 – Nitrogen Gas Spring Two Post Lifters

- 160 mm and 180 mm rail widths
- Powered by the **Micro 90™** and **Micro 180™**
- Stroke lengths available from 23 mm to 198 mm
- Two post for rail lift applications
- Compact Rail Plate available



SLN.090 and SLN.180 – Micro Nitrogen Gas Lifters

- Non-rotating design; provides lift and guidance
- Two guide rod options for single point, multipoint or rail lift applications
- Compact design powered by the **Micro 90™** and **Micro 180™**
- Stroke lengths available from 25 mm to 125 mm



Ultra Force® – U Series

- 19 mm to 195 mm in diameter
- Forces up to 199 kN
- Full range of standard stroke lengths up to 125 mm



Mini – LJ and L Series

- 38 mm, 45 mm and 50 mm diameters
- Force models: 3 kN, 5 kN, and 7.5 kN
- Full range of standard stroke lengths up to 125 mm



Ultra Force Extended® – UX Series

- 25-55% more force on-contact than ISO Standard Nitrogen Gas Springs
- From 50 mm to 150 mm in diameter
- Up to 95 kN of force on contact
- Bolt-on or welded mounts available
- Matches ISO Envelope



ISO / 90.10 Series

- From 32 mm to 195 mm in diameter
- Forces up to 100 kN
- Full range of standard stroke lengths up to 300 mm
- Bolt-on or welded mounts available
- ISO Standards

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