

# DADCO®

Compact Nitrogen Gas Springs

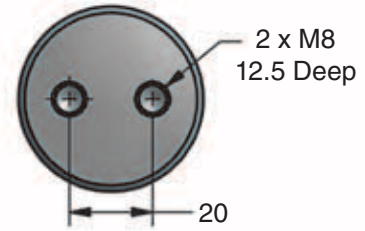
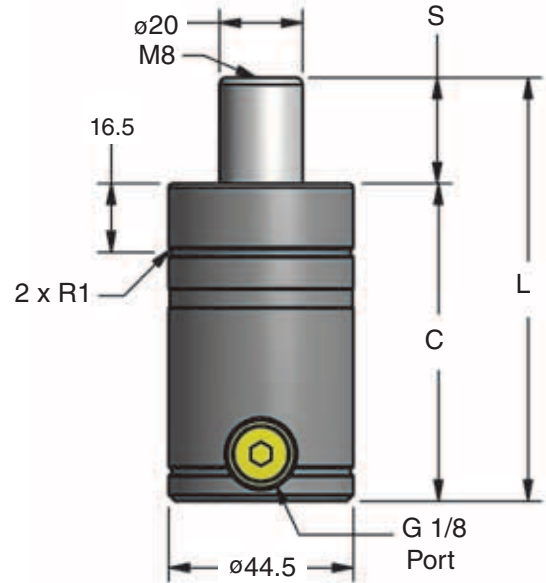
90.60 / 90.60N Series



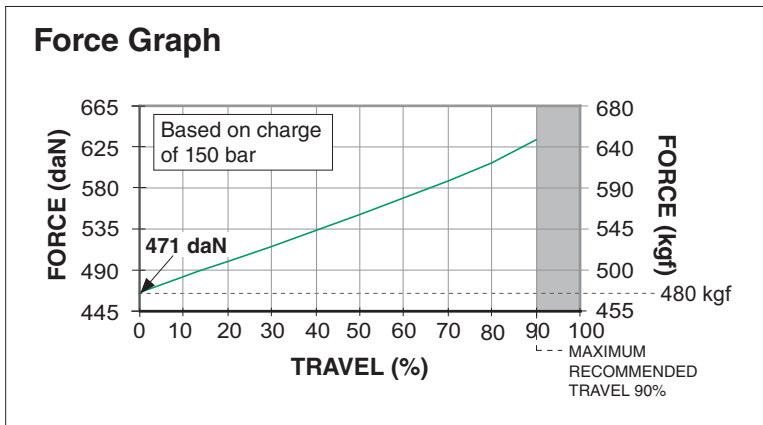
**- PHASING OUT -**

Replace with L Series and UH Series Models:  
L.500, L.750, UH.0800, UH.1000, UH.2600 and UH.4600

**- PHASING OUT -**  
Replace with L.500 or UH.0800



**RO - Basic Model**  
Bottom Radius Groove



Model	S inch	On-Contact Force daN (kgf)	Max Force* daN (kgf)	C mm	L ±0.25	Pressure Increase** %	Weight kg
90.60N.00500.E003	.25	471 (480)	632 (644)	57.15	63.5	34	0.55
90.60N.00500.E005	.50			63.50	76.2		0.59
90.60N.00500.E008	.75			69.85	88.9		0.62
90.60N.00500.E010	1.00			76.20	101.6		0.66
90.60N.00500.E015	1.50			88.90	127.0		0.74
90.60N.00500.E020	2.00			101.60	152.4		0.82
90.60N.00500.E025	2.50			114.30	177.8		0.89
90.60N.00500.E030	3.00			127.00	203.2		0.97
90.60N.00500.E035	3.50			139.70	228.6		1.05
90.60N.00500.E040	4.00			152.40	254.0		1.12
90.60N.00500.E045	4.50			165.10	279.4		1.20
90.60N.00500.E050	5.00			177.80	304.8		1.28

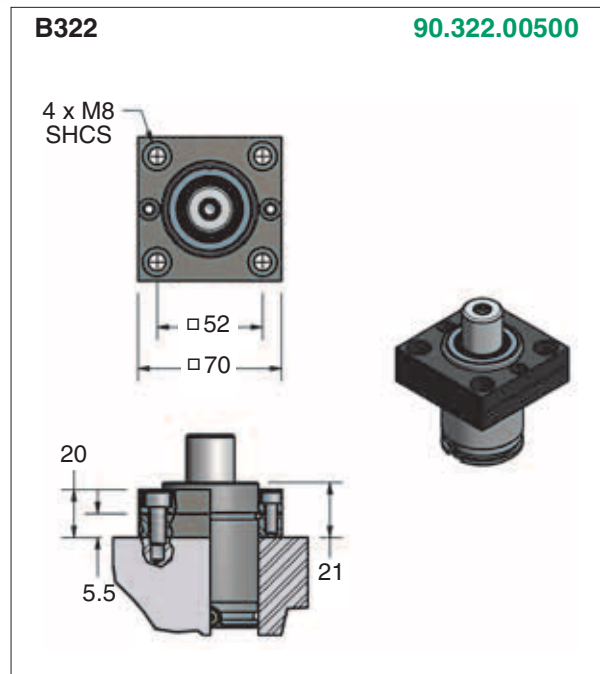
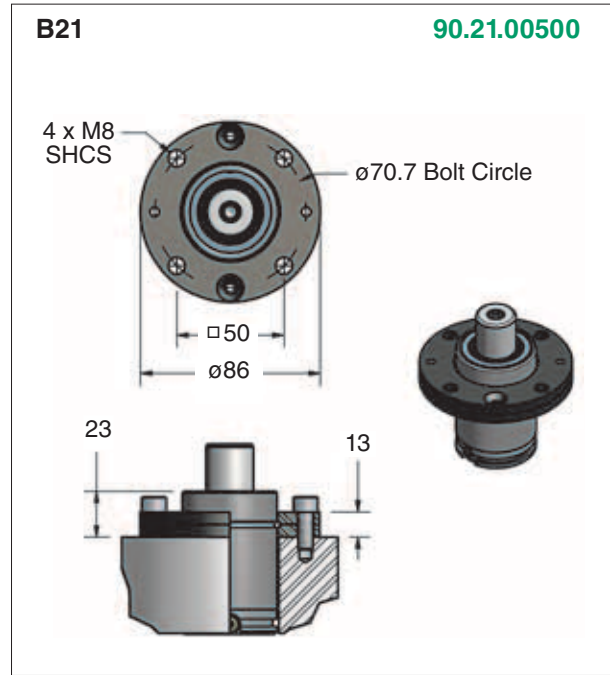
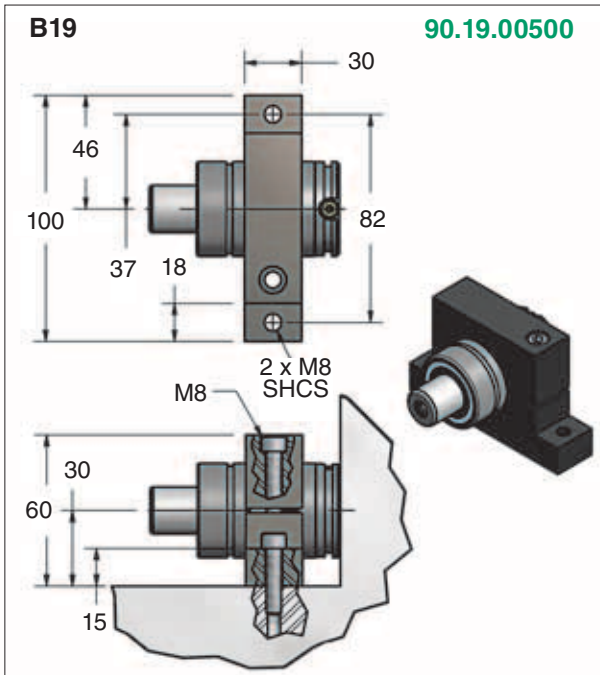
On-Contact Force			
bar	MPa	daN	kgf
150	15	471	480
125	12.5	392	400
100	10	314	320
75	7.5	235	240
50	5	157	160
25	2.5	78	80
15	1.5	47	48

\* 90% Stroke Recommended

\*\* Based on maximum recommended travel, 90% stroke

**90.60N.00500 — 0.5 ton / 5 kN**

**Mount Options**



**Ordering Example:**

Model	Stroke	Mount	Operating System	Charging Pressure (bar)
90.60N.00500	E10	B19	C	150

Part Number

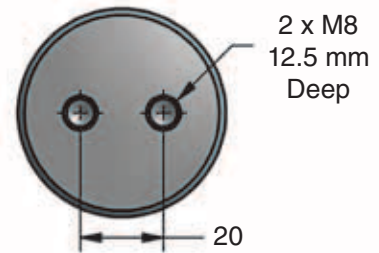
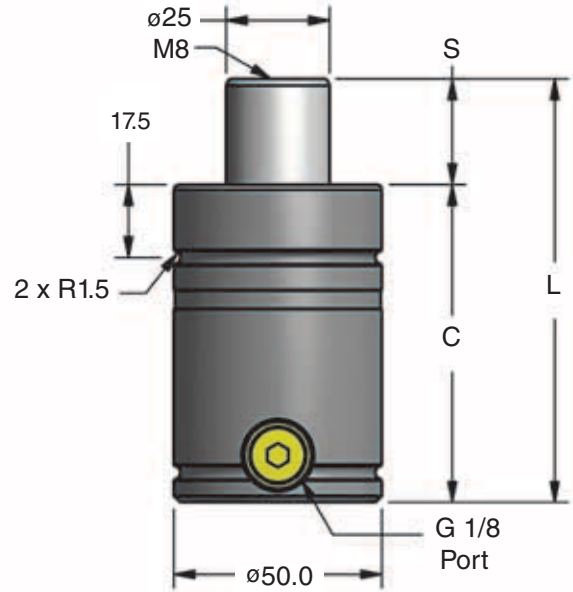
RO: Radius Groove

C: Self-contained  
F: Open Flow Fitting

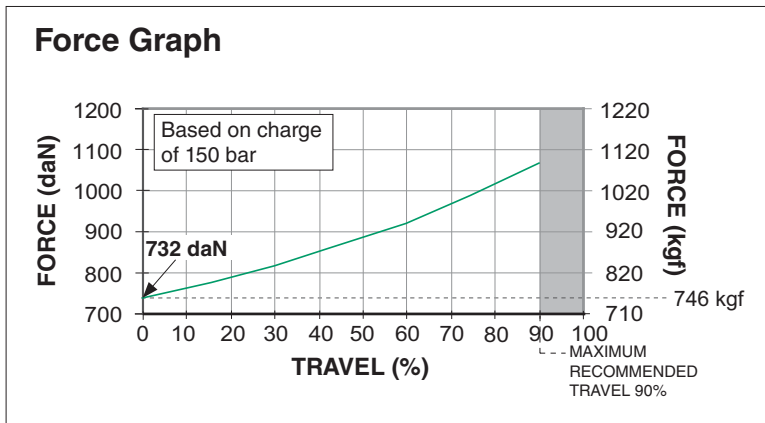
15~150 bar (1.5~15 MPa)  
When not specified, default is 150 bar (15 MPa)

**Mount Only:**  
90.19.00500

**- PHASING OUT -**  
Replace with L.750 or UH.1000



**RO - Basic Model**  
Bottom Radius Groove



Model	S inch	On-Contact Force daN (kgf)	Max Force* daN (kgf)	C mm	L ±0.25	Pressure Increase** %	Weight kg
90.60N.00750.E003	.25	732 (746)	1090 (1111)	57.15	63.5	49	0.71
90.60N.00750.E005	.50			63.50	76.2		0.76
90.60N.00750.E008	.75			69.85	88.9		0.82
90.60N.00750.E010	1.00			76.20	101.6		0.88
90.60N.00750.E015	1.50			88.90	127.0		0.99
90.60N.00750.E020	2.00			101.60	152.4		1.10
90.60N.00750.E025	2.50			114.30	177.8		1.21
90.60N.00750.E030	3.00			127.00	203.2		1.32
90.60N.00750.E035	3.50			139.70	228.6		1.43
90.60N.00750.E040	4.00			152.40	254.0		1.54
90.60N.00750.E045	4.50			165.10	279.4		1.65
90.60N.00750.E050	5.00			177.80	304.8		1.76

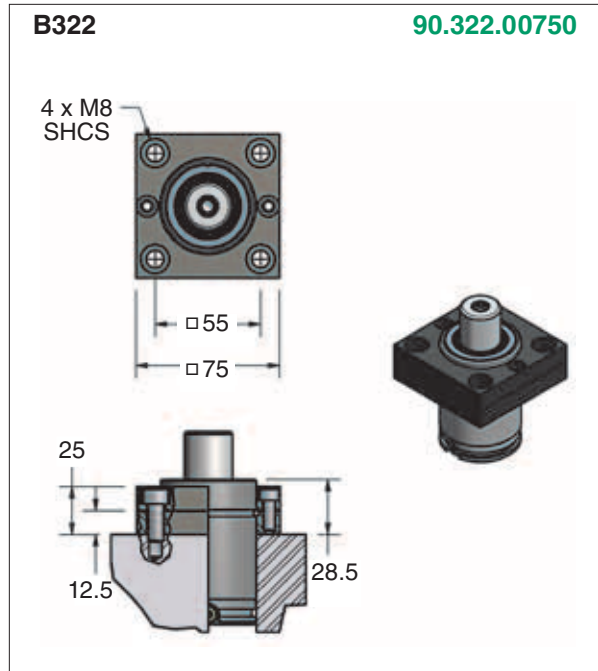
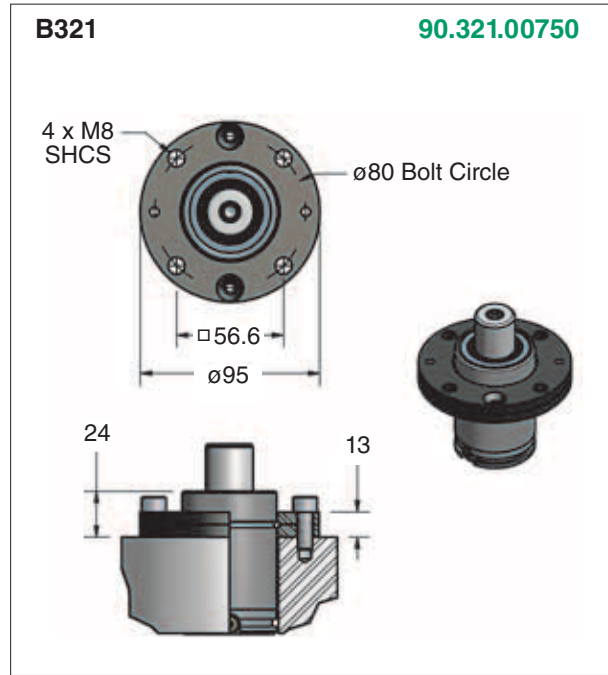
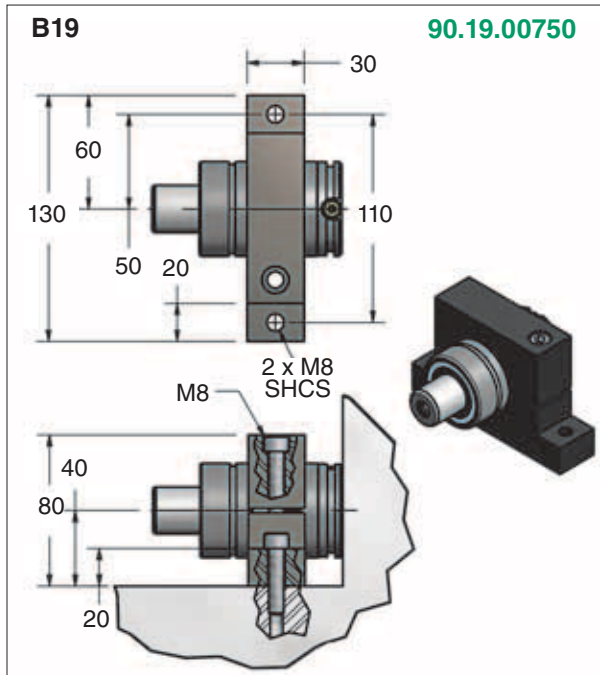
On-Contact Force			
bar	MPa	daN	kgf
150	15	732	746
125	12.5	610	622
100	10	488	498
75	7.5	366	373
50	5	244	249
25	2.5	122	124
15	1.5	73	74

\*90% Stroke Recommended

\*\* Based on maximum recommended travel, 90% stroke

**90.60N.00750 — 0.75 ton / 7.5 kN**

**Mount Options**



**Ordering Example:**

Model	Stroke	Mount	Operating System	Charging Pressure (bar)
90.60N.00750	E10	B19	C	150

Part Number

RO: Radius Groove

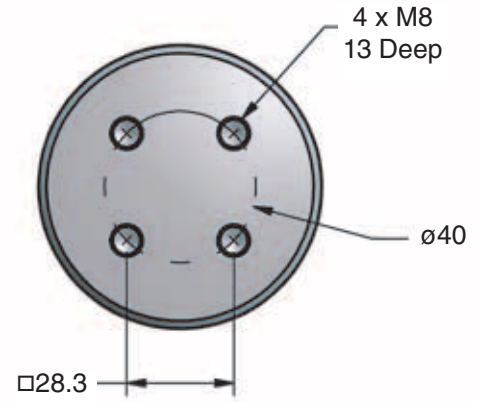
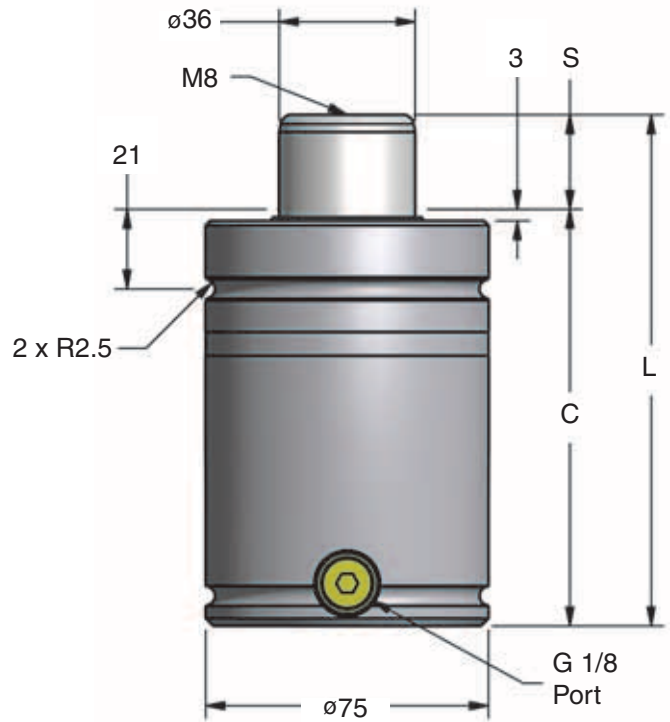
C: Self-contained  
F: Open Flow Fitting

15~150 bar (1.5~15 MPa)  
When not specified, default is 150 bar (15 MPa)

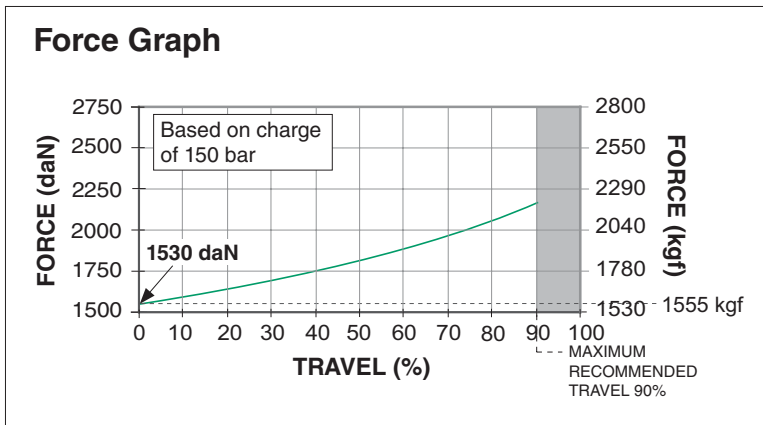
**Mount Only:**  
90.19.00750



**- PHASING OUT -**  
Replace with UH.2600



**RO - Basic Model**  
Bottom Radius Groove



Model	S mm	On-Contact Force daN (kgf)	Max Force* daN (kgf)	C mm	L ±0.25	Pressure Increase** %	Weight kg
90.60.01500.025	25	1530 (1555)	2180 (2225)	85.0	110.0	43	2.20
90.60.01500.038	38.1			98.1	136.2		2.44
90.60.01500.050	50			110.0	160.0		2.65
90.60.01500.063	63.5			123.5	187.0		2.90
90.60.01500.080	80			140.0	220.0		3.19
90.60.01500.100	100			160.0	260.0		3.55

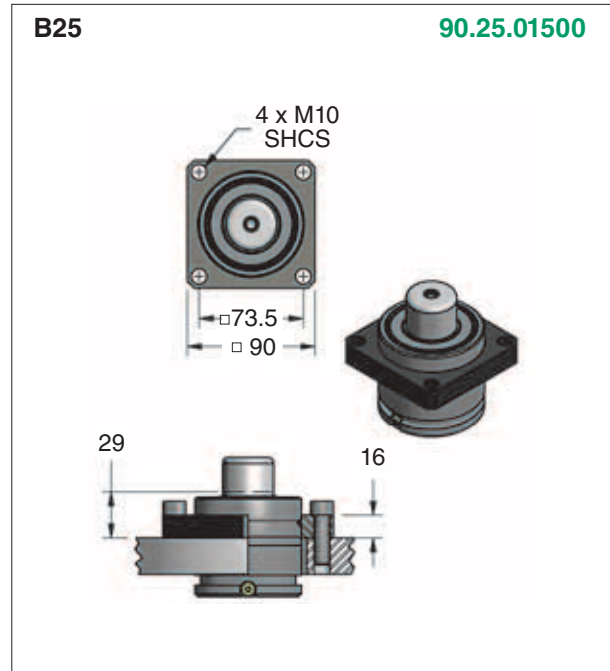
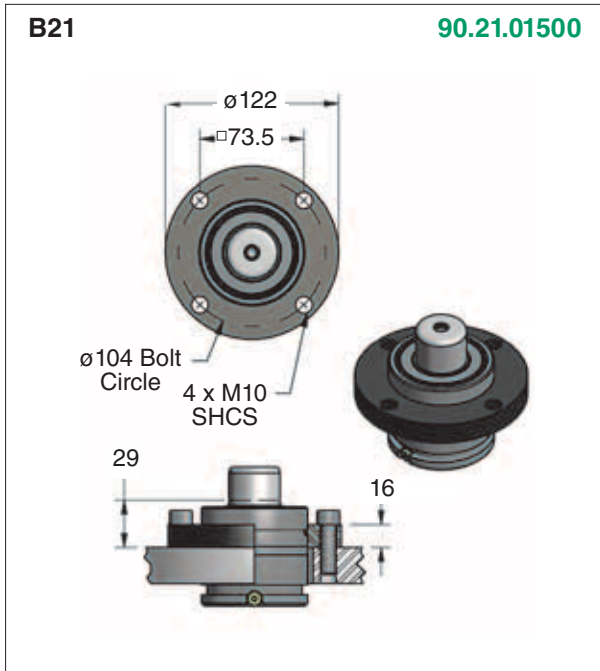
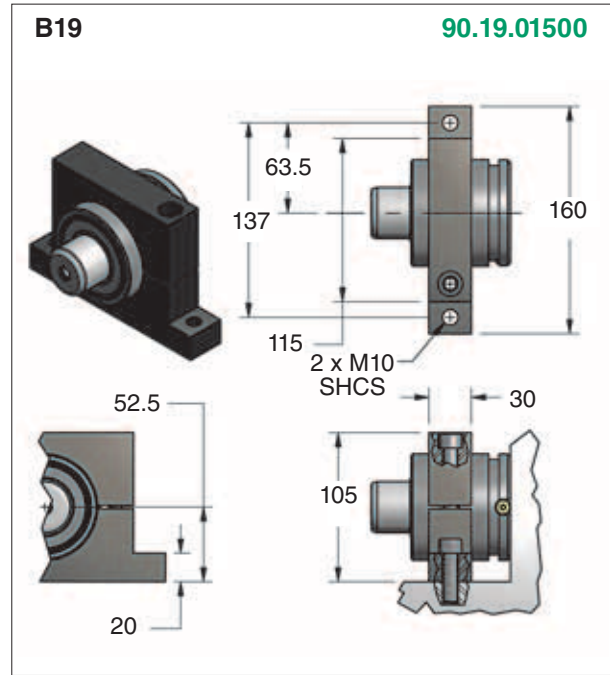
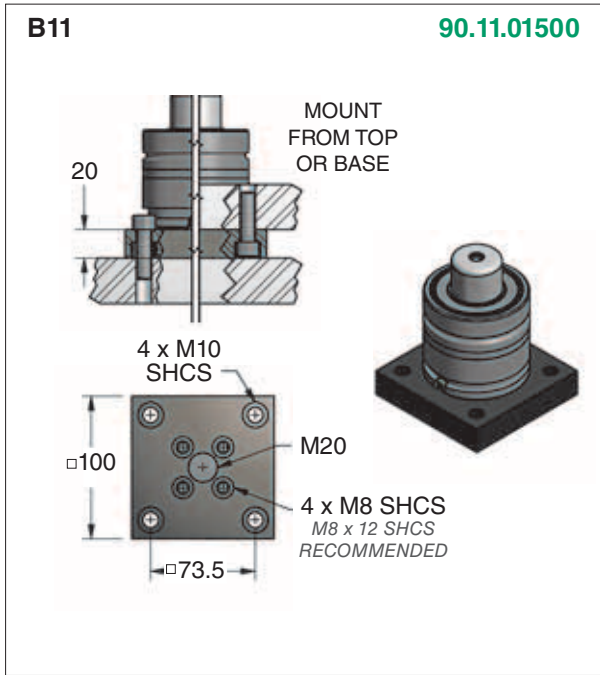
On-Contact Force			
bar	MPa	daN	kgf
150	15	1530	1555
125	12.5	1270	1295
100	10	1020	1040
75	7.5	765	780
50	5	510	520
25	2.5	255	260
15	1.5	155	155

\* 90% Stroke Recommended

\*\* Based on maximum recommended travel, 90% stroke

**90.60.01500 — 1.5 ton / 15 kN**

**Mount Options**



**Ordering Example:**

Model	Stroke	Mount	Operating System	Charging Pressure (bar)
90.60.01500	025	B11	C	150

Part Number

RO: Radius Groove

C: Self-contained  
F: Open Flow Fitting

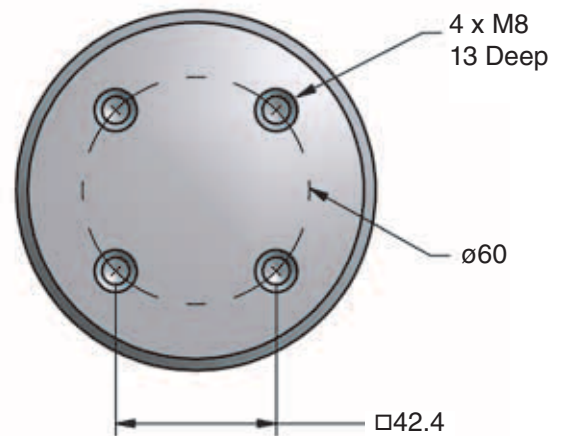
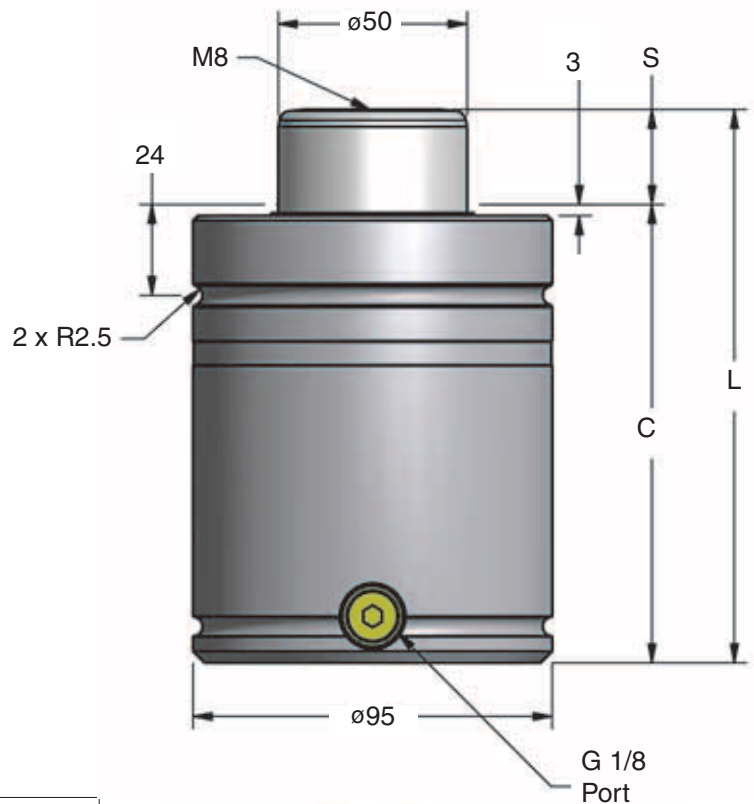
15~150 bar (1.5~15 MPa)  
When not specified, default is 150 bar (15 MPa)

**Mount Only:**  
90.11.01500

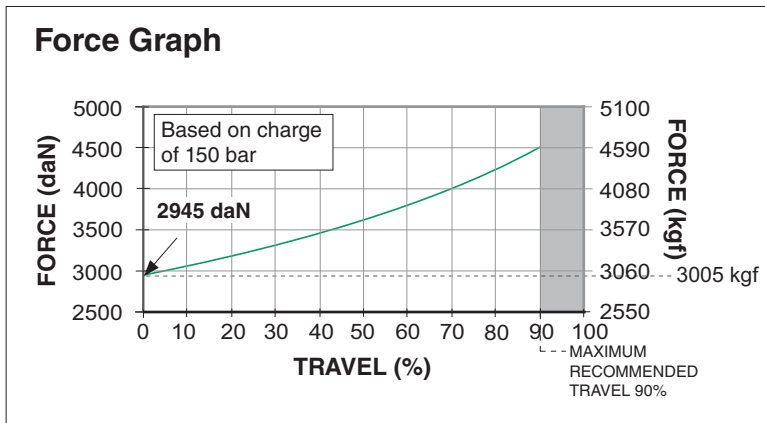
**90.60 / 90.60N Series  
Nitrogen Gas Springs**

**90.60.03000 — 3 ton / 30 kN**

**- PHASING OUT -**  
Replace with UH.4600



**RO - Basic Model**  
Bottom Radius Groove



Model	S mm	On-Contact Force daN (kgf)	Max Force* daN (kgf)	C	L ±0.25	Pressure Increase** %	Weight kg
90.60.03000.025	25	2945 (3005)	4485 (4575)	95	120.0	52	4.17
90.60.03000.038	38.1			108.1	146.2		4.58
90.60.03000.050	50			120.0	170.0		4.95
90.60.03000.063	63.5			133.5	197.0		5.37
90.60.03000.080	80			150.0	230.0		5.89
90.60.03000.100	100			170.0	270.0		6.52

On-Contact Force			
bar	MPa	daN	kgf
150	15	2945	3005
125	12.5	2455	2505
100	10	1965	2000
75	7.5	1475	1500
50	5	980	1000
25	2.5	490	500
15	1.5	295	300

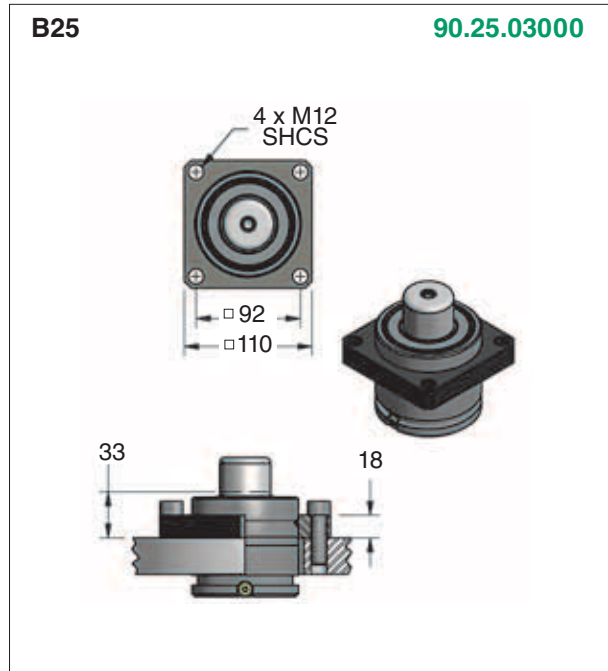
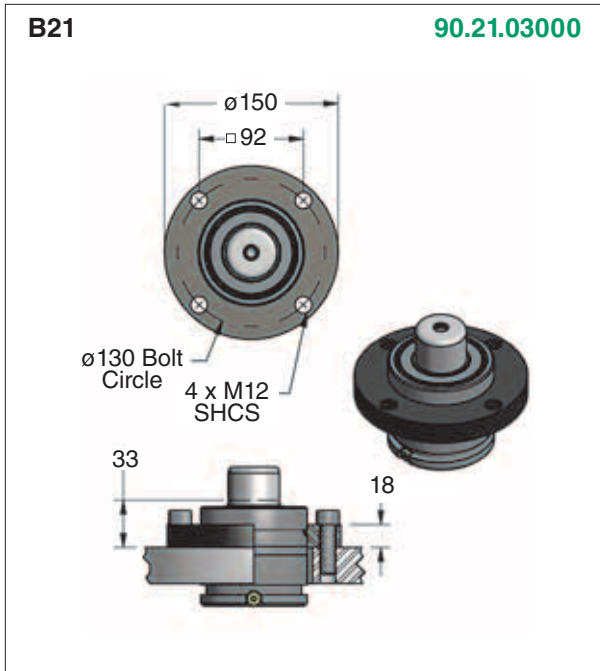
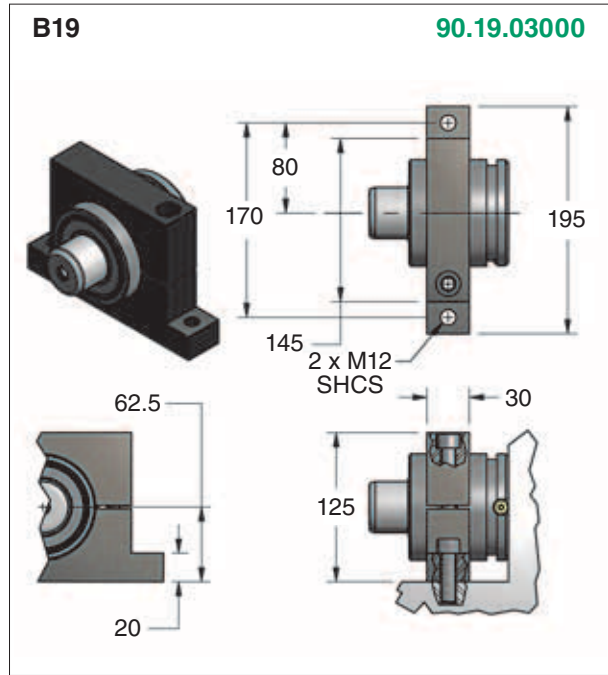
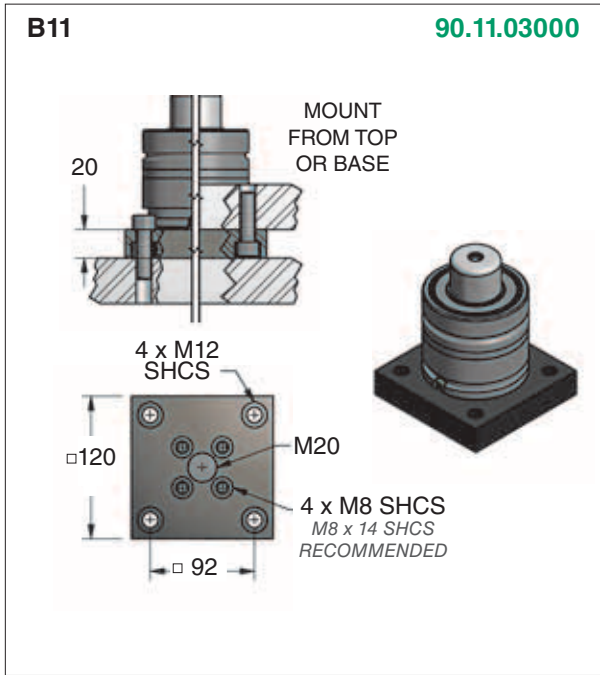
\* 90% Stroke Recommended

\*\* Based on maximum recommended travel, 90% stroke



**90.60.03000 — 3 ton / 30 kN**

**Mount Options**



**Ordering Example:**

<b>Model</b> 90.60.03000	•	<b>Stroke</b> 025	•	<b>Mount</b> B11	•	<b>Operating System</b> C	•	<b>Charging Pressure (bar)</b> 150
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Part Number

RO: Radius Groove

C: Self-contained  
F: Open Flow Fitting

15~150 bar (1.5~15 MPa)  
When not specified, default is 150 bar (15 MPa)

**Mount Only:**  
90.11.03000

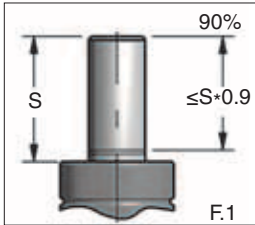
Model	Kit Number
90.60N.00500	90.107.00500
90.60N.00750	90.107.00750
90.60.01500	90.109.01500
90.60.03000	90.109.03000

### Operating Specifications

Charging Medium:	Nitrogen Gas	Operating Temperature:	-6°C – 71°C
Charging Pressure:	15 – 150 bar	Maximum Speed:	0.5 m/sec

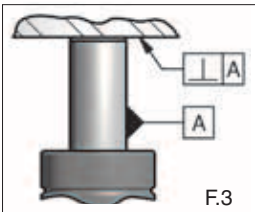
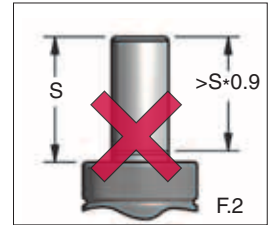
### CAUTION

Do NOT attempt maintenance on spring until internal pressure is exhausted.



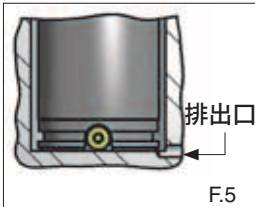
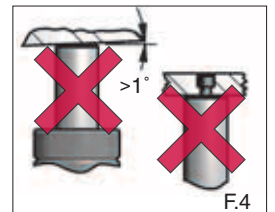
#### Provide Stroke Reserve

- DADCO 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).



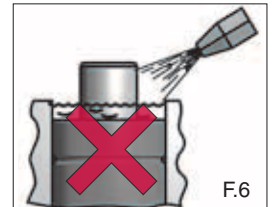
#### Avoid Side Loading

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



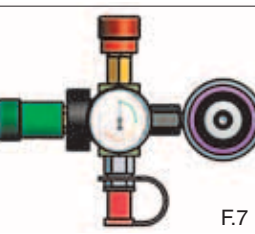
#### Rod End Thread

- 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.



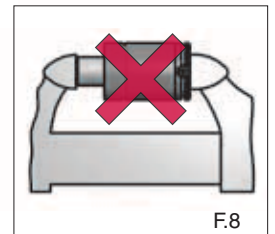
#### Protect From Fluids

- 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).



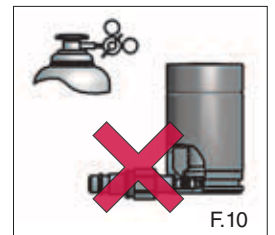
#### Discharging Self-Contained Gas Spring

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



#### 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, 90.320.2), 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 more information.



### Converting from Self-Contained mode to Linked mode

#### Remove Port Plug

- Remove port plug (C.1).

#### Exhausting the Spring

- Keeping face and hands clear of the port depress the valve stem using the Valve Bleed Tool (90.360.4) shown in (C.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 or Cartridge Valve

- Remove the Compact Valve (90.260) or Cartridge Valve (90.265) by unscrewing it using the Port Servicing Tool (90.320.8) shown in (C.3).

#### Ready to Pipe

- Install a port adapter into the open G 1/8 port, (C.4).

