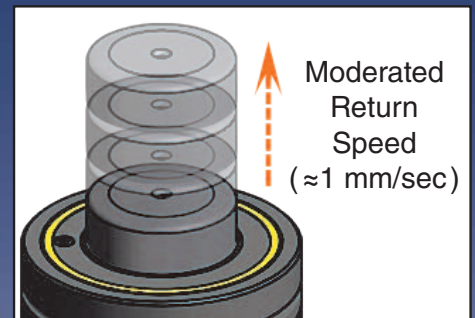


DADCO®

Die Storage Gas Spring

90.10 DS Series



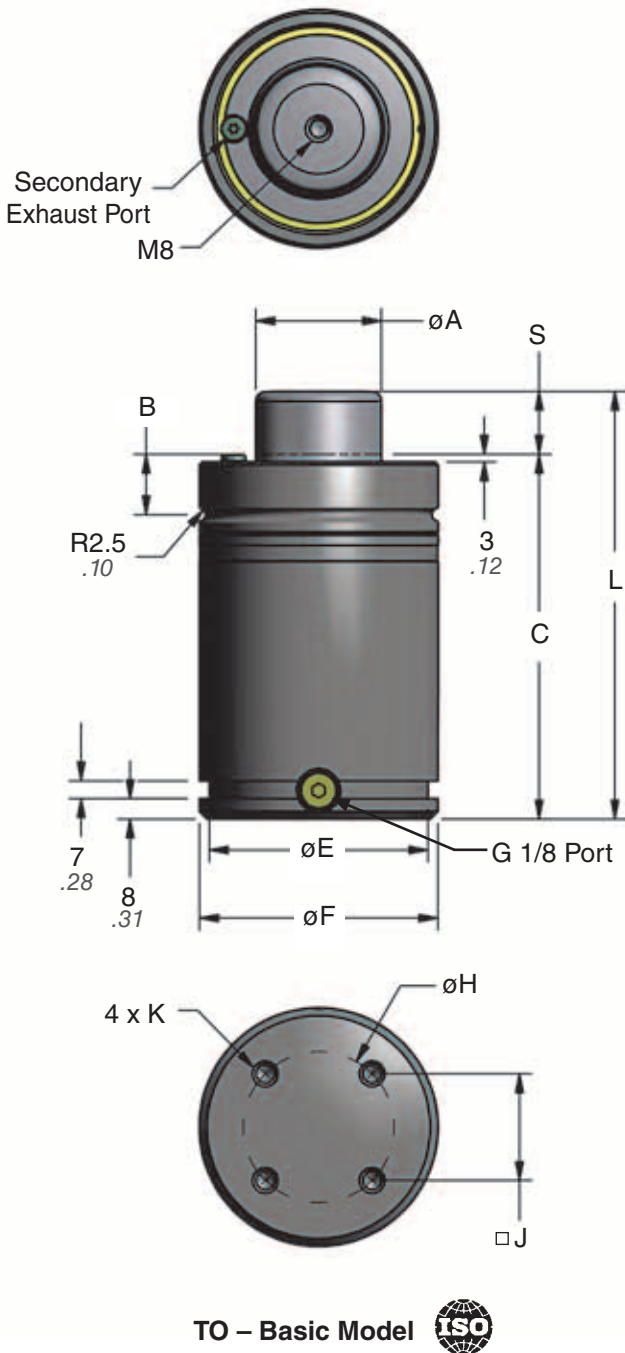
- Long spring life
- Lower operating temperature
- Directly interchanges with ISO models



Die Storage Nitrogen Gas Springs

90.10 DS Series

DS Springs are designed specifically for die storage applications. The DS models return at a moderated speed, unlike standard gas springs that return at the speed of the ram. After the initial hit, only a small portion of the DS stroke is engaged during each press stroke resulting in reduced operating temperature, minimal wear, and longer spring life.



Part No.	S mm inch	Model					
		03000		05000		07500	
		C	L ± 0.25 $\pm .010$	C	L ± 0.25 $\pm .010$	C	L ± 0.25 $\pm .010$
90.10DS.....050	50 1.97	170 6.69	220 8.661	190 7.48	240 9.449	205 8.07	255 10.039
90.10DS.....080	80 3.15	200 7.87	280 11.024	220 8.66	300 11.811	235 9.25	315 12.402
90.10DS.....100	100 3.94	220 8.66	320 12.598	240 9.45	340 13.386	255 10.04	355 13.976
90.10DS.....125	125 4.92	245 9.65	370 14.567	265 10.43	390 15.354	280 11.02	405 15.945
90.10DS.....160	160 6.30	280 11.02	440 17.323	300 11.81	460 18.110	315 12.40	475 18.701
90.10DS.....200	200 7.87	320 12.60	520 20.472	340 13.39	540 21.260	355 13.98	555 21.850
90.10DS.....250	250 9.84	370 14.57	620 24.409	390 15.35	640 25.197	405 15.94	655 25.787
90.10DS.....300	300 11.81	420 16.54	720 28.346	440 17.32	740 29.134	455 17.91	755 29.724

Other stroke lengths available.

Model	03000	05000	07500
A	$\phi 50$ 1.97	$\phi 65$ 2.56	$\phi 80$ 3.15
B	24 .94	25.5 1.00	27.5 1.08
E	$\phi 87$ 3.43	$\phi 112$ 4.41	$\phi 142$ 5.59
F	$\phi 95$ 3.740	$\phi 120$ 4.724	$\phi 150$ 5.906
H	$\phi 60$ 2.362	$\phi 80$ 3.150	$\phi 100$ 3.937
J	42.4 1.670	56.6 2.227	70.7 2.783
K	M8 x 12 Deep .47	M10 x 16 Deep .63	M10 x 16 Deep .63

On-Contact Force				
Model No.	psi	lb.	bar	daN
90.10DS.03000		6619		2945
90.10DS.05000	2175	11187	150	4977
90.10DS.07500		16946		7540

Ordering Example:

90.10DS.05000.100. TO. C. 150

Part Number:
Includes Series, Model and Stroke Length.

Mount Option:
TO = Basic Model.

When not specified, default is TO. Mounts ordered with cylinder will be attached at the factory.

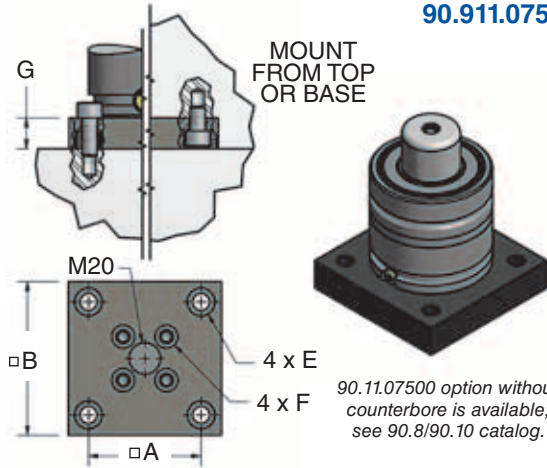
Charging Pressure:
15-150 bar (220-2175 psi). When not specified, default is 150 bar.

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

Mount Options

B11 / F11

90.11.03000 /
90.11.05000 /
90.911.07500



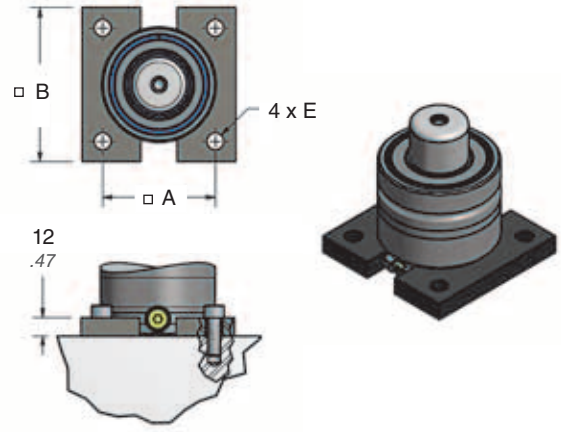
90.11.07500 option without counterbore is available; see 90.8/90.10 catalog.



Can Diameter	Part No.	A	B	E	F	G
ø95	90.11.03000	92 3.622	120 4.72	M12 SHCS 1/2"	M8 SHCS	20 .79
ø120	90.11.05000	109.5 4.311	140 5.51	M12 SHCS 1/2"	M10 SHCS	20 .79
ø150	90.911.07500	138 5.433	190 7.48	M16 SHCS 5/8"	M10 SHCS	25 .98

B12

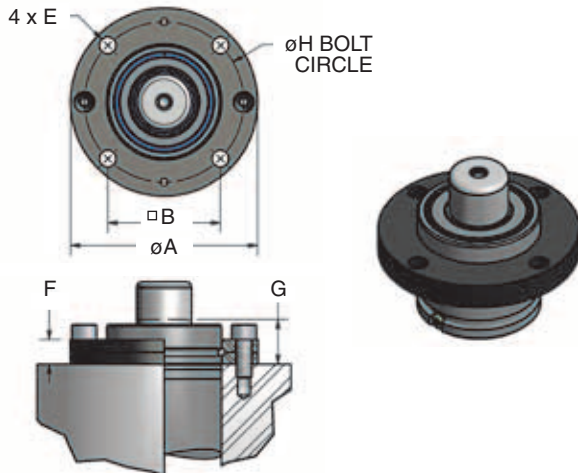
90.12.03000 /
90.12.05000 /
90.12.07500



Can Diameter	Part No.	A	B	E
ø95	90.12.03000	92 3.622	120 4.72	M12 SHCS 1/2"
ø120	90.12.05000	109.5 4.311	140 5.51	M12 SHCS 1/2"
ø150	90.12.07500	138 5.433	190 7.48	M16 SHCS 5/8"

B21

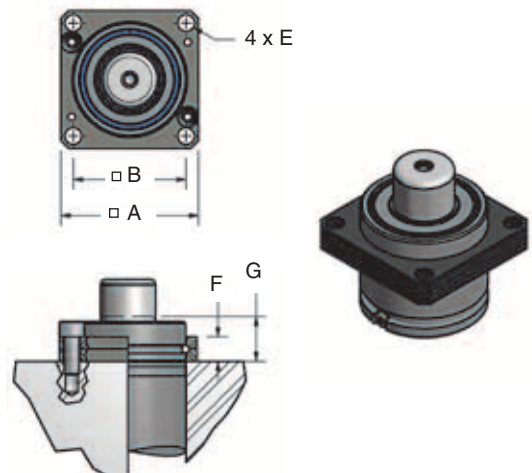
90.21.03000 /
90.21.05000 /
90.21.07500



Can Diameter	Part No.	A	B	E	F	G	H
ø95	90.21.03000	150 5.90	92 3.622	M12 SHCS 1/2"	18 .71	33 1.30	130 5.118
ø120	90.21.05000	175 6.89	109.5 4.311	M12 SHCS 1/2"	21 .83	36 1.42	155 6.102
ø150	90.21.07500	220 8.66	138 5.433	M16 SHCS 5/8"	27 1.06	41 1.61	195 7.677

B25

90.25.03000 /
90.25.05000 /
90.25.07500



Can Diameter	Part No.	A	B	E	F	G
ø95	90.25.03000	110 4.33	92 3.622	M12 SHCS 1/2"	18 .71	33 1.30
ø120	90.25.05000	130 5.12	109.5 4.311	M12 SHCS 1/2"	21 .83	36 1.42
ø150	90.25.07500	162 6.38	138 5.433	M16 SHCS 5/8"	27 1.06	41 1.61

Ordering Example:

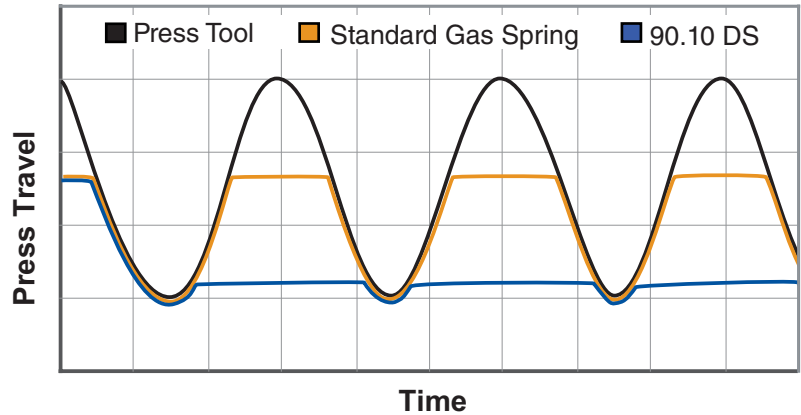
Cylinder with Mount: 90.10DS.05000.100.B12.C.150

Mount Only: 90.12.05000

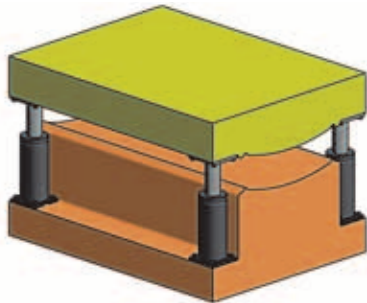
Welded mounts available, contact DADCO for more information.

Technical Data

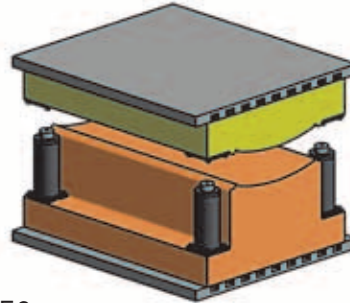
The 90.10 DS nitrogen gas springs are designed with a reduced rate of return (≈ 1 mm/sec) making them an ideal choice for die separation. Following the initial contact, only a small portion of the 90.10 DS total stroke length is engaged during each cycle. The reduced travel per cycle results in lower overall operating temperature and decreased wear on the gas spring and press components.



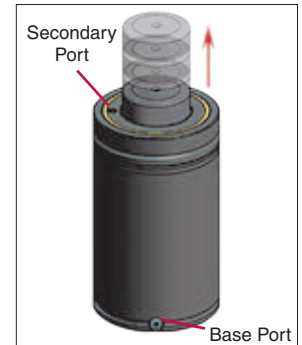
Application Examples



F.1



F.2



DADCO recommends using 90.10 DS cylinders in each corner of the die for well balanced die separation (F.1.). 90.10 DS cylinders are a direct replacement for traditional die storage components and do not need to be removed from the die before installation into the press. When installed in corners, striker plates provide a flat, hardened surface for impact. Refer to the Recommended Max Lifting Load table below to verify the load does not exceed the recommended limit.

During operation 90.10 DS cylinders return at a slower rate than traditional gas springs (F.2.). Before servicing the die, verify rods are fully extended (may take up to 3 minutes). **If rods do not fully extend, gas spring requires service. Pressure must be exhausted at the Base Port before venting the Secondary Port. For more information contact DADCO.**

Recommended Max Lifting Load

Model	03000		05000		07500	
	kg	lb.	kg	lb.	kg	lb.
# of Units						
4	9600	21180	16230	35790	24600	54220
6	14410	31770	24350	53690	36890	81340

Operating Specifications

Charging Medium: Nitrogen Gas
 Charging Pressure Range: 15 - 150 bar (220 - 2175 psi)
 Operating Temperature: 4°C - 71°C (40°F - 160°F)
 Maximum Speed: 1.6 m/sec (63 in/sec)

CAUTION

- Slow return stroke: may take 3 minutes for full rod extension.
- DO NOT attempt maintenance on spring until internal pressure is exhausted.
- Exhaust pressure at Base Port first.
- Release any remaining pressure from Secondary Port to verify complete exhaust.

DADCO®

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The global leader in nitrogen gas spring technology