N-FORCER®

CN Series
7/16 - 20 Port

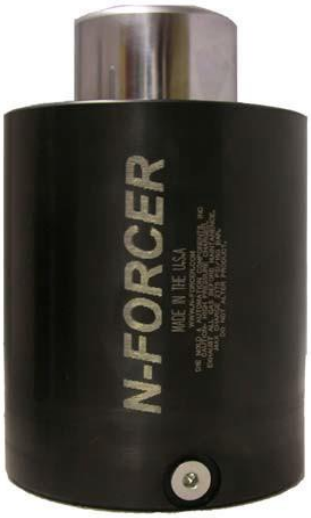
3/4 TON TO 8 TONS OF FORCE ON CONTACT

NO GROW -- CARTRIDGE DESIGN

SELF CONTAINED AND HOSED SYSTEMS

WELDED MOUNT CONSTRUCTION
(old Ford & GM standard)

See "IS" Series for NAMMS Standard with G1/8 Port

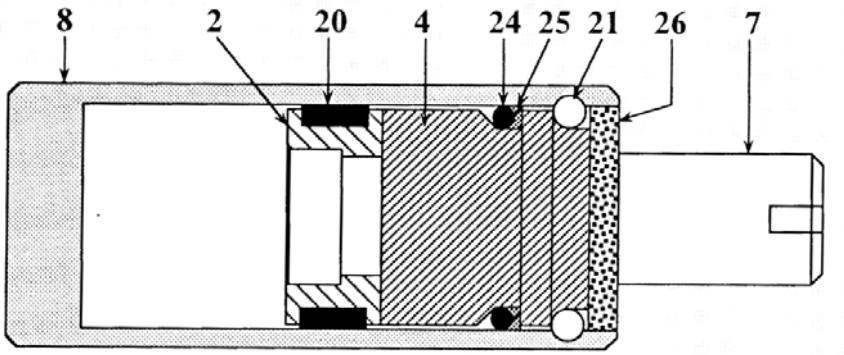


Die, Mold & Automation Components, Inc. 14400 Henn Street Dearborn, MI 48126
Phone : 1.800.220.2242 www.n-forcer.com

N-FORCER ®

“CN” & "IS" SERIES PARTS LIST

CN & IS Series repair kits & parts are interchangeable.



Individual repair parts:

8. Tube Assembly P/N: ***N(# # #)-08(# #)***
2. Piston Rod Retainer P/N: ***N(# # #) -02***
20. Wear Ring P/N: ***N(# # #) -20***
4. Cartridge P/N: ***N(# # #) -4C***
24. Cartridge O-ring P/N: ***N(# # #) -24***
25. O-ring back-up P/N: ***N(# # #) -25***
21. Retaining Rings P/N: ***N333 -21***
26. End Cover P/N: ***N(# # #) -26***
7. Piston Rod P/N: ***N(# # #) -07(# #)***

#= (Series Number)
= (Stroke)

STANDARD REPAIR KITS

Standard Repair Kit P/N:
CN (# # #) - RK-21

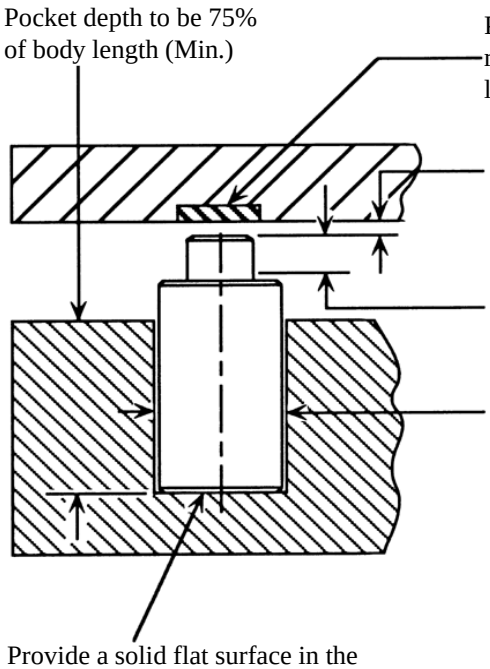
Example: CN300-RK-21
This represents a repair kit for a 3 ton cylinder with a Garloc Bearing

Repair Kit Contents:

Complete Cartridge (#4)
Wear Ring (#20)
Rod End Cover (#26)
Valve
Bottle of Oil

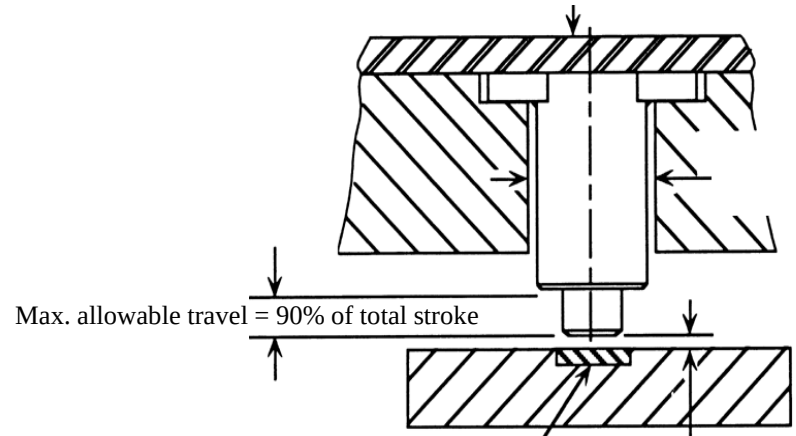
MOUNTING RECOMMENDATIONS

Drop in Model - Vertical Mount

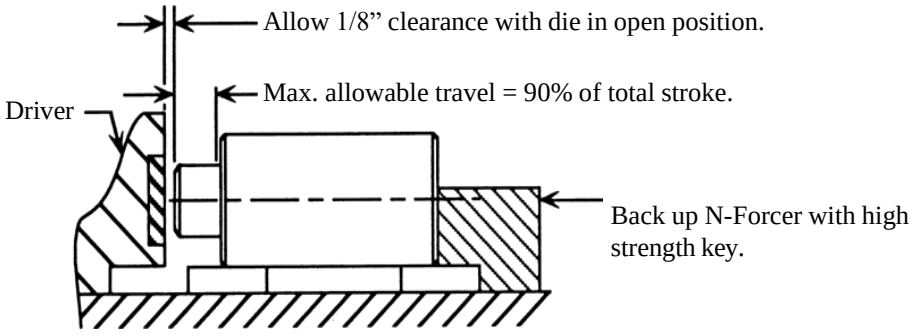


Inverted Vertical Mount with Welded Lugs

Provide a solid plate to reinforce the mounting lugs of the N-Forcer.

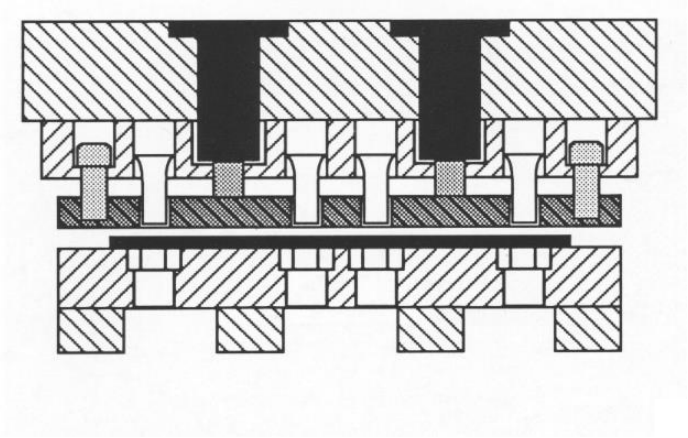


Horizontal Mount for Cam Slide Application



PRACTICAL APPLICATIONS

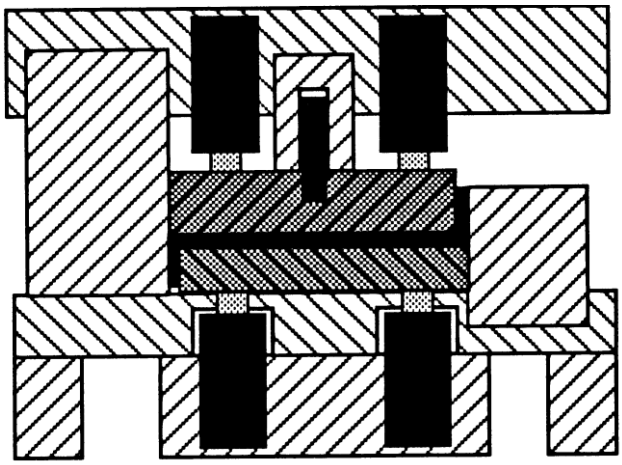
STRIPPING



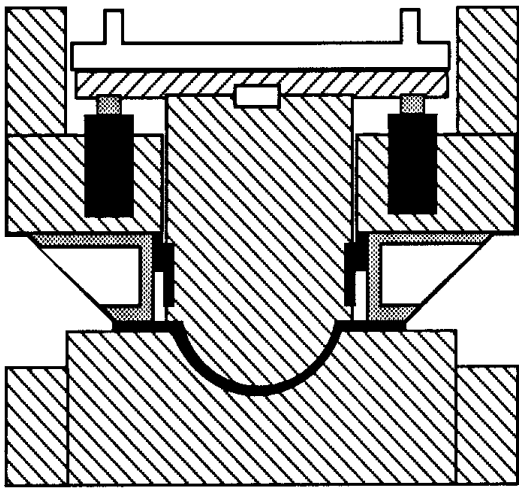
Nitrogen die springs curtail that ever present situation of broken punches due to uneven pressures on the stripper plates. They also give the high pressures needed on those difficult stripping jobs.

CONVENTIONAL DRAW

This is a very common use for nitrogen cylinders in the upper half of die as many progressive dies re- quire the parts to be drawn in this manner.



FLOATING PUNCH

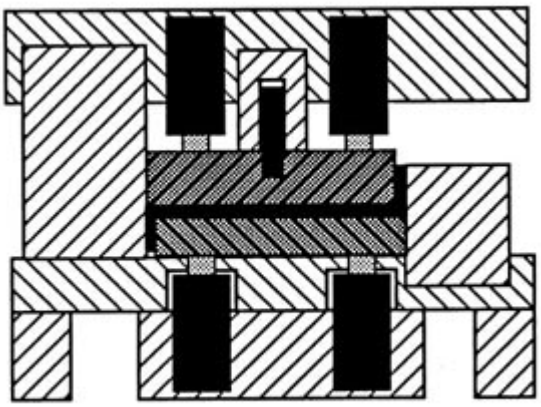


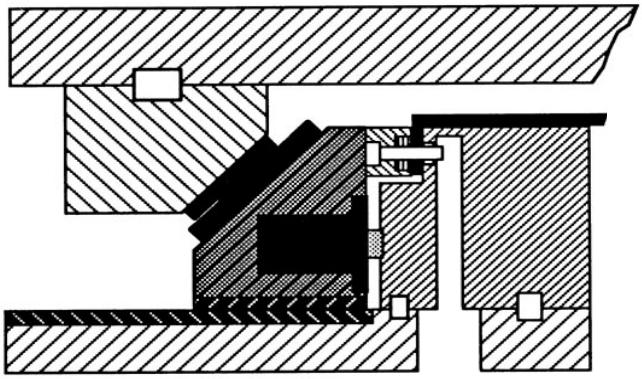
In this application the draw punch is not attached to the inner slide. Instead, the punch is suspended on self-contained cylinders mounted into the blank holder plate or the upper shoe. This re-duces die setting time and makes the punch more accessible for refinishing in the press.

PRACTICAL APPLICATIONS

DOUBLE ACTION FORMING

Forming in two directions is accomplished very easily using nitrogen die springs. By varying the pressure in the cylinders, you can attain the correct forcers needed to produce quality parts.



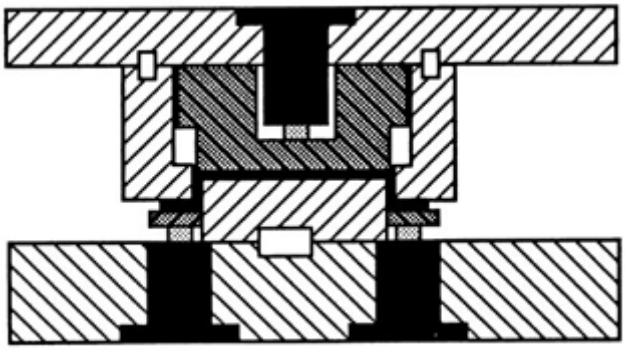


CAM RETURN

Cam returns are an excellent application for nitrogen die springs. As the nitrogen die springs eliminate the sometimes-awkward long coil springs required to produce enough pressure to return the cams.

INVERTED DRAW

With the high forces available on contact the nitrogen die springs are an excellent alternative to coil die springs. The ability to vary the forces generated by the nitrogen die springs also gives you better control over your final products.



FORCE CHARTS

Maximum Force Based On 2000 PSI Charge

If charging pressure is less than 2000 PSI, force is reduced proportionately (EXAMPLE: Forces listed on chart are multiplied by .75 at 1500PSI, by .50 at 1000 PSI etc.)

CN075

Cylr. Stroke	Nominal Travel												
	.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
.5	1520	2507											
1.0	1520	1893	2507										
1.5	1520	1750	2061	2507									
2.0	1520	1686	1893	2157	2507								
2.5	1520	1650	1804	1990	2219	2507							
3.0	1520	1627	1750	1893	2061	2262	2057						
3.5	1520	1611	1713	1829	1961	2115	2294	2507					
4.0	1520	1599	1686	1783	1893	2016	2157	2319	2507				
4.5	1520	1590	1666	1750	1842	1946	2061	2191	2339	2507			
5.0	1520	1582	1650	1724	1804	1893	1990	2098	2219	2354	2507		
5.5	1520	1576	1637	1703	1774	1851	1936	2028	2130	2243	2368	2507	
6.0	1520	1572	1627	1686	1750	1818	1893	1973	2061	2157	2262	2379	2507

CN150

Cylr. Stroke	Nominal Travel												
	.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
.5	3160	4696											
1.0	3160	3778	4696										
1.5	3160	3547	4041	4696									
2.0	3160	3441	3778	4187	4696								
2.5	3160	3381	3636	3932	4280	4696							
3.0	3160	3342	3547	3778	4041	4344	4696						
3.5	3160	3315	3486	3675	3886	4123	4391	4696					
4.0	3160	3295	3441	3602	3778	3972	4187	4427	4696				
4.5	3160	3279	3408	3547	3698	3862	4041	4238	4456	4696			
5.0	3160	3267	3381	3504	3636	3778	3932	4098	4280	4479	4696		
5.5	3160	3257	3360	3470	3587	3712	3846	3991	4146	4315	4497	4696	
6.0	3160	3249	3342	3441	3547	3659	3778	3905	4041	4187	4344	4513	4696

CN300

Cylr. Stroke	Nominal Travel												
	.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
.5	6080	9971											
1.0	6080	7554	9971										
1.5	6080	6989	8216	9971									
2.0	6080	6737	7554	8596	9971								
2.5	6080	6595	7205	7939	8840	9971							
3.0	6080	6503	6989	7554	8218	9010	9971						
3.5	6080	6439	6843	7301	7825	8430	9136	9971					
4.0	6080	6392	6737	7122	7554	8041	8596	9233	9971				
4.5	6080	6356	6657	6989	7356	7763	8218	8730	9309	9971			
5.0	6080	6327	6595	6886	7205	7554	7939	8365	8840	9371	9971		
5.5	6080	6304	6544	6804	7085	7391	7724	8089	8489	8932	9423	9971	
6.0	6080	6284	6503	6737	6989	7261	7554	7872	8218	8596	9010	9466	9971

CN500

Cylr. Stroke	Nominal Travel												
	.0	.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
.5	10314	13670											
1.0	10314	12100	14643										
1.5	10314	11531	13073	15092									
2.0	10314	11237	12341	13686	15352								
2.5	10314	11096	12006	13079	14356	15517							
3.0	10314	10936	11638	12436	13347	14408	15651						
3.5	10314	10849	11442	12104	12845	13685	14642	15744					
4.0	10314	10783	11297	11862	12485	13178	13954	14827	15816				
4.5	10314	10732	11185	11678	12214	12804	13454	14174	14975	15871			
5.0	10314	10691	11096	11533	12004	12517	13076	13687	14357	15098	15918		
5.5	10314	10657	11023	11416	11836	12289	12779	13309	13885	14514	15202	15955	
6.0	10314	10629	10963	11319	11697	12104	12539	13007	13511	14056	14646	15286	15987

CN800 SERIES INFO ON PG18

LONGER STROKES ARE AVAILABLE IN "IS" SERIES. CUSTOM STROKES ARE ALSO AVAILABLE.

N-FORCER ®
ORDERING PROCEDURE "CN" CARTRIDGE SERIES

WHEN ORDERING CYLINDERS, PLEASE USE THE FOLLOWING FORMAT.

1.	2.		3.		4.		5.	6.
CN	300	X	4	-	RF	-	2000	21

NOTE: CYLINDERS WILL BE SPECIFIED AS NOMINAL INCH STROKES ON ALL PACKING SLIPS AND INVOICES.

1. Series: ***CN*** (Self contained specify charging pressure)
CNB (7/16-20 SAE Port for hosed system, no pressure specified, shipped without a valve)
CNF *Special Order (Modified to 1/2" - 20 SAE port for hosed systems no pressure specified).

2. Tonnage: 075 (3/4 ton) - 150 (1 1/2 ton) - 300 (3 ton) - 500 (5 ton)

3. Stroke Length: Inch - Nominal Strokes (1/2" to 6" in 1/2" increments)
Available Strokes (mm) ~ 12.5, 25, 38.1, 50, 63.5, 75, 88.9 100, 114.3, 125, 139.7, 150

4. Mounting Style: Detailed on pages 10 through 13.

5. Charging Pressure: (specify) 200 PSI minimum to 2000 PSI maximum
Metric - 150 Bar maximum.

6. Rod Bearing – 21 (or Blank) Garloc Bearing (standard).

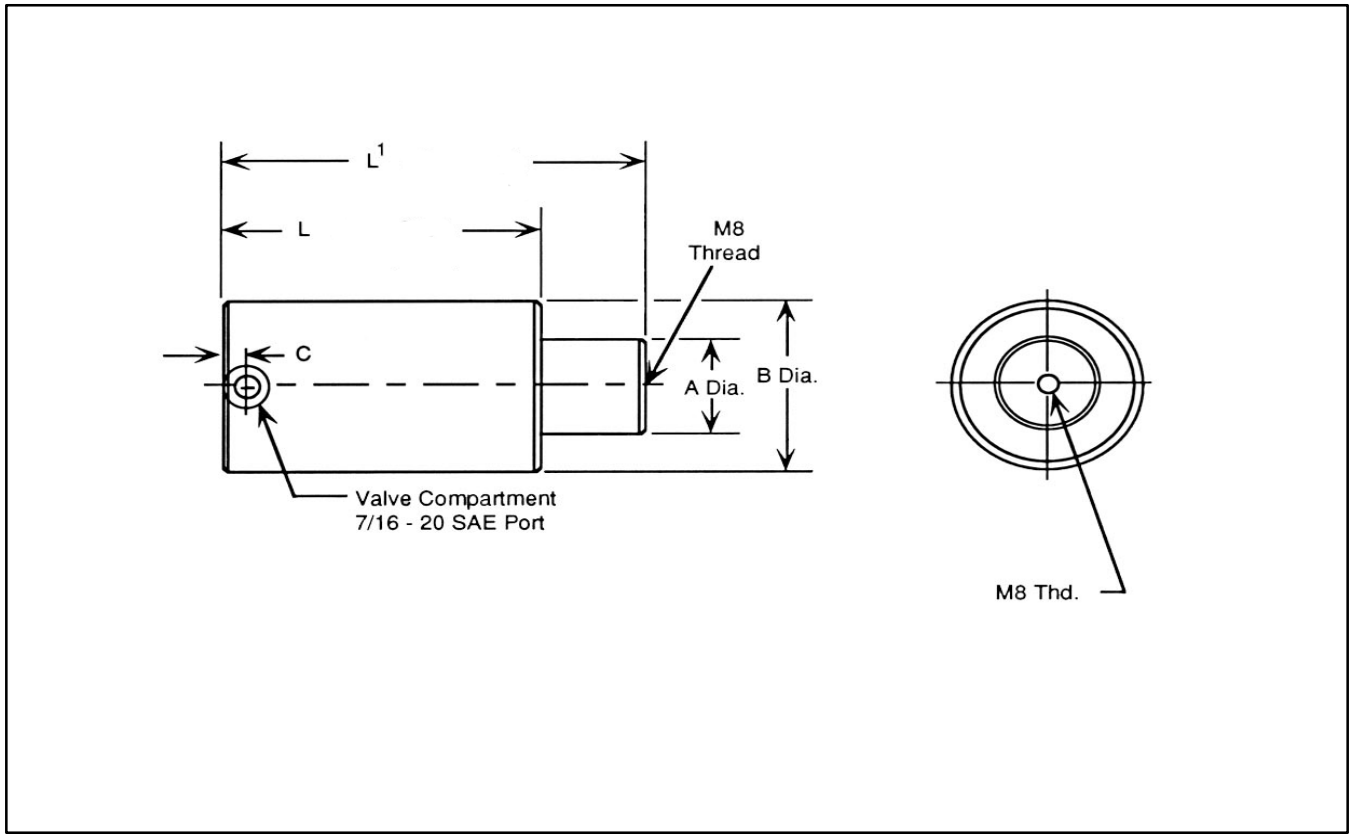
REPAIR KITS: Specify series, tonnage:

EXAMPLE: CN300-RK-21

This represents a repair kit for a 3 ton cylinder

MOUNTING SYLE “O”

Basic Drop - In Cylinder



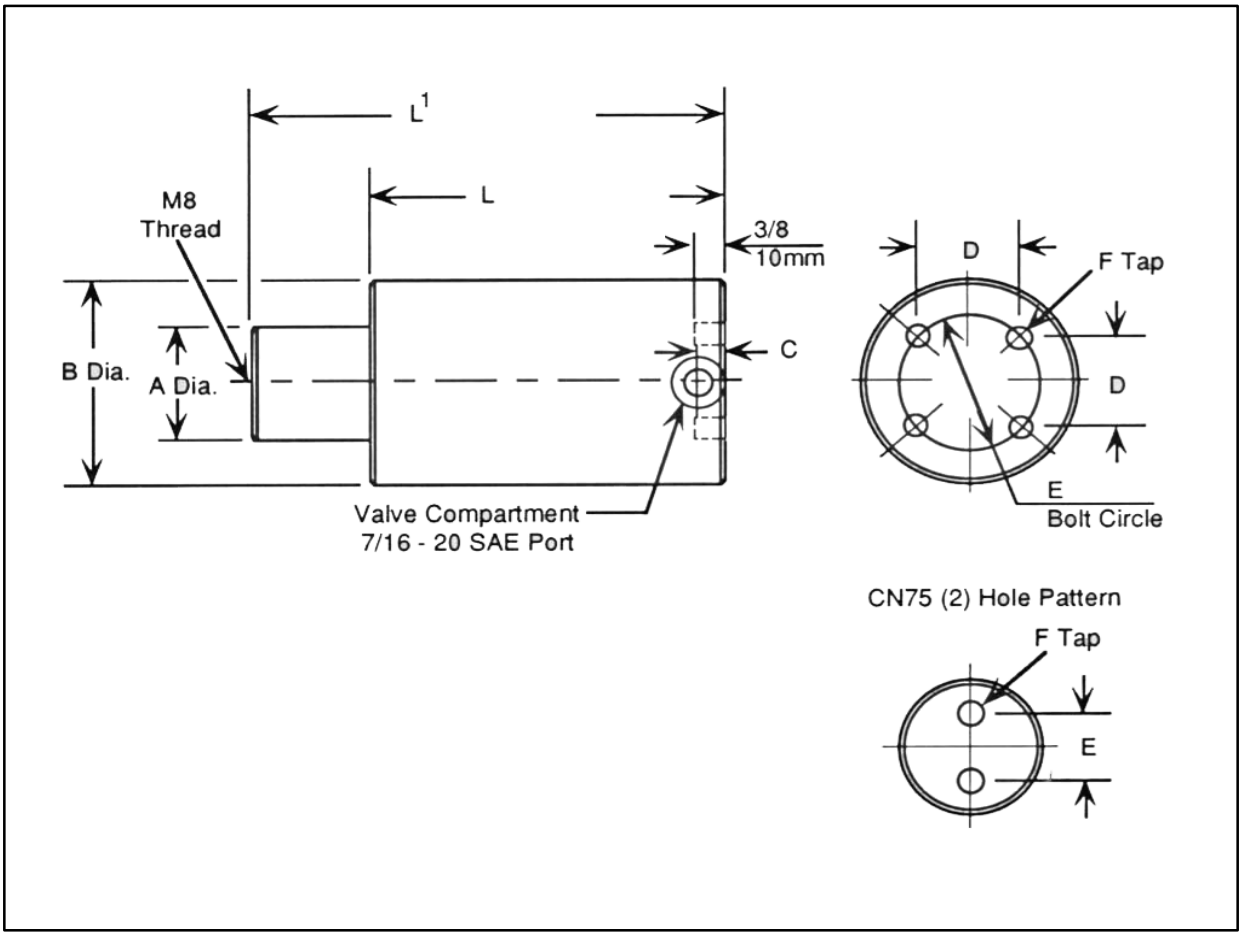
See page 16 for Stroke Dimension Charts

MODEL	A	B	C
CN075	.98	1.98	.407
	25	50	10.3
CN150	1.42	2.98	.407
	36	75	10.3
CN300	1.97	3.73	.427
	50	95	10.8
CN500	2.56	4.72	.427
	65	120	10.8

CN800 Series information is on Page 18.

METRIC DIMENSIONS ARE IN SHADED AREA

MOUNTING SYLE “D”
Drilled Base



See page 16 for Stroke Dimension Charts

**Other bolt hole patterns and thread styles available on request.

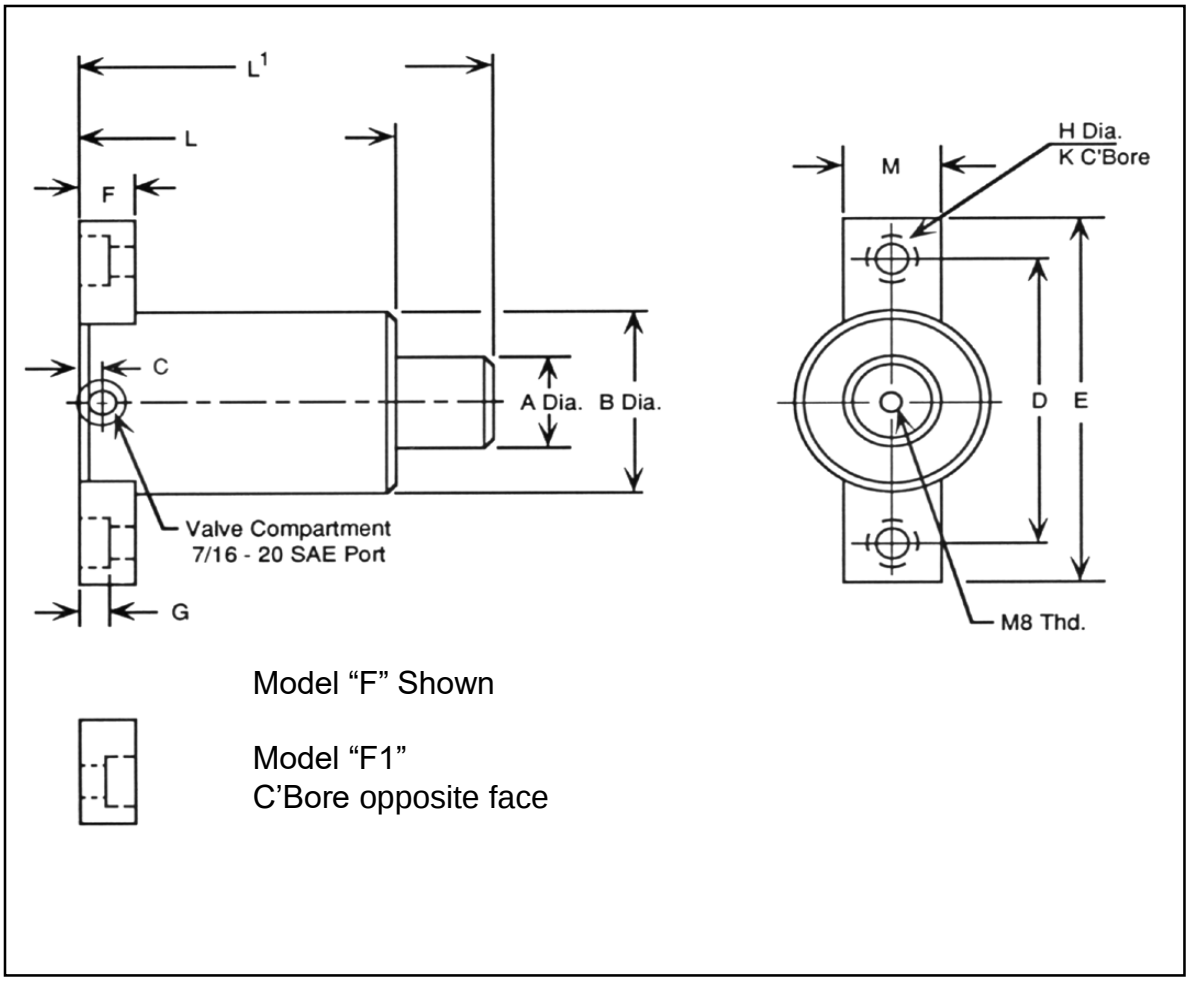
“D” = English Threads.
“DM” = Metric Threads.

MODEL	A	B	D	E	F	C	Threaded holes
CN075-D	.98	1.98	N/A	.79	*1/4-20*	.407	2
CN075-DM	25	50	N/A	20	*M6x1*	10.3	2
CN150-D	1.42	2.98	1.11	1.57	*5/16-18*	.407	4
CN150-DM	36	75	28	40	*M8x1.25*	10.3	4
CN300-D	1.97	3.73	1.67	2.36	*3/8-16*	.427	4
CN300-DM	50	95	42.5	60	*M10x1.5*	10.8	4
CN500-D	2.56	4.72	2.12	3.00	*3/8-16*	.427	4
CN500-DM	65	120	54	76	*M10x1.5*	10.8	4

METRIC DIMENSIONS ARE IN SHADED AREA

MOUNTING SYLE “F”

Rear Lug Mount



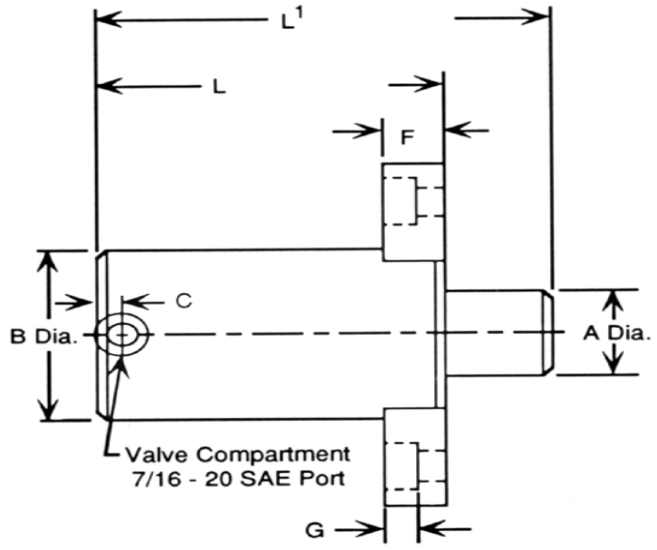
See page 16 for Stroke Dimension Charts

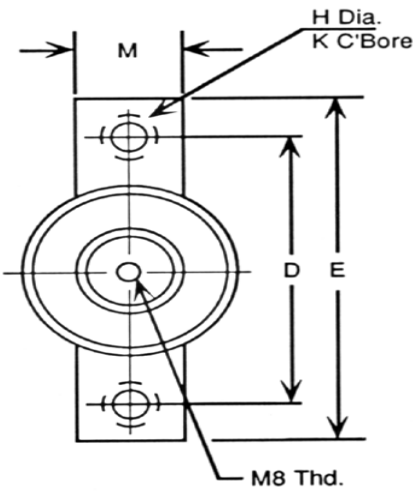
MODEL	A	B	D	E	F	G	H	K	M	C
CN075	.98	1.98	3.50	4.25	.75	.41	.43	.70	1.25	.407
	25	50	89	110	19	11	11.0	18	32	10.3
CN150	1.42	2.98	4.75	6.00	.75	.53	.53	.78	1.50	.407
	36	75	121	152	19	13	13.5	20	38	10.3
CN300	1.97	3.73	5.75	7.00	.75	.53	.53	.78	1.50	.427
	50	95	146	178	19	13	13.5	20	38	10.8
CN500	2.56	4.72	6.50	7.75	.75	.53	.53	.78	1.50	.427
	65	120	165	196	19	13	13.5	20	38	10.8

METRIC DIMENSIONS ARE IN SHADED AREA

MOUNTING SYLE “OF”

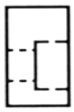
Front Lug Mount





Model “OF” Mount Shown

Model “OF1” C’Bore Opposite Face.



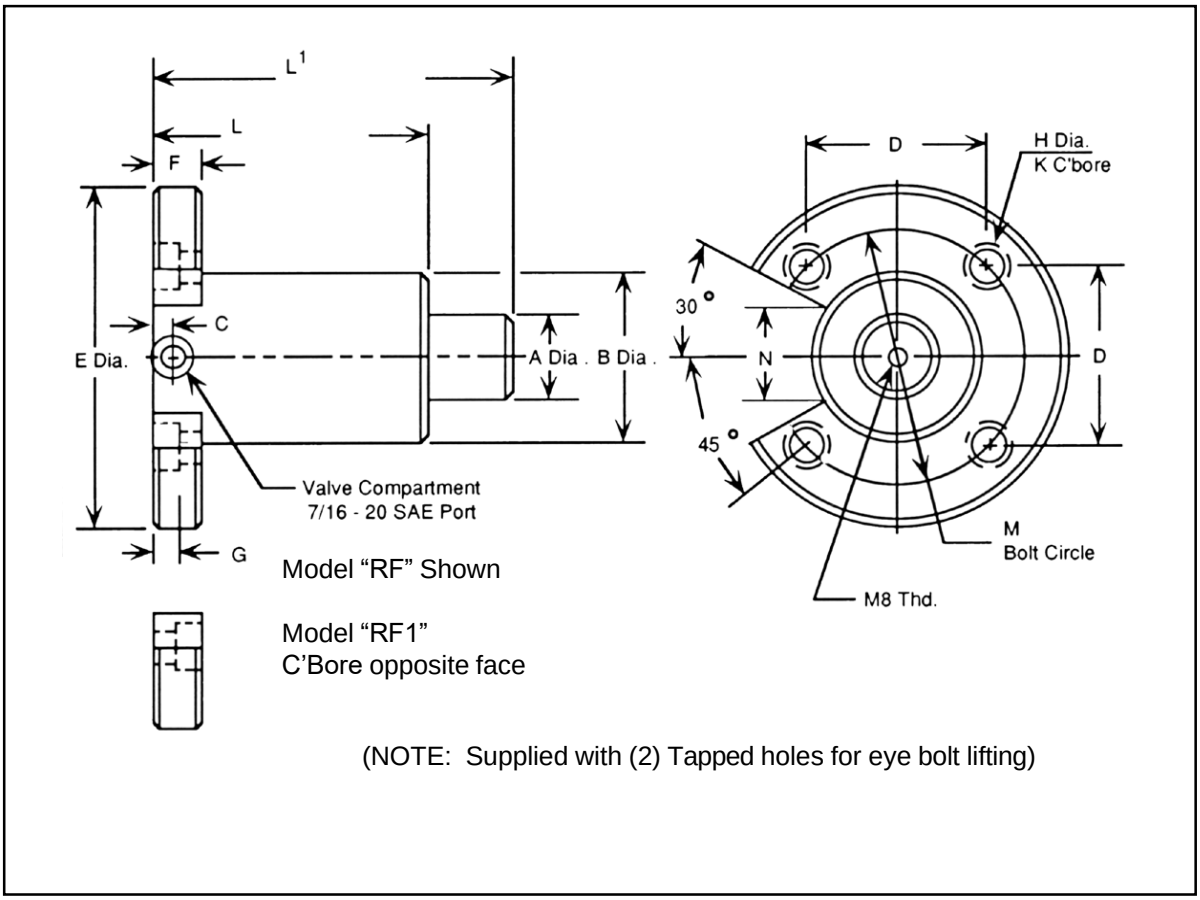
See page 16 for Stroke Dimension Charts

MODEL	A	B	D	E	F	G	H	K	M	C
CN075	.98	1.98	3.50	4.25	.75	.41	.43	.70	1.25	.407
	25	50	89	110	19	11	11.0	18	32	10.3
CN150	1.42	2.98	4.75	6.00	.75	.53	.53	.78	1.50	.407
	36	75	121	152	19	13	13.5	20	38	10.3
CN300	1.97	3.73	5.75	7.00	.75	.53	.53	.78	1.50	.427
	50	95	146	178	19	13	13.5	20	38	10.8
CN500	2.56	4.72	6.50	7.75	.75	.53	.53	.78	1.50	.427
	65	120	165	196	19	13	13.5	20	38	10.8

METRIC DIMENSIONS ARE IN SHADED AREA

MOUNTING SYLE “RF”

Rear Flange Mount



See page 16 for Stroke Dimension Charts

MODEL	A	B	D	E	F	G	H	K	M	N	C
CN075	.98	1.98	2.48	4.50	.75	.41	.43	.70	3.50	1.75	.407
	25	50	63	114	19	11	11.0	18	88.9	45	10.3
CN150	1.42	2.98	3.36	5.98	.75	.53	.53	.78	4.75	1.87	.407
	36	75	85	151	19	13.5	13.5	20	120.6	51	10.3
CN300	1.97	3.73	3.89	6.75	1.00	.53	.53	.78	5.50	1.87	.427
	50	95	99	171	25	13.5	13.5	20	139.7	51	10.8
CN500	2.56	4.72	4.60	7.7	1.00	.66	.69	1.02	6.50	1.87	.427
	65	120	117	195	25	17	17.5	26	165.1	51	10.8

METRIC DIMENSIONS ARE IN SHADED AREA

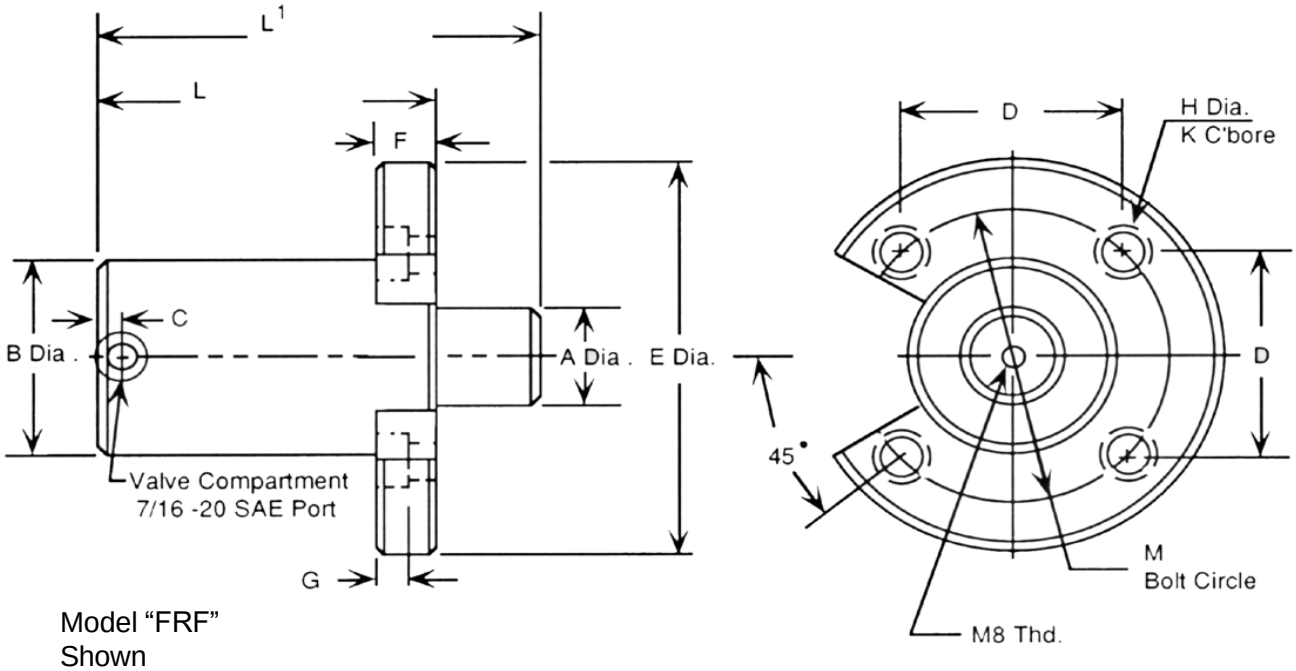
Made in the USA

N-FORCER

GAS Springs Since 1986

MOUNTING SYLE “FRF”

Front Flange Mount



Model “FRF” Shown

Model “FRF1” C’Bore opposite face

NOTE: Supplied with (2) Tapped holes for eye bolts

See page 16 for Stroke Dimension Charts

MODEL	A	B	D	E	F	G	H	K	M	N	C
CN075	.98	1.98	2.48	4.50	.75	.41	.43	.70	3.50	1.75	.407
	25	50	63	114	19	11	11.0	18	88.9	45	10.3
CN150	1.42	2.98	3.36	5.98	.75	.53	.53	.78	4.75	1.87	.407
	36	75	85	151	19	13.5	13.5	20	120.6	51	10.3
CN300	1.97	3.73	3.89	6.75	1.00	.53	.53	.78	5.50	1.87	.427
	50	95	99	171	25	13.5	13.5	20	139.7	51	10.8
CN500	2.56	4.72	4.60	7.71	1.00	.66	.69	1.02	6.50	1.87	.427
	65	120	117	195	25	17	17.5	26	165.1	51	10.8

METRIC DIMENSIONS ARE IN SHADED AREA

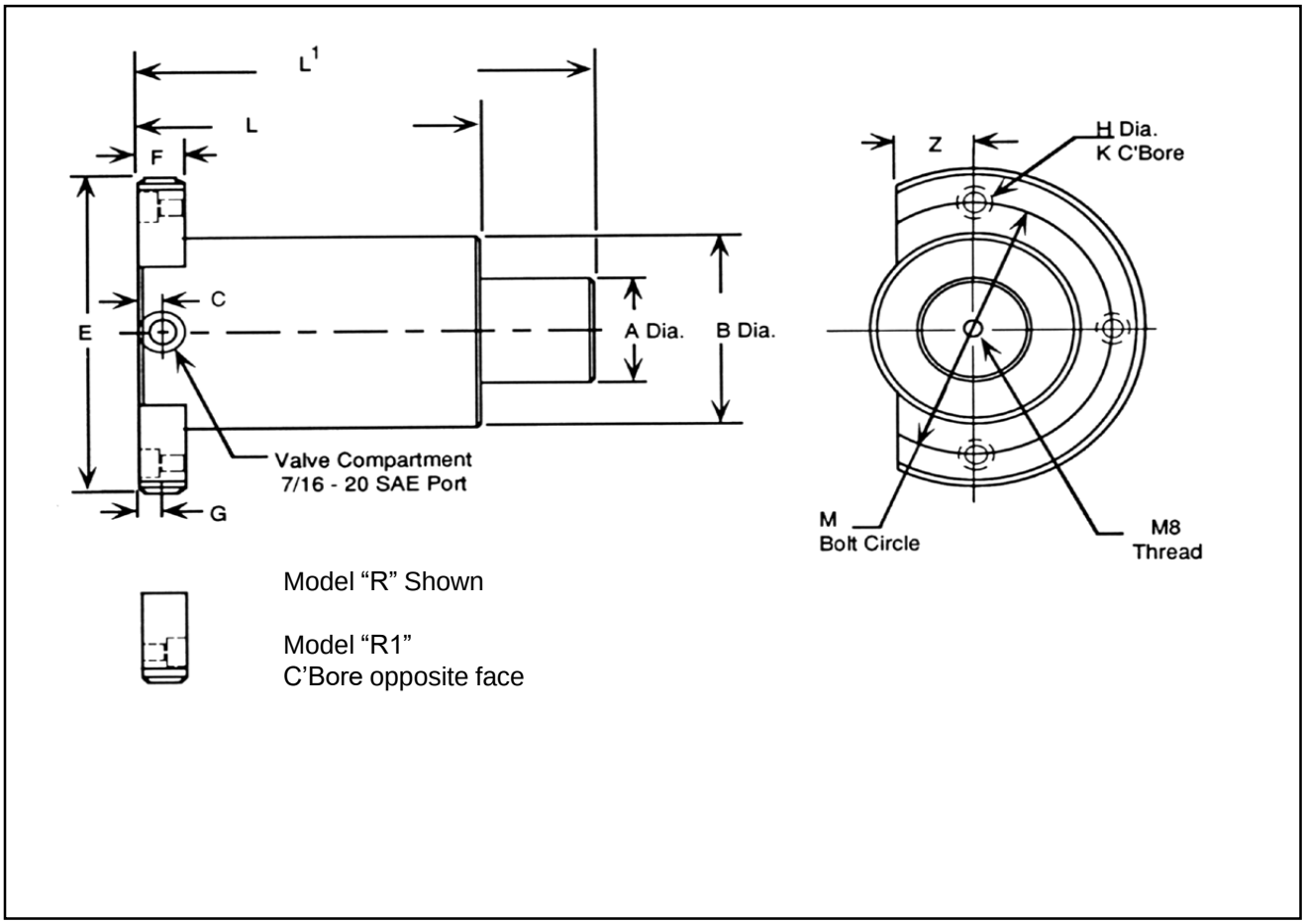
Made in the USA

N-FORCER

GAS Springs Since 1986

MOUNTING SYLE “R”

Three Hole Rear Flange Mount



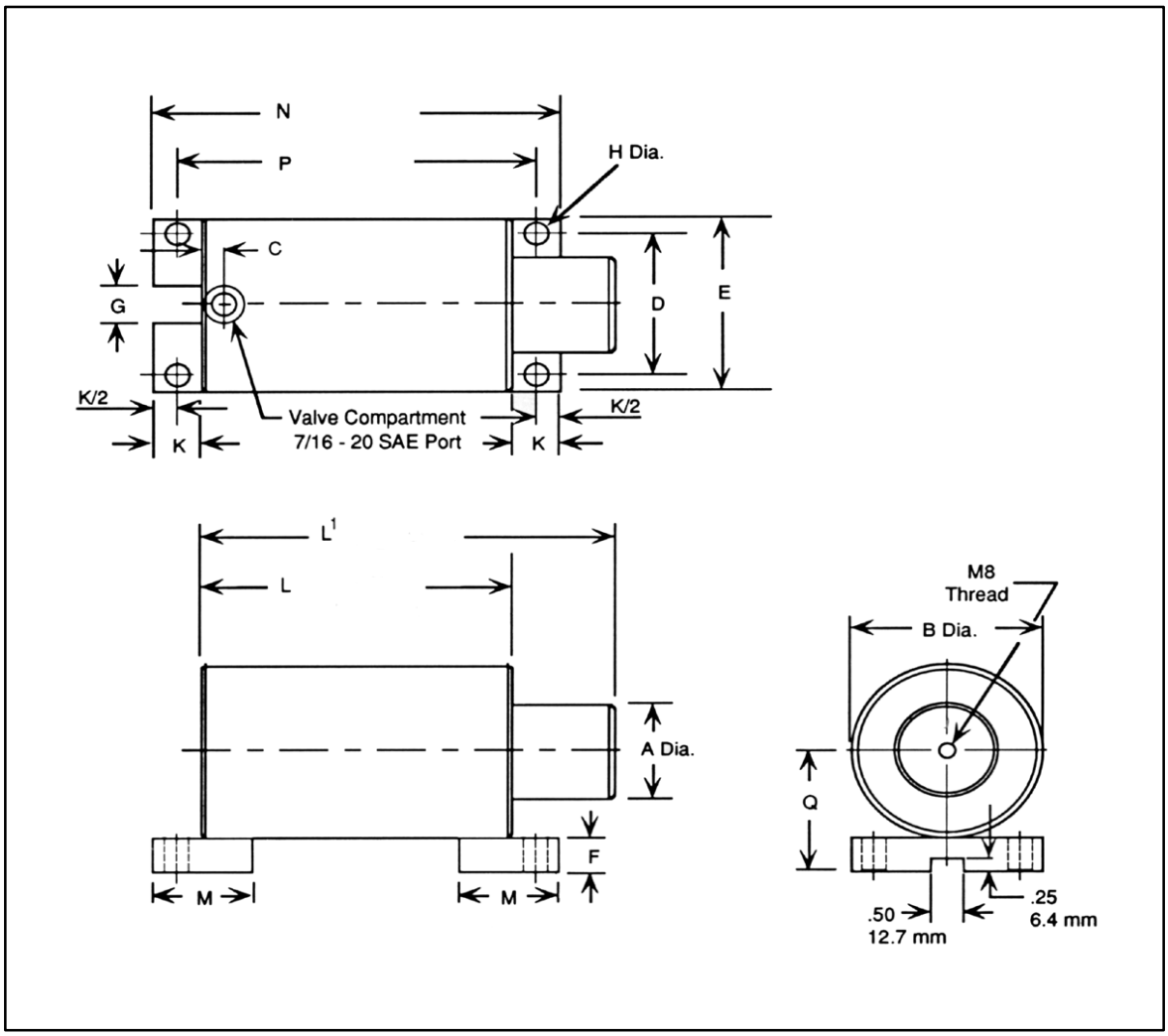
See page 16 for Stroke Dimension Charts

MODEL	A	B	D	E	F	G	H	K	M	N	C
CN075	.98	1.98	2.48	4.50	.75	.41	.43	.70	3.50	1.75	.407
	25	50	63	114	19	11	11.0	18	88.9	45	10.3
CN150	1.42	2.98	3.36	5.98	.75	.53	.53	.78	4.75	1.87	.407
	36	75	85	151	19	13.5	13.5	20	120.6	51	10.3
CN300	1.97	3.73	3.89	6.75	1.00	.53	.53	.78	5.50	1.87	.427
	50	95	99	171	25	13.5	13.5	20	139.7	51	10.8
CN500	2.56	4.72	4.60	7.71	1.00	.66	.69	1.02	6.50	1.87	.427
	65	120	117	195	25	17	17.5	26	165.1	51	10.8

METRIC DIMENSIONS ARE IN SHADED AREA

MOUNTING SYLE “SK”

Side Mount – Keyed



See page 17 for Stroke Dimension Charts (L, L1, N, P)

MODEL	A	B	D	E	F	G	H	K	M	Q	C
CN075	.98	1.98	1.6	2.36	.50	.86	.43	.87	2.0	1.5	.407
	25	50	42	60	13	22	11.0	22	51	38	10.3
CN150	1.42	2.98	2.25	3.00	.75	1.26	.53	1.12	2.0	2.2	.407
	36	75	57	75	19	32	13.5	28	51	56.	10.3
CN300	1.97	3.73	3.00	3.75	.75	1.65	.53	1.12	2.0	2.6	.427
	50	95	76	95	19	42	13.5	28	51	66.	10.8
CN500	2.56	4.72	3.75	4.75	.75	2.04	.53	1.12	2.0	3.1	.427
	65	120	95	120	19	52	13.5	28	51	79	10.8

METRIC DIMENSIONS ARE IN SHADED AREA

Stroke Dimension Charts

Stroke Length - Inches (Metric is Shaded Blue)

CN075	Nominal	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
	Actual	(12.7)	25	38.1	50	63.5	75	88.9	100	114.3	125	139.7	150
(Tube Length)	L	4.25	4.73	5.25	5.72	6.25	6.70	7.25	7.69	8.25	8.67	9.25	9.66
		107.9	120.0	133.3	145.0	158.7	170.0	184.1	195.0	209.5	220.0	234.9	245.0
(Overall Length)	L_1	4.74	5.71	6.74	7.68	8.74	9.65	10.74	11.62	12.74	13.58	14.74	15.56
		120.4	145.0	171.2	195.0	222.0	245.0	272.8	295.0	323.6	345.0	374.4	395.0

Stroke Length - Inches (Metric is Shaded Blue)

CN150	Nominal	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
	Actual	12.7	25	38.1	50	63.5	75	88.9	100	114.3	125	139.7	150
(Tube Length)	L	4.83	5.31	5.83	6.30	6.83	7.28	7.28	8.27	8.83	9.25	9.83	10.24
		122.7	135.0	148.1	160.0	173.5	185.0	198.0	210.0	224.3	235.0	249.6	260.0
(Overall Length)	L_1	5.33	6.30	7.33	8.27	9.33	10.24	11.33	12.21	13.33	14.17	15.33	16.14
		135.4	160.0	186.2	210.0	237.0	260.0	287.8	310.0	338.6	360.0	420.0	410.0

Stroke Length - Inches (Metric is Shaded Blue)

CN300	Nominal	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
	Actual	12.7	25	38.1	50	63.5	75	88.9	100	114.3	125	139.7	150
(Tube Length)	L	5.22	5.70	6.22	6.69	7.22	7.67	8.22	8.66	9.22	9.64	10.22	10.63
		132.6	145.0	158.0	170.0	183.4	195.0	208.8	220.0	234.2	245.0	259.6	270.0
(Overall Length)	L_1	5.72	6.69	7.72	8.66	9.72	10.63	11.72	12.60	13.72	14.56	15.72	16.53
		145.4	170.0	196.2	220.0	247.0	270.0	297.8	320.0	348.6	370.0	399.4	420.0

Stroke Length - Inches (Metric is Shaded Blue)

CN500	Nominal	.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
	Actual	12.7	25	38.1	50	63.5	75	88.9	100	114.3	125	139.7	150
(Tube Length)	L	6.00	6.48	7.00	7.47	8.00	8.45	9.00	9.44	10.00	10.42	11.00	11.41
		152.4	165.0	177.8	190.0	203.2	215.0	228.6	240.0	254.0	265.0	279.4	290.0
(Overall Length)	L_1	6.51	7.48	8.51	9.45	10.51	11.41	12.51	13.38	14.51	15.35	16.51	17.32
		165.4	190.0	216.2	240.0	267.0	290.0	317.8	340.0	368.6	390.0	419.4	440.0

Stroke Dimension Charts

"N" & "P" dimensions are only for "SK" type mounts shown on Page 15.

Stroke Length - Inches (Metric is Shaded Blue)

CN075 Nominal Actual

		.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
		12.7	25	38.1	50	63.5	75	88.9	100	114.3	125	139.7	150
Tube Length	L	4.25	4.73	5.25	5.72	6.25	6.70	7.25	7.69	8.25	8.67	9.25	9.66
		107.9	120.0	133.3	145.0	158.7	170.0	184.1	195.0	209.5	220.0	234.9	245.3
Overall Length	L 1	4.74	5.71	6.74	7.68	8.74	9.65	10.74	11.61	12.74	13.58	14.74	15.55
		120.4	145.0	171.2	195.0	222.0	244.0	272.8	295.0	323.6	345.0	374.4	395.0
Mount Length	N	5.94	6.42	6.94	7.41	7.94	8.39	8.94	9.38	9.94	10.36	10.94	11.35
		150.8	163.0	176.3	188.2	201.7	213.1	227.0	238.4	252.4	263.1	277.8	288.3
Hole Center Distance	P	5.10	5.59	6,10	6.57	7.10	7.56	8.10	8.54	9.10	9.52	10.10	10.51
		129.7	142	155.1	167	180.5	192	205.9	217	231.3	242	256.7	267

Stroke Length - Inches (Metric)

CN150 Nominal Actual

		.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
		12.7	25	38.1	50	63.5	75	88.9	100	114.3	125	139.7	150
Tube Length	L	4.83	5.31	5.83	6.30	6.83	7.28	7.83	8.27	8.83	9.25	9.83	10.24
		122.7	135.0	148.2	160.0	173.5	185.0	198.9	210.0	224.2	234.9	249.6	260.0
Overall Length	L 1	5.33	6.30	7.33	8.27	9.33	10.24	11.33	12.21	13.33	14.17	15.33	16.14
		135.4	160.0	186.2	210.0	237.0	260.0	287.8	310.0	338.6	360.0	389.4	410.0
Mount Length	N	6.94	7.42	7.94	8.41	8.94	9.39	9.94	10.38	10.94	11.36	11.94	12.35
		176.2	188.4	201.7	213.6	227.0	238.5	252.4	263.6	277.8	288.5	303.2	313.7
Hole Center Distance	P	5.93	6.41	6.93	7.40	7.93	8.38	8.93	9.37	9.93	10.35	10.93	11.34
		150.7	163	176.1	188	201.5	213	226.9	238	252.3	263	277.7	288

Stroke Length - Inches (Metric)

CN300 Nominal Actual

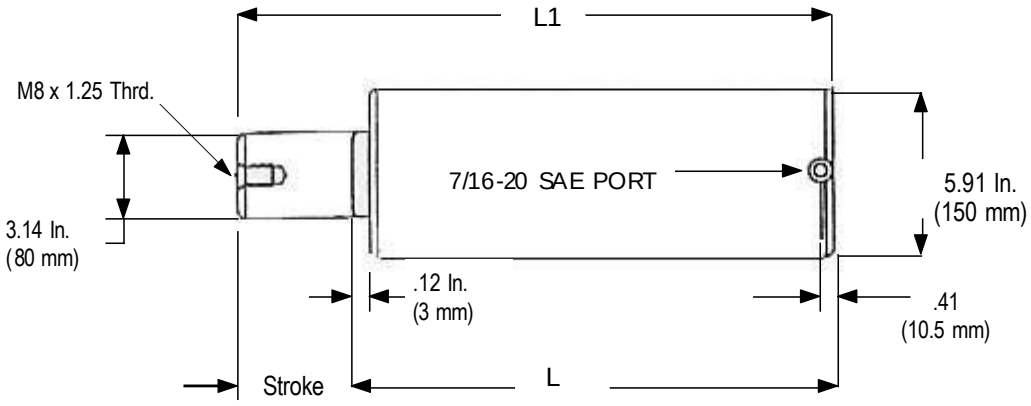
		.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
		12.7	25	38.1	50	63.5	75	88.9	100	114.3	125	139.7	150
Tube Length	L	5.22	5.70	6.22	6.69	7.22	7.67	8.22	8.66	9.22	9.64	10.22	10.63
		132.6	145.0	158.0	170.0	183.4	195.0	208.8	220.0	234.2	245.0	259.6	270.0
Overall Length	L 1	5.72	6.69	7.72	8.66	9.72	10.63	11.72	12.60	13.72	14.56	15.72	16.53
		145.4	170.0	196.2	220.0	247.0	270.0	297.8	320.0	348.6	370.0	399.4	420.0
Mount Length	N	7.38	7.86	8.38	8.85	9.38	9.83	10.38	10.82	11.38	11.80	12.38	12.79
		187.4	199.6	212.8	224.8	238.2	249.6	263.6	275.0	289.0	299.7	314.4	324.8
Hole Center Distance	P	6.32	6.81	7.32	7.79	8.32	8.78	9.33	9.76	10.32	10.74	11.28	11.73
		160.7	173	186.1	198	211.5	223	236.9	248	262.3	273	286.7	298

Stroke Length - Inches (Metric)

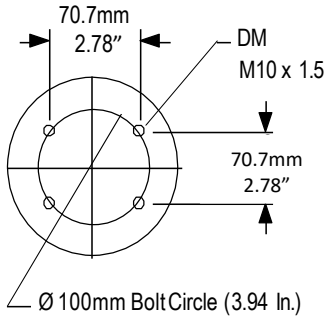
CN500 Nominal Actual

		.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	6.00
		12.7	25	38.1	50	63.5	75	88.9	100	114.3	125	139.7	150
Tube Length	L	6.00	6.48	7.00	7.47	8.00	8.45	9.00	9.44	10.00	10.42	11.00	11.41
		152.4	165.0	177.8	190.0	203.2	215.0	228.6	240.0	254.0	265.0	279.4	290.0
Overall Length	L1	6.51	7.48	8.51	9.45	10.51	11.41	12.51	13.38	14.51	15.35	16.51	17.32
		165.4	190.0	216.2	240.0	267.0	290.0	317.8	340.0	368.6	390.0	419.4	440.0
Mount Length	N	8.25	8.73	9.25	9.72	10.25	10.70	11.25	11.69	12.25	12.67	13.25	13.66
		209.5	221.7	234.9	246.9	260.3	271.7	285.7	296.9	311.1	321.8	336.5	346.9
Hole Center Distance	P	7.11	7.60	8.11	8.58	9.11	9.56	10.11	10.55	11.11	11.53	12.07	12.52
		180.7	193.0	206.1	218.0	231.5	243.0	256.9	268.0	282.3	293.0	306.7	318.0

N-FORCER®
CN800 ~ 8 Ton Basic Mount Style



DM – Metric Tapped Holes in Base



ORDER NO. Model mm	Spring Force In lbs. at 2000 PSI		Max Stroke		L	L	L1	L1
	Initial	Full Stroke	mm	In.	mm	In.	mm	In.
CN800 X 25		24550	25	.98	180	7.10	205	8.07
CN800 X 38.1		25090	38.1	1.50	193	7.60	231	9.10
CN800 X 50		25370	50	1.97	205	8.07	255	10.04
CN800 X 63.5		25560	63.5	2.50	218.5	8.60	282	11.10
CN800 X 75	15580	25675	75	2.95	230	9.06	305	12.01
CN800 X 88.9		25780	88.9	3.50	243.8	9.60	332.7	13.10
CN800 X 100		25840	100	3.94	255	10.04	355	13.98
CN800 X 125		25940	125	4.92	280	11.02	405	15.95
CN800 X 150		26000	150	5.90	305	12.01	455	17.92
CN800 X 203.2		26090	203.2	8.00	357.8	14.09	561	22.10

Force is proportional to charging pressure. Chart shown is based on 2000 psi charging pressure. To obtain the force at 1000 psi multiply chart force by (.5), to obtain force at 1500 psi multiply chart force by (.75).

ORDERING EXAMPLE:

CN800 x 38.1 - DM - 2000

MODEL 8 TON	STROKE Metric/In.	MOUNT STYLE	CHARGING PRESSURE

ACCESSORIES

CA-2000 QD - Charging Assembly with quick disconnect coupling.

Please specify your tank pressure of 4,000 or 6,000 psi. The fittings are unique to each tanks pressure.

HC-1QD - Female Quick Disconnect Coupling

FA-4 Threaded filling adapter

Install 7/16-20 threaded end into valve compartment of cylinder. Thread high pressure hose coupling onto .305-32 end.

FA-4QCD - Quick Disconnect Filling adapter

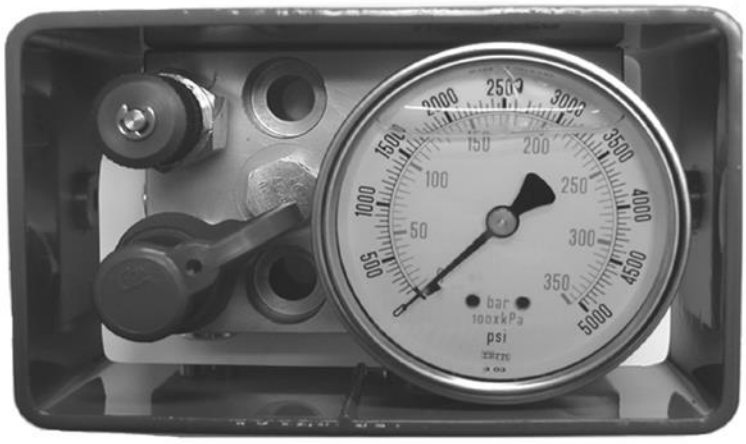
Install 7/16-20 threaded end into valve compartment of cylinder. Attach high pressure hose coupling to male end.

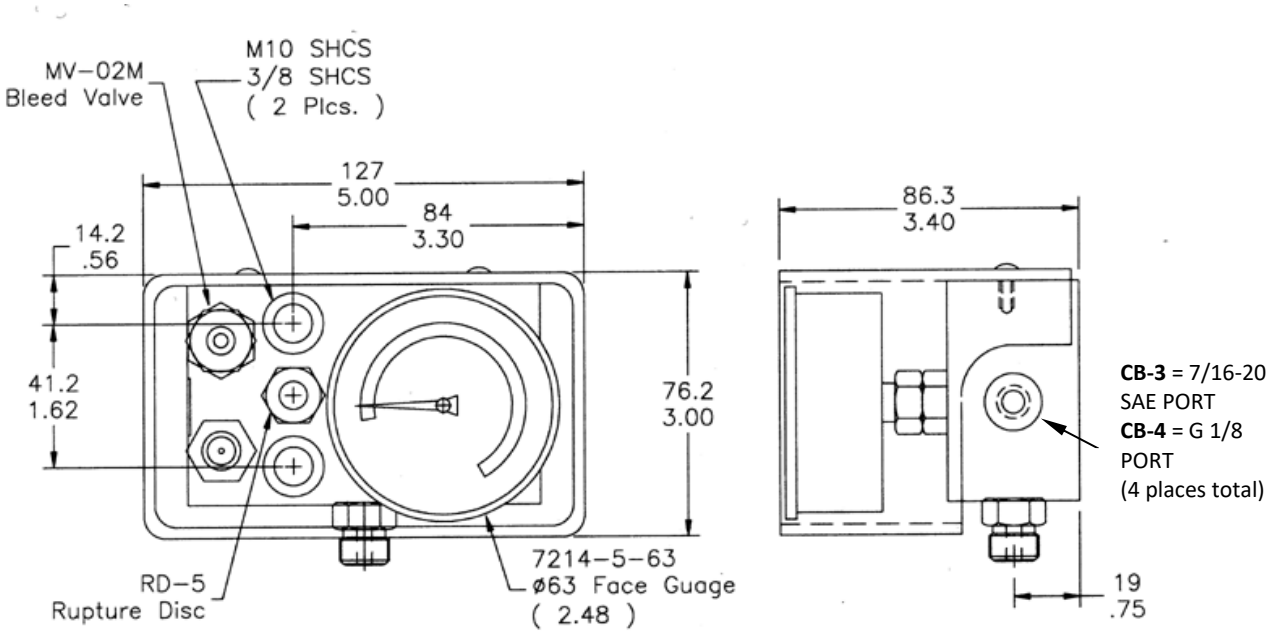
CA-2000 ~ Threaded Goose Neck Only.

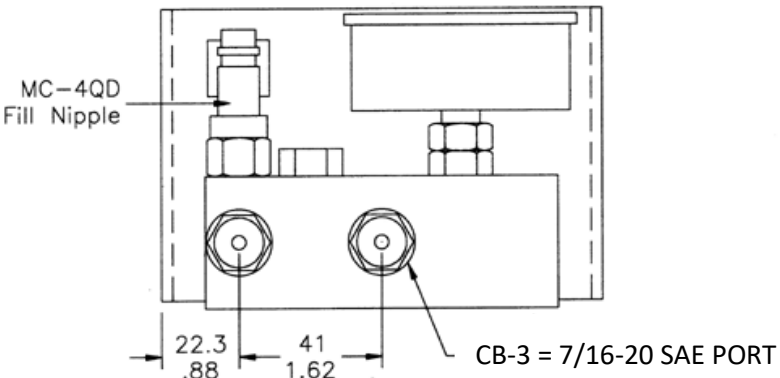
With .305 - 32 threaded coupling.

N-FORCER ®

CB-3 Control Panel (7/16-20 SAE PORT)
CB-4 Control Panel (G 1/8 PORT)

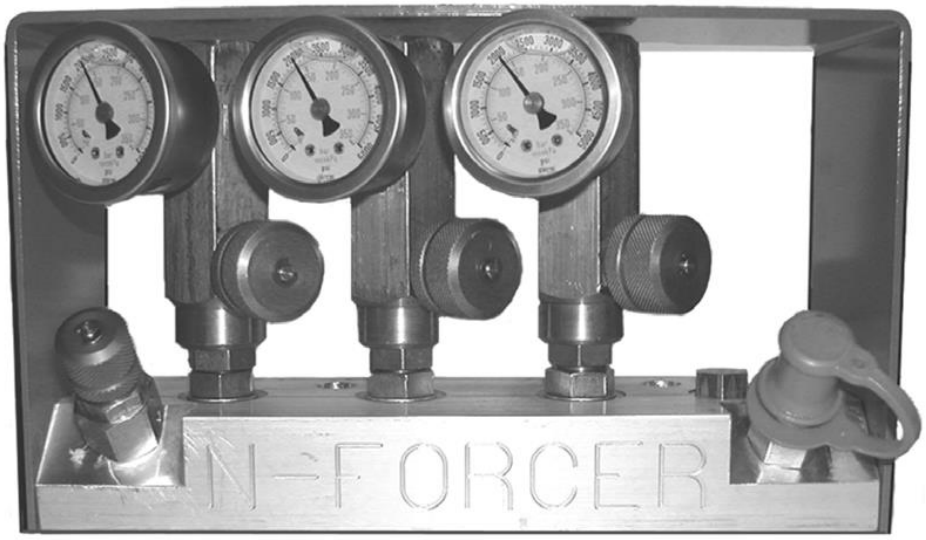


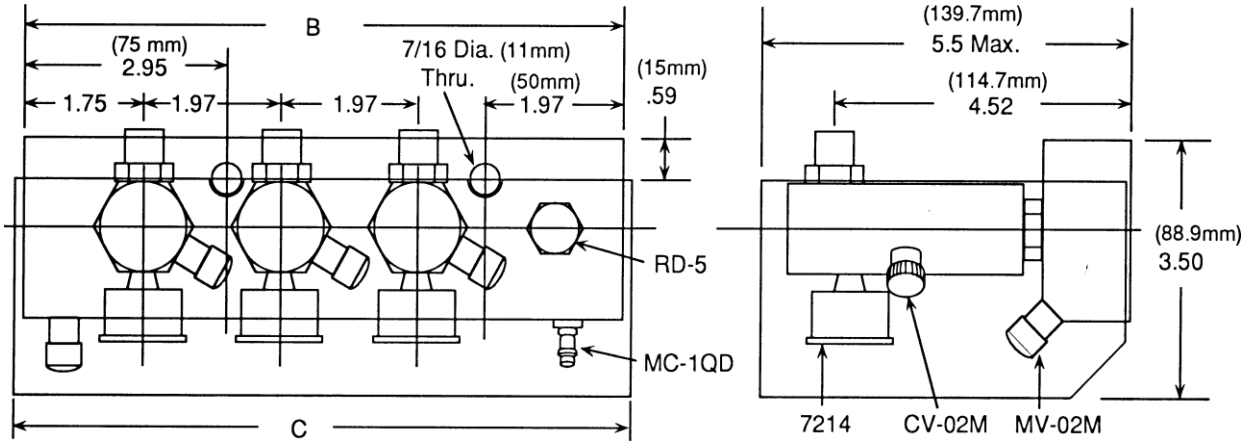




N-FORCER ®

MCB -- Multiple Port Control Block





	B	C
MCB-3 (Three Station)	8.657″ 219.9mm	8.905″ 226.2mm
MCB-4 (Four Station)	10.625″ 269.9mm	10.878″ 276.3mm
MCB-5 (Five Station)	12.598″ 320mm	12.846″ 326.3mm
MCB-6 (Six Station)	14.567″ 370mm	14.815″ 376.3mm

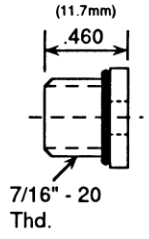
Multiple Station Control Block

This control block offers from 3 to 6 individual port stations which operate independent from each other. Each station has two 7/16-20 SAE ports for hosing nitrogen die springs. All stations can be set for different pressures, or they can all be the same pressure but isolate different sections of the die for maintenance purposes. All stations have a pressure gage and an opening and closing valve.

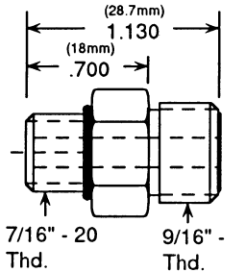
Made in the USA

N-FORCER
GAS Springs Since 1986

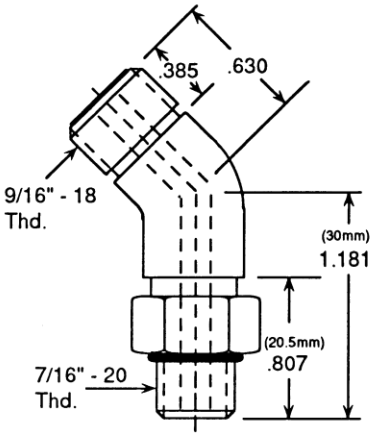
O-RING FACE SEAL HOSE FITTINGS
7/16” - 20 Threads



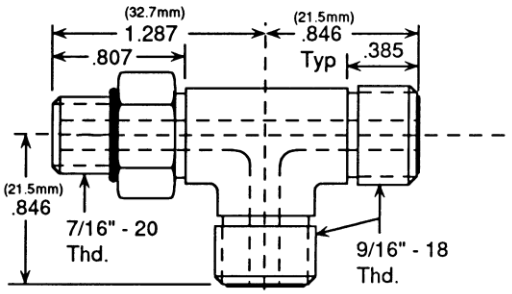
Hollow Hex Plug
4-HP50N-S



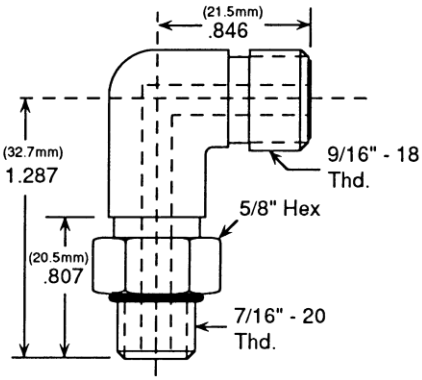
Straight Connector
4-F50L0-S



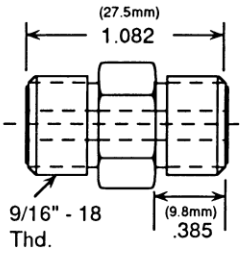
45° Straight Thread Elbow
4-V50L0-S



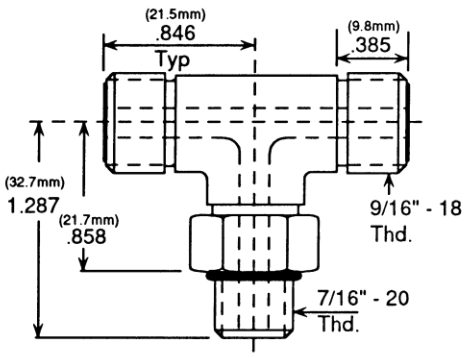
Straight Thread Run Tee
4-R50L0-S



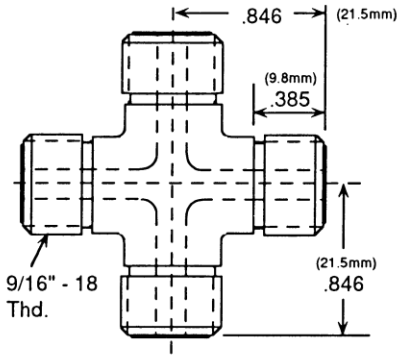
90° Straight Thread Elbow
4-C50L0-S



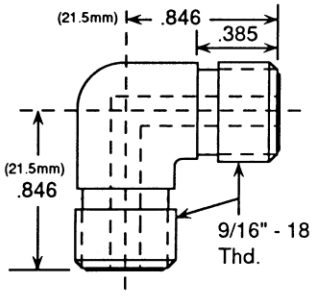
Union
4-HL0-S



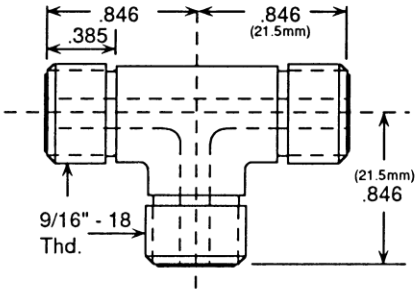
Straight Branch Tee
4-S50L0-S



Union Cross
4-KL0-S



90° Union Elbow
4-EL0-S

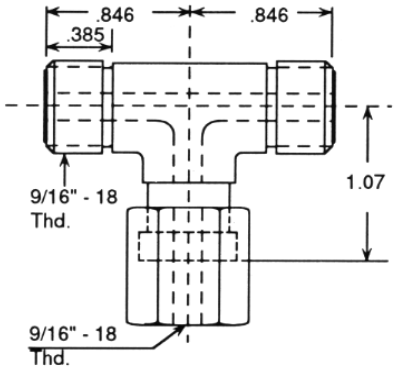


Union Tee
4-JL0-S

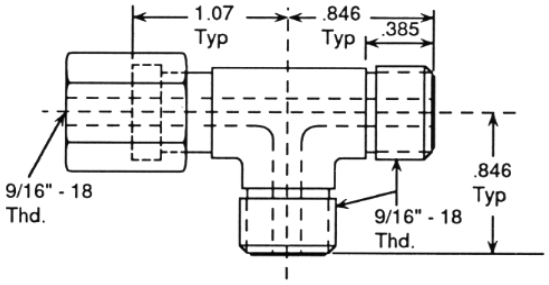
Made in the USA

N-FORCER
GAS Springs Since 1986

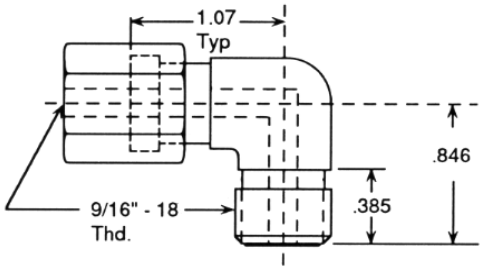
O-RING FACE SEAL HOSE FITTINGS



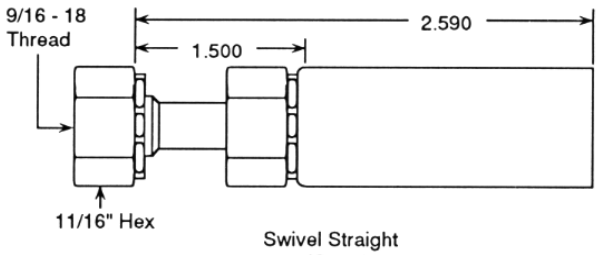
Swivel Nut Branch Tee
4-S6L0-S



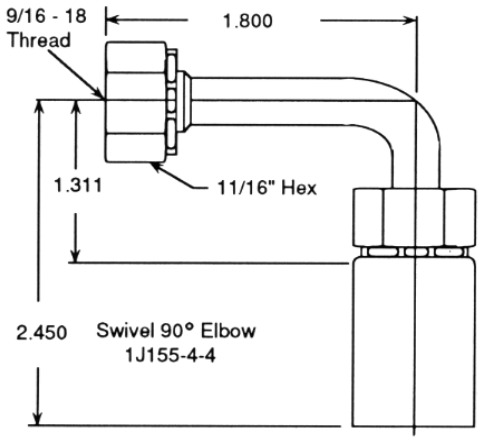
Swivel Nut Run Tee
4 R6LO-S



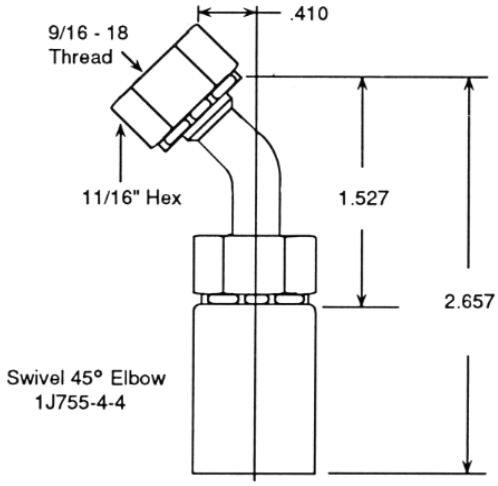
Swivel Nut Elbow
4 C6L0-S



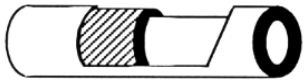
Swivel Straight
1JS55-4-4



Swivel 90° Elbow
1J155-4-4



Swivel 45° Elbow
1J755-4-4



Medium Pressure Hose
518B-4

Hose I.D 1/4 In.
Hose O.D. .47 In.
Maximum Working Pressure 2750 PSI
Minumum Burst Pressure 11,000 PSI
Minumun Bend Radius 1 1/2 In.

***Optional Hose Fittings**

½-20 Threads

This size has been phase out and is being offerec as replacement only for older systems.

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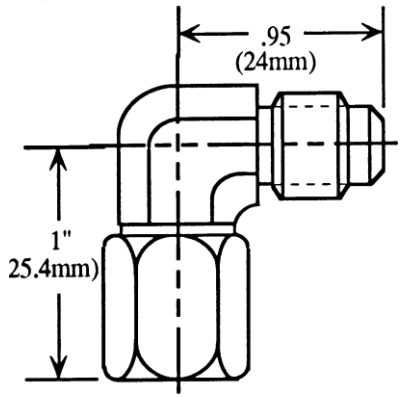
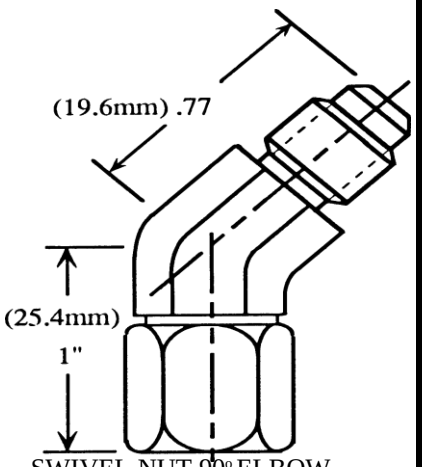
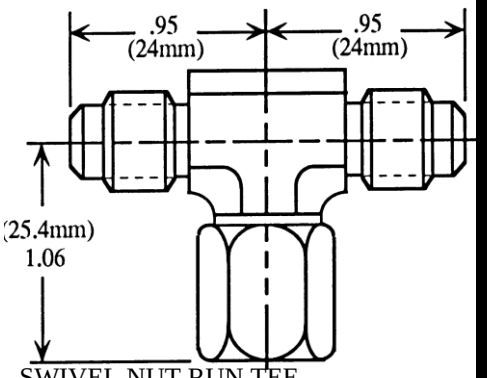


SWIVEL NUT 90° ELBOW
PART NO. 5-3903

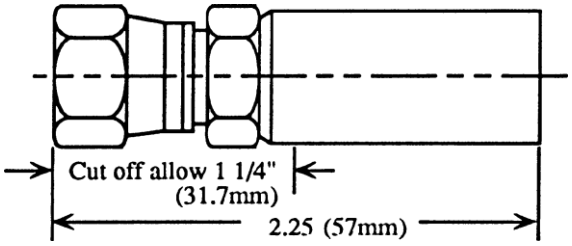


SWIVEL NUT 90° ELBOW
PART NO. 5-3703



SWIVEL NUT RUN TEE
PART NO. 5-393T

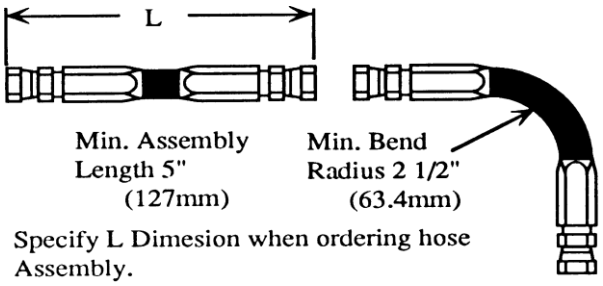
PERMANENT SWIVEL
PART NO. 5-3-10655



OPTIONAL HOSE FITTINGS
For Reusable and Permanent Couplings

Medium Pressure Hose For Reusable Couplings

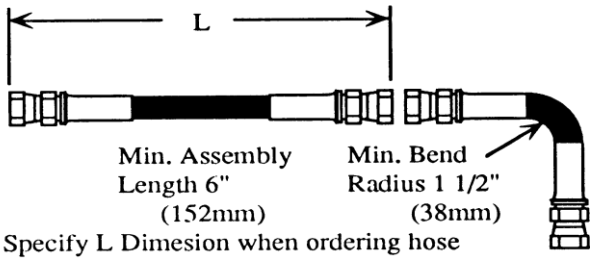
Part Number	ID in. mm	Max OD in mm	Max Working Pressure psi	Min Burst Pressure psi	Min Bend Radius in./mm	Weight Lbs/ 100ft.
NH-025	1/4	.47	2750	11000	2 1/2"	5.2
Metric	6.3	12	190 Bar	758 Bar	63.4	



Specify L Dimesion when ordering hose Assembly.

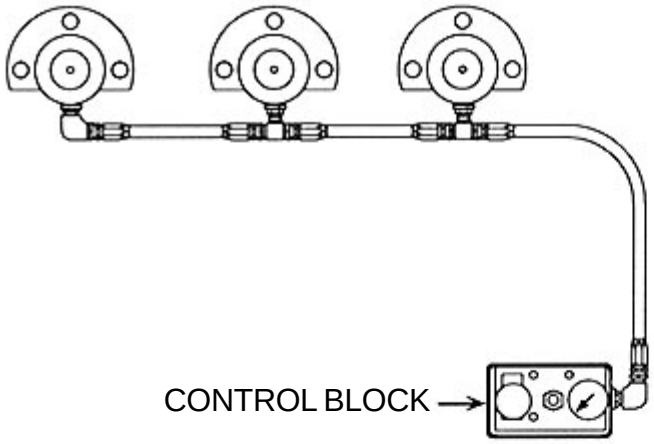
High Pressure Hose For Permanent Couplings

Part Number	ID in. mm	Max OD in mm	Max Working Pressure psi	Min Burst Pressure psi	Min Bend Radius in./mm	Weight Lbs/ 100ft.
NH-018	3/16	.42	5000	20000	1 1/2"	5.8
Metric	4.7	10.6	345 Bar	1379 Bar	38	



Specify L Dimesion when ordering hose Assembly.

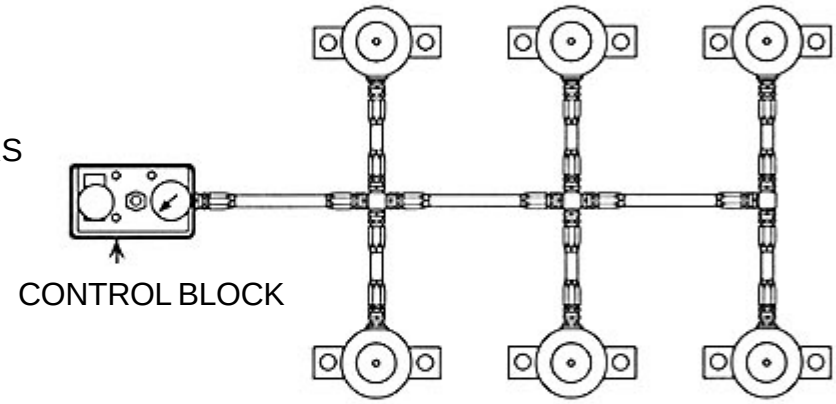
TYPICAL HOSE SYSTEM EXAMPLES

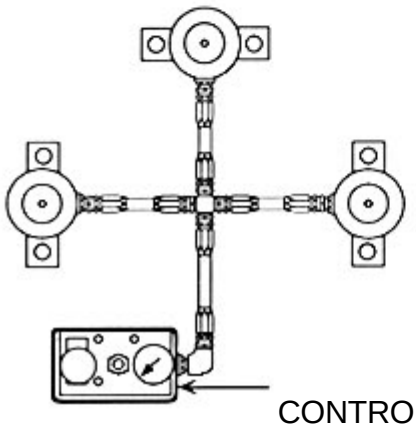


(3) "R" MOUNT CYLINDERS
(6) HOSE SWIVEL FITTINGS
PART NO 4-5-20651
(2) 90 DEGREE ELBOW FITTINGS
PART NO 5-2503
(2) BRANCH TEE FITTINGS
PART NUMBER 5-253T
(1) CONTROL BLOCK

A MINIMUM OF 3 FEET HOSE

(6) "F" MOUNT CYLINDERS
(18) HOSE SWIVEL FITTINGS
PART NO 4-5-20651
(7) STRAIGHT CONNECTORS
PART NO 5-0503
(2) UNION CROSS FITTINGS
PART NO 5-033X
(1) UNION TEE FITTING
PART NO 5-033T
(1) CONTROL BLOCK





(3) "F" MOUNT CYLINDERS
(8) HOSE SWIVEL FITTINGS
PART NO 4-5-20651
(3) STRAIGHT CONNECTORS
PART NO 5--5-3
(1) UNION CROSS FITTINGS
PART NO 5-033X
(1) 90 DEGREE ELBOW FITTING
PART NO 5-2503
(1) CONTROL BLOCK

A MINIMUM OF 2 FEET HOSE

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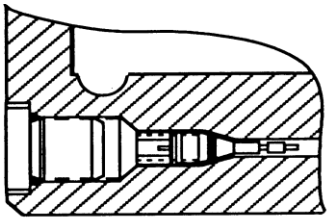
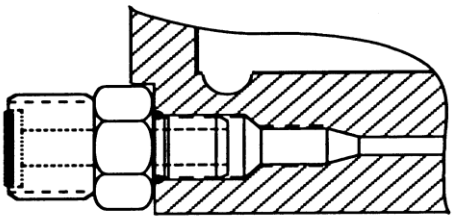
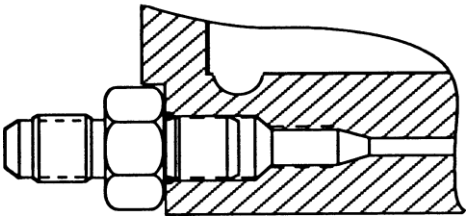
OPTIONAL VALVING & CONNECTIONS
Basic Self-Contained and Hose Ports
For G 1/8 Port -See "IS" Series



Series "CN"
Standard 7/16 - 20 port supplied with a plug and a valve to allow cylinders to be used as self-contained. May also be used as a hosed system without valve installed.



Series "CNB"
Standard 7/16 - 20 port to be used in a hosed system. Order fittings separately.
-No valve supplied unless requested.



Series "CNF"
*Optional 1/2 - 20 port to be used in a hosed system. Order fittings separately.
-No valve supplied unless requested.

When ordering compact nitrogen die springs, please used the following format:

1.	2.		3.	4.		5.	
CN	075	X	25	- SF1	-	138	(This die spring will be used as a self-contained unit.)

1.	2.		3.	4.		5.	
CN	075	X	25	- SF1	-		(This die spring will be used as a self-contained unit.)

1. Series = Compact Series
2. Model = Tonnage (6.76 KN)
3. Stroke Length = Length of Stroke (25mm)
4. Mounting Style - Square Rear Flange with Counter Bore Toward Rod End.
5. Charging Pressure = 138 Bar Internal Charging Pressure.

NOTE: IF NO CHARGING PRESSURE IS SPECIFIED - DIE SPRINGS WILL BE SHIPPED FOR HOSED SYSTEM AND WILL NOT HAVE A VALVE INSTALLED.