

Hydraulic Cylinders

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Features



- ▶ Slimline construction - available from 1.5" to 5.0" bore sizes.
- ▶ Dual ports for flexibility of installation.
- ▶ **Hallite** seals for long life and suitable for both single and double acting operation.
- ▶ Screwed S.G. cast iron gland and one-piece piston for long life.
- ▶ Gland has spanner slots and piston retained with nyloc nut for ease of service.
- ▶ Honed barrel with 0.25" wall thickness on all bore sizes gives structural strength.
- ▶ K1045 cast steel rod clevis secured to piston rod by grub screw with nylon insert and LOCTITE[®] 243™.
- ▶ One-piece K1045 cast steel base end cap allows easy modification for special mounts.
- ▶ K1045 Zinc plated clevis pins with lynch pin for added security.
- ▶ 5.0" bore standard with 1.25" clevis pins.

Order Code

Series	Bore & Stroke	Rod Dia.
HC	****	***

Examples:

HC1512 - 875 = HC Series - 1.5" Bore x 12" Stroke x 0.875" Rod

HC4024 - 175 = HC Series - 4.0" Bore x 24" Stroke x 1.75" Rod



1.5" Bore x 0.875" Rod		
Order Code	Stroke	Kg
HC1502-875	2"	3.6
HC1503-875	3"	3.9
HC1504-875	4"	4.1
HC1506-875	6"	4.6
HC1508-875	8"	5.1
HC1510-875	10"	5.7
HC1512-875	12"	6.2
HC1514-875	14"	6.7
HC1516-875	16"	7.2
HC1518-875	18"	7.7
HC1520-875	20"	8.3
HC1524-875	24"	9.3
HC1530-875	30"	10.9
HC1536-875	36"	12.4
HC1548-875	48"	15.5

2.0" Bore x 1.25" Rod		
Order Code	Stroke	Kg
HC2002-125	2"	7.3
HC2004-125	4"	8.1
HC2006-125	6"	8.9
HC2008-125	8"	9.7
HC2010-125	10"	10.5
HC2012-125	12"	11.3
HC2014-125	14"	12.1
HC2016-125	16"	12.9
HC2018-125	18"	13.7
HC2020-125	20"	14.5
HC2022-125	22"	15.3
HC2024-125	24"	16.1
HC2026-125	26"	16.9
HC2028-125	28"	17.7
HC2030-125	30"	18.5
HC2036-125	36"	20.7
HC2042-125	42"	23.1
HC2048-125	48"	25.5

2.5" Bore x 1.50" Rod		
Order Code	Stroke	Kg
HC2504-150	4"	10.3
HC2506-150	6"	11.3
HC2508-150	8"	12.4
HC2510-150	10"	13.5
HC2512-150	12"	14.5
HC2514-150	14"	15.5
HC2516-150	16"	16.5
HC2518-150	18"	17.5
HC2520-150	20"	18.5
HC2522-150	22"	19.5
HC2524-150	24"	20.5
HC2526-150	26"	21.5
HC2528-150	28"	22.5
HC2530-150	30"	23.5
HC2536-150	36"	26.5
HC2542-150	42"	29.5
HC2548-150	48"	32.5

3.0" Bore x 1.50" Rod		
Order Code	Stroke	Kg
HC3004-150	4"	12.5
HC3006-150	6"	13.7
HC3008-150	8"	14.9
HC3010-150	10"	16.0
HC3012-150	12"	17.2
HC3014-150	14"	18.4
HC3016-150	16"	19.5
HC3018-150	18"	20.7
HC3020-150	20"	21.9
HC3022-150	22"	23.1
HC3024-150	24"	24.2
HC3026-150	26"	25.4
HC3028-150	28"	26.6
HC3030-150	30"	27.7
HC3036-150	36"	31.2
HC3042-150	42"	34.8
HC3048-150	48"	38.3

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3.5" Bore x 1.75" Rod		
Order Code	Stroke	Kg
HC3504-175	4"	15.9
HC3506-175	6"	17.2
HC3508-175	8"	18.6
HC3510-175	10"	20.0
HC3512-175	12"	21.4
HC3514-175	14"	22.8
HC3516-175	16"	24.1
HC3518-175	18"	25.5
HC3520-175	20"	26.9
HC3524-175	24"	29.7
HC3530-175	30"	33.8
HC3536-175	36"	37.9
HC3542-175	42"	42.1
HC3548-175	48"	46.2

4.0" Bore x 1.75" Rod		
Order Code	Stroke	Kg
HC4004-175	4"	18.8
HC4006-175	6"	20.3
HC4008-175	8"	21.8
HC4010-175	10"	23.3
HC4012-175	12"	24.8
HC4016-175	16"	27.8
HC4018-175	18"	29.3
HC4020-175	20"	30.8
HC4024-175	24"	33.8
HC4030-175	30"	38.3
HC4036-175	36"	42.8
HC4042-175	42"	47.3
HC4048-175	48"	51.8

4.0" Bore x 2.00" Rod		
Order Code	Stroke	Kg
HC4012-200	12"	26.0
HC4016-200	16"	29.4
HC4018-200	18"	31.1
HC4020-200	20"	32.8
HC4024-200	24"	36.2
HC4030-200	30"	41.3
HC4036-200	36"	46.4
HC4042-200	42"	51.5
HC4048-200	48"	56.6

5.0" Bore x 2.00" Rod		
Order Code	Stroke	Kg
HC5008-200	8"	30.3
HC5010-200	10"	32.2
HC5012-200	12"	34.1
HC5016-200	16"	37.9
HC5018-200	18"	39.8
HC5020-200	20"	41.7
HC5024-200	24"	45.5
HC5030-200	30"	51.2
HC5036-200	36"	56.9
HC5048-200	48"	68.3

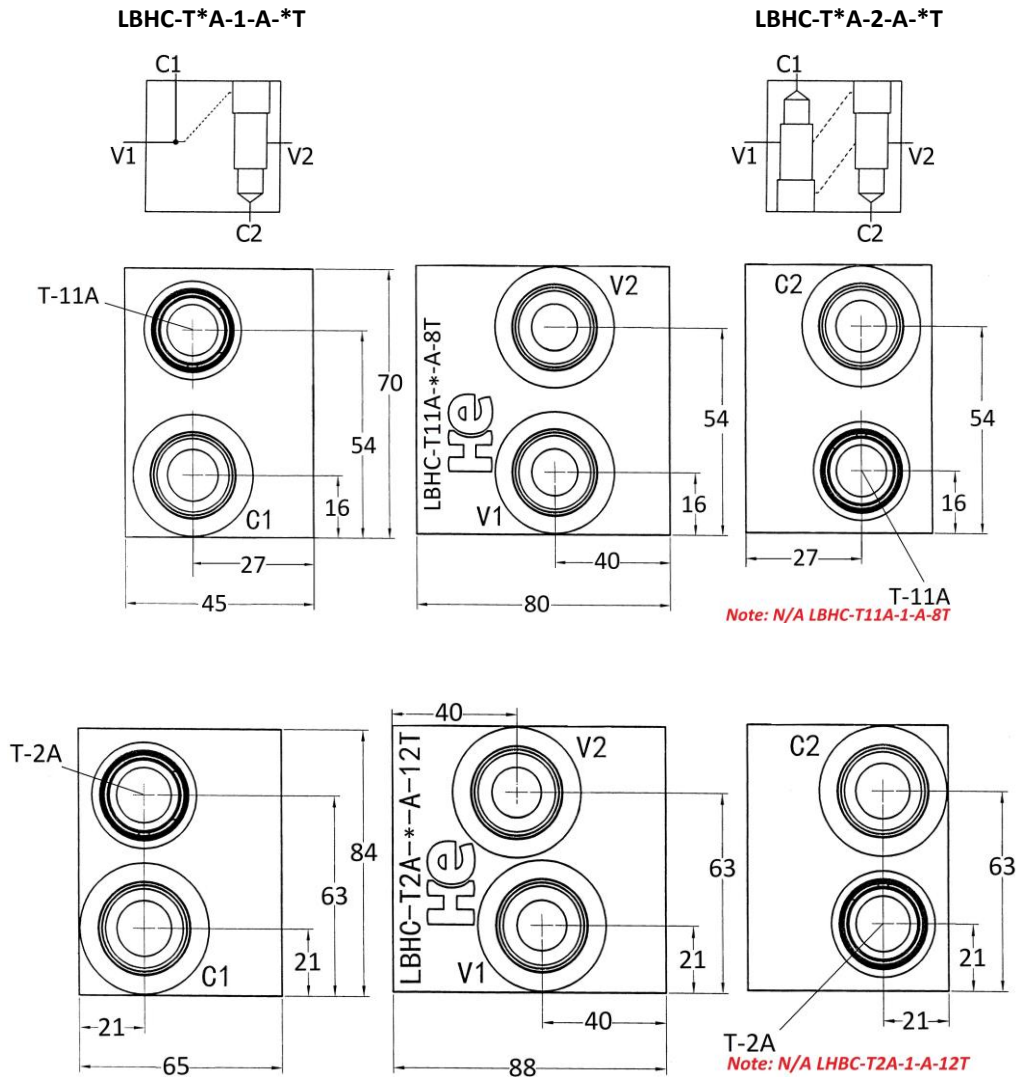
Cylinder Mount Counterbalance & Pilot Operated Check Valves



Order Code	Cavity	Ports	Material	Max. Pressure (bar)
LBHC-T11A-1-A-8T	T-11A x 1	3/4" UNO	Aluminium (6061T6)	210
LBHC-T11A-2-A-8T	T-11A x 2			
LBHC-T2A-1-A-12T	T-2A x 1	1 1/16" UNO		
LBHC-T2A-2-A-12T	T-2A x 2			

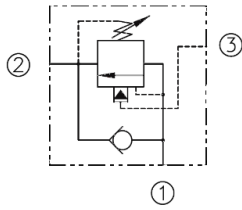
Note:

- LBHC-T*A-1-A-*T (single cavity body), load is held on port C2.
- Cartridge Information on [Page 1.06](#).



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Counterbalance Valves

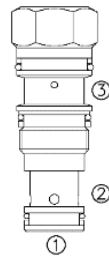
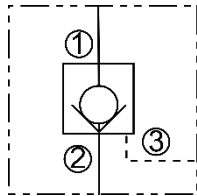


Order Code	Cavity	Max. Flow (L/min)	Pilot Ratio	Free Flow Cracking Pressure (bar)	Adjustable Pressure (bar)	Factory Set (bar)
LCBCA-LAN	T-11A	60	3 : 1	0.3	70 - 280	210
LCBCA-LHN			3 : 1	1.7	70 - 280	210
LCBCA-LIN			3 : 1	1.7	25 - 105	70
LCBCH-LJN			10 : 1	1.7	140 - 350	210
LCBEA-LHN	T-2A	120	3 : 1	1.7	70 - 280	210

Note:

- Two check valve cracking pressures are available. Use the 1.7 bar check unless actuator cavitation is a concern. Generally, the 1.7 bar check spring is recommended for most applications as it is more robust and insensitive to rapid flow reversals. The 0.3 bar check spring should be used if there is a need to pull in make-up oil.
- Counterbalance valves should be set at least 1.3 times the maximum load induced pressure.
- Additional information available on [Page 9.18](#).

Pilot Operated Check Valves



Order Code	Cavity	Max. Flow (L/min)	Max. Pressure (bar)	Pilot Ratio	Pilot Piston Seal	Free Flow Cracking Pressure (bar)
LCKCB-XCN	T-11A	60	350	3 : 1	No	2.0
LCKCD-XCN					Yes	

Elbow Fittings



Order Code	Threads	HC Cylinder Bore
6807-08-06-NWO	3/4" UNO x 9/16" UNO	1.5" - 2.0"
6807-08-08-NWO	3/4" UNO x 3/4" UNO	2.5" - 5.0"

Note:

- Elbow Fitting allows direct mounting of body to cylinder port. Not available for LBHC-T2A-*A-12T.
- Tube & fittings from body to the other cylinder port are not supplied.
- LBHC-T*A-1-A -*T (single cavity body), load is held on port C2.



Male Rod Clevis



Female Rod Clevis



Male Clevis Plate



Seal Kit



Breather Plug

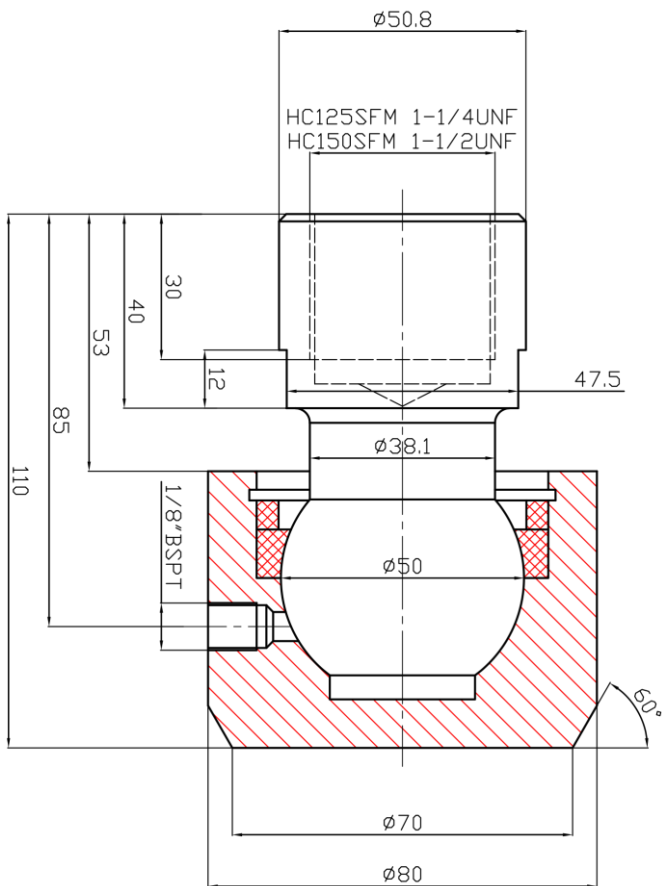


Pin & Clip for Female Clevis



Anti-Rotation Pin

Swivel Foot Mount



Swivel Foot Mount as supplied



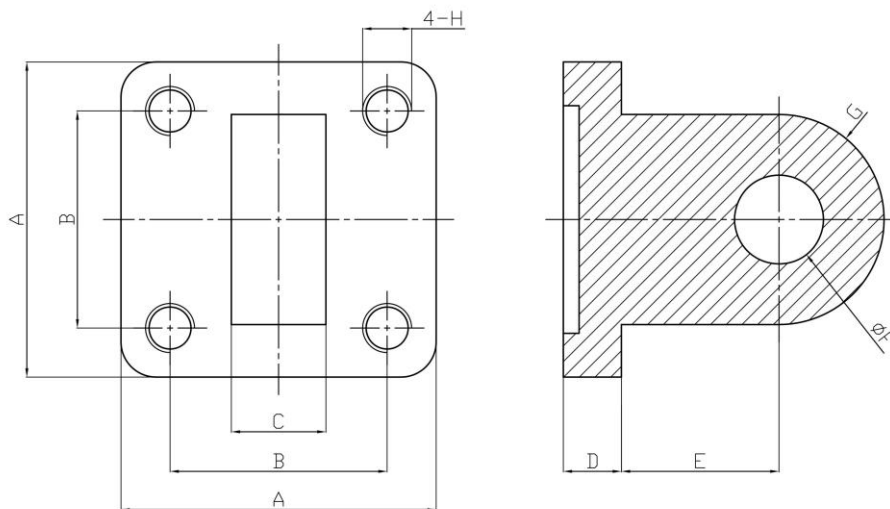
Swivel Foot Mount shown with customer supplied and fitted Foot Plate

Male Clevis Plate



Bore	Rod	Maximum Extension Force kN bar	Maximum Retraction Force kN bar
1.5"	0.875"	23 207	15 207
2.0"	1.25"	42 207	25 207
2.5"	1.50"	65 207	42 207
3.0"	1.50"	94 207	71 207
3.5"	1.75"	128 207	96 207
4.0"	1.75"	168 207	135 207
4.0"	2.00"	168 207	126 207
5.0"	2.00"	262 207	170 160

Note: Check **Maximum Force & Pressure** on [Page 1.11](#). The lower Force of the two is applicable.



Order Code	A	B	C	D	E	F	G	H
HC075MCP	80	56	20	17	35	19.5	20	M12 x 1.75
HC100MCP	90	62	26	17	45	25.6	30	M14 x 2.00
HC125MCP	110	80	26	20	50	31.9	30	M16 x 2.00

Accessories & Spare Parts

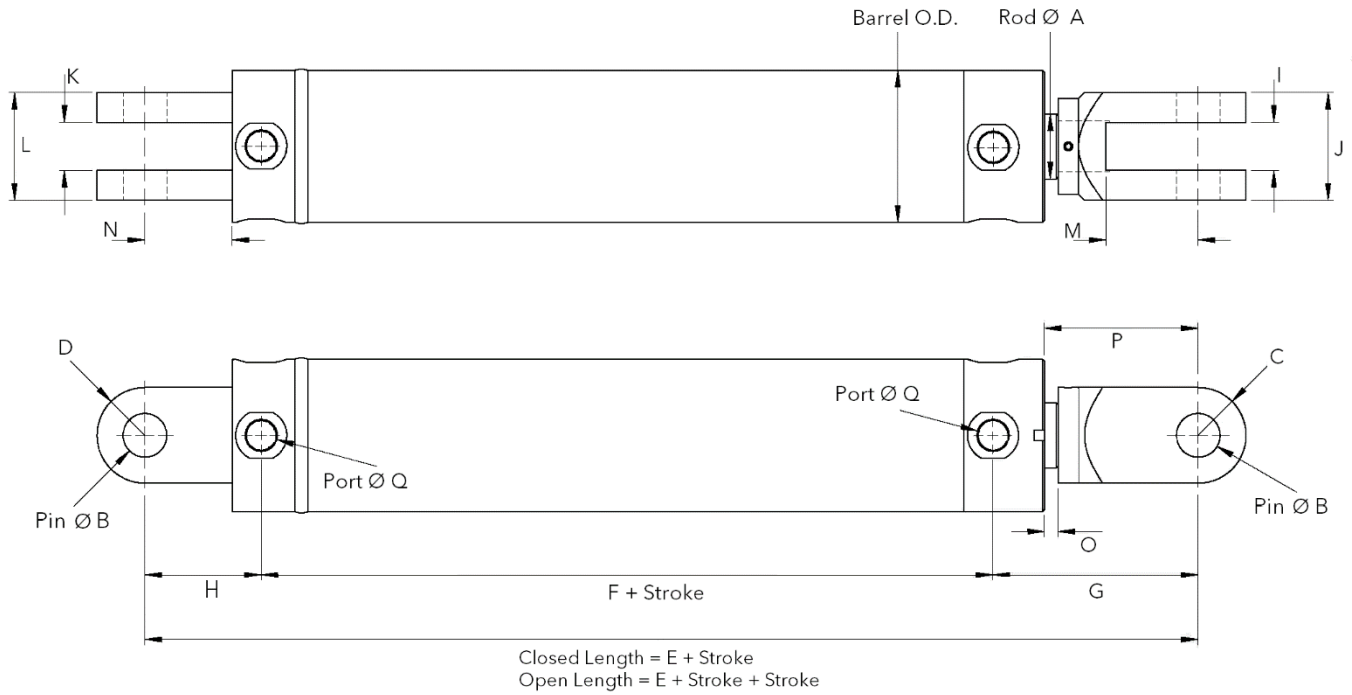
	Male Rod Clevis	Male Clevis Plate	Swivel Foot Mount	Breather Plug	Seal Kit
HC15XX-875	N/A	HC075MCP	N/A	HC-BP-SAE6	HC15-875SK
HC20XX-125	HC100-125BLOCK	HC100MCP	HC125SFM	HC-BP-SAE6	HC20-125SK
HC25XX-150	HC100-125BLOCK	HC100MCP	HC125SFM	HC-BP-SAE8	HC25-150SK
HC30XX-150	HC100-125BLOCK	HC100MCP	HC125SFM	HC-BP-SAE8	HC30-150SK
HC35XX-175	HC100-125BLOCK	HC100MCP	HC125SFM	HC-BP-SAE8	HC35-175SK
HC40XX-175	HC100-125BLOCK	HC100MCP	HC125SFM	HC-BP-SAE8	HC40-175SK
HC40XX-200	HC100-125BLOCK	HC100MCP	HC125SFM	HC-BP-SAE8	HC40-200SK
HC50XX-200	N/A	HC125MCP	HC150SFM	HC-BP-SAE8	HC50-200SK

	Female Rod Clevis	Pin & Clip for Female Clevis	Clevis Pin Clip	Anti-Rotation Pin for Female Clevis
HC15XX-875	HC075-075CLEVIS	HC075PIN	HC100CLIP	N/A
HC20XX-125	HC100-125CLEVIS	HC100PIN	HC100CLIP	HC100PIN-ARGx65
HC25XX-150	HC100-125CLEVIS	HC100PIN	HC100CLIP	HC100PIN-ARGx65
HC30XX-150	HC100-125CLEVIS	HC100PIN	HC100CLIP	HC100PIN-ARGx65
HC35XX-175	HC100-125CLEVIS	HC100PIN	HC100CLIP	HC100PIN-ARGx65
HC40XX-175	HC100-125CLEVIS	HC100PIN	HC100CLIP	HC100PIN-ARGx65
HC40XX-200	HC100-125CLEVIS	HC100PIN	HC100CLIP	HC100PIN-ARGx65
HC50XX-200	HC125-150CLEVIS	HC125PIN	HC125CLIP	HC125PIN-ARGx70

Note:

- Swivel Foot Mount supplied with Grease Nipple. There is no Grub Screw & Plastic Insert. The parts are not assembled. Customer to supply and weld their own Foot Plate.
- Seal Kit supplied with Nyloc Nut.
- Female Rod Clevis supplied with Grub Screw & Plastic Insert.
- Male Rod Clevis supplied with Grub Screw, Plastic Insert & Grease Nipple. Dimensions are the same as P/N HC100-125CLEVIS. Refer to [Page 1.10](#).
- Male Clevis Plate not supplied with mounting screws. It is manufactured from Cast Steel and can be welded. Check Maximum Force. Refer to [Page 1.08](#).
- Anti-Rotation Pin supplied with Grease Nipple & Retaining Screw (M6x20). It is the customers responsibility to machine M6 thread for Retaining Screw.

Dimensions



Bore Ø	1.5"	2.0"	2.5"	3.0"	3.5"	4.0"	5.0"
Rod Ø A	0.875"	1.25"	1.50"	1.50"	1.75"	1.75" or 2.00"	2.00"
Pin Ø B	0.75" 19.05	1.00" 25.4	1.00" 25.4	1.00" 25.4	1.00" 25.4	1.00" 25.4	1.25" 31.75
C	23	28	28	28	28	28	34
D	23	25	28	28	33	34	34
E ± 3 mm	9.50" 241	12.25" 311	12.25" 311	12.25" 311	12.25" 311	12.25" 311	12.25" 311
F	105	123	123	123	123	126	132
G	90	120	120	120	120	117	106
H	46	68	68	68	68	68	73
I	22	28	28	28	28	28	28
J	46	63	63	63	63	63	68
K	22	28	28	28	28	28	28
L	46	60	63	63	63	63	68
M	32	54	54	54	54	54	54
N	32	51	51	51	51	51	51
O	9	8	8	8	8	8	6
P	61	90	90	90	90	90	88
Port Ø Q	9/16" UNO	9/16" UNO	3/4" UNO	3/4" UNO	3/4" UNO	3/4" UNO	3/4" UNO
Barrel O.D.	2.0" 51	2.5" 64	3.0" 76	3.5" 89	4.0" 102	4.5" 114	5.5" 140
Rod Thread	3/4" UNF x 20 mm	1-1/4" UNF x 28 mm	1-1/4" UNF x 28 mm	1-1/4" UNF x 28 mm	1-1/4" UNF x 28 mm	1-1/4" UNF x 28 mm	1-1/2" UNF x 28 mm

Maximum Force & Pressure

The chart gives the maximum extension force at full stroke and exceeding these limits may result in rod buckling. The values are based on a safety factor of 2 with the cylinder operating vertical and fully guided. For horizontal or operating in an arc these values may have to be reduced.

Bore	Rod	Stroke	8"	10"	12"	16"	18"	20"	24"	30"	36"	42"	48"	Maximum Retraction Force kN bar
		Maximum Extension Force (Vertical & Guided) kN bar												
1.5"	0.875"	23	22	17	11	9	8	6	4	3	2	1	15	
		207	193	149	96	79	70	53	35	26	17	9	207	
2.0"	1.25"	42	42	38	25	21	17	13	9	7	5	4	25	
		207	207	187	123	104	84	64	44	34	25	20	207	
2.5"	1.50"	65	65	65	65	65	61	46	32	23	18	14	42	
		207	207	207	207	207	193	145	101	73	57	44	207	
3.0"	1.50"	94	94	94	85	71	61	46	32	23	18	14	71	
		207	207	207	186	156	134	101	70	50	39	31	207	
3.5"	1.75"	128	128	128	128	128	113	85	59	43	33	26	96	
		207	207	207	207	207	182	137	95	69	53	42	207	
4.0"	1.75"	168	168	168	157	132	113	85	59	43	33	26	135	
		207	207	207	194	163	139	105	73	53	41	32	207	
4.0"	2.00"	168	168	168	168	168	168	144	100	74	57	45	126	
		207	207	207	207	207	207	178	123	91	70	55	207	
5.0"	2.00"	262	262	262	262	225	192	144	100	74	57	45	220	
		207	207	207	207	178	152	114	79	58	45	35	207	

1 kN = 102 kgf = 225 lbf

1 bar = 14.5 psi

Cylinder Speed

Maximum cylinder velocity is 1.0 m/sec.

Single Acting Applications

To assist in preventing the ingress of contamination we recommend at a minimum the installation of a breather plug into the air side cylinder port. Connecting a hose from the air side back to the reservoir can further increase cylinder life.