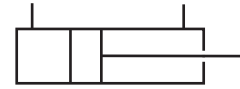


DB Series



Standard Hydraulic Cylinders Tie Rod Type



The CROSS tie rod type cylinders DB Series provide long life and reliable operation attributed to the use of high quality materials plus the many features included in this design. A large number of stroke sizes are available which incorporate many standard and optional features.

GENERAL SPECIFICATIONS

Rated working pressure (Max. relief valve setting at full flow).....172 Bar (2500 psi)
 Maximum shock and surge pressure.....276 Bar (4000 psi)
 Bore Diameters.....

2.00	2.50	3.00	3.50	4.00	5.00	inches
51	64	76	89	102	127	mm

MATERIAL SPECIFICATIONS

Cylinder Barrels.....C1025 Steel Alloy
 Pistons.....High Tensile Strength Grey Iron or Aluminium Alloy
 Rods.....Induction Hardened C1045 Steel Alloy*
 Base Castings & Rod Clevises.....Ductile Iron
 Cylinder Heads.....High Tensile Strength Grey Iron
 Seals.....70 Durometer Buna N O-ring with Polyurethane Back-up rings on tube and rod; wear ring and Teflon seal on piston.;

*Rods over 19mm (3/4") dia, Strokes up to 1650mm (65 inches).

STANDARD FEATURES

- Cylinder barrels are precision honed to provide long seal life.
- Rods are hardened, chrome plated and polished for long wear life and for protection from external damage and corrosion.
- Rod wipers clean dirt and foreign matter from rod to insure long seal life.
- UN O-ring porting.
- Double ported base allows connections to be made at 90° to pins.
- Supplied complete with hardened steel clevis pins and clips.

OPTIONAL FEATURES AVAILABLE

- Alternative rod diameter sizes on 8 inch (203.2mm) stroke cylinders.
- Hardened steel clevis bushings.
- Breather plugs

DB Series



Standard Hydraulic Cylinders Tie Rod Type

SAFETY FACTOR

A Safety Factor of 1.5 or better is built into a CROSS cylinder. The Safety Factor is a function of the critical buckling load determined basically by the length of the cylinder and cylinder extensions forces. The longer the stroke of the cylinder and the larger the bore the more critical the maximum extension pressure becomes. The calculation is based on an unsupported cylinder.

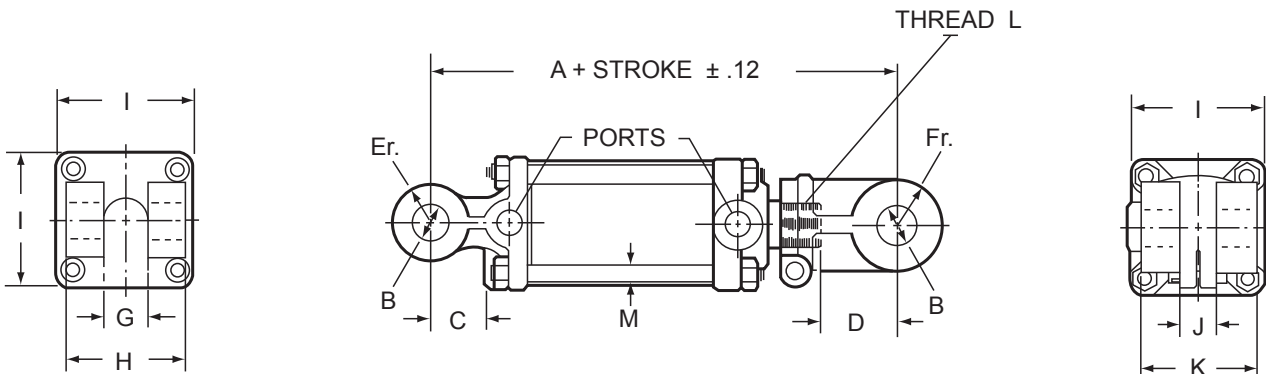
All CROSS cylinders within the Standard Stock range will maintain at least a 1.5 Safety Factor at 2500 psi extension pressure apart from those tabulated below.

SAFETY FACTORS - NON STANDARD

Cylinder				Max. Extension Pressure 1.5 Safety Factor		Safety Factor @ 2500 psi (172 bar) Extension Pressure
Bore		Stroke		psi	bar	
inches	mm	inches	mm			
2.5	63.5	24.0	609.6	2340	161	1.4
2.5	63.5	30.0	762.0	1570	108	0.9
4.0	101.6	24.0	609.6	1930	133	1.2

STANDARD DIMENSIONAL DETAILS

DIMENSIONAL DETAILS in inches and (millimetres)



Cross 'DB' Cylinder Dimension Table

Bore Dia.	A	B	C	D	Er	Fr	G	H	I	J	K	L	M
2.00 (51)	See 'Closed Centre' dimension in cylinder table	1.015 (25.8)	1.625 (41.3)	2.125 (53.9)	0.875 (22.2)	1.000 (25.4)	1.125 (28.6)	2.500 (63.5)	2.875 (73.0)	1.125 (28.6)	2.625 (66.7)	1-1/16 -12	0.375 (9.5)
2.50 (64)		1.015 (25.8)	1.625 (41.3)	2.125 (53.9)	1.000 (25.4)	1.000 (25.4)	1.125 (28.6)	2.625 (66.7)	3.250 (82.6)	1.125 (28.6)	2.625 (66.7)	1-1/16 -12	0.375 (9.5)
3.00 (76)		1.015 (25.8)	1.625 (41.3)	2.125 (53.9)	1.000 (25.4)	1.000 (25.4)	1.125 (28.6)	2.625 (66.7)	3.750 (95.3)	1.125 (28.6)	2.625 (66.7)	1-1/4 -12	0.500 (12.7)
3.50 (89)		1.015 (25.8)	1.625 (41.3)	2.125 (53.9)	1.000 (25.4)	1.250 (31.8)	1.250 (31.8)	2.750 (69.8)	4.250 (107.9)	1.250 (31.8)	2.750 (69.8)	1-1/4 -12	0.562 (14.3)
4.00 (102)		1.015 (25.8)	2.000 (50.8)	2.125 (53.9)	1.125 (28.6)	1.250 (31.8)	1.250 (31.8)	2.875 (73.0)	5.00 (127)	1.250 (31.8)	2.750 (69.8)	1-1/4 -12	0.625 (15.9)
5.00 (127)		1.265 (32.1)	2.312 (58.7)	2.125 (53.9)	1.500 (38.1)	1.250 (31.8)	1.375 (34.9)	3.500 (88.9)	6.000 (152.4)	1.250 (31.8)	2.750 (69.8)	1-1/2 -12	0.750 (19.0)

STANDARD STOCK CYLINDERS - INDIVIDUAL DIMENSIONAL DETAILS

Bore		Stroke		Rod Dia.		C.C.		Ports UN O-ring	Weight Kg.
Inches	mm	Inches	mm	Inches	mm	Inches	mm		
2.00	50.8	6.0	152.4	1.06	26.924	16.25	412.75	9/16"	7.7
2.00	50.8	8.0	203.2	1.06	26.924	20.25	514.35	9/16"	8.4
2.00	50.8	10.0	254.0	1.06	26.924	20.25	514.35	9/16"	9.1
2.00	50.8	12.0	304.8	1.06	26.924	24.25	615.95	9/16"	9.6
2.00	50.8	16.0	406.4	1.06	26.924	28.25	717.55	9/16"	10.7
2.50	63.5	6.0	152.4	1.06	26.924	16.25	412.75	3/4"	8.1
2.50	63.5	8.0	203.2	1.06	26.924	20.25	514.35	3/4"	9.0
2.50	63.5	8.0	203.2	1.25	31.75	20.25	514.35	3/4"	9.5
2.50	63.5	10.0	254.0	1.25	31.75	20.25	514.35	3/4"	10.0
2.50	63.5	12.0	304.8	1.25	31.75	24.25	615.95	3/4"	11.2
2.50	63.5	16.0	406.4	1.25	31.75	28.25	717.55	3/4"	12.7
2.50	63.5	18.0	457.2	1.25	31.75	30.25	768.35	3/4"	13.5
2.50	63.5	24.0	609.6	1.25	31.75	34.25	869.95	3/4"	16.8
2.50	63.5	30.0	762.0	1.25	31.75	42.25	1073.15	3/4"	18.6
3.00	76.2	8.0	203.2	1.25	31.75	20.25	514.35	3/4"	11.5
3.00	76.2	8.0	203.2	1.50	38.10	20.25	514.35	3/4"	12.3
3.00	76.2	12.0	304.8	1.50	38.10	24.25	615.95	3/4"	14.4
3.00	76.2	16.0	406.4	1.50	38.10	28.25	717.55	3/4"	16.6
3.00	76.2	18.0	457.2	1.50	38.10	30.25	768.35	3/4"	17.6
3.00	76.2	24.0	609.6	1.50	38.10	36.25	920.75	3/4"	20.7
3.50	88.9	8.0	203.2	1.25	31.75	20.25	514.35	3/4"	14.3
3.50	88.9	8.0	203.2	1.50	38.10	20.25	514.35	3/4"	15.2
3.50	88.9	12.0	304.8	1.50	38.10	24.25	615.95	3/4"	16.5
3.50	88.9	16.0	406.4	1.50	38.10	28.25	717.55	3/4"	17.7
3.50	88.9	18.0	457.2	1.50	38.10	30.25	768.35	3/4"	18.6
3.50	88.9	24.0	609.6	1.50	38.10	34.25	869.95	3/4"	22.3
4.00	101.6	8.0	203.2	1.25	31.75	20.25	514.35	3/4"	18.7
4.00	101.6	8.0	203.2	1.50	38.10	20.25	514.35	3/4"	19.5
4.00	101.6	12.0	304.8	1.50	38.10	24.25	615.95	3/4"	21.7
4.00	101.6	16.0	406.4	1.50	38.10	28.25	717.55	3/4"	23.2
4.00	101.6	18.0	457.2	1.50	38.10	30.25	768.35	3/4"	27.5
4.00	101.6	24.0	609.6	1.50	38.10	34.62	879.35	3/4"	32.3
5.00	127.0	8.0	203.2	1.50	38.10	20.25	514.35	3/4"	30.0
5.00	127.0	16.00	406.4	1.50	38.10	28.25	717.55	3/4"	40.0

DB Series



Standard Hydraulic Cylinders Tie Rod Type

HOW TO ORDER

<p style="text-align: center;">35</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Bore (inches)</td></tr> <tr><td style="padding: 2px;">2 = 2.00"</td></tr> <tr><td style="padding: 2px;">25 = 2.50"</td></tr> <tr><td style="padding: 2px;">3 = 3.00"</td></tr> <tr><td style="padding: 2px;">35 = 3.50"</td></tr> <tr><td style="padding: 2px;">4 = 4.00"</td></tr> <tr><td style="padding: 2px;">5 = 5.00"</td></tr> </table>	Bore (inches)	2 = 2.00"	25 = 2.50"	3 = 3.00"	35 = 3.50"	4 = 4.00"	5 = 5.00"	<p style="text-align: center;">08</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Stroke (inches)</td></tr> <tr><td style="padding: 2px;">06 = 6.00"</td></tr> <tr><td style="padding: 2px;">08 = 8.00"</td></tr> <tr><td style="padding: 2px;">10 = 10.00"</td></tr> <tr><td style="padding: 2px;">12 = 12.00"</td></tr> <tr><td style="padding: 2px;">16 = 16.00"</td></tr> <tr><td style="padding: 2px;">18 = 18.00"</td></tr> <tr><td style="padding: 2px;">24 = 24.00"</td></tr> <tr><td style="padding: 2px;">30 = 30.00"</td></tr> </table>	Stroke (inches)	06 = 6.00"	08 = 8.00"	10 = 10.00"	12 = 12.00"	16 = 16.00"	18 = 18.00"	24 = 24.00"	30 = 30.00"	<p style="text-align: center;">DB</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Cylinder Series</td></tr> </table>	Cylinder Series	<p style="text-align: center;">1.5</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 2px;">Rod Dia. (inches)</td></tr> </table>	Rod Dia. (inches)
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