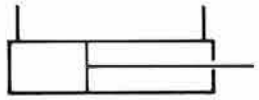
HYDRAULIC CYLINDERS

WELDED CYLINDERS
UT SERIES
Specification Sheet



The CROSS series UT welded type cylinders have been designed for continuous operation at pressures up to 3000 psi. They provide long life and reliable operation with a broad range of bore sizes, strokes, and features available.

GENERAL SPECIFICATIONS

Rated working pressure (Max. relief valve setting at full flow ..... 3000 psi (207 bar)
Maximum shock and surge pressure ..... 4500 psi (310 bar)
Bore diameters .....

1.50	2.00	2.50	3.00	3.50	4.00	5.00	in.
38	51	64	76	89	102	127	mm

MATERIAL SPECIFICATIONS

Cylinder barrels .....ST 52.3 steel alloy
Pistons .....High strength aluminum alloy
Rods .....Induction hardened C1045 steel alloy*
Seals .....Polyurethane U-cups
*Rods over 3/4" diameter, strokes up to 65" (1651 mm)

STANDARD FEATURES:

- Cylinder barrels are skived burnished precision finished to provide long seal life
- Rods are hardened, chrome plated and polished for long wear life
- Rod wipers clean dirt and foreign matter from rod to insure long seal life
- Steel base clevis mounting and ductile rod end clevis
- Screw-on head cap with locking screw

OPTIONAL FEATURES AVAILABLE

- Welded rod end mounts: pineye, single lug or clevis
- SAE straight thread o-ring ports or NPTF dryseal pipe thread ports
- Ports at 90° or in line with pins
- Hardened steel pins and bushings
- Grease fittings
- Self-aligning spherical bushings

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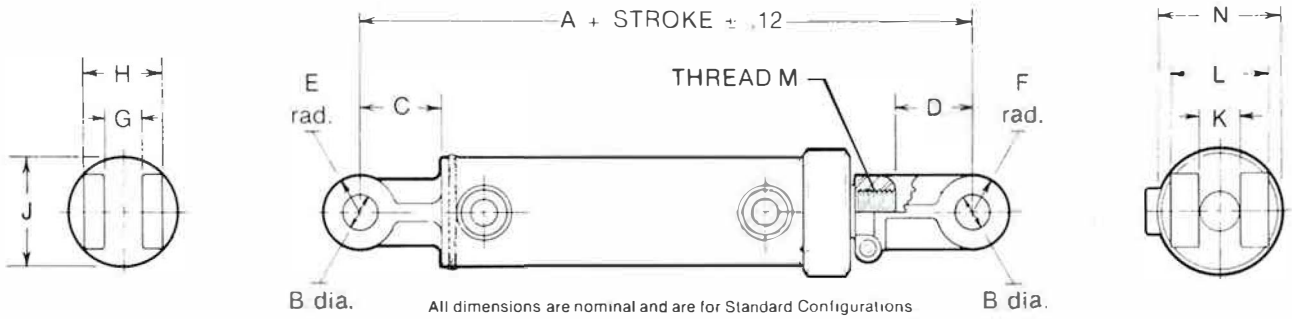
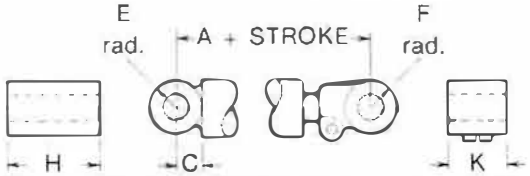
DIMENSIONAL DATA in inches and (millimeters)



All dimensions are nominal and are for Standard Configurations

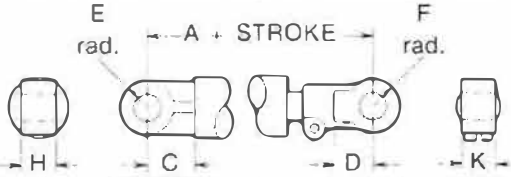
BORE DIA	A	B	C	D	E	F	G	H	J	K	L	M	N
1.50 (38)	8.62 (218.9)	.765 (19.4)	1.19 (30.2)	1.50 (38.1)	.94 (23.9)	.94 (23.9)	.81 (20.6)	1.56 (39.6)	1.88 (47.8)	.88 (22.4)	1.88 (47.8)	3/4 -16	2.38 (60.4)
2.00 (51)	11.25 (285.8)	1.015 (25.8)	2.25 (57.2)	2.12 (53.8)	1.00 (25.4)	1.00 (25.4)	1.12 (28.4)	2.12 (53.8)	2.38 (60.4)	1.12 (28.4)	2.62 (66.5)	1 3/16 -12	2.88 (73.2)
2.50 (64)	11.25 (285.8)	1.015 (25.8)	2.25 (57.2)	2.12 (53.8)	1.00 (25.4)	1.00 (25.4)	1.12 (28.4)	2.12 (53.8)	2.88 (73.2)	1.12 (28.4)	2.62 (66.5)	1 1/4 -12	3.38 (85.8)
3.00 (76)	11.38 (289.0)	1.015 (25.8)	2.12 (53.8)	2.12 (53.8)	1.00 (25.4)	1.00 (25.4)	1.12 (28.4)	2.12 (53.8)	3.50 (88.9)	1.12 (28.4)	2.62 (66.5)	1 1/4 -12	4.25 (108.0)
3.50 (89)	11.38 (289.0)	1.015 (25.8)	2.06 (52.3)	2.12 (53.8)	1.00 (25.4)	1.25 (31.8)	1.12 (28.4)	2.12 (53.8)	4.00 (101.6)	1.25 (31.8)	2.75 (69.8)	1 1/4 -12	4.75 (120.6)
4.00 (102)	12.00 (304.8)	1.015 (25.8)	2.12 (53.8)	2.12 (53.8)	1.25 (31.8)	1.25 (31.8)	1.25 (31.8)	2.50 (63.5)	4.50 (114.3)	1.25 (31.8)	2.75 (69.8)	1 1/4 -12	5.25 (133.4)
5.00 (127)	12.00 (304.8)	1.265 (32.1)	2.00 (50.8)	2.00 (50.8)	1.25 (31.8)	1.25 (31.8)	1.50 (38.1)	3.00 (76.2)	5.62 (142.7)	1.25 (31.8)	2.75 (69.8)	1 1/2 -12	6.25 (158.8)

OPTIONAL PINEYE MOUNT



BORE DIA	A	C	E	F	H	K
1.50 (38)	7.56 (192.0)	.88 (22.4)	.94 (23.9)	1.00 (25.4)	1.88 (47.8)	2.25 (57.2)
2.00 (51)	8.62 (218.9)	.88 (22.4)	1.00 (25.4)	1.00 (25.4)	3.00 (76.2)	2.25 (57.2)
2.50 (64)	8.62 (218.9)	.88 (22.4)	1.00 (25.4)	1.00 (25.4)	3.25 (82.6)	2.25 (57.2)
3.00 (76)	8.88 (225.6)	.88 (22.4)	1.00 (25.4)	1.00 (25.4)	4.00 (101.6)	2.75 (69.8)
3.50 (89)	8.94 (227.1)	.88 (22.4)	1.00 (25.4)	1.00 (25.4)	4.50 (114.3)	2.75 (69.8)
4.00 (102)	9.50 (241.3)	.88 (22.4)	1.00 (25.4)	1.00 (25.4)	5.00 (127.0)	2.75 (69.8)
5.00 (127)	10.38 (263.6)	1.12 (28.4)	1.25 (31.8)	1.25 (31.8)	6.00 (152.4)	3.25 (82.6)

OPTIONAL SINGLE LUG MOUNT



BORE DIA	A	C	D	E	F	H	K
1.50 (38)	8.62 (218.9)	1.19 (30.2)	1.25 (31.8)	.94 (23.9)	1.25 (38.1)	.75 (19.0)	.75 (19.0)
2.00 (51)	11.25 (285.8)	2.25 (57.2)	1.25 (31.8)	1.18 (30.0)	1.25 (31.8)	.75 (19.0)	.75 (19.0)
2.50 (64)	11.25 (285.8)	2.25 (57.2)	1.25 (31.8)	1.25 (31.8)	1.25 (31.8)	.75 (19.0)	.75 (19.0)
3.00 (76)	11.38 (289.0)	2.12 (53.8)	1.50 (38.1)	1.25 (31.8)	1.25 (31.8)	1.12 (28.4)	1.12 (28.4)
3.50 (89)	11.38 (289.0)	2.06 (52.3)	1.50 (38.1)	1.25 (31.8)	1.25 (31.8)	1.12 (28.4)	1.12 (28.4)
4.00 (102)	12.00 (304.8)	2.12 (53.8)	1.75 (44.4)	1.25 (31.8)	1.25 (31.8)	1.12 (28.4)	1.12 (28.4)
5.00 (127)	12.00 (304.8)	2.00 (50.8)	2.00 (50.8)	1.50 (38.1)	1.50 (38.1)	1.50 (38.1)	2.00 (50.8)

CYLINDER PORTS AND RODS

BORE DIA.	SIZE & TYPE PORTS		STANDARD RODS		OPTIONAL RODS	
	STANDARD	OPTIONAL	DIA.	MAX. STROKE*	DIA.	MAX. STROKE*
1.50 (38)	9/16 - 18 SAE	1/4 NPTF	.750 (19.0)	27 (686)	None	CONTACT CROSS MFG. INC. ENGINEERING DEPT. FOR MAXIMUM RECOMMENDED STROKE
2.00 (51)	9/16 - 18 SAE	1/4, 3/8 NPTF	1.062 (27.0)	14 (356)	1.250 (31.8)	
2.50 (64)	9/16 - 18 SAE	1/4, 3/8 NPTF	1.250 (31.8)	20 (508)	1.500 (38.1)	
3.00 (76)	3/4 - 16 SAE	3/8, 1/2 NPTF	1.250 (31.8)	16 (406)	1.500 (38.1) 2.000 (50.8)	
3.50 (89)	3/4 - 16 SAE	3/8, 1/2 NPTF	1.500 (38.1)	21 (533)	2.000 (50.8) 2.500 (63.5)	
4.00 (102)	3/4 - 16 SAE	3/8, 1/2 NPTF	1.500 (38.1)	16 (406)	2.000 (50.8) 2.500 (63.5) 3.000 (76.2)	
5.00 (127)	1 1/16 - 12 SAE	1/2, 3/4 NPTF	2.000 (50.8)	26 (660)	2.500 (63.5) 3.000 (76.2) 3.500 (88.9) 4.000 (101.6)	

*At 3000 psi rated operating pressure. Longer strokes are possible at reduced pressures. Additionally, smaller diameter rods can be provided for use at lower pressures or shorter length strokes. Consult CROSS Sales Department for maximum stroke at given pressure. For extended cylinder lengths of over 40" (1016 mm), 1" (25.4 mm) of stop tubing must be used for each 10" (254 mm) of stroke. Stroke limitation applies to compressive loading only.

CLEVIS PINS

BORE DIA.	STANDARD PINS				OPTIONAL PINS			
	DIA. in.	DIA. mm	MATL.	MAX. PRESSURE	DIA. in.	DIA. mm	MATL	MAX. PRESSURE psi / bar
1.50 (38)	.75	(19.0)	STEEL	3000 psi / 207 bar	NONE			———
2.00 (51)	1.00	(25.4)	STEEL					———
2.50 (64)	1.00	(25.4)	STEEL					———
3.00 (76)	1.00	(25.4)	STEEL					———
3.50 (89)	1.00	(25.4)	HARDENED STEEL		1.00	(25.4)	STEEL	2500 (172.5)
4.00 (102)	1.00	(25.4)	HARDENED STEEL		1.25	(31.8)	STEEL	1500 (103.5)
5.00 (127)	1.25	(31.8)	HARDENED STEEL		1.25	(31.8)	STEEL	2100 (144.9)

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CROSS

ORDERING INFORMATION

SERIES	BORE DIA. INCH x 100	STROKE INCH x 100	ROD DIA. INCH x 100	PORT SIZE & TYPE	END MOUNTING	CLEVIS PIN	PORT LOCATION	OTHER
UT	**150** **200** **250** **300** **350** **400** **500**	As Required	**75** **106** **125** **150** **200** **250** **300** **350** **400**	**C** 9/16-18 SAE **D** 3/4-16 SAE **E** 7/8 - 14 SAE **F** 1 1/16-12 SAE **M** 1/8 NPTF **N** 1/4 NPTF **P** 3/8 NPTF **R** 1/2 NPTF **S** 3/4 NPTF	**C*** Clevis **P** Pineye **S**(1) Single lug **X** Other (Specify)	**A** .75 Steel **B** 1.00 Steel **C** 1.00 Hard Steel **D** 1.25 Hard Steel **F** Other (Specify)	**A** In Line with pins **B** 90° to pins	**X** Specify

*Standard

(1) For pins over 1" diameter, single lug mounts will be welded rather than screw-on type.

EXAMPLE: UT250-2000-106CCAA is a standard 2 1/2 diameter bore cylinder with 20" stroke, 1 1/16" rod, 9/16 - 18 SAE ports, standard clevis and mountings, 3/4" diameter clevis pins with ports mounted in-line.

CROSS

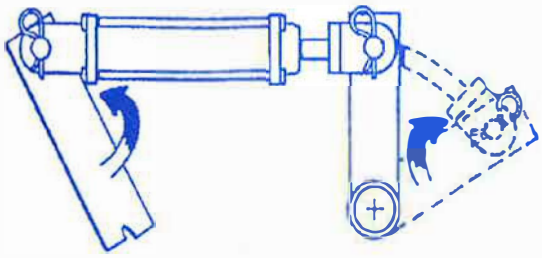
CROSS MANUFACTURING, INC.
100 Factory Street
Lewis, Kansas 67552
Phone: 620-324-5525

HYDRAULIC CYLINDER SAFETY

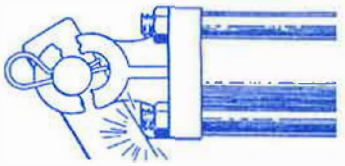
General Cautions:

- Always use a relief or bypass in your hydraulic system to prevent personal injury and/or breakage of equipment or components. Never operate a cylinder above rated pressures.
- Never use a cylinder as a transport device.
- Use correct fittings and proper hydraulic oil - Contact CROSS if you have questions.

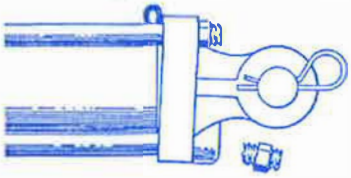
Binding



Check clevis clearances before, during and after extending the cylinder and before using the cylinder under pressure to avoid possible injury, or bent or broken rods or clevises caused by binding.

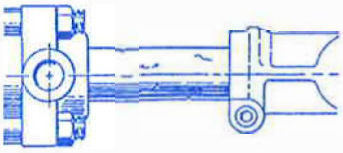


Too much pressure causes...



Extruded static seals and/or broken tie rods. Check pressure rating of cylinder against pump pressure of the tractor.

Rough or scored rod



Protect the rod at all times and make sure that nothing hits or rubs it when it is extended. Rough places on the rod damage the seals and reduce their normal life resulting in the necessity for frequent replacement.

Dirty Oil

Oil must be filtered to a minimum of 25 microns. Filters should be changed regularly - spin-on types after 50 hours of initial use and then after every two hundred fifty hours of use. Use of a condition indicator is recommended. Consult your tractor or implement owner's manual for filtration and changing recommendations for internal systems

Pinhole Leaks

If you observe a pinhole leak, discontinue use of the component. If oil has penetrated your skin or contacted your eye, seek medical attention immediately!

CROSS
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