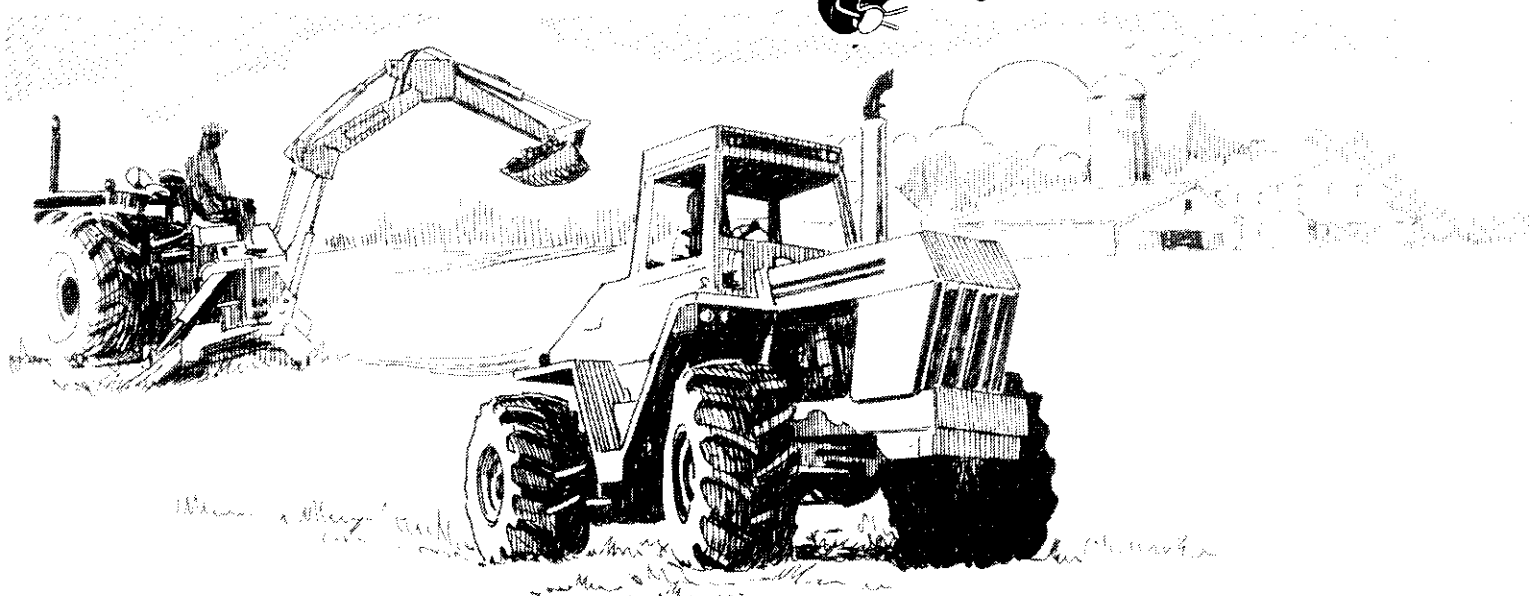
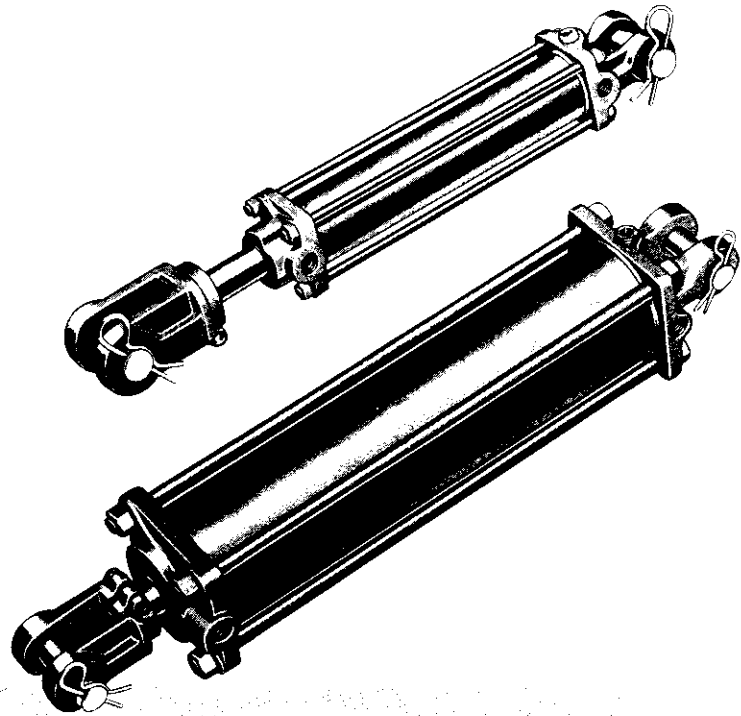




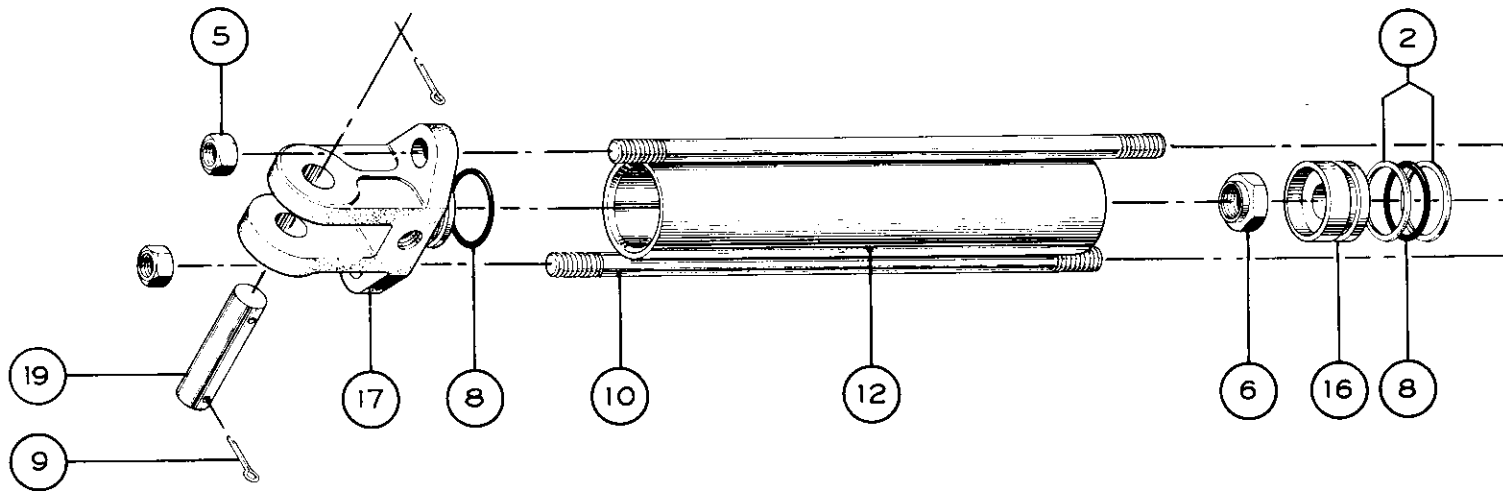
HYDRAULIC CYLINDERS

DB SERIES



CROSS MANUFACTURING, INC.

DB Series Cylinder



CROSS STANDARD SIZE CHART

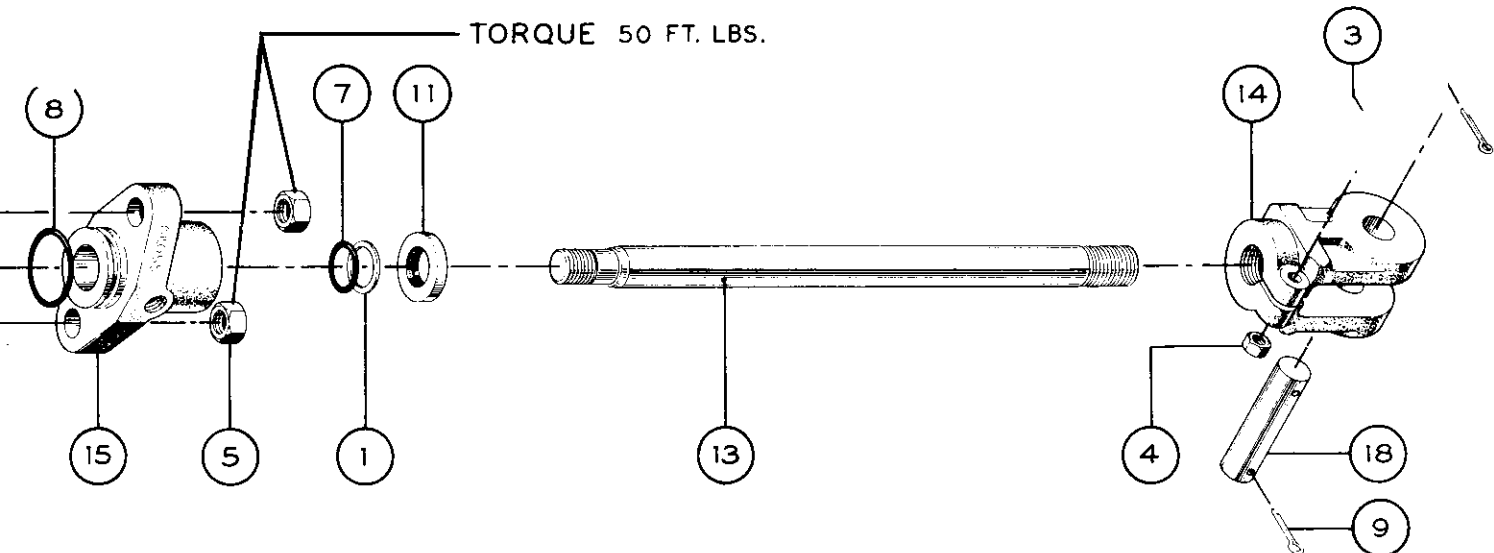
BORE	ROD SIZE	PORT SIZE
1 1/2"	3/4	1/4 NPTF
2"	1 1/16	3/8 NPTF
2 1/2"	1 1/16	3/8 NPTF
3"	1 1/4	1/2 NPTF
3 1/2"	1 1/4	1/2 NPTF
4"	1 1/4	1/2 NPTF
5"	1 1/2	1/2 NPTF

IF HEADS OR BASES ARE DESIRED WITH PORT SIZES OTHER THAN STANDARD, PLEASE SPECIFY CYLINDER BORE SIZE AND PORT THREAD SIZE.

IF PISTON RODS, TUBES OR TIE RODS ARE DESIRED FOR STROKE LENGTHS OTHER THAN THOSE LISTED, PLEASE SPECIFY BORE SIZE, ROD SIZE AND STROKE LENGTH.

CROSS MANUFACTURING INC. RESERVES THE RIGHT TO DISCONTINUE PRODUCTS AND/OR CHANGE DESIGN, SPECIFICATIONS OR PRICES AT ANY TIME WITHOUT INCURRING ANY OBLIGATIONS.

1 1/2" BORE



PARTS LIST - 1 1/2" BORE

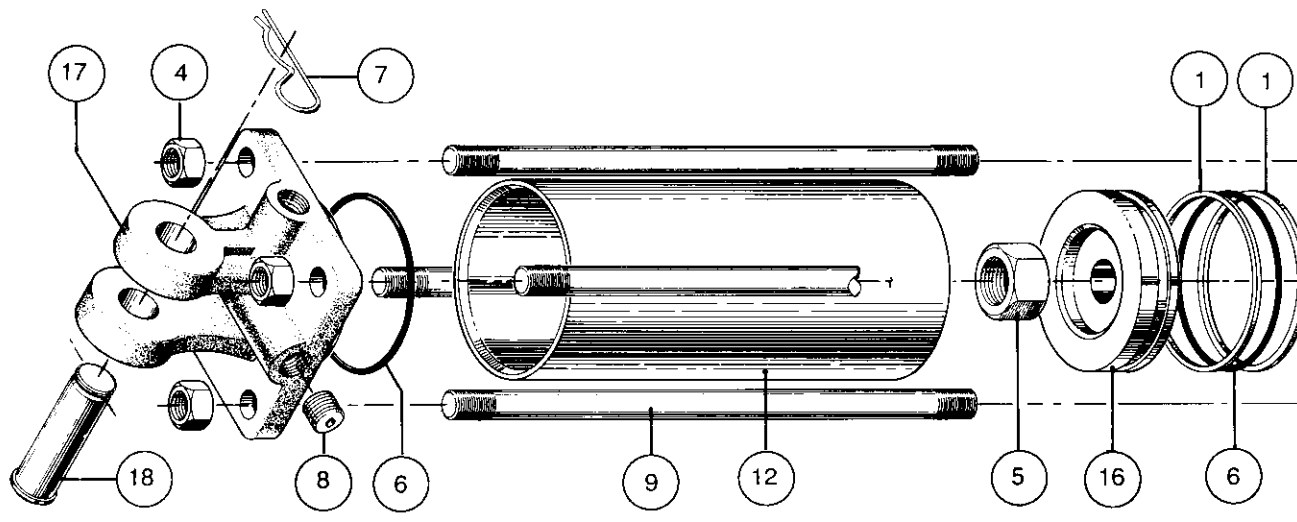
DESCRIPTION	QTY REQD	PART NO.
1 BACK-UP (ROD)	1	2A0006-210
2 BACK-UP (PISTON)	2	2A0010-218
3 CAPSCREW	1	2A0079-412
4 CLEVIS NUT	1	2A0235-4
5 TIE ROD NUT	4	2A0235-7
6 PISTON NUT	1	1A0493
7 O-RING (ROD)	1	2A0283-7210
8 O-RING (TUBE)	3	2A0283-7218
9 COTTER PIN	4	2A0309-410
10 TIE ROD	2	2A0579-*
11 WIPER	1	2A0773-812
12 TUBE	1	1D0001-*
13 ROD	1	1D0201-Δ
14 CLEVIS	1	1D1008-1
15 HEAD	1	NOT AVAILABLE
16 PISTON	1	1D1401-150
17 BASE	1	NOT AVAILABLE
18 CLEVIS PIN (ROD)	1	1D1558-10211
19 CLEVIS PIN (BASE)	1	1D1558-10211
SEAL KIT	0	1C4642

STROKE	DASH NUMBERS		
	* TIE ROD 2A0579	* TUBE 1D0001	3/4" ROD 1D0201
4	- 825	- 600	- 881
6	- 1025	- 800	- 1081
8	- 1225	- 1000	- 1281
10	- 1425	- 1200	- 1481
12	- 1625	- 1400	- 1681
14	- 1825	- 1600	- 1881
16	- 2025	- 1800	- 2081
18	- 2225	- 2000	- 2281
20	- 2425	- 2200	- 2481

THE 1 1/2 INCH BORE DB CYLINDER IS NO LONGER BEING MANUFACTURED
 — PARTS LIST FOR REFERENCE ONLY.

DB Series Cylinder

2" & 2 1/2" BORE



PARTS LIST — 2" BORE — 2 1/2" BORE

QTY REQD	DESCRIPTION	2" BORE		2 1/2" BORE		
		1 1/16" STD ROD	1 1/8" ROD	1 1/16" STD ROD	1 1/8" ROD	1 1/4" ROD
2	BACK-UP (PISTON)	2A0010-326		2A0010-330		
1	CAPSCREW	2A0079-616		2A0079-616		
1	CLEVIS NUT	2A0235-6		2A0235-6		
8	TIE ROD NUT	2A0235-6		2A0235-6		
1	PISTON NUT	2A0246-12		2A0246-12		
3	O-RING (TUBE)	2A0283-7326		2A0283-7330		
2	PIN CLIP	2A0308-1		2A0308-1		
1	PIPE PLUG	2A0349-6		2A0349-6		
4	TIE ROD	2A0578-*		2A0578-*		
1	U-CUP	2A0688-117	2A0688-218	2A0688-117	2A0688-218	2A0688-220
1	WIPER	2A0773-717	2A0773-818	2A0773-717	2A0773-818	2A0773-720
1	TUBE	1D0003-★		1D0005-★		
1	ROD	1D0203-□	1D0204-■	1D0203-□	1D0204-■	1D0206-◇
1	CLEVIS	1D1003-3	1D1003-4	1D1003-3	1D1003-4	1D1003-5
1	HEAD	1D1153-3	1D1153-10	1D1155-3	1D1155-10	1D1155-17
1	PISTON	1D1401-200		1D1401-250		
1	BASE	1D1503-3		1D1505-3		
1	CLEVIS PIN, ROD	1D1551-16275		1D1551-16275		
1	CLEVIS PIN, BASE	1D1551-16275		1D1551-16275		
0	SEAL KIT	1C4244	1C4623	1C4433	3C4385	1C4982

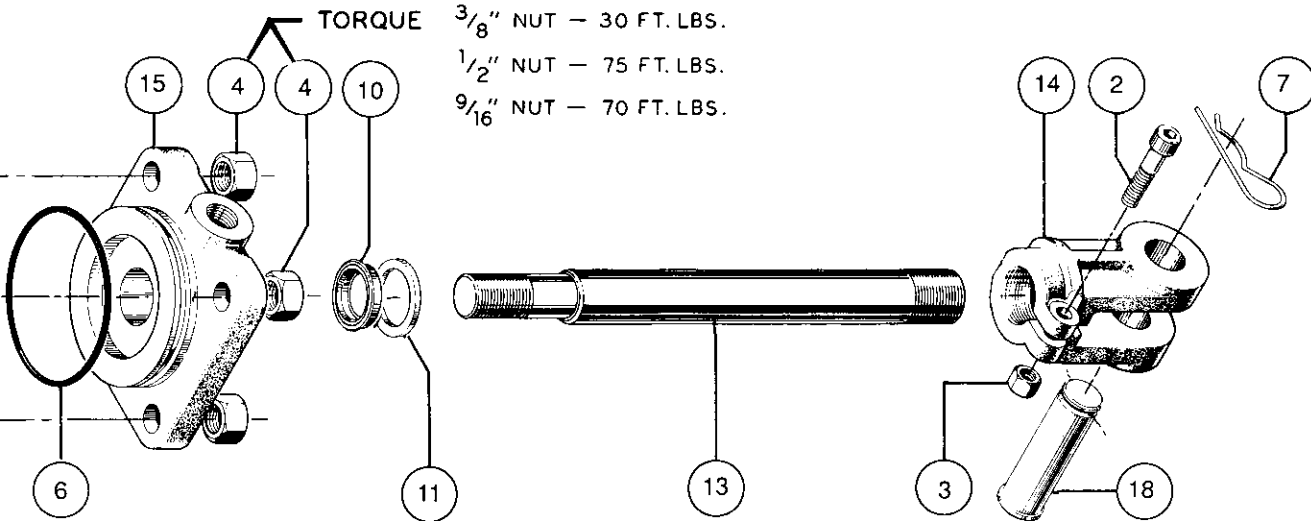
DASH NUMBERS FOR 2" BORE

STROKE	* TIE ROD 2A0578	★ TUBE 1D0003	□ 1 1/16" ROD 1D0203	■ 1 1/8" ROD 1D0204
4	-875	-650	-875	-875
6	-1075	-850	-1075	-1075
8	-1275	-1050	-1275	-1275
8ASAE	-1275	-1050	-1475	-1475
10	-1475	-1250	-1475	-1475
12	-1675	-1450	-1675	-1675
14	-1875	-1650	-1875	-1875
16	-2075	-1850	-2075	-2075
18	-2275	-2050	-2275	-2275
20	-2475	-2250	-2475	-2475

DASH NUMBERS FOR 2 1/2" BORE

STROKE	* TIE ROD 2A0578	□ TUBE 1D0005	□ 1 1/16" ROD 1D0203	■ 1 1/8" ROD 1D0204	◇ 1 1/4" ROD 1D0206
	-875	-650	-875	-875	-875
	-1075	-850	-1075	-1075	-1075
	-1275	-1050	-1275	-1275	-1275
	-1475	-1250	-1475	-1475	-1475
	-1675	-1450	-1675	-1675	-1675
	-1875	-1650	-1875	-1875	-1875
	-2075	-1850	-2075	-2075	-2075
	-2275	-2050	-2275	-2275	-2275
	-2475	-2250	-2475	-2475	-2475

3" & 3 1/2" BORE



PARTS LIST

QTY REQD	DESCRIPTION	3" BORE			3 1/2" BORE	
		1 1/8" ROD	1 1/4" STD ROD	1 1/2" ROD	1 1/4" STD ROD	1 1/2" ROD
2	BACK-UP (PISTON)	2A0010-334			2A0010-338	
1	CAPSCREW	2A0079-616			2A0079-616	
1	CLEVIS NUT	2A0235-6			2A0235-6	
8	TIE ROD NUT	2A0235-8			2A0236-9	
1	PISTON NUT	2A0246-12			1A1141	
3	O-RING (TUBE)	2A0283-7334			2A0283-7338	
2	PIN CLIP	2A0308-1			2A0308-1	
1	PIPE PLUG	2A0349-8			2A0349-8	
4	TIE ROD	2A0580-*			2A0581-*	
1	U-CUP	2A0688-218	2A0688-220	2A0688-224	2A0688-220	2A0688-224
1	WIPER	2A0773-818	2A0773-720	2A0773-824	2A0773-720	2A0773-824
1	TUBE	1D0007-★			1D0009-	
1	ROD	1D0204-■	1D0206-◇	1D0221-◆	1D0205-◇	1D0222-◆
1	CLEVIS (1" PIN HOLE) STD	1D1003-4	1D1003-5		1D1013-5	
1	CLEVIS (1 1/4" PIN HOLE) OPT.	1D1013-11	1D1013-12		1D1013-12	
1	CLEVIS (1 1/4" RH. 16" ASAE) OPT.	1D1014-11	1D1014-12		1D1014-12	
1	HEAD	1D1157-4	1D1157-13	1D1157-22	1D1159-4	1D1159-13
1	PISTON	1D1401-300			1D1401-350	
1	BASE (1" PIN HOLE) STD	1D1507-4			1D1509-4	
1	BASE (1 1/4" PIN HOLE) OPT.	1D1507-13			1D1509-13	
1	CLEVIS PIN (1")	1D1551-16275			1D1551-16275	
1	CLEVIS PIN (1 1/4") OPT.	1D1551-20300			1D1551-20300	
1	CLEVIS PIN (1")	1D1551-16300			1D1551-16300	
1	CLEVIS PIN (1 1/4") OPT.	1D1551-20300			1D1551-20300	
0	SEAL KIT	1C4147	1C4629	1C4630	1C4429	1C4631

DASH NUMBERS FOR 3" BORE

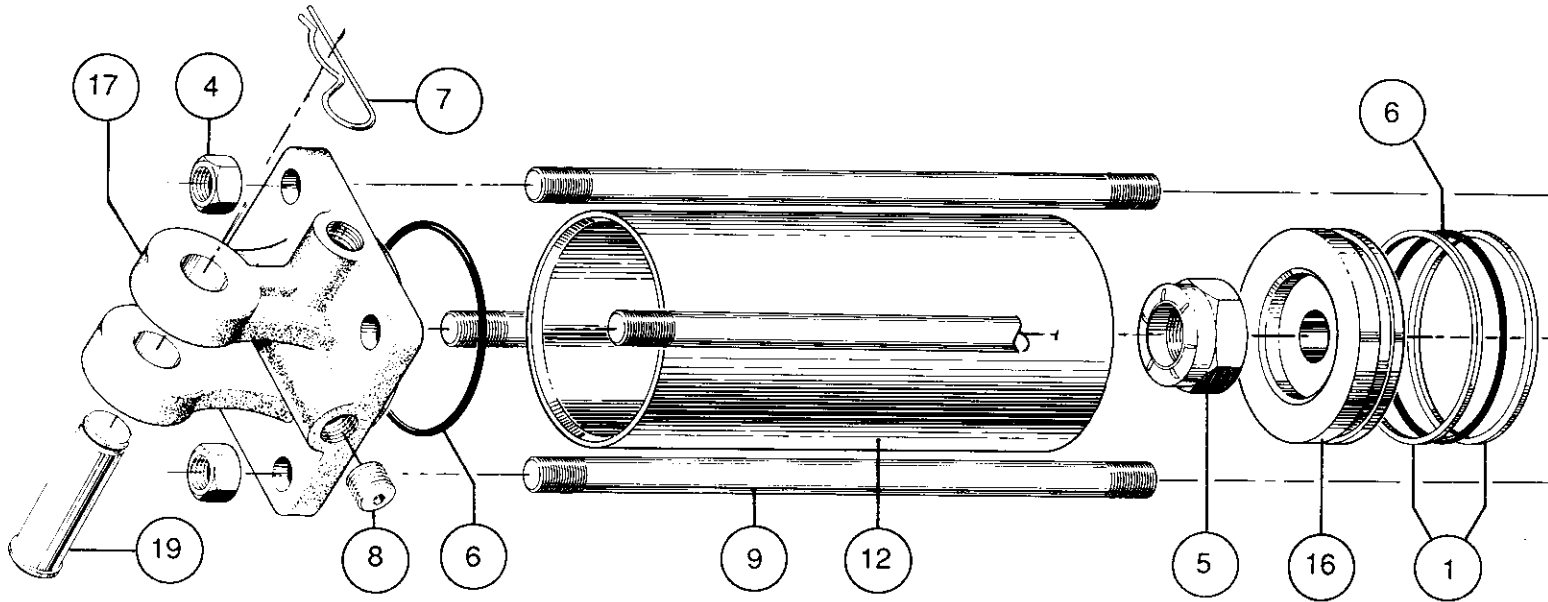
STROKE	* TIE ROD 2A0580	★ TUBE 1D0007	■ 1 1/8" ROD 1D0204	◇ 1 1/4" ROD 1D0206	◆ 1 1/2" ROD 1D0221
4	-900	-650	-875	-875	-875
6	-1100	-850	-1075	-1075	-1075
8	-1300	-1050	-1275	-1275	-1275
8 ASAE	-1300	-1050	-1475	-1475	-1475
10	-1500	-1250	-1475	-1475	-1475
12	-1700	-1450	-1675	-1675	-1675
14	-1900	-1650	-1875	-1875	-1875
16	-2100	-1850	-2075	-2075	-2075
16 ASAE	-2100	-1850	-2525	-2525	-2525
18	-2300	-2050	-2275	-2275	-2275
20	-2500	-2250	-2475	-2475	-2475
24					
30					
36					

DASH NUMBERS FOR 3 1/2" BORE

STROKE	* TIE ROD 2A0581	★ TUBE 1D0009	◇ 1 1/4" ROD 1D0205	◆ 1 1/2" ROD 1D0222
4	-925	-650	-862	-862
6	-1125	-850	-1062	-1062
8	-1325	-1050	-1262	-1262
8 ASAE	-1325	-1050	-1462	-1462
10	-1525	-1250	-1462	-1462
12	-1725	-1450	-1662	-1662
14	-1925	-1650	-1862	-1862
16	-2125	-1850	-2062	-2062
16 ASAE	-2125	-1850	-2512	-2512
18	-2325	-2050	-2262	-2262
20	-2525	-2250	-2462	-2462
24	-2925	-2650	-2862	-2862
30	-3525	-3250	-3462	-3462
36	-4125	-3850	-4062	-4062

DB Series Cylinder

4" BORE

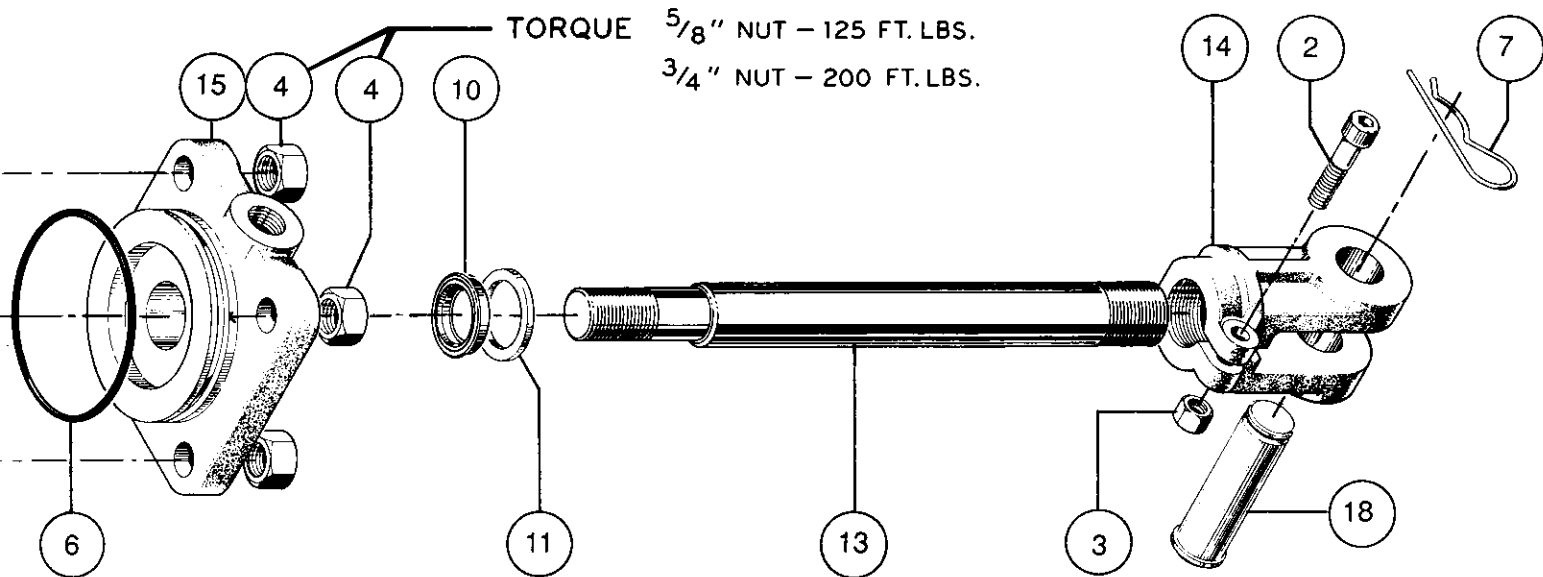


PARTS LIST — 4" BORE

QTY REQD	DESCRIPTION	1 1/4" STD ROD	1 1/2" ROD	2" ROD
2	BACK-UP (TUBE)	2A0010-342		
1	CAPSCREW	2A0079-616		
1	CLEVIS NUT	2A0235-6		
8	TIE ROD NUT	2A0236-10		
1	PISTON NUT	2A0246-16		
3	O-RING (TUBE)	2A0263-7342		
2	PIN CLIP	2A0308-1		
1	PIPE PLUG	2A0349-8		
4	TIE ROD	2A0582-*		
1	U-CUP	2A0688-220	2A0688-224	2A0688-232
1	WIPER	2A0773-720	2A0773-824	2A0773-1032
1	TUBE	1D0011-*		
1	ROD	1D0207-◇	1D0208-◆	1D0210-●
1	CLEVIS (1" PIN HOLE) STD	1D1013-5		
1 OPT.	CLEVIS (1 1/4" PIN HOLE)	1D1013-12		
1 OPT.	CLEVIS (1 1/4" PIN HOLE) ASAE	1D1014-12		
1	HEAD	1D1161-4	1D1161-13	1D1161-22
1	PISTON	1D1401-400		
1	BASE (1" PIN HOLE) STD	1D1511-4		
1 OPT.	BASE (1 1/4" PIN HOLE)	1D1511-13		
1	CLEVIS PIN (1")	1D1551-16275		
1 OPT.	CLEVIS PIN (1 1/4")	1D1551-20300		
1	CLEVIS PIN (1")	1D1551-16300		
1 OPT.	CLEVIS PIN (1 1/4")	1D1551-20300		
0	SEAL KIT	1C4430	1C4637	1C4638

STROKE	DASH NUMBERS FOR 4" BORE				
	* TIE ROD 2A0582	* TUBE 1D0011	◇ 1 1/4" ROD 1D0207	◆ 1 1/2" ROD 1D0208	● 2" ROD 1D0210
4	-900	-612	-925	-925	-925
6	-1100	-812	-1125	-1125	-1125
8	-1300	-1012	-1325	-1325	-1325
8 ASAE	-1300	-1012	-1488	-1488	-1488
10	-1500	-1212	-1525	-1525	-1525
12	-1700	-1412	-1725	-1725	-1725
14	-1900	-1612	-1925	-1925	-1925
16	-2100	-1812	-2125	-2125	-2125
16 ASAE	-2100	-1812	-2538	-2538	-2538
18	-2300	-2012	-2325	-2325	-2325
20	-2500	-2212	-2525	-2525	-2525
24	-2900	-2612	-2925	-2925	-2925
30	-3500	-3212	-3525	-3525	-3525
36	-4100	-3812	-4125	-4125	-4125

5" BORE



PARTS LIST — 5" BORE

QTY	DESCRIPTION	REQD	ROD TYPE	
			1 1/2" STD ROD	2" ROD
2	BACK-UP (TUBE)		2A0010-425	→
1	CAPSCREW		2A0079-616	→
1	CLEVIS NUT		2A0235-6	→
8	TIE ROD NUT		2A0236-12	→
1	PISTON NUT		2A0248-20	→
3	O-RING (TUBE)		2A0283-7425	→
2	PIN CLIP		2A0308-1	→
1	PIPE PLUG		2A0349-8	→
4	TIE ROD		2A0583-*	→
1	U-CUP		2A0688-224	2A0688-232
1	WIPER		2A0773-824	2A0773-1032
1	TUBE		1D0015-★	→
1	ROD		1D0209-◆	1D0211-●
1	CLEVIS (1" PIN HOLE) STD.		1D1013-5	→
OPT.	CLEVIS (1 1/4" PIN HOLE)		1D1013-12	→
OPT.	CLEVIS (1 1/4" PIN HOLE) ASAE		1D1014-12	→
1	HEAD		1D1165-4	1D1165-15
1	PISTON		1D1401-500	→
1	BASE (1" PIN HOLE) STD.		1D1515-4	→
OPT.	BASE (1 1/4" PIN HOLE)		1D1515-15	→
1	CLEVIS PIN (1")		1D1551-16275	→
OPT.	CLEVIS PIN (1 1/4")		1D1551-20300	→
1	CLEVIS PIN (1")		1D1551-16375	→
OPT.	CLEVIS PIN (1 1/4")		1D1551-20375	→
0	SEAL KIT		1C4654	1C4655

DASH NUMBERS FOR 5" BORE

STROKE	ROD TYPE			
	* TIE ROD 2A0583	★ TUBE 1D0015	◆ 1 1/2" ROD 1D0209	● 2" ROD 1D0211
4	- 1050	- 725	- 1012	- 1012
6	- 1250	- 925	- 1212	- 1212
8	- 1450	- 1125	- 1412	- 1412
8 ASAE	- 1450	- 1125	- 1412	- 1412
10	- 1650	- 1325	- 1612	- 1612
12	- 1850	- 1525	- 1812	- 1812
14	- 2050	- 1725	- 2012	- 2012
16	- 2250	- 1925	- 2212	- 2212
16 ASAE	- 2250	- 1925	- 2462	- 2462
18	- 2450	- 2125	- 2412	- 2412
20	- 2650	- 2325	- 2612	- 2612
24	- 3050	- 2725	- 3012	- 3012
30	- 3650	- 3325	- 3612	- 3612
36	- 4250	- 3925	- 4212	- 4212

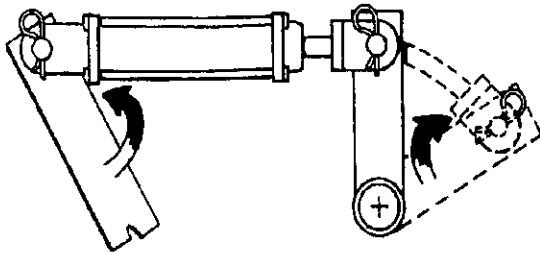


HYDRAULIC CYLINDER SAFETY

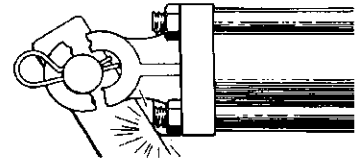
General Cautions:

- 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.

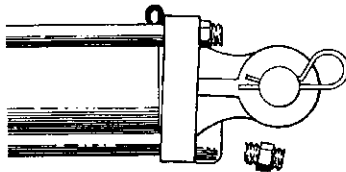
Binding



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.

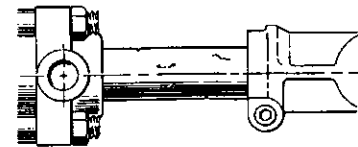


Too much pressure causes...



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!

