



## IOWA MOLD TOOLING CO., INC.

BOX 189, GARNER, IA 50438-0189

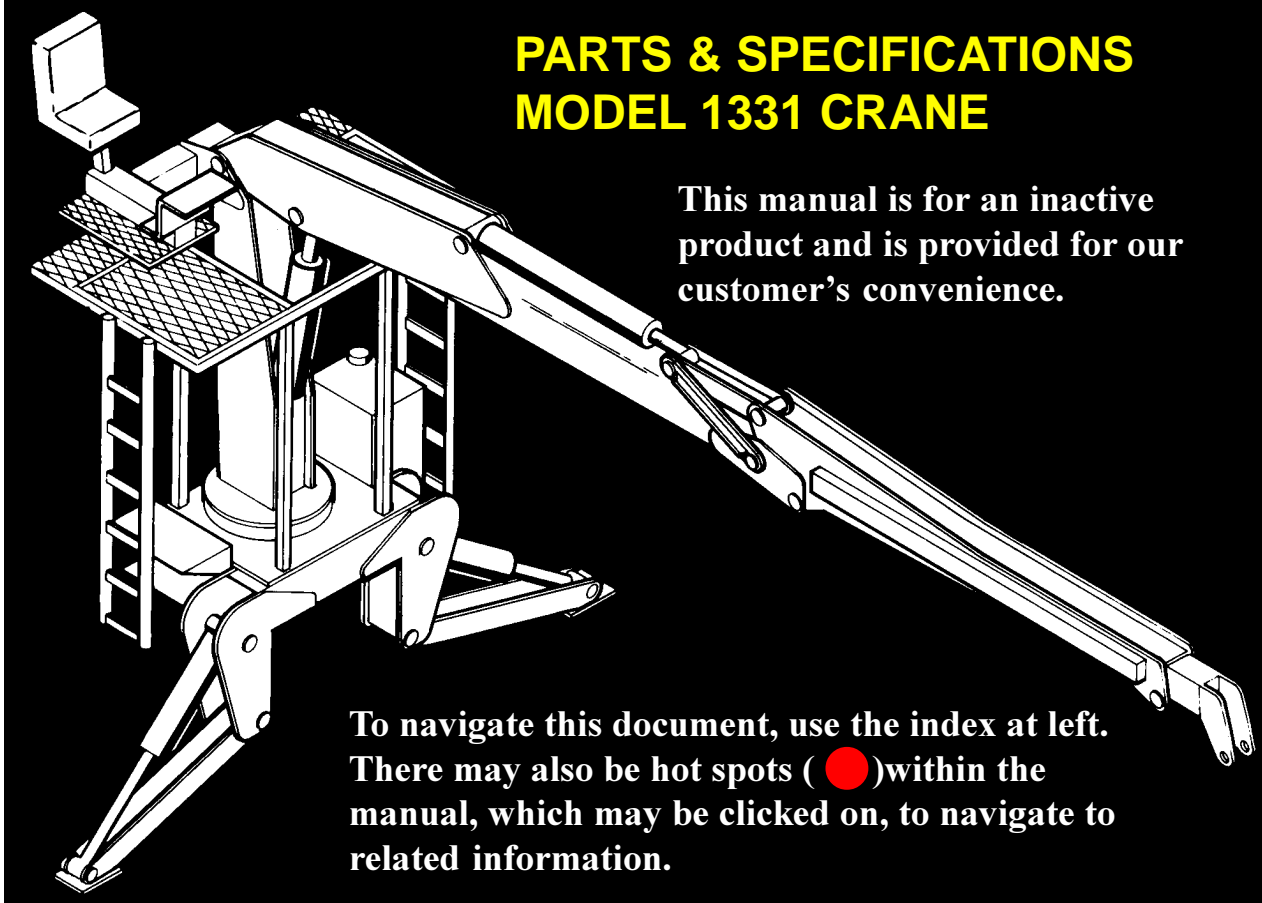
TEL: 515-923-3711

TECHNICAL SUPPORT FAX: 515-923-2424

### PARTS & SPECIFICATIONS MODEL 1331 CRANE

This manual is for an inactive product and is provided for our customer's convenience.

To navigate this document, use the index at left. There may also be hot spots (●) within the manual, which may be clicked on, to navigate to related information.



# INTRODUCTION – READ CAREFULLY!

This volume deals with information applicable to your particular crane. For operating, maintenance and repair instructions, refer to Volume 1, *OPERATION, MAINTENANCE AND REPAIR*. Volume 1 contains the following information:

- SECTION 1. OPERATION
- SECTION 2. MAINTENANCE
- SECTION 3. REPAIR
- SECTION 4. INSTALLATION -  
CHASSIS PREPARATION
- SECTION 5. APPENDIX

We recommend that Volume 2, *PARTS AND SPECIFICATIONS* be kept in a safe place in the office.

This manual is provided to assist you with ordering parts for your IMT truck-mounted articulating crane. It also contains additional instructions regarding your particular installation.

It is the user's responsibility to maintain and operate this unit in a manner that will result in the safest working conditions possible.

Warranty of this unit will be void on any part of the unit subjected to misuse due to overloading, abuse, lack of maintenance and unauthorized modifications. No warranty - verbal, written or implied - other than the official, published IMT new machinery and equipment warranty will be valid with this unit.

In addition, it is also the user's responsibility to be aware of existing Federal, State and Local codes and regulations governing the safe use and maintenance of this unit. Listed below is a publication that the user should thoroughly read and understand.

ANSI/ASME B30.5-1982  
*MOBILE AND LOCOMOTIVE CRANES*  
The American Society of Mechanical  
Engineers  
United Engineering Center  
345 East 47th Street  
New York, NY 10017

Three means are used throughout this manual to gain the attention of personnel. They are NOTE's, CAUTION's and WARNING's and are defined as follows:

## NOTE

A NOTE is used to either convey additional information or to provide further emphasis for a previous point.

## CAUTION

A CAUTION is used when there is the strong possibility of damage to the equipment or premature equipment failure.

## WARNING

A WARNING is used when there is the potential for personal injury or death.

Treat this equipment with respect and service it regularly. These two things can add up to a safer working environment.

# Section 1. SPECIFICATIONS

## GENERAL

Crane Rating	(17.91 ton-meters)	129,500 ft.-lbs.
Reach (from centerline of rotation)	(9.40 m)	30'-10"
Hydraulic Extension	(213 cm)	84"
* Lifting Height	(12.67 m)	41'-7"
Crane Weight	(4,287 kg.)	9,450 lbs.
Outrigger Span	(4.57 m)	15'-0"
* Storage Height	(4.04 m)	13'-3"
** Base Mounting Space Required	(91.4 cm)	36"
Optimum Pump Capacity		
(tandem pump - each section)	(60.6 liters/min.)	16 U.S. Gal./min.
Oil Reservoir Capacity	(148 liters)	39 U.S. Gallons
*** Vertical Center of Gravity (from bottom of crane)	(147.3 cm)	58"
*** Horizontal Center of Gravity		
(from centerline of rotation)	(182.9 cm)	72"
Design Factors - pins and hydraulics	4/1	4/1

- \* Based on 41" (104.1 cm) truck frame height.
- \*\* Allow an additional 3" (7.6 cm) between the truck cab and body for clearance between the cab, crane and body.
- \*\*\* Based on hydraulic extension fully retracted, inner and outer booms horizontal and hydraulic fork and rotator attached.

## LIFTING CAPACITY (from centerline of rotation)

23'-10" (7.26 m)	(2,449 kg.)	5,400 lbs.
30'-10" (9.40 m)	(1,905 kg.)	4,200 lbs.

## \* PERFORMANCE CHARACTERISTICS

Rotation - 400° (7.18 Rad.)	30 Seconds
Inner Boom Elevation - -20° to +72° (-0.35 Rad. to +1.26 Rad.)	22 Seconds
Outer boom Articulation - 168° (2.93 Rad.)	23 Seconds
Extension Boom - 84" (213.4 cm)	10 Seconds
Outrigger Extension - 29-1/4" (74.3 cm)	32 Seconds

- \* Based on Optimum oil flow of 16 GPM (60.6 liter/min.) for each function.

## POWER SOURCE

Integral-mounted, tandem pump and PTO application. Other standard power sources may be utilized. Minimum horsepower required is 55 horsepower.

## ROTATION SYSTEM

Turntable bearing powered with a high-torque hydraulic motor through a ring-and-pinion type spur gear train. A fail-safe, spring-loaded brake is supplied between the drive gear and the motor providing rotational and parking brake action. Total gear reduction is 68.3 to 1.

## CYLINDER HOLDING VALVES

The holding sides of all cylinders are equipped with integral-mounted counter-balance valves to prevent sudden cylinder collapse in case of hose or other hydraulic component failure. In addition, the outer, extension and outrigger cylinders feature double holding valves. The counter-balance valve serves several functions. First, it is a holding valve. Secondly, it is so constructed that it will control the lowering function and allow that motion to be feathered while under load. Finally, if a hose fails, the only oil loss will be that in the hose.

## CYLINDERS

	Bore	Stroke
Inner Cylinder	(17.8 cm) 7"	(76.8 cm) 30-1/4"
Outer Cylinder	(16.5 cm) 6-1/2"	(139.7 cm) 55"
Extension Cylinder	(7.6 cm) 3"	(213.4 cm) 84"
Outrigger Cylinder	(16.5 cm) 6-1/2"	(74.3 cm) 29-1/4"

HYDRAULIC SYSTEM

Open-centered, full pressure system with tandem pump requiring 16 U.S. GPM (60.6 liters/min.) optimum oil flow at 2500 PSI (175.7 kg. sq. cm.). Six-spool, stack-type control valve bank with mid-inlet (to feed 4 crane functions and 2 additional functions for a wallboard fork). A separate 2-spool valve bank installed on the base operates the curb- and street-side outriggers. System includes hydraulic oil reservoir, suction- and return-line filters, control valve banks and all necessary hoses and fittings.

CAPACITY ALERT SYSTEM

A pressure sensor mounted on the inner boom cylinder and connected hydraulically to the lift side of the outer boom and the extend side of the extension boom provides a capacity alert system. If the operator tries to pick up a load in excess of crane capacity, the outer boom lift and extension out functions will not operate. To relieve the condition, the outer boom can be lowered or the extension boom can be retracted.

MINIMUM CHASSIS SPECIFICATIONS

Body Style		Conventional Cab
Wheel Base	(604.5 cm)	238"
Cab to Trunnion	(457.2 cm)	180"
Frame Section Modulus	(492 cc)	30.0 in. <sup>3</sup>
R B M	(38,021 kg-m)	3,000,000 in.-lbs.
Front Axle	(7,258 kg.)	16,000 lbs.
Rear Axle	(17,237 kg.)	38,000 lbs.
Transmission		5-speed

In addition to these specifications, heavy-duty electrical and cooling systems and dual, tandem rear wheels are required. It is recommended that the vehicle be equipped with an electric engine tachometer, auxiliary brake lock and power steering.

**Figure A-1. Geometric Configuration**

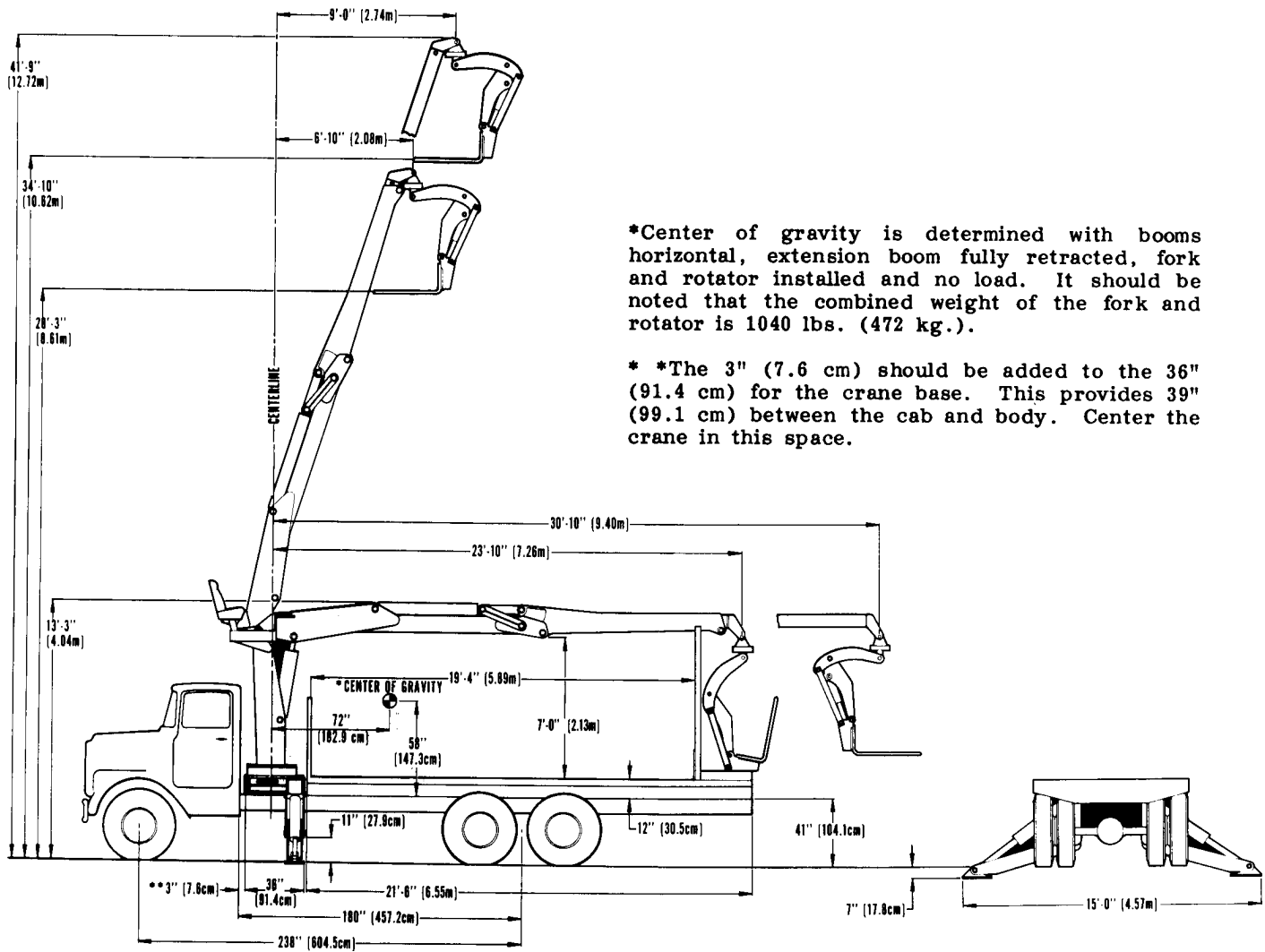
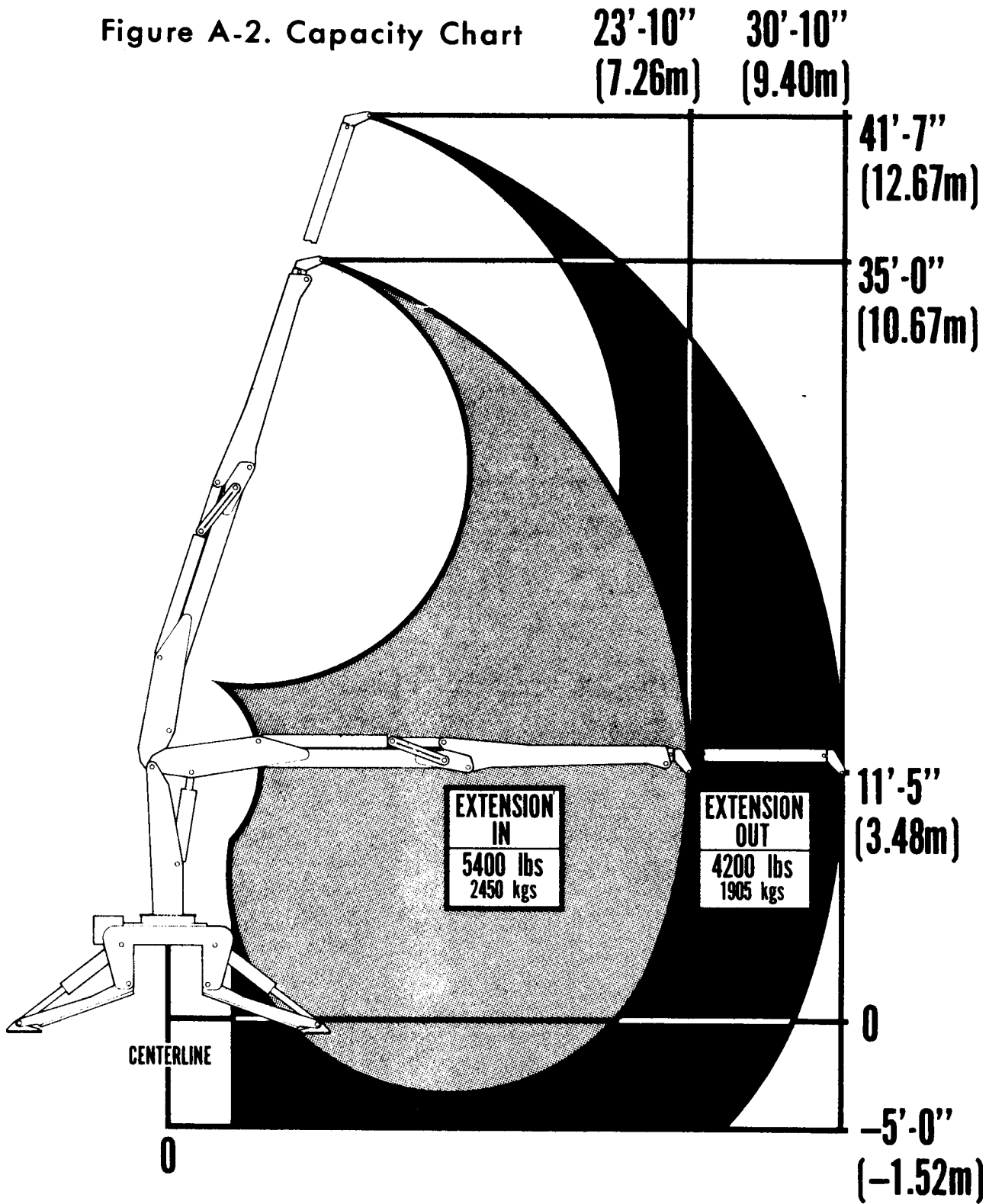


Figure A-2. Capacity Chart



## **Section 2. CRANE DESCRIPTION**

### **2-1. GENERAL**

The 1331 crane is designed primarily for use as a wallboard handling crane and is used with the wallboard fork. This section describes the major assemblies on this crane and Figure B-1 illustrates their location.

### **2-2. BASE**

The base provides the means for mounting the crane on the truck chassis. It incorporates the 400° (7.18 Rad.) rotation mechanism and the outriggers. The outriggers are powered by double-acting hydraulic cylinders to provide stabilization during crane operation - maximum span is 15'-0" (4.57m). In addition, the base includes the ladder and platform for gaining access to the operator's station.

### **2-3. MAST**

The mast provides the necessary elevation for crane operation as well as a hinge point for the inner boom. In addition, the operator's station is a part of the mast providing for a clear, unobstructed view of the work area.

### **2-4. INNER BOOM**

The inner boom will swing through a full 92° (1.61 Rad.) from -20° to +72° (-0.35 Rad. to +1.26 Rad.). It is raised and lowered through the use of a single, double-acting hydraulic cylinder.

### **2-5. OUTER BOOM**

The outer boom will swing through 168° (2.93 Rad.). It is raised and lowered through the use of a double-acting hydraulic cylinder mounted on top of the inner boom. The outer boom also provides storage for the extension boom in the retracted position.

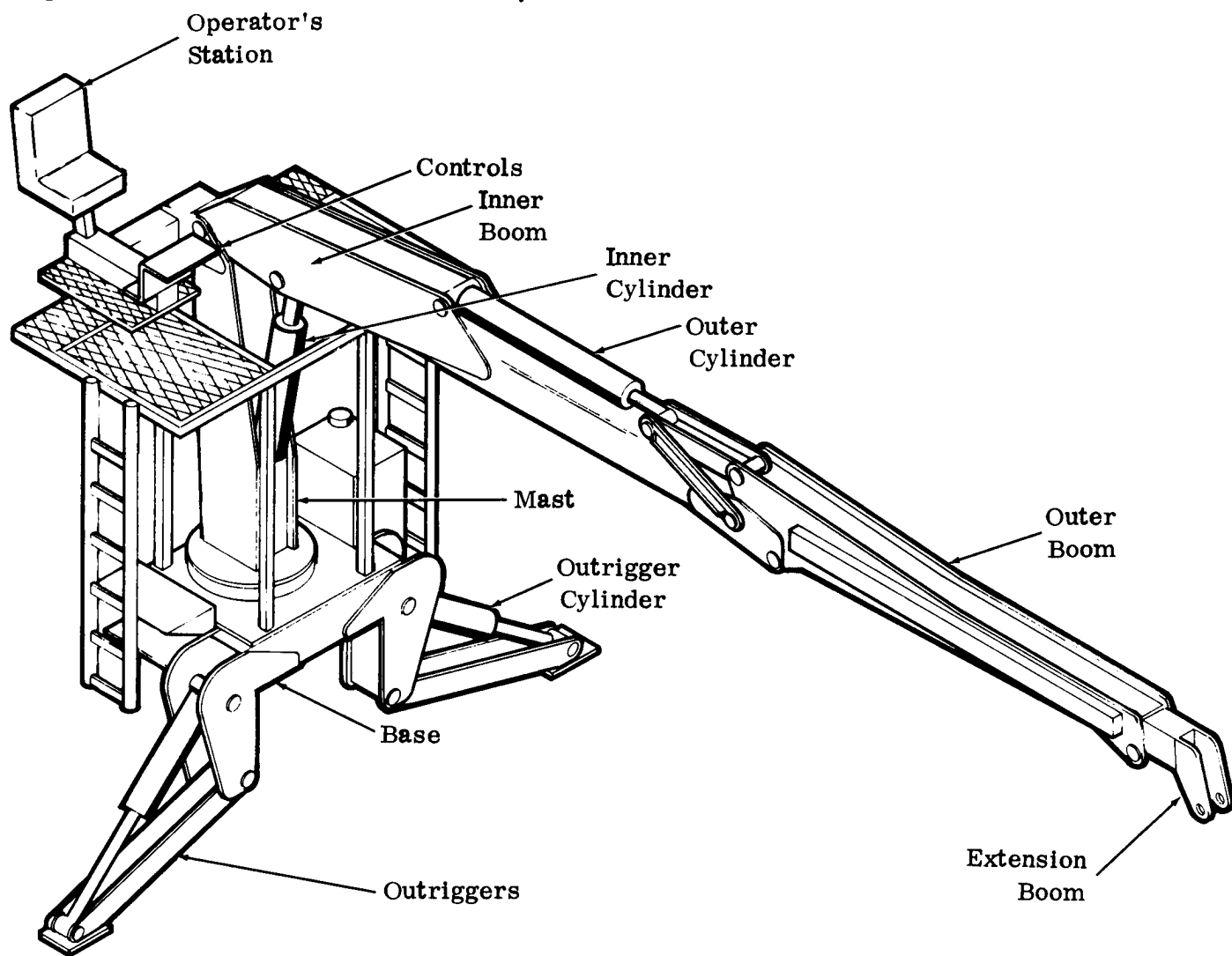
### **2-6. EXTENSION BOOM**

The single-stage extension boom increases the operating range from 23'-10" (7.26m) to 30'-10" (9.40m). The extension boom contains the hydraulic hoses feeding the fork and rotator.

### **2-7. CONTROLS**

There are two sets of controls on the standard crane - a 2-spool valve bank located on the base of the crane which controls the outriggers and a 6-spool valve bank at the operator's station which controls crane and fork operation.

**Figure B-1. 1331 Crane Group**





## Section 3. INSTALLATION

### 3—1. GENERAL

This section contains specific instructions for the installation of your crane. Prior to installing the crane and hydraulic components, make sure the chassis is ready to receive the crane (refer to Section 5, Installation - Chassis Preparation in Volume 1).

### 3—2. CRANE INSTALLATION

To install the crane on the chassis:

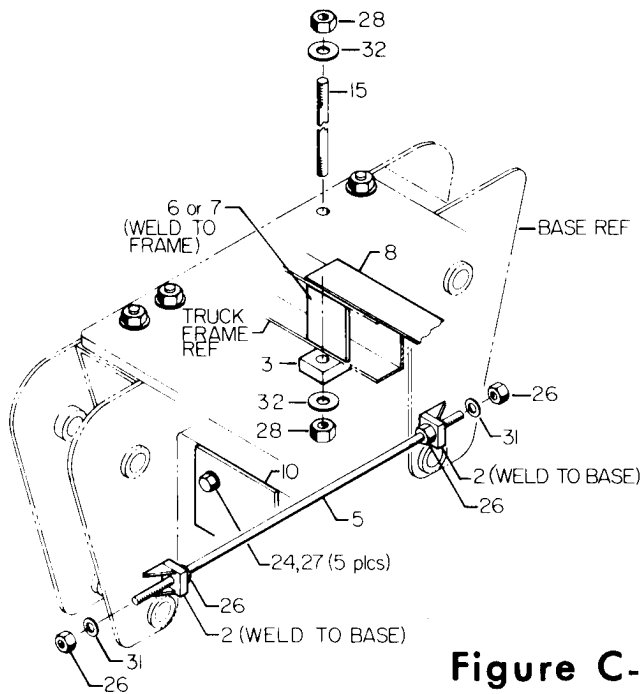
1. Use a lifting device capable of lifting the weight of the crane - 9,450 lbs. (4,287 kg). Attach the lifting device to the lift bracket welded to the top of the inner boom. Lift the crane, move the chassis into position under the crane and lower the crane into position on the chassis. Allow sufficient room between the crane and cab - at least 3" (7.6 cm). Check for front-to-rear alignment.
2. Install the tie rods, clamp plates, lock nuts and hardened flat washers to secure the crane base to the chassis (Figure C-1). Power wrench the nuts tight.

#### WARNING

Do not attempt to apply the same torque to the tie rod and self-locking nuts as shown in the Torque Data Chart in the APPENDIX in Volume 1. Do not exceed 200 ft. lbs. (28 kg-m). Exceeding this torque value could damage either the chassis or crane base.

Power wrenching is not recommended until the lead thread of the nut insert is engaged by hand turning.

3. Install the tie plate (item 10), Figure C-1) on the truck chassis. Drill four holes using the plate as a template and install the bolts and lock nuts. Torque the bolts to 200 ft. lbs. (28 kg-m). Weld the tie plate to the crane base with a 3/8" continuous fillet weld.
4. Install the tension bar (item 5, Figure C-1) with nuts and washers as shown. Tighten the outside nuts first to about 200 ft. lbs. (28 kg-m) to preload the tension bar. Then tighten the inner nuts to 466 ft. lbs. (65 kg-m).
5. Touch up paint on crane and chassis as necessary.



Item No.	Description	Qty
2.	Outrigger Tie Bar Block	2
3.	Clamp Plate	4
5.	Tension Bar	1
7.	Frame Reinforcement Bar	1
8.	Frame Flange Spacer	2
10.	Plate	2
15.	Tie-Down Stud	8
24.	Screw; 3/4-10 x 1-1/2" hex hd.	10
26.	Tension Bar Nuts; 1-8	2
27.	Lock Nut; 3/4-10	10
28.	Tie-Down Stud Lock Nuts; 1-1/4 - 7	16
31.	Tension Bar Lock Washer; 1"	2
32.	Tie-Down Stud Washers; 1-1/4"	16

Figure C-1. Crane Installation

### 3-3. HYDRAULIC INSTALLATION

To install the hydraulic hoses, fittings, etc.:

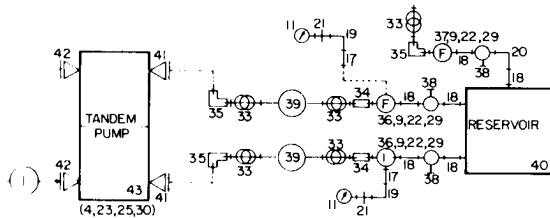
1. Plumb the suction line filters as shown in Figure C-2.
2. Install the 1-1/4" ID suction hose between the suction line filters and the pump inlets. Tighten the hose clamps.
3. Install the 3/4" pressure hose between the pump outlets and the inlet ports on the valve banks.
4. Install the return line between the reservoir return line filters and valve bank (if applicable).
5. Fill the hydraulic oil reservoir.

6. Open the gate valves at the suction line filter.

#### CAUTION

Failure to open the gate valve will result in a dry running pump which may damage the pump.

7. Open the return gate valve.
8. Start the vehicle engine and engage the PTO. Allow the system to run for about five minutes and then check the vacuum gauges on the suction-line filters (should read 8" or less of mercury). If the vacuum reading is too high, check to make certain that the gate valves are open. If the gate valves are open, check for a collapsed or restricted suction line.
9. Check for leaks and repair if necessary.



Item No.	Description	Qty
1.	Hose; 3/4" ID	1
4.	Pump Support	1
9.	Oil Filter Bracket	6
11.	Vacuum Gauge	2
17.	Nipple; 1/8" npt	2
18.	Nipple; 1-1/4" npt	6
19.	90° Street Elbow; 1/8" npt	2
20.	90° Street Elbow; 1-1/4" npt	1
21.	Coupling; 1/8" npt	2
22.	Filter Mounting Screws; 5/16-18 x 1" hex hd.	12
23.	Pump Mounting Screws; 3/8-16 x 1" hex hd.	2
25.	Pump Mounting Nuts; 3/8-16	2
29.	Filter Mounting Lock Washers; 5/16"12	
30.	Pump Mounting Lock Washers; 3/8"	2
33.	Hose Clamp; 1-1/4"	5
34.	Barbed Nipple; 1-1/4"	2
35.	90° Barbed Nipple; 1-1/4"	3
36.	Suction Filter	2
37.	Return Filter	1
38.	Gate Valves; 1-1/4"	3
39.	Hose; 1-1/4" ID	2
40.	Reservoir	1
41.	Pump Hydraulic Adapter	2
42.	Pump Hydraulic Adapter	2
43.	Hydraulic Pump	1

**Figure C-2.**  
**Hydraulic Installation**

## Section 4. PARTS LIST

### 4—1. GENERAL

This section contains the exploded parts drawings with the accompanying parts list for the assemblies used on this crane. These drawings are intended to be used in conjunction with the instructions found in the REPAIR section in Volume 1. For optional equipment such as winches and remote controls, refer to the appropriate service manual.

#### WARNING

Do not attempt to repair any component without reading the information contained in the REPAIR section in Volume 1. Pay particular attention to the WARNING's, CAUTION's and NOTE's contained in that section. Failure to comply with these instructions may result in damage to the equipment, an injury or even death.

### 4—2. CRANE IDENTIFICATION

Every crane has an identification placard (Figure D-1) attached to the mast or one of the booms in a prominent location. When ordering parts, communicating warranty information or referring to the unit in correspondence, always include the assigned serial and model numbers. All inquiries should be directed to Iowa Mold Tooling Co., Inc.; 500 Highway 18 West; Garner, Iowa 50438; telephone: (515) 923-3711 or TWX 910-523-6930. In Canada; IMT Cranes Canada, Ltd.; Orillia, Ontario; telephone: (705) 325-7458.



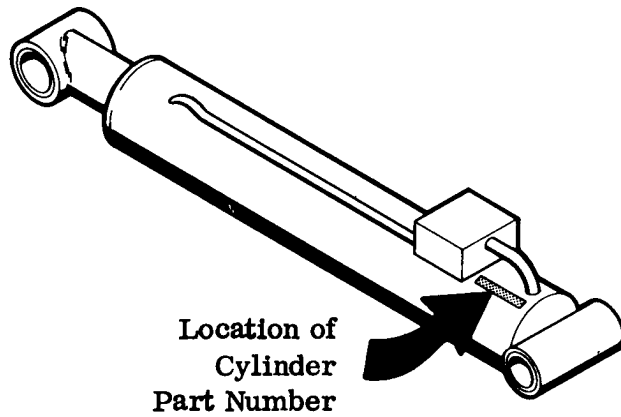
Figure D-1. Serial Number Placard

### 4—3. CYLINDER IDENTIFICATION

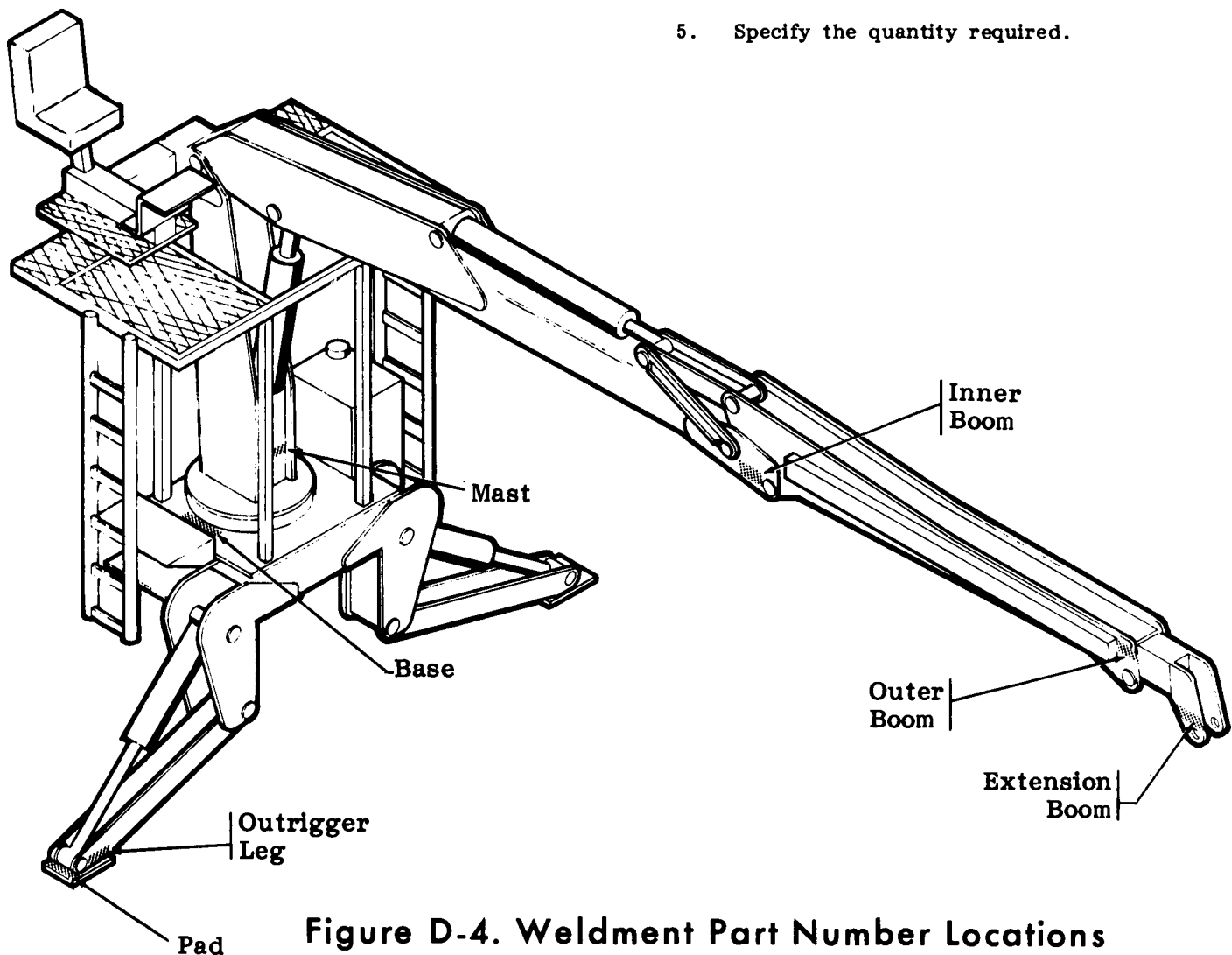
The crane has a cylinder identification placard (Figure D-2) attached to the mast. To ensure proper replacement parts are received, it is necessary to specify a complete number/letter sequence for any part request. Part numbers may be cross checked by comparing the stamped identification of the cylinder case (Figure D-3) against the information stamped on the placard. You must use the part number stamped on the cylinder case when ordering parts.



Figure D-2. Cylinder Identification Placard



**Figure D-3. Cylinder Part Number Location**



**Figure D-4. Weldment Part Number Locations**

#### **4—4. WELDMENT IDENTIFICATION**

Each of the major weldments - base, mast, inner boom, outer boom, extension boom and outrigger weldments - bear a stamped part number. Any time a major weldment is replaced, you must specify the complete part number as stamped on the weldment. The locations of the part numbers are shown in Figure D-4.

#### **4—5. ORDERING REPAIR PARTS**

When ordering replacement parts:

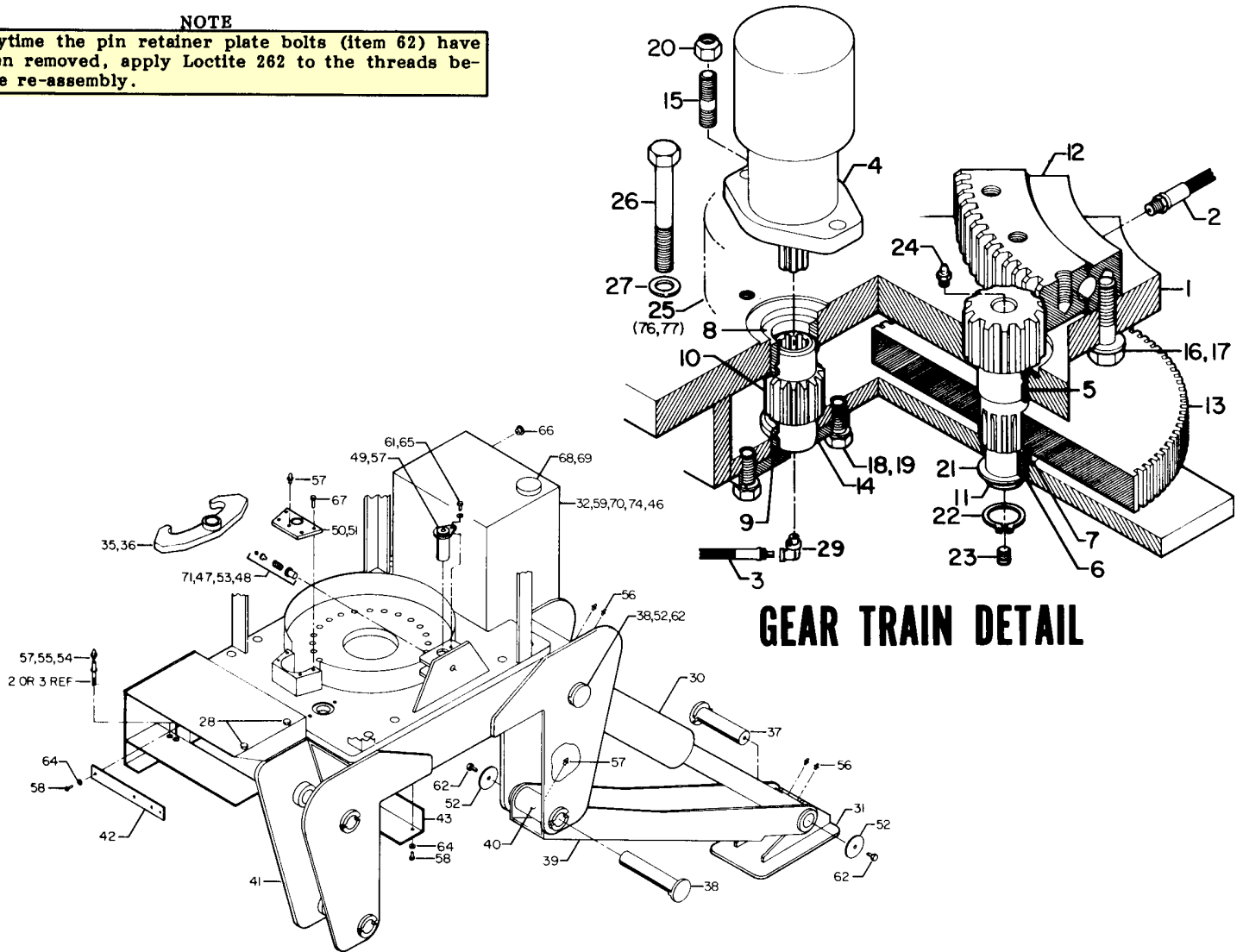
1. Give the model number of the unit.
2. Give the serial number of the unit.
3. Specify the complete part number. When ordering cylinder parts or one of the main weldments, always give the stamped part number.
4. Give a complete description of the part.
5. Specify the quantity required.

Figure D-5.

Base and Outrigger (Part Number 41703776)

NOTE

Anytime the pin retainer plate bolts (item 62) have been removed, apply Loctite 262 to the threads before re-assembly.

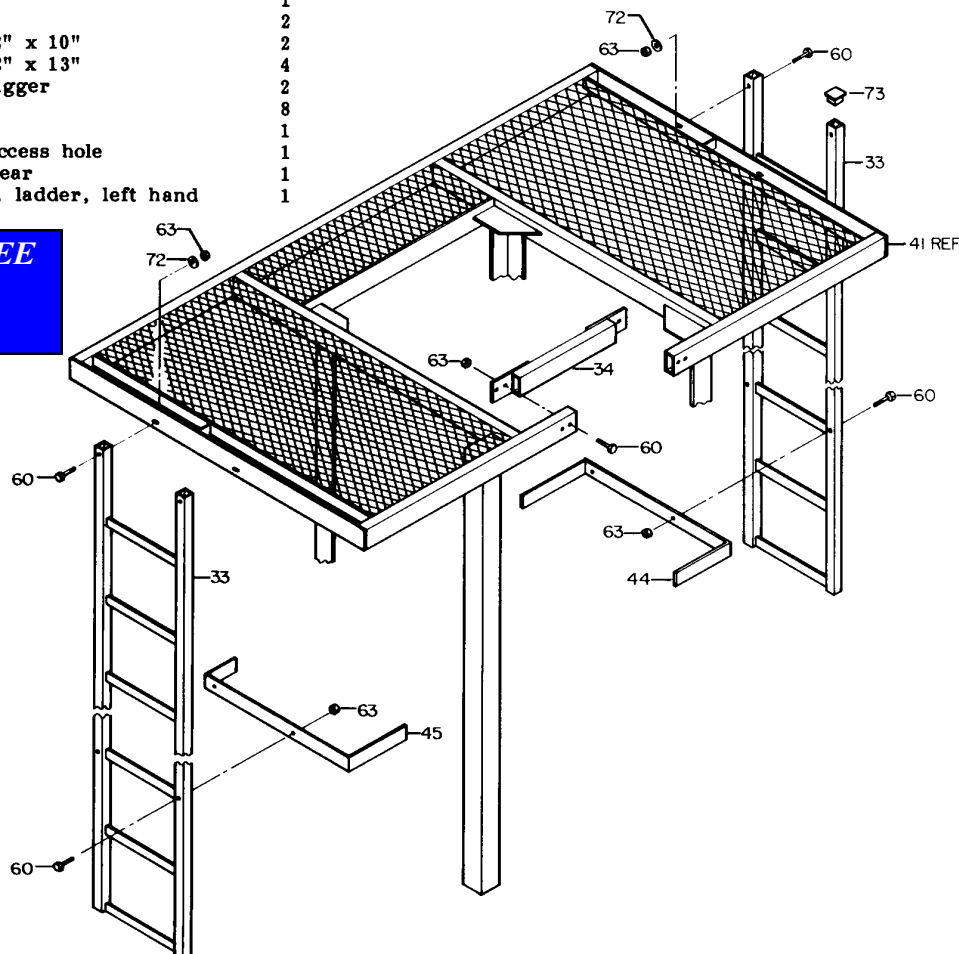


[CLICK HERE TO SEE PARTS LIST](#)

## Base & Outrigger Asm-Parts (41703776)

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	----	NOT USED	-	45.	60104211	BRACKET, ladder, right hand	1
2.	53000716	EXTENSION, grease; 44"	1	46.	72060023	SCREW; 5/16-18 x 3/4" hex hd.	2
3.	53000710	EXTENSION, grease; 27"	1	47.	60104239	FOLLOWER, latch	1
4.	73051223	MOTOR	1	48.	60104241	HOUSING, detent	1
5.	60020124	BUSHING, top pinion gear	1	49.	52705660	PIN; 2" x 5-1/2"	1
6.	60020122	BUSHING, bottom pinion gear	1	50.	60105964	SUPPORT PLATE, pinion gear	1
7.	60020123	WASHER, thrust	1	51.	70034264	BEARING	1
8.	60020120	BUSHING, top drive gear	1	52.	60106332	PLATE, retainer	6
9.	60020121	BUSHING, bottom drive gear	1	53.	70141491	SPRING	1
10.	71056074	GEAR, drive	1	54.	72063004	WASHER, wrt.; 7/16"	2
11.	71056073	GEAR, pinion	1	55.	72053301	COUPLING; 1/8" npt	2
12.	70056188	GEAR-BEARING, turntable	1	56.	72053507	ZERK; 1/4-28	8
13.	71056072	GEAR, intermediate	1	57.	72053508	ZERK; 1/8" npt	6
14.	60010844	GREASE PLATE, drive gear	1	58.	72060002	SCREW; 1/4-20 x 3/4"	4
15.	60106032	STUD, motor mount; 1/2-13 x 2"	2	59.	72060021	SCREW; 5/16-18 x 1/2"	6
16.	72601148	SCREW; 7/8-9 x 3 gr. 8	23	60.	72060052	SCREW; 3/8-16 x 2-1/2"	12
17.	72063115	WASHER, flat; 7/8" gr. 8	23	61.	72060091	SCREW; 1/2-13 x 1"	1
18.	72060091	SCREW; 1/2-13 x 1" hex hd.	2	62.	72060147	SCREW; 5/8-11 x 1"	6
19.	72063053	WASHER, lock; 1/2"	2	63.	72062103	NUT, lock; 3/8-16	12
20.	72062080	NUT, lock; 1/2-13	2	64.	72063049	WASHER, lock; 1/4"	4
21.	72063039	BUSHING, machy.; 2" x 10 ga.	1	65.	72063053	WASHER, lock; 1/2"	1
22.	72066095	RING, retaining; 2"	1	66.	72532261	SIGHT GUAGE; 3/4" npt	1
23.	72053240	PLUG; 1/8" npt hollow hex	1	67.	72601144	SCREW; 9/16-12 x 2"	4
24.	72053508	ZERK; 1/8" npt	1	68.	73014671	CAP, fill	1
25.	71056088	BRAKE, crane swing (includes items 76 & 77)	1	69.	73141276	SCREEN, reservoir fill	1
26.	72601037	SCREW; 9/16-12 x 4-1/2" hex hd.	2	70.	72063050	WASHER, lock; 5/16"	8
27.	72063054	WASHER; 9/16" hardened gr. 8	2	71.	72066444	BALL; 9/16" diameter	1
28.	72060857	SCREW; 5/16-18 x 5/8" self-tap	2	72.	72063003	WASHER, wrt.; 3/8"	4
29.	72053281	ELBOW, street, 90°; 1/8" npt	1	73.	70392310	PLUG, plastic; 1-1/2" square	4
30.	3C323911	CYLINDER, outrigger	2	74.	73052001	PLUG, magnetic; 3/4"	1
31.	52701412	PAD, outrigger	2	75.	----	NOT USED	-
32.	52701853	RESERVOIR	1	76.	76391497	GASKET	1
33.	52702121	LADDER	2	77.	76391498	GASKET	1
34.	52702122	TUBE, removable	1				
35.	52702134	LATCH	1				
36.	7BF81020	BUSHING	2				
37.	52703694	PIN; 2-1/2" x 10"	2				
38.	52703695	PIN; 2-1/2" x 13"	4				
39.	52703775	LEG, outrigger	2				
40.	7BF81225	BUSHING	8				
41.	52703825	BASE	1				
42.	60103728	COVER, access hole	1				
43.	60103729	GUARD, gear	1				
44.	60104210	BRACKET, ladder, left hand	1				

**CLICK HERE TO SEE  
 ADDITION  
 DRAWINGS**



**Figure D-6. Outrigger Cylinder (Part Number 3C323911)**

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	7Q072361	*O-RING	1	12.	72063016	WASHER; 2" wrt.	1
2.	7Q10P361	*RING, back-up	1	13.	7T651065	*RING, piston	2
3.	6H065035	HEAD	1	14.	6IX65200	PISTON	1
4.	7R546035	*SEAL, rod	1	15.	7Q072227	*O-RING	1
5.	7R14P035	*WIPER, rod	1	16.	7Q072257	*O-RING	1
6.	4G323910	ROD (includes items 7 and 20)	1	17.	7T66P065	*SEAL, piston	1
7.	7BF81215	BUSHING, rod (part of item 6)	3	18.	6A025035	*RING, wafer lock	1
8.	7PNPXT02	PLUG, 1/8" npt (part of item 10)	4	19.	7BF81225	BUSHING, (part of item 10)	4
9.	73054304	VALVE, counter-balance; 10-GPM	2	20.	72053507	ZERK	4
10.	4C263513	CASE, (includes items 19 and 20)	1				
11.	72062144	NUT; 2" buttress	1				

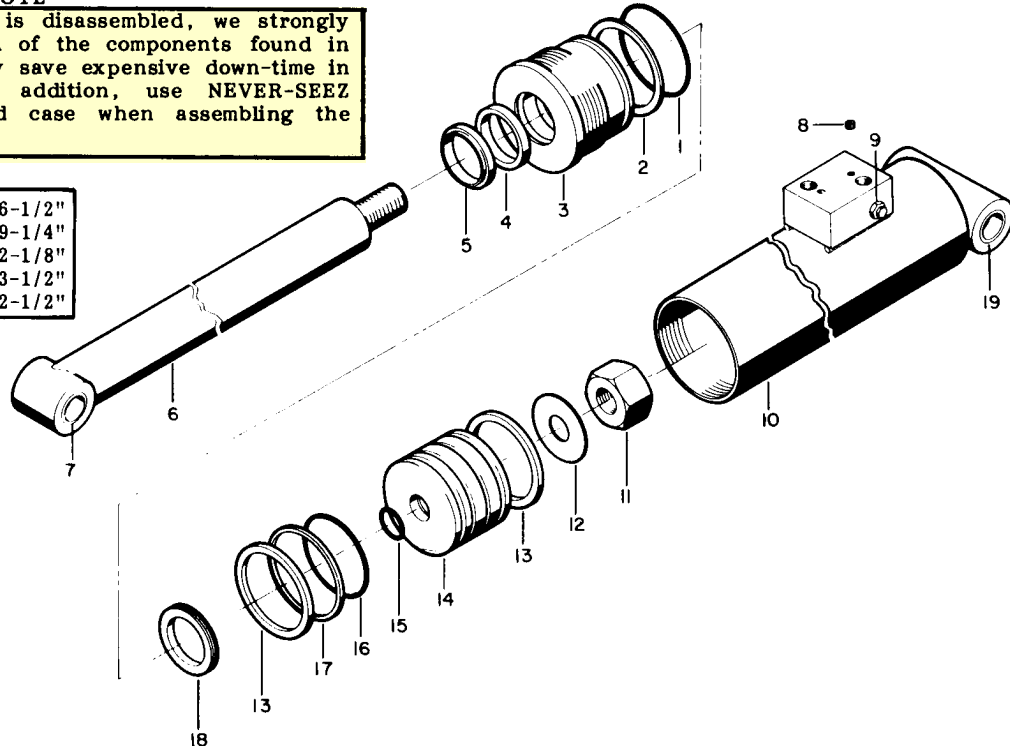
\*Part of seal kit (Part Number 9X262832)

**NOTE**

Whenever the cylinder is disassembled, we strongly recommend replacing all of the components found in the seal kit. This may save expensive down-time in the near future. In addition, use NEVER-SEEZ between the head and case when assembling the cylinder.

**DIMENSIONS**

Bore	6-1/2"
Stroke	29-1/4"
C-C Closed	42-1/8"
Rod Diameter	3-1/2"
Pin Diameter	2-1/2"



**Figure D-7. Counter-Balance — 10-GPM (Part Number 73054304)**

Item No.	Part No.	Description	Qty
1.	73054304	VALVE, complete (includes items 2 thru 6)	1
2.	7Q073912	- O-RING	1
3.	7Q10P018	- RING, back-up	1
4.	7Q072018	- O-RING	1
5.	7Q10P015	- RING, back-up	2
6.	7Q072016	- O-RING	1

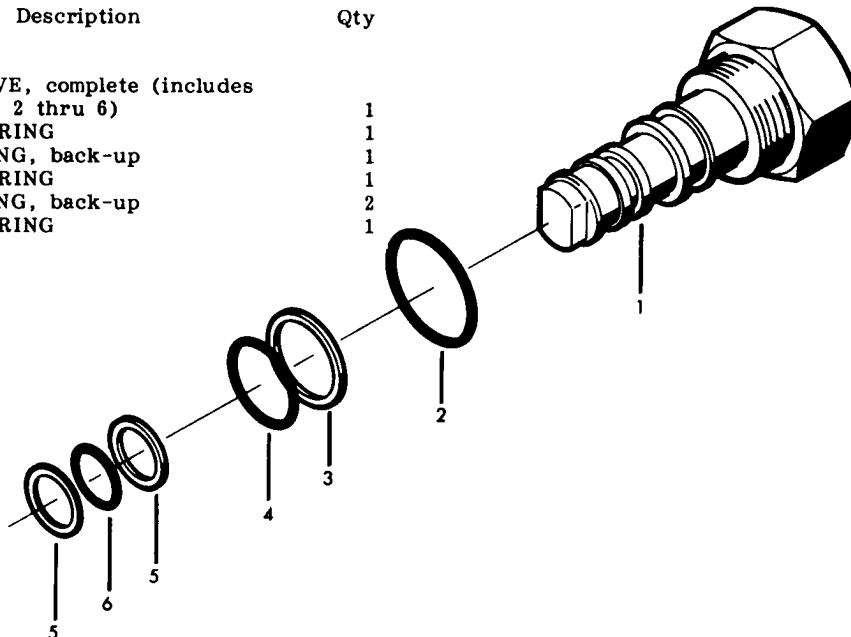


Figure D-8. Rotation Brake (Part Number 71056088)

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	76391497	GASKET	1	13.	70141885	DISC, rotation	4
2.	72066140	RING, retaining	1	14.	70141887	SPRING, compression	8
3.	72066150	RING, retaining	1	15.	70141886	DISC, stationary	4
4.	70055115	BEARING, ball	1	16.	70141888	PISTON	1
5.	70141891	HOUSING	1	17.	7Q10P236	RING, back-up	1
6.	7Q072165	O-RING	1	18.	7Q072236	O-RING	1
7.	70141883	SHAFT, splined	1	19.	7Q10P248	RING, back-up	1
8.	70142304	PLATE, spring retainer	1	20.	7Q072248	O-RING	1
9.	70141881	SPRING, compression; small	8	21.	70141890	PLATE, power	1
10.	70141880	SPRING, compression; large	8	22.	72601159	BOLT; 7/16-14 x 2"	4
11.	70141882	PIN, torque	2	23.	76391498	GASKET, motor mounting	1
12.	70141884	DISC, primary	4	24.	70141889	SCREW, bleeder	1

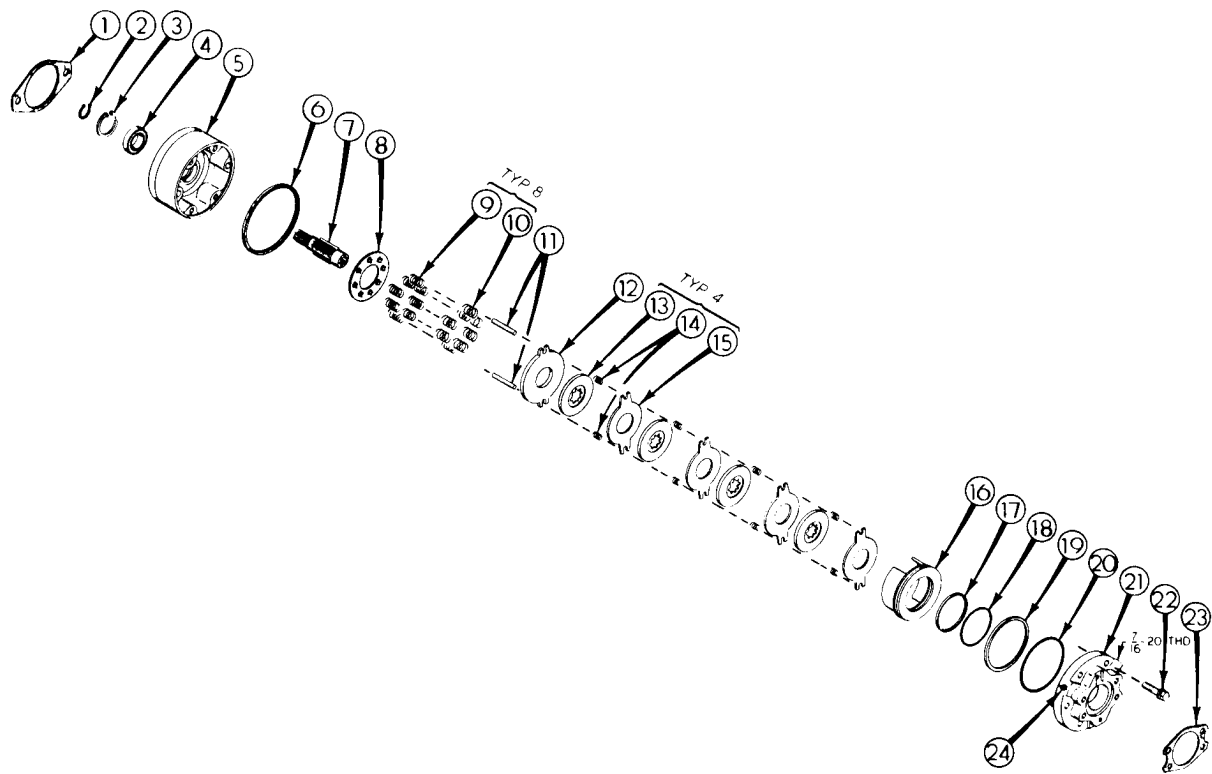
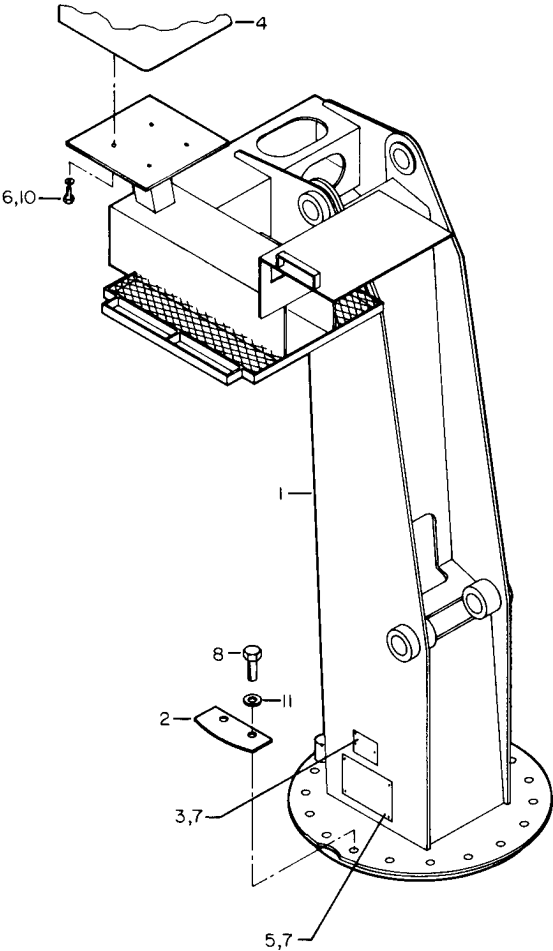




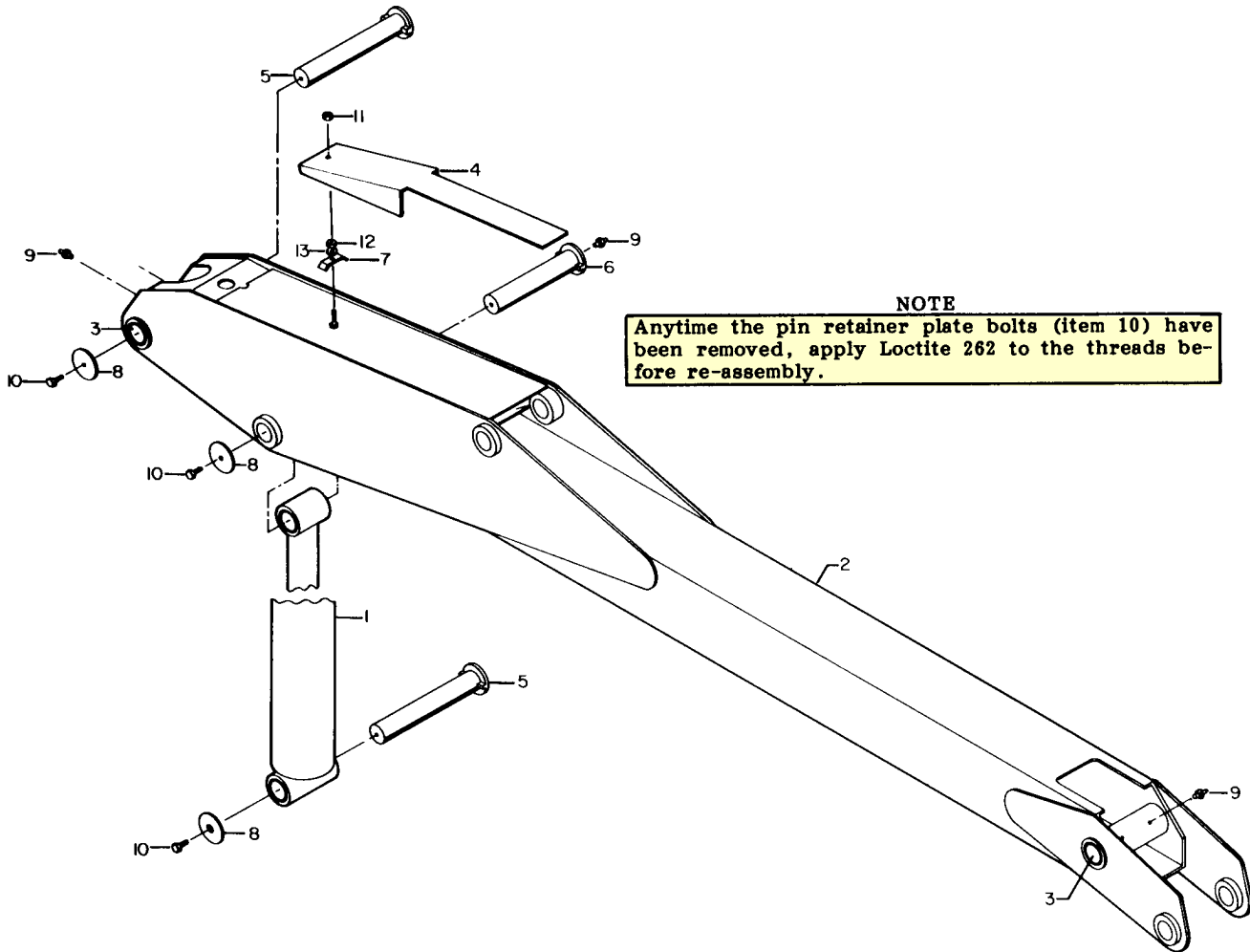
Figure D-9. Mast (Part Number 41701937)

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	52701938	MAST	1	7.	72066340	RIVET, pop; 1/8"	6
2.	60104246	COVER, pinion gear	1	8.	72060207	SCREW; 3/4-10 x 3" gr. 8	18
3.	70029119	PLACARD, serial number	1	9.	--	NOT USED	-
4.	70731411	CHAIR	1	10.	72063049	WASHER, lock; 1/4"	4
5.	71029106	DECAL, cylinder identification	1	11.	72063116	WASHER, flat; 3/4" gr. 8	18
6.	72060004	SCREW; 1/4-20 x 1" hex hd.	4				



## Figure D-10. Inner Boom (Part Number 41701939)

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	3C194613	CYLINDER, inner boom	1	8.	60106332	PLATE, retainer	3
2.	52702270	BOOM, inner (includes item 3)	1	9.	72053508	ZERK; 1/8" npt	5
3.	60020167	BUSHING (part of item 2)	6	10.	72060147	SCREW; 5/8-11 x 1" hex hd.	3
4.	52702468	GUARD, hose	1	11.	72062103	NUT, lock; 3/8-16	1
5.	52703697	PIN; 2-1/2" x 16-1/4"	2	12.	72062002	NUT; 3/8-16	1
6.	52703699	PIN; 2-1/2" x 13-1/4"	1	13.	72063003	WASHER, wrt.; 3/8"	1
7.	60010118	CLAMP, hose	1				



## Figure D-11. Inner Cylinder (Part Number 3C194613)

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	7BF81225	BUSHING	6	12.	7Q072259	*O-RING	1
2.	4G194610	ROD	1	13.	7T66P070	*SEAL, piston	1
3.	7R14P035	*WIPER, rod	1	14.	7T61N218	*SEAL, lock ring	1
4.	7R546035	*SEAL, rod	1	15.	4C194611	CASE, cylinder	1
5.	6H070035	HEAD	1	16.	73054242	VALVE, counter-balance; 10-gpm	1
6.	7Q10P363	*RING, back-up	1	17.	7BF81025	BUSHING	2
7.	7Q072363	*O-RING	1	18.	7PNPXT02	PLUG, pipe; 1/8" npt	2
8.	6A025035	*RING, wafer lock	1	19.	72053507	ZERK	2
9.	6C075035	TUBE, stop	1				
10.	7T651070	*RING, piston	2				
11.	61070218	PISTON	1				

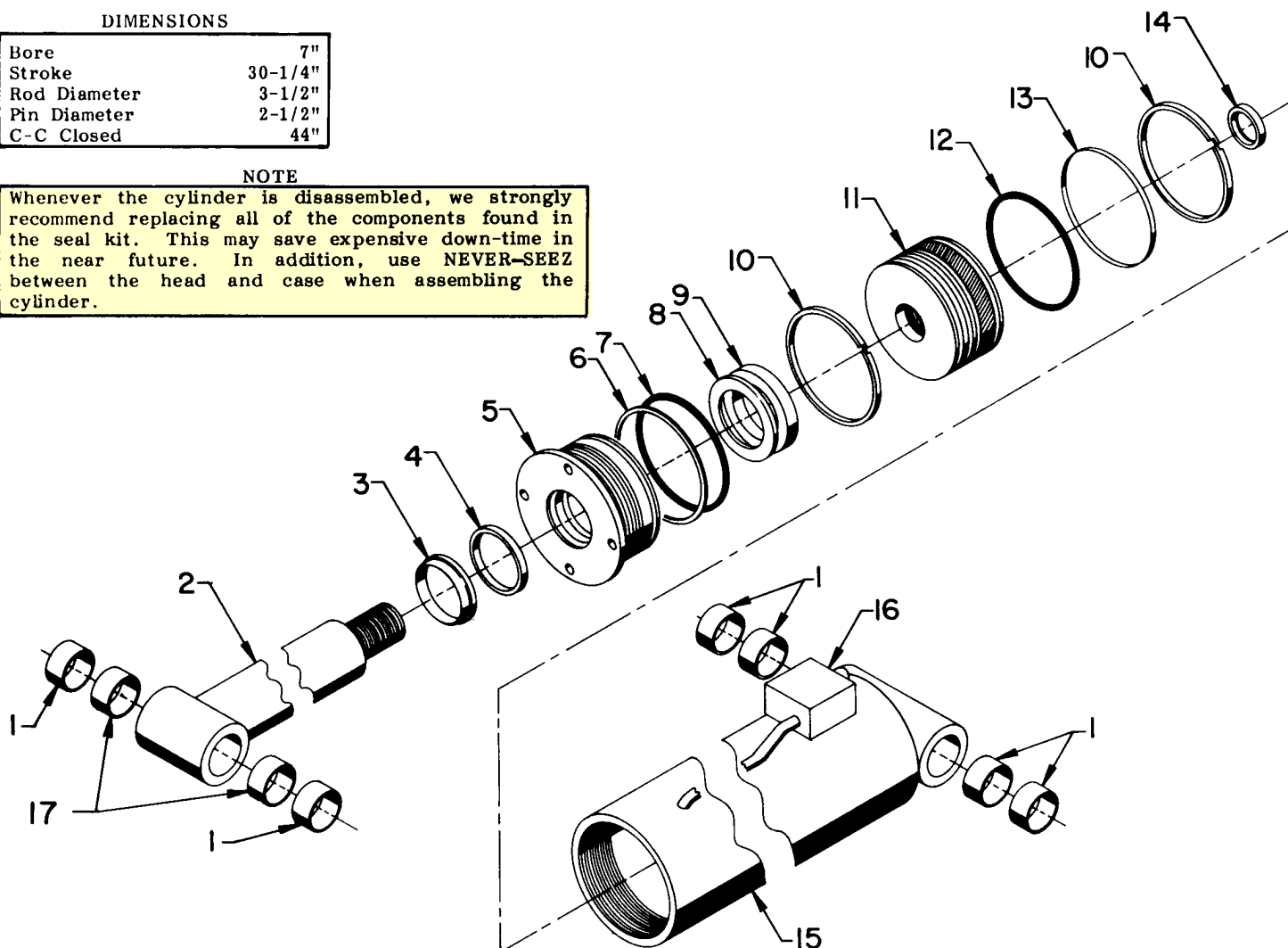
\*Part of seal kit (Part Number 9C282835)

### DIMENSIONS

Bore	7"
Stroke	30-1/4"
Rod Diameter	3-1/2"
Pin Diameter	2-1/2"
C-C Closed	44"

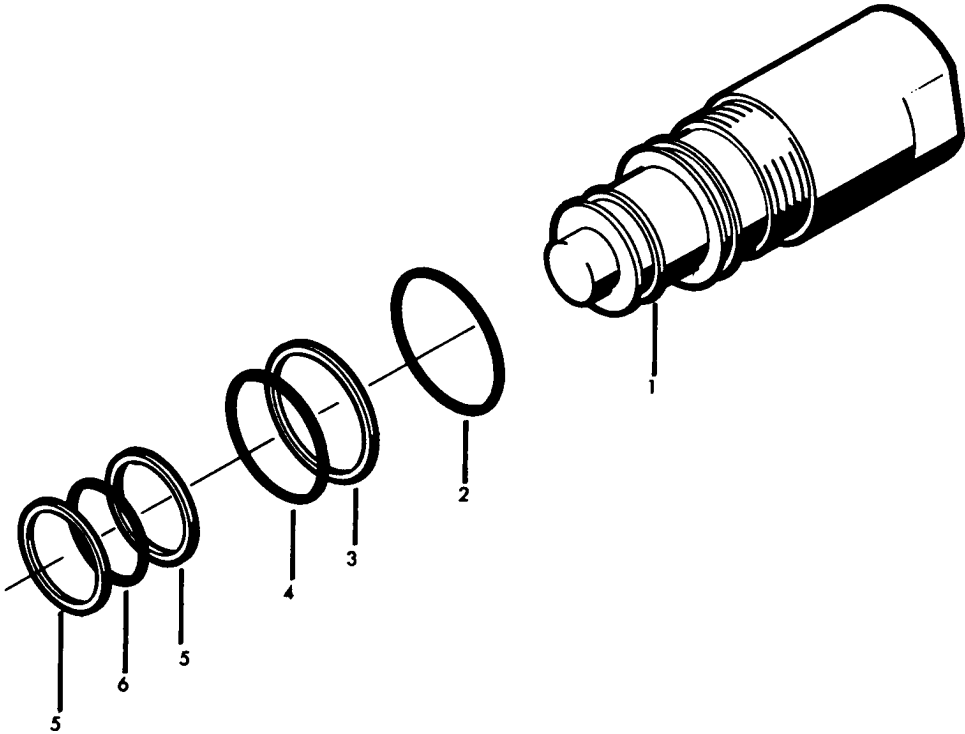
### NOTE

Whenever the cylinder is disassembled, we strongly recommend replacing all of the components found in the seal kit. This may save expensive down-time in the near future. In addition, use NEVER-SEEZ between the head and case when assembling the cylinder.



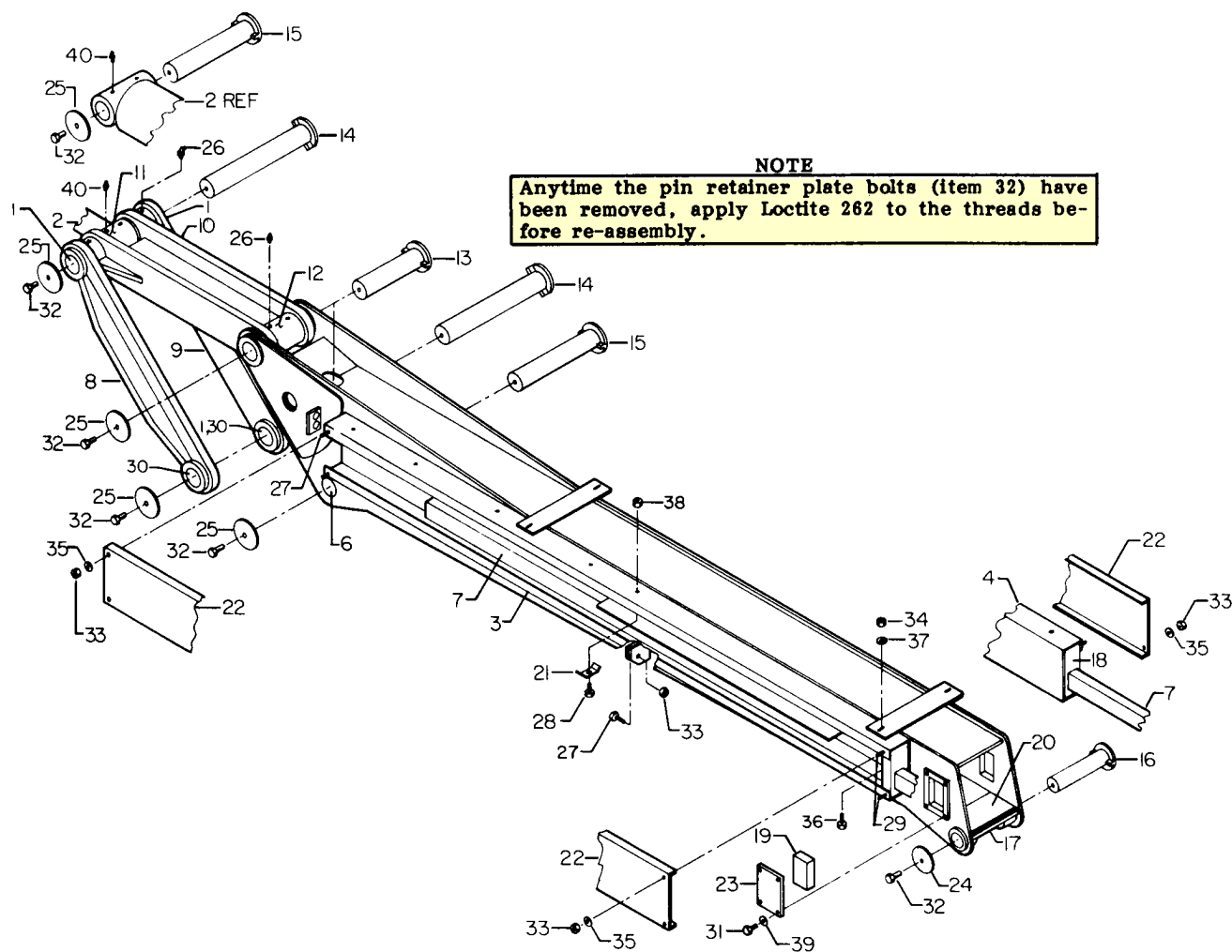
**Figure D-12. Counter-Balance Valve — 25-GPM  
(Part Number 73054242)**

Item No.	Part No.	Description	Qty
1.	73054242	VALVE, complete (includes items 2 thru 6)	1
2.	7Q072215	- O-RING	1
3.	7Q10P021	- RING, back-up	1
4.	7Q072021	- O-RING	1
5.	7Q072020	- O-RING	1
6.	7Q10P020	- RING, back-up	2



**Figure D-13. Outer Boom (Part Number 41701942)**

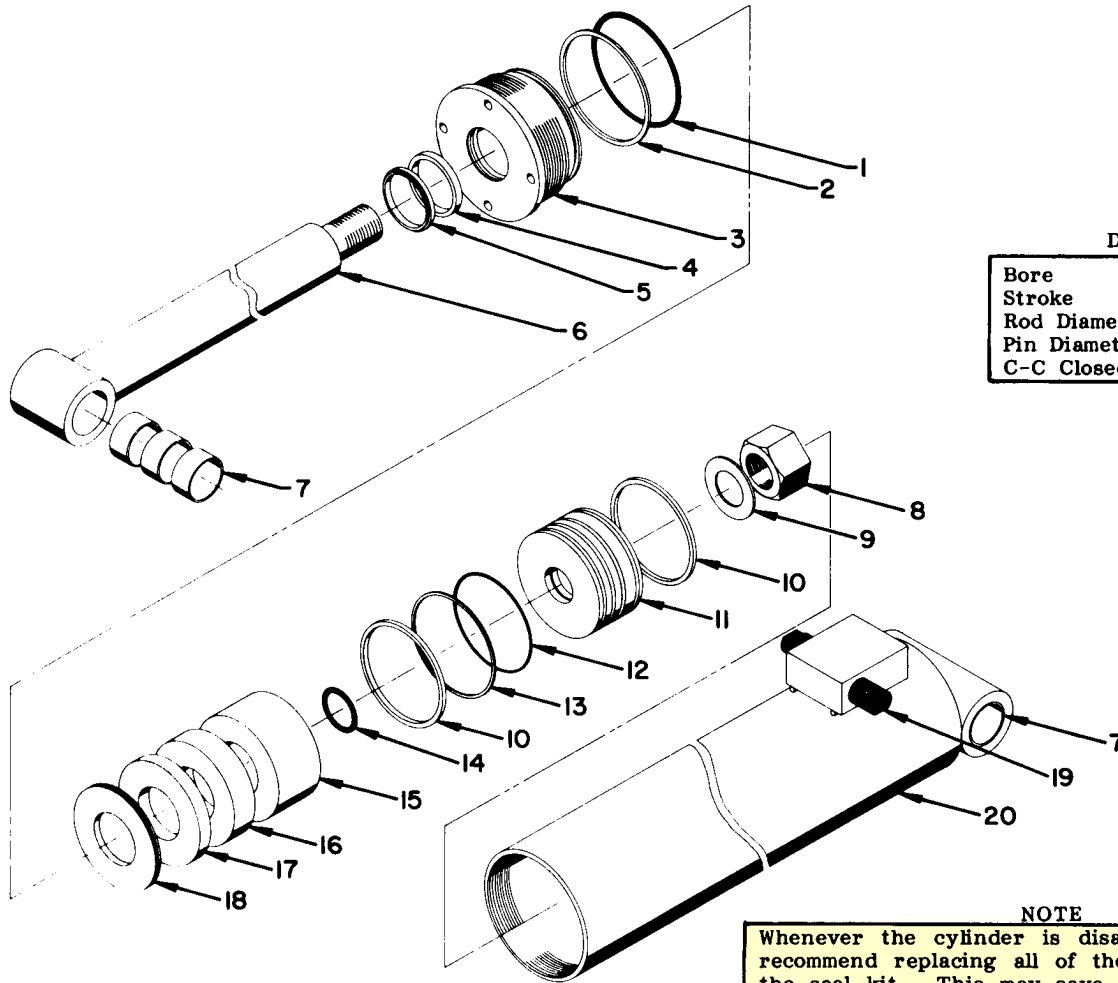
Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	7BF81225	BUSHING	4	21.	60103278	CLAMP, hose	8
2.	3C318911	CYLINDER, outer boom	1	22.	60103318	COVER, trumpet	2
3.	52701508	TRUMPET, right hand	1	23.	60104191	PLATE, wear pad and retainer	2
4.	52701509	TRUMPET, left hand	1	24.	60106331	PLATE, pin retainer	1
5.	52701949	BOOM, outer	1	25.	60106332	PLATE, pin retainer	5
6.	60020166	BUSHING	3	26.	72053508	ZERK; 1/8" npt	4
7.	52702099	TUBE, trumpet	2	27.	72060025	SCREW; 5/16-18 x 1" hex hd..	6
8.	52702267	LINK, outer, right hand	1	28.	72060005	SCREW; 1/4-20 x 1-1/4" hex hd.	8
9.	52702268	LINK, outer, left hand	1	29.	72060036	SCREW; 5/16-18 x 3-3/4" hex hd.	4
10.	52702269	LINK, inner	1	30.	7BF81025	BUSHING	3
11.	60020140	BUSHING	2	31.	72060044	SCREW; 3/8-16 x 3/4" hex hd.	8
12.	60020165	BUSHING	3	32.	72060147	SCREW; 5/8-11 x 1" hex hd.	6
13.	52703694	PIN; 2-1/2" x 10"	1	33.	72062109	NUT, lock; 5/16-18	10
14.	52703697	PIN; 2-1/2" x 16-1/4"	2	34.	72062103	NUT, lock; 3/8-16	4
15.	52703698	PIN; 2-1/2" x 13-1/4"	2	35.	72063002	WASHER, wrt.; 5/16"	8
16.	52703714	PIN; 2" x 10"	1	36.	72060047	SCREW; 3/8-16 x 1-1/4" hex hd.	4
17.	52704779	TRUNNION	1	37.	72063003	WASHER, wrt.; 3/8"	16
18.	60030017	GUIDE, trumpet	2	38.	72062104	NUT, lock; 1/4-20	8
19.	60030028	PAD, wear	2	39.	72063051	WASHER, lock; 3/8"	8
20.	60030093	PAD, wear, dovetailed	1	40.	72053507	ZERK; 1/4-28	4



**Figure D-14. Outer Cylinder (Part Number 3C318911)**

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	7Q072361	*O-RING	1	13.	7T66P065	*SEAL, piston	1
2.	7Q10P361	*RING, back-up	1	14.	7Q072227	*O-RING	1
3.	6H065030	HEAD	1	15.	6C300030	TUBE, stop; 3" lg.	1
4.	7R546030	*SEAL, rod	1	16.	6C150030	TUBE, stop; 1-1/2" lg.	1
5.	7R14P030	*WIPER, rod	1	17.	6C075030	TUBE, stop; 3/4" lg.	1
6.	4G348910	ROD	1	18.	6A025030	*RING, wafer lock	1
7.	7BF81225	BUSHING	7	19.	73054242	VALVE, counter-balance	2
8.	72062144	NUT	1	20.	4C318911	CASE, cylinder	1
9.	72063106	WASHER	1	21.	7PNPXT02	PLUG; 1/8" npt (not shown)	2
10.	7T651065	*RING, piston	2				
11.	6IX65200	PISTON	1				
12.	7Q072257	*O-RING	1				

\*Part of seal kit (Part Number 9X262432)



**DIMENSIONS**

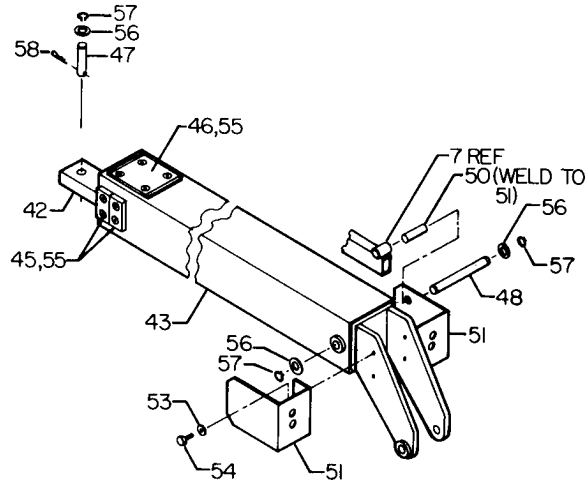
Bore	6-1/2"
Stroke	55"
Rod Diameter	3"
Pin Diameter	2-1/2"
C-C Closed	73-3/4"

**NOTE**

Whenever the cylinder is disassembled, we strongly recommend replacing all of the components found in the seal kit. This may save expensive down-time in the near future. In addition, use NEVER-SEEZ between the head and case when assembling the cylinder.

**Figure D-15. Extension Boom (Part Number 41701950)**

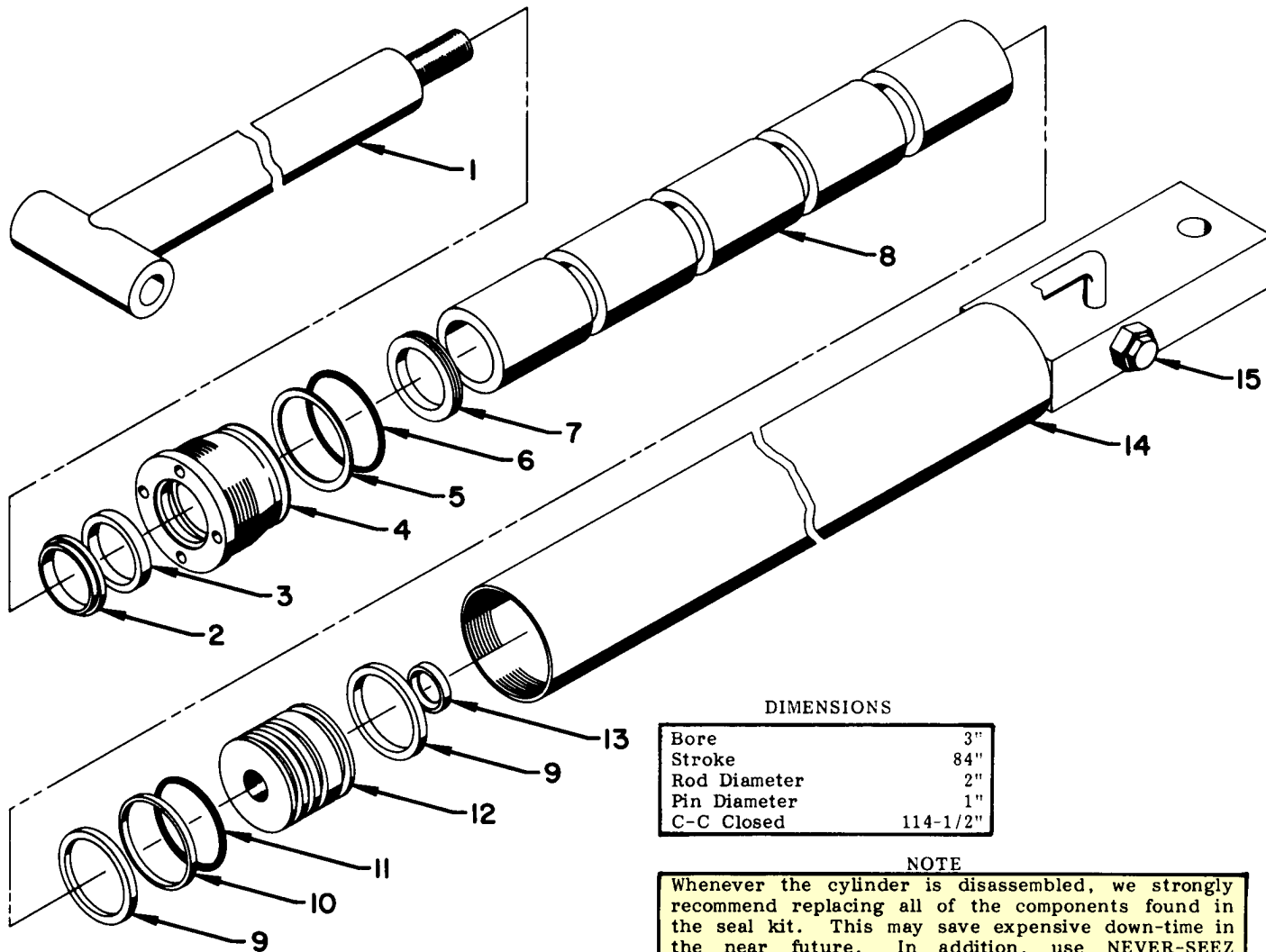
Item No.	Part No.	Description	Qty
42.	3B137913	CYLINDER, extension	1
43.	52701951	BOOM, extension	1
44.	----	NOT USED	-
45.	60030019	PAD, wear	4
46.	60030020	PAD, wear	1
47.	60101905	PIN, 1" x 4-1/8"	1
48.	60103821	PIN, 1" x 8-5/8"	1
49.	----	NOT USED	-
50.	60106513	ROD, 5/8" x 3"	2
51.	60106514	GUARD, trumpet end	2
52.	----	NOT USED	-
53.	72063051	WASHER, lock; 3/8"	4
54.	72060044	SCREW; 3/8-16 x 3/4" hex hd.	4
55.	72060915	SCREW; 3/8-16 x 1" flat hd. soc.	12
56.	72063034	BUSHING, machy.; 1" x 10 ga.	3
57.	72066125	RING, retaining; 1" x 10 ga.	3
58.	72066197	PIN, hair; 3/16" x 2-1/2"	1



## Figure D-16. Extension Cylinder (Part Number 3B137913)

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	4G220710	ROD	1	12.	6I030106	PISTON	1
2.	7R14P020	*WIPER, rod	1	13.	7T61N106	*SEAL, lock ring	1
3.	7R546020	*SEAL, rod	1	14.	4B137913	CASE, cylinder	1
4.	6H030020	HEAD	1	15.	73054304	VALVE, counter-balance; 10-gpm	2
5.	7Q10P334	*RING, back-up	1	16.	7PNPXT02	PLUG, pipe; 1/8" npt	2
6.	7Q072334	*O-RING	1	17.	72060836	SCREW, wear pad (not shown)	8
7.	6A025020	*RING, wafer lock	1	18.	60030004	PAD, wear (not shown)	2
8.	6C300020	TUBE, stop	5	19.	60106350	SPACER, wear pad (not shown)	2
9.	7T65I030	*RING, piston	2				
10.	7T66P030	*SEAL, piston	1				
11.	7Q072145	*O-RING	1				

\*Part of seal kit (Part Number 9C121617)



### DIMENSIONS

Bore	3"
Stroke	84"
Rod Diameter	2"
Pin Diameter	1"
C-C Closed	114-1/2"

### NOTE

Whenever the cylinder is disassembled, we strongly recommend replacing all of the components found in the seal kit. This may save expensive down-time in the near future. In addition, use NEVER-SEEZ between the head and case when assembling the cylinder.



## Hydraulic Kit-Parts (91703857)

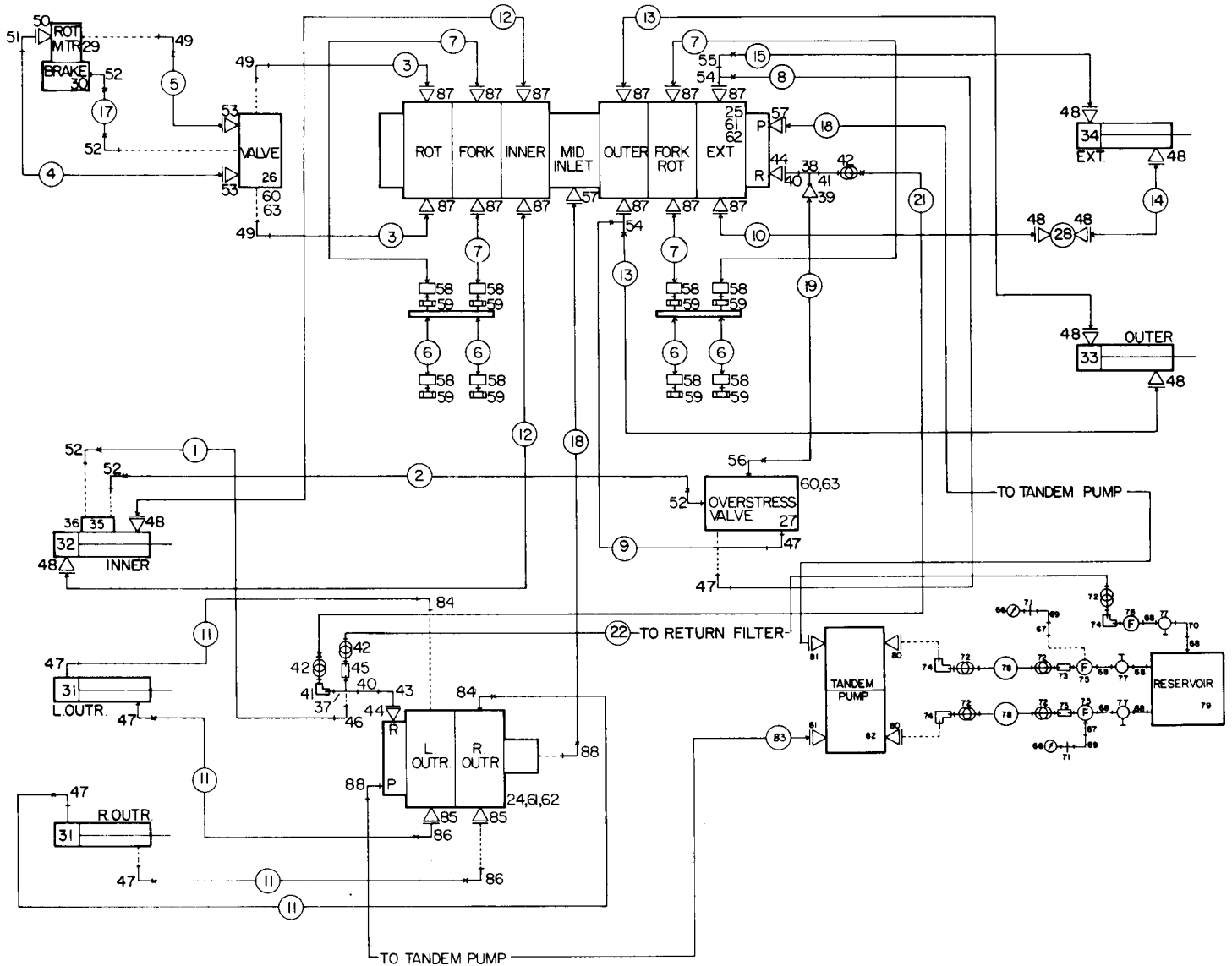
Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	51703543	HOSE; 1/4" ID x 80" lg.	1	47.	72053763	ELBOW, 90°; 3/4-16 str. thd.(m) x 3/4-16 JIC(m)	6
2.	51703596	HOSE; 1/4" ID x 120" lg.	1	48.	72532358	ADAPTER; 3/4-16 str. thd.(m) x 3/4-16 JIC(m)	8
3.	51703605	HOSE; 3/8" ID x 180" lg.	2	49.	72053764	ELBOW, 90°; 7/8-14 str. thd.(m) x 3/4-16 JIC(m)	5
4.	51703862	HOSE; 3/8" ID x 13-1/4" lg.	1	50.	72531206	ADAPTER; 7/8-14 str. thd.(m) x 3/4-16 str. thd.(f)	3
5.	51703863	HOSE; 3/8" ID x 14" lg.	1	51.	72532666	ELBOW, extra-long 90°; 3/4-16 str. thd.(m) x 3/4-16 JIC(m)	3
6.	51703864	HOSE; 3/8" ID x 234" lg.	4	52.	72053758	ELBOW, 90°; 7/16-20 str. thd.(m) x 7/16-20 JIC(m)	5
7.	51703865	HOSE; 3/8" ID x 261" lg.	4	53.	72532359	ADAPTER; 7/8-14 str. thd.(m) x 3/4-16 JIC(m)	14
8.	51703866	HOSE; 1/2" ID x 12" lg.	1	54.	72532657	TEE, swivel nut run; 3/4-16 JIC	2
9.	51704959	HOSE; 3/8" ID x 16" lg.	1	55.	72532658	ELBOW, 90°; 3/4-16 JIC(m x f)	1
10.	51703868	HOSE; 1/2" ID x 18" lg.	1	56.	72053767	ELBOW, 90°; 1-1/16" str. thd.(m) x 1-1/16" JIC(f)	3
11.	51703869	HOSE; 1/2" ID x 80" lg.	4	57.	72532366	ADAPTER; 1-1/16" str. thd.(m) x 1-1/16 JIC(m)	2
12.	51703870	HOSE; 1/2" ID x 120" lg.	2	58.	72532672	UNION, bulkhead; 3/4-16 JIC(m)	8
13.	51703871	HOSE; 1/2" ID x 134" lg.	2	59.	72531708	NUT, bulkhead; 3/4-16	8
14.	51703872	HOSE; 1/2" ID x 246" lg.	1	60.	72060051	SCREW, 3/8-16 x 2-1/4" hex hd.	4
15.	51703873	HOSE; 1/2" ID x 270" lg.	1	61.	72060096	SCREW; 1/2-13 x 2-1/2" hex hd.	6
16.	----	NOT USED	-	62.	72062080	NUT, lock; 1/2-13	6
17.	51705884	HOSE; 1/4" ID x 9" lg.	1	63.	72062103	NUT, lock; 3/8-16	4
18.	51703874	HOSE; 3/4" ID x 186" lg.	1	64.	----	NOT USED	-
19.	51704905	HOSE; 3/4" ID x 19" lg.	1	65.	----	NOT USED	-
20.	51392474	HOSE KIT (includes items 1 thru 19)	1	66.	70048031	*GAUGE, vacuum	2
21.	60035831	HOSE; 1-1/4" ID x 198" lg.	1	67.	72053002	*NIPPLE, pipe; 1/8" npt x 2" lg	2
22.	60035679	HOSE; 1-1/4" ID x 96" lg.	1	68.	72053211	*NIPPLE, close; 1-1/4" npt	6
23.	--	NOT USED	-	69.	72053281	*ELBOW, street, 90°; 1/8" npt	2
24.	51705129	VALVE BANK; 2-spool	1	70.	72053287	*ELBOW, street, 90°; 1-1/4" npt	1
25.	51705131	VALVE BANK; 6-spool	1	71.	72053468	*COUPLING; 1/8" npt	2
26.	73054370	VALVE, shuttle	1	72.	72066516	*CLAMP, hose; 1-1/4"	5
27.	73054424	VALVE, overstress	1	73.	72531550	*NIPPLE, barbed; 1-1/4"	2
28.	73054426	VALVE, adjustable relief	1	74.	72532346	*NIPPLE, barbed, 90°; 1-1/4"	3
29.	73051223	MOTOR, crane swing	1	75.	73052012	*FILTER, suction	2
30.	71056088	BRAKE, crane swing	1	76.	73052040	*FILTER, return	1
31.	3C323911	CYLINDER, outrigger	2	77.	73054225	*VALVE, gate; 1-1/4"	3
32.	3C194613	CYLINDER, inner boom	1	78.	60035679	*HOSE; 1-1/4" ID	As Required
33.	3C318911	CYLINDER, outer boom	1	79.	52701853	*RESERVOIR	1
34.	3B137913	CYLINDER, extension	1	80.	7205xxxx	*ADAPTER, pump	2
35.	73054425	VALVE, sensor	1	81.	7205xxxx	*ADAPTER, pump	2
36.	72060734	SCREW; 5/16-18 x 1-1/2" shcs	4	82.	7205xxxx	*PUMP, tandem	1
37.	60107571	TEE, hydraulic overload	1	83.	51704576	HOSE; 3/4" ID x 72" lg.	1
38.	72053615	TEE; 1-1/4"	1				
39.	72533180	BUSHING, reducer; 1-1/4" npt(m) x 3/4" npt(f)	1				
40.	72053211	NIPPLE, close; 1-1/4"	2				
41.	72532346	NIPPLE, barbed, 90°; 1-1/4"	2				
42.	72066516	CLAMP, hose; 1-1/4"	3				
43.	72053287	ELBOW, street, 90°; 1-1/4" npt	1				
44.	72053753	ADAPTER; 1-5/8" str. thd.(m) x 1-1/4" npt(f)	2				
45.	72531550	NIPPLE, barbed, 1-1/4"	1				
46.	72531412	ELBOW, 90°; 1/4" npt(m) x 7/16-20 JIC(m)	1				

\*These items are not a part of the hydraulic kit, but are shown for reference only.

[CLICK HERE TO SEE DRAWING](#)

Figure D-17.

Hydraulic Kit (Part Number 91703857)



[CLICK HERE TO SEE PARTS LIST](#)

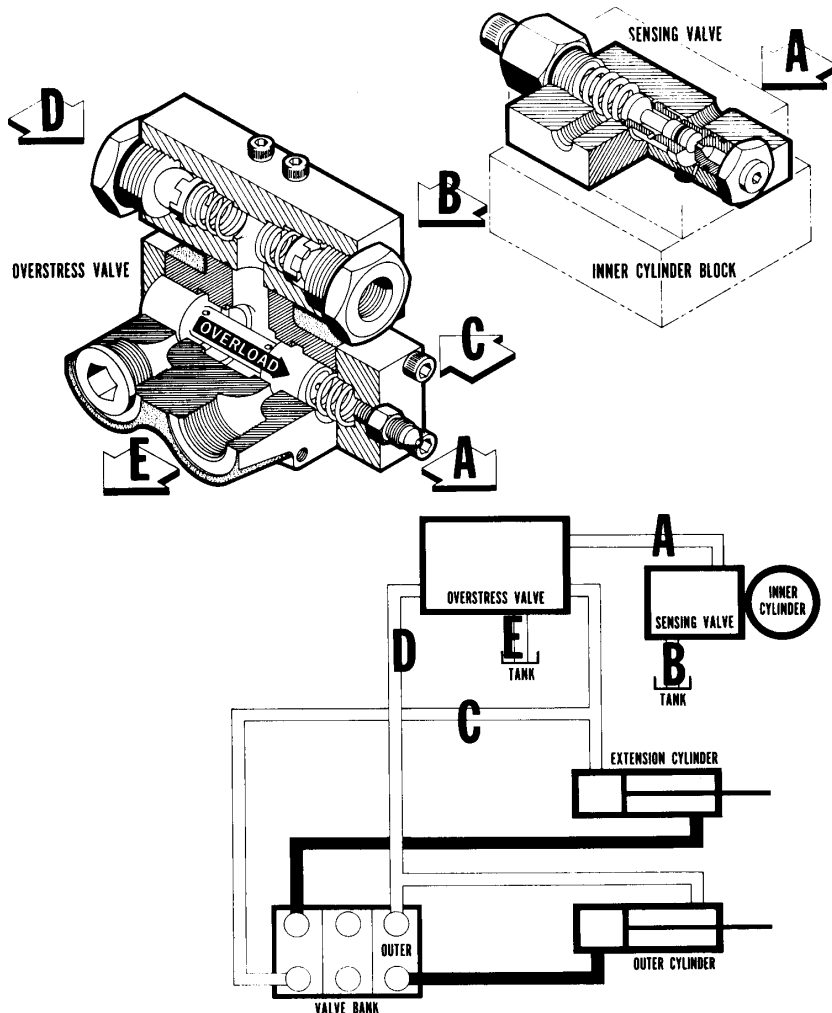
## Description of Capacity Alert System

Because of the possibility of personnel injury or equipment damage due to overloading a crane, IMT is providing a capacity alert system as standard equipment on all 1331 cranes manufactured after December 1, 1980.

The capacity alert system prevents the operator from raising the outer boom or extending the extension boom to a point where the crane is overloaded. Once the crane reaches an overload condition, both functions will no longer operate in that direction but may be reversed to eliminate the overload condition.

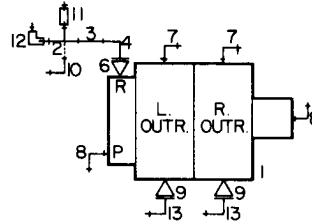
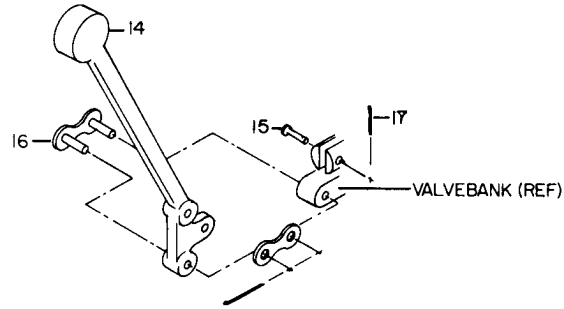
The inner cylinder incorporates a sensor valve mounted on the cylinder port block which monitors the inner cylinder's internal pressure. Raising the outer boom or extending the extension boom will increase the operating radius of the load, resulting in an increase in the inner cylinder's internal pressure. At a point in the process where the pressure exceeds a pre-determined setting, an overload condition exists and the sensor valve will dump hydraulic oil from the biasing cavity of the overstress valve to the oil reservoir. In turn, this will open the overstress valve which is connected to the rod end (retract side) of the outer cylinder and the base end (extend side) of the extension cylinder, dumping the hydraulic oil from these functions to the oil reservoir. This prevents the operator from raising the outer boom or extending the extension boom. However, the operator may reverse either of these functions to relieve the overloading condition.

This system is not intended as a substitute for good operator judgement and operating practices. Under no circumstances should the operator attempt to lift more than the rated load at a given radius of operation.



## Figure D-18. Outrigger Control Valve Bank (Part Number 51705129)

Item No.	Part No.	Description	Qty
1.	73731412	VALVE BANK (includes items 14 thru 17)	1
2.	60107571	TEE	1
3.	72053211	NIPPLE, close; 1-1/4" npt	1
4.	72053287	ELBOW, street, 90°; 1-1/4" npt	1
5.	----	NOT USED	-
6.	72053753	ADAPTER; 1-5/8" str. thd.(m) x 1-1/4" npt(f)	1
7.	72053764	ELBOW, 90°; 7/8-14 str. thd.(m) x 3/4-16 JIC(m)	2
8.	72053767	ELBOW, 90°; 1-1/16" str. thd.(m) x 1-1/16" JIC(m)	2
9.	72531206	ADAPTER; 7/8-14 str. thd.(m) x 3/4-16 str. thd.(f)	2
10.	72531412	ELBOW, 90°; 1/4" npt(m) x 7/16-20 JIC(m)	1
11.	72531550	NIPPLE, barbed; 1-1/4"	1
12.	72532346	NIPPLE, barbed; 1-1/4"	1
13.	72532666	ELBOW, extra-long 90°; 3/4-16 str. thd.(m) x 3/4-16 JIC(m)	2
14.	70142462	HANDLE, valve	2
15.	72066337	PIN	2
16.	71058003	LINK, connecting	2
17.	72066337	PIN, cotter	2



**Figure D-19. Crane Control Valve Bank (Part Number 51705131)**

Item No.	Part No.	Description	Qty
1.	52704237	HANDLE, control, crane swing)	1
2.	72053211	NIPPLE, close; 1-1/4" npt	1
3.	72053615	TEE; 1-1/4" npt	1
4.	72053753	ADAPTER; 1-5/8" str. thd.(m) x 1-1/4" npt(f)	1
5.	72053180	BUSHING, reducer; 1-1/4" npt(m) x 3/4" npt(f)	1
6.	72532346	NIPPLE, barbed, 90°; 1-1/4"	1
7.	72532359	ADAPTER; 7/8-14 str. thd.(m) x 3/4-16 JIC(m)	12
8.	72532366	ADAPTER; 1-1/16" str. thd.(m) x 1-1/16 JIC(m)	2
9.	70142462	HANDLE, control (part of item 10)	5
10.	73731626	VALVE BANK (includes items 1, 9, 11, 12 and 13)	1
11.	72066337	PIN (part of item 10)	6
12.	71058003	LINK, connecting (part of item 10)	6
13.	72066336	PIN, cotter (part of item 10)	6

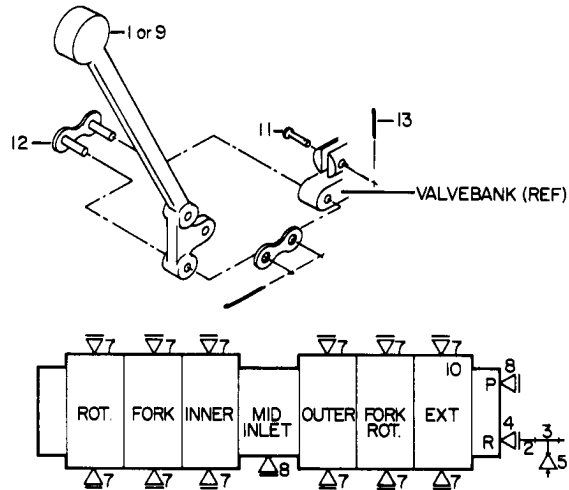
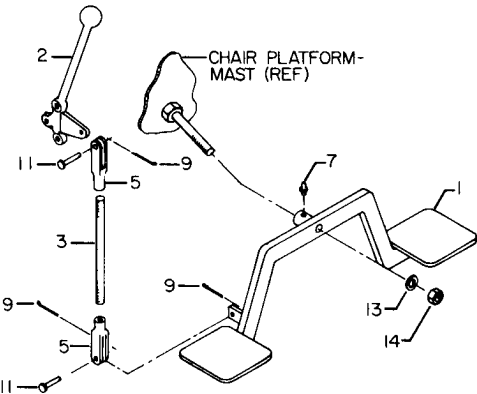


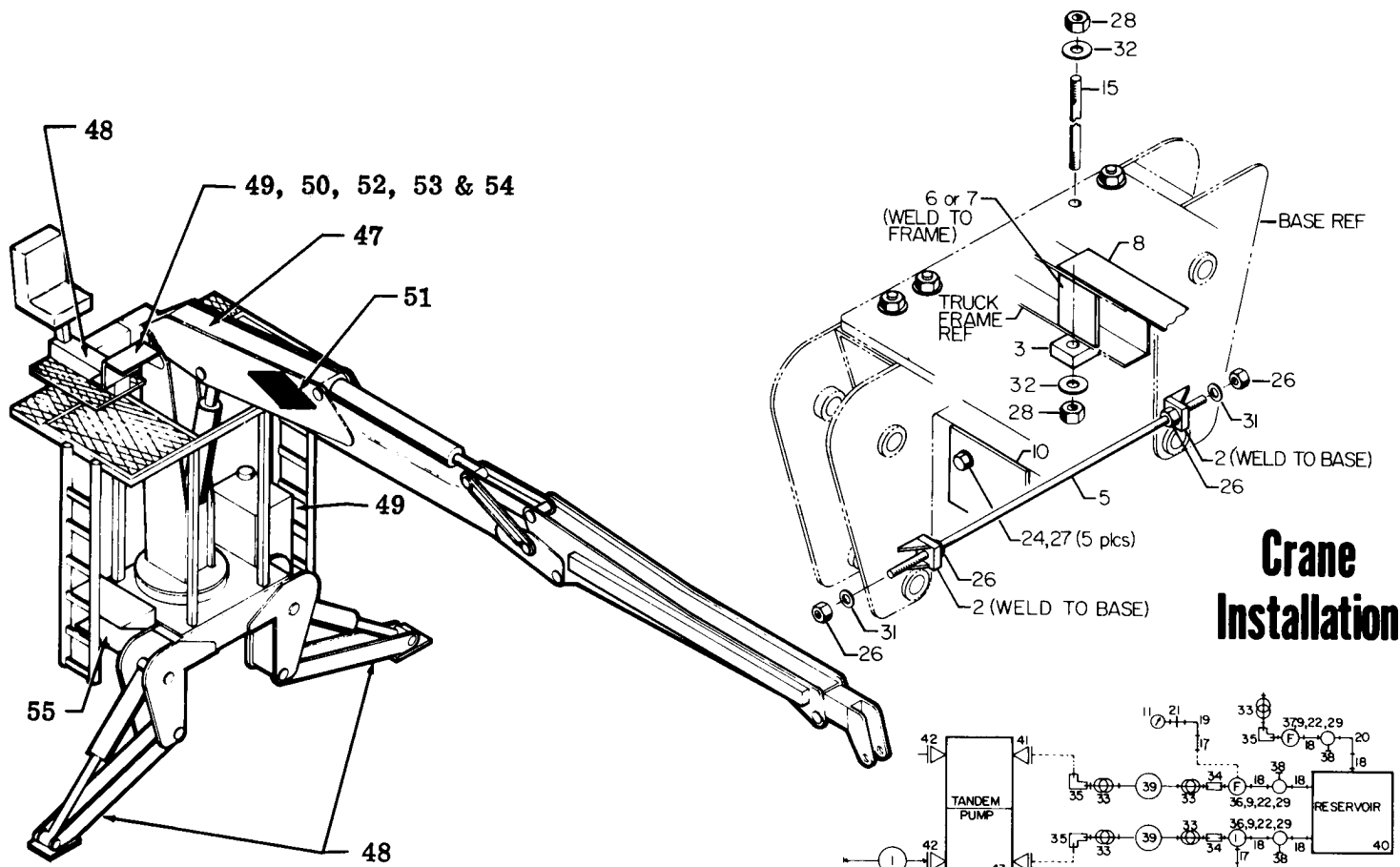
Figure D-20. Control Kit (Part Number 90705130)

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	52701270	PEDAL, crane swing	1	8.	--	NOT USED	-
2.	52704237	HANDLE, control	Reference	9.	72066336	PIN, cotter	2
3.	60102876	PIPE, link	1	10.	--	NOT USED	-
4.	--	NOT USED	-	11.	72066338	PIN, clevis; 5/16" x 1"	2
5.	71058002	CLEVIS; 5/16-18	2	12.	--	NOT USED	-
6.	--	NOT USED	-	13.	72063005	WASHER, wrt.; 1/2"	1
7.	72053508	ZERK; 1/8" npt	1	14.	72062080	NUT, lock; 1/2-13	1



## Figure D-21. Installation Kit (Part Number 93701459)

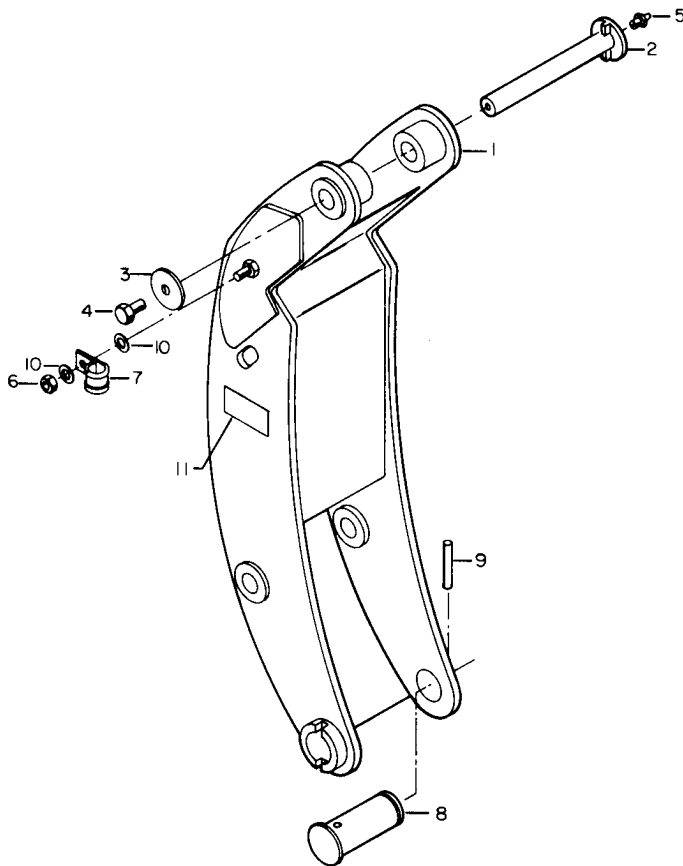
Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	51705689	HOSE; 3/4" ID x 72" lg	1	28.	72062142	NUT, lock; 1-1/4 - 7	16
2.	52702539	BLOCK, outrigger tie bar	2	29.	72063050	WASHER, lock; 5/16"	12
3.	60010665	PLATE, clamp	4	30.	72063051	WASHER, lock; 3/8"	2
4.	60103041	SUPPORT, tandem pump	1	31.	72063058	WASHER, lock; 1"	2
5.	60103204	BAR, tension	1	32.	72063067	WASHER, hi-strength; 1-1/4"	16
6.	60103561	BAR, frame reinforcement	4	33.	72066516	CLAMP, hose; 1-1/4"	5
7.	60103562	BAR, frame reinforcement	4	34.	72531550	NIPPLE, barbed; 1-1/4"	2
8.	60103563	SPACER, frame flange	2	35.	72532346	NIPPLE, barbed, 90°; 1-1/4"	3
9.	60103870	BRACKET, oil filter	6	36.	73052012	FILTER, suction	2
10.	60105107	PLATE	2	37.	73052040	FILTER, return	1
11.	70048031	GAUGE, vacuum	2	38.	73054225	VALVE, gate; 1-1/4"	3
12.	70391391	DECAL, danger, electrocution hazard (not shown)	4	39.	60035679	HOSE; 1-1/4" ID x 96" lg.	2
13.	70392108	DECAL, "Suction Line" (not shown)	2	40.	52701853	RESERVOIR	Reference
14.	70392109	DECAL, "Return Line" (not shown)	1	41.	7205xxxx	ADAPTER, pump	2
15.	71014847	STUD, tie-down; 1-1/4" x 28-1/2"	8	42.	7205xxxx	ADAPTER, pump	2
16.	71392237	DECAL, lube points (not shown)	1	43.	7205xxxx	PUMP, tandem	Reference
17.	72053002	NIPPLE, pipe; 1/8" npt x 2" lg.	2	44.	70391612	DECAL, "Grease Weekly", left	9
18.	72053211	NIPPLE, close; 1-1/4" npt	6	45.	70391613	DECAL, "Grease Weekly", right	9
19.	72053281	ELBOW, street, 90°; 1/8" npt	2	46.	70392273	DECAL, electrocution hazard	2
20.	72053287	ELBOW, street, 90°; 1-1/4" npt	1	47.	71029181	PLACARD, capacity	1
21.	72053468	COUPLING; 1/8" npt	2	48.	71039129	DECAL, outrigger warning	3
22.	72060025	SCREW; 5/16-18 x 1" hex hd.	12	49.	71039134	DECAL, oil level caution	2
23.	72060046	SCREW; 3/8-16 x 1" hex hd.	2	50.	71039163	DECAL, PTO Caution	1
24.	72060183	SCREW; 3/4-10 x 1-1/2" hex hd.	10	51.	70029252	PLACARD, IMT Diamond	2
25.	72062002	NUT; 3/8-16	2	52.	70039298	DECAL, control	1
26.	72062009	NUT; 1-8	4	53.	70391390	DECAL, operation caution	2
27.	72062114	NUT, lock; 3/4-10	10	54.	70391392	DECAL, operation danger	2
				55.	76391511	DECAL, stabilizer operation	1



**Decal Placement**

**Hydraulic Installation**

**Figure D-22. Wallboard Fork Upper Arm (Part Number 40701340)**



Item No.	Part No.	Description	Qty
1.	52701341	ARM, upper	1
2.	52705297	PIN	1
3.	60106333	PLATE, pin retainer	1
4.	720601487	SCREW; 5/8-11 x 1-1/4" hex hd.	1
5.	72053508	ZERK; 1/8" npt	1
6.	72062109	NUT, lock; 5/16-18	2
7.	720665801	CLAMP	2
8.	60103014	PIN	2
9.	72661159	PIN, groove; 1/2" x 3" lg.	2
10.	72063002	WASHER, wrt.; 5/16"	4
11.	70029119	PLACARD, serial no.	1

**NOTE**

Anytime the pin retainer plate bolt (item 4) has been removed, apply Loctite 262 to the threads before re-assembly.

**Figure D-23. Wallboard Fork Secondary Arm — 60" & 72" (Part Number 40701350) and 84" (Part Number 40703761)**

Item No.	60" & 72" Fork Body	84" Fork Body	Description	Qty
1.	3B189612	3B189612	CYLINDER	1
2.	52701351	52703762	ARM, secondary	1
3.	7BF81215	7BF81215	BUSHING	1
4.	60103021	60103021	PIN; 1-1/2" x 6-1/4"	1
5.	60103809	60103809	PIN; 1-1/2" x 10-3/16	1
6.	70029119	70029119	PLACARD, serial number	1
7.	72053508	72053508	ZERK; 1/8" npt	1
8.	72063037	72063037	BUSHING, machy.; 1-1/2"	2
9.	72066132	72066132	RING, retaining	1
10.	72066340	72066340	RIVET, pop; 1/8"	1
11.	72661159	72661159	PIN, groove; 1/2" x 3" lg.	1
12.	72661157	72661157	PIN, groove; 1/2" x 2-1/2"	1

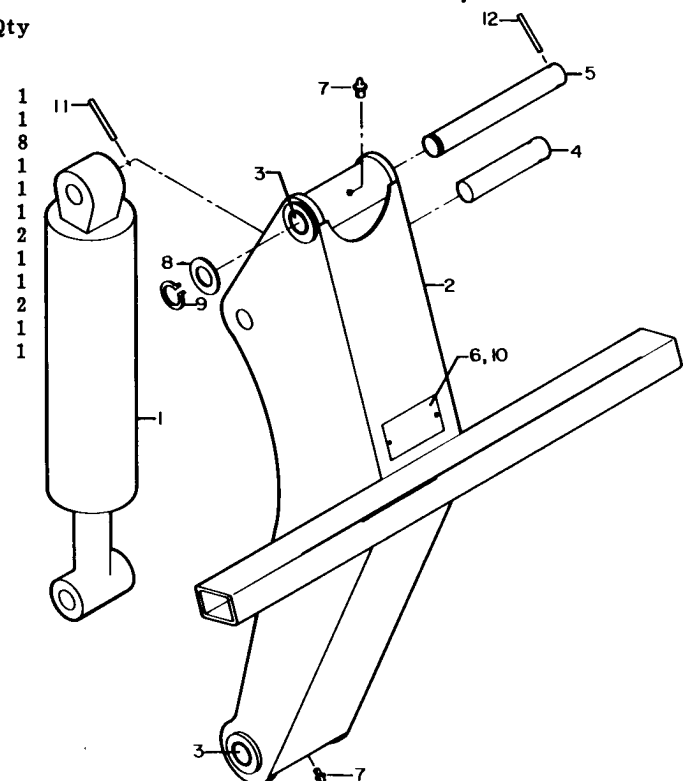




Figure D-24. Wallboard Fork Cylinder (Part Number 3B189612)

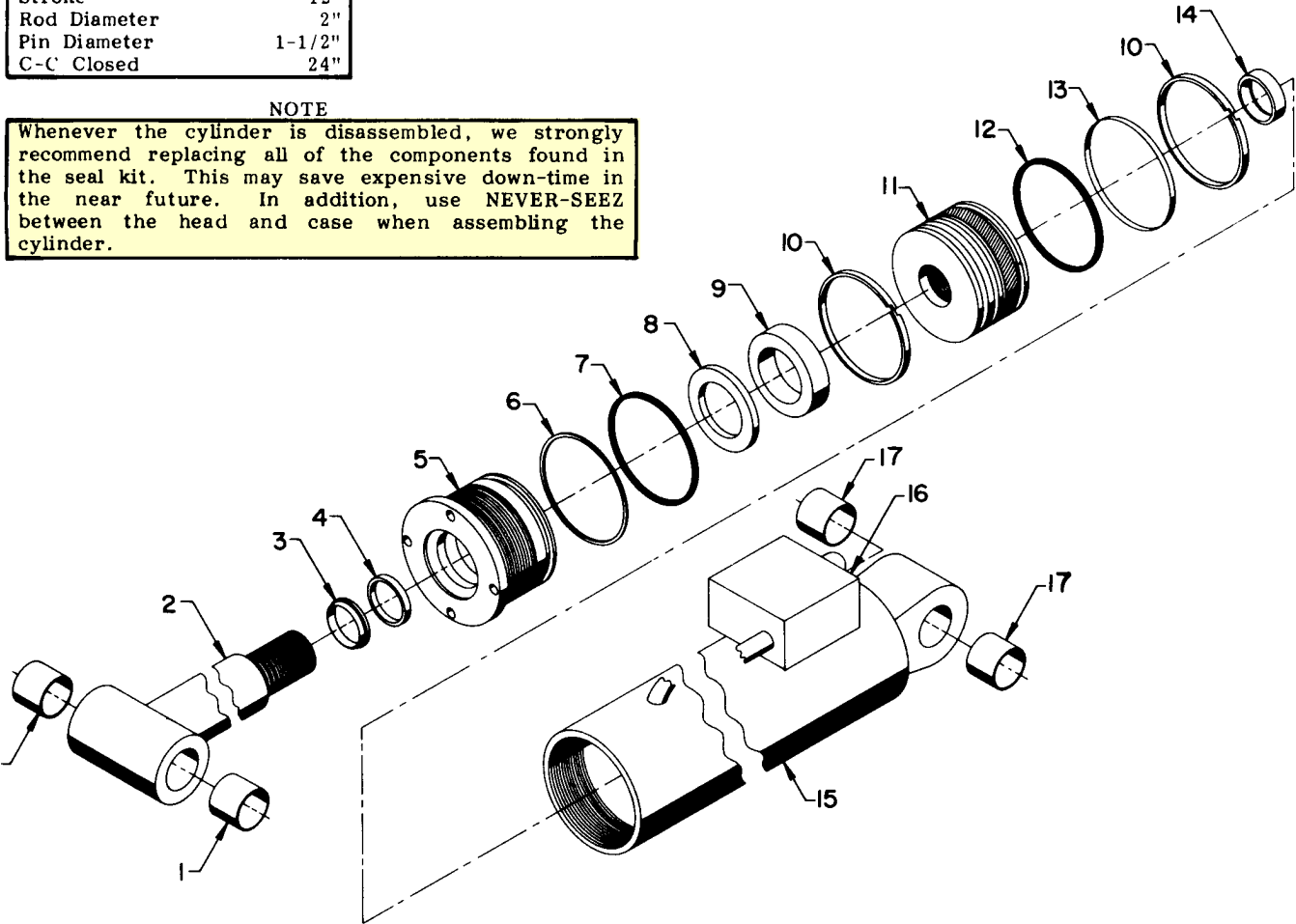
Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	7BF81215	BUSHING, cylinder rod	2	12.	7Q072153	*O-RING	1
2.	4G189610	ROD (includes item 1)	1	13.	7T66P040	*SEAL, piston	1
3.	7R14P020	*WIPER, rod	1	14.	7T61N143	*SEAL, lock ring	1
4.	7R546020	*SEAL, rod	1	15.	4B189611	CASE, cylinder (includes item 17)	1
5.	6H040020	HEAD	1	16.	73054242	VALVE, counter-balance; 25-gpm	1
6.	7Q10P342	*RING, back-up	1	17.	7BF81015	BUSHING, cylinder case	2
7.	7Q072342	*O-RING	1	18.	7PNPXT02	PLUG, 1/8" npt (not shown)	3
8.	6A025020	*RING, wafer lock	1	19.	72053507	ZERK	2
9.	6C075020	TUBE, stop	1				
10.	7T65I040	*RING, piston	2				
11.	6I040143	PISTON	1				
						*Part of seal kit (Part Number 9C161623)	

DIMENSIONS

Bore	4"
Stroke	12"
Rod Diameter	2"
Pin Diameter	1-1/2"
C-C Closed	24"

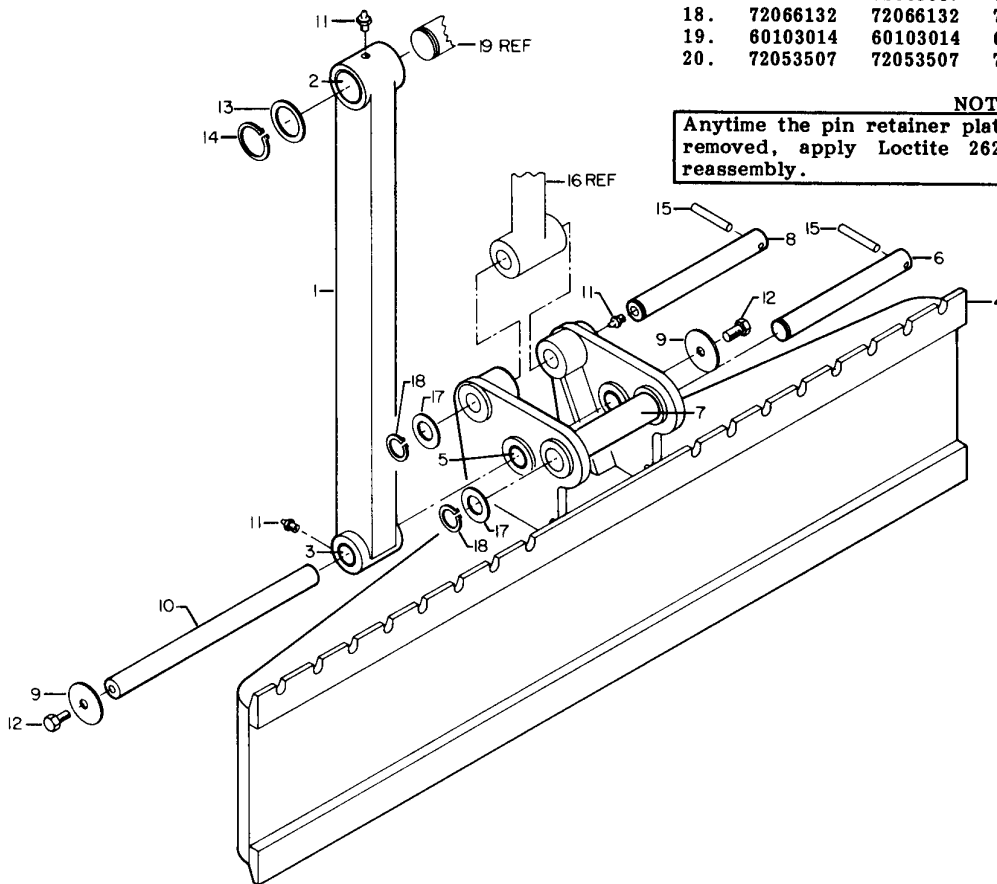
NOTE

Whenever the cylinder is disassembled, we strongly recommend replacing all of the components found in the seal kit. This may save expensive down-time in the near future. In addition, use NEVER-SEEZ between the head and case when assembling the cylinder.



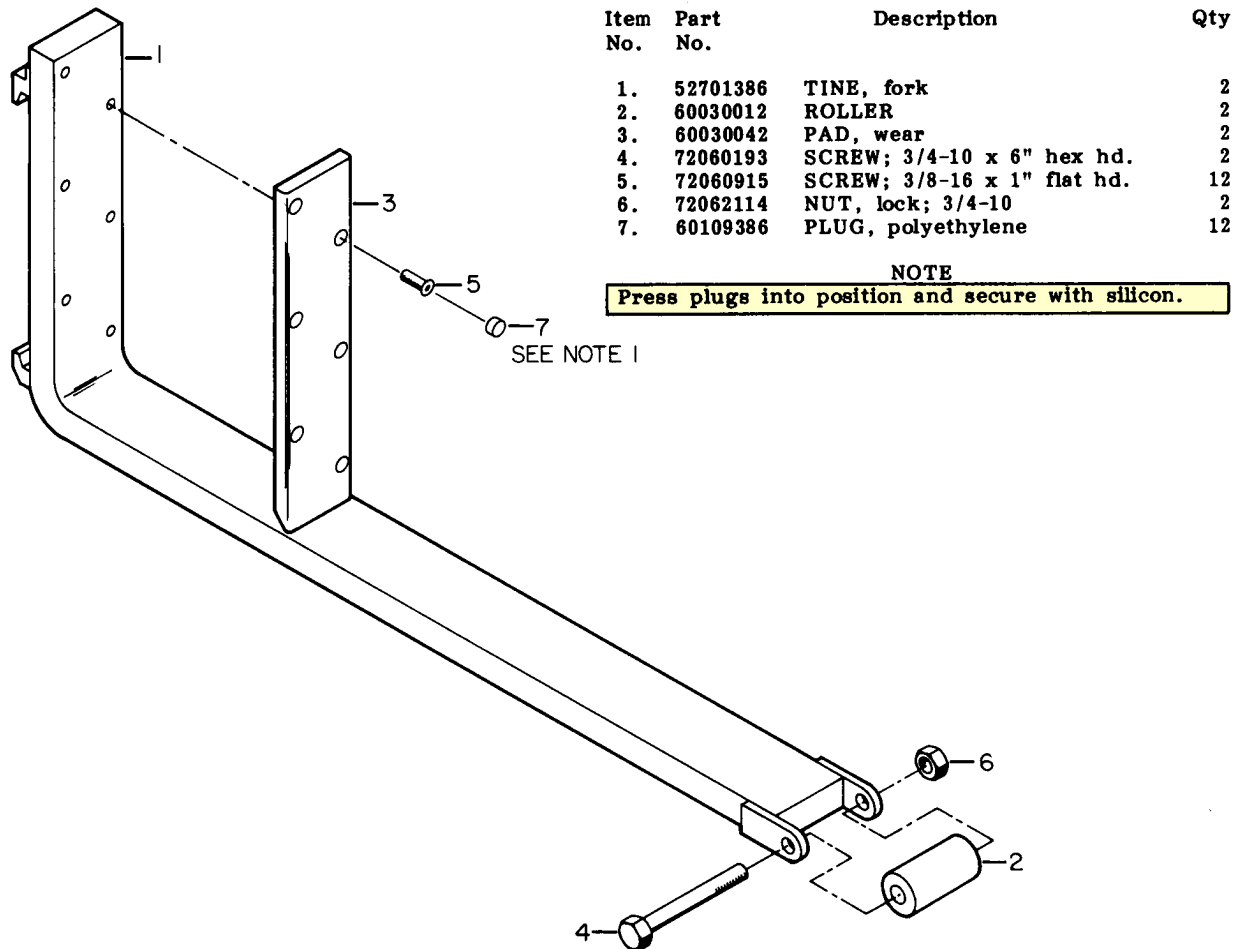
**Figure D-25. Wallboard Fork Body — 60" (Part Number 40701361),  
 72" (Part Number 40702077) and 84" (Part Number 40703667)**

Item No.	60" Part No.	72" Part No.	84" Part No.	Description	Qty
1.	52701353	52701353	52701353	ARM	2
2.	7BF81020	7BF81020	7BF81020	BUSHING	4
3.	7BF81215	7BF81215	7BF81215	BUSHING	4
4.	52701362	52702076	52703668	BODY	1
5.	60020208	60020208	60020208	BUSHING	2
6.	60103022	60103022	60103022	PIN; 1-1/2" x 10-9/16"	1
7.	60103422	60103422	60103422	SPACER	1
8.	60103808	60103808	60103808	PIN; 1-1/2" x 10-9/16"	1
9.	60106333	60106333	60106333	PLATE, pin retainer	2
10.	60107769	60107769	60107769	PIN; 1-1/2" x 16-3/4"	1
11.	72053508	72053508	72053508	ZERK; 1/8" npt	5
12.	72060148	72060148	72060148	SCREW; 5/8-11 x 1-1/4" hex hd.	2
13.	72063039	72063039	72063039	BUSHING, machy.; 2" x 10 ga.	2
14.	72066136	72066136	72066136	RING, retaining; 2"	2
15.	72661157	72661157	72661157	PIN, groove; 1/2" x 2-1/2"	2
16.	3B189612	3B189612	3B189612	CYLINDER, wallboard fork	1
17.	72063037	72063037	72063037	BUSHING, machy.	2
18.	72066132	72066132	72066132	RING, retaining	2
19.	60103014	60103014	60103014	PIN; 2" x 4-1/2"	Ref. 1
20.	72053507	72053507	72053507	ZERK, grease; 1/4-28	2

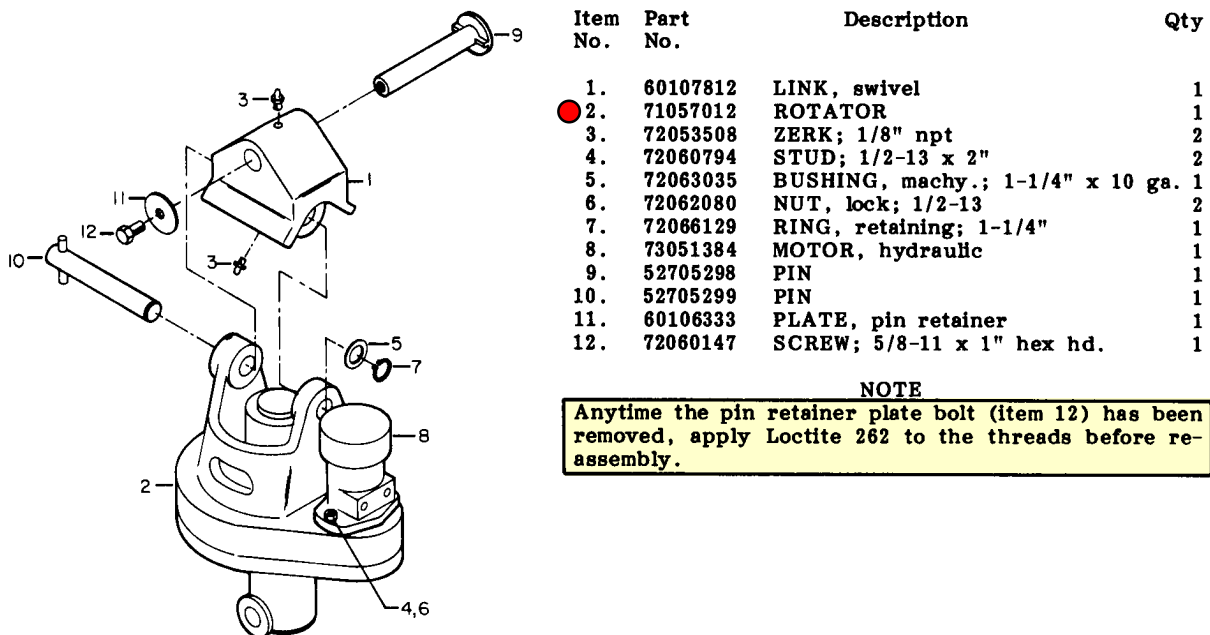


**NOTE**  
 Anytime the pin retainer plate bolt (item 12) has been removed, apply Loctite 262 to the threads before reassembly.

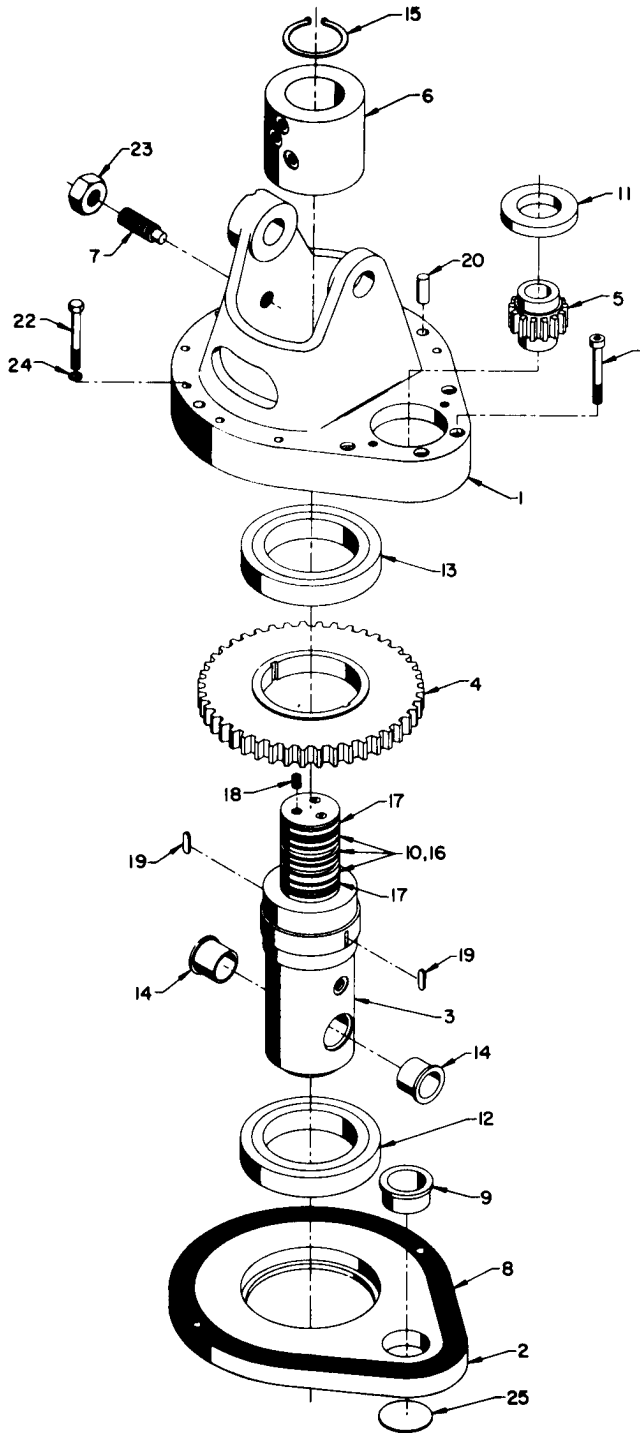
**Figure D-26. Fork (Part Number 40701385)**



**Figure D-27. Wallboard Fork Rotor (Part Number 40701339)**



**Figure D-28. Wallboard Fork Rotator (Part Number 71057012)**



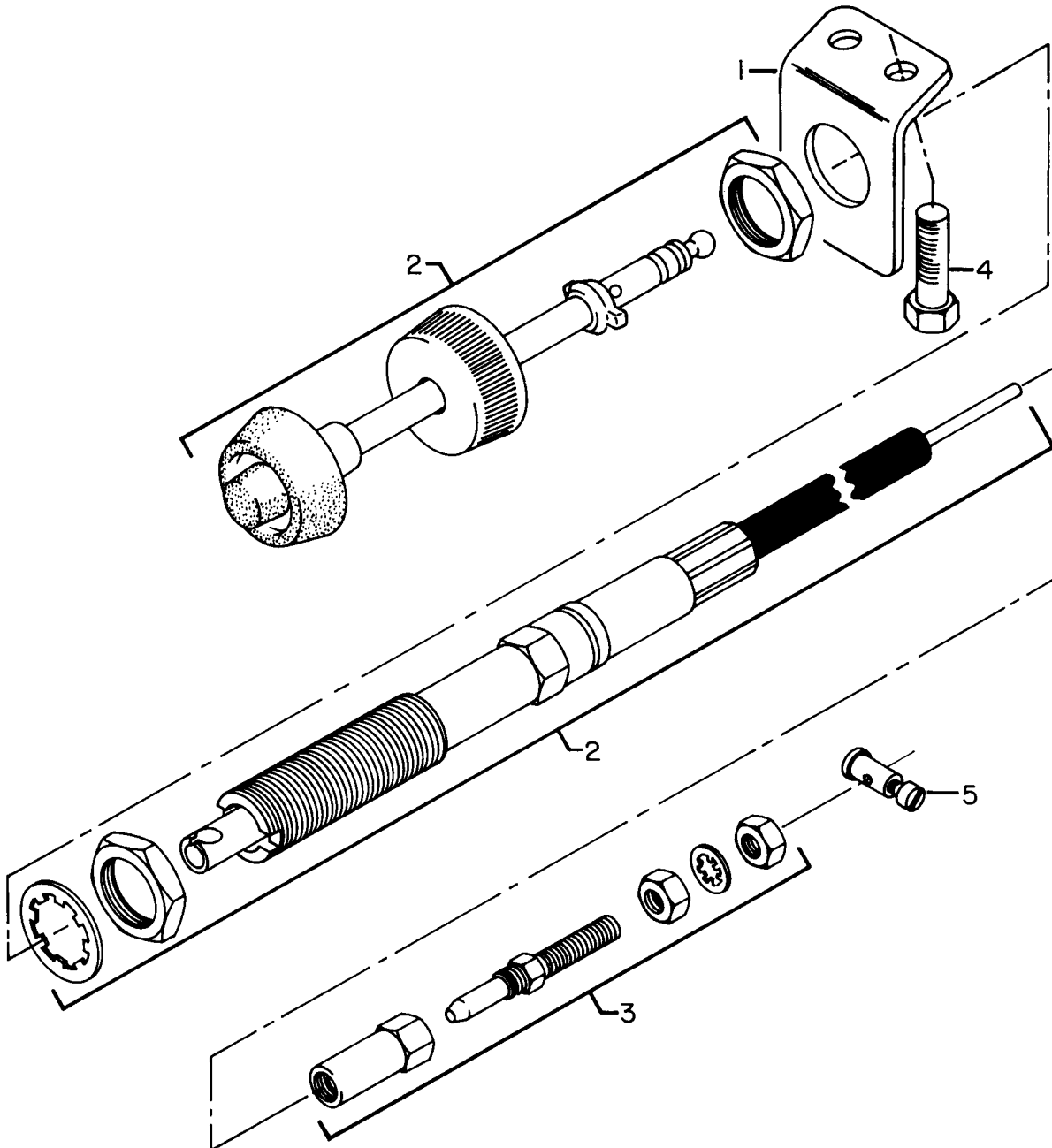
Item No.	Part No.	Description	Qty
1.	71141801	HOUSING	1
2.	71141809	PLATE, cover	1
3.	71141803	SHAFT	1
4.	71056212	GEAR, main	1
5.	71056229	GEAR, pinion	1
6.	71141805	SLEEVE, swivel	1
7.	72060984	SCREW, set; 3/4-10 x 2-1/2"	1
8.	76391387	GASKET	1
9.	71024236	BUSHING, flange	1
10.	7T66G025	* SEAL	3
11.	70024237	BUSHING, input gear	1
12.	70055094	BEARING	1
13.	70055094	BEARING	1
14.	71141806	BUSHING, flange	2
15.	72066103	RING, retaining	1
16.	7Q072137	* O-RING	3
17.	7Q072228	* O-RING	2
18.	72053241	PLUG, pipe; 1/4" npt hollow hex	3
19.	71141808	KEY	2
20.	71141807	PIN, dowel	2
21.	72060757	SCREW; 3/8-16 x 2-1/2" soc. hd.	4
22.	72060054	SCREW; 3/8-16 x 3" hex hd.	9
23.	72062007	NUT; 3/4-10	1
24.	72063051	WASHER, lock; 3/8"	9
25.	72661124	PLUG, expansion	1

\*Part of seal kit (Part Number 9R073164)

## Figure D-29. Manual Throttle Control

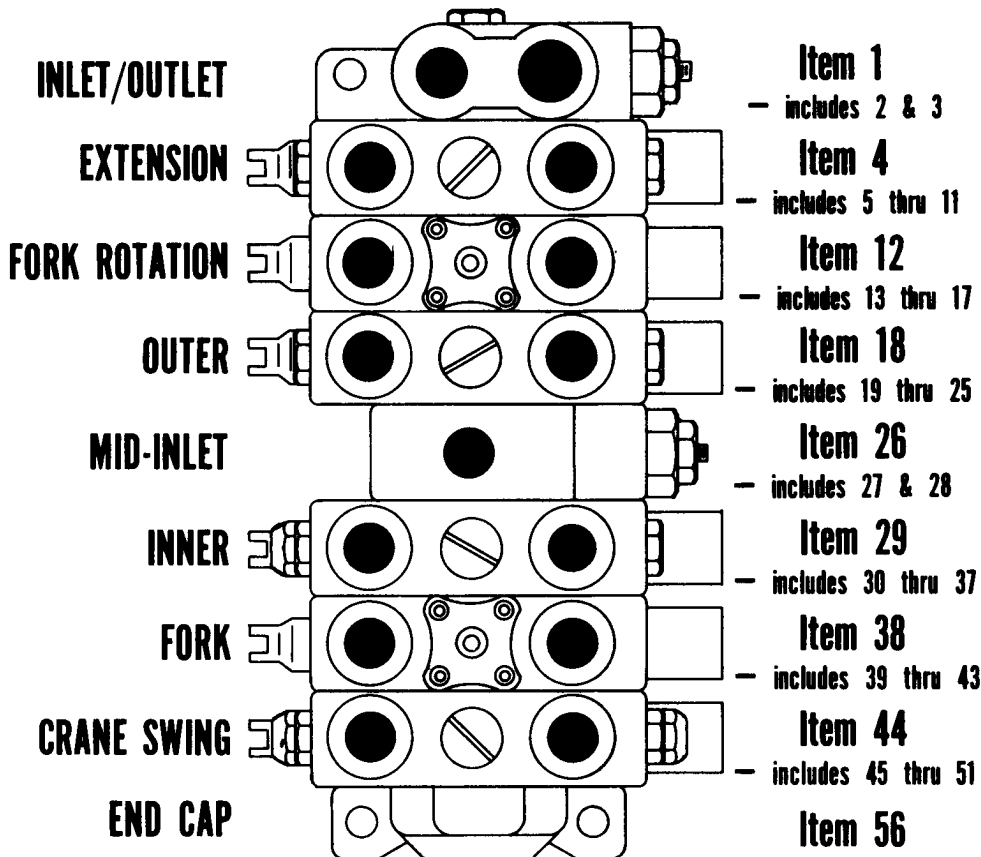
(Part Number 31702746 —18 ft. & 31702747 —30 ft.)

Item No.	18-foot Part No.	30-foot Part No.	Description	Qty
1.	60105400	60105400	BRACKET, mounting	1
2.	70058067	70058068	CONTROL, throttle	1
3.	70058889	70058889	KIT, hub	1
4.	72060962	72060962	SCREW; 5/16-18 x 1" self-tap	2
5.	72066377	72066377	STOP, cable	1



**Figure D-30. Crane Control Valve Bank (Part Number 73731626)**

Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	73054486	COVER, inlet/outlet (includes items 2 and 3)	1	29.	73054522	VALVE SECTION, inner (includes items 30 thru 37)	1
2.	73054500	- VALVE, relief	1	30.	73054412	- POSITIONER, spool	1
3.	73054410	- BODY	1	31.	70142906	- PLUG, anti-cavitation, upper	1
4.	73054519	VALVE SECTION, extension (includes items 5 thru 11)	1	32.	70142905	- PLUG, anti-cavitation, lower	1
5.	73054412	- POSITIONER, spool	1	33.	73054409	- PLUG, load check	1
6.	70142906	- PLUG, anti-cavitation, upper	1	34.	94074037	- HANDLE	1
7.	73054409	- PLUG, load check	2	35.	94391567	- SEAL KIT	2
8.	70142905	- PLUG, anti-cavitation, lower	1	36.	----	NOT USED	-
9.	94074037	- HANDLE	1	37.	73054501	- RELIEF, WH	1
10.	94391567	- SEAL KIT	2	38.	73054520	VALVE SECTION, fork (includes items 39 thru 43)	1
11.	----	NOT USED	-	39.	73054524	- POSITIONER, spool	1
12.	73054520	VALVE SECTION, fork rotation (includes items 13 thru 17)	1	40.	94074037	- HANDLE	1
13.	73054524	- POSITIONER, spool	1	41.	94074023	- FLOW CONTROL	1
14.	94074037	- HANDLE	1	42.	94074022	- ACTUATOR, flow control	1
15.	94074023	- FLOW CONTROL	1	43.	94074024	- SEAL, spool	2
16.	94074022	- ACTUATOR, flow control	1	44.	73054523	VALVE SECTION, crane swing (includes items 45 thru 51)	1
17.	94074024	- SEAL, spool	2	45.	73054412	- POSITIONER, spool	1
18.	73054519	VALVE SECTION, outer (includes items 19 thru 25)	1	46.	73054398	- VALVE, relief	2
19.	73054412	- POSITIONER, spool	1	47.	73054525	- CHECK, anti-cavitation, lower	2
20.	70142906	- PLUG, anti-cavitation, upper	1	48.	73054409	- PLUG, load check	1
21.	73054409	- PLUG, load check	2	49.	94074037	- HANDLE	1
22.	70142905	- PLUG, anti-cavitation, lower	1	50.	94391567	- SEAL KIT	2
23.	94074037	- HANDLE	1	51.	----	NOT USED	-
24.	94391567	- SEAL KIT	2	52.	76392444	SEAL KIT, o-ring, valve bank (includes items 53 and 54)	1
25.	----	NOT USED	-	53.	7Q092021	- SEAL, o-ring	16
26.	73054521	SECTION, mid-inlet (includes items 27 and 28)	1	54.	7Q092024	- SEAL, o-ring	8
27.	73054407	- BODY	1	55.	94074026	STUD KIT (4 studs and nuts)	1
28.	73054500	- VALVE, relief	1	56.	73142254	CAP, end	1



**Figure D-31. Outrigger Control Valve Bank (Part Number 73731412)**

Item No.	Part No.	Description	Qty
1.	73054486	COVER, inlet/outlet (includes items 2 and 3)	1
2.	73054500	- VALVE, relief	1
3.	73054410	- BODY	1
4.	73054519	VALVE, street side outrigger (includes items 5 thru 10)	1
5.	73054412	- POSITIONER, spool	1
6.	70142906	- PLUG, anti-cavitation, upper	1
7.	73054409	- PLUG, load check	2
8.	70142905	- PLUG, anti-cavitation, lower	1
9.	94074037	- HANDLE	1
10.	94391567	- SEAL KIT	2
11.	73054519	VALVE, curb side outrigger (includes items 12 thru 17)	1
12.	73054412	- POSITIONER, spool	1
13.	70142906	- PLUG, anti-cavitation, upper	1
14.	73054409	- PLUG, load check	2
15.	70142905	- PLUG, anti-cavitation, lower	1
16.	94074037	- HANDLE	1
17.	94391567	- SEAL KIT	2
18.	73142254	CAP, end	1
19.	7Q092021	SEAL, o-ring (between sections)	6
20.	7Q092024	SEAL, o-ring (between sections)	3
21.	94731722	STUD KIT (4 studs and nuts)	1

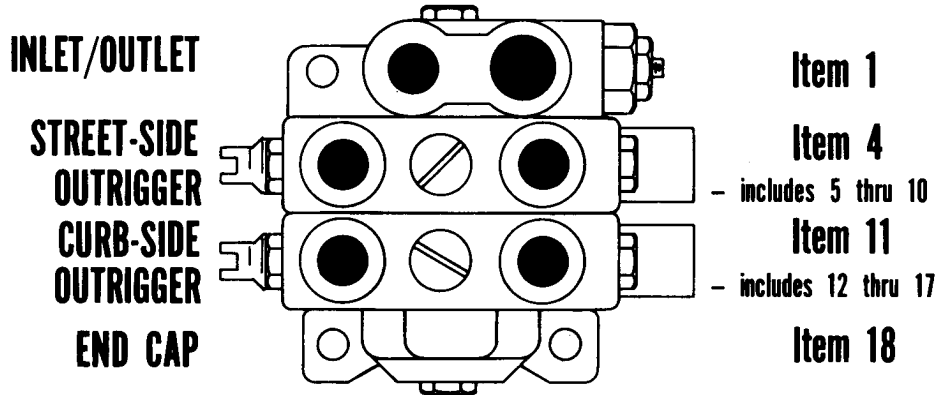
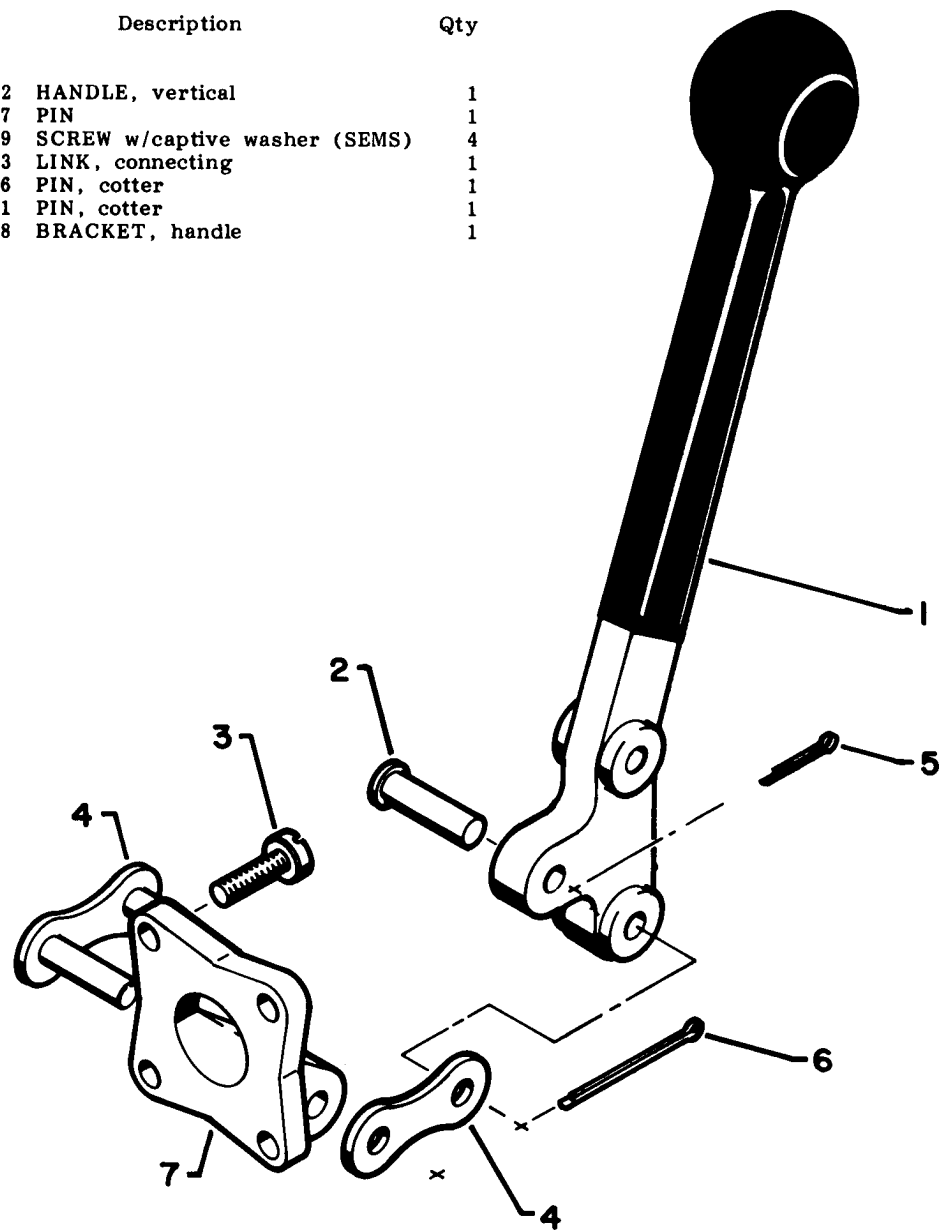


Figure D-32. Control Valve Handle (Part Number 94074037)

Item No.	Part No.	Description	Qty
1.	70142462	HANDLE, vertical	1
2.	72066337	PIN	1
3.	72601399	SCREW w/captive washer (SEMS)	4
4.	71058003	LINK, connecting	1
5.	72066336	PIN, cotter	1
6.	72066161	PIN, cotter	1
7.	70029228	BRACKET, handle	1





**Figure D-33. Wallboard Fork Hydraulic Kit (Part Number 91704818)**

Item No.	Part No.	Description	Qty
1.	51705733	HOSE; 1/4" ID x 24" lg.	4
2.	51705732	HOSE; 1/4" ID x 52" lg.	2
3.	72532665	ADAPTER; 7/16-20 JIC(m) x 3/4-16 JIC(f)	4
4.	72532770	ELBOW, 45°; 7/16-20 JIC(m) x 7/16-20 JIC(f)	2
5.	72532353	ADAPTER; 9/16-18 str. thd.(m) x 7/16-20 JIC(m)	2
6.	72053764	ELBOW, 90°; 9/16-18 str. thd.(m) x 7/16-20 JIC(m)	2
7.	72532353	ADAPTER; 9/16-18 str. thd.(m) x 7/16-20 JIC(m)	2
8.	72532792	ADAPTER; 3/4-16 str. thd.(m) x 7/16-20 JIC(m)	2
9.	3B189612	* FORK, cylinder	1
10.	73051384	* MOTOR, hydraulic	1
11.	71057012	* ROTOR	1
12.	72532690	ELBOW, 90° swivel; 7/16-20 JIC(m) x 7/16-20 JIC(f)	4
13.	72532722	ADAPTER; 7/8-14 str. thd.(m) x 9/16-18 str. thd.(f)	2

\* These items are not a part of this assembly but are shown for reference purposes only.

