Part No. 99900466

Parts and Specifications

516-25 CRANE

IOWA MOLD TOOLING CO., INC.
P.O. Box 189, Garner, IA 50438

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

This volume deals with information applicable to your particular crane. For operating, maintenance and repair instructions, refer to Volume 1, Maintenance and Repair. Volume 1 contains the following information:

SECTION 1.	OPERATION
SECTION 2.	MAINTENANCE
SECTION 3.	REPAIR
SECTION 4.	INSPECTION & TEST REPORT
SECTION 5.	INSTALLATION - CHASSIS PREPARATION
SECTION 6.	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.

Three means are used throughout this manual to gain the attention of personnel. They are NOTES, CAUTIONS and WARNINGS 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.

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

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

ANSI B30.15
MOBILE HYDRAULIC CRANES
The American Society of Mechanical Engineers
United Engineering Center
345 East 47th Street
New York, NY 10017

USAS B30.5
CRAWLER, LOCOMOTIVE AND TRUCK CRANES
The American Society of Mechanical Engineers
United Engineering Center
345 East 47th Street
New York, NY 10017

Warranty of this unit will be void on any part of the unit subjected to misuse due to overloading, abuse, lack of maintenance or 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.

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

SECTION 1. Specifications

GENERAL

Crane Rating	(9.82 ton/meters)	71,000 ft. lbs.
Reach (from centerline of rotation)	(7.67 m)	25'-2"
Extension	(114.3 cm/129.5 cm/114.3 cm)	45"/51"/45"
*Lifting Height	(10.4 m)	34'-1"
Weight of Crane	(2,032 kg.)	4,480 lbs.
Outrigger Span	(3.63 m)	11'-11"
Optimum Pump Capacity	(34.1 liters/min.)	9 U.S. Gal./Min.
Oil Reservoir Capacity	(64.4 liters)	17 U.S. Gal.
**Mounting Space Required - Centermount	(73.7 cm)	29"
**Mounting Space Required - Sidemount	(91.4 cm)	36"
*Storage Height - Centermount	(3.68 m)	12'-3"
*Storage Height - Sidemount	(3.63 m)	11'-11"
Design Factors - Structural Members		3/1
- Critical Members (pins and hydraulics)		4/1

*Based on 39" (99.1 cm) truck frame height.
**Add 3" (7.67 cm) for truck cab clearance.

PERFORMANCE CHARACTERISTICS

Rotation - 370° (6.46 Rad.)	30 Seconds
Main Boom Elevation - -20° to +72° (-0.35 Rad. to +1.26 Rad.)	24 Seconds
Secondary Boom Elevation - 113° (1.97 Rad.)	14 Seconds
Extension - 45" & 51" (114.3 cm & 129.5 cm)	14 & 7 Seconds

LIFTING CAPACITY (from centerline of rotation)

(2.44 m) 8'-0"	(4,037 kg)	8,900 lbs.
(4.09 m) 13'-5"	(2,427 kg)	5,350 lbs.
(5.23 m) 17'-2"	(1,860 kg)	4,100 lbs.
(6.53 m) 21'-5"	(1,406 kg)	3,100 lbs.
(7.67 m) 25'-2"	(1,179 kg)	2,600 lbs.

HYDRAULIC SYSTEM

Open-centered, full-pressure system that requires 9 GPM (34.1 liters/minute) optimum oil flow at 2450 PSI (172.2 kg/sq. cm.). Six-spool, stack-type control valve with dual operational handles located at both sides for convenient operation (centermount only - sidemount has either right or left hand control). System includes hydraulic oil reservoir, suction-line filter, pump, control valve bank, return-line filter and all hoses and fittings.

POWER SOURCE

Integral-mounted hydraulic pump and PTO application. Other standard power sources may be utilized.

ROTATION SYSTEM

Turntable bearing powered with a high-torque hydraulic motor through a ring-and-pinion type spur gear train.

CYLINDER HOLDING VALVES

The holding sides of all cylinders are equipped with integral-mounted holding and/or counter-balance valves to prevent sudden cylinder collapse in case of hose or other hydraulic failure. The outrigger cylinders have positive pilot-operated holding valves that will open only upon command.

The secondary, main and extension cylinders have pilot-operated counter-balance 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 breaks, the only oil loss will be that in the hose.

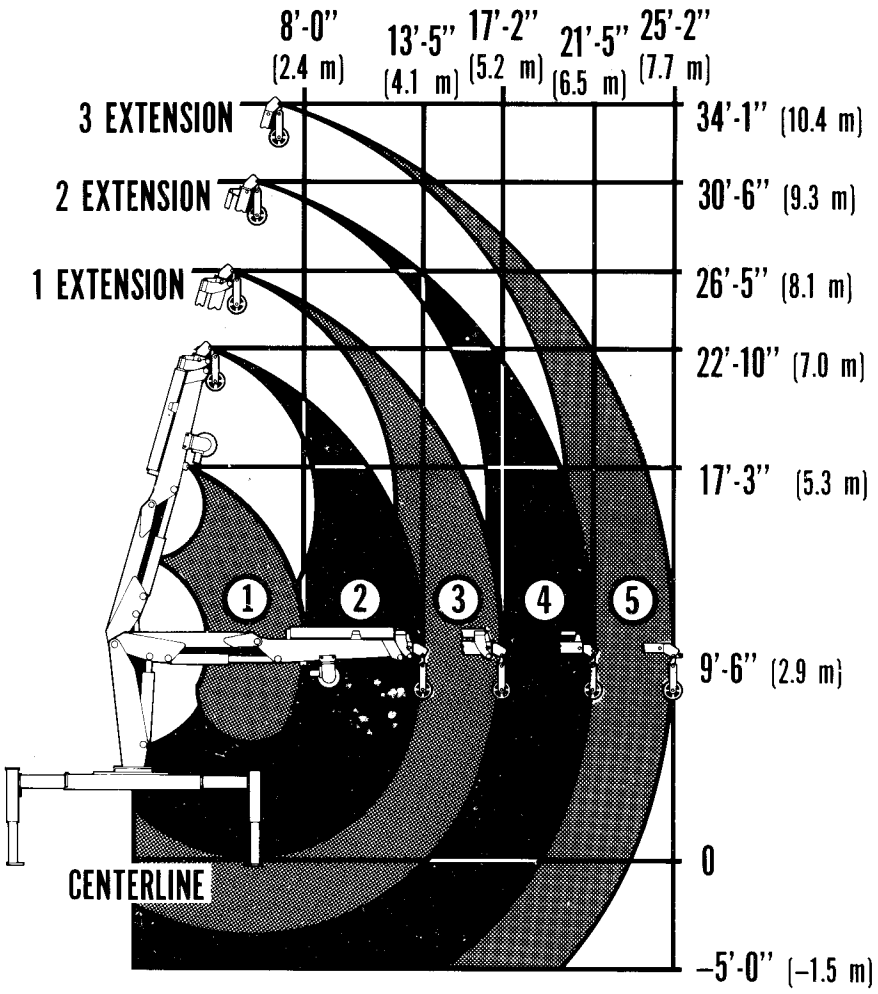
CYLINDERS

	Bore	Stroke
Main	(15.2 cm) 6"	(75.2 cm) 29-5/8"
Secondary	(12.7 cm) 5"	(64.5 cm) 25-3/8"
Extension - 1st stage	(10.2 cm) 4"	(114.3 cm) 45"
Extension - 2nd stage	(6.4 cm) 2-1/2"	(129.5 cm) 51"
Outrigger	(6.4 cm) 2-1/2"	(53.3 cm) 21"

MINIMUM CHASSIS SPECIFICATIONS

Body Style		Conventional Cab
Wheel Base	(480.1 cm)	189"
Cab to Axle	(304.8 cm)	120"
Frame Section Modulus	(314.7 cc)	19.2 cu. in.
R B M	(9,681 kg-m)	840,000 in. lbs.
Front Axle	(4,089 kg)	9,000 lbs.
Rear Axle	(7,450 kg)	17,500 lbs.
Transmission		4-Speed

In addition to these specifications, heavy-duty electrical and cooling systems and dual rear wheels are required. It is recommended that the vehicle be equipped with an electric engine tachometer, auxiliary brake lock, power steering and a 5-speed, in lieu of a 4-speed transmission.



1	SECONDARY HOOK	8,900 lbs.
	Gancho Secundaria/Crochet Secondaire	4,037 kgs.
2	SECONDARY BOOM	5,350 lbs.
	Pluma Secundaria/Fleche Secondaire	2,427 kgs.
3	1st EXTENSION	4,100 lbs.
	1ra Extension/1ere Extension	1,860 kgs.
4	2nd EXTENSION	3,100 lbs.
	2da Extension/2eme Extension	1,406 kgs.
5	3rd EXTENSION	2,600 lbs.
	3ra Extension/3eme Extension	1,179 kgs.

Figure A-1. Capacity Chart

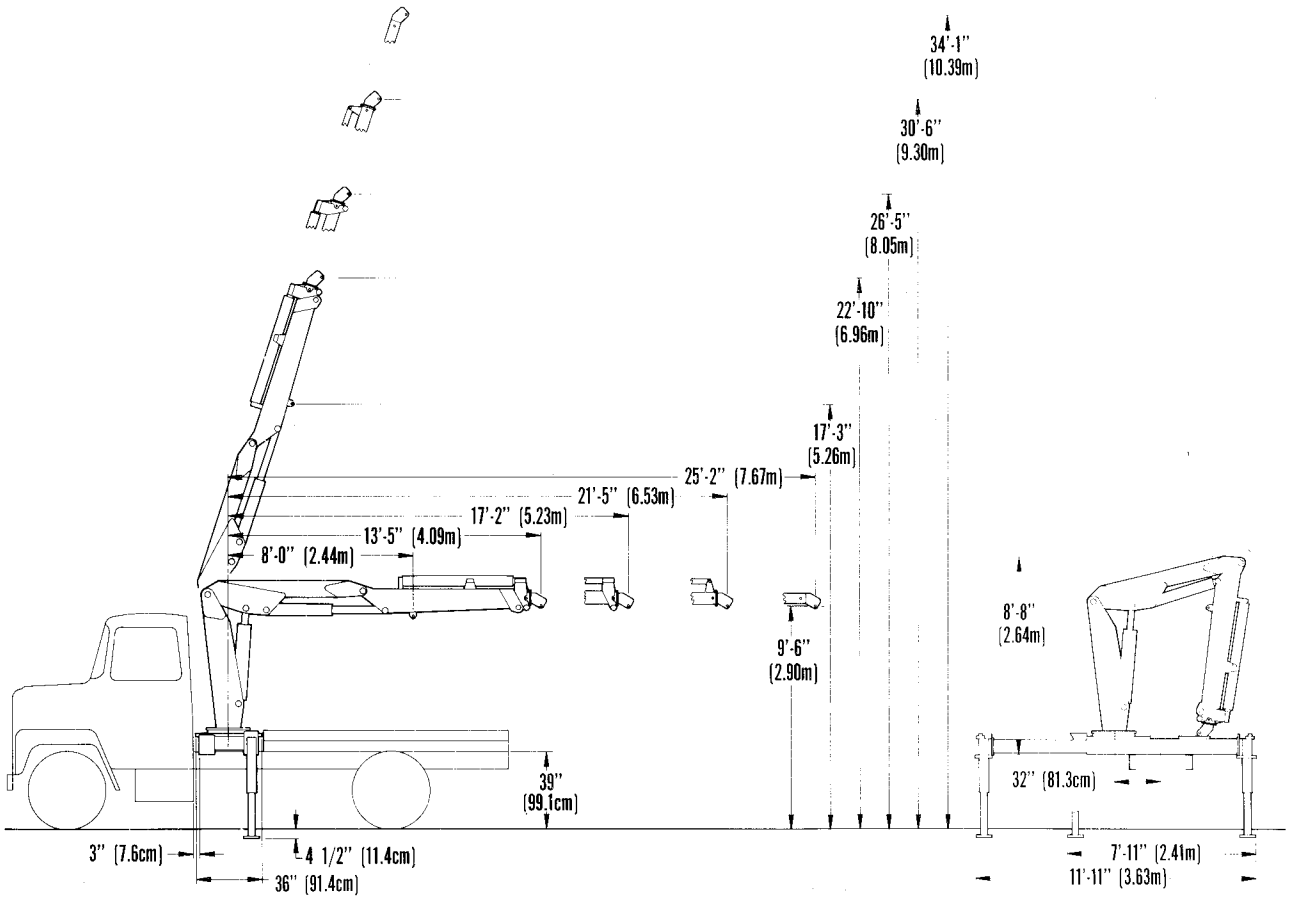


Figure A-2. Geometric Configuration

SECTION 2. Crane Description

2-1. GENERAL

This section describes the major assemblies that are available with the IMT 516-25 crane. Figure B-1 illustrates the location of the assemblies.

2-2. BASE

The base provides the means for mounting the crane on a truck chassis. It incorporates the 370° (6.46 Rad.) rotation mechanism.

2-3. MAST

The mast provides the necessary elevation for crane operation as well as a hinge point for the main boom.

2-4. MAIN BOOM

The main boom will swing through a full 92° (1.61 Rad.) for -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. SECONDARY BOOM

The secondary boom will swing through a full 113° (1.97 Rad.). It provides an additional mounting point for attachment of the crane hook. It is raised and lowered through the use of a double-acting hydraulic cylinder.

2-6. EXTENSION BOOM

The extension boom will increase the operating range of the crane from 13'-5" (4.09 m) to 25'-2" (7.67 m). This is accomplished by a two-stage, double-acting hydraulic cylinder.

2-7. CONTROLS

The crane may be operated from the driver's side of the base.

2-8. HYDRAULIC KITS

The crane hydraulics consist of double-braided pressure hoses, return hoses, filters, control-valve bank and all necessary hydraulic fittings.

2-9. AUXILIARY OUTRIGGERS

Auxiliary outriggers attached to the carrier vehicle's chassis provide for crane stabilization. The outriggers feature both power-out and power-down functions.

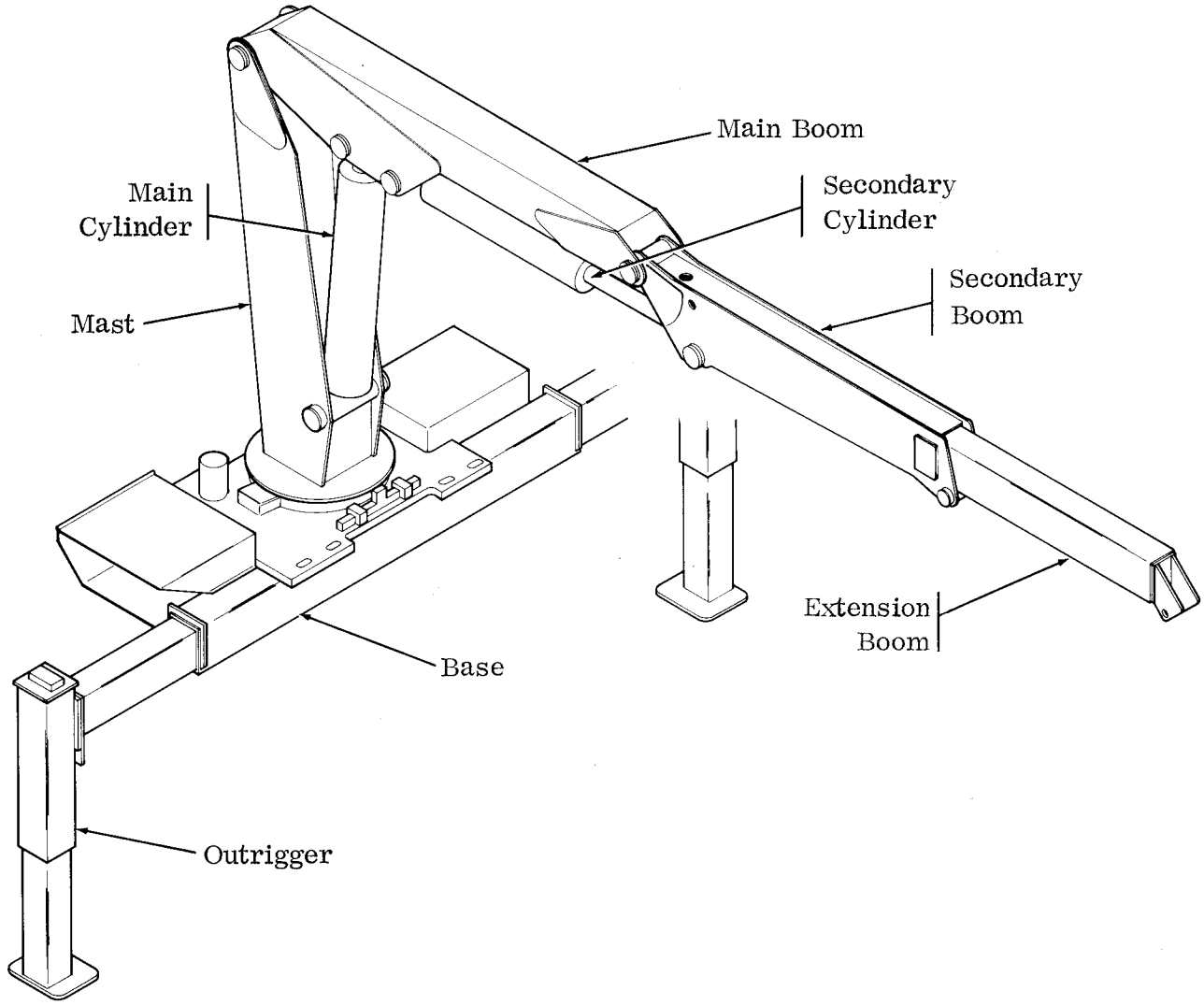


Figure B-1. Crane Group

SECTION 3. Crane 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:

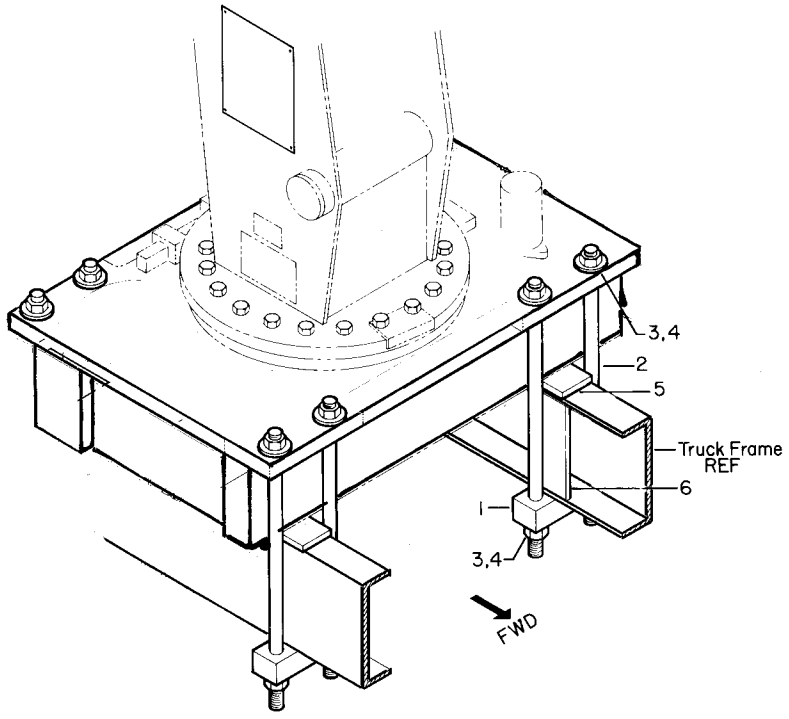
1. Use a lifting device capable of lifting the weight of the crane - 3,450 lbs. (1,565 kg.). Attach the lifting device to the lift bracket welded to the top of the main boom. Lift the crane, move the chassis into position under the crane and lower the crane onto the chassis in the desired position. Allow sufficient room between the crane and cab for mast rotation - at least 3" (7.6 cm). Check for front to rear alignment.

2. Install the tie rods, clip bars, hardened flat washers and self-locking nuts to secure the crane base to the chassis (Figure C-1). Power wrench the nuts tight.

CAUTION

Do not attempt to apply the same torque to the tie rod and self-locking nut 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.



1. Clamping Plate
2. Tie Rod
3. Hardened Steel Washer
4. Lock Nut
*5. Frame Flange Spacer
*6. Vertical Reinforcing Bar

*Refer to Section 5 in Volume 1 for installation instructions.

Figure C-1. Crane Installation

3-3. HYDRAULIC INSTALLATION

To install the hydraulic hoses, fittings, etc.:

1. Plumb the suction line filter as shown in Figure C-2.

2. Install the 1-1/4" ID suction hose between the reservoir suction port and the suction line filter.

3. Install the 1-1/4" suction hose between the suction-line filter and the pump inlet. Tighten the hose clamps.

4. Install the 1/2" pressure hose between the pump outlet and the inlet port on the valve bank.

5. Fill the hydraulic oil reservoir to the "FULL" mark.

6. Open the gate valve 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. Start the vehicle engine and engage the PTO. Allow the system to run for about five minutes and then check the vacuum gauge on the suction-line filter (it should read less than 8" of mercury pull). If it does not read less than 8", check to make certain the gate valve at the suction line filter is open. If it is, check for a restricted or collapsed suction line.

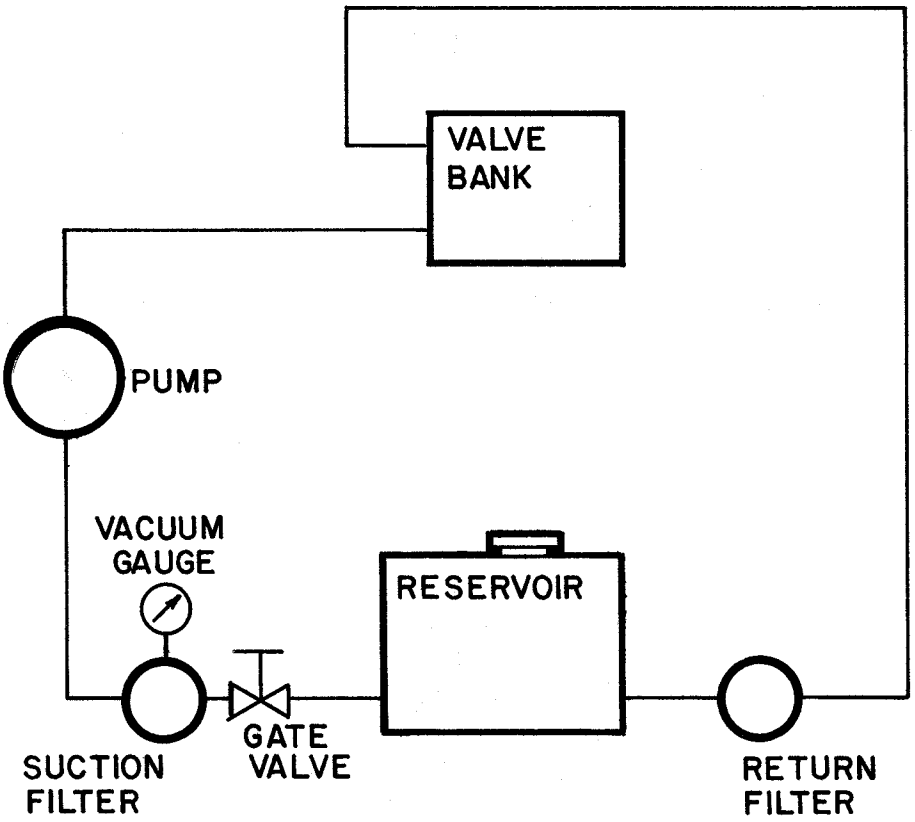


Figure C-2. Hydraulic Installation

4-1. GENERAL

This section contains the exploded parts drawings with the accompanying parts lists for the assemblies used on this crane. These drawings are intended to be used in conjunction with the instructions contained 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 and CAUTION's contained in that section. Failure to comply with these instructions may result in damage to equipment, an injury or even death.

4-2. CRANE IDENTIFICATION

Every crane has an identification placard (Figure D-1) attached to the mast. 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 addressed to Iowa Mold Tooling Co., Inc.; 500 Highway 18 West; Garner, Iowa 50438 or telephone (515) 923-3711.

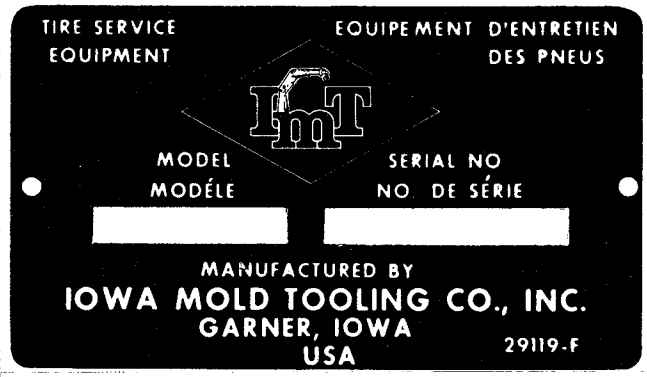


Figure D-1. Serial Number Placard

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.

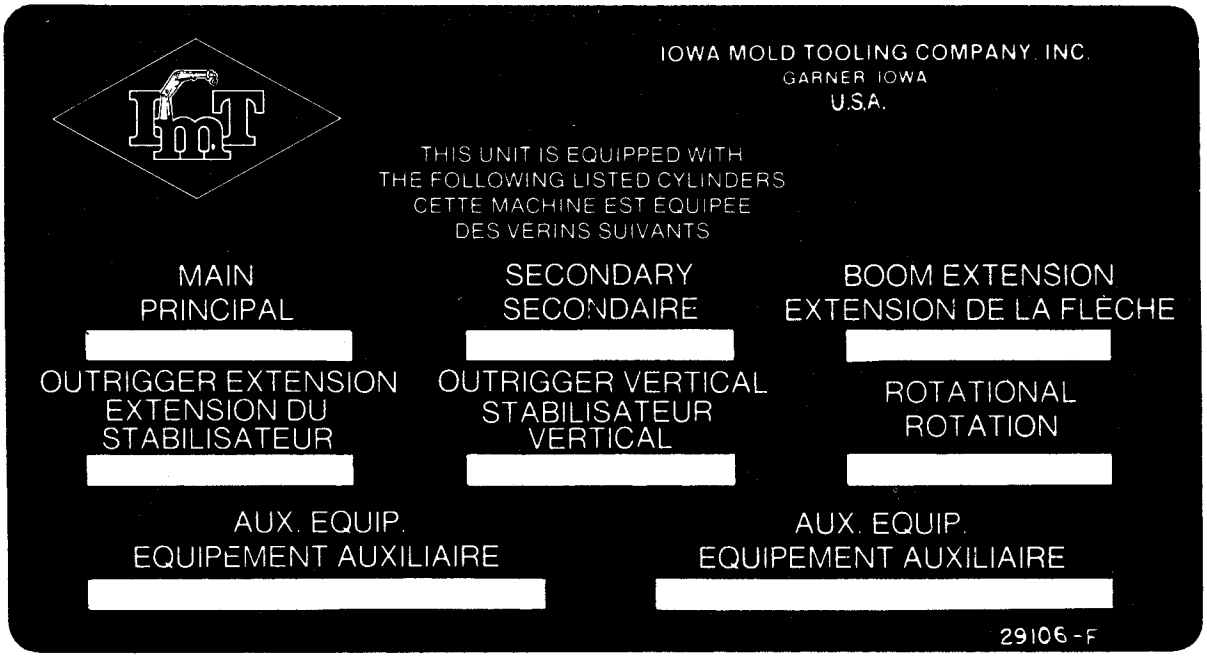


Figure D-2. Cylinder Identification Placard

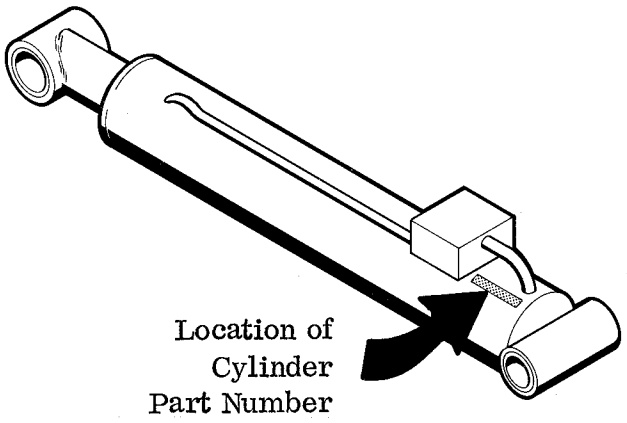


Figure D-3. Cylinder Part Number Location

4-4. WELDMENT IDENTIFICATION

Each of the major weldments - base, mast, main boom, secondary boom, extension boom(s) 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.

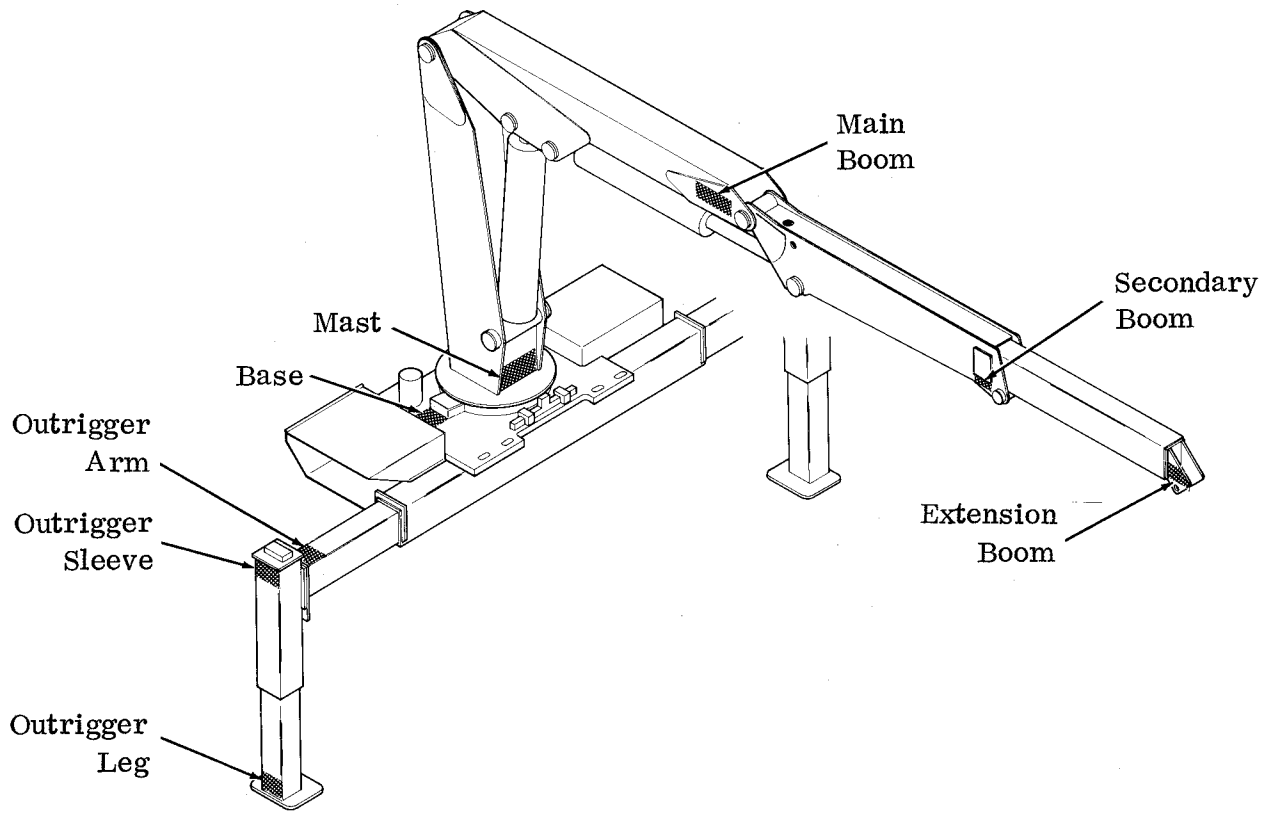


Figure D-4. Weldment Part Number Location

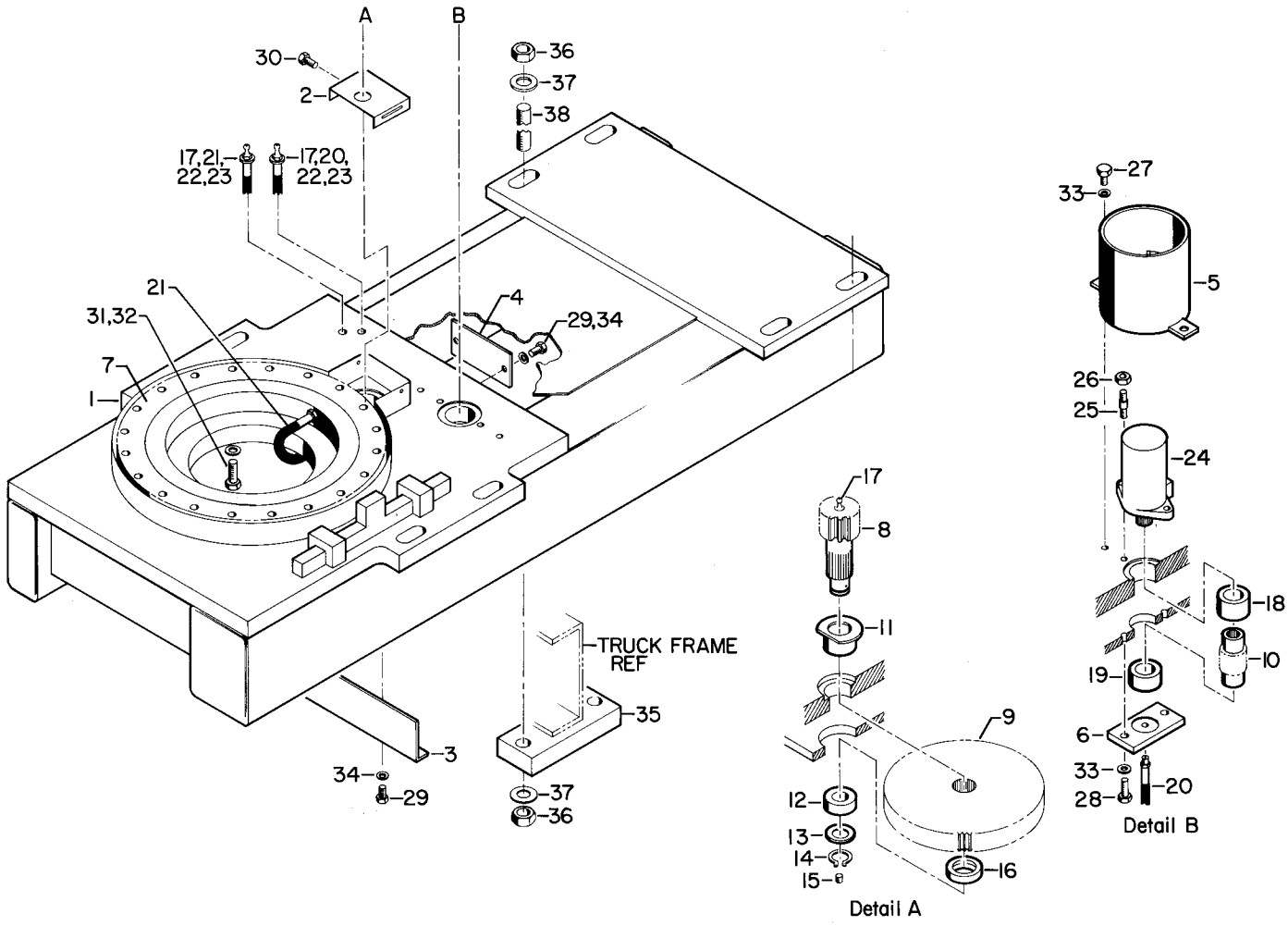


Figure D-5. Base Assembly — sheet 1 of 2

Item No.	Part No.	Description	Qty
1.	G267-3	BASE	1
2.	60010235	COVER, pinion	1
3.	60102769	GUARD, gear	1
4.	60102767	PLATE, inspection	1
5.	52702104	GUARD, motor	1
6.	60010844	PLATE, grease	1
7.	71056001	GEAR-BEARING, turntable	1
8.	71056010	GEAR, pinion	1
9.	71056012	GEAR, intermediate	1
10.	71056011	GEAR, drive	1
11.	60020114	BUSHING, pinion gear	1
12.	60020154	BUSHING, pinion gear	1
13.	72063035	BUSHING, machy.; 1-1/4" x 10 ga.	1
14.	72066084	RING, retaining; 1-1/4"	1
15.	72053240	PLUG, pipe; 1/8" npt socket hd.	1
16.	60104694	SPACER, pinion gear	1
17.	72053508	ZERK, brease; 1/8" npt	3
18.	60020115	BUSHING, drive gear	1
19.	60020116	BUSHING, drive gear	1
20.	73731171	EXTENSION, grease; 23-1/4"	1
21.	73731172	EXTENSION, grease; 31-1/4"	1
22.	72063004	WASHER, wrt.; 7/16"	2
23.	72053001	COUPLING; 1/8" npt	2
24.	72051378	MOTOR, hydraulic rotation	1
25.	60106032	STUD, brake; 1/2-13	2
26.	72062080	NUT, lock; 1/2-13	2
27.	72060089	SCREW; 1/2-13 x 3/4" hex hd.	2
28.	72060092	SCREW; 1/2-13 x 1-1/4" hex hd.	2
29.	72060002	SCREW; 1/4-20 x 3/4" hex hd.	4
30.	72060833	SCREW; 5/16-18 x 3/8" self-tap	2
31.	72061163	SCREW; 5/8-11 x 2-1/2" gr. 9	20
32.	72063127	WASHER, flat; 5/8" hardened	20
33.	72060053	WASHER, lock; 1/2"	4
34.	72063049	WASHER, lock; 1/4"	4
35.	60106716	PLATE, clamp	2
36.	72062141	NUT, lock; 1-8	8
37.	72063066	WASHER, wrt.; 1"	8
38.	G267-13	STUD, tie-down; 1-8 x 38" lg.	4

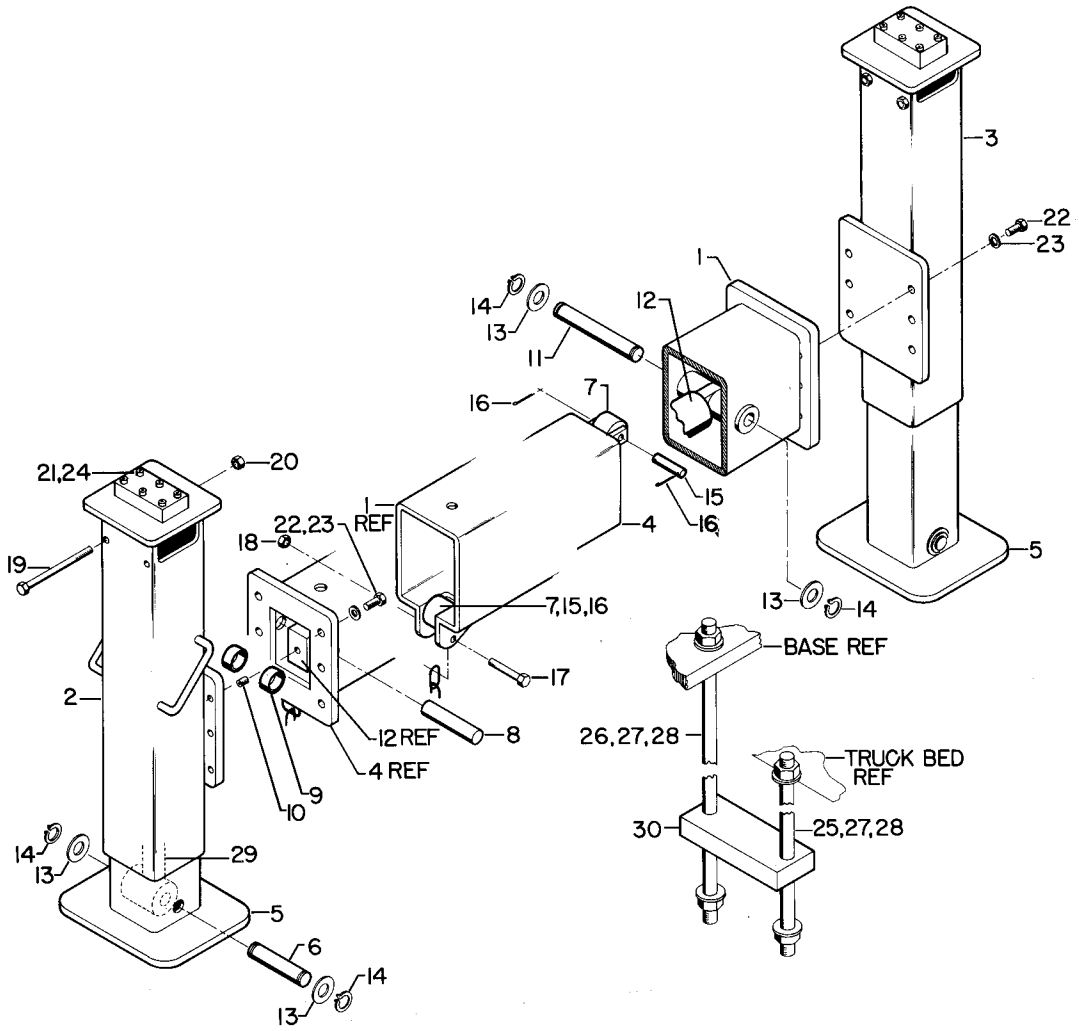
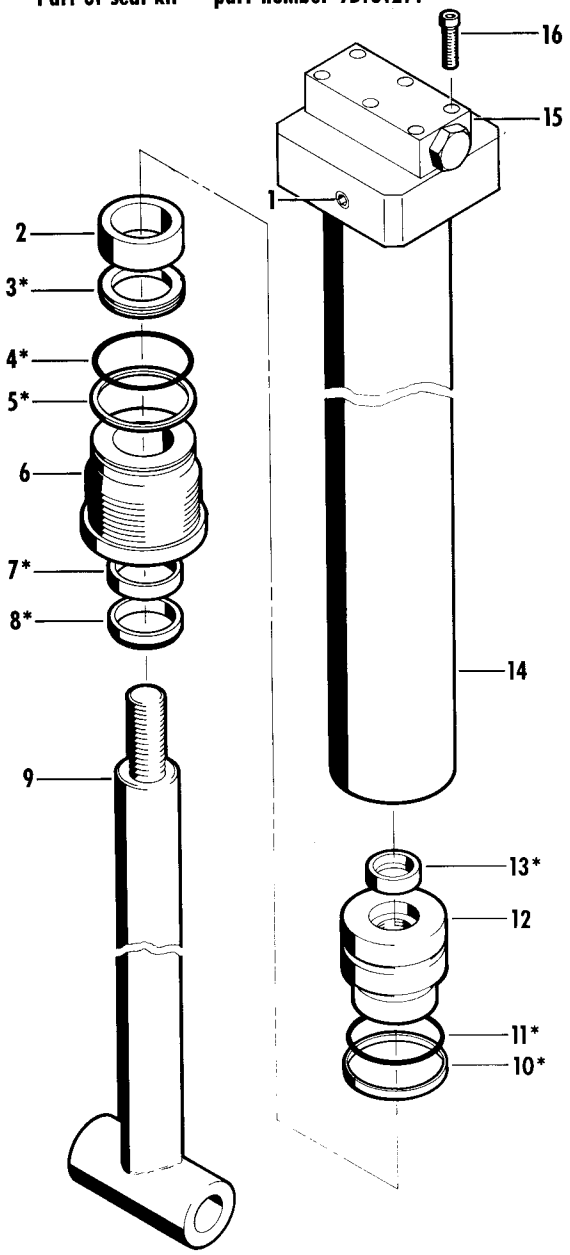


Figure D-6. Base Assembly — sheet 2 of 2

Item No.	Part No.	Description	Qty
1.	G267-10	TUBE	1
2.	G267-12	SLEEVE	1
3.	G267-11	SLEEVE	1
4.	52704041	ARM	1
5.	52704388	LEG	2
6.	60106968	PIN	2
7.	60030053	ROLLER	2
8.	60106281	PIN	1
9.	60106380	PIPE; 1-1/4"	2
10.	72060581	SCREW; 3/8-16 x 3/4" socket hd. set	1
11.	60106833	PIN	1
12.	3B267810	CYLINDER, power-out	1
13.	72063034	BUSHING, machy.; 1" x 10 ga.	6
14.	72066125	RING, retaining; 1"	6
15.	60106314	PIN	2
16.	72066178	PIN, cotter; 1/8" x 1"	4
17.	72060053	SCREW; 3/8-16 x 2-3/4" hex hd.	1
18.	72062103	NUT, lock; 3/8-16	1
19.	72060060	SCREW; 1/2-13 x 6" hex hd.	4
20.	72062080	NUT, lock; 1/2-13	4
21.	72060794	SCREW; 1/2-13 x 1-1/4" socket hd.	12
22.	72060092	SCREW; 1/2-13 x 1-1/4" hex hd.	12
23.	72063053	WASHER, lock; 1/2"	12
24.	73054004	VALVE, holding	2
25.	G267-13	STUD, tie-down; 1-8 x 38" lg.	4
26.	G267-14	STUD, tie-down; 1-8 x 46" lg.	4
27.	72062141	NUT, lock; 1-8	16
28.	72063066	WASHER; 1" hi-strength	16
29.	3B166820	CYLINDER, power-down	2
30.	60106716	PLATE, clamp	6

*Part of seal kit — part number 9B101214

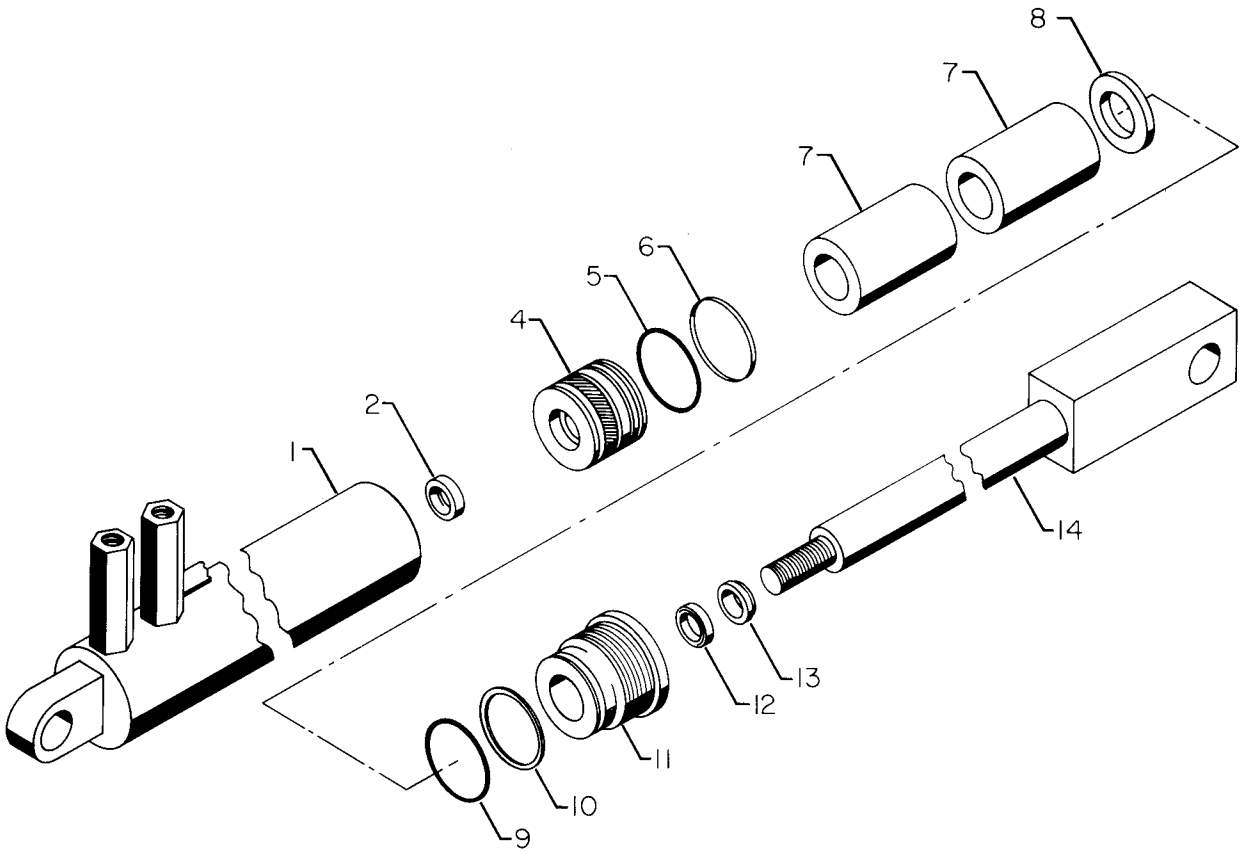


DIMENSIONS

Bore	2-1/2"
Stroke	21"
C-C Closed	29-9/16"
Rod Diameter	1-1/2"
Pin Diameter	1"

Item No.	Part No.	Description	Qty
1.	7PNPXT02	PLUG, pipe; 1/8" npt	3
2.	6C075015	TUBE, stop	1
*3.	6A025015	RING, wafer lock	1
*4.	7Q072228	O-RING	1
*5.	7Q10P228	RING, back-up	1
6.	6H025015	HEAD	1
*7.	7R546015	SEAL, rod	1
*8.	7R14P015	WIPER, rod	1
9.	4G166820	ROD	1
*10.	7T66P025	SEAL, piston	1
*11.	7Q072137	O-RING	1
12.	6I025087	PISTON	1
*13.	7T61N087	SEAL, lock ring	1
14.	4B166820	CASE	1
15.	73054004	VALVE, locking holding	1
16.	72060708	SCREW; 1/4-20 x 1-1/4" shcs	6

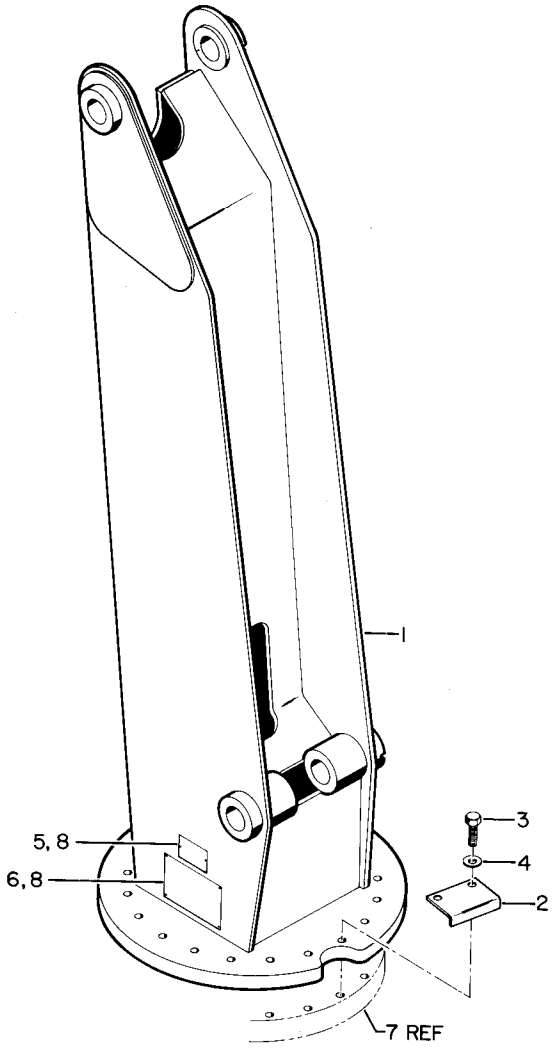
Figure D-7. Power-Down Outrigger Cylinder



Item No.	Part No.	Description	Qty
1.	4B267810	CASE, cylinder	1
2.	7T61N075	*SEAL, lock ring	1
3.	--	NOT USED	-
4.	6I020075	PISTON	1
5.	7Q072129	*O-RING	1
6.	7T66P020	*SEAL	1
7.	6C300012	TUBE, stop	2
8.	6A025012	*RING, wafer lock	1
9.	7Q072224	*O-RING	1
10.	7Q10P224	*RING, back-up	1
11.	6H020012	HEAD	1
12.	7R546012	*SEAL, rod	1
13.	7R14P012	*WIPER, rod	1
14.	4G267810	ROD	1

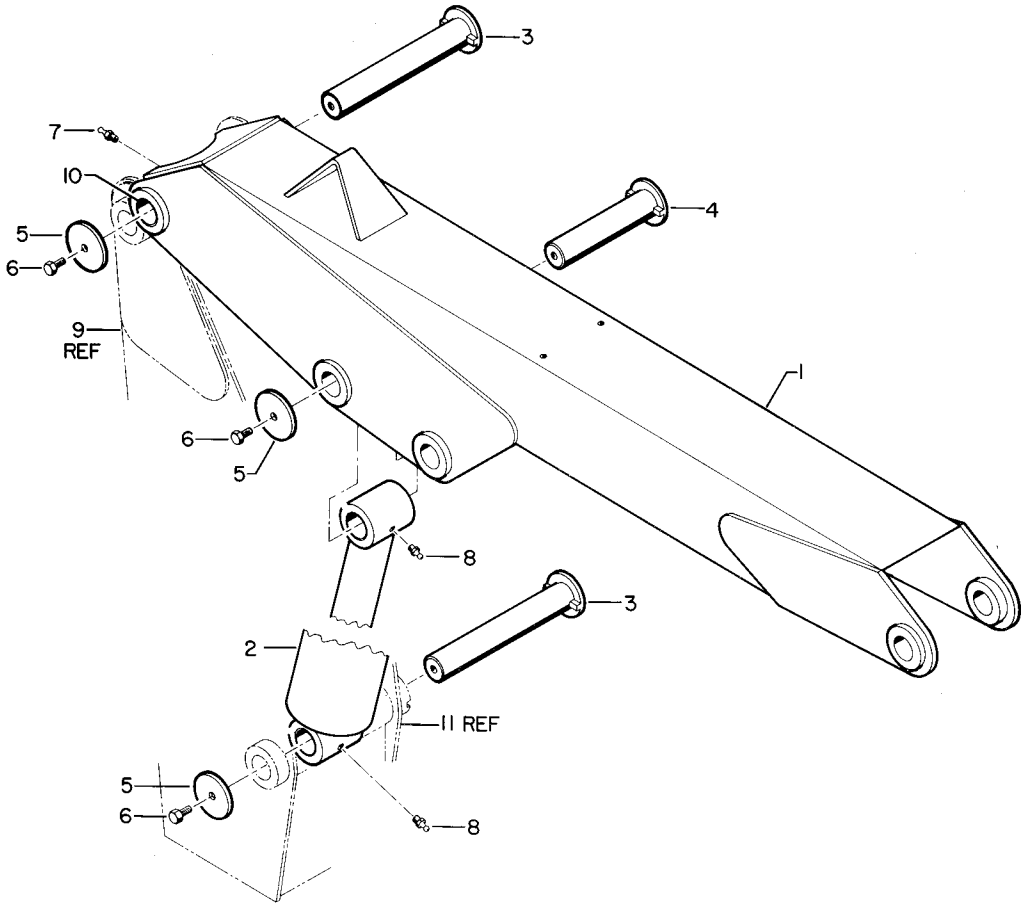
*Part of seal kit (Part Number 9B081012)

Figure D-8 Power-Out Outrigger Cylinder



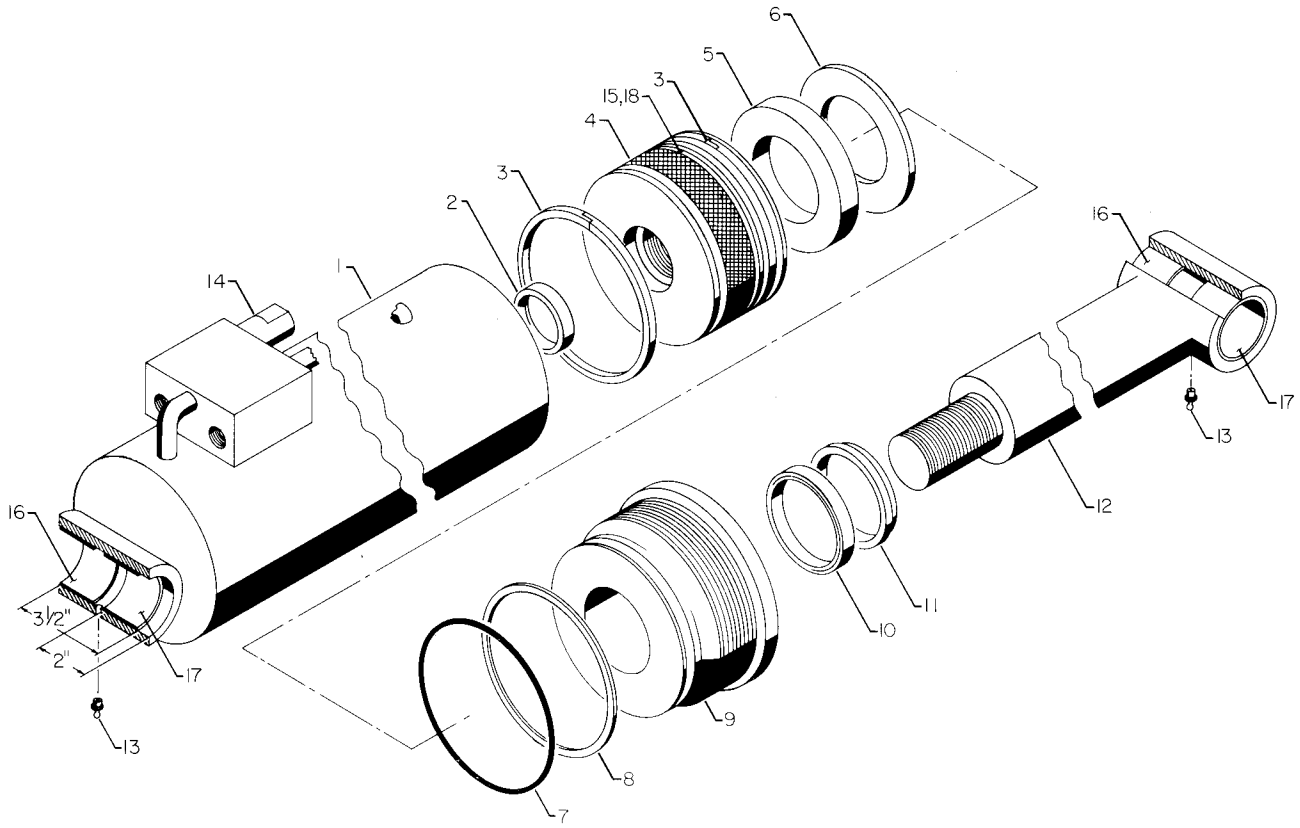
Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	52701805	MAST	1	5.	71029115	PLACARD, serial number	1
2.	60104539	COVER, pinion gear	1	6.	71029106	PLACARD, cylinder ID	1
3.	72060151	SCREW; 5/8-11 x 2" hex hd. gr. 8	20	7.	71056001	GEAR-BEARING, turntable	Ref.
4.	72063119	WASHER, hardened; 5/8"	20	8.	72066340	RIVET, pop; 1/8"	6

Figure D-9. Mast Assembly



Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	52701441	BOOM, main	1	7.	72053508	ZERK, grease; 1/8" npt	1
2.	3C021611	CYLINDER, main	1	8.	72053507	ZERK, grease; 1/4-28 str. thd.	2
3.	60103715	PIN, main/mast & cyl./mast	2	9.	41703951	MAST ASSY.	Ref.
4.	60103714	PIN, main boom/cylinder	1				
5.	60106331	PLATE, retainer	3				
6.	72060091	SCREW; 1/2-13 x 1" hex hd.	3				

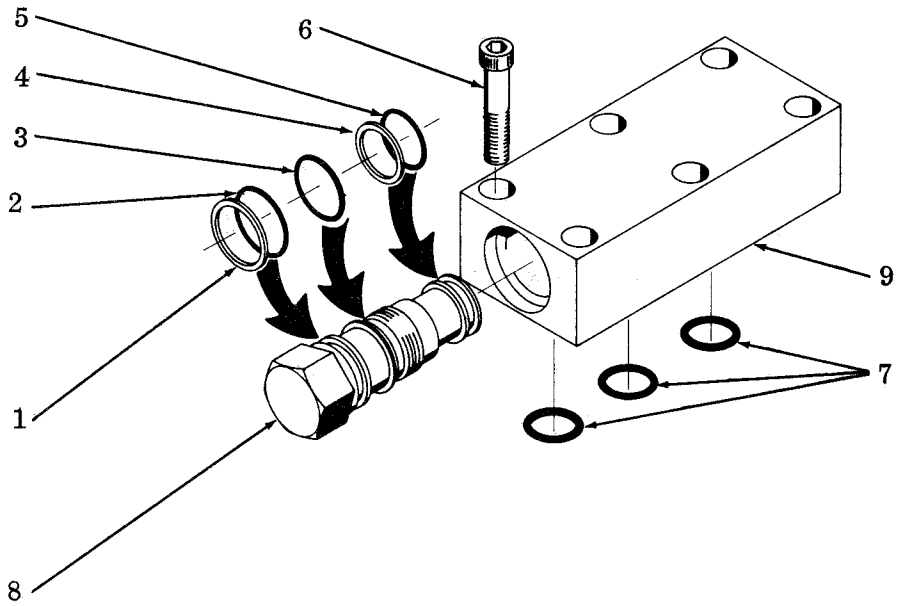
Figure D-10. Main Boom Assembly



Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	4C021611	CASE, cylinder	1	10.	7R546030	*SEAL, rod	1
2.	7T61N200	*SEAL, lock ring	1	11.	7R14P030	*WIPER, rod	1
3.	7T65I060	*RING, piston	2	12.	4G021610	ROD	1
4.	6I060200	PISTON	1	13.	72053507	ZERK, grease; 1/4-28 str. thd.	2
5.	6C075030	TUBE, stop	1	14.	73054242	VALVE, counter balance	1
6.	6A025030	*RING, wafer lock	1	15.	7Q072253	*O-RING	1
7.	7Q072358	*O-RING	1	16.	7BF81520	BUSHING	2
8.	7Q10P358	*RING, back-up	1	17.	7BF82020	BUSHING	2
9.	6H060030	HEAD	1	18.	7T66P060	*SEAL, piston	1

*Part of seal kit (Part Number 9C242432)

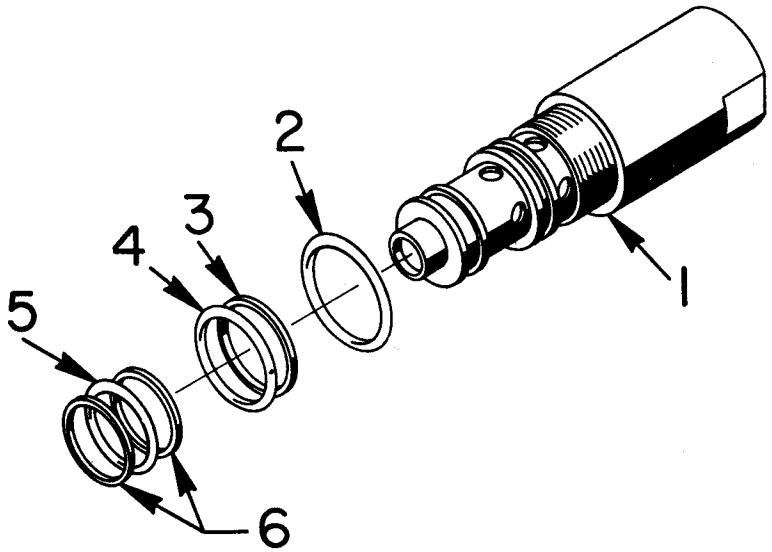
Figure D-11. Main Cylinder



Item No.	Part No.	Description	Qty
1.	7Q10P018	RING, back-up	1
2.	7Q072018	O-RING	1
3.	7Q072017	O-RING	1
4.	7Q10P015	RING, back-up	1
5.	7Q072015	O-RING	1
6.	72060708	SCREW; 1/4-20 x 1-1/4" shcs	6
7.	9C111411	KIT, o-ring*	1
8.	--	VALVE (order item 10)	1
9.	--	BLOCK (order item 10)	1
10.	73054004	VALVE, complete	1

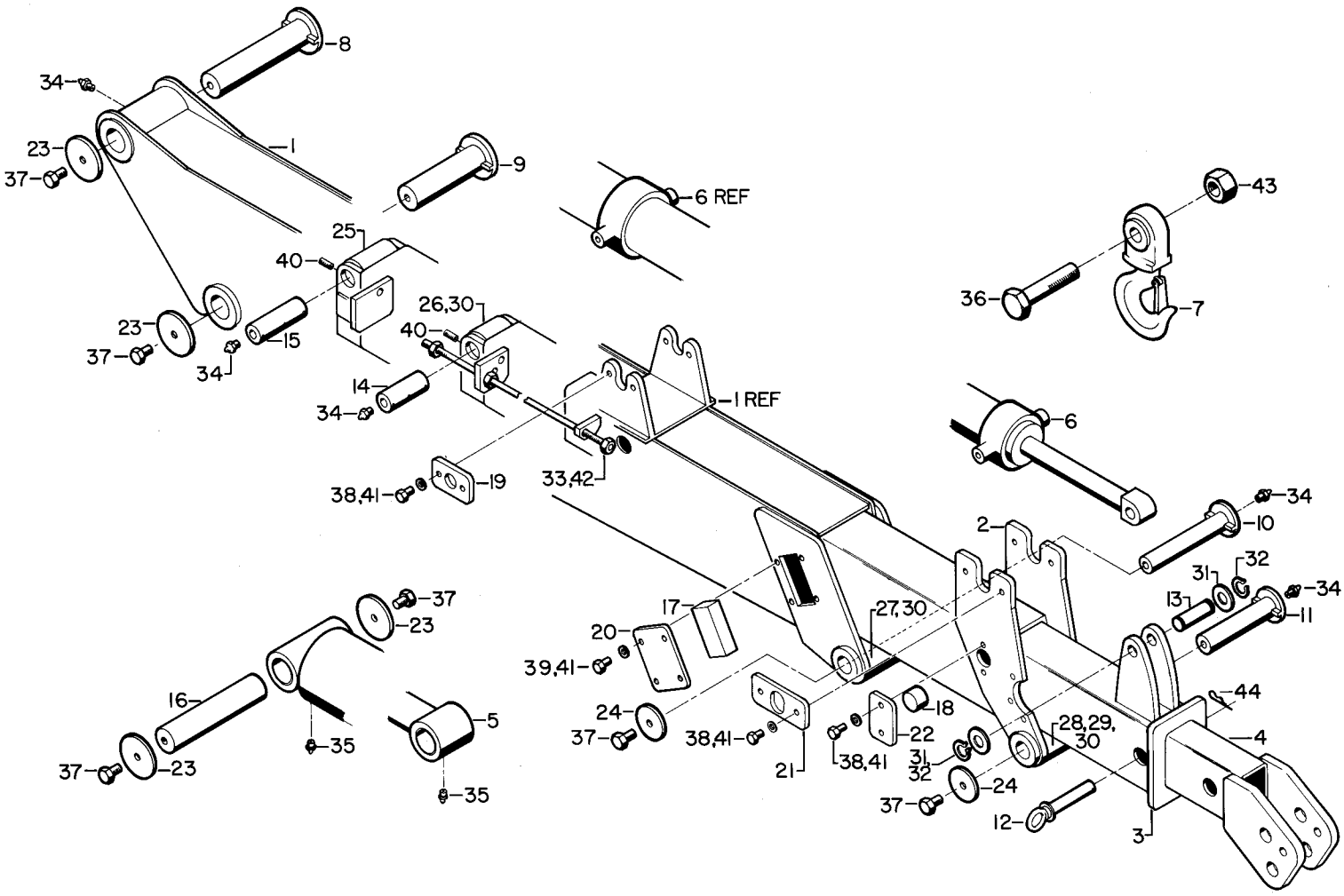
*Includes 3 - 7Q072111 (large) and 3 - 7Q072014 (small)

Figure D-12. Locking Holding Valve



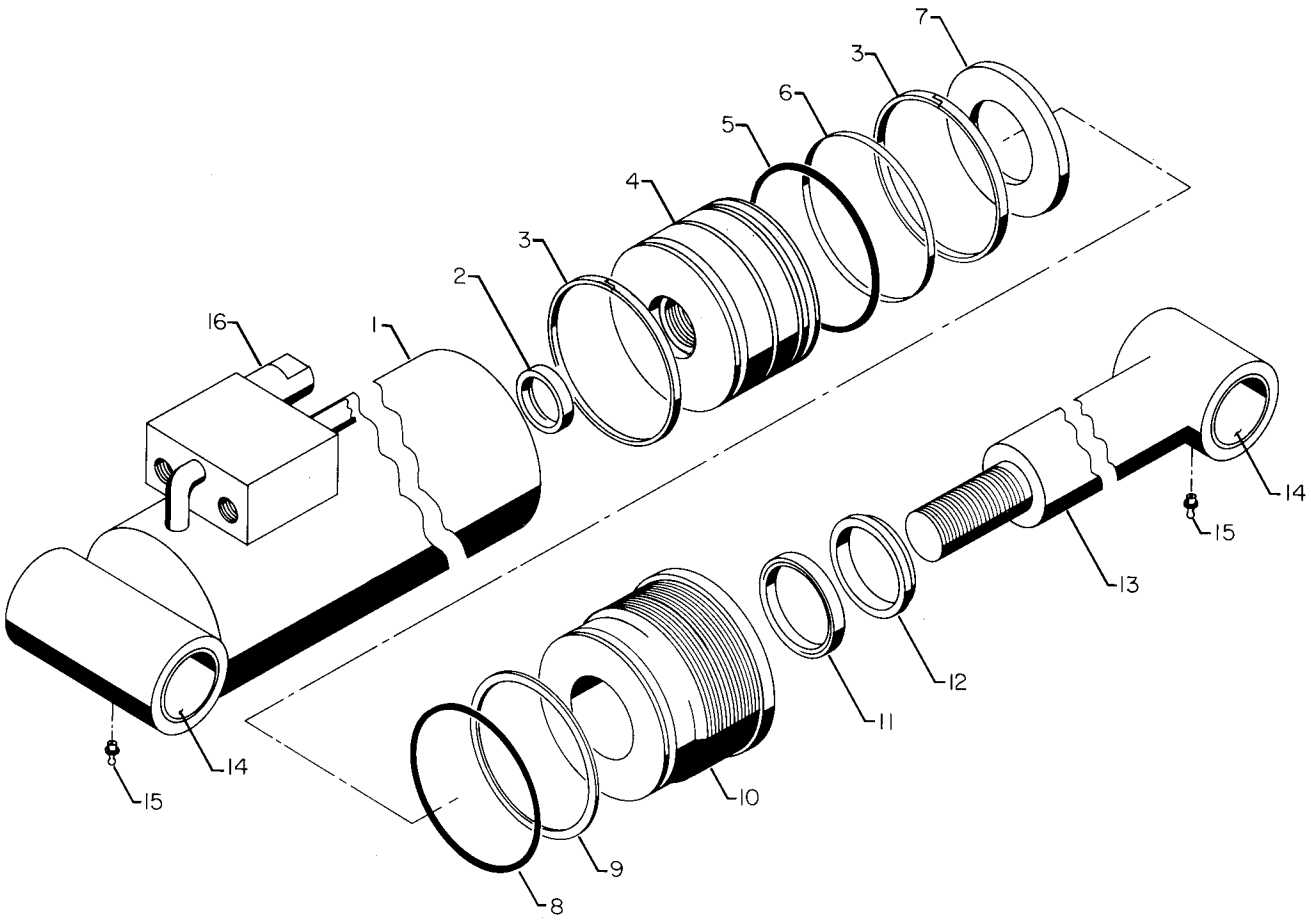
Item No.	Part No.	Description	Qty
1.	--	BODY, valve (not a replacement part)	1
2.	7Q072215	O-RING	1
3.	7Q10P021	RING, back-up	1
4.	7Q072021	O-RING	1
5.	7Q072020	O-RING	1
6.	7Q10P020	RING, back-up	2

Figure D-13. Counter Balance Holding Valve



Item No.	Part No.	Description	Qty	Item No.	Part No.	Description	Qty
1.	52703647	BOOM, secondary	1	23.	60106331	PLATE, retaining	4
2.	52701054	BOOM, 1st stage extension	1	24.	60106333	PLATE, retaining	2
3.	52701053	BOOM, 2nd stage extension	1	25.	60020087	ROLLER	1
4.	52701052	BOOM, 3rd stage extension	1	26.	60102286	ROLLER (includes item 30)	1
5.	3C116611	CYLINDER, secondary	1	27.	60102322	ROLLER (includes item 30)	1
6.	3K171515	CYLINDER, extension	1	28.	60102294	ROLLER (includes items 29 & 30)	1
7.	52701716	HOOK	1	29.	7BF81015	BUSHING (part of item 28)	2
8.	52703713	PIN	1	30.	7BF81215	BUSHING (part of items 27 & 28)	8
9.	52703710	PIN	1	31.	72063034	BUSHING, machy.; 1" x 10 ga.	2
10.	52703705	PIN	1	32.	72066125	RING, retaining; 1"	2
11.	52703706	PIN	1	33.	60102280	ROD, stop	1
12.	52701059	PIN	1	34.	72053508	ZERK; 1/8" npt	5
13.	60102281	PIN	1	35.	72053507	ZERK; 1/4-28	2
14.	60102282	PIN	1	36.	72060238	SCREW; $1\frac{1}{4}$-7 x 6" hex hd.	1
15.	60010004	PIN	1	37.	72060147	SCREW; 5/8-11 x 1" hex hd.	6
16.	60106344	PIN	1	38.	72060046	SCREW; 3/8-16 x 1" hex hd.	12
17.	60030006	PAD, wear	2	39.	72060044	SCREW; 3/8-16 x 3/4" hex hd.	8
18.	60030007	PAD, wear	2	40.	72060858	SCREW; 3/8-16 x 3/4" socket hd. set	4
19.	60102341	PLATE, lock	2	41.	72063051	WASHER, lock; 3/8"	20
20.	60102654	PLATE, retaining	2	42.	72062004	NUT; 1/2-13	3
21.	60102278	PLATE, lock	2	43.	72062073	NUT, lock; $1\frac{1}{4}$-7	1
22.	60102649	PLATE, retaining	2	44.	72066145	PIN, hair; 3/16"	1

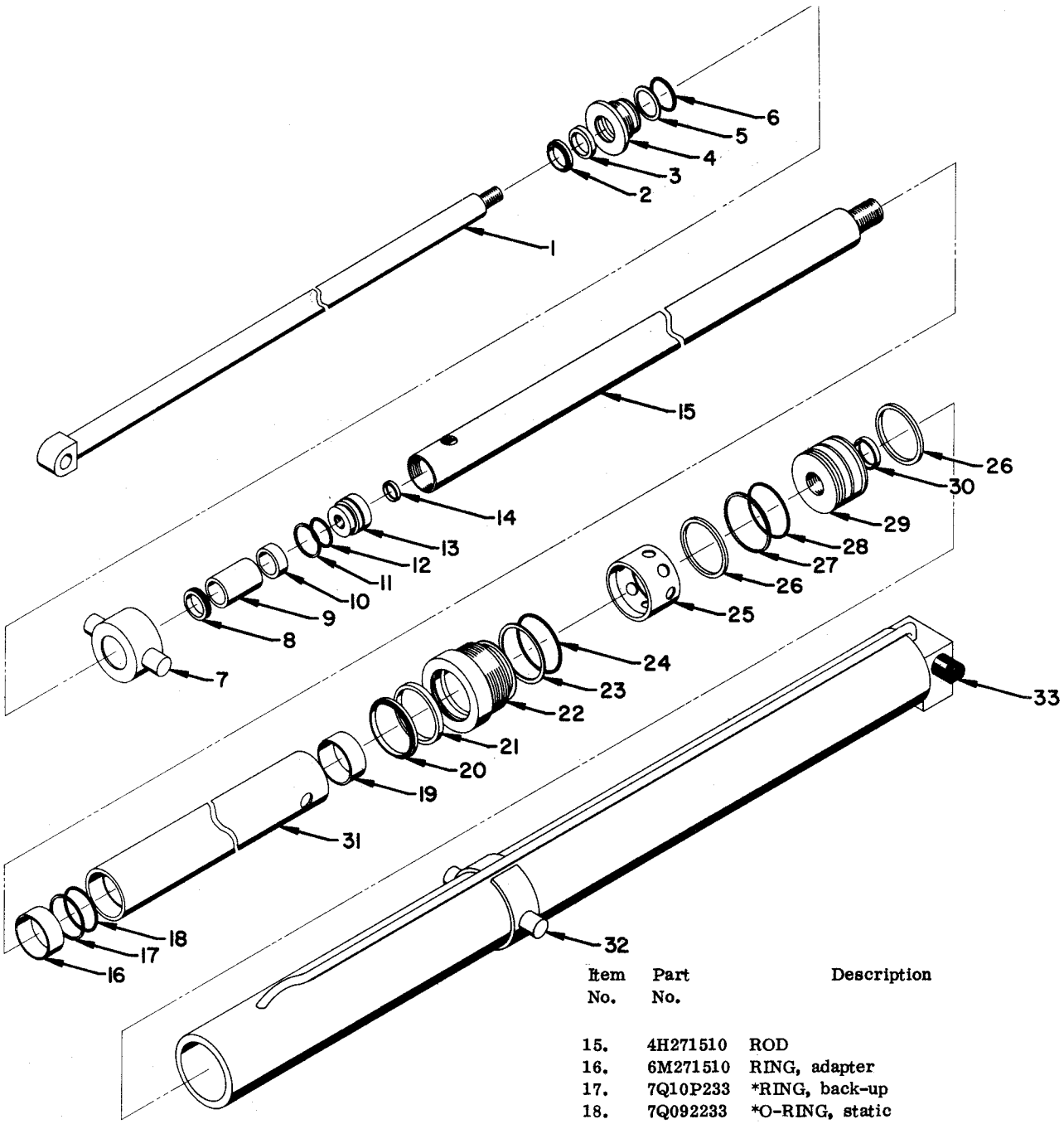
Figure D-14. Secondary and Extension Boom Assemblies



Item No.	Part No.	Description	Qty
1.	4C116611	CASE, cylinder	1
2.	7T61N181	*SEAL	1
3.	7T65I050	*RING, piston	2
4.	6I050181	PISTON	1
5.	7Q072157	*O-RING	1
6.	7T66P050	*SEAL	1
7.	6A025025	*RING, wafer-lock	1
8.	7Q072350	*O-RING	1
9.	7Q10P350	*RING, back-up	1
10.	6H050020	HEAD	1
11.	7R546025	*SEAL, rod	1
12.	7R14P025	*WIPER, rod	1
13.	4G116610	ROD	1
14.	7BF81520	BUSHING	4
15.	72053507	ZERK; 1/4-28 str. thd.	2
16.	73054242	VALVE, counterbalance	1

*Part of seal kit (Part Number 9C202029)

Figure D-15. Secondary Cylinder



Item No.	Part No.	Description	Qty
1.	4G171513	ROD	1
2.	7R14P015	*WIPER, rod	1
3.	7R546015	*SEAL, rod	1
4.	6H271511	HEAD	1
5.	7Q10P228	*RING, back-up	1
6.	7Q072228	*O-RING	1
7.	4J171513	RING, case mounting	1
8.	6A025015	*RING, wafer lock	1
9.	6C300015	TUBE, stop	1
10.	6C075015	TUBE, stop	1
11.	7T66P025	*SEAL, piston	1
12.	7Q072137	*O-RING	1
13.	6I025087	PISTON	1
14.	7T61N087	*SEAL, lock ring	1
15.	4H271510	ROD	1
16.	6M271510	RING, adapter	1
17.	7Q10P233	*RING, back-up	1
18.	7Q092233	*O-RING, static	1
19.	6M271510	RING, adapter	1
20.	7R14P035	*WIPER, rod	1
21.	7R546035	*SEAL, rod	1
22.	6H171513	HEAD	1
23.	7Q10P342	*RING, back-up	1
24.	7Q072342	*O-RING	1
25.	6C271510	TUBE, stop	1
26.	7T65I040	*RING, piston	2
27.	7T66P040	*SEAL, piston	1
28.	7Q072153	*O-RING	1
29.	6I040143	PISTON	1
30.	7T61N143	*SEAL, lock ring	1
31.	6J271510	SLEEVE	1
32.	4K171513	CASE, cylinder	1
33.	73054242	VALVE, counter balance holding	2
34.	7PNPXT02	PLUG, pipe; 1/8" npt	4

*Part of seal kit (Part Number 9X171513)

Figure D-16. Extension Cylinder

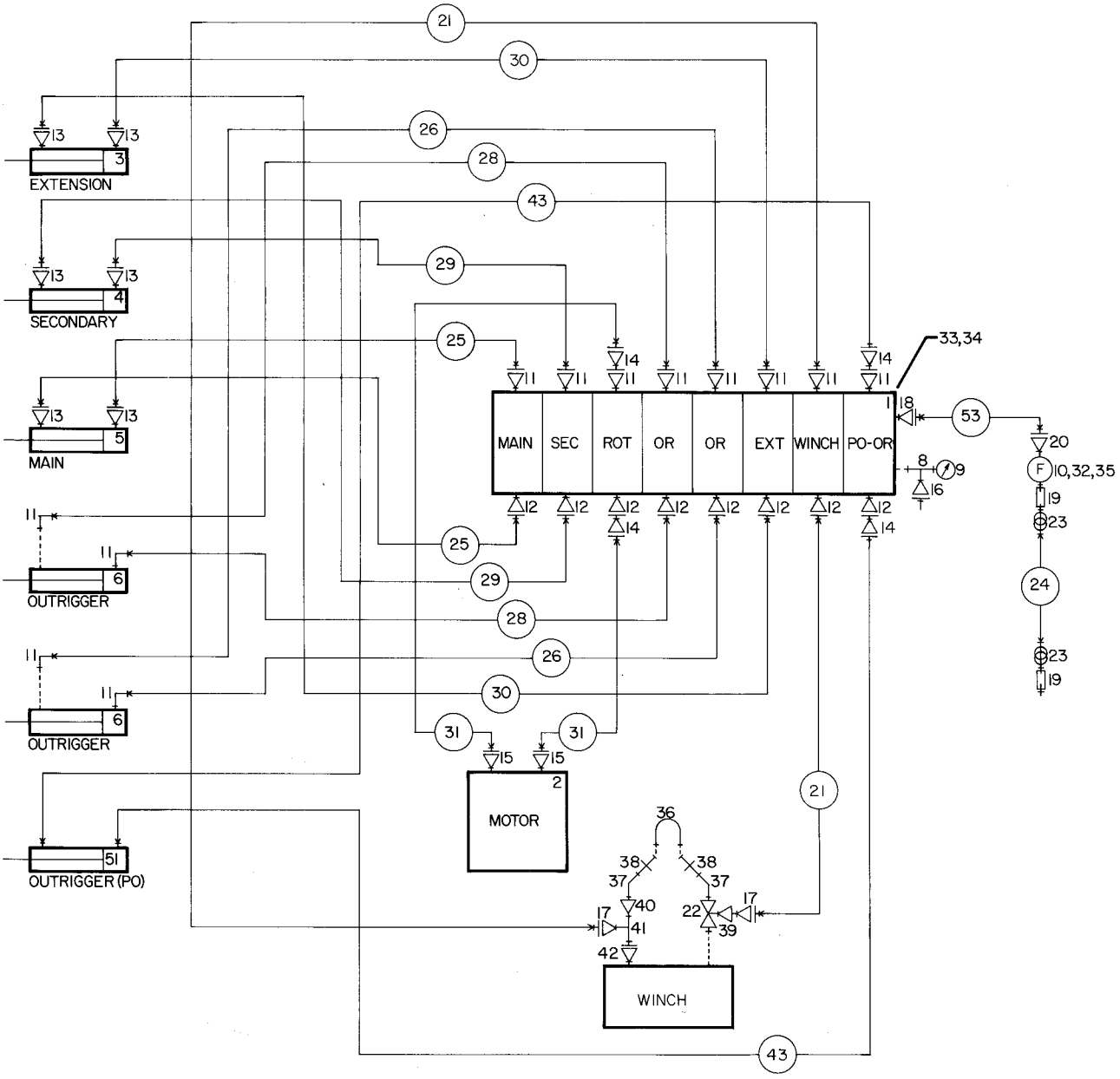


Figure D-17. Hydraulic Kit

Item No.	Part No.	Description	Qty
1.	51703618	VALVE BANK; 8-spool	1
2.	--	MOTOR, hydraulic	Ref.
3.	--	CYLINDER, extension	Ref.
4.	--	CYLINDER, secondary	Ref.
5.	--	CYLINDER, main	Ref.
6.	--	CYLINDER, outrigger	Ref.
7.	--	WINCH	Ref.
8.	60106322	ELBOW, pressure gauge	1
9.	73054435	GAUGE, pressure; 0-5000 PSI	1
10.	73052000	FILTER, return	1
11.	72532666	ELBOW, extra-long 90°; 3/4" str. thd. (m) x 3/4-16 JIC(m)	12
12.	72053763	ELBOW, 90°; 3/4-16 str. thd. (m) x 3/4-16 JIC(m)	8
13.	72532358	ADAPTER; 3/4-16 JIC(m)	6
14.	72532665	ADAPTER; 7/16-20 JIC(m) x 3/4-16 JIC(f)	4
15.	72532667	ADAPTER; 1/2" npt(m) x 7/16-20 JIC(m)	2
16.	72532669	ADAPTER; 7/8-14 JIC(m) x 3/4-16 JIC(f)	1
17.	72053670	ADAPTER; 3/8" npt(m) x 3/4-16 JIC(m)	2
18.	72532366	ADAPTER; 1-1/16" str. thd. (m) x 1-1/16" JIC(m)	1
19.	72053458	NIPPLE, barbed; 3/4"	2
20.	72532507	ELBOW, 90°; 1-1/16" JIC(m) x 3/4" npt(m)	2
21.	51703150	HOSE; 3/8" ID x 294" lg.	2
22.	73054006	VALVE, check	Ref.
23.	72066000	CLAMP, hose; #12	2
24.	60035589	HOSE; 3/4" ID x 52" lg.	1
25.	51703032	HOSE; 3/8" ID x 66" lg.	2
26.	51703253	HOSE; 3/8" ID x 108" lg.	2
28.	51703727	HOSE; 3/8" ID x 144" lg.	2
29.	51703726	HOSE; 3/8" ID x 204" lg.	2
30.	51703725	HOSE; 3/8" ID x 252" lg.	2
31.	51703770	HOSE; 1/4" ID x 60" lg.	2
32.	72060000	SCREW; 1/4-20 x 1/2" hex hd.	2
33.	72060033	SCREW; 5/16-18 x 3" hex hd.	3
34.	72062109	NUT, lock; 5/16-18	3
35.	72063049	WASHER, lock; 1/4"	2
36.	60101420	TUBE, "U"	Ref.
37.	72053533	ELBOW, street, 45°; 1/4" npt	Ref.
38.	72053345	CONNECTOR, male; 1/4"	Ref.
39.	72531829	BUSHING, reducer; 1/2" npt(m) x 3/8" npt(f)	Ref.
40.	72532138	BUSHING, reducer; 3/8" npt(m) x 1/4" npt(f)	Ref.
41.	72053611	TEE; 3/8" npt	Ref.
42.	72053628	NIPPLE, reducer; 1/2" npt x 3/8" npt	Ref.
43.	51703596	HOSE; 1/4" ID x 120" lg.	2
51.	--	CYLINDER, power-out outrigger	Ref.
53.	51703945	HOSE; 3/4" ID x 17" lg.	1

Schematic

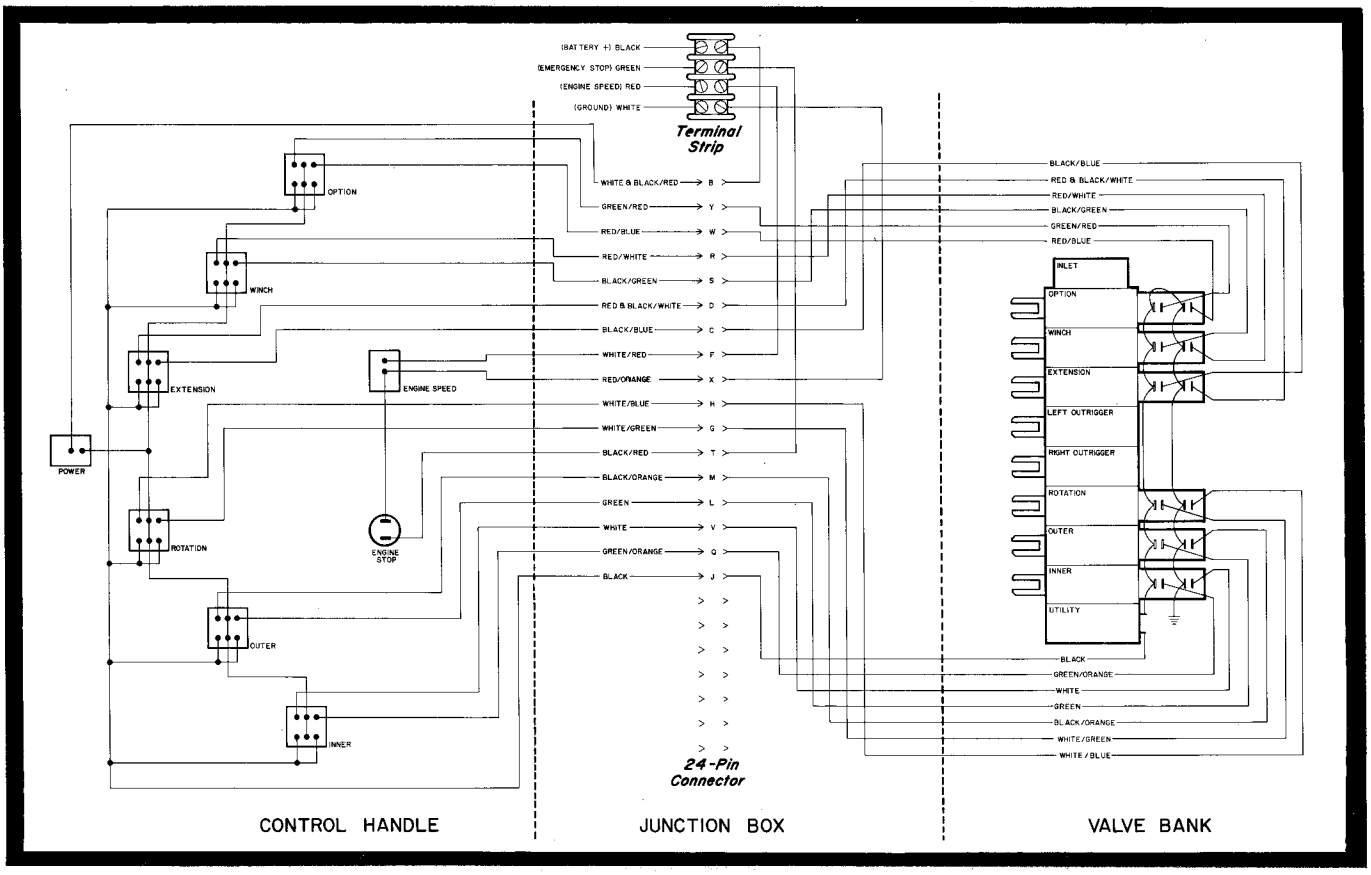


Figure D-18. Wiring Diagram