



**Volume 2  
Parts and Specifications  
Model 814 CRANE**

**IOWA MOLD TOOLING Co., Inc.**  
500 HWY 18 WEST, GARNER, IA 50438  
515 - 923 - 3711

A SUDBURY COMPANY

MANUAL PART NUMBER 99900103  
3/91

# **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. 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.

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 B30.5A-1984  
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 very 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.

# Table of Contents

PARAGRAPH	TITLE	PAGE
	<b>Section 1. SPECIFICATIONS</b>	
1-1.	GENERAL	1-1
1-2.	PERFORMANCE CHARACTERISTICS	1-1
1-3.	CYLINDERS	1-1
1-4.	POWER SOURCE	1-1
1-5.	ROTATION SYSTEM	1-2
1-6.	CYLINDER HOLDING VALVE	1-2
1-7.	CAPACITY ALERT	1-2
1-8.	WINCH	1-2
1-9.	HYDRAULIC SYSTEM (PTO Driven)	1-2
1-10.	ELECTRO-HYDRAULIC SYSTEM (2-Speed)	1-2
1-11.	CONTROLS	1-2
1-12.	MINIMUM CHASSIS SPECIFICATIONS	1-3
	<b>Section 2. CRANE DESCRIPTION</b>	
2-1.	GENERAL	2-1
2-2.	BASE	2-1
2-3.	MAST	2-1
2-4.	LOWER BOOM	2-1
2-5.	EXTENSION BOOMS	2-1
2-6.	CONTROLS	2-1
	<b>Section 3. INSTALLATION</b>	
3-1.	GENERAL	3-1
3-2.	CHASSIS INFORMATION	3-1
3-3.	CRANE INSTALLATION	3-1
3-4.	BODY REINFORCEMENT	3-1
	<b>Section 4. PARTS LIST</b>	
4-1.	GENERAL	4-1
4-2.	CRANE IDENTIFICATION	4-1
4-3.	CYLINDER IDENTIFICATION	4-1
4-4.	WELDMENT IDENTIFICATION	4-2
4-5.	ORDERING REPAIR PARTS	4-2
	<b>Section 5. REFERENCE</b>	
	GREASE ZERK LOCATIONS	5-1
	SPARE PARTS LIST	5-2

# List of Illustrations

FIGURE	TITLE	PAGE
A-1.	GEOMETRIC CONFIGURATION	1-3
A-2.	CAPACITY CHART	1-4
B-1.	814 CRANE GROUP	2-1
C-1.	MOUNTING HOLE PATTERN	3-1
C-2.	CRANE INSTALLATION	3-1
C-3.	REINFORCEMENT	3-1
D-1.	SERIAL NUMBER PLACARD	4-1
D-2.	CYLINDER PART NUMBER LOCATION	4-1
D-3.	WELDMENT PART NUMBER LOCATIONS	4-2
D-4.	BASE ASSEMBLY	41704562 4-3
D-5.	MAST ASSEMBLY	41704563 4-4
D-6.	WINCH / CABLE / HOOK KIT - GEAR PRODUCTS WINCH	41707648 4-5
D-7.	WINCH / CABLE / HOOK KIT - TULSA WINCH	41709533 4-6
D-8.	CABLE AND HOOK KIT	31704268 4-7
D-9.	SPEED REDUCER - GEAR PRODUCTS	70057663 4-8
D-10.	LOWER BOOM ASSEMBLY	41704943 4-9
D-11.	LOWER BOOM CYLINDER	3B104820 4-10
D-12.	EXTENSION BOOM ASSEMBLY - HYD/MAN 14'	41704936 4-11
D-13.	EXTENSION BOOM ASSEMBLY - HYD 10'	41704937 4-12
D-14.	EXTENSION CYLINDER	3B108830 4-13
D-15.	COUNTER BALANCE VALVE 10GPM	73054304 4-14
D-16.	OPTION - THROTTLE CONTROL - SYNCHRO START	31705270 4-14
D-17.	HYDRAULIC KIT - 4 SECTION / POWER UNIT	91704949 4-15
D-18.	HYDRAULIC KIT - 4 SECTION / PTO	91708891 4-16
D-19.	VALVEBANK ASSEMBLY	73073772 4-17
D-20.	CONTROL KIT - PTO 4 FUNCTION W/SPEED	90706361 4-18
D-21.	CONTROL KIT - POWER UNIT 4 FUNCTION	90706360 4-19
D-22.	REMOTE HANDLE ASSEMBLY - 4 FUNCTION PTO W/SPEED	51704795 4-20
D-23.	REMOTE HANDLE ASSEMBLY - 4 FCTN DUAL PUMP W/SPD	51704794 4-21
D-24.	INSTALLATION KIT - POWER UNIT	93704633 4-22
D-25.	INSTALLATION KIT - PTO	93705207 4-23
D-26.	DECAL KIT - POWER UNIT	95708631 4-24
D-27.	DECAL KIT - PTO	95708632 4-25
D-28.	OPTION - RESERVOIR / BOOM SUPPORT	51705060 4-26
D-29.	OPTION - RESERVOIR / BOOM SUPPORT 20-GALLON	51706910 4-26
D-30.	CONVERSION KIT - ANTI 2-BLOCK	95709424 4-27
D-31.	POWER UNIT	73051503 4-28
E-1.	GREASE ZERK LOCATIONS AND LUBRICANT REQUIREMENTS	5-1

# Section 1. SPECIFICATIONS

## 1-1. GENERAL

	<b>814-H10 CRANE</b>	<b>814-HM14 CRANE</b>
CRANE RATING	8,000 ft-lbs (1.11 ton-meters)	8,000 ft-lbs (1.11 ton-meters)
REACH - from centerline f rotation	10'-0" (3.05m)	14'-0" (4.27m)
HYDRAULIC EXTENSION	36" (91.4cm)	36" (91.4cm)
MANUAL EXTENSION		48" (121.9cm)
LIFTING HEIGHT - from base of crane	11'-4" (3.45m)	15'-2" (4.62m)
WEIGHT OF CRANE	610 lbs (277 kg)	650 lbs (295 kg)
STORAGE HEIGHT - crane only	26" (66.0cm)	26" (66.0cm)
MOUNTING SPACE REQUIRED (crane base)	14-1/2" X 17" (36.8cm x 43.2cm)	14-1/2" X 17" (36.8cm x 43.2cm)
TIE-DOWN BOLT PATTERN	11-1/2" X 14-3/4" (29.2cm X 37.5cm) on center	11-1/2" X 14-3/4" (29.2cm X 37.5cm) on center
HORIZONTAL CENTER OF GRAVITY - from centerline of rotation	15" (38.1cm)	15" (38.1cm)
VERTICAL CENTER OF GRAVITY - from bottom of crane base	13" (33.0cm)	13" (33.0cm)
*OPTIMUM PUMP CAPACITY (electric 2-stage)	3 U.S. Gallons/minute (11.4 liters/minute)	3 U.S. Gallons/minute (11.4 liters/minute)
OIL RESERVOIR CAPACITY	3 U.S. Gallons (11.4 liters)	3 U.S. Gallons (11.4 liters)
DESIGN FACTORS - pins and hydraulics	4/1	4/1

\* The 2-stage pump delivers 1-1/2 U.S. GPM (5.7 liters/min) per stage. Normally, when operated as a single-stage pump. The pump will be operated as a 2-stage pump to save time during set up. operating under load, the pump will be

## 1-2. PERFORMANCE CHARACTERISTICS

ROTATION: 400° (6.98 Rad.)	*90 seconds
LOWER BOOM ELEVATION: -0° to +72° (0 Rad. to +1.26 Rad.)	*16 seconds
EXTENSION BOOM: 36" (91.4cm)	*20 seconds
WINCH	*10 feet/minute (3.05 m/min)

## 1-3. CYLINDERS

	<b>BORE</b>	<b>STROKE</b>
LOWER BOOM CYLINDER	2-1/2" (6.4cm)	18" (45.7cm)
EXTENSION BOOM CYLINDER	2" (5.1cm)	36" (91.4cm)

## 1-4. POWER SOURCE

Power is supplied to the electric motor by a solenoid connected to the 12-VDC truck battery. The chassis must be equipped with a 4000 watt Delco Freedom battery (or equivalent) connected in parallel to the chassis' standard heavy-duty battery. The chassis must also be equipped with a heavy-duty alternator (63 amp for GM vehicles and 60 amp for Ford vehicles).

## 1-5. ROTATION SYSTEM

Turntable bearing with external worm gear powered with a high-torque hydraulic motor through a self-locking worm. Total gear reduction is 63 to 1.

## 1-6. CYLINDER HOLDING VALVES

The base ends (extend sides) of the lower boom and extension cylinders are equipped with integral-mounted counter-balance valves to prevent sudden cylinder collapse in case of hose or other hydraulic failure.

The counter balance valve serves several functions. First, it is a holding valve. Secondly, it is designed to control the speed at which the lowering function operates, and allows that motion to be metered under load. Finally, it prevents the loss of an excess amount of oil in the event of a hose failure. Only the oil in the hose, at the time of the failure, will be lost.

## 1-7. CAPACITY ALERT SYSTEM

A pressure switch mounted to the extend side of the lower boom cylinder and connected electrically to the lift side of the winch and the extend side of the extension cylinder provides the capacity alert system. If the operator attempts to lift a load exceeding the rated capacity of the crane, the winch lift and extension out functions will not operate. To relieve the situation, the winch may be lowered or the extension boom retracted.

## 1-8. WINCH

The winch is powered by a hydraulic motor through a 38:1 ratio worm-gear drive which also functions as a brake. Line speed is 10 ft/min (3.05m/min) at optimum oil flow for 1-part line and 5 ft/min (1.52m/min) for 2-part line. The winch is equipped with 45 ft (13.7m) of 1/4" (0.6cm) 6 X 25 FW PRF RRL IPS IWRC wire rope having a lifting capacity of 1350 lbs (612 kg) at 2350 PSI (165.3 kg/cm<sup>2</sup>) for 1-part line and 2700 lbs (1225 kg) for 2-part line. A nylon sheave riding on a lubricated needle bearing is located at the tip of the extension boom. The ratio of winch drum and sheave pitch diameter to wire rope diameter is 18:1.

## 1-9. HYDRAULIC SYSTEM (PTO Driven)

Open-centered, full-pressure system that requires 3 GPM (11.4 liters/min) optimum oil flow at 2350 PSI (165.3 kg/cm<sup>2</sup>). The control valvebank is a 3 or 4 spool, stack-type, 12 VDC valvebank. The hydraulic system includes a 3-gallon (11.4 liter) hydraulic oil reservoir, a 60-mesh suction-line strainer, a return line filter and the control valvebank.

## 1-10 ELECTRO-HYDRAULIC SYSTEM (2-SPEED)

Open-centered, full-pressure system that features a 2-stage hydraulic pump, each stage delivering 1-1/2 GPM (5.7 liters/min) at 2350 PSI (165.3 kg/cm<sup>2</sup>). The control valvebank is a 3 or 4 spool, stack-type, 12 VDC valvebank. The system includes a 3-gallon (11.4 liter) hydraulic oil reservoir, a 60-mesh suction-line strainer, a hydraulic pump driven by a permanent magnet electric motor and all necessary hoses and fittings.

## 1-11. CONTROLS

Remote control with a 25-foot (7.62m) control cable.

## 1-12. MINIMUM CHASSIS SPECIFICATIONS

BODY STYLE	Conventional Cab	Conventional Cab
WHEEL BASE	137" - 161"	348cm - 409cm
CAB TO AXLE	60" - 84"	152cm - 213cm
FRAME SECTION MODULUS	5.91 <sup>3</sup>	97cc
*RBM	212,760 in-lbs	2451 kg-meter
FRONT AXLE RATING	2700 lbs - 4000 lbs	1315 kg - 1814 kg
REAR AXLE RATING	5480 lbs - 7500 lbs	2486 kg - 3402 kg

\* Based on 36,000 PSI yield frame material (A-36).

In addition to these specifications, a heavy-duty battery and alternator are required. It is recommended that the vehicle have power steering and dual rear wheels..

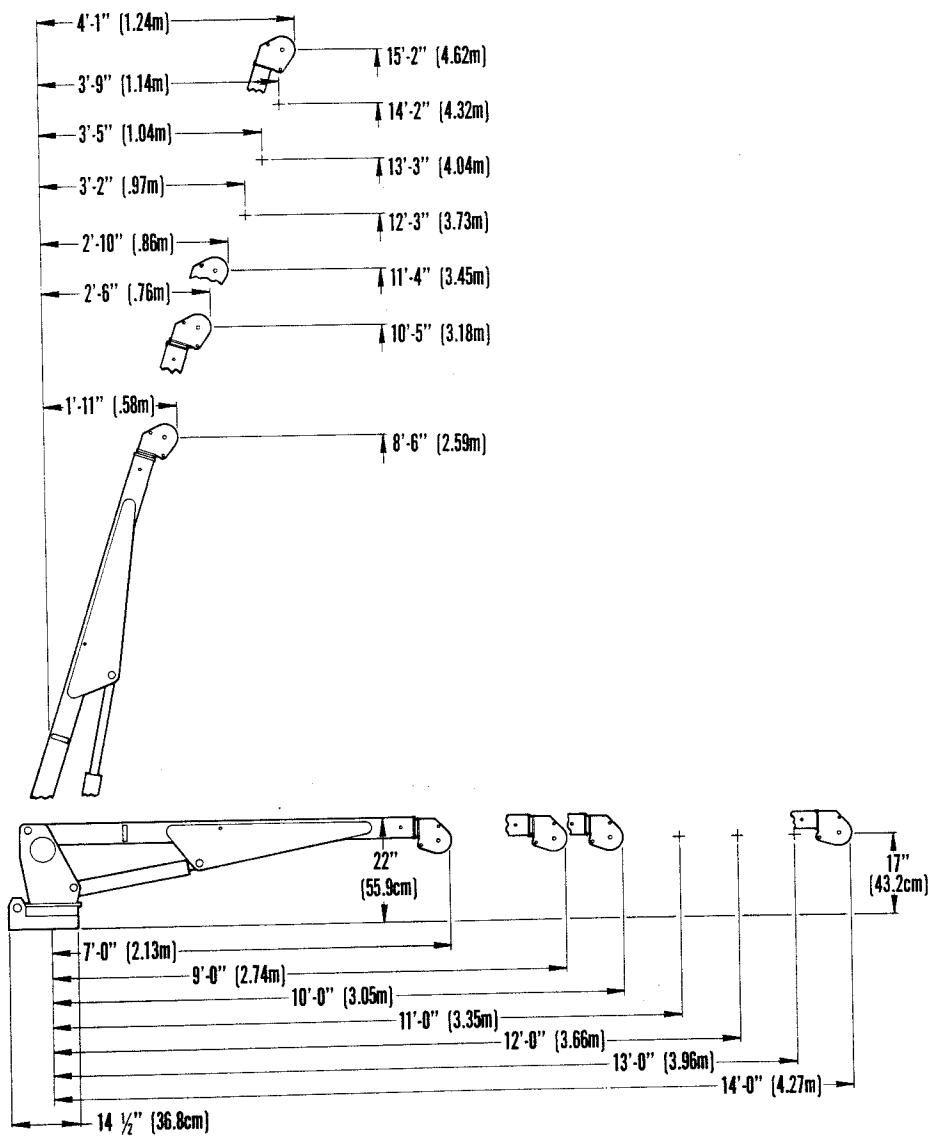


Figure A-1. Geometric Configuration

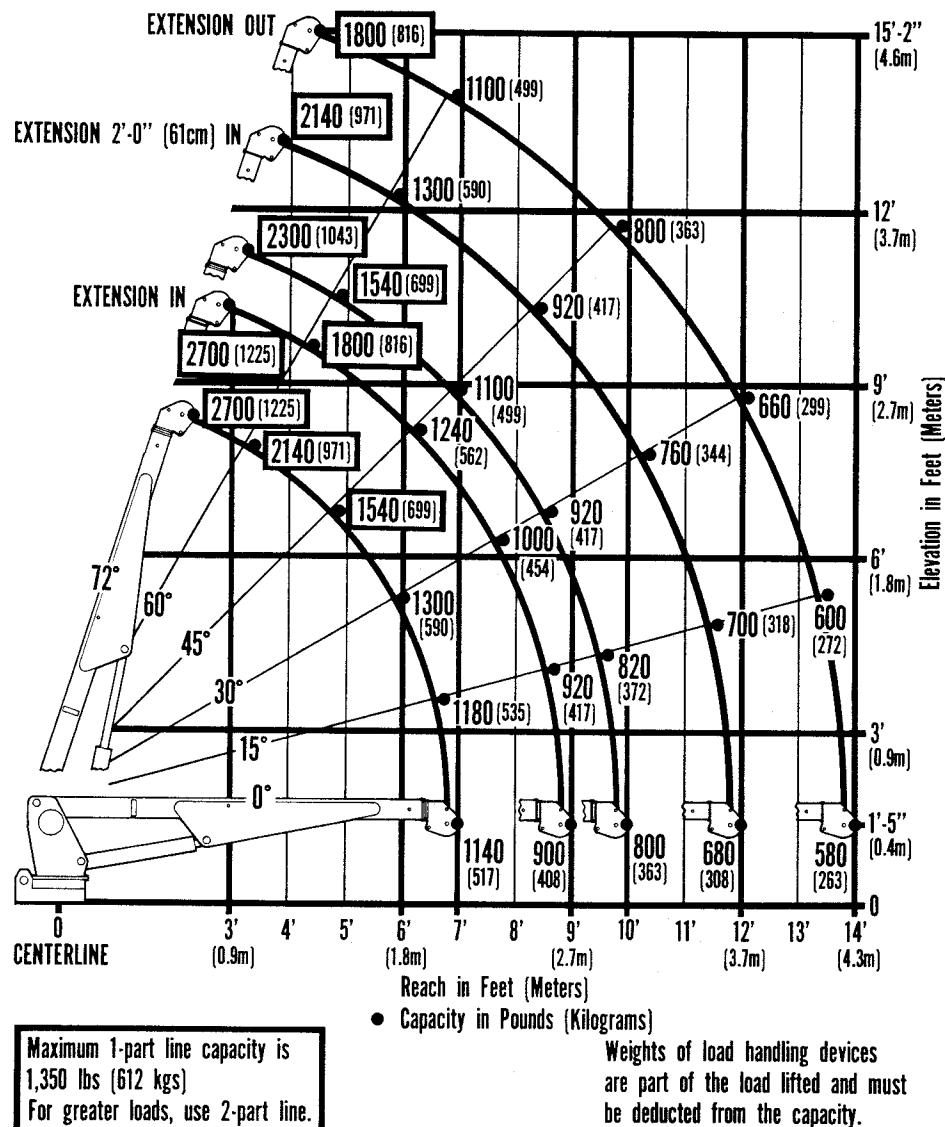


Figure A-1. Capacity Chart

## Section 2. CRANE DESCRIPTION

### 2-1. GENERAL

This section describes the major assemblies available with this crane. Figure B-1 illustrates the locations of the assemblies.

### 2-2. BASE

The cast base provides a platform for mounting the crane to the truck body. It incorporates the 400 degrees (6.98 Rad.) worm-gear rotation mechanism.

### 2-3. MAST

The mast provides the necessary additional elevation for crane operation. It houses the winch speed reducer, provides a mounting point for the hydraulic unit and provides a hinge point for the lower boom.

### 2-4. LOWER BOOM

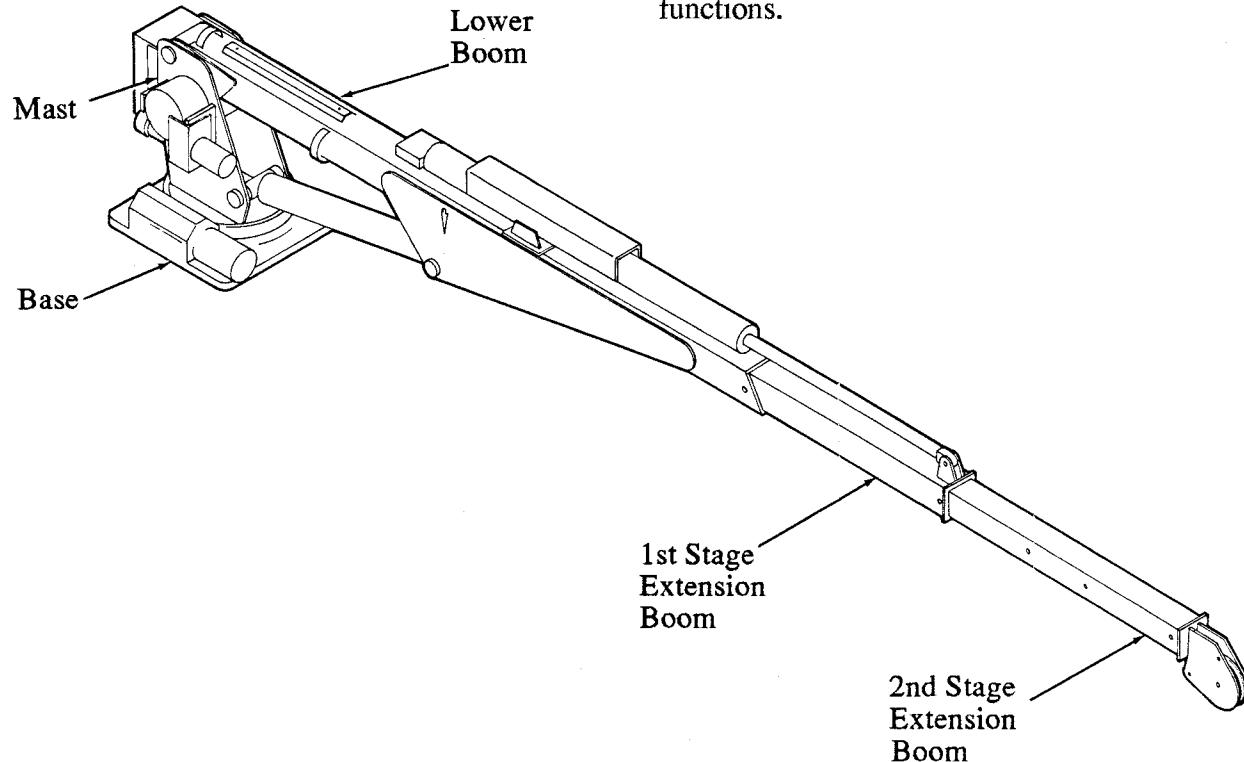
The lower boom will swing through 72 degrees (1.26 Rad.) from 0 to +72 degrees (1.26 Rad.). It is raised and lowered through the use of a single, double-acting hydraulic cylinder. The boom also stores the extension boom in its retracted position.

### 2-5. EXTENSION BOOMS

There are four different extension booms available with this crane - a manually-operated extension with 10-foot reach, a hydraulically-operated extension with 10-foot reach, a manually-operated extension with 14-foot reach, and a manual-and-hydraulic extension with 14-foot reach. Both of the hydraulic versions are operated through the use of a single, double-acting hydraulic cylinder with a 36" (91.4 cm) stroke.

### 2-6. CONTROLS

This crane is operated remotely with a 4-function remote control unit on a 25' (7.62 m) cable. Those cranes not equipped with hydraulic extensions will have only 3 functions.



**Figure B-1. 814 Crane Group**

## Section 3. INSTALLATION

### 3-1. GENERAL

This section is intended to serve as a guide in the installation of the IMT 814 crane. Since each installation is considered unique, certain components such as the power unit's battery cable must be cut to the proper length.

### 3-2. CHASSIS INFORMATION

The crane is designed for use with an IMT body installed on a vehicle meeting the minimum chassis requirements as specified in Section 1.

If this crane is being installed on any body other than an IMT mechanic body, check with IMT to determine the suitability of that body.

#### WARNING

**THE USE OF THIS CRANE ON A BODY NOT CAPABLE OF HANDLING THE LOADS IMPOSED ON IT BY THE CRANE, MAY RESULT IN SERIOUS INJURY OR DEATH.**

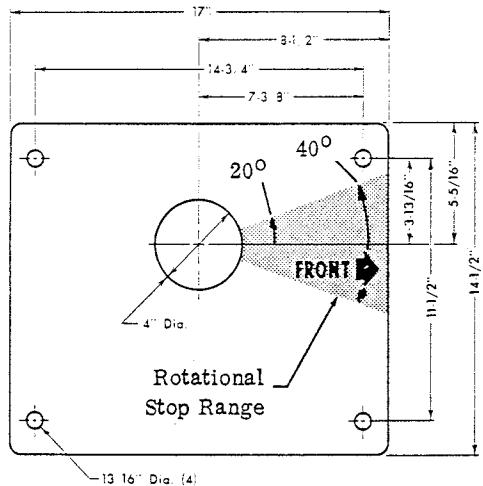


Figure C-1. Mounting Hole Layout

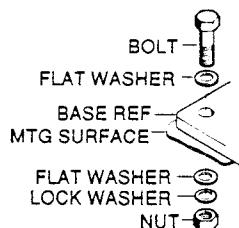


Figure C-2. Crane Installation

### 3-3. CRANE INSTALLATION

The crane requires a mounting space of at least 14-1/2" wide by 17" long. If necessary, the body can be reinforced to make the body strong enough to use this crane. Locate and drill the four 13/16" holes (Figure C-1). Use a pilot drill first and then the 13/16" drill. Cut the 4" diameter hole with a saw after starting with a drill. Deburr all holes. Lift the crane into position on the body. Use a lifting device capable of supporting the crane - 650 lbs. (295 kg.)

Install the bolts, lockwashers, flat washers and nuts to secure the crane to the chassis (Figure C-2). Torque the bolts to 200 ft. lbs. (27.66 kg-m).

#### NOTE

IN ADDITION TO THESE SPECIFICATIONS, A HEAVY-DUTY BATTERY AND ALTERNATOR ARE REQUIRED. IT IS RECOMMENDED THAT THE VEHICLE HAVE POWER STEERING AND DUAL REAR WHEELS.

IMT RECOMMENDS ADHERENCE TO THE UPPER LIMIT OF THESE SPECIFICATIONS FOR BEST SYSTEM PERFORMANCE.

### 3-4. BODY REINFORCEMENT

If, after talking with the factory, it has been determined that the body will not support the crane with the full, rated load, the body can be reinforced as shown in Figure C-3. Use 1/4" fillet welds and an AWS qualified welder.

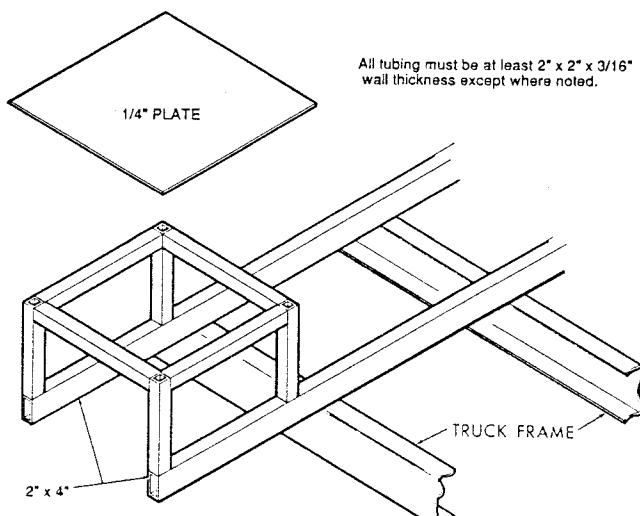


Figure C-3. Reinforcement

## 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.

#### 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 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 addressed to Iowa Mold Tooling Co., Inc.: 500 Highway 18 West; Garner, Iowa 50438, telephone (515)923-3711. In Canada: IMT Cranes Canada, Ltd.; Orillia, Ontario; telephone: (705)325-7458.



Figure D-1. Serial Number Placard

### 4-3. CYLINDER IDENTIFICATION

To insure proper replacement parts are received, it is necessary to specify a complete number/letter sequence for any parts request. Part numbers may be checked by comparing the stamped identification of the cylinder case (Figure D-2) against the information contained in this manual. You must use the part number stamped on the cylinder case when ordering parts.

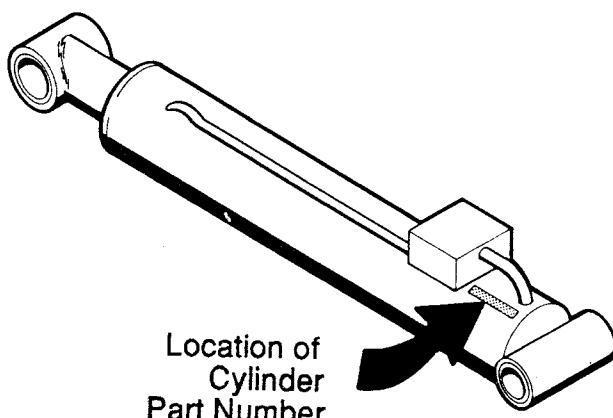


Figure D-2. Cylinder Part Number Location

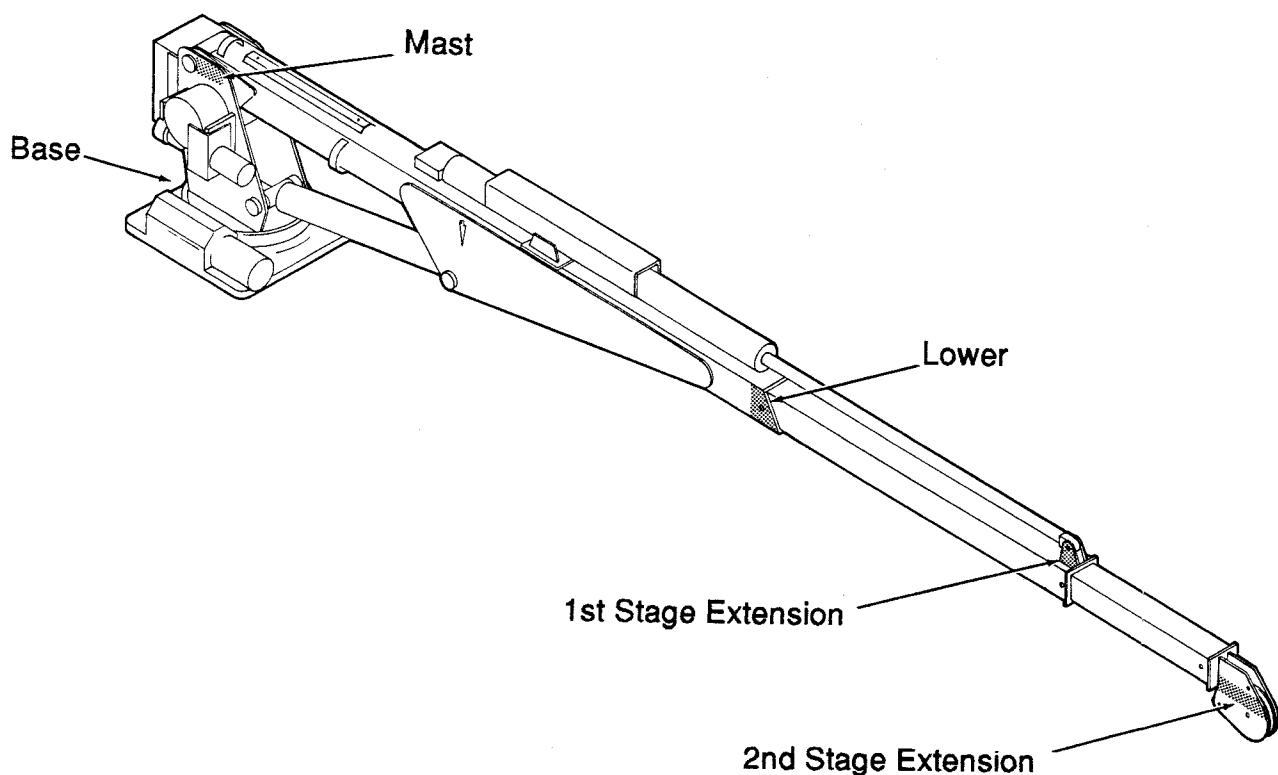
#### 4-4. WELDMENT IDENTIFICATION

Each of the major weldments bear a stamped part number. Any time a major weldment is placed, you must specify the complete part number as stamped on the weldment. The locations of the part number are shown in Figure D-3.

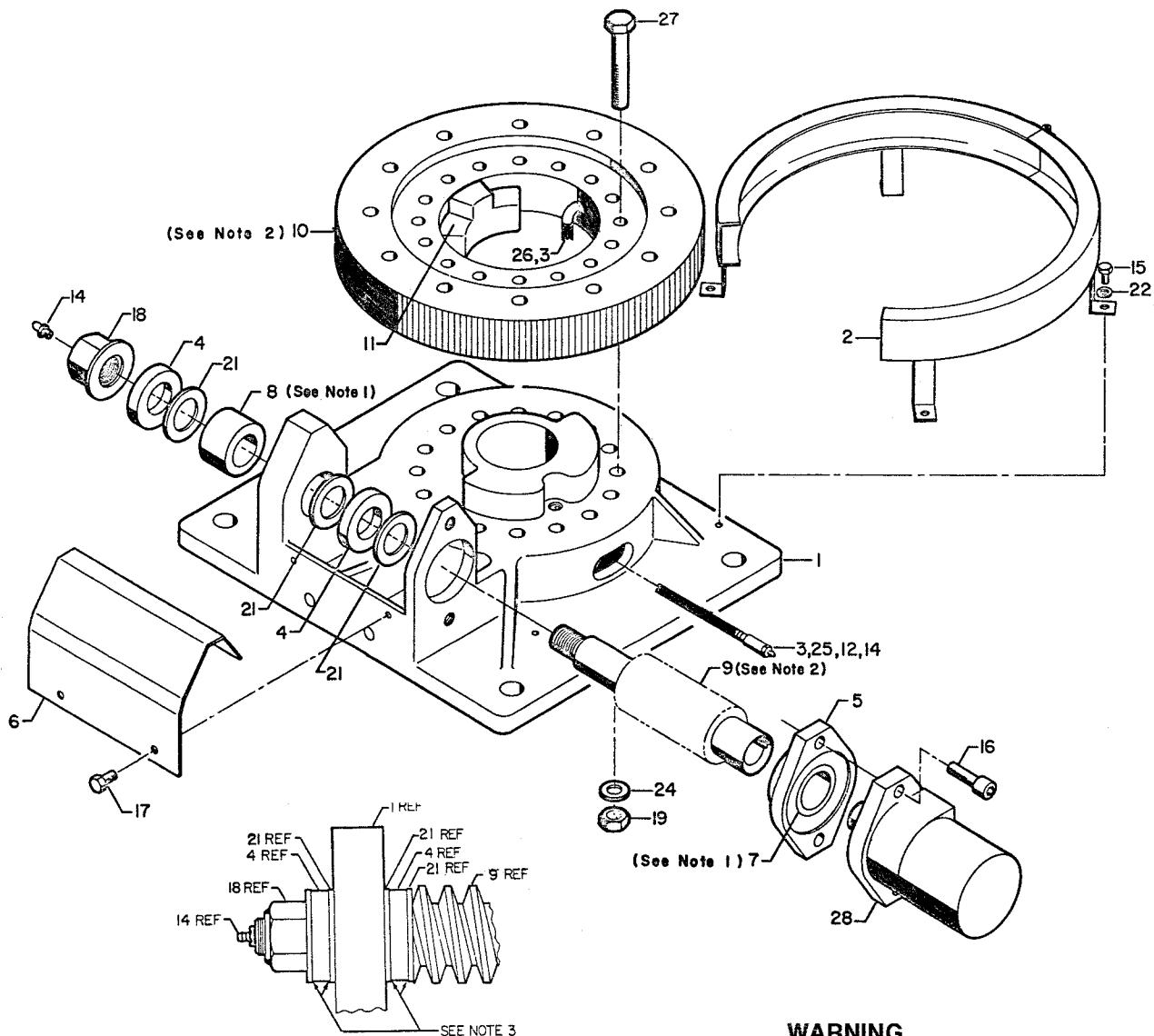
#### 4-5. ORDERING REPAIR PARTS

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-3. Weldment Part Number Locations**



## **WARNING**

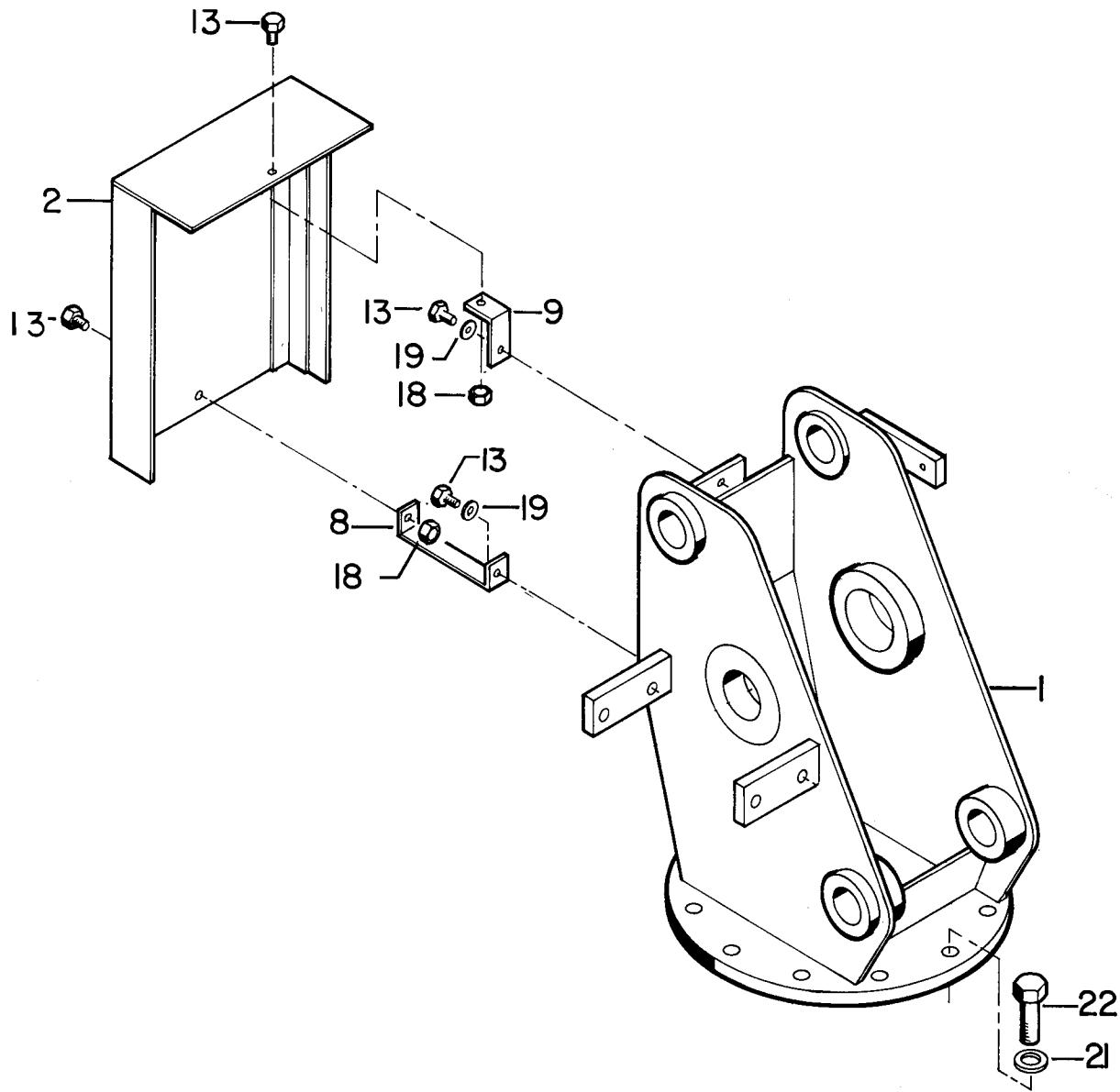
ITEM	PART NO.	DESCRIPTION	QTY
1.	51704564	BASE	1
2.	52704605	GUARD	1
3.	60030086	TUBING 1/4 X 6	1
4.	60030116	THRUST BEARING	2
5.	60107543	SUPPORT PLATE	1
6.	60107617	COVER	1
7.	70055147	BEARING	1
8.	70055148	BEARING	1
9.	70056307	WORM GEAR	1
10.	71056308	TURNTABLE BEARING	1
11.	71142535	SLIDE 400°	1
12.	72053301	COUPLING 1/8NPT	1
14.	72053508	ZERK 1/8NPT	2
15.	72060000	CAP SCR 1/4-20X1/2 HH GR5	4
16.	72060796	CAP SCR 1/2-13X2 SH	2
17.	72060833	SCR 5/16-18X3/4 HH SLFTP G	2
18.	52705551	LOCKNUT 7/8-9	1
19.	72062162	NUT 9/16-12 HEX GR8	15
21.	72063161	WASHER 1-1/8 FLAT	3
22.	72063049	WASHER 1/4 LOCK	4
24.	72063117	WASHER 9/16 FLAT HARD GR8	15
25.	72531731	ADAPTER 1/8POLY-FLO 1/4	1
26.	72531746	ELBOW 1/8MPT 1/4POLYFLO 90°	1
27.	72601313	CAP SCR 9/16-12X3-1/2 HH GR8	15
28.	73051482	MOTOR	1

ANY TIME THE GEAR-BEARING BOLTS HAVE BEEN REMOVED, THEY MUST BE REPLACED WITH NEW BOLTS OF IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE CAUSING SERIOUS INJURY OR DEATH.

## NOTES:

1. BEARINGS MUST BE PACKED WITH GREASE AT ASSEMBLY.
  2. APPLY "MOLUB-ALLOY 936" TO TURNTABLE BEARING AND WORM GEAR TEETH AT ASSEMBLY.
  3. INITIAL LUBRICATION OF BOTH SIDES OF THRUST BEARING IS REQUIRED AT TIME OF INSTALLATION. SEE NOTE 4 FOR APPROVED LUBRICANTS.
  4. APPROVED LUBRICANTS ARE "SLIP PLATE", "LUBRI-PLATE" OR OTHER LUBRICANTS CONTAINING GRAPHITE OR  $\text{MSO}_2$ .

**Figure D-4. Base Assembly (Part Number 41704562)**

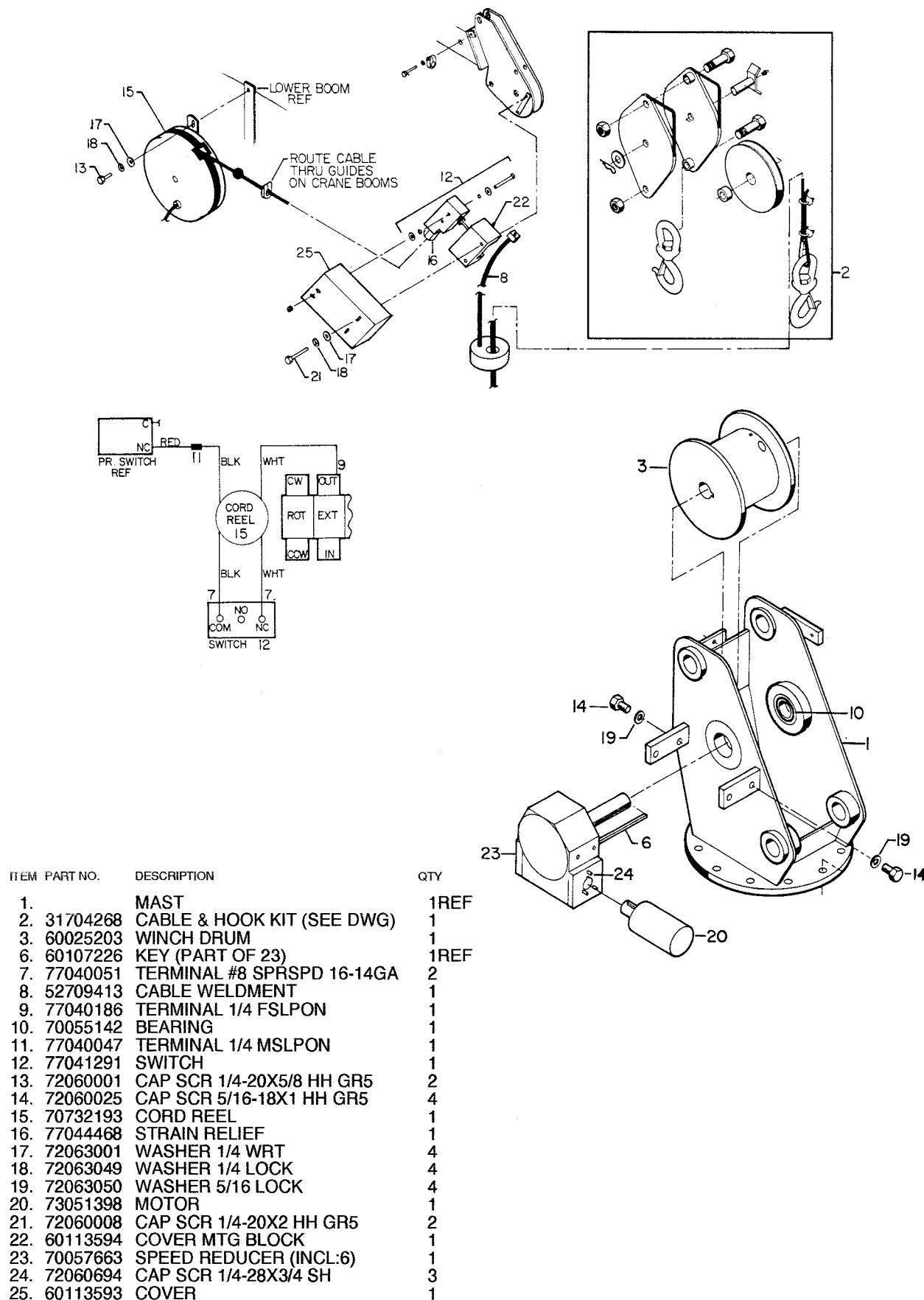


ITEM	PART NO.	DESCRIPTION	QTY
1.	52704565	MAST	1
2.	52704603	COVER	1
8.	60107612	COVER SUPPORT - BOTTOM	1
9.	60107613	COVER SUPPORT - TOP	1
13.	72060023	CAP SCR 5/16-18X3/4 HH GR5	4
18.	72062109	NUT 5/16-18 LOCK	2
19.	72063050	WASHER 5/16 WRT	2
21.	72063117	WASHER 9/16 FLAT HARD GR8	12
22.	72601144	CAP SCR 9/16-12X2 HH GR8	12

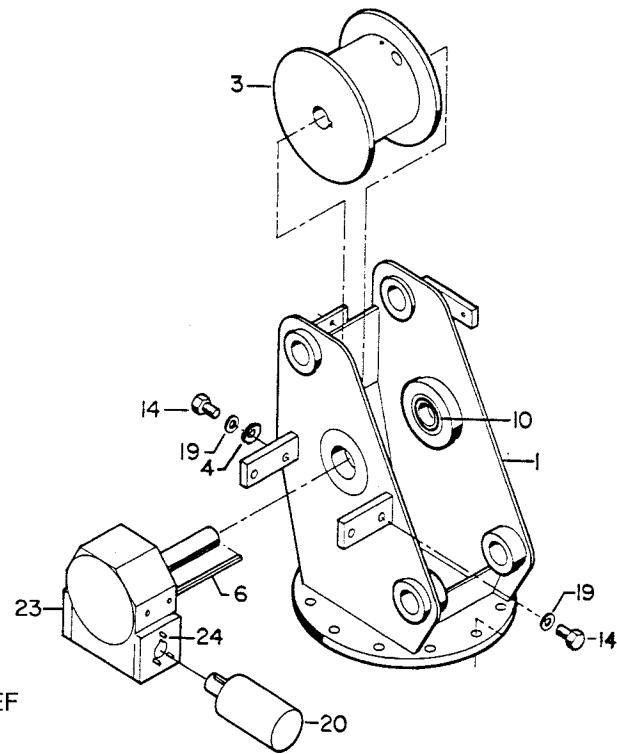
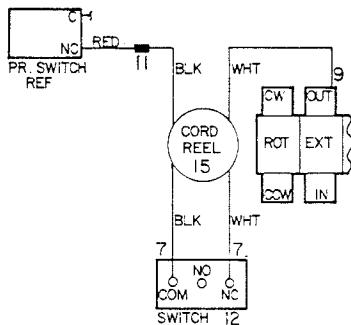
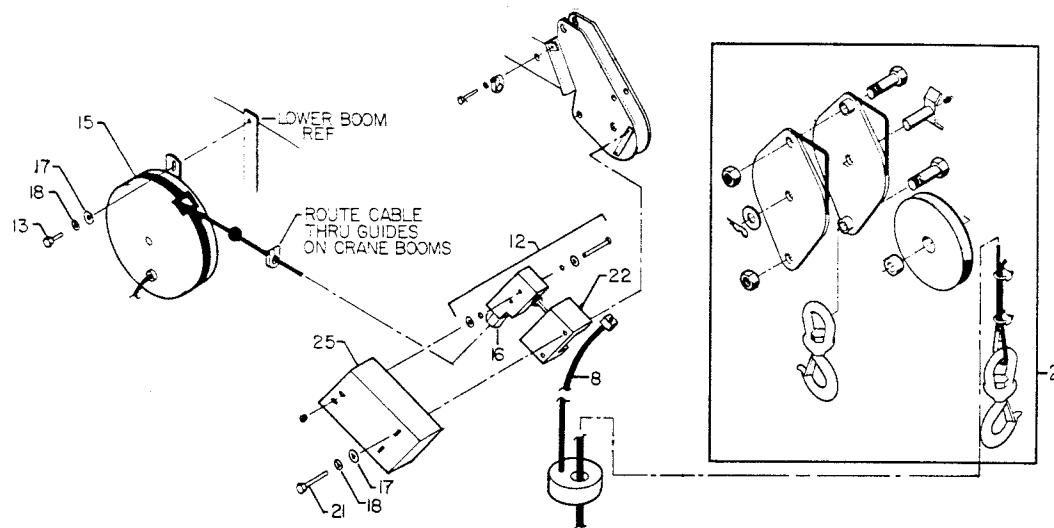
#### WARNING

ANY TIME THE GEAR-BEARING BOLTS HAVE BEEN REMOVED, THEY MUST BE REPLACED WITH NEW BOLTS OF IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE CAUSING SERIOUS INJURY OR DEATH.

Figure D-5. Mast Assembly (Part Number 41704563)

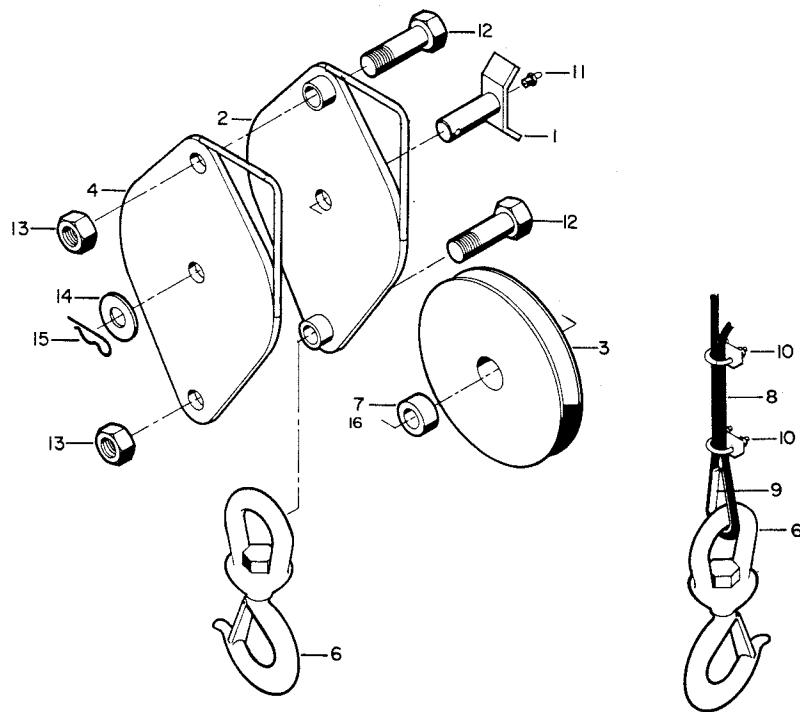


**Figure D-6. Winch / Cable / Hook Kit - Gear Products Winch (Part Number 41707648)**



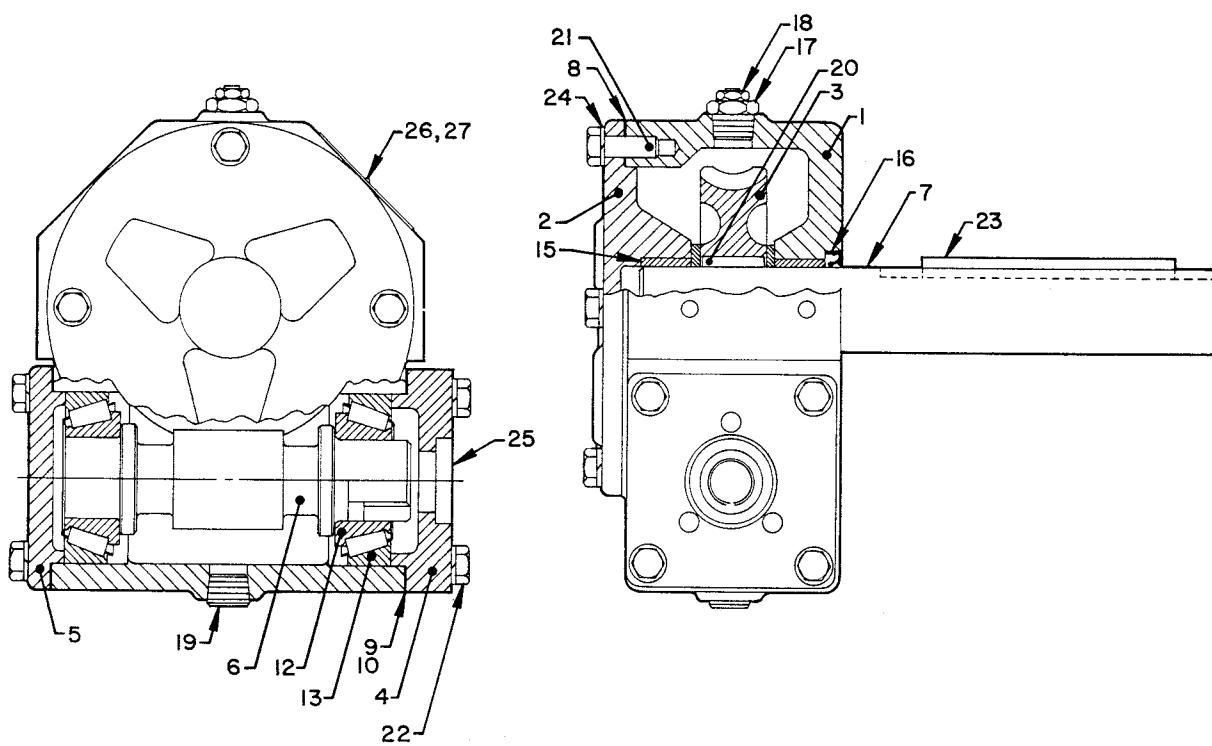
ITEM	PART NO.	DESCRIPTION	QTY
1.		MAST	1REF
2.	31704268	CABLE & HOOK KIT (SEE DWG)	1
3.	60025203	WINCH DRUM	1
4.	72063002	WASHER 5/16 WRT	4
6.	60107226	KEY (PART OF 23)	1REF
7.	77040051	TERMINAL #8 SPRSPD 16-14GA	2
8.	52709413	CABLE WELDMENT	1
9.	77040186	TERMINAL 1/4 FSLPON	1
10.	70055142	BEARING	1
11.	77040047	TERMINAL 1/4 MSLPON	1
12.	77041291	SWITCH	1
13.	72060001	CAP SCR 1/4-20X5/8 HH GR5	2
14.	72060025	CAP SCR 5/16-18X1 HH GR5	4
15.	70732193	CORD REEL	1
16.	77044468	STRAIN RELIEF	1
17.	72063001	WASHER 1/4 WRT	4
18.	72063049	WASHER 1/4 LOCK	4
19.	72063050	WASHER 5/16 LOCK	4
20.	73051398	MOTOR	1
21.	72060008	CAP SCR 1/4-20X2 HH GR5	2
22.	60113594	COVER MTG BLOCK	1
23.	71057998	SPEED REDUCER (INCL:6)	1
24.	72060694	CAP SCR 1/4-28X3/4 SH	3
25.	60113593	COVER	1

Figure D-7. Winch / Cable / Hook Kit - Tulsa Winch (Part Number 41709533)



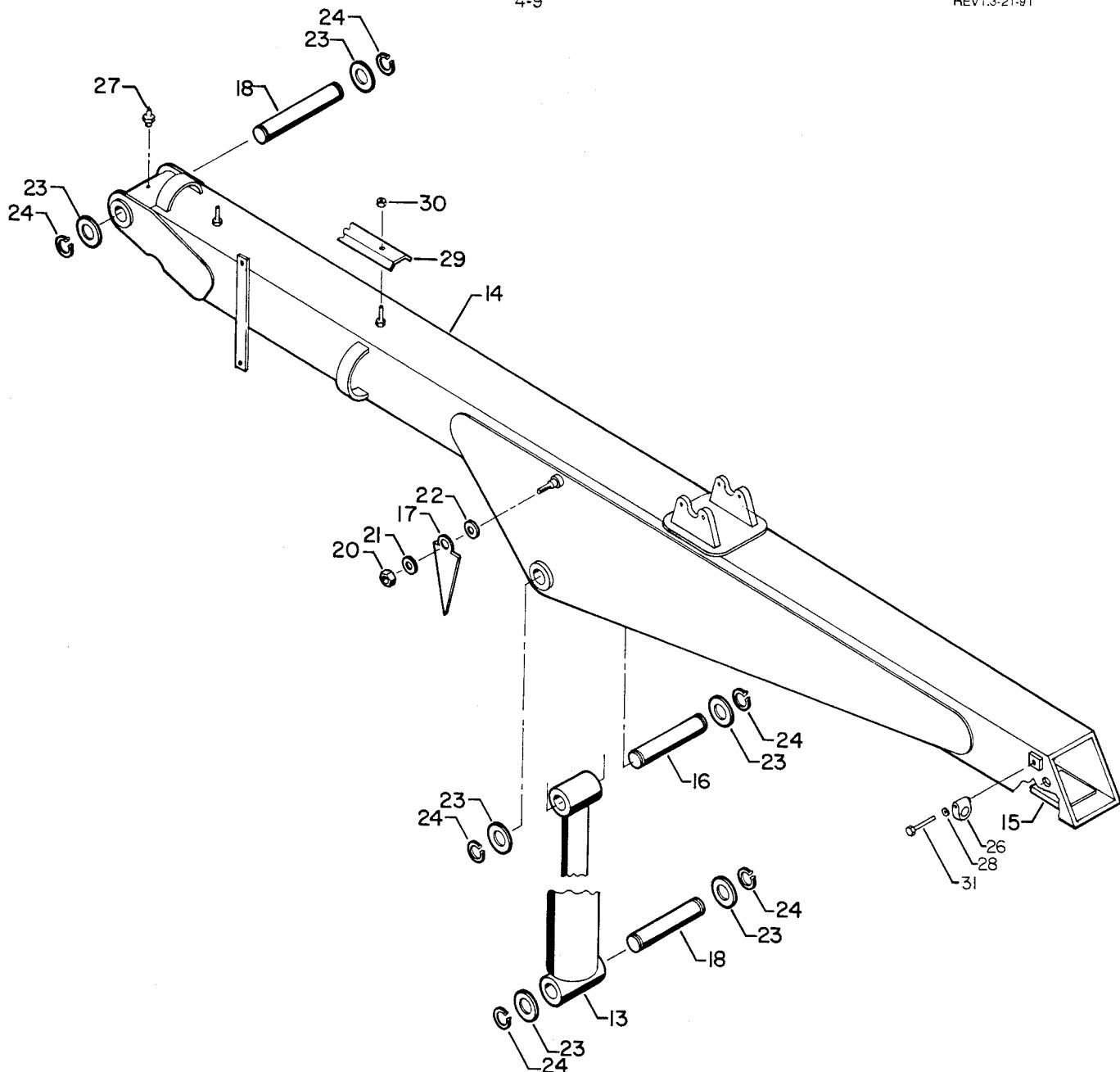
ITEM	PART NO.	DESCRIPTION	QTY
1.	52704828	PIN	1
2.	52704254	SNATCH BLOCK	1
3.	60030061	SHEAVE (INCL:7,16)	1
4.	52709411	SIDE PLATE	1
5.	72060569	SET SCR 5/16-18X3/8 SH (DRUM)	1
6.	71073921	HOOK 2-TON	2
7.	70055163	ROLLER BEARING (PART OF 3)	1REF
8.	60107238	CABLE 1/4 X 45'	1
9.	70058025	THIMBLE	1
10.	70058901	CLAMP 1/4	2
11.	72053508	ZERK 1/8NPT	1
12.	72060097	CAP SCR 1/2-13X3 HH GR5	2
13.	72062080	NUT 1/2-13 LOCK	2
14.	72063030	MACH BUSHING 3/4 X 10GA	1
15.	72066145	HAIR PIN 3/16	1
16.	70055162	INNER RACE (PART OF 3)	1REF

Figure D-8. Cable & Hook Kit (Part Number 31704268)



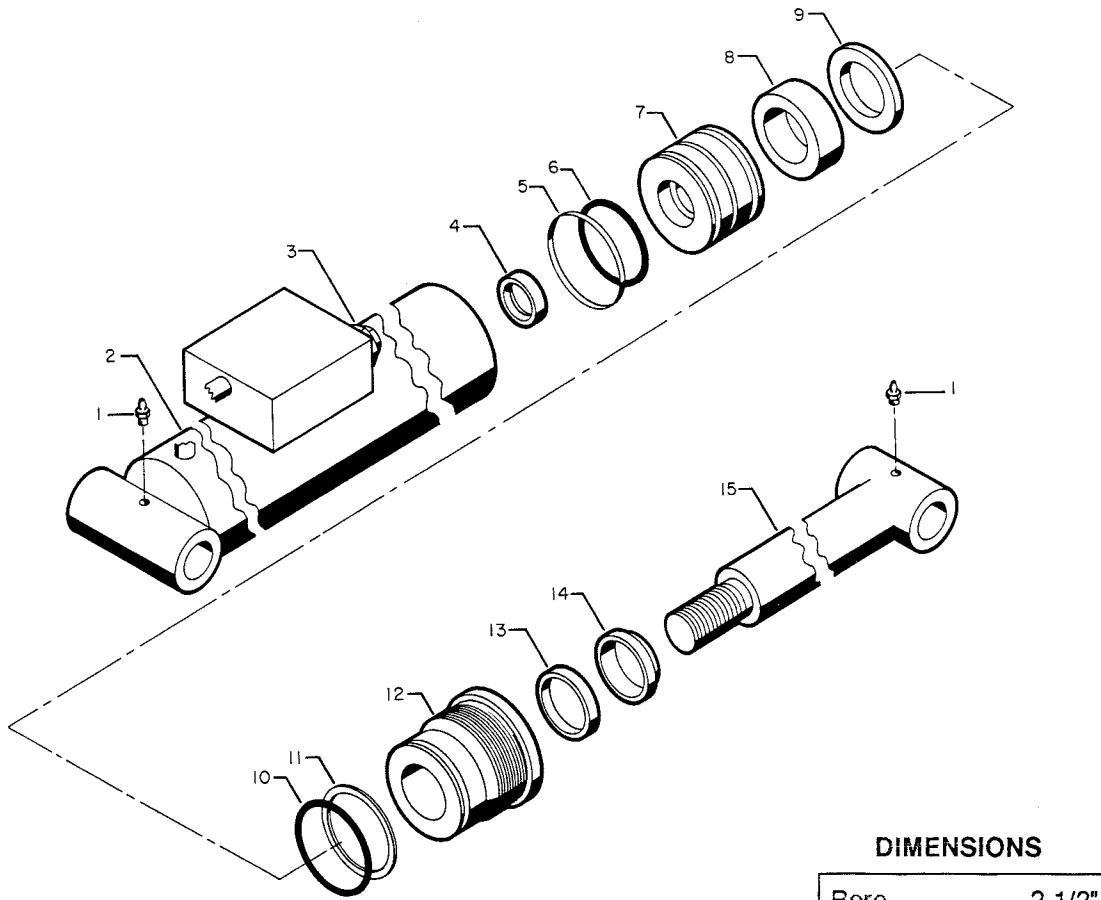
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	70143637	HOUSING	1	15.	70143632	BEARING BUSHING	2
2.	70143636	COVER	1	16.	76393141	SEAL	1
3.	70056425	WORM GEAR	1	17.	72532844	REDUCER BUSHING 3/8 1/2NPT	1
4.	70143635	MOTOR ADAPTER	1	18.	72053613	VENT PLUG	1
5.	70143634	BEARING RETAINER	1	19.	72053242	PIPE PLUG 3/8 HEX	2
6.	70056424	WORM	1	20.	81066819	KEY 5/16X5/16X1	2
7.	70143633	OUTPUT SHAFT	1	21.	72601516	CAP SCR 5/16-18X7/8 HH GR5	8
8.	76393144	COVER GASKET	1	22.	72060026	CAP SCR 5/16-18X1-1/4 HH GR5	4
9.	76392896	BEARING RETAINER GASKET	2	23.	60107226	KEY 5/16X5/16X3-3/4	1
10.	76393143	BEARING RETAINER GASKET	1	24.	72063050	WASHER 5/16 LOCK	11
11.	76393142	BOLT SEAL (NOT SHOWN)	1	25.	76393140	MOTOR GASKET	1
12.	70055192	CONE-BEARING	2	26.	70142375	DRIVE SCREW	2
13.	70055193	CUP-BEARING	2	27.	70143428	LABEL PLATE	1
14.	70143422	WASHER	2				

Figure D-9.Speed Reducer-Gear Products (Part Number70057663)



ITEM	PART NO.	DESCRIPTION	QTY
13.	3B104820	LOWER CYLINDER	1
14.	52704944	LOWER BOOM	1
15.	60030097	WEAR PAD	1
16.	60101906	PIN	1
17.	60105544	INDICATOR	2
18.	60106065	PIN	2
19.	72053508	ZERK 1/8NPT	1
20.	72062103	NUT 3/8-16 LOCK	2
21.	72063003	WASHER 3/8 WRT	2
22.	72063005	WASHER 1/2 WRT	2
23.	72063034	MACH BUSHING 1 X 10GA NR	6
24.	72066125	RETAINING RING 1" HD	6
25.	70029119	SERIAL NO. PLACARD (NOT SHOWN)	1
26.	70034381	CORD GUIDE	1
27.	72661216	GRIPNAIL 1/8 (NOT SHOWN)	2
28.	72063049	WASHER 1/4 LOCK	1
29.	60107993	HOSE GUARD	1
30.	72062104	NUT 1/4-20 LOCK	2
31.	72060006	CAP SCR 1/4-20X1-1/2 HH GR5	1

Figure D-10. Lower Boom Assembly (Part Number 41704943)

**NOTE**

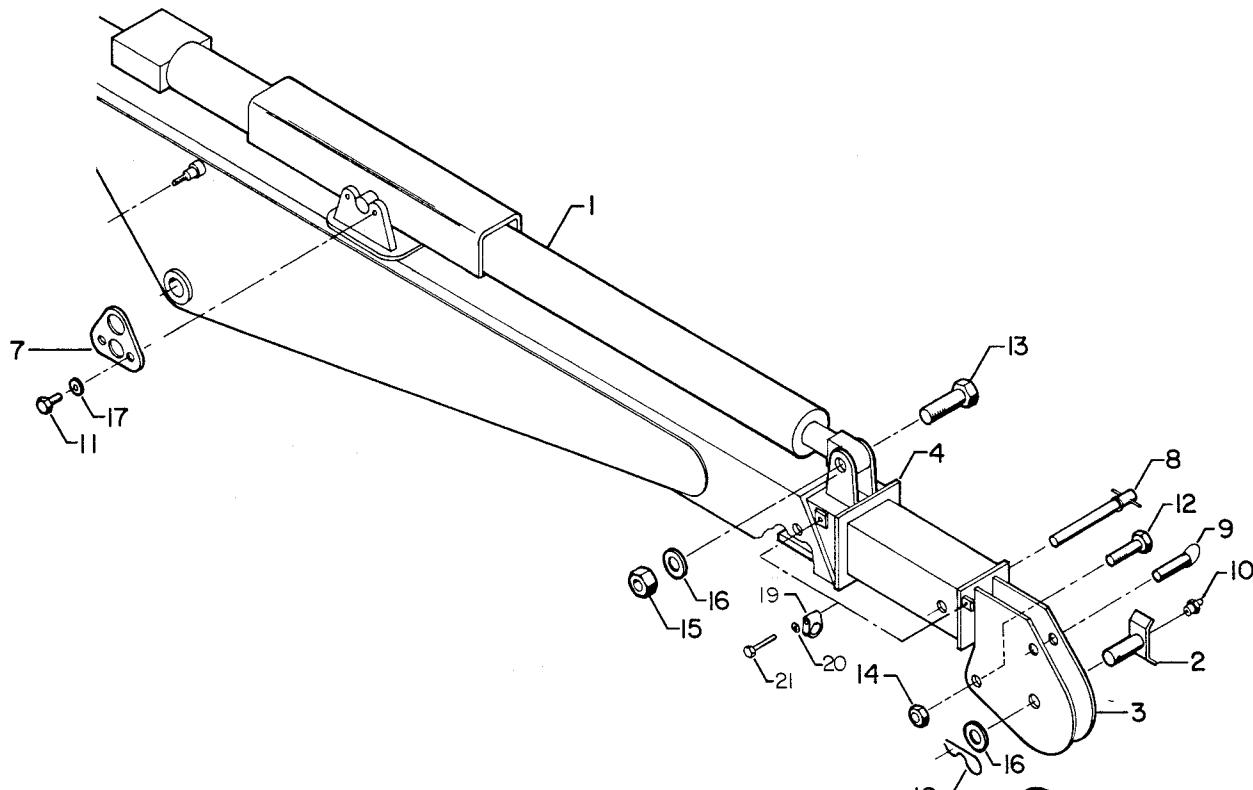
IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

APPLY "LUBRIPLATE #630-2" MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.

USE "NEVER-SEEZ" OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.

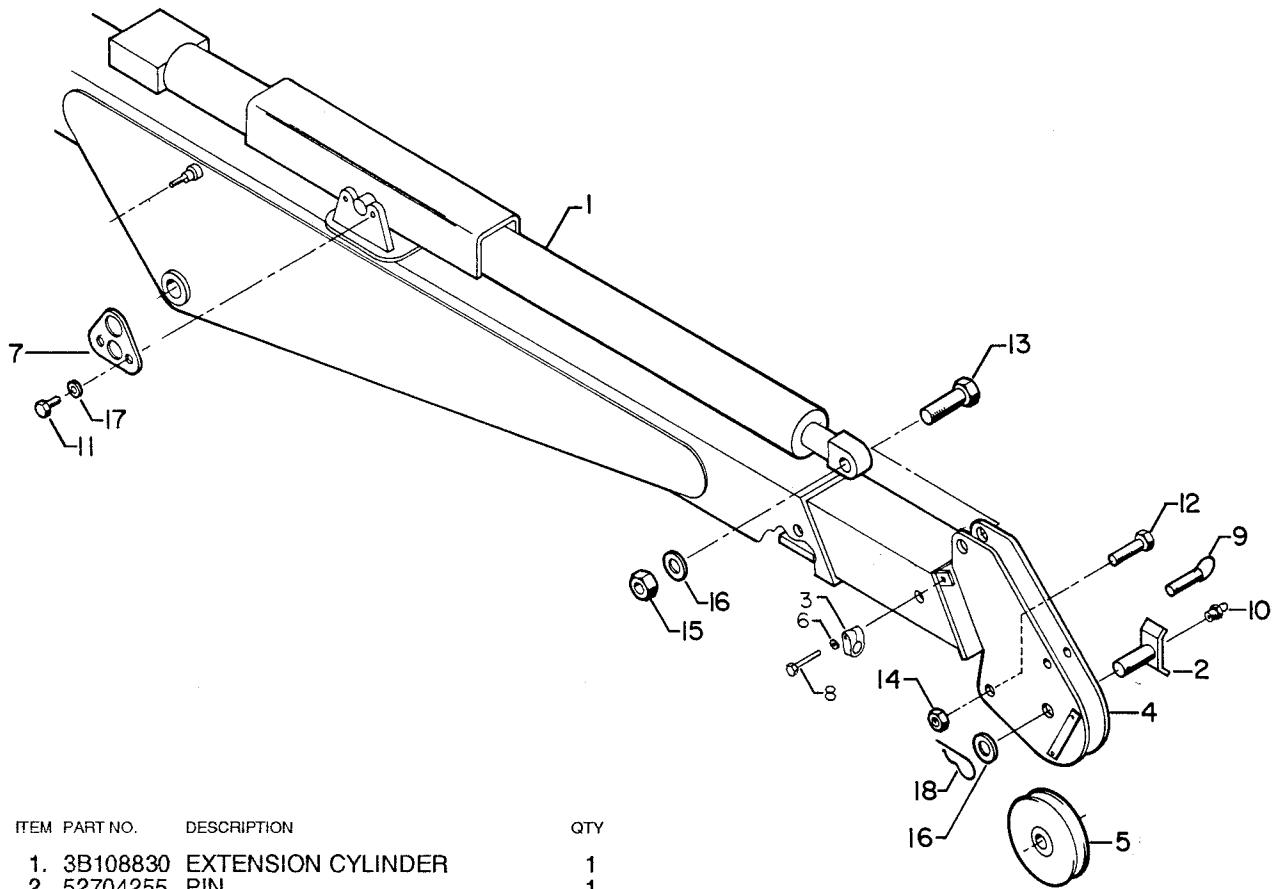
ITEM	PART NO.	DESCRIPTION	QTY
1.	73053507	ZERK 1/8NPT (PART OF 2 & 15)	2REF
2.	4B104820	CASE ASM (INCL:1,16)	1
3.	73054304	VALVE 10GPM	1
4.	7T61N087	LOCK RING SEAL (PART OF 17)	1REF
5.	7T66P025	PISTON SEAL (PART OF 17)	1REF
6.	7Q072137	O-RING (PART OF 17)	1REF
7.	6I025087	PISTON	1
8.	6C075015	STOP TUBE	1
9.	6A025015	WAFER LOCK (PART OF 17)	1REF
10.	7Q072228	O-RING (PART OF 17)	1REF
11.	7Q10P228	O-RING (PART OF 17)	1REF
12.	6H025015	HEAD	1
13.	7R546015	ROD SEAL (PART OF 17)	1REF
14.	7R14P015	ROD WIPER (PART OF 17)	1REF
15.	4G104820	ROD (INCL:1)	1
16.	7PNPXT02	PLUG 1/8NPT (PART OF 2)	2
17.	9B101214	SEAL KIT (INCL:4-6,9-11,13,14)	1

**Figure D-11. Lower Boom Cylinder (Part Number 3B104820)**



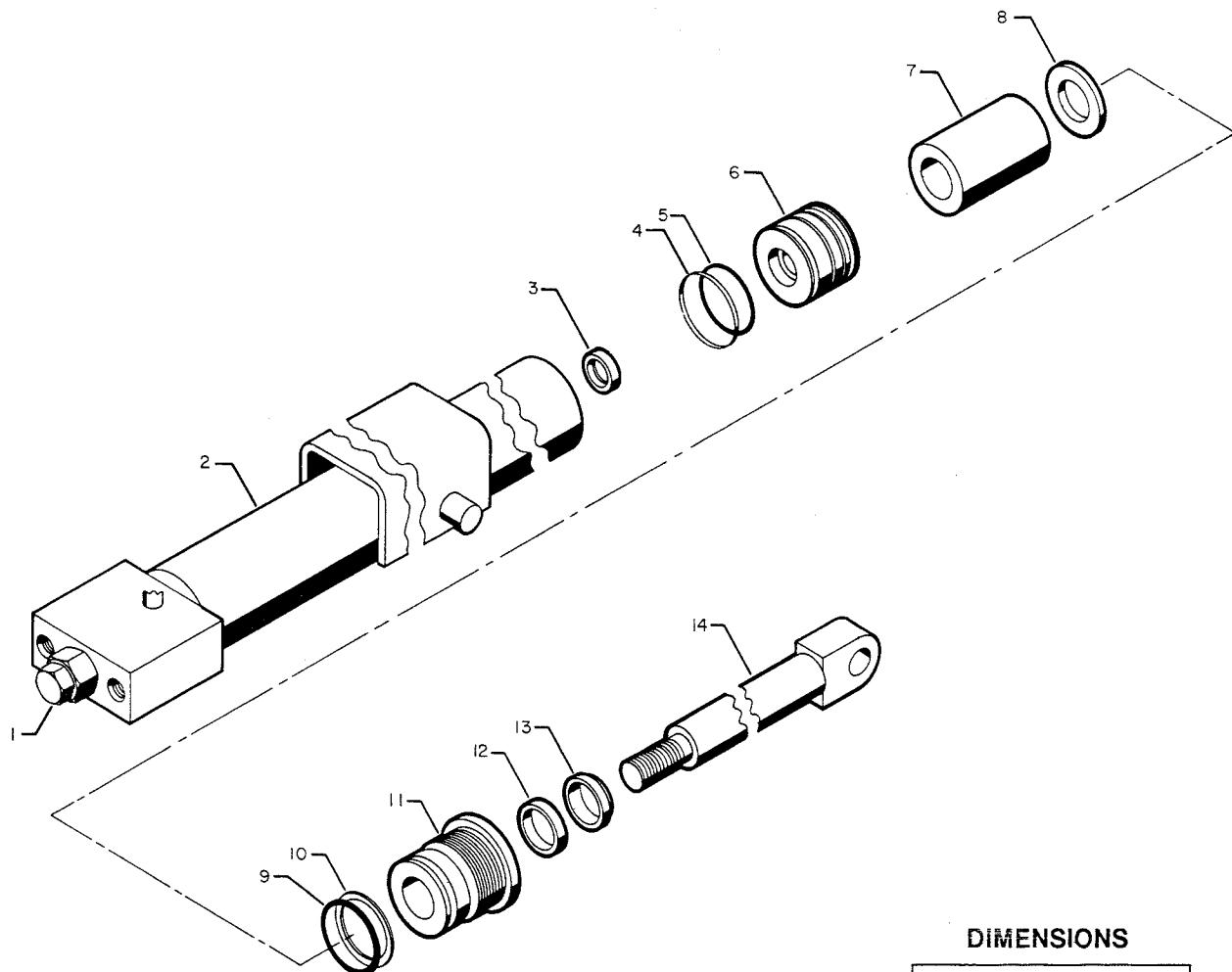
ITEM	PART NO.	DESCRIPTION	QTY
1.	3B108830	EXTENSION CYLINDER	1
2.	52704255	PIN	1
3.	52704945	2ND STG EXT BOOM	1
4.	52704946	1ST STG EXT BOOM	1
5.	60030061	SHEAVE WITH BEARING	1
7.	60107922	LOCKPLATE	2
8.	71731461	QUICK RELEASE PIN 1/2X4	1
9.	71731462	QUICK RELEASE PIN 1/2X1-1/2	1
10.	72053508	ZERK 1/8NPT	1
11.	72060044	CAP SCR 3/8-16X3/4 HH GR5	4
12.	72601368	CAP SCR 1/2-13X2-1/4 HH GR8	1
13.	72060186	CAP SCR 3/4-10X2-1/2 HH GR5	1
14.	72062080	NUT 1/2-13 LOCK	1
15.	72062114	NUT 3/4-10 LOCK	1
16.	72063030	MACH BUSHING 3/4X10GA NR	1
17.	72063051	WASHER 3/8 LOCK	4
18.	72066145	HAIR PIN 3/16	1
19.	70034381	CORD GUIDE	2
20.	72063049	WASHER 1/4 LOCK	2
21.	72060006	CAP SCR 1/4-20X1-1/2 HH GR5	2

Figure D-12. Extension Boom Assembly - Hyd/Man 14' (Part Number 41704936)



ITEM	PART NO.	DESCRIPTION	QTY
1.	3B108830	EXTENSION CYLINDER	1
2.	52704255	PIN	1
3.	70034381	CORD GUIDE	1
4.	52704947	EXTENSION BOOM	1
5.	60030061	SHEAVE WITH BEARING	1
6.	72063049	WASHER 1/4 LOCK	1
7.	60107922	LOCKPLATE	2
8.	72060006	CAP SCR 1/4-20X1-1/2 HH GR5	1
9.	71731462	QUICK RELEASE PIN 1/2X1-1/2	1
10.	72053508	ZERK 1/8NPT	1
11.	72060044	CAP SCR 3/8-16X3/4 HH GR5	4
12.	72601368	CAP SCR 1/2-13X2-1/4 HH GR8	1
13.	72060186	CAP SCR 3/4-10X2-1/2 HH GR5	1
14.	72062080	NUT 1/2-13 LOCK	1
15.	72062114	NUT 3/4-10 LOCK	1
16.	72063030	MACH BUSHING 3/4X10GA NR	2
17.	72063051	WASHER 3/8 LOCK	4
18.	72066145	HAIR PIN 3/16	1

Figure D-13. Extension Boom Assembly - Hyd 10' (Part Number 41704937)

**DIMENSIONS**

Bore	2"
Stroke	36"
C-C Closed	32"
Rod diameter	1-1/4"
Pin diameter	3/4"

**NOTE**

IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

APPLY "LUBRIPLATE #630-2" MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.

USE "NEVER-SEEZ" OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.

ITEM	PART NO.	DESCRIPTION	QTY
1.	73054304	VALVE 10GPM	1
2.	4B108830	CASE ASM (INCL:15)	1
3.	7T61N075	LOCK RING SEAL (PART OF 16)	1REF
4.	7T66P020	PISTON SEAL (PART OF 16)	1REF
5.	7Q072129	O-RING (PART OF 16)	1REF
6.	6I020075	PISTON	1
7.	6C300012	STOP TUBE	1
8.	6A025012	WAFER LOCK (PART OF 16)	1REF
9.	7Q072224	O-RING (PART OF 16)	1REF
10.	7Q10P224	O-RING (PART OF 16)	1REF
11.	6H020012	HEAD	1
12.	7R546012	ROD SEAL (PART OF 16)	1REF
13.	7R14P012	ROD WIPER (PART OF 16)	1REF
14.	4G108830	ROD	1
15.	7PNPXT02	PLUG 1/8NPT (PART OF 2)	3REF
16.	9B081012	SEAL KIT (INCL:3-5,8-10,12,13)	1

**Figure D-14. Extension Cylinder (Part Number 3B108830)**

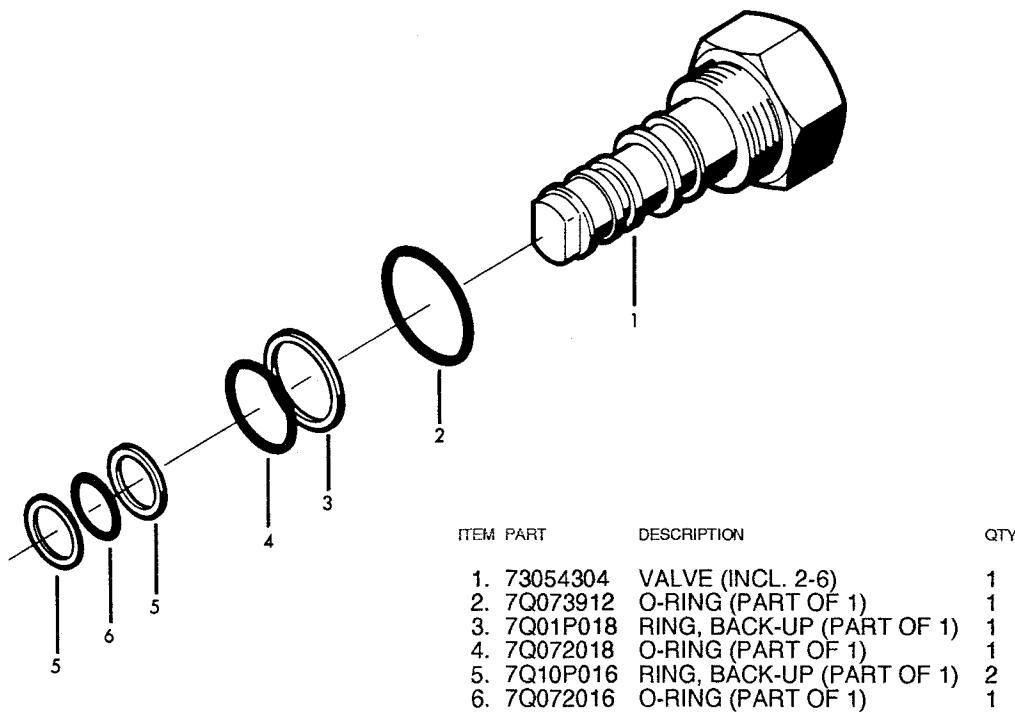
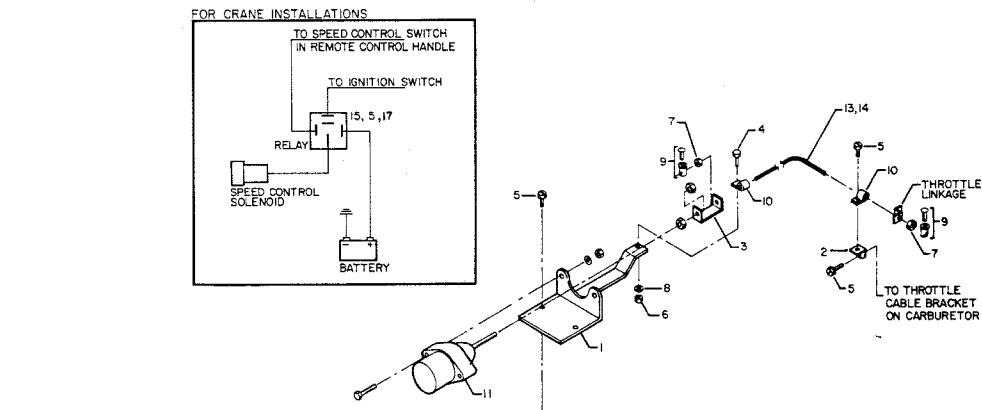
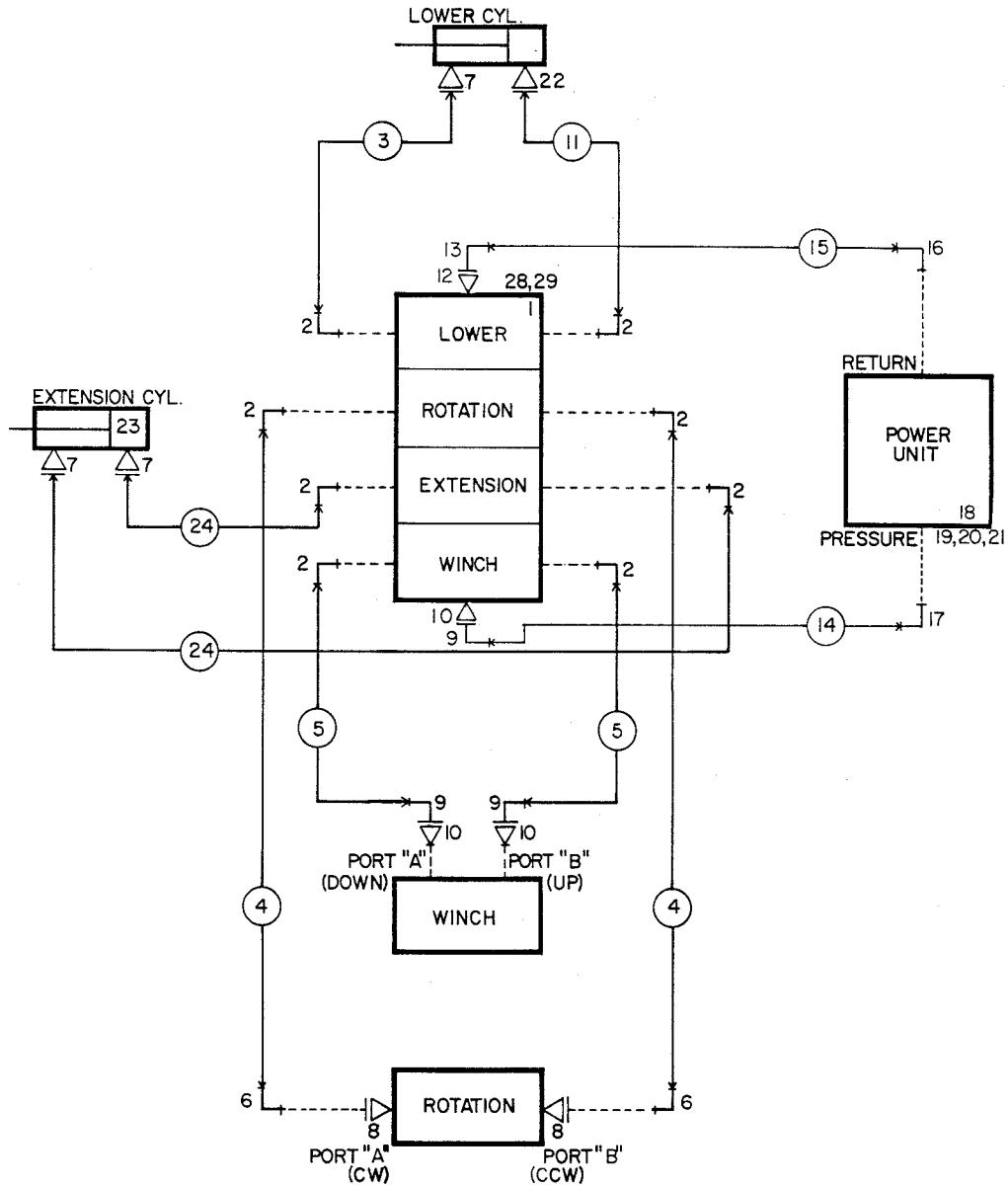


Figure D-15. Counter Balance Valve 10GPM (Part Number 73054304)



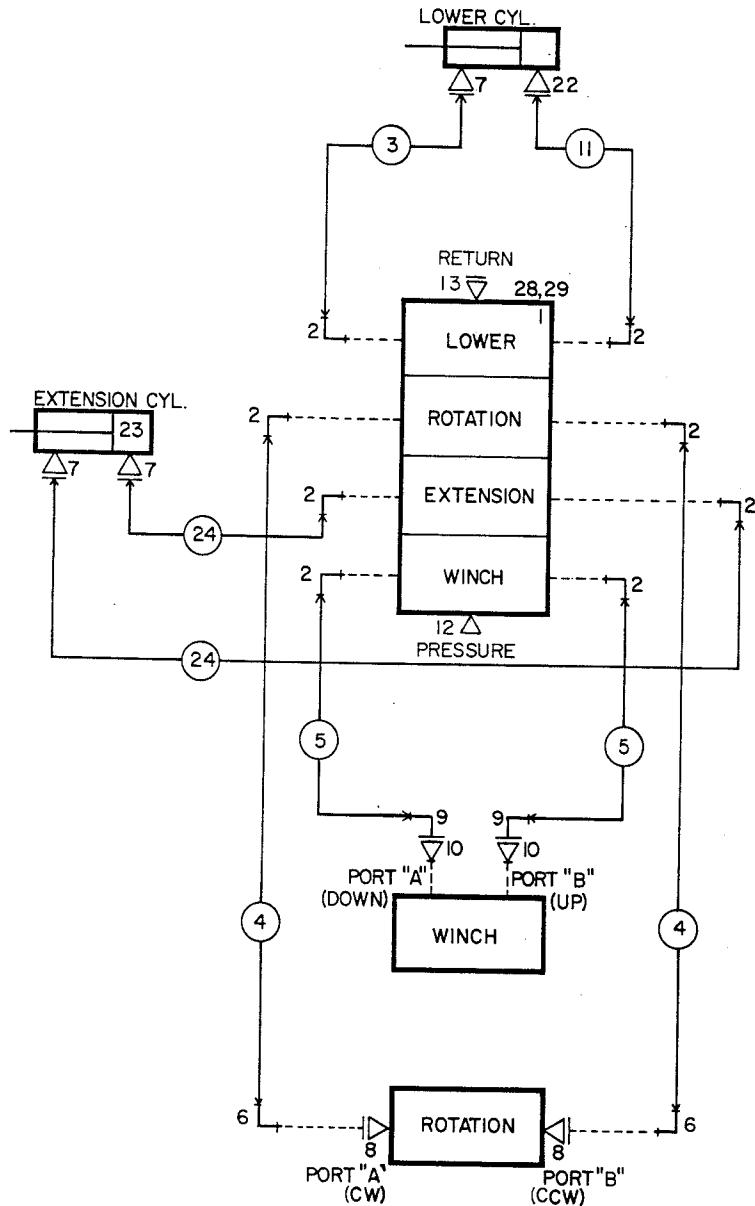
ITEM	PART	DESCRIPTION	QTY
1.	52705080	SPD CONT BRACKET	1
2.	60106760	LINKAGE BRACKET	1
3.	60108086	PLUNGER BRACKET	1
4.	72060002	CAP SCR 1/4-20 X 3/4 HH GR5	5
5.	72061004	SCR #14 X 3/4 SHT MET	5
6.	72062000	NUT 1/4-20 HEX	5
7.	72062093	NUT #8-32 HEX	2
8.	72063049	WASHER 1/4 LOCK	5
9.	72066377	CABLE STOP	2
10.	72066523	CLAMP	2
11.	73054654	SOLENOID VALVE 12V	1
13.	89058892	CASING	3-1/2'
14.	89058934	CABLE	4'
15.	77041251	RELAY 12V	1
16.	89044233	WIRE 14GA BRN	20'
17.	77040186	TERMINAL	4
18.	60103535	SWITCH BRACKET (NOT SHWN)	2
19.	77041345	TOGGLE SWITCH - SGL THRW (NOT SHWN)	2

Figure D-16. OPTION - Throttle Control-Synchro Start (Part Number 31705270)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	73073772	VALVEBANK	1	14.	51704619	HOSE ASM 1/4 X 19	1
2.	72532699	ADAPTER 9/16MSTR 7/16MJIC 90°	8	15.	51707239	HOSE ASM 3/8 X 10	1
3.	51704623	HOSE ASM 1/4 X 31	1	16.	72053762	ADAPTER 9/16MSTR 3/4MJIC 90°	1
4.	51705171	HOSE ASM 1/4 X 36	2	17.	72532699	ADAPTER 9/16MSTR 3/4MJIC 90°	1
5.	51704619	HOSE ASM 1/4 X 19	2	18.	73051503	POWER UNIT	1
6.	72532985	ADAPTER 9/16MSTR 7/16MJIC 45°	2	19.	72060022	CAP SCR 5/16-18X5/8 HH GR5	4
7.	72532351	ADAPTER 7/16MSTR 7/16MJIC	3	20.	72063050	WASHER 5/16 LOCK	4
8.	72532722	ADAPTER 7/8MSTR 9/16FSTR	2	21.	72063002	WASHER 5/16 WRT	4
9.	72532690	ADAPTER 7/16MJIC 7/16FJIC 45° SWVL	3	22.	73054487	CHECK VALVE	1
10.	72532353	ADAPTER 9/16MSTR 7/16MJIC	3	23.		EXTENSION CYLINDER	1 REF
11.	51706021	HOSE ASM 1/4 X 30	1	24.	51705202	HOSE ASM 1/4 X 49	2
12.	72532357	ADAPTER 9/16MSTR 3/4MJIC	1	28.	72060021	CAP SCR 5/16-18X1/2 HH GR5	2
13.	72532670	ADAPTER 3/4MSTR 3/4MJIC 45°	1	29.	72063050	WASHER 5/16 LOCK	2

Figure D-17. Hydraulic Kit - 4 Section/Power Unit (Part Number 91704949)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	73073772	VALVEBANK	1	10.	72532353	ADAPTER 9/16MSTR 7/16MJIC	3
2.	72532699	ADAPTER 9/16MSTR 7/16MJIC 90°	8	11.	51706021	HOSE ASM 1/4 X 30	1
3.	51704623	HOSE ASM 1/4 X 31	1	12.	72532357	ADAPTER 9/16MSTR 3/4MJIC	1
4.	51705171	HOSE ASM 1/4 X 36	2	13.	72532795	ADAPTER 9/164MSTR 3/8FNPT	1
5.	51704619	HOSE ASM 1/4 X 19	2	22.	73054487	CHECK VALVE	1
6.	72532985	ADAPTER 9/16MSTR 7/16MJIC 45°	2	23.		EXTENSION CYLINDER	1REF
7.	72532351	ADAPTER 7/16MSTR 7/16MJIC	3	24.	51705202	HOSE ASM 1/4 X 49	2
8.	72532722	ADAPTER 7/8MSTR 9/16FSTR	2	28.	72060021	CAP SCR 5/16-18X1/2 HH GR5	2
9.	72532690	ADAPTER 7/16MJIC 7/16FJIC 45° SWVL	3	29.	72063050	WASHER 5/16 LOCK	2

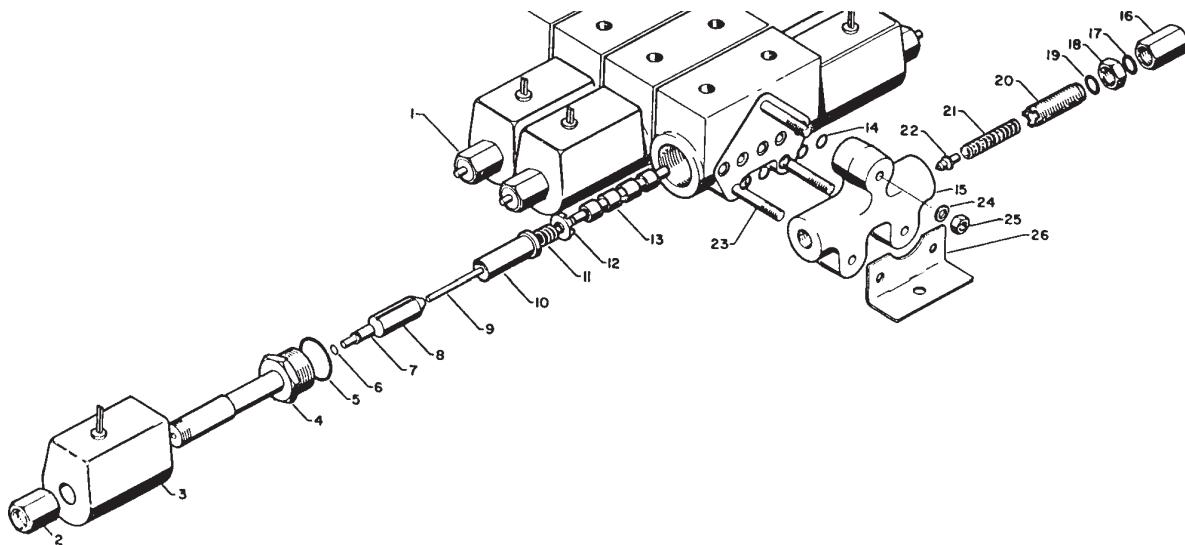
Figure D-18. Hydraulic Kit - 4 Section/PTO (Part Number 91708891)

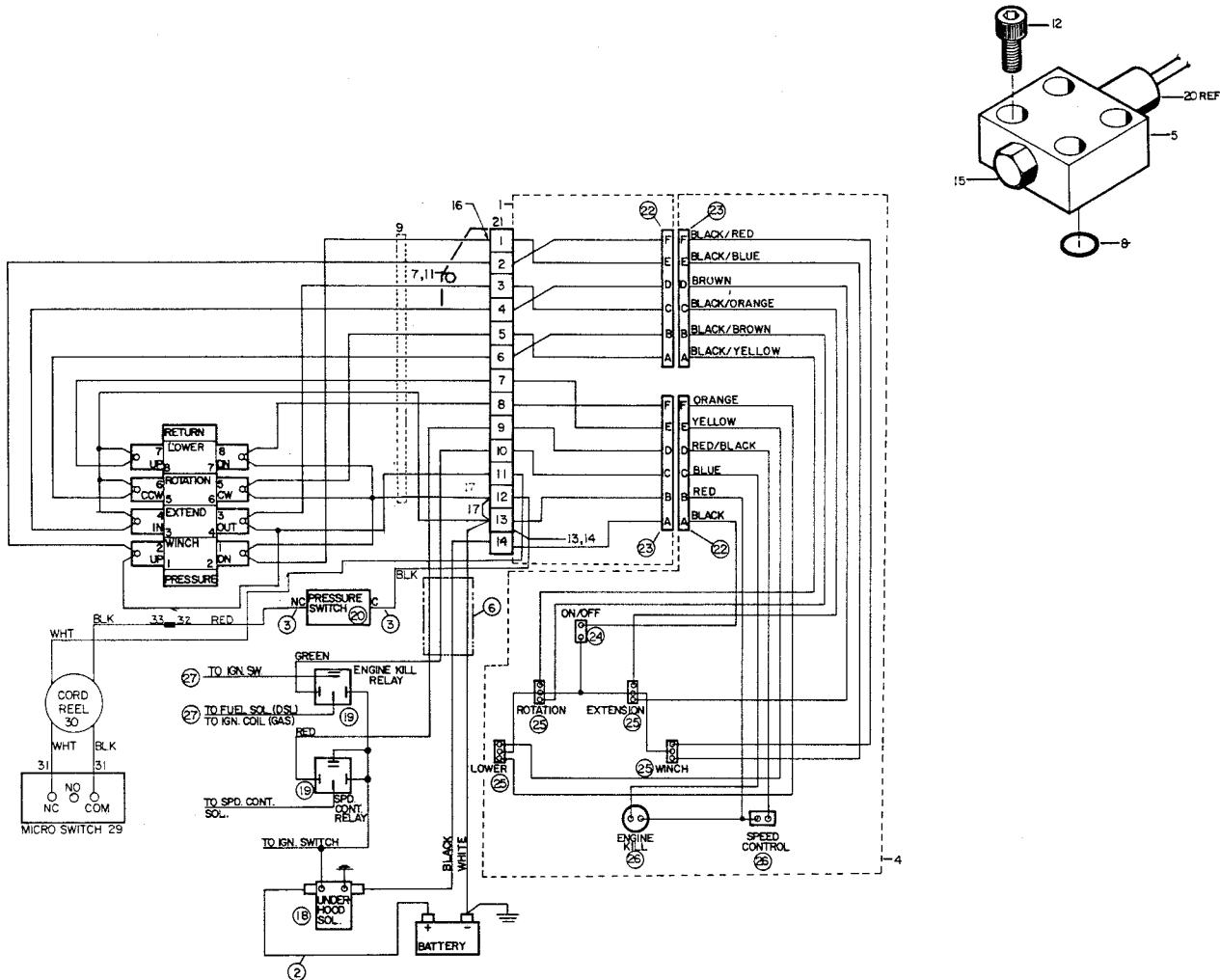
**VALVEBANK (73073772)**

ITEM PART NO.	DESCRIPTION	QTY
1. 73054077	VALVE SECTION (INCL:2-14)	4
2. 73014950	NUT	1REF
3. 77041016	COIL 12VDC (WAS 77040028)	2REF
4. 73014958	TUBE	2REF
5. 7Q072113	O-RING	2REF
6. 7Q072008	O-RING	2REF
7. 73014957	BUTTON	2REF
8. 73014956	PLUNGER	2REF
9. 73014954	PIN	2REF
10. 73014955	PLUG	2REF
REF 94014962	OUTER TUBE ASM (INCL 4-10)	1REF
11. 73014953	SPRING	2REF
12. 73014952	SPRING RETAINER	2REF
13. PART OF 73054077	SPOOL & BODY (MATCHED SET)	1REF
14. 7Q072012	O-RING	5REF
15. 73014948	INLET W/RELIEF (INCL:16-22)	1
16.	RELIEF VALVE ADJ CAP	1REF
17.	O-RING	1REF
18.	JAM NUT	1REF
19.	O-RING	1REF
20.	ADJ ROD	1REF
21.	SPRING	1REF
22.	NEEDLE	1REF
23. 73014960	TIE ROD	3
24. 72063002	WASHER 5/16	6
25. 72062001	NUT 5/16-18	6
26. 73014959	MTG BRACKET	2

**NOTE**

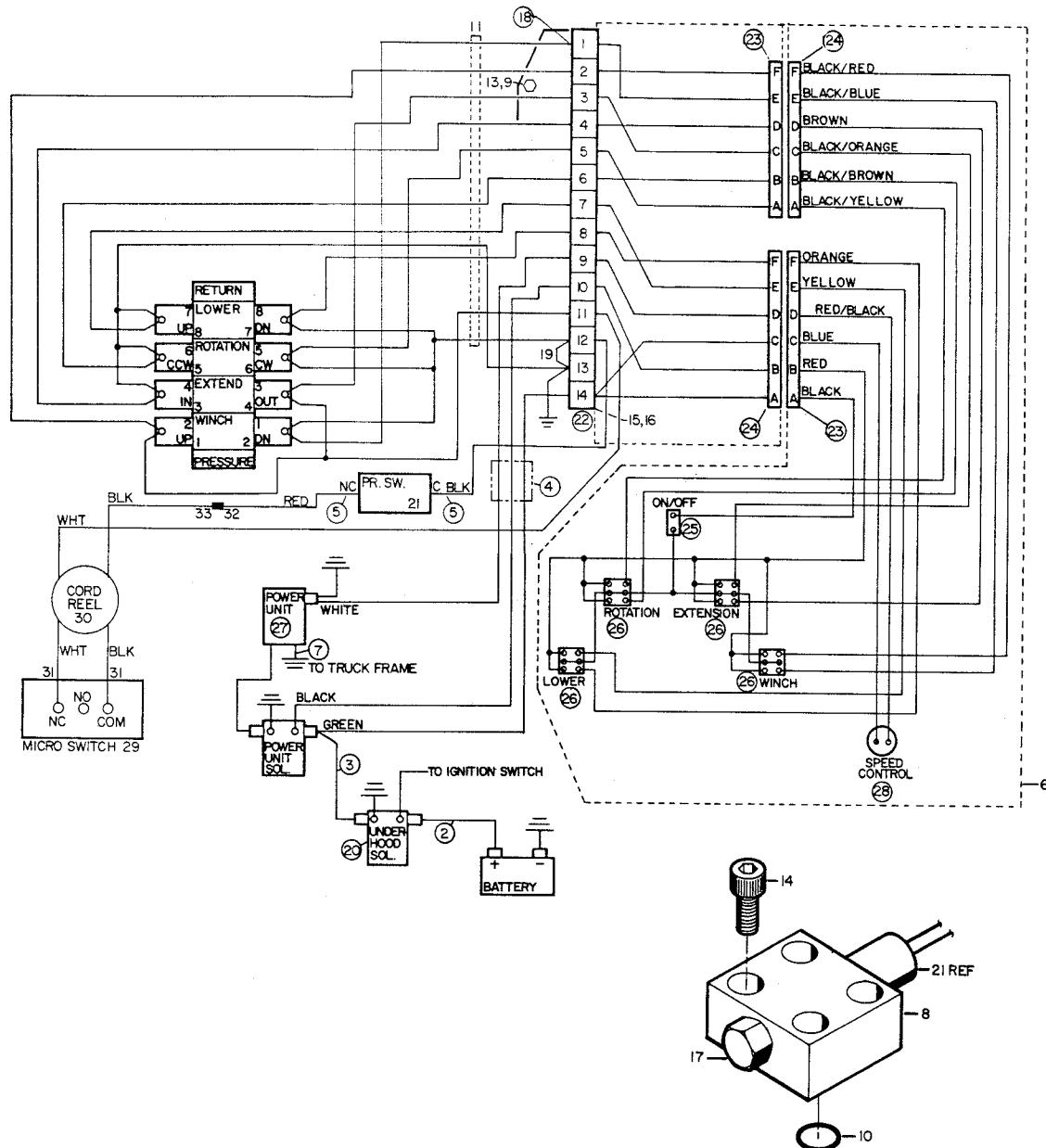
ITEMS 2-12 INDICATE QTY PER VALVE SECTION.  
ITEMS 16-22 ARE NOT AVAILABLE SEPARATELY.





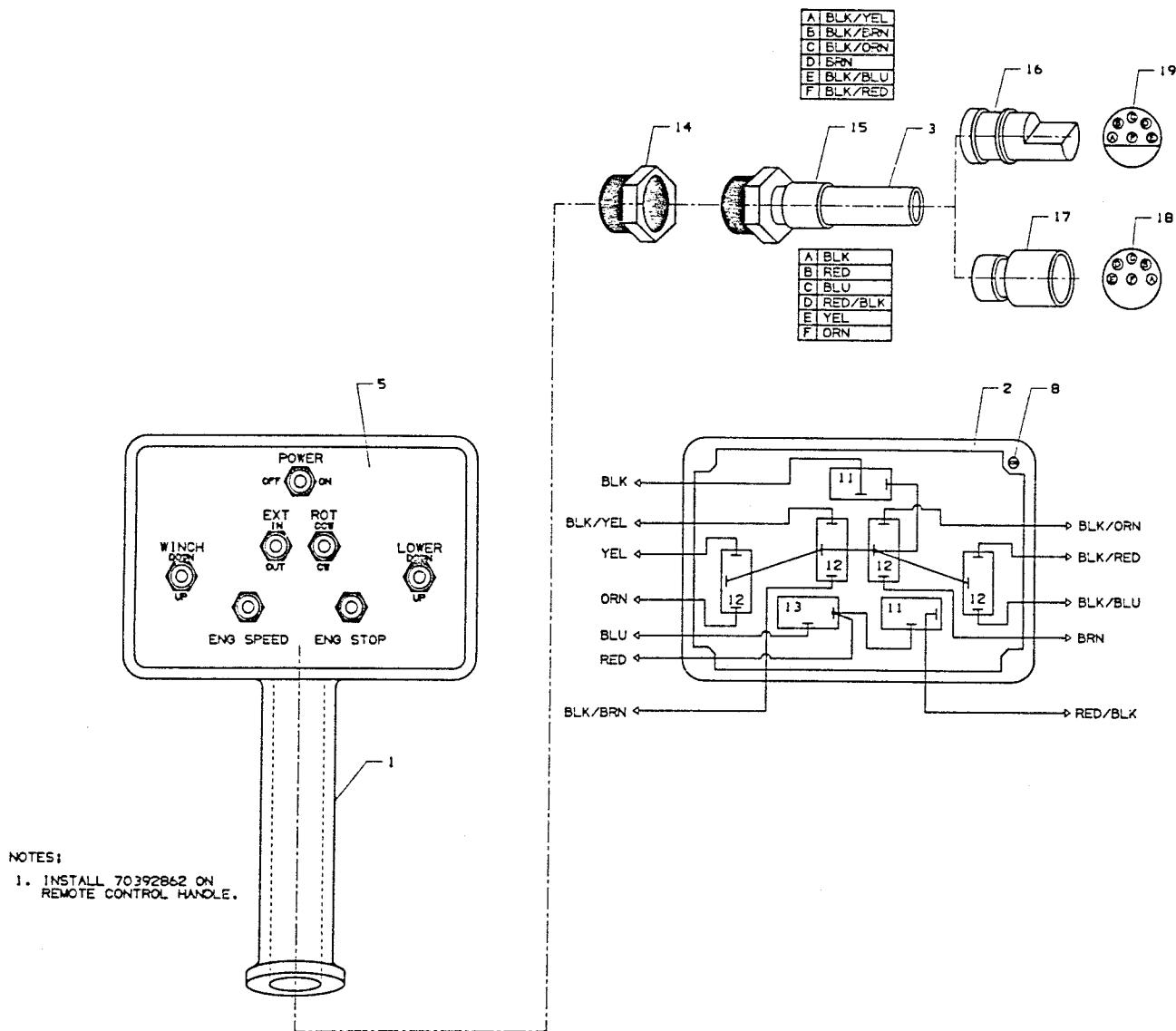
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	51704539	CABLE ASM 18GA/12WIRE X 36	1	18.	77041003	SOLENOID 12V	1
2.	51704784	CABLE ASM #1WIRE X 6	1	19.	77041251	RELAY 12V	2
3.	51704788	CABLE ASM 14GA/2WIRE X 48	1	20.	77041222	PRESSURE SWITCH	1
4.	51704795	HANDLE & CABLE ASM	1	21.	77044309	TERMINAL STRIP	1
5.	60025221	MANIFOLD - CAPACITY ALERT	1	22.		RECEPTACLE 6 CONTACT	1REF
6.	60045019	CABLE ASM 16GA/4WIRE X 300	1	23.		PLUG 6 CONTACT	1REF
7.	60105825	MTG PLATE	1	24.		TOGGLE SWITCH ST	2REF
8.	7Q072015	O-RING	1	25.		TOGGLE SWITCH DT	4REF
9.	70034060	TIE	4	26.		PUSH BUTTON SWITCH	1REF
11.	72060002	CAP SCR 1/4-20X3/4 HH GR5	2	27.		EXISTING TRUCK WIRING	REF
12.	72060731	CAP SCR 5/16-18X3/4 SH	4	29.	77041291	MICRO SWITCH (SEE WN KIT)	REF
13.	72061009	SHT MTL SCR #6X3/4 PH	2	30.	70732193	CORD REEL (SEE WN KIT)	REF
14.	72066525	CLAMP	1	31.	77040051	TERMINAL (SEE WN KIT)	REF
15.	72532140	PLUG 9/16 HH	1	32.	77040186	TERMINAL (SEE WN KIT)	REF
16.	77040051	TERMINAL #8 16-14GA SPRSPD	10	33.	77040047	TERMINAL (SEE WN KIT)	REF
17.	7704130	JUMPER	1				

Figure D-20. Control Kit - PTO 4 Function w/Speed (Part Number 90706361)



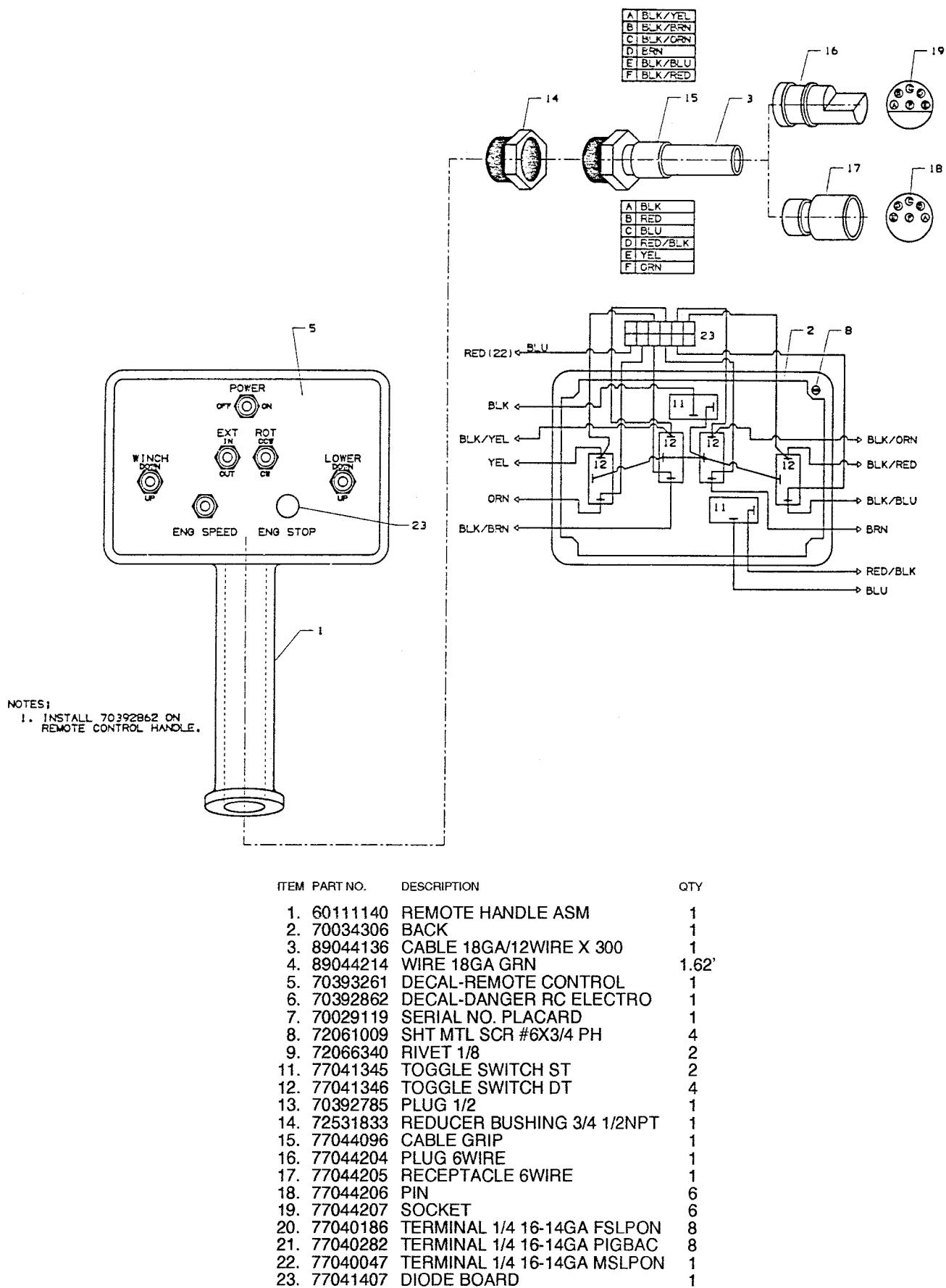
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	51704539	CABLE ASM 18GA/12WIRE X 36	1	18.	77040051	TERMINAL #8 16-14GA SPRSPD	10
2.	51704784	CABLE ASM #1WIRE X 6	1	19.	77040130	JUMPER	1
3.	51704785	CABLE ASM #1WIRE x 300	1	20.	77041003	SOLENOID 12V	1
4.	51704787	CABLE ASM 16GA/3WIRE X 42	1	21.	77041222	PRESSURE SWITCH	1
5.	51704788	CABLE ASM 14GA/2WIRE X 48	1	22.	77044309	TERMINAL STRIP	1
6.	51704794	HANDLE & CABLE ASM	1	23.		RECEPTACLE 6 CONTACT	1REF
7.	51705925	CABLE ASM #1WIRE X 96	1	24.		PLUG 6 CONTACT	1REF
8.	60025221	MANIFOLD - CAPACITY ALERT	1	25.		TOGGLE SWITCH ST	1REF
9.	60105825	MTG PLATE	1	26.		TOGGLE SWITCH DT	4REF
10.	7Q072015	O-RING	1	27.		POWER UNIT	REF
11.	70034060	TIE	4	28.		PUSH BUTTON SWITCH (OPT)	REF
13.	72060002	CAP SCR 1/4-20X3/4 HH GR5	2	29.	77041291	MICRO SWITCH (SEE WN KIT)	REF
14.	72060731	CAP SCR 5/16-18X3/4 SH	4	30.	70732193	CORD REEL (SEE WN KIT)	REF
15.	72061009	SHT MTL SCR #6X3/4 PH	2	31.	77040051	TERMINAL (SEE WN KIT)	REF
16.	72066525	CLAMP	1	32.	77040186	TERMINAL (SEE WN KIT)	REF
17.	72532140	PLUG 9/16 HH	1	33.	77040047	TERMINAL (SEE WN KIT)	REF

Figure D-21. Control Kit -Power Unit 4 Function (Part Number 90706360)

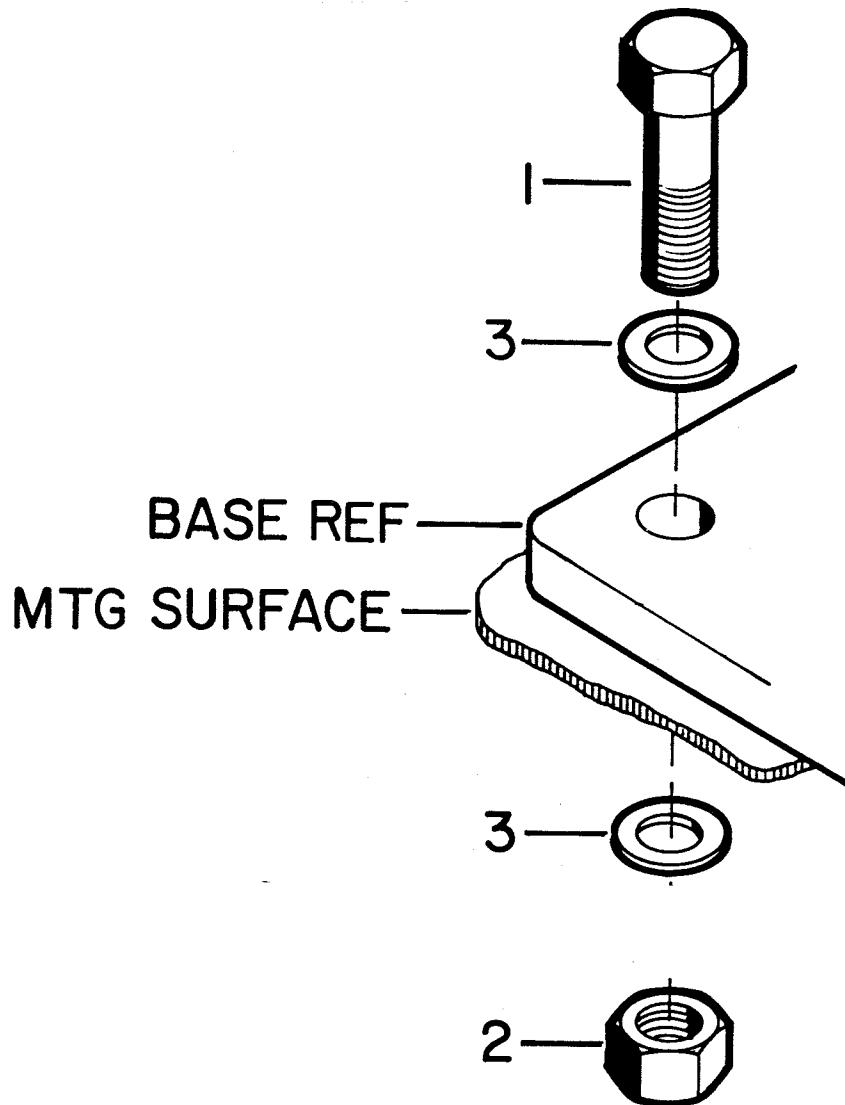


ITEM	PART NO.	DESCRIPTION	QTY
1.	60111140	REMOTE HANDLE ASM	1
2.	70034306	BACK	1
3.	89044136	CABLE 18GA/12WIRE X 300	1
4.	89044214	WIRE 18GA GRN	1.62'
5.	70393261	DECAL-REMOTE CONTROL	1
6.	70392862	DECAL-DANGER RC ELECTRO	1
7.	70029119	SERIAL NO. PLACARD	1
8.	72061009	SHT MTL SCR #6X3/4 PH	4
9.	72066340	RIVET 1/8	2
10.	77040186	TERMINAL 1/4 16-14GA FSLPON	18
11.	77041345	TOGGLE SWITCH ST	2
12.	77041346	TOGGLE SWITCH DT	4
13.	77041347	TOGGLE SWITCH DT MOM	1
14.	72531833	REDUCER BUSHING 3/4 1/2NPT	1
15.	77044096	CABLE GRIP	1
16.	77044204	PLUG 6WIRE	1
17.	77044205	RECEPTACLE 6WIRE	1
18.	77044206	PIN	6
19.	77044207	SOCKET	6

Figure D-22. Remote Handle Assembly 4 Function PTO w/Speed (Part Number 51704795)

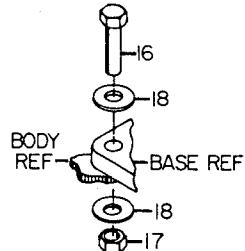
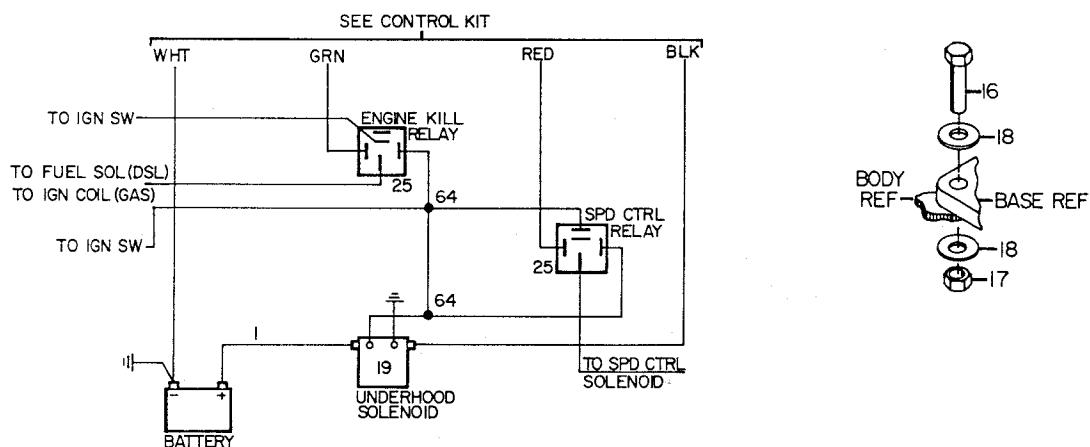
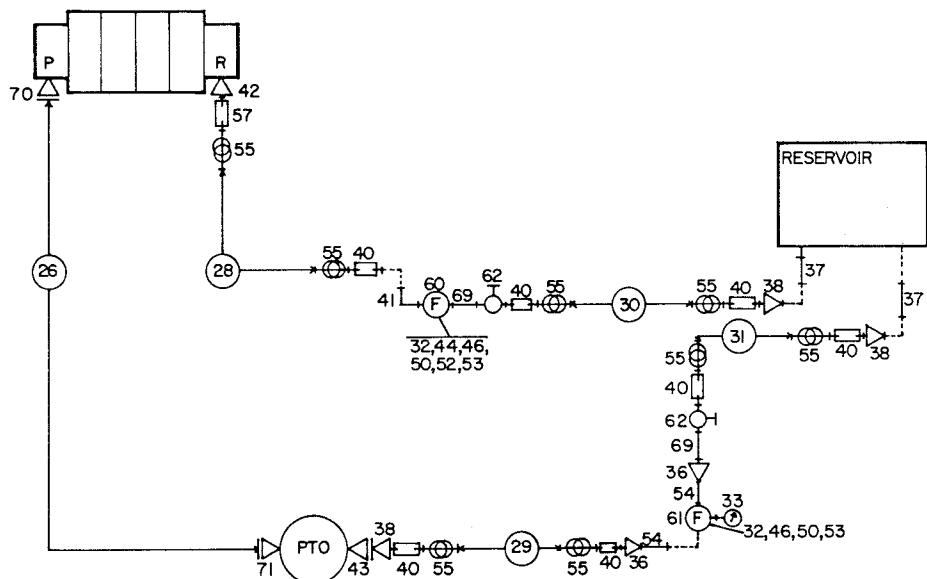


**Figure D-23. Remote Handle Assembly 4-Function Dual Pump w/Speed  
(Part Number 51704794)**



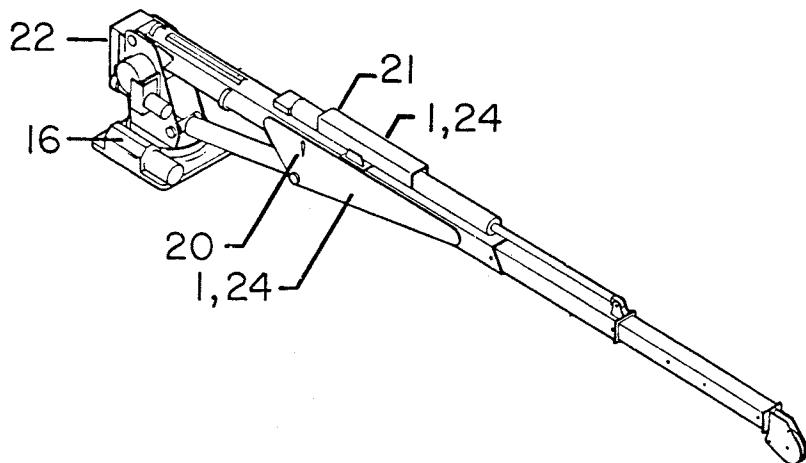
ITEM	PART NO.	DESCRIPTION	QTY
1.	72060186	CAP SCR 3/4-10X2-1/2 HH GR5	4
2.	72062140	NUT 3/4-10 LOCK	4
3.	72053008	WASHER 3/4	8

Figure D-24. INSTALLATION KIT - POWER UNIT (93704633)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	51704784	CABLE ASM #1WIRE X 6	1	42.	72532795	ADAPTER 9/16MSTR 3/8FPT	1REF
16.	72060186	CAP SCR 3/4-10X2-1/2 HH GR5	4	43.	72053751	ADAPTER 1-5/16MSTR 1FPT	1
17.	72062140	NUT 3/4-10 STL INSERT LOCK	4	44.	72060002	CAP SCR 1/4-20X3/4 HH GR5	2
18.	72063008	WASHER 3/4 WRT	8	46.	72060025	CAP SCR 5/16-18X1 HH GR5	4
19.	77041003	SOLENOID 12V	1	50.	72062109	NUT 5/16-18 LOCK	2
25.	77041251	RELAY	2	52.	72063049	WASHER 1/4 LOCK	2
26.	51703614	HOSE ASM 1/2 X 240	1	53.	72063050	WASHER 5/16 LOCK	2
28.	60035817	HOSE 3/4 100R4 X 240	1	54.	72053211	PIPE NIPPLE 1-1/4 X CLOSE	2
29.	60035818	HOSE 3/4 100R4 X 72	1	55.	72066000	HOSE CLAMP SAE#12	8
30.	60035819	HOSE 3/4 100R4 X 60	1	56.	72066377	CABLE STOP (NOT SHOWN)	1
31.	60035823	HOSE 3/4 100R4 X 52	1	57.	72532794	BARB NIPPLE 3/8BARB 3/4HOSE	1
32.	60103870	OIL FILTER BRACKET	2	60.	73052000	RETURN FILTER	1
33.	70048031	VACUUM GAUGE	1	61.	73052012	SUCTION FILTER	1
36.	72053180	REDUCER BUSHING 1-1/4 3/4NPT	2	62.	73054129	GATE VALVE 3/4NPT	2
37.	72053185	PIPE NIPPLE 1 X CLOSE	2	64.	77040048	BUTT CONNECTOR	2
38.	72053376	REDUCER BUSHING 1" 3/4NPT	3	69.	72053141	PIPE NIPPLE 3/4NPT	2
40.	72053458	BARB NIPPLE 3/4MPT 3/4HOSE	7	70.	72532357	ADAPTER 9/16MSTR 3/4MJIC	1REF
41.	72053556	STREET ELBOW 3/4NPT X 90°	1	71.	72532360	ADAPTER 1-1/16MSTR 3/4MJIC	1

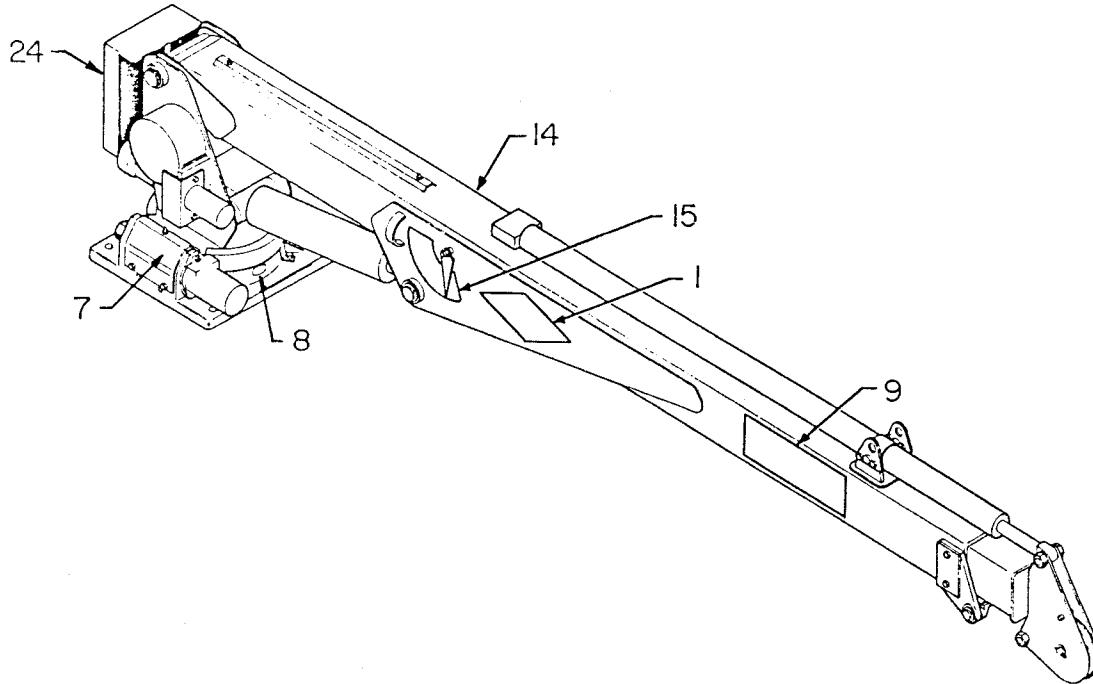
Figure D-25. Installation Kit - PTO (Part Number 93705207)



ITEM PART NO.	DESCRIPTION	QTY
1. 70029251	IMT DIAMOND	2
2. 70392813	DECAL-DANGER ELECTRO	1
3. 70392814	DECAL-DANGER OPERATOR	1
4. 70392815	DECAL-DANGER OPERATION	1
5. 70392861	DECAL-DANGER 2-BLOCKING	1
7. 70392863	DECAL-DANGER HOIST PERS	1
8. 70392864	DECAL-DANGER OUTRG STD CLR	2
9. 70392865	DECAL-DANGER ELECTRO	4
10. 70392866	DECAL-DANGER OPER COND	1
11. 70392867	DECAL-DANGER OUTRG MOVING	1
12. 70392868	DECAL-DANGER LOADLINE	4
13. 70392888	DECAL-DANGER OPER RESTRICT	1
14. 70392889	DECAL-DANGER RC ELECTRO	1
15. 70392524	DECAL-ROTATE CRANE/GREASE	1
16. 70392399	DECAL-LUBE WORM	1
17. 70391612	DECAL-GREASE WKLY LEFT	2
18. 70391613	DECAL-GREASE WKLY RIGHT	3
19. 70391598	DECAL-WARNING OUTRG	2
20. 71391522	DECAL-ANGLE CHART RH	1
21. 71391523	DECAL-ANGLE CHART LH	1
22. 71392245	CAPACITY PLACARD	2
23. 71392095	DECAL-CAUTION AMPH CONN	1
24. 70392220	DECAL-814 IDENT	2
25. 70392213	DECAL-CAUTION WASH/WAX	1
26. 70392982	DECAL-CONTACT IMT	1

DECAL PLACEMENT	
ITEM NO.	LOCATION
2,3,4,5,25,10, 11,13,14,22, 26	AT OR NEAR REMOTE CONTROL STORAGE POINT
8,19	ONE ON EACH OUTRIGGER
9,12	ONE ON EACH SIDE OF CARRIER VEHICLE
15	AT TURNTABLE GREASE ZERK
17,18	AT ALL GREASE ZERKS
23	NEAR CONNECTOR

Figure D-26. Decal Kit - Power Unit (Part Number 95708631)



ITEM	PART NO.	DESCRIPTION	QTY
1.	70029251	IMT DIAMOND	2
2.	70391598	DECAL-WARNING OUTRG	2
3.	70391612	DECAL-GREASE WKLY LEFT	2
4.	70391613	DECAL-GREASE WKLY RIGHT	3
5.	70392220	DECAL-814 IDENT	2
6.	70392213	DECAL-CAUTION WASH/WAX	1
7.	70392399	DECAL-LUBE WORM	1
8.	70392524	DECAL-ROTATE CRANE/GREASE	1
9.	70392813	DECAL-DANGER ELECTRO	1
10.	70392814	DECAL-DANGER OPERATOR	1
11.	70392815	DECAL-DANGER OPERATION	1
12.	70392861	DECAL-DANGER 2-BLOCKING	1
13.	70392863	DECAL-DANGER HOIST PERS	1
14.	71391522	DECAL-ANGLE CHART RH	1
15.	71391523	DECAL-ANGLE CHART LH	1
16.	70392866	DECAL-DANGER OPER COND	1
17.	70392867	DECAL-DANGER OUTRG MOVING	1
18.	70392868	DECAL-DANGER LOADLINE	4
19.	70392888	DECAL-DANGER OPER RESTRICT	1
20.	70392889	DECAL-DANGER RC ELECTRO	1
21.	70392864	DECAL-DANGER OUTRG STD CLR	2
22.	70392865	DECAL-DANGER ELECTRO	4
23.	71392095	DECAL-CAUTION AMPH CONN	1
24.	71392245	CAPACITY PLACARD	2
25.	70392982	DECAL-CONTACT IMT	1
26.	70392891	DECAL-DANGER DRIVELINE	1
28.	71039134	DECAL-CAUTION OIL LEVEL	1
29.	70392109	DECAL-RETURN LINE	1
30.	70392108	DECAL-SUCTION LINE	1

DECAL PLACEMENT	
ITEM NO.	LOCATION
6,9,10,11,12, 13,16,17,19, 20,25,26,28, 24	AT OR NEAR REMOTE CONTROL STORAGE POINT
2,21	ONE ON EACH OUTRIGGER
22,18	ONE ON EACH SIDE OF CARRIER VEHICLE
8	AT TURNTABLE GREASE ZERK
3,4	AT ALL GREASE ZERKS
23	NEAR CONNECTOR
29	ON RESERVOIR AT RETURN LINE
30	ON RESERVOIR AT SUCTION LINE

Figure D-27. Decal Kit - PTO (Part Number 95708632)

ITEM	PART NO.	DESCRIPTION	QTY
1.	60109252	SADDLE TUBE	1
2.	60030162	WEAR PAD	1
3.	70086054	TAPE 1" X 6"	2
4.	52704207	RESERVOIR	1
5.	72060092	CAP SCR 1/2-13X1-1/4 HH GR5	4
6.	72063053	WASHER 1/2 LOCK	4
7.	73014671	FILL CAP	1
8.	73052001	PIPE PLUG 3/4 SQHD	1
9.	73141276	FILL NECK SCREEN	1
10.	52705061	SADDLE	1
11.	72060195	CAP SCR 3/4-10X7 HH GR5	1
12.	72062114	NUT 3/4-10 LOCK	1
13.	72060046	CAP SCR 3/8-16X1 HH GR5	4
14.	72062103	NUT 3/8-16 LOCK	4
15.	72063003	WASHER 3/8 WRT	4
16.	76392821	THREAD SEAL 3/8	4

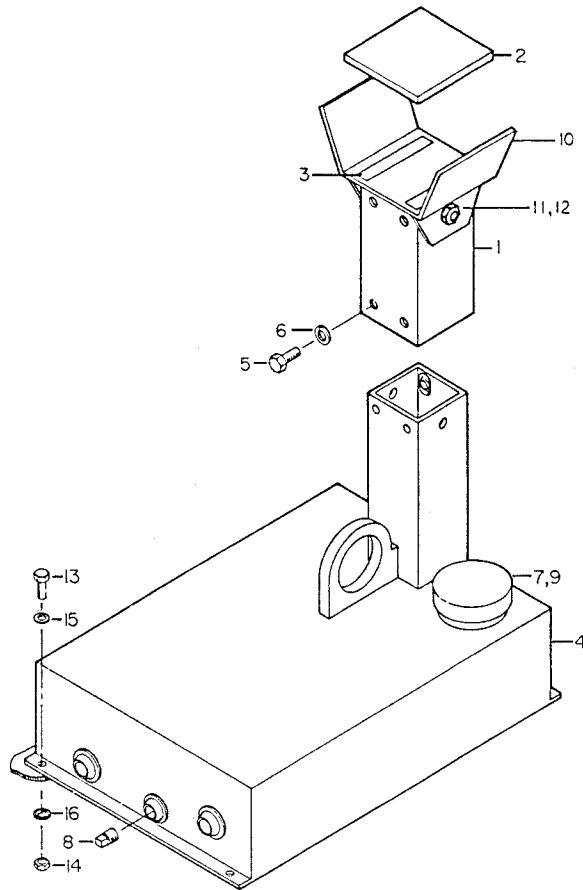


Figure D-28. OPTION - Reservoir / Boom Support (Part Number 51705060)

ITEM	PART NO.	DESCRIPTION	QTY
1.	52705061	SADDLE	1
2.	52706909	RESERVOIR	1
3.	72060092	CAP SCR 1/2-13X1-1/4 HH GR5	4
4.	72063053	WASHER 1/2 LOCK	4
5.	73014671	FILL CAP	1
6.	73052001	PIPE PLUG 3/4NPT SQHD MAG.	1
7.	73141276	FILL NECK SCREEN	1
8.	60030162	WEAR PAD	1
9.	70086054	TAPE 1" X 6"	2
10.	60109252	SADDLE TUBE	1
11.	72060195	CAP SCR 3/4-10X7 HH GR5	1
12.	72062114	NUT 3/4-10 LOCK	1
13.	72532261	SIGHT GAUGE 3/4NPT	1
14.	72060046	CAP SCR 3/8-16X1 HH GR5	4
15.	72062103	NUT 3/8-16 LOCK	4
16.	72063003	WASHER 3/8 WRT	4
17.	76392821	THREAD SEAL 3/8	4

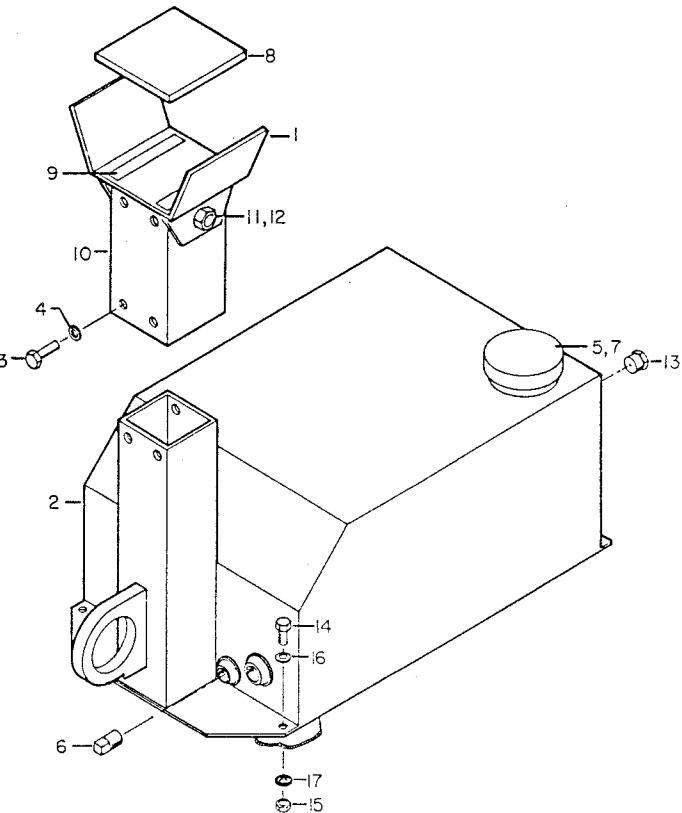
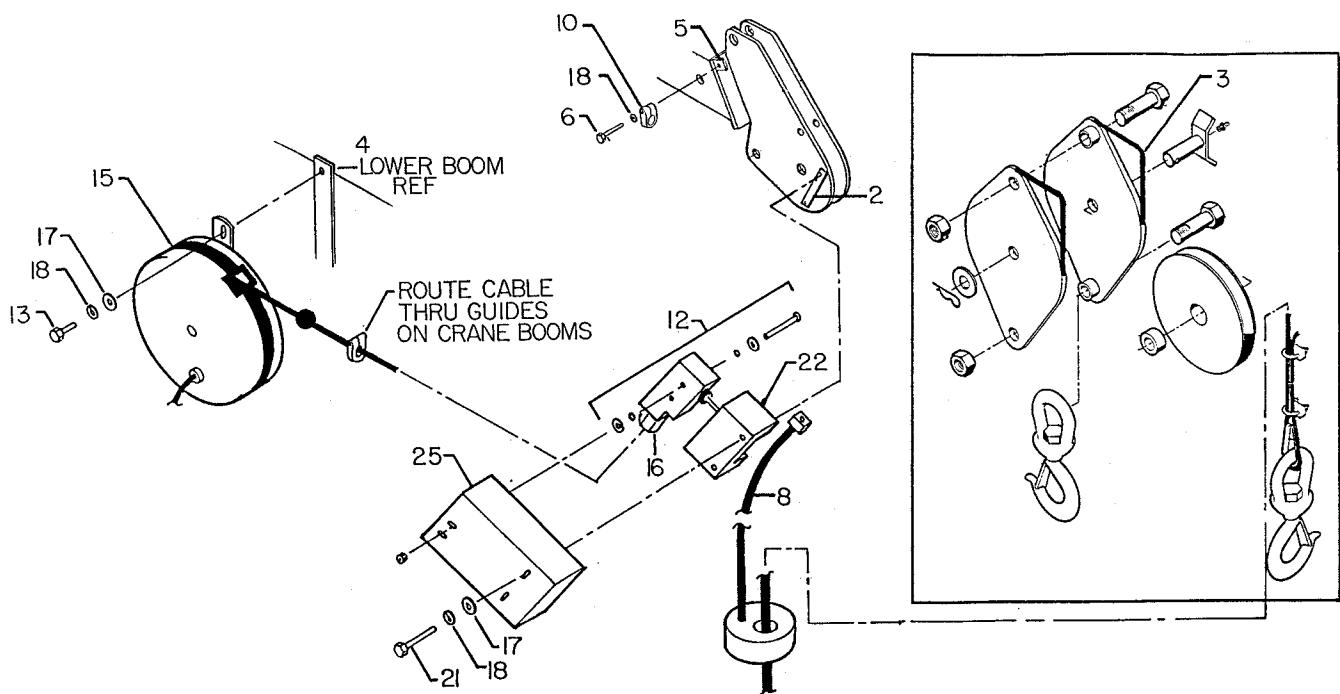
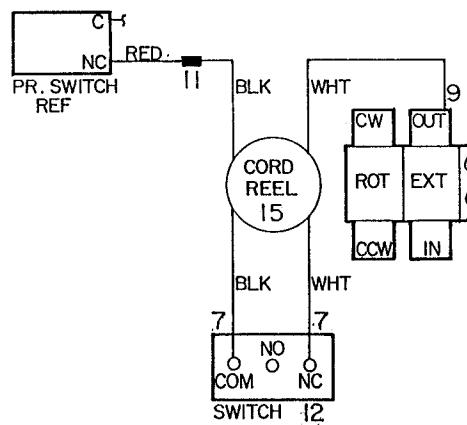


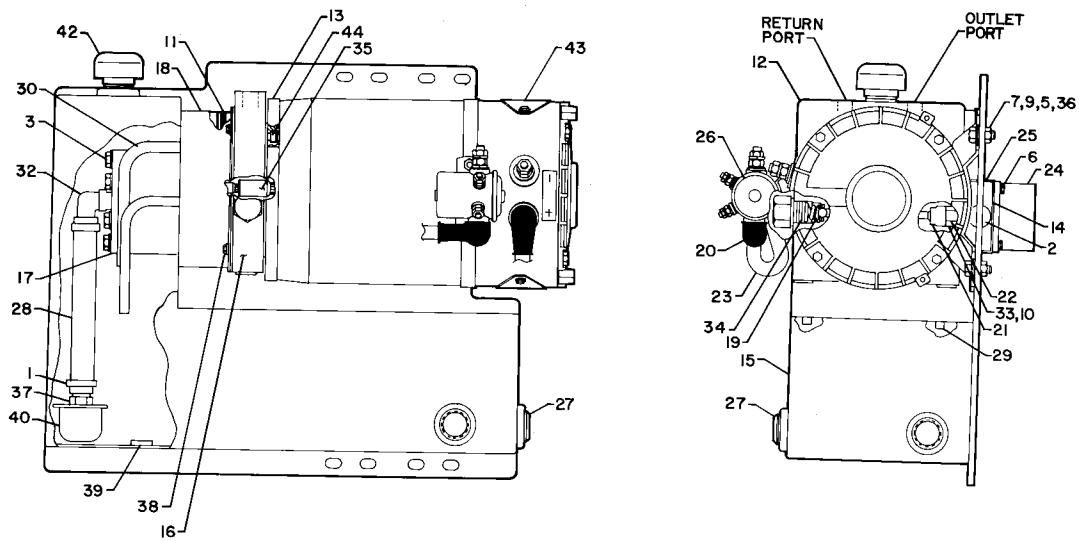
Figure D-29. OPTION - Reservoir / Boom Support 20 Gallon (Part Number 51706910)



ITEM	PART NO.	DESCRIPTION	QTY
1.	99900334	BOOM MODIFICATION DRAWING	1
2.	60113600	SWITCH MTG BAR	1
3.	60113592	SNATCH BLOCK BAR	2
4.	60113584	REEL MTG PLATE	1
5.	60107237	BLOCK (SEE 99900334 FOR LOC.)	4
6.	72060006	CAP SCR 1/4-20X1-1/2 HH GR5	4
7.	77040051	TERMINAL #8 16-14GA SPRSPD	2
8.	52709413	CABLE WELDMENT	1
9.	77040186	TERMINAL 1/4 FSLPON	1
10.	70034381	CORG GUIDE	4
11.	77040047	TERMINAL 1/4 MSLPON	1
12.	77041291	MICRO SWITCH	1
13.	72060001	CAP SCR 1/4-20X5/8 HH GR5	2
15.	70732193	CORD REEL	1
16.	77044468	STRAIN RELIEF 1/8 1/4	1
17.	72063001	WASHER 1/4 WRT	4
18.	72063049	WASHER 1/4 LOCK	8
21.	72060008	CAP SCR 1/4-20X2 HH GR5	2
22.	60113594	MTG BLOCK	1
25.	60113593	COVER	1



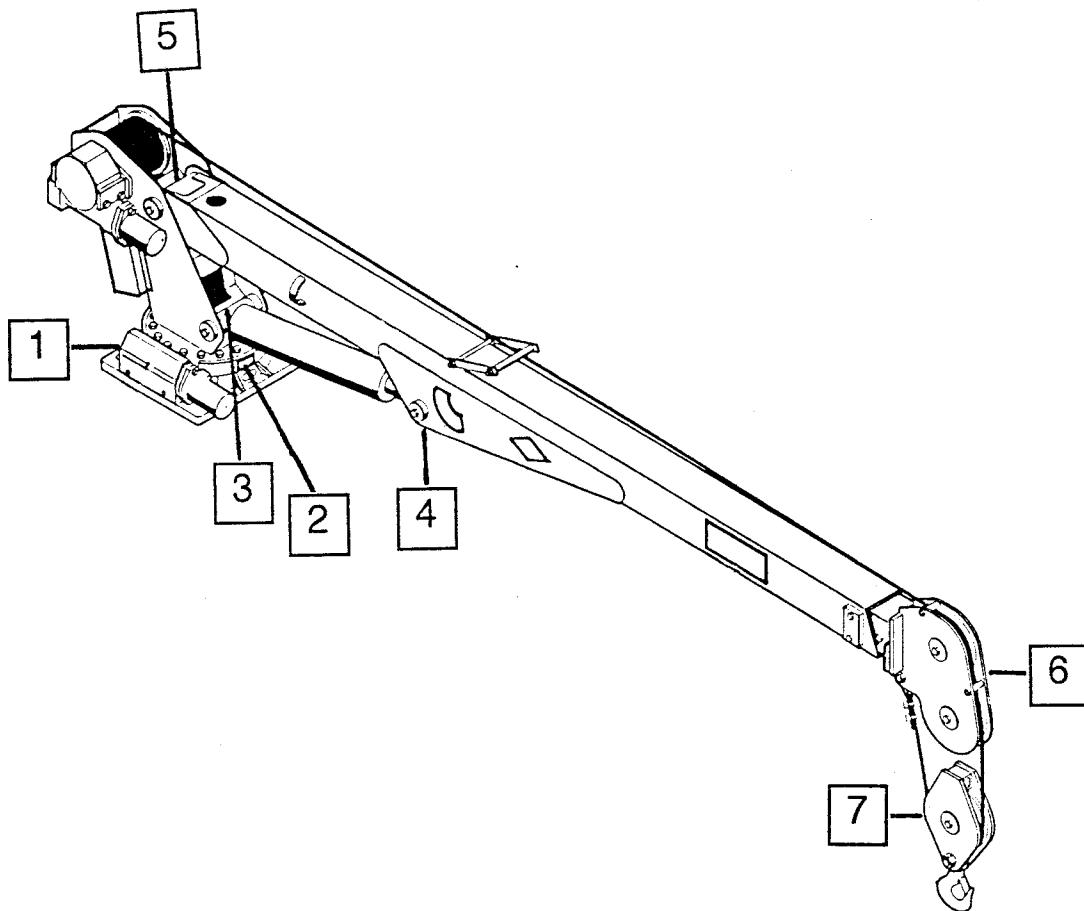
**Figure D-30. Conversion Kit - Anti 2-Block (Part Number 95709424)**



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	70034299	CABLE TIE	2	24.	77041238	SOLENOID	1
2.	77044299	TERMINAL BUSHING	1	25.	70029456	SOLENOID BRACKET	1
3.	72601360	CAP SCR 5/16X4	2	26.	77041336	START SWITCH	1
5.	72060731	CAP SCR 5/16X3/4	4	27.	72053395	PLUG 3/4NPT	2
6.	72601361	SCREW #32 X 1/2	6	28.	70392301	INLET TUBE	1
7.	72063002	WASHER	4	29.	70142711	RETURN TUBE	2
9.	72062001	NUT 5/16	4	30.	70142710	RETURN TUBE	1
10.	76392680	O-RING	1	32.	72633018	ADAPTER 90°	1
11.	76392300	O-RING	1	33.	73054495	RELEASE VALVE	1
12.	70034302	PROTECTOR	2	34.	72601257	ADJUSTMENT SCREW	1
13.	70143190	MOTOR MTG ADAPTER	1	35.	70143142	COUPLING	1
14.	70029457	COVER	1	36.	72063002	WASHER 11/32X1/2 LOCK	4
15.	70392302	NAME PLATE	1	37.	72532781	FITTING 3/8NPT	1
16.	70142708	END HEAD	1	38.	72601488	SCR #10X5/16	4
17.	73051429	PUMP	1	39.	73052052	MAGNET	1
18.	70142709	RESERVOIR	1	40.	73052043	SUCTION FILTER	1
19.	70731608	SPRING/BALL	1	41.	70392681	DECAL-POS/NEG ARROW	1
20.	70354493	RELIEF CAP	1	42.	70392298	BREATHER 3/4NPT	1
21.	73054494	VALVE SEAT	1	43.	77043041	MOTOR	1
22.	70731607	VALVE STEM	1	44.	72060703	BOLT 1/4X1/2 SH	4
23.	77044374	CABLE	1				

Figure D-31. Power Unit (Part Number 73051503)

## SECTION 5. Reference



ITEM	LOCATION DESCRIPTION	LUBRICANT	FREQUENCY
1.	WORM GEAR		
2.	TURNTABLE/BEARING GREASE EXTENSION *ROTATE CRANE WHILE GREASING	SHELL ALVANIA 2EP OR SHELL RETINAX "A"	
3.	LOWER CYLINDER BASE		
4.	LOWER CYLINDER ROD		
5.	MAST/LOWER BOOM HINGE PIN		
6.	SHEAVE PIN		
7.	SNATCH BLOCK PIN		

NOTE: All application points must be greased weekly under normal work loads and moderate weather conditions. Under severe operating conditions, lubrication should be performed more frequently. See Volume 1; Operation, Maintenance and Repair for additional lubrication requirements.

**Figure E-1. Grease Zerk Locations and Lubricant Requirements**

# Spare Parts List

This spare parts list does not necessarily indicate that the items can be expected to fail in the course of a year. It is intended to provide the user with a stock of parts sufficient to keep the unit operating with no down-time waiting for parts. Obviously, there may be part failures not covered by this list.

The item numbers shown on this list correspond to those on the figure listed.

FIGURE	ITEM NO. PART NO.	DESCRIPTION	QTY
D-4.	4	60030116 THRUST BEARING	2
D-4.	7	70055147 BEARING	1
D-4.	8	70055148 BEARING	1
D-4.	9	70056307 WORM GEAR	1
D-4.	10	71056308 TURNTABLE BEARING	1
D-4.	19	72062162 NUT 9/16-12 HEX GR8	15
D-4.	24	72063117 WASHER 9/16 FLAT HARD GR8	15
D-4.	27	72601313 CAP SCR 9/16-12X3-1/2 HH GR8	15
D-4.	28	73051482 MOTOR	1
D-5.	21	72063117 WASHER 9/16 FLAT HARD GR8	12
D-5.	22	72601144 CAP SCR 9/16-12X2 HH GR8	12
D-6.	10	70055142 BEARING	1
D-6.	12	77041291 SWITCH	1
D-7.	10	70055142 BEARING	1
D-7.	12	77041291 SWITCH	1
D-7.	20	73051398 MOTOR	1
D-8.	6	71073921 HOOK 2-TON	2
D-8.	7	70055163 ROLLER BEARING	1
D-8.	16	70055162 INNER RACE	1
D-10.	15	60030097 WEAR PAD	1
D-11.	3	73054304 VALVE 10GPM	1
D-11.	17	9B101214 SEAL KIT	1
D-12.	5	60030061 SHEAVE W/BEARING	1
D-13.	5	60030061 SHEAVE W/BEARING	1
D-14.	1	73054304 VALVE 10GPM	1
D-14.	16	9B081012 SEAL KIT	1
D-19.	1	73054077 VALVE SECTION	1
D-19.	15	73014948 INLET W/RELIEF	1
D-20.	8	7Q072015 O-RING	1
D-20.	18	77041003 SOLENOID 12V	1
D-20.	19	77041251 RELAY 12V	2
D-20.	20	77041222 PRESSURE SWITCH	1
D-21.	10	7Q072015 O-RING	1
D-21.	20	77041003 SOLENOID 12V	1
D-21.	21	77041222 PRESSURE SWITCH	1
D-22.	11	77041345 TOGGLE SWITCH ST	2
D-22.	12	77041346 TOGGLE SWITCH DT	4
D-22.	13.	77041347 TOGGLE SWITCH DT MOMENTARY	1
D-23.	11	77041345 TOGGLE SWITCH ST	2
D-23.	12	77041346 TOGGLE SWITCH DT	4
D-25.	19.	77041003 SOLENOID 12V	1
D-25.	25	77041251 RELAY	2
REF	70048149	SUCTION FILTER ELEMENT	6
REF	73052006	RETURN FILTER ELEMENT	6

The information within this manual has been compiled and checked but errors do occur. To provide our customers with a method of communicating those errors we have provided the Manual Change Request form below. In addition to error reporting, you are encouraged to suggest changes or additions to the manual which would be of benefit to you. We cannot guarantee that these additions will be made but we do promise to consider them. When completing the form, please write or print clearly. Submit a copy of the completed form to the address listed below.

## MANUAL CHANGE REQUEST

DATE	PRODUCT MANUAL	814 Crane	MANUAL PART NO.	99900103-3/91
SUBMITTED BY				
COMPANY				
ADDRESS				
CITY, STATE, ZIP				
TELEPHONE				

ERROR FOUND

LOCATION OF ERROR (page no.): \_\_\_\_\_

DESCRIPTION OF ERROR: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

REQUEST FOR ADDITION TO MANUAL

DESCRIPTION OF ADDITION: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

REASON FOR ADDITION: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

MAIL TO: IOWA MOLD TOOLING Co., Inc.  
Box 189,  
Garner IA 50438  
ATTN: Technical Publications

# MANUFACTURER'S LIMITED WARRANTY

**WARRANTY COVERAGE** - Products manufactured by Iowa Mold Tooling Co., Inc. (IMT) are warranted to be free from defects in material and workmanship, under proper use, application and maintenance in accordance with IMT's written recommendations, instructions and specifications as follows:

1. Ninety (90) days; labor on IMT workmanship from the date of delivery to the end user.
2. One (1) year; original IMT parts from the date of delivery to the end user.

IMT's obligation under this warranty is limited to, and the sole remedy for any such defect shall be the repair or replacement (at IMT's option) of unaltered parts returned to IMT, freight prepaid, provided such defect occurs within the above stated warranty period and is reported within fourteen (14) days of its occurrence.

**IMPLIED WARRANTY EXCLUDED** - This is the only authorized IMT warranty and is in lieu of all other express or implied warranties or representations, including any implied warranties of merchantability or fitness for any particular purpose or of any other obligations on the part of IMT.

**ITEMS EXCLUDED** - The manufacturer gives no warranty on any components or parts purchased by the manufacturer, and such components as are covered only by the warranties of their respective manufacturers.

**WARRANTY CLAIMS** - Warranty claims must be submitted and shall be processed in accordance with IMT's established warranty claim procedure.

**WARRANTY SERVICE** - Warranty service will be performed by any IMT distributor authorized to sell new IMT products of the type involved or by any IMT Service Center authorized to service the type of product involved or by IMT in the event of direct sales made by IMT. At the time of requesting warranty service, the purchaser must present evidence of the date of delivery of the product. The purchaser shall pay any premium for overtime labor requested by the purchaser, any charge for making service calls and for transporting the equipment to the place where warranty work is performed.

**WARRANTY VOIDED** - All obligations of IMT under this warranty shall be terminated:(1) if service other than normal maintenance or normal replacement of service items is performed by someone other than an authorized IMT dealer, (2) if product is modified or altered in ways not approved by IMT.

**PURCHASER'S RESPONSIBILITY** - This warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper protection in storage, or improper use. The purchaser has the obligation of performing the care and maintenance duties discussed in IMT's written recommendations, instructions and specifications. Any damage which results because of purchaser's failure to perform such duties shall not be covered by this warranty. The cost of normal maintenance and normal replacement of service items such as filters, belts, etc. shall be paid by the purchaser.

**CONSEQUENTIAL DAMAGES** - The only remedies the purchaser has in connection with the breach or performance of any warranty on IMT products are those set forth above. In no event will the dealer, IMT or any company affiliated with IMT, be liable for business interruptions, loss of sales and/or profits, rental or substitute equipment, costs of delay or for any other special, indirect, incidental or consequential losses, costs or damages.

**REPRESENTATIONS EXCLUDED** - IMT products are subject to no expressed, implied or statutory warranty other than herein set forth, and no agent, representative or distributor of the manufacturer has any authority to alter the terms of this warranty in any way whatsoever or to make any representations or promises, express or implied, as to the quality or performance of IMT products other than those set forth above.

**CHANGE IN DESIGN** - IMT reserves the right to make changes in design or improvements upon its products without imposing any obligation upon itself to install the same upon its products theretofore manufactured.

Effective January, 1984

This parts manual is provided to the user to assist in servicing the equipment. It is the property of Iowa Mold Tooling Co., Inc and, as such, may not be reproduced either whole or in part, whether by chemical, electrostatic, mechanical or photographic means without the expressed written permission of an officer of Iowa Mold Tooling Co., Inc. One manual is provided with each piece of new equipment and additional manuals may be obtained at a nominal price.

**IOWA MOLD TOOLING Co., Inc.**  
500 Hwy 18 West - Garner - IA 50438  
515-923-3711

A SUDBURY COMPANY