
Manual Part # 99900954

3820 Parts & Specifications

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Revisions

DATE	LOCATION	DESCRIPTION
20040730	Release of 2004 Radio Remote	ECN 9524 - Updated valvebank from 73733380 to 73733941; added radio kit 99903629.
20041019	31717067 & 31717274 Winch Kit drawings.	ECN 9059-4 - change from 70149785 collar to 70149793 collar in winch kits.
20050323	41717133	ECN 9715 - process improvement to boom weldment. Moved winch/cable hook pages to Boom Assemblies section.
20050629	41715268	ECN 9774 - removed thread lock from rotator bearing bolts.
		Moved winch-cable-hook kits and winch drawings from boom to base/mast section.
20050831	Winch, Hydraulic Drawings	ECN 9823 - Changed winch motor.
	99903728, 99903729	ECN 9877 - Change to purchased decal kits - 99903728 replaced 95717508, 99903729 replaced 95717149.
20050930	Cylinders, Boom Assemblies, Outrigger Assemblies, Spare Parts List.	ECN 9805-1 - Implemented cylinder change in boom assemblies, spare parts list. ECN 9934 - Implemented welded sheaves, pins in boom assemblies.
20051115	71411798	Correction to 71411798 parts list.
20060925	99903728, 99903729	ECN 10200 – Added 70392982 to decal kits.
20070410	41717133	ECN 10380 – Changed 71411793 to 3B210013.

CHAPTER 1

Introduction

This volume deals with information applicable to your particular crane. For operating, maintenance and repair instructions, refer to Telescopic Crane Volume 1: OPERATION, MAINTENANCE AND REPAIR. (IMT part number 99903514.)

We recommend that this volume be kept in a safe place in the office.

This manual is provided to assist you with ordering parts for your IMT 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. This crane was designed and built to meet the standards of ANSI/ASME B30.5, Mobile & Locomotive Cranes. Contact the American Society of Mechanical Engineers (www.asme.org) for more information.

Throughout this manual, three means are used to draw 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 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.

For a safe work environment, treat this equipment with respect and service it regularly.

CHAPTER 2

Specifications

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General Specifications

GENERAL SPECIFICATIONS	MODEL 1H 1M	MODEL 2H
CRANE RATING *	38,000 ft-lb (5.26 ton-meters)	38,000 ft-lb (5.26 ton-meters)
REACH (from centerline of rotation)	20'-0" (6.10 m)	20'-6" (6.2 m)
HYDRAULIC EXTENSIONS (2)	60" (152.4 cm)	60" (152.4 cm) 48" (121.9 cm)
MANUAL EXTENSION	48" (121.9 cm)	N/A
LIFTING HEIGHT (from base of crane)	21'-6" (6.55 m)	22'-1" (6.73 m)
CRANE WEIGHT	1400 lb (635 kg)	1545 lb (700 kg)
OUTRIGGER SPAN (required option) - Crane Side from Centerline of Chassis	83" (210.8 cm)	83" (210.8 cm)
STORAGE HEIGHT (crane only)	30" (76.2 cm)	30" (76.2 cm)
MOUNTING SPACE REQUIRED (crane base)	20" x 21" (50.8 cm x 53.3 cm)	20" x 21" (50.8 cm x 53.3 cm)
OPTIMUM PUMP CAPACITY (PTO Driven)	10 U.S. GPM	10 U.S. GPM
SYSTEM OPERATING PRESSURE	3000 psi (207 bar)	3000 psi (207 bar)
LOWER BOOM CYLINDER	4" bore; 21-5/8" stroke (10.2 cm bore; 54.9 cm stroke)	4" bore; 21-5/8" stroke (10.2 cm bore; 54.9 cm stroke)
EXTENSION BOOM CYLINDER	2.5" bore; 60" stroke (6.4 cm bore; 152.4 cm stroke)	2.5" bore; 60" + 48" stroke (6.4 cm bore; 152.4 cm + 121.0 cm stroke)

GENERAL SPECIFICATIONS	MODEL 1H 1M	MODEL 2H
HORIZONTAL CENTER OF GRAVITY (from centerline of rotation)	36" (91.4 cm)	39" (99.1 cm)
VERTICAL CENTER OF GRAVITY (from bottom of crane base)	19" (48.3 cm)	19" (48.3 cm)
TIE-DOWN BOLT PATTERN (on center)	14-3/4" x 14-3/4" (37.5 cm x 37.5 cm)	14-3/4" x 14-3/4" (37.5 cm x 37.5 cm)
ROTATIONAL TORQUE	9000 ft-lb (1.2 ton-m)	9000 ft-lb (1.2 ton-m)

* Crane rating (ft-lb) is the rated load (lb) multiplied by the respective distance (ft) from centerline of rotation with all extensions retracted and lower boom in horizontal position.

Performance Characteristics

	SPECIFICATION	PTO
ROTATION	400° (7.0 rad)	34 seconds
LOWER BOOM ELEVATION	-5° to +80° (-0.1 to +1.4 rad)	8.5 seconds
EXTENSION CYLINDER 1H 1M	60" (152.4 cm)	9.5 seconds
EXTENSION CYLINDER 2H	60" & 48" (152.4 cm & 121.9 cm)	18 seconds total
WINCH	single part line	27 ft/min (8.1 m/min)
WINCH	two part line	13 ft/min (3.9 m/min)

* All times based on 10 GPM (37.9 lpm) PTO delivery rate.

System Specifications

POWER SOURCE

PTO DRIVEN - Integral mounted hydraulic pump and PTO application. Other standard power sources may be used. Minimum power required is 23.5 horsepower based on 10 GPM (37.9 liters/min) at 3,000 PSI (207 bar).

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 extend side of the lower boom cylinder is equipped with a 10 gpm counterbalance valve. 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.

ROTATION SYSTEM

Turntable bearing with external worm gear powered with a high-torque hydraulic motor through a self-locking worm. Total gear reduction is 85 to 1.

HYDRAULIC SYSTEM (PTO DRIVEN)

The hydraulic system is an open-centered, full-pressure system that requires 10 GPM (37.85 liters/min.) optimum oil flow at 3000 psi (207 bar). It is equipped with a four-section, stack-type, electric, remote control valve with 30-foot control cable. The system includes separate hydraulic oil reservoir, suction line filter, and return-line filter.

EXCESSIVE LOAD LIMIT SYSTEM (ELLS)

A pressure switch which is mounted on the extend side of the lower boom cylinder and connected electrically to the lift side of the winch, the extend side of the extension boom, and the down side of the lower boom provides the capacity alert system. If the operator attempts to lift a load exceeding the rated capacity of the crane, the winch lift, extension out and lower boom down functions will not operate. To relieve the situation, the operator may set the load down (winch down) or retract the extension boom (extension in).

WINCH

The winch is powered using a hydraulic motor driving a 38:1 worm gear. The line speed of 27.0 ft/minute (8.1 m/min), under no load, is achieved at an optimum oil flow of 10 GPM (37.9 liters/min) and one-part line. Maximum single line lifting capacity of the winch is 3900 lb (1770 kg). Maximum two-part line lifting capacity of the winch is 7500 lb (3400 kg). The winch is equipped with 85 feet (25.9 m), 3/8" (9.5 mm), 6X25 FW PRF RRL IWRC XIPS wire rope. Nylon sheaves are located at the tip of the extension boom. The ratio of winch drum and sheave pitch diameter is 18.6:1 for the drum and 18:1 for the snatch block and boom tip sheave. A compact anti-two block device is included to prevent the lower block or hook assembly from coming in contact with the boom sheave assembly.

MINIMUM CHASSIS SPECIFICATIONS

	1H 1M & 2H
CHASSIS STYLE	Conventional Cab
WHEELBASE	154" (391 cm)
CAB-TO-AXLE	84" (213 cm)
RESISTANCE TO BENDING MOMENT	360,000 in-lb (4149 kg-m)
FRAME SECTION MODULUS	10 cubic inches
FRONT AXLE RATING (GAWR)	5000 lb (2268 kg)
REAR AXLE RATING (GAWR)	9500 lb (4309 kg)
GROSS VEHICLE RATING	14,500 lb (6577 kg)
TRANSMISSION	4 speed

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

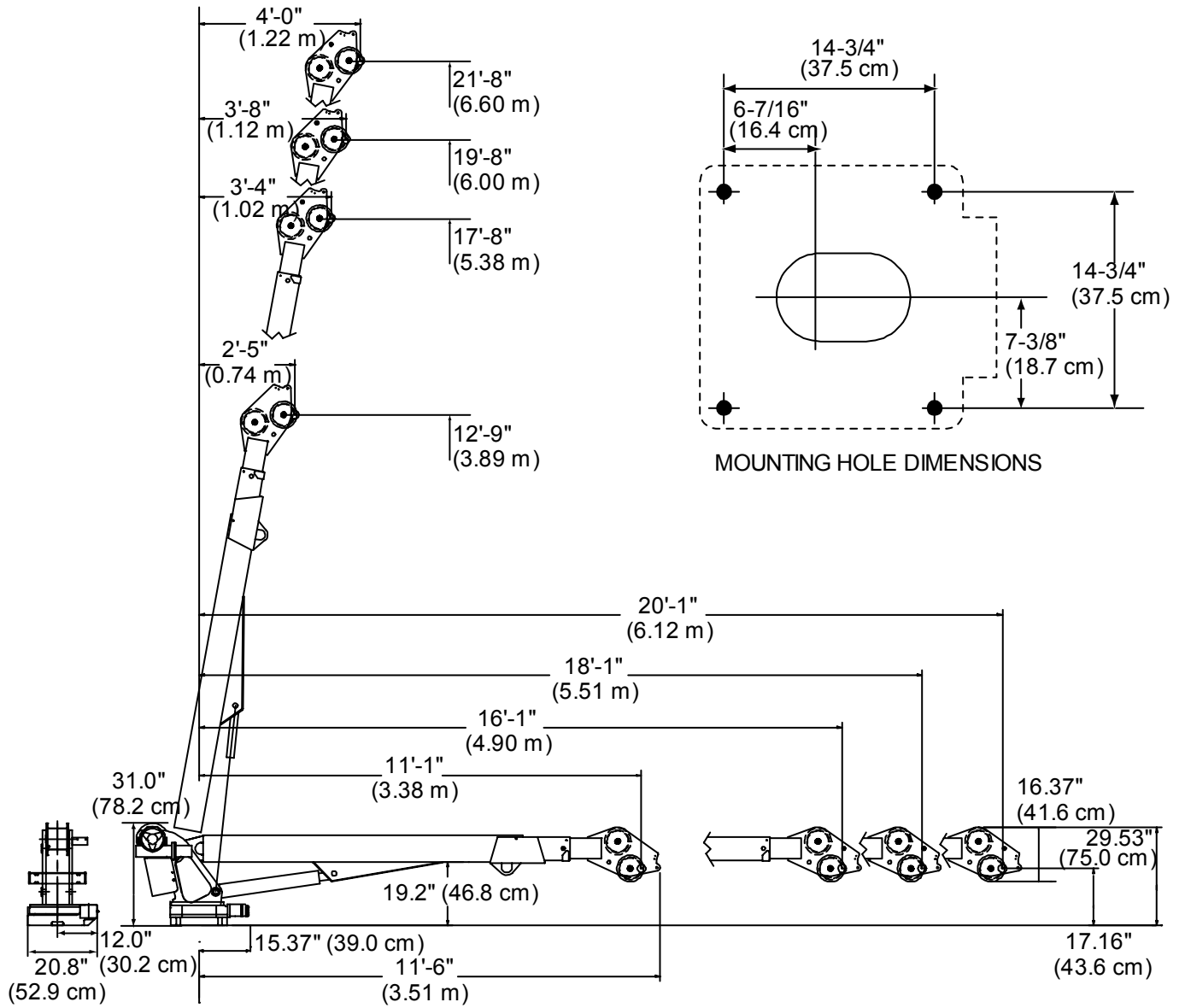
NOTES:

- 1 GAWR means Gross Axle Weight Rating. GAWR is dependent on all vehicle components including axles, tires, wheels, springs, brakes, steering and frame strength meeting the manufacturer's recommendations. Always specify GAWR when purchasing a truck.
- 2 Minimum axle requirements may increase with use of diesel engines, longer wheelbase or service bodies. Contact the factory for more information.
- 3 Weight distribution calculations are required to determine final axle loading.

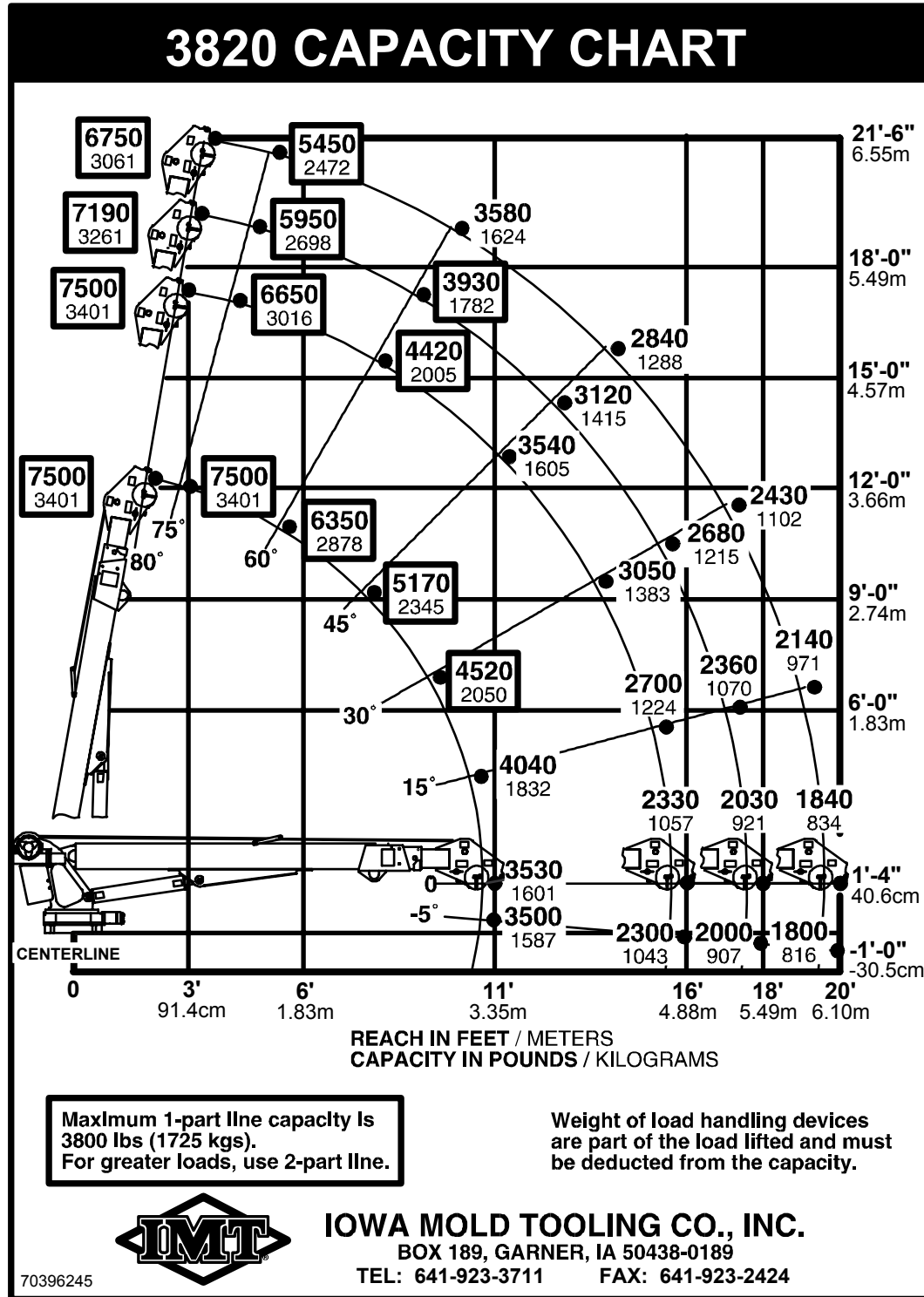
All chassis, crane and body combinations must be stability-tested to ensure stability per ANSI B30.5

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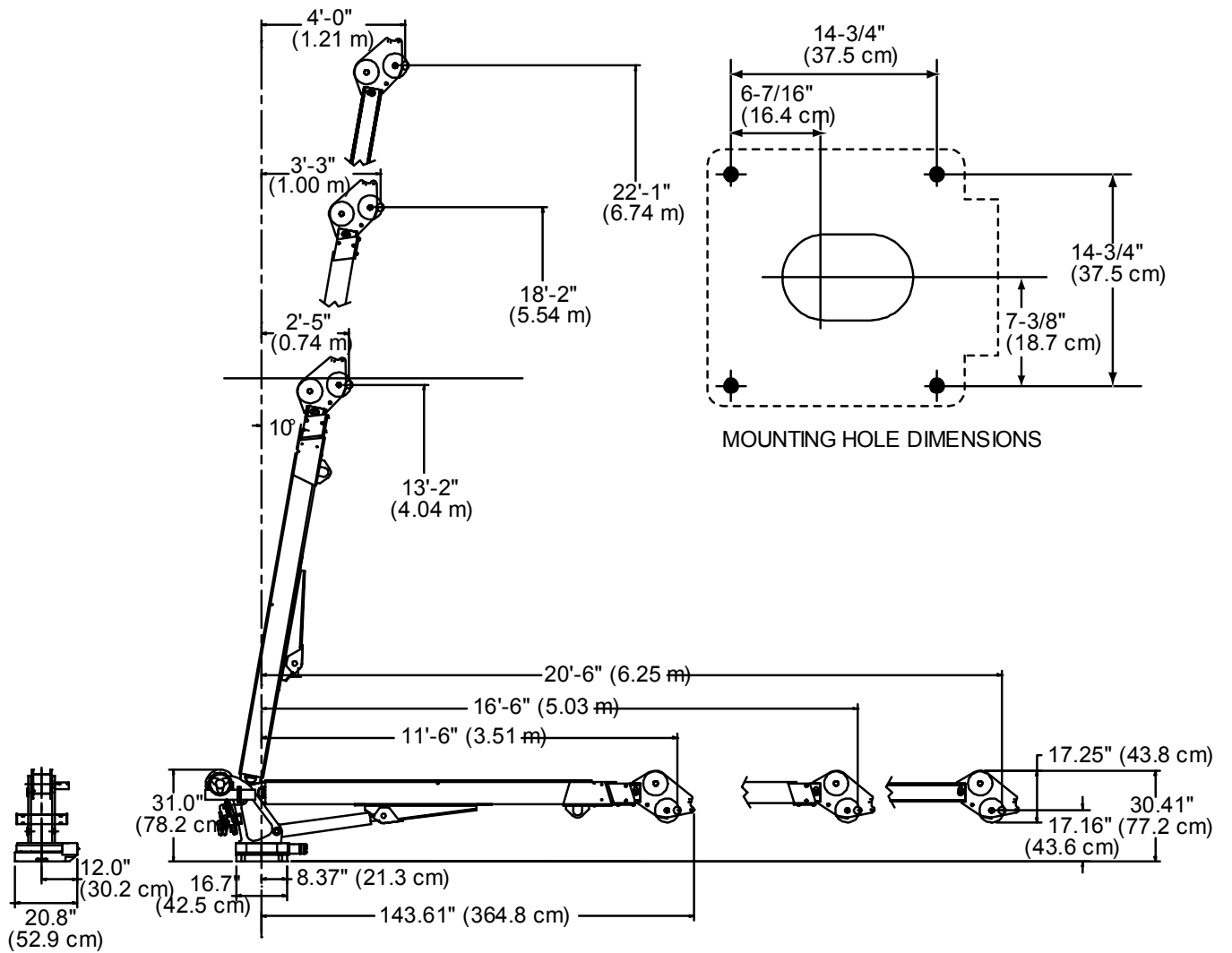
Geometric Configuration, 3820 1H 1M



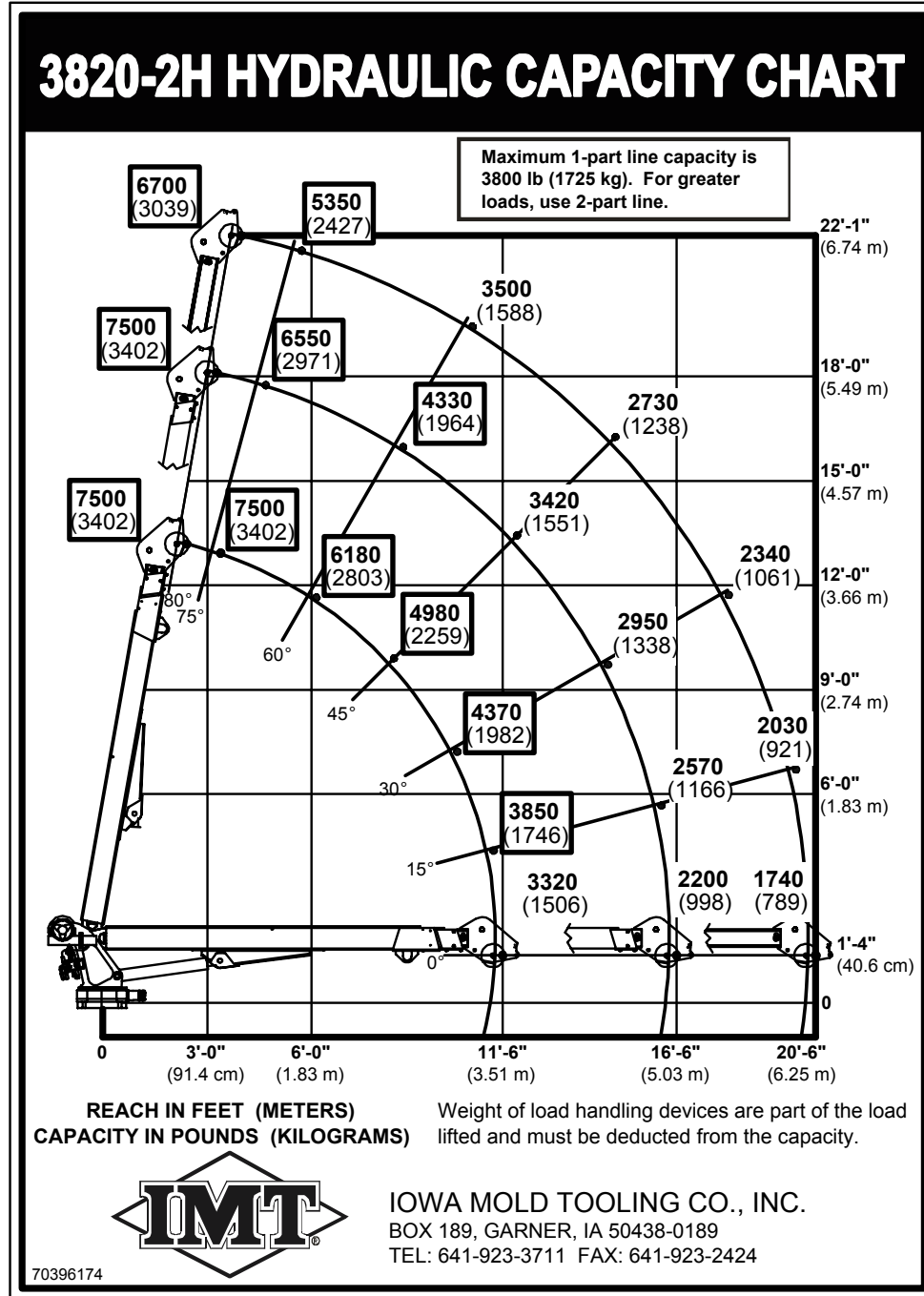
Capacity Chart, 3820 1H 1M



Geometric Configuration, 3820 2H



Capacity Chart, 3820 2H



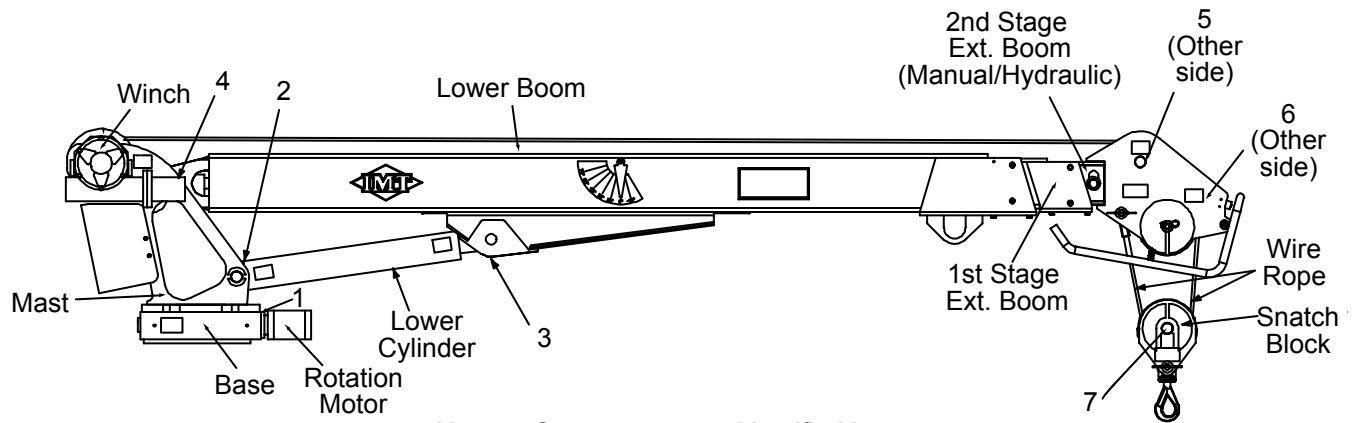
CHAPTER 3

Crane Reference

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Assemblies and Grease Zerk Locations



Note: Components are identified by name; grease zerks are identified by number.

ITEM	LOCATION DESCRIPTION	LUBRICANT	FREQUENCY
1.	Gear Rotator Grease Extension *Rotate Crane While Greasing.	Shell Alvania 2EP	Weekly
2.	Lower Cylinder Base	or Shell Retinax "A"	
3.	Lower Cylinder Rod		
4.	Mast/Lower Boom Hinge Pin		
5.	Upper Sheave Pin		
6.	Lower Sheave Pin		
7.	Snatch Block Sheave 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 the Volume 1: Telescopic Crane Operation & Safety (99903514) for additional lubrication requirements.

Recommended 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 the minimal down-time waiting for parts. There may be parts failures not covered by this list. Parts not listed are considered as not being Critical or Normal Wear items during the first year of operations and you need to contact the distributor or manufacturer for availability.

ASSEMBLY DESCRIPTION		
IMT PART #	NAME	QUANTITY
BASE ASSEMBLY (41714695)		
51395121	HOSE	1
GEAR ROTATOR (71056543)		
70395074	O-RING	1
70395076	SEAL	2
70145786	SNAP RING	1
70055271	BEARING-CONE	2
70055281	BEARING-CUP	2
70145501	BEARING RETAINER	1
70056550	WORM	1
73145506	SHIM .005	2
73145505	SHIM .015	2
73145504	SHIM .030	2
76395075	GASKET	1
LOWER BOOM ASSEMBLY - 1H 1M / 2H		
60120124	WEAR PAD	4
LOWER CYLINDER		
94396795	SEAL KIT	1
77041561	PRESSURE SWITCH	1
73540052	COUNTERBALANCE VALVE	1
71411947	BUSHING	4
EXTENSION BOOM ASSEMBLY - 1H 1M		
60030189	WEAR PAD	1
EXTENSION BOOM ASSEMBLY - 2H		
60120124	WEAR PAD	4
60030189	WEAR PAD	1
60030137	WEAR PAD	1
EXTENSION CYLINDER - 1H 1M		
73054999	COUNTERBALANCE VALVE	1
94396790	SEAL KIT	1

EXTENSION CYLINDER - 2H		
73054999	COUNTERBALANCE VALVE	1
94396789	SEAL KIT	1
WINCH/CABLE/HOOK KIT		
70580143	CABLE ASSEMBLY	1
51713168	CORD REEL	1
77041459	SWITCH	1
52709413	CABLE STOP	1
60030108	ROLLER CABLE GUIDE	1
60030134	SHEAVE	1
71073035	HOOK	1
70074004	HOOK SAFETY LATCH	1
WINCH ASSEMBLY		
76393174	O-RING	1
76393173	OIL SEAL	1
70055202	BALL BEARING	2
70732542	BRAKE KIT	1
76393171	GASKET	2
VALVEBANK		
73054934	PROPORTIONAL SOLENOID	1
73054936	SOLENOID VALVE	1
INSTALLATION KIT		
73052006	FILTER ELEMENT, 10 MIC	2

Crane Installation

GENERAL

This section contains instructions for the installation of your crane. Prior to installing the crane and hydraulic components, make sure that the chassis is ready to receive the crane (see the Installation Section of the IMT Telescopic Crane Operation & Safety Manual, 99903514).

Reinforce the chassis frame, as necessary, and install the PTO and pump.

Each installation may vary in components used. It is important to use hoses of proper length, pumps of correct size, and PTO's of adequate speed. Study the applicable installation kit in the parts section before attempting any installation.

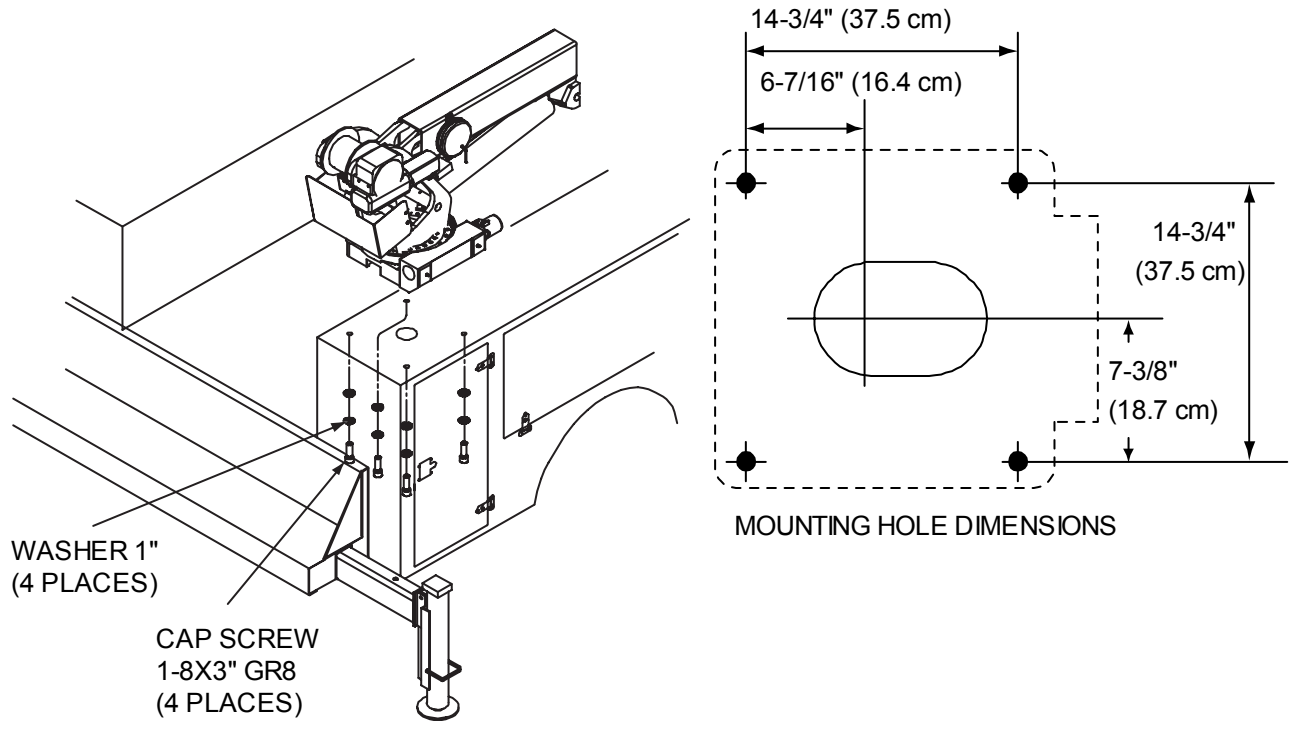
CRANE INSTALLATION

In addition to meeting Minimum Chassis Specifications, there must be sufficient room for mounting the crane and the platform must be strong enough to support the crane and rated load. Install the 3820 crane only on an IMT designed and approved truck body. The body must be designed to sustain the forces imposed by the crane when lifting the full rated load. In addition, an IMT designed body is designed to take full advantage of the standard reservoir placement. This reservoir is installed in the cargo area of the body. Before attempting to install the crane, the body must be installed.

To install the crane:

- 1 Use a lifting device capable of lifting the weight of the crane, up to 1460 lb (660 kg). Attach fabric slings to the crane lower boom, centered approximately 18 inches from the mast hinge. Make certain the crane is well balanced on the slings by slowly lifting approximately 6" off the ground. Lift the crane, apply a bead of waterproof compound, such as silicon based caulk, to the bottom of the base. Move the chassis under the crane and lower the crane into the desired position.

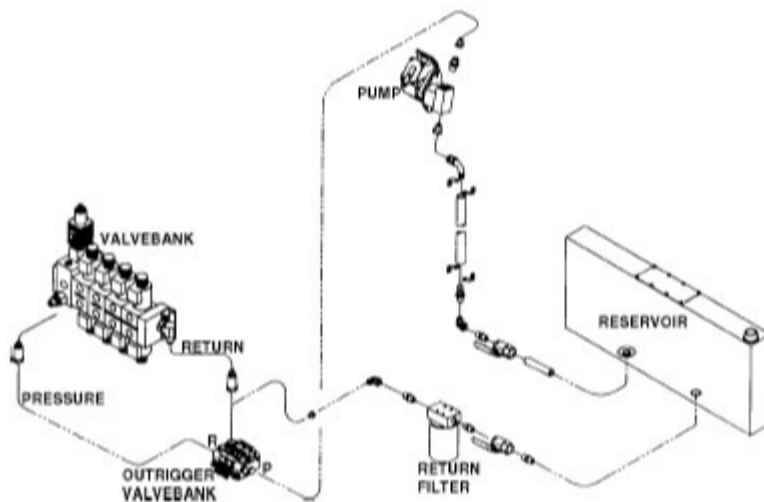
- 2 Install the 1-8x3" mounting cap screws and 1" washers to secure the crane base to the truck body (see figure). Torque the cap screws to 680 ft-lb (94 kg-m).



Hydraulic Installation

Before installation, familiarize yourself with the installation kit drawing in the parts section for specific hydraulic components used. The figure below is used to show major components and general hose routings only.

- 1 Plumb the hydraulic components as shown in the applicable installation kit in the parts section. Make certain all fittings are securely tightened and that hoses are free of possible chafing or contact with hot or sharp edges which could cause damage.
- 2 Refer to Volume 1 for hydraulic oil specifications. Fill the hydraulic reservoir.
- 3 Check all connections for leaks.
- 4 Start the vehicle engine and test each crane function individually. Conduct a visual inspection to make certain that there are no leaks and that everything is operating properly.
- 5 Check oil level in the reservoir and add oil if necessary.



Crane Control

IMT's telescopic cranes are controlled by radio or tethered remote controls. This telescopic crane includes a tethered remote control with a radio remote control option. For complete details on operating your telescopic crane, refer to the IMT Telescopic Crane Operation & Safety Manual (part number 99903514).

Parts

Parts Information

GENERAL

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

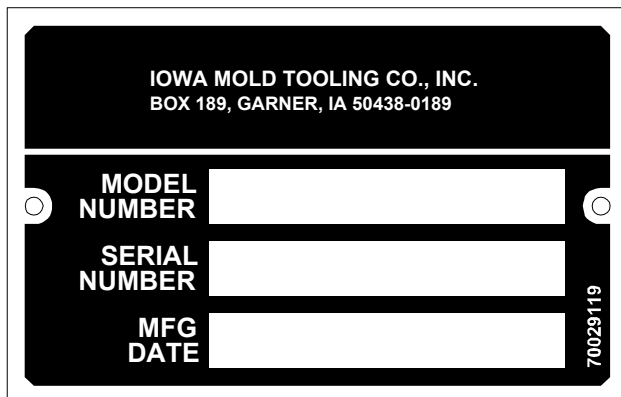
WARNING

DO NOT ATTEMPT TO REPAIR ANY COMPONENT WITHOUT READING THE INFORMATION CONTAINED IN THE REPAIR SECTION. PAY PARTICULAR ATTENTION TO STATEMENTS MARKED WARNING, CAUTION, OR NOTE IN THAT SECTION. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN DAMAGE TO THE EQUIPMENT, PERSONAL INJURY, OR DEATH.

CRANE IDENTIFICATION

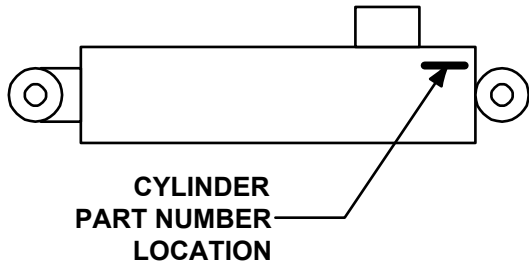
Every IMT crane has an identification placard (see figure) attached to the mast. When ordering parts, communicating warranty information, or referring to the unit in correspondence, always include the serial number and model numbers. All inquiries should be addressed to:

Iowa Mold Tooling Co., Inc.
Box 189, Garner, IA 50438-0189
Telephone: 641-923-3711
Technical Support Fax: 641-923-2424



CYLINDER IDENTIFICATION

To insure proper replacement parts are received, it is necessary to specify the complete number/letter sequence for any part requested. Part numbers may be cross checked by comparing the stamped identification on the cylinder case (See figure below) against the information contained in the service manual. You must include the part number stamped on the cylinder case when ordering parts.



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 the Crane Reference Section.

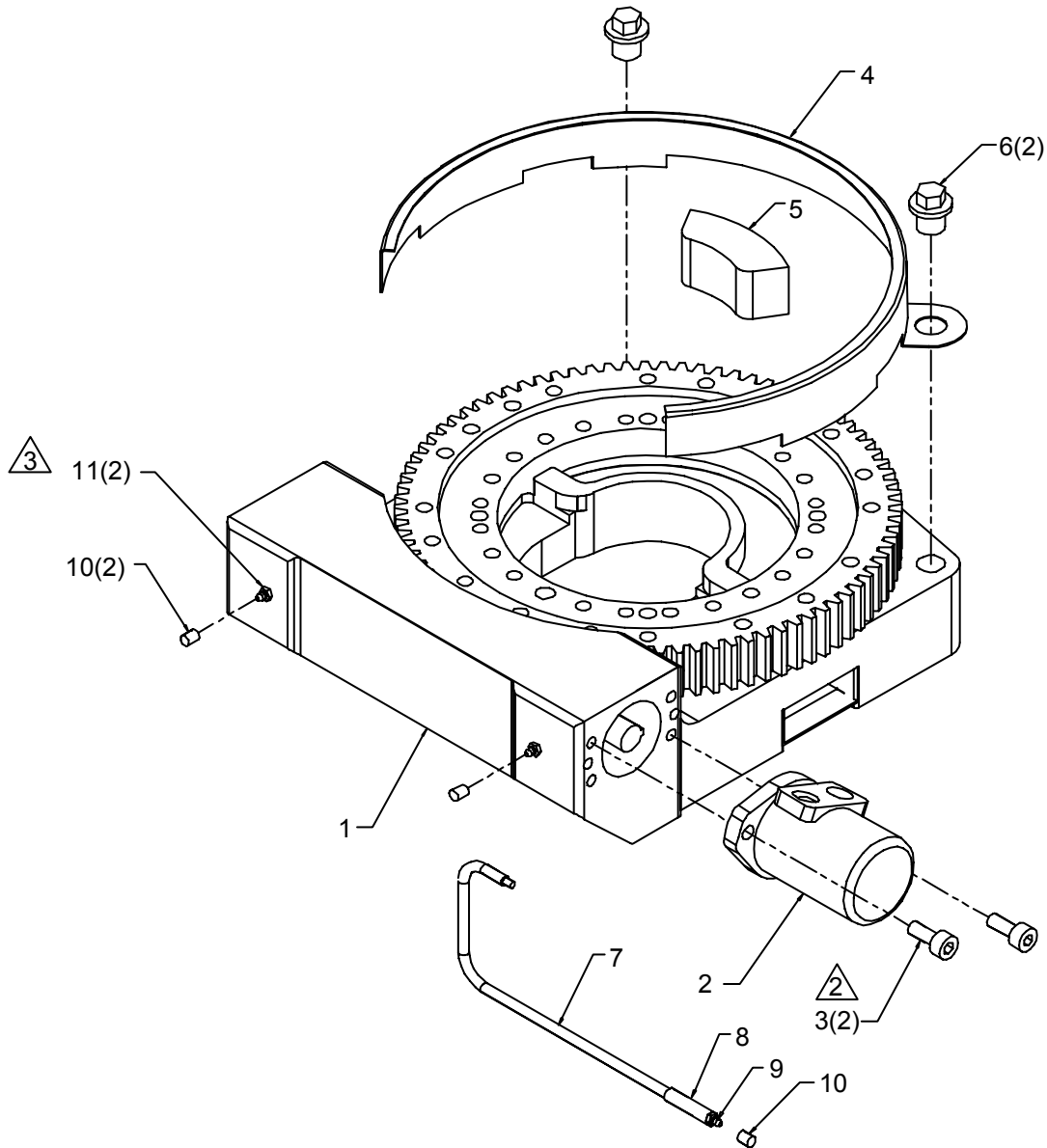
ORDERING REPAIR PARTS

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.

Base and Mast Assemblies

Base Assembly (41714695)



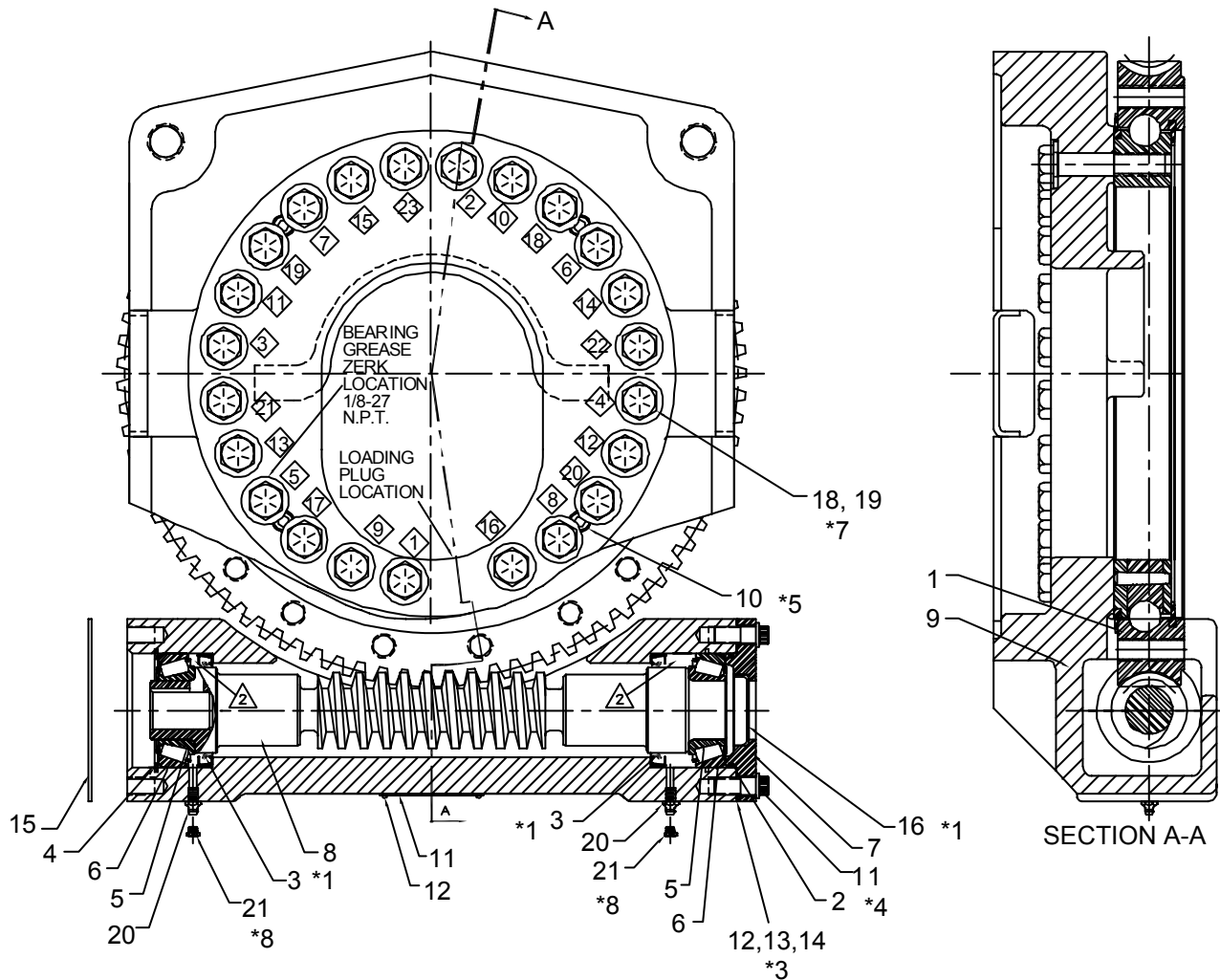
NOTES:

- 1 APPLY MOLUB-ALLOY 936F TO TURNTABLE BEARING AND WORM TEETH AT ASSEMBLY.
- 2 USE SERVICEABLE THREAD LOCK.
- 3 APPLY 3 PUMPS OF EXTREME PRESSURE GREASE (EP2) TO WORM BEARINGS. ROTATE CRANE FULLY AFTER APPLYING GREASE.

41714695 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71056543	GEAR ROTATOR (SEE DWG)	1
2.	73511070	HYDRAULIC MOTOR (WAS 73051919)	1
3.	72060795	CAP SCR 1/2-13X1-1/2 SH (WAS 72060794)	2
4.	60120192	GEAR GUARD	1
5.	60120138	SLIDE	1
6.	70029595	PLUG 1-8	2
7.	51395121	HOSE	1REF
8.	72053301	COUPLING 1/8NPT	1
9.	72053508	ZERK 1/8NPT	1
10.	70034382	CAP, GREASE (RED)	3
11.	72533605	ZERK(PART OF 1)	2REF

REV. D 20050831

Gear Rotator (71056543)



NOTES (*)

- 1 INSTALL SEALS #3 AND #21 WITH LOCTITE PLASTIC GASKET ON O.D. LUBRICATE SEAL SURFACE BEFORE ASSEMBLY.
- 2 PACK CAVITIES WITH EPO GREASE
- 3 SHIM TO OBTAIN 0.000 / 0.004 END PLAY ON WORM SHAFT.
- 4 LUBRICATE O-RING #2 WITH WORM GEAR OIL BEFORE INSTALLING.
- 5 INSTALL BOLTS #14 WITH LOCTITE #242.
- 6 SET BACKLASH BETWEEN WORM AND ROTATION BEARING 0.005 - 0.012.
- 7 TIGHTEN 5/8-11 UNC GRADE 8 MOUNTING BOLTS AS FOLLOWS: TIGHTEN PROGRESSIVELY AND AT 180° INTERVALS. FIRST INTERVAL AT 70 FT-LB. SECOND INTERVAL AT 140 FT-LB. THIRD INTERVAL AT 210 FT-LB. TIGHTEN BOLTS IN ORDER SHOWN IN DIAMONDS (<>). DO NOT USE LOCTITE ON MOUNTING BOLTS.
- 8 ITEM #33 SHIPS LOOSE. INSTALL ITEM #34 FOR SHIPPING.

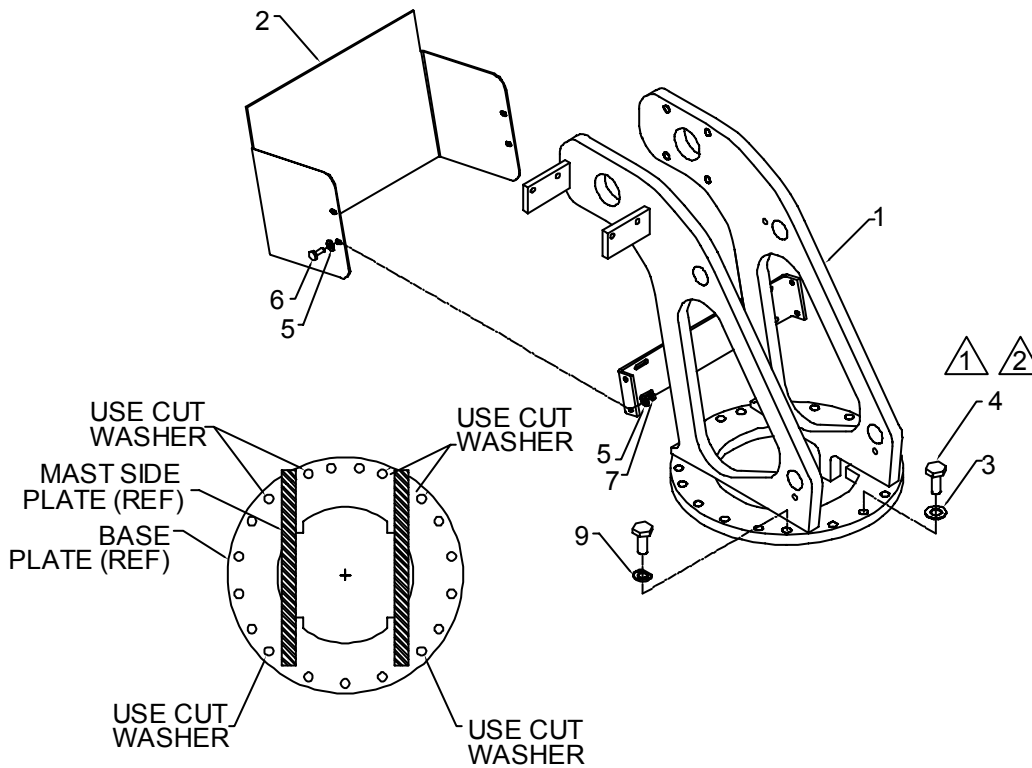
WARNING

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 DEATH OR SERIOUS INJURY.

71056543 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70056527	ROTATION BEARING	1
2.	70395074	O-RING	1
3.	70395076	SEAL	2
4.	70145786	SNAP RING	1
5.	70055271	BEARING-CONE	2
6.	70055281	BEARING-CUP	2
7.	70145501	BEARING RETAINER	1
8.	70056550	WORM	1
9.	70145787	HOUSING	1
10.	72601734	CAP SCR 3/8-16X1-1/4 SH	4
11.	72601733	CAP SCR 1/2-13X1-1/4 FERRY	4
12.	73145506	SHIM .005THK	2
13.	73145505	SHIM .015THK	2
14.	73145504	SHIM .030THK	2
15.	76395075	GASKET	1
16.	72533604	PLUG	1
17.	72661504	PIN 3/8X1	2
18.	72601751	CAP SCR 5/8-11X2-3/4 HHGR8	23
19.	72063219	WASHER 5/8 FLAT HARD	23
20.	72533605	ZERK	2
21.	72533439	VENT PLUG	2

REV. B 20031029

Mast Assembly (41715268)



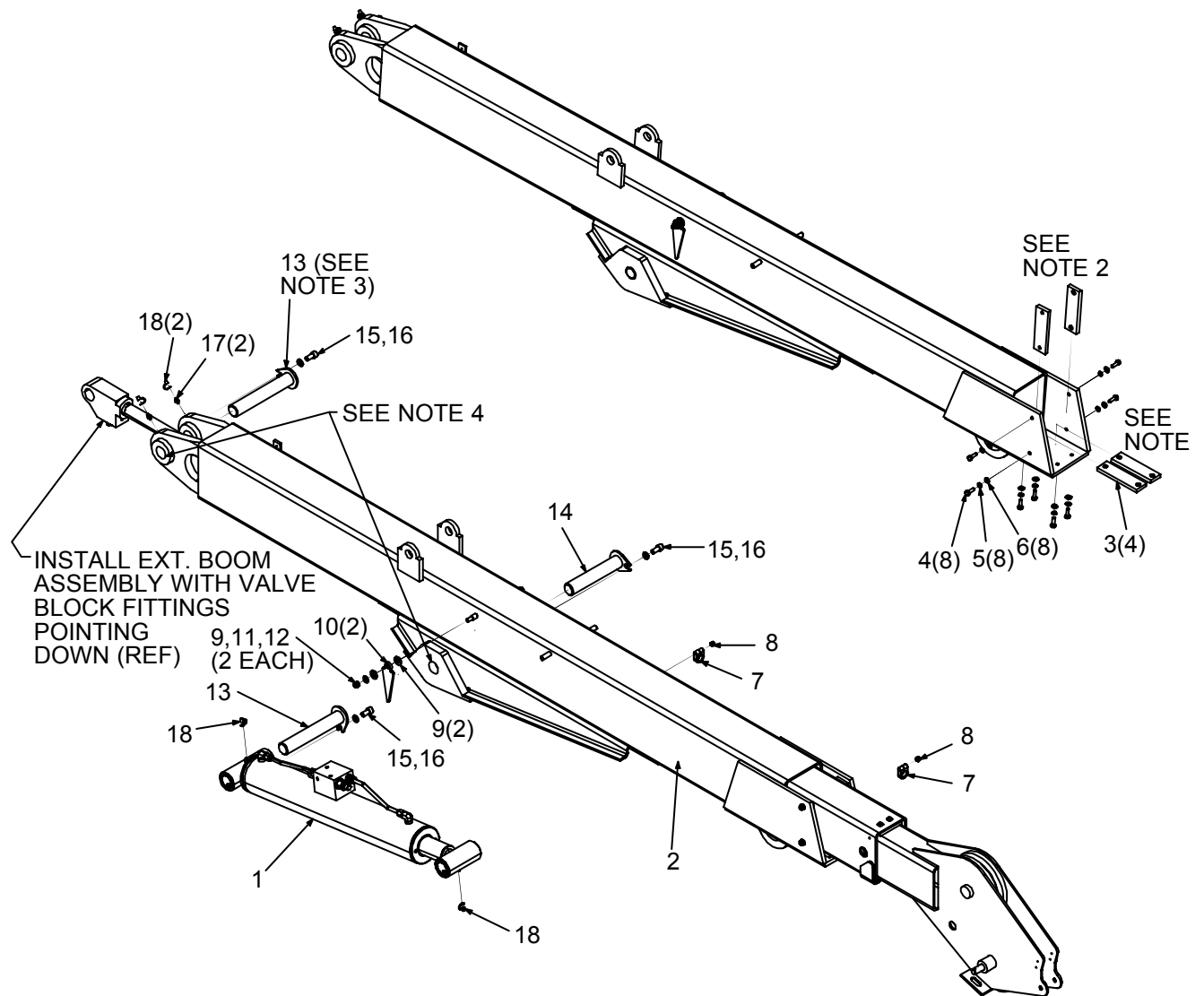
NOTES:

- 1 TORQUE ITEM #4 TO 160 FT-LB.
- 2 DO NOT USE THREAD LOCKER ON ITEM #4.

41715268 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52714977	MAST WLDMT	1
2.	60119128	VALVEBANK COVER	1
3.	72063119	WASHER 5/8 GR8 FLAT	13
4.	72601482	CAP SCR 5/8-11X2-1/2 HHGR8	19
5.	72063001	WASHER 1/4WRT	8
6.	72060004	CAP SCR 1/4-20X1 HHGR5	4
7.	72062104	NUT 1/4-20 HEX SELF LOCKING	4
8.	72063216	WASHER 5/8N FLAT-CUT	6

Boom Assemblies & Cylinders

Boom Assembly, Lower (41717137)



NOTES:

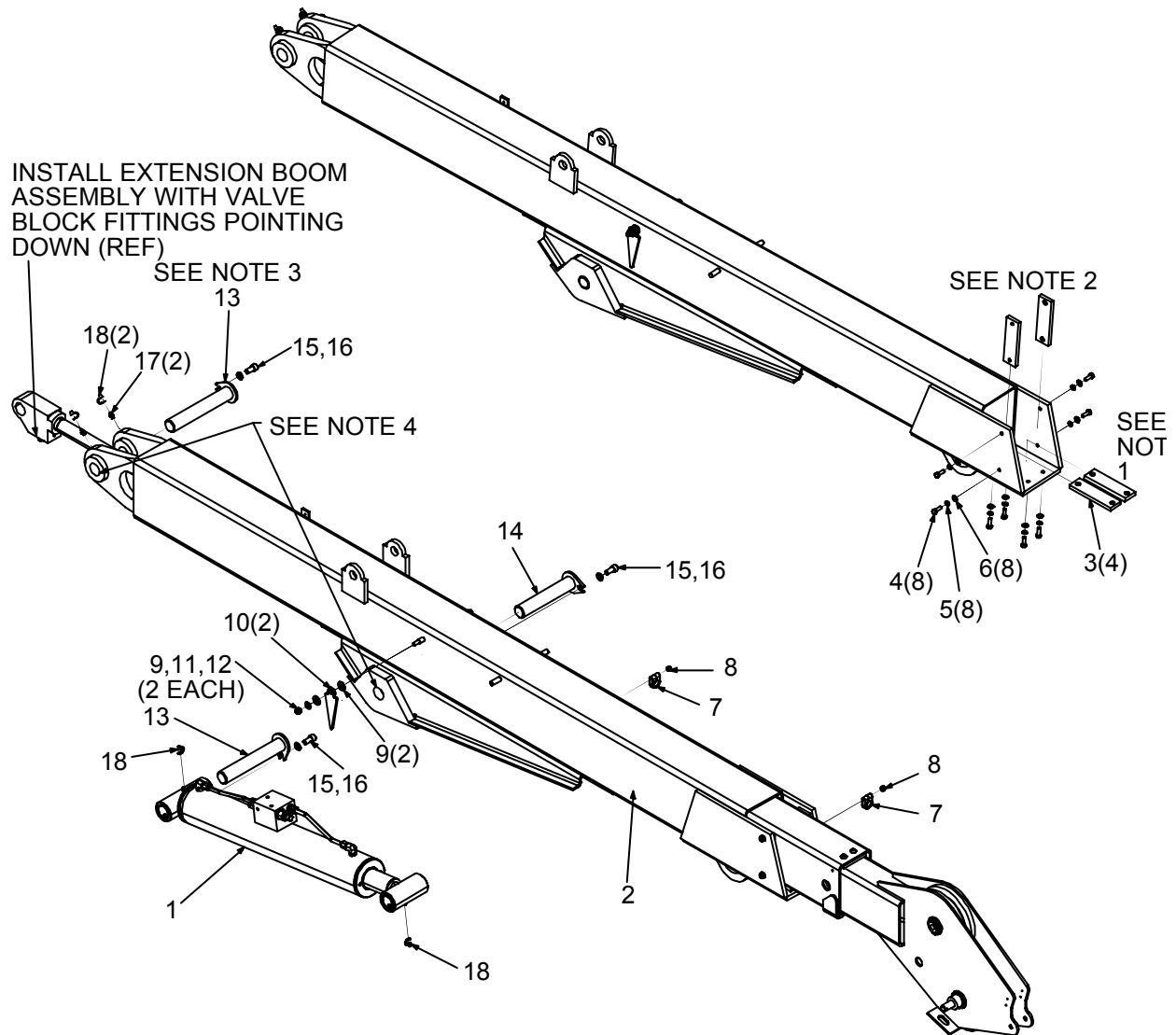
- 1 MOUNT BOTTOM TWO WEAR PADS BEFORE INSERTING THE MANUAL EXTENSION ASSEMBLY.
- 2 INSERT THE TWO SIDE WEAR PADS AFTER THE MANUAL EXTENSION IS INSTALLED.
- 3 PIN (ITEM #13) MUST GO THROUGH THE LOWER BOOM ASSEMBLY AND THE MANUAL EXTENSION ASSEMBLY. THE VALVE BLOCK FITTINGS MUST BE POINTED DOWN.
- 4 APPLY NEVER-SEEZ TO COLLAR I.D.
- 5 APPLY NEVER-SEEZ TO PIN. DO NOT EXCEED WIDTH OF BOOM COLLARS.

41717137 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411798	CYLINDER (WAS 51718546)	1
2.	52717135	WELDMENT-LOWER BOOM	1
3.	60120124	WEAR PAD	4
4.	72060293	CAP SCR .31-24X 1.00 HH GR5 Z	8
5.	72063050	WASHER .31 LOCK	8
6.	72063002	WASHER .31 FLAT	8
7.	70034381	SUPPORT	2
8.	72062104	NUT .25-20 HEX NYLOCK	2
9.	72063005	WASHER .50 FLAT	4
10.	60105544	PLATE-ANGLE PLASTIC	2
11.	72063003	WASHER .38 FLAT	2
12.	72062103	NUT .38-16 HEX NYLOCK	2
13.	52714976	PIN	2
14.	52715266	PIN	1
15.	72060793	CAP SCR .50-13X 1.00 SH ZINC	3
16.	72063053	WASHER .50 LOCK	3
17.	72053508	ZERK-NPT .12	2
18.	70034382	CAP-GREASE	4

REV. E 20050930

NOTE: 71411798 CYLINDER USED ON CRANES WITH SERIAL NUMBERS OF 3820051407 AND HIGHER.

Boom Assembly, Lower, Electric (41717273)

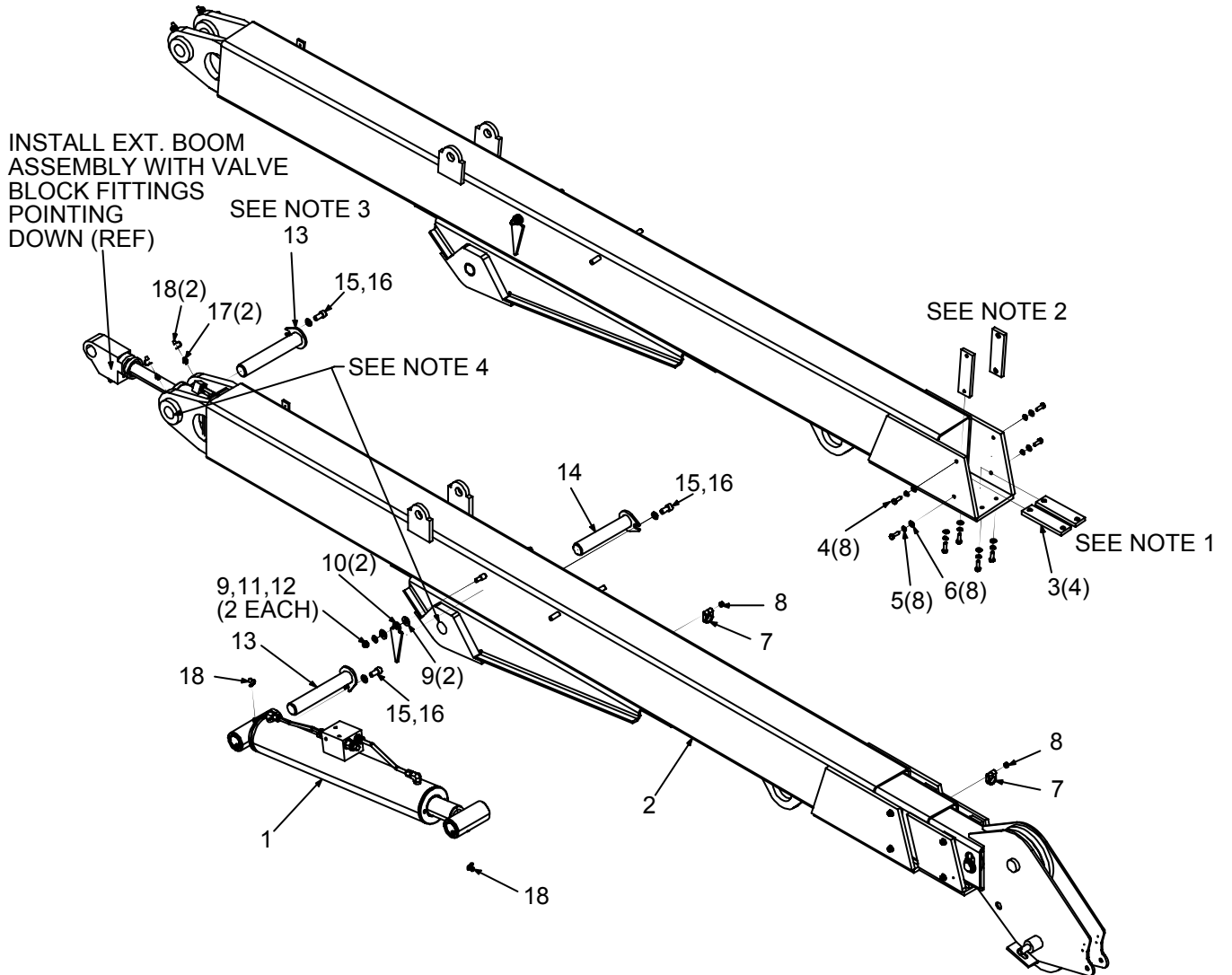


NOTES:

- 1 MOUNT BOTTOM TWO WEAR PADS BEFORE INSERTING THE MANUAL EXTENSION ASSEMBLY.
- 2 INSERT THE TWO SIDE WEAR PADS AFTER THE MANUAL EXTENSION IS INSTALLED.
- 3 PIN (ITEM #13) MUST GO THROUGH THE LOWER BOOM ASSEMBLY AND THE MANUAL EXTENSION ASSEMBLY. THE VALVE BLOCK FITTINGS MUST BE POINTED DOWN.
- 4 APPLY NEVER-SEEZ TO COLLAR I.D.
- 5 APPLY NEVER-SEEZ TO PIN. DO NOT EXCEED WIDTH OF BOOM COLLARS.

41717273 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411798	CYLINDER (WAS 3B210010, 51718546)	1
2.	52717272	WELDMENT	1
3.	60120124	WEAR PAD	4
4.	72060293	CAP SCR 5/16-24 X 1.00 HH GR5	8
5.	72063050	WASHER 5/16 LOCK	8
6.	72063002	WASHER 5/16 FLAT	8
7.	70034381	SUPPORT-GP STAUFF	2
8.	72062104	NUT 1/4-20 HEX NYLOC	2
9.	72063005	WASHER 1/2-FLAT	4
10.	60105544	PLATE-ANGLE PLASTIC	2
11.	72063003	WASHER 3/8 FLAT	2
12.	72062103	NUT 3/8-16 HEX NYLOC ZINC	2
13.	52714976	PIN-TYPE II 1.5 X 9.31	2
14.	52715266	PIN-TYPE II 1.5 X 8.31	1
15.	72060793	CAP SCR 1/2-13 X 1.00	3
16.	72063053	WASHER 1/2 LOCK	3
17.	72053508	ZERK-NPT 1/8	2
18.	70034382	CAP-GREASE	4

Boom Assembly, Lower, 2H (41717507)



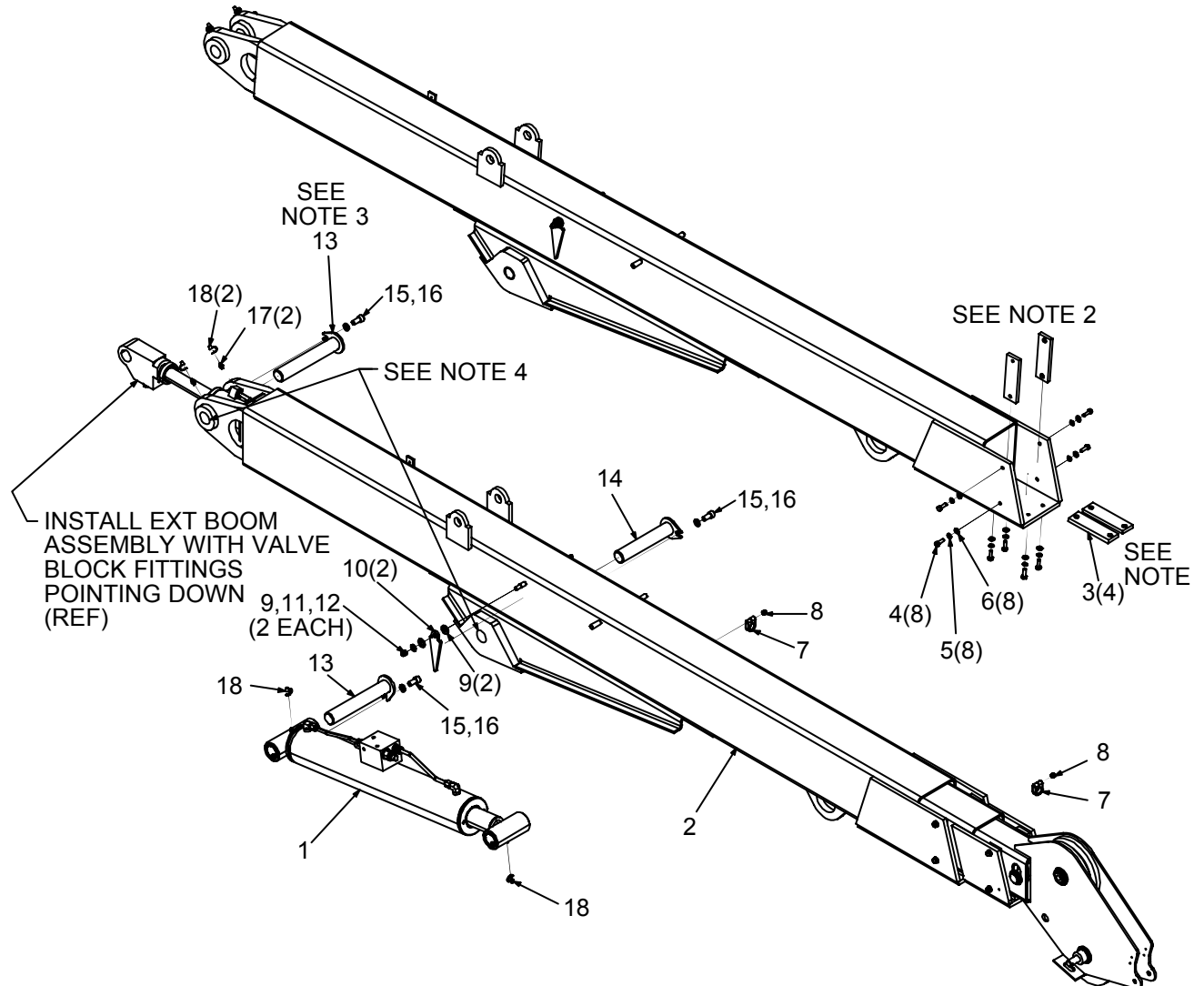
NOTES:

- 1 MOUNT BOTTOM TWO WEAR PADS BEFORE INSERTING THE MANUAL EXTENSION ASSEMBLY.
- 2 INSERT THE TWO SIDE WEAR PADS AFTER THE MANUAL EXTENSION IS INSTALLED.
- 3 PIN (ITEM #13) MUST GO THROUGH THE LOWER BOOM ASSEMBLY AND THE MANUAL EXTENSION ASSEMBLY. THE VALVE BLOCK FITTINGS MUST BE POINTED DOWN.
- 4 APPLY NEVER-SEEZ TO COLLAR I.D.
- 5 APPLY NEVER-SEEZ TO PIN. DO NOT EXCEED WIDTH OF BOOM COLLARS.

41717507 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411798	CYLINDER	1
2.	52717143	WELDMENT-LOWER BOOM	1
3.	60120124	WEAR PAD	4
4.	72060293	CAP SCR .31-24X 1.00 HH GR5 Z	8
5.	72063050	WASHER .31 LOCK	8
6.	72063002	WASHER .31 FLAT	8
7.	70034381	SUPPORT	2
8.	72062104	NUT .25-20 HEX NYLOCK	2
9.	72063005	WASHER .50 FLAT	4
10.	60105544	PLATE-ANGLE PLASTIC	2
11.	72063003	WASHER .38 FLAT	2
12.	72062103	NUT .38-16 HEX NYLOCK	2
13.	52714976	PIN	2
14.	52715266	PIN	1
15.	72060793	CAP SCR .50-13X 1.00 SH ZINC	3
16.	72063053	WASHER .50 LOCK	3
17.	72053508	ZERK-NPT .12	2
18.	70034382	CAP-GREASE	4

Boom Assembly, Lower, 2H Electric (41717535)



NOTES:

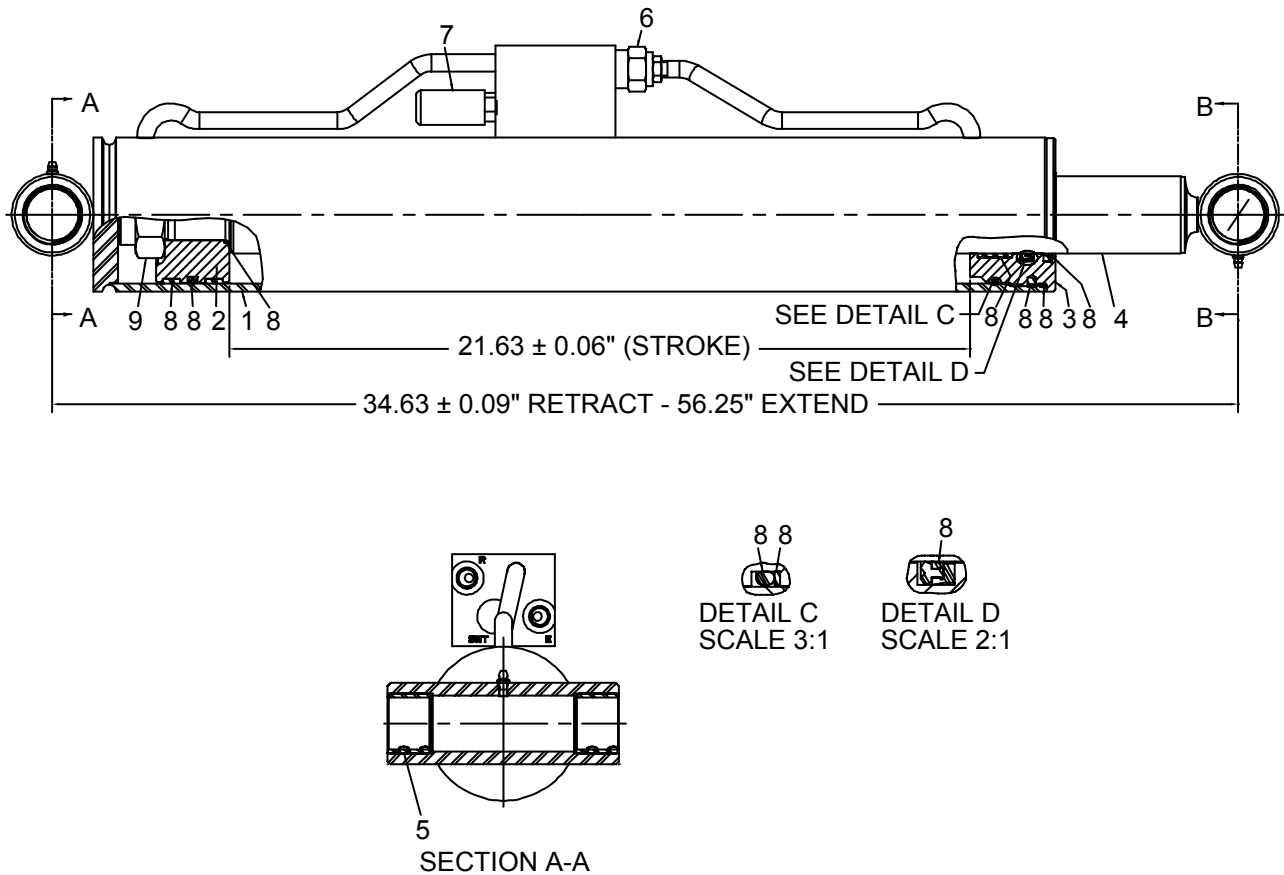
- 1 MOUNT BOTTOM TWO WEAR PADS BEFORE INSERTING THE MANUAL EXTENSION ASSEMBLY.
- 2 INSERT THE TWO SIDE WEAR PADS AFTER THE MANUAL EXTENSION IS INSTALLED.
- 3 PIN (ITEM #13) MUST GO THROUGH THE LOWER BOOM ASSEMBLY AND THE MANUAL EXTENSION ASSEMBLY. THE VALVE BLOCK FITTINGS MUST BE POINTED DOWN.
- 4 APPLY NEVER-SEEZ TO COLLAR I.D.
- 5 APPLY NEVER-SEEZ TO PIN. DO NOT EXCEED WIDTH OF BOOM COLLARS.

41717535 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411798	CYLINDER (WAS 3B210010, 51718546)	1
2.	52717534	WELDMENT	1
3.	60120124	WEAR PAD-NYLON	4
4.	72060293	CAP SCR 5/16-24X 1.00	8
5.	72063050	WASHER 5/16 LOCK ZINC	8
6.	72063002	WASHER 5/16 W FLAT	8
7.	70034381	SUPPORT	2
8.	72062104	NUT 1/4-20 HEX NYLOC ZINC	2
9.	72063005	WASHER 1/2 W FLAT	4
10.	60105544	PLATE-ANGLE PLASTIC	2
11.	72063003	WASHER 3/8 W FLAT	2
12.	72062103	NUT 3/8-16 HEX NYLOC ZINC	2
13.	52714976	PIN-TYPE II 1.50 X 9.31 (9.06)	2
14.	52715266	PIN-TYPE II 1.50 X 8.31 (8.06)	1
15.	72060793	CAP SCR 1/2-13X 1.00 SH ZINC	3
16.	72063053	WASHER 1/2 LOCK ZINC	3
17.	72053508	ZERK-NPT 1/8	2
18.	70034382	CAP-GREASE PRO20 GC-RED	4

Cylinder, Lower (71411798) (Eff. 9-05)

NOTE:

CRANES WITH SERIAL NUMBERS OF 3820051407 AND BEYOND USE THIS CYLINDER.



NOTES:

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

71411798 CYLINDER DATA	
EXTENDED	12.57 IN ³ , 1.18 GAL
RETRACTED	8.59 IN ³ , 0.80 GAL
CASE	4.0 BORE X ø4.50
ROD	ø2.25
DRY WEIGHT	82.1 LB
TEST PRESSURE	3000 PSI
OPERATING PRESSURE	2500 PSI
PORTS	SAE #6 O-RING BOSS (9/16-18 UNF-2B)
CYLINDER TUBE BURST PRESSURE	9,965 PSI
TORQUES	TORQUE LOCKNUT (#9) TO 1325-1450 FT-LB. USE LOCKTITE 271 OR EQUIVALENT.
	TORQUE HEAD GLAND (#3) TO 300-400 FT-LB
	TORQUE C-BAL VALVE (#6) TO 40-45 FT-LB
	TORQUE PRESSURE SWITCH (#7) TO 17-20 FT-LB

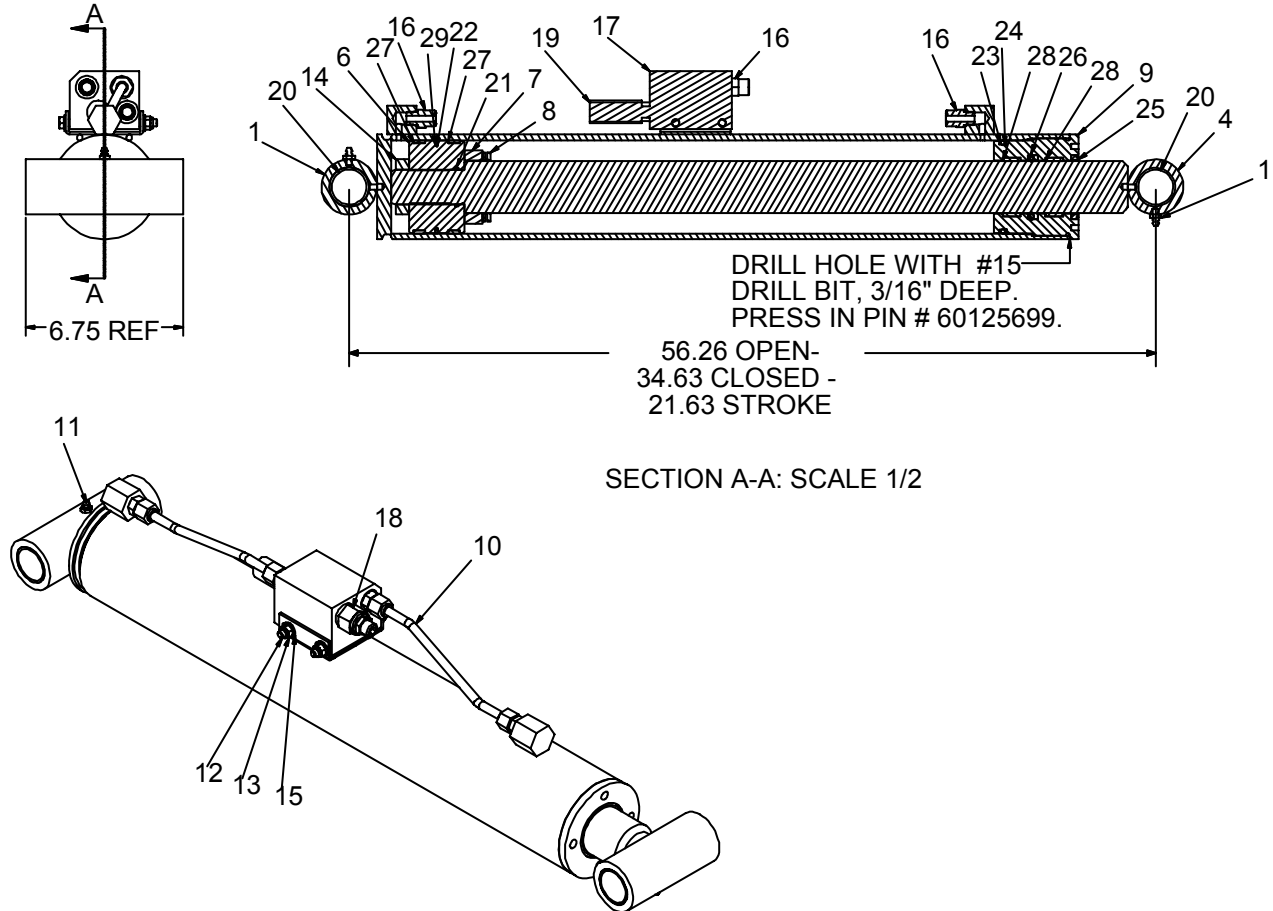
71411798 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411937	CASE WELDMENT	1
2.	71411940	PISTON	1
3.	71411939	HEAD GLAND	1
4.	71411938	ROD WELDMENT	1
5.	71411947	BUSHING - SPRING 1.50 X 1.25	4
6.	73540052	VALVE - COUNTERBALANCE	1
7.	77041561	PRESSURE SWITCH	1
8.	94396795	SEAL KIT	REF
9.	-REF-	1.50-12 UNF LOCKNUT	1

NEW 20050930

Cylinder, Lower (51718546) (Eff. 6-29-04 thru 8-05)

NOTE:

CRANES WITH SERIAL NUMBERS BEFORE 3820051407 USE THIS CYLINDER.



NOTES:

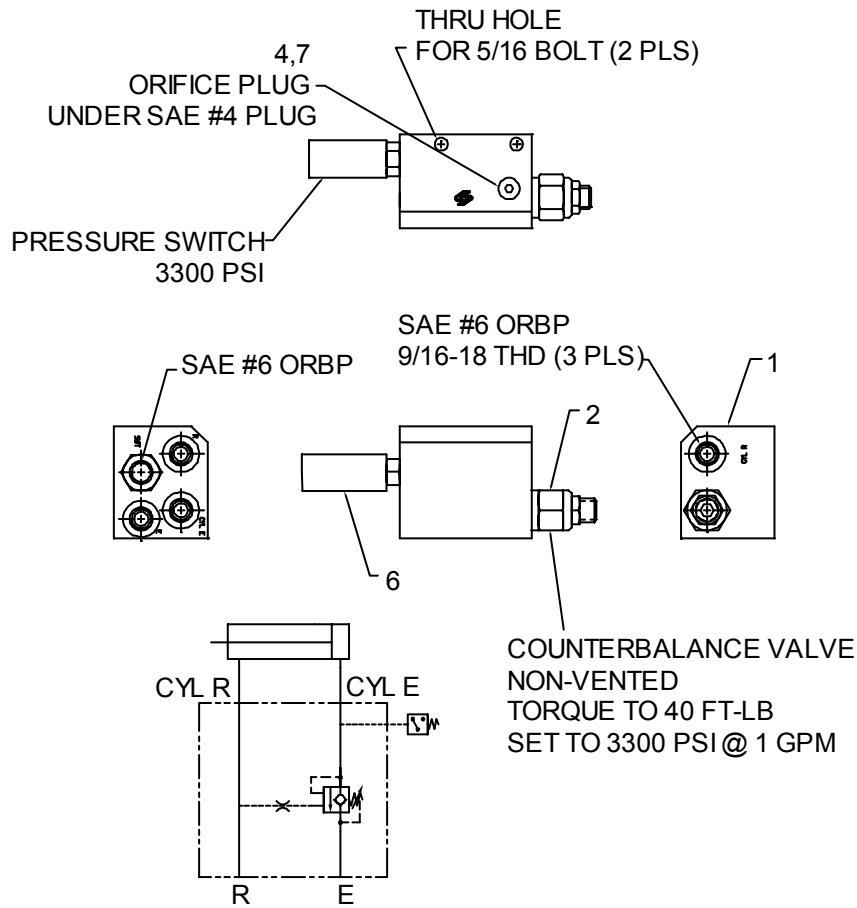
- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

CYLINDER DATA			
EXT.	12.57 in ² 1.18 gal	DRY WT.	99 #
RETR.	8.59 in ² 0.80 gal	BRG. SPAN	11.1%
CASE	ø4.5 x 4.0b x 29.31 lg	TEST PSI	3600
ROD	ø2.25 x 32.81 lg	OPER PSI	2350

51718546 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	4B210010	CASE ASSEMBLY	1
2.	51718546A	CYLINDER (INCL. 1,3,4,6,7,9,14)	1
3.	51744131	SEAL KIT	1
4.	52718385	ROD ASM	1
5.	60125699	PIN	1
6.	60125918	PISTON	1
7.	60125920	STOP TUBE	1
8.	6A025022	WAFER LOCK	1
9.	6HD40022	HEAD	1
10.	70145864	TUBE ASM-LOWER BOOM CYL	2
11.	72053507	ZERK - STR THD .25-28	2
12.	72060037	CAP SCR .31-18X 4.00 HH GR5 Z	2
13.	72062109	NUT .31-18 HEX NYLOCK	2
14.	72062305	COLLAR-LOCK	1
15.	72063002	WASHER .31 FLAT	4
16.	72533186	ADPTR-#6M FACE/#6M STR	4
17.	73540035	VALVE-CBAL	1
18.	73540052	VALVE-CBAL	1
19.	77041561	PRESSURE SWITCH	1
20.	7BF81215	BUSHING - STL 1.50 PIN X 1.25 LG	6
21.	7Q072128	O RING 1.487X 1.693X 0.103 70	1
22.	7Q072153	O-RING - 3.5 X 3.69 0.09 70	1
23.	7Q072342	O-RING - 3.62 X 4 0.19 70	1
24.	7Q10P342	BACK-UP RING 3.62 BORE 4 O.D. 0.07 THK	1
25.	7R14P022	ROD WIPER-TYPE D 2.25 ROD	1
26.	7R546022	U-CUP LOADED 2.25X2.75X.38 "B	1
27.	7T2N4040	WEAR RING - PISTON 4.00 O.D. X .50 W	2
28.	7T2NX625	WEAR RING-ROD 2.25 IDX0.75	2
29.	7T66P040	PISTON SEAL DYNAMIC 4.00"	1

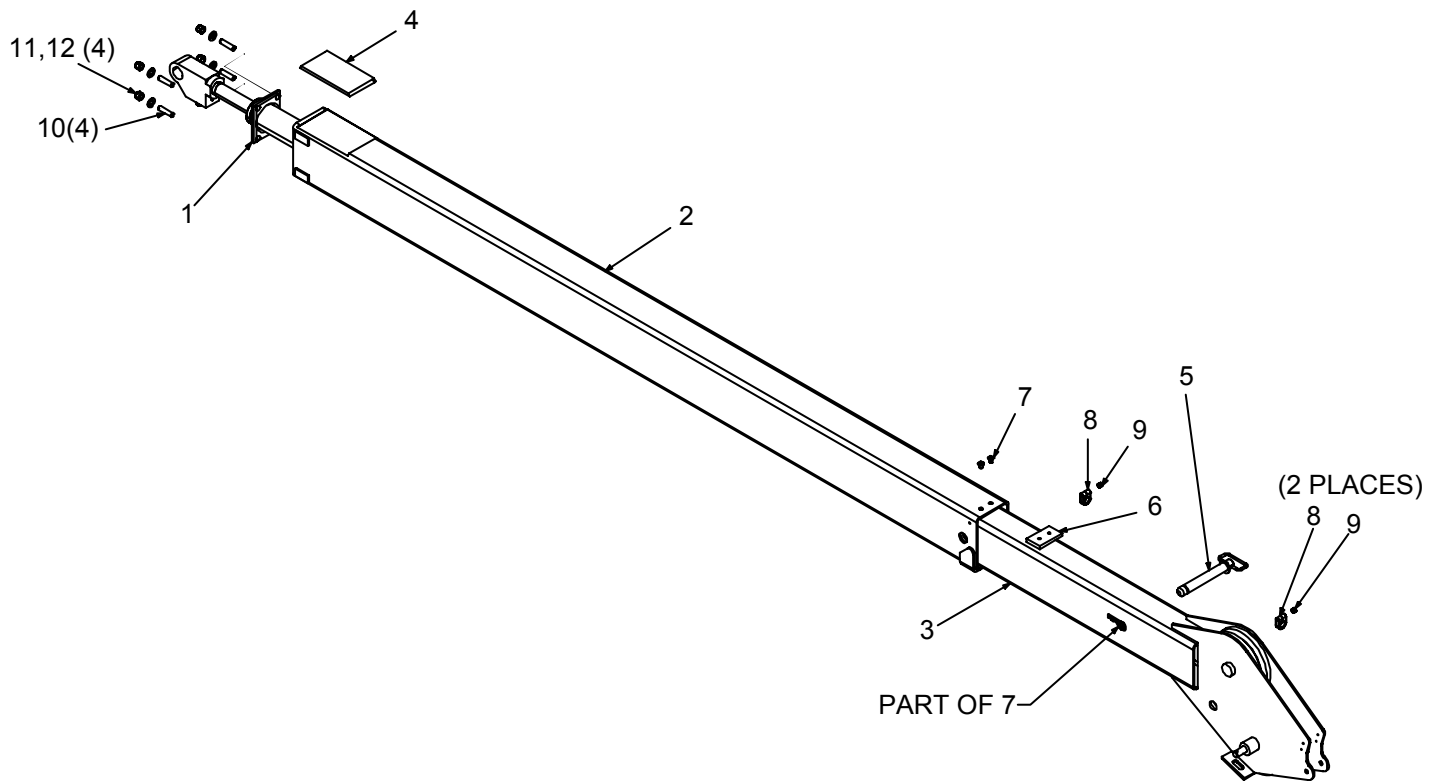
NEW 20040428

Valve, Counterbalance (73540035)



73540035 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73540051	VALVE, C-BAL	1
2.	73540052	VALVE, C-BAL	1
4.	70145750	ORIFICE	1
6.	77041561	PRESSURE SWITCH	1
7.	72533477	PLUG, STR HOL HEX STL 7/16 THD	2

Boom Assembly, Extension, 1H 1M (41717133)



NOTES:

1 ADD SERVICEABLE THREAD LOCK TO 1/4-20 NUT, ITEM #9, (2 PLACES).

35 ADD SERVICEABLE THREAD LOCK TO 1/2-13 NUT, ITEM #12, TO THE BOOM SIDE ONLY.

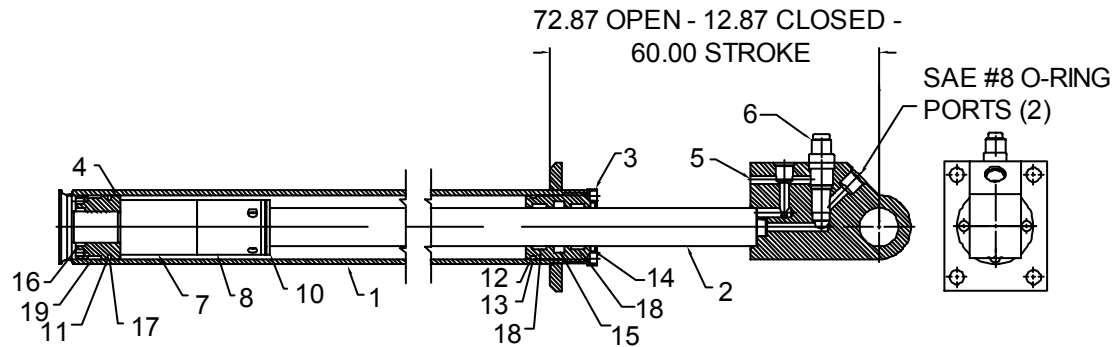
41717133 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	3B210013	CYLINDER (71411793 THRU 4-07)	1
2.	52717136	EXT BOOM WELDMENT, 1ST STAGE	1
3.	52717062	EXT BOOM WELDMENT, 2ND STAGE	1
4.	60030189	WEAR PAD	1
5.	73733171	PIN	1
6.	60121174	STROKE STOP	1
7.	72601750	CAP SCR .38-16X 0.50SOC BTNHD	2
8.	70034381	SUPPORT	2
9.	72062104	NUT .25-20 HEX NYLOCK	2
10.	72601757	STUD .50-13X 2.00 NC GR5 STL	4
11.	72063005	WASHER .50 FLAT	4
12.	72062080	NUT .50-13 HEX NYLOCK	4

Cylinder, Extension, 1H 1M (3B210013) (Thru 8-05, eff. 5-07)

NOTE:

USED THROUGH AUGUST 2005 ON CRANES PRIOR TO SERIAL NUMBER 3820051407.



CYLINDER DATA			
EXT.	4.91 in ² 1.28 gal	DRY WT.	74 #
RETR.	3.14 in ² 0.82 gal	BRG. SPAN	13.2%
CASE	2.5 x 2.88 x 70.31	TEST PSI	3000
ROD	ø1.50 x 72.59 lg	OPER PSI	2350

NOTES:

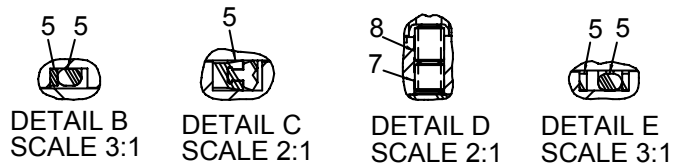
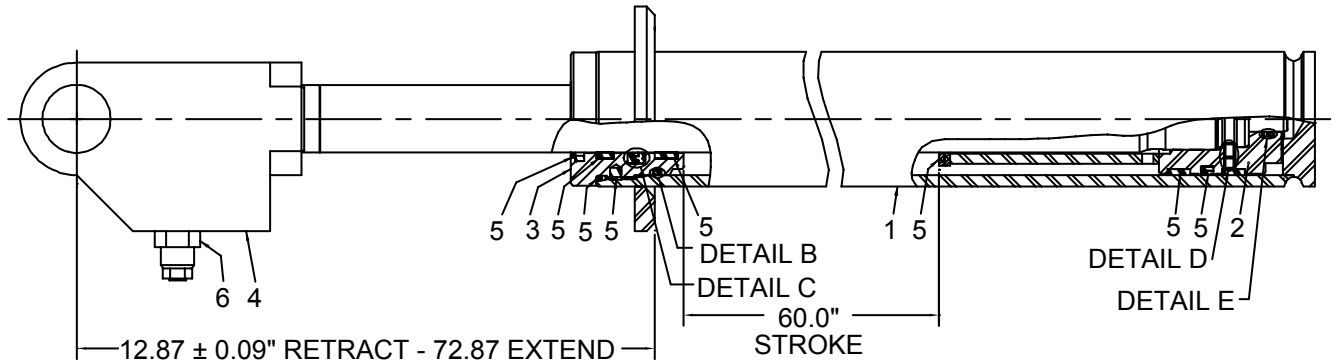
- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 36 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 37 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

3B210013 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	4B210013	CASE ASM	1
2.	52717006	ROD ASM (INCL. 5)	1
3.	6HD25015	HEAD	1
4.	6ID25125	PISTON	1
5.	7PNPXT02	PIPE PLUG 1/8 NPT (PART OF 2)	1REF
6.	73054999	C-BAL VALVE	1
7.	6C300015	STOP TUBE 3"	1
8.	6C210013	STOP TUBE 3"	1
9.	9D101220	SEAL KIT (INCL:10-19)	1
10.	6A025015	WAFER LOCK (PART OF 9)	1REF
11.	7Q072137	O-RING (PART OF 9)	1REF
12.	7Q072228	O-RING (PART OF 9)	1REF
13.	7Q10P228	BACKUP RING (PART OF 9)	1REF
14.	7R14P015	ROD WIPER (PART OF 9)	1REF
15.	7R546015	U-CUP SEAL (PART OF 9)	1REF
16.	7T61N125	LOCK RING, 1/8 NYLON (P/O 9)	1REF
17.	7T66P025	PISTON SEAL (PART OF 9)	1REF
18.	7T2NX417	WEAR RING (PART OF 9)	1REF
19.	7T2N4025	WEAR RING (PART OF 9)	1REF

Cylinder, Extension 1H 1M (71411793) (Eff. 9-05 thru 4-07)

NOTE:

CRANES WITH SERIAL NUMBERS OF 3820051407 AND BEYOND USE THIS CYLINDER.



NOTES:

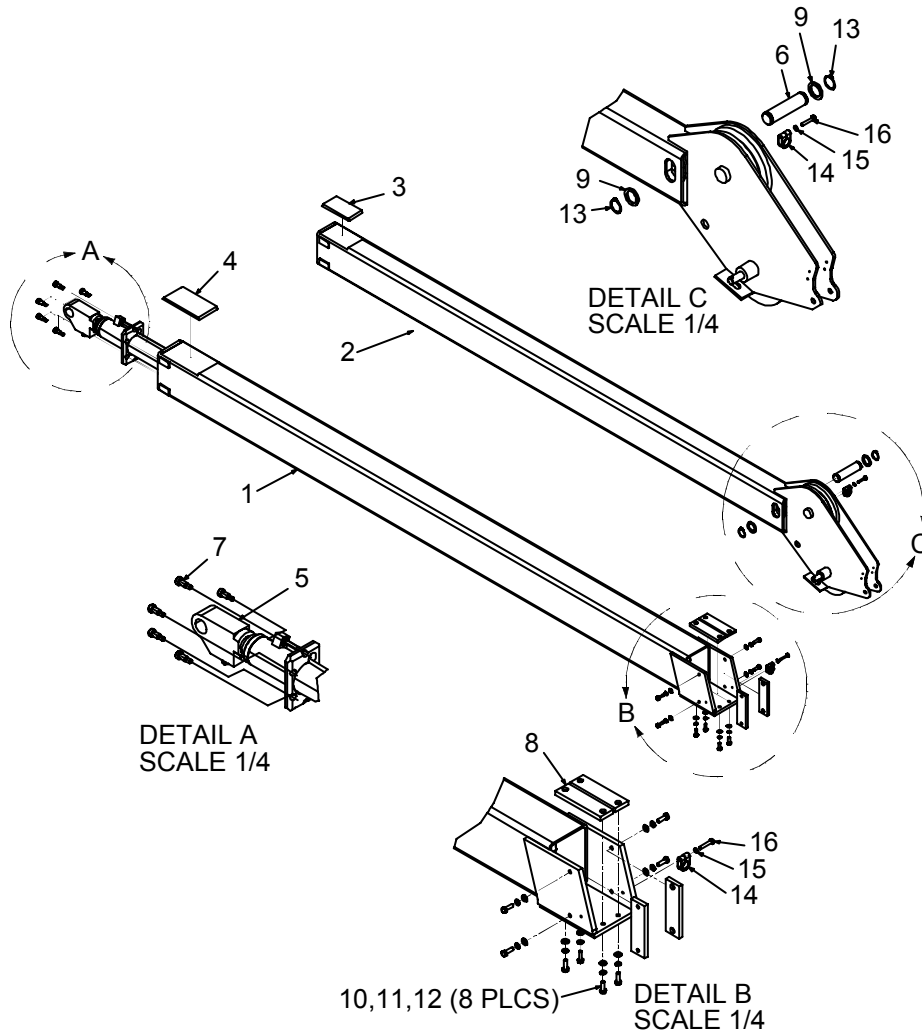
- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

71411793 CYLINDER DATA	
EXTENDED	4.91 IN ² , 1.27 GAL
RETRACTED	3.14 IN ² , 0.82 GAL
CASE	2.50 BORE X ø3.00
ROD	0.875 X ø1.50
DRY WEIGHT	88.6 LB
TEST PRESSURE	3500 PSI
OPERATING PRESSURE	3000 PSI
PORTS	SAE #8 O-RING BOSS (3/4-16 UNF-2B)
CYLINDER TUBE BURST PRESSURE	14,995 PSI
TORQUES	TORQUE SET SCREWS (#7, #8) TO 5-6 FT-LB. USE LOCTITE GRADE 271 OR EQUIVALENT.
	TORQUE HEAD GLAND (#3) TO 200-250 FT-LB
	TORQUE C-BAL VALVE (#6) TO 30-35 FT-LB
	TORQUE PISTON (#2) WITH THREADLOCK COMPOUND TO 450-500 FT-LB. USE LOCTITE GRADE 271 OR EQUIVALENT.

71411793 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411921	CASE WELDMENT, EXT CYL	1
2.	71411920	PISTON	1
3.	71411918	HEAD GLAND	1
4.	71411922	ROD WELDMENT, EXT CYL	1
5.	94396790	SEAL KIT	1
6.	73054999	VALVE - COUNTERBALANCE	1
7.	-REF-	1/4-20 UNC X .25 LG SET SCR.	1
8.	-REF-	1/4-20 UNC X .31 LG SET SCR.	1

NEW 20050930

Boom Assembly, Extension, 2H (41717310)



NOTES:

- 1 USE SERVICEABLE THREAD LOCK ON ITEM #7.
- 2 USE NEVER-SEEZ ON ITEM #8 (PIN).

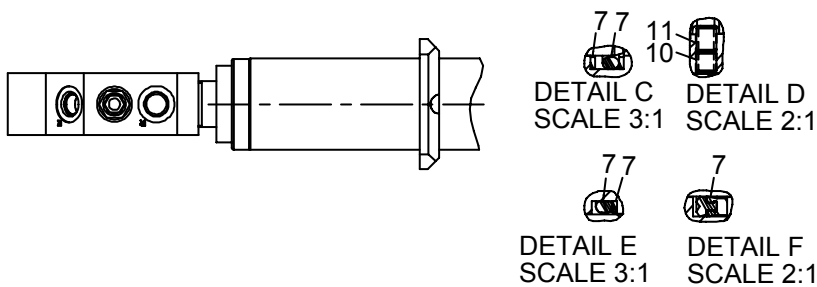
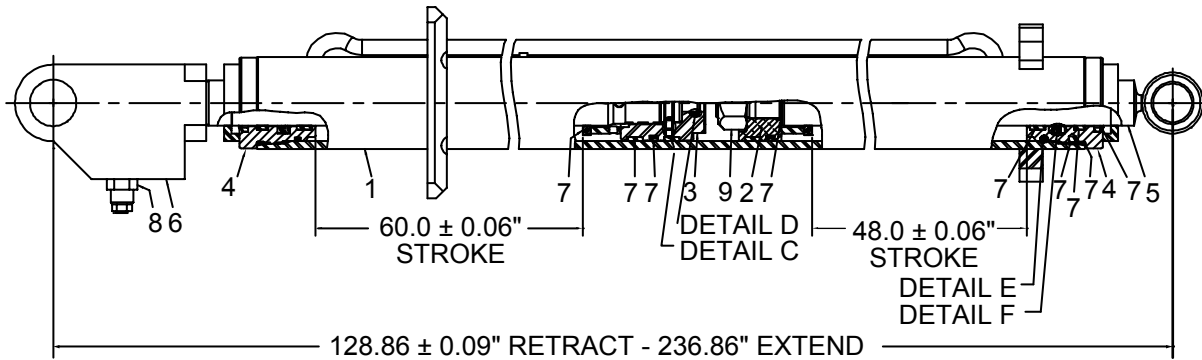
41717310 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717308	WLDMT-1ST STAGE EXT	1
2.	52717309	WLDMT-2ND STAGE EXT	1
3.	60030137	WEAR PAD	1
4.	60030189	WEAR PAD	1
5.	71411792	CYLINDER (3B022020)	1
6.	60123971	PIN	1
7.	72601784	BOLT-SHLDR .50X .75	5
8.	60120124	WEAR PAD	4
9.	72063035	MACHY BUSHING 1.25X10 GA NR	2
10.	72063050	WASHER .31 LOCK	8
11.	72063002	WASHER .31 FLAT	8
12.	72060293	CAP SCR .31-24X 1.00 HH GR5 Z	8
13.	72066084	RETAINING RING-EXT 1.25 STD	2
14.	70034381	SUPPORT	2
15.	72063049	WASHER .25 LOCK	2
16.	72060006	CAP SCR .25-20X 1.50 HH GR5 Z	2
REV. G 20050930			

NOTE: 71411792 CYLINDER USED ON CRANES WITH SERIAL NUMBERS OF 3820051407 AND HIGHER.

Cylinder, Extension, 2H (71411792) (Eff. 9-05)

NOTE:

CRANES WITH SERIAL NUMBERS OF 3820051407 AND BEYOND USE THIS CYLINDER.



NOTES:

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

71411792 CYLINDER DATA	
EXTENDED	4.91 IN ² , 2.29 GAL
RETRACTED	3.14 IN ² , 1.47 GAL
CASE	2.50 BORE X ø 3.00
ROD	1.50ø
DRY WEIGHT	149.1 LB
TEST PRESSURE	3500 PSI
OPERATING PRESSURE	3500 PSI
PORTS	SAE #8 O-RING BOSS (3/4-16 UNF-2B)
CYLINDER TUBE BURST PRESSURE	14,995 PSI
TORQUES	TORQUE SET SCREWS (#10,11) TO 5 - 6 FT-LB. USE LOCKTITE 271 OR EQUIVALENT.
	TORQUE HEAD GLAND (#4) TO 200 - 250 FT-LB
	TORQUE C-BAL VALVE (#8) TO 30-35 FT-LB
	TORQUE PISTON (#3) TO 450-500 FT-LB. TORQUE LOCKNUT (#9) TO 260-300 FT-LB. USE LOCKTITE 271 OR EQUIVALENT.

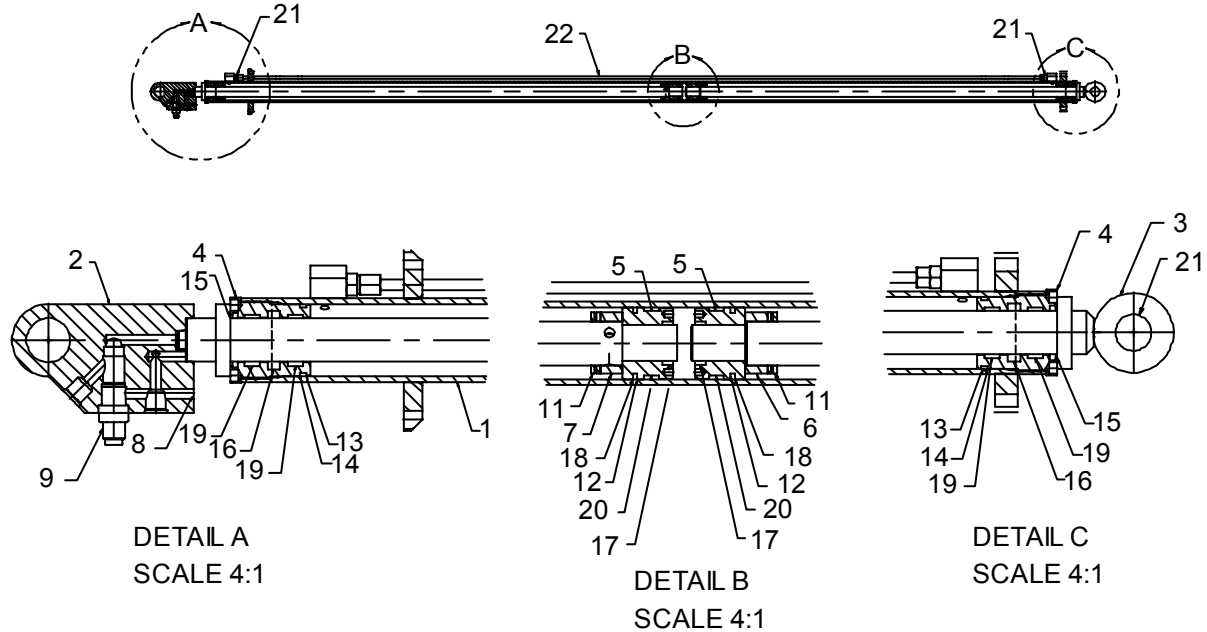
71411792 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411915	CASE WELDMENT	1
2.	71411919	PISTON	1
3.	71411920	PISTON	1
4.	71411918	HEAD GLAND	2
5.	71411916	ROD WELDMENT	1
6.	71411917	ROD WELDMENT	1
7.	94396789	SEAL KIT	1
8.	73054999	VALVE - COUNTERBALANCE	1
9.	-REF-	1.00-14 UNS LOCKNUT	1
10.	-REF-	1/4-20 UNC X .25 LG SET SCR.	1
11.	-REF-	1/4-20 UNC X .31 LG SET SCR.	1

NEW 20050930

Cylinder, Extension, 2H (3B022020) (Thru 8-05)

NOTE:

USED THROUGH AUGUST 2005 ON CRANES PRIOR TO SERIAL NUMBER 3820051407.

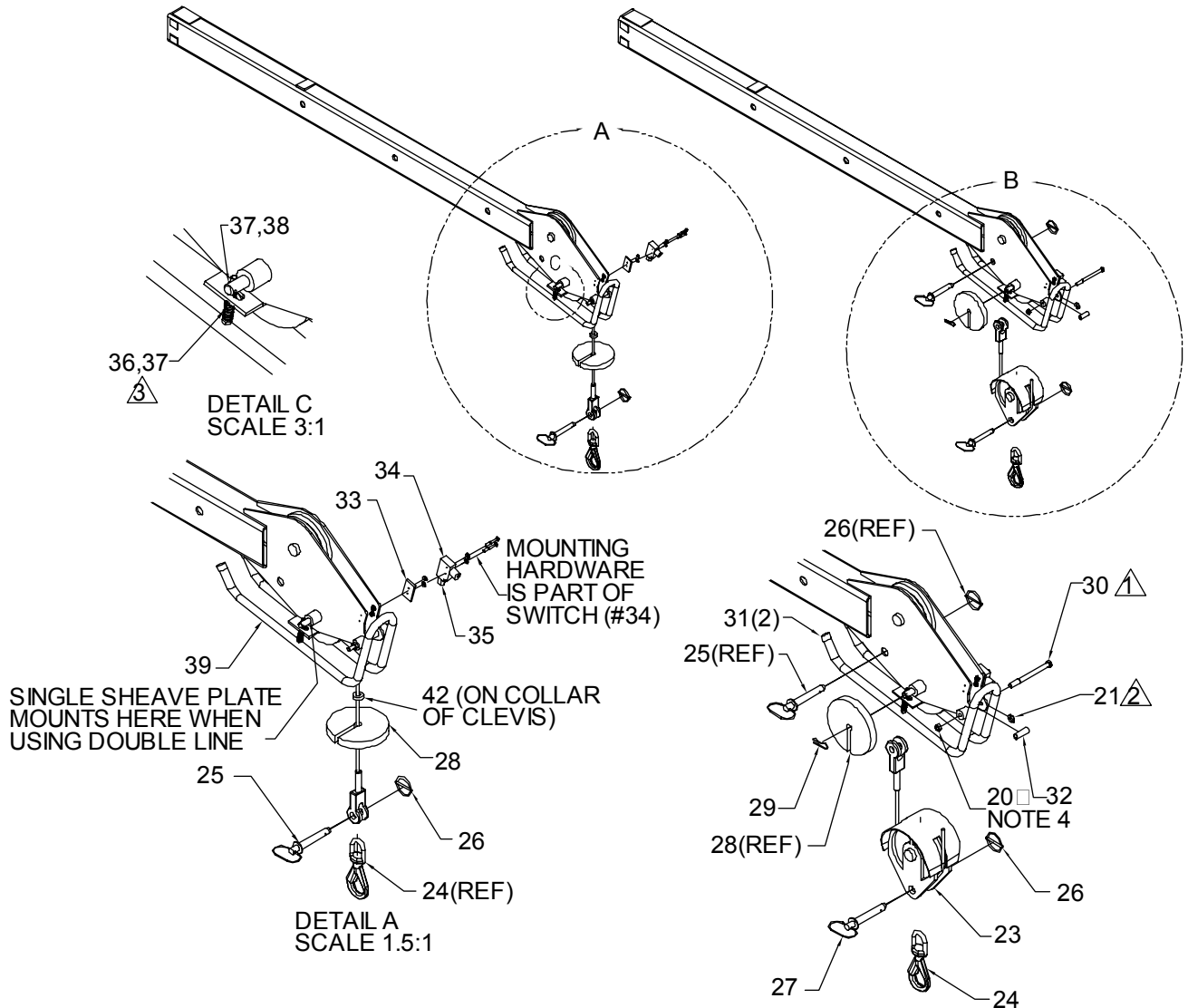


3B022020 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	4B022020	CASE ASM	1
2.	52717304	RODASSEMBLY	1
3.	4G022020	ROD ASM (INCL. 21)	1
4.	6HD25015	HEAD	2
5.	6ID25125	PISTON	2
6.	6C075015	STOP TUBE	1
7.	6C022020	STOP TUBE	1
8.	7PNPXT02	PIPE PLUG (PART OF 2)	1
9.	73054999	CBAL VALVE	1
10.	9D101220	SEAL KIT (INCL:11-20)	2
11.	6A025015	WAFER LOCK (PART OF 10)	1REF
12.	7Q072137	O-RING (PART OF 10)	1REF
13.	7Q072228	O-RING (PART OF 10)	1REF
14.	7Q10P228	BACKUP RING (PART OF 10)	2REF
15.	7R14P015	ROD WIPER (PART OF 10)	2REF
16.	7R546015	U-CUP (PART OF 10)	2REF
17.	7T61N125	LOCK RING, NYLON (PT OF 10)	2REF
18.	7T66P025	PISTON SEAL (PART OF 10)	2REF
19.	7T2NX417	WEAR RING (PART OF 10)	4REF
20.	7T2N4025	WEAR RING (PART OF 10)	2REF
21.	70055207	BEARING (PART OF 3)	2REF
22.	72533186	ADPTR #6MFACE #6MSTR	2
23.	70146464	TUBE ASM-HYD EXT CYL	1

NOTES:

- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

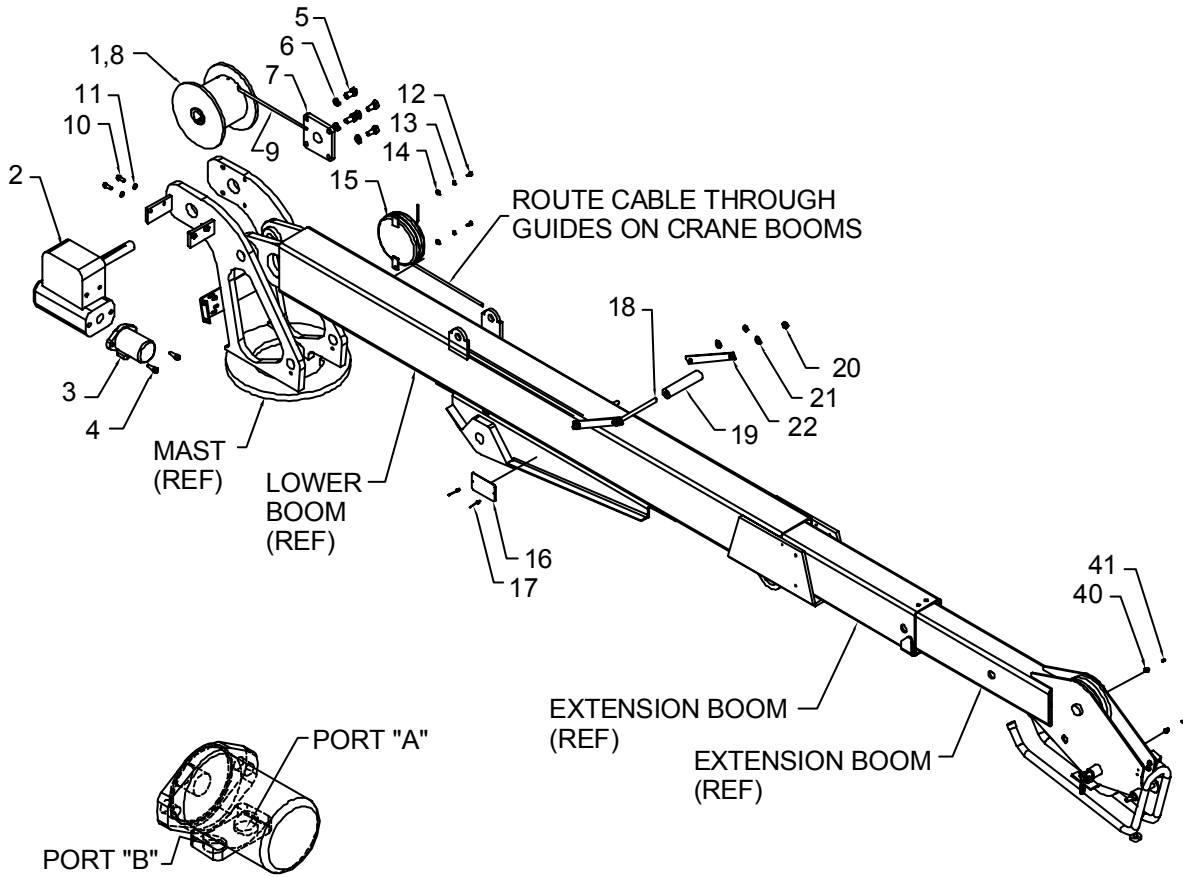
Winch/Cable/Hook Kit (31717067)



- NOTES:
- ⚠ ADD NEVER SEEZ TO BOLT, SPACER, AND PIVOT POINTS.
 - ⚠ LOCATE WASHER ON EITHER SIDE TO POSITION WELDED STUDS IN CENTER OF SLOTS.
 - ⚠ ADJUST TENSION TO ALLOW 1" OF TRAVEL.
 - ⚠ DO NOT OVER-TIGHTEN, MUST BE FREE TO PIVOT.

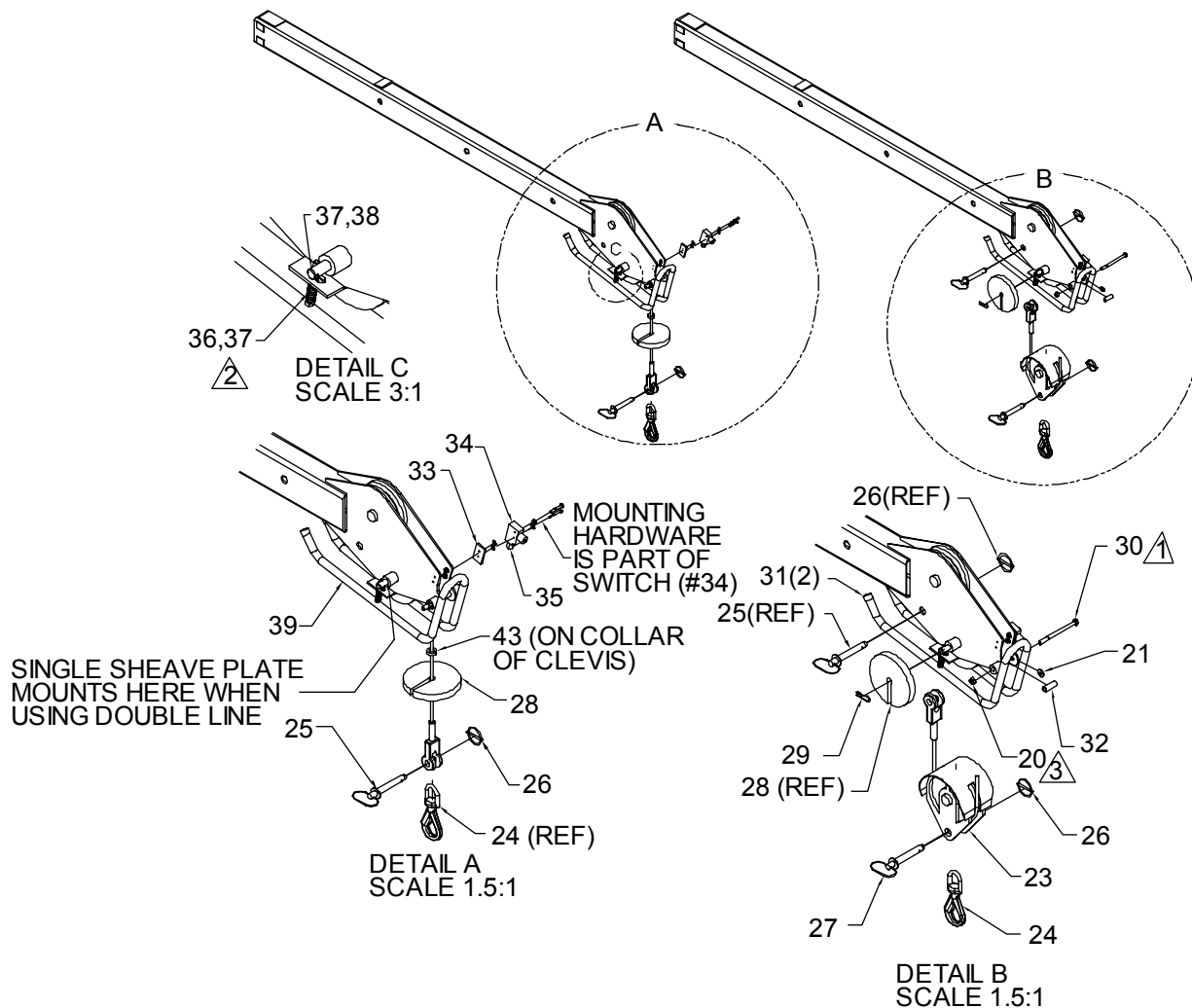
DETAIL B
SCALE 1.5:1

To Parts List - Winch/Cable/Hook Kit (31717067) (see "Winch/Cable/Hook Kit (31717067)" on page 53)



31717067 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51713808	WINCH DRUM	1
2.	71057936	WINCH	1
3.	73511069	MOTOR (WAS 73511069)	1
4.	72060774	CAP SCR 7/16-14X1.25 SH PL	2
5.	72601499	CAP SCR 9/16-12X1.25 HHGR5Z	4
6.	72063054	WASHER 9/16 LOCK	4
7.	70055185	FLANGE BEARING	1
8.	72060596	SCR 1/2-13X.75	1
9.	70580143	CABLE ASM 3/8 6X25	1
10.	72060046	CAP SCR 3/8-16X1.00 HHGR5Z	4
11.	72063051	WASHER 3/8 LOCK	4
12.	72060000	CAP SCR 1/4-20x1/2 HHGR5Z	2
13.	72063049	WASHER 1/4 LOCK	2
14.	72063001	WASHER 1/4 FLAT	2
15.	51713168	CORD REEL ASM	1
16.	70029119	SERIAL NO. PLACARD	1
17.	72066340	POP RIVET 1/8X.375 GRIP	2
18.	60105538	CABLE GUIDE STUD	1
19.	60030108	CABLE GUIDE ROLLER	1
20.	72062080	NUT 1/2-13 HEX NYLOC ZINC	5
21.	72063005	WASHER 1/2 FLAT	5
22.	60105540	CABLE GUIDE SIDE BAR	2
23.	52715836	GUARD WELDMENT	1
24.	71073035	SWIVEL HOOK W/LATCH	1
25.	72661514	LOCK PIN W/HANDLE	1
26.	72661543	QUICK PIN	2
27.	73733171	LOCK PIN 1X6 W/HAIRPIN	1
28.	60122263	PLATE-SINGLE SHEAVE (WAS 60122358)	1
29.	72066145	HAIR PIN 3/16	1
30.	72060104	CAP SCR 1/2-13 X 6.5 HH GR5 Z	1
31.	70396121	CAP-PLASTIC 1.00 X .68 HT	2
32.	60122329	SPACER-1/2 BLK PIPE X 2.0	1
33.	60122311	SPACER	1
34.	77041459	LIMIT SWITCH	1
35.	77044468	CONNECTOR 1/2 STR RLF	1
36.	70146096	SPRING 5/8 X 2.5 X 14GA	2
37.	72063003	WASHER 3/8 FLAT	4
38.	72062103	NUT 3/8-16 HEX NYLOC ZINC	2
39.	52715833	GUARD	1
40.	72053508	ZERK 1/8 NPT	2
41.	70034382	GREASE CAP	2
42.	70149793	COLLAR, LOCK (WAS 70149785)	1

Winch/Cable/Hook Kit, Electric Crane (31717274)

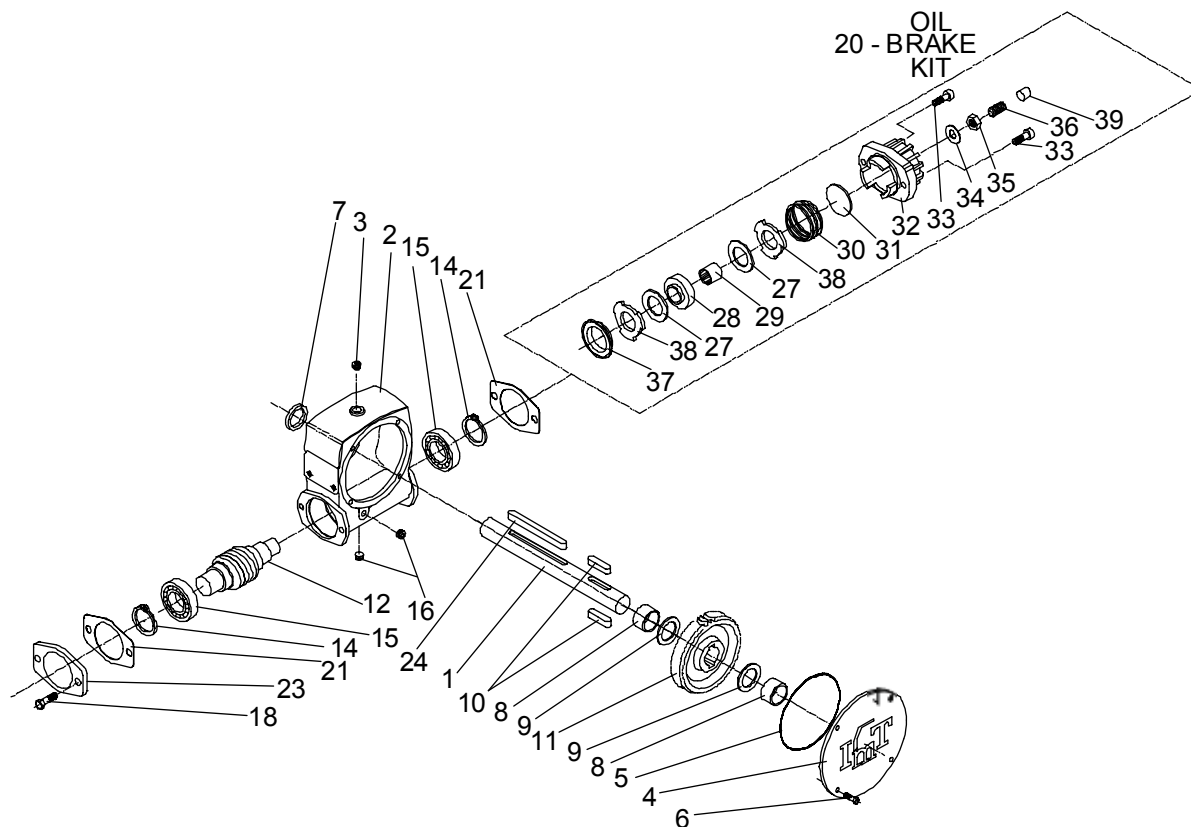


NOTES:

- 1 ADD NEVER-SEEZ TO BOLT, SPACER AND PIVOT POINTS.
- 2 ADJUST TENSION TO ALLOW 1° OF TRAVEL.
- 3 DO NOT OVERTIGHTEN. MUST BE FREE TO PIVOT.

31717274 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51713808	WINCH DRUM	1
2.	71057936	WINCH	1
3.	73511069	HYDRAULIC MOTOR (WAS 73051905)	1
4.	72060774	CAP SCR 7/16-14 X 1-1/4 PL	2
5.	72601499	CAP SCR 9/16-12 X 1-1/4 HH	4
6.	72063054	WASHER 9/16 LOCK	4
7.	70055185	FLANGE BEARING	1
8.	72060596	SET SCR 1/2-13 X 3/4 PL	1
9.	70580143	CABLE ASM 3/8 6X25	1
10.	72060046	CAP SCR 3/8-16 X 1.00	4
11.	72063051	WASHER 3/8 LOCK	4
12.	72060000	CAP SCR 1/4-20 X 1/2 HH GR5Z	2
13.	72063049	WASHER 1/4 LOCK	2
14.	72063001	WASHER 1/4 FLAT	2
15.	51717275	CORD REEL ASM	1
16.	70029119	PLACARD-S/N	1
17.	72066340	POP RIVET-AL 1/8 X .375	2
18.	60105538	STUD-CABLE GUIDE	1
19.	60030108	ROLLER-CABLE GUIDE	1
20.	72062080	NUT 1/2-13 HEX NYLOC ZINC	5
21.	72063005	WASHER 1/2 FLAT	5
22.	60105540	SIDE BAR-CABLE GUIDE	2
23.	52715836	GUARD-WLDMT SNATCH BLK	1
24.	71073035	HOOK-SWIVEL W/LATCH	1
25.	72661514	PIN-LOCK W/HANDLE	1
26.	72661543	PIN-QUICK	2
27.	73733171	PIN-LOCK 1 X 6 W/HAIRPIN	1
28.	60122263	PLATE-SINGLE SHEAVE (WAS 60122263)	1
29.	72066145	HAIR PIN 3/16 ZINC	1
30.	72061014	CAP SCR 1/4-13 X 6.5	1
31.	70396121	PLASTIC CAP	2
32.	60122329	SPACER 1/2 BLK PIPE	1
33.	60122311	SPACER	1
34.	77041459	LIMIT SWITCH	1
35.	77044468	CONNECTOR 1/2-STR RLF	1
36.	70146096	SPRING 5/8 x 2.5 x 14GA	2
37.	72063003	WASHER 3/8 FLAT	4
38.	72062103	NUT 3/8-16 HEX NYLOC	2
39.	52715833	GUARD - WLDMT BOOM TIP	1
40.	72053508	ZERK 1/8 NPT	2
41.	70034382	GREASE CAP	2
42.	70145799	RETAINER-ELEC HARNESS	2
43.	70149793	COLLAR, LOCK (WAS 70149785)	1

Winch (71057936)

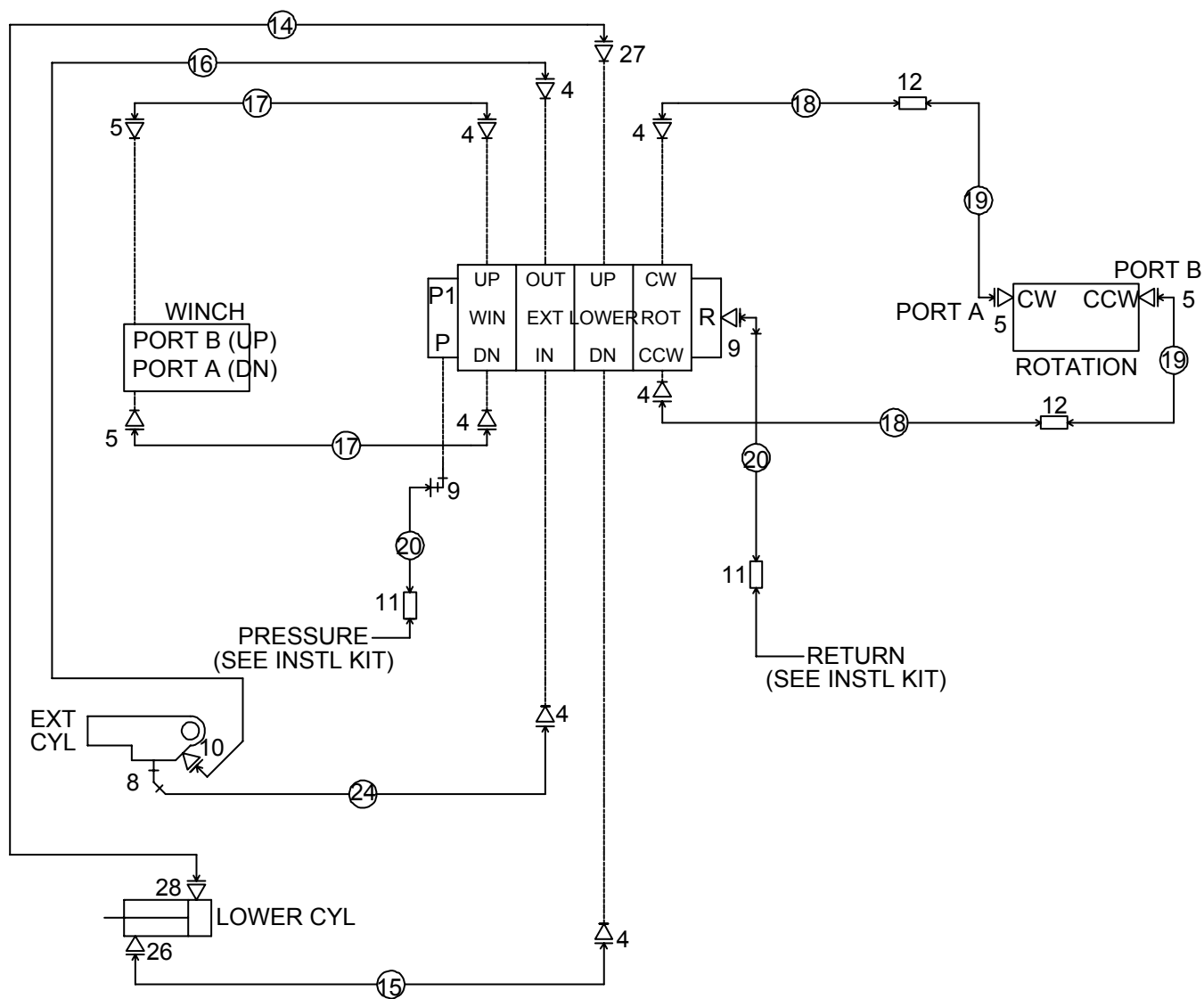


71057936 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70143673	SHAFT-OUTPUT	1
2.	70143672	HOUSING	1
3.	70048142	BUSHING & BRTHER KIT 3/8 NPT	1
4.	70145277	COVER	1
5.	76393174	O-RING	1
6.	72601568	CAP SCREW	4
7.	76393173	OIL SEAL	1
8.	70143670	BUSHING	2
9.	70143669	WASHER	2
10.	70143668	KEY	2
11.	70056428	GEAR-SR	1
12.	70056427	WORM-SR	1
14.	72661348	RETAINING RING	2
15.	70055202	BALL BEARING	2
16.	70143865	PIPE PLUG	2
18.	72601567	CAP SCREW	2
20.	70732542	BRAKE KIT (INCL:27-38)	1
21.	76393171	GASKET	2
23.	—	PROTECTOR (DISCARD)	1REF

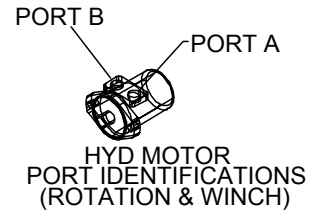
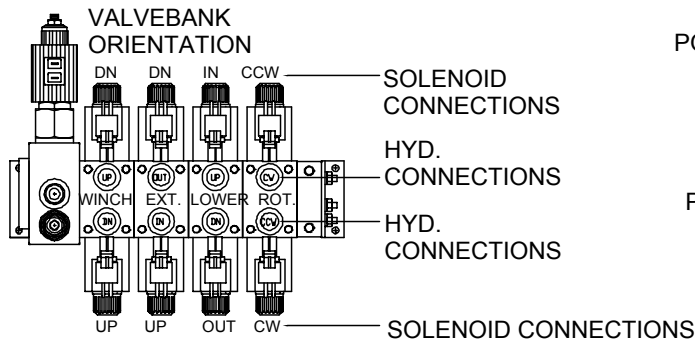
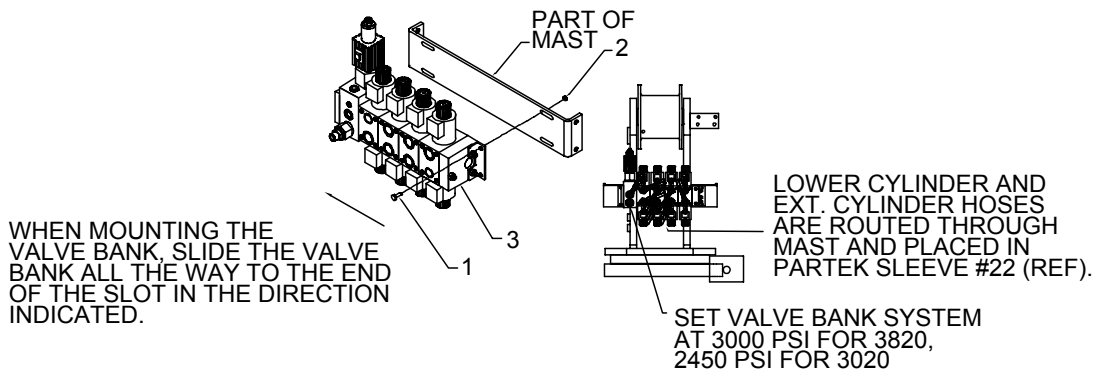
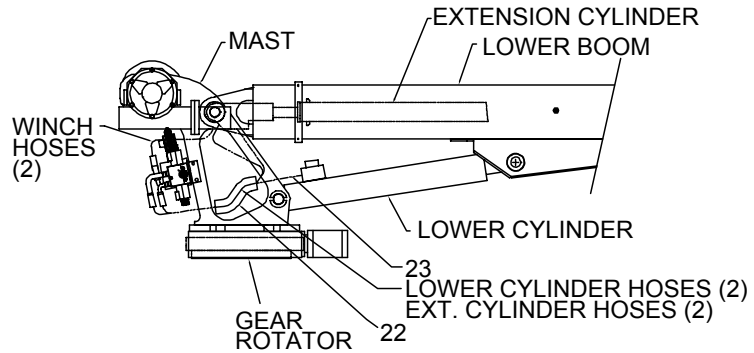
71057936 PARTS LIST			
24.	70143658	KEY	1
27.	70143664	*FRICTION DISC	2REF
28.	70143665	*BRAKE HUB	1REF
29.	70143662	*CAM CLUTCH	1REF
30.	70143661	*SPRING	1REF
31.	70143660	*THRUST WASHER	1REF
32.	70143666	*BRAKE HOUSING	1REF
33.	72601565	*CAP SCREW-SOC HD	2REF
34.	76393172	*WASHER-SEAL	1REF
35.	72601722	*LOCKNUT-SEAL	1REF
36.	72601723	*SET SCREW	1REF
37.	70143659	*BRAKE SPACER	1REF
38.	70143663	*STATOR PLATE	2REF
39.	70034440	*CAP-PLASTIC	1REF
		* PART OF ITEM 20.	

Hydraulics

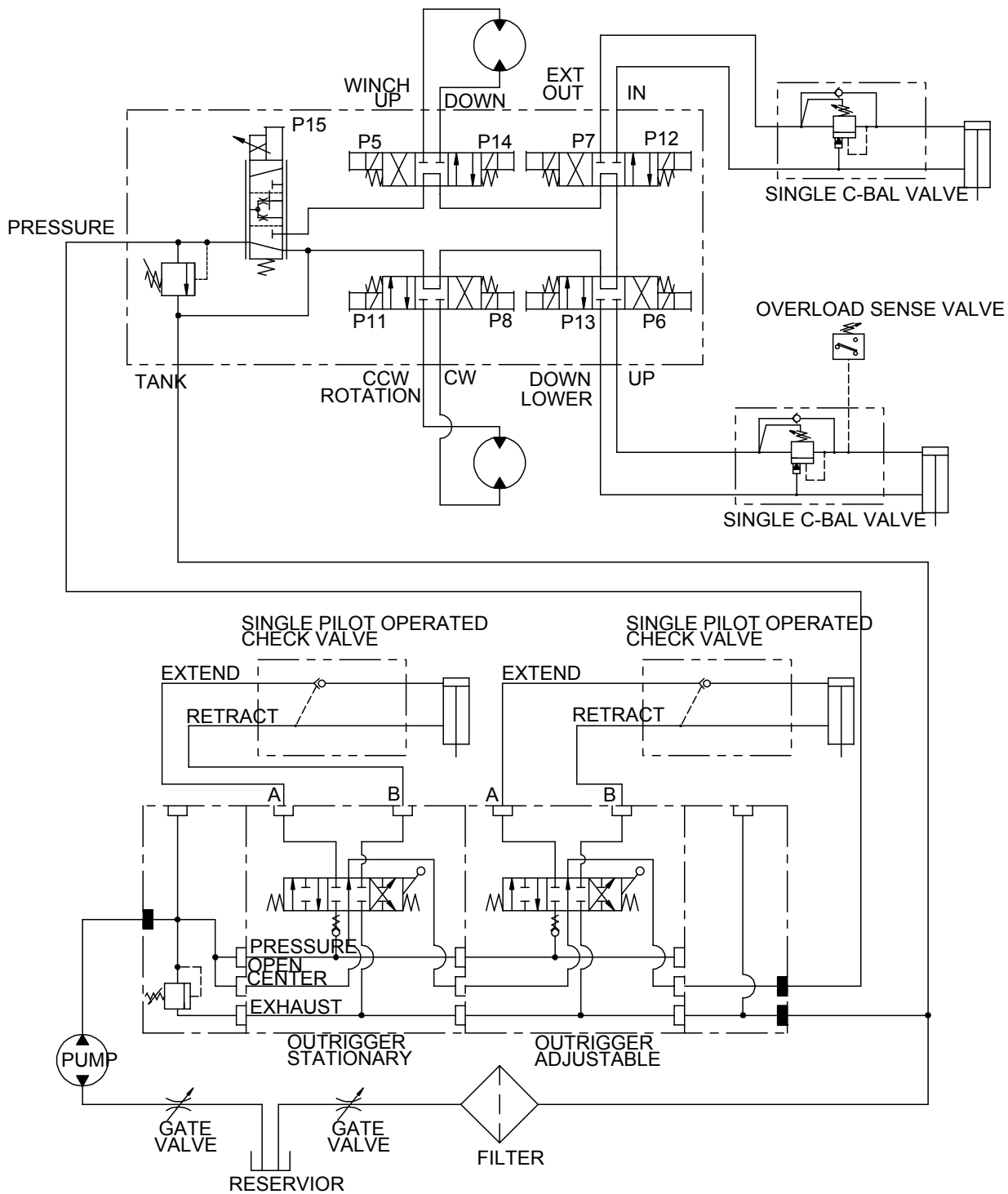
Hydraulic Kit, Tethered Remote (91715637)



Hydraulic Kit - Tethered Remote (91715637) (see "Hydraulic Kit, Tethered Remote (91715637)" on page 60)



Hydraulic Kit - Tethered Remote (91715637) (see "Hydraulic Kit, Tethered Remote (91715637)" on page 60)



91715637 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72060003	CAP SCR 1/4-20X0.88 HHGR5 (WAS 72060005)	4
2.	72062104	NUT 1/4-20 LOCK	4
3.	73733395	VALVEBANK (INCL:4,9,27,28)	1
4.	72533425	ADAPTER #4MFACE #8MSTR	7REF
5.	72533296	ADAPTER #6MFACE #10MSTR	4REF
8.	72533417	ELBOW #8MSTR #6MFACE 45°	1REF
9.	72533162	ELBOW #8MSTR #8MFACE 90°	2REF
10.	72533533	ADAPTER #4MFACE #8MSTR	1REF
11.	72534368	SWIVEL #8FACE #8JIC (WAS 72533538)	2REF
12.	72533540	SWIVEL #4#4 FACE	2REF
13.	51719557	HOSE/ADAPTER KIT (INCL. 5,8,10-12,14-20,24,26-28) (WAS 51714927)	1
14.	51395181	HOSE BBX .50X37.5 #8#8	1REF
15.	51394701	HOSE BBX .25X33.5 #4#4	1REF
16.	51394702	HOSE BBX.25X43 #4#4	1REF
17.	51394703	HOSE YX .25X18.5 #4#6	2REF
18.	51394705	HOSE BBX .25X31 #4#4	2REF
19.	51395147	HOSE BBX .25X19.5 #4#6	2REF
20.	51394707	HOSE BBX .50X24 #8#8	2REF
22.	60350073	SLEEVE	1
23.	70394558	TIE 8"	1
24.	51394718	HOSE BBX .25X43 #6#4	1REF
26.	72533337	ADAPTER #4MFACE #6MSTR	1REF
27.	72533166	ADAPTER #8MFACE #8MSTR	1REF
28.	72533423	ADAPTER #8MFACE #6MSTR	1REF

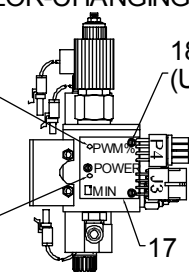
REV. E 20050831

Valvebank, Tethered Remote (73733395)

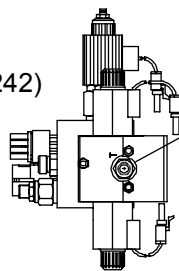
PERCENT OF SIGNAL INDICATOR COLOR-CHANGING LED:

RED = OFF, ZERO % TRIGGER
 GREEN = FULL ON, 100% TRIGGER
 SHORTENED COIL OR OTHER WILL
 SHOW AS RED WITH 100% TRIGGER.

POWER INDICATOR LED:
 OFF = BLANK
 ON = RED LIGHT

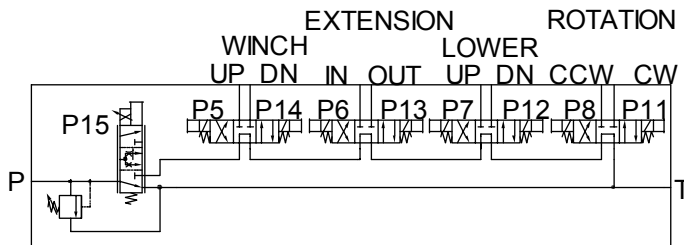
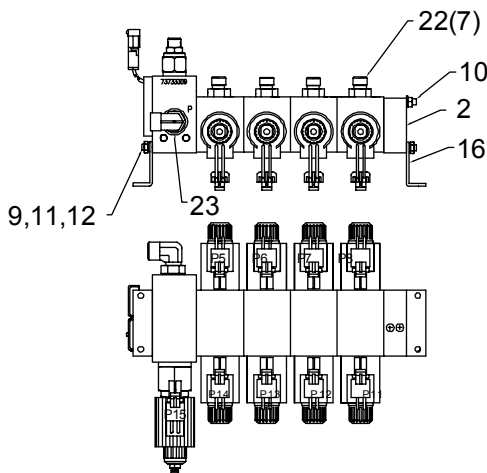
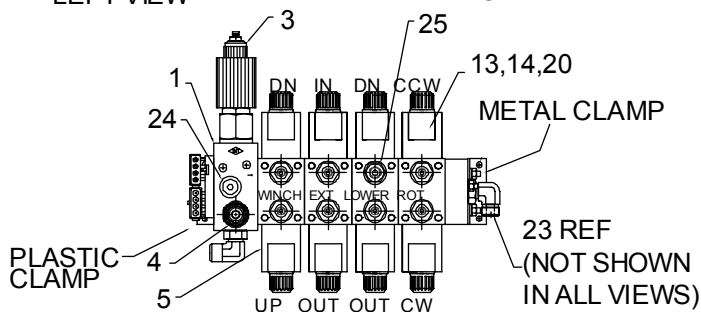


LEFT VIEW



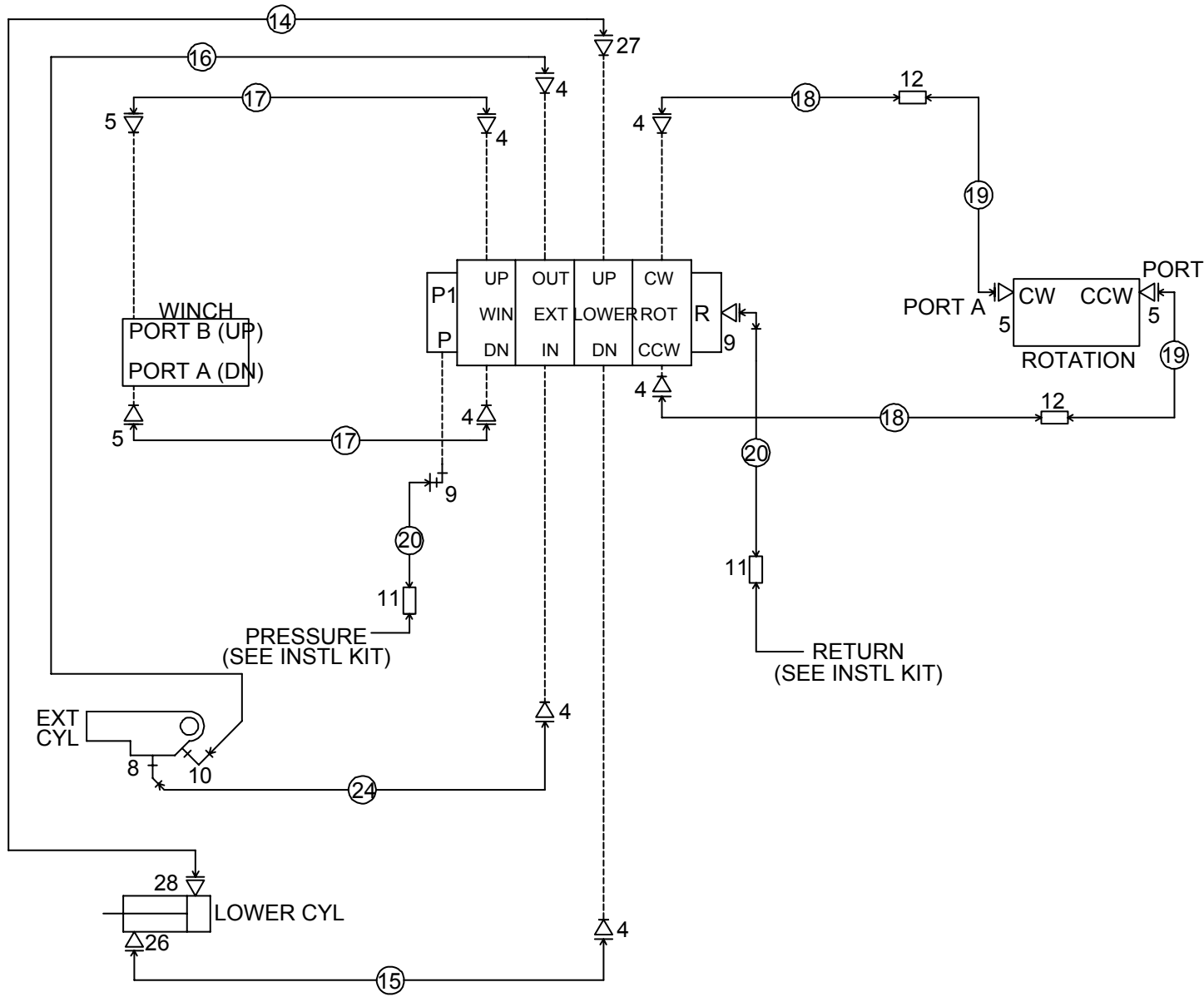
RIGHT VIEW

23
 (TORQUE
 TO 55 FT-LB
 LUBRICATED)

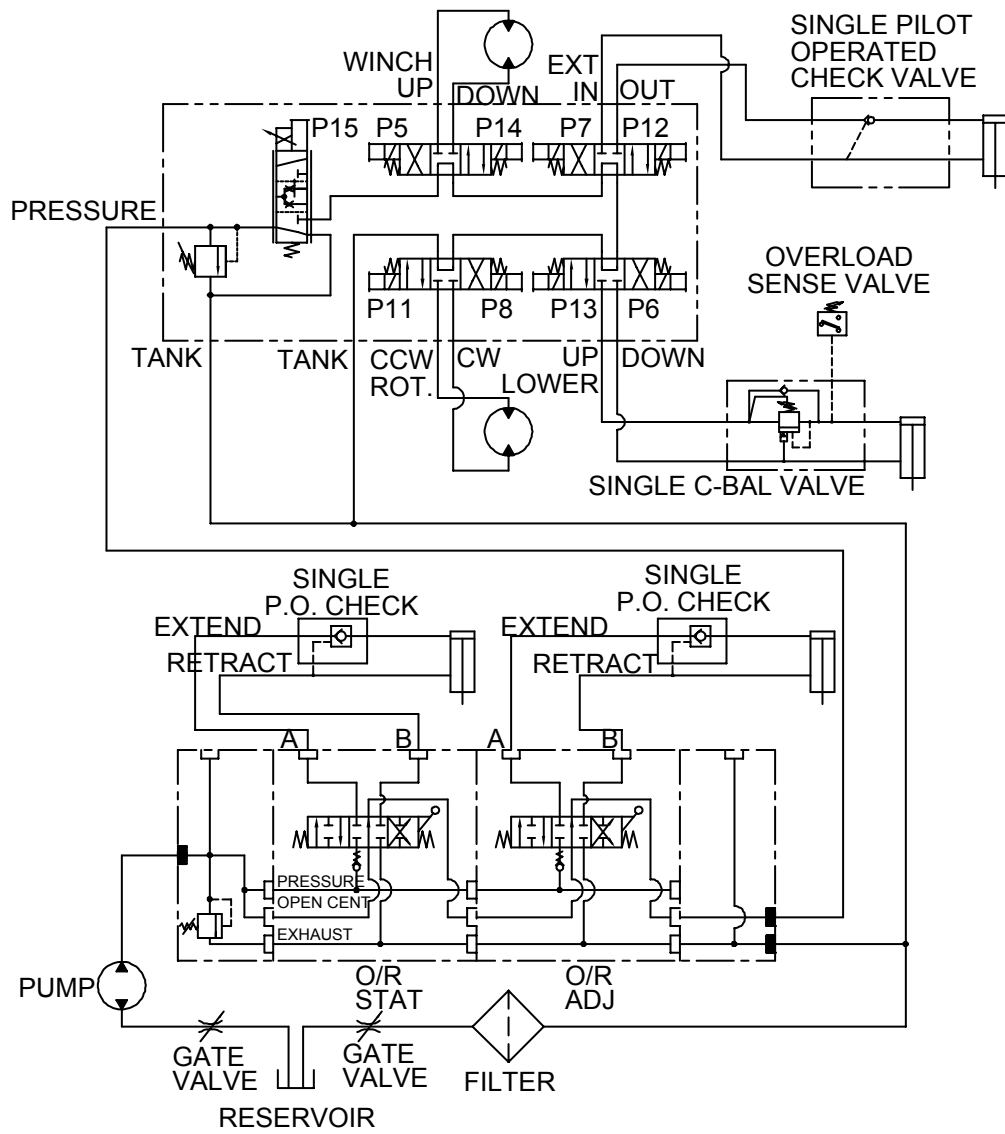


73733395 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73540028	INLET BLOCK	1
2.	73540027	END CAP	1
3.	73054934	FLOW CTRL VALVE	1
	77041556	PROPL VALVE-COIL ONLY	REF
4.	73054935	RELIEF VALVE	1
5.	73540044	VALVE SECT	4
	77041518	COIL-SOLENOID	REF
6.	7Q072013	O-RING	10
7.	72533477	PLUG 7/16STR HOLHEX	1
8.	70145829	EXPANDER PLUG	4
9.	60119363	THRD'D ROD 1/4-20X12-1/2	2
10.	60119364	THRD'D ROD 1/4-20X10-9/16	1
11.	72062000	NUT 1/4-20 HEX	5
12.	72063047	WASHER #10 LOCK	5
13.	77044574	CONNECTOR 2-WAY	9
14.	77044550	TERMINAL-F	18
15.	70394069	CABLE SEAL	2
16.	70145830	MTG BRKT	2
17.	77044595	VALVE DRIVER	1
18.	72601704	MACH SCR #6-32X3/4 RDHD	3
19.	72061705	WASHER #6 WRT	3
20.	77044594	CABLE SEAL	16
21.	70733394	CABLE ASM	1
22.	72533425	ADAPTER #4MFACE #8MSTR	7
23.	72533162	ELBOW #8MSTR #8MFACE 90°	2
24.	72533603	PLUG 9/16STR HOLHEX	1
25.	72533166	ADAPTER #8MFACE #8MSTR	1
26.	73733602	VALVE BANK (INCL. 1-21,24)	1
	70733875	PLASTIC NUT W/O-RING SEAL (APPLIED TO COIL)	8REF

Hydraulic Kit, Radio Remote (91715578)

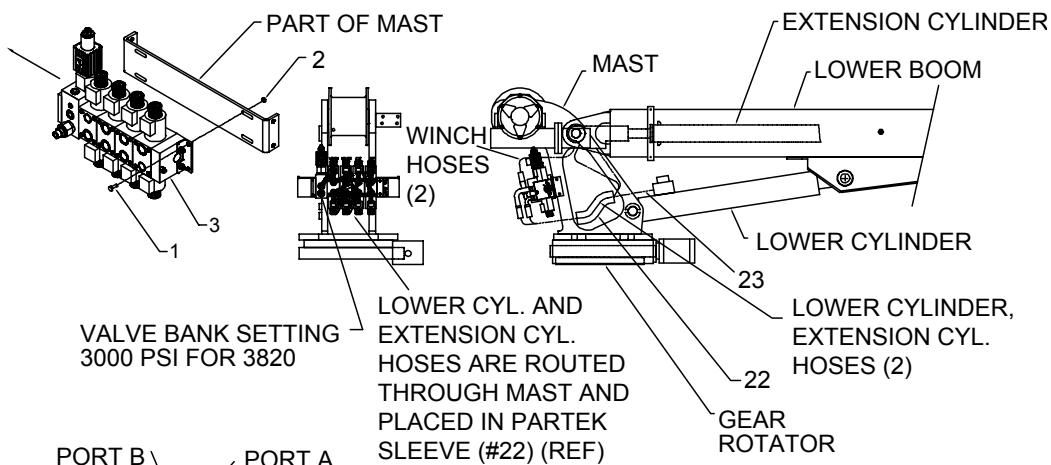


Hydraulic Kit, Radio Remote (91715578)

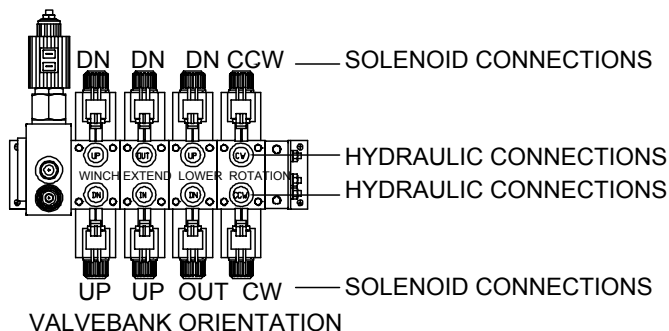


Hydraulic Kit, Radio Remote (91715578)

WHEN MOUNTING VALVE BANK, SLIDE OVER ALL THE WAY TO THE END OF THE SLOT IN THE DIRECTION INDICATED.



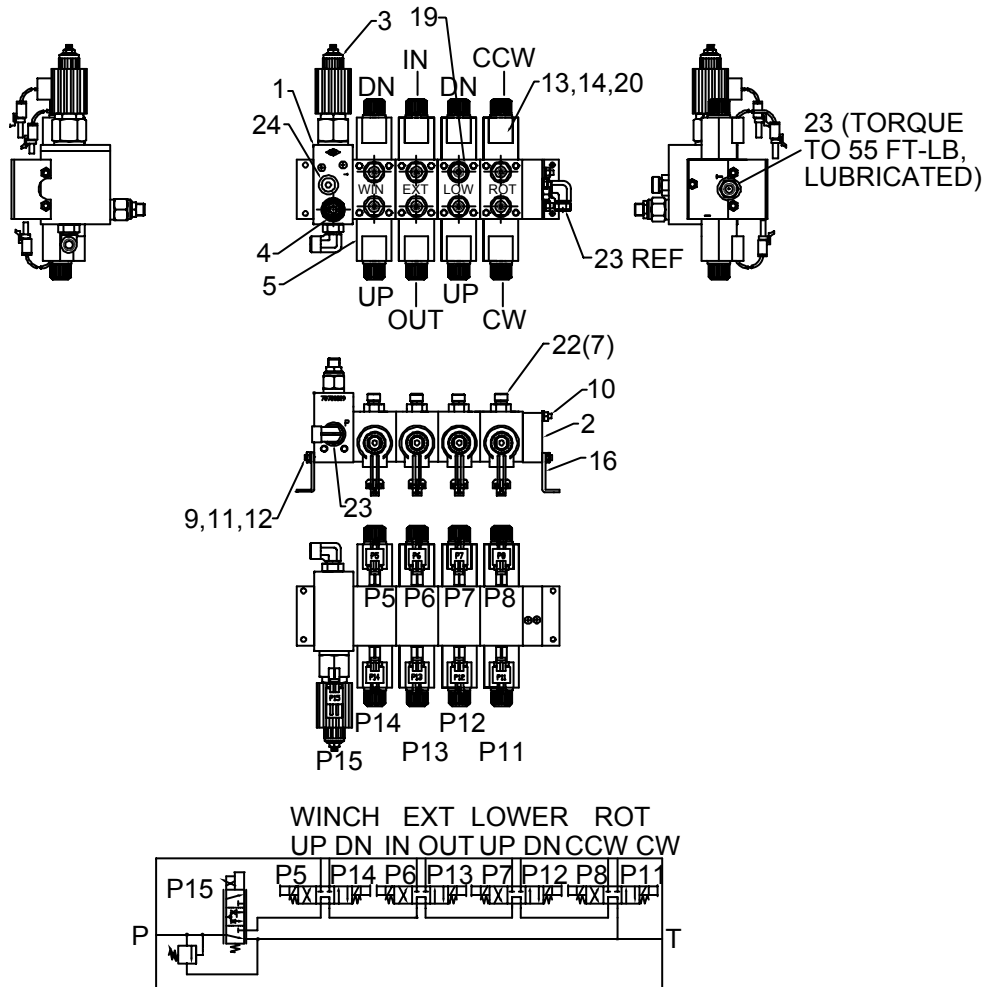
HYDRAULIC MOTOR
PORT IDENTIFICATIONS
(ROTATION & WINCH)



91715578 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72060005	CAP SCR 1/4-20X1-1/4 HHGR5	4
2.	72062104	NUT 1/4-20 LOCK	4
3.	73733941	VALVEBANK (INCL:4,9,27)	1
4.	72533425	ADAPTER #4MFACE #8MSTR	7REF
5.	72533296	ADAPTER #6MFACE #10MSTR	4REF
8.	72533417	ELBOW #8MSTR #6MFACE 45°	1REF
9.	72533162	ELBOW #8MSTR #8MFACE 90°	2REF
10.	72533533	ADAPTER #4MFACE #8MSTR	1REF
11.	72534368	SWIVEL #8FACE #8 JIC	2REF
12.	72533540	SWIVEL #4#4 FACE	2REF
13.	51719557	HOSE/ADAPTER KIT (INCL. 5,8,10-12,14-20, 24, 26, 28)(WAS 51714927)	1
14.	51395181	HOSE BBX .50X37.5 #8#8	1REF
15.	51394701	HOSE BBX .25X33.5 #4#4	1REF
16.	51394702	HOSE BBX.25X43 #4#4	1REF
17.	51394703	HOSE YX .25X18.5 #4#6	2REF
18.	51394705	HOSE BBX .25X31 #4#4	2REF
19.	51395147	HOSE BBX .25X19.5 #4#6	2REF
20.	51394707	HOSE BBX .50X24 #8#8	2REF
22.	60350073	SLEEVE	1
23.	70394558	TIE 8"	1
24.	51394718	HOSE BBX .25X43 #6#4	1REF
26.	72533337	ADAPTER #4MFACE #6MSTR	1REF
27.	72533166	ADAPTER #8MFACE #8MSTR	1REF
28.	72533423	ADAPTER #8MFACE #6MSTR	1REF

REV. E 20050831

Valvebank, Radio Remote (73733941)

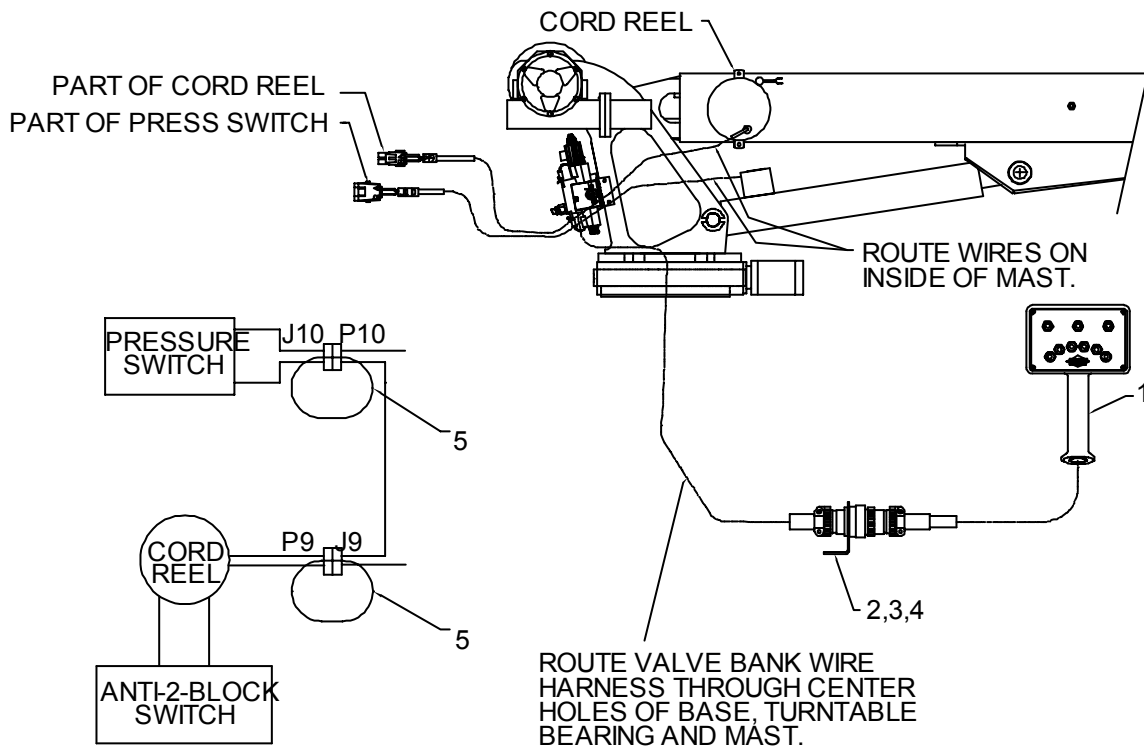


73733941 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73540028	VALVE BLOCK	1REF
2.	73540027	END CAP	1REF
3.	73054934	SOLENOID VALVE	1REF
4.	73054935	RELIEF VALVE	1REF
5.	73540044	VALVE SECTION	4REF
6.	7Q072013	O-RING	10REF
7.	72533477	PLUG, STR HOL HEX 7/16 THD	1REF
8.	70145829	EXPANDER PLUG	4REF
9.	60119363	ROD, THREADED 1/4-20 X 12-1/2	2REF
10.	60119364	ROD, THREADED 1/4-20 X 10-9/16	1REF
11.	72062000	NUT 1/4-20 HEX ZINC	5REF
12.	72063047	WASHER #10 LOCK ZINC	5REF
13.	77044574	CONNECTOR, 2-WAY	9REF
14.	77044550	TERMINAL, FEMALE, 18-20 GA	18REF
15.	70394069	CABLE SEAL	2REF
16.	70145830	BRACKET, MOUNTING, EXTRA LONG	2REF
19.	72533166	ADAPTER, #8MFACE #8MSTR	1
20.	77044594	CABLE SEAL, RED	16REF
21.	77441101	CABLE ASM	1REF
22.	72533425	ADAPTER, #4MFACE #8MSTR	7
23.	72533162	ELBOW #8MSTR #8MFACE 90°	2
24.	72533603	PLUG, STR HOL HEX 7/16 STL	1REF
25.	73733933	VALVE BANK (INCL. 1-16,20,21,24)	1

NEW 20040824

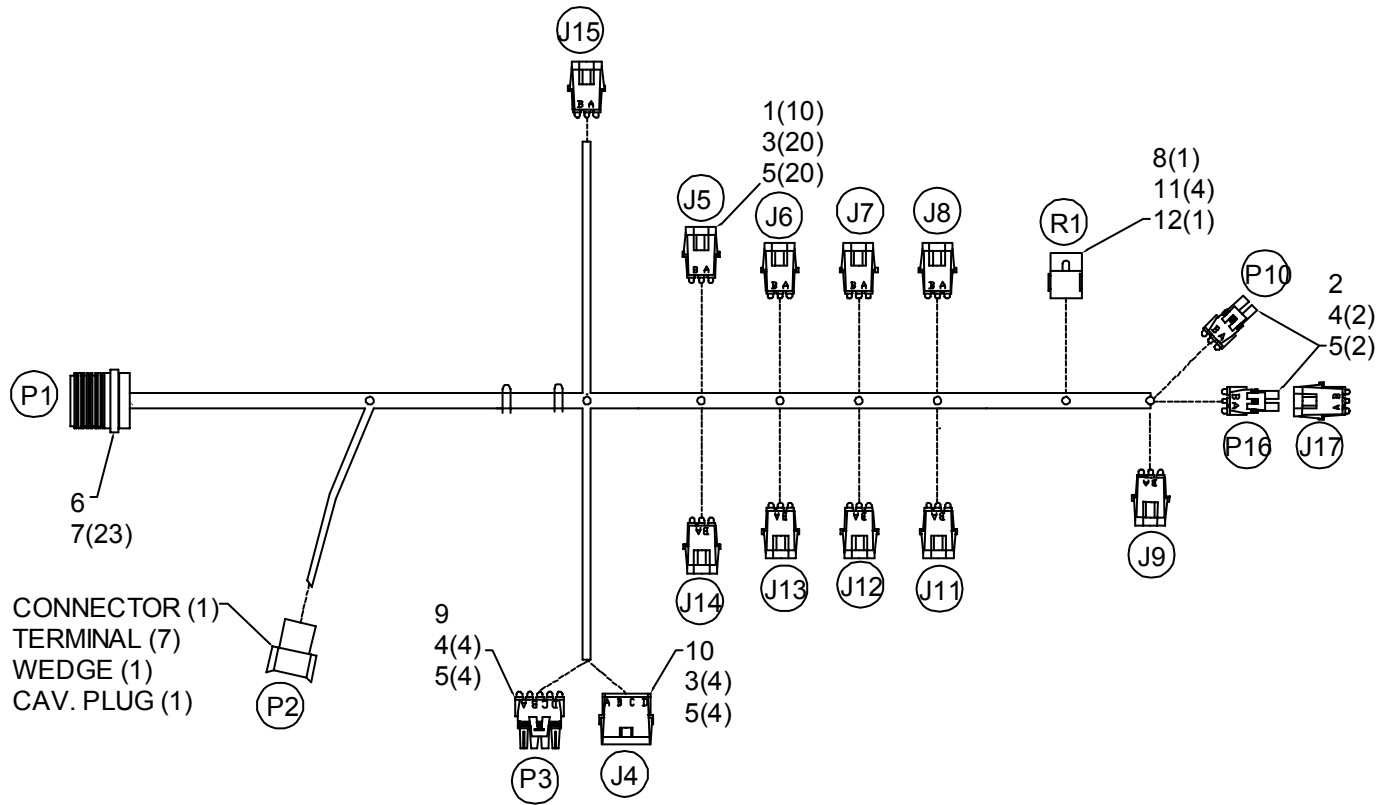
Controls

Control Kit, Tethered Remote (90715437)



90715437 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51713182	HANDLE ASM	1
2.	60119299	BRACKET	1
3.	77044645	NUT-DEUTSCH 24 SHELL	1
4.	77044646	WASHER-LOCK DEUTSCH	1
5.	70034439	LOCK WIRE LEAD SEAL, 8"	2
6.	99903263	ELEC. SCHEMATIC-PROP REMOTE CONT.	1
7.	99900339	MANUAL - PROP REMOTE CONTROL	1

Cable Assembly, Tethered Remote (70733394)



70733394 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	77044573	SHROUD CONN 2-CONTACT	10REF
2.	77044574	TOWER CONN	2REF
3.	77044576	TERMINAL-M	24REF
4.	77044577	TERMINAL-F	8REF
5.	77044578	CABLE SEAL	32REF
6.	77044620	CONN RCPT	1REF
7.	77044580	SOCKET	23REF
8.		SOCKET, RELAY	1REF
9.	77044623	TOWER CONN 4-CONTACT	1REF
10.	77044624	SHROUD CONN 4-CONTACT	1REF
11.		TERMINAL	4REF
12.		RELAY	1REF

WIRING CHART (70733394)

LOCATOR CODE: P1			DEUTSCH: HDP34-24-23SN059			
TERM: 0462-201-16141			SEAL: - CAVITY PLUG: 114017			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	18	ROT J11B	TO	J11	B
B	WHT	18	EXT J13B	TO	J13	B
C	WHT	18	WIN J5B	TO	J5	B
D	WHT	18	WIN J14B	TO	J14	B
E	WHT	18	J4A REF	TO	J4	A
F	WHT	18	EXT J6B	TO	J6	B
G	WHT	16	P2 6 ENG START	TO	P2	6
H	WHT	18	P3B SIG COMM	TO	P3	B
I	-	-	-	TO	-	-
J	WHT	18	P2 4 SPD RLA	TO	P2	4
K	WHT	18	ROT J8B	TO	J8	B
L	WHT	16	PENDANT PWR(+)	TO	SPL A	-
M	WHT	18	P2 2 KILL RLA	TO	P2	2
N	WHT	18	LOWER J7B	TO	J7	B
O	WHT	16	P1 O SOL WPR	TO	P2	1
P	WHT	18	LOWER J12B	TO	J12	B
Q	-	-	-	TO	-	-
R	WHT	18	J4B VOLTAGE	TO	J4	B
S	WHT	18	P1S ON H	TO	SPL D	-
T	WHT	16	P2 5 COMPR	TO	P2	5
U	WHT	16	WNSPD P16B	TO	P16	B
V	-	-	-	-	-	-
W	-	-	-	-	-	-

LOCATOR CODE: P2			DEUTSCH: DT04-8PA			
TERM: 1060-16-0122			WEDGE: W8P CAVITY PLUG: 114017			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	16	P1 SOL PWR	TO	P1	-
2	WHT	18	P2 2 KILL RLA	TO	P1	M
3	WHT	16	P2 3 BAT (-)	TO	SPL B	-
4	WHT	18	P2 4 SPD RLA	TO	P1	J
5	WHT	16	P2 5 COMPRESSOR	TO	P1	T
6	WHT	16	P2 6 ENG START	TO	P1	G
7	WHT	16	P2 7 IGN SOL	TO	SPL A	-
8	-	-	-	TO	-	-

LOCATOR CODE: P3			PACKARD: 12015797			
TERM: 12089188			SEAL: 12015323			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	P3A POWER (+)	TO	SPL A	-
B	WHT	18	P3B SIG COMM	TO	P1	H

WIRING CHART (70733394)

C	WHT	16	PRPVLV (-)	TO	J15	A
D	WHT	16	PRPVLV (+)	TO	J15	B

LOCATOR CODE: J4		PACKARD: 12010974				
TERM: 12089040		SEAL: 12015323				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	18	J4A REF	TO	J1	E
B	WHT	18	J4B VOLTAGE	TO	J1	R
C	WHT	18	J4C ON H	TO	SPL D	-
D	WHT	16	J4D PWR COM	TO	SPL B	-

LOCATOR CODE: J5		PACKARD: 12010973				
TERM: 12089040		SEAL: 12015323				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	J5A WINCH	TO	SPL B	-
B	WHT	18	J5B WINCH	TO	P1	C

LOCATOR CODE: J6		PACKARD: 12010973				
TERM: 12089040		SEAL: 12015323				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	EXT J6A	TO	SPL B	-
B	WHT	18	EXT J6B	TO	P1	F

LOCATOR CODE: J7		PACKARD: 12010973				
TERM: 12089040		SEAL: 12015323				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	LOWER J7A	TO	SPL C	-
B	WHT	18	LOWER J7B	TO	P1	N

LOCATOR CODE: J8		PACKARD: 12010973				
TERM: 12089040		SEAL: 12015323				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	ROT J8A	TO	SPL B	-
B	WHT	18	ROT J8B	TO	P1	K

LOCATOR CODE: J9		PACKARD: 12010973				
TERM: 12089040		SEAL: 12015323				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	J9A ANTI-TWO	TO	SPL B	-
B	WHT	16	P10B & P9B	TO	P10	B

LOCATOR CODE: P10		PACKARD: 12015792				
TERM: 12089188		SEAL: 12015323				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY

WIRING CHART (70733394)						
A	WHT	16	OPSI P10A	TO	R1	85
B	WHT	16	P10B & J9B	TO	J9	B

LOCATOR CODE: J11		PACKARD: 12010973				
TERM: 12089040				SEAL: 12015323		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	J11A ROT	TO	SPL B	-
B	WHT	18	J11B ROT	TO	P1	-

LOCATOR CODE: J12		PACKARD: 12010973				
TERM: 12089040				SEAL: 12015323		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	J12A LOWER	TO	SPL B	-
B	WHT	18	J12B LOWER	TO	P1	P

LOCATOR CODE: J13		PACKARD: 12010973				
TERM: 12089040				SEAL: 12015323		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	J13A EXT	TO	SPL C	-
B	WHT	18	J13B EXT	TO	P1	B

LOCATOR CODE: J14		PACKARD: 12010973				
TERM: 12089040				SEAL: 12015323		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	J14A WINCH	TO	SPL C	-
B	WHT	18	J14B WINCH	TO	P1	D

LOCATOR CODE: J15		PACKARD: 12010973				
TERM: 12089040				SEAL: 12015323		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	PRPVLV (-)	TO	P3	C
B	WHT	16	PRPVLV (+)	TO	P3	D

LOCATOR CODE: P16		PACKARD: 12015792				
TERM: 12089188				SEAL: 12015323		
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	P16A WNSPD	TO	SPL C	-
B	WHT	16	WINSPD P16B	TO	P1	U

LOCATOR CODE: -		SPLICE A				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	16	PENDANT PWR (+)	TO	P1	L
-	WHT	16	P2 7 IGN SOL	TO	P2	7
-	WHT	16	P3A POWER (+)	TO	P3	A

WIRING CHART (70733394)

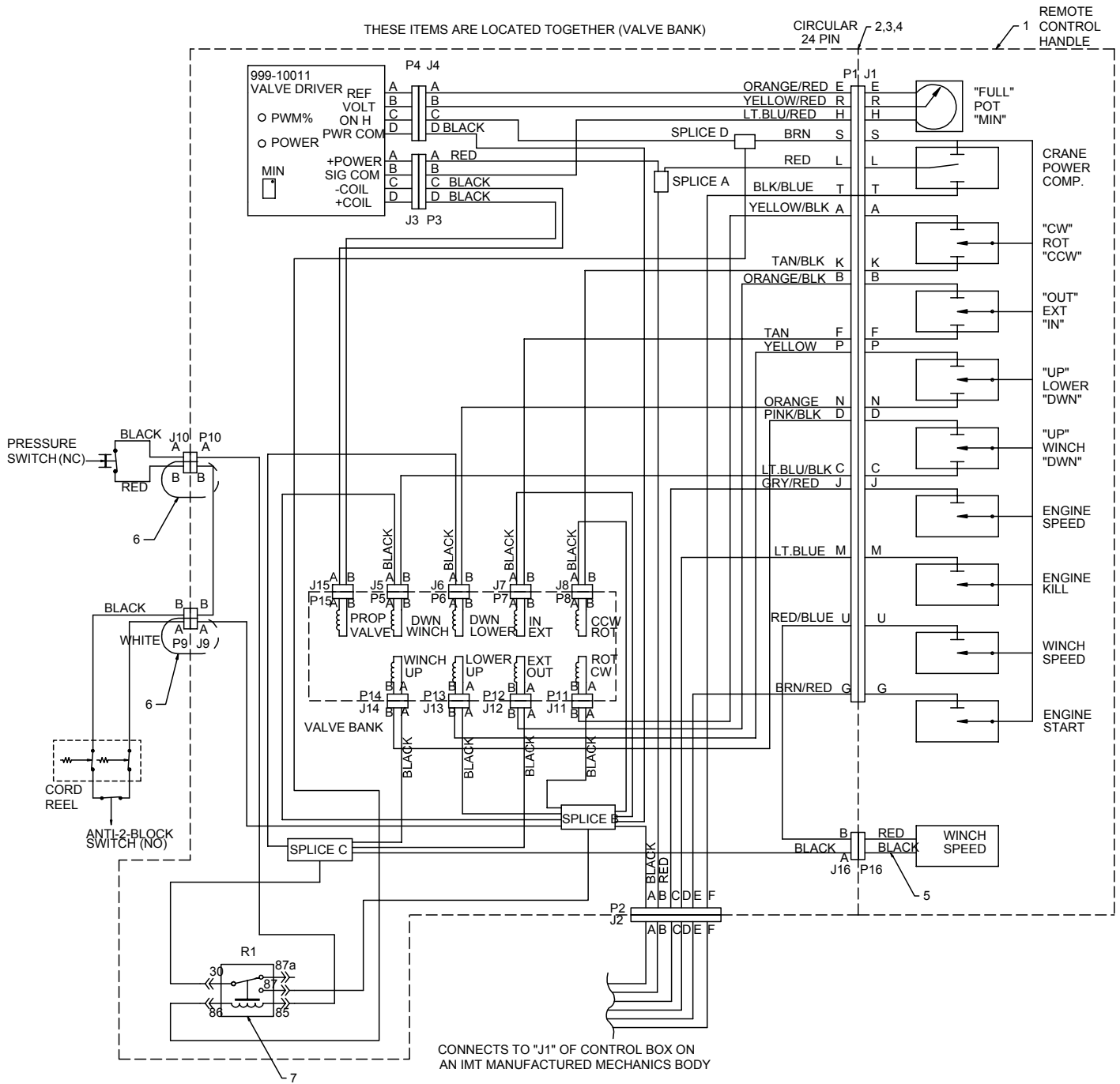
LOCATOR CODE: -			SPLICE B			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	16	WINCH J5A	TO	J5	A
-	WHT	16	RELAY GND	TO	R1	87
-	WHT	16	P2 3 BAT (-)	TO	P2	3
-	WHT	16	J4D PWR COM	TO	J4	D
-	WHT	16	ROT J11A	TO	J11	A
-	WHT	16	LOWER J12A	TO	J12	A
-	WHT	16	EXT J6A	TO	J6	A
-	WHT	16	ROT J8A	TO	J8	A
-	WHT	16	ATB J9A	TO	J9	A

LOCATOR CODE: R1						
RELAY SOCKET: PACKARD 12065685, 12052834						
TERM: 12066614		RELAY: HELLA 87411 (SEALED)				
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
30	WHT	16	ATB & OPRES GRD	TO	SPL C	-
87	WHT	16	RELAY GRD	TO	SPL B	-
87A	-	-	-	TO	-	-
86	WHT	16	RELAY PWR (+)	TO	SPL D	-
85	WHT	16	OPSI P10A	TO	P10	A

LOCATOR CODE: -			SPLICE C			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	16	J7A LOWER	TO	J7	A
-	WHT	16	ATB & OPRES GND	TO	R1	30
-	WHT	16	EXT J13A	TO	J13	A
-	WHT	16	WINCH J14A	TO	J14	A
-	WHT	16	WNSPD P16A	TO	P16	A

LOCATOR CODE: -			SPLICE D			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	18	P1S ON H	TO	P1	S
-	WHT	16	RELAY PWR (+)	TO	R1	86
-	WHT	18	J4C ON H	TO	J4	C

Electrical Schematic, Tethered Remote (99900855)

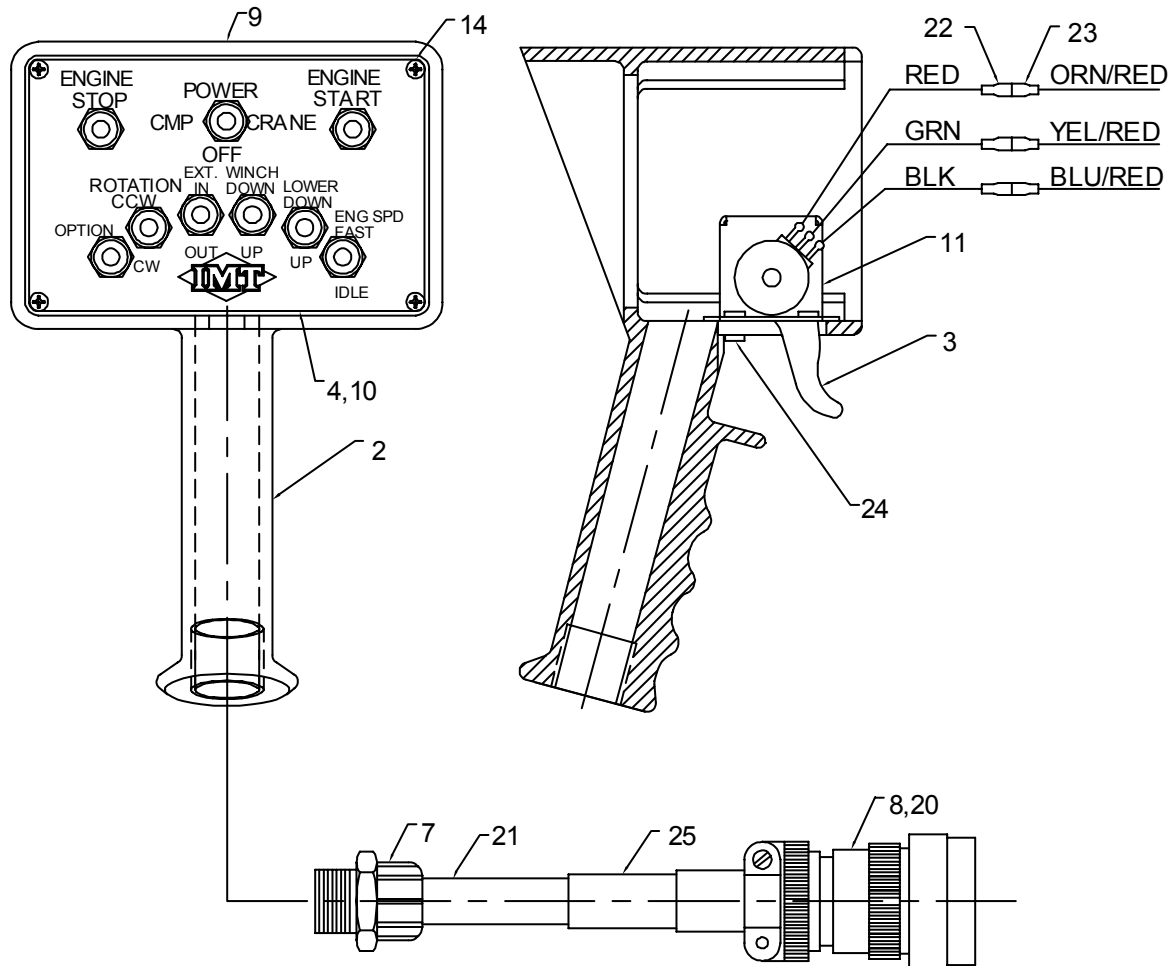


SEE CONTROL KIT DRAWINGS FOR WIRE ROUTINGS

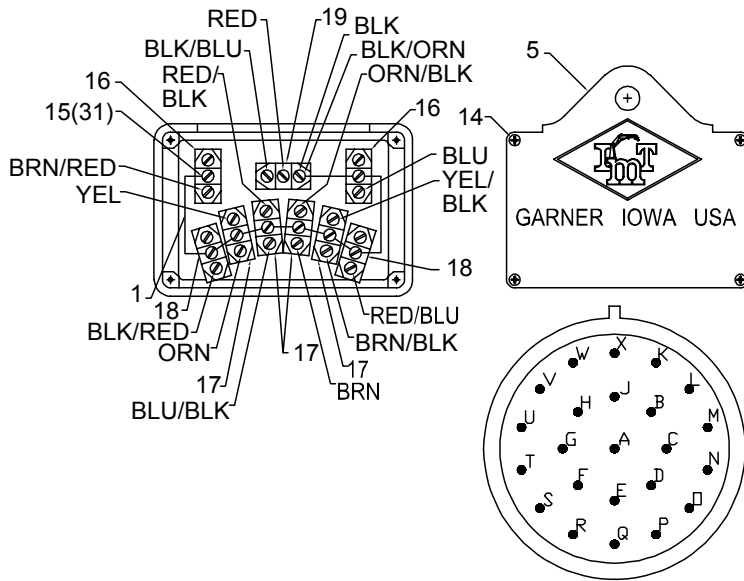
99900855 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51713182	HANDLE ASM	1
2.	60119299	BRACKET	1
3.	77044645	NUT	1
4.	77044646	LOCK WASHER	1
5.	51713343	CABLE ASM, 14GA 2 WIRE	1
6.	70034439	LOCK WIRE LEAD SEAL, 8"	2
7.	77041597	RELAY	1

REV. L 20040210

Handle Assembly, Tethered Remote (51713182)



Handle Assembly, Tethered Remote Kit (51713182)



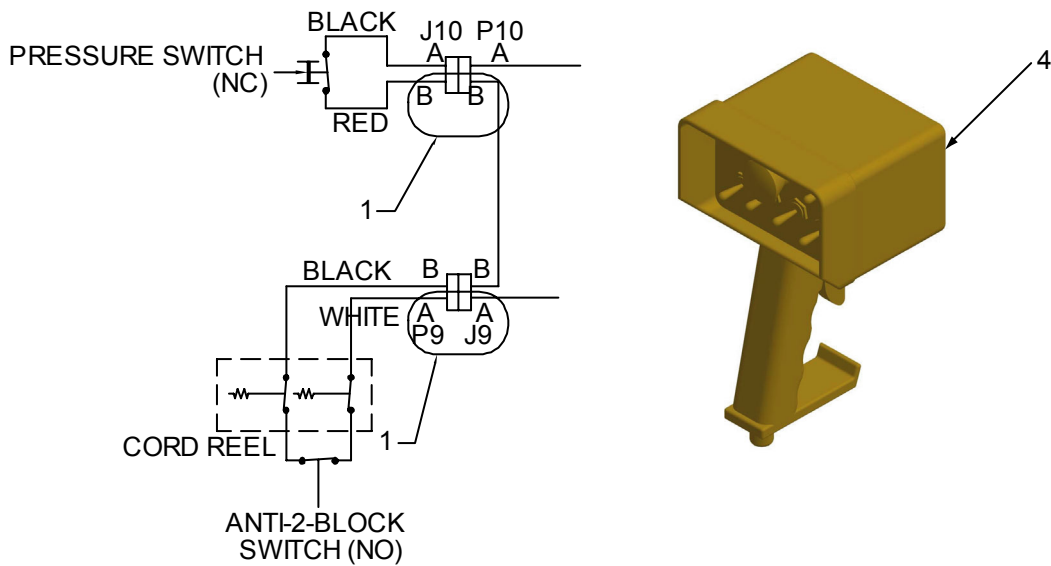
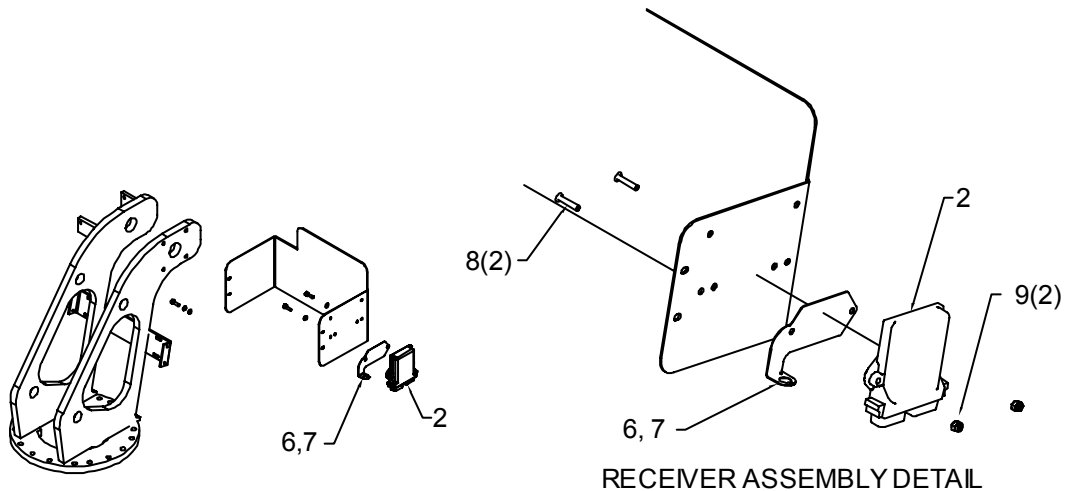
Handle Assembly, Tethered Remote Kit (51713182)

WIRE FUNCTIONS

SOLID/STRIPE	FUNCTION
A YEL/BLK	ROT CW
B ORN/BLK	EXT OUT
C BLU/BLK	WINCH DN
D RED/BLK	WINCH UP
E ORN/RED	-
F BRN	EXT IN
G BRN/RED	ENG START
H BLU/RED	-
J BLK/RED	ENG SPEED
K BRN/BLK	ROT CCW
L RED	POWER
M BLU	ENG STOP
N ORN	LOWER DN
O BLK/ORN	SOL POWER
P YEL	LOWER UP
Q BRN/BLU	-
R YEL/RED	-
S BLK	CRANE
T BLK/BLU	CPRSR
U RED/BLU	OPTION
V BLU/ORN	-
W ORN/BLU	-
X YEL/BLU	-
- RED/ORN	-

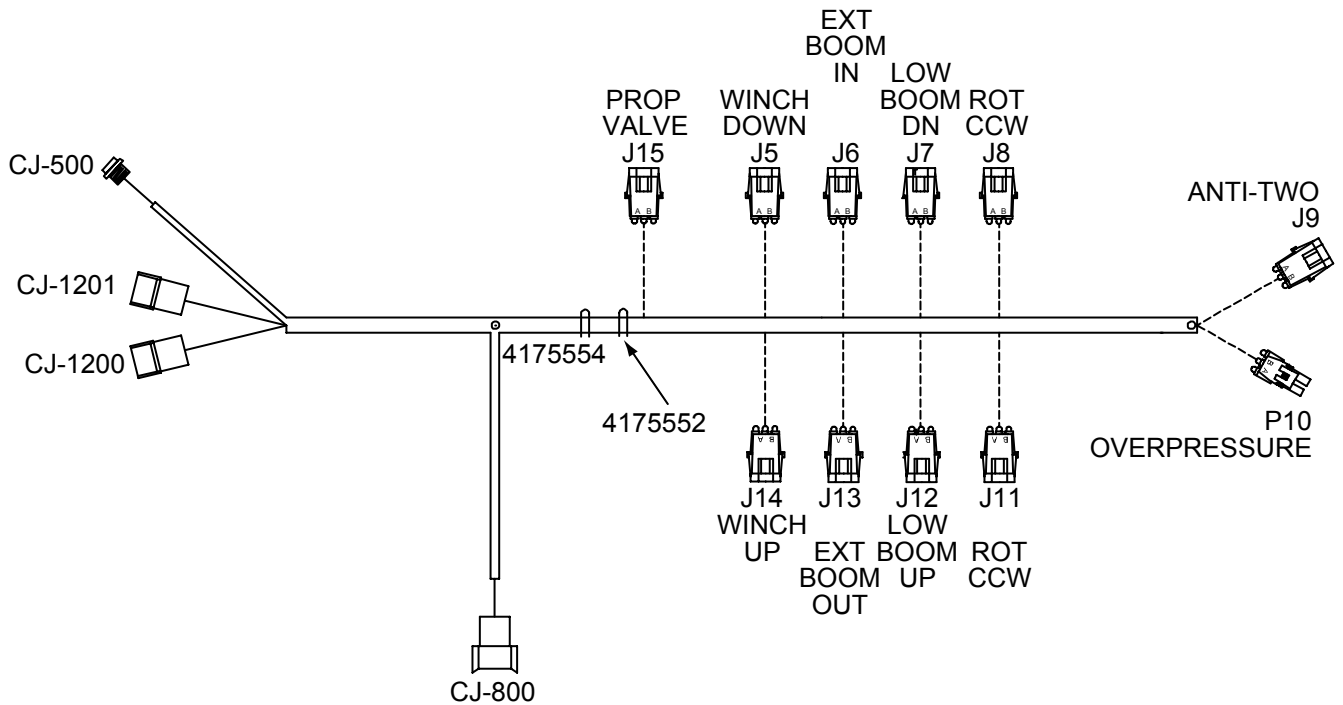
51713182 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	89044214	WIRE 18GA GRN	1.61 FT
2.	60119335	CONTROL HANDLE	1
3.	60111141	TRIGGER (PART OF 11)	1REF
4.	60119277	COVER	1
5.	70034306	BACK COVER	1
7.	77044196	STRAIN RELIEF 3/4	1
8.	77044621	PIN	23
9.	70394447	DECAL-DGR RC ELECTRO SM	1
10.	70394142	DECAL-CTRL	1
11.	70394183	TRIGGER ASM (INCL 3)	1
14.	72061009	SHT MTL SCR #6X3/4 PH	8
15.	77040051	TERM-SPRSPD #8 16-14GA	31
16.	77040371	TOGGLE SWITCH SPST	2
17.	77040372	TOGGLE SWITCH SPDT	4
18.	77040373	TOGGLE SWITCH SPST	2
19.	77040374	TOGGLE SWITCH SPDT	1
20.	77044579	CONNECTOR	1
21.	89044100	CABLE 18GA 24WIRE	30 FT
22.	77040147	TERM-FSLPON 1/4TAB 22-18	3
23.	77040047	TERM-MSLPON 1/4TAB 16-14	3
24.	72060602	MACH SCR #6-32X3/8 RDHD	4
25.	70145495	TUBING-HEAT SHRINK	.5 FT

Control Kit, Radio Remote (90718831) (Ref. Dwg. 99903629)



90718831 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70034439	LOCKWIRE LEAD SEAL, 8"	2
2.	70733921	RECEIVER, RADIO REMOTE	1
4.	70733883	TRANSMITTER, RADIO REMOTE	1
6.	60125959	BRACKET, TETHER CONNECTOR	1
7.	72066340	RIVET, POP, 1/8 X 3/8 GRIP	1
8.	72601846	CAP SCR-22 1/4-20X1-1/4 HH	2
9.	72062194	NUT-SS 1/4-20 NYLOC	2
10.	99903628	INSTRUCTIONS, RADIO REMOTE	1
13.	99903629	INSTALLATION DRAWING, RADIO REMOTE	1

Cable Assembly, Radio Remote (77441101)



77441101 WIRING CHART

LOCATOR CODE: CJ-500			BRAD/HARRIS: 8R5A00A18A120			
			CAP: 80012 (TIE TO HARNESS)			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	BRWN	22	RS485B	TO	SPL B	-
2	BLACK	22	GROUND	TO	SPL G	-
3	BLUE	22	RS485A	TO	SPL D	-
4	WHT	22	+ BATT	TO	SPL P	-
5	GREY	22	SHIELD (OPT)	TO	SPL G	-

LOCATOR CODE: CJ-800			DUETSCH DT04-8PA			
TERM: 1060-16-0122			WEDGE: W8P		CAVITY PLUG: 114017	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	16	COMP PWR	TO	SPL C	-
2	WHT	16	ENG KILL	TO	CJ-1201	6
3	WHT	16	GROUND	TO	SPL G	-
4	WHT	16	SPEED OUTPUT	TO	CJ-1200	7
5	WHT	16	COMP PWR	TO	SPL C	-
6	WHT	16	ENG START	TO	CJ-1201	5
7	WHT	16	POWER	TO	SPL P	-
8	-	-	-	TO	-	-

77441101 WIRING CHART						
LOCATOR CODE: CJ-1200					DEUTSCH: DTM06-12SA	
TERM: 1062-20-0122			WEDGE: WM12S		CAVITY PLUG: 0413-204-2005	
CAVITY	COLOR	GA	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	16	DOM SEL INPUT	TO	SPL P	-
2	-	-	-	TO	-	-
3	WHT	16	GROUND	TO	SPL G	-
4	WHT	16	PROP VLV PWR	TO	J15	B
5	-	-	-	TO	-	-
6	WHT	16	POWER (RADIO)	TO	SPL P	-
7	WHT	16	SPEED OUTPUT	TO	CJ-800	4
8	-	-	-	TO	-	-
9	WHT	16	ROT CCW	TO	J8	B
10	WHT	16	BOOM DOWN	TO	J7	B
11	WHT	16	ROT CCW	TO	J11	B
12	WHT	16	BOOM UP	TO	J12	B
LOCATOR CODE: CJ-1201					DEUTSCH: DTM06-12SB	
TERM: 1062-20-0122			WEDGE: WM12S		CAVITY PLUG: 0413-204-2005	
CAVITY	COLOR	GA	PRINT LABEL	TO	CON-SPLC	CAVITY
1	WHT	16	WINCH DOWN	TO	J5	B
2	WHT	16	WINCH UP	TO	J14	B
3	WHT	16	EXT IN	TO	J6	B
4	WHT	16	EXT OUT	TO	J13	B
5	WHT	16	ENGINE START	TO	CJ-800	6
6	WHT	16	ENGINE KILL	TO	CJ-800	2
7	WHT	16	RS485A	TO	SPL D	-
8	WHT	16	RS485B	TO	SPL B	-
9	WHT	16	COMP PWR	TO	SPL C	-
10	-	-	-	TO	-	-
11	-	-	-	TO	-	-
12	WHT	16	A2B/OVERLOAD	TO	J9	A

LOCATOR CODE: J5					PACKARD: 12010973	
TERM: 12124582					SEAL: 12015359	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	WINCH DN GRD	TO	SPL G	-
B	WHT	16	WINCH DN	TO	CJ-1201	1

LOCATOR CODE: J6					PACKARD: 12010973	
TERM: 12124582					SEAL: 12015359	
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	EXT IN GROUND	TO	SPL G	-
B	WHT	16	EXT IN	TO	CJ-1201	1

LOCATOR CODE: J7					PACKARD: 12010973	
TERM: 12124582					SEAL: 12015359	

77441101 WIRING CHART						
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	BOOM DN GRD	TO	SPL C	-
B	WHT	16	BOOM DN	TO	CJ-1200	10

LOCATOR CODE: J8			PACKARD: 12010973			
TERM: 12124582			SEAL: 12015359			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	ROT CCW GRD	TO	SPL G	-
B	WHT	16	ROT CCW	TO	CJ-1200	9

LOCATOR CODE: J9			PACKARD: 12010973			
TERM: 12124582			SEAL: 12015359			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	ANTI-TWO/OVERLOAD	TO	CJ-1201	12
B	WHT	16	P10B TO J9B	TO	P10	B

LOCATOR CODE: P10			PACKARD: 12015792			
TERM: 12124580			SEAL: 12015359			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	OVR PRESS SW	TO	SPL P	-
B	WHT	16	P10B TO J9B	TO	J9	B

LOCATOR CODE: J11			PACKARD: 12010973			
TERM: 12124582			SEAL: 12015359			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	ROT CW GRND	TO	SPL G	-
B	WHT	16	ROTATE CW	TO	CJ-1200	11

LOCATOR CODE: J12			PACKARD: 12010973			
TERM: 12124582			SEAL: 12015359			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	BOOM UP GRND	TO	SPL G	-
B	WHT	16	BOOM UP	TO	CJ-1200	12

LOCATOR CODE: J13			PACKARD: 12010973			
TERM: 12124582			SEAL: 12015359			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	EXT OUT GRND	TO	SPL G	-
B	WHT	16	EXT OUT	TO	CJ-1201	4

LOCATOR CODE: J14			PACKARD: 12010973			
TERM: 12124582			SEAL: 12015359			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	WINCH UP GRND	TO	SPL G	-
B	WHT	16	WINCH UP	TO	CJ-1201	2

77441101 WIRING CHART						
LOCATOR CODE: J15			PACKARD: 12010973			
TERM: 12124582			SEAL: 12015359			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
A	WHT	16	PROP VLV GRND	TO	SPL G	-
B	WHT	16	PROP VLV PWR	TO	CJ-1200	4

LOCATOR CODE: -						
			SPLICE B			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	BROWN	22	RS485B	TO	CJ-500	1
-	WHT	16	RS485B	TO	CJ-1201	8

LOCATOR CODE: -						
			SPLICE C			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	16	COMP PWR	TO	CJ-1201	9
-	WHT	16	COMP PWR	TO	CJ-800	1
-	WHT	16	COMP PWR	TO	CJ-800	5

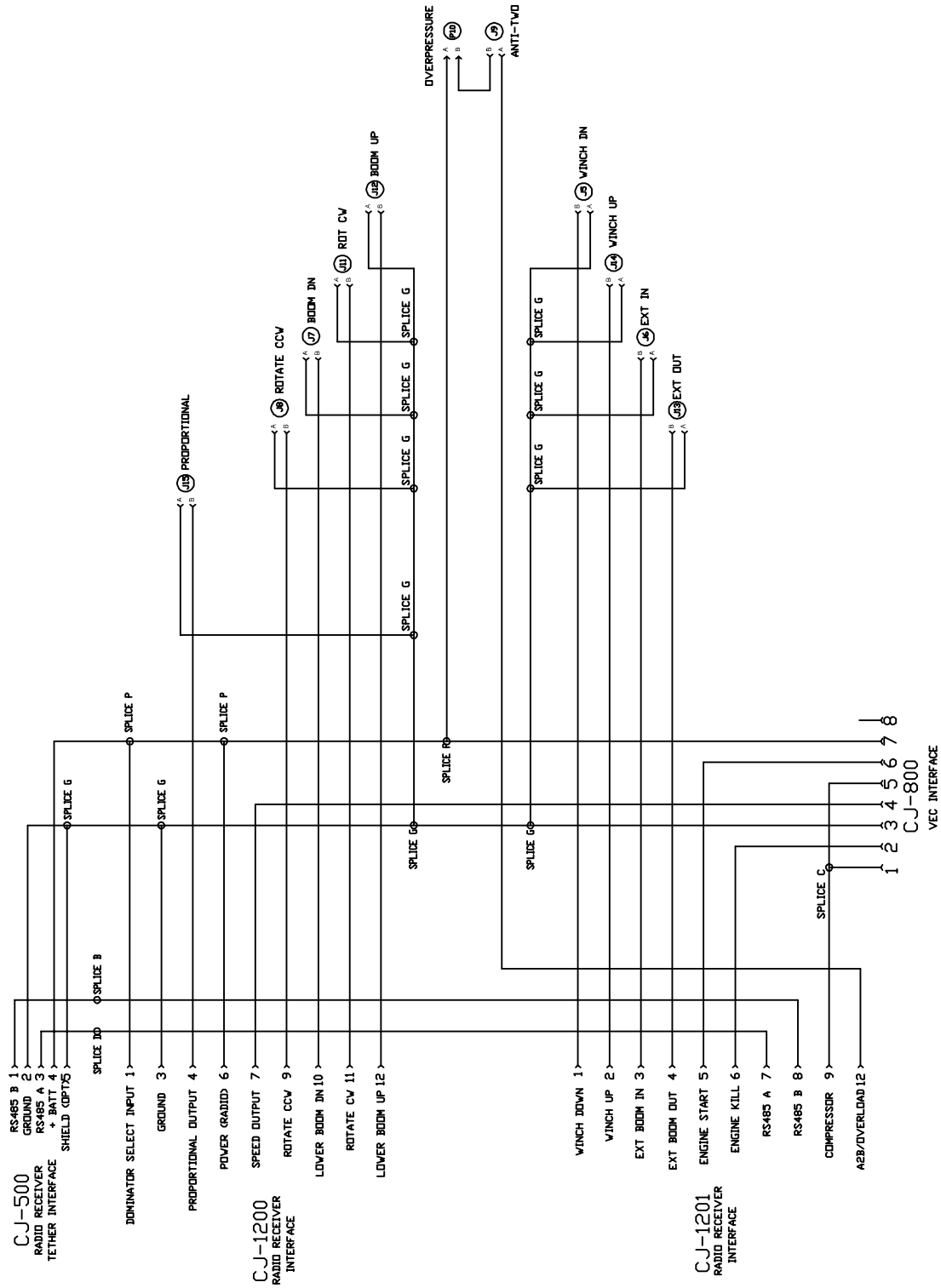
LOCATOR CODE: -						
			SPLICE D			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	BLUE	22	RS485 A	TO	CJ-500	3
-	WHT	16	RS485 A	TO	CJ-1201	7

LOCATOR CODE: -						
			SPLICE G			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	16	WINCH DN GRND	TO	J5	A
-	WHT	16	EXT IN GRND	TO	J6	A
-	WHT	16	BOOM DN GRND	TO	J7	A
-	WHT	16	ROT CCW GRND	TO	J8	A
-	WHT	16	ROT CW GRND	TO	J11	A
-	WHT	16	BOOM UP GRND	TO	J12	A
-	WHT	16	EXT OUT GRND	TO	J13	A
-	WHT	16	WINCH UP GRND	TO	J14	A
-	WHT	16	PROP VLV GRND	TO	J15	A
-	WHT	16	GROUND	TO	CJ-500	2
-	WHT	22	SHIELD (OPT)	TO	CJ-500	5
-	WHT	16	GROUND	TO	CJ-800	3
-	WHT	16	GROUND	TO	CJ-1200	3

LOCATOR CODE: -						
			SPLICE P			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	16	POWER	TO	CJ-800	7
-	WHT	16	POWER (RADIO)	TO	CJ-1200	6
-	WHT	16	DOM SEL INPUT	TO	CJ-1200	1
-	WHT	22	+ BATT	TO	CJ-500	4
-	WHT	16	OVR PRESS SW	TO	P10	A

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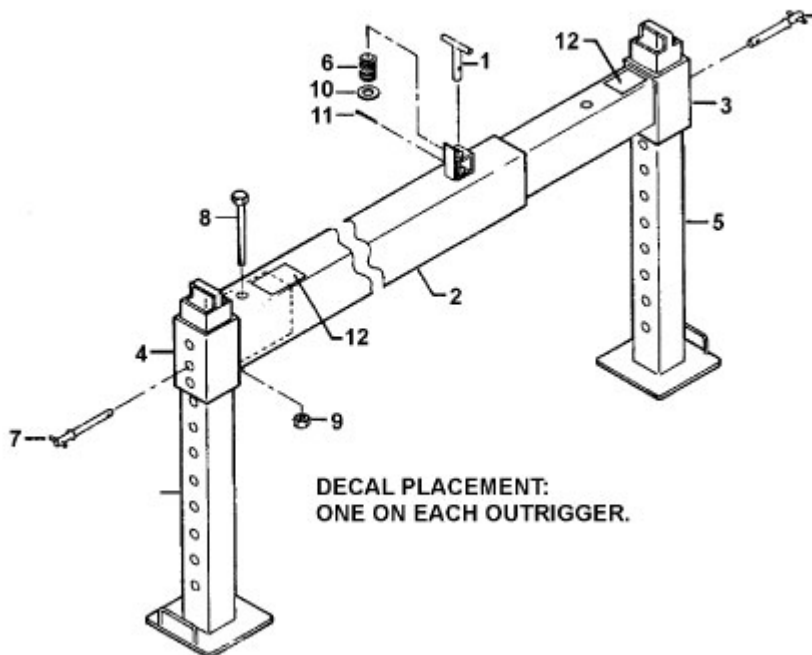
Electrical Schematic, Radio Remote (77441101)



Auxiliary Outrigger Assemblies and Valvebanks

The IMT telescopic cranes have a variety of outrigger options, depending on the body on which the crane is installed and the crane lifting application. Refer to the IMT Outrigger Manual for complete details on the applicable outriggers.

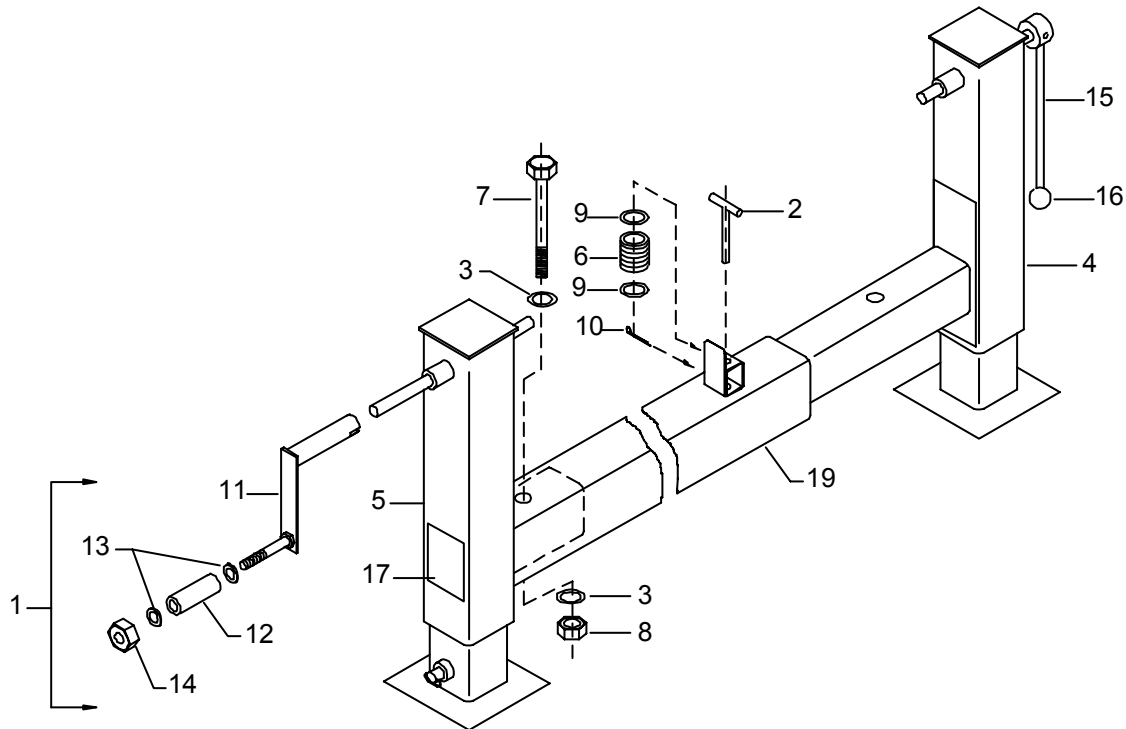
Outrigger, Manual Out/Manual Down, 6x4 (31703350)



31703350 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52070138	PIN	1
2.	52703334	TUBE WELDMENT	1
3.	52703351	ARM	1
4.	52703352	HOUSING, STATIONARY	1
5.	52703353	LEG	2
6.	60010351	SPRING	1
7.	71731361	PIN, QUICK RELEASE	2
8.	72060105	SCREW, CAP 1/2-13X7 HHGR5	1
9.	72062080	NUT, LOCK 1/2-13	1
10.	72063007	WASHER 5/8 WRT	1
11.	72066185	COTTER PIN 1/16X1	1
12.	70392864	DECAL, DANGER O/R STAND CLEAR	2

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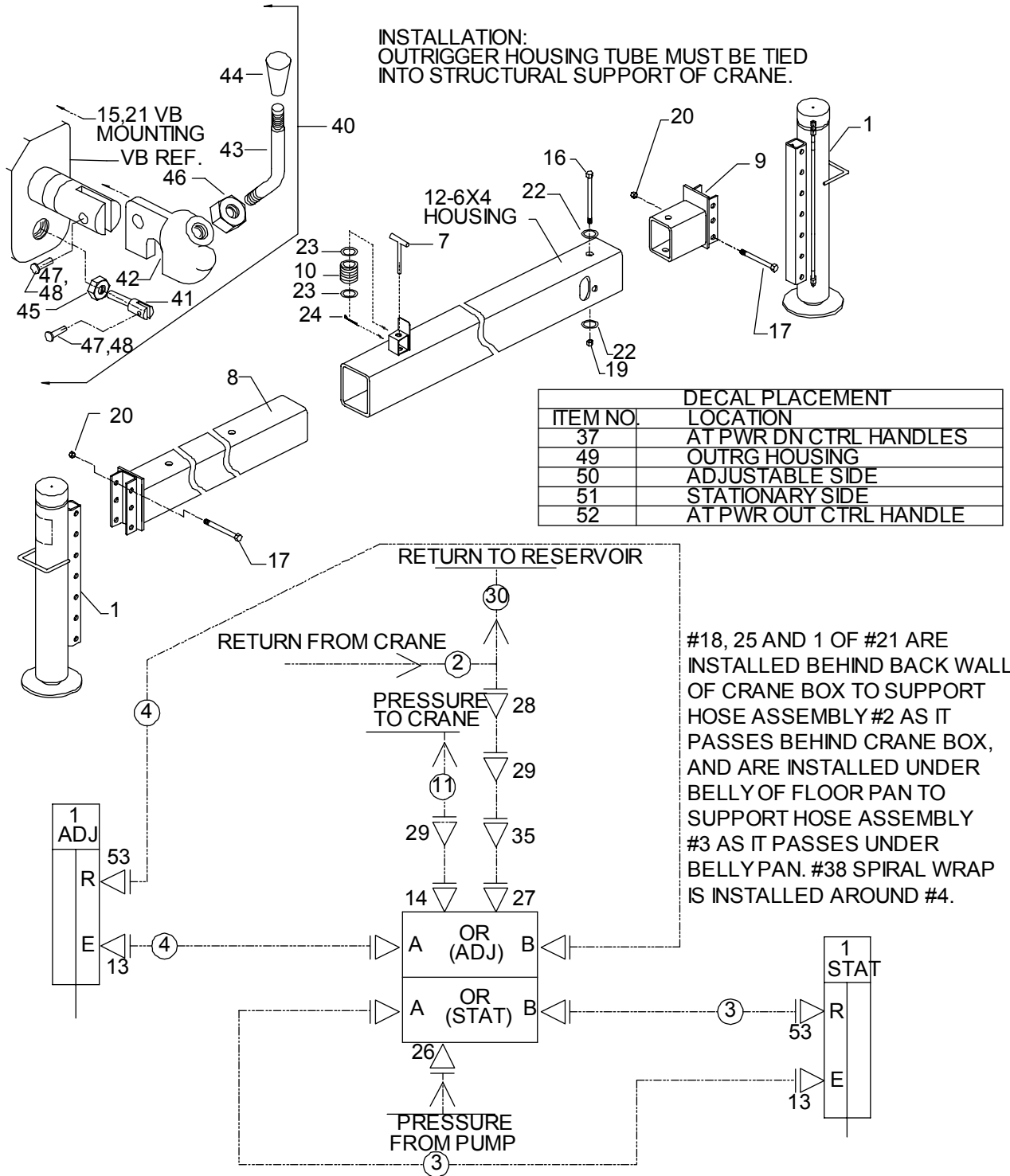
Outrigger, Manual Out/Crank Down, 6x4 (31703354)



INSTALLATION NOTE:
 OUTRIGGER HOUSING TUBE MUST BE TIED INTO
 STRUCTURAL SUPPORT OF CRANE.

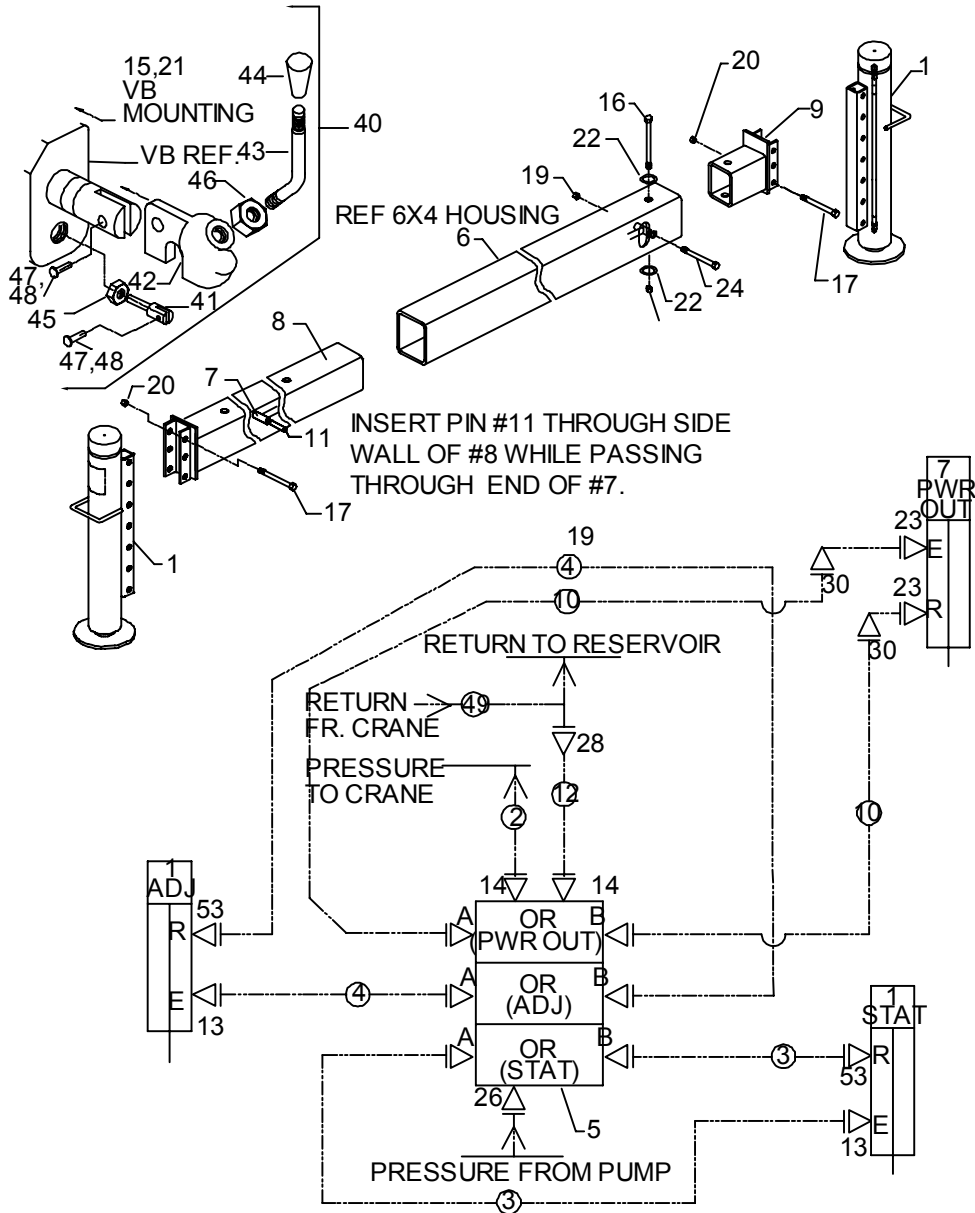
31703354 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51705040	CRANK ASM	1
2.	52070138	PIN WELDMENT "T"	1
3.	72063005	WASHER 1/2 FLAT	2
4.	52714179	ARM, ADJUSTABLE 6X4 CRANK	1
5.	52714180	ARM, STATIONARY 6X4 CRANK	1
6.	60010351	SPRING "T" PIN	1
7.	72060105	CAP SCR 1/2-13X7 HHGR5	1
8.	72062080	NUT 1/2-13 HEX NYLOC	1
9.	72063027	MACHY BUSHING 5/8X14 GA NR	2
10.	72066185	COTTER PIN .16 X 1	1
11.	52705039	CRANK WELDMENT (PART OF #1)	1REF
12.	60030099	ROLLER (PART OF #1)	1REF
13.	72063003	WASHER 3/8 WRT (PART OF #1)	2REF
14.	72062103	NUT 3/8-16 HEX SELF-LOCK (PART OF #1)	1REF
15.	52703319	CRANK HANDLE	1
16.	71039096	CONTROL KNOB	1
17.	70392864	DECAL-DANGER O/R STAND CLEAR	2
18.	99900644	MANUAL-AUX O/R	1
19.	52703334	OUTRIGGER HOUSING WELDMENT	1

Outrigger, Manual Out/Power Down, 6x4 (31710966)



31710966 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	3B205010	CYLINDER	2
2.	51395431	HOSE-FJ 1/2X98 OAL	1
3.	51395552	HOSE-FJ 1/4X135 OAL	2
4.	51396280	HOSE-FJ 1/4X96 OAL	2
5.	51714813	VALVE BANK, 2 SECT (INCLUDES #40)	1
7.	52070138	PIN WELDMENT	1
8.	52705725	ARM, ADJUSTABLE	1
9.	52705726	ARM, STATIONARY	1
10.	60010351	SPRING "T" PIN	1
11.	51396184	HOSE-FF 1/2X159	1
12.	52703334	HOUSING, OR 6X4	1
13.	72053758	ELBOW #4MSTR #4MJIC 90°	2
14.	72053764	ELBOW #10MSTR #8MJIC 90°	1
15.	72060025	CAP SCR 5/16-18X1 HHGR5Z	3
16.	72601760	CAP SCR 1/2-13X7 HHGR8	1
17.	72060155	CAP SCR 5/8-11X3.5 HHGR5	4
18.	72060833	SCR-THD CUT 5/16-18X3/4 HWH-1 (SEE NOTE)	2
19.	72062080	NUT 1/2-13 HEX NYLOC	1
20.	72062091	NUT 5/8-11 HEX NYLOC	4
21.	72063002	WASHER 5/16 FLAT	5
22.	72063005	WASHER 1/2 FLAT	2
23.	72063027	MACHY BUSHING 5/8X14 GA NR	2
24.	72066185	COTTER PIN	1
25.	72066582	CLAMP-UMP 20 (SEE NOTE)	2
26.	72532358	ADPTR #8MSTR #8MJIC	1
27.	72532365	ADPTR #10MSTR #12MJIC	1
28.	72532657	TEE-SWIVEL NUT RUN 3/4 JIC	1
29.	72532658	ELBOW #8MJIC #8FJIC SW	1
30.	51396282	HOSE-FF 3/4X51 OAL (12-12)	1
35.	72532972	ADPTR #8MJIC #12FJIC	1
37.	76391511	DECAL-UP & DOWN STAB. R&L	1
38.	89034049	SPIRAL WRAP, BLK (SEE NOTE)	4'
39.	99900644	MANUAL-AUX OUTRIGGER	1
40.	51731580	HANDLE ASM (INCL. 34-41) (PART OF 5)	2REF
41.	70142648	PIVOT-LEVER (PART OF #40)	2REF
42.	70142650	LEVER SUPPORT (PART OF #40)	2REF
43.	70142651	LEVER-CONTROL HANDLE (PART OF #40)	2REF
44.	71392269	KNOB-CONTROL HANDLE (PART OF #40)	2REF
45.	72062021	NUT 5/16-18 HEX JAM (PART OF #40)	2REF
46.	72062024	NUT 1/2-13 HEX JAM (PART OF #40)	2REF
47.	72066162	COTTER PIN (PART OF #40)	4REF
48.	72661204	CLEVIS PIN (PART OF #40)	4REF
49.	70392864	DECAL-DANGER O/R STAND CLEAR	2
50.	70392867	DECAL-DANGER O/R MOVING	1
51.	71392257	DECAL-O/R POWER DOWN SS	1
52.	71392277	DECAL-O/R POWER OUT	1
53.	72533567	ELBOW #4MSTR #4MJIC XLG	2

Outrigger, Power Out/Power Down, 6x4 (31710967)

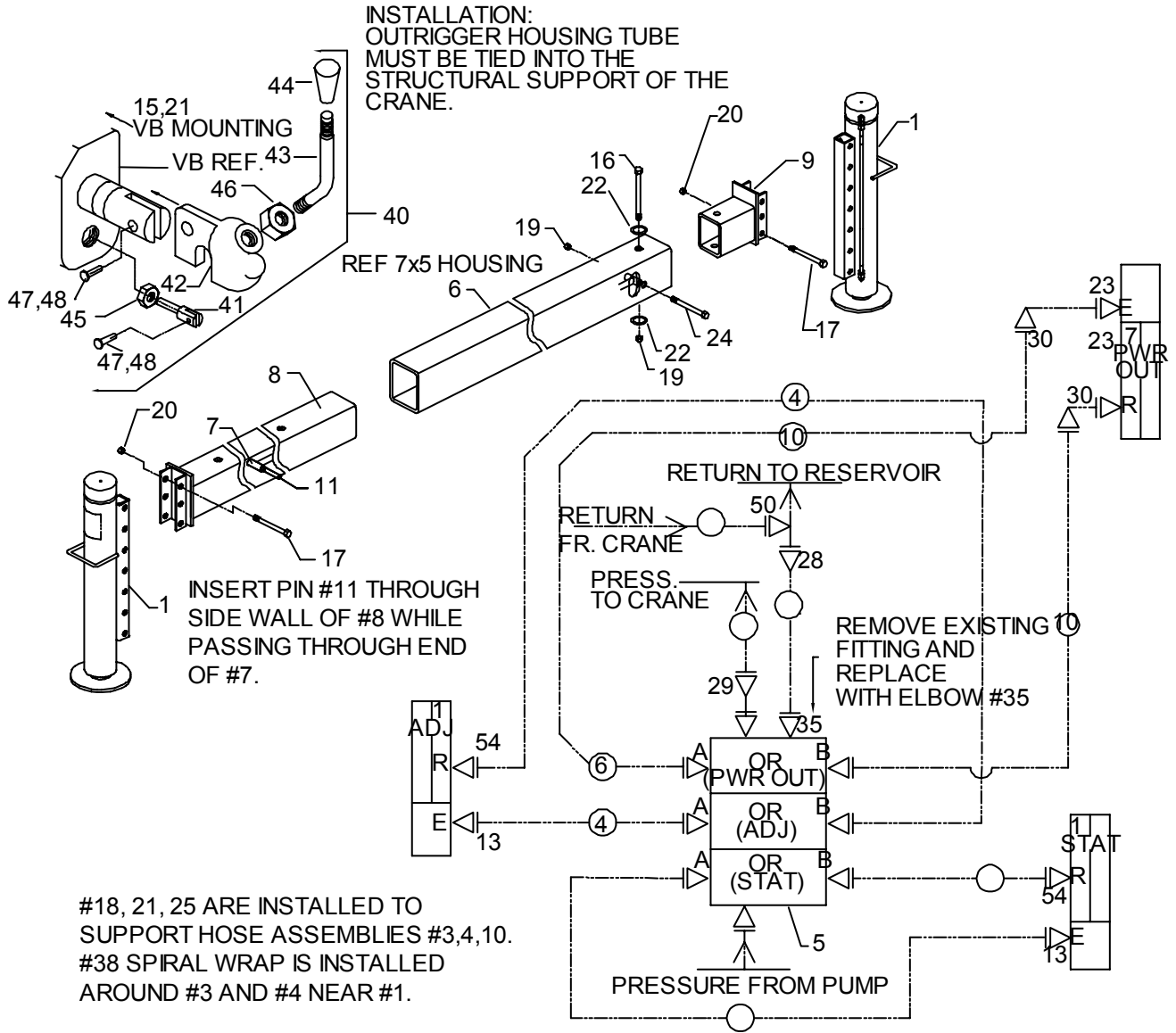


#18, 21, 25 ARE INSTALLED TO SUPPORT HOSE ASSEMBLIES #3,4,10.
 #38 SPIRAL WRAP IS INSTALLED AROUND #3 AND #4 NEAR #1.

DECAL PLACEMENT	
ITEM	LOCATION
36	AT P/O CONTROL HANDLE
37	AT P/D CONTROL HANDLES
50	O/R HOUSING
51	ADJUSTABLE SIDE
52	STATIONARY SIDE

31710967 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	3B205010	CYLINDER, POWER DOWN LEG	2
2.	51394917	HOSE-FF 1/2X137 OAL (8-8)	1
3.	51395552	HOSE-FJ 1/4X135 OAL (4-4)	2
4.	51396280	HOSE-FJ 1/4X96 OAL (4-4)	2
5.	51714812	VALVEBANK ASM - 3 SECTION	1
6.	52703334	TUBE - POWER OUT	1
7.	71411797	CYLINDER, POWER OUT (WAS 3B142860)	1
8.	52705725	ARM, ADJUSTABLE	1
9.	52705726	ARM, STATIONARY	1
10.	51396281	HOSE-FJ 1/4X107 OAL (4-4)	2
11.	72661473	PIN, SPRING 1/2X3	1
12.	51395412	HOSE-FJ 1/2X63 OAL (8-8)	1
13.	72053758	ELBOW #4MSTR #4MJIC 90°	2
14.	72532358	ADPTR #8MSTR #8MJIC	1
15.	72060025	CAP SCR 5/16-18X1 HHGR5Z	3
16.	72601760	CAP SCR 1/2-13X7 HHGR8	1
17.	72060155	CAP SCR 5/8-11 X 3.50 HHGR5Z	4
18.	72060833	SCR- THD CUT 5/16-18 X 3/4 HWH-1 (SEE NOTE)	2
19.	72062080	NUT 1/2-13 HEX NYLOC	2
20.	72062091	NUT 5/8-11 HEX NYLOC	4
21.	72063002	WASHER 5/16 FLAT	5
22.	72063005	WASHER 1/2 FLAT	2
23.	72532351	ADPTR #4MSTR #4MJIC	4
24.	72060101	CAP SCR 1/2-13 X 5 HHGR5	1
25.	72066582	CLAMP UMP 20 (SEE NOTE)	2
26.	72532358	ADPTR #8MSTR #8MJIC	1
28.	72532657	TEE-#8JIC SWVL NUT RUN	1
30.	72532690	ELBOW #4MJIC #4FJIC SW	2
36.	71392277	DECAL-OUTRIGGER POWER OUT	1
37.	76391511	DECAL-UP & DOWN STAB. R&L	1
38.	89034049	SPIRAL WRAP, BLK (SEE NOTE)	4'
39.	99900644	MANUAL-AUX OUTRIGGER	1
40.	51731580	HANDLE ASM (INCL. 34-41) (PART OF 5)	2REF
41.	70142648	PIVOT-LEVER (PART OF #40)	2REF
42.	70142650	LEVER SUPPORT (PART OF #40)	2REF
43.	70142651	LEVER-CONTROL HANDLE (PART OF #40)	2REF
44.	71392269	KNOB-CONTROL HANDLE (PART OF #40)	2REF
45.	72062021	NUT 5/16-18 HEX JAM (PART OF #40)	2REF
46.	72062024	NUT 1/2-13 HEX JAM (PART OF #40)	2REF
47.	72066162	COTTER PIN (PART OF #40)	4REF
48.	72661204	CLEVIS PIN (PART OF #40)	4REF
49.	51395431	HOSE-FF 1/2X98 OAL (8-8)	1
50.	70392864	DECAL-DANGER OR STAND CLEAR	2
51.	73092867	DECAL-DANGER OR MOVING	1
52.	71392257	DECAL-OR POWER DN SS	1
53.	72533567	ELBOW #4MSTR #4MJIC XLG	2

Outrigger, Power Out/Power Down, 7x5 (31712739)



DECAL PLACEMENT	
ITEM	LOCATION
36	AT P/O CONTROL HANDLE
37	AT P/D CONTROL HANDLES
51	O/R HOUSING
52	ADJUSTABLE SIDE
53	

31712739 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	3B205010	CYLINDER	2
2.	51396184	HOSE-FF 1/2X159 OAL (8-8)	1REF
3.	51395164	HOSE-FJ 1/4X135 OAL (4-4)	2REF
4.	51396280	HOSE-FJ 1/4X96 OAL (4-4)	2REF
5.	51714812	VALVEBANK ASM	1

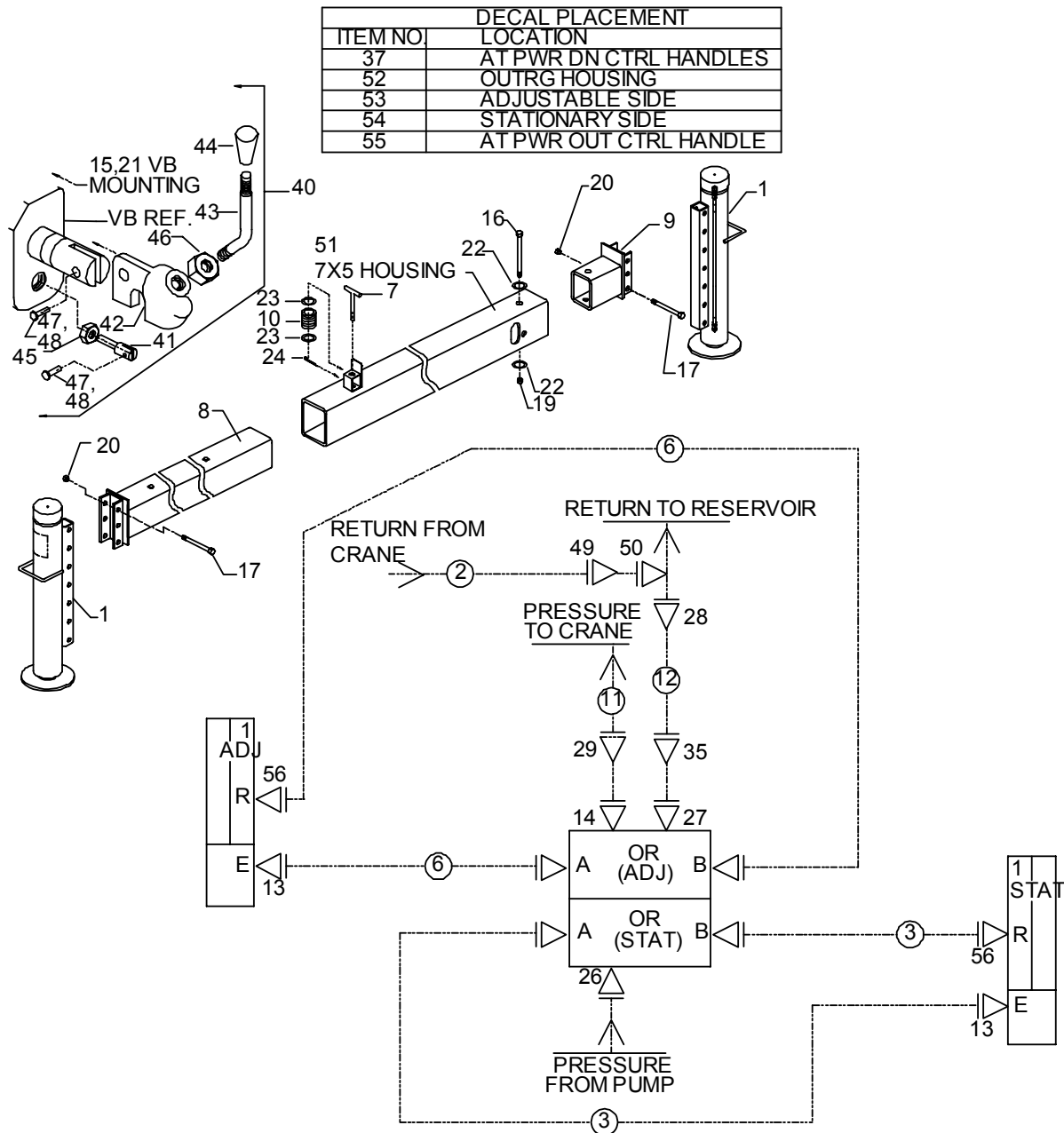
31712739 PARTS LIST			
6.	60118680	TUBE-OUTRIGGER HOUSING POWER OUT	1REF
7.	71411797	CYLINDER, POWER OUT (WAS 3B142860)	1
8.	52712735	ARM, ADJUSTABLE	1
9.	52712736	ARM, STATIONARY	1
10.	51396281	HOSE-FJ 1/4X107 OAL (4-4) (PART OF #55)	2REF
11.	72661472	PIN-SPRING 1/2X4	1
12.	51396282	HOSE-FF 3/4 X51 OAL (12-12) (PART OF #55)	1REF
13.	72053758	ELBOW #4MSTR #4MJIC 90°	2
15.	72060025	CAP SCR 5/16-18X1 HHGR5Z	3
16.	72060107	CAP SCR 1/2-13X8 HHGR5	1
17.	72060155	CAP SCR 5/8-11X3.5 HHGR5	4
18.	72060833	SCR-THD CUT 5/16-18X3/4 HWH-1 (SEE NOTE)	2
19.	72062080	NUT 1/2-13 HEX NYLOC	2
20.	72062091	NUT 5/8-11 HEX NYLOC	4
21.	72063002	WASHER 5/16 FLAT	5
22.	72063005	WASHER 1/2 FLAT	2
23.	72532351	ADPTR #4MSTR #4MJIC	4
24.	72601297	CAP SCR 1/2-13 X 5.75 HH GR5	1
25.	72066582	CLAMP-UMP 20 (SEE NOTE)	2
28.	72531205	TEE-MALE JIC 3/4-16 1/2 TUBE	1
29.	72532658	ELBOW #8MJIC #8FJIC SW	1
30.	72532690	ELBOW #4MJIC #4FJIC SW	2
35.	72533623	ELBOW #8MSTR #12MJIC 90°	1
36.	71392277	DECAL-OUTRIGGER POWER OUT	1
37.	76391511	DECAL-UP & DOWN STAB. R&L	1
38.	89034049	SPIRAL WRAP, BLK (SEE NOTE)	4'
39.	99900644	MANUAL-AUX OUTRIGGER	1
40.	51731580	HANDLE ASM (INCL. 34-41) (PART OF 5)	2REF
41.	70142648	PIVOT-LEVER (PART OF #40)	2REF
42.	70142650	LEVER SUPPORT (PART OF #40)	2REF
43.	70142651	LEVER-CONTROL HANDLE (PART OF #40)	2REF
44.	71392269	KNOB-CONTROL HANDLE (PART OF #40)	2REF
45.	72062021	NUT 5/16-18 HEX JAM (PART OF #40)	2REF
46.	72062024	NUT 1/2-13 HEX JAM (PART OF #40)	2REF
47.	72066162	COTTER PIN (PART OF #40)	4REF
48.	72661204	CLEVIS PIN (PART OF #40)	4REF
49.	51395431	HOSE-FF 1/2X96 OAL (8-8) (PART OF #55)	1REF
50.	72532972	ADPTR #8MJIC #12FJIC	1
51.	70392864	DECAL-DANGER O/R STAND CLEAR	2
52.	70392867	DECAL-DANGER O/R MOVING	1
53.	71392257	DECAL-DANGER POWER DOWN SS	1
54.	72533567	ELBOW #4MSTR #4MJIC XLG	2
55.	51717834	HOSE KIT - O/R PO/PD (7X5)	1

Outrigger, Manual Out/Power Down, 7x5 (31712740)

INSTALLATION NOTE: TIE OUTRIGGER HOUSING TUBE INTO STRUCTURAL SUPPORT OF CRANE.

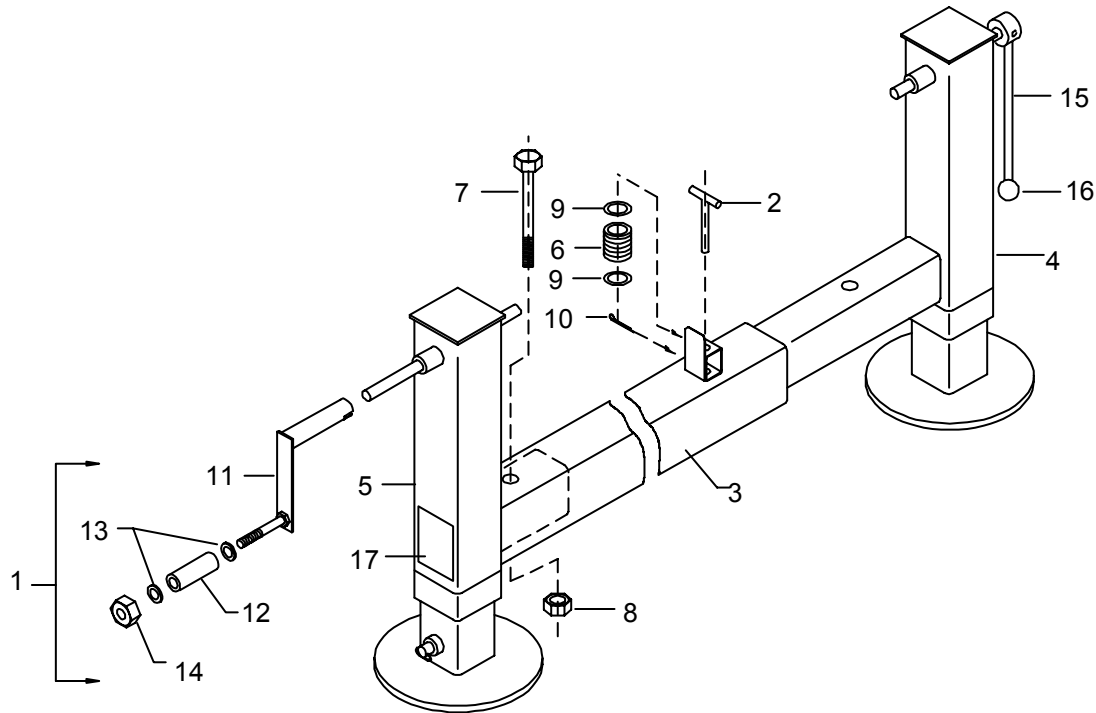
#18, 25, AND 1 OF #21 ARE INSTALLED BEHIND BACK WALL OF CRANE BOX TO SUPPORT HOSE ASSEMBLY #2 AS IT PASSES BEHIND CRANE BOX AND UNDER BELLY PAN OF FLOOR TO SUPPORT HOSE ASSEMBLY #3 AS IT PASSES UNDER BELLY PAN.

#38 SPIRAL WRAP IS INSTALLED AROUND #3 AND #4.



31712740 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	3B205010	CYLINDER	2
2.	51394931	HOSE-FF 1/2X98 OAL	1
3.	51395552	HOSE-FJ 1/4X135 OAL	2
5.	51714813	VALVE BANK, 2 SECT (INCLUDES #40)	1
6.	51396280	HOSE-FJ 1/4X96	2
7.	52070138	PIN WELDMENT	1
8.	52712735	ARM, ADJUSTABLE	1
9.	52712736	ARM, STATIONARY	1
10.	60010351	SPRING "T" PIN	1
11.	51396184	HOSE-FF 1/2X159 OAL (8-8) (PART OF #51)	1
12.	51396282	HOSE-FF 3/4 X51 OAL (12-12) (PART OF #51)	1
13.	72053758	ELBOW #4MSTR #4MJIC 90°	2
14.	72053764	ELBOW #10MSTR #8MJIC 90°	1
15.	72060025	CAP SCR 5/16-18X1 HHGR5Z	3
16.	72060107	CAP SCR 1/2-13X8 HHGR5	1
17.	72060155	CAP SCR 5/8-11X3.5 HHGR5	4
18.	72060833	SCR-THD CUT 5/16-18X3/4 HWH-1 (SEE NOTE)	2
19.	72062080	NUT 1/2-13 HEX NYLOC	1
20.	72062091	NUT 5/8-11 HEX NYLOC	4
21.	72063002	WASHER 5/16 FLAT	5
22.	72063005	WASHER 1/2 FLAT	2
23.	72063027	MACHY BUSHING 5/8X14 GA NR	2
24.	72066185	COTTER PIN	1
25.	72066582	CLAMP-UMP 20 (SEE NOTE)	2
26.	72532358	ADPTR #8MSTR #8MJIC	1
27.	72532365	ADPTR #10MSTR #12MJIC	1
28.	72531205	TEE-MALE JIC 3/4-16 1/2 TUBE	1
29.	72532658	ELBOW #8MJIC #8FJIC SW	1
35.	72532696	ELBOW #12MJIC #12FJIC SW	1
37.	76391511	DECAL-UP & DOWN STAB. R&L	1
38.	89034049	SPIRAL WRAP, BLK (SEE NOTE)	4'
39.	99900644	MANUAL-AUX OUTRIGGER	1
40.	51731580	HANDLE ASM (INCL. 34-41) (PART OF 5)	2REF
41.	70142648	PIVOT-LEVER (PART OF #40)	2REF
42.	70142650	LEVER SUPPORT (PART OF #40)	2REF
43.	70142651	LEVER-CONTROL HANDLE (PART OF #40)	2REF
44.	71392269	KNOB-CONTROL HANDLE (PART OF #40)	2REF
45.	72062021	NUT 5/16-18 HEX JAM (PART OF #40)	2REF
46.	72062024	NUT 1/2-13 HEX JAM (PART OF #40)	2REF
47.	72066162	COTTER PIN (PART OF #40)	4REF
48.	72661204	CLEVIS PIN (PART OF #40)	4REF
49.	72532972	ADPTR #8MJIC #12FJIC	1
50.	72532980	ADTPR PR SW IN-LINE JIC 3/4	1
51.	52712734	O/R HOUSING 7X5	1
52.	70392864	DECAL-DANGER O/R STAND CLEAR	2
53.	70392867	DECAL-DANGER O/R (MOVING)	1
54.	71392257	DECAL-O/R POWER DOWN SS	1
55.	71392277	DECAL-O/R POWER OUT	1
56.	72533567	ELBOW #4MSTR #4MJIC XLG	2

Outrigger, Manual Out/Crank Down, 7x5 (31712741)

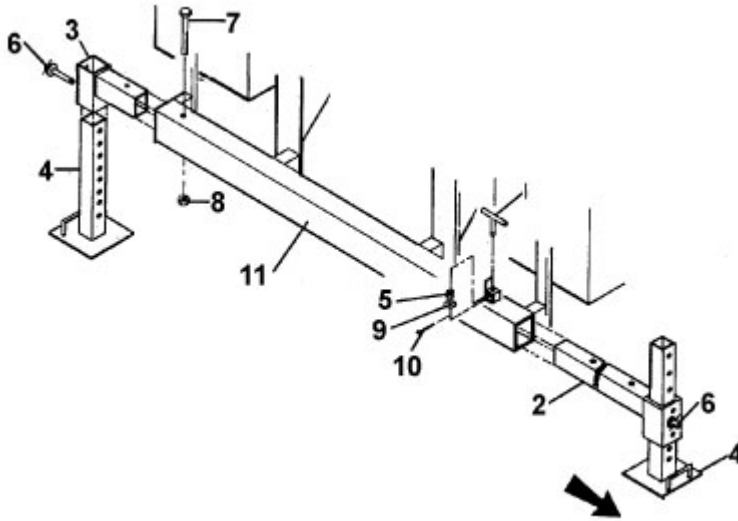


NOTE:

- 1 TIE OUTRIGGER HOUSING TUBE INTO STRUCTURAL SUPPORT OF CRANE.

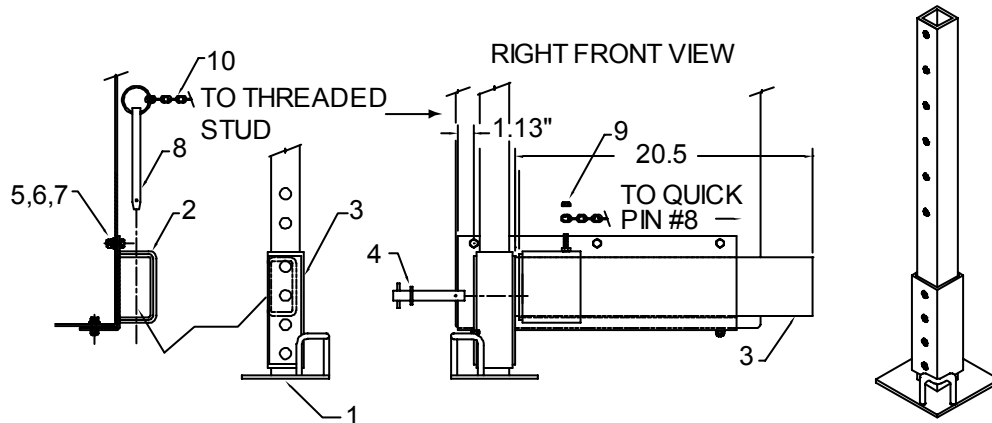
31712741 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51705040	CRANK ASM (INCL. 11-14)	1
2.	52070138	PIN WELDMENT - "T"	1
3.	52712734	O/R HOUSING 7X5	1
4.	52712737	ARM-O/R ADJ. MAN OUT/CRANK DOWN	1
5.	52712738	ARM-STAT MAN OUT/CRANK DOWN	1
6.	60010351	SPRING-"T" PIN	1
7.	72060107	CAP SCR 1/2-13X8 HHGR5	1
8.	72062080	NUT 1/2-13 HEX NYLOC	1
9.	72063007	WASHER 5/8 FLAT	2
10.	72066185	COTTER PIN	1
11.	52705039	CRANK WELDMENT (PART OF #1)	1REF
12.	60030099	ROLLER (PART OF #1)	1REF
13.	72063003	WASHER 3/8 WRT (PART OF #1)	2REF
14.	72062103	NUT 3/8-16 HEX SELF-LOCK (PART OF #1)	1REF
15.	52703319	CRANK HANDLE	1
16.	71039096	CONTROL KNOB	1
17.	70392864	DECAL-DANGER O/R STAND CLEAR	2

Outrigger, Manual Out/Manual Down, 7x5 (31712902)



31712902 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52070138	PIN WELDMENT "T"	1
2.	52712889	ADJUSTABLE ARM	1
3.	52712890	STATIONARY ARM	1
4.	52703353	OUTRIGGER LEG	2
5.	60010351	SPRING	1
6.	71731361	QUICK RELEASE "T" PIN	2
7.	72060107	CAP SCR 1/2-13X8 HHGR5	1
8.	72062080	NUT 1/2-13 NYLOC	1
9.	72063007	WASHER 5/8 WRT	1
10.	72066185	COTTER PIN	1
11.	52712734	O/R HOUSING 7X5	1

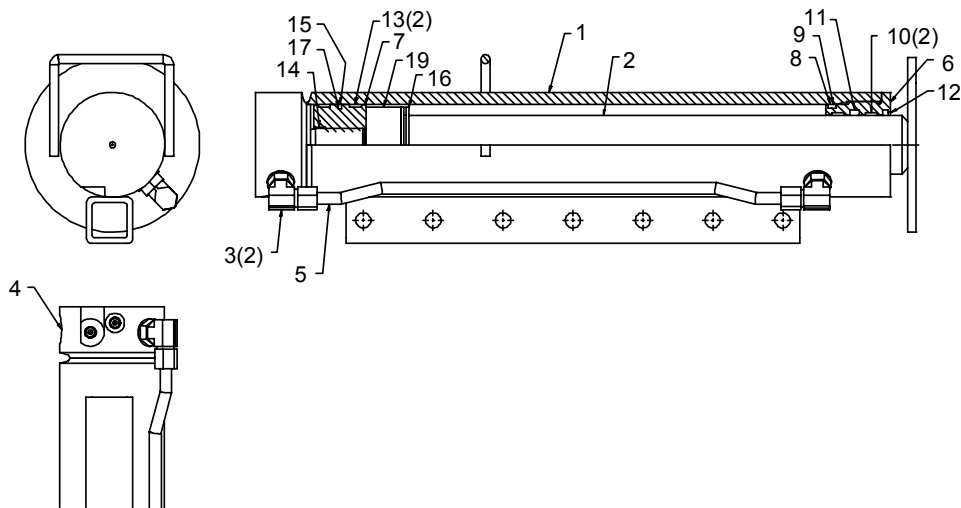
Outrigger, Front Right Pull-Out (51714110)



51714110 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52714182	OUTRIGGER LEG	1
2.	52715282	OUTRIGGER HOUSING, PULL-OUT	1
3.	52715283	OUTRIGGER ARM	1
4.	71731372	PIN, QUICK RELEASE	1
5.	72060046	CAP SCR 3/8-16X1 HHGR5	5
6.	72062103	NUT 3/8-16 LOCK	5
7.	72063003	WASHER 3/8 LOCK	5
8.	71733327	PIN, QUICK-RELEASE	1
9.	72062104	NUT 1/4-20 HEX NYLOC	1
10.	60114940	CHAIN - 1/8X9"	1

REV. E 20040114

Cylinder, Power Down (3B205010)



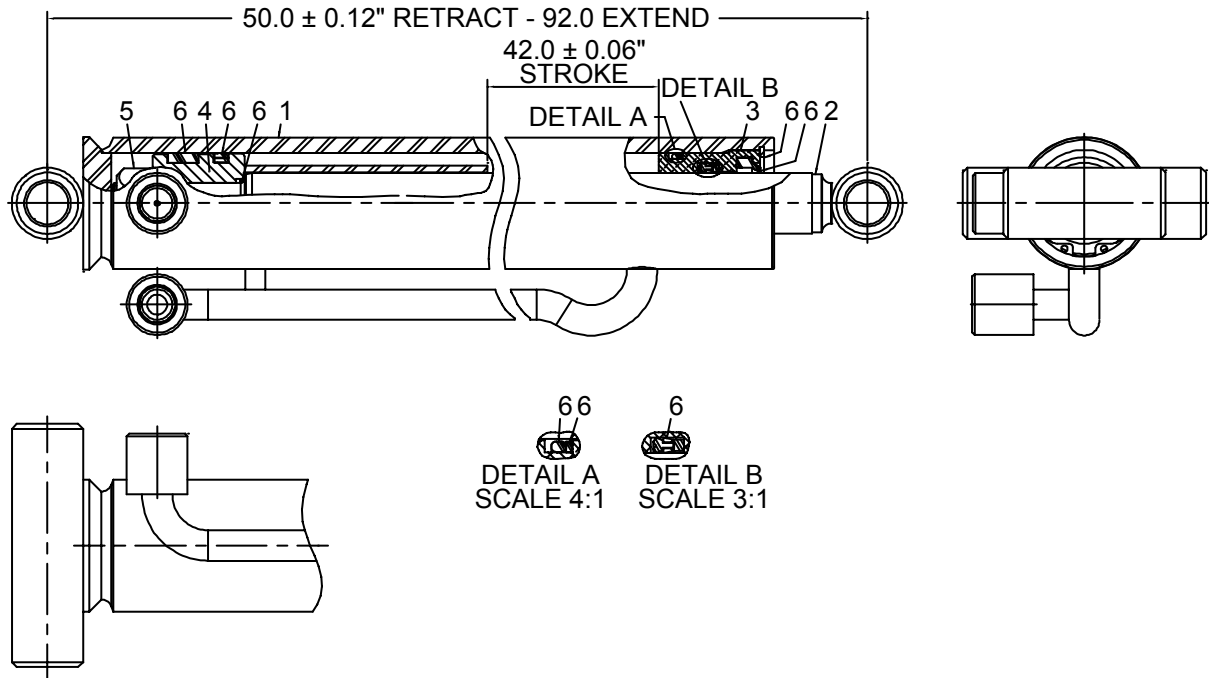
NOTES:

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.
- 2 APPLY "LUBRIPLATE #630-2" MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.
- 3 USE ANTI-SEIZE LUBRICATING COMPOUND OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.

3B205010 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	4B205010	CASE ASY	1
2.	4G048870	ROD ASY	1
3.	72053763	ELL #8MSTR #8MJIC 90°	1
4.	73054681	CHECK VALVE	1
5.	5P288970	PORT TUBE	1
6.	6HD35025	HEAD	1
7.	6ID35125	PISTON	1
8.	7Q072338	O-RING	1REF
9.	7Q10P338	BACKUP RING	1REF
10.	7T2NX427	WEAR RING	2REF
11.	7R546025	U-CUP SEAL	1REF
12.	7R14P025	ROD WIPER	1REF
13.	7T2NX435	PISTON RING	2REF
14.	7T61N125	NYLON LOCK RING	1REF
15.	7T66P035	PISTON SEAL	1REF
16.	6A025025	WAFER LOCK	1REF
17.	7Q072151	O-RING	1REF
18.	9D142020	SEAL KIT (INCL. 8-17)	1
19.	6C015025	STOP TUBE	1

Cylinder, Power Out (71411797) (Eff. 9-05 thru 1-07)



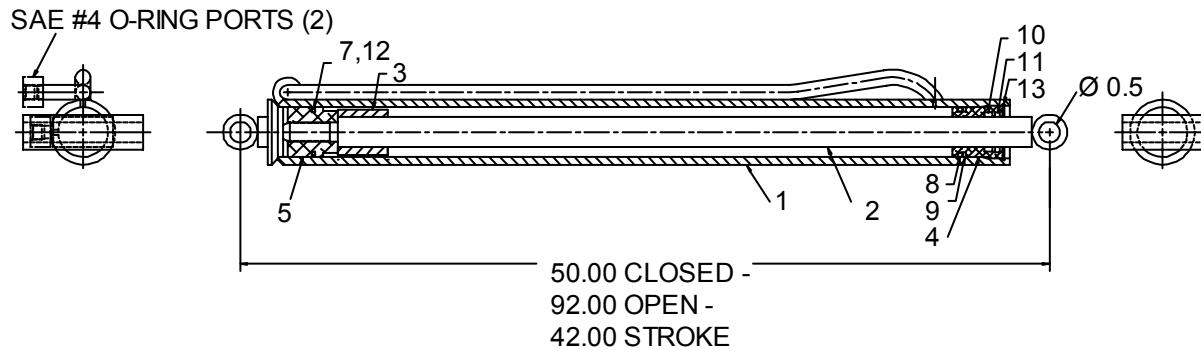
NOTES:

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

71411797 CYLINDER DATA	
EXTENDED	1.23 IN ² , 0.22 GAL
RETRACTED	0.79 IN ² , 0.14 GAL
CASE	1.25 BORE X ϕ 1.63
ROD	ϕ 0.750
DRY WEIGHT	19.7 LB
TEST PRESSURE	3000 PSI
OPERATING PRESSURE	2500 PSI
PORTS	SAE #4 O-RING BOSS (7/16-20 UNF-2B)
CYLINDER TUBE BURST PRESSURE	20,000 PSI
TORQUE	TORQUE LOCKNUT (#6) WITH THREADLOCK COMPOUND TO 35-40 FT-LB

71411797 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411933	CASE WELDMENT	1
2.	71411934	ROD WELDMENT	1
3.	71411935	HEAD GLAND	1
4.	71411936	PISTON	1
5.	-REF-	LOCKNUT 1-14 UNS	1
6.	94396794	SEAL KIT	1
NEW 20051010			

Cylinder, Power Out (3B142860) (Thru 8-05, Eff. 2-07)

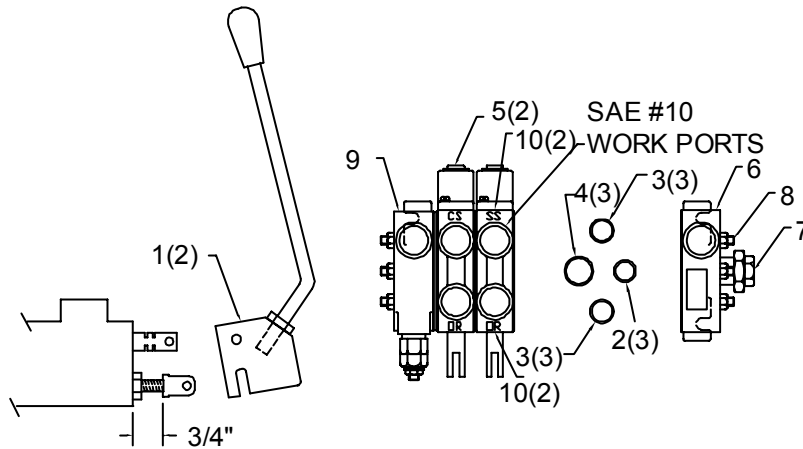


NOTES:

- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THE THREADS ON THE CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON HEAD GLAND AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

3B142860 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	4B142860	CASE ASM	1
2.	4G142860	ROD ASM	1
3.	6C125007	STOP TUBE	1
4.	6H012007	HEAD	1
5.	6I012050	PISTON	1
6.	9B050608	SEAL KIT	REF
7.	7Q072021	O-RING	1
8.	7Q072214	O-RING	1
9.	7Q10P214	BACKUP RING	1
10.	7R100750	U-CUP SEAL	1
11.	7R13P007	ROD WIPER	1
12.	7T66P012	PISTON SEAL	1
13.	72066029	RETAINING RING	1

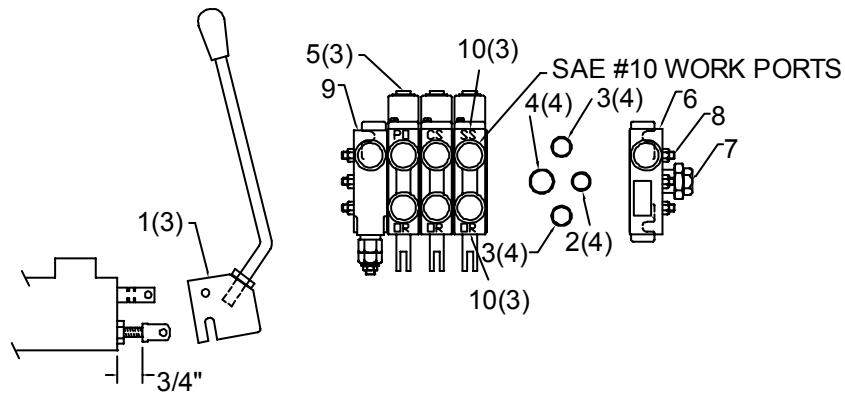
Valve Bank, 2-Section (51705983)



FOR OUTRIGGER VALVE BANK LEVER PIVOT BOLT MUST BE HELD OUT 3/4" SO HANDLE TIPS IN AS SHOWN.

51705983 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73540073	LEVER ASM	2
2.	7Q072017	O-RING SM	3
3.	7Q072018	O-RING MED	6
4.	7Q072021	O-RING LG	3
5.	73540074	VALVE SECTION 4-WAY	2
6.	73540075	END COVER RH	1
7.	73540076	POWER BEYOND ADAPTER	1
8.	73540078	TIE ROD KIT (2 SECT)	1
9.	73540077	END COVER-LH	1
10.	7Q072114	O-RING	4

Valve Bank, 3-Section (51705984)



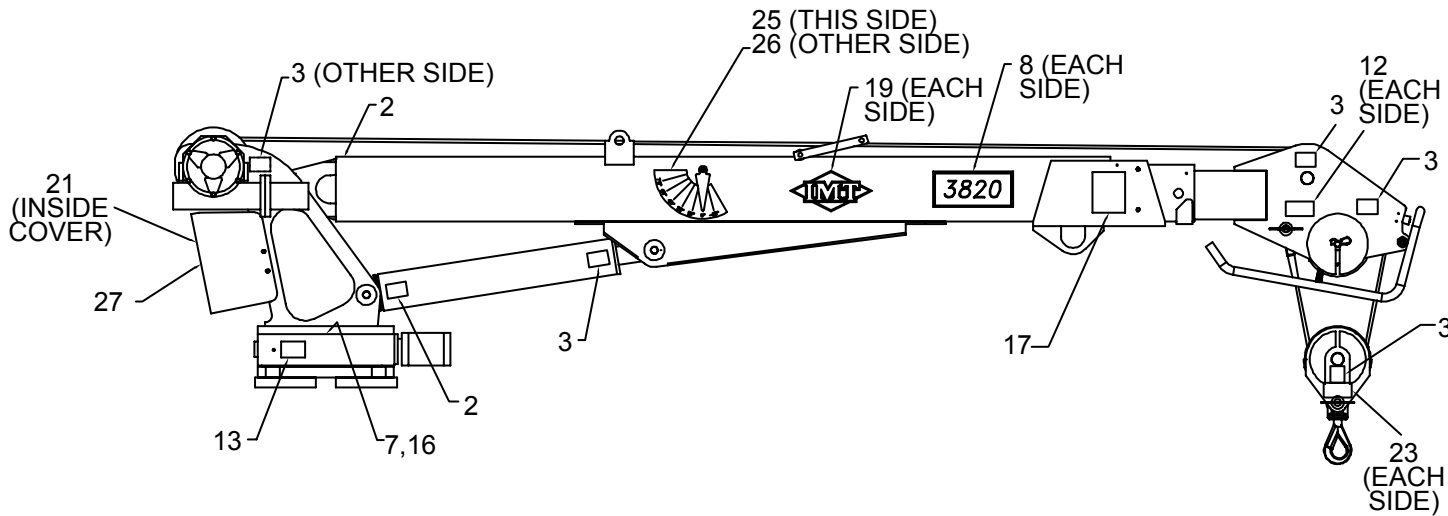
FOR OUTRIGGER VALVE BANK LEVER, PIVOT BOLT MUST BE HELD OUT 3/4" SO HANDLE TIPS IN AS SHOWN.

51705984 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1	73540073	HANDLE ASM	3
2	7Q072017	O-RING SM	4
3	7Q072018	O-RING MED	8
4	7Q072021	O-RING LG	4
5	73540074	VALVE SECTION	3
6	73540075	END COVER RH	1
7	73540076	POWER BEYOND ADAPTER	1
8	73540079	TIE ROD KIT	1
9	73540077	END COVER LH	1
10	7Q072114	O-RING	6

REV. F 20040115

Decal Kits

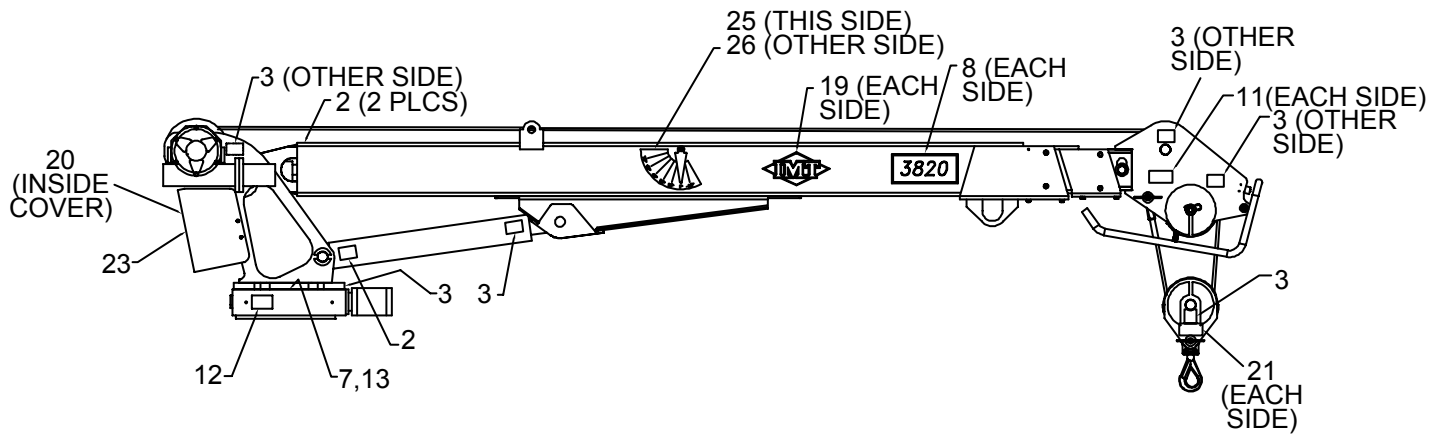
Decal Kit, 1H 1M (99903729)



DECAL PLACEMENT	
ITEM NO.	LOCATION
1	ONE ON EACH OUTRIGGER
6,10,24,27,28	AT OR NEAR REMOTE CONTROL STORAGE POINT.
11	AT OR NEAR CRANE SERIAL NUMBER PLACARD
14	2 ON FRONT SIDEPACKS, 2 ON REAR OUTRIGGERS
15,18	ONE ON EACH SIDE OF CARRIER VEHICLE
20	AT OR NEAR HYDRAULIC RESERVOIR
22	AT OR NEAR DRIVELINE

99903729 PARTS LIST				
ITEM	PART #	DESCRIPTION	QUANTITY	
1.	70391598	DECAL-WARNING OUTRIGGER	2	PART OF # 5
2.	70391612	DECAL-GREASE WKLY LH	4	PART OF # 4
3.	70391613	DECAL-GREASE WKLY RH	6	PART OF # 4
4.	95719347	DECAL KIT (TELE-COMMON)	1	
5.	95719348	DECAL KIT (BODY-COMMON)	1	
6.	70392213	DECAL-CAUTION WASH/WAX	1	PART OF # 4
7.	70392524	DECAL-ROTATE/GREASE	1	PART OF # 4
8.	70395501	DECAL-3820 IDENTIFICATION	2	PART OF # 9
9.	95719352	DECAL KIT - 3820 1H 1M SPECIFIC	1	
10.	70396613	DECAL-CRANE SAFETY/OPERATION	1	PART OF # 5
11.	70395324	DECAL-ASME/ANSI B30.5	1	PART OF # 4
12.	70395670	DECAL-CAUTION-DOWNHAUL WT	2	PART OF # 4
13.	70395090	DECAL-GREASE WORM DRIVE BRNGS	1	PART OF # 4
14.	70392864	DECAL-DGR STAND CLEAR	4	PART OF # 5
15.	70394445	DECAL-DANGER ELEC HZD LG	4	PART OF # 5
16.	70392399	DECAL-LUBRICATE WORM	1	PART OF # 4
17.	70394443	DECAL-DANGER, FREEFALL BOOM	1	PART OF # 4
18.	70392868	DECAL-DANGER CR LOADLINE	4	PART OF # 5
19.	70392887	DECAL-IMT DIAMOND	2	PART OF # 9
20.	70394189	PLACARD-MOBIL OIL RESERVOIR	1	PART OF # 5
21.	70394166	DECAL-INSTR MANUAL OPERATION	1	PART OF # 4
22.	70392891	DECAL-DANGER DRIVELINE	1	PART OF # 5
23.	70394453	DECAL-LOAD BLOCK RATING	1	PART OF # 9
24.	71039134	DECAL-CAUTION OIL LEVEL	1	PART OF # 5
25.	71391522	DECAL-ANGLE INDICATOR RH	1	PART OF # 4
26.	71391523	DECAL-ANGLE INDICATOR LH	1	PART OF # 4
27.	70396245	CAPACITY PLACARD	2	PART OF # 9
28.	70392982	DECAL-SERVICE & REPAIR	1	PART OF # 5

Decal Kit, 2H (99903728)

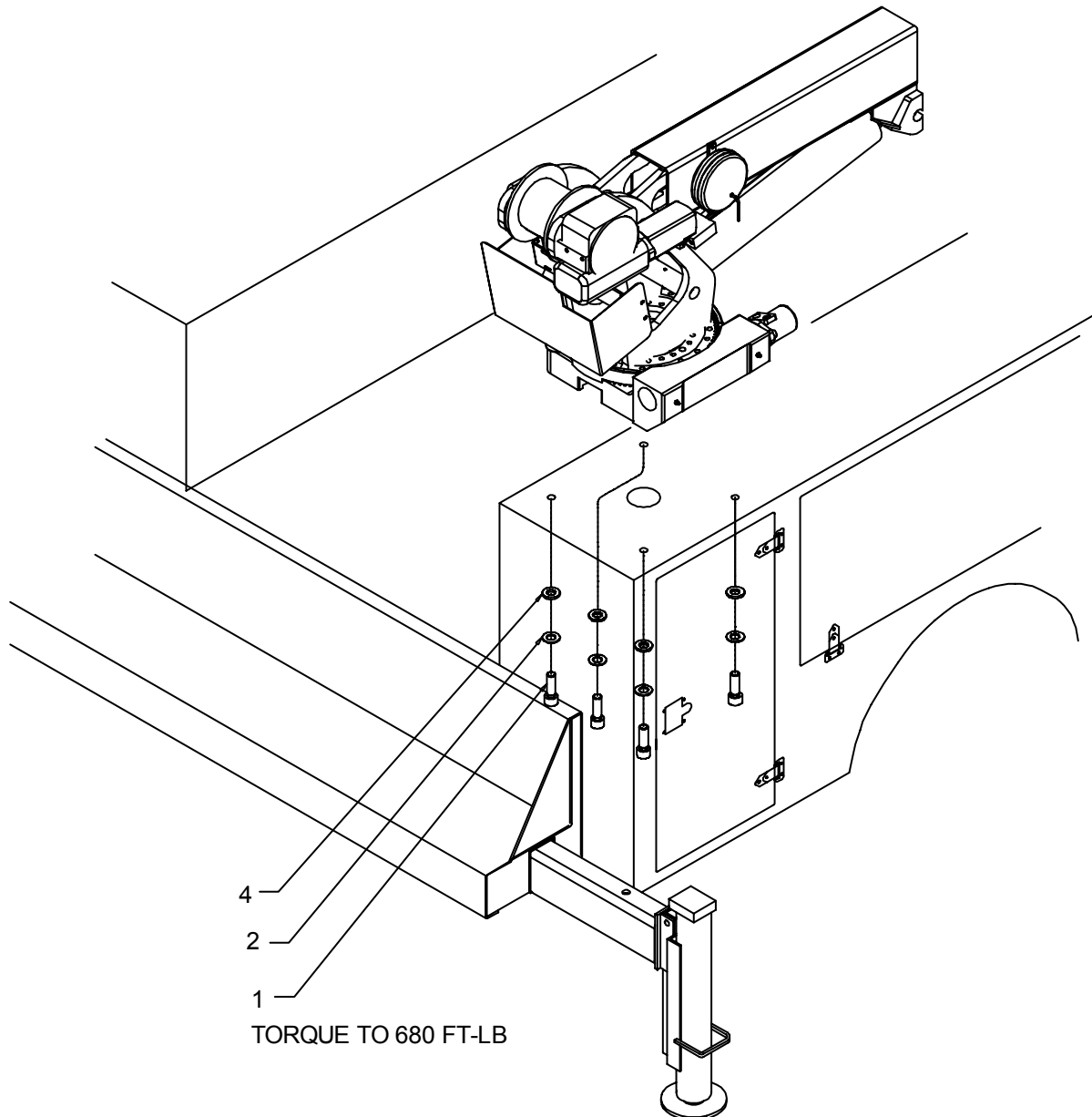


DECAL PLACEMENT	
ITEM NO.	LOCATION
6,10,23,24,25	AT OR NEAR REMOTE CONTROL STORAGE POINT.
1	ONE ON EACH OUTRIGGER
15,18	ONE ON EACH SIDE OF CARRIER VEHICLE
14	2 ON FRONT SIDEPACKS, 2 ON REAR OUTRIGGERS
30	AT OR NEAR HYDRAULIC RESERVOIR
22	AT OR NEAR DRIVELINE
16	AT OR NEAR SERIAL NUMBER PLACARD

99903728 PARTS LIST				
ITEM	PART #	DESCRIPTION	QUANTITY	
1.	70391598	DECAL-WARN 315A OUTRIG	2	PART OF #5
2.	70391612	DECAL-GREASE WEEKLY (LEFT)	3	PART OF #4
3.	70391613	DECAL-GREASE WEEKLY (RT)	6	PART OF #4
4.	95719347	DECAL KIT - TELE COMMON	1	
5.	95719348	DECAL KIT - BODY COMMON	1	
6.	70392213	DECAL-CAUTION WASH/WAX	1	PART OF #4
7.	70392524	DECAL-ROTATE WHILE GREAS	1	PART OF #4
8.	70395501	DECAL-3820 IDENTIFICATION	2	PART OF #9
9.	95719353	DECAL KIT - 3820-2H SPECIFIC	1	
10.	70396613	DECAL-CRANE SAFETY/OPERATION	1	PART OF #5
11.	70395670	DECAL-CAUTION DOWNHAUL WT	2	PART OF #5
12.	70395090	DECAL-GREASE WORM DRIVE BRNGS	1	PART OF #5
13.	70392399	DECAL-LUBRICATE WORM	1	PART OF #5
14.	70392864	DECAL-DANGER OUTRG ST CL	4	PART OF #5
15.	70394445	DECAL-DANG ELEC HZD LG TEL	4	PART OF #5
16.	70395324	DECAL-ASME/ANSI B30.5	1	PART OF #5
17.	70394189	PLACARD-MOBIL OIL RESERVOIR	1	PART OF #4
18.	70392868	DECAL-DANGER CR LOADLINE	4	PART OF #5
19.	70392887	DECAL-DIAMOND IMT 5.0X10.0	2	PART OF #9
20.	70394166	DECAL-MANUAL INSTRUCTIONS	1	PART OF #5
21.	70394453	DECAL-LOAD BLOCK RATINGS	2	PART OF #9
22.	70392891	DECAL-DANGER DRIVELINE	1	PART OF #5
23.	70396174	DECAL-CP 3820-2H	2	PART OF #9
24.	71039134	DECAL-CAUTION OIL LEVEL	1	PART OF #5
25.	70392982	DECAL-SERVICE & REPAIR	1	PART OF #5

Installation Kits

Installation Kit (93715267)



NOTES:

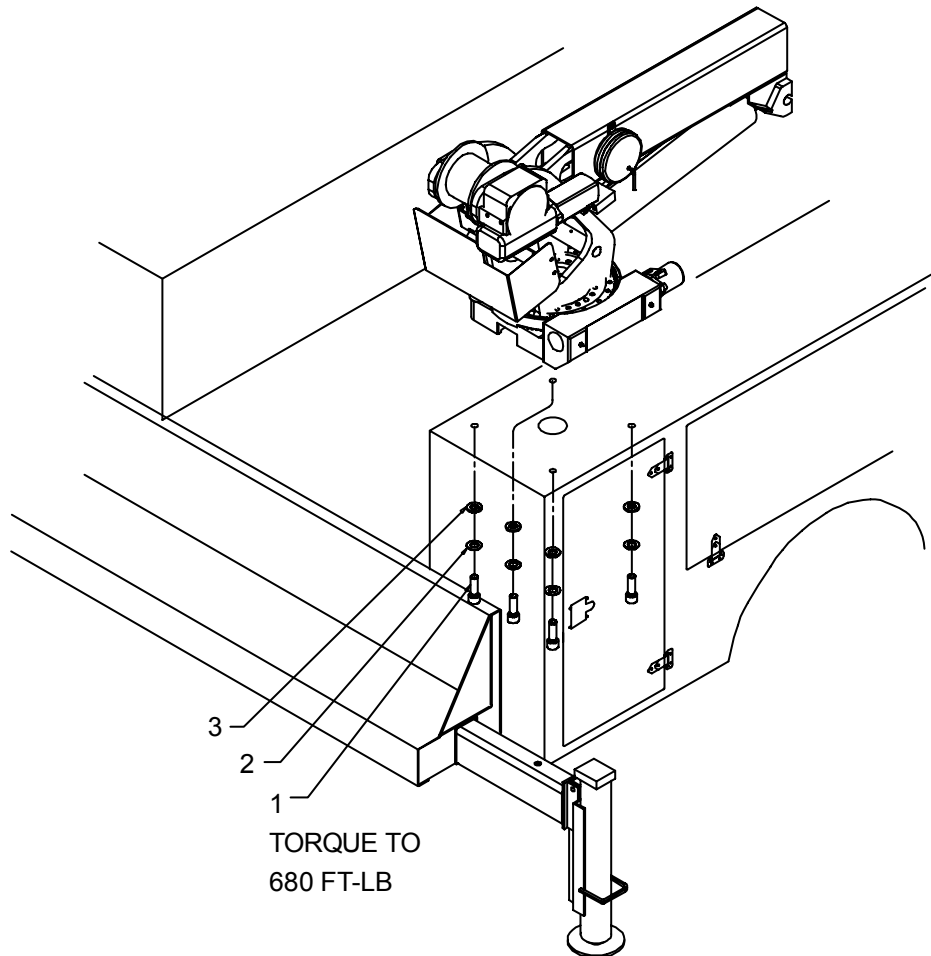
- 1 THE 3" BOLTS SUPPLIED ARE FOR USE ON BODIES WITH A CRANE BOX TOP PLATE THICKNESS OF 7/8-1" ONLY! ON SHIP-OUT CRANES, DETERMINE CRANE BOX TOP PLATE THICKNESS PRIOR TO MOUNTING THE CRANE. IF BOLTS OTHER THAN THE 3" SUPPLIED BOLTS ARE REQUIRED, THEY MUST BE 1"-8 GRADE 8 AND THE APPROPRIATE LENGTH.

- 2 FAILURE TO USE PROPER LENGTH BOLTS MAY CAUSE THE CAP SCREWS UNDER THE WORM HOUSING TO BOTTOM OUT BEFORE BEING TORQUED. DURING TORQUEING, CHECK TO SEE THAT BOLTS ARE TORQUED AND THAT THEY DO NOT BOTTOM OUT ON THE WORM HOUSING. SIZE CAPSCREWS TO INSURE MINIMUM 1.5" THREAD ENGAGEMENT.

93715267 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72601748	CAP SCR 1-8X3 SHGR8	4
2.	72063066	WASHER 1 FLAT	4
3.	73052091	RETURN FILTER 10MIC (NOT SHOWN)	1
	73052006	FILTER ELEMENT 10MIC	REF
4.	60123848	WASHER, SPECIAL 1X2X	4

REV. E 20031027

Installation Kit - 24V Power Unit (93716197)



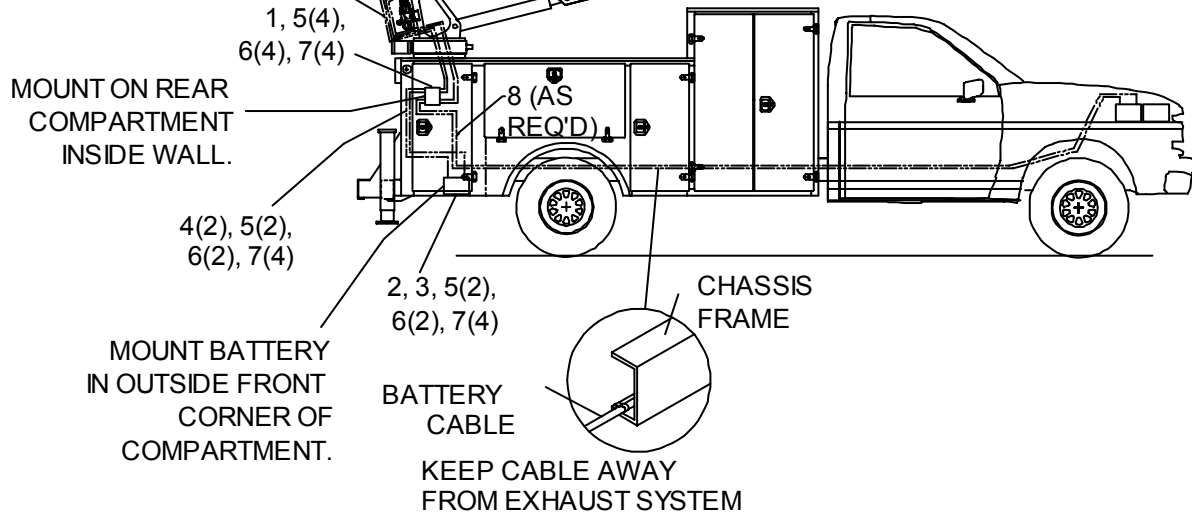
NOTES:

- 1** THE 3" BOLTS SUPPLIED ARE FOR USE ON BODIES WITH A CRANE BOX TOP PLATE THICKNESS OF 7/8-1" ONLY! ON SHIP-OUT CRANES, DETERMINE CRANE BOX TOP PLATE THICKNESS PRIOR TO MOUNTING THE CRANE. IF BOLTS OTHER THAN THE 3" SUPPLIED BOLTS ARE REQUIRED, THEY MUST BE 1"-8 GRADE 8 AND THE APPROPRIATE LENGTH.
- 2** FAILURE TO USE PROPER LENGTH BOLTS MAY CAUSE THE CAP SCREWS UNDER THE WORM HOUSING TO BOTTOM OUT BEFORE BEING TORQUED. DURING TORQUEING, CHECK TO SEE THAT BOLTS ARE TORQUED AND THAT THEY DO NOT BOTTOM OUT ON THE WORM HOUSING. SIZE CAPSCREWS TO INSURE MINIMUM 1.5" THREAD ENGAGEMENT.

93716197 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72601748	CAP SCREW 1-8X3 SH GR8	4
2.	72063066	WASHER 1" FLAT	4
3.	60123848	WASHER-SPECIAL 1X2X1/4	4

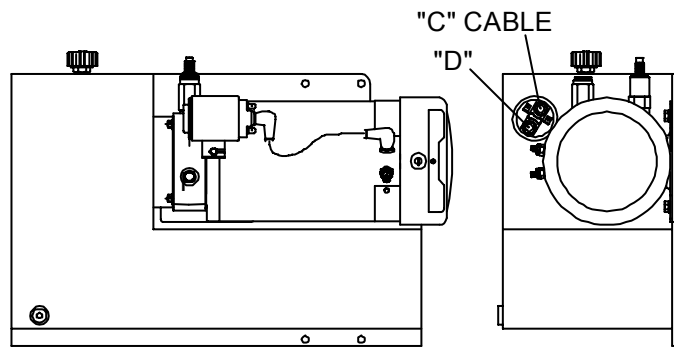
93716197 Drawing

ROUTE CABLES THROUGH
CENTER OF BASE AND
MAST UNDER VALVE BANK
TO POWER UNIT.



MOUNT BATTERY
IN OUTSIDE FRONT
CORNER OF
COMPARTMENT.

KEEP CABLE AWAY
FROM EXHAUST SYSTEM

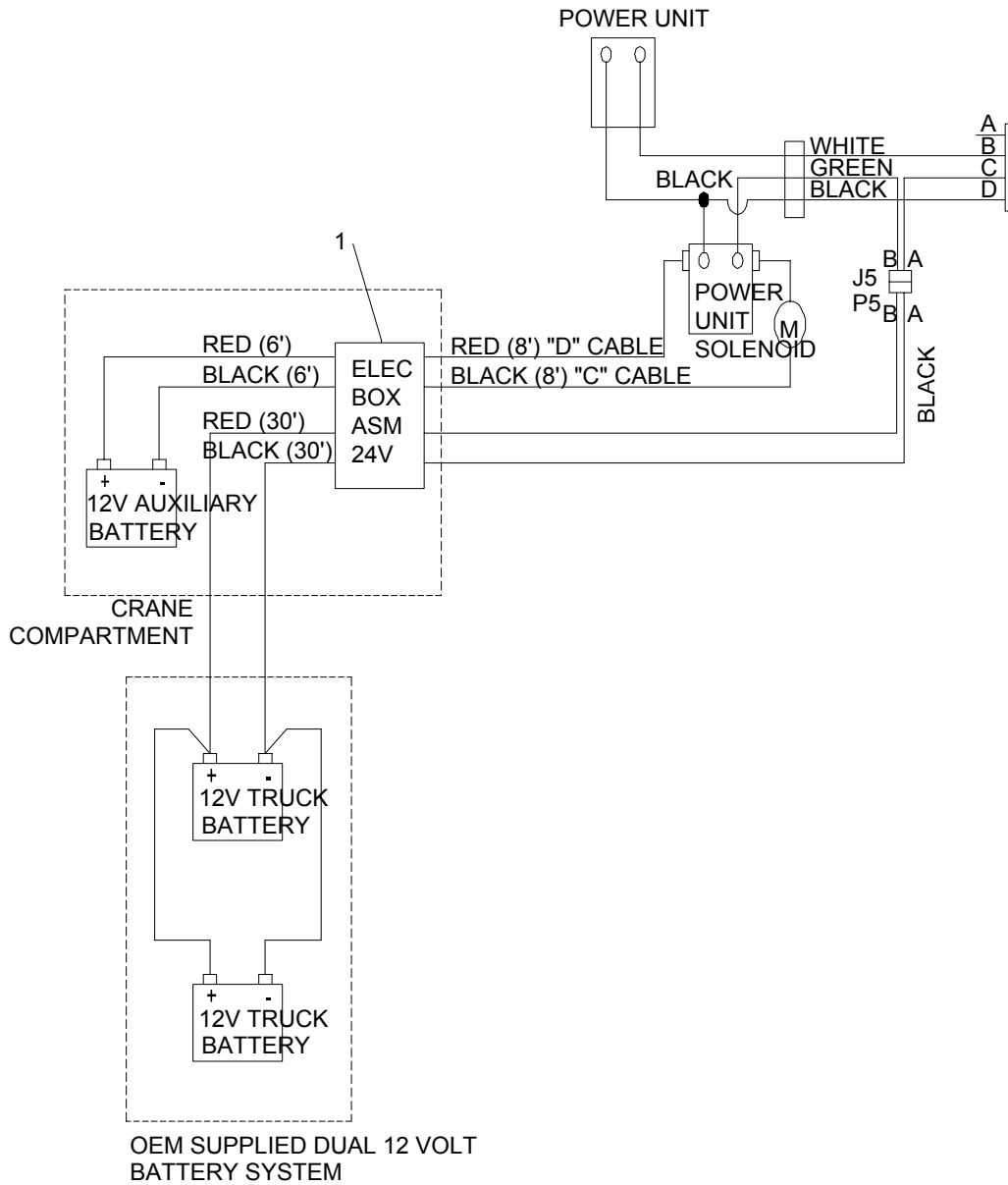


POWER UNIT

NOTES:

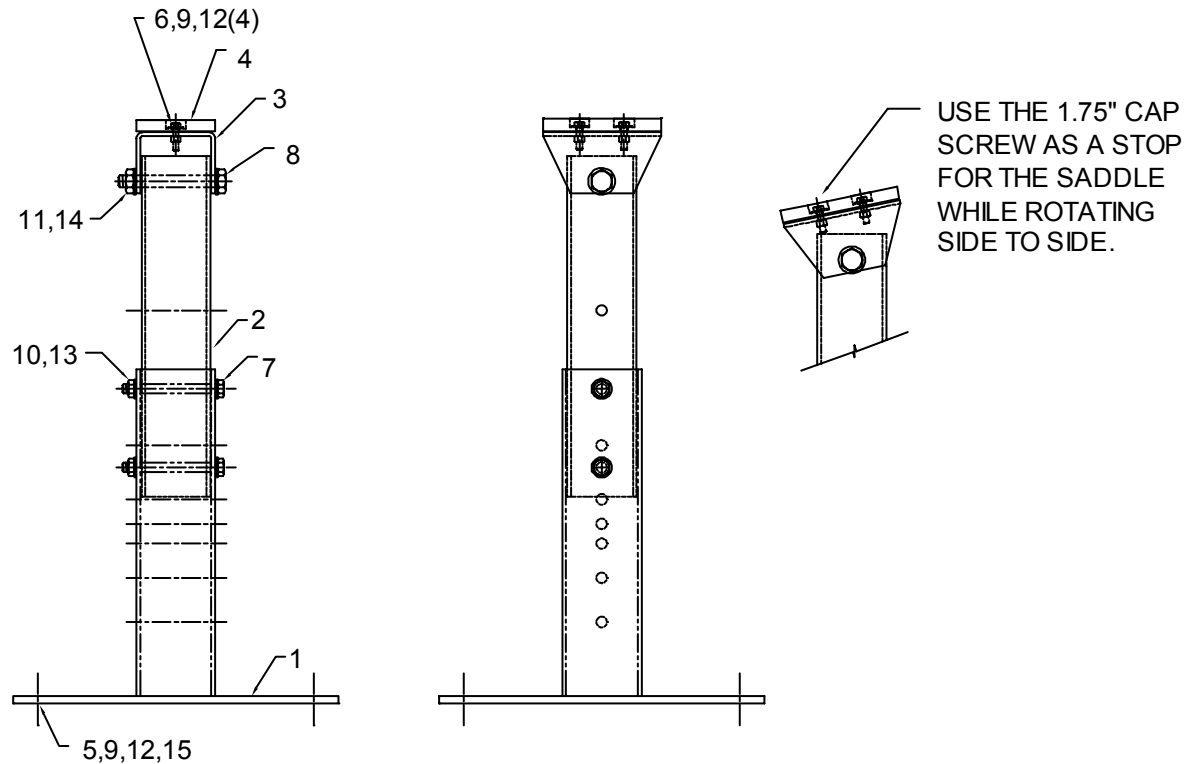
- 1 RUN BATTERY CABLES THROUGH EXISTING HOLE IN BODY COMPARTMENT.
- 2 RUN BATTERY CABLES INSIDE THE CHASSIS FRAME TO THE TRUCK ENGINE BATTERIES. LOCATE CABLES SO THEY WILL BE PROTECTED. AVOID SHARP EDGES. INSTALL FRAME CLIPS (IMT # 72661491) TO HOLD CABLE TO TRUCK FRAME.

- 3 REMOVE THE NUT ON THE BATTERY TERMINAL CLAMP CAPSCREW. CONNECT THE BATTERY CABLES TO THE CLAMP CAPSCREW. REINSTALL THE CLAMP NUT.



Miscellaneous

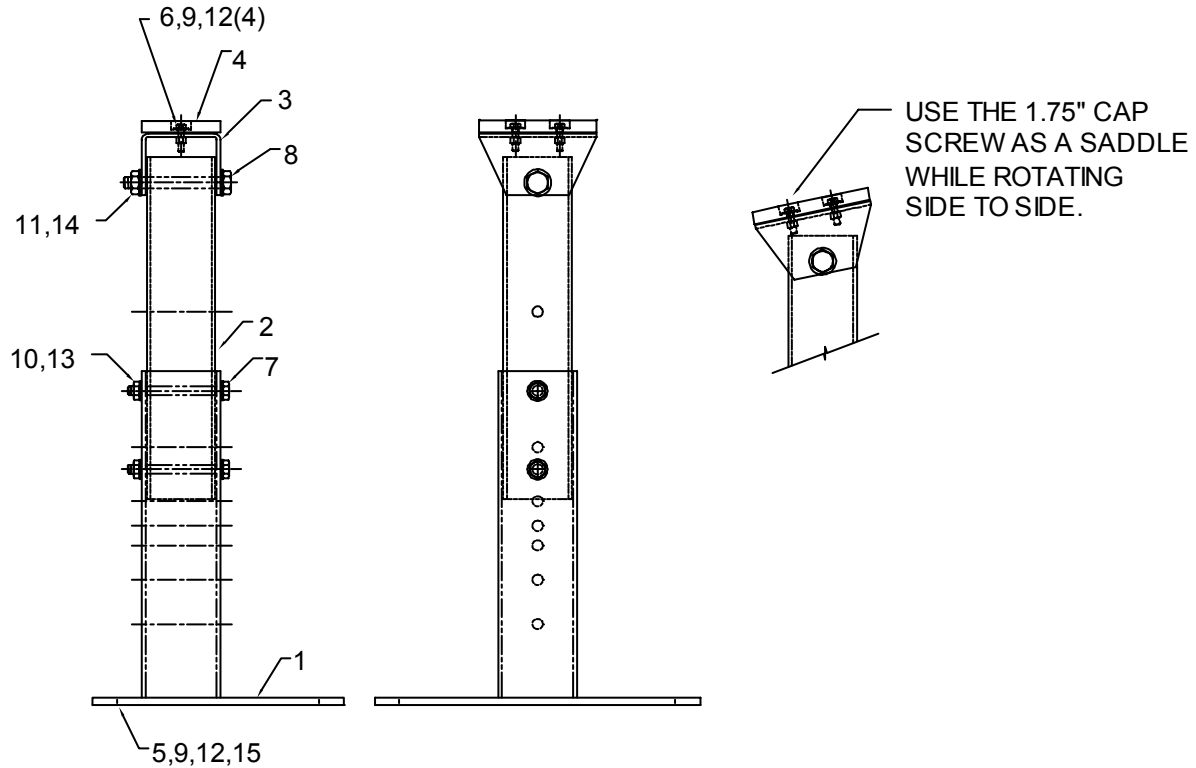
Boom Support Assembly (51714181)



51714181 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52708159	PEDESTAL	1
2.	60121853	TUBE	1
3.	60120516	SADDLE	1
4.	60030306	WEAR PAD	1
5.	72060048	CAP SCR 3/8-16X1-1/2 HHGR5	4
6.	72060049	CAP SCR 3/8-16X1-3/4 HHGR5	2
7.	72060101	CAP SCR 1/2-13X5 HHGR5	2
8.	72601671	CAP SCR 3/4-10X5-1/2 HHGR5	1
9.	72062103	NUT 3/8-16 LOCK	6
10.	72062080	NUT 1/2-13 LOCK	2
11.	72062114	NUT 3/4-10 LOCK	1
12.	72063003	WASHER 3/8 WRT	12
13.	72063005	WASHER 1/2 WRT	4
14.	72063008	WASHER 3/4 WRT	2
15.	76392821	WASHER-BONDED PLTD	4
16.	51716384	HARDWARE KIT (INCL. 5-15)	1

REV. E 20040206

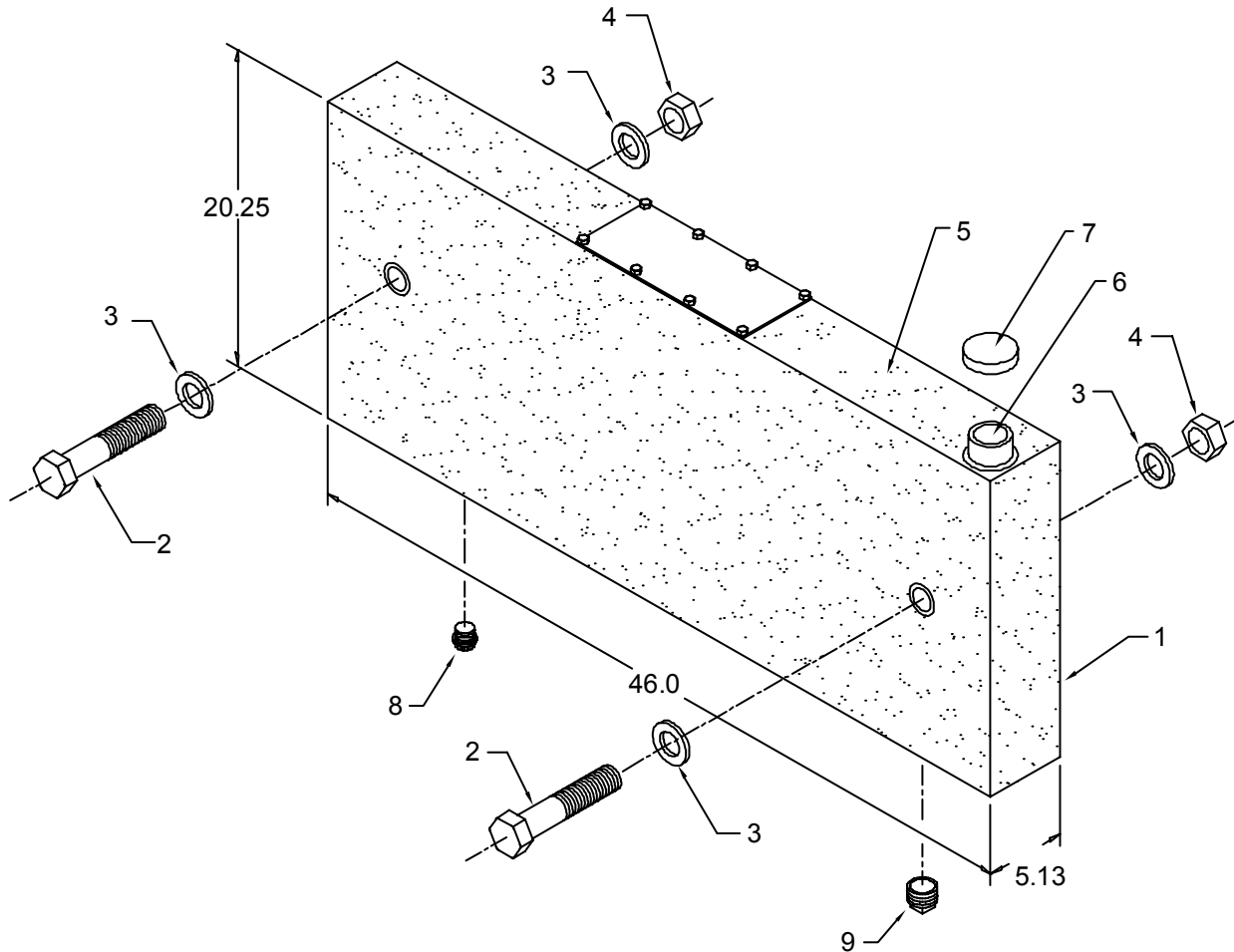
Boom Support Assembly (51718474)



51718474 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52718455	PEDESTAL	1
2.	60121853	TUBE	1
3.	60120516	BOOM SUPPORT SADDLE	1
4.	60030306	WEAR PAD	1
5.	72060048	CAP SCREW 3/8-16X1.5 HHGR5	4REF
6.	72060049	CAP SCREW 3/8-16X1.75 HHGR5	2REF
7.	72060101	CAP SCREW 1/2-13X5 HHGR5Z	2REF
8.	72601671	CAP SCREW 3/4-10X5.5 HHGR5Z	1REF
9.	72062103	NUT 3/8-16 HEX NYLOC	6REF
10.	72062080	NUT 1/2-13 HEX NYLOC	2REF
11.	72062114	NUT 3/4-10 HEX NYLOC	1REF
12.	72063003	WASHER 3/8 WRT	12REF
13.	72063005	WASHER 1/2 WRT	4REF
14.	72063008	WASHER 3/4 WRT	2REF
15.	76392821	WASHER, BONDED PLT	4REF
16.	51716384	HARDWARE KIT (INCL. #5-15)	1

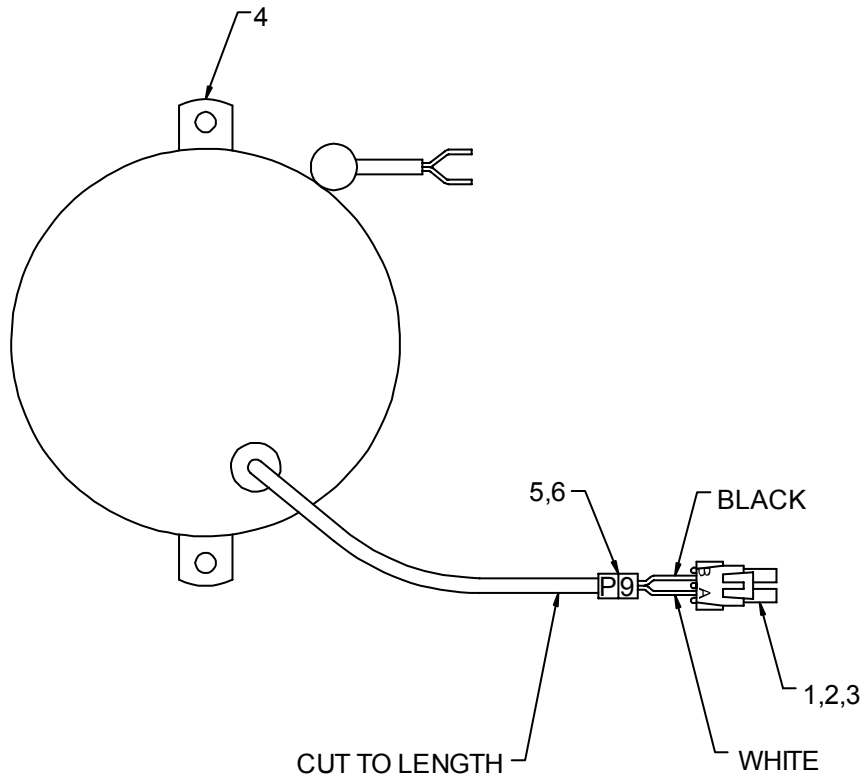
NEW 20031203

Reservoir (51707798)



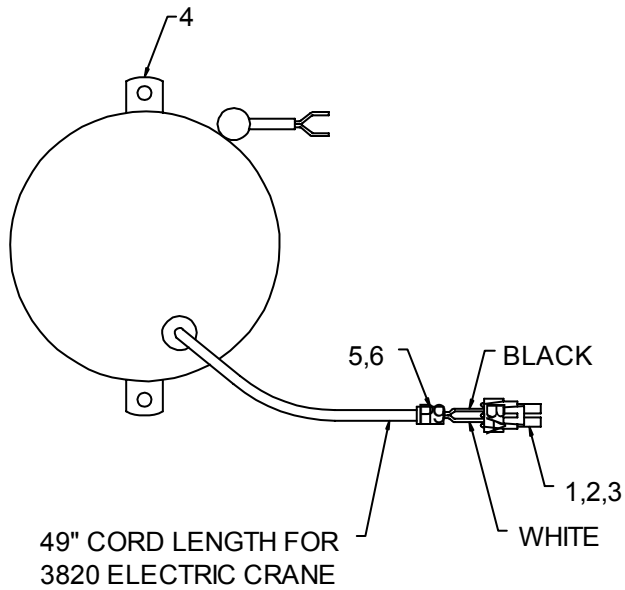
51707798 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52711432	RESERVOIR WELDMENT	1
2.	72060104	CAP SCR 1/2-13X6-1/2 HHGR5	2
3.	72063005	WASHER 1/2 WRT	8
4.	72062080	NUT 1/2-13 LOCK	2
5.	70394189	DECAL-OIL RECOMMENDED	1
6.	70142482	FILL NECK STRAINER	1
7.	70142483	FILL CAP	1
8.	70393233	PLUG 3/4NPT	1
9.	72601004	PLUG 1-1/4NPT SQHD	1

Cord Reel Assembly (51713168)



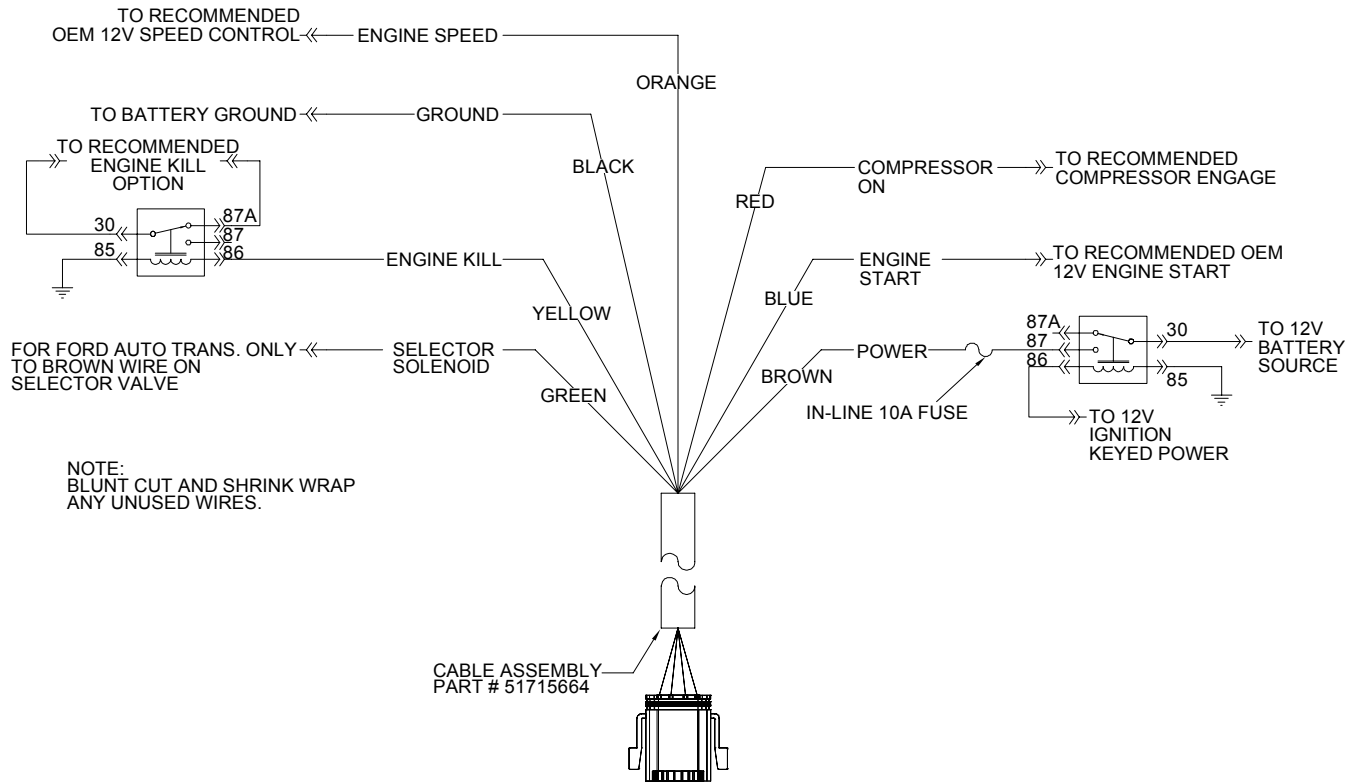
51713168 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	77044574	TOWER CONNECTOR	1
2.	77044552	PIN 18-20GA	2
3.	70394069	CABLE SEAL	2
4.	70732193	CORD REEL	1
5.	77041493	WIRE MARKER-PA2-P-YEL	1
6.	77041491	WIRE MARKER-PA2-9-YEL	1

Cord Reel Assembly - Electric Cranes (51717275)



51717275 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	77044574	CONNECTOR	1
2.	77044550	TERMINAL-FEM 18-20 GA	2
3.	70394069	SEAL-CABLE GREEN	2
4.	70732193	CORD REEL-ANTI 2 BLOCK	1
5.	77041493	WIRE MARKER-PA2-P-YELLOW	1
6.	77041491	WIRE MARKER-PA2-9-YELLOW	1

Chassis Wiring Harness (99903340)



Note: Used on all ship-out IMT telescopic cranes.

CHAPTER 4

General Reference

In This Chapter

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Inspection Checklist

NOTICE:

The user of this form is responsible for determining that these inspections satisfy all applicable regulatory requirements.

OWNER/COMPANY:	TYPE OF INSPECTION (circle one):			
CONTACT PERSON:	DAILY	MONTHLY	QUARTERLY	ANNUAL
CRANE MAKE & MODEL:	DATE INSPECTED:			
CRANE SERIAL NUMBER:	HOURMETER READING (if applicable):			
UNIT I.D. NUMBER:	INSPECTED BY (print):			
LOCATION OF UNIT:	SIGNATURE OF INSPECTOR:			

<p>TYPE OF INSPECTION</p> <p>NOTES:</p> <p>Daily and monthly inspections are to be performed by a “designated” person, who has been selected or assigned by the employer or the employer’s representative as being competent to perform specific duties.</p> <p>Quarterly and annual inspections are to be performed by a “qualified” person who, by possession of a recognized degree in an applicable field or certificate of professional standing, or who, by extensive knowledge, training and experience has successfully demonstrated the ability to solve or resolve problems related to the subject matter and work.</p> <p>One hour of normal crane operation assumes 20 complete cycles per hour. If operation exceeds 20 cycles per hour, inspection frequency should be increased accordingly.</p> <p>Consult Operator / Service Manual for additional inspection items, service bulletins and other information.</p> <p>Before inspecting and operating crane, crane must be set up away from power lines and leveled with outriggers fully extended.</p> <p>DAILY (D): Before each day of operation, those items designated with a (D) must be inspected. This inspection need not be recorded unless a deficiency (8) is found. If the end user chooses to record all daily inspections and those daily inspections include the monthly inspection requirements, there would be no need for a separate monthly inspection.</p> <p>MONTHLY (M): Monthly inspections or 100 hours of normal operation (which ever comes first) includes all daily inspections plus items designated with an (M). This inspection must be recorded.</p> <p>QUARTERLY (Q): Every three to four months or 300 hours of normal operation (which ever comes first) includes all daily and monthly inspection items plus items designated with a (Q). This inspection must be recorded.</p> <p>ANNUAL (A): Each year or 1200 hours of normal operation (which ever comes first) includes all items on this form which encompasses daily, monthly and quarterly inspections plus those items designated by (A). This inspection must be recorded.</p>

INSPECTION CHECKLIST STATUS KEY:

S = Satisfactory	R = Recommendation (should be considered for corrective action)
X = Deficient (must be corrected prior to operation)	NA = Not Applicable

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
D	1	Labels	All load charts, safety & warning labels, and control labels are present and legible.	
D	2	Crane	Check all safety devices for proper operation.	
D	3	Controls	Control mechanisms for proper operation of all functions, leaks and cracks.	
D	4	Station	Control and operator's station for dirt, contamination by lubricants, and foreign material.	
D	5	Hydraulic System	Hydraulic system (hoses, tubes, fittings) for leakage and proper oil level.	
D	6	Hook	Presence and proper operation of hook safety latches.	
D	7	Rope	Proper reeving of wire rope on sheaves and winch drum.	
D	8	Pins	Proper engagement of all connecting pins and pin retaining devices.	
D	9	General	Overall observation of crane for damaged or missing parts, cracked welds, and presence of safety covers.	
D	10	Operation	During operation, observe crane for abnormal performance, unusual wear (loose pins, wire rope damage, etc.). If observed, discontinue use and determine cause and severity of hazard.	
D	11	Remote Ctrl	Operate remote control devices to check for proper operation.	
D	12	Electrical	Operate all lights, alarms, etc. to check for proper operation.	
D	13	Anti 2-Block	Operate anti 2-block device to check for proper operation.	
D	14		Other (Per customer requirements)	
D	15		Other (Per customer requirements)	
M	16	Daily	All daily inspection items.	
M	17	Cylinders	Visual inspection of cylinders for leakage at rod, fittings, and welds. Damage to rod and case.	
M	18	Valves	Holding valves for proper operation.	
M	19	Valves	Control valves for leaks at fittings and between stations.	
M	20	Valves	Control valve linkages for wear, smoothness of operation, and tightness of fasteners.	
M	21	General	Bent, broken, or significantly rusted/corroded parts.	
M	22	Electrical	Electrical systems for presence of dirt, moisture, and frayed wires.	
M	23	Structure	All structural members for damage.	
M	24	Welds	All welds for breaks and cracks.	
M	25	Pins	All pins for proper installation and condition.	
M	26	Hardware	All bolts, fasteners and retaining rings for tightness, wear and corrosion.	
M	27	Wear Pads	Presence of wear pads.	
M	28	Pump & Motor	Hydraulic pumps and motors for leakage at fittings, seals, and between sections.	
M	29	PTO	Transmission/PTO for leakage, abnormal vibration, and noise.	
M	30	Hyd Fluid	Quality of hydraulic fluid and presence of water.	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
M	31	Hyd Lines	Hoses & tubes for leakage, abrasion damage, blistering, cracking, deterioration, fitting leakage, and secured properly.	
M	32	Hook	Load hook for abnormal throat distance, twist, wear, and cracks.	
M	33	Rope	Condition of load line.	
M	34	Manual	Presence of operator's manual with unit.	
M	35		Other	
Q	36	Daily	All daily inspection items.	
Q	37	Monthly	All monthly inspection items.	
Q	38	Extensions	Condition of wear pads.	
Q	39	Rotation Sys	Rotation bearing for proper torque of all accessible mounting bolts.	
Q	40	Hardware	Base mounting bolts for proper torque.	
Q	41	Structure	All structural members for deformation, cracks and corrosion.	
	42		• Base	
	43		• Outrigger beams and legs	
	44		• Mast	
	45		• Inner Boom	
	46		• Outer Boom	
	47		• Extension(s)	
	48		• Jib boom	
	49		• Jib extension(s)	
	50		• Other	
Q	51	Hardware	Pins, bearing, shafts, gears, rollers, and locking devices for wear, cracks, corrosion and distortion.	
	52		• Rotation bearing(s)	
	53		• Inner boom pivot pin(s) and retainer(s)	
	54		• Outer boom pivot pin(s) and retainer(s)	
	55		• Inner boom cylinder pin(s) and retainer(s)	
	56		• Outer boom cylinder pin(s) and retainer(s)	
	57		• Extension cylinder pin(s) and retainer(s)	
	58		• Jib boom pin(s) and retainer(s)	
	59		• Jib cylinder pin(s) and retainer(s)	
	60		• Jib extension cylinder pin(s) and retainer(s)	
	61		• Boom tip attachment	
	62		• Other	
Q	63	Hyd Lines	Hoses, fittings and tubing for proper routing, leakage, blistering, deformation and excessive abrasion.	
	64		• Pressure line(s) from pump to control valve	
	65		• Return line(s) from control valve to reservoir	
	66		• Suction line(s) from reservoir to pump	
	67		• Pressure line(s) from control valve to each function	
	68		• Load holding valve pipe(s) and hose(s)	
	69		• Other	
Q	70	Pumps, PTO's & Motors	Pumps, PTO's & motors for loose bolts/fasteners, leaks, noise, vibration, loss of performance, heating & excess pressure.	
	71		• Winch motor(s)	
	72		• Rotation motor(s)	
	73		• Other	
Q	74	Valves	Hydraulic valves for cracks, spool return to neutral, sticking spools, proper relief valve setting, relief valve failure.	
	75		• Main control valve	

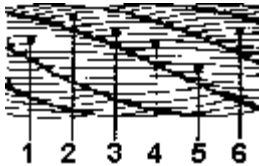
FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
	76		• Load holding valve(s)	
	77		• Outrigger or auxiliary control valve(s)	
	78		• Other valves (per customer requirements)	
	79		• Other (per customer requirements)	
Q	80	Cylinders	Hydraulic cylinders for drifting, rod seal leakage and leakage at welds. Rods for nicks, scores and dents. Case for damage. Case and rod ends for damage and abnormal wear.	
	81		• Outrigger cylinder(s)	
	82		• Inner boom cylinder(s)	
	83		• Outer boom cylinder(s)	
	84		• Extension cylinder(s)	
	85		• Rotation cylinder(s)	
	86		• Jib lift cylinder(s)	
	87		• Jib extension cylinder(s)	
	88		• Other (per customer requirements)	
Q	89	Winch	Winch, sheaves and drums for damage, abnormal wear, abrasions and other irregularities.	
Q	90	Hyd Filters	Hydraulic filters for replacement per maintenance schedule.	
A	91	Daily	All daily inspection items.	
A	92	Monthly	All monthly inspection items.	
A	93	Quarterly	All quarterly inspection items.	
A	94	Hyd Sys	Hydraulic fluid change per maintenance schedule.	
A	95	Controls	Control valve calibration for correct pressure & relief valve settings.	
A	96	Valves	Safety valve calibration for correct pressure & relief valve settings.	
A	97	Valves	Valves for failure to maintain correct settings.	
A	98	Rotation Sys	Rotation drive system for proper backlash clearance & abnormal wear, deformation and cracks.	
A	99	Lubrication	Gear oil change in rotation drive system per maintenance schedule.	
A	100	Hardware	Check tightness of all fasteners and bolts, using torque specifications on component drawings or torque chart.	
A	101	Wear Pads	Wear pads for excessive wear.	
A	102	Loadline	Loadline for proper attachment to drum.	

X,R,CA	ITEM #	EXPLANATION	DATE CORRECTED

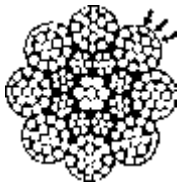
Wire Rope Inspection & Replacement

Wire rope with any of the deficiencies shown below shall be removed and replaced immediately.

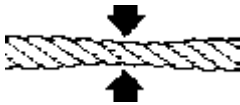
- a Corrosion can be cause for replacement. Any development of corrosion must be noted and monitored closely.
- b When there are either three broken wires in one strand or a total of six broken wires in all strands in any one rope lay.



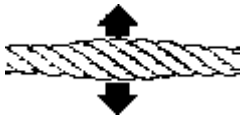
- c When flat spots on the outer wires appear and those outside wires are less than 2/3 the thickness of the unworn outer wire.



- d When there is a decrease of diameter indicating a core failure.



- e When kinking, crushing, birdcaging or other distortion occurs.



- f When there is noticeable heat damage (discoloration) of the rope by any means.



- g When the diameter is reduced from nominal size by 1/32" or more.



- h If a broken wire protrudes or loops out from the core of the rope.



Hook Inspection

Hooks having any of the listed deficiencies shall be removed from service unless a qualified person approves their continued use and initiates corrective action. Hooks approved for continued use shall be subjected to periodic inspection.

a DISTORTION

Bending / Twisting

A bend or twist exceeding 10° from the plane of the unbent hook.

Increased Throat Opening

HOOK WITHOUT LATCH: An increase in throat opening exceeding 15% (Or as recommended by the manufacturer).

HOOK WITH LATCH: An increase of the dimension between a fully-opened latch and the tip section of the hook exceeding 8% (Or as recommended by the manufacturer).

b WEAR

If wear exceeds 10% of the original sectional dimension. (Or as recommended by the manufacturer).

c CRACKS, NICKS, GOUGES

Repair of cracks, nicks, and gouges shall be carried out by a designated person by grinding longitudinally, following the contour of the hook, provided that no dimension is reduced more than 10% of its original value. (Or as recommended by the manufacturer). (A qualified person may authorize continued use if the reduced area is not critical).

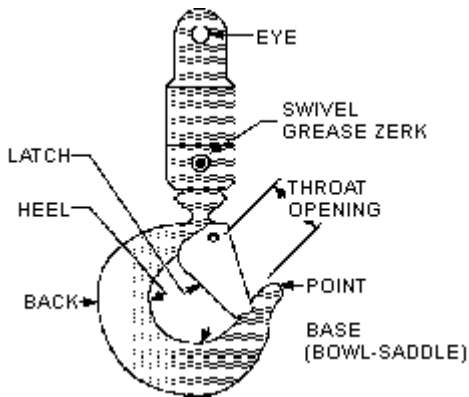
d LATCH

Engagement, Damage & Malfunction

If a latch becomes inoperative because of wear or deformation, and is required for the service involved, it shall be replaced or repaired before the hook is put back into service. If the latch fails to fully close the throat opening, the hook shall be removed from service or “moused” until repairs are made.

e HOOK ATTACHMENTS & SECURING MEANS

If any indication of distortion, wear, cracks, nicks or gouges are present, unless a qualified person authorizes their use. (Or as recommended by the manufacturer).



Holding Valve Inspection

The cylinders are equipped with holding valves that prevent sudden movement of the cylinder rods in the event of a hydraulic hose or other hydraulic component failure. The valve is checked in the following manner:

- 1 With a full rated load, extend the cylinder in question and kill the engine.
- 2 Operate the control valve to retract the cylinder. If the cylinder “creeps”, replace the holding valve. If the cylinder does not “creep”, the valve is serviceable.

Anti-Two-Block Device Inspection

(See the operation, maintenance, and repair manual for this crane for a complete description.)

The anti-two-block system should be checked daily as follows:

- 1 Examine flexible rod and weight to insure free unrestricted mechanical operation.
- 2 Examine cord for damage, cuts or breaks. Grasp cord and pull to check operation of cord reel. The cord should retract on reel when released.

- 3 Start vehicle, engage PTO and slowly winch loadline up until anti-two-block weight comes in contact with the hook end of the loadline cable. At the moment the weight is fully supported, a marked difference in winch operation should be noted. At this point, the winch up function should become very sluggish or non-functioning and have very little pull capability. Slowly increase truck engine speed while simultaneously actuating the winch up function. The winch characteristics should remain sluggish with little or no tensioning of the cable. If operation other than as described occurs, stop immediately and investigate. Failure to do so will risk damage to the cable or the crane. If all is well at this point, actuate the boom extend function slowly, and gradually increase to full actuation. Once again the function should be sluggish or non-existent with no tightening of the winch cable. If operation other than described occurs, stop immediately and reverse the function.
- 4 The final check involves actuating both the winch up and extend functions together and checking for proper operation of the anti-two-blocking circuit. Once again, start slowly and stop if it appears the cable is being tensioned.
- 5 If the anti-two-block function appears to be functioning normally, winch the cable down until the sensing weight swings free.

Thread Torques



WARNING

Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Once a bolt has been torqued to 75% of its proof load and then removed, the torque coefficient may no longer be the same as when the bolt was new thus giving indeterminate clamp loads after torquing. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue, causing serious injury or DEATH.



When using the torque data in the torque charts, the following rules should be observed.

- 1 Bolt manufacturer's particular specifications should be consulted when provided.
- 2 Flat washers of equal strength must be used.
- 3 All torque measurements are given in foot-pounds. To convert to inch-pounds, multiply by 12.
- 4 Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphite, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of Loctite does not affect the torque values.

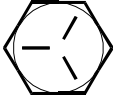
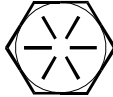
FINE THREAD TORQUE CHART (ENGLISH)

TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA. (INCHES)	 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (FT-LB)	PLATED (FT-LB)	PLAIN (FT-LB)	PLATED (FT-LB)
5/16-24	0.3125	19	14	27	20
3/8-24	0.375	35	26	49	35
7/16-20	0.4375	55	41	78	58
1/2-20	0.5	90	64	120	90
9/16-18	0.5625	120	90	170	130
5/8-18	0.625	170	130	240	180
3/4-16	0.75	300	225	420	315
7/8-11	0.875	445	325	670	500
1-12	1	645	485	995	745
1 1/8-12	1.125	890	670	1445	1085
1 1/4-12	1.25	1240	930	2010	1510
1 3/8-12	1.375	1675	1255	2710	2035
1 1/2-12	1.5	2195	1645	3560	2670



COARSE THREAD TORQUE CHART (ENGLISH)

TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA. (INCHES)	 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (FT-LB)	PLATED (FT-LB)	PLAIN (FT-LB)	PLATED (FT-LB)
5/16-18	0.3125	17	13	25	18
3/8-16	0.375	31	23	44	33
7/16-14	0.4375	49	37	70	52
1/2-13	0.5	75	57	105	80
9/16-12	0.5625	110	82	155	115
5/8-11	0.625	150	115	220	160
3/4-10	0.75	265	200	375	280
7/8-9	0.875	395	295	605	455
1-8	1	590	445	910	680
1 1/8-7	1.125	795	595	1290	965
1 1/4-7	1.25	1120	840	1815	1360
1 3/8-6	1.375	1470	1100	2380	1780
1 1/2-6	1.5	1950	1460	3160	2370

FINE THREAD TORQUE CHART (METRIC)

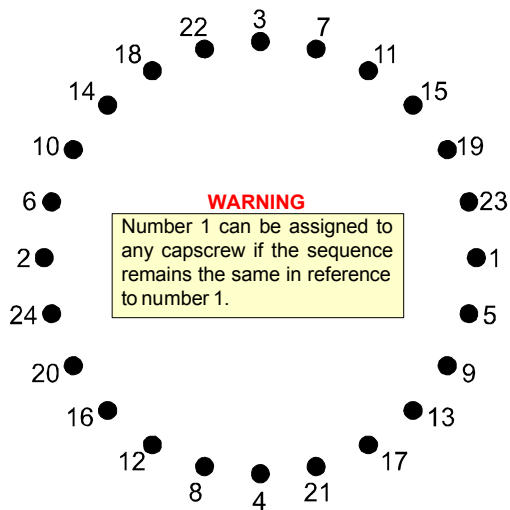
TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA. (INCHES)	 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-24	0.3125	3	2	4	3
3/8-24	0.375	5	4	7	5
7/16-20	0.4375	8	6	11	8
1/2-20	0.5	12	9	17	12
9/16-18	0.5625	17	12	24	18
5/8-18	0.625	24	18	33	25
3/4-16	0.75	41	31	58	44
7/8-11	0.875	62	45	93	69
1-12	1	89	67	138	103
1 1/8-12	1.125	123	93	200	150
1 1/4-12	1.25	171	129	278	209
1 3/8-12	1.375	232	174	375	281
1 1/2-12	1.5	304	228	492	369

COARSE THREAD TORQUE CHART (METRIC)

TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA. (INCHES)	 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-18	0.3125	2	2	3	2
3/8-16	0.375	4	3	6	5
7/16-14	0.4375	7	5	10	7
1/2-13	0.5	10	8	15	11
9/16-12	0.5625	15	11	21	16
5/8-11	0.625	21	16	30	22
3/4-10	0.75	37	28	52	39
7/8-9	0.875	55	41	84	63
1-8	1	82	62	126	94
1 1/8-7	1.125	110	82	178	133
1 1/4-7	1.25	155	116	251	188
1 3/8-6	1.375	203	152	329	246
1 1/2-6	1.5	270	210	438	328

Turtable Bearing Thread Tightening Sequence

Refer to the turtable bearing thread tightening diagram below for proper tightening/torqueing sequence of the turtable bearing to the crane base and crane mast. The total quantity of cap screws varies dependent on crane model.



TIGHTENING PROCEDURE

- 1 Refer to the Torque Data Chart to determine the proper torque value to apply to the size of capscrew used.
- 2 Follow the tightening sequence shown in the diagram. Note that the quantity of capscrews may differ from the diagram, but the sequence must follow the criss-cross pattern as shown in the diagram.
- 3 Torque all capscrews to approximately 40% of the specified torque value, by following the sequence.
(EXAMPLE: .40 x 265 FT-LB = 106 FT-LB)
(EXAMPLE-METRIC: .40 x 36 KG-M = 14.4 KG-M)
- 4 Repeat Step 3, but torqueing all capscrews to 75% of the specified torque value. Continue to follow the tightening sequence.
(EXAMPLE: .75 x 265 FT-LB = 199 FT-LB)
(EXAMPLE-METRIC: .75 x 36 KG-M = 27 KG-M)
- 5 Using the proper sequence, torque all capscrews to the listed torque value as determined from the Torque Data Chart.

Turtable Bearing Inspection for Replacement

Before a bearing is removed from a crane for inspection, one of the following conditions should be evident:

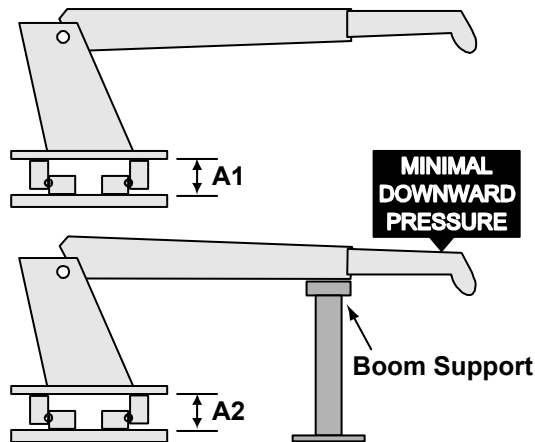
- 1 Metal particles present in the bearing lubricant.
- 2 Increased drive power required to rotate the crane.
- 3 Noise emitting from the bearing during crane rotation.
- 4 Rough crane rotation.
- 5 Uneven or excessive wear between the pinion gear and turntable gear.

If none of the listed conditions exists, the bearing is functioning properly and need not be replaced. But, if one or more of the above conditions exists, inspection may be required. Limits are measured in "TILT" which is dependent on the internal clearances of the bearing. TILT is the most practical determination of a bearing's internal clearance once mounted on a crane.

Periodic readings indicating a steady increase in TILT may be an indicator of bearing wear. Note that a bearing found to have no raceway cracks or other structural irregularities should be reassembled and returned to service.

Turtable Bearing Tilt Test

- 1 With the crane horizontal and fully extended, measure between the top and bottom mounting surfaces of the turntable bearing (A1), using a dial indicator for accuracy.
- 2 Reverse the load by applying minimal downward pressure on the boom while the boom is in the boom support or on a solid surface. Again measure A2.
- 3 Subtract A1 from A2 to determine tilt and compare the result with the accompanying chart.



COMPARISON CHART - MODEL TO MEASURED TILT DIMENSION				
NOTE:				
The figures listed in this chart are service guidelines and do not, in themselves, require that the bearing be inspected.				
If there is reason to suspect an excess of bearing wear and the measured tilt dimension exceeds the dimension listed, remove the bearing for inspection.				
IMT Crane, Loader or Tirehand Model	1007 1014 1014A 1015 2015/2020 2109 3000 3816/3820 3016/3020 421/425 4300 5016/5020 6016/6020 TH7 BODY ROT'N TH1449 BODY ROT'N TH15B CLAMP TH2551B CLAMP TH2557A CLAMP	5200 5200R 5217 5800 7020 7025 7200 7415 9000 TH10 BODY ROT'N TH14 BODY ROT'N	16000 32018 32027 32030 T30 T40	9800 12916 13031 13034 14000 15000 18000 20017 8000L H1200 H1200RR T50 TH2551B BODY ROT'N TH2557B BODY ROT'N TH2557A BODY ROT'N
Ball Dia. (Ref)	.875" (22 mm)	1.00" (25 mm)	1.18 - 1.25" (30-32 mm)	1.75" (44 mm)
Tilt Dim. (A-A)	.060" (1.524 mm)	.070" (1.778 mm)	.075" (1.905 mm)	.090" (2.286 mm)