Manual Part # 99901218

5020 Parts & Specifications

Manual Effective August 2004

Revision Date: February 14, 2019

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Printed on 28 February, 2019

Contents

Revisions

DATE	LOCATION	DESCRIPTION
20040830	Release of 2004 Radio Remote.	ECN 9524 - Valvebank change from 73733380 to 73733941, control kit change from 90715572 to 90718831, release of new remote on 99903629.
20041019	31717146	ECN 9059 - Change collar on 31717146 from 70149785 to 70149793.
20050323	41717145	ECN 9715 - Boom weldment process improvements. Also moved cable/winch/hook assemblies to boom assembly section.
20050629	41715268	ECN 9774 - removed thread lock from rotator bearing bolts.
20050909	31717146, 41714695	ECN 9823 - New winch drive and rotation motor.
	99903730	ECN 9877 - New decal kit
20051010	CYLINDER CHANGE	ECN 9805 - Changed extension cyl from 3B210013 to 71411793. Updated assembly drawing 41717145. Replaced outrigger power out cylinder 3B142860 with 71411797, and updated outrigger assemblies.
20051103	41717147	ECN 9832-1 - Change to 41717147 assembly with cylinder change from 51718547 to 71411813. ECN 9934 - 41717145 rev. C.
20060712	31717146	ECN 10026 - Changed hydraulic motor from 73511069 to 73511081
20060920	99903730	ECN 10200 - Added 70392982 to decal kit.
20070410	41717145	ECN 10380 - Replaced ext. cyl 71411793 with 3B210013.
20100617	VALVEBANKS	ECN 11134 - 73734494 replaced 73733395, 73734530 replaced 73733941.
20120417	CYLINDERS	ECN 11615 - Replaced wafer lock with stop tube, updated drawings.
		Added prop remote handle setting procedure.

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

In This Chapter

General Specifications

GENERAL SPECIFICATIONS	
CRANE RATING *	50,000 ft-lb (6.92 ton-meters)
REACH (from centerline of rotation)	20'-0" (6.10 m)
HYDRAULIC EXTENSIONS (2)	60" (152.4 cm)
MANUAL EXTENSION	48" (121.9 cm)
LIFTING HEIGHT (from base of crane)	21'-11" (6.68 m)
CRANE WEIGHT	1625 lb (737 kg)
OUTRIGGER SPAN (required option) - Crane Side from Centerline of Chassis - Opposite Crane Side from Centerline of Chassis	 90" (228.6 cm) 48" (121.9 cm)
STORAGE HEIGHT (crane only)	35" (88.9 cm)
MOUNTING SPACE REQUIRED (crane base)	20" x 21" (50.8 cm x 53.3 cm)
OPTIMUM PUMP CAPACITY (PTO Driven)	10 U.S. GPM (38.8 liters/minute)
SYSTEM OPERATING PRESSURE	3000 psi (207 bar)
LOWER BOOM CYLINDER	4-1/2" bore; 22-1/2" stroke (11.4 cm bore; 57.29 cm stroke)
EXTENSION BOOM CYLINDER	2-1/2" bore; 60" stroke (6.4 cm bore; 152.4 cm stroke)
HORIZONTAL CENTER OF GRAVITY (from centerline of rotation)	36.25" (96.5 cm)
VERTICAL CENTER OF GRAVITY (from bottom of crane base)	21" (50.8 cm)
TIE-DOWN BOLT PATTERN (on center)	14-3/4" x 14-3/4" (37.5 cm x 37.5 cm)
ROTATIONAL TORQUE	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)	33 seconds
LOWER BOOM ELEVATION	-10° to +80° (-0.17 to +1.4 rad)	11.5 seconds
EXTENSION CYLINDER	60" (152.4 cm)	9.5 seconds

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 counterbalance 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 counterbalance 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 a separate hydraulic oil reservoir, suction line filter, and return-line filter.

EXCESSIVE LOAD LIMIT SYSTEM (ELLS)

Overloading of the crane is limited by the ELLS system. The system consists of 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. 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 25.0 ft/minute (7.62 m/min), under no load *on the first wrap*, 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 4300 lb (1950 kg) *on the top wrap*. Maximum two-part line lifting capacity of the winch is 8500 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

CHASSIS STYLE	Conventional Cab
WHEELBASE	154" (391 cm)
CAB-TO-AXLE	84" (213 cm)
RESISTANCE TO BENDING MOMENT	600,000 in-lb (6915 kg-m)
FRAME SECTION MODULUS	12 cubic inches (196.7 cc)
FRONT AXLE RATING (GAWR)	7,000 lb (3175 kg)
REAR AXLE RATING (GAWR)	15,000 lb (6804 kg)
GROSS VEHICLE RATING	22,000 lb (9979 kg)
TRANSMISSION	5 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:

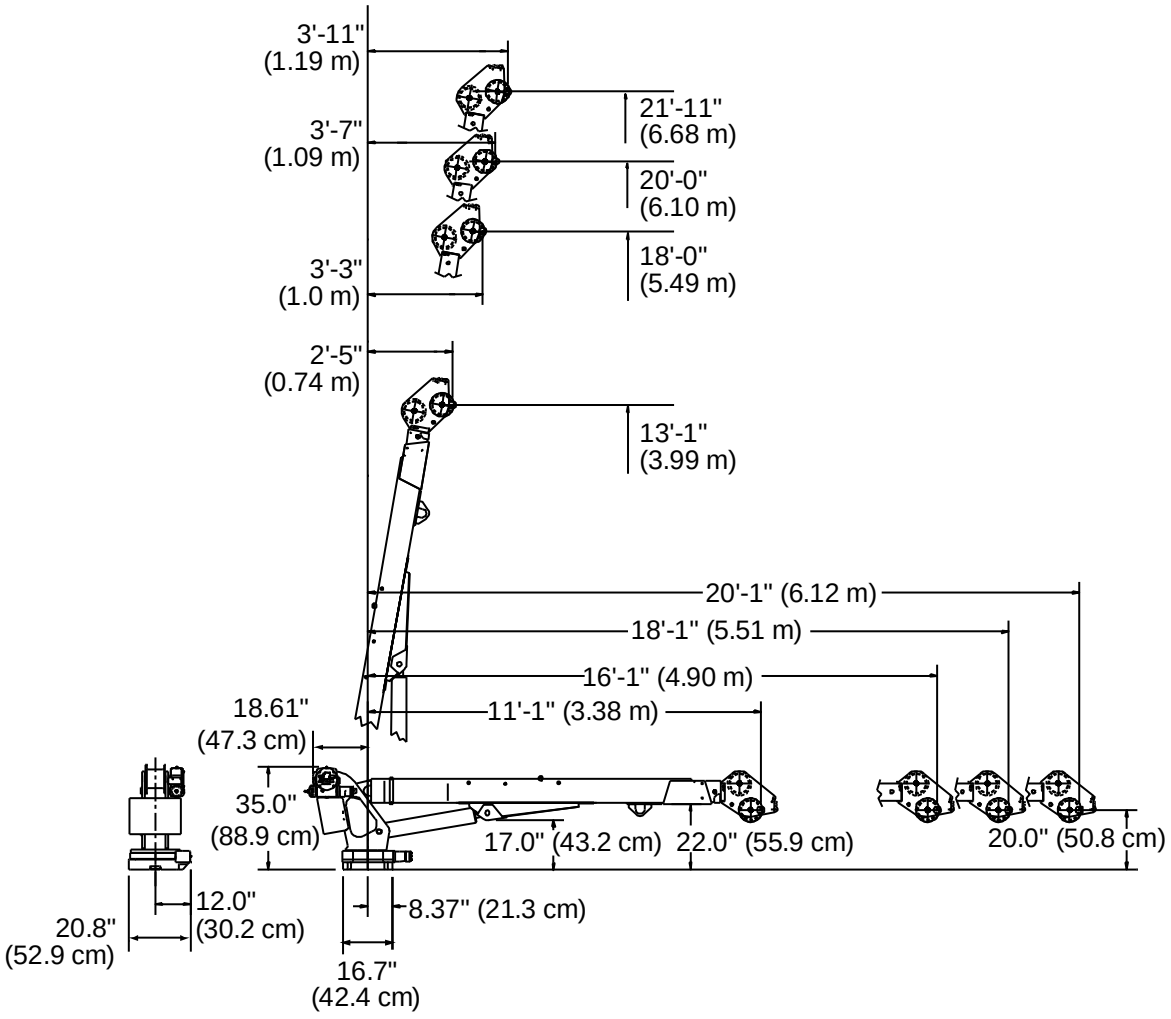
1 GAWR means Gross Axle Weight Rating. GAWR is dependent on all vehicle components including axles, tires, wheels, springs, brakes, steering and frame strength meeting the manufacturer's recommendations. Always specify GAWR when purchasing a truck.

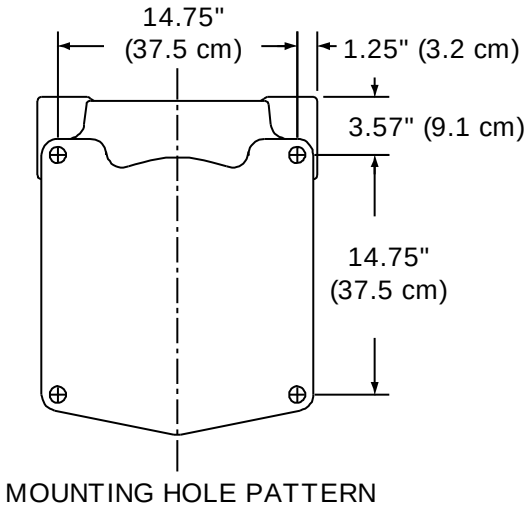
2 Minimum axle requirements may increase with use of diesel engines, longer wheelbase or service bodies. Contact the factory for more information.

3 Weight distribution calculations are required to determine final axle loading.

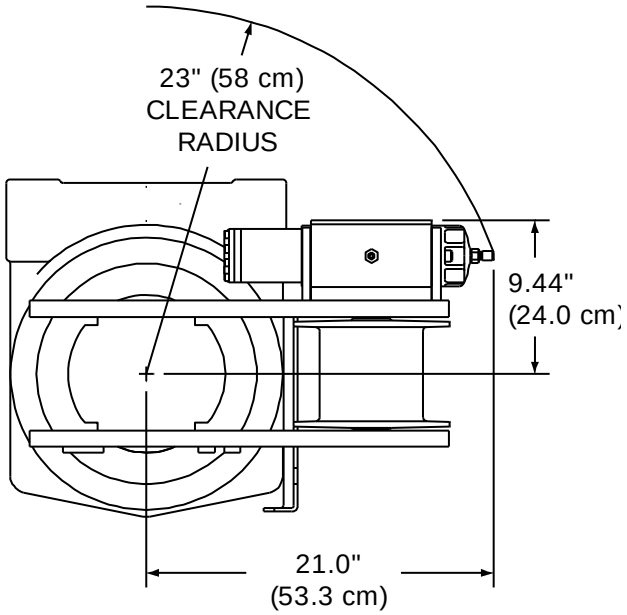
All chassis, crane and body combinations must be stability-tested to ensure stability per ANSI B30.5

Geometric Configuration, 5020

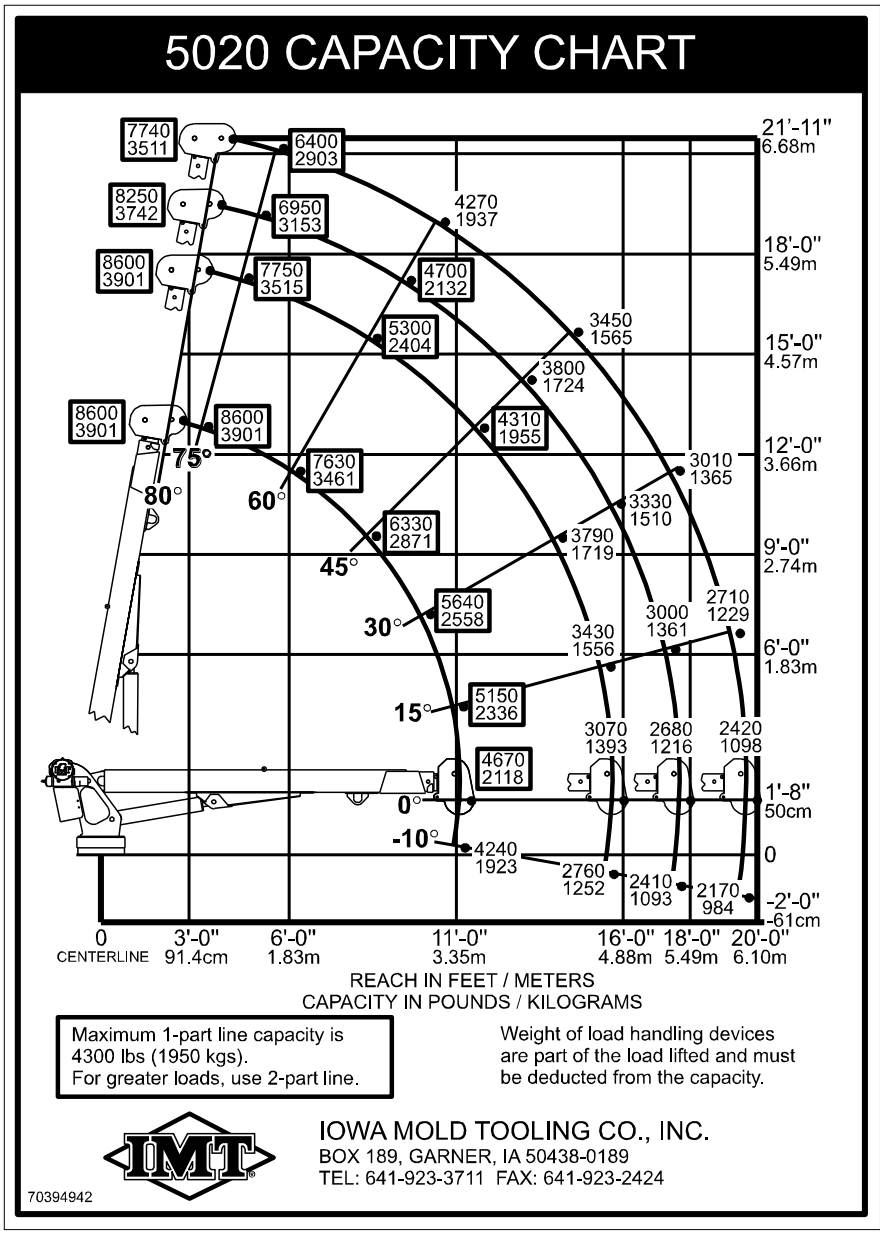




MOUNTING HOLE PATTERN



Capacity Chart, 5020

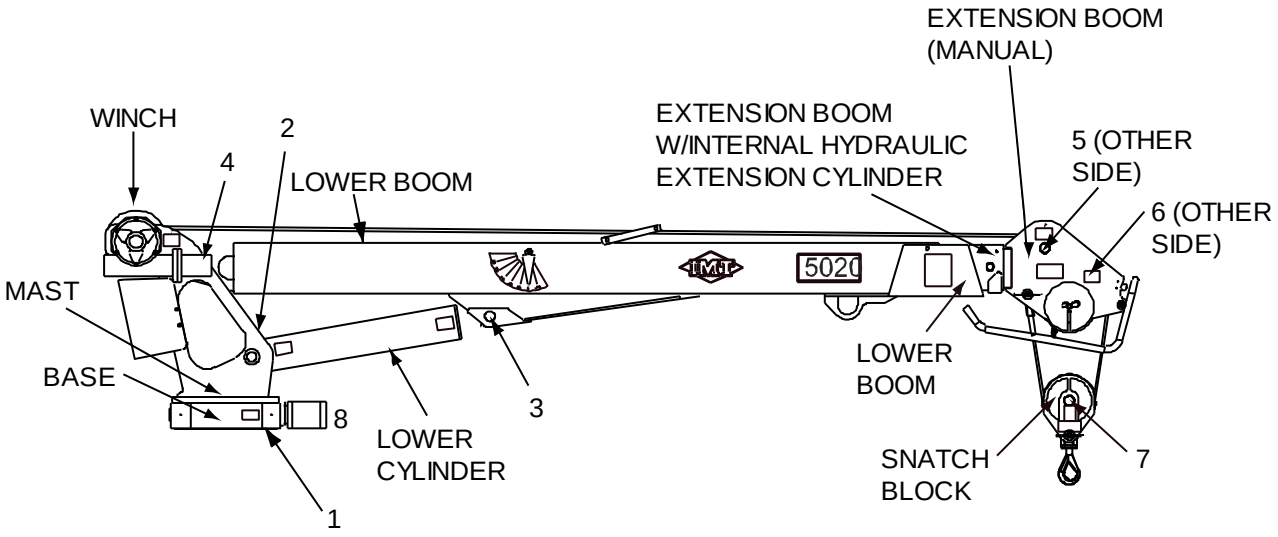


CHAPTER 3

Crane Reference

In This Chapter

Assemblies and Grease Zerk Locations



NOTE: Assemblies and part number locations 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 or Shell Retinax "A"	Weekly
2.	Lower Cylinder Base		
3.	Lower Cylinder Rod		
4.	Mast/Lower Boom Hinge Pin		
5.	Upper Sheave Pin		
6.	Lower Sheave Pin		
7.	Snatch Block Sheave Pin		
8.	Worm Drive Bearings *3 Pumps/ Then Rotate Crane Fully	Extreme Pressure EP2 Grease	Every 3 months

NOTE: All application points must be greased weekly under normal work loads and moderate weather conditions. Under severe operating conditions, lubrication should be performed more frequently. See Volume 1: 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)		
73511070	HYDRAULIC MOTOR	1
LOWER BOOM ASSEMBLY (41717147)		
3C210010	LOWER CYLINDER	1
60120124	WEAR PAD	4
72060293	CAP SCREW 5/16-24X1 HHGR5	8
LOWER CYLINDER (3C210010)		
4G035980	ROD ASSEMBLY	1
6HD45022	HEAD	1
6ID45143	PISTON	1
9D181823	SEAL KIT	1
77041561	PRESSURE SWITCH	1
73540052	COUNTERBALANCE VALVE	1
EXTENSION BOOM ASSEMBLY (41717145)		
3B210013	EXTENSION CYLINDER	1
60030189	WEAR PAD	1
60030134	SHEAVE	2
EXTENSION BOOM ASSEMBLY, 20' WITH FLIPSHEAVE (41714691)		
71411793	EXTENSION CYLINDER	1
60030189	WEAR PAD	1
EXTENSION CYLINDER (71411793)		
73054999	COUNTERBALANCE VALVE	1
94396790	SEAL KIT	1
WINCH / CABLE / HOOK KIT (31714696) & WINCH / CABLE / HOOK KIT W/ FLIPSHEAVE (31714697)		
73511081	HYDRAULIC MOTOR (was 73511069)	1
70580143	CABLE ASSEMBLY	1
51713168	CORD REEL	1
77041291	SWITCH	1
52709413	CABLE	1
60030108	ROLLER-CABLE GUIDE	1
60030134	SHEAVE	1
71073035	HOOK	1
70074004	HOOK SAFETY LATCH	1

WINCH ASSEMBLY (70570501)		
76393174	O-RING	1
76393173	OIL SEAL	1
70055202	BALL BEARING	2
70733294	BRAKE KIT	1
76393171	GASKET	2
PROPORTIONAL REMOTE HANDLE ASSEMBLY (51713182)		
51713182	PROP. REMOTE HANDLE ASSEMBLY	1
70394183	TRIGGER ASSEMBLY	1
77040371	TOGGLE SWITCH SPST	1
77040372	TOGGEL SWITCH SPDT	2
77040373	TOGGLE SWITCH SPST	1
77040374	TOGGLE SWITCH SPDT	1
INSTALLATION KIT (93715267)		
73052092	FILTER ELEMENT, 10 MIC	2
GEAR ROTATOR (71056543)		
70395074	O-RING	1
70395076	SEAL	1
70145786	SNAP RING	1
70055271	BEARING - CONE	2
70055281	BEARING - CUP	2
70145501	BEARING RETAINER	1
70056550	WORM	1
73145506	SHIM 0.005	2
73145505	SHIM 0.015	2
73145504	SHIM 0.030	2
76395075	GASKET	1

REV. 20051006

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 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.

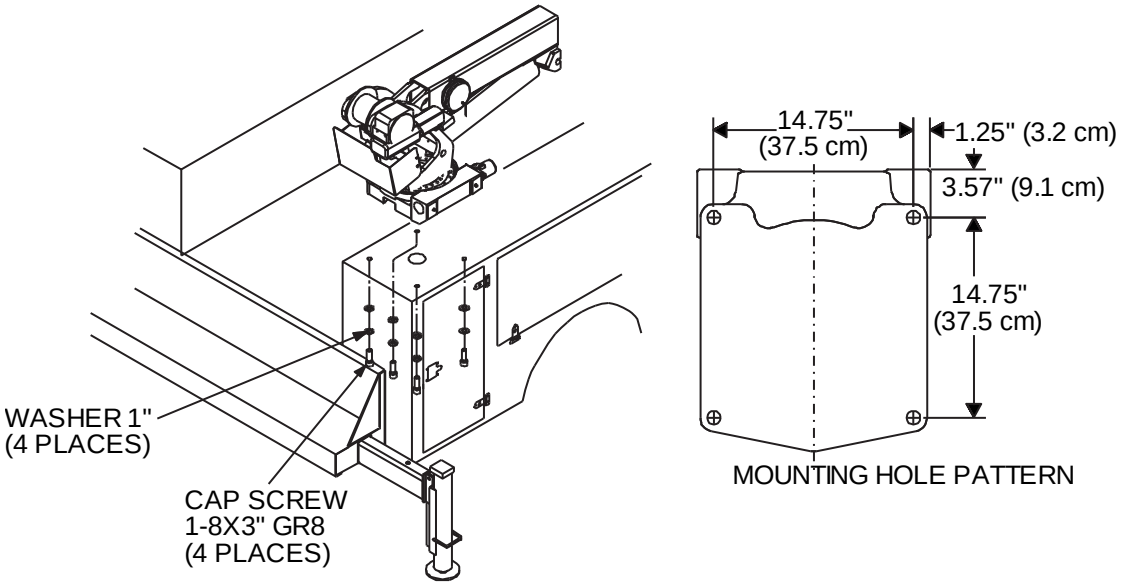
To install the crane:

1 Use a lifting device capable of lifting the weight of the crane, up to 1625 lb (737 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).

CAUTION

THE 3" BOLTS SUPPLIED ARE FOR USE ON BODIES WITH A CRANE BOX TOP PLATE THICKNESS OF 7/8" TO 1" ONLY. DETERMINE THE CRANE BOX TOP PLATE THICKNESS PRIOR TO MOUNTING. IF DIFFERENT LENGTH BOLTS ARE REQUIRED, THEY MUST BE 1-8, GRADE 8, ZINC COATED, OF THE PROPER LENGTH. FAILURE TO USE PROPER LENGTH BOLTS MAY CAUSE THE BOLTS UNDER THE WORM HOUSING TO BOTTOM OUT BEFORE TORQUEING. INSURE A MINIMUM OF 1-1/2" THREAD ENGAGEMENT.



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.

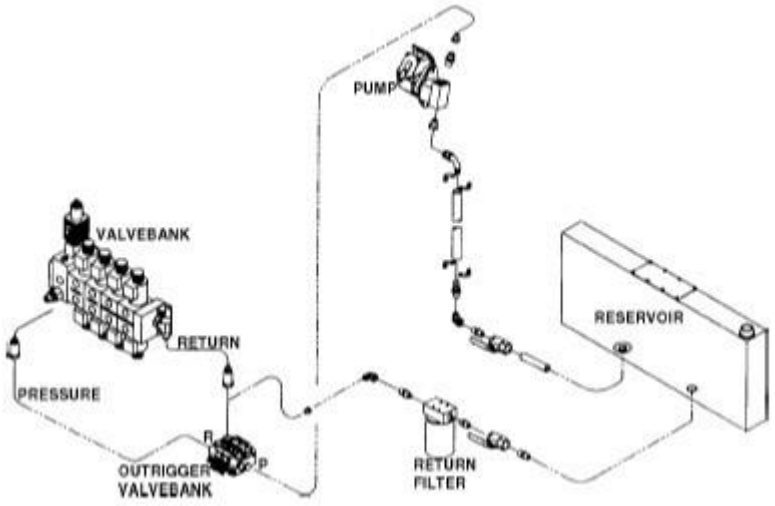
1 Plumb the hydraulic components as shown in the applicable installation kit in the parts section. Make certain all fittings are securely tightened and that hoses are free of possible chafing or contact with hot or sharp edges which could cause damage.

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).

CHAPTER 4

Parts

In This Chapter

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.

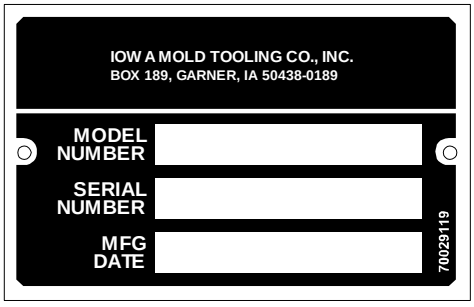
WARNING

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

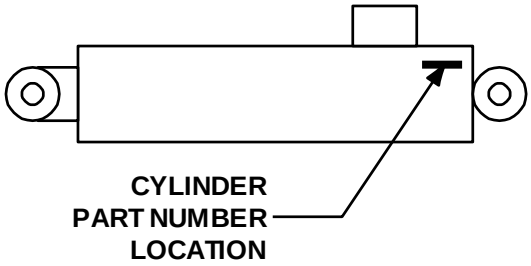
Every IMT crane has an identification placard (see figure). This placard is attached to the inner boom, mast, or crane base. When ordering parts, communicating warranty information, or referring to the unit in correspondence, always include the serial number and model numbers. Address all inquiries to your authorized IMT distributor or 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 stabilizer 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.

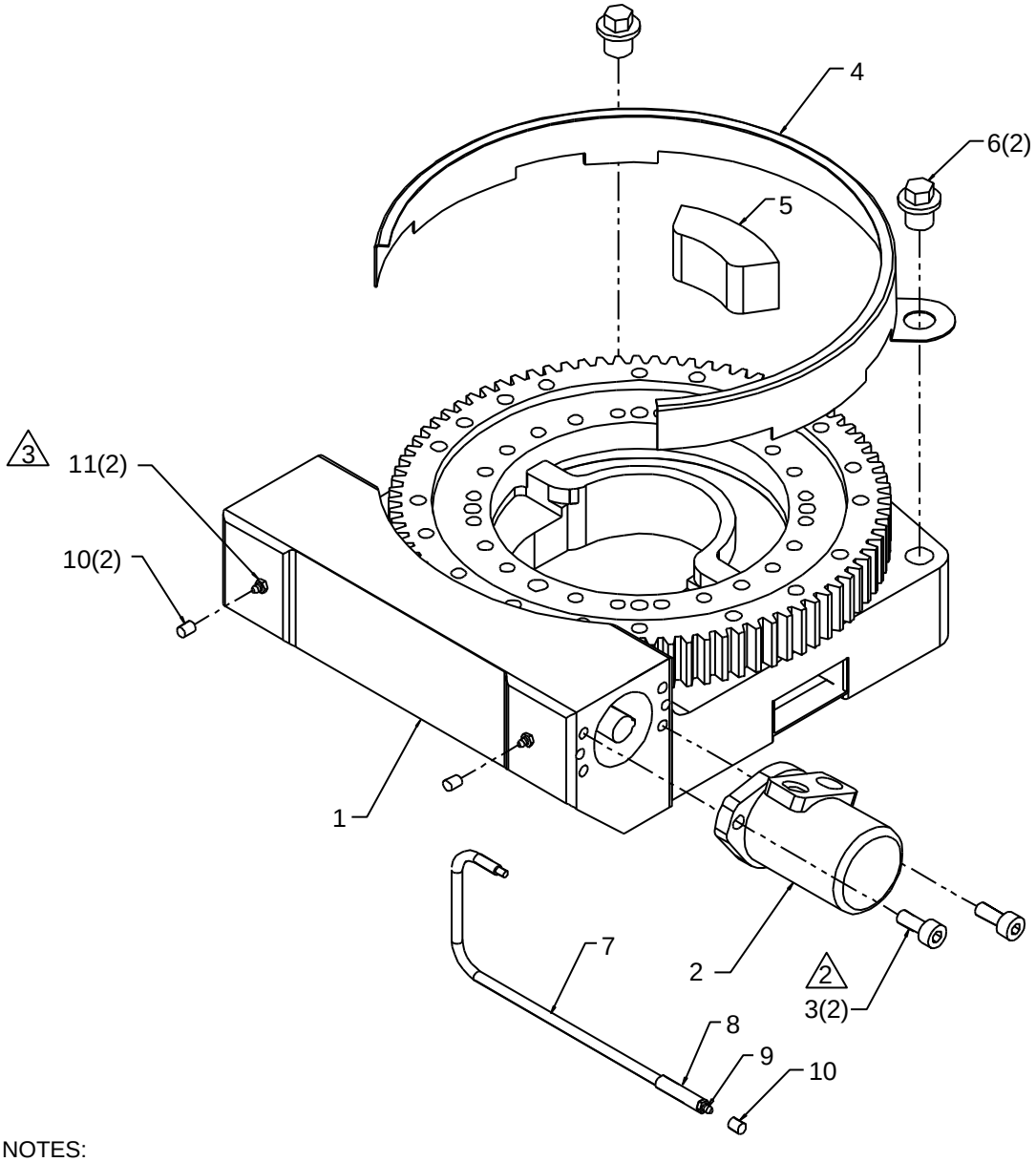
3 Specify the complete part number. When ordering cylinder parts, or one of the main weldments, always give the stamped part number.

4 Give a complete description of the part.

5 Specify the quantity required.

Base and Mast Assemblies

Base Assembly (41714695)



NOTES:

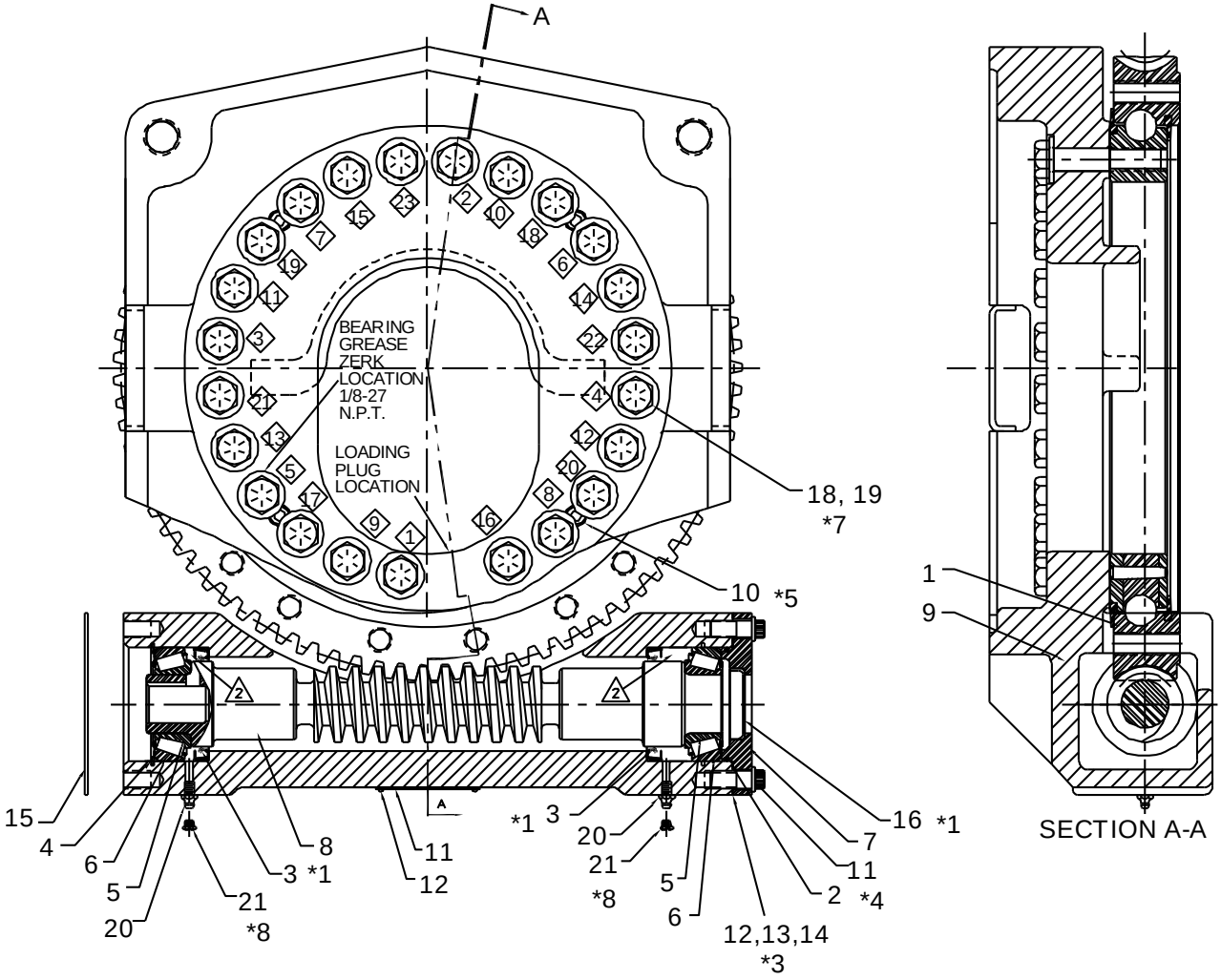
1 APPLY MOLUB-ALLOY 936F TO TURNTABLE BEARING AND WORM TEETH AT ASSEMBLY.

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.	73051919	HYDRAULIC MOTOR (WAS 73511070)	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 E 20080930			

Gear Rotator (71056543) (Primary)



NOTES (*)

1 INSTALL SEALS #3 AND #16 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 #10 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 180º 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 #20 SHIPS LOOSE. INSTALL ITEM #21 FOR SHIPPING.

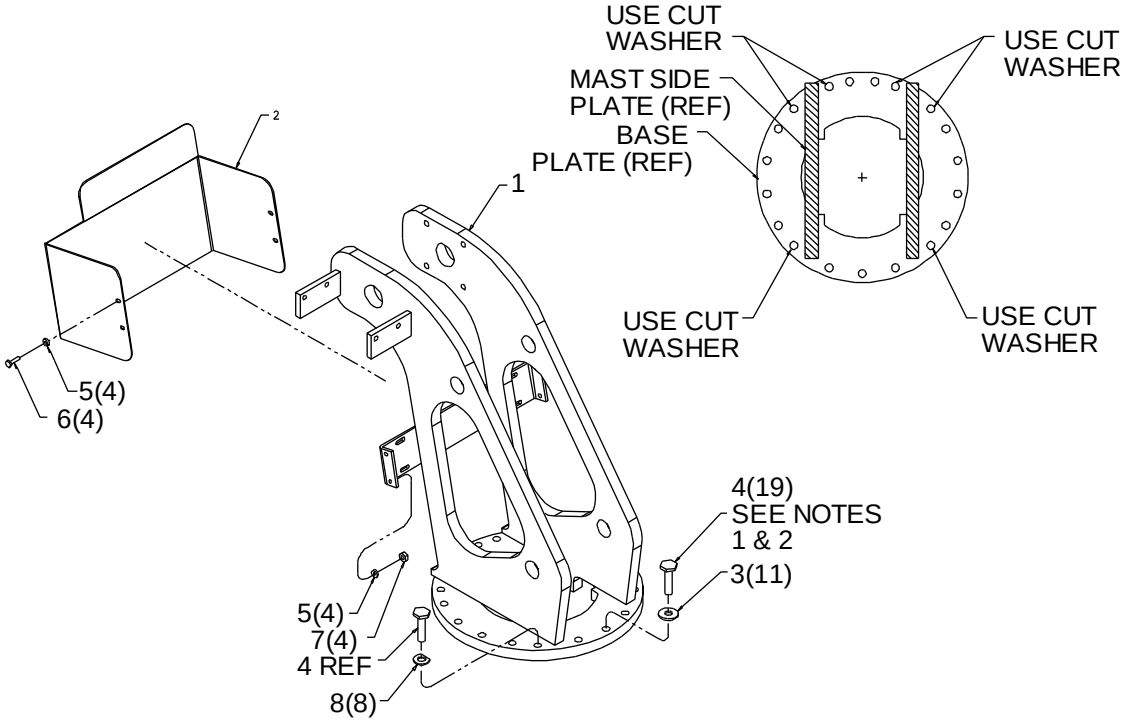
WARNING

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	DETAILS	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 SCREW	3/8-16X1-1/4 SH	4
11.	72601733	CAP SCREW	1/2-13X1-1/4 FERRY	4
12.	73145506	SHIM	.005" THICK	2
13.	73145505	SHIM	.015" THICK	2
14.	73145504	SHIM	.030" THICK	2
15.	76395075	GASKET		1
16.	72533604	PLUG		1
17.	72661504	PIN	3/8X1	2
18.	72601751	CAP SCREW	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 (41714694)



NOTES:

1 TORQUE ITEM #4 TO 160 FT-LB.

2 DO NOT USE PERMANENT THREAD LOCK ON ITEM #4.

WARNING

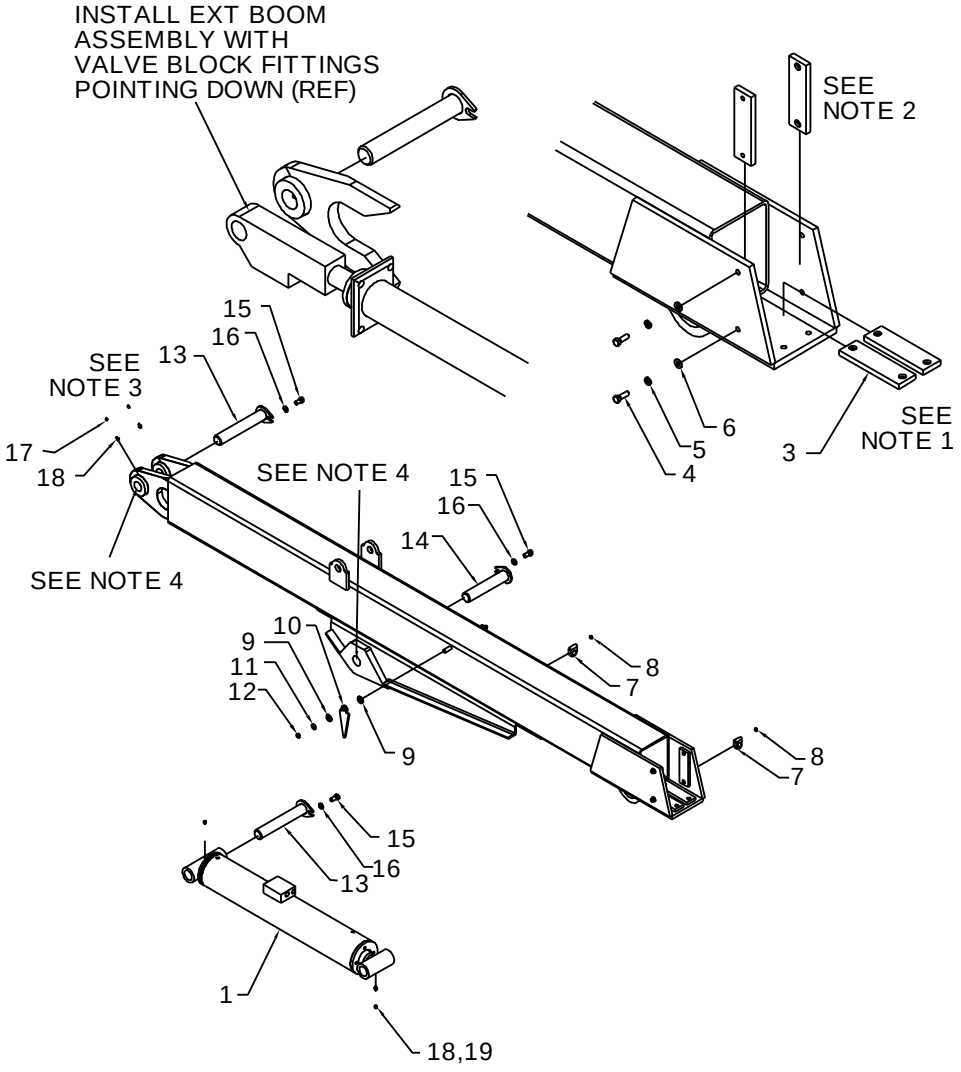
ANY TIME THE GEAR-BEARING BOLTS HAVE BEEN REMOVED, THEY MUST BE REPLACED WITH NEW BOLTS OF IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE, CAUSING DEATH OR SERIOUS INJURY.

41714694 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52714693	MAST	1
2.	60119128	VALVEBANK COVER	1
3.	72063119	WASHER 5/8 FLAT HARD GR8	11
4.	72601482	CAP SCR 5/8-11X2-1/2 HHGR8	19
5.	72063001	WASHER 1/4 WRT	8
6.	72060004	CAP SCR 1/4-20X1 HHGR5	4
7.	72062104	NUT 1/4-20 LOCK	4
8.	72063216	WASHER 5/8 FLAT HARD-CUT	8

REV. B 20050629

Boom Assemblies & Cylinders

Boom Assembly, Lower (41717147)



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.

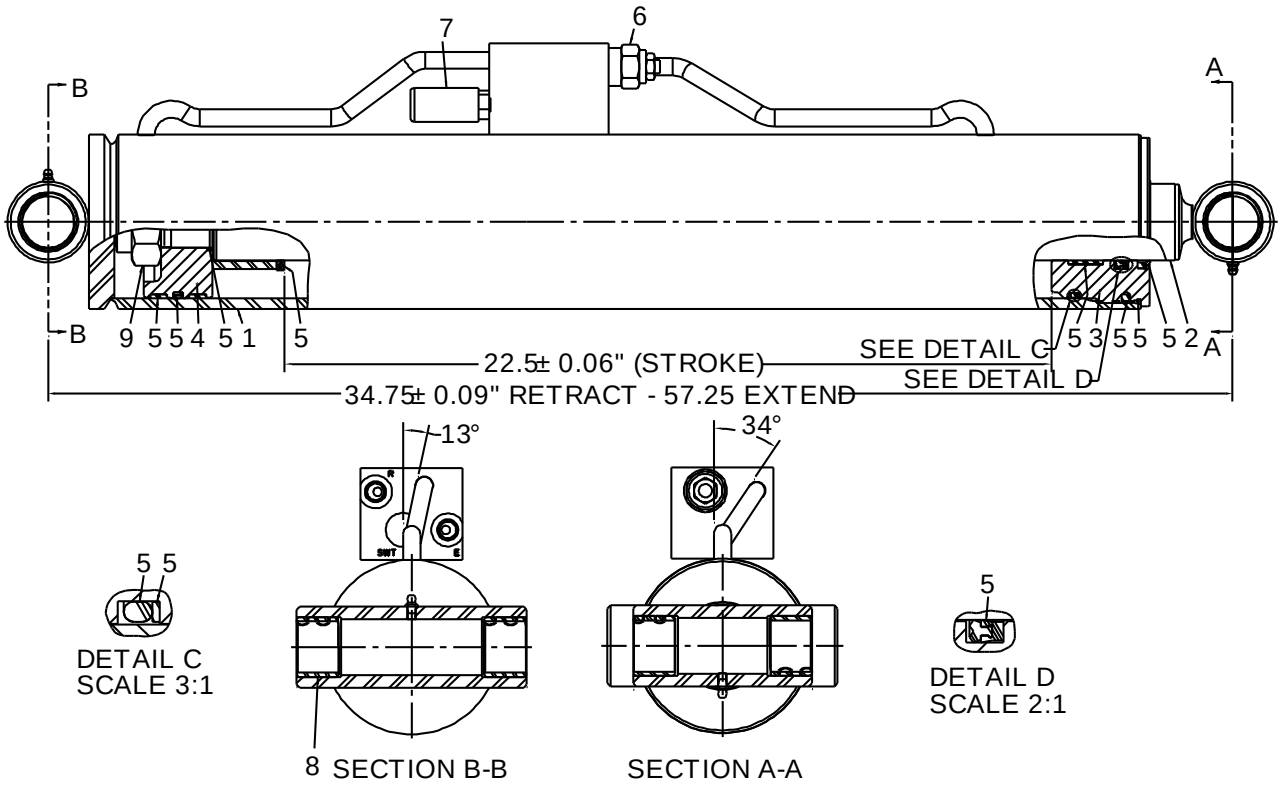
4 APPLY NEVER-SEIZE TO COLLAR I.D.

5 APPLY NEVER-SEIZE TO PIN. DO NOT EXCEED WIDTH OF BOOM COLLARS.

41717147 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411813	LOWER CYLINDER (INCL. 19) (WAS 51718147, 3C210010)	1
2.	52717143	LOWER BOOM WELDMENT	1
3.	60120124	WEAR PAD	4
4.	72060293	CAP SCREW 5/16-24x1.00	8
5.	72063050	WASHER 5/16 LOCK	8
6.	72063002	WASHER 5/16 FLAT	8
7.	70034381	SUPPORT	2
8.	72062104	NUT 1/4-20 HEX NYLOC ZINC	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 1.5x9.31	2
14.	52715266	PIN TYPE II 1.5x8.31	1
15.	72060793	CAP SCREW 1/2-13x1.00	3
16.	72063053	WASHER 1/2 LOCK	3
17.	72053508	ZERK-NPT .12	2
18.	70034382	CAP-GREASE PRO 20	4
19.	72053507	ZERK STR THD .25-.28	2REF

REV. D 20051101

Cylinder (71411813) (Eff. Dec. 2005)



NOTES:

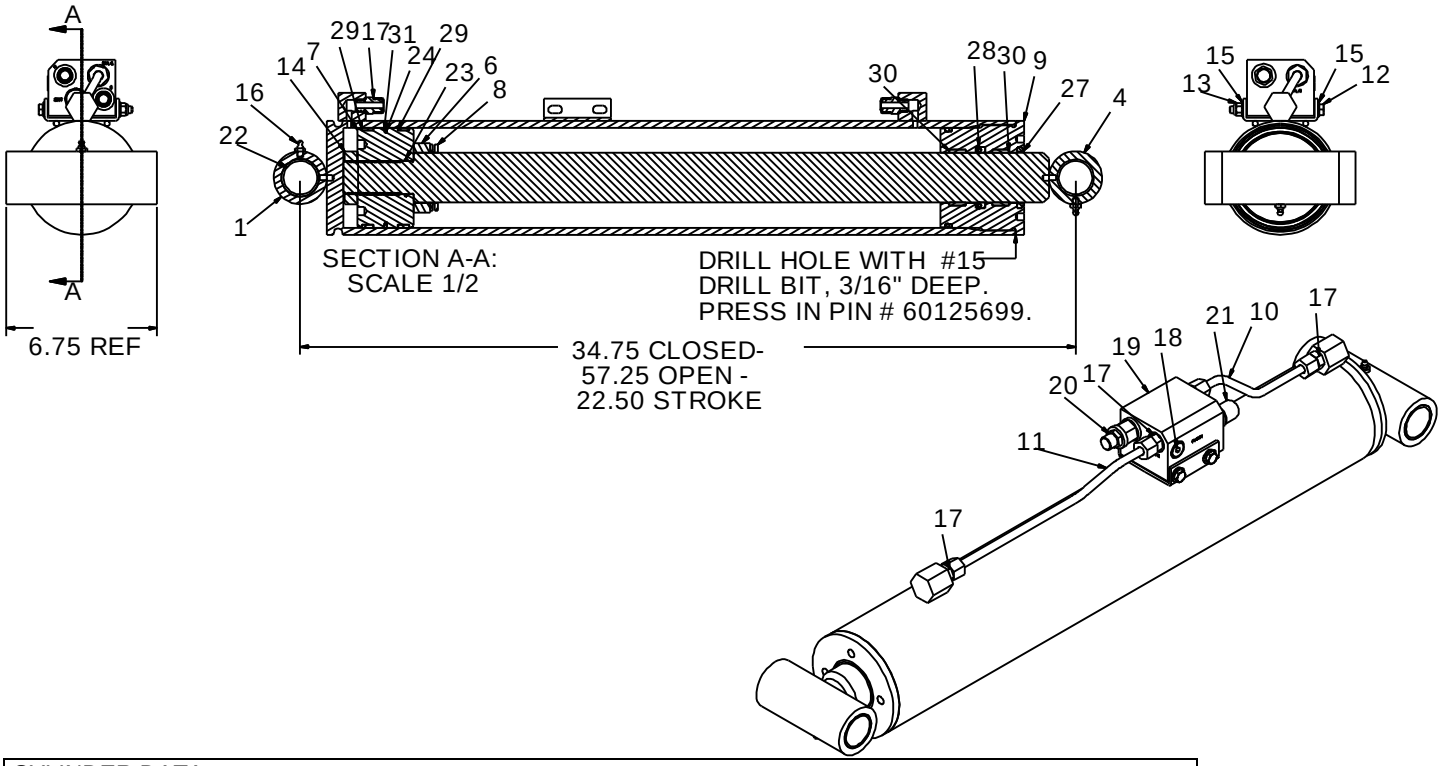
1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

71411813 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411949	CASE	1
2.	71411950	ROD	1
3.	71411951	HEAD GLAND	1
4.	71411952	PISTON	1
5.	94396767	SEAL KIT	1
6.	73540052	COUNTERBALANCE VALVE	1
7.	77041561	PRESSURE SWITCH	1
8.	71411947	BUSHING-SPRING 1.50 PIN X 1.25 LG	4
9.	-REF-	LOCKNUT, 1.5-12 UNF	1

NEW 20051021

71411813 CYLINDER DATA	
EXTENDED	15.9 IN^2, 1.55 GAL
RETRACTED	11.93 IN^2, 1.16 GAL
CASE	4.50 BORE X ø5.13
ROD	ø2.25
DRY WEIGHT	91.7 LB
TEST PRESSURE	3500 PSI
OPERATING PRESSURE	3000 PSI
PORTS	SAE #6 O-RING BOSS (9/16-16 UNF-2B)
CYLINDER TUBE BURST PRESSURE	11,074 PSI
TORQUES	USING THREADLOCK COMPOUND, TORQUE LOCKNUT (#9) TO 1600-1800 FT-LB. USE LOCKTITE 271 OR EQUIVALENT.
	TORQUE HEAD GLAND (#3) TO 300-400 FT-LB.
	TORQUE COUNTERBALANCE VALVE (#6) TO 40-45 FT-LB.
	TORQUE PRESSURE SWITCH (#7) TO 17-20 FT-LB.

Lower Cylinder (51718547) (Eff. 6-29-04 through Nov. 2005)



CYLINDER DATA			
EXTENDED	16.05 IN² 1.56 GAL	DRY WEIGHT	122#
RETRACTED	12.07 IN² 1.18 GAL	BEARING SPAN	11.8%
CASE	4.50 X 5.12 X 30.11	TEST PSI	3600
ROD	ø2.25 X 32.68L (1.44 S)	OPER PSI	3000

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.

4 ITEM #8, STOP TUBE, REPLACES 6A025022 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.

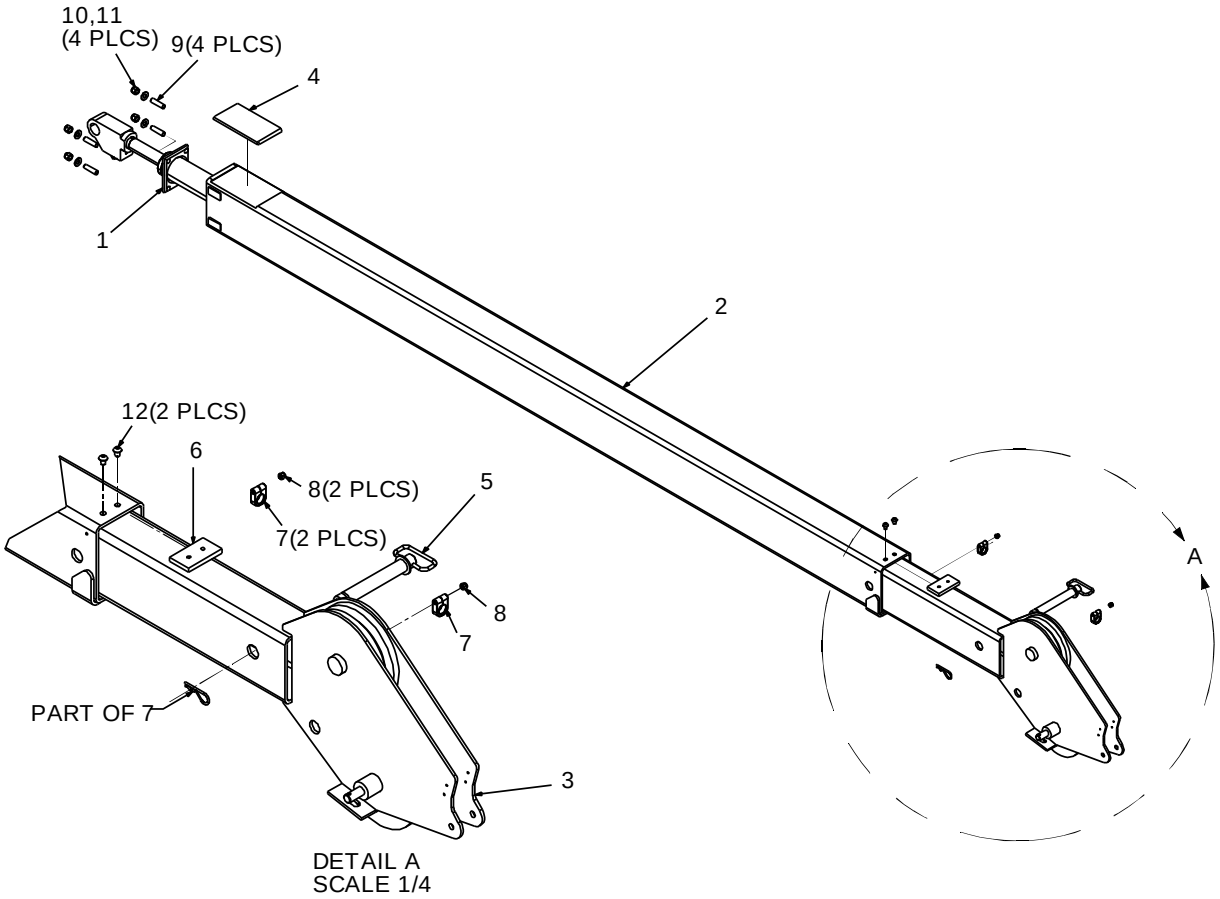
5 PRESS LOCKING PIN (ITEM #5) INTO #15 HOLE DRILLED 0.188” DEEP.

6 TORQUE PISTON TO 710-740 FT-LB, HEAD TO 450 FT-LB, CARTRIDGE TO 40 FT-LB, AND CAP SCREW TO 16 FT-LB.

51718547 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	4C210010	CASE ASSEMBLY (INCL. 15)	1
2.	51718547A	CYLINDER (INCL. 1,3,4,6,7,9,14)	1

51718547 PARTS LIST			
3.	51744132	SEAL KIT (INCL. 4,7,22-29)	1
4.	52718385	ROD ASM (INCL. 15)	1
5.	60125699	PIN	1REF
6.	60125922	STOP TUBE	1
7.	60125926	PISTON	1
8.	60138275	STOP TUBE (WAS 6A025022)	1REF
9.	6HD45022	HEAD	1
10.	70145753	TUBE ASM	1
11.	70145927	TUBE ASM	1
12.	72060037	CAP SCR .31-18X 4.00 HH GR5 Z	2
13.	72062109	NUT .31-18 HEX NYLOCK	2
14.	72062305	COLLAR-LOCK 1-1/2-12 X 2.375 X .563	1
15.	72063002	WASHER .31 FLAT	4
16.	72503507	ZERK-STR THD .25-28	2REF
17.	72533186	ADPTR-#6 M FACE/ #6 M STR	4
18.	72533603	PLUG- 7/16 STR HOL HEX STL	1
19.	73540035	VALVE-CBAL	1
20.	73540052	VALVE - CBAL	1
21.	77041561	PRESSURE SWITCH	1
22.	7BF81215	BUSHING-STL 1.50 PIN X 1.25 LG	6REF
23.	7Q072128	O RING 1.487X 1.693X 0.103 70	1REF
24.	7Q072155	O-RING - 4 X 4.19 0.09 70	1REF
25.	7Q072346	O-RING - 4.12 X 4.5 0.19 70	1REF
26.	7Q10P346	BACKUP RING-4.12 ID X 4.50 OD	1REF
27.	7R14P022	ROD WIPER-TYPE D 2.25 ROD	1REF
28.	7R546022	U-CUP LOADED 2.25X2.75X.38 "B	1REF
29.	7T2N4045	WEAR RING - PISTON 4.50 O.D. X .50 W	2REF
30.	7T2NX625	WEAR RING-ROD 2.25 IDX0.75	2REF
31.	7T66P045	PISTON SEAL-DYNAMIC	1REF
REV B 20120417			

Boom Assembly, Extension (41717145)



NOTES:

1 ADD SERVICEABLE THREAD LOCK TO ITEM #14 (2 PLACES).

2 ADD SERVICEABLE THREAD LOCK TO ITEM #11 (4 PLACES), BOOM SIDE ONLY.

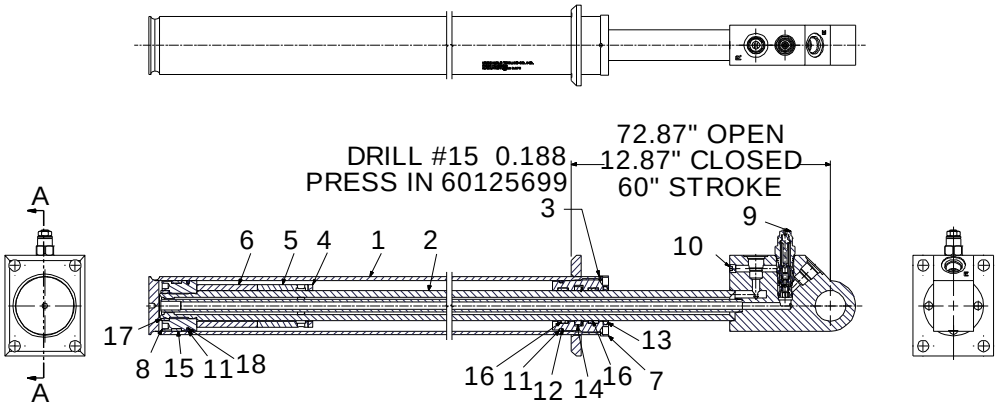
41717145 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411793	LOWER CYLINDER (WAS 3B210013)	1
2.	52717142	BOOM EXTENSION WELDMENT	1
3.	52717144	WELDMENT - 2ND EXT. BOOM	1
4.	60030189	WEAR PAD	1
5.	73733171	PIN-LOCK 1X6 W/HAIRPIN	1
6.	60121174	STROKE STOP	1
7.	70034381	SUPPORT	2
8.	72062104	NUT 1/4-20 HEX NYLOC ZINC	2
9.	72601757	STUD 1/2-13 X 2 NC GR5 STL	4
10.	72063005	WASHER 1/2 FLAT	4
11.	72062080	NUT 1/2-13 HEX	4
12.	72601750	CAP SCR 3/8-16 X 1/2 SOC BTNHD	2

REV. C 20051010

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

NOTE:

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



SECTION A-A

CYLINDER DATA			
EXT.	4.91 in² 1.28 gal	DRY WT.	74 #
RETR.	3.14 in² 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.

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.

4 ITEM #8, STOP TUBE, REPLACES 6A025025 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.

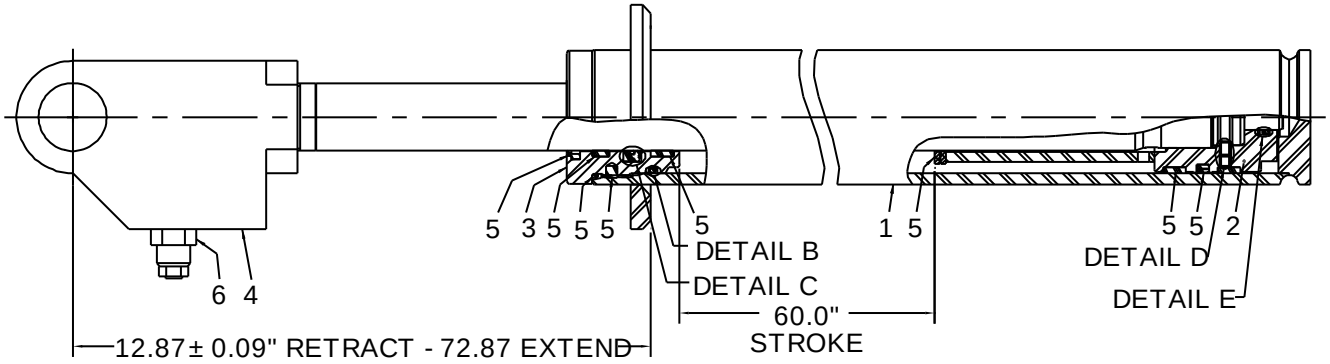
5 PRESS LOCKING PIN (ITEM #25) INTO #15 HOLE DRILLED 0.188” DEEP.

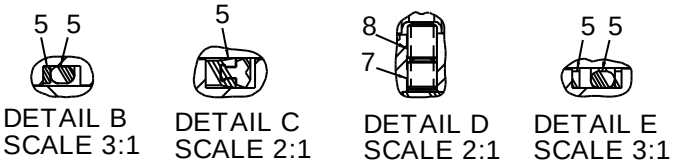
6 TORQUE PISTON TO 710-740 FT-LB, HEAD TO 525 FT-LB, CARTRIDGE TO 40 FT-LB, AND CAP SCREW TO 16 FT-LB.

3B210013 PARTS LIST				
ITEM	PART #	DESCRIPTION	KIT #	QUANTITY
1.	4B210013	CASE ASSEMBLY		1
2.	52717006	ROD ASSEMBLY		1
3.	60125699	PIN-LOCK TUBE	#19	1
4.	60138272	STOP TUBE		1
5.	6C210013	STOP TUBE (REPL 6A025015)		1
6.	6C300015	STOP TUBE		1
7.	6HD25015	HEAD		1
8.	6ID25125	PISTON		1
9.	73054999	VALVE-COUNTERBALANCE		1
10.	7PNPXT02	PLUG-PIPE SOCKET HEAD TAPED		1
11.	7Q072228	O-RING	#19	2
12.	7Q10P228	BACKUP RING	#19	1
13.	7R14P015	ROD WIPER	#19	1
14.	7R546016	U-CUP	#19	1
15.	7T2N4025	WEAR RING-PISTON	#19	1
16.	7T2NX417	WEAR RING-ROD	#19	2
17.	7T61N125	LOCK RING	#19	1
18.	7T66P025	PISTON SEAL		1
19.	9D101220	SEAL KIT		1
REV C 20120417				

Cylinder, Extension 1H 1M (71411793) (Eff. 9-05 through 5-07)

NOTE:
CRANES WITH SERIAL NUMBERS OF 3820051407 AND BEYOND USE THIS CYLINDER THROUGH 5-07.





NOTES:

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

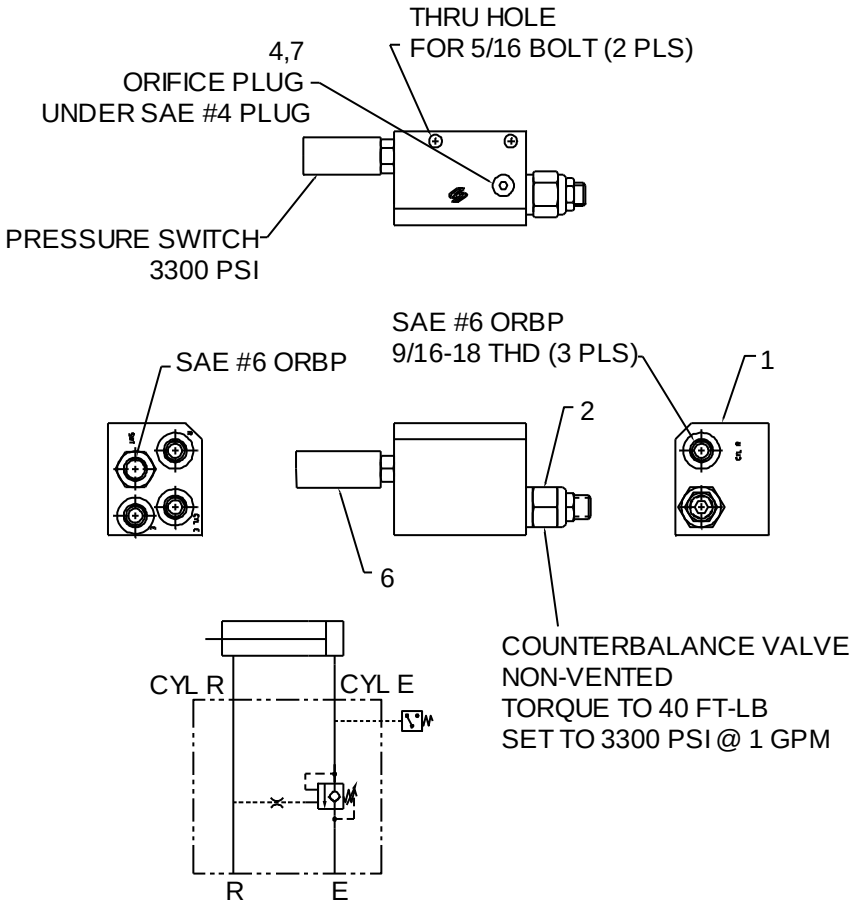
71411793 CYLINDER DATA	
EXTENDED	4.91 IN², 1.27 GAL
RETRACTED	3.14 IN², 0.82 GAL
CASE	2.50 BORE X ø3.00
ROD	0.875 X ø1.50
DRY WEIGHT	88.6 LB
TEST PRESSURE	3500 PSI
OPERATING PRESSURE	3000 PSI
PORTS	SAE #8 O-RING BOSS (3/4-16 UNF-2B)
CYLINDER TUBE BURST PRESSURE	14,995 PSI
TORQUES	TORQUE SET SCREWS (#7, #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

71411793 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
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

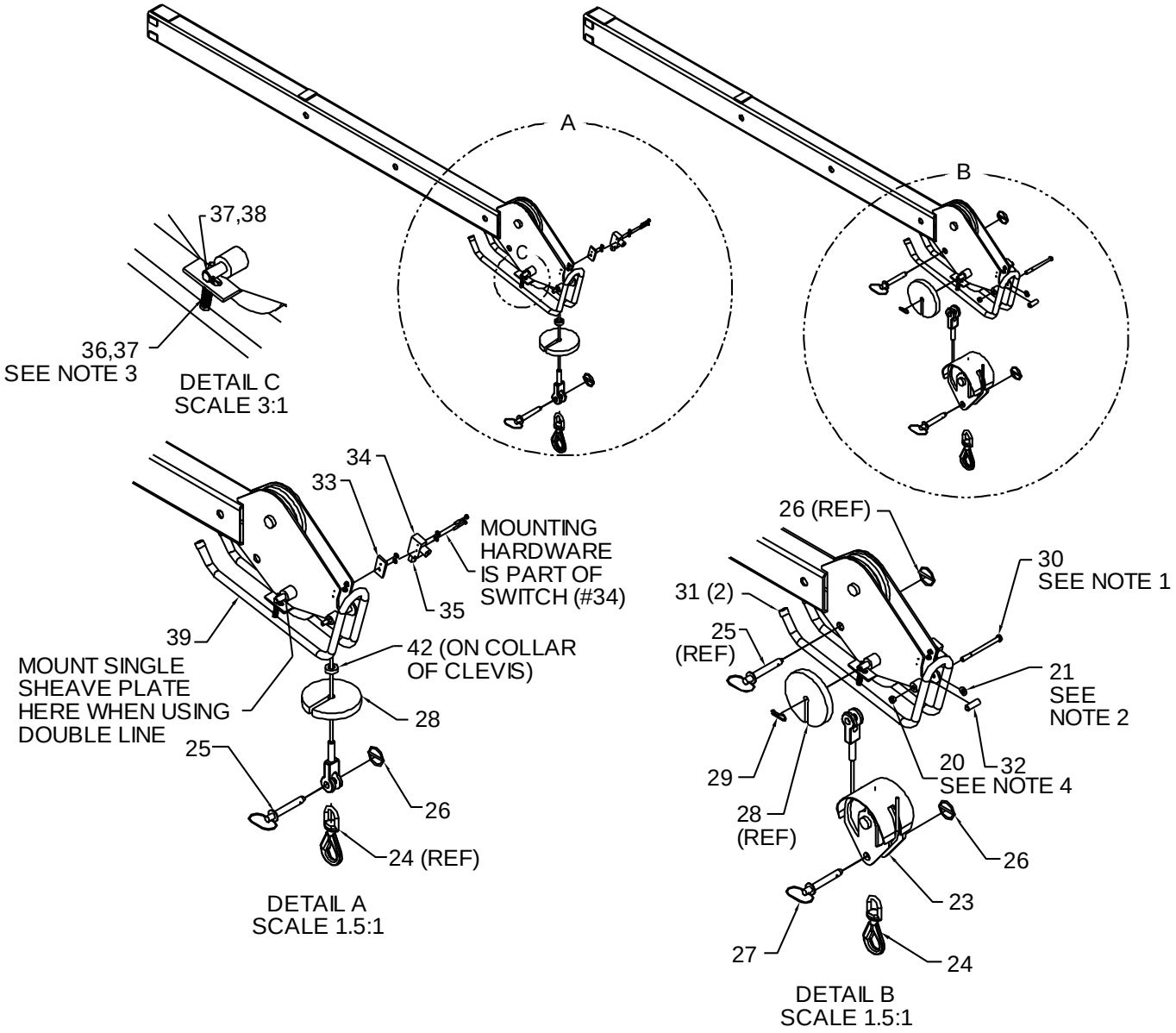
Valve, Counterbalance (73540035)



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

REV. C 20031104

Winch / Cable / Hook Kit (31717146)



NOTES:

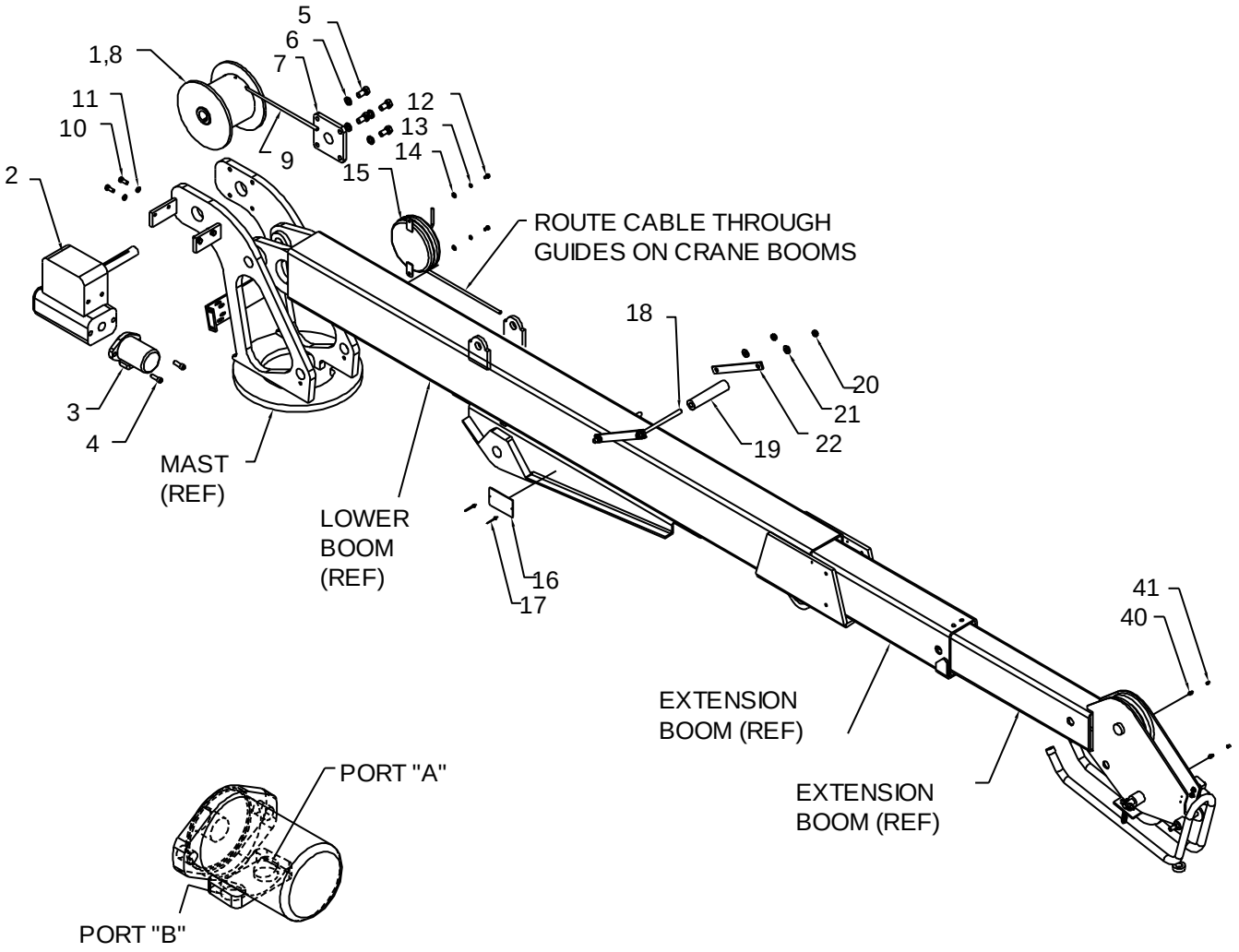
1 ADD NEVER-SEEZ TO BOLT, SPACER, AND PIVOT POINTS.

2 LOCATE WASHER ON EITHER SIDE TO POSITION WELDED STUDS IN CENTER OF SLOTS.

3 ADJUST TENSION TO ALLOW 1.0" OF TRAVEL.

4 DO NOT OVER-TIGHTEN. MUST BE FREE TO PIVOT.

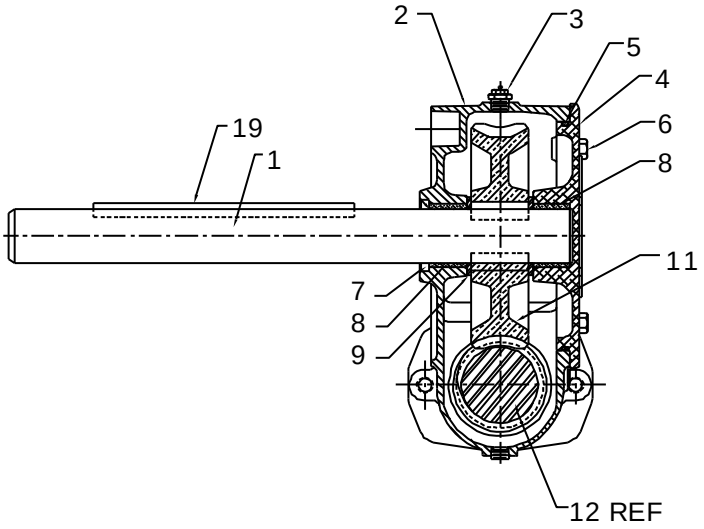
Winch / Cable / Hook Kit (31717146) (on page 42)

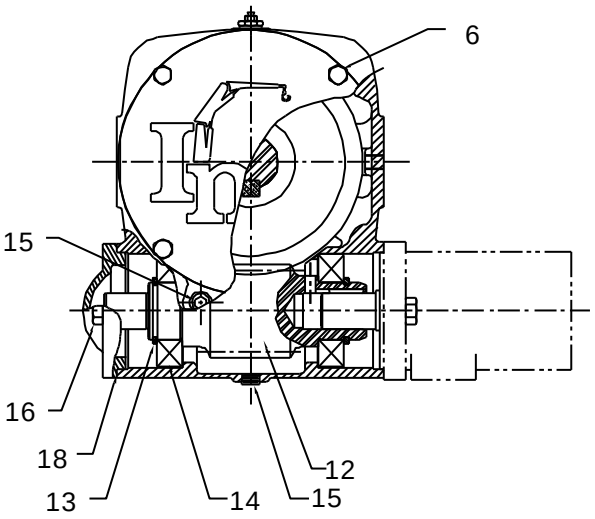


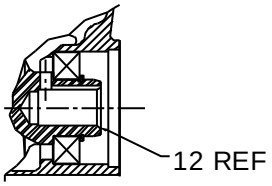
31717146 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51713808	WINCH DRUM	1
2.	70570501	WINCH (WAS 71057936)	1
3.	73051940	HYDRAULIC MOTOR	1
4.	72060774	CAP SCREW 7/16-14x1.25	2
5.	72601499	CAP SCREW 9/16-12x1.25	4
6.	72063054	WASHER 9/16 LOCK	4
7.	70055185	FLANGE BEARING	1
8.	72060596	SET SCREW 1/2-13x.75	1
9.	70580143	CABLE ASM 3/8 6x25	1
10.	72060047	CAP SCREW 3/8-16x1.25 (WAS 72060046)	4
11.	72063051	WASHER 3/8 LOCK	4
12.	72060000	CAP SCREW 1/4-20x1/2	2
13.	72063049	WASHER 1/4 LOCK	2
14.	72063001	WASHER 1/4 FLAT	2

31717146 PARTS LIST			
15.	51713168	CORD REEL ASM	1
16.	70029119	SER. NO. PLACARD	1
17.	72661638	TACK	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	SNATCH BLOCK GUARD WELD.	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	SINGLE SHEAVE PLATE	1
29.	72066145	HAIR PIN .19 ZINC	1
30.	72060104	CAP SCREW 1/2-13x6.5	1
31.	70396121	PLASTIC CAP	2
32.	60122329	SPACER 1/2 BLACK PIPE x2.00	1
33.	60122311	SPACER	1
34.	77041459	LIMIT SWITCH	1
35.	77044468	CONNECTOR 1/2 STR RLF	1
36.	70146096	SPRING 5/8x2.5x14 GA	2
37.	72063003	WASHER 3/8 FLAT	4
38.	72062103	NUT 3/8-16 HEX NYLOC ZINC	2
39.	52715833	WELD. BOOM TIP GUARD	1
40.	72053508	ZERK .12 NPT	2
41.	70034382	GREASE CAP	2
42.	70149793	LOCKING COLLAR (WAS 70149785)	1
REV. L 20080930			

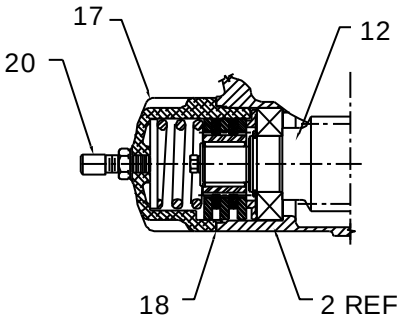
Winch, Worm, 2820 & 5020 (70570501)







HYD END W/O MOTOR
IF SPECIFIED



1* #17 (REF) OIL BRAKE DETAIL

WINCH SPECIFICATIONS

GEAR RATIO	31:1
OUTPUT TORQUE	19,800 IN-LB
MAXIMUM INPUT TORQUE	1,161 IN-LB
MAXIMUM INPUT SPEED	400 RPM
INSTALLED WEIGHT	41 LB
LUBRICATION	EP140 (1 U.S. PINT)

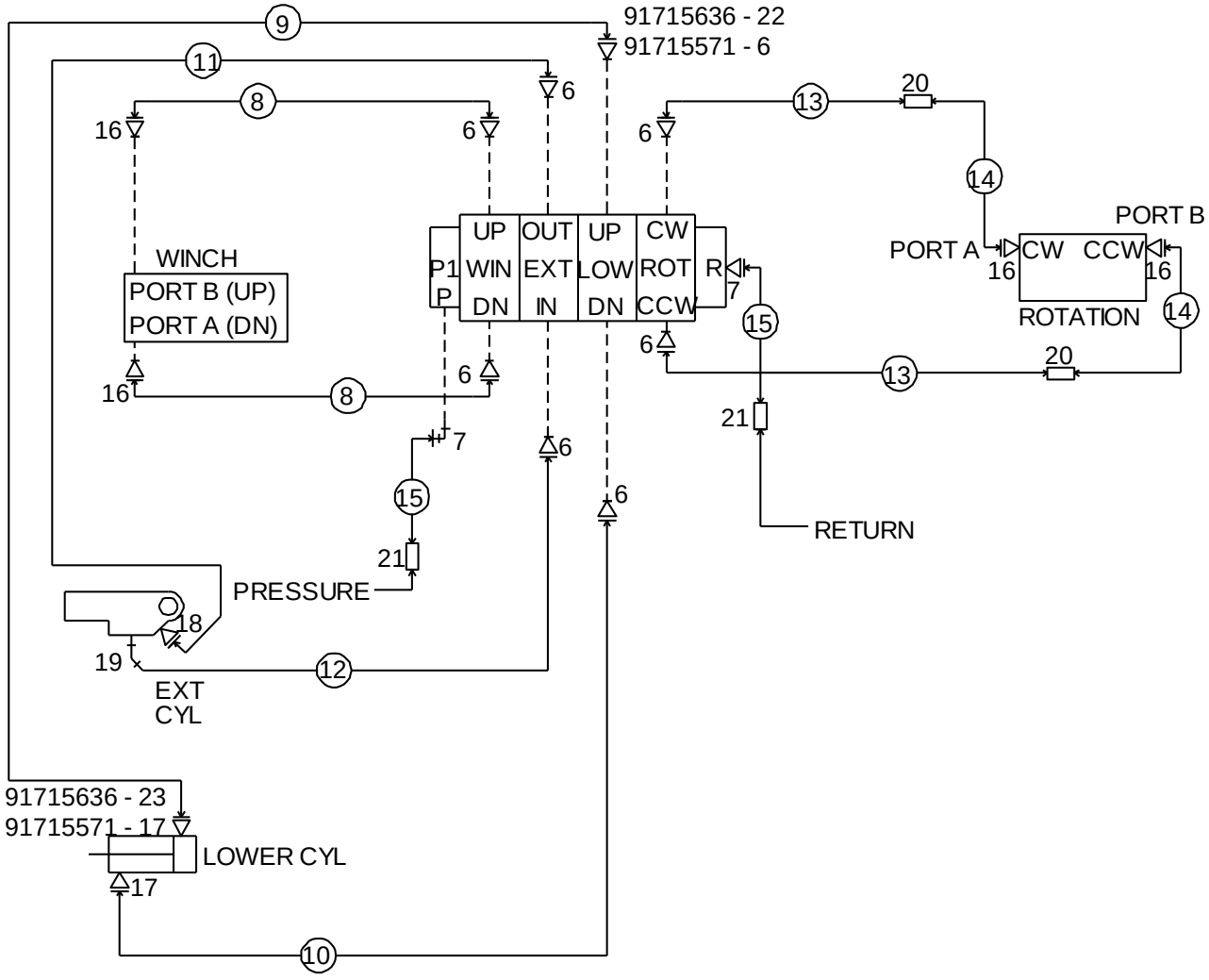
70570501 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70143673	SHAFT	1
2.	70143672	HOUSING	1
3.	70048142	BREATHER	1
4.	70145277	COVER, WINCH	1
5.	76393174	O-RING	1
6.	72601568	CAP SCR	4
7.	76393173	SEAL	1
8.	70143670	BUSHING	2

70570501 PARTS LIST			
9.	70143669	WASHER	2
10.	70143668	KEY	2
11.	70056542	GEAR	1
12.	70056541	WORM	1
13.	72661348	RETAINING RING	2
14.	70055202	BEARING	2
15.	70143865	PIPE PLUG	2
16.	72601567	CAP SCR	2
17.	70733294	BRAKE KIT	1
18.	76393171	GASKET	2
19.	70143658	KEY	1
20.	70034440	PLASTIC CAP	1

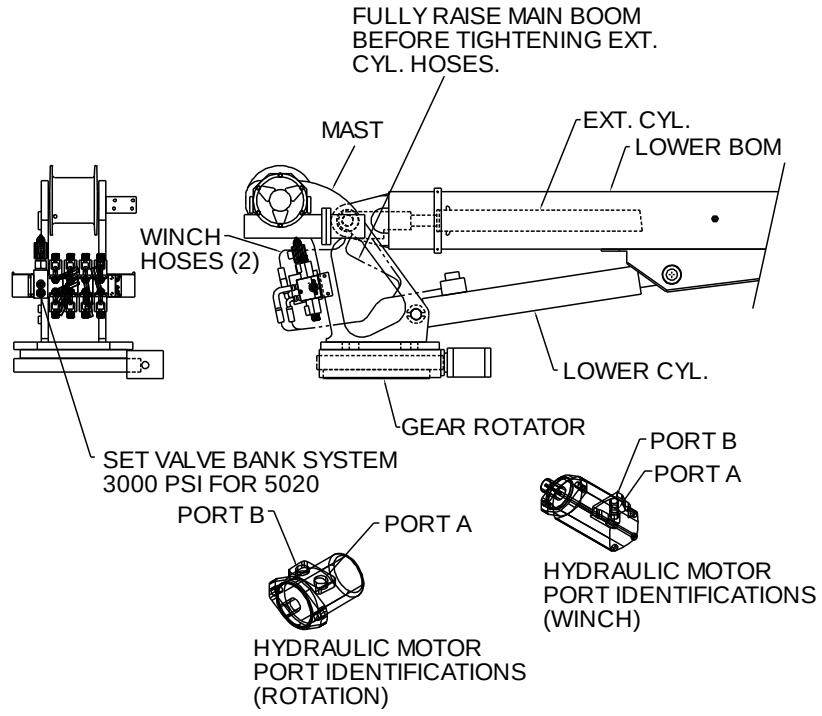
REV. B 20031104

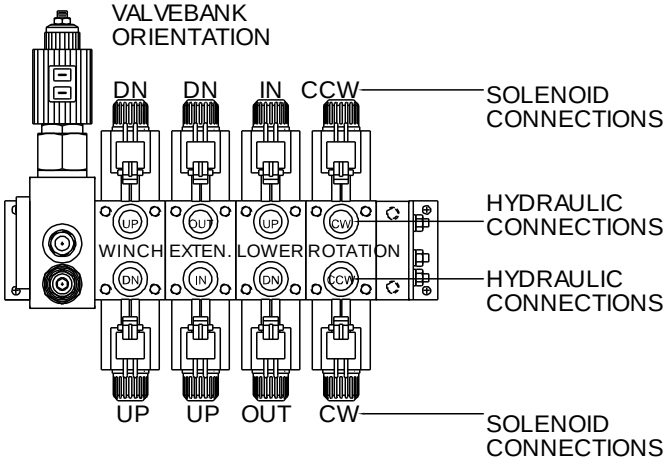
Hydraulics

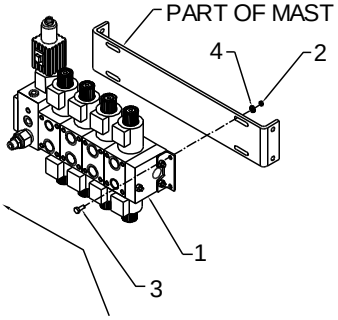
Hydraulic Kit, Tethered Remote (91715636) & Radio Remote (91715571)



Hydraulic Kit (91715636 & 91715571)

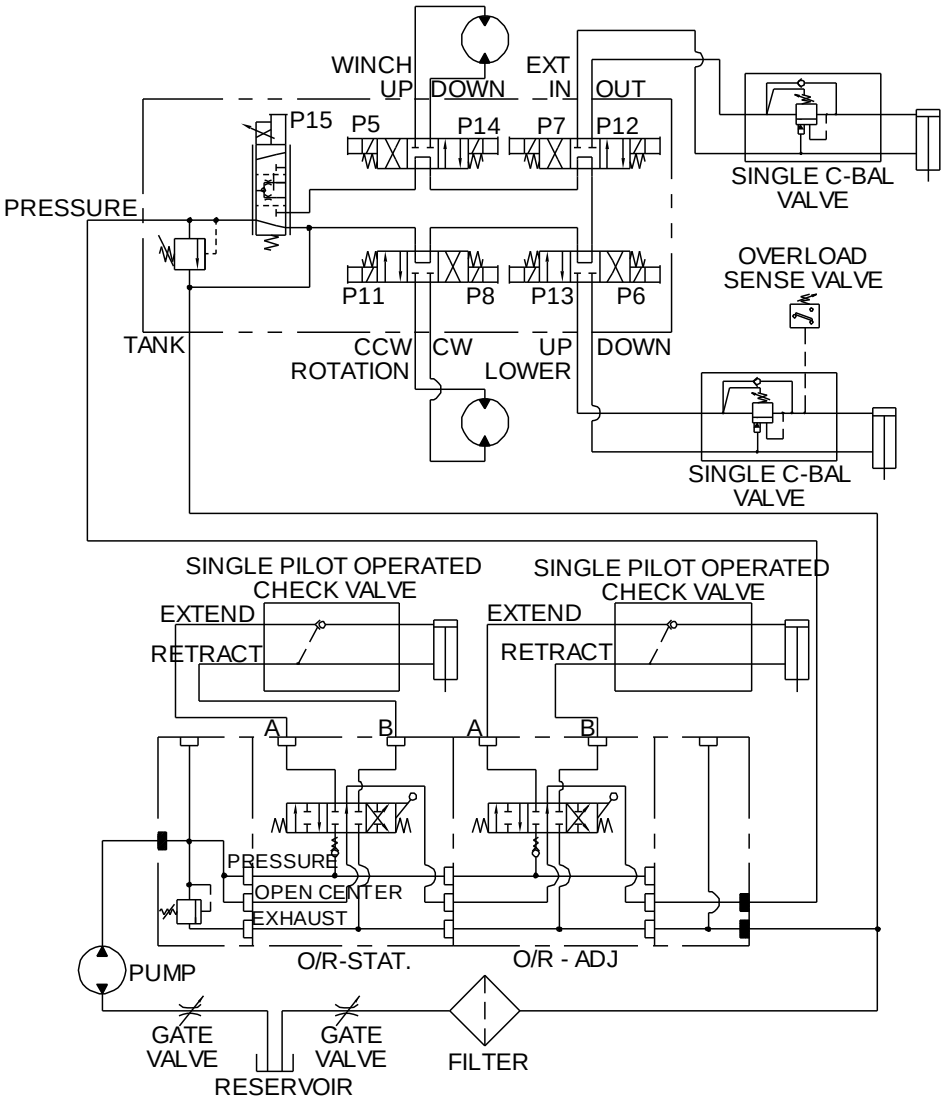






WHEN MOUNTING THE VALVEBANK, SLIDE VALVEBANK OVER ALL THE WAY TO THE END OF THE SLOT IN THE DIRECTION INDICATED.

Hydraulic Kit (91715636 & 91715571)



TETHERED (91715636) PARTS LIST			
ITEM	PART #	DESCRIPTION	QTY.
1.	73735154	VALVE BANK-4SEC 4R 10GPM TELE CRN IP69 (WAS 73734494 OR 73733395)	1
2.	72062104	NUT 1/4-20 LOCK	4
3.	72060005	CAP SCR 1/4-20X1-1/4 HHGR5	4
4.	72063001	WASHER 1/4 WRT	4
5.	51715640	HOSE/ADPTR KIT(INCL:8-21,23,24)	1
6.	72533425	ADAPTER #4MFACE #8MSTR	7REF
7.	72533162	ELBOW #8MSTR #8MFACE 90°	2REF
8.	51395142	HOSE YX .25X20 #4#6	2REF
9.	51395182	HOSE BBX .50X39 #8#8	1REF
10.	51395557	HOSE BBX .25X34.5 #4#4	1REF
11.	51395145	HOSE BBX .25X46.5 #4#4	1REF

TETHERED (91715636) PARTS LIST			
12.	51395146	HOSE BBX .25X46.5 #6#4	1REF
13.	51394705	HOSE BBX .25X31 #4#4	2REF
14.	51395147	HOSE BBX .25X19.5 #4#6	2REF
15.	51394790	HOSE BBX .50X31 #8#8	2REF
16.	72533296	ADAPTER #6MFACE #10MSTR	4REF
17.	72533337	ADAPTER #4MFACE #6MSTR	1REF
18.	72533533	ADAPTER #4MFACE #8MSTR	1REF
19.	72533417	ELBOW #8MSTR #6MFACE 45°	1REF
20.	72533540	SWIVEL #4#4 FACE 90°	2REF
21.	72534368	SWIVEL, OHSE #8FACE #8JIC	2REF
22.	72533166	ADAPTER #8MFACE #8MSTR	1REF
23.	72533423	ADAPTER #8MFACE #6MSTR	1REF
REV M 201900228			

RADIO (91715571) PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73734530	VALVEBANK (INCL:6,7) (WAS 73733941)	1
2.	72062104	NUT 1/4-20 LOCK	4
3.	72060005	CAP SCR 1/4-20X1-1/4 HHGR5	4
4.	72063001	WASHER 1/4 WRT	4
5.	51714974	HOSE/ADAPTER KIT (INCL:8-22)	1
6.	72533425	ADAPTER #4MFACE #8MSTR	8REF
7.	72533162	ELBOW #8MSTR #8MFACE 90°	2REF
8.	51395142	HOSE YX .25X20 #4#6	2REF
9.	51395143	HOSE BBX .25X30.5 #4#4	1REF
10.	51395144	HOSE BBX .25X27.5 #4#4	1REF
11.	51395145	HOSE BBX .25X46.5 #4#4	1REF
12.	51395146	HOSE BBX .25X46.5 #6#4	1REF
13.	51394705	HOSE BBX .25X31 #4#4	2REF
14.	51395147	HOSE BBX .25X19.5 #4#6	2REF
15.	51394790	HOSE BBX .50X31 #8#8	2REF
16.	72533296	ADPTR #6MFACE #10MSTR	4REF
17.	72533376	ADAPTER #4MFACE #4MSTR	2REF
18.	72533533	ADAPTER #4MFACE #8MSTR	1REF
19.	72533417	ELBOW #8MSTR #6MFACE 45°	1REF
20.	72533540	SWIVEL #4#4 FACE 90°	2REF
21.	72534368	SWIVEL, HOSE #8FACE #8JIC	2REF
REV E 20100617			

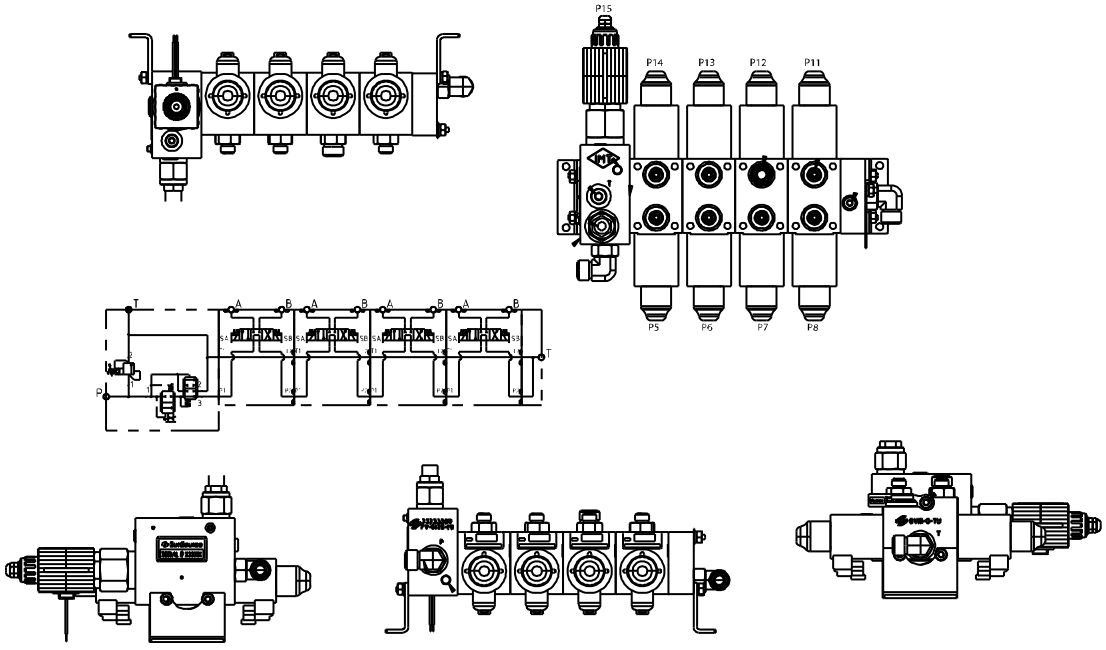
Valve Bank Parts, Tethered Remote (73734494) (Eff. thru 02-14-2019)

73054934	FLOW CONTROL VALVE	1
77041556	FLOW CONTROL VALVE, COIL ONLY	REF
73054935	RELIEF VALVE	1
73540375	SOLENOID VALVE SECTION	4
90744198	COIL KIT, SOLENOID VALVE	REF

Valve Bank Parts, Tethered Remote (73735154)

NOTE:

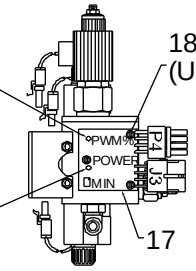
73734494 WAS REPLACED WITH 73735154. EFFECTIVE: 2/15/2019

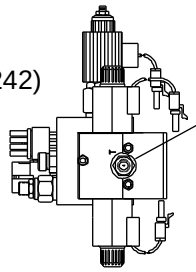


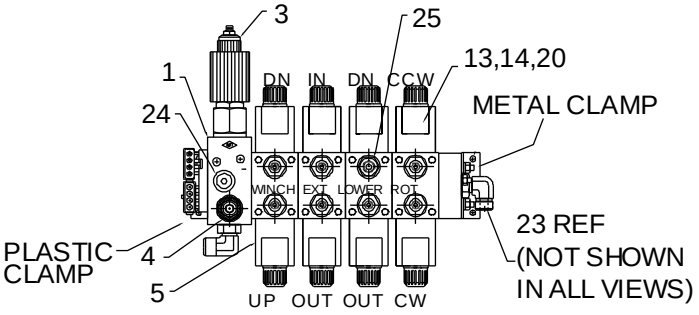
Valvebank, Tethered Remote (73733395)

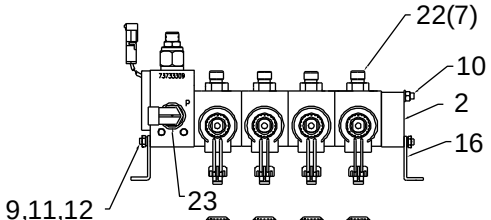
PERCENT OF SIGNAL INDICATOR COLOR-CHANGING LED:
RED = OFF, ZERO % TRIGGER
GREEN = FULL ON, 100% TRIGGER
SHORTENED COIL OR OTHER WILL
SHOW AS RED WITH 100% TRIGGER.

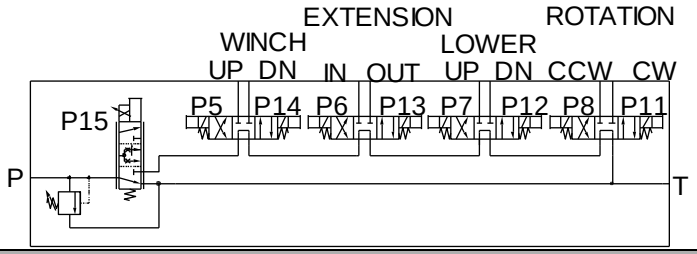
POWER INDICATOR LED:
OFF = BLANK
ON = RED LIGHT











73733395 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73540028	INLET BLOCK	1
2.	73540027	END CAP	1

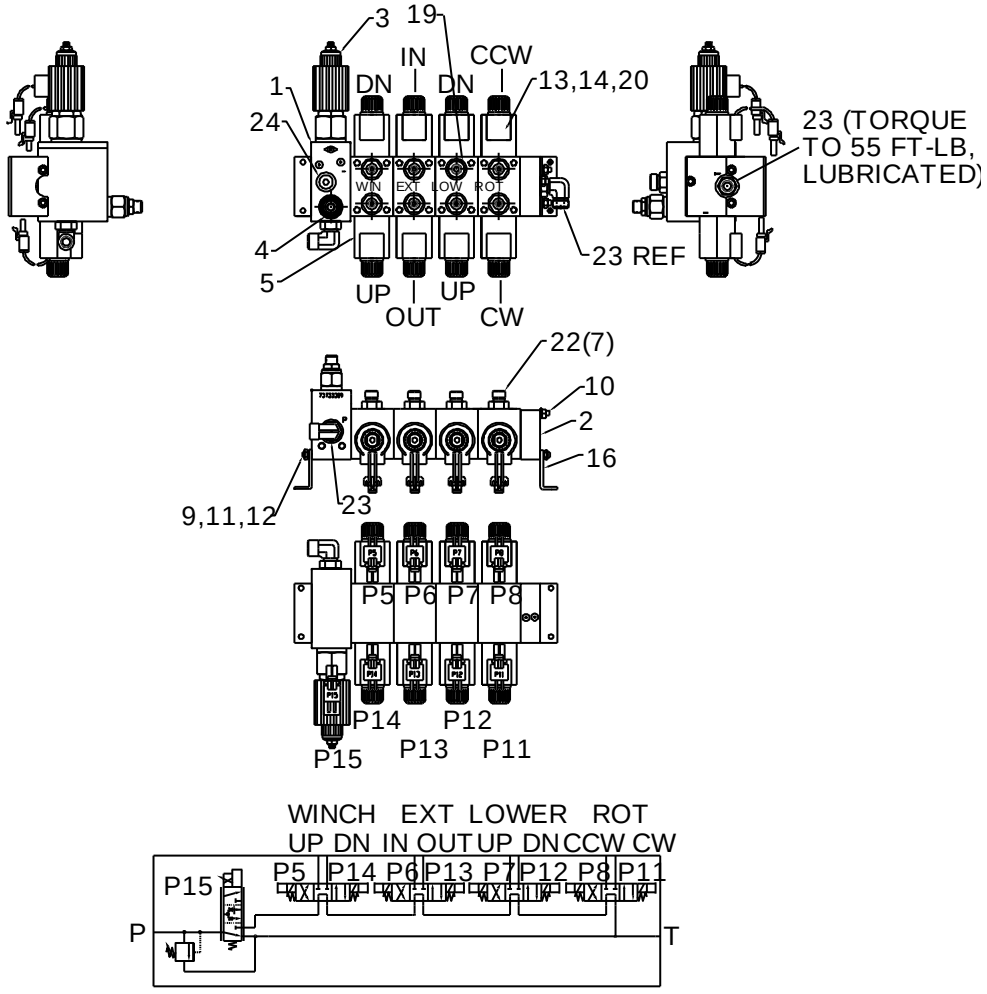
73733395 PARTS LIST			
3.	73054934	FLOW CTRL VALVE	1
	77041556	PROPL VALVE-COIL ONLY	REF
4.	73054935	RELIEF VALVE	1
5.	91722649 OR 91722723*	VALVE SECT (WAS 73540044)	4
	91722709	COIL-SOLENOID (WAS 77041518)	REF
6.	7Q072013	O-RING	10
7.	72533477	PLUG 7/16STR HOLHEX	1
8.	70145829	EXPANDER PLUG	4
9.	60119363	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

* CONTACT IMT FOR INFORMATION.
REV. C 20040206

Valvebank Parts, Radio Remote (73734530) (Eff. 1-2010)

73054934	FLOW CTRL VALVE	1
77041556	PROPL VALVE-COIL ONLY	REF
73054935	RELIEF VALVE	1
73540375	SOLENOID VALVE SECTION	4
90744198	COIL-SOLENOID	REF

Valvebank (73733941)



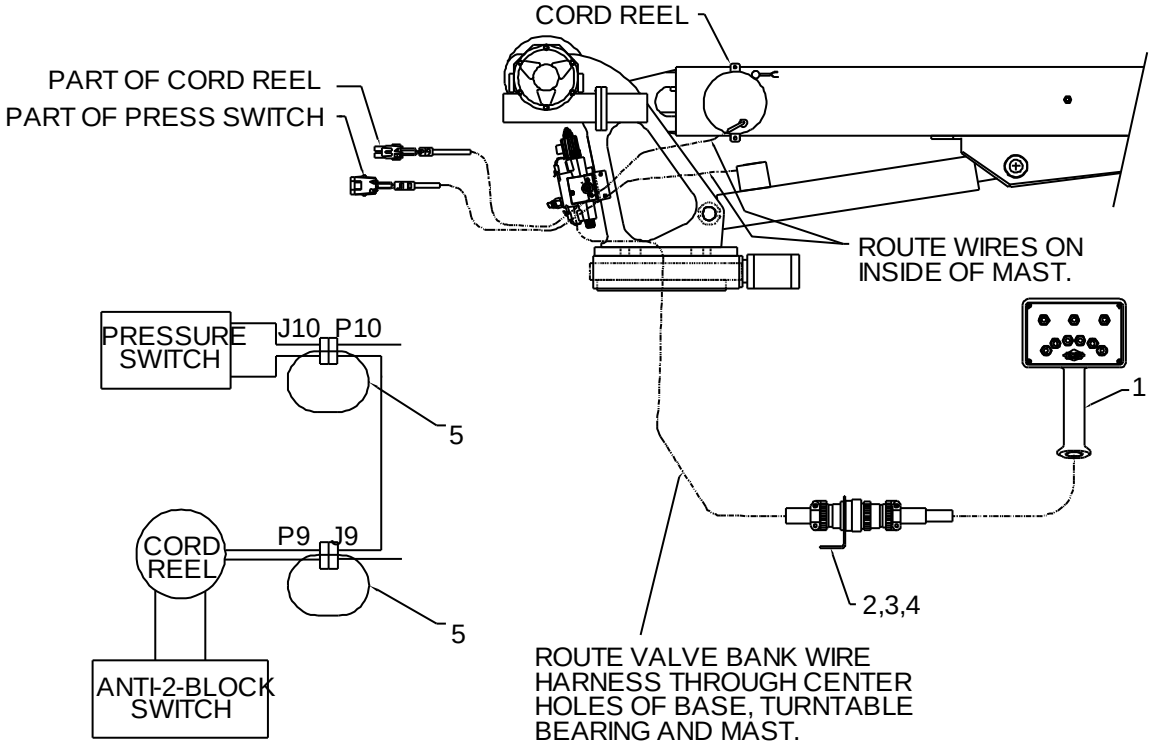
73733941 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73540028	VALVE BLOCK	1REF
2.	73540027	END CAP	1REF
3.	73054934	SOLENOID VALVE	1REF
4.	73054935	RELIEF VALVE	1REF
5.	91722649 OR 91722723*	VALVE SECTION (WAS 73540044)	4REF
6.	7Q072013	O-RING	10REF
7.	72533477	PLUG, STR HOL HEX 7/16 THD	1REF
8.	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

73733941 PARTS LIST			
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

* CONTACT IMT FOR INFORMATION.
NEW 20040824

Controls

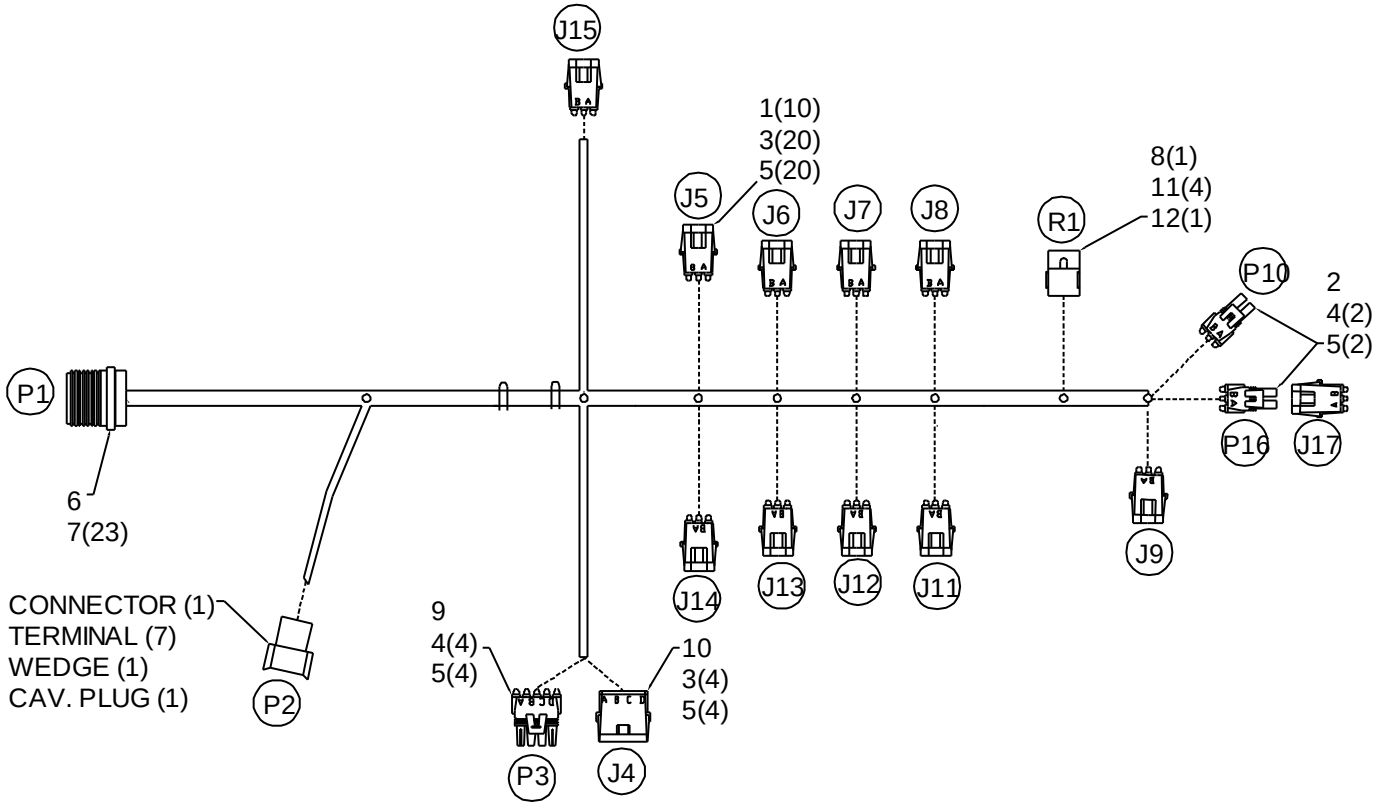
Control Kit, Tethered Remote (90715437)



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

REV. A 20040210

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

REV. F 20040205

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
A	WHT	16	OPSI P10A	TO	R1	85

WIRING CHART (70733394)						
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

LOCATOR CODE: -		SPLICE B			

WIRING CHART (70733394)

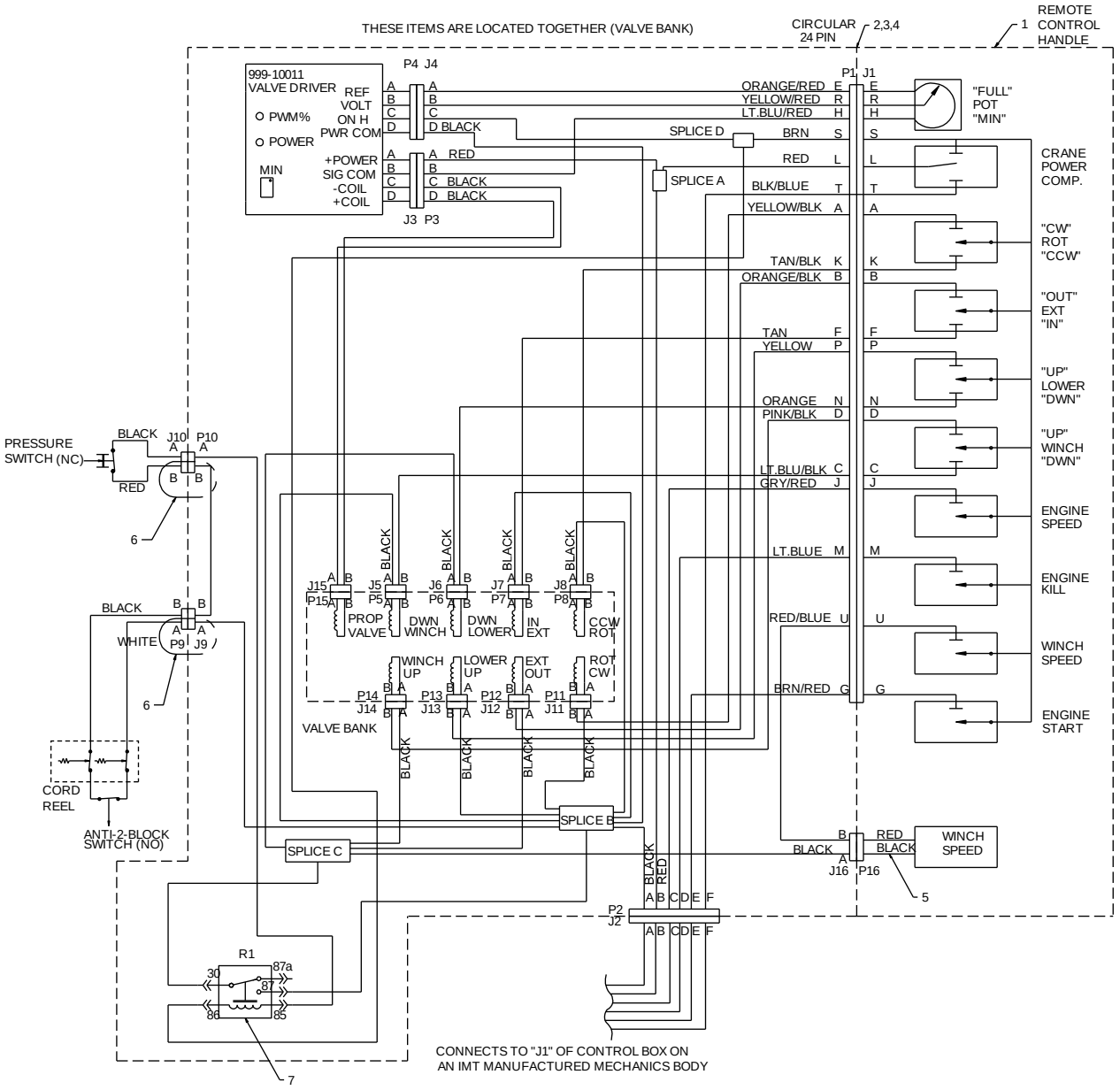
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	16	WINCH J5A	TO	J5	A
-	WHT	16	RELAY GND	TO	R1	87
-	WHT	16	P2 3 BAT (-)	TO	P2	3
-	WHT	16	J4D PWR COM	TO	J4	D
-	WHT	16	ROT J11A	TO	J11	A
-	WHT	16	LOWER J12A	TO	J12	A
-	WHT	16	EXT J6A	TO	J6	A
-	WHT	16	ROT J8A	TO	J8	A
-	WHT	16	ATB J9A	TO	J9	A

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)

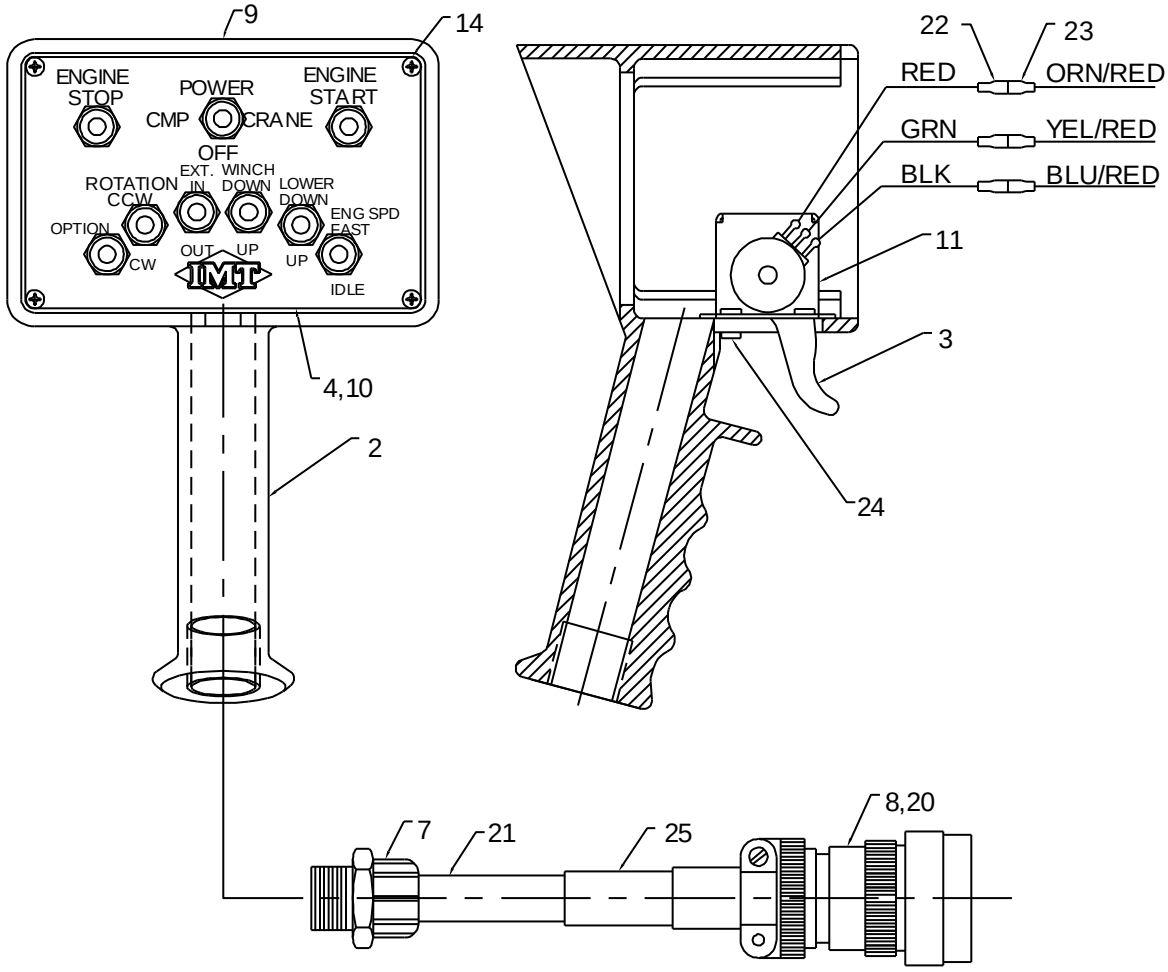


SEE CONTROL KIT DRAWINGS FOR WIRE ROUTINGS

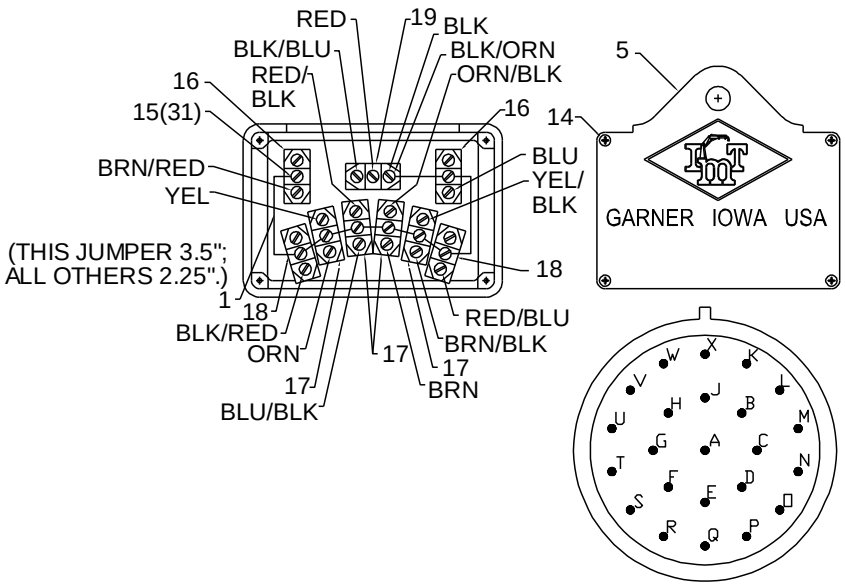
99900855 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51713182	HANDLE ASM	1
2.	60119299	BRACKET	1
3.	77044645	NUT	1
4.	77044646	LOCK WASHER	1
5.	51713343	CABLE ASM, 14GA 2 WIRE	1
6.	70034439	LOCK WIRE LEAD SEAL, 8"	2
7.	77041597	RELAY	1

REV. L 20040210

Handle Assembly, Tethered Remote (51713182)



Handle Assembly, Tethered Remote Kit (51713182)



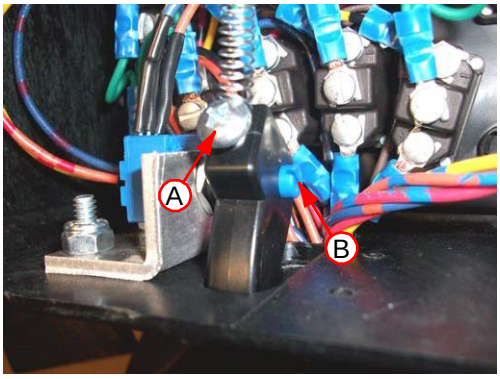
Handle Assembly, Tethered Remote Kit (51713182)

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/RON	-

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 (NOTE: MUST ORDER 30-FEET.)	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
REV. H 20071016			

NOTE: KIT # 51717816, TETHERED CABLE - 30 FEET, INCLUDES ITEMS 8, 15 (QTY 24), 20, 21, AND 25. ORDER 51717816 TO REPLACE THE CABLE ASSEMBLY.

Tethered Proportional Remote Potentiometer Adjustment



NOTE:

ONLY use this procedure to set the low-end output on the remote handle assembly if crane functions operate without pulling the proportional trigger.

You may need a second operator to help with steps 4 and 5.

1 Following proper crane and stabilizer set-up, with the PTO engaged and the truck running, move the crane from the stowed position to a position off to the side of the truck. Unstow the winch cable hook and lower the winch approx (6) six feet.

2 Remove the back cover of the remote control handle.

3 Loosen screw “A” slightly. (Note: Screw style may vary).

4 While holding “WINCH DOWN” function, very slowly, rotate screw “B” clockwise until all movement has stopped.

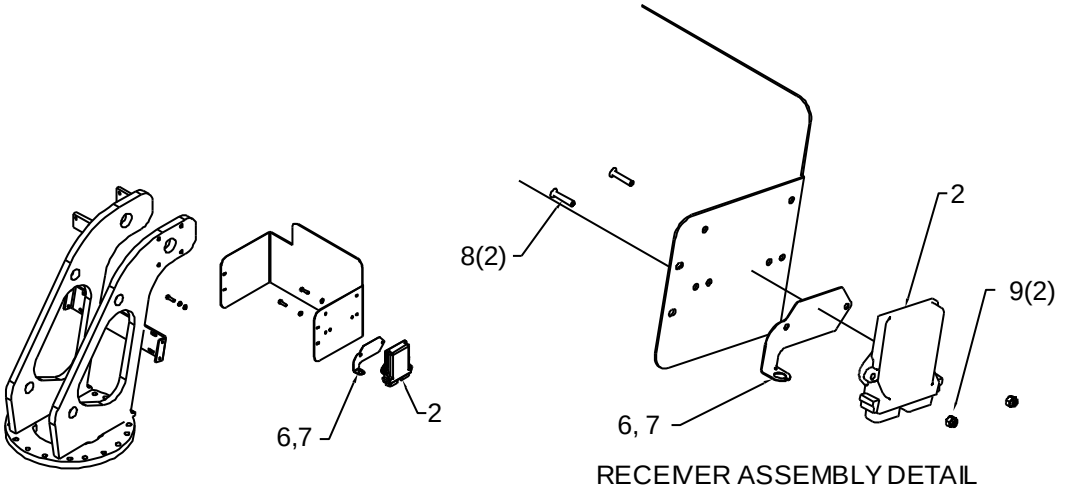
5 Release “WINCH DOWN” function.

6 Tighten screw “A”

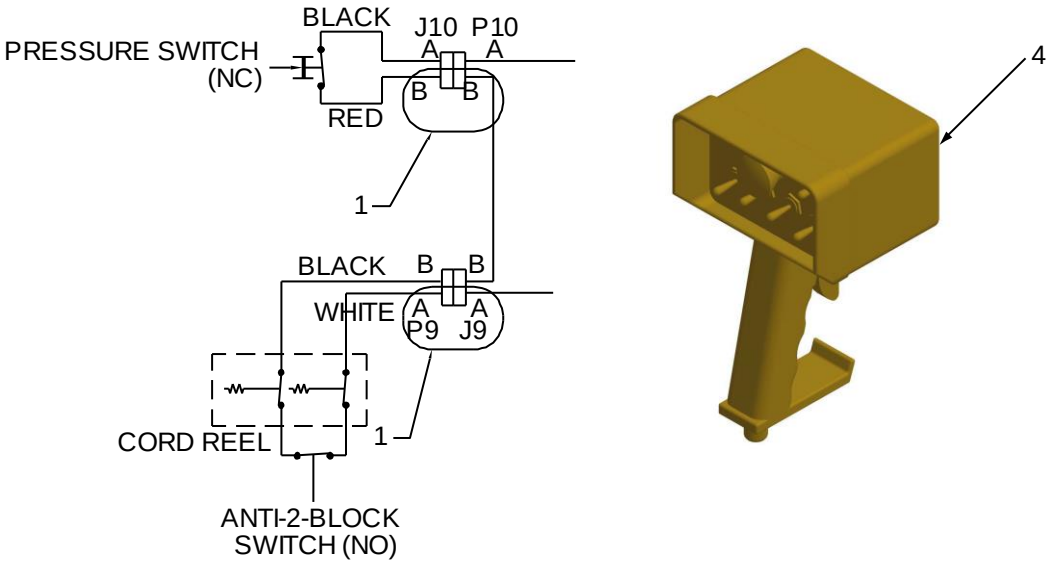
7 Test by operating “WINCH DOWN”, “WINCH UP”, “ROTATE CCW”, and “ROTATE CW” without pulling the trigger. If any of these functions move, repeat steps 2 through 6.

8 Replace control back cover and properly stow the crane and stabilizers.

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



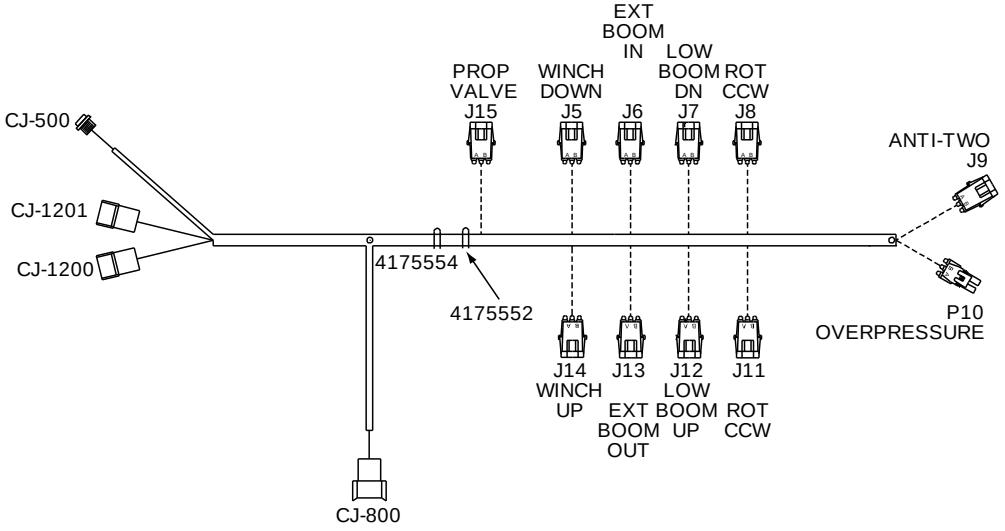
RECEIVER ASSEMBLY DETAIL



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

NEW 20040730

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	-	-

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		

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

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

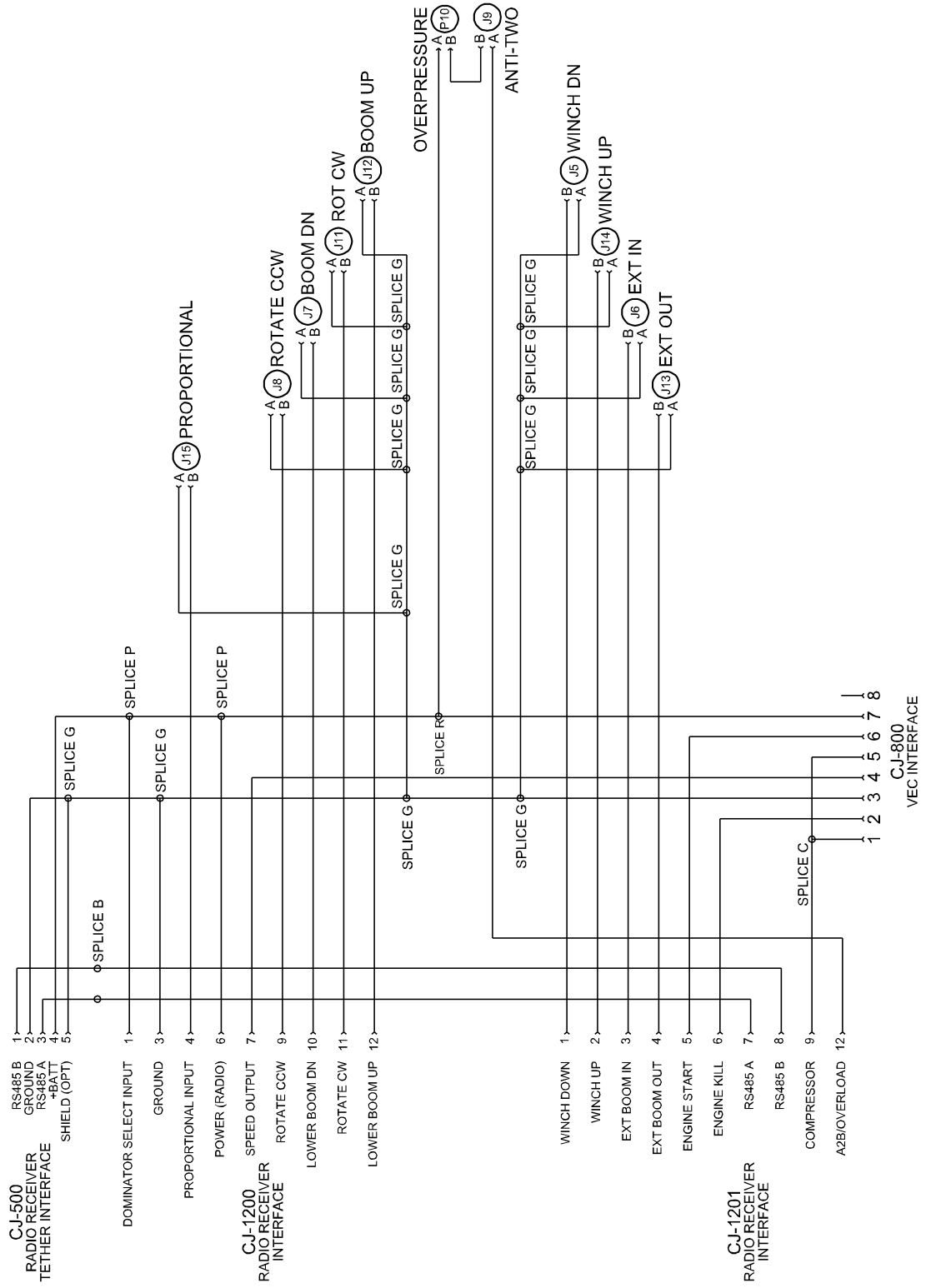
LOCATOR CODE: -			SPLICE C			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	WHT	16	COMP PWR	TO	CJ-1201	9
-	WHT	16	COMP PWR	TO	CJ-800	1
-	WHT	16	COMP PWR	TO	CJ-800	5

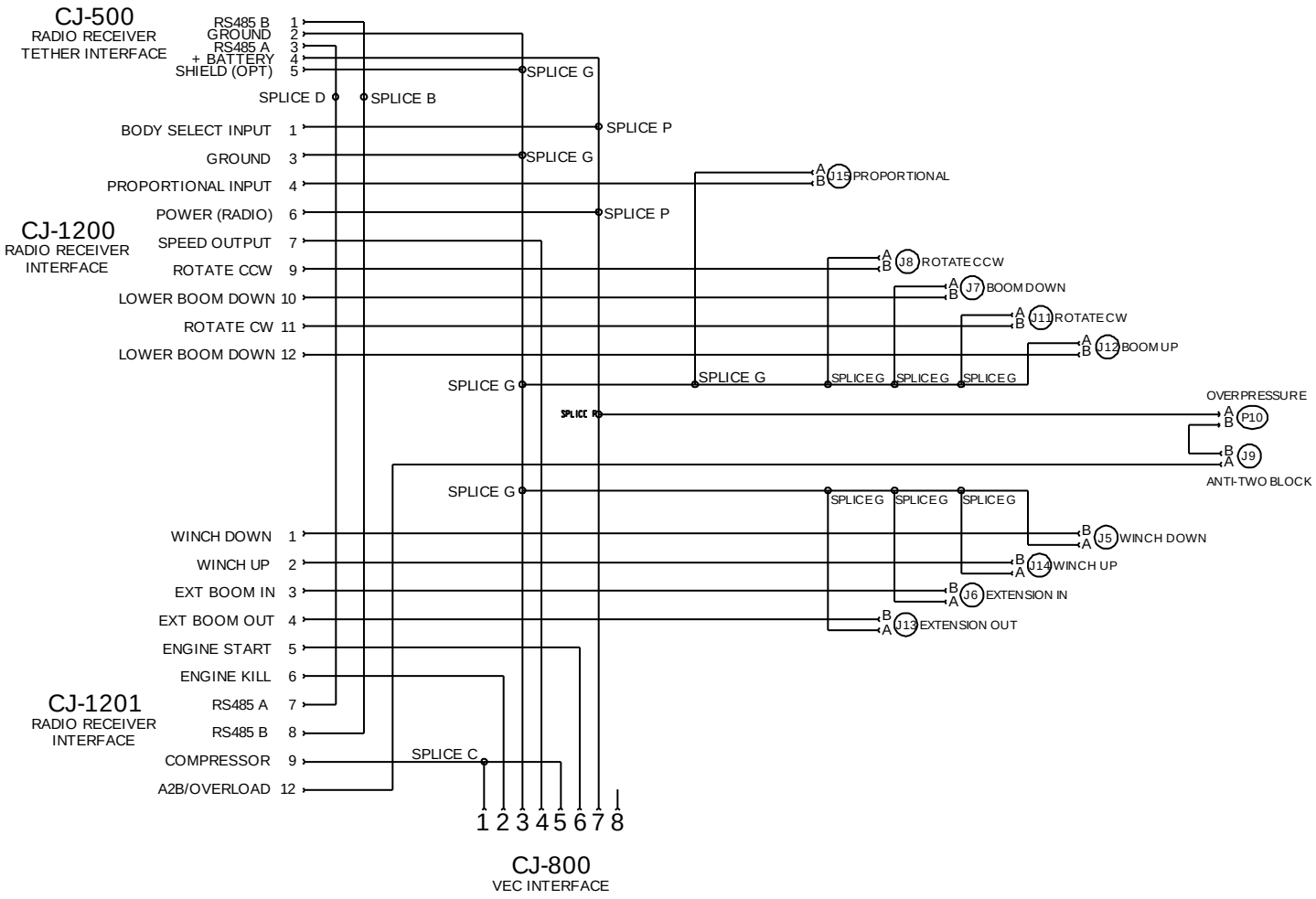
LOCATOR CODE: -			SPLICE D			
CAVITY	COLOR	GA.	PRINT LABEL	TO	CON-SPLC	CAVITY
-	BLUE	22	RS485 A	TO	CJ-500	3
-	WHT	16	RS485 A	TO	CJ-1201	7

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

Electrical Schematic, Radio Remote (77441101)

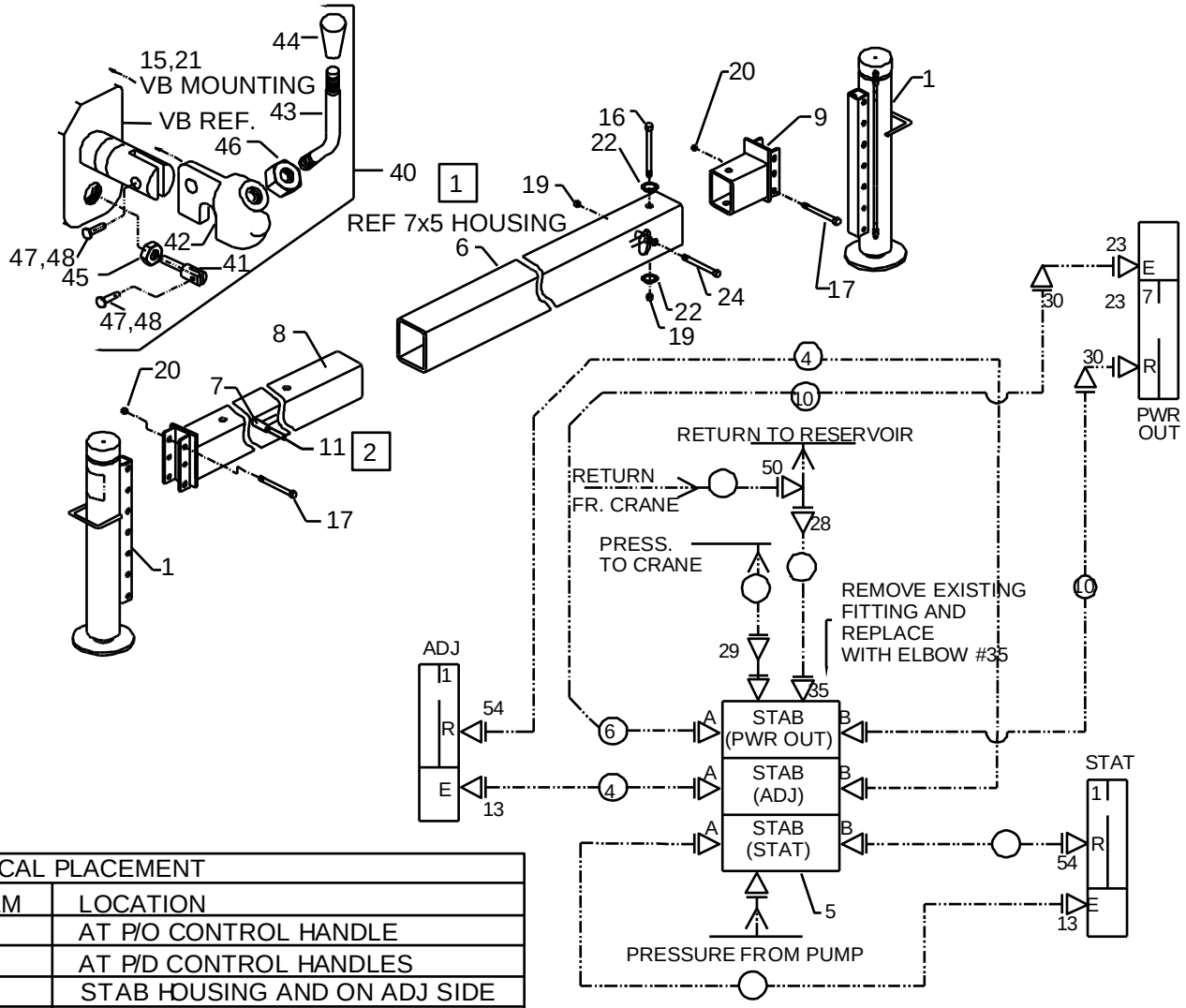



CJ-500
RADIO RECEIVER
TETHER INTERFACE
RS485 B 1
GROUND 2
RS485 A 3
+ BATTERY 4
SHIELD (OPT) 5
SPLICE G
SPLICE D
SPLICE B
BODY SELECT INPUT 1
SPLICE P
GROUND 3
SPLICE G
PROPORTIONAL INPUT 4
J15 PROPORTIONAL
CJ-1200
RADIO RECEIVER
INTERFACE
POWER (RADIO) 6
SPLICE P
SPEED OUTPUT 7
ROTATE CCW 9
J8 ROTATE CCW
LOWER BOOM DOWN 10
J7 BOOM DOWN
ROTATE CW 11
J11 ROTATE CW
LOWER BOOM DOWN 12
J12 BOOM UP
SPLICE G
SPLICE G
SPLICE G
SPLICE G
SPLICE G
OVERPRESSURE
P10
J9
ANTI-TWO BLOCK
SPLICE G
SPLICE G
SPLICE G
SPLICE G
WINCH DOWN 1
J5 WINCH DOWN
WINCH UP 2
J14 WINCH UP
EXT BOOM IN 3
J6 EXTENSION IN
EXT BOOM OUT 4
J13 EXTENSION OUT
ENGINE START 5
ENGINE KILL 6
CJ-1201
RADIO RECEIVER
INTERFACE
RS485 A 7
RS485 B 8
COMPRESSOR 9
SPLICE C
A2B/OVERLOAD 12
1 2 3 4 5 6 7 8
CJ-800
VEC INTERFACE

Auxiliary Stabilizer Assemblies and Valvebanks

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

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



DECAL PLACEMENT	
ITEM	LOCATION
36	AT P/O CONTROL HANDLE
37	AT P/D CONTROL HANDLES
51	STAB HOUSING AND ON ADJ SIDE
53	STAB ADJUSTABLE SIDE
56	AT FULL EXTENSION

NOTES (SEE REFERENCE NUMBER IN BOX):

1 TIE STABILIZER HOUSING TUBE INTO THE STRUCTURAL SUPPORT OF THE CRANE WHEN INSTALLING STABILIZERS.

2 INSERT PIN #11 THROUGH SIDE WALL OF #8 WHILE PASSING THROUGH END OF #7.

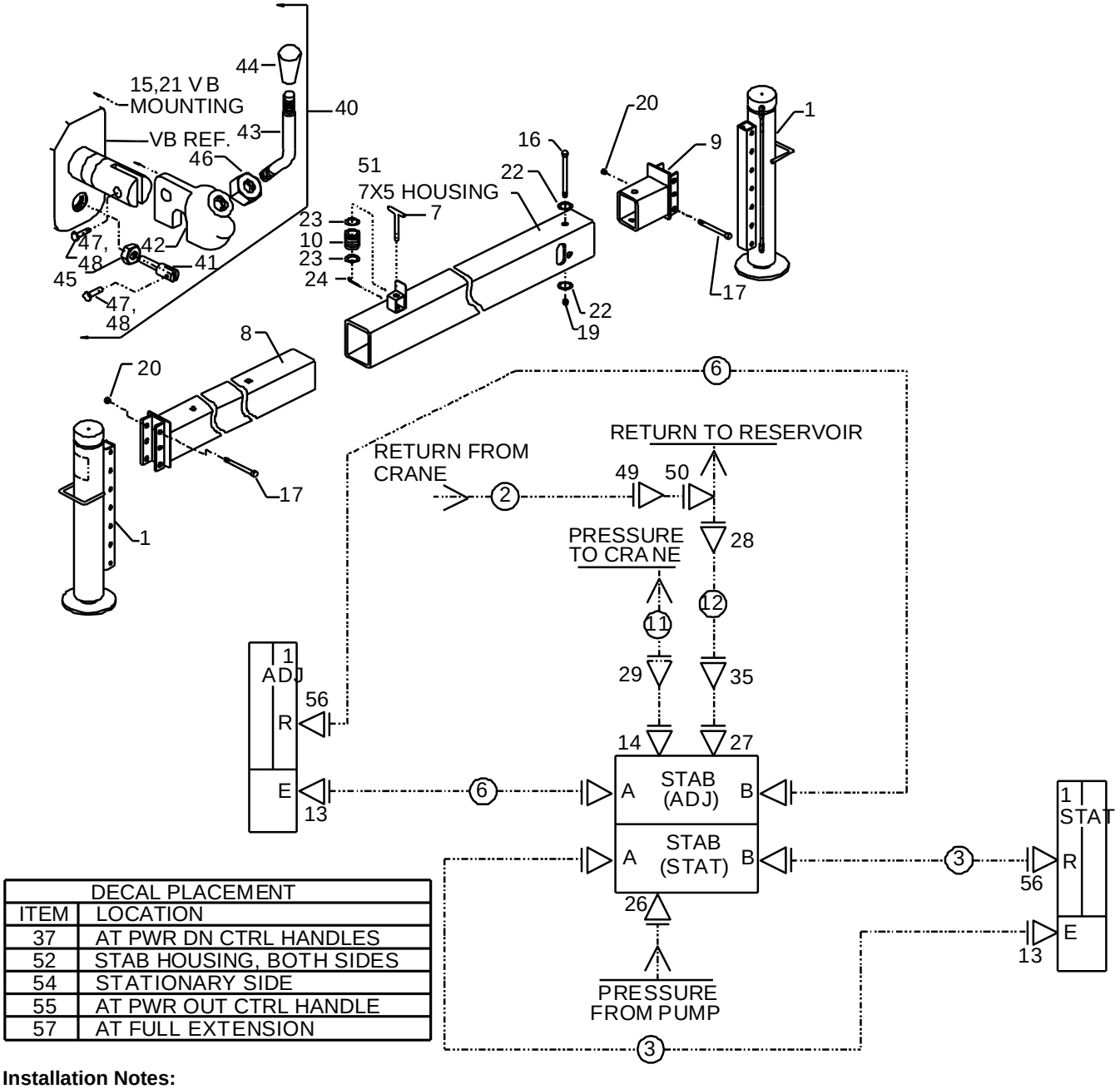
3 INSTALL #18, 21, 25 TO SUPPORT HOSE ASSEMBLIES #3, 4, AND 10.

4 INSTALL #38 SPIRAL WRAP AROUND HOSE ASSEMBLIES #3 AND #4 NEAR #1 CYLINDER.

31712739 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	3B205010	CYLINDER	3.5/2.5 18.00SS 29.50CC	2
2.	51396184	HOSE	FF 1/2X159 OAL (8-8) (PART OF #55)	1REF
3.	51395164	HOSE	FJ 1/4X135 OAL (4-4) (PART OF #55)	2REF
4.	51396280	HOSE	FJ 1/4X96 OAL (4-4) (PART OF #55)	2REF
5.	51714812	VALVEBANK ASSEMBLY		1
6.	60118680	TUBE-STABILIZER HOUSING POWER OUT		1REF
7.	71411797	CYLINDER, POWER OUT (WAS 3B142860)	1.2/.7 42.00S 50.00CC	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 SCREW	5/16-18X1 HHGR5Z	3
16.	72060107	CAP SCREW	1/2-13X8 HHGR5	1
17.	72060155	CAP SCREW	5/8-11X3.5 HHGR5	4
18.	72060833	SCREW-THREAD 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	ADAPTER	#4MSTR #4MJIC	4
24.	72601297	CAP SCREW	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-STABILIZER POWER OUT		1
37.	76391511	DECAL-UP & DOWN STAB. R&L		1
38.	89034049	SPIRAL WRAP, BLACK	(SEE NOTE)	4'
39.	99900644	MANUAL-AUX STABILIZER		1
40.	51731580	HANDLE ASSEMBLY	(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

31712739 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
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	ADAPTER	#8MJIC #12FJIC	1
51.	70392864	DECAL-DANGER STAB STAND CLEAR		2
53.	71392257	DECAL-DANGER POWER DOWN SS		1
54.	72533567	ELBOW	#4MSTR #4MJIC XLG	2
55.	51717834	HOSE KIT - STAB PO/PD (7X5)		1
56.	70399271	DECAL-FULLY DEPLOYED		2
REV F 20120309				

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



DECAL PLACEMENT	
ITEM	LOCATION
37	AT PWR DN CTRL HANDLES
52	STAB HOUSING, BOTH SIDES
54	STATIONARY SIDE
55	AT PWR OUT CTRL HANDLE
57	AT FULL EXTENSION

Installation Notes:

1 Tie stabilizer housing tube into the structural support of the crane.

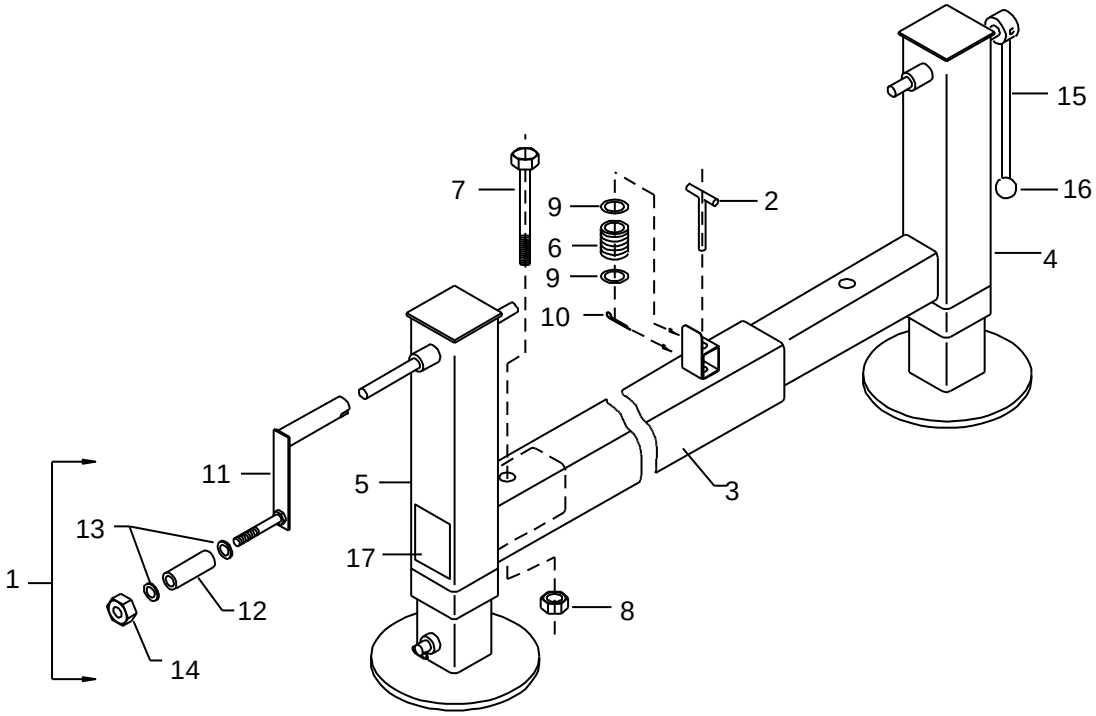
2 Items #18, #25, and quantity (1) of #21 are installed behind the back wall of the crane box to support hose assembly #2 as it passes behind the crane box.

3 Items #18, #25, and quantity (1) of #21 are installed under belly pan of floor to support hose assembly #3 as it passes under belly pan.

4 #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 STABILIZER	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	STAB HOUSING 7X5	1
52.	70392864	DECAL-WARNING STAB STAND CLEAR	2
54.	71392257	DECAL-STAB POWER DOWN SS	1
55.	71392277	DECAL-STAB POWER OUT	1
56.	72533567	ELBOW #4MSTR #4MJIC XLG	2
57.	70399271	DECAL-FULLY DEPLOYED	2
REV F 20120308			

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

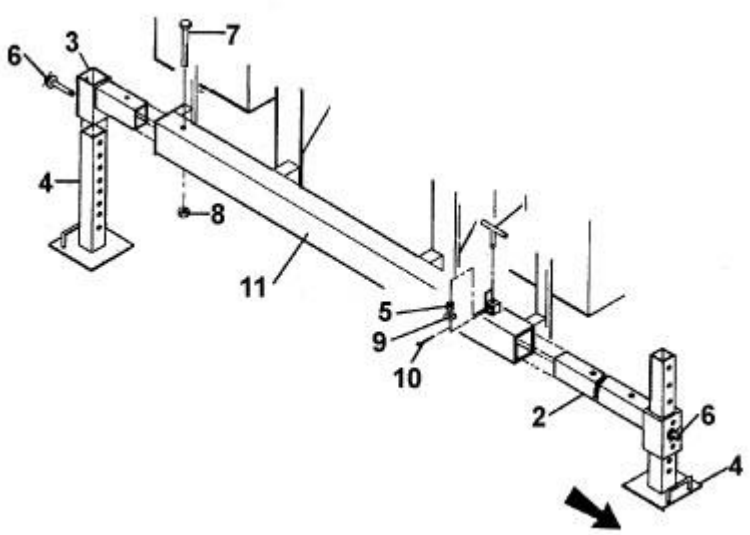


NOTE:

1 TIE STABILIZER 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	STAB HOUSING 7X5	1
4.	52712737	ARM-STAB 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 STAB STAND CLEAR	2
REV A 20031117			

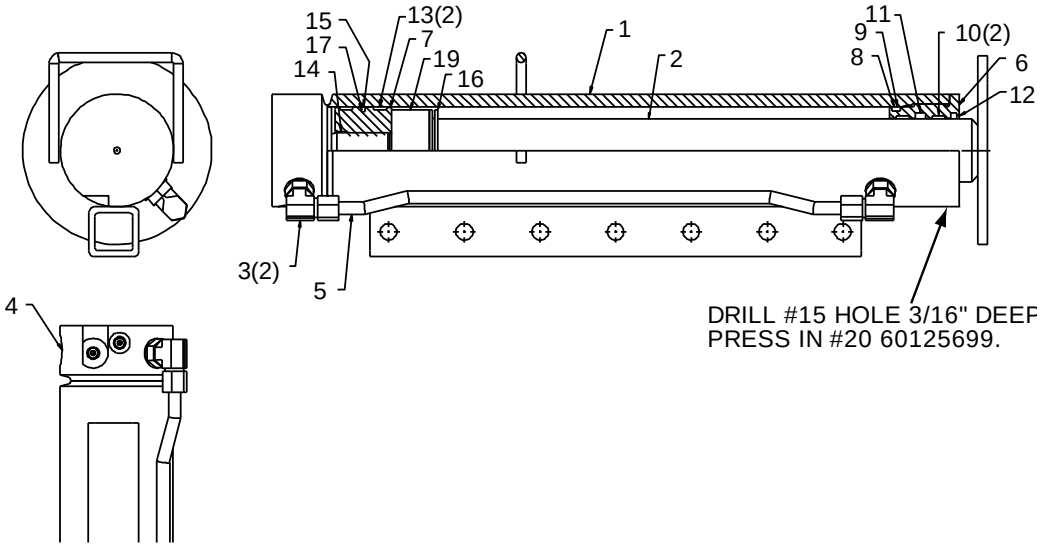
Stabilizer, Manual Out/Manual Down, 7x5 (31712902)



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	STABILIZER 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	STABILIZER HOUSING 7X5	1

REV. A 20031117

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.

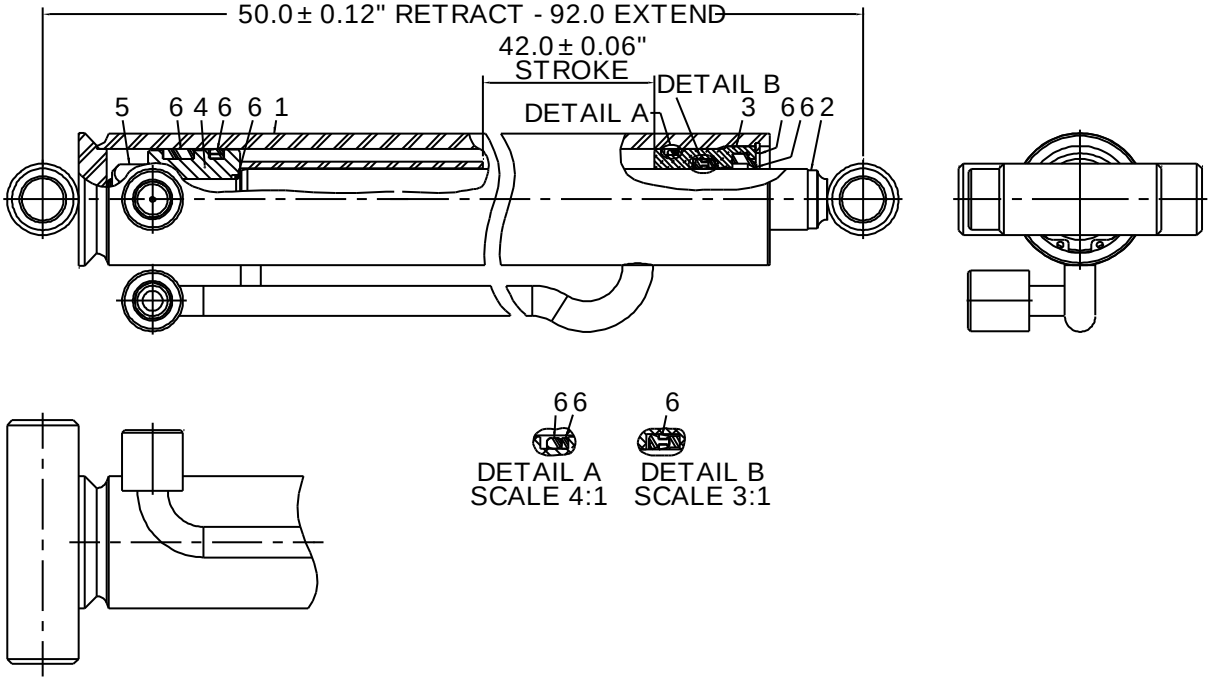
4 ITEM #16, STOP TUBE, REPLACES 6A025025 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.

5 TORQUE PISTON TO 500-530 FT-LB, HEAD TO 350 FT-LB, AND CARTRIDGE TO 30-35 FT-LB.

3B205010 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	4B205010	CASE ASY	1
2.	4G048870	ROD ASY	1
3.	72053763	ELBOW #8MSTR #8MJIC 90°	2
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.	60138260	STOP TUBE (WAS 6A025025 WAFER LOCK) (SEE NOTE)	1REF

3B205010 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
17.	7Q072151	O-RING	1REF
18.	9D142020	SEAL KIT (INCL. 8-17, 20)	1
19.	6C015025	STOP TUBE	1
20.	60125699	PIN-LOCK TUBE	1
REV. D 20120312			

Cylinder, Power Out (71411797) (Used 9-05 to 1-07)



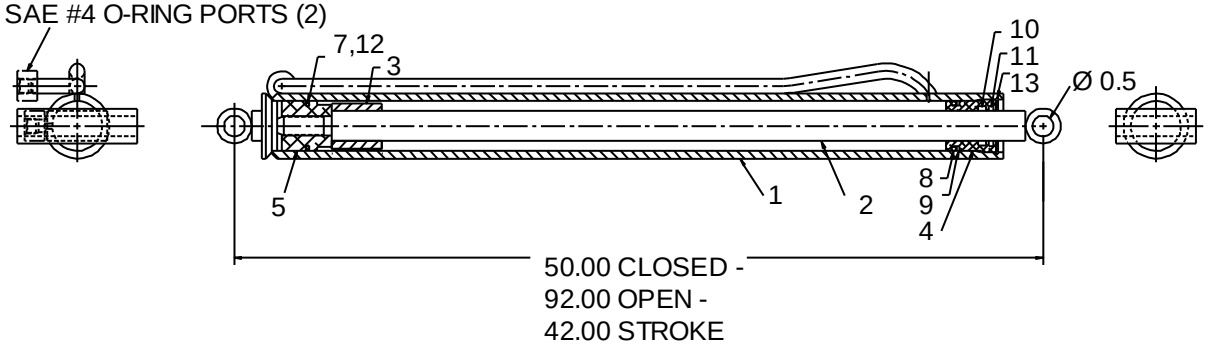
NOTES:

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

71411797 CYLINDER DATA	
EXTENDED	1.23 IN², 0.22 GAL
RETRACTED	0.79 IN², 0.14 GAL
CASE	1.25 BORE X ø1.63
ROD	ø 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) (Effective 2-07, prior to 8-05)



CYLINDER DATA	
CLOSED LENGTH	50.17 / 49.85" CLOSED
OPEN LENGTH	92.33 / 91.59" OPEN
STROKE	42.15 / 41.84" STROKE
PISTON TORQUE	10-40 FT-LB
CARTRIDGE TORQUE	30-35 FT-LB

NOTES:

1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

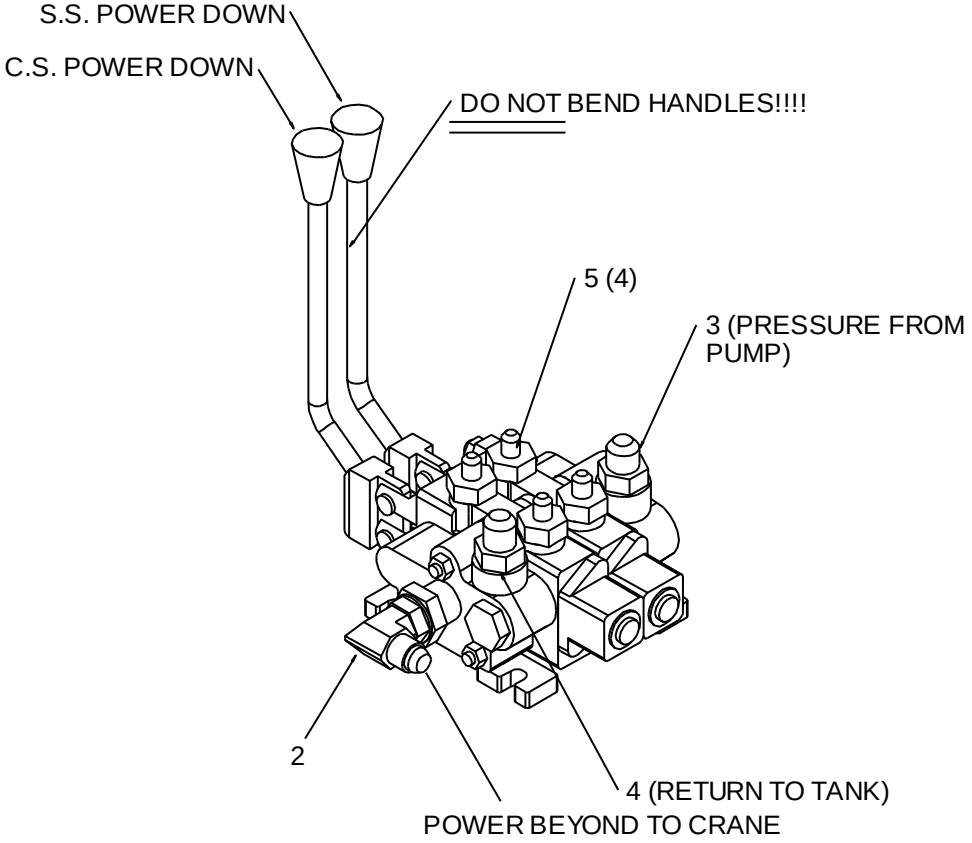
2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THE THREADS ON THE CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.

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.

4 TORQUE PISTON TO 10-40 FT-LB, CARTRIDGE TO 30-35 FT-LB.

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
REV B 20120417			

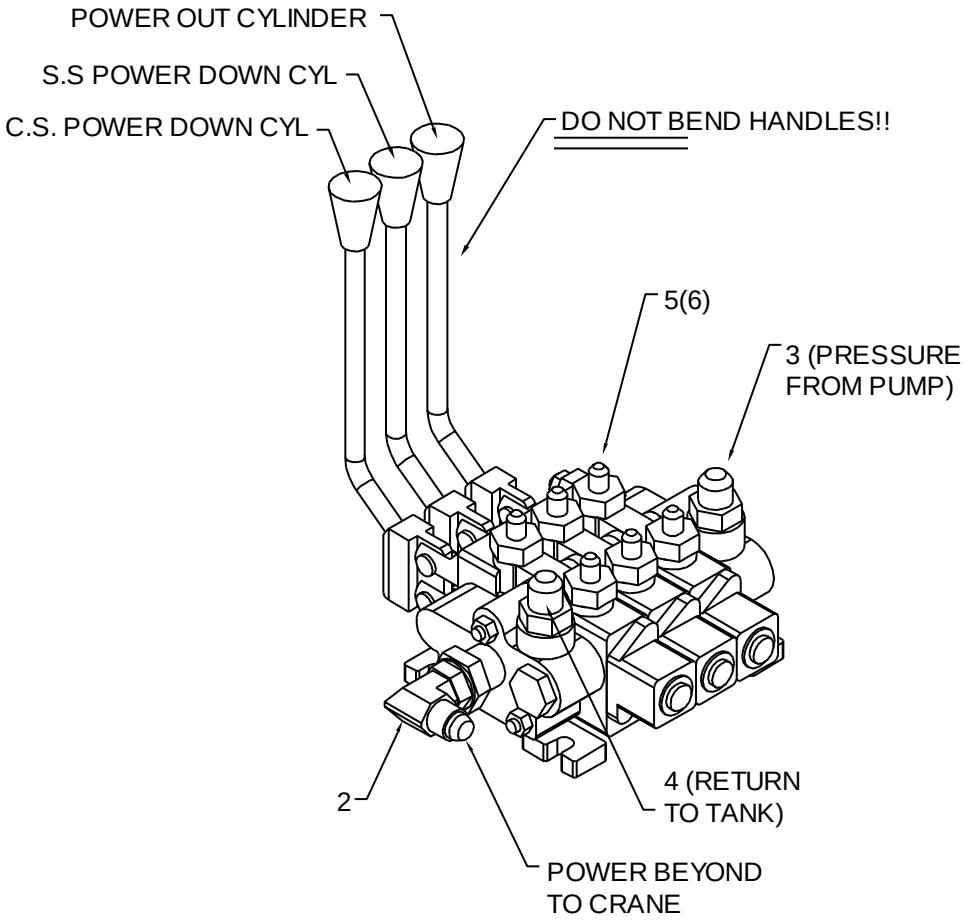
Valve Bank, 2-Section (51714813)



51714813 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51705983	VALVEBANK	1
2.	72053764	ELBOW #10MSTR #8MJIC 90°	1
3.	72532358	ADAPTER #8MSTR #8MJIC	1
4.	72532359	ADAPTER #10MSTR #8MJIC	1
5.	72533589	ADAPTER #10MSTR #4MJIC	4

REV. A 20040204

Valve Bank, 3-Section (51714812)

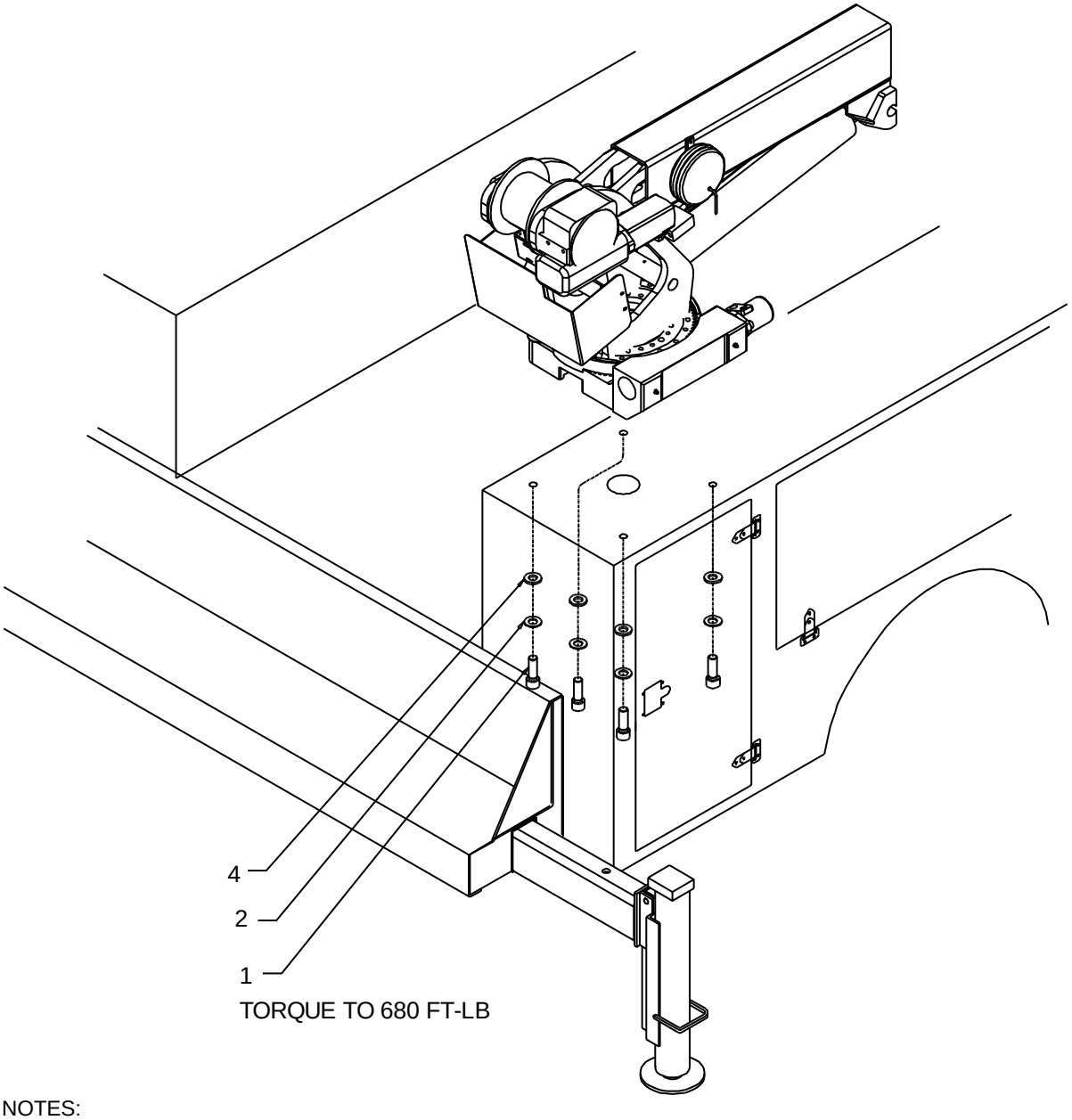


51714812 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51705984	VALVEBANK	1
2.	72053764	ELBOW #10MSTR #8MJIC 90°	1
3.	72532358	ADAPTER #8MSTR #8MJIC	1
4.	72532359	ADAPTER #10MSTR #8MJIC	1
5.	72533589	ADAPTER #10MSTR #4MJIC	6

REV. A 20040204

Miscellaneous

Installation Kit (93715267)



NOTES:

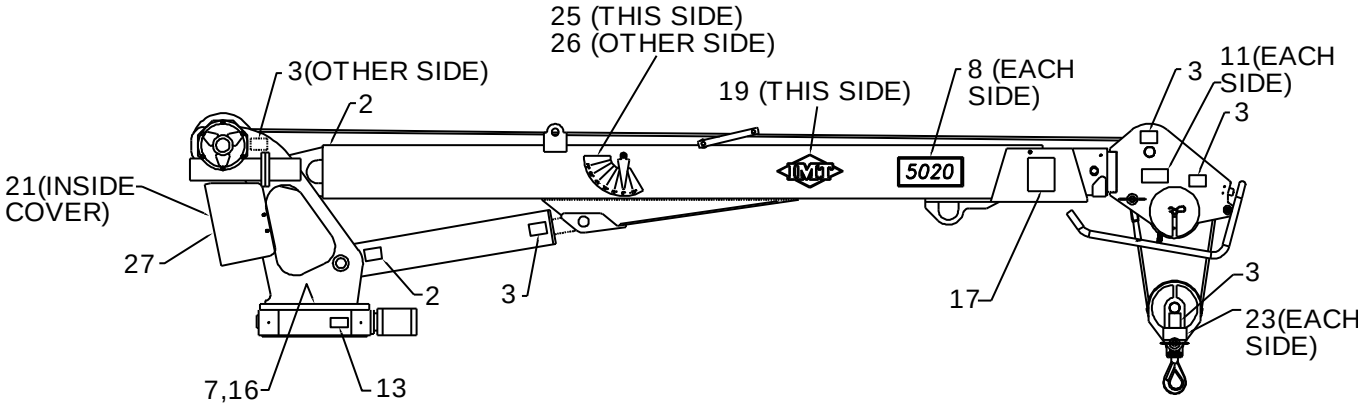
1 THE 3" BOLTS SUPPLIED ARE FOR USE ON BODIES WITH A CRANE BOX TOP PLATE THICKNESS OF 7/8-1" ONLY! ON SHIP-OUT CRANES, DETERMINE CRANE BOX TOP PLATE THICKNESS PRIOR TO MOUNTING THE CRANE. IF BOLTS OTHER THAN THE 3" SUPPLIED BOLTS ARE REQUIRED, THEY MUST BE 1"-8 GRADE 8 AND THE APPROPRIATE LENGTH.

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
	73052092	FILTER ELEMENT 10MIC	REF
4.	60123848	WASHER, SPECIAL 1X2X	4

REV. E 20031027

Decal Kit (99903730)



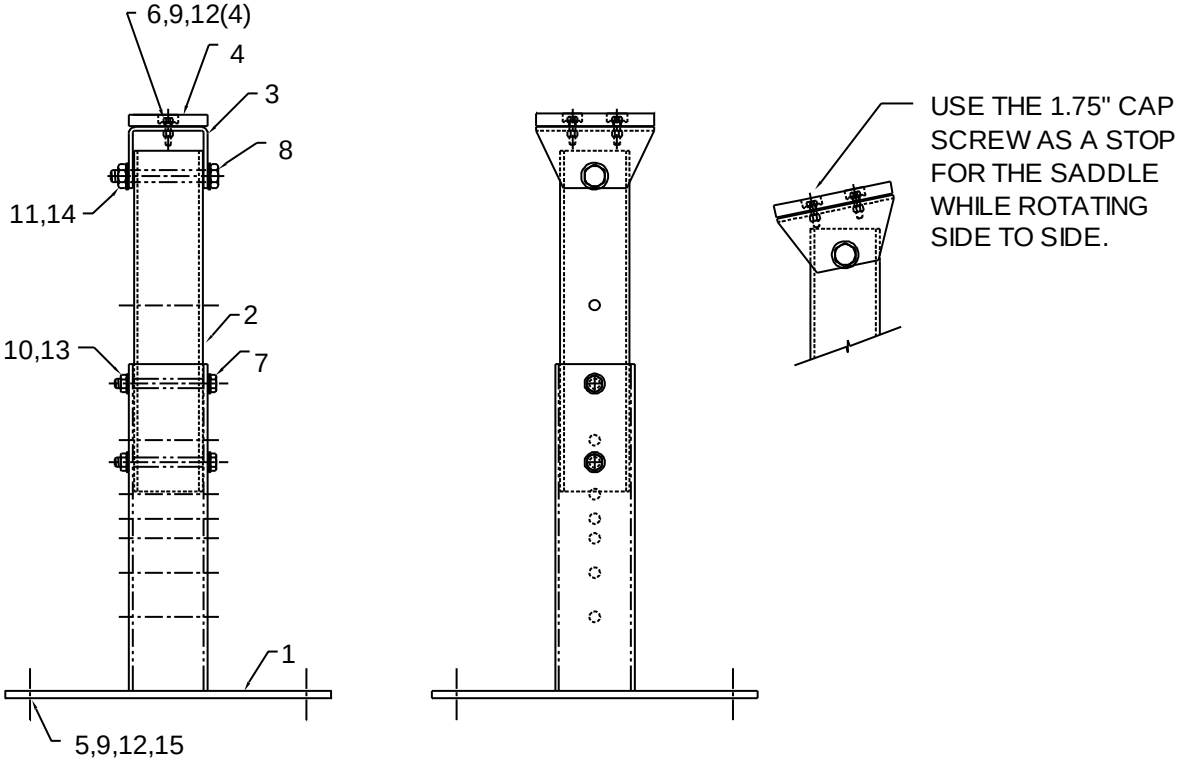
DECAL PLACEMENT	
ITEM NO.	LOCATION
1	ONE ON EACH OUTRIGGER
6,10,24,27,28	AT OR NEAR REMOTE CONTROL STORAGE POINT.
12	AT OR NEAR CRANE SERIAL NUMBER PLACARD
14	2 ON FRONT SIDEPACKS, 2 ON REAR OUTRIGGERS
15,18	ONE ON EACH SIDE OF CARRIER VEHICLE
20	AT OR NEAR HYDRAULIC RESERVOIR
22	AT OR NEAR DRIVELINE

99903730 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	4	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.	70394719	DECAL-5020 IDENTIFICATION	2	PART OF # 9
9.	95719354	DECAL KIT - 5020 SPECIFIC	1	
10.	70396613	DECAL-CRANE SAFETY/OPERATION	1	PART OF # 5
11.	70395670	DECAL-CAUTION DOWNHAUL WT	2	PART OF #4
12.	70395324	DECAL-ASME/ANSI B30.5	1	PART OF # 4
13.	70395090	DECAL-GREASE WORM 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.	70029251	DECAL-IMT DIAMOND	2	PART OF # 9
20.	70394189	PLACARD-MOBILOIL RESERVOIR	1	PART OF # 5
21.	70394166	DECAL-INSTR MANUAL OPERATION	1	PART OF # 4
22.	70392891	DECAL-DANGER DRIVELINE	1	PART OF # 5

99903730 PARTS LIST				
23.	70393860	DECAL-LOAD BLOCK RATING	2	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.	70396246	CAPACITY PLACARD	2	PART OF # 9
28.	70392982	DECAL-SERVICE & REPAIR	1	PART OF #5

REV B 20060920

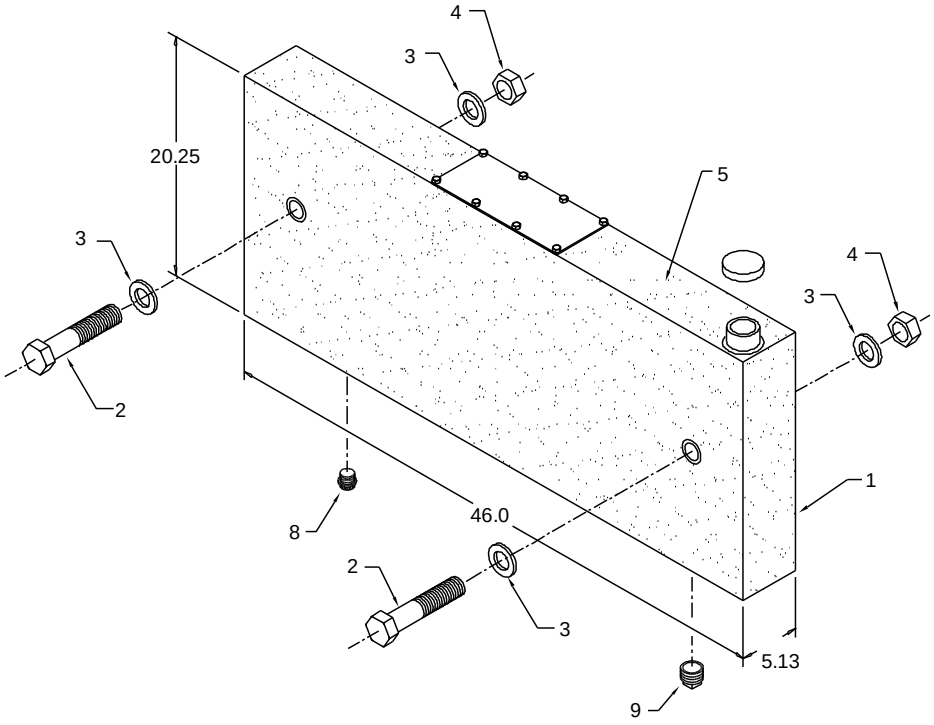
Boom Support Assembly (51714181)



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

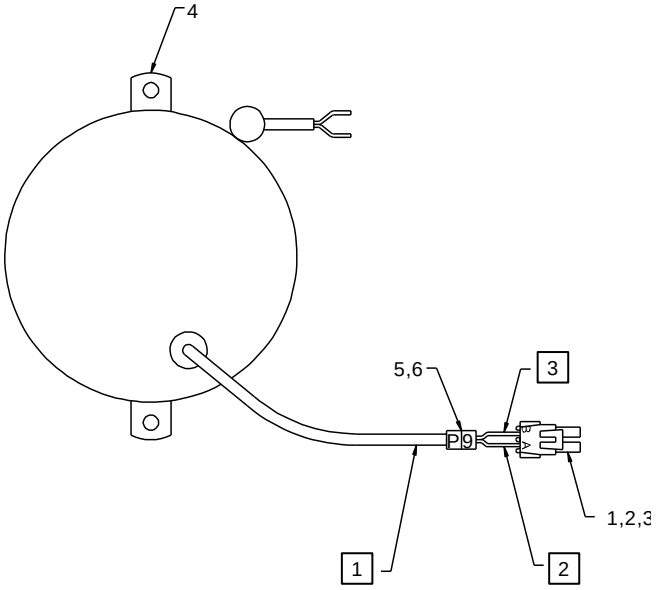
Reservoir (51707798)



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
8.	70393233	PLUG 3/4NPT	1
9.	72601004	PLUG 1-1/4NPT SQUARE HEAD	1

REV. H 20051213

Cord Reel Assembly (51713168) (Through 8-1-06)



NOTES (SEE REFERENCE NUMBER IN BOX):

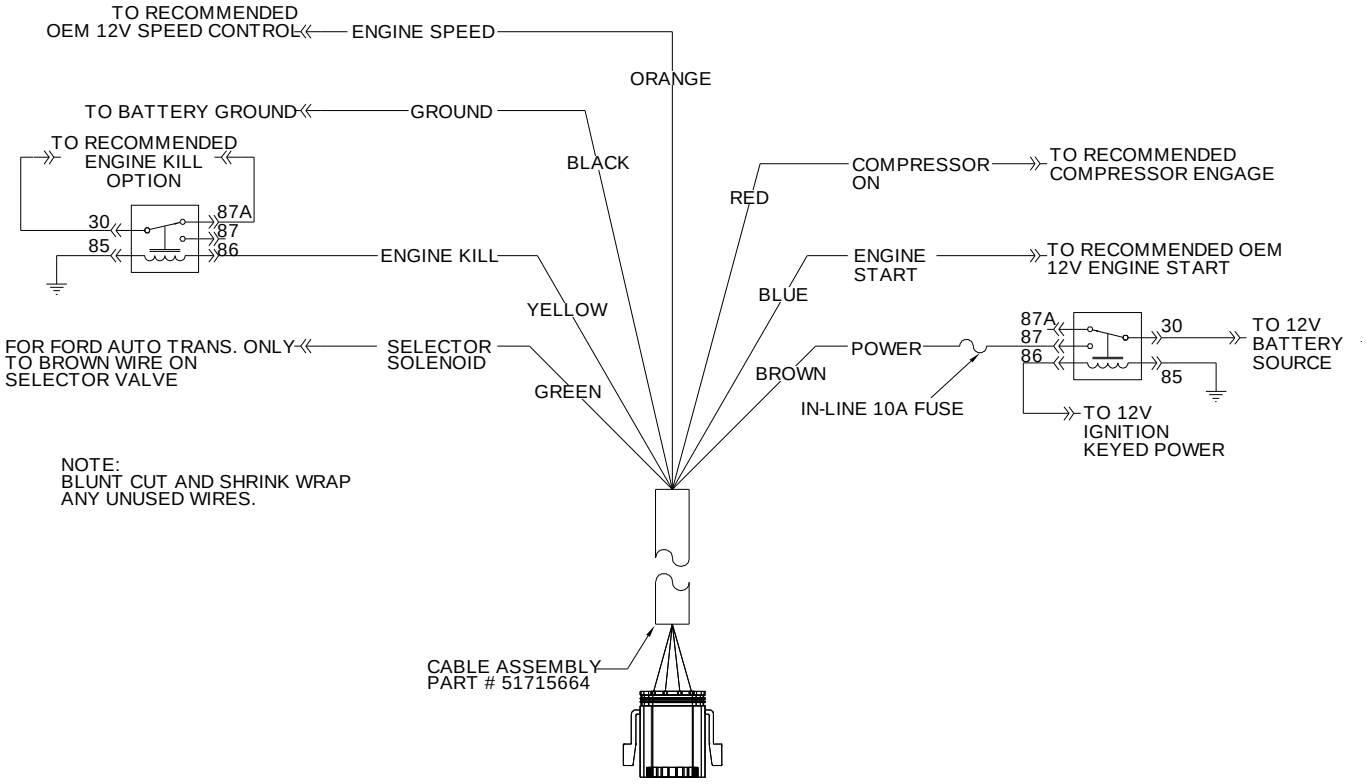
1 CUT TO LENGTH.

2 WHITE

3 BLACK

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	1
6.	77041491	WIRE MARKER	1

Chassis Wiring Harness (99903340)



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

CHAPTER 5

General Reference

In This Chapter

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:			

TYPE OF INSPECTION

NOTES:

Daily and monthly inspections are to be performed by a “competent person”, who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Quarterly and annual inspections are to be performed by a “qualified person” who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.

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.

Consult Operator / Service Manual for additional inspection items, service bulletins and other information.

Before inspecting and operating crane, crane must be set up away from power lines and leveled with stabilizers fully extended.

DAILY (D): Before each shift of operation, those items designated with a (D) must be inspected.

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 and retained for a minimum of 3 months.

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 documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection.

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 documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection.

INSPECTION CHECKLIST STATUS KEY:

S = Satisfactory	X = Deficient (NOTE: If a deficiency is found, an immediate determination must be made as to whether the deficiency constitutes a safety hazard and must be corrected prior to operation.)
R = Recommendation (Should be considered for corrective action)	
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	Wire Rope	Inspect for apparent deficiencies per applicable requirements and manufacturer’s specifications.	
D	8	Pins	Proper engagement of all connecting pins and pin retaining devices.	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
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 Two-Block or Two-Block Damage Prevention	Operate anti two-block or two-block damage prevention device to check for proper operation.	
D	14	Tires	Check tires (when in use) for proper inflation and condition.	
D	15	Ground Conditions	Check ground conditions around the equipment for proper support, watching for ground settling under and around stabilizers and supporting foundations, ground water accumulation, or similar conditions.	
D	16	Level	Check the equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.	
D	17	Operator cab windows	Check windows for cracks, breaks, or other deficiencies which would hamper the operator's view.	
D	18	Rails, rail stops, rail clamps and supporting surfaces	Check rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling.	
D	19	Safety devices	Check safety devices and operational aids for proper operation.	
D	20	Electrical	Check electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation.	
D	21		Other	
D	22		Other	
M	23	Daily	All daily inspection items.	
M	24	Cylinders	Visual inspection of cylinders for leakage at rod, fittings, and welds. Damage to rod and case.	
M	25	Valves	Holding valves for proper operation.	
M	26	Valves	Control valves for leaks at fittings and between stations.	
M	27	Valves	Control valve linkages for wear, smoothness of operation, and tightness of fasteners. Relief valve for proper pressure settings.	
M	28	General	Bent, broken, or significantly rusted/corroded parts.	
M	29	Electrical	Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation. Electrical systems for presence of dirt, moisture, and frayed wires.	
M	30	Structure	All structural members for damage.	
M	31	Welds	All welds for breaks and cracks.	
M	32	Pins	All pins for proper installation and condition.	
M	33	Hardware	All bolts, fasteners and retaining rings for tightness, wear and corrosion.	
M	34	Wear Pads	Presence of wear pads.	
M	35	Pump & Motor	Hydraulic pumps and motors for leakage at fittings, seals, and between sections. Check tightness of mounting bolts.	
M	36	PTO	Transmission/PTO for leakage, abnormal vibration & noise, alignment, and mounting bolt torque.	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
M	37	Hyd Fluid	Quality of hydraulic fluid and presence of water.	
M	38	Hyd Lines	Hoses & tubes for leakage, abrasion damage, blistering, cracking, deterioration, fitting leakage, and secured properly.	
M	39	Hook	Load hook for abnormal throat distance, twist, wear, and cracks.	
M	40	Wire Rope	Condition of load line.	
M	41	Manual	Presence of operator's manual with unit.	
M	42		Other	
M	43		Other	
Q	44	Daily	All daily inspection items.	
Q	45	Monthly	All monthly inspection items.	
Q	46	Rotation Sys	Rotation bearing for proper torque of all mounting bolts.	
Q	47	Hardware	Base mounting bolts for proper torque.	
Q	48	Structure	All structural members for deformation, cracks and corrosion.	
	49		• Base	
	50		• Stabilizer beams and legs	
	51		• Mast	
	52		• Inner Boom	
	53		• Outer Boom	
	54		• Extension(s)	
	55		• Jib boom	
	56		• Jib extension(s)	
	57		• Other	
Q	58	Hardware	Pins, bearing, shafts, gears, rollers, and locking devices for wear, cracks, corrosion and distortion.	
	59		• Rotation bearing(s)	
	60		• Inner boom pivot pin(s) and retainer(s)	
	61		• Outer boom pivot pin(s) and retainer(s)	
	62		• Inner boom cylinder pin(s) and retainer(s)	
	63		• Outer boom cylinder pin(s) and retainer(s)	
	64		• Extension cylinder pin(s) and retainer(s)	
	65		• Jib boom pin(s) and retainer(s)	
	66		• Jib cylinder pin(s) and retainer(s)	
	67		• Jib extension cylinder pin(s) and retainer(s)	
	68		• Boom tip attachment	
	69		• Other	
Q	70	Hyd Lines	Hoses, fittings and tubing for proper routing, leakage, blistering, deformation and excessive abrasion.	
	71		• Pressure line(s) from pump to control valve	
	72		• Return line(s) from control valve to reservoir	
	73		• Suction line(s) from reservoir to pump	
	74		• Pressure line(s) from control valve to each function	
	75		• Load holding valve pipe(s) and hose(s)	
	76		• Other	
Q	77	Pumps & Motors	Pumps and Motors for loose bolts/fasteners, leaks, noise, vibration, loss of performance, heating & excess pressure.	
	78		• Winch motor(s)	
	79		• Rotation motor(s)	
	80		• Other	
Q	81	Valves	Hydraulic valves for cracks, spool return to neutral, sticking spools, proper relief valve setting, relief valve failure.	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
	82		• Main control valve	
	83		• Load holding valve(s)	
	84		• Stabilizer or auxiliary control valve(s)	
	85		• Other	
	86		• Other	
Q	87	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.	
	88		• Stabilizer cylinder(s)	
	89		• Inner boom cylinder(s)	
	90		• Outer boom cylinder(s)	
	91		• Extension cylinder(s)	
	92		• Rotation cylinder(s)	
	93		• Jib lift cylinder(s)	
	94		• Jib extension cylinder(s)	
	95		• Other	
Q	96	Winch	Winch, sheaves and drums for damage, abnormal wear, abrasions and other irregularities.	
Q	97	Hyd Filters	Hydraulic filters for replacement per maintenance schedule.	
A	98	Daily	All daily inspection items.	
A	99	Monthly	All monthly inspection items.	
A	100	Quarterly	All quarterly inspection items.	
A	101	Hyd Sys	Hydraulic fluid change per maintenance schedule.	
A	102	Controls	Control valve calibration for correct pressure & relief valve settings.	
A	103	Valves	Safety valve calibration for correct pressure & relief valve settings.	
A	104	Valves	Valves for failure to maintain correct settings.	
A	105	Rotation Sys	Rotation drive system for proper backlash clearance & abnormal wear, deformation and cracks.	
A	106	Lubrication	Gear oil change in rotation drive system per maintenance schedule.	
A	107	Hardware	Check tightness of all fasteners and bolts, using torque specifications on component drawings or torque chart.	
A	108	Wear Pads	Wear pads for excessive wear.	
A	109	Loadline	Loadline for proper attachment to drum.	

Deficiency / Recommendation / Corrective Action Report

DATE:	OWNER:	UNIT I.D. NUMBER:

GUIDELINES

a A deficiency (X) may constitute a hazard. Deficiency must be corrected and/or faulty parts replaced before resuming operation.

b Recommendations (R) should be considered for corrective actions. Corrective action for a particular recommendation depends on the facts in each situation.

c Corrective actions (CA), repairs, adjustments, parts replacement, etc. are to be performed by a qualified person in accordance with all manufacturer's recommendations, specifications and requirements.

NOTE: Deficiencies (X) listed must be followed by the corresponding corrective action taken (CA).

X = DEFICIENCY R = RECOMMENDATION CA = CORRECTIVE ACTION TAKEN

X,R,CA	ITEM #	EXPLANATION	DATE CORRECTED

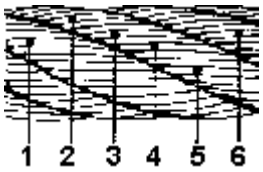
X,R,CA	ITEM #	EXPLANATION	DATE CORRECTED

Wire Rope Inspection & Replacement

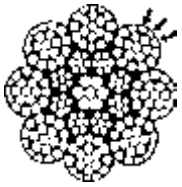
Wire rope with any of the deficiencies shown below shall be removed and replaced immediately.

a Corrosion can be cause for replacement. Any development of corrosion must be noted and monitored closely.

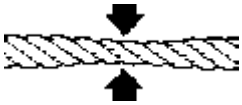
b When there are either three broken wires in one strand or a total of six broken wires in all strands in any one rope lay.



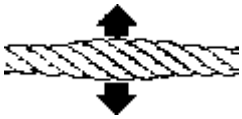
c When flat spots on the outer wires appear and those outside wires are less than 2/3 the thickness of the unworn outer wire.



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

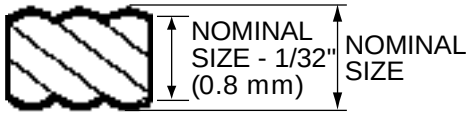


e When kinking, crushing, birdcaging or other distortion occurs.



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" (0.8 mm) 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).

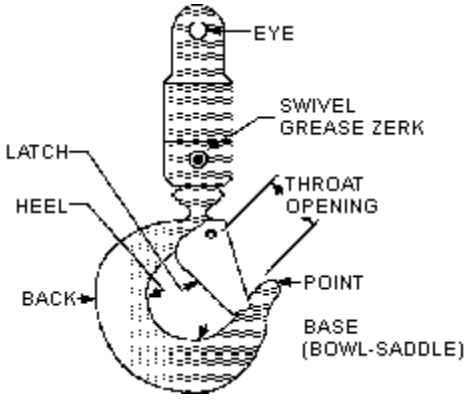
d LATCH

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 wired closed (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.

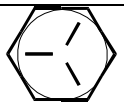
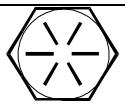
1 Bolt manufacturer's particular specifications should be consulted when provided.

2 Flat washers of equal strength must be used.

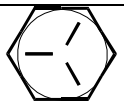
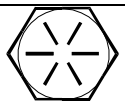
3 All torque measurements are given in foot-pounds. To convert to inch-pounds, multiply by 12.

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 disulphide, 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.

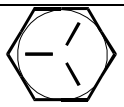
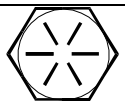
FINE THREAD TORQUE CHART (ENGLISH)

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

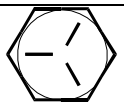
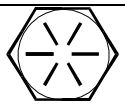
COARSE THREAD TORQUE CHART (ENGLISH)

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)

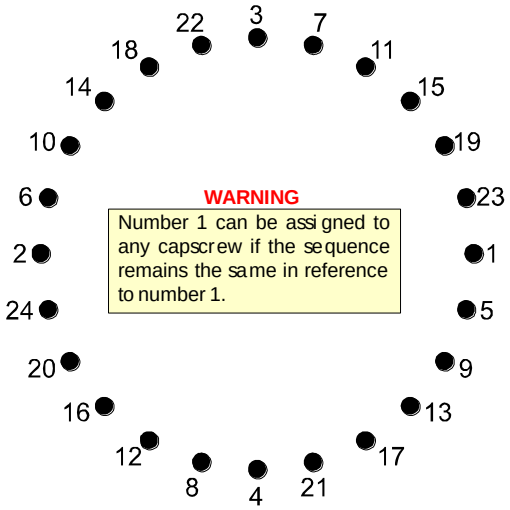
TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA. (INCHES)	 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-24	0.3125	3	2	4	3
3/8-24	0.375	5	4	7	5
7/16-20	0.4375	8	6	11	8
1/2-20	0.5	12	9	17	12
9/16-18	0.5625	17	12	24	18
5/8-18	0.625	24	18	33	25
3/4-16	0.75	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

Turntable Bearing Thread Tightening Sequence

Refer to the turntable bearing thread tightening diagram below for proper tightening/torquing sequence of the turntable 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 torquing 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.

Turntable Bearing Inspection

Turntable bearings may experience wear. One of the following conditions may indicate turntable bearing wear:

1 Metal particles present in the bearing lubricant.

2 Increased drive power required to rotate the crane.

3 Noise emitting from the bearing during rotation.

4 Rough rotation.

5 Uneven or excessive wear between the pinion gear and turntable gear.

If one or more of the above conditions exists, further 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 bearings' internal clearance once mounted on a crane. You can measure the tilt using the ***Turntable Bearing Tilt Test.*** (see "Turntable Bearing Tilt Test" on page 111)

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.**

Turntable Bearing Tilt Test

1 Place crane in vertical position.

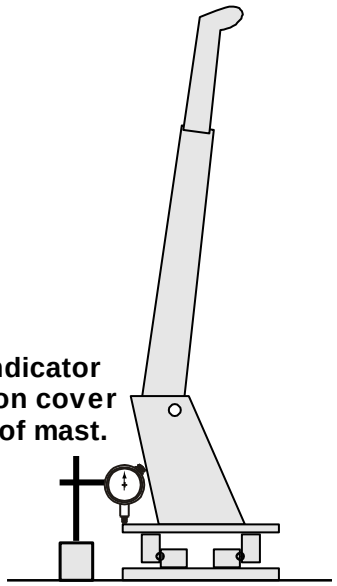
2 Set a dial indicator at 0 on the pinion cover plate at back side of mast.

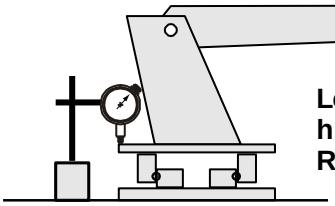
3 Lower crane to the horizontal position.

4 Check and record the dial indicator change. It should not exceed the tilt measurement noted in the chart below.

5 Return the crane to the vertical position. The dial indicator should return to 0.

Set up dial indicator to 0" on pinion cover at back side of mast.





Lower crane to horizontal position. Read dial indicator.

COMPARISON CHART - MEASURED TILT DIMENSION PER CRANE MODEL					
NOTE: The tilt dimensions 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 2820 3000 3016/3020 3203i 3816/3820 4004i 421/425 4300 5005i 5016/5020 6006i 6016/6020 6022 5525 / 6025 / 6625 EZ Hauler I, II EZ Hauler 3000 / 5500	5200 5200R 5217 5800 7020 7025 7200 7415 8025 9000	16000-I, II, III 32018 32027 32030 T30 T40	23516 14K160TH COMMANDER IV	1221R 1225R 8000L 9800 12916 13031 13034 14000 15000 18000 20017 8000L H1200 H1200RR T50
Ball Dia. (Ref)	.875" (22 mm)	1.00" (25 mm)	1.18 - 1.25" (30-32 mm)	1.5” (38 mm)	1.75" (44 mm)
Tilt Dim.	.060" (1.524 mm)	.070" (1.778 mm)	.075" (1.905 mm)	.085” (2.159 mm)	.090" (2.286 mm)

Rev 20100331