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Manual Part # 99903688

# Model 5525-6025-6625 Parts & Specifications

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## Revisions

DATE	LOCATION	DESCRIPTION
20050427	77441131,	ECN 9771 - HARNESS, CHANGED HOUR METER & E-STOP CONNECTION POINTS
	77441164	ECN 9773 - ADDED CRANE HOUR METER CONNECTION TO HARNESS
	99903694, 99903695, 99903699, 51719469	ECN 9747 - ADDED COMPONENT ASSEMBLIES FOR ALTERNATE BASE CONFIGURATION
20050512	77441164	ECN 9789 - UPDATE TO CP-700
	99903690, 99903699	ECN 9796 - UPDATED HOSE KIT IN HYDRAULIC INSTALLATION DRAWINGS
	99903692, 99903624, 99903693-5, 99903697-8	ECN 9784 - UPDATES PER BOM AUDIT
	73733947	ECN 9759 - CHANGE TO VALVEBANK ASM
20050726	77441131	ECN 9837 - CHANGE WIRING ON CP-1200
	99903624, 99903693, 99903695	ECN 9862 - HARDWARE KIT UPDATES
20050922	99903692	ECN 9898 - CHANGE FROM 73051919 MOTOR TO 73511070 MOTOR.
20051012	31712739	ECN 9805 - CYLINDER 3B142860 REPLACED BY 71411797. ADDED SPARE PARTS LISTS TO CYLINDERS.
20051115	99903624	ECN 9934 - BOOM PINS AND SHEAVE MOVED TO SUBASSEMBLY
20051205	99903699, 99903690	ECN 9927-1 - CORRECTED VALVE FUNCTION DIRECTIONS
	71056608	ADDED SPARE PARTS FOR GEARBOX ASSEMBLY
20060111	CYLINDERS, VALVEBANK	ECN 9836 -ADDED SPARE PARTS INFORMATION
20060330	99903756	ECN 9892 - CAST WINCH MOUNT
20060712	51718848	ECN 10156 - CHANGE TO HARDWARE KIT
20070516	99904248	ECN 10454 - ADDED FLIP SHEAVE DRAWING. ECN 10438 - ADDED CRANE REACH RETROFIT KITS.
20070621	71410928	ECN 10514 – SHORTENED STROKE 6”.



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## 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](http://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.





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CHAPTER 2

# Specifications

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## General Specifications

GENERAL SPECIFICATIONS	
CRANE RATING	Model 5525 - 55,000 ft-lb (7.6 tm) Model 6025 - 60,000 ft-lb (8.3 tm) Model 6625 - 66,000 ft-lb (9.1 tm)
HORIZONTAL REACH (From centerline of rotation)	25'-4" (7.7 m)
HYDRAULIC EXTENSIONS (2)	78" & 78" (198.1 cm & 198.1 cm)
LIFTING HEIGHT (From base of crane)	26'-7" (8.1 m)
CRANE WEIGHT	2,350 lb (1,066 kg)
OUTRIGGER SPAN (Required option)	
▪ Crane Side (From centerline of chassis)	90" (228.6 cm)
▪ Opposite Crane Side (From centerline of chassis)	48" (121.0 cm)
CRANE STORAGE HEIGHT	40" (101.6 cm)
MOUNTING SPACE REQUIRED (Crane base)	20" x 21" (50.8 cm x 53.3 cm)
OPTIMUM PUMP CAPACITY	10 U.S gpm (37.9 l/min)
SYSTEM OPERATING PRESSURE	3,000 psi (206.8 bar)
CENTER OF GRAVITY	
▪ Horizontal from Centerline of Rotation	41" (104.1 cm)
▪ Vertical from Bottom of Crane Base	22" (55.9 cm)
TIE-DOWN BOLT PATTERN (8 bolts)	14-3/4" x 14-3/4" (37.5 cm x 37.5 cm)
ROTATIONAL TORQUE	9,000 ft-lb (1.2 tm)

\* 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		
	SPECIFICATIONS	SPEED
ROTATION	400° (7.0 rad.)	33 seconds
LOWER BOOM ELEVATION	-5° to +78° (-0.09 to +1.31 rad)	11 seconds to raise 13 seconds to lower
EXTENSION CYLINDERS (2)	78" & 78" (198.1 cm & 198.1 cm)	23 seconds to extend 32 seconds to retract
PLANETARY GEAR LINE SPEED		55 feet per minute (2nd wrap)

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# 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 tooth worm gear powered with a high-torque hydraulic motor. Standard rotation is 420°.

## 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. 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 5,500 lb planetary winch is powered using a high-torque hydraulic motor. The lifting capacity of the winch is 5,500 lb (2,495 kg) one-part line. Maximum two-part line winch capacity is 10,500 lb (4,762 kg). The winch is equipped with 100 ft (30.5 m) of 7/16" (1.1 cm) 6x25 FW PRF RRL IWRC XIPS wire rope. 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. The winch meets ANSI B30.5 standards.

**MINIMUM CHASSIS SPECIFICATIONS**

CHASSIS STYLE	Conventional Cab
WHEELBASE	154" (391 cm)
CAB-TO-AXLE	84" (213 cm)
RESISTANCE TO BENDING MOMENT	800,000 in-lb (9,217 kg-m)
FRAME SECTION MODULUS	16 cubic inches (262.2 cc)
FRAME YIELD STRENGTH	50,000 psi (3,447 bar)
FRONT AXLE RATING (GAWR)	9,000 lb (4,082 kg)
REAR AXLE RATING (GAWR)	17,000 lb (7,711 kg)
GROSS VEHICLE RATING	26,000 lb (11,793 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.

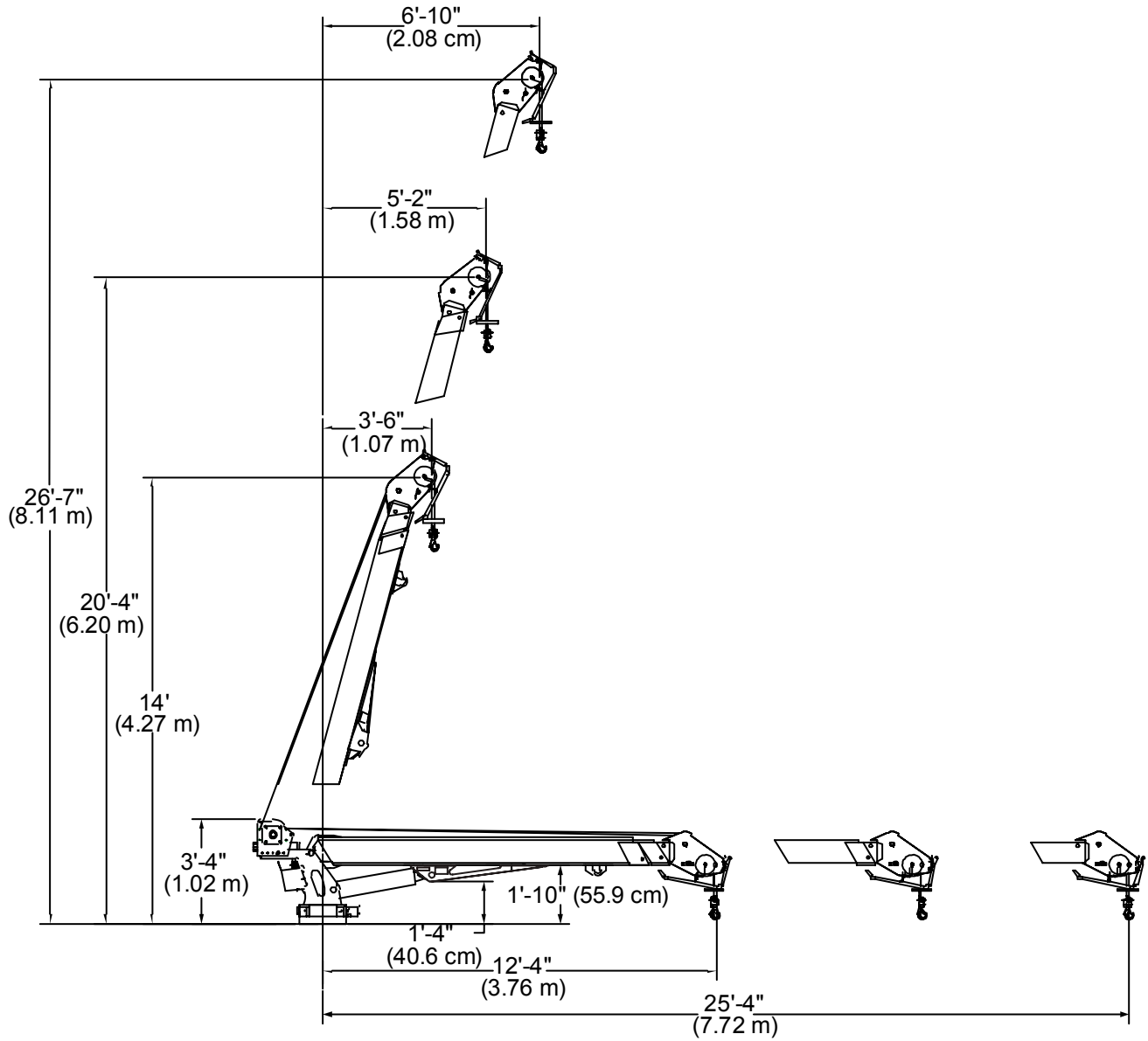
All chassis, crane and body combinations must be stability-tested to ensure stability per ANSI B30.5

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# Geometric Configuration, 5525-6025-6625



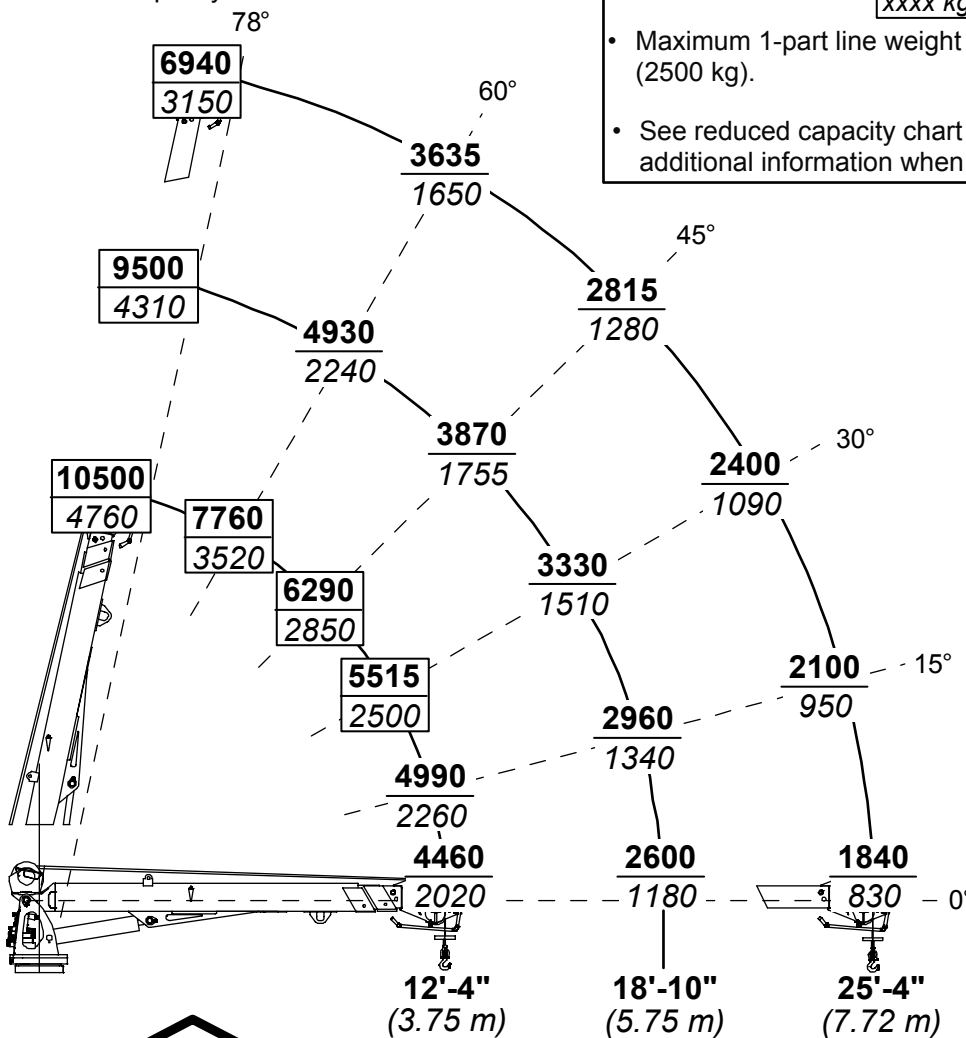
# Capacity Chart, 5525

## 5525 HYDRAULIC CAPACITY CHART

The weight of load-handling devices is part of the load lifted and must be deducted from the rated capacity.

- Values in the box indicate the use of 2-part line is required. 

xxxx lb
xxxx kg
- Maximum 1-part line weight is 5500 lb (2500 kg).
- See reduced capacity chart for additional information when applicable.



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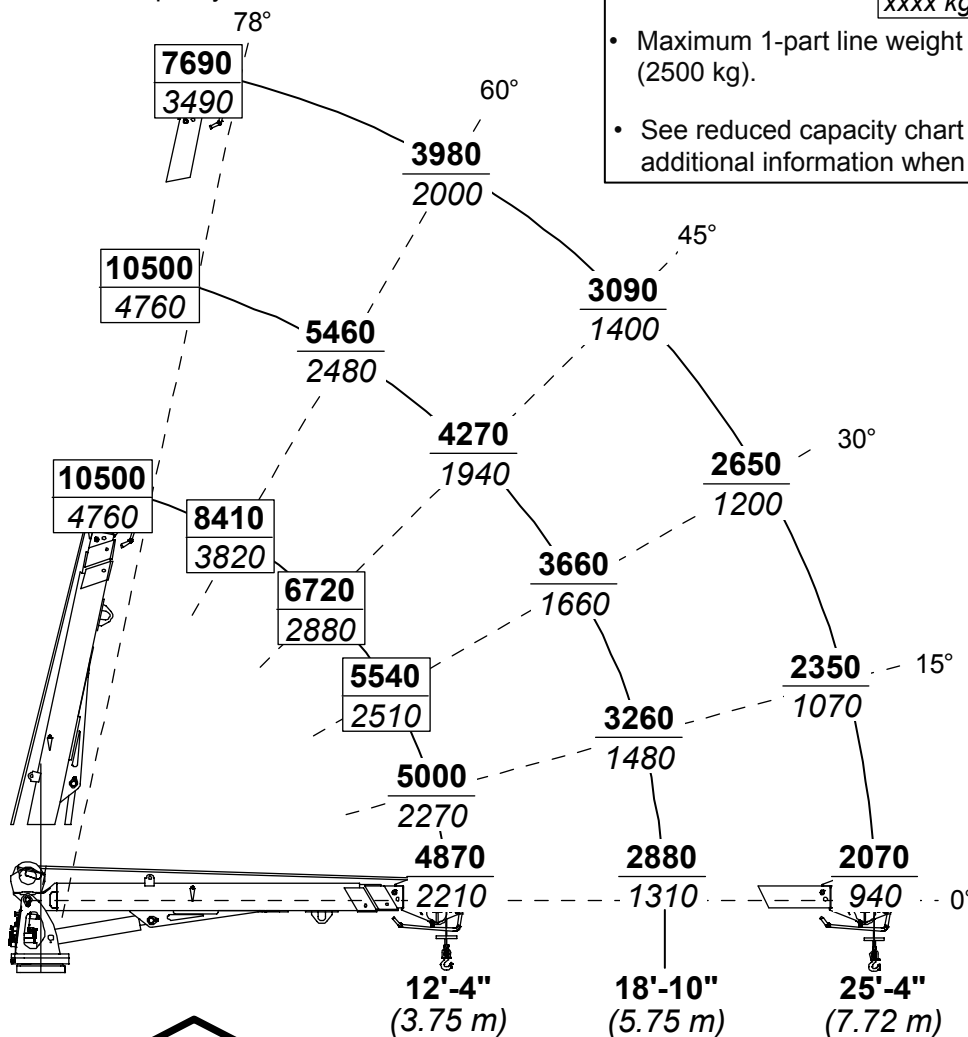
# Capacity Chart, 6025

## 6025 HYDRAULIC CAPACITY CHART

The weight of load-handling devices is part of the load lifted and must be deducted from the rated capacity.

- Values in the box indicate the use of 2-part line is required. 

xxxx lb
xxxx kg
- Maximum 1-part line weight is 5500 lb (2500 kg).
- See reduced capacity chart for additional information when applicable.



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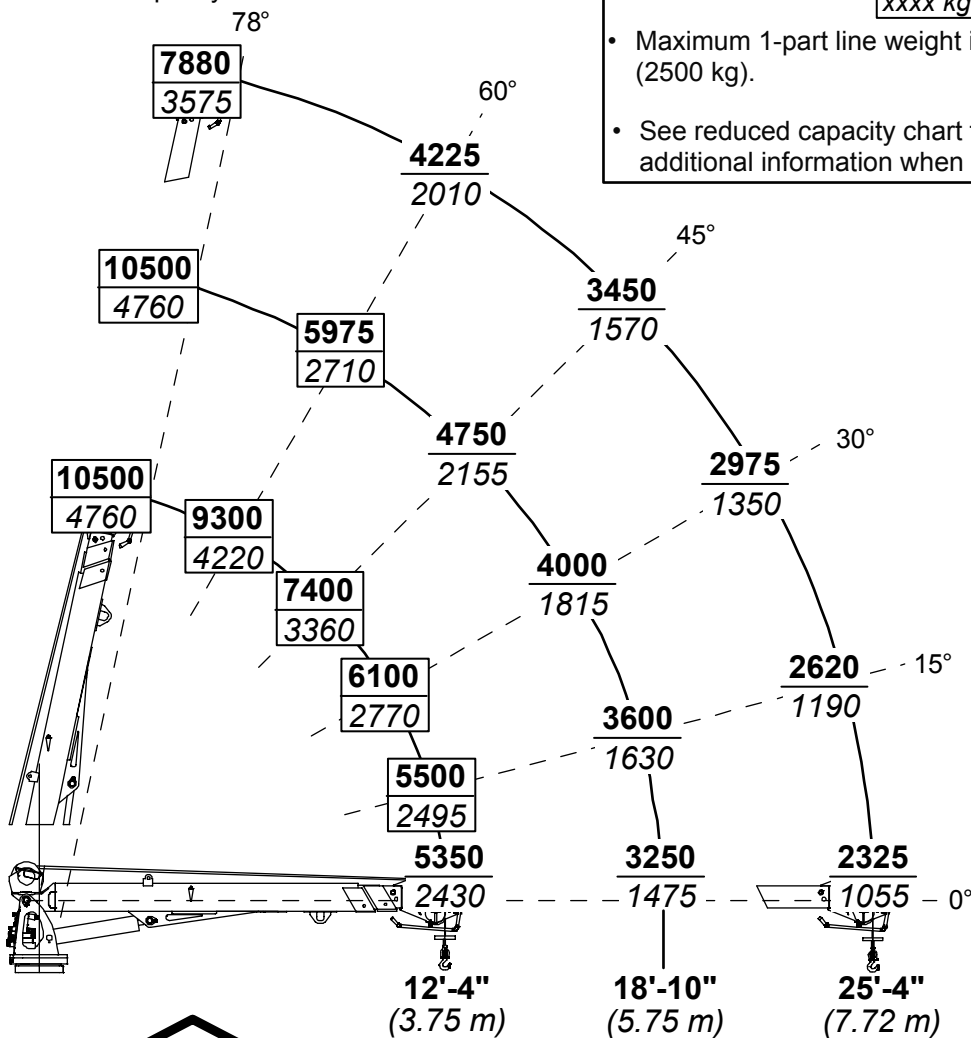
# Capacity Chart, 6625

## 6625 HYDRAULIC CAPACITY CHART

The weight of load-handling devices is part of the load lifted and must be deducted from the rated capacity.

- Values in the box indicate the use of 2-part line is required. 

xxxx lb
xxxx kg
- Maximum 1-part line weight is 5500 lb (2500 kg).
- See reduced capacity chart for additional information when applicable.



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## Reduced Capacity Lift Charts

The Reduced Capacity Lift Chart system was conceived to inform the end user of the allowable loads which can be lifted off the sides of a mechanics truck. IMT devised a color-coded chart defining the sectors where less than hydraulic crane capacity can be lifted. The color-coded chart (Reduced Capacity Lift Chart or RCLC) corresponds to a visual indicator on the base of the crane. The RCLC displays the percentage of the hydraulic crane capacity to be lifted in each sector. The visual indicator on the crane base gives the operator a reference of the sectors. With this information the end user can more safely use the mechanics truck. Stability confirmation yields data to produce a Reduced Capacity Lift Chart if necessary. Some units may not require de-rating over the sides, but a majority will.

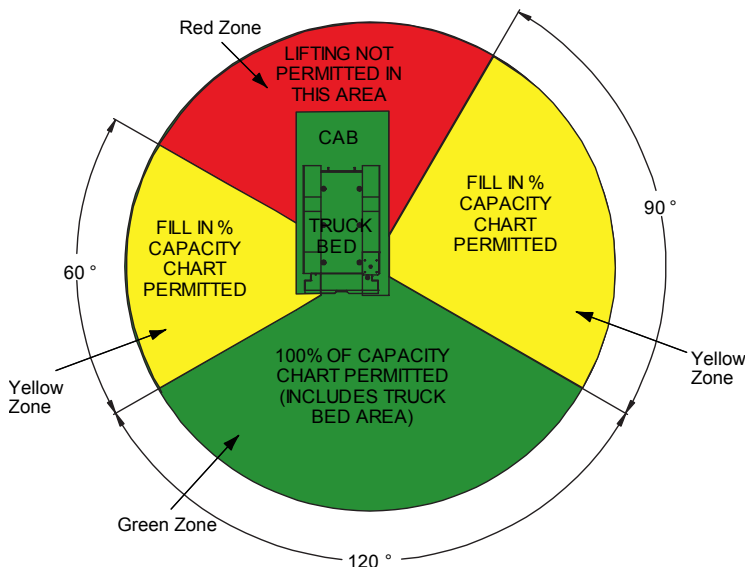
If the IMT crane is installed by an IMT distributor, the distributor is responsible for stability confirmation. IMT supplies a generic RCLC decal for dealer installation.

### CAUTION

CHASSIS WEIGHT, SUSPENSION, AND UNIT SET UP, INCLUDING NUMBER AND TYPE OF OUTRIGGERS, LIFTING SURFACE, ETC., HAVE A SIGNIFICANT IMPACT ON STABILITY.

The basic illustration shows full crane capacity off the rear of the truck and reduced capacity when lifting over the sides. Lifting over the front of the truck is not permitted.

For an IMT 5525 crane with a standard IMT Dominator® II body, the derated percentage is 80% in the yellow quadrants. For an IMT 6025 crane with a standard Dominator II body, the derated percentage is 70% in the yellow quadrants.



## Stability Confirmation Process

To confirm stability,

- 1 Set up unit on a hard, flat surface which meets SAE J765 requirements. Use all recommended equipment such as outriggers, etc.
- 2 Position the crane at full, horizontal reach. For a 5525 crane, use a  $2,172 \pm 10$  lb test weight suspended over the rear of the truck. For a 6025 crane, use a  $2,443 \pm 10$  lb test weight suspended over the rear of the truck. Rotate the test weight up to the point where the pointer on the crane base meets the yellow bands on both sides of the unit. If the unit keeps at least one rear tire firmly touching the ground, the test can be continued for the capacity on the sides. If the criterion is not met for the rear of the unit, a custom RCLC is required. Please contact IMT for assistance in this situation.

### NOTE

THE TIRE IS TOUCHING THE GROUND WHEN AT LEAST 90% OR MORE OF THE TREAD SURFACE IS CONTACTING THE GROUND.

Once stability is verified over the rear section of the truck, test the stability on the sides of the truck. Again, using the test weight in a fully extended, horizontal position, rotate the crane around the sides of the truck. If the test weight passes the sides with at least one rear tire firmly touching the ground, a standard Hydraulic Capacity Chart may be used rather than a Reduced Capacity Lift Chart.

### CAUTION

THE UNIT MAY TILT SEVERELY!

If the unit does not pass the side load test, you must begin retracting the booms to find the usable percentage of the crane capacity.

For a 5525 crane, retract the booms 42" for a capacity derating to 80%. For a 6025 crane, retract the booms 63" for a capacity derating to 70%. Measure from a fixed point on the boom tip horizontally to a fixed point on the main boom to verify how far the booms have been retracted. See table.

CRANE MODEL	TEST WEIGHT	PERCENT RATED LOAD (%)	DISTANCE BOOMS ARE RETRACTED FROM FULL EXTENSION (INCHES)
5525	$2,172 \pm 10$ lb	80%	42"
6025	$2,443 \pm 10$ lb	70%	63"

Once the booms are retracted, re-check stability by again rotating the crane around the sides of the truck, making sure the weight passes by the yellow region marked on the crane base with at least one rear tire firmly touching the ground.

Test both sides of the truck. If the crane cannot rotate through the yellow zone with at least one rear tire firmly touching the ground, you must work with IMT for a custom Reduced Capacity Lift Chart. In this situation, please contact IMT for assistance.

**CAUTION**

**DO NOT LIFT IN THE “NO LIFTING ZONE.”**

Follow safe crane practices throughout the testing. Keep the load as close to the ground as possible.

The minimum 90° “No Lifting Zone” over the cab must be on ALL Reduced Capacity Load Charts. The zone may need to be increased if front outriggers are not used. In addition, the stability may be greater on one side of the unit than the other, but IMT has chosen to keep both ratings the same. Thus, the lowest stability percentage is reported for each side.

Install the RCLC decal on the inside of the crane compartment door.

Keep a record of the reduced stability test to verify the decals in case replacement is necessary.



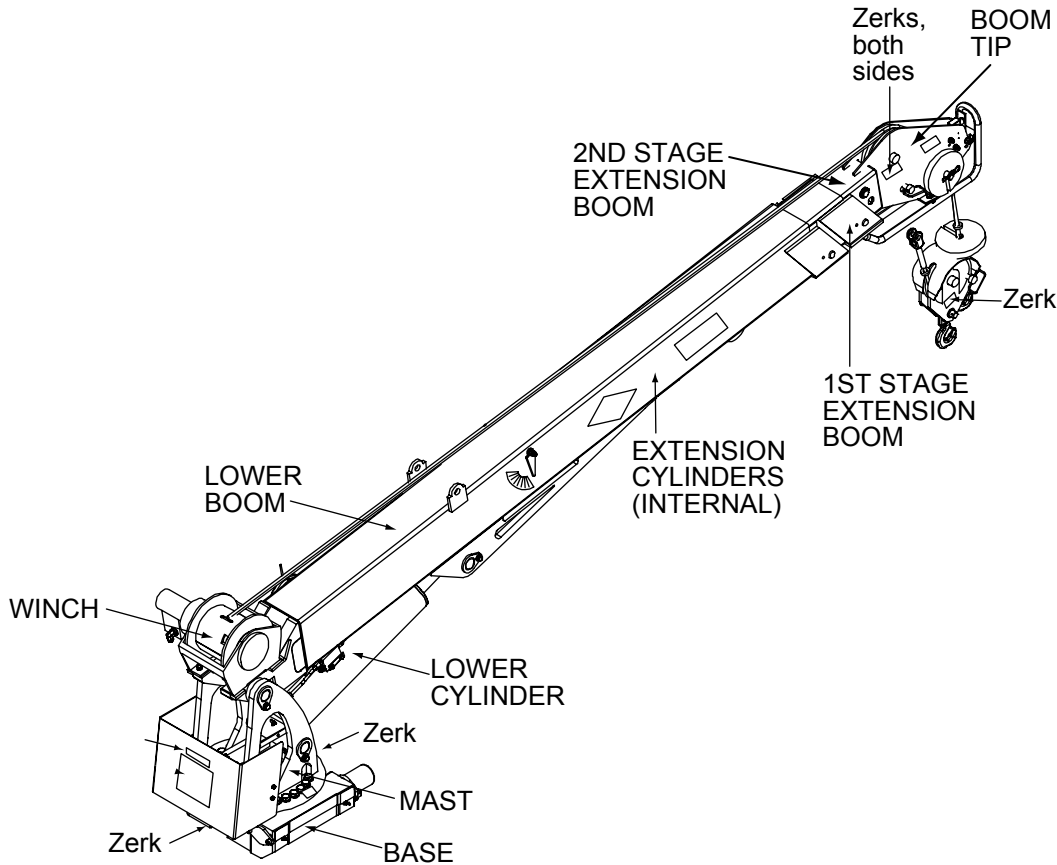
## CHAPTER 3

# Crane Reference

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# 5525-6025-6625 Assemblies & Grease Zerk Locations



**NOTE**

The descriptions indicate major crane assemblies. Grease zerks are identified by the word "Zerk."

LOCATION DESCRIPTION	LUBRICANT	FREQUENCY
Turntable/Bearing Grease *Rotate crane while greasing	Shell Alvania 2EP or Shell Retinax "A"	Weekly
Lower Cylinder		
Lower Cylinder Rod		
Upper Sheave Pin		
Lower Sheave Pin		
Snatch Block Pin		

\* Apply 3 'pumps', then rotate crane fully.

## Recommended Spare Parts List

This parts list 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, but it does not indicate these items will fail within a year. In addition, 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.

BASE & MAST ASSEMBLY			
ALL MODELS	73511070	HYDRAULIC MOTOR (PRIMARY CONFIG)	1
	73051963	HYDRAULIC MOTOR (ALT CONFIG)	1
	72060814	CAP SCR 5/8-11X2 SH PLAIN	4
	72060177	CAP SCREW 5/8-11 X 3 HHGR8	4
BOOM ASSEMBLY (99903624)			
ALL MODELS	77041459	LIMIT SWITCH	1
	51713168	CORD REEL	1
	60030336	WEAR PAD	2
	60030337	WEAR PAD	4
	60122982	WEAR PAD	1
	60122984	WEAR PAD	1
	60122985	WEAR PAD	4
LOWER CYLINDERS			
MODEL 5525 - 71411457	092KT0010	SEAL KIT	1
MODEL 6025-71410929	092LT0059	SEAL KIT	1
MODEL 6625-71411458	092LT0056	SEAL KIT	1
EXTENSION CYLINDER ASSEMBLY (71410928)			
ALL MODELS		SEAL KIT	1
CRANE & WINCH ASSEMBLY			
ALL MODELS	70580168	WIRE ROPE ASSEMBLY	1
	71073035	HOOK W/LATCH, 5.0 TONS (SINGLE LINE)	1
	70732882	HOOK, 5.9 TONS (DOUBLE LINE)	1
	60122358	DOWNHAUL WEIGHT	1
	52718741	PIN	1
	52718903	PIN	1
WINCH (70570771)			
ALL MODELS	71411150	CABLE WEDGE	1
	94744136	SEAL KIT	1
VALVE BANK (73733947)			
ALL MODELS	73540166	PROPORTIONAL VALVE	1
	73540190	RELIEF VALVE	1
	73540167	VALVE SPOOLS	4
INSTALLATION KIT (93719174)			
ALL MODELS	73052091	FILTER, 10 MICRON	1
	73052092	FILTER ELEMENT, SPIN-ON	1

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# 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

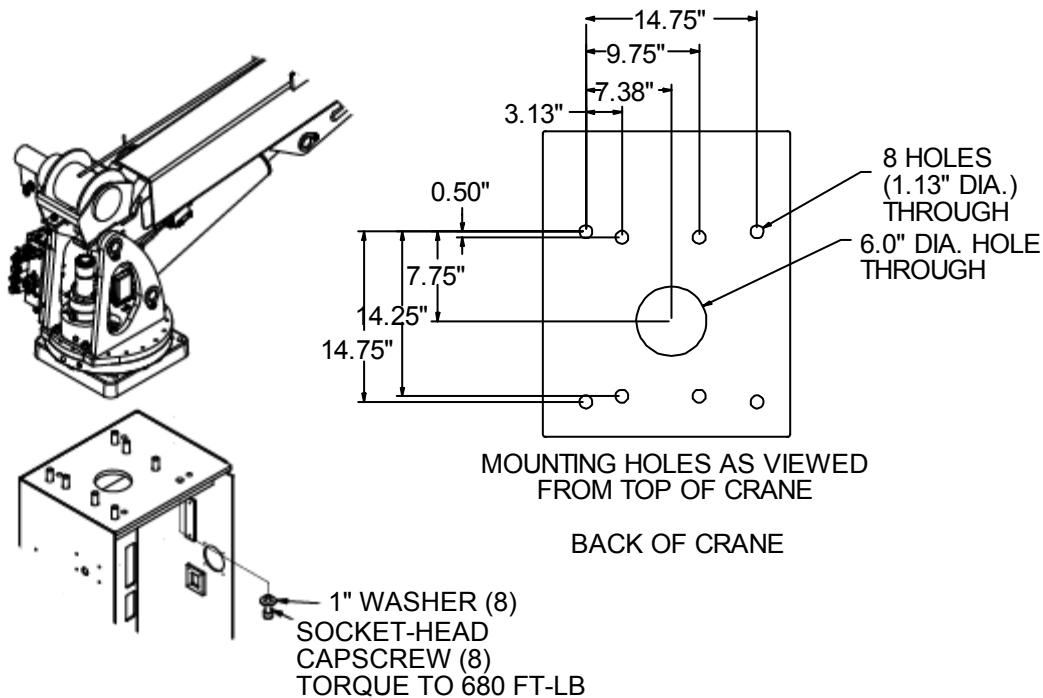
In addition to meeting Minimum Chassis Specifications, there must be sufficient room for mounting the crane and the platform must be strong enough to support the crane and rated load. Install the crane only on an IMT designed and approved truck body. The body must be designed to sustain the forces imposed 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 mounting cap screws and washers to secure the crane base to the truck body (see figure). Torque the cap screws to 680 ft-lb (94 kg-m).



### CAUTION

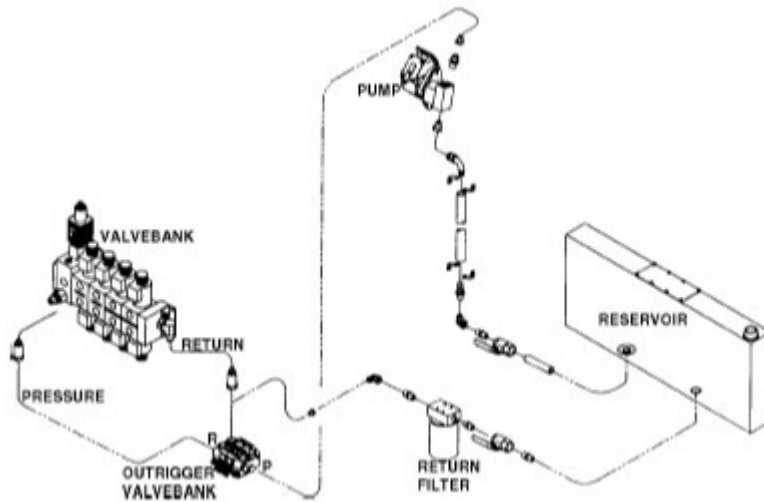
THE 3" BOLTS SUPPLIED ARE FOR USE ON BODIES WITH A CRANE BOX TOP PLATE THICKNESS OF 7/8" TO 1" ONLY. DETERMINE THE CRANE BOX TOP PLATE THICKNESS PRIOR TO MOUNTING. IF DIFFERENT LENGTH BOLTS ARE REQUIRED, THEY MUST BE 1-8, GRADE 8, ZINC COATED, OF THE PROPER LENGTH. FAILURE TO USE PROPER LENGTH BOLTS 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.



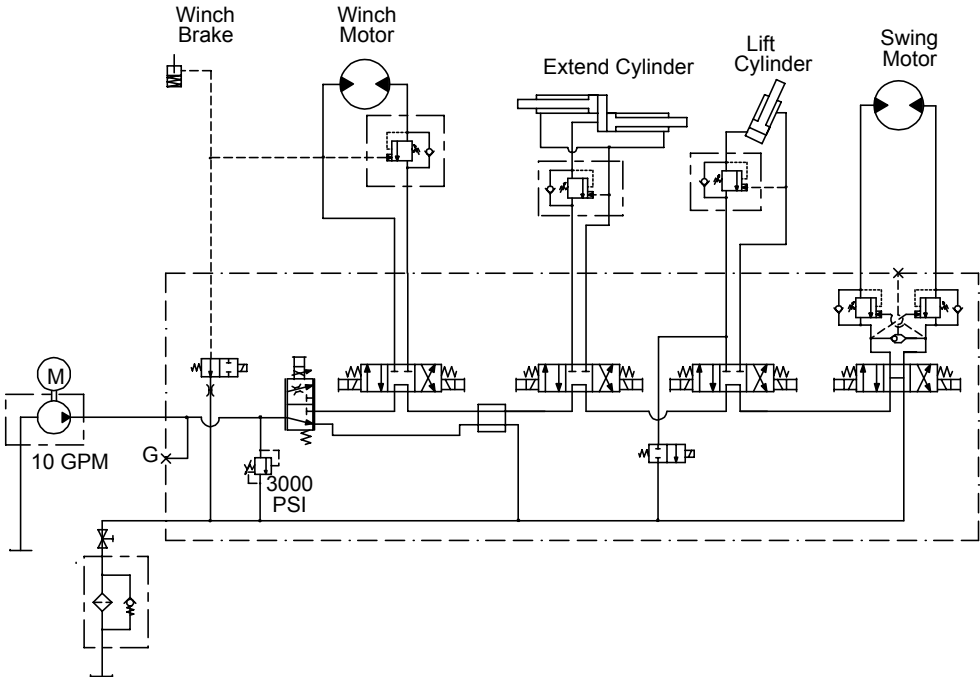
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## Crane Control

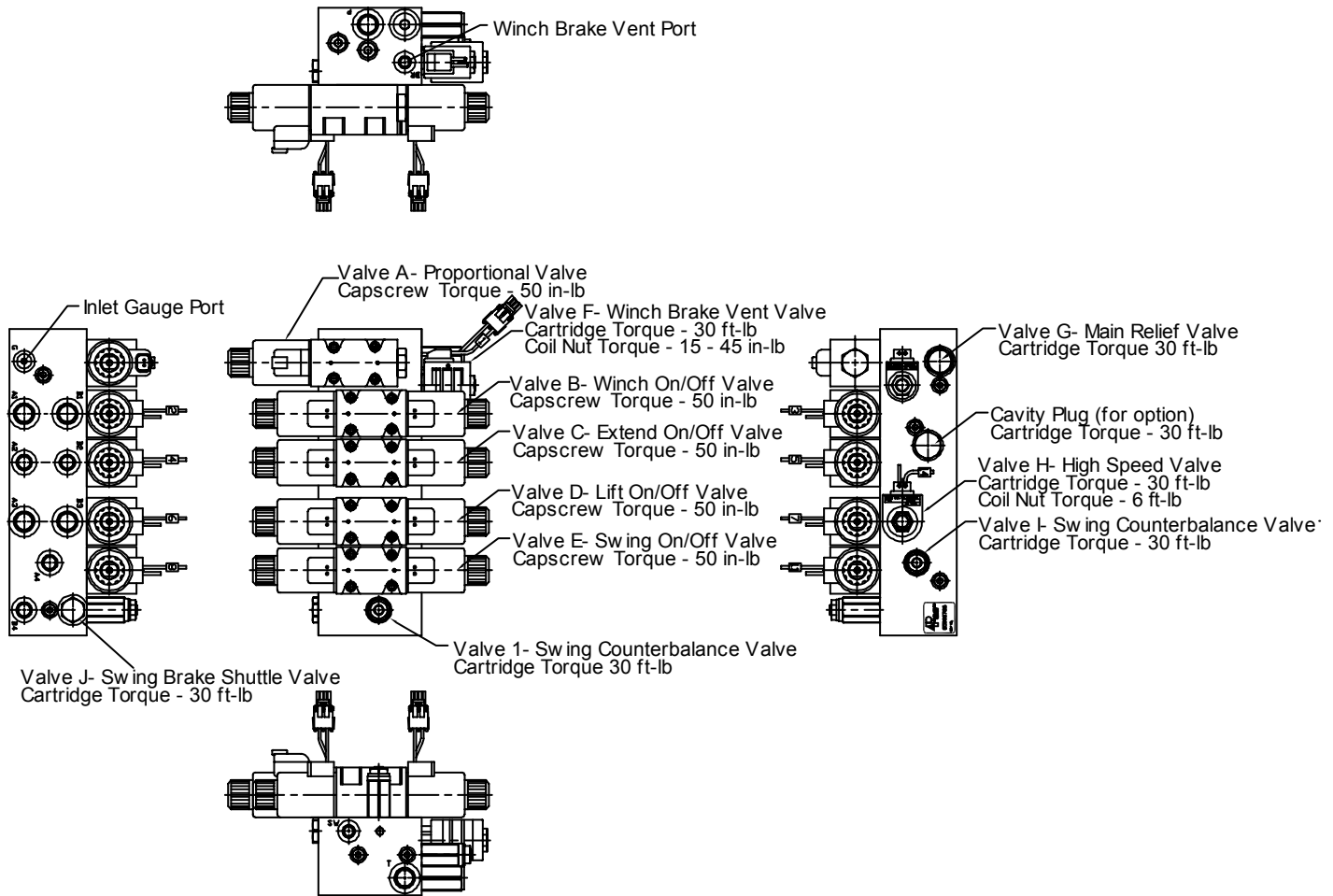
IMT's telescopic cranes are controlled by radio or tethered remote controls. This telescopic crane includes a tethered remote control with a radio remote control option. For complete details on operating your telescopic crane, refer to the IMT Telescopic Crane Operation & Safety Manual (part number 99903514).

# Control Valve Hydraulic Layout & Torque Values

## Hydraulic Layout



## Control Valve Functions and Torque Values



## Control Valve Troubleshooting Chart

Theory of Operation – The control valve for this crane family consists of an electro-hydraulic proportional valve with integral bypass which feeds four series on/off solenoid valves. The proportional valve controls function speed. The on/off solenoid valves control which functions are operated and the direction of operation. The valve manifold also includes a relief valve to limit system pressure, a winch brake vent solenoid to apply the brake of a planetary winch, and a high speed lower solenoid valve for the lift circuit. The proportional valve and the on/off valves incorporate manual overrides for troubleshooting and emergency operation. The swing valve uses a counterbalance valve in each work port to block flow in neutral. The swing brake shuttle valve is not used for this application.

FUNCTION / ISSUE	ACTION
<b>WINCH</b>	
Winch will not operate in either direction.	Check operating pressure at valve inlet, Port G. 1. Check and/or adjust main relief valve, Valve G. (Pressure setting - 3000 psi -0/+100 psi) 2. Check and/or adjust outrigger relief valve, if unit is equipped with outriggers. (Pressure setting - 3500 psi) 3. Engage proportional valve (Valve A) manual override while operating function. If winch operates, a. Verify power to Valve A. b. Check Valve A for contamination. 4. Engage winch on/off control valve (Valve B) manual override while operating function. If winch operates, a. Verify power to Valve B. b. Check Valve B for contamination. 5. Check winch counterbalance valve and PO check valve for contamination.
Winch will not lower.	1. Check items 1 through 5 for "Winch will not operate in either direction." 2. Disconnect brake line and cap both ends to winch brake vent solenoid valve (Valve F). If winch begins to lower: a. Verify power to Valve F. b. Check Valve F for contamination.
<b>EXTEND</b>	
Extend cylinder will not extend.	1. Check items 1 through 3 in "Winch will not operate in either direction." 2. Engage extend on/off control valve (Valve C) manual override while operating function. If extend operates: a. Verify power to Valve C. b. Check Valve C for contamination.
Extend cylinder will not retract.	1. Check items 1 and 2 for "Extend cylinder will not extend." 2. Check extend counterbalance valve for contamination.
<b>LOWER</b>	
Lower cylinder will not extend.	1. Check items 1 through 3 for "Winch will not operate in either direction." 2. Engage lower on/off control valve (Valve D) manual override operating function. If lower operates: a. Verify power to Valve D. b. Check Valve D for contamination.
Lower cylinder will not retract.	1. Check items 1 and 2 for "Lift cylinder will not extend." 2. Check lower counterbalance valve for contamination.
Premature kick out of overload system during rapid lowering of a heavy load.	1. Verify power to high speed lower valve (Valve H). 2. Check high speed lower valve for contamination.

ROTATION	
Machine will not rotate.	1. Check items 1 through 3 for "Winch will not operate in either direction."
	2. Engage rotate on/off control valve (Valve E) manual override while operating function. If rotate operates:
	a. Verify power to Valve E.
	b. Check Valve E for contamination.
	3. Check rotation counterbalance valves (Valve I, quantity 2) for contamination.

**NOTES:**

If a valve must be replaced, torque the new valve with the following installation torques:

- 1 Valves A,B,C,D, and E are installed using 4 #10-24 socket head cap screws. Torque to 50 in-lb using a criss-cross tightening pattern.
- 2 Valves F, G, H, I, and J have a cartridge installation torque of 30 ft-lb.
- 3 The torque on the coil nut for Valve F is 15-45 in-lb.
- 4 The torque on the coil nut for Valve H is 6 ft-lb.
- 5 The torque on the coil nut for valves B, C, D, and E is 26 in-lb.

Over-torquing cartridges can cause valves to malfunction. Under-torquing cartridge can result in valves loosening with time. Over-torquing coil nuts can permanently damage valves.

Contamination may cause failure in any hydraulic system. Avoid introducing any contamination into your hydraulic system during the assembly procedures. Plug all ports and cavities of the manifold and cylinders while other work is being performed during assembly.

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**CHAPTER 4****Parts****In This Chapter**

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## 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. All inquiries should be addressed to:

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

IOWA MOLD TOOLING CO., INC.  
BOX 189, GARNER, IA 50438-0189

MODEL NUMBER

SERIAL NUMBER

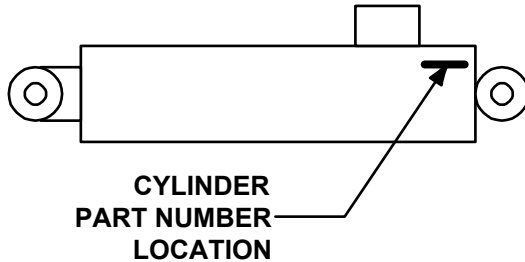
MFG DATE

70029119



## CYLINDER IDENTIFICATION

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



## WELDMENT IDENTIFICATION

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

## ORDERING REPAIR PARTS

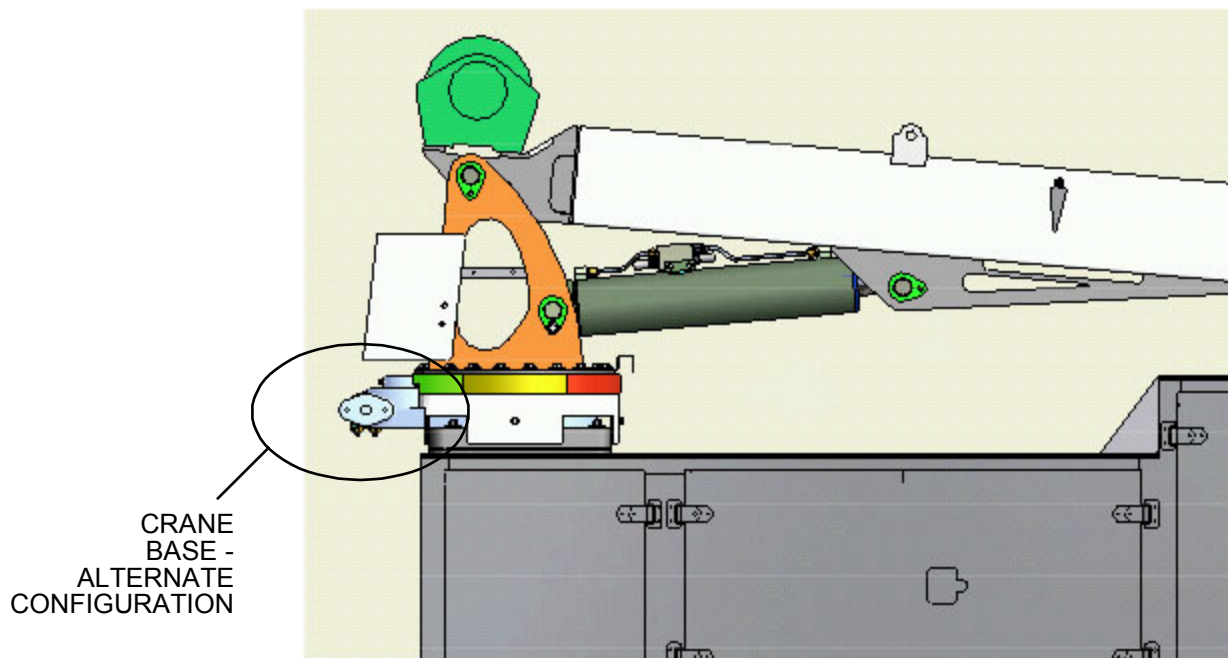
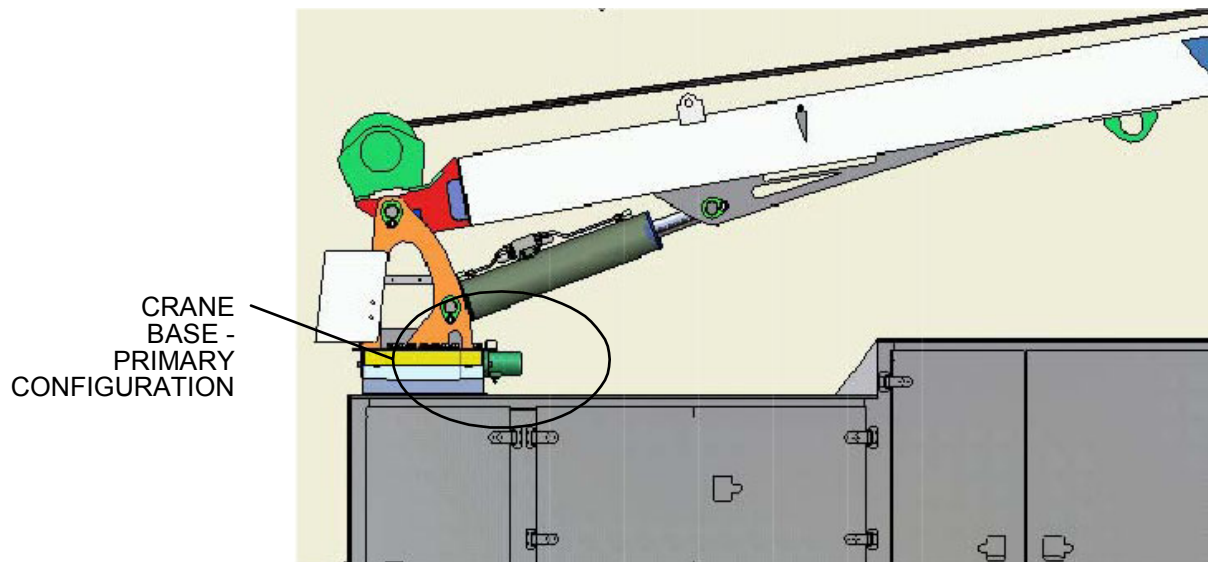
When ordering replacement parts:

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

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## Primary and Alternate Base Configurations

This crane model has a primary and an alternate supplier for the crane base. Carefully review the drawing to make sure you know which base your crane model has.



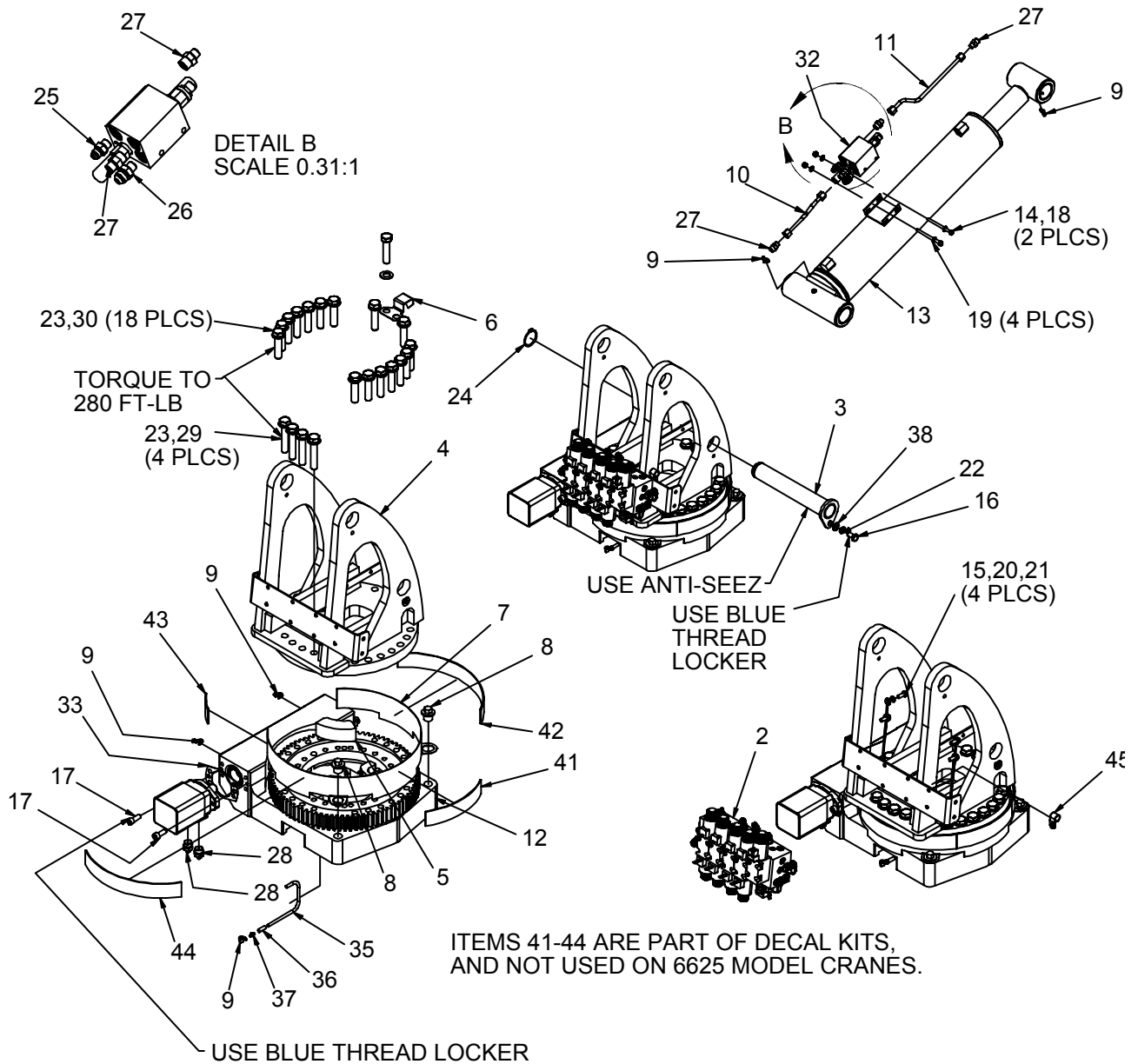
If your crane looks like the top drawing, your crane base was manufactured using the primary configuration. Replacement parts for your crane are shown on drawings 99903692, 99903624, and 99903693.

If your crane looks like the second drawing, your crane base was manufactured using the alternate configuration. Replacement parts for your crane are shown on drawings 99903694, 99903624, and 99903695.

Some components, including the valvebank, cylinders, counterbalance valves, and outriggers, are the same for both base configurations.

# Base & Mast Assemblies

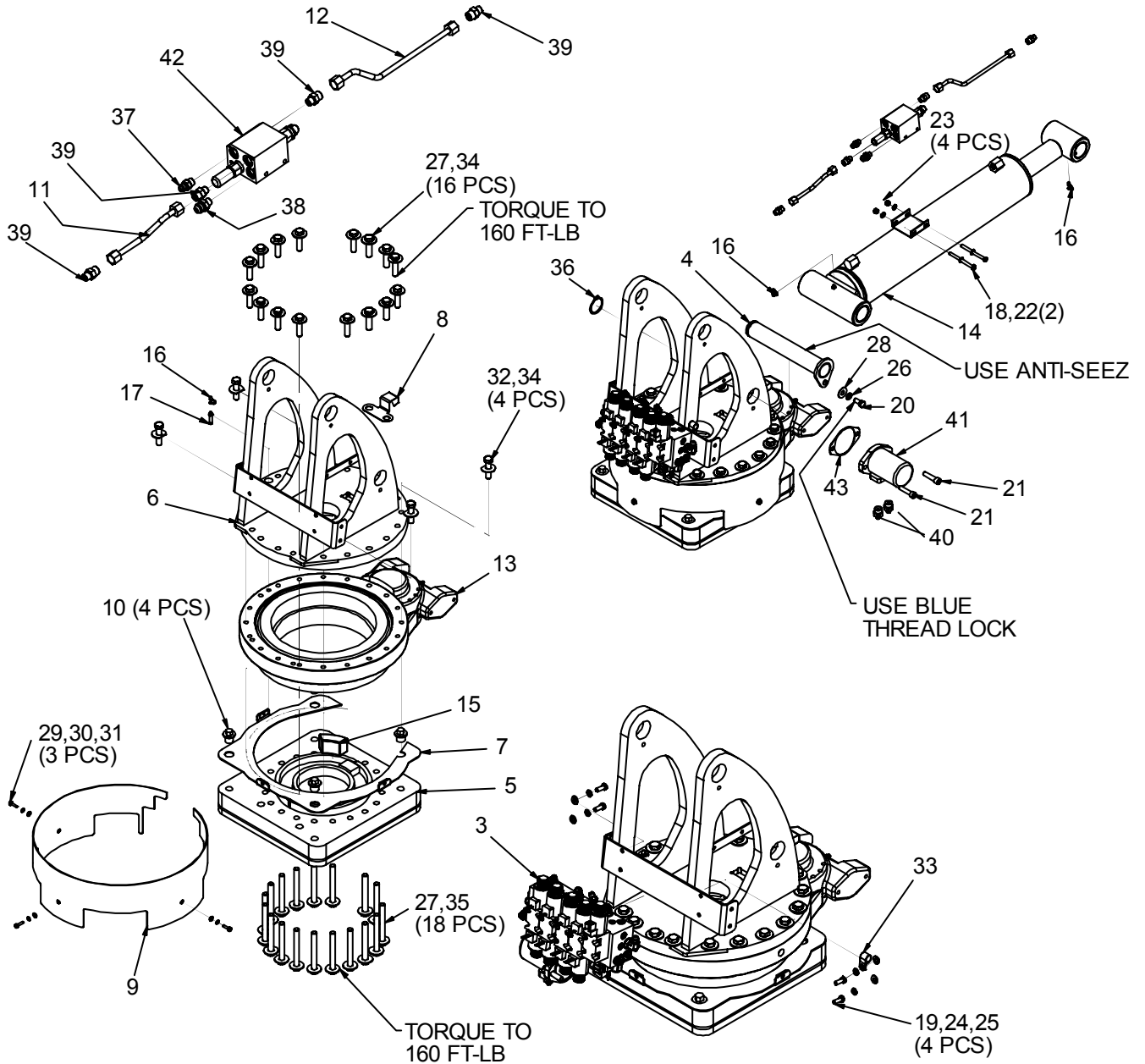
## Base & Mast Assembly (99903692) (Primary configuration)



BASE & MAST ASSEMBLY PARTS LIST (99903692)			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51719131	KIT-HARDWARE	1
2.	51719127	VALVE BODY ASY W/FITTINGS	1
3.	52718741	PIN	1

<b>BASE &amp; MAST ASSEMBLY PARTS LIST (99903692)</b>			
4.	52719132	MAST WLDMNT (WAS 52719125)	1
5.	60120138	SLIDE-ROTATION STOP 3816	1
6.	60128848	INDICATOR-MAST LOCATION	1
7.	60128849	GEAR GUARD	1
8.	70029595	THREADED PLUG 1.00-8	2
9.	70034382	CAP-GREASE (PART OF #1)	5
10.	70145753	TUBE ASM- LOWER CYL FACE	1
11.	70145927	TUBE ASM - LOWER CYL FACE	1
12.	71056577	GEAR ROTATOR	1
13.	71410929	CYLINDER, 6025	1
	71411458	CYLINDER, 6625	1
	71411457	CYLINDER, 5525	1
14.	72060037	CAP SCR .31-18X 4.00 HH GR5 Z (PART OF #1)	2
15.	72060046	CAP SCR .38-16X 1.00 HH GR5 Z (PART OF #1)	4
16.	72060091	CAP SCR .50-13X 1.00 HH GR5 Z (PART OF #1)	1
17.	72060794	CAP SCR .50-13X 1.25 SH PLAIN (PART OF #1)	2
18.	72062109	NUT .31-18 HEX NYLOCK (PART OF #1)	2
19.	72063002	WASHER .31 FLAT (PART OF #1)	4
20.	72063003	WASHER .38 FLAT (PART OF #1)	4
21.	72063051	WASHER .38 LOCK (PART OF #1)	4
22.	72063053	WASHER .50 LOCK (PART OF #1)	1
23.	72063116	WASHER .75 N FLAT H ASTM F (PART OF #1)	22
24.	72066136	RETAINING RING-EXT 2.00 HD (PART OF #1)	1
25.	72532355	ADPTR-M STR/M JIC 6 6 (PART OF #34)	1
26.	72532357	ADPTR-M STR/M JIC 6 8 (PART OF #34)	1
27.	72533186	ADPTR-M FACE/M STR 6 6 (PART OF #34)	4
28.	72533589	ADPTR-M STR/M JIC 10 4 (PART OF #34)	2
29.	72601629	CAP SCR .75-10X 4.00 HH GR8 Z (PART OF #1)	4
30.	72601817	CAP SCR .75-10X 3.25 HH GR8 Z (PART OF #1)	18
31.	73511070	MOTOR-HYD (WAS 73051919)	1
32.	73540094	VALVE-DUAL CNTRL PRESS SWITCH	1
33.	76039295	GASKET (PART OF #12)	1
34.	91719130	HOSE KIT 6025	1
35.	51395121	HOSE-AA .13 X 13.50 OAL (2-2) (PART OF #34)	1
36.	72053301	COUPLING-BLK .12 (PART OF #1)	1
37.	72053508	ZERK-NPT .12 (PART OF #1)	1
38.	72063132	WASHER .50 FLAT (PART OF #1)	1
39.	77441131	HARNESS-TELE RADIO REMOTE	1
40.	70034439	LOCK WIRE, LEAD SEAL	5
41.	60350129	TAPE-YELLOW 2 X 9.46	REF
42.	60350122	TAPE-RED 2 X 14.14	REF
43.	60350121	TAPE-YELLOW 2 X 3.24	REF
44.	60350119	TAPE-GREEN 2 X 17.4	REF
45.	72066580	CLIP (PART OF #1)	1

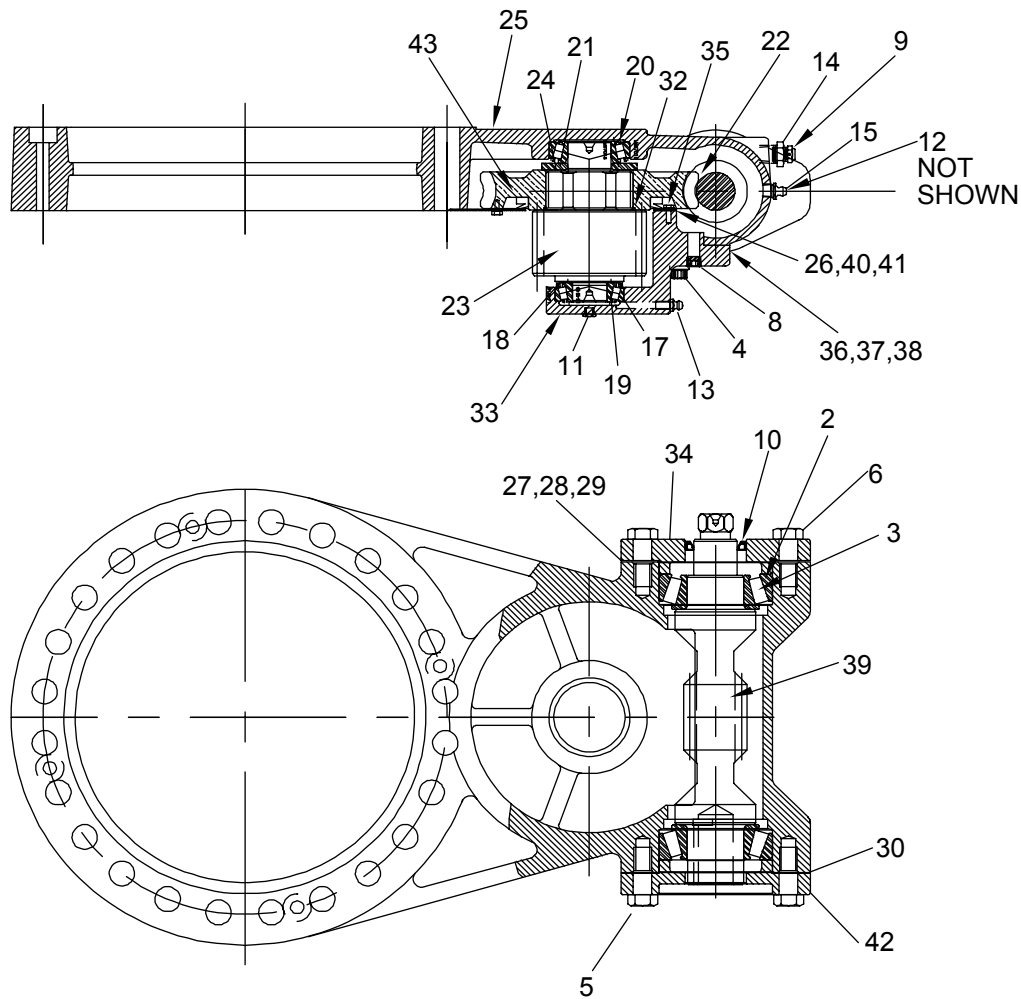
## Base & Mast Assembly (99903694) (Alternate Configuration)



BASE & MAST ASSEMBLY PARTS LIST (99903694)			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51719410	KIT-HRDWR (ITEMS 16-36)	1
2.	91719430	HOSE KIT (ITEMS 37-40)	1
3.	51719469	VALVE BODY ASY W/FITTINGS	1
4.	52718741	PIN	1
5.	52719409	BASE WLDMNT	1
6.	52719411	MAST WLDMNT	1
7.	52719441	GEAR GUARD WLDMNT	1

<b>BASE &amp; MAST ASSEMBLY PARTS LIST (99903694)</b>			
8.	60128854	INDICATOR-MAST LOCATION	1
9.	60128856	GEAR GUARD 6025	1
10.	70029595	THREADED PLUG	4
11.	70145753	TUBE ASM-LOWER CYL FACE	1
12.	70145927	TUBE ASM - LOWER CYL FACE	1
13.	71056608	GEAR BOX	1
14.	71410929	CYLINDER - 5525	1
14.	71411458	CYLINDER - 6625	1
14.	71411457	CYLINDER - 5525	1
15.	71411189	SLIDE, ROTATION 540 DEG	1
16.	70034382	CAP-GREASE (PART OF #1)	3
17.	72534418	ZERK-NPT .12 X 1.75 LG (PART OF #1)	1
18.	72060037	CAP SCR .31-18X 4.00 HH GR5 Z (PART OF #1)	2
19.	72060046	CAP SCR .38-16X 1.00 HH GR5 Z (PART OF #1)	4
20.	72060091	CAP SCR .50-13X 1.00 HH GR5 Z (PART OF #1)	1
21.	72060796	CAP SCR .50-13X 2.00 SH PLAIN (PART OF #1)	2
22.	72062109	NUT .31-18 HEX NYLOCK (PART OF #1)	2
23.	72063002	WASHER .31 FLAT (PART OF #1)	4
24.	72063003	WASHER .38 FLAT (PART OF #1)	4
25.	72063051	WASHER .38 LOCK (PART OF #1)	4
26.	72063053	WASHER .50 LOCK (PART OF #1)	1
27.	72063119	WASHER .62 FLAT ASTM F436 (PART OF #1)	34
28.	72063132	WASHER .50 FLAT ASTM F436 (PART OF #1)	1
29.	72060004	CAP SCR .25-20X 1.00 HH GR5 (PART OF #1)	3
30.	72063001	WASHER .25 FLAT (PART OF #1)	3
31.	72063049	WASHER .25 LOCK (PART OF #1)	3
32.	72063216	WASHER .62 N FLAT-CUT (PART OF #1)	4
33.	72066580	CLIP (PART OF #1)	1
34.	72601482	CAP SCR .62-11X 2.50 HH GR8 Z (PART OF #1)	20
35.	72601854	CAP SCR .62-11X 5.50 HH GR8 Z (PART OF #1)	18
36.	72066136	RETAINING RING-EXT 2.00 HD	1
37.	72532355	ADPTR-M STR/M JIC 6 6 (PART OF #2)	1
38.	72532357	ADPTR-M STR/M JIC 6 8 (PART OF #2)	1
39.	72533186	ADPTR-M FACE/M STR 6 6 (PART OF #2)	4
40.	72533613	ADPTR-M STR/M JIC 10 6 (PART OF #2)	2
41.	73051963	MOTOR-HYD	1
42.	73540094	VALVE-DUAL CNTRL PRESS SWITCH	1
43.	76393171	GASKET-WINCH	1
44.	77441131	HARNESS, TELE RADIO REMOTE	1
45.	70034439	LOCK WIRE LEAD SEAL, 8"	5

## Gear Rotator (71056608) (Alternate configuration)

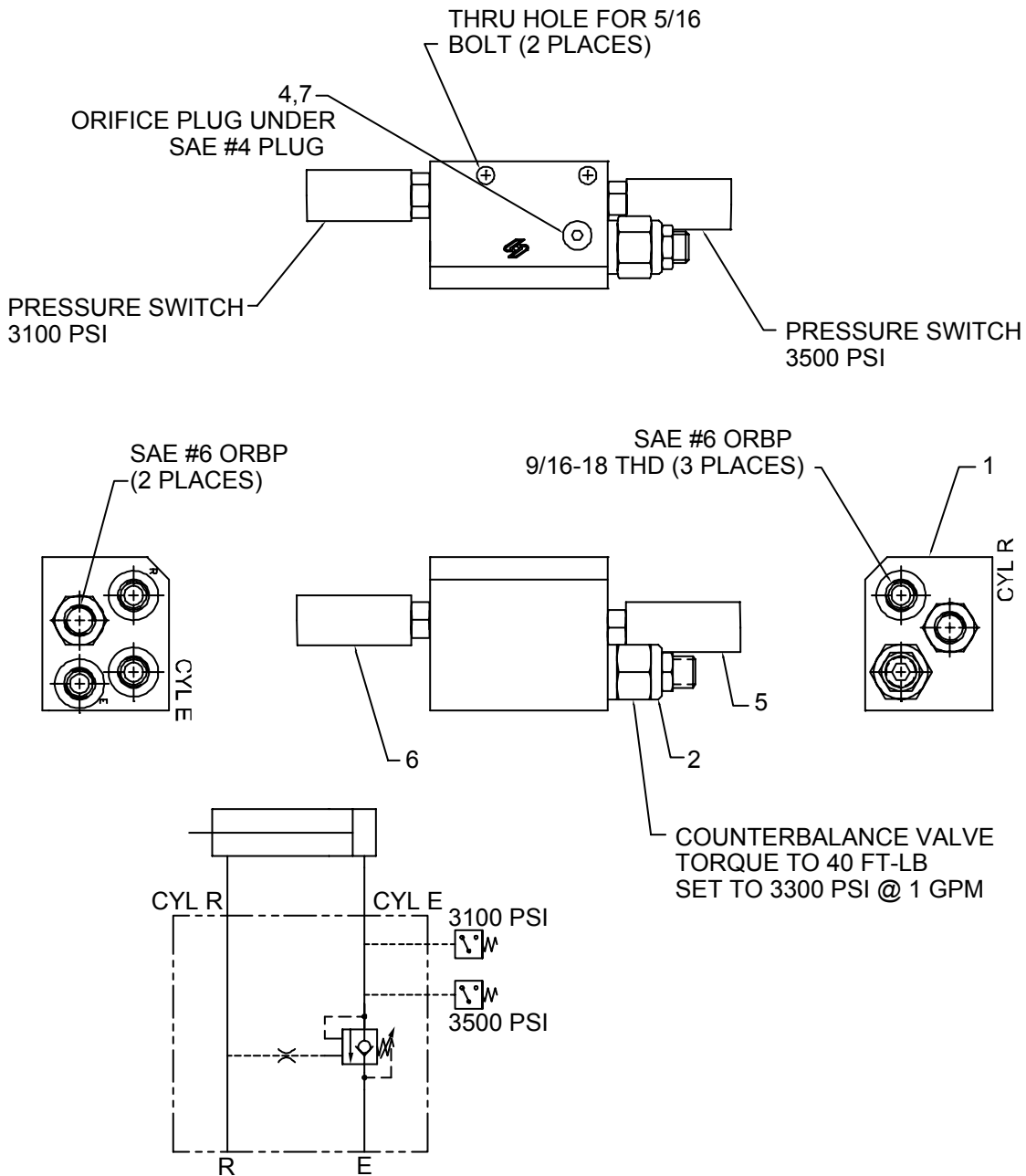


71056608 PARTS LIST (PARTS SHOWN ON DRAWING 99903804)			
ITEM	PART #	DESCRIPTION	QUANTITY
2.	70055307	BEARING, ROLL CUP	2
3.	70055308	BEARING, ROLL CONE	2
4.	71412279	3/8-16X1-1/4 12 PT CBB GR8	8
5.	71412280	CAP SCR 1/2-13X1 HH (SHIPPING ONLY)	2
6.	71412281	CAP SCR 1/2-13X1-1/4 HH PLATE GR5	2
8.	71412282	PLUG, PIPE 1/8" HEX SUN	1
9.	71412283	VENT PLUG	1
10.	76396847	SEAL, OIL	1
11.	71412284	PLUG, THREADED 1/4-28	1
12.	70034484	CAP, GREASE FIT PLASTIC COVER	2
13.	71412285	GREASE FITTING 1/4-28 STRAIGHT	1
14.	71412286	BUSHING, RED 1/8X1/4	1
15.	71412287	GREASE FITTING 1/8 NPT STRAIGHT	1
17.	70055309	BEARING, ROLL CUP	1



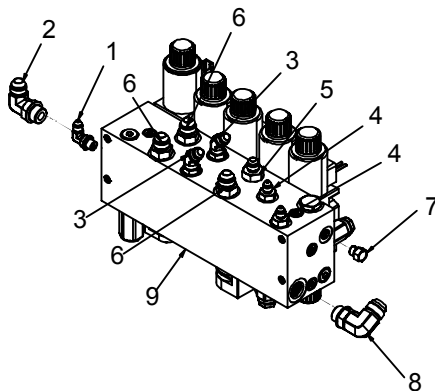
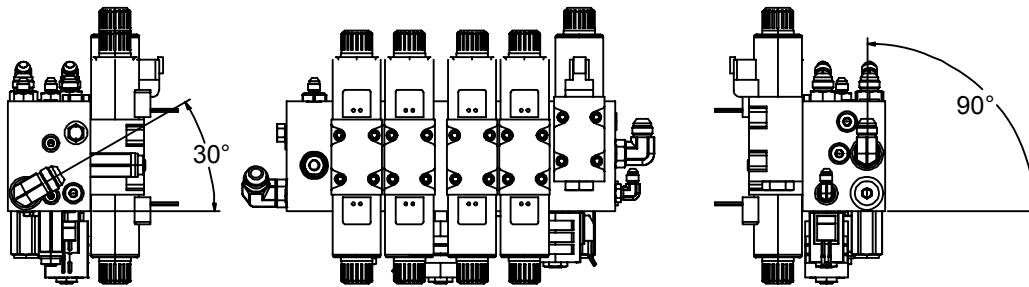
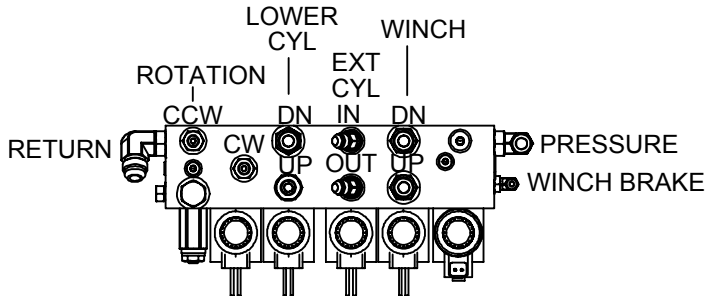
<b>71056608 PARTS LIST (PARTS SHOWN ON DRAWING 99903804)</b>			
18.	71412288	RING, GREASE	1
19.	70055310	BEARING, ROLL CONE	1
20.	70055311	BEARING, ROLL CUP	1
21.	70055312	BEARING, ROLL CONE	1
22.	71056614	GEAR, WORM	1
23.	71056615	PINION, OUTPUT	1
24.	71412289	SPACER, WASHER	1
25.	71412290	HOUSING	1
26.	71412291	COVER	1
27.	76029615	SHIM, WORM 0.010 BROWN	2
28.	76029616	SHIM, WORM 0.0075 CLEAR	2
29.	76029617	SHIM, WORM 0.005 BLUE	3
30.	76029618	SHIM, WORM 0.020 YELLOW	2
32.	76396848	O-RING	1
33.	71412292	CAP, GEAR	1
34.	71412293	CAP, WORM	1
35.	71412294	SCREW, 6-32X3/8" HWHTR	8
36.	76029610	SHIM, GEAR 0.0075 NAT ALUMINUM	4
37.	76029611	SHIM, GEAR 0.005 BLUE ALUMINUM	4
38.	76029612	SHIM, GEAR 0.003 GREEN ALUMINUM	4
39.	71412295	WORM, GROUND	1
40.	76029613	SHIM, COVER 0.005 BLUE ALUMINUM	3
41.	76029614	SHIM, COVER 0.020 YELLOW ALUMINUM	2
42.	71412296	MTR ADAPTER	1
43.	76396849	SEAL, FACE	1
REF	70734049	SHIM KIT (INCL. 27-30,35-38,40,41)	1
REF	94396846	SEAL KIT (INCL. 10,32,43)	1

# Valve, Counterbalance (73540094)



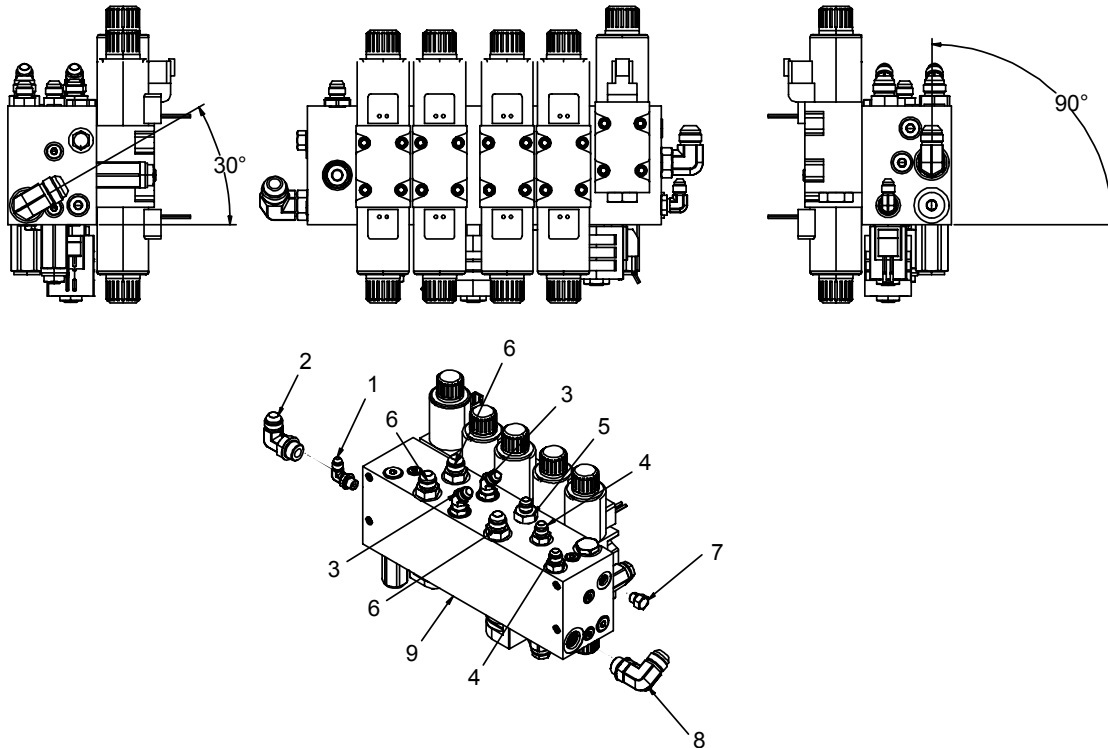
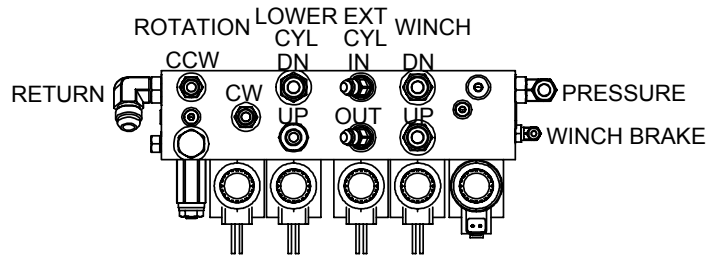
73540094 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73540051	VALVE, C-BAL	1
2.	73540052	VALVE, C-BAL	1
4.	70145750	ORIFICE	1
5.	77041626	PRESSURE SWITCH	1
6.	77041625	PRESSURE SWITCH	1
7.	72533477	PLUG, STR HOL HEX STL 7/16 THD	2

## Valve Body Assembly (51719127) (Primary Configuration)



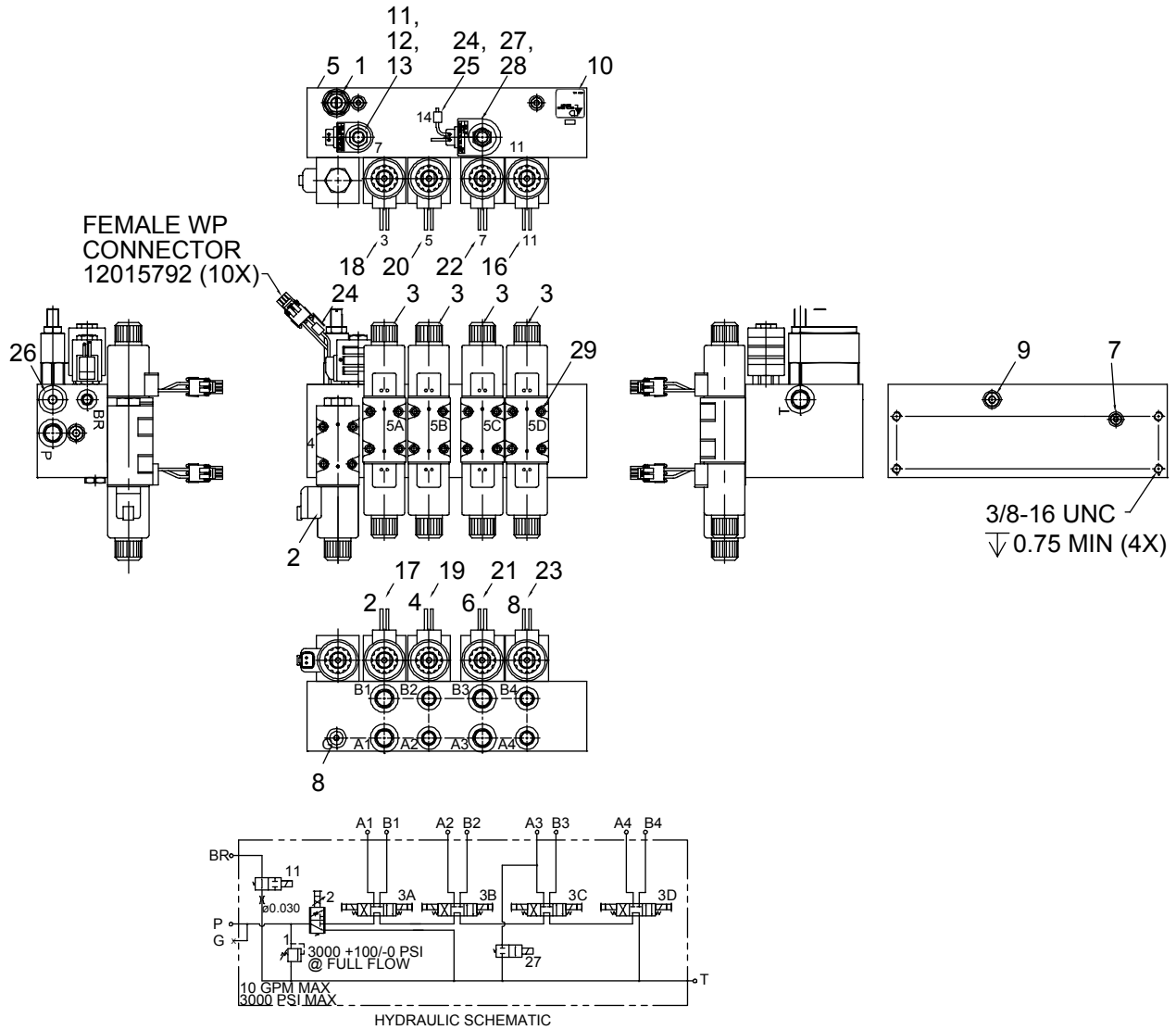
51719127 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72053758	ELBOW-M STR/90/M JIC 4 4	1
2.	72053763	ELBOW-M STR/90/M JIC 8 8	1
3.	72053776	ELBOW-M STR/45/M JIC 6 6	2
4.	72532353	ADPTR-M STR/M JIC 6 4	2
5.	72532356	ADPTR-M STR/M JIC 8 6	1
6.	72532358	ADPTR-M STR/M JIC 8 8	3
7.	72532522	PLUG-STR HEX HD STL .44	1
8.	72533507	ELBOW-M STR/90/M JIC 8 10	1
9.	73733947	VALVE BANK ASM	1

## Valve Body Assembly (51719469) (Alternate Configuration)



51719469 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72053758	ELBOW-M STR/90/M JIC 4 4	1
2.	72053763	ELBOW-M STR/90/M JIC 8 8	1
3.	72053776	ELBOW-M STR/45/M JIC 6 6	2
4.	72532355	ADPTR-M STR/M JIC 6 6	2
5.	72532356	ADPTR-M STR/M JIC 8 6	1
6.	72532358	ADPTR-M STR/M JIC 8 8	3
7.	72532522	PLUG-STR HEX HD STL .44	1
8.	72533507	ELBOW-M STR/90/M JIC 8 10	1
9.	73733947	VALVE BANK ASM	1
REV. B 20050428			

# Valvebank (73733947)



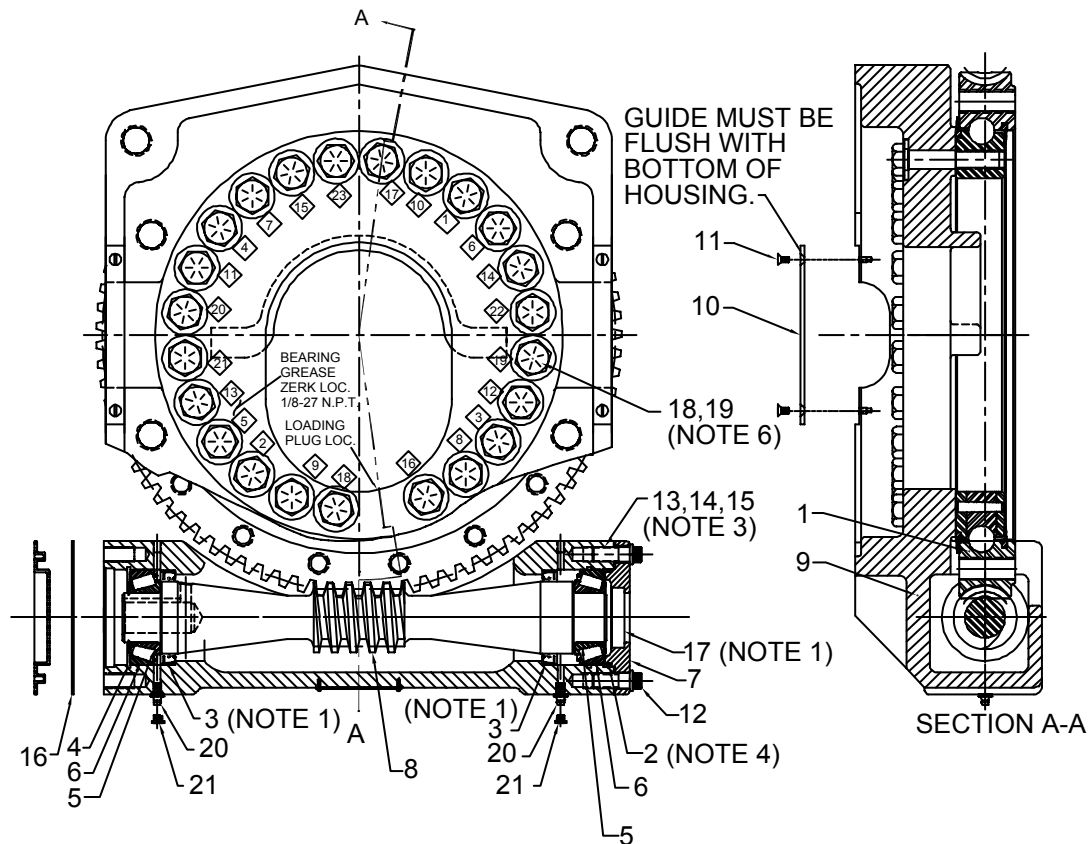
**NOTES:**

- 1 PORTS BR & G ARE SAE #4
- 2 PORTS A2, A4, B2, AND B4 ARE SAE #6
- 3 PORTS A1, A3, B1, B3, P AND T ARE SAE #8
- 4 BOLT INSTALLATION TORQUE (ITEM #29): 50 IN-LB

73733947 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73540190	RELIEF VALVE, 3000 PSI	1
	94396850	SEAL KIT FOR RELIEF VALVE	
2.	73540166	PROPORTIONAL VALVE, 3W2P	1

73733947 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
	77040488	COIL FOR PROP VALVE 3W2P	
3.	73540167	VALVE, SPOOL	4
	77040489	COIL FOR SPOOL VALVE 4W3P	
4.		CAVITY PLUG, 4W	1
5.		MANIFOLD	1
6.		PLUG, EXPANDER, 7MM	4
7.		PLUG, SAE #4 ZL	6
8.		PLUG, SAE #4	1
9.		PLUG, SAE #6 ZL	1
10.		NAME PLATE	1
11.	73540191	VALVE, SPOOL, 2W N.O. (INCL. 12)	1
12.	77040154	COIL, 12 VDC	1
	94396851	SEAL KIT FOR SPOOL VALVE 2W N. O.	
13.	73540169	ORIFICE DISK, Ø.030	1
14.		SHUTTLE VALVE	1
15.		COUNTERBALANCE VALVE	2
16-25.		I.D. TAGS	1
26.		#10 SAE PLUG	1
27.	73540192	VALVE, SPOOL 2W N.C. (INCL. 28)	1
28.	77040442	COIL, 12V DC	1
	94396853	SEAL KIT FOR SPOOL VALVE 2W N.C.	
29.		CAP SCREW, SOCKET HEAD #10-24 X 1-3/4"	16
30.		CAP SCREW, SOCKET HEAD #10-24 1-1/4"	4
31.		CABLE SEAL	16
32.		TERMINAL, FEMALE PIN	16
		#4 SAE PLASTIC PLUG	2
		#6 SAE PLASTIC PLUG	4
		#8 SAE PLASTIC PLUG	6
33.		SPOOL VALVE	1

## Gear Rotator (71056577)



### NOTES

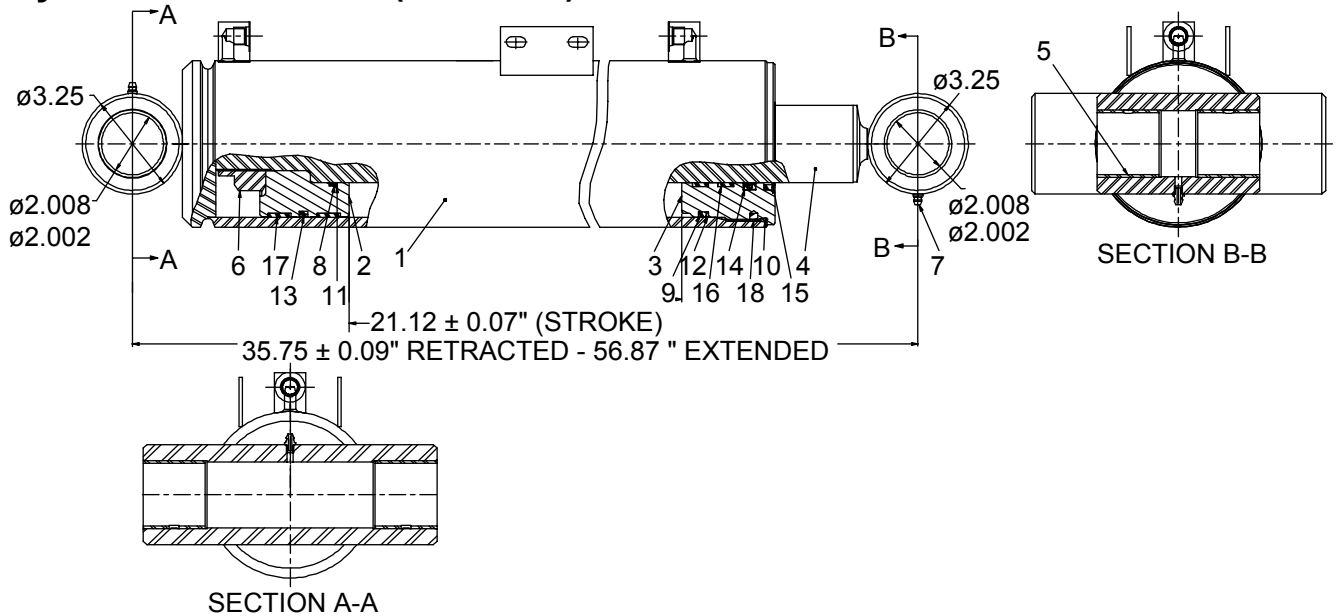
- 1 Install seals #3 and #17 with Loctite plastic gasket on O.D. Lubricate seal surface before assembly.
- 2 Pack cavities with EPO grease.
- 3 Shim to obtain 0.000/0.004 end play on worm shaft.
- 4 Lubricate o-ring #2 with worm gear oil before installing.
- 5 Set backlash between worm and rotation bearing 0.005 - 0.012. Tighten bolts numbered 1, 2, 3, 4.
- 6 Tighten 3/4-10UNC Grade 8 mounting bolts as follows:
  - a) Tightening must be progressive and at 180 degree intervals. First interval at 130 ft-lb. Second interval at 280 ft-lb. Third interval at 380 ft-lb.
  - b) Tighten bolts in order shown in diamonds.
7. *Do not* use Loctite on mounting bolts.

71056577 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71056607	SRB	1
2.	70395074	O-RING	1
3.	70395076	SEAL	2
4.	70145786	SNAP RING	1
5.	70055271	CONE BEARING	2
6.	70055281	CUP BEARING	2
7.	70145501	RETAINER, BEARING	1
8.	70056550	WORM	1
9.	70146322	MAIN HOUSING	1
10.	70145848	HOSE GUIDE	1
11.	72601754	SCR, SLT FH1.25-20 NC X 1/2	2
12.	72601733	CAP SCR-FERRY 1/2NCX1-1/4	4
13.	73145506	SHIM, METAL (0.005)	2
14.	73145505	SHIM, METAL (0.015)	1
15.	73145504	SHIM, METAL (0.030)	1
16.	76039295	GASKET	1
17.	72533604	PLUG	1
18.	72601817	CAP SCR 3/4-10X3-1/4 HHGR8	23
19.	72063116	WASHER 3/4 FLAT	23
20.	72533605	ZERK	2
21.	72533439	VENT PLUG	2

REV. B 20050314



### Cylinder, Lower, 5525 (71411457)



CYLINDER DATA			
EXTENDED LENGTH	56.87"	RETRACTED LENGTH	35.75"
CYLINDER	4.75" O.D., 2.50" I.D., 21.12" STROKE	TEST PRESSURE	3500 PSI
DRY WEIGHT	129.7 LB	OPERATING PRESSURE	3000 PSI

**NOTES:**

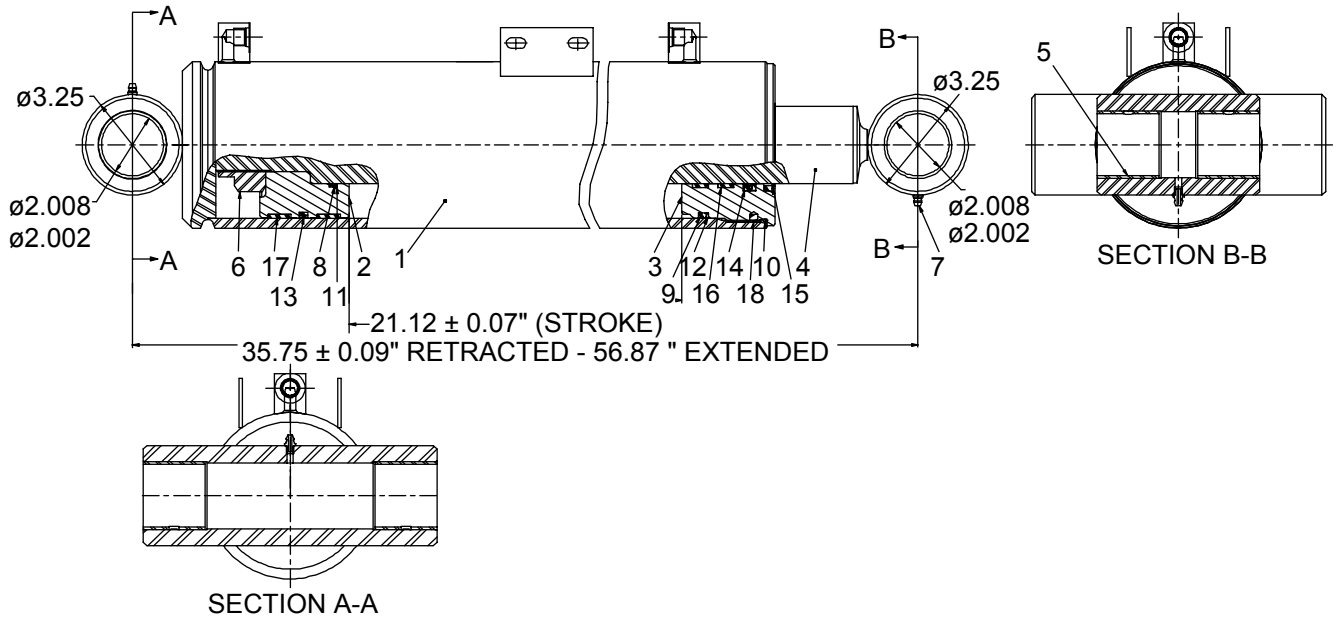
- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY LUBRIPLATE NO. 630-2 MEDIUM-HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.
- 4 TORQUE ITEM #6, LOCKNUT, TO 1500 - 1700 FT-LB WITH THREADLOCK COMPOUND LOCTITE GRADE 271 OR EQUIVALENT.
- 5 TORQUE ITEM #3, HEAD GLAND, TO 300 - 400 FT-LB.

71411457 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71412022	WELDMENT, TUBE	1
2.	050KE0008	PISTON	1
3.	060KT0007	HEAD GLAND	1
4.	075TC0064	WELDMENT, ROD	1
5.	107KS0011	BUSHING	4
6.		LOCK NUT, 1.25-12 UNF	1
7.	109BA0001	FITTING, 1/4-28 LUBE, STRAIGHT	2
8.		O-RING	1

71411457 PARTS LIST			
9.		O-RING	1
10.		O-RING	1
11.		BACKUP RING, DYNAMIC	2
12.		BACKUP RING	1
13.		DISO-PAC	1
14.		SEAL	1
15.		ROD WIPER	1
16.		WEARBAND	2
17.		WEARBAND	2
18.		INSERT, LOCKING	2
19.	092KT0010	SEAL KIT (INCL. 8-18)	REF

REV. B 20060111

## Cylinder, Lower, 6025 (71410929)



CYLINDER DATA			
EXTENDED LENGTH	56.87"	RETRACTED LENGTH	35.75"
CYLINDER	5.0" O.D., 2.50" I.D., 21.12" STROKE	TEST PRESSURE	3500 PSI
DRY WEIGHT	145.4 LB	OPERATING PRESSURE	3000 PSI

**NOTES:**

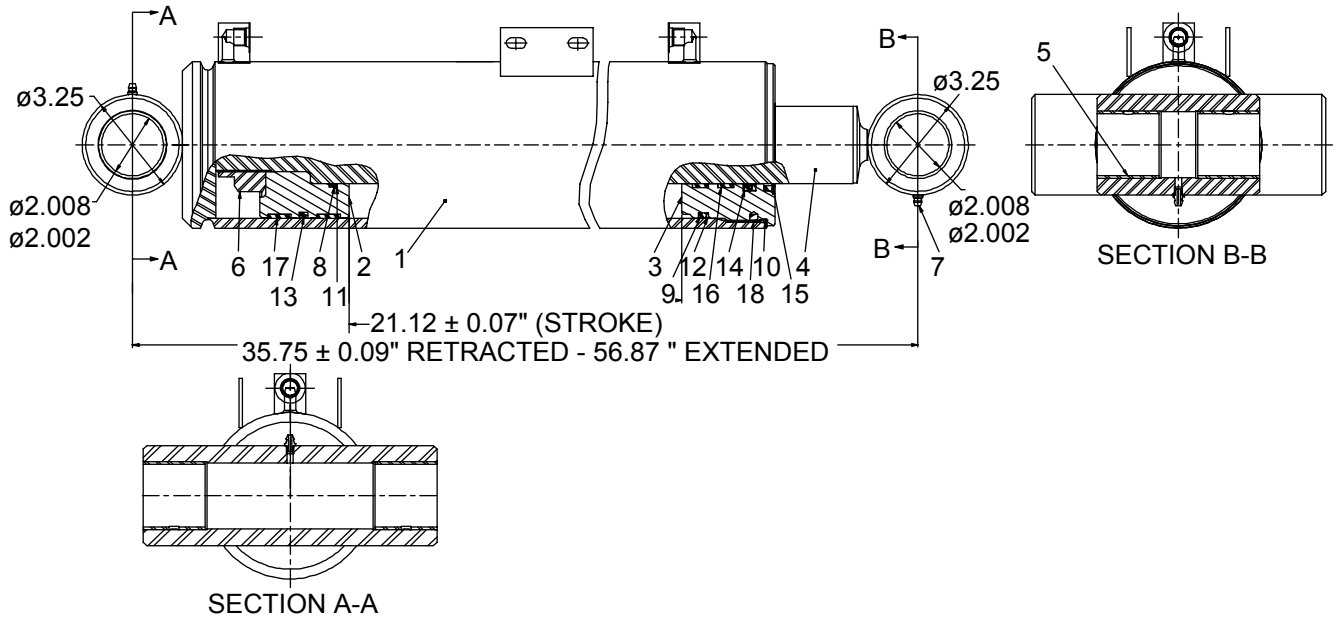
- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY LUBRIPLATE NO. 630-2 MEDIUM-HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.
- 4 TORQUE ITEM #6, LOCKNUT, TO 2,000 - 2,200 FT-LB WITH THREADLOCK COMPOUND LOCTITE GRADE 271 OR EQUIVALENT.
- 5 TORQUE ITEM #3, HEAD GLAND, TO 300 - 400 FT-LB.

71410929 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71412023	WELDMENT, TUBE	1
2.	050LE0013	PISTON	1
3.	060LT0007	HEAD GLAND	1
4.	075TC0058	WELDMENT, ROD	1
5.	107KS0011	BUSHING	4
6.	108BL0006	LOCK NUT, 2.0-12 UN	1
7.	109BA0001	FITTING, 1/4-28 LUBE, STRAIGHT	2

71410929 PARTS LIST			
8.		O-RING	1
9.		O-RING	1
10.		O-RING	1
11.		BACKUP RING, DYNAMIC	2
12.		BACKUP RING	1
13.		DISO-PAC	1
14.		SEAL	1
15.		ROD WIPER	1
16.		WEARBAND	2
17.		WEARBAND	2
18.		INSERT, LOCKING	2
19.	092LT0059	SEAL KIT (INCL. 8-18)	REF

REV. B 20060111

## Cylinder, Lower, 6625 (71411458)



CYLINDER DATA			
EXTENDED LENGTH	56.87"	RETRACTED LENGTH	35.75"
CYLINDER	5.25" O.D., 2.50" I.D., 21.12" STROKE	TEST PRESSURE	3500 PSI
DRY WEIGHT	150.8 LB	OPERATING PRESSURE	3000 PSI

**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 TORQUE ITEM #6, LOCKNUT, TO 2,000 - 2,200 FT-LB WITH THREADLOCK COMPOUND LOCTITE GRADE 271 OR EQUIVALENT.
- 5 TORQUE ITEM #3, HEAD GLAND, TO 300 - 400 FT-LB.

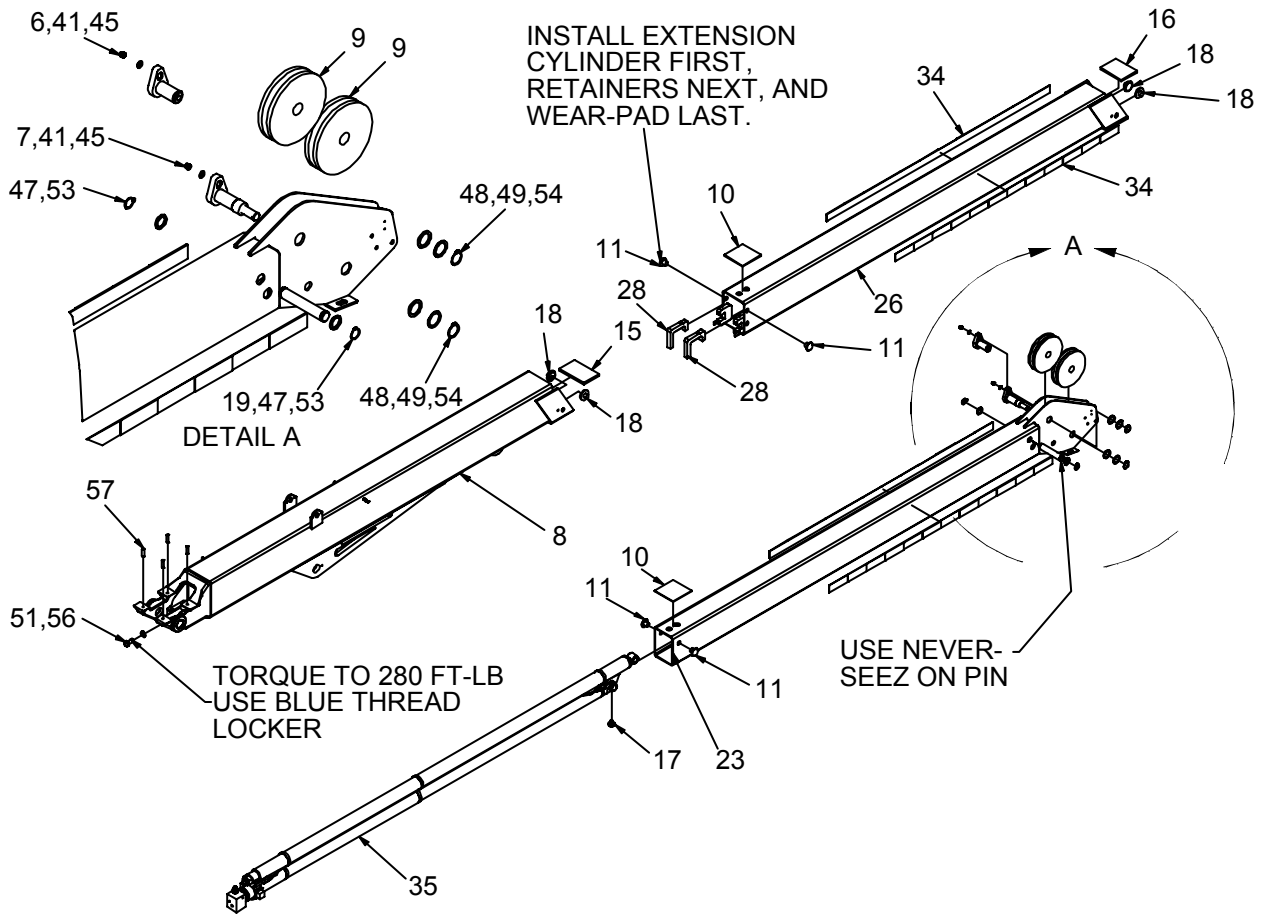
71411458 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71412024	WELDMENT, TUBE	1
2.	050LE0011	PISTON	1
3.	060LT0008	HEAD GLAND	1
4.	075TC0058	WELDMENT, ROD	1
5.	107KS0011	BUSHING	4
6.	108BL0006	LOCK NUT, 2.0-12 UN	1
7.	109BA0001	FITTING, 1/4-28 LUBE, STRAIGHT	2

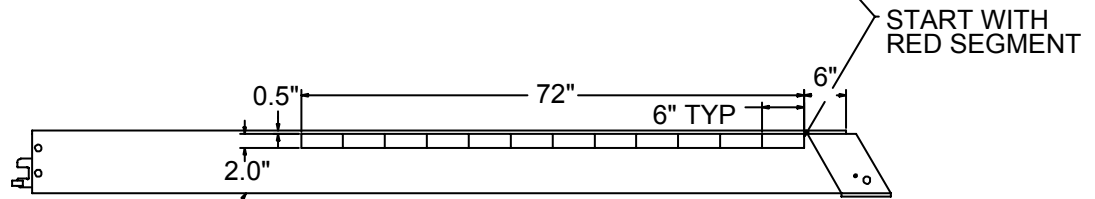
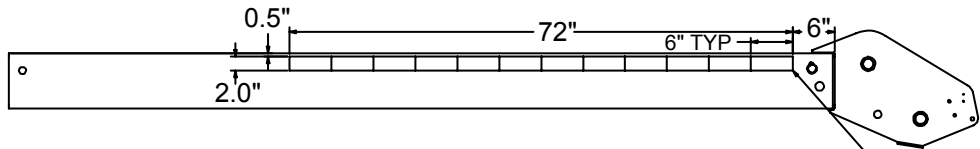
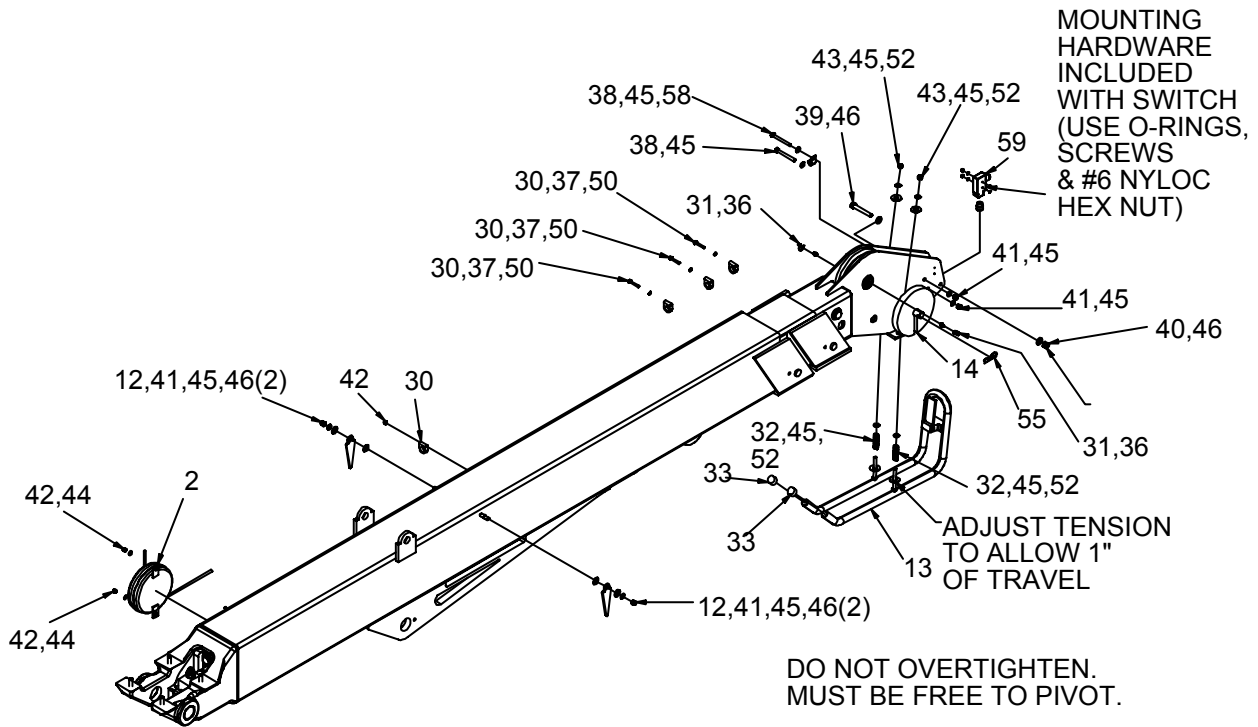
71411458 PARTS LIST			
8.		O-RING	1
9.		O-RING	1
10.		O-RING	1
11.		BACKUP RING, DYNAMIC	2
12.		BACKUP RING	1
13.		DISO-PAC	1
14.		SEAL	1
15.		ROD WIPER	1
16.		WEARBAND	2
17.		WEARBAND	2
18.		INSERT, LOCKING	2
19.	092LT0056	SEAL KIT (INCL. 8-18)	REF

REV. B 20060111

# Boom Assemblies & Cylinders

## Boom Assembly (99903756) (Eff. 12-20-06)





BOOM-1ST STAGE EXT WELDMENT

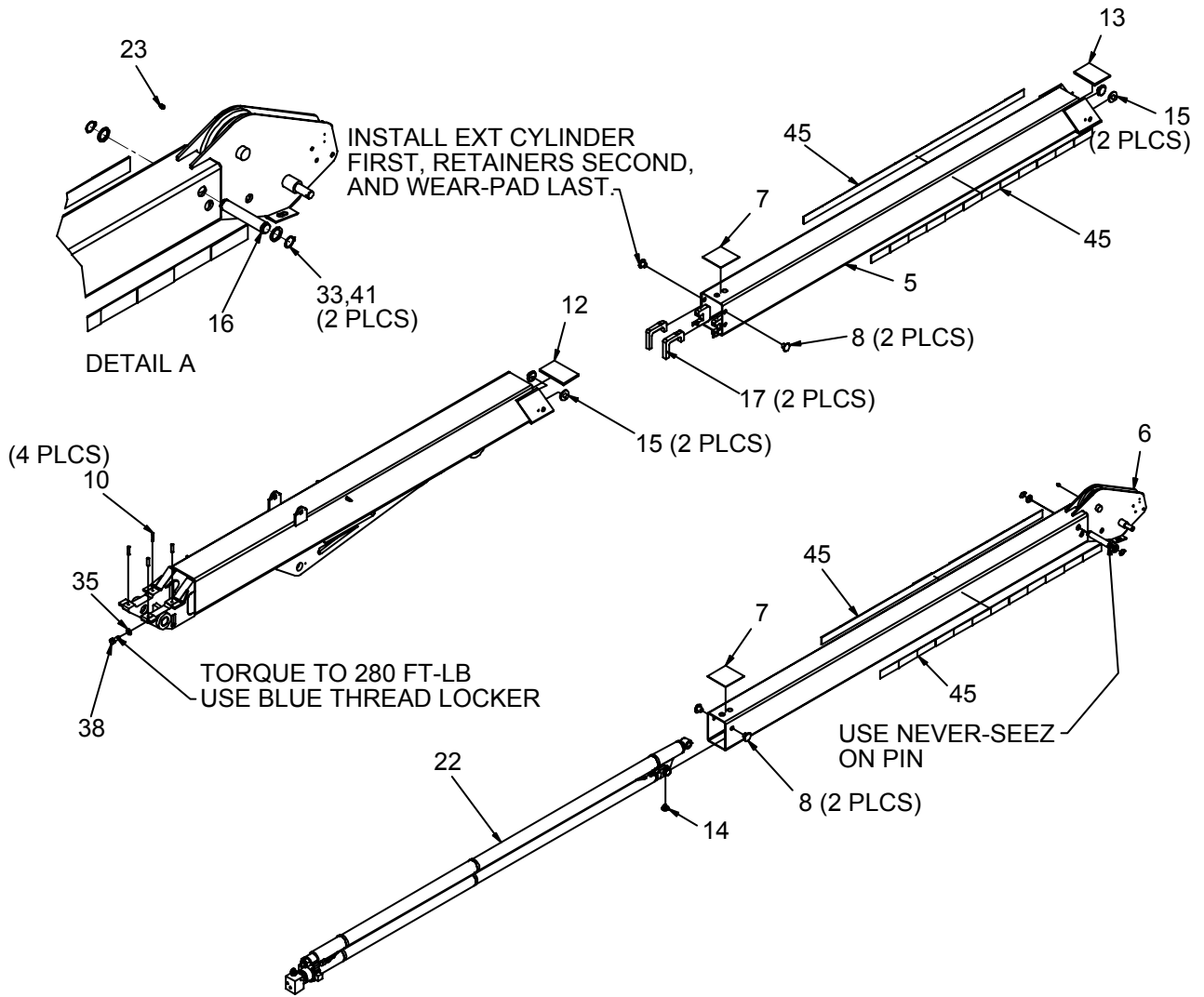
99903756 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51719591	HARDWARE KIT- BOOM (INCL 31-34,36-58)	1
2.	51713168	CORD REEL ASM-W/PACKARD CONN	1
3.	52718005	TUBE WELDMENT- ANTI TWO BLOCK	1
4.	52718672	BOOM-1st STAGE EXT WLDMT	1
5.	52718673	BOOM-2nd STAGE EXT WLDMT	1
6.	52719124	PIN	1
7.	52719371	PIN	1
8.	52719746	BOOM-LOWER WLDMT	1



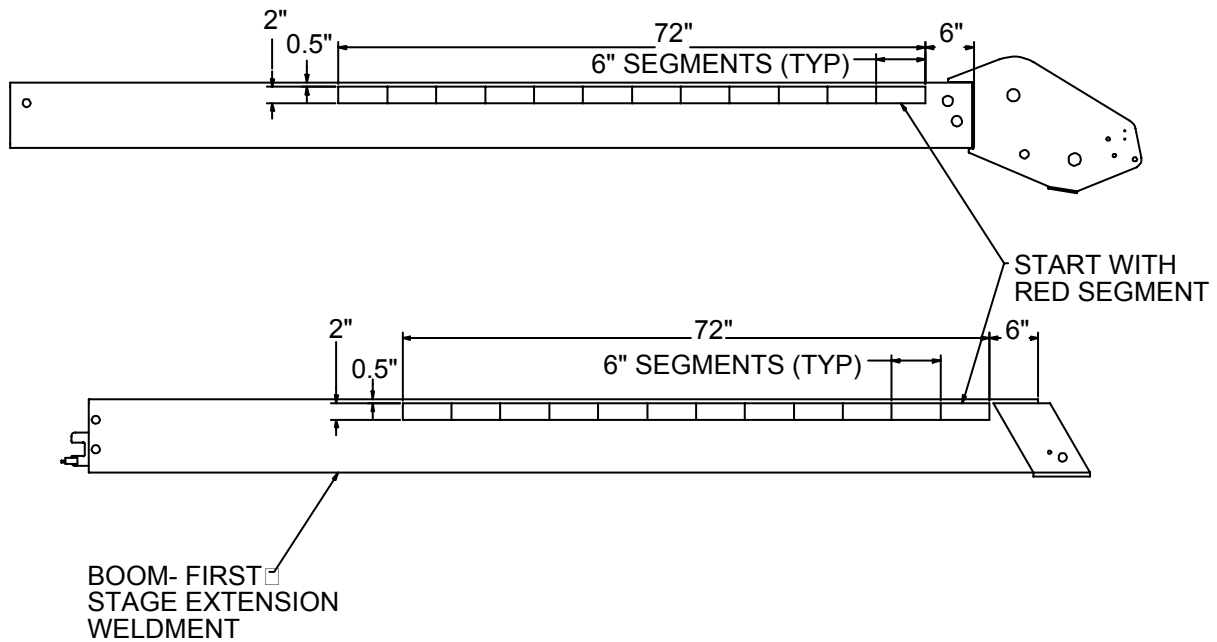
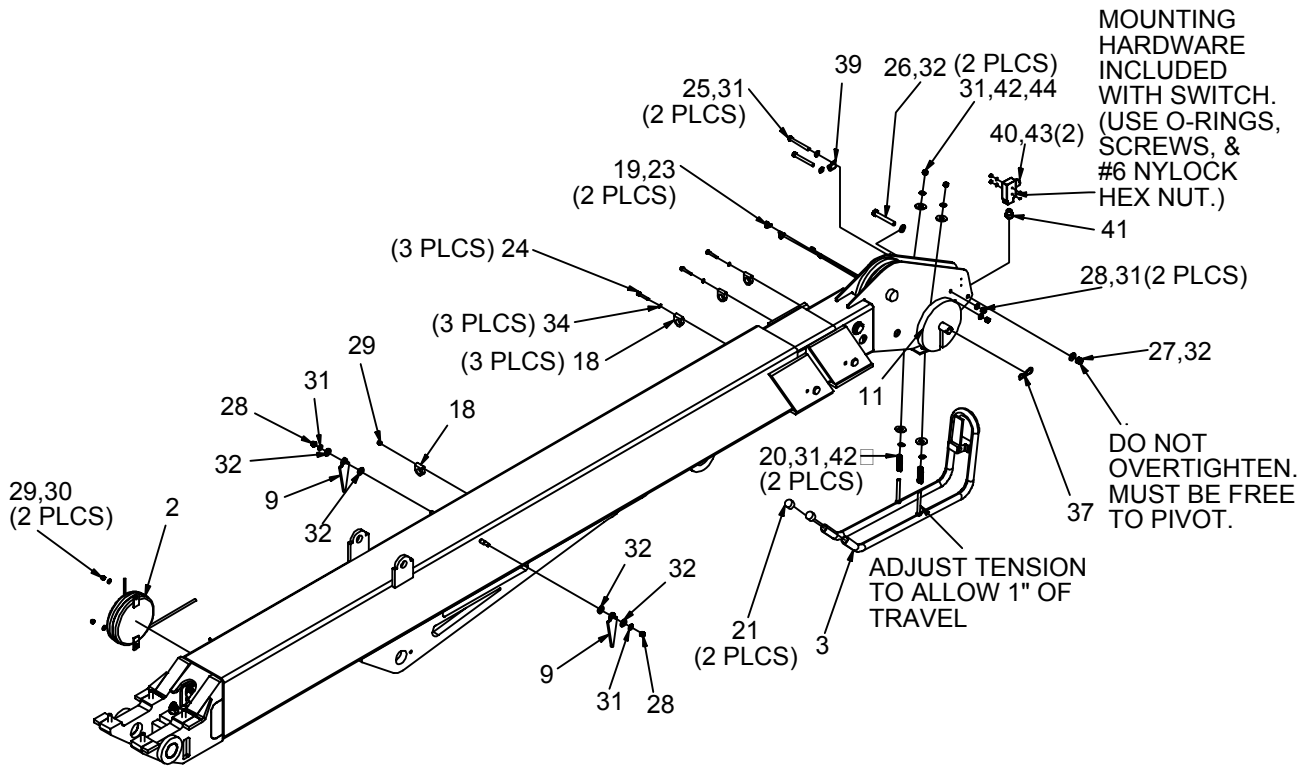
99903756 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
9.	60030255	SHEAVE- 9.00 NYLATRON GSM	2
10.	60030336	WEAR PAD-RC .19 X 6.00 X 6.00	2
11.	60030337	WEAR PAD-RND 2.00 DIA X 1.00 DIA X 1.188 LG	4
12.	60105544	PLATE-ANGLE PLASTIC	2
13.	60122270	TUBE- ANTI TWO BLOCK	1
14.	60122358	PLATE-SINGLE SHEAVE (12#) 6020	1
15.	60122982	WEAR PAD-0.50 X 5.00 X 7.88 ERTALYTE-TX	1
16.	60122983	WEAR PAD-RC	1
17.	60122984	WEAR PAD-RND 6625 CYLINDER	1
18.	60122985	WEAR PAD-RND 6625 BOOMS	4
19.	60122986	PIN-TYPE A 1.25X 7.00 ( 6.31)	1
20.	60123222	BLOCK-TPD .25-20X1.25X 1.00DIA	1
21.	60125019	PLATE- .25X 1.50X 4.00	1
22.	60125020	T-PLATE- ANTI TWO BLOCK	1
23.	60126246	TUBE-2nd STAGE BOOM EXT	1
24.	60126247	EAR-2nd STAGE BOOM EXT	2
25.	60126248	PLATE-REINF 2nd STAGE BOOM EXT	2
26.	60126257	TUBE-1st STAGE BOOM EXT	1
27.	60126258	SIDE PLATE-1st STAGE EXT CYL CONN	2
28.	60126259	RETAINER-1st STAGE EXT CYL	2
29.	60126482	PLATE-RETAINER STOP BLOCK	2
30.	70034381	SUPPORT	4
31.	70034382	CAP-GREASE	2
32.	70146096	SPRING 0.62 X 2.50 X 14 GA.	2
33.	70396121	CAP-PLSTC 1.00 TUBE OD X 0.68 HGT BLACK	2
34.	70396734	DECAL-BOOM LENGTH INDICATOR	4
35.	71410928	CYL ASSEMBLY	1
36.	72053508	ZERK-NPT .12	2
37.	72060007	CAP SCR .25-20X 1.75 HH GR5 Z	3
38.	72060055	CAP SCR .38-16X 3.50 HH GR5 Z	4
39.	72060098	CAP SCR .50-13X 3.50 HH GR5 Z	1
40.	72062080	NUT .50-13 HEX NYLOCK	1
41.	72062103	NUT .38-16 HEX NYLOCK	6
42.	72062104	NUT .25-20 HEX NYLOCK	3
43.	72062179	NUT .38-16 HEX CENTER LOCKING	2
44.	72063001	WASHER .25 FLAT	2
45.	72063003	WASHER .38 FLAT	12
46.	72063005	WASHER .50 FLAT	6
47.	72063035	MACHY BUSHING 1.25X10 GA NR	2
48.	72063036	MACHY BUSHING 1.50X14 GA NR	2
49.	72063037	MACHY BUSHING 1.50X10 GA NR	2
50.	72063049	WASHER .25 LOCK	3
51.	72063116	WASHER .75 N FLAT H ASTM F436Z	1
52.	72063117	WASHER .56 FLAT ASTM F436	4
53.	72066129	RETAINING RING-EXT 1.25 STD	2

99903756 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
54.	72066088	RETAINING RING-EXT 1.50 STD	2
55.	72066145	HAIR PIN .19 ZINC	1
56.	72601484	CAP SCR .75-10X 1.75 HH GR8 Z	1
57.	72601757	STUD .50-13X 2.00 NC GR5 STL	4
58.	72661312	CLAMP- .50 LOOP CUSHIONED	1
59.	77041459	SWITCH-LIMIT ZE-N-2S	1
60.	77044468	CONNECTOR- .50 STR RLF .12-.25	1
NEW 20060330			

# Boom Assembly (99903624) (Through 12-19-05)



99903624 DRAWINGS



**NOTE:**

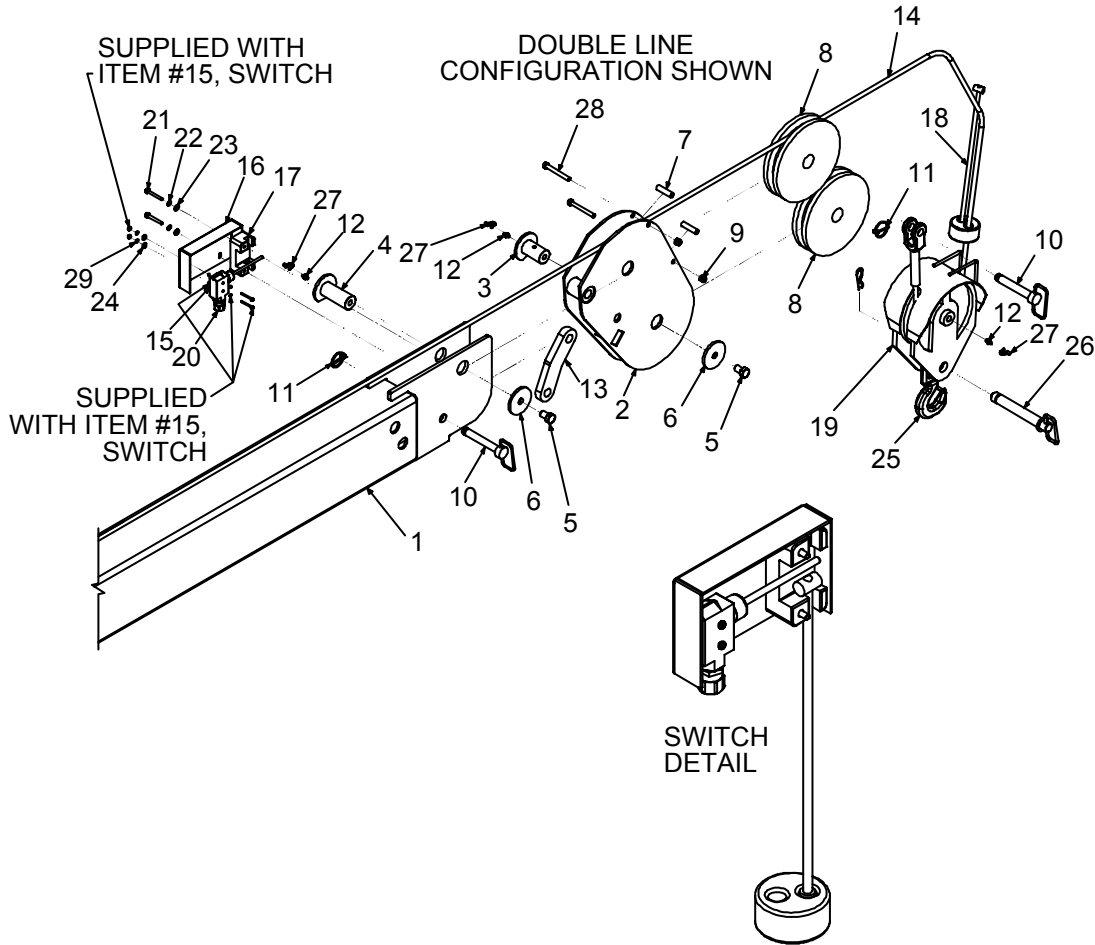
ITEM 45, 70396627, IS A BOOM LENGTH INDICATOR DECAL. EACH RED SEGMENT AND EACH WHITE SEGMENT IS 6-INCHES LONG, SO A RED AND WHITE PAIR OF SEGMENTS IS 1-FOOT LONG. BY COUNTING THE NUMBER OF RED AND WHITE PAIRS, THE OPERATOR CAN DETERMINE HOW FAR THE BOOM IS EXTENDED, AND THUS, THE CAPACITY AT THAT PARTICULAR REACH.

<b>BOOM ASSEMBLY PARTS LIST (99903624)</b>			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51718758	HARDWARE KIT	1
2.	51713168	CORD REEL ASM	1
3.	52718005	TUBE WELDMENT- ANTI TWO BLOCK	1
4.	52719442	BOOM-LOWER WLDMT ASM	1
5.	52718672	BOOM-1st STAGE EXT WLDMT	1
6.	52718673	BOOM-2nd STAGE EXT WLDMT	1
7.	60030336	WEAR PAD-RC	2
8.	60030337	WEAR PAD-RND	4
9.	60105544	PLATE-ANGLE PLASTIC	2
10.	72601757	STUD .50-13X 2.00 NC GR5 STL (PART OF #1 )	4
11.	60122358	PLATE-SINGLE SHEAVE	1
12.	60122982	WEAR PAD	1
13.	60122983	WEAR PAD-RC	1
14.	60122984	WEAR PAD-RND	1
15.	60122985	WEAR PAD-RND	4
16.	60122986	PIN-TYPE A 1.25X 7.00 ( 6.31)	1
17.	60126259	RETAINER	2
18.	70034381	SUPPORT	4
19.	70034382	CAP- GREASE ZERK (PART OF #1)	2
20.	70146096	SPRING 0.62 X 2.50 X 14 GA. (PART OF #1)	2
21.	70396121	CAP-PLSTC (PART OF #1)	2
22.	71410928	CYLINDER ASSEMBLY	1
23.	72053508	ZERK-NPT .12 (PART OF #1)	2
24.	72060007	CAP SCR .25-20X 1.75 HH GR5 Z (PART OF #1 )	3
25.	72060055	CAP SCR .38-16X 3.50 HH GR5Z (PART OF #1)	2
26.	72060098	CAP SCR .50-13X 3.50 HH GR5 Z (PART OF #1)	1
27.	72062080	NUT .50-13 HEX NYLOCK (PART OF #1)	1
28.	72062103	NUT .38-16 HEX NYLOCK (PART OF #1)	4
29.	72062104	NUT .25-20 HEX NYLOCK (PART OF #1)	3
30.	72063001	WASHER .25 FLAT (PART OF #1) (WAS 6)	2
31.	72063003	WASHER .38 FLAT (PART OF #1)	10
32.	72063005	WASHER .50 FLAT (PART OF #1)	6
33.	72063035	MACHY BUSHING 1.25X10 GANR (PART OF #1 )	2
34.	72063049	WASHER .25 LOCK (PART OF #1) (WAS 2)	3
35.	72063116	WASHER .75 N FLAT H ASTM F (PART OF #1)	1
37.	72066145	HAIR PIN .19 ZINC (PART OF #1)	1
38.	72601484	CAP SCR .75-10X 1.75 HH GR8Z (PART OF #1)	1
39.	72661312	CLAMP- .50 LOOP CUSHIONED (PART OF #1)	1
40.	77041459	SWITCH-LIMIT	1
41.	77044468	CONNECTOR- .50 STR RLF .12-.25	1

<b>BOOM ASSEMBLY PARTS LIST (99903624)</b>			
ITEM	PART #	DESCRIPTION	QUANTITY
42.	72063117	WASHER 0.56 FLAT (PART OF #1)	4
43.	72601726	NUT #6-32 HEX NYLOCK (PART OF #40)	2
44.	72062179	NUT 3/8-16 HEX CNTR LOCK (PART OF #1)	2
45.	70396734	DECAL-BOOM LENGTH INDICATOR	4

REV. J 20051115

## Flip Sheave Assembly (99904248)



99904248 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52720362	BOOM-2nd STAGE EXT WLDMT	1
2.	52709455	SHEAVE-WLDMT (FLIP)	1
3.	52707730	PIN-TYPE M 1.50X 2.50	1
4.	52709438	PIN-TYPE M 1.50X 3.50	1
5.	72060147	CAP SCR .62-11X 1.00 HH GR5 Z	2
6.	60109337	RETAINER PLT-PIN 3.00 DIA	2
7.	60102596	SPACER- .38 BLK PIPE X 2.00	2
8.	60030255	SHEAVE- 9.00 NYLATRON GSM	2
9.	72062103	NUT .38-16 HEX NYLOCK	2
10.	72661514	PIN- .75X 4.50 LG	2
11.	72661543	PIN-QUICK 316-10QP	2
12.	72053508	ZERK-NPT .12	3
13.	60130291	LINK-FLIP SHEAVE	1
14.	70580143	CABLE ASM	1

99904248 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
15.	77041291	SWITCH-LIMIT	1
16.	60127876	COVER-ANTI 2 BLOCK MICRO SWITCH LEFT	1
17.	60113594	MTG BLOCK-COVER ANTI-2BLK	1
18.	52709413	CABLE-WLDMT ANTI-2 BLOCK	1
19.	52720363	GUARD-WLDMT SNATCH BLOCK FLIP	1
20.	77044468	CONNECTOR- .50 STR RLF .12-.25	1
21.	72060008	CAP SCR .25-20X 2.00 HH GR5 Z	2
22.	72063049	WASHER .25 LOCK	2
23.	72063001	WASHER .25 FLAT	2
24.	72063098	WASHER .16 W FLAT ANSI B27.2Z	2
25.	70732882	HOOK-SWVL POS LOCK BBRG 5.9TON	1
26.	73733171	PIN LOCK 1X6 W/HAIR PIN	1
27.	70034382	CAP-GREASE	3
28.	72060893	CAP SCR .38-16X 3.25 HH GR5 Z	2
29.	72063047	WASHER #10 LOCK	2
NEW 20070516			

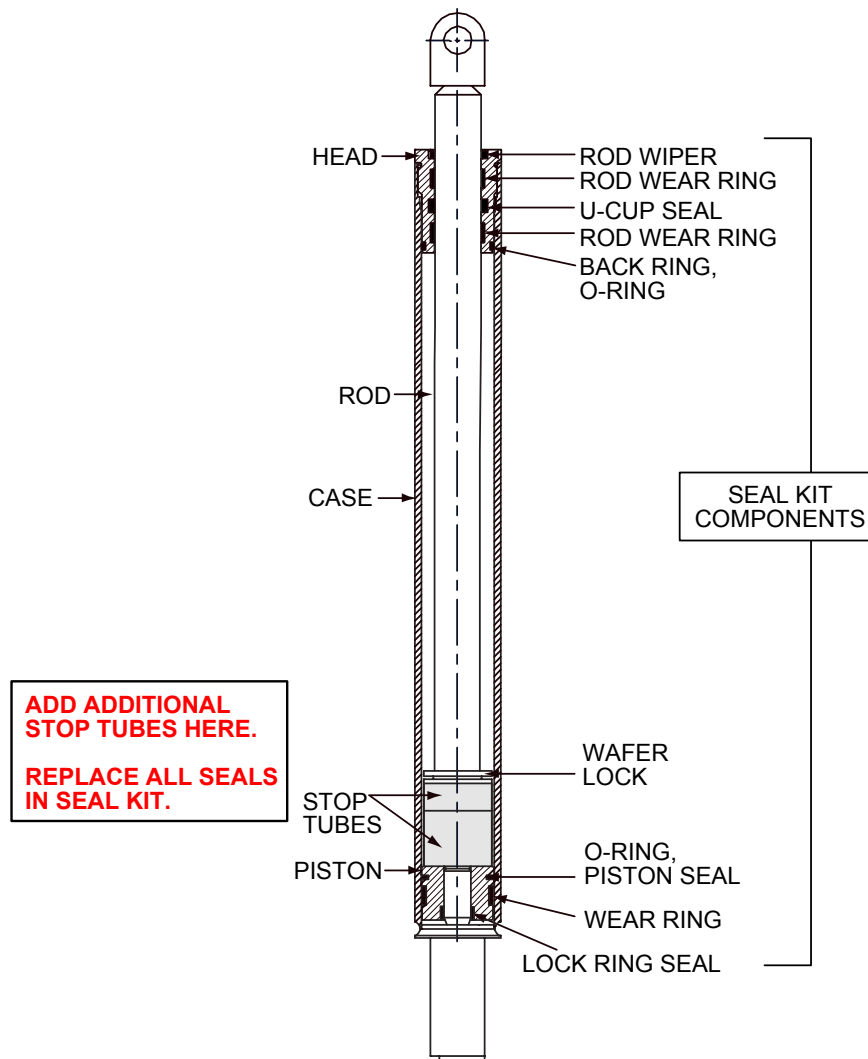


## Crane Reach Retrofit Kits

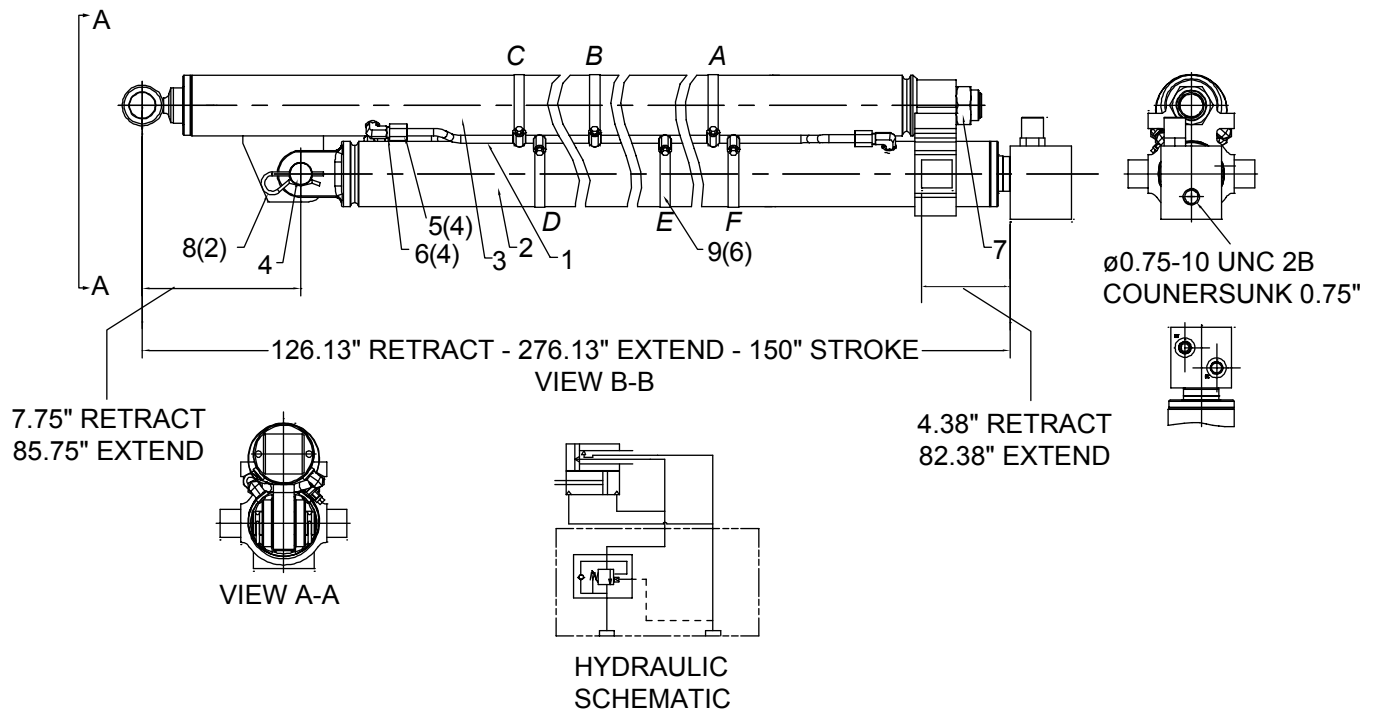
IMT has developed a retrofit kit to shorten the reach of your crane below 25', to 24'-10", if desired. Each kit contains capacity placards, a cylinder seal kit, and two stop tubes.

MODEL	RETROFIT KIT PART #
5525	95721040
6025	95720927
6625	95721041

The retrofit kit is designed for upper cylinder, 71410931, in the extension cylinder assembly 71410928. When installing the retrofit kit, follow the cylinder repair instructions in the Telescopic Crane Operation & Safety Manual, IMT # 99903514. Be sure to replace all components in the seal kit as you reassemble the cylinder. Use all stop tubes - the stop tubes which were part of the original assembly, plus the stop tubes included in the retrofit kit. See figure for cylinder details.



## Cylinder Assembly, Extension (71410928)



### NOTE:

- 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 TORQUE ITEM #7 (LOCKNUT) WITH THREADLOCKING COMPOUND TO 325-380 FT-LB. USE LOCTITE GRADE 271 OR EQUIVALENT.
- 5 HOSE CLAMP LOCATIONS NOTED WITH LETTERS, IN VIEW B.

HOSE CLAMP DESIGNATION	CLAMP FUNCTION
A	BACK HYD. LINE TO ITEM #3
B	BOTH HYD LINES TO ITEM #3
C	FRONT HYD LINE TO ITEM #2
D	BACK HYDRAULIC LINE TO ITEM #2
E	BOTH HYDRAULIC LINES TO ITEM #2
F	FRONT HYDRAULIC LINE TO ITEM #2

71410928 CYLINDER DATA			
EXTENDED LENGTH	282.13" with both cylinders extended	RETRACTED LENGTH	42.70"
TOP CYLINDER (ITEM #3)	2.5" O.D., 1.7" I.D., 78.00" STROKE	TEST PRESSURE	3500
BOTTOM CYLINDER (ITEM #4)	2.7" O.D., 1.7" I.D., 78.00" STROKE	OPERATING PRESSURE	3000 PSI

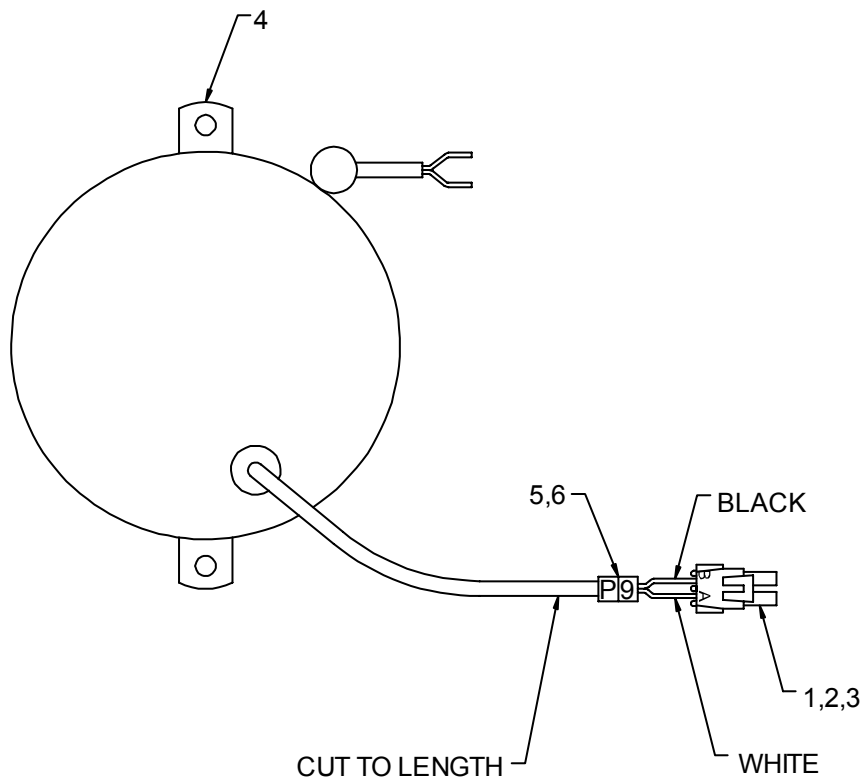
71410928 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	001EE0006	HYDRAULIC LINE, EXT CYLINDER	2
2.	71410930	CYLINDER, 2.7/1.7 78.00 S	1
3.	71410931	CYLINDER, 2.5/1.7 72.00 S	1
4.	103MG0006	CLEVIS PIN	1
5.	106EA0006	NUT, #6 FLARELESS TUBE	4
6.	106EB0007	FERRULE, #6 FLARELESS TUBE	4
7.	108BL0002	LOCK NUT, 1.25-12 UNF	1
8.	108LZ0002	CLIP, HITCH PIN	2
9.	108NZ0005	CLAMP, HOSE	6

REV. B 20060111

**NOTE:**

The stroke on extension cylinder 71410931, the top cylinder in the 71410928 cylinder assembly, was shortened by 6" effective 6-15-2007.

## Cord Reel Assembly (51713168)

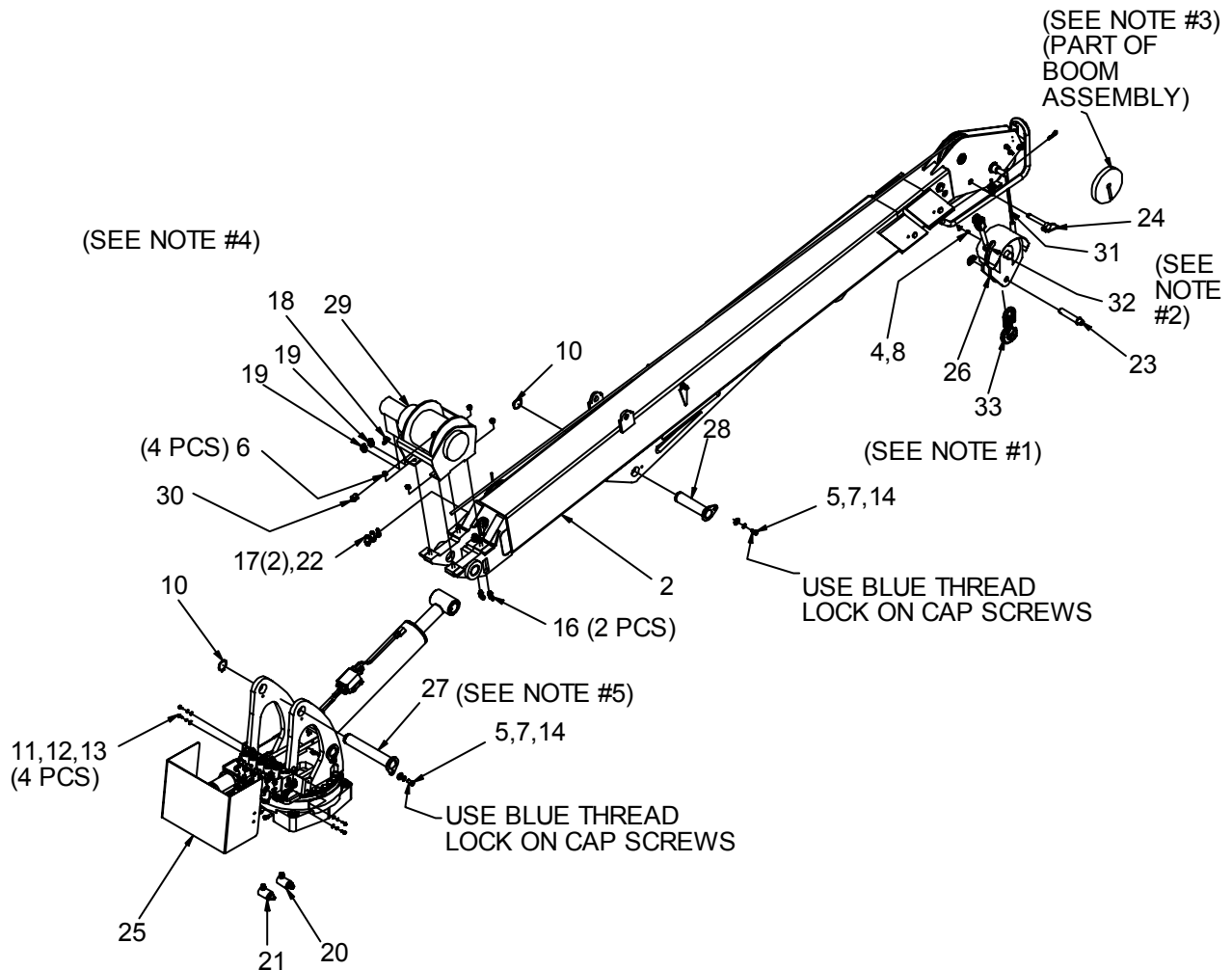


51713168 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	77044574	TOWER CONNECTOR	1
2.	77044552	PIN 18-20GA	2
3.	70394069	CABLE SEAL	2
4.	70732193	CORD REEL	1
5.	77041493	WIRE MARKER-PA2-P-YEL	1
6.	77041491	WIRE MARKER-PA2-9-YEL	1

# Crane & Winch Assemblies

## Crane & Winch Assembly (99903693) (Primary configuration)

### DOUBLE LINE APPLICATION

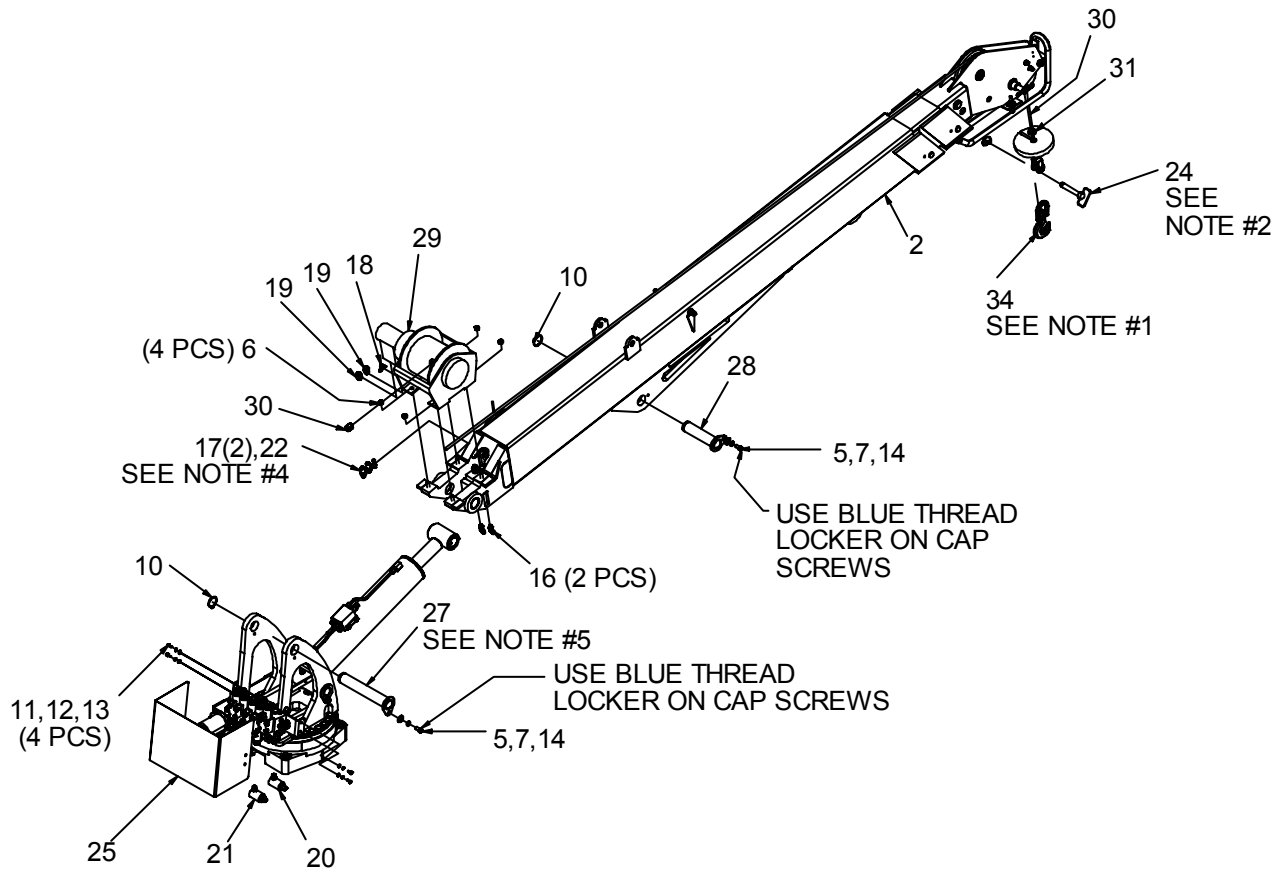


#### NOTES:

- 1 USE SWIVEL HOOK, ITEM #33, ON DOUBLE LINE CONFIGURATION. ATTACH ITEM #34, SINGLE LINE HOOK, TO UNDERSIDE OF BOOM AND CABLE HOOK.
- 2 FOR DOUBLE LINE APPLICATION, INSTALL ITEM #24 THROUGH THE BOOM SIDE PLATE AND THEN THROUGH THE WIRE ROPE CLEVIS.
- 3 MOUNT THE DOWN HAUL WEIGHT ON THE BOOM SIDE OF THE PLATE SHAFT.
- 4 REMOVE 90° ELBOW ON THE DRUM SIDE OF THE COUNTERBALANCE VALVE. ADD ITEM #18, TEE, AND RECONNECT TUBE FROM COUNTERBALANCE VALVE TO WINCH BRAKE.

- 5 IF REQUIRED, USE BUSHINGS (72063039) BETWEEN MAST AND BOOM WHEN INSTALLING PIN, ITEM #27.
- 6 CABLE WEDGE IS SUPPLIED WITH WINCH. SEE WINCH DRAWING FOR REPLACEMENT PART NUMBER.

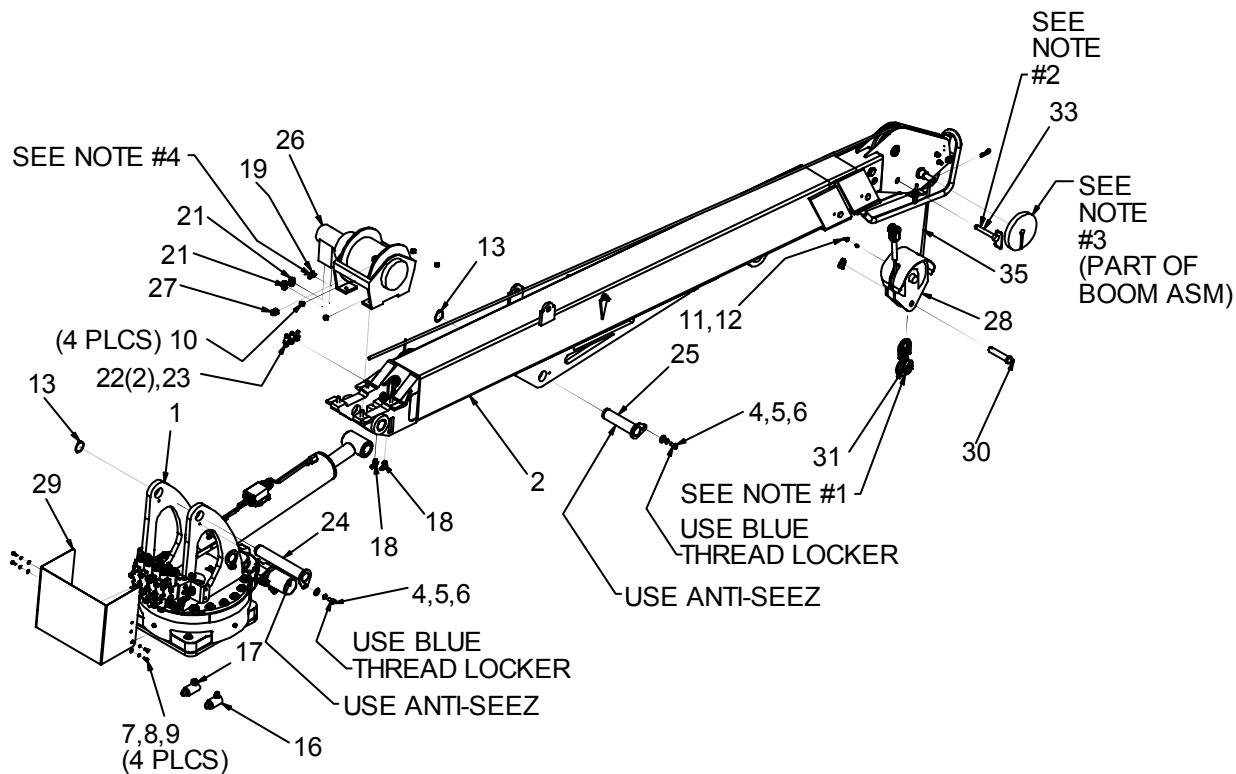
### SINGLE LINE APPLICATION



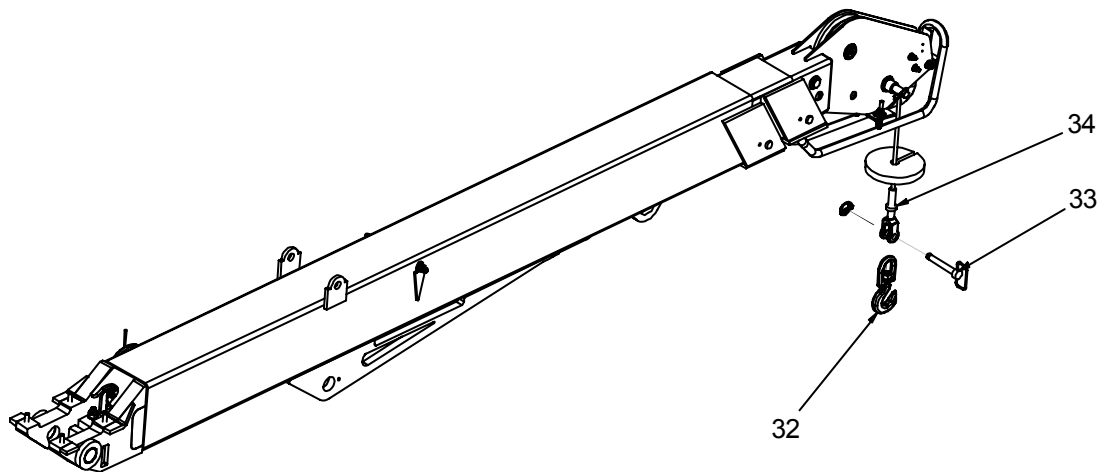
CRANE & WINCH ASSEMBLY PARTS LIST (99903693)			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	41719388	BASE & MAST ASY 6025 (Worm Drive)	1
2.	41718669	BOOM ASY 5525, 6025, 6625	1
3.	51718759	HARDWARE KIT-CRANE ASSEMBLY (INCL. 4-14)	1
4.	72053508	ZERK-NPT .12 (PART OF #3)	1
5.	72060091	CAP SCR .50-13X 1.00 HH GR5 Z(PART OF #3)	2
6.	72062232	NUT .50-13 HEX TOPLOCKGR8Z(PART OF #3)	4
7.	72063053	WASHER .50 LOCK (PART OF #3)	2
8.	70034382	CAP-GREASE ZERK (PART OF #3)	1
10.	72066136	RETAINING RING-EXT 2.00 HD (PART OF #3)	2
11.	72060002	CAP SCR .25-20X .75 HH GR5 Z (PART OF #3)	4
12.	72063049	WASHER .25 LOCK (PART OF #3)	4
13.	72063001	WASHER .25 FLAT (PART OF #3)	4
14.	72063132	WASHER .50 FLAT ASTM F436 (PART OF # 3)	2
15.	91719121	HYDRAULIC KIT-CRANE ASY (INCL. 16-22)	1
16.	72053760	ELBOW-M STR/90/M JIC 6 6 (PART OF #15)	2
17.	72533373	UNION-BULKHEAD 37 DEG JIC .75 (PART OF #15)	2
18.	72533573	TEE-STL JIC/STR/JIC 4 4 4 (PART OF #15)	1
19.	72532359	ADPTR-M STR/M JIC 10 8 (PART OF ITEM #15)	2
20.	72534412	SWIVEL-M JIC/90/M JIC 10 10 (PART OF # 15)	1
21.	72533648	SWIVEL-M JIC/90/M JIC 8 8 (PART OF #15)	1
22.	72533024	UNION-BULKHEAD 37 DEG JIC .44 (PART OF # 15)	1
23.	73733171	PIN LOCK 1X6 W/HAIR PIN	1
24.	72661514	PIN	1
25.	60128847	COVER-MAST VLV BANK 6025	1
26.	52715896	GUARD WELDMENT SNATCH BLOCK	1
27.	52718741	PIN TYPE-MM 2.00 X 12.75 (11.94)	1
28.	52718903	PIN TYPE-MM 2.00 X 9.00 (8.19)	1
29.	70570771	WINCH-PLANETARY 6000 LB LINE PULL	1
30.	71411150	CABLE WEDGE (SUPPLIED W/WINCH)	
31.	70580168	WIRE ROPE ASM-.44(6X25)X100' LH LAY	1
32.	70145121	COLLAR-SHAFT 2 PIECE 7/8 in.	1
33.	70732882	HOOK-SWVL POS LOCK BBRG 5.9TON	1
34.	71073035	HOOK-SWVL L-322 AN 5.0T W/LATCH	1

## Crane & Winch Assembly (99903695) (Alternate configuration)

### DOUBLE PART LINE APPLICATION



### SINGLE PART LINE APPLICATION



### NOTES:

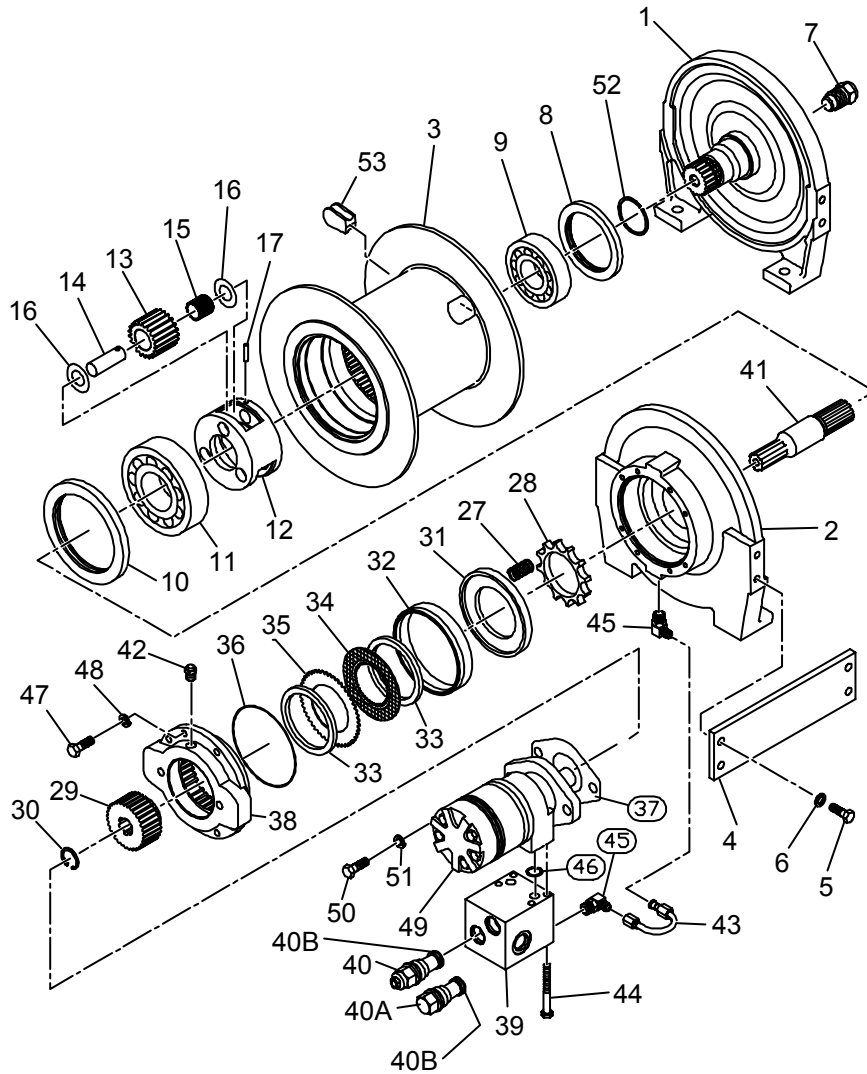
- 1 USING SWIVEL HOOK, ITEM #31, FOR DOUBLE PART LINE APPLICATION. ATTACH ITEM #32, SINGLE PART LINE HOOK, TO UNDERSIDE OF BOOM AND CABLE HOOK.



- 2 INSTALL ITEM #33, PIN, THROUGH THE BOOM SIDE PLATE AND THROUGH THE WIRE ROPE CLEVIS.
- 3 MOUNT THE DOWNHAUL WEIGHT ON THE BOOM SIDE OF THE PLATE SHAFT.
- 4 REMOVE THE 90° ELBOW ON THE DRUM SIDE OF THE COUNTERBALANCE VALVE. ADD ITEM #18 AND RECONNECT THE TUBE FROM THE COUNTERBALANCE VALVE TO THE WINCH BRAKE.
- 5 IF REQUIRED, USE THE 72063039 MACHY BUSHINGS BETWEEN THE MAST AND THE BOOM WHEN INSTALLING PIN, ITEM #12.
- 6 THE CABLE WEDGE IS SUPPLIED WITH THE WINCH. REFER TO WINCH DRAWING FOR REPLACEMENT PART NUMBER.

<b>CRANE &amp; WINCH ASSEMBLY PARTS LIST (99903695)</b>			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	41719390	BASE & MAST ASSEMBLY	1
2.	41718669	BOOM ASSEMBLY	1
3.	51718759	KIT-HARDWARE CRANE ASSEMBLY (INCL. 4-6,10-14)	1
4.	72063132	WASHER .50 FLAT ASTM F436 (PART OF #3)	2
5.	72063053	WASHER .50 LOCK (PART OF #3)	2
6.	72060091	CAP SCR .50-13X 1.00 HH GR5 Z (PART OF #3)	2
7.	72063001	WASHER .25 FLAT	4
8.	72063049	WASHER .25 LOCK	4
9.	72060002	CAP SCR .25-20X .75 HH GR5 Z	4
10.	72062232	NUT .50-13 HEX TOP LOCK GR8 Z (PART OF #3)	4
11.	72053508	ZERK-NPT .12 (PART OF #3)	1
12.	70034382	CAP-GREASE (PART OF #3)	1
13.	72066136	RETAINING RING-EXT 2.00 HD (PART OF #3)	2
15.	91719121	HOSE KIT-CRANE ASSEMBLY (INCL. 16-23)	1
16.	72533648	SWIVEL-M JIC/90/M JIC 8 8 (PART OF #15)	1
17.	72534412	SWIVEL-M JIC/90/M JIC 10 10 (PART OF #15)	1
18.	72053760	ELBOW-M STR/90/M JIC 6 6 (PART OF #15)	2
19.	72533573	TEE-STL JIC/STR/JIC 4 4 4 (PART OF #15)	1
21.	72532359	ADPTR-M STR/M JIC 10 8 (PART OF #15)	2
22.	72533373	UNION-BULKHEAD 37 DEG JIC .75 (PART OF #15)	2
23.	72533024	UNION-BULKHEAD 37 DEG JIC .44 (PART OF #15)	1
24.	52718741	PIN	1
25.	52718903	PIN	1
26.	70570771	WINCH, 6000 #	1
27.	71411150	CABLE WEDGE (SUPPLIED WITH WINCH)	1
28.	52715896	GUARD WELDMENT	1
29.	60128847	COVER-MAST VLV BANK	1
30.	73733171	PIN LOCK 1X6 W/HAIR PIN	1
31.	70732882	HOOK-SWVL POS LOCK BBRG 5.9TON	1
32.	71073035	HOOK-SWVL W/LATCH	1
33.	72661514	PIN	2
34.	70145121	COLLAR-SHAFT 2 PIECE 7/8 in.	1
35.	70580168	WIRE ROPE ASM-.44(6X25)X100' LH LAY	1

## Winch (70570761) (Used through 4-15-05)

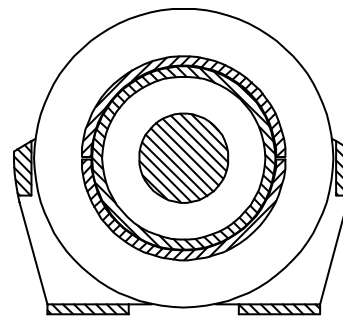
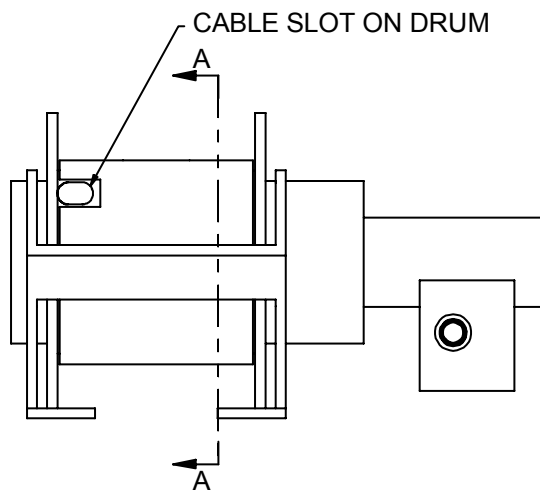
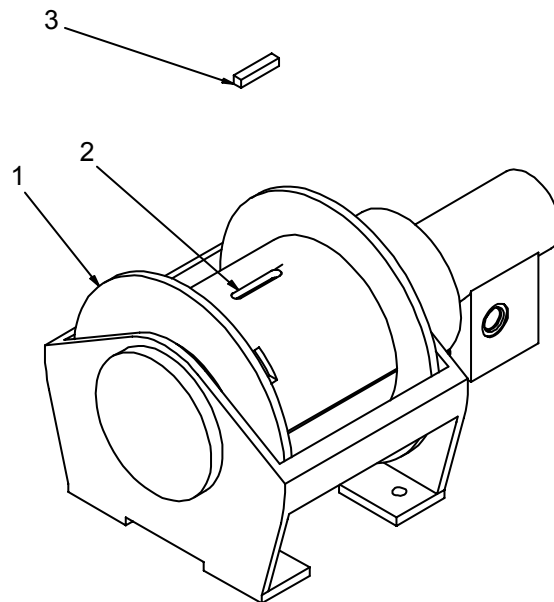


### 70570761 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	-	BEARING SUPPORT END PLATE	1
2.	-	BRAKE CYLINDER END PLATE	1
3.	-	CABLE DRUM	1
4.	-	TIE PLATE	2
5.	-	CAPSCREW (3/8-16 X 1 G8 Z)	8
6.	-	LOCKWASHER (3/8 Z)	8
7.	-	SIGHT GAUGE	1
8.	-	OIL SEAL	1 REF
9.	71411143	BALL BEARING	1
10.	-	OIL SEAL	1 REF
11.	71411144	BALL BEARING	1
12.	-	OUTPUT PLANET CARRIER	1

70570761 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
13.	-	OUTPUT PLANET GEAR	3
14.	-	OUTPUT PLANET GEAR SHAFT	3
15.	71411145	ROLLER BEARING	3
16.	-	THRUST RACE	6
17.	-	ROLL PIN	3
27.	71411146	SPRING	12
28.	-	SPRING LOCATOR	1
29.	-	BRAKE COUPLING	1
30.	-	RETAINING RING	1
31.	-	SPRING PLATE	1
32.	-	BRAKE PISTON SEAL	1 REF
33.	-	BRAKE PLATE SPACER	2
34.	71411147	FRICITION DISK	8
35.	71411148	STEEL DISK	9
36.	-	O-RING	1 REF
37.	-	GASKET	1 REF
38.	-	MOTOR ADAPTER	1
39.	-	BRAKE VALVE BLOCK	1
40.	71733943	COUNTERBALANCE CARTRIDGE	1
40A.	71733944	CHECK VALVE CARTRIDGE (PART OF 40)	1REF
40B.	76733945	SEAL KIT (PART OF 40)	1REF
41.	-	SUN GEAR	1
42.	71411149	VENT PLUG	1
43.	-	TUBE ASSEMBLY	1
44.	-	CAPSCREW (5/16-18 X 3-1/2 G5)	2
45.	-	ELBOW FITTING	2
46.	-	O-RING	2 REF
47.	-	CAPSCREW (5/16-18 X 1 G5)	8
48.	-	LOCKWASHER (5/16/)	8
49.	73511057	HYDRAULIC MOTOR (13.9 cu in)	1
50.	-	CAPSCREW (1/2-13 X 1-1/4 G8 Z)	2
51.	-	LOCKWASHER (1/2)	2
52.	-	RETAINING RING	1
53.	71411150	CABLE WEDGE	1
54.	94744136	SEAL KIT (INCL. 8,10,32,36,37,46)	1

## Winch Drum Weldment (52719305) (Used through 4-15-05)

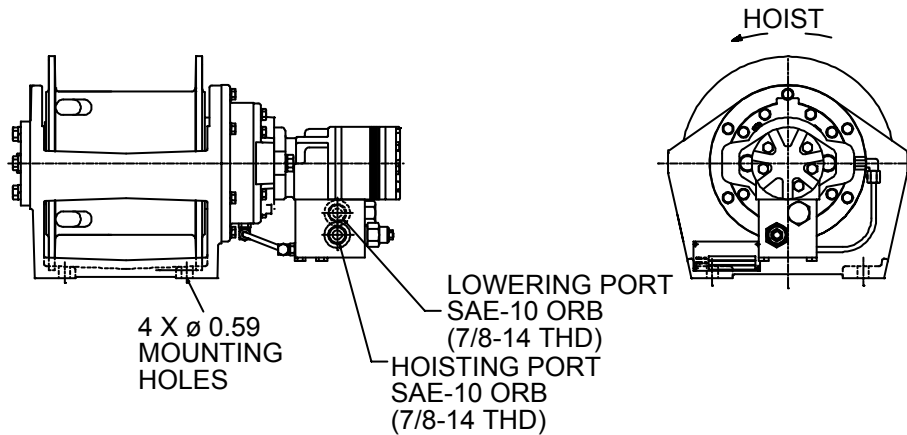


SECTION A-A  
SCALE 0.44:1

### 52719305 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	70570761	WINCH, 5500 LB	1
2.	60128178	SLEEVE, WINCH DRUM	1
3.	60128184	KEY	1

## Winch Performance (70570771)



### 70570771 WINCH SPECIFICATIONS

LAYER	LINE PULL (POUNDS)	LINE SPEED (FPM)	CAPACITY (FT)
1	6000	50	34
2	5400	55	72
3	4920	60.6	114
4	4510	72	160

ULTIMATE SAFETY FACTOR = 2.5:1  
 GEAR RATIO = 5:1

### PERFORMANCE ESTIMATE

PRESSURE	3000 PSI
FLOW	10 GPM
MOTOR DISPLACEMENT	11.9 CI/REV

### DRUM SPECIFICATIONS

DRUM DIAMETER	7.50 INCHES
FLANGE DIAMETER	11.125 INCHES
WIDTH	7.28 INCHES
ROPE	0.44" DIAMETER

## Winch Oil Specifications

The use of proper gear oil and regular preventive maintenance will help extend gear train life and reliable winch brake performance.

### Lubricants

The following lubricants are recommended based on ambient temperature. Other lubricants may work equally as well. We suggest you work with your lubricant supplier to find an equivalent product if needed. The winch is initially filled with Exxon Spartan EP150 or equivalent.

Prevailing Ambient Temperature	Recommended Lubricant
25 - 130 °F (-4 - 54 °C)	Exxon Spartan EP220 or equivalent (AGMA 5 EP, ISO VG 200)
10 - 100 °F (-12 - 38 °C)	Exxon Spartan EP 150 or equivalent (AGMA 4 EP, ISO VG 150) <i>Note:</i> Avoid using Exxon Spartan EP150 above 80 °F (27 °C) in severe applications such as offshore lifting, sustained fast duty cycles, or frequent lifting.
-25 - 130 °F (-32 - 54 °C)	Mobil SHC 629 or 630 synthetic or equivalent

### Oil Change Frequency

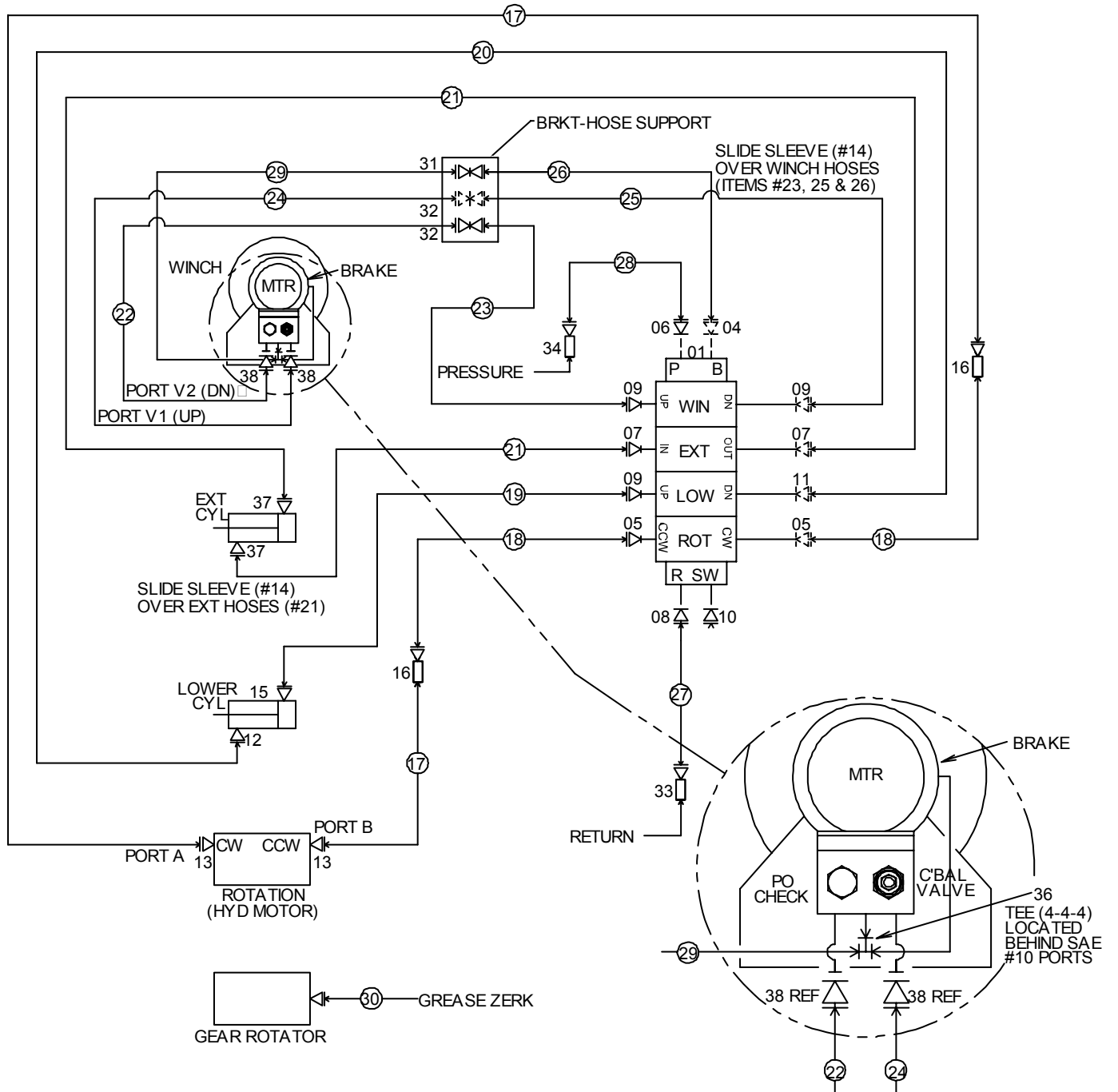
Gear oil should be changed after the first 100 hours or 30 days of machine operation, and then every 1000 hours or 12 months, whichever occurs first. Gear oil should also be changed whenever the ambient temperature changes significantly and an oil from a different temperature range would be more appropriate.

### Warm-Up Procedure

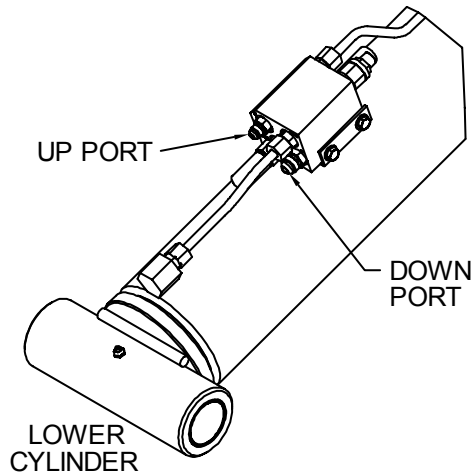
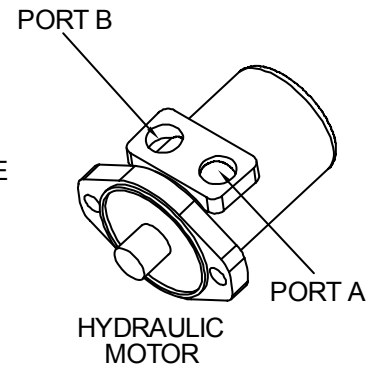
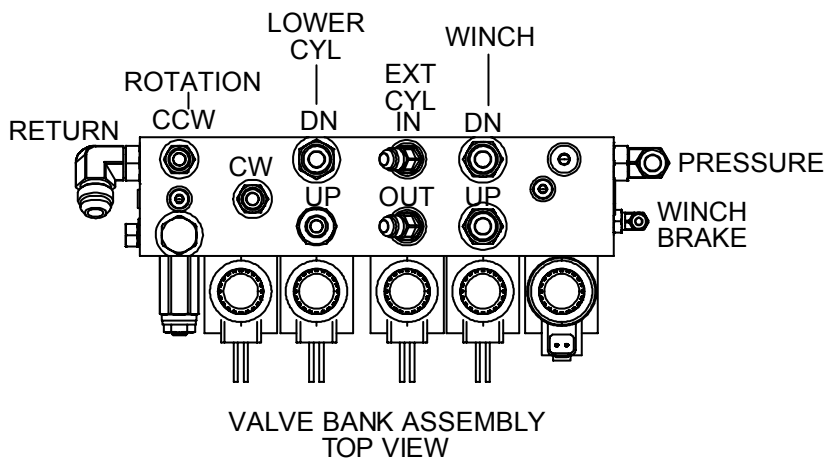
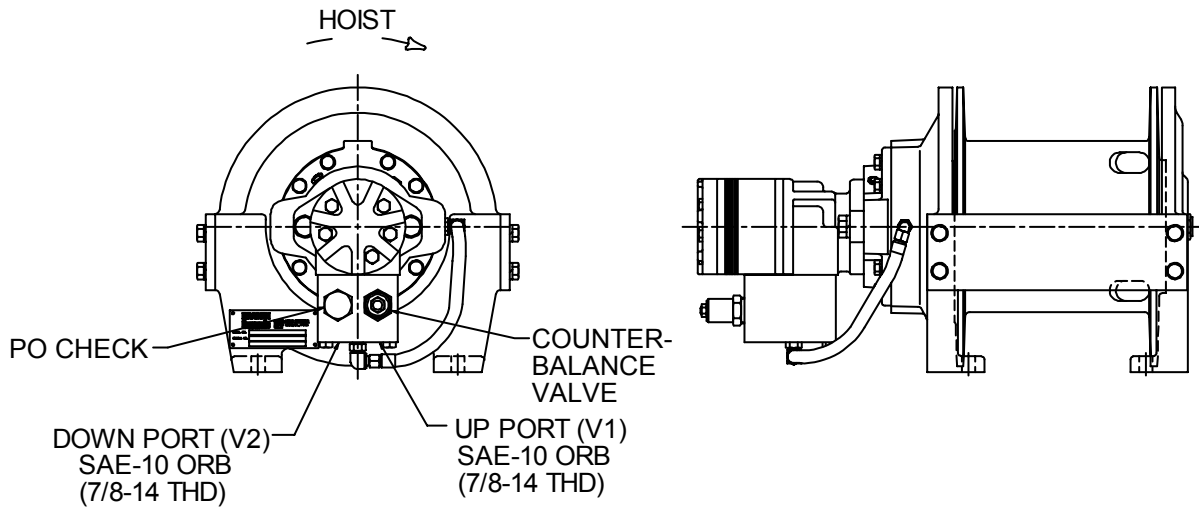
Warming up the winch is recommended at start-up and at ambient temperatures below 40 °F (4 °C). Run the prime mover at its lowest recommended RPM with the hydraulic winch control valve in neutral, allowing sufficient time to warm up the system. Operate the winch at low speeds, forward and reverse, several times to prime all lines with warm hydraulic oil and to circulate gear oil through the planetary gear sets.

# Hydraulic and Electrical System

## Hydraulic Installation, Primary Configuration (99903690)



### 99903690 LAYOUT AND FITTINGS

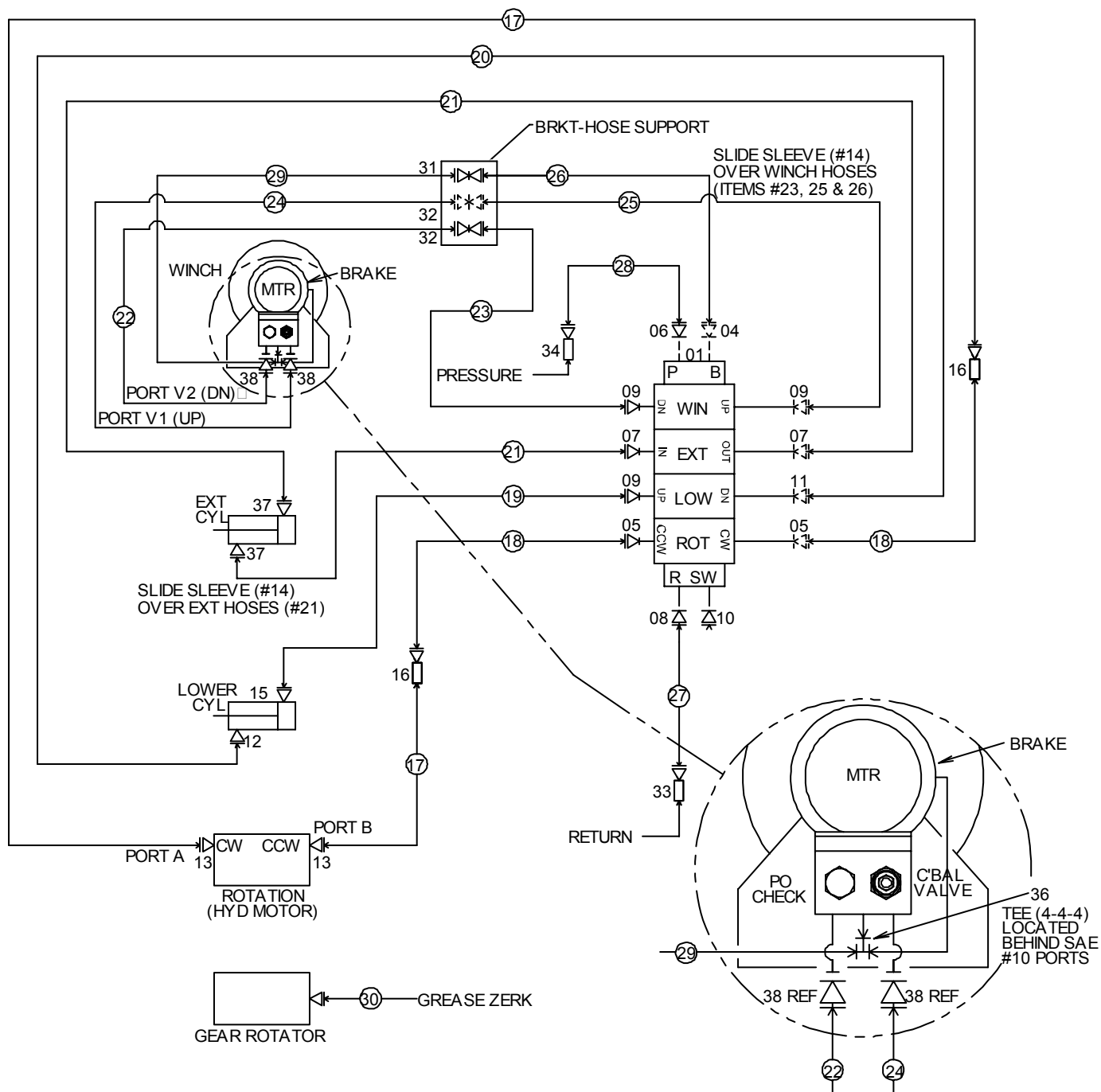




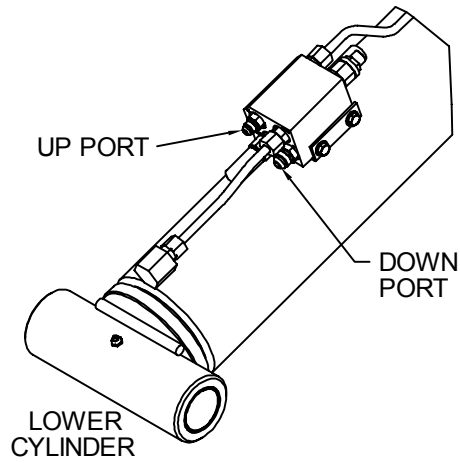
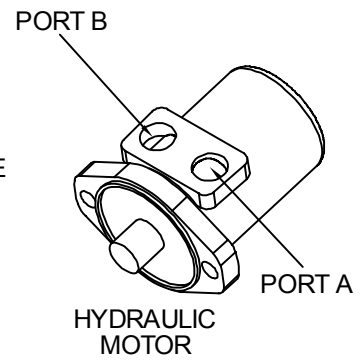
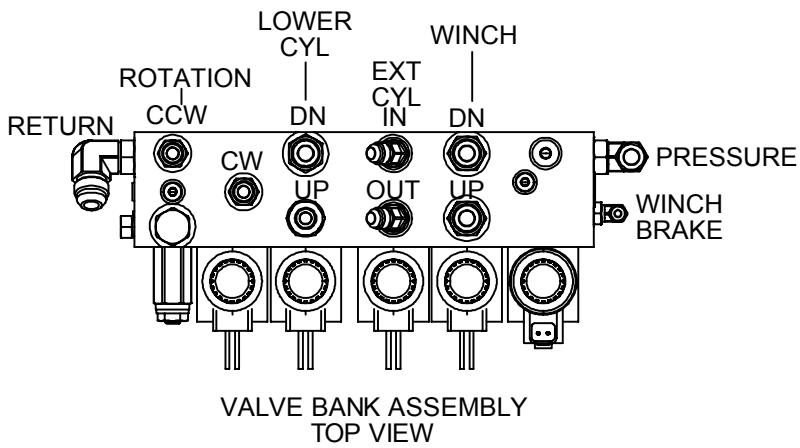
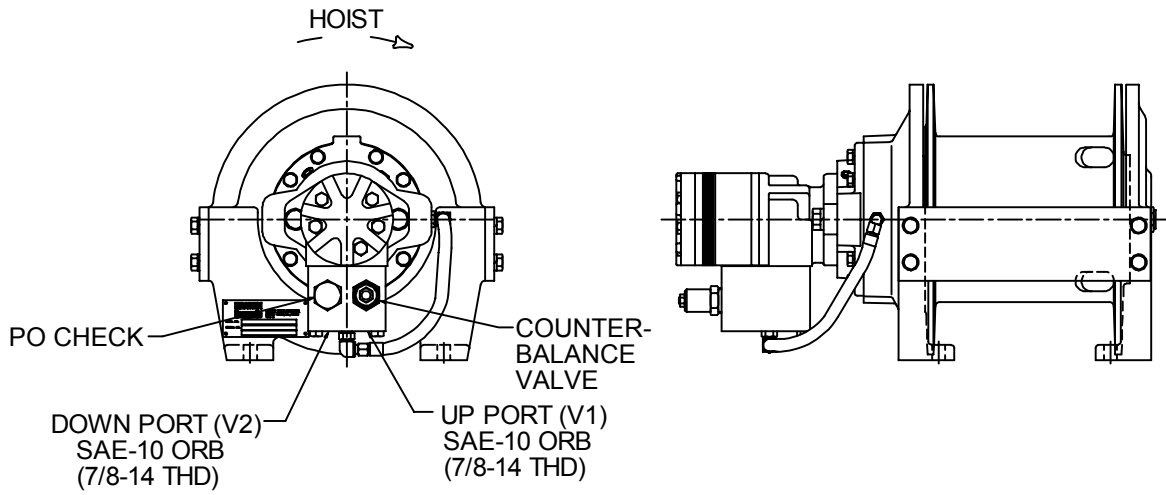
99903690 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51719127	VALVE BODY ASM (INCL. #4-11)	1
2.	91719130	HOSE KIT (INCLUDES #12-30)	1
3.	91719121	KIT - HYD CRANE ASSEMBLY (INCL. #31-38)	1
4.	72053758	ELBOW #4MSTR #4MJIC 90°	1
5.	72532353	ADAPTER #6MSTR #4MJIC	2
6.	72063763	ELBOW #8MSTR #8MJIC 90°	1
7.	72053776	ELBOW #6MSTR #6MJIC 45°	2
8.	72533507	ELBOW #8MSTR #10MJIC 90°	1
9.	72532358	ADAPTER #8MSTR #8 MJIC	3
10.	72532522	PLUG STR HH STL 0.44"	1
11.	72532356	ADAPTER #8MSTR #6MJIC	1
12.	72532355	ADAPTER #6MSTR #6MJIC	1
13.	72533589	ADAPTER #10MSTR #4MJIC	2
14.	60350128	SLEEVE, HOSE	2
15.	72532357	ADAPTER #6MSTR #8MJIC	1
16.	72534416	SWIVEL #4MJIC #4MJIC 90°	2
17.	51396579	HOSE FJ 1/4X19.4 OAL (4-4)	2
18.	51394948	HOSE FJ 1/4X21 OAL (4-4)	2
19.	51396580	HOSE FJ 1/2X24.5 OAL (8-8)	1
20.	51396581	HOSE FJ 3/8X26 OAL (6-6)	1
21.	51396582	HOSE FF 3/8X20.0 OAL (6-6)	2
22.	51394253	HOSE FZ 1/2X19.0 OAL (8-8)	1
23.	51396584	HOSE-FZ 1/2X27.5 OAL (8-8)	1
24.	51396732	HOSE FF 1/2X20.0 OAL (8-8)	1
25.	51396683	HOSE FJ 1/2X28 OAL (8-8)	1
26.	51396690	HOSE FJ 1/2X28 OAL (8-8)	1
27.	51396684	HOSE FZ 5/8X25 OAL (10-10)	1
28.	51396685	HOSE FF 1/2X38 OAL (8-8)	1
29.	51396686	HOSE FF 1/4 X 18 OAL (4-4)	1
30.	51395121	HOSE AA 1/8 X 13.5 OAL (2-2)	1
31.	72533024	UNION, BULKHEAD 37° JIC 0.44"	1
32.	72533373	UNION, BULKHEAD 37° JIC 3/4	2
33.	72534412	SWIVEL #10MJIC #10MJIC 90°	1
34.	72533648	SWIVEL #8MJIC #8MJIC 90°	1
36.	72533573	TEE, STEEL #4JIC #4STR #4JIC	1
37.	72053760	ELBOW #6MSTR #6MJIC 90°	2
38.	72532359	ADAPTER #10MSTR #8MJIC	2

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# Hydraulic Installation, Alternate Configuration (99903699)

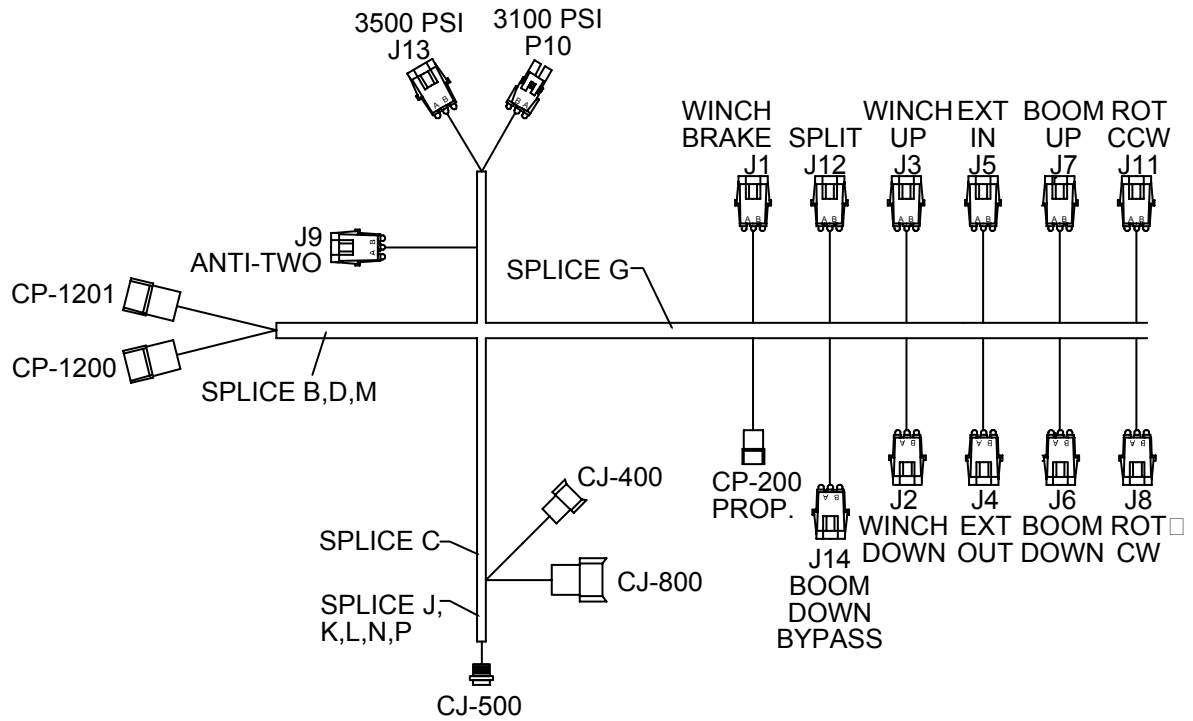


99903699 DRAWING

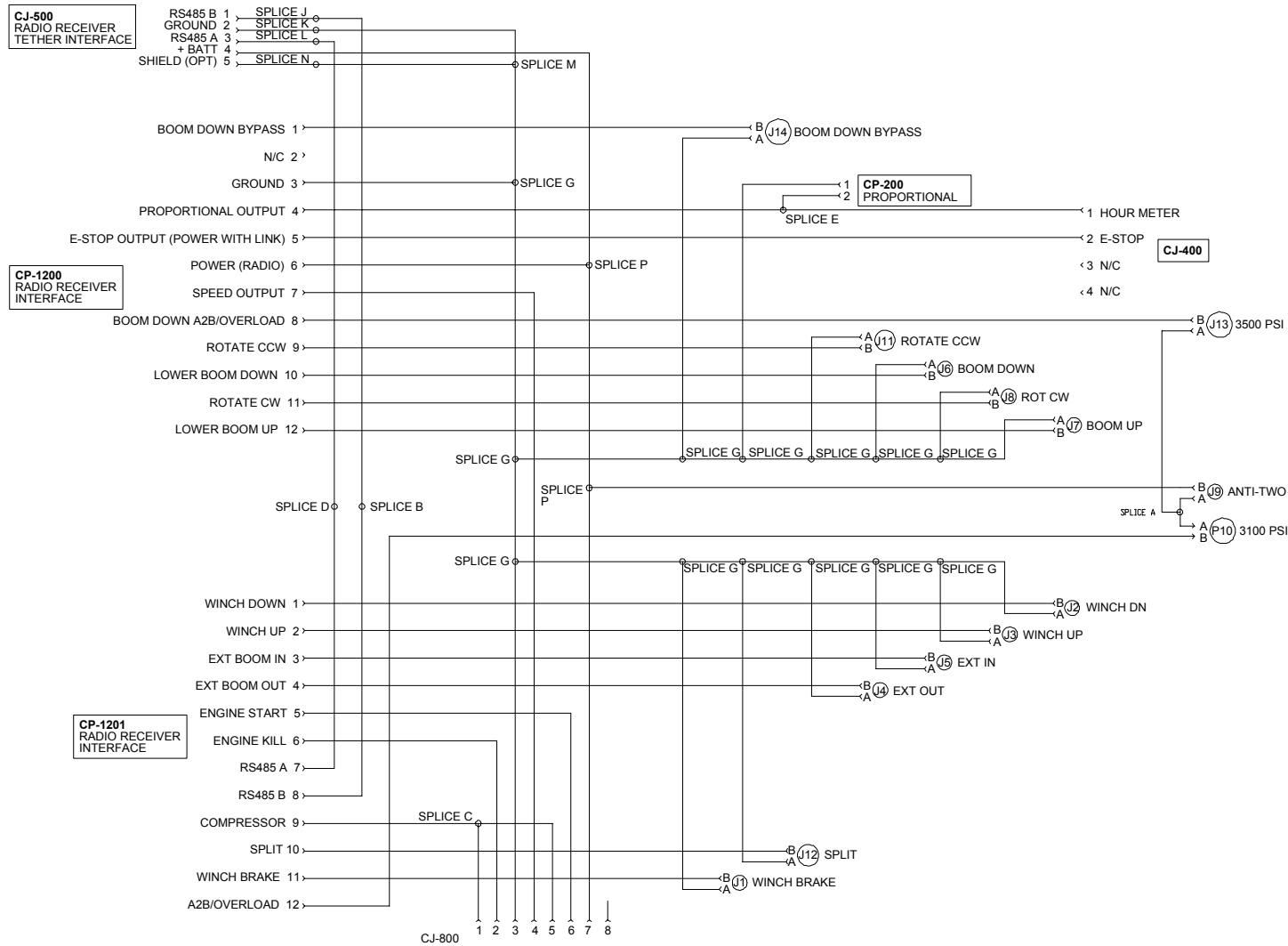


99903699 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51719469	VALVE BODY ASM (INCL. #4-11)	1
2.	91719430	HOSE KIT (INCLUDES #12-30)	1
3.	91719121	KIT - HYD CRANE ASSEMBLY (INCL. #31-38)	1
4.	72053758	ELBOW #4MSTR #4MJIC 90°	1
5.	72532355	ADAPTER #6MSTR #6MJIC	2
6.	72063763	ELBOW #8MSTR #8MJIC 90°	1
7.	72053776	ELBOW #6MSTR #6MJIC 45°	2
8.	72533507	ELBOW #8MSTR #10MJIC 90°	1
9.	72532358	ADAPTER #8MSTR #8 MJIC	3
10.	72532522	PLUG STR HH STL 0.44"	1
11.	72532356	ADAPTER #8MSTR #6MJIC	1
12.	72532355	ADAPTER #6MSTR #6MJIC	1
13.	72533613	ADAPTER #10MSTR #6MJIC	2
14.	60350128	SLEEVE, HOSE	2
15.	72532357	ADAPTER #6MSTR #8MJIC	1
16.	72533648	SWIVEL #8MJIC #8MJIC 90°	2
17.	51396717	HOSE FJ 3/8X19.5 OAL (8-6)	2
18.	51396718	HOSE FJ 3/8X21 OAL (8-6)	2
19.	51396580	HOSE FJ 1/2X24.5 OAL (8-8)	1
20.	51396581	HOSE FJ 3/8X26 OAL (6-6)	1
21.	51396582	HOSE FF 3/8X20.0 OAL (6-6)	2
22.	51394253	HOSE FZ 1/2X19.0 OAL (8-8)	1
23.	51396584	HOSE-FZ 1/2X27.5 OAL (8-8)	1
24.	51396732	HOSE FF 1/2X20.0 OAL (8-8)	1
25.	51396683	HOSE FJ 1/2X28 OAL (8-8)	1
26.	51396690	HOSE FJ 1/2X36 OAL (8-8)	1
27.	51396684	HOSE FZ 5/8X25 OAL (10-10)	1
28.	51396685	HOSE FF 1/2X38 OAL (8-8)	1
29.	51396686	HOSE FF 1/4 X 18 OAL (4-4)	1
30.	51395121	HOSE AA 1/8 X 13.5 OAL (2-2)	1
31.	72533024	UNION, BULKHEAD 37° JIC 0.44"	1
32.	72533373	UNION, BULKHEAD 37° JIC 3/4	2
33.	72534412	SWIVEL #10MJIC #10MJIC 90°	1
34.	72533648	SWIVEL #8MJIC #8MJIC 90°	1
36.	72533573	TEE, STEEL #4JIC #4STR #4JIC	1
37.	72053760	ELBOW #6MSTR #6MJIC 90°	2
38.	72532359	ADAPTER #10MSTR #8MJIC	2

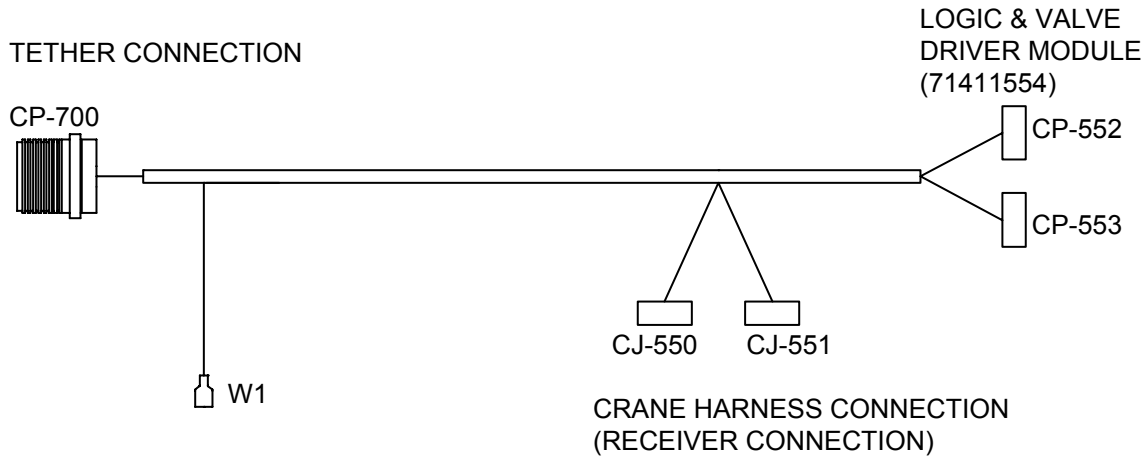
# Electrical Harness, Radio Remote (77441131)



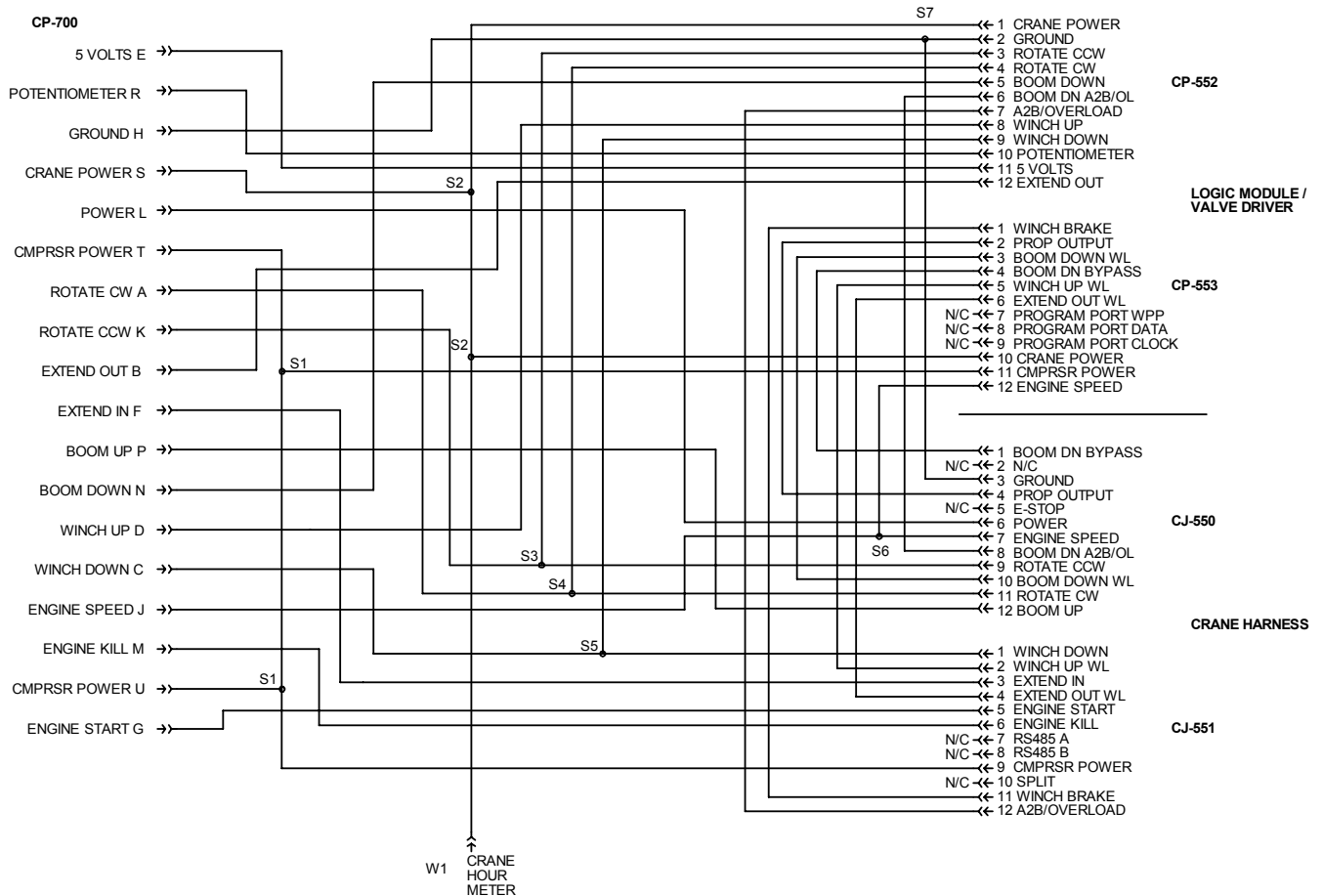
# Electrical Schematic, Radio Remote (77441131)



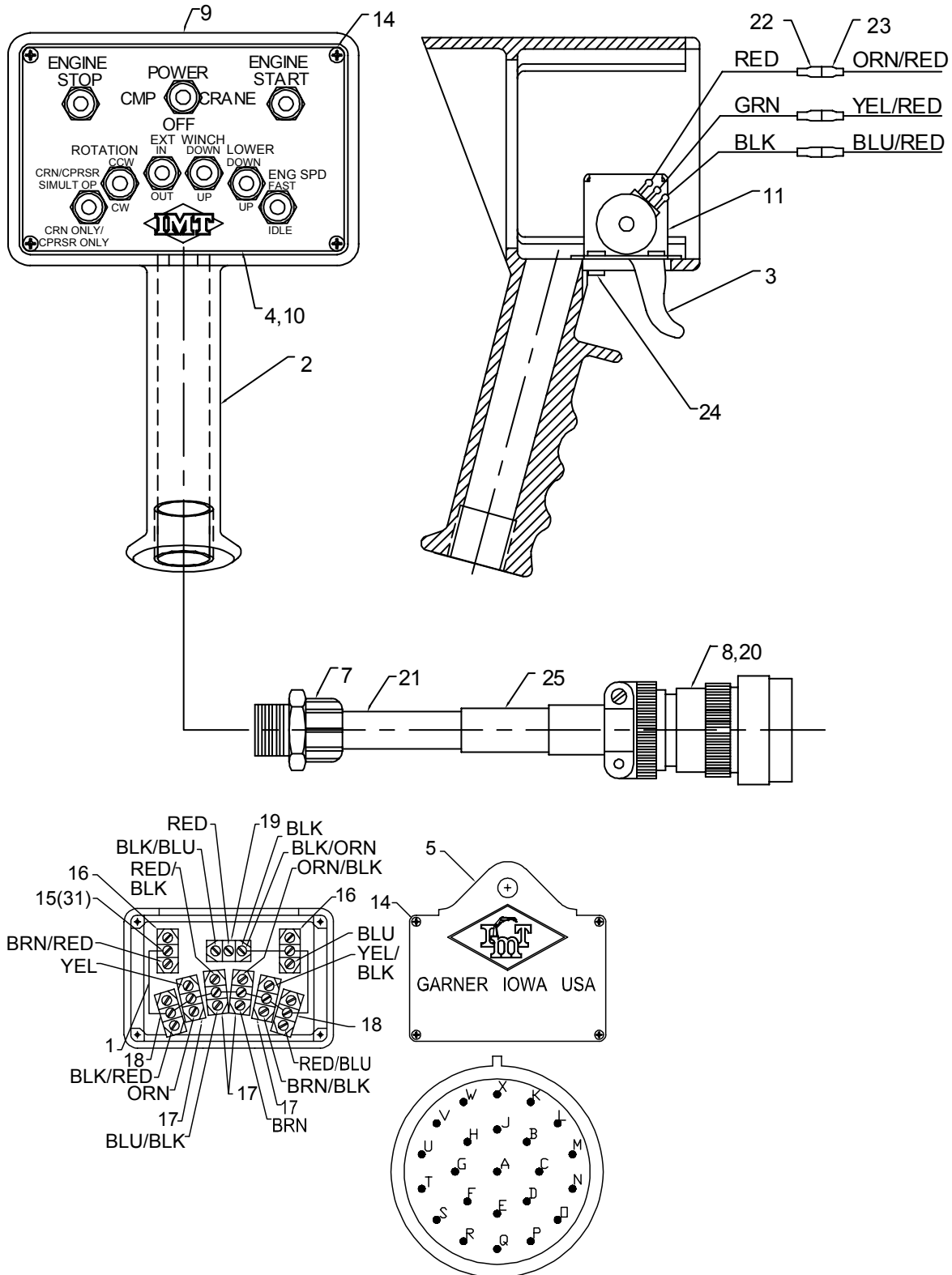
# Electrical Harness, Tethered Remote (77441164)



# Electrical Schematic, Tethered (77441164)



# Handle Assembly, Tethered Remote w/Engine Start (51719470)





**51719470 HANDLE ASSEMBLY WIRE FUNCTIONS**

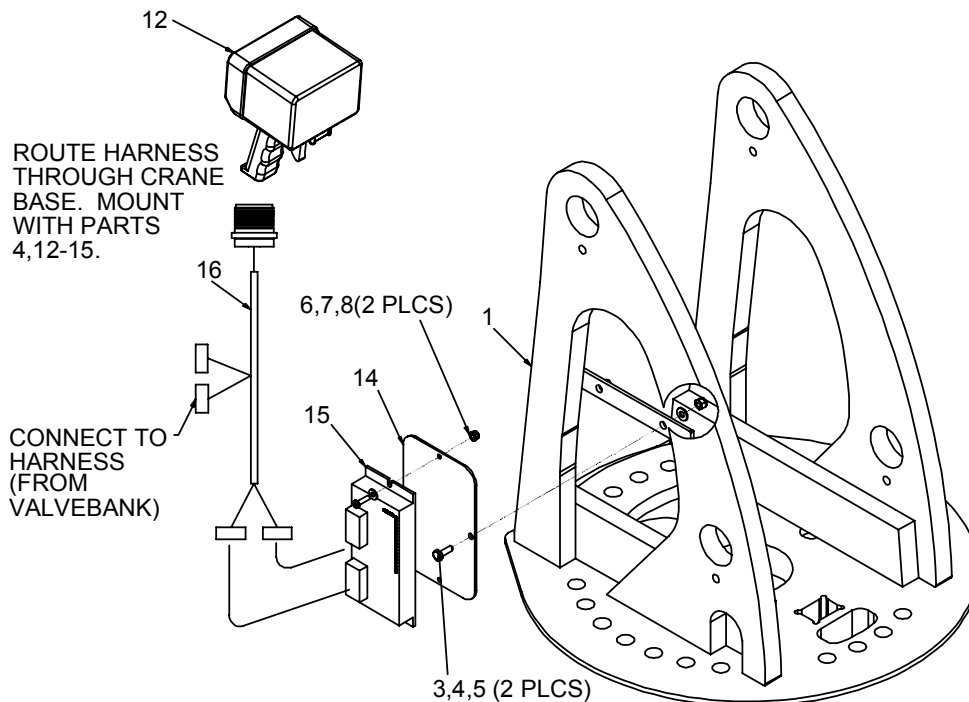
SOLID/STRIPE		FUNCTION
A	YEL/BLK	ROT CW
B	ORN/BLK	EXT OUT
C	BLU/BLK	WINCH DN
D	RED/BLK	WINCH UP
E	ORN/RED	-
F	BRN	EXT IN
G	BRN/RED	ENG START
H	BLU/RED	-
J	BLK/RED	ENG SPEED
K	BRN/BLK	ROT CCW
L	RED	POWER
M	BLU	ENG STOP
N	ORN	LOWER DN
O	BLK/ORN	SOL POWER
P	YEL	LOWER UP
Q	BRN/BLU	-
R	YEL/RED	-
S	BLK	CRANE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

**51719470 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.	70396719	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	40 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

## Controls

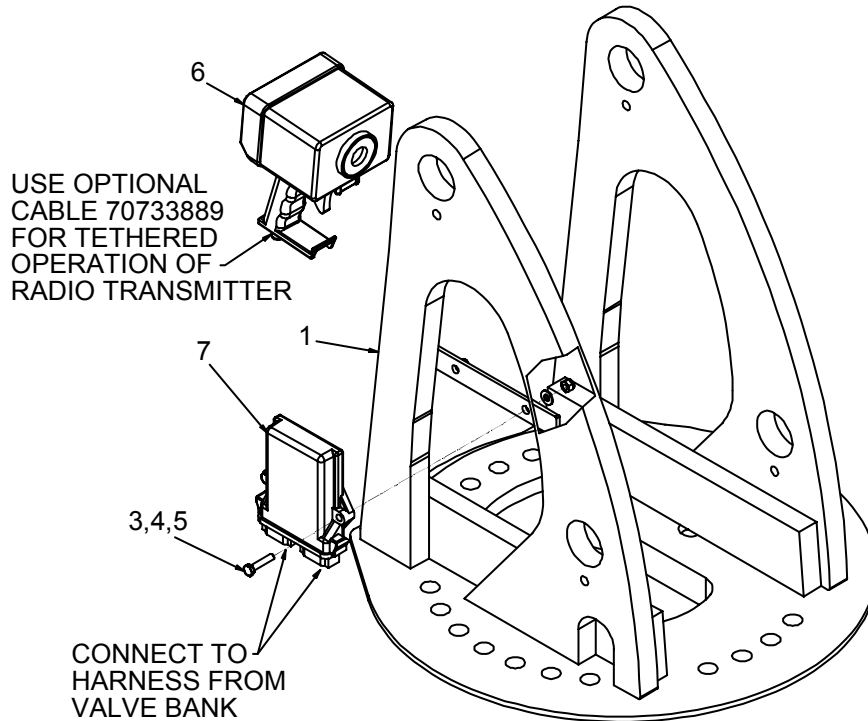
### Controls Installation, Tethered (Kit 90719399/Dwg. 99903697)



#### 90719399 TETHERED CONTROLS PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	N/A	MAST WLDMNT	1
2.	51719412	HARDWARE KIT - TELE CRANE, TETH CONTROLS (INCL 3-11)	REF
3.	72601827	CAP SCR-SS .25-20X .75 HH GR5	2
4.	72063166	WASHER-SS .25 R WRT18-8 .62OD	2
5.	72062194	NUT-SS .25-20 NYLOC	2
6.	72060636	SCR-MACH#10-24X .75 RDH PH Z	2
7.	72062106	NUT 10-24 HEX NYLOCK	2
8.	72063000	WASHER .19 W FLAT ANSI B27.2Z	2
9.	77044645	NUT-DEUTSCH 24 SHELL112263-90	1
10.	77044646	WASHER-LOCK DEUTSCH 112264	1
11.	72601330	CAP SCR-SS .25-20X 1.00 HH	2
12.	51719470	HANDLE ASSEMBLY	1
13.	60119299	BRACKET-MTG	1
14.	60128881	BRACKET-CONTROLLER	1
15.	71411554	TETHER LOGIC MODULE	1
16.	77441164	HARNESS-TETHER	1
REV. B 20050513			

## Controls Installation / Radio Remote (Kit 90719400/Dwg. 99903697)



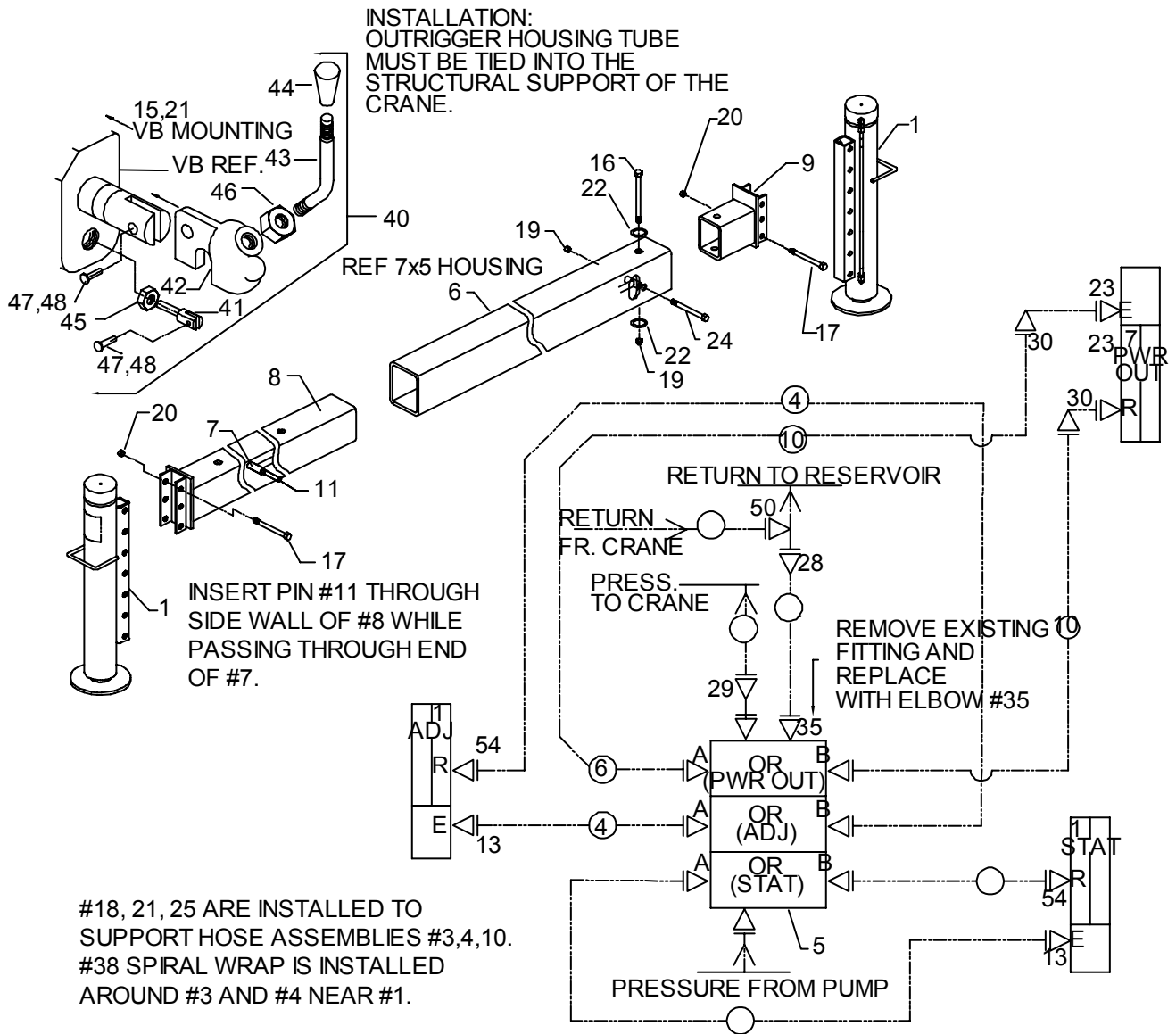
90719400 TETHERED CONTROLS PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	N/A	MAST WELDMENT	1
2.	70733956	RECEIVER - RADIO REMOTE TELE VORC	1
3.	72601846	CAP SCR-SS .25-20X 1.25 HH	2
4.	72063166	WASHER-SS .25 R WRT 18-8 .62OD	2
5.	72062194	NUT-SS .25-20 NYLOC	2
6.	70733883	TRANSMITTER-RADIO REMOTE TELE	1
7.	51719413	HARDWARE KIT-TELE CRANE RADIO CONTROLS	REF

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## **Auxiliary Outrigger Assemblies and Valvebanks**

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

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



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

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

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

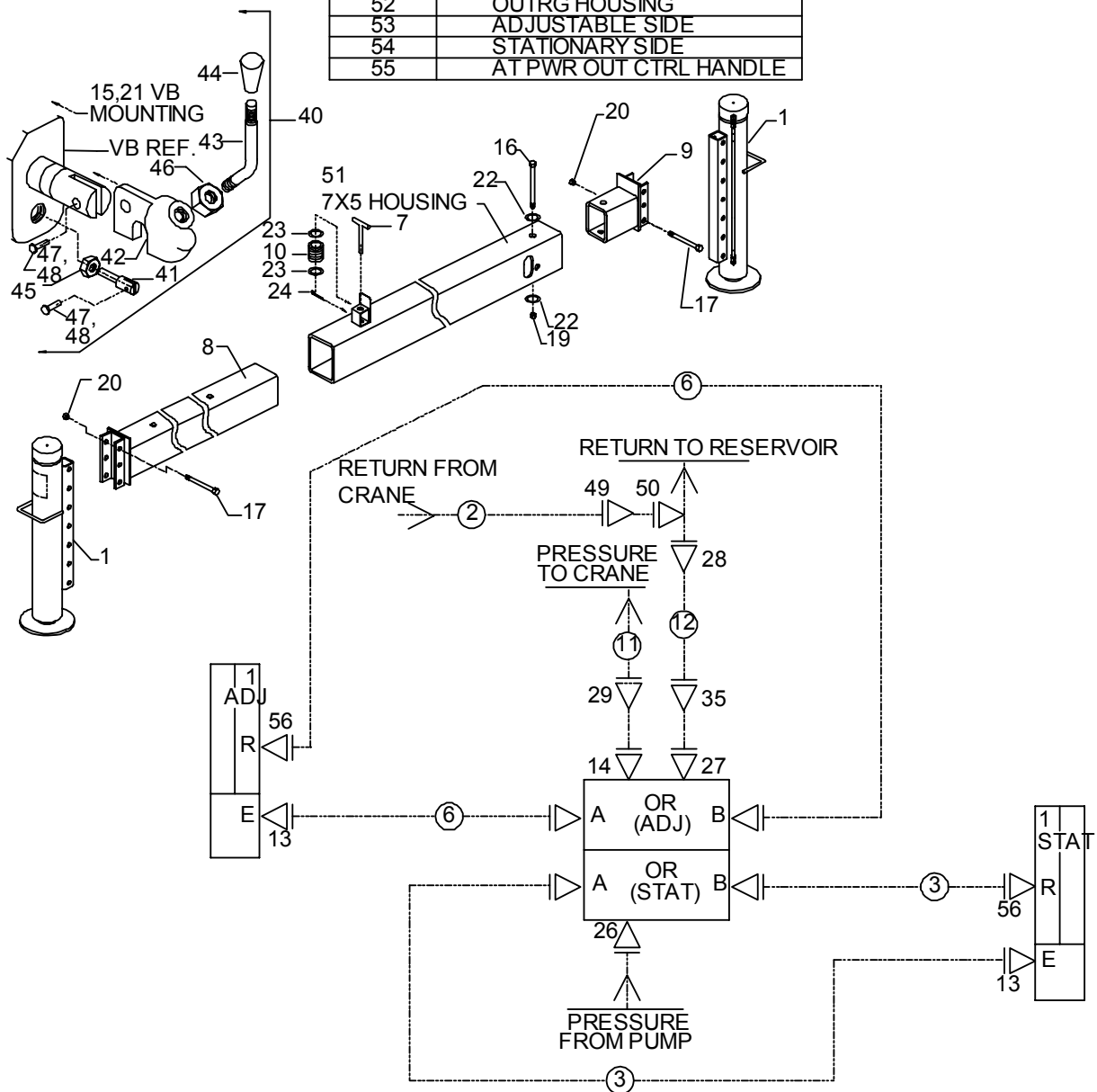
# Outrigger, Manual Out/Power Down, 7x5 (31712740)

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

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

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

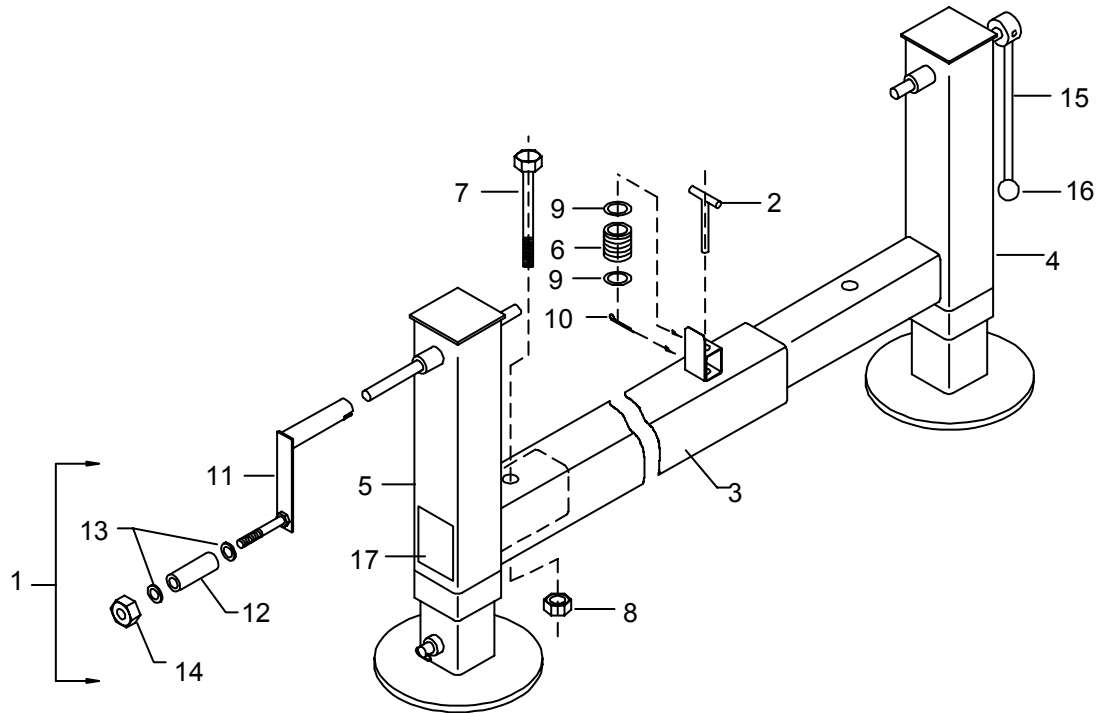
DECAL PLACEMENT	
ITEM NO.	LOCATION
37	AT PWR DN CTRL HANDLES
52	OUTRG HOUSING
53	ADJUSTABLE SIDE
54	STATIONARY SIDE
55	AT PWR OUT CTRL HANDLE



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



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

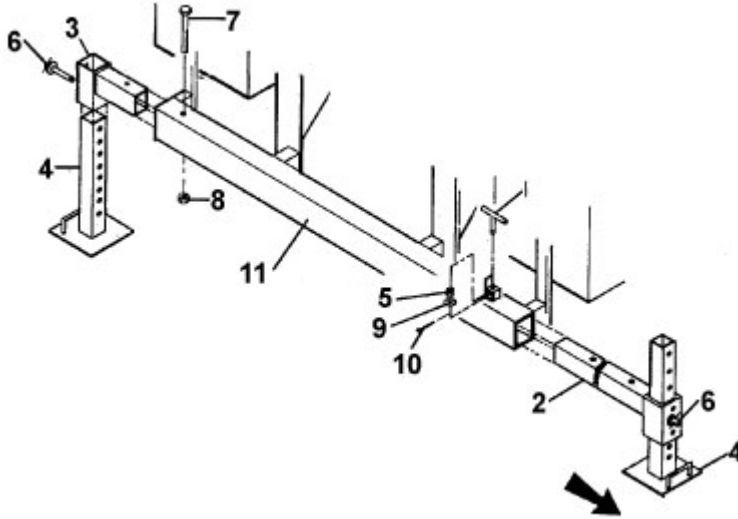


**NOTE:**

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

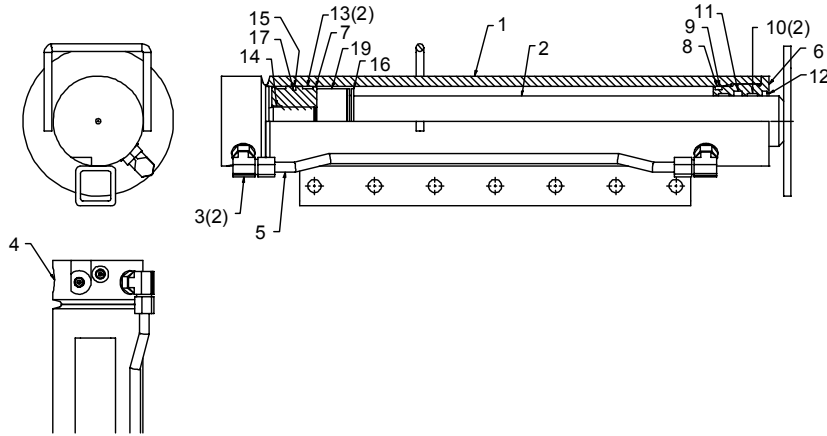
31712741 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51705040	CRANK ASM (INCL. 11-14)	1
2.	52070138	PIN WELDMENT - "T"	1
3.	52712734	O/R HOUSING 7X5	1
4.	52712737	ARM-O/R ADJ. MAN OUT/CRANK DOWN	1
5.	52712738	ARM-STAT MAN OUT/CRANK DOWN	1
6.	60010351	SPRING-"T" PIN	1
7.	72060107	CAP SCR 1/2-13X8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

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



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

## Cylinder, Power Down (3B205010)



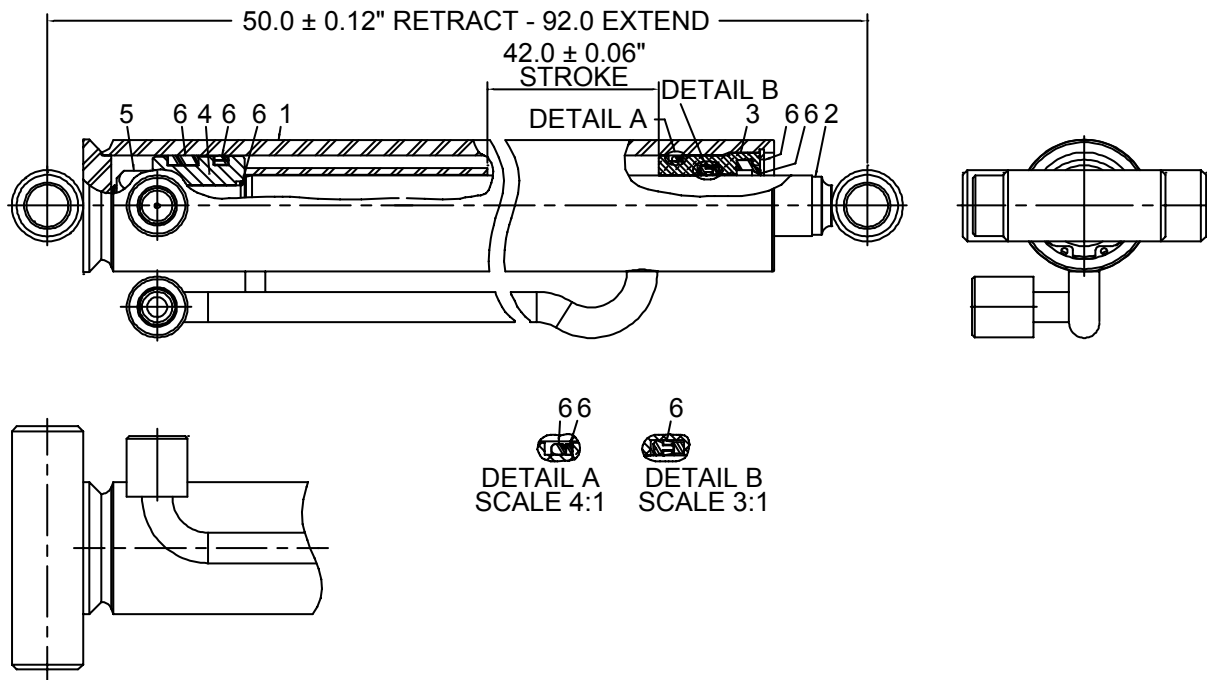
### NOTES:

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

### 3B205010 PARTS LIST

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

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



**NOTES:**

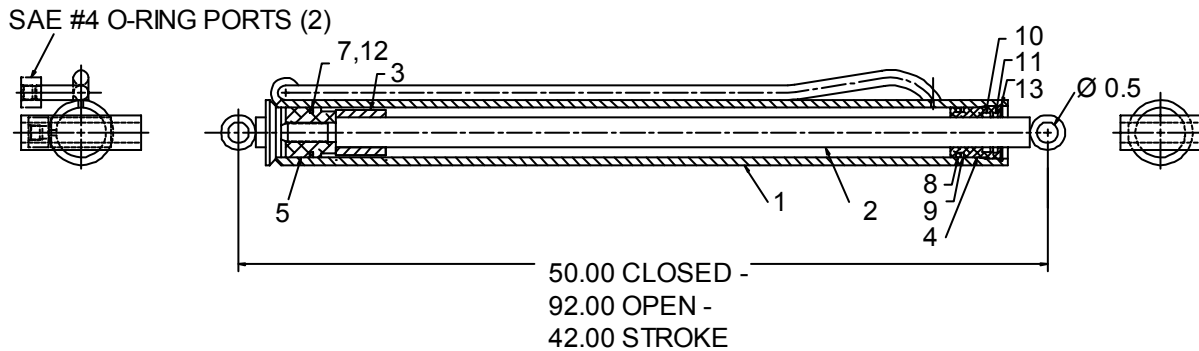
- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

<b>71411797 CYLINDER DATA</b>	
EXTENDED	1.23 IN <sup>2</sup> , 0.22 GAL
RETRACTED	0.79 IN <sup>2</sup> , 0.14 GAL
CASE	1.25 BORE X $\phi$ 1.63
ROD	$\phi$ 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

<b>71411797 PARTS LIST</b>			
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)

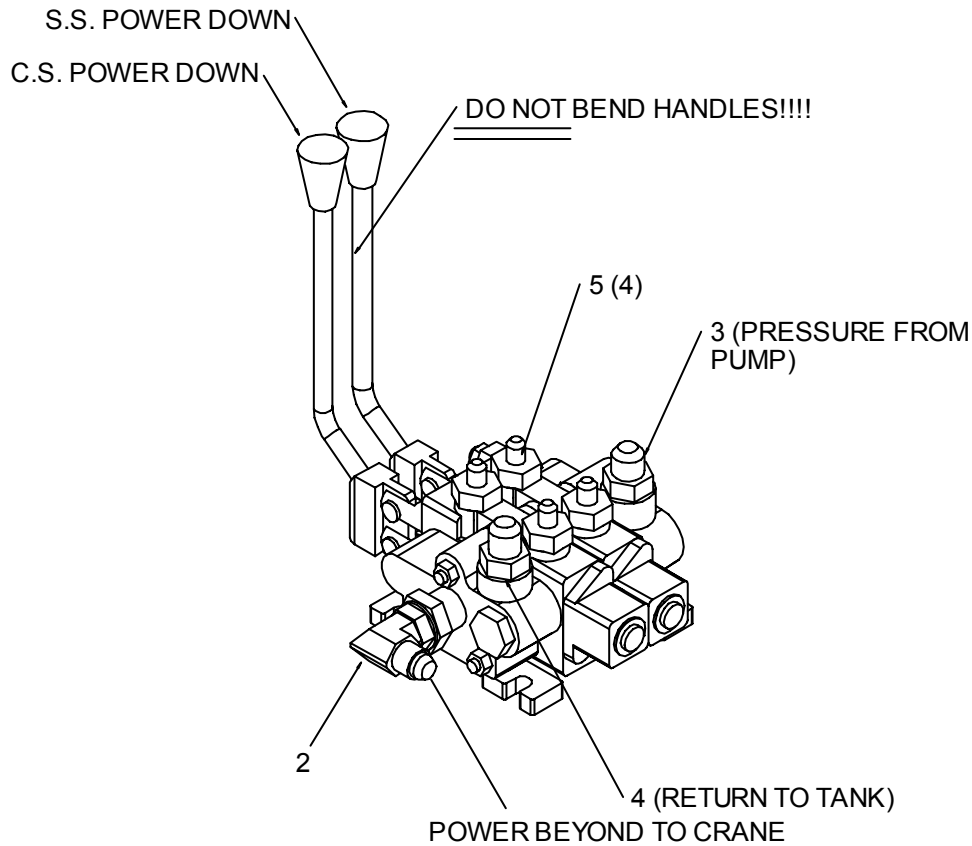


**NOTES:**

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

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

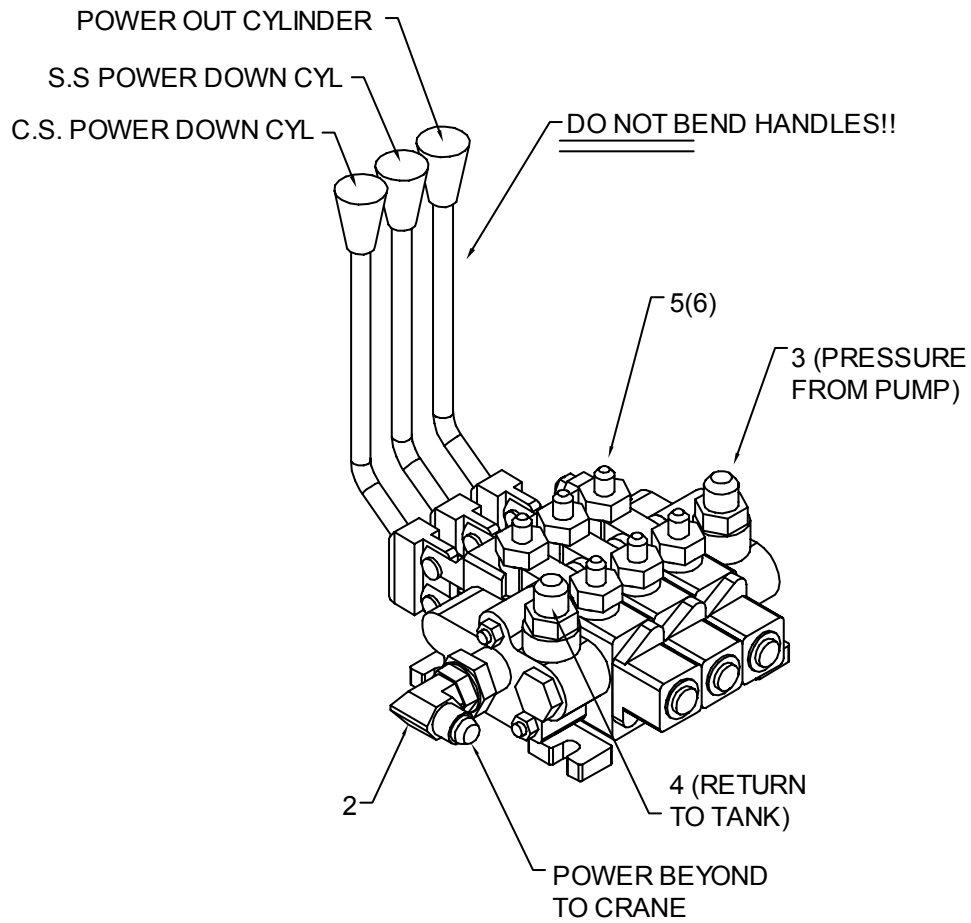
## Valve Bank, 2-Section (51714813)



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)

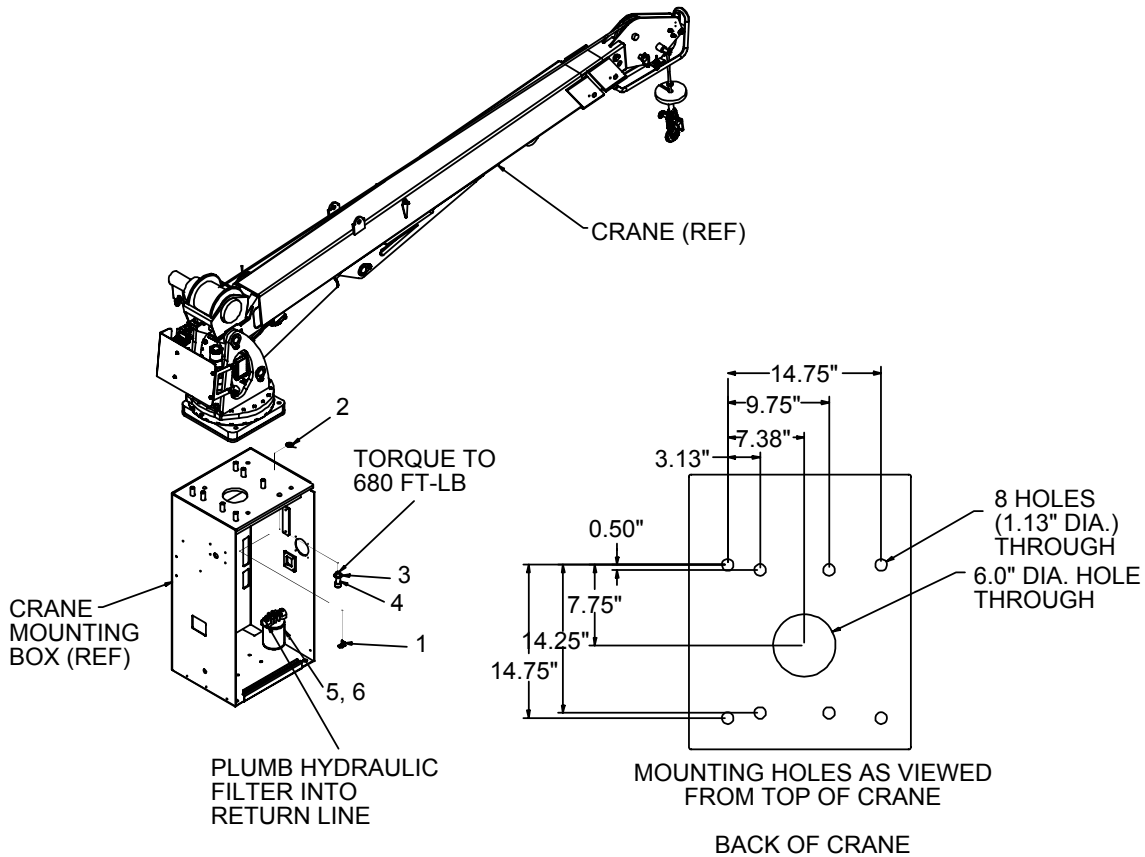


51714812 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51705984	VALVEBANK	1
2.	72053764	ELBOW #10MSTR #8MJIC 90°	1
3.	72532358	ADAPTER #8MSTR #8MJIC	1
4.	72532359	ADAPTER #10MSTR #8MJIC	1
5.	72533589	ADAPTER #10MSTR #4MJIC	6



# Miscellaneous

## Installation Kit (93719174)

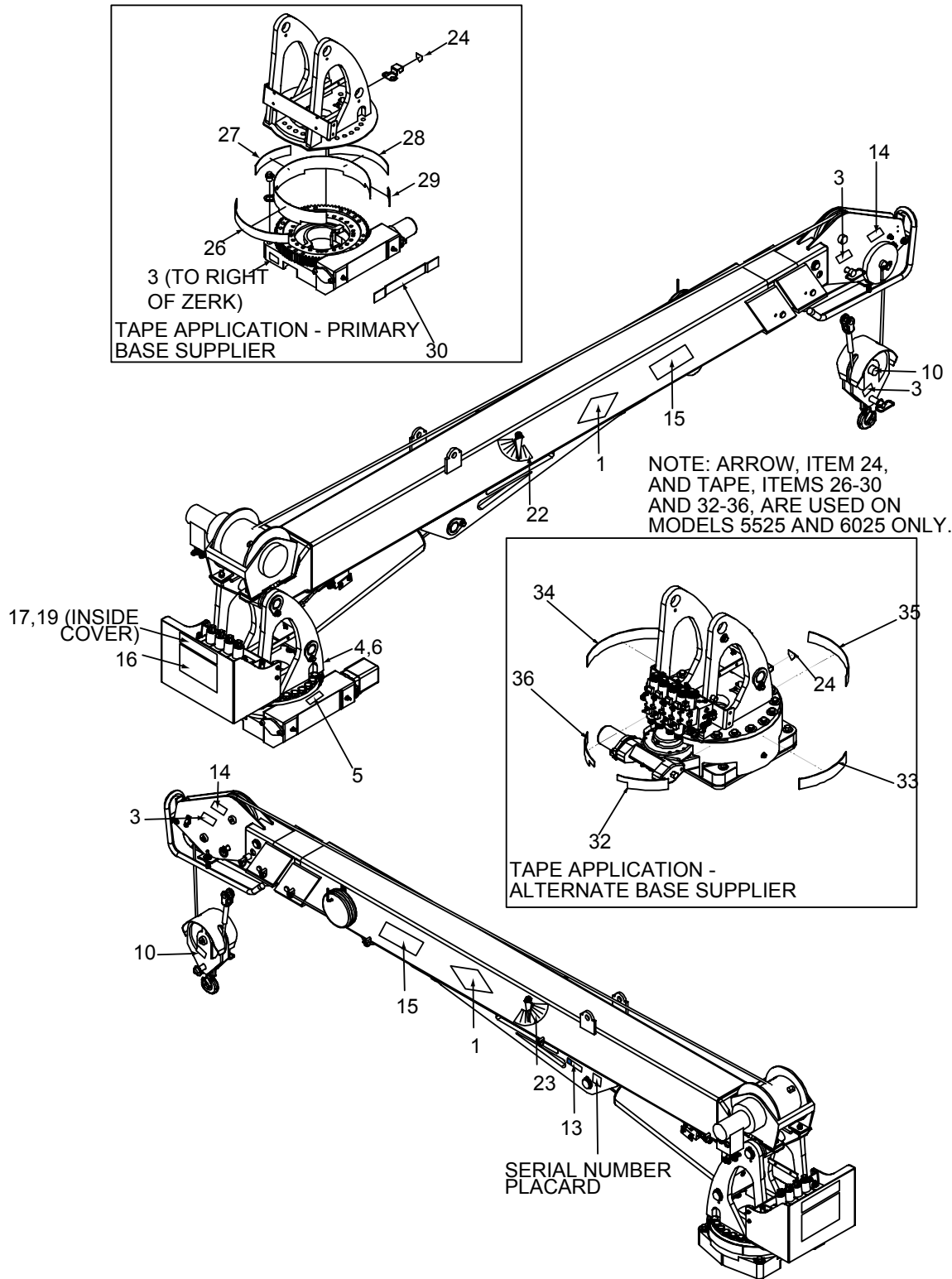


**NOTES:**

- 1 Install item #1 with tethered remote system. Not required for radio remote system.
- 2 Item #2, boom level indicator, is designed to tell the crane operator if the crane base is level. Install boom level indicator on the crane box or other visible location.

93719174 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	60127880	BRKT-CABLE TETHER	1
2.	72042097	BOOM LEVEL INDICATOR	1
3.	72063066	WASHER 1.00 FLAT HI STR	8
4.	72601748	CAP SCREW, SOCK HD 0.495"	8
5.	73052091	FILTER-HYD RET 10MIC 1.25 NPTF	1
6.	73052092	ELEMENT-HYD FILTER 10MIC(SPIN)	1

## Decal Kits & Installation (99903698)

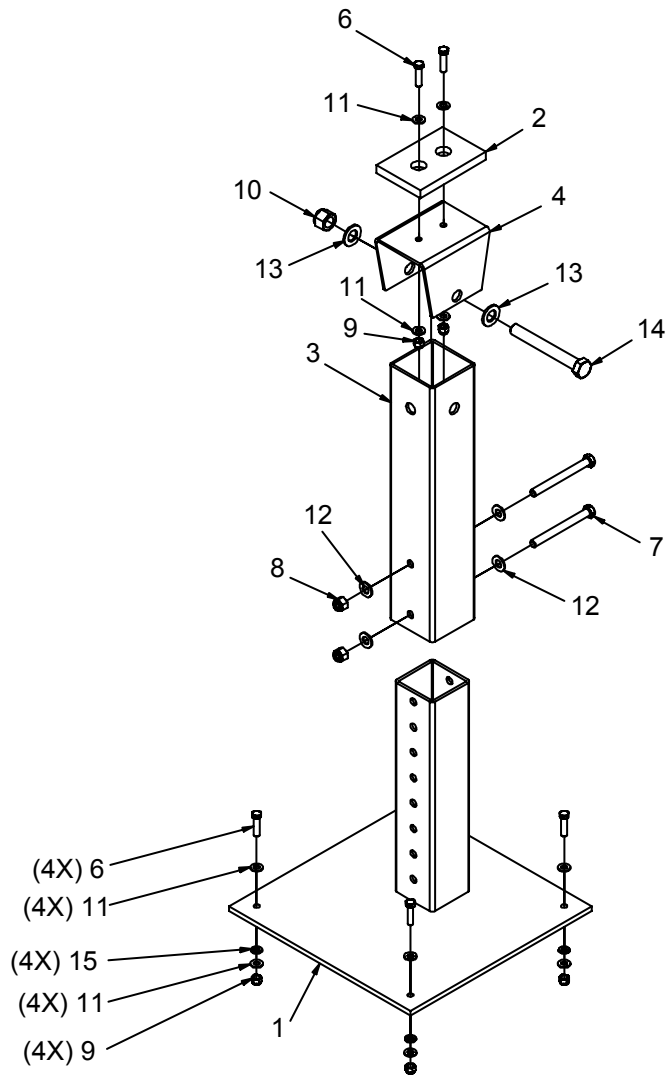


DECAL PLACEMENT (IF NOT SHOWN ON CRANE)	
ITEM #	PLACEMENT
18,20,21,37	AT OR NEAR REMOTE HANDLE STORAGE POINT
2	ON OUTRIGGERS OR BUMPER GUSSET
7	2 ON REAR OUTRIGGERS, 2 ON SIDEPACK FRONT WALLS
9	AT OR NEAR DRIVELINE
8,12	ON ALL FOUR SIDES OF CARRIER VEHICLE
11	ON OIL RESERVOIR
5,25	ON TOP OF BASE OVER WORM DRIVE
31	INSTALL AT REAR OF CRANE BASE AFTER CRANE IS MOUNTED ON BODY

DECAL PART NUMBERS FOR 5525 - 6025 - 6625 CRANE MODELS			
ITEM	PART #	DESCRIPTION	QUANTITY
REF	95719347	DECAL KIT, TELE COMMON (SHEET)	1
REF	95719348	DECAL SET, BODY COMMON (BAG)	1
REF	95719358	DECAL SET, 6025 MODEL SPECIFIC (PRIMARY CONFIGURATION)	1
REF	95719403	DECAL SET, 5525 MODEL SPECIFIC (PRIMARY CONFIGURATION)	1
REF	95719404	DECAL SET, 6625 MODEL SPECIFIC (PRIMARY AND ALTERNATE CONFIGURATIONS)	1
REF	95719481	DECAL SET, 5525 MODEL SPECIFIC (ALTERNATE CONFIGURATION)	1
REF	95719482	DECAL SET, 6025 MODEL SPECIFIC (ALTERNATE CONFIGURATION)	1
1.	70029251	DECAL, IMT DIAMOND	2
2.	70391598	DECAL, WARNING, MAN O/R	2
3.	70391612	DECAL, GREASE WEEKLY (LEFT)	5
4.	70391613	DECAL, GREASE WEEKLY (RIGHT)	2
5.	70392399	DECAL, LUBRICATION	1
6.	70392524	DECAL, ROTATE WHILE GREASING	1
7.	70392864	DECAL, OUTRIGGER STAND CLEAR	4
8.	70392868	DECAL, DANGER LOADLINE (TRUCK)	4
9.	70392891	DECAL, DANGER DRIVELINE	1
10.	70393860	DECAL, LOAD BLOCK RATING	2
11.	70394189	DECAL, OIL RESERVOIR	1
12.	70394445	DECAL, DANGER ELECTROCUTION	4
13.	70395324	DECAL, ASME/ANSI B30.5	1
14.	70395670	DECAL, CAUTION DOWNHAUL WT.	2
15.	70396655	DECAL, ID 6025	2
	70396697	DECAL, ID 5525	2
	70396698	DECAL, ID 6625	2
16.	70396096	DECAL, CAPACITY PLACARD, 6025	1
	70396149	DECAL, CAPACITY PLACARD, 5525	1
	70396054	DECAL, CAPACITY PLACARD, 6625	2
17.	70396631	DECAL, MANUAL OVERRIDE	1
18.	70396613	DECAL, DANGER CRANE OPERATION	1
19.	70394166	DECAL, MANUAL OVERRIDE (70396632 THRU 1-31-06)	1

DECAL PART NUMBERS FOR 5525 - 6025 - 6625 CRANE MODELS			
ITEM	PART #	DESCRIPTION	QUANTITY
20.	70396097	DECAL, REDUCED CAPACITY, 6025	1
	70396193	DECAL, REDUCED CAPACITY, 5525	1
	70396079	DECAL, REDUCED CAPACITY, 6625	REF
21.	71039134	DECAL, CAUTION OIL LEVEL	1
22.	71391522	DECAL, ANGLE INDICATOR (RH)	1
23.	71391523	DECAL, ANGLE INDICATOR (LH)	1
24.	70396700	DECAL, ARROW	1
25.	70395090	DECAL, GREASE WORM DRIVE BRNGS	1
26.	60350119	TAPE, GREEN REFLECTIVE 2 X 17.4	1
27.	60350120	TAPE, YELLOW REFLECTIVE 2 X 9.46	1
28.	60350122	TAPE, RED REFLECTIVE 2 X 14.14	1
29.	60350121	TAPE, YELLOW REFLECTIVE 2 X 3.24	1
30.	60350129	TAPE, YELLOW REFLECTIVE 2 X 16.75	1
31.	71392365	DECAL, ALIGNMENT	1
32.	60350130	TAPE, GREEN REFLECTIVE 2 X 8.81	1
33.	60350131	TAPE, YELLOW REFLECTIVE 2 X 16.82	1
34.	60350132	TAPE, YELLOW REFLECTIVE 2 X 11.18	1
35.	60350133	TAPE, RED REFLECTIVE 2 X 16.77	1
36.	60350135	TAPE, GREEN REFLECTIVE 2 X 8.81	1
37.	70392113	CAUTION, WASH/WAX	1
38.	70392982	DECAL-SERVICE & REPAIR	1
	70029119	PLACARD, SERIAL NUMBER	REF

## Boom Support, Adjustable, 3820-5020-5525-6025 (51718848)



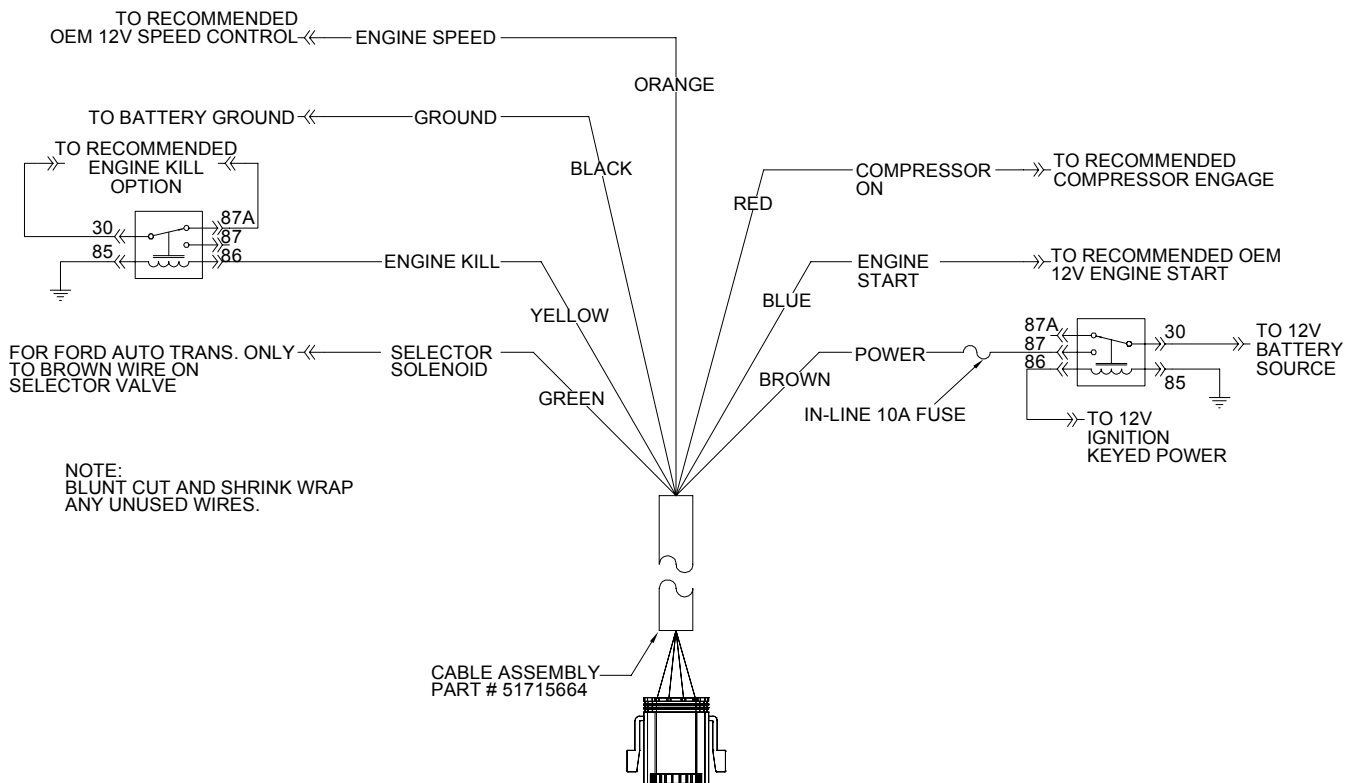
**NOTE:**

- 1 Hardware included in kit # 51718794.
- 2 Rotate and arrange pedestal #1 and saddle #10 based on chassis exhaust.

51718848 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52718849	PEDESTAL-WLDMT ADJ	1
2.	60030306	WEAR PAD	1
3.	60126561	TUBE-PEDESTAL	1
4.	60126563	SADDLE-BOOM SUPPORT DOM 3820 & UP	1
6.	72060048	CAP SCR .38-16X 1.50 HH GR5 Z	6
7.	72060101	CAP SCR .50-13X 5.00 HH GR5 Z	2
8.	72062080	NUT .50-13 HEX NYLOCK	2
9.	72062103	NUT .38-16 HEX NYLOCK	6

51718848 PARTS LIST			
10.	72062114	NUT .75-10 HEX NYLOCK	1
11.	72063003	WASHER .38 FLAT (WAS 8)	12
12.	72063005	WASHER .50 FLAT	4
13.	72063008	WASHER .75 FLAT	2
14.	72601845	CAP SCR .75-10X 6.00 HH GR5 Z (WAS 72601845)	1
15.	76392821	WASHER-BONDED PLTD .38	4
REV D 20060901			

## Chassis Wiring Harness (99903340)



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

## CHAPTER 5

# General Reference

## In This Chapter

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# Inspection Checklist

**NOTICE:**

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

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

**TYPE OF INSPECTION**  
**NOTES:**  
 Daily and monthly inspections are to be performed by a “designated” person, who has been selected or assigned by the employer or the employer’s representative as being competent to perform specific duties.  
 Quarterly and annual inspections are to be performed by a “qualified” person who, by possession of a recognized degree in an applicable field or certificate of professional standing, or who, by extensive knowledge, training and experience has successfully demonstrated the ability to solve or resolve problems related to the subject matter and work.  
 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 outriggers fully extended.  
**DAILY (D):** Before each day of operation, those items designated with a (D) must be inspected. This inspection need not be recorded unless a deficiency (8 ) is found. If the end user chooses to record all daily inspections and those daily inspections include the monthly inspection requirements, there would be no need for a separate monthly inspection.  
**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.  
**QUARTERLY (Q):** Every three to four months or 300 hours of normal operation (which ever comes first) includes all daily and monthly inspection items plus items designated with a (Q). This inspection must be recorded.  
**ANNUAL (A):** Each year or 1200 hours of normal operation (which ever comes first) includes all items on this form which encompasses daily, monthly and quarterly inspections plus those items designated by (A). This inspection must be recorded.



**INSPECTION CHECKLIST STATUS KEY:**

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

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

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

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

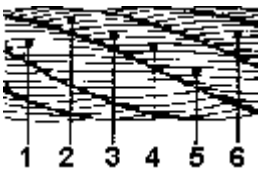




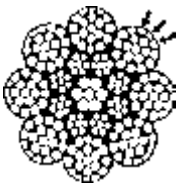
## Wire Rope Inspection & Replacement

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

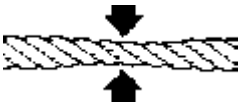
- a Corrosion can be cause for replacement. Any development of corrosion must be noted and monitored closely.
- b When there are either three broken wires in one strand or a total of six broken wires in all strands in any one rope lay.



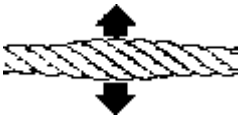
- c When flat spots on the outer wires appear and those outside wires are less than 2/3 the thickness of the unworn outer wire.



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



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



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



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



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



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## 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  $10^\circ$  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).

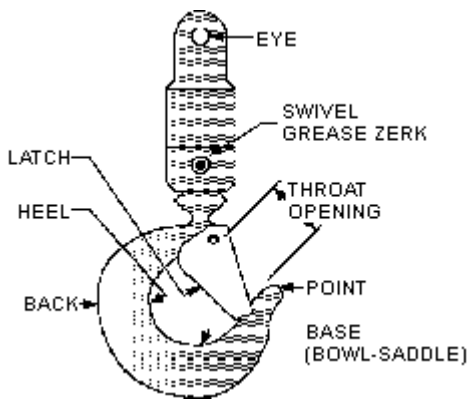
### d LATCH

#### 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).



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## 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.

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## Thread Torques

### WARNING

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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.

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

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



**FINE THREAD TORQUE CHART (ENGLISH)**

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

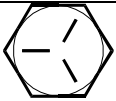
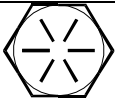
**COARSE THREAD TORQUE CHART (ENGLISH)**

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

**FINE THREAD TORQUE CHART (METRIC)**

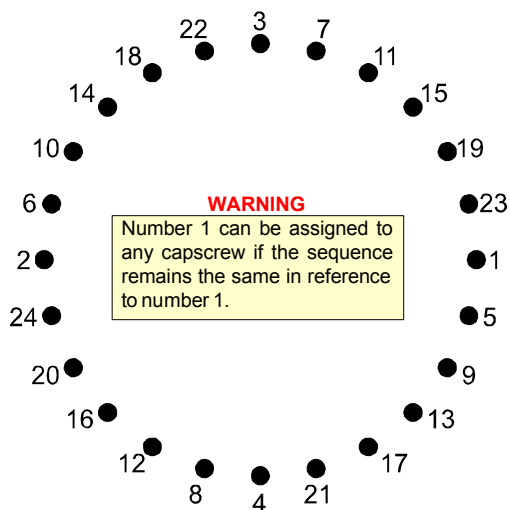
TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA. (INCHES)	 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-24	0.3125	3	2	4	3
3/8-24	0.375	5	4	7	5
7/16-20	0.4375	8	6	11	8
1/2-20	0.5	12	9	17	12
9/16-18	0.5625	17	12	24	18
5/8-18	0.625	24	18	33	25
3/4-16	0.75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

**COARSE THREAD TORQUE CHART (METRIC)**

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

## Turtable Bearing Thread Tightening Sequence

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



### TIGHTENING PROCEDURE

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

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## Turntable Bearing Inspection for Replacement

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

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

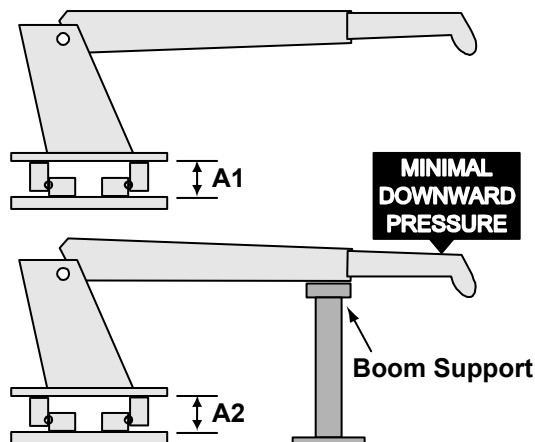
If none of the listed conditions exists, the bearing is functioning properly and need not be replaced. But, if one or more of the above conditions exists, inspection may be required. Limits are measured in "TILT" which is dependent on the internal clearances of the bearing. TILT is the most practical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

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

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## Turntable Bearing Tilt Test

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



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