
Manual Part # 99905181

Model 8600 30-foot Parts & Specifications

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Revisions

DATE	LOCATION	DESCRIPTION
20111031	77441481	ECN 11624 - Harness change
20120313	DECALS	ECN 11712 - 70399345 replaced 70396787.
20120815	99904923	ECN 11774 - Added cable guide.
	73734727	ECN 11783 - 73734727 was 73734635

CHAPTER 1

Introduction

This volume includes specifications, installation information, and spare parts drawings applicable to your particular crane. For operating, maintenance and repair instructions, see the Telescopic Crane Operation, Maintenance and Repair Manual (IMT part number 99905190).

It is your responsibility to operate and maintain this unit in a manner that will result in the safest working conditions possible. You must be aware of existing Federal, State and Local codes and regulations governing the safe use and maintenance of this IMT crane. The crane was designed and built to meet the standards of ANSI/ASME B30.5, Mobile & Locomotive Cranes. Contact the American Society of Mechanical Engineers (www.asme.org) for more information on ANSI/ASME B30.5.

Misuse of the crane through overloading, abuse, lack of maintenance and unauthorized modifications will void the warranty on any part of the unit subjected to this misuse. No warranty - verbal, written or implied - other than the official, published IMT new machinery and equipment warranty will be valid with this unit.

Throughout the manual, NOTES, CAUTIONS and WARNINGS are used to draw the attention of personnel. They are defined as follows:

NOTE

A NOTE is used to either convey additional information or to provide further emphasis for a previous point.

CAUTION

A CAUTION is used when there is the very strong possibility of damage to the equipment or premature equipment failure.

WARNING

A WARNING is used when there is the potential for personal injury or death.

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

CHAPTER 2

Specifications

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Model 8600 30' Specifications

GENERAL SPECIFICATIONS	
CRANE RATING (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.)	60,000 ft-lb (8.3 tm)
HORIZONTAL REACH - FLIP SHEAVE UP (From centerline of rotation)	30'-10" (9.4 m)
HORIZONTAL REACH - FLIP SHEAVE DOWN (From centerline of rotation)	30'-0" (9.1 m)
FULLY RETRACTED LENGTH	12'-11" (3.9 m)
HYDRAULIC EXTENSIONS (2)	102" & 102" (259 cm & 259 cm)
LIFTING HEIGHT (From base of crane)	32'-1" (9.8 m)
CRANE WEIGHT	2,410 lb (1,093 kg)
CRANE STORAGE HEIGHT	40.6" (103 cm)
MOUNTING SPACE REQUIRED (Crane base)	20" x 21" (50.8 cm x 53.3 cm)
OPTIMUM PUMP CAPACITY	10 -12 U.S gpm (37.9 - 45.4 l/min)
SYSTEM OPERATING PRESSURE	3,000 psi (206.8 bar)
CENTER OF GRAVITY	
▪ Horizontal from Centerline of Rotation	49.9" (126.8 cm)
▪ Vertical from Bottom of Crane Base	22.2" (56.4 cm)
TIE-DOWN BOLT PATTERN (8 bolts)	14.75" x 14.75" (37.5 cm x 37.5 cm)
ROTATIONAL TORQUE	9,000 ft-lb (1.2 tm)

PERFORMANCE CHARACTERISTICS		
	SPECIFICATIONS	SPEED
ROTATION	400° (7.0 rad.)	30 seconds
LOWER BOOM ELEVATION	-10° to +80° (-0.17 to +1.4 rad)	12 seconds to raise or lower
EXTENSION CYLINDERS (2)	102" & 102" (259 cm & 259 cm)	33 seconds to extend or retract
WINCH SPEED (single line)		60 feet per minute

POWER SOURCE

Hydraulic power is provided by an integral mounted hydraulic pump and PTO application. Other standard power sources may be used. Minimum power required is 23.5 horsepower based on 10-12 GPM (37.9 - 45.4 liters/min) at 3,000 PSI (207 bar).

CYLINDER HOLDING VALVES

The holding sides of all cylinders are equipped with integral-mounted counterbalance valves or load-holding check valves to prevent sudden cylinder collapse in case of hose failure.

ROTATION SYSTEM

Rotation of the crane is accomplished through a turntable gear bearing powered by a high-torque hydraulic motor through worm gear reduction. Standard rotation is 400° (6.98 rad).

HYDRAULIC SYSTEM (PTO DRIVEN)

The hydraulic system is an open-centered, full-pressure system that requires 10-12 GPM (37.9 - 45.4 liters/min.) optimum oil flow at 3000 psi (207 bar). It is equipped with a four-section, stack-type, electric, remote control valve with an RF remote-control system with a 40' (9.1 m) radio elimination cable. The system includes a separate hydraulic oil reservoir, suction line filter, return-line filter and control valve.

OVERLOAD PROTECTION SYSTEM

Overloading of the crane is prevented by the overload protection system. A pressure transducer mounted on the lower cylinder senses overload conditions. When in an overload situation, the winch-up, extension-out, and boom-down functions are stopped. To relieve the situation, raise the boom, retract the extensions, or lower the winch.

WINCH

The 4,300 lb (1,950 kg) planetary winch is powered using a high-torque hydraulic motor. The lifting capacity of the winch is 4,300 lb (1,950 kg) one-part line. Maximum two-part line capacity is based on the maximum crane capacity. The winch is equipped with 120 ft (36.5 m) of 3/8" (9.5 mm), 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.

8600-30' Minimum Chassis Specifications

CRANE MODEL	8600 - 30'
CHASSIS STYLE	Conventional Cab
BODY STYLE	Dominator™ II minimum
CAB-TO-AXLE (1)	84 - 120" (213 - 305 cm)
RESISTANCE TO BENDING MOMENT	1,200,000 in-lb (138,255 kg-m)
FRAME SECTION MODULUS	14.2 cubic inches (232.7 cc)
RATED MOMENT	60,000 ft-lb (8295 kg-m)
GROSS VEHICLE WEIGHT RATING (2)	26,000 lb (11,793 kg) minimum

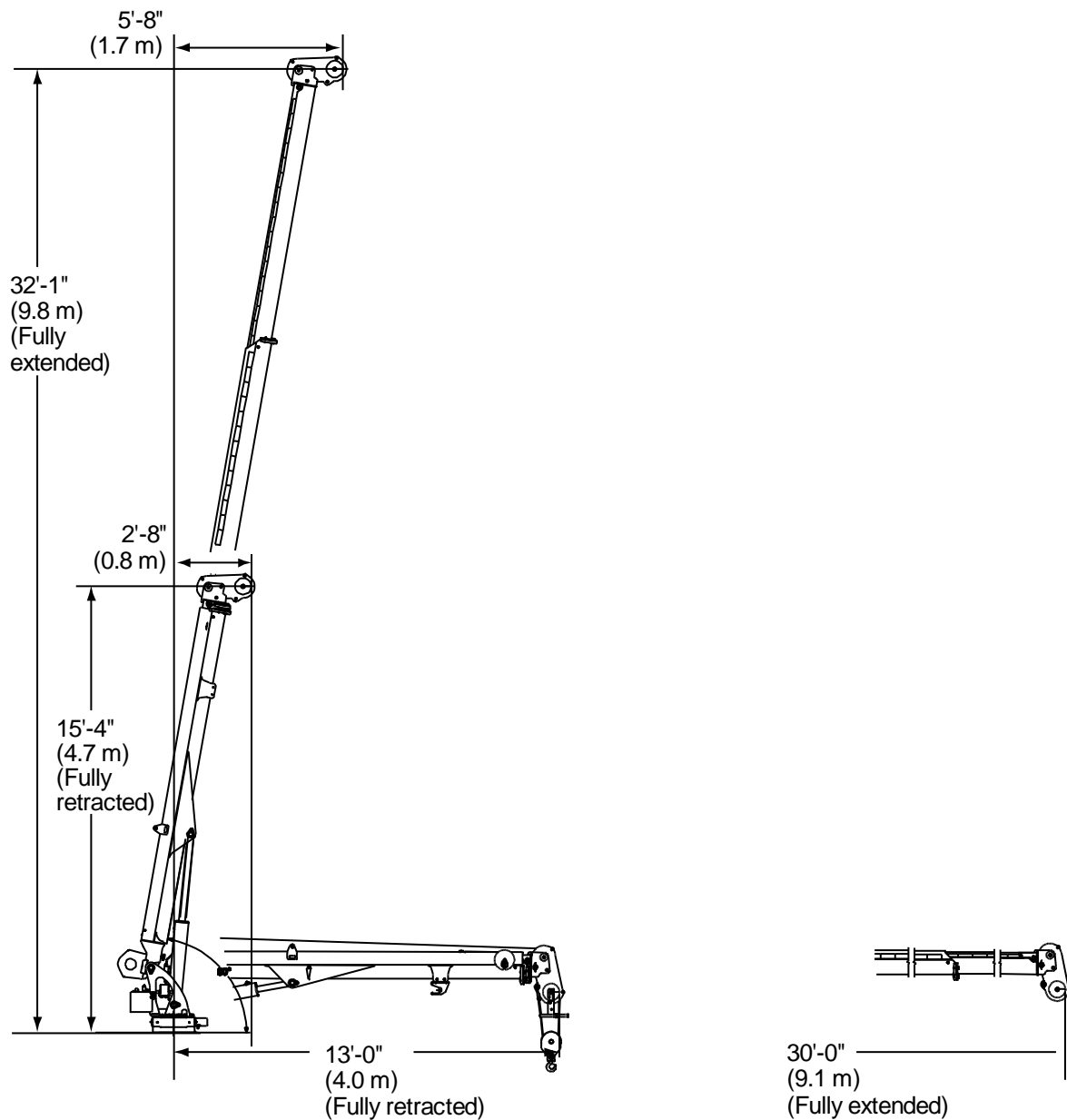
NOTES:

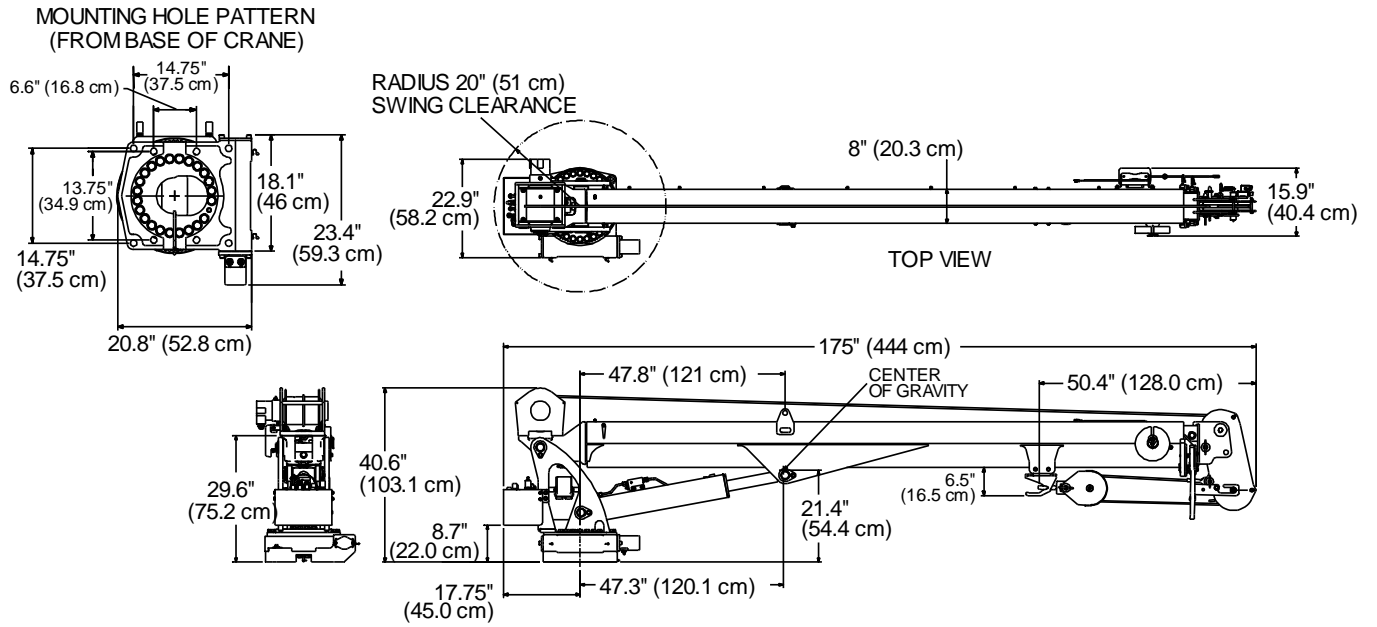
- 1 The Cab to Axle (CA) dimension varies based on the configuration of the body, crane, and auxiliary equipment including welder decks. Make sure the CA is free and clear from obstructions everywhere except between the frame rails.
- 2 The Gross Vehicle Weight Rating (GVW) is a minimum guideline. Contact IMT if you have questions regarding your particular installation.
- 3 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.
- 4 Weight distribution calculations are required to determine final axle loading.
- 5 All chassis, crane and body combinations must be stability-tested to ensure stability per ANSI B30.5

Iowa Mold Tooling Co., Inc. reserves the right to change specifications and design without notice.

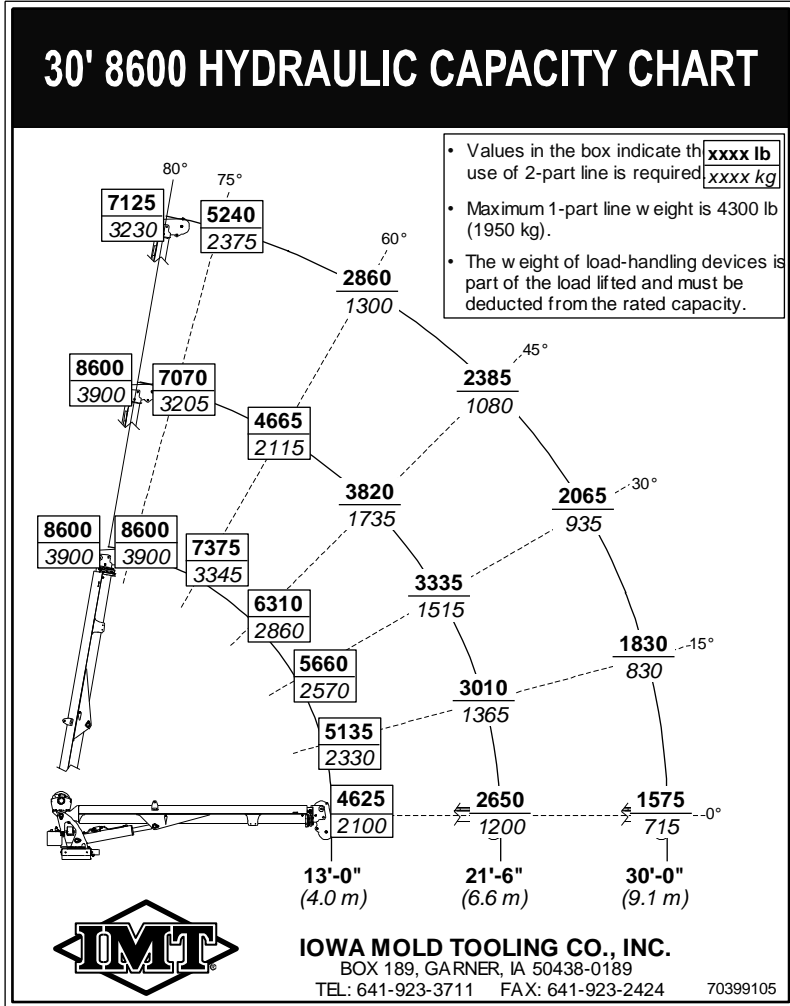
Dimensional Drawing

Dimensions for 30' 7500 and 8600 Crane





30' 8600 Capacity Chart



CHAPTER 3

Crane Reference

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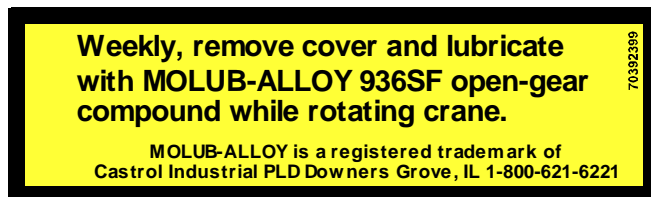
Greasing Instructions

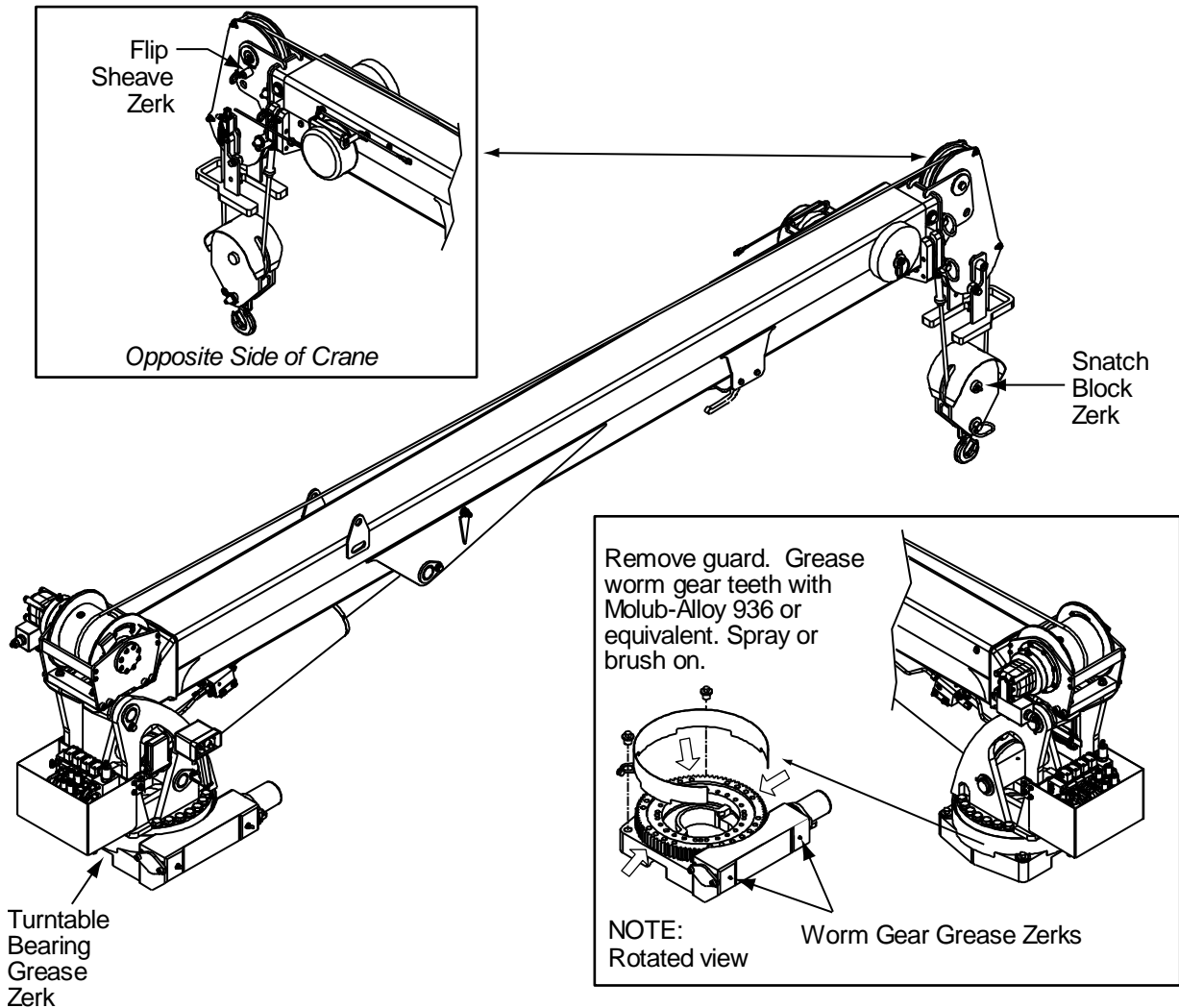
Different lubricants are required for different sections of your crane. Contact your lubricant supplier for specific product information. Follow the grease and lubricant specifications and intervals listed in this manual for best results.

Crane grease zerks must be greased on a weekly basis during normal operating conditions. Under severe operating conditions the zerks must be greased more frequently. Each grease zerk is marked with a decal, "Grease Weekly", as shown. Rotate the worm gear bearing when greasing the worm gear bearing grease zerks.



Crane worm gear bearing teeth must be lubricated weekly with Molub-Alloy 936 or equivalent, applied with a grease gun or brush. Cover all teeth with grease and leave no exposed metal surfaces showing.





LOCATION	LUBRICANT	APPLICATION METHOD	FREQUENCY
Base - Turntable Bearing Grease Zerk	Extreme Pressure Lithium Grease such as Shell Alvania 2EP, Shell Retinax "A", Mobilgrease XHP 462, Cenex ML 365, Xtreme True-Flo MP EP2 Lithium Grease or equivalent.	Apply with hand or pneumatic pressure grease gun.	Weekly
Flip Sheave Pin			
Snatch Block Pin			
Worm Gear Bearings Grease Zerks (*Rotate crane while greasing)	Molub-Alloy 936 or equivalent	Brush or spray on.	Weekly
Rotation Worm Gear Teeth			

8600 30' Recommended Spare Parts

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		
73051919	HYDRAULIC MOTOR	1
72601949	CAP SCREW 0.50-13 X 1.25 SHZC	2
72601629	CAP SCREW .75-10 X 4.00 HEX HEAD GR8 Z	4
72601817	CAP SCREW .75-10 X 3.25 HEX HEAD GR8 Z	16
BOOM ASSEMBLY		
60030336	WEAR PAD-RC	1
60030337	WEAR PAD-ROUND	2
60030421	WEAR PAD-RC	1
60030422	WEAR PAD-ROUND	1
60030423	WEAR PAD-RC	4
60030425	WEAR PAD-ROUND	2
60030428	WEAR PAD-ROUND	4
ANTI-TWO-BLOCK ASSEMBLY		
77041863	LIMIT SWITCH	1
CRANE & WINCH ASSEMBLY		
52718741	PIN	2
52723036	PIN	1
71073035	HOOK, SWIVEL 5.0T	1
70580202	WIRE ROPE ASSEMBLY	1
60030134	SHEAVE	1
LOWER CYLINDER (51723694)		
94399129	SEAL KIT	1
51723931 CYLINDER (PART OF 51723604 EXT. CYLINDER ASSEMBLY)		
94399160	SEAL KIT	1
51723927 CYLINDER (PART OF 51723604 EXT. CYLINDER ASSEMBLY)		
94399162	SEAL KIT	1
WINCH (71570968)		
IN PROCESS		
VALVE BANK (73734727)		
94399213	SEAL KIT, CONNECTION BLOCK	1
94399214	SEAL KIT, VALVE SECTIONS	1
77041898	SOLENOID, 12V	1

Installation Introduction

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, 99905190).

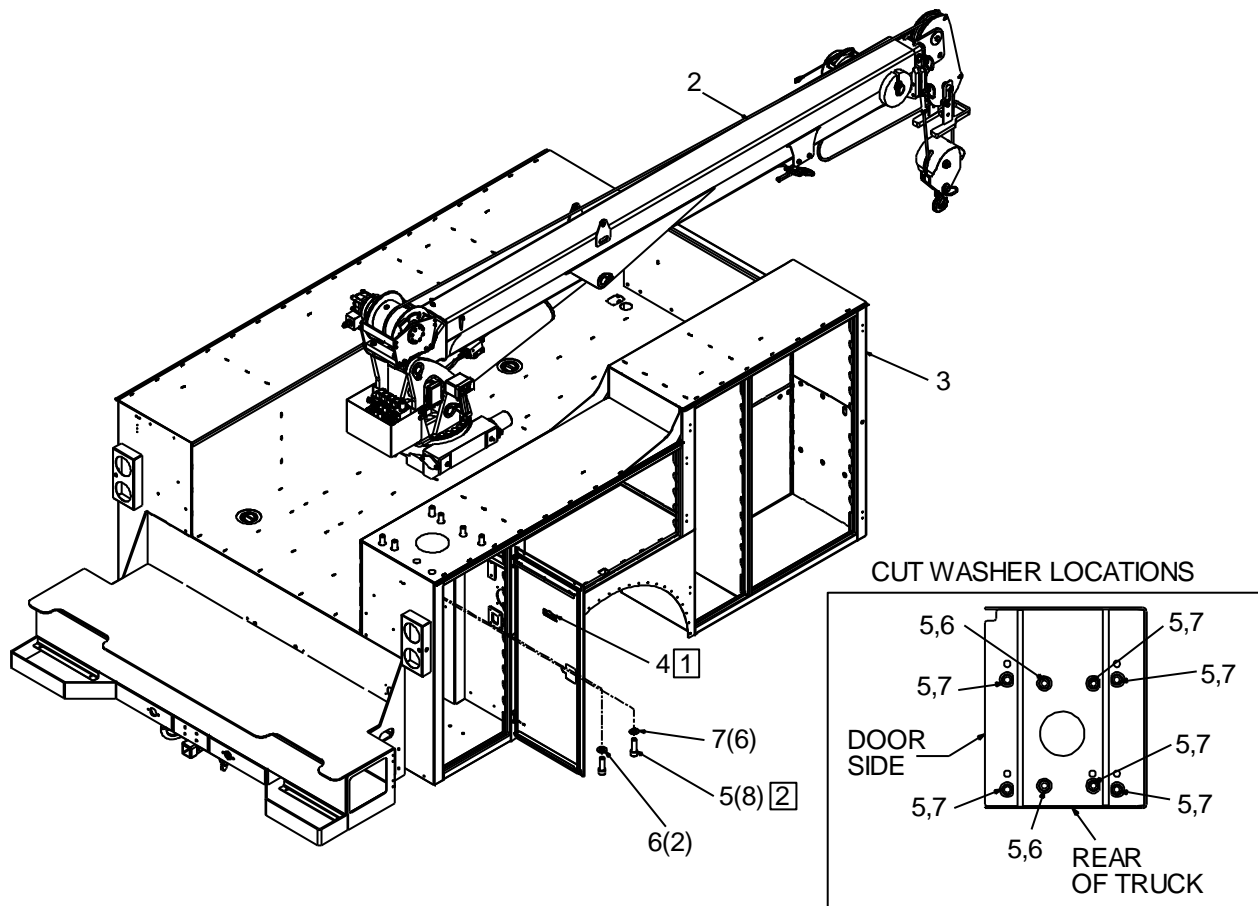
Reinforce the chassis frame, as necessary, and install the PTO and pump.

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 to 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.

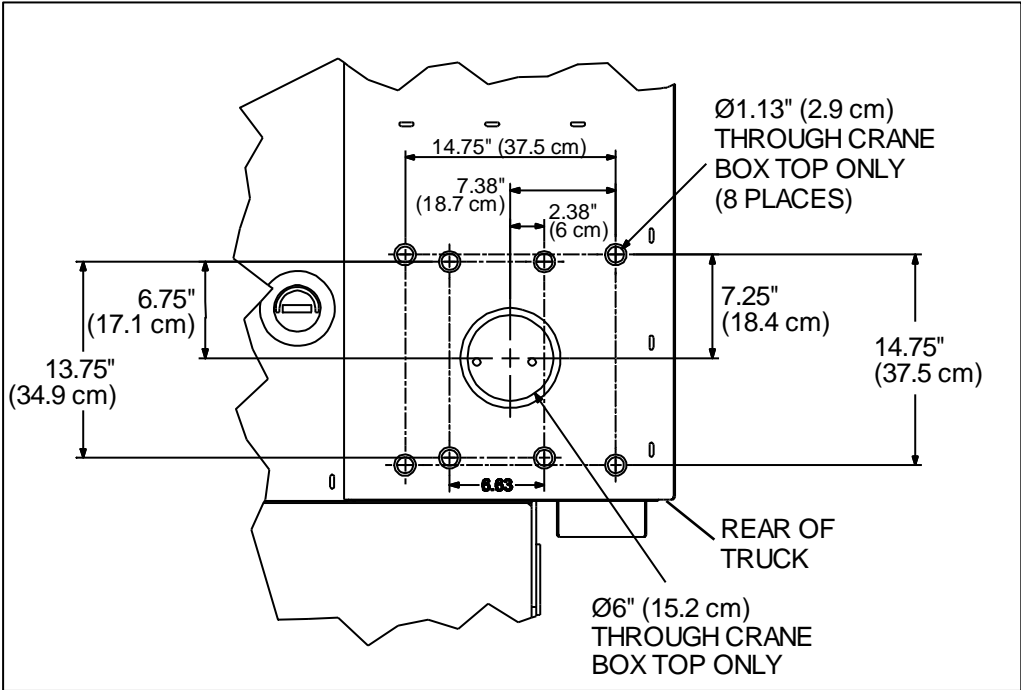
Dominator II - 8600 - 10000 Crane Installation Kit (99905067)



NOTES (SEE REFERENCE NUMBER IN BOX):

- 1 INSTALL THE LEVEL INDICATOR (72042097) PARALLEL TO THE DOOR REINFORCEMENTS.
- 2 TORQUE MOUNTING BOLTS TO 680 FT-LB (94 KG-M). (8 PLACES) USE THE SUPPLIED 3" (7.6 cm) BOLTS WITH A CRANE BOX TOP PLATE THICKNESS OF 1/2" TO 5/8" (1.3 cm TO 1.6 cm) ONLY. DETERMINE THE THICKNESS OF THE CRANE BOX TOP PLATE PRIOR TO MOUNTING. IF DIFFERENT LENGTH BOLTS ARE REQUIRED, THEY MUST BE 1-8, GRADE 8, ZINC COATED, OF PROPER LENGTH. FAILURE TO USE PROPER LENGTH BOLTS MAY CAUSE THE BOLTS UNDER THE CRANE SWING BEARING TO BOTTOM OUT BEFORE TORQUING. INSURE A MINIMUM OF 1-1/2" (3.8 cm) THREAD ENGAGEMENT.

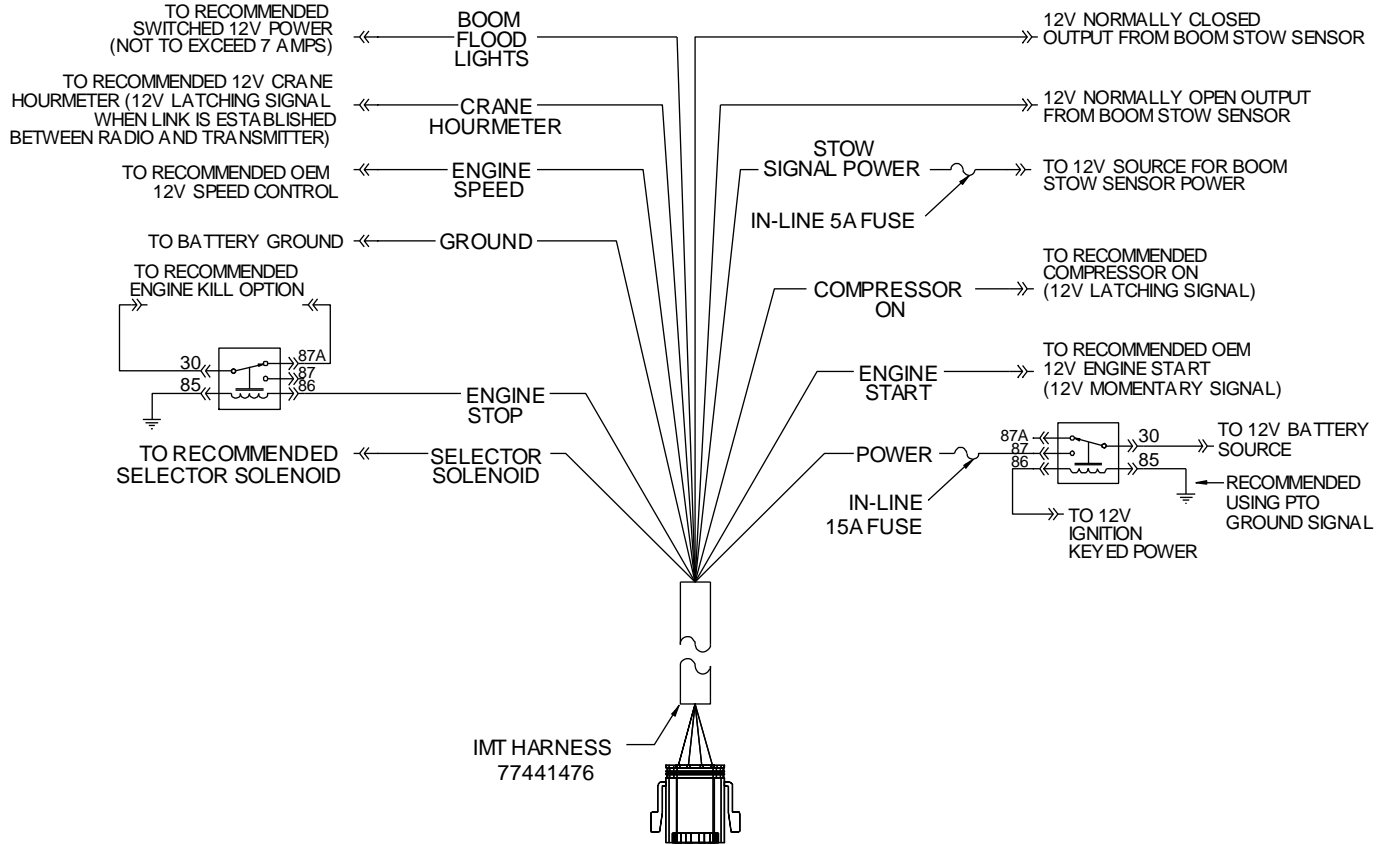
CRANE MOUNTING HOLE LOCATIONS



99905067 PARTS					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
1.	93713669	INSTALLATION KIT	7500-10000		1
2.	CRANE	CRANE ASSEMBLY			1
3.	BODY	DOMINATOR BODY			1
4.	72042097	LEVEL INDICATOR LEVEL		#1	1
5.	72601748	CAP SCREW	1.00- 8X 3.00 SH GR8	#1	8
6.	72063066	WASHER	1.00 FLAT HI STR	#1	2
7.	72063286	WASHER	FLAT 1.00 H ASTM F436 Z-CUT	#1	6
REV D 20120523					

Additional Installation Components, Non-IMT Body (93713748)

Chassis Wiring Harness (77441476 / 99905212)

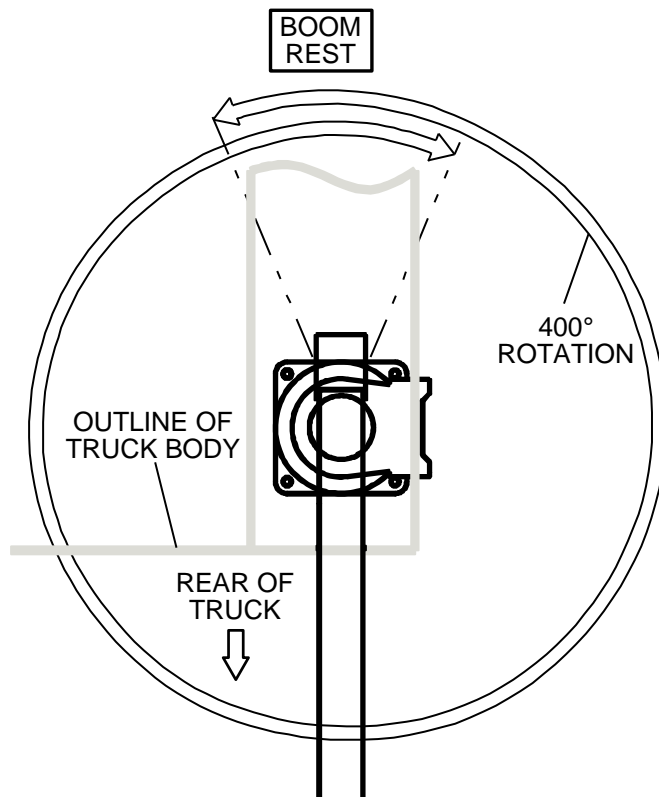


Filter (10 micron) (73052091)

Used on ship-out IMT telescopic cranes.

Telescopic Crane Orientation

When an IMT telescopic crane is not factory-installed on a body, the crane is packed with the boom oriented as it is built on a test stand to facilitate handling. Install the crane on the body with boom pointing backward. Once the crane is bolted down, it can be rotated 180° (3.14 radians) to the boom rest.



Crane Controls

IMT's telescopic cranes are controlled by radio remote controls. See the *Telescopic Crane Radio Remote System* manual, IMT # 99905114, for complete details on the radio remote system.

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Parts

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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

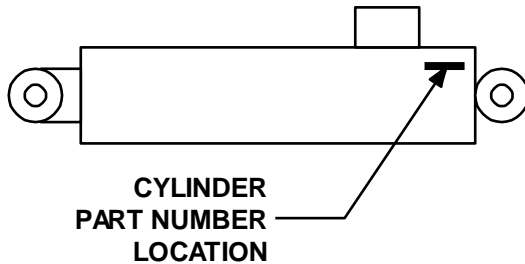
Every IMT crane has an identification placard (see figure). This placard is attached to the inner boom, mast, or crane base. When ordering parts, communicating warranty information, or referring to the unit in correspondence, always include the serial number and model numbers. Address all inquiries to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

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

The image shows a rectangular identification placard with a black background and white text. At the top, it reads "IOWA MOLD TOOLING CO., INC." and "BOX 189, GARNER, IA 50438-0189". Below this, there are three horizontal white bars for data entry. The first bar is labeled "MODEL NUMBER", the second "SERIAL NUMBER", and the third "MFG DATE". On the right side of the placard, there is a vertical label "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

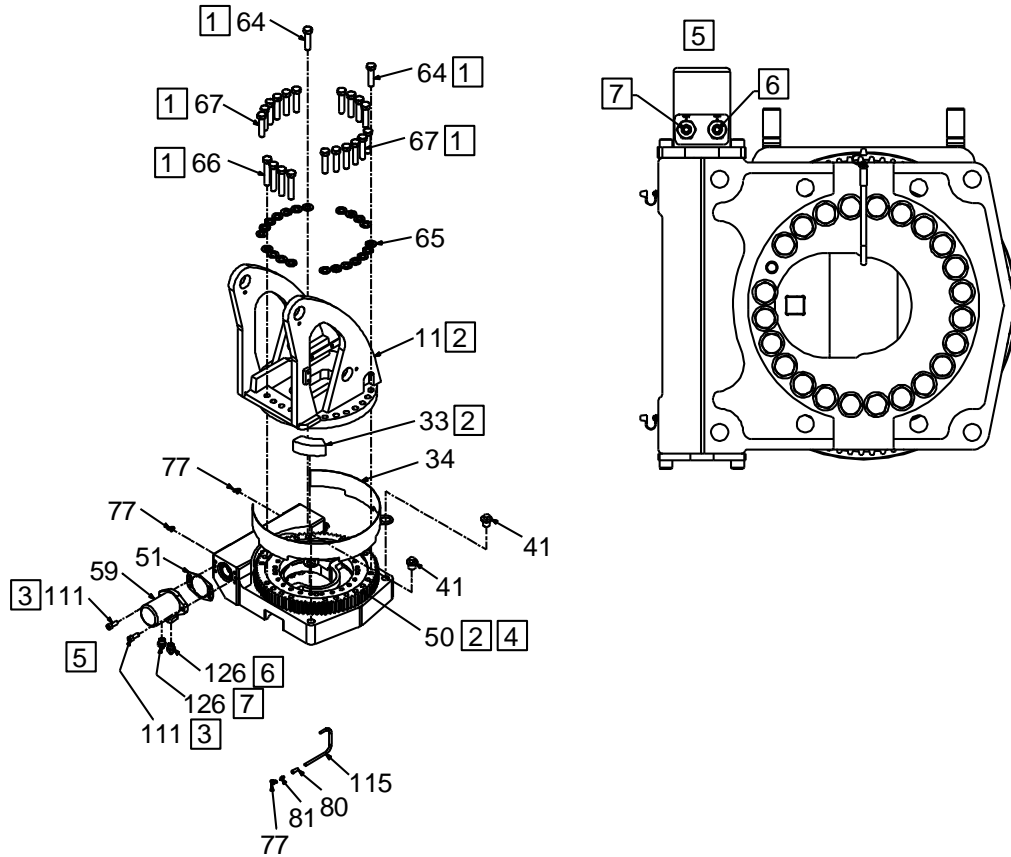
Each of the major weldments - base, mast, inner boom, outer boom, extension boom and stabilizer weldments bear a stamped part number. Any time a major weldment is replaced, you must specify the complete part number as stamped on the weldment. The locations of the part numbers are shown in the Crane Reference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

ORDERING REPAIR PARTS

When ordering replacement parts:

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

Base & Mast Assembly, Test Stand (99904923)



NOTES (SEE REFERENCE NUMBER IN BOX):

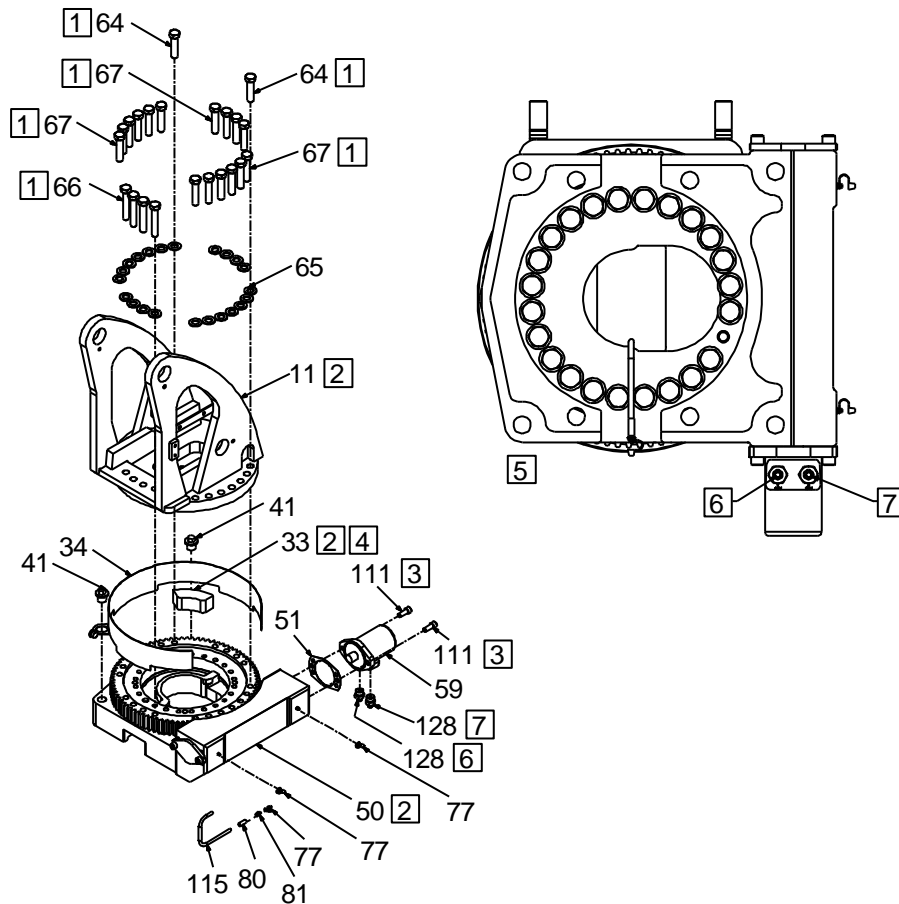
- 1 TORQUE TO 280 FT-LB (38.7 KG-M)
- 2 USE RUST PREVENTATIVE ON SLIDE STOP, BEARING RACE, BOTTOM OF MAST AND TOP OF GEAR BEARING.
- 3 APPLY BLUE THREAD LOCKER.
- 4 APPLY GEAR LUBE ON GEAR TEETH.
- 5 BASE AND MAST ASSEMBLY SHOWN AS MOUNTED ON THE TEST STAND. NOTE ORIENTATION OF MOTOR. BOTTOM VIEW OF ROTATION ASSEMBLY.
- 6 PORT A
- 7 PORT B

BASE & MAST ASSEMBLY, TEST STAND MOUNT (99904923)					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QTY
1.	91723059	KIT-HARDWARE BASE & MAST			1
5.	91723584	HARDWARE KIT			1
6.	91723601	HYDRAULIC KIT			1
11.	52722950	MAST WELDMENT			1

BASE & MAST ASSEMBLY, TEST STAND MOUNT (99904923)					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QTY
33.	60120138	SLIDE-ROTATION STOP			1
34.	60128849	GEAR GUARD			1
41.	70029595	THREADED PLUG	1.00-8		2
50.	71056577	GEAR ROTATOR	0.75 BOLTS		1
51.	76039295	GASKET		#50	1
59.	73051919	MOTOR-HYDRAULIC			1
64.	72060207	CAP SCREW	.75-10 X 3.00 HEX HEAD GR8 Z	#1	2
65.	72063116	WASHER	.75 N FLAT H ASTM F436 Z	#1	22
66.	72601629	CAP SCREW	.75-10 X 4.00 HEX HEAD GR8 Z	#1	4
67.	72601817	CAP SCREW	.75-10 X 3.25 HEX HEAD GR8 Z	#1	16
77.	70034382	CAP-GREASE		#5	6
80.	72053301	COUPLING	BLK .12	#5	1
81.	72053508	ZERK	NPT 0.12	#5	4
111.	72601949	CAP SCREW	.50-13 X 1.25 SOCKET HEAD ZINC-COATED	#5	2
115.	51395121	HOSE	AA .13 X 13.5 0 OAL (2-2)	#6	1
128.	72533613	ADAPTER	M STR/M JIC 10 6	#6	2
REV. G 20120815					

Base & Mast Assembly, Truck Mount (99904923)

NOTE: This base and mast assembly is shown as if it were mounted on a truck.

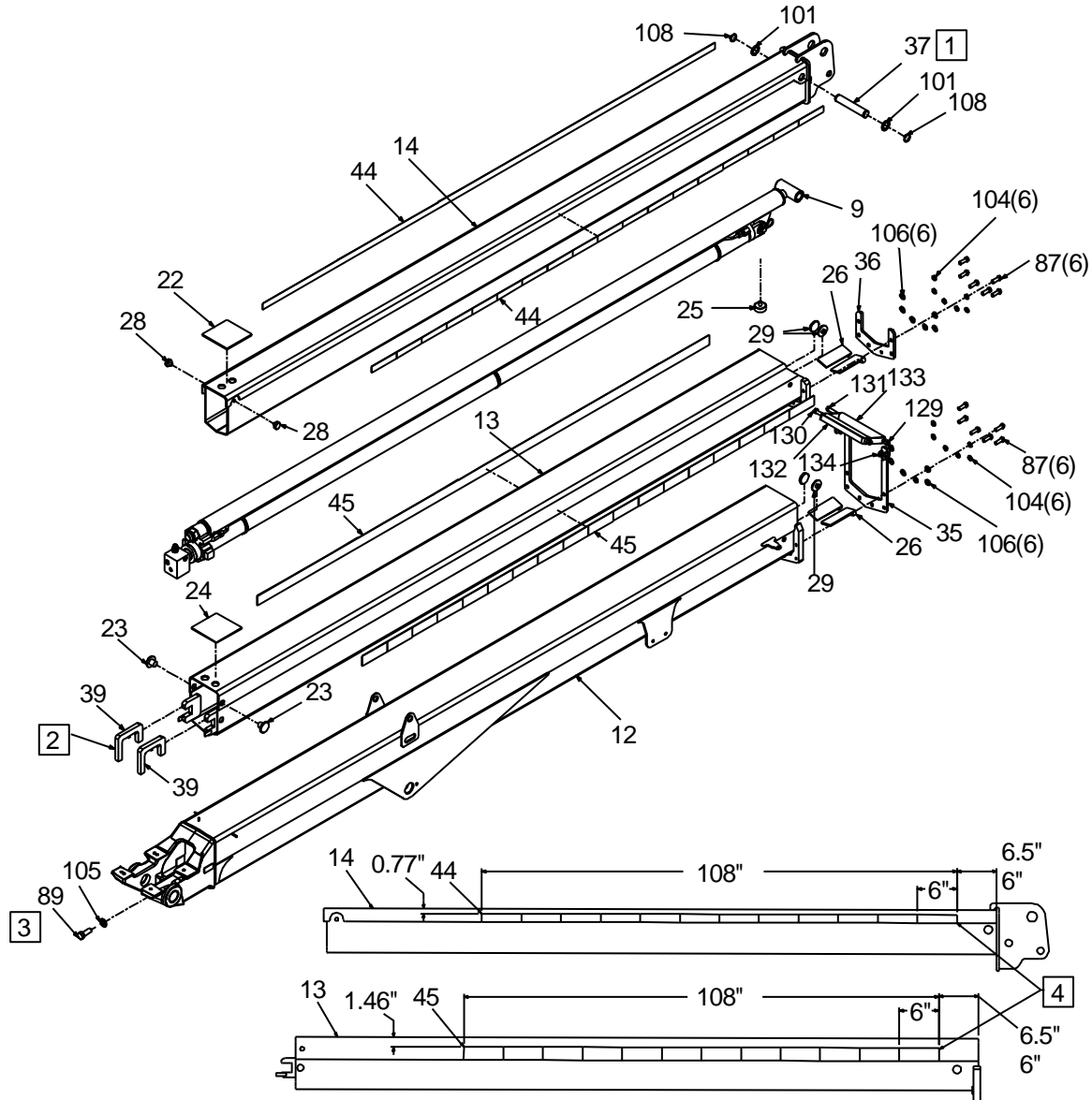


NOTES (SEE REFERENCE NUMBER IN BOX):

- 1 TORQUE TO 280 FT-LB (38.7 KG-M)
- 2 USE RUST PREVENTATIVE ON SLIDE STOP, BEARING RACE, BOTTOM OF MAST AND TOP OF GEAR BEARING.
- 3 APPLY BLUE THREAD LOCKER.
- 4 APPLY GEAR LUBE ON GEAR TEETH.
- 5 BASE AND MAST ASSEMBLY SHOWN AS MOUNTED ON THE TRUCK. VIEW A FROM BOTTOM OF ROTATION ASSEMBLY.
- 6 PORT A
- 7 PORT B

BASE & MAST ASSEMBLY, TRUCK MOUNT (99904923)					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QTY
1.	91723059	KIT-HARDWARE BASE & MAST			1
5.	91723584	HARDWARE KIT			1
6.	91723601	HYDRAULIC KIT			1
11.	52722950	MAST WELDMENT			1
33.	60120138	SLIDE-ROTATION STOP			1
34.	60128849	GEAR GUARD			1
41.	70029595	THREADED PLUG	1.00-8		2
50.	71056577	GEAR ROTATOR	0.75 BOLTS		1
51.	76039295	GASKET		#50	1
59.	73051919	MOTOR-HYDRAULIC			1
64.	72060207	CAP SCREW	.75-10 X 3.00 HEX HEAD GR8 Z	#1	2
65.	72063116	WASHER	.75 N FLAT H ASTM F436 Z	#1	22
66.	72601629	CAP SCREW	.75-10 X 4.00 HEX HEAD GR8 Z	#1	4
67.	72601817	CAP SCREW	.75-10 X 3.25 HEX HEAD GR8 Z	#1	16
77.	70034382	CAP-GREASE		#5	6
80.	72053301	COUPLING	BLK .12	#5	1
81.	72053508	ZERK	NPT 0.12	#5	4
111.	72601949	CAP SCREW	.50-13 X 1.25 SOCKET HEAD ZINC-COATED	#5	2
115.	51395121	HOSE	AA .13 X 13.5 0 OAL (2-2)	#6	1
128.	72533613	ADAPTER	M STR/M JIC 10 6	#6	2
REV. G 20120815					

Boom Assembly (99904923)



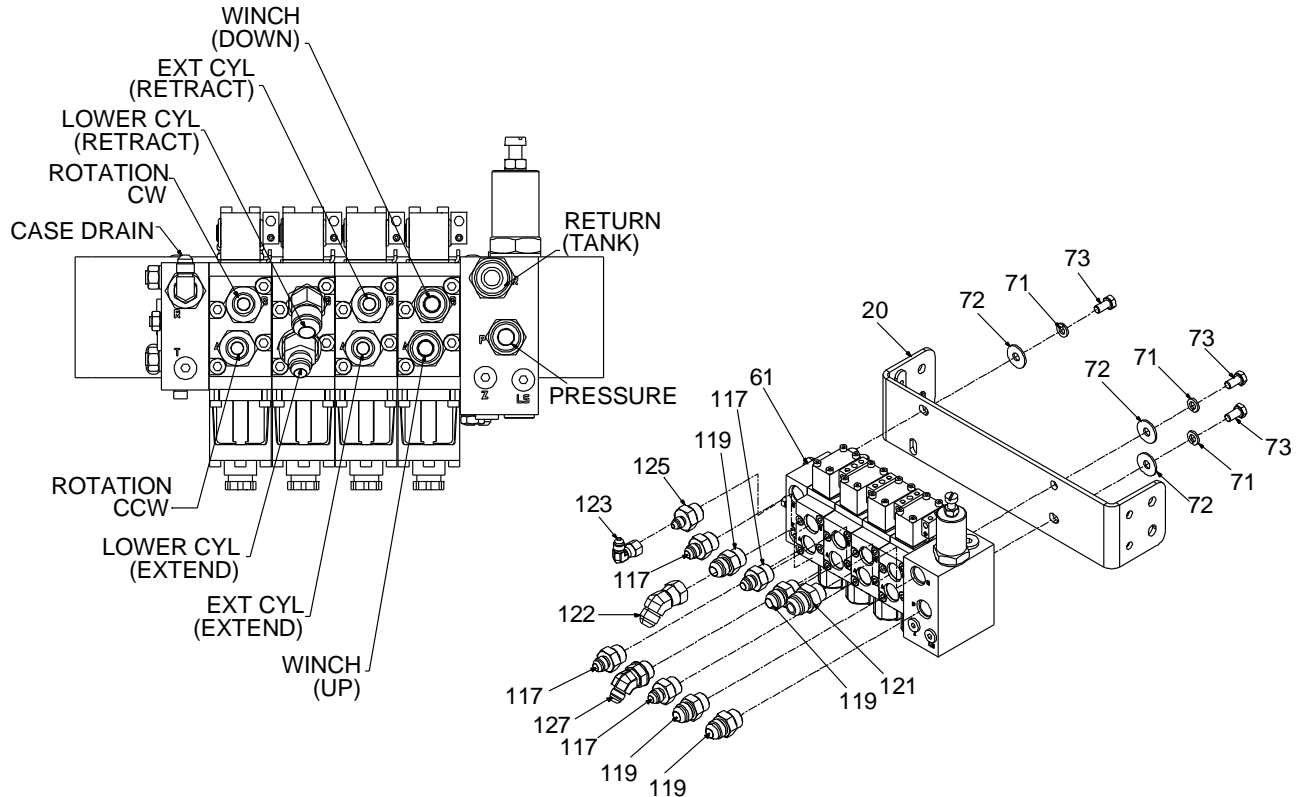
NOTES (SEE REFERENCE NUMBER IN BOX):

- 1 APPLY NEVER SEEZ.
- 2 INSTALL EXTENSION CYLINDER FIRST, FOLLOWED BY RETAINERS AND WEAR PADS.
- 3 TORQUE TO 280 FT-LB (38.7 KG-M). USE BLUE THREAD LOCKER.
- 4 START WITH RED SEGMENT. ALIGN WITH PLATE EDGE.

99904923 BOOM ASSEMBLY					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
5.	91723584	HARDWARE KIT			1
9.	51723604	CYLINDER ASSEMBLY	2.50/ 1.50 2.75/1.75 204.0S 144.6		1

99904923 BOOM ASSEMBLY					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
12.	52723022	WELDMENT-LOWER BOOM	7500/10000		1
13.	52723023	WELDMENT-1st STAGE EXT BOOM	7500/10000		1
14.	52723024	WELDMENT-2nd STAGE EXT BOOM	7500/10000		1
22.	60030336	WEAR PAD-RC	.19 X 6.00 X 6.00		1
23.	60030337	WEAR PAD-ROUND	2.00 DIA X 1.00 DIA X 1.188 LG		2
24.	60030421	WEAR PAD-RC	.25 X 6.00 X 6.00		1
25.	60030422	WEAR PAD-ROUND	2.00 DIA X .50 DIA X 1.69 L		1
26.	60030423	WEAR PAD-RC	0.25 X 2.25 X 6.00L		4
28.	60030425	WEAR PAD-ROUND	1.25 DIA X 0.50 DIA X 0.94L		2
29.	60030428	WEAR PAD-ROUND	2.0 0 DIA X .75 DIA X .72L		4
35.	60135667	CAP-LOWER BOOM			1
36.	60135668	CAP-FIRST STAGE			1
37.	60135669	PIN	1.2 5X 6.89 (6.46)		1
39.	60135833	RETAINER-1st STAGE EXTENSION CYLINDER			2
44.	70399044	TAPE -REFLECTIVE RED/ SILVER	1.25 X108.00		2
45.	70399045	TAPE -REFLECTIVE RED/ SILVER	2.00 X108.00		2
87.	72060093	CAP SCREW	.50-13 X 1.5 HEX HEAD GR5 Z	#5	12
89.	72060206	CAP SCREW	.75-10 X 2.00 HEX HEAD GR8Z	#5	1
101.	72063035	MACHINERY BUSHING	1.25 X10 GA NR	#5	2
104.	72063053	WASHER	.50 LOCK	#5	17
105.	72063116	WASHER	FLAT .75N ASTM F436Z	#5	1
106.	72063132	WASHER	.50 FLAT ASTM F436	#5	17
108.	72066129	RETAINING RING-EXTERNAL	1.25 HD	#5	2
129.	72062080	NUT	.50-13 HEX NYLOCK	#135	2
130.	72602073	CAP SCREW	.50-13 X 11.5 HHGR5Z	#135	1
131.	72602075	CAP SCREW	.50-13 X 12.5 HHGR5Z	#135	1
132.	60140029	BRACKET-CABLE GUIDE		#135	1
133.	60140030	ROLLER-CABLE GUIDE		#135	2
134.	72063005	WASHER	.50 FLAT	#135	2
135.	93724760	CABLE GUIDE KIT			1
REV G 20120815					

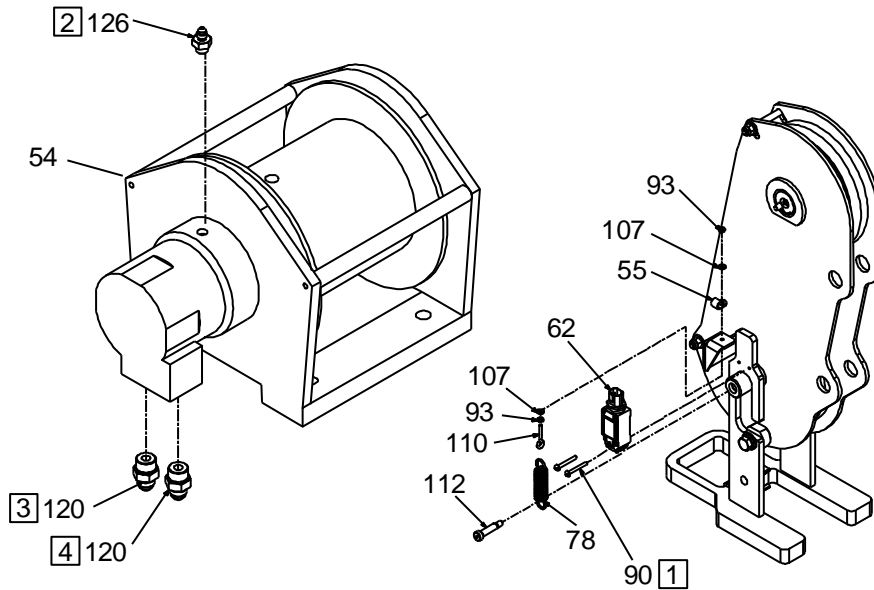
Valvebank Assembly (99904923)



VALVEBANK ASSEMBLY PARTS LIST (99904923)

ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
3.	91723543	HARDWARE KIT-VALVEBANK MOUNT			1
6.	91723601	HYDRAULIC KIT			1
20.	52723563	WELDMENT-MAST VALVEBANK BRACKET			1
61.	73734727	VALVE BANK (WAS 73734635)	10 GPM		1
71.	72601797	WASHER-LOCK	8 MM	#3	3
72.	72602065	WASHER-FLAT	M8	#3	3
73.	72602052	CAP SCREW	M8-1.25X 16 HEX HEAD Z	#3	3
117.	72532356	ADAPTER	M STR/M JIC 8 6	#6	4
119.	72532358	ADAPTER	M STR/M JIC 8 8	#6	4
121.	72532361	ADAPTER	M STR/M JIC 8 10	#6	1
122.	72532670	ELBOW	M JIC/45/ F JIC 8 8	#6	1
123.	72532690	ELBOW	M JIC/90/ FJIC SW 4 4	#6	1
125.	72532792	ADAPTER	M STR/M JIC 8 4	#6	1
127.	72533583	ELBOW	M STR/45/ M JIC 8 6	#6	1
REV G 20120815					

Winch & Anti-Two-Block Assembly (99904923)

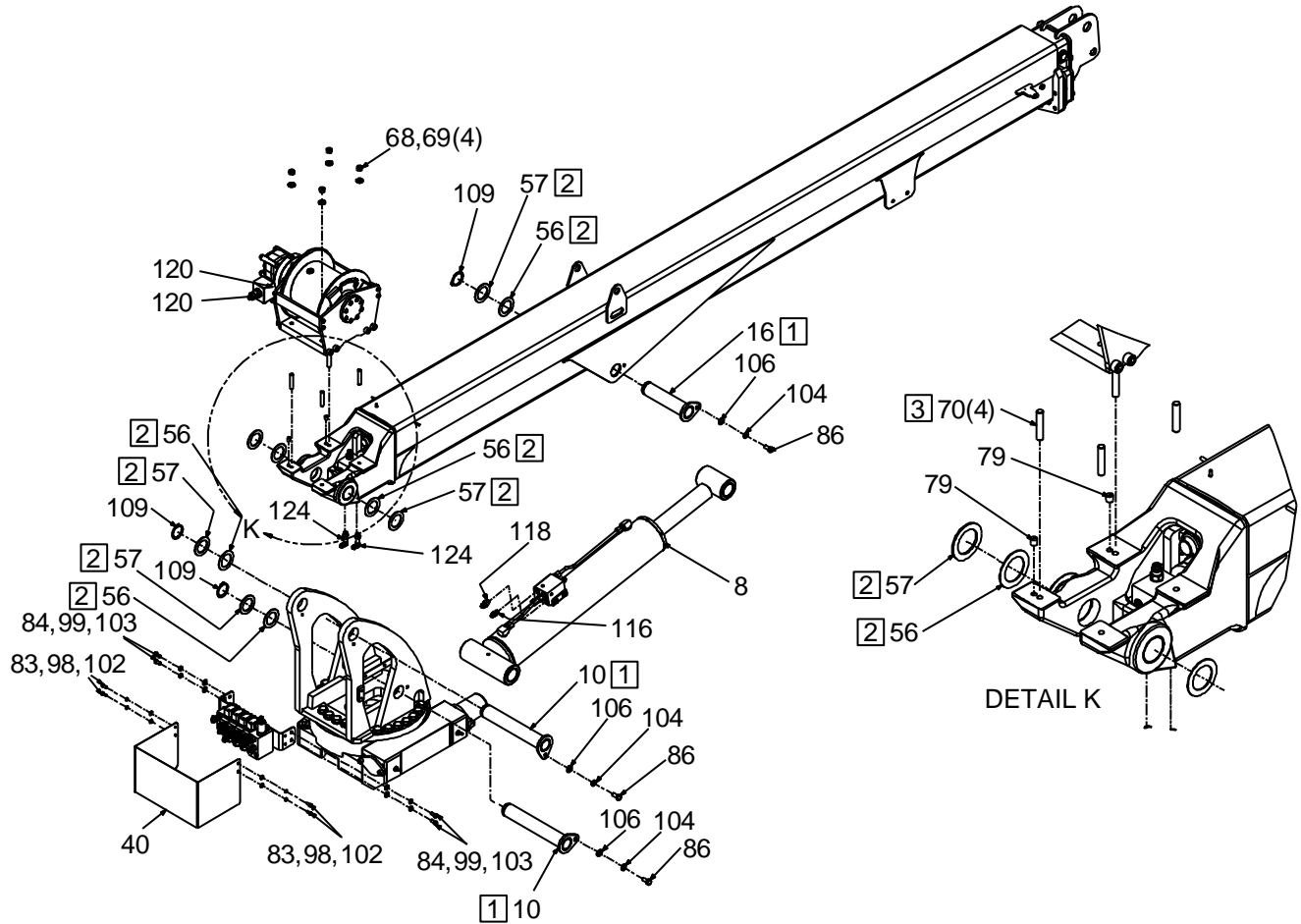


NOTES (SEE REFERENCE NUMBER IN BOX):

- 1 USE BLUE LOCTITE
- 2 CASE DRAIN
- 3 PORT B
- 4 PORT A

WINCH ASSEMBLY, ANTI-TWO-BLOCK ASSEMBLY (99904923)					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
5.	91723584	HARDWARE KIT			1
6.	91723601	HYDRAULIC KIT			1
54.	71570968	WINCH-PLANETARY	4400 LINE PULL (A41)		1
55.	72034485	CLAMP-PLASTIC	1/4 " CABLE		9
62.	77041863	SWITCH-LIMIT	DT04-4P CONN		1
78.	71413185	SPRING	.105 WIRE 0.75OD 2 .875 LG	#5	1
90.	72060640	SCREW-MACHINERY	10-24 X 1.50 ROUND HEAD	#5	2
93.	72062093	NUT	#8 -32 HEX ZINC	#5	2
107.	72063271	WASHER	# 8 W FLAT ANSI B 27. 2Z	#5	2
110.	72601938	BOLT-EYE	# 8-32X 1.125	#5	1
112.	72602022	BOLT-SHOULDER	.38X 1.25	#5	1
120.	72532359	ADAPTER	M STR/M JIC 10 8	#6	2
126.	72533490	ADAPTER	M BSPP/M JIC 4 4	#6	1
REV G 20120815					

Crane & Winch Assembly (99904923)



NOTES (SEE REFERENCE NUMBER IN BOX):

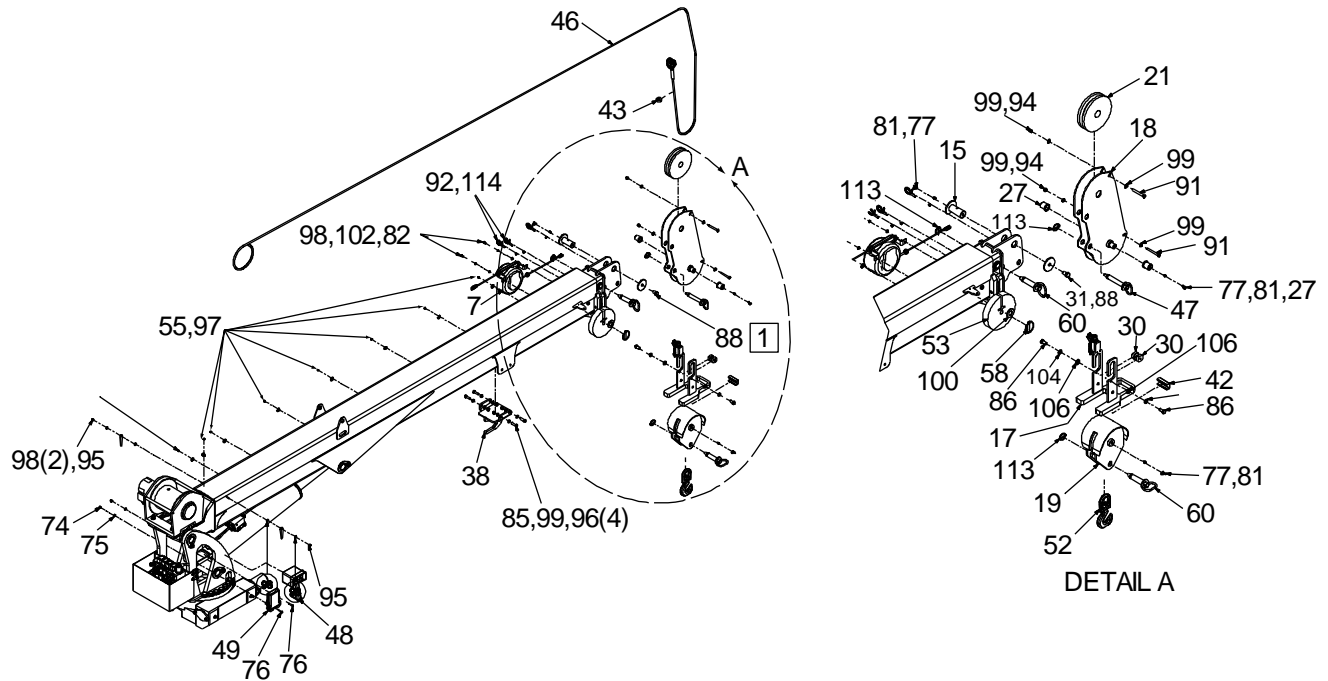
- 1 APPLY ANTI-SEEZ TO BOOM AND CYLINDER MOUNTING PINS ON THE MAST.
- 2 IF REQUIRED, USE 72063038 OR 72063039 MACHINERY BUSHINGS BETWEEN THE MAST AND LOWER BOOM.
- 3 APPLY BLUE LOCKTITE.

CRANE & WINCH ASSEMBLY (99904923)

ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
1.	91723059	KIT-HARDWARE BASE & MAST			1
2.	91723579	HARDWARE KIT-WINCH MOUNT			1
5.	91723584	HARDWARE KIT			1
8.	51723694	CYLINDER	4.75/2.50 25.06S 45.52CCC		1
10.	52718741	PIN	MM 2.00 X 12.75 (11.94)		2
16.	52723036	PIN	MM 2.00 X 9.00 (8.19)		1
40.	60136475	COVER-VALVE BANK			1

CRANE & WINCH ASSEMBLY (99904923)					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
56.	72063038	MACHINERY BUSHING	2.00 X14 GA NR		AS REQUIRED
57.	72063039	MACHINERY BUSHING	2.00 X10 GA NR		AS REQUIRED
68.	72062108	NUT	.50 -20 HEX CENTER LOCK	#2	4
69.	72063132	WASHER	.50 FLAT ASTM F436	#2	4
70.	72602061	STUD	0.50-13(20)X2.5 NC(NF) GR8 STL	#2	4
79.	72034479	PLUG-PLASTIC	.50-13 X .50 UNC-2B	#5	2
83.	72060002	CAP SCREW	.25-20 X .75 HEX HEAD GR5 Z	#5	4
84.	72060044	CAP SCREW	.38-16 X .75 HEX HEAD GR5 Z	#5	4
86.	72060091	CAP SCREW	.50-13 X 1.00 HEX HEAD GR5 Z	#5	5
98.	72063001	WASHER	.25 FLAT	#5	10
99.	72063003	WASHER	.38 FLAT	#5	16
102.	72063049	WASHER	.25 LOCK	#5	6
103.	72063051	WASHER	.38 LOCK	#5	4
104.	72063053	WASHER	.50 LOCK	#5	17
106.	72063132	WASHER	.50 FLAT ASTM F436	#5	17
109.	72066136	RETAINING RING- EXTERNAL	2.00 HD	#5	3
116.	72532355	ADAPTER	M STR/M JIC 6 6	#6	1
118.	72532357	ADAPTER	M STR/M JIC 6 8	#6	1
120.	72532359	ADAPTER	M STR/M JIC 10 8	#6	2
124.	72532700	ELBOW	M STR/90/ M JIC XL 6 6	#6	2
REV G 20120815					

Flip Sheave Assembly (99904923)



NOTES (SEE REFERENCE NUMBER IN BOX):

1 USE BLUE LOCKTITE.

FLIP SHEAVE ASSEMBLY PARTS (99904923)					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
4.	51719413	HARDWARE KIT-CRANE RADIO CONTROLS			1
5.	91723584	HARDWARE KIT			1
7.	51723610	CORD REEL ASSEMBLY	30' WITH CONNECTOR		1
15.	52723030	PIN	M 1.50X 3.38		1
17.	52723058	WELDMENT- ANTI-TWO BLOCK BRACKET			1
18.	52723062	WELDMENT-FLIP SHEAVE	7500/8600		1
19.	52723063	WELDMENT- SNATCH BLOCK	7500/8600		1
21.	60030134	SHEAVE	8.00 NYLATRON GSM		1
27.	60030424	CAP- ANTI-TWO BLOCK PIN			2
30.	60030429	WEAR PAD- ANTI-TWO BLOCK BRACKET			2
31.	60109337	PIN RETAINER PLATE	3.00 DIA		1
38.	52723623	HOOK HOLDER-WELDMENT			1
42.	70034517	SPLIT SHEAVE PROTECTOR			1
43.	70145121	COLLAR-SHAFT 2 PIECE	7/8 in.		1
46.	70580202	WIRE ROPE ASSEMBLY	0.38 (6X25)X130 ft LH LAY		1
47.	72661514	PIN-LOCK WITH HANDLE			1
48.	70734559	TRANSMITTER-RADIO REMOTE			1

FLIP SHEAVE ASSEMBLY PARTS (99904923)					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
49.	70734560	RECEIVER-RADIO REMOTE			1
52.	71073035	HOOK-SWIVEL	5.0T W/LATCH		1
53.	71414204	PLATE-SINGLE SHEAVE	(20 #) .38 WIRE ROPE		1
55.	72034485	CLAMP-PLASTIC	1/4 " CABLE		9
58.	72661641	PIN-QUICK	5/16-2-1/16 ZINC YELLOW		1
60.	73734565	PIN-LOCK WITH HANDLE	1.00 X 3.50 WITH HAIRPIN		2
74.	72062194	NUT-STAINLESS STEEL	.25 -20 NYLOC	#4	2
75.	72063166	WASHER-FLAT	.25 R WRT 18 -8 .62 OD STAINLESS STEEL	#4	2
76.	72601846	CAP SCREW	.25-20 X 1.25 HEX HEAD STAINLESS STEEL	#4	2
77.	70034382	CAP-GREASE		#5	6
81.	72053508	ZERK	NPT 0.12	#5	4
82.	72060000	CAP SCREW	.25-20 X .50 HEX HEAD GR5 Z	#5	2
85.	72060064	CAP SCREW	.44-14 X 1.50 HEX HEAD GR5 Z	#5	4
86.	72060091	CAP SCREW	.50-13 X 1.00 HEX HEAD GR5 Z	#5	5
88.	72060147	CAP SCREW	.62-11 X 1.00 HEX HEAD GR5 Z	#5	1
91.	72060893	CAP SCREW	.38-16 X 3.25 HEX HEAD GR5 Z	#5	2
92.	72062000	NUT	.25-20 HEX	#5	3
94.	72062103	NUT	.38-16 HEX NYLOCK	#5	2
95.	72062104	NUT	.25-20 HEX NYLOCK	#5	2
96.	72062105	NUT	.44-14 HEX NYLOCK	#5	4
97.	72062106	NUT	10-24 HEX NYLOCK	#5	8
98.	72063001	WASHER	.25 FLAT	#5	10
99.	72063003	WASHER	.38 FLAT	#5	16
100.	72063010	WASHER	1.00 FLAT	#5	1
102.	72063049	WASHER	.25 LOCK	#5	6
104.	72063053	WASHER	.50 LOCK	#5	17
106.	72063132	WASHER	.50 FLAT ASTM F436	#5	17
113.	72661543	PIN-QUICK		#5	3
114.	72661694	BRIDLE RING	1-1/12 ID X 1/ 4-20	#5	3
REV G 20120815					

30' Model 8600 Crane Parts List, Complete (99904923)

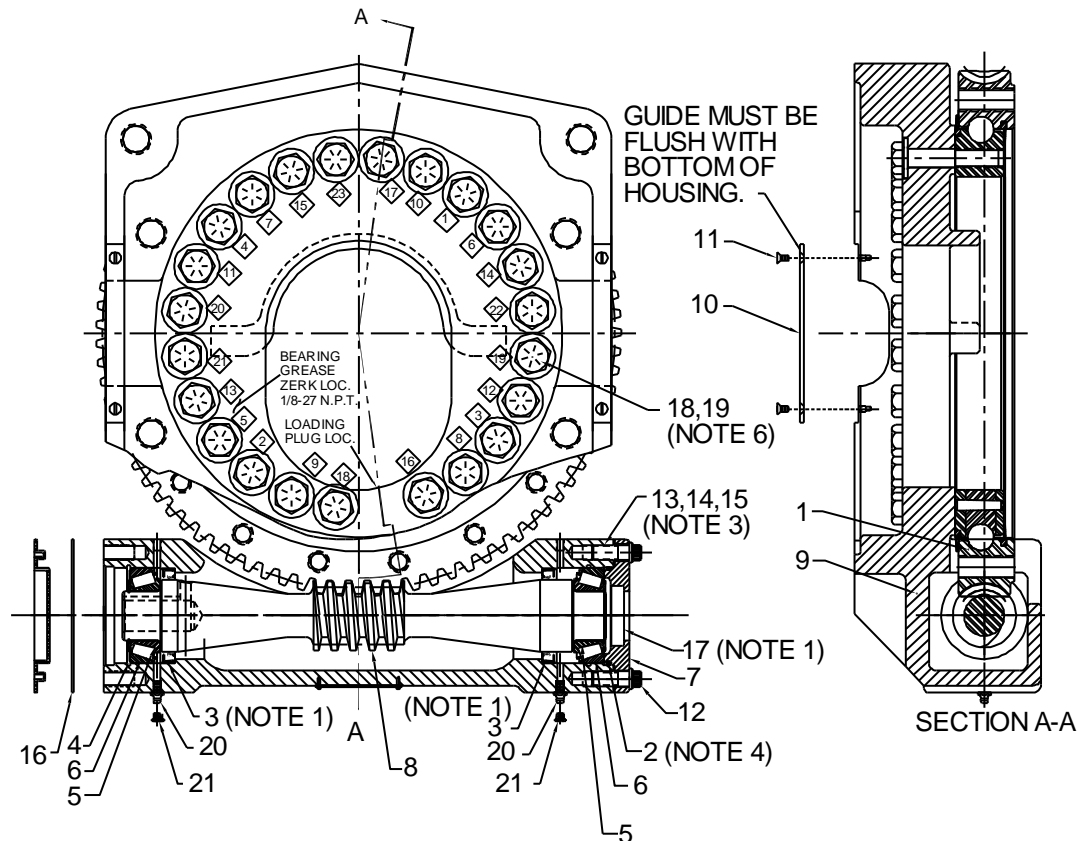
99904923 PARTS LIST, COMPLETE					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
1.	91723059	KIT-HARDWARE BASE & MAST			1
2.	91723579	HARDWARE KIT-WINCH MOUNT			1
3.	91723543	HARDWARE KIT-VALVEBANK MOUNT			1
4.	51719413	HARDWARE KIT-CRANE RADIO CONTROLS			1
5.	91723584	HARDWARE KIT			1
6.	91723601	HYDRAULIC KIT			1
7.	51723610	CORD REEL ASSEMBLY	30' WITH CONNECTOR		1
8.	51723694	CYLINDER	4.75/2.50 25.06S 45.52CCC		1
9.	51723604	CYLINDER ASSEMBLY	2.50/ 1.50 2.75/1.75 204.0S 144.6		1
10.	52718741	PIN	MM 2.00 X 12.75 (11.94)		2
11.	52722950	MAST WELDMENT			1
12.	52723022	WELDMENT-LOWER BOOM	7500/10000		1
13.	52723023	WELDMENT-1st STAGE EXT BOOM	7500/10000		1
14.	52723024	WELDMENT-2nd STAGE EXT BOOM	7500/10000		1
15.	52723030	PIN	M 1.50X 3.38		1
16.	52723036	PIN	MM 2.00 X 9.00 (8.19)		1
17.	52723058	WELDMENT- ANTI-TWO BLOCK BRACKET			1
18.	52723062	WELDMENT-FLIP SHEAVE	7500/8600		1
19.	52723063	WELDMENT- SNATCH BLOCK	7500/8600		1
20.	52723563	WELDMENT-MAST VALVEBANK BRACKET			1
21.	60030134	SHEAVE	8.00 NYLATRON GSM		1
22.	60030336	WEAR PAD-RC	.19 X 6.00 X 6.00		1
23.	60030337	WEAR PAD-ROUND	2.00 DIA X 1.00 DIA X 1.188 LG		2
24.	60030421	WEAR PAD-RC	.25 X 6.00 X 6 .00		1
25.	60030422	WEAR PAD-ROUND	2.00 DIA X .50 DIA X 1.69 L		1
26.	60030423	WEAR PAD-RC	0.25 X 2.25 X 6.00L		4
27.	60030424	CAP- ANTI-TWO BLOCK PIN			2
28.	60030425	WEAR PAD-ROUND	1.25 DIA X 0.50 DIA X 0.94L		2
29.	60030428	WEAR PAD-ROUND	2.0 0 DIA X .75 DIA X .72L		4
30.	60030429	WEAR PAD- ANTI-TWO BLOCK BRACKET			2
31.	60109337	PIN RETAINER PLATE	3.00 DIA		1
32.	70034490	PLATE-ANGLE PLASTIC	3.5"		2
33.	60120138	SLIDE-ROTATION STOP			1
34.	60128849	GEAR GUARD			1
35.	60135667	CAP-LOWER BOOM			1
36.	60135668	CAP-FIRST STAGE			1

99904923 PARTS LIST, COMPLETE					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
37.	60135669	PIN	1.2 5X 6.89 (6.46)		1
38.	52723623	HOOK HOLDER-WELDMENT			1
39.	60135833	RETAINER-1st STAGE EXTENSION CYLINDER			2
40.	60136475	COVER-VALVE BANK			1
41.	70029595	THREADED PLUG	1.00-8		2
42.	70034517	SPLIT SHEAVE PROTECTOR			1
43.	70145121	COLLAR-SHAFT 2 PIECE	7/8 in.		1
44.	70399044	TAPE -REFLECTIVE RED/ SILVER	1.25 X108.00		2
45.	70399045	TAPE -REFLECTIVE RED/ SILVER	2.00 X108.00		2
46.	70580202	WIRE ROPE ASSEMBLY	0.38 (6X25)X130 ft LH LAY		1
47.	72661514	PIN-LOCK WITH HANDLE			1
48.	70734559	TRANSMITTER-RADIO REMOTE			1
49.	70734560	RECEIVER-RADIO REMOTE			1
50.	71056577	GEAR ROTATOR	0.75 BOLTS		1
51.	76039295	GASKET		#50	1
52.	71073035	HOOK-SWIVEL	5.0T W/LATCH		1
53.	71414204	PLATE-SINGLE SHEAVE	(20 #) .38 WIRE ROPE		1
54.	71570968	WINCH-PLANETARY	4400 LINE PULL (A41)		1
55.	72034485	CLAMP-PLASTIC	1/4 " CABLE		9
56.	72063038	MACHINERY BUSHING	2.00 X14 GA NR		AS REQUIRED
57.	72063039	MACHINERY BUSHING	2.00 X10 GA NR		AS REQUIRED
58.	72661641	PIN-QUICK	5/16-2-1/16 ZINC YELLOW		1
59.	73051919	MOTOR-HYDRAULIC			1
60.	73734565	PIN-LOCK WITH HANDLE	1.00 X 3.50 WITH HAIRPIN		2
61.	73734727	VALVE BANK (WAS 73734635)	10 GPM		1
62.	77041863	SWITCH-LIMIT	DT04-4P CONN		1
63.	77441481	HARNESS (WAS 77441426)			1
64.	72060207	CAP SCREW	.75-10 X 3.00 HEX HEAD GR8 Z	#1	2
65.	72063116	WASHER	.75 N FLAT H ASTM F436 Z	#1	22
66.	72601629	CAP SCREW	.75-10 X 4.00 HEX HEAD GR8 Z	#1	4
67.	72601817	CAP SCREW	.75-10 X 3.25 HEX HEAD GR8 Z	#1	16
68.	72062108	NUT	.50 -20 HEX CENTER LOCK	#2	4
69.	72063132	WASHER	.50 FLAT ASTM F436	#2	4
70.	72602061	STUD	0.50-13(20)X2.5 NC(NF) GR8 STL	#2	4
71.	72601797	WASHER-LOCK	8 MM	#3	3
72.	72602065	WASHER-FLAT	M8	#3	3
73.	72602052	CAP SCREW	M8-1.25X 16 HEX HEAD Z	#3	3
74.	72062194	NUT-STAINLESS STEEL	.25 -20 NYLOC	#4	2

99904923 PARTS LIST, COMPLETE					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
75.	72063166	WASHER-FLAT	.25 R WRT 18 -8 .62 OD STAINLESS STEEL	#4	2
76.	72601846	CAP SCREW	.25-20 X 1.25 HEX HEAD STAINLESS STEEL	#4	2
77.	70034382	CAP-GREASE		#5	6
78.	71413185	SPRING	.105 WIRE 0.75OD 2 .875 LG	#5	1
79.	72034479	PLUG-PLASTIC	.50-13 X .50 UNC-2B	#5	2
80.	72053301	COUPLING	BLK .12	#5	1
81.	72053508	ZERK	NPT 0.12	#5	4
82.	72060000	CAP SCREW	.25-20 X .50 HEX HEAD GR5 Z	#5	2
83.	72060002	CAP SCREW	.25-20 X .75 HEX HEAD GR5 Z	#5	4
84.	72060044	CAP SCREW	.38-16 X .75 HEX HEAD GR5 Z	#5	4
85.	72060064	CAP SCREW	.44-14 X 1.50 HEX HEAD GR5 Z	#5	4
86.	72060091	CAP SCREW	.50-13 X 1.00 HEX HEAD GR5 Z	#5	5
87.	72060093	CAP SCREW	.50-13 X 1.5 HEX HEAD GR5 Z	#5	12
88.	72060147	CAP SCREW	.62-11 X 1.00 HEX HEAD GR5 Z	#5	1
89.	72060206	CAP SCREW	.75-10 X 2.00 HEX HEAD GR8Z	#5	1
90.	72060640	SCREW-MACHINERY	10-24 X 1.50 ROUND HEAD	#5	2
91.	72060893	CAP SCREW	.38-16 X 3.25 HEX HEAD GR5 Z	#5	2
92.	72062000	NUT	.25-20 HEX	#5	3
93.	72062093	NUT	#8 -32 HEX ZINC	#5	2
94.	72062103	NUT	.38-16 HEX NYLOCK	#5	2
95.	72062104	NUT	.25-20 HEX NYLOCK	#5	2
96.	72062105	NUT	.44-14 HEX NYLOCK	#5	4
97.	72062106	NUT	10-24 HEX NYLOCK	#5	8
98.	72063001	WASHER	.25 FLAT	#5	10
99.	72063003	WASHER	.38 FLAT	#5	16
100.	72063010	WASHER	1.00 FLAT	#5	1
101.	72063035	MACHINERY BUSHING	1.25 X10 GA NR	#5	2
102.	72063049	WASHER	.25 LOCK	#5	6
103.	72063051	WASHER	.38 LOCK	#5	4
104.	72063053	WASHER	.50 LOCK	#5	17
105.	72063116	WASHER	FLAT .75 N H ASTM F436 Z	#5	1
106.	72063132	WASHER	.50 FLAT ASTM F436	#5	17
107.	72063271	WASHER	# 8 W FLAT ANSI B 27. 2Z	#5	2
108.	72066129	RETAINING RING-EXTERNAL	1.25 HD	#5	2
109.	72066136	RETAINING RING-EXTERNAL	2.00 HD	#5	3
110.	72601938	BOLT-EYE	# 8-32X 1.125	#5	1
111.	72601949	CAP SCREW	.50-13 X 1.25 SOCKET HEAD ZINC-COATED	#5	2
112.	72602022	BOLT-SHOULDER	.38X 1.25	#5	1
113.	72661543	PIN-QUICK		#5	3
114.	72661694	BRIDLE RING	1-1/12 ID X 1/ 4-20	#5	3
115.	51395121	HOSE	AA .13 X 13.5 0 OAL (2-2)	#6	1

99904923 PARTS LIST, COMPLETE					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
116.	72532355	ADAPTER	M STR/M JIC 6 6	#6	1
117.	72532356	ADAPTER	M STR/M JIC 8 6	#6	4
118.	72532357	ADAPTER	M STR/M JIC 6 8	#6	1
119.	72532358	ADAPTER	M STR/M JIC 8 8	#6	4
120.	72532359	ADAPTER	M STR/M JIC 10 8	#6	2
121.	72532361	ADAPTER	M STR/M JIC 8 10	#6	1
122.	72532670	ELBOW	M JIC/45/ F JIC 8 8	#6	1
123.	72532690	ELBOW	M JIC/90 /FJIC SW 4 4	#6	1
124.	72532700	ELBOW	M STR/90/ M JIC XL 6 6	#6	2
125.	72532792	ADAPTER	M STR/M JIC 8 4	#6	1
126.	72533490	ADAPTER	M BSPP/M JIC 4 4	#6	1
127.	72533583	ELBOW	M STR/45/ M JIC 8 6	#6	1
128.	72533613	ADAPTER	M STR/M JIC 10 6	#6	2
129.	72062080	NUT	.50-13 HEX NYLOCK	#135	2
130.	72602073	CAP SCREW	.50-13 X 11.5 HHGR5Z	#135	1
131.	72602075	CAP SCREW	.50-13 X 12.5 HHGR5Z	#135	1
132.	60140029	BRACKET-CABLE GUIDE		#135	1
133.	60140030	ROLLER-CABLE GUIDE		#135	2
134.	72063005	WASHER	.50 FLAT	#135	2
135.	93724760	CABLE GUIDE KIT			1
REV G 20120815					

Gear Rotator (71056577)

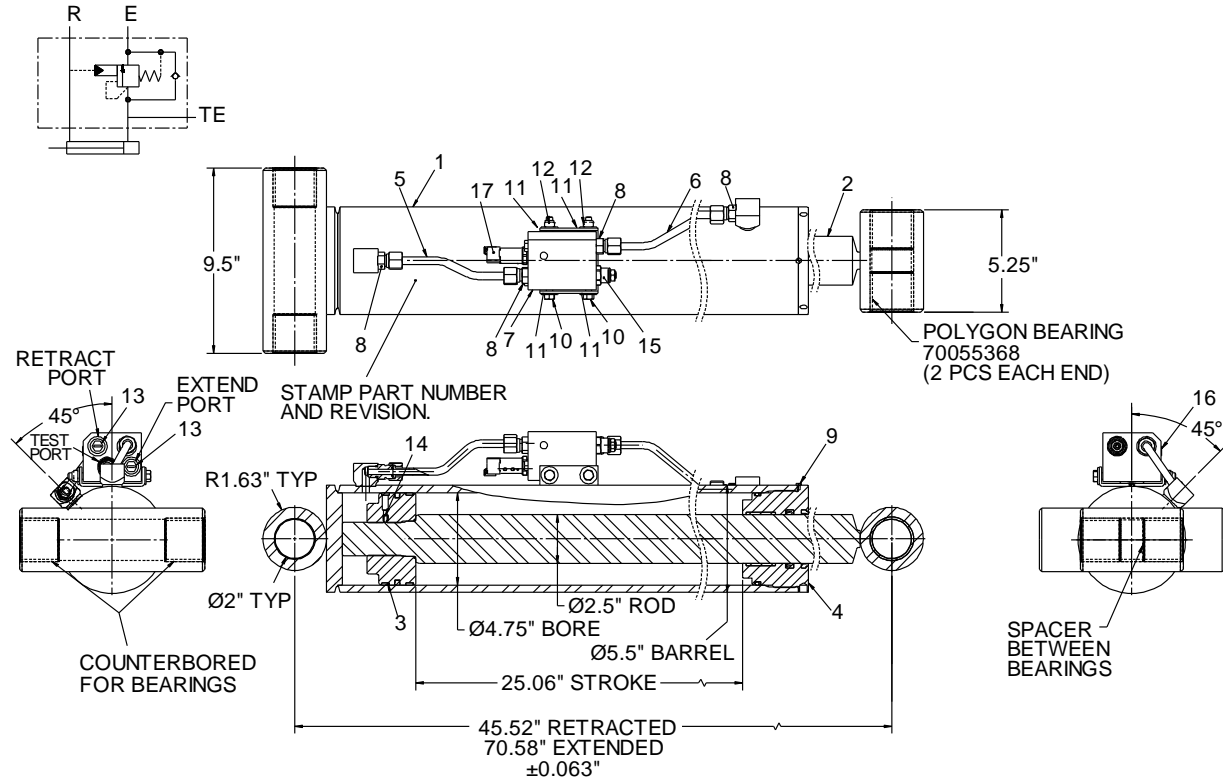


NOTES

- 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	DETAILS	QUANTITY
1.	71056607	GEAR BEARING		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	SCREW	SLT FH1.25-20 NC X 1/2	2
12.	72601733	CAP SCREW	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 SCREW	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				

Lower Cylinder (51723694)



SECTION A-A
PISTON SEALS

ITEM NO.	DESCRIPTION	QTY.
1	PISTON	1
2	PISTON SEAL	1
3	WEAR RING	2
4	O-RING	1

SEAL KIT # 94399129. INCLUDES ALL SEALS.
SEALS CANNOT BE PURCHASED INDIVIDUALLY.

SECTION A-A
ROD SEALS

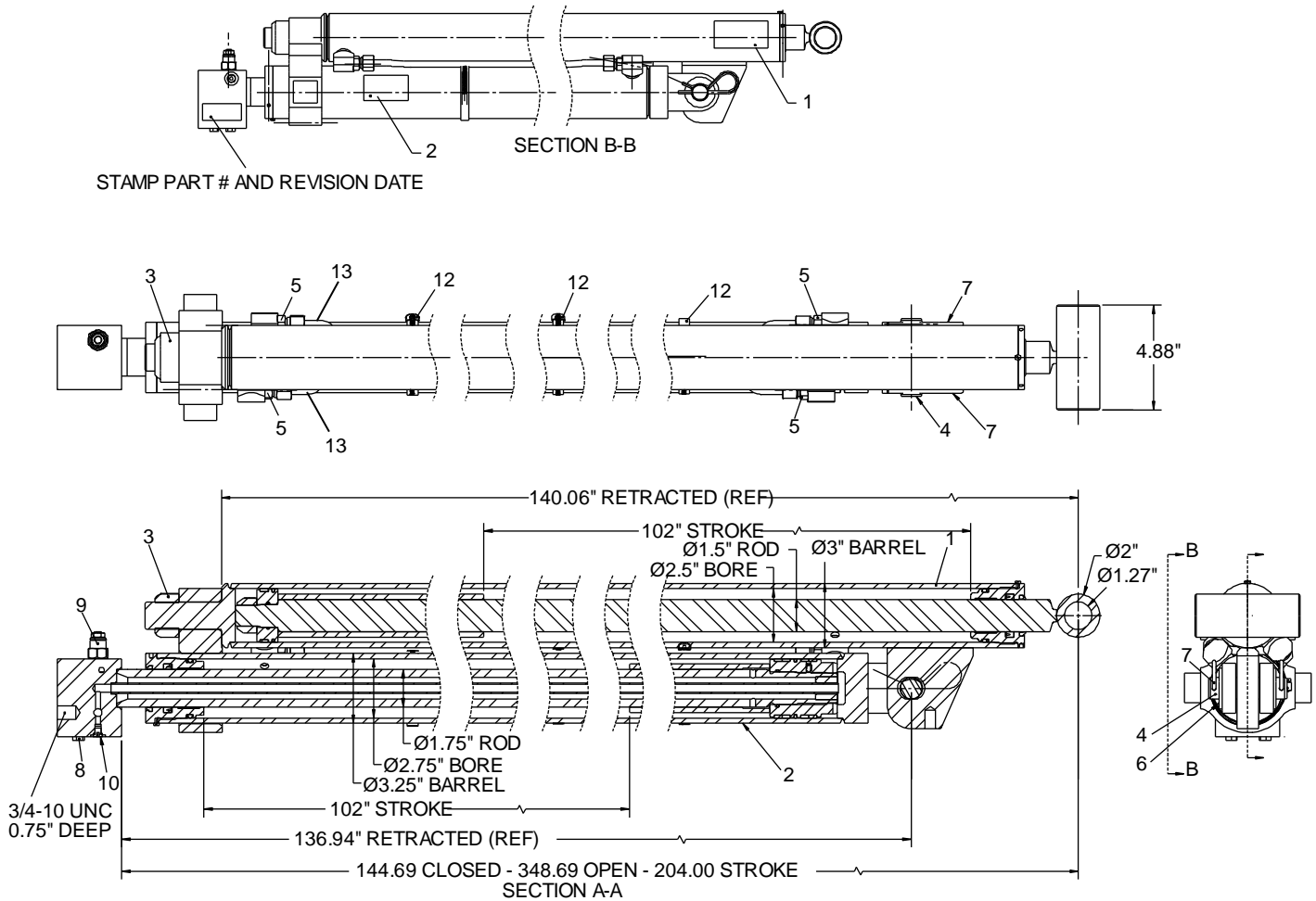
ITEM NO.	DESCRIPTION	QTY.
1	ROD BEARING	1
2	WIPER	1
3	ROD SEAL	1
4	WEAR RING	1
5	BACK-UP RING	1
6	O-RING	1

NOTES:

- 1 SEE PART NUMBER AND REVISION STAMPED ON CYLINDER.
- 2 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED TO REDUCE DOWNTIME.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM-HEAVY, MULTI-PURPOSE LUBRICANT TO ALL PISTON, ROD BEARING AND HOLDING VALVE SEALS.
- 4 TORQUE ROD BEARING TO 500-600 FT-LB (69-83 KG-M); PISTON SET SCREW TO 12-18 FT-LB (1.7-2.5 KG-M) AND PISTON TO 200-300 FT-LB (27.6 - 41.5 KG-M).
- 5 USE BLUE LOCTITE ON PISTON.
- 6 TO LOCK THE ROD BEARING ON THE CYLINDER, DRILL A #26 HOLE 0.25-0.30" DEEP IN A SEAM BETWEEN THE ROD BEARING AND THE CASE. INSTALL THE LOCKING SCREW (ITEM #9, SELF-TAPPING #8-32 X 0.25" SET SCREW) IN THE HOLE UNTIL SEATED.

51723694 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	52723918	CASE		1
2.	52723919	ROD ASSEMBLY		1
3.	71414683	PISTON ASSEMBLY		1
4.	71414684	ROD BEARING ASSEMBLY		1
5.	71414693	TRANSFER TUBE		1
6.	71414694	TRANSFER TUBE		1
7.	73540444	VALVE BLOCK ASSEMBLY		1
8.		FITTING ADAPTER		4
9.		LOCKING SCREW		1
10.		HEX BOLT	5/16"-18 X 4.00 GR5	2
11.		WASHER	.31 FLAT	4
12.		NYLOC NUT	.31-18	2
13.		PLASTIC PLUG SAE O-RING	#6	3
14.		NYLON TIP SET SCREW	.250-20 UNC	1
15.	73540490	COUNTERBALANCE VALVE		1
16.		STEEL SAE O-RING PLUG	#4	1
17.	77041866	PRESSURE TRANSDUCER		1
REF	94399129	SEAL KIT		
REV B 20120712				

Extension Cylinder Assembly (51723604)



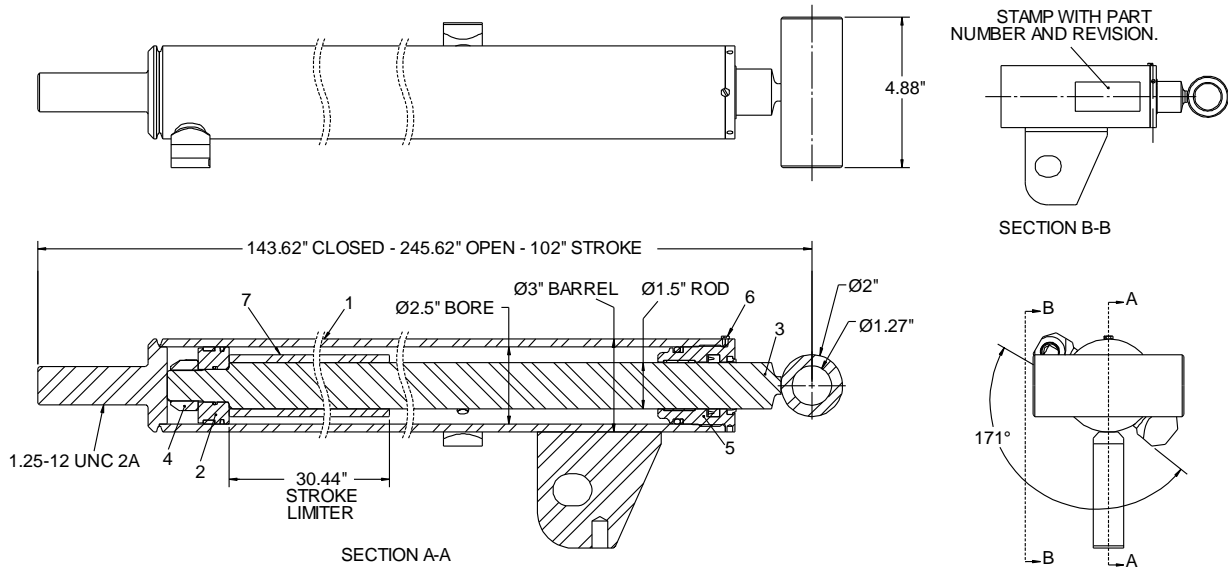
NOTES:

- 1 TEST CYLINDER AT 3500 PSI.
- 2 TORQUE NUT #3 (1.25-12 UNF) TO 810.7 FT-LB (112 KG-M).
- 3 PAINT BLACK SEMI-GLOSS.
- 4 INSTALL HOSE CLAMPS AFTER PAINTING.

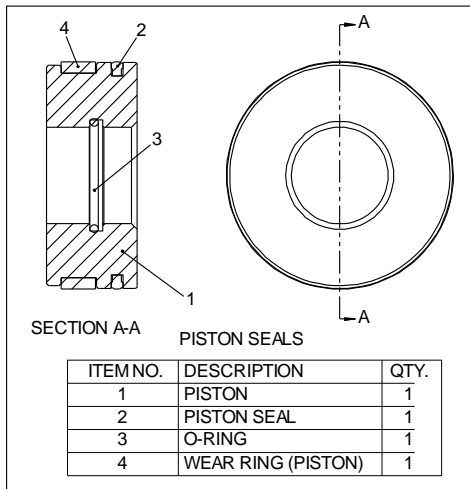
51723604 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	51723931	CYLINDER ASSEMBLY		1
2.	51723927	CYLINDER ASSEMBLY		1
3.		SELF-LOCKING NUT	1.25-12	1
4.		PIN		1
5.		FITTING ADAPTER		4
6.		WASHER		2

51723604 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
7.		HAIRPIN, COTTER		2
8.		PLASTIC PLUG SAE O-RING	#6	2
9.	73054807	VALVE, COUNTERBALANCE		1
10.		SAE O-RING PLUG	#2	1
11.		SAE O-RING PLUG, STEEL	#4	3
12.		HOSE CLAMP	#56	3
13.	71414720	TUBE LINE		2
REV. B 20110407				

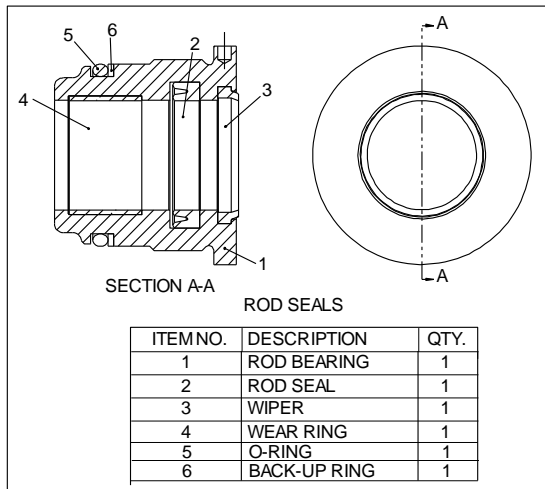
Cylinder (51723931)



SEALS FOR 51723931 PISTON



SEALS FOR 51723931 ROD BEARING



SEAL KIT # 94399160, INCLUDES ALL ROD AND PISTON SEALS FOR 51723931. SEALS CANNOT BE PURCHASED INDIVIDUALLY.

NOTES:

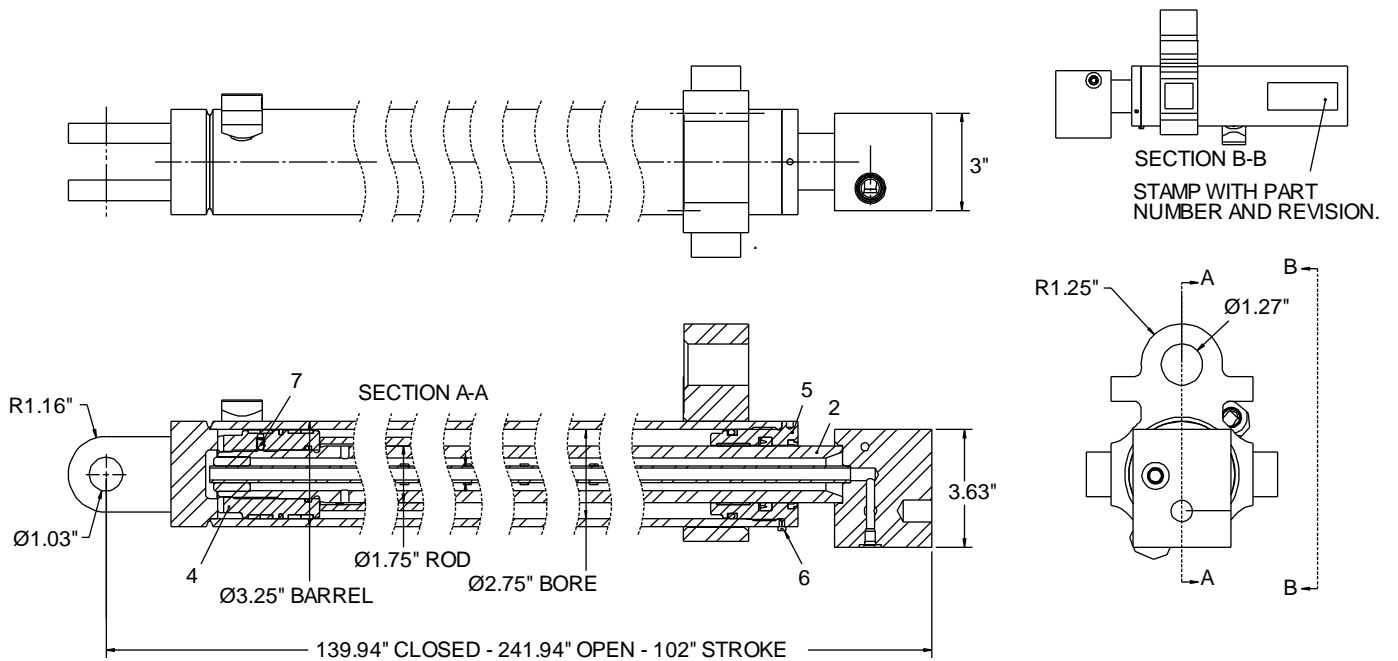
- 1 SEE PART NUMBER AND REVISION STAMPED ON CYLINDER.
- 2 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED TO REDUCE DOWNTIME.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM-HEAVY, MULTI-PURPOSE LUBRICANT TO ALL PISTON, ROD BEARING AND HOLDING VALVE SEALS.
- 4 TORQUE ROD BEARING TO 200-300 FT-LB (27.6 - 41.5 KG-M).
- 5 TORQUE PISTON NUT (#4) TO 412.3 FT-LB (57 KG-M).

6 TO LOCK THE ROD BEARING ON THE CYLINDER, DRILL A #26 HOLE 0.25-0.30" DEEP IN A SEAM BETWEEN THE ROD BEARING AND THE CASE. INSTALL THE LOCKING SCREW (ITEM #9, SELF-TAPPING #8-32 X 0.25" SET SCREW) IN THE HOLE UNTIL SEATED.

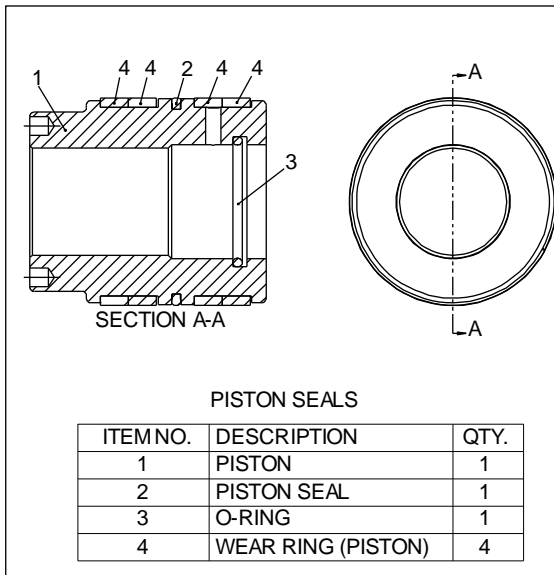
7 SEAL KIT 94399160 INCLUDES ALL SEALS FOR CYLINDER 51723931.

51723931 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	52724028	CASE		1
2.	71414724	PISTON ASSEMBLY		1
3.	52724029	ROD ASSEMBLY		1
4.		SELF-LOCKING NUT	1.00-14 UNF	1
5.	71414723	ROD BEARING ASSEMBLY		1
6.		LOCKING SCREW		1
7.	73050199	STROKE LIMITER		1
REF	94399160	SEAL KIT		1
NEW 20110407				

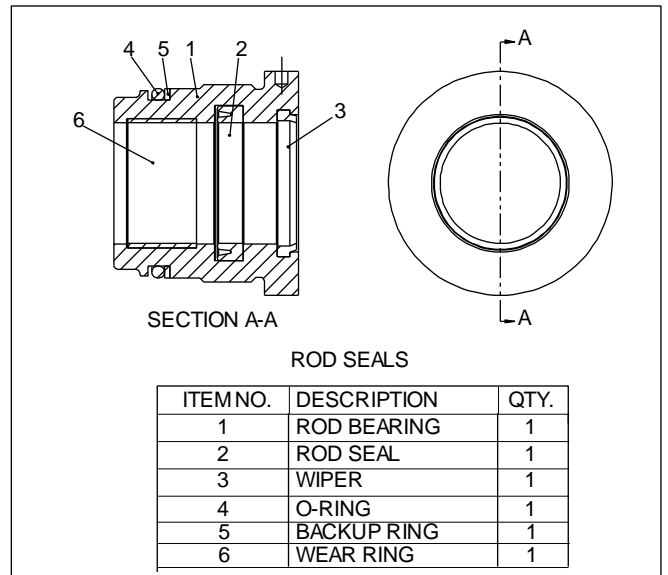
Cylinder (51723927)



SEALS FOR 51723927 PISTON



SEALS FOR 51723927 ROD BEARING



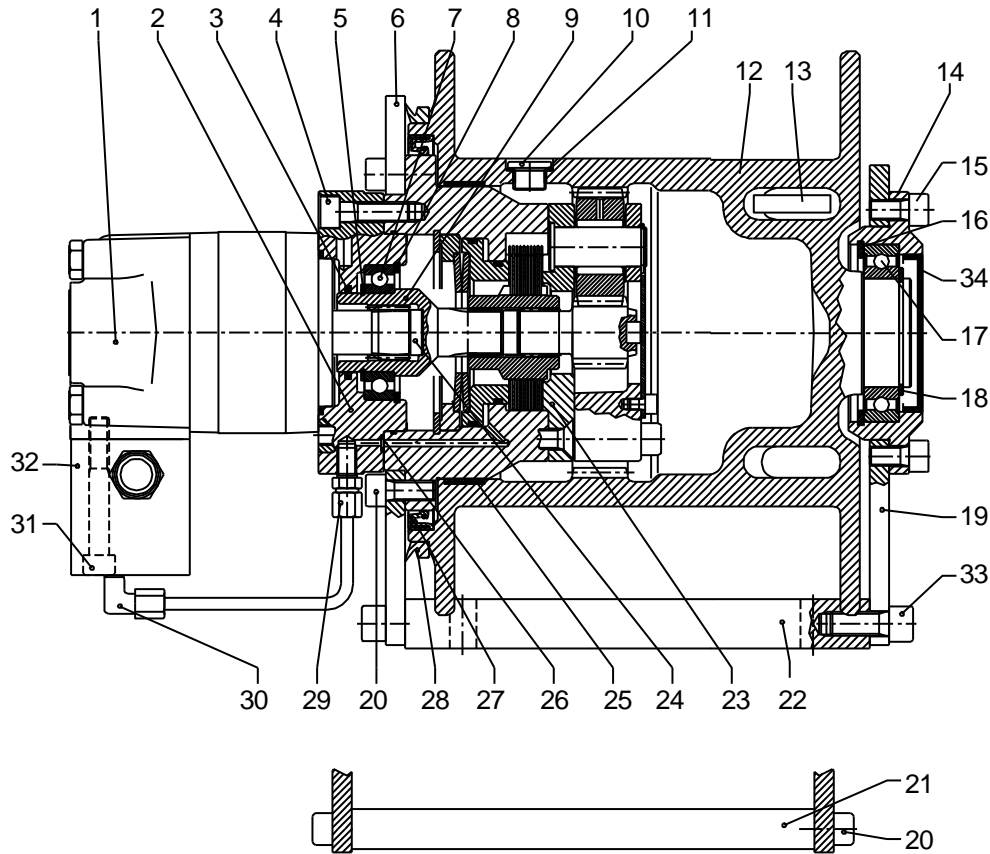
SEAL KIT # 94399162, WHICH INCLUDES ALL ROD AND PISTON SEALS FOR 51723927.
SEALS CANNOT BE PURCHASED INDIVIDUALLY.

NOTES:

- 1 SEE PART NUMBER AND REVISION STAMPED ON CYLINDER.
- 2 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED TO REDUCE DOWNTIME.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM-HEAVY, MULTI-PURPOSE LUBRICANT TO ALL PISTON, ROD BEARING AND HOLDING VALVE SEALS.
- 4 TORQUE ROD BEARING TO 200-300 FT-LB (27.6 - 41.5 KG-M).
- 5 TORQUE PISTON 200-300 FT-LB (27.6 - 41.5 KG-M).
- 6 TO LOCK THE ROD BEARING ON THE CYLINDER, DRILL A #26 HOLE 0.25-0.30" DEEP IN A SEAM BETWEEN THE ROD BEARING AND THE CASE. INSTALL THE LOCKING SCREW (ITEM #6, SELF-TAPPING #8-32 X 0.25" SET SCREW) IN THE HOLE UNTIL SEATED.
- 7 SEAL KIT 94399162 INCLUDES ALL SEALS FOR CYLINDER 51723927.

51723927 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	52724034	CASE		1
2.	52724035	ROD ASSEMBLY		1
3.	73050203	STROKE LIMITER		1
4.	71414725	PISTON ASSEMBLY		1
5.	71414726	ROD BEARING ASSEMBLY		1
6.		LOCKING SCREW		1
7.		NYLON TIP SET SCREW	.25-20	1
REF	94399162	SEAL KIT		1
NEW 20110407				

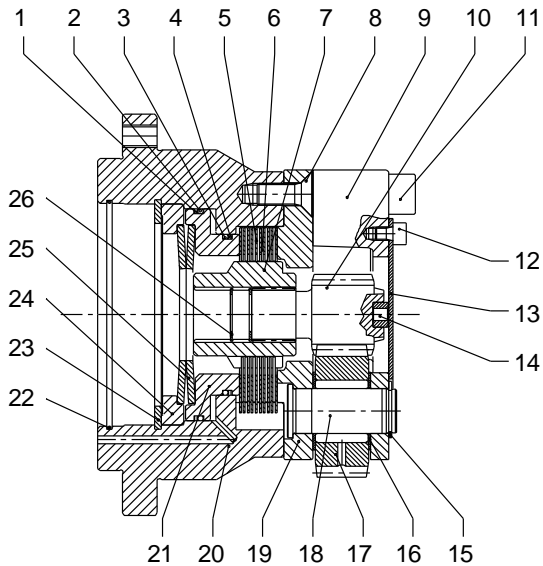
Winch, Planetary (71570968)



71570968 PARTS LIST

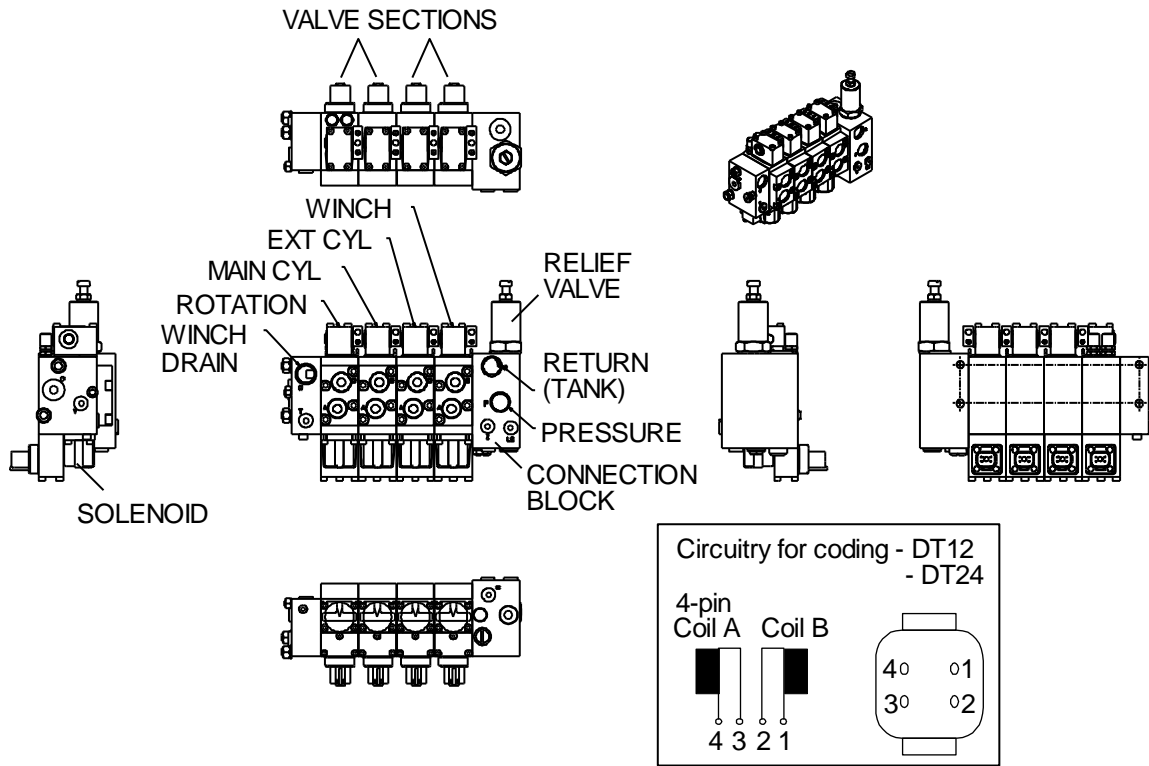
ITEM	PART #	DESCRIPTION	DETAILS
1.	73540453	Hydraulic motor	1
	Part of 94399223	Seal for motor	2REF
2.		Motor mounting flange	1
3.	Part of 94399223	Seal	1
4.		Hex socked head cap screw	4
5.		Seeger	1
6.		Engine support	1
7.		Ball bearing	1
8.	72661702	Retaining ring	1
9.		Sleeve	1
10.		Plug	2
11.	Part of 94399223	Copper washer	2
12.		Winch drum	1
13.	70580214	Wedge, winch cable	1
13.		Thimble	1
14.		Bearing support	1

71570968 PARTS LIST			
ITEM	PART #	DESCRIPTION	DETAILS
15.		Hex socked head cap screw	6
16.		Seeger	1
17.		Ball bearing	1
18.		Seeger	1
19.		Hub side support	1
20.		1 Hex socked head cap screw	1
20.		1 Hex socked head cap screw	1
21.		Cross member	2
22.		Fastening surface plate	2
23.	71056673	Brake unit (Reduction gear unit).	1
24.		Insert	1
25.		Guide	1
26.	Part of 94399223	O-ring joint	1
27.	Part of 94399223	Oil retainer seal	1
28.	Part of 94399223	V-Ring	1
29.		Straight pipe fitting (Conical)	1
30.		90° Connection (Conical)	1
31.		Hex socked head cap screw	2
32.	73540308	Valve	1
	Part of 94399223	Seal for valve	1REF
33.		Hex socked head cap screw	8
34.		Plug	1
	94399223	SEAL KIT	REF

71570968 Winch Brake

71570968 WINCH BRAKE PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	Part of 94399223	O-ring joint	1
2.	Part of 94399223	Antiextrusion ring	1
3.	Part of 94399223	O-ring joint	1
4.	Part of 94399223	Antiextrusion ring	1
5.		Brake Disk	9
6.		Brake Disk	10
7.		Gear	1
8.		Hex socket countersunk head	3
9.		Flange	1
10.		Sun gear	1
11.		Hex socket head cap screw	6
12.		Hex socket head cap screw	3
13.		Keep plate	1
14.		Insert	1
15.	72661703	Retaining ring	3
16.		Slewing ring	6
17.		Planetary gear	3
18.		Pin	3
19.		Flange	1
20.		Flange	1
21.		Piston	1
22.	Part of 94399223	O-ring joint	1
23.		Retaining ring	1
24.		Support	1
25.		Belleville washer	2
26.		Seeger	2
	94399223	SEAL KIT	REF

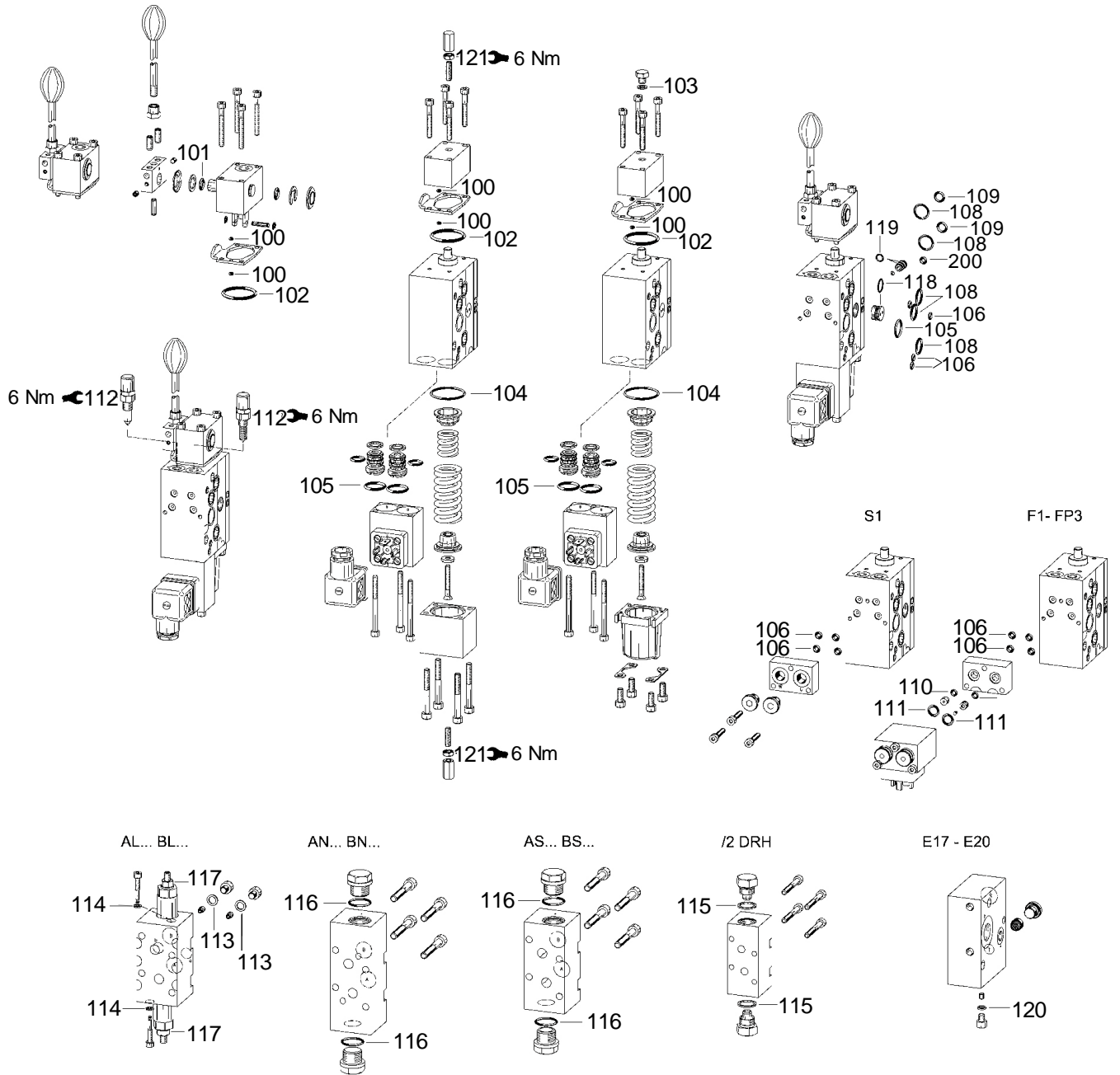
Valvebank (73734727)



73734727 PARTS LIST		
PART #	DESCRIPTION	QUANTITY
94399213	SEAL KIT, CONNECTION BLOCK	1
94399214	SEAL KIT, SEALS BETWEEN SECTIONS	1
77041898	SOLENOID, 12V	4
77040598	12V COIL FOR 77041898 SOLENOID	

WAS 73734635 THROUGH S/N 8600121025.

Seal Kit for 73734727 (94399214)

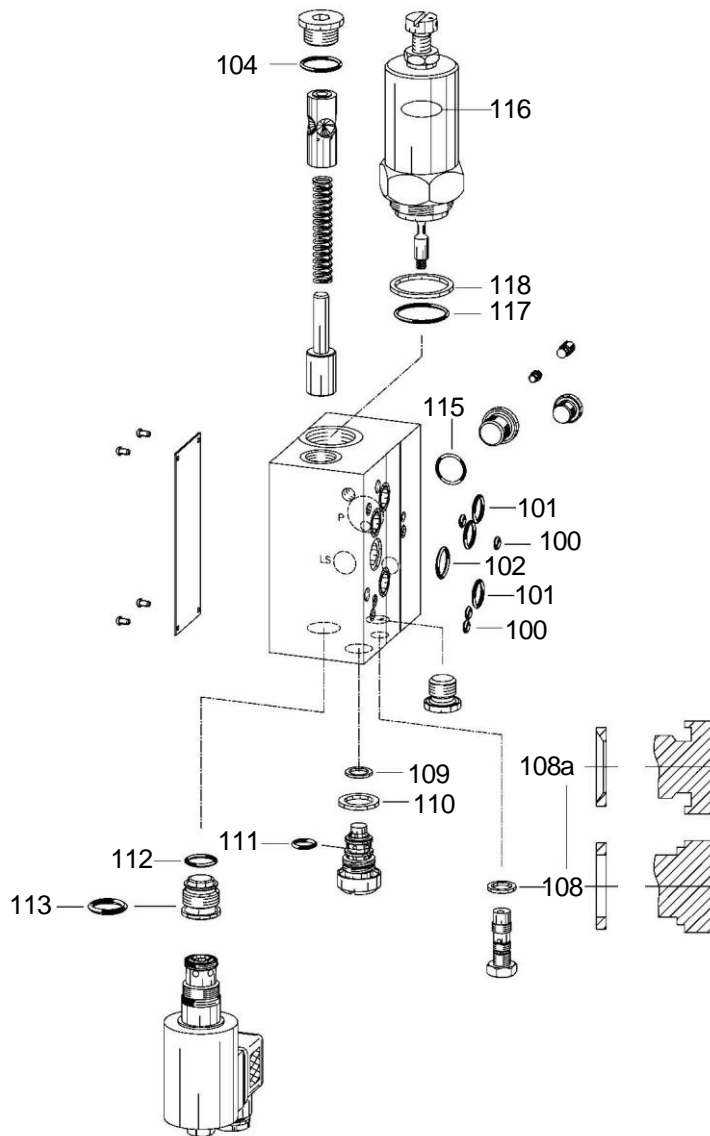


94399214 SEAL KIT PARTS			
ITEM	DESCRIPTION	DETAILS	QUANTITY
100.	O-RING	1.78 x 1.02 mm	2
101.	O-RING	6.75 x 1.75 mm P5001	2
102.	O-RING	25.07 x 2.62 mm Z24	1
103.	USIT-RING	ST 37 STANDARD	1

94399214 SEAL KIT PARTS			
ITEM	DESCRIPTION	DETAILS	QUANTITY
104.	O-RING	26.7 x 1.78 mm Z24	1
105.	O-RING	12.42 x 1.78 mm P5001	3
106.	O-RING	2.90 x 1.78 mm Z24	8
108.	O-RING	10.82 x 1.78mm P5001	6
109.	O-RING	6.07 x 1.78 mm P5001	4
110.	O-RING	3 x 1.5 mm	2
111.	O-RING	6.75 x 1.78 mm P5001	2
112.	SEAL NUT		2
113.	USIT-RING	ST 37 STANDARD	2
114.	COPPER RING	4 x 8 x 1 mm	2
115.	SOFT IRON SEAL RING		2
116.	O-RING	17.17 x 1.78 mm P5001	2
117.	SEAL-LOCK COLLAR NUT	M6 12 x 1	2
118.	O-RING	10.00 x 1.00 mm P5001	1
119.	O-RING	5.00 x 1.00 mm P5001	2
120.	COPPER RING	5 x 7.5 x 1 mm	1
121.	SEAL NUT		2

NOTE: These seals are all part of 94399214, and cannot be purchased individually.

Connection Block Seal Kit for 73734727 (94399213)



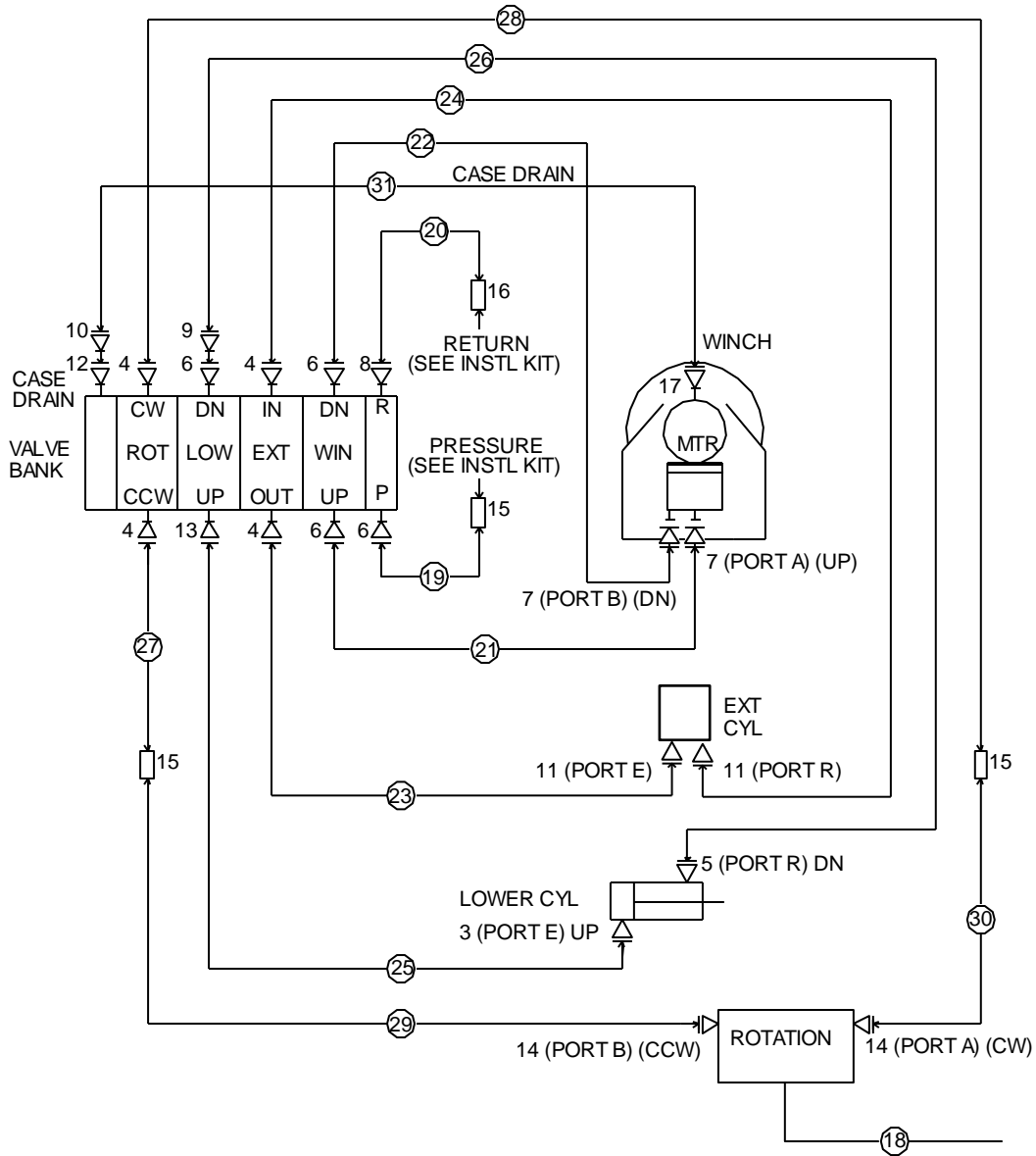
CONNECTION BLOCK SEAL KIT FOR 73734727 (94399213)

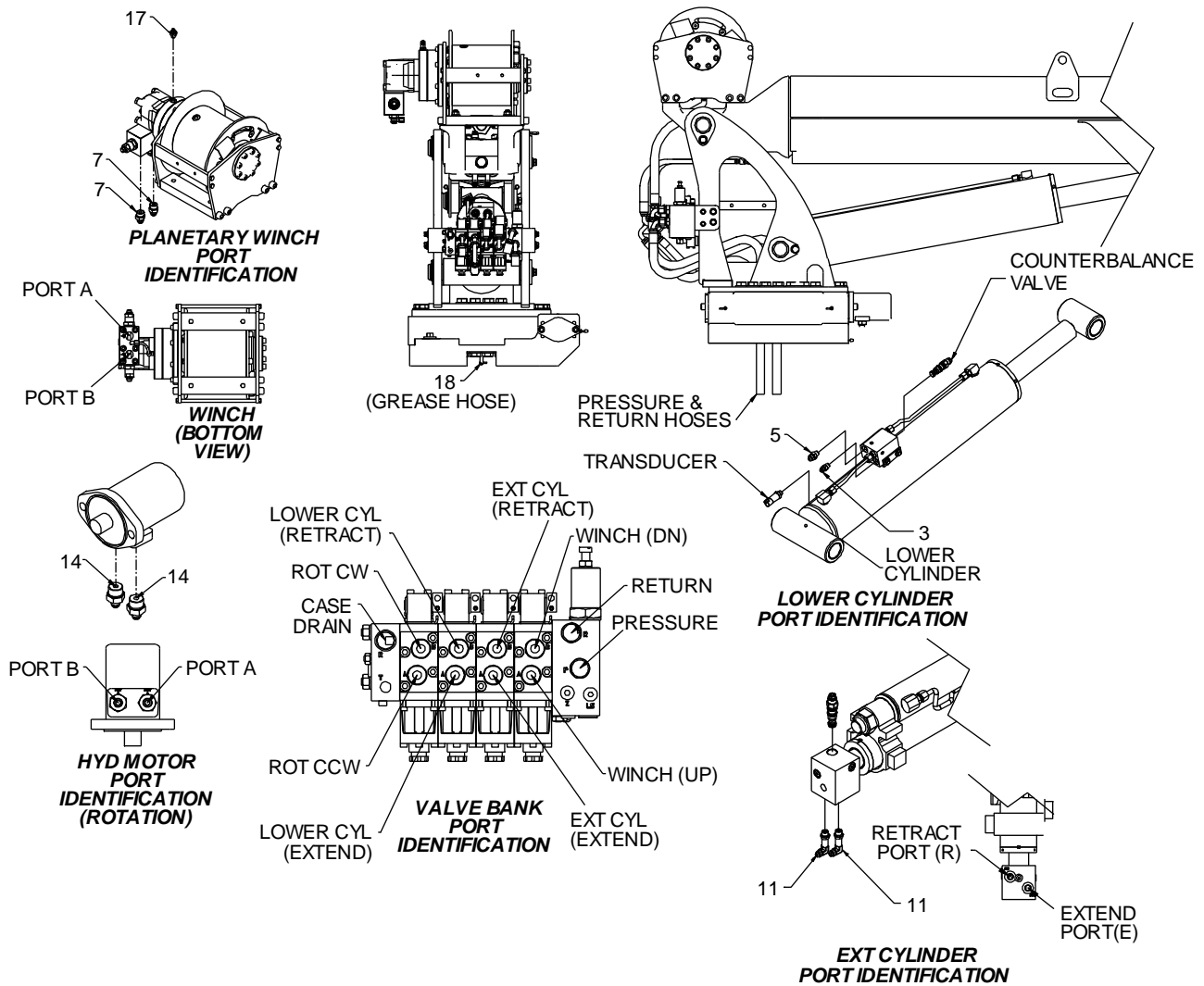
ITEM	DESCRIPTION	DETAILS	QUANTITY
100.	O-RING	2.90x1.78 Z24	4
101.	O-RING	10.82x1.78 P5001	3
102.	O-RING	12.42x1.78 P5001	1
104.	O-RING	17.17 x 1.78 P 5001	1
108.	COPPER RING	SHAPE A DIN 7603 10X14X1.5-Cu	1
108a.	FITTING SEAL		1
109.	SEAL RING	8.3X11X1.15 PTFE 7625 109/1	1
110.	SEAL	1/4" DRV	1
111.	O-RING	9X1.5 NBR 90 SH	1

CONNECTION BLOCK SEAL KIT FOR 73734727 (94399213)			
ITEM	DESCRIPTION	DETAILS	QUANTITY
112.	O-RING	12.42x1.78 P5001	1
113.	O-RING	14.03x2.61 P5001 94 Sh A	1
115.	SEAL	G 1/4" DRV 100116-NB 650 NBR	2
116.	O-RING	15X2 HNBR 90 SH RED SPOT	1
117.	O-RING	23.52X1.78 HNBR 90 SH RED SPOT	1
118.	SEAL RING	27X32X2 ST	1

NOTE: These seals are all part of 94399213, and cannot be purchased individually.

Hydraulic Schematic (99905018)





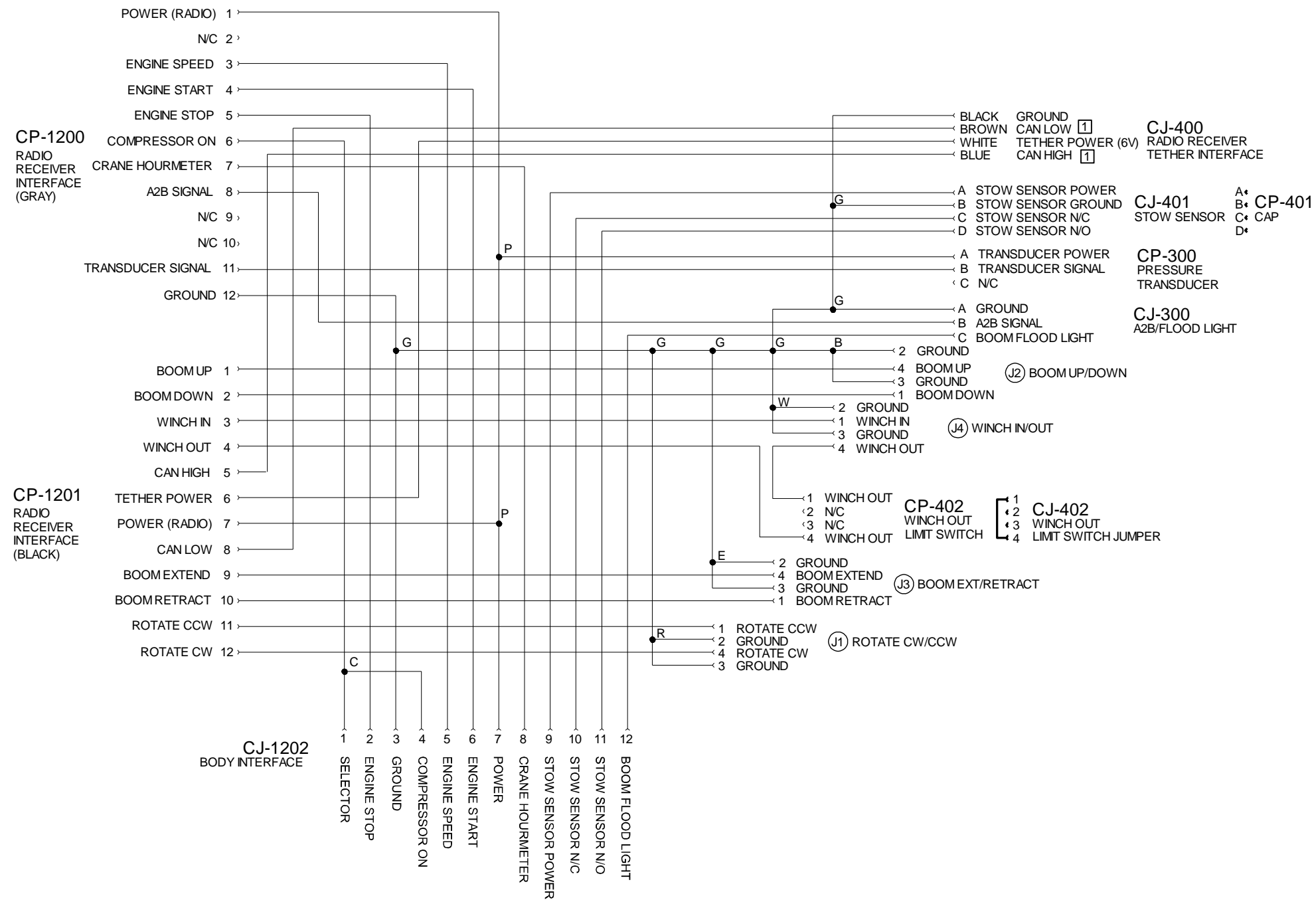
NOTES:

- 1 INSTALL SLEEVE #32, 60350141, ON EXTENSION CYLINDER, LOWER CYLINDER AND ROTATION HOSES.
- 2 INSTALL SLEEVE #33, 60350142, ON WINCH HOSES AND PRESSURE & RETURN VALVE BANK HOSES.
- 3 INSTALL SLEEVE #34, 60350105, ON PRESSURE & RETURN HOSES AND ROTATION HOSES THROUGH THE MAST.

99905018 PARTS LIST					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
1.	91723601	HYDRAULIC KIT-A40-60			1
2.	73734727	VALVE BANK (WAS 73734635)	4SECTION 10 GPM PROPORTIONAL		1 REF
3.	72532355	ADAPTER	M STR/M JIC 6 6	#1	1
4.	72532356	ADAPTER	M STR/M JIC 8 6	#1	4
5.	72532357	ADAPTER	M STR/M JIC 6 8	#1	1
6.	72532358	ADAPTER	M STR/M JIC 8 8	#1	4
7.	72532359	ADAPTER	M STR/M JIC 10 8	#1	2
8.	72532361	ADAPTER	M STR/M JIC 8 10	#1	1

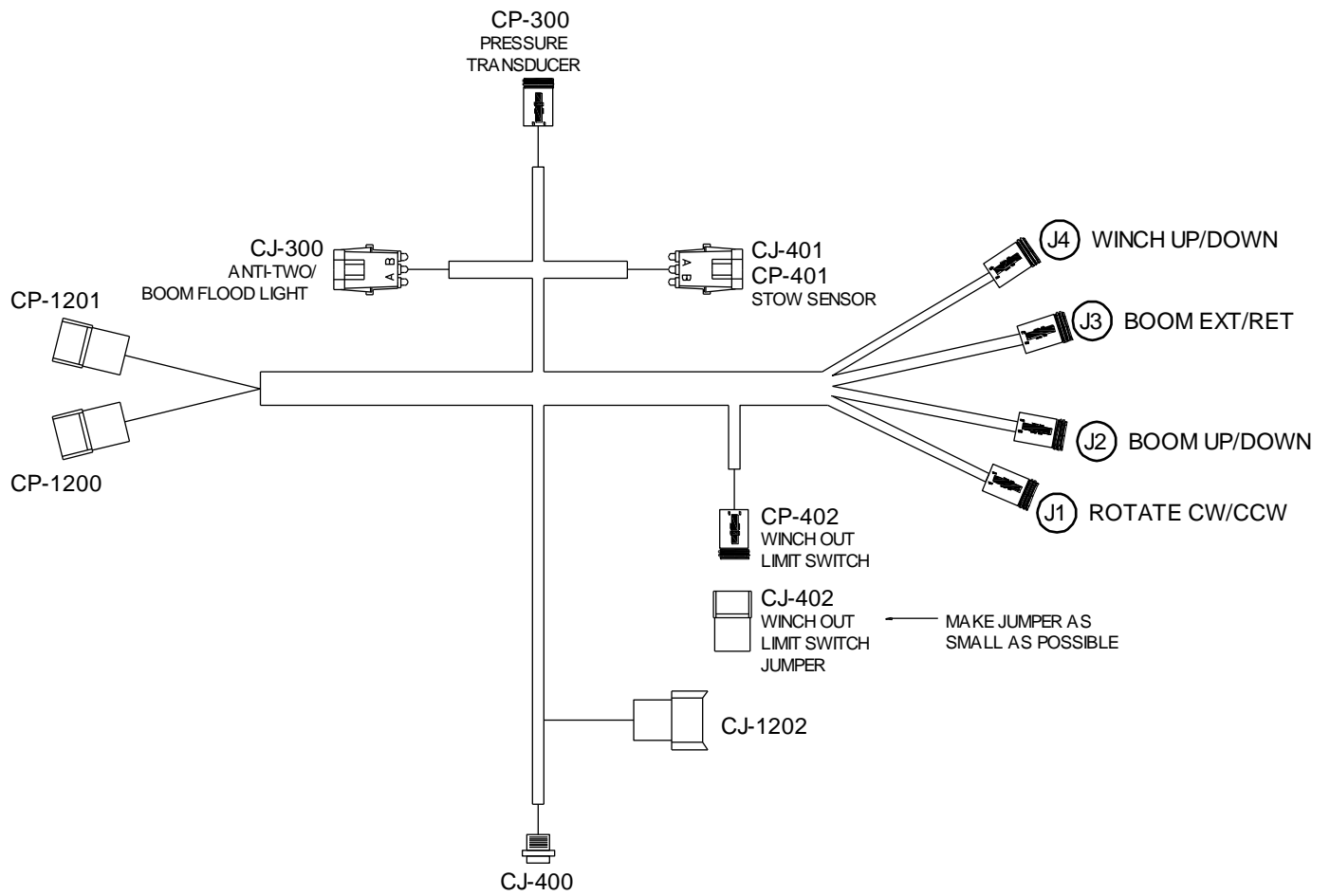
99905018 PARTS LIST					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
9.	72532670	ELBO W	M JIC/45/F JIC 8 8	#1	1
10.	72532690	ELBOW	M JIC/90/F JIC SW 4 4	#1	1
11.	72532700	ELBOW	M STR/90/M JIC XLG 6 6	#1	2
12.	72532792	ADAPTER	M STR/M JIC 8 4	#1	1
13.	72533583	ELBO W	M STR/45/M JIC 8 6	#1	1
14.	72533613	ADAPTER	M STR/M JIC 10 6	#1	2
15.	72533648	SWIVEL	M JIC/90/M JIC 8 8	#1	3
16.	72534412	SWIVEL	M JIC/90/M JIC 10 10	#1	1
17.	72533490	ADAPTER	M BSPP/M JIC 4 4	#1	1
18.	51395121	HOSE-AA	.13 X 13.50 (2-2) 100R17	#1	1
19.	51396017	HOSE-FJ	.50 X 30.00 (8-8) 100R16	#1	1
20.	51397080	HOSE-FJ	.62 X 30.00 (10-10) 100R17	#1	1
21.	51397081	HOSE-FZ	.50 X 31.50 (8-8) 100R17	#1	1
22.	51397082	HOSE-FJ	.50 X 31.00 (8-8) 100R17	#1	1
23.	51396886	HOSE-FZ	.38 X 25.00 (6-6) 100R17	#1	1
24.	51396887	HOSE-FJ	.38 X 24.50 (6-6) R10017	#1	1
25.	51399077	HOSE-FJ	.38 X 29.00 (6-6) 100R17	#1	1
26.	51399078	HOSE-FZ	.50 X 30.00 (8-8) 100R17	#1	1
27.	51399072	HOSE-FJ	.38 X 22.50 (8-6) 100R17	#1	1
28.	51399073	HOSE-FZ	.38 X 25.00 (8-6) 100R17	#1	1
29.	51399228	HOSE-FJ	.38 X 18.00 (8-6) 100R17	#1	1
30.	51399229	HOSE-FJ	.38 X 22.00 (8-6) 100R17	#1	1
31.	51399074	HOSE-FJ	.25 X 32.00 (4-4) 100R2	#1	1
32.	60350141	SLEEVE-HOSE	159 X 12 CUT & SEALED	#1	3
33.	60350142	SLEEVE-HOSE	254 X 15 CUT & SEALED	#1	2
34.	60350105	SLEEVE-HOSE	WRAP AROUND, 4 IN DIA.		1
REV F 20120815					

Radio Remote Harness (77441481)



NOTES:

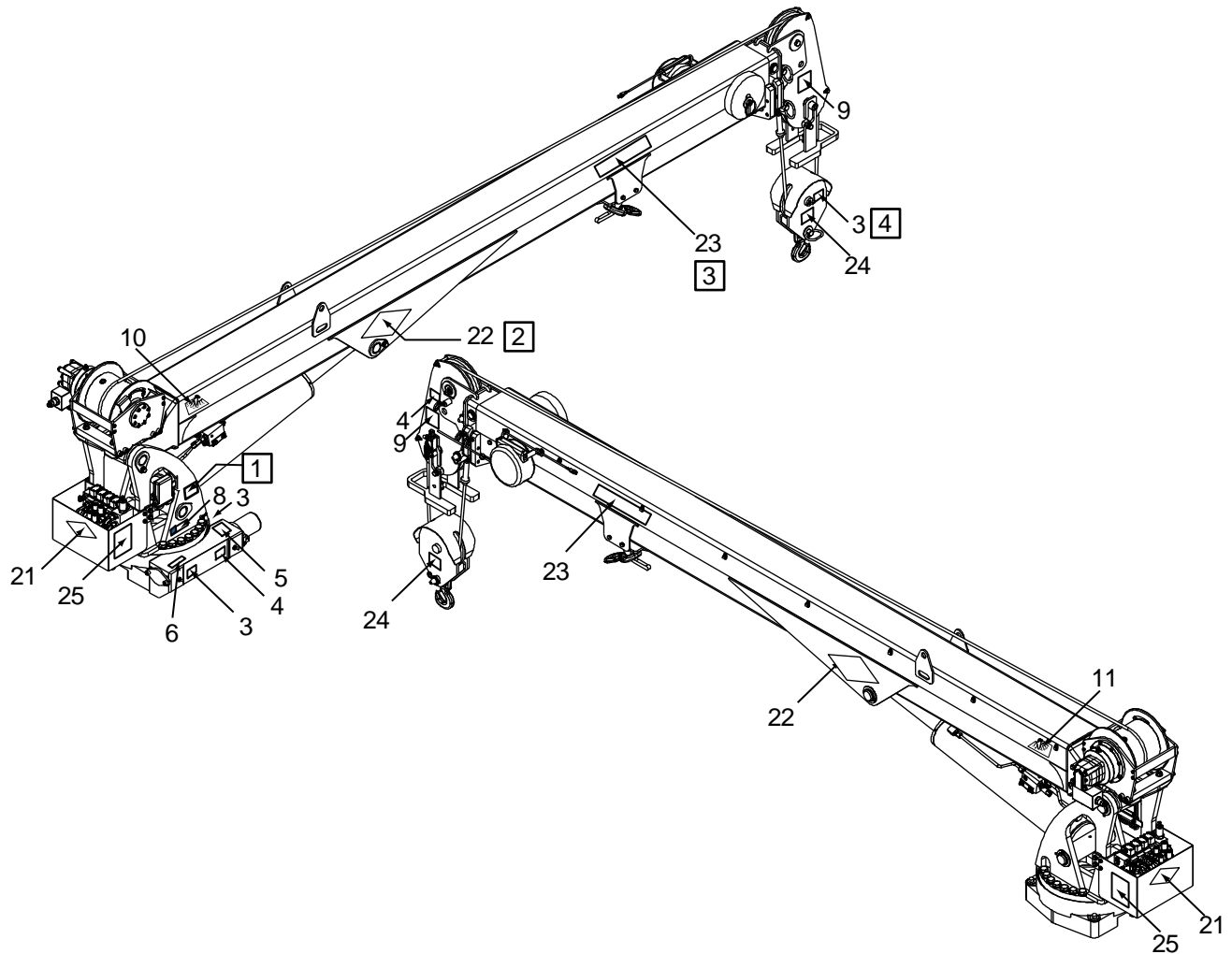
1 USE SHIELDED, TWISTED PAIR FOR CAN LOW, CAN HIGH BETWEEN CP-1201 AND CJ-400.



REV B 20111028

REPLACED 77441426.

Decal Placement, 8600 30' Crane



NOTES (SEE REFERENCE NUMBER IN BOX):

- 1 SERIAL NUMBER PLACARD. MOUNT STREETSIDE.
- 2 PLACE BOTTOM POINT OF DIAMOND ABOVE END OF CYLINDER PIN.
- 3 CENTER ABOVE HOOK WELDMENT.
- 4 EITHER SIDE.

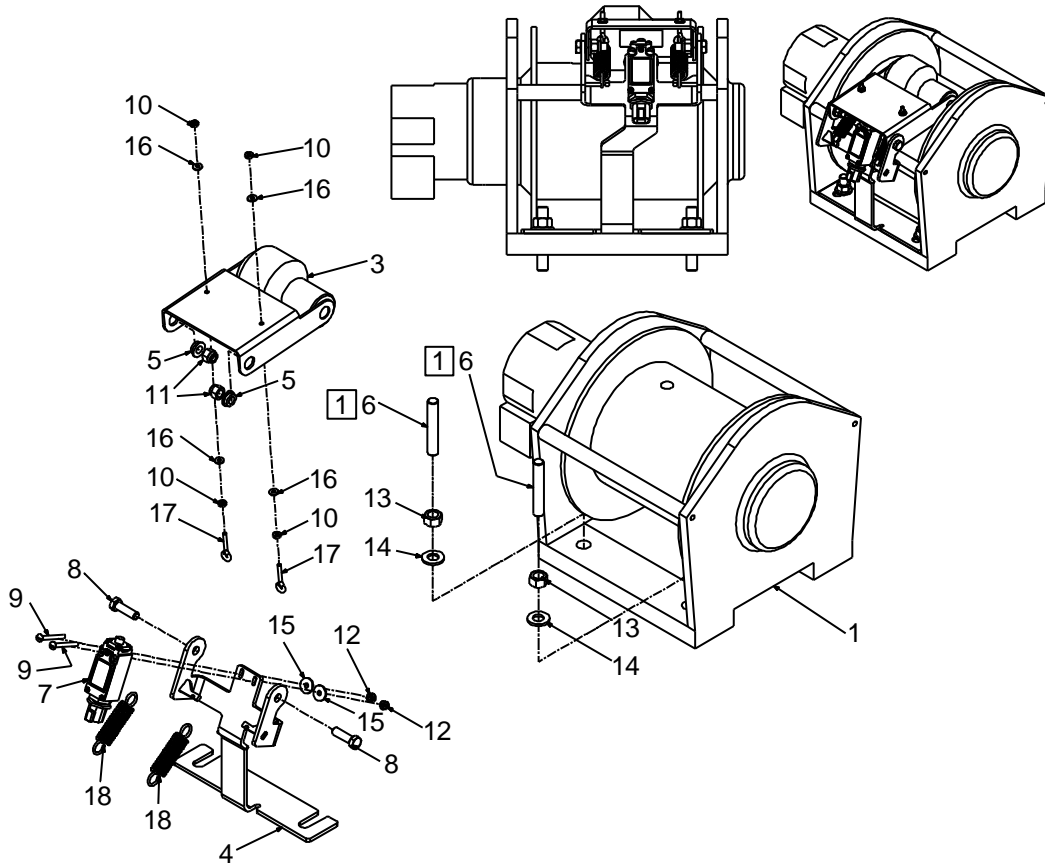
DECAL PLACEMENT (IF NOT SHOWN ON CRANE)

ITEM #	PLACEMENT
12,17,19,20, 25	AT OR NEAR REMOTE HANDLE STORAGE POINT
13	2 ON REAR STABILIZERS, 2 ON SIDEPACK FRONT WALLS
15	AT OR NEAR DRIVELINE
14,16	ON ALL FOUR SIDES OF CARRIER VEHICLE
18	ON TOP OF HYDRAULIC RESERVOIR

DECAL PLACEMENT, 8600 30' CRANES (REF 99905087)					
ITEM	PART #	DESCRIPTION	KIT #	QTY IN KIT	QTY ON CRANE
1.	95724111	DECAL KIT - TELE COMMON SIII (7500-14000)			1
2.	95719348	DECAL KIT - BODY COMMON			1
3.	70391612	DECAL-GREASE WEEKLY (LEFT)	1	3	3
4.	70391613	DECAL-GREASE WEEKLY (RIGHT)	1	2	2
5.	70392524	DECAL-ROTATE CRANE WHILE GREAS	1	1	1
6.	70392399	DECAL-LUBRICATE WORM	1	1	1
8.	70395324	DECAL-ASME/ANSI B30.5-TELESCOP	1	1	1
9.	70395670	DECAL-CAUTION DOWN HAUL WT	1	2	2
10.	71399136	DECAL-ANGLE INDICATOR RH	1	1	1
11.	71399137	DECAL-ANGLE INDICATOR LH	1	1	1
12.	70392213	DECAL-CAUTION DONT WASH/WAX	1	1	1
13.	70392864	DECAL-WARNING STAB STAND CLEAR	2	4	4
14.	70392868	DECAL-WARNING CR LOADLINE (TRK)	2	4	4
15.	70392891	DECAL-DANGER DRIVELINE	2	1	1
16.	70394445	DECAL-DANGER ELEC HZD LG TELES	2	4	4
17.	70396613	DECAL-CRANE SAFETY OPER	2	1	1
18.	70394189	DECAL-MOBIL OIL RESERVOIR	2	1	1
19.	71039134	DECAL-CAUTION OIL LEVEL	2	1	1
20.	70392982	DECAL-SERVICE REPAIR	2	1	1
21.	70399195	DECAL-DIAMOND IMT 4 X 8 (REFL)	1	1	1
22.	70399140	DECAL-DIAMOND IMT 6.75X13.50 (REFL)	1	2	2
23.	70399048	DECAL-ID 8600			2REF
24.	70396787	DECAL-LOAD BLOCK RATING 4.3TONS (MODELS 7500 / 8600 ONLY)			2REF
25.	70399105	DECAL-CAP CHART 8600-30'			3REF
REV B 20110811					

Option-Winch Roller (99905054)

Kit 51723636



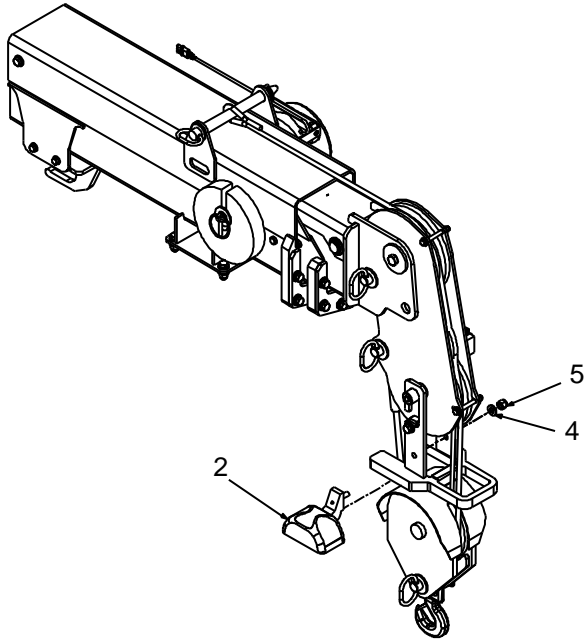
NOTES (SEE REFERENCE NUMBER IN BOX):

1 APPLY BLUE LOCKTITE WHEN INSTALLING STUDS INTO WINCH MOUNT CASTING.

99905054 PARTS LIST					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
1.	71570968	WINCH-PLANETARY 4400 LB LINE PULL			REF
2.	91723544	HARDWARE KIT-WINCH ROLLER			1
3.	52723095	ROLLER ASSEMBLY-WINCH SWITCH			1
4.	52723641	WELDMENT-BRACKET			1
5.	60030439	SLEEVE-TYPE C	0.38X 0.62X.25		2
6.	72602058	STUD	0.50-13(20)X3.00 NC GR8STL		2
7.	77041863	SWITCH-LIMIT			1

99905054 PARTS LIST					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
8.	72060047	CAP SCREW	.38-16X 1.25 HH G R5 Z	#2	2
9.	72060641	MACHINE SCREW	#10-24X 1.75 ROUND HEAD	#2	2
10.	72062093	NUT	#8-32 HEX ZINC	#2	4
11.	72062103	NUT	.38-16 HEX NYLOCK	#2	2
12.	72062106	NUT	#10-24 HEX NYLOCK	#2	2
13.	72062108	NUT	.50-20 HEX CENTER LOCKING	#2	2
14.	72063132	WASHER	.50 FLAT ASTM F436	#2	2
15.	72063268	WASHER	#10 W FLAT ANSI B27.2Z	#2	2
16.	72063271	WASHER	# 8 W FLAT ANSI B27.2Z	#2	4
17.	72601938	BOLT-EYE	# 8-32X 1.125	#2	2
18.	71413185	SPRING	0.105WIRE 0.75 OD 2.875 LG	#2	2
REV A 20110513					

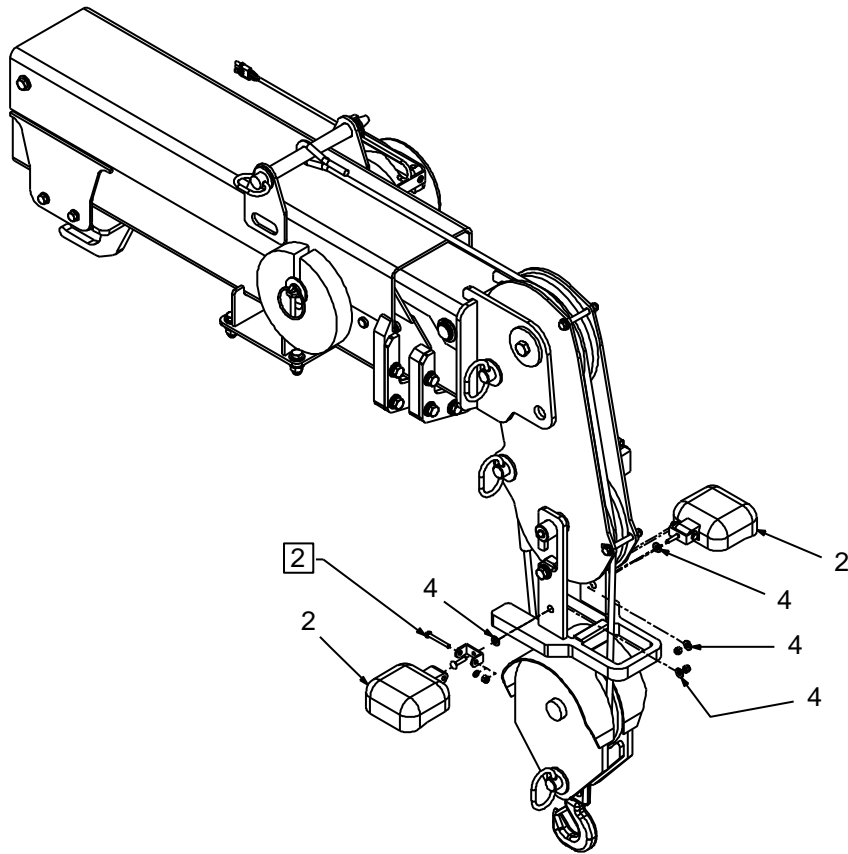
Option - Boom Tip Light Kit (99905289)



NOTES:

- 1 LIGHT CAN BE PLACED ON EITHER SIDE.
- 2 HARNESS CONNECTS TO CORD REEL AND ANTI-TWO-BLOCK SWITCH.

SINGLE INCANDESCENT LIGHT KIT (12V & 24V) (DWG 99905289)							
ITEM	PART #	DESCRIPTION	DETAILS	12V KIT (51723830)		24V KIT (51724606)	
				KIT #	QUANTITY	KIT #	QUANTITY
1.	51723830	ELECTRICAL KIT-BOOM SINGLE FLOOD LIGHT (12V)			1		
1A.	51724606	ELECTRICAL KIT-BOOM SINGLE FLOOD LIGHT (24V)					1
2.	77040424	FLOODLIGHT-COMPOSITE WORK LAMP TOP MTG (12V)		#1	1		1
2A.	77441279	FLOODLIGHT-COMPOSITE WORK LAMP TOP MTG (24V)				#1A	1
3.	77441470	HARNESS-BOOM TIP FLOOD LIGHT JUMPER		#1	1	#1A	1
4.	72063005	WASHER	.50 FLAT	#2	1	#2A	1
5.	72062080	NUT	.50-13 HEX NYLOCK	#2	1	#2A	1
REV B 20120413							

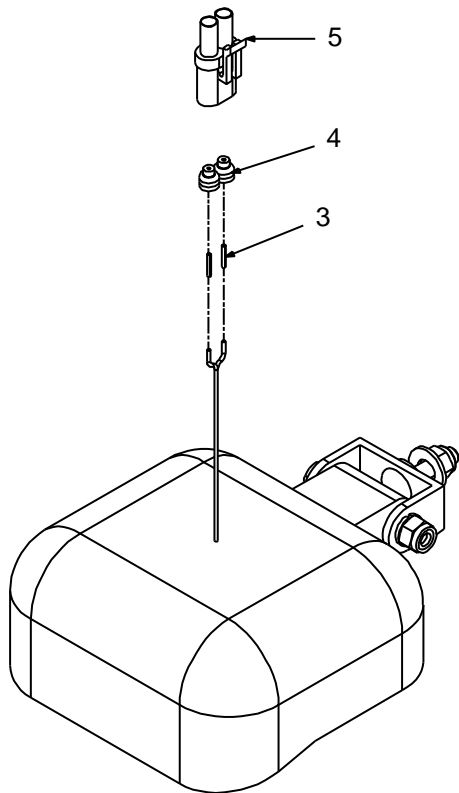
**NOTES (SEE REFERENCE NUMBER IN BOX:**

1 LIGHT CAN BE PLACED ON EITHER SIDE.

2 HARNESS CONNECTS TO CORD REEL AND ANTI-TWO-BLOCK SWITCH.

DUAL LED LIGHT KIT (KIT 51724116 / DWG 99905289)

ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
1.	51724116	ELECTRICAL KIT-BOOM DUAL LED FLOOD LIGHT			1
2.	77040581	FLOODLIGHT-LED	12-36 VDC	#1	2
3.	77441473	HARNESS-BOOM TIP LED FLOOD LIGHT JUMPER		#1	1
4.	72063002	WASHER	.31 FLAT	#1	4
REV B 20120413					



ELECTRICAL INSTALLATION, LIGHT KITS (99905289)				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	51723830	ELECTRICAL KIT-BOOM SINGLE FLOOD LIGHT		1
1.	51724116	ELECTRICAL KIT-BOOM DUAL LED FLOOD LIGHT		1
1.	51724606	ELECTRICAL KIT-BOOM SINGLE FLOOD LIGHT 24V		1
3.	77045888	TERMINAL	PKRD WP 14-16GA FEM	2
4.	77044927	CABLE SEAL	14GA GRAY	2
5.	77044574	CONNECTOR	PKRD WP 2CAV FEM TOWER	1
REV B 20120416				

CHAPTER 5

General Reference

In This Chapter

Inspection Checklist	75
Deficiency / Recommendation / Corrective Action Report.....	80
Thread Torque Charts	82

Inspection Checklist

NOTICE:

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

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

TYPE OF INSPECTION**NOTES:**

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

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

One hour of normal crane operation assumes 20 complete cycles per hour. If operation exceeds 20 cycles per hour, inspection frequency should be increased accordingly.

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

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

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

MONTHLY (M): Monthly inspections or 100 hours of normal operation (which ever comes first) includes all daily inspections plus items designated with an (M). This inspection must be recorded and retained for a minimum of 3 months.

QUARTERLY (Q): Every three to four months or 300 hours of normal operation (which ever comes first) includes all daily and monthly inspection items plus items designated with a (Q). This inspection must be documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection.

ANNUAL (A): Each year or 1200 hours of normal operation (which ever comes first) includes all items on this form which encompasses daily, monthly and quarterly inspections plus those items designated by (A). This inspection must be documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection.

INSPECTION CHECKLIST STATUS KEY:

S = Satisfactory	X = Deficient
R = Recommendation (Should be considered for corrective action)	(NOTE: If a deficiency is found, an immediate determination must be made as to whether the deficiency constitutes a safety hazard and must be corrected prior to operation.)
NA = Not Applicable	

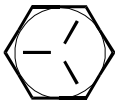

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
D	1	Labels	All load charts, safety & warning labels, and control labels are present and legible.	
D	2	Crane	Check all safety devices for proper operation.	
D	3	Controls	Control mechanisms for proper operation of all functions, leaks and cracks.	
D	4	Station	Control and operator's station for dirt, contamination by lubricants, and foreign material.	
D	5	Hydraulic System	Hydraulic system (hoses, tubes, fittings) for leakage and proper oil level.	
D	6	Hook	Presence and proper operation of hook safety latches.	
D	7	Wire Rope	Inspect for apparent deficiencies per applicable requirements and manufacturer's specifications.	
D	8	Pins	Proper engagement of all connecting pins and pin retaining devices.	

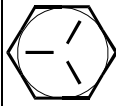
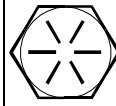
FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
D	9	General	Overall observation of crane for damaged or missing parts, cracked welds, and presence of safety covers.	
D	10	Operation	During operation, observe crane for abnormal performance, unusual wear (loose pins, wire rope damage, etc.). If observed, discontinue use and determine cause and severity of hazard.	
D	11	Remote Ctrl	Operate remote control devices to check for proper operation.	
D	12	Electrical	Operate all lights, alarms, etc. to check for proper operation.	
D	13	Anti Two-Block or Two-Block Damage Prevention	Operate anti two-block or two-block damage prevention device to check for proper operation.	
D	14	Tires	Check tires (when in use) for proper inflation and condition.	
D	15	Ground Conditions	Check ground conditions around the equipment for proper support, watching for ground settling under and around stabilizers and supporting foundations, ground water accumulation, or similar conditions.	
D	16	Level	Check the equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.	
D	17	Operator cab windows	Check windows for cracks, breaks, or other deficiencies which would hamper the operator's view.	
D	18	Rails, rail stops, rail clamps and supporting surfaces	Check rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling.	
D	19	Safety devices	Check safety devices and operational aids for proper operation.	
D	20	Electrical	Check electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation.	
D	21		Other	
D	22		Other	
M	23	Daily	All daily inspection items.	
M	24	Cylinders	Visual inspection of cylinders for leakage at rod, fittings, and welds. Damage to rod and case.	
M	25	Valves	Holding valves for proper operation.	
M	26	Valves	Control valves for leaks at fittings and between stations.	
M	27	Valves	Control valve linkages for wear, smoothness of operation, and tightness of fasteners. Relief valve for proper pressure settings.	
M	28	General	Bent, broken, or significantly rusted/corroded parts.	
M	29	Electrical	Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation. Electrical systems for presence of dirt, moisture, and frayed wires.	
M	30	Structure	All structural members for damage.	
M	31	Welds	All welds for breaks and cracks.	
M	32	Pins	All pins for proper installation and condition.	
M	33	Hardware	All bolts, fasteners and retaining rings for tightness, wear and corrosion.	
M	34	Wear Pads	Presence of wear pads.	
M	35	Pump & Motor	Hydraulic pumps and motors for leakage at fittings, seals, and between sections. Check tightness of mounting bolts.	
M	36	PTO	Transmission/PTO for leakage, abnormal vibration & noise, alignment, and mounting bolt torque.	

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

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

Thread Torque Charts

FINE THREAD BOLTS (ENGLISH)					
SIZE	BOLT DIA.	GRADE 5  SAE J429 GRADE 5		GRADE 8  SAE J429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN	PLATED	PLAIN	PLATED
		(FT-LB)	(FT-LB)	(FT-LB)	(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

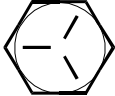

COARSE THREAD BOLTS (ENGLISH)					
SIZE	BOLT DIA.	GRADE 5  SAE J429 GRADE 5		GRADE 8  SAE J429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN	PLATED	PLAIN	PLATED
		(FT-LB)	(FT-LB)	(FT-LB)	(FT-LB)
5/16-18	0.3125	17	13	25	18
3/8-16	0.375	31	23	44	33
7/16-14	0.4375	49	37	70	52
1/2-13	0.5	75	57	105	80
9/16-12	0.5625	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



NOTES

- 1 Tightening torques provided are midrange.
- 2 Consult bolt manufacturer's particular specifications, when provided.
- 3 Use flat washers of equal strength.
- 4 All torque measurements are given in foot-pounds.
- 5 Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphide, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of Loctite does not affect the torque values listed above.

WARNING

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

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

NOTES

- 1 Tightening torques provided are midrange.
- 2 Consult bolt manufacturer's particular specifications, when provided.
- 3 Use flat washers of equal strength.
- 4 All torque measurements are given in kilogram-meters.
- 5 Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphide, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of Loctite does not affect the torque values listed above.

WARNING

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