
Manual # 99904560

20017 Crane Parts & Specifications

Revised: May 18, 2021



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Revisions

DATE	LOCATION	DESCRIPTION
20100330	73733481, 99903557	ECN 11211 - Update elec system for engine start function on OTR product line.
20111221	Throughout	ECN 11628 - Update stabilizer wording, add crane levels.
	91704442, 51717130	ECN 11621 - Update hydraulic overload kit.
20120420	3B223820, 3D216821, 3C221820	ECN 11615 - Updated cylinder drawings.
20140403	Throughout	ECN 12148 – Added 40725658, 40725655, 40725649, 40725647 & 40725247 Updated 51717977 to 51718014
20140624	31713789 99905760 99905768 77044935	ECN 12230 – Updated BOM – Added – Added Added along with Radio Remote reference numbers
20160516	40725247	CN373-ADD SPACER
20160930	99903465	CN367-Add valve bank mounting springs and associated hardware.
20161102	40725807	ADDED NEW DRAWING AND BOM
20190507	40725658	CN470
20210518	31717515	CN1186

CHAPTER 1

Introductions

GENERAL

This manual will help you operate your IMT crane correctly and safely. The manual does not replace any government regulations, safety codes or insurance carrier requirements. Read and understand the manual and all safety procedures for this crane prior to operation.

WARNING

Failure to read, understand and follow any safety procedures for this equipment may result in death, serious injury or equipment damage.

Use caution and common sense. Refer to ANSI/ASME B30.22, the standard for Mobile and Locomotive Cranes, for more information on crane design and test criteria. (Contact American Society of Mechanical Engineers at www.asme.org for information on ANSI/ASME B30.22.) Crane operators must also be familiar with OSHA 29CFR, Subpart N, Article 1926.550 and CAL-OSHA Title 8, Article 93 (California).

CRANE AND SAFETY EQUIPMENT MODIFICATIONS

Do not modify your crane with anything other than IMT approved equipment. If in doubt, contact IMT prior to making modifications. DO NOT alter or modify any safety device! All safety devices must be inspected, tested and maintained in proper working condition.

Decals regarding crane safety and operation are safety equipment and must be maintained. Decals must be kept clean and legible.

OWNER RESPONSIBILITIES

The owner must maintain and operate this unit for the safest working conditions possible. He must follow existing Federal, State, and Local codes and regulations governing the safe use and maintenance. He must make sure anyone involved in equipment operation understands how to operate and maintain the crane safely. Contact IMT or your IMT distributor for clarification.

WARRANTY

The equipment warranty on 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 is valid with this unit.

MANUAL STRUCTURE

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

NOTICE TO THE OWNER / USER

If the crane is involved in a property damage accident, contact your IMT distributor immediately and provide them with the details of the accident and the serial number of the equipment. If an accident involves personal injury, immediately notify your distributor and IMT Technical Support at:

IOWA MOLD TOOLING CO., INC.
500 HWY 18 WEST
GARNER, IA 50438
641 - 923 - 3711

CHAPTER 2

Specifications

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Specifications

GENERAL SPECIFICATIONS	
CRANE RATING* (ANSI B30.22)	199,538 ft-lb (27.59 tm)
MAXIMUM CRANE RATING**	200,000 ft-lb (27.65 tm)
HORIZONTAL REACH (From centerline of rotation)	17'-0" (5.18 m)
HYDRAULIC EXTENSION	40" (101.6 cm)
MANUAL EXTENSION	None
VERTICAL REACH (From mounting surface)	24'-11" (7.6 m)
VERTICAL REACH (From ground/ 41" frame height)	28'-4" (8.64 m)
CRANE WEIGHT	7,630 lb (3,460 kg)
STABILIZER SPAN	15'-0" (4.57 m)
STABILIZER PADS	12" x 19" (30.5 cm x 48.2 cm)
CRANE STORAGE HEIGHT (with 12" flat-bed body - from mounting surface)	8'-9" (2.67 m)
CRANE STORAGE HEIGHT (with 12" flat-bed body - from ground / 41" frame height)	12'-2" (3.71 m)
MOUNTING SPACE REQUIRED (Allow 4" between the truck cab and crane base for swing clearance)	36" (0.91 m)
ROTATIONAL TORQUE	24,150 ft-lb (3.33 tm)
OPTIMUM PUMP CAPACITY	16 U.S gpm (60.6 l/min)
SYSTEM OPERATING PRESSURE	2,500 psi (172.4 bar)
OIL RESERVOIR CAPACITY	26 U.S. gallons (98.4 l)
HOOK APPROACH - HORIZONTAL (from centerline of rotation)	5'-8" (1.73 m)
HOOK APPROACH - VERTICAL (from mounting surface)	10'-11" (3.33 m)
*Note: ANSI B30.22 Crane Rating (ft-lb) is the rated load (lb) with all extensions retracted and the inner and outer booms in a horizontal position, multiplied by the respective distance (ft) from the centerline of rotation.	
** Maximum 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		
CRANE ROTATION WITH TIREHAND	370°	70 seconds
INNER BOOM ELEVATION	-25° to + 70°	28 seconds
OUTER BOOM ARTICULATION	113°	24 seconds
EXTENSION BOOM	40" (102 cm)	10 seconds
STABILIZER EXTENSION	29-1/4" (74.3 cm)	32 seconds

POWER SOURCE

Integral mounted hydraulic pump and PTO application. Other standard power sources may be used. Minimum power required is 28 horsepower.

CYLINDER HOLDING VALVES

The holding sides of all cylinders are equipped with integral-mounted counterbalance valves to prevent sudden cylinder collapse in case of hose or other hydraulic failure. The extension and stabilizer cylinders have double holding valves.

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

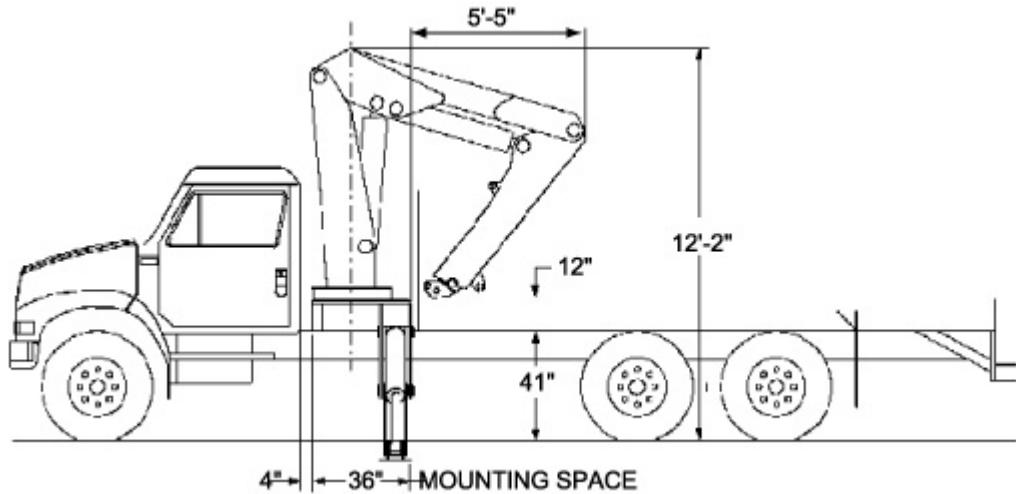
Crane rotation is accomplished through a turntable bearing powered by a high torque hydraulic motor through a ring and pinion type spur gear train. A spring loaded brake is supplied between the drive gear and motor, providing rotational and parking brake action.

HYDRAULIC SYSTEM (PTO DRIVEN)

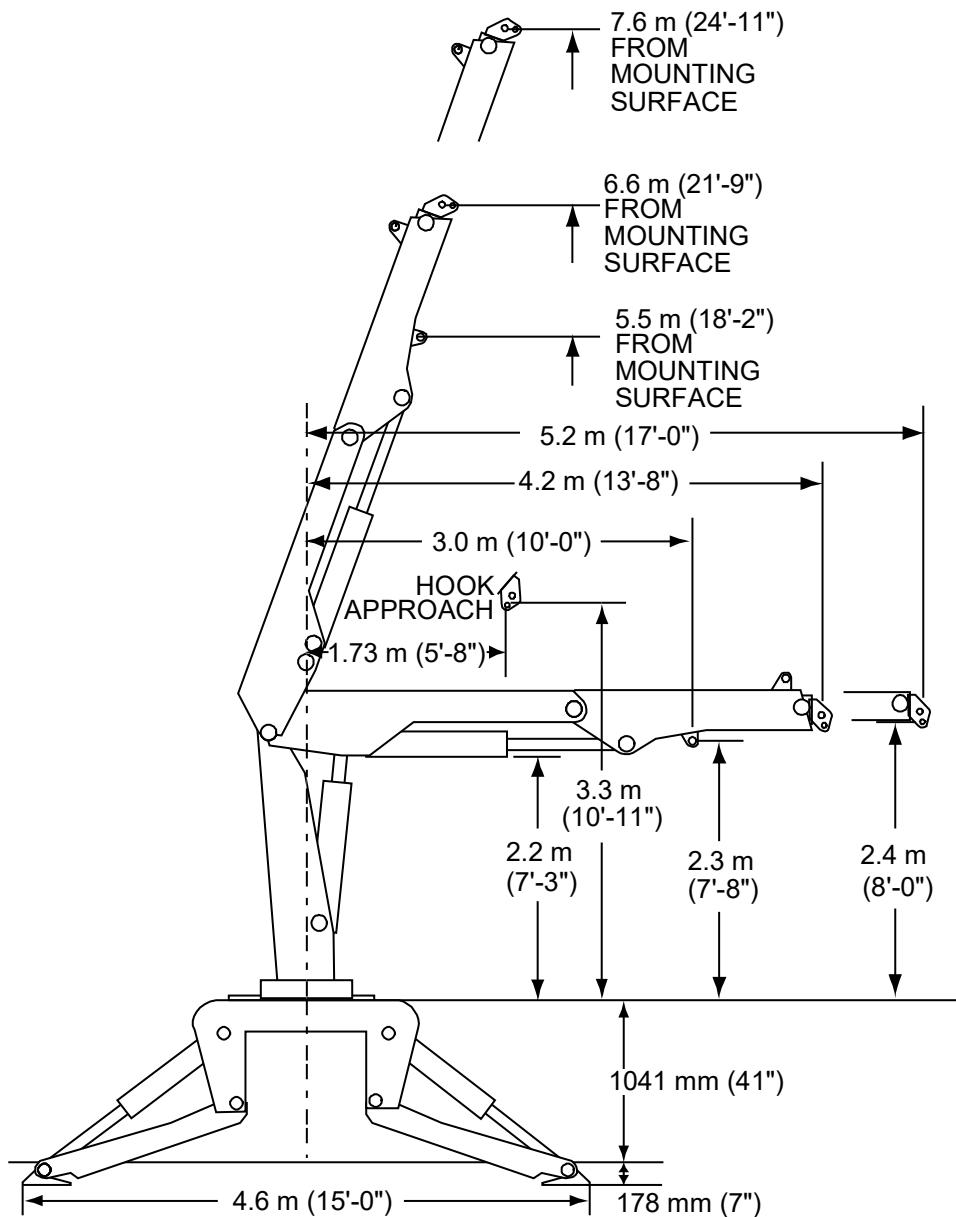
The hydraulic system is an open-centered, full-pressure system that requires 16 GPM (60.6 liters/min.) optimum oil flow at 2,500 psi (172.4 bar). Eleven spool, stack-type control valves, including six functions for standard crane controls, two functions for optional tirehand articulation, and three functions for optional hydraulic out-and-down auxiliary stabilizer system are supplied. The optional valve sections will be plugged if not utilized. Dual operational handles for the six standard crane functions are located at both sides of the crane for convenient operation. The hydraulic system includes a hydraulic oil reservoir, suction-line filter, return-line filter, control valvebank, and all hoses and fittings.

IMT reserves the right to change specifications and design without notice.

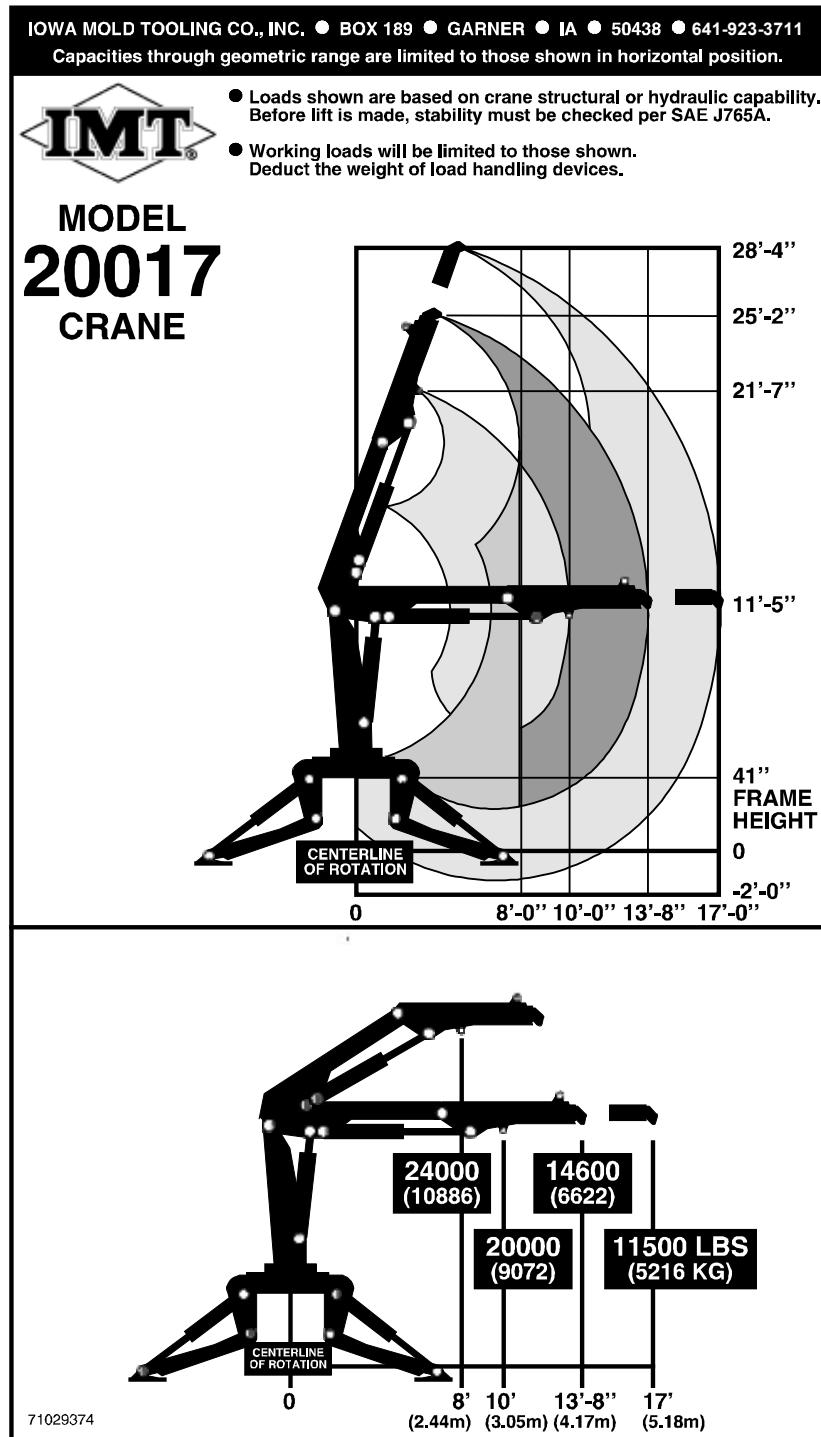
Stowed Position and Mounting Dimensions



Geometric Configuration



Capacity Chart

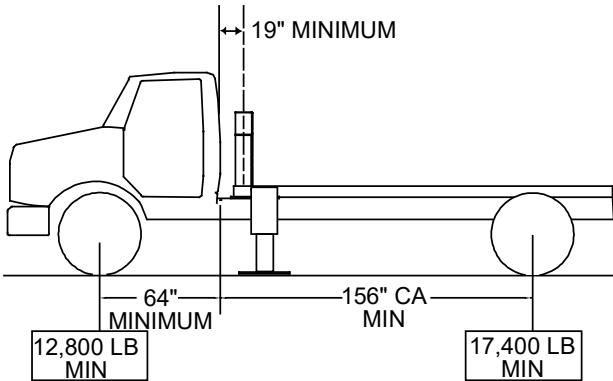


Minimum Chassis Specifications

Crane Mount	Behind Cab
Crane Working Area	360°
Chassis Style	Conventional Cab
Front Axle Rating (GAWR)	16,000 lb (7,260 kg)
Rear Axle Rating (GAWR)	Tandem Axle (40,000 lb) (18,144 kg)
**Wheelbase (Recommended)	220"
**Cab-to-axle (Recommended)	156"
Stabilizer Width Required	15'-0"
RBM (Recommended)	3,300,000 in-lb
Frame Section Modulus	30 in ³
Frame Yield Strength	100,000 psi
Minimum Finished Unit Weight	
To Maintain Vehicle Stability	
Front Axle	* 12,800 lb
Rear Axle	* 17,400 lb
Total Finished Unit Wt.	30,200 lb

* Allows lifting full capacity load in 360° arc when crane is installed immediately behind cab. Great care should be taken when swinging the load from rear of vehicle to front of vehicle since the front axle springs will compress, thus affecting the levelness of the vehicle.

** Based on IMT's recommended chassis. All other applications to be approved by IMT.



NOTES:

- 1 GAWR means Gross Axle Weight Rating and is dependent on all components of the vehicle such as 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 further information.
- 3 Weight distribution calculations are required to determine final axle loading.
- 4 All chassis and crane combinations must be stability tested to ensure stability per ANSI B30.22.

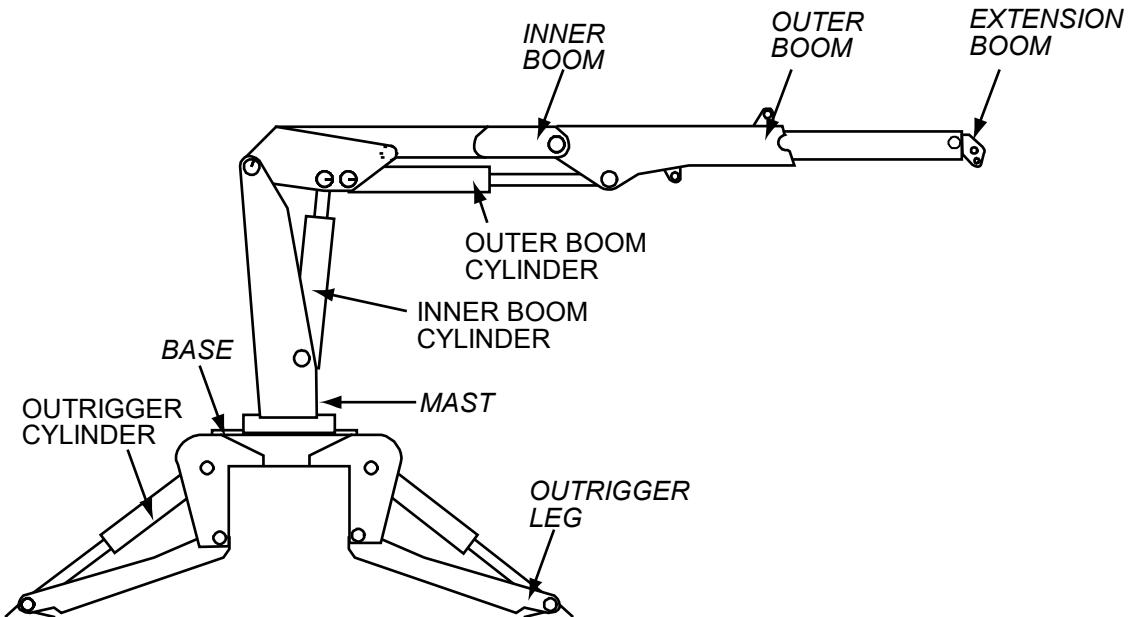
CHAPTER 3

Crane Reference

In This Chapter

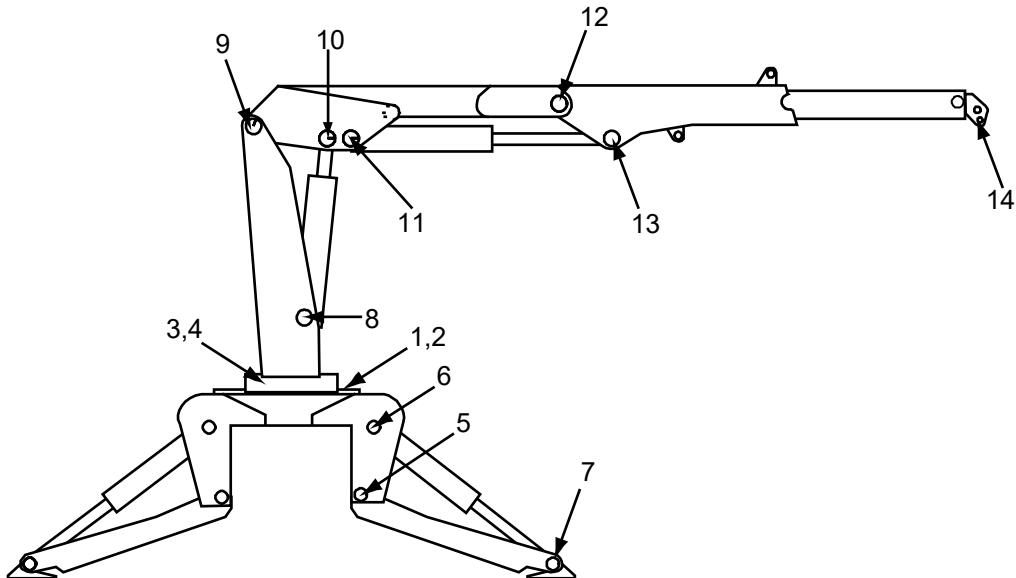
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Crane Assemblies & Weldment Part Numbers

**NOTES:**

- 1 The names of the crane assemblies are indicated on the crane graphic.
- 2 The weldments that make up the crane are stamped with the weldment part numbers. The weldment part number locations are indicated on the assemblies with names written in italics.

20017 Grease Zerk Locations



ITEM	LOCATION DESCRIPTION	LUBRICANT	FREQUENCY
1.	Turntable/Bearing Grease Extension (Rotate Crane While Greasing.)	Shell Alvania 2EP	
2.	Drive Gear Grease Extension	or	
3.	Pinion Gear	Shell Retinax "A"	
4.	Pinion Cover		Weekly
5.	Base/Stabilizer Leg Hinge Pin		
6.	Stabilizer Cylinder Base		
7.	Stabilizer Cylinder Rod		
8.	Inner Cylinder Base		
9.	Mast/Inner Boom Hinge Pin		
10.	Inner Cylinder Rod Pin		
11.	Outer Cylinder Base		
12.	Inner Boom / Outer Boom Hinge Pin		
13.	Outer Cylinder Rod		
14.	Any Tirehand Attachment		

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

Recommended Spare Parts (Effective from 10/17/13)

This spare parts list does not necessarily indicate that the items can be expected to fail in the course of a year. It is intended to provide the user with a stock of parts sufficient to keep the unit operating with the minimal down-time waiting for parts. There may be parts failures not covered by this list. Parts not listed are considered as not being Critical or Normal Wear items during the first year of operations and you need to contact the distributor or manufacturer for availability.

Assembly Designation	Item #	Part #	Description	Quantity	Code
40725658			BASE & STABILIZER ASM		
	5	60020124	BUSHING	1	W
	6	60020122	BUSHING	1	W
	7	60020123	THRUST WASHER	1	W
	8	60020120	BUSHING	1	W
	9	60020121	BUSHING	1	W
	11	71056073	PINION GEAR	1	C
	25	71056374	BRAKE	1	W
	43	70034295	BEARING	1	W
	44	7BF81225	BUSHING	8	W
	61	60030176	WEAR PAD	2	W
3C323911			STABILIZER CYLINDER		
	3	6H065035	HEAD	1	W
	7	7BF81225	BUSHING	6	W
	9	73054304	VALVE 10GPM	4	C
	14	6IX65200	PISTON	1	W
	19	7BF81225	BUSHING	8	W
	20	9X262832	SEAL KIT	2	W
41704437			INNER BOOM ASM		
	5	60020192	BUSHING	3	W
3D216821			INNER CYLINDER		
	6	6I080243	PISTON	1	W
	10	6HX80040	HEAD	1	W
	14	60020190	BUSHING	3	W
	15	60020189	BUSHING	2	W
	16	73054242	VALVE 25GPM	1	C
	18	9C323239	SEAL KIT	1	W
40725647			OUTER BOOM ASM		
	3	60030491	WEAR PAD	2	W
	4	60122985	WEAR PAD	4	W
3C221820			OUTER CYLINDER		
	4	6H075035	HEAD	1	W
	5	6I075218	PISTON	1	W
	6	73054242	VALVE 25GPM	1	C
	7	9C302835	SEAL KIT	1	W
	18	60020193	BUSHING	2	W
	20	60020194	BUSHING	2	W

40725247	EXTENSION BOOM ASM				
	3	60030490	WEAR PAD	1	W
	6	60122985	WEAR PAD	4	W
3B223820	EXTENSION CYLINDER				
	4	73054304	VALVE 10GPM	2	C
	5	6H040025	HEAD	1	W
	6	6I040143	PISTON	1	W
	7	9C162023	SEAL KIT	1	W
93704445	INSTALLATION KIT				
		70048148	SUCTION FILTER	4	P
		73052014	RETURN FILTER	4	P

Recommended Spare Parts (Effective to 10/16/13)

This spare parts list does not necessarily indicate that the items can be expected to fail in the course of a year. It is intended to provide the user with a stock of parts sufficient to keep the unit operating with the minimal down-time waiting for parts. There may be parts failures not covered by this list. Parts not listed are considered as not being Critical or Normal Wear items during the first year of operations and you need to contact the distributor or manufacturer for availability.

Assembly Designation	Item #	Part #	Description	Quantity	Code
41704444			BASE & STABILIZER ASM		
	5	60020124	BUSHING	1	W
	6	60020122	BUSHING	1	W
	7	60020123	THRUST WASHER	1	W
	8	60020120	BUSHING	1	W
	9	60020121	BUSHING	1	W
	11	71056073	PINION GEAR	1	C
	25	71056374	BRAKE	1	W
	43	70034295	BEARING	1	W
	44	7BF81225	BUSHING	8	W
	61	60030176	WEAR PAD	2	W
3C323911			STABILIZER CYLINDER		
	3	6H065035	HEAD	1	W
	7	7BF81225	BUSHING	6	W
	9	73054304	VALVE 10GPM	4	C
	14	6IX65200	PISTON	1	W
	19	7BF81225	BUSHING	8	W
	20	9X262832	SEAL KIT	2	W
41704437			INNER BOOM ASM		
	5	60020192	BUSHING	3	W
3D216821			INNER CYLINDER		
	6	6I080243	PISTON	1	W
	10	6HX80040	HEAD	1	W
	14	60020190	BUSHING	3	W
	15	60020189	BUSHING	2	W
	16	73054242	VALVE 25GPM	1	C
	18	9C323239	SEAL KIT	1	W
41704439			OUTER BOOM ASM		
	6	60020195	BUSHING	2	W
	7	60030028	WEAR PAD	1	W
	8	60030032	WEAR PAD	2	W
	9	60030074	WEAR PAD	1	W
	17	60030245	WEAR PAD	1	W
3C221820			OUTER CYLINDER		
	4	6H075035	HEAD	1	W
	5	6I075218	PISTON	1	W
	6	73054242	VALVE 25GPM	1	C

	7	9C302835	SEAL KIT	1	W
	18	60020193	BUSHING	2	W
	20	60020194	BUSHING	2	W
41704440	EXTENSION BOOM ASM				
	21	60030071	WEAR PAD	1	W
	22	60030072	WEAR PAD	2	W
3B223820	EXTENSION CYLINDER				
	4	73054304	VALVE 10GPM	2	C
	5	6H040025	HEAD	1	W
	6	6I040143	PISTON	1	W
	7	9C162023	SEAL KIT	1	W
93704445	INSTALLATION KIT				
		70048148	SUCTION FILTER	4	P
		73052014	RETURN FILTER	4	P

20017 Crane Installation

This section contains specific instructions for the installation of your crane. Prior to installing the crane and hydraulic components, make sure the chassis is ready to receive the crane (refer to VOLUME 1, Installation).

CRANE MOUNTING

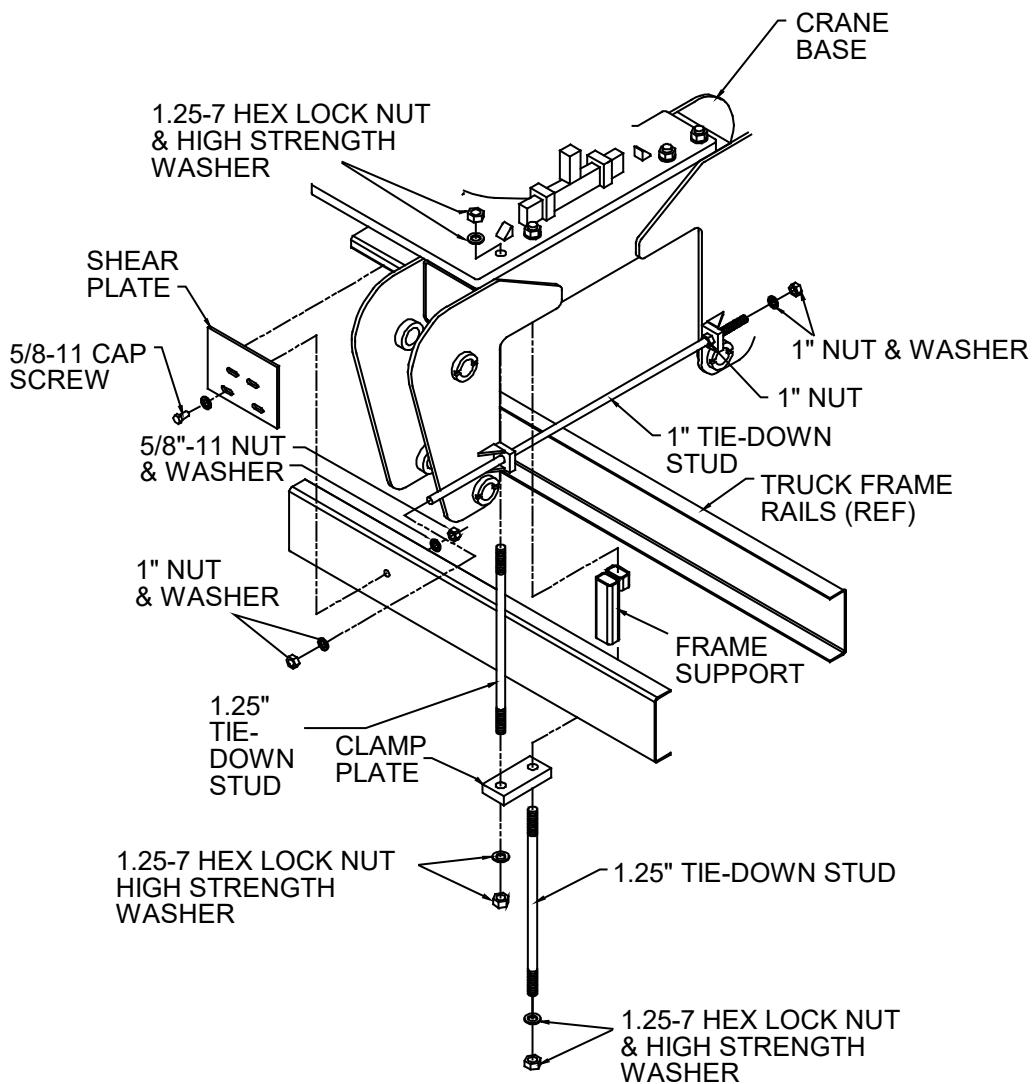
- 1 See SPECIFICATIONS in Section 1 for crane weight. Using an overhead hoist and fabric slings of adequate capacity, lift the crane about a foot to see if the crane is adequately balanced. If not, lower hoist and adjust slings. Re-check balance and re-position crane until mounting surface is level.
- 2 Install the truck frame support so that the tie-down studs pass through the supports (See figure). Cut the support to the inside dimensions of the truck frame. Allow about 1/16" extra. Grind the end of the support to fit inside the frame channel. Use a hammer to drive it into position if necessary.
- 3 Allow sufficient clearance between the cab and crane base, at least 4" (10.2cm). Position the crane on the chassis per the applicable installation drawing, centering the mounting slots over the truck frame rails. While holding crane with hoist, start mounting hardware per figure below. Note position of support weldments on truck frame. Hand-tighten nuts. Observe underside of crane base. No clearance between base and frame is allowed.
- 4 Torque the 1 1/4"-7 UNC Grade 5 mounting hardware to 840 ft-lb (116 kg-m). When torqueing the mounting hardware follow these precautions:
 - a) Never use lock washers.
 - b) Use hardened washers under the turning element, whether the turning element is the nut or the head of the bolt.
 - c) Torque values specified are with residual oils or without special lubricants applied to the threads. If special lubricants are used, such as Never-Seize compound graphite and oil, molybdenum disulphide colloidal copper or white lead, reduce torque values 10%. Torque values for threaded fasteners are not affected with the use of Loctite.
 - d) Do not use rusty fasteners. The rust will alter torque values significantly.

⚠ CAUTION

Do NOT attempt to apply the same torque to the tie rod and self-locking nuts as shown in the torque data chart. Do NOT exceed 840 ft-lb (116 kg-m). Exceeding this torque value could damage either the chassis or crane base.

Power wrenching is not recommended until the lead thread of the nut insert is engaged by hand turning.

- 5 Install the tie-plate (see figure) on the truck chassis. Drill four holes using the plate as a template and install the bolts and lock nuts. Torque the bolts to 200 ft-lb (28 kg-m). Weld the tie-plate to the crane base with 3/8" continuous fillet weld.
- 6 Install the two tension bars with nuts and washers as shown. Tighten the outside nuts first to about 200 ft-lb (28 kg-m) to preload the tension bar. Then tighten the inner nuts to 466 ft-lb (65 kg-m).
- 7 Touch up paint on crane and chassis as necessary.



20017 Hydraulic Installation

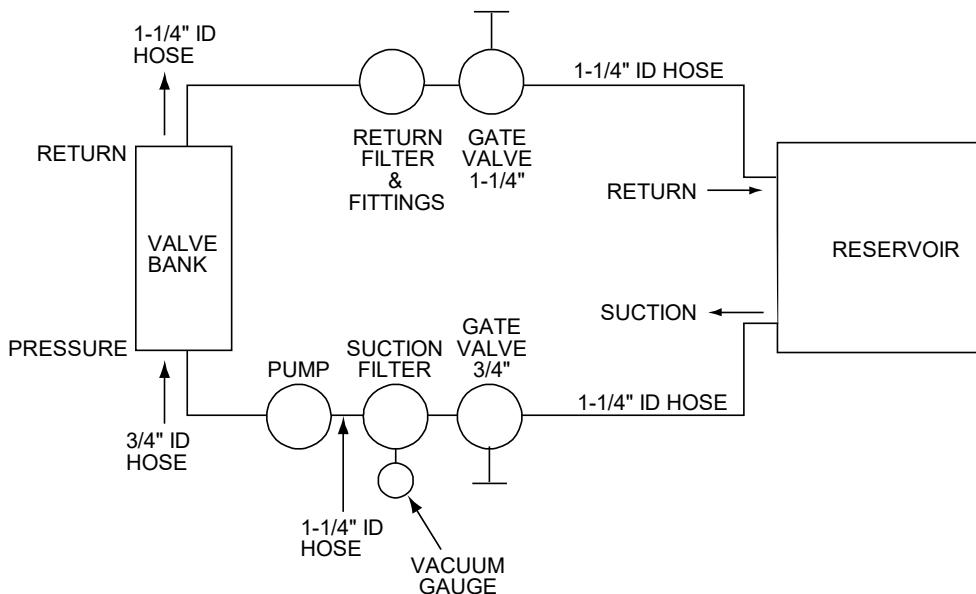
To install the hydraulic hoses, fittings, etc.:

- 1 Plumb the suction line filter as shown in figure.
- 2 Install the suction hose between the suction line filter and the pump inlet. Tighten the hose clamps.
- 3 Install the pressure hose between the pump outlet and the inlet port on the valvebank.
- 4 Install the return line between the reservoir return line filter and valvebank (if applicable).
- 5 Fill the hydraulic oil reservoir.
- 6 Open the gate valve at the suction-line filter.

CAUTION

Failure to open the gate valve will result in a dry running pump which may damage the pump.

- 7 Open the return gate valve.
- 8 Start the vehicle's engine and engage the PTO. Allow the system to run for about five minutes and then check the vacuum gauge on the suction-line filter (it should read 8" mercury or less). If the vacuum reading is too high, check to make certain that the gate valve is opened completely. If the valve is fully opened, check for a collapsed or restricted suction line.
- 9 Cycle all hydraulic functions. Check for leaks, and refill the reservoir if necessary.



20017 Winch Troubleshooting

POSSIBLE CAUSE	PROBABLE CURE
WINCH WON'T LIFT HEAVY LOADS	
Too much load	Rig to reduce loading on winch.
Low or no gearbox oil.	Check oil level. Add oil if necessary.
Motor inlet pressure is less than specifications with load stalled.	Test hydraulic pump.
Motor inlet pressure is too high with load stalled.	Find and remove source of restriction.
Brake should engage in payout direction only.	Run winch with no load in both directions. System pressure should be slightly higher in payout direction.
Check flow to winch motor with winch under load.	Test pump if not to specifications.
Check end play in worm.	If greater than 0.030", inspect worm bearings for wear. Replace if necessary.
WINCH WON'T HOLD LOAD	
Brake may need adjustment.	Turn adjusting screw clockwise 1/4 turn at a time. Re-test winch.
Brake disks may be worn.	Inspect and replace if necessary. Adjust and retest.
Cam clutch in brake may be installed incorrectly.	Reverse clutch and retest.
Journal on worm where cam clutch runs may be galled or worn.	Inspect and replace worm if necessary.
WINCH RUNS TOO SLOW	
System may have low flow.	Install flow meter in system and test under load. If flow is below specifications, inspect pump.
Motor worn out.	Replace motor.
WINCH WILL NOT RUN UNDER NO LOAD (RELIEF VALVE OPENS WITHOUT WINCH TURNING)	
Motor seized up.	Remove motor from winch and test if operable. If not, replace motor.
Worm and gear set damaged.	Repair gearbox.

CHAPTER 4

Parts

In This Chapter

Parts Information	26
Base, Mast & Boom Assemblies & Cylinders.....	38
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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.

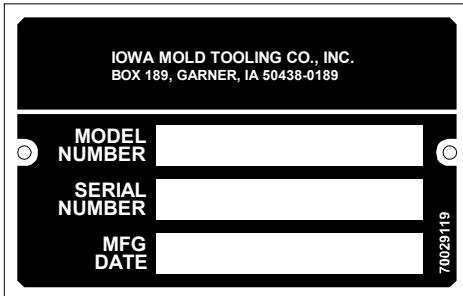
⚠ WARNING

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

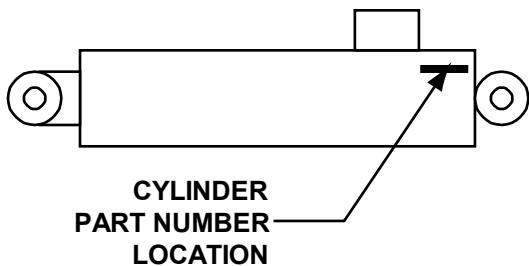
Every IMT crane has an identification placard (see figure). This placard is attached to the inner boom, mast, or crane base. When ordering parts, communicating warranty information, or referring to the unit in correspondence, always include the serial number and model numbers. Address all inquiries to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



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.

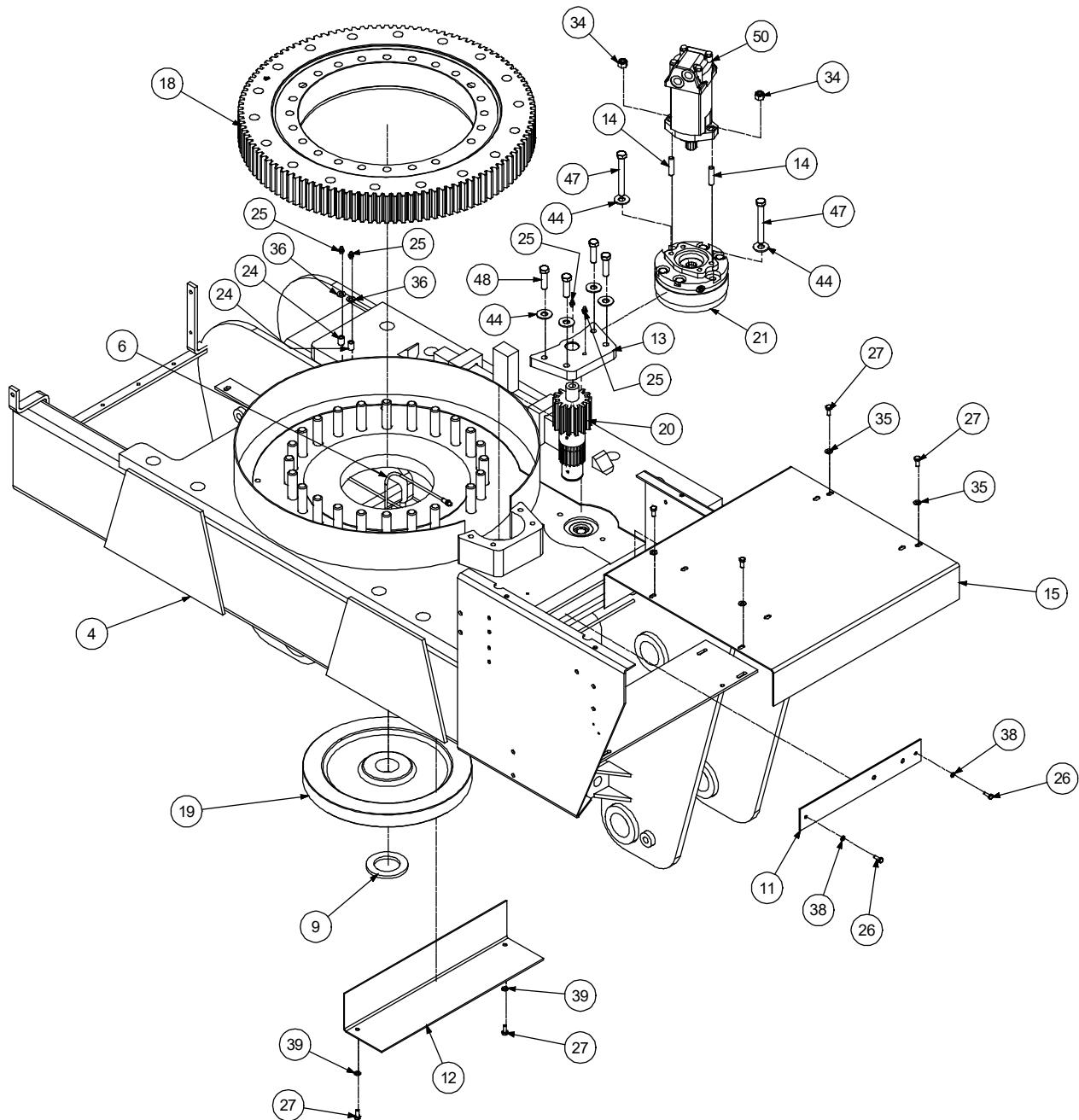
ORDERING REPAIR PARTS

When ordering replacement parts:

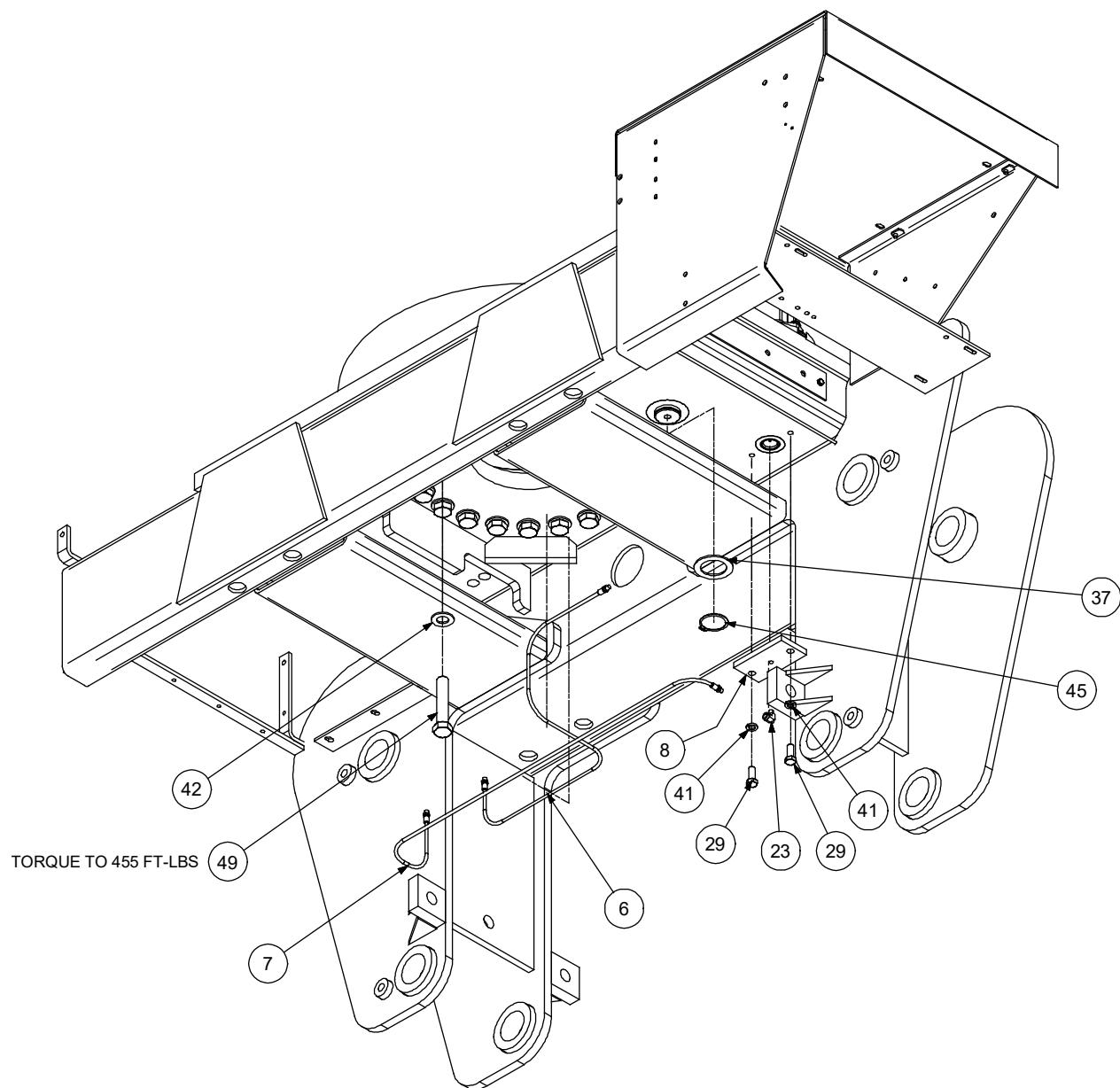
- 1 Give the model number of the unit.
- 2 Give the serial number of the unit.
- 3 Specify the complete part number. When ordering cylinder parts, or one of the main weldments, always give the stamped part number.
- 4 Give a complete description of the part.
- 5 Specify the quantity required.

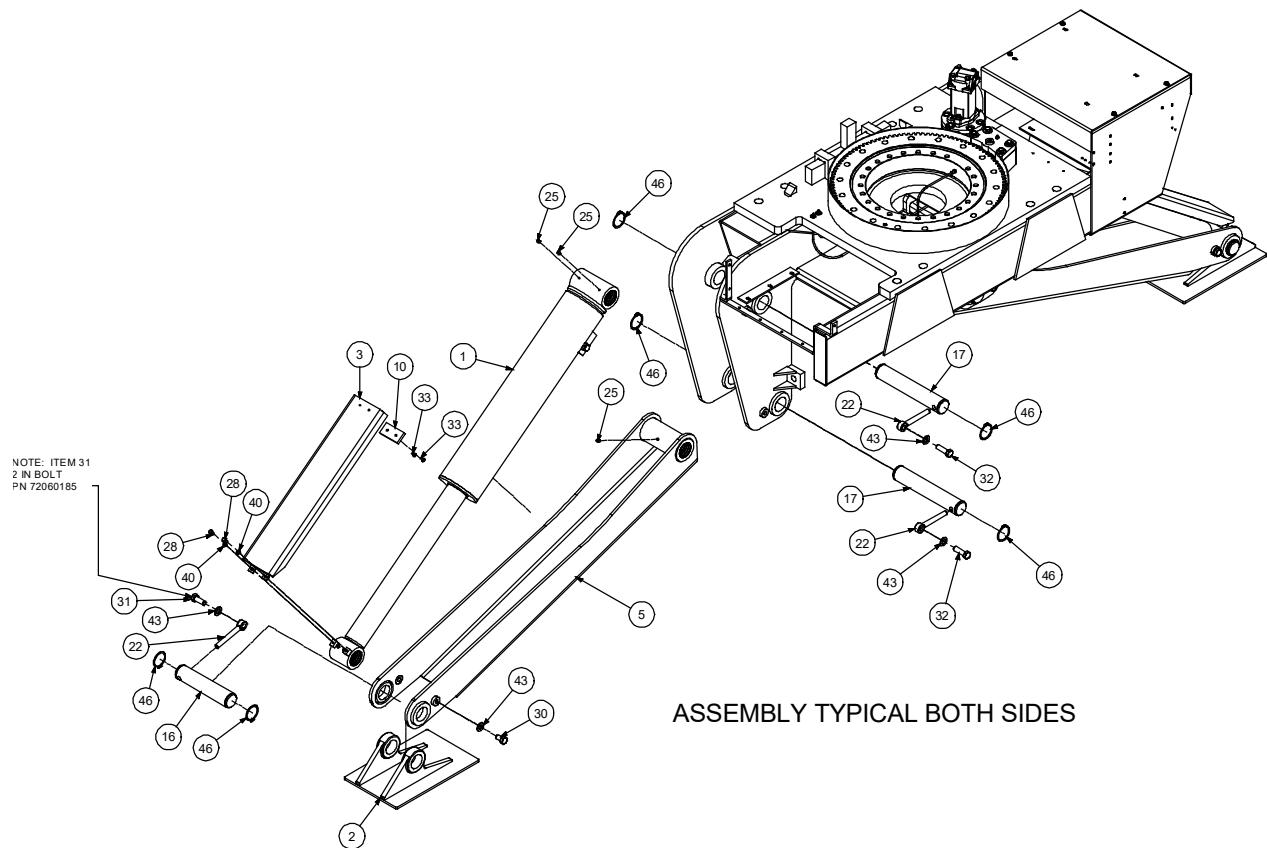
Base, Mast & Boom Assemblies & Cylinders

40725658, Effective 3/2017



NOTE: Apply Lubricant to the external teeth of the turntable bearing and pinion gear. Turntable bearing backlash – 0.008 / 0.013.

40725658-1

40725658-2

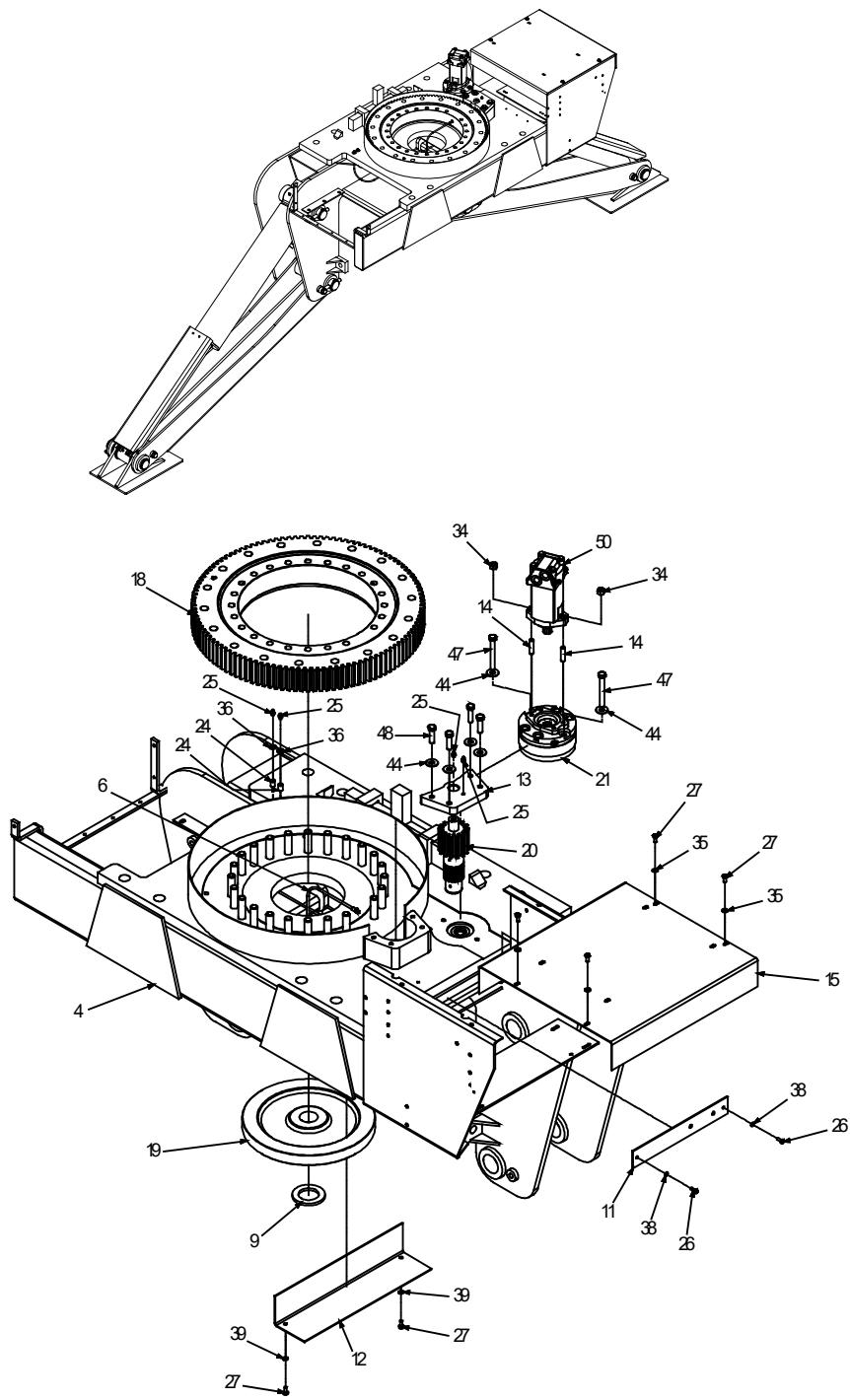
40725658 COMPLETE PARTS LIST

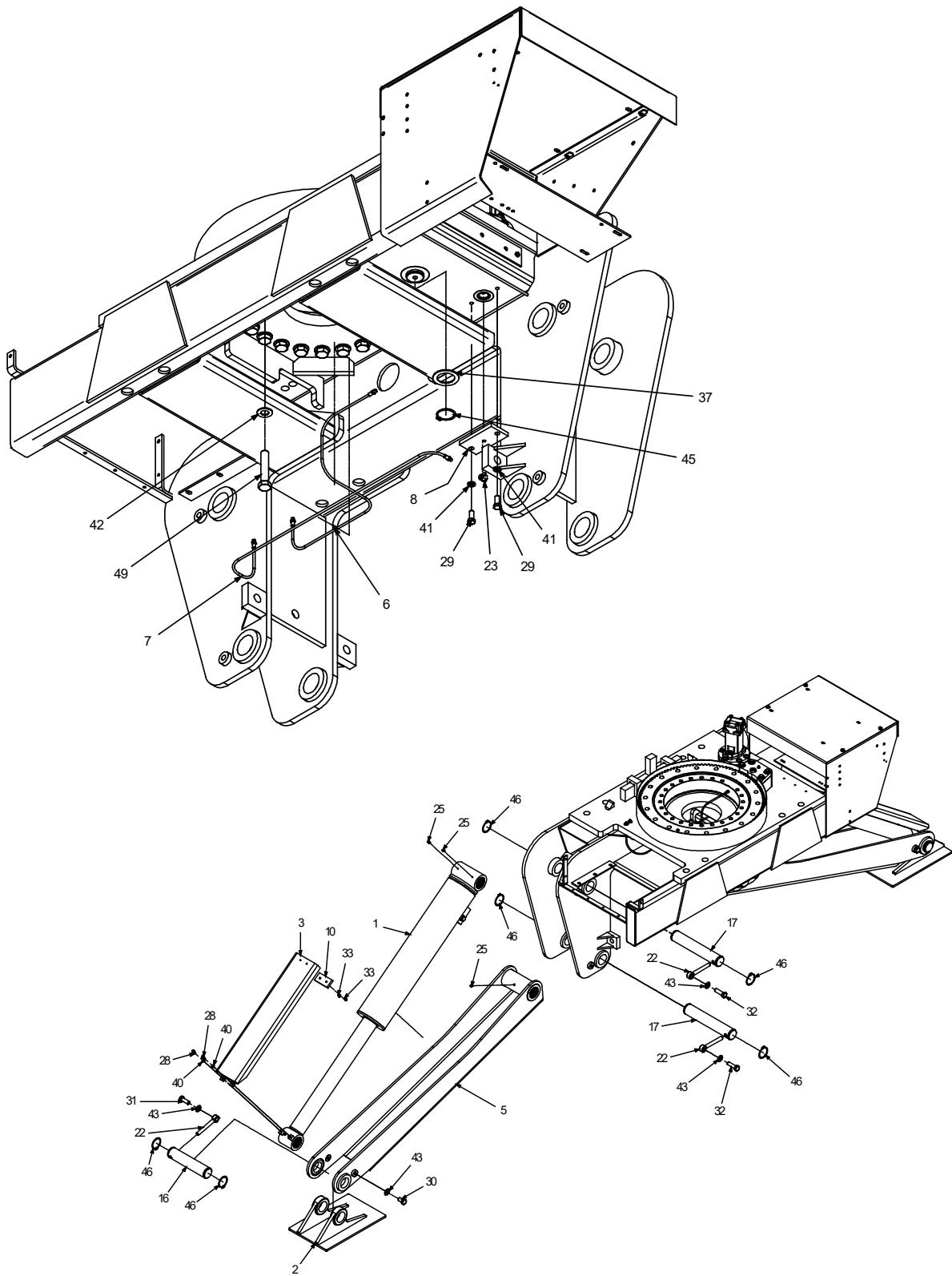
ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
1.	3C323911	CYL-6.5/3.5 29.25S 42.12CC C		2
2.	52701412	OUTRG PAD-MACH (CAST EARS) 12916 20017		2
3.	52706739	GUARD-OUTRG CYL ROD 1216		2
4.	52725659	WLDMT-BASE 20017		1
5.	52725660	WLDMT-FOLD DOWN STAB LEG 20017		2
6.	53000710	GREASE EXT-29.00 OAL 27.00HOSE		1
7.	53000713	GREASE EXT-38.00 OAL 36.00HOSE		1
8.	60010844	GREASE PLATE-DRIVE GEAR		1
9.	60020123	THRUST WASH-BRZ 2.50X4.00X .31		1
10.	60030176	WEAR PAD-B2 UHMW .50X2.00X4.00		2
11.	60103728	ACCESS HOLE COVER		1
12.	60103729	GEAR COVER		1
13.	60105964	SUPPORT PLT-PINION		1
14.	60106032	STUD- .50-13X1.75	50	2
15.	60118801	VALVE BANK COVER- TOP PLATE		1
16.	60141680	PIN-TYPE PP 2.50X 11.75 (10.03)		2
17.	60141681	PIN-TYPE PP 2.50X 14.50 (12.78)		4
18.	70055167	BEARING-ROTATION		1
19.	71056072	GEAR-INTMD 301-10051-1		1
20.	71056073	GEAR-PINION 301-10052-1		1
21.	71056623	BRAKE-HYD SWING DRIVE		1
22.	71415017	KEEPER-PIN .75		6
23.	72053281	ELBOW-STREET BLK .12X90 DEG		1
24.	72053301	COUPLING-GLV .12 SCH 40		2
25.	72053508	ZERK-NPT .12	51	10
26.	72060002	CAP SCR .25-20X .75 HH GR5 Z	51	2
27.	72060023	CAP SCR .31-18X .75 HH GR5 Z	51	6
28.	72060044	CAP SCR .38-16X .75 HH GR5 Z	51	4
29.	72060092	CAP SCR .50-13X 1.25 HH GR5 Z	51	2
30.	72060182	CAP SCR .75-10X 1.25 HH GR5 Z	51	2
31.	72060185	CAP SCR .75-10X 2.00 HH GR5 Z	51	2
32.	72060186	CAP SCR .75-10X 2.50 HH GR5 Z	51	4
33.	72060836	SCR-MACH .25-20X .75 FLH	51	4
34.	72062080	NUT .50-13 HEX NYLOCK	51	2
35.	72063002	WASHER .31 FLAT	51	4
36.	72063003	WASHER .38 FLAT	51	2
37.	72063039	MACHY BUSHING 2.00X10 GA NR	51	1
38.	72063049	WASHER .25 LOCK	51	2
39.	72063050	WASHER .31 LOCK	51	2
40.	72063051	WASHER .38 LOCK	51	4

ITEM NO.	PART NO.	DESCRIPTION	KIT NO.	QTY.
41.	72063053	WASHER .50 LOCK	51	2
42.	72063115	WASHER .88 FLAT ASTM F436	51	23
43.	72063116	WASHER .75 N FLAT H ASTMF436Z	51	8
44.	72063117	WASHER .56 FLAT ASTM F436	51	6
45.	72066095	RETAINING RING-EXT 2.00 STD	51	1
46.	72066103	RETAINING RING-EXT 2.50 STD		12
47.	72601037	CAP SCR .56-12X 4.50 HH GR8 Z	51	2
48.	72601144	CAP SCR .56-12X 2.00 HH GR8 Z	51	4
49.	72601472	CAP SCR .88- 9X 4.50 HH GR8 Z	51	23
50.	73051223	MOTOR-HYD C104-1021 NO DANFOSS		1
51.	91725669	KIT-HRDW BASE 20017		1
REV. C 20190507				

Base, Mast & Boom Assemblies & Cylinders

Base & Stabilizer Assembly (40725658) (Effective from 10/17/13)





⚠ WARNING

Anytime the gear-bearing bolts have been removed, they must be replaced with new bolts of identical grade and size. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue, causing death or serious injury.

NOTES:

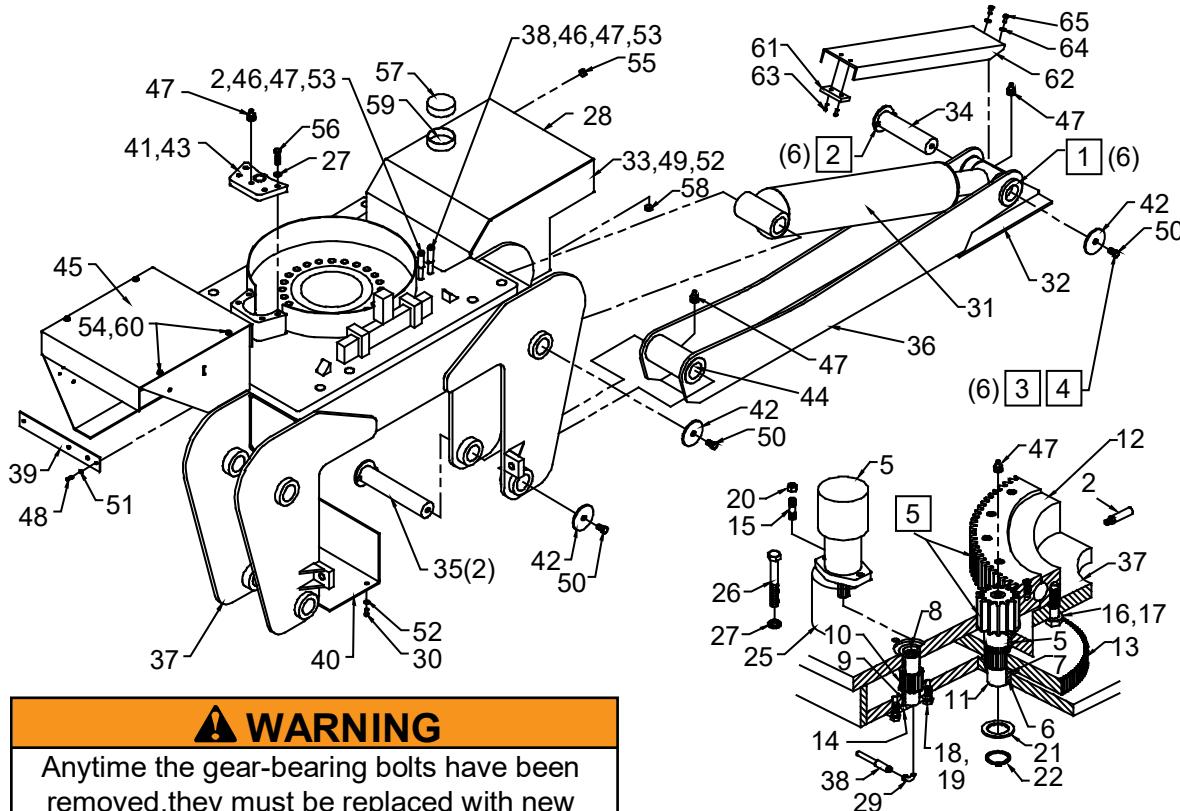
- 1 APPLY LUBRICANT TO THE EXTERNAL TEETH OF THE TURNTABLE BEARING AND PINION GEAR.
- 2 TORQUE CAP SCR 72601472 (ITEM #49) TO 455 FT-LBS.
- 3 TURNTABLE BEARING BACKLASH 0.008"/0.013" (0.203 - 0.330 mm).

40725658 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	3C323911	CYLINDER		2
2.	52701412	OUTRIGGER PAD		2
3.	52706739	GUARD		2
4.	52725659	BASE WELDMENT		1
5.	52725660	STABILIZER LEG		2
6.	53000710	GREASE EXTENSION	.29"	1
7.	53000713	GREASE EXTENSION	.38"	1
8.	60010844	GREASE PLATE		1
9.	60020123	THRUST WASHER		1
10.	60030176	WEAR PAD		2
11.	60103728	ACCESS HOLE COVER		1
12.	60103729	GEAR COVER		1
13.	60105964	PINION GEAR SUPPORT		1
14.	60106032	STUD	.50-13 X 1.75	2
15.	60118801	VALVE BANK COVER		1
16.	60141680	PIN		2
17.	60141681	PIN		4
18.	70055167	BEARING-ROTATION		1
19.	71056072	INTERMEDIATE GEAR		1
20.	71056073	PINION GEAR		1
21.	71056623	BRAKE		1
22.	71415017	KEEPER-PIN	.75	6
23.	72053281	STREET ELBOW	.12 90 DEGREE	1
24.	72053301	COUPLING	.12 SCH 40	2
25.	72053508	ZERK	NPT .12	10
26.	72060002	CAP SCREW	.25-20 X .75 HEX HEAD GRADE 5	2
27.	72060023	CAP SCREW	.31-18 X .75 HEX HEAD GRADE 5	6
28.	72060044	CAP SCREW	.38-16 X .75 HEX HEAD GRADE 5	4
29.	72060092	CAP SCREW	.50-13 X 1.25 HEX HEAD GRADE 5	2
30.	72060182	CAP SCREW	.75-10 X 1.25 HEX HEAD GRADE 5	2
31.	72060185	CAP SCREW	.75-10 X 2.00 HEX HEAD GRADE 5	2
32.	72060186	CAP SCREW	.71-10 X 2.50 HEX HEAD GRADE 5	4
33.	72060836	SCREW	.25-20 X .75 FLH	4
34.	72062080	NUT	.50-13 HEX NYLOCK	2

40725658 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
35.	72063002	WASHER	.31 FLAT	4
36.	72063003	WASHER	.38 FLAT	2
37.	72063039	MACHINERY BUSHING	2.00X10 GA	1
38.	72063049	WASHER	.25 LOCK	2
39.	72063050	WASHER	.31 LOCK	2
40.	72063051	WASHER	.38 LOCK	4
41.	72063053	WASHER	.50 LOCK	2
42.	72063115	WASHER	.88 FLAT	23
43.	72063116	WASHER	.75 FLAT	8
44.	72063117	WASHER	.56 FLAT	6
45.	72066095	RETAINING RING	2.00 STD	1
46.	72066103	RETAINING RING	2.50 STD	12
47.	72601037	CAP SCREW	.56-12 X 4.50 HEX HEAD GRADE 8	2
48.	72601144	CAP SCREW	.56-132 X 2.00 HEX HEAD GRADE 8	4
49.	72601472	CAP SCREW	.88-9 X 4.50 HEX HEAD GRADE 8	23
50.	73051223	MOTOR		1
51.	91725669	KIT		1
REV. B 20140204				

Base & Stabilizer Assembly (41704444) (Effective to 10/16/13)



WARNING

Anytime the gear-bearing bolts have been removed, they must be replaced with new bolts of identical grade and size. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue, causing death or serious injury.

NOTES (SEE REFERENCE NUMBER IN BOX):

- 1 APPLY NEVER-SEEZ TO COLLAR I.D.
- 2 APPLY NEVER-SEEZ TO PIN AT PIN CAP, NOT TO EXCEED THE WIDTH OF THE COLLAR.
- 3 IF REQUIRED, SHIM PIN RETAINING PLATES FLUSH (-0/+0.06") (-0/+1.5 mm) WITH OUTSIDE OF COLLAR USING 0.75" (19 mm) FLAT WASHERS AS REQUIRED.
- 4 CLEAN/PRIMER ALL PIN RETAINING PLATE CAP SCREWS. APPLY A SERVICEABLE THREAD LOCKER TO A MINIMUM OF THREE THREADS. TORQUE 0.75-10 (GR5 PLATED) PIN RETAINING PLATE CAP SCREWS TO 200 FT-LB (27.7 KG-M), AND 0.63-11 (GR5 PLATED) PIN RETAINING PLATE CAP SCREWS TO 115 FT-LB (15.9 KG-M).
- 5 APPLY MOBILTAC 375NC LUBRICANT (OR EQUIVALENT) TO THE EXTERNAL TEETH OF THE TURNTABLE BEARING AND PINION GEAR.
- 6 IF THE CRANE DOES NOT GET A RESERVOIR ASSEMBLY (ITEM #28), USE 52710798 (WELDMENT COVER)
- 7 THE "HIGH FRAME" VERSION OF THE BASE AND STABILIZER ASSEMBLY (41706881) IS IDENTICAL TO THE STANDARD BASE AND STABILIZER ASSEMBLY (41704444) EXCEPT FOR THE BASE WELDMENT (ITEM #37, 52704449) WHICH IS 52706880.
- 8 TURNTABLE BEARING BACKLASH 0.008"/0.013" (0.203 - 0.330 mm).

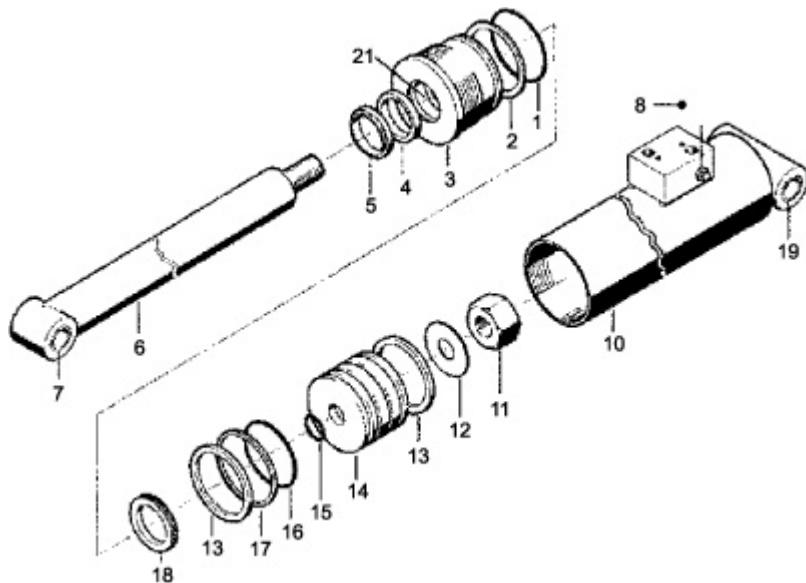
41704444 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QTY
1.	99903611	INSTRUCTIONS, HYD SHUTDOWN PROCESS		1REF
2.	53000710	GREASE EXTENSION	29"	1
4.	73051223	MOTOR		1
5.	60020124	BUSHING	PART OF 37	1REF
6.	60020122	BUSHING	PART OF 37	1REF
7.	60020123	THRUST WASHER		1
8.	60020120	BUSHING	PART OF 37	1REF
9.	60020121	BUSHING	PART OF 37	1REF
10.	71056074	DRIVE GEAR	PART OF 37	1REF
11.	71056073	PINION GEAR		1
12.	70055167	GEAR BEARING	FROM 6/94	1
	REF 70056188	GEAR BEARING	TO 5-31-94/SERIAL #20017F249056	1
13.	71056072	INTERMEDIATE GEAR		1
14.	60010844	GREASE PLATE		1
15.	60106032	STUD	1/2-13 X 2	2
16.	72601472	CAP SCREW	7/8-9X4-1/2 HHGR8	23
REF	72601148	CAP SCREW (THROUGH 5-31-94/SERIAL #20017F249056)	7/8-9X3 HHGR8	23
17.	72063115	WASHER	7/8 HARD	23
18.	72060092	CAP SCREW	1/2-13X1-1/4 HHGR5	2
19.	72063053	WASHER	1/2 LOCK	2
20.	72062080	NUT	1/2-13 LOCK	2
21.	72063039	MACHINERY BUSHING	2" X 10GA	1
22.	72066095	RETAINING RING	2" EXT STD	1
25.	71056374	BRAKE		1
26.	72601037	CAP SCREW	9/16-12X4-1/2 HHGR8	2
27.	72063117	WASHER	9/16 HARD	6
28.	51707855	RESERVOIR ASSEMBLY	INCLUDING 33,55,57-59	1REF
29.	72053281	STREET ELBOW	1/8NPT 90°	1
30.	72060023	CAP SCREW	5/16-18X3/4 HEX HEAD GRADE 5	2
31.	3C323911	STABILIZER CYLINDER		2
32.	52701412	STABILIZER PAD		2
	52723619	STABILIZER PAD, EXTENDED	OPTIONAL	2REF
33.	52703357	RESERVOIR	PART OF 28	1REF
34.	52703694	PIN		2
35.	52703695	PIN		4
36.	52703775	STABILIZER LEG		2
37.	52704449	BASE	INCLUDING:5,6,8-10	1
38.	53000713	GREASE EXTENSION	36"	1
39.	60103728	COVER		1
40.	60103729	GUARD		1
41.	60105964	PINION GEAR SUPPORT		1
42.	60106332	RETAINER		6
43.	70034295	BEARING	PART OF 41	1REF
44.	7BF81225	BUSHING	PART OF 36	8REF

41704444 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QTY
45.	60118801	VALVEBANK COVER-TOP		1
46.	72053301	COUPLING	1/8NPT	2
47.	72053508	ZERK	1/8NPT	8
48.	72060002	CAP SCREW	1/4-20X3/4 HEX HEAD GRADE 5	2
49.	72060021	CAP SCREW	5/16-18X1/2 HEX HEAD GRADE 5	6
50.	72060147	CAP SCREW	5/8-11X1 HEX HEAD GRADE 5	6
51.	72063049	WASHER	1/4 LOCK	2
52.	72063050	WASHER	5/16 LOCK	8
53.	72063003	WASHER	3/8 WRT	2
54.	72063002	WASHER	5/16 WRT	4
55.	72532261	SIGHT GAUGE	3/4 (PART OF 28)	1REF
56.	72601144	CAP SCREW	9/16-12X2 HEX HEAD GRADE 8	4
57.	73014671	FILL CAP	PART OF 28	1REF
58.	73052001	PLUG	3/4NPT SQUARE HEAD MAGNETIC (PART OF 28)	1REF
59.	73141276	FILL SCREEN	PART OF 28	1REF
60.	72060833	SCREW, THREAD CUT	0.31-18X.75 HWH-1	4
61.	60030176	WEAR PAD		2
62.	52706739	CYLINDER GUARD		2
	52723620	CYLINDER GUARD, NARROW	OPTION	2
63.	72060836	CAP SCREW	1/4-20X3/4 FLTHD	4
64.	72063051	WASHER	3/8 LOCK	4
65.	72060044	CAP SCREW	3/8-16X3/4 HHGR5	4
REV. K 20061220				

Stabilizer Cylinder (3C323911)



NOTES:

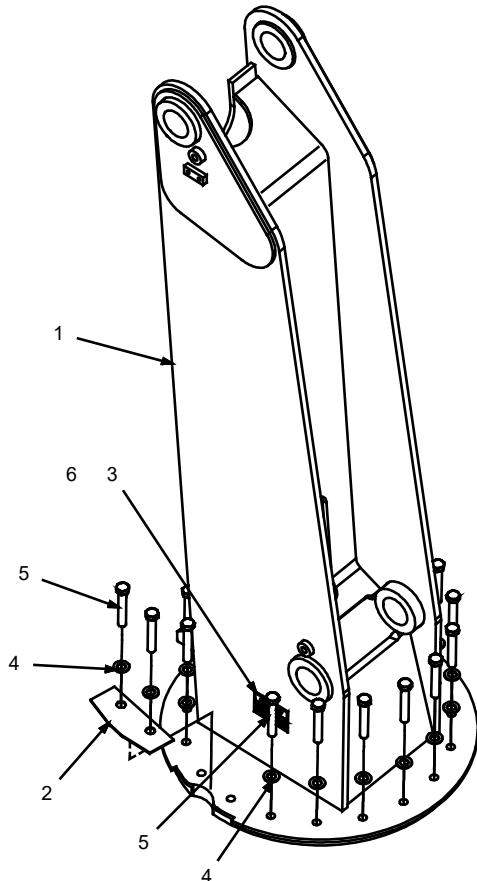
- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT,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

3C323911 PART LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	7Q072361	O-RING	PART OF 20	1REF
2.	7Q10P361	BACK-UP RING	PART OF 20	1REF
3.	6H065035	HEAD		1
4.	7R546035	ROD SEAL	PART OF 20	1REF
5.	7R14P035	ROD WIPER	PART OF 20	1REF
6.	4G323910	ROD	INCLUDES 7	1
7.	7BF81225	BUSHING	PART OF 6	3REF
8.	7PNPXT02	PLUG	1/8NPT (PART OF 10)	4REF
9.	73054304	VALVE	10 GPM	2
10.	4C263513	CASE	INCLUDES 8, 19	1
11.	72062144	NUT	2" BUTTRESS	1
12.	72063016	WASHER		1
13.	7T65I065	PISTON RING	PART OF 20	2REF
14.	6IX65200	PISTON		1
15.	7Q072227	O-RING	PART OF 20	1REF
16.	7Q072257	O-RING	PART OF 20	1REF
17.	7T66P065	PISTON SEAL	PART OF 20	1REF

3C323911 PART LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
18.	6A025035	WAFER-LOCK	PART OF 20	1REF
19.	7BF81225	BUSHING	PART OF 10	4REF
20.	9X262832	SEAL KIT	INCLUDES 1,2,4,5,13,15-18,21	1
21.	7T2N2X37	WEAR RING	PART OF 20	1REF
REV 20070613				

Mast Assembly (40725655) (Effective from 10/17/13)



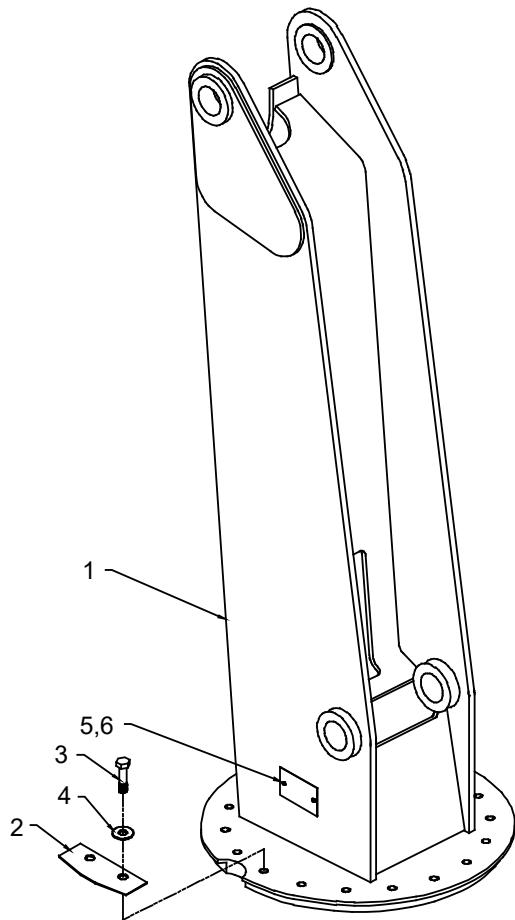
WARNING

Anytime the gear-bearing bolts have been removed, they must be replaced with new bolts of identical grade and size. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue, causing death or serious injury.

40725655 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	52725654	MAST WELDMENT		1
2.	60104246	COVER, PINION GEAR		1
3.	70029119	PLACARD-SERIAL NUMBER		1
4.	72063116	WASHER	.75 FLAT	18
5.	72601468	CAP SCREW	.75-10 X 4.50 HEX HEAD GRADE 8 ZINC	18
6.	72661638	TACK-METAL		2
REV. B 20140205				

Mast Assembly (41704436) (Effective to 10/16/13)

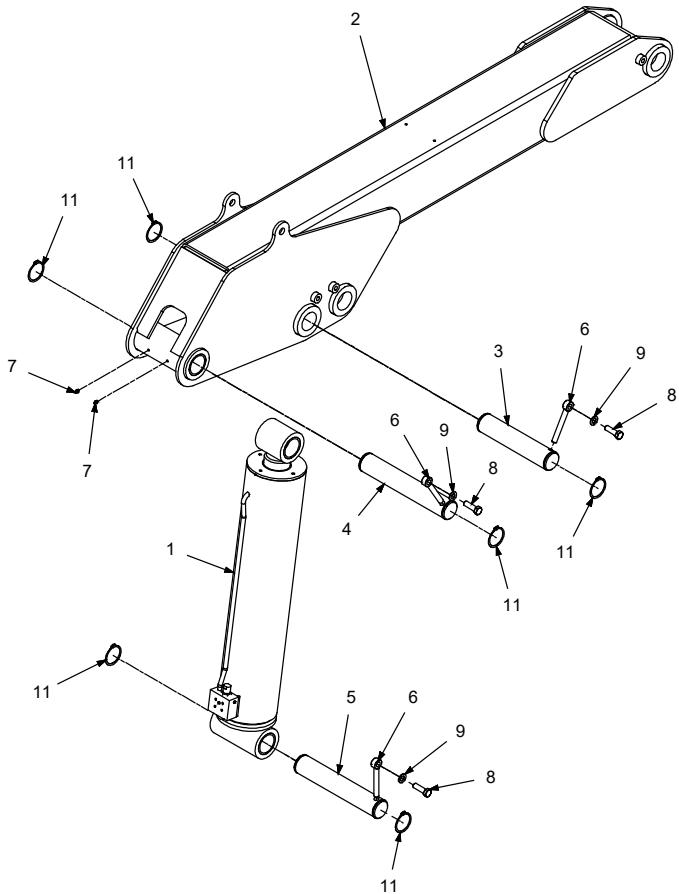


WARNING

Anytime the gear-bearing bolts have been removed, they must be replaced with new bolts of identical grade and size. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue, causing death or serious injury.

41704436 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	52704409	MAST WELDMENT		1
2.	60104246	COVER, PINION GEAR		1
3.	72601468	CAP SCREW	.75-10 X 4.50 HEX HEAD GRADE 8 ZINC	18
4.	72063116	WASHER	.75 FLAT	18
5.	70029119	PLACARD-SERIAL NUMBER		1
6.	72661638	TACK-METAL		2
REV. F 20070614				

Inner Boom Assembly (40725649) (Effective from 10/17/13)



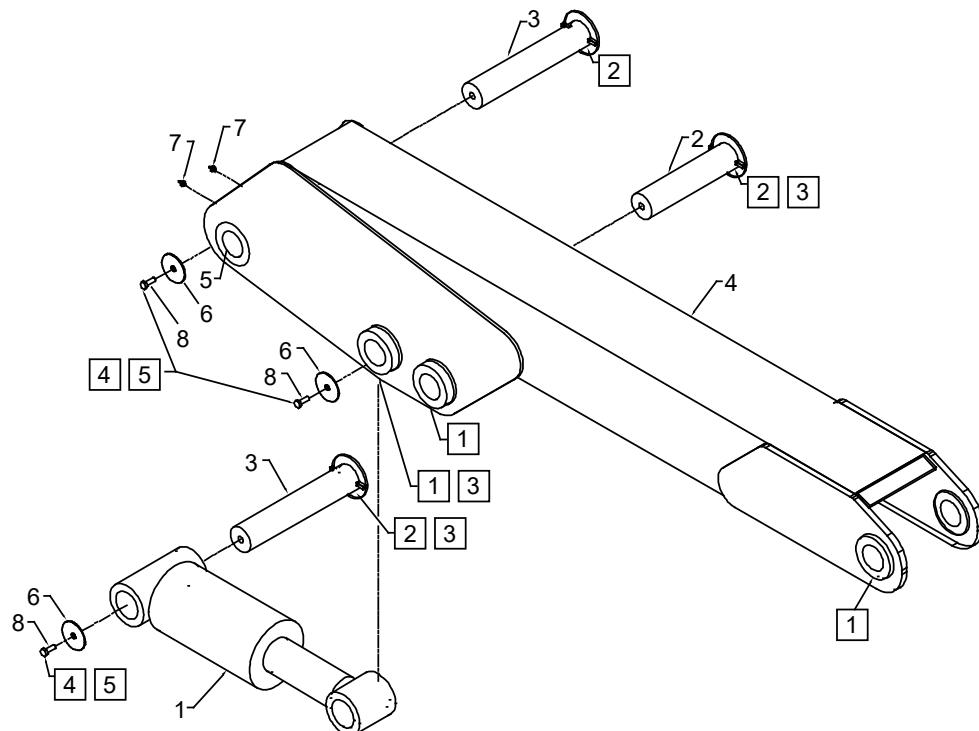
NOTES:

- 1 APPLY NEVER-SEEZ TO COLLAR ID.
- 2 APPLY NEVER-SEEZ TO PIN AT PIN CAP, NOT TO EXCEED THE WIDTH OF THE COLLAR.
- 3 DO NOT ALLOW NEVER-SEEZ TO CONTACT ANY GAR-MAX BEARINGS.
- 4 IF REQUIRED, SHIM PIN RETAINING PLATES FLUSH (-0/+0.06) (-0/+1.5 mm) WITH OUTSIDE OF COLLAR USING 0.75 (19 mm) FLAT WASHERS AS REQUIRED.
- 5 CLEAN/PRIME ALL PIN RETAINING PLATE CAP SCREWS. APPLY A SERVICEABLE THREAD LOCKER TO A MINIMUM OF THREE THREADS. TORQUE 3/4-10 PIN RETAINING PLATE CAP SCREWS TO 200 FT-LB (27.7 KG-M); 9/16-11 PIN RETAINING CAP SCREWS TO 115 FT-LB (15.9 KG-M).

40725649 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	3D216821	CYLINDER		1
2.	52725648	BOOM-MAIN WELDMENT		1
3.	60141655	PIN		1

40725649 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
4.	60141657	PIN		1
5.	60141673	PIN		1
6.	71415017	KEEPER-PIN		3
7.	72053508	ZERK	NPT 0.12	2
8.	72060186	CAP SCREW	.75-10 X 1.25 HEX HEAD GR 5 ZINC	3
9.	72063116	WASHER	.75 FLAT	3
10.	91725645	KIT-HARDWARE		1
11.	72066108	RETAINING RING	3.00 STD	6
REV. A 20131016				

Inner Boom Assembly (41704437) (Effective to 10/16/13)



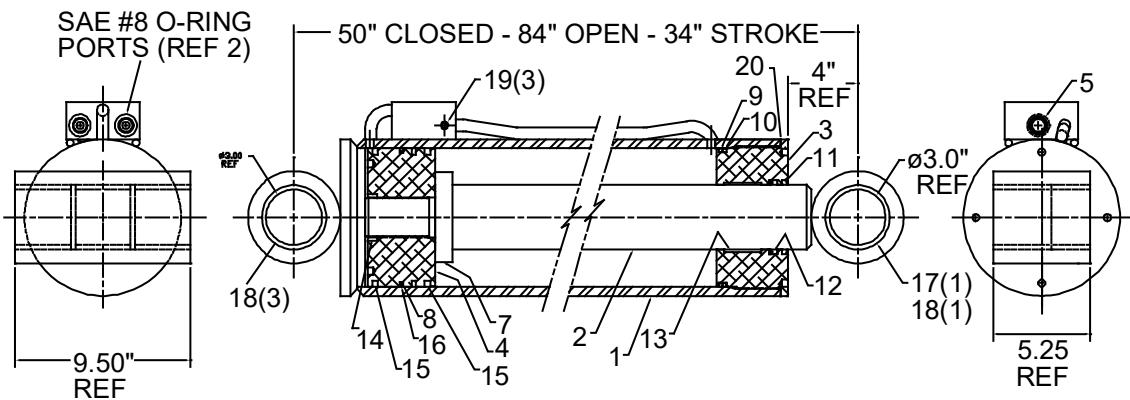
NOTES (SEE REFERENCE NUMBER IN BOX):

- 1 APPLY NEVER-SEEZ TO COLLAR ID.
- 2 APPLY NEVER-SEEZ TO PIN AT PIN CAP, NOT TO EXCEED THE WIDTH OF THE COLLAR.
- 3 DO NOT ALLOW NEVER-SEEZ TO CONTACT ANY GAR-MAX BEARINGS.
- 4 IF REQUIRED, SHIM PIN RETAINING PLATES FLUSH (-0/+0.06) (-0/+1.5 mm) WITH OUTSIDE OF COLLAR USING 0.75 (19 mm) FLAT WASHERS AS REQUIRED.
- 5 CLEAN/PRIME ALL PIN RETAINING PLATE CAP SCREWS. APPLY A SERVICEABLE THREAD LOCKER TO A MINIMUM OF THREE THREADS. TORQUE 3/4-10 PIN RETAINING PLATE CAP SCREWS TO 200 FT-LB (27.7 KG-M); 9/16-11 PIN RETAINING CAP SCREWS TO 115 FT-LB (15.9 KG-M).

41704437 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	3D216821	CYLINDER		1
2.	52704421	PIN		1
3.	52704420	PIN		2
4.	52704424	BOOM-MAIN WELDMENT	INCLUDES 5	1
5.	60020192	BUSHING-BRONZE	3.0 X 3.5 X 3.75 (PART OF 4)	3REF
6.	60106681	RETAINER PLATE		3
7.	72053508	ZERK	NPT 0.12	2
8.	72060182	CAP SCREW	.75-10 X 1.25 HEX HEAD GR 5 ZINC	3
REV. C 1998				

Inner Cylinder (3D216821)



CYLINDER DATA

EXTENDED	50.24 IN ² , 7.39 GAL
RETRACTED	37.68 IN ² , 5.55 GAL
CASE	Ø9.00 X 8.00 B X 43.13 LONG
ROD	Ø4.00 X 43.63 LONG
DRY WEIGHT	422 LB
TEST PRESSURE	3000 PSI
OPERATING PRESSURE	2300 PSI

NOTES:

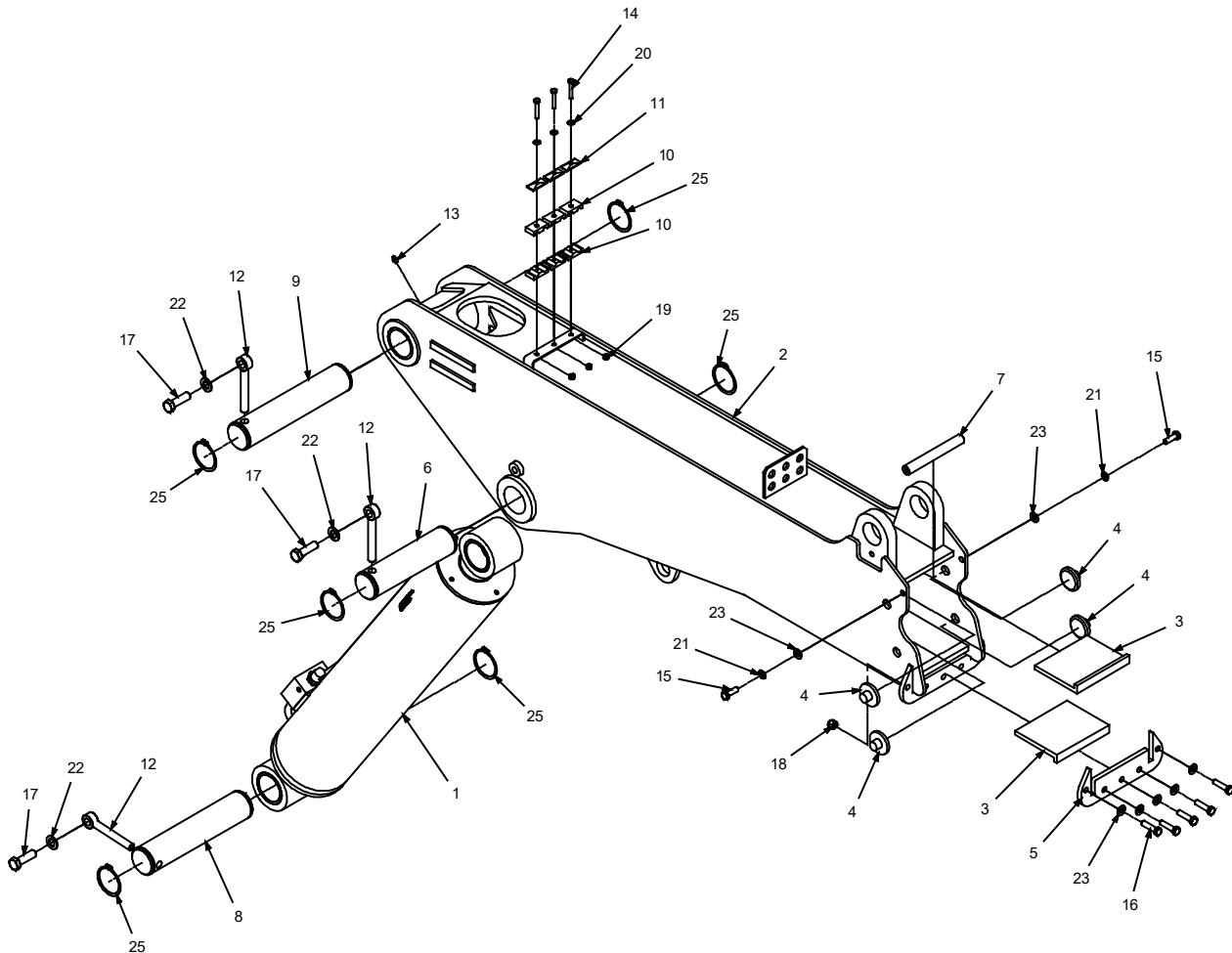
- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.
- 4 ITEM #8, STOP TUBE, REPLACES 6A025025 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.
- 5 PRESS LOCKING PIN (ITEM #25) INTO #15 HOLE DRILLED 0.188" DEEP.
- 6 TORQUE PISTON TO 710-740 FT-LB AND HEAD TO 800 FT-LB.

3D216821 PART LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	4D216821	CASE	INCLUDES 17,18,19	1
2.	4G216820	ROD	INCLUDES 18	1
3.	6HX80040	HEAD		1
4.	6I080243	PISTON		1
5.	73054242	VALVE	25 GPM (94.6 L/MIN)	1
6.	9C323239	SEAL KIT	INCLUDES 7-16	1
7.	60138279	STOP TUBE (WAS 6A025040)	PART OF 6	1REF
8.	7Q072263	O-RING	PART OF 6	1REF
9.	7Q072443	O-RING	PART OF 6	1REF
10.	7Q10P443	BACK-UP RING	PART OF 6	1REF
11.	7R14P040	ROD WIPER	PART OF 6	1REF
12.	7R546040	ROD SEAL	PART OF 6	1REF

3D216821 PART LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
13.	7T2N2X42	ROD WEAR RING	PART OF 6	1REF
14.	7T61N243	LOCK-RING SEAL	PART OF 6	1REF
15.	7T65I080	PISTON RING	PART OF 6	2REF
16.	7T66P080	PISTON SEAL	PART OF 6	1REF
17.	70034285	BEARING (FROM 5-1-98)	PART OF 1	1REF
18.	70034441	BEARING (FROM 5-1-98)	PART OF 1,2	4REF
19.	7PNPXT02	PLUG 1/8NPT	PART OF 1	3REF
20.	60125699	PIN-LOCK TUBE	PART OF 6	1REF
REF	60020190	BUSHING (PART OF CASE ASM) (TO 5-1-98)		3REF
REF	60020189	BUSHING (PART ROD ASM) (TO 5-1-98)		2REF
REV D 20120420				

Outer Boom Assembly (40725647) (Effective from 10/17/13)



NOTE:

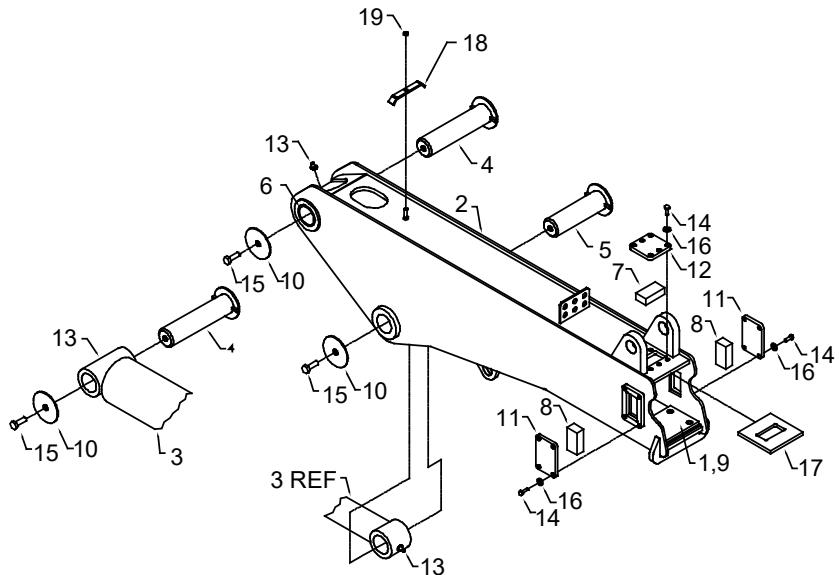
- 1 ANYTIME THE PIN RETAINER BOLTS HAVE BEEN REMOVED, APPLY LOCTITE 262 TO THE THREADS BEFORE REASSEMBLY.

40725647 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	3C221820	CYLINDER, HYDRAULIC		1
2.	52725240	BOOM-SEC WELDMENT		1
3.	60030491	WEAR PAD		2
4.	60122985	WEAR PAD		4
5.	60141211	CAP-WEAR PAD		1
6.	60141213	PIN		1
7.	60141214	PIN		1
8.	60141655	PIN		1
9.	60141656	PIN		1
10.	70034402	CLAMP		3
11.	70143829	COVER PLATE		3

40725647 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
12.	71415017	KEEPER-PIN	.75	3
13.	72053508	ZERK-NPT	.12	1
14.	72060029	CAP SCREW	.31-18 X 2.00 HEX HEAD GRADE 5	3
15.	72060093	CAP SCREW	.50-13 X 2.00 HEX HEAD GRADE 5	2
16.	72060095	CAP SCREW	.50-13 X 2.00 HEX HEAD GRADE 5	5
17.	72060186	CAP SCREW	.75-10 X 2.50 HEX HEAD GRADE 5	3
18.	72062080	NUT	.50-13 HEX NYLOCK	5
19.	72062109	NUT	.31-18 HEX NYLOCK	3
20.	72063002	WASHER	.31 FLAT	3
21.	72063053	WASHER	.50 LOCK	2
22.	72063116	WASHER	.75 FLAT	3
23.	72063132	WASHER	.50 FLAT	7
24.	91725645	KIT		1
25.	72066108	RETAINING RING		6
REV. A 20131016				

Outer Boom Assembly (41704439) (Effective to 10/16/13)



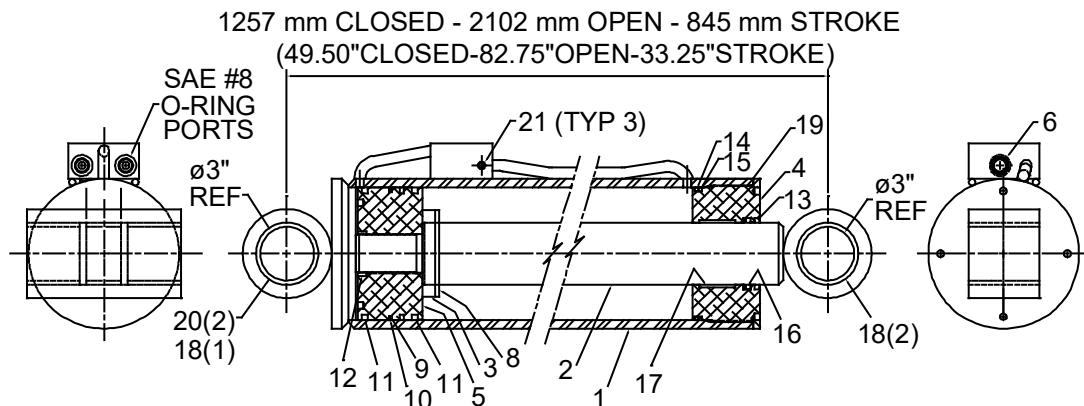
NOTE:

- 1 ANYTIME THE PIN RETAINER BOLTS HAVE BEEN REMOVED, APPLY LOCTITE 262 TO THE THREADS BEFORE REASSEMBLY.

41704439 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	72601043	CAP SCREW	.38-16 X .75 FLH SOC	4
2.	52704456	OUTER BOOM WELDMENT		1
3.	3C221820	CYLINDER, HYDRAULIC (OUTER)		1
4.	52704421	PIN		2
5.	52704422	PIN		1
6.	60020195	BUSHING		2
7.	60030028	PAD, WEAR		1
8.	60030032	PAD, WEAR		2
9.	60030074	PAD, WEAR		1
10.	60106681	PLATE, RETAINER		3
11.	60107438	PLATE, RETAINER		2
12.	60107442	PLATE, RETAINER		1
13.	72053508	ZERK, GREASE	.13	3
14.	72060092	CAP SCREW	.50 - 13 X 1.25 HEX HEAD GRADE 5	14
15.	72060182	CAP SCREW	.75-10 X 1.25 HEX HEAD GRADE 5	3
16.	72063053	LOCK WASHER	.50	14
17.	60030245	PAD, WEAR		1
18.	60103305	CLAMP, HOSE		1
19.	72062103	NUT	.38-16 HEX NYLOC ZINC	1
REV. E 1998				

Outer Cylinder (3C221820)



3C221820 CYLINDER DATA

EXTENDED	44.16 IN ² , 6.36 GAL
RETRACTED	34.54 IN ² , 4.97 GAL
CASE	Ø8.50 X 7.54 B X 41.88 LONG
ROD	Ø3.50 X 43.12 LONG
DRY WEIGHT	378 LB
TEST PRESSURE	3000 PSI
OPERATING PRESSURE	2300 PSI

NOTES:

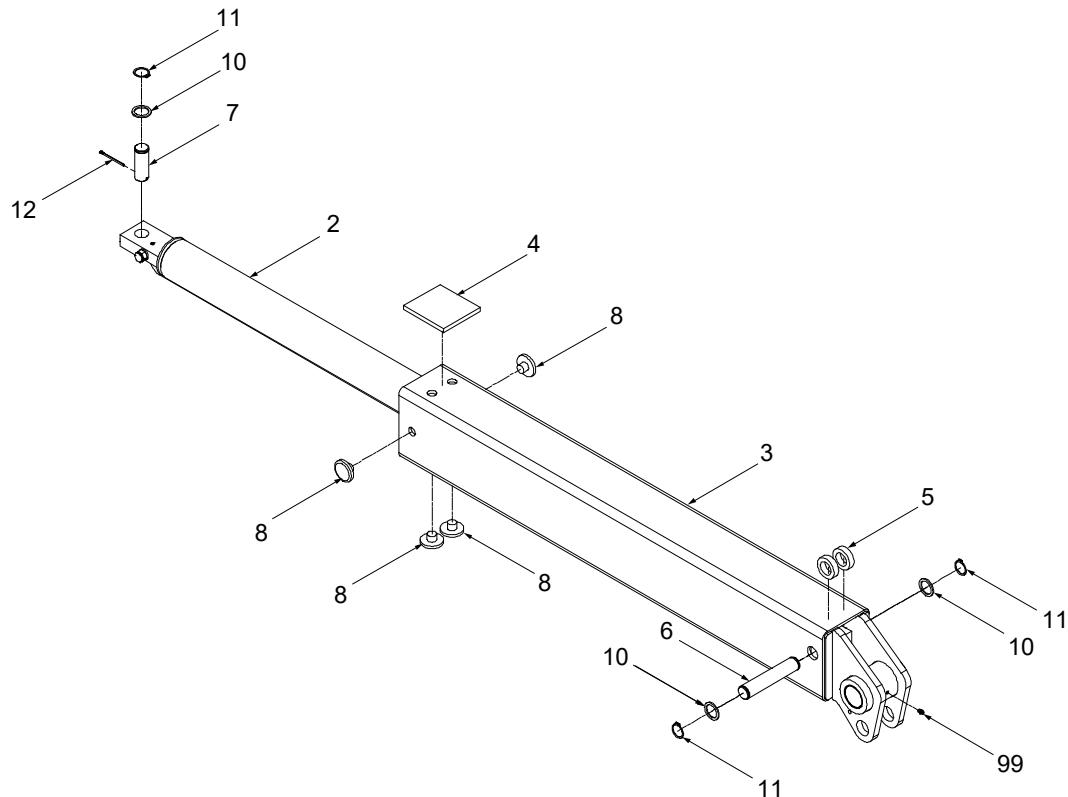
- 1 REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.
- 4 ITEM #8, STOP TUBE, REPLACES 6A025035 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.
- 5 PRESS LOCKING PIN (ITEM #19) INTO #15 HOLE DRILLED 0.188" DEEP.
- 6 TORQUE PISTON TO 710-740 FT-LB, HEAD TO 775 FT-LB, CARTRIDGE TO 65 FT-LB, LOCKNUT TO 12 FT-LB, AND CAP SCREW TO 16 FT-LB.

3C221820 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	4C221820	CASE ASSEMBLY	7.54 BORE X 45.31 LONG (INCLUDES 18,20,21)	1
2.	4G221820	ROD ASSEMBLY	INCLUDES 18	1
3.	6C075035	STOP TUBE		1
4.	6H075035	HEAD		1
5.	6I075218	PISTON		1
6.	73054242	COUNTERBALANCE VALVE		1
7.	9C302835	SEAL KIT	INCLUDES 8-17	1
8.	60138278	STOP TUBE (WAS 6A025035)	PART OF 7	1REF
9.	7Q072261	O-RING	PART OF 7	1REF

3C221820 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
10.	7T66P075	PISTON SEAL	PART OF 7	1REF
11.	7T65I075	PISTON RING	PART OF 7	1REF
12.	7T61N218	LOCK RING	PART OF 7	1REF
13.	7R14P035	ROD WIPER	PART OF 7	1REF
14.	7Q072441	O-RING	PART OF 7	1REF
15.	7Q10P441	BACKUP RING	PART OF 7	1REF
16.	7R546035	U-CUP LOADED	PART OF 7	1REF
17.	7T2N2X37	WEAR RING-ROD	PART OF 7	1REF
18.	70034285	BEARING, GAR-MAX	PART OF 1 & 2	1REF
19.	60125699	PIN - LOCK TUBE	PART OF 7	1REF
20.	70034441	BEARING, GAR-MAX	PART OF 1	2REF
21.	7PNPXT02	PLUG	PIPE SOCKET HEAD TAPED .12 (PART OF 1)	3REF
REV C 20120420				

Extension Boom Assembly (40725247) (Effective from 4-4-16)

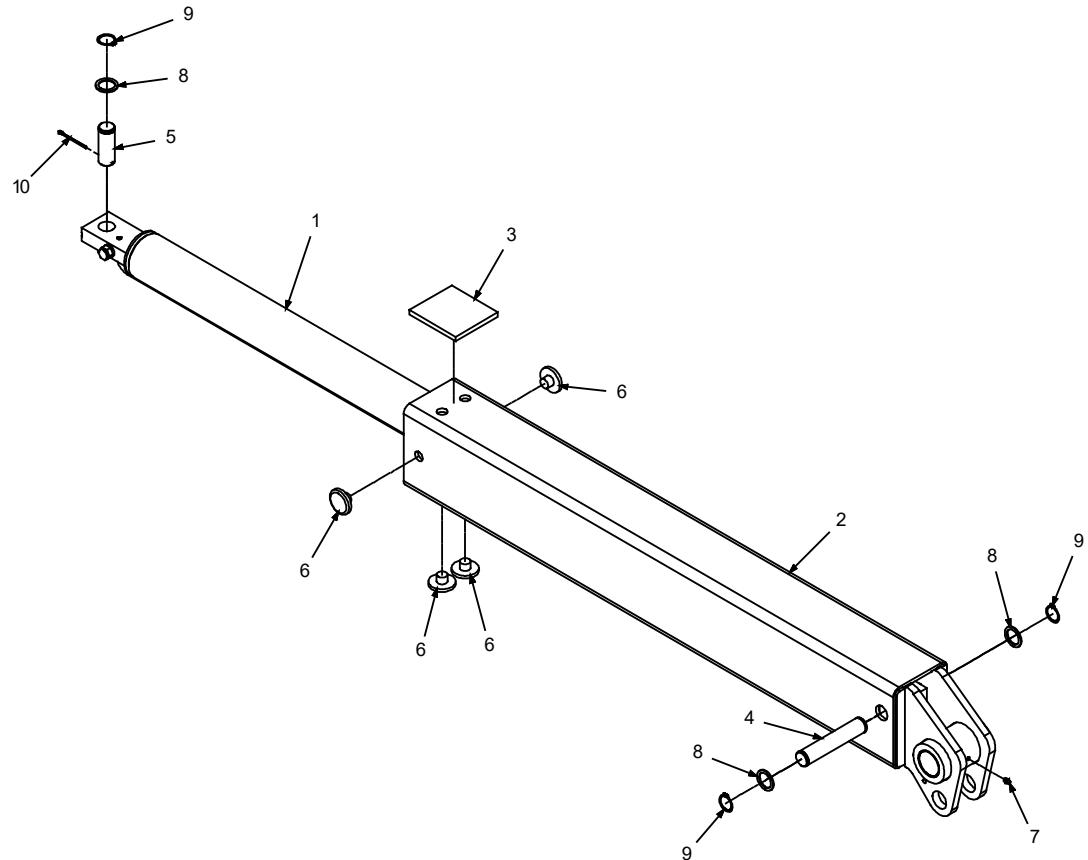


40725247 PARTS LIST EFFECTIVE 4-4-16

ITEM	PART NO	DESCRIPTION	KIT NO.	QTY
1	91725645	KIT-HRDW 20017 BOOMS	-	1
2	3B223820	CYL-4.0/2.5 40.00S 64.00CC C	-	1
3	52725239	WLDMT-EXT BOOM 20017	-	1
4	60030490	WEAR PAD-RC 0.50X 5.50X 6.00	-	1
5	60030574	SPACER- 1.56X 2.50X 0.69	-	2
6	60101159	PIN-TYPE A 1.50X 7.81 (7.31)	-	1
7	60102096	PIN-TYPE B 1.50X 3.94 (3.38)	-	1
8	60122985	WEAR PAD-RND 0.44X 2.50X 1.00X .75	-	4
9	72053508	ZERK-NPT .12	1	1
10	72063037	MACHY BUSHING 1.50X10 GA NR	1	3
11	72066132	RETAINING RING-EXT 1.50 HD	1	3
12	72066198	COTTER PIN .19X3.00 PLAIN	1	1

REV. B 20160516

Extension Boom Assembly (40725247) (Effective from 10/17/13)



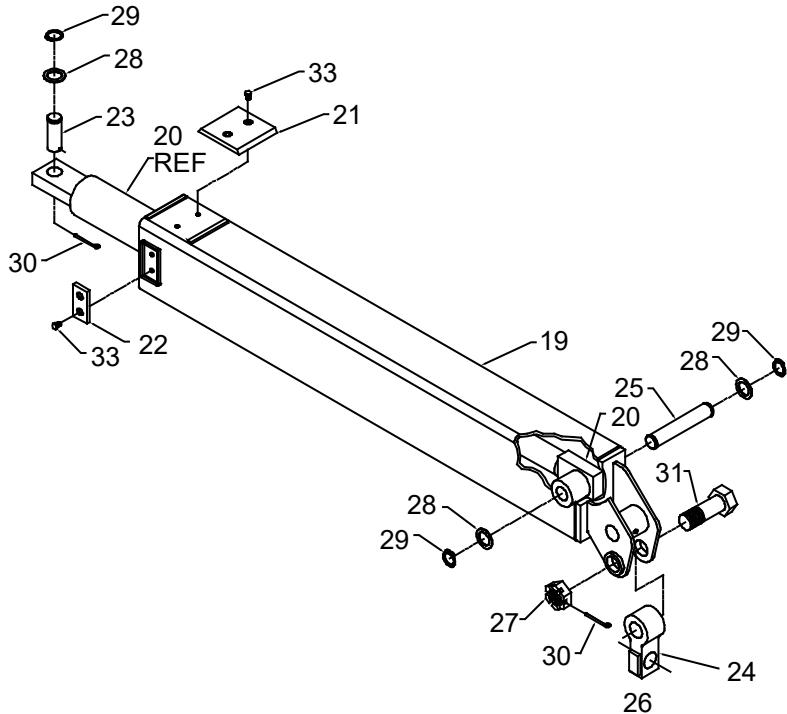
NOTES:

1 EXTENSION CYLINDER PORT TUBE MUST BE INSTALLED "DOWN" WHEN CYLINDER IS INSTALLED.

41704440 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	3B223820	CYLINDER		1
2.	52725239	EXTENSION BOOM WELDMENT		1
3.	60030490	WEAR PAD		1
4.	60101159	PIN		1
5.	60102096	PIN		1
6.	60122985	WEAR PAD		4
7.	72053508	ZERK	NPT .12	1
8.	72063037	MACHINERY BUSHING		3
9.	72066132	RETAINING RING	EXTERNAL 1.50 HD	3
10.	72066198	COTTER PIN	.19X3.00 PLAIN	1
11.	91725645	KIT		1
REV. A 20130912				

Extension Boom Assembly (41704440) (Effective to 10/16/13)



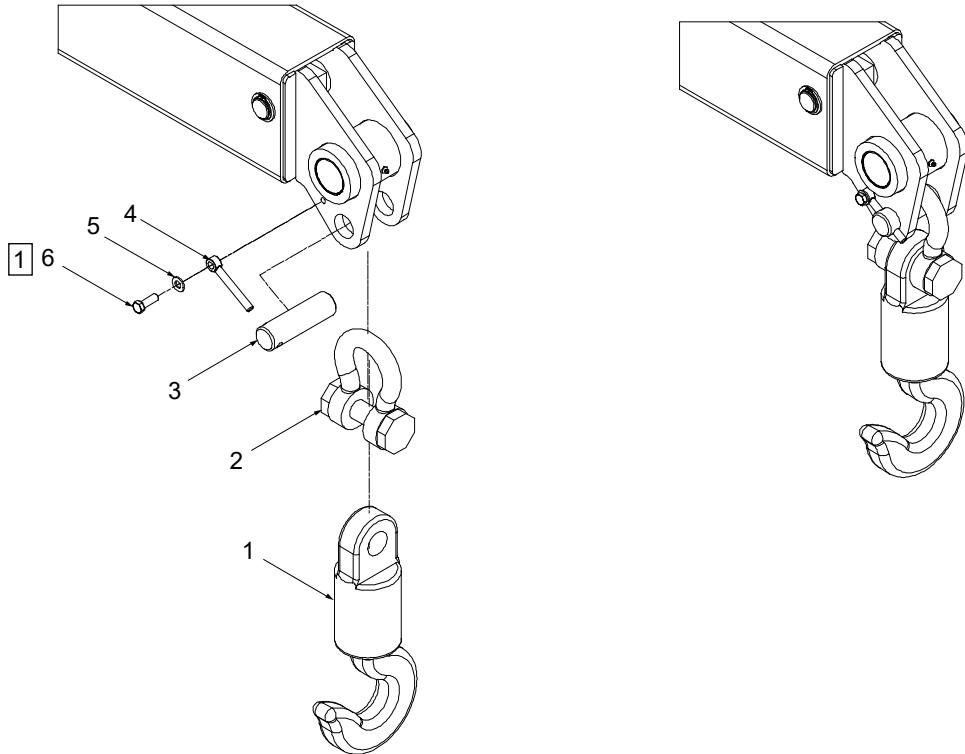
NOTES:

- 1 EXTENSION CYLINDER PORT TUBE MUST BE INSTALLED "DOWN" WHEN CYLINDER IS INSTALLED.

41704440 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
19.	52704423	EXTENSION BOOM WELDMENT		1
20.	3B223820	CYLINDER		1
21.	60030071	WEAR PAD		1
22.	60030072	WEAR PAD		2
23.	60102096	PIN	TYPE B 1.50 X 3.94	1
24.	52709464	SWIVEL LINK		1
25.	60105321	PIN	TYPE A 1.50 X 8.44	1
26.	70731508	HOOK-SWIVEL	NOT SHOWN	1
27.	72062135	NUT	1.75-5 SLOTTED PLAIN	1
28.	72063037	MACHINERY BUSHING	1.5 X 10 GA NR	3
29.	72066132	RETAINING RING	EXTERNAL 1.50 HD	3
30.	72066198	COTTER PIN	.19X 3 PLAIN	2
31.	60106250	BOLT-HOOK	1.75-5 X 9"	1
33.	72601026	CAP SCREW	.38-16 X .50 FLAT HEAD SOCP	6
REV. C 1997				

Kit Hook Assembly (40725807)

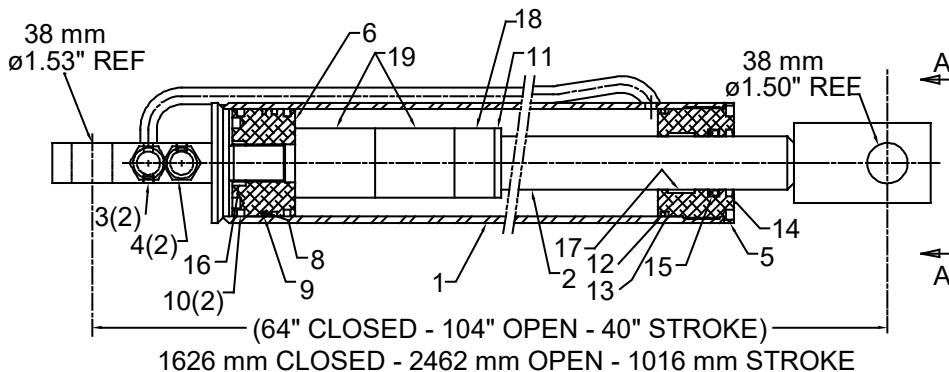


NOTES:

1. APPLY BLUE LOCTITE TO KEEPER PIN RETAINER BOLT.

40725807 COMPLETE PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	70734811	HOOK-SWVL 12EH W/LCH ASM	1
2	72661719	SHACKLE- 12 TON 1.38 NOM SIZE	1
3	60141230	PIN-TYPE NN 1.75X 6.00	1
4	71415015	KEEPER-PIN .50	1
5	72063132	WASHER .50 FLAT ASTM F436	1
6	72060093	CAP SCR .50-13X 1.50 HH GR5 Z	1
20161102-NEW			

Extension Cylinder (3B223820)



3B223820 CYLINDER DATA

EXTENDED	12.69 IN ² , 2.20 GAL
RETRACTED	7.78 IN ² , 1.35 GAL
CASE	Ø4.50 X 4.02 B X 57.88 LONG
ROD	Ø2.50 X 58.88 LONG
DRY WEIGHT	148 LB
TEST PRESSURE	3000 PSI
OPERATING PRESSURE	2300 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 ITEM #11, STOP TUBE, REPLACES 6A025025 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.
- 5 PRESS LOCKING PIN (ITEM #20) INTO #15 HOLE DRILLED 0.188" DEEP.

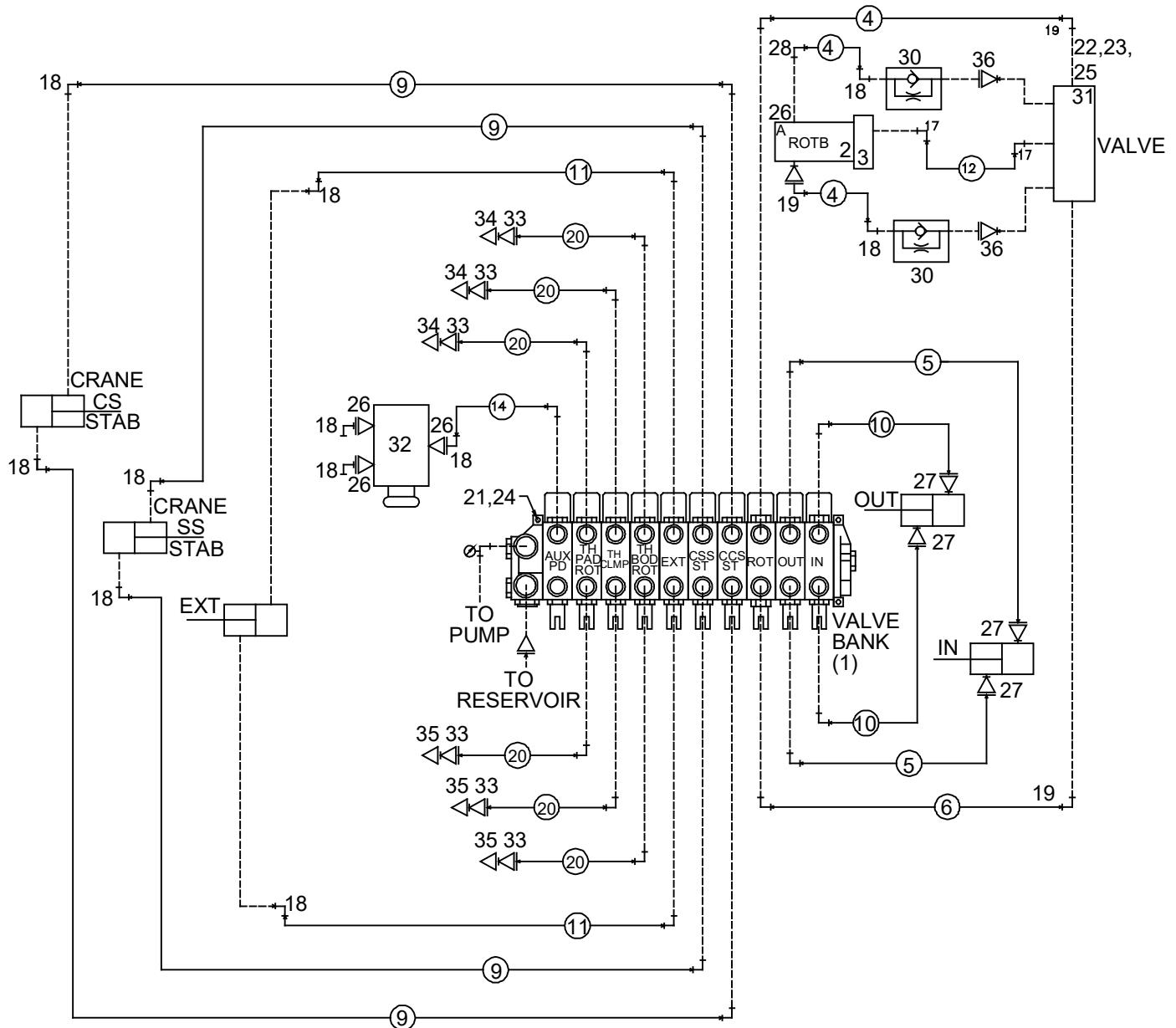
3B223820 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	4B223820	CASE ASSEMBLY	INCLUDES 3	1
2.	4G223820	ROD ASSEMBLY		1
3.	7PNPXT02	PIPE PLUG	PART OF 1	2REF
4.	73054304	VALVE-COUNTERBALANCE	10 GPM (37.8 L/MIN)	2
5.	6H040025	HEAD		1
6.	6I040143	PISTON		1
7.	9C162023	SEAL KIT		REF
8.	7Q072153	O-RING		1
9.	7T66P040	PISTON SEAL		1
10.	7T65I040	PISTON RING		2
11.	60138276	STOP TUBE (WAS 6A025025)		1
12.	7Q072342	O-RING		1

3B228320 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
13.	7Q10P342	BACKUP RING		1
14.	7R14P025	ROD WIPER		1
15.	7R546025	U-CUP LOADED		1
16.	7T61N143	LOCK RING		1
17.	7T2N8027	WEAR RING		1
18.	6C150025	STOP TUBE		1
19.	6C300025	STOP TUBE		2
20.	60125699	PIN-LOCK TUBE		1
REV C 20120420				

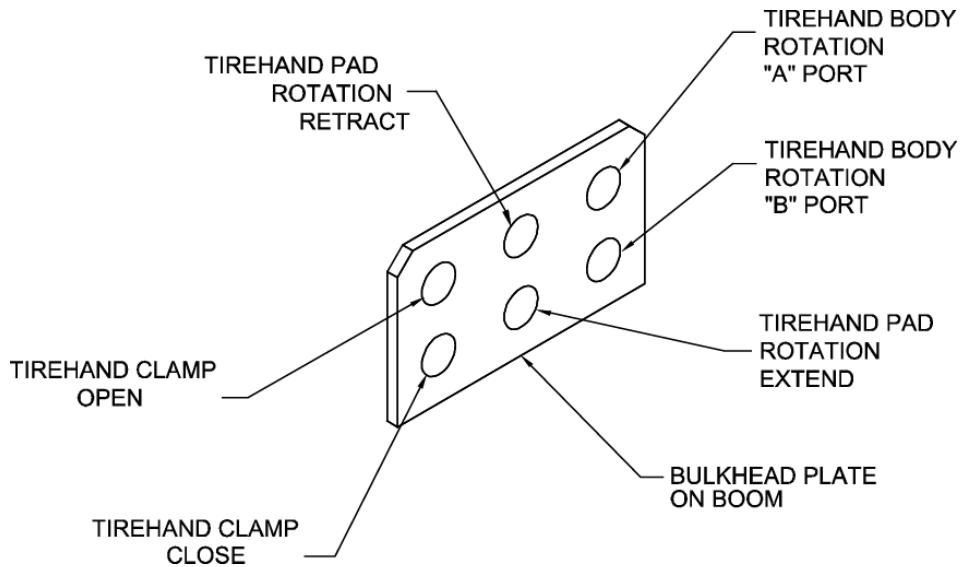
Hydraulics

Hydraulic Schematic, Manual (91704442)



91704442 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51710120	VALVEBANK (NO RADIO)	REF
	51719464	VALVEBANK (12V RADIO)	REF
	73733389	VALVEBANK (24V RADIO)	REF
2.	73051223	MOTOR	REF
3.	71056088	BRAKE	REF
4.	51394424	HOSE ASM 3/8X12 FF	3*REF
5.	51394428	HOSE ASM 1/2X75 FF	2*REF
6.	51394425	HOSE ASM 3/8X15 FF	1*REF
9.	51394426	HOSE ASM 3/8X87 FF	4*REF
10.	51394429	HOSE ASM 1/2X177 FF	2*REF
11.	51394430	HOSE ASM 1/2X255 FJ	2*REF
12.	51394347	HOSE ASM 1/4X11-1/2 FF	1*REF
14.	51703729	HOSE ASM 3/8X24 FF (MAY VARY)	1
17.	72053758	ELBOW #4MSTR #4MJIC 90°	2
18.	72053763	ELBOW #8MSTR #8MJIC 90°	11
19.	72053764	ELBOW #10MSTR #8MJIC 90°	3
20.	51394427	HOSE ASM 3/8X303 FF	6*REF
21.	72060033	CAP SCR 5/16-18X3 HHGR5	3
22.	72060054	CAP SCR 3/8-16 X 3 HHGR5	2
23.	72062103	NUT 3/8-16 LOCK	2
24.	72062109	NU 5/16-18 LOCK	3
25.	72063003	WASHER 3/8 WRT	2
26.	72531206	ADAPTER #10MSTR #8FSTR	4
27.	72532358	ADAPTER #8MSTR #8MJIC	4
28.	72532666	ELBOW #8MSTR#8MJIC 90° XLG	1
29.	51713827	HOSE KIT (INCL:ITEMS W/*)	1
30.	73054921	VALVE-FLOW CONTROL	2
31.	73054370	COUNTERBALANCE VALVE	1
32.	73054420	SELECTOR VALVE	1
33.	72053670	ADAPTER 3/8MPT #8MJIC	6
34.	72533101	DISCONNECT COUPLER3/8FPT	3
35.	72533102	DISCONNECT NIPPLE 3/8FPT	3
36.	72532728	UNION #8MSTR #8MSTR	2
* NOTE: HOSE SIZE MAY VARY.			
REV. L 20111221			

Hydraulic Diagram, Radio Remote (99905760)



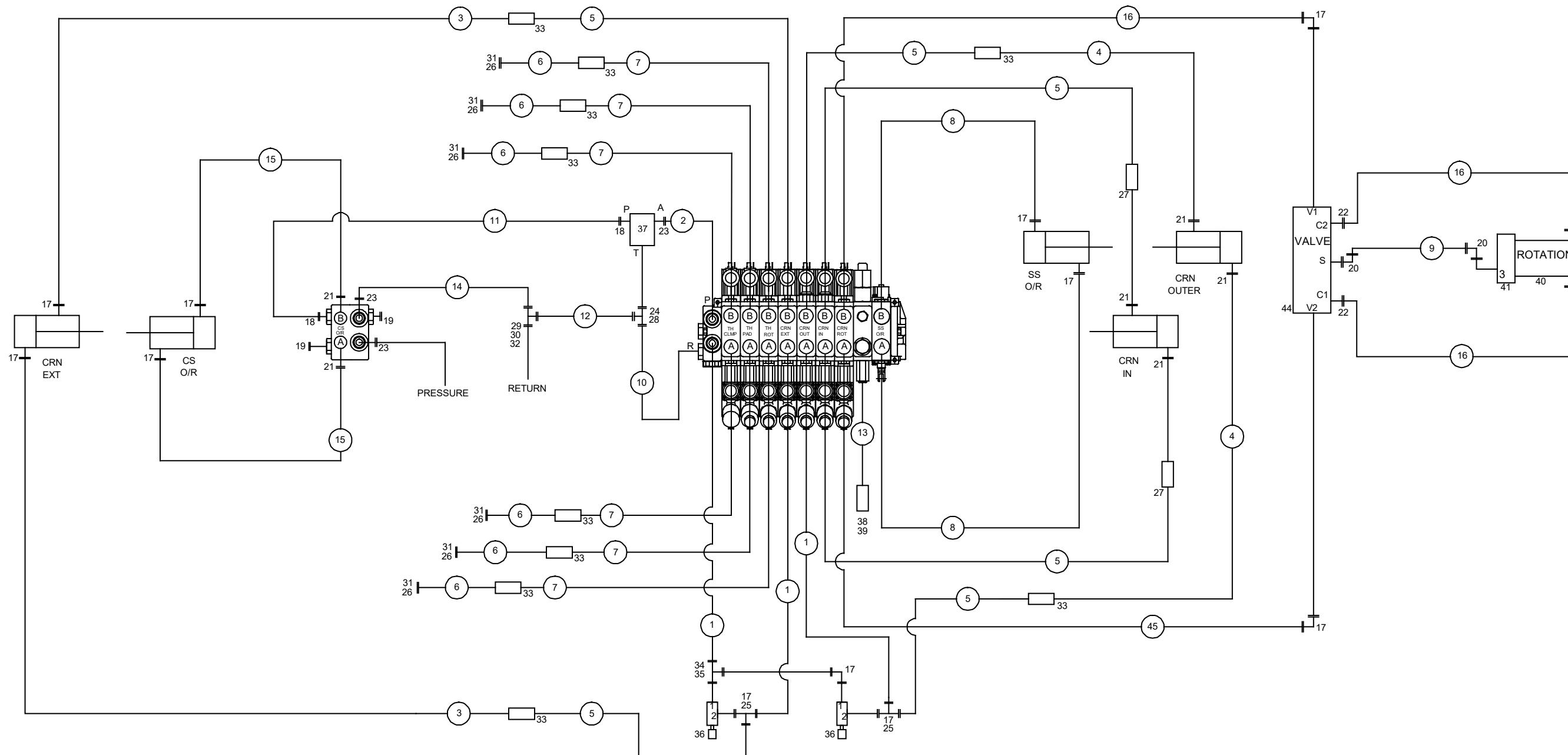
99905760 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	51394253	HOSE-FJ .50 X 19.00 (8-8) 100R2	3
2.	51395012	HOSE-FF .75 X 25.00 (12-12) 100 R2	1
3.	51395194	HOSE-FJ .50 X 190.00 (8-8) 100R17	2
4.	51395195	HOSE-FF .50 X 103.00 (8-8) 100R17	2
5.	51395196	HOSE-FF .50 X 69.00 (8-8) 100R17	6
6.	51395197	HOSE-FF .38 X 223.00 (8-8) 100R17	6
7.	51395198	HOSE-FF .38 X 69.00 (8-8) 100R17	6
8.	51395199	HOSE-FF .38 X 87.00 (8-8) 100R17	2
9.	51395208	HOSE-FF .25 X 16.00 (4-4) 100R17	1
10.	51396125	HOSE-FF 1.00 X 23.00 (16-16) 100R1	1
11.	51396284	HOSE-FZ .75 X 80.00 (12-12) 100R17	1
12.	51396460	HOSE-FF 1.00 X 42.00 (16-16) 100R17	1
13.	51396565	HOSE-FJ .38 X 20.50 (6-6) 100R17	1
14.	51399584	HOSE-FJ .75 X 44.00 (12-12) 100R17	1
15.	51397416	HOSE-FJ .38 X 100.00 (8-8) 100R17	2
16.	51397421	HOSE-FF .38 X 17.50 (8-8) 100R17	3
17.	72053763	ELBOW-M STR/90/M JIC 8 8	11
18.	72053767	ELBOW-M STR/90 M JIC 12 12	3
19.	72532136	PLUG-STR HEX HD STL 13 (1.06 THD)	2
20.	72532351	ADPTR-M STR/M JIC 4 4	2
21.	72532358	ADPTR-M STR/M JIC 8 8	6
22.	72532359	ADPTR-M STR/M JIC 10 8	4
23.	72532366	ADPTR-M STR/M JIC 12 12	2
24.	72532369	ADPTR-M STR/M JIC 12 16	1
25.	72532657	TEE-SWVL NUT RUN JIC 8	2

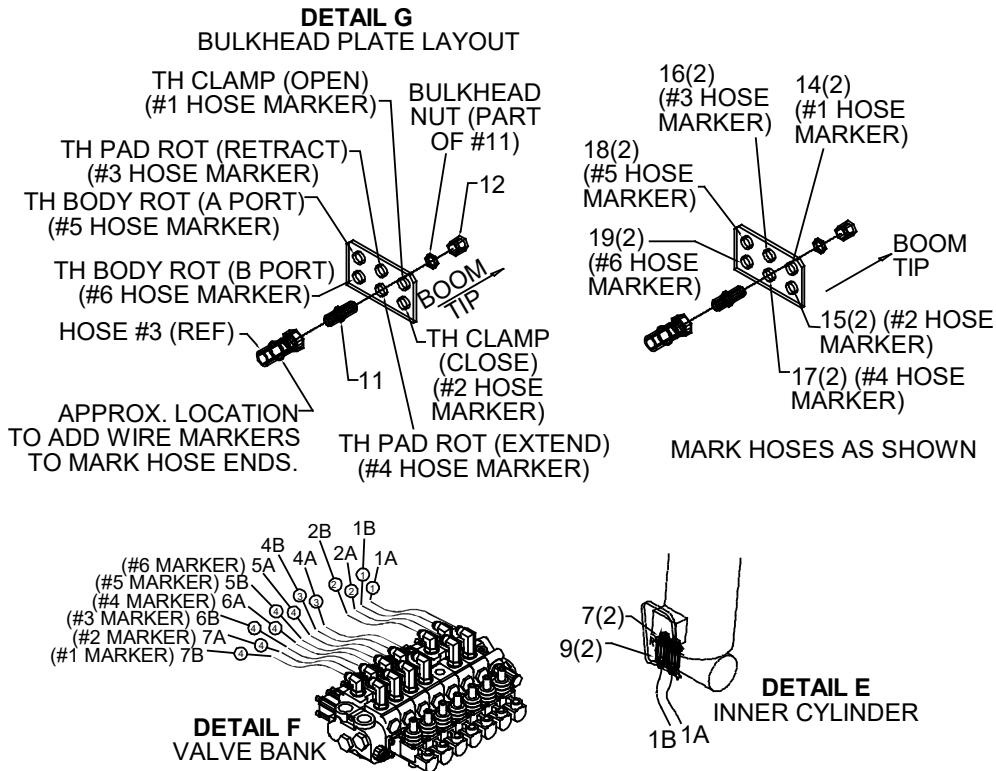
99905760 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
26.	72532675	CAP-JIC STL 8 (.75 THD)	6
27.	72532980	SWIVEL-M JIC/F JIC 8 8 IN-LINE	2
28.	72533000	TEE-SWVL NUT RUN JIC 16	1
29.	72533028	ADPTR-M JIC/F JIC 12 16	1
30.	72533029	NUT-JIC STL 16 (1.31 THD)	1
31.	72533373	UNION-BULKHEAD JIC 8 (3/4-16)	6
32.	72533558	TEE-UNION JIC 16	1
33.	72533566	SWIVEL-M JIC/M JIC 8 8 IN-LINE	10
34.	72533597	TEE-STL JIC/STR/JIC 8 8 BRANCH	1
35.	72534371	UNION-F JIC/SWIVEL/F JIC 8 8	1
36.	73054980	VALVE-SOL 10 12V 2-WAY OVERLOAD FASTONS	2
36,	73540142	VALVE-SOL NO 24V 2-WAY OVERLOAD FASTONS	2
37.	73055278	VALVE ASM-RELIEF/SOL HYD SHUTD 12 VOLT	1
37.	73055298	VALVE ASM-RELIEF/SOL HYD SHUTD 24 VOLT	1
38.	70733498	ACCUMULATOR-14K160TH	1
39.	72066507	CLAMP-EXHAUST U 2.25	1
40.	73051223	MOTOR-HYD C104-1021 NO DANFOSS	1
41.	71056623	BRAKE-HYD SWING DRIVE	1
42.	51719464	VALVE BANK-9 SECT V20 LS EPC 12V 7R 1M	1
42.	51719464	VALVE BANK-9 SECT V20 24V (COILS CHANGED)	1
43.	51715128	VB ASM-1SEC V20 W/PB CS OR 12916 RAD	1
44.	73054370	VALVE-CBAL SUN01 CBEA-LAN-YHK	1
45.	51394281	HOSE-FF .38 X 25.00 (8-8) 100R17	1

REV B 20140203

Hydraulic Diagram, Radio Remote (99905760)

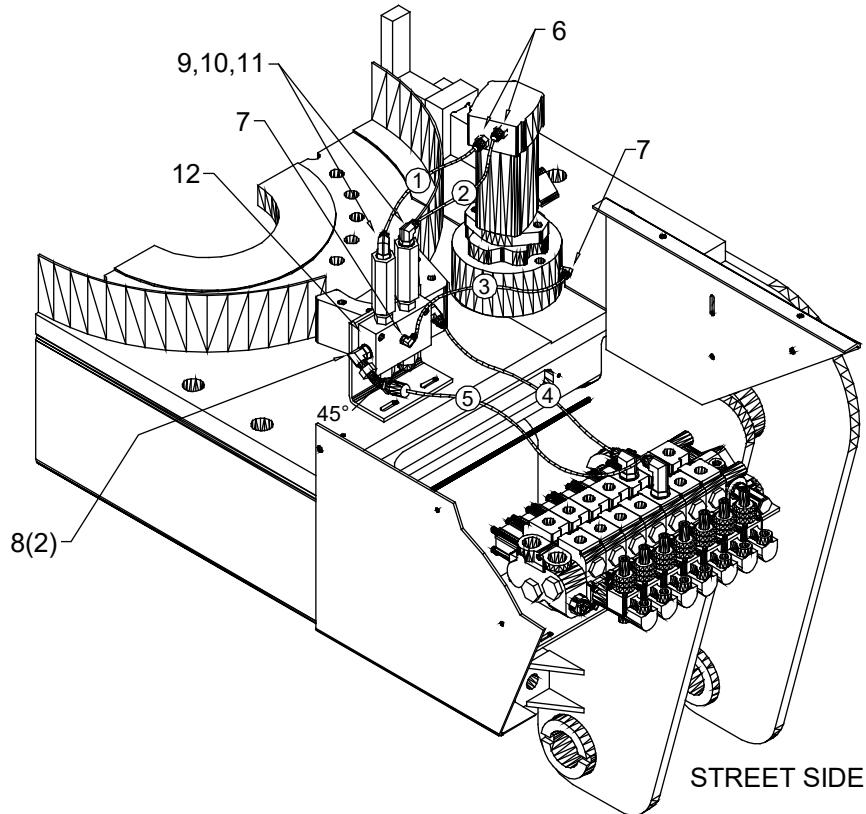


Hydraulic Kit, Crane/Tirehand (99903032)



99903032 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
	51715091	HOSE KIT	(INCLUDES 1-5)	1
1.	51395195	HOSE-	FF 1/2 X 103 OAL (8-8)	2REF
2.	51395196	HOSE-	FF 1/2 X 69 OAL (8-8)	6REF
3.	51395197	HOSE-	FF 3/8 X 223 OAL (8-8)	6REF
4.	51395194	HOSE-	FJ 1/2 X 190 OAL (8-8)	2REF
5.	51395198	HOSE-	FF 3/8 X 69 OAL (8-8)	6REF
6.	73054921	VALVE-FLOW CONTROL		2
7.	72532358	ADAPTER-	M STR/M JIC #8 #8	6
8.	72533566	SWIVEL-	MJIC/MJIC #8 INLINE	10
9.	72532980	ADAPTER-	PR SW IN-LINE JIC 3/4X16	2
10.	72533304	ADAPTER-	#8 MALE O-RING #8 FEMALE	2
11.	72533373	UNION-	BULKHEAD 37DEG 3/4 JIC	6
12.	72532675	CAP-	JIC STL 3/4 THREAD	6
13.	72053763	ELBOW-	MSTR/90/MJIC #8 #8	2
14.	70145798	WIRE MARKERS		2
15.	70145831	WIRE MARKERS		2
16.	70145832	WIRE MARKERS		2
17.	70145833	WIRE MARKERS		2
18.	70145834	WIRE MARKERS		2
19.	70145835	WIRE MARKERS		2
REV 1998				

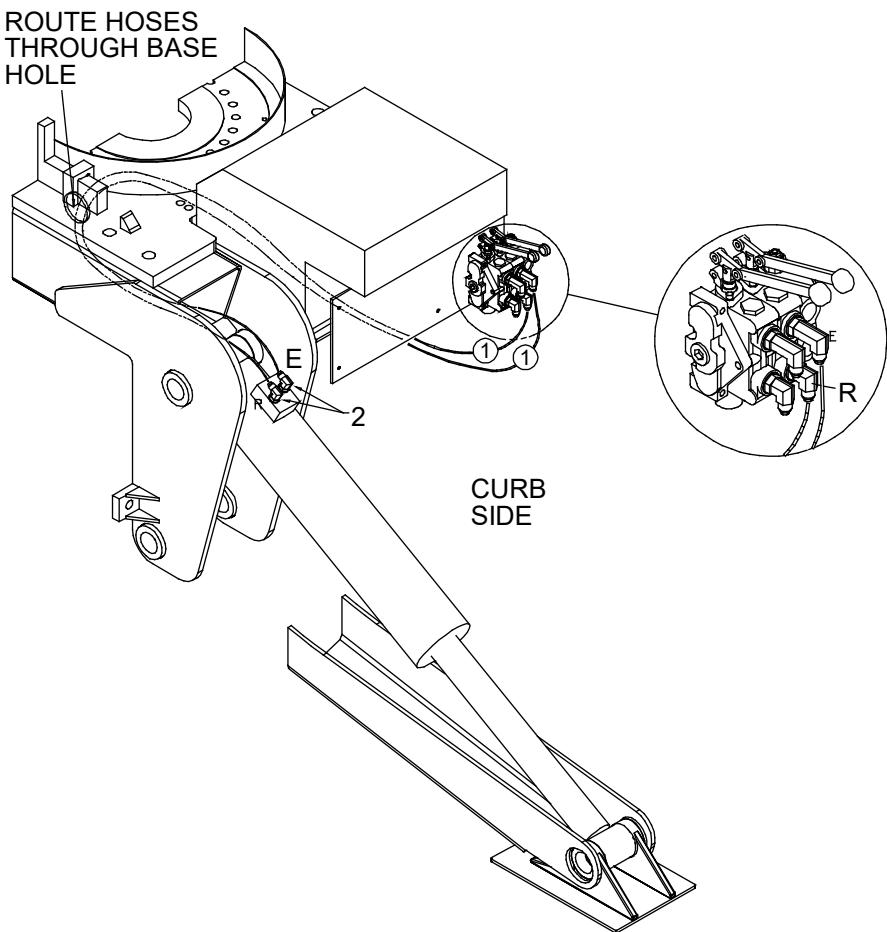
Hydraulic Kit, Crane Rotation (99903033)



99903033 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
	51715071	HOSE KIT		1
1.	51395200	HOSE	FF 3/8 X 12 OAL (8-8)	1REF
2.	51395207	HOSE	FF 3/8 X 10 OAL (8-8)	1REF
3.	51395208	HOSE	FF 1/4 X 16 OAL (4-4)	1REF
4.	51395201	HOSE	FF 3/8 X 15 OAL (8-8)	1REF
5.	51395209	HOSE	FI 3/8 X 20 OAL (8-8)	1REF
6.	72532359	ADAPTER	#10 MSTR/ #8 MJIC	2
7.	72053758	ELBOW	#4MSTR/90/#4MJIC	2
8.	72053764	ELBOW	#10MSTR/90/#8MJIC	2
9.	72532728	UNION	#8MSTR/#8MSTR	2
10.	73054921	VALVE-FLOW CONTROL PRESSURE COMP		2
11.	72053763	ELBOW	#8MSTR/90/#8MJIC	2
12.	73054370	VALVE-COUNTERBALANCE		1REF
REV 1998				

Hydraulic Kit, Curbside Stabilizer (99903035)

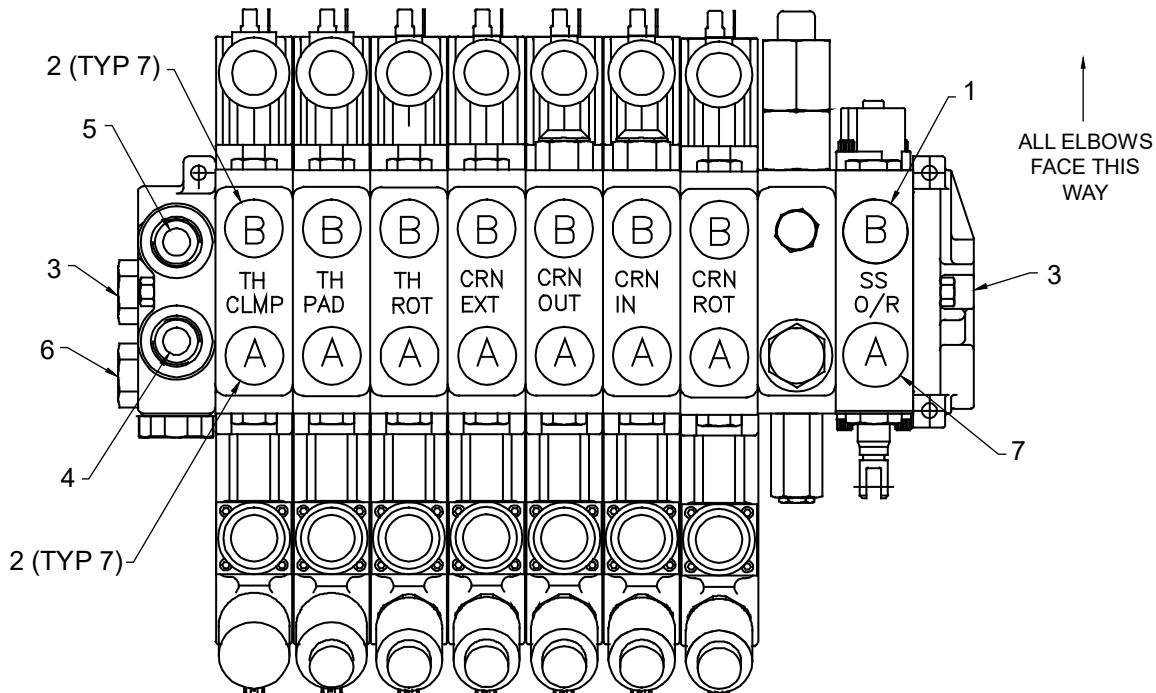


99903035 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	51395304	HOSE	FF 3/8 X 93 OAL (8-8) (PART OF 51715072 HOSE KIT)	2REF
2.	72053763	ELBOW	#8MSTR/90/#8MJIC	2
REV 1998				

Controls-Radio

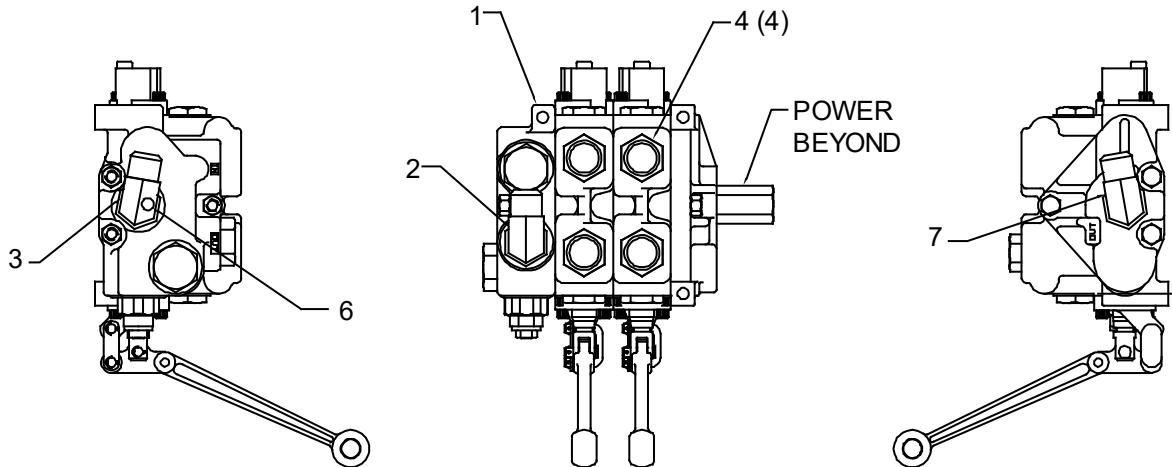
Valve Bank, Radio Remote (99905768)



99905768 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
REF	73733415	VALVE BANK (12V)	1
REF	73733891	VALVE BANK (24V)	1
REF	77041641	COIL (12V)	14
REF	77041673	COIL (24V)	14
1.	72053764	ELBOW-M STR/90/M JIC 10 8	1
2.	72053778	ELBOW-M STR/45/M JIC 10 8	14
3.	72532136	PLUG-STR HEX HD STL 12 (1.06 THD)	2
4.	72532360	ADPTR-M STR/M JIC 12 8	1
5.	72532366	ADPTR-M STR/M JIC 12 12	1
6.	72533319	ELBOW-M STR/90/M JIC 12 16	1
7.	72534435	ELBOW-M STR/90/M JIC XLG 10 8	1
REV B 20140530			

Valve Bank, Stabilizer (51715470)

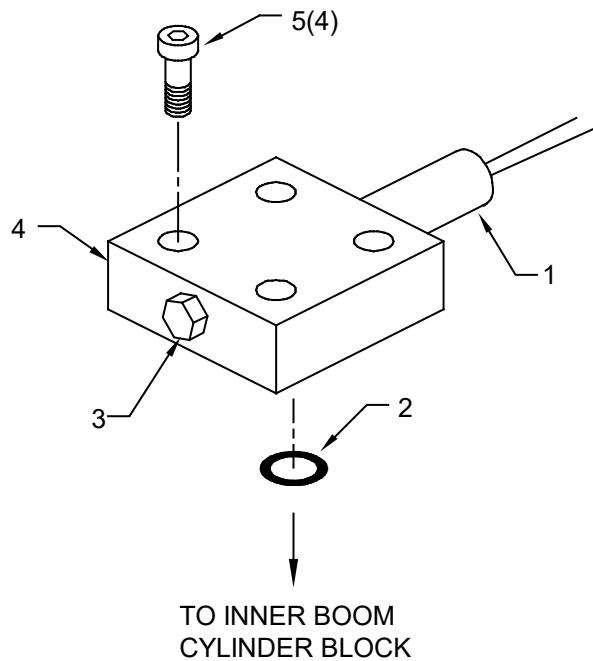


51715470 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	70733329	VALVE BANK, 2-SECTION		1
2.	72053767	ELBOW	#12MSTR #12MJIC	1
3.	60114669	ELBOW	PRESSURE GAUGE LEFT HAND	1
4.	72532364	ADAPTER	#8MSTR #12MJIC	4
6.	72532987	NIPPLE	DISC 1/4 WITH CAP	2
7.	60107995	ELBOW	PRESSURE GAUGE RIGHT HAND	1

Note: Used for radio controls only. Mounted curbside.

Kit-Capacity Alert Articulating 3000 PSI (31717515)

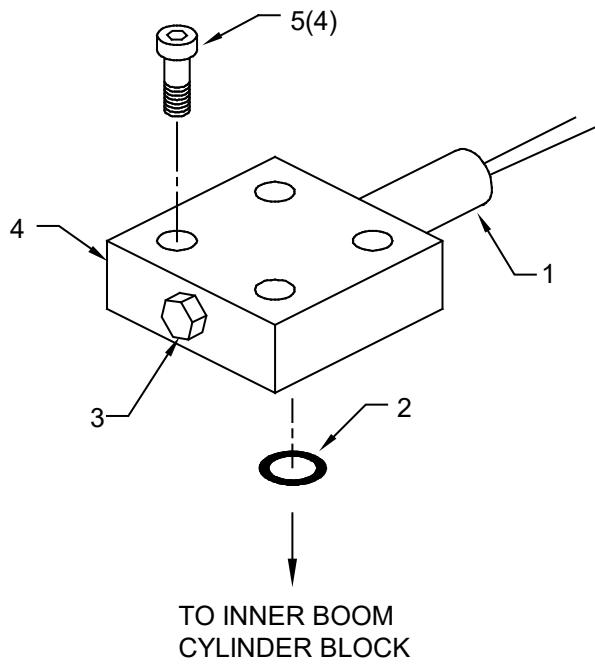


31717514 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	77041545	KIT-CAPACITY ALERT ARTICULATING 3000 PSI		1
2.	7Q072015	O-RING	9/16 X 11/16 X 1/16	1
3.	72532140	PLUG	STRAIGHT HEX HEAD STEEL 9/16	1
4.	60025221	MANIFOLD-CAPACITY ALERT		1
5.	72060731	CAP SCREW	5/16-18 X 3/4 SH Z	4

REV. A 2021 CN1186

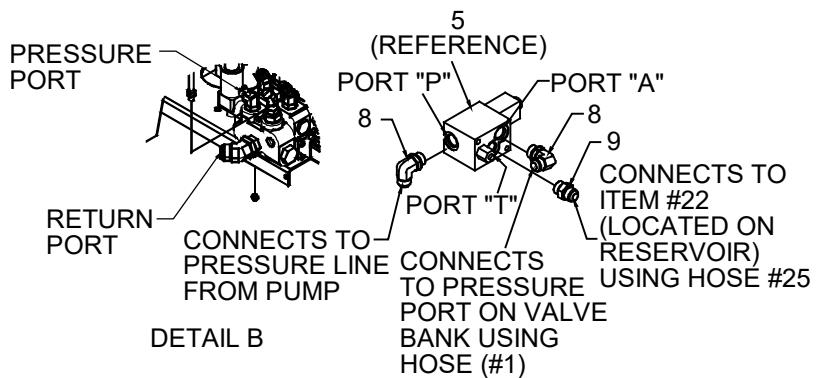
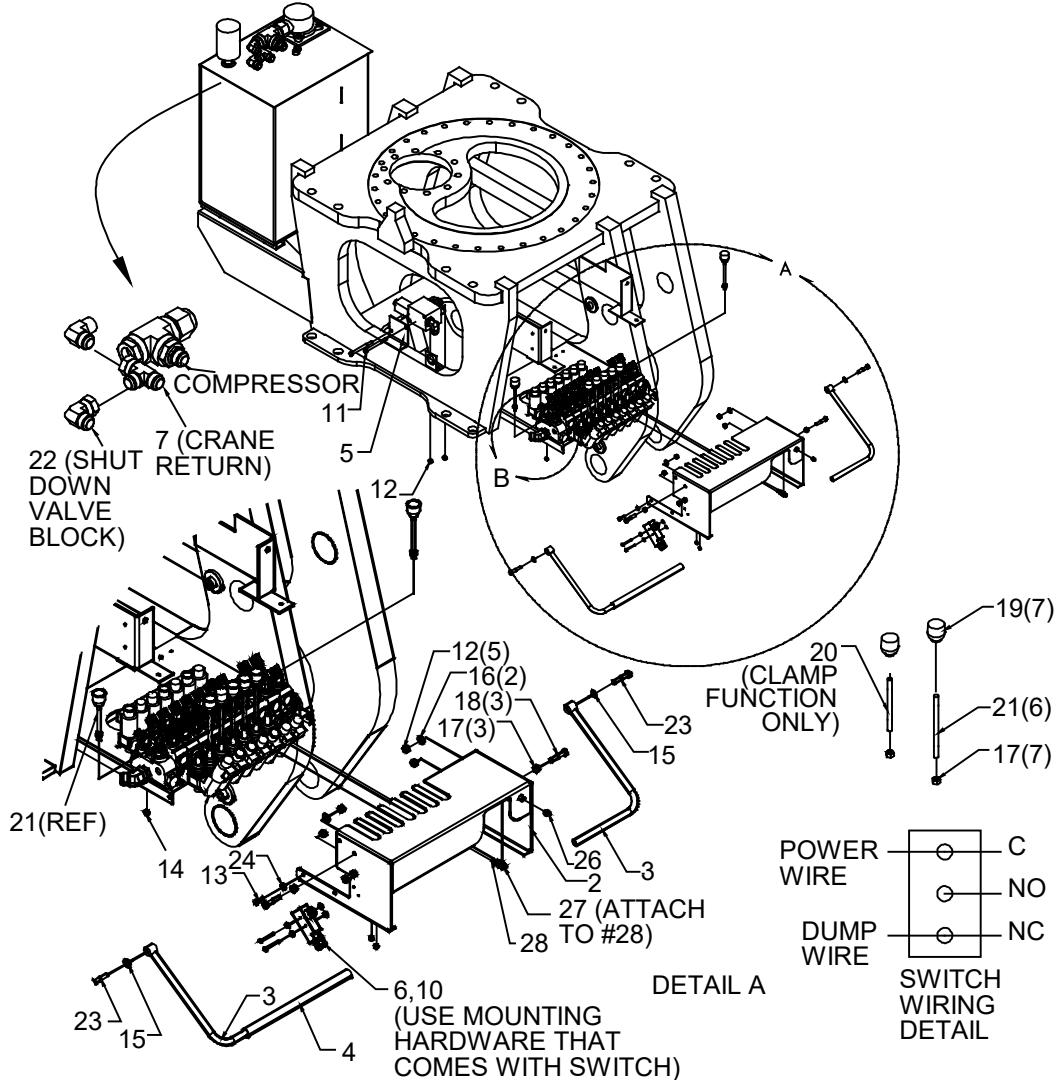
Capacity Shutdown Kit, Radio (31717514)



31717514 PARTS LIST

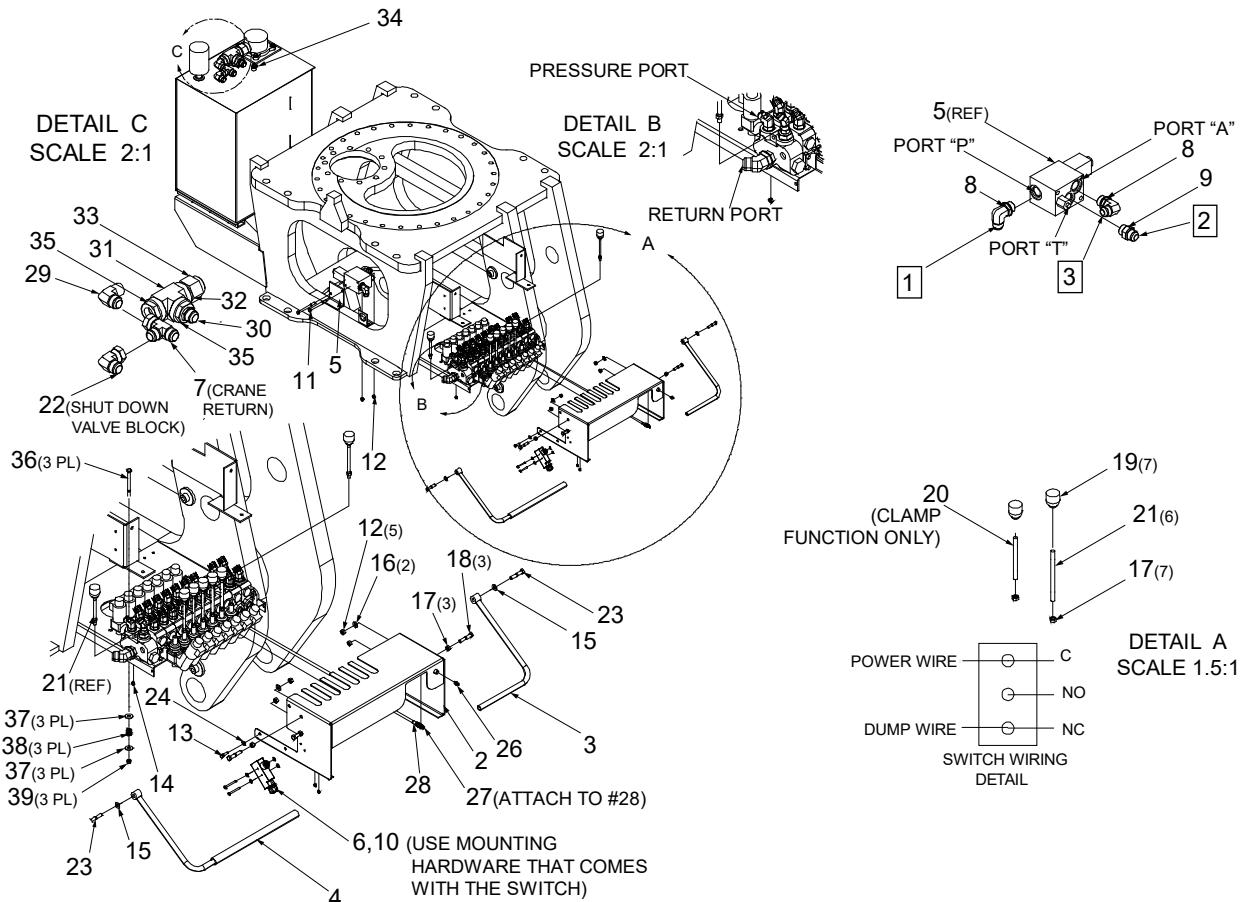
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	77041543	PRESSURE SWITCH	2800 PSI NORMALLY CLOSED	1
2.	7Q072015	O-RING	9/16 X 11/16 X 1/16	1
3.	72532140	PLUG	STRAIGHT HEX HEAD STEEL 9/16	1
4.	60025221	MANIFOLD-CAPACITY ALERT		1
5.	72060731	CAP SCREW	5/16-18 X 3/4 SH Z	4
REV. A 2002				

Hydraulic Shutdown Kit, Radio (99903465)



99903465 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	51396300	HOSE	FF .75X 36.00 OAL(12-12)	1REF
2.	52718583	COVER WELDED ASSEMBLY		1
3.	52713782	HANDLE-HYDRAULIC SHUTDOWN		2
4.	60120092	TUBE-	RD .75IDX 1.00ODX 15.50	1
5.	73055278	VALVE ASSEMBLY-RELIEF/SOLENOID HYDRAULIC SHUTDOWN (12V)		1
	73055298	VALVE ASSEMBLY-RELIEF/SOLENOID HYDRAULIC SHUTDOWN (24V)		1
6.	77041459	SWITCH-LIMIT		1
7.	72533000	TEE	SWIVEL NUT RUN JIC 16	1
8.	72053767	ELBOW	M STR/90/M JIC 12 12	2
9.	72532366	ADAPTER	M STR/M JIC 12 12	1
10.	77044468	CONNECTOR	.50 STR RLF .12-.25	1
11.	72060057	CAP SCREW	.38-16X 4.50 HH GR5 Z	2
12.	72062103	NUT	.38-16 HEX NYLOC ZINC	7
13.	72060004	CAP SCREW	.25-20X 1.00 HH GR5 Z	4
14.	72062104	NUT	.25-20 HEX NYLOC ZINC	4
15.	72063215	WASHER	BELLEVILLE .38 SS	2
16.	72063003	WASHER	.38 W FLAT ANSI B27.2Z	2
17.	72062002	NUT	.38-16 HEX ZINC	10
18.	72060052	CAP SCREW	.38-16X 2.50 HH GR5 Z	3
19.	70146062	KNOB-CONTROL HANDLE		7
20.	60124863	HANDLE-VALVEBANK	VB 5.00 LONG	1
21.	60124864	HANDLE-VALVEBANK	VB 6.00 LONG	6
22.	72532971	ELBOW	M JIC/F JIC SW 16 16	1
23.	72060051	CAP SCREW	.38-16X 2.25 HH GR5 Z	2
24.	72063001	WASHER	.25 W FLAT ANSI B27.2Z	4
25.	51396303	HOSE	FJ .75X 61.00 OAL(16-12)	1REF
26.	72053508	ZERK	NPT .12 (PART OF HYDRAULIC KIT)	1REF
27.	72053638	ADAPTER	MPT/FPT SWVL .12 .12 (PART OF HYD KIT)	1REF
28.	53000718	GREASE EXT	55.00 OAL 53.00 HOSE (PART OF HYD KIT)	1REF
REV 20080318				

Hydraulic Shutdown Kit, (99903465)



NOTES:

1. CONNECTS TO PRESSURE LINE FROM PUMP
2. CONNECTS TO ITEM #22 (LOCATED ON RESERVOIR USING HOSE #25)
3. CONNECTS TO PRESSURE PORT ON VALVE BANK USING HOSE ITEM #1

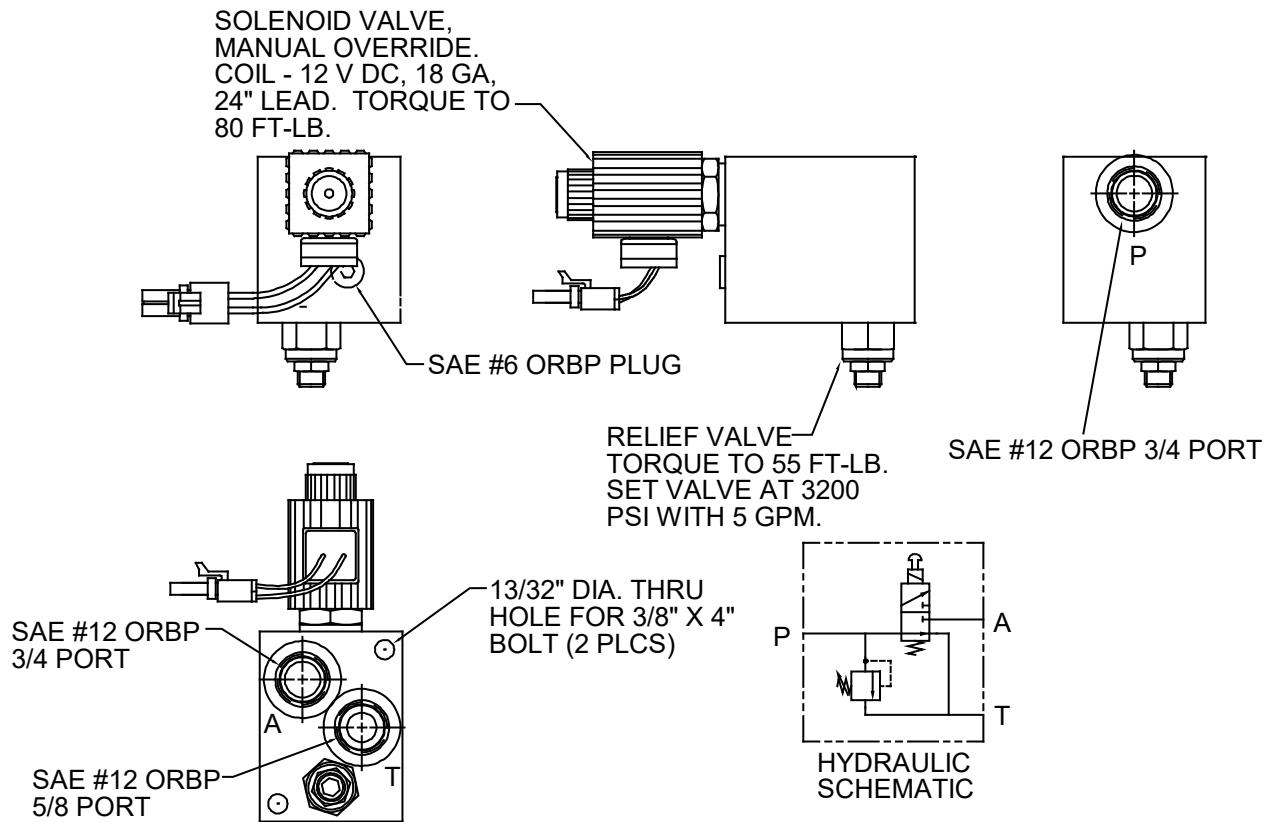
99903465 PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
1	51396300	HOSE - FF .75 X 36.00 OAL (12-12)	1REF
2	60124754	COVER - SHUT DOWN 14K160TH VALVE BANK	1
3	52713782	HANDLE - HYD SHUTDOWN UNIVERSAL	2
4	60120092	TUBE-RD .75DX 1.00ODX 15.50	1
5	73055278	VALVE ASM-RELIEF/SOL HYD SHUTD	1
6	77041459	SWITCH - LIMIT ZE-N-2S	1
7	72533000	TEE - SWVL NUT RUN JIC 16	1
8	72053767	ELBOW - M JIC 12 12	2

99903465 PARTS LIST			
ITEM	PART NO.	DESCRIPTION	QTY
9	72532366	ADPTR-M STR/M JIC 12 12	1
10	77044468	CONNECTOR - .50 STR RLF .12-25	1
11	72060057	CAP SCR .38-16 X 4.50 HH GR5 Z	2
12	72062103	NUT .38-16 HEX NYLOC ZINC	7
13	72060004	CAP SCR .25-20 X 1.00 HH GR5 Z	4
14	72062104	NUT .25-20 HEX NYLOC ZINC	4
15	72063215	WASHER - BELLVILLE .38 SS	2
16	72063003	WASHER .38 W FLAT ANSI B27.2Z	2
17	72062002	NUT .38-16 HEX ZINC	10
18	72060052	CAP SCR .38-16 X 2.50 HH GR5 Z	3
19	70146062	KNOB-CNTRL HANDLE (GRESEN 8815-001)	7
20	60124863	HANDLE -GRESEN V20 VB 5.00 LG	1
21	60124864	HANDLE -GRESEN V20 VB 6.00 LG	6
22	72532971	ELBOW - M JIC/F JIC SW 16 16	1
23	72060051	CAP SCR .38-16 X 2.25 HH GR5 Z	2
24	72063001	WASHER .25 W FLAT ANSI B27.2Z	4
25	51396303	HOSE-FJ .75 X 61.00 OAL (16-12)	1REF
26	72053508	ZERK-NPT .12	PART OF HYD KIT
27	72053638	ADPTR - MPT/FPT SWVL .12 .12	PART OF HYD KIT
28	53000718	GREASE EXT - 55.00 OAL 56.00 HOSE	PART OF HYD KIT
29	72531430	ELBOW-MPT/M JIC 1.00 16	PART OF HYD KIT
30	72053680	ADAPTER-MPT/M JIC 1.0 16	PART OF HYD KIT
31	72053607	TEE-BLK 1.50	PART OF HYD KIT
32	72053251	NIPPLE-PIPE BLK 1.50 X CLOSE	PART OF HYD KIT
33	72532560	ADPTR - M STR/FPT 24 1.50	PART OF HYD KIT
34	72053758	ELBOW - M STR/90/M JIC 4 4	PART OF HYD KIT
35	72053578	REDUCER BUSH - BLK 1.50-1.00	PART OF HYD KIT
36	72060037	CAP SCR .31 - 18X 4.00 HH GR5 Z	3
37	72063002	WASHER - FLAT .31 W ANSI B27.2Z	6
38	71410697	SPRING - .344 ID X .625 OD X 1.00 LG	3
39	72062109	NUT .31-18 HEX GR5 Z NYLOCK	3

REV. D 20160930

99903465 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	51396300	HOSE	FF .75X 36.00 OAL(12-12)	1REF
2.	52718583	COVER WELDED ASSEMBLY		1
3.	52713782	HANDLE-HYDRAULIC SHUTDOWN		2
4.	60120092	TUBE-	RD .75IDX 1.00ODX 15.50	1
5.	73055278	VALVE ASSEMBLY-RELIEF/SOLENOID HYDRAULIC SHUTDOWN (12V)		1
	73055298	VALVE ASSEMBLY-RELIEF/SOLENOID HYDRAULIC SHUTDOWN (24V)		1
6.	77041459	SWITCH-LIMIT		1
7.	72533000	TEE	SWIVEL NUT RUN JIC 16	1
8.	72053767	ELBOW	M STR/90/M JIC 12 12	2
9.	72532366	ADAPTER	M STR/M JIC 12 12	1
10.	77044468	CONNECTOR	.50 STR RLF .12-.25	1
11.	72060057	CAP SCREW	.38-16X 4.50 HH GR5 Z	2
12.	72062103	NUT	.38-16 HEX NYLOC ZINC	7
13.	72060004	CAP SCREW	.25-20X 1.00 HH GR5 Z	4
14.	72062104	NUT	.25-20 HEX NYLOC ZINC	4
15.	72063215	WASHER	BELLEVILLE .38 SS	2
16.	72063003	WASHER	.38 W FLAT ANSI B27.2Z	2
17.	72062002	NUT	.38-16 HEX ZINC	10
18.	72060052	CAP SCREW	.38-16X 2.50 HH GR5 Z	3
19.	70146062	KNOB-CONTROL HANDLE		7
20.	60124863	HANDLE-VALVEBANK	VB 5.00 LONG	1
21.	60124864	HANDLE-VALVEBANK	VB 6.00 LONG	6
22.	72532971	ELBOW	M JIC/F JIC SW 16 16	1
23.	72060051	CAP SCREW	.38-16X 2.25 HH GR5 Z	2
24.	72063001	WASHER	.25 W FLAT ANSI B27.2Z	4
25.	51396303	HOSE	FJ .75X 61.00 OAL(16-12)	1REF
26.	72053508	ZERK	NPT .12 (PART OF HYDRAULIC KIT)	1REF
27.	72053638	ADAPTER	MPT/FPT SWVL .12 .12 (PART OF HYD KIT)	1REF
28.	53000718	GREASE EXT	55.00 OAL 53.00 HOSE (PART OF HYD KIT)	1REF
REV 20080318				

Relief Valve Assembly, 12V Radio (73055278)



REFERENCE PARTS FOR SERVICE:
Coil - 77040456

Relief Valve Assembly, 24V Radio (73055298)

Reference drawing 73055278.

REFERENCE PARTS FOR SERVICE:
Coil - 77040447

Solenoid Dump Valves

12V Solenoid Dump Valves

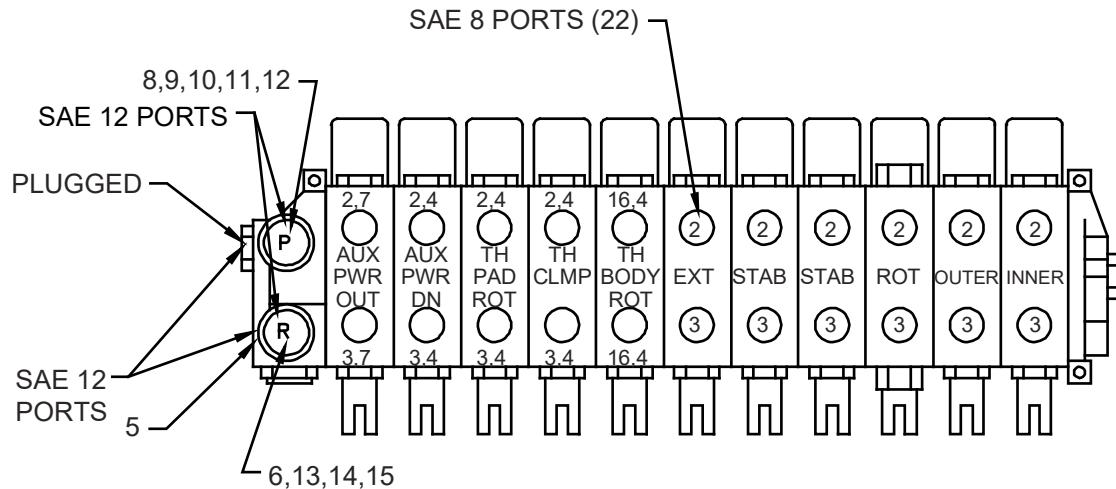
12V Normally Open Solenoid Valve - 73054980
Replacement Coil - 77041456

24V Solenoid Dump Valves

24V Normally Open Solenoid Valve - 73540142
Replacement Coil - 77040463

Controls-Manual

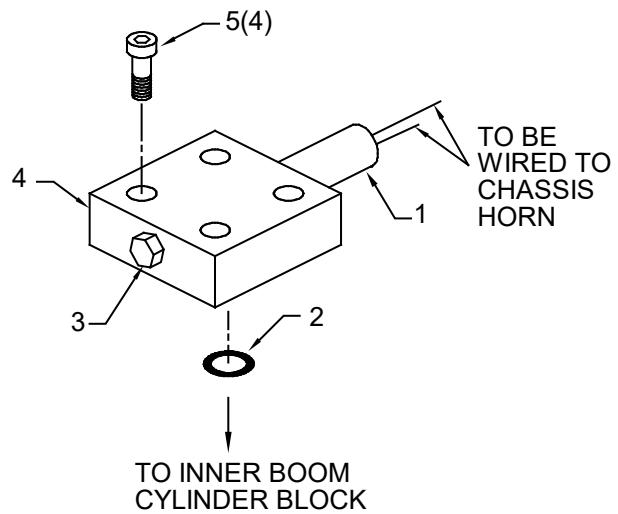
Valvebank, Manual (51710120)



51710120 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	70732486	VALVEBANK 11-SECTION	1
2.	72053763	ELBOW 3/4MSTR 3/4MJIC 90°	10
3.	72532666	ELBOW 3/4MSTR 3/4MJIC 90°XLG	10
4.	72532675	CAP 3/4JIC STL	8
5.	72053767	ELBOW #12MSTR #12MJIC 90°	1
6.	72053747	ADAPTER #12MSTR 3/4FPT	1
7.	72532665	ADAPTER #4MJIC #8FJIC	2
8.	60107995	ELBOW=PR GAUGE MODIFIED	1
9.	72053533	ELBOW 1/4STR 45°	1
10.	73054435	PRESSURE GAUGE	1
11.	72053517	ADAPTER 1/4MPT 1/4MPT HEX	1
12.	72053469	COUPLING 1/4NPT	1
13.	72053558	ADAPTER 3/4MPT 3/4MPT HEX	1
14.	72073436	REDUCER COUPLING 1"-3/4"NPT	1
15.	72532834	BEAD NIPPLE 1MPT 1-1/4HOSE 90°	1
16.	72532728	UNION-M STR/M STR 8 8	2
REV. E 20081114			

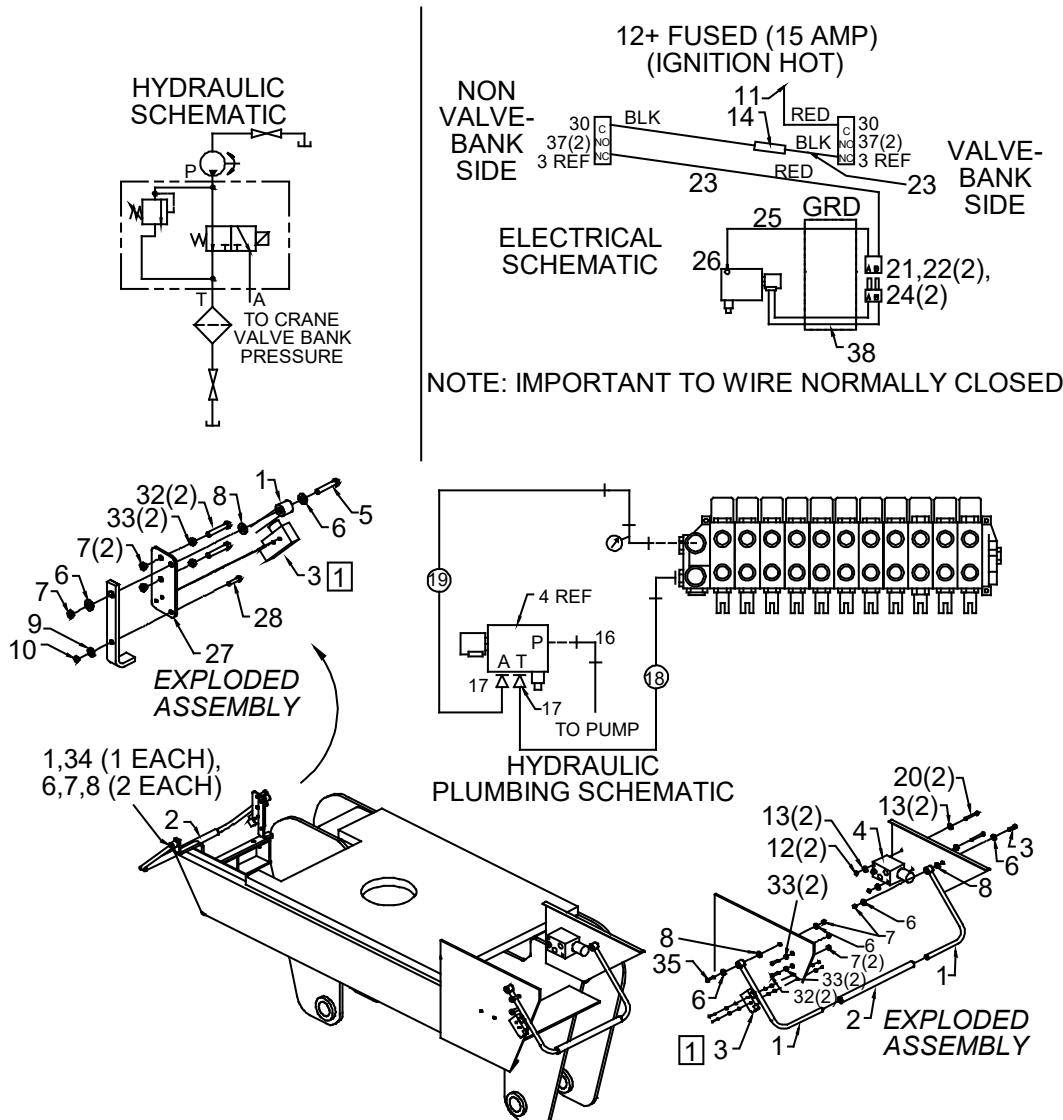
Capacity Shutdown Kit, Manual (31717169)



31717169 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	77041652	PRESSURE SWITCH, 2800 PSI, NORMALLY OPEN	1
2.	7Q072015	O-RING	1
3.	72532140	PLUG 9/16-STR HH	1
4.	60025221	MANIFOLD	1
5.	72060731	CAP SCREW 5/16-18X3/4 SH ZINC	4
REV. A 20020701			

Hydraulic Shutdown Kit, Manual (31713789)



NOTES (SEE REFERENCE IN BOX):

1 USE FASTENERS INCLUDED.

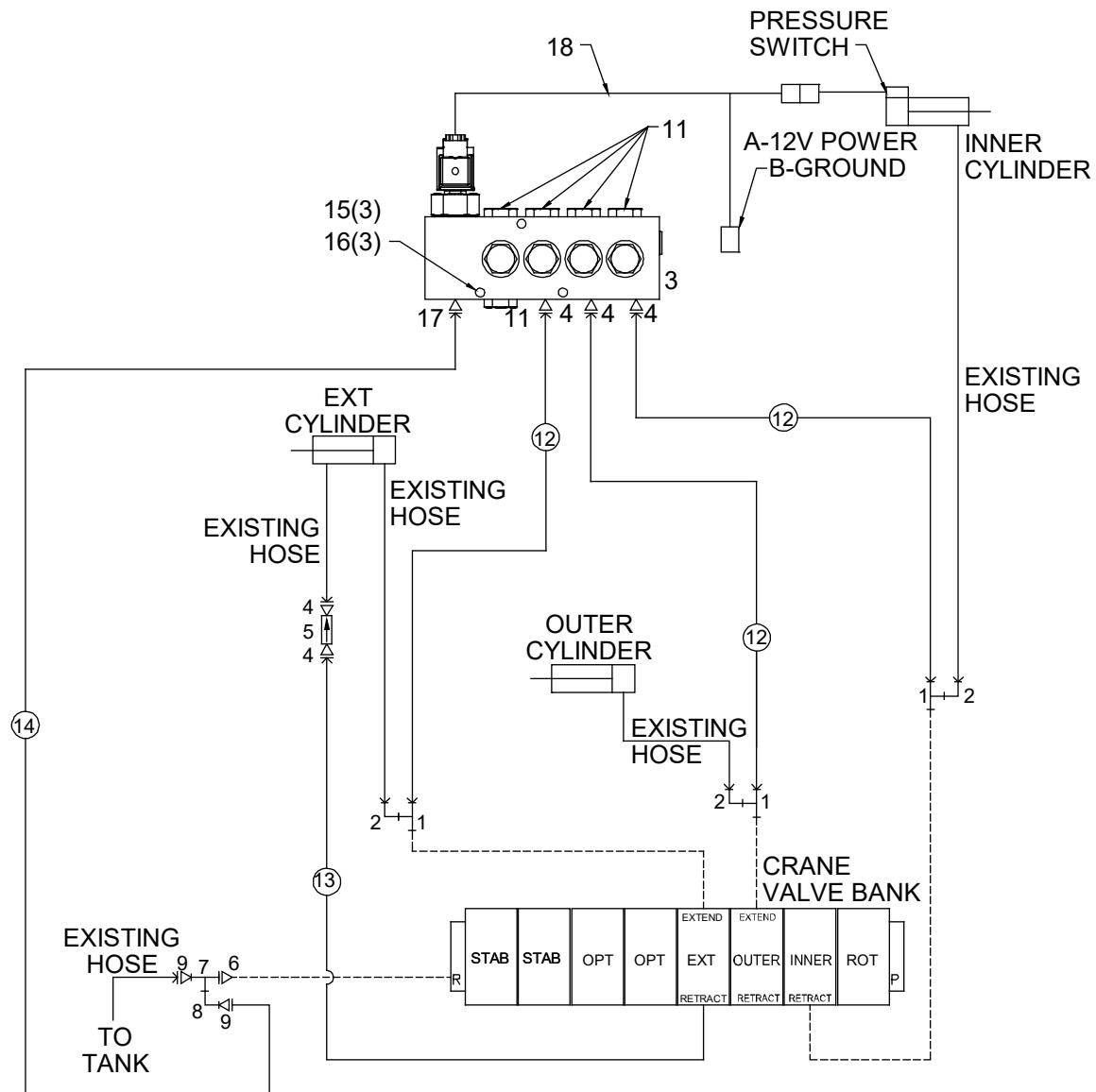
31713789 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	52713782	HANDLE	A/R
2.	60120549	TUBE	A/R
3.	77041459	LIMIT SWITCH	2
4.	VARIES	VALVE ASM-RELIEF/SOL HYD SHUTDOWN	1
5.	72060052	CAP SCR 3/8-16X2-1/2 HHGR5	1
6.	72063003	WASHER 3/8 WRT	8
7.	72062103	NUT 3/8-16 LOCK	8

31713789 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
8.	72063215	WASHER 3/8 BELLEVILLE SS	4
9.	72063001	WASHER 1/4 WRT	1
10.	72062104	NUT 1/4-20 LOCK	1
12.	72062109	NUT 5/16-18 LOCK	4
13.	72063002	WASHER 5/16 WRT	4
16.	72053767	ELBOW #12MSTR #12MJIC 90°	1
17.	72532366	ADAPTER #12MSTR #12MJIC	2
18.	51395012	HOSE 3/4X25 FF #12#12	1
19.	51395013	HOSE 3/4X21 FZ #12#12	1
20.	72060038	CAP SCR 5/16-18X4-1/2 HHGR5	2
21.	77044573	CONNECTOR	1
22.	77044552	TERMINAL MALE 18-20GA	2
23.	89044188	CABLE-14AWG DUPLX	12FT
24.	70394069	SEAL-CABLE CONNECTOR	2
25.	89044274	WIRE 14GA BLK	2FT
26.	77040052	TERMI-RING I .38STUD 12-10GA	1
27.	60120438	BRACKET	1
28.	72060004	CAP SCR 1/4-20X1 HHGR5	1
30.	77044468	STRAIN RELIEF 1/2	2
32.	72060050	CAP SCR 3/8-16X2 HHGR5	4
33.	72062002	NUT 3/8-16 HEX	4
34.	72060030	CAP SCR5/16-18X2-1/4HHGR5Z	1
35.	72060031	CAP SCR 5/16-18X2 HHGR5	2
37.	77040051	TERM #8STUD 16-14GA	4
38.	89034048	SPIRAL WRAP-CLEAR	3FT
REV. K 20140604			

Hydraulic Overload Kit, 3-Function (51717130)

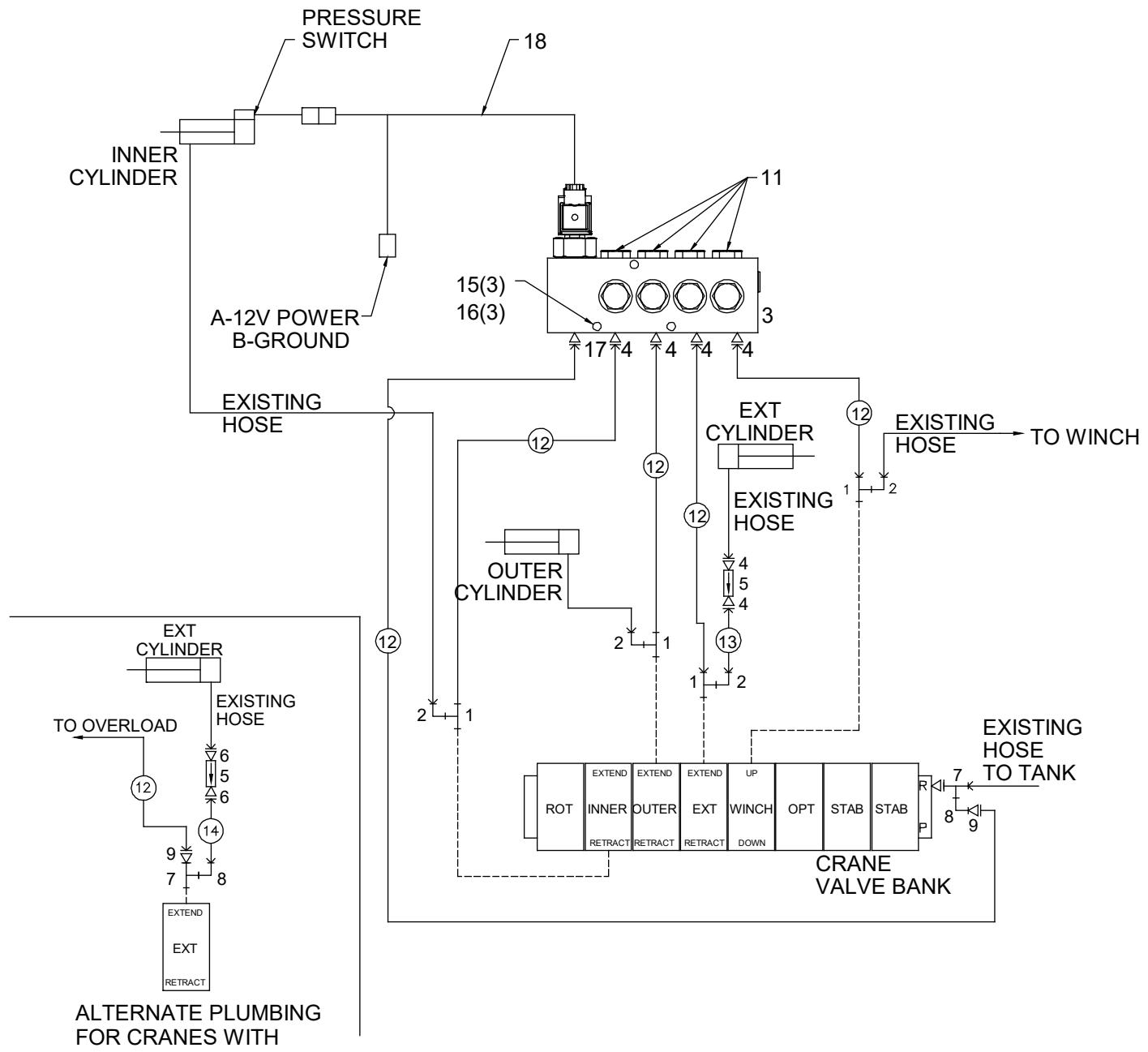


NOTES:

- 1 THE OVERLOAD SYSTEM FUNCTIONS SUCH THAT WHEN THE INNER CYLINDERS ARE OVERLOADED, THE PRESSURE SWITCH WILL ACTIVATE THE SOLENOID DUMP VALVE(S), thus dumping oil to "TANK" AND PREVENTING THE OUTER CYLINDER EXTEND, EXTENSION CYLINDER EXTEND, OR WINCH UP FUNCTIONS.
- 2 IN AN OVERLOAD CONDITION, INNER BOOM RETRACT, OUTER BOOM EXTEND, EXTENSION CYLINDER EXTEND, AND WINCH UP FUNCTIONS ARE SHUT DOWN.
- 3 INSTALL A RELIEF VALVE (73054426 - 700 PSI) IN THE EXTEND LINE OF THE EXTENSION CYLINDER SO THE CYLINDER WILL NOT EXTEND WHEN THE DUMP SYSTEM IS ACTIVATED.
- 4 USE HYDRAULIC OVERLOAD KIT IN CONJUNCTION WITH THE ELECTRIC CAPACITY ALERT KIT.

511717130 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72532657	TEE #8JIC SWVL NUT RUN	3
2.	72532658	ELBOW #8MJIC #8FJIC	3
3.	73540463	VALVE BLOCK ASM	1
4.	72532358	ADAPTER #8MSTR #8MJIC	5
5.	73054426	VALVE-ADJ RELIEF	1
6.	72053676	ADAPTER 3/4MPT #12MJIC	1
7.	72532950	TEE-SWIVEL NUT RUN JIC#12	1
8.	72532696	ELBOW #12MJIC #12FJIC SW	1
9.	72532972	ADPTR-#8MJIC#12FJIC	2
11.	72532141	PLUG STR HEX HD STL 3/4 THD	4
12.	51703863	HOSE ASM-FF 3/8 X 14	3
13.	51706239	HOSE ASM-FF 1/2 X 5	1
14.	51704914	HOSE ASM-FF 3/8 X 60	1
15.	72060034	CAP SCR 5/16-18 X 3.25 HH	3
16.	72062109	NUT 5/16-18 HEX NYLOC ZINC	3
17.	72532360	ADPTR-#12MSTR #8MJIC	1
18.	77441025	HARNESS-OVERLOAD	1
REV. B 20111221			

Hydraulic Overload Kit, 4-Function, Manual (51717128)

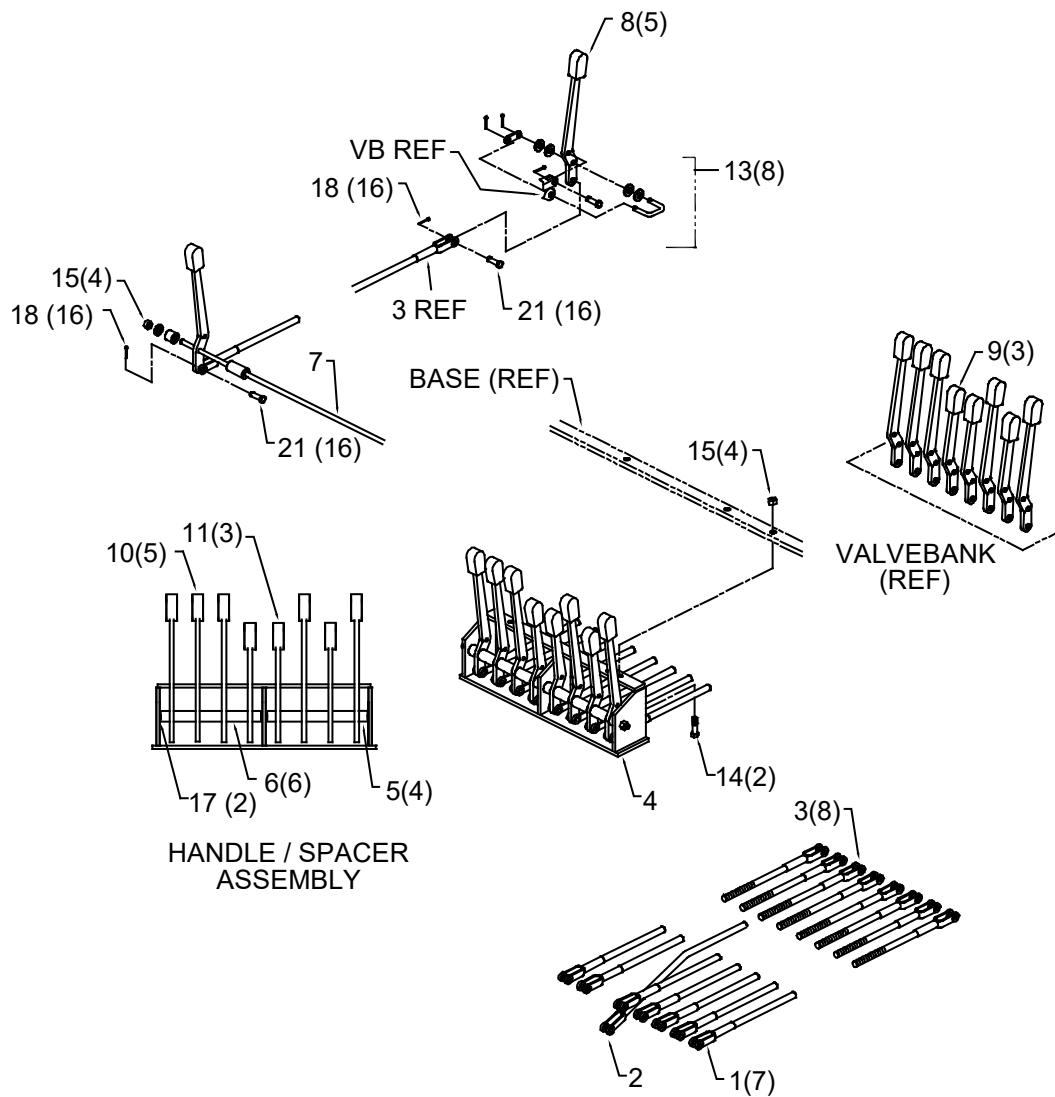


NOTES:

- 1 THE OVERLOAD SYSTEM FUNCTIONS SUCH THAT WHEN THE INNER CYLINDERS ARE OVERLOADED, THE PRESSURE SWITCH WILL ACTIVATE THE SOLENOID DUMP VALVE(S), THUS DUMPING OIL TO "TANK" AND PREVENTING THE OUTER BOOM RETRACT, OUTER BOOM EXTEND, EXTENSION CYLINDER EXTEND, OR WINCH UP FUNCTIONS.
- 2 IN AN OVERLOAD CONDITION, INNER BOOM RETRACT, OUTER BOOM EXTEND, EXTENSION CYLINDER EXTEND, AND WINCH UP FUNCTIONS ARE SHUT DOWN.
- 3 INSTALL A RELIEF VALVE (73054426 - 700 PSI) IN THE EXTEND LINE OF THE EXTENSION CYLINDER SO THE CYLINDER WILL NOT EXTEND WHEN THE DUMP SYSTEM IS ACTIVATED.
- 4 THIS KIT IS USED IN CONJUNCTION WITH THE ELECTRIC CAPACITY ALERT KIT.

51717128 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72532657	TEE #8JIC SWVL NUT RUN	4
2.	72532658	ELBOW #8MJIC #8FJIC	4
3.	73540463	VALVE BLOCK 4 FUNCT ASM 12V	1
3.	73540527	VALVE BLOCK 4 FUNCT ASM 24V	1
4.	72532358	ADAPTER #8MSTR #8MJIC	6
5.	73054426	VALVE-ADJ RELIEF	1
6.	72532366	ADAPTER #12MSTR #12MJIC	2
7.	72532950	TEE-SWIVEL NUT RUN JIC#12	2
8.	72532696	ELBOW-#12MJIC #12FJIC SW	2
9.	72532972	ADPTR-#8MJIC#12FJIC	2
11.	72532141	PLUG STR HEX HD STL 3/4 THD	3
12.	51706443	HOSE ASM-FF 3/8 X 53	5
13.	51706239	HOSE ASM-FF 1/2 X 5	1
14.	51706238	HOSE ASM-FF 3/4 X 6	1
15.	72060034	CAP SCR 5/16-18 X 3.25 HH	3
16.	72062109	NUT 5/16-18 HEX NYLOC ZINC	3
17.	72532360	ADPTR-#12MSTR #8MJIC	1
18.	77441025	HARNESS-OVERLOAD	1
REV. B 20111221			

Control Kit, 8-Function, Manual (90704441)

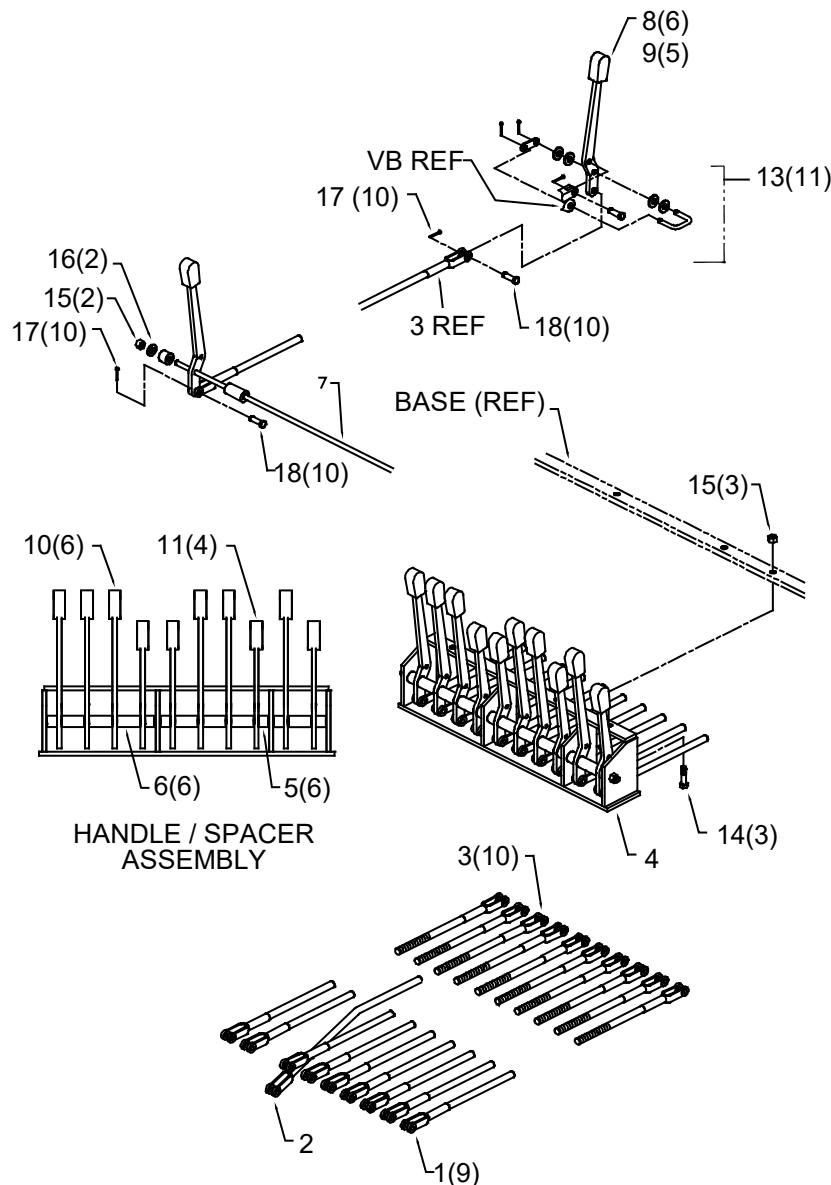


90704441 PARTS LIST

ITEM	PART #	DESCRIPTION	KIT #	QUANTITY
1.	52702016	CONTROL ROD - FEMALE		7
2.	52702017	CONTROL ROD - FEMALE BENT		1
3.	52702018	CONTROL ROD - MALE		8
4.	52702777	VALVEBANK		1
5.	60030045	SPACER	5/8"	4
6.	60030046	SPACER	1-1/2"	6
7.	60105503	ROD		1
8.	70141982	CONTROL HANDLE - VALVEBANK LONG		5
9.	70141983	CONTROL HANDLE - VALVEBANK SHORT		3
10.	70141984	CONTROL HANDLE - CURBSIDE LONG		5

90704441 PARTS LIST				
ITEM	PART #	DESCRIPTION	KIT #	QUANTITY
11.	70141985	CONTROL HANDLE - CURBSIDE SHORT		3
13.	94731839	LINK & PIN KIT		8
14.	72060025	CAP SCREW	5/16-18 X 1 HH GR5	2
15.	72062109	NUT	5/16-18 LOCK	4
17.	72063002	WASHER	5/16 WRT	2
18.	72066168	COTTER PIN		16
21.	72066338	CLEVIS PIN		16
REV. C 1997				

Control Kit, 11-Function, Manual (90710603)



NOTE:

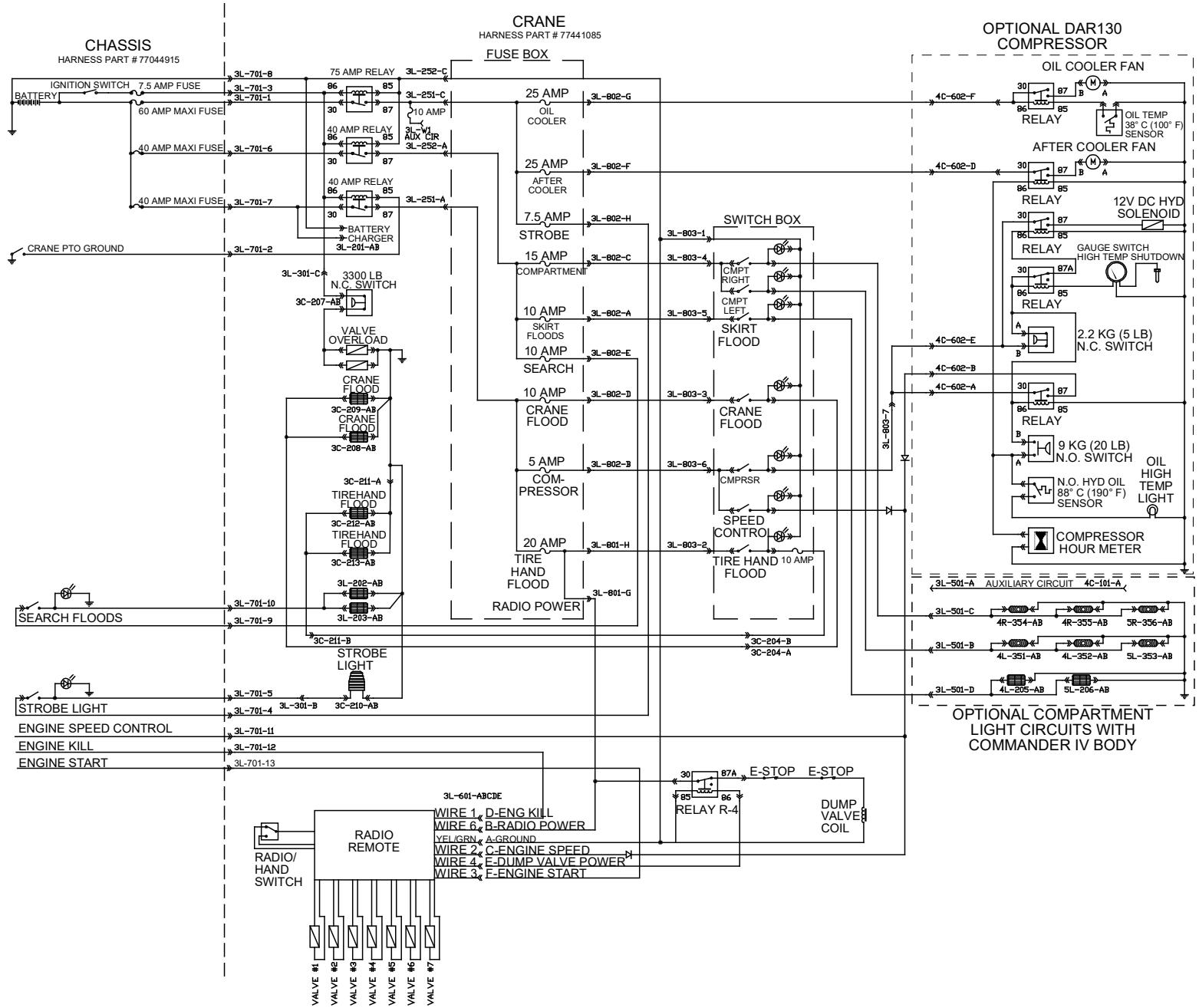
- 1 AUXILIARY POWER OUT STABILIZER FUNCTION IS CONTROLLED FROM THE VALVEBANK SIDE ONLY. THERE IS NO CROSS CONTROL FOR THIS FUNCTION.

90710603 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52702016	CONTROL ROD-FEMALE	9
2.	52702017	CONTROL ROD-BENT FEMALE	1
3.	52702018	CONTROL ROD-MALE	10

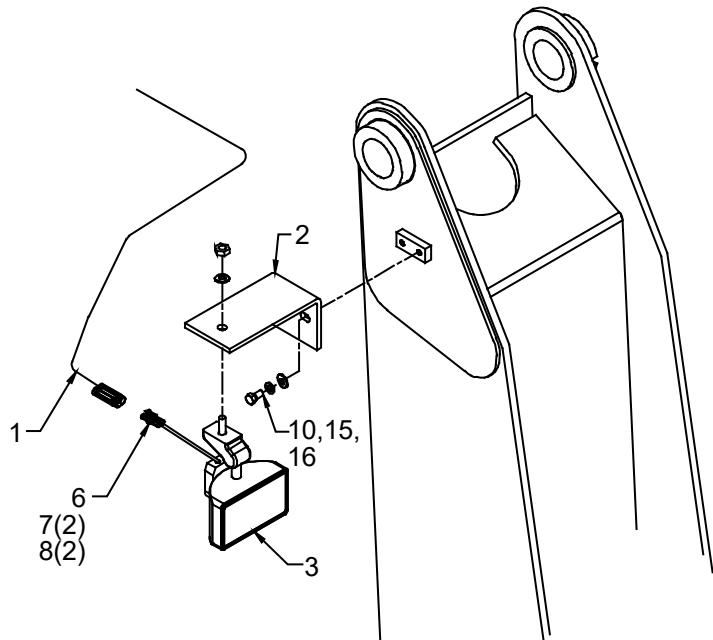
90710603 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
4.	52710602	DUMMY VALVEBANK	1
5.	60030045	SPACER 5/8	7
6.	60030046	SPACER 1-1/2	6
7.	60115353	DUMMY VB ROD	1
8.	70141982	CONTROL HANDLE-LONG-VB	6
9.	70141983	CONTROL HANDLE-SHORT-VB	5
10.	70141984	CONTROL HANDLE-LONG-DVB	6
11.	70141985	CONTROL HANDLE-SHORT-DVB	4
13.	94731839	LINK & PIN KIT	11
14.	72060025	CAP SCR 5/16-18X1 HH GR5	3
15.	72062109	NUT 5/16-18 LOCK	5
16.	72063002	WASHER 5/16 WRT	2
17.	72066168	COTTER PIN	20
18.	72066338	CLEVIS PIN	20
REV. B 1996			

Electrical

Electrical Schematic (99903557)



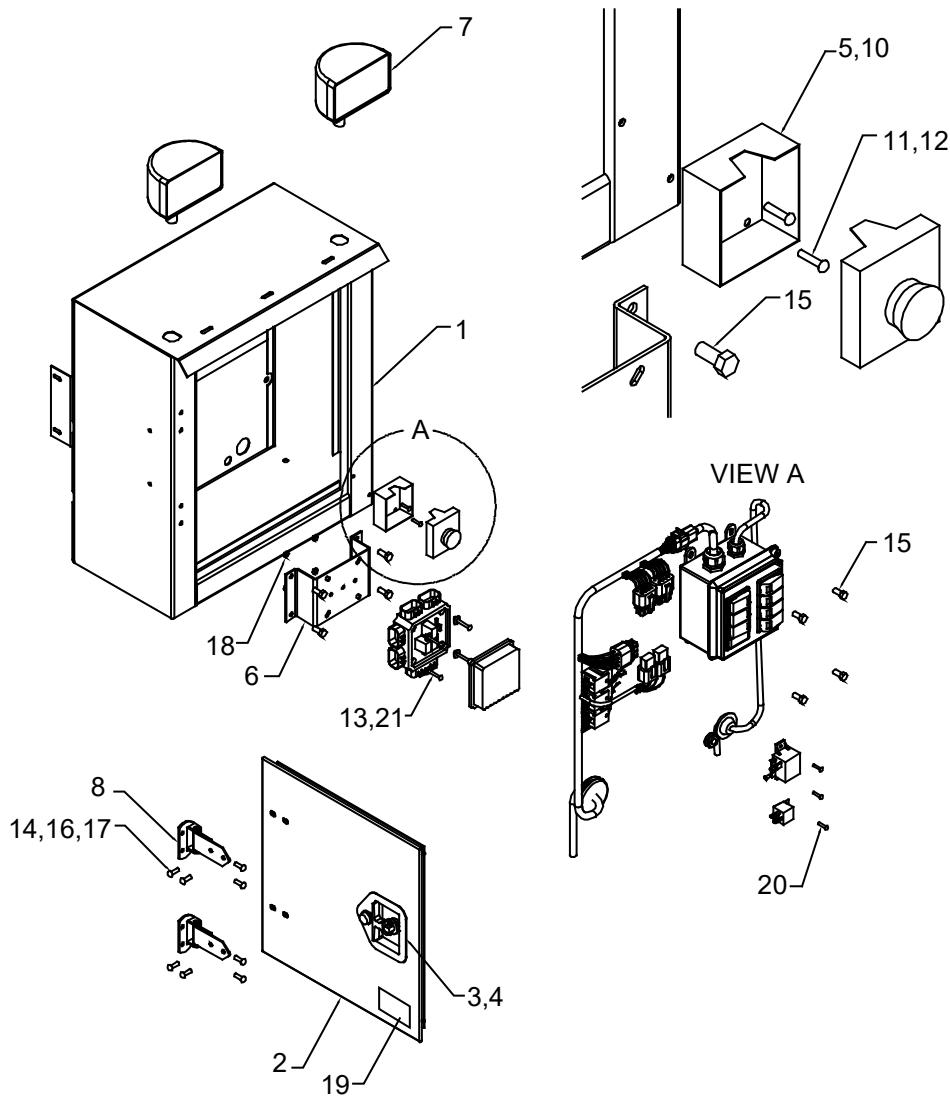
Light Kit (51718014)



51718014 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	51717219	HARNESS-OTR CRANE	MANUAL CONTROLS	1
1.	77441197	HARNESS-OTR CRANE	RADIO CONTROLS	1
1.	77044958	HARNESS	24V	1
2.	60113428	LIGHT BRACKET		2
3.	77040424	FLOODLIGHT, TOP MOUNT	12V	2REF
3.	77040572	FLOODLIGHT	24V	2REF
6.	77044574	CONNECTION	PACKARD FEMALE 2-WAY WEATHERPACK	2
7.	77044550	TERMINAL	FEMALE 18-20 GA WP	4
8.	70394069	SEAL, CABLE CONNECTION		4
10.	72060044	CAP SCREW	3/8-16 X 3/4 HHGR5Z	4
15.	72063051	WASHER	3/8 LOCK ZINC	4
16.	72063003	WASHER	.38 W FLAT	4
REV. A 20070820				

Electrical Control Cabinet (41718269-12V, 41718425-24V)



NOTES:

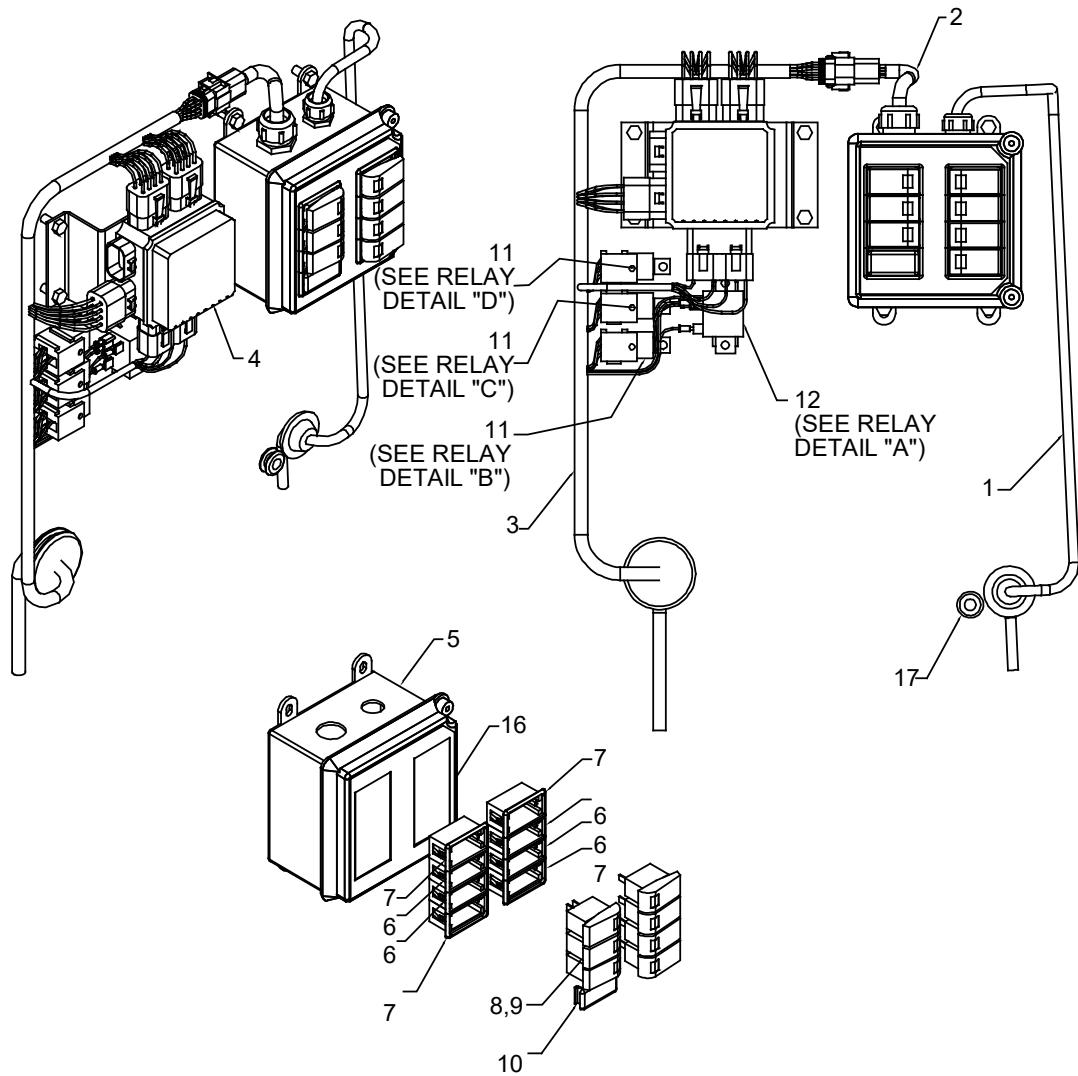
- 1 INSTALL WEATHERSTRIP (ITEM #9) AROUND DOOR OPENING.
- 2 INSTALL DUAL-LOCK FASTENER (ITEM #19) INSIDE LEFT SIDE WALL OF CABINET. USE ITEM #19 TO MOUNT RADIO REMOTE CONTROL CHARGER. (USE 2 STRIPS ON CABINET WALL AND 2 STRIPS ON CHARGER.)

41718269/41718425 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	41721887	CABINET WELDMENT (WAS 52715880)		1
2.	52713707	DOOR WELDMENT		1
3.	72661470	LATCH ASSEMBLY, 1-PT		1
4.	76393253	GASKET, LATCH WITH STUDS		1
5.	77041486	SWITCH, E-STOP		1

41718269/41718425 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
6.	60121574	BRACKET, FUSE/RELAY BOX		1
7.	77040424	LIGHT, WORK LAMP	12V	2
	77040572	LIGHT, WORK LAMP	24V	2
8.	72661383	HINGE	SS 10-GA	2
9.	89393637	WEATHERSTRIP	1/2X1/2 TRIMLOC	5.5'
10.	77044468	CONNECTOR	1/2" STR REL .12-.25	1
11.	72601725	SCREW-MACHINE	6-32 1/2 ROUND HEAD PHILLIPS	2
12.	72601726	NUT	6-32 HEX NYLOC	2
13.	72060643	SCREW-MACHINE	10-24 X 1.50 RDH SST	4
14.	72601652	SCREW-MACHINE	1/4-20X3/4 TRHTORXSS	8
15.	72061004	SCR-SHEET METAL	14X3/4 SLT HEXZ	8
16.	72062194	NUT	SS 1/4-20 NYLOC	6
17.	72062264	NUT	1/4-20 WELD TP2120	2
18.	72062053	NUT	10-24 HEX ZINC	4
19.	70396515	DECAL-WARNING-NO STORE IN E-CABINET		1
20.	72060835	SCREW-SELF TAPPING	8-18 3/4 HHZINC	5
21.	72063166	WASHER	SS 1/4 WRT 18-8 5/8 OD	4
REV. C 20080903				

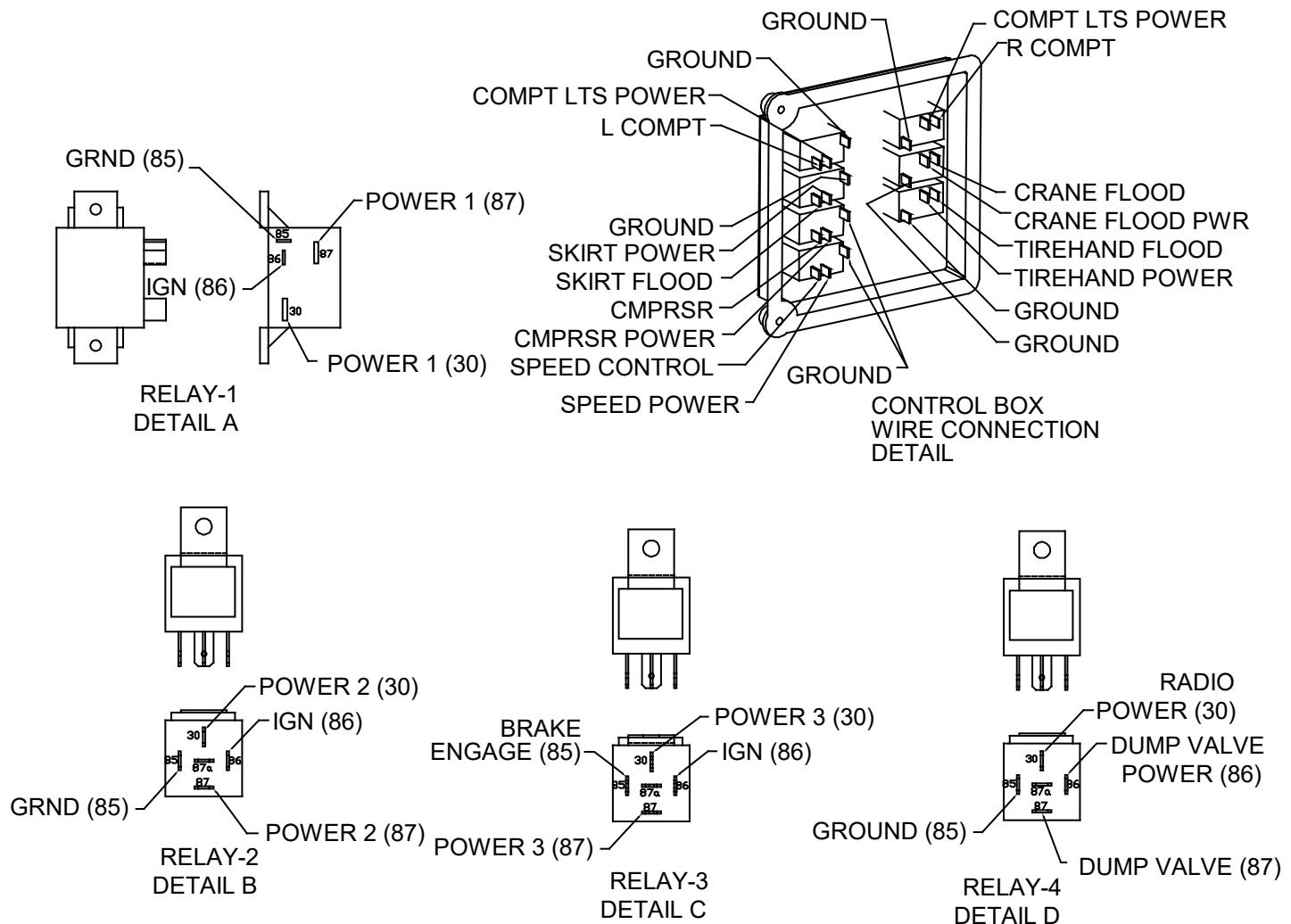
Electrical Control Box Assembly (41718269-12V, 41718425-24V)



NOTE:

1 FOR COMPLETE WIRING CONNECTIONS, SEE WIRING SCHEMATIC.

41718269/41718425 DRAWING

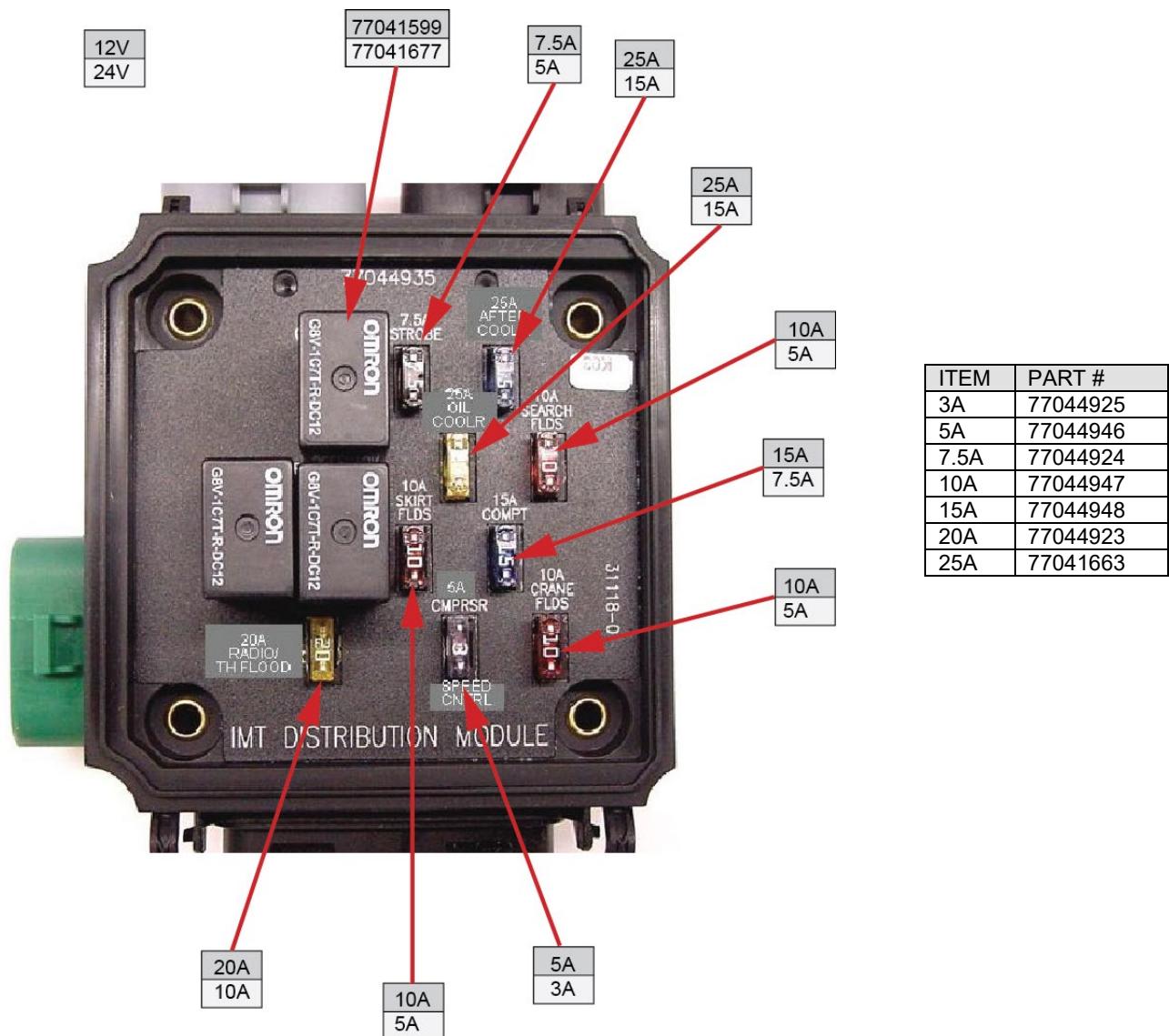


41718269/41718425 PARTS LIST

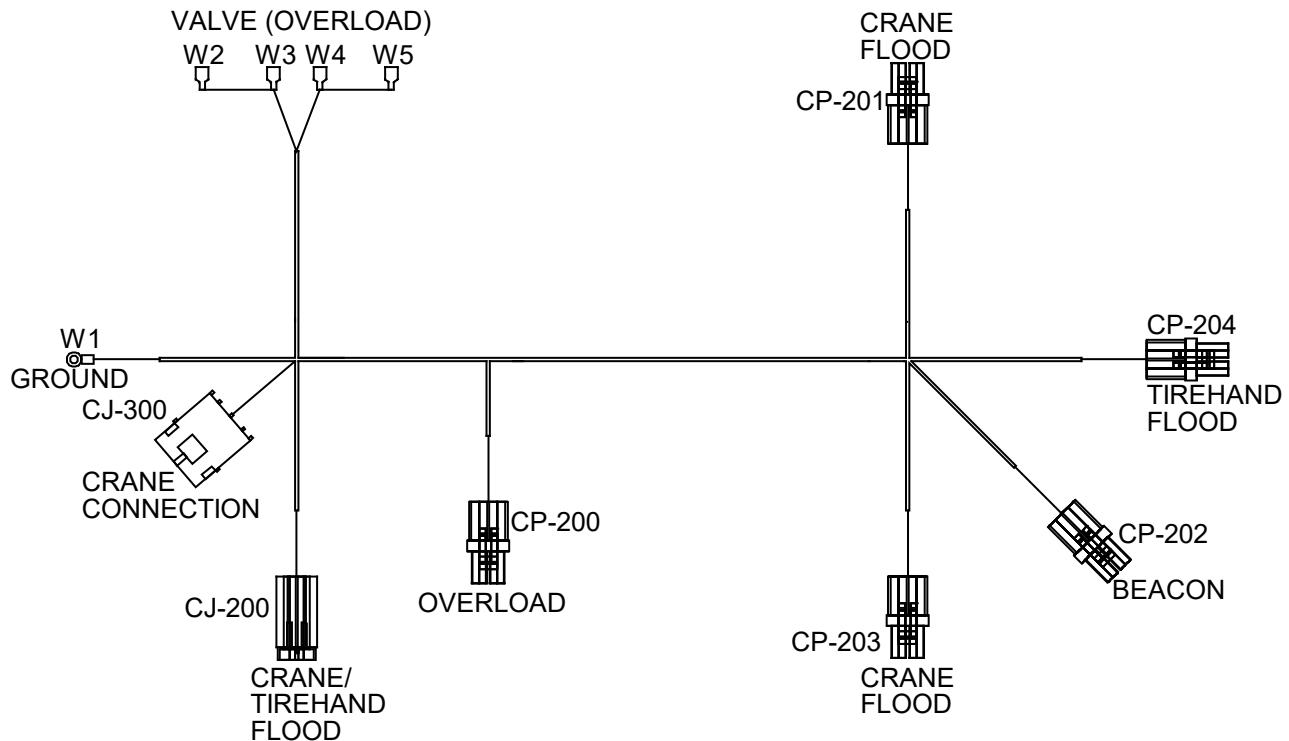
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	77044919	HARNESS, SWITCH BOX OUT		1
2.	77441086	HARNESS, SWITCH BOX IN		1
3.	77441085	HARNESS, CRANE POWER		1
4.	77044935	FUSE/RELAY BOX		1
5.	77044797	SWITCH BOX		1
6.	77041504	SWITCH, ROCKER MTG PAN MID		4
7.	77041502	SWITCH, ROCKER MTG PAN END		4
8.	77041500	SWITCH, ROCKER BODY	12V	7
	77041672	SWITCH, ROCKER BODY	24V	7
9.	77041499	SWITCH, ROCKER RED ACT.		7
10.	77041571	SWITCH, ROCKER PLUG		1
11.	77041251	RELAY	40 AMP (12V)	3
	77041674	RELAY	20 AMP (24V)	
12.	77040391	RELAY	12V DC 75 AMP (12V)	1

41718269/41718425 PARTS LIST

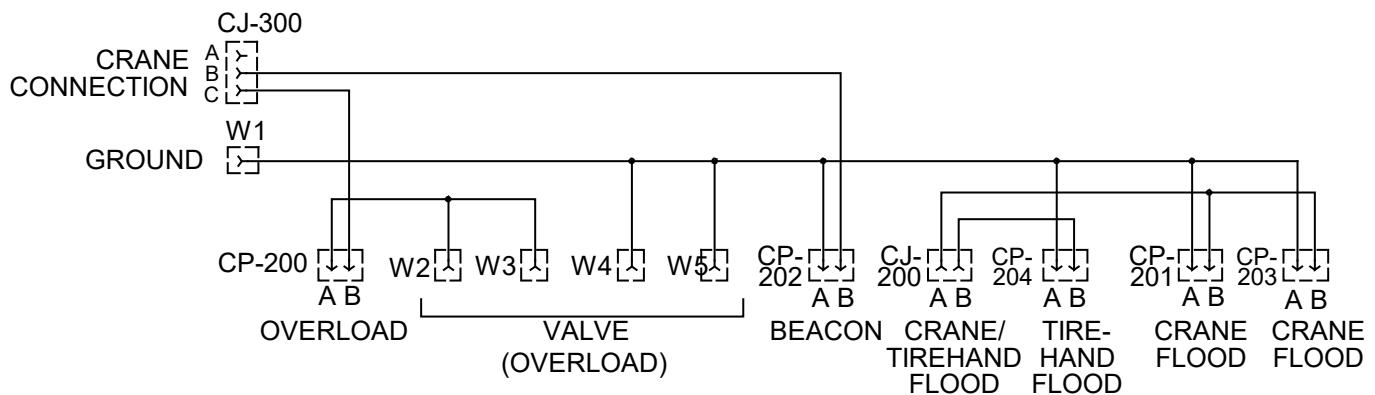
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
	77040455	RELAY	24V DC 50 AMP (24V)	1
13.	77044573	CONNECTOR	PACKARD MALE 2-WAY WEATHERPACK	1
14.	77044552	TERMINAL	MALE 18-20 GA WEATHERPACK	2
15.	70394069	SEAL, CABLE CONNECTOR		2
16.	70395669	DECAL, OTR LIGHT SWITCH		1
17.	76391200	RUBBER GROMMET	9/16	1
18.	77041599	RELAY	12V DC	3REF
	77041677	RELAY	24V DC	3REF

Relay Fuse Box, 12V & 24V (77044935)

Harness, Crane Mast/Radio Control (77441197)



SCHEMATIC



Radio Remote

Radio Remote Kit 458 Frequency – 73733481
Radio Remote Kit 434 Frequency – 73733890

REFERENCE PARTS FOR SERVICE:

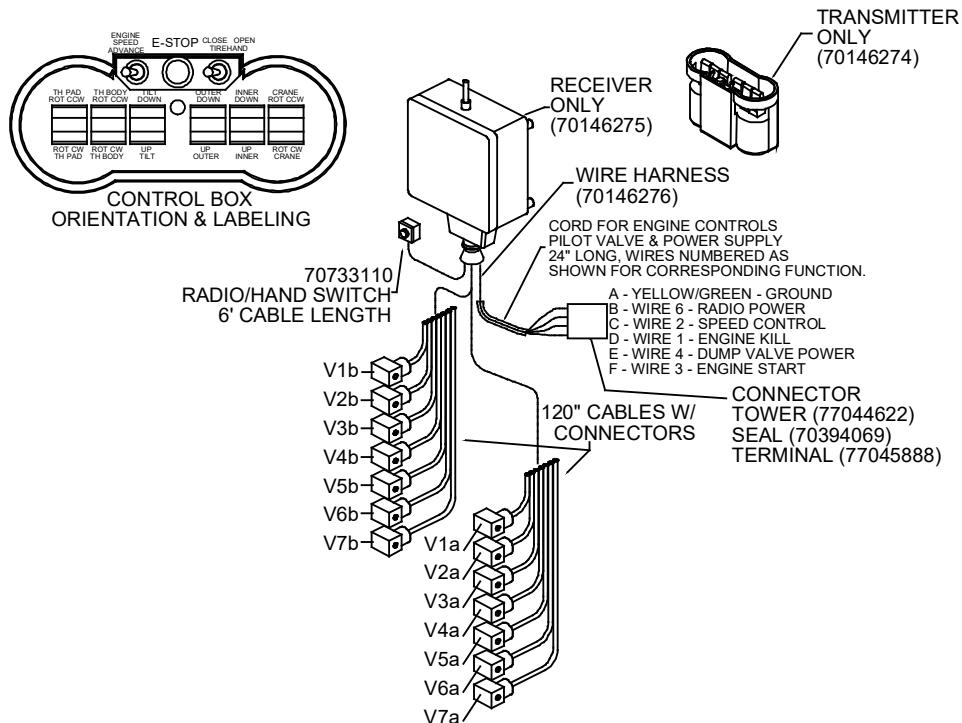
Transmitter - 70146274

458 Frequency - 57149
434 Frequency - 70734224

Receiver - 70146275

458 Frequency - 57129
434 Frequency - 70734225

Radio Remote Kit - Nova (73733481)


NOTES:

- 1) SPARE PARTS - BATTERY CHARGER (70733290) (NOT SHOWN), AND 2 BATTERIES (77042092) (NOT SHOWN).
- 2) SOLENOID ACTUATOR SPECIFICATIONS: 12VDC OPERATING VOLTAGE; 7.5 OHMS PROPORTIONAL COIL RESISTANCE AT 68° F (20° C); 6.5 OHMS ON-OFF COIL RESISTANCE; PWM, 50 HZ FREQUENCY SIGNAL.
- 3) TIREHAND CLAMP LOCKOUT IS REQUIRED FOR ACTIVATION OF CLAMP PADDLE. MOMENTARY SWITCH.
- 4) THE OVERALL APPEARANCE OF THE TRANSMITTER MAY VARY. SWITCHES AND PADDLES WILL BE LABELED AS SHOWN.

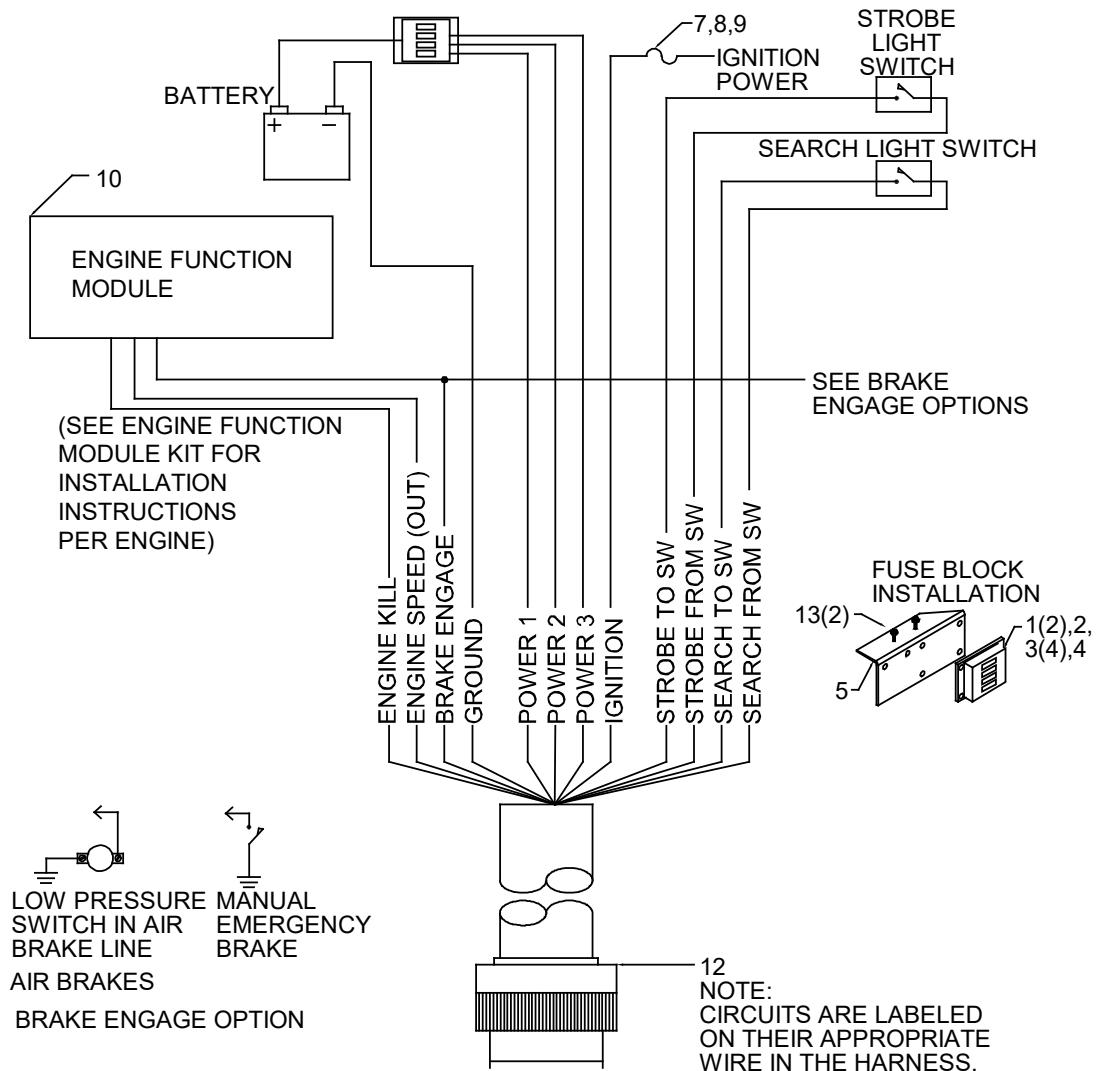
REV B 20100330

LABEL	CONTROLLED FUNCTION
V1a	TIREHAND CLAMP - OPEN
V1b	TIREHAND CLAMP - CLOSE
V2a	TIREHAND PAD ROTATION - CLOCKWISE
V2b	TIREHAND PAD ROTATION - COUNTER-CLOCKWISE
V3a	TIREHAND BODY ROTATION - CLOCKWISE
V3b	TIREHAND BODY ROTATION - COUNTER-CLOCKWISE
V4a	TIILT-UP
V4b	TIILT-DOWN
V5a	OUTER CYLINDER EXTEND - UP
V5b	OUTER CYLINDER RETRACT - DOWN
V6a	INNER CYLINDER EXTEND - UP
V6b	INNER CYLINDER RETRACT - DOWN
V7a	CRANE ROTATION - CLOCKWISE
V7b	CRANE ROTATION - COUNTER-CLOCKWISE

* ALL CONNECTORS WILL BE SET-UP AND LABELED AS SHOWN.
 * ALL CABLES ARE 120" LONG.

To convert radio remote control from 12V to 24V, contact IMT.

Chassis Wiring (99903160)



99903160 PARTS LIST

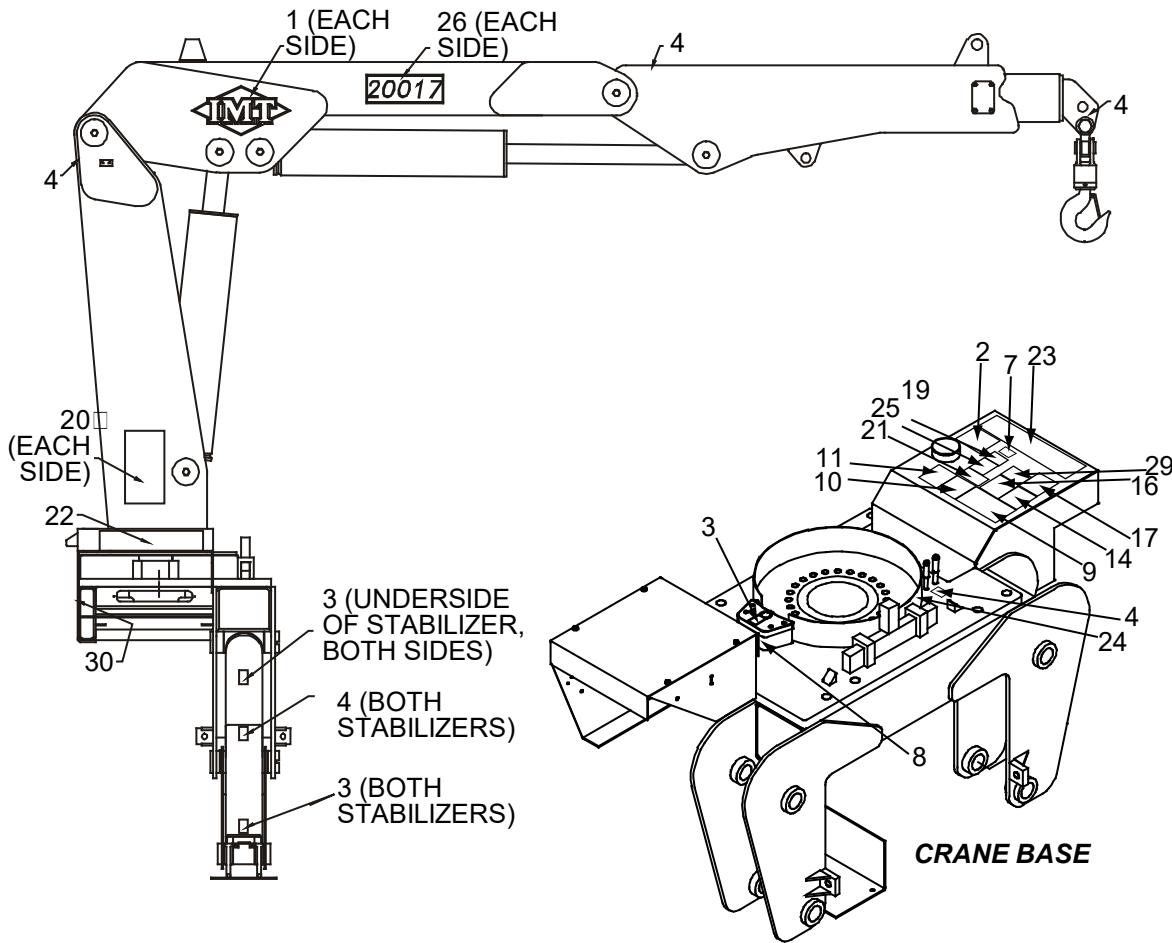
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	77041616	FUSE	MAXI 40 AMP (12V)	2
	77044635	FUSE	MAXI 20 AMP (24V)	2
2.	77041678	FUSE BLOCK- 4 POSITION		1
3.	72060835	SCREW	SELF-TAPPING #8-18 X 3/4 HHZ	4
4.	77041619	FUSE	MAXI 60 AMP (12V)	1
	77044635	FUSE	MAXI 30 AMP (24V)	1
5.	60251088	BRACKET-RELAY & MAXI FUSE BLOCK		1
6.	77441110	POWER CABLE, RED	#6X16	1
7.	77041606	FUSE AGC 7.5		1

99903160 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
8.	77044691	FUSE HOLDER		1
9.	77040048	TERMINAL-BUTT CONNECTOR		6
10.	51717388	ENGINE FUNCTION MODULE KIT	(12V ONLY)	1
11.	70145421	HEAT SHRINK (NOT SHOWN)		12"
12.	77044915	HARNESS		1
13.	72061739	SCREW-TEK	12-14 X 1.0 HWH (N/S)	2

Miscellaneous

Decal Kit (95708880)

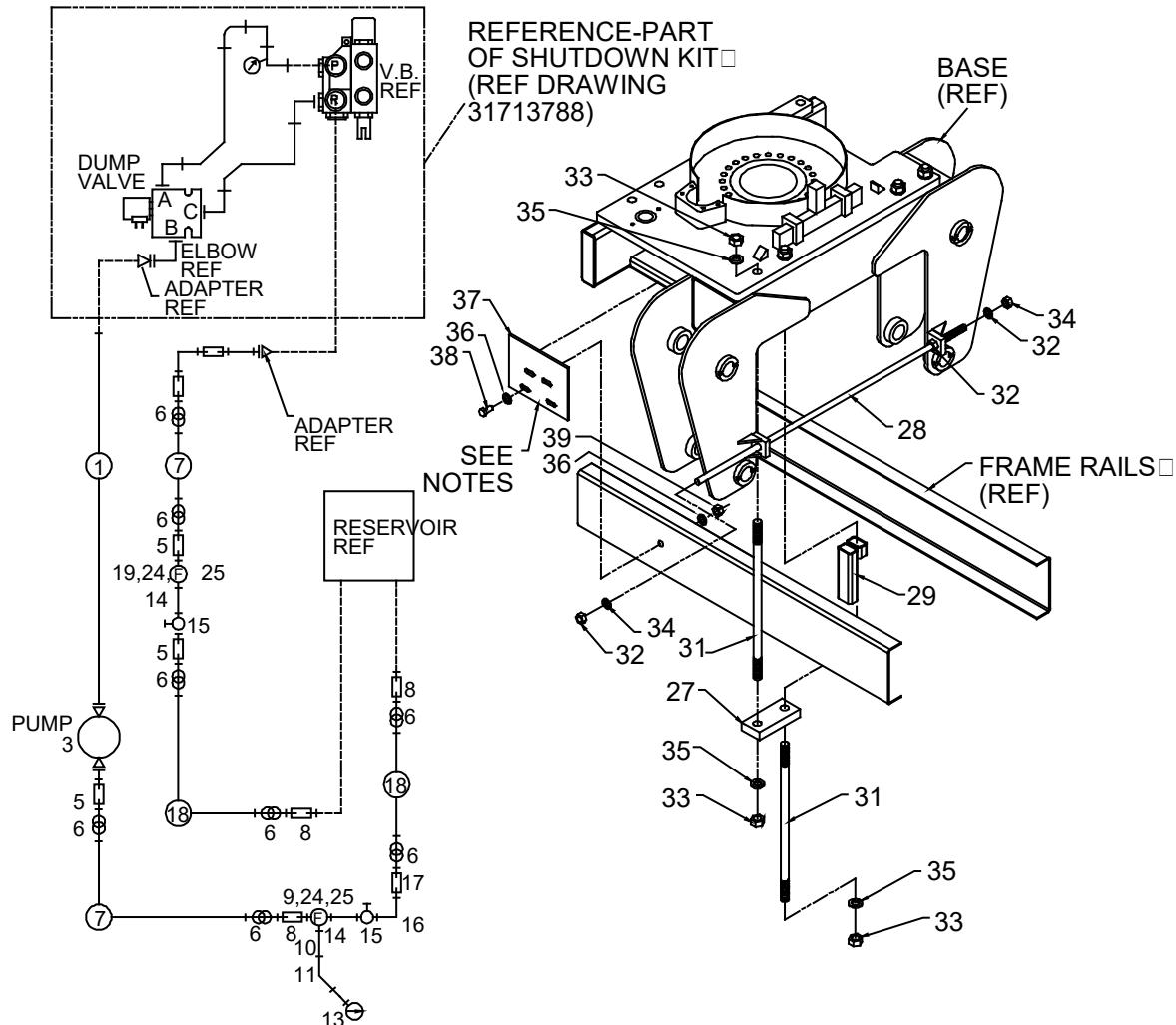


DECAL PLACEMENT (IF NOT SHOWN IN DRAWINGS)

ITEM NUMBER	LOCATION
13, 28	ONE ON EACH SIDE OF CARRIER VEHICLE
6	ON RESERVOIR AT RETURN LINE
5	ON RESERVOIR AT SUCTION LINE
12, 15	ONE ON THE UNDERSIDE OF EACH STABILIZER NEAR PAD
9, 10, 11, 14, 16, 17, 21, 29	ONE EACH ON THE HOSE REEL CABINET DOOR
31	UNDER SERIAL NUMBER TAG
32	ON FRONT AND SIDE OF CRANE BASE

95700880 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70029252	PLACARD - IMT DIAMOND	2
3.	70391612	DECAL-GREASE WEEKLY LEFT	5
4.	70391613	DECAL-GREASE WEEKLY RIGHT	6
5.	70392108	DECAL-SUCTION LINE	1
6.	70392109	DECAL-RETURN LINE	1
7.	70392213	DECAL-CAUTION WASH/WAX	1
8.	70392524	DECAL-ROT CRANE/GREASE	1
9.	70392813	DECAL-DANGER ELECTROC'N	2
10.	70392814	DECAL-WARNING OPERATOR	2
11.	70392815	DECAL-WARNING OPERATION	2
12.	70392864	DECAL-WARNING STAB STD CLR	2
13.	70392865	DECAL-DANGER ELECTROC'N	4
14.	70392866	DECAL-WARNING OPER COND	2
16.	70392888	DECAL-WARNING OPER RESTRICT	2
17.	70392890	DECAL-DGR STOW/UNFOLD	2
18.	70392891	DECAL-DANGER DRIVELINE	2
19.	70392982	DECAL-CONTACT IMT	1
20.	71029374	CAPACITY PLACARD	2
21.	71039134	DECAL-CAUTION OIL LEVEL	2
22.	70394090	DECAL-CTRL SS	1
23.	70394091	DECAL-CTRL CS	1
24.	71392365	DECAL-ALIGN CRANE	1
25.	70394189	DECAL-RECOMMEND HYD OIL	1
26.	70392211	DECAL-IDENTIFICATION	2
28.	70392868	DECAL-WARNING CR LOADLINE	4
29.	70392863	DECAL-WARNING HOIST PERS	2
30.	71393878	DECAL-SELECTOR VALVE	1
31.	70395323	DECAL-ASME/ANSI B30.22	1
32.	72042097	LEVEL	2
REV H 20111221			

Installation Kit (93704445)



NOTES:

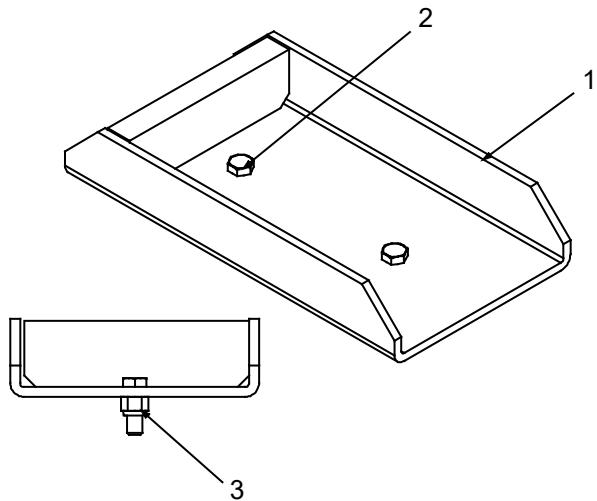
- 1 WELD ITEM #37, SHEAR PLATE, TO BASE AS SHOWN WITH A 3/8 BUTT WELD.
- 2 DRILL 0.812 HOLES AS REQUIRED TO BOLT ITEM #37 SHEAR PLATE TO FRAME RAILS.
- 3 NOT ALL PARTS ARE SHOWN FOR CLARITY.
- 4 (1) WASHER FOR INSIDE AND (1) WASHER FOR OUTSIDE OF FRAME.

93704445 PARTS LIST

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	51704808	HOSE ASSEMBLY	3/4 X 72	1
3.		PUMP		REF
5.	72532346	BARB NIPPLE	1-1/4 90°	3
6.	72661642	HOSE CLAMP	1-1/4 (was 72661642)	8
7.	60035829	HOSE	1-1/4 100R4 X 48	2
8.	72531550	BARB NIPPLE	1-1/4	3

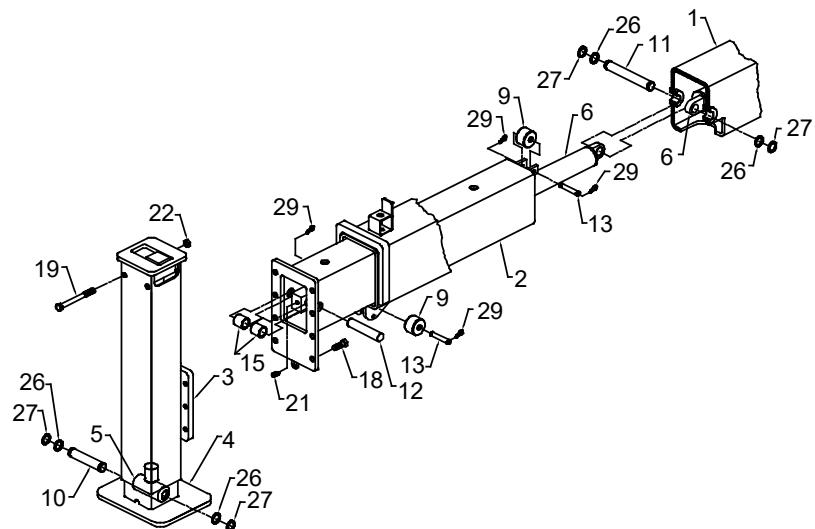
93704445 PARTS LIST				
ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
9.	73052012	SUCTION FILTER		1
10.	72053458	BARB NIPPLE	3/4	1
11.	72053533	STREET ELBOW	1/4 90°	1
13.	70048031	VACUUM GAUGE		1
14.	72053211	PIPE NIPPLE	1-1/4XCL	2
15.	73054130	GATE VALVE	1-1/4	1
16.	72053287	STREET ELBOW	3/4MPT	1
17.	72531196	BARB NIPPLE	1-1/4 45°	2
18.	60035832	HOSE	1-1/4 100R4 X 38	2
19.	73052091	RETURN FILTER		1
24.	60103870	OIL FILTER BRACKET		2
25.	72060025	CAP SCREW	5/16-18 X 1 HH GR5	4
27.	60128960	CLAMP PLATE (WAS 60010665)		4
28.	60103204	TENSION BAR		2
29.	52706660	SUPPORT		4
31.	71014847	TIE-DOWN STUD	1-1/4 X 30	8
32.	72062009	NUT	1-8 HEX	8
33.	72062142	NUT	1-1/4-7 LOCK	16
34.	72063058	WASHER	1" LOCK	4
35.	72063067	WASHER	1-1/4	16
36.	72063119	WASHER	5/8	16
37.	60105107	TIE PLATE		2
38.	72060931	CAP SCREW	5/8-11X2-3/4 HHGR8	8
39.	72062091	NUT	5/8-11 LOCK	8

Saddle Kit (31704684)

**31074684 PARTS LIST**

ITEM	PART #	DESCRIPTION	DETAILS	QUANTITY
1.	52704685	SADDLE		1
2.	72060093	CAP SCREW	.50-13 X 1.5 HHGR5Z	2
3.	72062080	NUT	.50-13 HEX NYLOC	2

Auxiliary Stabilizer Kit, PO/PD Radio (31714072-1)



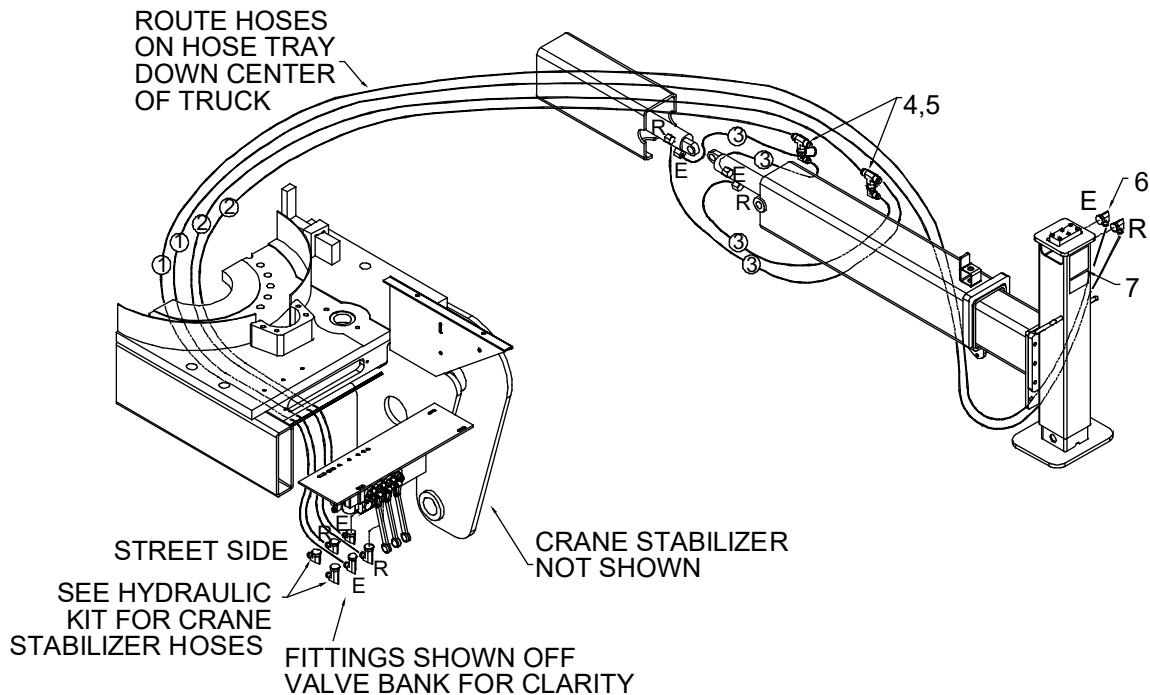
NOTE:

- 1 INSTALL 70399271 - DECAL-FULLY DEPLOYED - ON TOP OF STABILIZER BEAMS WHEN BEAMS ARE FULLY EXTENDED. DECAL MUST BE VISIBLE.

31714072 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	52704109	HOUSING	1
2.	52701065	ARM	2
3.	52710122	SLEEVE	2
4.	52704868	LEG	2
5.	3B166820	CYLINDER POWER DOWN	2
6.	3B210522	CYLINDER POWER OUT	2
9.	60030053	ROLLER	4
10.	60106968	PIN	2
11.	60103202	PIN	1
12.	60106281	PIN	2
13.	60106314	PIN	4
15.	60106380	SPACER	4
18.	72060795	CAP SCR 1/2-13X1-1/2 SH	12
19.	72060102	CAP SCR 1/2-13X5-1/2 HH	4
21.	72060581	SET SCR 3/8-16X3/4 SH	2
22.	72062107	NUT 1/2-13 CTR LOCK	4
26.	72063034	BUSHING 1X10GA	6
27.	72066125	RETAINING RING 1" HD	6
28.	71392277	DECAL-STAB PO(NOT SHOWN)	2
29.	72066178	COTTER PIN 1/8X1	8
30.	71392257	DECAL-STAB PD (NOT SHOWN, CUT IN HALF)	1
64.	60114701	ANGLE-STAB MTG RH	2
66.	72060186	CAP SCR 3/4-10X2-1/2	12
67.	72062114	NUT-3/4-10 SELF LOCKING	12

Auxiliary Stabilizer Kit, PO/PD Street Side (31714072-2)



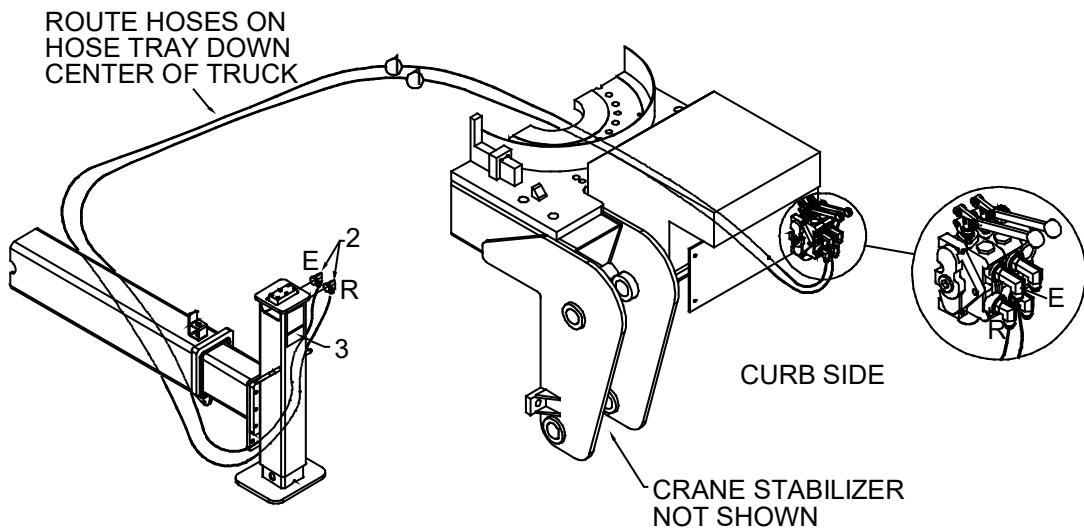
NOTE:

- 1 INSTALL 70399271 - DECAL-FULLY DEPLOYED - ON TOP OF STABILIZER BEAMS WHEN BEAMS ARE FULLY EXTENDED. DECAL MUST BE VISIBLE.

31714072 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	51395212	HOSE-FF .38 X 339" OAL (8-8)	2REF
2.	51395157	HOSE-FF .25X287.5" (4-4)	2REF
3.	51395158	HOSE-FF .25 X 14.5 (4-4)	4REF
REF	51715073	HOSE KIT (INCL 1-3)	
4.	72532690	ELBOW - MJIC / FJIC SW #4 #4	2
5.	72532768	TEE-MJIC .44-20 .25 TUBE	2
6.	72532779	ELBOW-MSTR/MJIC XLG #6 #8	2
7.	70392864	DECAL-WARNING, STAB, STAND CLEAR	1
9.	51715073	HOSE KIT (INCL 1-3)	REF
10.	70399271	DECAL-FULLY DEPLOYED	1
REV D 20111221			

Auxiliary Stabilizer Kit, PO/PD Curb Side (31714072-3)



31714072-3 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
1.	51395213	HOSE-FF .38 X 348 OAL (8-8)	2REF
2.	72532779	ELBOW-MSTR/MJIC XLG #6 #8	2
3.	70392864	DECAL-WARNING STAB STAND CLEAR	1
5.	51715073	HOSE KIT (INCL. 1)	REF
6.	70399271	DECAL-FULLY DEPLOY (PLACED ON TOP OF STABILIZER BEAM WHEN FULLY EXTENDED.)	1
REV. D 20111220			

CHAPTER 5

General Reference

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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 "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 (whichever 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 (whichever 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 (whichever 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.	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
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-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.	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
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.	
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)	

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

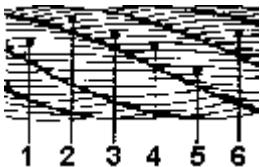
Deficiency / Recommendation / Corrective Action Report

DATE:	OWNER:	UNIT I.D. NUMBER:
GUIDELINES		
a A deficiency (X) may constitute a hazard. Deficiency must be corrected and/or faulty parts replaced before resuming operation.		
b Recommendations (R) should be considered for corrective actions. Corrective action for a particular recommendation depends on the facts in each situation.		
c Corrective actions (CA), repairs, adjustments, parts replacement, etc. are to be performed by a qualified person in accordance with all manufacturer's recommendations, specifications and requirements.		
NOTE: Deficiencies (X) listed must be followed by the corresponding corrective action taken (CA).		
X = DEFICIENCY	R = RECOMMENDATION	CA = CORRECTIVE ACTION TAKEN

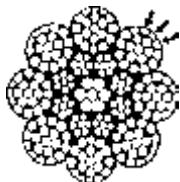
Wire Rope Inspection & Replacement

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

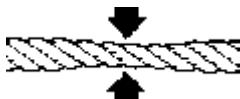
- a Corrosion can be cause for replacement. Any development of corrosion must be noted and monitored closely.
- b When there are either three broken wires in one strand or a total of six broken wires in all strands in any one rope lay.



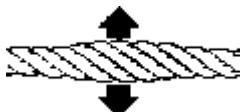
- c When flat spots on the outer wires appear and those outside wires are less than 2/3 the thickness of the unworn outer wire.



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



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



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



- g When the diameter is reduced from nominal size by 1/32" (0.8 mm) or more.



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



Hook Inspection

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

a DISTORTION

Bending / Twisting

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

Increased Throat Opening

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

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

b WEAR

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

c CRACKS, NICKS, GOUGES

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

d LATCH

Engagement, Damage & Malfunction

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

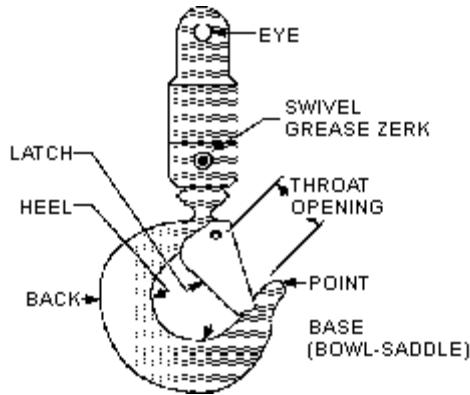
e HOOK ATTACHMENTS & SECURING MEANS

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

Holding Valve Inspection

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

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



Anti-Two-Block Device Inspection

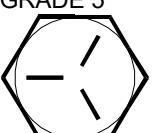
(See the operation, maintenance, and repair manual for this crane for a complete description.)

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

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

Thread Torque Chart (English)

FINE THREAD BOLTS (ENGLISH)					
SIZE	BOLT DIA.	GRADE 5 	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 	GRADE 8 		
(DIA-TPI)	(INCHES)	PLAIN	PLATED	(FT-LB)	(FT-LB)
		(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 torqueing. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue causing death or serious injury.

Thread Torque Chart (Metric)

FINE THREAD TORQUE CHART (METRIC)					
TIGHTENING TORQUE					
SIZE (DIA-TPI)	BOLT DIA. (INCHES)				
		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)				
		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

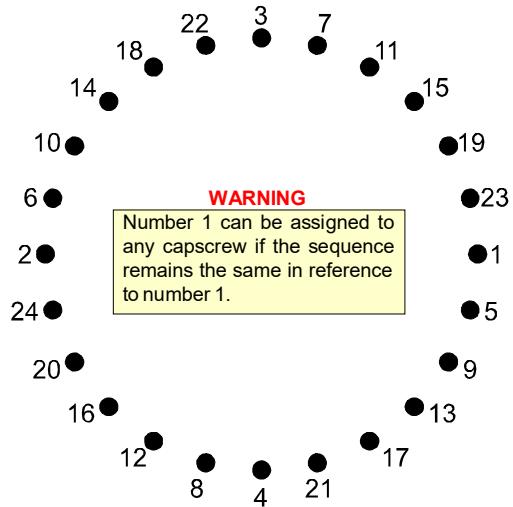
- 1 Tightening torques provided are midrange.
- 2 Consult bolt manufacturer's particular specifications, when provided.
- 3 Use flat washers of equal strength.
- 4 All torque measurements are given in kilogram-meters.
- 5 Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum 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 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 torqueing. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue causing death or serious injury.

Turntable Bearing Thread Tightening Sequence

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



TIGHTENING PROCEDURE

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

Turntable Bearing Inspection

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

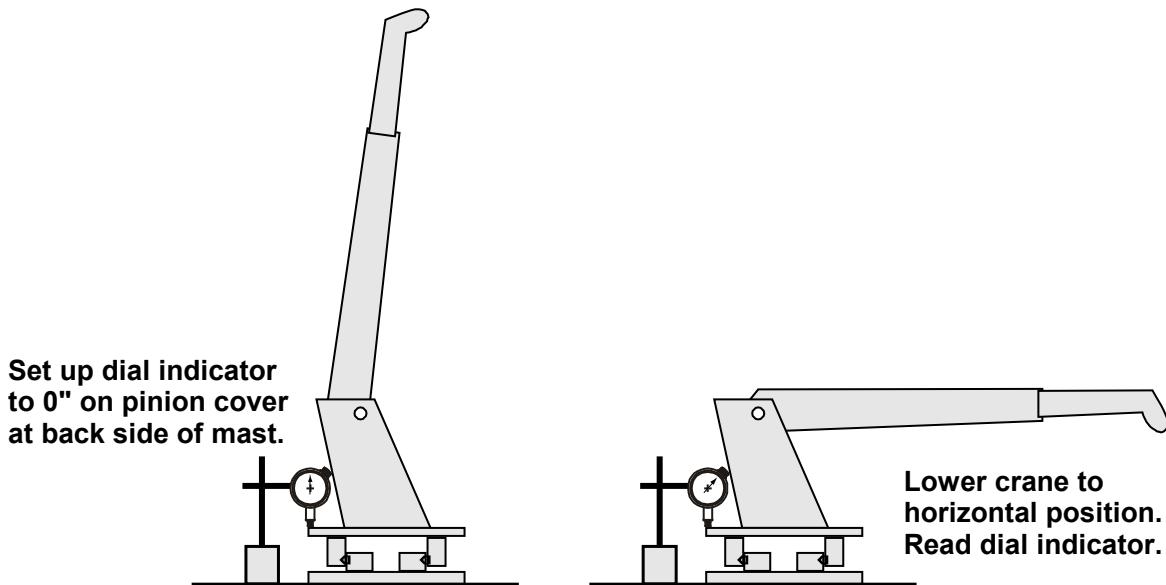
- 1 Metal particles present in the bearing lubricant.
- 2 Increased drive power required to rotate the crane.
- 3 Noise emitting from the bearing during rotation.
- 4 Rough rotation.
- 5 Uneven or excessive wear between the pinion gear and turntable gear.

If one or more of the above conditions exists, further inspection may be required. Limits are measured in "TILT" which is dependent on the internal clearances of the bearing. TILT is the most practical determination of a bearings' internal clearance once mounted on a crane. You can measure the tilt using the ***Turntable Bearing Tilt Test***. (see "Turntable Bearing Tilt Test" on page 124)

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

Turntable Bearing Tilt Test

- 1 Place crane in vertical position.
- 2 Set a dial indicator at 0 on the pinion cover plate at back side of mast.
- 3 Lower crane to the horizontal position.
- 4 Check and record the dial indicator change. It should not exceed the tilt measurement noted in the chart below.
- 5 Return the crane to the vertical position. The dial indicator should return to 0.



COMPARISON CHART - MEASURED TILT DIMENSION PER CRANE MODEL

NOTE: The tilt dimensions listed in this chart are service guidelines and do not, in themselves, require that the bearing be inspected.

If there is reason to suspect an excess of bearing wear **AND** the measured tilt dimension exceeds the dimension listed, remove the bearing for inspection.

IMT Crane, Loader or Tirehand Model	1007 1014/1014A 1015 2015/2020 2109 2820 3000 3016/3020 3203i 3816/3820 4004i 421/425 4300 5005i 5016/5020 6006i 6016/6020 6022 5525 / 6025 / 6625 EZ Hauler I, II EZ Hauler 3000 / 5500	5200 5200R 5217 5800 7020 7025 7200 7415 8025 9000	16000-I, II, III 32018 32027 32030 T30 T40	23516 14K160TH COMMANDER IV	1221R 1225R 8000L 9800 12916 13031 13034 14000 15000 18000 20017 8000L H1200 H1200RR T50
Ball Dia. (Ref)	.875" (22 mm)	1.00" (25 mm)	1.18 - 1.25" (30-32 mm)	1.5" (38 mm)	1.75" (44 mm)
Tilt Dim.	.060" (1.524 mm)	.070" (1.778 mm)	.075" (1.905 mm)	.085" (2.159 mm)	.090" (2.286 mm)