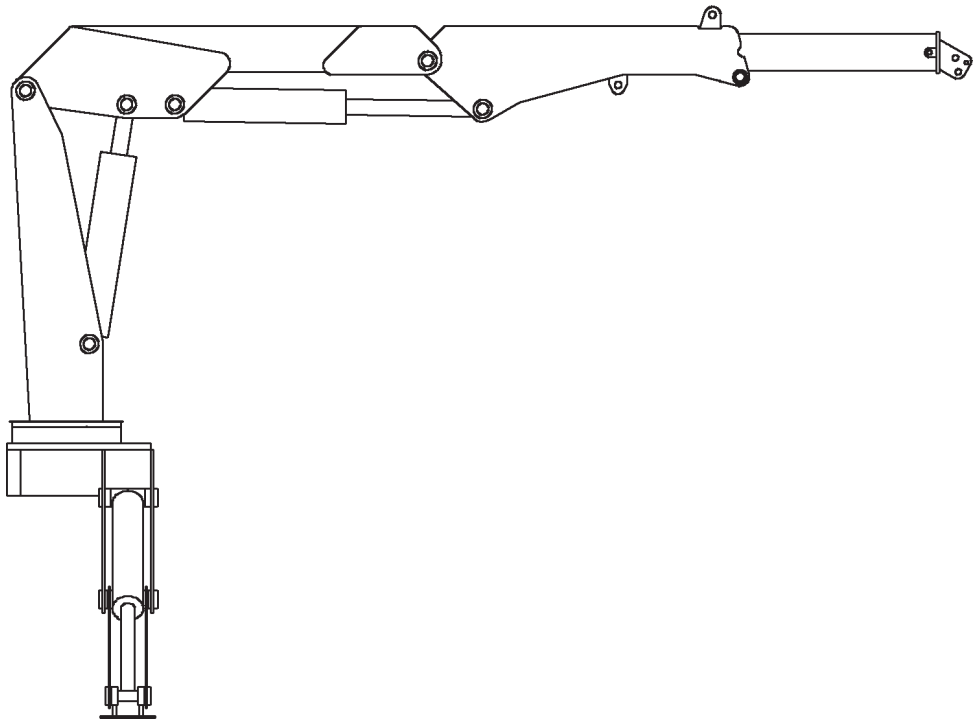
00012916:99900131: 20120322

Model 12916 Crane

Volume 2 - PARTS AND SPECIFICATIONS



IOWA MOLD TOOLING CO., INC.

BOX 189, GARNER, IA 50438-0189
TEL: 641-923-3711

MANUAL PART NUMBER 99900131

Iowa Mold Tooling Co., Inc. is an Oshkosh Corporation company.

00012916:99900131: --------

REVISIONS LIST

DATE	LOCATION	DESCRIPTION OF CHANGE
-	-	-
20011127	3-22 - 24	ECN 8794 - NEW HYD OVERLOAD VALVE BLOCK
	4-1, 14	ECN 8780 - WARRANTY
	3-26	CORRECTED INCORRECT PART NUMBER FOR DUMP VALVE. WAS 73054979, SHOULD BE 73055278.
20011210	3-25	ECN 8834 - NEW FLOOD LIGHT KIT
20020128	3-22,23	ITEM #11 WAS 72532679, NOW 72532141
20020318	3-5	MOBILTAC 375NC NOTE
	3-24	ADDED 31717514 CAP ALERT KIT
20020801	3-24	ECN 8958 - UPDATED 31717169, 31717514 CAP ALERT/SHUTDOWN KITS
	3-25	ECN 8972 - ADDED GROMMET & CLAMP TO FLOOD LIGHT KIT
20021022	3-26	ECN 9009 - NEW HYD SHUTDOWN VALVE
20021202	3-25	ECN 9064 - ADDED 51717977 LIGHT KIT
20030325	3-12,13	ECN 9127 - REPLACED 3B116513 WITH NEW CYLINDER, 51718065
20030520	3-16,17	ECN 9075 - CHANGED HOSE DIA. AND REDUCED FITTINGS ON VALVE BANK RETURN
20050712	3-17	ECN 9782-1 - CHANGE TO CLAMP PLATE ON 93708876
20060616	3-6,8,10,12	ECN 9832-2 - REVERSE CYLINDER CHANGE
20060714	2-5	ECN 10169 - CHANGED HYD FILTER RETURN ELEMENT PART
20061020	1-1,3-3	UPDATED OWNERSHIP STATEMENT, ADDED SERIAL TAG LOCATIONS
20070705	3-13	ECN 10299 - UPDATE TO 51718065
20071008	3-25	ECN 10425-ADD WASHERS TO 51717977
	3-14	ECN 10429 - CORRECTIONS TO HYD SHUTDOWN KIT 91703946
	3-17	ECN 10523 - HOSE CLAMP 72661642 WAS 72066516
20111221	THROUGHOUT	ECN 11628 - UPDATED STABILIZER WORDING, ADDED STAB. DEPLOY DECALS, CRANE LEVEL
	3-14,22,23	ECN 11621 - HYDRAULIC OVERLOAD KIT
20120322	3-6,9,32	ECN 11615 - CYLINDER REVISIONS, ADDED TETH RMT POT ADJUSTMENT TO MANUAL

INTRODUCTION

This volume deals with information applicable to your particular crane. For operating, maintenance and repair instructions, refer to Volume 1, OPERATION, MAINTENANCE AND REPAIR.

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

This manual is provided to assist you with ordering parts for your IMT crane. It also contains additional instructions regarding your particular installation.

It is the user's responsibility to maintain and operate this unit in a manner that will result in the safest working conditions possible.

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

In addition, it is also the user's responsibility to be aware of existing Federal, State and Local codes and regulations governing the safe use and maintenance of this unit. Listed below is a publication that the user should thoroughly read and understand.

ANSI/ASME B30.22
ARTICULATING BOOM CRANES
The American Society of Mechanical Engineers
United Engineering Center
345 East 47th Street
New York, NY 10017

Three means are used throughout this manual to gain the attention of personnel. They are NOTE's, CAUTION's and WARNING's and are defined as follows:

NOTE

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

CAUTION

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

WARNING

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

Treat this equipment with respect and service it regularly. These two things can add up to a safer working environment.

Read and familiarize yourself with the IMT OPERATOR'S CRANE SAFETY MANUAL before operating or performing any maintenance on your crane.

NOTES

SECTION 1. 12916 CRANE SPECIFICATIONS

NOTES

12916 CRANE SPECIFICATIONS

GENERAL SPECIFICATIONS

***CRANE RATING (ANSI B30.22)**	129,000 FT-LBS
***MAXIMUM CRANE RATING**	129,000 FT-LBS
HORIZONTAL REACH from centerline of rotation	16'-2"
HYDRAULIC EXTENSION	40"
MANUAL EXTENSION	NONE
VERTICAL REACH from mounting surface	23'-1"
VERTICAL REACH from ground / 41'' frame ht.	26'-6"
CRANE WEIGHT	6040 LBS
STABILIZER SPAN	15'-0"
STABILIZER PADS	12" X 19"
CRANE STORAGE HEIGHT from mounting surface	8'-2"
CRANE STORAGE HEIGHT from ground / 41'' frame ht.	11'-7"
****MOUNTING SPACE REQUIRED**	32"
ROTATIONAL TORQUE	16,200 FT-LBS
OPTIMUM PUMP CAPACITY	13 U.S. GPM
SYSTEM OPERATING PRESSURE	2300 PSI
OIL RESERVOIR CAPACITY	21 U.S. GALLONS
HOOK APPROACH - HORIZONTAL from centerline of rotation	5'-10"
HOOK APPROACH - VERTICAL from mounting surface	9'-8"

* Maximum Crane Rating (ft-lbs) is defined as that rated load (lbs) which when multiplied by its respective distance (ft) from centerline of rotation gives the greatest ft-lb value.

ANSI B30.22 Crane Rating (ft-lbs) = With all extensions retracted and inner plus outer boom in a horizontal position, rated load (lbs) X respective distance (ft) from centerline of rotation = nominal ft-lb value.

** Allow an additional 3'' between the cab and crane base for swing clearance.

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PERFORMANCE CHARACTERISTICS

CRANE ROTATION WITH TIREHAND:	370°	45 seconds
INNER BOOM ELEVATION:	-23° to +67°	25 seconds
OUTER BOOM ARTICULATION:	113°	19 seconds
EXTENSION BOOM:	40"	6 seconds
STABILIZER EXTENSION:	29-1/4"	40 seconds

POWER SOURCE

Integral-mounted hydraulic pump and PTO application. Other standard power sources may be utilized - minimum power required is 21 horsepower.

CYLINDER HOLDING VALVES

The holding sides of all standard cylinders are equipped with integral-mounted holding or counter-balance valves to prevent sudden cylinder collapse in case of hose or other hydraulic failure. The stabilizer cylinders have positive, pilot-operated holding valves that open only on command.

The inner cylinders have single pilot-operated counter balance valves while the outer and extension boom cylinders have double counter-balance valves. The counter-balance valve serves several functions. First, it is a holding valve. Secondly, it is so constructed that it will control the lowering function and allow that motion to be feathered while under load. Finally, if a hose breaks, the only oil loss will be that in the hose.

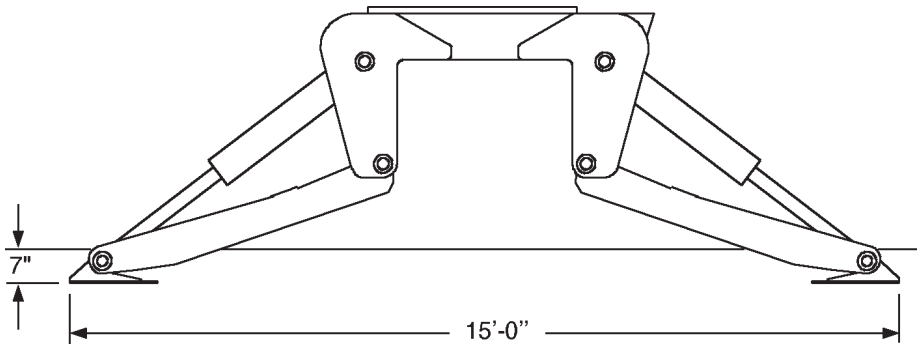
ROTATION SYSTEM

Rotation of the crane is accomplished through a turntable bearing, powered by a high torque hydraulic motor through a ring and pinion type spur gear train. Total gear reduction is 56.7 : 1.

HYDRAULIC SYSTEM

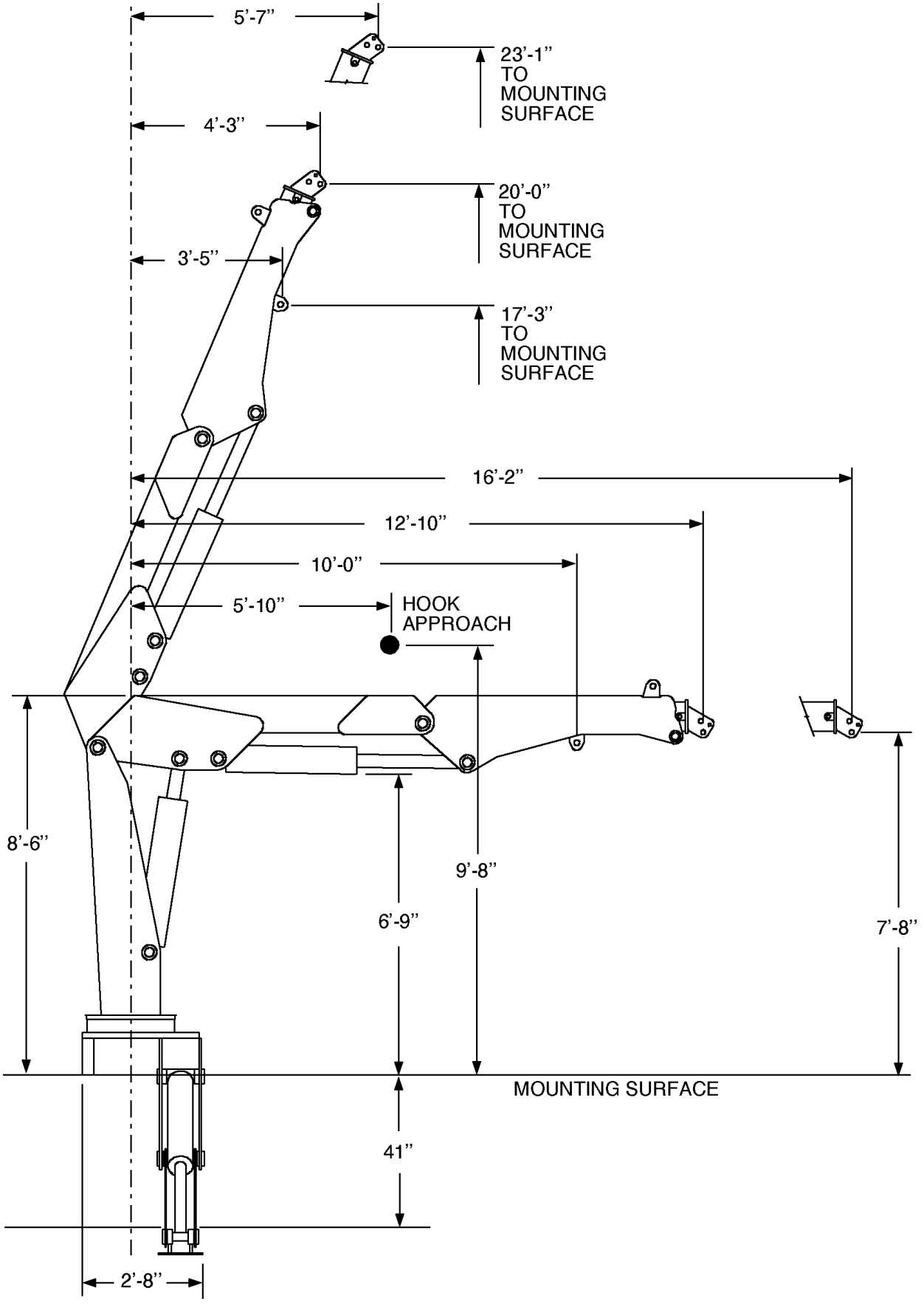
The hydraulic system is an open centered, full pressure system, requiring 13 GPM optimum oil flow, at 2300 PSI. Eight-spool, stack-type control valve, six of which are used for the standard crane and the remaining two are plugged, but easily adapted for additional optional features. Dual operational handles for six functions are located at both sides of crane for convenient operation. System includes hydraulic oil reservoir, suction-line strainer, pump, 8-section control valve, return-line filter and all hoses and fittings.

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



STABILIZER DIMENSIONS

GEOMETRIC CONFIGURATION



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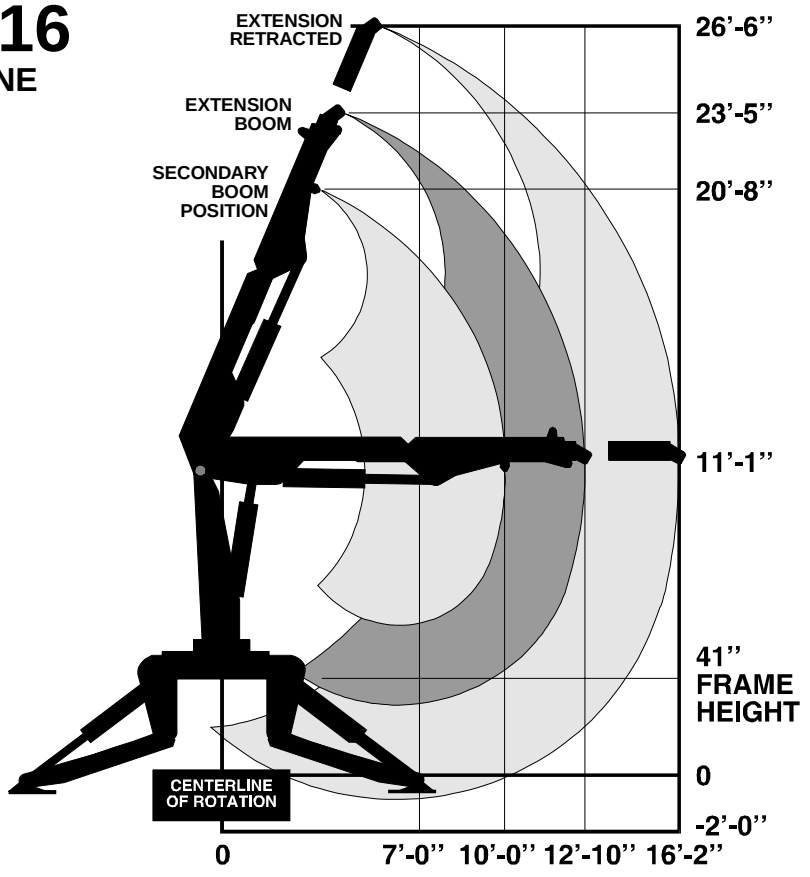
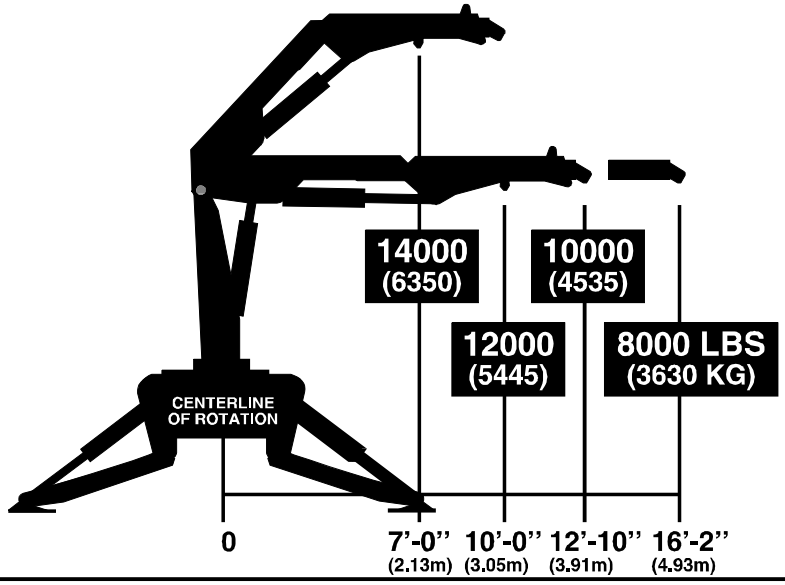
Capacities through geometric range are limited to those shown in horizontal position.

MODEL
12916
CRANE

- Loads shown are based on crane structural or hydraulic capability. Before lift is made, stability must be checked per SAE J765A.
- Working loads will be limited to those shown. Deduct the weight of load handling devices.
- Winch lifting capacity is limited to those shown - Maximum 4000 LBS for 1-part line.





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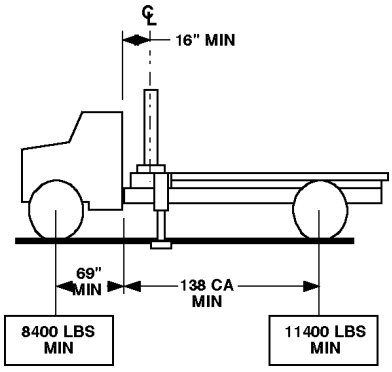
MINIMUM CHASSIS SPECIFICATIONS FOR STANDARD 12916 CRANE

Crane Mount	Behind Cab
Crane Working Area	360°
Chassis Style	Conventional Cab
Front Axle Rating (GAWR)	12000 lbs
Rear Axle Rating (GAWR)	Single Axle 21000 lbs
Wheelbase	207"
Cab-to-axle	138"
Outigger Width Required	15'-0"
RBM	1,664,000 in-lbs
Frame Section Modulus	26 cubic inches
Frame Yield Strength	50,000 psi
Minimum Finished Unit Weight To Maintain Vehicle Stability	
Front Axle	* 8400 lbs
Rear Axle	*11400 lbs
Total Finished Unit Wt.	19800 lbs

* Allows lifting full capacity load in a 360° arc when crane is installed immediately behind the 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.

FIGURE A.
360° WORKING AREA



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

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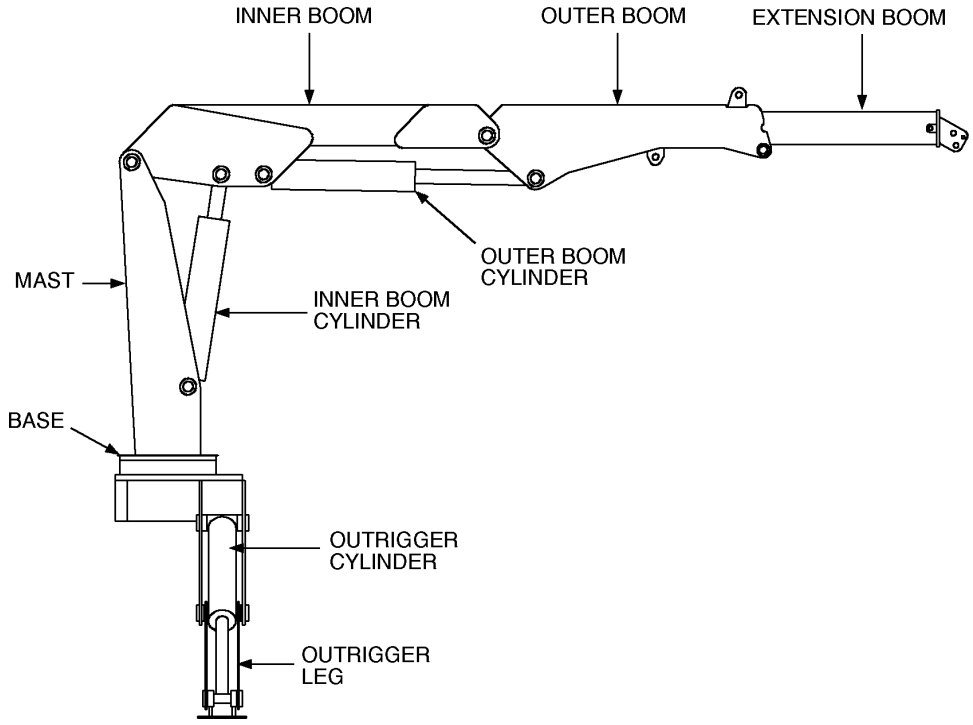
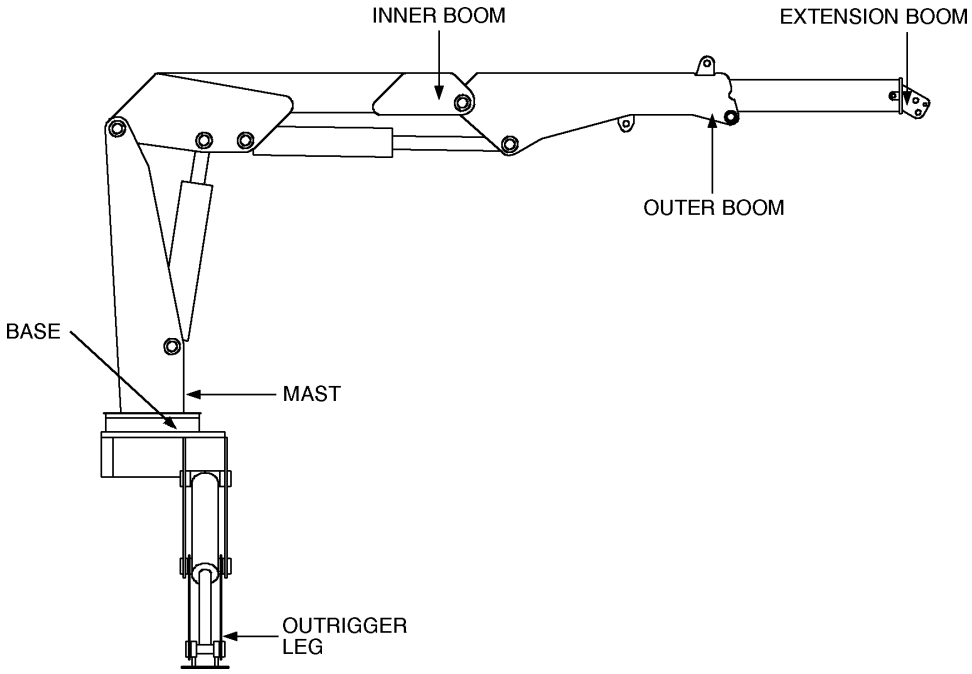
SECTION 2. 12916 CRANE REFERENCE

NOTES

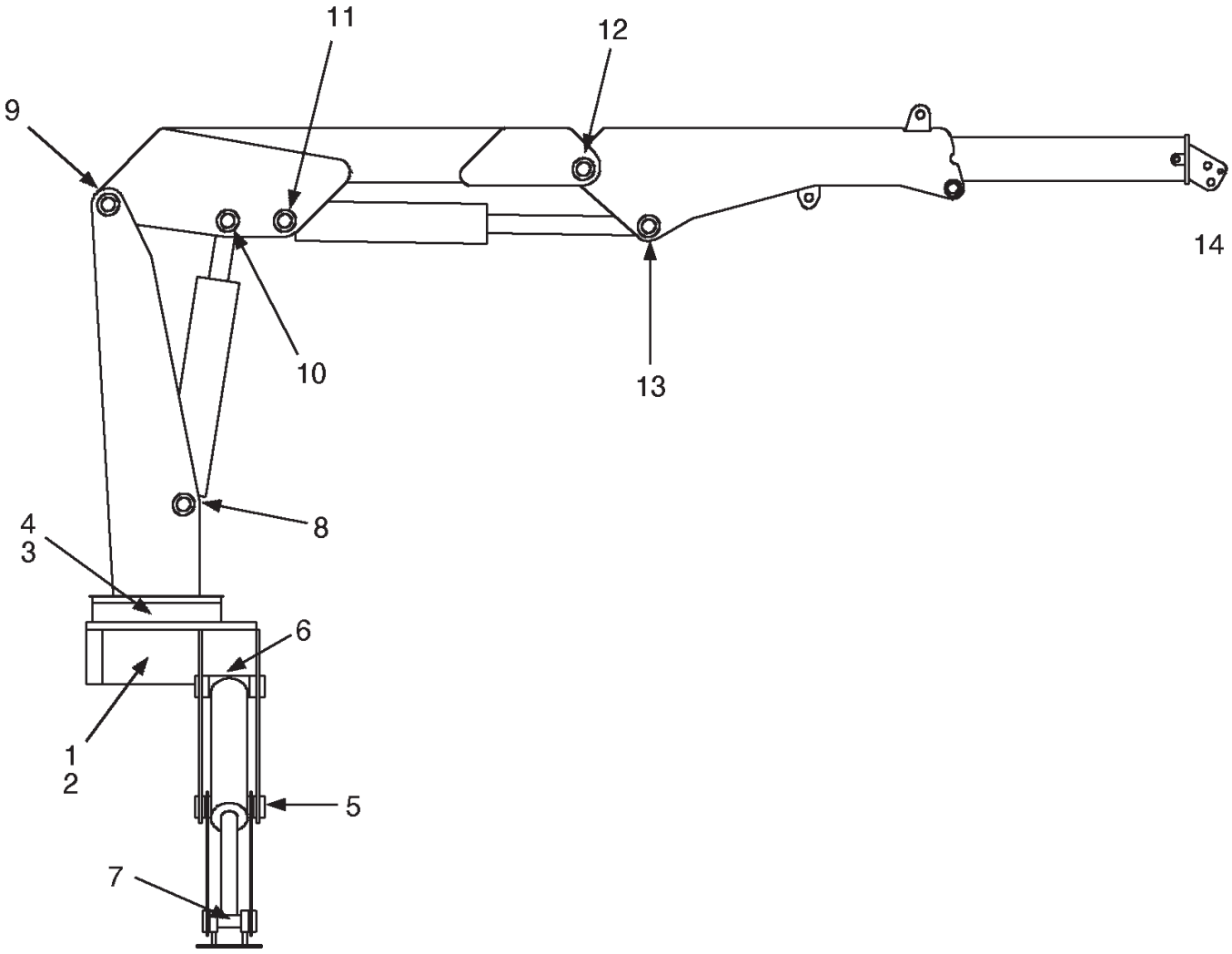


MAJOR CRANE ASSEMBLIES



WELDMENT PART NUMBER LOCATIONS

GREASE ZERK LOCATIONS & LUBRICANT REQUIREMENTS



ITEM	LOCATION DESCRIPTION	LUBRICANT	FREQUENCY
1.	TURNTABLE/BEARING GREASE EXTENSION *ROTATE CRANE WHILE GREASING	SHELL ALVANIA 2EP OR SHELL RETINAX “A”	WEEKLY
2.	DRIVE GEAR GREASE EXTENSION		
3.	PINION GEAR		
4.	PINION COVER		
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 work loads and moderate weather conditions. Under severe operating conditions, lubrication should be performed more frequently. See Volume 1; Operation, Maintenance and Repair for additional lubrication requirements.

RECOMMENDED SPARE PARTS LIST

1 YEAR SUPPLY
12916 CRANE
FOR MANUAL: 99900131

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 NO.	PART NO.	DESCRIPTION	QTY	CODE	SHELF LIFE (MO)	ORDER QTY
41703560.01.19970625	**BASE & STABILIZER ASM**						
	4	7BF81225	BUSHING	8	W		
	13	70034295	BEARING	1	W		
	35	60020124	BUSHING	1	W		
	36	60020122	BUSHING	1	W		
	38	60020120	BUSHING	1	W		
	39	60020121	BUSHING	1	W		
	58	60030176	WEAR PAD	2	W		
3C283801.01.19950419	**STABILIZER CYLINDER**						
	3	6H060030	HEAD	1	W		
	4	6I060200	PISTON	1	W		
	5	73054304	COUNTERBALANCE VALVE	4	C		
	7	9C242432	SEAL KIT	2	W		
	21	7BF81225	BUSHING	14	W		
41701371.01.19940506	**INNER BOOM ASM**						
	3	60020167	BUSHING	3	W		
3C194614.01.19940506	**INNER CYLINDER**						
	4	6HX70035	HEAD	1	W		
	5	6I070218	PISTON	1	W		
	8	73054242	VALVE 25GPM	1	C		
	9	9C282835	SEAL KIT	1	W		
	21	7BF81025	BUSHING	2	W		
	22	7BF81225	BUSHING	6	W		
	23	7BF81225	BUSHING	4	W		
41701372.01.19970303	**OUTER BOOM ASM**						
	3	7BF81225	BUSHING	6	W		
	9	60030015	WEAR PAD	2	W		
	17	60030181	WEAR PAD	1	W		
3C195613.01.19940506	**OUTER CYLINDER**						
	1	7BF81225	BUSHING	3	W		
	5	6H065035	HEAD	1	W		
	10	73054242	VALVE 25GPM	1	C		
	11	7BF81225	BUSHING	4	W		
	14	6I065200	PISTON	1	W		
	20	9C262832	SEAL KIT	1	W		
41070640.01.19940506	**EXTENSION BOOM**						
	7	60107453	SWIVEL LINK	1	W		
	8	70073725	HOOK 7 TON	1	W		
	11	60030121	WEAR PAD	1	W		
3B116513.01.19940608	**EXTENSION CYLINDER**						
	3	6I030106	PISTON	1	W		
	4	6H030020	HEAD	1	W		
	5	73054004	VALVE	1	C		
	9	9C121617	SEAL KIT	1	W		
91703946.01.19970303	**HYDRAULIC KIT**						
	9	73054370	COUNTERBALANCE VALVE	1	C		
	REF	70048148	SUCTION FILTER ELEMENT	6	P		
	REF	73052092	RETURN FILTER ELEMENT	6	P		

NOTES

INSTALLATION

GENERAL

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 reposition crane until mounting surface is level.

2. Install the truck frame support so that the tie-down studs pass through the supports(Figure below). 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 3" (7.6cm). 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. 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-lbs (116 kg-m). When torquing the mounting hardware the following precautions must be followed:

A. Never use lock washers.

B. Hardened washers must be used, and 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 disulphite collodial 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.

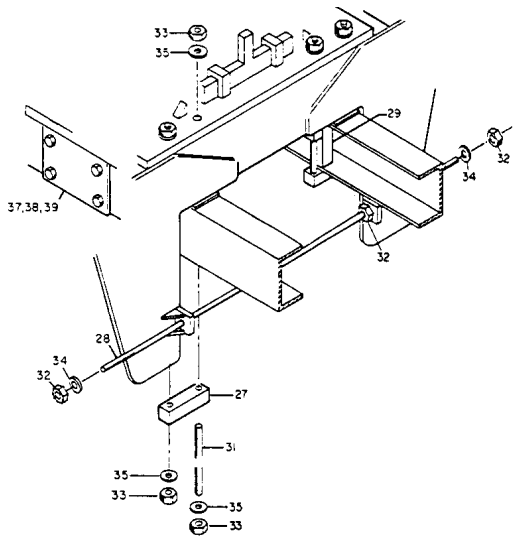
CAUTION

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. LBS. (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.

4. Install the tie-plate (Figure C-1) 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-lbs (28 kg-m). Weld the tie-plate to the crane base with 3/8" continuous fillet weld.

5. Install the two tension bars with nuts and washers as shown. Tighten the outside nuts first to about 200 ft-lbs (28 kg-m) to preload the tension bar. Then tighten the inner nuts to 466 ft-lbs (65 kg-m).

6. Touch up paint on crane and chassis as necessary.



ITEM	DESCRIPTION	ITEM	DESCRIPTION
27.	CLAMP BLOCK	33.	LOCK NUT
28.	TENSION BAR	34.	LOCK WASHER
29.	FRAME SUPPORT	35.	WASHER
31.	TIE-DOWN STUD	37.	TIE-PLATE
32.	NUT	38.	CAP SCREW
		39.	LOCK NUT

CRANE INSTALLATION

HYDRAULIC INSTALLATION

To install the hydraulic hoses, fittings, etc.:

1. Plumb the suction line filter as shown in Figure below.

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.

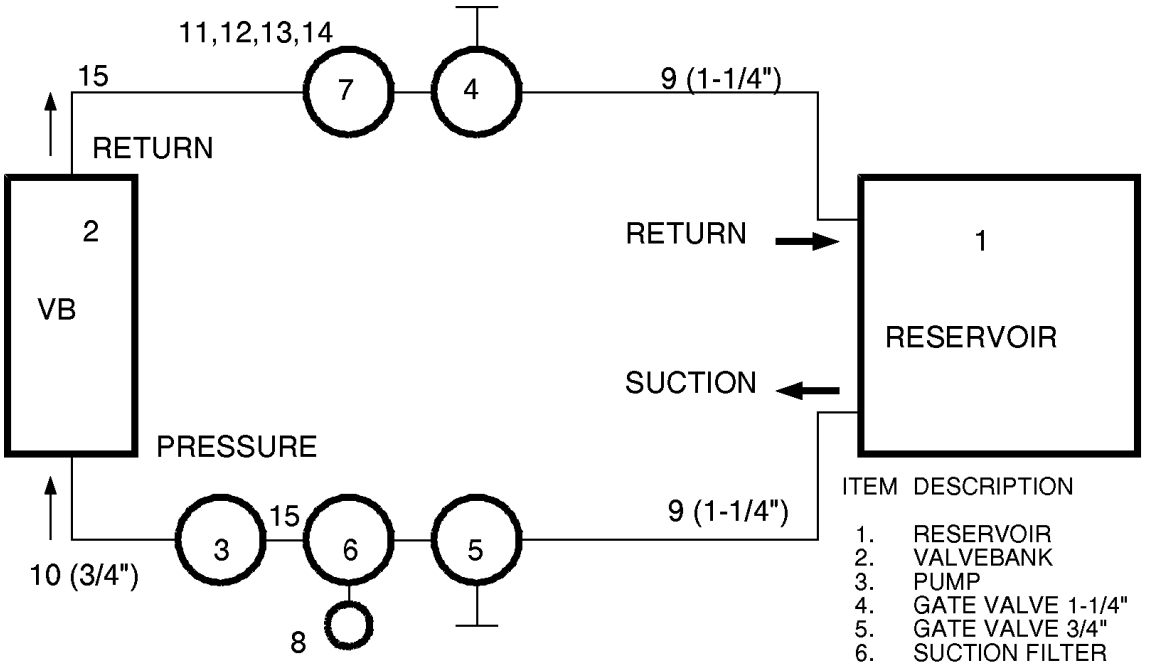
CAUTION

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.



ITEM	DESCRIPTION
1.	RESERVOIR
2.	VALVEBANK
3.	PUMP
4.	GATE VALVE 1-1/4"
5.	GATE VALVE 3/4"
6.	SUCTION FILTER
7.	RETURN FILTER
8.	VACUUM GAUGE
9.	HOSE 1-1/4" ID
10.	HOSE 3/4" ID
11.	OIL FILTER BRACKET
12.	MOUNTING SCREW
13.	MOUNTING NUT
14.	LOCK WASHER
15.	HOSE 1-1/4" ID

HYDRAULIC INSTALLATION

SECTION 3. REPLACEMENT PARTS 12916 CRANE

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 REPAIR section in Volume 1. 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 IN VOLUME 1. PAY PARTICULAR ATTENTION TO STATEMENTS MARKED WARNING, CAUTION, OR NOTE IN THAT SECTION. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN DAMAGE TO THE EQUIPMENT, PERSONAL INJURY, OR DEATH.

CRANE IDENTIFICATION

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

Iowa Mold Tooling Co., Inc.
Box 189, Garner, IA 50438-0189
Telephone: 641-923-3711
Product 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.

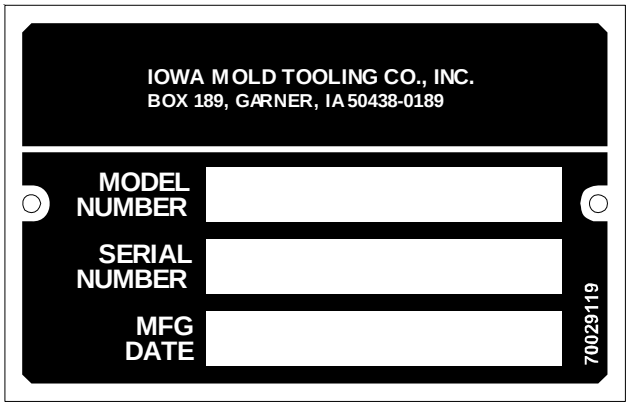
WELDMENT IDENTIFICATION

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 Section 2.

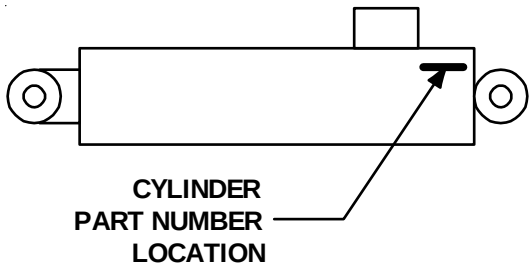
ORDERING REPAIR PARTS

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.



SERIAL NUMBER PLACARD



CYLINDER PART NUMBER LOCATION

BASE & STABILIZER ASM (41703560-1)

ITEM	PART NO.	DESCRIPTION	QTY
1.	3C283801	STABILIZER CYLINDER	2
2.	52701412	STABILIZER PAD	2
3.	52703540	STABILIZER LEG (INCL:4)	2
4.	7BF81225	BUSHING(PART OF 3)	8REF
5.	52703542	BASE (INCL:35,36,38,39,40)	1
6.	52703565	RESERVOIR 21GAL(PART OF 66)	1REF
7.	52703694	PIN	2
8.	52703695	PIN	4
9.	53000710	GREASE EXTENSION 29"	1
10.	53000713	GREASE EXTENSION 38"	1
11.	60103367	COVER	1
12.	60105964	PINION SUPPORT (INCL:13)	1
13.	70034295	BEARING (PART OF 12)	1REF
14.	60106193	GUARD	1
15.	60106332	PIN RETAINER PLATE	6
16.	72053301	COUPLING 1/8NPT	2
17.	72053508	ZERK 1/8NPT	8
18.	72060004	CAP SCR 1/4-20X1 HHGR5	2
19.	72060833	CAP SCR 5/16-18X3/4 SLFTPG	6
20.	72060147	CAP SCR 5/8-11X1 HHGR5	6
21.	72063003	WASHER 3/8 WRT	2
22.	72063049	WASHER 1/4 LOCK	2
23.	72063050	WASHER 5/16 LOCK	8
24.	72063117	WASHER 9/16 HARDENED GR8	6
25.	72531550	BARB NIPPLE (PART OF 66)	2REF
26.	72532261	SIGHT GAUGE (PART OF 66)	1REF
27.	72601144	CAP SCR 9/16-12X2 HHGR8	4
28.	73014671	FILL CAP(PART OF 66)	1REF
29.	73052001	PLUG 3/4NPT(PART OF 66)	1REF
30.	73141276	FILL SCREEN (PART OF 66)	1REF
31.	60118802	VB COVER-TOP	1
32.	72063002	WASHER 5/16 WRT	4
33.	72060857	CAP SCR 5/16-18X5/8 SLFTPG	4
34.	73051223	MOTOR	1
35.	60020124	BUSHING (PART OF 5)	1REF
36.	60020122	BUSHING (PART OF 5)	1REF
37.	60020123	PINION GEAR SPACER	1
38.	60020120	BUSHING (PART OF 5)	1REF
39.	60020121	BUSHING (PART OF 5)	1REF
40.	71056074	DRIVE GEAR (PART OF 5)	1REF
41.	71056073	PINION GEAR	1

CONTINUED

42.	71056273	GEAR-BEARING	1
43.	71056072	INTERMEDIATE GEAR	1
44.	60010844	GREASE PLATE	1
45.	60106032	STUD 1/2-13X2	2
46.	72601148	CAP SCR 7/8-9X3 HHGR8	23
47.	72063115	WASHER 7/8 HARDENED GR8	23
48.	72060092	CAP SCR 1/2-13X1-1/4 HHGR5	2
49.	72063053	WASHER 1/2 LOCK	2
50.	72062080	NUT 1/2-13 LOCK	2
51.	72063039	MACH BUSHING 2 X 10GA	1
52.	72066095	RETAINING RING 2"	1
53.	72053240	PIPE PLUG 1/8NPT	1
54.	70034288	EDGE LINER	2
55.	71056374	BRAKE	1
56.	72601037	CAP SCR 9/16-12X4-1/2 HHGR8	2
58.	60030176	WEAR PAD	2
59.	52706739	CYLINDER GUARD	2
60.	72060836	CAP SCR 1/4-20X3/4 FLHD SOC	4
61.	72063051	WASHER 3/8 LOCK	4
62.	72060044	CAP SCR 3/8-16X3/4 HH GR5	4
63.	72053281	ELBOW 1/8NPT 90°	1
64.	72053249	PIPE PLUG (PART OF 66)	1REF
65.	72060023	CAP SCR 5/16-18X3/4 HHGR5	2
66.	51714508	RESERVOIR ASM-21GAL (INCL: 6,25,26,28-30,64)	1REF
	99903611	HYD SHUTDOWN INSTR	1REF

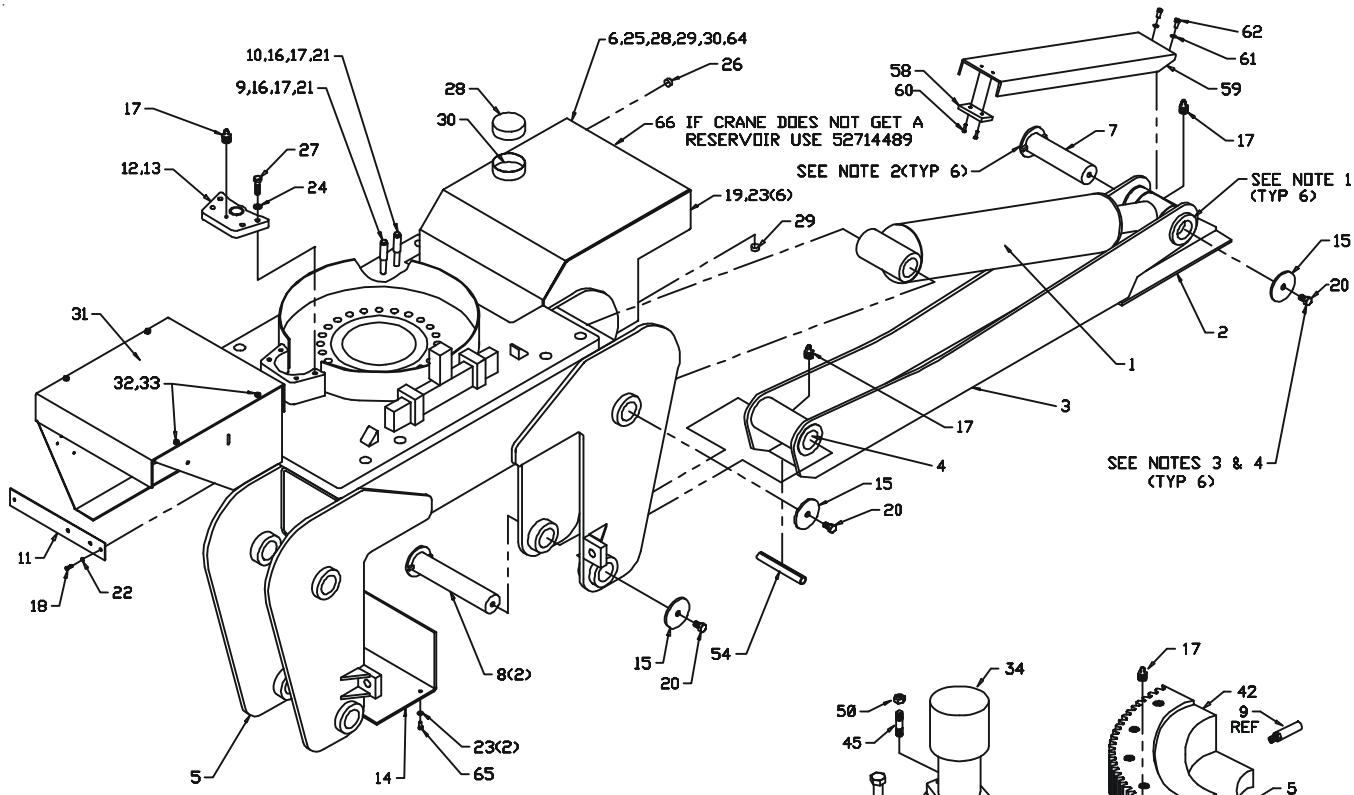
WARNING

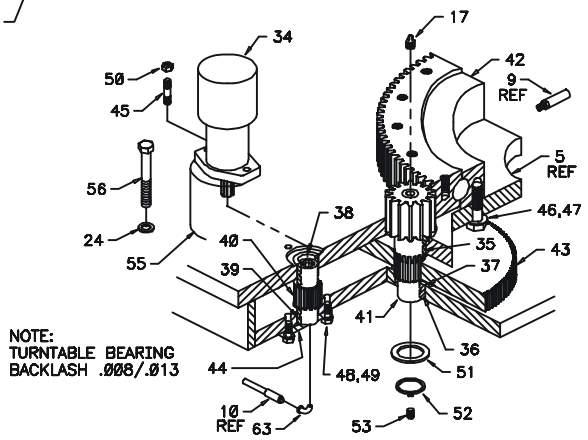
ANYTIME A GEAR-BEARING BOLT IS REMOVED, IT MUST BE REPLACED WITH A NEW BOLT OF THE IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE, CAUSING SERIOUS INJURY OR DEATH.

NOTE

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

BASE & STABILIZER ASM (41703560-2)





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. IF REQUIRED SHIM PIN RETAINING PLATES FLUSH (-0/+0.06) WITH OUTSIDE OF COLLAR USING 0.75 FLAT WASHERS AS REQUIRED.
4. CLEAN/PRIMER ALL PIN RETAINING PLATE CAP SCREWS AND APPLY A SERVICEABLE THREAD LOCKER TO A MINIMUM OF THREE THREADS. TORQUE PIN RETAINING PLATE CAP SCREWS AS FOLLOWS:

   0.75-10 CAP SCREW (GR5 PLATED) - 200 FT-LBS.
   0.63-11 CAP SCREW (GR5 PLATED) - 115 FT-LBS.

APPLY MOBILTAC 375NC LUBRICANT (OR EQUIVALENT) TO THE EXTERNAL TEETH OF THE TURNTABLE BEARING AND PINION GEAR.

STABILIZER CYLINDER (3C283801)

ITEM	PART NO.	DESCRIPTION	QTY
1.	4C283801	CASE (INCL:19-21)	1
2.	4G283800	ROD (INCL:20&21)	1
3.	6H060030	HEAD	1
4.	6I060200	PISTON	1
5.	73054304	COUNTERBALANCE VALVE	2
6.	6C075030	STOP TUBE 3/4"	1
7.	9C242432	SEAL KIT (INCL:8-18)	1
8.	7Q10P358	BACK-UP RING (PART OF 7)	1REF
9.	7Q072358	O-RING (PART OF 7)	1REF
10.	7T2N4032	ROD WEAR RING (PART OF 7)	1REF
11.	7T2N8032	ROD WEAR RING (PART OF 7)	1REF
12.	7R546030	ROD SEAL (PART OF 7)	1REF
13.	7R14P030	ROD WIPER (PART OF 7)	1REF
14.	7T65I060	PISTON RING (PART OF 7)	2REF
15.	7Q072253	O-RING (PART OF 7)	1REF
16.	7T66P060	PISTON SEAL (PART OF 7)	1REF
17.	7T61N200	LOCK RING SEAL (PART OF 7)	1REF
18.	60138277	STOP TUBE (PART OF 7)	1REF
	(WAS 6A025030 WAFER LOCK)		
19.	7PNPXT02	PIPE PLUG 1/8NPT(PART OF 1)	4REF
20.	72053507	ZERK 1/4-28 (PART OF 1&2)	4REF
21.	7BF81225	BUSHING (PART OF 1&2)	7REF
22.	60125699	PIN-LOCKING TUBE	1

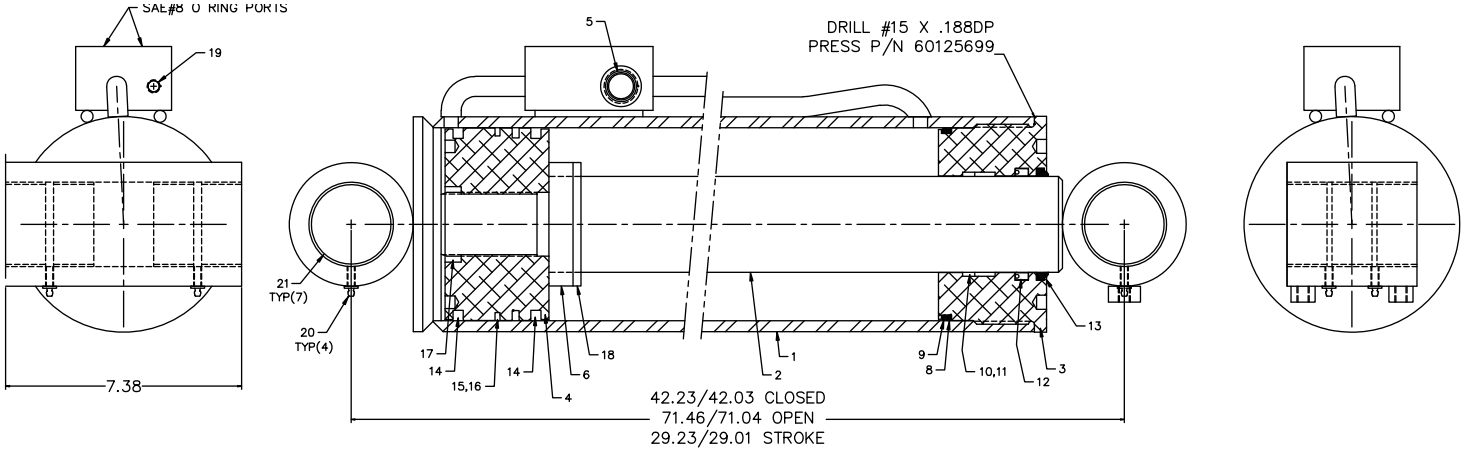
NOTE

IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

APPLY “LUBRIPLATE #630-2” MEDIUM HEAVY,MULTI-PURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.

USE “NEVER-SEEZ” OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.

ITEM #18,, STOP TUBE, REPLACES 6A025030 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.

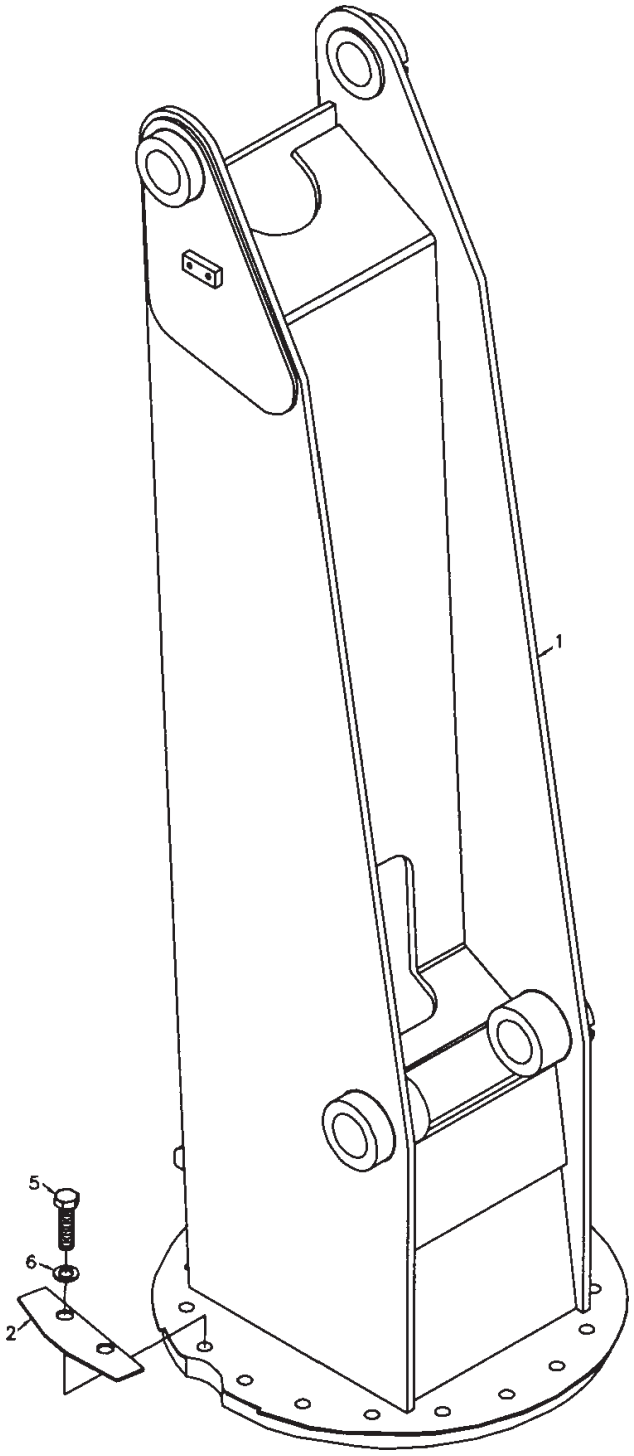


MAST ASM (41701370)

ITEM	PART NO.	DESCRIPTION	QTY
1.	52701338	MAST	1
2.	60104247	PINION COVER	1
3.	70029119	SER NO. PLACARD(NOT SHWN)	1
5.	72060209	CAP SCR 3/4-10X2-3/4 HHGR8	18
6.	72063116	WASHER 3/4 HARDENED GR8	18
7.	72066340	POP RIVET 1/8X3/8 (NOT SHWN)	2

WARNING

ANYTIME A GEAR-BEARING BOLT IS REMOVED, IT MUST BE REPLACED WITH A NEW BOLT OF THE IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE, CAUSING SERIOUS INJURY OR DEATH.

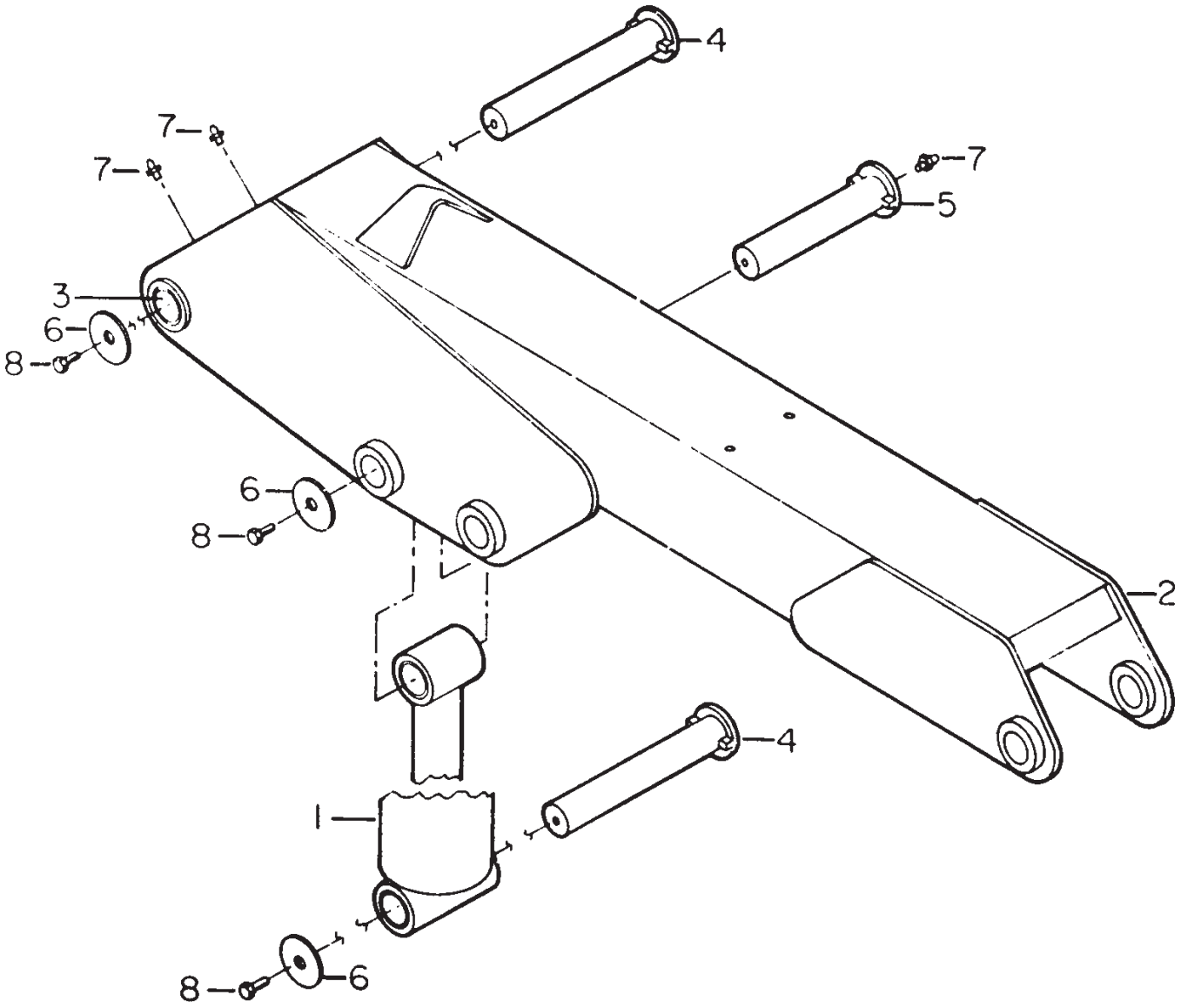


INNER BOOM ASM (41701371)

ITEM	PART NO.	DESCRIPTION	QTY
1.	3C194614	INNER CYLINDER	1
2.	52701342	INNER BOOM (INCL:3)	1
3.	60020167	BUSHING (PART OF 2)	3REF
4.	52703697	PIN	2
5.	52703699	PIN	1
6.	60106332	PIN RETAINER PLATE	3
7.	72053508	ZERK 1/8NPT	3
8.	72060147	CAP SCR 5/8-11X1 HHGR5	3

NOTE

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



INNER CYLINDER (3C194614)

ITEM	PART NO.	DESCRIPTION	QTY
1.	4C194611	CASE (INCL:20,23)	1
2.	4G194610	ROD (INCL:21,22)	1
3.	6C075035	STOP TUBE	1
4.	6HX70035	HEAD	1
5.	6I070218	PISTON	1
6.	73054242	VALVE-CBAL 25 GPM	1
7.	9C282835	SEAL KIT (INCL:8-17,20)	1
8.	60138278 (WAS 6A025035)	STOP TUBE (PART OF 7)	1REF
9.	7Q072259	O-RING (PART OF 7)	1REF
10.	7T66P070	PISTON SEAL (PART OF 7)	1REF
11.	7T65I070	PISTON RING (PART OF 7)	2REF
12.	7T61N218	LOCK RING SEAL (PART OF 7)	1REF
13.	7R14P035	ROD WIPER (PART OF 7)	1REF
14.	7Q072363	O-RING (PART OF 7)	1REF
15.	7Q10P363	BACKUP RING (PART OF 7)	1REF
16.	7R546035	ROD SEAL (PART OF 7)	1REF
18.	7BF81025	BUSHING (PART OF 2)	2REF
19.	7BF81225	BUSHING (PART OF 1 & 2)	6REF
20.	60125699	PIN-LOCK TUBE (PART OF 7)	1REF
21.	7PNPXT02	PLUG-PIPE SOC HD (PT OF 1)	3REF
22.	A31-7-153	PAINT MASK	1

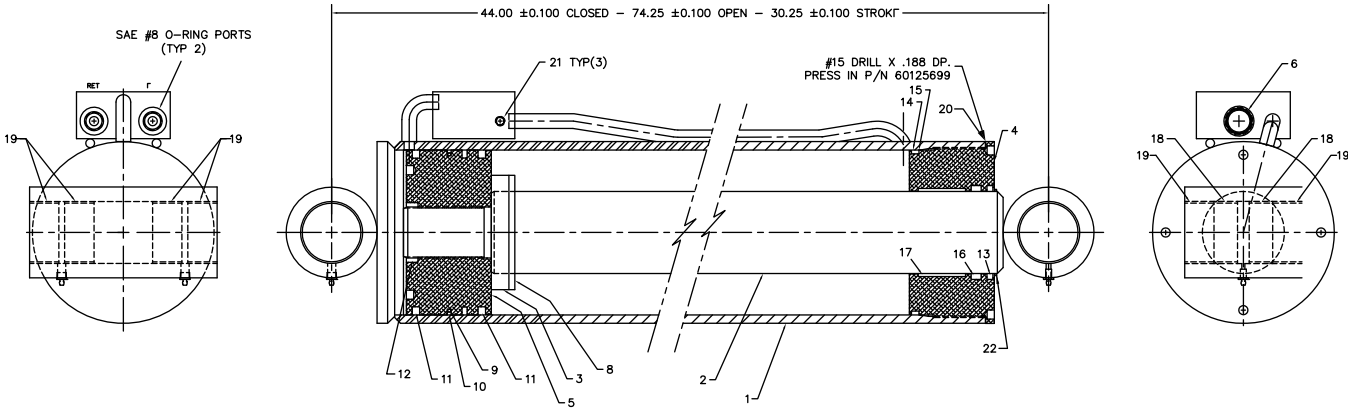
NOTE

IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

APPLY “LUBRIPLATE #630-2” MEDIUM HEAVY,MULTI-PURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.

USE “NEVER-SEEZ” OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.I

ITEM #8, STOP TUBE, REPLACES 6A025035 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.

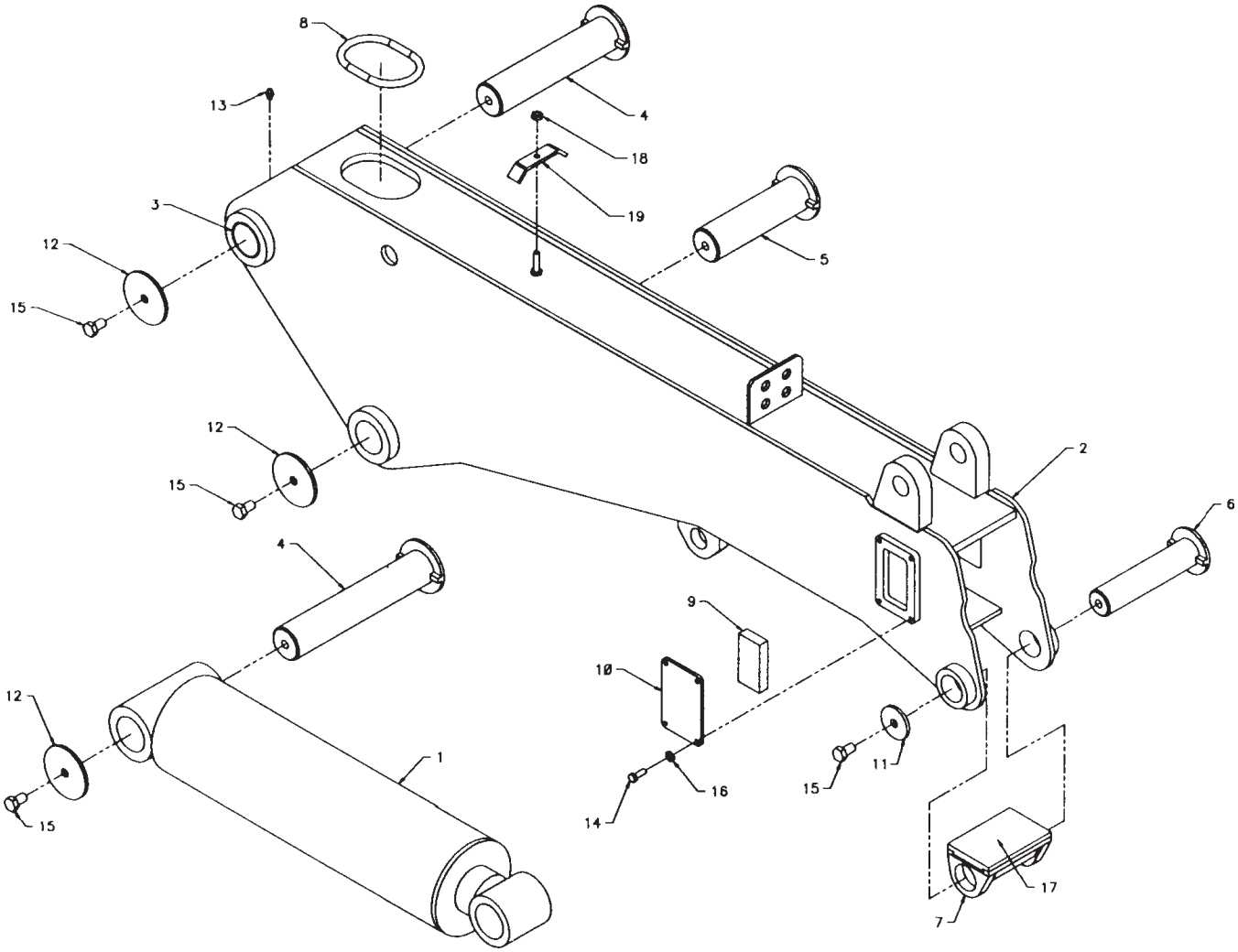


OUTER BOOM ASM (41701372)

ITEM	PART NO.	DESCRIPTION	QTY
1.	3C195613	OUTER CYLINDER	1
2.	52701352	OUTER BOOM (INCL:3)	1
3.	7BF81225	BUSHING (PART OF 2)	6REF
4.	52703698	PIN	2
5.	52703749	PIN	1
6.	52703767	PIN	1
7.	51706949	TRUNNION	1
8.	70034288	EDGE LINER	1
9.	60030015	WEAR PAD	2
10.	60104191	RETAINER PLATE	2
11.	60106331	PIN RETAINER PLATE	1
12.	60106332	PIN RETAINER PLATE	3
13.	72053508	ZERK 1/8NPT	1
14.	72060044	CAP SCR 3/8-16X3/4 HHGR5	8
15.	72060147	CAP SCR 5/8-11X1 HHGR5	4
16.	72063051	WASHER 3/8 LOCK	8
17.	60030181	WEAR PAD	1
18.	72062103	NUT 3/8-16 LOCK	1
19.	60010118	HOSE CLAMP	1

NOTE

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



OUTER CYLINDER (3C195613)

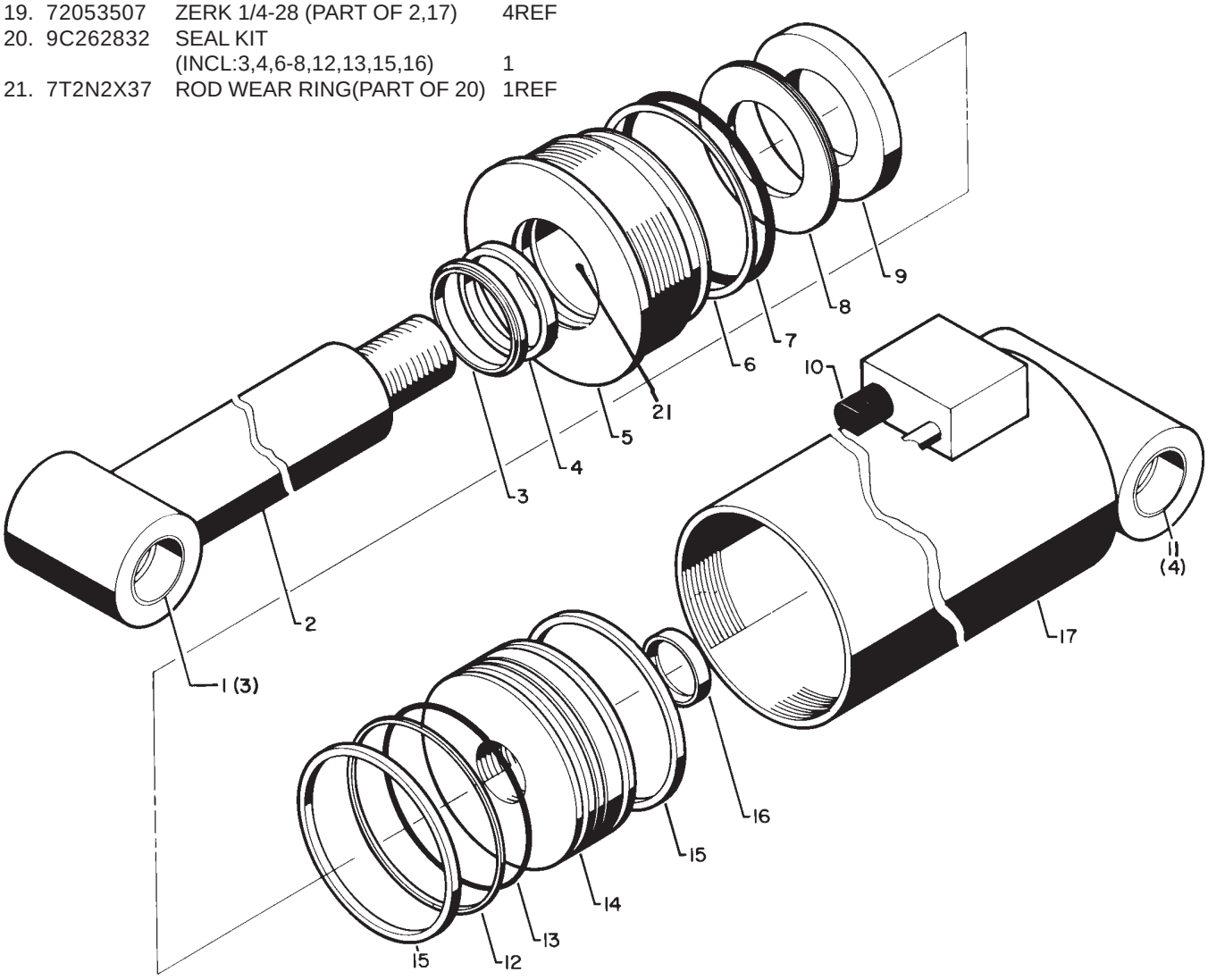
ITEM	PART NO.	DESCRIPTION	QTY
1.	7BF81225	BUSHING (PART OF 2)	3REF
2.	4G195611	ROD (INCL:1)	1
3.	7R14P035	ROD WIPER (PART OF 20)	1REF
4.	7R546035	ROD SEAL (PART OF 20)	1REF
5.	6H065035	HEAD	1
6.	7Q10P361	BACK-UP RING (PART OF 20)	1REF
7.	7Q072361	O-RING (PART OF 20)	1REF
8.	6A025035	WAFER LOCK (PART OF 20)	1REF
9.	6C075035	STOP TUBE	1
10.	73054242	VALVE 25GPM	1
11.	7BF81225	BUSHING (PART OF 17)	4REF
12.	7T66P065	PISTON SEAL (PART OF 20)	1REF
13.	7Q072257	O-RING (PART OF 20)	1REF
14.	6I065200	PISTON	1
15.	7T65I065	PISTON RING (PART OF 20)	2REF
16.	7T61N200	LOCK RING SEAL (PART OF 20)	1REF
17.	4C195611	CASE (INCL:11,18)	1
18.	7PNPXT02	PIPE PLUG 1/8NPT(PART OF 17)	3REF
19.	72053507	ZERK 1/4-28 (PART OF 2,17)	4REF
20.	9C262832	SEAL KIT (INCL:3,4,6-8,12,13,15,16)	1
21.	7T2N2X37	ROD WEAR RING(PART OF 20)	1REF

NOTE

IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

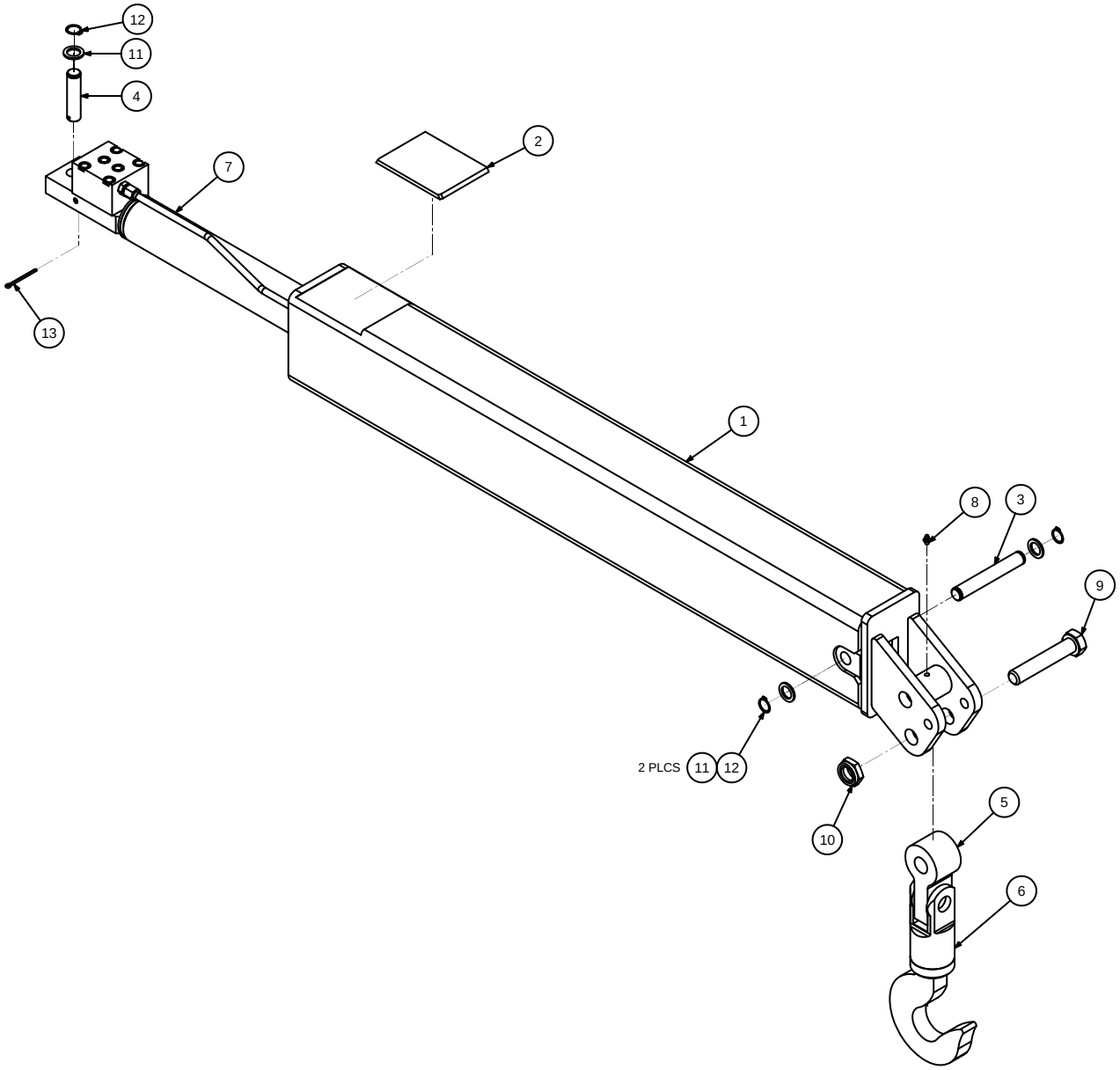
APPLY “LUBRIPLATE #630-2” MEDIUM HEAVY,MULTI-PURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.

USE “NEVER-SEEZ” OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.



EXTENSION BOOM (41070640)

ITEM	PART NO.	DESCRIPTION	QTY
1.	52070645	BOOM-EXT WLDMT	1
2.	60030121	WEAR PAD	1
3.	60101874	PIN	1
4.	60101905	PIN	1
5.	60107453	SWIVEL LINK	1
6.	70073725	HOOK-SWVL	1
7.	51718065	CYLINDER	1
	(WAS 3B116513 THRU S/N 12916021014)		
8.	72053508	ZERK-NPT .12	1
9.	72060238	CAP SCR 1.25- 7X 6.00 HH GR5 Z	1
10.	72062073	NUT 1.25- 7 THIN HEX NYLOC Z	1
11.	72063034	MACHY BUSHING 1.00X10 GA NR	3
12.	72066125	RETAINING RING-EXT 1.00 HD	3
13.	72066197	COTTER PIN	1



EXTENSION CYLINDER (51718065)

1.	4G116510	ROD ASSEMBLY	1
2.	52718045	CASE ASSEMBLY	1
3.	60125126	HOLDING VALVE	1
4.	6A025020	WAFER LOCK	1
5.	6c075020	STOP TUBE	3
8.	70149900	PORT TUBE	1
9.	72060055	CAP SCR .38-16X 3.50 HH GR5 Z	6
10.	72532358	ADPTR-M STR/M JIC 8 8	2
11.	73540052	VALVE-CBAL 1.75:1 3300 PSI ADJ (NOT SHOWN)	2
12.	7PNPXT02	PLUG-PIPE SOC HD TAPED .12	2
14.	7Q072016	O RING .62X .75X .06 70	5
15.	7Q072145	O RING 2.56X 2.75X .09 70	1
16.	7Q072334	O RING 2.62X 3.00X .19 70	1
17.	7Q10P334	BACKUP RING .62 ID X 3.00 OD	1
18.	7R14P020	ROD WIPER-TYPE D 2.00 ROD	1
19.	7R546020	U-CUP LOADED	1
20.	7T2N4022	WEAR RING-ROD	1
21.	7T61N106	LOCK RING NYLON 1.06"	1
22.	7T65I030	PISTON RING-3.00 HYD CYL	2
23.	7T66P030	PISTON SEAL-DYNAMIC 3.00in)	1
24.	9C121617	SEAL KIT-IMT 3.00B 2.00R 1.06S (INCL:4, 12-22)	1
25.	6H030020	HEAD-3.00 BORE X 2.00 ROD	1
26.	6I030106	PISTON-3.00 BORE X 1.06 STGR	1

NOTE: CYLINDER 3B116513 USED THROUGH CRANE SERIAL NO. 12916021014. REPLACED BY CYLINDER 51718065.

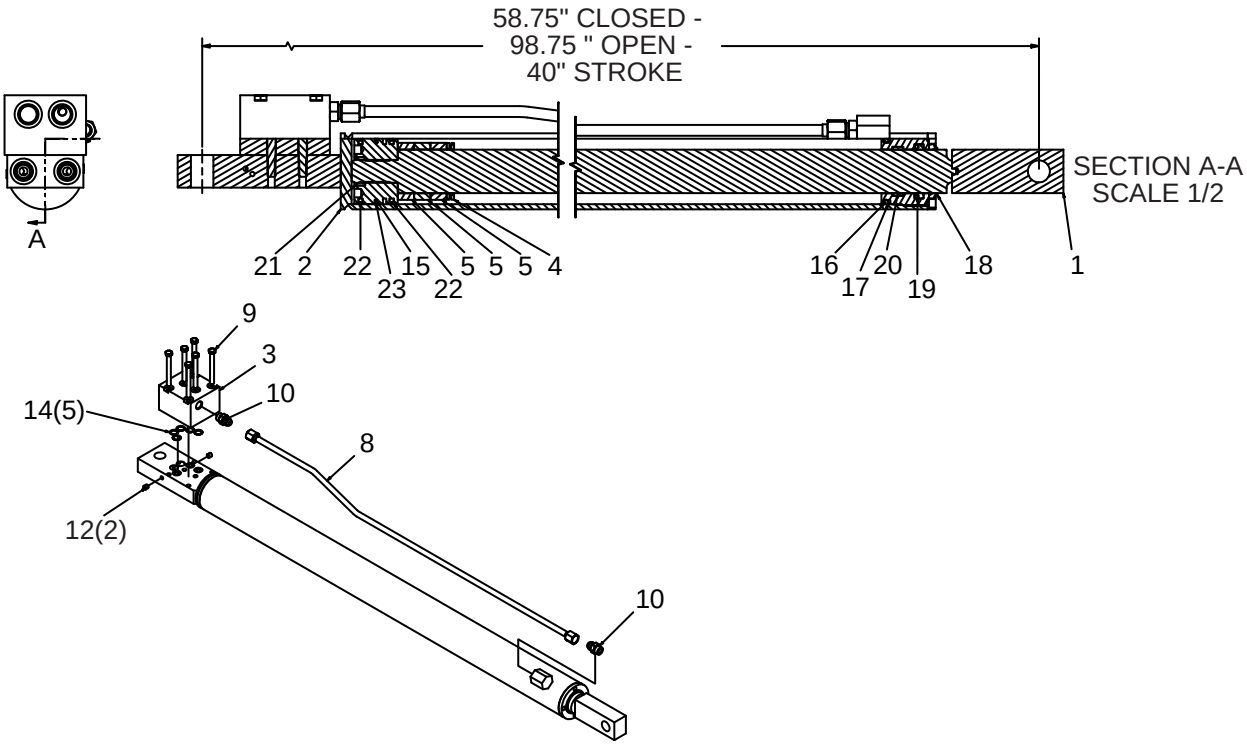
NOTE

IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

APPLY “LUBRIPLATE #630-2” MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT OR EQUIVALENT TO ALL PISTON AND HEAD GLANDS, LOCK RING AND ROD THREADS BEFORE ASSEMBLY.

USE “NEVER-SEEZ” OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.

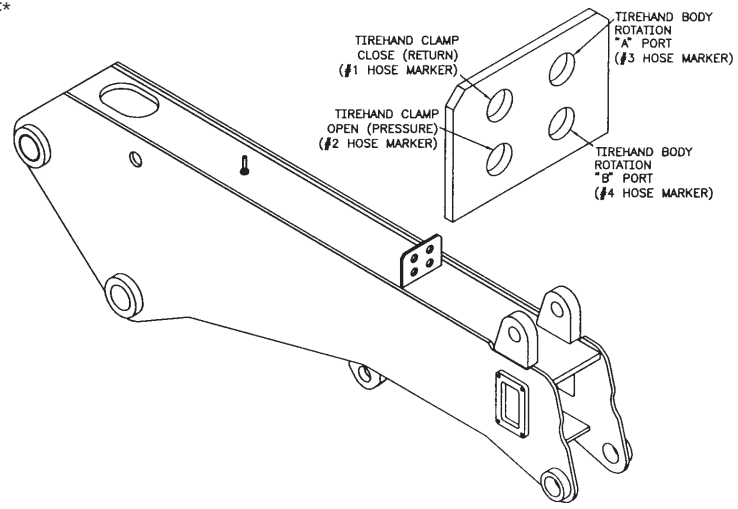
NOTES:
1. PART ITEM #14 (2) AND ITEM #13 (3) ARE PLACED BETWEEN #2 AND #3.
2. USE SERVICEABLE LOCTITE ON #9.

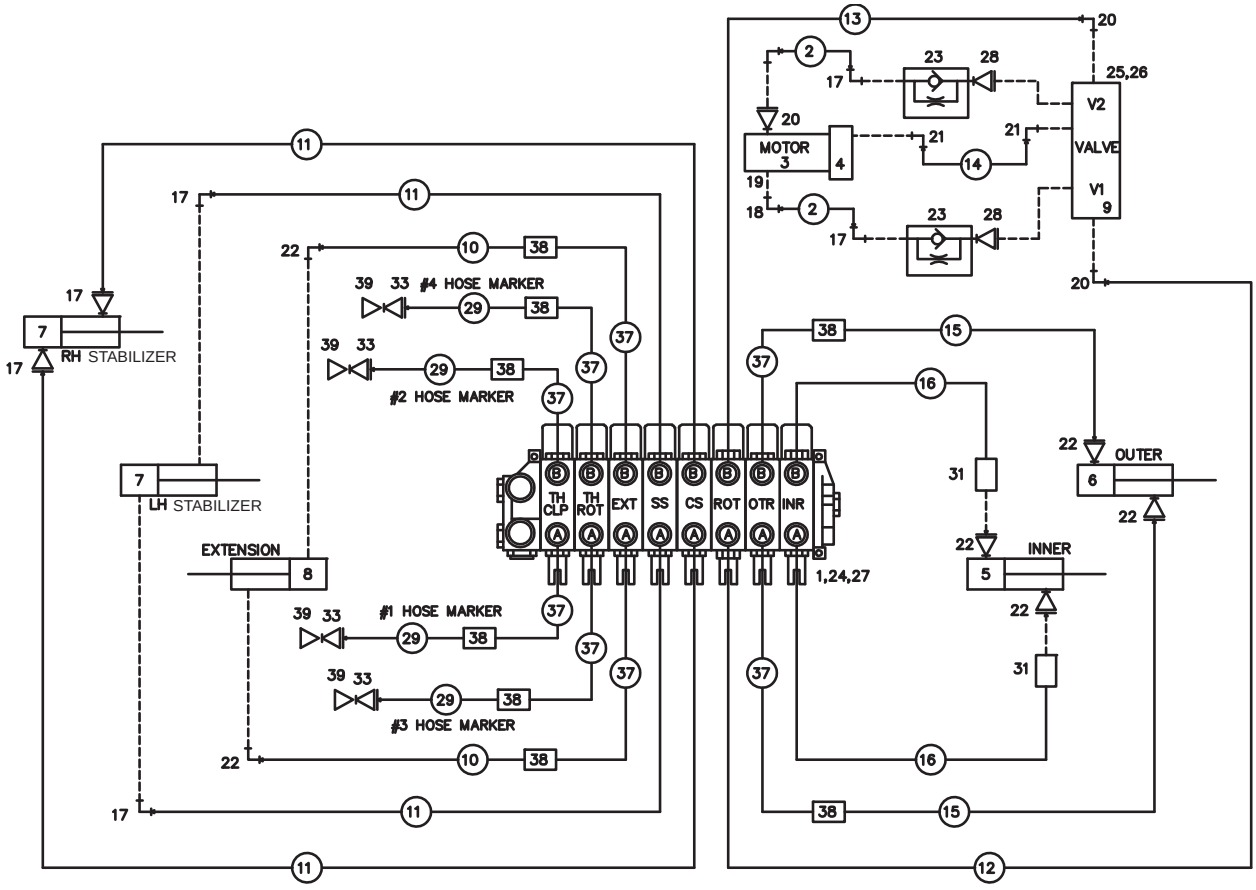


HYD KIT-6 SECT (91703946)

ITEM	PART	DESCRIPTION	QTY
1.		VALVEBANK - 8 SECT	1REF
2.	51395200	HOSE ASM 3/8X12 #8F#8F	2REF*
3.		MOTOR	1REF
4.		BRAKE	1REF
5.		INNER CYLINDER	1REF
6.		OUTER CYLINDER	1REF
7.		STABILIZER CYLINDER	2REF
8.		EXTENSION CYLINDER	1REF
9.	73054370	COUNTERBALANCE VALVE	1
10.	51395242	HOSE ASM 3/8X158 #8F#8F	2REF*
11.	51395239	HOSE ASM 3/8X83 #8F#8F	4REF*
12.	51395201	HOSE ASM 3/8X15 #8F#8F	1REF*
13.	51395238	HOSE ASM 3/8X16 #8F#8F	1REF*
14.	51395237	HOSE ASM 1/4X10.5 #4F#4F	1REF*
15.	51395304	HOSE ASM 3/8X93 #8F#8F	2REF*
16.	51395303	HOSE ASM 3/8X70 #8F#8F	2REF*
17.	72053763	ELBOW #8MSTR #8MJIC 90°	6
18.	72532666	ELBOW #8MSTR #8MJIC XLG	1
19.	72531206	ADAPTER #10MSTR #8FSTR	1
20.	72053764	ELBOW #10MSTR #8MJIC 90°	3
21.	72053758	ELBOW #4MSR #4MJIC 90°	2
22.	72532358	ADAPTER #8MSTR #8MJIC	6
23.	73054921	VALVE-FLOW CONTROL	2
24.	72060033	CAP SCR 5/16-18X3 HHGR5	3
25.	72060051	CAP SCR 3/8-16X2-1/4 HHGR5	2
26.	72062103	NUT 3/8-16 LOCK	2
27.	72062109	NUT 5/16-18 LOCK	3
28.	72532728	UNION #8MSTR #8MSTR	2
29.	51395241	HOSE ASM 3/8X195 #8F#8F 4REF*	
30.	51713944	HOSE KIT (INCL: *)	1
31.	72532980	ADAPTER #8JIC INLINE PR SW	2
33.	72533373	UNION-BULKHEAD 37° 3/4JIC	4
37.	51395240	HOSE 3/8X67 #8F #8F	8
38.	72533566	SWIVEL #8MJIC INLINE	8
39.	72532675	CAP-JIC STL 3/4THD	4

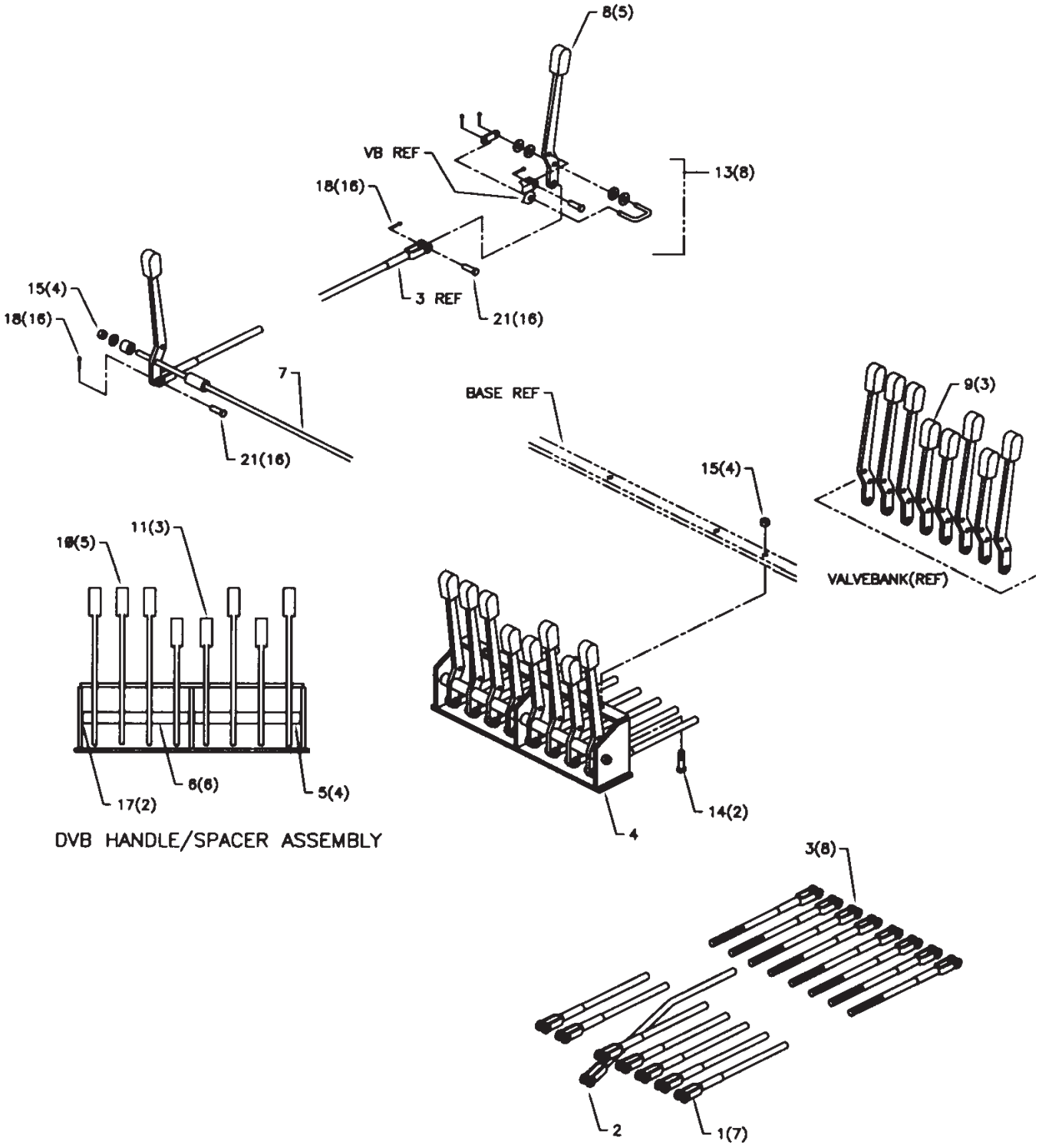
NOTE:
FOR HYDRAULIC OVERLOAD, SEE ASSEMBLY 51717130.





CONTROL KIT-MNL 6F (90704441)

ITEM	PART NO.	DESCRIPTION	QTY
1.	52702016	CTRL ROD - FEMALE	7
2.	52702017	CTRL ROD - FEMALE BENT	1
3.	52702018	CTRL ROD - MALE	8
4.	52702777	DUMMY VALVEBANK	1
5.	60030045	SPACER 5/8	4
6.	60030046	SPACER 1-1/2	6
7.	60105503	ROD DUMMY VB	1
8.	70141982	CTRL HANDLE - VB LONG	5
9.	70141983	CTRL HANDLE - VB SHORT	3
10.	70141984	CTRL HANDLE - CS LONG	5
11.	70141985	CTRL HANDLE - CS SHORT	3
13.	94731839	LINK & PIN KIT	8
14.	72060025	CAP SCR 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

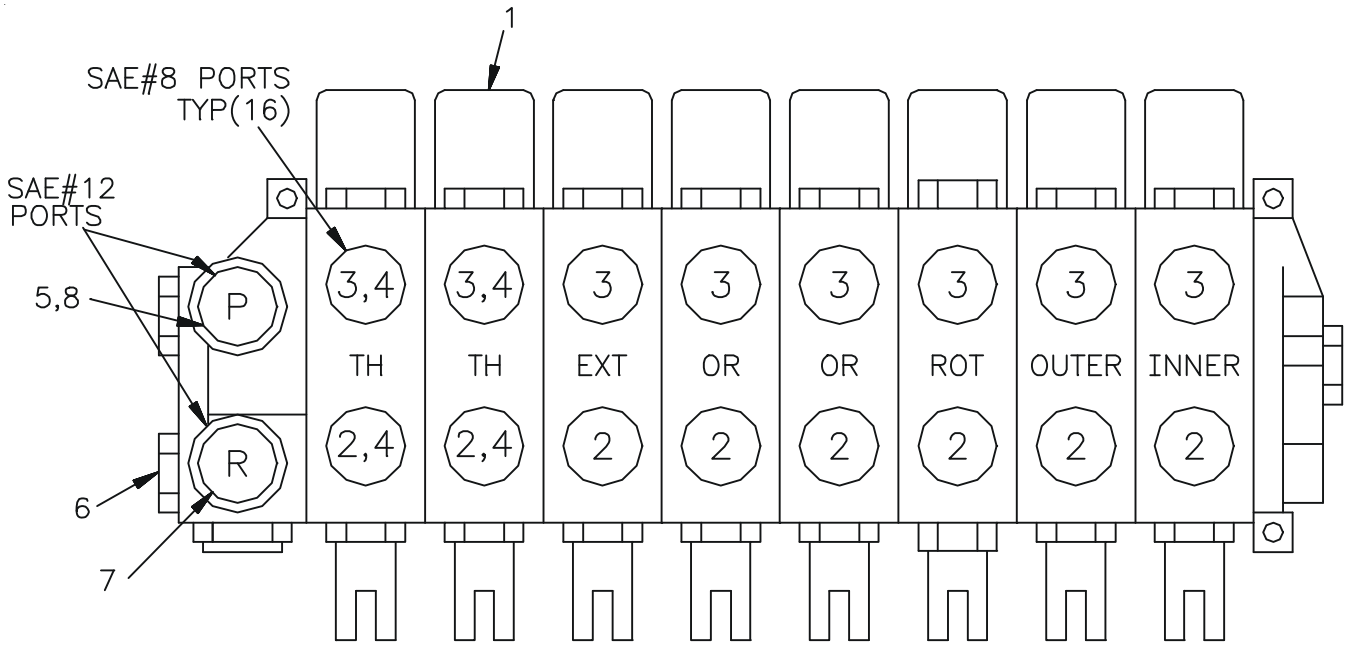


DVB HANDLE/SPACER ASSEMBLY

VALVEBANK ASM-8 SECT MNL (51706642)

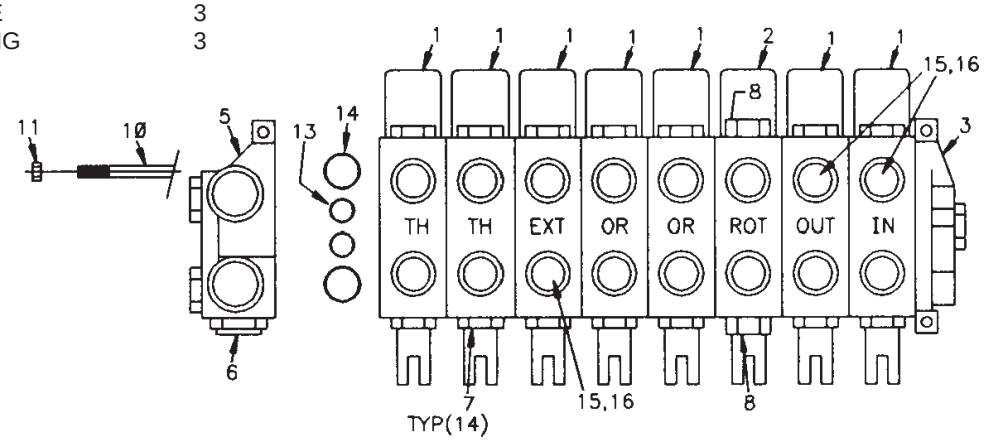
1.	51706643	VALVEBANK - 8 SECTION	1
2.	72532666	ELBOW #8MSTR #8MJIC XLG	8
3.	72053763	ELBOW #8MSTR #8MJIC 90°	8
4.	72532675	CAP 3/4JIC STL	4
5.	60107995	ELBOW-PRESSURE GAUGE	1
6.	72053767	ELBOW #12MSTR #12MJIC 90°	1
7.	72532369	ADAPTER #12MSTR #16MJIC (WAS 72053747)	1
8.	72054435	PRESSURE GAUGE 5000PSI	1

(20030520 DELETED 1 EACH OF 72053533, 72053517, 72053469, 72053558, 72053436, 72532834)



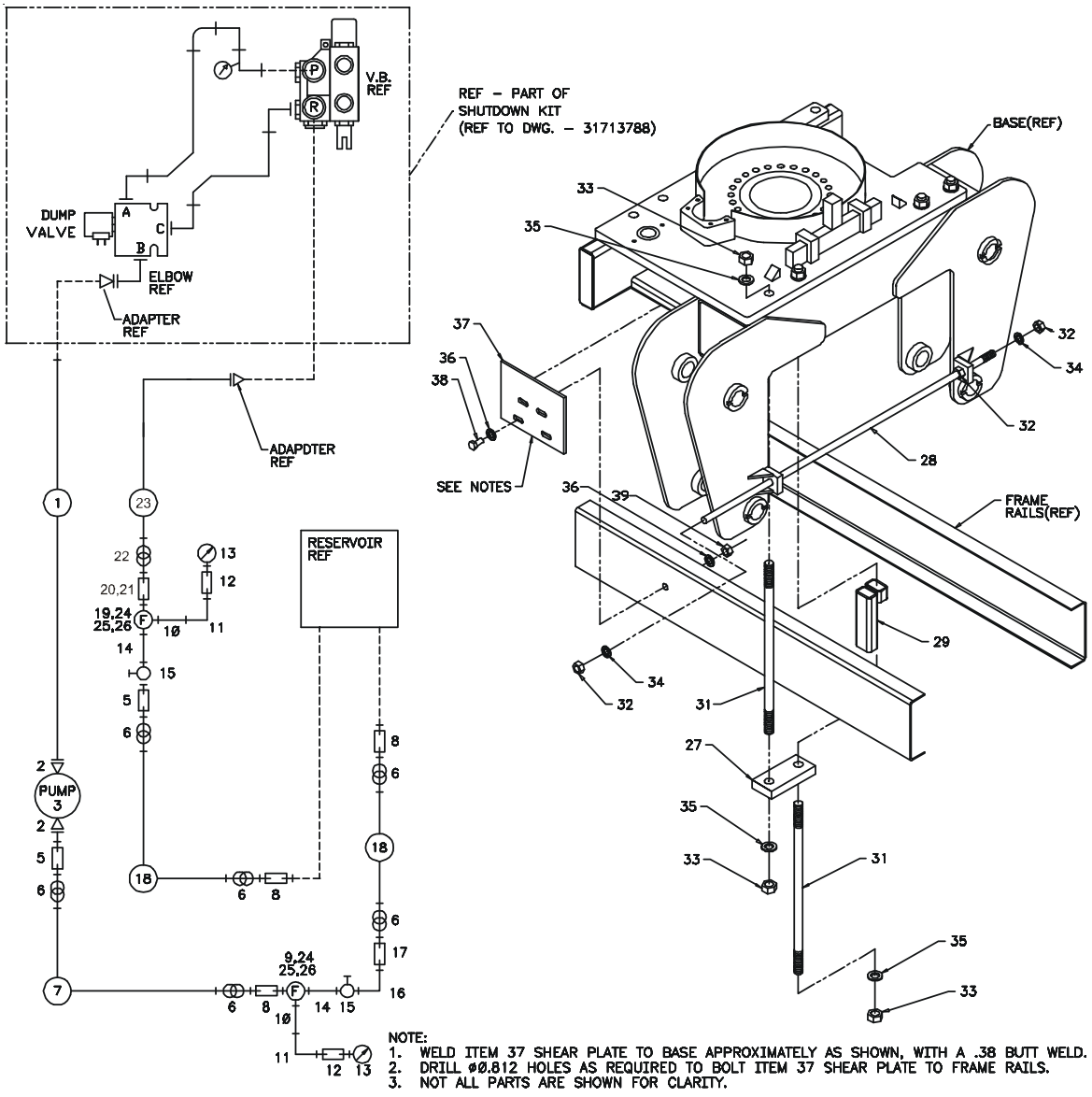
VALVEBANK-8 SECT MNL (51706643)

1.	73054432	VALVE SECT 4-WAY SAE#8	7
2.	73054452	VALVE SECT 4-WAY W/BS SAE#8	1
3.	73731241	END COVER RH W/CONV PLUG	1
5.	73731424	END COVER LH 2300PSI	1
6.	73054673	RELIEF VALVE 2300PSI(PART OF 5)	1REF
7.	73054010	LOAD CHECK VALVE ASM	14
8.	73054007	RELIEF RC NON-ADJ 1800PSI	2
10.	73014596	STUD 3/8-24X15-1/4	3
11.	72062037	NUT 3/8-24 HEX	6
12.	51393494	O-RING KIT (SERVICE PART)	REF
13.	7Q072117	O-RING .81X1X.09	18
14.	7Q072119	O-RING .94X1.12X.09	18
15.	70142402	ORIFICE PLATE	3
16.	70142403	ORIFICE SPRING	3



INSTALLATION KIT-MNL CTRLS (93708876)

1.	51703703	HOSE ASM 1/2 X 72	1
2.		PUMP ADAPTER	2REF
3.		PUMP	1REF
5.	72532346	BARB NIPPLE 1-1/4 90° (QTY. WAS 3)	2
6.	72066516	HOSE CLAMP 1-1/4 (QTY. WAS 8)	6
7.	60035829	HOSE 1-1/4X48 (QTY. WAS 2)	1
8.	72531550	BARB NIPPLE 1-1/4	3
9.	73052012	SUCTION FILTER	1
10.	72053002	PIPE NIPPLE 1/8NPT X 2	2
11.	72053281	STRT ELBOW 1/8NPT 90°	2
12.	72053301	COUPLING 1/8NPT BLK	2
13.	70048031	VACUUM GAUGE	2
14.	72053211	PIPE NIPPLE 1-1/4 X CLOSE	2
15.	73054130	GATE VALVE 1-1/4	2
16.	72053287	STRT ELBOW 1-1/4NPT 90°	1
17.	72531196	BARB NIPPLE 1-1/4 45°	1
18.	60035598	HOSE 1-1/4 100R4X72	2
19.	73052091	RETURN FILTER	1
20.	72532345	NIPPLE BARB 90° 1 X 1	1
21.	72503377	RED BUSH, BLK 1.25-1	1
22.	72661642	CLAMP, HOSE (WAS 72066515)	1
23.	51396428	HOSE-J 1X50 OAL (16) (ITEMS 20-23 ADDED 20030520)	1
24.	60103870	OIL FILTER BRACKET	2
25.	72060025	CAP SCR 5/16-18X1 HHGR5	4
26.	72062109	NUT 5/16-18 LOCK	4
27.	60128960	CLAMP PLATE (WAS 60010665)	4
28.	60103204	TENSION BAR	1
29.	52716527	FRAME SUPPORT	4
31.	71014847	TIE DOWN STUD 1-1/4X28-1/2	8
32.	72062009	NUT 1-8 HEX	4
33.	72062142	NUT 1-1/4-7 LOCK	16
34.	72063058	WASHER 1" LOCK	2
35.	72063067	WASHER 1-1/4	16
36.	72063119	WASHER 5/8	16
37.	60105107	TIE PLATE	2
38.	72060931	CAP SCR 5/8-11X2-3/4 HHGR8	8
39.	72062091	NUT 5/8-11 LOCK	8

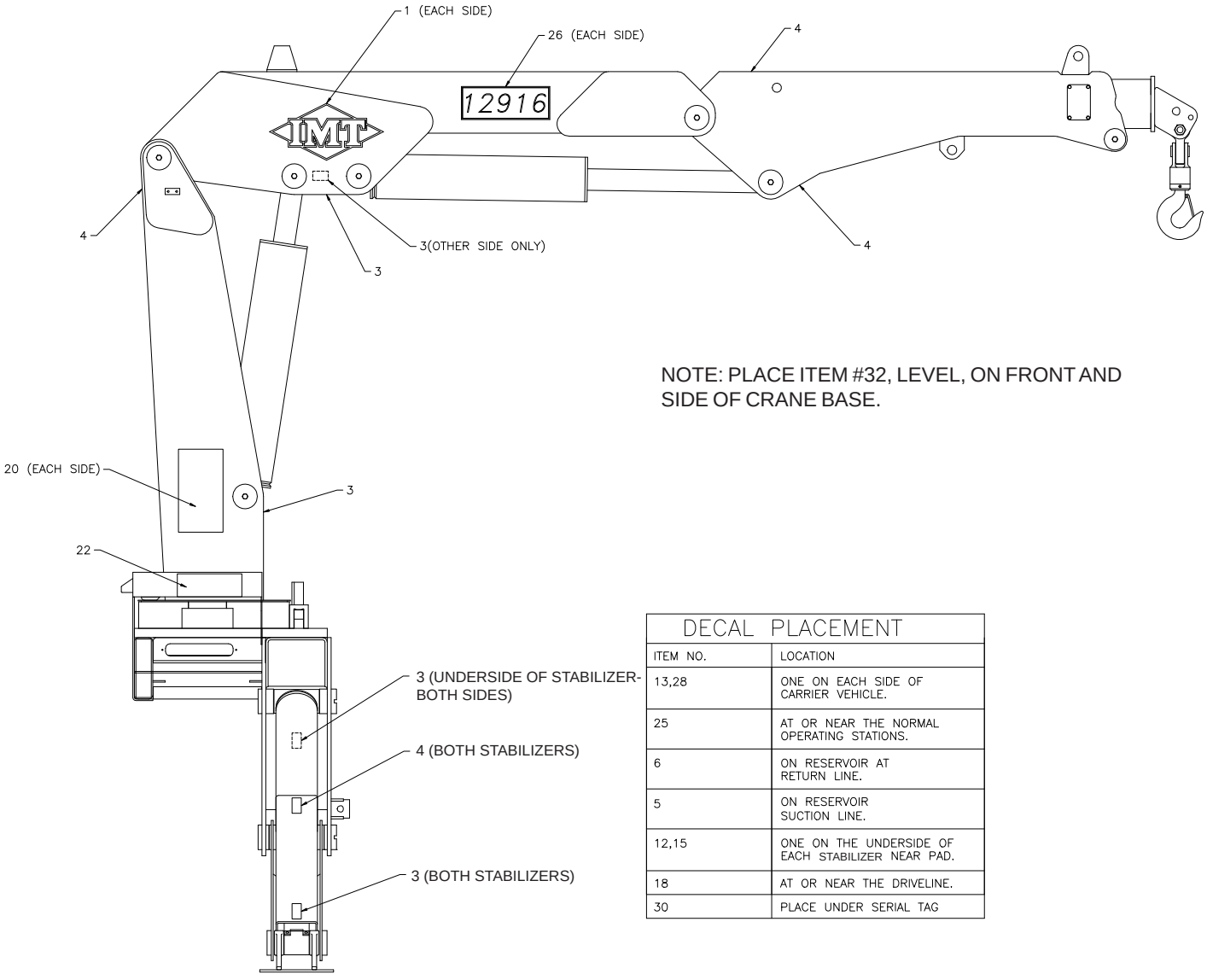


DECAL KIT (95712299-1)

1.	70029252	PLACARD - IMT DIAMOND	2
2.	70391583	DECAL-SETUP/STOW INST.	2
3.	70391612	DECAL-GREASE WEEKLY LEFT	8
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-ROTATE 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-WARN STAB STD CLR	2
13.	70392865	DECAL-DANGER ELECTROC'N	4
14.	70392866	DECAL-WARN OPER COND	2

CONTINUED

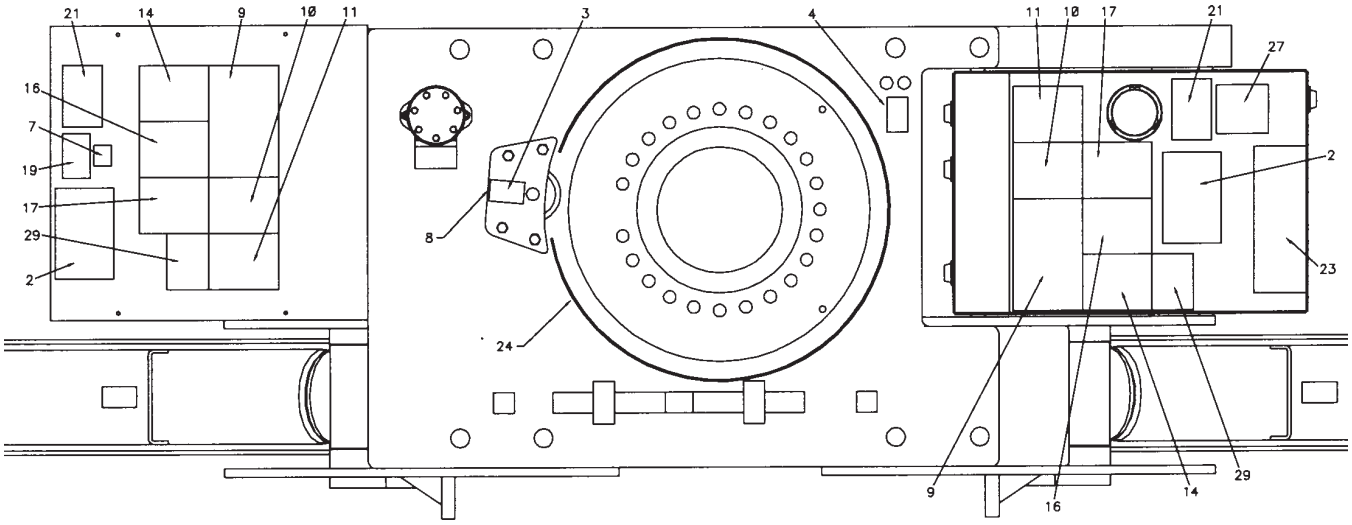
16.	70392888	DECAL-WARN OPER RESTRICT	2
17.	70392890	DECAL-DANGER STOW/UNFOLD	2
18.	70392891	DECAL-DANGER DRIVELINE	2
19.	70392982	DECAL-CONTACT IMT	1
20.	71393869	CAPACITY PLACARD	2
21.	71039134	DECAL-CAUTION OIL LEVEL	2
22.	70395030	DECAL-CTRL SS	1
23.	70395031	DECAL-CTRL CS	1
24.	71392365	DECAL-ALIGN CRANE	1
25.	70392889	DECAL-DANGER RC ELECTRO	2
26.	71393867	DECAL-12916 IDENT	2
27.	70394189	DECAL-RECOMMENDED HYD OIL	1
28.	70392868	DECAL-WARN CR LOADLINE	4
29.	70392863	DECAL-WARN HOIST PERS	2
30.	70395323	DECAL-ASME/ANSI B30.22	1
31	72042097	LEVEL	2



NOTE: PLACE ITEM #32, LEVEL, ON FRONT AND SIDE OF CRANE BASE.

DECAL PLACEMENT	
ITEM NO.	LOCATION
13,28	ONE ON EACH SIDE OF CARRIER VEHICLE.
25	AT OR NEAR THE NORMAL OPERATING STATIONS.
6	ON RESERVOIR AT RETURN LINE.
5	ON RESERVOIR SUCTION LINE.
12,15	ONE ON THE UNDERSIDE OF EACH STABILIZER NEAR PAD.
18	AT OR NEAR THE DRIVELINE.
30	PLACE UNDER SERIAL TAG

DECAL KIT (95712299-2)



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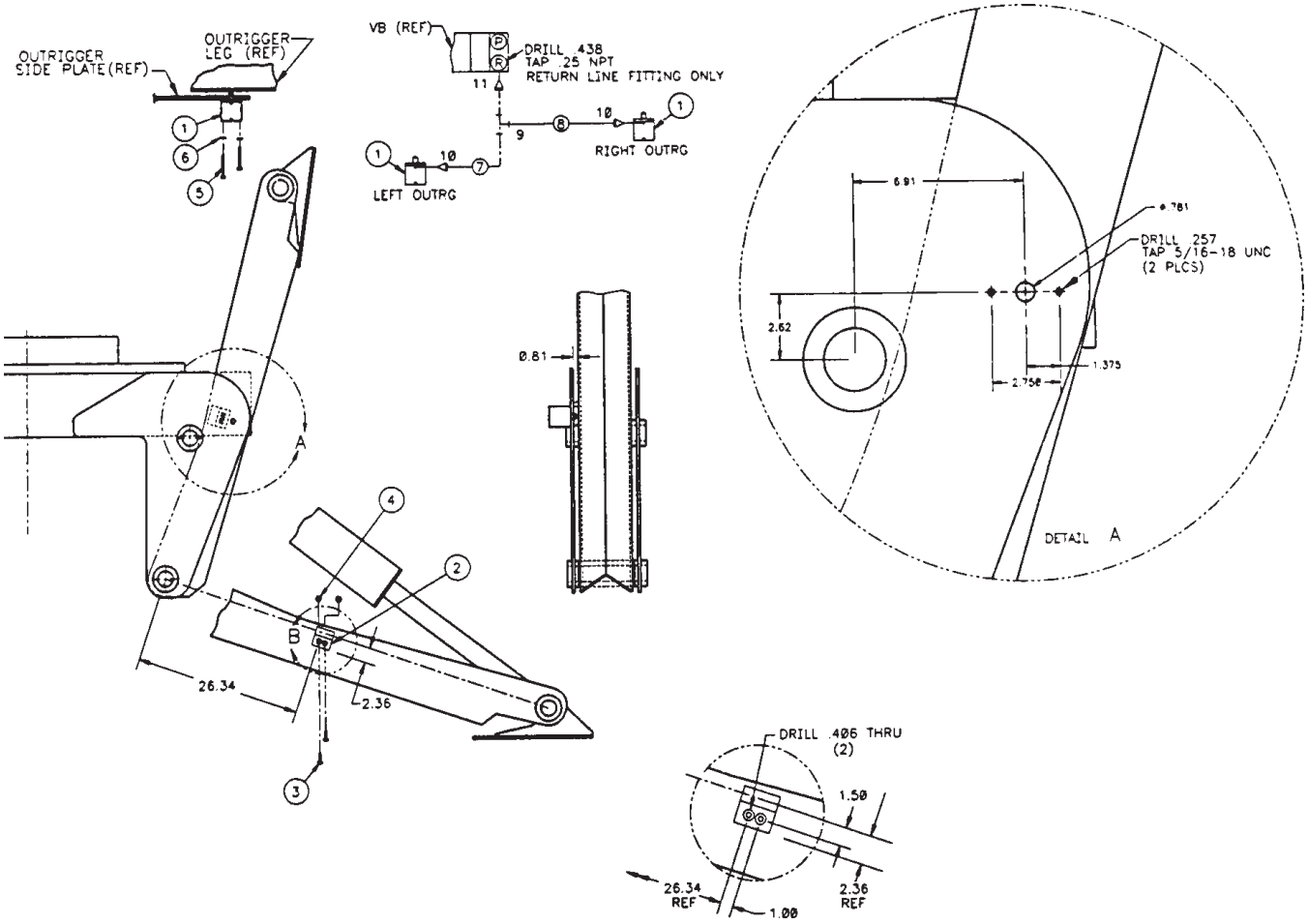
CONVERSION KIT-STABILIZER CYLINDER LOCK (95711163)

ITEM	PART NO.	DESCRIPTION	QTY
1.	70732773	LOCKING CYLINDER	2
2.	60116659	LATCH PLATE	2
3.	72601139	CAP SCR 3/8-16X2 FLTHDSOC	4
4.	72062179	NUT 3/8-16 CTR LOCK	4
5.	72060034	CAP SCR 5/16-18X3-1/4 HHGR5	4
6.	72063050	WASHER 5/16 LOCK	4
7.	51709819	HOSE ASM 1/4X28 FF	1
8.	51709580	HOSE ASM 1/4X68 FF	1
9.	72532981	TEE 7/16JIC SWVL NUT RUN	1
10.	72053663	ADAPTER 1/8MPT #4MJIC	2
11.	72053499	ADAPTER 1/4MPT #4MJIC	1
12.	99990022	CONVERSION DRAWING	1



HYD OVERLOAD KIT-3F (51717130)

ITEM	PART NO.	DESCRIPTION	QTY
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 14.00	3
13.	51706239	HOSE ASM-FF 1/2 X 5.00	1
14.	51704914	HOSE ASM-FF 3/8 X 60.00	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

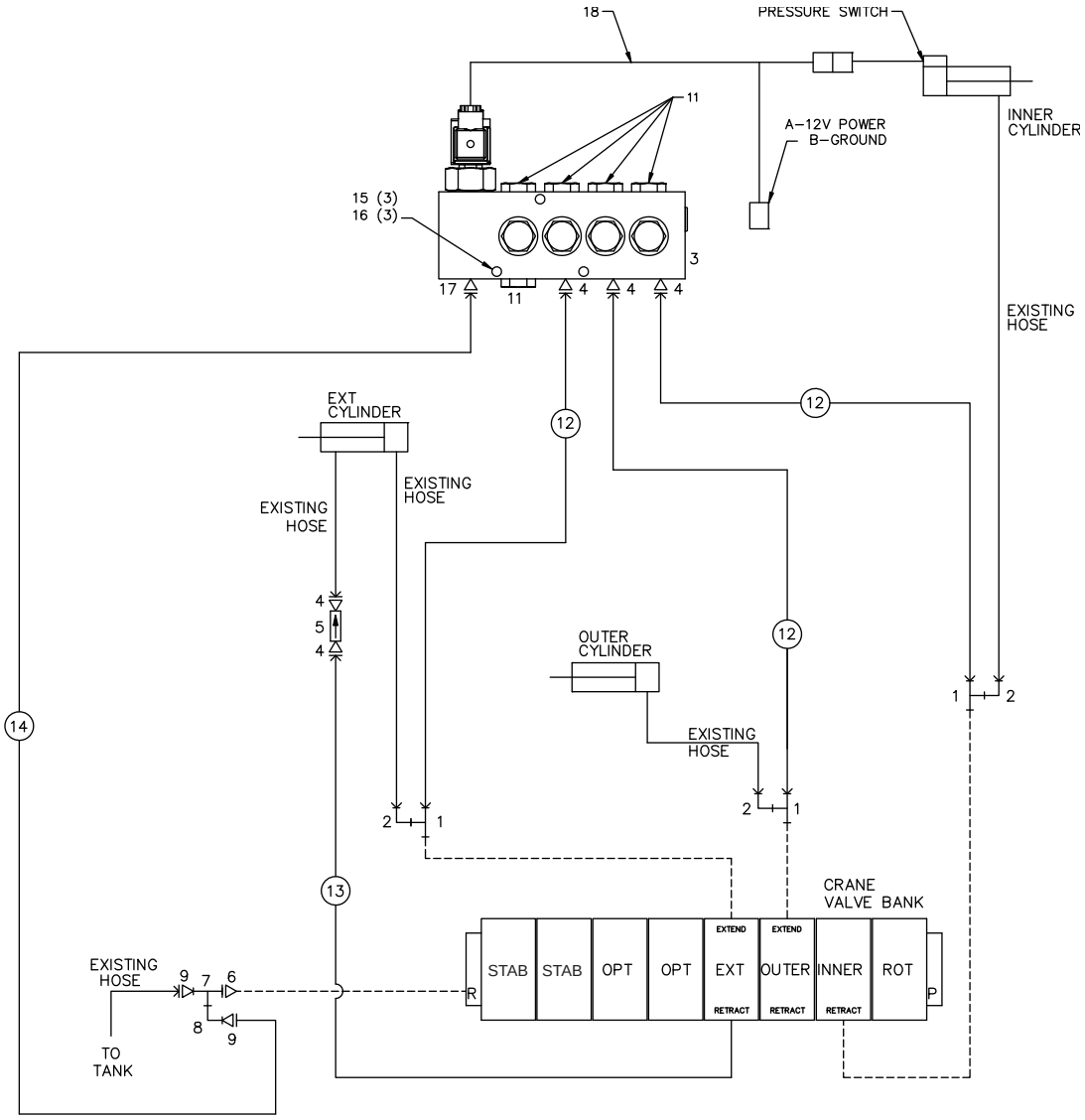
NOTES

1. FUNCTION OF SYSTEM IS SUCH THAT WHEN THE INNER CYLINDERS ARE OVERLOADED, THE PRESSURE SWITCH WILL ACTIVATE THE SOLENOID DUMP VALVE(S); THUS DUMPING OIL TO "TANK" INSTEAD OF THE OUTER CYLINDER "EXTEND", EXTENSION CYLINDER "EXTEND", OR WINCH "UP" FUNCTIONS WHICH WILL NOT ALLOW PRESSURE TO BUILD FOR THESE FUNCTIONS. THIS SYSTEM IS BASED ON THE FACT THAT THE OILL WILL TAKE THE PATH OF LEAST RESISTANCE.

2. THE FUNCTIONS THAT ARE SHUT DOWN, IF OVERLOADED, ARE THE FOLLOWING:
   A. INNER BOOM "RETRACT"
   B. OUTER BOOM "EXTEND"
   C. EXTENSION CYLINDER "EXTEND"
   D. WINCH "UP"

3. INSTALL A RELIEF (PART NO. 73054426, 700PSI) IN THE EXTEND LINE OF THE EXTENSION CYLINDER SO CYLINDER WILL NOT EXTEND WHEN THE DUMP SYSTEM IS ACTIVATED.

4. USE KIT IN CONJUNCTION WITH ELECTRIC CAPACITY ALERT KIT.



HYD OVERLOAD KIT-4F (51717128)

ITEM	PART NO.	DESCRIPTION	QTY
1.	72532657	TEE #8JIC SWVL NUT RUN	4
2.	72532658	ELBOW #8MJIC #8FJIC	4
3.	73540463	VALVE BLOCK ASM	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 53.00	5
13.	51706239	HOSE ASM-FF 1/2 X 5.00	1
14.	51706238	HOSE ASM-FF 3/4 X 6.00	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

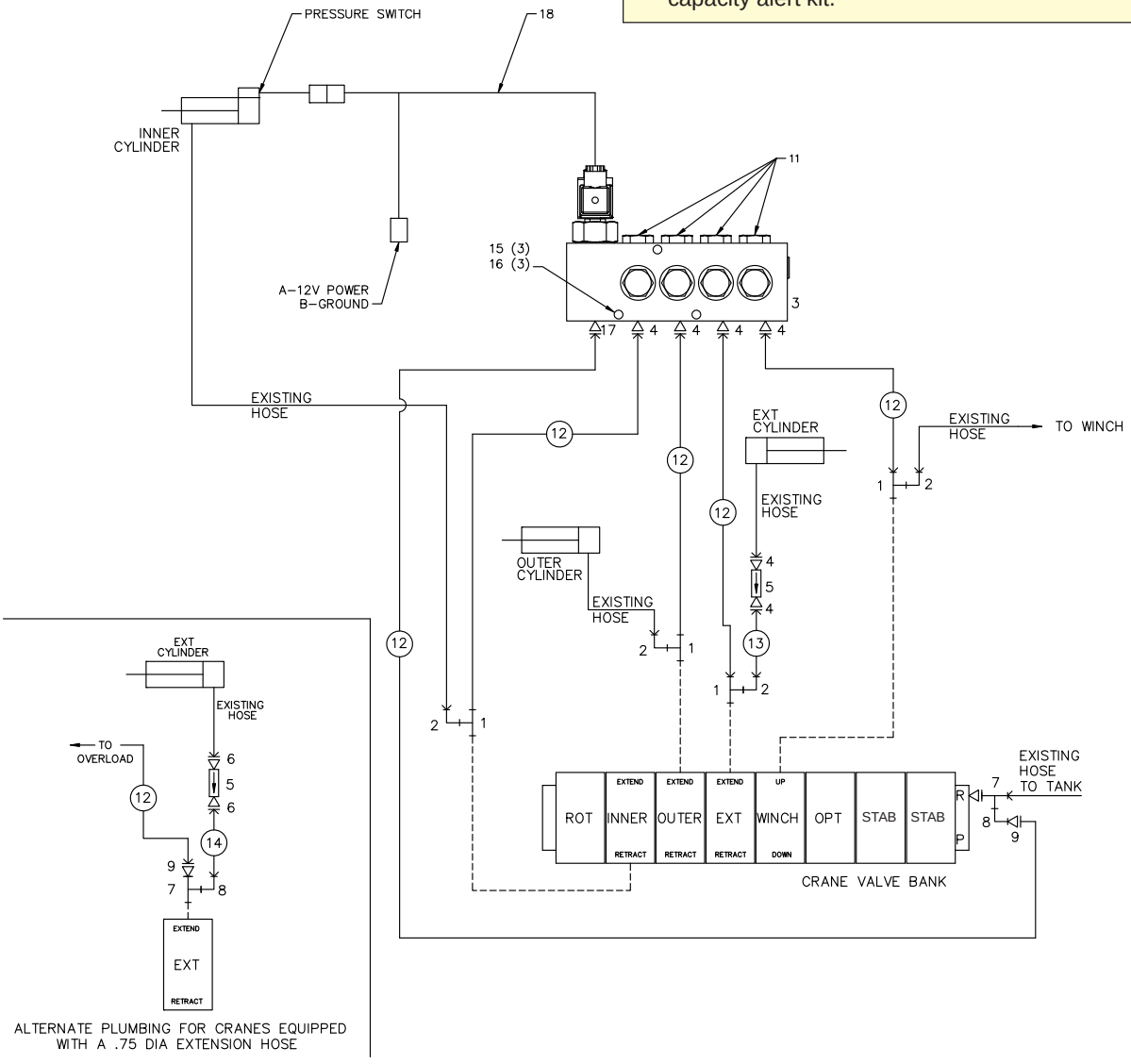
NOTES:

1. Function of system is such that when the inner cylinders are overloaded, the pressure switch, mounted on the inner cylinder, will activate the solenoid dump valve(s); thus dumping oil to “tank” instead of the outer cylinder “extend”, extension cylinder “extend”, or winch “up” functions, which will not allow pressure to build for these functions. This system is based on the fact that the oil will take the path of least resistance.

2. The following functions will shut down if overloaded:
   a. Inner boom “retract”
   b. Outer boom “extend”
   c. Extension cylinder “extend”
   d. Winch “up”

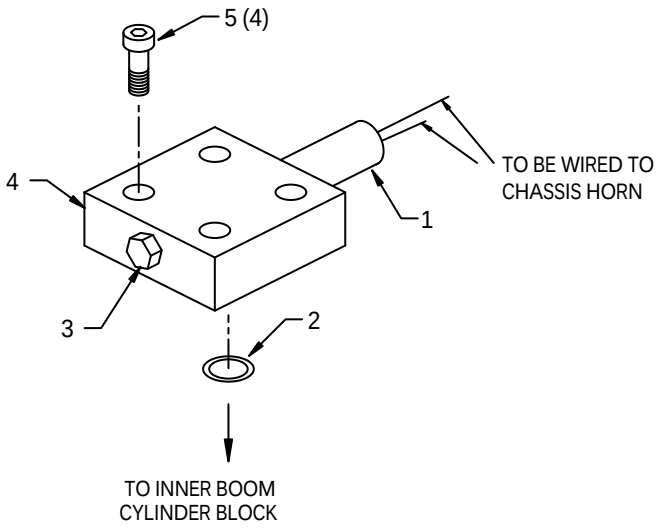
3. Install a relief valve (73054426 - 700 psi) in the extend line of the extension cylinder so cylinder will not extend when the dump system is activated.

4. This kit used in conjunction with the electric capacity alert kit.



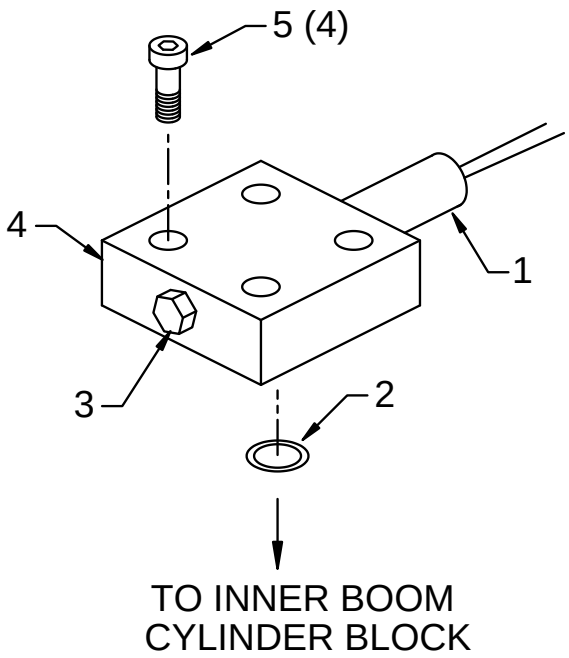
CAPACITY ALERT KIT - 2800 PSI (31717169)

1.	77041652	PRESSURE SWITCH	1
2.	7Q072015	O-RING	1
3.	72532140	PLUG-9/16 STR HH	1
4.	60025221	MANIFOLD	1
5.	72060731	CAP SCREW 5/16-18 X 3/4 SH	4



CAPACITY SHUTDOWN KIT - 2800 PSI (31717514)

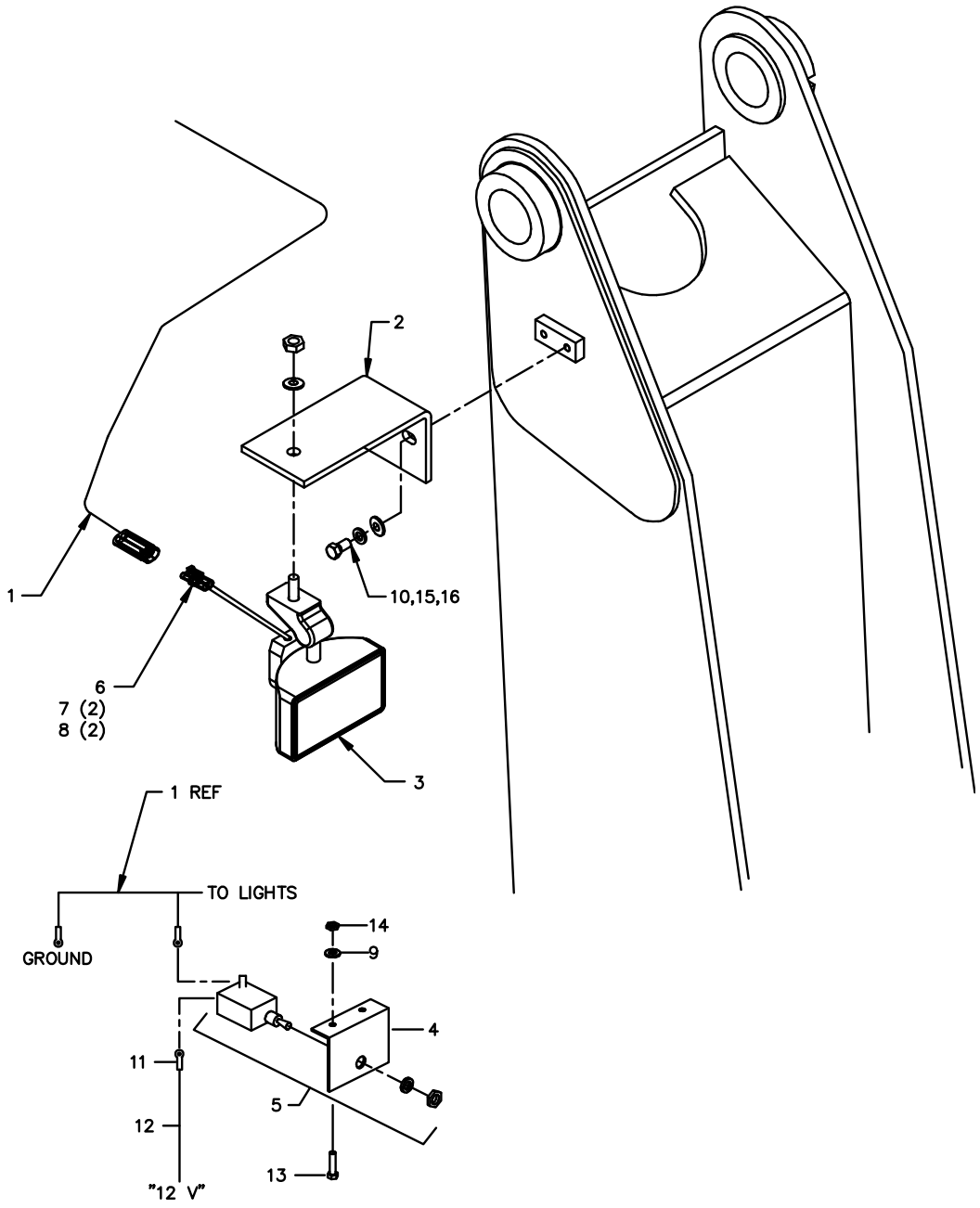
1.	77041543	PRESSURE SWITCH	1
2.	7Q072015	O-RING	1
3.	72532140	PLUG-STR HEX HS STL 9/16	1
4.	60025221	MANIFOLD	1
5.	72060731	CAP SCR 5/16-18 X 3/4 SH Z	4



LIGHT KIT-CRANE MAST MOUNTED (51717977) (EFF. 11/15/02)

EFFECTIVE 11/15/02 TO PRESENT

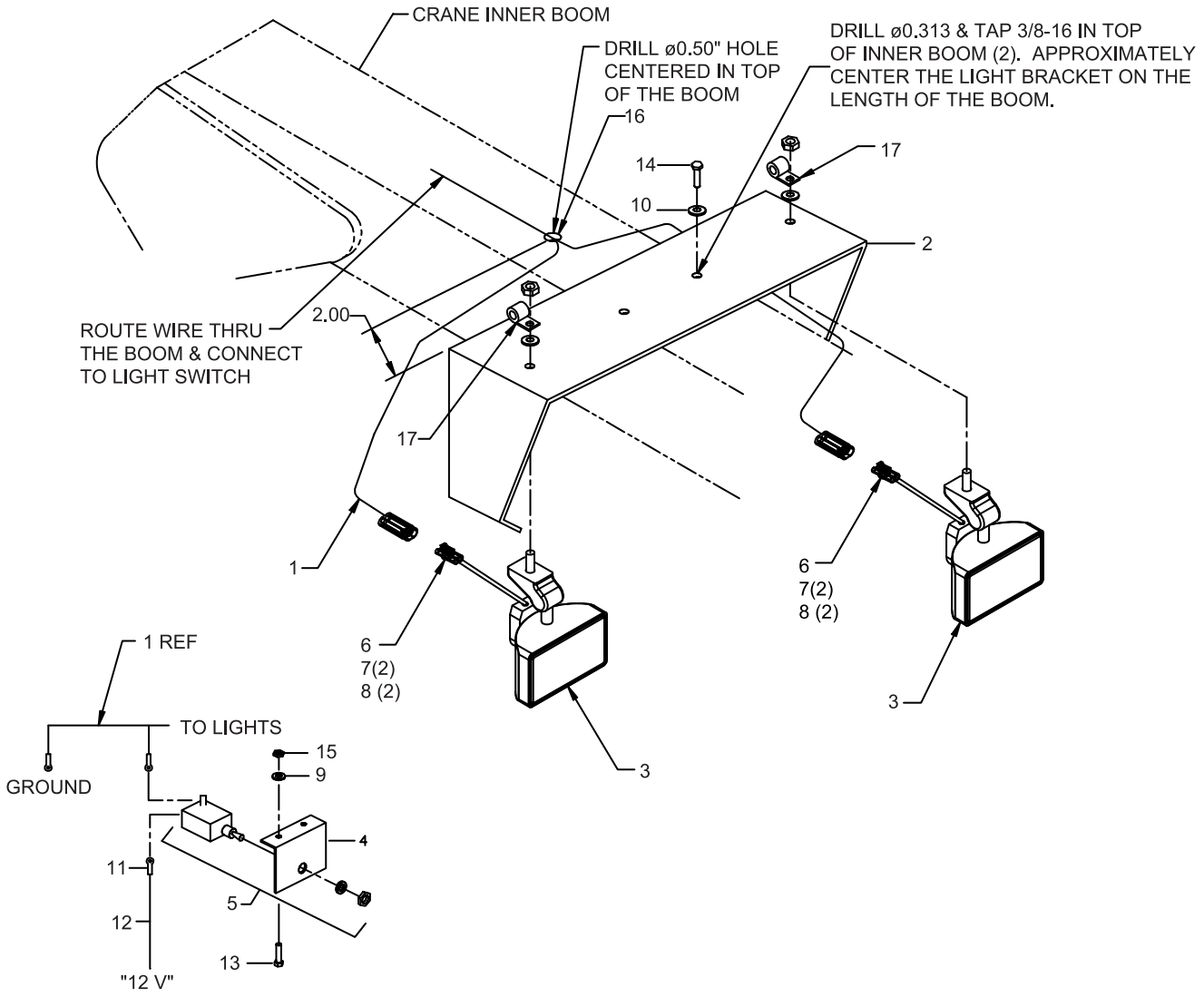
1.	51717219	CABLE ASM	1
2.	60113428	LIGHT BRACKET	2
3.	77040424	FLOODLIGHT, TOP MNT	2
4.	60103535	SWITCH BRACKET, 1 HOLE	1
5.	77041345	TOGGLE SWITCH	1
6.	77044574	CONN, PACKARD FEM 2-WAY WP	2
7.	77044550	TERM-FEM 18-20 GA WP	4
8.	70394069	SEAL, CABLE CONN. WP	4
9.	72063049	WASHER 1/4 LOCK ZINC	2
10.	72060044	CAP SCR 3/8-16 X 3/4 HHGR5Z	4
11.	77040000	RING TERM. I #10 STUD 16-14GA	1
12.	89044274	WIRE-BLACK STRD TYPE GPT	36”
13.	72060000	CAP SCR 1/4-20 X 1/2 HHGR5Z	2
14.	72062000	NUT 1/4-20 HEX ZINC	2
15.	72063051	WASHER 3/8 LOCK ZINC	4
16.	72063003	WASHER .38 W FLAT	4



OPTION - LIGHT KIT (31717218) (THRU 11/15/02)

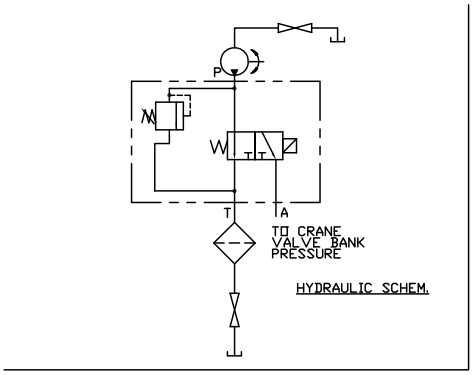
EFFECTIVE THROUGH 11/15/02

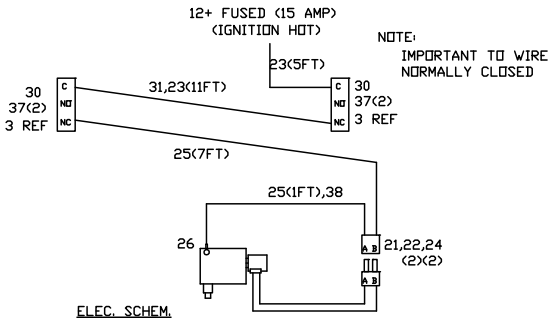
ITEM	PART NO.	DESCRIPTION	QTY
1.	51717219	CABLE ASM- FLOOD LIGHTS	1
2.	60107762	GUARD	1
3.	77040424	FLOOD-LT-COMP WORK LAMP	2
4.	60103535	SWITCH BRACKET - 1 HOLE	1
5.	77041345	TOGGLE SWITCH	1
6.	77044574	CONNECTOR	2
7.	77044550	TERMINAL-F 18-20 GA	4
8.	70394069	SEAL CABLE CONNECTOR	4
9.	72063049	WASHER 1/4 LOCK	2
10.	72063051	WASHER 3/8 LOCK	2
11.	77040000	TERMINAL, RING #10 STUD 16-14	1
12.	89044274	WIRE-BLACK STRD TYPE	36”
13.	72060000	CAP SCR 1/4-20 X 1/2 HH GR5	2
14.	72060044	CAP SCR 3/8-16 X 3/4 HH GR5	2
15.	72062000	NUT 1/4-20 HEX ZINC	2
16.	76391200	GROMMET-RUBBER 9/16	1
17.	72661312	CLAMP 1/2 LOOP CUSHIONED	2

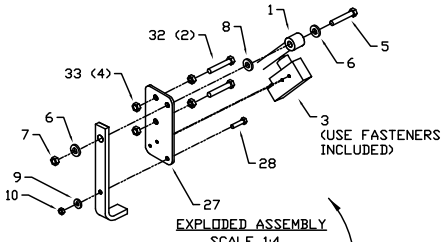


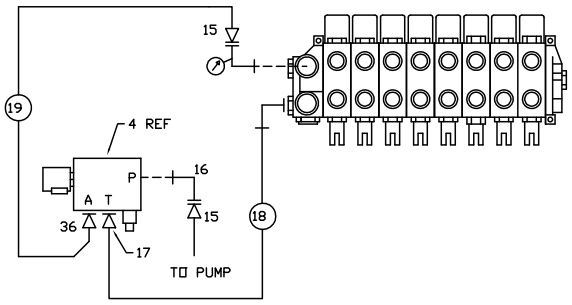
OPTION-HYD SHUTDOWN KIT (31713788) (EFF 9-4-02)

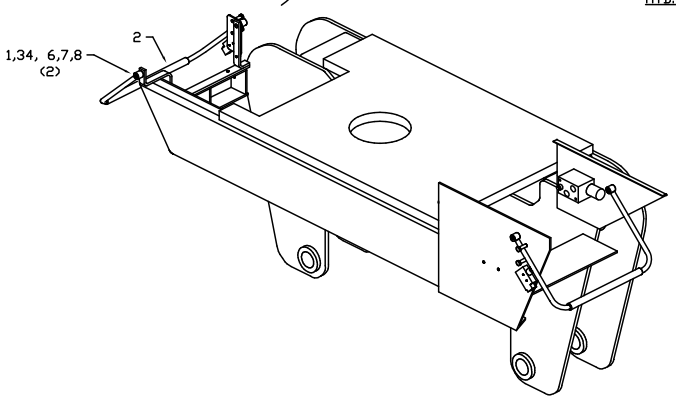
ITEM	PART NO.	DESCRIPTION	QTY
1.	52713782	HANDLE-SHUTDOWN	4
2.	60120092	TUBE	2
3.	77041459	LIMIT SWITCH	2
4.	73055278	DUMP VALVE	1
5.	72060052	CAP SCR 3/8-16X2-1/2 HHGR5	1
6.	72063003	WASHER 3/8 WRT	8
7.	72062103	NUT 3/8-16 LOCK	4
8.	72063215	WASHER 3/8 BELLEVILLE SS	4
9.	72063001	WASHER 1/4 WRT	5
10.	72062104	NUT 1/4-20 LOCK	1
12.	72062109	NUT 5/16-18 LOCK	4
13.	72063002	WASHER 5/16 WRT	4
15.	72532972	ADAPTER #8MJIC #12FJIC	2
16.	72053767	ELBOW #12MSTR #12MJIC 90°	1
17.	72532366	ELBOW #12MSTR #12MJIC 45°	1
18.	51394919	HOSE ASM 3/4X21 FF #12#12	1
19.	51394882	HOSE ASM 1/2X22 FZ #8#8	1
20.	72060038	CAP SCR 5/16-18X4-1/2 HHGR5	2
21.	77044573	CONNECTOR, M 2-WAY WP	1
22.	77044552	TERMINAL MALE WP 18-20GA	2
23.	89044232	WIRE 14GA RED	16FT
24.	70394069	SEAL, CABLE CONN	2
25.	89044274	WIRE 14GA BLK	8FT
26.	77040000	TERMINAL #10STUD 16-14GA	1
27.	60120438	BRACKET	1
28.	72060004	CAP SCR 1/4-20X1 HHGR5	1
30.	77044468	CONN, S/R 1/8-1/4	2
31.	89044331	LOOM .35ID	11FT
32.	72060050	CAP SCR 3/8-16X2	4
33.	72062002	NUT 3/8-16 HEX ZINC	8
34.	72060030	CAP SCR 5/16-18X2-1/4 HHGR5	1
35.	72060031	CAP SCR 5/16-18 X 2 HHGR5	2
36.	72532360	ADPTR #12MSTR #8MJIC	1
37.	77040051	TERM, SPRSPADE #8 16-14GA	4
38.	89034048	SPIRAL WRAP-CLEAR	3FT

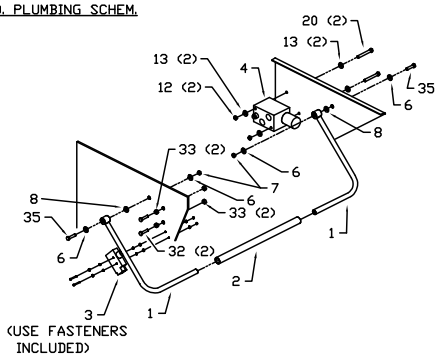






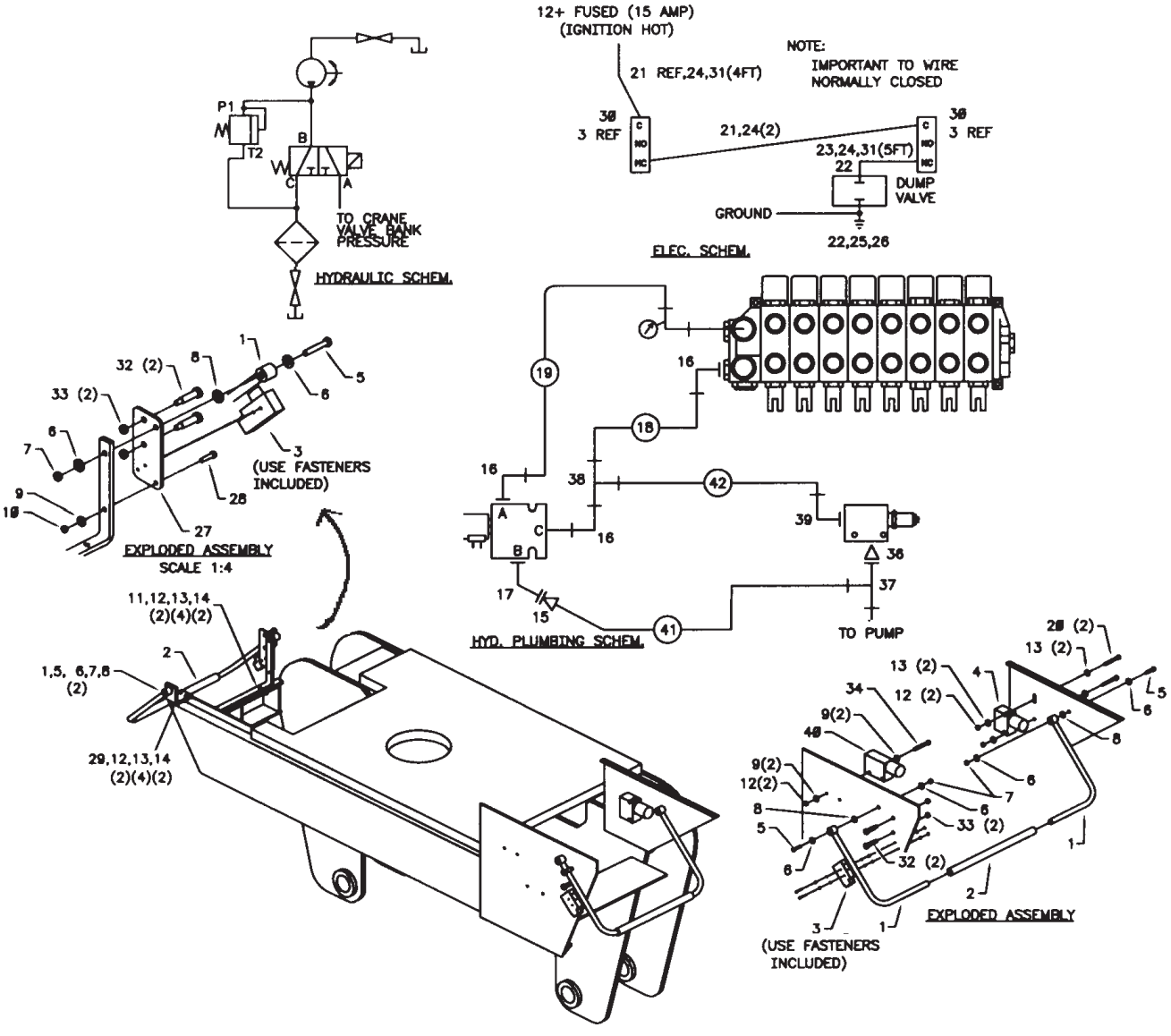






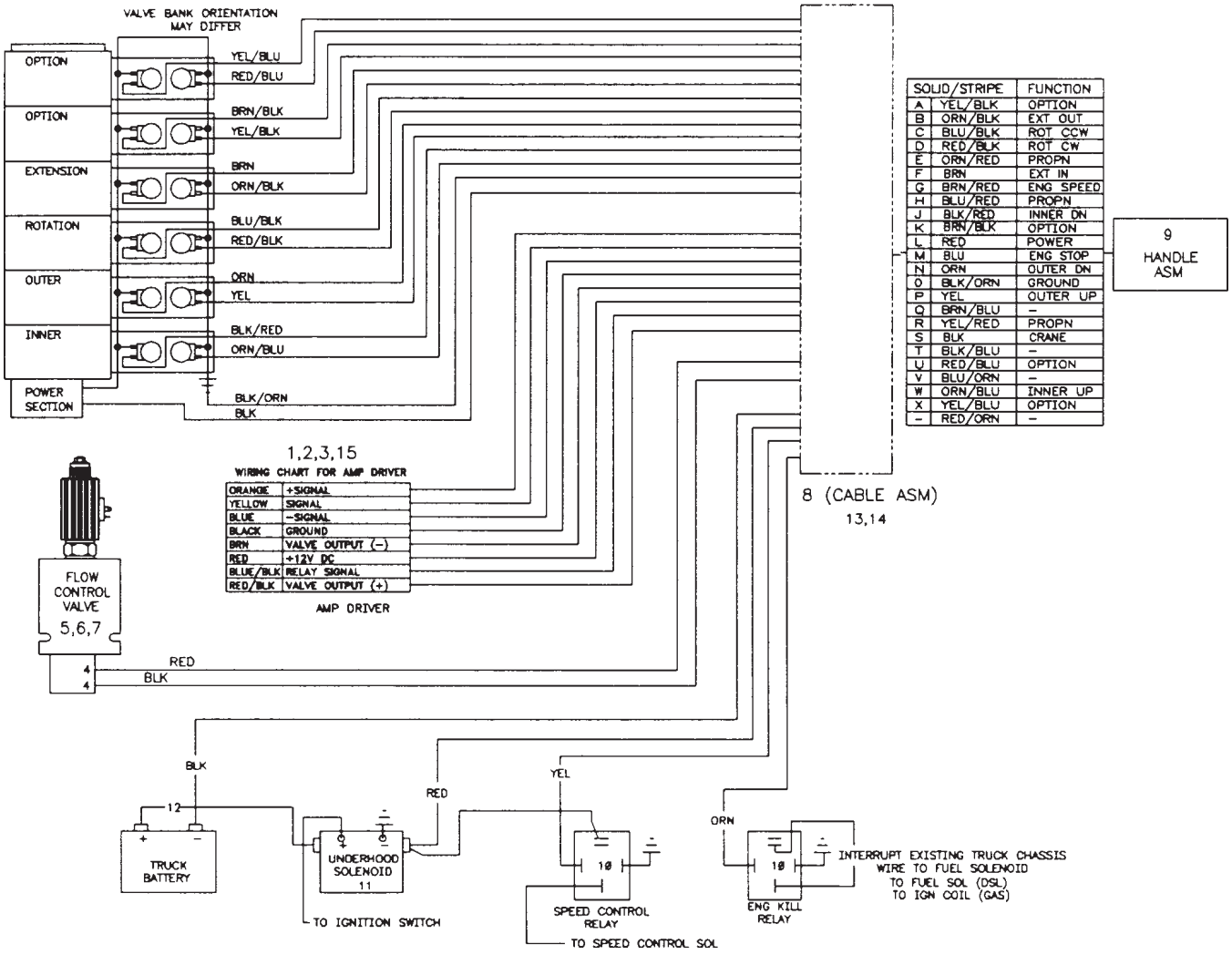
OPTION-HYD SHUTDOWN KIT (31713788) (THRU 9-3-02)

ITEM	PART NO.	DESCRIPTION	QTY
1.	52713782	HANDLE-SHUTDOWN	4
2.	60120092	TUBE	2
3.	77041459	LIMIT SWITCH	2
4.	73055278	DUMP VALVE	1
5.	72060052	CAP SCR 3/8-16X2-1/2 HHGR5	4
6.	72063003	WASHER 3/8 WRT	8
7.	72062103	NUT 3/8-16 LOCK	4
8.	72063215	WASHER 3/8 BELLEVILLE SS	4
9.	72063001	WASHER 1/4 WRT	5
10.	72062104	NUT 1/4-20 LOCK	1
11.	60118873	MOUNTING BAR	1
12.	72062109	NUT 5/16-18 LOCK	8
13.	72063002	WASHER 5/16 WRT	12
14.	72060029	CAP SCR 5/16-18X2	4
15.	72532972	ADAPTER #8MJIC #12FJIC	1
16.	72053767	ELBOW #12MSTR #12MJIC 90°	3
17.	72053781	ELBOW #12MSTR #12MJIC 45°	1
18.	51705352	HOSE ASM 3/4X22 FF #12#12	1
19.	51714157	HOSE ASM 3/4X22 FZ #12#12	1
20.	72060032	CAP SCR 5/16-18X2-3/4 HHGR5	2
21.	89044188	CABLE 14AWG DUPLEX	15FT
22.	77040186	TERMINAL 1/4FSLPON 16-14GA	2
23.	89044232	WIRE 14GA RED	5FT
24.	77040186	TERMINAL 1/4 FSLPON 16-14GA	4
25.	89044274	WIRE 14GA BLK	1FT
26.	77040000	TERMINAL #10STUD 16-14GA	1
27.	60120438	BRACKET	1
28.	72060004	CAP SCR 1/4-20X1 HHGR5	1
29.	60118874	BRACKET	1
30.	77044468	STRAIN RELIEF 1/2	2
31.	89044331	LOOM .35ID	9FT
32.	72061738	SCR 3/8-16X1-1/4 SHOULDER	4
33.	72062179	NUT 3/8-16 CTRL LOCK	4
34.	72060030	CAP SCR 5/16-18X2-1/4 HHGR5	2
36.	72532360	ADPTR #12MSTR #8MJIC	1
37.	72532657	TEE-SWVL NUT RUN JIC 3/4	1
38.	72532950	TEE-SWVL NUT RUN JIC 1.06	1
39.	72053767	ELBOW #12MSTR #12MJIC 90°	1
40.	73055000	VALVE-RELIEF INLINE	1
41.	51707601	HOSE ASM FF 1/2X27 F	1
42.	51394919	HOSE 3/4X21 #12F #12F	1



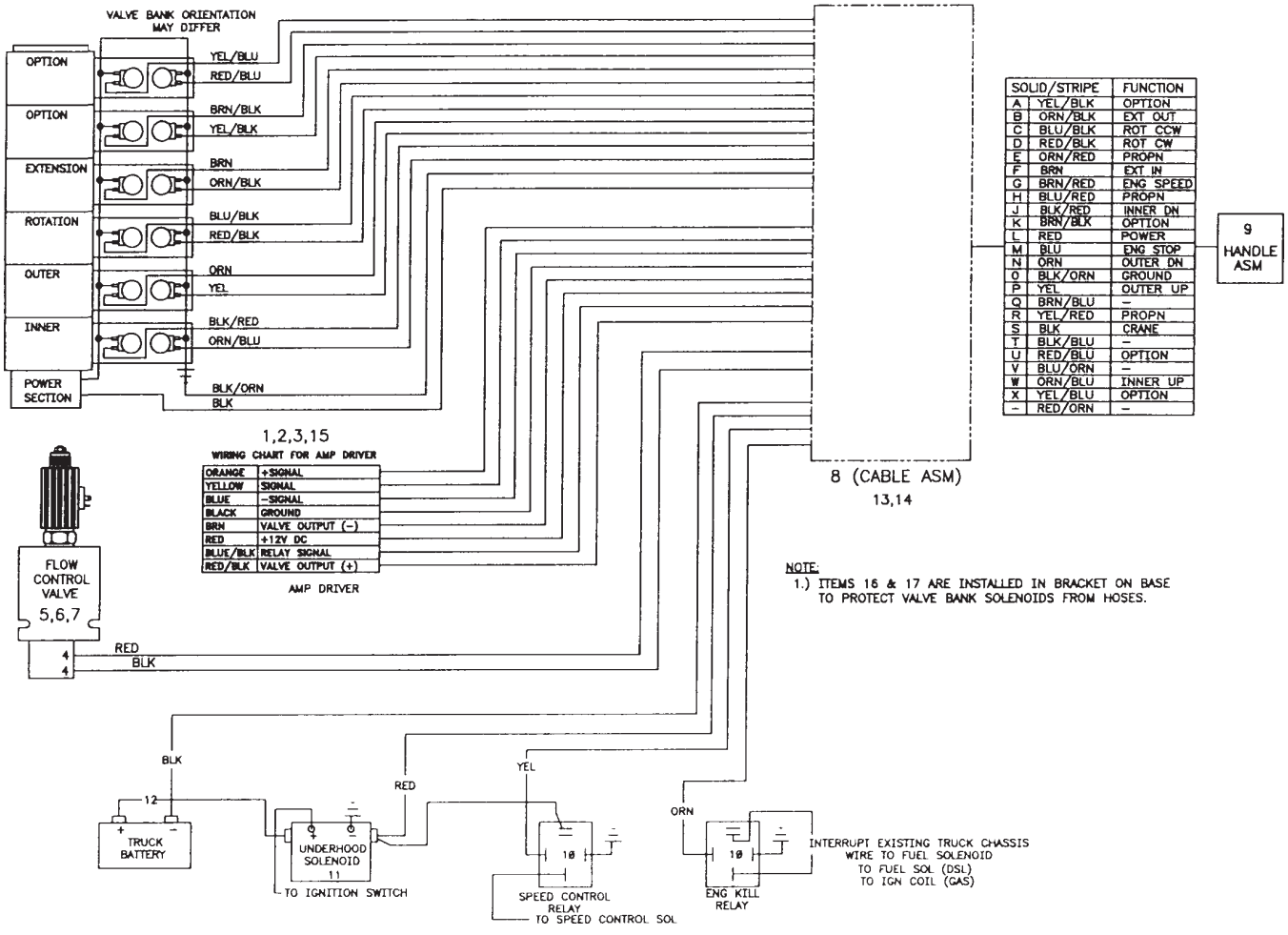
REMOTE CONTROL KIT-V20R 6R/2M (90713581)

ITEM	PART NO.	DESCRIPTION	QTY
1.	77041390	AMP DRIVER	1
2.	72060703	CAP SCR 1/4-20X1/2 SH	2
3.	72063049	WASHER 1/4 LOCK	2
4.	77040186	TERMINAL 1/4 FSLPON 16-14GA	2
5.	73054876	FLOW VALVE	1
6.	72060051	CAP SCR 3/8-16X2-1/4 HHGR5	2
7.	72062103	NUT 3/8-16 LOCK	2
8.	51713570	CABLE ASM-JIC BOX	1
9.	51713430	HANDLE ASM	1
10.	77041251	RELAY	2
11.	77041237	SOLENOID 12V	1
12.	51704784	CABLE ASM #1WIRE X 6	1
13.	72060004	CAP SCR 1/4-20X1 HHGR5	4
14.	72062104	NUT 1/4-20 LOCK	6
15.	60112887	MTG PLATE	1



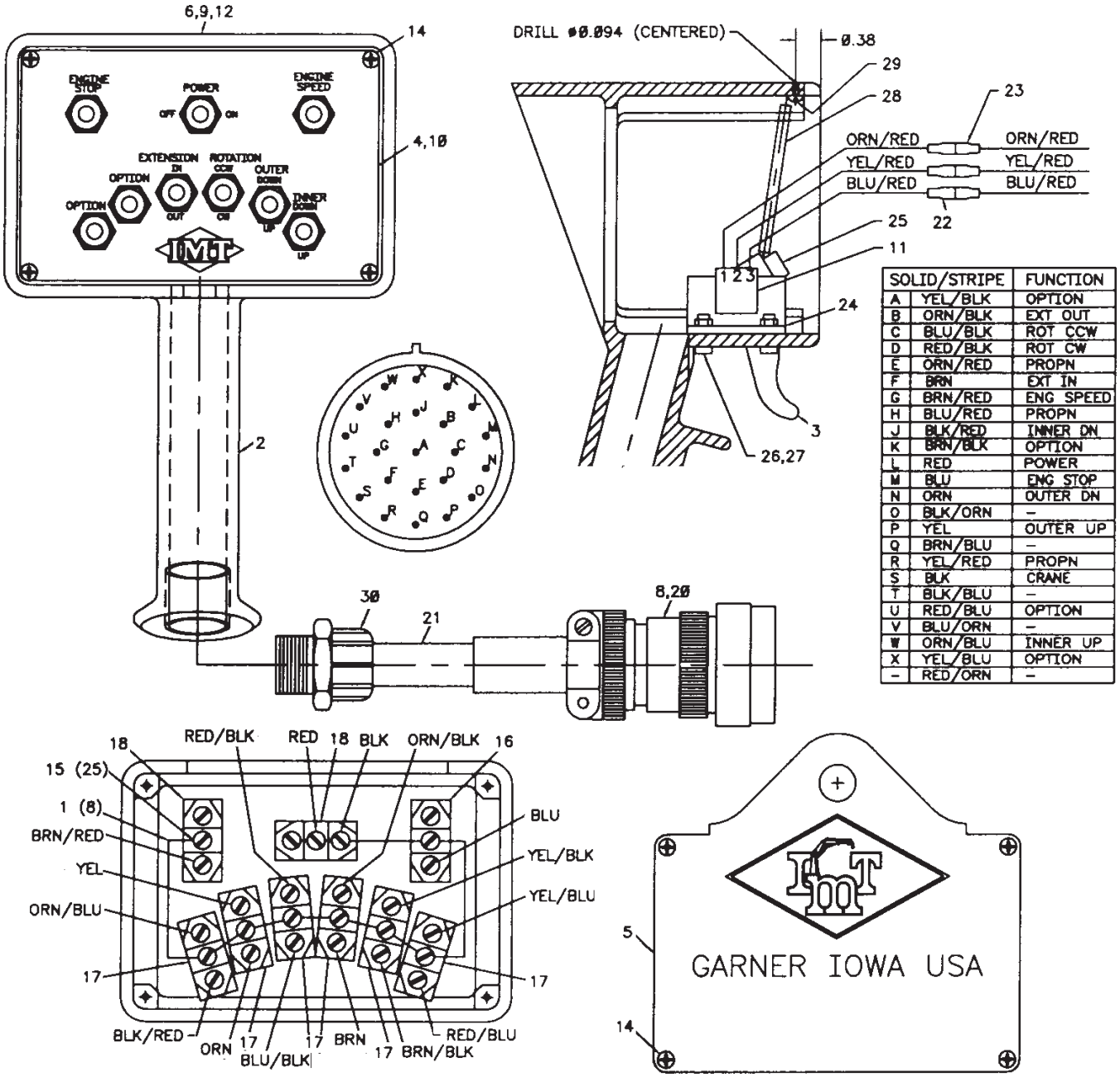
PROP'L RMT CTRL KIT-6F (90713576)

ITEM	PART NO.	DESCRIPTION	QTY
1.	77041390	AMP DRIVER	1
2.	72060703	CAP SCR 1/4-20X1/2 SH	2
3.	72063049	WASHER 1/4 LOCK	2
4.	77040186	TERMINAL 1/4 FSLPON 16-14GA	2
5.	73054876	PRIORITY VALVE	1
6.	72060051	CAP SCR 3/8-16X2-1/4 HHGR5	2
7.	72062103	NUT 3/8-16 LOCK	2
8.	51713570	CABLE ASM-JIC BOX	1
9.	51713430	HANDLE ASM	1
10.	77041251	RELAY	2
11.	77041237	SOLENOID 12V	1
12.	51704784	CABLE ASM #1WIRE X 6	1
13.	72060004	CAP SCR 1/4-20X1 HHGR5	4
14.	72062104	NUT 1/4-20 LOCK	4
15.	60112887	MTG PLATE	1
16.	52704397	ROD-CONTROL HANDLE	1
17.	72062006	NUT 5/8-11 HEX	1



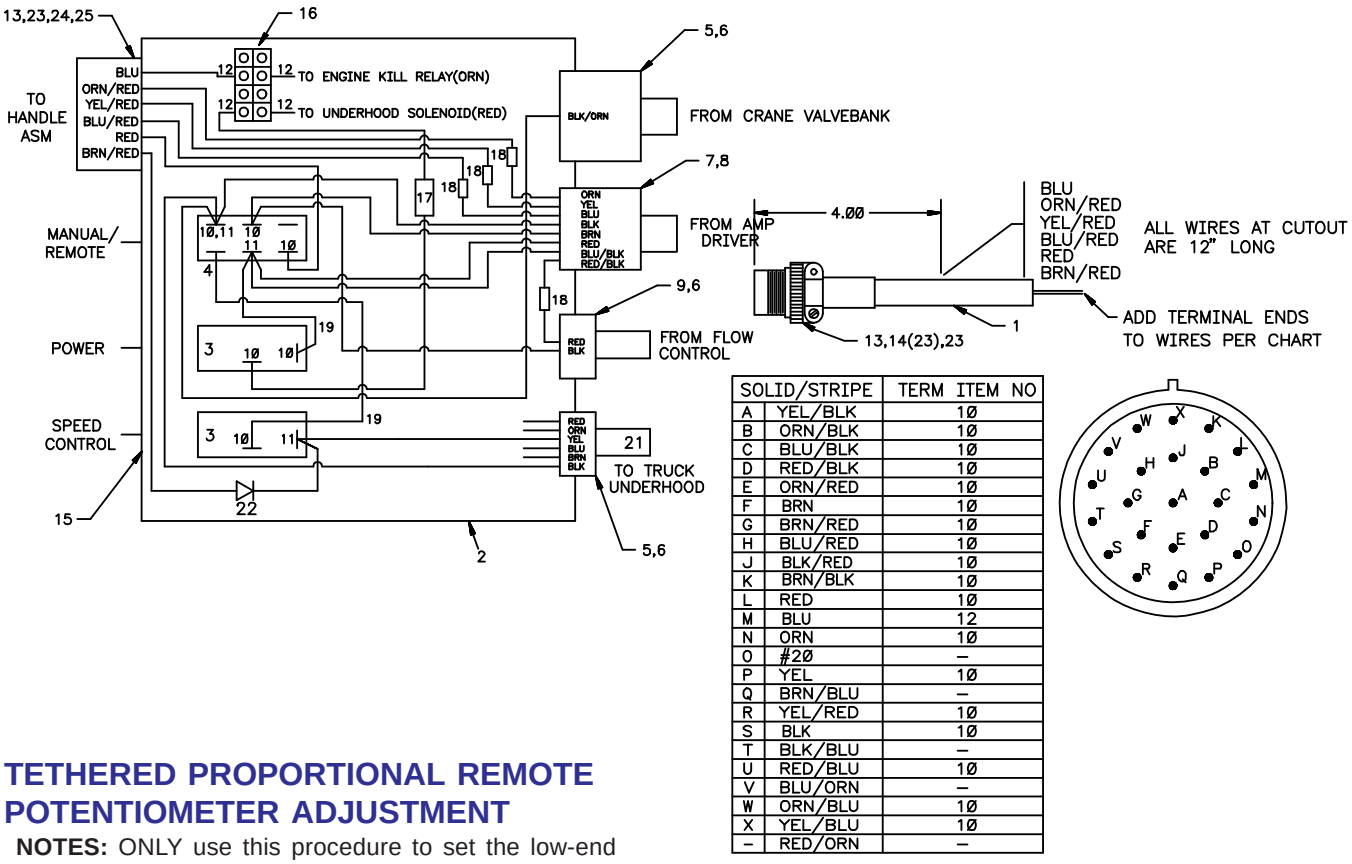
RMT HANDLE ASM-6F (51713430)

ITEM	PART NO.	DESCRIPTION	QTY
1.	60045031	WIRE 18GA GRN X 4	8
2.	60119335	CONTROL HANDLE	1
3.	60111141	TRIGGER	1
4.	60119277	COVER-RC	1
5.	70034306	BACK COVER-RC	1
6.	70029119	SER NO PLACARD	1
8.	77044621	PIN	23
9.	70392862	DECAL-DGR RC ELECTRO SM	1
10.	71394283	DECAL-RC HANDLE	1
11.	51707507	POTENTIOMETER ASM(INCL 22)	1
12.	72066340	POP RIVET	2
14.	72061009	SHT MTL SCR #6X3/4 PH	8
15.	77040051	TERMINAL #8 SPRSPD 16-14GA	25
16.	77040371	TOGGLE SWITCH SPST	1
17.	77040372	TOGGLE SWITCH SPDT	6
18.	77040373	TOGGLE SWITCH SPST	2
20.	77044579	CONNECTOR	1
21.	89044100	CABLE 18GA/24WIRE X 30FT	1
22.	77040047	TERMINAL (PART OF 22)	3REF
23.	77040186	TERMINAL 1/4 FSLPON 16-14GA	3
24.	60111142	MTG BRACKET	1
25.	72060669	CAP SCR #10-32X5/8 SH	1
26.	72060636	CAP SCR #10-24X3/4 SH	2
27.	72062106	NUT #10-24 LOCK	2
28.	70143223	SPRING	1
29.	72061000	SHT MTL SCR #6X1/2 PH	1
30.	77044196	CONNECTOR	1



CABLE ASM-JIC BOX 50" (51713570)

1.	89044100	CABLE 18GA/24WIRE	50"
2.	90713575	JIC BOX	1
3.	77041345	TOGGLE SWITCH ST	2
4.	77041354	TOGGLE SWITCH DT	1
5.	77044018	STRAIN RELIEF 1/2	2
6.	77044201	NUT 1/2 ELEC LOCK	3
7.	77044196	STRAIN RELIEF 3/4	1
8.	77044202	NUT 3/4 ELEC LOCK	1
9.	77044468	STRAIN RELIEF 1/8-1/4	1
10.	77040186	TERMINAL 1/4 FSLPON 16-14GA	25
11.	77040282	TERMINAL 1/4 PIGBAC 16-14GA	3
12.	77040051	TERMINAL #8 SPRSPD 16-14GA	4
13.	77044620	CONNECTOR	1
14.	77044580	SOCKET	23
15.	70393257	DECAL-JIC BOX	1
16.	77044341	TERMINAL BLOCK-4	1
17.	77041056	FUSE 20A IN-LINE	1
18.	77040048	BUTT CONNECTOR 16-14GA	4
19.	89044232	WIRE 14GA RED X 3	2
20.	77044668	PLUG-SEAL	1
21.	89044354	CABLE 14GA/6WIRE	84"
22.	77041423	DIODE	1
23.	77044667	PLUG-CAP	1
24.	77044645	NUT	1
25.	77044646	WASHER-LOCK	1

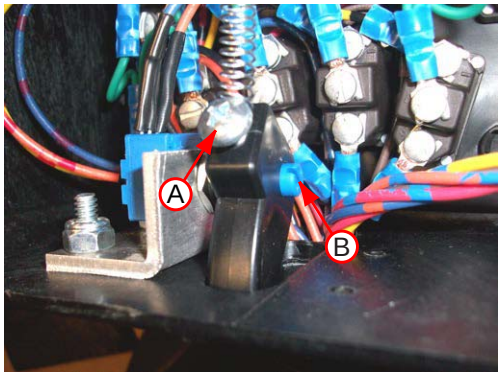


SOLID/STRIPE	TERM ITEM NO
A YEL/BLK	10
B ORN/BLK	10
C BLU/BLK	10
D RED/BLK	10
E ORN/RED	10
F BRN	10
G BRN/RED	10
H BLU/RED	10
J BLK/RED	10
K BRN/BLK	10
L RED	10
M BLU	12
N ORN	10
O #20	–
P YEL	10
Q BRN/BLU	–
R YEL/RED	10
S BLK	10
T BLK/BLU	–
U RED/BLU	10
V BLU/ORN	–
W ORN/BLU	10
X YEL/BLU	10
– RED/ORN	–

TETHERED PROPORTIONAL REMOTE POTENTIOMETER ADJUSTMENT

NOTES: ONLY use this procedure to set the low-end output on the remote handle assembly if crane functions operate without pulling the proportional trigger.
You may need a second operator to help with steps 4 and 5.

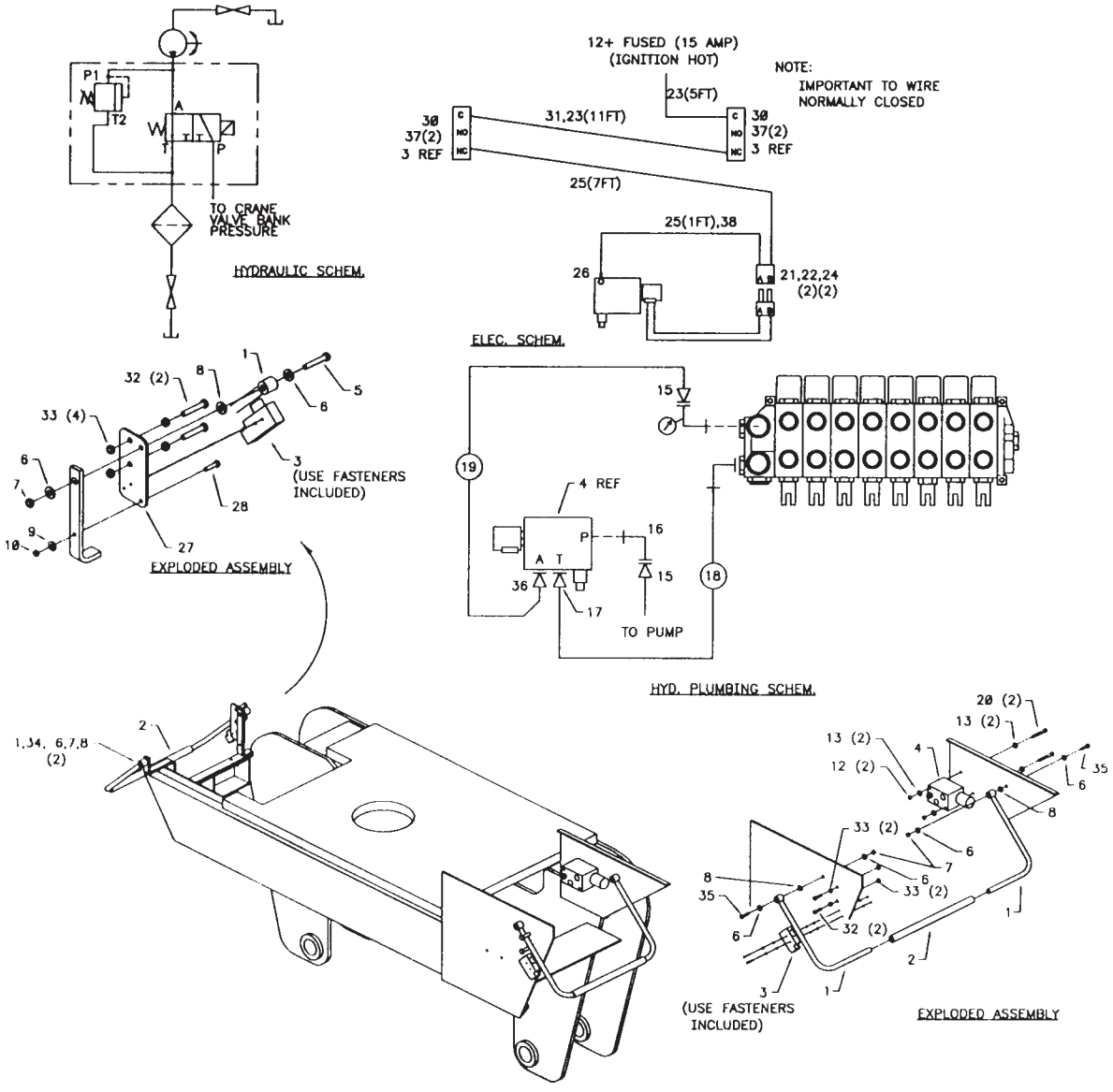
1. Following proper crane and stabilizer set-up, with the PTO engaged and the truck running, move the crane from the stowed position to a position off to the side of the truck. Unstow the winch cable hook and lower the winch approx (6) six feet.
2. Remove the back cover of the remote control handle.
3. Loosen screw “A” slightly. (Note: Screw style may vary).
4. While holding “WINCH DOWN” function, very slowly, rotate screw “B” clockwise until all movement has stopped.
5. Release “WINCH DOWN” function.
6. Tighten screw “A”
7. Test by operating “WINCH DOWN”, “WINCH UP”, “ROTATE CCW”, and “ROTATE CW” without pulling the trigger. If any of these functions move, repeat steps 2 through 6.
8. Replace control back cover and properly stow the crane and stabilizers.



HYDRAULIC SHUT-DOWN KIT (31713788)

EFF: 6-23-97: USED ON CRANE SN 12916971013 ONLY

ITEM	PART NO.	DESCRIPTION	QTY
1.	52713782	HANDLE	4
2.	60120092	TUBE	2
3.	77041459	LIMIT SWITCH	2
4.	73055278	VALVE ASM	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	4
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
14.	72060029	CAP SCR 5/16-18X2	4
16.	72053767	ELBOW #12MSTR #12MJIC 90°	1
17.	72532366	ADAPTER #12MSTR #12MJIC	1
18.	51394919	HOSE 3/4X21 FF #12#12	1
19.	51394882	HOSE 1/2X22 FI #8#8	1
20.	72060038	CAP SCR 5/16-18X4-1/2 HHGR5	2
21.	77044573	CONNECTOR	1
22.	77044552	TERMINAL MALE 18-20GA	2
23.	89044232	WIRE 14GA RED	16FT
24.	70394069	SEAL-CABLE CONNECTOR	2
25.	89044274	WIRE 14GA BLK	8FT
26.	77040000	TERMINAL #10STUD 16-14GA	1
27.	60120438	BRACKET	1
28.	72060004	CAP SCR 1/4-20X1 HHGR5	1
30.	77044468	STRAIN RELIEF 1/2	2
31.	89044331	LOOM	11FT
32.	72060050	SCR 3/8-16X2 HHGR5	4
33.	72062002	NUT 3/8-16 HEX	4
34.	72060030	CAP SCR 5/16-18X2-1/4 HHGR5	1
35.	72060031	CAP SCR 5/16-18X2 HHGR5	2
36.	72532360	ADAPTER #12MSTR #8MJIC	1
37.	77040051	TERMINAL #8STUD 16-14GA	4
38.	89034048	SPIRAL WRAP-CLEAR	3FT



SECTION 4. GENERAL REFERENCE

NOTES

NOTICE

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

Inspection Checklist

CRANES

1

REV: 11-22-11

OWNER/COMPANY	*TYPE OF INSPECTION (check one)* ☐ *DAILY (if deficiency found)* ☐ *QUARTERLY* ☐ *MONTHLY* ☐ *ANNUAL*
CONTACT PERSON	
CRANE MAKE & MODEL	*DATE INSPECTED*
CRANE SERIAL NUMBER	*HOUR METER 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 deployed according to the crane manufacturer's directions.

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

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

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

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

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

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS ✓, R, X, NA
D	1	Labels	All load charts, safety & warning labels, & 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 & cracks.	
D	4	Station	Control and operator's station for dirt, contamination by lubricants, & foreign materials.	
D	5	Hyd System	Hydraulic system (hoses, tubes & fittings) for leakage & proper oil level.	
D	6	Hook	Presence & proper operation of hook safety latches.	
D	7	Wire Rope	Inspect for apparent deficiencies per applicable requirements and manufacturer's specifications.	
D	8	Pins	Proper engagement of all connecting pins & pin retaining devices.	
D	9	General covers.	Overall observation of crane for damaged or missing parts, cracked welds & presence of safety	
D	10	Operation	During operation, observe crane for abnormal performance, unusual wear (loose pins, wire rope damage, etc.). If observed, discontinue use & determine cause & severity of hazard.	
D	11	Remote Ctrls	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-blocking or two-block prevention devices to check for proper operation.	

Inspection Checklist — CRANES — 2

FREQUENCY	ITEM	KEY	✓ = SATISFACTORY **R** = RECOMMENDATION (Should be considered for corrective action) ***NA*** = Not Applicable **X** = Deficient (Note: If a deficiency is found, an immediate determination must be made as to whether the deficiency constitutes a safety hazard and must be corrected prior to operation.) **INSPECTION DESCRIPTION**	STATUS ✓, R, X, NA
D	14	Tires	Check tires (when in use) for proper inflation and condition.	
D or similar.	15	Ground conditions	Ground conditions around the equipment for proper support, including ground settling under and around and around stabilizers and supporting foundations, ground water accumulation,	
D	16	Level Position	The equipment for level position within tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.	
D	17	Operator Cab Windows	Significant cracks, breaks, or other deficiencies that would hamper the operator 's view.	
D	18	Rails, rail stops, clamps, supporting surfaces.	Rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling.	
D	19	Safety Devices	Safety devices and operational aids for proper operation.	
D	20	Electrical	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 & welds. Damage to rod & case.	
M	25	Valves	Holding valves for proper operation.	
M	26	Valves	Control valve for leaks at fittings & between sections.	
M	27	Valves	Control valve linkages for wear , smoothness of operation & 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 excess 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 & cracks.	
M	32	Pins	All pins for proper installation & condition.	
M	33	Hardware	All bolts, fasteners & retaining rings for tightness, wear & corrosion	
M	34	Wear Pads	Condition of wear pads.	
M	35	Pump & Motor mounting bolts.	Hydraulic pumps & motors for leakage at fittings, seals & between sections. Check tightness of	
M	36	PTO	Transmission/PTO for leakage, abnormal vibration & noise, alignment & mounting bolt torque.	
M	37	Hyd Fluid	Quality of hydraulic fluid and for presence of water .	
M	38	Hyd Lines	Hoses & tubes for leakage, abrasion damage, blistering, cracking, deterioration, fitting leakage & secured properly .	
M	39	Hook	Load hook for abnormal throat distance, twist, wear & cracks.	
M	40	Wire Rope	Condition of load line.	
M	41	Manual	Presence of operator's manuals 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 & corrosion.	
	49		● Base	
	50		● Stabilizer beams & 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, bearings, shafts, gears, rollers, & locking devices for wear , cracks, corrosion & distortion.	

Inspection Checklist — CRANES — 3

FREQUENCY	ITEM	KEY	✓ = SATISFACTORY **R** = RECOMMENDATION (Should be considered for corrective action) ***NA*** = Not Applicable X = Deficient (Note: If a deficiency is found, an immediate determination must be made as to whether the deficiency constitutes a safety hazard and must be corrected prior to operation.) **INSPECTION DESCRIPTION**	STATUS ✓, *R, X, NA*
	59		● Rotation bearing(s)	
	60		● Inner boom pivot pin(s) & retainer(s)	
	61		● Outer boom pivot pin(s) & retainer(s)	
	62		● Inner boom cylinder pin(s) & retainer(s)	
	63		● Outer boom cylinder pin(s) & retainer(s)	
	64		● Extension cylinder pin(s) & retainer(s)	
	65		● Jib boom pin(s) & retainer(s)	
	66		● Jib cylinder pin(s) & retainer(s)	
	67		● Jib extension cylinder pin(s) & retainer(s)	
	68		● Boom tip attachments	
	69		● Other	
Q	70	Hyd Lines	Hoses, fittings & tubing for proper routing, leakage, blistering, deformation & 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 & motors for loose bolts/fasteners, leaks, noise, vibration, loss of performance, heating & excess pressure.	
	78		● Winch motor(s)	
	79		● Rotation motor(s)	
	80		● Other	
Q	81	Valves	Hydraulic valves for cracks, spool return to neutral, sticking spools, proper relief valve setting, relief valve failure.	
	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 & leakage at welds. Rods for nicks, scores & dent s. Case for damage. Case & rod ends for damage & abnormal wear .	
	88		● Stabiliizer 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 & drums for damage, abnormal wear , abrasions & 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 pressures & relief valve settings	
A	103	Valves	Safety valve calibration for correct pressures & 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 & cracks.	
A	106	Lubrication	Gear oil change in rotation drive system per maintenance schedule.	
A	107	Hardware	Check tightness of all fasteners and bolts.	
A	108	Wear Pads	Wear pads for excessive wear .	
A	109	Loadline	Loadline for proper attachment to drum.	

Deficiency / Recommendation / Corrective Action Report 4

DATE	*OWNER*	*UNIT I.D. NUMBER*

GUIDELINES

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

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

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

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

X = DEFICIENCY **R** = RECOMMENDATION **CA** = CORRECTIVE ACTION TAKEN

X, R, CA	ITEM #	EXPLANATION	DATE CORRECTED

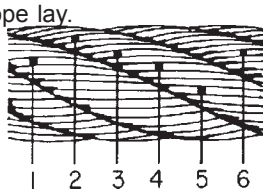
If additional space is required, reproduce this page and attach to this report.

WIRE ROPE INSPECTION

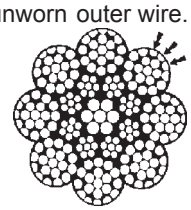
Wire rope with any of the deficiencies shown below shall be removed and replaced immediately .

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

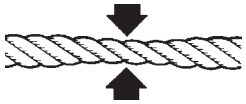
B. When there are either 3 broken wires in one strand or a total of six broken wires in all strands in any one rope lay.



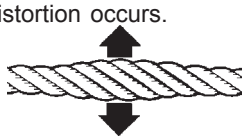
C. When flat spots on the outer wires appear and those outside wires are less than 2/3 the thickness of the unworn outer wire.



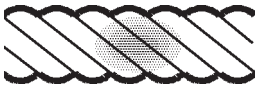
D. When there is a decrease of diameter indicating a core failure.



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



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



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

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

HOOK INSPECTION

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

A. DISTORTION

Bending / Twisting

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

Increased Throat Opening

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

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

B. WEAR

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

C. CRACKS, NICKS, GOUGES

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

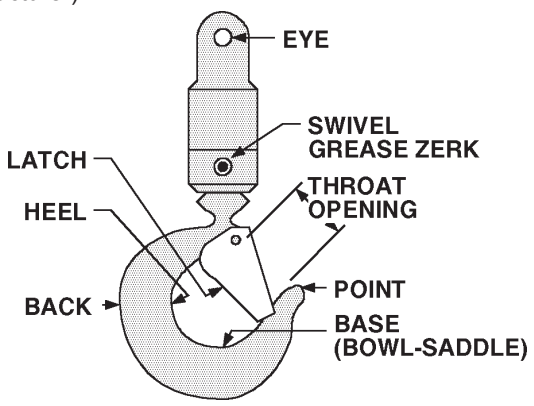
D. LATCH

Engagement, Damage & Malfunction

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

E. HOOK ATTACHMENTS & SECURING MEANS

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



HOLDING VALVE INSPECTION

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

1. With a full rated load, extend the cylinder in question and kill the engine.

2. Operate the control valve to retract the cylinder. If the cylinder "creeps", replace the holding valve. If the cylinder does not "creep", the valve is serviceable.

TWO BLOCK PREVENTION DEVICE INSPECTION

(See Vol. 1, Operation, Maintenance and Repair for a complete description)

The two block prevention system halts the "winch-up" and "extension-out" crane functions before the block contacts the sheave. The two block prevention 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.

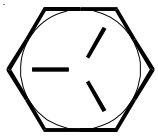
3. Start vehicle, engage PTO and slowly winch loadline up until anti-two block weight comes in contact with the hook end of the loadline cable. At the moment the weight is fully supported by the hook end, the winch up function should become non-functioning, because the two-block damage prevention switch will stop further movement.

If operation other than as described occurs, stop immediately and investigate. Failure to do so will risk damage to the cable or the crane.

Then, extend the winch cable to relieve the two-block condition, and actuate the boom extend function slowly . Again, once the weight is fully supported by the hook end, the boom extend function should become non-functioning, because the two-block damage prevention switch will stop further movement. If operation other than described occurs, stop immediately , reverse the function, and check the system.

If the anti two block function appears to be functioning normally, winch the cable down until the sensing weight swings free.

COARSE THREAD BOLTS

SIZE (DIA-TPI)	BOLT DIA (INCHES)	TIGHTENING TORQUE			
		 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (FT-LBS)	PLATED (FT-LBS)	PLAIN (FT-LBS)	PLATED (FT-LBS)
5/16-18	0.3125	17	13	25	18
3/8-16	0.3750	31	23	44	33
7/16-14	0.4375	49	37	70	52
1/2-13	0.5000	75	57	105	80
9/16-12	0.5625	110	82	155	115
5/8-11	0.6250	150	115	220	160
3/4-10	0.7500	265	200	375	280
7/8-9	0.8750	395	295	605	455
1-8	1.0000	590	445	910	680
1 1/8-7	1.1250	795	595	1290	965
1 1/4-7	1.2500	1120	840	1815	1360
1 3/8-6	1.3750	1470	1100	2380	1780
1 1/2-6	1.5000	1950	1460	3160	2370

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

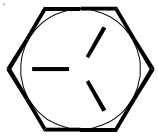
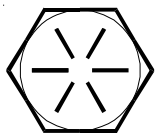
1. Bolt manufacturer's particular specifications should be consulted when provided.
2. Flat washers of equal strength must be used.
3. All torque measurements are given in foot-pounds. To convert to inch-pounds, multiply by 12.
4. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphite, collodial 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

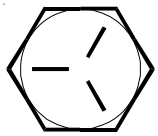
Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Once a bolt has been torqued to 75% of its proof load and then removed, the torque coefficient may no longer be the same as when the bolt was new thus giving indeterminate clamp loads af ter torquing.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

TORQUE DATA CHART - DOMESTIC

FINE THREAD BOLTS

SIZE (DIA-TPI)	BOLT DIA (INCHES)	TIGHTENING TORQUE			
		 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (FT-LBS)	PLATED (FT-LBS)	PLAIN (FT-LBS)	PLATED (FT-LBS)
5/16-24	0.3125	19	14	27	20
3/8-24	0.3750	35	26	49	35
7/16-20	0.4375	55	41	78	58
1/2-20	0.5000	90	64	120	90
9/16-18	0.5625	120	90	170	130
5/8-18	0.6250	170	130	240	180
3/4-16	0.7500	300	225	420	315
7/8-11	0.8750	445	325	670	500
1-12	1.0000	645	485	995	745
1 1/8-12	1.1250	890	670	1445	1085
1 1/4-12	1.2500	1240	930	2010	1510
1 3/8-12	1.3750	1675	1255	2710	2035
1 1/2-12	1.5000	2195	1645	3560	2670

COARSE THREAD BOLTS

SIZE (DIA-TPI)	BOLT DIA (INCHES)	TIGHTENING TORQUE			
		 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (FT-LBS)	PLATED (FT-LBS)	PLAIN (FT-LBS)	PLATED (FT-LBS)
5/16-18	0.3125	17	13	25	18
3/8-16	0.3750	31	23	44	33
7/16-14	0.4375	49	37	70	52
1/2-13	0.5000	75	57	105	80
9/16-12	0.5625	110	82	155	115
5/8-11	0.6250	150	115	220	160
3/4-10	0.7500	265	200	375	280
7/8-9	0.8750	395	295	605	455
1-8	1.0000	590	445	910	680
1 1/8-7	1.1250	795	595	1290	965
1 1/4-7	1.2500	1120	840	1815	1360
1 3/8-6	1.3750	1470	1100	2380	1780
1 1/2-6	1.5000	1950	1460	3160	2370

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

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

2. Flat washers of equal strength must be used.

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

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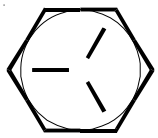
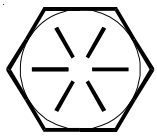
WARNING

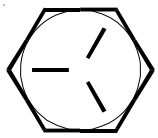
Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Once a bolt has been torqued to 75% of its proof load and then removed, the torque coefficient may no longer be the same as when the bolt was new thus giving indeterminate clamp loads after torquing.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

TORQUE DATA CHART - METRIC

FINE THREAD BOLTS

SIZE (DIA-TPI)	BOLT DIA (INCHES)	TIGHTENING TORQUE			
		 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-24	0.3125	3	2	4	3
3/8-24	0.3750	5	4	7	5
7/16-20	0.4375	8	6	11	8
1/2-20	0.5000	12	9	17	12
9/16-18	0.5625	17	12	24	18
5/8-18	0.6250	24	18	33	25
3/4-16	0.7500	41	31	58	44
7/8-11	0.8750	62	45	93	69
1-12	1.0000	89	67	138	103
1 1/8-12	1.1250	123	93	200	150
1 1/4-12	1.2500	171	129	278	209
1 3/8-12	1.3750	232	174	375	281
1 1/2-12	1.5000	304	228	492	369

COARSE THREAD BOLTS

SIZE (DIA-TPI)	BOLT DIA (INCHES)	TIGHTENING TORQUE			
		 SAE J429 GRADE 5		 SAE J429 GRADE 8	
		PLAIN (KG-M)	PLATED (KG-M)	PLAIN (KG-M)	PLATED (KG-M)
5/16-18	0.3125	2	2	3	2
3/8-16	0.3750	4	3	6	5
7/16-14	0.4375	7	5	10	7
1/2-13	0.5000	10	8	15	11
9/16-12	0.5625	15	11	21	16
5/8-11	0.6250	21	16	30	22
3/4-10	0.7500	37	28	52	39
7/8-9	0.8750	55	41	84	63
1-8	1.0000	82	62	126	94
1 1/8-7	1.1250	110	82	178	133
1 1/4-7	1.2500	155	116	251	188
1 3/8-6	1.3750	203	152	329	246
1 1/2-6	1.5000	270	210	438	328

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

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

2. Flat washers of equal strength must be used.

3. All torque measurements are given in kilogram-meters.

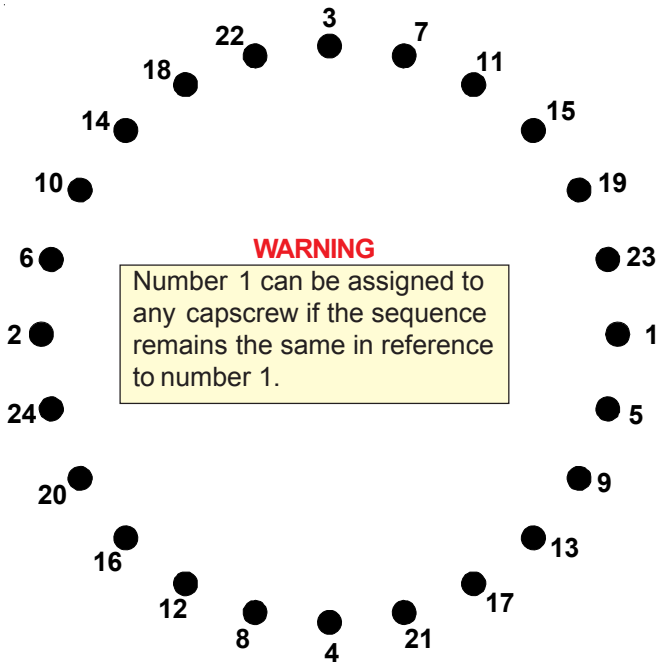
4. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphite, collodial copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of Loctite does not affect the torque values listed above.

WARNING

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

TURNTABLE BEARING FASTENER TIGHTENING SEQUENCE

Refer to the 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-LBS = 106 FT-LBS)
   (EXAMPLE-METRIC: .40 x 36 KG-M = 14.4 KG-M)

4. Repeat Step 3, but torqueing all capscrews to 75% of the specified torque value. Continue to follow the tightening sequence.
   (EXAMPLE: .75 x 265 FT-LBS = 199 FT-LBS)
   (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 FOR REPLACEMENT

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

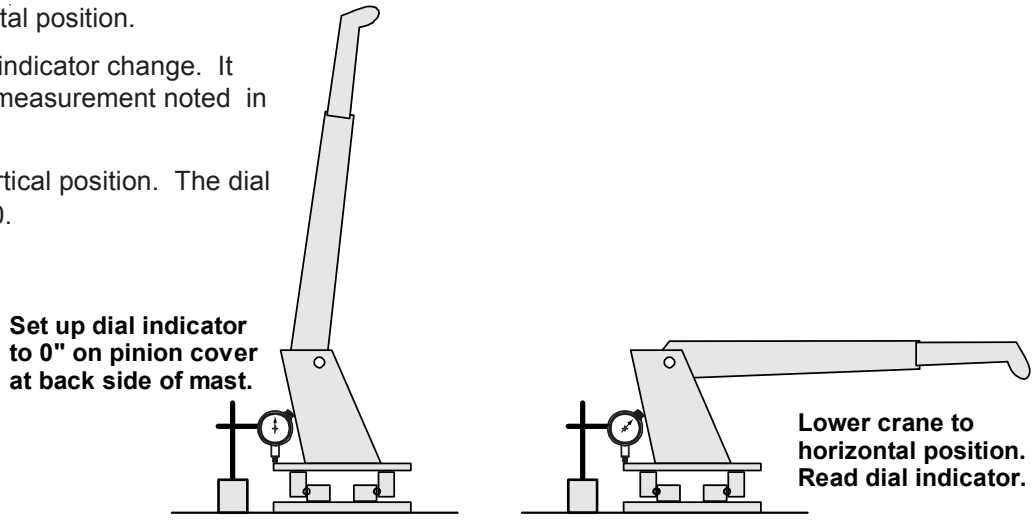
1. Metal particles present in the bearing lubricant.
2. Increased drive power required to rotate the crane.
3. Noise emitting from the bearing during crane rotation.
4. Rough crane rotation.
5. Uneven or excessive wear between the pinion gear and turntable gear.

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

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

TEST PROCEDURE

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 - MODEL TO MEASURED TILT DIMENSION

NOTE	IMT CRANE, LOADER OR TIREHAND MODEL				
THE FIGURES LISTED IN THIS CHART ARE SERVICE GUIDELINES AND DO NOT, IN THEMSELVES, REQUIRE THAT THE BEARING BE INSPECTED. IF THERE IS REASON TO SUSPECT AN EXCESS OF BEARING WEAR AND THE MEASURED TILT DIMENSION EXCEEDS THE DIMENSION LISTED, REMOVE THE BEARING FOR INSPECTION.		1007 1014 1014A 1015 2015/2020 2109 3000 3816/3820 3016/3020 421/425 4300 5016/5020 6016/6020 TH7 BODY ROT'N TH1449 BODY ROT'N TH15B CLAMP TH2551B CLAMP TH2557A CLAMP	5200 5200R 5217 5800 7020 7025 7200 7415 9000 TH10 BODY ROT'N TH14 BODY ROT'N	16000 32018 32027 32030 T30 T40	9800 12916 13031 13034 14000 15000 18000 20017 8000L H1200 H1200RR T50 TH2551B BODY ROT'N TH2557B BODY ROT'N TH2557A BODY ROT'N
	BALL DIA. (REF)	.875" (22mm)	1.00" (25mm)	1.18"-1.25" (30-32mm)	1.75" (44mm)
	TILT DIM. (A_1-A_2)	**.060" (1.524mm)**	**.070" (1.778mm)**	**.075" (1.905mm)**	**.090" (2.286mm)**

20000710

The information within this manual has been compiled and checked but errors do occur. To provide our customers with a method of communicating those errors we have provided the Manual Change Request form below. In addition to error reporting, you are encouraged to suggest changes or additions to the manual which would be of benefit to you. We cannot guarantee that these additions will be made but we do promise to consider them. When completing the form, please write or print clearly. Submit a copy of the completed form to the address listed below.

MANUAL CHANGE REQUEST

DATE	PRODUCT MANUAL	MANUAL PART NO.
SUBMITTED BY		
COMPANY		
ADDRESS		
CITY, STATE, ZIP		
TELEPHONE		

☐ ERROR FOUND

LOCATION OF ERROR (page no.): _____

DESCRIPTION OF ERROR: _____

☐ ERROR FOUND

DESCRIPTION OF ADDITION: _____

REASON FOR ADDITION: _____

MAIL TO:

IOWA MOLD TOOLING CO., INC.

BOX 189

GARNER, IA 50438-0189

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