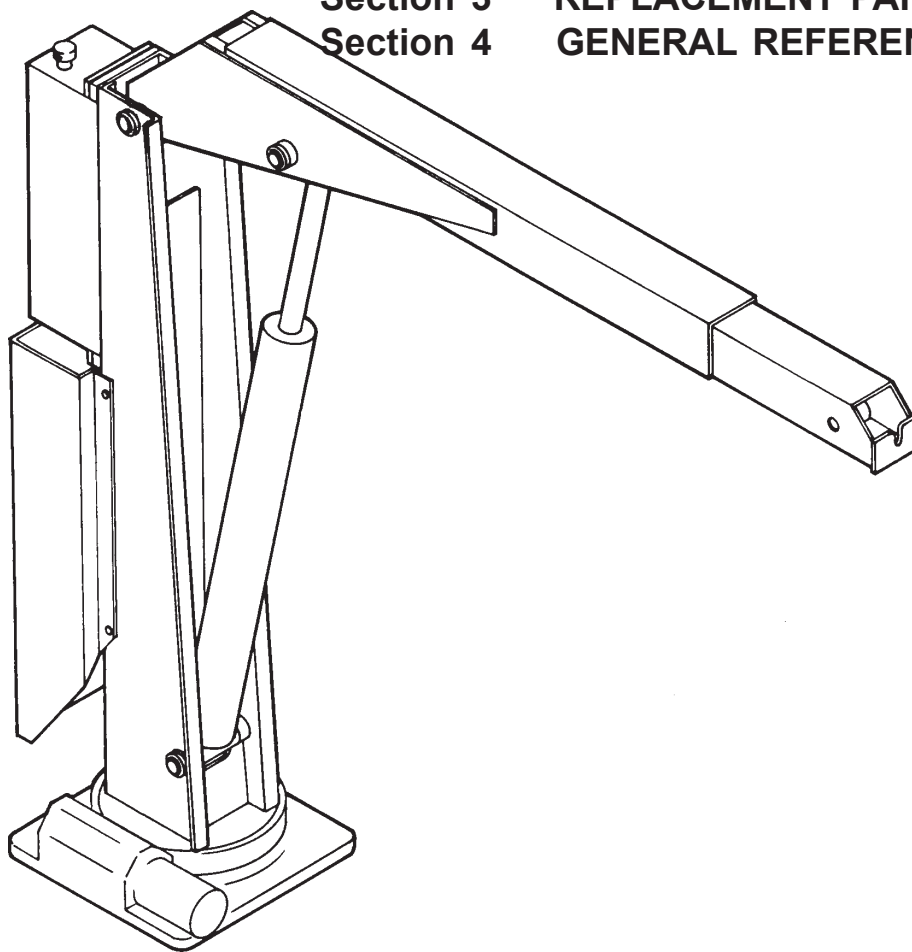




## ***Model 1007 Crane***

### **Volume 2 - PARTS AND SPECIFICATIONS**

<b>Section 1</b>	<b>SPECIFICATIONS</b>
<b>Section 2</b>	<b>CRANE REFERENCE</b>
<b>Section 3</b>	<b>REPLACEMENT PARTS</b>
<b>Section 4</b>	<b>GENERAL REFERENCE</b>



**IOWA MOLD TOOLING CO., INC.**

BOX 189, GARNER, IA 50438-0189

TEL: 641-923-3711

MANUAL PART NUMBER 99900142

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

00001007:99900142: -----

## REVISIONS LIST

DATE	LOCATION	DESCRIPTION OF CHANGE
20001003	3-15	ECN9000-93715056-ITEM 1 CABLE ASM MADE REF
	3-16	ECN9000-93715057-ITEM 1 CABLE ASM MADE REF
	3-22	ECN9000-90713620-ADD CABLE ASMS 51716317 & 51705388
	3-26	EXC9000-90714025-ADD CABLE ASM 51705388 & REV #2 CABLE ASM 51716317
20001212	3-22	ECN8635-90713620-ADD AUX CHASSIS GRD INFO
20010208	2-05	CORRECT SPARE PARTS LIST
20030129	1-6	ECN 9120 - UPDATED CAPACITY PLACARD IN MANUAL
20040129	3-5,20,24	ECN 9361 - ADDED RUBBER BUMPER TO PREVENT PULLEY/BEARING INTERFERENCE.
20040608	3-15,16,22,26	ECN 9493 - MOVED SOLENOID FROM CONTROL KIT TO INSTL KIT
20070212	COVER, 1-3, 3-3	UPDATED COVER, SPECS WITH LOGO, OWNERSHIP STATEMENT, UPDATED S/N TAG.
20070607	3-5,20	ECN 10379 - MOVED SPACER, RUBBER BUMPER, FROM WINCH KIT TO MAST ASM.
20091210	3-18,20	UPDATED REMOTE HANDLE IN WINCH KITS
20110209	3-12	ADDED 94014962 TUBE ASSEMBLY TO VALVEBANK (73073039)

## 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 truck-mounted articulating 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.**

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## NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

SECTION 1. 1007 CRANE SPECIFICATIONS

GENERAL SPECIFICATIONS .....	3
PERFORMANCE CHARACTERISTICS .....	3
CYLINDERS .....	3
POWER SOURCE.....	3
ROTATION SYSTEM .....	3
CYLINDER HOLDING VALVES .....	4
HYDRAULIC SYSTEM .....	4
CONTROLS .....	4
MINIMUM CHASSIS SPECIFICATIONS .....	4
GEOMETRIC CONFIGURATION .....	5
CAPACITY CHART .....	6

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1-2  
**NOTES**

# 1007 CRANE SPECIFICATIONS

## GENERAL SPECIFICATIONS

<b>CRANE RATING</b>	10,500 ft-lbs (1.46 ton-meters)
<b>REACH</b> - from centerline of rotation	7'-0" (2.13m)
<b>HYDRAULIC EXTENSION</b>	31-1/2" (80cm)
<b>LIFTING HEIGHT</b> - from base of crane	11'-8" (3.56m)
<b>WEIGHT OF CRANE</b>	580 lbs (263.1 kg)
<b>MOUNTING SPACE REQUIRED</b> (crane base)	14-1/2" X 17"
<b>TIE-DOWN BOLT PATTERN</b>	11-1/2" X 14-3/4" (29.2cm X 37.5cm) on center
<b>HORIZONTAL CENTER OF GRAVITY</b> from centerline of rotation-stored position	3" (7.6cm)
<b>VERTICAL CENTER OF GRAVITY</b> from bottom of crane base - stored position	30" (76.2cm)
<b>OPTIMUM PUMP CAPACITY</b> electric, single stage	1-1/2 U.S. Gallons/minute (5.7 liters/minute)
<b>OIL RESERVOIR CAPACITY</b>	3 U.S. Gallons (11.4 liters)
<b>DESIGN FACTORS</b> - pins and hydraulics	4/1

## PERFORMANCE CHARACTERISTICS

<b>ROTATION:</b>	400° (6.98 Rad.)	*90 seconds
<b>LOWER BOOM ELEVATION:</b>	-90° to +60° (-1.57 Rad. to +1.05 Rad.)	*35 seconds
<b>EXTENSION BOOM:</b>	31-1/2" (80cm)	*18 seconds

\* Times are based on 1-1/2 GPM (5.7 liters/minute) optimum oil flow.

## CYLINDERS

	<b>BORE</b>	<b>STROKE</b>
<b>LOWER BOOM CYLINDER</b>	3" (7.62cm)	28" (71.1cm)
<b>EXTENSION BOOM CYLINDER</b>	2" (5.1cm)	31-1/2" (80cm)

## POWER SOURCE

Power is supplied to the electric motor by a solenoid connected to the 12-VDC truck battery. The chassis must be equipped with a 4000 watt Delco Freedom battery (or equivalent) connected in parallel to the chassis' standard heavy-duty battery. The chassis must also be equipped with a heavy-duty alternator (63 amp for GM vehicles and 60 amp for Ford vehicles).

## ROTATION SYSTEM

Turntable bearing with external worm gear powered with a high-torque hydraulic motor through a self-locking worm. Total gear reduction is 63 to 1.

## CYLINDER HOLDING VALVES

The base ends (extend side) of the lower boom cylinder is equipped with an integral-mounted counter-balance valve to prevent sudden cylinder collapse in case of hose or other hydraulic failure.

The counter balance valve serves several functions. First, it is a holding valve. Secondly, it is designed to control the speed at which the lowering function operates, and allows that motion to be metered under load. Finally, it prevents the loss of an excess amount of oil in the event of a hose failure. Only the oil in the hose, at the time of the failure, will be lost.

## HYDRAULIC SYSTEM

Open-centered, full-pressure system that requires 1-1/2 GPM (5.7 liters/min) optimum oil flow at 2350 PSI (162 bar). The control valvebank is a 3 spool, stack-type, 12 VDC valvebank. The hydraulic system includes a 3-gallon (11.4 liter) hydraulic oil reservoir, a 60-mesh suction-line strainer, a hydraulic pump driven by a heavy-duty electric motor and all necessary hoses and fittings.

## CONTROLS

Remote control with a 10-foot (3.05m) control cable.

## MINIMUM CHASSIS SPECIFICATIONS

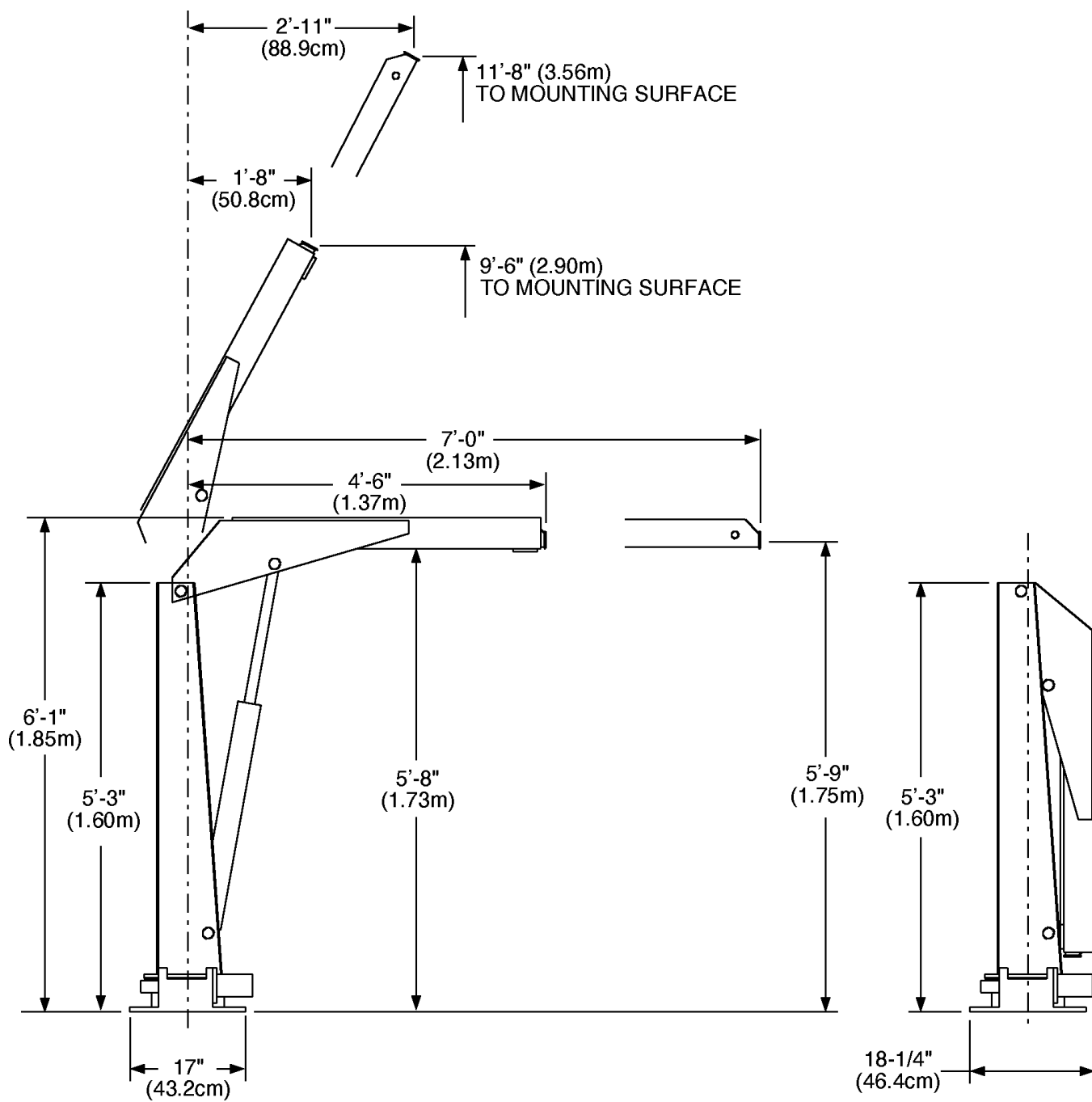
<b>BODY STYLE</b>	Conventional cab
<b>WHEEL BASE</b>	137" - 161" (348cm - 409cm)
<b>CAB-TO-AXLE DIMENSION</b>	60" - 84" (152cm - 213cm)
<b>*FRAME SECTION MODULUS</b>	5.91 cubic inches (97cc)
<b>*RBM</b>	212,760 in-lbs (2451 kg-m)
<b>FRONT AXLE RATING</b>	2700 lbs - 4000 lbs (1315 kg - 1814 kg)
<b>REAR AXLE RATING</b>	5480 lbs - 7500 lbs (2486 kg - 3402 kg)

\* Based on 36,000 PSI yield frame material (A-36).

In addition to these specifications, a heavy-duty battery and alternator are required. It is recommended that the vehicle have power steering and dual rear wheels. IMT recommends adherence to the upper limit of these specifications for best total system performance.

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



**GEOMETRIC CONFIGURATION**

## 1007 CRANE SPECIFICATIONS

### GENERAL SPECIFICATIONS

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### PERFORMANCE CHARACTERISTICS

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\* Times are based on 1-1/2 GPM (5.7 liters/minute) optimum oil flow.

### CYLINDERS

	<b>BORE</b>	<b>STROKE</b>
<b>LOWER BOOM CYLINDER</b>	3" (7.62cm)	28" (71.1cm)
<b>EXTENSION BOOM CYLINDER</b>	2" (5.1cm)	31-1/2" (80cm)

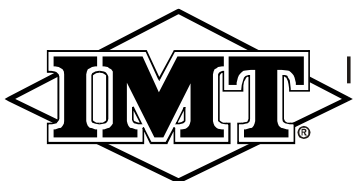
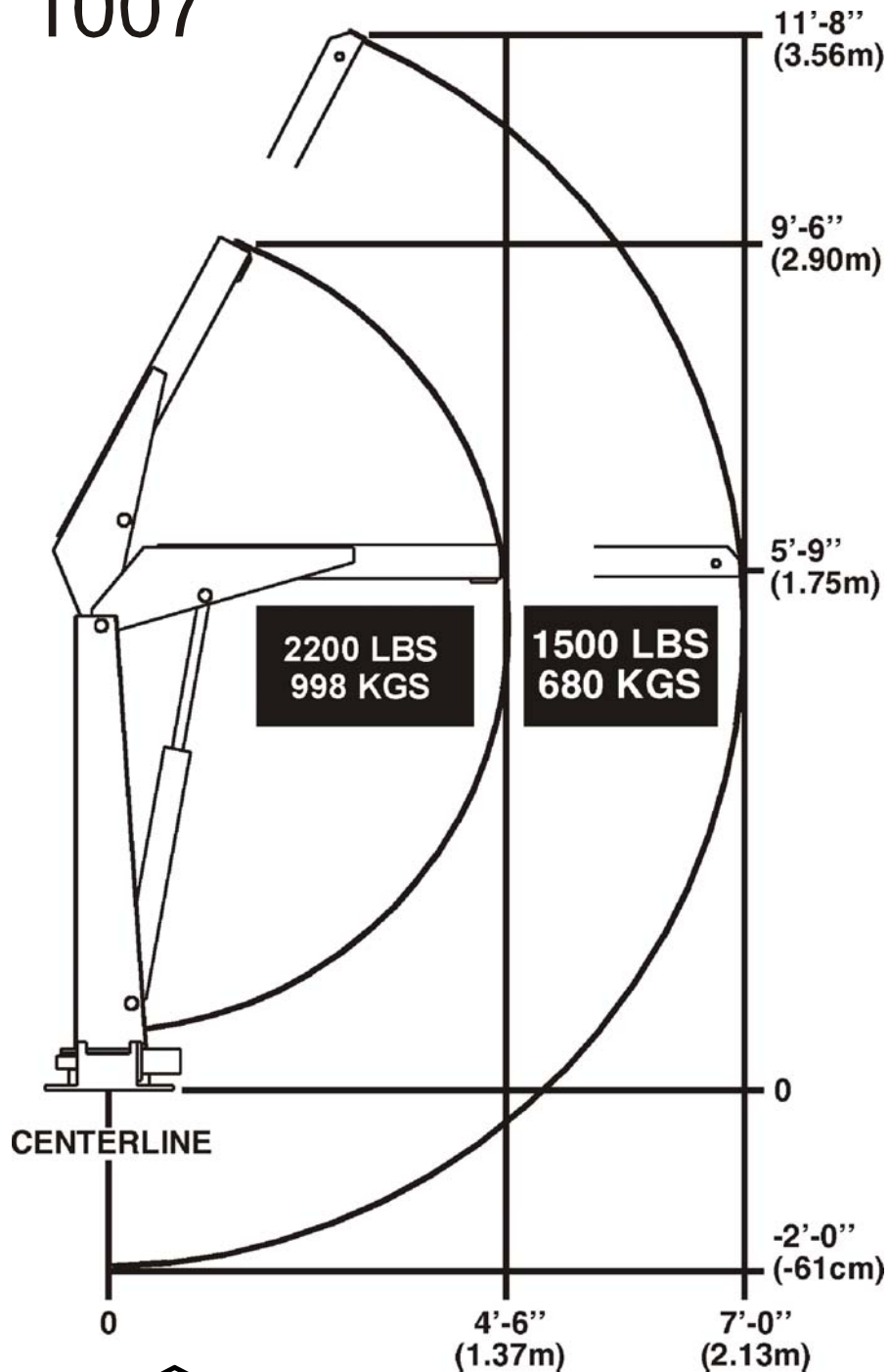
### POWER SOURCE

Power is supplied to the electric motor by a solenoid connected to the 12-VDC truck battery. The chassis must be equipped with a 4000 watt Delco Freedom battery (or equivalent) connected in parallel to the chassis' standard heavy-duty battery. The chassis must also be equipped with a heavy-duty alternator (63 amp for GM vehicles and 60 amp for Ford vehicles).

### ROTATION SYSTEM

Turntable bearing with external worm gear powered with a high-torque hydraulic motor through a self-locking worm. Total gear reduction is 63 to 1.

# CAPACITY CHART 1007



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

71392336

SECTION 2. 1007 CRANE REFERENCE

MAJOR CRANE ASSEMBLIES ..... 3

WELDMENT PART NUMBER LOCATIONS ..... 3

GREASE ZERK LOCATIONS & LUBRICANT REQUIREMENTS ..... 4

RECOMMENDED SPARE PARTS LIST ..... 5

INSTALLATION ..... 7

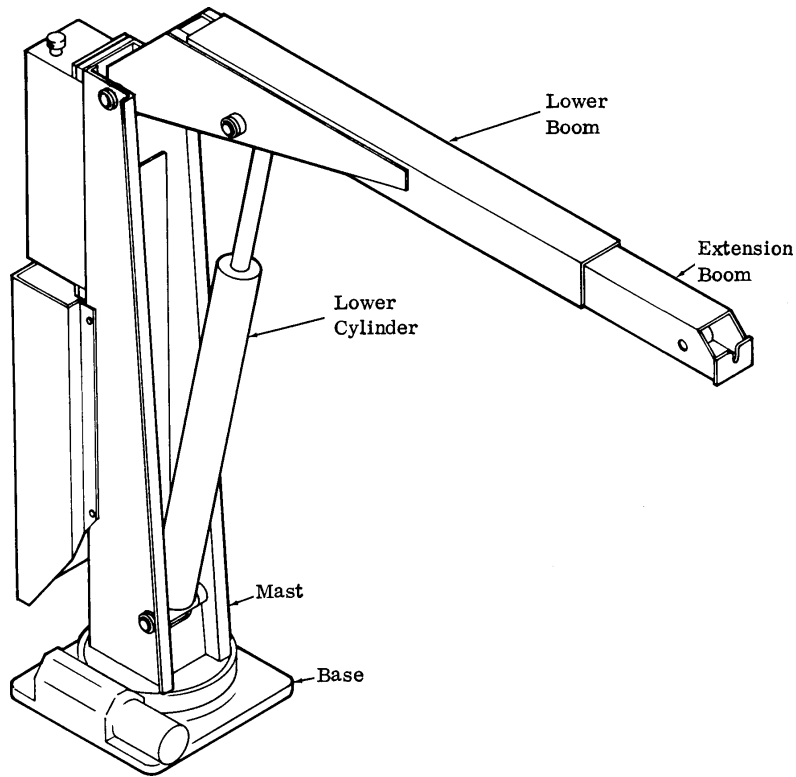
POWER UNIT INSTALLATION ..... 8

HYDRAULIC INSTALLATION ..... 8

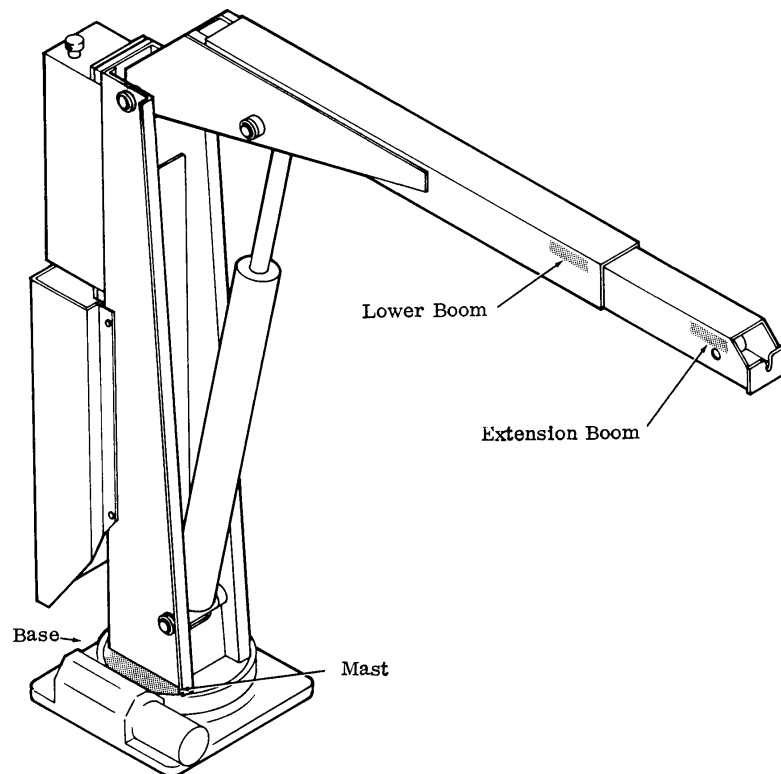
GROUND WIRE INSTALLATION ..... 8

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2-2  
**NOTES**

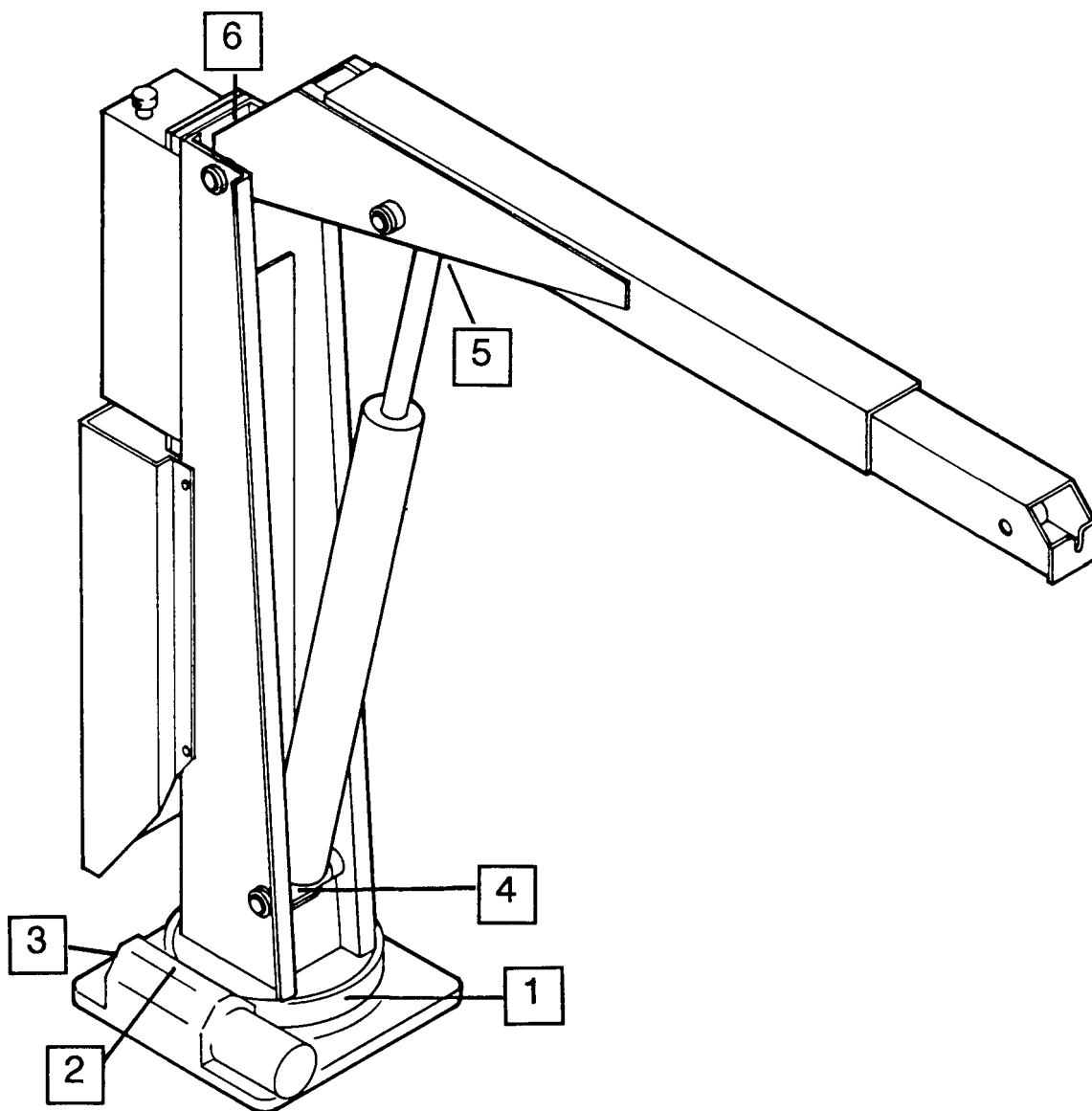


## MAJOR CRANE ASSEMBLIES



## 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	WEEKLY
2.	WORM GEAR COVER	OR	
3.	WORM GEAR END		
4.	LOWER CYLINDER BASE		
5.	LOWER CYLINDER ROD	SHELL RETINAX "A"	
6.	MAST/LOWER BOOM HINGE PIN		

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****1007 CRANE****FOR MANUAL: 99900142**

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.

<b>ASSEMBLY DESIGNATION</b>	<b>ITEM NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>CODE</b>	<b>SHELF LIFE (MO)</b>	<b>ORDER QTY</b>
<b>41704562.01.19980831</b>	<b>BASE ASM</b>						
	5	60030116	THRUST BEARING	2	W		
	8	70055147	BEARING	1	W		
	9	70055148	BEARING	1	W		
	10	70056307	WORM GEAR	1	C		
	11	71056308	TURNABLE BEARING	1	W		
	19	72062162	NUT	15	W		
	22	72063117	WASHER	15	W		
	25	72601313	CAP SCR	15	W		
	26	73051482	MOTOR	1	C		
<b>41705155.01.19950717</b>	<b>MAST ASM</b>						
	10	72063117	WASHER	12	W		
	12	72601144	CAP SCR	12	W		
	13	70142779	SUCTION STRAINER	1	W		
<b>41705145.01.19980806</b>	<b>LOWER BOOM ASM</b>						
	3	60030109	WEAR PAD	1	W		
<b>41705143.01.19980806</b>	<b>EXTENSION BOOM ASM</b>						
	4	60030109	WEAR PAD	1	W		
<b>3B031840.01.19971010</b>	<b>LOWER BOOM CYLINDER</b>						
	6	9C121217	SEAL KIT	1	W		
	17	73054304	VALVE 10 GPM	1	C		
<b>3B030840.01.19940912</b>	<b>EXTENSION CYLINDER</b>						
	7	9B081012	SEAL KIT	1	W		
<b>91705142.01.19941109</b>	<b>HYDRAULIC KIT-3 SECTION/POWER UNIT</b>						
	8	73073039	VALVEBANK	1	W		
	27	70073616	POWER UNIT	1	W		
<b>90705141.01.19950721</b>	<b>CONTROL KIT-3 FUNCTION/POWER UNIT</b>						
	10	77041091	SOLENOID 3-POLE 12V	1	W		
	11	77041237	SOLENOID 12V 150A	1	W		
<b>51705139.01.19910830</b>	<b>REMOTE HANDLE ASSEMBLY-3 FUNCTION/SINGLE PUMP</b>						
	11	77041345	TOGGLE SWITCH ST	1	W		
	12	77041346	TOGGLE SWITCH DT	3	W		



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2-6  
(BLANK)

# INSTALLATION

## INSTALLATION

### NOTE

These instructions apply only to IMT bodies.

1. Inspect the carrier vehicle for compliance with the Minimum Chassis Specifications as shown in Section 1. Specifications.
2. Locate the center point of the crane support 15-3/4" from the side wall of the body and 18" from the rear edge of the body. For right side mount, center point is to be 16-1/2" from side wall and 18-7/8" from rear edge of body.
3. Cut a 6-1/2" x 4-1/2" rectangular hole centered on the point located in Step 2. The 4-1/2" dimension must be parallel with the side wall of the body.

### CAUTION

Before cutting the hole, make certain it will not interfere with the body frame members. Do not cut any frame members when cutting the hole.

The fiberglass body deck consists of fiberglass impregnated expanded metal. Use a metal-cutting blade in the saw.

4. Insert the crane support in the hole and weld the crane support to the deck. Drill the four mounting holes.

### CAUTION

The "diamond plate" deck on the fiberglass body appears to be metal. Is is, in fact, fiberglass and will be damaged by attempting to weld the crane support to the deck. Use the crane support as a template and drill the four holes.

5. Position the support plate in the hole and install the crane on top of the plate. Use a lifting device capable of supporting the crane (580 lbs). Install three bolts through the top of the crane base, through the deck and into the crane support bottom plate. Install the fourth bolt with washer and nut from the bottom side.

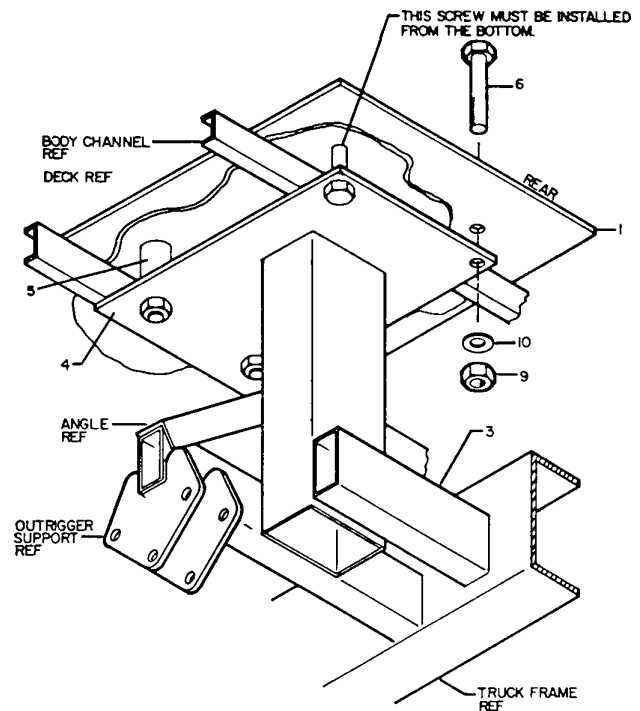
6. Weld the 4" x 2" x 1/4" wall support tube to the truck frame and rear side of the crane support tube. Weld outrigger tube to chassis and front of crane support tube. Weld angle from bottom support plate to outrigger tube.

### NOTE

If optional outrigger support tube is not ordered, use a 4" x 2" x 1/4" wall tube (customer supplied). All welding must be done by an AWS qualified welder.

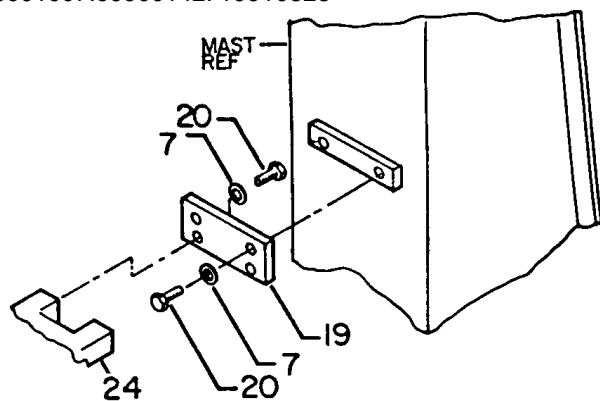
7. Spray paint all unpainted surfaces.
8. Feed the battery cable through the support tube and base and connect it to the power unit solenoid. Connect the other end to the underhood solenoid which is connected to the positive (+) side of the battery.

Refer to the parts drawings of the installation kits in Section 4 for specific part numbers.

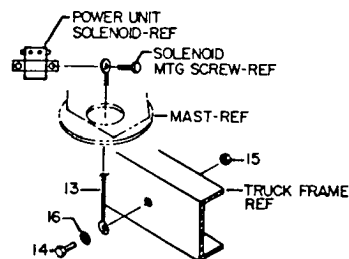


1. CRANE WELL
3. TUBE
4. BOTTOM PLATE
5. SPACER (USED ONLY ON ALUMINUM BODIES)
6. CAP SCR 3/4-10
9. LOCK NUT 3/4-10
10. WRT WASHER 3/4

## CRANE INSTALLATION



- 7. WASHER 3/8 LOCK
- 19. MOUNTING BAR
- 20. CAP SCR 3/8-16X7/8
- 24. POWER UNIT



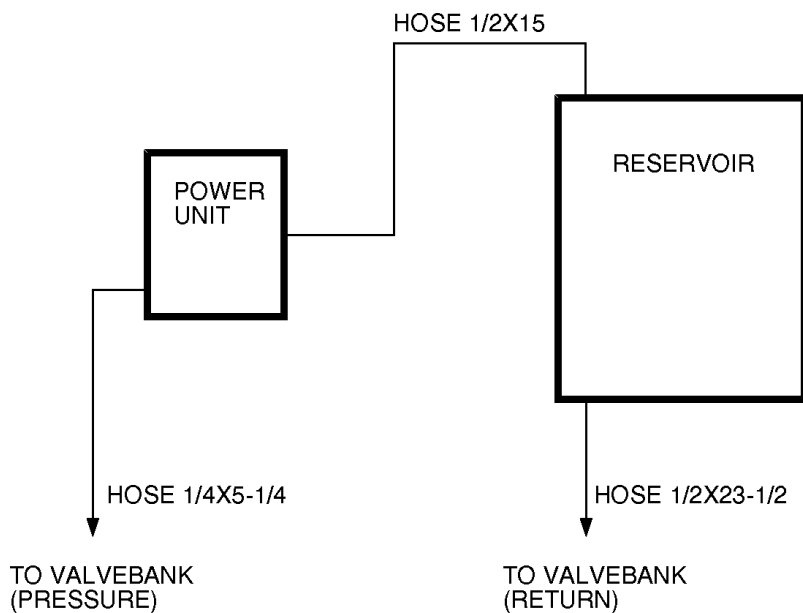
- 13. CABLE ASSEMBLY
- 14. CAP SCR 3/8-16X1
- 15. NUT 3/8-16 LOCK
- 16. WASHER 3/8 STAR

### CAUTION

The ground wire must be used in this installation. Failure to use a ground wire may result in arcing between the worm and worm gear or an inadequate ground between the two gears.

## POWER UNIT INSTALLATION

## GROUND WIRE INSTALLATION



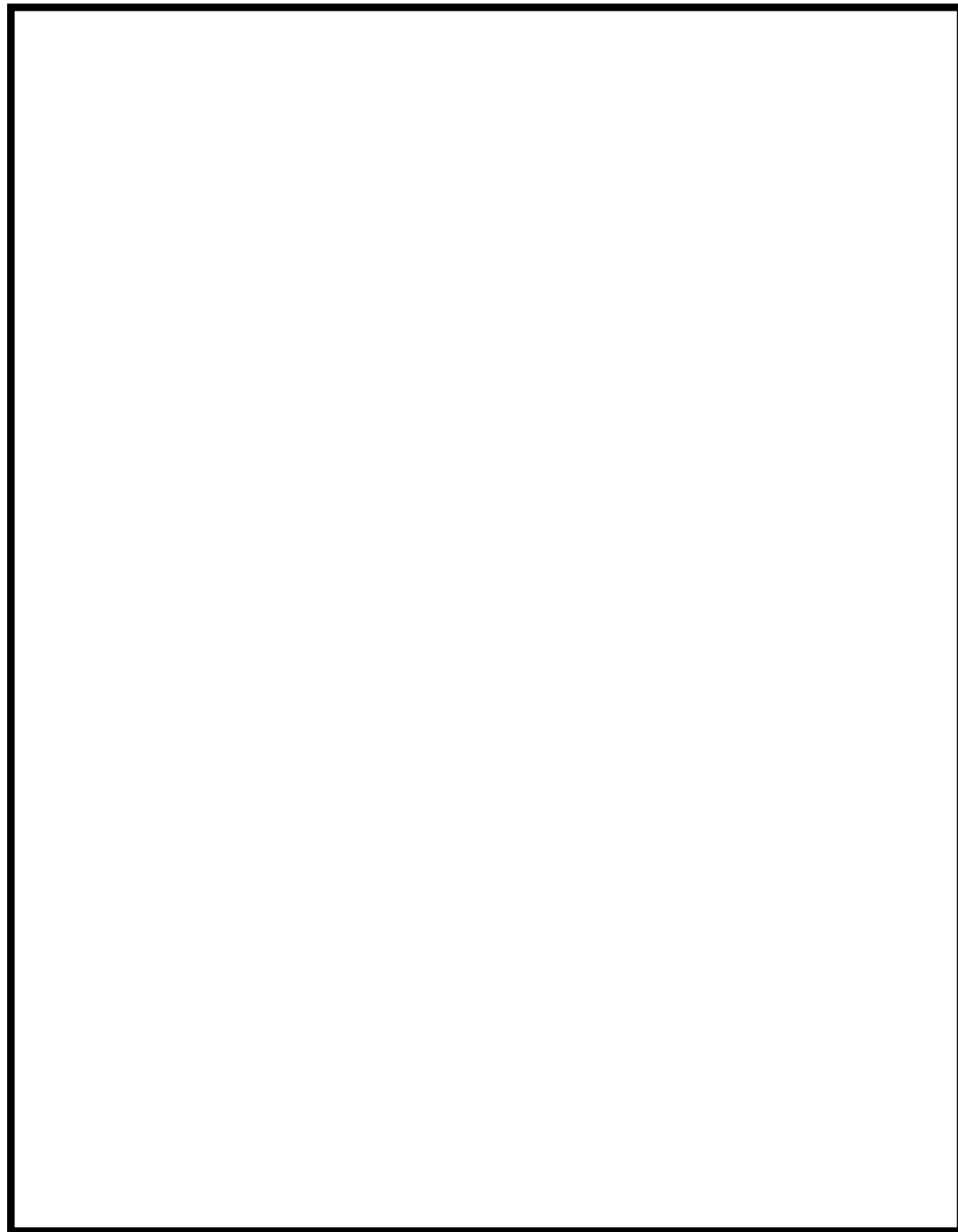
### NOTE

Refer to the parts lists in Section 4 for complete hydraulic diagrams.

## HYDRAULIC INSTALLATION

## SECTION 3. REPLACEMENT PARTS 1007 CRANE

PARTS INFORMATION .....	3
BASE ASM (41704562) .....	4
MAST ASM (41705155) .....	5
LOWER BOOM ASM (41705145) .....	6
EXTENSION BOOM ASM (41705143) .....	7
LOWER BOOM CYLINDER (3B031840) .....	8
EXTENSION CYLINDER (3B030840) .....	9
HYDRAULIC KIT-3 SECT/PWR UNIT (91705142) .....	10
POWER UNIT (70073616) .....	11
VALVEBANK ASM-3 SECT MINIPAK (51713268) .....	12
VALVEBANK (73073039) .....	12
CONTROL KIT-PWR UNIT 3F (90705141) .....	13
REMOTE HANDLE ASM 3F SGL PUMP (51705139) .....	14
INSTALLATION KIT-STEEL BODY (93715056) .....	15
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OPTION-OUTRIGGER KIT-SWING DOWN (91715055) .....	19
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ELECTRICAL SCHEMATIC-WINCH (99900907) .....	21
CONTROL KIT-SGL PUMP (90713620) .....	22
REMOTE HANDLE ASM (51713619) .....	23
EXTENSION BOOM ASM W/WINCH (41715052) .....	24
LOWER BOOM ASM W/WINCH (41715053) .....	25
CONTROL KIT-SGL PUMP W/WINCH (90714025) .....	26
REMOTE HANDLE ASM-W/WINCH (51714024) .....	27



## 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.

#### 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 crane base, mast, or inner boom. When ordering parts, communicating warranty information, or referring to the unit in correspondence, always include the serial number and model numbers. All inquiries should be addressed to:

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

<b>IOWA MOLD TOOLING CO., INC.</b>		
<b>BOX 189, GARNER, IA 50438-0189</b>		
<b>MODEL NUMBER</b>		<b>70029119</b>
<b>SERIAL NUMBER</b>		
<b>MFG DATE</b>		

**SERIAL NUMBER PLACARD**

### CYLINDER IDENTIFICATION

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

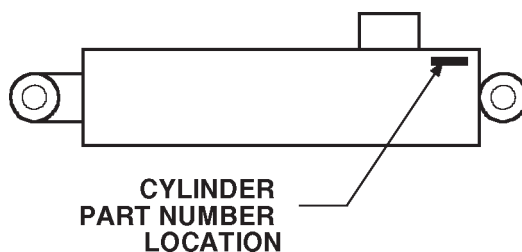
### WELDMENT IDENTIFICATION

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

### 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.



**CYLINDER PART NUMBER LOCATION**

**BASE ASM (41704562)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51704564	BASE	1
2.	52713752	TURNTABLE GUARD-RH	1
3.	52713753	TURNTABLE GUARD-LH	1
4.	60030086	TUBING 1/4X6	1
5.	60030116	THRUST BEARING	2
6.	60107543	SUPPORT PLATE	1
7.	60107617	COVER	1
8.	70055147	BEARING	1
9.	70055148	BEARING	1
10.	70056307	WORM GEAR	1
11.	71056308	TURNTABLE BEARING	1
12.	71142535	SLIDE 400°	1
13.	72053301	COUPLING 1/8NPT	1
14.	72063050	WASHER 5/16 LOCK	2
15.	72053508	ZERK 1/8NPT	2
16.	72060000	CAP SCR 1/4-20X1/2 HH GR5	4
17.	72060023	SCR 5/16-18X3/4 HHGR5	2
18.	72062251	NUT 7/8-9 LOCK 2-PC GR8	1
19.	72062162	NUT 9/16-12 HEX GR8	15
20.	72063161	WASHER 1-1/8 FLAT	3
21.	72063049	WASHER 1/4 LOCK	4
22.	72063117	WASHER 9/16 FLAT HARD GR8	15
23.	72531731	ADAPTER 1/8POLY-FLO 1/4	1
24.	72531746	ELBOW 1/8MPT 1/4POLYFLO 90°	1
25.	72601313	CAP SCR 9/16-12X3-1/2 HHGR8	15
26.	73051482	MOTOR	1

27.	72601486	CAP SCR 1/2-13X1-3/4 SH	2
28.	60121433	SHIM 2.25X1.81X16GA	REF

**WARNING**

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

**NOTES:**

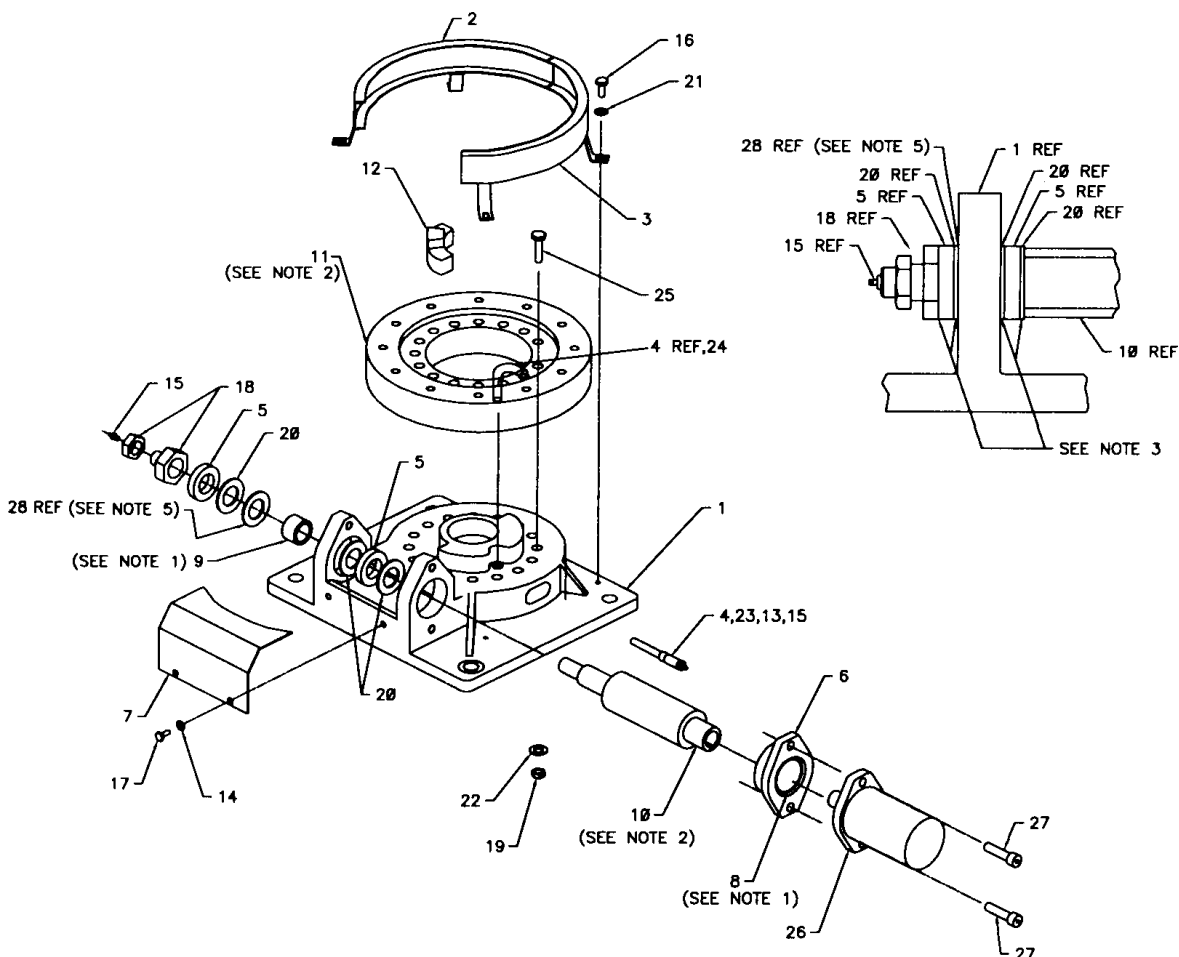
1. BEARINGS MUST BE PACKED WITH GREASE AT ASSEMBLY.

2. APPLY "MOLUB-ALLOY 936" TO TURNTABLE BEARING AND WORM GEAR TEETH AT ASSEMBLY.

3. INITIAL LUBRICATION OF BOTH SIDES OF THRUST BEARING IS REQUIRED AT TIME OF INSTALLATION. SEE NOTE 4 FOR APPROVED LUBRICANTS.

4. APPROVED LUBRICANTS ARE "SLIP PLATE", "LUBRI-PLATE" OR OTHER LUBRICANTS CONTAINING GRAPHITE OR  $\text{MSO}_2$ .

5. SHIM AS REQUIRED IF NEEDED.

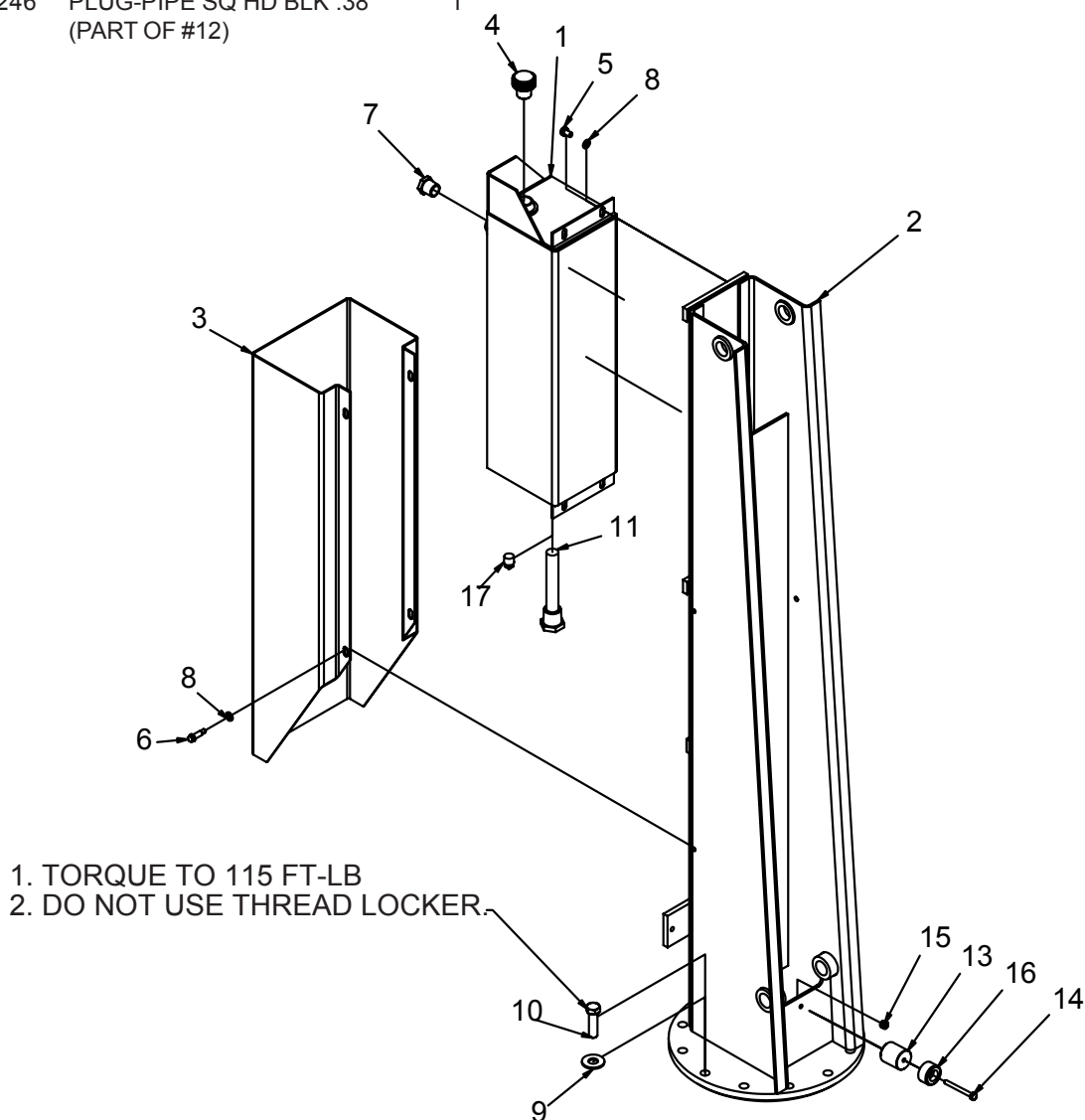


**MAST ASM (41705155)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	52705153	RESERVOIR (PART OF 14)	1REF
2.	52705154	MAST	1
3.	60108164	POWER UNIT COVER	1
4.	70392298	BREATHER (PART OF 14)	1REF
5.	72060021	CAP SCR 5/16-18X1/2 HH GR5	4
6.	72060833	SCR 5/16-18X3/4 HH SLFTPG	4
7.	72532261	SIGHT GAUGE 3/4 (PART OF 14)	1REF
8.	72063050	WASHER 5/16 LOCK	8
9.	72063117	WASHER 9/16 HARD GR8	12
10.	72601144	CAP SCR 9/16-12 X 2 HHGR8	12
11.	70142779	SUCTION STRAINER S5-100-RV	1
		(PART OF 12)	
12.	51705236	RESERVOIR ASM (1,4,7,11,17)	1
13.	60126047	SPACER 1.38 OD X 1.5	1
		LONG .26 BORE	
14.	72060010	CAP SCR .25-20 X 2.50 HHGR5Z	1
15.	72062104	NUT .25-20 HEX NYLOC	1
16.	70392190	BUMPER-RUBBER	1
17.	72053246	PLUG-PIPE SQ HD BLK .38	1
		(PART OF #12)	

**WARNING**

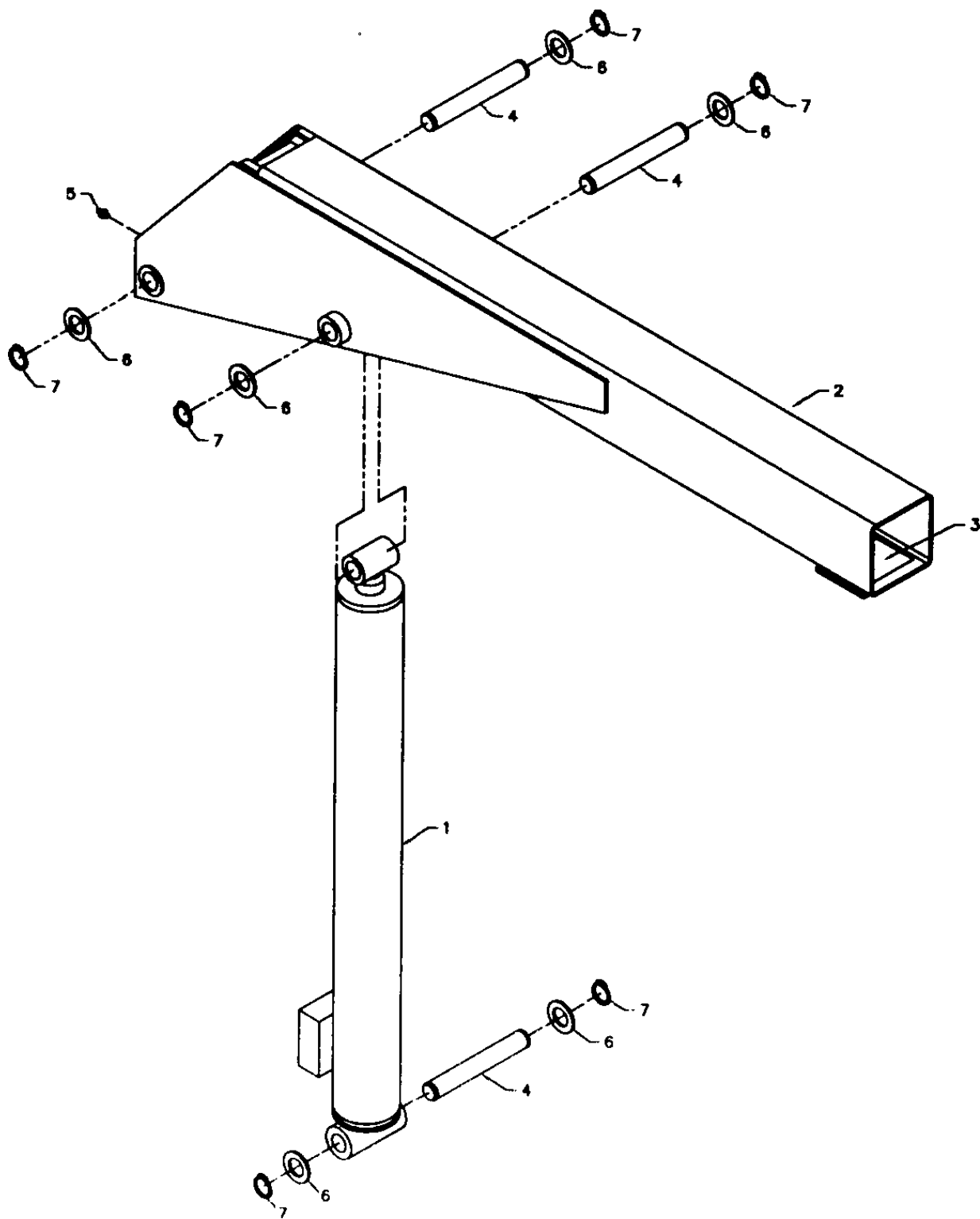
ANY TIME THE GEAR-BEARING BOLTS HAVE BEEN REMOVED, THEY MUST BE REPLACED WITH NEW BOLTS OF IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE CAUSING SERIOUS INJURY OR DEATH.





**LOWER BOOM ASM (41705145)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	3B031840	INNER CYLINDER	1
2.	52705132	INNER BOOM	1
3.	60030109	WEAR PAD	1
4.	60108142	PIN	3
5.	72053508	ZERK 1/8NPT	1
6.	72063034	MACH BUSHING 1X10GA NR	6
7.	72066125	RETAINING RING 1"	6

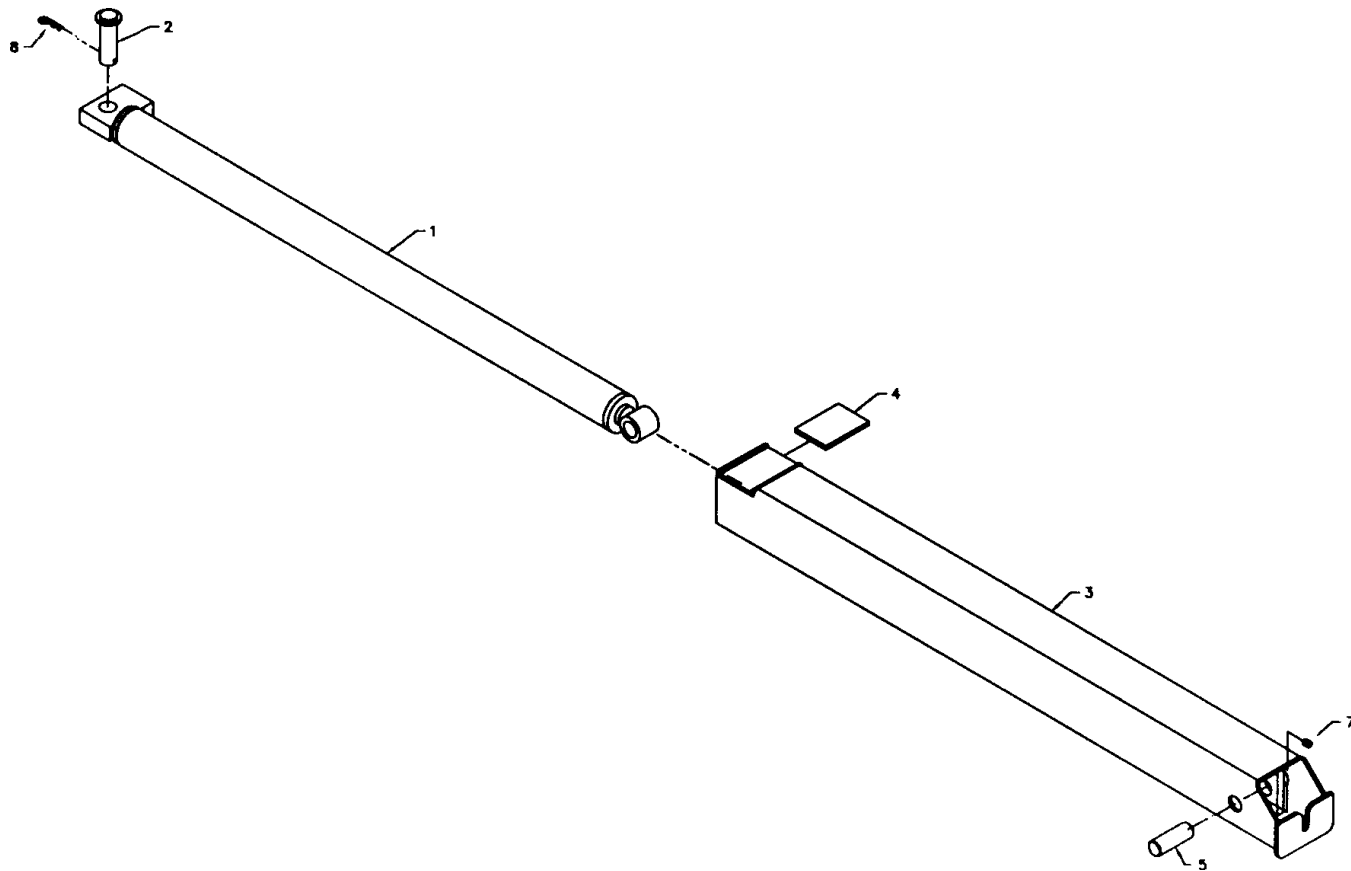


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## EXTENSION BOOM ASM (41705143)

ITEM	PART NO.	DESCRIPTION	QTY
1.	3B030840	EXTENSION CYLINDER	1
2.	52070319	PIN	1
3.	52705134	EXTENSION BOOM	1
4.	60030109	WEAR PAD	1
5.	60108145	PIN	1
6.	70058066	CHAIN (NOT SHOWN)	1
7.	72060578	SET SCR 3/8-16X3/8 SH	1
8.	72066143	HAIRPIN .12	1



**LOWER BOOM CYLINDER (3B031840)**

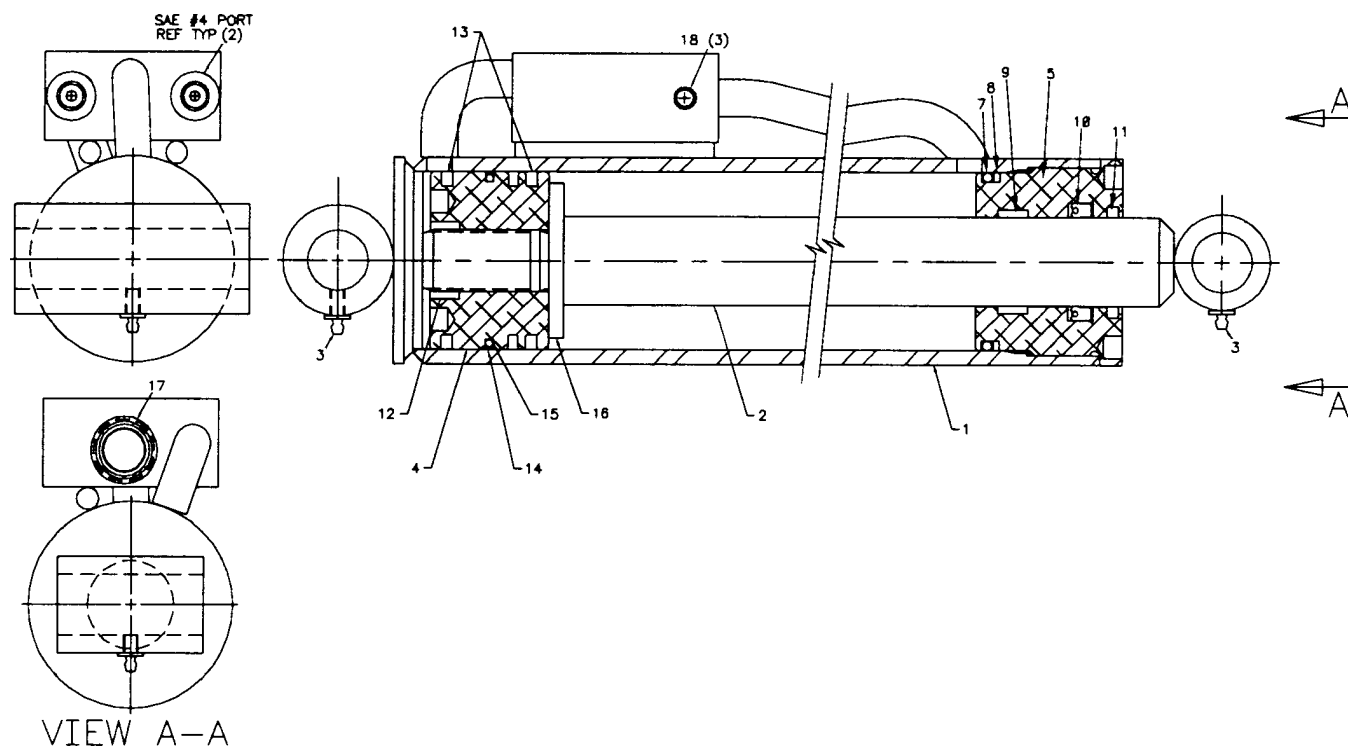
ITEM	PART NO.	DESCRIPTION	QTY
1.	4B031840	CASE (INCL:3&18)	1
2.	4G031840	ROD (INCL:3)	1
3.	72053507	ZERK 1/4-28 (PART OF 1&2)	2REF
4.	6I030106	PISTON	1
5.	6H030015	HEAD	1
6.	9C121217	SEAL KIT (INCL:7-16)	1
7.	7Q072334	O-RING (PART OF 6)	1REF
8.	7Q10P334	BACK-UP RING (PART OF 6)	1REF
9.	7T2N8015	WEAR RING (PART OF 6)	1REF
10.	7R546015	ROD SEAL (PART OF 6)	1REF
11.	7R14P015	ROD WIPER (PART OF 6)	1REF
12.	7T61N106	LOCK RING SEAL (PART OF 6)	1REF
13.	7T65I030	PISTON RING (PART OF 6)	2REF
14.	7T66P030	PISTON SEAL (PART OF 6)	1REF
15.	7Q072145	O-RING (PART OF 6)	1REF
16.	6A025015	WAFER LOCK (PART OF 6)	1REF
17.	73054304	VALVE 10 GPM	1
18.	7PNPXT02	PLUG 1/8NPT (PART OF 1)	3REF

**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 CYLINDER (3B030840)**

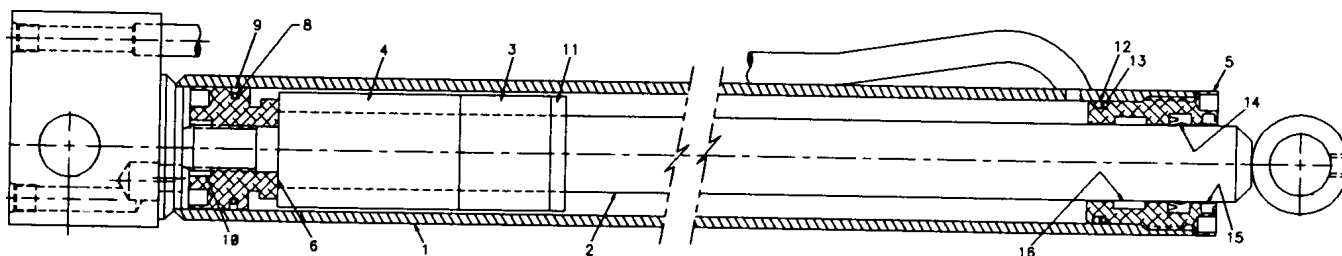
ITEM	PART NO.	DESCRIPTION	QTY
1.	4B030840	CASE	1
2.	4G030840	ROD ASM	1
3.	6C150012	STOP TUBE 1.5"	1
4.	6C300012	STOP TUBE 3"	1
5.	6H020012	HEAD	1
6.	6I020075	PISTON	1
7.	9B081012	SEAL KIT (INCL:8-16)	1
8.	7Q072129	O-RING (PART OF 7)	1REF
9.	7T66P020	PISTON SEAL (PART OF 7)	1REF
10.	7T61N075	LOCK RING (PART OF 7)	1REF
11.	6A025012	WAFER LOCK (PART OF 7)	1REF
12.	7Q072224	O-RING (PART OF 7)	1REF
13.	7Q10P224	BACKUP RING (PART OF 7)	1REF
14.	7R546012	U-CUP (PART OF 7)	1REF
15.	7R14P012	ROD WIPER (PART OF 7)	1REF
16.	7T2N8012	WEAR RING-ROD (PART OF 7)	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.

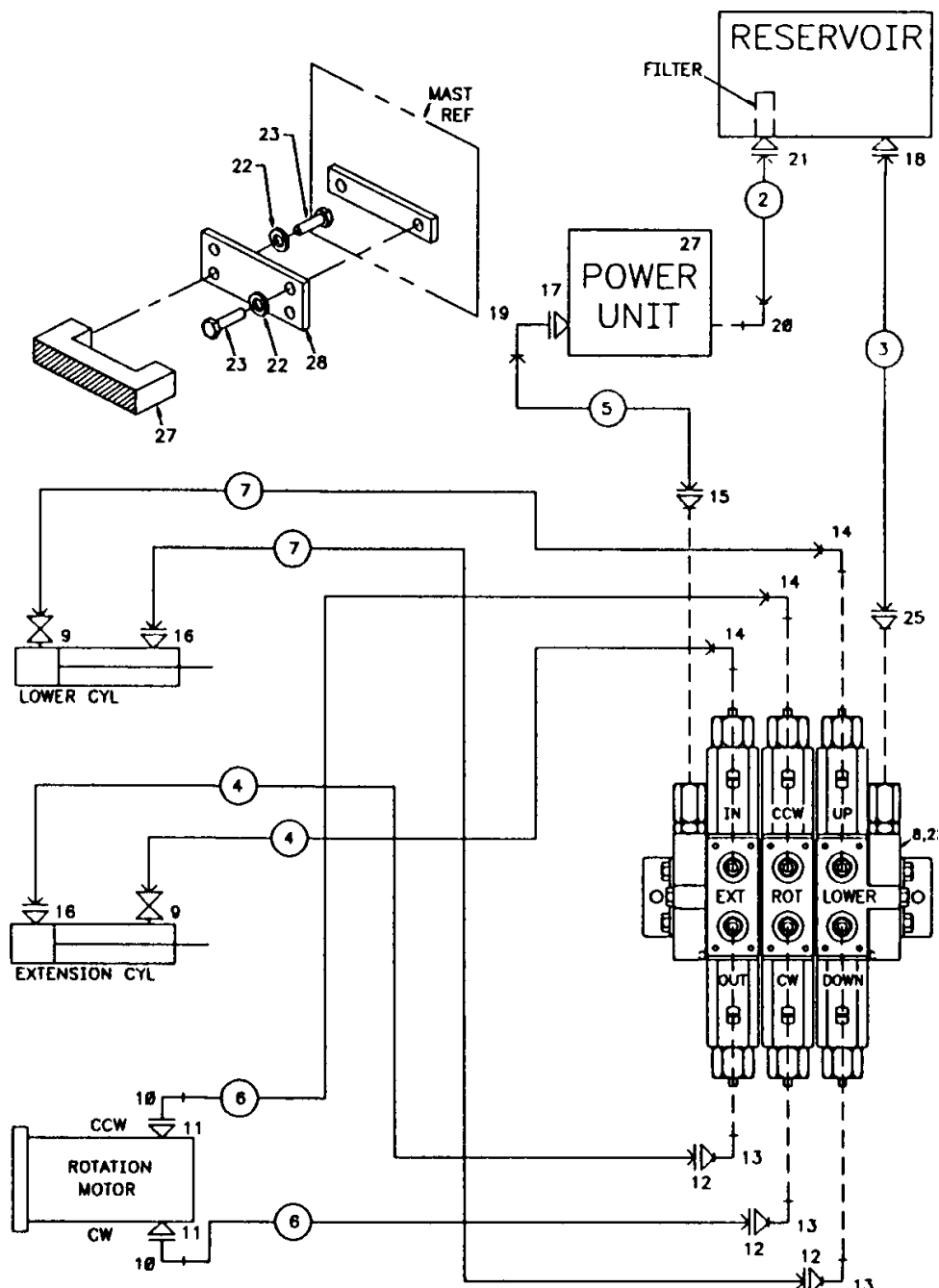
USE "NEVER-SEEZ" OR EQUIVALENT BETWEEN THE HEAD AND THE CASE WHEN ASSEMBLING THE CYLINDER.



# HYDRAULIC KIT-3 SECT/PWR UNIT (91705142)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51712467	HOSE KIT (INCL:2-7)	1
2.	51393980	HOSE 1/2X16 #8F#8F	1REF
3.	51392461	HOSE 1/2X25 #8F#8F	1REF
4.	51393965	HOSE ASM 1/4X67 #4F#4F	2REF
5.	51393966	HOSE ASM 1/4X8-1/4 #4F#4F	1REF
6.	51394037	HOSE ASM 1/4X52 #4F#4F	2REF
7.	51394038	HOSE ASM 1/4X35 #4F#4F	2REF
8.	73073039	VALVEBANK 3-SECTION	1
9.	73054487	FLOW RESTRICTOR	2
10.	72532985	ELBOW #6MSTR #4MJIC 45°	2
11.	72532722	ADAPTER #10MSTR #6FSTR	2
12.	72532707	ADAPTER #4MJIC #6FJIC	3

13.	72532700	ELBOW #6MSTR #6MJIC XLG	3
14.	72532699	ELBOW #6MSTR #4MJIC 90°	3
15.	72532353	ADAPTER #6MSTR #4MJIC	1
16.	72532351	ADAPTER #4MSTR #4MJIC	2
17.	72532138	REDUCER BUSHING 3/8-1/4NPT	1
18.	72053670	ADAPTER 3/8MPT #8MJIC	1
19.	72531412	ELBOW 1/4MPT #4MJIC 90°	1
20.	72531421	ELBOW 1/2MPT #8MJIC 90°	1
21.	72053497	ADAPTER 1/2MPT #8MJIC	1
22.	72063051	WASHER 3/8 LOCK	6
23.	72060045	CAP SCR 3/8-16X7/8 HH GR5	4
24.	72060042	CAP SCR 3/8-16X1/2 HH GR5	2
25.	72532357	ADAPTER #6MSTR #8MJIC	1
27.	70073616	POWER UNIT	1
28.	60108160	MOUNTING BAR	1

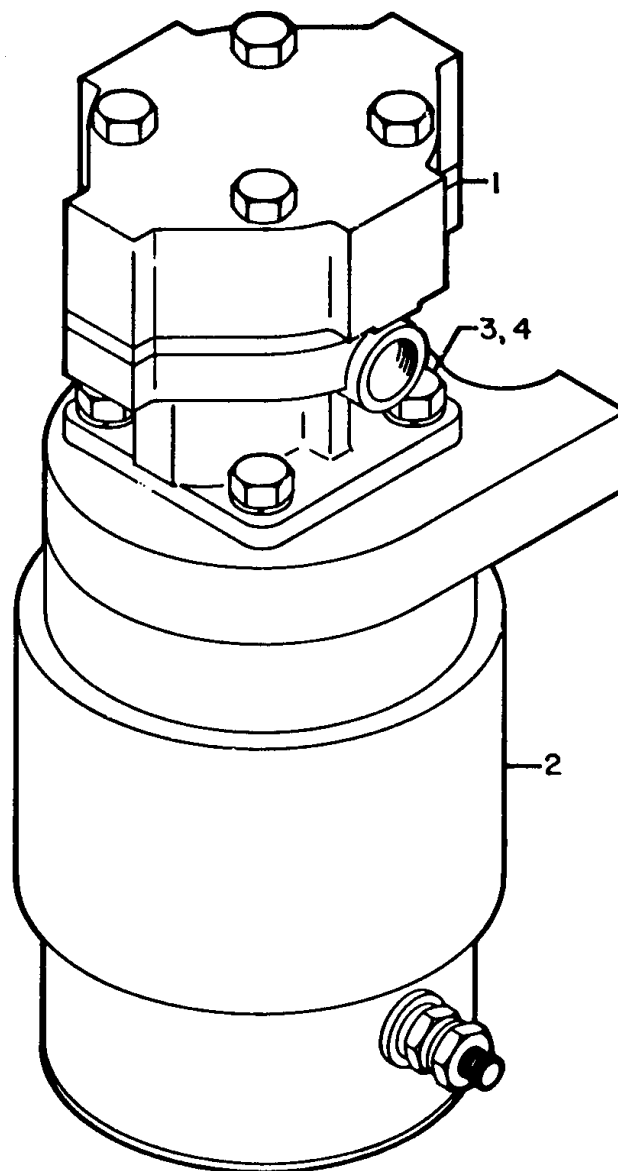


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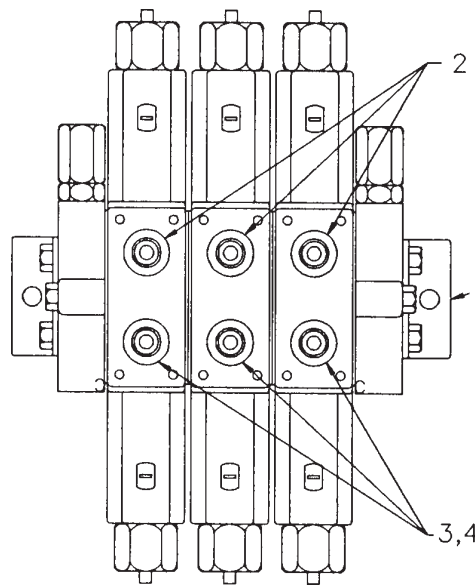
**POWER UNIT (70073616)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	73051007	PUMP	1REF
2.	77043020	MOTOR	1REF
3.	72060023	CAP SCR 5/16-18X3/4 HH GR8	4REF
4.	72063050	WASHER 5/16 LOCK	4REF



## VALVEBANK ASM-3 SECT MINIPAK (51713268)

ITEM	PART NO.	DESCRIPTION	QTY
1.	73073039	VALVEBANK	1
2.	72532699	ELBOW #6MSTR #4MJIC 90°	3
3.	72532700	ELBOW #6MSTR #6MJIC XLG	3
4.	72532707	ADAPTER #4MJIC #6FJIC	3



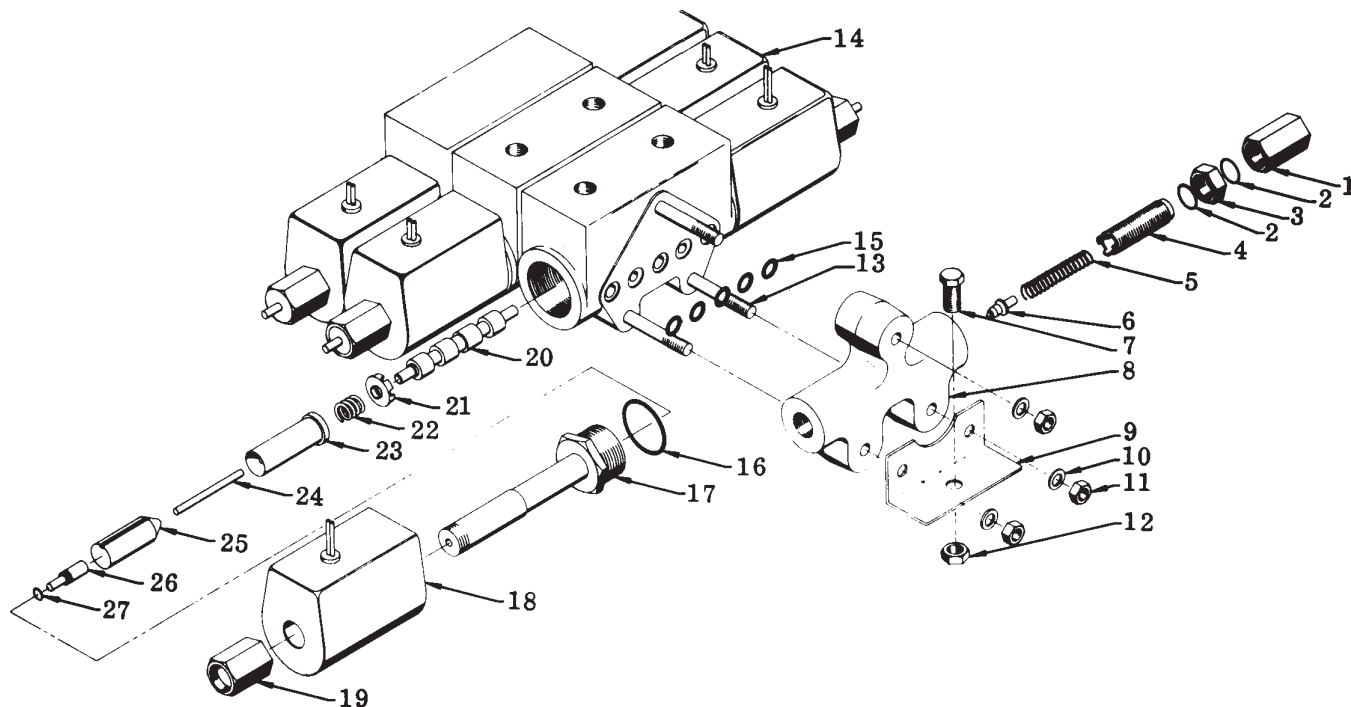
## VALVEBANK (73073039)

ITEM	PART NO.	DESCRIPTION	QTY
1.		RELIEF VALVE ADJ CAP	1
2.		O-RING	2
3.		JAM NUT	1
4.		ADJ ROD	1
5.		SPRING	1
6.		NEEDLE	1
7.	72060046	CAP SCR 3/8-16X1	2
8.	73014948	INLET (INCL:1-6)	1
9.	73014959	BRACKET	2
10.	72063002	WASHER 5/16	6
11.	72062001	NUT 5/16-18	6
12.	72062002	NUT 3/8-16	2
13.	73014960	STUD	3
14.	73054077	VALVE SECTION 12VDC	3
15.	7Q072012	O-RING	5
16.	7Q072113	O-RING	2
17.	73014958	TUBE	2
18.	77041016	COIL 12VDC	2

19.	73014950	NUT	2
20.	51014951	SPOOL & BODY (MATCHED SET)	1
21.	73014952	RETAINER SPRING	2
22.	73014953	SPRING	2
23.	73014955	PLUG	2
24.	73014954	PIN	2
25.	73014956	PLUNGER	2
26.	73014957	BUTTON	2
27.	7Q072008	O-RING	2

NOTE: ITEMS 15-27 INDICATE QTY PER VALVE SECTION. ITEMS 1-6 ARE NOT AVAILABLE SEPARATELY.

ITEMS 16,17,23-27 PART OF TUBE ASSEMBLY 94014962.



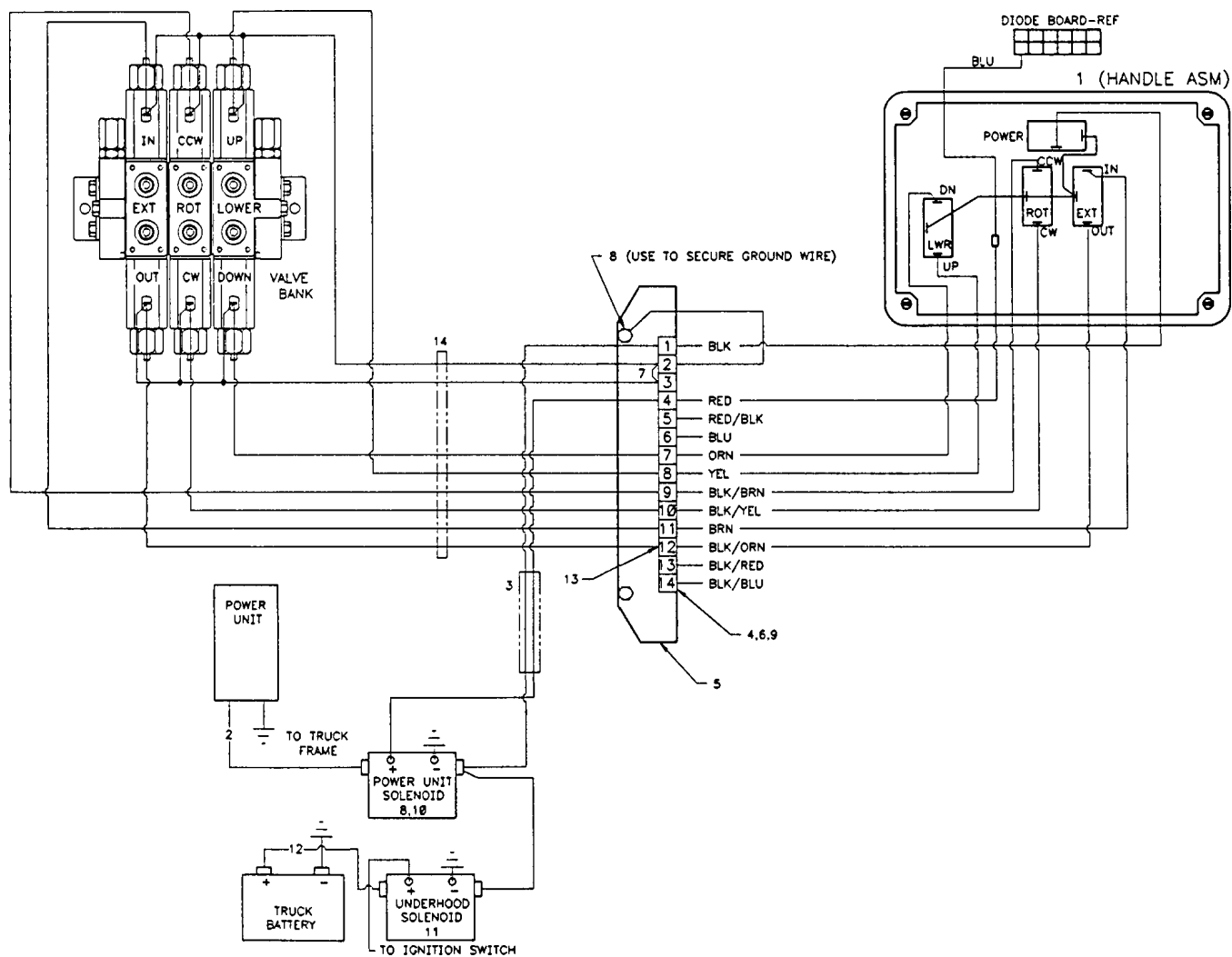
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## CONTROL KIT-PWR UNIT 3F (90705141)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51705139	HANDLE ASM (INCL:22-31)	1
2.	51705208	CABLE ASM #1WIREX9	1
3.	51705206	CABLE ASM 14GA 2WIRE X 24	1
4.	77044309	TERMINAL STRIP	1
5.	60105825	TERMINAL BLOCK MTG	1
6.	72066525	HOSE CLAMP	2

7.	77040130	JUMPER	1
8.	72060002	CAP SCR 1/4-20X3/4 HH GR5	4
9.	72061009	SHT MTL SCR #6X3/4 PH	2
10.	77041091	SOLENOID 3-POLE 12V	1
11.	77041237	SOLENOID 12V 150A	1
12.	51704784	CABLE ASM #1WIRE X 6	1
13.	77040051	TERMINAL SPRSPD #8STUD	10
14.	70034060	TIE	4

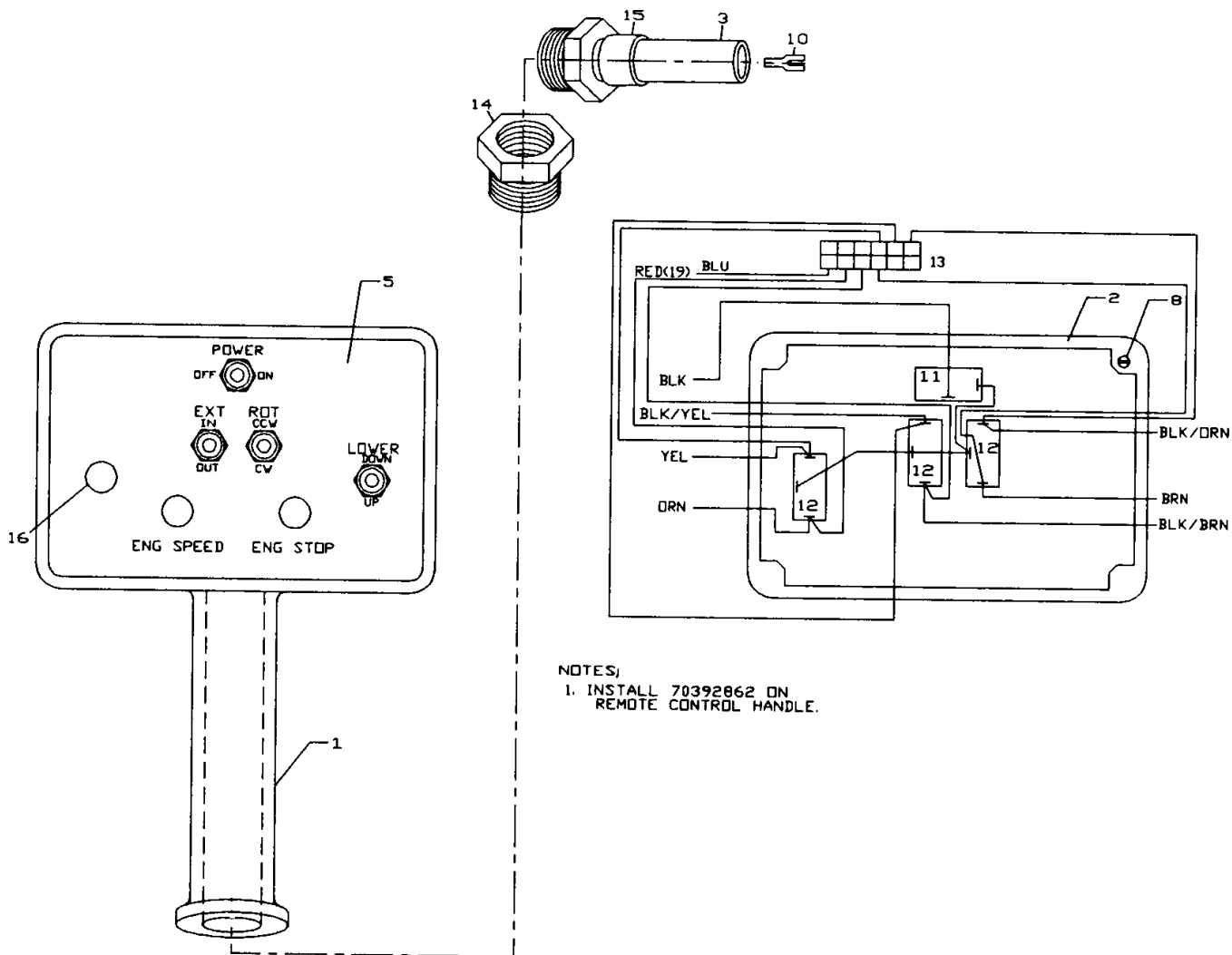




# **REMOTE HANDLE ASM 3F SGL PUMP** **(51705139)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	60111140	REMOTE HANDLE ASM	1
2.	70034306	BACK	1
3.	89044136	CABLE 18GA/12WIRE X 300	1
4.	89044214	WIRE 18GA GRN	1.00'
5.	70393261	DECAL-REMOTE CONTROL	1
6.	70392862	DECAL-DANGER RC ELECTRO	1
7.	70029119	SERIAL NO. PLACARD	1
8.	72061009	SHT MTL SCR #6X3/4 PH	4

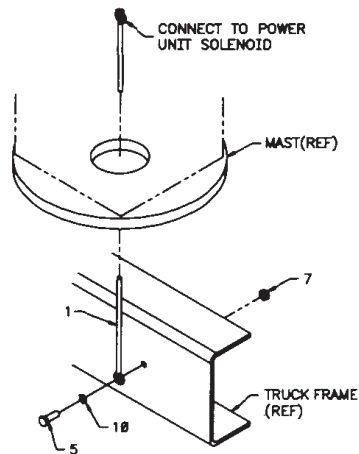
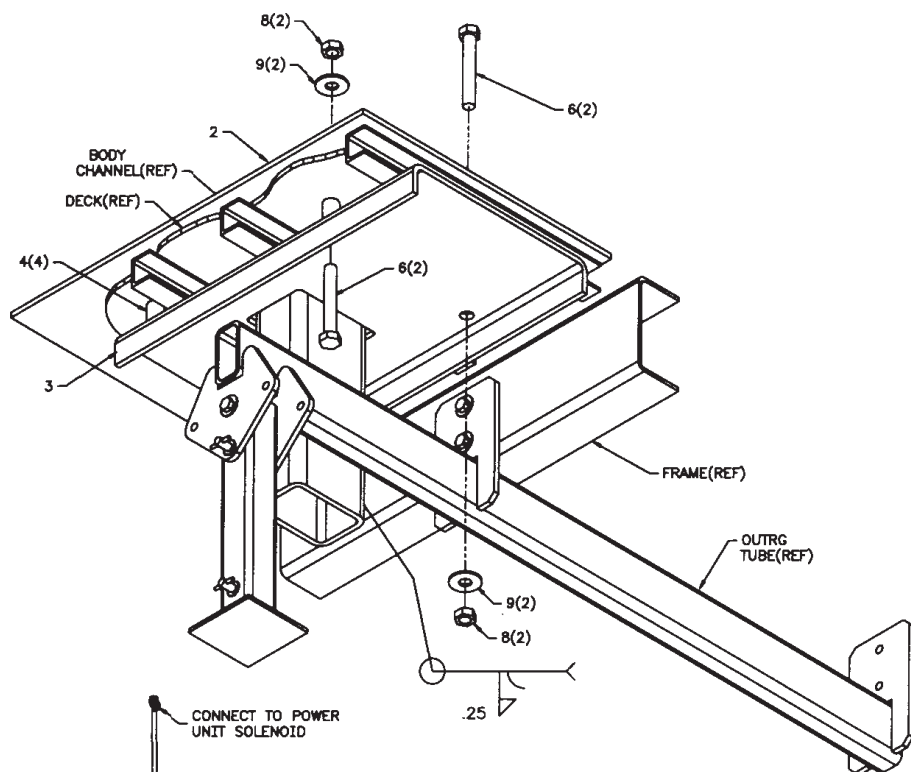
9.	72066340	RIVET 1/8	2
10.	77040051	TERMINAL SPRSPD #8STUD	12
11.	77041345	TOGGLE SWITCH ST	1
12.	77041346	TOGGLE SWITCH DT	3
13.	77041407	DIODE BOARD	1
14.	72531833	REDUCER BUSHING 3/4 1/2NPT	1
15.	77044096	CABLE GRIP	1
16.	70392785	PLUG 1/2	3
17.	77040186	TERMINAL 1/4TAB FSLPON	11
18.	77040047	TERMINAL 1/4TAB MSLPON	1



## INSTALLATION KIT-STEEL BODY (93715056)

- |             |              |   |
|-------------|--------------|---|
| 1. 51701516 | CABLE ASM    | 1 |
| 2. 52705305 | CRANE WELL   | 1 |
| 3. 60108338 | BOTTOM PLATE | 1 |
| 4. 60113919 | PIPE 3/4X2   | 4 |

- |              |                         |   |
|--------------|-------------------------|---|
| 5. 72060046  | CAP SCR 3/8-16X1 HH GR5 | 1 |
| 6. 72060191  | CAP SCR 3/4-10X5 HH GR5 | 4 |
| 7. 72062103  | NUT 3/8-16 LOCK         | 1 |
| 8. 72062140  | NUT 3/4-10 LOCK         | 4 |
| 9. 72063008  | WASHER 3/4 WRT          | 4 |
| 10. 72063073 | WASHER 3/8 STAR         | 1 |
| 11. 77041237 | SOLENOID                | 1 |



### 1007 INSTALLATION INSTRUCTIONS

These instructions apply only to IMT alum. and fiberglass truck bodies.

1. Inspect the carrier vehicle for compliance with the following minimum chassis specifications.

Body Style . . . . .	Conventional Cab
Wheel Base . . . . .	137" - 161"
Cab to Axle Dimension . . . . .	60" - 84"
*Frame Section Modulus . . . . .	5.91 cu. in.
*R B M . . . . .	212,760 in. lbs.
Front Axle Rating . . . . .	2,700 lbs. - 4,000 lbs.
Rear Axle Rating . . . . .	5,400 lbs. - 7,500 lbs.

In addition to these specifications, a heavy-duty battery and alternator are required. It is recommended that the vehicle have power steering and dual rear wheels. IMT recommends adherence to the upper limit of these specifications for best total system performance.

\*Based on 36,000 PSI yield frame material (A-36)

2. Locate the center point of the crane support 15-3/4" from the side wall of the body and 18" from the rear edge of the body. For right side mount; center point to be 16-1/2" from side wall & 18-7/8" from rear edge of the body.
3. Cut a 6-1/2" x 4-1/2" rectangular hole centered on the point located in Step 2. The 4-1/2" dimension must be parallel with the side wall of the body.

#### CAUTION

Before cutting the hole, make certain it will not interfere with the body frame members. Do not cut any frame members when cutting the hole.

4. Insert the crane support in the hole and drill four #10 mounting holes in body floor using the crane support plate as a template. Weld the crane support tube to the outrigger support tube.
5. Position the support plate in the hole and install the crane on top of the plate. Using a lifting device capable of supporting the crane (approximately 500 lbs.). Install three bolts through the top of the crane base, through the deck and into the crane support bottom plate. Install the washers and nuts. Note that the bottom support plate must span three deck channels. Install the fourth bolt with washer and nut from the bottom side.

#### NOTE

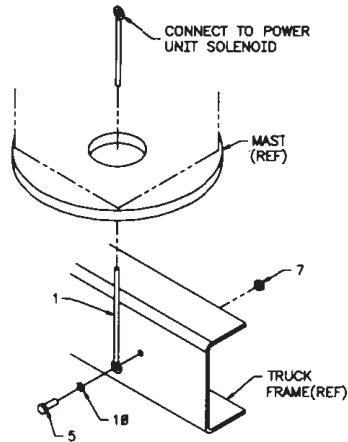
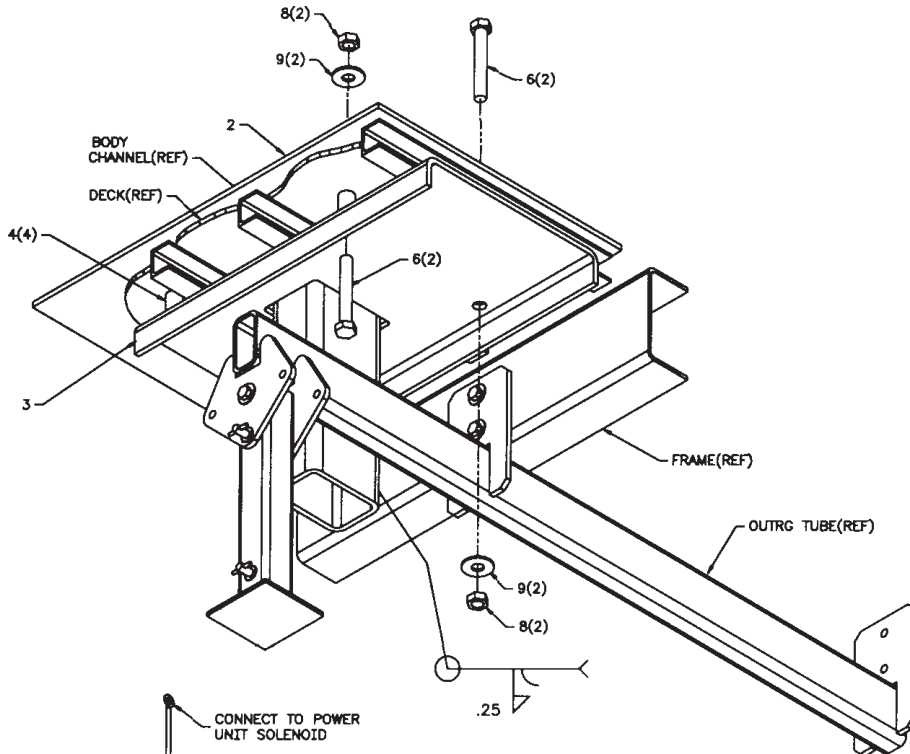
If optional outrigger support is not ordered, use a 4" x 2" x 1/4" wall tube (customer supplied). All welding must be done by an AWS qualified welder.

6. Spray paint all unpainted surfaces.
7. Feed the battery cable up through the support tube and base and connect it to the power unit solenoid. Connect the other end to the underhood solenoid which is connected to the positive (+) side of the battery.

# **INSTALLATION KIT-ALUMINUM/ FIBERGLASS BODIES (93715057)**

1. 51701516	CABLE ASM	1
2. 52705305	CRANE WELL	1
3. 60108338	BOTTOM PLATE	1
4. 60116326	PIPE-3/4X3-1/2	4

5. 72060046	CAP SCR 3/8-16X1 HH GR5	1
6. 72060193	CAP SCR 3/4-10X6 HH GR5	4
7. 72062103	NUT 3/8-16 LOCK	1
8. 72062140	NUT 3/4-10 LOCK	4
9. 72063008	WASHER 3/4 WRT	4
10. 72063073	WASHER 3/8 STAR	1
11. 77041237	SOLENOID	1



## **1997 INSTALLATION INSTRUCTIONS**

These instructions apply only to IMT alum. and fiberglass truck bodies.

1. Inspect the carrier vehicle for compliance with the following minimum chassis specifications.

Body Style . . . . .	Conventional Cab	In addition to these specifications, a heavy-duty battery and alternator are required. It is recommended that the vehicle have power steering and dual rear wheels. IMT recommends adherence to the upper limit of these specifications for best total system performance.
Wheel Base . . . . .	137" - 161"	
Cab to Axle Dimension . . . . .	66" - 84"	
*Frame Section Modulus . . . . .	5.91 cu. in.	
*R B M . . . . .	212,760 in. lbs.	
Front Axle Rating . . . . .	2,700 lbs. - 4,000 lbs.	
Rear Axle Rating . . . . .	5,400 lbs. - 7,500 lbs.	

\*Based on 36,000 PSI yield frame material (A-36)

2. Locate the center point of the crane support 15-3/4" from the side wall of the body and 18" from the rear edge of the body. For right side mount; center point to be 16-1/2" from side wall & 18-7/8" from rear edge of the body.
3. Cut a 6-1/2" x 4-1/2" rectangular hole centered on the point located in Step 2. The 4-1/2" dimension must be parallel with the side wall of the body.

### **CAUTION**

Before cutting the hole, make certain it will not interfere with the body frame members. Do not cut any frame members when cutting the hole.

The fiberglass body deck consists of fiberglass impregnated expanded metal. Use a metal-cutting blade in the saw.

4. Insert the crane support in the hole and drill four #1.06 mounting holes in body floor using the crane support plate as a template. Weld the crane support tube to the outrigger support tube.

### **CAUTION**

The "diamond plate" deck on the fiberglass body appears to be metal. It is, in fact, fiberglass and will be damaged by attempting to weld the crane support to the deck.

5. Position the support plate in the hole and install the crane on top of the plate. Using a lifting device capable of supporting the crane (approximately 500 lbs.). Install three bolts through the top of the crane base, through the deck and into the crane support bottom plate. Install the washers and nuts. Note that the bottom support plate must span three deck channels. Install the fourth bolt with washer and nut from the bottom side.

### **NOTE**

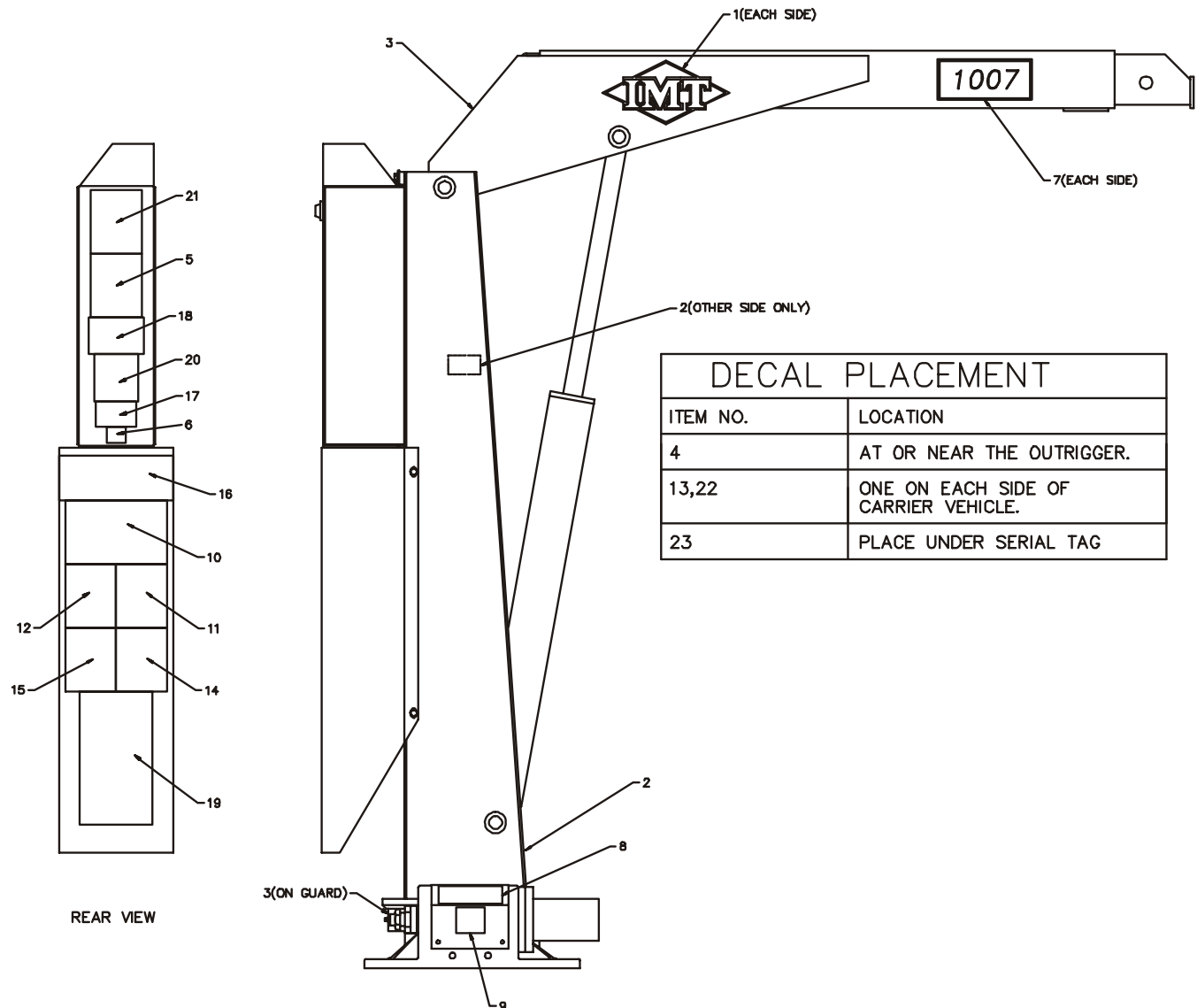
If optional outrigger support is not ordered, use a 4" x 2" x 1/4" wall tube (customer supplied). All welding must be done by an AWS qualified welder.

6. Spray paint all unpainted surfaces.
7. Feed the battery cable up through the support tube and base and connect it to the power unit solenoid. Connect the other end to the underhood solenoid which is connected to the positive (+) side of the battery.

**DECAL KIT-REMOTE (95708895)**

1.	70392887	IMT DIAMOND	2
2.	70391612	DECAL-GREASE WKLY LEFT	2
3.	70391613	DECAL-GREASE WKLY RIGHT	2
4.	70392864	DECAL-DANGER OR. STD CLR	1
5.	70392890	DECAL-DGR STOW/UNFOLD	1
6.	70392213	DECAL-CAUTION WASH/WAX	1
7.	70392345	DECAL-1007 IDENT	2
8.	70392399	DECAL-LUBE WORM	1
9.	70392524	DECAL-ROTATE/GREASE	1
10.	70392813	DECAL-DANGER ELECTRO	1
11.	70392814	DECAL-DANGER OPER TRAIN'G	1

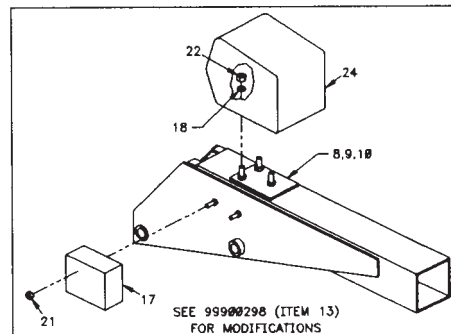
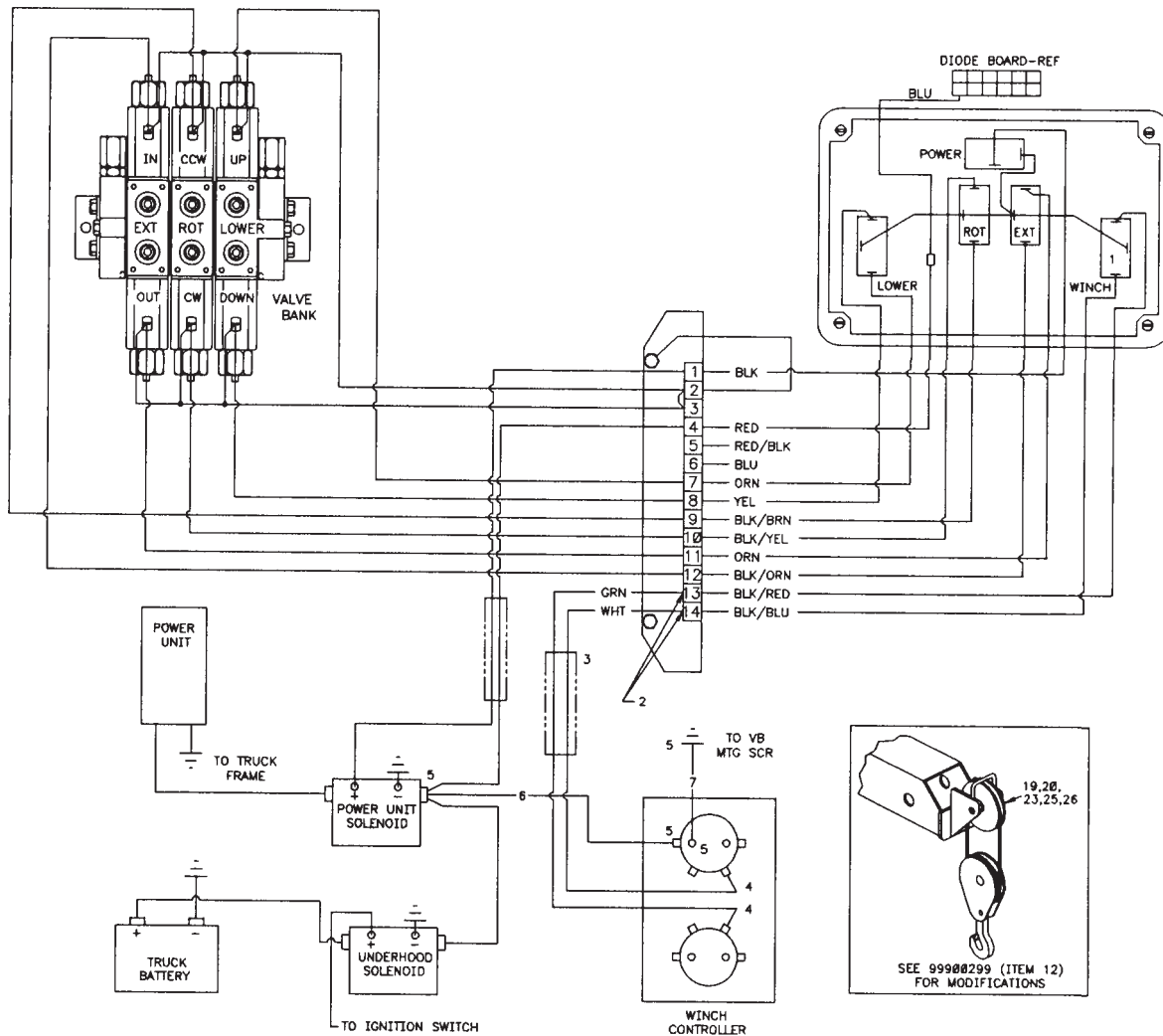
12.	70392815	DECAL-DANGER OPERATION	1
13.	70392865	DECAL-DGR ELEC HAZARD	4
14.	70392866	DECAL-DANGER OPER COND	1
15.	70392888	DECAL-DANGER OP RESTRICT	1
16.	70392889	DECAL-DANGER RC ELECTRO	1
17.	70392982	DECAL-CONTACT IMT	1
18.	71039134	DECAL-CAUTION OIL LEVEL	1
19.	71392336	CAPACITY PLACARD	1
20.	70394189	DECAL-RECOMMEND HYD OIL	1
21.	70392863	DECAL-DGR HOIST PERS	1
22.	70392868	DECAL-DGR CR LOADLINE	4
23.	70395324	DECAL-ASME/ANSI B30.5	1



**OPTION-WINCH KIT (31709264)**

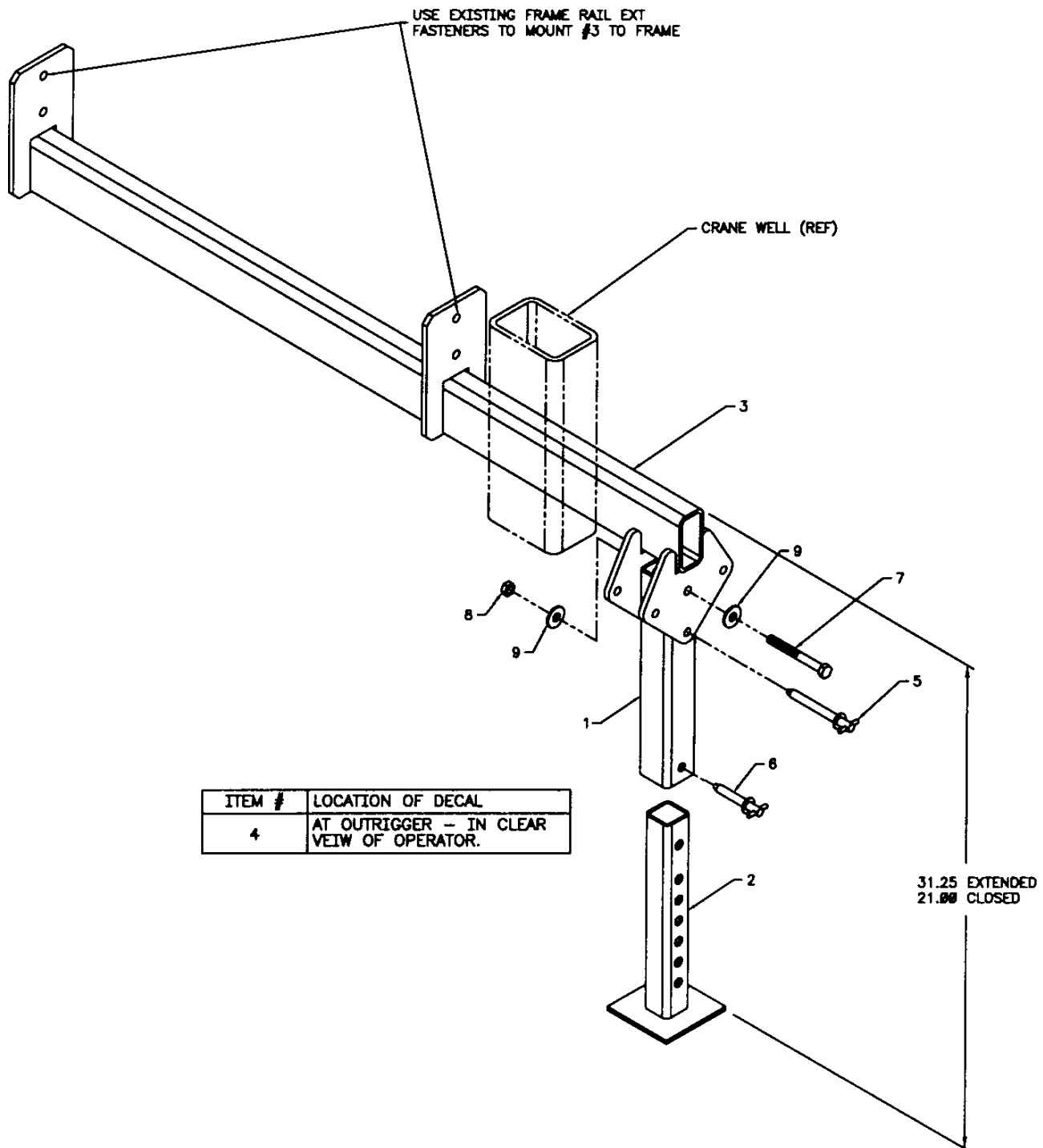
ITEM	PART NO.	DESCRIPTION	QTY
1.	77041346	TOGGLE SWITCH DT	1
2.	77040051	TERMINAL SPRSPD #8STUD	4
3.	89044053	CABLE 16GA/3WIRE X 75	1
4.	77040052	TERM RING 3/8STUD	2
5.	77040010	TERM RING 3/8STD #4WIRE	4
6.	89044003	WIRE #4X86	1
7.	89044003	WIRE #4X82	1
8.	60104436	PLATE	1
9.	72060046	CAP SCR 3/8-16X1 HH GR5	2
10.	72060091	CAP SCR 1/2-13X1 HH GR5	3
11.	99900300	ELECTRICAL SCHEMATIC	1
12.	99900299	EXTENSION BOOM MOD DWG	1

13.	99900298	INNER BOOM MOD DWG	1
14.	60113404	EAR	2
15.	60113402	CABLE GUIDE	1
16.	60113403	CABLE HOOK HANGER	1
17.	51714024	RMT CTRL WITH CABLE	1
18.	72063053	WASHER 1/2 LOCK	3
19.	72063005	WASHER 1/2 WRT	1
20.	72062107	NUT 1/2-13 HEX CTR LOCK	1
21.	72062103	NUT 3/8-16 LOCK	2
22.	72062004	NUT 1/2-13 HEX	3
23.	72060097	CAP SCR 1/2-13X3 HH GR5	1
24.	71057732	WINCH 2200 LB 12V	1
25.	70056385	SHEAVE	1
26.	60030130	SPACER	2



# **OPTION-OUTRIGGER KIT-SWING DOWN (91715055)**

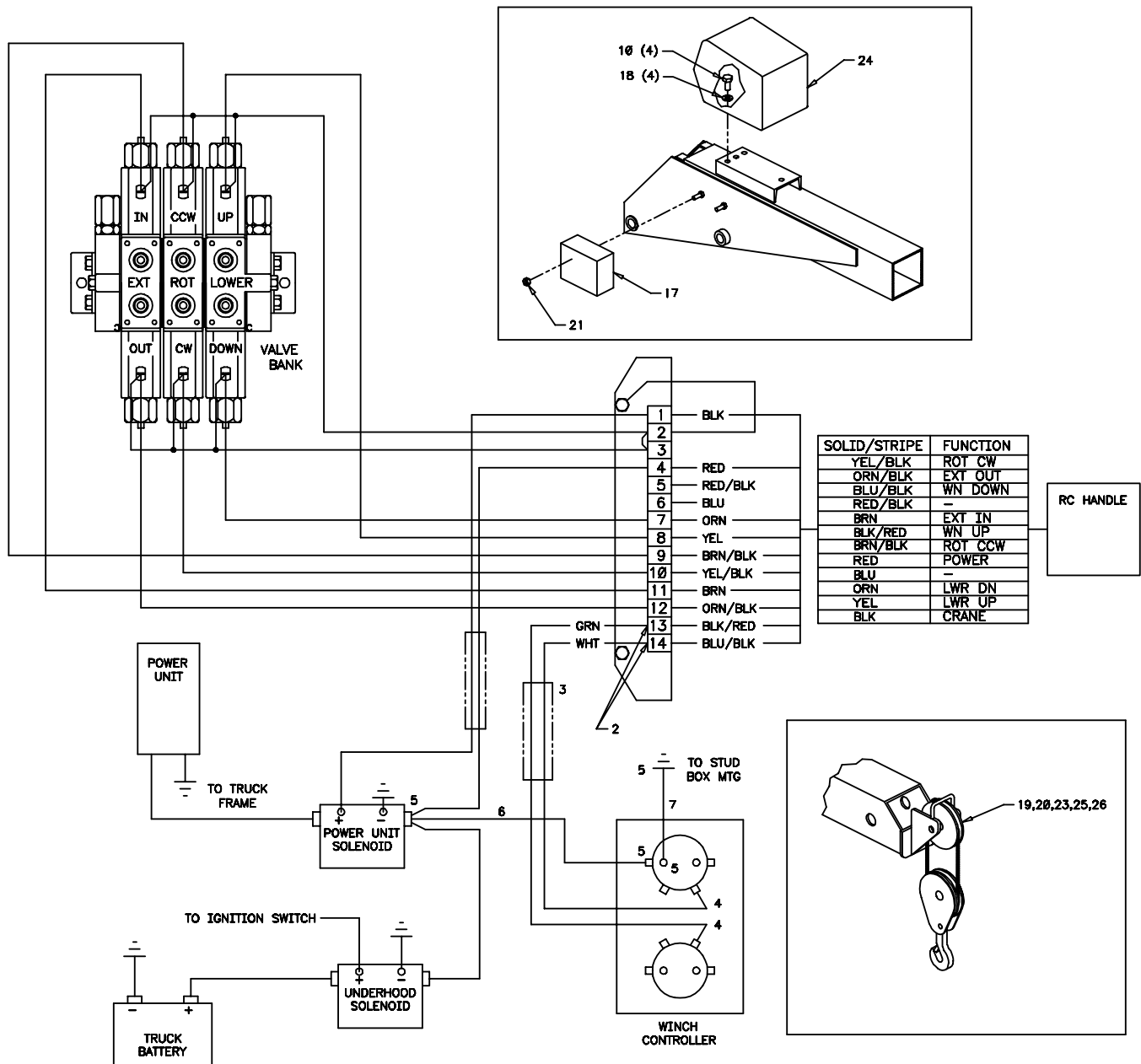
ITEM	PART NO.	DESCRIPTION	QTY
1.	60103578	OUTRG HOUSING	1
2.	52701718	LEG	1
3.	52715054	OUTRG SUPT TUBE WLDMT	1
4.	70392864	DECAL-DANGER OR. STD CLR	1
5.	71731461	QUICK RELEASE PIN	1
6.	71731711	QUICK RELEASE PIN	1
7.	72060100	CAP SCR 1/2-13X4-1/2 HH GR5	1
8.	72062080	NUT 1/2-13 LOCK	1
9.	72063005	WASHER 1/2 WRT	2



**WINCH KIT (31713666)**

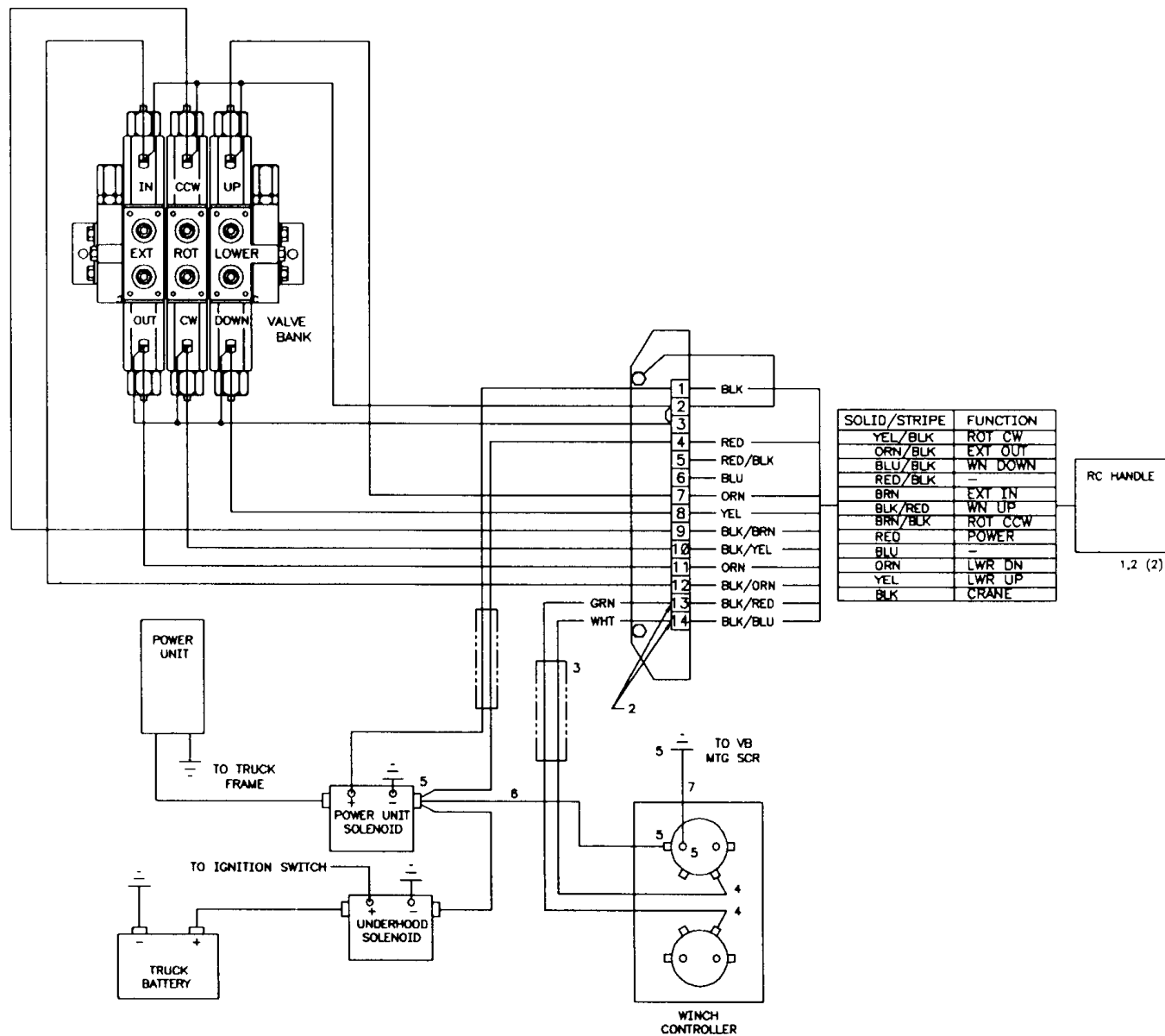
2.	77040051	TERM #8 SPRSPD 16-14GA	4
3.	89044053	CABLE 16GA/3WIRE X 75	1
4.	77040052	TERMINAL 3/8 STUD 12-10GA	2
5.	77040010	TERMINAL 3/8 STUD #4WIRE	4
6.	89044003	CABLE #4 X 86	1
7.	89044003	CABLE #4 X 82	1
10.	72060046	CAP SCR 3/8-16X1 HHGR5	4
11.	99900907	ELECTRICAL SCHEMATIC	1

17.	51714024	RMT CTRL W/CABLE	1
18.	72063051	WASHER 3/8 LOCK	4
19.	72063005	WASHER 1/2 WRT	1
20.	72062107	NUT 1/2-13 HEX CTR LOCK	1
21.	72062103	NUT 3/8-16 LOCK	2
23.	72060097	CAP SCR 1/2-13X3 HHGR5	1
24.	71057732	WINCH 2200# 12V	1
25.	70056385	SHEAVE 4"	1
26.	60030130	SPACER	2



# **ELECTRICAL SCHEMATIC-WINCH** **(99900907)**

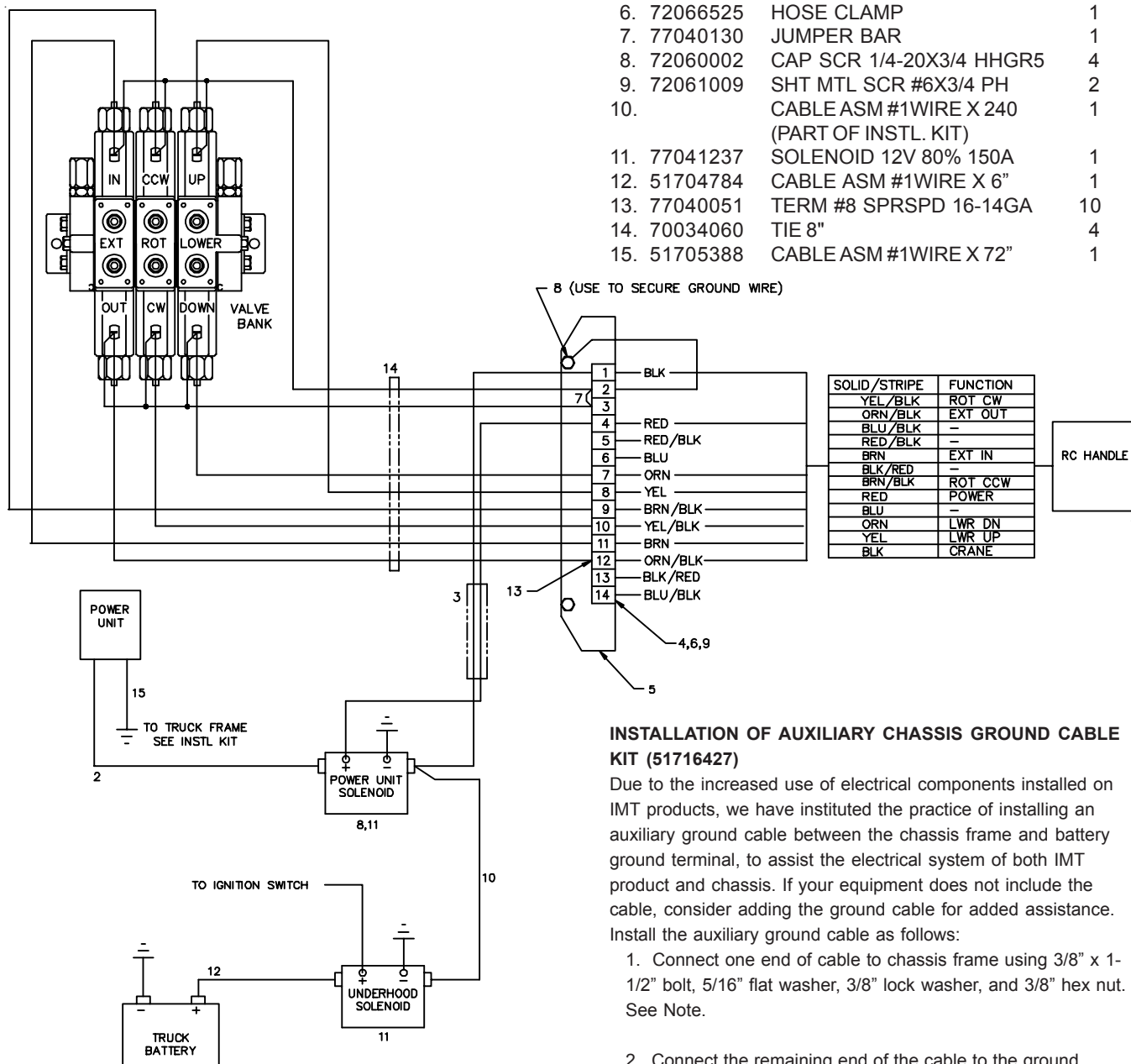
ITEM	PART NO.	DESCRIPTION	QTY
1.	77040372	TOGGLE SWITCH SPDT	1
2.	77040051	TERMINAL #8 SPRSPD 16-14GA	6
3.	89044053	CABLE 16GA/3WIRE X 75	1
4.	77040052	TERMINAL 3/8 RING 12-10GA	2
5.	77040010	TERMINAL 3/8 RING #4WIRE	4
6.	89044003	CABLE #4 X 86	1
7.	89044004	CABLE #4 X 82	1





**CONTROL KIT-SGL PUMP (90713620)**

- |     |          |                            |    |
|-----|----------|----------------------------|----|
| 1.  | 51713619 | HANDLE ASM                 | 1  |
| 2.  | 51716317 | CABLE ASM #1WIRE X 3"      | 1  |
| 3.  | 51705206 | CABLE ASM 14GA 2WIRE X 24" | 1  |
| 4.  | 77044309 | TERMINAL BLOCK-14          | 1  |
| 5.  | 60105825 | TERMINAL BLOCK MTG         | 1  |
| 6.  | 72066525 | HOSE CLAMP                 | 1  |
| 7.  | 77040130 | JUMPER BAR                 | 1  |
| 8.  | 72060002 | CAP SCR 1/4-20X3/4 HHGR5   | 4  |
| 9.  | 72061009 | SHT MTL SCR #6X3/4 PH      | 2  |
| 10. |          | CABLE ASM #1WIRE X 240     | 1  |
|     |          | (PART OF INSTL. KIT)       |    |
| 11. | 77041237 | SOLENOID 12V 80% 150A      | 1  |
| 12. | 51704784 | CABLE ASM #1WIRE X 6"      | 1  |
| 13. | 77040051 | TERM #8 SPRSPD 16-14GA     | 10 |
| 14. | 70034060 | TIE 8"                     | 4  |
| 15. | 51705388 | CABLE ASM #1WIRE X 72"     | 1  |

**INSTALLATION OF AUXILIARY CHASSIS GROUND CABLE KIT (51716427)**

Due to the increased use of electrical components installed on IMT products, we have instituted the practice of installing an auxiliary ground cable between the chassis frame and battery ground terminal, to assist the electrical system of both IMT product and chassis. If your equipment does not include the cable, consider adding the ground cable for added assistance. Install the auxiliary ground cable as follows:

1. Connect one end of cable to chassis frame using 3/8" x 1-1/2" bolt, 5/16" flat washer, 3/8" lock washer, and 3/8" hex nut. See Note.

2. Connect the remaining end of the cable to the ground terminal of the chassis battery or to the engine block. See Note.

**NOTE**

Ground connections made to metal surfaces shall maintain contact integrity when subjected to the normal effects of aging, temperature cycling, moisture, splash, spray washing, fatigue, and other environmental conditions. Metal surfaces shall be free of primer, paint, rust, and corrosion, and have a bright, polished appearance immediately before the ground terminal is connected. A steel flat washer, with an outside diameter approximately equal to the ring terminal diameter, shall be placed between bolt head and terminal. Grounding studs and joints shall be dedicated to the ground and not be used as a structural joint.

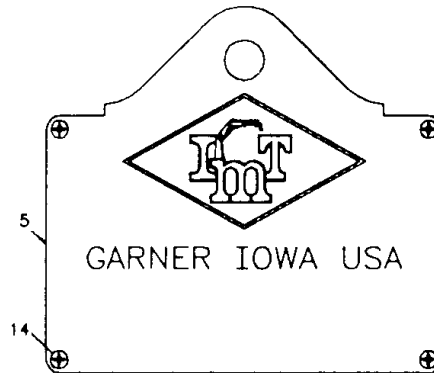
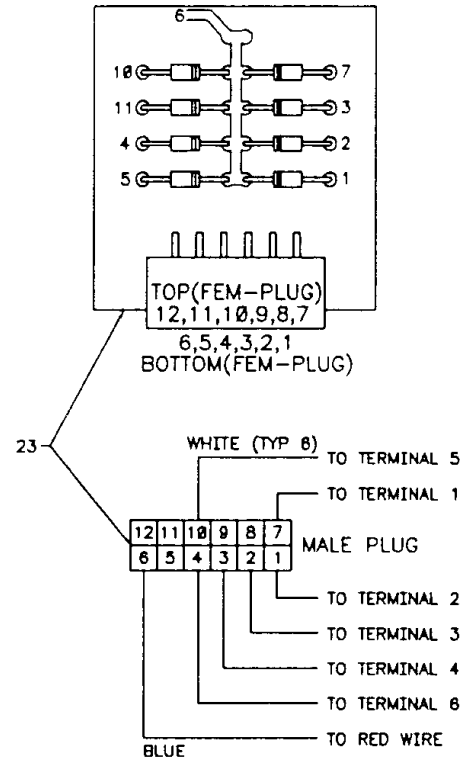
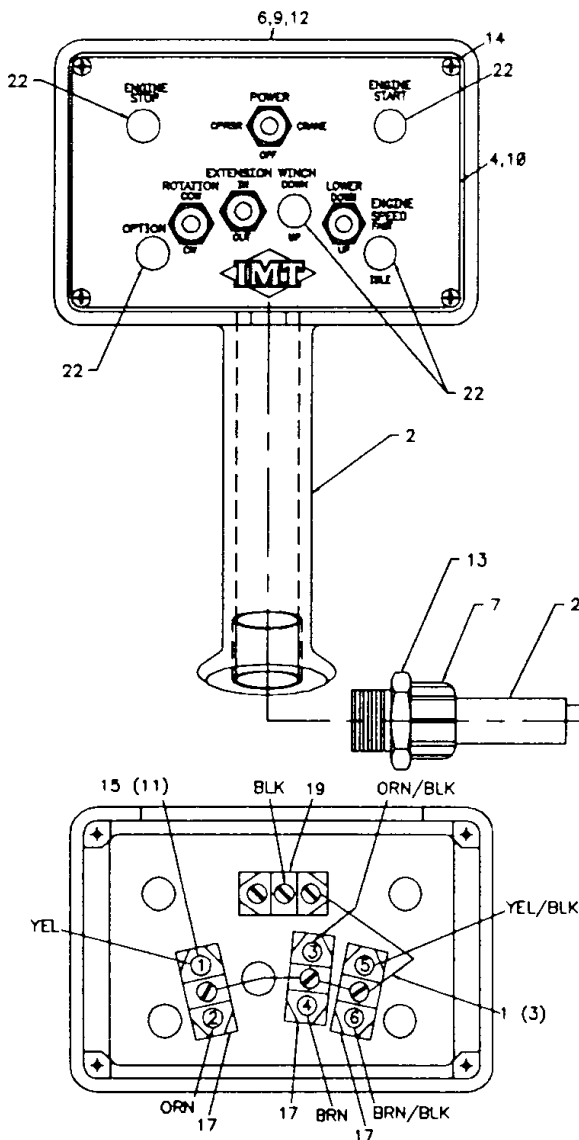
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# REMOTE HANDLE ASM (51713619)

ITEM	PART NO.	DESCRIPTION	QTY
1.	60045031	WIRE 18GA GRN X 4	3
2.	60119335	CONTROL HANDLE	1
4.	60119277	FRONT COVER	1
5.	70034306	BACK COVER	1
6.	70029119	SER NO PLACARD	1
7.	77044096	CORD GRIP	1
9.	70394447	DECAL-DGR RC ELECTRO SM	1
10.	70394142	DECAL-REMOTE	1

3-23

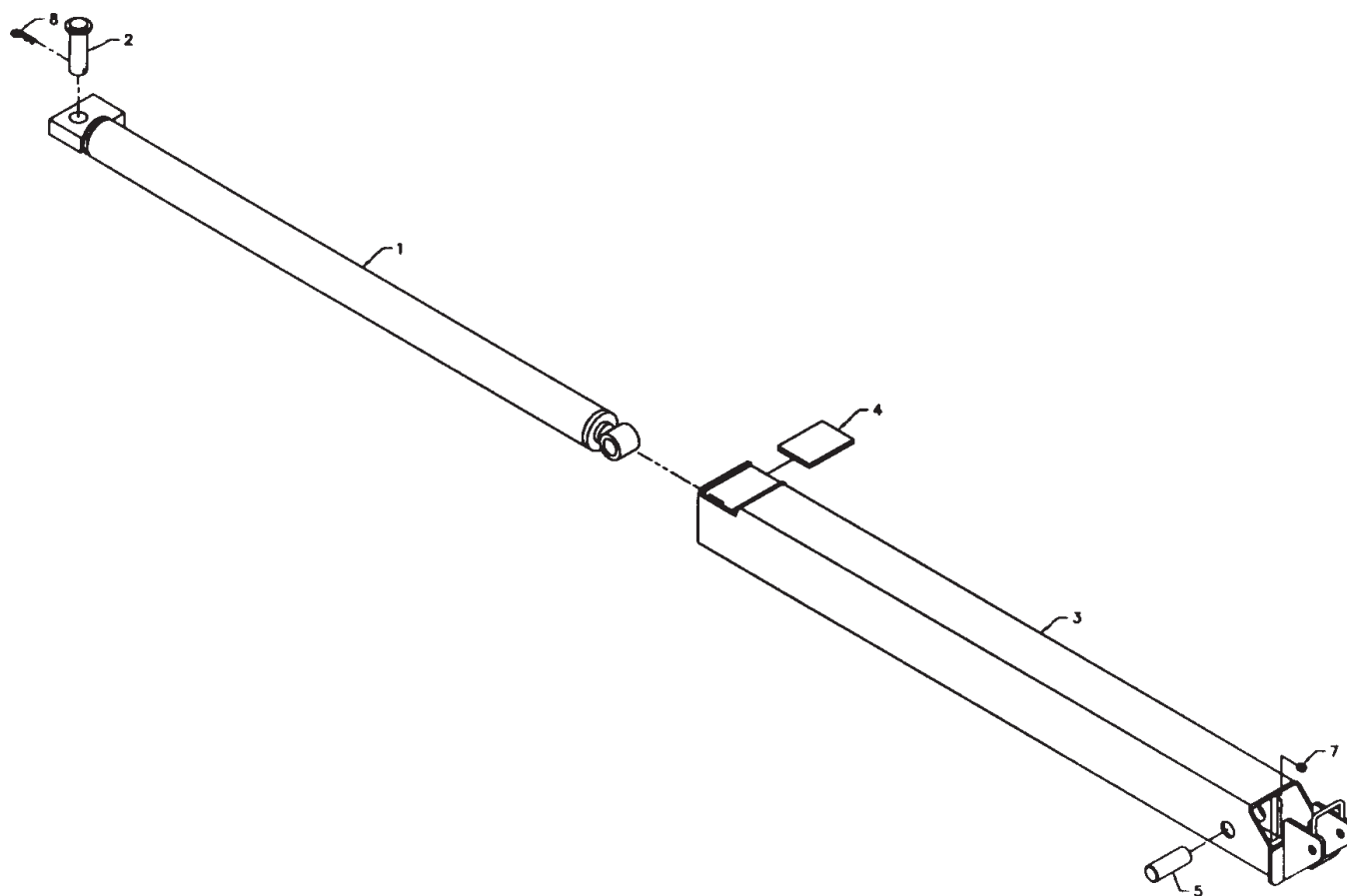
12.	72066340	POP RIVET	2
13.	72531833	REDUCER BUSHING 3/4-1/2NPT	1
14.	72061009	SHT MTL SCR #6X3/4 PH	8
15.	77040051	TERM #8 SPRSPD 16-14GA	19
17.	77040372	TOGGLE SWITCH SPDT	3
19.	77040374	TOGGLE SWITCH SPDT	1
21.	89044136	CABLE 18GA/12WIRE	10FT
22.	70392785	PLUG 1/2	5
23.	77041407	DIODE BOARD	1



SOLID/STRIPE	FUNCTION
YEL/BLK	ROT CW
ORN/BLK	EXT OUT
BLU/BLK	-
RED/BLK	-
BRN	EXT IN
BLK/RED	-
BRN/BLK	ROT CCW
RED	POWER
BLU	-
ORN	LWR DN
YEL	LWR UP
BLK	CRANE

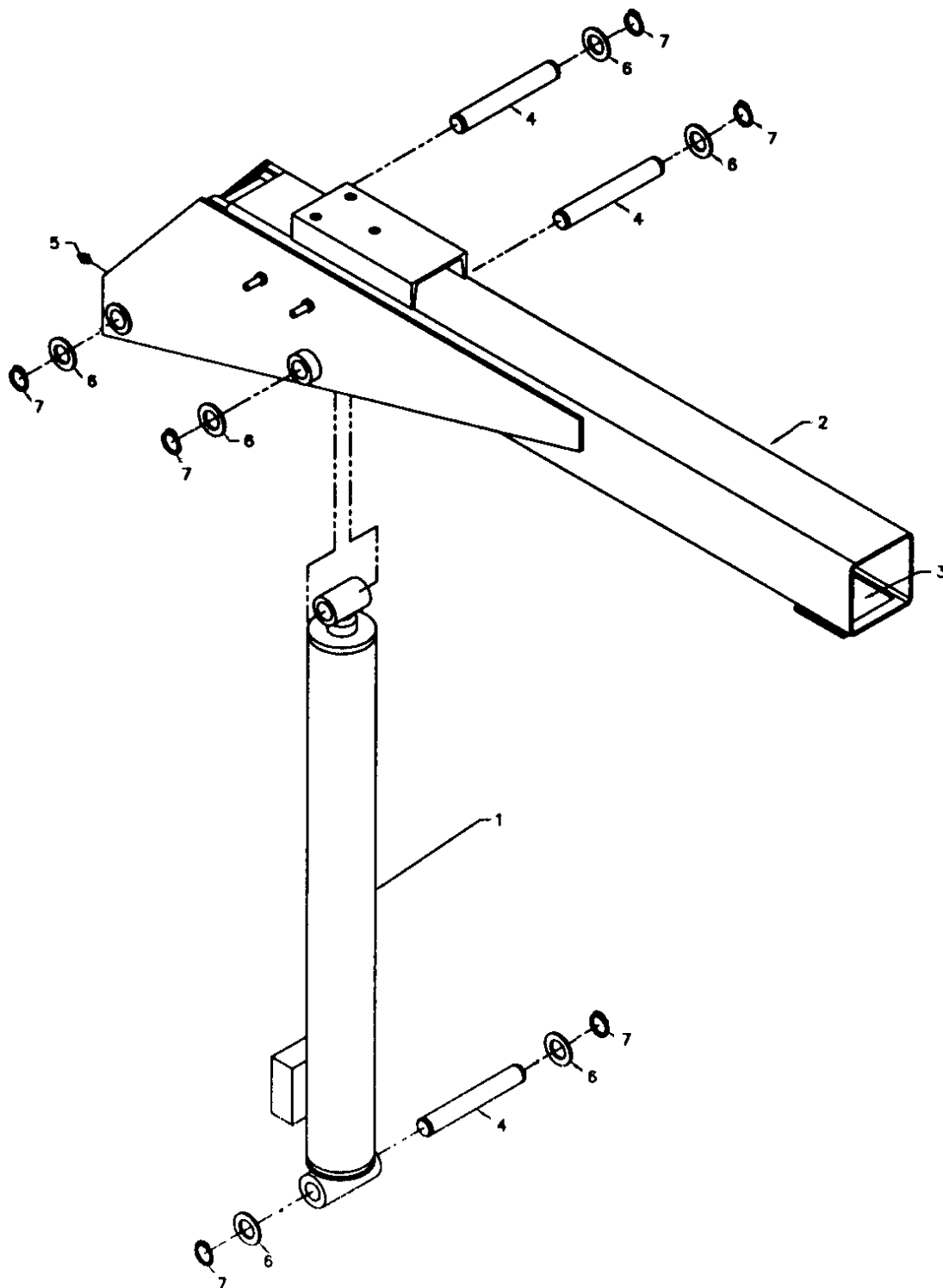
**EXTENSION BOOM ASM W/WINCH**  
**(41715052)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	3B030840	EXTENSION CYLINDER	1
2.	52070319	PIN	1
3.	52715051	EXTENSION BOOM	1
4.	60030109	WEAR PAD	1
5.	60108145	PIN	1
7.	72060578	SET SCR 3/8-16X3/8 SH	1
8.	72066143	HAIRPIN .12	1



# **LOWER BOOM ASM W/WINCH** **(41715053)**

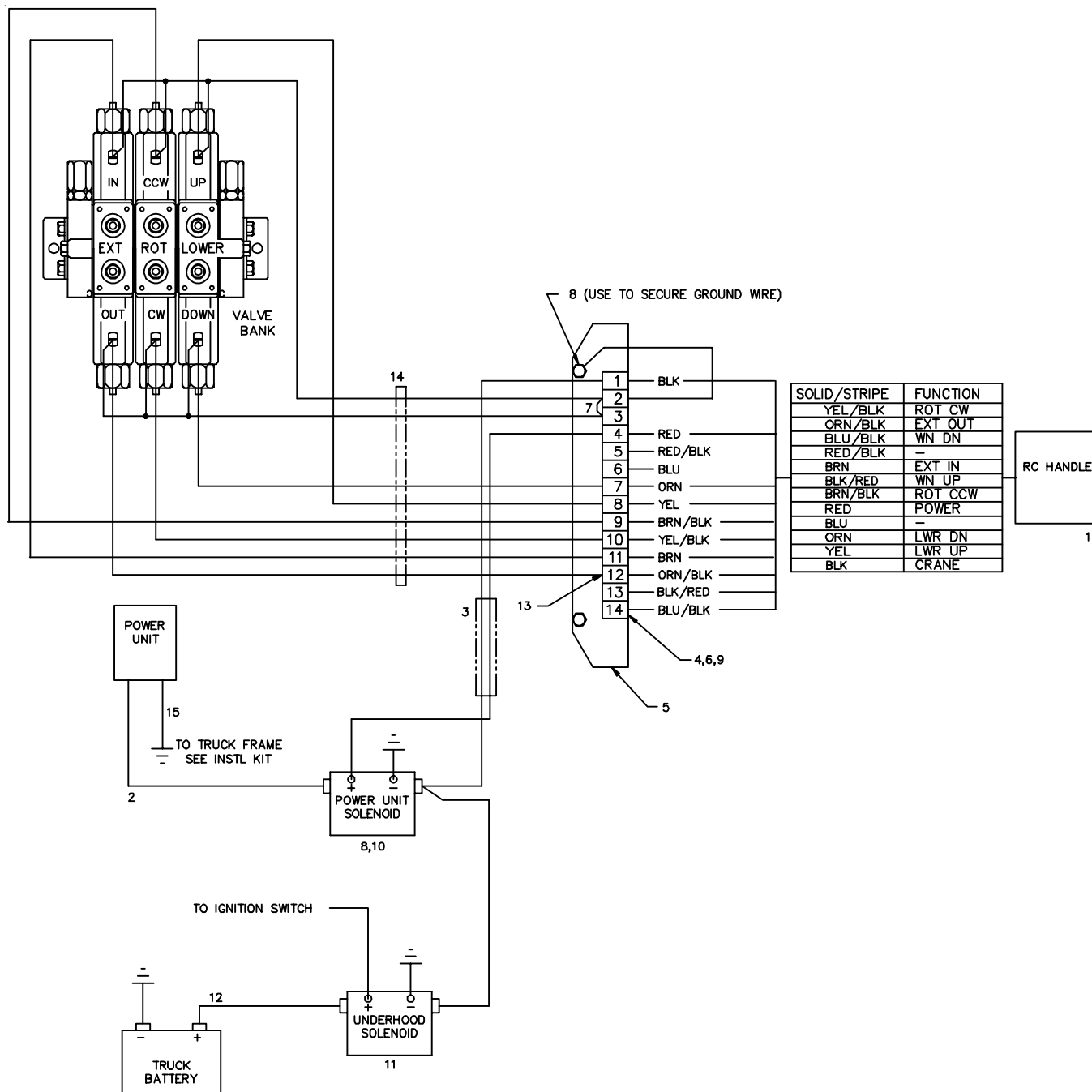
ITEM	PART NO.	DESCRIPTION	QTY
1.	3B031840	INNER CYLINDER	1
2.	52715041	INNER BOOM	1
3.	60030109	WEAR PAD	1
4.	60108142	PIN	3
5.	72053508	ZERK 1/8NPT	1
6.	72063034	MACH BUSHING 1X10GA NR	6
7.	72066125	RETAINING RING 1"	6



# CONTROL KIT-SGL PUMP W/WINCH (90714025)

- |             |                            |   |
|-------------|----------------------------|---|
| 1. 51714024 | HANDLE ASM                 | 1 |
| 2. 51716317 | CABLE ASM #1WIRE X 3"      | 1 |
| 3. 51705206 | CABLE ASM 14GA/2WIRE X 24" | 1 |
| 4. 77044309 | TERMINAL BLOCK-14          | 1 |
| 5. 60105825 | TERMINAL BLOCK MTG         | 1 |
| 6. 72066525 | HOSE CLAMP                 | 2 |

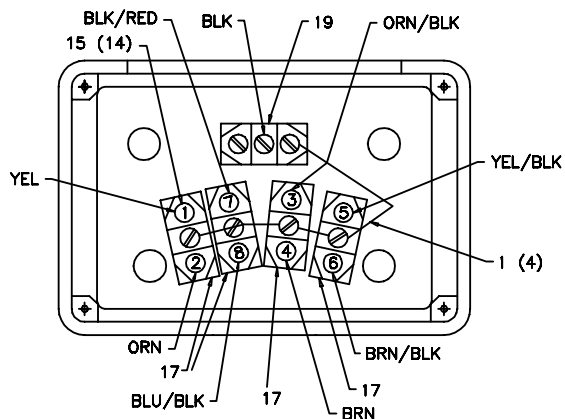
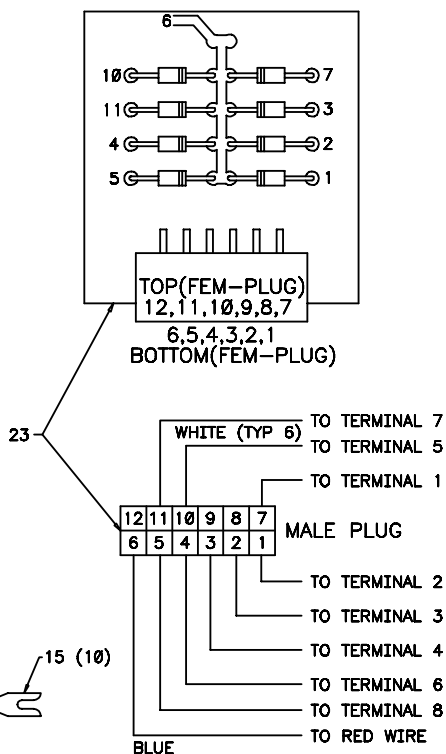
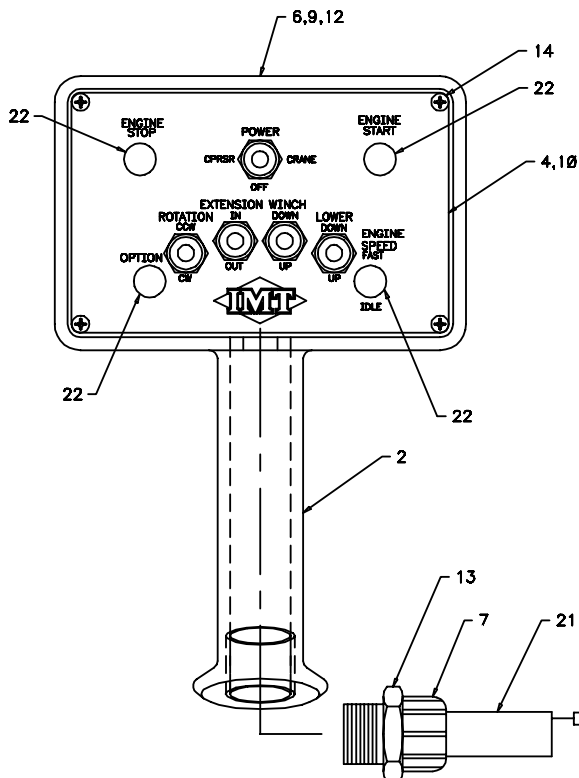
- |              |                          |    |
|--------------|--------------------------|----|
| 7. 77040130  | JUMPER BAR               | 1  |
| 8. 72060002  | CAP SCR 1/4-20X3/4 HHGR5 | 4  |
| 9. 72061009  | SHT MTL SCR #6X3/4 PH    | 2  |
| 10. 77041091 | SOLENOID 3-POLE 12V      | 1  |
| 11. 77041237 | SOLENOID 12V 80% 150A    | 1  |
| 12. 51704784 | CABLE ASM #1WIRE X 6     | 1  |
| 13. 77040051 | TERM #8 SPRSPD 16-14GA   | 10 |
| 14. 70034060 | TIE 8"                   | 4  |
| 15. 51705388 | CABLE ASM #1WIRE X 72"   | 1  |



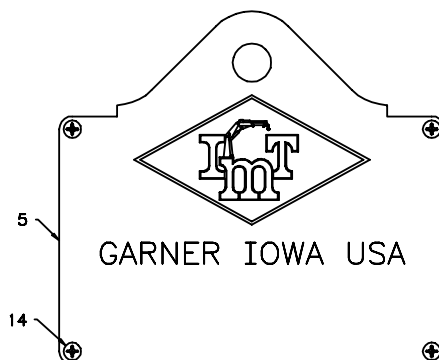
# **REMOTE HANDLE ASM-W/WINCH (51714024)**

- |    |          |                         |   |
|----|----------|-------------------------|---|
| 1. | 60045031 | WIRE 18GA GRN X 4       | 4 |
| 2. | 60119335 | CONTROL HANDLE          | 1 |
| 4. | 60119277 | FRONT COVER             | 1 |
| 5. | 70034306 | BACK COVER              | 1 |
| 6. | 70029119 | SER NO PLACARD          | 1 |
| 7. | 77044096 | CORD GRIP               | 1 |
| 9. | 70394447 | DECAL-DGR RC ELECTRO SM | 1 |

- |     |          |                            |      |
|-----|----------|----------------------------|------|
| 10. | 70394142 | DECAL-REMOTE               | 1    |
| 12. | 72066340 | POP RIVET                  | 2    |
| 13. | 72531833 | REDUCER BUSHING 3/4-1/2NPT | 1    |
| 14. | 72061009 | SHT MTL SCR #6X3/4 PH      | 8    |
| 15. | 77040051 | TERM #8 SPRSPD 16-14GA     | 24   |
| 17. | 77040372 | TOGGLE SWITCH SPDT         | 4    |
| 19. | 77040374 | TOGGLE SWITCH SPDT         | 1    |
| 21. | 89044136 | CABLE 18GA/12WIRE          | 10FT |
| 22. | 70392785 | PLUG 1/2                   | 4    |
| 23. | 77041407 | DIODE BOARD                | 1    |



SOLID/STRIPE	FUNCTION
YEL/BLK	ROT CW
ORN/BLK	EXT OUT
BLU/BLK	WN DN
RED/BLK	-
BRN	EXT IN
BLK/RED	WN UP
BRN/BLK	ROT CCW
RED	POWER
BLU	-
ORN	LWR DN
YEL	LWR UP
BLK	CRANE





SECTION 4. GENERAL REFERENCE

INSPECTION CHECKLIST ..... 3

WIRE ROPE INSPECTION ..... 7

HOOK INSPECTION ..... 7

HOLDING VALVE INSPECTION ..... 8

ANTI-TWO BLOCKING DEVICE INSPECTION ..... 8

TORQUE DATA CHART - DOMESTIC ..... 9

TORQUE DATA CHART - METRIC..... 10

TURNTABLE BEARING FASTENER TIGHTENING SEQUENCE ..... 11

TURNTABLE BEARING INSPECTION FOR REPLACEMENT ..... 12



## NOTES

[illegible]

**NOTICE**

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

OWNER/COMPANY

CONTACT PERSON

CRANE MAKE &amp; MODEL

CRANE SERIAL NUMBER

UNIT I.D. NUMBER

LOCATION OF UNIT

**Inspection Checklist****CRANES****1**

REV: 6-18-99

TYPE OF INSPECTION (check one)

☐

DAILY (if deficiency found)

☐

QUARTERLY

☐

MONTHLY

☐

ANNUAL

DATE INSPECTED

HOUR METER READING (if applicable)

INSPECTED BY (print)

SIGNATURE OF INSPECTOR

**TYPE OF INSPECTION****NOTES:**

Daily and monthly inspections are to be performed by a "designated" person, who has been selected or assigned by the employer or the employer's representative as being competent to perform specific duties.

Quarterly and annual inspections are to be performed by a "qualified" person who, by possession of a recognized degree in an applicable field or certificate of professional standing, or who, by extensive knowledge, training and experience has successfully demonstrated the ability to solve or resolve problems related to the subject matter and work.

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

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

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

**DAILY (D):** Before each day of operation, those items designated with a **(D)** must be inspected. This inspection need not be recorded unless a deficiency (**X**) is found. If the end user chooses to record all daily inspections and those daily inspections include the monthly inspection requirements, there would be no need for a separate monthly inspection.

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

**QUARTERLY (Q):** Every three to four months or 300 hours of normal operation (which ever comes first) includes all daily and monthly inspection items plus items designated with a **(Q)**. This inspection must be recorded.

**ANNUAL (A):** Each year or 1200 hours of normal operation (which ever comes first) includes all items on this form which encompasses daily, monthly and quarterly inspections plus those items designated by **(A)**. This inspection must be recorded.

FREQUENCY	ITEM	KEY	✓ = SATISFACTORY ✗ = DEFICIENCY (must be corrected prior to operation)	R = RECOMMENDATION (should be considered for corrective action) NA= NOT APPLICABLE	STATUS ✓ ✗ R, NA
			INSPECTION DESCRIPTION		
D	1	Labels	All load charts, safety & warning labels, & control labels are present and legible.		
D	2		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	Rope	Proper reeving of wire rope on sheaves & winch drum.		
D	8	Pins	Proper engagement of all connecting pins & pin retaining devices.		
D	9	General	Overall observation of crane for damaged or missing parts, cracked welds & presence of safety covers.		
D	10	Operation	During operation, observe crane for abnormal performance, unusual wear (loose pins, wire rope damage, etc.). If observed, discontinue use & 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 2-Blocking	Operate anti 2-blocking device to check for proper operation.		
D	14		Other		
D	15		Other		

Inspection Checklist			CRANES		2
FREQUENCY	ITEM	KEY	✓ = SATISFACTORY ✕ = DEFICIENCY (must be corrected prior to operation)	R = RECOMMENDATION (should be considered for corrective action) NA = NOT APPLICABLE	STATUS ✓, ✕, R, NA
			INSPECTION DESCRIPTION		
M	16	Daily	All daily inspection items.		
M	17	Cylinders	Visual inspection of cylinders for leakage at rod, fittings & welds. Damage to rod & case.		
M	18	Valves	Holding valves for proper operation.		
M	19	Valves	Control valve for leaks at fittings & between sections.		
M	20	Valves	Control valve linkages for wear, smoothness of operation & tightness of fasteners.		
M	21	General	Bent, broken or significantly rusted/corroded parts.		
M	22	Electrical	Electrical systems for presence of dirt, moisture & frayed wires.		
M	23	Structure	All structural members for damage.		
M	24	Welds	All welds for breaks & cracks.		
M	25	Pins	All pins for proper installation & condition.		
M	26	Hardware	All bolts, fasteners & retaining rings for tightness, wear & corrosion		
M	27	Wear Pads	Presence of wear pads.		
M	28	Pump & Motor	Hydraulic pumps & motors for leakage at fittings, seals & between sections.		
M	29	PTO	Transmission/PTO for leakage, abnormal vibration & noise.		
M	30	Hyd Fluid	Quality of hydraulic fluid and for presence of water.		
M	31	Hyd Lines	Hoses & tubes for leakage, abrasion damage, blistering, cracking, deterioration, fitting leakage & secured properly.		
M	32	Hook	Load hook for abnormal throat distance, twist, wear & cracks.		
M	33	Rope	Condition of load line.		
M	34	Manual	Presence of operator's manuals with unit.		
M	35		Other		
Q	36	Daily	All daily inspection items.		
Q	37	Monthly	All monthly inspection items.		
Q	38		Condition of wear pads		
Q	39	Rotation Sys	Rotation bearing for proper torque of all accessible mounting bolts.		
Q	40	Hardware	Base mounting bolts for proper torque.		
Q	41	Structure	All structural members for deformation, cracks & corrosion.		
	42		● Base		
	43		● Outrigger beams & legs		
	44		● Mast		
	45		● Inner boom		
	46		● Outer boom		
	47		● Extension(s)		
	48		● Jib boom		
	49		● Jib extension(s)		
	50		● Other		
Q	51	Hardware	Pins, bearings, shafts, gears, rollers, & locking devices for wear, cracks, corrosion & distortion.		
	52		● Rotation bearing(s)		
	53		● Inner boom pivot pin(s) & retainer(s)		
	54		● Outer boom pivot pin(s) & retainer(s)		
	55		● Inner boom cylinder pin(s) & retainer(s)		
	56		● Outer boom cylinder pin(s) & retainer(s)		
	57		● Extension cylinder pin(s) & retainer(s)		
	58		● Jib boom pin(s) & retainer(s)		
	59		● Jib cylinder pin(s) & retainer(s)		
	60		● Jib extension cylinder pin(s) & retainer(s)		
	61		● Boom tip attachments		
	62		● Other		
Q	63	Hyd Lines	Hoses, fittings & tubing for proper routing, leakage, blistering, deformation & excessive abrasion.		
	64		● Pressure line(s) from pump to control valve		
	65		● Return line(s) from control valve to reservoir		
	66		● Suction line(s) from reservoir to pump		
	67		● Pressure line(s) from control valve to each function		
	68		● Load holding valve pipe(s) and hose(s)		
	69		● Other		

## 3

FREQUENCY	ITEM	KEY	<b>✓</b> = SATISFACTORY <b>x</b> = DEFICIENCY (must be corrected prior to operation)	<b>R</b> = RECOMMENDATION (should be considered for corrective action) <b>NA</b> = NOT APPLICABLE	STATUS  ✓ x R, NA
			INSPECTION DESCRIPTION		
Q	70	Pumps, PTO's & Motors	Pumps, PTO's & motors for loose bolts/fasteners, leaks, noise, vibration, loss of performance, heating & excess pressure.		
	71		● Winch motor(s)		
	72		● Rotation motor(s)		
	73		● Other		
Q	74	Valves	Hydraulic valves for cracks, spool return to neutral, sticking spools, proper relief valve setting, relief valve failure.		
	75		● Main control valve		
	76		● Load holding valve(s)		
	77		● Outrigger or auxiliary control valve(s)		
	78		● Other		
	79		● Other		
Q	80	Cylinders	Hydraulic cylinders for drifting, rod seal leakage & leakage at welds. Rods for nicks, scores & dents. Case for damage. Case & rod ends for damage & abnormal wear.		
	81		● Outrigger cylinder(s)		
	82		● Inner boom cylinder(s)		
	83		● Outer boom cylinder(s)		
	84		● Extension cylinder(s)		
	85		● Rotation cylinder(s)		
	86		● Jib lift cylinder(s)		
	87		● Jib extension cylinder(s)		
	88		● Other		
Q	89	Winch	Winch, sheaves & drums for damage, abnormal wear, abrasions & other irregularities.		
Q	90	Hyd Filters	Hydraulic filters for replacement per maintenance schedule.		
A	91	Daily	All daily inspection items.		
A	92	Monthly	All monthly inspection items.		
A	93	Quarterly	All quarterly inspection items.		
A	94	Hyd Sys	Hydraulic fluid change per maintenance schedule.		
A	95	Controls	Control valve calibration for correct pressures & relief valve settings		
A	96	Valves	Safety valve calibration for correct pressures & relief valve settings.		
A	97	Valves	Valves for failure to maintain correct settings.		
A	98	Rotation Sys	Rotation drive system for proper backlash clearance & abnormal wear, deformation & cracks.		
A	99	Lubrication	Gear oil change in rotation drive system per maintenance schedule.		
A	100	Hardware	Check tightness of all fasteners and bolts.		
A	101	Wear Pads	Wear pads for excessive wear.		
A	102	Loadline	Loadline for proper attachment to drum.		

## 4

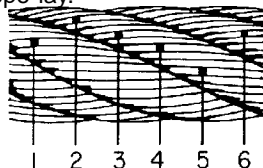
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*If additional space is required, reproduce this page and attach to this report.*

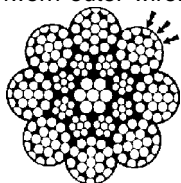
**WIRE ROPE INSPECTION**

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

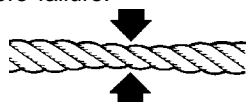
- A. Corrosion can be cause for replacement. Any development of corrosion must be noted and monitored closely.
- B. When there are either 3 broken wires in one strand or a total of six broken wires in all strands in any one rope lay.



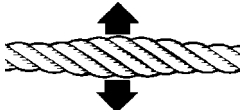
- C. When flat spots on the outer wires appear and those outside wires are less than 2/3 the thickness of the unworn outer wire.



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



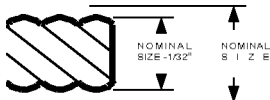
- E. When kinking, crushing, birdcaging or other distortion occurs.



- 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**

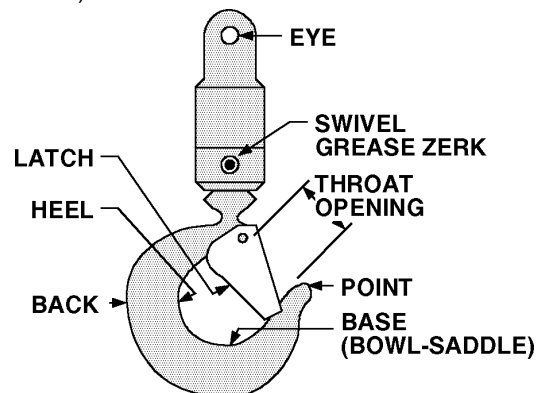
Repair of cracks, nicks, and gouges shall be carried out by a designated person by grinding longitudinally, following the contour of the hook, provided that no dimension is reduced more than 10% of its original value. (Or as recommended by the manufacturer) (A qualified person may authorize continued 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.

**ANTI-TWO BLOCKING DEVICE INSPECTION**

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

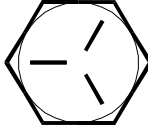

The anti two block system should be checked daily as follows:

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

The final check involves actuating both the winch up and extend functions together and checking for proper operation of the anti two blocking circuit. Once again, start slowly and stop if it appears the cable is being tensioned.

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.

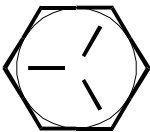
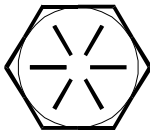
1. Bolt manufacturer's particular specifications should be consulted when provided.
2. Flat washers of equal strength must be used.
3. All torque measurements are given in foot-pounds. To convert to inch-pounds, multiply by 12.
4. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphite, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of Loctite does not affect the torque values listed above.
5. Torque values for socket-head capscrews are the same as for Grade 8 capscrews.

**WARNING**

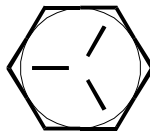
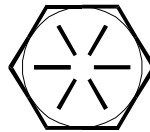
Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Once a bolt has been torqued to 75% of its proof load and then removed, the torque coefficient may no longer be the same as when the bolt was new thus giving indeterminate clamp loads after torquing.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

# 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.
4. Torque values specified are for bolts with residual oils or no special lubricants applied.  
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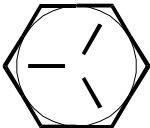

### WARNING

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 fatigue causing serious injury or DEATH.

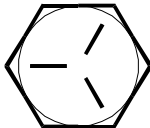
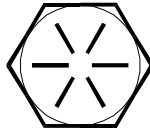


# TORQUE DATA CHART - METRIC

## 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.

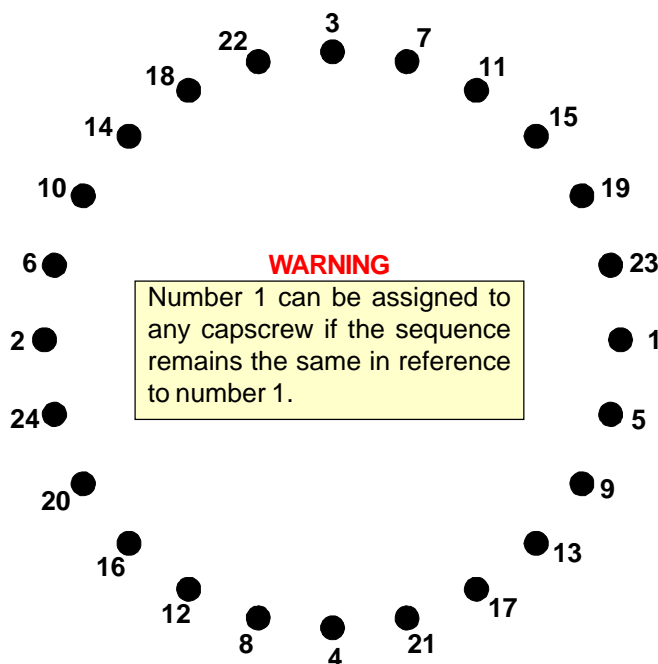
1. Bolt manufacturer's particular specifications should be consulted when provided.
2. Flat washers of equal strength must be used.
3. All torque measurements are given in kilogram-meters.
4. Torque values specified are for bolts with residual oils or no special lubricants applied.  
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5. Torque values for socket-head capscrews are the same as for Grade 8 capscrews.

### WARNING

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

## 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 bearing's internal clearance once mounted on a crane.

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

## TEST PROCEDURE

### STEP 1.

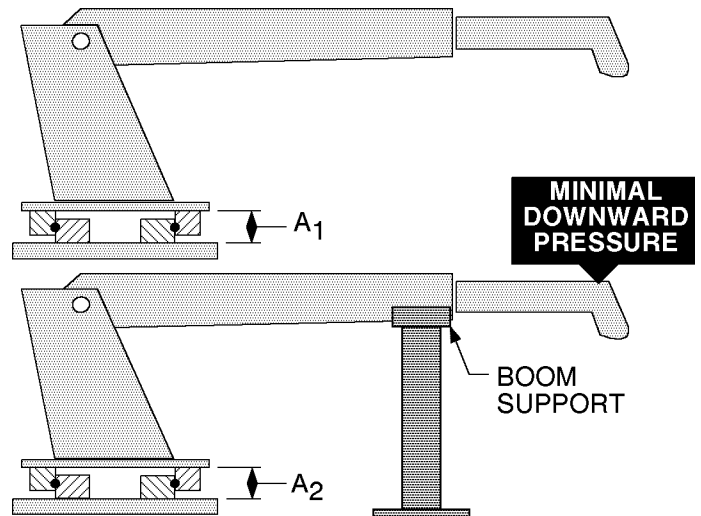
With the crane horizontal and fully extended, measure between the top and bottom mounting surfaces of the turntable bearing (A1), using a dial indicator for accuracy.

### STEP 2.

Reverse the load by applying minimal downward pressure on the boom while the boom is in the boom support or on a solid surface. Again measure A2.

### STEP 3.

Subtract A1 from A2 to determine tilt and compare the result with the accompanying chart.



**COMPARISON CHART - MODEL TO MEASURED TILT DIMENSION**

<b>NOTE</b> THE FIGURES LISTED IN THIS CHART ARE SERVICE GUIDELINES AND DO NOT, IN THEMSELVES, REQUIRE THAT THE BEARING BE INSPECTED.  IF THERE IS REASON TO SUSPECT AN EXCESS OF BEARING WEAR AND THE MEASURED TILT DIMENSION EXCEEDS THE DIMENSION LISTED, REMOVE THE BEARING FOR INSPECTION.	<b>IMT CRANE, LOADER OR TIREHAND MODEL</b>	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 32030 T30 T40	9800 12916 13031 13034 14000 15000 18000 20017 H1200 H1200RR T50 TH2551B BODY ROT'N TH2557B BODY ROT'N TH2557A BODY ROT'N
	<b>BALL DIA. (REF)</b>	.875" (22mm)	1.00" (25mm)	1.18"-1.25" (30-32mm)	1.75" (44mm)
	<b>TILT DIM. (A<sub>1</sub>-A<sub>2</sub>)</b>	.060" (1.524mm)	.070" (1.778mm)	.075" (1.905mm)	.090" (2.286mm)

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:  
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BOX 189  
GARNER, IA 50438-0189  
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TEL: 641-923-3711  
TECHNICAL SUPPORT FAX: 641-923-2424  
[www.imt.com](http://www.imt.com)