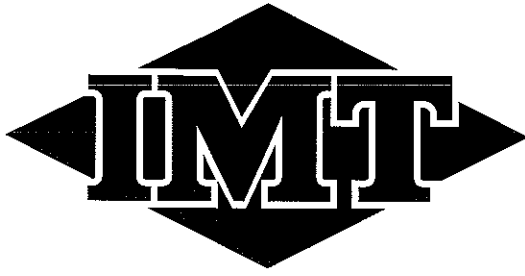


MANUAL CHANGE NOTICE

1495

The following revisions have been made to the listed IMT product manuals.
Please revise your manuals to agree with these revisions.

PRODUCT	DATE	FIGURE	PAGE	CHANGE
1495	01-12-96		LOI	DELETE : D-45 DBL HOSE REEL KIT 31708878 - NOT USED (ECO 7158) DELETE: D-50. DBL HOSE REEL KIT 31706853 - NOT USED
		D-45	4-40	REMOVE FIG D-45. DBL HOSE REEL KIT (31708878)
		D-50	4-44	REMOVE FIG D-45. DBL HOSE REEL KIT (317-06853)
1495	05-22-96	D-4	4-3	ADD 64-67, CTRL HANDL GUARD & HARDWARE, CHG DWG
		D-37	4-35	ADD 30. 70394190 DECAL-CAUTION NOT A STEP (2), CHG DWG
1495	05-29-96	D-23	4-22	ADD ITEM 4.72532675 CAP (2) & CHG DWG
1495	07-23-96			ADD PG 4-47, 48 & 49 (90713554, 51713429 & 51713568)
1495	07-31-96		4-42	CHG ITEM 5 FROM: 73054877 TO: 73054426 & ITEM 12 FROM: 72532360 TO: 72532358
1495	08-13-96		4-49	ADD ITEM 23. 77044667 PLUG-CAP (1)
1495	08-27-96		4-47	90713554-CHG DWG
			4-49	51713568-CHG DWG & BOM
1495	10-15-96		4-48	51713429-CHG CABLE FROM 30' TO 45'
1495	10-23-96		4-48	51713429-CHG POT ASM PN
				Replaced by ⁹⁹⁰⁰ 1495 99900719



Volume 2
Parts and Specifications
Model 1495 Crane

IOWA MOLD TOOLING CO., INC.

BOX 189, GARNER, IA 50438-0189

515-923-3711

PRODUCT SUPPORT FAX: 515-923-2424

MANUAL PART NUMBER 99900724
LAST REVISED: 10-23-96

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 Volume 2, PARTS AND SPECIFICATIONS be kept in a safe place in the office.

This manual is provided to assist you with ordering parts for you 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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Section 1. MODEL 1495 SPECIFICATIONS

1-1. GENERAL

	1495 - 2H	1495 - 3H	1495 - 3H1M	1495 - 3H2M
CRANE RATING	14 ton-meters	14 ton-meters	14 ton-meters	14 ton-meters
HORIZONTAL REACH from centerline of rotation	7.67m	9.42m	11.05m	12.67m
HYDRAULIC EXTENSION	163cm x 2	163cm x 3	163cm x 3	163cm x 3
MANUAL EXTENSION	None	None	163cm	163cm x 2
VERTICAL REACH from mounting surface	9.62m	11.20m	12.64m	14.20m
VERTICAL REACH from ground / 97cm frame ht.	10.59m	12.17m	13.63m	15.17m
**BASE CRANE WEIGHT	2450 kg	2550 kg	2600 kg	2640 kg
OUTRIGGER SPAN	4.42m	4.42m	4.42m	4.42m
OUTRIGGER PADS	30 x 30cm	30 x 30cm	30 x 30cm	30 x 30cm
CRANE STORAGE HEIGHT from mounting surface	2.57m	2.57m	2.57m	2.57m
CRANE STORAGE HEIGHT from ground / 97cm frame ht.	3.54m	3.54m	3.54m	3.54m
*MOUNTING SPACE REQUIRED	97cm	97cm	97cm	97cm
ROTATIONAL TORQUE	1890 kg-m	1890 kg-m	1890 kg-m	1890 kg-m
OPTIMUM PUMP CAPACITY	49 liters/min	49 liters/min	49 liters/min	49 liters/min
SYSTEM OPERATING PRESSURE	178 bar	178 bar	178 bar	178 bar
OIL RESERVOIR CAPACITY	87 liters	87 liters	87 liters	87 liters
HOOK APPROACH - HORIZONTAL from centerline of rotation	82cm	86cm	86cm	86cm
HOOK APPROACH - VERTICAL from mounting surface	2.41m	2.31m	2.31m	2.31m
***VERTICAL CTR OF GRAVITY from centerline of rotation	7.6cm	7.0cm	6.4cm	6.0cm
***HORIZONTAL CTR OF GRAVITY from crane base	100.3cm	100.3cm	100.3cm	100.3cm

* Allow an additional 13cm between the cab and crane base for swing clearance

** Without outriggers, hydraulic oil reservoir and mounting accessories.

*** Crane in the stowed position.

1-2. PERFORMANCE CHARACTERISTICS

ROTATION:	450°/7.85 rad	33 seconds
INNER BOOM ELEVATION:	-91 to +1.26 rad	23 seconds
OUTER BOOM ARTICULATION:	2.44 rad	17 seconds
TELESCOPIC EXTENSIONS:	163cm/163cm/163cm	25 / 13 / 7 seconds
VERTICAL OUTRIGGER STROKE:	61cm	4 seconds
HORIZONTAL OUTRIGGER STROKE:	100cm	6 seconds

1-3. POWER SOURCE

Integral-mounted hydraulic pump and PTO application. Other standard power sources may be utilized, with engineering approval.

1-4. 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 outrigger cylinders have positive, pilot-operated holding valves that open only on command.

The inner, outer and extension boom cylinders have pilot operated 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.

1-5. 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. A spring loaded brake is supplied between the drive gear and motor, providing rotation brake and parking brake action. Total gear reduction is 56.7 to 1.

1-6. HYDRAULIC SYSTEM

The hydraulic system is an open centered, full pressure system, requiring 49 liters/min optimum oil flow, at 178 bar. Nine-spool, stack-type control valve, seven 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 seven functions are located at both sides of crane for convenient operation. System includes hydraulic oil reservoir, suction-line strainer, pump, 9-section control valve, return-line filter and all hoses and fittings.

1-7. SELECTED WEIGHTS OF ANCILLARY EQUIPMENT

OUTRIGGERS	352 kg
HYDRAULIC OIL RESERVOIR	27 kg

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

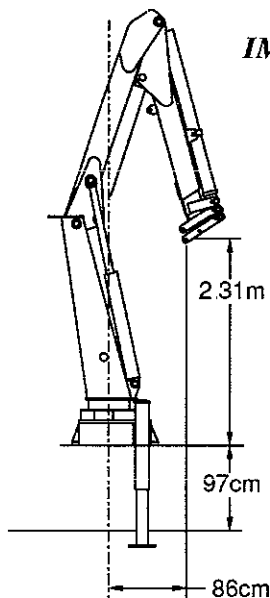


Figure A-1.

HOOK APPROACH DIMENSIONS

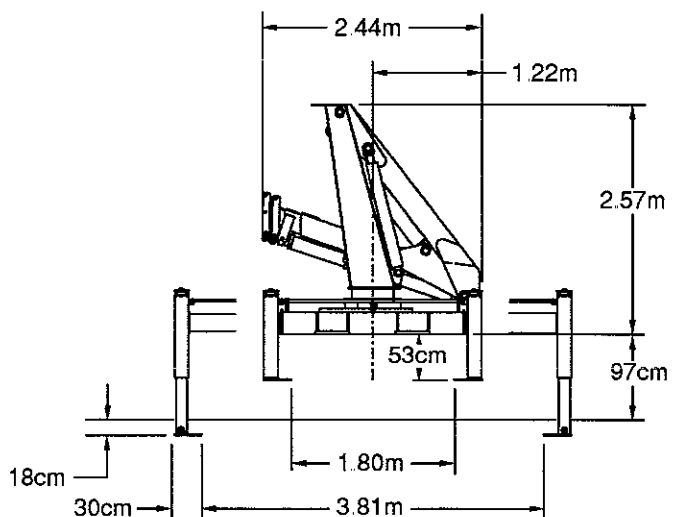


Figure A-2.

STOWED POSITION AND OUTRIGGER DIMENSIONS

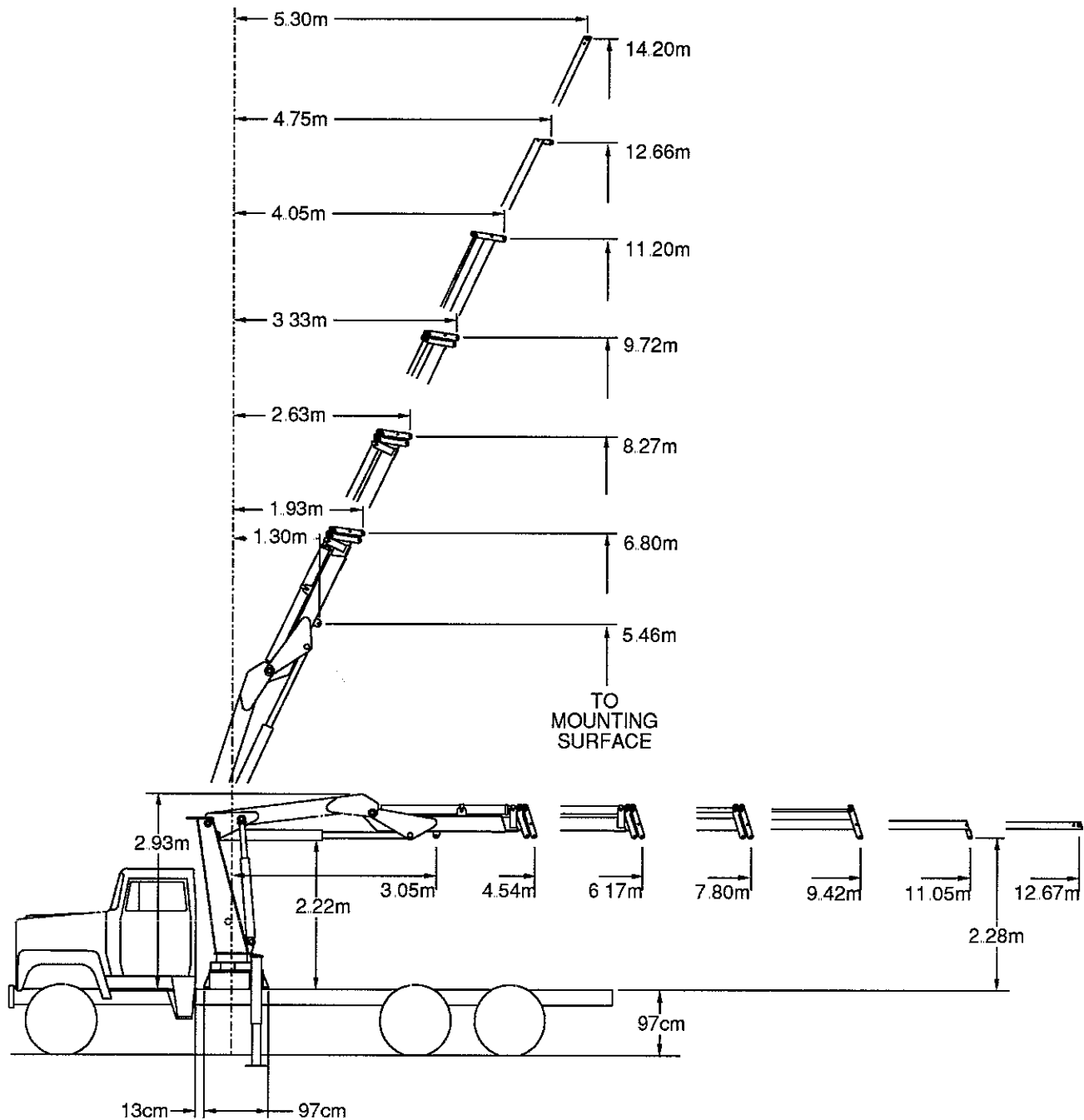


Figure A-3. GEOMETRIC CONFIGURATION

IOWA MOLD TOOLING CO., INC. • BOX 189 • GARNER • IA • 50438 • 515-923-3711
Capacities through geometric range are limited to those shown in horizontal position.



**MODEL
1495**

- 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 3000 KG for 1-part line.

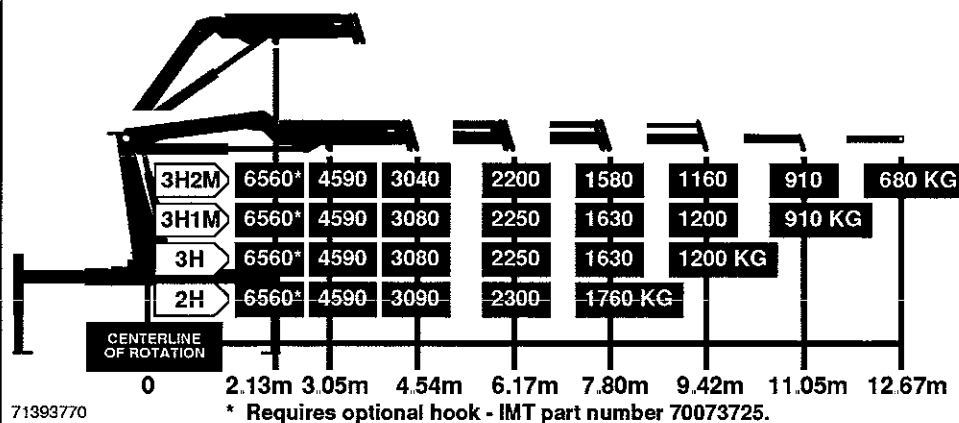
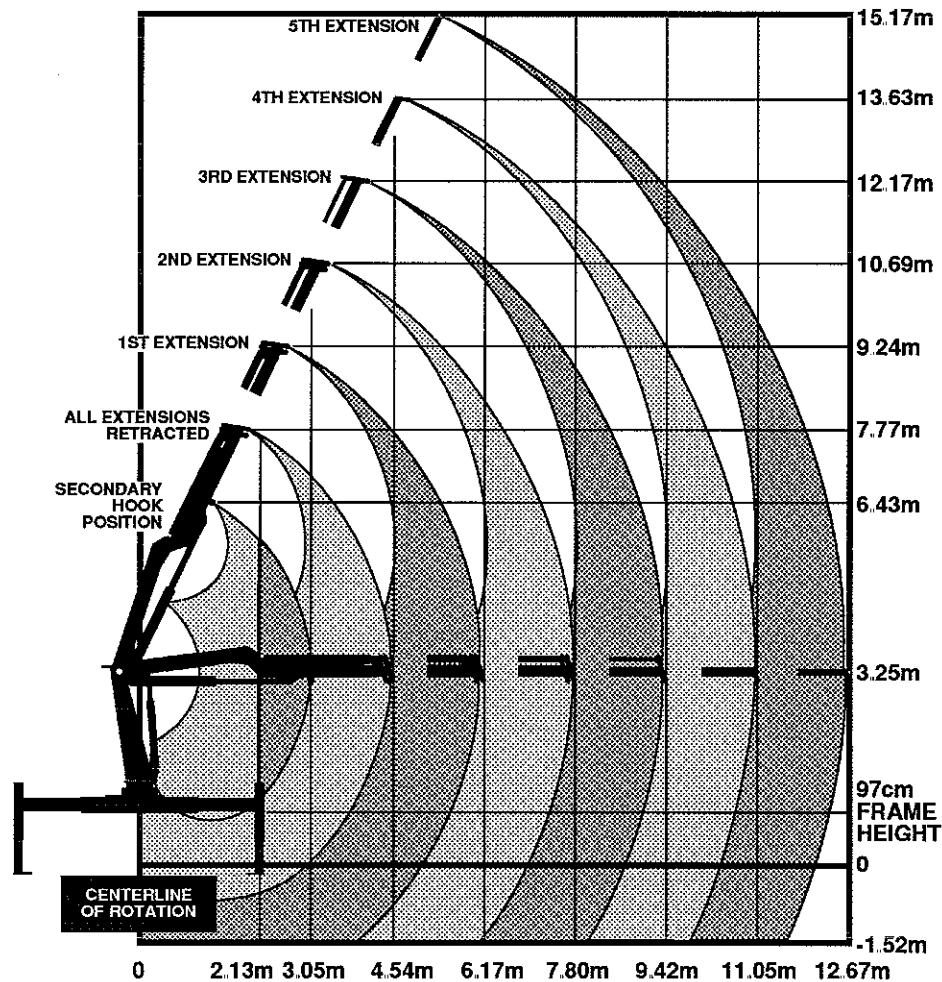


Figure A-4. CAPACITY CHART

Section 2. CRANE DESCRIPTION

2-1. GENERAL

This section describes the major assemblies that are available with this crane. Figure B-1 illustrates the locations of the assemblies.

There are four models of cranes covered in this manual. They are the 9831-2H, 9831-3H, 9831-3H1M and the 9831-3H2M. The 9831-3H is considered to be the standard crane model with the other models offered as optional cranes. The differences are discussed in paragraph 2-6.

2-2. BASE

The base provides a platform for mounting the crane to a truck. It incorporates the $450^{\circ}/7.85$ Rad. rotation mechanism and outriggers. The outriggers are powered through double acting hydraulic cylinders, and provide stabilization during crane operation.

2-3. MAST

The mast provides the necessary elevation for crane operation as well as a hinge point for the inner boom. The mast consists of two vertical tubes welded to the base to allow the crane to fold into the figure-4 configuration for travel.

2-4. INNER BOOM

The inner boom will swing through a full $124^{\circ}/2.16$ Rad. from -52° to $+72^{\circ}/0.91$ to $+1.26$ Rad. It is raised and lowered through the use of twin double-acting hydraulic cylinders.

2-5. OUTER BOOM

The outer boom will swing through a full $140^{\circ}/2.44$ Rad. The boom is raised and lowered with a single double-acting hydraulic cylinder mounted under the inner and outer hinge point. It also provides storage for the extension booms in the retracted position.

2-6. EXTENSION BOOMS

The differences between the 9831-2H, 9831-3H, 9831-3H1M and the 9831-3H2M cranes are in the extension booms. The 9831-2H crane uses a single-stage hydraulic extension boom cylinder for an additional 163cm of reach. The 9831-3H uses a 2-stage hydraulic extension for an additional 163cm of reach for each stage for a total of 325cm. The 9831-3H1M uses a 2-stage telescoping hydraulic extension cylinder for an additional 325cm of reach, plus a manual extension for another 163cm of reach. The 9831-3H2M uses a 2-stage telescoping hydraulic extension cylinder for an additional 325cm of reach, plus two manual extensions of 163cm each for an additional 325cm of reach.

2-7. CONTROLS

The eight section control valve may be operated from either side of the crane. The crane functions utilize six sections, leaving two sections plugged, but easily adaptable, for additional functions.

2-8. HYDRAULICS

The crane hydraulics consist of double-braided pressure and return hoses, hydraulic filters, control valve bank and all necessary hydraulic fittings.

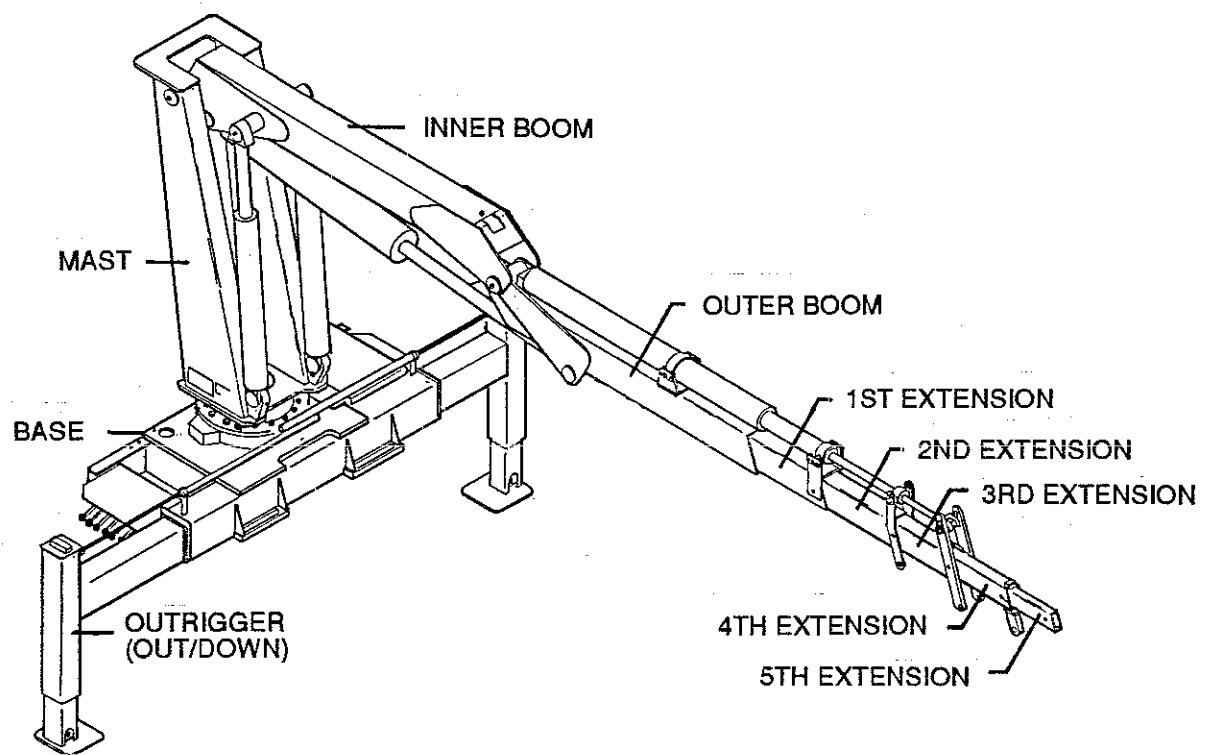


Figure B-1. 1495 CRANE GROUP

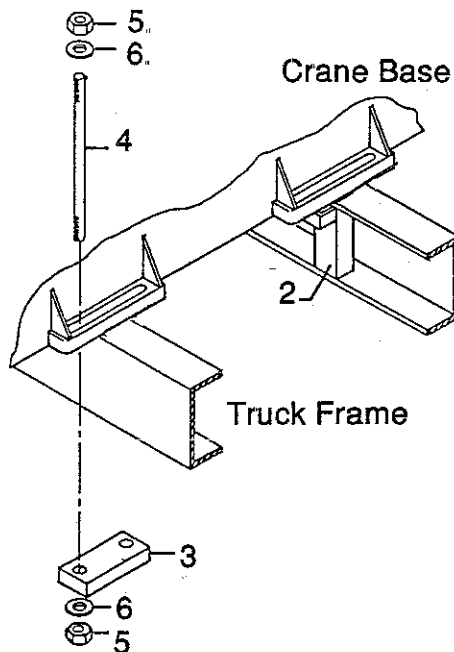
Section 3. INSTALLATION

3-1. 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).

3-2. CRANE MOUNTING

1. See SPECIFICATIONS in Section 1 for crane weight. Using an overhead hoist and fabric slings of adequate capacity, lift the crane about a foot to see if the crane is adequately balanced. If not, lower hoist and adjust slings. Re-check balance and re-position crane until mounting surface is level.
2. Install the truck frame support so that the tie-down studs pass through the supports (Figure C-1). Cut the support to the inside dimensions of the truck frame. Allow about 1.6mm extra. Grind the end of the support to fit inside the frame channel. Use a hammer to drive it into position if necessary.



ITEM	DESCRIPTION	QTY
2.	FRAME SUPPORT	4
3.	CLAMP PLATE	4
4.	TIE DOWN STUD	8
5.	LOCK NUT	16
6.	WASHER	16

3. Allow sufficient clearance between the cab and crane base, at least 12.7cm. 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 C-1. Note position of support weldments on truck frame. Hand tighten nuts. Observe underside of crane base.
4. Torque the 1 1/4"-7 UNC Grade 5 mounting hardware to 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.

E. Touch-up paint around mounting anchor plates.

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 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.

Figure C-1. CRANE INSTALLATION

3-3. HYDRAULIC INSTALLATION

To install the hydraulic hoses, fittings, etc.:

1. Install the hydraulic reservoir on the crane base.
2. Plumb the suction-line filter as shown in Figure C-2.
3. Install the 1-1/4" suction hose between the suction-line filter and the pump inlet. Tighten the hose clamps.
4. Install the 1/2" pressure hoses between the pump outlet and the inlet port on the valve bank.
5. Install the return filter and gate valve on the reservoir. Install the hose between the valve bank and return filter.
6. Fill the hydraulic reservoir to the "FULL" mark.
7. 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.

8. Open the return gate valve.
9. 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" of 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.
10. Cycle all hydraulic functions. Check for leaks, and refill the reservoir if necessary.

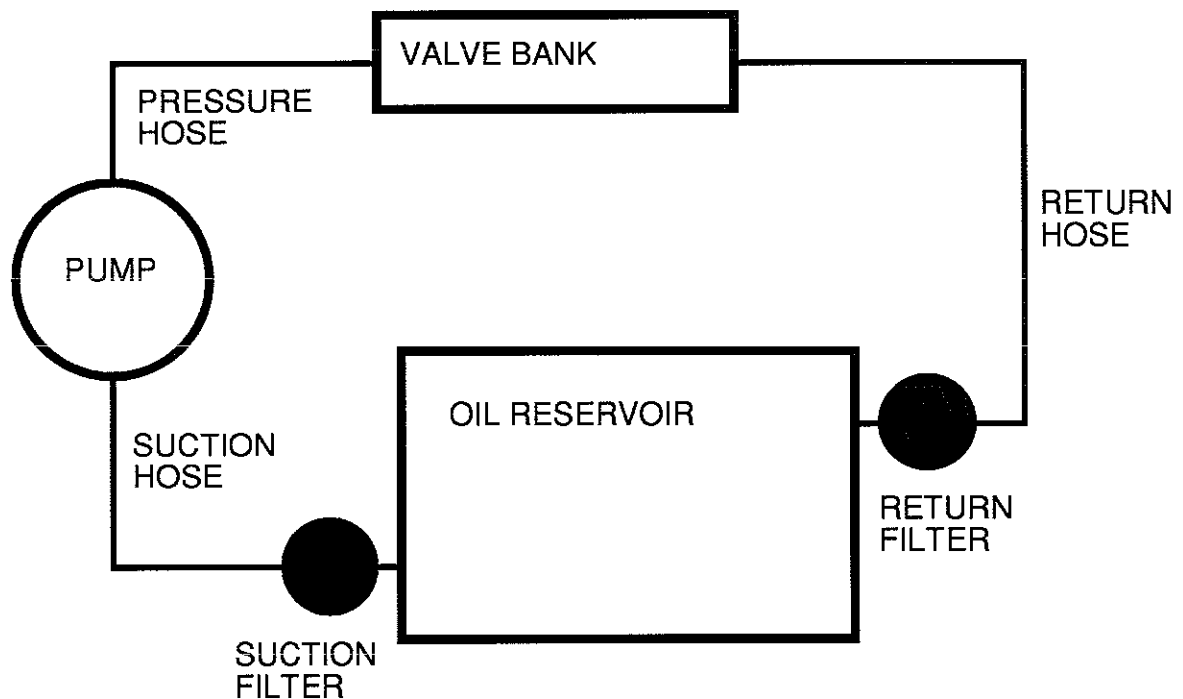


Figure C-2. HYDRAULIC INSTALLATION

Section 4. PARTS LIST

4-1. GENERAL

This section contains the exploded parts drawings with the accompanying parts list 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 THE WARNING'S, CAUTION'S AND NOTE'S CONTAINED IN THAT SECTION. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN DAMAGE TO THE EQUIPMENT, AN INJURY OR DEATH.

4-2. CRANE IDENTIFICATION

Every crane has an identification placard (Figure D-1) attached to the mast. When ordering parts, communicating warranty information or referring to the unit in correspondence, always include the assigned serial and model numbers. All inquiries should be addressed to:

Iowa Mold Tooling Company, Inc.
Box 189, Garner, Iowa 50438-0189
Telephone: 515-923-3711
Product Support Fax: 515-923-2424

or

IMT Cranes Canada, Ltd.
385 West Street South
Orillia, Ontario, L3V 5H2, Canada
Telephone: 705-325-7458
Fax: 705-325-7624

MODEL MODELO MODELE	SERIAL NUMBER NUMERO DE SERIE NUMERO DE SERIE
DRAWING NUMBER NUMERO DE PLANO NUMERO DE PLAN	DATE FECHA DE FABRICACION DATE
	
Iowa Mold Tooling Co., Inc. Garner, Iowa U.S.A.	IMT Cranes Canada, Ltd. Orillia, Ontario, Canada

Figure D-1. SERIAL NUMBER PLACARD

4-3. CYLINDER IDENTIFICATION

To ensure proper replacement parts are received, it is necessary to specify a complete number/letter sequence for any part request. Part numbers may be cross checked by comparing the stamped identification of the cylinder case (Figure D-2) against the information contained in this manual. You must use the part number stamped on the cylinder case when ordering parts.

4-4. WELDMENT IDENTIFICATION

Each of the major weldments - base, mast, inner boom, outer boom, extension booms 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 D-3.

4-5. 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.

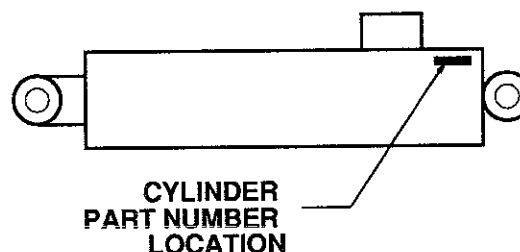


Figure D-2. CYLINDER PART NUMBER LOCATION

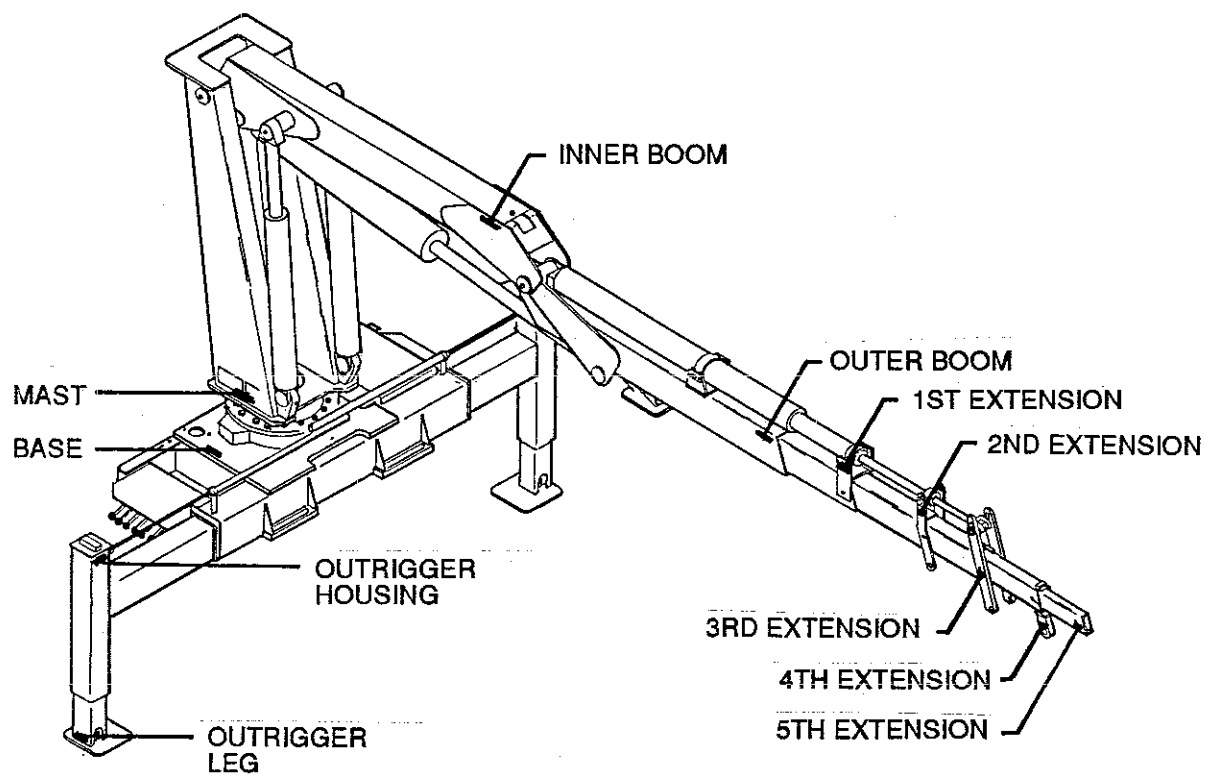
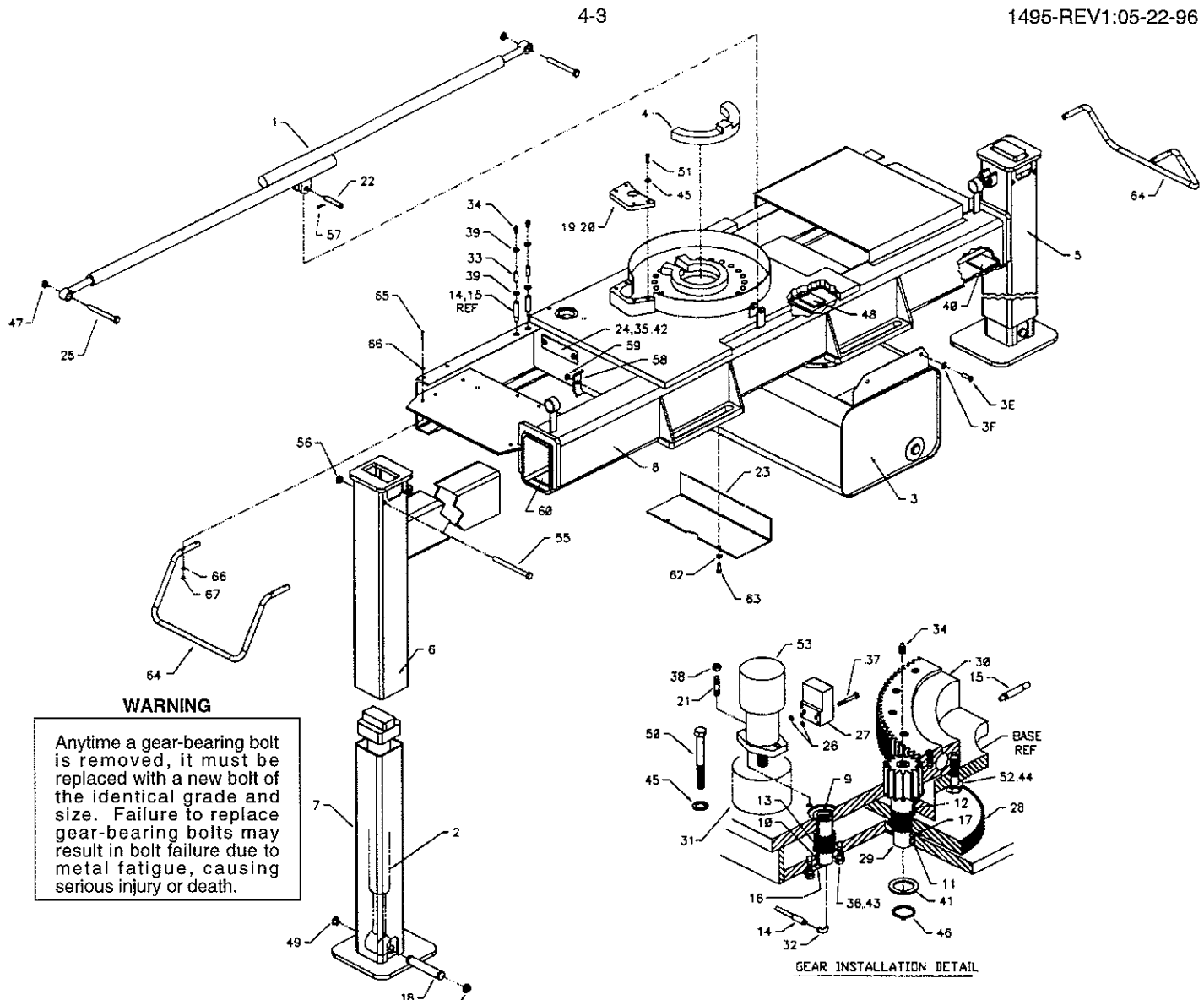
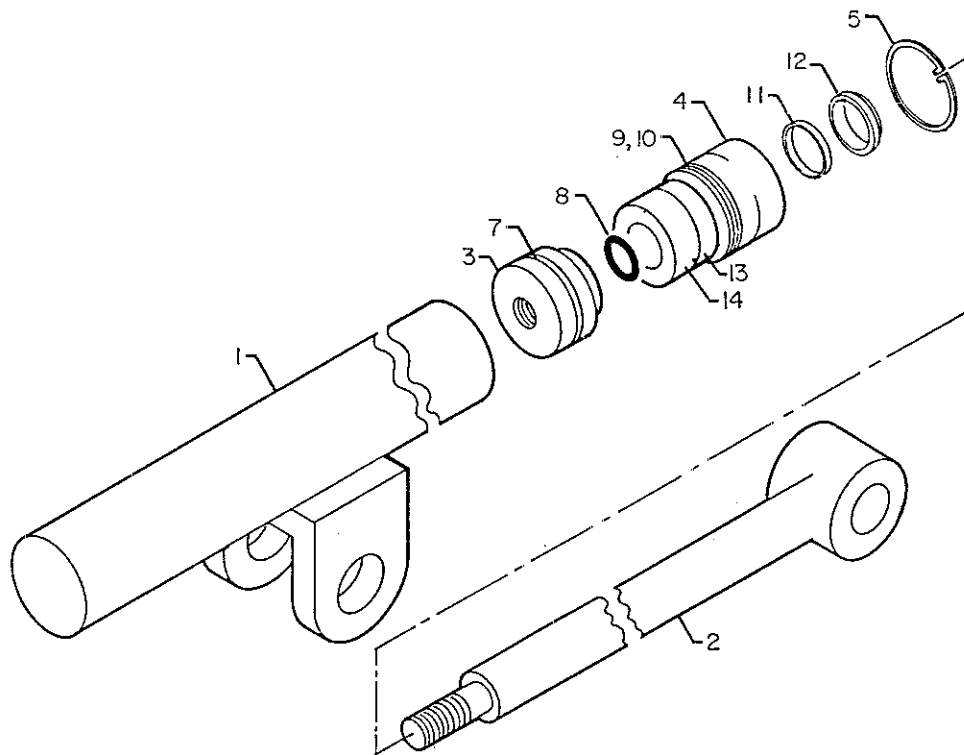


Figure D-3. WELDMENT PART NUMBER LOCATIONS



ITEM	PART	DESCRIPTION	QTY	ITEM	PART	DESCRIPTION	QTY
1	3A170890	POWER OUT CYLINDER	2	33.	72053301	COUPLING 1/8NPT	2
2	3B171890	POWER DOWN CYLINDER	2	34.	72053508	GREASE ZERK 1/8NPT	3
3	70732579	RESERVOIR ASM	1	35.	72060002	CAP SCR 1/4-20X3/4 HH GR5	4
3E.	72060044	CAP SCR 3/8-16X3/4 HH GR5	4	36.	72060092	CAP SCR 1/2-13X1-1/4 HH GR5	2
3F.	72063051	WASHER 3/8 LOCK	4	37.	72060739	CAP SCR 5/16-18X3 SH	4
4.	52707194	SLIDE 450° ROTATION	1	38.	72062080	NUT 1/2-13 LOCK	2
5.	52709188	OUTRIGGER ARM - CURBSIDE	1	39.	72063003	WASHER 3/8 WRT	4
6.	52709189	OUTRIGGER ARM - STREETSIDE	1	40.	60030119	WEAR PAD	1
7.	52709190	OUTRIGGER LEG	2	41.	72063039	MACH BUSHING 2 X 10GA	1
8.	52709195	BASE (INCL: 9-13)	1	42.	72063049	WASHER 1/4 LOCK	4
9.	60020120	BUSHING (PART OF 8)	1REF	43.	72063053	WASHER 1/2 LOCK	2
10.	60020121	BUSHING (PART OF 8)	1REF	44.	72063115	WASHER 7/8 FLAT	23
11.	60020122	BUSHING (PART OF 8)	1REF	45.	72063117	WASHER 9/16 FLAT	6
12.	60020124	BUSHING (PART OF 8)	1REF	46.	72066095	RETAINING RING 2" EXT	2
13.	71056074	DRIVE GEAR (PART OF 8)	1REF	47.	72062114	NUT 3/4-10 LOCK	2
14.	53000701	GREASE EXTENSION 14"	1	48.	60030121	WEAR PAD	1
15.	53000713	GREASE EXTENSION 38"	1	49.	72066132	RETAINING RING 1-1/2" EXT	2
16.	60010844	GREASE PLATE	1	50.	72601037	CAP SCR 9/16-12X4-1/2 HH GR8	2
17.	60020123	THRUST WASHER	1	51.	72601144	CAP SCR 9/16-12X2 HH GR8	4
18.	60104977	PIN	2	52.	72601148	CAP SCR 7/8-9X3 HH GR8	23
19.	60105964	PINION SUPPORT PLATE (INCL:20)	1	53.	73051004	MOTOR	1
20.	70034295	BEARING (PART OF 19)	1REF	55.	72060104	CAP SCR 1/2-13X6-1/2 HH GR5	4
21.	60106032	STUD 1/2-13X2	2	56.	72062107	NUT 1/2-13	4
22.	60113676	PIN	1	57.	72066145	HAIR PIN	1
23.	60108760	INTERMEDIATE GEAR GUARD	1	58.	60107648	HOSE CLAMP	2
24.	60108761	INSPECTION PLATE COVER	1	59.	72062103	NUT 3/8-16	2
25.	72060188	CAP SCR 3/4-10X3-1/2 HH GR5	2	60.	60030149	WEAR PAD	1
26.	7Q072112	O-RING	2	62.	72063050	WASHER 5/16 LOCK	2
27.	70731731	VALVEPAC	1	63.	72060023	CAP SCR 5/16-18X3/4 HH GR5	2
28.	71056072	INTERMEDIATE GEAR	1	64.	60119747	CTRL HANDLE GUARD	2
29.	71056073	PINION GEAR	1	65.	72060005	CAP SCR 1/4-20X1-1/4 HHGR5	8
30.	71056273	TURNTABLE GEAR BEARING	1	66.	72063001	WASHER 1/4 WRT	16
31.	71056374	BRAKE	1	67.	72062104	NUT 1/4-20 LOCK	8
32.	72053281	STREET ELBOW 1/8 NPT X 90°	1				

Figure D-4. BASE AND OUTRIGGER ASSEMBLY (41709196)

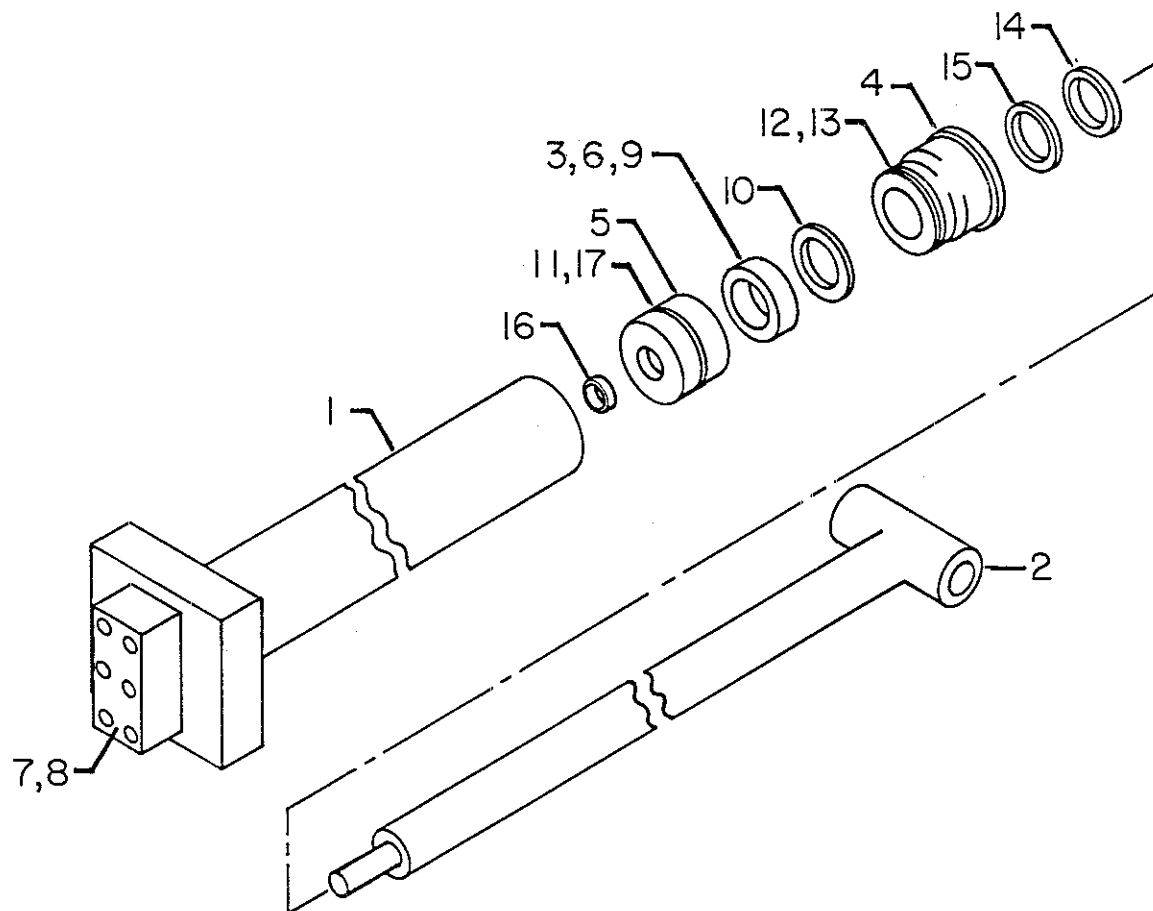
**NOTE**

REPLACEMENT OF ALL SEAL KIT COMPONENTS IS RECOMMENDED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL SAVE FUTURE DOWN-TIME.

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

ITEM	PART NO.	DESCRIPTION	QTY
1.	4A170890	CASE ASM	1
2.	4G170890	ROD ASM	1
3.	M61012050	PISTON	1
4.	6H125075	HEAD	1
5.	72066029	RETAINING RING 1-5/16 INT	1
6.	9A050608	SEAL KIT (INCL: 7-12)	1
7.	M7T66P012	PISTON SEAL (PART OF 6)	REF
8.	M7Q072014	O-RING (PART OF 6)	REF
9.	7Q072214	O-RING (PART OF 6)	REF
10.	7Q10P214	BACK-UP RING (PART OF 6)	REF
11.	7R66P075	T-SEAL (PART OF 6)	REF
12.	M7R13P007	ROD WIPER (PART OF 6)	REF
13.	6C075007	STOP TUBE 3/4	1
14.	6C125007	STOP TUBE 1-1/4	3

Figure D-5. POWER OUT OUTRIGGER CYLINDER (3A170890)

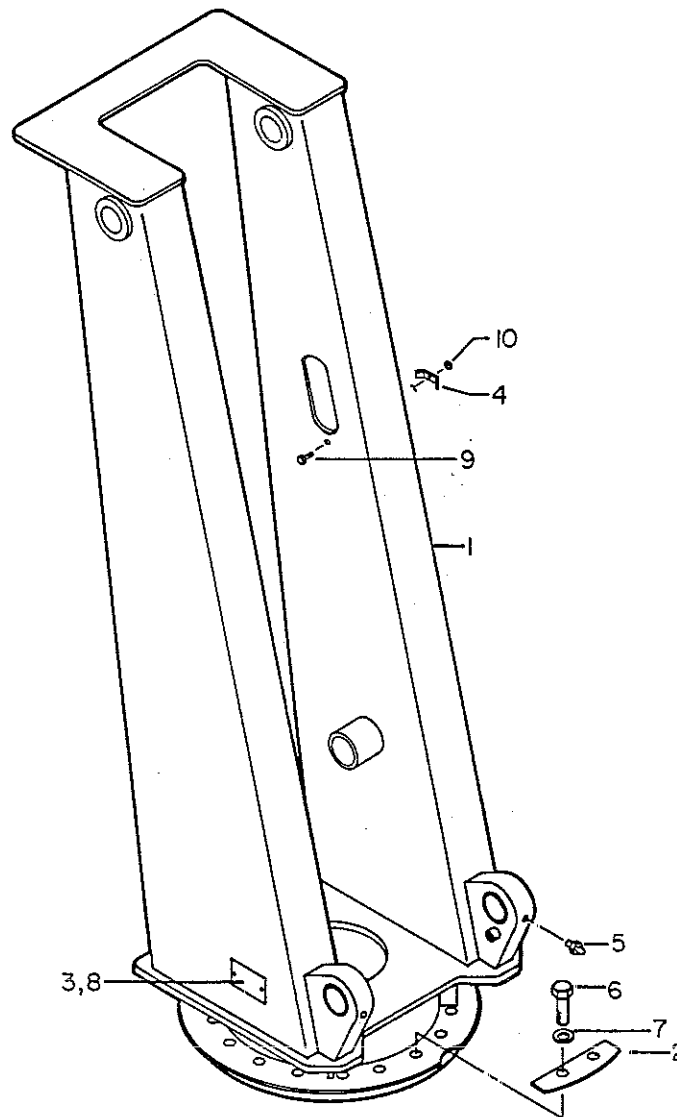
**NOTE**

REPLACEMENT OF ALL SEAL KIT COMPONENTS IS RECOMMENDED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL SAVE FUTURE DOWN-TIME.

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

ITEM	PART NO.	DESCRIPTION	QTY
1	4B171890	CASE ASM	1
2	4G171890	ROD ASM	1
3	6C300017	STOP TUBE	1
4	6H030017	HEAD	1
5	6I030106	PISTON	1
6	6C075017	STOP TUBE	1
7	72060708	CAP SCREW 1/4-20 X 1-1/4 SH	6
8	73054004	VALVE	1
9	6C150017	STOP TUBE	1
10	6A025017	WAFER LOCK RING (part of 20)	REF
11	7Q072145	O-RING (part of 20)	REF
12	7Q072334	O-RING (part of 20)	REF
13	7Q10P334	BACK-UP RING (part of 20)	REF
14	7R14P017	ROD WIPER (part of 20)	REF
15	7R546017	ROD SEAL (part of 20)	REF
16	7T61N106	LOCK RING SEAL (part of 20)	REF
17	7T66P030	PISTON SEAL (part of 20)	REF
18	7T65I030	PISTON RING (part of 20)	2 REF
20	9C121417	SEAL KIT (incl: 10-18)	1

Figure D-6. POWER DOWN OUTRIGGER CYLINDER (3B171890)

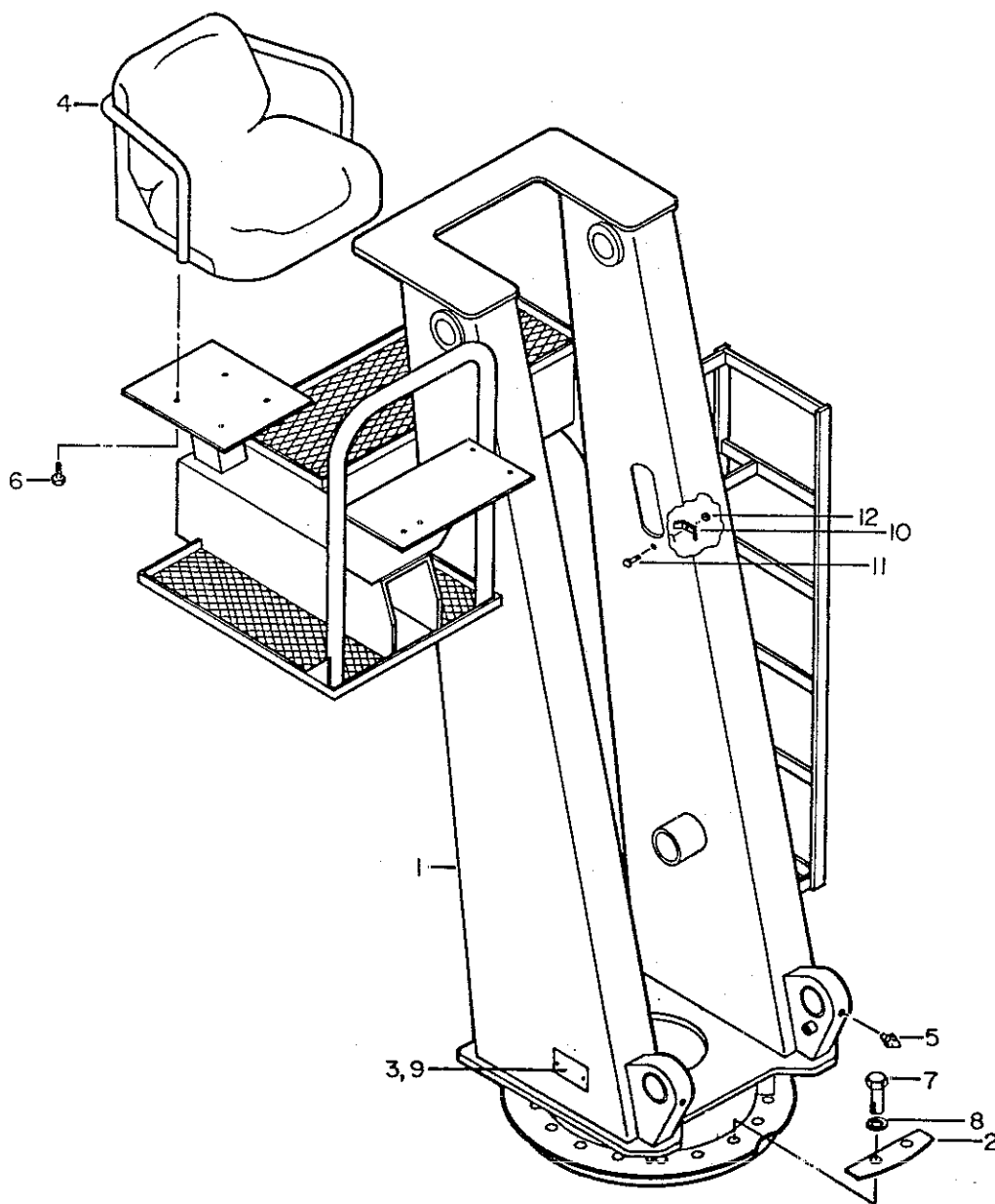


WARNING

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.

ITEM	PART NO.	DESCRIPTION	QTY
1.	52709518	MAST	1
2.	60104247	PINION GEAR COVER	1
3.	70029119	SERIAL NUMBER PLACARD	1
4.	60010118	HOSE CLAMP	2
5.	72053508	GREASE ZERK 1/8 NPT	2
6.	72060209	CAP SCREW 3/4-10 X 2-3/4 HH GR8	18
7.	72063116	WASHER 3/4 FLAT HARDENED	18
8.	72661216	GRIPNAIL FASTENER 1/8	2
9.	72060051	CAP SCR 3/8-16X2-1/4 HH GR5	2
10.	72062103	NUT 3/8-16 LOCK	2

Figure D-7. MAST ASSEMBLY (41709507)

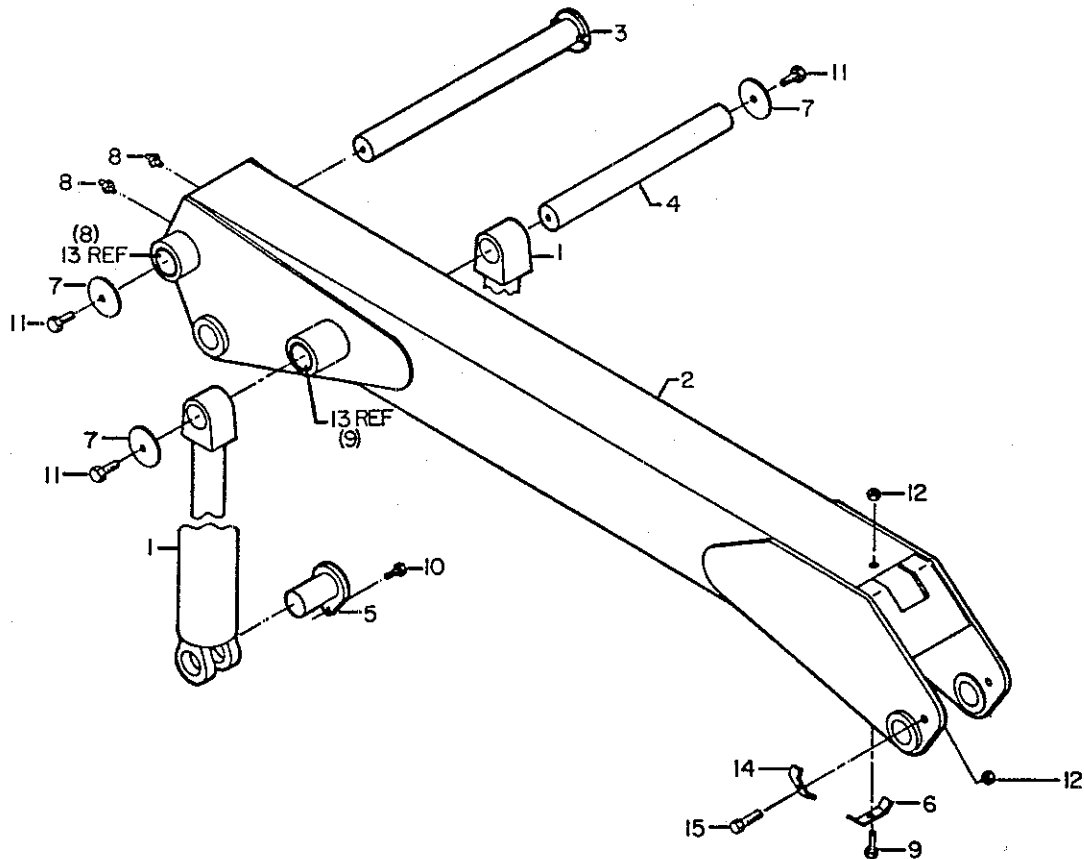


WARNING

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.

ITEM	PART NO.	DESCRIPTION	QTY
1	52709521	MAST WITH CHAIR	1
2	60104247	PINION GEAR COVER	1
3	70029119	SERIAL NUMBER PLACARD	1
4	70731411	CHAIR	1
5	72053508	GREASE ZERK 1/8 NPT	2
6	72060025	CAP SCREW 5/16-18 X 1 HH GR5	4
7	72060209	CAP SCREW 3/4-10 X 2-3/4 HH GR8	18
8	72063116	WASHER 3/4 FLAT HARDENED	18
9	72661216	GRIPNAIL FASTENER 1/8	2
10	60010118	HOSE CLAMP	2
11	72060051	CAP SCR 3/8-16X2-1/4 HH GR5	2
12	72062103	NUT 3/8-16 LOCK	2

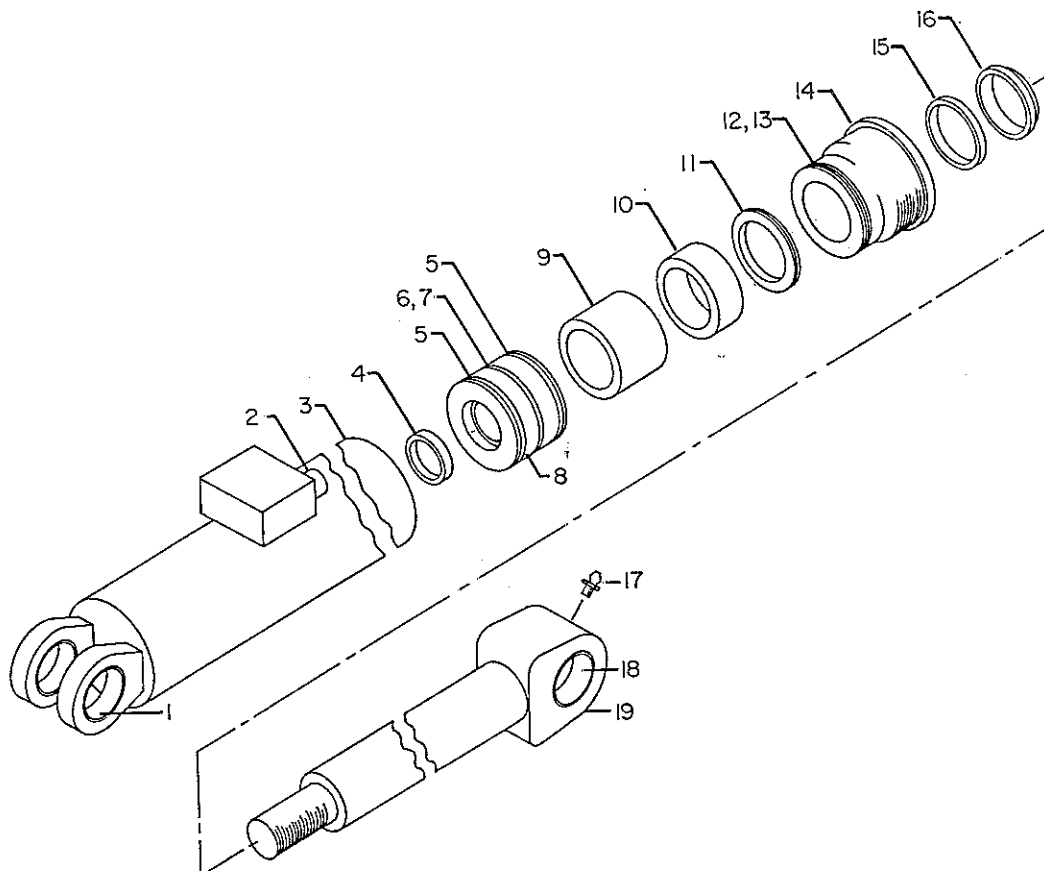
Figure D-8. MAST ASSEMBLY WITH CHAIR (41709508)



NOTE: Route extension cylinder hoses on this (right) side of boom.

ITEM	PART NO.	DESCRIPTION	QTY
1.	3C279840	INNER CYLINDER	2
2.	52705781	INNER BOOM (incl: 13)	1
3.	52703750	PIN	1
4.	60108835	PIN	1
5.	52705803	PIN	2
6.	60010118	HOSE CLAMP	1
7.	60106332	PIN RETAINER	3
8.	72053508	GREASE ZERK 1/8 NPT	2
9.	72060050	CAP SCREW 3/8-16 X 2 HH GR5	1
10.	72060092	CAP SCREW 1/2-13 X 1-1/4 HH GR5	2
11.	72060147	CAP SCREW 5/8-11 X 1 HH GR5	3
12.	72062103	NUT 3/8-16 LOCK	1
13.	7BF81225	BUSHING (part of 2)	17 REF
14.	60107648	HOSE CLAMP	1
15.	72060051	CAP SCR 3/8-16 X 2-1/4 HH GR5	1

Figure D-9. INNER BOOM ASSEMBLY (41705766)

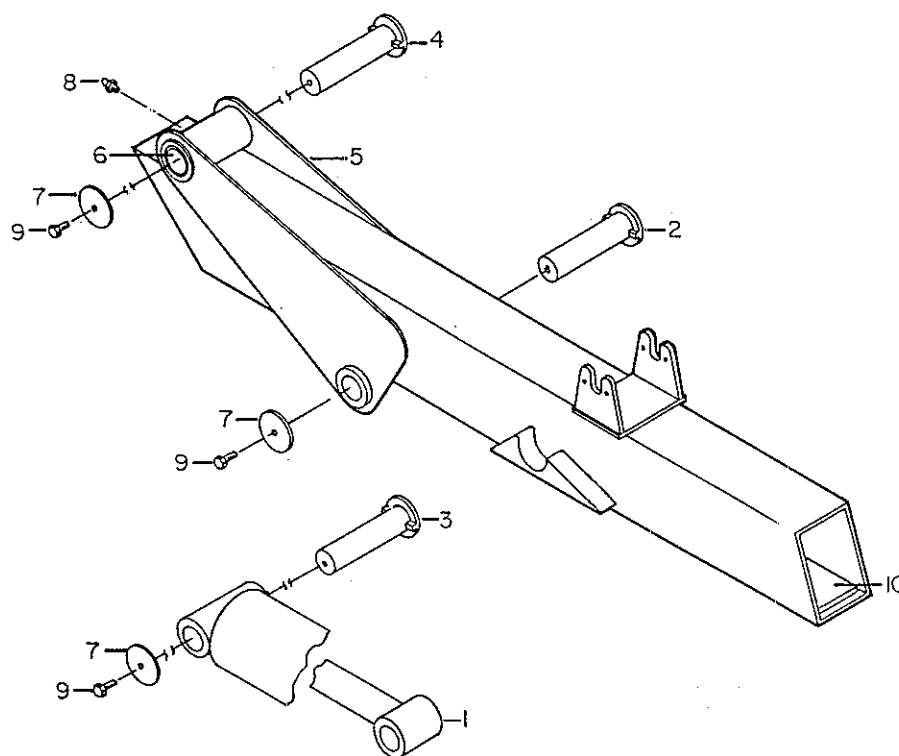
**NOTE**

REPLACEMENT OF ALL SEAL KIT COMPONENTS IS RECOMMENDED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL SAVE FUTURE DOWN-TIME.

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

ITEM	PART NO.	DESCRIPTION	QTY
1.	7BF81025	BUSHING (part of 3)	2 REF
2.	73054242	VALVE - 25 GPM	1
3.	4C279840	CASE ASM (incl: 1)	1
4.	7T61N143	LOCK RING SEAL (part of 21)	REF
5.	7T65I045	PISTON RING (part of 21)	2 REF
6.	7T66P045	PISTON SEAL (part of 21)	REF
7.	7Q072155	O-RING (part of 21)	REF
8.	6I045143	PISTON	1
9.	6C300030	STOP TUBE	1
10.	6C150030	STOP TUBE	1
11.	6A025030	WAFFER LOCK RING (part of 21)	REF
12.	7Q10P346	BACK-UP RING (part of 21)	REF
13.	7Q072345	O-RING (part of 21)	REF
14.	6H045030	HEAD	1
15.	7R546030	ROD SEAL (part of 21)	1
16.	7R14P030	ROD WIPER (part of 21)	REF
17.	72053507	GREASE ZERK 1/4-28	1
18.	7BF81225	BUSHING (part of 19)	2 REF
19.	4G279840	ROD ASM (incl: 18)	1
20.	7PNPXT02	PLUG 1/8 NPT (NOT SHOWN)	3
21.	9C182423	SEAL KIT (incl: 4-7, 11-13, 15, 16)	1

Figure D-10. INNER BOOM CYLINDER (3C279840)



ITEM	PART NO.	DESCRIPTION	QTY
1.	3C282840	OUTER CYLINDER	1
2.	52703694	PIN	1
3.	52703753	PIN	1
4.	52704916	PIN	1
5.	52709497	OUTER BOOM (incl: 6)	1
6.	7BF81225	BUSHING (part of 5)	4 REF
7.	60106332	PIN RETAINER	3
8.	72053508	GREASE ZERK 1/8 NPT	1
9.	72060147	CAP SCREW 5/8-11 X 1 HH GR5	3
10.	60030120	WEAR PAD	1

Figure D-11. OUTER BOOM ASSEMBLY (41709509)

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, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

APPLY "NEVER-SEEZ" REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO CYLINDER HEAD AND CASE THREADS.

ITEM	PART NO.	DESCRIPTION	QTY
1.	4C282840	CASE ASM (INCL:3,4,21)	1
2.	4G282840	ROD ASM (INCL:4,21,22)	1
3.	7PNPXT02	PIPE PLUG 1/8NPT (PART OF 1)	3REF
4.	72053507	GREASE ZERK (PART OF 1&2)	4REF
5.	6H055035	HEAD	1
6.	6I055181	PISTON	1
7.	9C222829	SEAL KIT (INCL:8-17)	1
8.	7Q072354	O-RING (PART OF 7)	1REF
9.	7Q10P354	BACKUP RING (PART OF 7)	1REF
10.	7T2N4037	WEAR RING (PART OF 7)	2REF
11.	7R546035	U-CUP SEAL (PART OF 7)	1REF
12.	7R14P035	ROD WIPER (PART OF 7)	1REF
13.	7T61N181	LOCK RING (PART OF 7)	1REF
14.	7T65I055	PISTON RING (PART OF 7)	2REF
15.	7T66P055	PISTON SEAL (PART OF 7)	1REF
16.	7Q072159	O-RING (PART OF 7)	1REF
17.	6A025035	WAFFER LOCK (PART OF 7)	1REF
18.	6C300035	STOP TUBE 3"	1
19.	6C150035	STOP TUBE 1-1/2"	1
20.	73054242	COUNTERBALANCE VALVE 25GPM	1
21.	7BF81025	BUSHING (PART OF 1&2)	8REF
22.	7BF81225	BUSHING (PART OF 2)	2REF

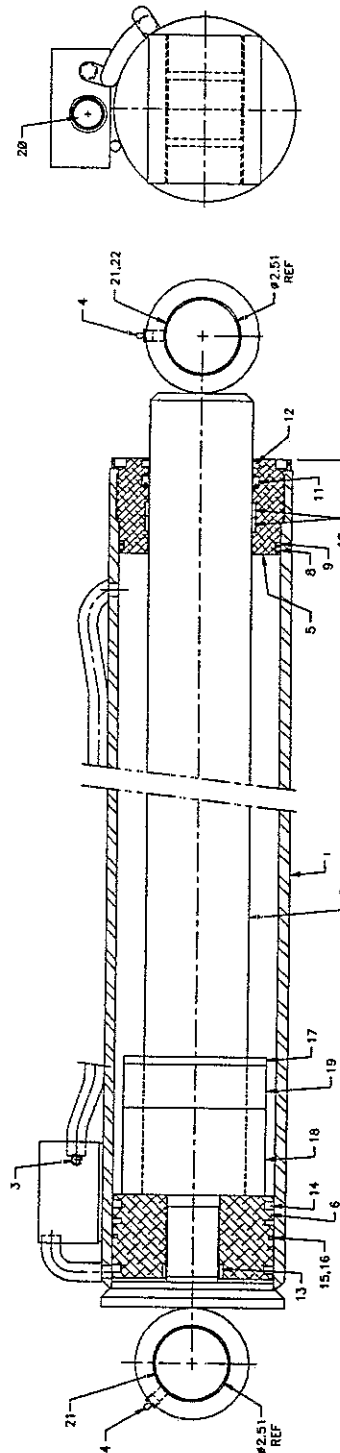
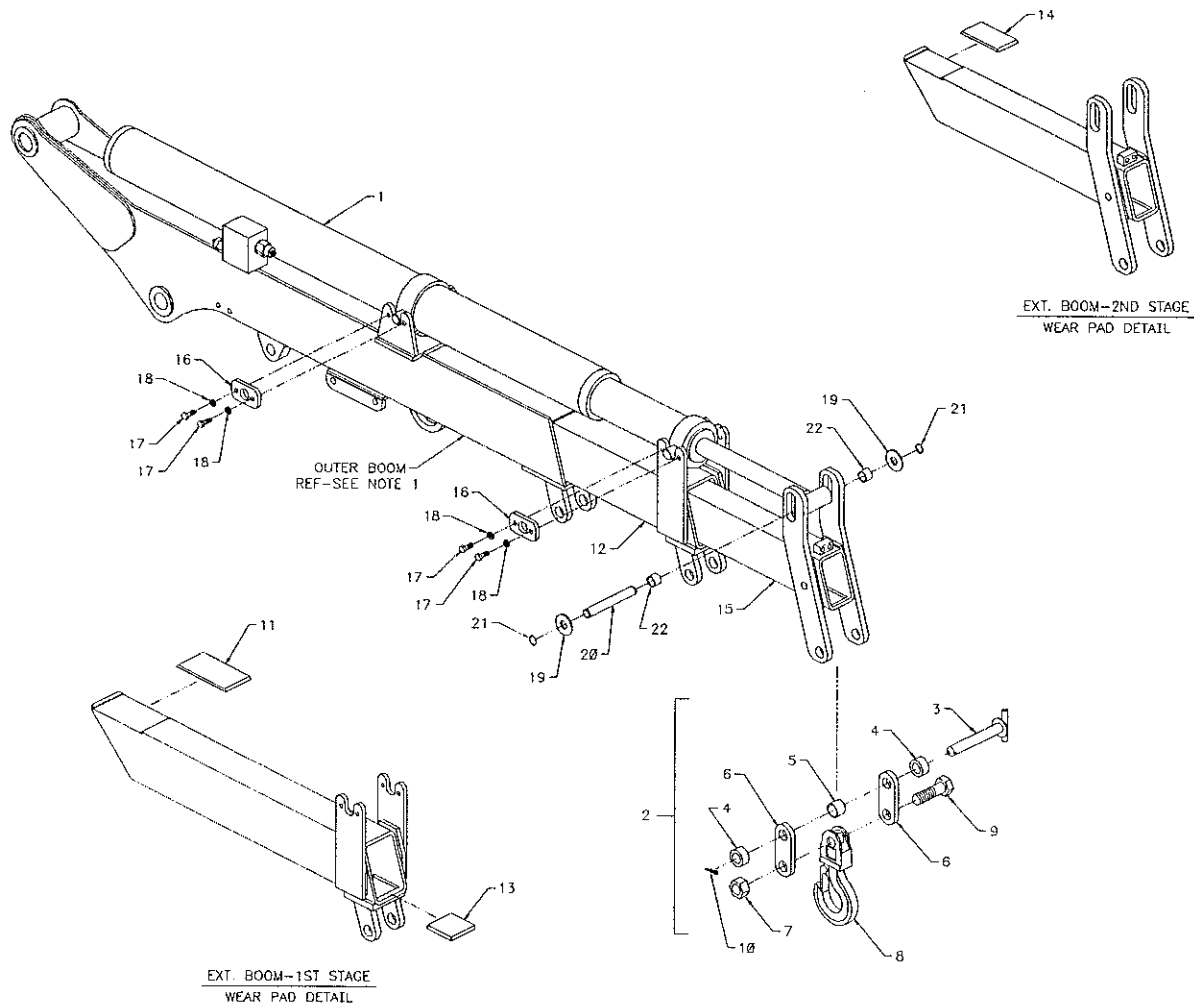


Figure D-12. OUTER BOOM CYLINDER (3C282840)



ITEM	PART NO.	DESCRIPTION	QTY
1	3K152920	EXTENSION CYLINDER	1
2	51706266	HOOK ASM 8-TON (INCL:3-10)	1
3	52705801	PIN (PART OF 2)	REF
4	60102466	SLEEVE (PART OF 2)	2REF
5	60108857	SLEEVE (PART OF 2)	REF
6	60107324	HOOK LINK (PART OF 2)	2REF
7	72062073	NUT 1 1/4-7 LOCK (PART OF 2)	1REF
8	60103575	HOOK - 8 TON (PART OF 2)	1REF
9	72601666	CAP SCR 1 1/4-7X4 HHGR5 (PART OF 2)	1REF
10	72066145	HAIR PIN (PART OF 2)	1REF

ITEM	PART NO.	DESCRIPTION	QTY
11	60030121	WEAR PAD	1
12	52709498	1ST STG EXT BOOM	1
13	60030119	WEAR PAD	1
14	60030118	WEAR PAD	1
15	52709499	2ND STG EXT BOOM	1
16	60107152	RETAINER PLATE	4
17	72060092	CAP SCR 1/2-13X1-1/4 HHGR5	8
18	72063053	WASHER 1/2 LOCK	8
19	72063010	WASHER 1" WRT	2
20	60106833	PIN	1
21	72066125	RETAINING RING 1"	2
22	60020197	ROLLER	2

Figure D-13. EXTENSION BOOM ASSEMBLY-2H (41709510)

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, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

APPLY "NEVER-SEEZ" REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO CYLINDER HEAD AND CASE THREADS.

ITEM	PART	DESCRIPTION	QTY
1.	4C148920	CASE ASM	1
2.	4J148920	ROD/CASE ASM 3-1/2 ID	1
3.	4G082900	ROD ASM 2"	1
4.	4FG06690	MOUNTING RING 4-1/2 BORE	1
5.	6H503450	HEAD 5" BORE	1
6.	6H352200	HEAD 3-1/2 BORE	1
7.	6I503369	PISTON 5" BORE	1
8.	6I352125	PISTON 3-1/2 BORE	1
9.	6C512100	STOP TUBE	1
10.	73054817	COUNTERBALANCE VALVE	1
11.	73054902	COUNTERBALANCE VALVE	1
12.	7PNPXT02	PIPE PLUG 1/8 NPT (PART OF 1)	6REF
13.	9X082900	SEAL KIT (INCL:14-30)	1
14.	7Q10P338	BACK-UP RING (PART OF 13)	1REF
15.	7Q072338	O-RING (PART OF 13)	1REF
16.	7Q10P350	BACK-UP RING (PART OF 13)	1REF
17.	7Q072350	O-RING (PART OF 13)	1REF
18.	7Q072240	O-RING (PART OF 13)	1REF
19.	7Q072124	O-RING (PART OF 13)	1REF
20.	7R546020	U-CUP SEAL (PART OF 13)	1REF
21.	7R488450	U-CUP SEAL (PART OF 13)	1REF
22.	7T66P350	PISTON SEAL (PART OF 13)	1REF
23.	7T66P500	PISTON SEAL (PART OF 13)	1REF
24.	7T2N4022	WEAR RING (PART OF 13)	2REF
25.	7T2N4035	WEAR RING (PART OF 13)	2REF
26.	7T2N4050	WEAR RING (PART OF 13)	2REF
27.	7T61N125	LOCK RING (PART OF 13)	1REF
28.	7R14P020	ROD WIPER (PART OF 13)	1REF
29.	7R14P045	ROD WIPER (PART OF 13)	1REF

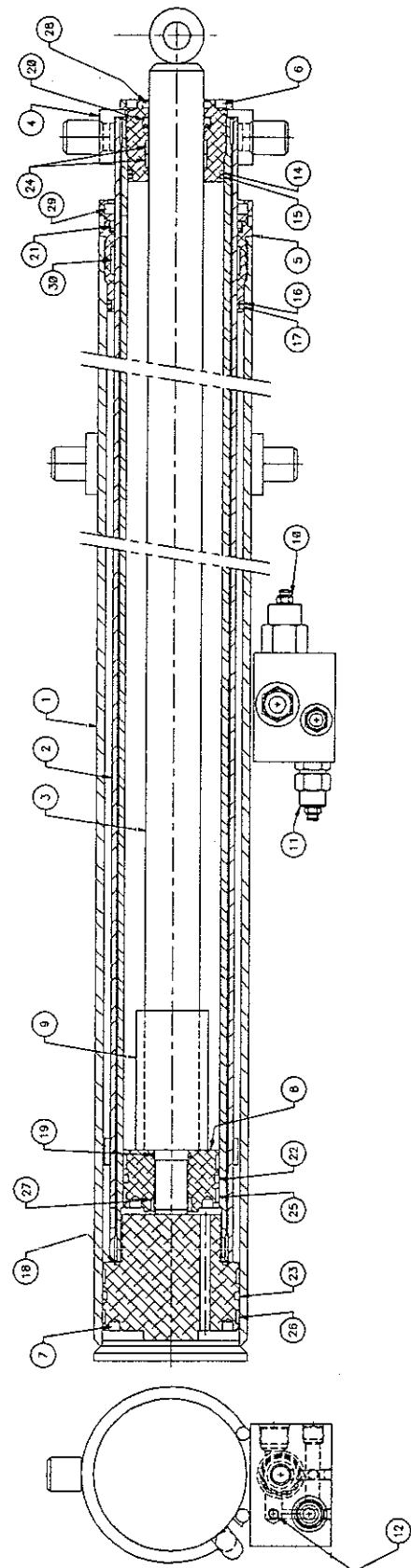
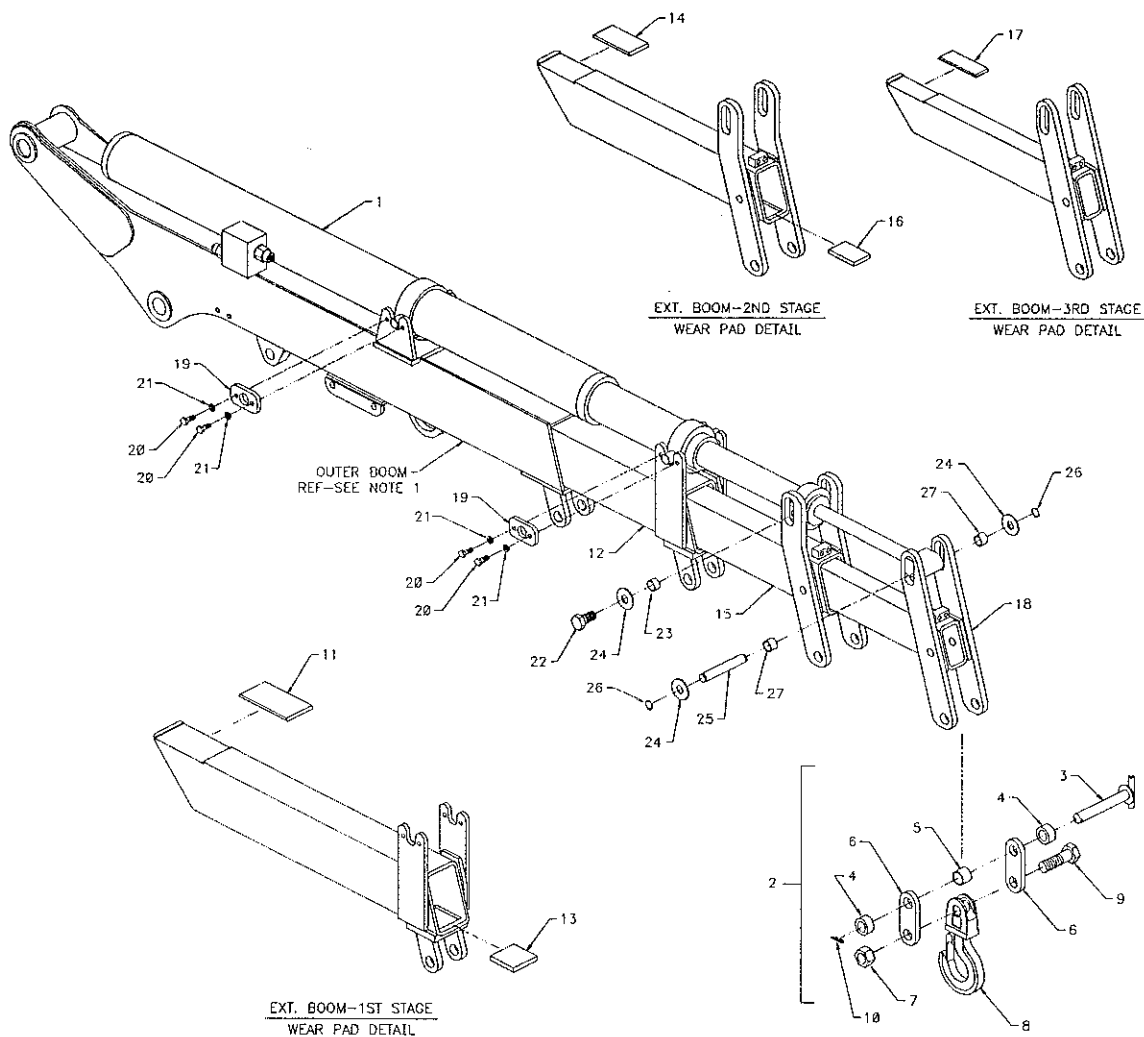
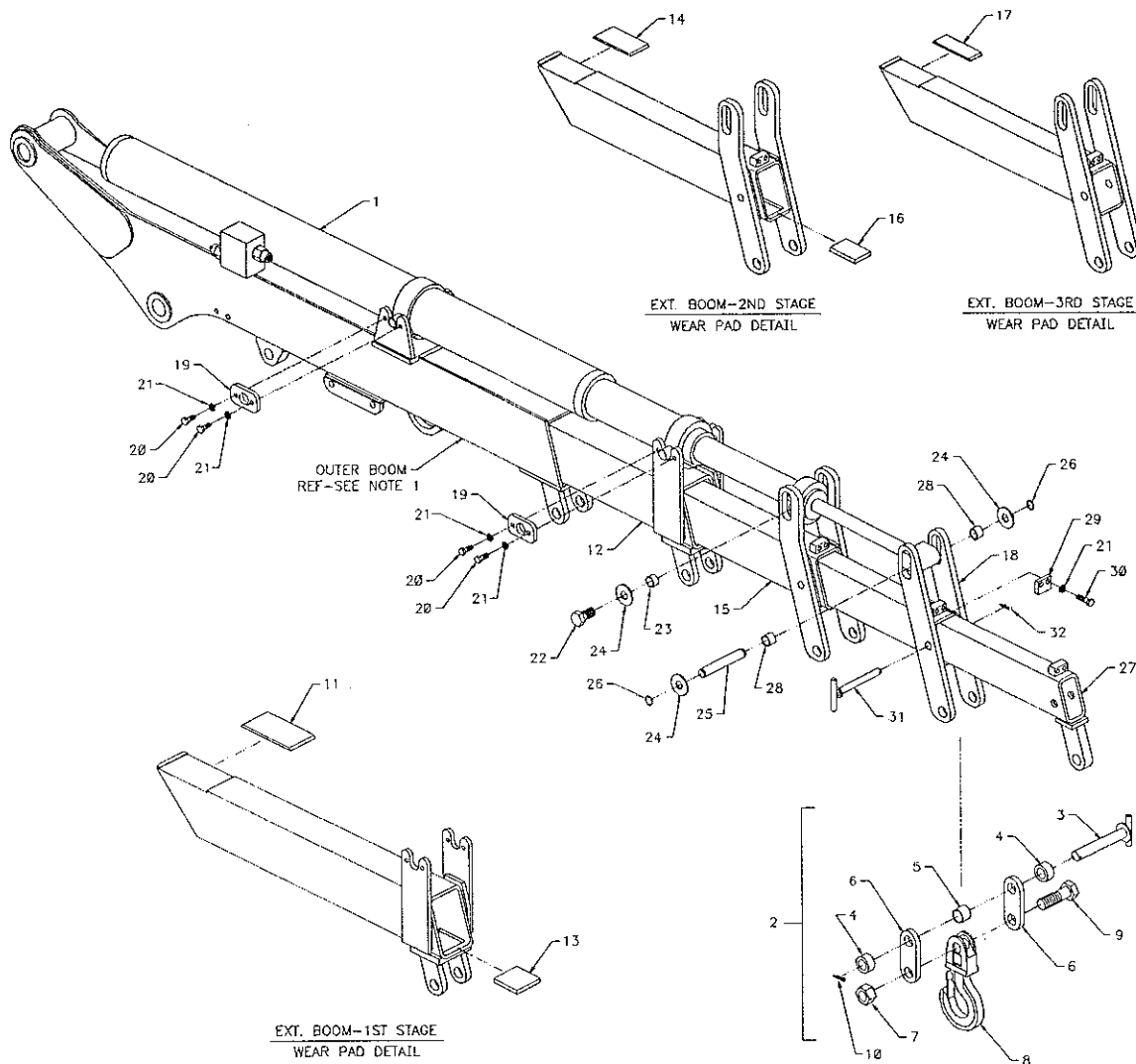


Figure D-14. EXTENSION CYLINDER (3K152920)



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	3K148920	EXTENSION CYLINDER	1	14.	60030118	WEAR PAD	1
2.	51706266	HOOK ASM 8-TON (INCL:3-10)	1	15.	52709499	2ND STG EXT BOOM	1
3.	52705801	PIN (PART OF 2)	REF	16.	60030201	WEAR PAD	1
4.	60102466	SLEEVE (PART OF 2)	2REF	17.	60030200	WEAR PAD	1
5.	60108857	SLEEVE (PART OF 2)	REF	18.	52709500	3RD STG EXT BOOM	1
6.	60107324	HOOK LINK (PART OF 2)	2REF	19.	60107152	RETAINER PLATE	4
7.	72062073	NUT 1 1/4-7 LOCK (PART OF 2)	REF	20.	72060092	CAP SCR 1/2-13X1-1/4 HHGR5	8
8.	60103575	HOOK - 8 TON (PART OF 2)	REF	21.	72063053	WASHER 1/2 LOCK	8
9.	72601666	CAP SCR 1 1/4-7X4 HHGR5 (PART OF 2)	REF	22.	72601591	CAP SCR 1-14X2 HHGR5	2
10.	72066145	HAIR PIN (PART OF 2)	REF	23.	60020198	ROLLER	4
11.	60030121	WEAR PAD	1	24.	72063010	WASHER 1" WRT	4
12.	52709498	1ST STG EXT BOOM	1	25.	60106065	PIN	1
13.	60030119	WEAR PAD	1	26.	72066125	RETAINING RING 1"	2
				27.	60020197	ROLLER	2

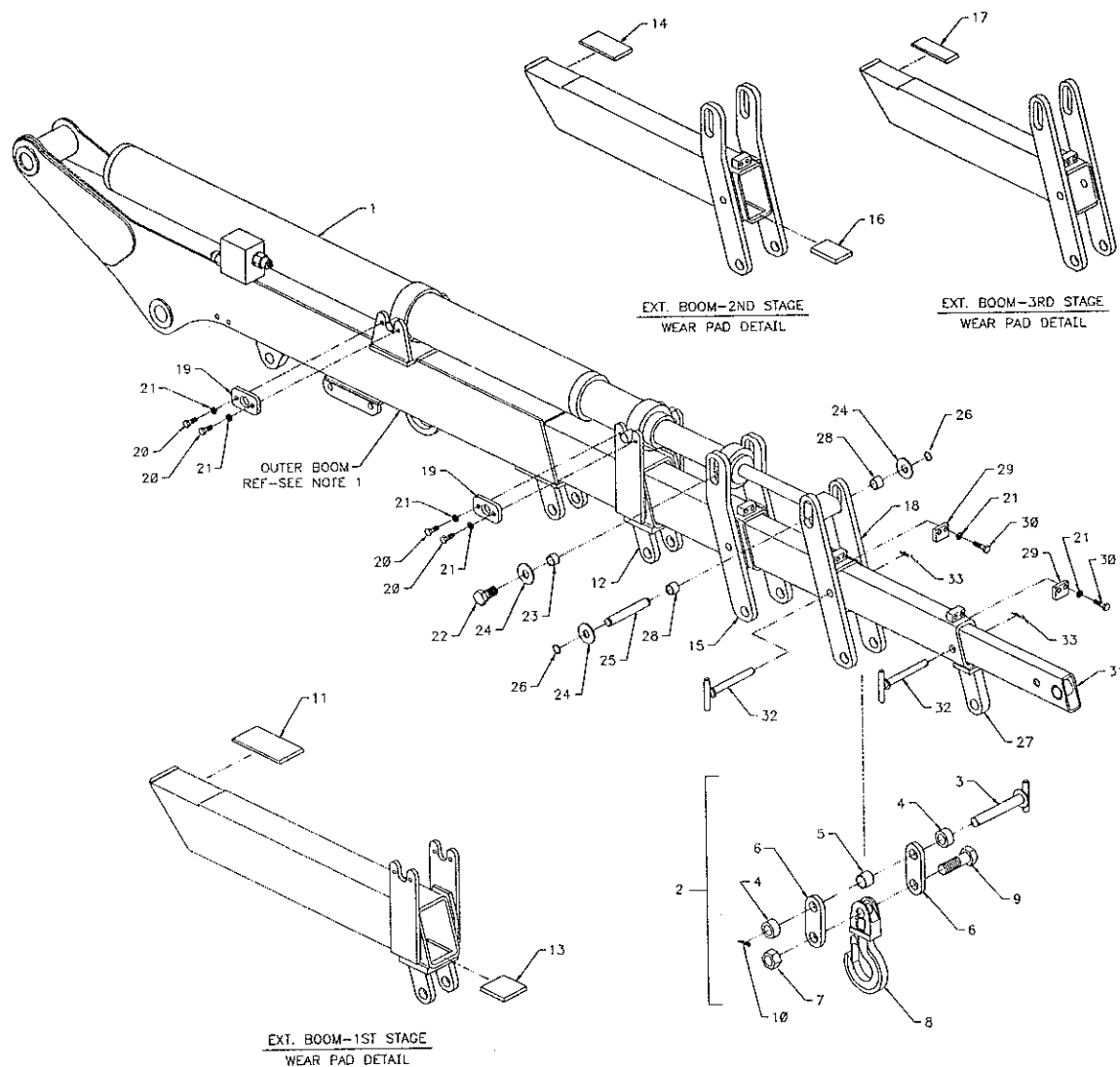
Figure D-15. EXTENSION BOOM ASSEMBLY-3H (41709511)



ITEM	PART NO.	DESCRIPTION	QTY
1.	3K148920	EXTENSION CYLINDER	1
2.	51706266	HOOK ASM 8-TON (INCL: 3-10)	1
3.	52705801	PIN (PART OF 2)	REF
4.	60102466	SLEEVE (PART OF 2)	2REF
5.	60108857	SLEEVE (PART OF 2)	REF
6.	60107324	HOOK LINK (PART OF 2)	2REF
7.	72062073	NUT 1 1/4-7 LOCK (PART OF 2)	REF
8.	60103575	HOOK - 8 TON (PART OF 2)	REF
9.	72601666	CAP SCR 1 1/4-7X4 HHGR5 (PART OF 2)	REF
10.	72066145	HAIR PIN (PART OF 2)	REF
11.	60030121	WEAR PAD	1
12.	52709498	1ST STG EXT BOOM	1
13.	60030119	WEAR PAD	1
14.	60030118	WEAR PAD	1
15.	52709499	2ND STG EXT BOOM	1
16.	60030201	WEAR PAD	1

ITEM	PART NO.	DESCRIPTION	QTY
17.	60030200	WEAR PAD	1
18.	52709500	3RD STG EXT BOOM	1
19.	60107152	RETAINER PLATE	4
20.	72060092	CAP SCR 1/2-13X1-1/4 HHGR5	8
21.	72063053	WASHER 1/2 LOCK	10
22.	72601591	CAP SCR 1-14X2 HHGR5	2
23.	60020198	ROLLER	4
24.	72063010	WASHER 1" WRT	4
25.	60106065	PIN	1
26.	72066125	RETAINING RING 1"	2
27.	52709501	4TH STG EXT BOOM	1
28.	60020197	ROLLER	2
29.	60107294	STOP	1
30.	72060094	CAP SCR 1/2-13X1-3/4 HHGR5	2
31.	51705883	PIN	1
32.	72066145	HAIR PIN	1

Figure D-16. EXTENSION BOOM ASSEMBLY-3H1M (41709512)



ITEM	PART NO.	DESCRIPTION	QTY
1.	3K148920	EXTENSION CYLINDER	1
2.	51706266	HOOK ASM 8-TON (INCL: 3-10)	1
3.	52705801	PIN (PART OF 2)	1REF
4.	60102466	SLEEVE (PART OF 2)	2REF
5.	60108857	SLEEVE (PART OF 2)	1REF
6.	60107324	HOOK LINK (PART OF 2)	2REF
7.	72062073	NUT 1 1/4-7 LOCK (PART OF 2)	1REF
8.	60103575	HOOK - 8 TON (PART OF 2)	1REF
9.	72601666	CAP SCR 1 1/4-7X5 HHGR5 (PART OF 2)	1REF
10.	72066145	HAIR PIN (PART OF 2)	1REF
11.	60030121	WEAR PAD	1
12.	52709498	1ST STG EXT BOOM	1
13.	60030119	WEAR PAD	1
14.	60030118	WEAR PAD	1
15.	52709499	2ND STG EXT BOOM	1
16.	60030201	WEAR PAD	1

ITEM	PART NO.	DESCRIPTION	QTY
17.	60030200	WEAR PAD	1
18.	52709500	3RD STG EXT BOOM	1
19.	60107152	RETAINER PLATE	4
20.	72060092	CAP SCR 1/2-13X1-1/4 HHGR5	8
21.	72063053	WASHER 1/2 LOCK	12
22.	72601591	CAP SCR 1-14X2 HHGR5	2
23.	60020198	ROLLER	4
24.	72063010	WASHER 1" WRT	4
25.	60106065	PIN	1
26.	72066125	RETAINING RING 1"	2
27.	52709501	4TH STG EXT BOOM	1
28.	60020197	ROLLER	2
29.	60107294	STOP	2
30.	72060094	CAP SCR 1/2-13X1-3/4 HHGR5	4
31.	52709502	5TH STXG EXT BOOM	1
32.	51705883	PIN	2
33.	72066145	HAIR PIN	2

Figure D-17. EXTENSION BOOM ASSEMBLY-3H2M (41709513)

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, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

APPLY "NEVER-SEEZ" REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO CYLINDER HEAD AND CASE THREADS.

ITEM	PART	DESCRIPTION	QTY
1.	4C148920	CASE ASM	1
2.	4J148920	ROD/CASE ASM 3-1/2 ID	1
3.	4K148920	ROD/CASE ASM 2-1/2 ID	1
4.	4H066900	ROD ASM 1-1/2 OD	1
5.	4P066900	INTERNAL PORT ASM	1
6.	4FG06690	MOUNTING RING 4-1/2 BORE	1
7.	5FG66900	MOUNTING RING 3" BORE	1
8.	6I503369	PISTON 5" BORE	1
9.	6I352269	PISTON 3-1/2 BORE	1
10.	6I252144	PISTON 2-1/2 BORE	1
11.	6H503450	HEAD 5" BORE	1
12.	6H352300	HEAD 3-1/2 BORE	1
13.	6H271511	HEAD 2-1/2 BORE	1
14.	6C400150	STOP TUBE 1-1/2 ROD X 4	1
15.	73054817	COUNTERBALANCE VALVE	1
16.	73054902	COUNTERBALANCE VALVE	1
17.	9X355900	SEAL KIT (INCL:18-35,39-43)	1
18.	7Q10P228	BACK-UP RING (PART OF 17)	3REF
19.	7Q072228	O-RING (PART OF 17)	2REF
20.	7Q10P338	BACK-UP RING (PART OF 17)	1REF
21.	7Q072338	O-RING (PART OF 17)	1REF
22.	7Q10P350	BACK-UP RING (PART OF 17)	1REF
23.	7Q072350	O-RING (PART OF 17)	1REF
24.	7R072240	O-RING (PART OF 17)	1REF
25.	7R546015	U-CUP SEAL (PART OF 17)	1REF
26.	7R546030	U-CUP SEAL (PART OF 17)	1REF
27.	7R488450	U-CUP SEAL (PART OF 17)	1REF
28.	7R100750	U-CUP SEAL (PART OF 17)	3REF
29.	7T66P250	PISTON SEAL (PART OF 17)	1REF
30.	7T66P350	PISTON SEAL (PART OF 17)	1REF
31.	7T66P500	PISTON SEAL (PART OF 17)	1REF
32.	7R14P015	ROD WIPER (PART OF 17)	1REF
33.	7R14P030	ROD WIPER (PART OF 17)	1REF
34.	7R14P045	ROD WIPER (PART OF 17)	1REF
35.	7T2N4050	WEAR RING (PART OF 17)	2REF
36.	7PNPXT02	PIPE PLUG 1/8NPT (PART OF 1)	6REF
37.	7Q092916	O-RING (PART OF 5)	1REF
38.	72053507	ZERK 1/4-28	1
39.	7T2N4025	WEAR RING (PART OF 17)	1REF
40.	7T2N4035	WEAR RING (PART OF 17)	1REF

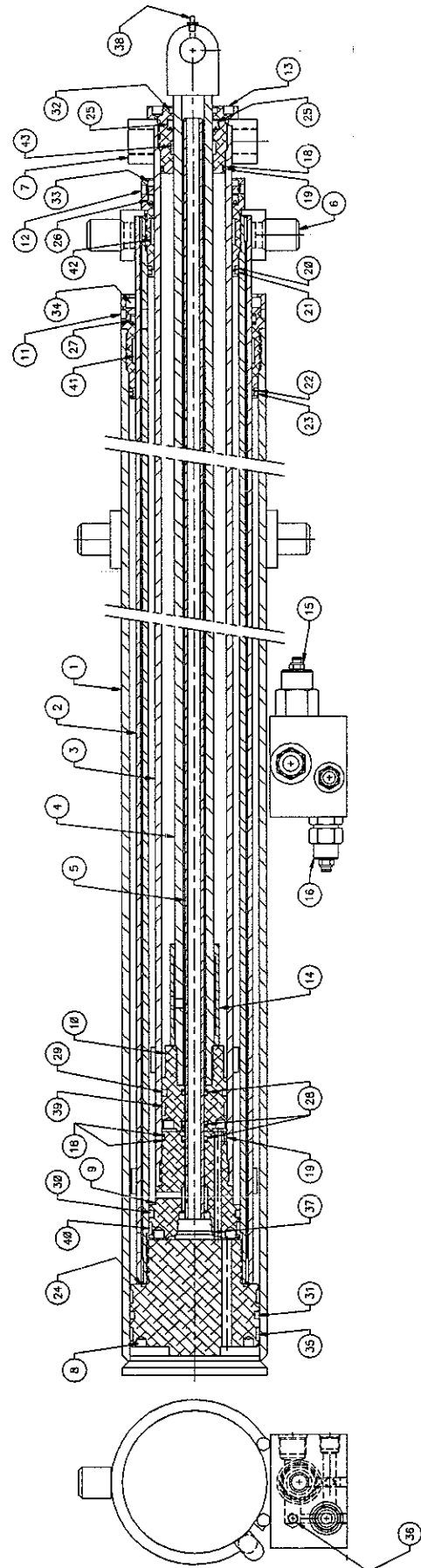
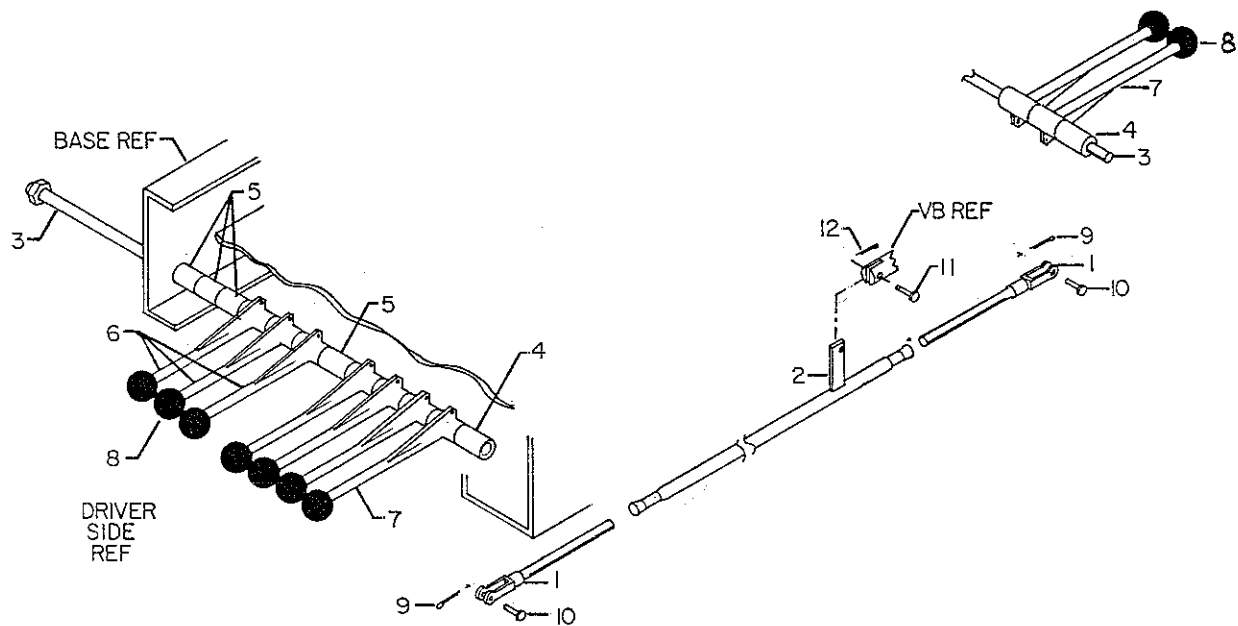
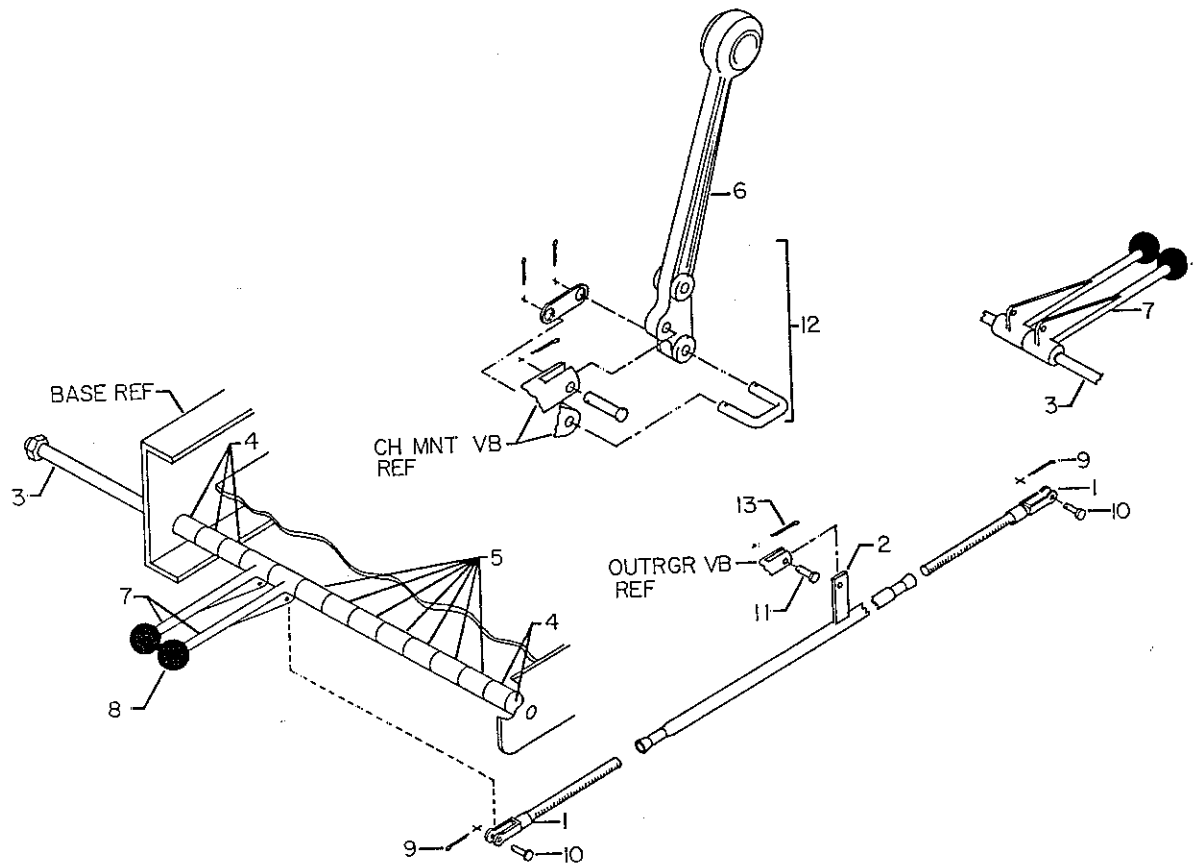


Figure D-18. TELESCOPIC EXTENSION CYLINDER (3K148920)



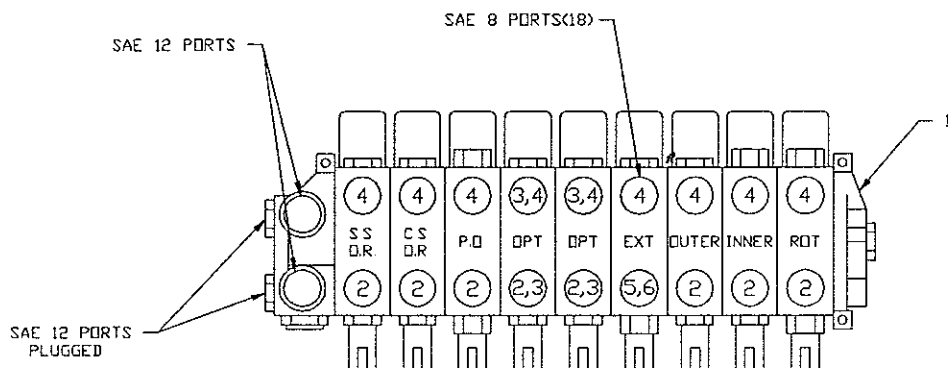
ITEM	PART NO.	DESCRIPTION	QTY
1.	52704745	CONTROL ROD - MALE	14
2.	52705799	CONTROL ROD - FEMALE	7
3.	52705800	CONTROL HANDLE ROD	2
4.	60030068	SPACER 1-3/8	2
5.	60030069	SPACER 1-3/4	8
6.	60025254	SHORT CONTROL HANDLE - VB	6
7.	70029451	CONTROL HANDLE - VB	8
8.	71039096	CONTROL KNOB	14
9.	72066168	COTTER PIN	14
10.	72066338	CLEVIS PIN 5/16 X 1	14
11.	72066337	PIN	7
12.	72066336	COTTER PIN - SPECIAL SHORT	7

Figure D-19. CONTROL KIT - 7 FUNCTION MANUAL (90709359)



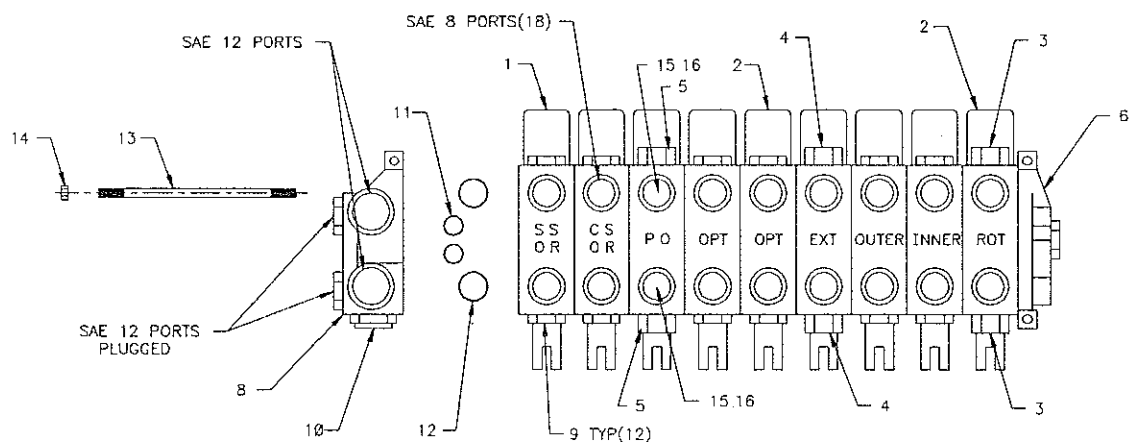
ITEM	PART NO.	DESCRIPTION	QTY
1.	52704745	CONTROL ROD - MALE	4
2.	52705799	CONTROL ROD - FEMALE	2
3.	52705800	CONTROL HANDLE ROD	2
4.	60030068	SPACER 1-3/8	10
5.	60030069	SPACER 1-3/4	14
6.	73014848	CONTROL HANDLE	4
7.	70029451	CONTROL HANDLE - VB	4
8.	71039096	CONTROL KNOB	4
9.	72066168	COTTER PIN	4
10.	72066338	CLEVIS PIN 5/16 X 1	4
11.	72661169	PIN	2
12.	94731839	LINK AND PIN KIT	4
13.	72066336	COTTER PIN - SPECIAL SHORT	2

Figure D-20. CONTROL KIT - CHAIR MOUNT (90706886)



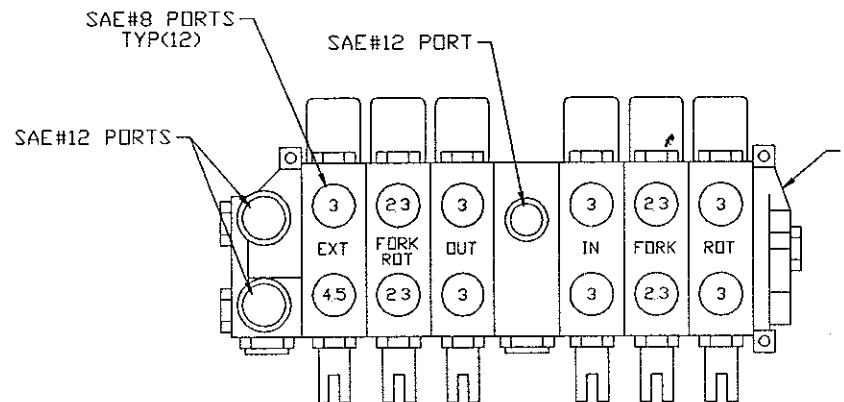
ITEM	PART NO.	DESCRIPTION	QTY
1	51709344	VALVEBANK 9-SECT V20	1
2	72053763	ELBOW 3/4MSTR 3/4MJIC 90°	8
3	72532675	CAP 3/4JIC STL	4
4	72532666	ELBOW 3/4MSTR 3/4MJIC XLG	9
5	72532364	ADAPTER #8MSTR #12MJIC	1
6	72532696	ELBOW #12MJIC #12 FJIC SW	1

Figure D-21. VALVEBANK ASSEMBLY - 9 SECTION MANUAL (51709341)



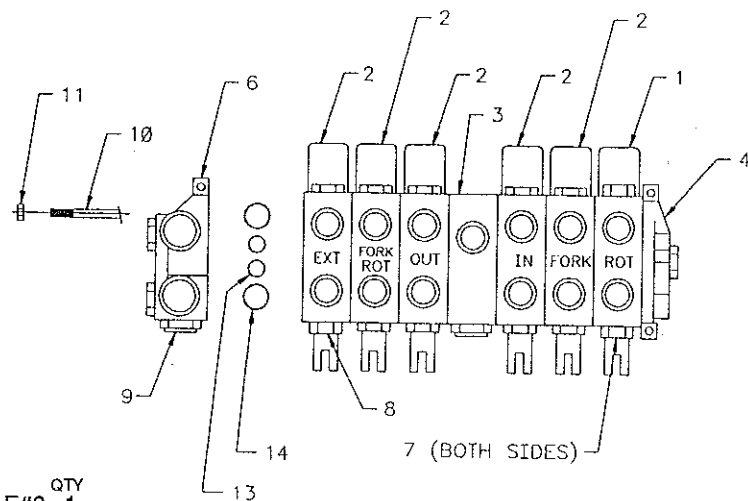
ITEM	PART NO.	DESCRIPTION	QTY
1.	73054432	VALVE SECT V20 4WAY	7
2.	73054722	VALVE SECT V20 4WAY BS	2
3.	73054007	PORT RELIEF 1800PSI	2
4.	73054400	PORT RELIEF 2300PSI	2
5.	73054430	PORT RELIEF 1000PSI	2
6.	73731241	END CAP W/CONV PLUG	1
8.	73731424	END CAP LH (INCL:10)	1
9.	73054010	LOAD CHECK VALVE	12
10.	73054673	RELIEF CAP (PART OF 8)	1REF
11.	7Q072117	O-RING	20
12.	7Q072119	O-RING	20
13.	73014672	STUD 3/8X18-3/4	3
14.	72062037	NUT 3/8-24 HEX	6
15.	70143140	ORIFICE PLATE	2
16.	70142403	SPRING	2
17.	51393494	O-RING KIT	REF

Figure D-21A. VALVEBANK (51709344)



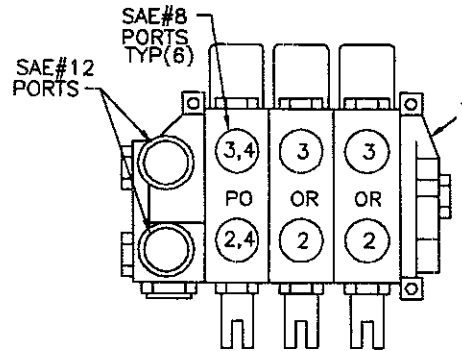
ITEM	PART NO.	DESCRIPTION	QTY
1.	51706877	VALVEBANK 6-SECTION W/MID-INLET	1
2.	72532675	CAP 3/4JIC STL	4
3.	72532358	ADAPTER #8MSTR #8MJIC	11
4.	72532364	ADAPTER #8MSTR #12MJIC	1
5.	72532696	ELBOW #12MJIC #12FJIC SW	1

Figure D-22. VALVEBANK ASSEMBLY-6 SECTION CHAIR MOUNT W/MID-INLET (51706876)



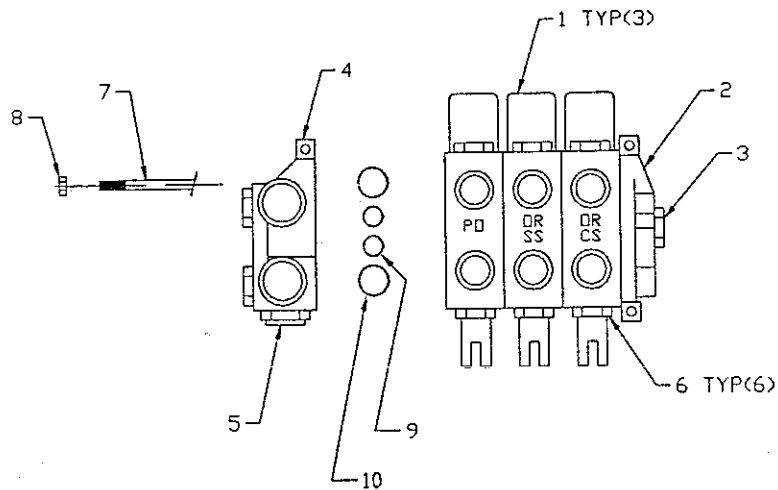
ITEM	PART NO.	DESCRIPTION	QTY
1.	73054452	VALVE SECT 4-WAY W/BS SAE#8	1
2.	73054432	VALVE SECT 4-WAY SAE#8	5
3.	73054467	MID-INLET W/2300WH SAE#12	1
4.	73731241	END COVER RH W/CONV PLUG	1
6.	73731424	END COVER LH (INCL:9)	1
7.	73054007	RELIEF RC NON-ADJ 1800PSI	2
8.	73054400	RELIEF RC NON-ADJ 2300PSI	1
9.	73054673	RELIEF VALVE (PART OF 6)	1 REF
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	16
14.	7Q072119	O-RING .94X1.12X.09	16
15.	73054010	LOAD CHECK PLUG ASM	9

Figure D-22A. VALVEBANK-6 SECTION CHAIR MOUNT W/MID-INLET (51706877)



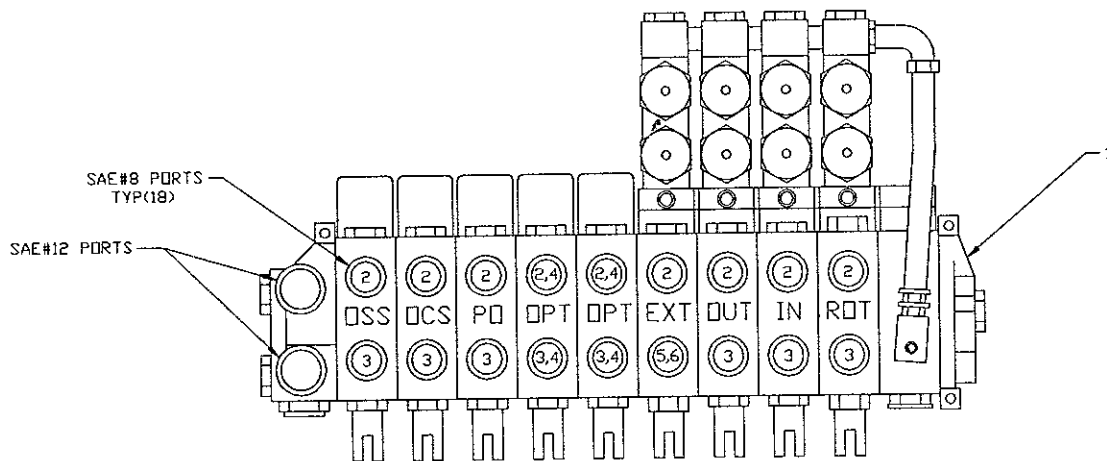
ITEM	PART NO.	DESCRIPTION	QTY
1.	51705973	VALVEBANK 3-SECTION W/PB	1
2.	72053763	ELBOW #8MSTR #8MJIC 90°	3
3.	72532666	ELBOW #8MSTR #8MJIC XLG	3
4.	72532675	CAP #8JIC	2

Figure D-23. VALVEBANK ASSEMBLY 3 SECTION W/POWER BEYOND (51706751)



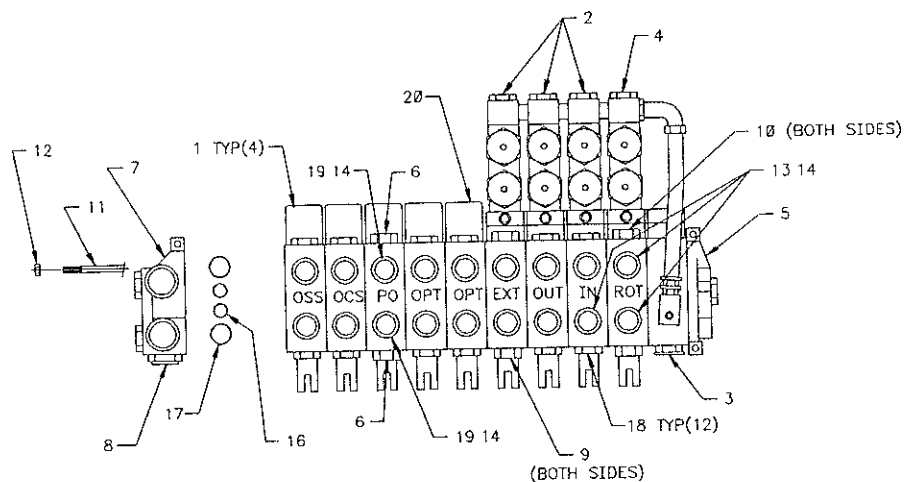
ITEM	PART NO.	DESCRIPTION	QTY
1.	73054432	VALVE SECT V20 4-WAY SAE#8	3
2.	73054442	END COVER RH	1
3.	73731242	ADAPTER-PWR BEYOND SAE#8	1
4.	73731424	END COVER LH	1
5.	73054643	RELIEF VALVE 2300 PSI	1
6.	73054010	LOAD CHECK PLUG ASM	6
7.	73014594	STUD 3/8X8-1/4	3
8.	72062037	NUT 3/8-24 HEX	6
9.	7Q072117	O-RING	8
10.	7Q072119	O-RING	8
11.	51393494	O-RING KIT	REF

Figure D-23A. VALVEBANK (51705973)



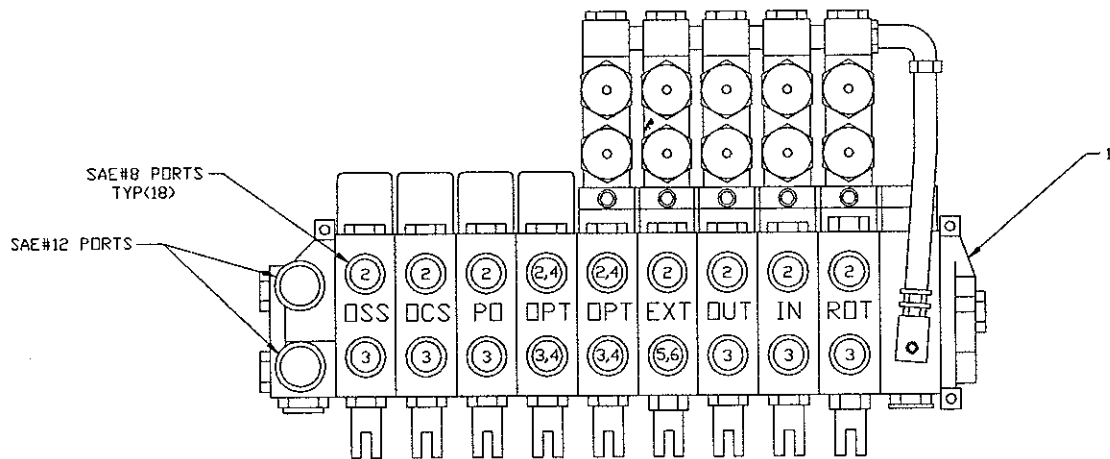
ITEM	PART NO.	DESCRIPTION	QTY
1.	51709694	VALVEBANK 4R/5M	1
2.	72532666	ELBOW #8MSTR #8MJIC XLG	9
3.	72053763	ELBOW #8MSTR #8MJIC 90°	8
4.	72532675	CAP 3/4JIC STL	4
5.	72532364	ADAPTER #8MSTR #12MJIC	1
6.	72532696	ELBOW #12MJIC #12FJIC SW	1

Figure D-24. VALVEBANK ASSEMBLY 4R/5M (51709677)



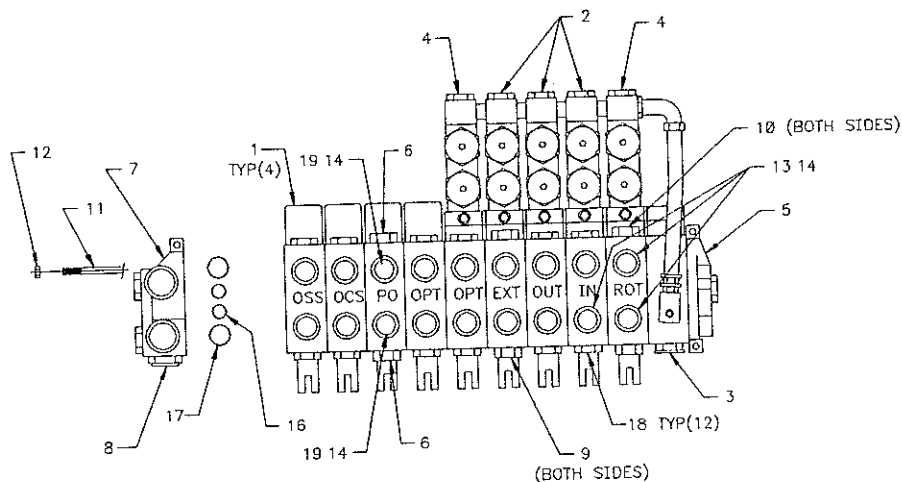
ITEM	PART NO.	DESCRIPTION	QTY
1.	73054432	VALVE SECT V20 4WAY	4
2.	73054468	VALVE SECT V20R 4WAY	3
3.	73054502	VALVE SECT V20R UTIL	1
4.	73054482	VALVE SECT V20R 4WAY BS	1
5.	73731241	END COVER RH W/CONV PLUG	1
6.	73054430	RELIEF 1000PSI NON-ADJ	1
7.	73731424	END COVER LH (INCL:8)	1
8.	73054673	RELIEF VALVE (PART OF 7)	1 REF
9.	73054400	RELIEF 2300PSI NON-ADJ	2
10.	73054007	RELIEF 1800PSI NON-ADJ	2
11.	60108011	STUD 3/8X20-1/2	3
12.	72062037	NUT 3/8-24 HEX	6
13.	70142402	ORIFICE PLATE	3
14.	70142403	SPRING	5
15.	51393494	O-RING KIT	REF
16.	7Q072117	O-RING	22
17.	7Q072119	O-RING	22
18.	73054010	LOAD CHECK PLUG	12
19.	70143140	ORIFICE PLATE	2
20.	73054722	VALVE SECT 4WAY BS	1

Figure D-24A. VALVEBANK (51709694)



ITEM	PART NO.	DESCRIPTION	QTY
1	51709695	VALVEBANK 5R/4M	1
2	72532666	ELBOW #8MSTR #8MJIC XLG	9
3	72053763	ELBOW #8MSTR #8MJIC 90°	8
4	72532675	CAP 3/4JIC STL	4
5	72532364	ADAPTER #8MSTR #12MJIC	1
6	72532696	ELBOW #12MJIC #12FJIC SW	1

Figure D-25. VALVEBANK ASSEMBLY 5R/4M POWER OUT/DOWN OUTRIGGERS (51709678)



ITEM	PART NO.	DESCRIPTION	QTY
1	73054432	VALVE SECT V20 4WAY	4
2	73054468	VALVE SECT V20R 4WAY	3
3	73054502	VALVE SECT V20R UTIL	1
4	73054482	VALVE SECT V20R 4WAY BS	2
5	73731241	END COVER RH W/CONV PLUG	1
6	73054430	RELIEF 1000PSI NON-ADJ	2
7	73731424	END COVER LH (INCL:8)	1
8	73054673	RELIEF VALVE (PART OF 7)	1REF
9	73054400	RELIEF 2300PSI NON-ADJ	2
10	73054007	RELIEF 1800PSI NON-ADJ	2
11	60108011	STUD 3/8X20-1/2	3
12	72062037	NUT 3/8-24 HEX	6
13	70142402	ORIFICE PLATE	3
14	70142403	SPRING	5
15	51393494	O-RING KIT	REF
16	7Q072117	O-RING	22
17	7Q072119	O-RING	22
18	73054010	LOAD CHECK PLUG	12
19	70143140	ORIFICE PLATE	2

Figure 25A. VALVEBANK (51709695)

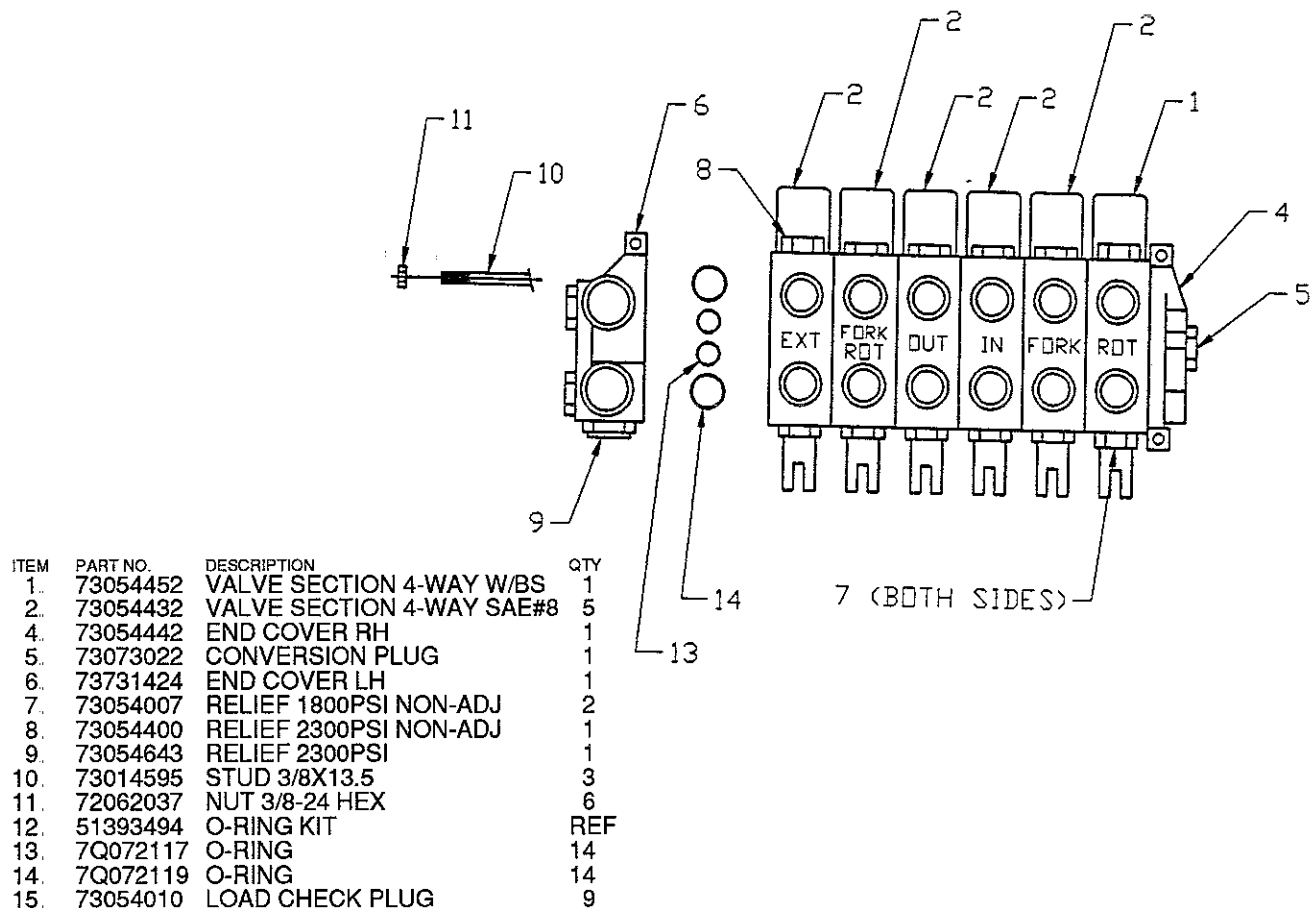
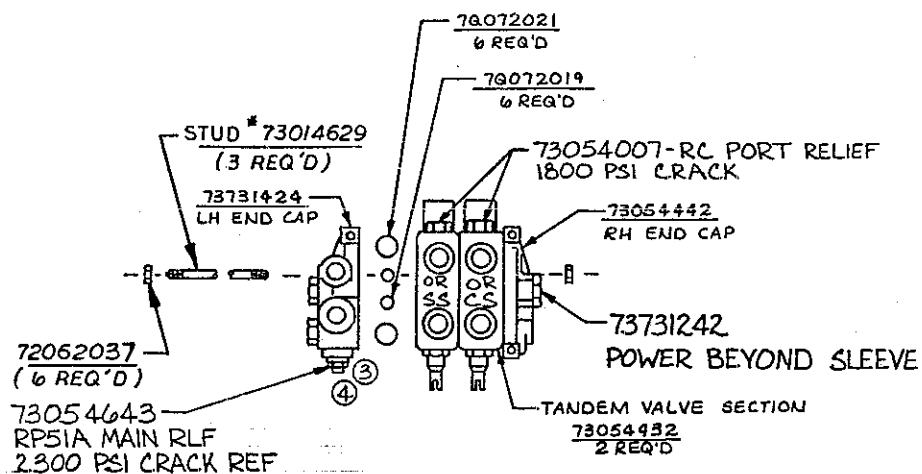


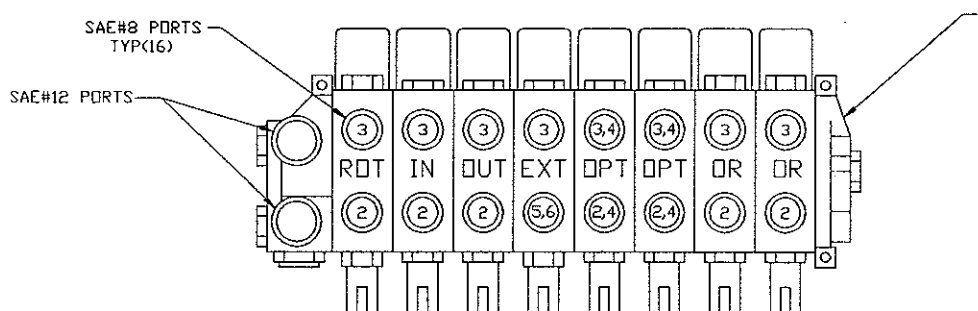
Figure D-26. VALVEBANK CHAIRMOUNT (51711281)



ITEM	PART NO.	DESCRIPTION	QTY
1.	51705739	VB 2-SECT W/PWR BEYOND	1
2.	72053763	ELBOW #8MSTR #8MJIC 90°	2
3.	72532666	ELBOW #8MSTR #8MJIC XLG	2

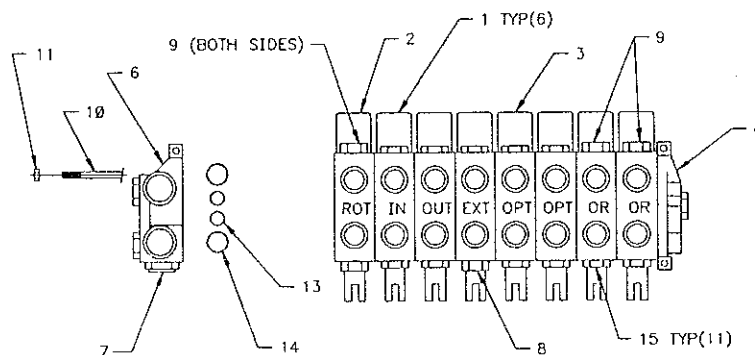
51705739 - VB 2-SECTION - SHOWN

Figure D-27. VALVEBANK ASSEMBLY W/PB CHAIR MOUNT (51706750)



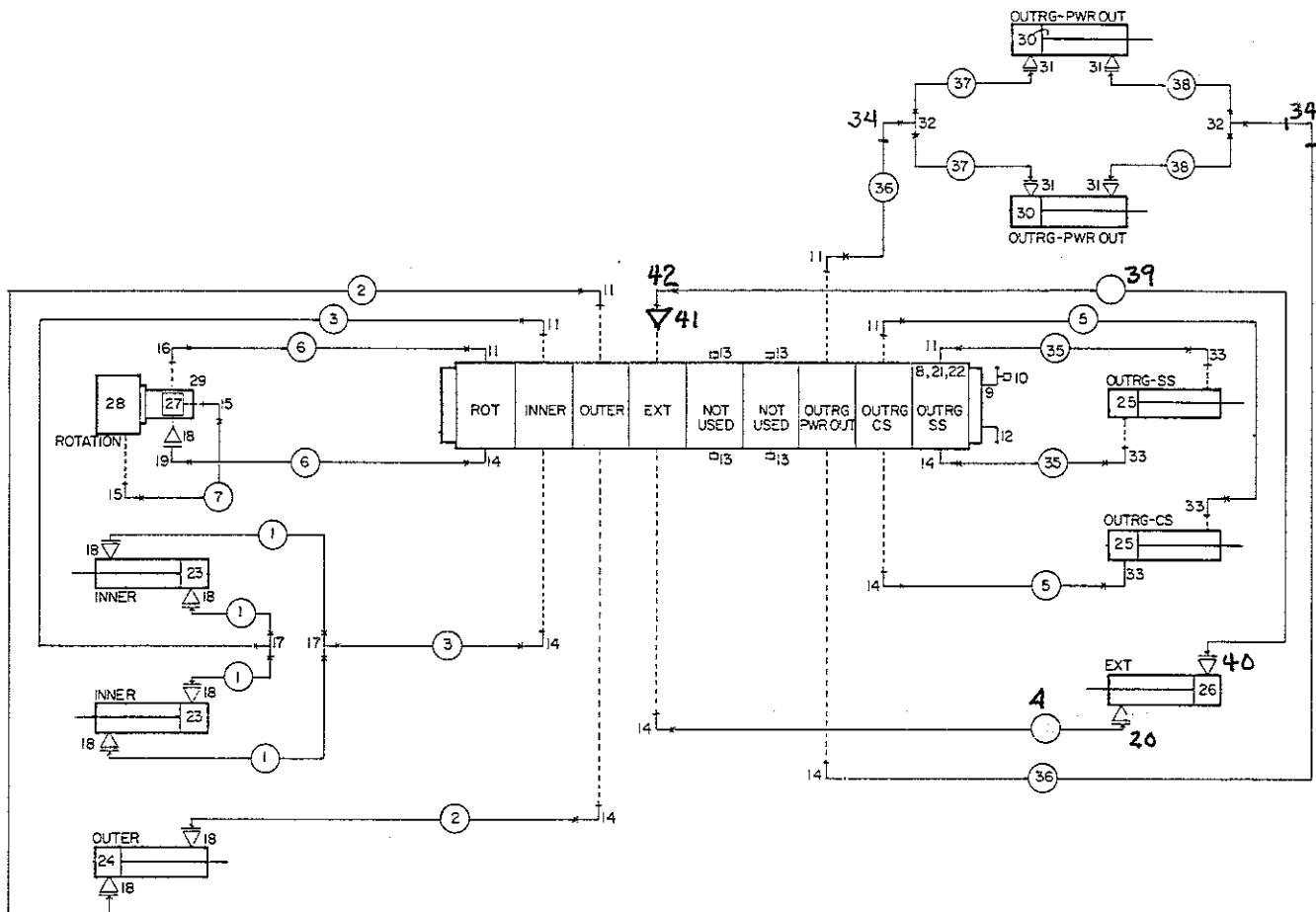
ITEM	PART NO.	DESCRIPTION	QTY
1.	73731769	VALVEBANK 8-SECTION	1
2.	72053763	ELBOW #8MSTR #8MJIC 90°	7
3.	72532666	ELBOW #8MSTR #8MJIC XLG	8
4.	72532675	CAP 3/4JIC	4
5.	72532364	ADAPTER #8MSTR #12MJIC	1
6.	72532696	ELBOW #12MJIC #12FJIC SW	1

Figure 28. VALVEBANK ASSEMBLY 8-SECTION MANUAL (51705774)



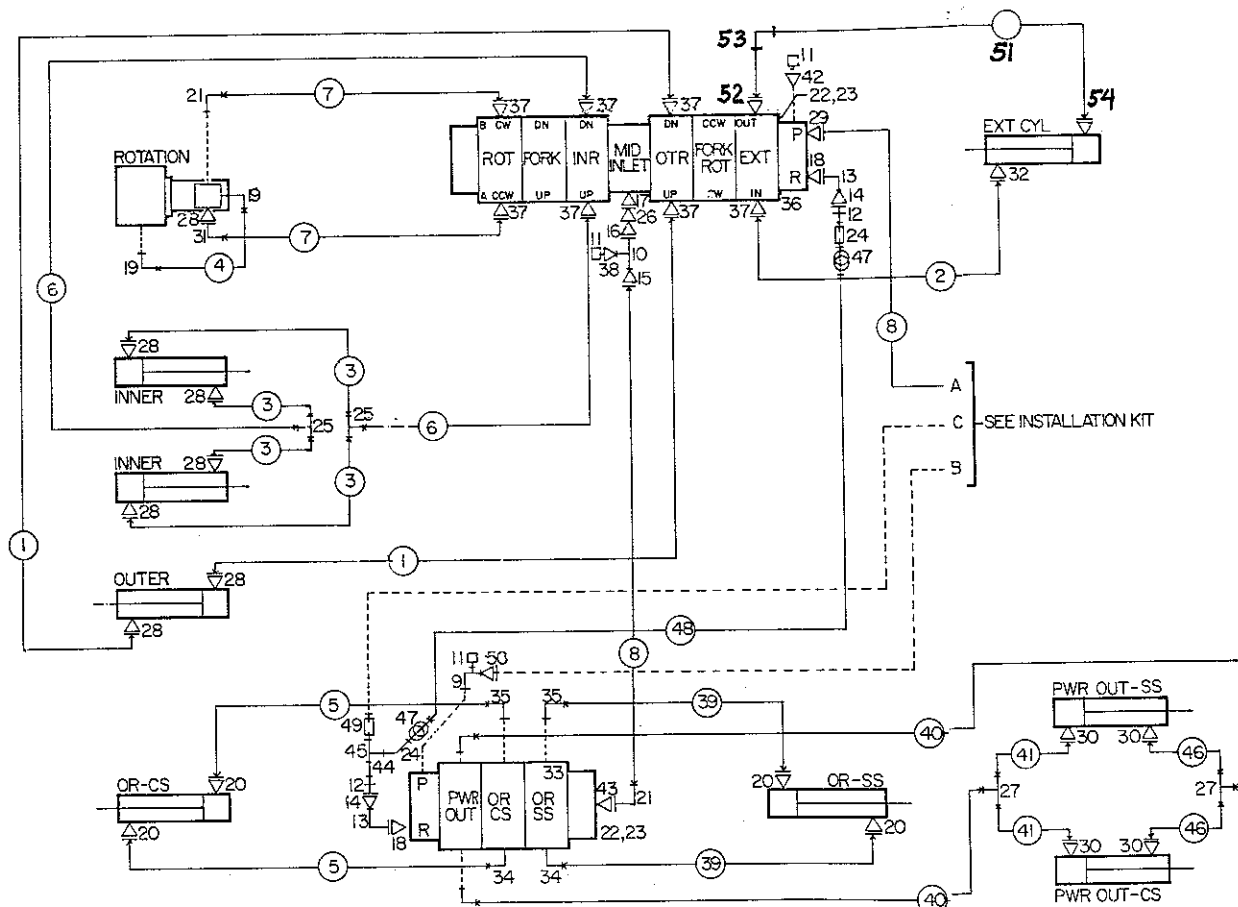
ITEM	PART NO.	DESCRIPTION	QTY
1.	73054432	VALVE SECT 4WAY SAE#8	6
2.	73054452	VALVE SECT 4WAY BS SAE#8	1
3.	73054722	VALVE SECT 4WAY BS	1
4.	73731241	END COVER RH W/CONV PLUG	1
6.	73731424	END COVER LH (INCL:7)	1
7.	73054673	RELIEF VALVE (PART OF 6)	1
8.	73054400	RELIEF RC NON-ADJ 2300PSI	1
9.	73054007	RELIEF RC NON-ADJ 1800PSI	4
10.	73014668	STUD 3/8X17	3
11.	72062037	NUT 3/8-24 HEX	6
12.	51393494	O-RING KIT	REF
13.	7Q072117	O-RING	18
14.	7Q072119	O-RING	18
15.	73054010	LOAD CHECK PLUG ASM	11

Figure D-28A. VALVEBANK (73731769)



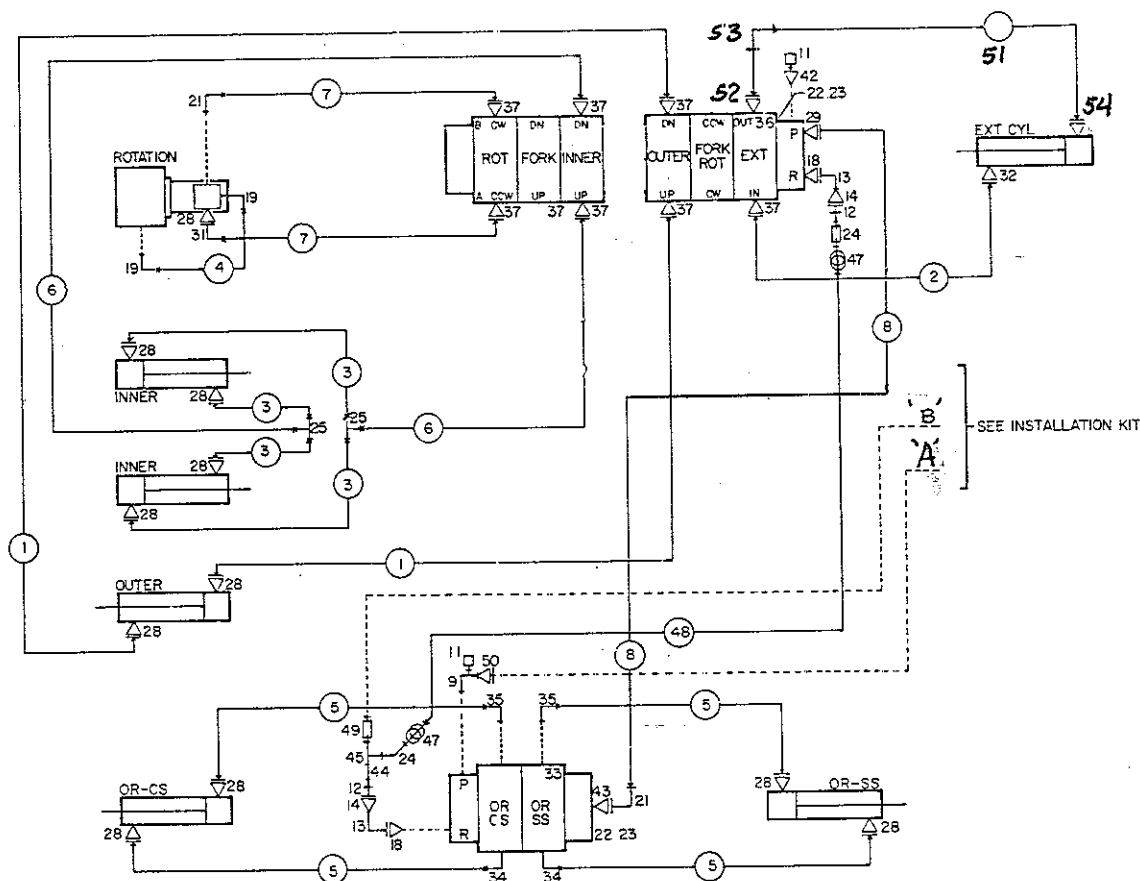
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	51703586	HOSE ASM 3/8X30	4	22.		NUT 5/16-18 LOCK	3REF
2.	51703588	HOSE ASM 3/8X150	2	23.		INNER CYLINDER	2REF
3.	51704206	HOSE ASM 3/8X28	2	24.		OUTER CYLINDER	1REF
4.	51704918	HOSE ASM 1/2X282	1	25.		OUTRIGGER CYLINDER	2REF
5.	51703601	HOSE ASM 3/8X90	2	26.		EXTENSION CYLINDER	1REF
6.	51705406	HOSE ASM 3/8X63	2	27.		CARTRIDGE BLOCK	1REF
7.	51705641	HOSE ASM 1/4X6	1	28.		BRAKE	1REF
8.		VALVEBANK ASM (INCL:11,13,14)	1REF	29.		MOTOR	1REF
9.	60106322	ELBOW- MODIFIED	1	30.		POWER OUT CYLINDER	2REF
10.	72053412	PLUG 1/4NPT	1	31.	72532351	ADAPTER #4MSTR #4MJIC	4
11.	72053763	ELBOW #8MSTR #8MJIC 90° (PART OF 8)	6REF	32.	72532768	TEE #4MJIC	2
12.	72053767	ELBOW 1-1/16MSTR 1-1/16MJIC 90°	1	33.	72532779	ELBOW #6MSTR #8MJIC XLG	4
13.		PLUG #8MSTR (PART OF 8)	4REF	34.	72532690	ELBOW #4MJIC #4FJIC SWVL	2
14.	72532666	ELBOW #8MSTR #8MJIC XLG (PART OF 8)	6REF	35.	51703693	HOSE ASM 3/8X114	2
15.	72053758	ELBOW #4MSTR #4MJIC 90°	2	36.	51706028	HOSE ASM 1/4X34	2
16.	72053763	ELBOW #8MSTR #8MJIC 90°	1	37.	51706152	HOSE ASM 1/4X36	2
17.	72531205	TEE #8MJIC 1/2TUBE	2	38.	51705376	HOSE ASM 1/4X44	2
18.	72532358	ADAPTER #8MSTR #8MJIC	7	39.	51710952	HOSE ASM 3/4X282 FF	1
19.	72532658	ELBOW #8MJIC #8FJIC 90°	1	40.	72053767	ELBOW #12MSTR #12MJIC 90°	1
20.	72532666	ELBOW #8MSTR #8MJIC XLG	1	41.		ADAPTER #8MSTR #12MJIC (PART OF 8)	REF
21.		CAP SCR 5/16-18X2-3/4 HHGR5	3REF	42.		ELBOW #12MJIC #12FJIC SW (PART OF 8)	REF

Figure D-29. HYDRAULIC KIT - POWER OUT/DOWN OUTRIGGERS (91709203)



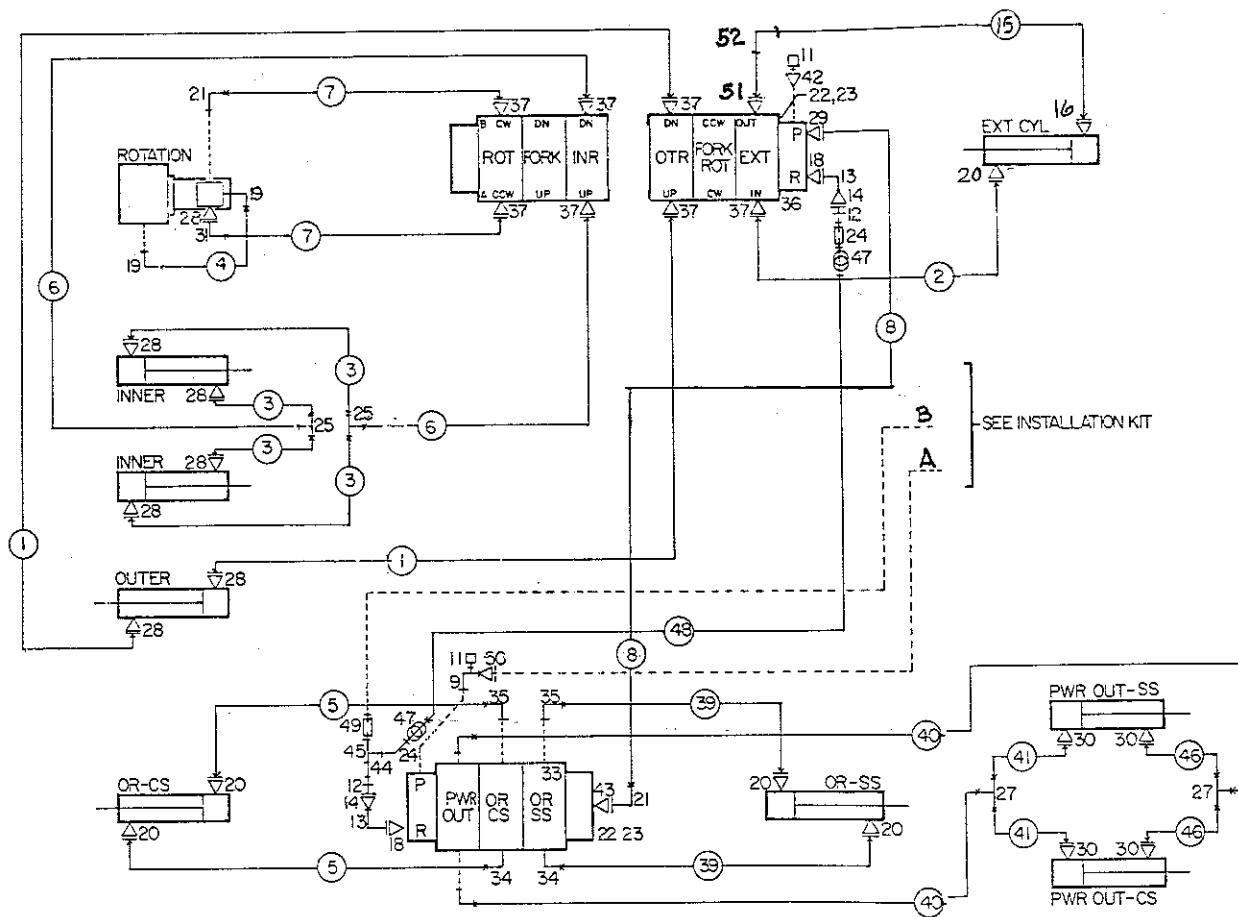
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	51703789	HOSE ASM 1/2 X 92	2	31.	72532658	ELBOW 3/4MJIC 3.4FJIC 90°	1
2.	51703933	HOSE ASM 1/28 X 186	1	32.	72532740	ELBOW 3/4MSTR 3/4MJIC 90° SW	2
3.	51704029	HOSE ASM 3/8 X 32	4	33.		VALVEBANK ASM (incl:34,35,43)	1REF
4.	51705641	HOSE ASM 1/4 X 6	1	34.	72053763	ELBOW 3/4MSTR 3/4MJIC 90°	3REF
5.	51703601	HOSE ASM 3/8 X 90	2			(part of 33)	
6.	51706860	HOSE ASM 3/8 X 123	2	35.	72532666	ELBOW 3/4MSTR 3/4MJIC XLG	3REF
7.	51706861	HOSE ASM 3/8 X 170	2			(part of 33)	
8.	51706863	HOSE ASM 1/2 X 166	2	36.	51706876	VALVEBANK ASM (incl:37)	1REF
9.	60106322	ELBOW- MODIFIED	1	37.	72532358	ADAPTER 3/4MSTR 3/4MJIC	7REF
10.	72053363	TEE 3/8 NPT	1			(part of 36)	
11.	72053412	PIPE PLUG 1/4 SQHD	3	38.	72053372	REDUCER BUSHING 3/8X1/4	1
12.	72053489	REDUCER COUPLING 1-1/4 X 3/4	2	39.	51703693	HOSE ASM 3/8X114	2
13.	72053556	ELBOW 3/4 X 90°	2	40.	51706028	HOSE ASM 1/4X34	2
14.	72053558	ADAPTER 3/4MPT X 3/4MPT	2	41.	51704280	HOSE ASM 1/4X40	2
15.	72053670	ADAPTER 3/8MPT X 3/4MJIC	1	42.	60107746	PLUG	1
16.	72053723	ADAPTER 3/8MPT X 3/8MPT	1	43.	73731242	ADAPTER - POWER BEYOND	1 REF
17.	72053746	ADAPTER 1-1/16MSTR X 1/2FPT	1			(part of 33)	
18.	72053747	ADAPTER 1-1/16MSTR X 3/4FPT	2	44.	72053211	PIPE NIPPLE 1-1/4 X CLOSE	1
19.	72053758	ELBOW 7/16MSTR X 7/16MJIC 90°	2	45.	72053615	TEE 1-1/4	1
20.	72532666	ELBOW 3/4MSTR X 3/4MJIC XLG	4	46.	51705376	HOSE ASM 1/4X44	2
21.	72053763	ELBOW 3/4MSTR X 3/4MJIC 90°	2	47.	72066516	HOSE CLAMP 1-1/4	2
22.	72060033	CAP SCREW 5/16-18 X 3 HH GR5	6	48.	60035830	HOSE 1-1/4 100R4 X 144	1
23.	72062109	NUT 5/16-18 LOCK	6	49.	72531550	BARB NIPPLE 1-1/4 X 1-1/4	1
24.	72531196	BARB NIPPLE 1-1/4 X 1-1/4 45°	2	50.	72532669	ADAPTER 3/4MJIC 7/8FJIC	1
25.	72531205	TEE 3/4MJIC	2	51.	51703874	HOSE ASM 3/4X186 FF	1
26.	72053629	REDUCER BUSHING 1/2 X 3/8	1	52.		ADAPTER #8MSTR #12MJIC	REF
27.	72532768	TEE 7/16MJIC	2			(PART OF 36)	
28.	72532358	ADAPTER 3/4MSTR 3/4MJIC	7	53.		ELBOW #12MJIC #12FJIC SW	REF
29.	72532360	ADAPTER 1-1/16MSTR 3/4MJIC	1			(PART OF 36)	
30.	72532351	ADAPTER 7/16MSTR 7/16MJIC	4	54.	72053767	ELBOW #12MSTR #12MJIC 90°	1

Figure D-30. HYDRAULIC KIT - CHAIR MOUNT (91709216)



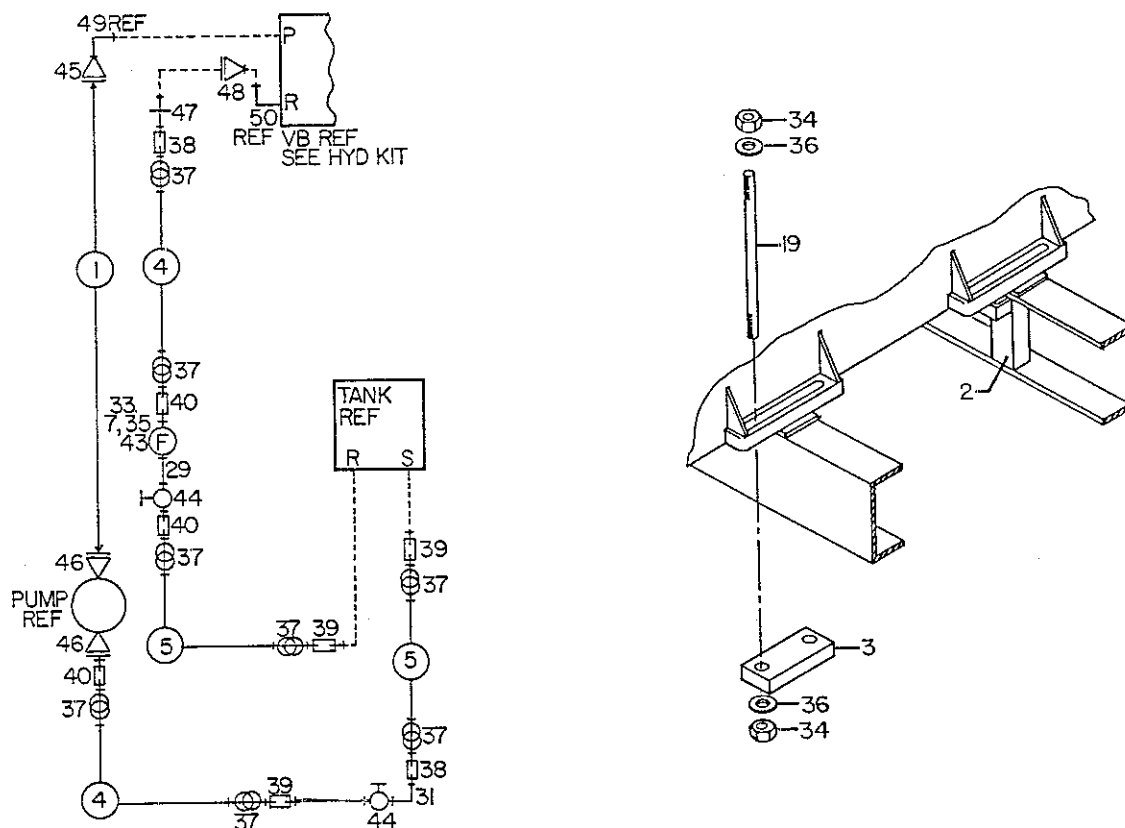
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	51703789	HOSE ASM 1/2X92	2	31.	72532658	ELBOW 3/4MJIC 3.4FJIC 90°	1
2.	51703933	HOSE ASM 1/2X186	1	32.		SWIVEL ELBOW 3/4MSTR 3/4MJIC 90°	2
3.	51704029	HOSE ASM 3/8X32	4	33.		VB ASM (incl:34,35,43)	1REF
4.	51705641	HOSE ASM 1/4X6	1	34.		ELBOW 3/4MSTR 3/4MJIC 90° (part of 33)	2REF
5.	51706859	HOSE ASM 3/8X62	4	35.		ELBOW 3/4MSTR 3/4MJIC XLG (part of 33)	2REF
6.	51706860	HOSE ASM 3/8X123	2	36.		VALVEBANK ASM (incl:37)	1REF
7.	51706861	HOSE ASM 3/8X170	2	37.		ADAPTER 3/4MSTR 3/4MJIC (part of 36)	7REF
8.	51706863	HOSE ASM 1/2X166	1	42.	60107746	PLUG	1
9.	60106322	ELBOW- MODIFIED	1	43.		ADAPTER-POWER BEYOND (part of 33)	1REF
11.	72053412	PIPE PLUG 1/4 SQHD	2	44.	72053211	PIPE NIPPLE 1-1/4 X CLOSE	1
12.	72053489	REDUCER COUPLING 1-1/4 X 3/4	2	45.	72053615	TEE 1-1/4	1
13.	72053556	ELBOW 3/4 X 90°	2	47.	72066516	HOSE CLAMP 1-1/4	2
14.	72053558	ADAPTER 3/4MPT 3/4MPT	2	48.	60035830	HOSE 1-1/4 100R4 X 144	1
18.	72053747	ADAPTER 1-1/16MSTR 3/4FPT	2	49.	72531550	BARB NIPPLE 1-1/4 1-1/4	1
19.	72053758	ELBOW 7/16MSTR 7/16MJIC 90°	2	50.	72532669	ADAPTER 3/4MJIC 7/8FJIC	1
21.	72053763	ELBOW 3/4MSTR 3/4MJIC 90°	2	51.	51703874	HOSE ASM 3/4X186 FF	1
22.	72060033	CAP SCR 5/16-18X3 HH GR5	6	52.		ADAPTER #8MSTR #12MJIC (PART OF 36)	REF
23.	72062109	NUT 5/16-18 LOCK	6	53.		ELBOW #12MJIC #12FJIC SW (PART OF 36)	REF
24.	72531196	BARB NIPPLE 1-1/4 1-1/4 45°	2	54.	72053767	ELBOW #12MSTR #12MJIC 90°	1
25.	72531205	TEE 3/4MJIC	2				
28.	72532358	ADAPTER 3/4MSTR 3/4MJIC	11				
29.	72532360	ADAPTER 1-1/16MSTR 3/4MJIC	1				

Figure D-31. HYDRAULIC KIT 8-SECT CHAIR MOUNT W/O MID-INLET (91711286)



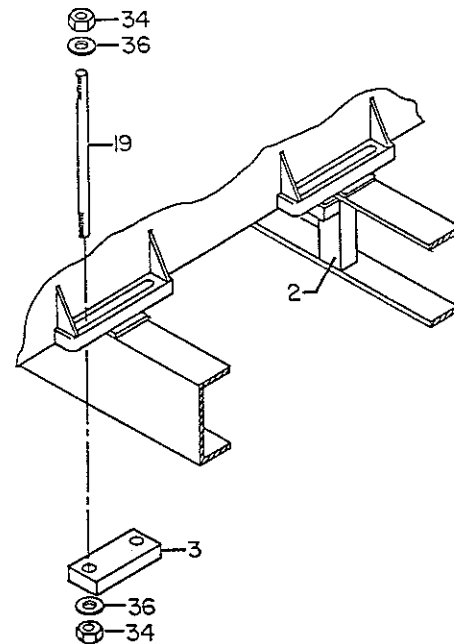
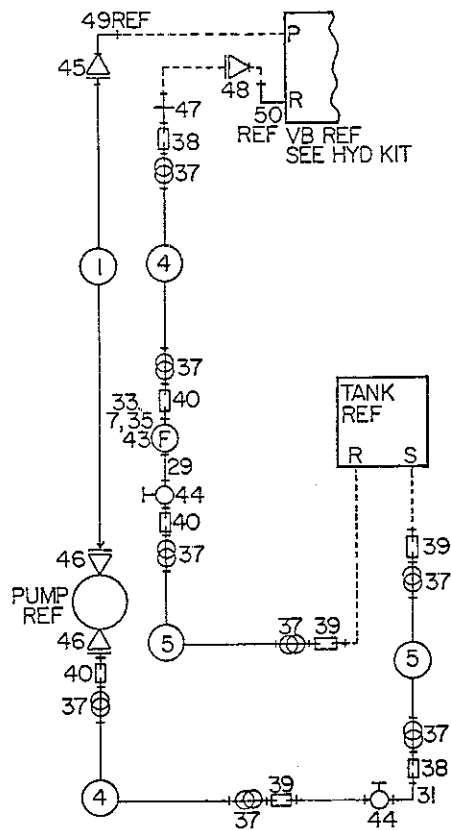
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	51703789	HOSE ASM 1/2X92	2	29.	72532360	ADAPTER 1-1/16MSTR 3/4MJIC	1
2.	51703933	HOSE ASM 1/2X186	1	30.	72532351	ADAPTER 7/16MSTR 7/16MJIC	4
3.	51704029	HOSE ASM 3/8X32	4	31.	72532658	ELBOW 3/4MJIC 3/4FJIC 90°	1
4.	51705641	HOSE ASM 1/4X6	1	33.		VALVEBANK ASM (incl:34,35,43)	1 REF
5.	51703601	HOSE ASM 3/8X90	2	34.		ELBOW 3/4MSTR 3/4MJIC 90° (part of 33)	3 REF
6.	51706860	HOSE ASM 3/8X123	2	35.		ELBOW 3/4MSTR 3/4MJIC XLG (part of 33)	3 REF
7.	51706861	HOSE ASM 3/8X170	2	36.		VALVEBANK ASM (incl:37)	1 REF
8.	51706863	HOSE ASM 1/2X166	1	37.		ADAPTER 3/4MSTR 3/4MJIC (part of 36)	7 REF
9.	60106322	ELBOW- MODIFIED	1	39.	51703693	HOSE ASM 3/8X114	2
11.	72053412	PIPE PLUG 1/4 SQHD	2	40.	51706028	HOSE ASM 1/4X34	2
12.	72053489	REDUCER COUPLING 1-1/4 3/4NPT	2	41.	51704280	HOSE ASM 1/4X40	2
13.	72053556	ELBOW 3/4NPT 90	2	42.	60107746	PLUG	1
14.	72053558	ADAPTER 3/4MPT 3/4MPT	2	43.		ADAPTER - POWER BEYOND(part of 33)	1 REF
15.	51703874	HOSE ASM 3/4X186 FF	1	44.	72053211	PIPE NIPPLE 1-1/4 X CLOSE	1
16.	72053767	ELBOW #12MSTR #12MJIC 90°	1	45.	72053615	TEE 1-1/4	1
18.	72053747	ADAPTER 1-1/16MSTR	2	46.	51705376	HOSE ASM 1/4X44	2
19.	72053758	ELBOW 7/16MSTR 7/16MJIC 90°	2	47.	72066516	HOSE CLAMP 1-1/4	2
20.	72532666	ELBOW 3/4MSTR 3/4MJIC XLG	5	48.	60035830	HOSE 1-1/4 100R4 X 144	1
21.	72053763	ELBOW 3/4MSTR 3/4MJIC 90°	2	49.	72531550	BARB NIPPLE 1-1/4 1-1/4	1
22.	72060033	CAP SCR 5/16-18X3 HH GR5	6	50.	72532669	ADAPTER 3/4MJIC 7/8FJIC	1
23.	72062109	NUT 5/16-18 LOCK	6	51.		ADAPTER #8MSTR #12MJIC (PART OF 36)	REF
24.	72531196	BARB NIPPLE 1-1/4 1-1/4 45°	2	52.		ELBOW #12MJIC #12FJIC SW (PART OF 36)	REF
25.	72531205	TEE 3/4MJIC	2				
27.	72532768	TEE 7/16MJIC	2				
28.	72532358	ADAPTER 3/4MSTR 3/4MJIC	7				

Figure D-32. HYDRAULIC KIT 9-SECT CHAIRMOUNT W/PO & PD (91711287)



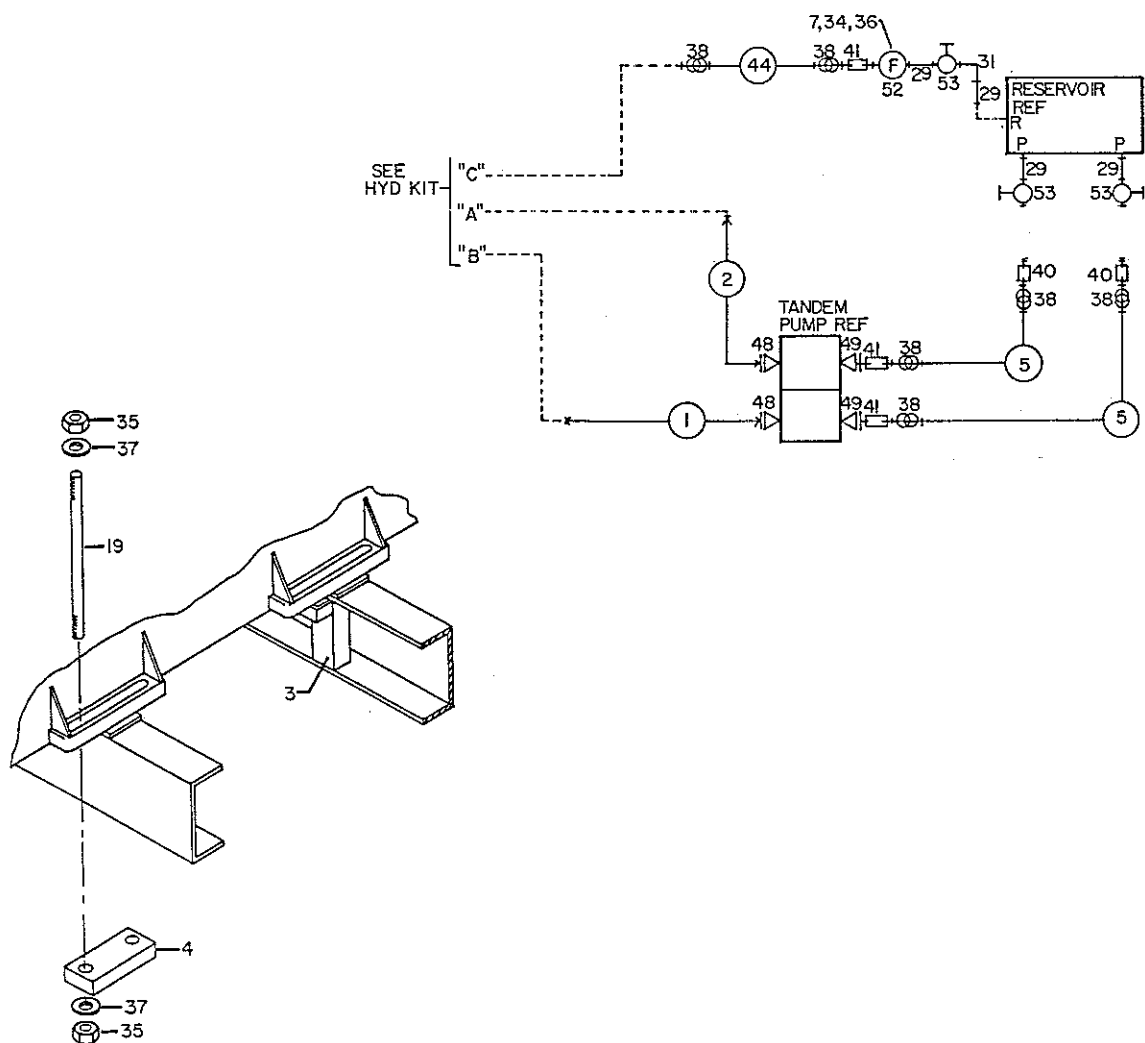
ITEM	PART NO.	DESCRIPTION	QTY
1.	51703703	HOSE ASM 1/2 X 72	1
2.	52706660	FRAME SUPPORT	4
3.	60010665	CLAMP PLATE	4
4.	60035829	HOSE 1-1/4 100R4 X 48	2
5.	60035832	HOSE 1-1/4 100R4 X 38	2
7.	60103870	OIL FILTER BRACKET	1
19.	71014054	TIE DOWN STUD 1-1/4X24	8
29.	72053211	PIPE NIPPLE 1-1/4 X CLOSE	1
31.	72053287	STREET ELBOW 1-1/4 90°	1
33.	72060025	CAP SCR 5/16-18X1 HH GR5	2
34.	72062142	NUT 1 1/4-7 STEEL INSERT	16
35.	72063050	WASHER 5/16 LOCK	2
36.	72063067	WASHER 1-1/4 HI-STRENGTH	16
37.	72066516	HOSE CLAMP 1-1/4	8
38.	72531196	BARB NIPPLE 1-1/4 X 1-1/4 45°	2
39.	72531550	BARB NIPPLE 1-1/4 X 1-1/4	3
40.	72532346	BARB NIPPLE 1-1/4 X 1-1/4 90°	3
43.	73052040	RETURN FILTER	1
44.	73054130	GATE VALVE 1-1/4	2
45.	72532669	ADAPTER 3/4MJIC 7/8FJIC	1
46.		ADAPTER - PUMP	2 REF
47.	72053489	REDUCER COUP: LING 1-1/4 3/4NPT	1
48.	72053676	ADAPTER 3/4MPT 1-1/16MJIC	1
49.	60106322	ELBOW - MODIFIED	1 REF
50.	72053767	ELBOW 1-1/16MSTR 1-1/16MJIC 90° (PART OF HYD. KIT)	1 REF

Figure D-33. INSTALLATION KIT - TRUCK MOUNT MANUAL CONTROLS (93709560)



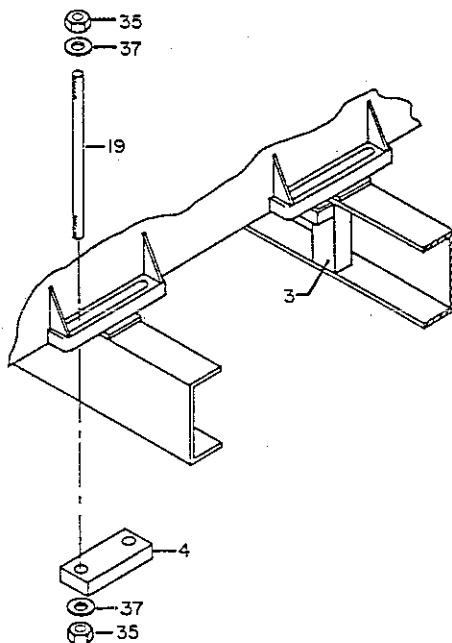
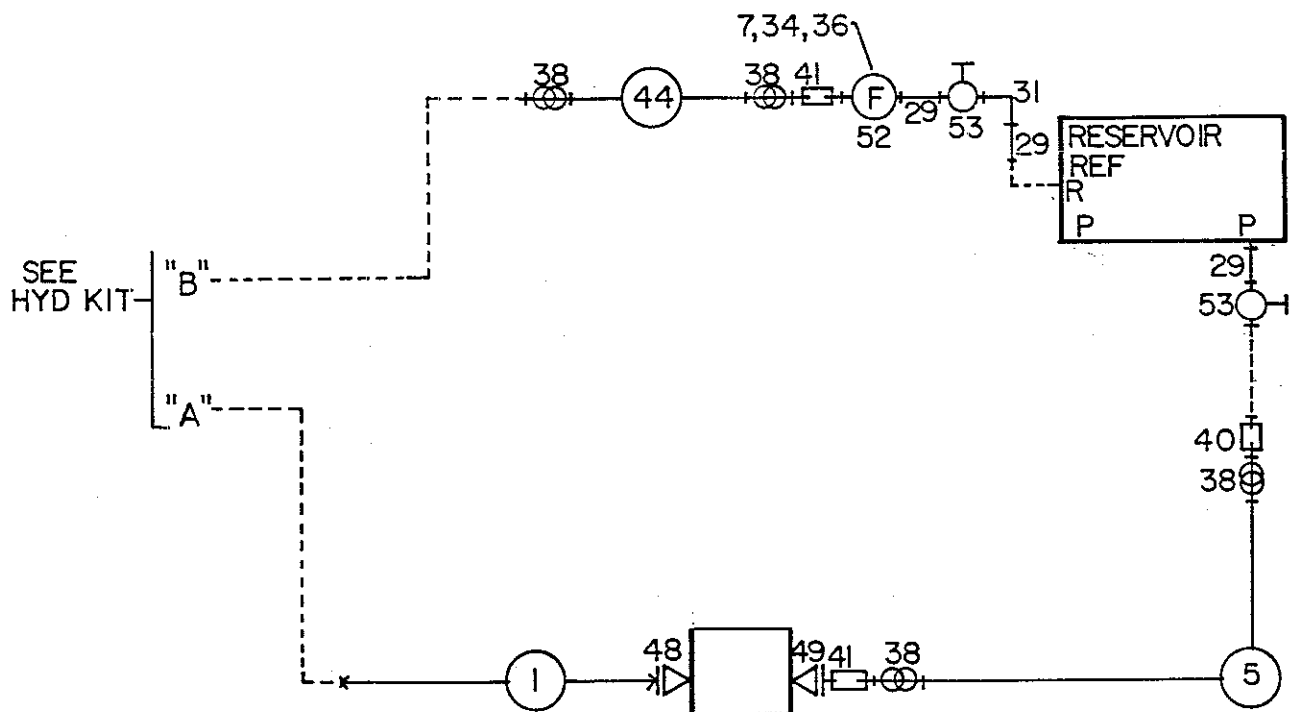
ITEM	PART NO.	DESCRIPTION	QTY
1.	51703703	HOSE ASM 1/2 X 72	1
2.	52706660	FRAME SUPPORT	4
3.	60010665	CLAMP PLATE	4
4.	60035829	HOSE 1-1/4 100R4 X 48	2
5.	60035832	HOSE 1-1/4 100R4 X 38	2
7.	60103870	OIL FILTER BRACKET	1
19.	71014054	TIE DOWN STUD 1-1/4X24	8
29.	72053211	PIPE NIPPLE 1-1/4 X CLOSE	1
31.	72053287	STREET ELBOW 1-1/4 X 90°	1
33.	72060025	CAP SCR5/16-18X1 HH GR5	2
34.	72062142	NUT 1-1/4-7 STEEL INSERT	16
35.	72063050	WASHER 5/16 LOCK	2
36.	72063067	WASHER 1-1/4 HI-STRENGTH	16
37.	72066516	HOSE CLAMP 1-1/4	8
38.	72531196	BARB NIPPLE 1-1/4X1-1/4 45°	2
39.	72531550	BARB NIPPLE 1-1/4X1-1/4	3
40.	72532346	BARB NIPPLE 1-1/4X1-1/4 90°	3
43.	73052040	RETURN FILTER	1
44.	73054130	GATE VALVE 1-1/4	2
45.	72532669	ADAPTER 3/4MJIC 7/8FJIC	1
46.		ADAPTER - PUMP	2 REF
47.	72053489	REDUCER COUPLING 1-1/4X3/4	1
48.	72053676	ADAPTER 3/4 MPT 1-1/16MJIC	1
49.	60106322	ELBOW - MODIFIED	1 REF
50.	72053767	ELBOW 1-1/16MSTR 1-1/16MJIC90° (PART OF HYD. KIT)	1 REF

Figure D-34. INSTALLATION KIT - TRUCK MOUNT REMOTE CONTROLS (93709562)



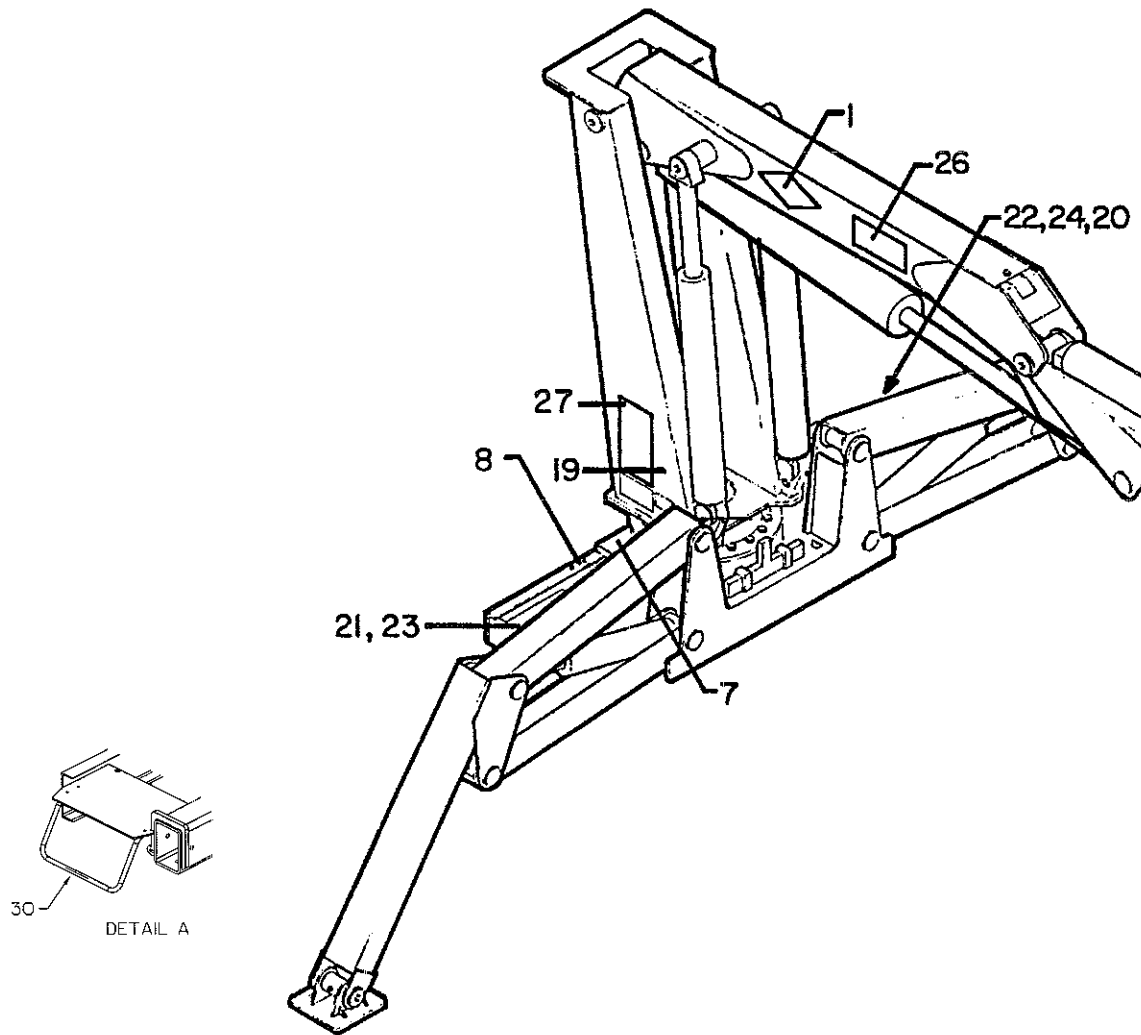
ITEM	PART NO.	DESCRIPTION	QTY
1.	51703703	HOSE ASM 1/2 X 72	1
2.	51706863	HOSE ASM 1/2 X 166	1 REF
3.	52706660	SUPPORT	4
4.	60010665	CLAMP PLATE	4
5.	60035829	HOSE 1-1/4 100R4 X 48	2
7.	60103870	OIL FILTER BRACKET	1
19.	71014054	TIE DOWN STUD 1-1/4 X 24	8
29.	72053211	PIPE NIPPLE 1-1/4 X CLOSE	6
31.	72053287	STREET ELBOW 1-1/4 X 90°	1
34.	72060025	CAP SCREW 5/16-18 X 1 HH GR5	2
35.	72062142	NUT 1-1/4-7 STEEL INSERT	16
36.	72063050	WASHER 5/16 LOCK	2
37.	72063067	WASHER 1-1/4 HI-STRENGTH	16
38.	72066516	HOSE CLAMP 1-1/4	6
40.	72531550	BARB NIPPLE 1-1/4 X 1-1/4	2
41.	72532346	BARB NIPPLE 1-1/4 X 1-1/4 90°	3
44.	60035828	HOSE 1-1/4 100R4 X 72	1
48.		ADAPTER (determined by pump)	2 REF
49.		ADAPTER (determined by pump)	2 REF
52.	73052040	RETURN FILTER	1
53.	73054130	GATE VALVE 1-1/4	3

Figure D-35. INSTALLATION KIT - CHAIR MOUNT (93709564)



ITEM	PART NO.	DESCRIPTION	QTY
1.	51703703	HOSE ASM 1/2X72 FF	1
3.	52706660	SUPPORT	4
4.	60010665	CLAMP PLATE	4
5.	60035829	HOSE 1-1/4 100R4 X 48	1
7.	60103870	OIL FILTER BRACKET	1
19.	71014054	TIE-DOWN STUD 1-1/4X24	8
29.	72053211	PIPE NIPPLE 1-1/4NPT X CLOSE	3
31.	72053287	STREET ELBOW 1-1/4NPT 90°	1
34.	72060025	CAP SCR 5/16-18X1 HHGR5	2
35.	72062142	NU 1 1/4-7 STL INSERT GR5	16
36.	72063050	WASHER 5/16 LOCK	2
37.	72063067	WASHER 1-1/4 HI-STRENGTH	16
38.	72066516	HOSE CLAMP 1-1/4 2-BOLT	4
40.	72531550	BARB NIPPLE 1-1/4 1-1/4	1
41.	72532346	BARB NIPPLE 1-1/4 1-1/4 90°	2
44.	60035828	HOSE 1-1/4 100R4 X 72	1
48.		ADAPTER (determined by pump)	1REF
49.		ADAPTER (determined by pump)	1REF
52.	73052040	RETURN FILTER	1
53.	73054130	GATE VALVE 1-1/4NPT	2

Figure D-36. INSTALLATION KIT 8-SECT CHAIR MOUNT (93711288)



DECAL PLACEMENT	
ITEM NO.	LOCATION
2,9,10,11,14,16 17,18,28,29	AT OR NEAR THE NORMAL OPERATING STATIONS
12,15	ONE ON EACH OUTRIGGER
13	ONE ON EACH SIDE OF CARRIER VEHICLE
8	AT TURNTABLE GREASE ZERK
3,4	AT ALL GREASE ZERKS
6	ON RESERVOIR AT RETURN LINE
5	ON RESERVOIR AT SUCTION LINE
25	AT LOWER REAR OF MAST AND STREET SIDE OF TURNTABLE GUARD ON BASE

ITEM	PART NO.	DESCRIPTION	QTY
1.	70029252	PLACARD - IMT DIAMOND	2
2.	70391583	DECAL - SET UP/STOW	2
3.	70391612	DECAL - GREASE WEEKLY LEFT	6
4.	70391613	DECAL - GREASE WEEKLY RIGHT	6
5.	70392108	DECAL - SUCTION LINE	1
6.	70392109	DECAL - RETURN LINE	1
7.	70392213	DECAL - WASH/WAX	1
8.	70392524	DECAL - ROTATE/GREASE	1
9.	70392813	DECAL - DANGER ELECTROCUTION	2
10.	70392814	DECAL - DANGER OPERATOR	2
11.	70392815	DECAL - DANGER OPERATION	2
12.	70392864	DECAL - DANGER OUTRG STD CLR	2
13.	70392865	DECAL - DANGER ELECTROCUTION	4
14.	70392866	DECAL - DANGER OPER COND	2
15.	70392867	DECAL - DANGER OUTRG MOVING	2
16.	70392888	DECAL - DANGER OPER RESTRICT	2
17.	70392890	DECAL - DANGER STOW/UNFOLD	2
18.	70392891	DECAL - DANGER DRIVELINE	2
19.	70392982	DECAL - CONTACT IMT	1
20.	71039134	DECAL - CAUTION OIL LEVEL	1
21.	71392255	DECAL - CTRL STREETSIDE	1
22.	71392256	DECAL - CTRL CURBSIDE	1
23.	71392257	DECAL - OUTRG PWR DN STREET	1
24.	71392258	DECAL - OUTRG PWR DN CURB	1
25.	71392365	DECAL - ALIGN CRANE ROTATION	1
26.	71393794	DECAL - 1495 IDENTIFICATION	2
27.	71393770	PLACARD - CAPACITY 1495	2
28.	70392898	DECAL-DANGER RC ELECTRO	2
29.	71392277	DECAL - OUTRG PWR OUT	2
30.	70394190	DECAL-CAUTION NOT A STEP	2

Figure D-37. DECAL KIT - STANDARD CONTROLS (95711910)

DRAWING NOT AVAILABLE AT TIME OF PRINTING

ITEM	PART NO.	DESCRIPTION	QTY
1.	70029252	PLACARD - IMT DIAMOND	2
2.	70391583	DECAL - SET UP/STOW	2
3.	70391612	DECAL - GREASE WEEKLY LEFT	6
4.	70391613	DECAL - GREASE WEEKLY RIGHT	6
5.	70392108	DECAL - SUCTION LINE	1
6.	70392109	DECAL - RETURN LINE	1
7.	70392213	DECAL - WASH/WAX	1
8.	70392524	DECAL - ROTATE/GREASE	1
9.	70392813	DECAL - DANGER ELECTROCUTION	2
10.	70392814	DECAL - DANGER OPERATOR	2
11.	70392815	DECAL - DANGER OPERATION	2
12.	70392864	DECAL - DANGER OUTRG STD CLR	2
13.	70392865	DECAL - DANGER ELECTROCUTION	4
14.	70392866	DECAL - DANGER OPER COND	2
15.	70392867	DECAL - DANGER OUTRG MOVING	2
16.	70392888	DECAL - DANGER OPER RESTRICT	2
17.	70392890	DECAL - DANGER STOW/UNFOLD	2
18.	70392891	DECAL - DANGER DRIVELINE	2
19.	70392982	DECAL - CONTACT IMT	1
20.	71039134	DECAL - CAUTION OIL LEVEL	1
23.	71392257	DECAL - OUTRG PWR DN STREET	1
24.	71392258	DECAL - OUTRG PWR DN CURB	1
25.	71392365	DECAL - ALIGN CRANE ROTATION	1
26.	70393794	DECAL - 1495 IDENTIFICATION	2
27.	71393770	PLACARD - CAPACITY 1495	2

Figure D-38. DECAL KIT - CHAIR MOUNT (95711911)

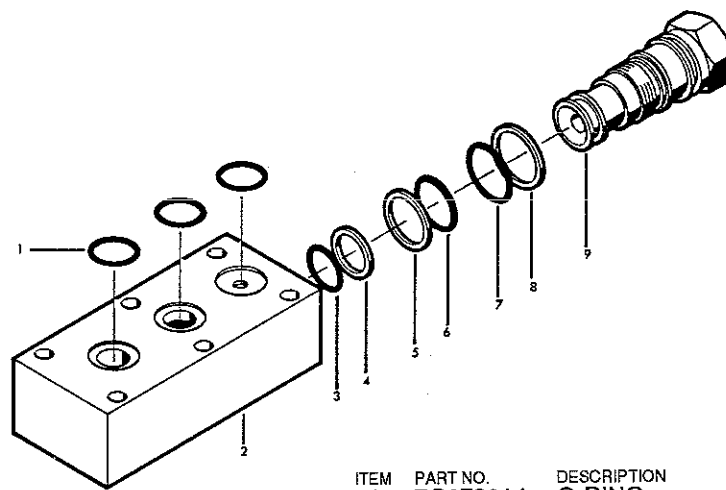


Figure D-41.
HOLDING VALVE
(73054004)

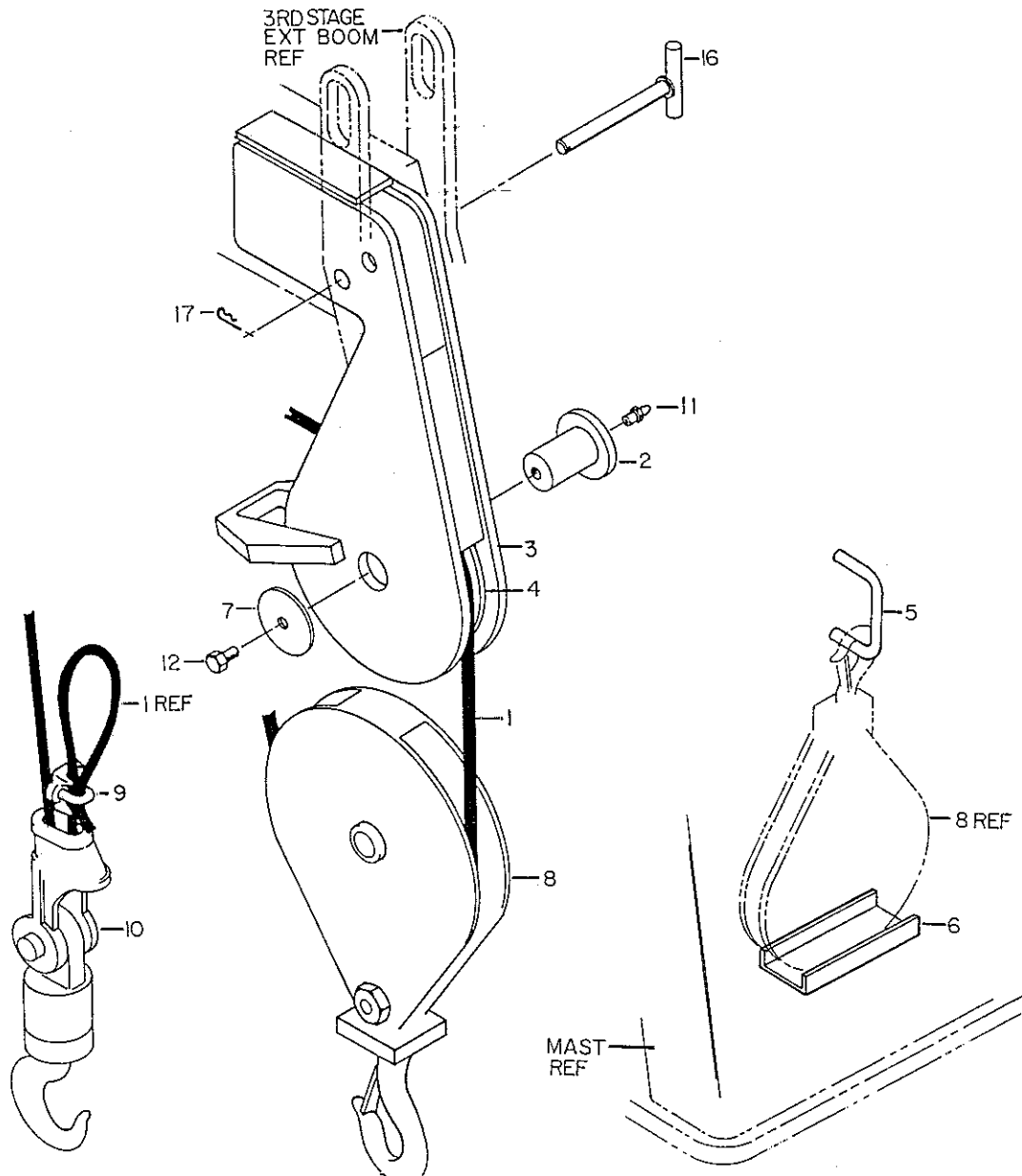
ITEM	PART NO.	DESCRIPTION	QTY
1.	7Q072014	O-RING	3
2.		BLOCK (not sold separately)	1
3.	7Q072015	O-RING	1
4.	7Q10P015	BACK-UP RING	1
5.	7Q10P017	BACK-UP RING	1
6.	7Q072017	O-RING	1
7.	7Q072018	O-RING	1
8.	7Q10P018	BACK-UP RING	1
9.		BODY (not sold separately)	1
10.	73054004	VALVE (incl: 1-9)	1

Exploded perspective view of the inner boom assembly. The diagram shows the boom (1) being attached to the main structure (7) using screws (9, 11, 13). The boom is labeled "INNER BOOM REF". A cable (16) is shown connected to the boom, passing through a series of pulleys (18) and ending in a circular component (16).



ITEM	PART NO.	DESCRIPTION	QTY
1.	72060731	CAP SCR 5/16-18X3/4 SH	4
2.	60025221	MANIFOLD	1
3	72532140	PLUG 9/16-18 STR THD HH	1
4.	7Q072015	O-RING	1
5.	77041283	PRESSURE SWITCH	1
6.	89044188	WIRE-14GA	
		(Customer Supplied)	REF
7.	99900118	INSTALLATION DWG	1

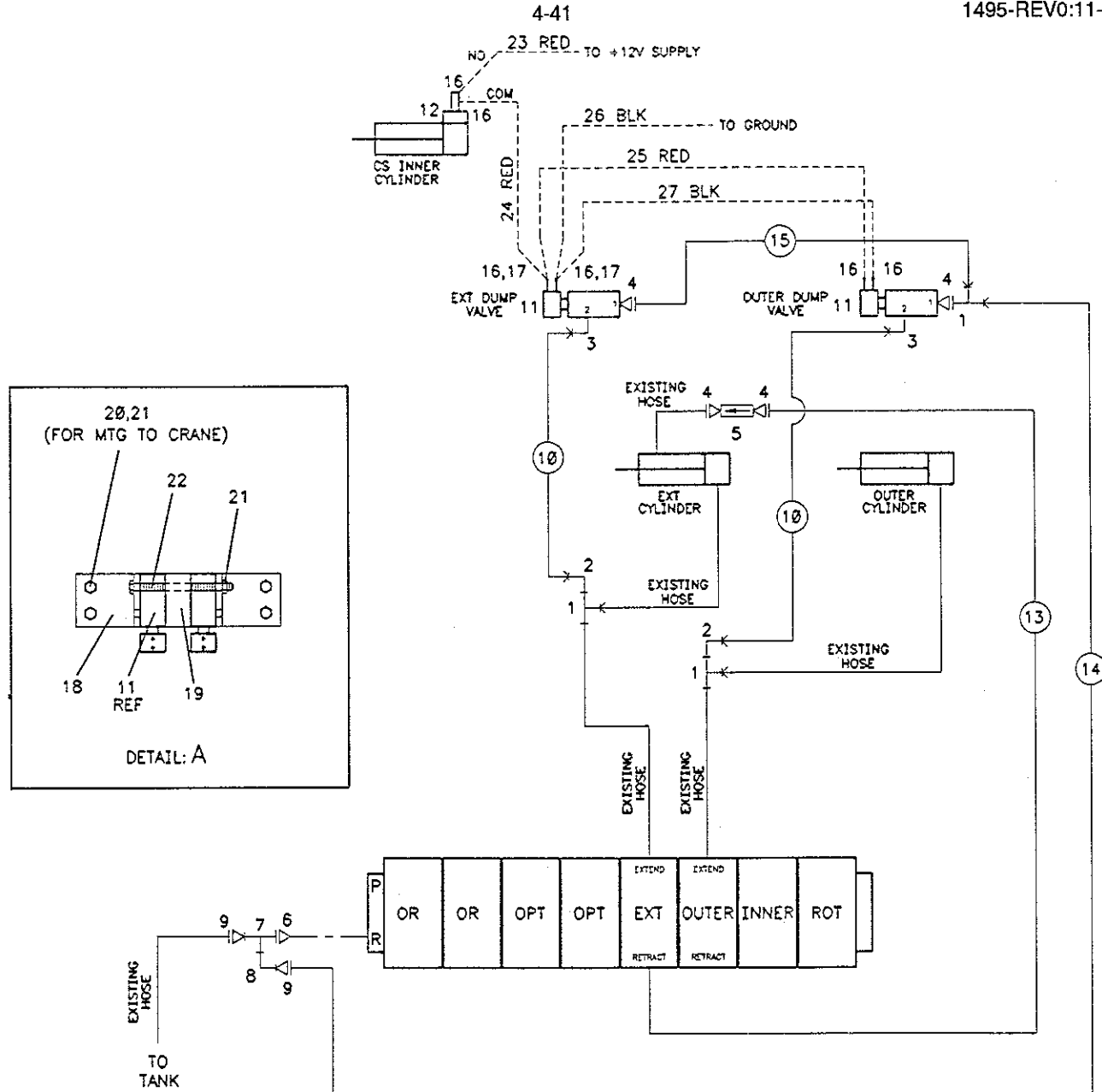
Figure D-43. CAPACITY ALERT KIT - AUDIBLE (31705698)



ITEM	PART NO.	DESCRIPTION	QTY
1.	60105311	CABLE 1/2 X 100'	1
2.	52705161	PIN	1
3.	52709812	SHEAVE HOLDER	1
4.	60030102	SHEAVE	1
5.	60105575	HANGER	1
6.	60105580	SNATCH BLOCK HOLDER	1
7.	60106331	PIN RETAINER PLATE	1
8.	70056253	SHEAVE	1
9.	70058034	CLAMP	1
10.	70731056	COMPLETE HOOK	1
11.	72053508	ZERK 1/8NPT	1
12.	72060147	CAP SCR 5/8-11 X 1 HH GR5	1
16.	52705802	PIN	1
17.	72066145	HAIR PIN	1
18.	99900402	MAST MODIFICATION DWG	1

Figure D-44. OPTION - CABLE AND HOOK KIT 1/2" X 30.5m (31709813)

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ITEM	PART NO.	DESCRIPTION	QTY
1	72532657	TEE 3/4JIC SWVL NUT RUN	3
2	72532658	ELBOW #8MJIC #8FJIC	2
3	72053763	ELBOW #8MSTR #8MJIC 90"	2
4	72532358	ADAPTER #8MSTR #8MJIC	4
5	73054426	RELIEF VALVE - ADJ	1
6	72053676	ADAPTER 3/4MPT #12MJIC	1
7	72532950	TEE 1-1/16JIC SWVL NUT RUN	1
8	72532696	ELBOW #12MJIC #12FJIC SWVL	1
9	72532972	ADAPTER #8MJIC #12FJIC	2
10	51703863	HOSE ASM 3/8X14 FF	2
11	73054576	SOLENOID VALVE	2
12	31705698	KIT-CAPACITY ALERT (ELECT)	1
13	51706239	HOSE ASM 1/2X5 FF	1
14	51704914	HOSE ASM 3/8X60 FF	1
15	51703701	HOSE ASM 3/8X10 FF	1
16	77040186	TERM-FSLPON 1/4TAB 16-14GA	6
17	77040282	TERM-PIGBAC 1/4TAB 16-14GA	2
18	60250259	MTG ANGLE-DUMP VALVE	2
19	60250260	MTG SPACER-DUMP VALVE	1
20	72060004	CAP SCR 1/4-20X1 HH GR5	4
21	72062104	NUT 1/4-20 LOCK	6
22	72060017	CAP SCR 1/4-20X4-1/2 HH GR5	2
23	89044232	WIRE 14GA RED X 180	1
24	89044232	WIRE 14GA RED X 120	1
25	89044232	WIRE 14GA RED X 6	1
26	89044274	WIRE 14GA BLK X 60	1
27	89044274	WIRE 14GA BLK X 6	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 OIL WILL TAKE THE PATH OF LEAST RESISTANCE

2. THE FUNCTIONS THAT ARE SHUT DOWN, IF OVERLOADED, ARE THE FOLLOWING:

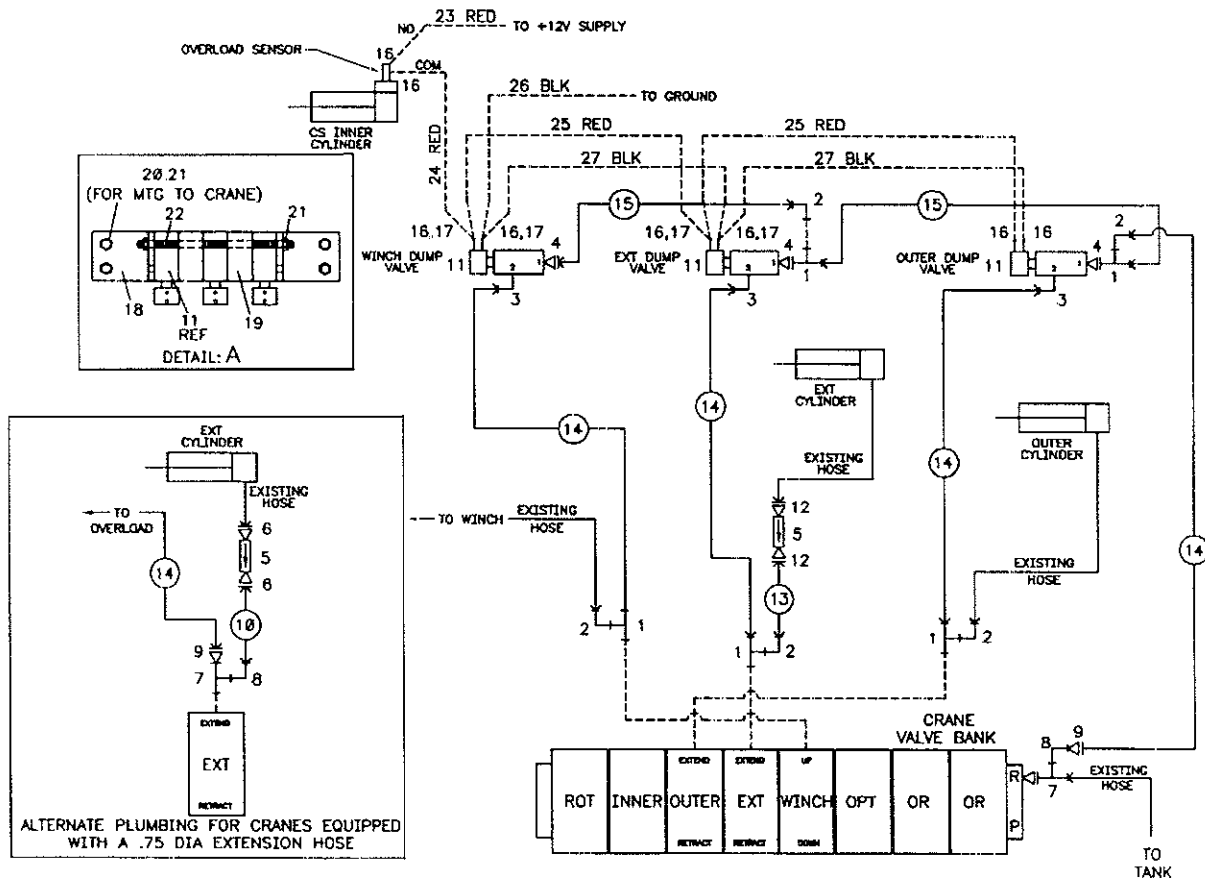
- A OUTER BOOM "EXTEND"
- B EXTENSION CYLINDER "EXTEND"

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

4. ITEMS 11, 18, 19, 20, 21 AND 22 SHOULD BE BOLTED TOGETHER BEFORE THEY ARE MOUNTED TO THE CRANE (SEE DETAIL A).

Figure D-46. OPTION-HYDRAULIC OVERLOAD KIT 2-FUNCTION (51710922)

07-31-96
 1295 4-40
 1495 4-42
 2595 4-25
 9000 4-40
 9800 4-58
 12916 4-22
 18000 4-41
 20017 4-26



ITEM	PART NO.	DESCRIPTION	QTY
1	72532657	TEE #8JIC SWVL NUT RUN	5
2	72532658	ELBOW #8MJIC #8FJIC	5
3	72053763	ELBOW #8MSTR #8MJIC 90°	3
4	72532358	ADAPTER #8MSTR #8MJIC	3
5	73054426	RELIEF VALVE	1
6	72532366	ADAPTER #12MSTR #12MJIC	2
7	72532950	TEE #12JIC SWVL NUT RUN	2
8	72532696	ELBOW #12MJIC #12FJIC SWVL	2
9	72532972	ADAPTER #8MJIC #12FJIC	2
10	51706238	HOSE ASM 3/4X6 FF	1
11	73054576	SOLENOID VALVE	3
12	72532358	ADAPTER #8MSTR #8MJIC	2
13	51706239	HOSE ASM 1/2X5 FF	4
14	51704914	HOSE ASM 3/8X60 FF	1
15	51703701	HOSE ASM 3/8X10 FF	2
16	77040186	TERM-FSLPON 1/4TAB 16-14GA	8
17	77040282	TERM-PIGBAC 1/4TAB 16-14GA	4
18	60250259	MTG ANGLE-DUMP VALVE	2
19	60250260	MTG SPACER-DUMP VALVE	2
20	72060004	CAP SCR 1/4-20X1 HH GR5	4
21	72062104	NUT 1/4-20 LOCK	6
22	60117338	THREADED ROD 1/4-20X6-1/2	2
23	89044232	WIRE 14GA RED X 180	1
24	89044232	WIRE 14GA RED X 120	1
25	89044232	WIRE 14GA RED X 6	2
26	89044274	WIRE 14GA BLK X 60	1
27	89044274	WIRE 14GA BLK X 6	2

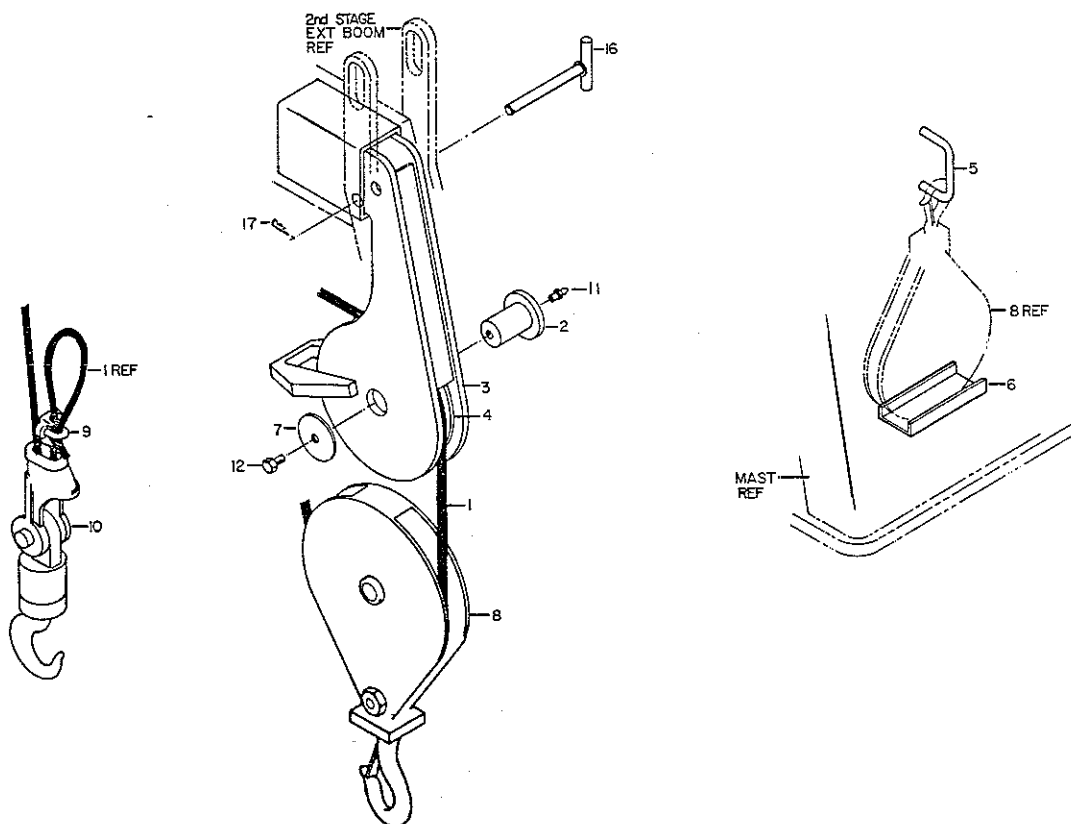
NOTES:

- 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
- THE FUNCTIONS THAT ARE SHUT DOWN, IF OVERLOADED, ARE THE FOLLOWING:
 - OUTER BOOM "EXTEND"
 - EXTENSION CYLINDER "EXTEND"
 - WINCH "UP"
- INSTALL A RELIEF VALVE IN THE EXTEND LINE OF THE EXTENSION CYLINDER SO CYLINDER WILL NOT EXTEND WHEN DUMP SYSTEM IS ACTIVATED
- ITEMS 11, 18, 19, 20, 21 AND 22 SHOULD BE BOLTED TOGETHER BEFORE THEY ARE MOUNTED TO THE CRANE (SEE DETAIL A)

OPTION-HYDRAULIC OVERLOAD KIT 3-FUNCTION (51710923)

ITEM	PART NO.	DESCRIPTION	QTY
1.	70144163	COVER	1
2.	70732718	DIPSTICK ASSEMBLY	1
3.	70034410	DIFFUSER 3/4NPT 33GPM	1
4.	70732791	SCREEN 100MESH	1
5.	70144166	STRAINER 100MESH 20GPM	1
6.	73052001	PLUG 3/4NPTF SQHD MAG	1
7.	76393565	O-RING 6 ID X 6.5 OD	1

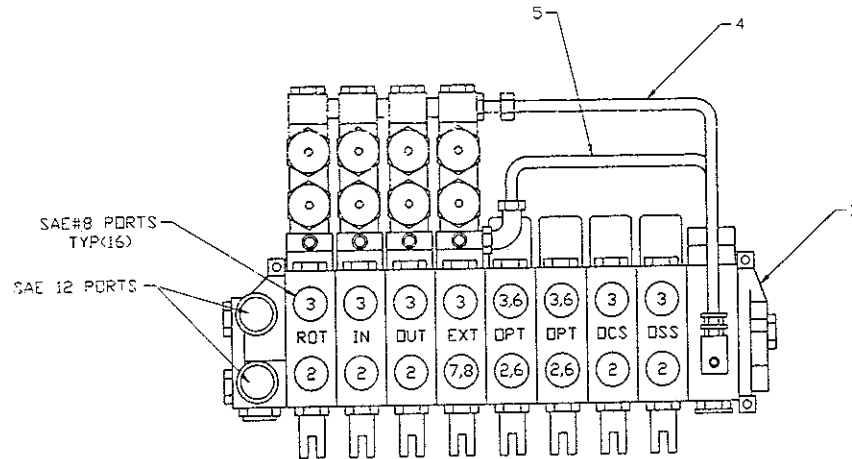
Figure D-48. RESERVOIR ASSEMBLY 22-GALLON (70732579)



ITEM	PART NO.	DESCRIPTION	QTY
1.	60105311	CABLE 1/2 X 100'	1
2.	52705161	PIN	1
3.	52707523	SHEAVE HOLDER-FIXED	1
4.	60030102	SHEAVE	1
5.	60105575	HANGER	1
6.	60105580	SNATCH BLOCK HOLDER	1
7.	60106331	PIN RETAINER PLATE	1
8.	70056253	SHEAVE	1
9.	70058034	CLAMP	1
10.	70731056	COMPLETE HOOK	1
11.	72053508	ZERK 1/8NPT	1
12.	72060147	CAP SCR 5/8-11 X 1 HH GR5	1
16.	52705802	PIN	1
17.	72066145	HAIR PIN	1
18.	99900402	MAST MODIFICATION DWG	1

Figure D-49. CABLE AND HOOK KIT-1/2" X 30.5m 1495-2H (31706395)

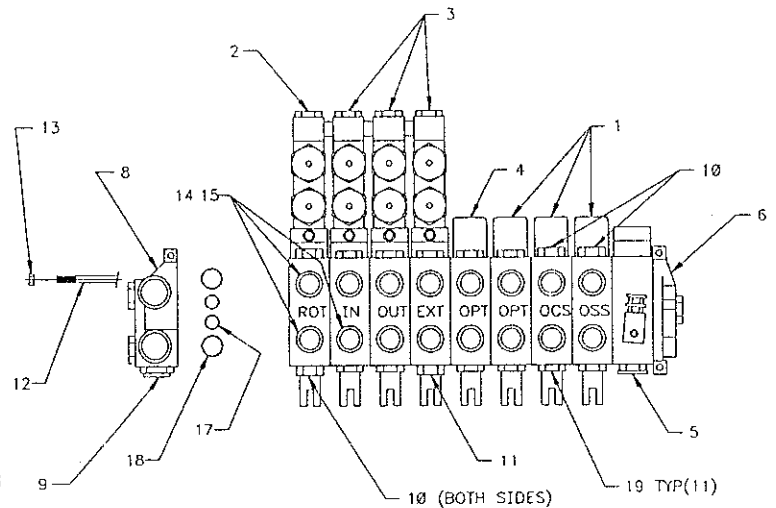
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ITEM PART NO. DESCRIPTION QTY

1.	51706379	VALVEBANK	1
2.	72053763	ELBOW #8MSTR #8MJIC 90°	7
3.	72532666	ELBOW #8MSTR #8MJIC XLG	8
4.	51706383	TUBE ASM-L	1
5.	51706384	TUBE ASM-U	1
6.	72532675	CAP 3/4JIC	4
7.	72532364	ADAPTER #8MSTR #12MJIC	1
8.	72532696	ELBOW #12MJIC #12FJIC SWVL	1

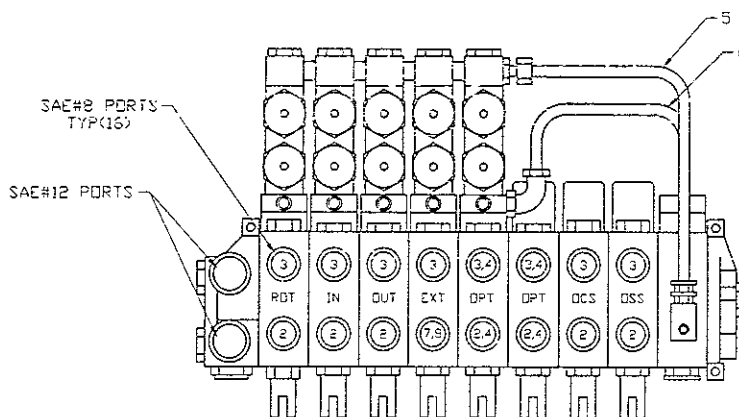
Figure D-51. VALVEBANK ASM 4R/4M (51706390)



ITEM PART NO. DESCRIPTION QTY

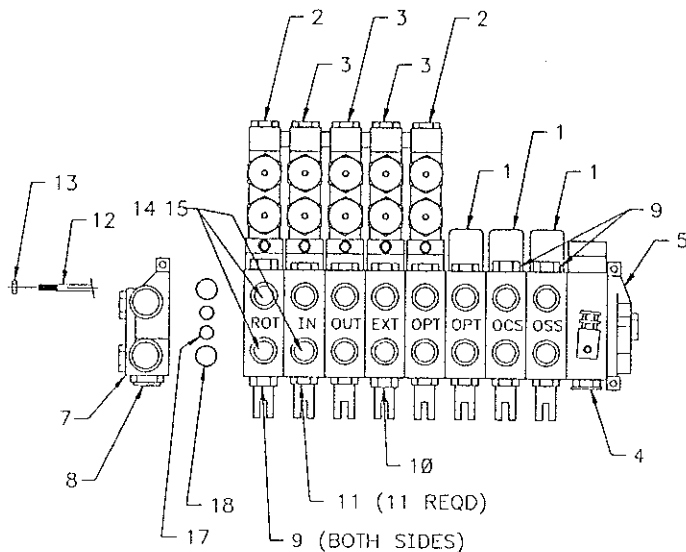
1.	73054432	VALVE SECTION 4WAY SAE#8	3
2.	73054482	VALVE SECTION W/BLDR SPOOL	1
3.	73054468	VALVE SECTION 4WAY SAE#8	3
4.	73054722	VALVE SECTION W/BLDR SPOOL	1
5.	73054502	VALVE SECTION-UTILITY	1
6.	73731241	END COVER RH W/CONV PLUG	1
8.	73731424	END COVER LH (INCL:9)	1
9.	73054673	RELIEF VALVE (PART OF 8)	1 REF
10.	73054007	RELIEF 1800PSI NON-ADJ	4
11.	73054400	RELIEF 2300PSI NON-ADJ	1
12.	73014672	STUD 3/8X18-3/4	3
13.	72062037	NUT 3/8-24 HEX	6
14.	70142402	ORIFICE PLATE	3
15.	70142403	SPRING	3
16.	51393494	O-RING KIT	REF
17.	7Q072117	O-RING	20
18.	7Q072119	O-RING	20
19.	73054010	LOAD CHECK PLUG ASM	11

Figure D-51A. VALVEBANK (51706379)



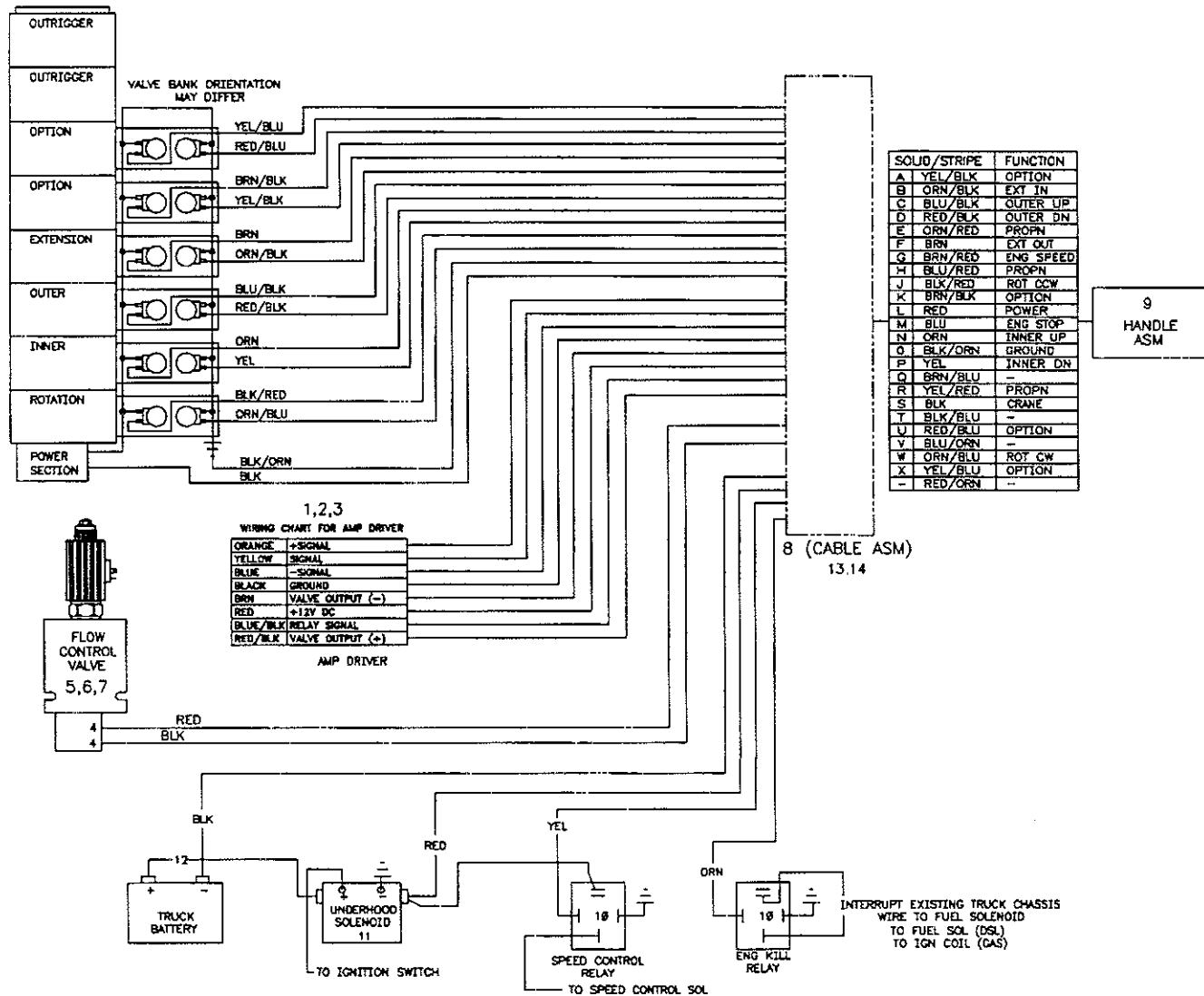
ITEM	PART NO.	DESCRIPTION	QTY
1.	51706380	VALVEBANK	1
2.	72053763	ELBOW #8MSTR #8MJIC 90°	7
3.	72532666	ELBOW #8MSTR #8MJIC XLG	8
4.	72532675	CAP 3/4JIC	4
5.	51706381	TUBE ASM-L	1
6.	51706382	TUBE ASM-U	1
7.	72532364	ADAPTER #8MSTR #12MJIC	1
8.	72532696	ELBOW #12MJIC #12FJIC SWVL	1

Figure D-52. VALVEBANK ASM 5R/3M (51706391)



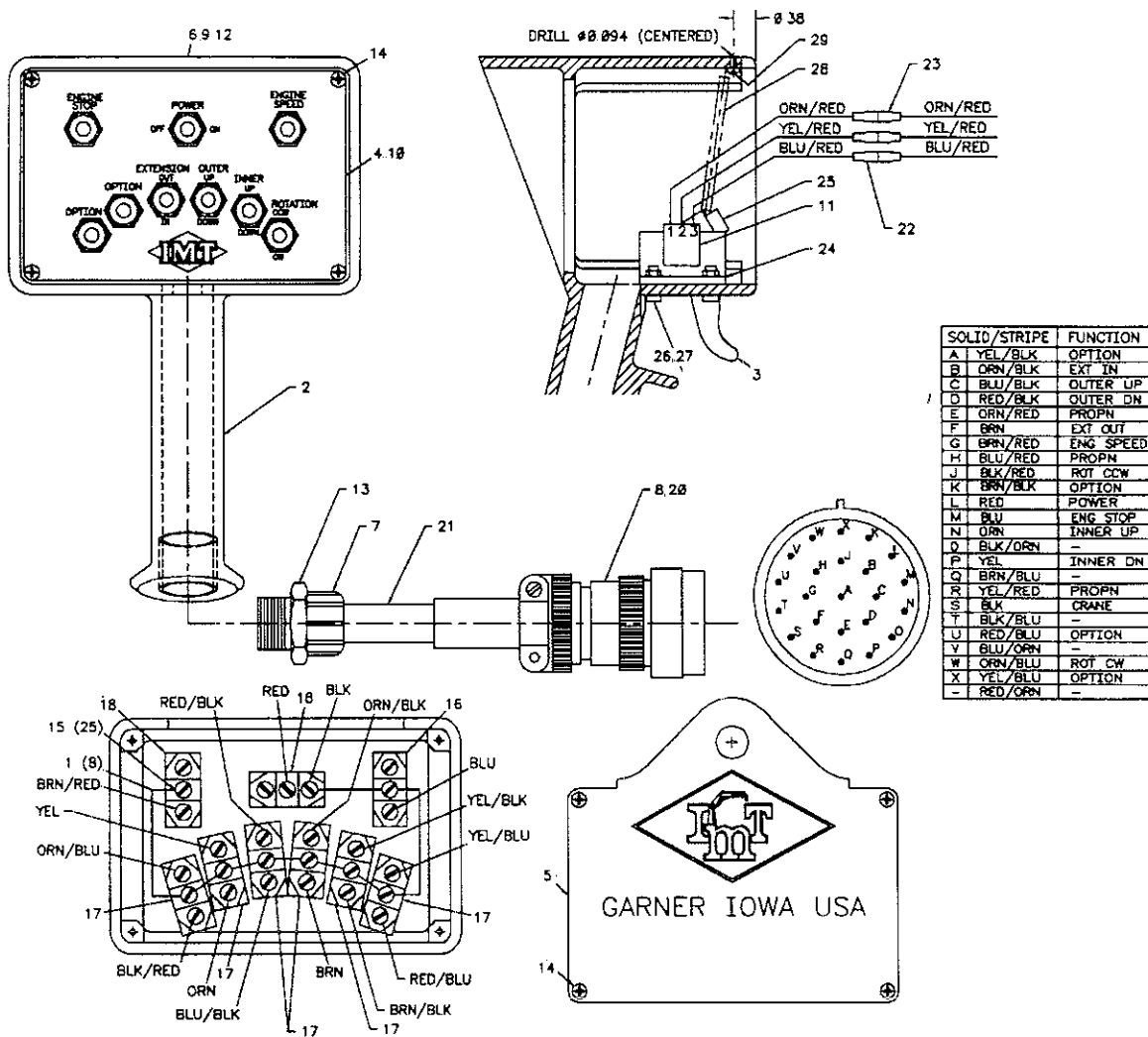
ITEM	PART NO.	DESCRIPTION	QTY
1.	73054432	VALVE SECTION 4WAY SAE#8	3
2.	73054482	VALVE SECTION W/BLDR SPOOL	2
3.	73054468	VALVE SECTION 4WAY SAE#8	3
4.	73054502	VALVE SECTION-UTILITY	1
5.	73731241	END COVER RH W/CONV PLUG	1
7.	73731424	END COVER LH (INCL:8)	1
8.	73054673	RELIEF VALVE (PART OF 7)	1 REF
9.	73054007	RELIEF 1800PSI NON-ADJ	4
10.	73054400	RELIEF 2300PSI NON-ADJ	1
11.	73054010	LOAD CHECK PLUG ASM	11
12.	73014672	STUD 3/8X18-3/4	3
13.	72062037	NUT 3/8-24 HEX	6
14.	70142402	ORIFICE PLATE	3
15.	70142403	SPRING	3
16.	51393494	O-RING KIT	REF
17.	7Q072117	O-RING	20
18.	7Q072119	O-RING	20

Figure D-52A. VALVEBANK (51706380)



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.	51713568	CABLE ASM	1
9.	51713429	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

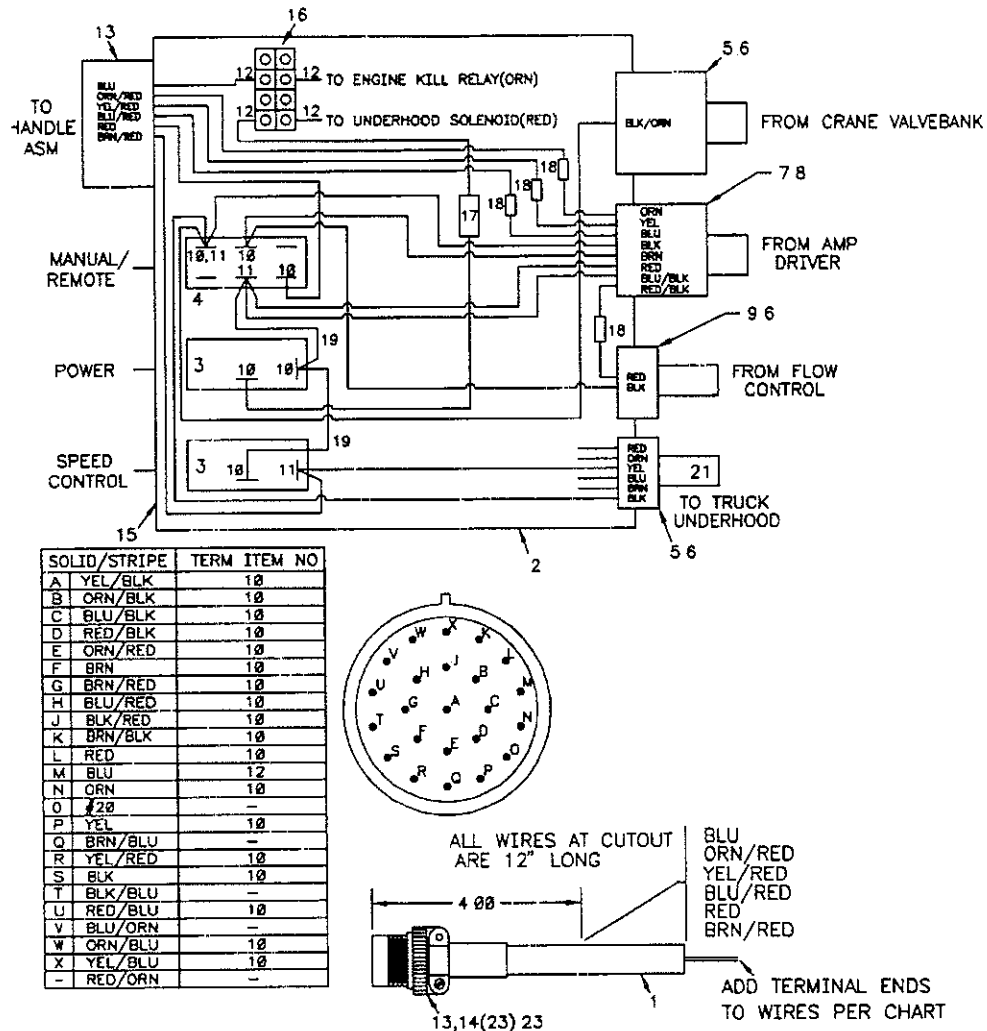
PROPORTIONAL REMOTE CONTROL KIT (90713554)



ITEM	PART NO.	DESCRIPTION	QTY
1.	60045031	WIRE 18GA X 4 GRN	8
2.	60119335	CONTROL HANDLE BACK	1
3.	60111141	TRIGGER	1
4.	60119277	COVER	1
5.	70034306	BACK COVER	1
6.	70029119	SERIAL NUMBER PLACARD	1
7.	77044096	CORD GRIP	1
8.	77044621	PIN	23
9.	70392862	DECAL-DGR RC ELECTRO	1
10.	71394282	DECAL-RC HANDLE	1
11.	51707507	POTENTIOMETER ASM (INCL:22)	1
12.	72066340	POP RIVET	2
13.	72531833	REDUCER BUSHING 3/4-1/2NPT	1
14.	72061009	SHT MTL SCR #6X3/4 PH	8

ITEM	PART NO.	DESCRIPTION	QTY
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 45FT	1
22.	77040047	TERMINAL MSLPON(PART OF 11)	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

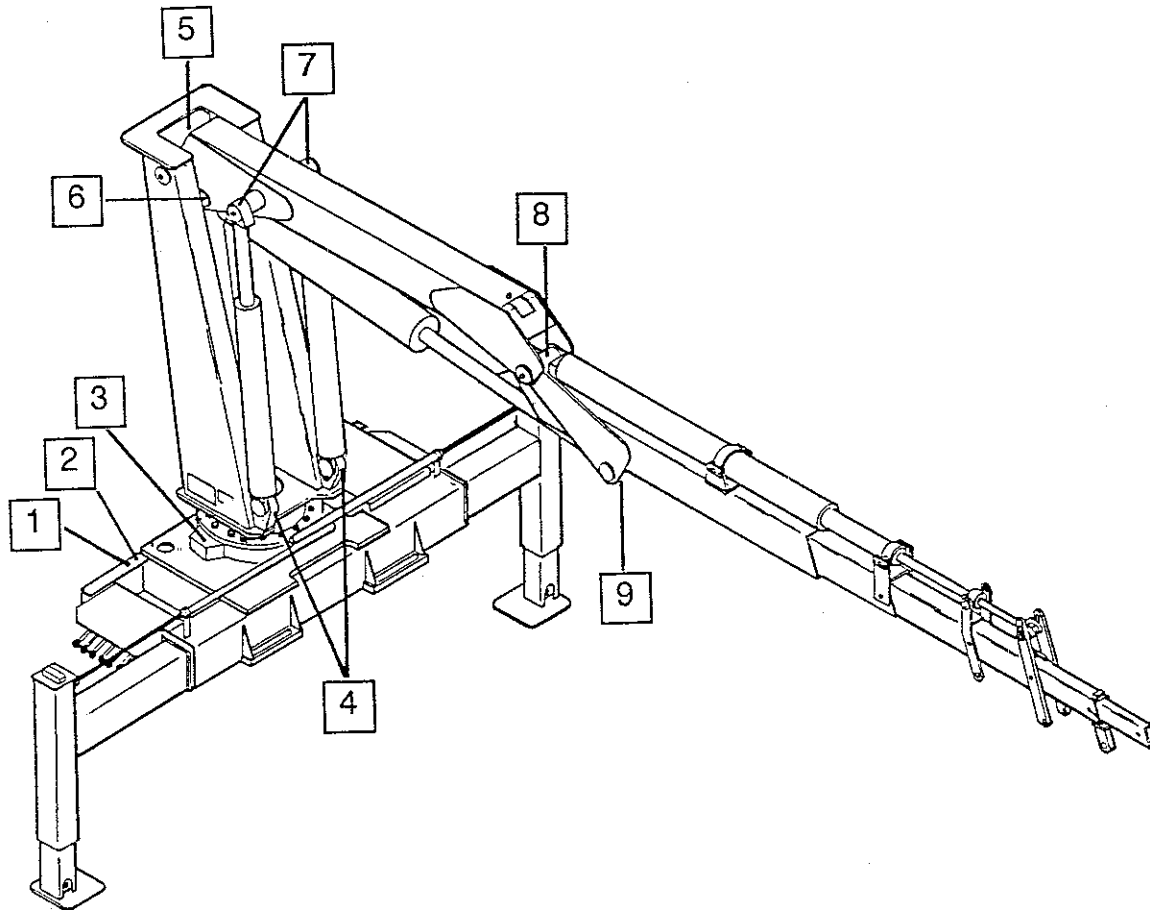
PROPORTIONAL REMOTE HANDLE ASSEMBLY (51713429)



ITEM	PART NO.	DESCRIPTION	QTY
1.	89044100	CABLE 18GA/24WIRE X 94	1
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 1/2	1
10.	77040186	TERMINAL 1/4 FSLPON 16-14GA25	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/6WIR	84"
23.	77044667	PLUG-CAP	1

CABLE ASM-JIC BOX 94" (51713568)

Section 5. REFERENCE



ITEM	LOCATION DESCRIPTION	LUBRICANT	FREQUENCY
1.	DRIVE GEAR GREASE EXTENSION	SHELL ALVANIA 2EP OR SHELL RETINAX "A"	WEEKLY
2.	TURNTABLE/BEARING GREASE EXTENSION		
	*ROTATE CRANE WHILE GREASING		
3.	PINION GEAR		
4.	MAST/INNER CYLINDER HINGE PIN		
5.	MAST/INNER BOOM HINGE PIN		
6.	OUTER CYLINDER BASE		
7.	INNER CYLINDER ROD		
8.	INNER BOOM/OUTER BOOM HINGE PIN		
9.	OUTER CYLINDER ROD		

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.

Figure E-1. GREASE ZERK LOCATIONS AND LUBRICANT REQUIREMENTS

TORQUE DATA CHART

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.

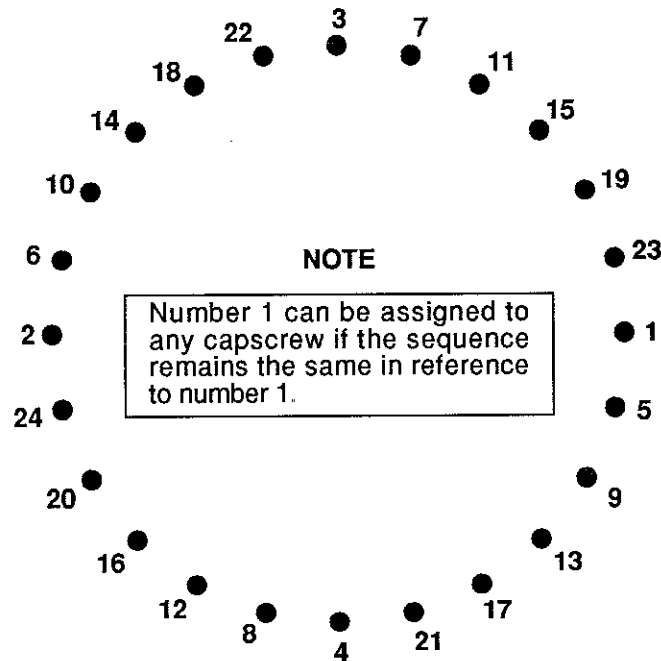
1. Bolt manufacturer's particular specifications should be consulted when provided.
2. Flat washers of equal strength must be used.
3. All torque measurements are given in kilogram-meters.
4. Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants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

Figure E-2. TORQUE DATA CHARTS

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 cap screw used.
2. Follow the tightening sequence shown in the diagram. Note that the quantity of cap screws may differ from the diagram, but the sequence must follow the criss-cross pattern as shown in the diagram.
3. Torque all cap screws to approximately 40% of the specified torque value, by following the sequence. (EXAMPLE: $40 \times 37 \text{ kg-m} = 15 \text{ k-m}$)
4. Repeat Step 3, but torqueing all cap screws to 75% of the specified torque value. Continue to follow the tightening sequence. (EXAMPLE: $75 \times 37 \text{ kg-m} = 28 \text{ kg-m}$)
5. Using the proper sequence, torque all cap screws to the listed torque value as determined from the Torque Data Chart.

Figure E-3. TURNTABLE BEARING FASTENER TIGHTENING SEQUENCE

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.

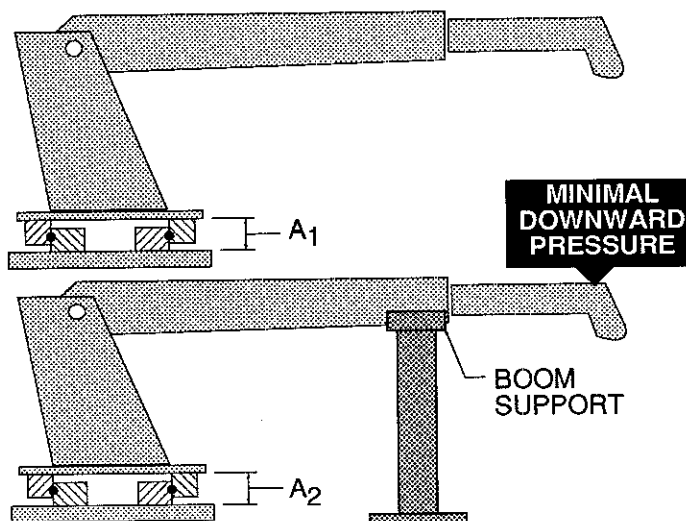
With the crane horizontal and fully extended, measure between the top and bottom mounting surfaces of the turntable bearing (A_1), using a dial indicator for accuracy.

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 A_2 .

STEP 3.

Subtract A_1 from A_2 to determine tilt and compare the result with the accompanying chart.



COMPARISON CHART - MODEL TO MEASURED TILT DIMENSION					
NOTE THE FIGURES LISTED IN THIS CHART ARE SERVICE GUIDELINES AND DO NOT, IN THEMSELVES, REQUIRE THAT THE BEARING BE INSPECTED. IF THERE IS REASON TO SUSPECT AN EXCESS OF BEARING WEAR AND THE MEASURED TILT DIMENSION EXCEEDS THE DIMENSION LISTED, REMOVE THE BEARING FOR INSPECTION.	IMT CRANE OR TIREHAND MODEL	814 1007 1014 2010 215 2015 2109 2815 3016 315A 320H 3515 3617 3625 421 425 5016 TH7 BODY ROT'N TH1449A BODY ROT'N TH15A CLAMP TH1836A CLAMP TH2551 CLAMP TH2557 CLAMP TH2557A CLAMP	4817 4825 516 525 5826 6014 6425 725 7020 7025 8025 8031 TH10 BODY ROT'N TH12 BODY ROT'N	32018 32030 HAWK-H1150 HAWK-H1150TL HAWK-H4961	9616 9825 9831/1495 10020 10025 1216 1325 1331 13031 13034 13426 14018 14048 14126 15033 1725 18026 20017 HAWK-H1200 TH1836 BODY ROT'N TH1836A BODY ROT'N TH2551 BODY ROT'N TH2557 BODY ROT'N TH2557A BODY ROT'N
	BALL DIA. (REF)	22mm	25mm	30 - 32mm	44mm
	TILT DIM. ($A_1 - A_2$)	1.524mm	1.778mm	1.905mm	2.286mm

Figure E-5. TURNTABLE BEARING INSPECTION FOR REPLACEMENT

Spare Parts List

1-Year Supply

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 no down-time waiting for parts. Obviously, there may be part failures not covered by this list. The item numbers shown on this list correspond to the item numbers on the figure listed.

FIG	ITEM	PART NO>	DESCRIPTION	QTY
D-4. BASE AND OUTRIGGER ASSEMBLY (41709196)				
	9.	60020120	BUSHING	1
	10.	60020121	BUSHING	1
	11.	60020122	BUSHING	1
	12.	60020124	BUSHING	1
	13.	71056074	DRIVE GEAR	1
	20.	70034295	BEARING	1
	26.	7Q072112	O-RING	2
	28.	71056072	INTERMEDIATE GEAR	1
	29.	71056073	PINION GEAR	1
	30.	71056273	TURNTABLE GEAR BEARING	1
	40.	60030119	WEAR PAD	1
	44.	72063115	WASHER 7/8 FLAT	23
	48.	60030121	WEAR PAD	1
	52.	72601148	CAP SCR 7/8-9X3 HHGR8	23
	53.	73051004	MOTOR	1
	60.	60030149	WEAR PAD	1
D-5. POWER OUT OUTRIGGER CYLINDER (3A170890)				
	6	9A050608	SEAL KIT	2
D-6. POWER DOWN OUTRIGGER CYLINDER (3B171890)				
	8	73054004	VALVE	2
	20.	9C121417	SEAL KIT	2
D-7. MAST ASSEMBLY (41709507)				
	6.	72060209	CAP SCR 3/4-10X2-3/4 HHGR8	18
	7.	72063116	WASHER 3/4 FLAT HARD	18
D-8. MAST ASSEMBLY WITH CHAIR (41709508)				
	7.	72060209	CAP SCR 3/4-10X2-3/4 HHGR8	18
	8.	72063116	WASHER 3/4 FLAT HARD	18
D-9. INNER BOOM ASSEMBLY (41705766)				
	13.	7BF81225	BUSHING	17
D-10. INNER BOOM CYLINDER (3C279840)				
	1.	7BF81025	BUSHING	4
	2.	73054242	VALVE	2
	18.	7BF81225	BUSHING	4
	21.	9C182423	SEAL KIT	2
D-11. OUTER BOOM ASSEMBLY (41709509)				
	6.	7BF81225	BUSHING	4
	10.	60030120	WEAR PAD	1
D-12. OUTER BOOM CYLINDER (3C282840)				
	7.	9C222829	SEAL KIT	1
	21.	7BF81025	BUSHING	8
	22.	7BF81225	BUSHING	2
D-13. EXTENSION BOOM ASSEMBLY-2H (41709510)				
	8.	60103575	HOOK 8-TON	1
	11.	60030121	WEAR PAD	1
	13.	60030119	WEAR PAD	1
	14.	60030118	WEAR PAD	1
D-14. EXTENSION CYLINDER (3K152920)				
	10.	73054817	COUNTERBALANCE VALVE	1
	11.	73054902	COUNTERBALANCE VALVE	1
	13.	9X082900	SEAL KIT	1

Spare Parts List (cont)

D-15. EXTENSION BOOM ASSEMBLY-3H (41709511)

8.	60103575	HOOK 8-TON	1
11.	60030121	WEAR PAD	1
13.	60030119	WEAR PAD	1
14.	60030118	WEAR PAD	1
16.	60030201	WEAR PAD	1
17.	60030200	WEAR PAD	1

D-16. EXTENSION BOOM ASSEMBLY-3H1M (41709512)

8.	60103575	HOOK 8-TON	1
11.	60030121	WEAR PAD	1
13.	60030119	WEAR PAD	1
14.	60030118	WEAR PAD	1
16.	60030201	WEAR PAD	1
17.	60030200	WEAR PAD	1

D-17. EXTENSION BOOM ASSEMBLY-3H2M (41709513)

8.	60103575	HOOK 8-TON	1
11.	60030121	WEAR PAD	1
13.	60030119	WEAR PAD	1
14.	60030118	WEAR PAD	1
16.	60030201	WEAR PAD	1
17.	60030200	WEAR PAD	1

D-18. TELESCOPIC EXTENSION CYLINDER (3K148920)

15.	73054817	COUNTERBALANCE VALVE	1
16.	73054902	COUNTERBALANCE VALVE	1
17.	9X355900	SEAL KIT	1

D-48. RESERVOIR ASSEMBLY (70732579)

4.	70732791	SCREEN 100-MESH	
5.	70144166	STRAINER 100-MESH 20GPM	
	73052040	RETURN FILTER	



Section 6.

Crane Inspection Requirements

IMT recommends that employers perform daily and monthly inspections and maintain the results of inspections for each hoisting machine and piece of equipment. It also recommends a thorough annual inspection of hoisting machinery. This inspection is to be made by a competent person, or by a government or private agency authorized to do so. Records of the dates and results of inspections for each hoisting machine and piece of equipment should also be maintained by the employer. The following inspections are to be performed on Iowa Mold Tooling Co., Inc. truck-mounted hydraulic cranes in order to provide the safest work environment possible.

TO BE FILLED IN BY OWNER OF CRANE
CRANE SERIAL NO:
DATE LAST INSPECTED:
NEXT INSPECTION DUE:
INSPECTED BY:

TO BE FILLED IN BY A COMPETENT PERSON, OR BY A GOVERNMENT OR PRIVATE AGENCY AUTHORIZED TO INSPECT THIS EQUIPMENT
DATE INSPECTED:
IS THE UNIT OPERATIONAL? YES ☐ NO ☐
SIGNATURE

INSTRUCTIONS

All inspections listed below should be performed as the schedule indicates. It is not necessary to record daily inspections but they must be verified and recorded monthly. The inspections listed on this form do not eliminate or replace any other prescribed maintenance or inspections which may be referenced in other manuals pertaining to your equipment. A copy of this completed form should remain with the applicable unit at all times.

INSPECTIONS TO BE PERFORMED BY EMPLOYER

ITEM	DESCRIPTION	FREQUENCY			INSP. RESULT		REPAIRED?		DATE INSPECTED
		DAILY	WEEKLY	MONTHLY	ACCEPT	REJECT	YES(Y) NO(N)	DATE	
HYDRAULIC SYSTEM LEAKS	Visually inspect hoses, hyd tubes and fittings for hydraulic leaks								
LOOSE PARTS	Check for the presence of loose parts, missing fasteners and safety guards								
STRUCTURAL DAMAGE	Visually examine crane for broken welds, cracks, deficiencies, bends and dents								
ROTATION SYSTEM LEAKS	Visually check rotation system motor brake, and connections for leaks								
WIRE ROPE	Check for conditions outlined in "Wire Rope Inspection"								
ELECTRICAL- REMOTE CONTROL OPTION	Operate remote control to check for proper operation								
ELECTRIC- LIGHTS AND OPTIONS	Operate lights and other electrical devices to check for proper operation								
HYDRAULIC FLUID LEVEL	Visually check hydraulic fluid level of reservoir								
CONTROL VALVES- LEAKS / CRACKS	Visually examine control valves for leaks, cracks or other deficiencies								
CONTROL VALVES- OPERATION	Operate control valves to check for smooth operation of each function and possible excessive wear of valves								
ANTI-TWO BLOCKING DEVICE	Test the Anti-Two Blocking Device as described in "Anti-Two Blocking Device Inspection"								

CONTINUED ON FOLLOWING PAGE

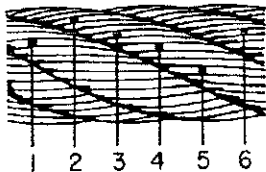
INSPECTIONS TO BE PERFORMED BY EMPLOYER (continued)

ITEM	DESCRIPTION	FREQUENCY			INSP. RESULT		REPAIRED?		DATE INSPECTED
		DAILY	WEEKLY	MONTHLY	ACCEPT	REJECT	YES(Y) NO(N)	DATE	
CRANE HOOK	Visually examine hook for enlarged throat opening, twist and presence of safety latch. Also check for conditions outlined in "Hook Inspection"								
ELECTRICAL SYSTEM WEAR	Check for deterioration of parts, the presence of dirt or moisture near contacts and worn or frayed wiring								
HYDRAULIC HOSE WEAR	Visually examine all hydraulic hoses and fittings for possible blistering, abrasions cuts, cracking or deterioration								
HOLDING VALVES-LOAD TEST	Perform a load holding test with loaded boom See "Holding Valve Inspection"								
POWER TAKE-OFF	Check transmission for proper lubrication, signs of leakage, alignment and PTO mounting bolt torque.								
ROTATION SYSTEM	Check torque of both upper and lower rotation gear bearing mounting bolts								
ALL FASTENERS	Visually examine all fasteners (screws, nuts & retaining rings) for looseness, deformation and corrosion								
STRUCTURAL DAMAGE	Visually examine crane for any broken welds, cracks, structural deficiencies, bends or dents								
CONTROLS	Check all controls for excessive wear cleanliness and proper functioning								
ROTATION SYSTEM MOUNTING BOLTS	Check torque of both upper and lower rotation gear bearing mounting bolts								
HYDRAULIC FLUID	Check quality of hydraulic fluid and for the presence of water								
PUMP & MOTOR	Check for loose fasteners, unusual noise, vibration, reduced operating speed and excessive heating								
HYDRAULIC CYLINDERS	Visually examine all cylinders for leaks; scored, nicked or dented rods; dented case deformed pin boss, and corrosion.								
WINCH, SHEAVES & DRUM	Check for cracks, and worn or damaged sheaves. Visually examine winch drum for irregularities								
DECALS	Visually examine the crane for the presence of all warning decals, instructional decals and capacity charts. Inspect all decals for legibility								

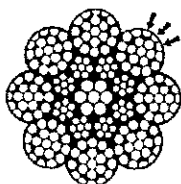
WIRE ROPE INSPECTION

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

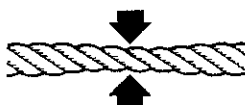
- A Corrosion can be cause for replacement. Any development of corrosion must be noted and monitored closely.
- B When there are either 3 broken wires in one strand or a total of six broken wires in all strands in any one rope lay.



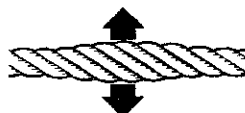
- C When flat spots on the outer wires appear and those outside wires are less than 2/3 the thickness of the unworn outer wire.



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



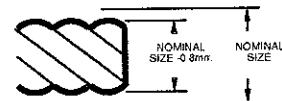
- E When kinking, crushing, birdcaging or other distortion occurs.



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



- G When the diameter is reduced from nominal size by 0.8mm 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.)

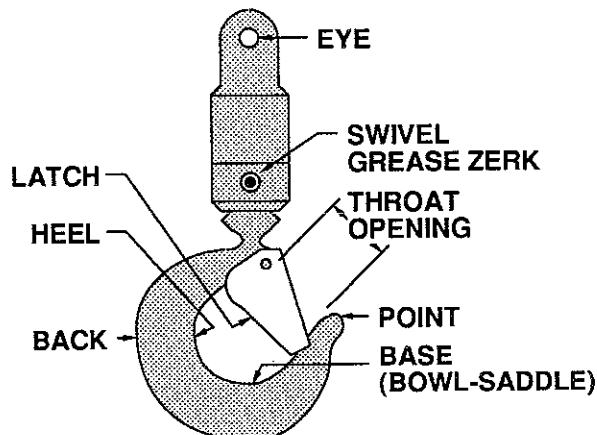
D. LATCH

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

TORQUE DATA CHART

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 disulphide, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of Loctite does not affect the torque values listed above.
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

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	1495 Crane	MANUAL PART NO.	99900724-11/93
SUBMITTED BY				
COMPANY				
ADDRESS				
CITY, STATE, ZIP				
TELEPHONE				

☐ ERROR FOUND

LOCATION OF ERROR (page no.): _____

DESCRIPTION OF ERROR: _____

☐ REQUEST FOR ADDITION TO MANUAL

DESCRIPTION OF ADDITION: _____

REASON FOR ADDITION: _____

MAIL TO: IOWA MOLD TOOLING Co., Inc.
Box 189,
Garner IA 50438
ATTN: Technical Publications

LIMITED WARRANTY

WARRANTY COVERAGE - Products manufactured by Iowa Mold Tooling Co., Inc (IMT) are warranted to be free from defects in material and workmanship, under proper use, application and maintenance in accordance with IMT's written recommendations, instructions and specifications as follows:

1. Ninety (90) days; labor on IMT workmanship from the date of shipment to the end user.
2. One (1) year; original IMT parts from the date of shipment to the end user

IMT's obligation under this warranty is limited to, and the sole remedy for any such defect shall be the repair or replacement (at IMT's option) of unaltered parts returned to IMT, freight prepaid, and proven to have such defect, provided such defect occurs within the above stated warranty period and is reported within fourteen (14) days of its occurrence.

IMPLIED WARRANTY EXCLUDED - This is the only authorized IMT warranty and is in lieu of all other express or implied warranties or representations, including any implied warranties of merchantability or fitness for any particular purpose or of any other obligations on the part of IMT.

ITEMS EXCLUDED - The manufacturer gives no warranty on any components purchased by the manufacturer, and such components as are covered only by the warranties of their respective manufacturers

WARRANTY CLAIMS - Warranty claims must be submitted and shall be processed in accordance with IMT's established warranty claim procedure.

WARRANTY SERVICE - Warranty service will be performed by any IMT distributor authorized to sell new IMT products of the type involved or by any IMT Service Center authorized to service the type of product involved or by IMT in the event of direct sales made by IMT. At the time of requesting warranty service, the purchaser must present evidence of the date of delivery of the product. The purchaser shall pay any premium for overtime labor requested by the purchaser, any charge for making service calls and for transporting the equipment to the place where warranty work is performed

WARRANTY VOIDED - All obligations of IMT under this warranty shall be terminated: (1) if service other than normal maintenance or normal replacement of service items is performed by someone other than an authorized IMT dealer, (2) if product is modified or altered in ways not approved by IMT.

PURCHASER'S RESPONSIBILITY - This warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper protection in storage, or improper use. The purchaser has the obligation of performing the care and maintenance duties discussed in IMT's written recommendations, instructions and specifications. Any damage which results because of purchaser's failure to perform such duties shall not be covered by this warranty. The cost of normal maintenance and normal replacement of service items such as filters, belts, etc. shall be paid by the purchaser.

CONSEQUENTIAL DAMAGES - The only remedies the purchaser has in connection with the breach or performance of any warranty on IMT products are those set forth above. In no event will the dealer, IMT or any company affiliated with IMT, be liable for business interruptions, loss of sales and/or profits, rental or substitute equipment, costs of delay or for any other special, indirect, incidental or consequential losses, costs or damages.

REPRESENTATIONS EXCLUDED - IMT products are subject to no expressed, implied or statutory warranty other than herein set forth, and no agent, representative or distributor of the manufacturer has any authority to alter the terms of this warranty in any way whatsoever or to make any representations or promises, express or implied, as to the quality or performance of IMT products other than those set forth above.

CHANGE IN DESIGN - IMT reserves the right to make changes in design or improvements upon its products without imposing any obligation upon itself to install the same upon its products theretofore manufactured.

Effective January, 1985

This parts manual is provided to the user to assist in servicing the equipment. It is the property of Iowa Mold Tooling Co., Inc and, as such, may not be reproduced either whole or in part, whether by chemical, electrostatic, mechanical or photographic means without the expressed written permission of an officer of Iowa Mold Tooling Co., Inc. One manual is provided with each piece of new equipment and additional manuals may be obtained at a nominal price.



IOWA MOLD TOOLING CO., INC.

BOX 189, GARNER, IA 50438-0189

TEL: 515-923-3711

PRODUCT SUPPORT FAX: 515-923-2424