



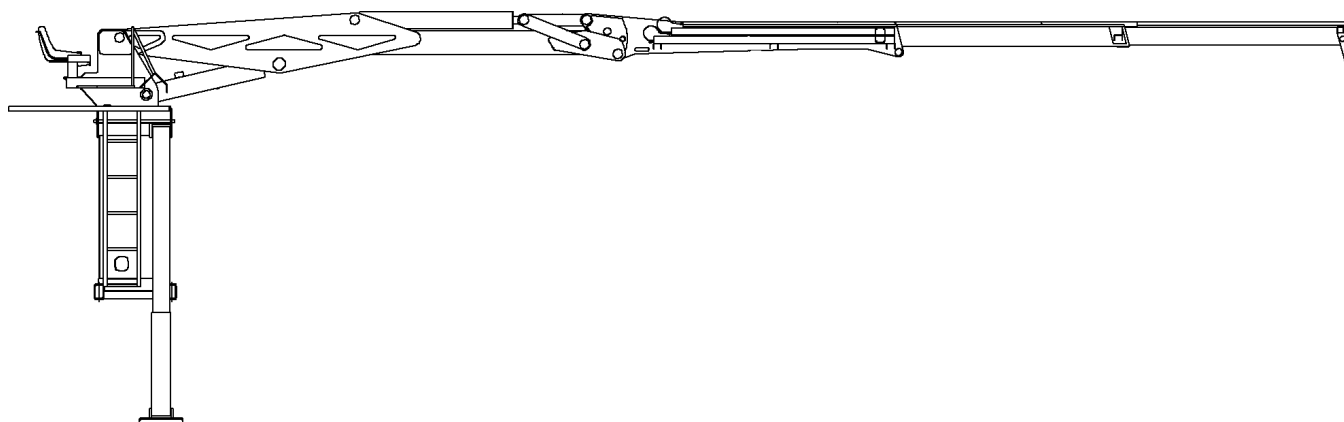
00016042:99900831: 20040126



16000 Series Crane 42' Boom (2H)

Volume 2 - PARTS AND SPECIFICATIONS

Section 1	SPECIFICATIONS
Section 2	CRANE REFERENCE
Section 3	REPLACEMENT PARTS
Section 4	GENERAL REFERENCE



IOWA MOLD TOOLING CO., INC.

BOX 189, GARNER, IA 50438-0189

TEL: 641-923-3711

TECHNICAL SUPPORT FAX: 641-923-2424

MANUAL PART NUMBER 99900831



00016042:99900831:19980522

INTRODUCTION

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

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

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

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

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

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

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

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

NOTE

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

CAUTION

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

WARNING

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

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

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



00016042:99900831:19971029

1-1

SECTION 1. 16042 CRANE SPECIFICATIONS

GENERAL SPECIFICATIONS	3
PERFORMANCE CHARACTERISTICS	3
CYLINDERS	3
CYLINDER HOLDING VALVES	4
ROTATION SYSTEM	4
HYDRAULIC SYSTEM	4
CAPACITY ALERT	4
MINIMUM CHASSIS SPECIFICATIONS	4
GEOMETRIC CONFIGURATION	5
OUTRIGGER DIMENSIONS	5
CAPACITY CHART	6
REFERENCE DIMENSIONS	7



00016042:99900831:19971029

1-2
NOTES

[illegible]



00016042:99900831: 19971029

1-3



16000 SERIES CRANE 42' BOOM (2H) SPECIFICATIONS

GENERAL SPECIFICATIONS

CRANE RATING	160,000 ft-lbs (22.13 ton-meters)
REACH (from centerline of rotation)	42'-0" (12.80m)
HYDRAULIC EXTENSION (double)	87" + 87" (221.0 + 221.0cm)
* MAXIMUM LIFTING HEIGHT	54'-3" (16.53m)
CRANE WEIGHT base unit with platform and chair	9550 lbs (4332 kgs)
OUTRIGGER SPAN at ground level	17'-6" (5.33m)
*CRANE STORAGE HEIGHT	13'-3" (4.04m)
MOUNTING SPACE REQUIRED	36" (91cm)
OPTIMUM PUMP CAPACITY tandem pump (each section)	20 + 20 U.S. GPM (75.7 + 75.7 liters/min)
OIL RESERVOIR CAPACITY	40 Gallon (151 liters)
**VERTICAL CENTER OF GRAVITY from base of crane	62" (1.57m)
**HORIZONTAL CENTER OF GRAVITY from centerline of rotation	95" (2.41m)
* Based on 40" (102cm) truck frame height.	
** Based on crane with chair and platform in stored position, extension boom retracted with fork and rotator installed - fork, rotator and link weigh approximately 600 lbs (272 kg).	

PERFORMANCE CHARACTERISTICS

ROTATION:	450° (7.85 rad)	30 seconds/450° 24 seconds/360°
INNER BOOM ELEVATION:	-5° to +80° (-.09 to +1.40 rad)	17 seconds
OUTER BOOM ARTICULATION:	170° (2.97 rad)	17 seconds
EXTENSION BOOM:	87" + 87" (221.0 + 221.0cm)	4.5 + 3.5 seconds
OUTRIGGER EXTENSION:	52-1/2" (133.4cm)	6.5 seconds
* All times are theoretical and based on an optimum pump capacity of 20 GPM.		

CYLINDERS

	BORE	STROKE
INNER BOOM CYLINDER	7" (17.8cm)	34" (86.4cm)
OUTER BOOM CYLINDER	6-1/2" (16.5cm)	50" (127.0cm)
EXTENSION BOOM CYLINDER	3" + 3" (7.6+7.6cm)	87"+87" (221+ 221cm)
OUTRIGGER CYLINDERS	3-1/2" (8.9cm)	52-1/2" (133.4cm)

POWER SOURCE

Integral-mounted tandem hydraulic pump and PTO application. Other standard power sources may be utilized. Minimum power required is 70 horsepower.

IOWA MOLD TOOLING CO., INC.
BOX 189, GARNER, IA 50438-0189
TEL: 515-923-3711 FAX: 515-923-2424



00016042:99900831: 19950908

1-4

CYLINDER HOLDING VALVES

The holding sides of all cylinders are equipped with integral-mounted counter-balance valves or load holding check valves to prevent sudden cylinder collapse in case of hose or other hydraulic component failure. In addition, the outer and extension cylinders feature double counter-balance valves. The extension cylinders also feature a regenerative circuit which reduces extension time. The outrigger cylinders feature dual load holding check 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. The dual load holding check valves in the outrigger cylinders prevent the cylinders from drifting down during transport and prevent the cylinders from collapsing should a hose break when the outriggers are set.

ROTATION SYSTEM

Rotation of the loader is accomplished through a turntable bearing, powered by a high torque hydraulic motor through a heavy-duty gear box equipped with a heat treated pinion. The pinion runs on the external teeth of the turntable bearing to accomplish the rotation function. Standard rotation is 450° (7.85 rad.). Total gear reduction is 123.5:1.

HYDRAULIC SYSTEM

Open-centered, full-pressure system with tandem pump requiring 20 + 20 U.S. GPM (75.7 + 75.7 liters/min) optimum oil flow at 3000 PSI (206.9 bar). Control valve consists of two four-spool, stack type valvebanks. All crane (excluding outriggers) and wallboard functions are operated by either joy sticks or foot throttles via a pilot source of oil from the valve banks. Outrigger controls - located at the base of the crane - are of the push/pull type, connected directly to the valvebank. System includes hydraulic oil reservoir, suction-filter, return-filter and control valvebank.

CAPACITY ALERT

A pressure sensor mounted on the inner-boom cylinders and connected hydraulically to the down side of the inner boom, the lift side of the outer boom and extend side of the extension boom provides a capacity alert system. If the operator tries to lift a load in excess of crane capacity, the inner boom lift and lower, the outer boom lift and the extension out functions will not operate. To relieve the condition, the outer boom can be lowered or the extension retracted.

MINIMUM CHASSIS SPECIFICATIONS

BODY STYLE	Conventional Cab	Conventional Cab
WHEELBASE	259"	(657.9cm)
CAB-TO-AXLE	200"	(508.0cm)
FRAME SECTION MODULUS	30 in ³	(492 cc)
RBM	3,300,000 in-lbs	(38,021 kg-m)
FRONT AXLE RATING	16,000 lbs	(7258 kg)
REAR AXLE RATING	38,000 lbs	(17,237 kg)
TRANSMISSION	5-speed	5-speed

In addition to these specifications, heavy-duty electrical and cooling systems and tandem rear axles with dual wheels are required. It is recommended that the vehicle be equipped with an electric engine tachometer and auxiliary brake locks.

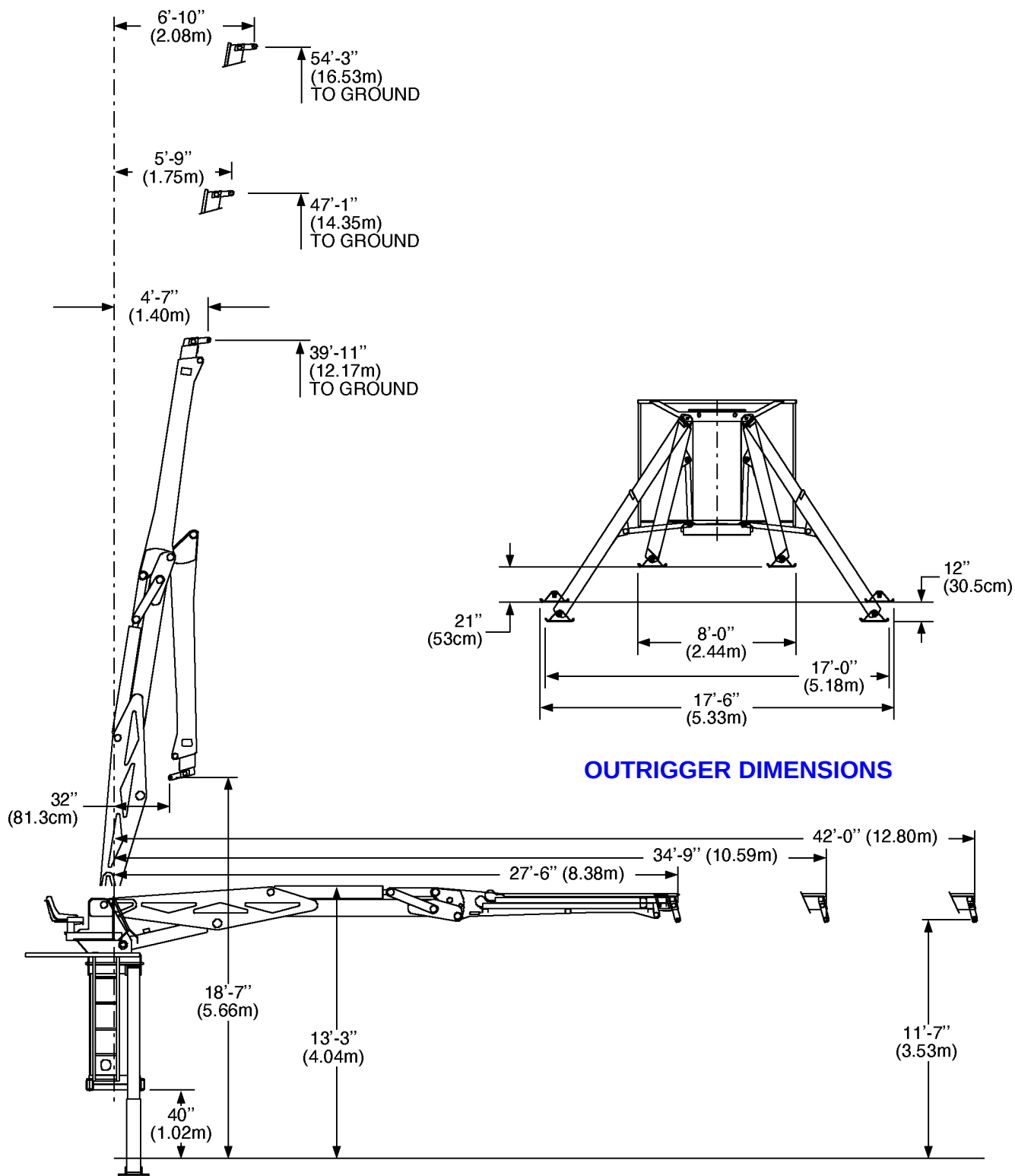
Iowa Mold Tooling Co., Inc. reserves the right to change specifications and design without notice.



00016042:99900831:19950908

1-5

GEOMETRIC CONFIGURATION





00016042:99900831:19971029

1-6

CAPACITY CHART

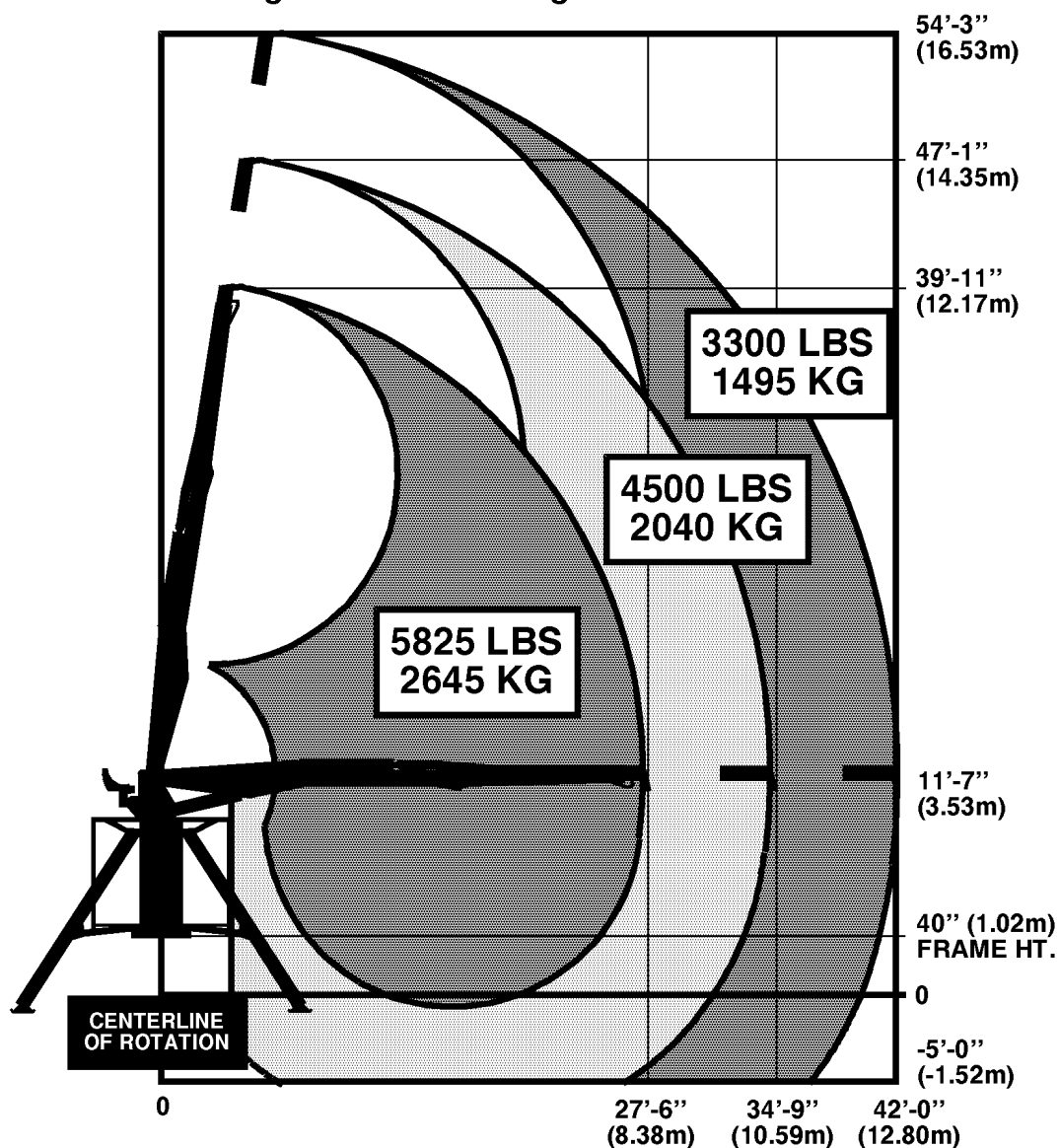
IOWA MOLD TOOLING CO., INC. • BOX 189 • GARNER • IA • 50438 • 515-923-3711

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



16000 Series Crane 42' Boom (2H)

- 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.



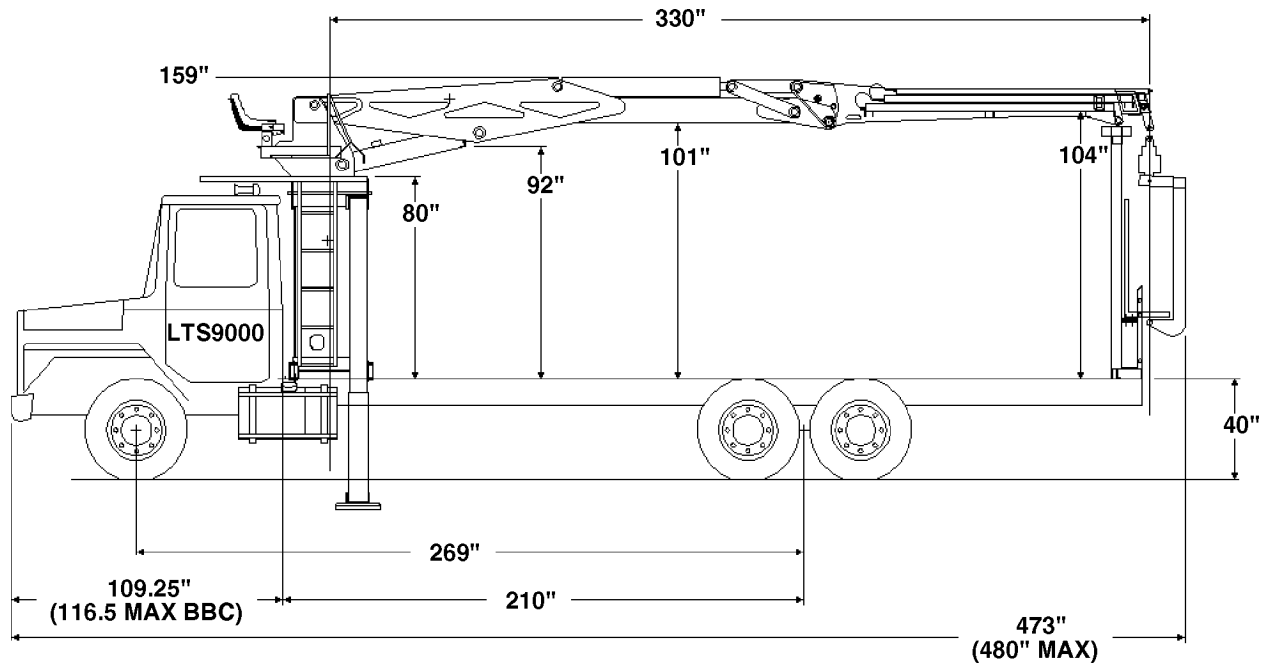
71394156



00016042:99900831: 19980417

1-7

REFERENCE DIMENSIONS





00016042:99900831:19951130

1-8



00016042:99900831:19940506

2-1

SECTION 2. 16042 CRANE REFERENCE

MAJOR CRANE ASSEMBLIES	3
WELDMENT PART NUMBER LOCATIONS	3
GREASE ZERK LOCATIONS & LUBRICANT REQUIREMENTS	4
RECOMMENDED SPARE PARTS LIST	5
RECOMMENDED SPARE PARTS LIST (cont.)	6
SERVICE TOOLS LIST	7
CRANE OPERATION NEAR HEAD BOARD.....	8
INSTALLATION.....	9
CRANE MOUNTING	9
HOSE ROUTING-FORK ROTATOR	11
CRANE ROTATION PRECAUTION	12
ROTATION STOP LOCATIONS	12



00016042:99900831:19940506

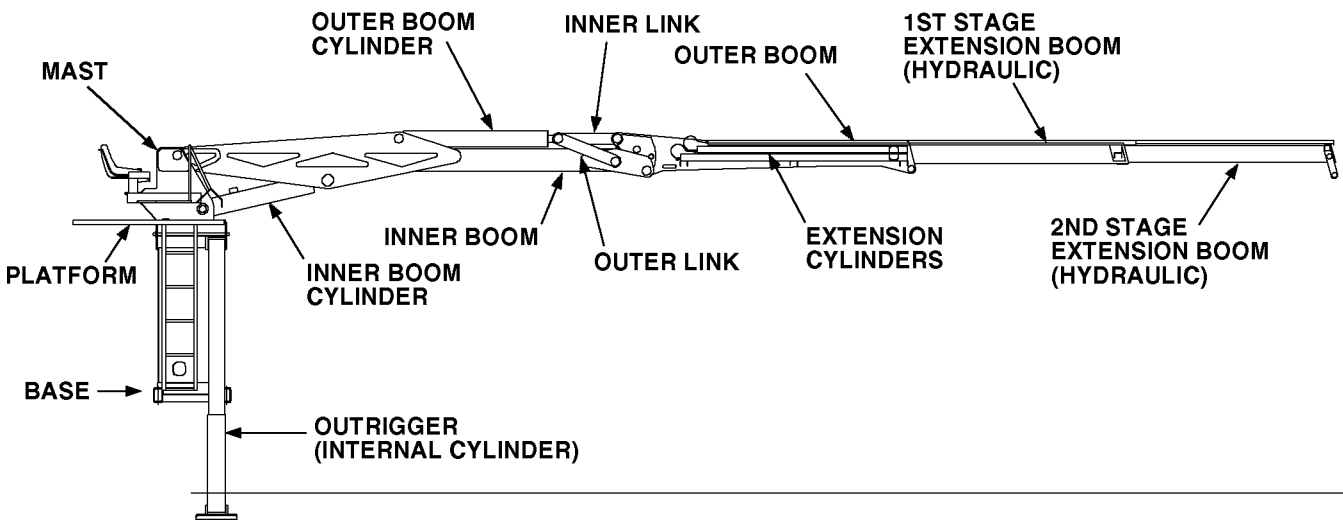
2-2
NOTES

[illegible]

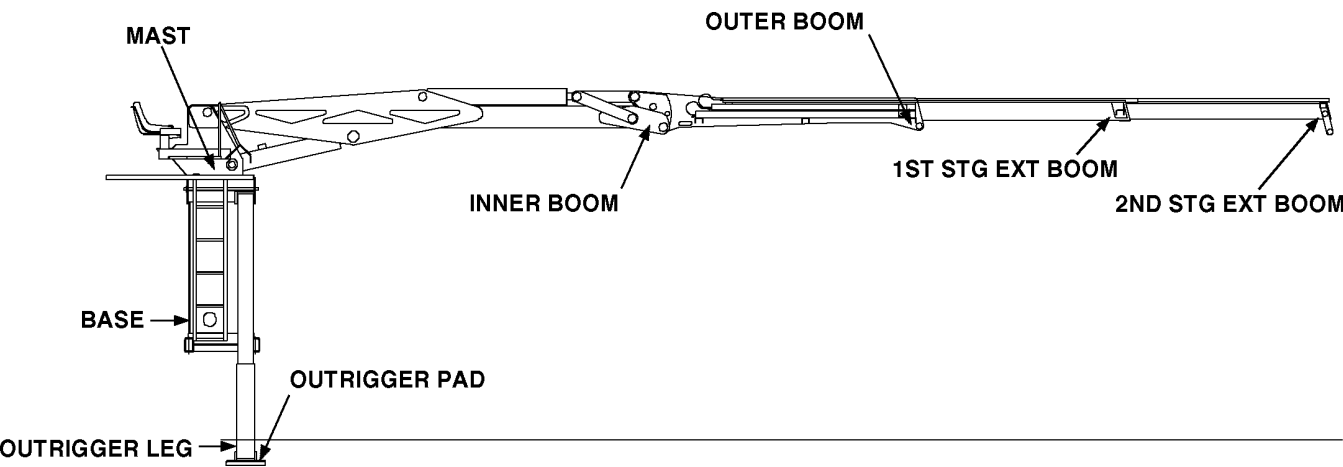


00016042:99900831: 19950922

2-3



MAJOR CRANE ASSEMBLIES



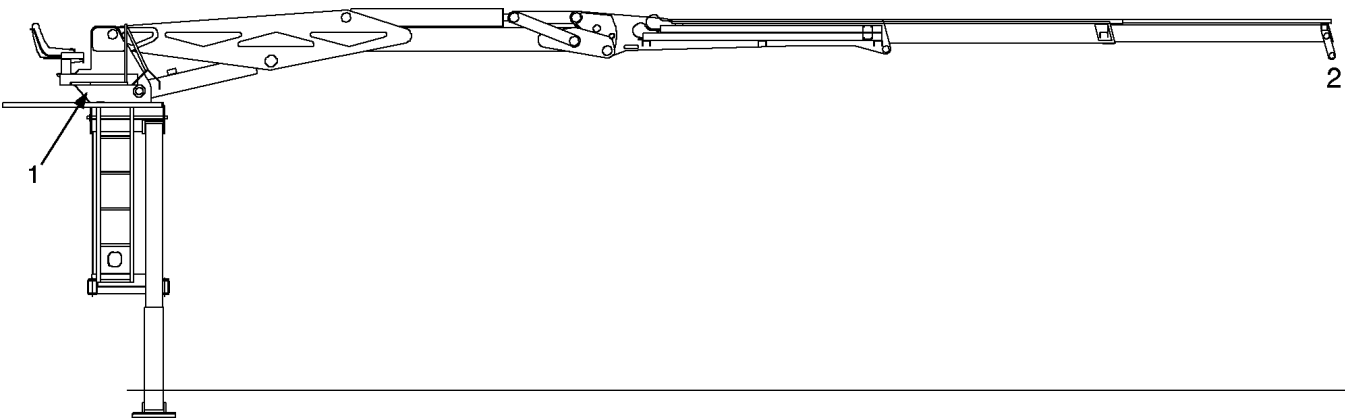
WELDMENT PART NUMBER LOCATIONS



00016042:99900831:19950922

2-4

GREASE ZERK LOCATIONS & LUBRICANT REQUIREMENTS



ITEM	LOCATION DESCRIPTION	LUBRICANT	FREQUENCY
1.	TURNTABLE/BEARING GREASE EXTENSION	SHELL ALVANIA 2EP	WEEKLY
	*ROTATE CRANE WHILE GREASING	OR	
2.	WALLBOARD FORKS (NOT SHOWN)	SHELL RETINAX "A"	

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.



00016042:99900831: 19971112

2-5

RECOMMENDED SPARE PARTS LIST**1 YEAR SUPPLY****16042 CRANE****FOR MANUAL: 99900831**

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

ASSEMBLY DESIGNATION	ITEM NO.	PART NO.	DESCRIPTION	QTY	CODE	SHELF LIFE (MO)	ORDER QTY
41711811.01.19971023		BASE & OUTRIGGER ASM					
	17	60350055	RUBBER PAD	2	W		
3B003950.01.19960301		OUTRIGGER CYLINDER					
	3	61352144	PISTON	1	W		
	4	6H003950	HEAD	1	W		
	5	9B089930	SEAL KIT	2	W		
	14	73054842	CHECK VALVE SET	2	C		
41711812.01.19970725		MAST ASM					
	19	71056461	PINION GEAR	1	C		
	21	72601629	CAP SCR 3/4-10X4 HHGR8	9			
	22	72601622	CAP SCR 7/8-9X5 HHGR8	11			
	32	77041249	MERCURY SWITCH	1	W		
	33	77041250	CLIP-MERCURY SWITCH	1	W		
	36	76391497	GASKET HYD BRAKE/BASE	1	W		
	37	76393533	GASKET-BRAKE	1	W		
	39	7Q072017	O-RING	2	W		
	40	73054538	CARTRIDGE VALVE	2	C		
94394208.01.19951106		HYDRAULIC MOTOR SEAL KIT					
	1	94394208	SEAL KIT-HYD MOTOR	1	W		
94394209.01.19951106		HYDRAULIC BRAKE SEAL KIT					
	1	94394209	SEAL KIT	1	W		
76393542.01.19951106		GEAR BOX SEAL KIT					
		76393542	SEAL KIT	1	W		
3C117930.01.19960301		INNER CYLINDER					
	3	70034285	BUSHING	5	W		
	5	73054242	C'BALANCE VALVE 25GPM	1	C		
	6	61704244	PISTON	1	W		
	7	6HX70035	HEAD	1	W		
	8	9B216920	SEAL KIT	1	W		
41713123.01.19971023		OUTER BOOM ASM					
	9	70034283	BUSHING	4	W		
	10	60030015	WEAR PAD	2	W		
	11	60030167	WEAR PAD	1	W		
	15	70034283	BUSHING	3	W		
	16	70034284	BUSHING	2	W		
	19	7BF81025	BUSHING	4	W		
	20	7BF81225	BUSHING	3	W		
3C160970.01.19970912		OUTER CYLINDER					
	3	70034284	BUSHING	2	W		
	4	70034283	BUSHING	2	W		
	5	6H650030	HEAD	1	W		
	6	61X65002	PISTON	1	W		
	8	73054242	VALVE 25GPM	2	C		
	13	9X170086	SEAL KIT	1	W		
41713128.01.19970912		EXTENSION BOOM ASM					
	4	51709475	SWIVEL LINK	1	W		
	5	70055207	BUSHING	2	W		
	10	52713127	PIN	1	W		
	11	60030301	WEAR PAD	1	W		
	12	60030126	WEAR PAD	1	W		
	13	60030288	ROLLER-TRACK GUIDE	4	W		
	14	60030290	WEAR PAD	1	W		
	15	60030291	WEAR PAD	1	W		
	16	60030292	WEAR PAD	1	W		
	34	72062141	NUT 1-8 LOCK	1	W		
	37	72063066	WASHER 1 HIGH STRENGTH	1	W		

(CONTINUED)



00016042:99900831:19971112

2-6

RECOMMENDED SPARE PARTS LIST (CONT.)

ASSEMBLY DESIGNATION	ITEM NO.	PART NO.	DESCRIPTION	QTY	CODE	SHELF LIFE (MO)	ORDER QTY
3B240950.01.19971023	1ST STAGE EXTENSION CYLINDER						
	3	6I302106	PISTON	1	W		
	4	6H302225	HEAD	1	W		
	5	9B085920	SEAL KIT	1	W		
	17	73054996	HOLDING VALVE	1	C		
	18	60030289	WEAR PAD	1	W		
3B242950.01.19960301	20	72060854	CAP SCR 1/4-20X1 FHS	3	W		
	2ND STAGE EXTENSION CYLINDER						
	3	6I302106	PISTON	1	W		
	4	6H030020	HEAD	1	W		
	5	9B070920	SEAL KIT	1	W		
	18	60030289	WEAR PAD	1	W		
93711852.01.19960229	19	72060837	CAP SCR 1/4-20X5/8 FHS	3	W		
	INSTALLATION KIT						
	13	77041251	RELAY	1	W		
	14	77041013	MAIN SWITCH	2	W		
70145010.01.19951106	20	77041345	TOGGLE SWITCH	1	W		
	SPOOL ACTUATOR ASM						
	1	94393203	SEAL KIT	1	W		
94074089.01.19951106	13	77044466	BOOT ASM	1	W		
	SPOOL POSITIONER END ASM						
70731801.01.19951106		94074089	REPLACEMENT KIT	1	W		
		94394210	PLUNGER SEAL KIT	1	W		
70731800.01.19951106	FOOT TREADLE CONTROLLER						
		94394210	PLUNGER SEAL KIT	1	W		
70732903.01.19951106	WALLBOARD FORK-KINSHOFER W/ROTATOR FORK						
	7	70145226	ROLLER	2	W		
	15	70145230	KNURLED NUT	2	W		
	16	70145231	SPRING-DOWEL PIN	4	W		
	17	70145232	SPRING-PRESSURE	2	W		
	18	70145233	PIN	2	W		
	19	70145244	BUSHING 30X34X15	2	W		
	20	70145229	PAD	4	W		
	23	70145243	BUSHING 50X55X30	2	W		
	29	94393202	SEAL KIT-ROTATOR	3	W		
	30	70143529	BUSHING-ROTATOR	2	W		
	CYLINDER						
	5	94393279	SEAL KIT	1	W		
	7	70145236	BUSHING	2	W		
51712758.01.19970610	BOOM SUPPORT ASM						
	6	60118677	PAD	2	W		
	HYDRAULIC KIT (REFERENCE)						
		73052014	FILTER ELEMENT-RETURN	2	P		
		70048148	FILTER ELEMENT-SUCTION	4	P		



00016042:99900831: 19951201

2-7

SERVICE TOOLS LIST

This Service Tools list is provided as a recommendation. Dealers of the equipment covered by this manual should be equipped with the following tools and devices listed. There may be useful tools which are not listed which does not preclude them from use.

GENERAL SHOP EQUIPMENT

- ☐ AIR COMPRESSOR AND AIR TOOLS
- ☐ WELDER
- ☐ BAND SAW
- ☐ VISE
- ☐ DRILL PRESS
- ☐ HYDRAULIC PRESS
- ☐ GRINDERS
- ☐ ASSORTED HYDRAULIC FITTINGS
- ☐ HOSE ASSEMBLY EQUIPMENT
- ☐ GREASE APPLICATION EQUIPMENT
- ☐ PAINT SYSTEM
- ☐ CUTTING TORCHES OR PLASMA CUTTER
- ☐ FILTER BUGGY
- ☐ OVERHEAD CRANE WITH 5-TON CAPACITY (MINIMUM)
- ☐ FLOOR JACK
- ☐ PORT-A-POWER
- ☐ WELL EQUIPPED SERVICE VEHICLE
- ☐ QUALIFIED MECHANIC

SERVICE TOOLS REQUIRED FOR THIS CRANE

- ☐ FLOW METERS (2-25 GPM MINIMUM)
- ☐ TORQUE WRENCH/MULTIPLIER (850 FT-LB)
- ☐ 5000 PSI PRESSURE GAUGES W/PARKER QUICK DISCONNECTS (2)
- ☐ 500 PSI PRESSURE GAUGES W/PARKER QUICK DISCONNECTS (2)
- ☐ VOLT/OHM METER
- ☐ REPLACEMENT RETURN FILTERS (SEE SPARE PARTS LIST)
- ☐ REPLACEMENT SUCTION FILTERS (SEE SPARE PARTS LIST)
- ☐ ELECTRICAL WIRE, ENDS AND TOOLS
- ☐ TOUCH-UP PAINT
- ☐ IMPACT WRENCH (1")
- ☐ APPROVED HYDRAULIC OIL
- ☐ MOLY GREASE (BEARINGS)



00016042:99900831:19961213

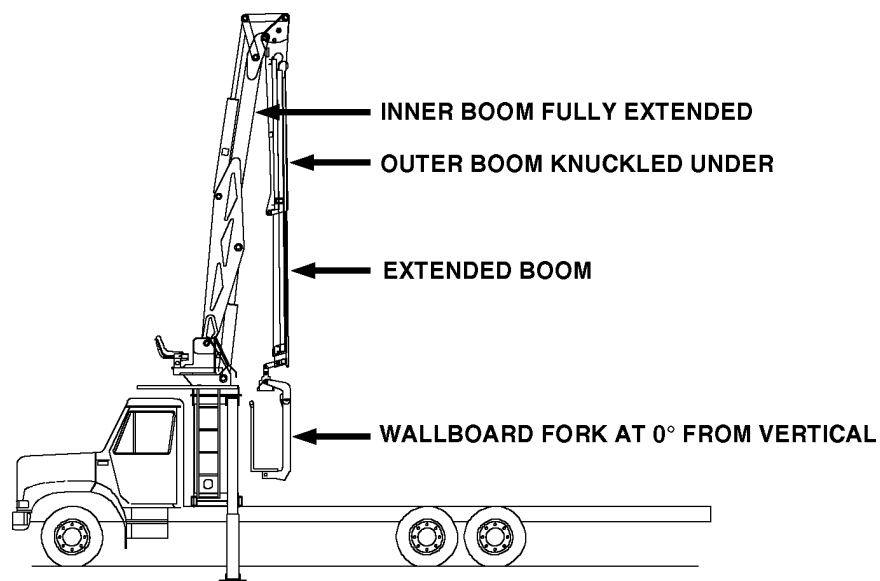
2-8

CRANE OPERATION NEAR HEAD BOARD

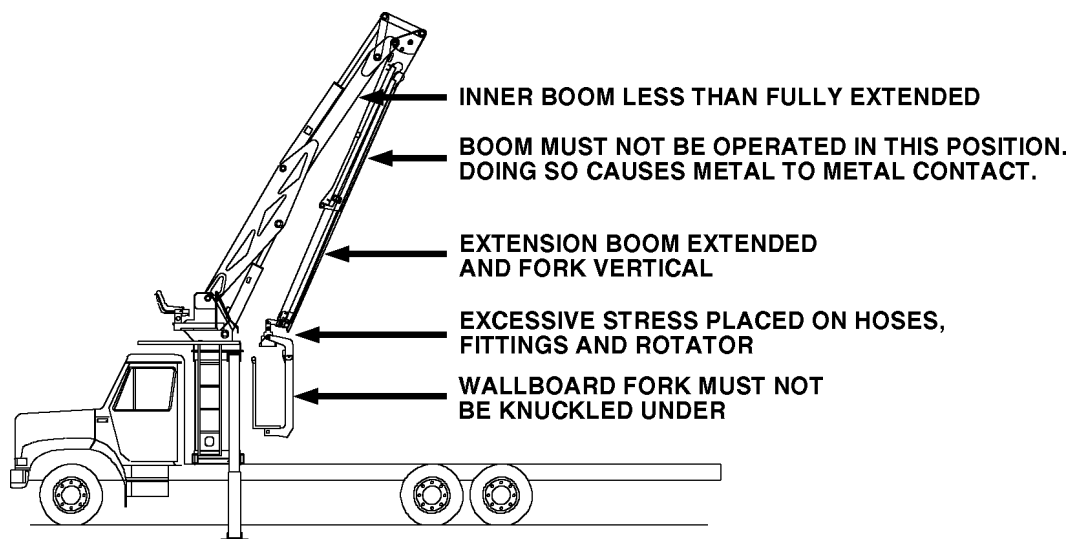
To operate the crane with the load in close proximity to the head board, do so with the inner boom elevated, as shown in Figure 1. Operation of the crane as shown in Figure 2 will result in metal to metal contact of outer and extension booms, causing premature failure. Also, damage will result to hoses and fittings at rotator, causing premature failure.

CAUTION

DO NOT POSITION THE LOAD AS SHOWN IN FIGURE 2.



CORRECT OPERATION NEAR HEAD BOARD



IMPROPER OPERATION NEAR HEAD BOARD



00016042:99900831:19950922

2-9

INSTALLATION

GENERAL

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

CRANE MOUNTING

1. See SPECIFICATIONS in Section 1 for crane weight. Using an overhead hoist and fabric slings of adequate capacity, lift the crane about a foot to see if the crane is adequately balanced. If not, lower hoist and adjust slings. Re-check balance and 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 below). Cut the support to the inside dimensions of the truck frame. Allow about 1/16" extra. Grind the end of the support to fit inside the frame channel. Use a hammer to drive it into position if necessary.

3. Allow sufficient clearance between the cab and crane base, at least 5" (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 below. 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 840 ft-lbs (116 kg-m). When torquing the mounting hardware the following precautions must be followed:

A. Never use lock washers.

B. Hardened washers must be used, and under the turning element, whether the turning element is the nut or the head of the bolt.

C. Torque values specified are with residual oils or without special lubricants applied to the threads. If special lubricants are used, such as Never-Seize compound graphite and oil, molybdenum disulphite colloidal copper or white lead, reduce torque values 10%. Torque values for threaded fasteners are not affected with the use of Loctite.

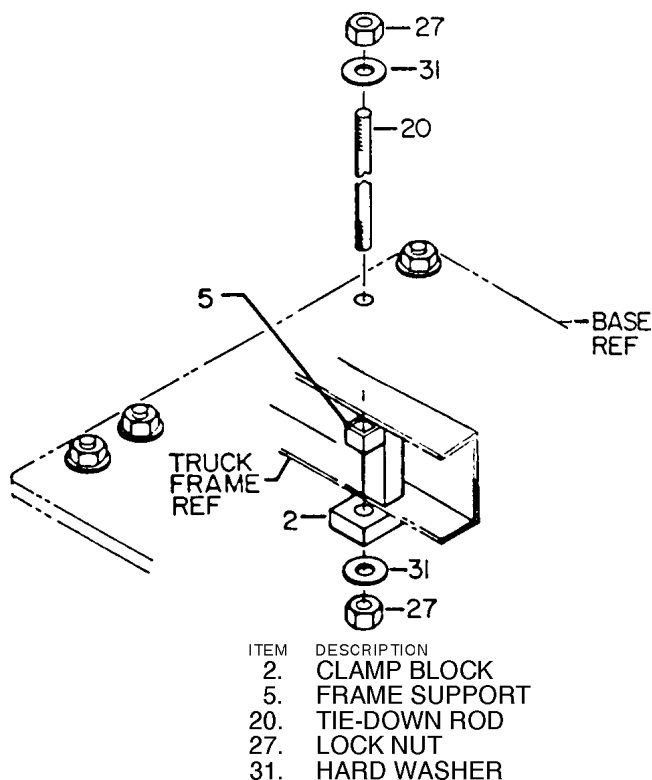
D. Do not use rusty fasteners, the rust will alter torque values significantly.

CAUTION

DO NOT ATTEMPT TO APPLY THE SAME TORQUE TO THE TIE ROD AND SELF-LOCKING NUTS AS SHOWN IN THE TORQUE DATA CHART. DO NOT EXCEED 840 FT. LBS. (116 KG-M). EXCEEDING THIS TORQUE VALUE COULD DAMAGE EITHER THE CHASSIS OR CRANE BASE.

POWER WRENCHING IS NOT RECOMMENDED UNTIL THE LEAD THREAD OF THE NUT INSERT IS ENGAGED BY HAND TURNING.

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



CRANE MOUNTING



00016042:99900831: 19950922

HYDRAULIC INSTALLATION

To install the hydraulic hoses, fittings, etc.:

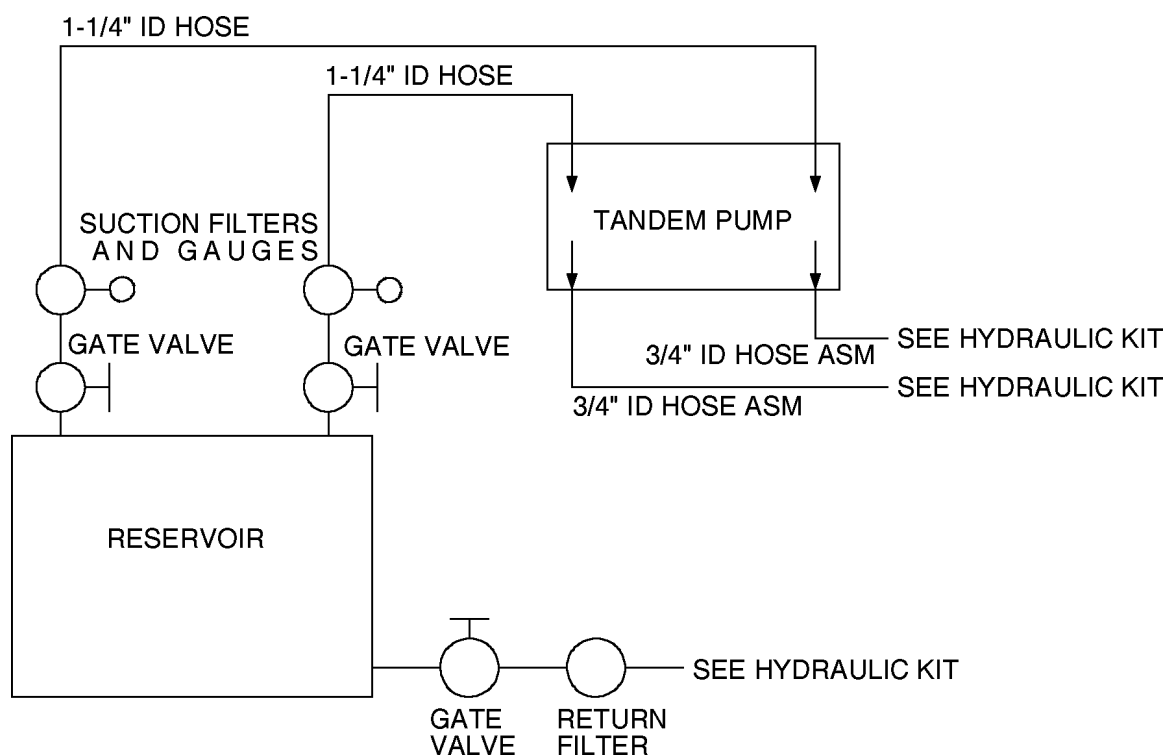
1. Plumb the suction line filter as shown in Figure below.
2. Install the 1-1/4" ID suction hose between the suction line filters and the pump inlets. Tighten the hose clamps.
3. Install the 3/4" pressure hose between the pump outlets and the inlet ports on the valvebanks.
4. Install the return line between the reservoir return line filters and valvebank (if applicable).
5. Fill the hydraulic oil reservoir.
6. Open the gate valve at the suction-line filter.

2-10

CAUTION

FAILURE TO OPEN THE GATE VALVE WILL RESULT IN A DRY RUNNING PUMP WHICH MAY DAMAGE THE PUMP.

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

**GENERAL HYDRAULIC INSTALLATION**

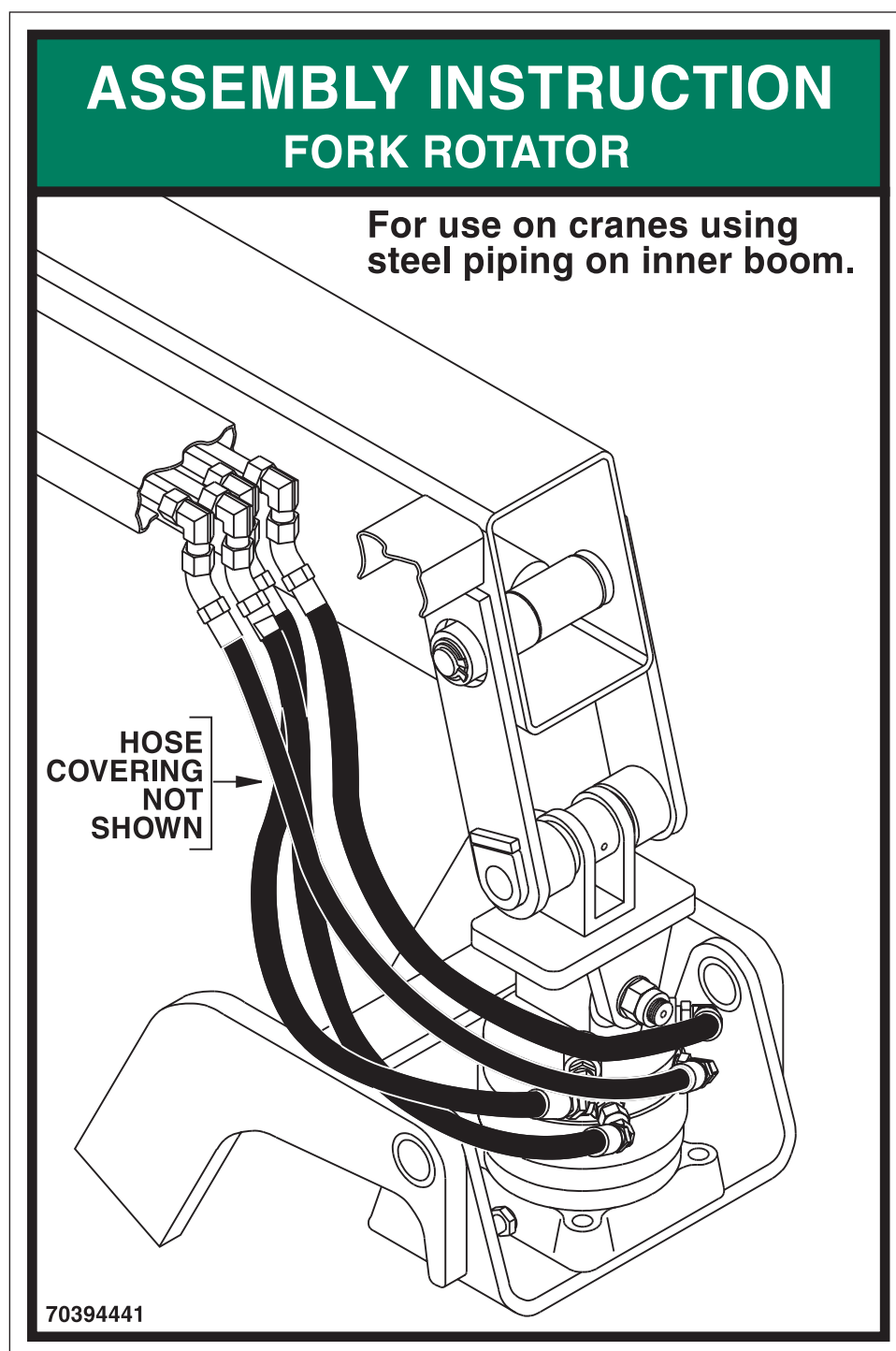


00016042:99900831:19970325

2-11

HOSE ROUTING-FORK ROTATOR

Reproduced below is decal part number 70394441 which is mounted on the boom near the fork rotator. Route the hoses as shown on the decal.



DECAL-FORK ROTATOR HOSE ROUTING



00016042:99900831: 19950922

2-12

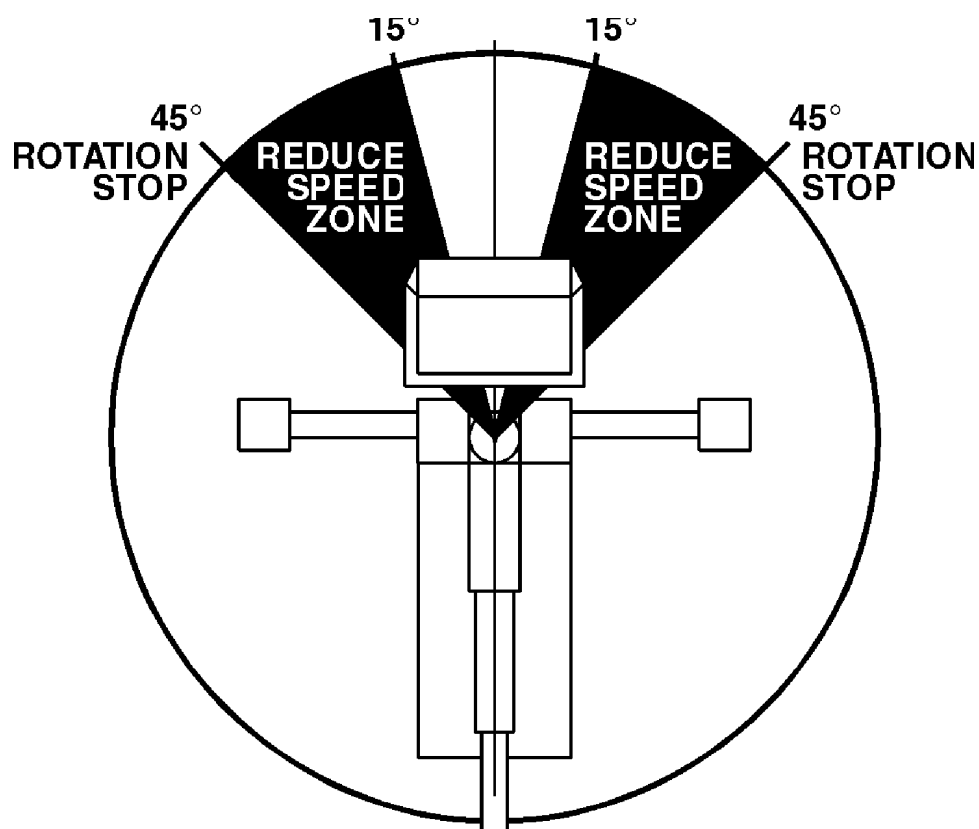
CRANE ROTATION PRECAUTION

CAUTION

REPEATED ROTATION OF THE CRANE AGAINST THE ROTATION STOPS CAN CAUSE MAJOR CRANE BASE AND/OR MAST DAMAGE, RESULTING IN EXPENSIVE NON-WARRANTABLE REPAIRS.

This crane does not provide continuous rotation. A rotation stop mechanism is used to prevent damage to hydraulic and lubricant lines.

During operation, it is necessary to reduce rotation speed and to use caution when approaching the rotation stop locations, as shown in Figure below. Also, attempt to position the unit in such a manner to avoid contacting the stops during operation.



ROTATION STOP LOCATIONS



00016042: 99900831:19990413

3-1

SECTION 3. REPLACEMENT PARTS 16042 CRANE

PARTS INFORMATION	3
CRANE IDENTIFICATION	3
CYLINDER IDENTIFICATION	3
WELDMENT IDENTIFICATION	3
ORDERING REPAIR PARTS	3
BASE & OUTRIGGER ASM (41711811)	4
OUTRIGGER CYLINDER (3B003950)	5
MAST ASM (41711812)	6
HYDRAULIC MOTOR SEAL KIT (94394208)	7
HYDRAULIC BRAKE SEAL KIT (94394209)	8
GEAR BOX SEAL KIT (76393542)	9
INNER BOOM ASM-AFTER 1-9-97 (41713891)	10
INNER CYLINDER (3C117930)	11
OUTER BOOM ASM (41713123)	12
OUTER CYLINDER (3C160970)	13
EXTENSION BOOM ASM (41713128-1)	14
EXTENSION BOOM ASM (41713128-2)	15
1ST STG EXT CYLINDER (51718382)	16
2ND STG EXT CYLINDER (51718381)	17
INSTALLATION KIT (93711852)	18
DECAL KIT (95713136)	19
VALVEBANK ASM (51713166)	20
VALVE BANK (70731810)	20
VALVE BANK (70731811)	20
SPOOL ACTUATOR ASM (70145010)	21
SPOOL POSITIONER END ASM (94074089)	22
CONTROLLER ASM (70731801)	23
FOOT TREADLE CONTROLLER (70731800)	24
KIT-KINSHOFER FORK MOUNTING-HARD PLUMBED (51713903)	25
WALLBOARD FORK-KINSHOFER W/ROTATOR (70732903)	26
DECAL KIT-RADIO REMOTE (95713823)	27
HYD KIT-STD/HI FRM-RADIO-BASE & OUTRIGGERS (99901021)	28
HYD KIT-STD/HI FRM-RADIO-MAST MTD VB (99901022)	29
HYD KIT-STD/HI FRM-RADIO-ROT'N (99901023)	30



00016042: 19990413

3-2

HYD KIT-STD/HI FRM-RADIO-MAIN CYLINDER (99901024)	31
HYD KIT-STD/HI FRM-RADIO-OUTER CYLINDER (99901025)	32
HYD KIT-STD/HI FRM-RADIO-EXT CYLINDER (99901026)	33
HYD KIT-STD/HI FRM-RADIO-BOOM TIP FUNCTIONS (99901027)	34
HYD KIT-STD/HI FRM-RADIO-PILOT LINES (99901028)	35
HYD KIT-STD/HI FRM-RADIO & CHAIR MOUNT-OIL TANK (99901019)	36
HYD KIT-STD/HI FRM-RADIO-OVERALL SCHEMATIC (99901020)	37
BOOM SUPPORT ASM (51712758)	39
HYD KIT-STD/HI FRM-CHAIR MOUNT-BASE & OUTRIGGERS (99901011)	40
HYD KIT-STD/HI FRM-CHAIR MOUNT-MAST MTD VB (99901012)	41
HYD KIT-STD/HI FRM-CHAIR MOUNT-ROT'N (99901013)	42
HYD KIT-STD/HI FRM-CHAIR MOUNT-MAIN CYLINDER (99901014)	43
HYD KIT-STD/HI FRM-CHAIR MOUNT-OUTER CYLINDER (99901015)	44
HYD KIT-STD/HI FRM-CHAIR MOUNT-EXT CYLINDER (99901016)	45
HYD KIT-STD/HI FRM-CHAIR MOUNT-BOOM TIP FUNCTIONS (99901017)	46
HYD KIT-STD/HI FRM-CHAIR MOUNT-PILOT LINES (99901018)	47
HYD KIT-STD/HI FRM-CHAIR MOUNT-OVERALL SCHEMATIC (99901010)	48
KIT-SWIVEL LINK (51709479)	49
EXTENSION CYLINDER ASM (51713729)	50
CONTROL KIT-VOAC/HETRONIC RADIO REMOTE (90713798-1)	51
CONTROL KIT-VOAC/HETRONIC RADIO REMOTE (90713798-2)	52
MAST ASM-RADIO REMOTE-HETRONIC (41713791-1)	53
MAST ASM-RADIO REMOTE-HETRONIC (41713791-2)	54
INSTALLATION KIT-RADIO REMOTE CONTROL (93712710)	55
BASE & OUTRIGGER ASM-HI FRAME (41713255)	56
RADIO RMT-WB CONV RCVR & XMTR (70733104)	57
KIT-WB RADIO MANIFOLD (73733364)	58



00016042: 99900831:19950922

3-3

PARTS INFORMATION

GENERAL

This section contains the exploded parts drawings and accompanying parts lists for the assemblies used on this crane. These drawings are intended to be used in conjunction with the instructions found in the REPAIR section in Volume 1. For optional equipment such as winches and remote controls, refer to the appropriate service manual.

WARNING

DO NOT ATTEMPT TO REPAIR ANY COMPONENT WITHOUT READING THE INFORMATION CONTAINED IN THE REPAIR SECTION IN VOLUME 1. PAY PARTICULAR ATTENTION TO STATEMENTS MARKED WARNING, CAUTION, OR NOTE IN THAT SECTION. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN DAMAGE TO THE EQUIPMENT, PERSONAL INJURY, OR DEATH.

CRANE IDENTIFICATION

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

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

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

SERIAL NUMBER PLACARD

CYLINDER IDENTIFICATION

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

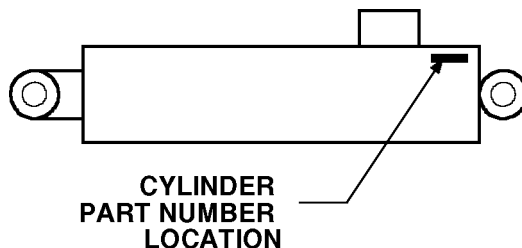
WELDMENT IDENTIFICATION

Each of the major weldments - base, mast, inner boom, outer boom, extension boom and outrigger weldments bear a stamped part number. Any time a major weldment is replaced, you must specify the complete part number as stamped on the weldment. The locations of the part numbers are shown in Section 2.

ORDERING REPAIR PARTS

When ordering replacement parts:

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



CYLINDER PART NUMBER LOCATION



00016042: 41711811.01.19990727

BASE & OUTRIGGER ASM (41711811)

1.	52714253	BASE	1
2.	52711710	OUTRIGGER ARM(TO 11-1-96)	2
	52713458	OUTRIGGER ARM(AFT 11-1-96)	2
3.	52711711	OUTRIGGER LEG(TO 11-1-96)	2
	52713691	OUTRIGGER LEG(AFT 11-1-96)	2
4.	52712405	OUTRIGGER LINK	2
5.	52711986	OUTRIGGER PAD	2
6.	3B003950	OUTRIGGER CYLINDER	2
7.	52712505	PIN	2
8.	52714382	PIN	2
9.	52710199	PIN	2
10.	72601630	CAP SCR 3/4-10X3-1/2 SH	18
11.	72060044	CAP SCR 3/8-16X3/4	8
12.	89044402	LOOM 1/2 ID X 22	2
13.	70067005	ADHESIVE-WEATHERSTRIP	AR
14.	52712103	PIN	2
15.	70029119	SERIAL NUMBER PLACARD	1
16.	72066340	POP RIVET 1/8X3/8 GRIP	2
17.	60350055	RUBBER PAD	2
18.	72060048	CAP SCR 3/8-16X1-1/2 HHGR5	4
19.	72063003	WASHER 3/8 WRT	4
20.	52715594	LADDER EXTENSION	2
21.	72060053	CAP SCR 3/8-16X2-3/4	4
22.	72062103	NUT 3/8-16 LOCK	10
23.	52701853	OIL RESERVOIR	1

3-4

24.	70086029	GREASE 1/4LB	1
25.	72532261	SIGHT GAUGE	1
26.	73014671	FILL CAP	1
27.	73052001	PIPE PLUG 3/4NPT MAGNETIC	1
28.	73141276	FILL SCREEN	1
29.	60109337	RETAINER PLATE	6
30.	72060147	CAP SCR 5/8-11X1	6
31.	60119766	THREADED ROD 5/16-18X4	2
32.	72053508	ZERK 1/8NPT	10
33.	70034417	HOSE CLAMP 3/4	6
34.	70144819	COVER PLATE	4
35.	72060029	CAP SCR 5/16-18X2 HHGR5	2
36.	70055173	BUSHING (PART OF 3&4)	12REF
37.	60120746	BAR	2
38.	72060025	CAP SCR 5/16-18X1 HHGR5	4
39.	60030303	WEAR PAD	2
40.	60030297	WEAR PAD	2
41.	72062109	NUT 5/16-18 LOCK	2
42.	72063050	WASHER 5/16 LOCK	4
43.	72063037	MACH BUSH'G 1-1/2X10GANR	4

WARNING

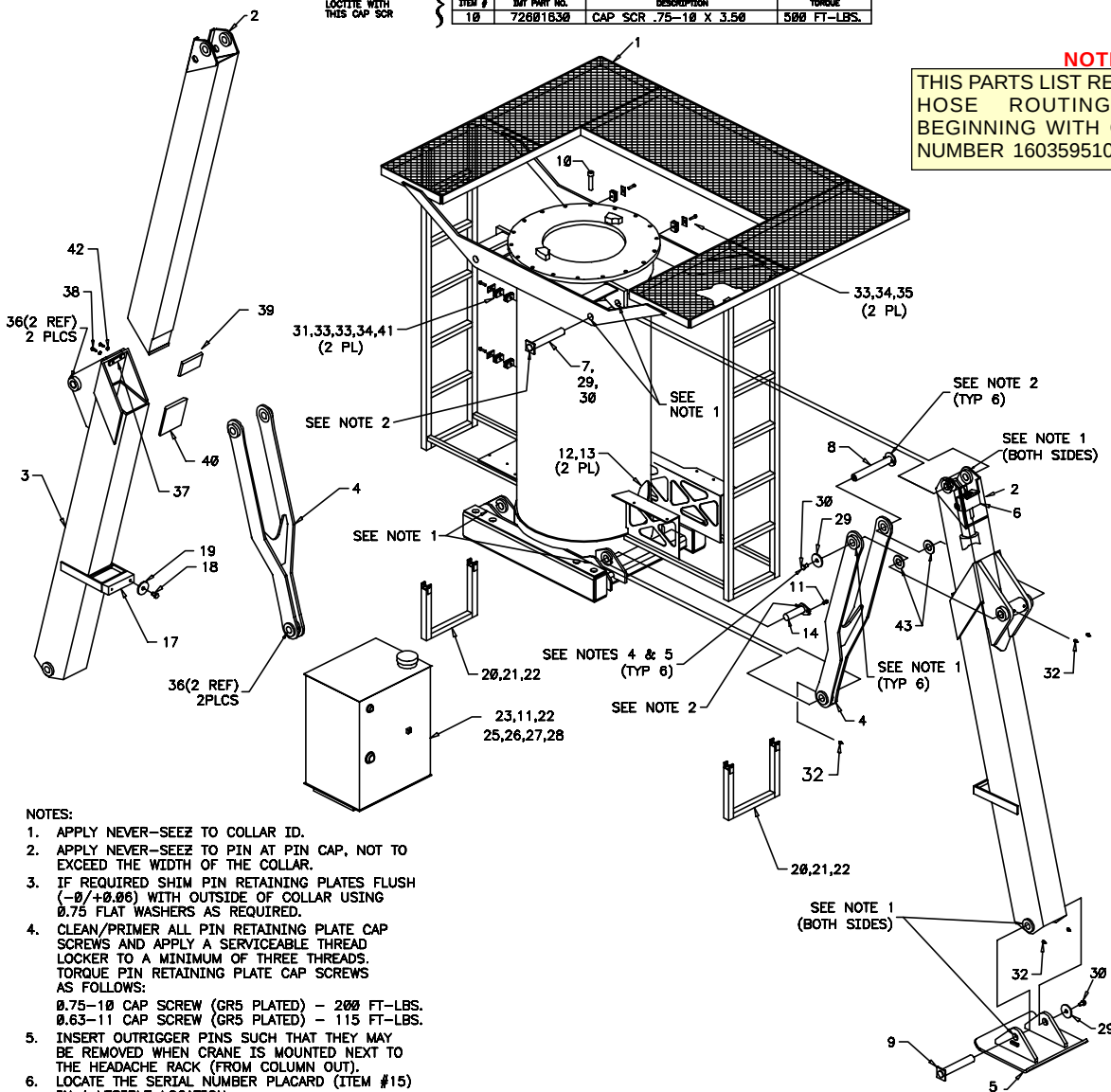
ANYTIME A GEAR-BEARING BOLT IS REMOVED, IT MUST BE REPLACED WITH A NEW BOLT OF THE IDENTICAL GRADE AND SIZE. FAILURE TO REPLACE GEAR-BEARING BOLTS MAY RESULT IN BOLT FAILURE DUE TO METAL FATIGUE, CAUSING SERIOUS INJURY OR DEATH.

USE NON-SERVICEABLE
LOCITE WITH
THIS CAP SCR

TORQUE SPECIFICATIONS			
ITEM #	MT PART NO.	DESCRIPTION	TORQUE
10	72601630	CAP SCR .75-10 X 3.50	500 FT-LBS.

NOTE

THIS PARTS LIST REFLECTS MAJOR HOSE ROUTING REVISIONS, BEGINNING WITH CRANE SERIAL NUMBER 16035951039.

**NOTES:**

1. APPLY NEVER-SEEZ TO COLLAR ID.
2. APPLY NEVER-SEEZ TO PIN AT PIN CAP, NOT TO EXCEED THE WIDTH OF THE COLLAR.
3. IF REQUIRED SHIM PIN RETAINING PLATES FLUSH (-0/+0.06) WITH OUTSIDE OF COLLAR USING 0.75 FLAT WASHERS AS REQUIRED.
4. CLEAN/PRIMER ALL PIN RETAINING PLATE CAP SCREWS AND APPLY A SERVICEABLE THREAD LOCKER TO A MINIMUM OF THREE THREADS. TORQUE PIN RETAINING PLATE CAP SCREWS AS FOLLOWS:
0.75-10 CAP SCREW (GR5 PLATED) - 200 FT-LBS.
0.63-11 CAP SCREW (GR5 PLATED) - 115 FT-LBS.
5. INSERT OUTRIGGER PINS SUCH THAT THEY MAY BE REMOVED WHEN CRANE IS MOUNTED NEXT TO THE HEADACHE RACK (FROM COLUMN OUT).
6. LOCATE THE SERIAL NUMBER PLACARD (ITEM #15) IN A VISIBLE LOCATION.
7. MULTI-PURPOSE GREASE IS TO BE APPLIED TO TOP AND BOTTOM SURFACES OF OUTRIGGER ARMS (ITEM #2)



00016042: 3B003950.01.19960301

3-5

OUTRIGGER CYLINDER (3B003950)

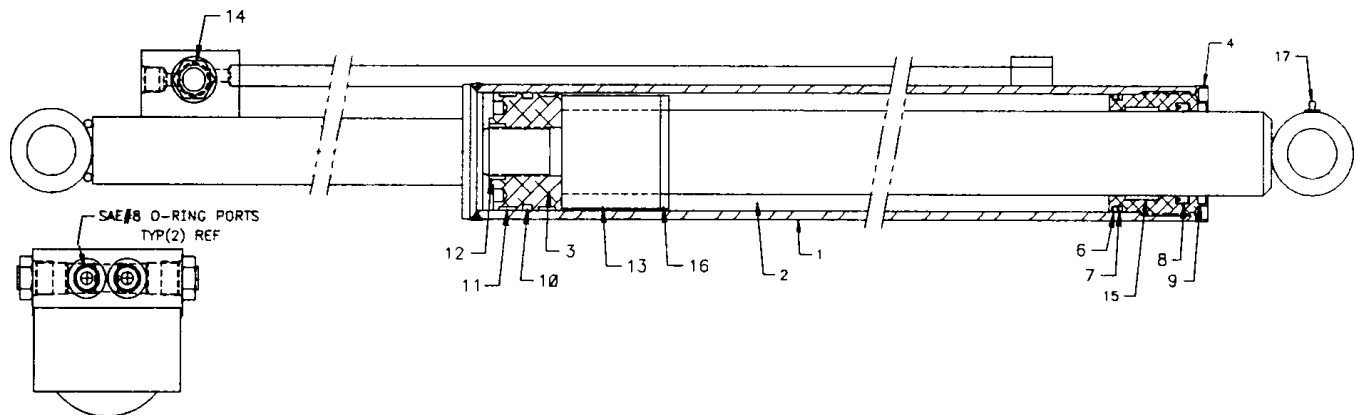
ITEM	PART NO.	DESCRIPTION	QTY
1.	4B182930	CASE ASM	1
2.	4G003950	ROD ASM (INCL:17)	1
3.	6I352144	PISTON	1
4.	6H003950	HEAD	1
5.	9B089930	SEAL KIT (INCL:6-12,15,16)	1
6.	7Q072338	O-RING (PART OF 5)	1REF
7.	7Q10P338	BACKUP RING (PART OF 5)	1REF
8.	7R746025	U-CUP SEAL (PART OF 5)	1REF
9.	7R17P025	ROD WIPER (PART OF 5)	1REF
10.	7T66P350	PISTON SEAL (PART OF 5)	1REF
11.	7T2N4035	WEAR RING (PART OF 5)	2REF
12.	7T61N143	LOCK RING (PART OF 5)	1REF
13.	6C300025	STOP TUBE	1
14.	73054842	CHECK VALVE SET-DBL 25GPM	1
15.	7T2N8027	WEAR RING (PART OF 8)	1REF
16.	6A025025	WAFER LOCK (PART OF 5)	1REF
17.	72053507	ZERK 1/4-28 (PART OF 2)	1REF

NOTE

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

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

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





00016042: 41711812.01.19990727

MAST ASM (41711812)

3-6

MAST ASM (41711812)							
ITEM	PART NO.	DESCRIPTION	QTY				
1.	52714252	MAST	1	24.	70731411	CHAIR	1
2.	60116308	RETAINING RING	1	25.	72060025	CAP SCR 5/16-18X1 HHGR5	8
3.	60120732	SLIDE-ROTATION STOP	1	26.	72053508	ZERK 1/8NPT	1
4.	60114481	SPACER	4	27.	72062103	NUT 3/8-16 LOCK	2
5.	72060097	CAP SCR 1/2-13X3 HHGR5	4	28.	72063050	WASHER 5/16 WRT	4
6.	73051473	HYDRAULIC MOTOR	1	29.	70034431	HOSE GUARD	1
7.	70731795	VALVE BLOCK (INCL:39&40)	1	30.	60035938	EDGE LINER	2
8.	60117608	SEAT BRACKET	1	31.	89044188	WIRE 14GA 2WIRE	164"
9.	60109964	HOSE PROTECTOR	1	32.	77041249	MERCURY SWITCH	1
10.	72060053	CAP SCR 3/8-16X2-3/4 HHGR5	2	33.	77041250	CLIP-MERCURY SWITCH	1
11.	72060092	CAP SCR 1/2-13X1-1/4 HHGR5	6	34.	72060612	MACH SCR #8-32X3/4 RDHD	1
12.	72063053	WASHER 1/2 LOCK	2	35.	72062207	NUT #8-32 LOCK	1
13.	52710062	GUARD	1	36.	76391497	GASKET-HYD BRK/CRN BASE	1
14.	70056495	GEARBOX-TORQUE HUB	1	37.	76393533	GASKET-BRAKE (PART OF 38)	1REF
15.	72063003	WASHER 3/8 WRT	2	38.	71056465	HYDRAULIC BRAKE (INCL:37)	1
16.	72601625	CAP SCR 3/4-10X2-1/4 HHGR5	10	39.	7Q072017	O-RING (PART OF 7)	2REF
17.	60114482	PINION CAP	1	40.	73054538	CARTRIDGE VLV (PART OF 7)	2REF
18.	72060356	CAP SCR 1/2-20X1-1/4 HHGR5	2	41.	72060757	CAP SCR 3/8-16X2-1/2 SH	3
19.	71056461	PINION GEAR	1	42.	53000713	GREASE EXTENSION 38"	1
20.	71056450	TURNABLE BEARING	1	43.	72062109	NUT 5/16-18 LOCK	8
21.	72601629	CAP SCR 3/4-10X4 HHGR8	9	44.	60113703	SLEEVE	4
22.	72601622	CAP SCR 7/8-9X5 HHGR8	11	45.	72661357	BUTT HINGE 1/2PIN	2
23.	72062120	NUT 7/8-9	11	46.	60118860	SPACER 1-3/4"	2
				47.	72060029	CAP SCR 5/16-18X2 HHGR5	4
				48.	89044402	LOOM 1/2 ID X 8"	1
				49.	89044402	LOOM 1/2 ID X 24.5"	1
				50.	89044402	LOOM 1/2 ID X 23.25"	1
				51.	70067005	ADHESIVE-WEATHERSTRIP	AR
				52.	60106032	STUD-HYD MOTOR	2
				53.	72062080	NUT 1/2-13 LOCK	2
				54.	72060023	CAP SCR 5/16-18X3/4 HHGR5	5
				55.	52713209	GUARD-FRONT	1
				56.	52713210	GUARD-REAR	1

NOTES:

1. APPLY NEVER-SEEZ TO COLLAR ID.
2. IT IS IMPERATIVE THAT NEVER-SEEZ BE APPLIED IN SUCH A MANNER THAT IT DOES NOT COME IN CONTACT WITH ANY GAR-MAX BEARING.
3. INSTALL TURNABLE GEAR BEARING WITH A MINIMUM GEAR BACKLASH OF .009/.015", MEASURED BETWEEN SWING PINION AND TURNABLE GEAR BEARING TEETH WITH YELLOW PAINT.
4. APPLY MOBILTAC 378NC LUBRICANT (OR EQUIVALENT) TO THE EXTERNAL TEETH OF THE TURNABLE BEARING AND PINION GEAR.

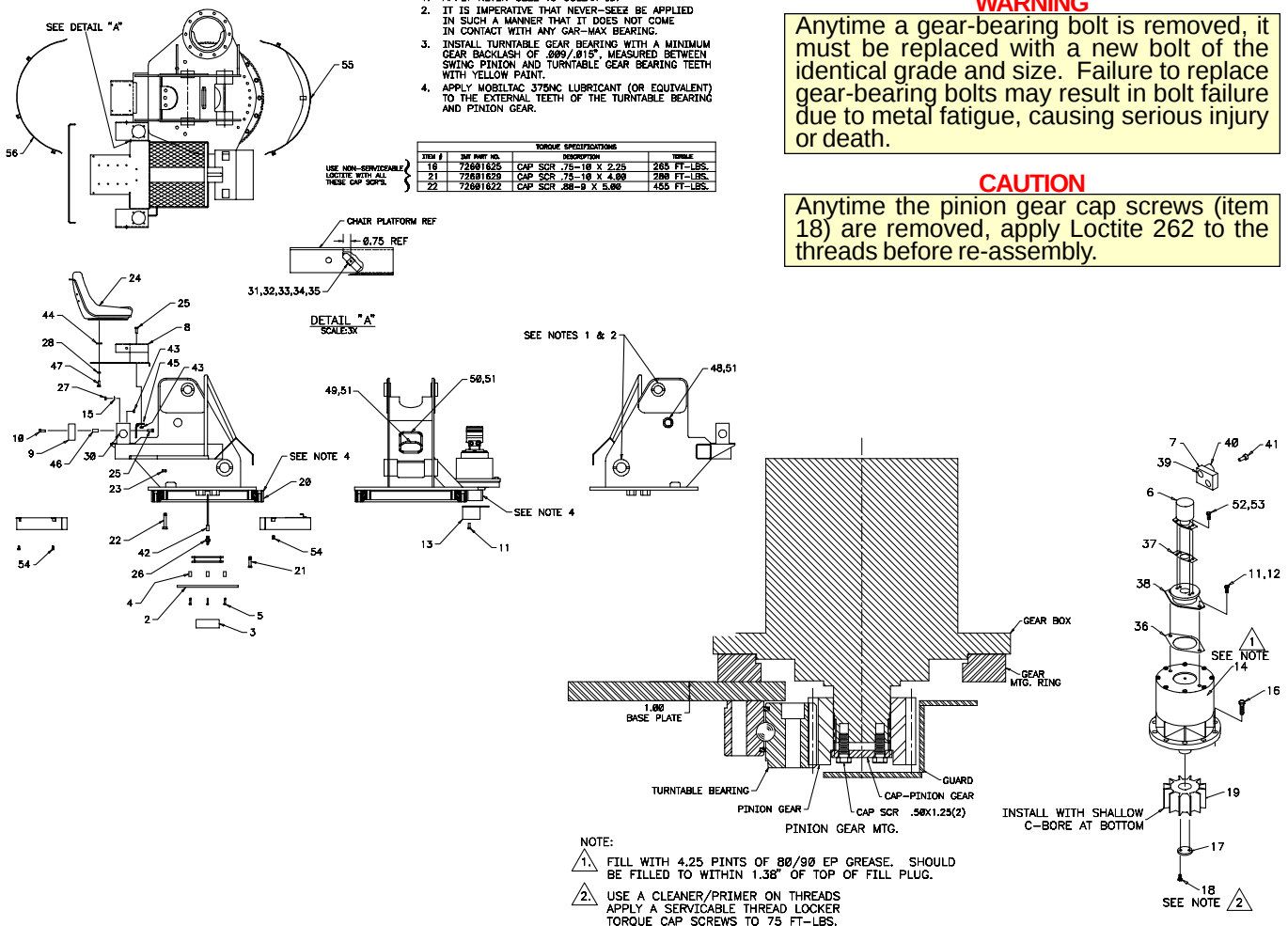
ITEM #	IMP PART NO.	DESCRIPTION	TORQUE
16	72601625	CAP SCR .75-10 X 2.25	265 FT-LBS.
21	72601629	CAP SCR .75-10 X 4.80	280 FT-LBS.
22	72601622	CAP SCR .28-9 X 5.00	425 FT-LBS.

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.

CAUTION

Anytime the pinion gear cap screws (item 18) are removed, apply Loctite 262 to the threads before re-assembly.



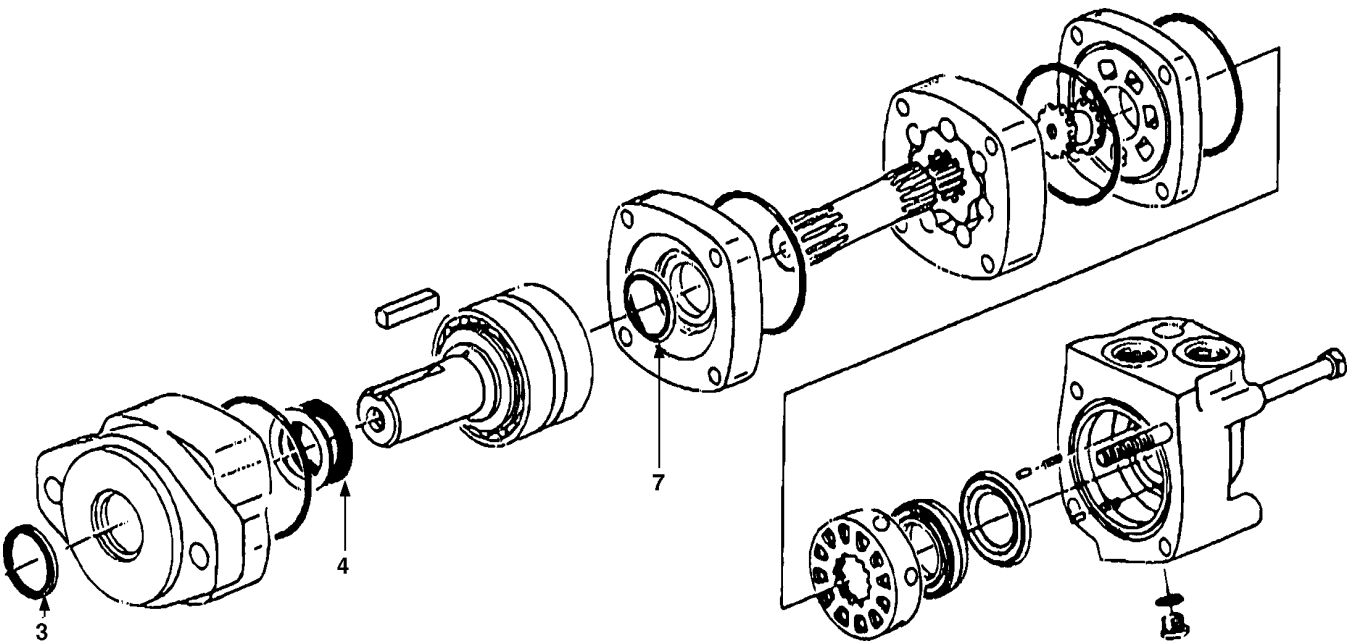


00016042: 94394208.01.19951106

3-7

**HYDRAULIC MOTOR SEAL KIT
(94394208)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	94394208	SEAL KIT (INCL 3,4,7)	1
3.		SEAL-EXCLUSION	1REF
4.		SEAL-SHAFT	1REF
7.		SEAL-SHAFT FACE	1REF



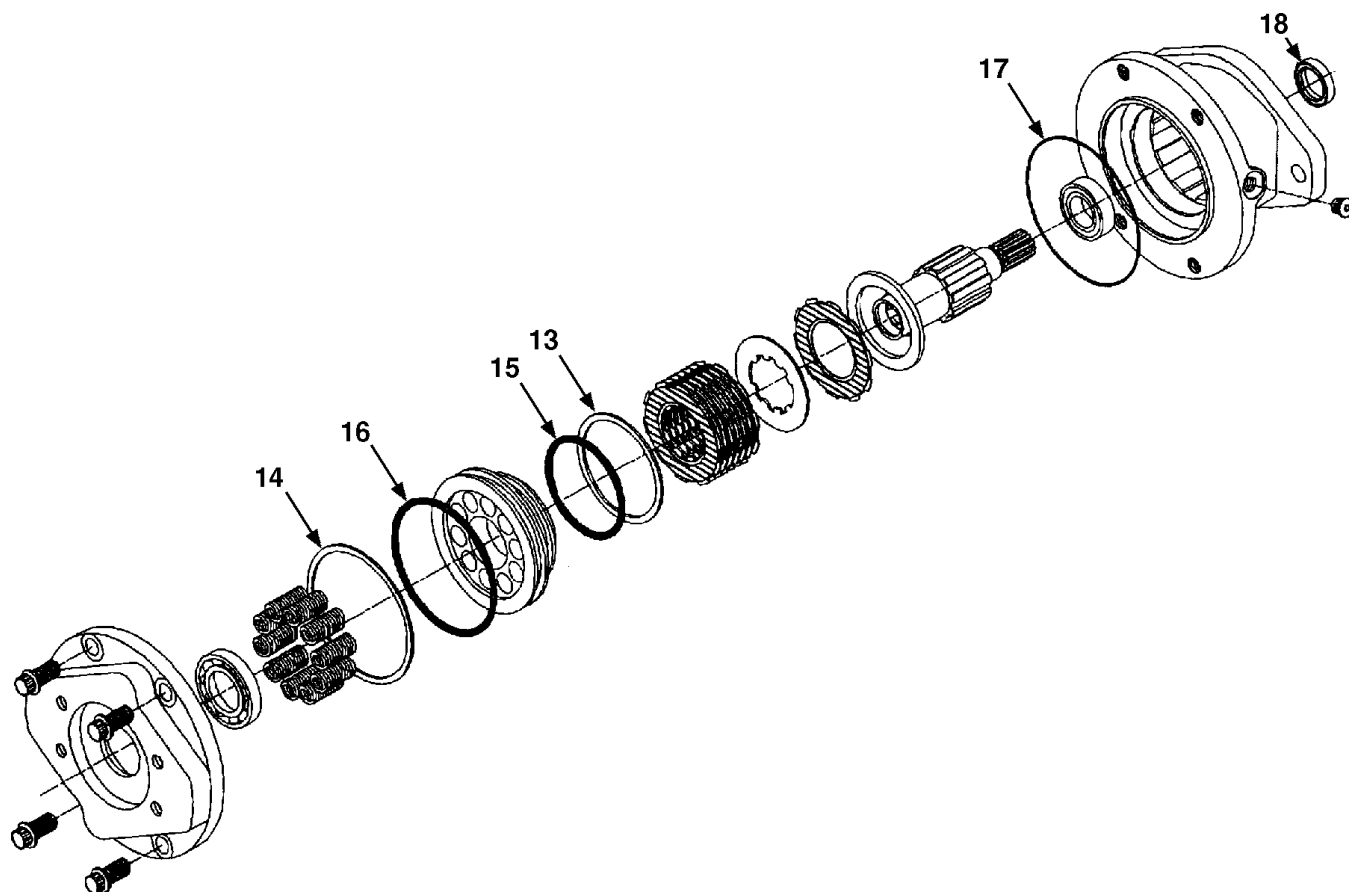


00016042: 94394209.01.19951106

3-8

HYDRAULIC BRAKE SEAL KIT (94394209)

ITEM	PART NO.	DESCRIPTION	QTY
1.	94394209	SEAL KIT (INCL:13-18)	1
13.	76393535	BACK-UP RING	1REF
14.	76393536	BACK-UP RING	1REF
15.	76393538	O-RING	1REF
16.	76393537	O-RING	1REF
17.	76393541	O-RING	1REF
18.	76393498	SEAL	1REF



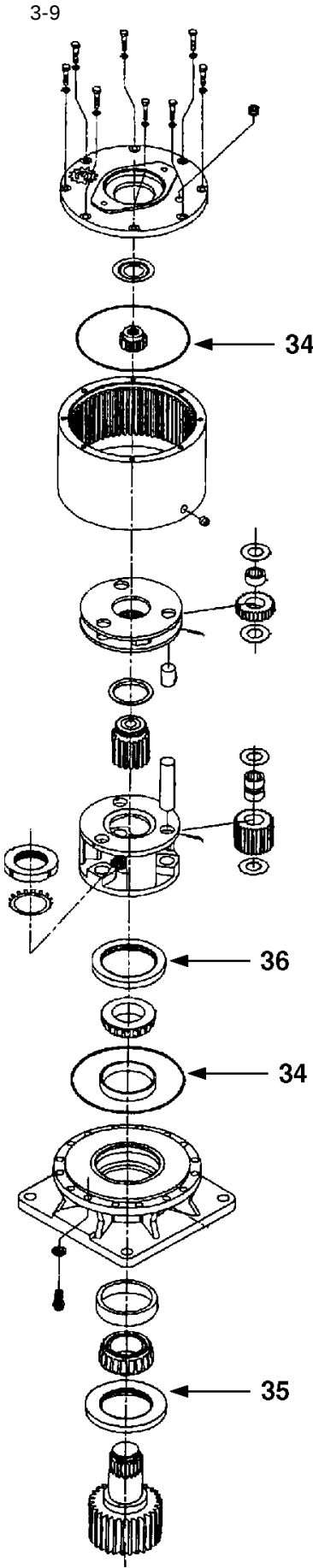


00016042: 76393542.01.19951106

GEAR BOX SEAL KIT (76393542)

ITEM	PART NO.	DESCRIPTION
34.	76393544	O-RING
35.	76393545	SEAL-OUTER SHAFT
36.	76393543	SEAL-INNER SHAFT

QTY
2
1
1





00016042: 41713891.01.19980203

3-10

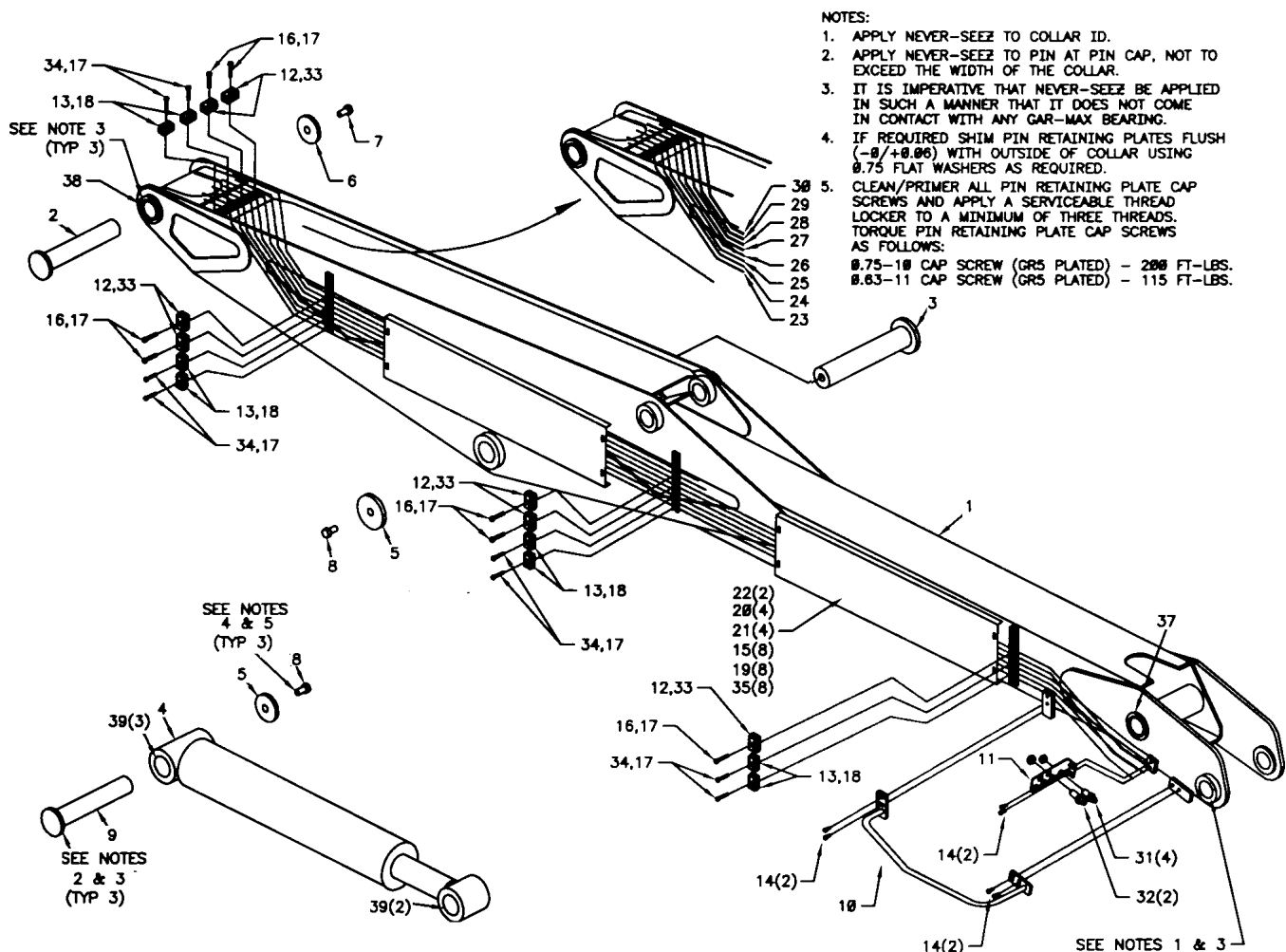
**INNER BOOM ASM-AFTER 1-9-97
(41713891)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	52711717	INNER BOOM	1
2.	52706583	PIN	1
3.	52711756	PIN	1
4.	3C117930	INNER CYLINDER	1
5.	60106681	PIN RETAINER 5"	2
6.	60106332	PIN RETAINER 4"	1
7.	72060147	CAP SCR 5/8-11X1 HHGR5	1
8.	72060181	CAP SCR 3/4-10X1 HHGR5	2
9.	52711755	PIN	1
10.	52713888	TUBE GUARD	1
11.	60120011	BULKHEAD PLATE	1
12.	70034417	HOSE CLAMP 3/4	7
13.	70034432	HOSE CLAMP 1/2	8
14.	72060044	CAP SCR 3/8-16X3/4 HHGR5	6
15.	72060000	CAP SCR 1/4-20X1/2 HHGR5	8
16.	72060028	CAP SCR 5/16-18X1-3/4HHGR5	7
17.	72601729	NUT-RAIL MTG TWIN	15
18.	70143829	COVER PLATE	8
19.	72062104	NUT 1/4-20 LOCK	8
20.	72066580	CLAMP 3/4 TUBE	4
21.	72661312	CLAMP 1/2 TUBE	4

22.	60120067	DECAL MTG PLATE	2
23.	70145467	TUBE ASM-INNER/TROMBONE	1REF
24.	70145468	TUBE ASM-INNER/TROMBONE	1REF
25.	70145469	TUBE ASM-INNER/TROMBONE	1REF
26.	70145470	TUBE ASM-INNER/TROMBONE	1REF
27.	70145471	TUBE ASM-INNER/TROMBONE	1REF
28.	70145472	TUBE ASM-INNER/EXT CYL	1REF
29.	70145473	TUBE ASM-INNER/OUTER CYL	1REF
30.	70145474	TUBE ASM-INNER/OUTER CYL	1REF
31.	72533373	UNION-BULKHD 37° #8JIC	4
32.	72533371	UNION-BULKHD 37° #12JIC	2
33.	70144819	COVER PLATE	7
34.	72060026	CAP SCR 5/16-18X1-1/4HHGR5	8
35.	72063001	WASHER 1/4 WRT	8
36.	51713890	TUBE KIT (INCL:23-30)	1
37.	70034284	BEARING (PART OF 1)	3REF
38.	70034283	BEARING (PART OF 1)	4REF
39.	70034285	BEARING (PART OF 4)	5REF

NOTE

Anytime the pin retainer plate bolts have been removed, apply Loctite 262 to the threads before reassembly.





00016042: 3C117930.01.19960301

3-11

INNER CYLINDER (3C117930)

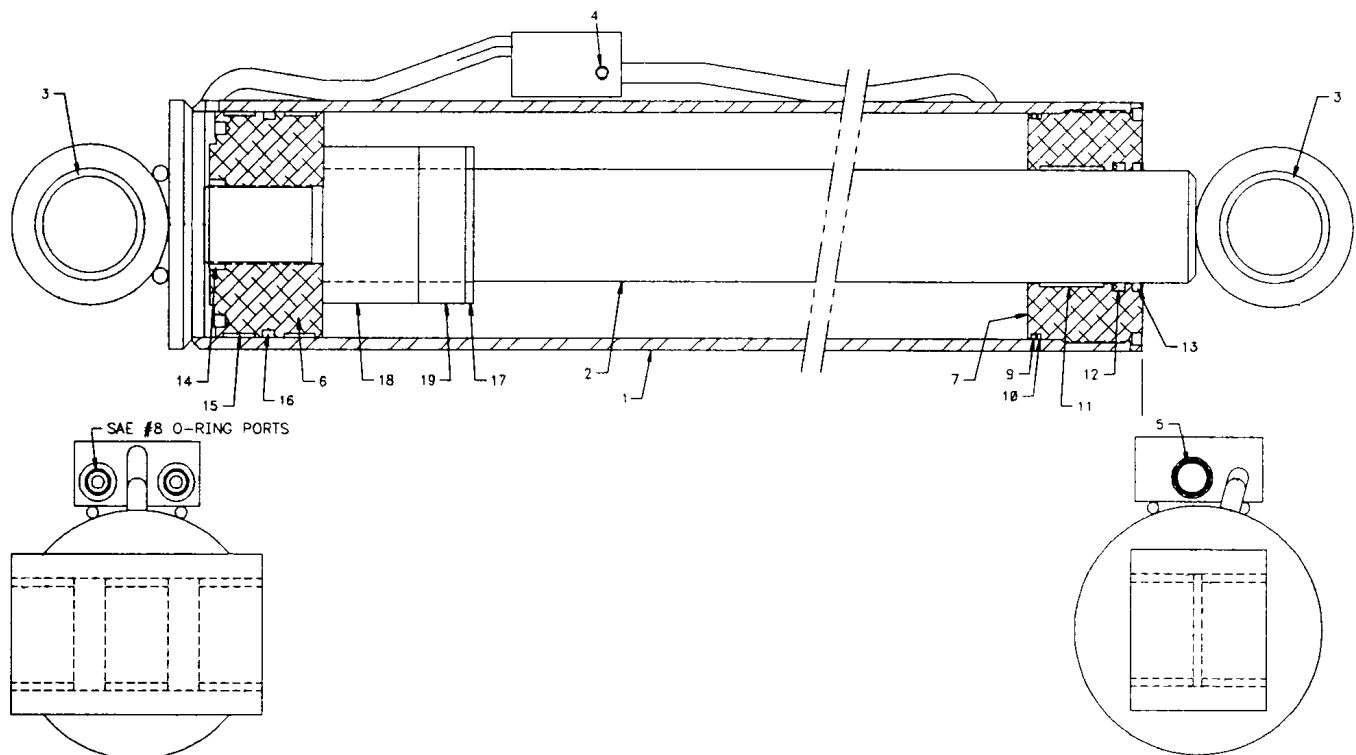
ITEM	PART NO.	DESCRIPTION	QTY
1.	4C117930	CASE (INCL:3,4)	1
2.	4G117930	ROD (INCL:3,)	1
3.	70034285	BUSHING (PART OF 1 & 2)	5REF
4.	7PNPXT02	PIPE PLUG 1/8NPT (PART OF 1)	3REF
5.	73054242	C'BALANCE VALVE 25GPM	1
6.	6I704244	PISTON	1
7.	6HX70035	HEAD	1
8.	9B216920	SEAL KIT (INCL:9-17)	1
9.	7Q072363	O-RING (PART OF 8)	1REF
10.	7Q10P363	BACK-UP RING (PART OF 8)	1REF
11.	7T2N2X37	WEAR RING (PART OF 8)	1REF
12.	7R746035	U-CUP SEAL (PART OF 8)	1REF
13.	7R17P035	ROD WIPER (PART OF 8)	1REF
14.	7T61N243	LOCK RING (PART OF 8)	1REF
15.	7T2N8070	WEAR RING (PART OF 8)	2REF
16.	7T66P704	PISTON SEAL (PART OF 8)	1REF
17.	6A025035	WAFER LOCK (PART OF 8)	1REF
18.	6C300035	STOP TUBE	1
19.	6C150035	STOP TUBE	1

NOTE

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

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

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



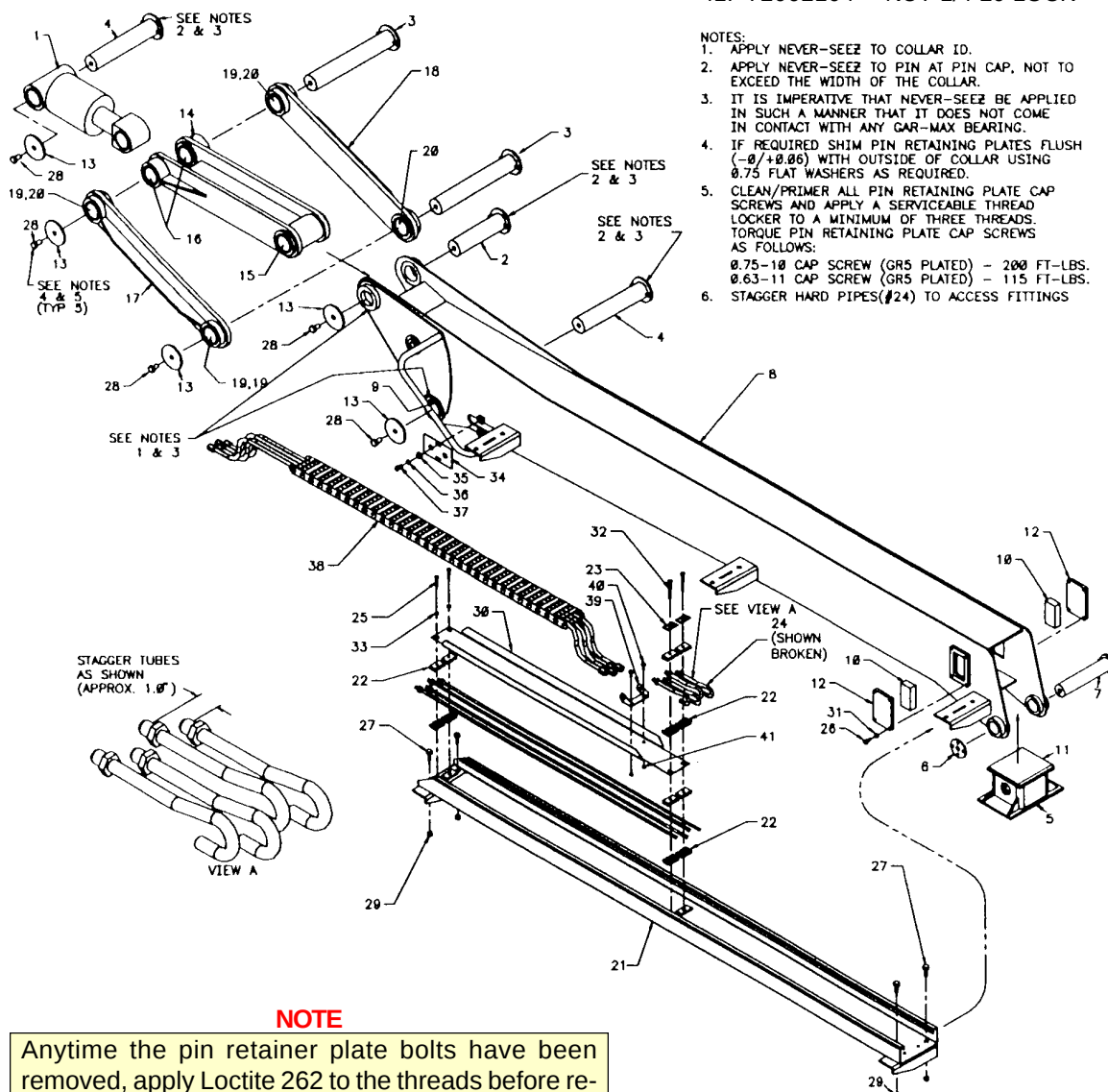


00016042: 41713123.01.19971023

3-12

OUTER BOOM ASM (41713123)

ITEM	PART NO.	DESCRIPTION	QTY				
1.	3C160970	OUTER CYLINDER	1	21.	52714279	HOSE TRACK-BOTTOM	1
2.	52703694	PIN	1	22.	70034432	CLAMP-TWIN 1/2	6
3.	52703697	PIN	2	23.	70143829	COVER	4
4.	52703698	PIN	2	24.	70145250	HYD TUBE ASM 1/2X53 #8 #8	4
5.	52706587	TRUNNION	1	25.	72601741	CAP SCR5/16-18X1-1/2 SBTHD	2
6.	52706831	RETAINER	1	26.	72060044	CAP SCR 3/8-16X3/4 HHGR5	8
7.	52706832	PIN	1	27.	72060091	CAP SCR 1/2-13X1 HHGR5	4
8.	52714046	OUTER BOOM (INCL:9)	1	28.	72060147	CAP SCR 5/8-11X1 HHGR5	5
9.	70034283	BUSHING (PART OF 8)	4REF	29.	72062080	NUT 1/2-13 LOCK	4
10.	60030015	WEAR PAD	2	30.	60120424	TRAY-HOSE GUIDE	1
11.	60030167	WEAR PAD	1	31.	72063051	WASHER 3/8 LOCK	8
12.	60104191	RETAINER PLATE	2	32.	72601740	CAP SCR 5/16-18X3 SBTNHD	2
13.	60106332	PIN RETAINER 4"	5	33.	72063002	WASHER 5/16 WRT	2
14.	60119951	INNER LINK (INCL:15,16)	1	34.	60120063	BULKHD PLATE	1
15.	70034283	BUSHING (PART OF 14)	3REF	35.	72063001	WASHER 1/4 WRT	2
16.	70034284	BUSHING (PART OF 14)	2REF	36.	72063049	WASHER 1/4 LOCK	2
17.	60109919	OUTER LINK (INCL:19,20)	1	37.	72060004	CAP SCR 1/4-20X1 HHGR5	2
18.	60109920	OUTER LINK (INCL:19,20)	1	38.	70145607	E-CHAIN	1
19.	7BF81025	BUSHING (PART OF 17,18)	4REF	39.	70145611	MTG BRKT-CHAIN	1
				40.	72060002	CAP SCR 1/4-20X3/4 HHGR5	2
				41.	72062104	NUT 1/4-20 LOCK	2





00016042: 3C160970.01.19970912

3-13

OUTER CYLINDER (3C160970)

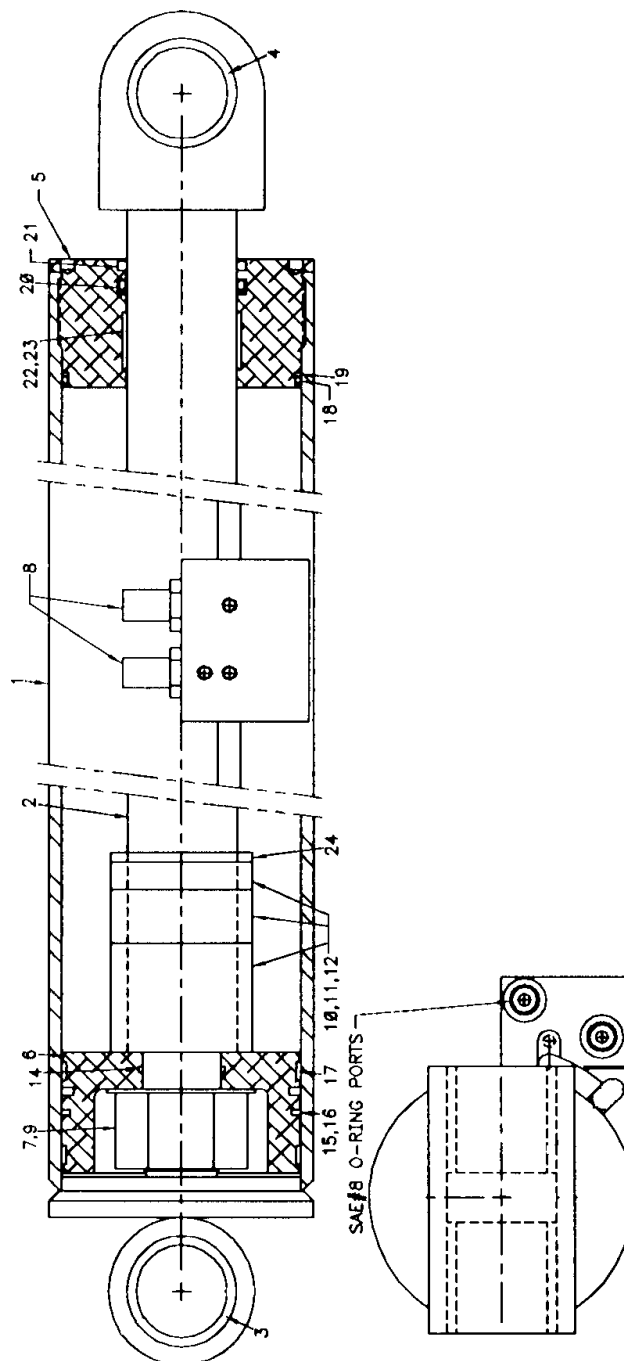
ITEM	PART NO.	DESCRIPTION	QTY
1.	4C170860	CASE (INCL:3)	1
2.	4G170860	ROD (INCL:4)	1
3.	70034284	BUSHING (PART OF 1)	2REF
4.	70034283	BUSHING (PART OF 2)	2REF
5.	6H650030	HEAD	1
6.	6IX65002	PISTON	1
7.	72062144	NUT 2" BUTRESS	1
8.	73054242	VALVE 25GPM	2
9.	72063016	WASHER	1
10.	6C075030	STOP TUBE	1
11.	6C150030	STOP TUBE	1
12.	6C300030	STOP TUBE	1
13.	9X170086	SEAL KIT (INCL:14-24)	1
14.	7Q072227	O-RING (PART OF 13)	1REF
15.	7Q072257	O-RING (PART OF 13)	1REF
16.	7T66P065	PISTON SEAL (PART OF 13)	1REF
17.	7T2N4065	WEAR RING (PART OF 13)	2REF
18.	7Q072361	O-RING (PART OF 13)	1REF
19.	7Q10P361	BACK-UP RING (PART OF 13)	1REF
20.	7R746030	ROD SEAL (PART OF 13)	1REF
21.	7R17P030	ROD WIPER (PART OF 13)	1REF
22.	7T2N4032	WEAR RING (PART OF 13)	1REF
23.	7T2N8032	WEAR RING (PART OF 13)	1REF
24.	6A025030	WAFER LOCK (PART OF 13)	1REF

NOTE

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

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

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



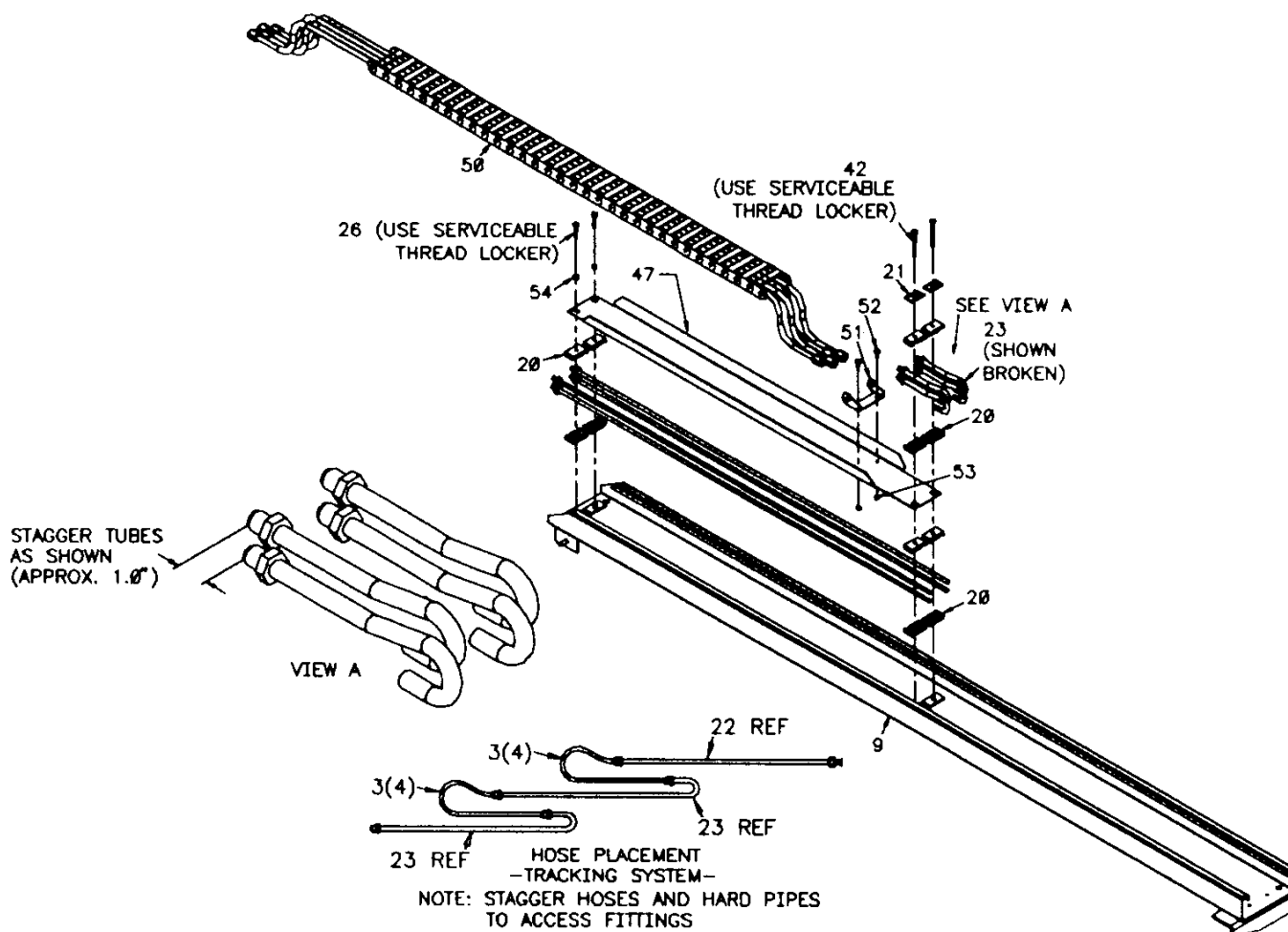


00016042: 41713128.01.19970912

3-14

EXTENSION BOOM ASM (41713128-1)

SEE FOLLOWING PAGE FOR PARTS LIST



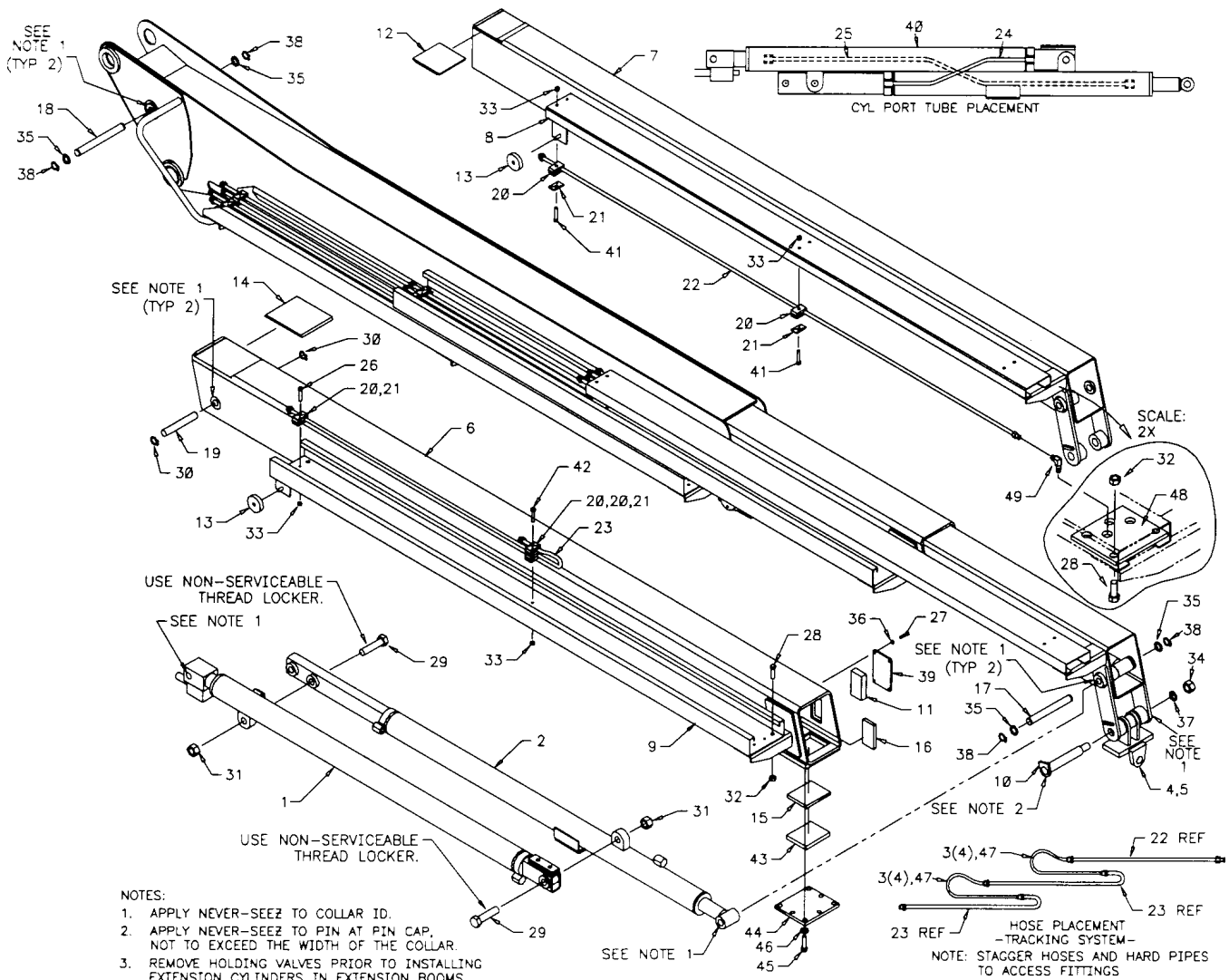


00016042: 41713128.02.19971023

EXTENSION BOOM ASM (41713128-2)

3-15

ITEM	PART NO.	DESCRIPTION	QTY			
1.	3B240950	1ST STG EXT CYL (PART OF 40)	1REF	28.	72060092	CAP SCR 1/2-13X1-1/4 HHGR5 4
2.	3B242950	2ND STG EXT CYL (PART OF 40)	1REF	29.	72060246	CAP SCR 1-8X4 HHGR5(PO 40) 2REF
3.	51394153	HOSE ASM 3/8X72 #8F #8F	8REF	30.	72066025	RETAINING RING 1-1/16 INT 2
4.	51709475	SWIVEL LINK (INCL:5)	1	31.	72062268	NUT 1-8 CTRLCK (PART OF 40) 2REF
5.	70055207	BUSHING (PART OF 4)	2REF	32.	72062080	NUT 1/2-13 HEX 4
6.	52713114	BOOM-1ST STG EXT	1	33.	72062109	NUT 5/16-18 HEX 4
7.	52713115	BOOM-2NG STG EXT	1	34.	72062141	NUT 1-8 LOCK STL INSERT 1
8.	52713124	HOSE TRACK-TOP	1	35.	72063034	MACH BUSHING 1X10GA 4
9.	52713125	HOSE TRACK-MID	1	36.	72063051	WASHER 3/8 LOCK 4
10.	52713127	PIN	1	37.	72063066	WASHER 1 HI-STRENGTH 1
11.	60030301	WEAR PAD	1	38.	72066125	RETAINING RING 1 HD 4
12.	60030126	WEAR PAD	1	39.	60104191	RETAINER PLATE 1
13.	60030288	ROLLER-TRACK GUIDE	4	40.	51713729	EXT CYL ASM (INCL:1,2,24,25,29,31) 1
14.	60030290	WEAR PAD	1	41.	72060028	CAP SCR 5/16-18X1-3/4HHGR5 4
15.	60030291	WEAR PAD	1	42.	72601740	CAP SCR 5/16-18X3 SBTNHD 2
16.	60030292	WEAR PAD	1	43.	60119954	PLATE-WEAR PAD 1
17.	60103821	PIN	1	44.	60120062	PLATE-WEAR PAD BOLT-ON 1
18.	60119244	PIN	1	45.	72601727	CAP SCR 5/8-11X1-1/4 HHGR8 7
19.	60119245	PIN	1	46.	72063119	WASHER 5/8 FLAT 7
20.	70034432	CLAMP-TWIN 1/2	10	47.	60120424	TRAY-HOSE GUIDE 1
21.	70143829	COVER PLATE	8	48.	60120348	BRACKET 1
22.	70145520	HYD TUBE ASM 1/2X97.75 #8#8	4	49.	72532986	ELBOW #8MJIC#8MJIC BLKHD 4
23.	70145250	HYD TUBE ASM 1/2X53 #8 #8	4	50.	70145607	E-CHAIN 1
24.	70145251	HYD TUBE 1/2X74 FF(PO 40)	1REF	51.	70145611	MTG BRKT-CHAIN 1
25.	70145252	HYD TUBE 1/2X102FF(PO 40)	1REF	52.	72060002	CAP SCR 1/4-20X3/4 HHGR5 2
26.	72601741	CAP SCR 5/16-18X1-1/2 SBTND	2	53.	72062104	NUT 1/4-20 LOCK 2
27.	72060044	CAP SCR 3/8-16X3/4 HHGR5	4	54.	72063002	WASHER 5/16 WRT 2





00016042: 51718382 (NEW): 20040126

3-16

1ST STG EXT CYLINDER-42' (51718382)

1.	51744123	SEAL KIT	1
2.	52717732	CASEASM	1
3.	52718292	STOP TUBE	1
4.	52718380	RODASM	1
5.	60030319	WEAR PAD	1
6.	60124582	HEAD	1
7.	60125661	PISTON	1
8.	72060009	CAP SCR 1/4-20X2.25 HHGR5Z	4
9.	72062302	LOCK COLLAR	1
10.	73054996	HOLDING VALVE	1
11.	7Q072120	O-RING (PART OF 1)	1REF
12.	7Q072334	O-RING (PART OF 1)	1REF
13.	7Q10P334	BACK RING (PART OF 1)	1REF
14.	7R17P022	ROD WIPER (PART OF 1)	1REF
15.	7R746022	U-CUP(PART OF 1)	1REF
16.	7T103000	WEAR RING, ROD (PART OF 1)	2REF
17.	7T2N4030	WEAR RING, PISTON (PART 1)	2REF
18.	7T66P300	PISTON SEAL (PART OF 1)	1REF

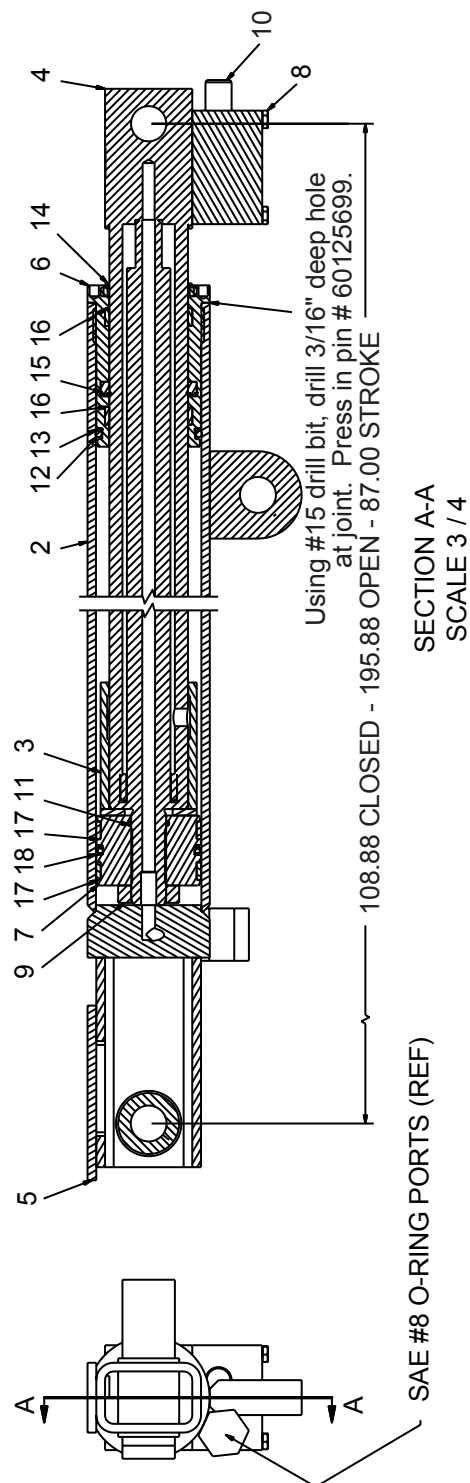
NOTE

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

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

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

NOTE: 51718382 REPLACES CYLINDER 3B240950. NEW ASSEMBLY INCLUDES CYLINDER LOCKING PIN.





00016042: 51718381 (NEW): 20040126

2ND STG EXT CYLINDER-42' (51718381)

1.	51744124	SEAL KIT	1
2.	52717733	CASEASM	1
3.	52718379	RODASM	1
4.	60124581	HEAD	1
5.	60125661	PISTON	1
6.	60125680	STOP TUBE	1
7.	60125699	PIN	1
8.	6A025020	WAFER LOCK (PART OF 1)	1
9.	6C300020	STOP TUBE	1
10.	72062302	LOCK COLLAR	1
11.	76534386	U-CUP, LOADED (PART OF 1)	1REF
12.	7Q072120	O-RING (PART OF 1)	1REF
13.	7Q072334	O-RING (PART OF 1)	1REF
14.	7Q10P334	BACKUP RING (PART OF 1)	1REF
15.	7R17P020	ROD WIPER (PART OF 1)	1REF
16.	7T104000	ROD WIPER (PART OF 1)	2REF
17.	7T2N4030	WEAR RING, PISTON (PART 1)	2REF
18.	7T66P300	PISTON SEAL (PART OF 1)	1REF

NOTE

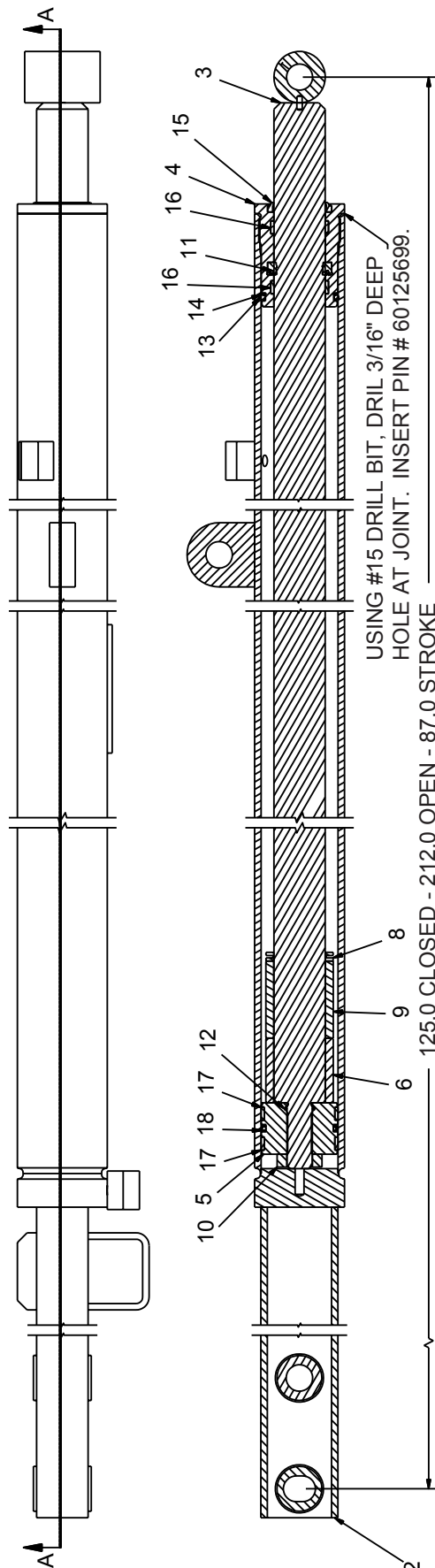
IT IS RECOMMENDED THAT ALL COMPONENTS OF THE SEAL KIT BE REPLACED WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.

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

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

NOTE: 51718381 REPLACES CYLINDER 3B242950. NEW ASSEMBLY INCLUDES CYLINDER LOCKING PIN.

3-17





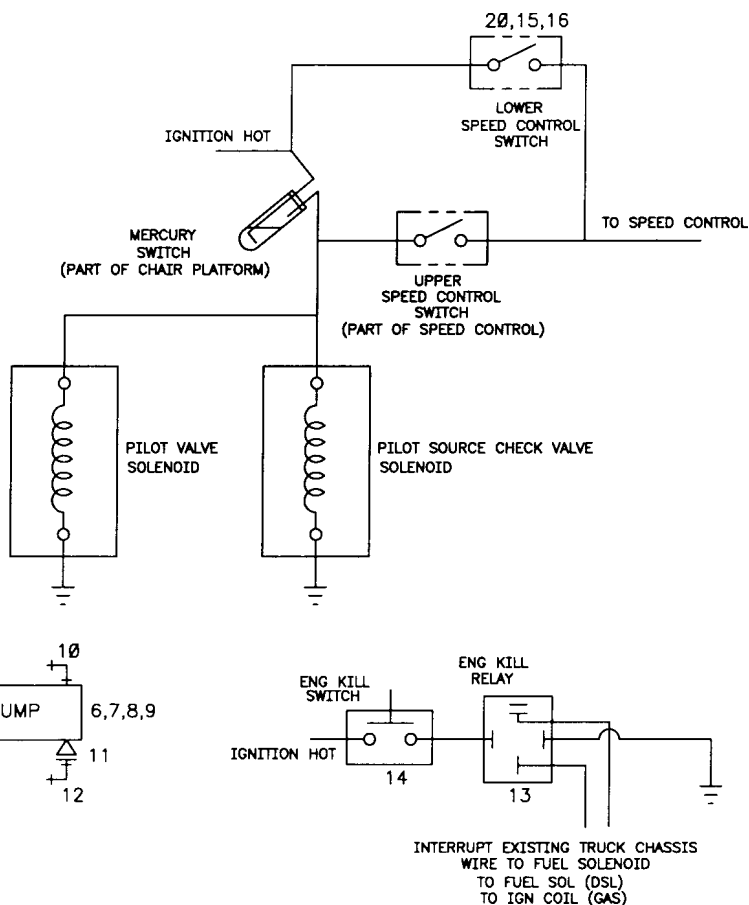
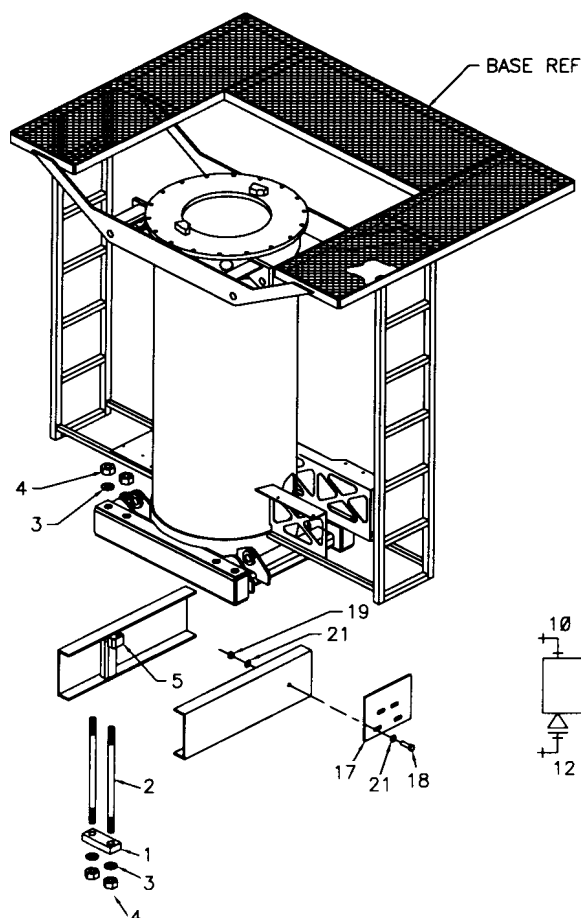
00016042: 93711852.01.19980514

INSTALLATION KIT (93711852)

ITEM	PART NO.	DESCRIPTION	QTY
1.	60010665	CLAMP PLATE	4
2.	71014054	STUD-TIE DOWN	8
3.	72063037	WASHER 1-1/4 HI STRENGTH	16
4.	72062142	NUT 1 1/4-7 LOCK	16
5.	52706660	FRAME SUPPORT	4
6.	60103041	TANDEM PUMP SUPPORT	1
7.	72060046	CAP SCR 3/8-16X1 HHGR5	2
8.	72062002	NUT 3/8-16	2
9.	72063051	WASHER 3/8 LOCK	2
10.	72532710	BEADNIPPLE 1-5/8STR1-1/4 90° 2	

3-18

11.	72532949	ADAPTER #20MSTR #12FSTR	2
12.	72053767	ELBOW #12MSTR #12MJIC 90°	2
13.	77041251	RELAY	1
14.	77041013	SWITCH-PUSHBUTTON	1
15.	72061100	SCR #10X1/2 HH SLFTPG	2
16.	60103535	SWITCH BRACKET	1
17.	60105107	SHEAR PLATE	2
18.	72060931	CAP SCR 5/8-11X2-3/4 HHGR8	8
19.	72062091	NUT 5/8-11 LOCK	8
20.	77041345	TOGGLE SWITCH	1
21.	72063119	WASHER 5/8N FLAT	16





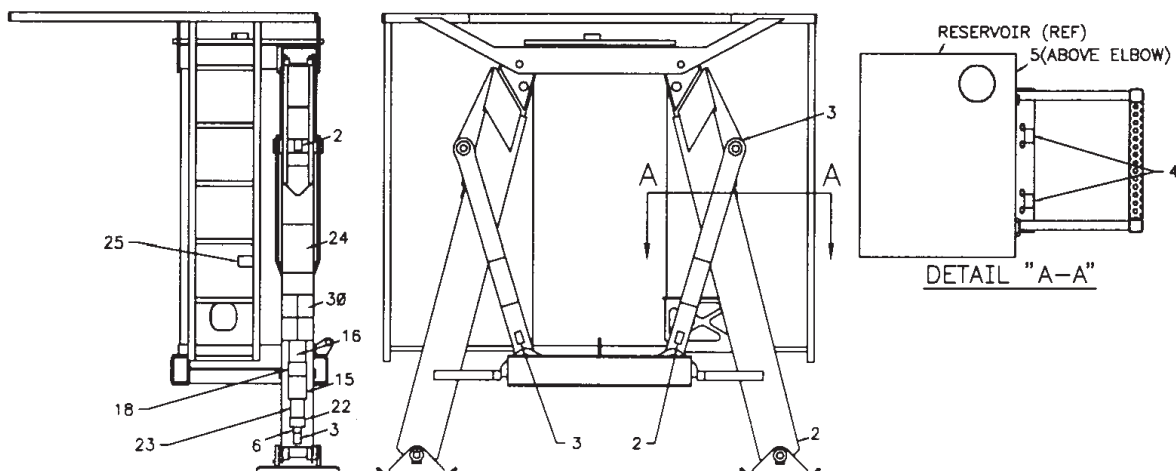
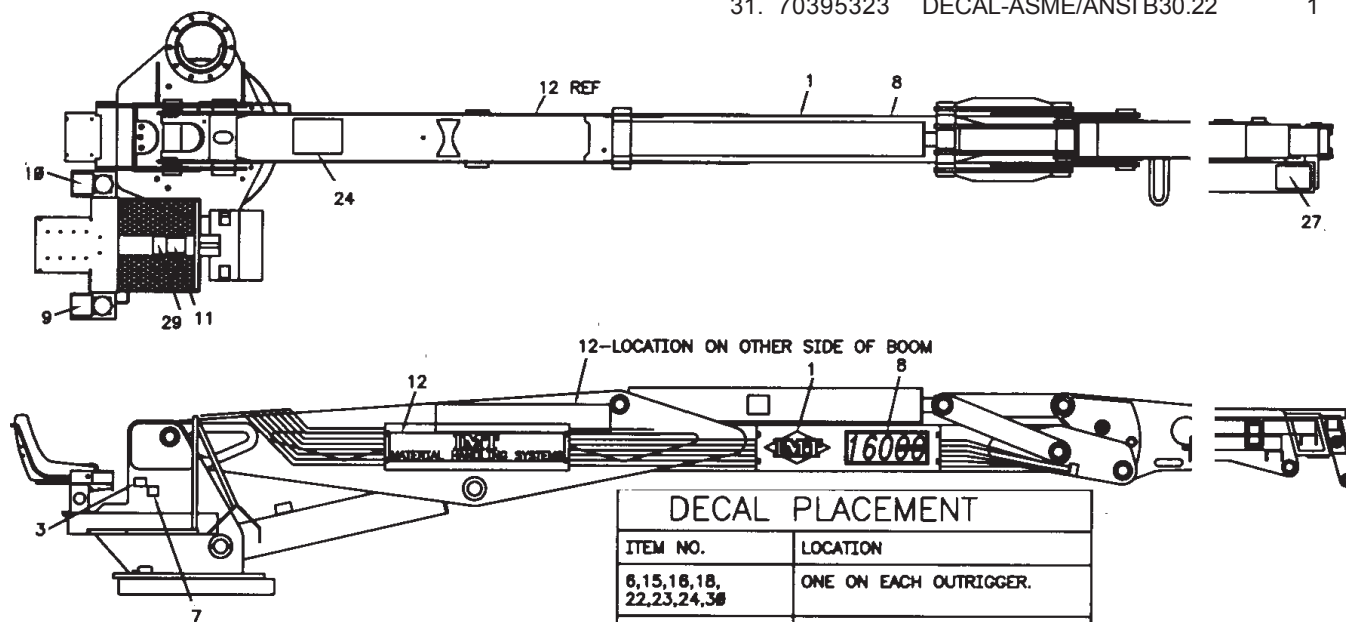
00016042: 95713136.01.20040205

3-19

DECAL KIT (95713136)

ITEM	PART NO.	DESCRIPTION	QTY
1.	70029252	PLACARD - IMT DIAMOND	2
2.	70391612	DECAL-GREASE WEEKLY LEFT	4
3.	70391613	DECAL-GREASE WEEKLY RIGHT	4
4.	70392108	DECAL-SUCTION LINE	2
5.	70392109	DECAL-RETURN LINE	1
6.	70392213	DECAL-CAUTION WASH/WAX	3
7.	70392524	DECAL-ROT CRANE/GREASE	1
8.	70394864	DECAL-16000 IDENT	2
9.	70392578	DECAL-CONTROL RH JOYSTICK	1
10.	70392579	DECAL-CONTROL LH JOYSTICK	1
11.	70392580	DECAL-CONTROL PEDAL	1
12.	70394670	DECAL-IMT MATL HDLG SYS	2

13.	70392863	DECAL-DANGER HOIST PERS	1
15.	70392864	DECAL-DANGER OR STD CLR	2
16.	70392890	DECAL-DANGER STOW/UNFOLD	2
18.	70392867	DECAL-DANGER OR MOVING	2
20.	70392891	DECAL-DANGER DRIVELINE	2
21.	70392865	DECAL-DANGER ELECTRO LG	4
22.	70392982	DECAL-CONTACT IMT	3
23.	71039134	DECAL-CAUTION OIL LEVEL	3
24.	71394156	CAPACITY PLACARD	3
25.	76391511	DECAL-WB STABILIZER	1
26.	70394189	DECAL-RECOMMEND HYD OIL	1
27.	70394625	DECAL-FORK HOSE ROUTING	1
28.	70392868	DECAL-DGR CR LOADLINE	4
29.	70392863	DECAL-DGR HOIST PERS	1
30.	70394764	DECAL-DANGER 5-COMBINED	2
31.	70395323	DECAL-ASME/ANSI B30.22	1



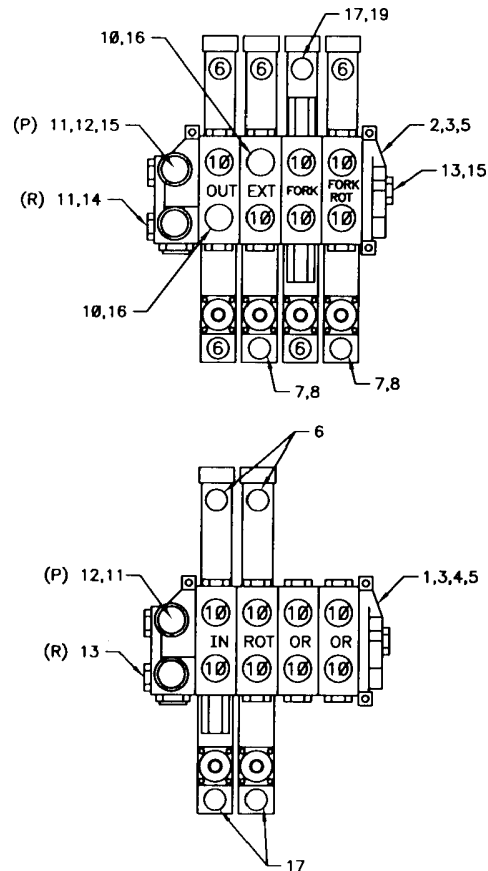


00016042: 51713166.01.19980107

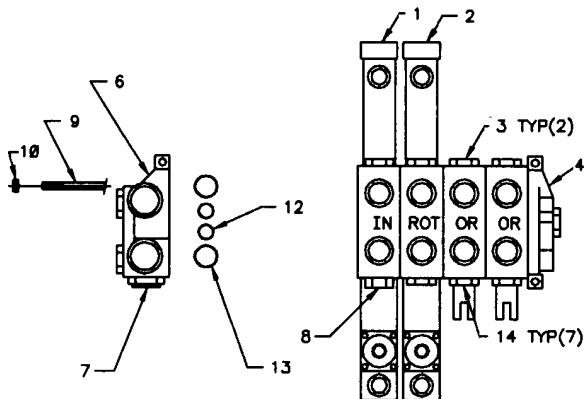
VALVEBANK ASM (51713166)

ITEM	PART NO.	DESCRIPTION	QTY
1.	70731810	VALVEBANK 4-SECT BASE	1
2.	70731811	VALVEBANK 4-SECT MAST	1
3.	72060032	CAP SCR 5/16-18X2-3/4 HHGR5	6
4.	72062109	NUT 5/16-18 LOCK	3
5.	72063002	WASHER 5/16 WRT	6
6.	72532699	ELBOW 9/16MSTR 7/16MJIC 90°	7
7.	72532700	ELBOW 9/16MSTR 9/16MJIC XLG	2
8.	72532707	ADAPTER 7/16MJIC 9/16FJIC	2
10.	72532358	ADAPTER #8MSTR #8MJIC	16
11.	60107995	ELBOW-PRESS GAUGE MOD	3
12.	72532987	NIPPLE 1/4 DISCONNECT	2
13.	72053767	ELBOW 1-1/16MSTR 1-1/16 90°	2
14.	72531412	ELBOW 1/4MPT #4MJIC	1
15.	72533032	ELBOW #12MJIC #12FJIC 45°	2
16.	72532657	TEE #8 RUN	2
17.	72532353	ADAPTER #6MSTR #4MJIC	3
19.	72532690	ELBOW #4MJIC #4FJIC SW	1

3-20

**VALVE BANK (70731810)**

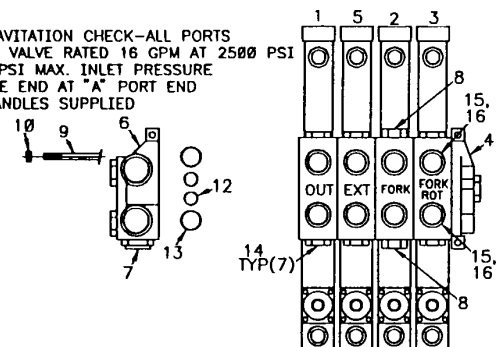
ITEM	PART NO.	DESCRIPTION	QTY
1.	73054595	VALVE SECT HRH 1000PSI	1
2.	73054943	VALVE SECT HRH BLEED	1
3.	73054597	VALVE SECT CVHA	2
4.	73733046	END COVER RH W/TA PLUG	1
6.	73731424	END COVER LH (INCL:7)	1
7.	73054673	RELIEF VALVE (PART OF 6)	1REF
8.	73054592	CHECK 1000PSI	1
9.	73014649	STUD 3/8X11-3/4	3
10.	72062037	NUT 3/8-24 HEX	6
11.	51393494	O-RING KIT	REF
12.	7Q072117	O-RING	10
13.	7Q072119	O-RING	10
14.	73054893	VALVE-ANTI CAVITATION	7

**VALVE BANK (70731811)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	73054598	VALVE SECT HRH	1
2.	73054599	VALVE SECT HRH 1800PSI	1
3.	73054600	VALVE SECT HRH .062 ORIFICE	1
4.	73731241	END COVER RH W/CONV PLUG	1
5.	73054596	VALVE SECT-HRH FREE FLOW	1
6.	73731424	END COVER LH (INCL:7)	1
7.	73054673	RELIEF VALVE (PART OF 6)	1REF
8.	73054985	CHECK 2350PSI	2
9.	73014630	STUD 3/8X10	3
10.	72062037	NUT 3/8-24 HEX	6
11.	51393494	O-RING KIT	REF
12.	7Q072117	O-RING	10
13.	7Q072119	O-RING	10
14.	73054893	VALVE-ANTI CAVITATION	7
15.	70143140	ORIFICE PLATE	2
16.	70142403	SPRING	2

NOTES:

- 1.) ANTICAVITATION CHECK-ALL PORTS
- 2.) 4 WAY VALVE RATED 16 GPM AT 2500 PSI
3500 PSI MAX. INLET PRESSURE
- 3.) HANDLE END AT "A" PORT END
- 4.) NO HANDLES SUPPLIED



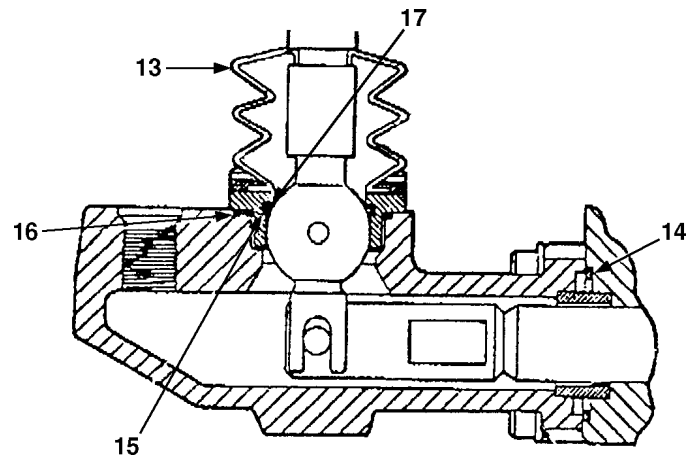


00016042: 70145010.01.19951106

SPOOL ACTUATOR ASM (70145010)

ITEM	PART NO.	DESCRIPTION	QTY
1.	94393203	SEAL KIT (INCL:14-17)	1
13.	77044466	BOOT ASM	1
14.		SEAL-SQ CUT (PART OF 1)	1REF
15.		SEAL-O-RING (PART OF 1)	1REF
16.		SEAL-O-RING (PART OF 1)	1REF
17.		SEAL-SPECIAL (PART OF 1)	1REF

3-21



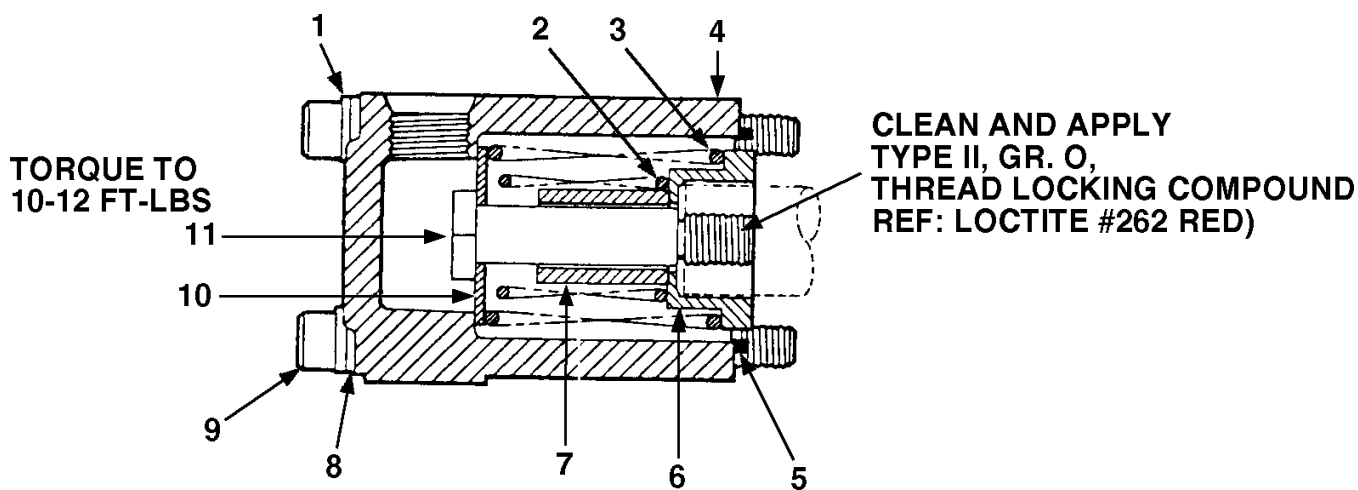


00016042: 94074089.01.19951106

3-22

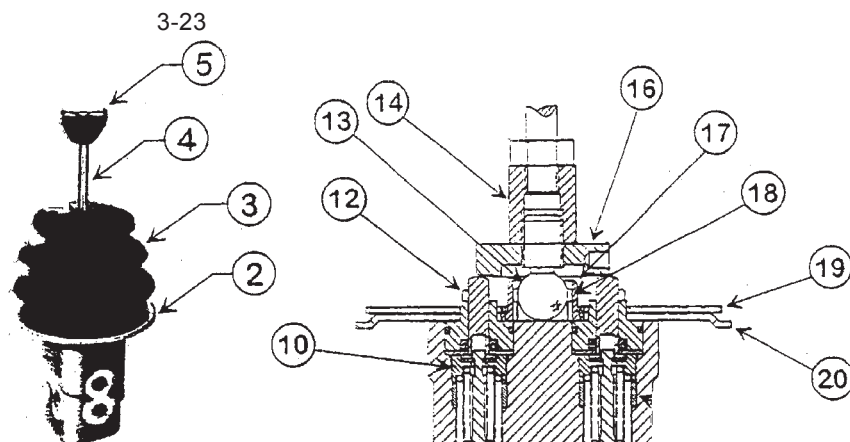
SPOOL POSITIONER END ASM (94074089)

ITEM	PART NO.	DESCRIPTION	QTY
	94074089	REPLACEMENT KIT (INCL:1-11)	1
1.		WASHER-LOCK	4REF
2.		SPRING	1REF
3.		SPRING	1REF
4.		BONNET	1REF
5.		SEAL-SQ CUT	1REF
6.		COLLAR-STOP	1REF
7.		SLEEVE-STOP	1REF
8.		PLATE-BEARING	4REF
9.		SCREW 1/4-20X3 HSHC	4REF
10.		WASHER	1REF
11.		SPUD-POSITIONER	1REF

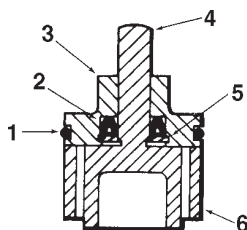




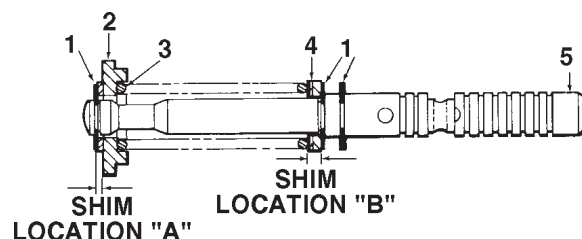
00016042: 70731801.01.20030228

**CONTROLLER ASM (70731801)**

ITEM	PART NO.	DESCRIPTION	QTY
2.	70149792	BOOT RETAINER	1
3.	77044669	BOOT	1
4.	12333001	HANDLE ROD	1
5.	70394211	HANDLE KNOB	1
10.	70145393	PLUNGER GUIDE ASM	4
12.	70580129	SCREW	4
13.	70733263	PIVOT BALL	1
14.	70145395	HANDLE ADAPTER	1
16.	70146218	CAM PLATE	1
17.	70145518	BALL PIVOT RACE	1
18.	70146226	PIVOT PIN	1
19.	70145392	TOP MOUNTING PLATE	1
20.	70146227	BOTTOM MOUNTING PLATE	1

**PLUNGER ASM**

ITEM	PART NO.	DESCRIPTION	QTY
	94394210	PLUNGER SEAL KIT (INCL:1&2)	1
1.		SEAL-O-RING	1REF
2.		SEAL-U CUP	1REF
3.		GUIDE-PLUNGER STD	1REF
		GUIDE-PLUNGER SS	1REF
4.		PIN-PLUNGER STD HCS/H CJ	1REF
		PIN-PLUNGER SS HCS	1REF
		PIN-PLUNGER HCF	1REF
		PIN-PLUNGER HCJMAG DET	1REF
5.		RING-RETAINING	1REF
6.		RACE-FEEL	1REF

**SPOOL ASM**

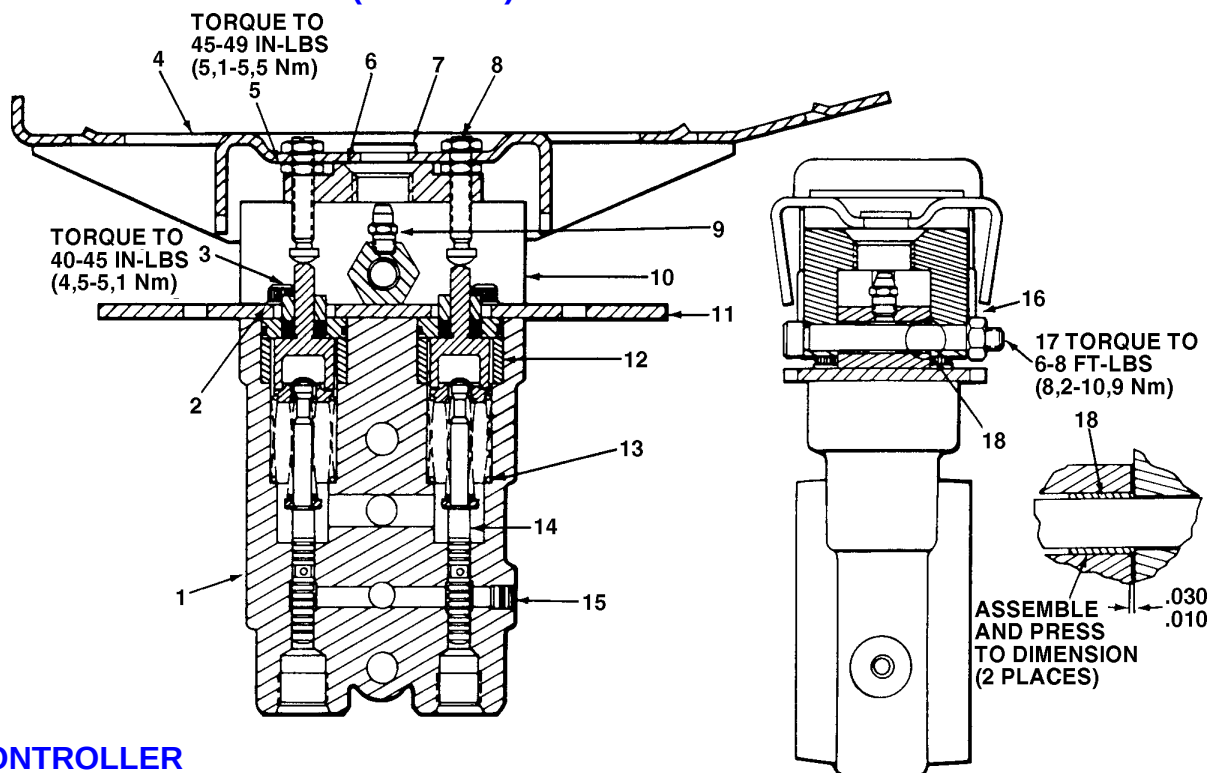
ITEM	PART NO.	DESCRIPTION	QTY
1.		RING-RETAINING	3
2.		RETAINER-SPRING	1
3.		SPRING (0-120 PSI) GREY	1
		SPRING (0-150 PSI) BLUE	1
		SPRING (0-200 PSI) RED	1
		SPRING (0-250 PSI) YELLOW	1
		SPRING (0-300 PSI) BLACK	1
		SPRING (0-400 PSI) SILVER	1
4.		SHIM .010"	AR
		SHIM .020"	AR
		SHIM .060"	AR
5.		SPOOL	1



00016042: 70731800.01.19951106

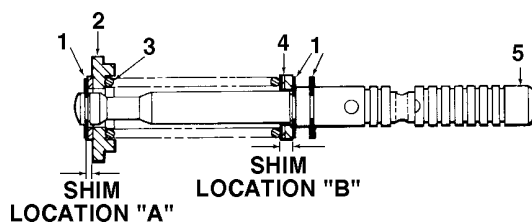
3-24

FOOT TREADLE CONTROLLER (70731800)



FOOT CONTROLLER

ITEM	PART NO.	DESCRIPTION	QTY
1.		HOUSING (SAE 6 PORTS)	1
2.		WASHER-LOCK	4
3.		SCREW-HSHC	4
4.	70145275	PEDAL-FOOT	1
5.		NUT 1/4-20 JAM	4
6.		ARM-ROCKER	1
7.		GROMMET	1
8.	70145687	BUTTON	2
9.		FITTING-GREASE	1
10.		BRACKET-GUARD	2
11.		PLATE-MOUNTING	1
12.		PLUNGER ASM (SEE DWG)	2
13.		SPRING	2
14.		SPOOL ASM (SEE DWG)	2
15.		PLUG-EXPANSION	1
16.		NUT 1/4-20 HEX	1
17.		SCREW-SHOULDER	1
18.		BEARING-BUSHING	2

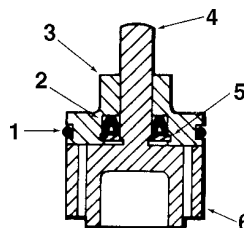


SPOOL ASM

ITEM	PART NO.	DESCRIPTION	QTY
1.		RING-RETAINING	3
2.		RETAINER-SPRING	1
3.		SPRING (0-120 PSI) GREY	1
		SPRING (0-150 PSI) BLUE	1
		SPRING (0-200 PSI) RED	1
		SPRING (0-250 PSI) YELLOW	1
		SPRING (0-300 PSI) BLACK	1
		SPRING (0-400 PSI) SILVER	1
4.		SHIM .010"	AR
		SHIM .020"	AR
		SHIM .060"	AR
5.		SPOOL	1

PLUNGER ASM

ITEM	PART NO.	DESCRIPTION	QTY
	94394210	PLUNGER SEAL KIT (INCL:1&2)	1
1.		SEAL-O-RING	1REF
2.		SEAL-U CUP	1REF
3.		GUIDE-PLUNGER STD	1REF
		GUIDE-PLUNGER SS	1REF
4.		PIN-PLUNGER STD HCS/HCI	1REF
		PIN-PLUNGER SS HCS	1REF
		PIN-PLUNGER HCF	1REF
		PIN-PLUNGER HCJMAG DET	1REF
5.		RING-RETAINING	1REF
6.		RACE-FEEL	1REF



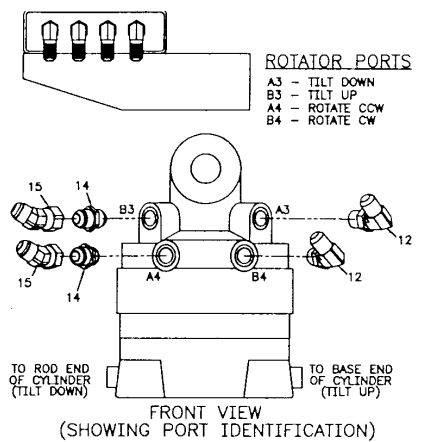
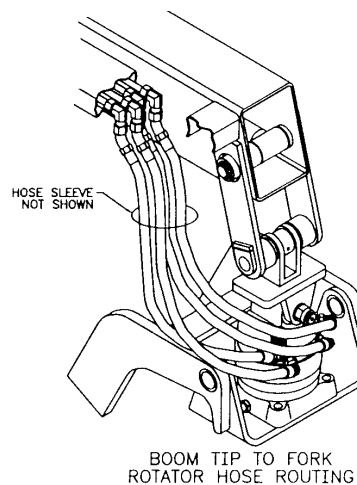
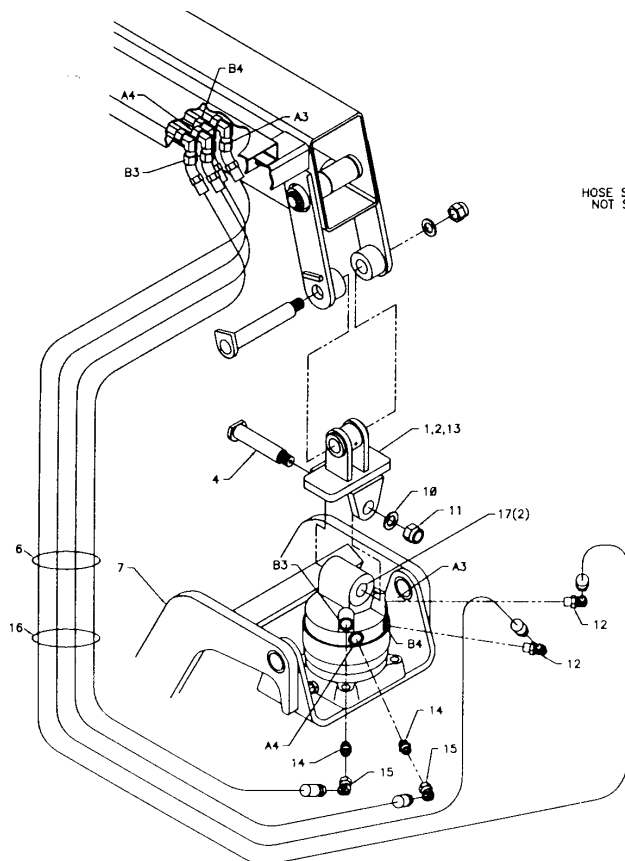


00016042: 51713903.01.19980728

3-25

KIT-KINSHOFER FORK MOUNTING- HARD PLUMBED (51713903)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51709475	SWIVEL LINK (INCL: 2-13)	1REF
2.	70055207	BUSHING (PART OF 1)	2REF
4.	70143730	ROTATOR PIN (PART OF 7)	1REF
6.	51394466	HOSE ASM 3/8X29 #8#8	4
7.		FORK (INCL:4,10-12, 17)	1REF
10.	72063182	WASHER-FLAT (PART OF 7)	1REF
11.	72062234	NUT-LOCK (PART OF 7)	1REF
12.	72533476	ELBOW #8MJIC MM (PART OF 7)	2REF
13.	72053508	ZERK 1/8NPT (PART OF 1)	1REF
14.	72533025	ADAPTER 3/4MJIC MM	2
15.	72532670	ELBOW #8MJIC #8FJIC 45°	2
16.	60350067	SLEEVE X 20"	1
17.	70143529	BUSHING (PART OF 7)	2REF



NOTE:
1. ITEMS 1,2,3,8,9 AND 13 ARE PART OF EXTENSION BOOM ASM.

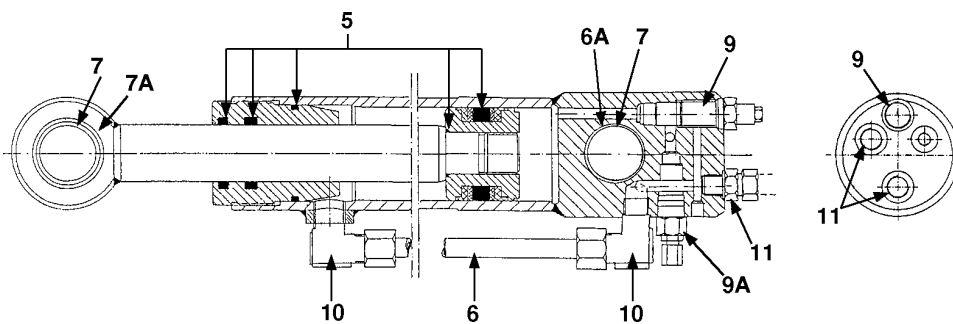
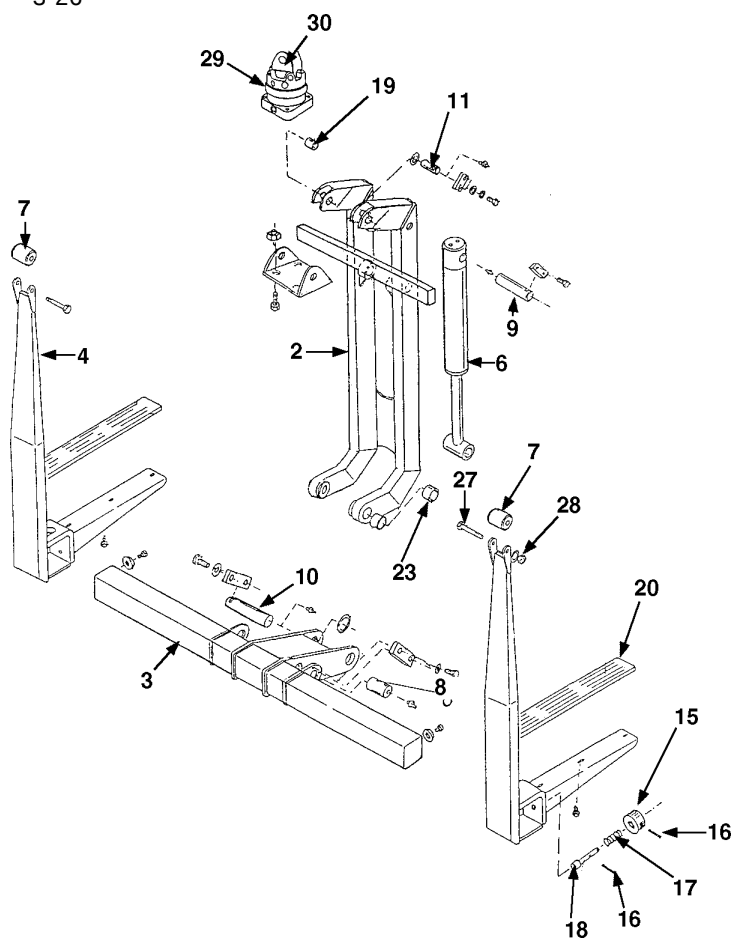


00016042: 70732903.01.19951106

3-26

**WALLBOARD FORK-KINSHOFER W/
ROTATOR (70732903)****FORK ASSEMBLY**

ITEM	PART NO.	DESCRIPTION	QTY
2.	70145043	PLATFORM 48"	1
	70145044	PLATFORM 54"	1
3.	70145241	LOWER 63"	1
	70145242	LOWER 84"	1
4.	70145047	BARE PRONG	2
7.	70145226	ROLLER	2
8.	70145248	PIN-LOWER PART	2
9.	70145245	PIN-CYL ABOVE	1
10.	70145246	PIN-CYL BELOW	1
11.	70145247	PIN-SUSPENSION	1
15.	70145230	KNURLED NUT	2
16.	70145231	SPRING-DOWEL PIN	4
17.	70145232	SPRING-PRESSURE	2
18.	70145233	PIN	2
19.	70145244	BUSHING 30X34X15	2
20.	70145229	PAD	4
23.	70145243	BUSHING 50X55X30	2
27.	70145227	HEX SCREW	2
28.	70145228	LOCK NUT	2
29.	94393202	SEAL KIT-ROTATOR	3
30.	70143529	BUSHING-ROTATOR	2
	70733064	ROTATOR	REF

**FORK CYLINDER ASM**

ITEM	PART NO.	DESCRIPTION	QTY
5.	94393279	SEAL KIT	1
6.	70145234	HYD TUBE	1
6A.	70145235	DISTANCE TUBE	1
7.	70145236	BUSHING	2
7A.	70145237	DISTANCE TUBE	1
9.	73054931	BRAKE VALVE	1
9A.	70145238	PRESSURE RELIEF TUBE	1
10.	70145239	BANJO FITTING	2
11.	70145240	MALE STUD FITTING	2



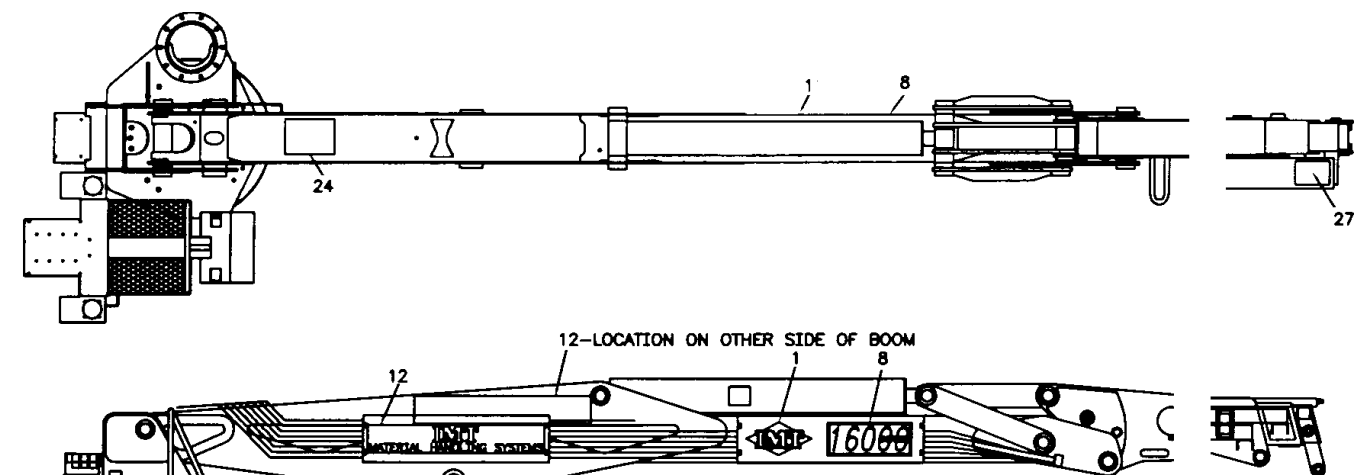
00016042: 95713823.01.19980203

3-27

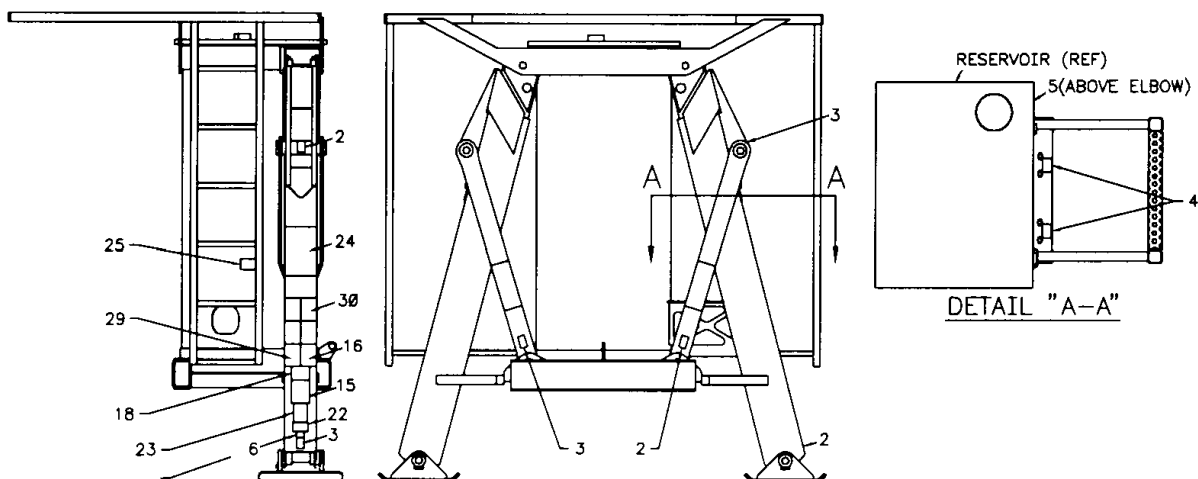
DECAL KIT-RADIO REMOTE (95713823)

ITEM	PART NO.	DESCRIPTION	QTY
1.	70029252	PLACARD - IMT DIAMOND	2
2.	70391612	DECAL-GREASE WEEKLY LEFT	3
3.	70391613	DECAL-GREASE WEEKLY RIGHT	4
4.	70392108	DECAL-SUCTION LINE	2
5.	70392109	DECAL-RETURN LINE	1
6.	70392213	DECAL-CAUTION WASH/WAX	3
7.	70392524	DECAL-ROT CRANE/GREASE	1
8.	70394864	DECAL-16000 IDENT	2
12.	70394670	DECAL-IMT MATL HDLG SYS	2
15.	70392864	DECAL-DANGER OR STD CLR	2
16.	70392890	DECAL-DANGER STOW/UNFOLD	2

18.	70392867	DECAL-DANGER OR MOVING	2
20.	70392891	DECAL-DANGER DRIVELINE	2
21.	70392865	DECAL-DANGER ELECTRO LG	4
22.	70392982	DECAL-CONTACT IMT	3
23.	71039134	DECAL-CAUTION OIL LEVEL	3
24.	71394156	CAPACITY PLACARD	3
25.	76391511	DECAL-WB STABILIZER	1
26.	70394189	DECAL-RECOMMEND HYD OIL	1
27.	70394625	DECAL-FORK HOSE ROUTING	1
28.	70392868	DECAL-DGR CR LOADLINE	4
29.	70392863	DECAL-DGR HOIST PERS	1
30.	70394764	DECAL-DANGER 5-COMBINED	2



DECAL PLACEMENT	
ITEM NO.	LOCATION
6,15,16,18, 22,23,24,30	ONE ON EACH OUTRIGGER.
21,28	ONE ON EACH SIDE OF CARRIER VEHICLE.
7	AT TURNABLE GREASE ZERK.
2,3	AT ALL GREASE ZERKS.
6,22,23,26	ON RESERVOIR.
28	AT OR NEAR THE DRIVELINE.



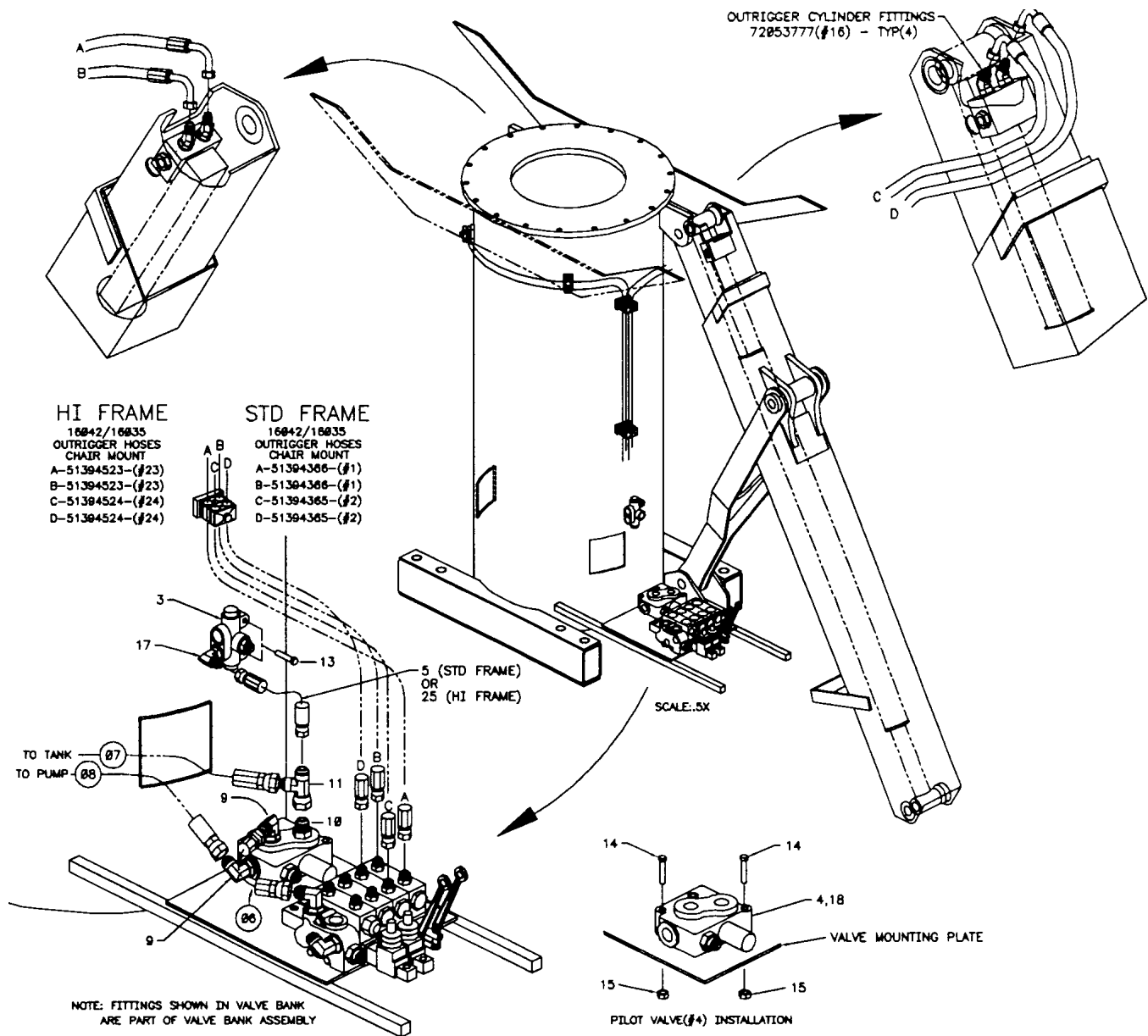


00016042: 99901021.01.19971023

3-28

HYD KIT-STD/HI FRM-RADIO-BASE & OUTRIGGERS (99901021)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394366	HOSE ASM 1/2X123 FJ #8#8 (PART OF 19)	2REF
2.	51394365	HOSE ASM 1/2X81 FJ #8#8 (PART OF 19)	2REF
3.	73054462	SELECT VLV-PILOT OPERATED	1
4.	73054542	PILOT VALVE	1
5.	51394356	HOSE ASM 1/2X18 FF #8#12 (PART OF 19)	1REF
6.	51394359	HOSE ASM 3/4X9-1/2 FF #12#12 (PART OF 19&20)	1REF
7.	51394364	HOSE ASM 3/4X83 FF #12#12 (PART OF 19&20)	1REF
8.	51394358	HOSE ASM 3/4X65 FF #12#12 (PART OF 19&20)	1REF
9.	72053767	ELBOW #12MSTR #12MJIC 90°	2
10.	72532366	ADAPTER #12MSTR #12MJIC	1
11.	72532950	TEE #12 SWVL NUT RUN	1
13.	72060028	CAP SCR 5/16-18X1-3/4	2
14.	72060029	CAP SCR 5/16-18X2	2
15.	72062109	NUT 5/16 LOCK	2
16.	72053777	ELBOW #8MSTR #8MJIC 45°	4
17.	72053763	ELBOW #8MSTR #8MJIC 90°	1
18.	73014618	SHIM	1
19.	51713834	HOSE KIT-STD FRM-RADIO (INC:1,2,5-8)	1REF
20.	51714016	HOSE KIT-HI FRM-RADIO (INC:6-8,23-25)	1REF
23.	51394523	HOSE ASM 1/2X113 FJ #8#8 (PART OF 20)	2REF
24.	51394524	HOSE ASM 1/2X71 FJ #8#8 (PART OF 20)	2REF
25.	51394525	HOSE ASM 1/2X15 FF #8#12 (PART OF 20)	1REF





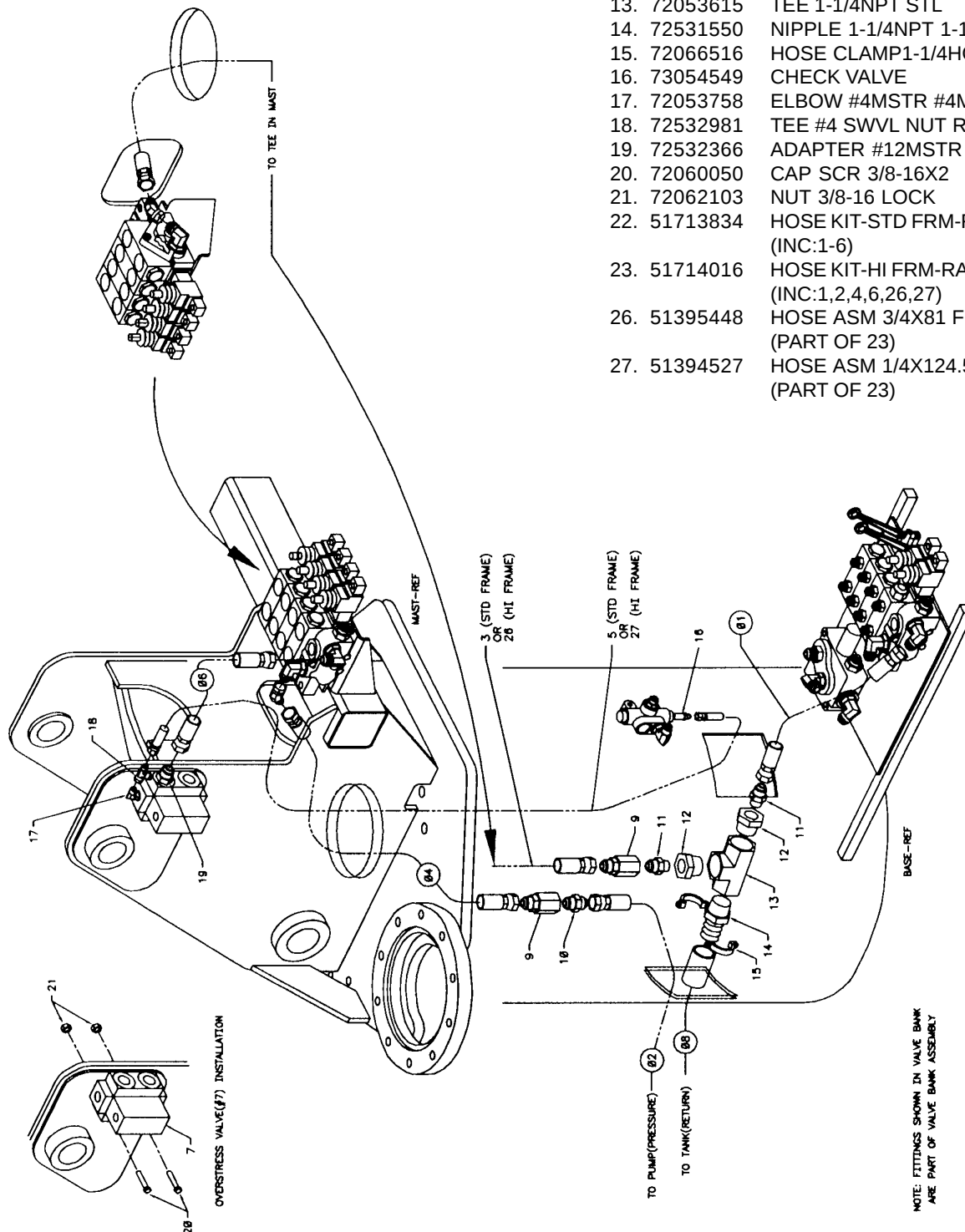
00016042: 99901022.01.19990413

3-29

**HYD KIT-STD/HI FRM-RADIO-MAST MTD
VB (99901022)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394362	HOSE ASM 3/4X36 FF #12#12 (PART OF 22&23)	1REF
2.	51394363	HOSE ASM 3/4X97 FF #12#12 (PART OF 22&23)	1REF
3.	51394364	HOSE ASM 3/4X91 FF #12#12 (PART OF 22)	1REF
4.	51395449	HOSE ASM 3/4X50 FF #12#12	

5.	51394342	(PART OF 22&23) HOSE ASM 1/4X131.5 FF #4#4	1REF
6.	51394360	(PART OF 22) HOSE ASM 3/4X24 FF #4#4 (PART OF 22&23)	1REF
7.	73054424	OVERSTRESS VALVE	1
8.	60035829	HOSE 1-1/4 100R4 X 50	1
9.	72532973	ADAPTER #12 PR-SW-IN-LINE	2
10.	72532855	ADAPTER #12MJIC #12MJIC	1
11.	72053676	ADAPTER 3/4MPT #12MJIC	2
12.	72531836	REDUCE BUSH 1-1/4 3/4NPT	2
13.	72053615	TEE 1-1/4NPT STL	1
14.	72531550	NIPPLE 1-1/4NPT 1-1/4HOSE	1
15.	72066516	HOSE CLAMP1-1/4HOSE 2BOLT	1
16.	73054549	CHECK VALVE	1
17.	72053758	ELBOW #4MSTR #4MJIC 90°	1
18.	72532981	TEE #4 SWVL NUT RUN	1
19.	72532366	ADAPTER #12MSTR #12MJIC	1
20.	72060050	CAP SCR 3/8-16X2	2
21.	72062103	NUT 3/8-16 LOCK	2
22.	51713834	HOSE KIT-STD FRM-RADIO (INC:1-6)	1REF
23.	51714016	HOSE KIT-HI FRM-RADIO (INC:1,2,4,6,26,27)	1REF
26.	51395448	HOSE ASM 3/4X81 FF #12#12 (PART OF 23)	1REF
27.	51394527	HOSE ASM 1/4X124.5 FF #4#4 (PART OF 23)	1REF





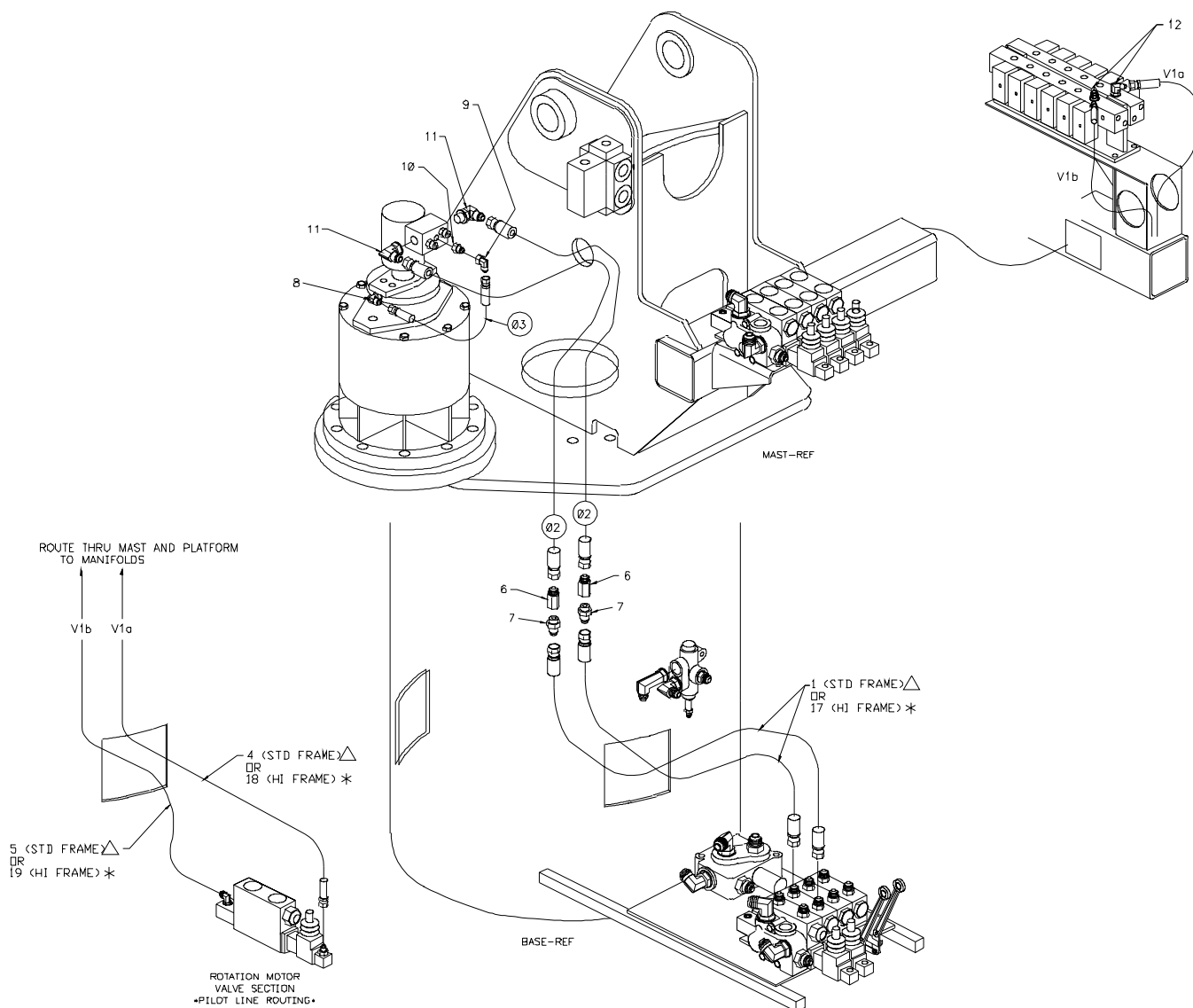
00016042: 99901023.01.19990413

HYD KIT-STD/HI FRM-RADIO-ROT'N **(99901023)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394338	HOSE ASM 1/2X83 FF #8#8 (PART OF 13)	1REF
2.	51394348	HOSE ASM 1/2X61 FF #8#8 (PART OF 13&14)	2REF
3.	51394347	HOSE ASM 1/4X11.5 FF #4#4 (PART OF 13&14)	1REF
4.	51394332	HOSE ASM 1/4X176.5 FF #4#4 (PART OF 13)	1REF
5.	51394343	HOSE ASM 1/4X161.5 FF #4#4 (PART OF 13)	1REF
6.	72532980	ADAPTER PR-SW-IN-LINE	2
7.	72532739	ADAPTER #8MJIC #8MJIC	2

3-30

8.	72053758	ELBOW #4MSTR #4MJIC 90°	1
9.	72532690	ELBOW #4MJIC #4FJIC SWVL	1
10.	72532351	ADAPTER #4MSTR #4MJIC	1
11.	72053763	ELBOW #8MSTR #8MJIC 90°	2
12.	72532699	ELBOW #6MSTR #4MJIC 90°	2
13.	51713834	HOSE KIT-STD FRM-RADIO (INC:1-5)	1REF
14.	51714016	HOSE KIT-HI FRM-RADIO (INC:2,3,17-19)	1REF
17.	51394528	HOSE ASM 1/2X73 FF #8#8 (PART OF 14)	2REF
18.	51394529	HOSE ASM 1/4X169.5 FF #4#4 (PART OF 14)	1REF
19.	51394530	HOSE ASM 1/4X153.5 FF #4#4 (PART OF 14)	1REF





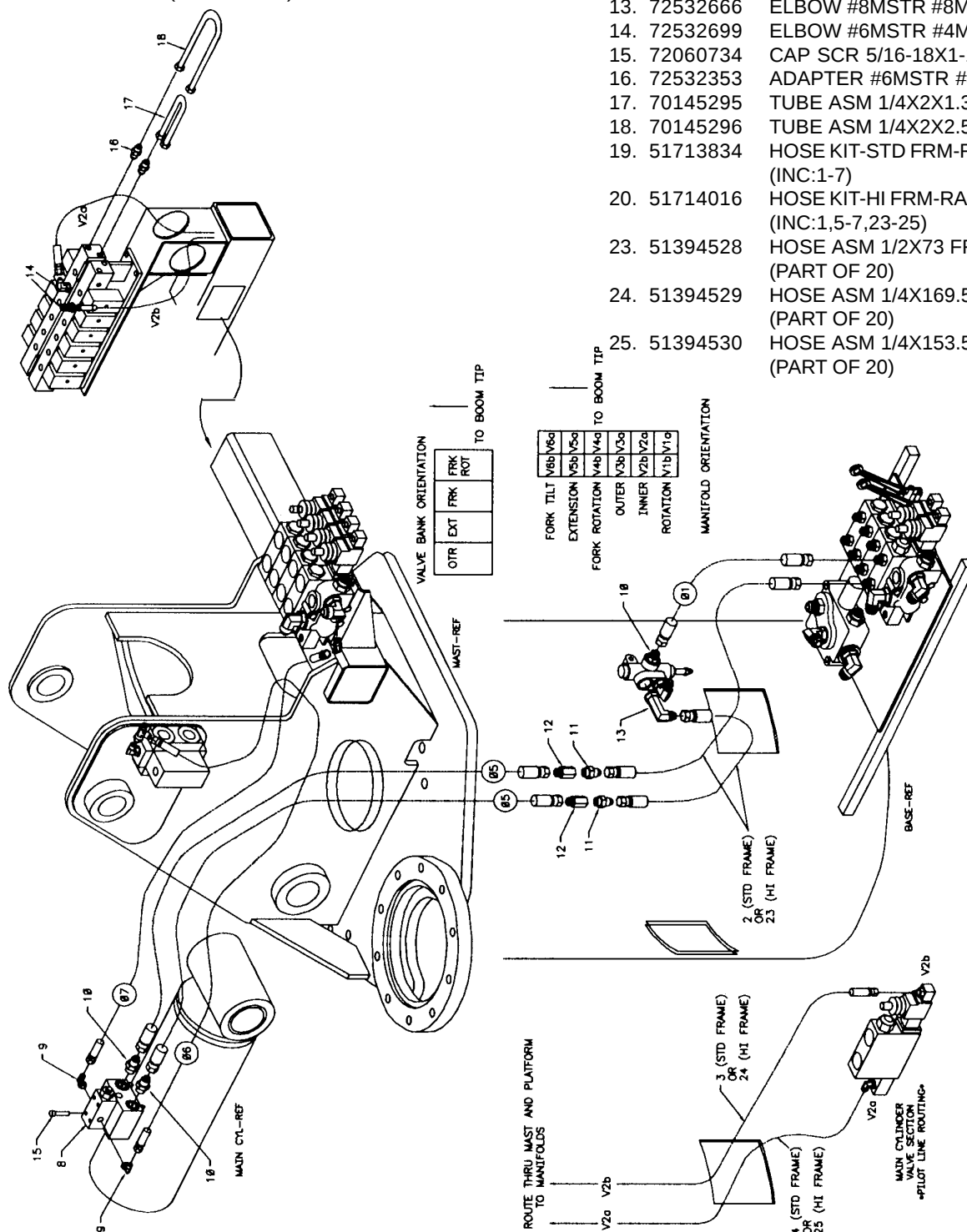
00016042: 99901024.01.19990413

**HYD KIT-STD/HI FRM-RADIO-MAIN
CYLINDER (99901024)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394337	HOSE ASM 1/2X23 FF #8#8 (PART OF 19&20)	1REF
2.	51394338	HOSE ASM 1/2X83 FF #8#8 (PART OF 19)	2REF
3.	51394332	HOSE ASM 1/4X176.5 FF #4#4 (PART OF 19)	1REF
4.	51394343	HOSE ASM 1/4X161.5 FF #4#4 (PART OF 19)	1REF

3-31

5.	51394339	HOSE ASM 1/2X43 FF #8#8 (PART OF 19&20)	2REF
6.	51394349	HOSE ASM 1/4X61.5 FF #4#4 (PART OF 19&20)	1REF
7.	51394352	HOSE ASM 1/4X48.5 FF #4#4 (PART OF 19&20)	1REF
8.	73054425	SENSOR VALVE	1
9.	72053758	ELBOW #4MSTR #4MJIC 90°	2
10.	72532358	ADAPTER #8MSTR #8MJIC	3
11.	72532739	ADAPTER #8MJIC #8MJIC	2
12.	72532980	ADAPTER-PR SW IN-LINE	2
13.	72532666	ELBOW #8MSTR #8MJIC XLG	1
14.	72532699	ELBOW #6MSTR #4MJIC 90°	2
15.	72060734	CAP SCR 5/16-18X1-1/2 SHPLN	4
16.	72532353	ADAPTER #6MSTR #4MJIC	4
17.	70145295	TUBE ASM 1/4X2X1.36	1
18.	70145296	TUBE ASM 1/4X2X2.59	1
19.	51713834	HOSE KIT-STD FRM-RADIO (INC:1-7)	1REF
20.	51714016	HOSE KIT-HI FRM-RADIO (INC:1,5-7,23-25)	1REF
23.	51394528	HOSE ASM 1/2X73 FF #8#8 (PART OF 20)	2REF
24.	51394529	HOSE ASM 1/4X169.5 FF #4#4 (PART OF 20)	1REF
25.	51394530	HOSE ASM 1/4X153.5 FF #4#4 (PART OF 20)	1REF





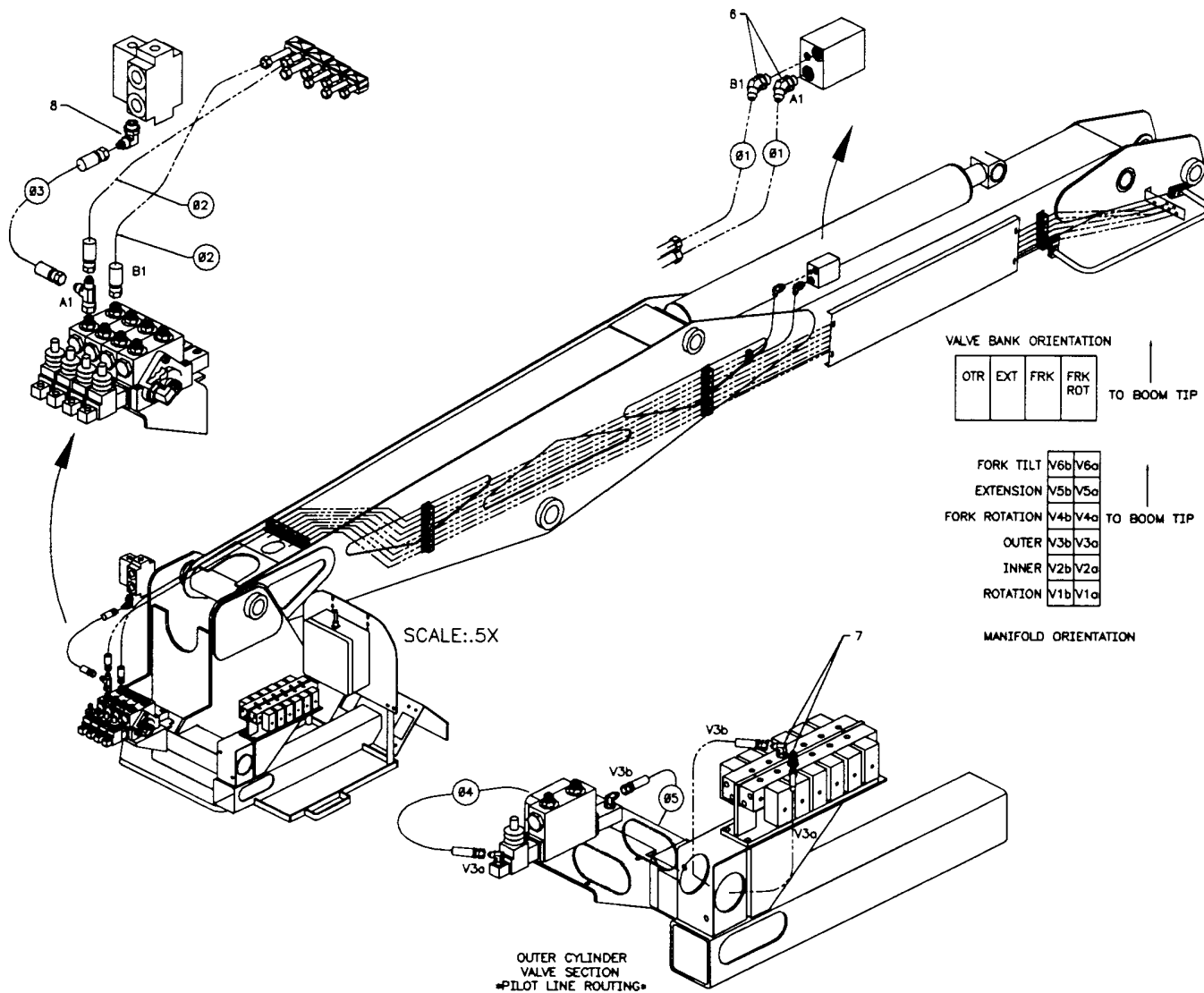
00016042: 99901025.01.19990413

3-32

**HYD KIT-STD/HI FRM-RADIO-OUTER
CYLINDER (99901025)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394469	HOSE ASM 1/2X23 AAF #8#8 (PART OF 9&10)	1REF
2.	51394467	HOSE ASM 1/2X37 AAF #12#8 (PART OF 9&10)	1REF
3.	51394353	HOSE ASM 1/2X18 FF #8#8 (PART OF 9&10)	1REF
4.	51394355	HOSE ASM 1/4X70.5 FF #4#4 (PART OF 9&10)	1REF

5.	51394334	HOSE ASM 1/4X53.5 FF #4#4 (PART OF 9&10)	1REF
6.	72053777	ELBOW #8MSTR #8MJIC 45°	2
7.	72532699	ELBOW #6MSTR #4MJIC 90°	2
8.	72053763	ELBOW #8MSTR #8MJIC 90°	1
9.	51713834	HOSE KIT-STD FRM-RADIO (INC:1-5)	1REF
10.	51714016	HOSE KIT-HI FRM-RADIO (INC:1-5)	1REF





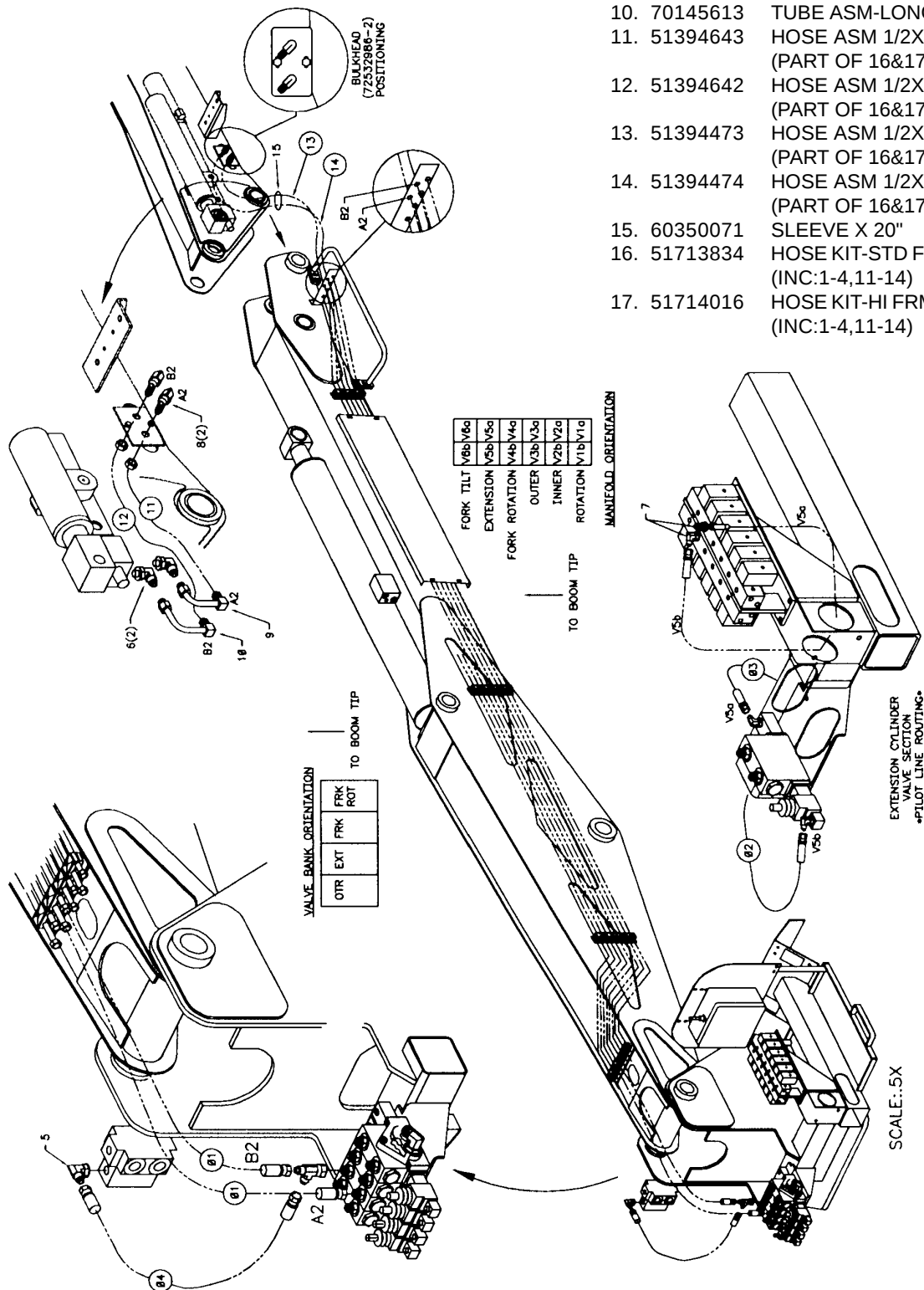
00016042: 99901026.01.19990413

3-33

**HYD KIT-STD/HI FRM-RADIO-EXT
CYLINDER (99901026)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394467	HOSE ASM 1/2X37 FF #12#8 (PART OF 16&17)	1REF
2.	51394335	HOSE ASM 1/4X82.5 FF #4#4 (PART OF 16&17)	1REF

3.	51394340	HOSE ASM 1/4X68.5 FF #4#4 (PART OF 16&17)	1REF
4.	51394337	HOSE ASM 1/2X23 FF #8#8 (PART OF 16&17)	1REF
5.	72053763	ELBOW #8MSTR #8MJIC 90°	1
6.	72053762	ELBOW #6MSTR #8MJIC 90°	2
7.	72532699	ELBOW #6MSTR #4MJIC 90°	2
8.	72532986	ELBOW #8MJIC #8MJIC BKHD	2
9.	70145612	TUBE ASM-SHORT	1
10.	70145613	TUBE ASM-LONG	1
11.	51394643	HOSE ASM 1/2X17 IJ #8#8 (PART OF 16&17)	1REF
12.	51394642	HOSE ASM 1/2X20 IJ #8#8 (PART OF 16&17)	1REF
13.	51394473	HOSE ASM 1/2X27 FF #12#8 (PART OF 16&17)	1REF
14.	51394474	HOSE ASM 1/2X31 FF #12#8 (PART OF 16&17)	1REF
15.	60350071	SLEEVE X 20"	1
16.	51713834	HOSE KIT-STD FRM-RADIO (INC:1-4,11-14)	1REF
17.	51714016	HOSE KIT-HI FRM-RADIO (INC:1-4,11-14)	1REF



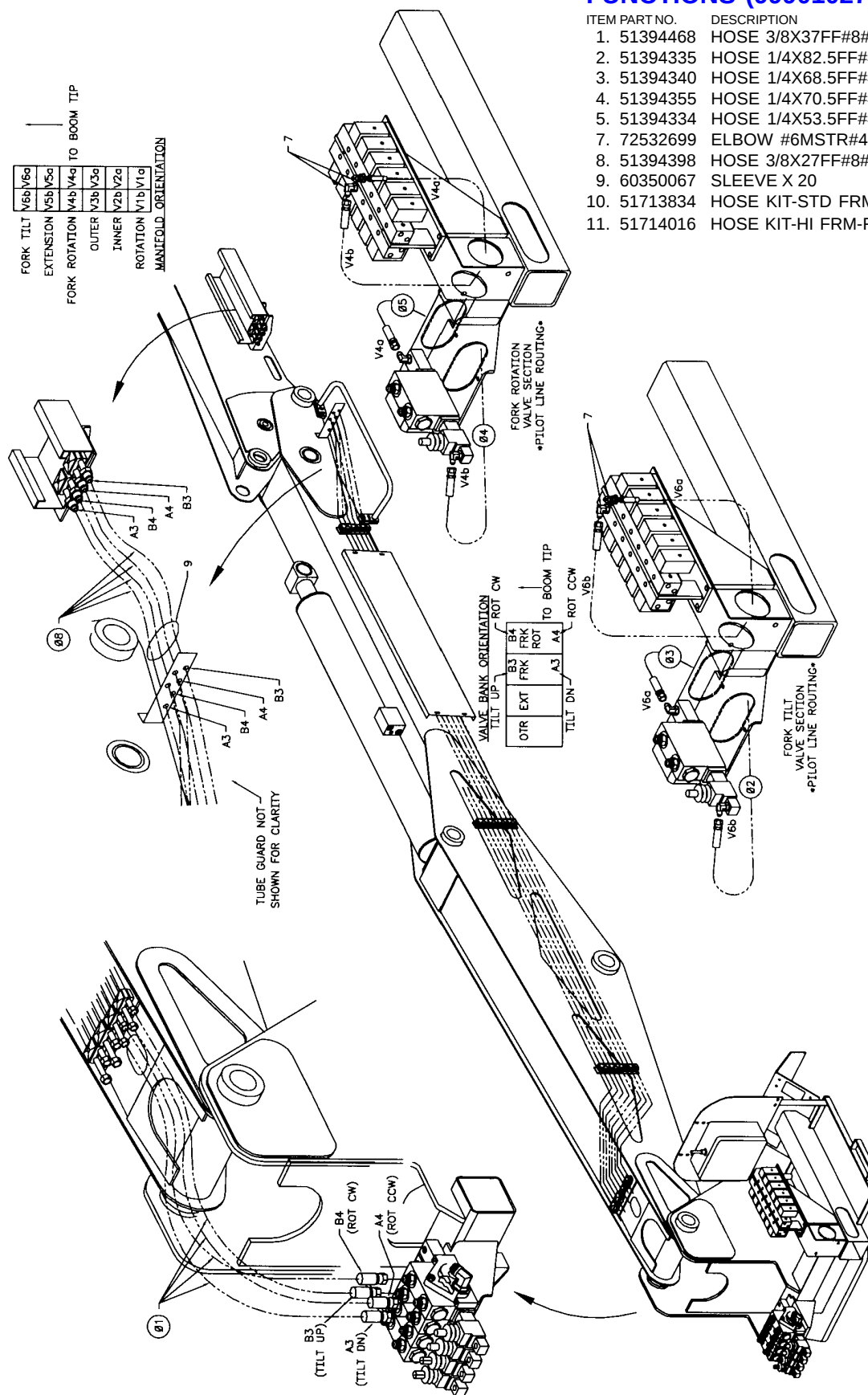


00016042: 99901027.01.19990413

3-34

HYD KIT-STD/HI FRM-RADIO-BOOM TIP FUNCTIONS (99901027)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394468	HOSE 3/8X37FF#8#8(PART OF 10&11)	4REF
2.	51394335	HOSE 1/4X82.5FF#4#4(PART OF 10&11)	1REF
3.	51394340	HOSE 1/4X68.5FF#4#4(PART OF 10&11)	1REF
4.	51394355	HOSE 1/4X70.5FF#4#4(PART OF 10&11)	1REF
5.	51394334	HOSE 1/4X53.5FF#4#4(PART OF 10&11)	1REF
7.	72532699	ELBOW #6MSTR#4MJIC90°	4
8.	51394398	HOSE 3/8X27FF#8#8 (PART OF 10&11)	4REF
9.	60350067	SLEEVE X 20	1
10.	51713834	HOSE KIT-STD FRM-RADIO(INC:1-5,8)	1REF
11.	51714016	HOSE KIT-HI FRM-RADIO (INC:1-5,8)	1REF



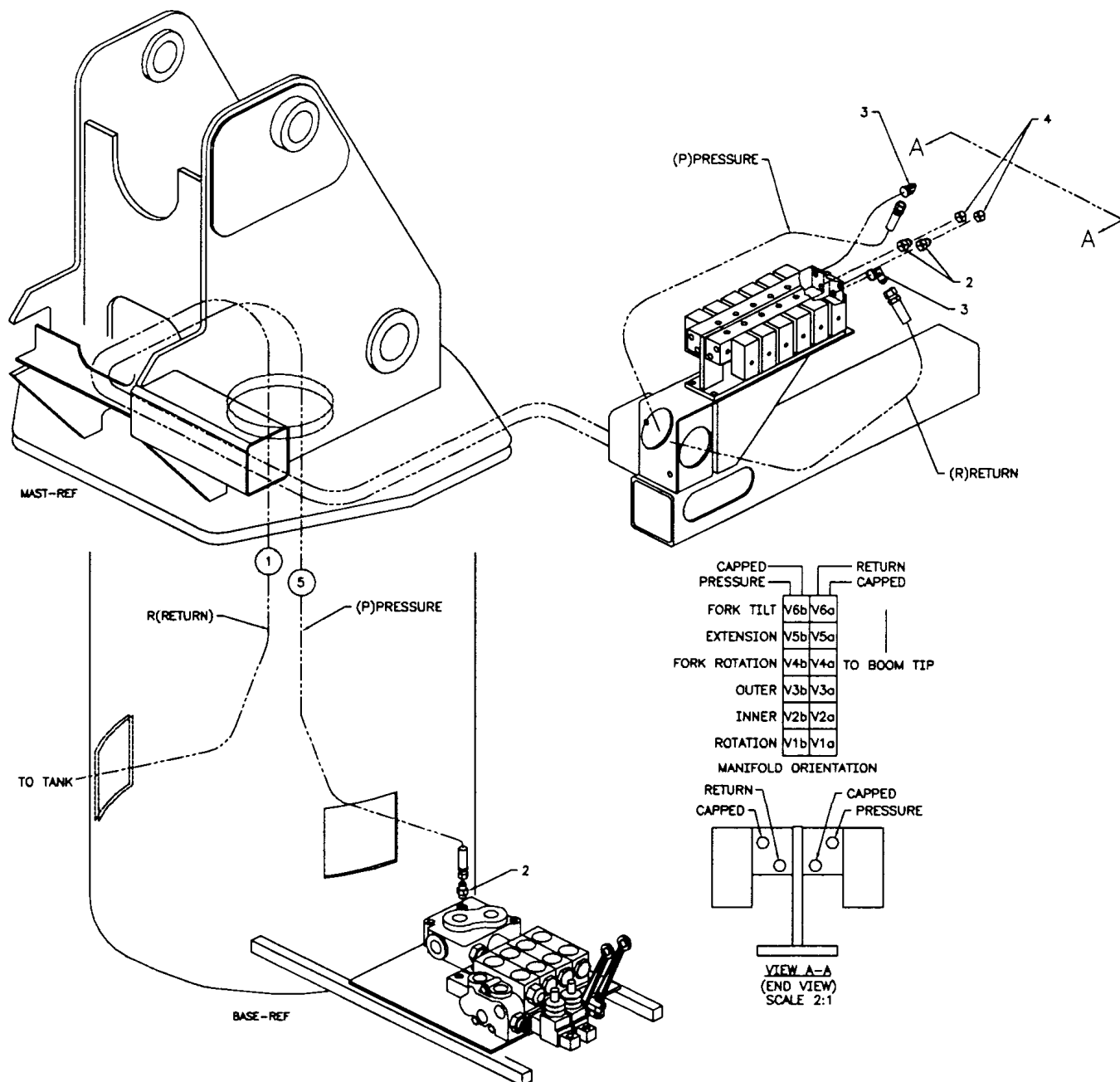


00016042: 9991028.01.19970425

3-35

HYD KIT-STD/HI FRM-RADIO-PILOT LINES (99901028)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394533	HOSE ASM 1/4X181.5FF#4#4 (PART OF 6&7)	1REF
2.	72532353	ADAPTER #6MSTR #4MJIC	2
3.	72532699	ELBOW #6MSTR #4MJIC 90°	4
4.	72532674	CAP #4JIC	2
5.	51394532	HOSE ASM 1/4X195.5FF#4#4 (PART OF 6&7)	1REF
6.	51713834	HOSE KIT-STD FRM-RAD(INC:1,5)	1REF
7.	51714016	HOSE KIT-HI FRM-RADIO(INC:1,5)	1REF





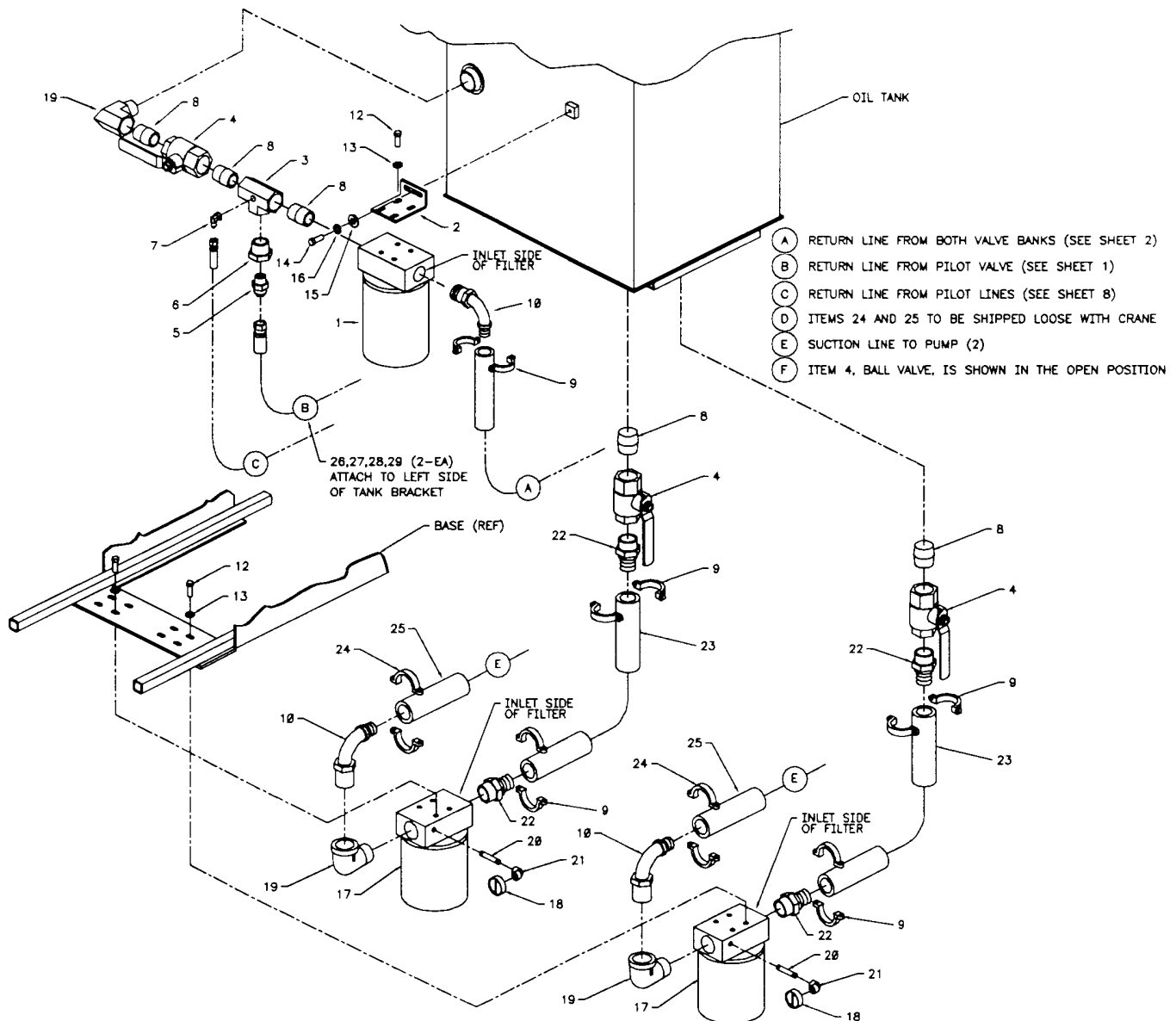
00016042: 99901019.01.19980827

3-36

**HYD KIT-STD/HI FRM-RADIO & CHAIR
MOUNT-OIL TANK (99901019)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	73052091	RETURN FILTER	1
2.	60112266	BRACKET-OIL FILTER	1
3.	60107571	TEE-MODIFIED	1
4.	73054232	BALL VALVE 1-1/4NPT	3
5.	72053676	ADAPTER 3/4MPT #12MJIC	1
6.	72531836	REDUCER BUSH 1-1/4 3/4 ST	1
7.	72531412	ELBOW 1/4MPT 7/16MJIC	1
8.	72053211	PIPE NIPPLE 1-1/4NPT X CLOSE	5
9.	72066516	HOSE CLAMP 1-1/4	5
10.	72532346	BARB NIPPLE 1-1/4NPT1-1/4 90°	3
12.	72060025	CAP SCR 5/16-18X1 HHGR5	12
13.	72063050	WASHER 5/16 LOCK	12
14.	72060002	CAP SCR 1/4-20X3/4 HHGR5	1

15.	72063001	WASHER 1/4 WRT	1
16.	72063049	WASHER 1/4 LOCK	1
17.	73052012	FILTER-SUCTION W/GAUGE	2
18.	70048031	VACUUM GAUGE	2
19.	72053287	STREET ELBOW 1-1/4NPT 90°	3
20.	72053002	PIPE NIPPLE 1/8NPT X 2	2
21.	72053321	ELBOW 1/8NPT 90°	2
22.	72531550	BARB NIPPLE 1-1/4MPT 1-1/4	4
23.	60350063	HOSE 1-1/4 HYD 100R4 X 15	2
24.	72066516	HOSE CLAMP 1-1/4 2-BOLT	4
25.	60035679	HOSE 1-1/4 100R4 X 96	2
26.	72066587	CLAMP	2
27.	72063003	WASHER 3/8 WRT	2
28.	72060046	CAP SCR 3/8-16X1 HHGR5	2
29.	72062103	NUT 3/8-16 LOCK	2

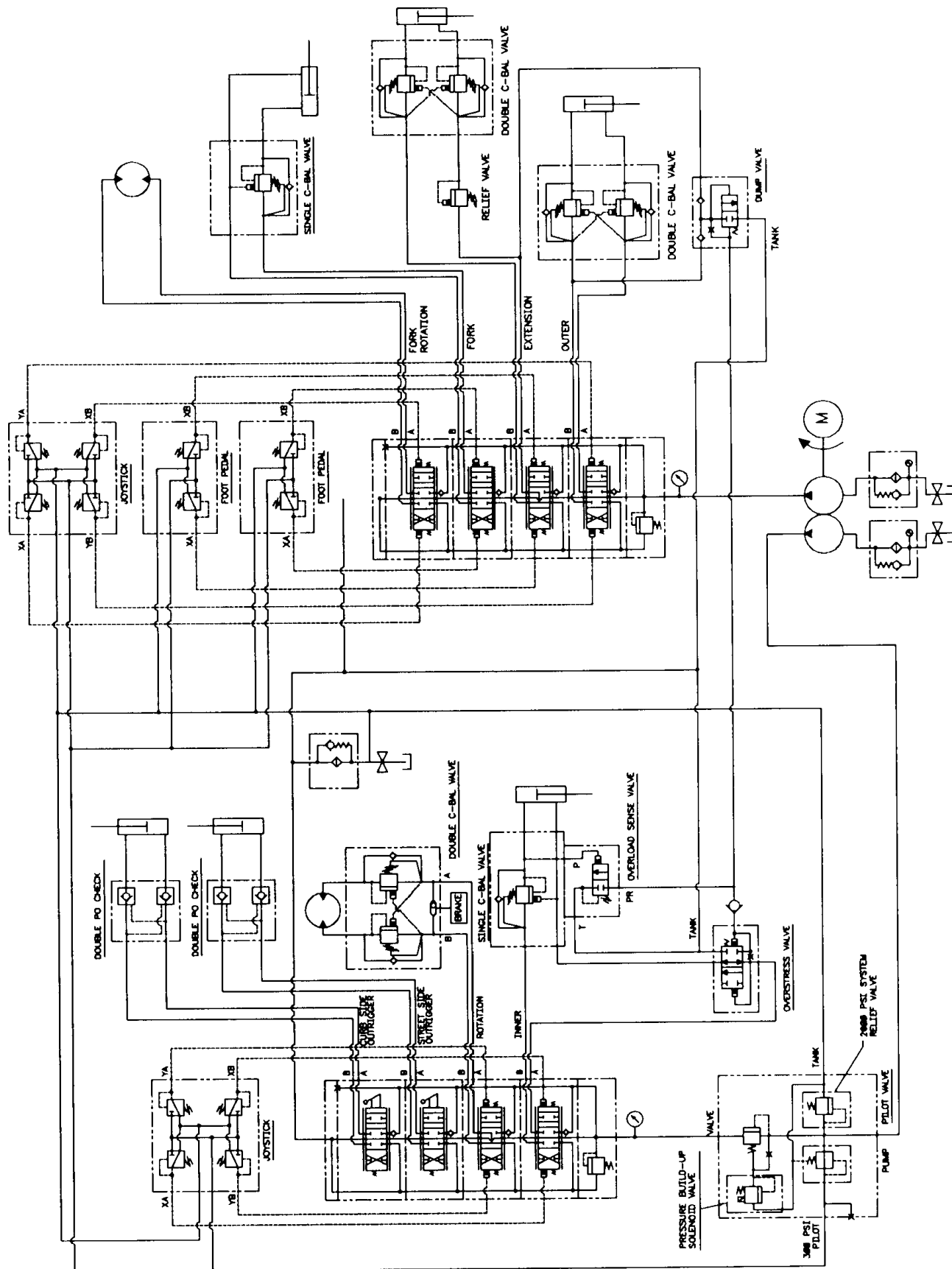




00016042: 99901020.01.19970425

3-37

HYD KIT-STD/HI FRM-RADIO-OVERALL SCHEMATIC (99901020)





00016042: 19980826

3-38

(BLANK)

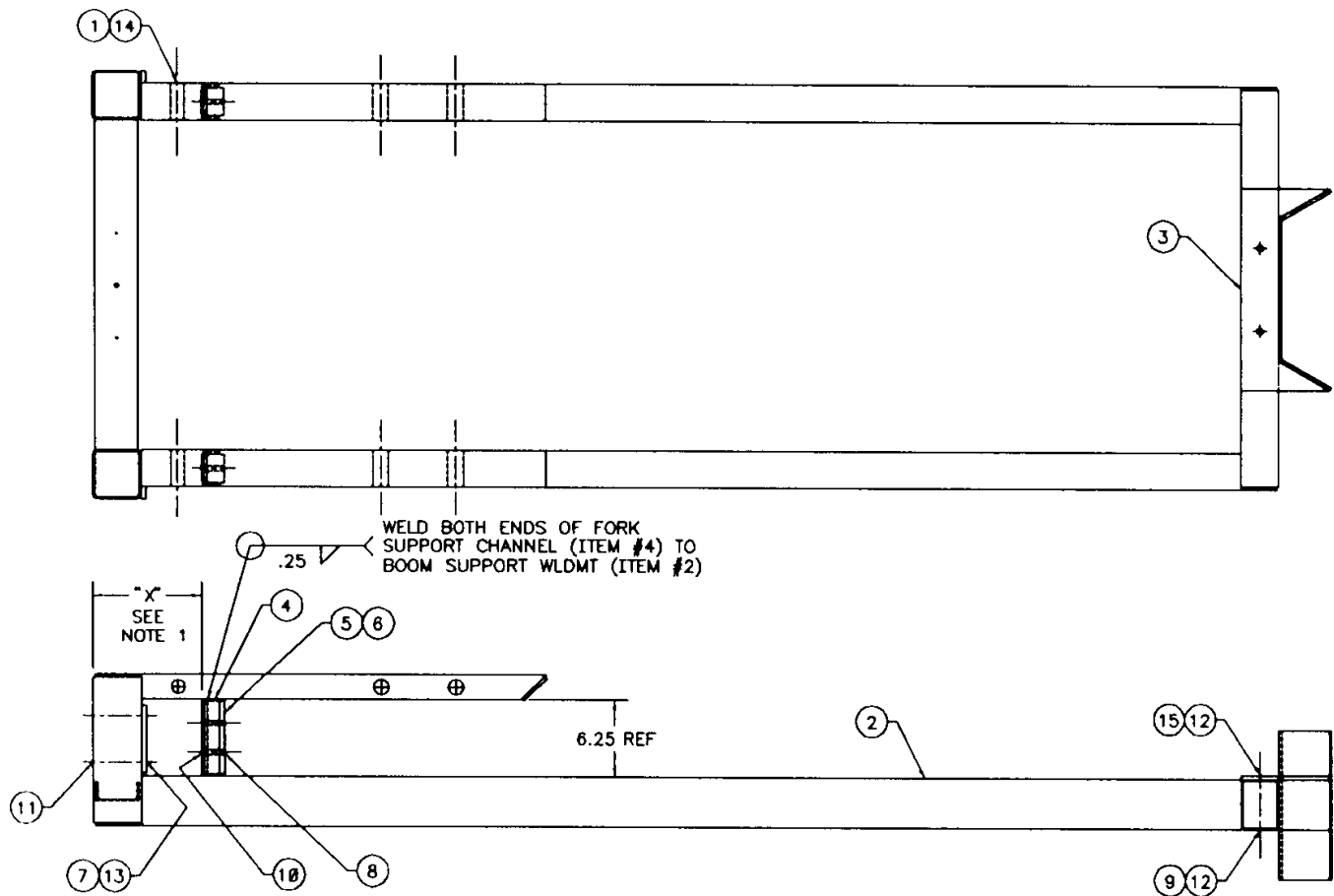


00016042: 51712758.01.19970610

3-39

BOOM SUPPORT ASM (51712758)

ITEM	PART NO.	DESCRIPTION	QTY			
1.	60119499	PIN	1	8.	72060959	CRG BOLT 3/8-16X2-1/2SQ GR2 4
2.	52712757	BOOM SUPPORT	1	9.	72062080	NUT 1/2-13 LOCK 2
3.	52712761	SADDLE	1	10.	72062103	NUT 3/8-16 LOCK 4
4.	60118671	CHANNEL	2	11.	72062114	NUT 3/4-10 LOCK 4
5.	60118670	PLATE	2	12.	72063005	WASHER 1/2 WRT 4
6.	60118677	PAD	2	13.	72063008	WASHER 3/4 WRT 4
7.	72060194	CAP SCR 3/4-10X6-1/2 HHGR5 4		14.	72661367	QUICK PIN 2
				15.	72601585	CAP SCR 1/2-13X5-1/2 HHGR8 2



- NOTE:
- WELD FORK SUPPORT CHANNEL, ITEM #4, IN PLACE AFTER FORK IS MOUNTED ONTO CRANE AND POSITIONED INTO BOOM SUPPORT. FOLLOWING DIMENSIONS REPRESENT APPROXIMATE PLACEMENT OF FORK SUPPORT, ITEM #4
- "X" = 10.62" FOR 54" FORK APPLICATION ON 16035/16042 CRANE
- "X" = 16.62" FOR 48" FORK APPLICATION ON 16035/16042 CRANE

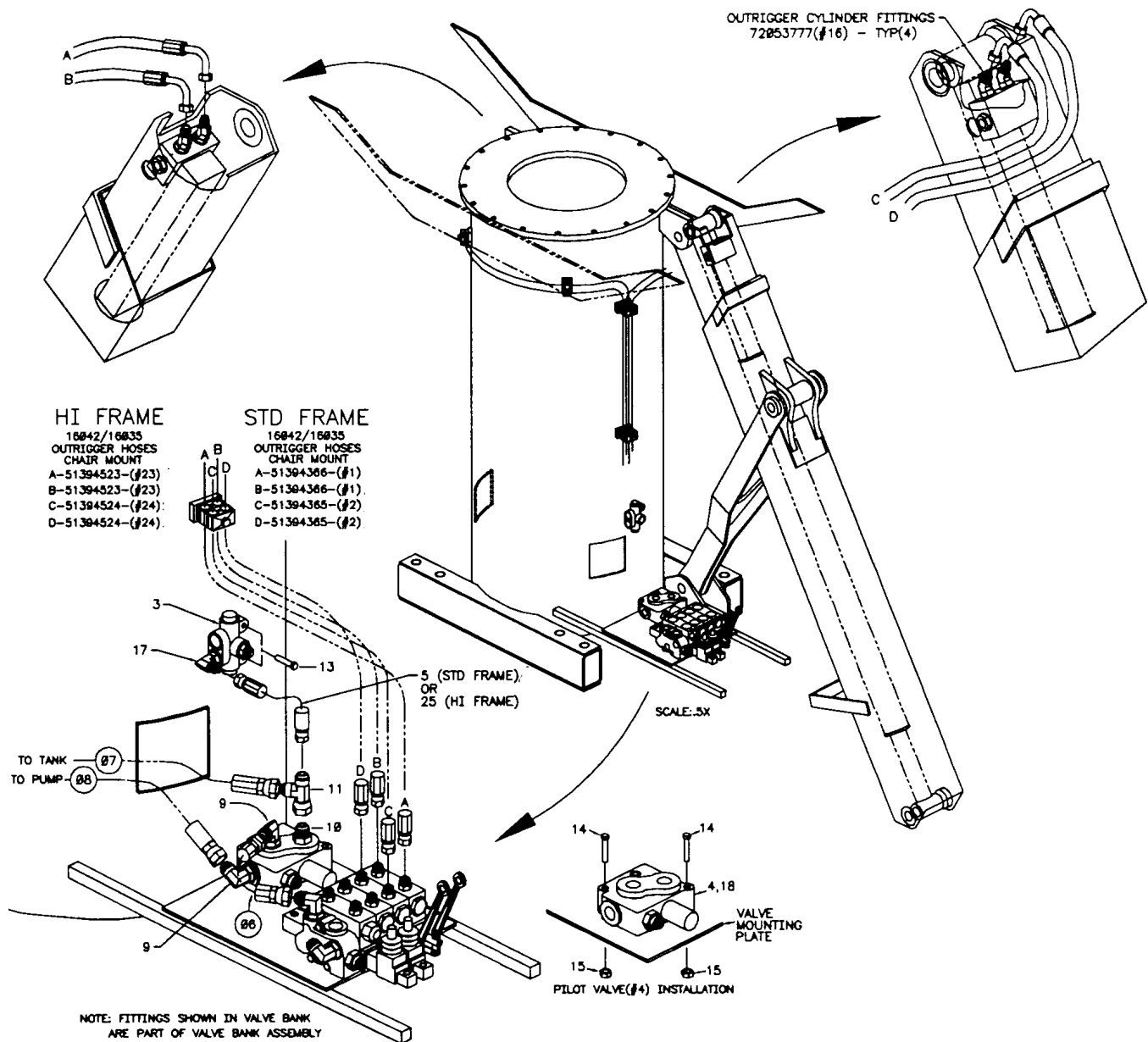


00016042: 99901011.01.19971023

3-40

HYD KIT-STD/HI FRM-CHAIR MOUNT-BASE & OUTRIGGERS (99901011)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394366	HOSE ASM 1/2X123 FJ #8#8 (PART OF 19)	2REF
2.	51394365	HOSE ASM 1/2X81 FJ #8#8 (PART OF 19)	2REF
3.	73054462	SELECTOR VLV-PILOT OPER	1
4.	73054542	PILOT VALVE	1
5.	51394356	HOSE ASM 1/2X18 FF #8#12 (PART OF 19)	1REF
6.	51394359	HOSE ASM 3/4X9.5 FF #12#12 (PART OF 19&20)	1REF
7.	51394364	HOSE ASM 3/4X83 FF #12#12 (PART OF 19&20)	1REF
8.	51394358	HOSE ASM 3/4X65 FF #12#12 (PART OF 19&20)	1REF
9.	72053767	ELBOW #12MSTR #12MJIC 90°	2
10.	72532366	ADAPTER #12MSTR #12MJIC	1
11.	72532950	TEE #12 SWVL NUT RUN	1
13.	72060028	CAP SCR 5/16-18X1-3/4	2
14.	72060029	CAP SCR 5/16-18X2	2
15.	72062109	NUT 5/16 LOCK	2
16.	72053777	ELBOW #8MSTR #8MJIC 45°	4
17.	72053763	ELBOW #8MSTR #8MJIC 90°	1
18.	73014618	SHIM	1
19.	51713728	HOSE KIT-STD FRM-CHAIR (INC:1,2,5-8)	1REF
20.	51713835	HOSE KIT-HI FRM-CHAIR (INC:6-8,23-25)	1REF
23.	51394523	HOSE ASM 1/2X113 FJ #8#8 (PART OF 20)	2REF
24.	51394524	HOSE ASM 1/2X71 FJ #8#8 (PART OF 20)	2REF
25.	51394525	HOSE ASM 1/2X15 FF #8#12 (PART OF 20)	1REF





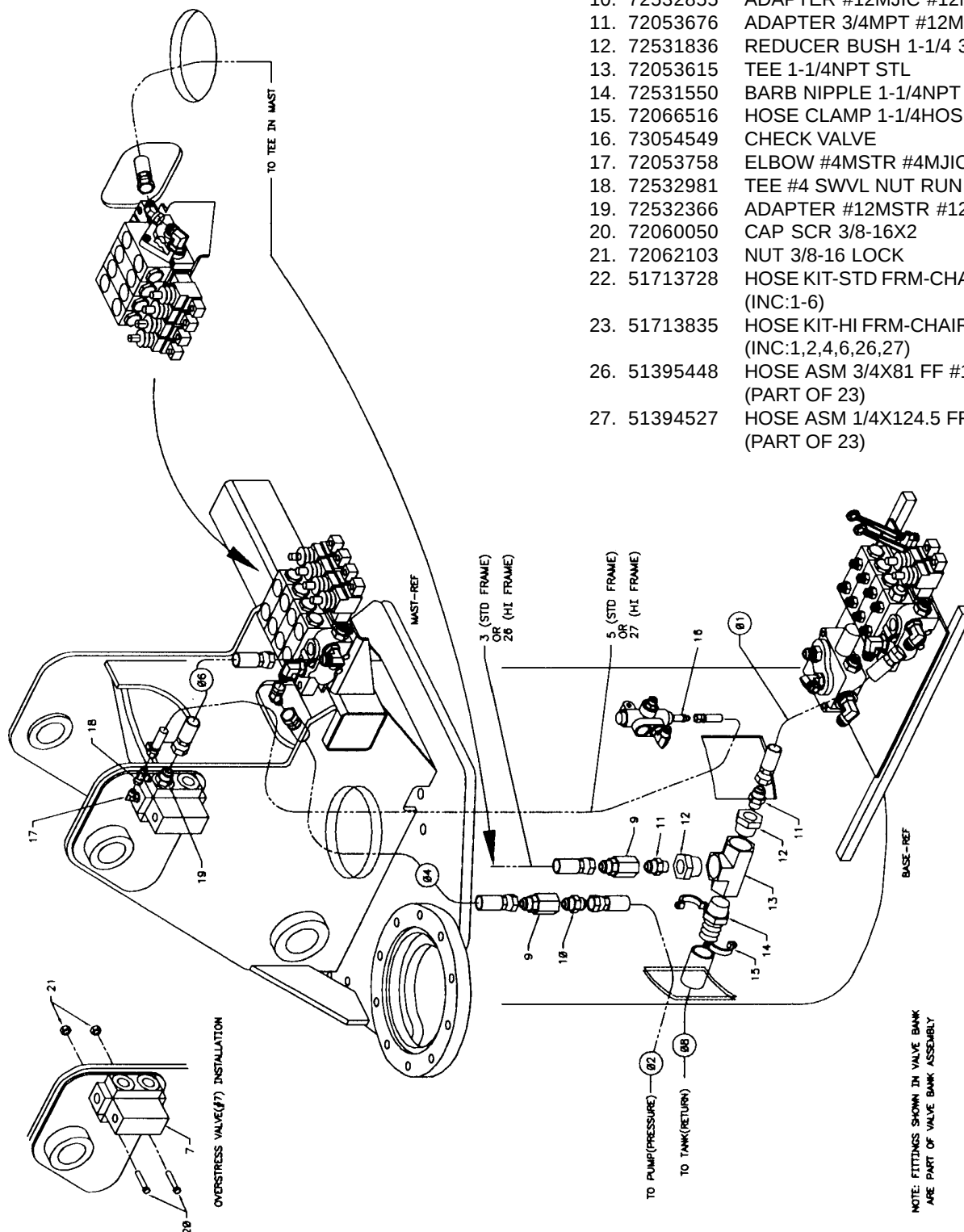
00016042: 99901012.01.19990413

**HYD KIT-STD/HI FRM-CHAIR MOUNT-
MAST MTD VB (99901012)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394362	HOSE ASM 3/4X38 FF #12#12 (PART OF 22&23)	1REF
2.	51394363	HOSE ASM 3/4X97 FF #12#12 (PART OF 22&23)	1REF
3.	51395449	HOSE ASM 3/4X91 FF #12#12 (PART OF 22)	1REF

3-41

4.	51394361	HOSE ASM 3/4X50 FF #12#12 (PART OF 22&23)	1REF
5.	51394342	HOSE ASM 1/4X131.5 FF #4#4 (PART OF 22)	1REF
6.	51394360	HOSE ASM 3/4X24 FF #12#12 (PART OF 22&23)	1REF
7.	73054424	OVERSTRESS VALVE	1
8.	60035829	HOSE 1-1/4 100R4 X 50	1
9.	72532973	ADAPTER #12 PR-SW-IN-LINE	2
10.	72532855	ADAPTER #12MJIC #12MJIC	1
11.	72053676	ADAPTER 3/4MPT #12MJIC	2
12.	72531836	REDUCER BUSH 1-1/4 3/4NPT	2
13.	72053615	TEE 1-1/4NPT STL	1
14.	72531550	BARB NIPPLE 1-1/4NPT 1-1/4	1
15.	72066516	HOSE CLAMP 1-1/4HOSE2-BOLT	1
16.	73054549	CHECK VALVE	1
17.	72053758	ELBOW #4MSTR #4MJIC 90°	1
18.	72532981	TEE #4 SWVL NUT RUN	1
19.	72532366	ADAPTER #12MSTR #12MJIC	1
20.	72060050	CAP SCR 3/8-16X2	2
21.	72062103	NUT 3/8-16 LOCK	2
22.	51713728	HOSE KIT-STD FRM-CHAIR (INC:1-6)	1REF
23.	51713835	HOSE KIT-HI FRM-CHAIR (INC:1,2,4,6,26,27)	1REF
26.	51395448	HOSE ASM 3/4X81 FF #12#12 (PART OF 23)	1REF
27.	51394527	HOSE ASM 1/4X124.5 FF #4#4 (PART OF 23)	1REF



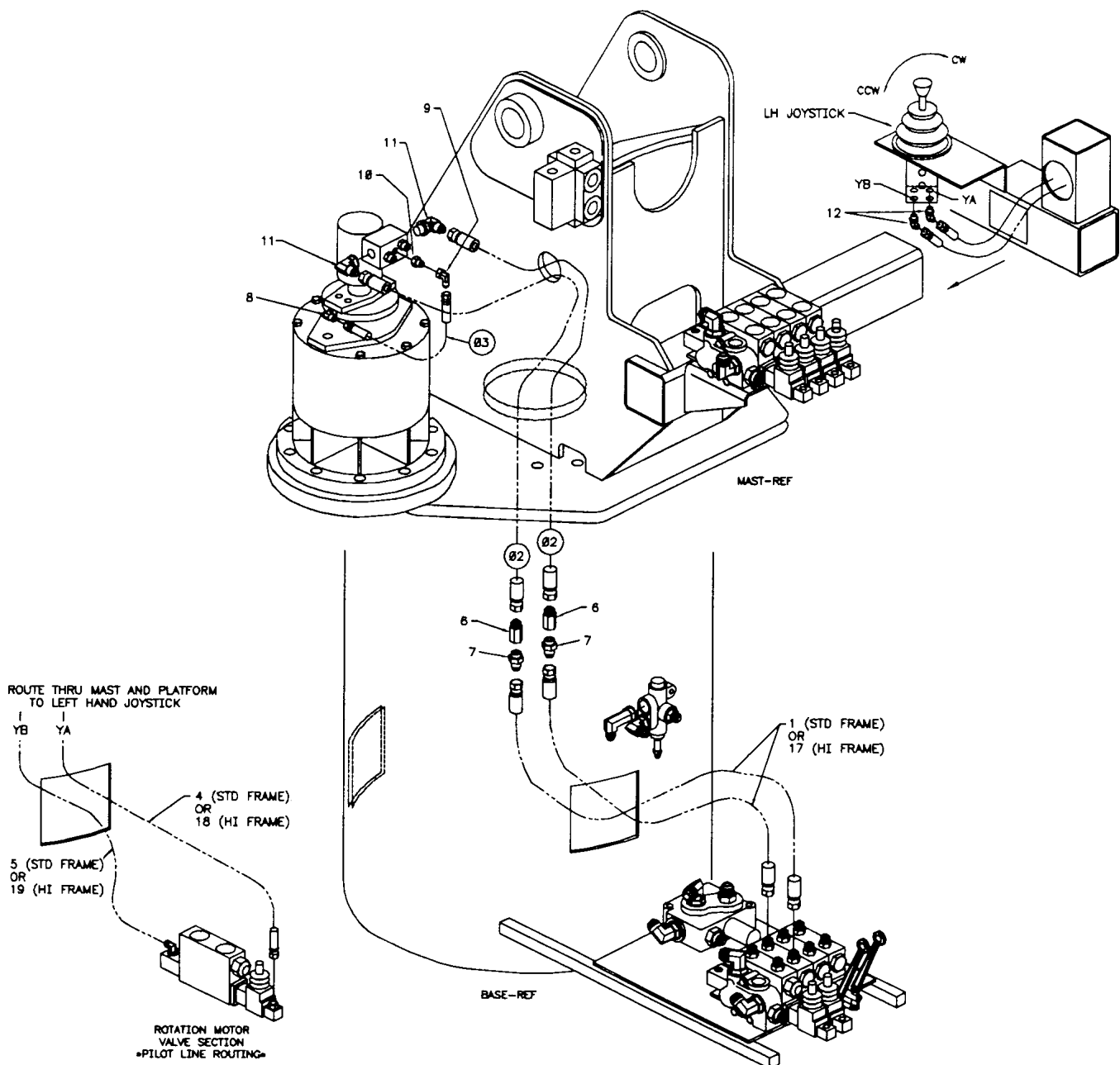


00016042: 99901013.01.19970425

3-42

**HYD KIT-STD/HI FRM-CHAIR MOUNT-
ROT'N (99901013)**

ITEM	PART NO.	DESCRIPTION	QTY				
1.	51394338	HOSE ASM 1/2X83 FF #8#8 (PART OF 13)	2REF	8.	72053758	ELBOW #4MSTR #4MJIC 90°	1
2.	51394348	HOSE ASM 1/2X61 FF #8#8 (PART OF 13&14)	2REF	9.	72532690	ELBOW #4MJIC #4FJIC SWVL	1
3.	51394347	HOSE ASM 1/4X11.5 FF #4#4 (PART OF 13&14)	1REF	10.	72532351	ADAPTER #4MSTR #4MJIC	1
4.	51394332	HOSE ASM 1/4X176.5 FF #4#4 (PART OF 13)	1REF	11.	72053763	ELBOW #8MSTR #8MJIC 90°	2
5.	51394343	HOSE ASM 1/4X161.5 FF #4#4 (PART OF 13)	1REF	12.	72532985	ELBOW #6MSTR #4MJIC 45°	2
6.	72532980	ADAPTER PR-SW-IN-LINE	2	13.	51713728	HOSE KIT-STD FRM-CHAIR (INC:1-5)	1REF
7.	72532739	ADAPTER #8MJIC #8MJIC	2	14.	51713835	HOSE KIT-HI FRM-CHAIR (INC:2,3,17-19)	1REF
				17.	51394528	HOSE ASM 1/2X73 FF #8#8 (PART OF 14)	2REF
				18.	51394529	HOSE ASM 1/4X169.5 FF #4#4 (PART OF 14)	1REF
				19.	51394530	HOSE ASM 1/4X153.5 FF #4#4 (PART OF 14)	1REF





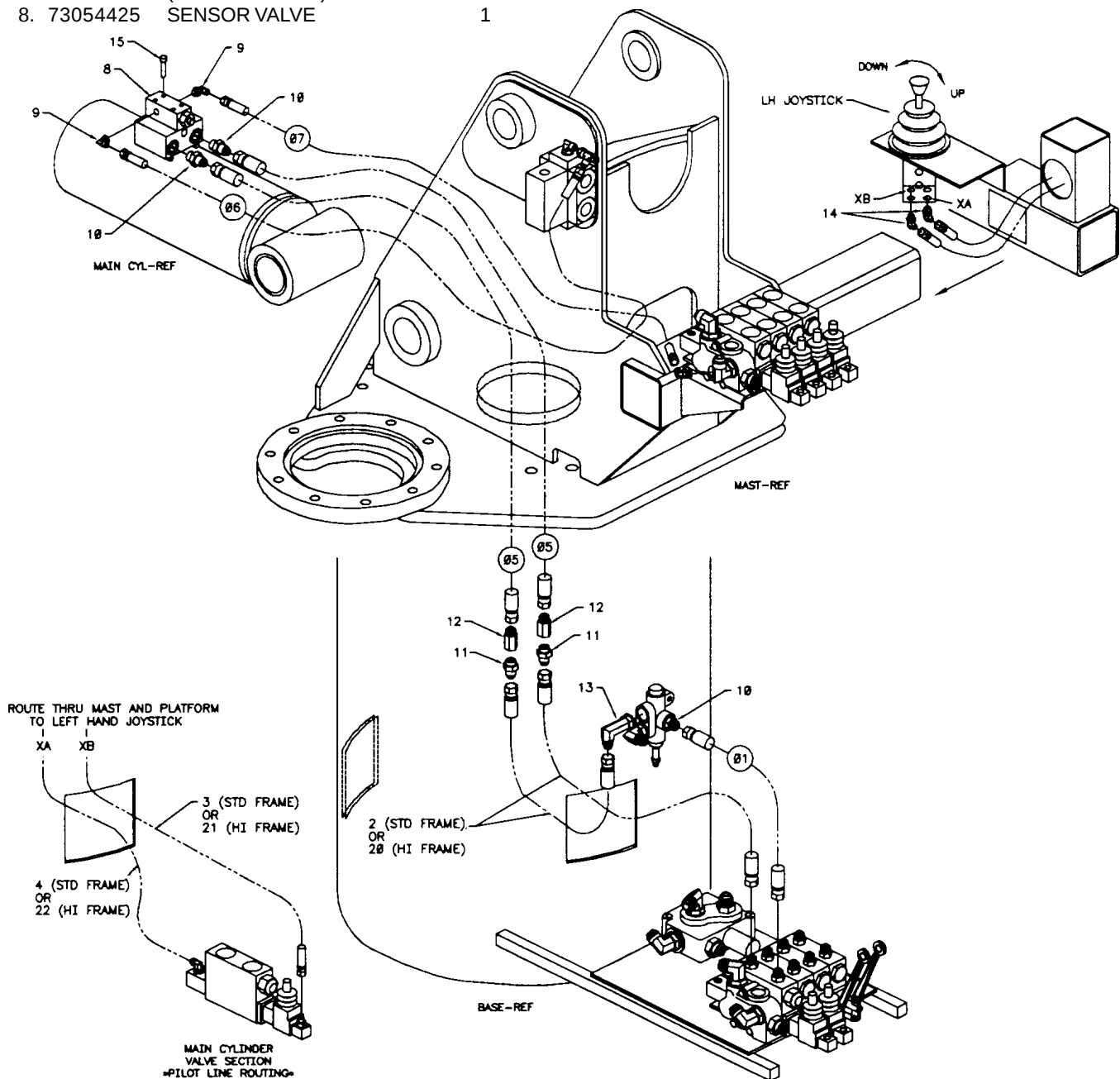
00016042: 99901014.01.19970425

3-43

**HYD KIT-STD/HI FRM-CHAIR MOUNT-
MAIN CYLINDER (99901014)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394337	HOSE ASM 1/2X23 FF #8#8 (PART OF 16&17)	1REF
2.	51394338	HOSE ASM 1/2X83 FF #8#8 (PART OF 16)	2REF
3.	51394332	HOSE ASM 1/4X176.5 FF #4#4 (PART OF 16)	1REF
4.	51394343	HOSE ASM 1/4X161.5 FF #4#4 (PART OF 16)	1REF
5.	51394339	HOSE ASM 1/2X43 FF #8#8 (PART OF 16&17)	2REF
6.	51394349	HOSE ASM 1/4X61.5 FF #4#4 (PART OF 16&17)	1REF
7.	51394352	HOSE ASM 1/4X48.5 FF #4#4 (PART OF 16&17)	1REF
8.	73054425	SENSOR VALVE	1

9.	72053758	ELBOW #4MSTR #4MJIC 90°	2
10.	72532358	ADAPTER #8MSTR #8MJIC	3
11.	72532739	ADAPTER #8MJIC #8MJIC	2
12.	72532980	ADAPTER-PR SW IN-LINE	2
13.	72532666	ELBOW #8MSTR #8MJIC XLG	1
14.	72532985	ELBOW #6MSTR #4MJIC 45°	2
15.	72060734	CAP SCR 5/16-18X1-1/2 SH PL	4
16.	51713728	HOSE KIT-STD FRM-CHAIR (INC:1-7)	1REF
17.	51713835	HOSE KIT-HI FRM-CHAIR (INC:1,5-7,20-22)	1REF
20.	51394528	HOSE ASM 1/2X73 FF #8#8 (PART OF 17)	2REF
21.	51394529	HOSE ASM 1/4X169.5 FF #4#4 (PART OF 17)	1REF
22.	51394530	HOSE ASM 1/4X153.5 FF #4#4 (PART OF 17)	1REF



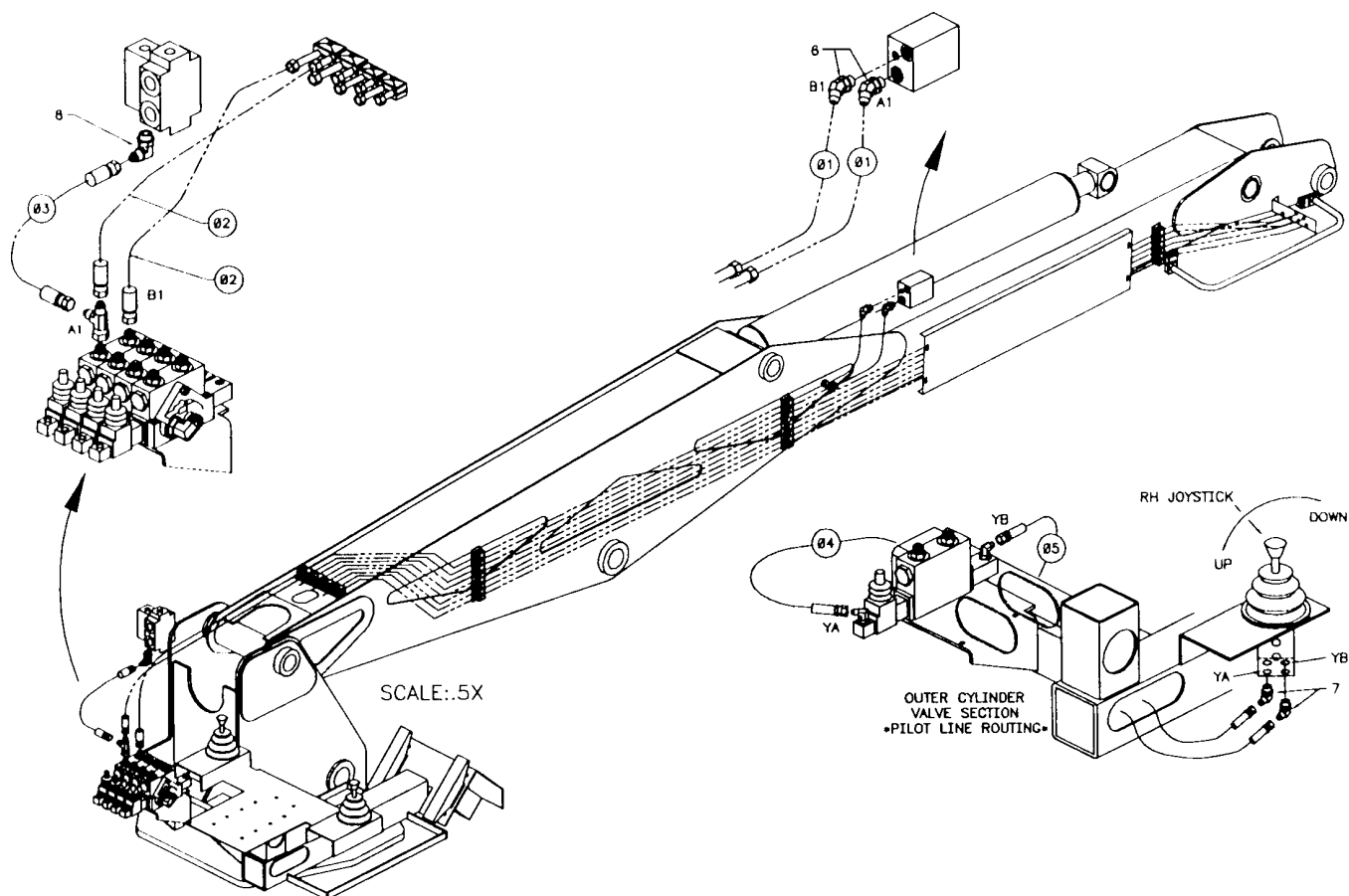


00016042: 99901015.01.19970425

3-44

**HYD KIT-STD/HI FRM-CHAIR MOUNT-
OUTER CYLINDER (99901015)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394469	HOSE ASM 1/2X23 AAF #12#8 (PART OF 9&10)	1REF
2.	51394467	HOSE ASM 1/2X37 AAF #12#8 (PART OF 9&10)	1REF
3.	51394353	HOSE ASM 1/2X18 FF #8#8 (PART OF 9&10)	1REF
4.	51394355	HOSE ASM 1/4X70.5 FF #4#4 (PART OF 9&10)	1REF
5.	51394334	HOSE ASM 1/4X53.5 FF #4#4 (PART OF 9&10)	1REF
6.	72053777	ADAPTER #8MSTR #8MJIC 45°	2
7.	72532985	ELBOW #6MSTR #4MJIC 45°	2
8.	72053763	ELBOW #8MSTR #8MJIC 90°	1
9.	51713728	HOSE KIT-STD FRM-CHAIR (INC:1-5)	1REF
10.	51713835	HOSE KIT-HI FRM-CHAIR (INC:1-5)	1REF





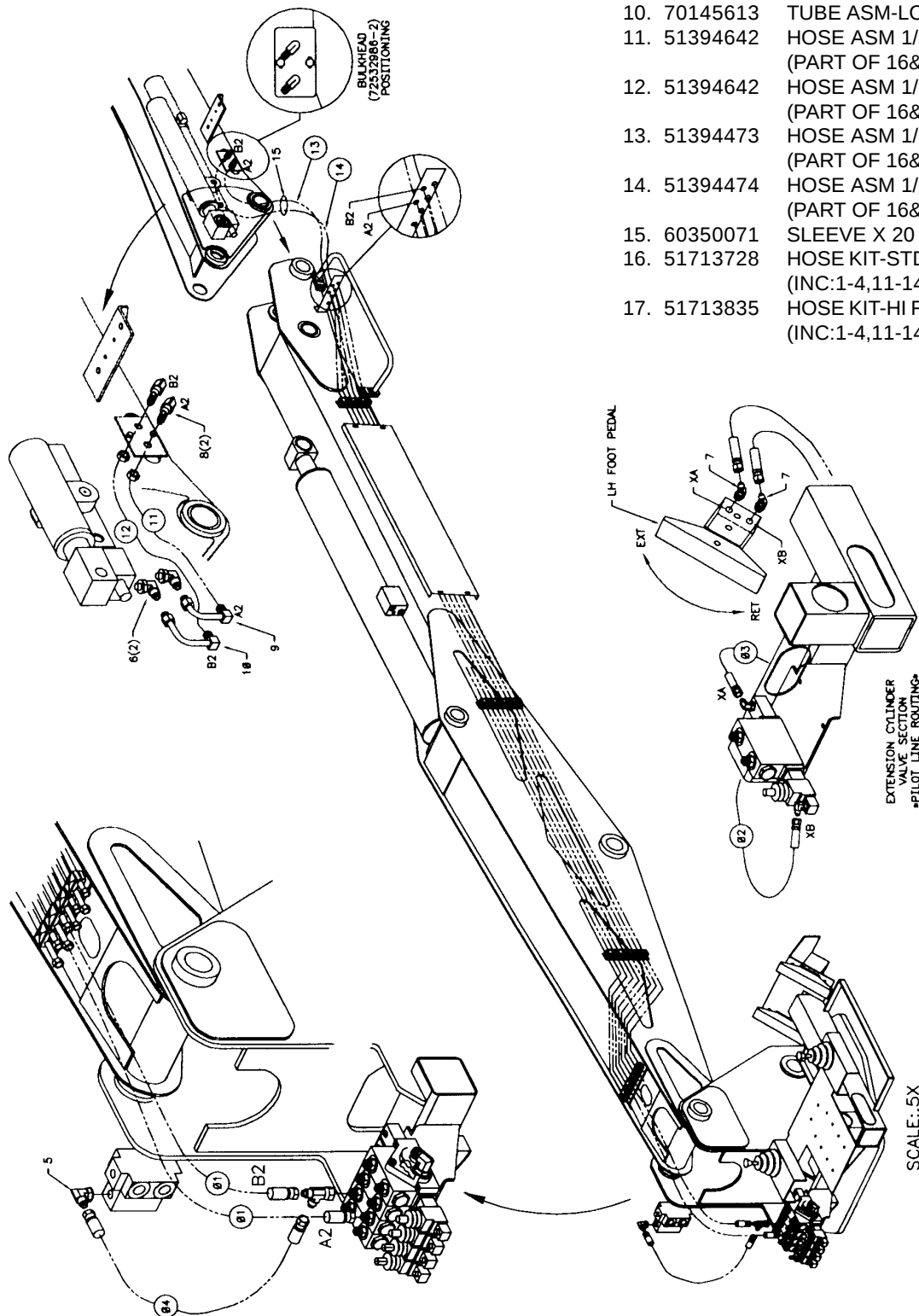
00016042: 99901016.01.19970829

**HYD KIT-STD/HI FRM-CHAIR MOUNT-
EXT CYLINDER (99901016)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394467	HOSE ASM 1/2X37 FF #12#8 (PART OF 16&17)	2REF
2.	51394335	HOSE ASM 1/4X82.5 FF #4#4 (PART OF 16&17)	1REF

3-45

3.	51394340	HOSE ASM 1/4X68.5 FF #4#4 (PART OF 16&17)	1REF
4.	51394337	HOSE ASM 1/2X23 FF #8#8 (PART OF 16&17)	1REF
5.	72053763	ELBOW #8MSTR #8MJIC 90°	1
6.	72053762	ELBOW #6MSTR #8MJIC 90°	2
7.	72532985	ELBOW #6MSTR #4MJIC 45°	2
8.	72532986	ELBOW #8MJIC #8MJIC BULKHD	2
9.	70145612	TUBE ASM-SHORT	1
10.	70145613	TUBE ASM-LONG	1
11.	51394642	HOSE ASM 1/2X17 IJ #8#8 (PART OF 16&17)	1REF
12.	51394642	HOSE ASM 1/2X20 IJ #8#8 (PART OF 16&17)	1REF
13.	51394473	HOSE ASM 1/2X27 FF #12#8 (PART OF 16&17)	1REF
14.	51394474	HOSE ASM 1/2X31 Ff #12#8 (PART OF 16&17)	1REF
15.	60350071	SLEEVE X 20	1
16.	51713728	HOSE KIT-STD FRM-CHAIR (INC:1-4,11-14)	1REF
17.	51713835	HOSE KIT-HI FRM-CHAIR (INC:1-4,11-14)	1REF





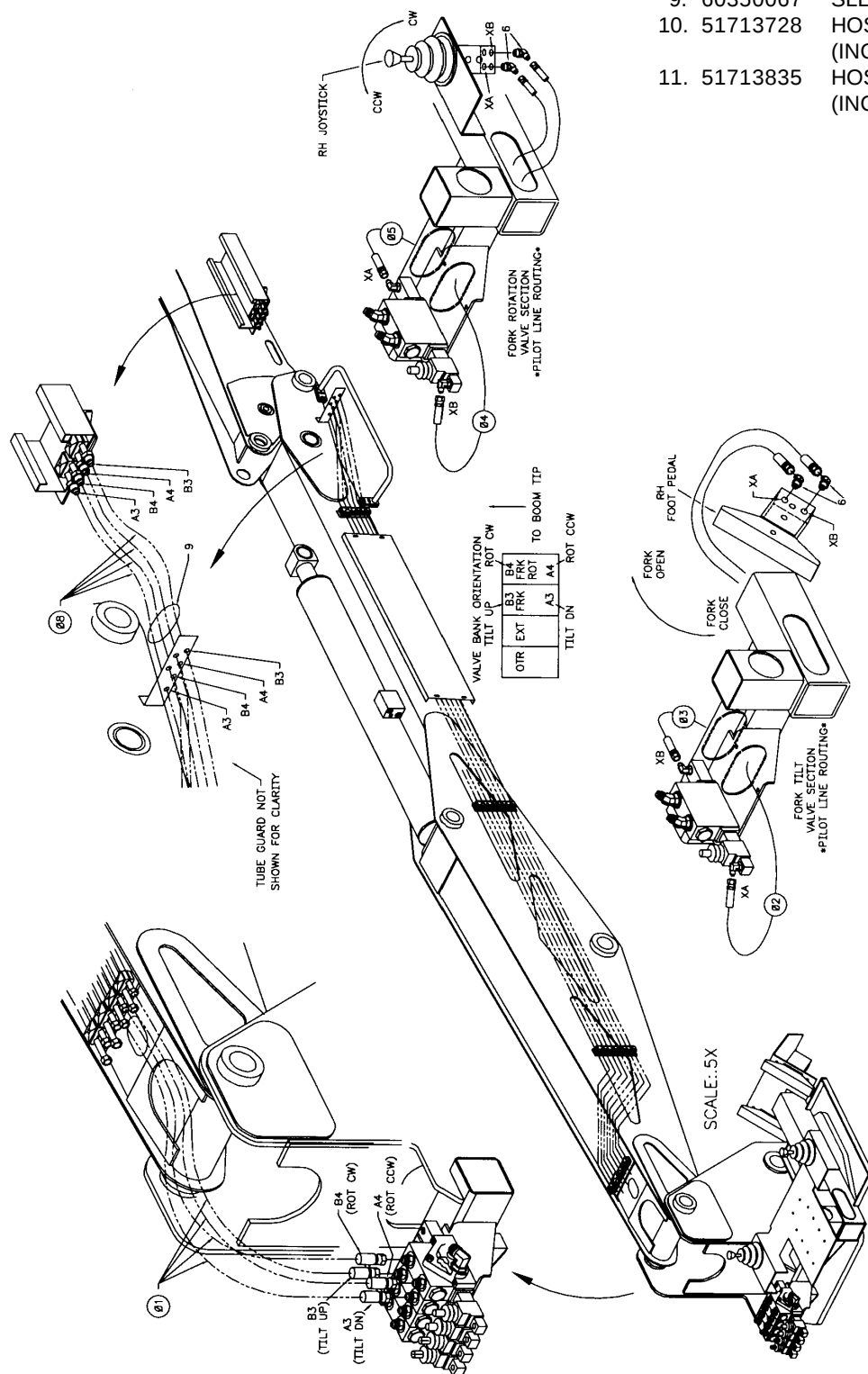
00016042: 99901017.01.19970829

HYD KIT-STD/HI FRM-CHAIR MOUNT- BOOM TIP FUNCTIONS (99901017)

ITEM	PART NO.	DESCRIPTION	QTY
1.	51394468	HOSE ASM 3/8X37 FF #8#8 (PART OF 10&11)	4REF
2.	51394335	HOSE ASM 1/4X82.5 FF #4#4 (PART OF 10&11)	1REF

3-46

3.	51394340	HOSE ASM 1/4X68.5 FF #4#4 (PART OF 10&11)	1REF
4.	51394355	HOSE ASM 1/4X70.5 FF #4#4 (PART OF 10&11)	1REF
5.	51394334	HOSE ASM 1/4X53.5 FF #4#4 (PART OF 10&11)	1REF
6.	72532985	ELBOW #6MSTR #4MJIC 45°	4
8.	51394398	HOSE ASM 3/8X27 FF #8#8 (PART OF 10&11)	4REF
9.	60350067	SLEEVE X 20	1
10.	51713728	HOSE KIT-STD FRM-CHAIR (INC:1-5,8)	1REF
11.	51713835	HOSE KIT-HI FRM-CHAIR (INC:1-5,8)	1REF





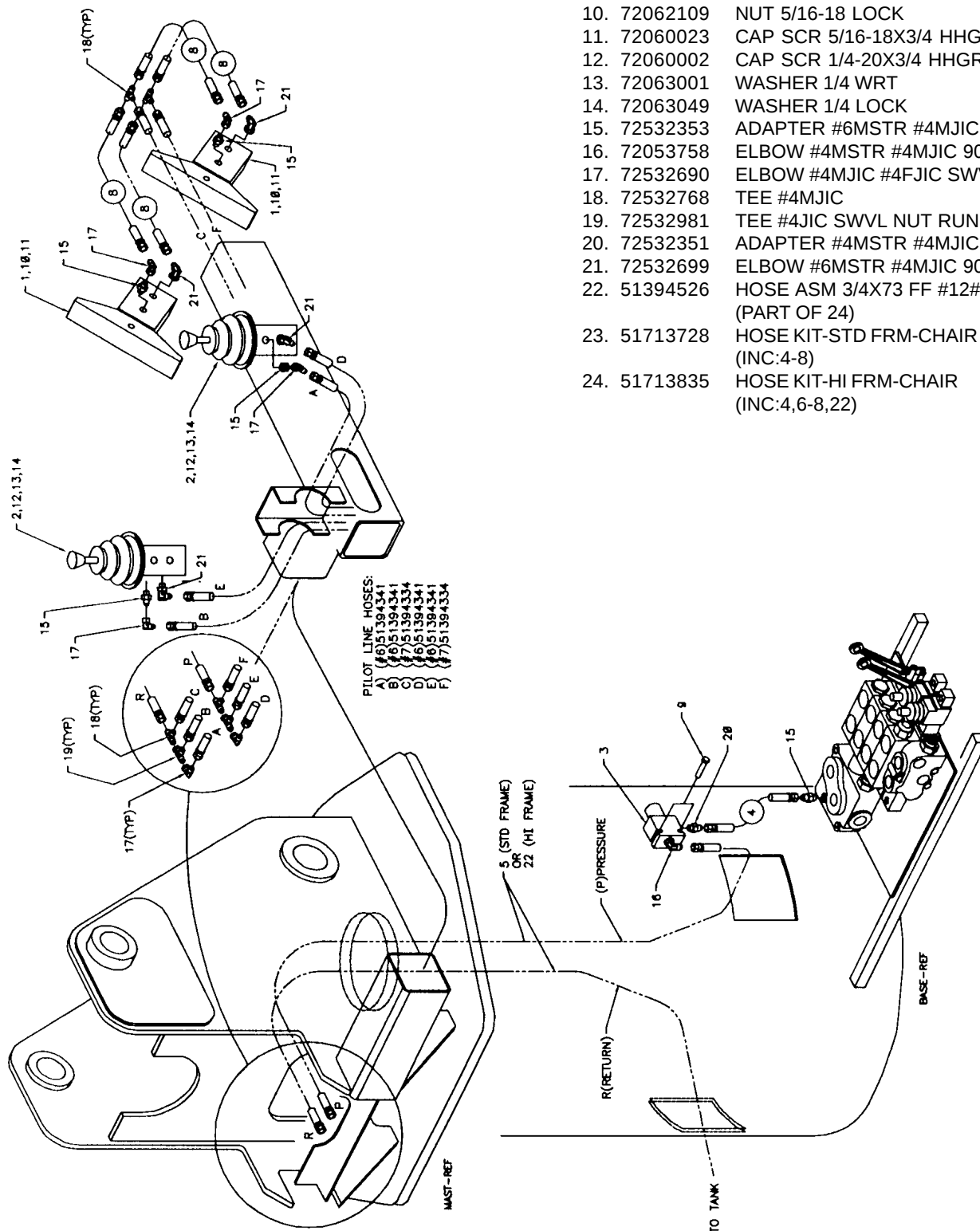
00016042: 99901018.01.19970425

**HYD KIT-STD/HI FRM-CHAIR MOUNT-
PILOT LINES (99901018)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	70731800	FOOT PEDAL-HYDRAULIC	2
2.	70731801	JOYSTICK-HYDRAULIC	2
3.	73054940	SOLENOID VALVE	1
4.	51394415	HOSE ASM 1/4X13.5 FF #4#4 (PART OF 23&24)	1REF

3-47

5.	51394342	HOSE ASM 1/4X131.5 FF #4#4 (PART OF 23)	2REF
6.	51394341	HOSE ASM 1/4X44.5 FF #4#4 (PART OF 23&24)	4REF
7.	51394334	HOSE ASM 1/4X53.5 FF #4#4 (PART OF 23&24)	2REF
8.	51394346	HOSE ASM 1/4X8 FF #4#4 (PART OF 23&24)	4REF
9.	72060007	CAP SCR 1/4-20X1-3/4 HHGR5	2
10.	72062109	NUT 5/16-18 LOCK	8
11.	72060023	CAP SCR 5/16-18X3/4 HHGR5	8
12.	72060002	CAP SCR 1/4-20X3/4 HHGR5	8
13.	72063001	WASHER 1/4 WRT	8
14.	72063049	WASHER 1/4 LOCK	8
15.	72532353	ADAPTER #6MSTR #4MJIC	5
16.	72053758	ELBOW #4MSTR #4MJIC 90°	1
17.	72532690	ELBOW #4MJIC #4FJIC SWVL	6
18.	72532768	TEE #4MJIC	4
19.	72532981	TEE #4JIC SWVL NUT RUN	2
20.	72532351	ADAPTER #4MSTR #4MJIC	1
21.	72532699	ELBOW #6MSTR #4MJIC 90°	4
22.	51394526	HOSE ASM 3/4X73 FF #12#12 (PART OF 24)	1REF
23.	51713728	HOSE KIT-STD FRM-CHAIR (INC:4-8)	1REF
24.	51713835	HOSE KIT-HI FRM-CHAIR (INC:4,6-8,22)	1REF

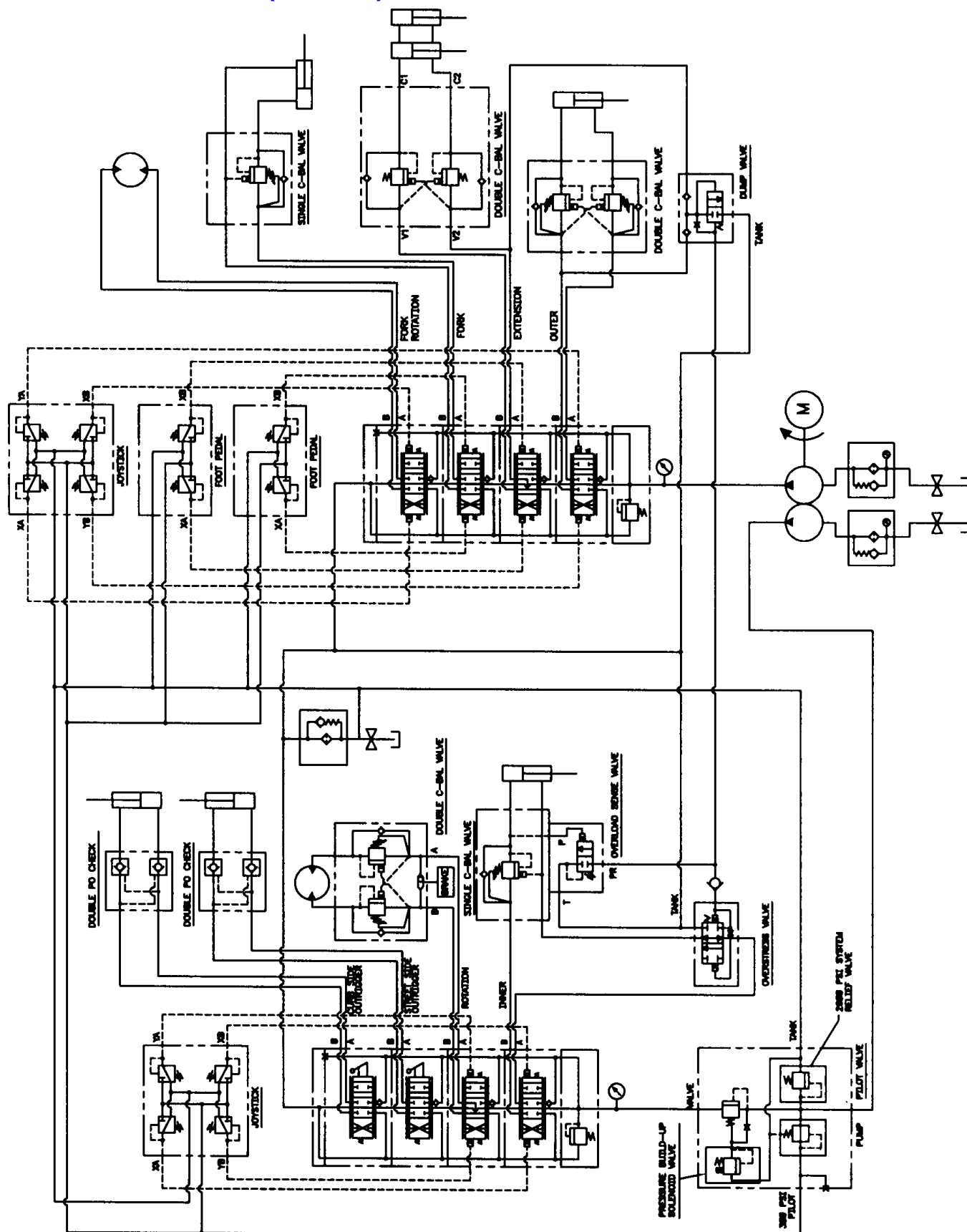




00016042: 99901010.01.19980218

3-48

HYD KIT-STD/HI FRM-CHAIR MOUNT- OVERALL SCHEMATIC (99901010)

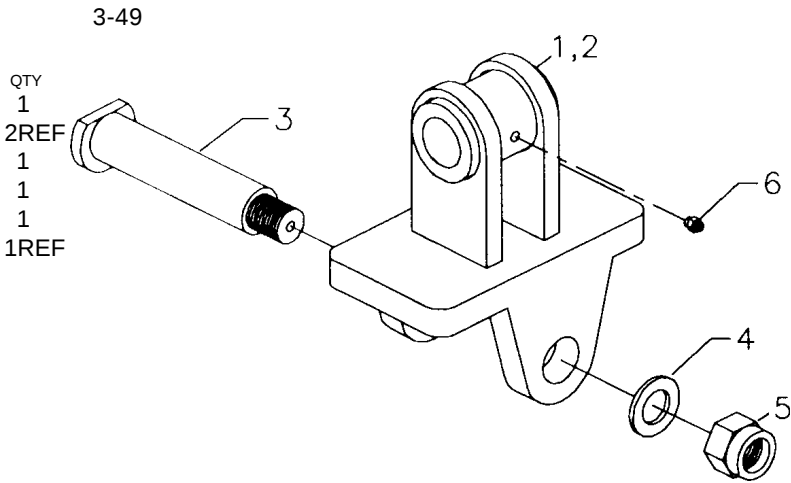




00016042: 51709479.01.19970425

KIT-SWIVEL LINK (51709479)

ITEM	PART NO.	DESCRIPTION
1.	51709475	SWIVEL LINK (INCL: 2,6)
2.	70055207	BUSHING (PART OF 1)
3.	70143730	ROTATOR PIN
4.	72063182	WASHER-FLAT
5.	72062234	NUT-LOCK
6.	72053508	ZERK 1/8NPT (PART OF 1)



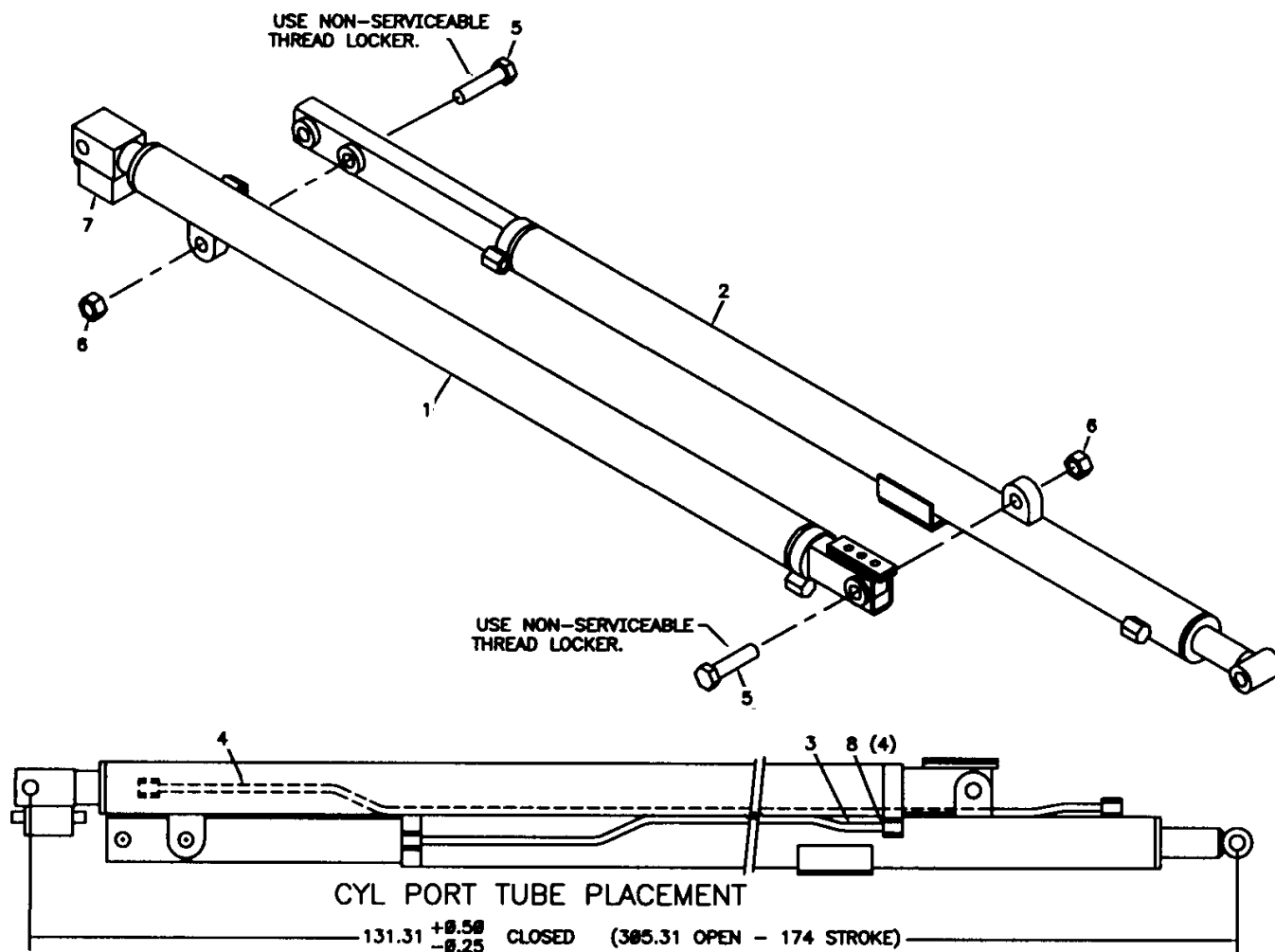


00016042: 51713729.01.19980218

3-50

EXTENSION CYLINDER ASM (51713729)

ITEM	PART NO.	DESCRIPTION	QTY
1.	3B240950	CYLINDER (INCL:7)	1
2.	3B242950	CYLINDER	1
3.	70145251	HYD TUBE ASM 1/2X74 FF	1
4.	70145252	HYD TUBE ASM 1/2X102 FF	1
5.	72060246	CAP SCR 1-8X4 HHGR5	2
6.	72062268	NUT 1-8 CTR LOCK	2
7.	73054996	DBL HLDING VLVE(PART OF 1)	1REF
8.	72532358	ADAPTER #8MSTR #8MJIC	4





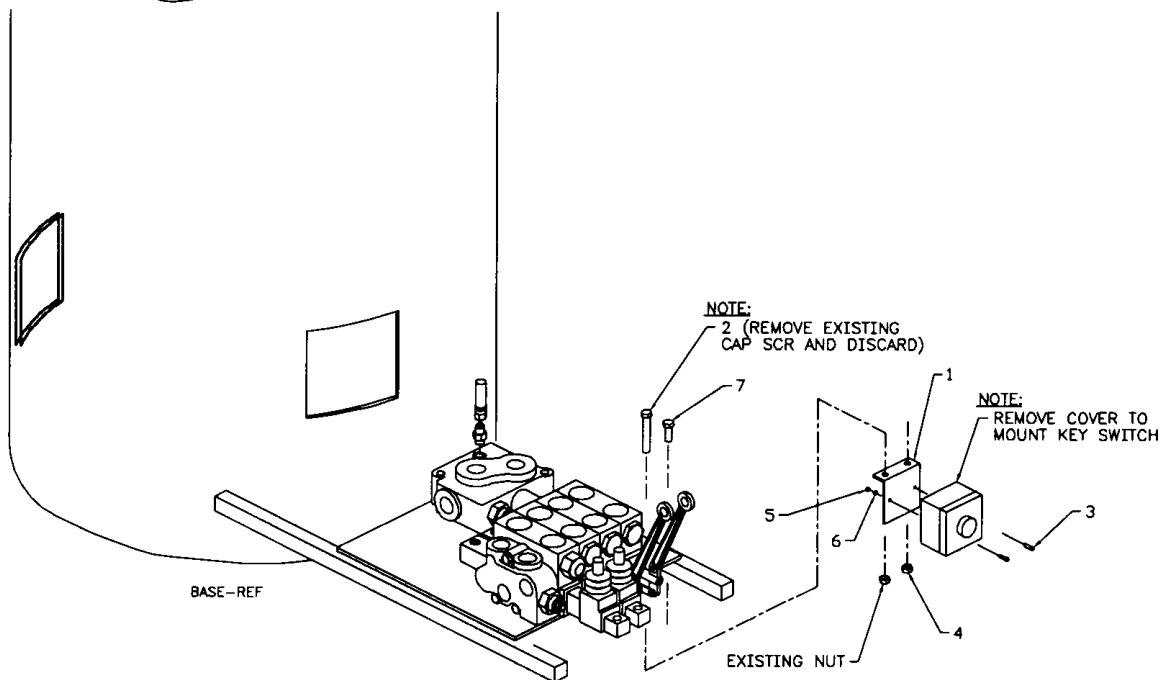
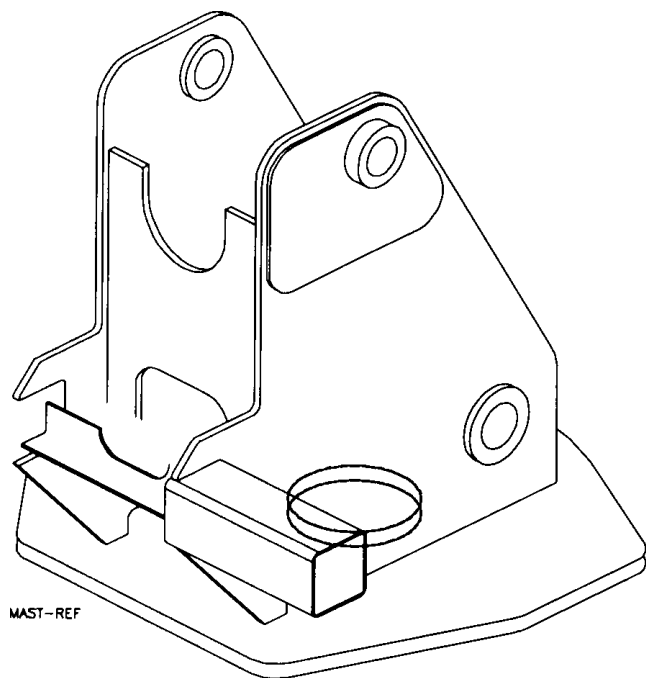
00016042: 90713798.01.19990413

3-51

**CONTROL KIT-VOAC/HETRONIC RADIO
REMOTE (90713798-1)**

SEE FOLLOWING PAGE FOR DRAWING

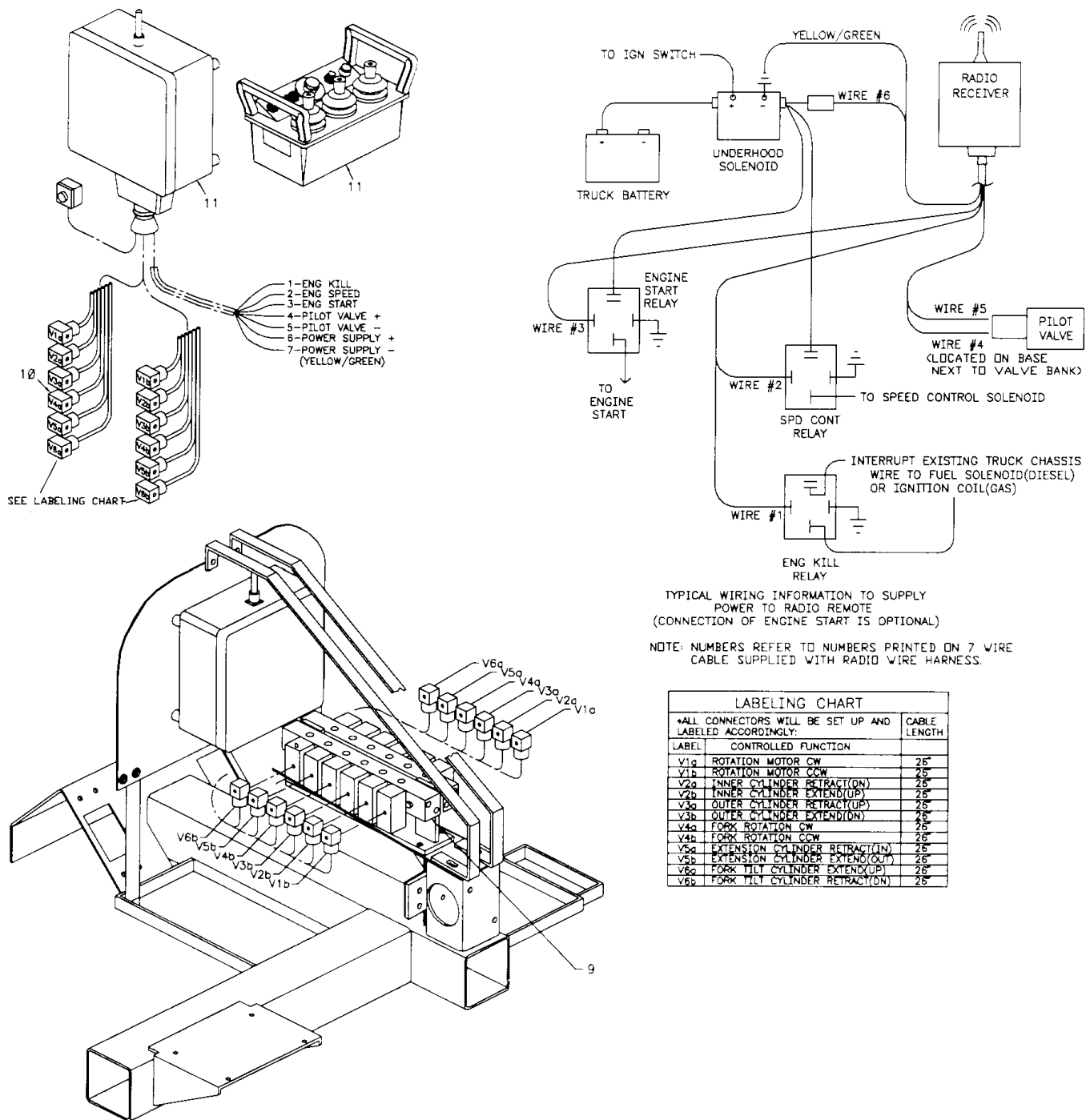
ITEM	PART NO.	DESCRIPTION	QTY
1.	60119879	MTG BRACKET-KEY SW	1
2.	72060033	CAP SCR 5/16-18X3 HHGR5	1
3.	72060612	MACH SCR #8-32X3/4 RDHD	2
4.	72062109	NUT 5/16-18 LOCK	1
5.	72062207	NUT #8-32 LOCK	2
6.	72063098	WASHER 5/32 WRT	2
7.	72060022	CAP SCR 5/16-18X5/8 HHGR5	1
8.	73733364	KIT-WB RADIO MANIF (INCL:9-10)	1
9.	70733102	MANIFOLD BLOCK (PART OF 8)	2REF
10.	70733103	MANIF SOLENOID (PART OF 8)	12REF
11.	70733104	RADIO REMOTE (PART OF 8)	1





00016042: 90713798.02.19970425

3-52

**CONTROL KIT-VOAC/HETRONIC RADIO
REMOTE (90713798-2)**



00016042: 41713791.01.19990727

3-53

**MAST ASM-RADIO REMOTE-HETRONIC
(41713791-1)**

1.	52714252	MAST	1
2.	60116308	RETAINING RING	1
3.	60120732	SLIDE-ROTATION STOP	1
4.	60114481	SPACER	4
5.	72060097	CAP SCR 1/2-13X3 HHGR5	4
6.	73051473	HYDRAULIC MOTOR	1
7.	70731795	VALVE BLOCK (INCL:39&40)	1
8.	72060023	CAP SCR 5/16-18X3/4 HH	5
9.	52713209	GUARD-TURNTABLE-FRONT	1
10.	52713210	GUARD-TURNTABLE-REAR	1
11.	72060092	CAP SCR 1/2-13X1-1/4 HHGR5	8
12.	72063053	WASHER 1/2 LOCK	4
13.	52710062	GUARD	1
14.	70056495	GEARBOX-TORQUE HUB	1
15.	60035938	EDGE LINER	2
16.	72601625	CAP SCR 3/4-10X2-1/4 HHGR5	10
17.	60114482	PINION CAP	1
18.	72060356	CAP SCR 1/2-20X1-1/4 HHGR5	2
19.	71056461	PINION GEAR	1
20.	71056450	TURNTABLE BEARING	1
21.	72601629	CAP SCR 3/4-10X4 HHGR8	9
22.	72601622	CAP SCR 7/8-9X5 HHGR8	11
23.	72062120	NUT 7/8-9	11
26.	72053508	ZERK 1/8NPT	1

CONTINUED

29.	70034431	HOSE GUARD	1
32.	89044402	LOOM 1/2	8"
33.	89044402	LOOM 1/2	24.5"
34.	89044402	LOOM 1/2	23.25"
35.	70067005	ADHESIVE	AR
36.	76391497	GASKET-BRAKE/BASE	1
37.	76393533	GASKET-BRAKE (PART OF 38)	1REF
38.	71056465	HYDRAULIC BRAKE (INCL:37)	1
39.	7Q072017	O-RING (PART OF 7)	2REF
40.	73054538	CARTRIDGE VLV (PART OF 7)	2REF
41.	72060757	CAP SCR 3/8-16X2-1/2 SH	3
42.	53000713	GREASE EXTENSION 38"	1

WARNING

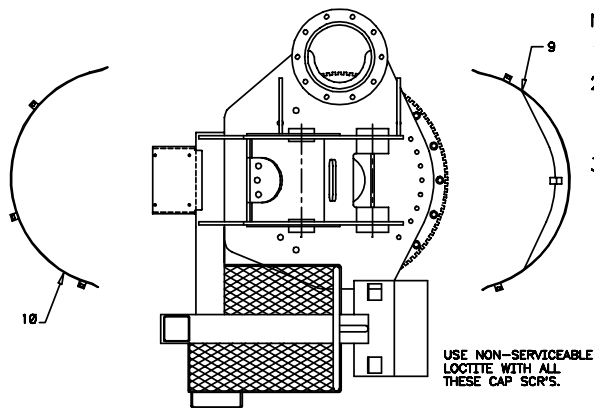
Anytime a gear-bearing bolt is removed, it must be replaced with a new bolt of the identical grade and size. Failure to replace gear-bearing bolts may result in bolt failure due to metal fatigue, causing serious injury or death.

CAUTION

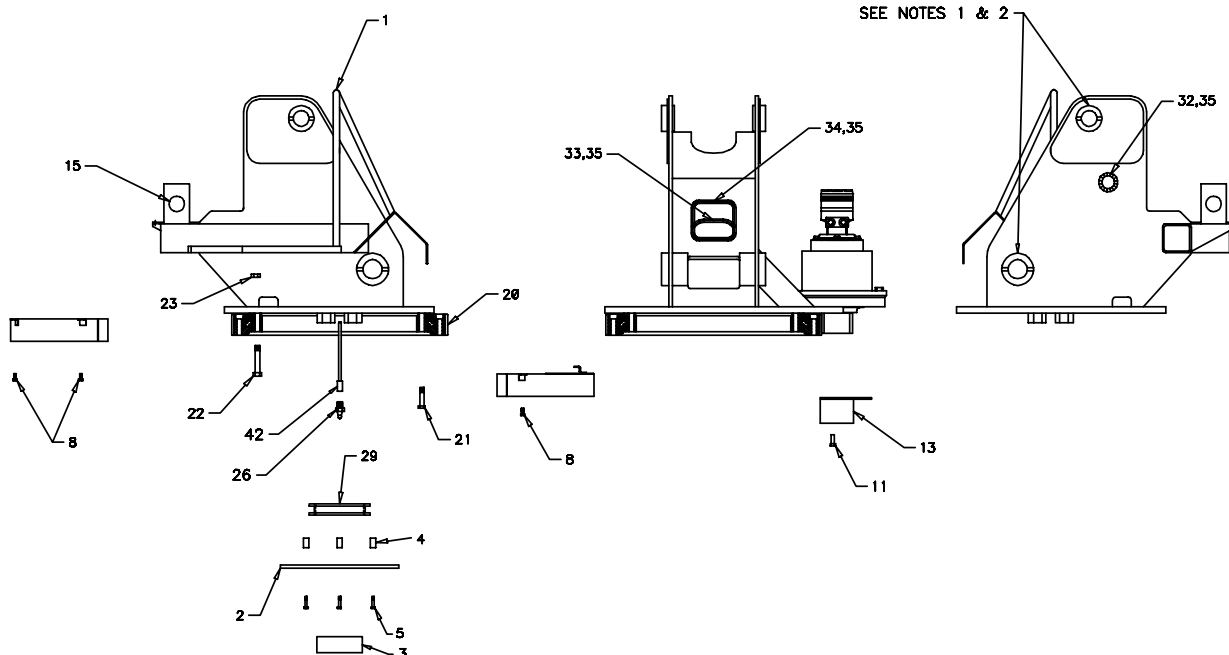
ANYTIME THE PINION GEAR CAP SCREWS (ITEM 18) ARE REMOVED, APPLY LOCTITE 262 TO THE THREADS BEFORE RE-ASSEMBLY. NOTE 1. FILL GEARBOX WITH 4.25 PINTS OF 80/90 EPGREASE TO WITHIN 1-3/8" OF TOP FILL PLUG.

NOTES:

1. APPLY NEVER-SEEZ TO COLLAR ID.
2. IT IS IMPERATIVE THAT NEVER-SEEZ BE APPLIED IN SUCH A MANNER THAT IT DOES NOT COME IN CONTACT WITH ANY GAR-MAX BEARING.
3. INSTALL TURNTABLE GEAR BEARING WITH A MINIMUM GEAR BACKLASH OF .009/.015", MEASURED BETWEEN SWING PINION AND TURNTABLE GEAR BEARING TEETH WITH YELLOW PAINT.



TORQUE SPECIFICATIONS			
ITEM #	IMT PART NO.	DESCRIPTION	TORQUE
21	72601629	CAP SCR .75-10 X 4.00	280 FT-LBS.
22	72601622	CAP SCR .88-9 X 5.00	455 FT-LBS.





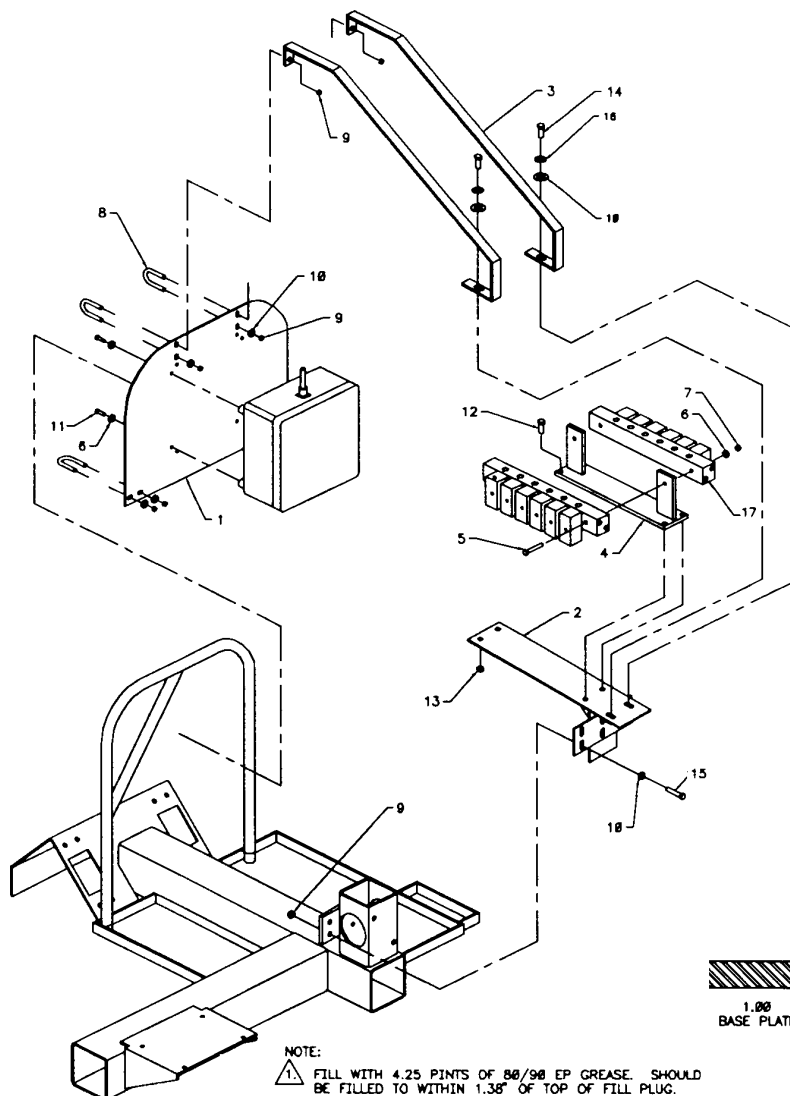
00016042: 41713791.02.19970425

3-54

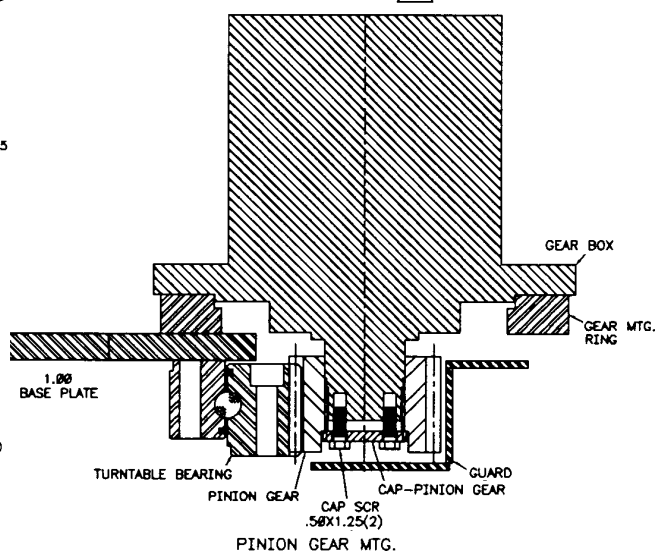
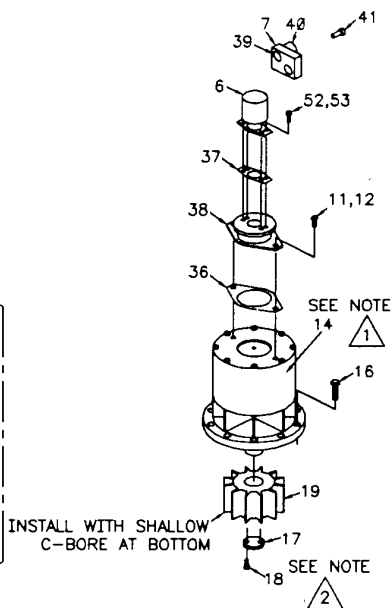
MAST ASM-RADIO REMOTE-HETRONIC (41713791-2)

ITEM	PART NO.	DESCRIPTION	QTY
1.	60119880	MTG PLATE	1
2.	52713646	BRACKET	1
3.	60119911	GUARD	2
4.	52713355	MTG PLATE	1
5.	72060015	CAP SCR 1/4-20X3-3/4 HHGR5	2
6.	72063001	WASHER 1/4 WRT	6
7.	72062104	NUT 1/4-20 LOCK	2

8.	72661341	U-BOLT 5/16-18X1-3/4 IL X 1 IL	4
9.	72062109	NUT 5/16-18 LOCK	12
10.	72063002	WASHER 5/16 WRT	10
11.	72601448	CAP SCR 6-1X10 METRIC HHZ	4
12.	72060045	CAP SCR 3/8-16X7/8 HHGR5	4
13.	72062103	NUT 3/8-16 LOCK	4
14.	72060004	CAP SCR 1/4-20X1 HHGR5	2
15.	72601376	CAP SCR 5/16-18X1 HHGR5	4
16.	72063050	WASHER 5/16 LOCK	2
17.	73733075	KIT-VOAC/HETRONIC WB CVRSN REF	



NOTE:
1. FILL WITH 4.25 PINTS OF 80/90 EP GREASE. SHOULD BE FILLED TO WITHIN 1.38" OF TOP OF FILL PLUG.
2. USE A CLEANER/PRIMER ON THREADS APPLY A SERVICEABLE THREAD LOCKER TORQUE CAP SCREWS TO 75 FT-LBS.



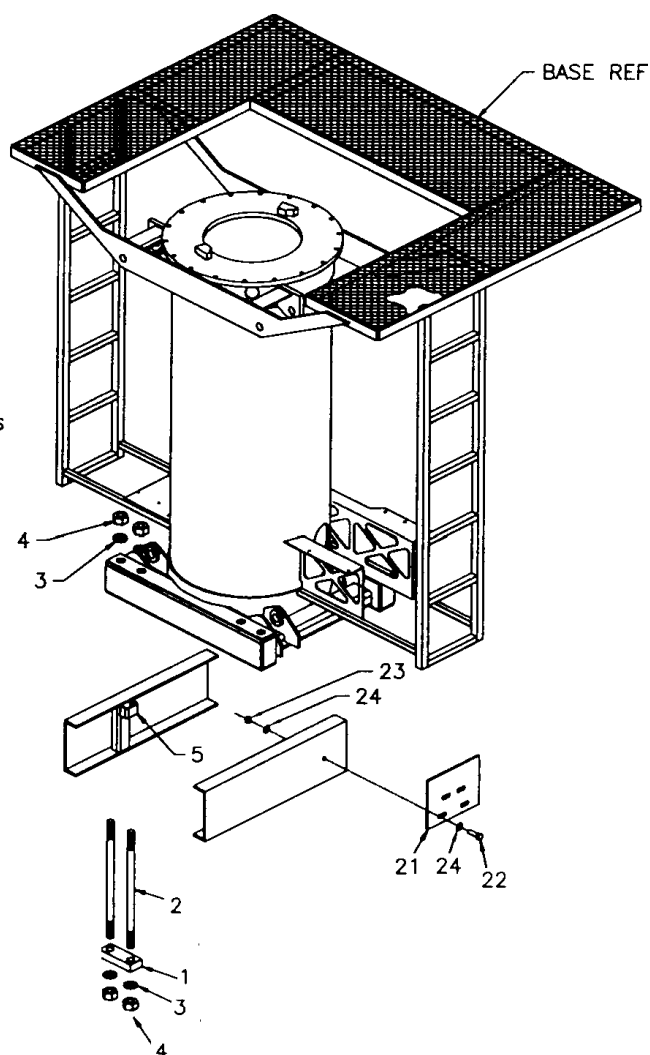
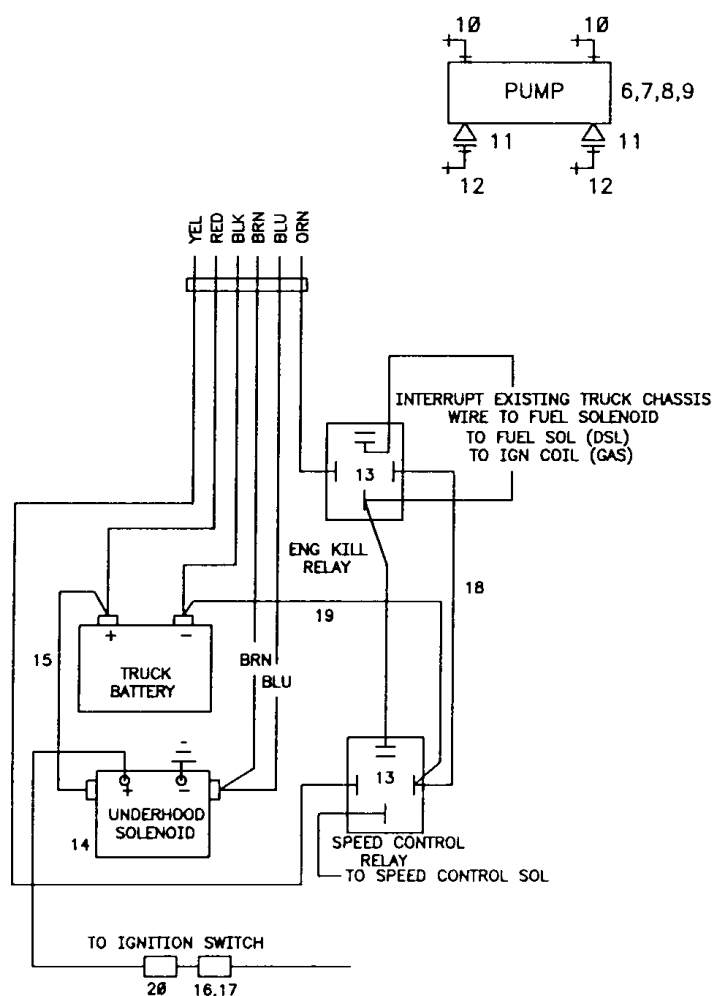
00016042: 93712710.01.19980514

**INSTALLATION KIT-RADIO REMOTE
CONTROL (93712710)**

ITEM	PART NO.	DESCRIPTION	QTY
1.	60010665	CLAMP PLATE	4
2.	71014054	STUD-TIE DOWN	8
3.	72063067	WASHER 1-1/4 HI STRENGTH	16
4.	72062142	NUT 1 1/4-7 LOCK	16
5.	52706660	FRAME SUPPORT	4
6.	60103041	TANDEM PUMP SUPPORT	1
7.	72060046	CAP SCR 3/8-16X1 HHGR5	2
8.	72062002	NUT 3/8-16	2
9.	72063051	WASHER 3/8 LOCK	2
10.	72532710	BEAD NIPPLE 1-5/8STR1-1/4 90°	2
11.	72532949	ADAPTER #20MSTR #12FSTR	2

3-55

12.	72053767	ELBOW #12MSTR #12MJIC 90°	2
13.	77041251	RELAY	2
14.	77041237	SOLENOID 12V 150A	1
15.	51704784	CABLE ASM #1WIRE X 6	1
16.	60103535	SWITCH BRACKET	1
17.	77041345	TOGGLE SWITCH	1
18.	89044038	WIRE 10GA BLK X 10	1
19.	89044038	WIRE 10GA BLK X 36	1
20.	77041056	FUSE 20AMP IN-LINE	1
21.	60105107	SHEAR PLATE	2
22.	72060931	CAP SCR 5/8-11X2-3/4 HHGR8	8
23.	72062091	NUT 5/8-11 LOCK	8
24.	72063119	WASHER 5/8N FLAT	16





00016042: 41713255.01.19971023

**BASE & OUTRIGGER ASM-HI FRAME
(41713255)**

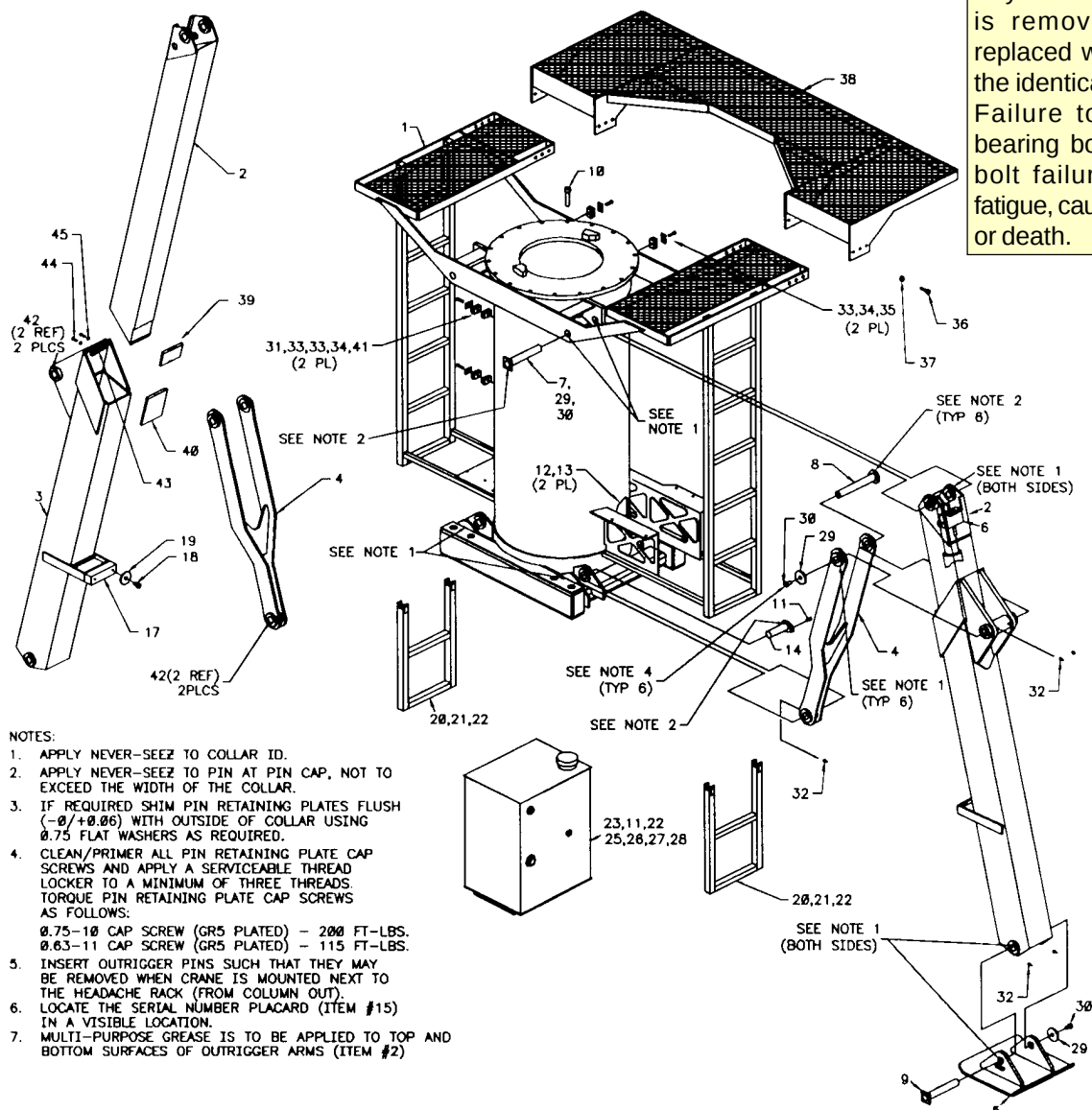
3-56

ITEM	PART NO.	DESCRIPTION	QTY
1.	52714254	BASE	1
2.	52713458	OUTRIGGER ARM	2
3.	52713460	OUTRIGGER LEG	2
4.	52713459	OUTRIGGER LINK	2
5.	52711986	OUTRIGGER PAD	2
6.	3B003950	OUTRIGGER CYLINDER	2
7.	52712505	PIN	2
8.	52714382	PIN	2
9.	52710199	PIN	2
10.	72601630	CAP SCR 3/4-10X3-1/2 SH	18
11.	72060044	CAP SCR 3/8-16X3/4	8
12.	89044402	LOOM 1/2 ID X 22	2
13.	70067005	ADHESIVE-WEATHERSTRIP	AR
14.	52712103	PIN	2
15.	70029119	SERIAL NUMBER PLACARD	1
16.	72066340	POP RIVET 1/8X3/8 GRIP	2
17.	60350055	RUBBER PAD	2
18.	72060048	CAP SCR 3/8-16X1-1/2 HHGR5	4
19.	72063003	WASHER 3/8 WRT	4
20.	52713233	LADDER EXTENSION	2
21.	72060052	CAP SCR 3/8-16X2-1/2	4
22.	72062103	NUT 3/8-16 LOCK	10

23.	52701853	OIL RESERVOIR	1
24.	70086029	GREASE 1/4LB	1
25.	72532261	SIGHT GAUGE	1
26.	73014671	FILL CAP	1
27.	73052001	PIPE PLUG 3/4NPT MAGNETIC	1
28.	73141276	FILL SCREEN	1
29.	60109337	RETAINER PLATE	6
30.	72060147	CAP SCR 5/8-11X1	6
31.	60119766	THREADED ROD 5/16-18X4	2
32.	72053508	ZERK 1/8NPT	10
33.	70034417	HOSE CLAMP 3/4	6
34.	70144819	COVER PLATE	4
35.	72060029	CAP SCR 5/16-18X2 HHGR5	2
36.	72060093	CAP SCR 1/2-13X1-1/2	12
37.	72062080	NUT 1/2-13 LOCK	12
38.	52713337	PLATFORM-BOLT ON	1
39.	60030303	WEAR PAD	2
40.	60030297	WEAR PAD	2
41.	72062109	NUT 5/16-18 LOCK	2
42.	70055173	BEARING (PART OF 3&4)	12REF
43.	60120746	BAR	2
44.	72060025	CAP SCR 5/16-18X1 HHGR5	4
45.	72063050	WASHER 5/16 LOCK	4

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.

**NOTES:**

1. APPLY NEVER-SEEZ TO COLLAR ID.
2. APPLY NEVER-SEEZ TO PIN AT PIN CAP, NOT TO EXCEED THE WIDTH OF THE COLLAR.
3. IF REQUIRED SHIM PIN RETAINING PLATES FLUSH (-0/+0.06) WITH OUTSIDE OF COLLAR USING 0.75 FLAT WASHERS AS REQUIRED.
4. CLEAN/PRIMER ALL PIN RETAINING PLATE CAP SCREWS AND APPLY A SERVICEABLE THREAD LOCKER TO A MINIMUM OF THREE THREADS. TORQUE PIN RETAINING PLATE CAP SCREWS AS FOLLOWS:
0.75-10 CAP SCREW (GR5 PLATED) - 200 FT-LBS.
0.63-11 CAP SCREW (GR5 PLATED) - 115 FT-LBS.
5. INSERT OUTRIGGER PINS SUCH THAT THEY MAY BE REMOVED WHEN CRANE IS MOUNTED NEXT TO THE HEADACHE RACK (FROM COLUMN OUT).
6. LOCATE THE SERIAL NUMBER PLACARD (ITEM #15) IN A VISIBLE LOCATION.
7. MULTI-PURPOSE GREASE IS TO BE APPLIED TO TOP AND BOTTOM SURFACES OF OUTRIGGER ARMS (ITEM #2)

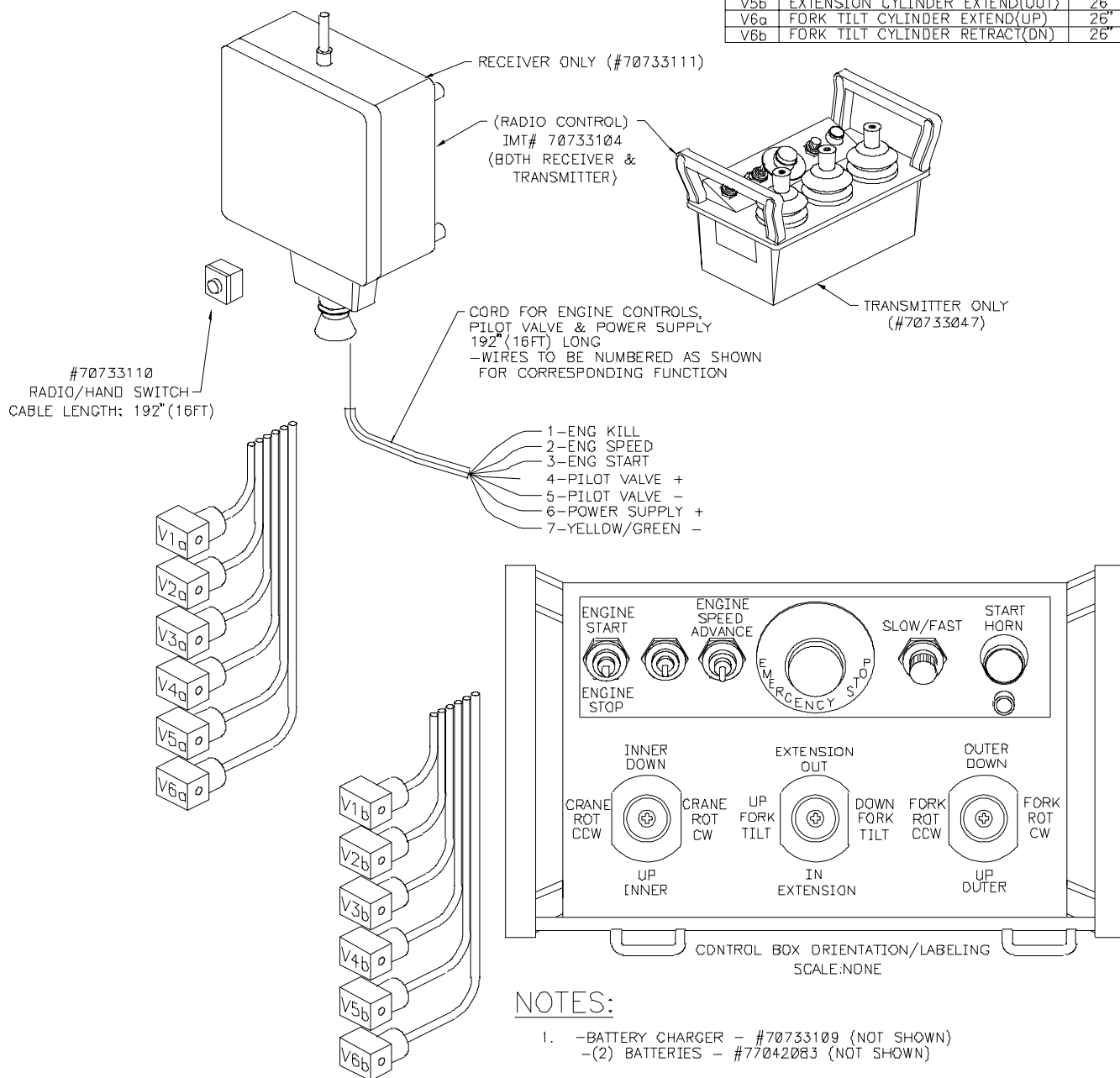


00016042: 70733104.01.19990413

3-57

**RADIO RMT-WB CONV RCVR & XMTR
(70733104)**

LABELING CHART		
*ALL CONNECTORS WILL BE SET UP AND LABELED ACCORDINGLY;		
LABEL	CONTROLLED FUNCTION	CABLE LENGTH
V1a	ROTATION MOTOR CW	26"
V1b	ROTATION MOTOR CCW	26"
V2a	INNER CYLINDER RETRACT(DN)	26"
V2b	INNER CYLINDER EXTEND(UP)	26"
V3a	OUTER CYLINDER RETRACT(UP)	26"
V3b	OUTER CYLINDER EXTEND(DN)	26"
V4a	FORK ROTATION CW	26"
V4b	FORK ROTATION CCW	26"
V5a	EXTENSION CYLINDER RETRACT(IN)	26"
V5b	EXTENSION CYLINDER EXTEND(OUT)	26"
V6a	FORK TILT CYLINDER EXTEND(UP)	26"
V6b	FORK TILT CYLINDER RETRACT(DN)	26"

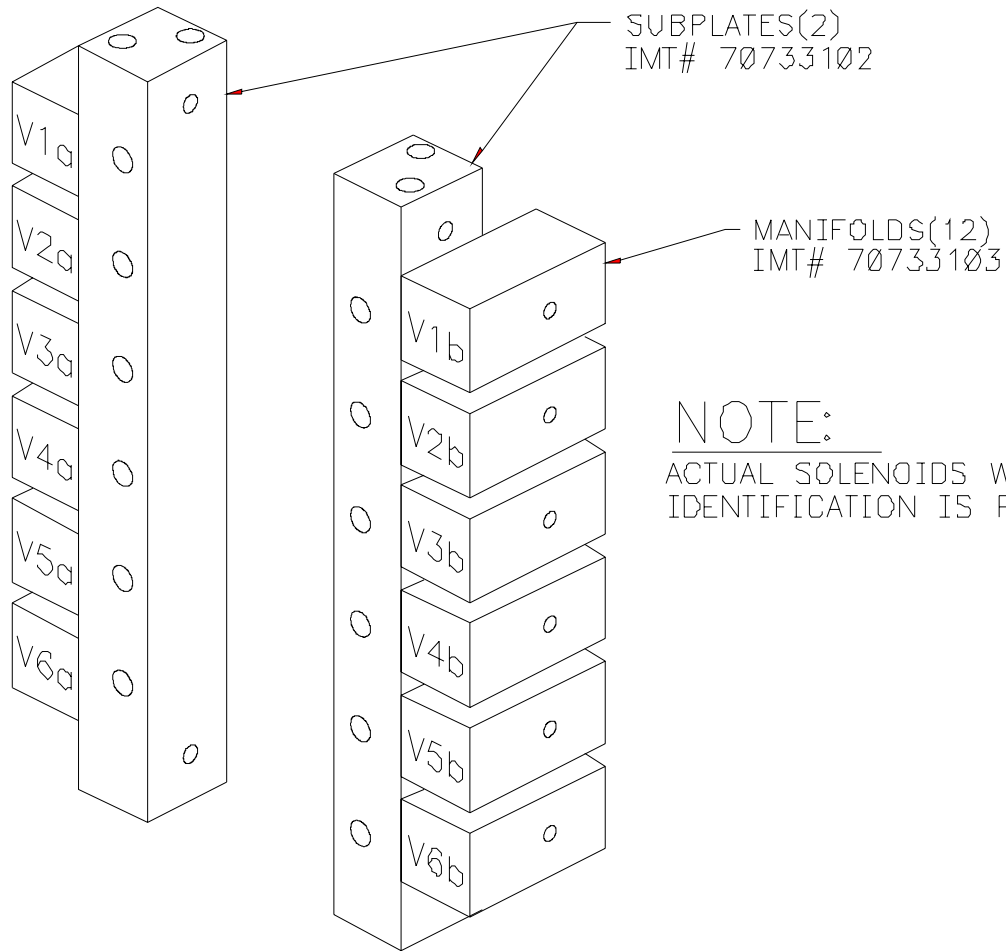




00016042: 73733364.01.19990413

3-58

KIT-WB RADIO MANIFOLD (73733364)



NOTE:

ACTUAL SOLENOIDS WILL NOT BE LABELED.
IDENTIFICATION IS FOR REFERENCE ONLY.



SECTION 4. GENERAL REFERENCE

INSPECTION CHECKLIST 3

WIRE ROPE INSPECTION 7

HOOK INSPECTION 7

HOLDING VALVE INSPECTION 8

ANTI-TWO BLOCKING DEVICE INSPECTION 8

TORQUE DATA CHART-DOMESTIC 9

TORQUE DATA CHART-METRIC 10

TURNTABLE BEARING FASTENER TIGHTENING SEQUENCE 11

TURNTABLE BEARING INSPECTION FOR REPLACEMENT 12

LIMITED WARRANTY 14



4-2

SECTION 4. GENERAL REFERENCE

[illegible]



19990618

4-3

SECTION 4. GENERAL REFERENCE

NOTICE
The user of this form is responsible in determining that these inspections satisfy all applicable regulatory requirements
OWNER/COMPANY
CONTACT PERSON
CRANE MAKE & MODEL
CRANE SERIAL NUMBER
UNIT I.D. NUMBER
LOCATION OF UNIT

Inspection Checklist	
CRANES	
TYPE OF INSPECTION (check one)	
☐ DAILY (if deficiency found)	☐ QUARTERLY
☐ MONTHLY	☐ ANNUAL
DATE INSPECTED	
HOUR METER READING (if applicable)	
INSPECTED BY (print)	
SIGNATURE OF INSPECTOR	

REV: 6-18-99

TYPE OF INSPECTION**NOTES:**

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

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

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

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

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

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

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

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

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

FREQUENCY	ITEM	KEY	✓ = SATISFACTORY ✗ = DEFICIENCY (must be corrected prior to operation)	R = RECOMMENDATION (should be considered for corrective action) NA = NOT APPLICABLE	STATUS ✓ , ✗ , R, NA
			INSPECTION DESCRIPTION		
D	1	Labels	All load charts, safety & warning labels, & control labels are present and legible.		
D	2		Check all safety devices for proper operation.		
D	3	Controls	Control mechanisms for proper operation of all functions, leaks & cracks.		
D	4	Station	Control and operator's station for dirt, contamination by lubricants, & foreign materials.		
D	5	Hyd System	Hydraulic system (hoses, tubes & fittings) for leakage & proper oil level.		
D	6	Hook	Presence & proper operation of hook safety latches.		
D	7	Rope	Proper reeving of wire rope on sheaves & winch drum.		
D	8	Pins	Proper engagement of all connecting pins & pin retaining devices.		
D	9	General	Overall observation of crane for damaged or missing parts, cracked welds & presence of safety covers.		
D	10	Operation	During operation, observe crane for abnormal performance, unusual wear (loose pins, wire rope damage, etc.). If observed, discontinue use & determine cause & severity of hazard.		
D	11	Remote Ctrl's	Operate remote control devices to check for proper operation.		
D	12	Electrical	Operate all lights, alarms, etc. to check for proper operation.		
D	13	Anti 2-Blocking	Operate anti 2-blocking device to check for proper operation.		
D	14		Other		
D	15		Other		

**Inspection Checklist****CRANES****2**

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



SECTION 4. GENERAL REFERENCE

3

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

Deficiency / Recommendation / Corrective Action Report

DATE	OWNER	UNIT I.D. NUMBER
------	-------	------------------

GUIDELINES

- A. A deficiency (**X**) may constitute a hazard. **X** must be corrected and/or faulty parts replaced before resuming operation.
- B. Recommendations (**R**) should be considered for corrective actions. Corrective action for a particular recommendation depends on the facts in each situation.
- C. Corrective actions (**CA**), repairs, adjustments, parts replacement, etc. are to be performed by a qualified person in accordance with all manufacturer's recommendations, specifications and requirements.

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

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

[illegible]



SECTION 4. GENERAL REFERENCE

4

[illegible]

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



19990519

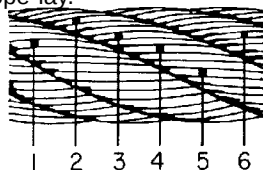
4-7

SECTION 4. GENERAL REFERENCE

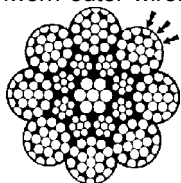
WIRE ROPE INSPECTION

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

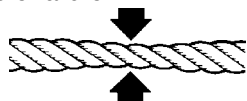
- A. Corrosion can be cause for replacement. Any development of corrosion must be noted and monitored closely.
- B. When there are either 3 broken wires in one strand or a total of six broken wires in all strands in any one rope lay.



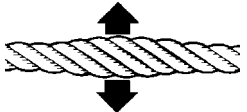
- C. When flat spots on the outer wires appear and those outside wires are less than 2/3 the thickness of the unworn outer wire.



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



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



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



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



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

**HOOK INSPECTION**

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

A. DISTORTION**Bending / Twisting**

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

Increased Throat Opening

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

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

B. WEAR

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

C. CRACKS, NICKS, GOUGES

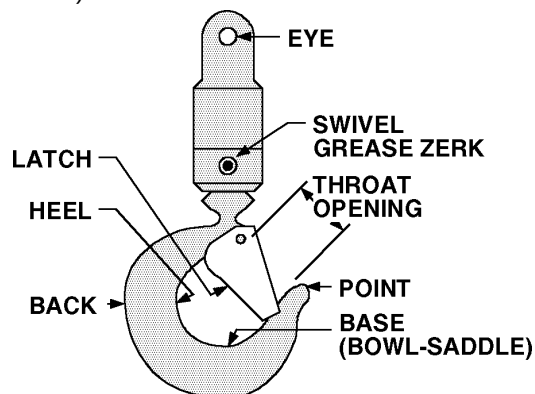
Repair of cracks, nicks, and gouges shall be carried out by a designated person by grinding longitudinally, following the contour of the hook, provided that no dimension is reduced more than 10% of its original value. (Or as recommended by the manufacturer) (A qualified person may authorize continued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

D. LATCH**Engagement, Damage & Malfunction**

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

E. HOOK ATTACHMENTS & SECURING MEANS

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





19990519

4-8

SECTION 4. GENERAL REFERENCE

HOLDING VALVE INSPECTION

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

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

ANTI-TWO BLOCKING DEVICE INSPECTION

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

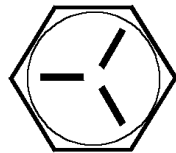
The anti two block system should be checked daily as follows:

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

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

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

COARSE THREAD BOLTS

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

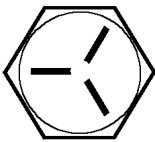
When using the torque data in the charts above, the following rules should be observed.

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

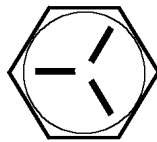
WARNING

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

**TORQUE DATA CHART - DOMESTIC****FINE THREAD BOLTS**

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

COARSE THREAD BOLTS

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

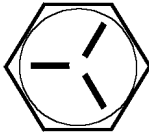
When using the torque data in the charts above, the following rules should be observed.

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

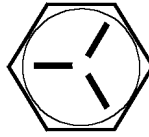
WARNING

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

**TORQUE DATA CHART - METRIC****FINE THREAD BOLTS**

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

COARSE THREAD BOLTS

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

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

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

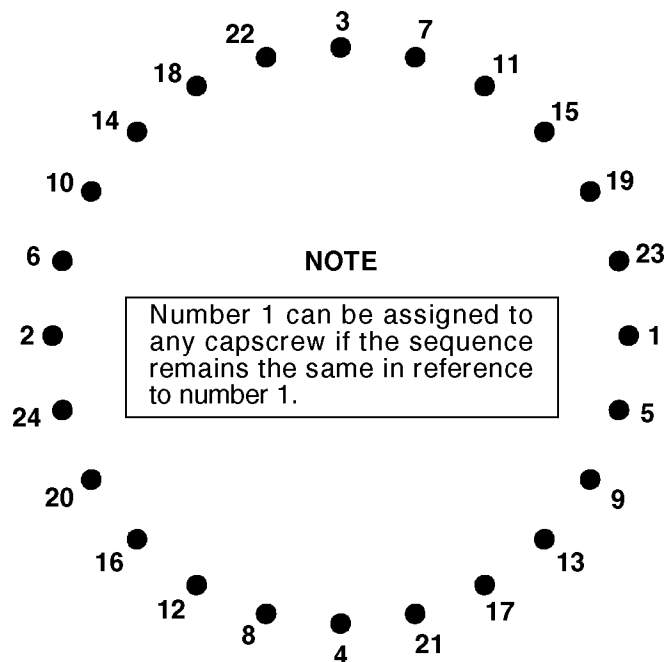
WARNING

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



TURNTABLE BEARING FASTENER TIGHTENING SEQUENCE

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



TIGHTENING PROCEDURE:

1. Refer to the Torque Data Chart to determine the proper torque value to apply to the size of 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 x 265 FT-LBS = 106 FT-LBS)
(EXAMPLE-METRIC: .40 x 36 KG-M = 14.4 KG-M)
4. Repeat Step 3, but torqueing all cap screws to 75% of the specified torque value. Continue to follow the tightening sequence.
(EXAMPLE: .75 x 265 FT-LBS = 199 FT-LBS)
(EXAMPLE-METRIC: .75 x 36 KG-M = 27 KG-M)
5. Using the proper sequence, torque all cap screws to the listed torque value as determined from the Torque Data Chart.



TURNTABLE BEARING INSPECTION FOR REPLACEMENT

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

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

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

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

TEST PROCEDURE

STEP 1.

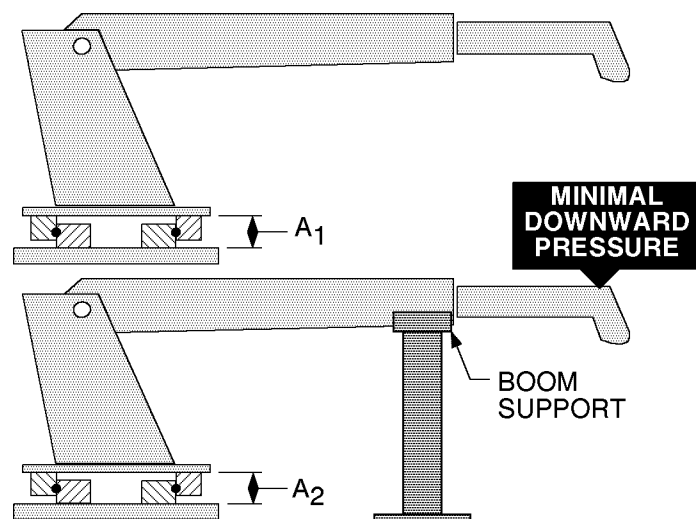
With the crane horizontal and fully extended, measure between the top and bottom mounting surfaces of the turntable bearing (A1), using a dial indicator for accuracy.

STEP 2.

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

STEP 3.

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



COMPARISON CHART - MODEL TO MEASURED TILT DIMENSION

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, LOADER OR TIREHAND MODEL	1007 1014 1014A 2015 2020 2109 3000 3016 3816 3020 425 4300 5016 6016 TH7 BODY ROT'N TH1449 BODY ROT'N TH15B CLAMP TH2551B CLAMP TH2557A CLAMP	5200 5200R 5217 5800 7020 7025 7200 7415 9000 TH10 BODY ROT'N TH14 BODY ROT'N	16000 32018 32030 T30 T40	9800 12916 13031 13034 14000 15000 18000 20017 H1200 H1200RR T50 TH2551B BODY ROT'N TH2557B BODY ROT'N TH2557A BODY ROT'N
	BALL DIA. (REF)	.875" (22mm)	1.00" (25mm)	1.18"-1.25" (30-32mm)	1.75" (44mm)
	TILT DIM. (A₁-A₂)	.060" (1.524mm)	.070" (1.778mm)	.075" (1.905mm)	.090" (2.286mm)



19990519

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

MANUAL CHANGE REQUEST

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

☐

ERROR FOUND

LOCATION OF ERROR (page no.): _____

DESCRIPTION OF ERROR: _____

☐

REQUEST FOR ADDITION TO MANUAL

DESCRIPTION OF ADDITION: _____

REASON FOR ADDITION: _____

MAIL TO: IOWA MOLD TOOLING Co., Inc.
Box 189,
Garner IA 50438-0189
ATTN: Technical Publications



19990519

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
TECHNICAL SUPPORT FAX: 515-923-2424