
Manual # 99903572

16000 SII Parts & Specifications

Volume 2

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Revisions

DATE	LOCATION	DESCRIPTION
20031111	99903430, EXTENSION BOOM ASM - 42' (99903426)	ECN 9309, 9313 - FITTING, VIEW CHANGES TO 99903430 BASE, CHANGES TO 99903426 42' EXT. BOOM ASM., CHANGES TO CYLINDERS 51717738, 51717752, AND TO DECAL KIT 95717769.
20031201	BASE ASSEMBLY, STANDARD (99903430) , CYLINDERS 51717738, 51718466, AND SCHEMATICS 99903515, 99903525, AND 99903583	ECN'S 9301, 9312, 9324
20031217	99903424	ECN 9337 - ADDED TUBE ASM & ADAPTER TO MAST ASSEMBLY 99903424.
20031230	99903424, 99903498 (SEE "HYDRAULICS, DUAL CONTROLS (99903498) (THROUGH 7/06)" ON PAGE 97), 99903515 (SEE "HYDRAULICS, STANDARD CONTROLS (99903515)" ON PAGE 87), 99903525-3,-4, 99903583	ECN 9317-1 - UPDATED JOYSTICKS & FOOT PEDALS. (EFFECTIVE S/N 16000S3041009 AND BEYOND.)
20040120	99903430 , 99903439, 99903523 (SEE "RESERVOIR LAYOUT (99903523)" ON PAGE 43)	ECN 9351- ADDITION OF HI-FRAME INFORMATION. REMOVED 99903545, BASE ASSEMBLY, HI-FRAME.
	99903498 (SEE "HYDRAULICS, DUAL CONTROLS (99903498) (THROUGH 7/06)" ON PAGE 97)	ECN 9301-1 - FINAL RELEASE OF DUAL CONTROL DRAWINGS.
	99903424 , 99903582	ECN 9356 - CYLINDER CHANGE ON 99903424 MAST ASSEMBLY, ADDED 99903582 ELECTRICAL INSTALLATION INFORMATION.
20040205	SPARE PARTS LIST, MAST ASSEMBLY, STANDARD CONTROLS (99903424)	ECN 9369 - MAST HARDWARE RESTRUCTURING. ALSO ADDED FILTER ELEMENT 73052135 TO RESERVOIR ASSEMBLY 99903523 SPARE PARTS LIST.
20040301	51718466 , MAST ASSEMBLY, STANDARD CONTROLS (99903424), HYDRAULICS, DUAL CONTROLS (99903498) (SEE "HYDRAULICS, DUAL CONTROLS (99903498) (THROUGH 7/06)" ON PAGE 97)	ECN 9393 - CHANGE TO CYLINDER CASE. ECN 9382 - CHANGE TO 99903498, 99903424. ADDED 99903581 ELECTRICAL INSTALLATION DRAWING.
20040310	MAST ASSEMBLY, STANDARD CONTROLS (99903424)	ADDED SEAL KIT, BOOT SPARE PARTS NUMBERS FOR FOOT PEDAL & JOYSTICK, ADDED ELECTRICAL HARNESSSES 77441079 AND 77441095. ECN 9394 - ADDED 52715593 TO 99903430 BASE ASSEMBLY; ECN 9406 - REDUCED 70391612 QUANTITY ON DECAL KIT 95717769, CHANGES TO 99903523, 99903525. ADDED VALVEBLOCK SPARE PARTS.
20040409	MAST ASSEMBLY, STANDARD CONTROLS (99903424) , 99903498, 99903525, 99903586	ECN 9318 - NEW CRANE ROTATION GEARBOX/MOTOR; ECN 9422-CHAIR PLATFORM MOUNTING CHANGES.
20040510	RESERVOIR LAYOUT (SEE "RESERVOIR LAYOUT (99903523)" ON PAGE 43) , CYLINDERS, GEARBOX	ECN 9475 - ADDED FITTINGS TO HYD. RESERVOIR TANK ASSEMBLY; ECN 9431 - ADDED LOCKING PIN TO SEAL KITS; ADDED GEARBOX PARTS DRAWING 70056594
20040719	MAST ASSEMBLY, STANDARD CONTROLS (99903424)	ADDED HIGH-FRAME OPTION TO 99903424.

20040903	99903581, 99903498, 99903525	ECN 9558 - HARDWARE CHANGE. ECN 9541 - PRODUCT IMPROVEMENTS TO 99903498, 99903525.
20041110	99903425, 99903426	ECN 9579 - CHANGES TO WEAR PADS. CORRECTION TO 51717752 CYLINDER DRAWING.
20050222	99903430	ECN 9641 - CHANGED STABILIZER DRAG LINKAGES ON BASE ASSEMBLY.
20050413	70056594	ECN 9734 - ADDED SPARE PARTS TO 70056594 ASSEMBLY.
20050509	99903527	ECN 9782 - CHANGE TO INSTALLATION KIT AND DRAWING.
	99903498	ADDED RADIO TRANSMITTER NUMBER TO 99903498 PARTS LIST.
	73733892	ADDED NUT PART NUMBER TO VALVEBLOCK PARTS BREAKDOWN.
20050620	70046594	DESCRIPTION CHANGE, ITEM #19.
	99903523, 99903525, 99903424	ECN 9740 - COMPONENT PIECE PART REVISIONS.
20050830	CYLINDERS & ASSEMBLIES WHICH INCLUDE CYLINDERS	ECN 9753 - CHANGE TO PURCHASED CYLINDERS.
20050912	99903430	ECN 9669 - STABILIZER LINK WELDMENT RATHER THAN CASTING (52719049 INSTEAD OF 60128818)
20051102	CYLINDERS EFFECTIVE 7/15/05	ADDED NOTE REGARDING REPLACING ALL SEALS WHEN CYLINDER IS DISASSEMBLED.
20060127	99903424	ECN 10012 - ITEM #34 72060148 WAS 72060147. ALSO ADDED HYDRAULIC LINE PART NUMBERS TO 71411575 STABILIZER CYLINDER DRAWING.
20060428	99903430	ECN 9923 - UPDATE DRAG LINK TO CASTING, ECN 10094
	99903498, 99903525	ECN 10108 - HOSE CHANGES
	99903957	ECN 10104 - ADDED FRAME MOUNT INSTALLATION OPTION
	70056593	ADDED SPARE PARTS LIST FOR 70056593 GEARBOX
20060721	99903439	ECN 10119 - ADDED NUTS TO 99903439 BASE ASSEMBLY
20060823	99904076, 99904077, 77441207	ECN 10163 - ADDED NEW DRAWINGS FOR CHANGE TO ELECTRICAL SWITCH BOX
20061024	99903957	ECN 10287 - ADDED ADDITIONAL NUTS TO MOUNTING SYSTEM.
	99904100, 99904101	ECN 10255 - NEW DRAWINGS FOR ELECTRICAL & HYDRAULIC LAYOUT FOR RADIO REMOTE OPTION
20070108	95717769	ECN 10311, 10358 - CHANGES TO DECAL DRAWINGS
20070313	99903424, 99903425, 99903426, 99903430	ECN 10380, 10380-1 - CHANGES TO HYDRAULIC CYLINDERS
20070402	99903427, 95717769	ECN 10389 - INNER BOOM CHANGE & DECAL PLACEMENT CHANGE
20070427	99903424, 99903430	ECN 10441 - REMOVED FLAT WASHERS.
20070816	99903424	ECN 10539 - CHANGED 72060023 TO 72060035 ON 99903424
20080228	70056594	ADDED PART NUMBERS TO ITEMS 72, 73, 80, 81.
20080422	99903430, 99903424, 70056594	ECN 10718-ADDED TORQUE SPEC TO RETAINING BOLTS, ADDED SPARE PART TO JOYSTICK IN 99903424, ADDED O-RING PART NUMBERS TO 70056594 DRAWING,
20080807	73733903	ADDED HANDLE SPARE PART NUMBER.
	70056594	ADDED PART NUMBERS FOR ITEM #1, 75, 78
20091029	SPECIFICATIONS	PRESSURE SYSTEM CHANGES

20110928	99903424	ECN 11576-SEAT BOLTS PART CHANGE
20111122		ECN 11628 - CHANGE STABILIZER WORDING, UPDATE SAFETY DECALS
20120420	51717731, 51717734	ECN 11615 - CYLINDER DRAWING UPDATES.
20120914	99903523	ECN 11804 – ADDED RETURN ELEMENT
20130927	99903424	PER ENGINEERING MARKUP ITEM 13 UPDATED.
20131106	PAGE 22 DRAWING	PER ENGINEERING CORRECTED 1.25-7 HEX NUT TORQUE FROM 240 TO 840.
20131121	99902532	ADDED SECOND LINE OF ITEM 34
20131212	70056593, 70056594, 99903424 99903523	ENGINEERING MARKUPS – SWING DRIVE ADDED SECOND ITEMS 1, 7, 8, 9, 10
20140507	51718003	ECN 12196 – ADDED NEW DRAWING EFFECTIVE 5/07/14
20140515	51717736 99905745	ECN 11840-33 – ADDED NEW DRAWING EFFECTIVE 1/16/14 AND KIT FOR RETRO.
20140911	51726278	ECN 12256 – NEW BOOM SUPPORT

SECTION 1

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

Throughout the manual, NOTES, CAUTIONS and WARNINGS are used to draw the attention of personnel. They 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.

CHAPTER 1

Specifications

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General Specifications

	42' Version
CRANE RATING	160,000 ft-lb (22.13 ton-meters)
REACH (from centerline of rotation)	42'-0" (12.80m)
HYDRAULIC EXTENSION	87" + 87" (221.0 + 221.0cm)
* MAXIMUM LIFTING HEIGHT	54'-1" (16.48m)
CRANE WEIGHT w/platform & chair	10,550 lb (4785 kg)
STABILIZER SPAN at ground level	17'-6" (5.33m)
*CRANE STORAGE HEIGHT	13'-2" (4.01m)
MOUNTING SPACE REQUIRED	36" (91cm)
OPTIMUM PUMP CAPACITY tandem pump (each section)	16 + 16 U.S. GPM (60.56 lpm)
OIL RESERVOIR CAPACITY	40 gallons (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" (102 cm) 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 lb (272 kg).

Performance Characteristics

ROTATION:	450°	42 seconds
	360°	34 seconds
INNER BOOM ELEVATION:	-5° to +80° (-.09 to +1.40 rad)	21 seconds
OUTER BOOM ARTICULATION:	170°	21 seconds (retract)
EXTENSION BOOM:		
35' BOOM	87" (221.0cm)	5.5 seconds
42' BOOM	87" + 87" (221.0 + 221.0cm)	10 + 10 seconds
STABILIZER EXTENSION:	52-1/2" (133.4cm)	6.5 seconds

NOTE: * All times are theoretical and based on an optimum pump capacity of 16 + 16 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		
42' BOOM	3" + 3" (7.6+7.6cm)	87" +87" (221+ 221cm)
STABILIZER CYLINDERS	3-1/2" (8.9cm)	52-1/2" (133.4cm)

System Specifications

POWER SOURCE

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

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 stabilizer cylinders feature dual load holding check valves.

The counter-balance valve is a holding valve, constructed to prevent sudden cylinder rod movement in the event of hydraulic hose or component failure and to limit oil loss from a hose break to the oil contained in the hose. The dual load holding check valves in the stabilizer cylinders prevent the cylinders from drifting down during transport and prevent the cylinders from collapsing should a hose break when the stabilizers 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 137.5:1.

HYDRAULIC SYSTEM

Open-centered, full-pressure system with tandem pump requiring 16 U.S. GPM (60.56 liters/min) at 3000 psi (207 bar) and 16 U.S. GPM (60.56 liters/min) at 2750 PSI (190 bar) at the mid-section inlet. Control valve consists of a two-spool and a six spool, stack type valvebank. All crane (excluding stabilizers) and wallboard functions are operated by either joy sticks or foot treadles via a pilot source of oil from the valve banks. Radio remote controls are optional. Stabilizer 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.

EXCESSIVE LOAD LIMITATION SYSTEM

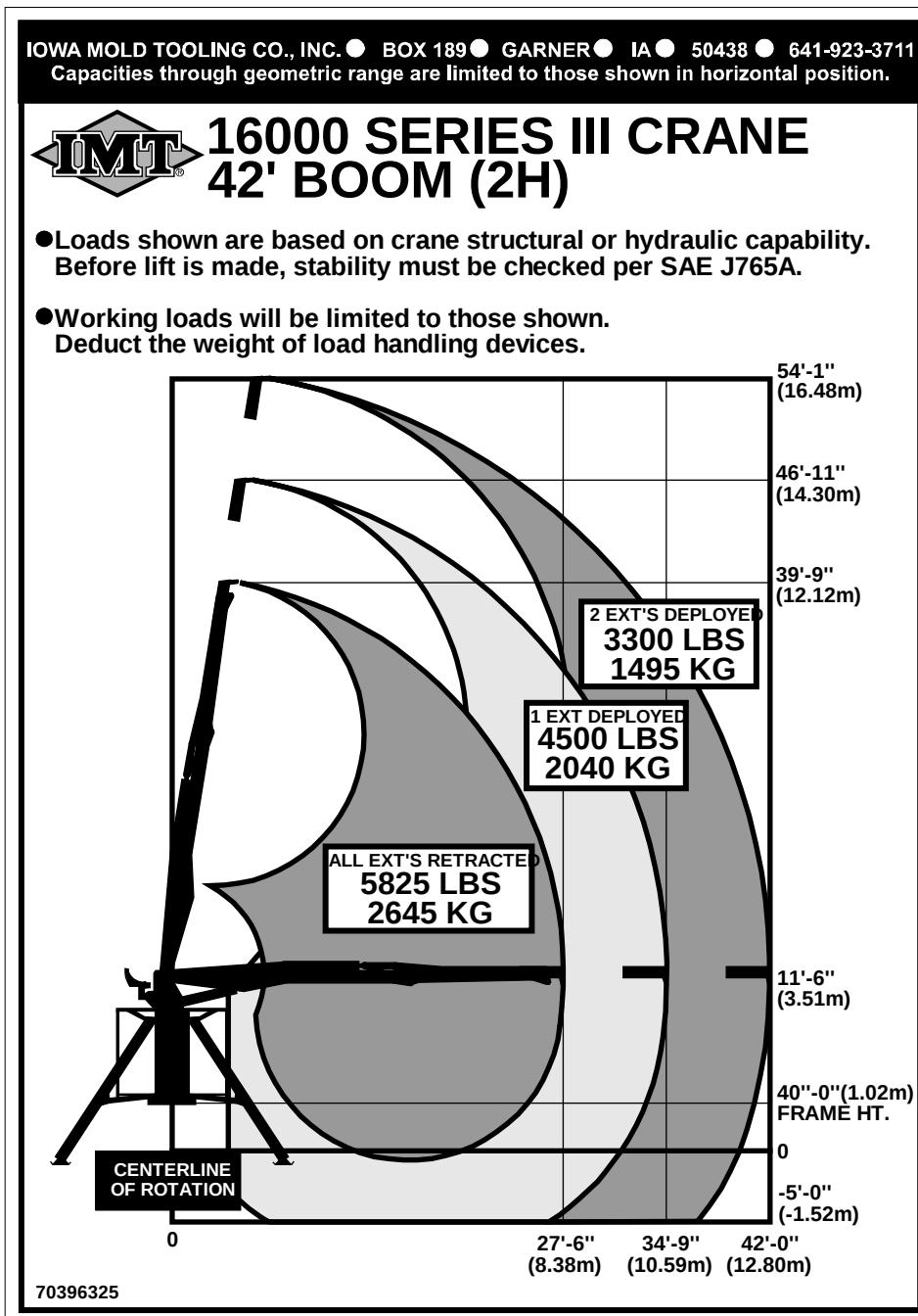
A pressure sensor mounted on the inner-boom cylinder and connected hydraulically to the down side of the inner boom, the lift side of the outer boom and extend side of the extension boom provides the wallboard crane excessive load limitation system. If the operator tries to lift a load in excess of crane 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
WHEELBASE	269" (683 cm)
CAB-TO-AXLE	210" (533.4 cm)
FRAME SECTION MODULUS	30 cubic inches (492 cubic cm)
RBM*	3,300,000 in-lb (38,021 kg-m)
FRONT AXLE RATING	16,000 lb (7258 kg)
REAR AXLE RATING	38,000 lb (17,237 kg)
TRANSMISSION	10-speed

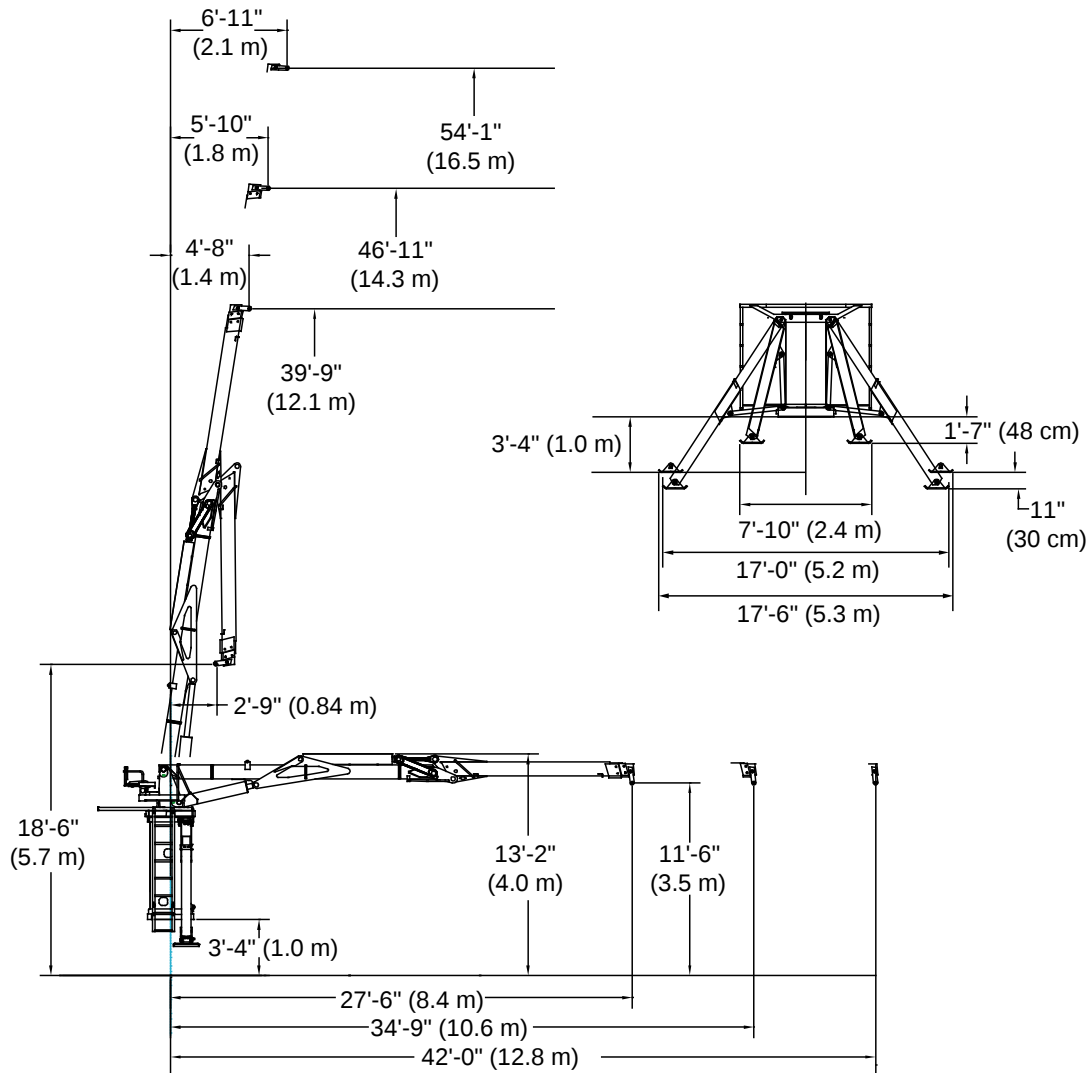
In addition to these specifications, heavy-duty electrical and cooling systems, and tandem rear axles with dual wheels, are required. It is recommended that the vehicle be equipped with an electric engine tachometer and auxiliary brake locks.

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

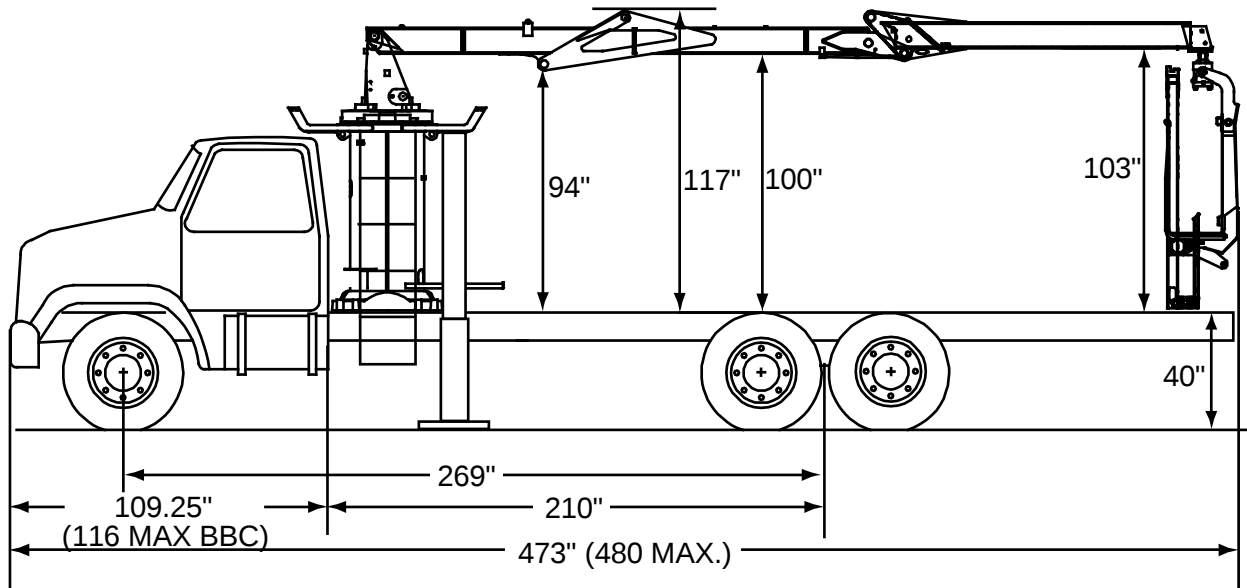
Capacity Chart - 42' 16000 SIII



Geometric Configuration - 42' 16000 SIII



Reference Dimensions



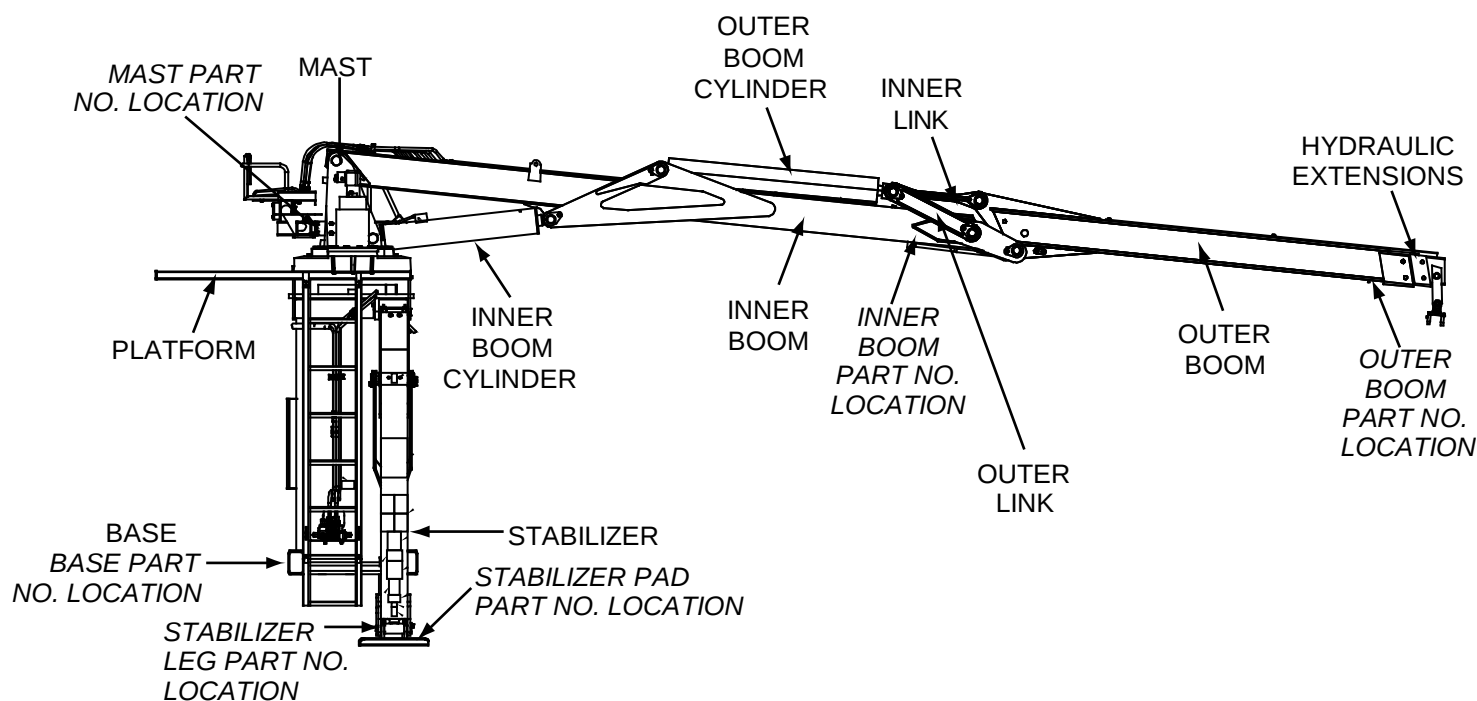
CHAPTER 2

Crane Reference

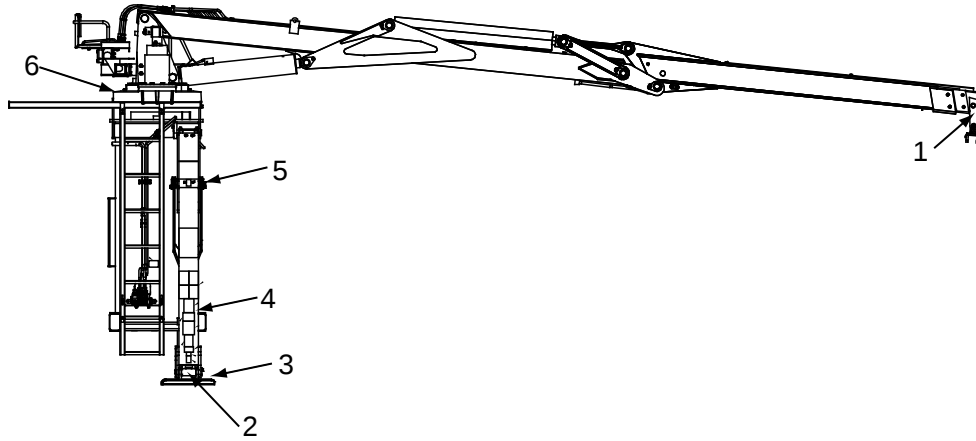
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Major Assemblies, Part Number Locations



Wallboard Grease Zerk Locations



ITEM	LOCATION DESCRIPTION	LUBRICANT RECOMMENDATION	FREQUENCY
1.	SWIVEL LINK	SHELL ALVANIA 2EP OR SHELL RETINAX "A"	WEEKLY
2.	STABILIZER CYLINDER BASE		
3.	STABILIZER LEG/PAD (2 EACH SIDE)		
4.	STABILIZER LINK / BASE		
5.	STABILIZER LINK / LEG (2 EACH SIDE)		
6.	TURNTABLE BEARING GREASE EXTENSION *ROTATE CRANE WHILE GREASING		

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.

Recommended Spare Parts

Recommended Spare Parts for One-year for the 16000-SIII Crane:

NOTE: 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. (Rev. 20070313)

Base Assembly (99903430)			
Item #24	60350055	Rubber Bumper	2
Stabilizer Cylinder (51717736)			
Item #3	60124587	Piston	1
Item #4	60124588	Head	1
Item #19	73052097	Check Valve	1
Item #24	9B080000	Seal Kit	1
Mast Assembly (99903424)			
Item #15	73054462	Solenoid Valve	1
	77041658	Coil (part of Solenoid Valve)	1
Item #16	73054549	Check Valve	1
Item #17	73054424	Overstress Valve	1
Item #29	72061793	Cap Screw 7/8-9 x 3.50	10
Item #30	72061293	Cap Screw 7/8-9 x 6.00	14
Item #41	73054425	Sensor Valve	1
Hydraulic Motor Seal Kit (94394208)			
Inner Boom Assembly (99903427)			
Item #27	70034283	Bearing	2
Item #28	70034285	Bearing	2
Inner Cylinder (51718466)			
Item #5	73054242	Counter Balance Valve	1
Item #6	60125927	Piston	1
Item #7	60124617	Head	1
Item #8	51744129	Seal Kit	1
Outer Boom Assembly (99903425)			
Item #9	60122985	Wear Pad	4
Item #13	60124036	Wear Pad	1
Item #30	70034467	Bearing	6
Item #31	72063106	Bushing	12
Item #32	70034283	Bearing	10
Outer Cylinder (51717738)			
Item #5	60124593	Head	1
Item #6	60124596	Piston	1

Item #8	73054242	Counter Balance Valve	2
Item #13	51744112	Seal Kit	1
Extension Boom Assembly- 42' (99903426)			
Item #5	52713127	Pin	1
Item #6	51709475	Swivel Link	1
Item #7	70055207	Bearing	2
Item #14	60030288	Roller-Track Guide	4
Item #15	60122985	Wear Pad	4
Item #16	60124155	Wear Pad	1
Item #17	60124156	Wear Pad	1
Item #18	60124157	Wear Pad	1
Item #34	72062141	Nut - Lock	1
Item #35	72063066	Washer - Hi-Strength	1
Item #53	60030319	Wear Pad	2
Extension Cylinder, 1st Stage (51717731)			
Item #1	51744123	Seal Kit	1
Item #5	60124582	Head	1
Item #6	60125661	Piston	1
Extension Cylinder, 2nd Stage (51717734)			
Item #1	51744124	Seal Kit	1
Item #4	60124581	Head	1
Item #5	60125661	Piston	1
Swivel Link Replacement Kit (51709479)			
Item #2	70055207	Bushing	2
Boom Support (51712758)			
Item #6	60118677	Pad	2
Reservoir Assembly (99903523)			
Item #30	73052134	Filter, High Pressure	2
	73052135	Filter Element	2
PM Hydraulic Filtration Kit (91718064)			
	71410004	Breather Element	
	73052088	Return Filter Element	
	70396373	Chart - PM Service	

Crane Installation

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

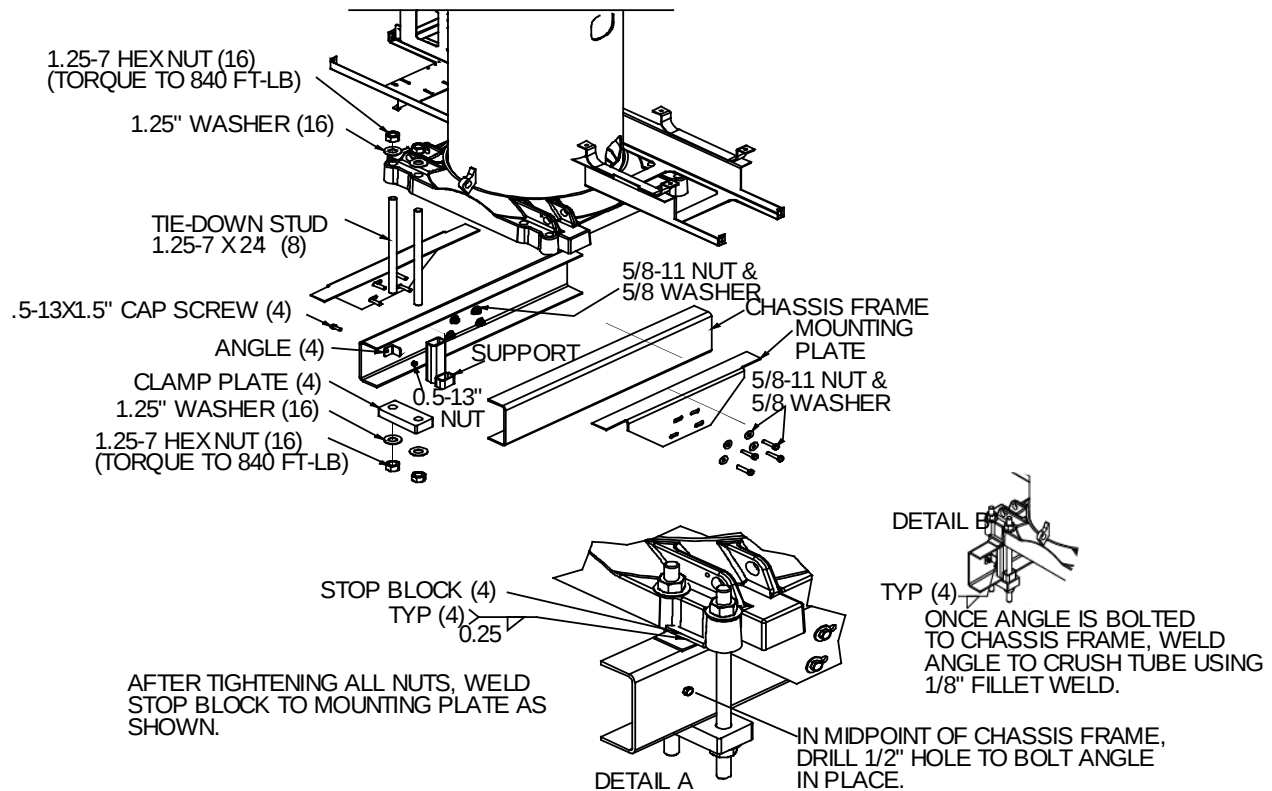
- 1 See SPECIFICATIONS in Section 1 for crane weight. Using an overhead hoist and fabric slings of adequate capacity, lift the crane about a foot to see if the crane is adequately balanced. If not, lower hoist and adjust slings. Re-check balance and re-position crane until mounting surface is level.
- 2 Install the truck frame support so that the tie-down studs pass through the supports (See figure). Cut the support to the inside dimensions of the truck frame. Allow about 1/16" extra. Grind the end of the support to fit inside the frame channel. Use a hammer to drive it into position if necessary.
- 3 Allow sufficient clearance between the cab and crane base, at least 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. 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-lb (116 kg-m). When torquing the mounting hardware the following precautions must be followed:
 - a) Never use lock washers.
 - b) Use hardened washers only, placed 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-Seez compound graphite and oil, molybdenum disulphide colloidal copper or white lead, reduce torque values 10%. Torque values for threaded fasteners are not affected by Loctite.
 - d) Do not use rusty fasteners. The rust will alter torque values significantly.
- 5 After tightening all nuts, weld the four stop blocks to the mounting plate.
- 6 Drill holes for 1/2" bolts in the midpoint of the chassis frame as shown in Detail A. Bolt angle in place as shown in Detail B. Weld angle to crush tube, using 1/8" fillet weld.
- 7 Touch up paint on crane and chassis as necessary.

CAUTION

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

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

Crane Installation Drawing



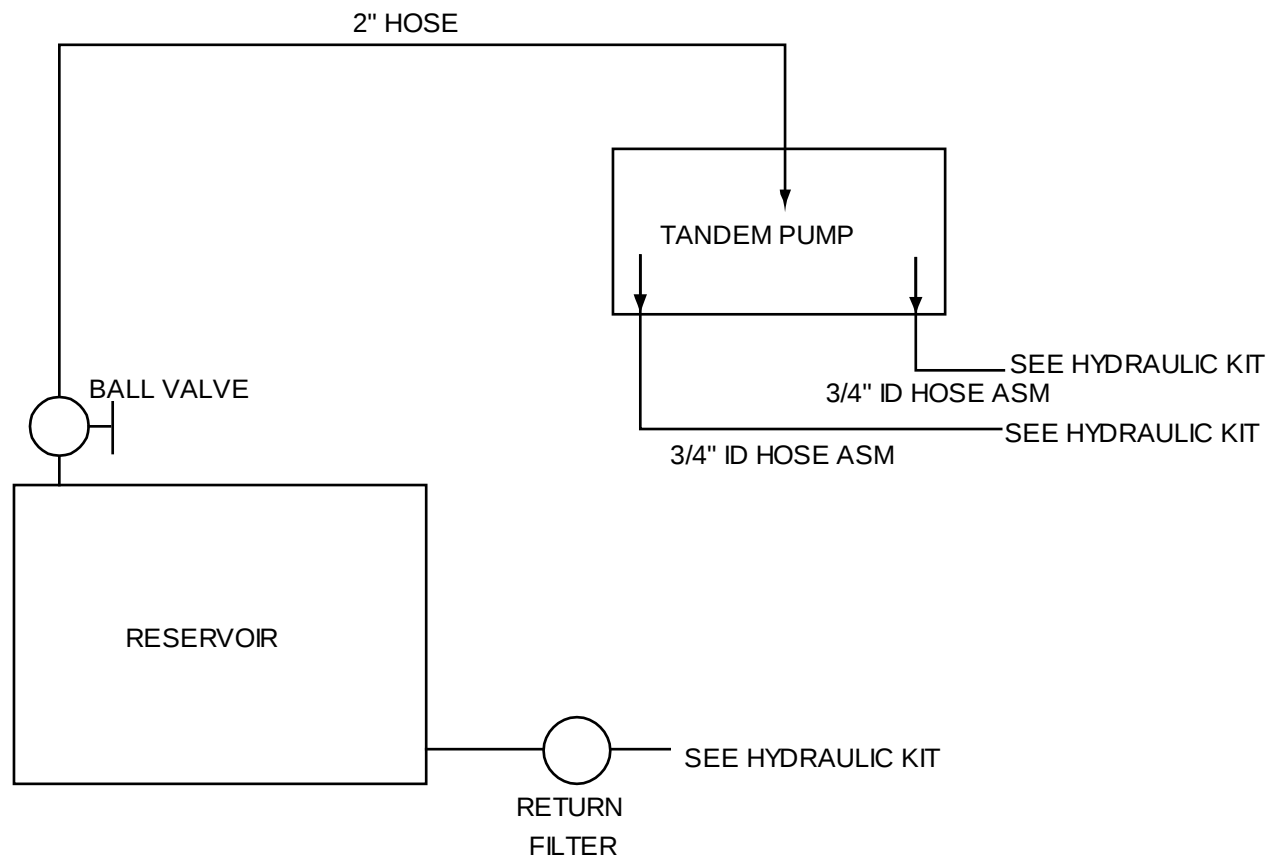
Hydraulic Installation

To install the hydraulic hoses, fittings, etc.:

- 1 Install the 2" suction hose to the pump. Tighten the hose clamps.
- 2 Install the 3/4" pressure hose between the pump outlets and the inlet ports on the valve banks.
- 3 Fill the hydraulic oil reservoir.
- 4 Open the gate valve.
- 5 Start the vehicle's engine and engage the PTO. Allow the system to run for about five minutes.
- 6 Cycle all hydraulic functions. Check for leaks, and refill the reservoir if necessary.

CAUTION

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



IMT-PM Package Service Schedule

TYPE OF SERVICE	MONTH											
	1	2	3	4	5	6	7	8	9	10	11	12
Change 16000 SIII Crane return filter (73052088)						X						X
Change 16000 SIII Crane hydraulic oil												X
Change 16000 SIII Crane pressure filter elements						X						X
Change 16000 SIII Crane breather element (71710004)						X						X
Start new 12-month PM Chart												X

Daily Checks: Crane fluid levels

Weekly checks: Greasing of crane turntable and pin bosses

Kit includes: Pressure filter (4), Return Filter Element (2), Breather Element (2), Drawing - PM 16000 SIII Service Schedule (1).

Recommended for average equipment usage rate. Required crane lubricants are not included.

CHAPTER 3

Parts

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Parts Information

GENERAL

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

 WARNING
Do not attempt to repair any component without reading the information contained in the repair section. Pay particular attention to statements marked Warning, Caution or Note in that section. Failure to comply with these instructions may result in damage to the equipment, personal injury or death.

CRANE IDENTIFICATION

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

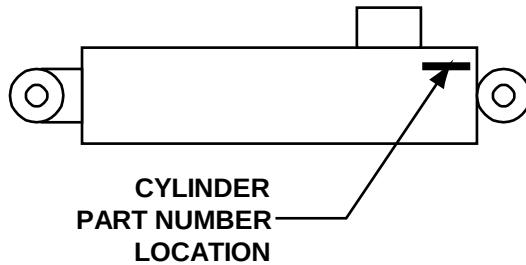
Iowa Mold Tooling Co., Inc.
Box 189, Garner, IA 50438-0189
Telephone: 641-923-3711
Technical Support Fax: 641-923-2424

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

70023119

CYLINDER IDENTIFICATION

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



WELDMENT IDENTIFICATION

Each of the major weldments - base, mast, inner boom, outer boom, extension boom and stabilizer weldments bear a stamped part number. Any time a major weldment is replaced, you must specify the complete part number as stamped on the weldment. The locations of the part numbers are shown in the **Crane Reference Section** (see "Major Assemblies, Part Number Locations" on page 17).

ORDERING REPAIR PARTS

When ordering replacement parts:

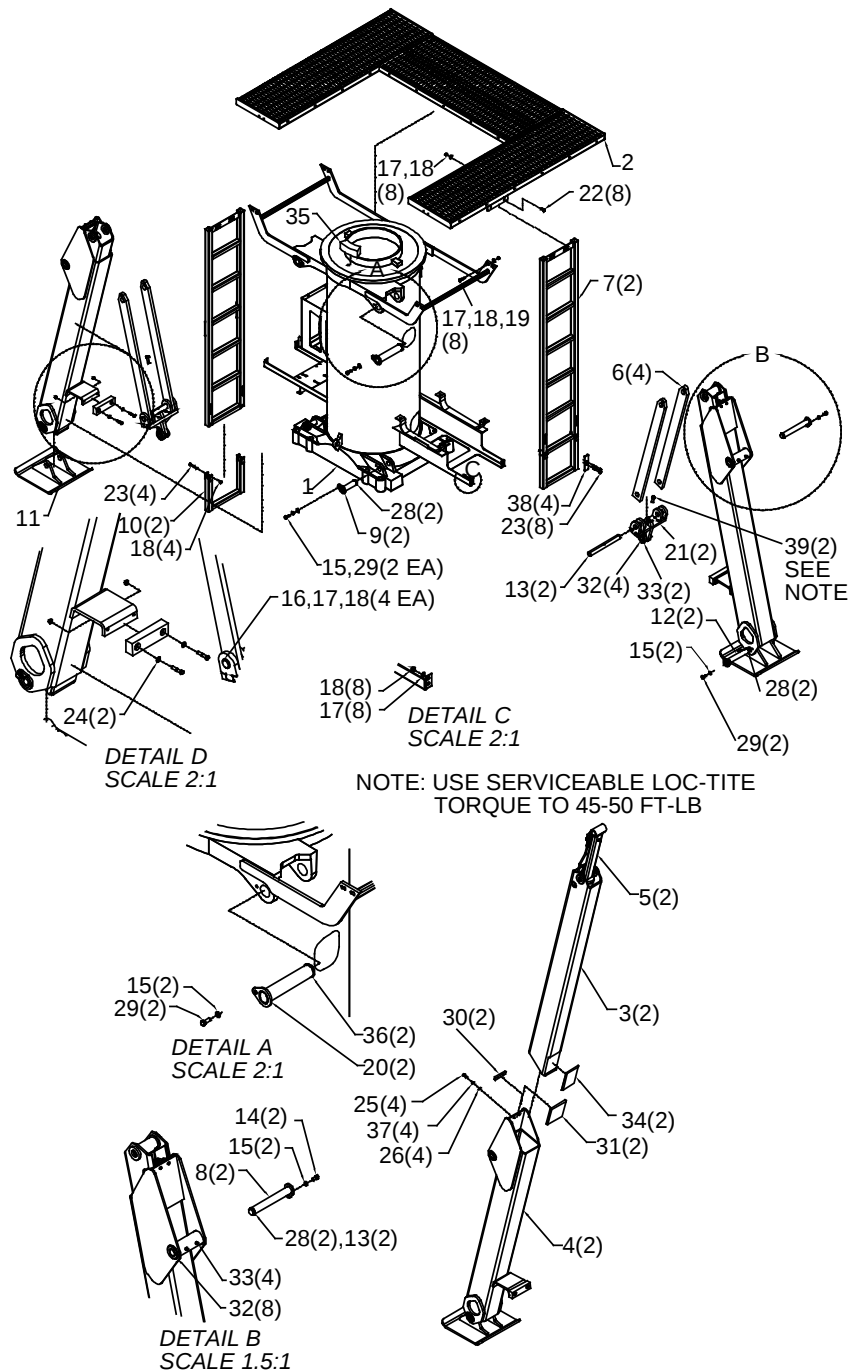
- 1 Give the model number of the unit.
- 2 Give the serial number of the unit.
- 3 Specify the complete part number. When ordering cylinder parts, or one of the main weldments, always give the stamped part number.
- 4 Give a complete description of the part.
- 5 Specify the quantity required.

Base Assembly, Standard (99903430)

99903430 PARTS LIST				
ITEM	PART #	DESCRIPTION	FRAME	QUANTITY
1.	52718238	BASE WELDMENT-16000 SIII	HI-FRAME	1
	52717785	BASE WELDMENT-16000 SIII	STANDARD	1
2.	52718490	WLDMNT-PLATFORM 16000 SIII	HI-FRAME	1
	52718477	WLDMNT-PLATFORM 16000 SIII	STANDARD	1
3.	52717742	WLDMT STABILIZER ARM 16000 SII		2
4.	52716019	LEG-STAB WLDMT 16000 SII	HI-FRAME	2
	52715858	LEG-STAB WLDMT 16000 SII	STANDARD	2
5.	51717736	CYL-3.5/2.5 52.50S 86.00CC C (WAS 51711736 THRU 7/05, 71411575 FROM 7/05 THRU 4/10/07)		2
6.	60128058	PLATE-LINK ARM 16000 III HIGH FRAME STAB	HI-FRAME	4
	60127554	PLATE-LINK ARM 16000 III STAB	STANDARD	4
7.	52718502	LADDER-BOLT ON	HI-FRAME	2
	52718476	LADDER-BOLT ON	STANDARD	2
8.	52717606	PIN-TYPE M 1.50 X 11.50 (10.75)		2
9.	52718278	PIN-TYPE M 1.50 X 6.00 (5.25)		2
10.	52715593	WLDMT-LADDER EXTENSION	HI-FRAME	2
	52715594	WLDMT-LADDER EXTENSION	STANDARD	2
11.	52715859	PAD WELDMENT-16000 SII STAB		2
12.	52718277	PIN-TYPE M 1.50 X 9.50 (8.75)		2
13.	60127553	PIN-1.50 DIA X 13.00 L		2
14.	72060091	CAP SCR .50-13X 1.00 HH GR5 Z		2
15.	72063053	WASHER .50 LOCK ZINC		8
16.	72060050	CAP SCR .38-16X 2.00 HH GR5ZC		4
17.	72063003	WASHER .38 W FLAT ANSI B27.2Z		28
18.	72062103	NUT .38-16 HEX NYLOC ZINC		32
19.	72060048	CAP SCR .38-16X 1.50 HH GR5 Z		8
20.	52718457	PIN-TYPE M 2.00 X 10.38 (9.63)		2
21.	60128818	MACHINING, STAB DRAG LINK (WELDMENT - #52719049)		2
22.	72060047	CAP SCR .38-16X 1.25 HH GR5 Z		8
23.	72060054	CAP SCR .38-16X 3.00 HH GR5 Z		12
24.	60350055	RUBBER PAD		2
25.	72060025	CAP SCR .31-18X 1.00 HH GR5 Z		4
26.	72063002	WASHER .31 W FLAT ANSI B27.2Z		4
28.	72661584	RETAINING RING-EXT 1.50 SPIROLOX		6
29.	72060092	CAP SCR .50-13X 1.25 HH GR5 Z		6
30.	60120746	BAR- .50X1.00X 4.50		2
31.	60030297	WEAR PAD-UHMW .62X 6.75 X 6.75		2
32.	70055173	BEARING-GAR DX 1.50X1.67X1.00		12REF
33.	72053508	ZERK-NPT .12		8REF

99903430 PARTS LIST				
ITEM	PART #	DESCRIPTION	FRAME	QUANTITY
34.	60030303	WEAR PAD-BV NYL .31X7.75X5.50		2
35.	60124569	STOP-16000 SIII		1
36.	72661585	RETAINING RING-EXT 2.00 SPIROLOX		2
37.	72063050	WASHER .31 LOCK ZINC		4
38.	60125818	PLATE-LADDER MNT		4
39.	72060095	CAP SCR .50-13X 2.00 HH GR5 Z		2
REV. R 20080422				

99903430 Drawings



* USE SERVICEABLE THREAD LOCK.

Mast Assembly, Standard Controls (99903424)

99903424 PARTS LIST				
ITEM	PART #		DESCRIPTION	QUANTITY
	STANDARD MAST	HIGH-FRAME MAST*		
1.	70733744		CHAIR, WALLBOARD	1
2.	52717979	52718509	WLDMT, CHAIR PLATFORM	1
3.	73733902		FOOT PEDAL (WAS 70733817*)	2
			(SPARE PARTS - SEAL KIT 94396511 (REF))	
4.	52717687		PIN	1
5.	72661357	NOT USED	HINGE, BUTT 4-NB ZC 1/2 PIN	2
6.	51718003		VALVE BANK, 6 SECT.	1
7.	71056580		GEAR, TURNTABLE BEARING	1
8.	70056594		GEAR BOX (EFF. 3/24/04)	1
	70056593		GEAR BOX (EFF THRU 03/23/04)	1
	70056695**		GEAR BOX (EFF FROM 10/31/13)	1
9.	51718466		CYLINDER (WAS 51717752 THRU 12/03, 51718466 THRU 7/05, 71411576 THRU 1/07)	1
10.	51717612		MACHINING, MAST	1
11.	60124518		ANGLE BRACKET, CHAIR PLATFORM	2
12.	60125012	NOT USED	PLATE, CHAIR MTG PLATFORM	1
13.	73733903		JOYSTICK (WAS 70733816*)	2
			(SPARE PARTS - 94396512 SEAL KIT; 76396513 RUBBER BOOT; 73540324 JOYSTICK ROCKER ASM; 70734014 HANDLE ASM; 70034539 JOYSTICK CAP)	
15.	73054462		VALVE, OVERSTRESS	1
16.	73054549		CHECK VALVE, INLINE #4MSTR #4MJIC	1
17.	73054424		VALVE, OVERSTRESS	1
18.	72053763		ELBOW #8MSTR #8MJIC 90°	3
19.	72532358		ADPTR #8MSTR #8MJIC	4
20.	72532366		ADPTR #12MSTR #12MJIC	1
21.	72532658		ELBOW #8MJIC #8FJIC SW	1
22.	72053758		ELBOW #4MSTR #4MJIC 90°	3
25.	60126263		COVER, GEAR BEARING (WAS 60124519)	1
26.	72063115		WASHER 7/8 FLAT ASTM F436Z	23
27.	72063116		WASHER 3/4 FLAT ASTM F436Z	10
28.	72601625		CAP SCR 3/4-10X2.25 HHGR5Z	10
29.	72601793		CAP SCR 7/8-9X3.5 HHGR8Z	10
30.	72601293		CAP SCR 7/8-9X6 HHGR8Z	14
31.	72060933		CAP SCR 5/8-11X3.75 HHGR5Z (WAS 4)	2
32.	72063007		WASHER 5/8 FLAT (WAS 9)	13
33.	72062091		NUT 5/8-11 HEX NYLOC	4
34.	72060148		CAP SCR 5/8-11X1.25 HHGR5Z (WAS 72060147)	5
35.	72063055		WASHER 5/8 LOCK	5

99903424 PARTS LIST				
ITEM	PART #		DESCRIPTION	QUANTITY
36.	72060007		CAP SCR 1/4-20X1.75 HHGR5Z	2
38.	72532981		TEE, SWIVEL NUT RUN #4JIC (WAS 1)	2
39.	72053508		GREASE ZERK, 1/8	1
40.	72063051		WASHER 3/8 LOCK (WAS QTY. 2)	4
41.	73054425		VALVE, SENSOR RC HYD	1
42.	72060033		CAP SCR 5/16-18X3 HHGR5Z	3
43.	72063002		WASHER 5/16 FLAT	3
44.	60251009		WASHER 3/8X1X1/8 ALUM	4
46.	72063050		WASHER 5/16 LOCK	7
47.	72060734		CAP SCR 5/16-18 1.50 SH PLAIN	4
48.	72062109		NUT 5/16-18 HEX NYLOC	19
49.	72060023		CAP SCR 5/16-18X3/4 HHGR5Z	3
50.	72060002		CAP SCR 1/4-20X3/4 HHGR5Z	8
51.	72062104		NUT 1/4-20 HEX NYLOC	10
52.	72060025		CAP SCR 5/16-18X1 HHGR5Z (WAS 16)	20
53.	72060046		CAP SCR 3/8-16X1 HHGR5Z	2
54.	72063001		WASHER 1/4 FLAT	10
56.	72060049		CAP SCR 3/8-16X1.75 HHGR5Z (WAS 72060050)	2
57.	72532353		ADPTR #6MSTR #4MJIC	20
58.	72661586		SPIROLOX 2.838" ID X .093" THICK	1
66.	60124526		COVER, ROTATOR	1
67.	72601630		CAP SCR 3/4-10X3.5 SH BLACK	24
68.	72060157		CAP SCR 5/8-11X4.50 HHGR5Z	2
69.	60125998		SPACER, RADIO BRACKET	2
70.	51718083		HARDWARE KIT (INCL 26-36,39-40,42-43,45-56,67,68)	REF
REV. W 20110928				

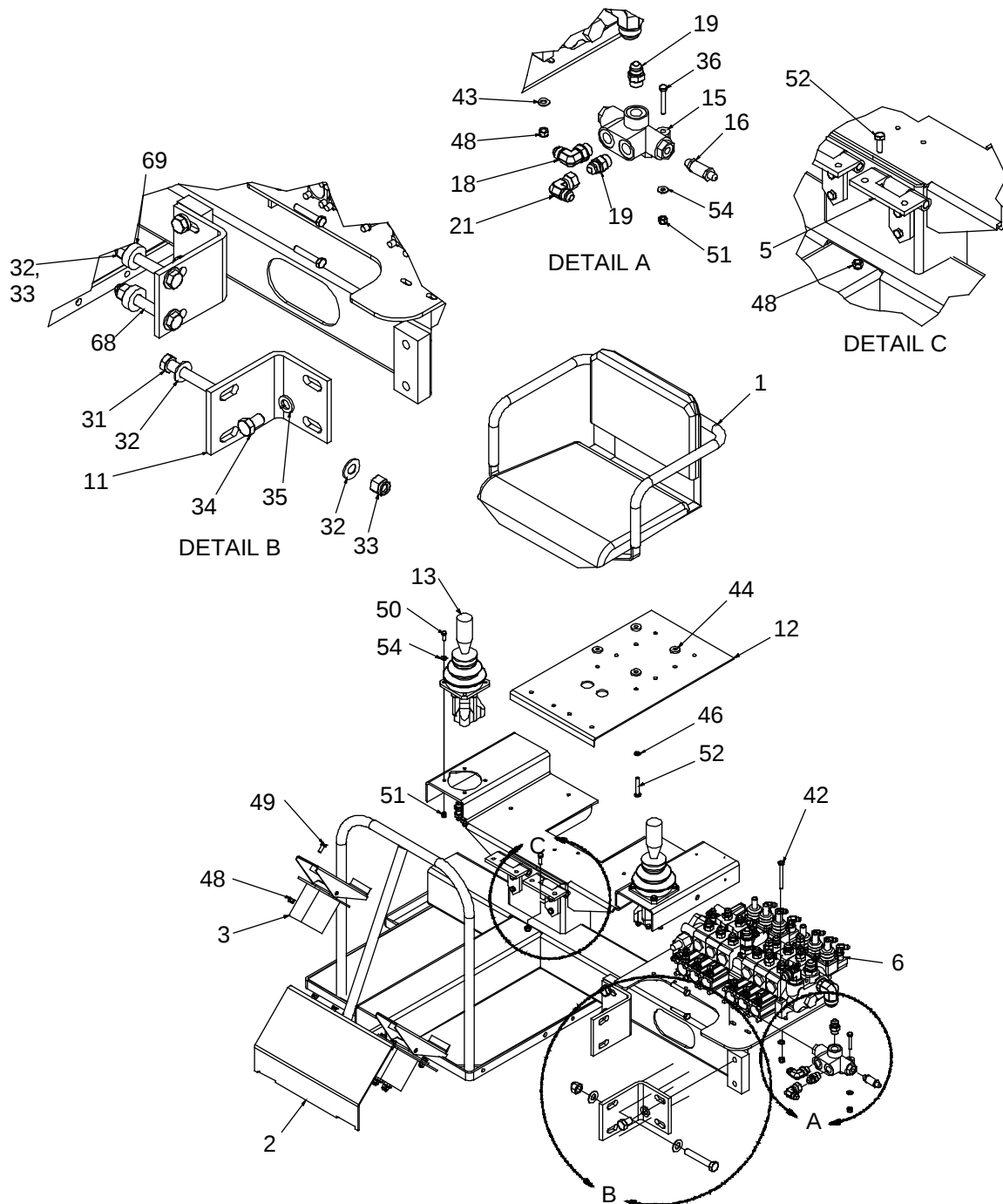
* FOOT PEDAL AND JOYSTICK PART NUMBERS CURRENT FOR SERIAL NUMBER 16000S3041009 AND BEYOND.

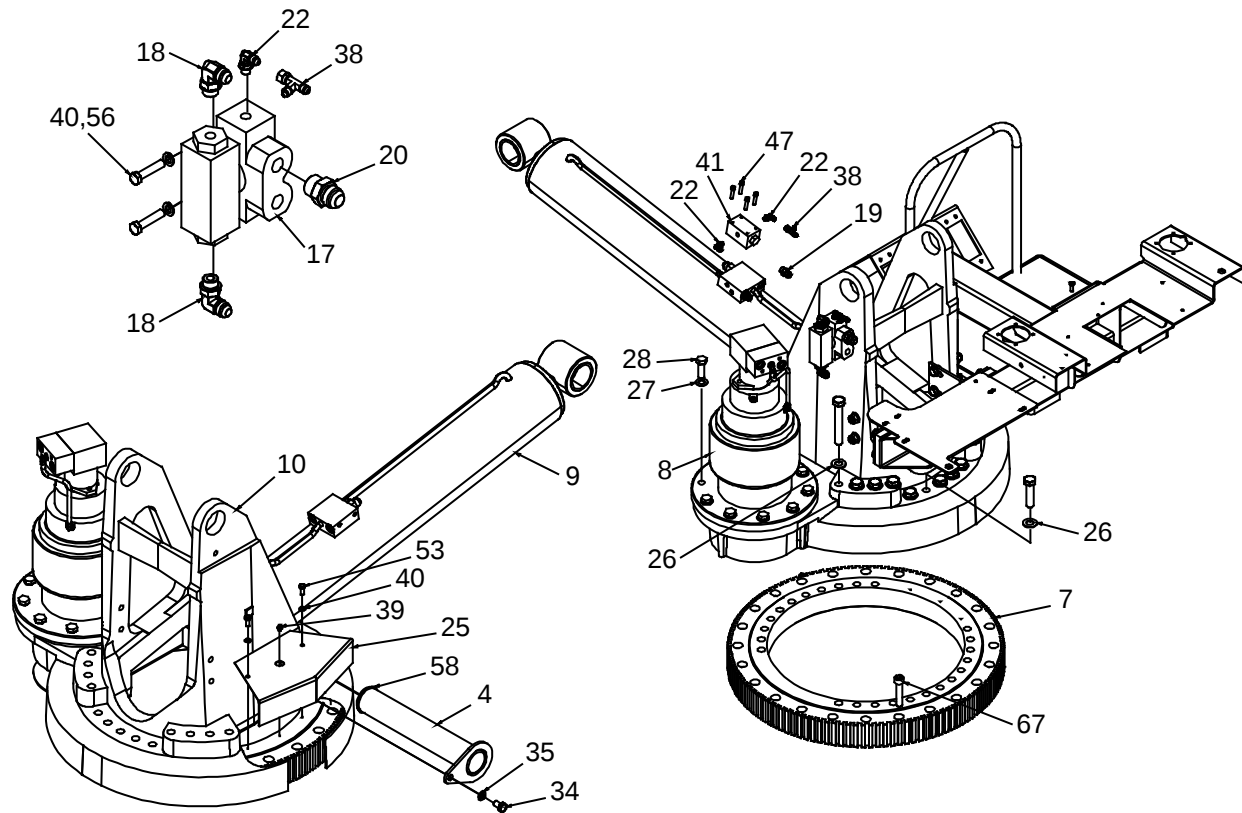
* GEARBOX 70056594 EFFECTIVE 3/24/04 FOR SERIAL NUMBER 16000S3041082 AND BEYOND.

** GEARBOX 70056695 EFFECTIVE 10/31/13 FOR SERIAL NUMBER 16000S3131037 THRU SERIAL NUMBER TBD.

* ALL PARTS ON THE HIGH-FRAME MAST ARE THE SAME AS THE STANDARD MAST EXCEPT WHERE INDICATED.

99903424 Drawings



99903424 Parts List**NOTE:**

- 1 USE BLUE SERVICEABLE LOCKTITE ON BOLTS WHEN SECURING OVERSTRESS VALVE (#17) TO MAST.

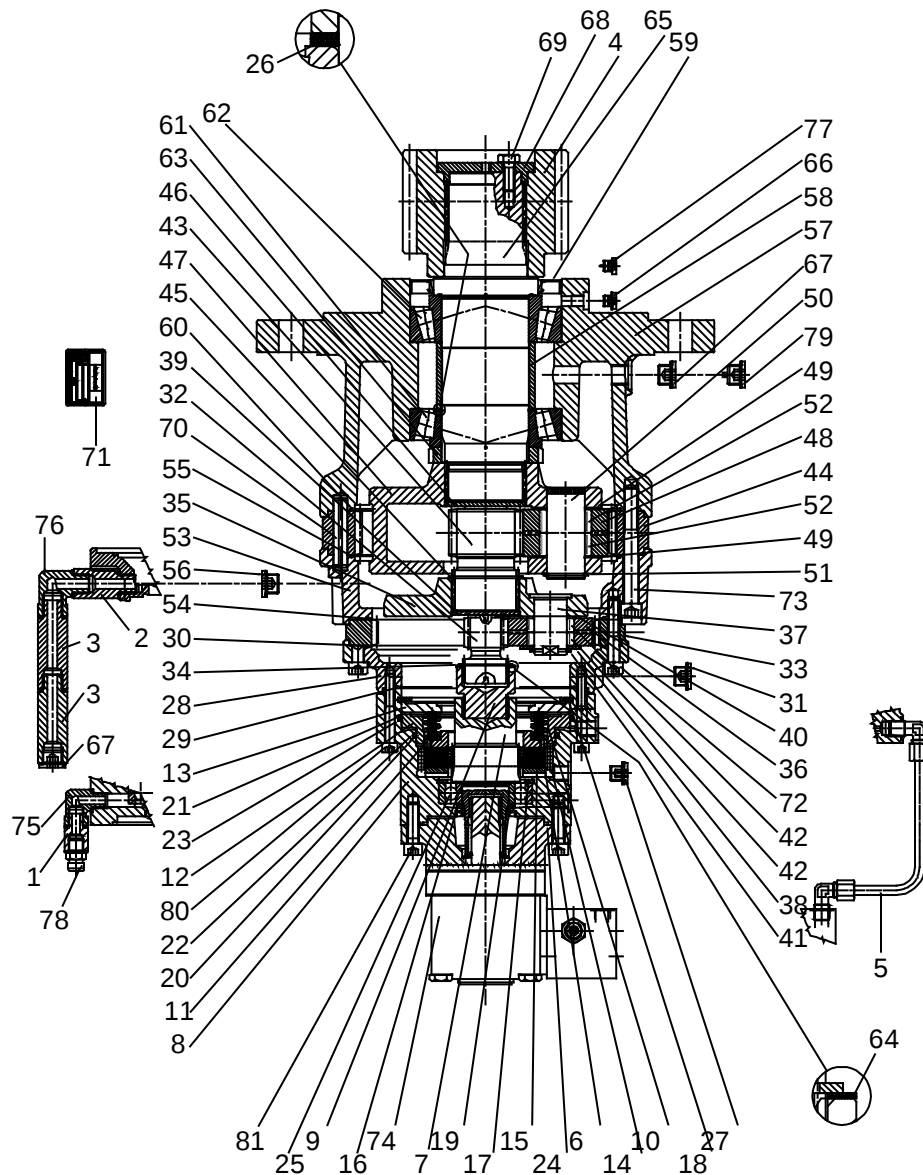
TORQUE REQUIREMENTS		
Item #	Description	Torque
28	CAP SCREW 3/4-10X2.25 HHGR5Z	280 ft-lb
29	CAP SCREW 7/8-9X3.5 HHGR8Z	455 ft-lb
30	CAP SCREW 7/8-9X6 HHGR8Z	455 ft-lb
67	CAP SCREW 3/4-10X3.5 SH	500 ft-lb

Gearbox (70056594)(03/24/04 THRU 10/31/13)

70056594 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
	71056609	BRAKE ASSEMBLY, COMPLETE (INCL. 6-27)	REF
	70733994	OUTPUT ASSEMBLY, COMPLETE (INC. 57-67)	REF
	94396701	SEAL KIT, ORBIT MOTOR	REF
	71411566	BRAKE DISK KIT	REF
	94396703	BRAKE PISTON SEAL KIT	REF
1.	71412007	EXTENSION	1
2.	71411452	EXTENSION	1
3.	71411453	EXTENSION	2
4.	71411571	OUTPUT GEAR	1
5.		TUBE	1
6.		CLUTCH DISC	5
7.		COUPLING	1
8.		INPUT MOTOR BOX GLC	1
9.		COUPLING	1
10.	71411567	SPRING	16
11.	71411568	SPRING	2
12.		BRAKE PISTON RA	1
13.		BRAKE END PLATE RA-RB	1
14.		BRAKE STILL MIDLE DISC RA	6
15.		BRAKE SPACER RA	1
16.		SEEGER Ø40 UNI 7435	1
17.		INT. RETAINING RING	1
18.		INT. RETAINING RING	1
19.	76396704	SEAL, LIP	1
20.		RING	1
21.		RING	1
22.	76397424	O RING	1
23.	76397425	O RING	1
24.	76396702	O RING	1
25.		BALL BEARING	1
26.		SHIM KIT	1
27.		OIL DRAIN PLUG	4
28.		JUNCTION BOX	1
29.	76396705	O RING	1
30.	76396706	O RING	1
31.		OIL DRAIN PLUG	2
32.		SUN GEAR	1
33.		RING GEAR	1
34.		PLANETARY CARRIER	1
35.		PLANETARY BOX	1

36.		PLANETARY GEAR	3
37.		PIN	3
38.		THRUST WASHER	3
39.		STOP BOTTOM	1
40.		THRUST WASHER	3
41.		SNAP RING	3
42.		NEEDLE	108
43.		SUN GEAR	1
44.		RING GEAR	1
45.		SEEGER	1
46.		STOP BOTTOM PLATE	1
47.		PPM M R=3,67	1
48.		SUN GEAR	3
49.		THRUST WASHER	6
50.		PIN	3
51.		SNAP RING	3
52.		NEEDLE	120
53.		CONNECTION BOX	1
54.	76396706	O RING	1
55.	76396707	O RING	1
56.		DRAIN PLUG	2
57.		OUTPUT BOX	1
58.	71411570	DISTANCE RING	1
59.	76396708	OIL SEAL	1
60.	76396707	O RING	1
61.	70055302	BEARING	1
62.	70055303	BEARING	1
63.	72062327	RING NUT	1
64.		SHIM KIT	1
65.	71411569	OUTPUT SHAFT PS	1
66.		DRAIN PLUG	1
67.	71411454	DRAIN PLUG 3/8"	4
68.	71411572	PLATE	1
69.	72062328	HEX. HEAD BOLT M10x30	3
70.		ELASTIC PIN	2
71.		ALUM. NAME PLATE	1
72.	72062347	HEX. S.H.S. M10x55 UNI 5931-8G	16
73.	72062348	V.T.C.E.I. M12x100 UNI 5931-12K	10
74.	73050185	MOTOR	1
75.	71412006	ELBOW M/F. CIL. 1/4"GAS	1
76.	71411451	ELBOW M/F CIL. 3/8"GAS	1
77.		MAGNETIC PLUG 1/8"GAS DIN 908	1
78.	71412005	BREATHER PLUG 1/4"GAS	1
79.		MAGNETIC PLUG 3/8"GAS DIN 908	1
80.	72062349	HEX. S.H.S. M8x60 UNI 5931-8G	8
81.	72062350	HEX. S.H.S. M10x30 UNI 5931-8G	4

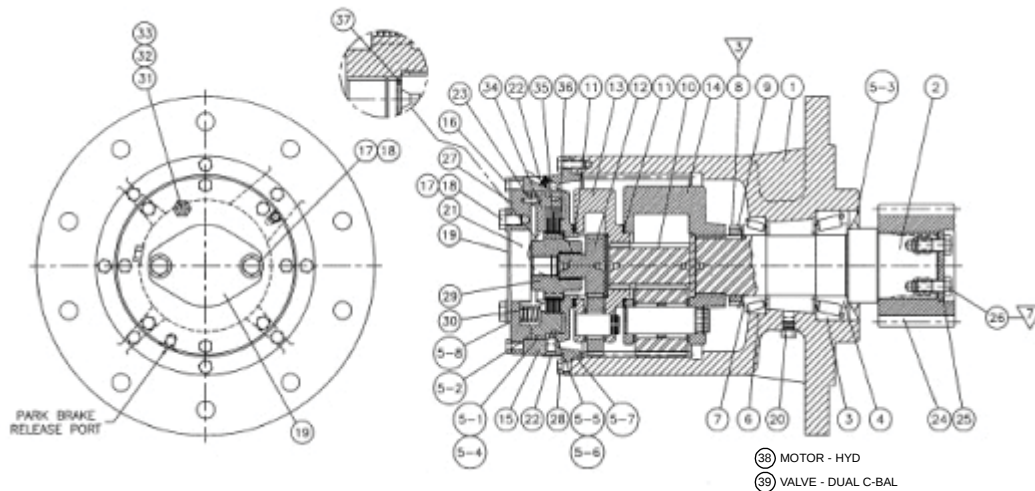
70056594 Drawing



NOTE:

- 1 Change gearbox oil using instructions included in the 16000-SIII Operation and Safety manual.
- 2 Change oil after first 100 hours of operation, and every 2000 hours thereafter.
- 3 Recommended oil is Mobil HD 80W-90 or equivalent.
- 4 The gearbox contains 5.15 quarts (4.875 liters) of oil when full.
- 5 This gear box assembly has case drain plumbed to the valve block assembly on the hyd. motor.
- 6 This gear box assembly uses a formed steel tube plumbed from the valve block on the motor to the brake release port on the drive assembly.

Gearbox (70056593) (Thru 3/2004) (70056695) (From 10/31/13)



NOTES:

- 1 BACKLASH TOTAL AT ASSEMBLY = 00.004 - 0.008"
- 2 APPLY LOC-TITE TO THREADS OF #2 SHAFT, THEN TORQUE BEARING LOCKNUT (#8) TO 100 FT-LB. ROLLING TORQUE 75-85 IN-LB.
- 3 PAINT WITH TWI PAINT SPEC. #709171. DO NOT PAINT PINION, PILOT, OR LOWER MOUNTING SURFACE.
- 4 DO NOT ADD OIL.
- 5 BRAKE FULL OFF AT 340 PSI $\pm$ 10%. BRAKE SET TO SLIP BETWEEN 90-110 FT/LB AT 275 PSI.
- 6 SHIP BREATHER UNDER MOTOR MOUNT PROTECTOR.
- 7 APPLY RED LOC-TITE TO THREADS OF #26 CAPSCREWS.
- 8 THIS GEAR BOX ASSEMBLY USES A HYD HOSE PLUMBED FROM THE VALVE BANK ON THE MOTOR TO THE BRAKE RELEASE PORT ON THE DRIVE ASSEMBLY.
- 9 THIS GEAR BOX ASSEMBLY DOES NOT HAVE A CASE DRAIN PLUMBED TO THE VALVE BLOCK ASSEMBLY ON THE HYD MOTOR.

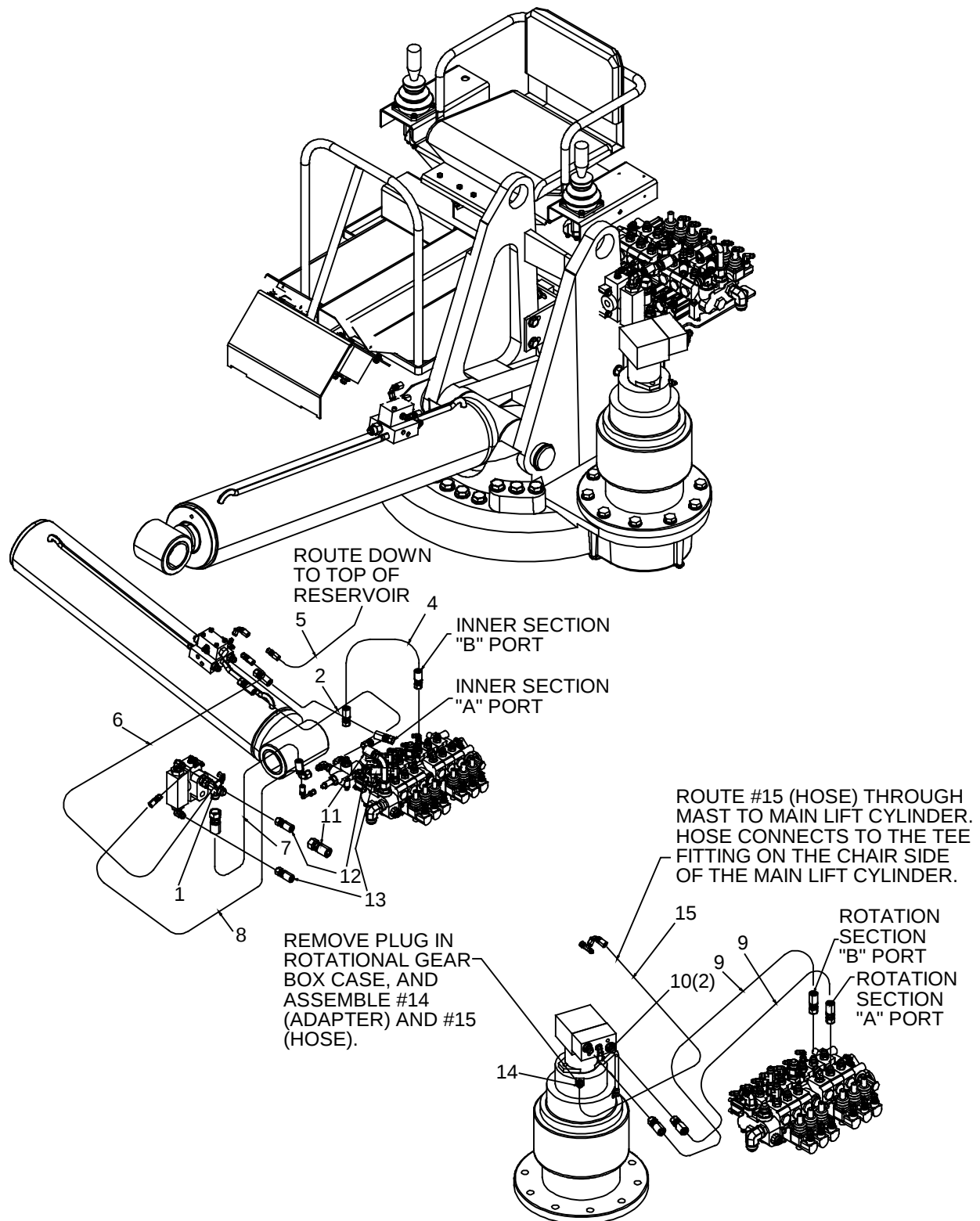
70056593 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70396907	HOUSING, GEAR	1
2.	71412336	SHAFT, OUTPUT	1
3.	71412337	CUP BEARING	1
4.	71412338	CONE BEARING	1
5.	94396908	SEAL KIT	1
6.	71412339	CUP BEARING	1
7.	71412340	CONE, BEARING	1
8.	72534467	LOCKNUT, BEARING	1

70056593 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
9.	72063235	LOCKWASHER, BEARING	1
10.	71056618	GEAR, SUN, OUTPUT, 1200W	1
11.	70055313	RACE, 707W/1200W, RN60	2
12.	71056619	GEAR, SUN, INPUT	1
13.	70056616	INPUT GEAR SET,1221W	1
14.	70056617	GEARSET, OUTPUT	1
15.	71412341	HOUSING, BRAKE	1
16.	72601864	CAPSCREW M10/12	8
17.	72063236	WASHER	2
18.	72601865	CAPSCREW	2
19.	71412342	PROTECTOR	1
20.	71412343	PLUG, O-RING	1
21.	71412344	CAPLUG	1
22.	72534468	PLUG, PIPE	1
23.	71412345	PIN	1
24.	71056620	GEAR, PINION	1
25.	71412346	SPACER	1
26.	72601866	CAPSCREW,G6, 1 200W,938D,RN-AL.	2
27.	71412347	COVER, BRAKE	1
28.	72601867	CAPSCREW	8
29.	71412348	DRIVER, BRAKE	1
30.	71412349	SPRING, BRAKE	8
31.	70048231	BREATHER	1
32.	71412350	PLUG, O-RING, SPECIAL.	1
33.	71412351	CAPLUG	1
34.	71412352	PISTON, BRAKE	1
35.	71412353	DISC, FRICTION	5
36.	71412354	PLATE ,STATOR	6
37.	71412355	RING, RETAINING	1
38.	73051473	Motor-hydraulic swing drive (Eff thru 03/23/04) <i>Use with drive asm 70056593</i>	1 REF
	73511313	Motor-hydraulic swing drive (Eff 10/31/13 s/n 16000S3131037) <i>Use with drive 70056695</i>	1 REF
39.	70731795	Valve-dual c-balance (eff thru 03/04) <i>Use with drive asm 70056593</i>	1 REF
	70734829	Valve-dual c-balance (eff 10/31/13 s/n 16000S3131037) <i>Use with drive 70056695</i>	1 REF

Hose Installation - Mast (99903586)

99903586 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72532950	TEE-SWVL NUT RUN JIC #12	1
2.	51395429	HOSE-FF 1/2X45 OAL (8-8)	1REF
3.	51395400	HOSE-FF 1/2X51 OAL (8-8)	1REF
4.	51396241	HOSE-FF 1/2X24 OAL (8-8)	1REF
5.	51396343	HOSE-FF 1/4X90 OAL (4-4)	1REF
6.	51396344	HOSE-FJ 1/4x46 OAL (4-4)	1REF
7.	51396345	HOSE-FJ 1/2X10.5 OAL (12-8)	1REF
8.	51396346	HOSE-FZ 1/4X18 OAL (4-4)	1REF
9.	51396347	HOSE-FF 1/2X34 OAL (8-8)	2REF
10.	72532358	ADPTR #8MSTR #8MJIC (WAS 72053763)	2
11.	51396729	HOSE-FZ 3/4X9.75 (12-12) (WAS 51396462)	1
12.	51394716	HOSE-FF 1/2X18 OAL (8-8)	1
13.	51396448	HOSE-FF 1/2 X 15 OAL (8-8) (WAS 51396365)	1
14.	72533490	ADPTR-BSPP/M JIC .25 4	1
15.	51395642	HOSE-FJ .25X 54.00 OAL (4-4)	1
REV C 20060330			

99903586 Drawing



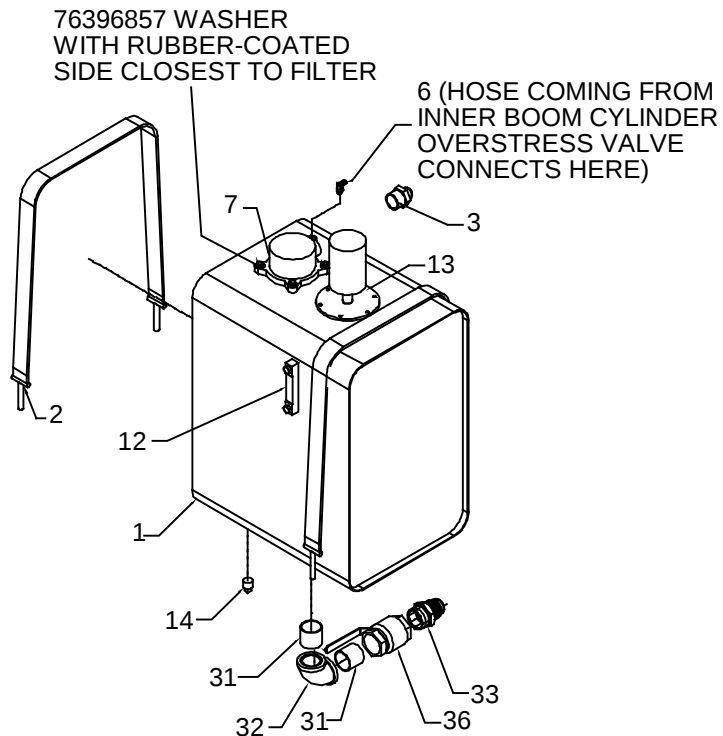
Reservoir Layout (99903523)

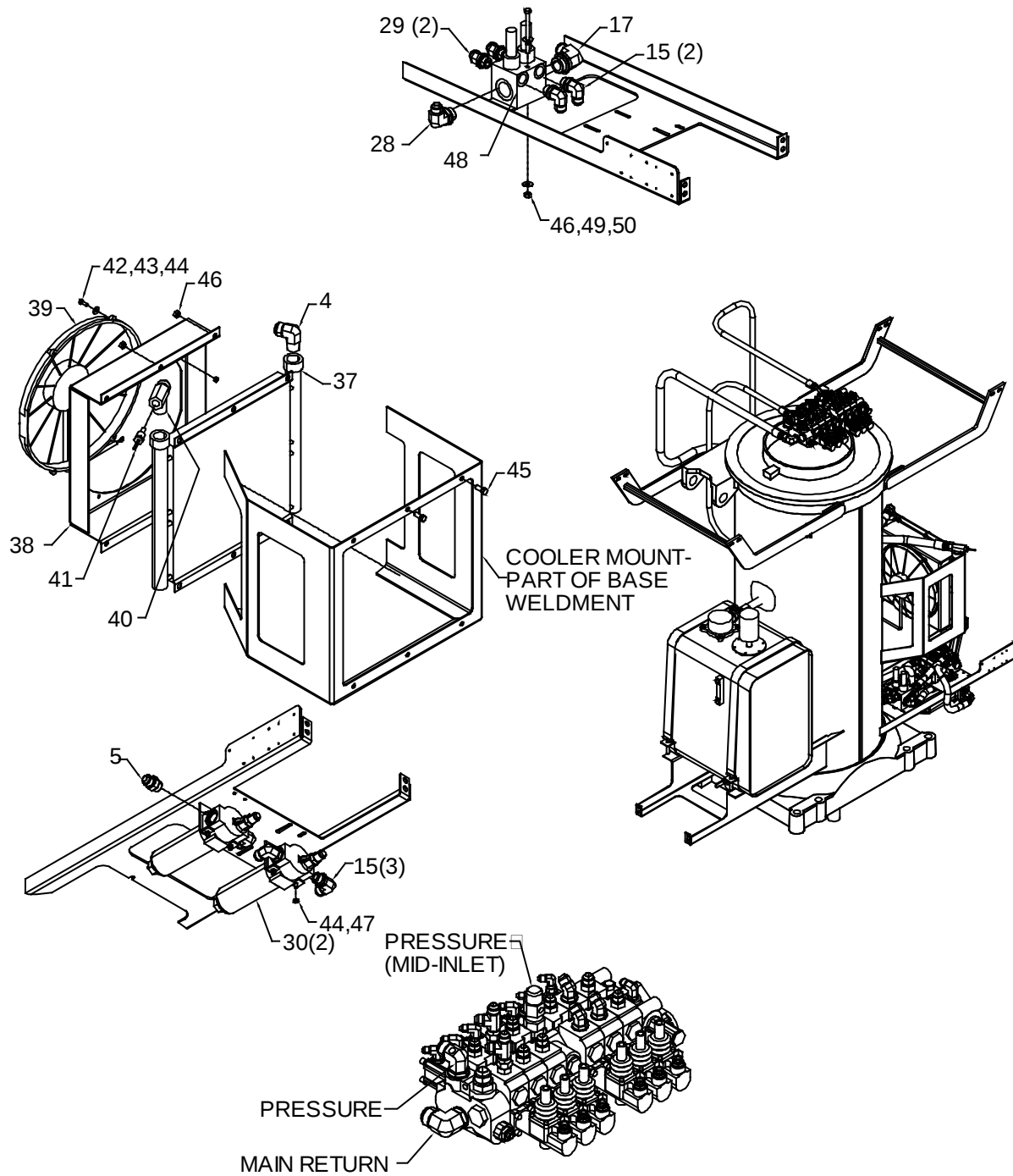
99903523 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70149895	RESERVOIR (INCL. 2,7,12,13,31,32) (EFF THRU 08/28/13)	1
	71415475	RESERVOIR (INCL. 2,7,12,13,31,32) (EFF FROM 08/29/13)	1
2.	71410001	STRAP, RESERVOIR	2REF
3.	72534852	ADPTR #24MJIC #16MJIC (WAS 72534374)	1REF
4.	72531430	ELBOW 1" MPT #16MJIC 90°	1
5.	72532366	ADPTR #12MSTR #12MJIC	1
6.	72053758	ELBOW #4MSTR #4MJIC 90°	1REF
7.	73052087	FILTER ASM (INCL. 8-11) (PART OF 1) (EFF THRU 08/28/13)	1REF
	73052162	FILTER ASM (INCL. 8-11) (PART OF 1) (EFF FROM 08/29/13)	1REF
8.	73052088	FILTER ELEMENT - RETURN (PART OF 7) (EFF THRU 08/28/13)	1REF
	73052163	FILTER ELEMENT - RETURN (PART OF 7) (EFF FROM 08/29/13)	1REF
9.	76395851	GASKET, FILTER ASM (EFF THRU 08/28/13)	1REF
	76399556	GASKET, FILTER ASM (EFF FROM 08/29/13)	1REF
10.	94074101	O-RING KIT, FILTER (PART OF 7) (EFF THRU 08/28/13)	1REF
	76399555	O-RING KIT, FILTER (PART OF 7) (EFF FROM 08/29/13)	1REF
11.	73540083	OIL FILTER GAUGE (PART OF 7)	1REF
12.	71410003	SIGHT GAUGE W/ THERM	1REF
13.	71410004	FILTER - BREATHER	1REF
	76396517	GASKET FOR FILTER-BREATHER	REF
14.	73052021	PIPE PLUG, MAGNETIC 3/4 NPT SH	1REF
15.	72053767	ELBOW #12MSTR #12MJIC 90°	5
16.	72533558	TEE-UNION JIC #16	1REF
17.	72534376	ELBOW #20MSTR #16MJIC 90°	1
18.	72532973	SWIVEL #12MJIC #12FJIC INLINE	3REF
19.	72534375	SWIVEL #16MJIC #16FJIC INLINE	2REF
20.	72532855	ADPTR #12MJIC #12MJIC	2REF
21.	51396457	HOSE-FJ 1X60 OAL (16-16) (STANDARD)	1
	51396496	HOSE-FJ 1X50 OAL (16-16) (HI-FRAME)	1
23.	51396459	HOSE-FF 1X48 OAL (16-16)	1
24.	51396371	HOSE-FF 3/4X77 OAL (12-12)	2REF
25.	51396372	HOSE-FF 3/4X60 OAL (12-12)	2REF
26.	51396373	HOSE-FJ 3/4X60 OAL (12-12) (STANDARD)	2REF
	51396376	HOSE-FJ 3/4X50 OAL (12-12) (HI-FRAME)	2REF
27.	51396458	HOSE-FF 1X33 OAL (16-16)	1
28.	72534377	ELBOW #20MSTR #12MJIC 90°	1
29.	72053781	ELBOW #12MSTR #12MJIC 45°	2
30.	73052134	HI-PRESSURE FILTER (4000 PSI)	2
31.	72053260	NIPPLE, PIPE BLK 2XCLOSE	2REF
32.	72063329	ELBOW BLK 2X90°	1REF
33.	72531553	NIPPLE, BARB STL 2.0 MPT 2.0	1REF
34.	73052135	FILTER ELEMENT-HIGH PRESSURE	1

99903523 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
	76399534	O-RING FOR 73052135 FILTER	1REF
36.	73540126	VALVE-BALL 2.00	1REF
37.	70143815	OIL COOLER W/O FAN	1
38.	60125737	SHROUD, FAN COOLER	1
39.	70733695	FAN ASSEMBLY	1
40.	72534379	TEE-STL #16JIC #16MPT #8FPT	1
41.	77041659	SWITCH, TEMP	1
42.	72063000	WASHER 1/8 FLAT	4
43.	72060002	CAP SCR 1/4-20X3/4 HHGR5Z	4
44.	72062104	NUT 1/4-20 HEX NYLOC	8
45.	72060046	CAP SCR 3/8-16X1 HHGR5Z	6
46.	72062103	NUT 3/8-16 HEX NYLOC	8
47.	72060010	CAP SCR 1/4-20X2.50 HHGR5Z	4
48.	73540137	VALVE BLOCK	1
49.	72060058	CAP SCR 3/8-16X5 HHGR5Z	2
50.	72063003	WASHER 3/8 FLAT	2
51.	51396460	HOSE-FF 1X42 (16-16)	1
52.	51395388	HOSE-FJ 3/4X14 OAL (12-12)	1
53.	51394941	HOSE-FZ 3/4X18 (12-12) (WAS 51396461)	1
54.	51396729	HOSE-FZ 3/4X9.75 (12-12) (WAS 51396462)	1
55.	51395912	HOSE-FJ 3/4X30 OAL (12-12)	1

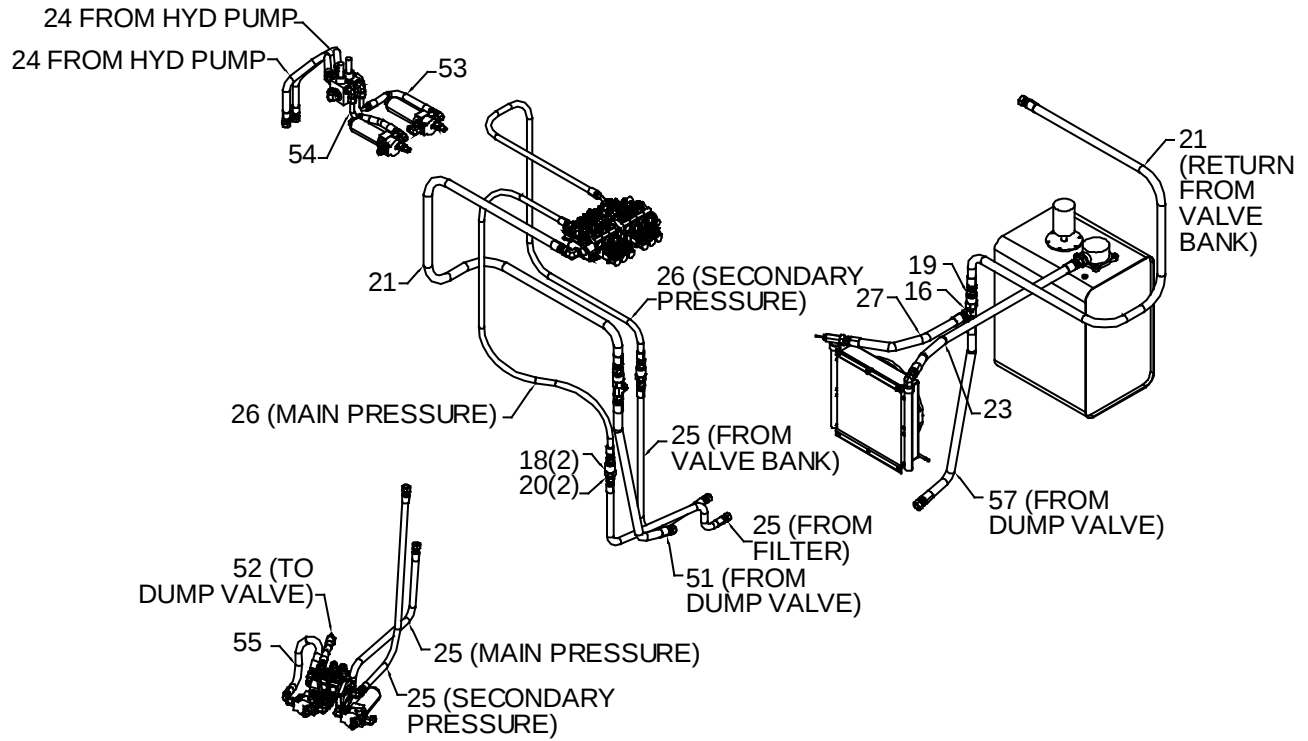
REV. J 20120914

99903523 Drawings



99903523 Parts List (see "Reservoir Layout (99903523)" on page 43)

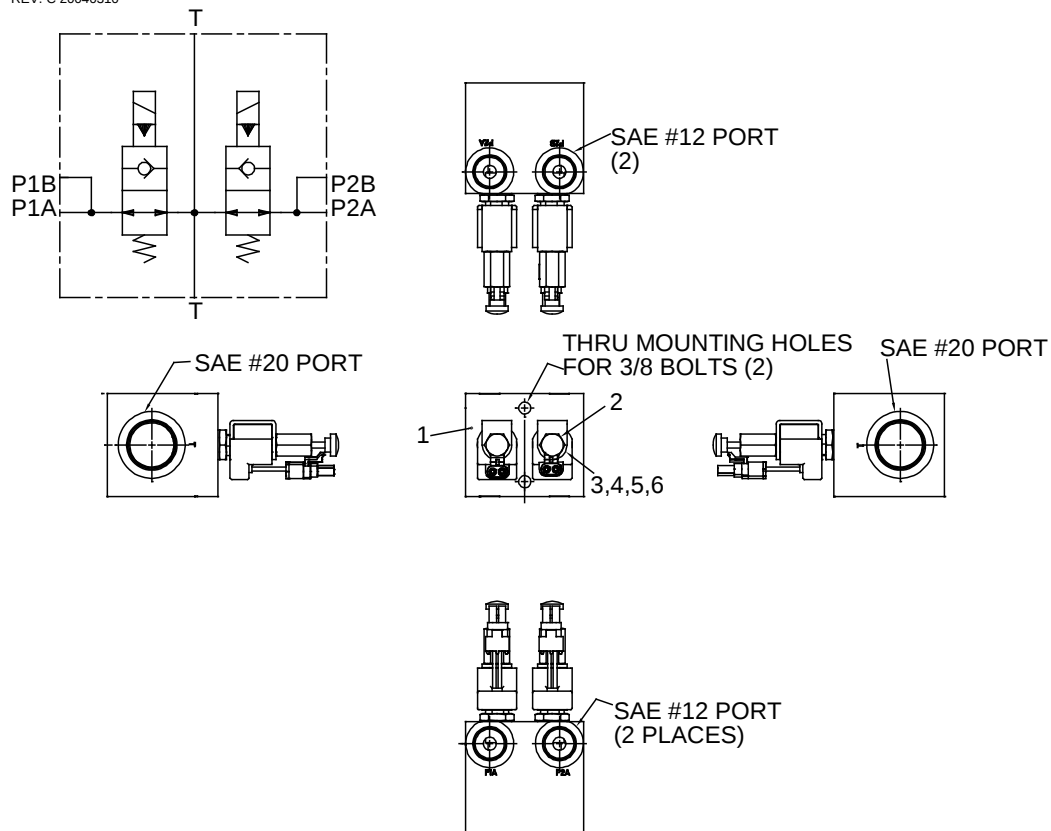
99903523 Parts List (see "Reservoir Layout (99903523)" on page 43)



Valve Block (73540137)

73540137 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.		VALVE BODY	1
2.	73540146	CARTRIDGE	2
3.	77041680	COIL	2
4.		TOWER CONNECTOR	2
5.		PIN, FEMALE	4
6.		SEAL	4

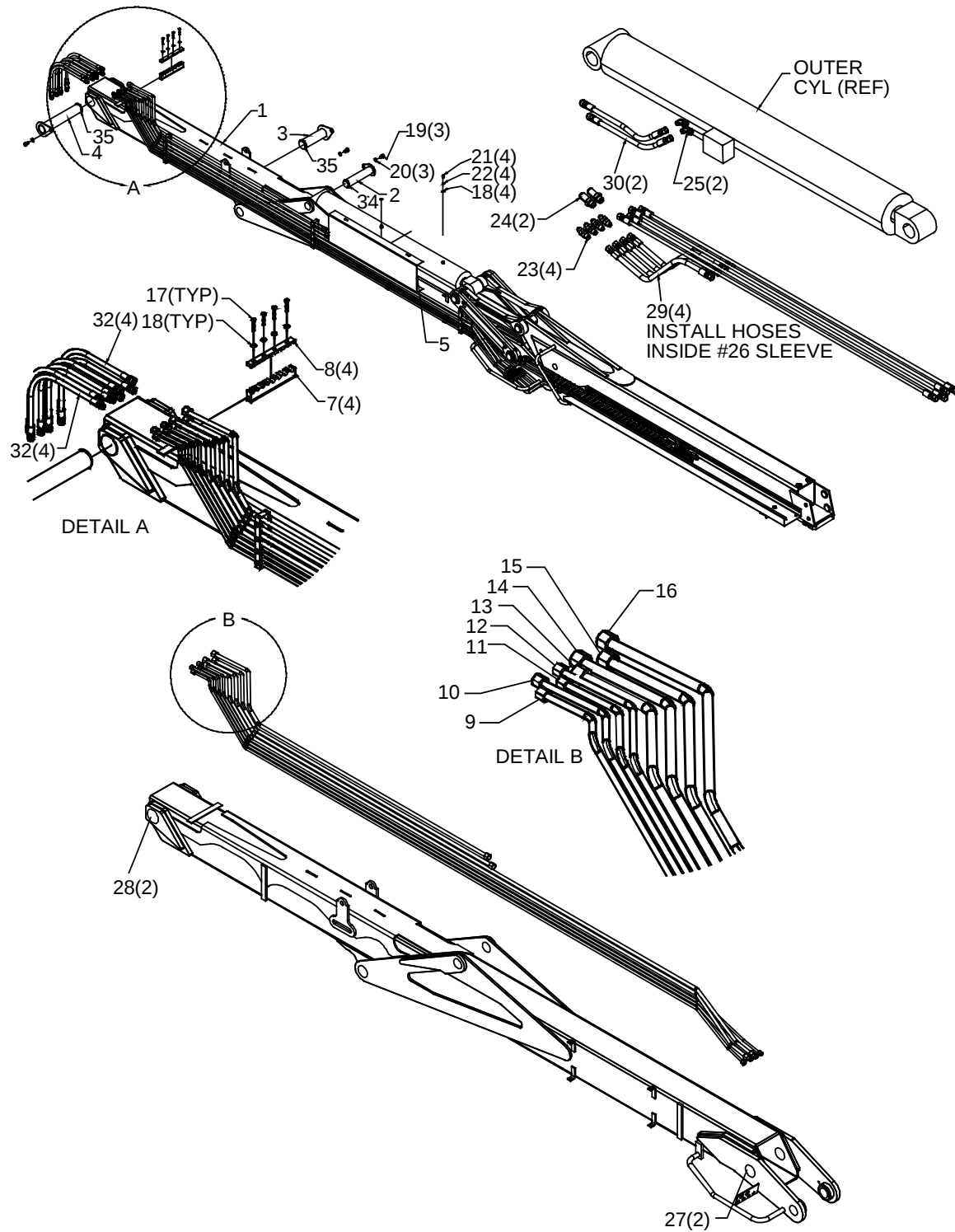
REV. C 20040310



Inner Boom Assembly (99903427)

99903427 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717244	INNER BOOM WELDMENT	1
2.	52717302	PIN	1
3.	52717303	PIN	1
4.	52717538	PIN	1
5.	60125796	COVER PLATE DECALS	1
7.	60124346	TUBE GUIDE	4
8.	60124367	TUBE GUIDE	4
9.	70145467	TUBE ASM, TROMBONE (PART OF 31)	1REF
10.	70145468	TUBE ASM, TROMBONE (PART OF 31)	1REF
11.	70145469	TUBE ASM, TROMBONE (PART OF 31)	1REF
12.	70145470	TUBE ASM, TROMBONE (PART OF 31)	1REF
13.	70145471	TUBE ASM, EXT CYL (PART OF 31)	1REF
14.	70145472	TUBE ASM, EXT CYL (PART OF 31)	1REF
15.	70145473	TUBE ASM, STAB CYL (PART OF 31)	1REF
16.	70145474	TUBE ASM, STAB CYL (PART OF 31)	1REF
17.	72060297	CAP SCR 5/16-24X2 HHGR5Z	16
18.	72063002	WASHER 5/16 FLAT ANSI B27.2Z	20
19.	72060147	CAP SCR 5/8-11X1 HHGR5Z	3
20.	72063055	WASHER 5/8 LOCK ZINC	3
21.	72060022	CAP SCR 5/16-18X5/8 HHGR5Z	4
22.	72063050	WASHER 5/16 LOCK ZINC	4
23.	72533373	UNION, 3/4 JIC BLKHD 37°	4
24.	72533371	UNION, 1-1/16 JIC BLKHD 37°	2
25.	72053777	ELBOW #8MSTR #8MJIC 45°	2
26.	60350071	SLEEVE, HOSE ASM	1
27.	70034283	BEARING, GAR-MAX (PART OF 1)	2REF
28.	70034285	BEARING, GAR-MAX (PART OF 1)	2REF
29.	51394398	HOSE-FF 3/8X27 OAL (8-8)	4REF
30.	51396321	HOSE-AAF 1/2X23 OAL (12-8)	2REF
31.	51713890	TUBE KIT (INCL. 9-16)	1
32.	51396322	HOSE-AAF 3/8X37 OAL (8-8)	4REF
33.	51396323	HOSE-AAF 1/2X37 OAL (12-8)	4REF
34.	72661582	SNAP RING, EXT. 2.5"	1
35.	72661586	SNAP RING, EXT 3"	2
REV D 20070402			

99903427 Drawings

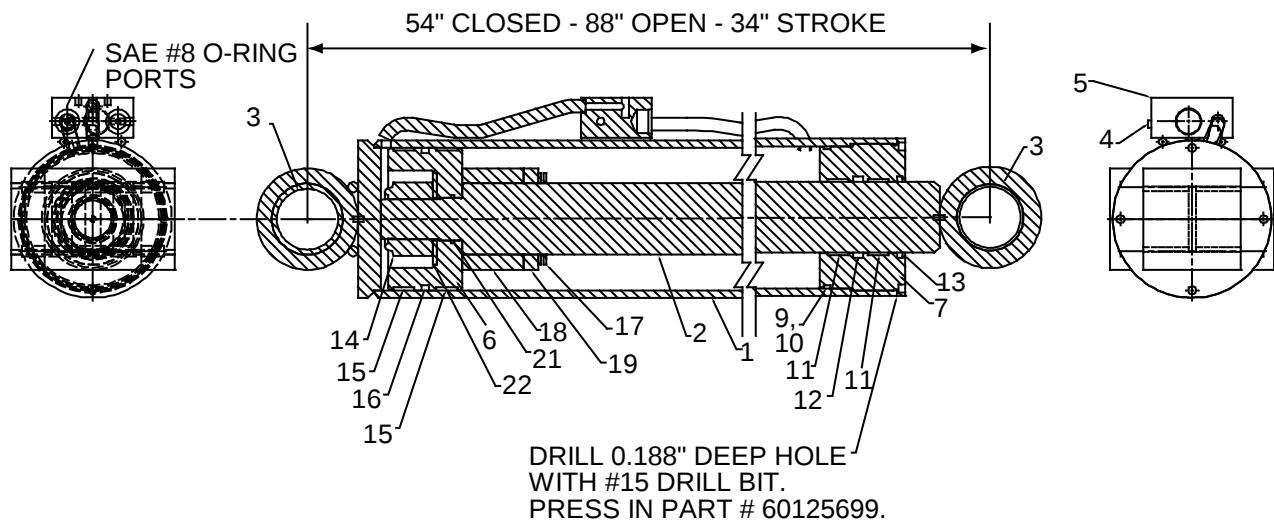


Inner Cylinder (51718466) (Eff. 12/1/03 - 7/15/05, 2/1/07 Forward)

NOTE:

- 1 Cylinder effective on cranes 16000S3071029 and beyond, except 16000S3071031 and 16000S3071035.

51718466 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717751	CASE ASM	1
2.	52718453	ROD ASM	1
3.	70034285	BEARING	5REF
4.	7PNPXT02	PLUG 1/8 NPT	3REF
5.	73054242	VALVE, C'BAL 25 GPM	1
6.	60125927	PISTON	1
7.	60124617	HEAD	1
8.	51744129	SEAL KIT	1
9.	7Q072439	O-RING	1REF
10.	7Q10P439	BACKUP RING	1REF
11.	70148367	WEAR RING	2REF
12.	76534387	U-CUP SEAL	1REF
13.	7R17P035	ROD WIPER	1REF
14.	72062144	NUT 2-12 HEX BUTTRESS THRD	1
15.	7T2N8070	WEAR RING	2REF
16.	7T66P704	PISTON SEAL	1REF
17.	6A025035	WAFER LOCK	1REF
18.	6C300035	STOP TUBE	1
19.	6C075035	STOP TUBE	1
20.	60125699	PIN-LOCK TUBE	1REF
21.	7Q072227	O-RING	1REF
22.	72063016	WASHER 2" FLAT	1
REV. C 20070313			

**NOTES:**

- 1 APPLY REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 2 APPLY "LUBRIPLATE" NO. 630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT, TO ALL PISTON HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

CYLINDER DATA			
EXT.	38.93 in ² 5.73 gal	DRY WT.	310 #
RETR.	29.30 in ² 4.31 gal	BRG. SPAN	12%
CASE	7.04 x 7.75 x 46.19"	TEST PSI	3000
ROD	ø3.50 x 47.88 L	OPER PSI	3000

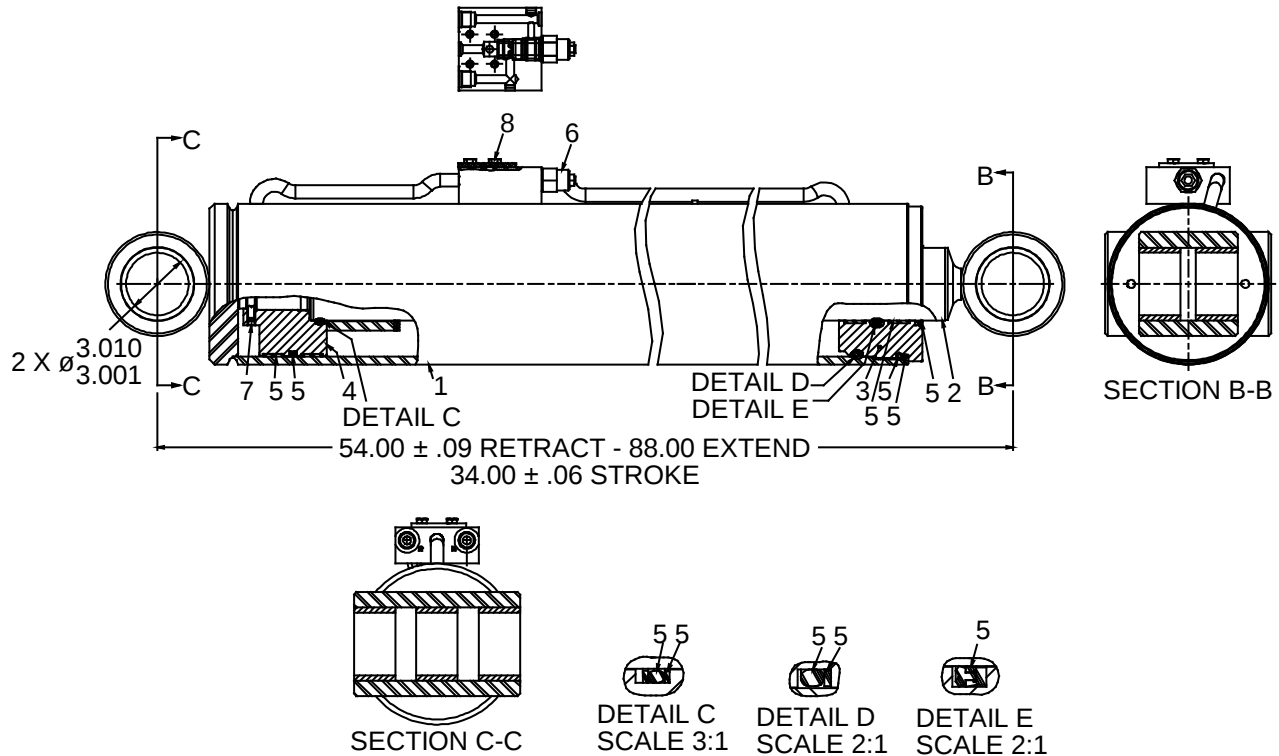
Inner Cylinder (71411576) (Eff. 7/15/05 - 2/1/07)

NOTE:

Cranes with serial numbers 16000S3051171 and beyond (7/15/05 and later manufacturing dates) use this cylinder.

71411576 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTIT Y
1.	71411853	CASE WELDMENT	1
2.	71411856	ROD WELDMENT	1
3.	71411855	HEAD GLAND	1
4.	71411854	PISTON	1
5.	94396724	SEAL KIT	1
6.	73540178	COUNTERBALANCE VALVE	1
7.	REF	SET SCREW (PART OF #2)	1
8.	REF	BOLT, 5/16-UNC (PART OF #1)	4

NEW 20050824


NOTES:

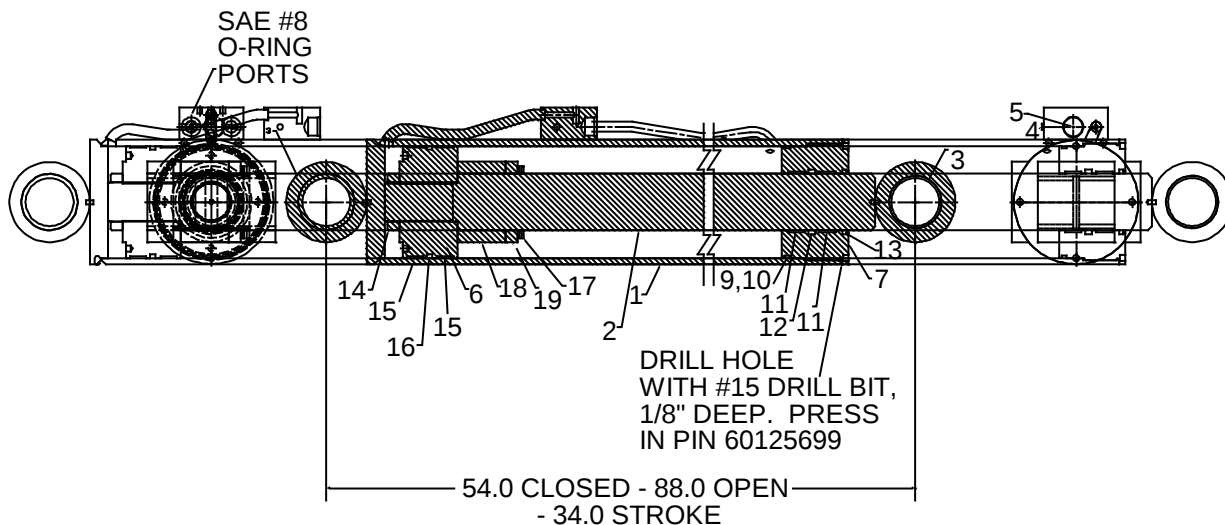
- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

CYLINDER DATA	
EXTENDED	38.93 IN ² , 5.73 GAL
RETRACTED	29.30 IN ² , 4.31 GAL
CASE	7.0 BORE X Ø8.0
ROD	Ø3.50
OPERATING PRESSURE	3000 PSI

TEST PRESSURE	3500 PSI
PORTS	SAE #8 O-RING BOSS (3/4-16 UNF-2B)
CYLINDER TUBE BURST PRESSURE	11,200 PSI
CYLINDER DRY WEIGHT	407.9 LB
TORQUES	PISTON (#4) - TORQUE WITH THREADLOCK COMPOUND TO 2300 - 2500 FT-LB. USE LOCTITE 271 OR EQUIVALENT.
	HEAD GLAND (#3) 500-600 FT-LB
	COUNTERBALANCE VALVE (#6) 45-50 FT-LB
	BOLT (#8) 10-15 FT-LB
	SET SCREW (#7) - TORQUE WITH THREADLOCK COMPOUND TO 16-18 FT-LB. USE LOCTITE 243 OR EQUIVALENT.

Inner Cylinder (51717752) (Through 12/1/03)

51717752 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717751	CASE ASM	1
2.	52718444	ROD ASM	1
3.	70034285	BEARING	5REF
4.	7PNPXT02	PLUG 1/8 NPT	3REF
5.	73054242	VALVE, C'BAL 25 GPM	1
6.	60124618	PISTON	1
7.	60124617	HEAD	1
8.	51744111	SEAL KIT	1
9.	7Q072363	O-RING	1REF
10.	7Q10P363	BACKUP RING	1REF
11.	70148367	WEAR RING	2REF
12.	76534387	U-CUP SEAL	1REF
13.	7R17P035	ROD WIPER	1REF
14.	7T61N243	LOCK RING	1REF
15.	7T2N8070	WEAR RING	2REF
16.	7T66P704	PISTON SEAL	1REF
17.	6A025035	WAFER LOCK	1REF
18.	6C300035	STOP TUBE	1
19.	6C100035	STOP TUBE	1
REV. B 2004111			



NOTES:

1. APPLY "NEVER-SEEZ" REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
2. APPLY "LUBRIPLATE" #630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

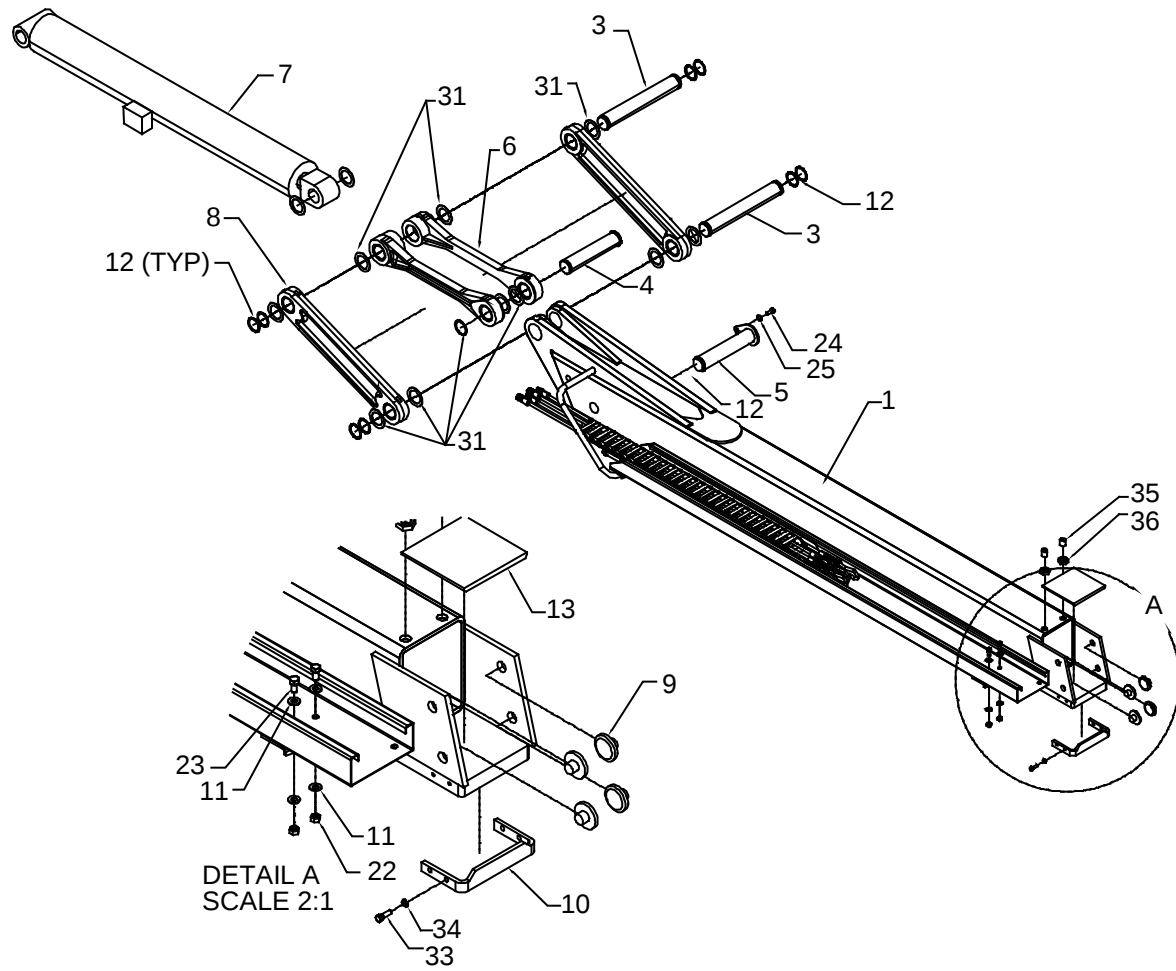
CYLINDER DATA			
EXT.	38.93 in ² 5.73 gal	DRY WT.	310 #
RETR.	29.30 in ² 4.31 gal	BRG. SPAN	12%
CASE	7.04 x 7.75 x 46.19"	TEST PSI	3000
ROD	ø3.50 x 47.88 L	OPER PSI	3000

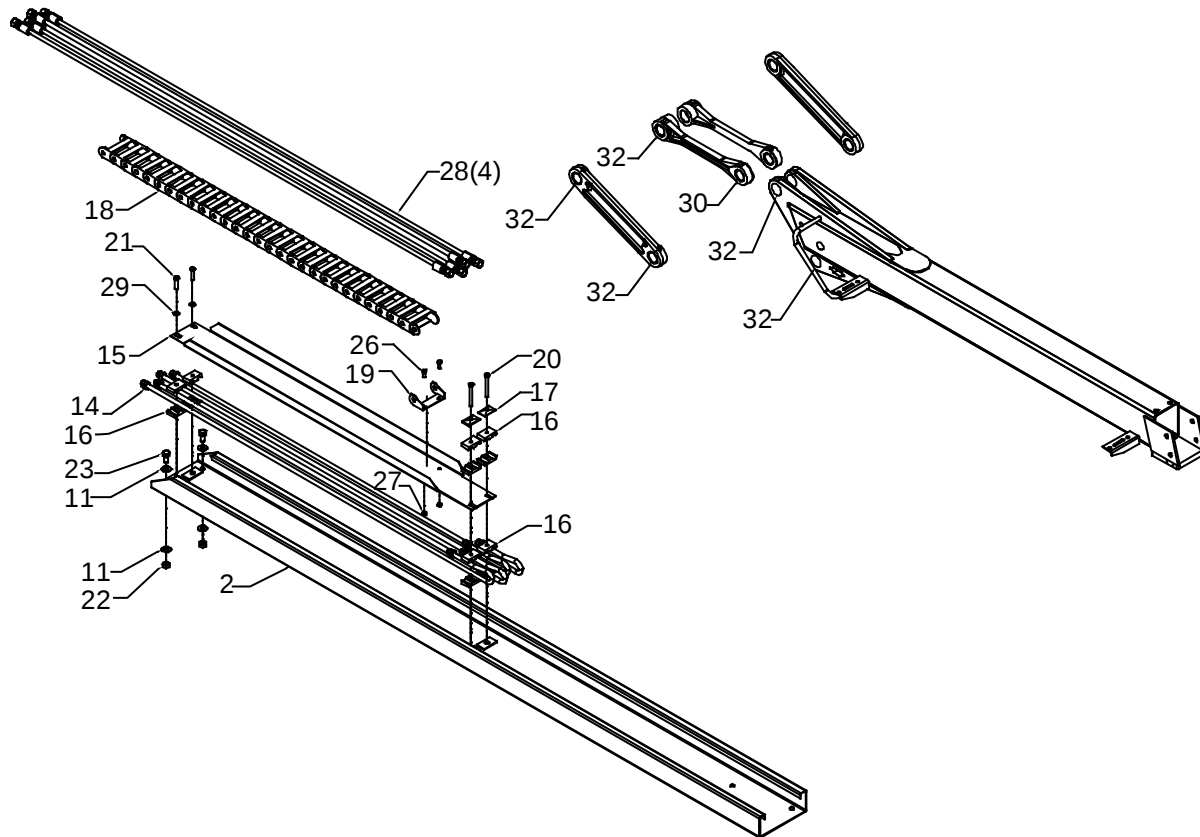
Outer Boom Asm (99903425)

99903425 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717245	WLDMT, OUTER BOOM (INCL. 32)	1
2.	52714279	WLDMT, HOSE TRACK	1
3.	60125582	PIN	2
4.	60125581	PIN	1
5.	52717345	PIN	1
6.	51717597	LINK, MACHINING OUTER (INCL. 30,31)	2
7.	51717738	CYLINDER 6.5/3.0 50S 70.25 CC (WAS 51711738 THRU 7/05, 71411577 THRU 2/07)	1
8.	51717598	LINK, MACHINING OUTER (INCL. 30)	2
9.	60122985	WEAR PAN	4
10.	60125113	RETAINER PLATE, OUTER BOOM WEAR PAD	1
11.	72063005	WASHER 1/2 FLAT	8
12.	72661582	SNAP RING, 2.50"	11
13.	60124036	WEAR PAD	1
14.	70145250	TUBE ASM	4
15.	60120424	TRAY, HOSE GUIDE	1
16.	70034432	CLAMP, TWIN TUBE 1/2 OD	6
17.	70143829	COVER PLATE	2
18.	70145607	E-CHAIN, 31 LINKS	1
19.	70145611	E-CHAIN, MTG BRACKET	1
20.	72601740	CAP SCR 5/16-18X3 SOC BTNHD	2
21.	72601741	CAP SCR 5/16-18X1.5 SOC BTNHD	2
22.	72062080	NUT 1/2-13 HEX NYLOC	4
23.	72060092	CAP SCR 1/2-13X1.25 HHGR5Z	4
24.	72060148	CAP SCR 5/8-11X1.25 HHGR5Z	1
25.	72063055	WASHER 5/8 LOCK ZINC	1
26.	72060002	CAP SCR 1/4-20X3/4 HHGR5Z	2
27.	72062104	NUT 1/4-20 HEX NYLOC ZINC	2
28.	51395668	HOSE-FF 3/8X72 OAL (8-8) (PART OF CRANE HOSE KIT)	4REF
29.	72063002	WASHER 5/16 FLAT	2
30.	70034467	BEARING, GAR MAX (PART OF 6(2) AND 8(4))	6REF
31.	72063106	MACHY BUSHING 2.50X14 GA NR	12
32.	70034283	BEARING, GAR MAX (PART OF 1)	10REF
33.	72060047	CAP SCR 3/8-16X1.25 HHGR5Z	4
34.	72063051	WASHER 3/8 LOCK ZINC	4
35.	60127464	WEAR PAD (WAS 60124364)	2
36.	72062293	NUT 1-14 HEX ZINC JAM	4

REV. E 20070313

99903425 Drawings



Outer Boom Asm (99903425)**NOTES:**

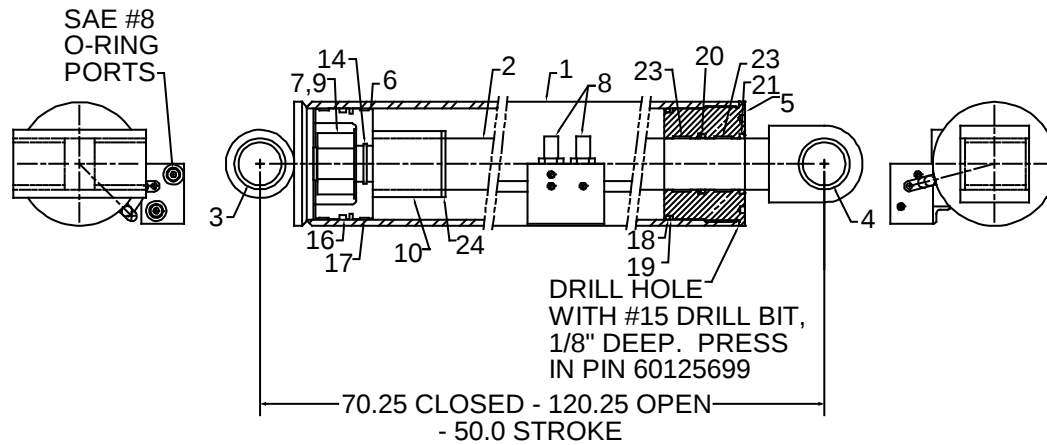
1. FOR PROPER ASSEMBLY, INSERT HOSES (ITEM #28) INTO E-CHAIN (ITEM #18) BEFORE INSTALLING HOSES ONTO HYDRAULIC TUBES (ITEM #14).
2. STAGGER HYDRAULIC TUBES (ITEM #14) TO ACCESS FITTINGS.

Outer Cylinder (51717738) (Through 7/15/05, Eff. 2/07)

NOTE:

Cranes with serial numbers up to 16000S3051170 use this cylinder.

51717738 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717739	CASE ASM	1
2.	4G170860	ROD ASM	1
3.	70034284	BEARING	2REF
4.	70034465	BEARING	1REF
5.	60124593	HEAD	1
6.	60124596	PISTON SEAL	1
7.	72062144	NUT 2.00-12 BUTTRESS HEX	1
8.	73054242	VALVE, C'BAL 25 GPM	2
9.	72063016	WASHER 2.00 FLAT	1
10.	60124598	STOP TUBE	1
13.	51744112	SEAL KIT	1
14.	7Q072227	O-RING	1REF
16.	7T66P650	PISTON SEAL	1REF
17.	7T2N4065	WEAR RING	2REF
18.	7Q072437	O-RING	1REF
19.	7Q10P437	BACKUP RING	1REF
20.	76534388	U-CUP, LOADED	1REF
21.	7R17P030	ROD WIPER	1REF
23.	70148368	WEAR RING	2REF
24.	6A025030	WAFER LOCK	1REF
25.	60125699	PIN	1REF
Rev. D 20031111			



NOTES:

1. APPLY "LUBRIPLATE" #630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

CYLINDER DATA			
EXT.	33.18 in ² 7.18 gal	DRY WT.	400 #
RETR.	26.12 in ² 5.65 gal	BRG. SPAN	9.06%
CASE	6.5 x 7.25 x 62.5"	TEST PSI	3000
ROD	ø3.00 x 64.62 L	OPER PSI	3000

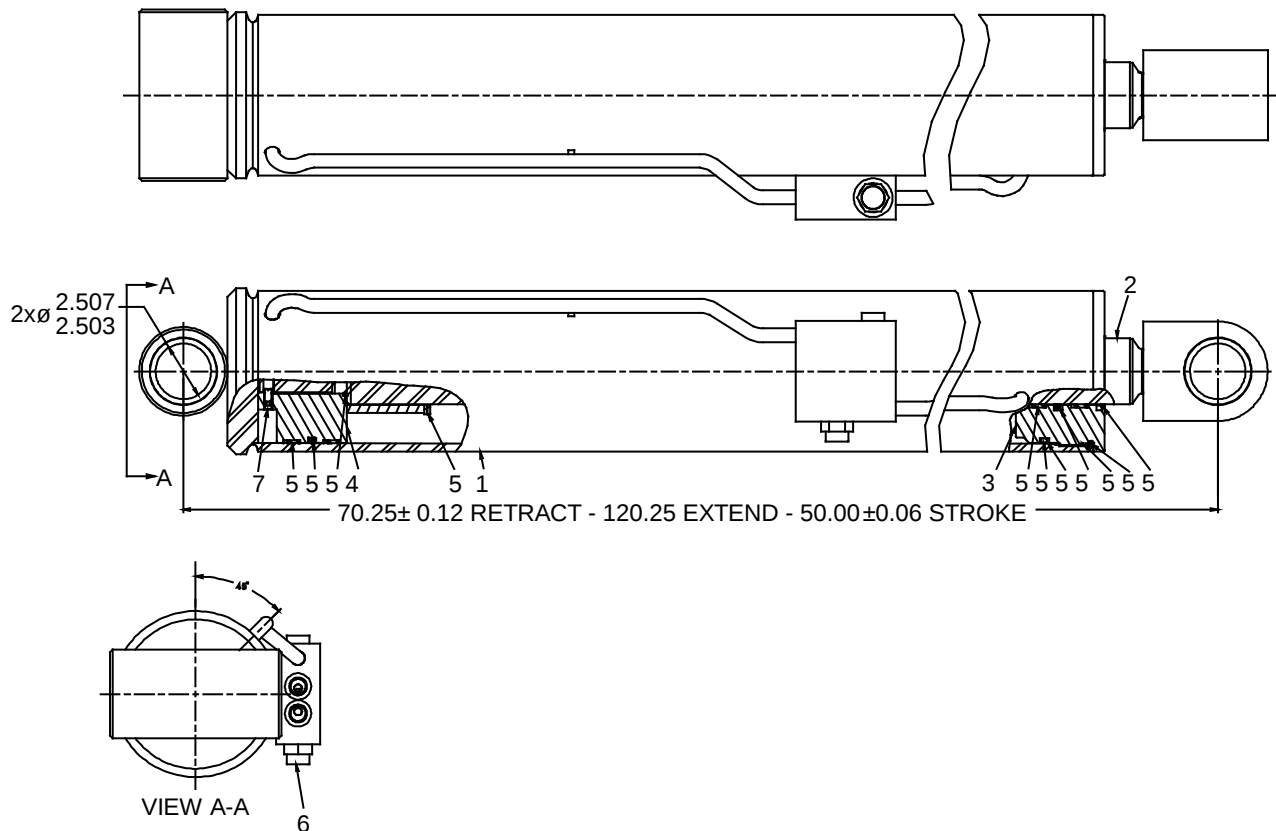
Outer Cylinder (71411577) (Eff. 7/15/05 - 2/07)

NOTE:

Cranes with serial numbers 16000S3051171 and beyond (7/15/05 and later manufacturing dates) use this cylinder.

71411577 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411857	CASE WELDMENT	1
2.	71411860	ROD WELDMENT	1
3.	71411859	HEAD GLAND	1
4.	71411858	PISTON	1
5.	94396726	SEAL KIT	1
6.	73540179	VALVE-COUNTERBALANCE	2
7.	REF	SET SCREW	1

NEW 20050826



NOTES:

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

CYLINDER DATA	
EXTENDED	33.18 IN ² , 7.18 GAL
RETRACTED	26.12 IN ² , 5.65 GAL

CASE	6.50" BORE X $\varnothing$ 7.25
ROD	$\varnothing$ 3.00"
OPERATING PRESSURE	3000 PSI
TEST PRESSURE	3500 PSI
PORTS	SAE #8 O-RING BOSS (3/4-16 UNF-2B)
CYLINDER TUBE BURST PRESSURE	13,000 PSI
CYLINDER DRY WEIGHT	386.6 LB
TORQUES	PISTON (#4) - TORQUE WITH THREADLOCK COMPOUND TO 2300 - 2500 FT-LB. USE LOCTITE 271 OR EQUIVALENT.
	COUNTERBALANCE VALVE (#6) 45-50 FT-LB
	HEAD GLAND (#3) 500-600 FT-LB
	SET SCREW (#8) - TORQUE WITH THREADLOCK COMPOUND TO 16-18 FT-LB. USE LOCTITE 243 OR EQUIVALENT.

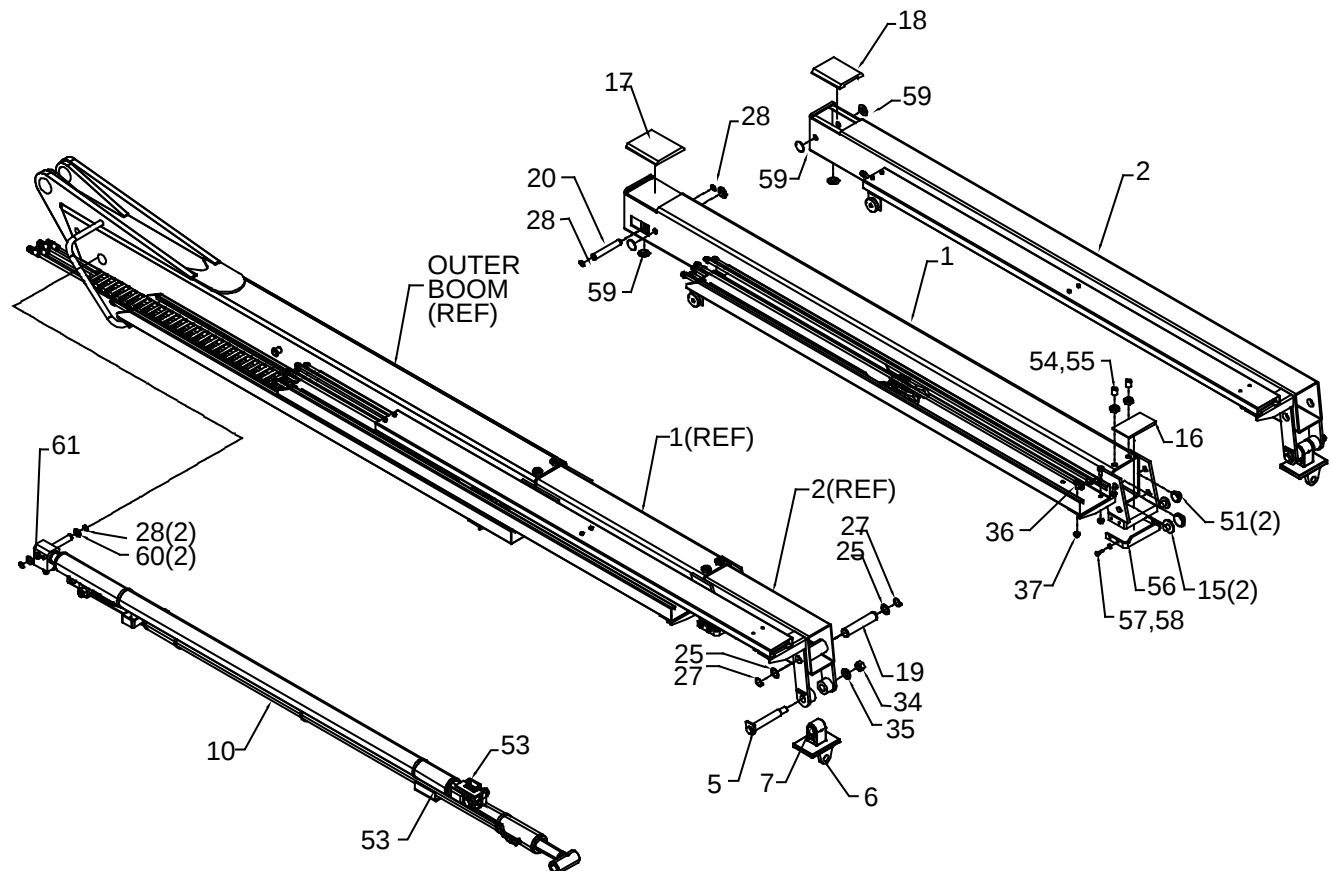
Extension Boom Asm - 42' (99903426)

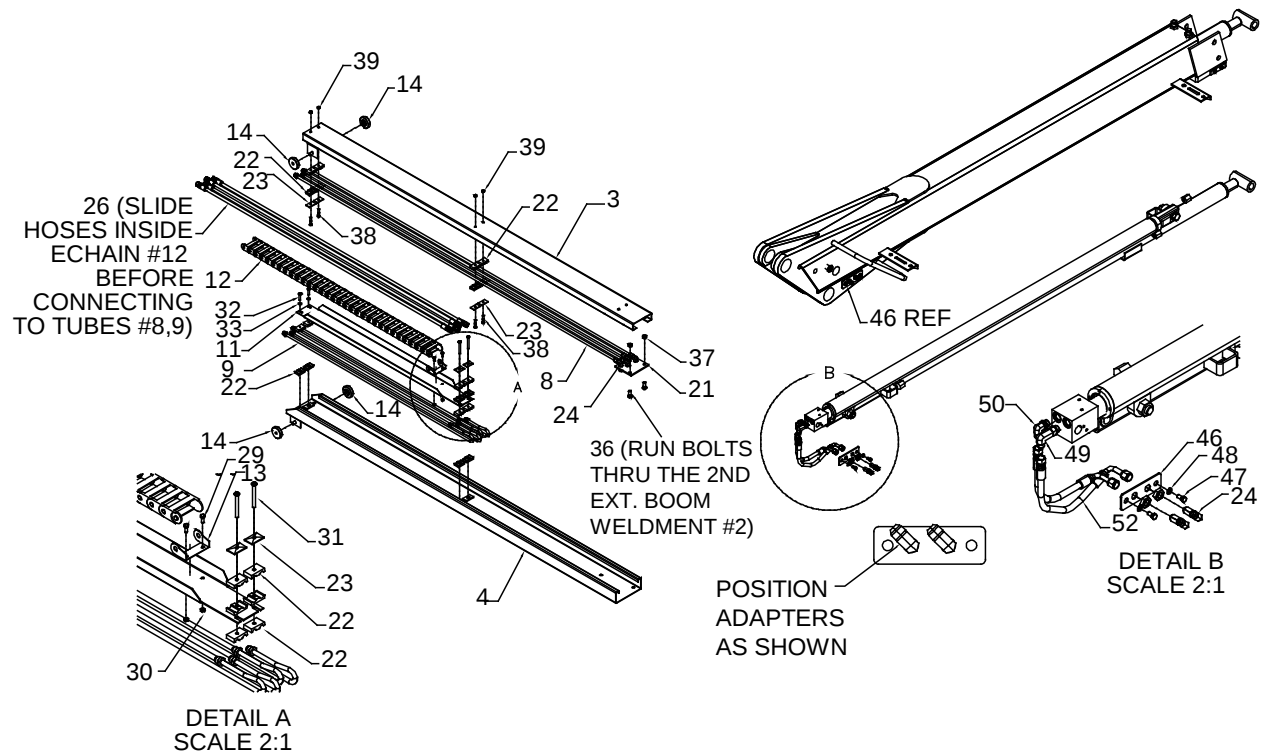
99903426 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717246	EXT BOOM WELDMENT, 1ST	1
2.	52717247	EXT BOOM WELDMENT, 2ND	1
3.	52713124	WLDMT, HOSE TRACK TOP	1
4.	52713125	WLDMT, HOSE TRACK MID	1
5.	52713127	PIN	1
6.	51709475	SWIVEL LINK (INCL. 7)	1
7.	70055207	BEARING, GAR D (PART OF 6)	2REF
8.	70145520	TUBE ASM	4
9.	70145250	TUBE ASM	4
10.	51717730	EXT CYL ASM (WAS 51717730 THRU 7/05, 71411578 EFF. 7/05 THRU 2/07)	1
11.	60120424	TRAY, HOSE GUIDE	1
12.	70145607	E-CHAIN, 31 LINKS	1
13.	70145611	E-CHAIN MTG BRKT	1
14.	60030288	ROLLER, TRACK GUIDE	4
15.	60122985	WEAR PAD, RND	2
16.	60124155	WEAR PAD, RC NYL	1
17.	60124156	WEAR PAD, RC NYL	1
18.	60124157	WEAR PAD, RC NYL	1
19.	60122027	PIN	1
20.	60101874	PIN	1
21.	60120348	BRACKET, HOSE GUIDE	1
22.	70034432	CLAMP, TWIN TUBE	10
23.	70143829	COVER PLATE	6
24.	72532986	ELBOW #8MJIC #8MJIC BLKHD	6
25.	72063036	MACH BUSHING	2
26.	51395668	HOSE-FF 3/8X72 OAL (8-8)	4REF
27.	72066132	RETAINING RING	2
28.	72066125	RETAINING RING	4
29.	72060002	CAP SCR 1/4-20X3/4 HHGR5Z	2
30.	72062104	NUT 1/4-20 HEX NYLOC	2
31.	72601740	CAP SCR 5/16-18X3 SOC BTNHD	2
32.	72601741	CAP SCR 5/16-18X1.5 SOC BTNHD	2
33.	72063002	WASHER 5/16 FLAT	2
34.	72062141	NUT 1-8 HEX LOCK STINGR5	1
35.	72063066	WASHER 1" HI-STR ZINC YEL	1
36.	72060092	CAP SCR 1/2-13X1.25 HHGR5Z	4
37.	72062080	NUT 1/2-13 HEX NYLOC ZINC	4
38.	72060028	CAP SCR 5/16-18X1.75 HHGR5Z	4
39.	72062109	NUT 5/16-18 HEX NYLOC ZINC	4

99903426 PARTS LIST

ITEM	PART #	DESCRIPTION	QUANTITY
46.	60124366	PLT, BULKHEAD	1
47.	72060089	CAP SCR 1/2-13X3/4 HHGR5Z	2
48.	72063053	WASHER 1/2 LOCK ZINC	2
49.	72532666	ELBOW #8MSTR #8MJIC XLG	1
50.	72053763	ELBOW #8MSTR #8MJIC 90°	1
51.	60123777	WEAR PAD, RND	2
52.	51396456	HOSE-FZ 3/8X25 10AL (8-8)	2REF
53.	60030319	WEAR PAD, EXT CYL	2
54.	60127464	WEAR PAD (WAS 60124364)	2
55.	72062293	NUT 1-14 HEX ZINC JAM	2
56.	60125113	RETAINER PLATE	1
57.	72060047	CAP SCR 3/8-16X1.25 HHGR5Z	4
58.	72063051	WASHER 3/8 LOCK ZINC	4
59.	60125478	WEAR PAD, RND 2"	6
60.	72063033	MACHY BUSHING 1X14 GA NR	2
61.	60103821	PIN	1

REV. F 20070313

99903426 Drawings

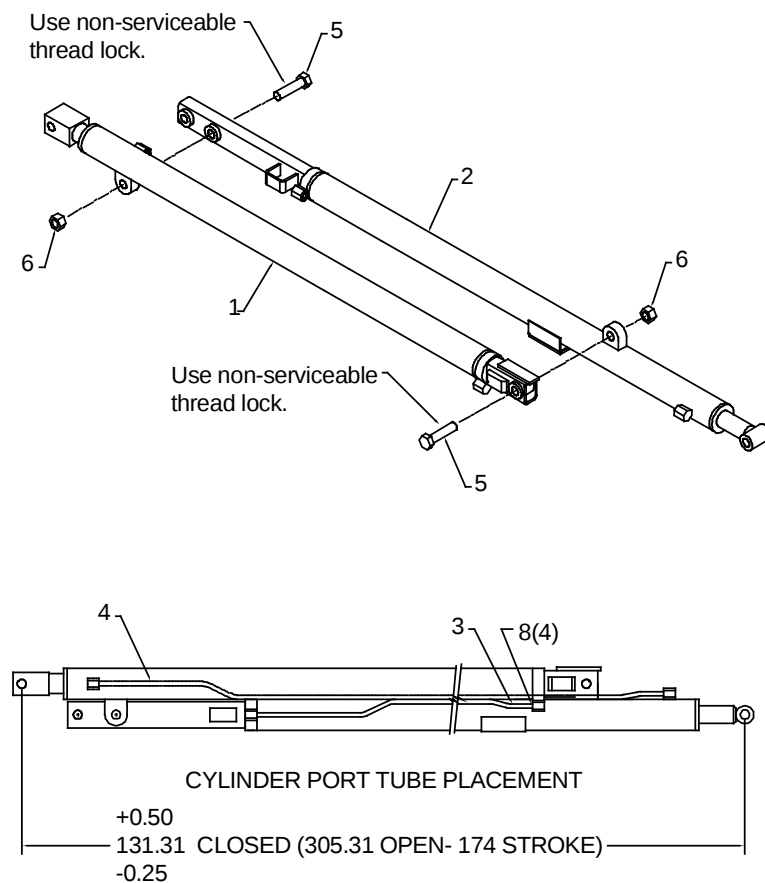
Extension Boom Asm - 42' (99903426)

Extension Cylinder Assembly (51717730) (Through 7/15/05, Eff. 4/10/07)

NOTE:

Cranes with serial numbers up to 16000S3051170 use this cylinder.

51717730 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51717731	CYLINDER, EXTENSION (INCL. 7)	1
2.	51717734	CYLINDER, EXTENSION	1
3.	70145251	TUBE ASM	1
4.	70145252	TUBE ASM	1
5.	72060247	CAP SCR 1-8X4.5 HHGR5Z	2
6.	72062268	NUT 1-8 HEX CENTER LOCK	2
8.	72532358	ADPTR #8MSTR #8MJIC	4
REV. A 20030923			

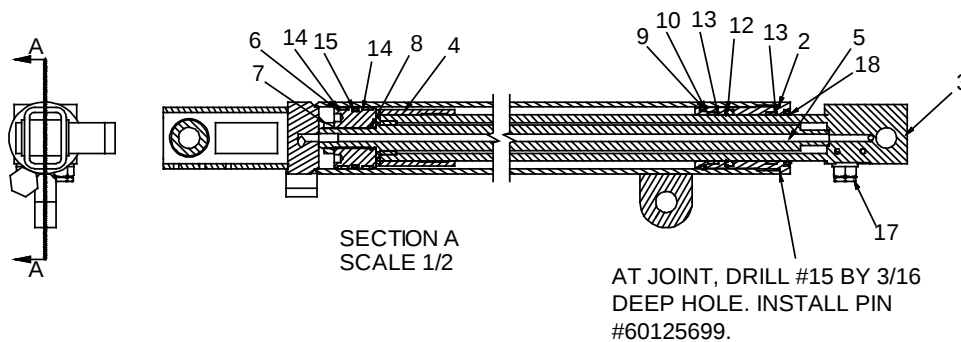


Extension Cylinder (51717731) (Through 7/15/05, Eff. 4/10/07)

NOTE:

Cranes with serial numbers up to 16000S3051170 use this cylinder.

51717731 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51744123	SEAL KIT	1
2.	52717732	CASE ASM	1
3.	52718290	ROD ASSEMBLY	1
4.	52718292	STOP TUBE	1
5.	60124582	HEAD	1
6.	60125661	PISTON	1
7.	72062302	COLLAR, LOCK	1
8.	7Q072120	O-RING (PART OF 1)	1REF
9.	7Q072334	O-RING (PART OF 1)	1REF
10.	7Q10P334	BACKUP RING (PART OF 1)	1REF
12.	7R546022	U-CUP, LOADED (PART OF 1)	1REF
13.	7T103000	WEAR RING, ROD (PART OF 1)	2REF
14.	7T2N4030	WEAR RING, PISTON (PART OF 1)	2REF
15.	7T66P300	PISTON SEAL (PART OF 1)	1REF
16.	60125699	PIN	1REF
17.	73054304	VALVE, C'BAL 10 GPM	2
18.	7R17P022	ROD WIPER (PART OF 1)	1
REV H 20120420			



NOTES:

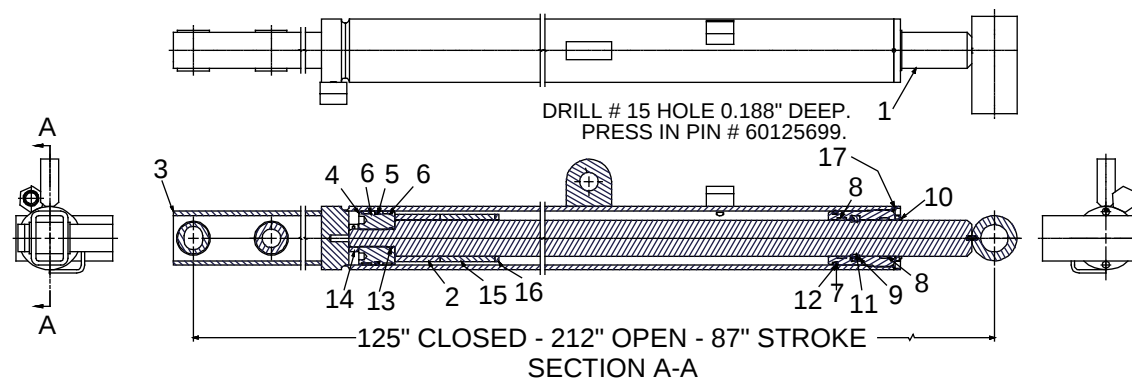
- 1 APPLY NEVER-SEEZ REGULAR GRADE ANTI-SIEZE AND LUBRICATING COMPOUND TO THREADS ON THE CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 2 APPLY LUBRIPLATE #630-2 MEDIUM HEAVY, MULTIPURPOSE LUBRICANT TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

Extension Cylinder (51717734) (Through 7/15/05, Eff. 4/10/07)

NOTE:

Cranes with serial numbers up to 16000S3051170 use this cylinder.

51717734 PARTS LIST					
ITEM	PART #	DESCRIPTION	DETAILS	KIT #	QUANTITY
1.	52718291	ROD ASSEMBLY	2.00 DIA X 104.62L		1
2.	60125680	STOP TUBE	2.00 R X 2.517LG		1
3.	52717733	CASE ASSEMBLY	3.00B x 119.44L		1
4.	60125661	PISTON	3.00 BORE X 1.00 STGR		1
5.	7T66P300	PISTON SEAL	PSP 3.00		1
6.	7T2N4030	WEAR RING-PISTON	3.00 OD X 0.50 W	#18	2
7.	7Q10P334	BACKUP RING2	2.62 ID X 3.00 OD	#18	1
8.	7t104000	WEAR RING-ROD	2.00 ID X 0.50W HAL	#18	2
9.	60124581	HEAD	3.00B 2.00R 4.0 LG		1
10.	7r17p020	ROD WIPER-TYPE D	2.00 ROD HAL	#18	1
11.	76534386	U-CUP LOADED	2.00X2.50X.38 MPS	#18	1
12.	7Q072334	O RING	2.62X 3.00X .19 70	#18	1
13.	7Q072120	O-RING	1.00 X 1.019 0.09 70	#18	1
14.	72062302	COLLAR-LOCK	1-14 UNS	#18	1
15.	6C300020	STOP TUBE-2.00 ROD X 3.00 LONG			1
16.	60138274	STOP TUBE-2.00 ROD X 0.25 LONG (WAS 6A025020)			1
17.	60125699	PIN - LOCK TUBE		#18	1
18.	51744124	SEAL KIT			1
REV G 20120420					



NOTES:

- 1 REPLACE ALL SEAL KIT COMPONENTS WHENEVER THE CYLINDER IS DISASSEMBLED. THIS WILL REDUCE FUTURE DOWNTIME.
- 2 APPLY NEVER-SEEZ REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON THE CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 3 APPLY LUBRIPLATE #630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.
- 4 ITEM #16, STOP TUBE, REPLACES 6A025020 WAFER LOCK. USE STOP TUBE INSTEAD OF WAFER LOCK WHEN RESEALING CYLINDER.
- 5 PRESS LOCKING PIN (ITEM #18) INTO #15 HOLE DRILLED 0.188" DEEP.
- 6 TORQUE PISTON TO 300-330 FT-LB, HEAD TO 325 FT-LB, LOCKNUT TO 12 FT-LB, AND CAP SCREW TO 16 FT-LB.

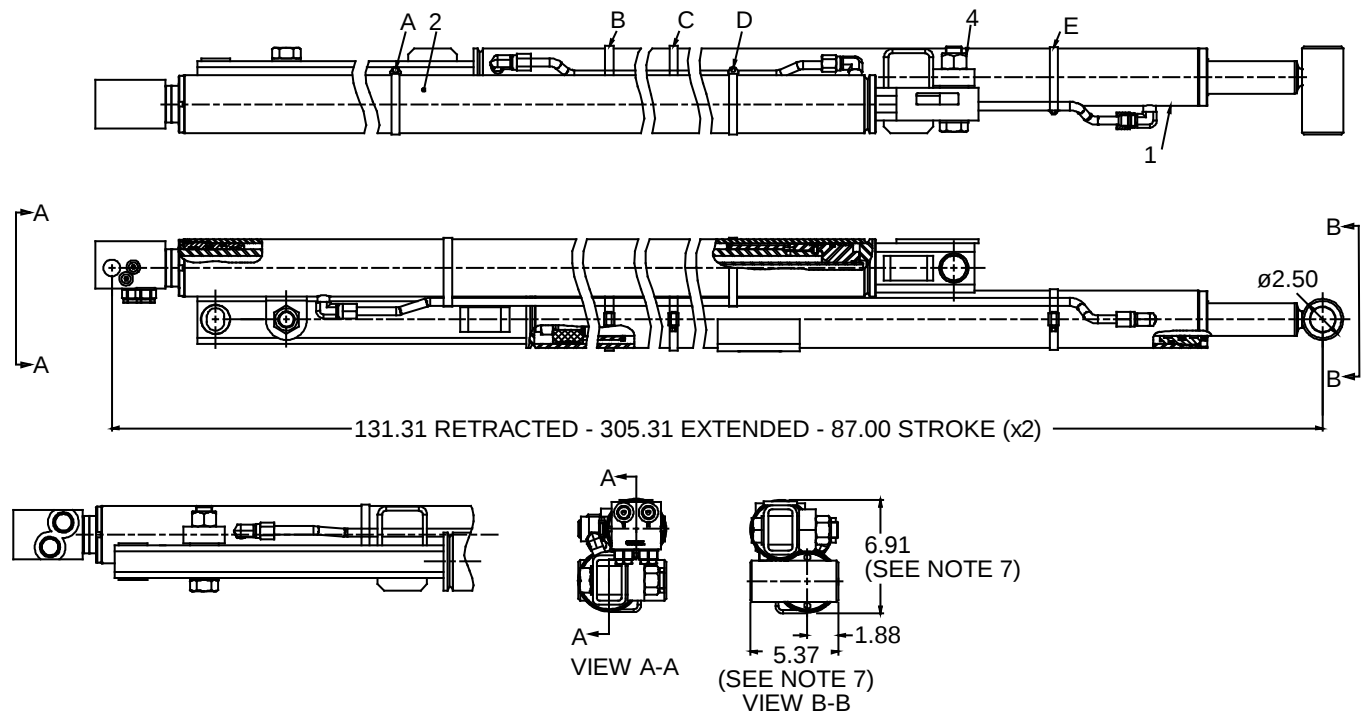
Extension Cylinder Assembly (71411578) (Eff. 7/15/05 - 2/07)

NOTE:

Cranes with serial numbers 16000S3051171 and beyond (7/15/05 and later manufacturing dates) use this cylinder.

71411578 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411861	CYLINDER, HYDRAULIC, 3X87X2	1
2.	71411862	CYLINDER, HYDRAULIC, 3X87X2.25	1
3.	94396727	SEAL KIT	1
4.	REF	LOCKNUT	2

NEW 20050826

**NOTES:**

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

CYLINDER DATA	
OPERATING PRESSURE	3000 PSI
TEST PRESSURE	3500 PSI
PORTS	SAE #8 O-RING BOSS (3/4-16 UNF-2B)
CYLINDER DRY WEIGHT	373.1 LB
TORQUES	LOCK NUT (#4) - TORQUE WITH THREADLOCK COMPOUND TO 350-400 FT-LB. USE LOCTITE 271 OR EQUIVALENT.

NOTE:

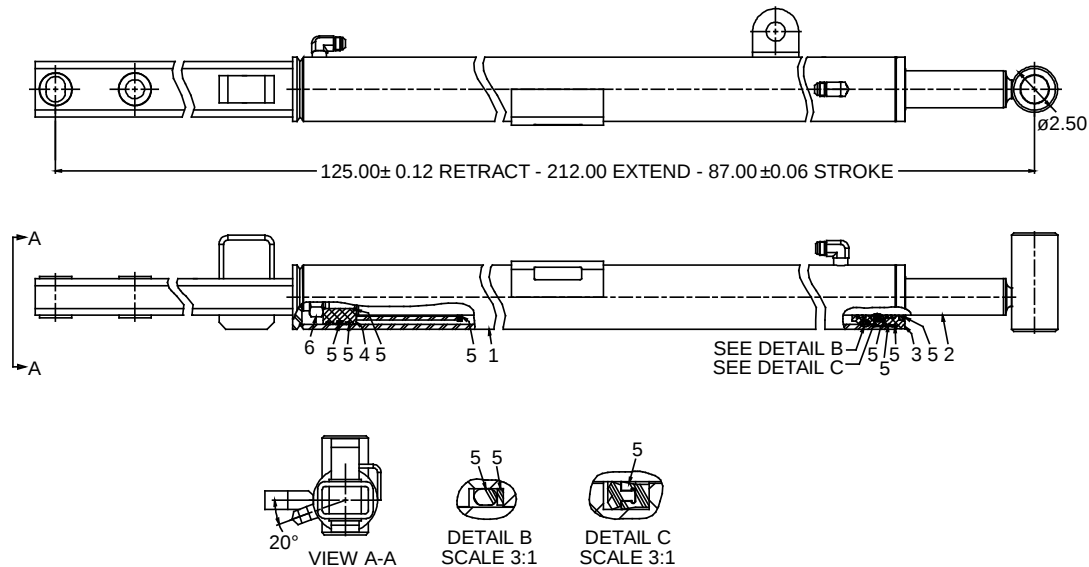
- 1 HOSE CLAMP LOCATIONS ARE DETERMINED FROM VIEW B-B.
- 2 CLAMP "A" SHOULD CLAMP ITEM #4 AND ITEM #2.
- 3 CLAMP "B" SHOULD CLAMP ITEMS #3, #1, AND #2.
- 4 CLAMP "C" SHOULD CLAMP ITEMS #3, #1, AND #2.
- 5 CLAMP "D" SHOULD CLAMP ITEMS #4, #1, AND #2.
- 6 CLAMP "E" SHOULD CLAMP ITEMS #3 AND #2.

Extension Cylinder (71411861) (Eff. 7/15/05 - 3/07)

NOTE:

Cranes with serial numbers 16000S3051171 and beyond (7/15/05 and later manufacturing dates) use this cylinder.

71411861 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411863	CASE WELDMENT	1
2.	71411866	ROD WELDMENT	1
3.	71411865	HEAD GLAND	1
4.	71411864	PISTON	1
5.	94396432	SEAL KIT	1
6.	REF	1.25-12 UNF LOCKNUT	1
NEW 20050826			



NOTES:

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

CYLINDER DATA	
EXTENDED	7.16 IN ³ , 2.69 GAL
RETRACTED	4.01 IN ³ , 1.50 GAL
CASE	3.00" BORE X ø3.50
ROD	ø2.00"
OPERATING PRESSURE	3000 PSI
TEST PRESSURE	3500 PSI
PORTS	SAE #8 JIC (3/4-16 UNF-2A)
CYLINDER TUBE BURST PRESSURE	13,000 PSI
CYLINDER DRY WEIGHT	191.8 LB
TORQUES	LOCKNUT (#6) - TORQUE WITH THREADLOCK COMPOUND TO 500-500 FT-LB. USE LOCTITE 271 OR EQUIVALENT.
	HEAD GLAND (#3) 250-300 FT-LB

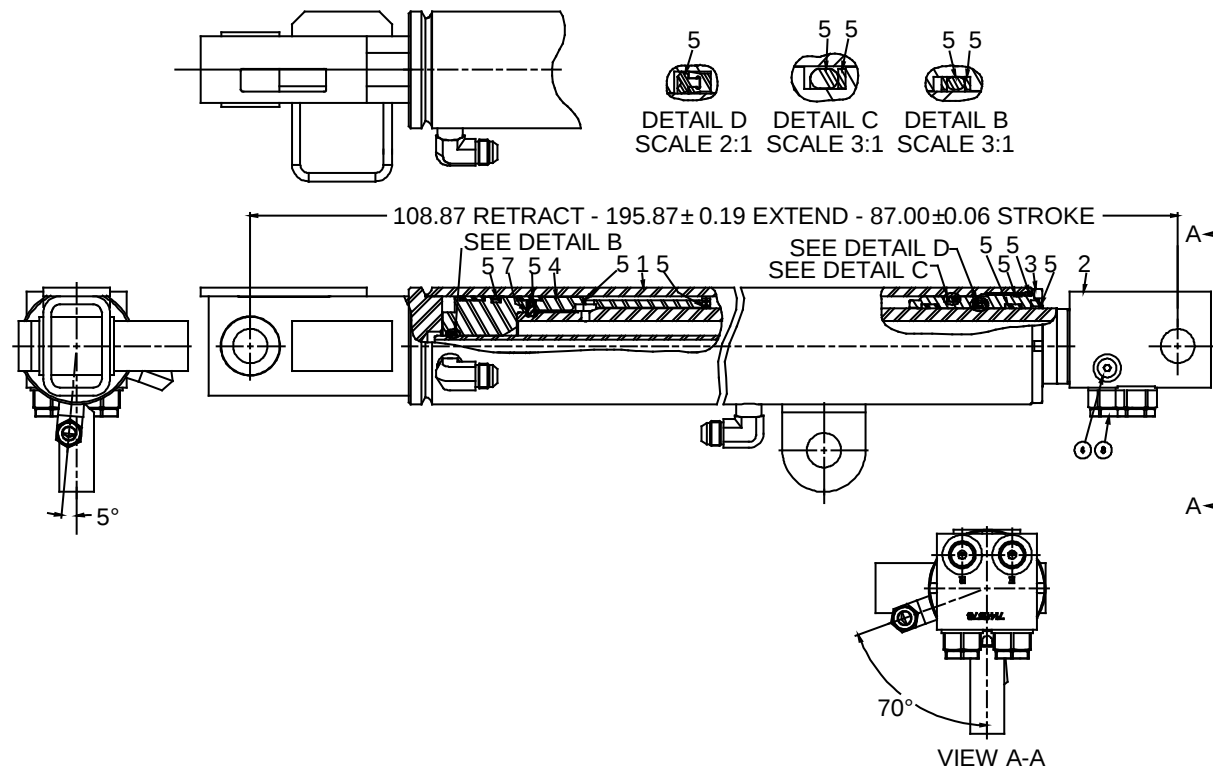
Extension Cylinder (71411862) (Eff. 7/15/05 - 3/07)

NOTE:

Cranes with serial numbers 16000S3051171 and beyond (7/15/05 and later manufacturing dates) use this cylinder.

71411861 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411867	CASE WELDMENT	1
2.	71411870	ROD WELDMENT	1
3.	71411869	HEAD GLAND	1
4.	71411868	PISTON	1
5.	94396775	SEAL KIT	1
6.	73540180	VALVE-COUNTERBALANCE	2
7.	REF	1/4-20 UNC x .44 LG SET SCREW	1

NEW 20050826



NOTES:

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

CYLINDER DATA	
EXTENDED	7.16 IN ² , 2.69 GAL
RETRACTED	3.19 IN ² , 1.20 GAL
CASE	3.00" BORE X ø3.50
ROD	ø2.25"
OPERATING PRESSURE	3000 PSI

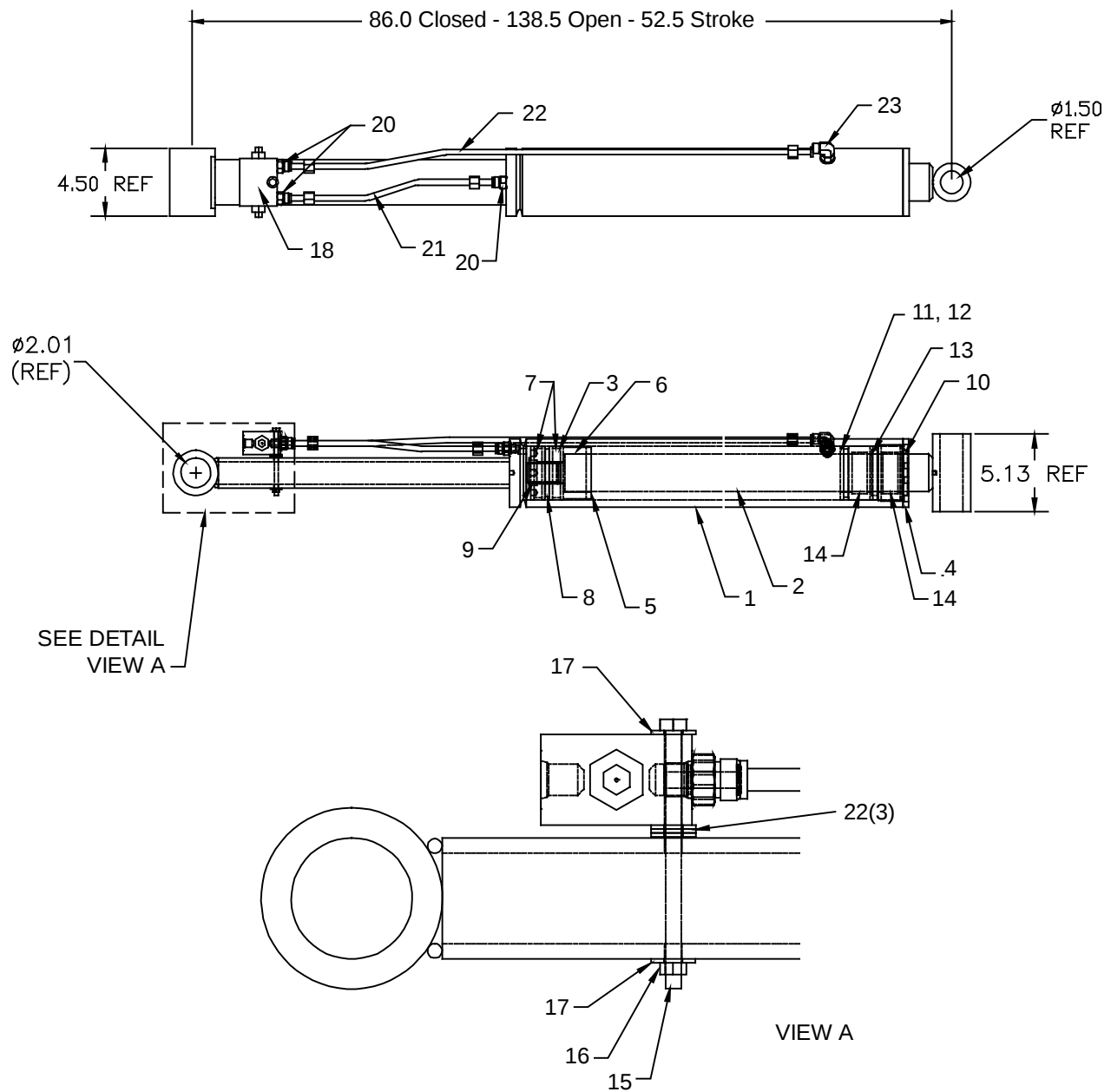
TEST PRESSURE	3500 PSI
PORTS	SAE #8 JIC (3/4-16 UNF-2B)
CYLINDER TUBE BURST PRESSURE	13,000 PSI
CYLINDER DRY WEIGHT	191.8 LB
TORQUES	PISTON (#4) - TORQUE WITH THREADLOCK COMPOUND TO 360-400 FT-LB. USE LOCTITE 271 OR EQUIVALENT.
	SET SCREW (#7) - TORQUE WITH THREADLOCK COMPOUND TO 6-7 FT-LB. USE LOCTITE 243 OR EQUIVALENT.
	HEAD GLAND (#3) 250-300 FT-LB COUNTERBALANCE VALVE (#6) 30-35 FT-LB

Stabilizer Cylinder (51717736) (Effective 1/16/14)

NOTE:

Cranes with serial numbers from 16000S3141024 use this cylinder.

51717736 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717735	CASE ASM	1
2.	4G340990	ROD ASM	1
3.	60124587	PISTON	1
4.	60124588	HEAD	1
5.	60138276	STOP TUBE-2.50 ROD X 0.25 LONG (PART OF 24)	1
6.	6C150025	STOP TUBE-2.50 ROD X 1.50 LONG	1
7.	7T2N4035	WEAR RING (PART OF 24)	2REF
8.	7T66P350	PISTON SEAL (PART OF 24)	1REF
9.	7T61N143	NYLON LOCK RING (PART OF 24)	1REF
10.	7R17P025	ROD WIPER (PART OF 24)	1REF
11.	7Q072338	O-RING (PART OF 24)	1REF
12.	7Q10P338	BACKUP RING (PART OF 24)	1REF
13.	7R746025	U-CUP, LOADED (PART OF 24)	1REF
14.	7T080000	WEAR RING (PART OF 24)	2REF
15.	72060016	CAP SCR 1/4-20X4.00 HHGR5Z	1
16.	72062104	NUT 1/4-20 HEX NYLOC ZINC	1
17.	72063001	WASHER 1/4 FLAT	5
18.	71415729	VALVE BLOCK-16000 OR DBL CHECK	1
20.	72533186	ADPTR #6MFACE #6MSTR	3
21.	70146082	TUBE ASM	1
22.	70146083	TUBE ASM	1
23.	72533163	ELBOW #6MSTR #6MFACE 90°	1
24.	9B080000	SEAL KIT (INCL 5, 7-14)	1REF
REV C 20131216			

**NOTES:**

- 1 APPLY NEVER-SEEZ REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON THE CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 2 APPLY LUBRIPLATE #630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

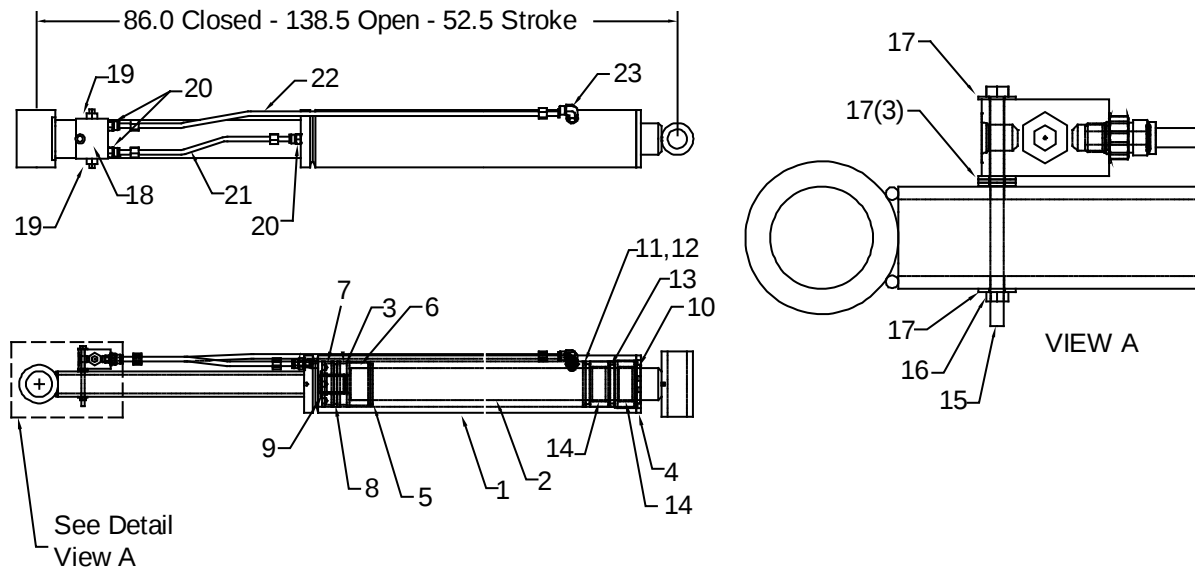
Stabilizer Cylinder (51717736) (Through 7/15/05, Effective 4/10/07 through 1/15/14)

NOTE:

Cranes with serial numbers up to 16000S3051170 use this cylinder.

51717736 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717735	CASE ASM	1
2.	4G340990	ROD ASM	1
3.	60124587	PISTON	1
4.	60124588	HEAD	1
5.	6A025025	WAFER LOCK	1REF
6.	6C150025	STOP TUBE	1
7.	7T2N4035	WEAR RING	2REF
8.	7T66P350	PISTON SEAL	1REF
9.	7T61N143	NYLON LOCK RING	1REF
10.	7R17P025	ROD WIPER	1REF
11.	7Q072338	O-RING	1REF
12.	7Q10P338	BACKUP RING	1REF
13.	7R746025	U-CUP, LOADED	1REF
14.	7T080000	WEAR RING	2REF
15.	72060017	CAP SCR 1/4-20X4.50 HHGR5Z	1
16.	72062104	NUT 1/4-20 HEX NYLOC ZINC	1
17.	72063001	WASHER 1/4 FLAT	5
18.	5V080000	VALVE BLOCK, 8 GPM	1REF
19.	73052097	CHECK VALVE	2REF
20.	72533186	ADPTR #6MFACE #6MSTR	3
21.	70146082	TUBE ASM	1
22.	70146083	TUBE ASM	1
23.	72533163	ELBOW #6MSTR #6MFACE 90°	1
24.	9B080000	SEAL KIT (INCL 5, 7-14)	1
25.	70146126	VALVE BLOCK (INCL. 18,19)	1

REV. A 20070313

**NOTES:**

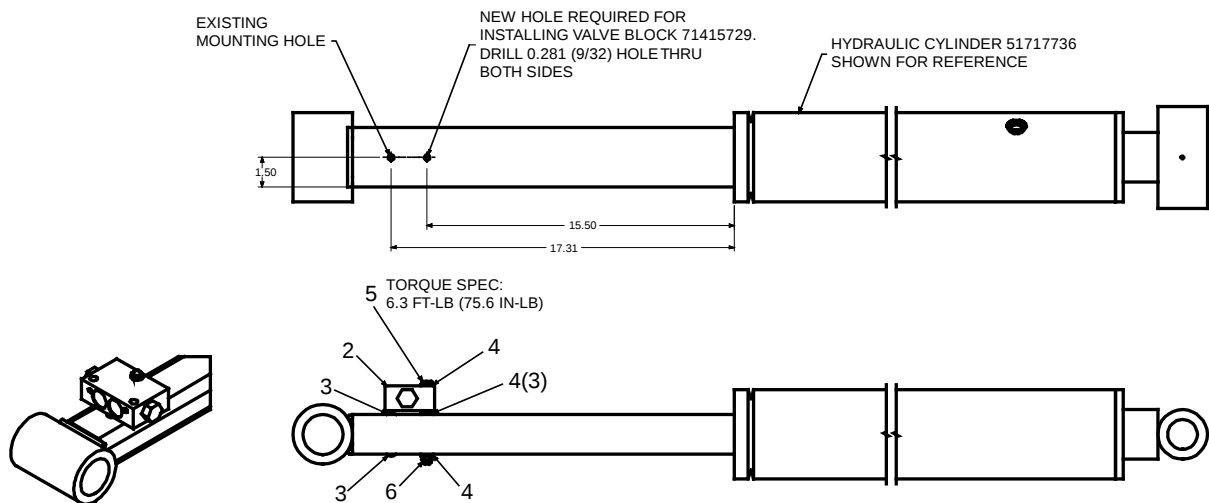
- 1 APPLY NEVER-SEEZ REGULAR GRADE ANTI-SEIZE AND LUBRICATING COMPOUND TO THREADS ON THE CYLINDER HEAD ONLY. KEEP AWAY FROM ALL SEALS.
- 2 APPLY LUBRIPLATE #630-2 MEDIUM HEAVY, MULTI-PURPOSE LUBRICANT TO ALL PISTON, HEAD GLAND, AND HOLDING VALVE SEALS, NYLON LOCK RING, CAST IRON PISTON RINGS, AND ROD STINGER THREADS.

Kit-Retro Valve for 51717736 (99905745)

NOTE:

For the purpose of replacing Valve Block 70146126 for 51717736 prior to Rev C.

99905745 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	95725862	KIT-RETRO VALVE – 51717736 (REF)	1
2.	71415729	VALVE BLOCK-16000 OR DBL CHECK	1
3.	70393719	PLUG-PL RUBBER BUTTON .266 HOLE	2
4.	72063001	WASHER .25 FLAT	5
5.	72060016	CAP SCREW .25-20 X 4.00 HH GR5Z	1
6.	72062104	NUT .25-20 HEX NYLOCK	1
NEW 20140110			



NOTES:

- 1 ALL DIMENSIONS IN INCHES.
- 2 IF IN GOOD WORKING CONDITION, THE ORIGINAL HYDRAULIC LINES CAN BE REUSED.
- 3 TORQUE SPEC FOR HYDRAULIC FITTINGS: 26.7 FT-LB (320 IN-LB).

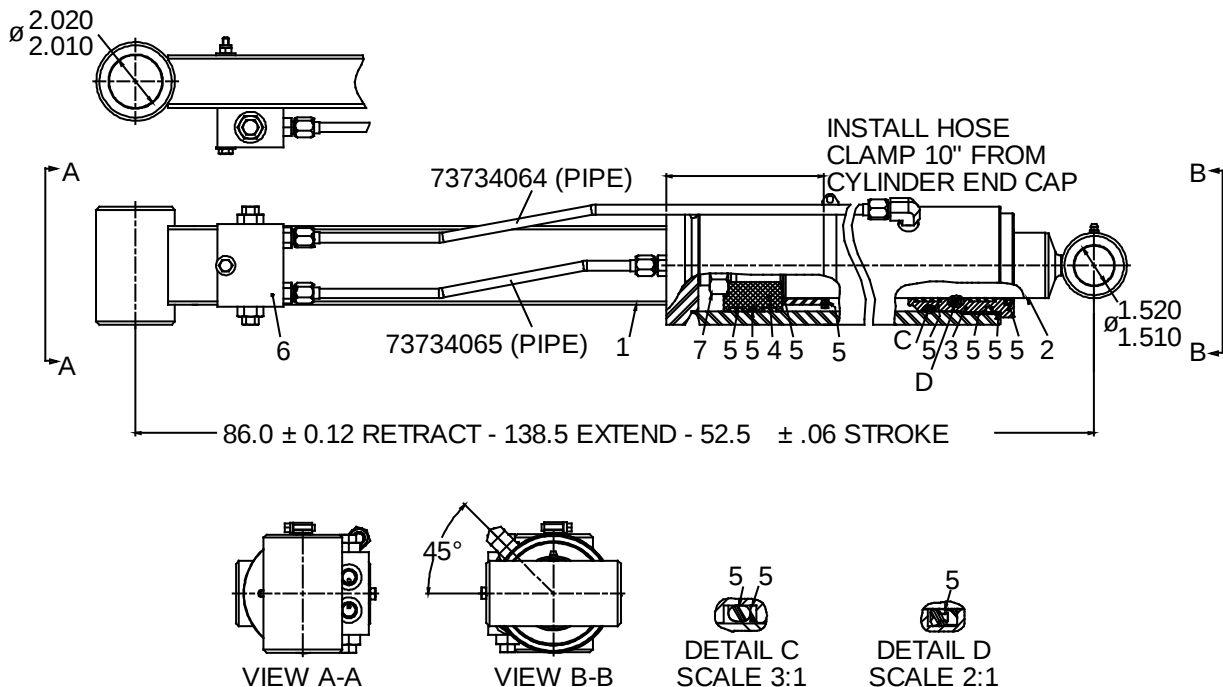
Stabilizer Cylinder (71411575) (Eff. 7/15/05 thru 4/10/07)

NOTE:

Cranes with serial numbers 16000S3051171 and beyond (7/15/05 and later manufacturing dates) use this cylinder.

71411575 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	71411784	CASE WELDMENT	
2.	71411781	ROD WELDMENT	1
3.	71411782	HEAD GLAND	1
4.	71411783	PISTON	1
5.	94396725	SEAL KIT	1
6.	73540177	CHECK VALVE, DOUBLE PO	1
7.	REF	LOCKNUT, 1-1/4-12 UNF	1REF

NEW 20050824


NOTES:

- 1 TO REDUCE DOWNTIME, REPLACE ALL COMPONENTS OF THE SEAL KIT WHENEVER THE CYLINDER IS DISASSEMBLED.

CYLINDER DATA	
EXTENDED	9.73 IN ² , 2.21 GALLONS
RETRACTED	4.82 IN ² , 1.09 GALLONS
CASE	3.5" BORE X ϕ 4.50
ROD	ϕ 2.5
OPERATING PRESSURE	3000 PSI
TEST PRESSURE	3500 PSI

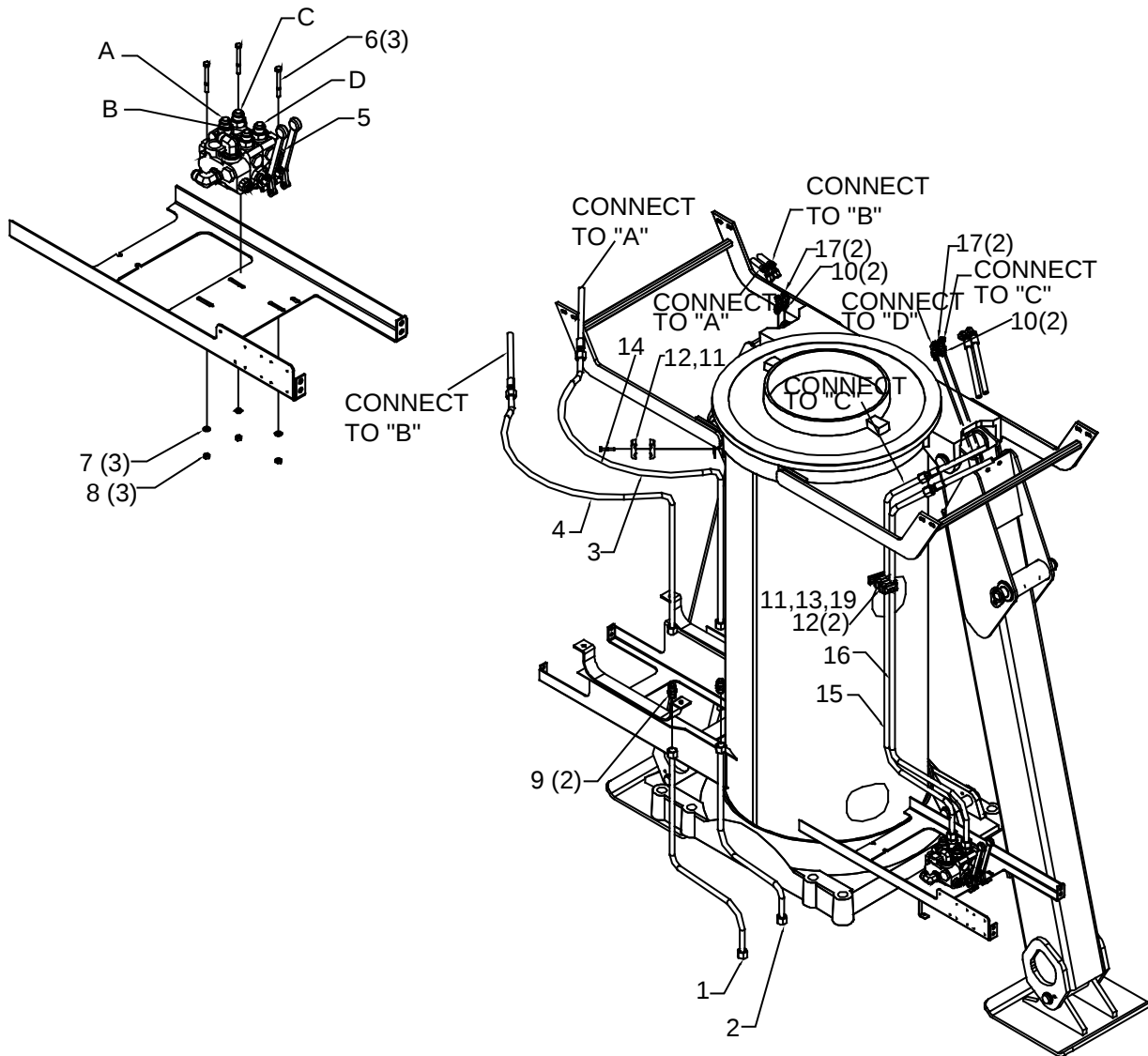
PORTS	SAE #60-RING BOSS (9/16-18 UNF-2B)
CYLINDER TUBE BURST PRESSURE	19,380 PSI
CYLINDER DRY WEIGHT	227.0 LB
TORQUES	LOCKNUT (#7) - TORQUE WITH THREADLOCK COMPOUND TO 500-550 FT-LB. USE LOCTITE 271 OR EQUIVALENT.
	HEAD GLAND (#4) 250-300 FT-LB

Base Hydraulic Assembly (99903439)

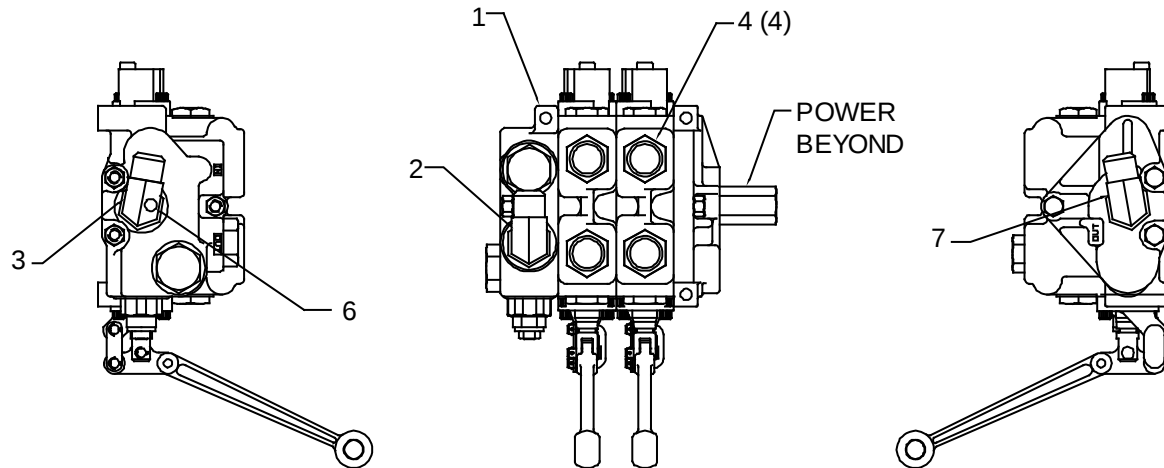
99903439 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70148272	TUBE ASM, OR CS A-PORT	1
2.	70248273	TUBE ASM, OR CS B-PORT	1
3.	70145822	TUBE ASM, OR CS B-PORT (STANDARD)	1
	70145921	TUBE ASM OR CS B-PORT (HI-FRAME)	1
4.	70145823	TUBE ASM, OR CS A-PORT (STANDARD)	1
	70145922	TUBE ASM, OR CS A-PORT (HI-FRAME)	1
5.	51715470	VB ASM, 2 SECT	1
6.	72060033	CAP SCR 5/16-18X3 HHGR5Z	3
7.	72063002	WASHER 5/16 FLAT	3
8.	72062109	NUT 5/16-18 HEX NYLOC ZINC	3
9.	72532855	ADPTR #12MJIC #12MJIC	2
10.	72532357	ADPTR #6MSTR #8MJIC	4
11.	70144819	COVER PLATE	2
12.	70034417	CLAMP, TWIN TUBE	3
13.	72060030	CAP SCR 5/16-18X2.25 HHGR5Z	1
14.	72060028	CAP SCR 5/16-18X1.75 HHGR5Z	1
15.	70145824	TUBE ASM, OR SS B-PORT (STANDARD)	1
	70145923	TUBE ASM, OR SS B-PORT (HI-FRAME)	1
16.	70145825	TUBE ASM, OR SS A-PORT (STANDARD)	1
	70145924	TUBE ASM, OR SS A-PORT (HI-FRAME)	1
17.	72532670	ELBOW #8MJIC #8FJIC 45°	7
18.	51396368	HOSE-AAZ 1/2X30 OAL (12-8)	4
19.	72601729	NUT-MOUNTING RAIL TWIN	2

REV. D 20060721

99903439 Drawing



Valve Bank, Stabilizer (51715470)

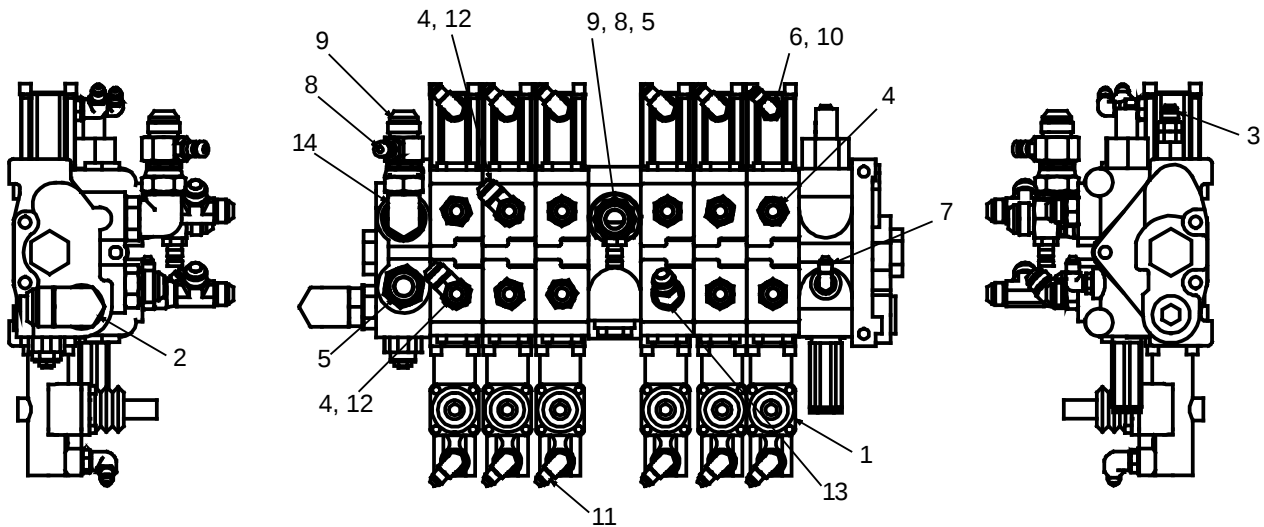


51715470 PARTS LIST

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

Valve Bank, Crane Controls (51718003) (Effective 5/07/14)

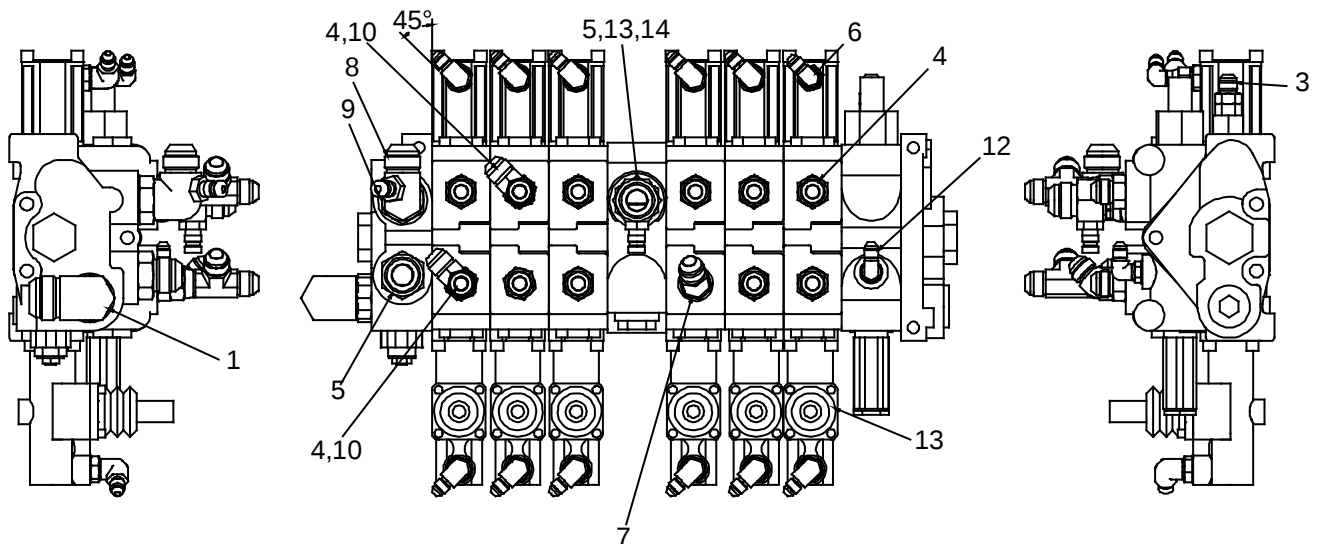
51718003 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70733330	VALVE BANK, 6 SECT	1
2.	72533319	ELBOW #12MSTR #16MJIC 90°	1
3.	72532355	ADPTR #6MSTR #6MJIC	1
4.	72532358	ADPTR #8MSTR #8MJIC	11
5.	72532366	ADPTR #12MSTR #12MJIC	2
6.	72532690	ELBOW #4MJIC #4FJIC SW	1
7.	72053758	ELBOW #4MSTR #4MJIC 90°	1
8.	72533228	NIPPLE, DISC 1/4 W/CAP	2
9.	72534348	ADPTR #12MJIC #12FJIC DIAG TEE	2
10.	72532353	ADPTR #6MSTR #4MJIC	1
11.	72532699	ELBOW #6MSTR #4MJIC 90°	11
12.	72532657	TEE-SWIVEL NUT RUN JIC 8	2
13.	72053777	ELBOW #8MSTR #8MJIC 45°	1
14.	72053767	ELBOW #12MSTR #12MJIC 90°	1
REV C 20140421			



Valve Bank, Crane Controls (51718003) (Through 5/06/14)

51718003 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72533319	ELBOW #12MSTR #16MJIC 90°	1
3.	72532355	ADPTR #6MSTR #6MJIC	1
4.	72532358	ADPTR #8MSTR #8MJIC	11
5.	72532366	ADPTR #12MSTR #12MJIC	2
6.	72532690	ELBOW #4MJIC #4FJIC SW	1
7.	72053777	ELBOW #8MSTR #8MJIC 45°	1
8.	60107995	ELBOW, PRESS GAUGE MOD RH	1
9.	72532987	NIPPLE, DISC 1/4	1
10.	72532657	TEE, #8 SWIVEL NUT RUN 3/4	2
12.	72053758	ELBOW #4MSTR #4MJIC 90°	1
13.	72534348	ADPTR #12MJIC #12FJIC DIAG TEE	1
14.	72533228	NIPPLE, DISC 1/4 W/CAP	1
15.	70733330	VALVE BANK, 6 SECT	1
25.	72532353	ADPTR #6MSTR #4MJIC	1
26.	72532699	ELBOW #6MSTR #4MJIC 90°	11

REV. A 20030923



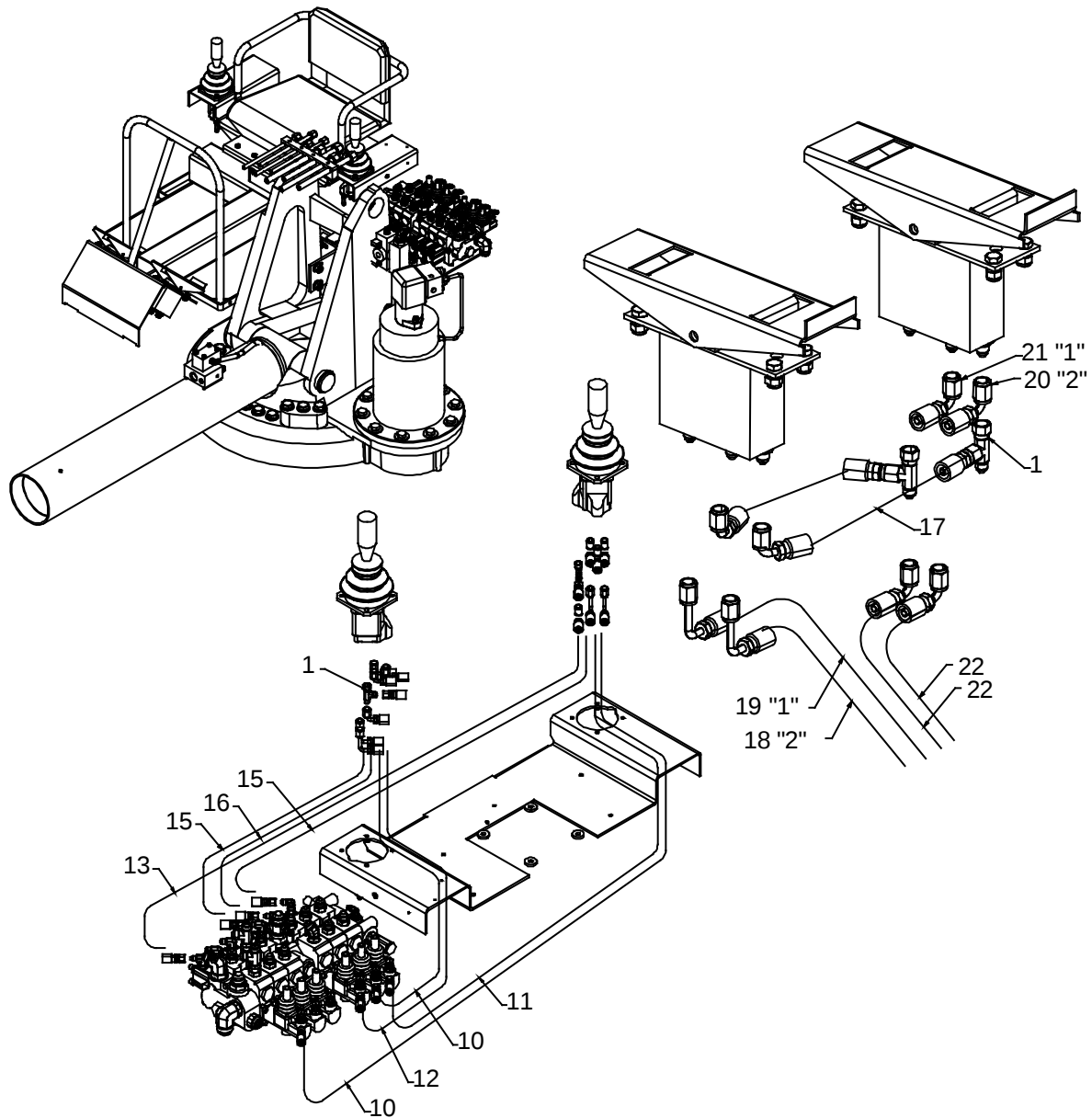
NOTE: APPLY "X-PANDO" PIPE JOINT COMPOUND TO ITEM #9.

Hydraulics, Standard Controls (99903515)

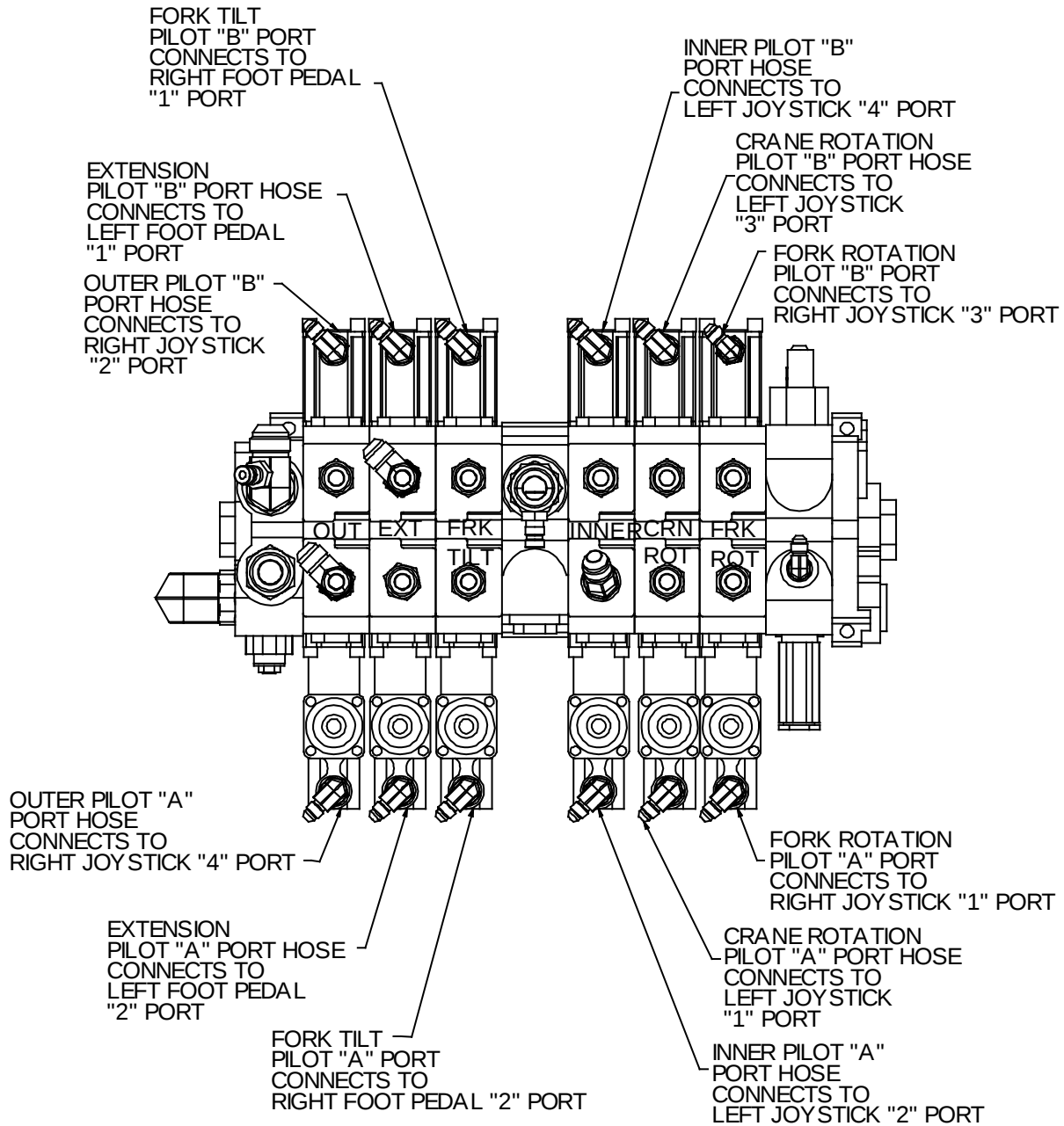
99903515 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	72532981	TEE-JIC #4 SWIVEL NUT RUN	4
10.	51396349	HOSE-FJ 1/4X70 OAL (4-4)	2REF
11.	51396357	HOSE-FJ 1/4X64 OAL (4-4)	1REF
12.	51395709	HOSE-FJ 1/4X66 OAL (4-4)	1REF
13.	51396350	HOSE-FZ 1/4X65 OAL (4-4)	1REF
14.	51396322	HOSE-AAF 3/8X37 OAL (8-8)	4REF
15.	51396355	HOSE-FZ 1/4X52 OAL (4-4)	2REF
16.	51396356	HOSE-FZ 1/4X54.5 OAL (4-4)	1REF
17.	51396363	HOSE-FJ 1/4X12.5 OAL (4-4)	2REF
18.	51396351	HOSE-FZ 1/4X86 OAL (4-4)	1REF
19.	51396352	HOSE-FZ 1/4X84 OAL (4-4)	1REF
20.	51396353	HOSE-FJ 1/4X87.5 OAL (4-4)	1REF
21.	51396354	HOSE-FJ 1/4X80.5 OAL (4-4)	1REF
22.	51396360	HOSE-FJ 1/4X36.5 OAL (4-4)	2REF
23.	51396323	HOSE-AAF 1/2X37 OAL (12-8)	4REF

REV. C 20031231

99903515 Drawings

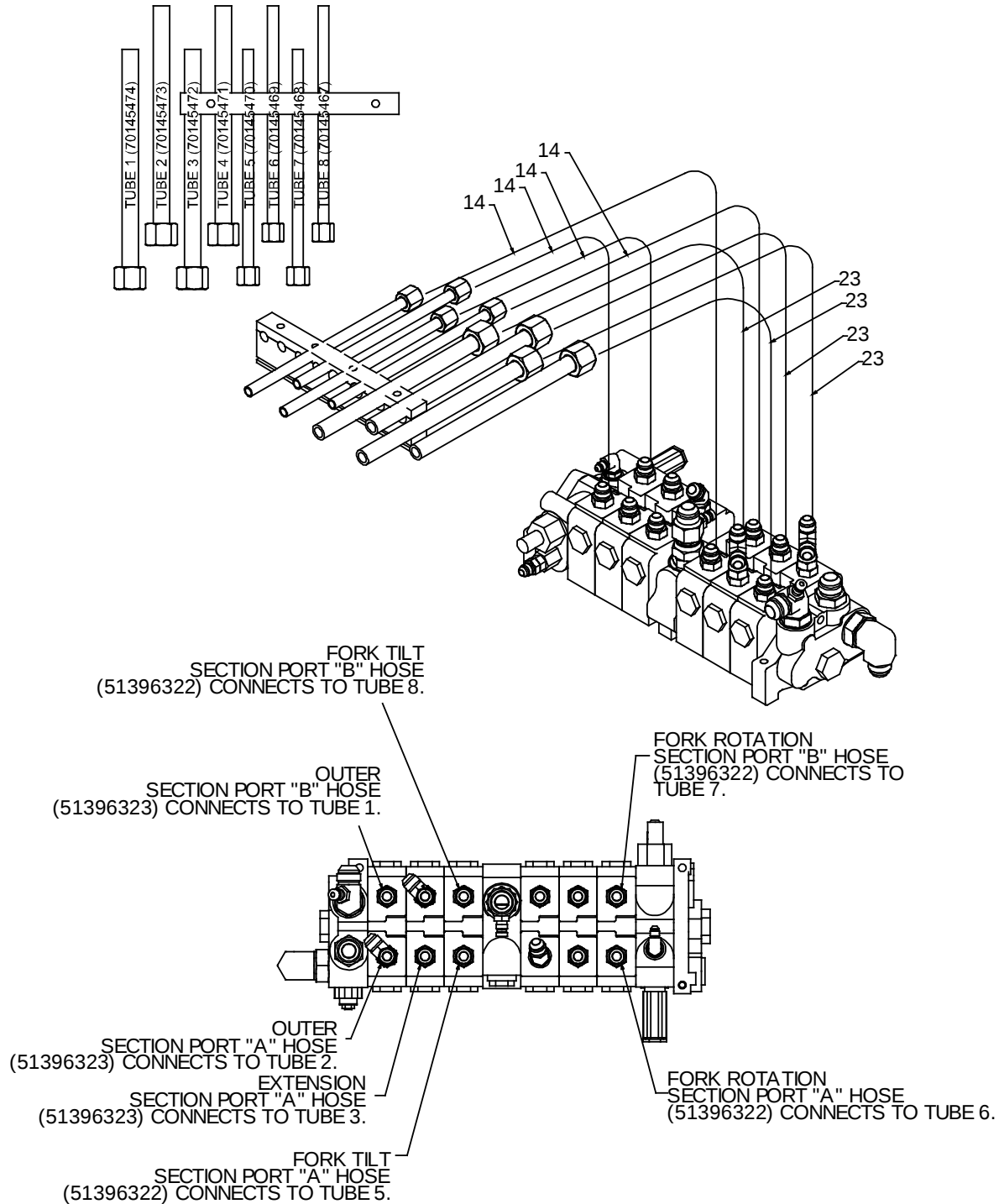


Mast Assembly, Standard Controls (99903515 (see "Hydraulics, Standard Controls (99903515)" on page 87))

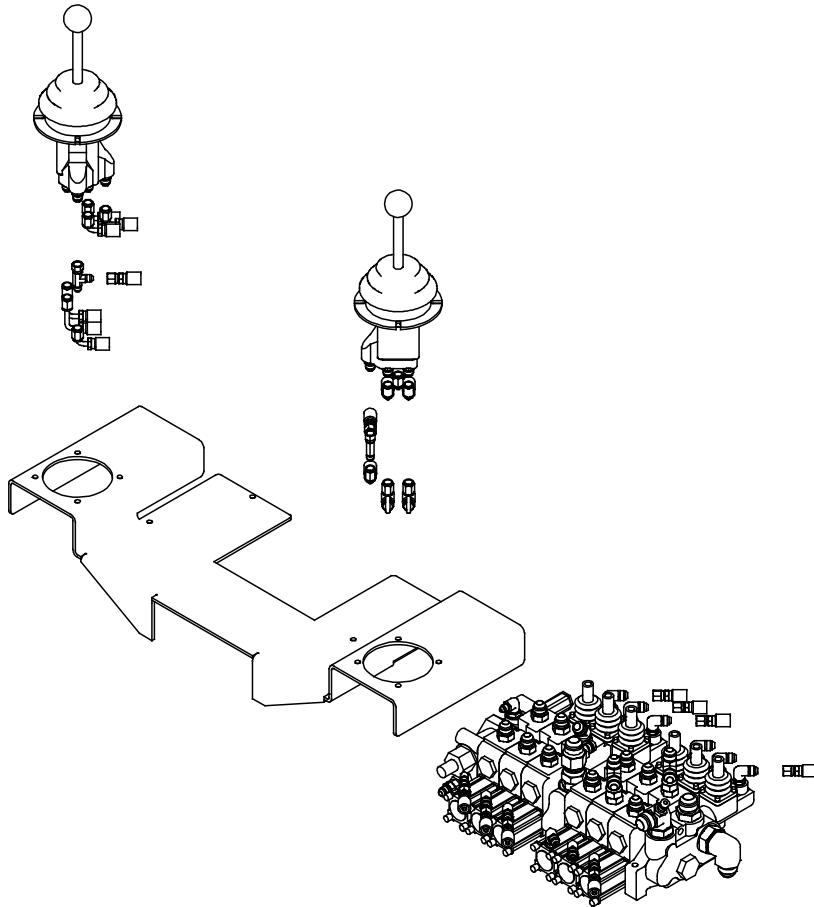


Mast Assembly, Standard Controls (99903515 (see "Hydraulics, Standard Controls (99903515)" on page 87))

TUBES ARE LOCATED ON THE TOP OF THE
INNER BOOM ASM (PART # 99903427)



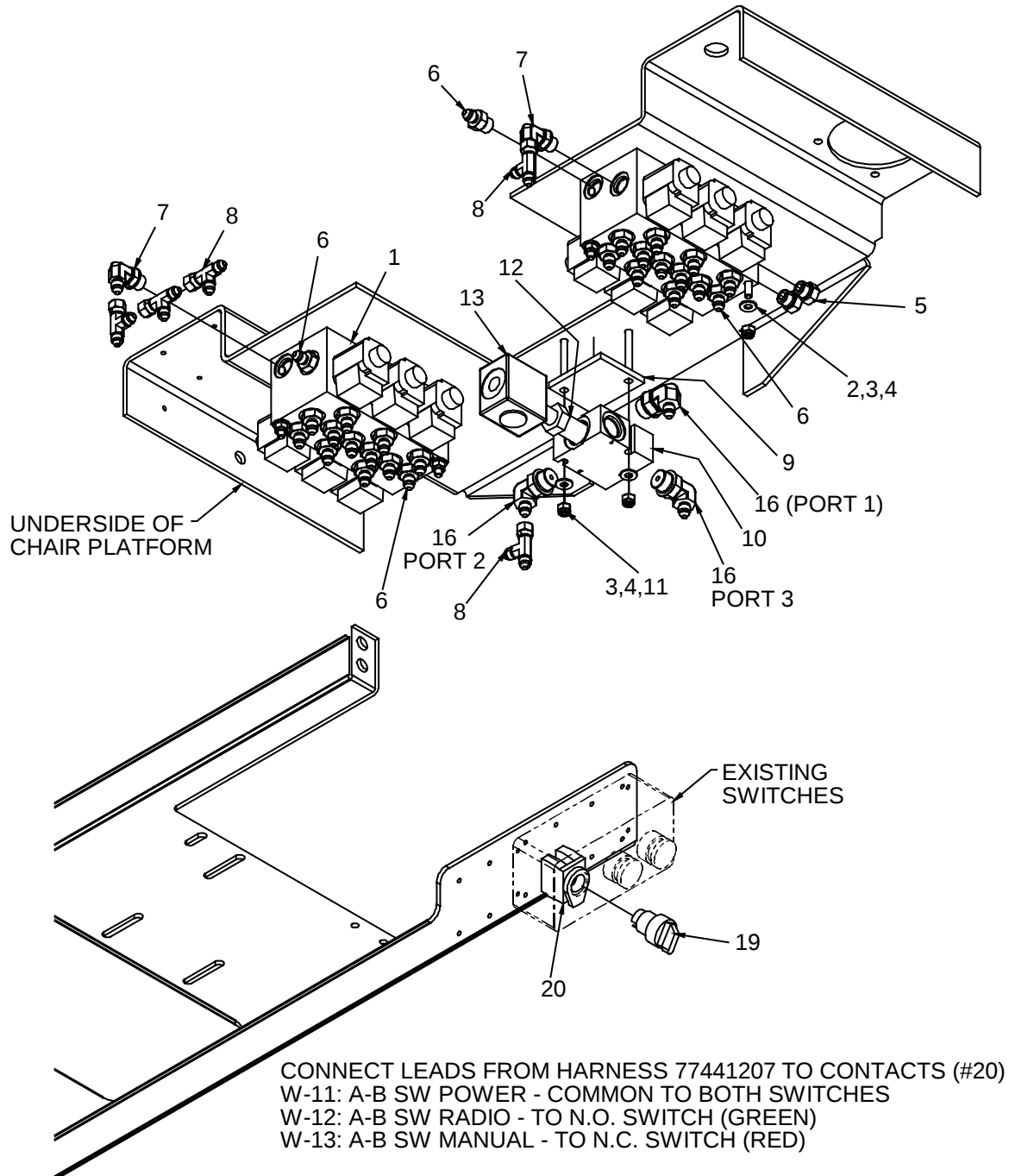
Mast Assembly, Standard Controls (99903515 (see "Hydraulics, Standard Controls (99903515)" on page 87))



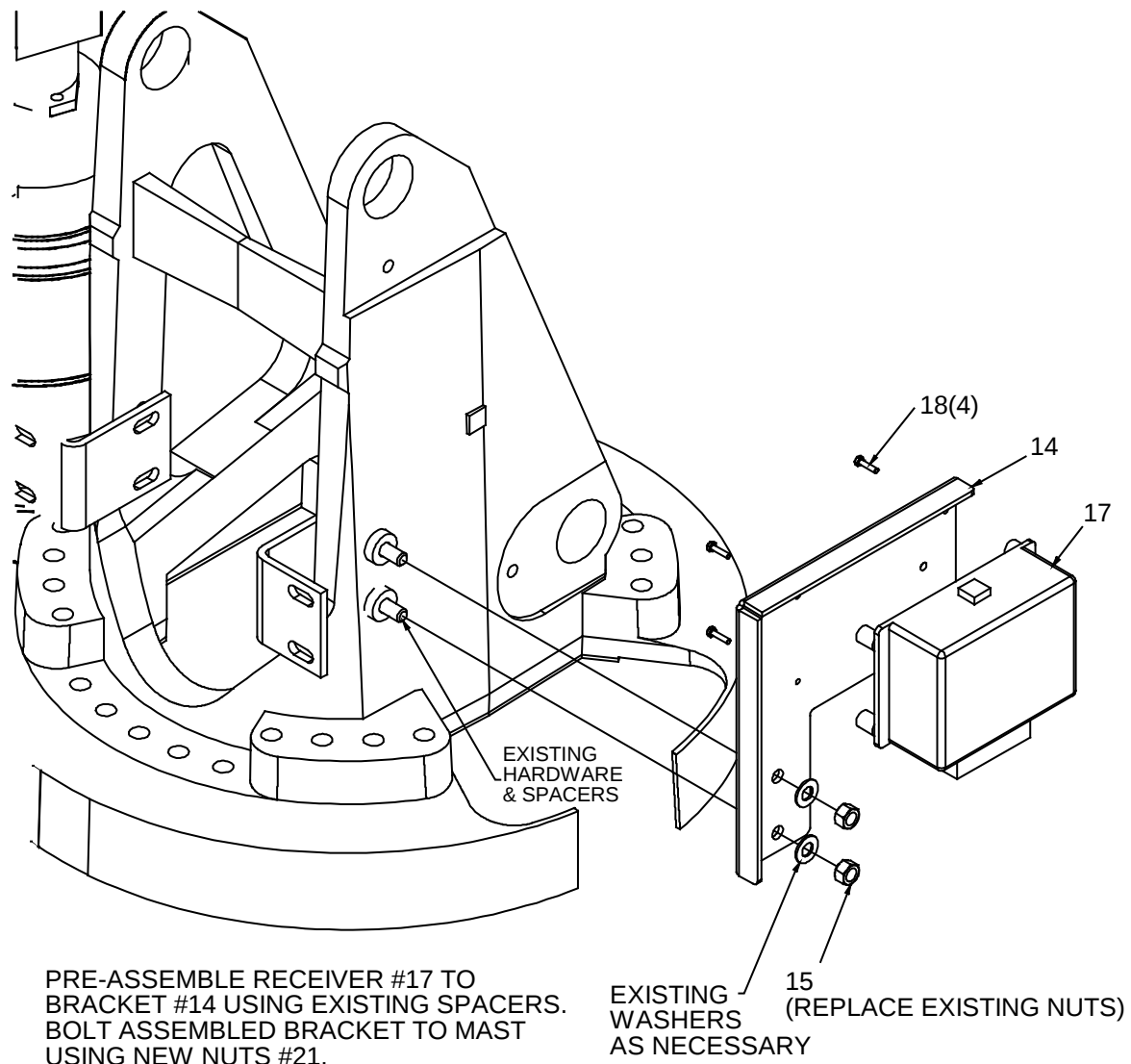
Hydraulics, Dual Controls (99904076) (Eff. 8/06)

99904076 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73733892	MANIFOLD-DUAL CONTROLS 16000 S3	2
2.	72060015	CAP SCR .25-20X 3.75 HH GR5 Z	4
3.	72063001	WASHER .25 FLAT	6
4.	72062104	NUT .25-20 HEX NYLOCK	6
5.	72532140	PLUG-STR HEX HD STL .56	4
6.	72532353	ADPTR-M STR/M JIC 6 4	26
7.	72532699	ELBOW-M STR/90/M JIC 6 4	2
8.	72532981	TEE-SWVL NUT RUN JIC 4	9
9.	60125558	SPACER-VALVE DUAL CONTROLS 16000	1
10.	73029606	BLOCK-DIVERter VALVE 16000 S3	1
11.	72060009	CAP SCR .25-20X 2.25 HH GR5 Z	2
12.	73540131	VALVE-DIVERter 16000 S3	1
13.	77733900	COIL-DIVERter VALVE	1
14.	60125997	BRACKET-RADIO RECEIVER 16000 SIII	1
15.	72062172	NUT .62-11 HEX CENTER LOCKING	2
16.	72534391	ELBOW-M STR/90/M JIC 8 4	3
17.	77733893	RADIO-RECIEVER DUAL CONTROLS 16000S3	1
18.	72601500	CAP SCR M 6-1.00X 25 HHZ	4
19.	77041720	SWITCH-A/B SELECTOR SWITCH	1
20.	77041724	SWITCH-A/B SELECTOR CONTACTS	1
NEW 20060823			

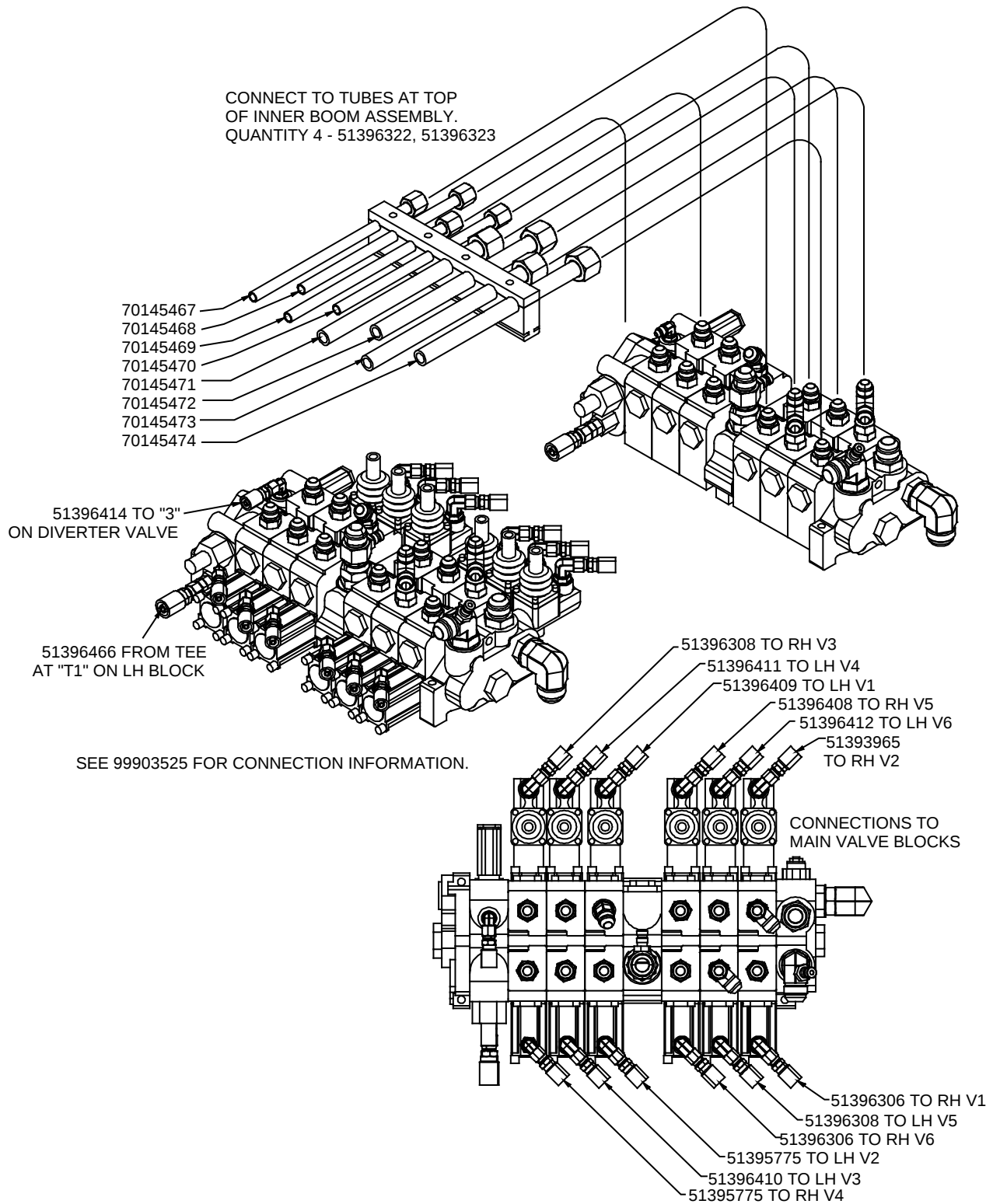
99904076 Drawings



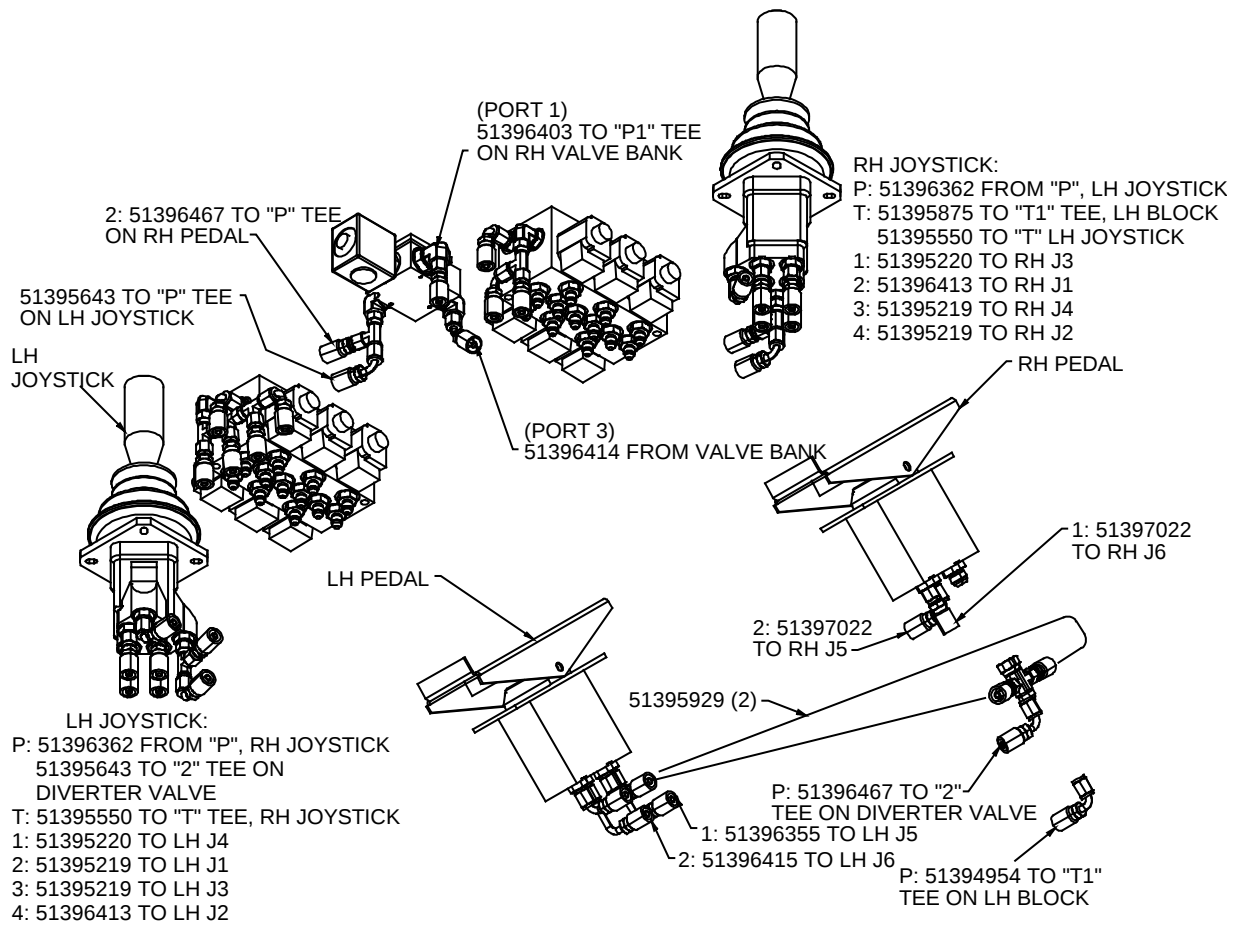
99904076-2 Drawing



99904076-3 Drawing



99904076-4 Drawing



Hydraulics, Dual Controls (99903498) (Through 7/06)

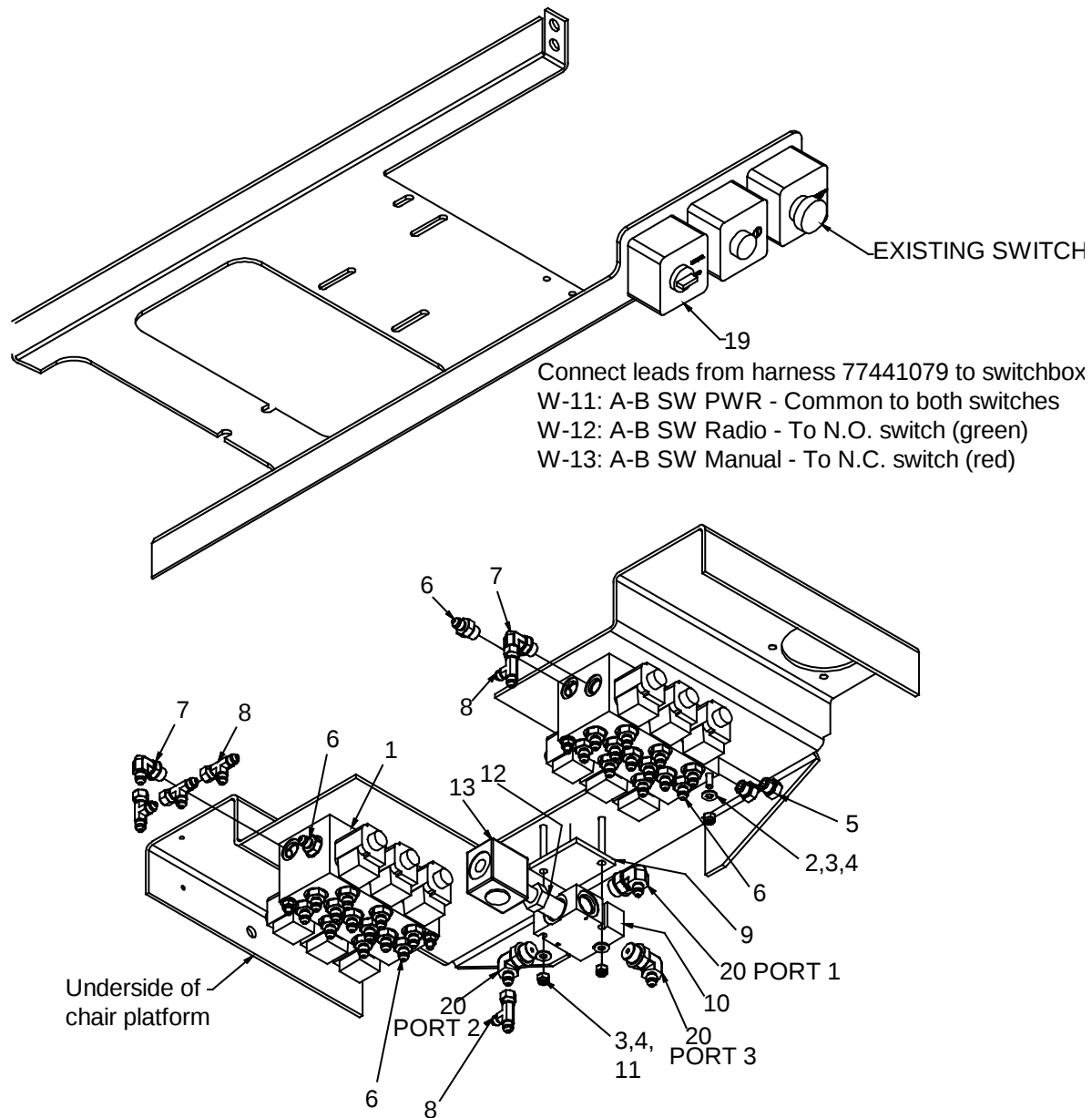
99903498 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	73733892	MANIFOLD, DUAL CONTROLS	2
2.	72060015	CAP SCR 1/4-20X3-3/4 HHGR5Z	4
3.	72063001	WASHER 1/4 FLAT	6
4.	72062104	NUT 1/4-20 HEX NYLOC	6
5.	72532140	PLUG 9/16 STR HH STL	4
6.	72532353	ADPTR #6MSTR #4MJIC	26
7.	72532699	ELBOW #6MSTR #4MJIC 90°	2
8.	72532981	TEE, JIC #4 SWIVEL NUT RUN	9
9.	60125558	SPACER	1
10.	73029606	BLOCK, DIVERter VALVE	1
11.	72060009	CAP SCR 1/4-20X2.25 HHGR5Z	2
12.	73540131	VALVE DIVERter	1
13.	77733900	COIL, DIVERter VALVE	1
14.	60125997	MOUNTING BRACKET	1
17.	77733893	RADIO RECEIVER, DUAL CONTROLS	1
18.	72601500	CAP SCREW, METRIC 6-1X25 HHZ	4
19.	77041671	SWITCH, A/B ENCLOSURE	1
20.	72534391	ELBOW #8MSTR #4MJIC 90°	3
21.	72062172	NUT 5/8-11 HEX CENTER LOCK (WAS 72062091)	2
	77733894	TRANSMITTER, RADIO, DUAL CONTROLS	REF

REV. E 20050509

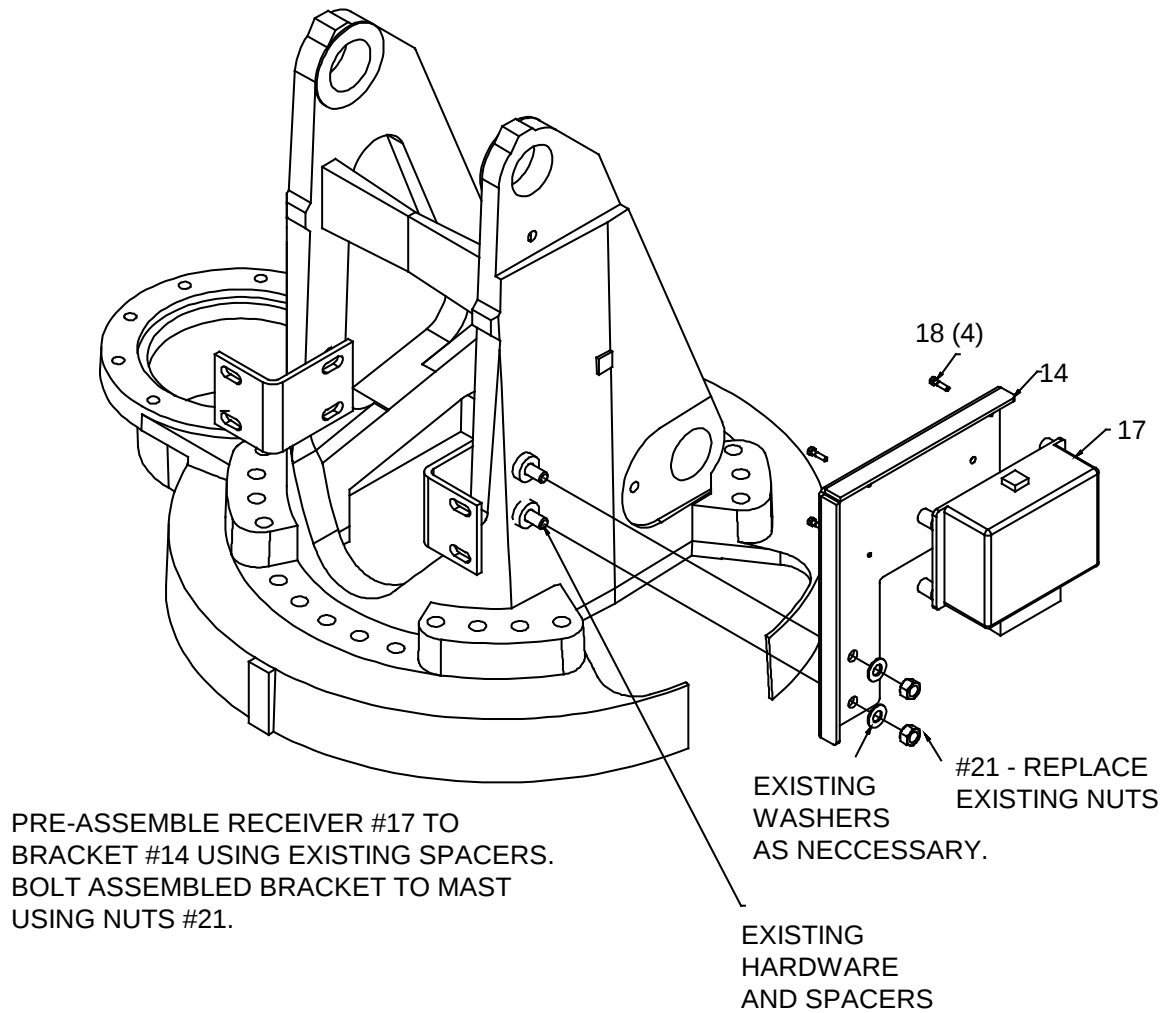
REV. C REMOVED #15, 72063007 AND #16, 72060157

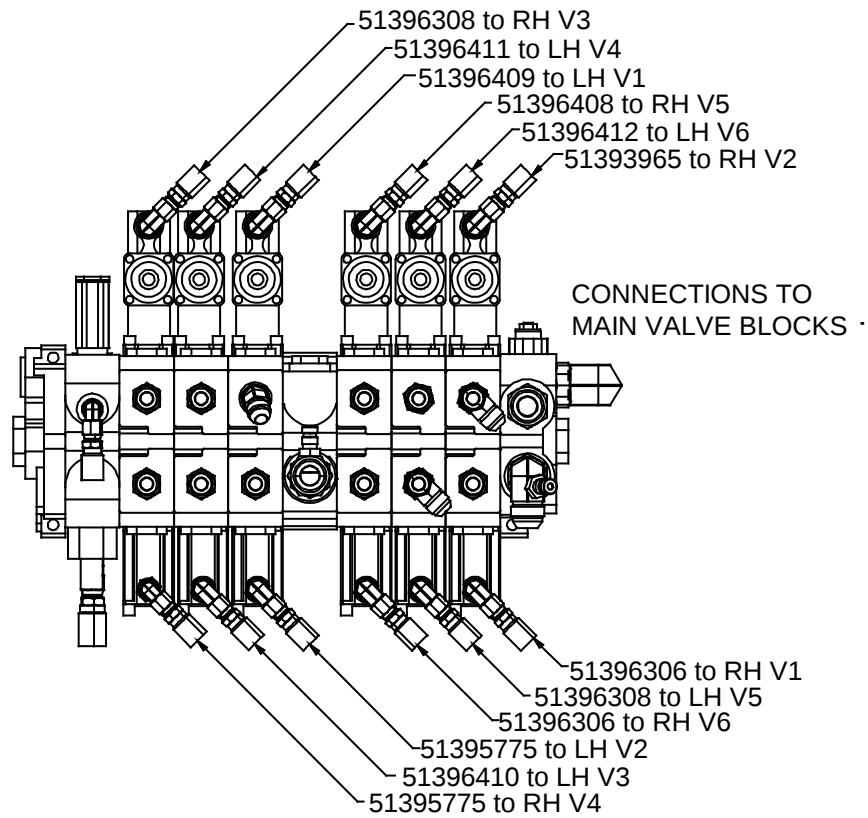
99903498 Drawings

To 99903498 Parts List (see "Hydraulics, Dual Controls (99903498) (Through 7/06)" on page 97)

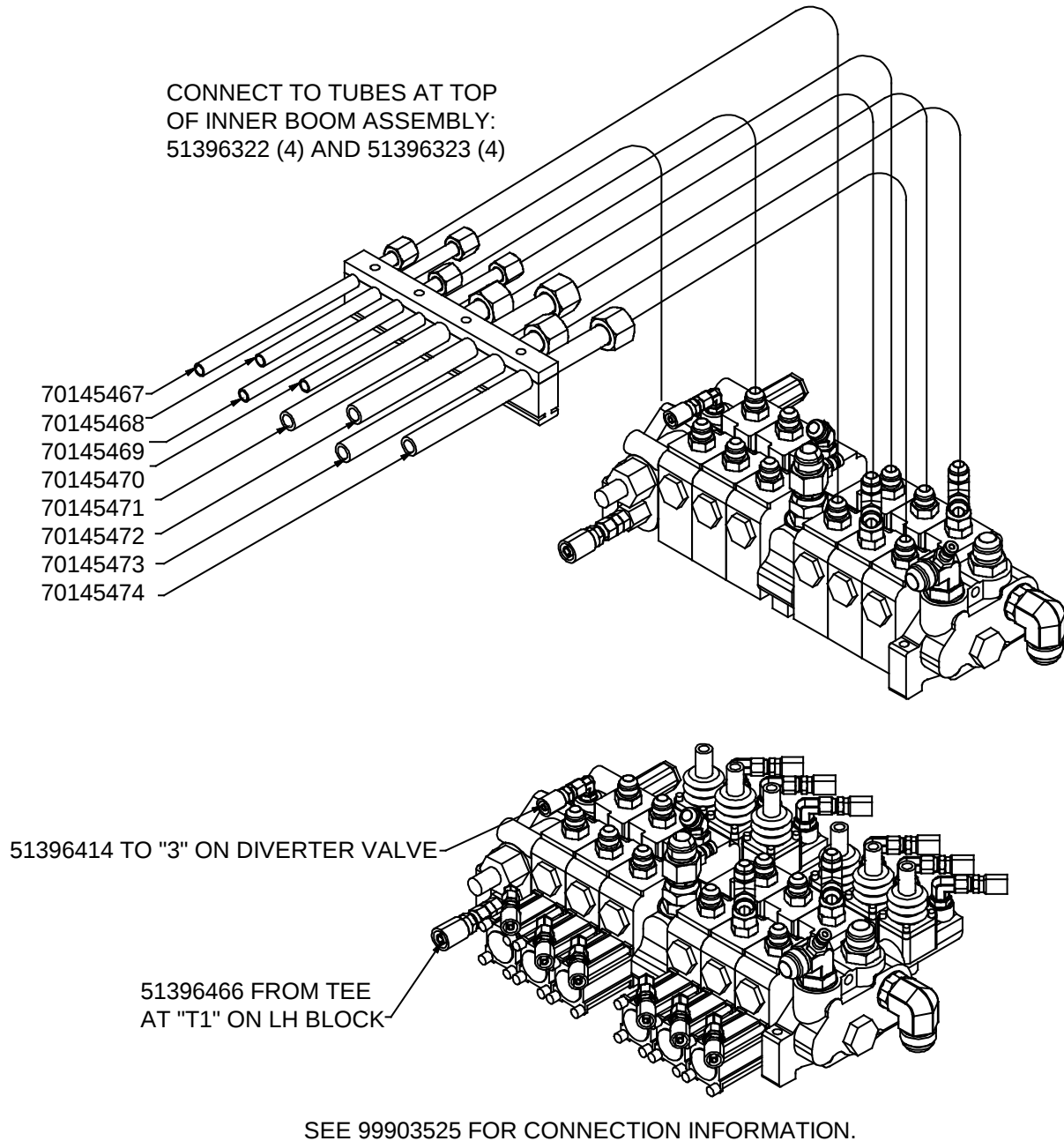


To 99903498 Parts List (see "Hydraulics, Dual Controls (99903498) (Through 7/06)" on page 97)

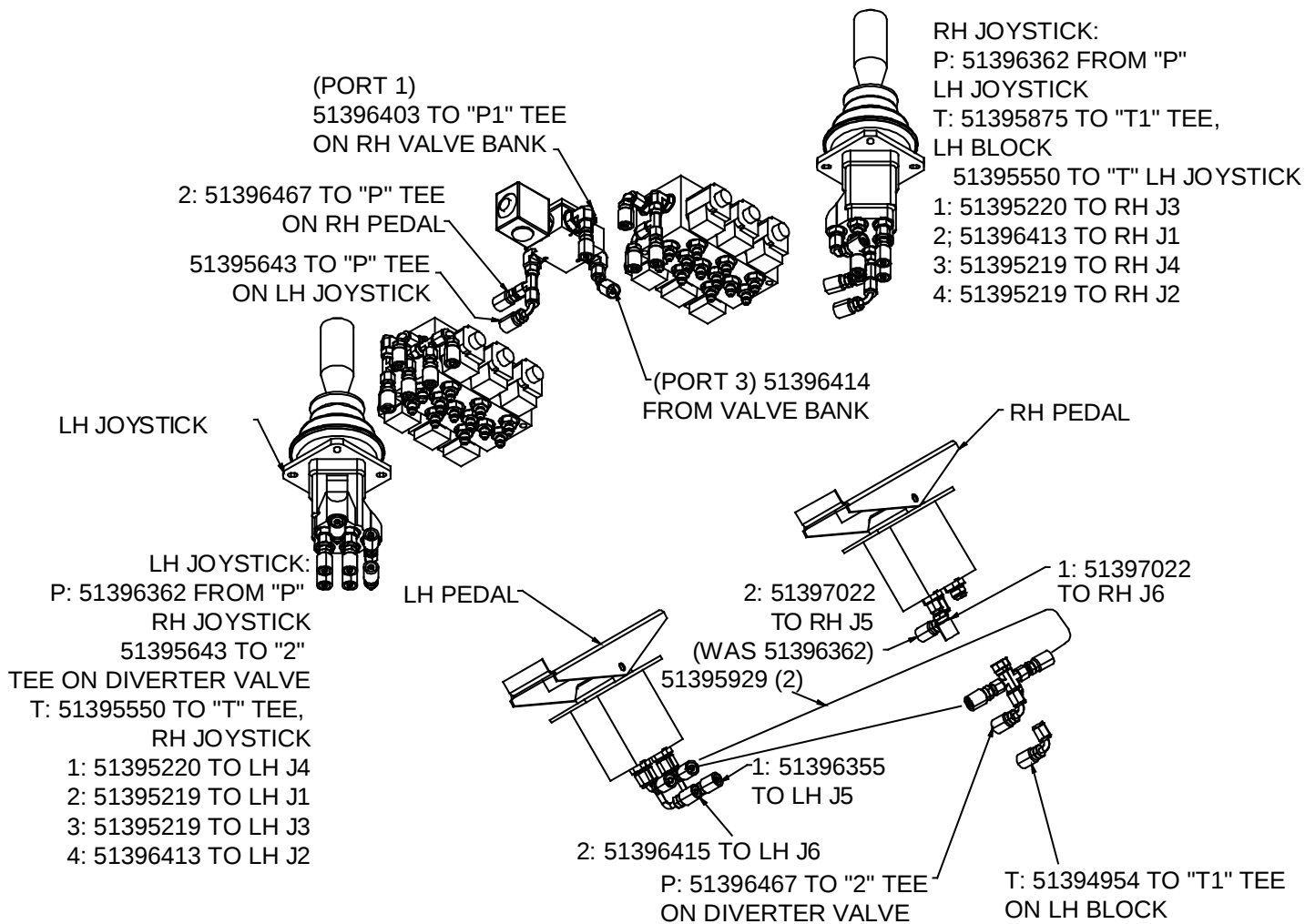




To 99903498 Parts List (see "Hydraulics, Dual Controls (99903498) (Through 7/06)" on page 97)



To 99903498 Parts List (see "Hydraulics, Dual Controls (99903498) (Through 7/06)" on page 97)



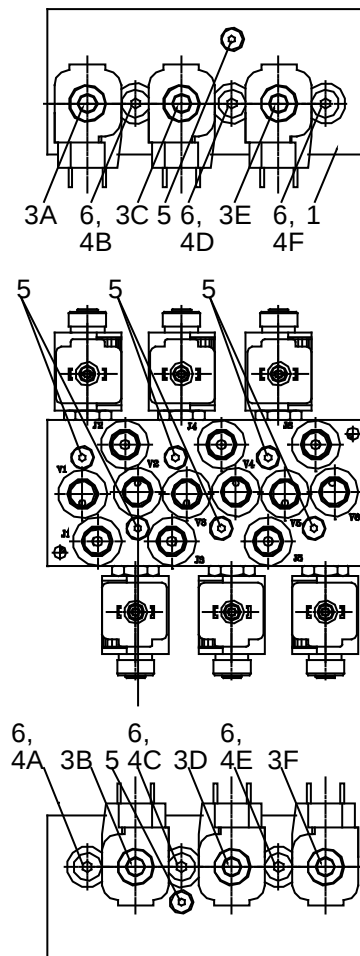
SEE 99903525 FOR CONNECTION INFORMATION.

Manifold Valve Block (73733892)

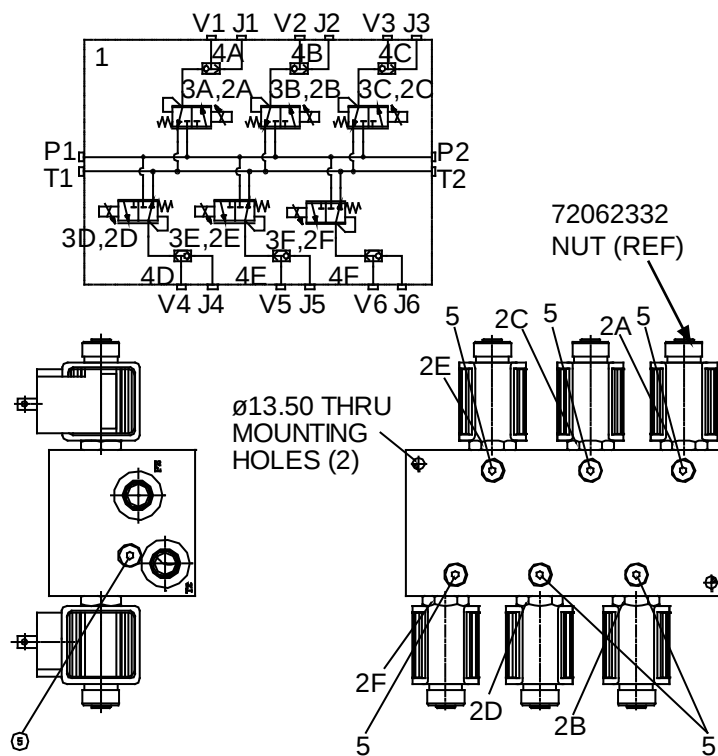
73733892 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.		VALVEBLOCK	1
2.	73540144	VALVE CARTRIDGE	6
3.	77041679	COIL	6
4.	73540145	SHUTTLE VALVE	6
5.		#2 SAE HOLLOW HEX PLUG	16
6.		#4SAE HOLLOW HEX PLUG	6

REV. C 20040310

SHUTTLE VALVE
UNDER ALL #4 PLUGS



HYDRAULIC SCHEMATIC

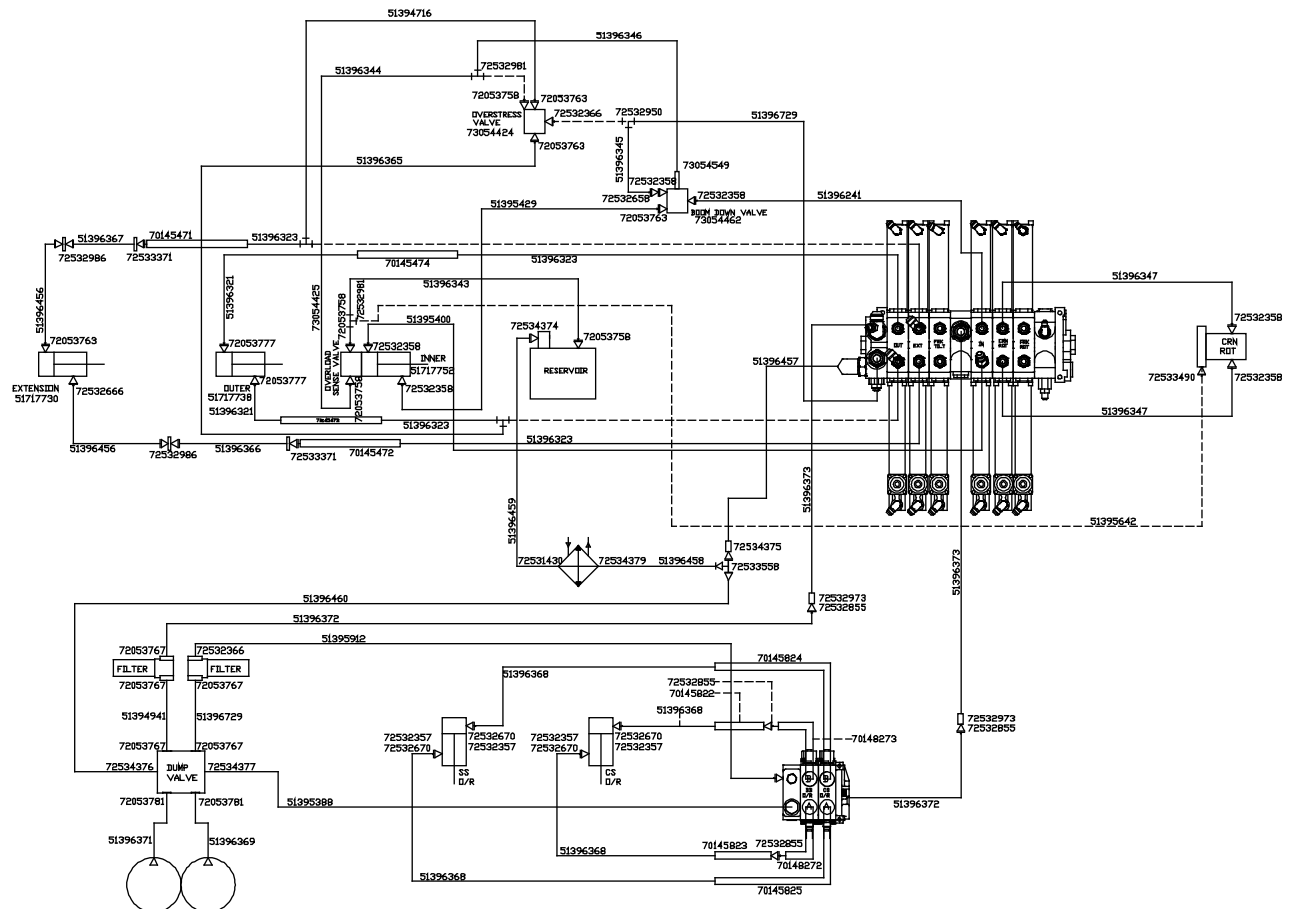


PORTS:
ALL PORTS ARE SAE #6

Hydraulic Layout (99903525)

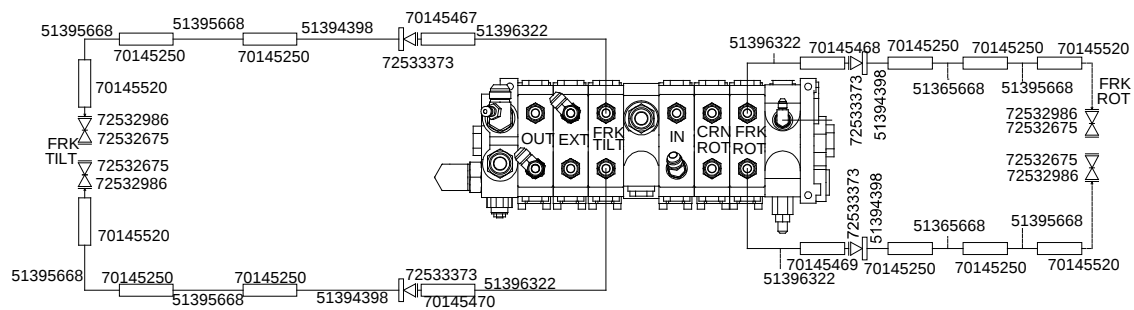
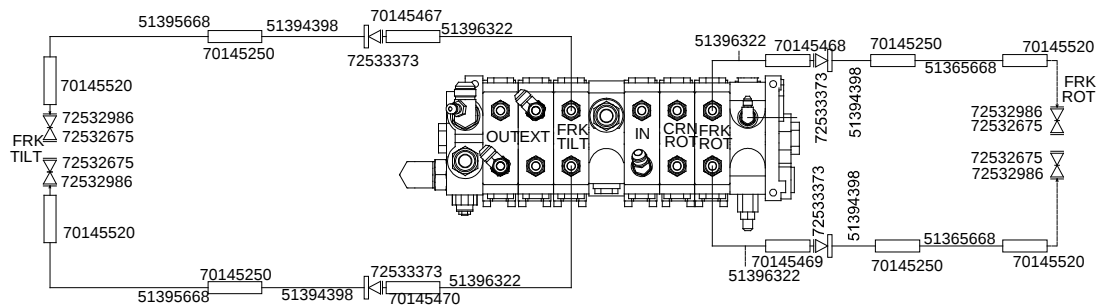
Layout Drawing (99903525-1)

REV. J 20050826



Fork Connections (99903525-2)

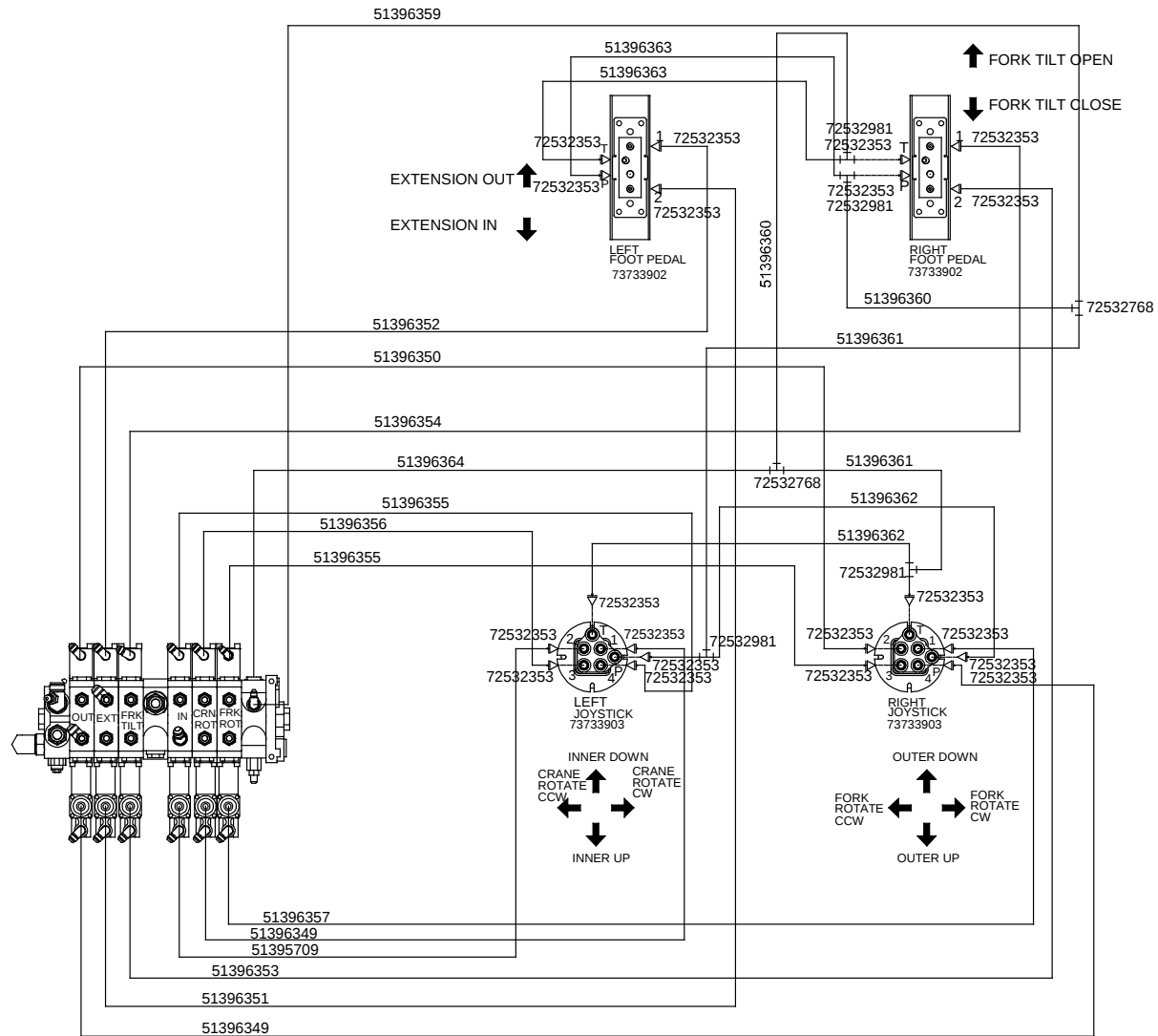
35' BOOM



42' BOOM

Hydraulic Layout - Manual Controls (99903525-3)

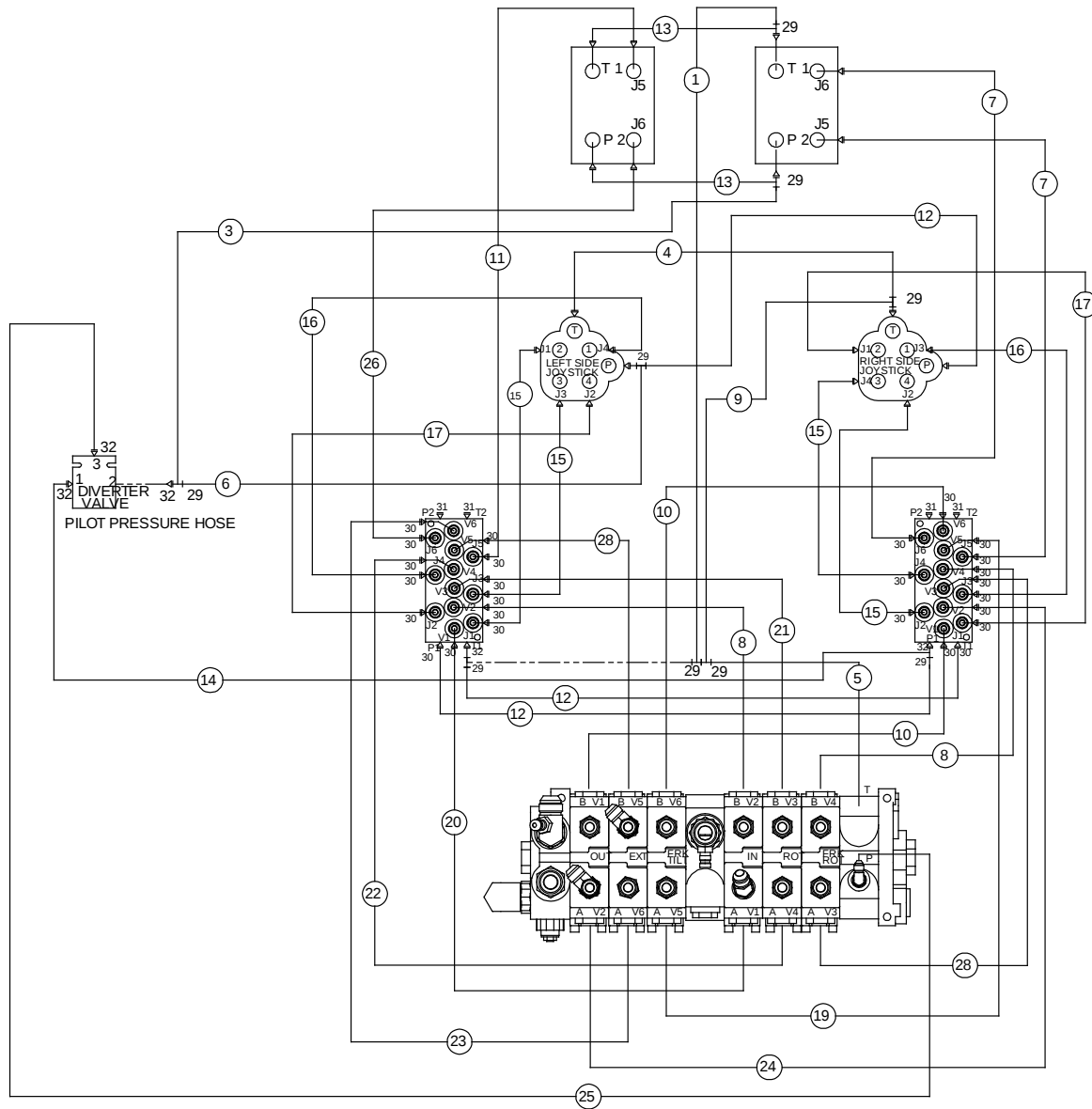
REV. D 20041002



Hydraulic Layout, Dual Controls (99903525-4)

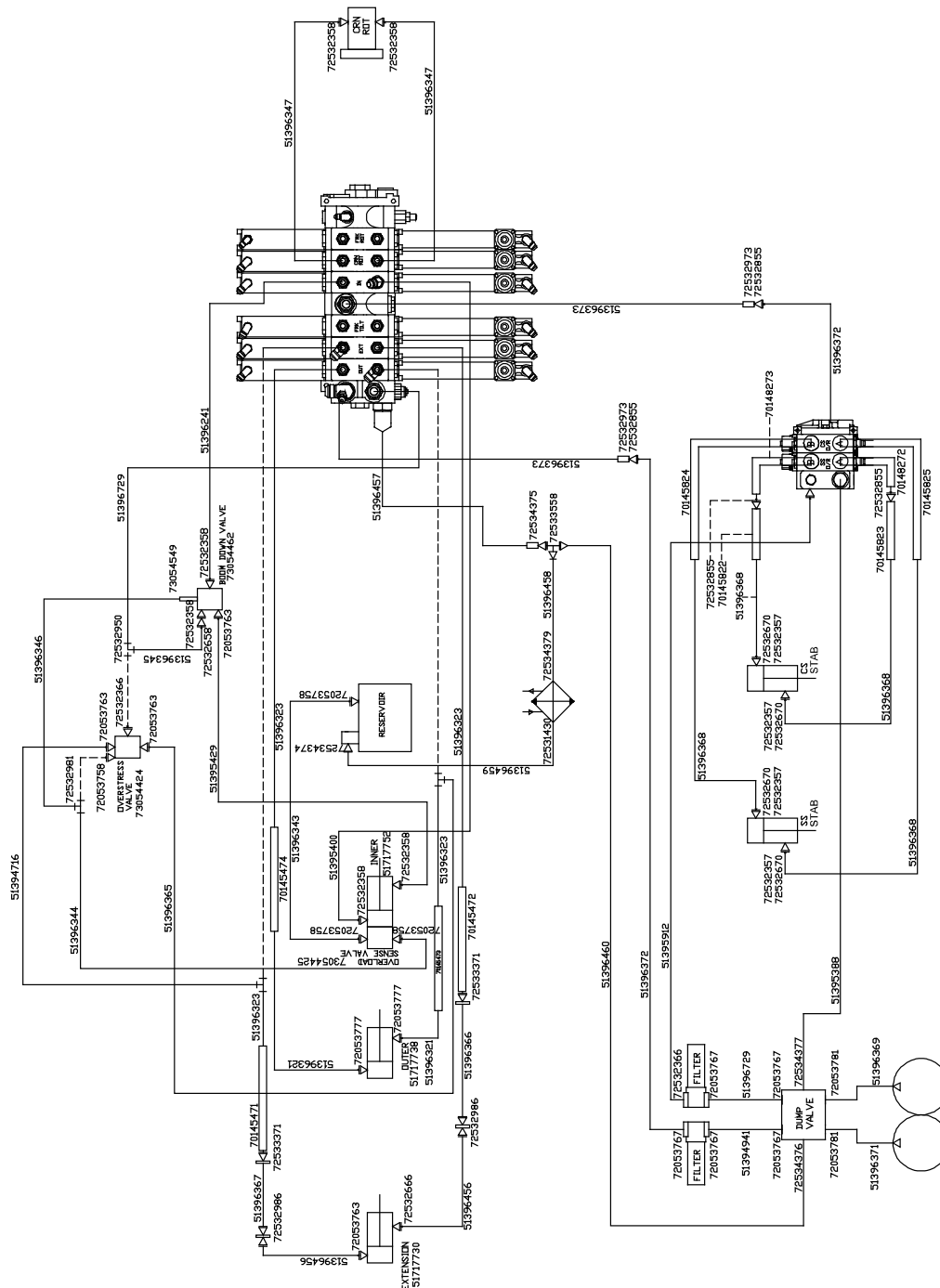
99903525 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51394954	HOSE-FJ .25X 57.00 OAL(4- 4)	1
2.	51718364	HOSE KIT (INCL. ALL ITEMS)	1
3.	51396467	HOSE-FJ .25X 48.00 OAL(4- 4)	1
4.	51395550	HOSE-FJ .25X 27.00 OAL(4- 4)	1
5.	51396466	HOSE-FJ .25X 54.00 OAL(6 4)	1
6.	51395643	HOSE-FJ .25X 12.00 OAL(4- 4)	1
7.	51397022	HOSE-FJ .25X 50.00 OAL(4- 4) (WAS FI 51")	2
8.	51395775	HOSE-FF .25X 50.00 OAL(4- 4)	2
9.	51395875	HOSE-FJ .25X 28.00 OAL (4- 4)	1
10.	51396306	HOSE-FF .25X 64.50 OAL(4- 4)	2
11.	51396355	HOSE-FZ .25X 52.00 OAL(4- 4)	1
12.	51396362	HOSE-FJ .25X 25.50 OAL(4- 4)	3 (WAS 4)
13.	51395929	HOSE-FJ .25X 11.75 OAL(4- 4) (WAS 12.5)	2
14.	51396403	HOSE-FJ .25X 19.00 OAL(4- 4)	1
15.	51395219	HOSE-FF .25X 18.00 OAL(4- 4)	4
16.	51395220	HOSE-FF .25X 20.00 OAL(4- 4)	2
17.	51396413	HOSE-FF .25X 22.00 OAL(4- 4)	2
19.	51396408	HOSE-FF .25X 73.00 OAL(4- 4)	1
20.	51396409	HOSE-FF .25X 58.50 OAL(4- 4)	1
21.	51396410	HOSE-FF .25X 47.00 OAL(4- 4)	1
22.	51396411	HOSE-FF .25X 59.00 OAL(4- 4)	1
23.	51396412	HOSE-FF .25X 68.00 OAL(4- 4)	1
24.	51393965	HOSE-FF .25X 67.00 OAL(4- 4)	1
25.	51396414	HOSE-FI .25X 43.00 OAL(4- 4)	1
26.	51396415	HOSE-FZ .25X 46.00 OAL(4- 4)	1
28.	51396308	HOSE-FF .25X 61.50 OAL(4- 4)	2
29.	72532981	TEE-SWVL NUT RUN JIC 4	9
30.	72532353	ADPTR-M STR/M JIC 6 4	26
31.	72532140	PLUG-STR HEX HD STL .56	4
32.	72532699	ELBOW-M STR/90/M JIC 6 4	5

REV. K 20060428

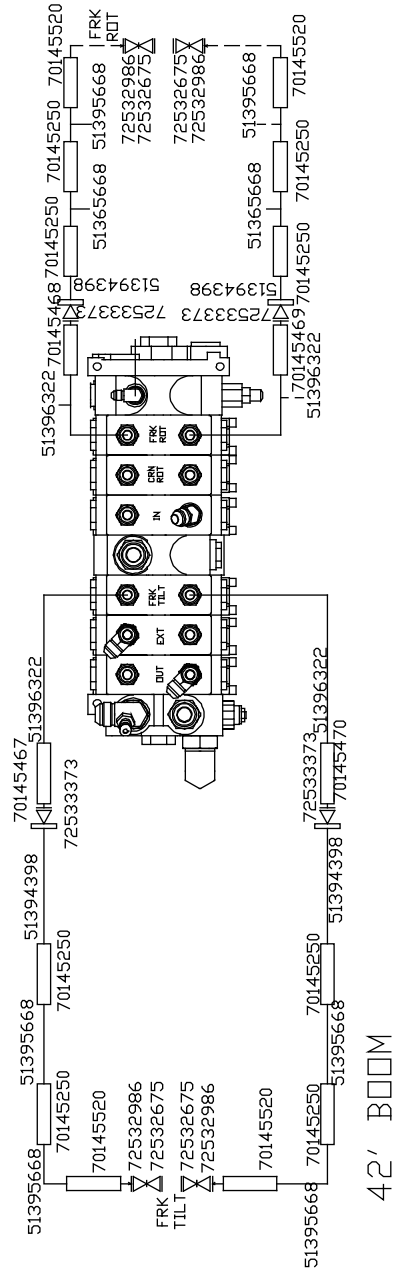
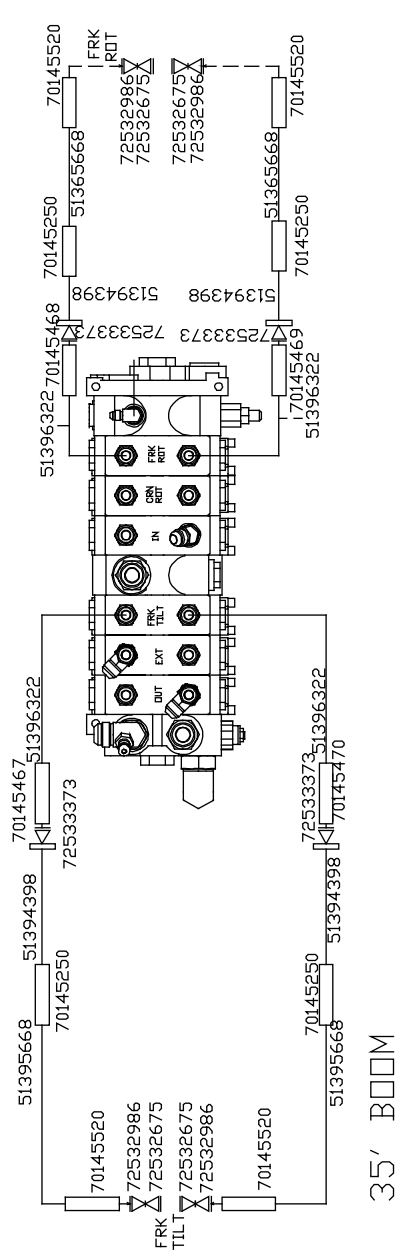


Hydraulic Layout, Radio Remote (99904100)

Layout Drawing (99904100-1)

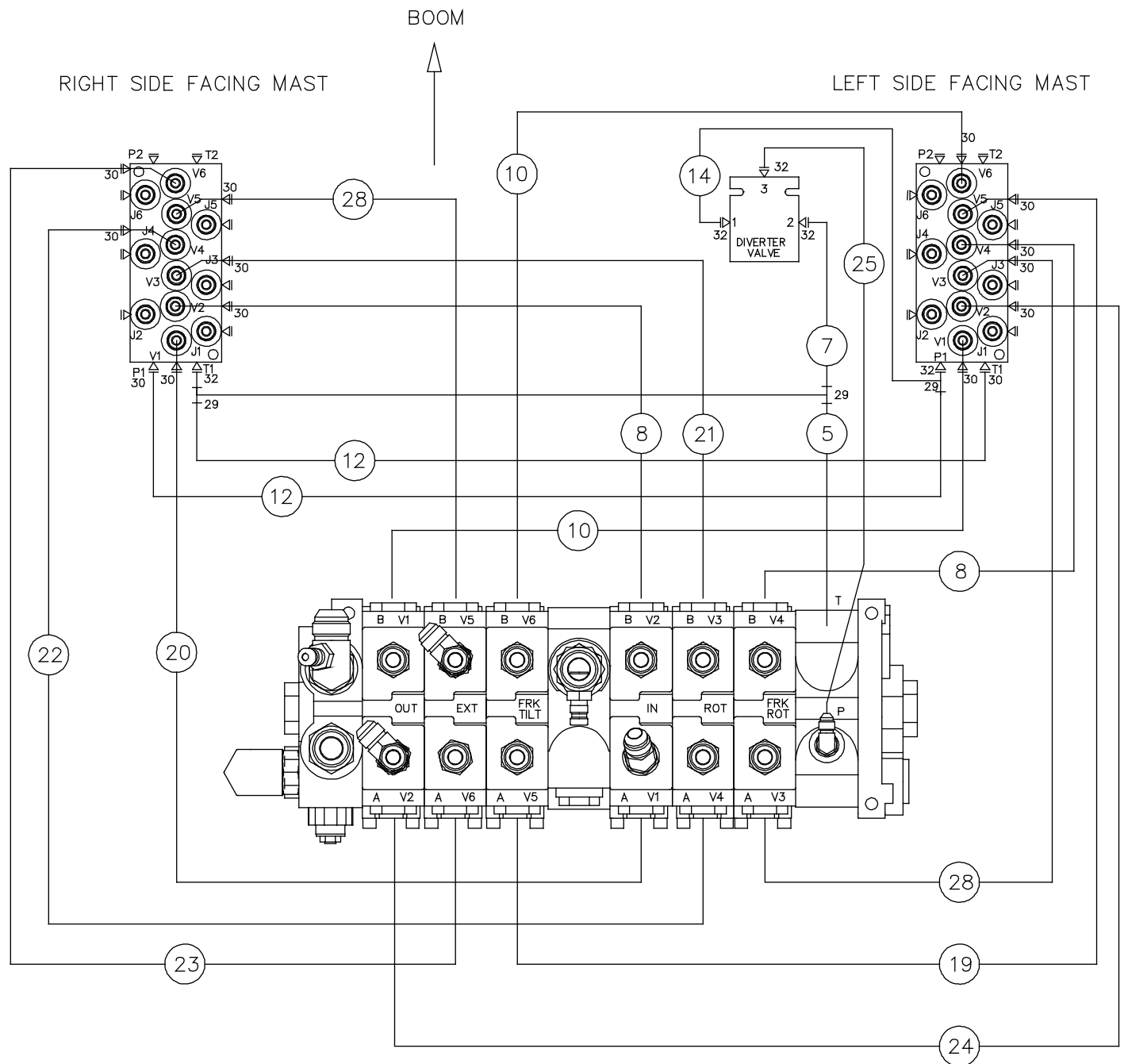


Fork Connections (99904100-2)



Hydraulic Layout (99904100-3)

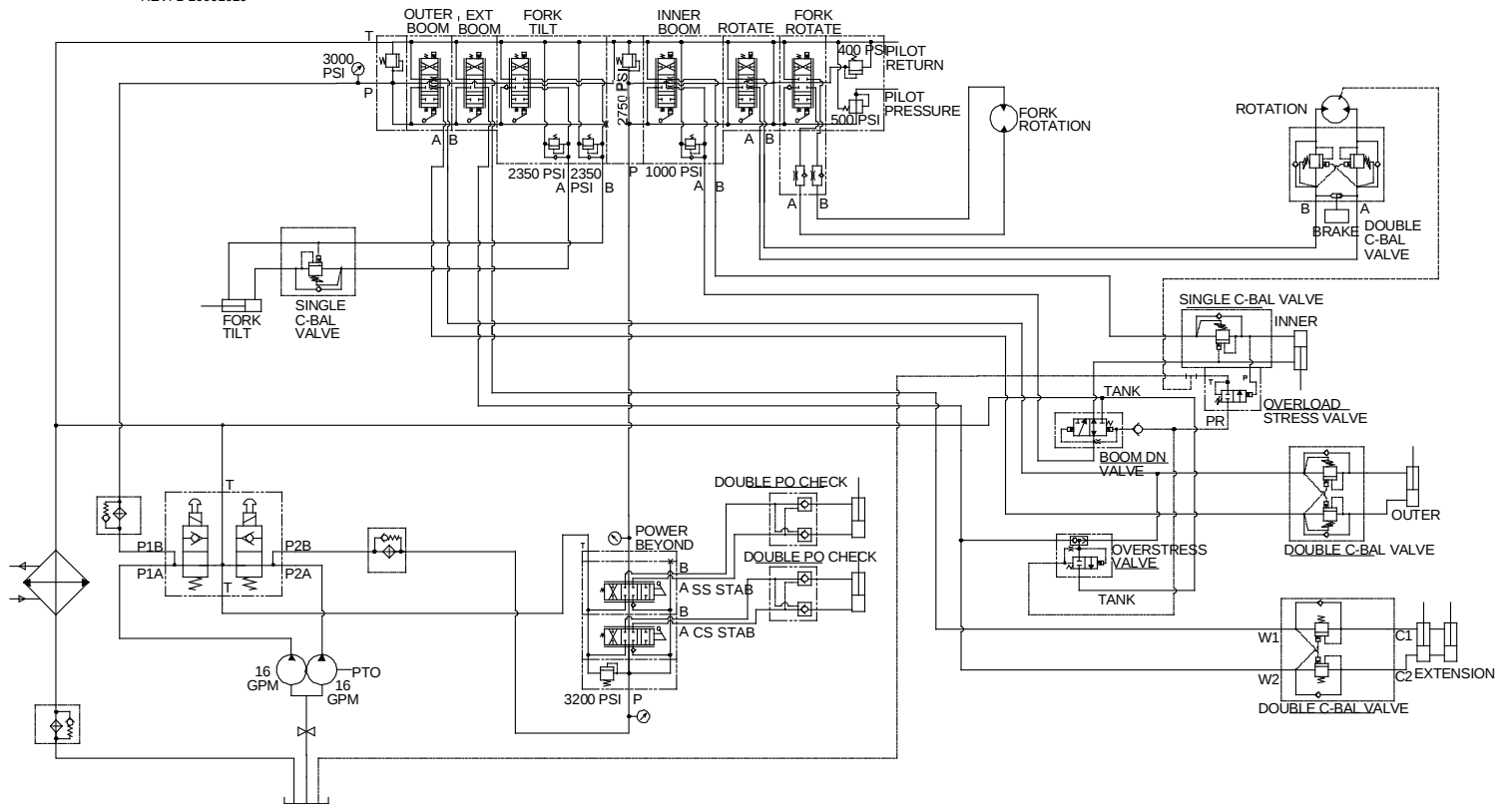
99904100 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51394954	HOSE-FJ .25X 57.00 OAL(4- 4)	1
2.	51718364	HOSE KIT (INCL. ALL ITEMS)	1
3.	51396467	HOSE-FJ .25X 48.00 OAL(4- 4)	1
4.	51395550	HOSE-FJ .25X 27.00 OAL(4- 4)	1
5.	51396466	HOSE-FJ .25X 54.00 OAL(6 4)	2
6.	51395643	HOSE-FJ .25X 12.00 OAL(4- 4)	1
7.	51396416	HOSE-FI .25X 51.00 OAL(4- 4)	1
8.	51395775	HOSE-FF .25X 50.00 OAL(4- 4)	2
9.	51395875	HOSE-FJ .25X 28.00 OAL (4- 4)	1
10.	51396306	HOSE-FF .25X 64.50 OAL(4- 4)	2
11.	51396355	HOSE-FZ .25X 52.00 OAL(4- 4)	1
12.	51396362	HOSE-FJ .25X 25.50 OAL(4- 4)	3
13.	51396363	HOSE-FJ .25X 12.5 OAL(4- 4)	2
14.	51396403	HOSE-FJ .25X 19.00 OAL(4- 4)	1
15.	51395219	HOSE-FF .25X 18.00 OAL(4- 4)	4
16.	51395220	HOSE-FF .25X 20.00 OAL(4- 4)	2
17.	51396413	HOSE-FF .25X 22.00 OAL(4- 4)	2
19.	51396408	HOSE-FF .25X 73.00 OAL(4- 4)	1
20.	51396409	HOSE-FF .25X 58.50 OAL(4- 4)	1
21.	51396410	HOSE-FF .25X 47.00 OAL(4- 4)	1
22.	51396411	HOSE-FF .25X 59.00 OAL(4- 4)	1
23.	51396412	HOSE-FF .25X 68.00 OAL(4- 4)	1
24.	51393965	HOSE-FF .25X 67.00 OAL(4- 4)	1
25.	51396414	HOSE-FI .25X 43.00 OAL(4- 4)	1
26.	51396415	HOSE-FZ .25X 46.00 OAL(4- 4)	1
28.	51396308	HOSE-FF .25X 61.50 OAL(4- 4)	2
29.	72532981	TEE-SWVL NUT RUN JIC 4	9
30.	72532353	ADPTR-M STR/M JIC 6 4	26
31.	72532140	PLUG-STR HEX HD STL .56	4
32.	72532699	ELBOW-M STR/90/M JIC 6 4	5
NEW 20061106			



NOTE: ACTUAL HOSE INSTALLATION IS MIRROR IMAGE TO THIS VIEW. NOTES ARE CORRECT.

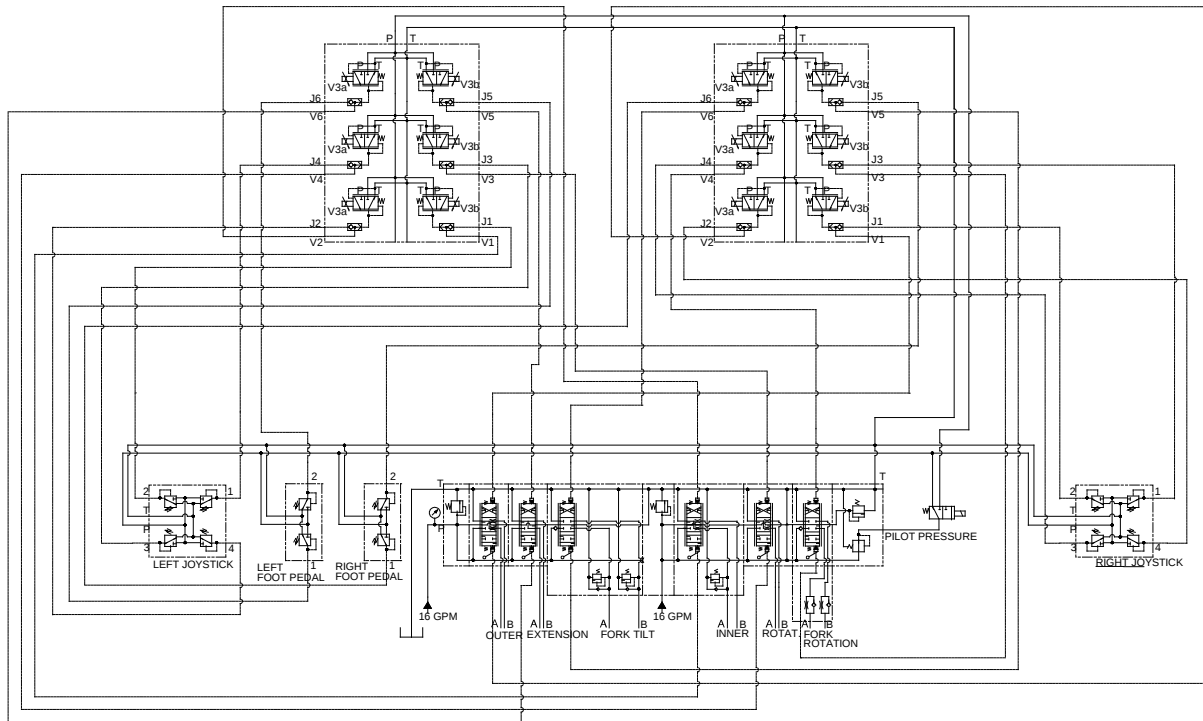
Hydraulic Schematic (99903580)

REV. B 20091029



Hydraulic Schematic, Dual Controls (99903583)

REV. A 20041002

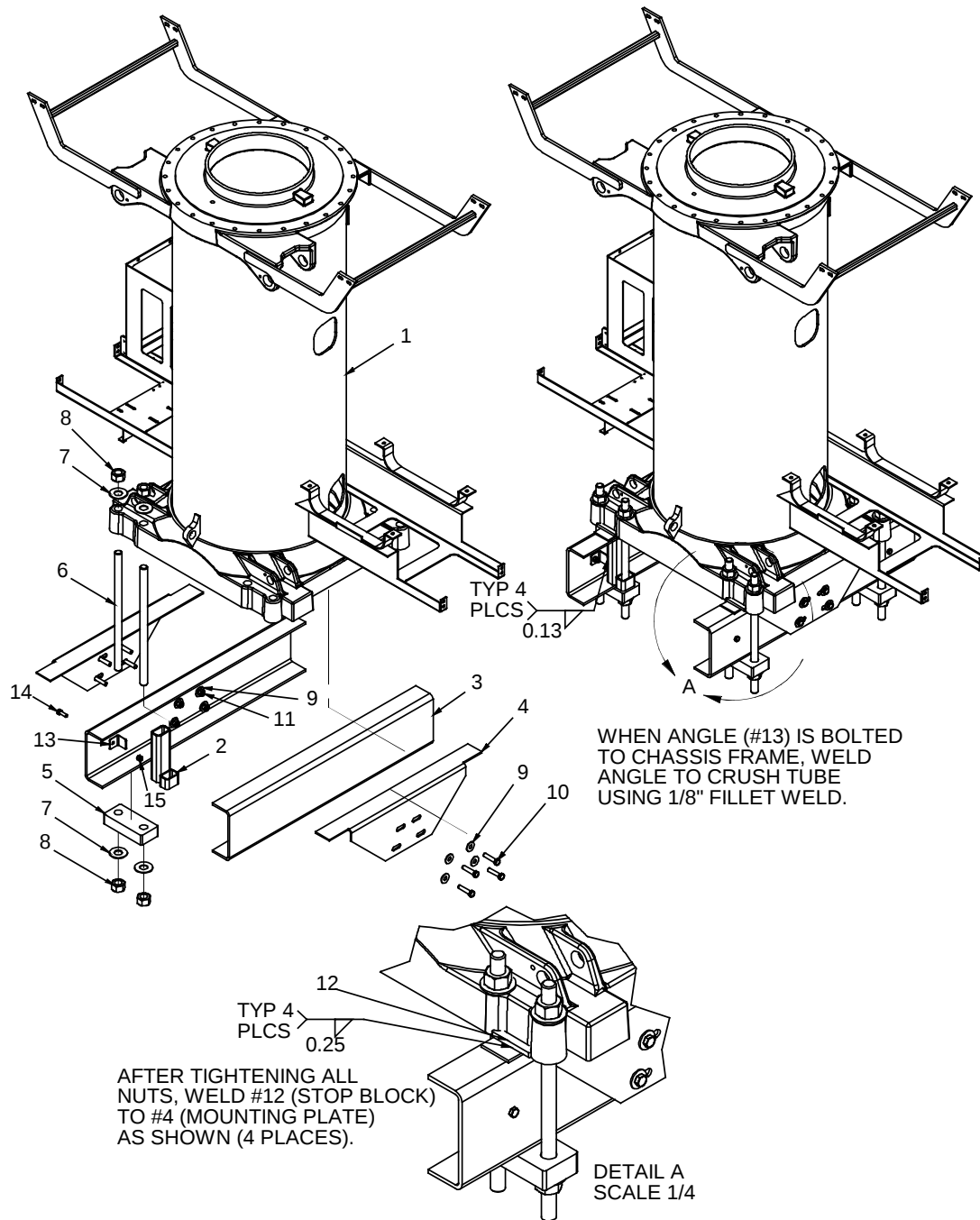


Installation Kit (99903527)

99903527 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	52717785	WLDMT-CAST BASE	1
2.	52716527	SUPPORT-WLDMT	4
3.	REF	CHASSIS FRAME	1
4.	60125711	MOUNTING PLATE	2
5.	60128960	PLATE-CLAMP 2.00 X 4.00 X 9.00	4
6.	71411789	STUD-TIEDOWN 1.25-7 X 24.00	8
7.	72063067	WASHER 1.25 HI STR ZINC	16
8.	72062142	NUT 1.25-7 HEX LOCK STIN GR5	16
9.	72063119	WASHER .62 FLAT ASTM F436	16
10.	72060931	CAP SCR .62-11X 2.75 HH GR8 Z	8
11.	72062091	NUT .62-11 HEX NYLOCK	8
12.	60125712	STOP BLOCK	4
13.	60128035	ANGLE-FORM 10GA 2.00 X 2.00 X 2.00	4
14.	72060093	CAP SCR .50-13X 1.50 HH GR5 Z	4
15.	72062080	NUT .50-13 HEX NYLOCK	4
	93718063	INSTALLATION KIT (INCL 1-15)	REF

REV. C 20050509

99903527 Drawing



NOTE:

- 1 TORQUE #8 (72062142 - HEX NUT 1.25-7) TO 850 FT-LB

Installation Kit (99903957)

99903957 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	93720242	INSTL KIT-16000 III FRAME MNT (INCL 1-11)	1
2.	52720142	FRAME MOUNT-SHEAR PLATE WLDMT 16000 SIII	2
3.	60125712	STOP BLOCK-INSTL	4
4.	60129782	PLATE-2.00X 4.00X 40.50	2
5.	71411789	STUD-TIEDOWN 1.25-7 X 24.00	4
6.	72060177	CAP SCR .62-11X 3.00 HH GR8 Z	32 MIN
7.	72062142	NUT 1.25- 7 HEX LOCK STIN GR5 (WAS 8)	16
8.	72062336	CAP SCR 1.25- 7X 7.00 HH GR5 Z	4
9.	72063007	WASHER .62 FLAT	64 MIN
10.	72063067	WASHER 1.25 HI STR ZINC	12
11.	72601860	NUT .62-11 HEX ZINC GR8	38
12.	BASE	BASE-MACHINING 16000SIII	REF
REV. B 20061024			

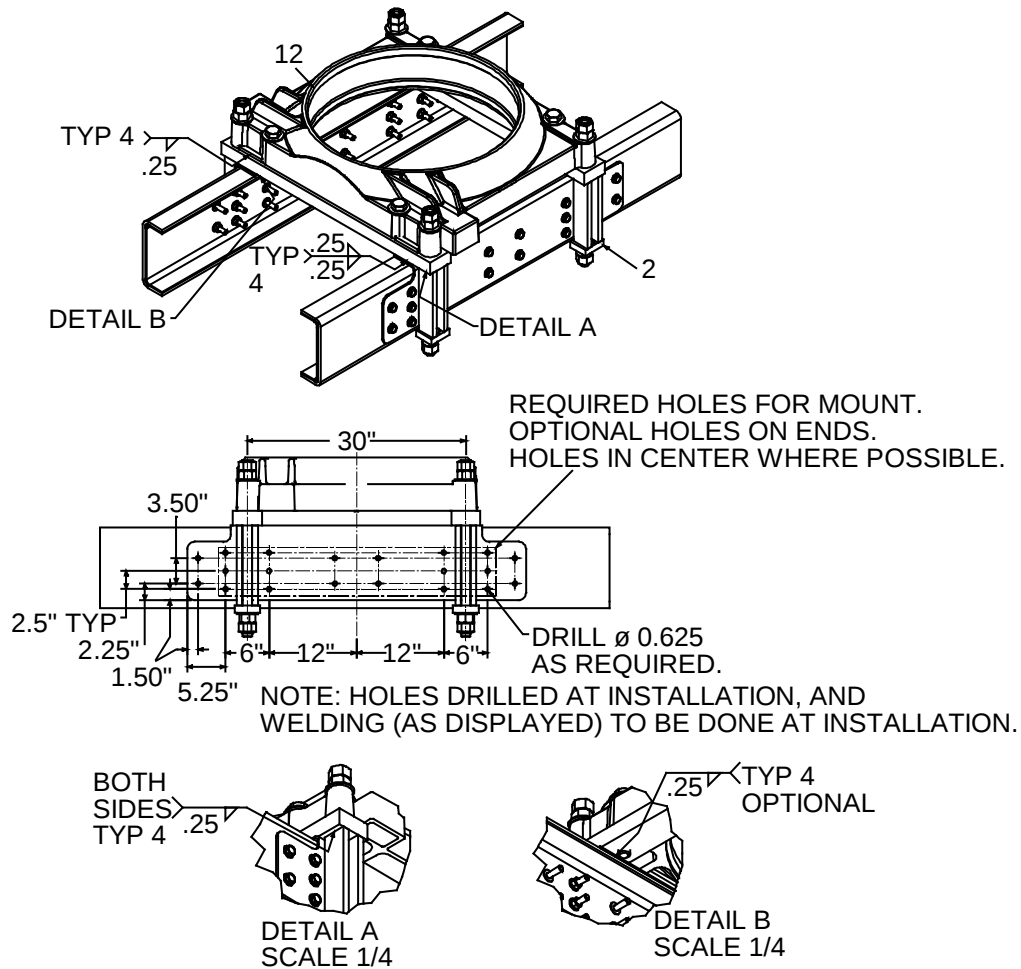
MOUNTING STEPS

- 1 ATTACH SHEAR PLATE WELDEMENTS. DRILL FRAME, BOLT IN PLACE.
- 2 BOLT BARS TO BASE. TORQUE TO 840 FT-LB (4 INNER BOLTS ONLY).
- 3 POSITION BASE ON SHEAR PLATES.
- 4 WELD IN POSITION.
- 5 TORQUE TIE DOWN BOLTS TO 840 FT-LB.

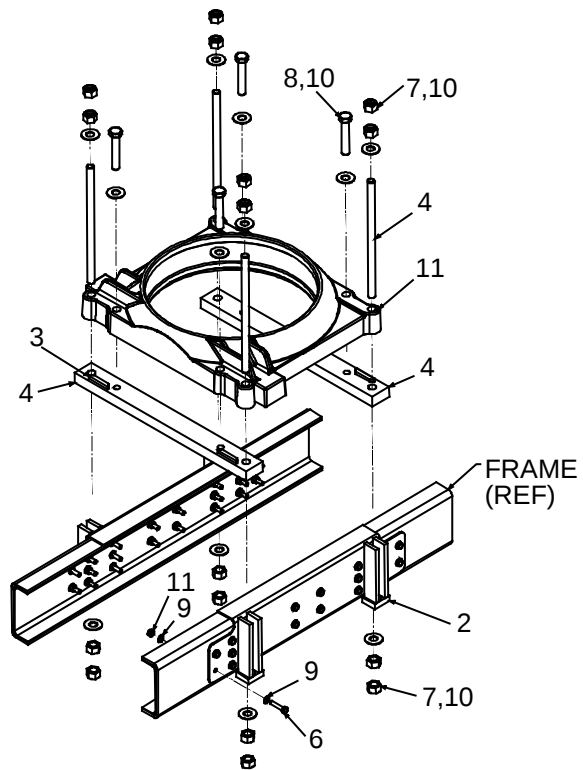
WELDING REQUIREMENTS

- 1 WELDER MUST BE CERTIFIED TO AWS D14.3 SPECIFICATION FOR WELDING EARTH MOVING & CONSTRUCTION EQUIPMENT; AWS D1.1 STRUCTURAL STEEL WELDING CODE; OR ASME BOILER & PRESSURE VESSEL CODE SECTION IX.
- 2 ALL WELDING MUST BE COMPLETED WITH AN E7018 ELECTRODE OR SOLID OR FLUX CORE WIRE OF COMPARABLE CHARACTERISTICS.
- 3 ELECTRODES MUST BE IN GOOD CONDITION AND OF PROPER DRYNESS, PREFERABLY NEW ELECTRODES FROM A SEALED CONTAINER OR PREVIOUSLY OPENED ELECTRODES WHICH HAVE BEEN PROPERLY STORED.
- 4 ALL MATERIAL MUST BE AT LEAST 70° F BEFORE ANY TACK WELDING OR WELDING CAN BE PERFORMED.
- 5 PRE-HEATING IS REQUIRED FOR HEAVY SECTIONS OR MATERIALS HIGH IN CARBON CONTENT.
- 6 NO DOWNHILL WELDING ALLOWED! ALL VERTICAL WELDING MUST BE DONE IN AN UPHILL DIRECTION.
- 7 ANY AREA WHERE CARBON ARC GOUGING HAS BEEN DONE MUST BE GROUND TO CLEAN METAL BEFORE WELDING CAN BEGIN.
- 8 ALL PAINT, GREASE, AND OTHER CONTAMINATION MUST BE REMOVED FROM ANY AREA WHERE WELDING WILL BE DONE.

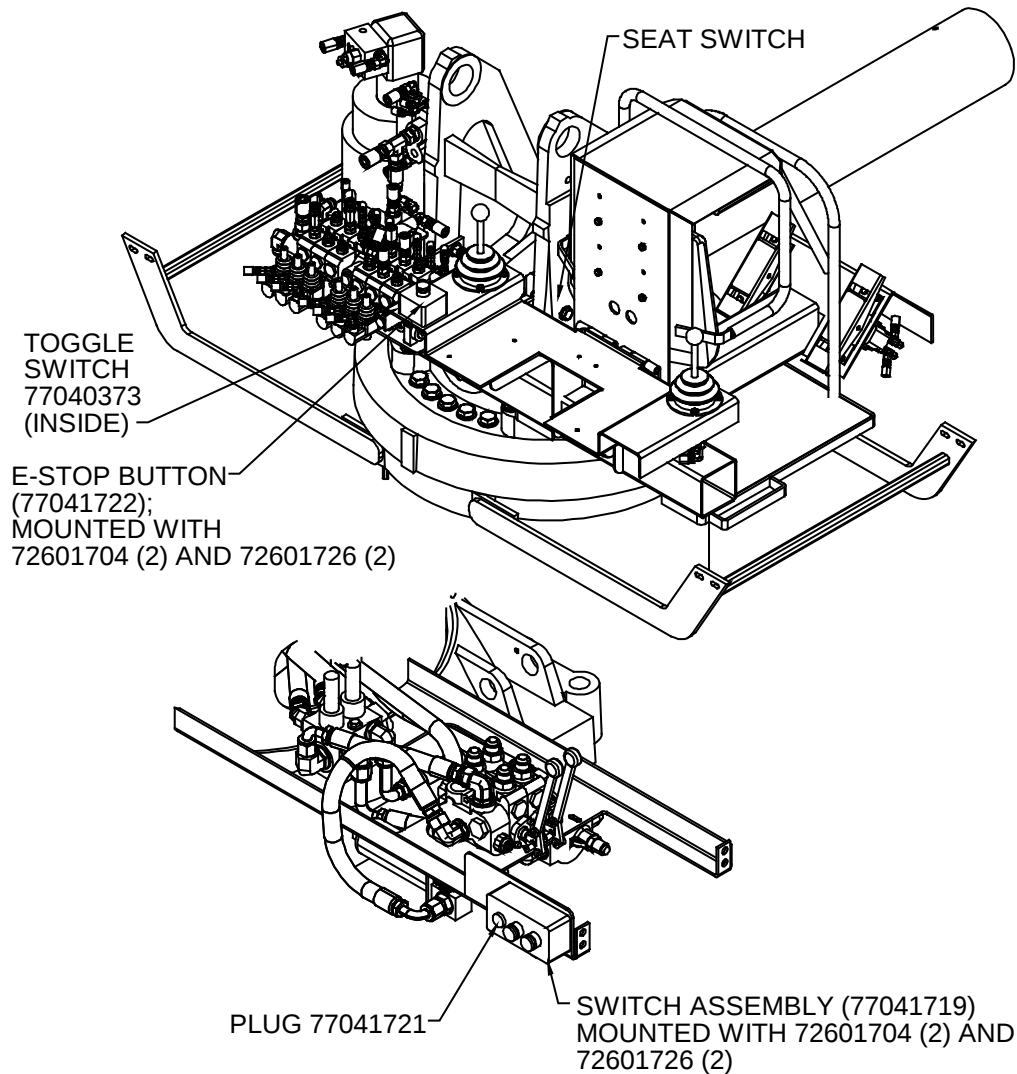
99903957 Drawings



99903957-2 DRAWING



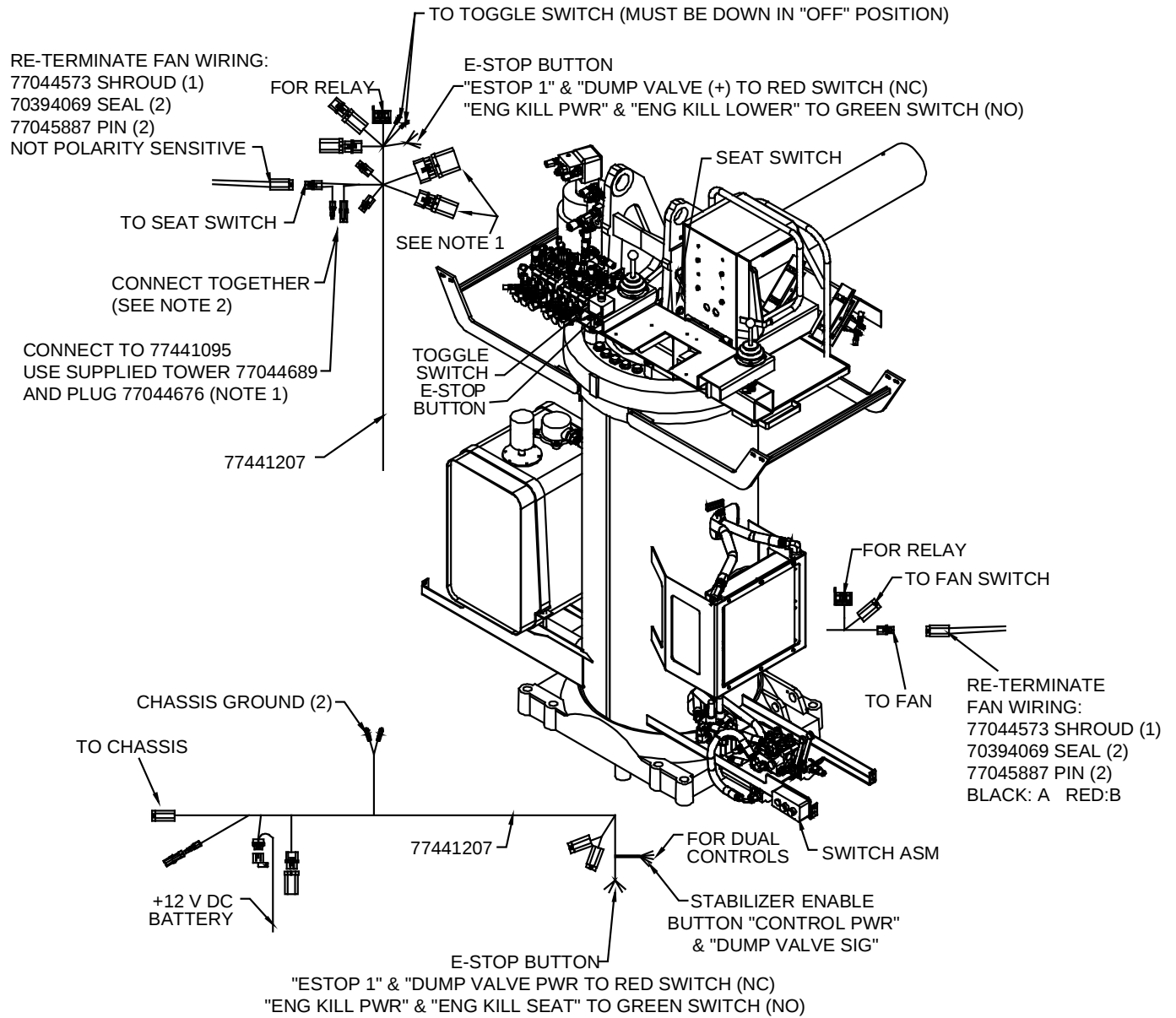
Electrical Installation (99904077) (Eff. 8/06)



99904077-2 Drawing

NOTE:

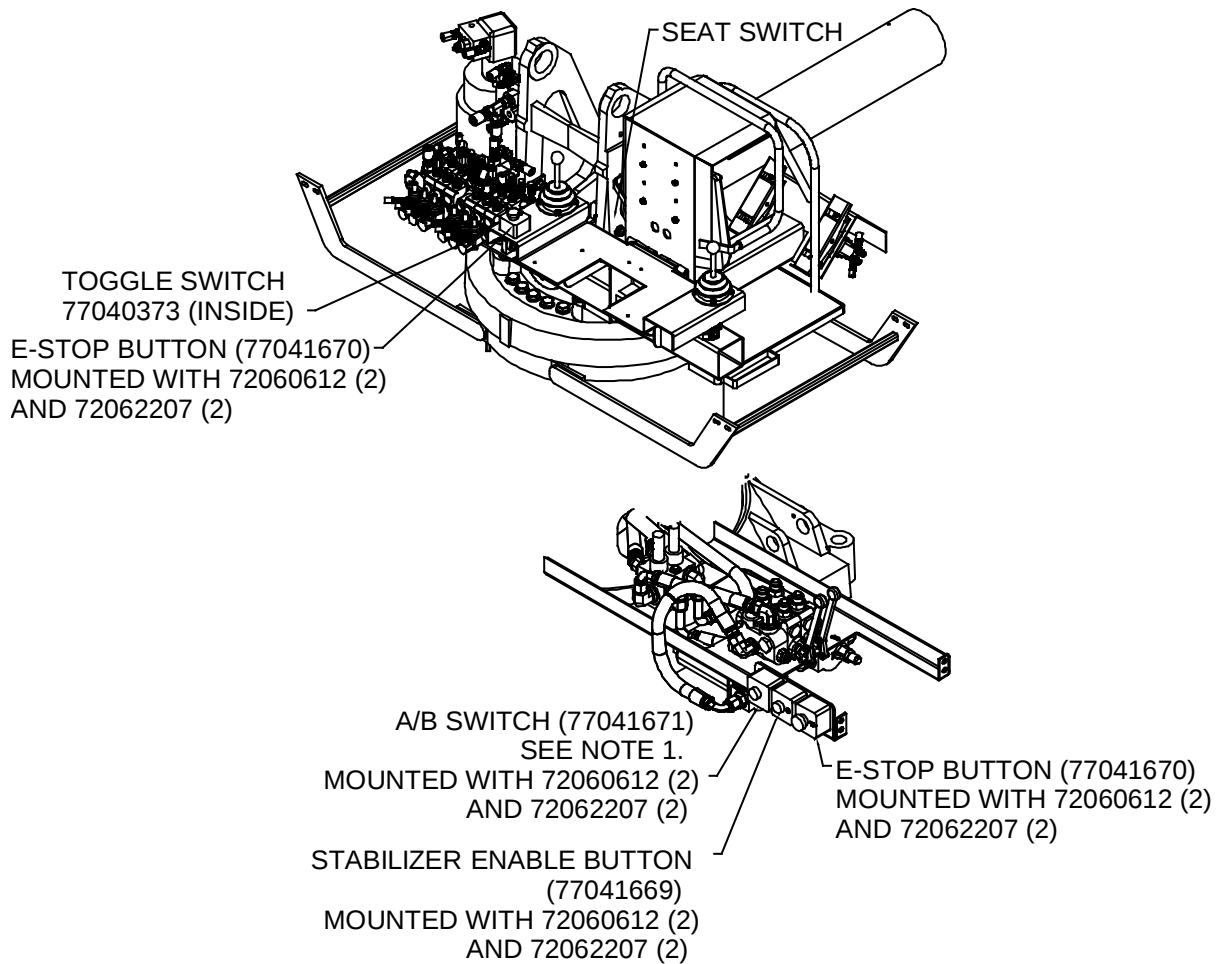
- 1 FOR RADIO (DUAL CONTROLS) CONNECTIONS
- 2 FOR NON-RADIO APPLICATIONS
- 3 SWITCHES ARE NOT POLARITY SENSITIVE

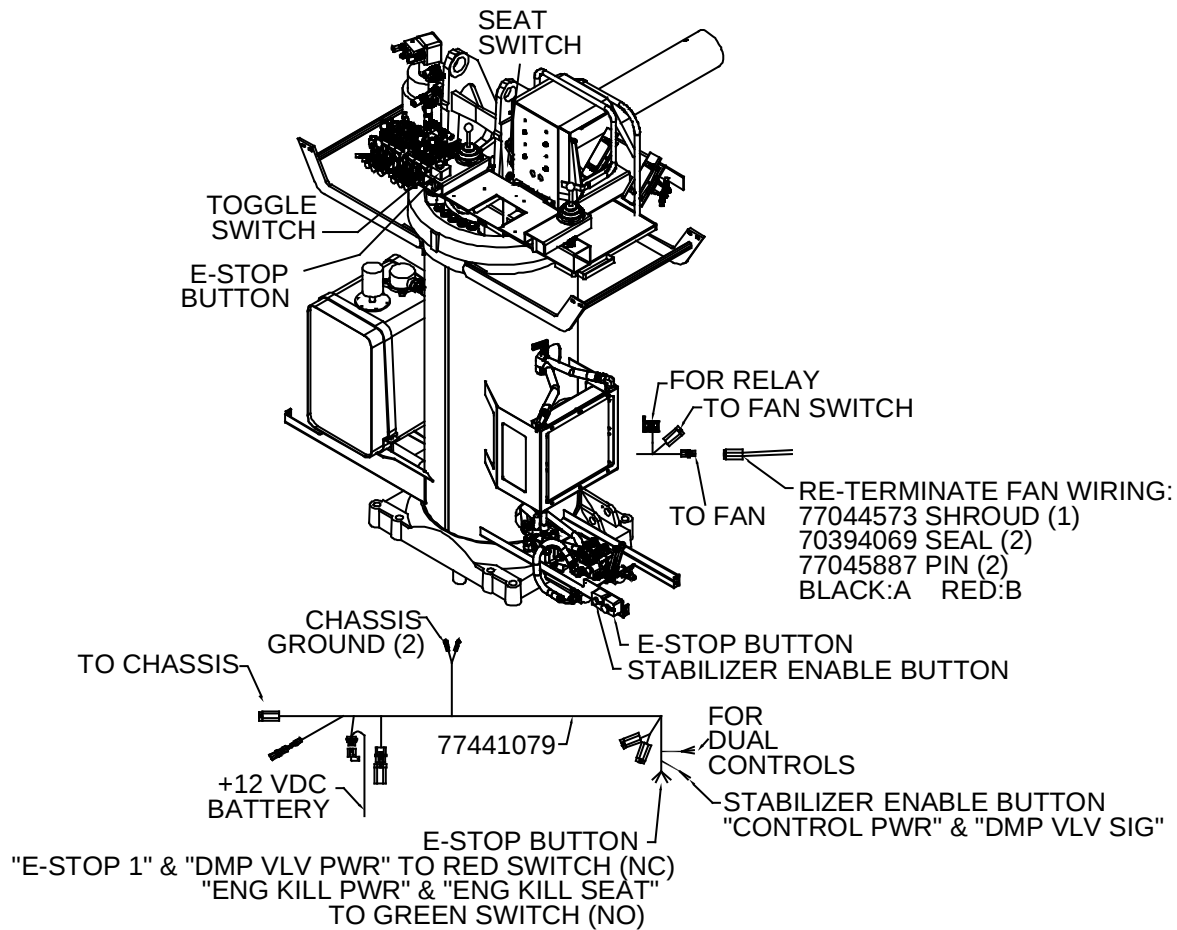


Electrical Installation (99903581) (Through 7/06)

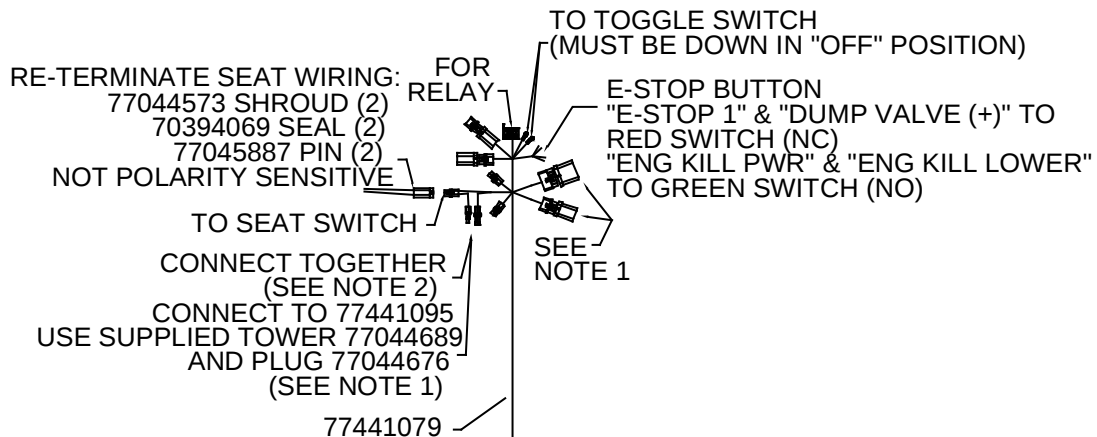
NOTE:

- 1 FOR RADIO CONNECTIONS
- 2 FOR NON-RADIO APPLICATIONS

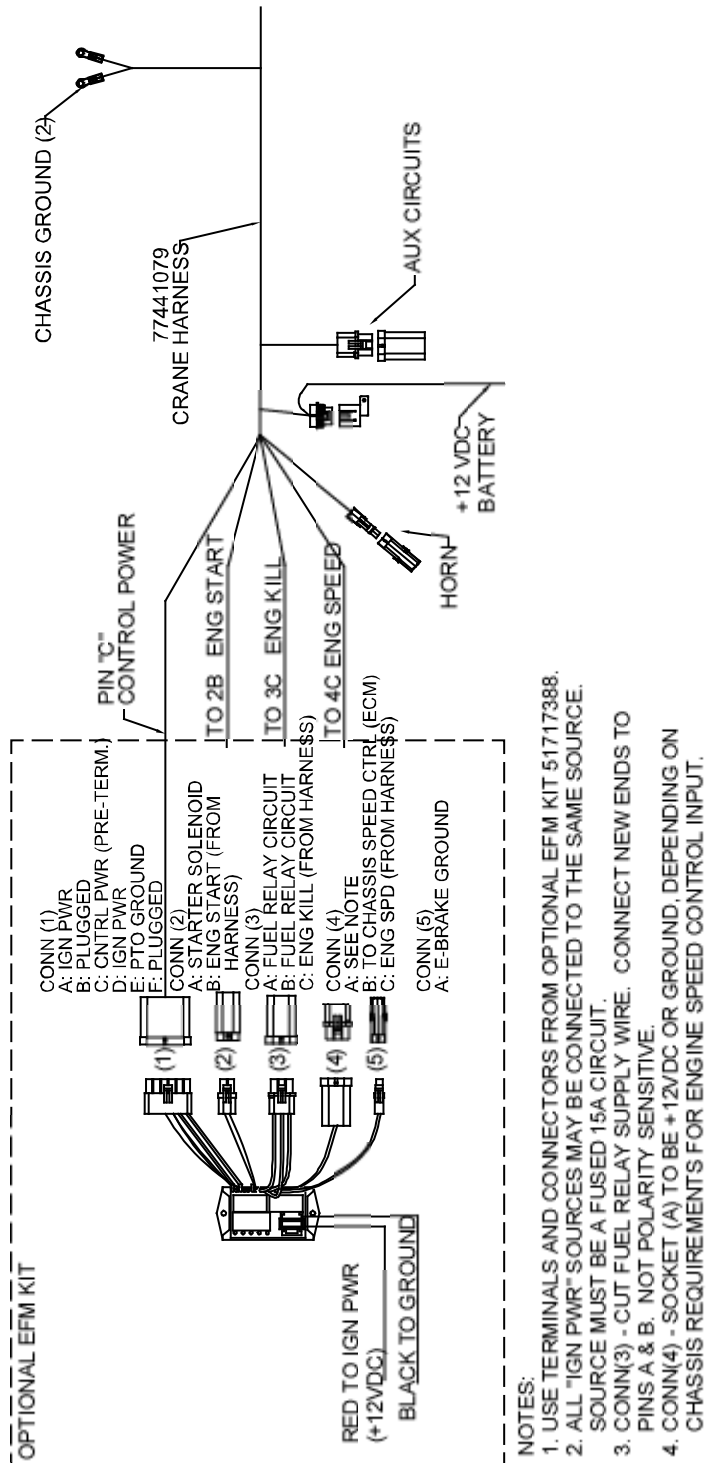




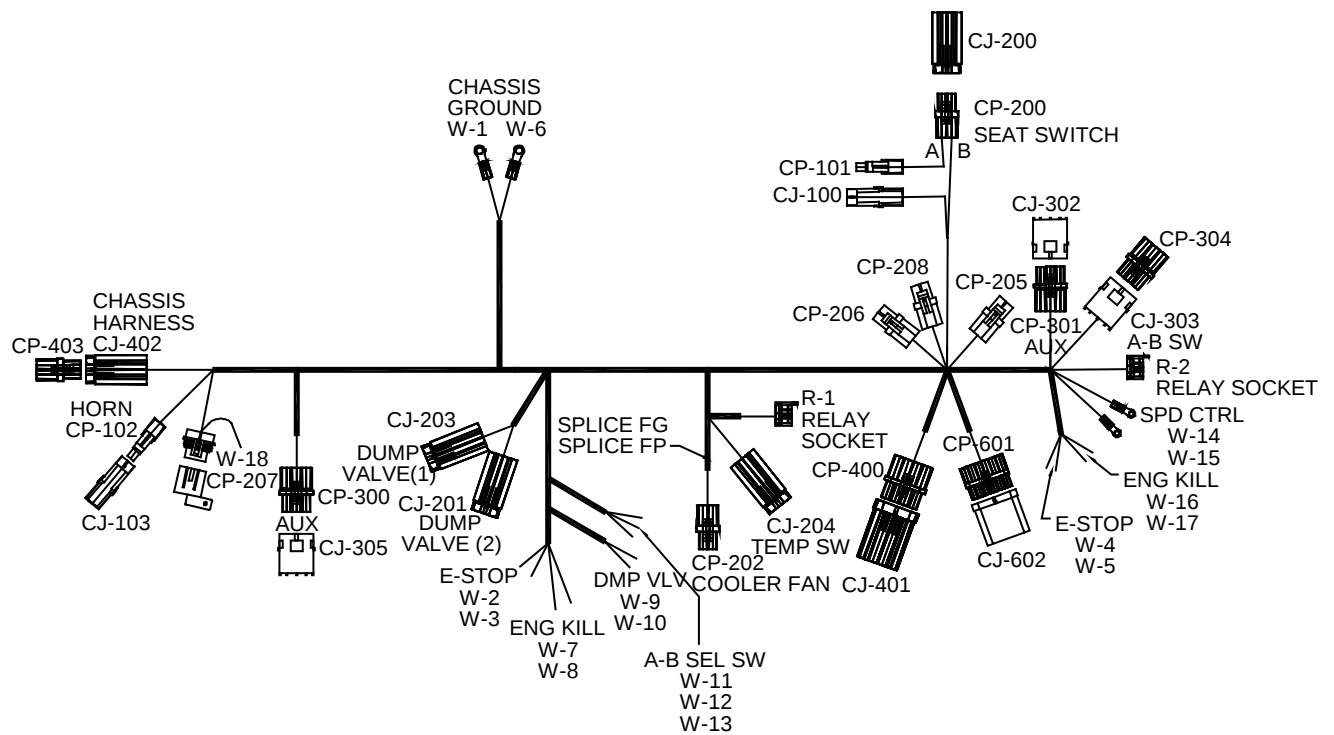
NOTE: SWITCHES ARE NOT POLARITY SENSITIVE



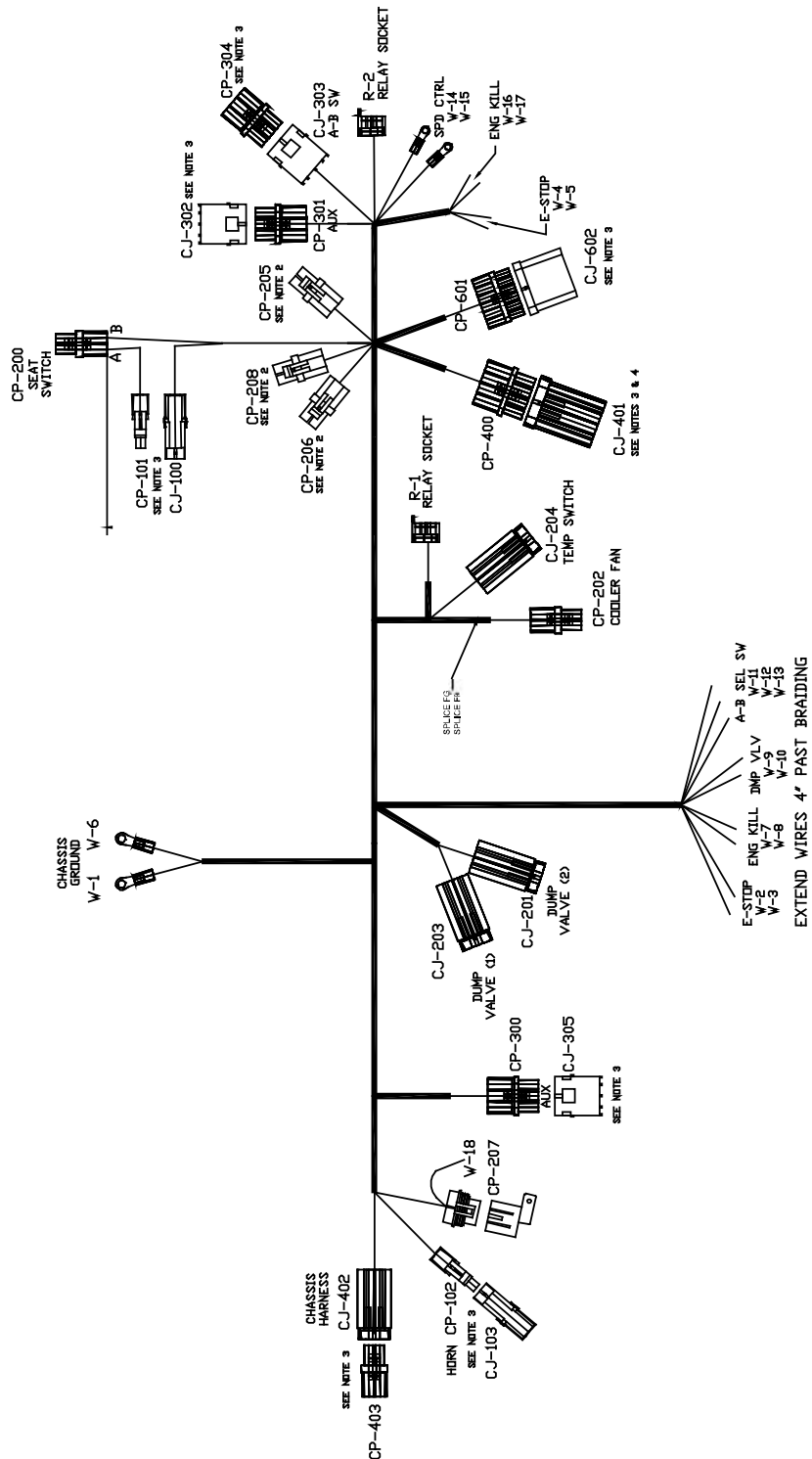
Electrical Installation Kit (99903582)



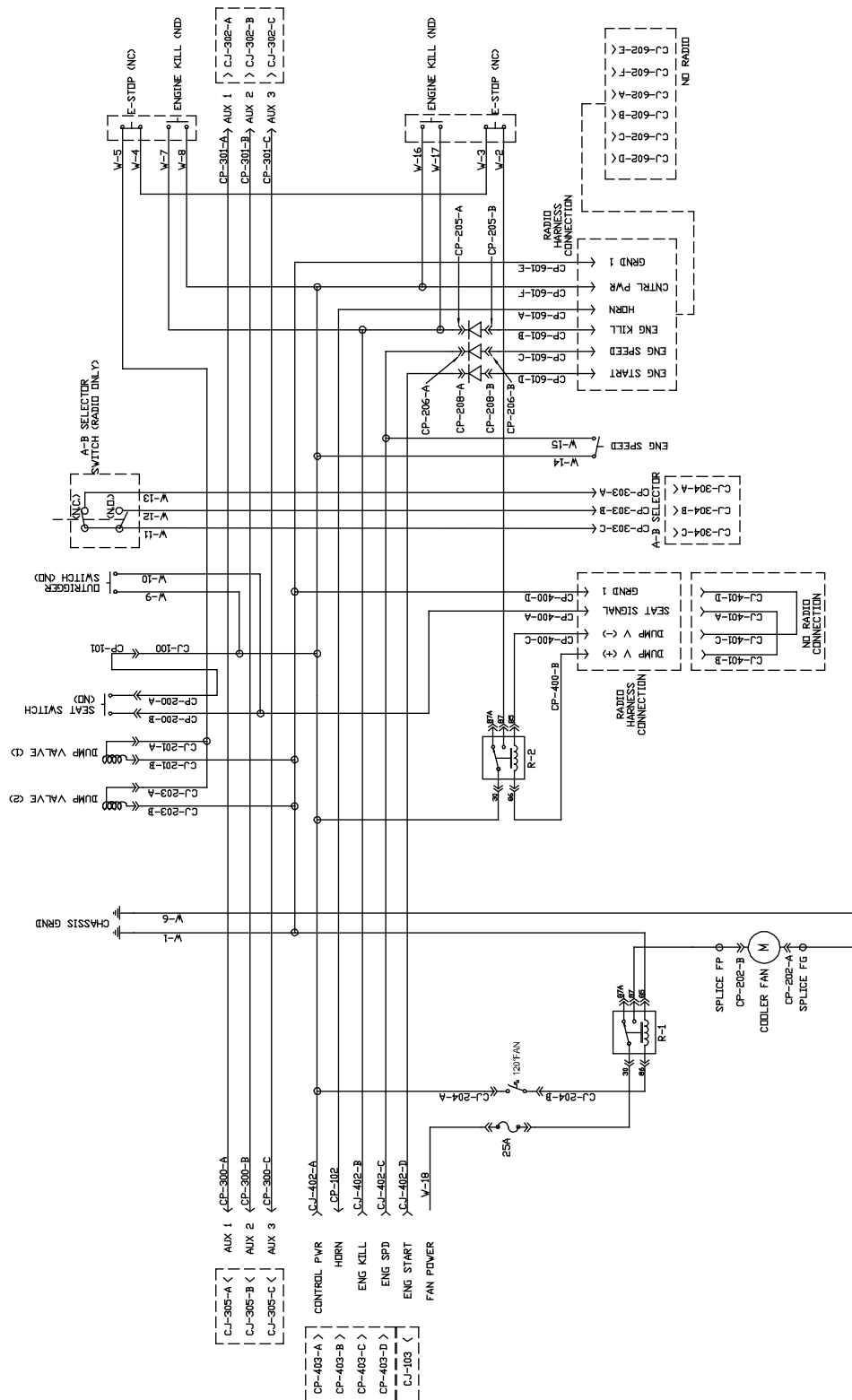
Electrical Schematic, Radio Remote (99904101)



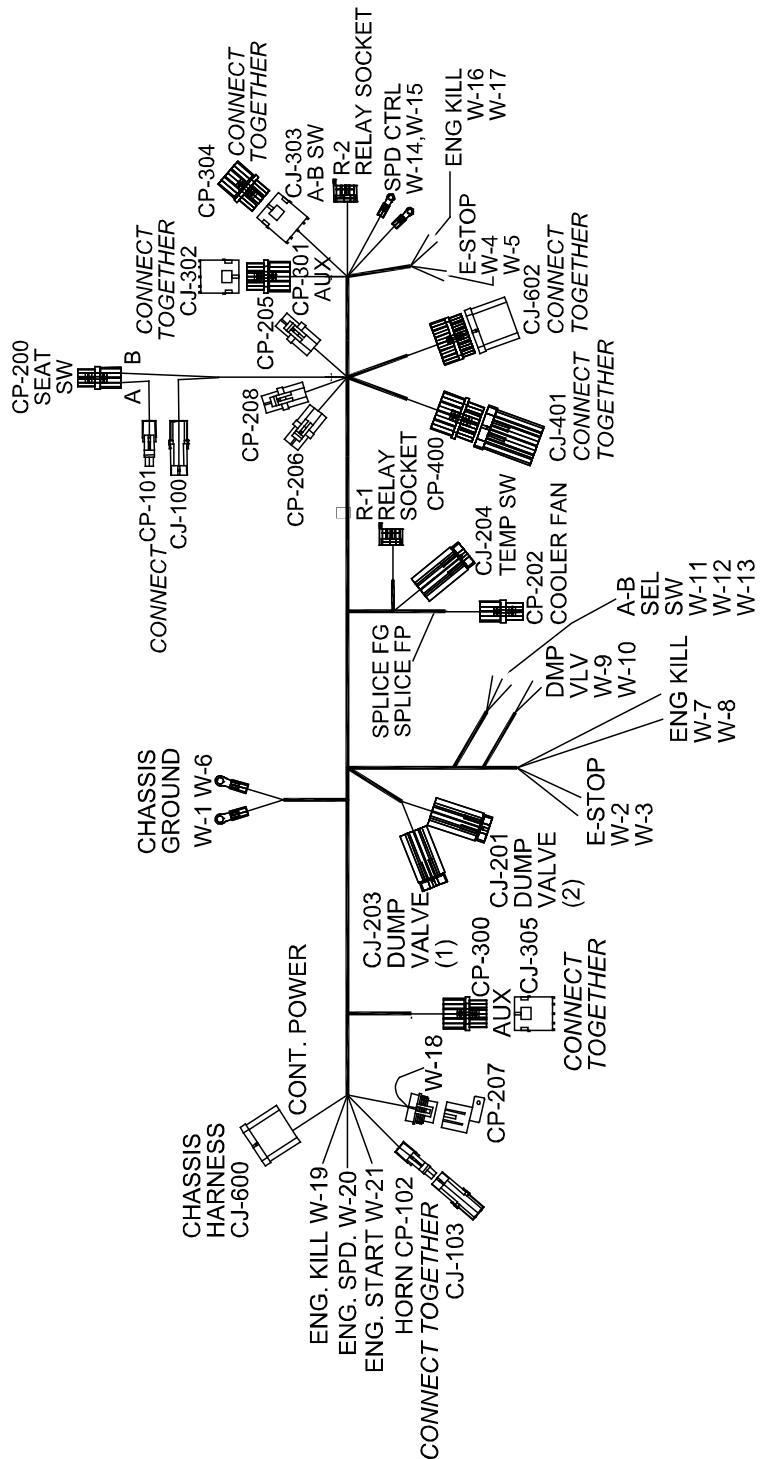
Harness, Crane (77441207) (eff. 8/06)



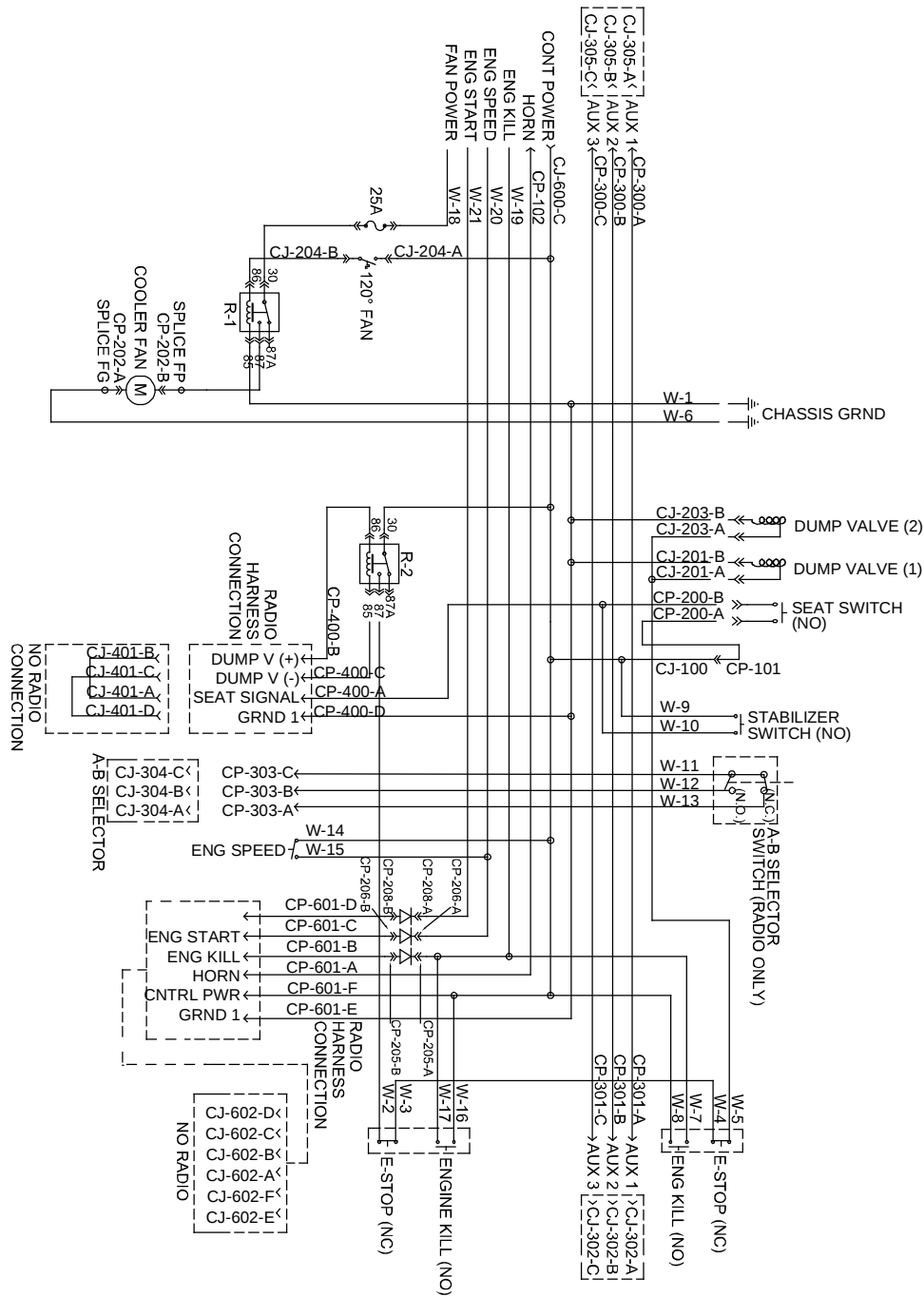
77441207 SCHEMATIC



Harness, Crane (77441079) (Through 7/06)

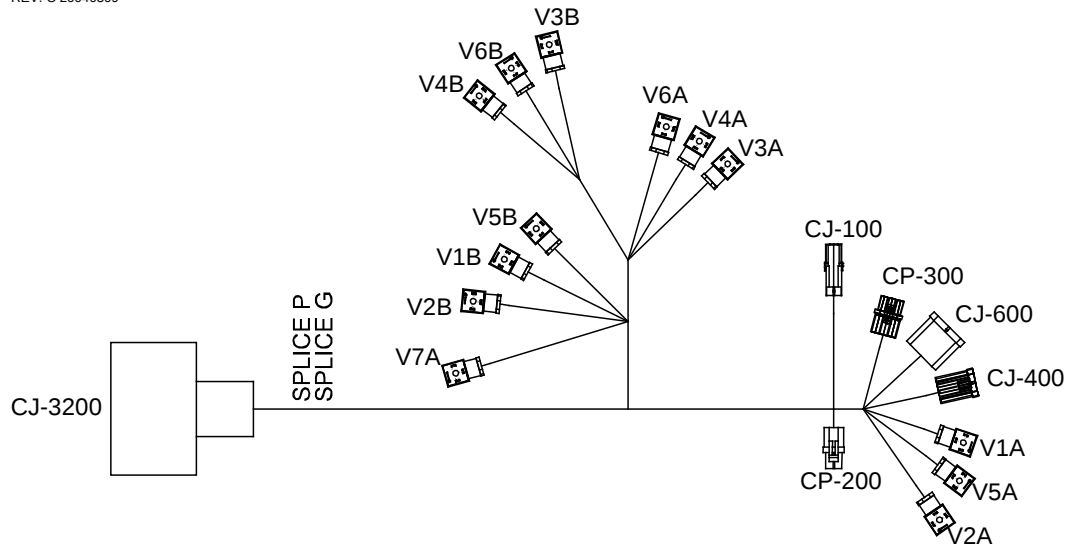


77441079 Schematic



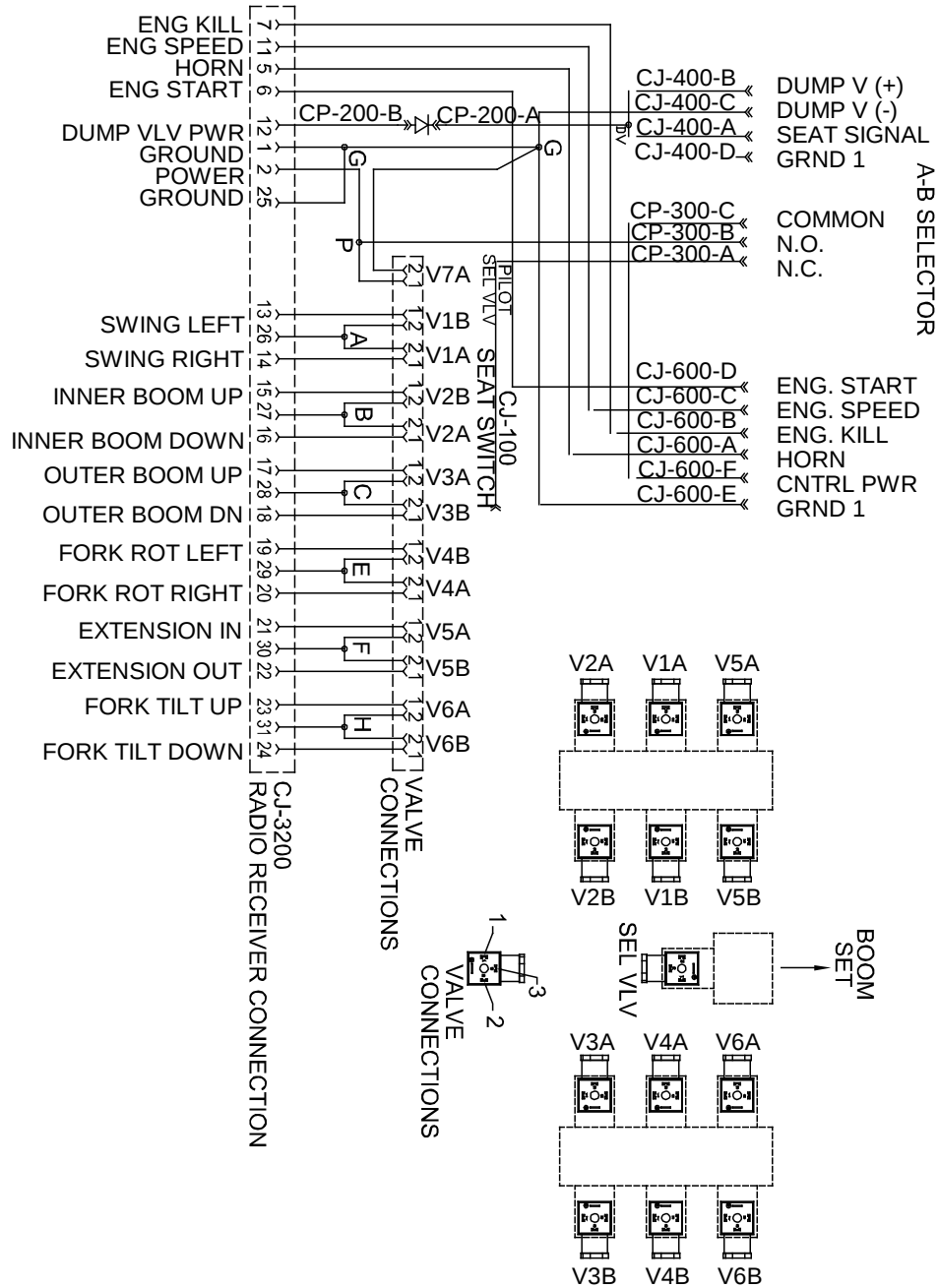
Harness, Dual Control (77441095)

REV. C 20040309



77441095 Schematic

REV. C 20040309

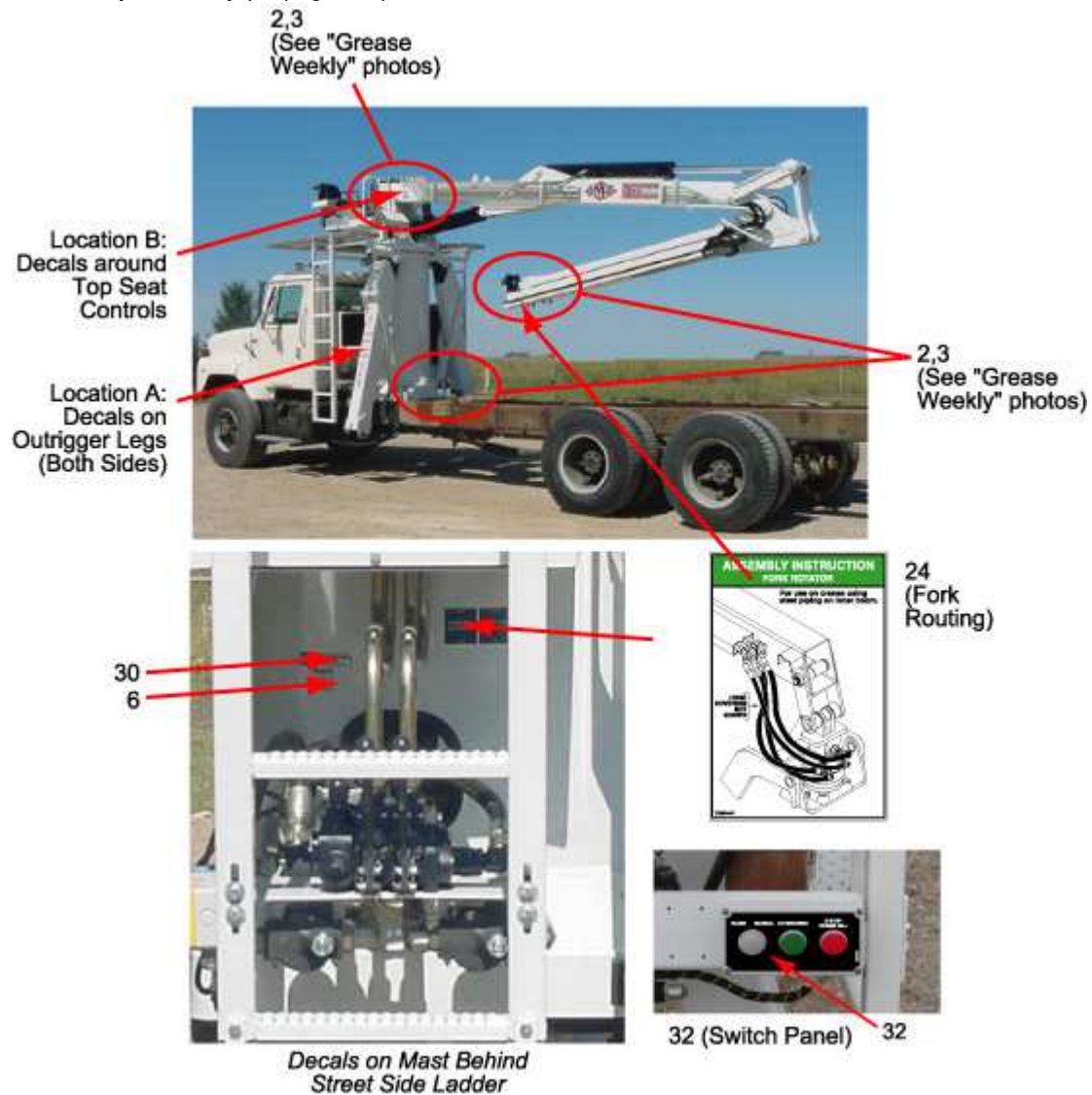


Decal Kit (95717769)

95717769 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	70029252	IMT DIAMOND	2
2.	70391612	DECAL, GR WKLY (LF)	4
3.	70391613	DECAL, GR WKLY (RT)	4
4.	70392108	DECAL, SUCTION LINE	1
5.	70392109	DECAL, RETURN LINE	1
6.	70392213	DECAL, CAUT. WASH/WX	1
7.	70392524	DECAL, ROTATE GRS	1
8.	70396324	DECAL, 16000 SIII IDENT	2
9.	70392578	DECAL, CTRL RH J-STK	1
10.	70392579	DECAL, CTRL LH J-STK	1
11.	70392580	DECAL, CTRL PEDAL	1
12.	70394670	DECAL, IMT MATL HNDLG	1
13.	70395784	DECAL, CAUTION RMV LUB	4
14.	70394558	TIES, PLASTIC BLACK	4
15.	70396919	DECAL, DANGER WALLBOARD	2
16.	70392864	DECAL-WARNING STAB STAND CLEAR	2
18.	70392891	DECAL, DANGER DRVLN	2
19.	70392865	DECAL, DANGER ELEC(LG)	4
20.	71039134	DECAL, CAUT. OIL LEVEL	1
21.	70396325	PLACARD, 16000 SIII 42'	REF
	70396425	PLACARD, 16000 SIII 35'	REF
22.	70395510	DECAL, STABILIZER	1
23.	70394189	DECAL, MOBILOIL	1
24.	70394625	DECAL, FORK HOSE ROUT	1
25.	70392868	DECAL, CAUTION LOADLINE	4
26.	70392863	DECAL, CAUTION HOIST PERS	1
29.	70395838	DECAL, MANUAL O-RIDE	1
30.	70395323	DECAL, ASME/ANSI B30.22	1
31.	70392834	DECAL, SPEED CONTROL	1
32.	70397047	DECAL, SWITCH PANEL (INSTALLED ON 77041719 SWITCH BOX)	1
REV. F 20111122			

95717769 Photos

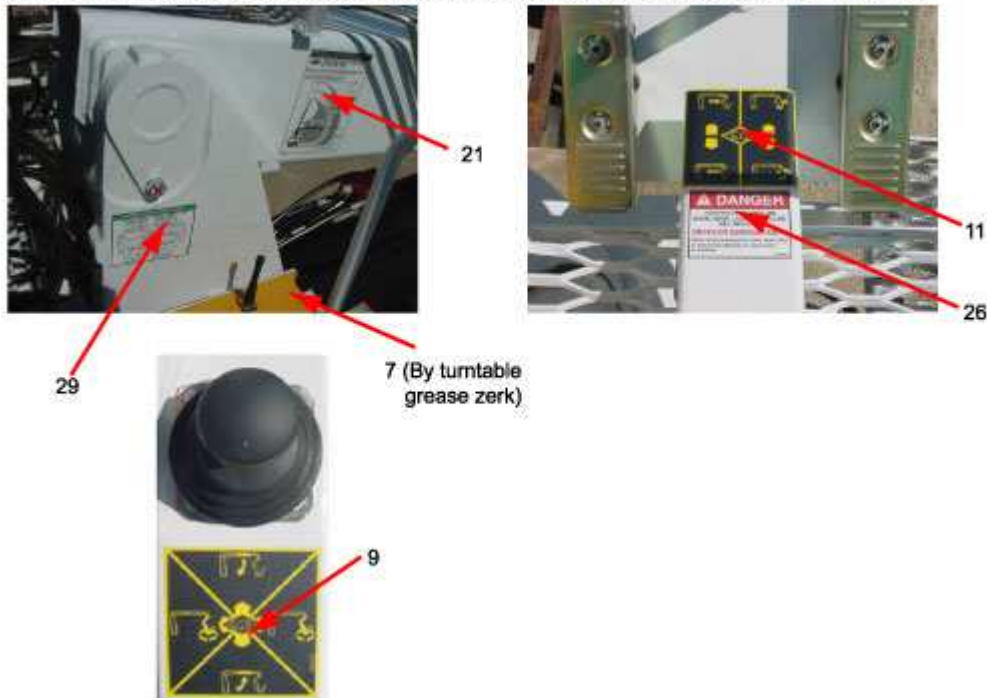
Decal Kit (95717769) (on page 133)



Decal Kit (95717769) (on page 133)

LOCATION A DECALS:

Control, safety, and capacity placard decals are mounted around the top seat controls.

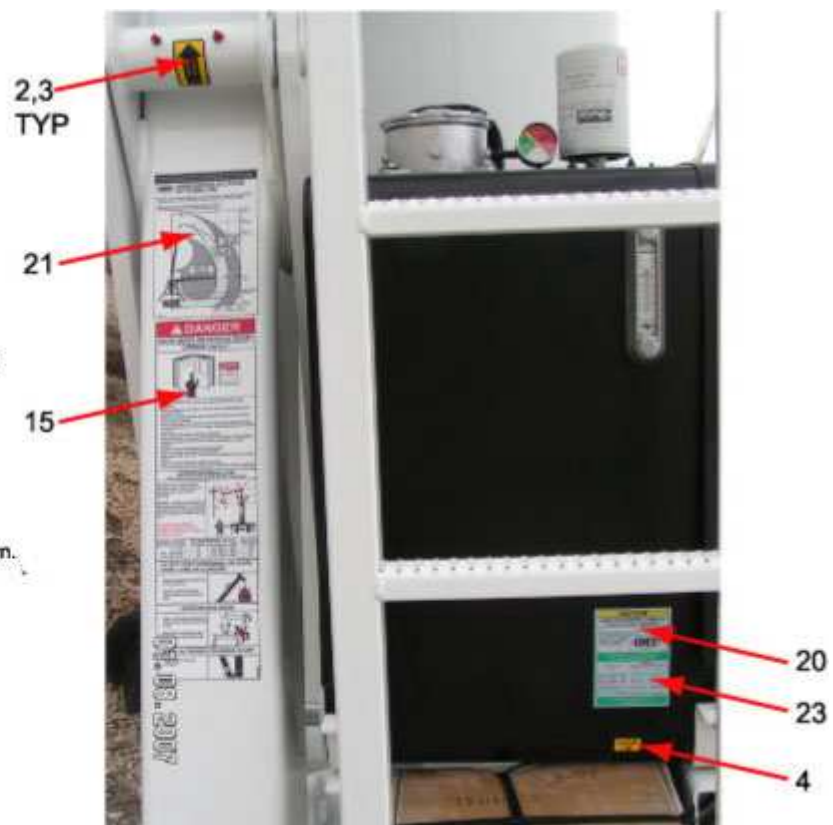


Decal Kit (95717769) (on page 133)

LOCATION B DECALS:

Decals are mounted on the sides of the stabilizer legs next to the streetside control station and by the ladders on both sides for easy viewing. Mounting begins at the bottom of the weld which secures the stabilizer leg to the stabilizer mechanism so the decals are at the appropriate height once the stabilizers are set up.

The curbside view of decals is shown.



Place #16, 70392864, beneath #15 on each stabilizer leg.
Decal Kit (95717769) (on page 133)



16000-SIII CURBSIDE VIEW OF DECALS

Decal Kit (95717769) (on page 133)
 16000-SIII Grease Zerk Location Decals:



Links at Crane Base -
 70391612 (RH) &
 70391613 (LH)



Swivel - 70391612 (RH)



Crane Rotation System -
 70391613 (LH) &
 70392524 Rotate While
 Greasing



Stabilizers - 70391612 (RH)
 & 70391613 (LH)



Stabilizer Pads
 70391612 & 70391613

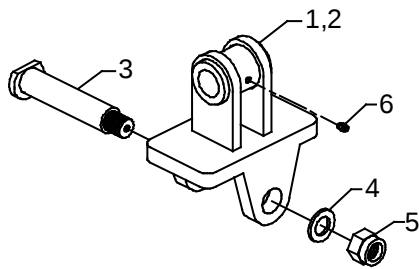
DECAL PLACEMENT FOR DECALS NOT SHOWN IN PHOTOS:

ITEM #	LOCATION	ITEM#	LOCATION
13,14	On radio remote	19,25	On sides of carrier vehicle.
18	At or near driveline	31	Behind left hand joystick speed control switch at top seat controls.

Swivel Link Replacement Kit (51709479)

51709479 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	51709475	SWIVEL LINK (INCL: 2,6)	1
2.	70055207	BUSHING (PART OF 1)	2REF
3.	70143730	ROTATOR PIN	1
4.	72063182	WASHER-FLAT	1
5.	72062234	NUT-LOCK	1
6.	72053508	ZERK 1/8NPT (PART OF 1)	1REF

Rev. A 19961002

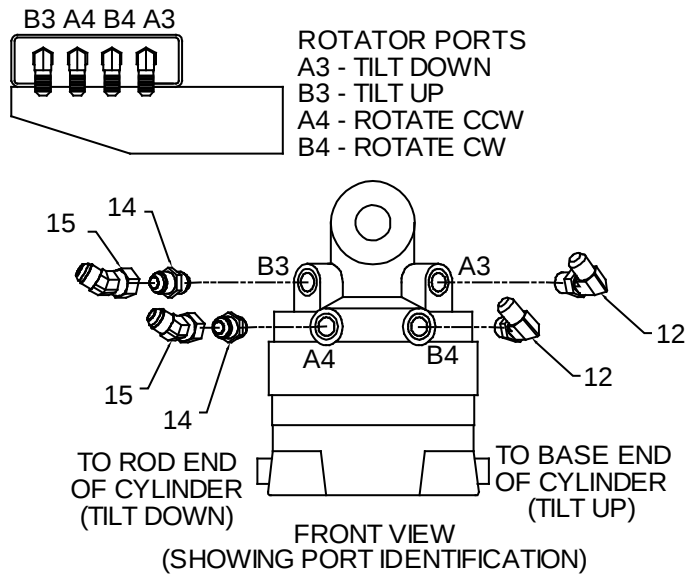


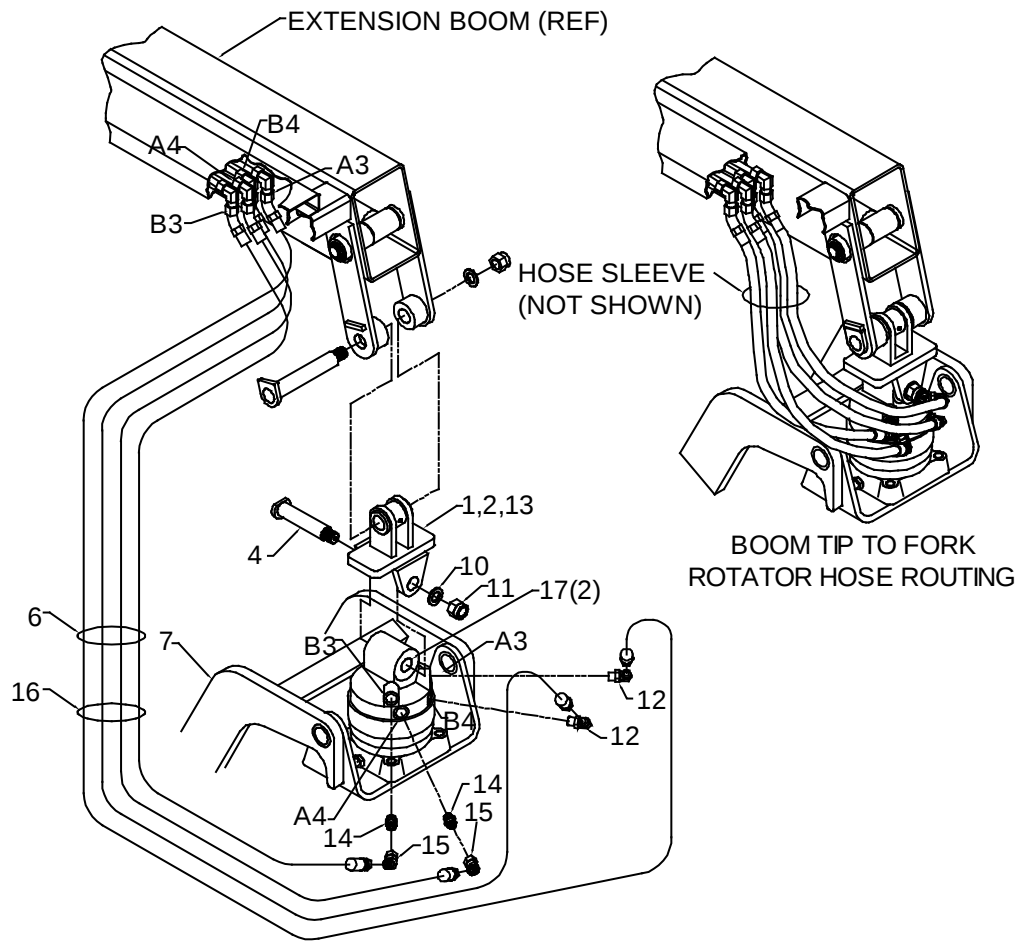
Kinshofer Fork Mounting Kit (51713903)

51713903 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
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

Rev. F 19980515

51713903 Drawing



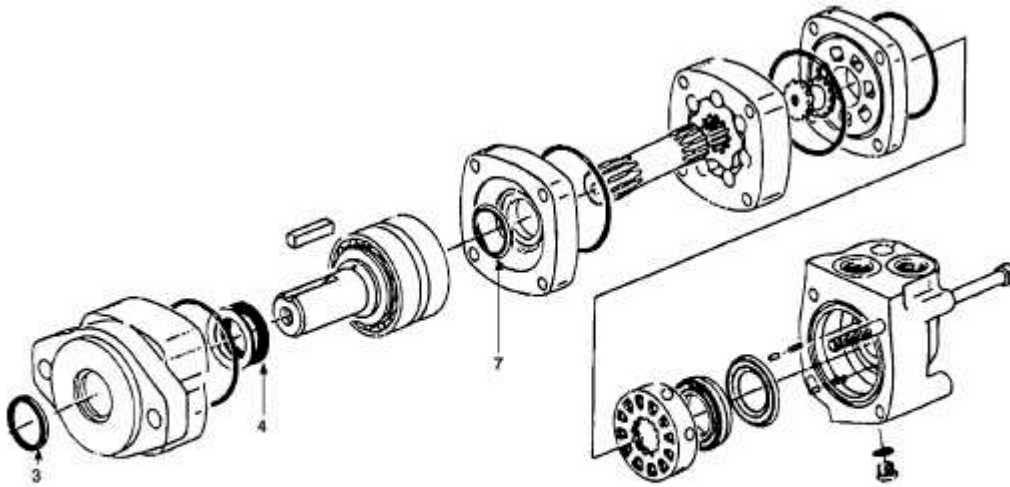


NOTE:
ITEMS 1,2,3,8,9 AND 13 ARE PART OF EXT. BOOM ASM.

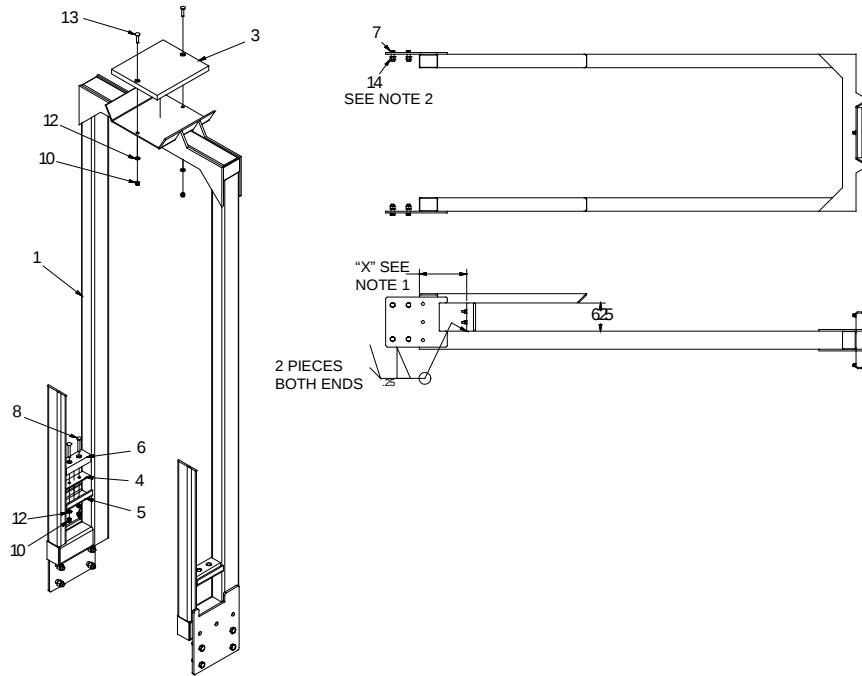
Hydraulic Motor Seal Kit (94394208)

94394208 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	94394208	SEAL KIT (INCL 3,4,7)	1
3.		SEAL-EXCLUSION	1REF
4.		SEAL-SHAFT	1REF
7.		SEAL-SHAFT FACE	1REF

19990630



Boom Support Assembly (51726278) (Effective 9/08/14)

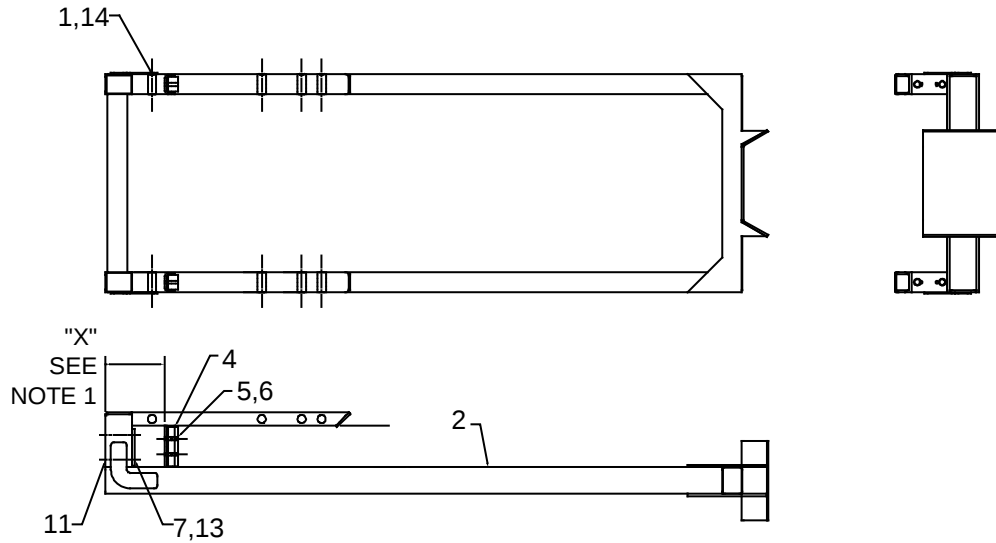


NOTES:

- 1 WELD FORK SUPPORT CHANNEL, ITEM #3, IN PLACE AFTER FORK IS MOUNTED ONTO CRANE AND POSITIONED ON BOOM SUPPORT. USE THESE DIMENSIONS FOR APPROXIMATE PLACEMENT OF FORK SUPPORT - X = 10.62" FOR A 54" FORK APPLICATION, AND X = 16.62" FOR A 48" FORK APPLICATION.
- 2 TORQUE 5/8" BOLTS TO 160 FT-LBS.

51712758 PARTS LIST				
ITEM	PART #	DESCRIPTION	KIT	QUANTITY
1.	51726320	KIT-BOOM SUPPORT HARDWARE		1
2.	52726279	WLDMT-BOOM SUPPORT		1
3.	60030481	PAD BOOM SUPPORT		1
4.	60118670	PLATE-SHIME FORK SUPPORT	1	2
5.	60118671	CHANNEL-FORM FORK SUPPORT	1	2
6.	60118677	RUBBER PAD – 1.44 X 2.25 X 5.88	1	2
7.	72060151	CAP SCREW .62-11 X 2.00 HH GR8 Z	1	8
8.	72060959	BOLT-CRG .38-16X 2.50 SQNK GR2	1	4
9.	72062103	NUT .38-16 HEX NYLOCK		2
10.	72062103	NUT .38-16 HEX NYLOCK	1	4
11.	72063003	WASHER .38 FLAT		2
12.	72063003	WASHER .38 FLAT	1	4
13.	72601310	BOLT-CRG .38-16X 1.50 SQNK GR2		2
14.	72601859	NUT .62-11 HEX ZINC NYLOCK GR8	1	8
NEW 20140905				

Boom Support Assembly (51712758) (Through 9/08/14)



NOTE:

Weld fork support channel, item #4, in place after fork is mounted onto crane and positioned into boom support.

See below for approximate dimensions for fork support placement:

"X" = 10.62' for 54" fork application on 35' and 42' cranes.

"X" = 16.62' for 48" fork application on 35' and 42' cranes.

51712758 PARTS LIST			
ITEM	PART #	DESCRIPTION	QUANTITY
1.	60119499	PIN	1
2.	52716256	BOOM SUPPORT	1
4.	60118671	CHANNEL	2
5.	60118670	PLATE	2
6.	60118677	PAD	2
7.	72060194	CAP SCR 3/4-10X6-1/2 HHGR5	4
8.	72060959	CRG BOLT 3/8-16X2-1/2SQ GR2	4
10.	72062103	NUT 3/8-16 LOCK	4
11.	72062114	NUT 3/4-10 LOCK	4
13.	72063008	WASHER 3/4 WRT	4
14.	72661367	QUICK PIN	2

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CHAPTER 4

General Reference

In This Chapter

Inspection Checklist	143
Deficiency / Recommendation / Corrective Action Report.....	148
Holding Valve Inspection	150
Thread Torque Chart (English)	151
Thread Torque Chart (Metric)	152
Turntable Bearing Thread Tightening Sequence	153
Turntable Bearing Inspection.....	154
Turntable Bearing Tilt Test	154

Inspection Checklist

NOTICE:

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

OWNER/COMPANY:	TYPE OF INSPECTION (circle one):			
CONTACT PERSON:	DAILY	MONTHLY	QUARTERLY	ANNUAL
CRANE MAKE & MODEL:	DATE INSPECTED:			
CRANE SERIAL NUMBER:	HOURMETER READING (if applicable):			
UNIT I.D. NUMBER:	INSPECTED BY (print):			
LOCATION OF UNIT:	SIGNATURE OF INSPECTOR:			

TYPE OF INSPECTION**NOTES:**

Daily and monthly inspections are to be performed by a "competent person", who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

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

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

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

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

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

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

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

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

INSPECTION CHECKLIST STATUS KEY:

S = Satisfactory

R = Recommendation

(Should be considered for corrective action)

NA = Not Applicable

X = Deficient

(NOTE: If a deficiency is found, an immediate determination must be made as to whether the deficiency constitutes a safety hazard and must be corrected prior to operation.)

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS
				(S,R,X,NA)
D	1	Labels	All load charts, safety & warning labels, and control labels are present and legible.	
D	2	Crane	Check all safety devices for proper operation.	
D	3	Controls	Control mechanisms for proper operation of all functions, leaks and cracks.	
D	4	Station	Control and operator's station for dirt, contamination by lubricants, and foreign material.	
D	5	Hydraulic System	Hydraulic system (hoses, tubes, fittings) for leakage and proper oil level.	
D	6	Hook	Presence and proper operation of hook safety latches.	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
D	7	Wire Rope	Inspect for apparent deficiencies per applicable requirements and manufacturer's specifications.	
D	8	Pins	Proper engagement of all connecting pins and pin retaining devices.	
D	9	General	Overall observation of crane for damaged or missing parts, cracked welds, and presence of safety covers.	
D	10	Operation	During operation, observe crane for abnormal performance, unusual wear (loose pins, wire rope damage, etc.). If observed, discontinue use and determine cause and severity of hazard.	
D	11	Remote Ctrl	Operate remote control devices to check for proper operation.	
D	12	Electrical	Operate all lights, alarms, etc. to check for proper operation.	
D	13	Anti-Two-Block or Two-Block Damage Prevention	Operate anti two-block or two-block damage prevention device to check for proper operation.	
D	14	Tires	Check tires (when in use) for proper inflation and condition.	
D	15	Ground Conditions	Check ground conditions around the equipment for proper support, watching for ground settling under and around stabilizers and supporting foundations, ground water accumulation, or similar conditions.	
D	16	Level	Check the equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.	
D	17	Operator cab windows	Check windows for cracks, breaks, or other deficiencies which would hamper the operator's view.	
D	18	Rails, rail stops, rail clamps and supporting surfaces	Check rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling.	
D	19	Safety devices	Check safety devices and operational aids for proper operation.	
D	20	Electrical	Check electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation.	
D	21		Other	
D	22		Other	
M	23	Daily	All daily inspection items.	
M	24	Cylinders	Visual inspection of cylinders for leakage at rod, fittings, and welds. Damage to rod and case.	
M	25	Valves	Holding valves for proper operation.	
M	26	Valves	Control valves for leaks at fittings and between stations.	
M	27	Valves	Control valve linkages for wear, smoothness of operation, and tightness of fasteners. Relief valve for proper pressure settings.	
M	28	General	Bent, broken, or significantly rusted/corroded parts.	
M	29	Electrical	Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation. Electrical systems for presence of dirt, moisture, and frayed wires.	
M	30	Structure	All structural members for damage.	
M	31	Welds	All welds for breaks and cracks.	
M	32	Pins	All pins for proper installation and condition.	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS (S,R,X,NA)
M	33	Hardware	All bolts, fasteners and retaining rings for tightness, wear and corrosion.	
M	34	Wear Pads	Presence of wear pads.	
M	35	Pump & Motor	Hydraulic pumps and motors for leakage at fittings, seals, and between sections. Check tightness of mounting bolts.	
M	36	PTO	Transmission/PTO for leakage, abnormal vibration & noise, alignment, and mounting bolt torque.	
M	37	Hyd Fluid	Quality of hydraulic fluid and presence of water.	
M	38	Hyd Lines	Hoses & tubes for leakage, abrasion damage, blistering, cracking, deterioration, fitting leakage, and secured properly.	
M	39	Hook	Load hook for abnormal throat distance, twist, wear, and cracks.	
M	40	Wire Rope	Condition of load line.	
M	41	Manual	Presence of operator's manual with unit.	
M	42		Other	
M	43		Other	
Q	44	Daily	All daily inspection items.	
Q	45	Monthly	All monthly inspection items.	
Q	46	Rotation Sys	Rotation bearing for proper torque of all mounting bolts.	
Q	47	Hardware	Base mounting bolts for proper torque.	
Q	48	Structure	All structural members for deformation, cracks and corrosion.	
	49		• Base	
	50		• Stabilizer beams and legs	
	51		• Mast	
	52		• Inner Boom	
	53		• Outer Boom	
	54		• Extension(s)	
	55		• Jib boom	
	56		• Jib extension(s)	
	57		• Other	
Q	58	Hardware	Pins, bearing, shafts, gears, rollers, and locking devices for wear, cracks, corrosion and distortion.	
	59		• Rotation bearing(s)	
	60		• Inner boom pivot pin(s) and retainer(s)	
	61		• Outer boom pivot pin(s) and retainer(s)	
	62		• Inner boom cylinder pin(s) and retainer(s)	
	63		• Outer boom cylinder pin(s) and retainer(s)	
	64		• Extension cylinder pin(s) and retainer(s)	
	65		• Jib boom pin(s) and retainer(s)	
	66		• Jib cylinder pin(s) and retainer(s)	
	67		• Jib extension cylinder pin(s) and retainer(s)	
	68		• Boom tip attachment	
	69		• Other	
Q	70	Hyd Lines	Hoses, fittings and tubing for proper routing, leakage, blistering, deformation and excessive abrasion.	
	71		• Pressure line(s) from pump to control valve	
	72		• Return line(s) from control valve to reservoir	
	73		• Suction line(s) from reservoir to pump	
	74		• Pressure line(s) from control valve to each function	
	75		• Load holding valve pipe(s) and hose(s)	
	76		• Other	

FREQUENCY	ITEM	KEY	INSPECTION DESCRIPTION	STATUS
				(S,R,X,NA)
Q	77	Pumps & Motors	Pumps and Motors for loose bolts/fasteners, leaks, noise, vibration, loss of performance, heating & excess pressure.	
	78		• Winch motor(s)	
	79		• Rotation motor(s)	
	80		• Other	
Q	81	Valves	Hydraulic valves for cracks, spool return to neutral, sticking spools, proper relief valve setting, relief valve failure.	
	82		• Main control valve	
	83		• Load holding valve(s)	
	84		• Stabilizer or auxiliary control valve(s)	
	85		• Other	
	86		• Other	
Q	87	Cylinders	Hydraulic cylinders for drifting, rod seal leakage and leakage at welds. Rods for nicks, scores and dents. Case for damage. Case and rod ends for damage and abnormal wear.	
	88		• Stabilizer cylinder(s)	
	89		• Inner boom cylinder(s)	
	90		• Outer boom cylinder(s)	
	91		• Extension cylinder(s)	
	92		• Rotation cylinder(s)	
	93		• Jib lift cylinder(s)	
	94		• Jib extension cylinder(s)	
	95		• Other	
Q	96	Winch	Winch, sheaves and drums for damage, abnormal wear, abrasions and other irregularities.	
Q	97	Hyd Filters	Hydraulic filters for replacement per maintenance schedule.	
A	98	Daily	All daily inspection items.	
A	99	Monthly	All monthly inspection items.	
A	100	Quarterly	All quarterly inspection items.	
A	101	Hyd Sys	Hydraulic fluid change per maintenance schedule.	
A	102	Controls	Control valve calibration for correct pressure & relief valve settings.	
A	103	Valves	Safety valve calibration for correct pressure & relief valve settings.	
A	104	Valves	Valves for failure to maintain correct settings.	
A	105	Rotation Sys	Rotation drive system for proper backlash clearance & abnormal wear, deformation and cracks.	
A	106	Lubrication	Gear oil change in rotation drive system per maintenance schedule.	
A	107	Hardware	Check tightness of all fasteners and bolts, using torque specifications on component drawings or torque chart.	
A	108	Wear Pads	Wear pads for excessive wear.	
A	109	Loadline	Loadline for proper attachment to drum.	

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

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[illegible]

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.

Thread Torque Chart (English)

FINE THREAD BOLTS (ENGLISH)

SIZE	BOLT DIA.	GRADE 5  SAE J429 GRADE 5		GRADE 8  SAE J429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN (FT-LB)	PLATED (FT-LB)	PLAIN (FT-LB)	PLATED (FT-LB)
5/16-24	0.3125	19	14	27	20
3/8-24	0.375	35	26	49	35
7/16-20	0.4375	55	41	78	58
1/2-20	0.5	90	64	120	90
9/16-18	0.5625	120	90	170	130
5/8-18	0.625	170	130	240	180
3/4-16	0.75	300	225	420	315
7/8-11	0.875	445	325	670	500
1-12	1	645	485	995	745
1 1/8-12	1.125	890	670	1445	1085
1 1/4-12	1.25	1240	930	2010	1510
1 3/8-12	1.375	1675	1255	2710	2035
1 1/2-12	1.5	2195	1645	3560	2670

COARSE THREAD BOLTS (ENGLISH)

SIZE	BOLT DIA.	GRADE 5  SAE J429 GRADE 5		GRADE 8  SAE J429 GRADE 8	
(DIA-TPI)	(INCHES)	PLAIN (FT-LB)	PLATED (FT-LB)	PLAIN (FT-LB)	PLATED (FT-LB)
5/16-18	0.3125	17	13	25	18
3/8-16	0.375	31	23	44	33
7/16-14	0.4375	49	37	70	52
1/2-13	0.5	75	57	105	80
9/16-12	0.5625	110	82	155	115
5/8-11	0.625	150	115	220	160
3/4-10	0.75	265	200	375	280
7/8-9	0.875	395	295	605	455
1-8	1	590	445	910	680
1 1/8-7	1.125	795	595	1290	965
1 1/4-7	1.25	1120	840	1815	1360
1 3/8-6	1.375	1470	1100	2380	1780
1 1/2-6	1.5	1950	1460	3160	2370

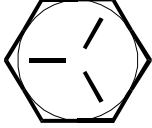
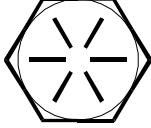
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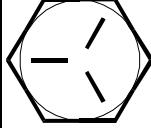
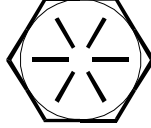
- 1 Tightening torques provided are midrange.
- 2 Consult bolt manufacturer's particular specifications, when provided.
- 3 Use flat washers of equal strength.
- 4 All torque measurements are given in foot-pounds.
- 5 Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphide, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of Loctite does not affect the torque values listed above.

WARNING

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

Thread Torque Chart (Metric)

FINE THREAD TORQUE CHART (METRIC)					
TIGHTENING TORQUE					
SIZE (DIA- TPI)	BOLT DIA. (INCHES)				
		SAE J429 GRADE 5	SAE J429 GRADE 8	PLAIN (KG-M)	PLATED (KG-M)
5/16-24	0.3125	3	2	4	3
3/8-24	0.375	5	4	7	5
7/16-20	0.4375	8	6	11	8
1/2-20	0.5	12	9	17	12
9/16-18	0.5625	17	12	24	18
5/8-18	0.625	24	18	33	25
3/4-16	0.75	41	31	58	44
7/8-11	0.875	62	45	93	69
1-12	1	89	67	138	103
1 1/8-12	1.125	123	93	200	150
1 1/4-12	1.25	171	129	278	209
1 3/8-12	1.375	232	174	375	281
1 1/2-12	1.5	304	228	492	369

COARSE THREAD TORQUE CHART (METRIC)					
TIGHTENING TORQUE					
SIZE (DIA- TPI)	BOLT DIA (INCHES)				
		SAE J429 GRADE 5	SAE J429 GRADE 8	PLAIN (KG-M)	PLATED (KG-M)
5/16-18	0.3125	2	2	3	2
3/8-16	0.375	4	3	6	5
7/16-14	0.4375	7	5	10	7
1/2-13	0.5	10	8	15	11
9/16-12	0.5625	15	11	21	16
5/8-11	0.625	21	16	30	22
3/4-10	0.75	37	28	52	39
7/8-9	0.875	55	41	84	63
1-8	1	82	62	126	94
1 1/8-7	1.125	110	82	178	133
1 1/4-7	1.25	155	116	251	188
1 3/8-6	1.375	203	152	329	246
1 1/2-6	1.5	270	210	438	328

NOTES

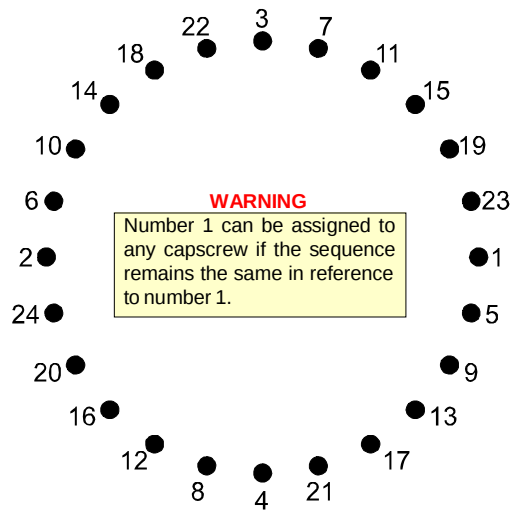
- 1 Tightening torques provided are midrange.
- 2 Consult bolt manufacturer's particular specifications, when provided.
- 3 Use flat washers of equal strength.
- 4 All torque measurements are given in kilogram-meters.
- 5 Torque values specified are for bolts with residual oils or no special lubricants applied. If special lubricants of high stress ability, such as Never-Seez compound graphite and oil, molybdenum disulphite, colloidal copper or white lead are applied, multiply the torque values in the charts by the factor .90. The use of Loctite does not affect the torque values listed above.

WARNING

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

Turtable Bearing Thread Tightening Sequence

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



TIGHTENING PROCEDURE

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

Turntable Bearing Inspection

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

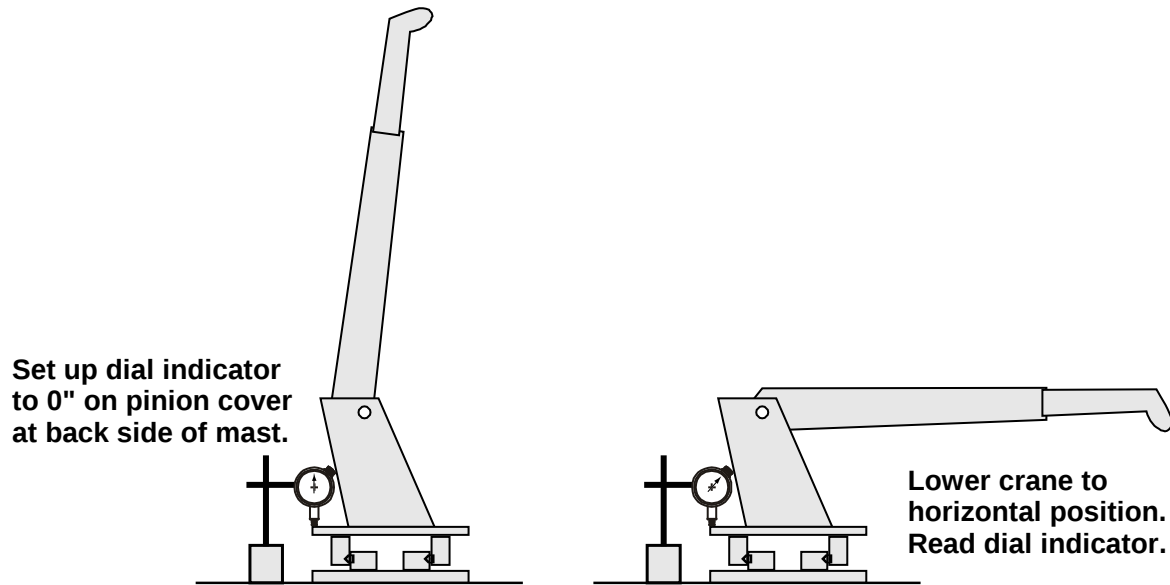
- 1 Metal particles present in the bearing lubricant.
- 2 Increased drive power required to rotate the crane.
- 3 Noise emitting from the bearing during rotation.
- 4 Rough rotation.
- 5 Uneven or excessive wear between the pinion gear and turntable gear.

If one or more of the above conditions exists, further inspection may be required. Limits are measured in "TILT" which is dependent on the internal clearances of the bearing. TILT is the most practical determination of a bearings' internal clearance once mounted on a crane. You can measure the tilt using the ***Turntable Bearing Tilt Test***. (see "Turntable Bearing Tilt Test" on page 154)

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

Turntable Bearing Tilt Test

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



COMPARISON CHART - MEASURED TILT DIMENSION PER CRANE MODEL

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

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

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

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