

PARTS LIST
For
Crawler Drilling Machine
Model: CM-695D
(Serial Number 18069 and Above)



Read this instruction manual before operating this equipment.

**CALIFORNIA
PROPOSITION 65 WARNING**

DIESEL ENGINE EXHAUST AND SOME OF ITS
CONSTITUENTS ARE KNOWN TO THE STATE OF
CALIFORNIA TO CAUSE CANCER, BIRTH
DEFECTS, AND OTHER REPRODUCTIVE HARM.

INGERSOLL-RAND

51996593

PAGE NUMBERING:

- THE PAGE NUMBERING SCHEME OF THIS MANUAL REFLECTS THE SECTION NUMBER FOLLOWED BY A PERIOD, THE SUB-SECTION FOLLOWED BY A DASH, AND THE PAGE NUMBER. (EX. 4.0-1, 4.0-2. ETC.) AT TIMES CHANGES ARE MADE THAT REQUIRE THE ESTABLISHMENT OF NEW SUB-SECTIONS, THAT DEAL WITH THE SAME ASSEMBLY, BUT FOR REASONS OF INTERCHANGEABILITY, HAVE TO BE CREATED. THESE NEW SECTIONS REFLECT A LETTER AFTER THE SUB-SECTION NUMBER. (EX. 4.0A-1)

WHEN THE DESCRIPTION IS KNOWN - USE THE WORD INDEX:

- THE WORD INDEX IS FOUND IN THE FRONT OF THIS MANUAL. THE ITEMS LISTED ARE IN ALPHABETICAL ORDER AND MAY BE REPEATED SEVERAL TIMES DEPENDING ON THEIR FUNCTIONAL DESCRIPTION. AT THE END OF THE PART NAME THE SECTION AND PAGE NUMBER WILL APPEAR. (EX. BACKUP ALARM, 2.1-8)
- IF THE PART CANNOT BE FOUND BY USING THE ABOVE STEP, ANOTHER WAY OF FINDING THE PART IS BY REFERRING TO GENERAL INFORMATION (WHICH IS THE NEXT SECTION IN THIS MANUAL). LOOK AT THE PARTS LIST SECTION BREAKDOWN AND SELECT THE MOST APPROPRIATE SECTION TITLE THAT THE PART YOU ARE LOOKING FOR MAY BE FOUND. THE SECTION NUMBER IS CALLED OUT TO THE LEFT OF THE SECTION TITLE.

WHEN THE PART NUMBER (CPN) IS KNOWN - USE THE CPN INDEX:

- IF YOU ALREADY KNOW THE PART NUMBER (CPN) FOR THE ITEM REQUIRED, A CPN INDEX (NUMERICAL ORDER) IS PROVIDED IN THE FRONT OF THIS MANUAL. LOOK UP THE PART NUMBER (CPN) DESIRED AND THE CPN INDEX WILL SHOW THE SECTION AND PAGE NUMBER.

SERIAL NUMBER RANGES:

- WHEN AN ASSEMBLY OR PART IS AFFECTED BY A SERIAL NUMBER CHANGE, THE SERIAL NUMBER WILL APPEAR IN THE SPECIFIC SECTION INVOLVED, AND THE INDEX. (REFER TO PAGE HOW-3 FOR EXAMPLES.)

USING THE PARTS IDENTIFICATION PAGES:

- THE PARTS IDENTIFICATION PAGES CONSIST OF THE PARTS ILLUSTRATION AND THE PARTS LIST.
- THE PARTS ILLUSTRATION SHOWS THE ASSEMBLY WITH ITS COMPONENT PARTS IDENTIFIED BY A REF. NO.
- ON THE PARTS LIST, THE COMPONENTS ARE LISTED IN REF. NO. ORDER. OTHER INFORMATION PROVIDED BY THE PARTS LIST IS THE PART NO. (CPN), THE QUANTITY REQUIRED TO ASSEMBLE THE ASSEMBLY, THE PART NAME, A DESCRIPTION OF THE PART (ON HARDWARE ITEMS), AND ANY OTHER ADDITIONAL NOTES OR REMARKS REQUIRED TO HELP PLACE THE PARTS ORDER.

ORDERING INSTRUCTIONS

When ordering service parts, please specify:

1. The **NAME** of each part as listed.
2. The **PART NUMBER** as listed or stamped on the part.
3. The **SERIAL NUMBER** of the machine. (Refer to Figure 1.)

DO NOT use the REF. NO. when ordering service parts, use the Part No. and the PART NAME. To save time send all orders for parts to the nearest branch office or agent. IF IT IS NECESSARY TO SEND ANY PART OF THIS MACHINE TO THE FACTORY, INQUIRE AT OUR NEAREST BRANCH OFFICE OR AGENT FOR SPECIAL INSTRUCTIONS. PRODUCT IMPROVEMENT IS A CONTINUING GOAL AT INGERSOLL-RAND. DESIGN AND SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.

NOTICE: When a black bar is seen to the left of any text or graphic, there has been a change or modification made to that particular text or graphic.



Figure 1. Serial Number Location

INGERSOLL-RAND®	
CE	
YEAR BUILT	<input type="text"/>
SERIAL NO.	MODEL / TYPE
<input type="text"/>	<input type="text"/>
POWER	VOLTAGE
<input type="text"/> KW	<input type="text"/> VDC
TOTAL MASS	PULL BACK
<input type="text"/> KG	<input type="text"/> N
REAR WINCH	ROD WINCH
<input type="text"/> N	<input type="text"/> N
INGERSOLL-RAND ROCK DRILL DIVISION ROANOKE, VIRGINIA - U.S.A.	

FOR CE MACHINES

INGERSOLL-RAND®	
<input type="text"/>	<input type="text"/>
ALWAYS GIVE SERIAL NO. WHEN ORDERING PART INGERSOLL-RAND WOODCLIFF LAKE, N.J. U.S.A.	

FOR ASME MACHINES

NOTE: References to the right-hand side and left-hand side of the machine are made looking from the main frame end toward the drill end.

ELECTRICAL SCHEMATIC
STARTING WITH MACHINE SERIAL NUMBER 87082;
88078; & 89072
Section 17.0A

Month/Day/Year

SERIAL NUMBER RANGES,
WHEN APPLICABLE

REVISION BAR

PLXXXX 7.0A-1

BOOM ASSEMBLY
(For Illustration of parts, refer to Pages 4.0-1 thru 4.0-3)

REF. NO.	PART NO.	QTY.	PART NAME	REMARKS	SERIAL NUMBER
	52094851		BOOM ASSEMBLY		
1	52105822	1	BOOM, OUTER 30" EXTENSION		BEGIN WITH 88072
2	03207974	15	FITTING, GREASE ALEMITE #1610-BL		
3	52094240	1	CYLINDER, BOOM LIFT	REFER TO PL6137, SECTION 4.3	
4	52105798	1	BOOM, INNER 30" EXTENSION		
5	52095262	1	CYLINDER, GUIDE DUMP	REFER TO PL6137, SECTION 4.1	
6	52106853	1	CYLINDER, BOOM EXTENSION	REFER TO PL6137, SECTION 4.2	
7	52099835	1	BUSHING, SPACER		
8	52096187	1	PIN, CYLINDER		
9	52095361	2	PIN, CYLINDER		
11	52096229	1	PIN, PIVOT		
12	52096088	2	CAP, RETAINER		
14	52096120	2	BUSHING, BOOM PIVOT		
16	52133832	1	ASSEMBLY, BOOM BASE DUMP		
17	52096062	1	PIN, BOOM EXT CYLINDER		
18	52096070	1	PIN, BOOM EXTENSION		
20	52096237	1	PIN, PIVOT		
21	52096096	2	CAP, RETAINER		
22	52096153	2	BUSHING, DUMP TRUNNION		
23	95957478	3	BOLT M16-2.0 X 130MM - CAPSCREW, HEX FLANGED, ZINC PLATED		
24	96727151	3	NUT M16-2 - NUT, HEX, ZINC PLATED		
25	++	8	PLATE, BEARING		

PLXXXX 7.0A-2

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<p style="text-align: center;">S</p> <p>SAFETY DECALS, S-7 INFORMATION, S-1 NAMEPLATE ASSEMBLY, 13.2-1 TRIP WIRE ASSEMBLY, 5.0-6 SAFETY TRIP WIRE ASSEMBLY, 5.25-6 SCHEMATIC AIR/OIL/WATER (672), 17.2-1 AIR/OIL/WATER (672), 17.4-1 ELECTRICAL FOR MACHINES STARTING WITH THE FOLLOWING SERIAL #., ECM570 - 87082, ECM670 - 88078, CM672 - 89072, 17.0A-1 FOR MACHINES THRU THE FOLLOWING SERIAL #., ECM570 - 87081, ECM670 - 88077, CM672 - 89071, 17.0-1 HYDRAULIC (570/670), 17.1-1 HYDRAULIC (672), 17.2-1 SEAT, OPERATOR'S CAB, 6.0-6 SEPARATOR, HYDRAULIC RESERVOIR, 2.3-2 SEPARATOR TANK ASSEMBLY (ASME), 9.10-1 ASSEMBLY (CE), 9.11-1 COMPRESSOR DISCHARGE PIPE, 9.10-4, 9.11-5 INLINE FILTER, 9.10-5, 9.11-4 NEEDLE VALVE, 9.10-5, 9.11-5 OIL LEVEL DECAL, 9.10-5, 9.11-5 OIL SEPARATOR ELEMENT, 9.10-4, 9.11-4 RELIEF VALVE, 9.10-4, 9.11-4 SCAVENGE TUBE, 9.10-4, 9.11-4 SIGHT TUBE, 9.10-4, 9.11-4 TANK (ASME), 9.10-4 TANK (CE), 9.11-4 TEMPERATURE SENDER, 9.10-4, 9.11-5 THERMAL SWITCH, 9.10-5, 9.11-4 SOCKET 12 VOLT, 6.0-8 STEPS, CAB/ENCLOSURE, 2.1-9 STRIKING BAR (T51), 16.0-1 SWITCH A/C HI PRESSURE, 6.11-3 BATTERY DISCONNECT, 8.10-6 DUST COLLECTOR, 6.3-1 EMERGENCY STOP, 6.3-1 ENGINE FAN, 8.10-6 ENGINE SHUTDOWN, 8.0-10</p>	<p>ETHER LOW TEMPERATURE, 8.0-10 GREASER FOOT, 6.0-7 HYDRAULIC (OIL-FAN), 8.10-7 IGNITION, 6.5-1 JOYSTICK, 6.8-1 LIGHT, 6.6-1 OIL PRESSURE, 8.1-2 OSCILLATION, 6.3-1 OVERRIDE, 6.5-1 PRESSURE (BACKUP ALARM), 7.18-1 PRESSURE (LOAD SENSE), 7.12-2 PROXIMITY (GRIPPER ARM), 5.6-4 SAFETY TRIP WIRE, 5.0-7 SAFETY TRIP WIRE ASSEMBLY, 5.0-7 SEPARATOR TANK THERMAL, 9.10-5, 9.11-4 SHUTDOWN (AIR END), 9.5-5 START, 6.3-1, 6.5-1 TEMPERATURE (HYD. OIL THERMAL VALVE), 7.19-2 TOGGLE, 6.5-1 WIPER, 6.6-1</p> <p style="text-align: center;">T</p> <p>TEMPERATURE SENDER (HYD. OIL THERMAL VALVE), 7.19-2 TORQUE SPECIFICATIONS, 15.0-17 TRACK ASSEMBLY BOTTOM ROLLER ASSEMBLY, 3.0A-3 BOTTOM TRACK ROLLER, 3.0-3 BOTTOM TRACK ROLLER ASSEMBLY, 3.2-1 CARRIER ROLLER ASSEMBLY, 3.0-3, 3.0A-3, 3.5-1 DOUBLE GROUSER PAD, 3.1-1, 3.1A-1 FINAL DRIVE GEARBOX ASSEMBLY, 3.0A-3 FINAL DRIVE MOTOR, 3.0-3, 3.0A-3 FRONT IDLER ASSEMBLY, 3.0-3, 3.0A-3, 3.3-1 HYDRAULIC TRAM COUNTERBALANCE VALVE, 3.0-3, 3.0A-3 RECOIL DEVICE ASSEMBLY, 3.3-2 ROCK GUARD, 3.0-3, 3.0A-3 TENSION ASSEMBLY, 3.3-2 TRACK CHAIN ASSEMBLY, 3.1-1, 3.1A-1 TRACK DRIVE SPROCKET, 3.0-3, 3.0A-3 TRACK FRAME, 3.0-3, 3.0A-3 TRACK GROUP ASSEMBLY, 3.0-3, 3.0A-3, 3.1-1, 3.1A-1 WITH .96 IN. [24.5MM] HIGH GROUSER RIBS, 3.0-1 WITH 1.17 IN. [29.8MM] HIGH GROUSER RIBS, 3.0A-1</p>
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GENERAL PARTS LIST SECTION BREAKDOWN

<u>SECTION #</u>	<u>SECTION TITLE</u>
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2.0	UNDERCARRIAGE ASSEMBLY
3.0	TRACK ASSEMBLY
4.0	BOOM ASSEMBLY
5.0	DRILL GUIDE ASSEMBLY
6.0	ENCLOSURE ASSEMBLY & COMPONENTS
7.0	ENGINE ASSEMBLY - POWER PACK SYSTEM
8.0	AIR SYSTEM - HOISING AND COMPONENTS
9.0	HYDRAULIC SYSTEM - HOISING AND COMPONENTS
10.0	DUST CONTROL SYSTEMS - DUST COLLECTOR, VAPOSOL®
11.0	MACHINE LABELS - NAMEPLATE, SAFETY, AND STRIPING
12.0	ELECTRICAL COMPONENTS
13.0	STANDARD EQUIPMENT
14.0	OPTIONAL EQUIPMENT
15.0	MACHINE SCHEMATICS - AIR, HYDRAULIC, ELECTRICAL
16.0	CAB ASSEMBLY
17.0	MAINTENANCE SPECIFICATIONS AND SERVICE LIST - TORQUE SPECS, FLUIDS, SERVICE ITEMS, INTERVALS, SPECIFICATIONS

ADDITIONAL MANUALS FURNISHED WITH EACH MACHINE

- INSTRUCTION MANUAL FOR CRAWLER DRILLING MACHINE
MODEL: CM-695D IM6061ENG
- SAFETY MANUAL FOR CRAWLER DRILLING MACHINE
MODEL: CM-695D SM6061
- PARTS LIST FOR DIRECT DRIVE ROTARY HEAD
MODEL: DDRH PL6082

WRITE PRODUCT IDENTIFICATION NUMBERS.

Accurately record all the numbers. Always use the serial number of the machine when requesting service information or when ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure in doing a specific service operation.

MACHINE: _____



Figure 1. Serial Number Location

INGERSOLL-RAND.	
CE	
YEAR BUILT	<input type="text"/>
SERIAL NO.	MODEL / TYPE
<input type="text"/>	<input type="text"/>
POWER	VOLTAGE
<input type="text"/> KW	<input type="text"/> VDC
TOTAL MASS	PULL BACK
<input type="text"/> KG	<input type="text"/> N
REAR WINCH	ROD WINCH
<input type="text"/> N	<input type="text"/> N
INGERSOLL-RAND ROCK DRILL DIVISION ROANOKE, VIRGINIA - U.S.A.	

FOR CE MACHINES

INGERSOLL-RAND®	
<input type="text"/>	<input type="text"/>
ALWAYS GIVE SERIAL NO. WHEN ORDERING PART INGERSOLL-RAND WOODCLIFF LAKE, N.J. U.S.A.	

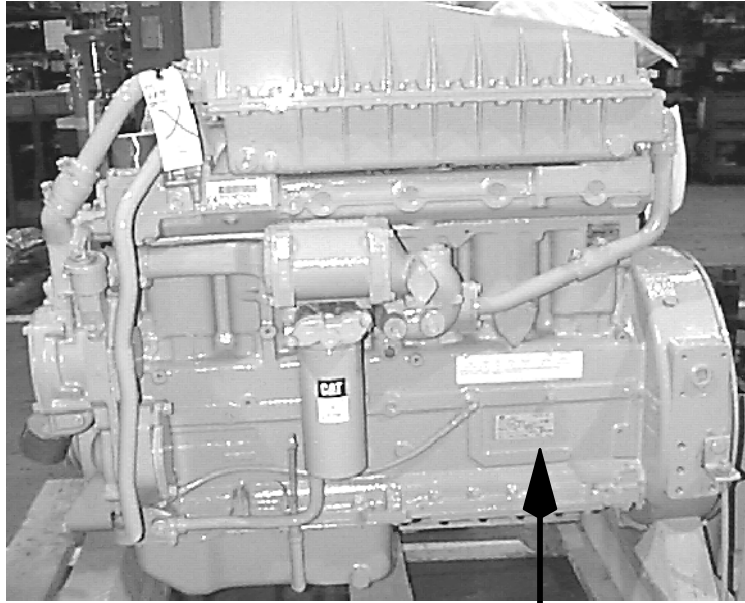
FOR ASME MACHINES

NOTE: References to the right-hand side and left-hand side of the machine are made looking from the main frame end toward the drill end.

NOTICE

All information, illustrations, and specifications in this manual are based on the latest information available at the time of publication. Product improvement is a continuing goal at Ingersoll-Rand®. Design and specifications are subject to change without notice or obligation.

WRITE PRODUCT IDENTIFICATION NUMBERS. (cont.)



ENGINE: _____

WRITE PRODUCT IDENTIFICATION NUMBERS. (cont.)

ROTARY HEAD : _____

Serial Number Located In This Area



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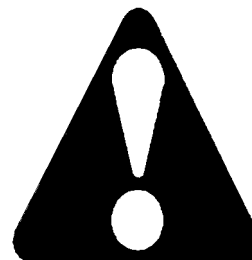
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SAFETY INFORMATION

BE AWARE OF SAFETY INFORMATION

This is the Safety-Alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

**SAFETY ALERT SYMBOL****UNDERSTAND SIGNAL WORDS**

A signal word - DANGER, WARNING, or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER, WARNING, or CAUTION safety labels are located near specific hazards.

NOTICE labels are for general information.



(RED BACKGROUND)

DANGER IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH WILL CAUSE SEVERE PERSONAL INJURY OR DEATH IF THE WARNING IS IGNORED.



(ORANGE BACKGROUND)

WARNING IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH CAN CAUSE SEVERE INJURY OR DEATH IF THE WARNING IS IGNORED.



(YELLOW BACKGROUND)

CAUTION IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH WILL OR CAN CAUSE PERSONAL INJURY, OR PROPERTY DAMAGE IF THE WARNING IS IGNORED.



(BLUE BACKGROUND)

Notice is used to notify people of installation, operation, or maintenance information which is important but not hazard related.

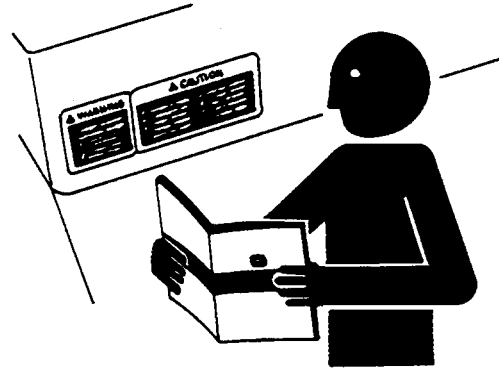
FOLLOW INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine's safety labels. Keep safety labels in good condition. Replace all missing or damaged safety labels.

Replacement safety labels can be obtained at no cost from your local Ingersoll-Rand dealer or representative or by contacting the factory.

Learn how to operate the machine and how to use the controls properly. **DO NOT LET ANYONE OPERATE THIS MACHINE WITHOUT PROPER INSTRUCTION.**

If you do not understand any part of this manual and need assistance, contact your local Ingersoll-Rand dealer.

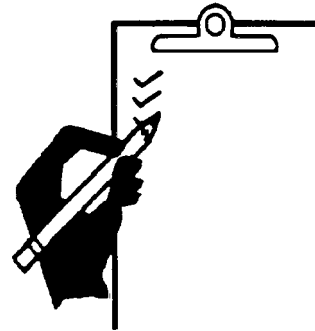


KEEP MACHINE IN GOOD WORKING CONDITION

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and effect machine life.

Make sure all safety devices, including shields are installed and functioning properly.

Visually inspect the machine daily before starting the machine. Do not operate the machine with loose, worn, or broken parts.

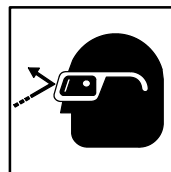


WEAR PROTECTIVE CLOTHING

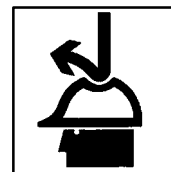
Wear APPROVED safety equipment (safety shoes, safety glasses, hearing protection, hard hat, gloves, respirator, etc.) when operating or maintaining the machine.

Wear close fitting clothing and confine long hair.

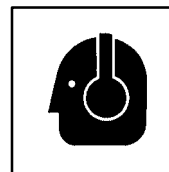
Operating equipment requires the full attention of the operator. Do not wear radio or music headphones while operating the machine.



Safety Glasses



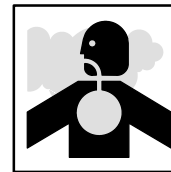
Hard Hat



Ear Protection



Electrically Insulated Gloves



Respirator



Electrically Insulated Boots

HANDLE FUEL SAFELY - AVOID FIRES

Handle fuel with care, it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

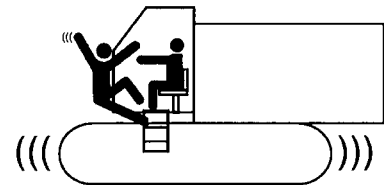
Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fire by keeping machine clean of accumulated trash, debris, and grease. Always clean up spilled fuel.



KEEP RIDERS OFF MACHINE

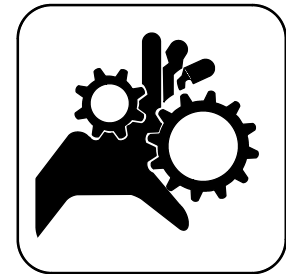
Never ride on a machine. The operator's cab is for one person only. Riders are subject to injury such as being thrown off the machine.



AVOID MOVING PARTS

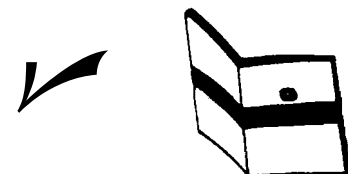
Keep hands, feet, and clothing away from power driven parts.

Keep safety shields in place and properly secured.



CHECK LAWS AND REGULATIONS

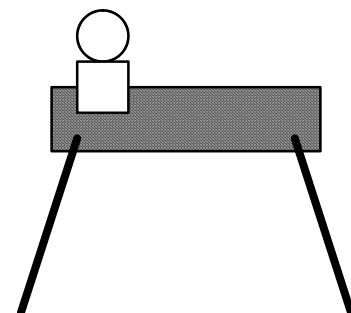
Know and obey all Federal, State, and local laws and regulations that apply to your work situation.



PLACE WARNING BARRIERS AROUND WORK SITE

Set up traffic barriers around the work area with warning signs facing outward.

Place pedestrian and traffic barriers around the job site in accordance with Federal, State, local, and governing agency laws and regulations.



CHECK FOR UNDERGROUND UTILITY LINES

Before starting work, remember that contact with buried utilities may cause serious injury or death. Electric line contact may cause electric shock or electrocution. Gas line contact may rupture pipe causing explosion or fire. Fiber optic cables can blind you if you look into the laser light in them. Water line rupture may cause a flood and possible ground collapse. Before drilling, check with qualified sources to properly locate all buried utilities in and around drill path. Select a drill path that will not intersect buried utilities. Never launch a drill bit on a path toward electric, gas, or water lines. Until their location is known, have the utility company shut it off before starting any underground work. Excavate to confirm its exact location.



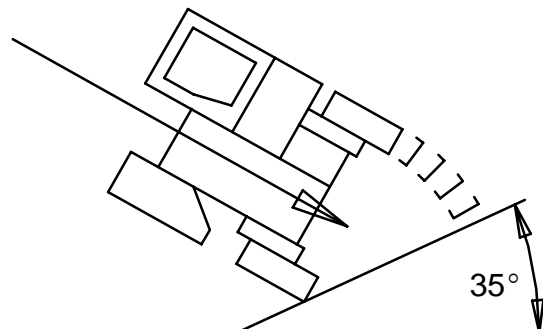
DO NOT WORK ON OR NEAR UNSTABLE GROUND

Do not work in trenches with unstable sides which could cave in. Do not work near faces or walls that can collapse. Do not work near benches that can collapse. Specific requirements for shoring or sloping trench walls, faces, and benches are available from several sources including Federal and State O.S.H.A. offices, or appropriate governing agency. Be sure to contact suitable authorities for these requirements before working in a trench. Federal O.S.H.A. regulations can be obtained by contacting the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. State O.S.H.A. regulations are available at your local state O.S.H.A. office, or appropriate governing agency.



ROLLOVER POSSIBLE

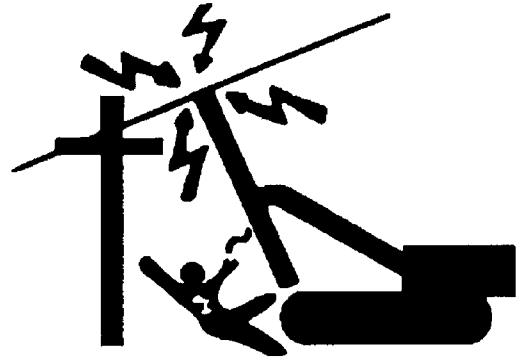
Proceed slowly; be alert and use extreme caution when operating on hillsides, or near ditches, gullies, holes, or obstructions where rollover could occur.



AVOID ELECTROCUTION. STAY AWAY.

Electrocution possible. Serious injury or death may result if the machine strikes an energized powerline. Take the following precautions to prevent electrocution. Also refer to the operating instructions.

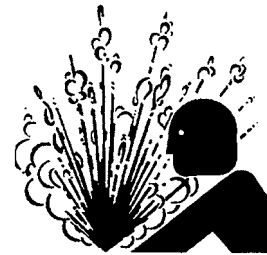
- ◆ Always contact your local utility company when working in the vicinity of utilities.
- ◆ Locate underground utilities by qualified persons.
- ◆ Do not raise, lower, or move drill guide or boom near power lines.
- ◆ Always wear proper electrically insulated lineman's gloves and boots.
- ◆ Never touch metal parts on machine while standing on bare ground if machine comes in contact with a powerline.
- ◆ Always stay in cab during all drilling operations.
- ◆ Never step onto or off of a machine if an electric strike occurs.



AVOID COOLANT BURNS

Hot fluid under pressure can erupt and scald if opened.

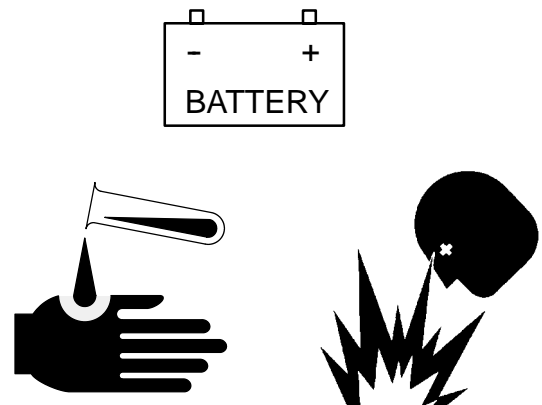
Allow to cool before opening.



AVOID BATTERY BURNS AND EXPLOSION

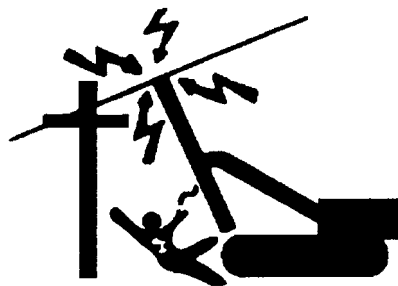
Battery contains sulfuric acid which can cause severe burns. Avoid contact with eyes, skin, and clothing.

Battery fumes are flammable and can explode. Keep all burning materials away from battery. Do not smoke. Tools and cable clamps can make sparks. Shield eyes and face from battery.



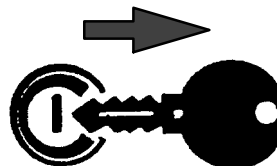
CHECK FOR OVERHEAD UTILITY LINES

Check for overhead electrical power lines or other obstructions and be certain there is adequate clearance when handling drill rod or moving machine.



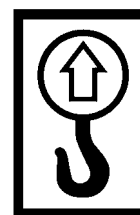
USE NORMAL SHUTDOWN PROCEDURE

Before servicing, cleaning, repairing, inspecting, lubricating, fueling, or transporting the machine, make sure the machine has been shutdown in accordance with this instruction manual.



WHEN TRANSPORTING ON TRUCK OR TRAILER

Attach chains and binders to the machine to securely tie down the machine to the truck or trailer. Refer to LIFTING POINTS in Section 2 for proper location.



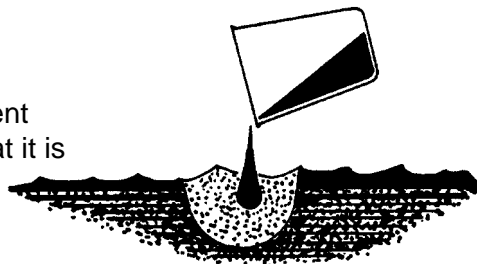
OBSERVE ENVIRONMENTAL PROTECTION REGULATIONS

Be mindful of the environment and ecology.

Before draining any fluids, find the correct way of disposing them.

Observe the relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters and batteries.

When using any solvent to clean parts, make sure that it is nonflammable, that it will not harm the skin, that it meets current O.S.H.A. standards, or appropriate governing agency. And that it is used in an area that is adequately ventilated.



WARNING: Failure to follow any of the above safety instructions or those that follow within this manual, could result in serious injury or death. This machine is to be used only for those purposes for which it was intended as explained in this instruction manual.

SAFETY DECALS

INSPECTING SAFETY DECALS

Safety decals located on your machine contain important and useful information that will help you operate your equipment safely.

To assure that all decals remain in place and in good condition, follow the instructions given below:

Keep decals clean. Use soap and water, not mineral spirits, abrasive cleaners, or other similar cleaners that will damage the decal.

Replace any damaged or missing decals. When attaching decals, surface temperature of the metal must be at least 40°F (5°C). The metal must also be clean and dry.

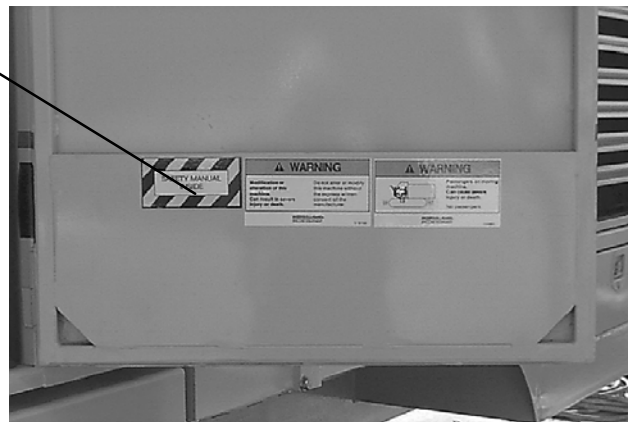
When replacing a machine component with a decal attached, replace the decal also.

Replacement decals can be obtained at no cost from your local Ingersoll-Rand dealer or representative or by contacting the factory.

If you do not understand any part of this manual and need assistance, contact your local Ingersoll-Rand dealer.



SAFETY MANUAL MUST BE KEPT WITH MACHINE AT ALL TIMES. REPLACE SAFETY MANUAL WHEN LOST OR DAMAGED.



⚠ DANGER



**Hazardous voltage.
Will cause severe
injury or death.**

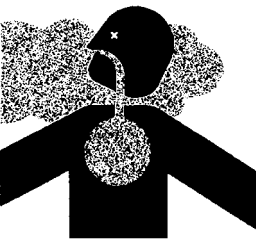
**Do not raise, lower,
or move drill guide
or boom near
power lines.**

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51777357



⚠ DANGER



**Air discharged from
this machine may contain
carbon monoxide or
other contaminants.
Will cause severe
injury or death.**

Do not breathe this air.

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51777373





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51993145



⚠ WARNING

Modification or alteration of this machine can result in severe injury or death.

Do not alter or modify this machine without the express written consent of the manufacturer.

⚠ ADVERTENCIA

La modificación o alteración de esta máquina puede resultar en lesión grave o la muerte.

No cambie o modifique esta máquina sin el consentimiento expreso por escrito del fabricante.

⚠ AVERTISSEMENT

Des modifications à cette machine peuvent causer des blessures graves ou la mort.

N'apportez aucune modification à cette machine sans l'accord écrit du fabricant.

⚠ WARNING

Eine Modifikation oder Änderung dieser Maschine kann zu schweren Verletzungen oder zum Tod führen.

Diese Maschine darf ohne ausdrückliche schriftliche Zustimmung vom Hersteller nicht geändert oder modifiziert werden.

⚠ AVVERTENZA

Modifiche o alterazioni di questa macchina. Possono causare infortuni gravi o morte.

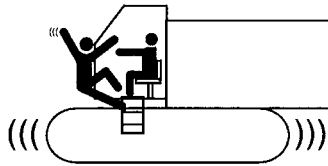
Non alterare o modificare questa macchina senza aver prima ottenuto l'espresso consenso scritto del fabbricante.



INGERSOLL-RAND.

52292851

⚠ WARNING

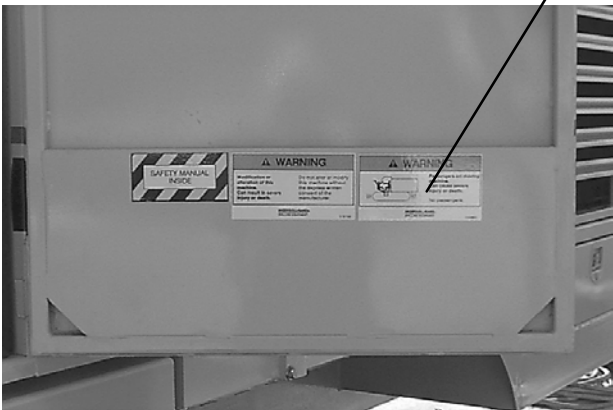


Passengers on moving machine. Can cause severe injury or death.

No passengers.

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51949691



WARNING

Improper operation of this equipment can cause severe injury or death.

Read safety instructions supplied with this equipment before operating or servicing.



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52292844



CALIFORNIA PROPOSITION 65 WARNING

DIESEL ENGINE EXHAUST AND SOME OF ITS CONSTITUENTS ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, AND OTHER REPRODUCTIVE HARM.

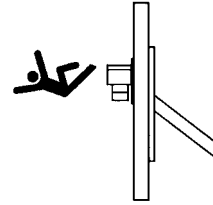
INGERSOLL-RAND

51996593





⚠ WARNING



**Riding rotary head/drifter.
Can cause severe injury
or death.**

Do not ride rotary head/drifter.
Lower drill guide to service.

INGERSOLL-RAND®

51949709

⚠ WARNING

**Rotating drill steel.
Can cause
severe injury or death.**

Keep clear.

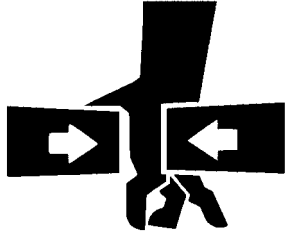
INGERSOLL-RAND®

51777456





▲ WARNING



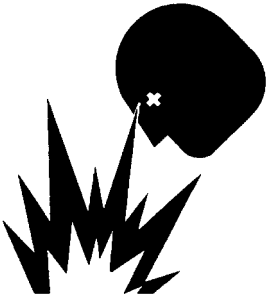
**Crush area.
Can cause severe
injury.**

Stay clear.

INGERSOLL-RAND®

51792695

▲ WARNING

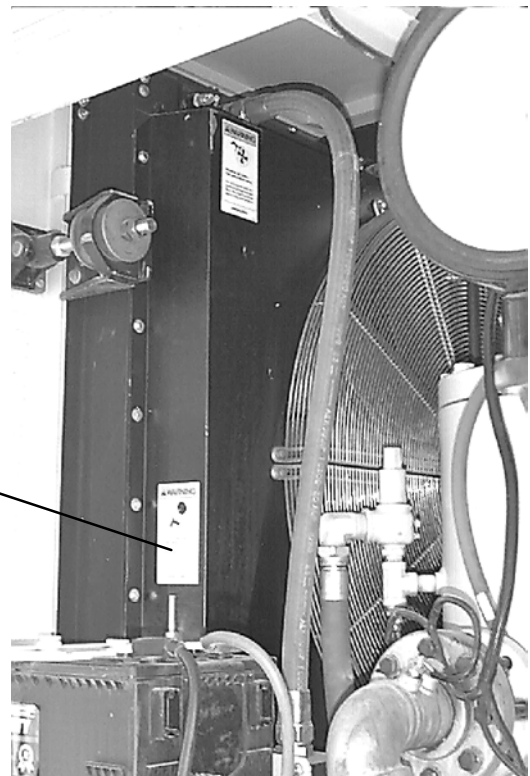


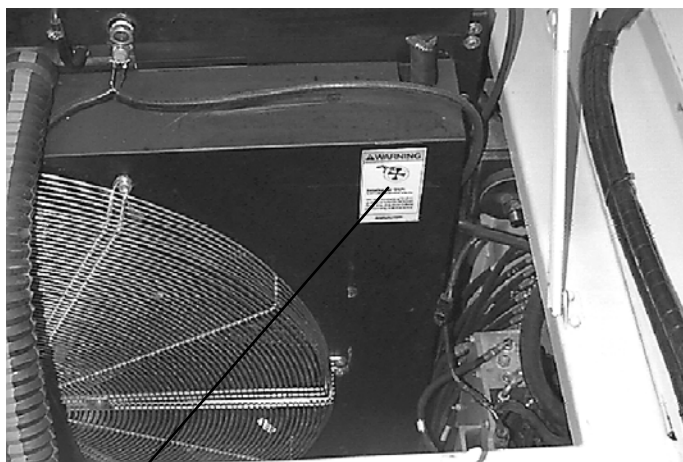
**Combustible gas.
Can cause severe burns,
blindness, or death.**

Keep sparks and
open flame away.

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51777365





▲ WARNING

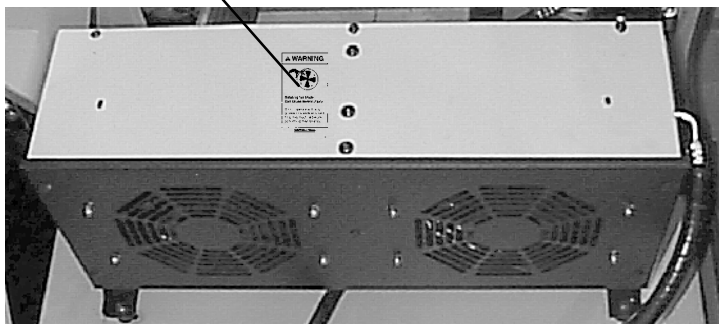


**Rotating fan blade.
Can cause severe injury.**

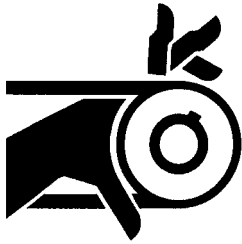
Do not operate with any
guards or shields removed.
Stop this machine before
performing maintenance.

INGERSOLL-RAND.

51777464



▲ WARNING

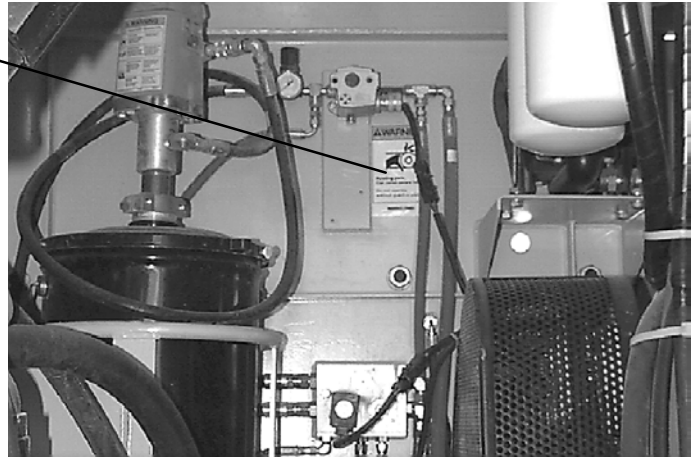


**Rotating parts.
Can cause
severe injury.**

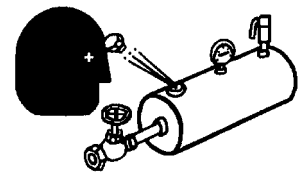
Do not operate
without guard
in place.

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51357408



▲ WARNING

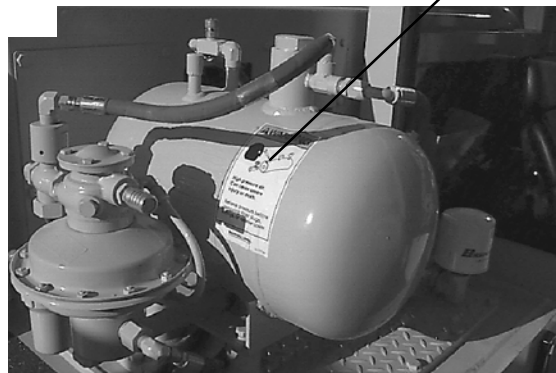


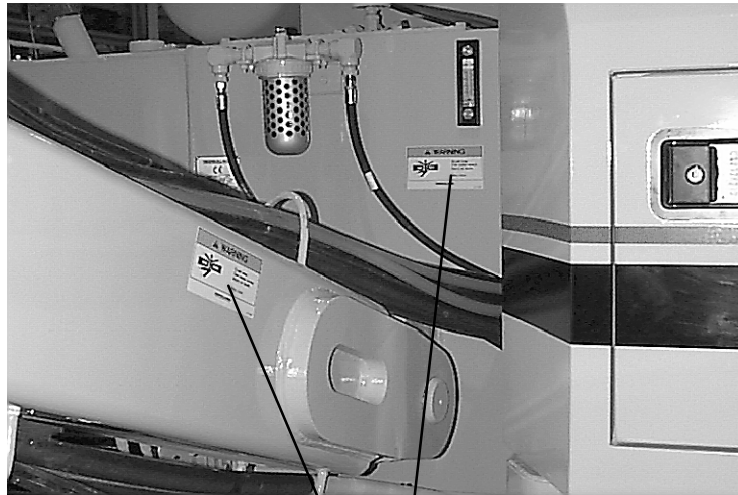
**High pressure air.
Can cause severe
injury or death.**

Relieve pressure before
removing filler plugs,
fittings, or receiver cover.

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51777381





▲ WARNING



**Crush area.
Can cause severe
injury or death.**

Stay clear.

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51777449





▲ WARNING



**Runaway machine.
Can cause severe
injury or death.**

Chock tracks
before declutching
propel drive.

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51917904



▲ WARNING



**Machine rollover.
Can cause severe
injury or death.**

Position boom and
guide to uphill side
and lowered position
when crossing slope.

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51778876





CAUTION

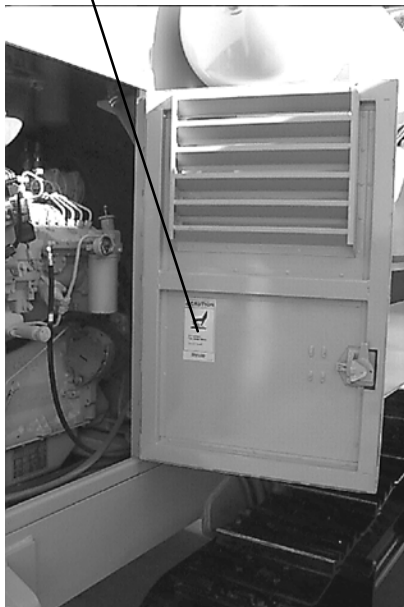
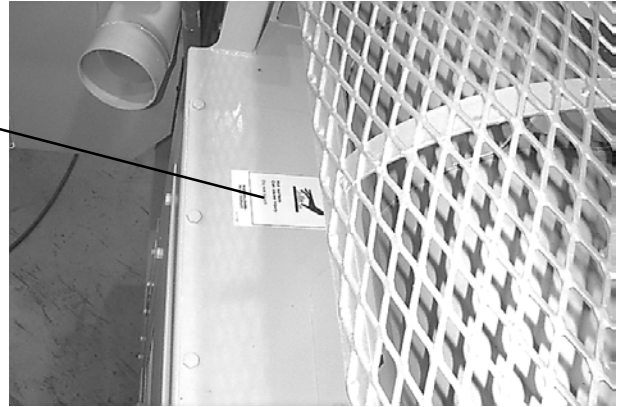


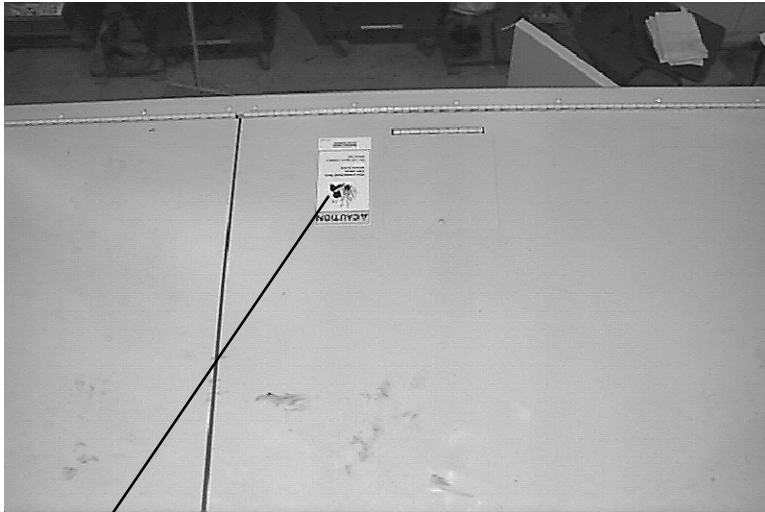
**Hot surface.
Can cause injury.**

Do not touch.


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51777407





▲ CAUTION



**Hot pressurized fluid.
Can cause
severe burns.**

Do not open radiator
while hot.

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51777415

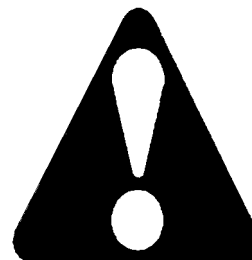


SAFETY INFORMATION

BE AWARE OF SAFETY INFORMATION

This is the Safety-Alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

**SAFETY ALERT SYMBOL****UNDERSTAND SIGNAL WORDS**

A signal word - DANGER, WARNING, or CAUTION - is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER, WARNING, or CAUTION safety labels are located near specific hazards.

NOTICE labels are for general information.



(RED BACKGROUND)

DANGER IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH WILL CAUSE SEVERE PERSONAL INJURY OR DEATH IF THE WARNING IS IGNORED.



(ORANGE BACKGROUND)

WARNING IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH CAN CAUSE SEVERE INJURY OR DEATH IF THE WARNING IS IGNORED.



(YELLOW BACKGROUND)

CAUTION IS USED TO INDICATE THE PRESENCE OF A HAZARD WHICH WILL OR CAN CAUSE PERSONAL INJURY, OR PROPERTY DAMAGE IF THE WARNING IS IGNORED.



(BLUE BACKGROUND)

Notice is used to notify people of installation, operation, or maintenance information which is important but not hazard related.

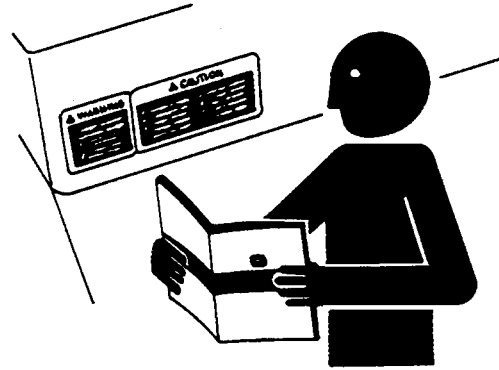
FOLLOW INSTRUCTIONS

Carefully read all safety messages in this manual and on your machine's safety labels. Keep safety labels in good condition. Replace all missing or damaged safety labels.

Replacement safety labels can be obtained at no cost from your local Ingersoll-Rand dealer or representative or by contacting the factory.

Learn how to operate the machine and how to use the controls properly. **DO NOT LET ANYONE OPERATE THIS MACHINE WITHOUT PROPER INSTRUCTION.**

If you do not understand any part of this manual and need assistance, contact your local Ingersoll-Rand dealer.

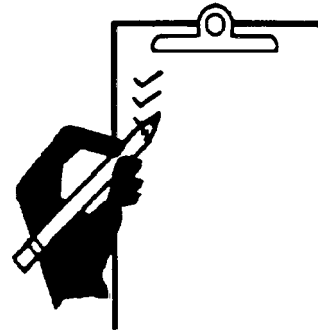


KEEP MACHINE IN GOOD WORKING CONDITION

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and effect machine life.

Make sure all safety devices, including shields are installed and functioning properly.

Visually inspect the machine daily before starting the machine. Do not operate the machine with loose, worn, or broken parts.

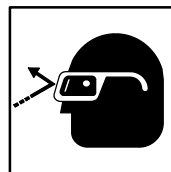


WEAR PROTECTIVE CLOTHING

Wear APPROVED safety equipment (safety shoes, safety glasses, hearing protection, hard hat, gloves, respirator, etc.) when operating or maintaining the machine.

Wear close fitting clothing and confine long hair.

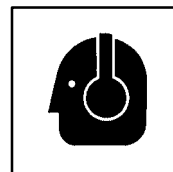
Operating equipment requires the full attention of the operator. Do not wear radio or music headphones while operating the machine.



Safety Glasses



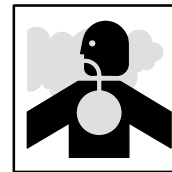
Hard Hat



Ear Protection



Electrically Insulated Gloves



Respirator



Electrically Insulated Boots

HANDLE FUEL SAFELY - AVOID FIRES

Handle fuel with care, it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

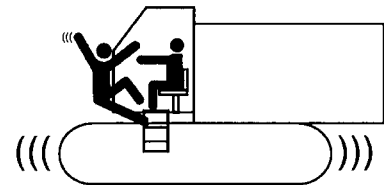
Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fire by keeping machine clean of accumulated trash, debris, and grease. Always clean up spilled fuel.



KEEP RIDERS OFF MACHINE

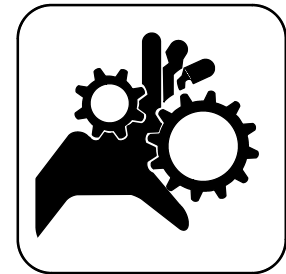
Never ride on a machine. The operator's cab is for one person only. Riders are subject to injury such as being thrown off the machine.



AVOID MOVING PARTS

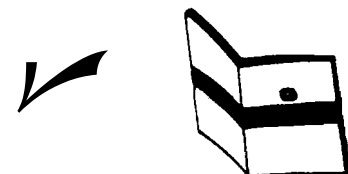
Keep hands, feet, and clothing away from power driven parts.

Keep safety shields in place and properly secured.



CHECK LAWS AND REGULATIONS

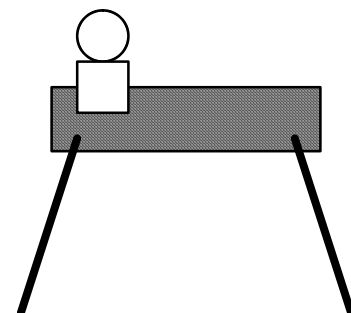
Know and obey all Federal, State, and local laws and regulations that apply to your work situation.



PLACE WARNING BARRIERS AROUND WORK SITE

Set up traffic barriers around the work area with warning signs facing outward.

Place pedestrian and traffic barriers around the job site in accordance with Federal, State, local, and governing agency laws and regulations.



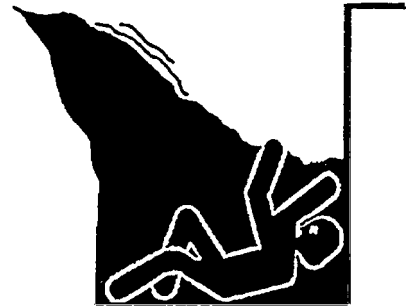
CHECK FOR UNDERGROUND UTILITY LINES

Before starting work, remember that contact with buried utilities may cause serious injury or death. Electric line contact may cause electric shock or electrocution. Gas line contact may rupture pipe causing explosion or fire. Fiber optic cables can blind you if you look into the laser light in them. Water line rupture may cause a flood and possible ground collapse. Before drilling, check with qualified sources to properly locate all buried utilities in and around drill path. Select a drill path that will not intersect buried utilities. Never launch a drill bit on a path toward electric, gas, or water lines. Until their location is known, have the utility company shut it off before starting any underground work. Excavate to confirm its exact location.



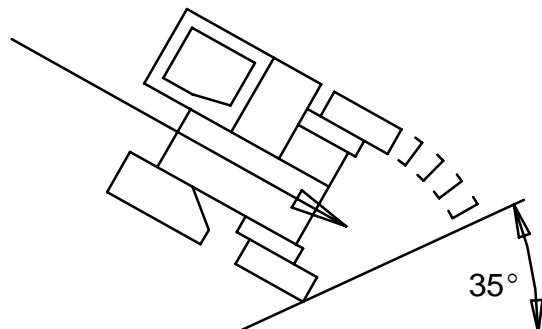
DO NOT WORK ON OR NEAR UNSTABLE GROUND

Do not work in trenches with unstable sides which could cave in. Do not work near faces or walls that can collapse. Do not work near benches that can collapse. Specific requirements for shoring or sloping trench walls, faces, and benches are available from several sources including Federal and State O.S.H.A. offices, or appropriate governing agency. Be sure to contact suitable authorities for these requirements before working in a trench. Federal O.S.H.A. regulations can be obtained by contacting the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. State O.S.H.A. regulations are available at your local state O.S.H.A. office, or appropriate governing agency.



ROLLOVER POSSIBLE

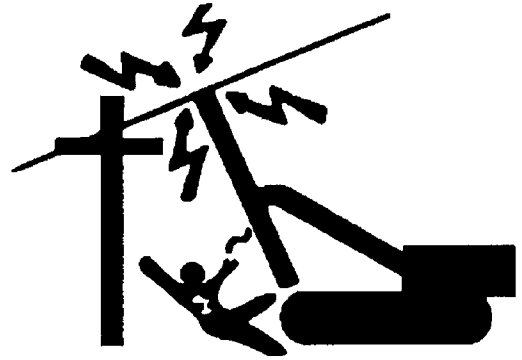
Proceed slowly; be alert and use extreme caution when operating on hillsides, or near ditches, gullies, holes, or obstructions where rollover could occur.



AVOID ELECTROCUTION. STAY AWAY.

Electrocution possible. Serious injury or death may result if the machine strikes an energized powerline. Take the following precautions to prevent electrocution. Also refer to the operating instructions.

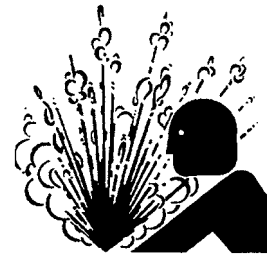
- ◆ Always contact your local utility company when working in the vicinity of utilities.
- ◆ Locate underground utilities by qualified persons.
- ◆ Do not raise, lower, or move drill guide or boom near power lines.
- ◆ Always wear proper electrically insulated lineman's gloves and boots.
- ◆ Never touch metal parts on machine while standing on bare ground if machine comes in contact with a powerline.
- ◆ Always stay in cab during all drilling operations.
- ◆ Never step onto or off of a machine if an electric strike occurs.



AVOID COOLANT BURNS

Hot fluid under pressure can erupt and scald if opened.

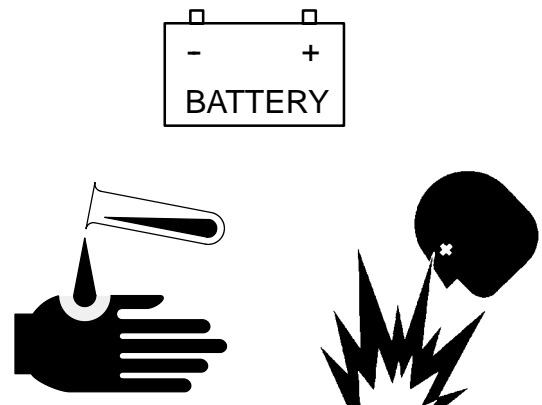
Allow to cool before opening.



AVOID BATTERY BURNS AND EXPLOSION

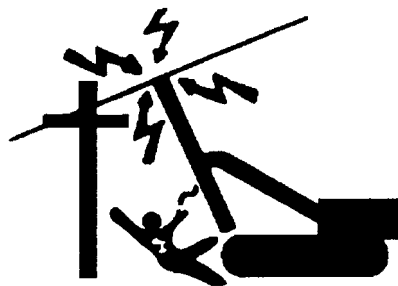
Battery contains sulfuric acid which can cause severe burns. Avoid contact with eyes, skin, and clothing.

Battery fumes are flammable and can explode. Keep all burning materials away from battery. Do not smoke. Tools and cable clamps can make sparks. Shield eyes and face from battery.



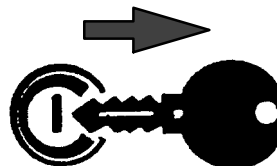
CHECK FOR OVERHEAD UTILITY LINES

Check for overhead electrical power lines or other obstructions and be certain there is adequate clearance when handling drill rod or moving machine.



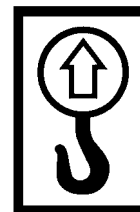
USE NORMAL SHUTDOWN PROCEDURE

Before servicing, cleaning, repairing, inspecting, lubricating, fueling, or transporting the machine, make sure the machine has been shutdown in accordance with this instruction manual.



WHEN TRANSPORTING ON TRUCK OR TRAILER

Attach chains and binders to the machine to securely tie down the machine to the truck or trailer. Refer to LIFTING POINTS in Section 2 for proper location.



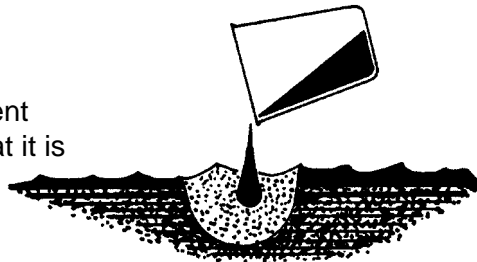
OBSERVE ENVIRONMENTAL PROTECTION REGULATIONS

Be mindful of the environment and ecology.

Before draining any fluids, find the correct way of disposing them.

Observe the relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters and batteries.

When using any solvent to clean parts, make sure that it is nonflammable, that it will not harm the skin, that it meets current O.S.H.A. standards, or appropriate governing agency. And that it is used in an area that is adequately ventilated.



WARNING: Failure to follow any of the above safety instructions or those that follow within this manual, could result in serious injury or death. This machine is to be used only for those purposes for which it was intended as explained in this instruction manual.

SAFETY DECALS

INSPECTING SAFETY DECALS

Safety decals located on your machine contain important and useful information that will help you operate your equipment safely.

To assure that all decals remain in place and in good condition, follow the instructions given below:

Keep decals clean. Use soap and water, not mineral spirits, abrasive cleaners, or other similar cleaners that will damage the decal.

Replace any damaged or missing decals. When attaching decals, surface temperature of the metal must be at least 40°F (5°C). The metal must also be clean and dry.

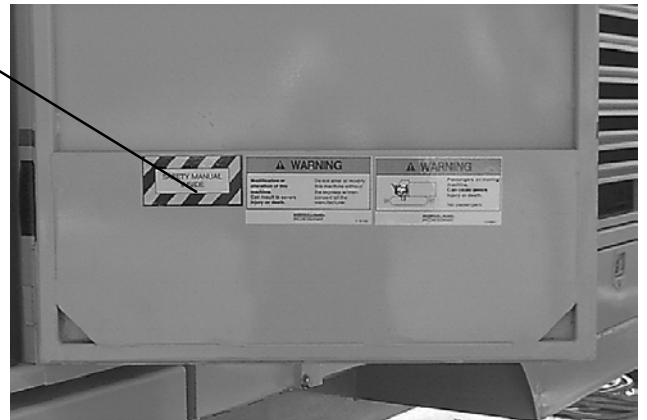
When replacing a machine component with a decal attached, replace the decal also.

Replacement decals can be obtained at no cost from your local Ingersoll-Rand dealer or representative or by contacting the factory.

If you do not understand any part of this manual and need assistance, contact your local Ingersoll-Rand dealer.



SAFETY MANUAL MUST BE KEPT WITH MACHINE AT ALL TIMES. REPLACE SAFETY MANUAL WHEN LOST OR DAMAGED.



Hazardous voltage.
Will cause severe injury or death.

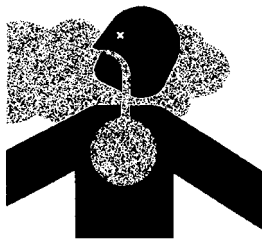
Do not raise, lower, or move drill guide or boom near power lines.

INGERSOLL-RAND®

51777357



⚠ DANGER



Air discharged from this machine may contain carbon monoxide or other contaminants. Will cause severe injury or death.

Do not breathe this air.

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51777373





INGERSOLL-RAND.

51993145



⚠ WARNING

Modification or alteration of this machine can result in severe injury or death.

Do not alter or modify this machine without the express written consent of the manufacturer.

⚠ ADVERTENCIA

La modificación o alteración de esta máquina puede resultar en lesión grave o la muerte.

No cambie o modifique esta máquina sin el consentimiento expreso por escrito del fabricante.

⚠ AVERTISSEMENT

Des modifications à cette machine peuvent causer des blessures graves ou la mort.

N'apportez aucune modification à cette machine sans l'accord écrit du fabricant.

⚠ WARNING

Eine Modifikation oder Änderung dieser Maschine kann zu schweren Verletzungen oder zum Tod führen.

Diese Maschine darf ohne ausdrückliche schriftliche Zustimmung vom Hersteller nicht geändert oder modifiziert werden.

⚠ AVVERTENZA

Modifiche o alterazioni di questa macchina.
Possono causare infortuni gravi o morte.

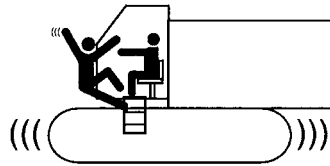
Non alterare o modificare questa macchina senza aver prima ottenuto l'espresso consenso scritto del fabbricante.



INGERSOLL-RAND.

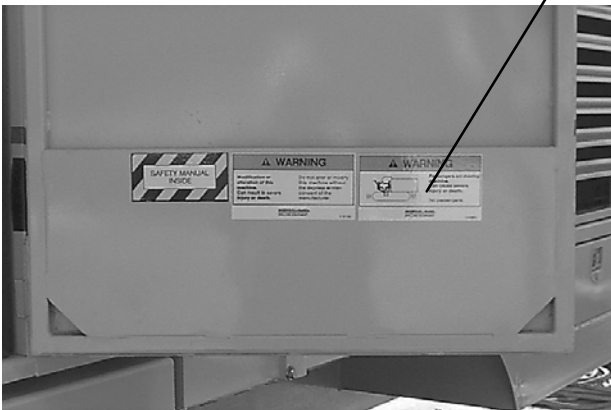
52292851

⚠ WARNING



**Passengers on moving machine.
Can cause severe injury or death.**

No passengers.



INGERSOLL-RAND.

51949691

WARNING

Improper operation of this equipment can cause severe injury or death.

Read safety instructions supplied with this equipment before operating or servicing.



INGERSOLL-RAND

52292844



CALIFORNIA PROPOSITION 65 WARNING

DIESEL ENGINE EXHAUST AND SOME OF ITS CONSTITUENTS ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, AND OTHER REPRODUCTIVE HARM.

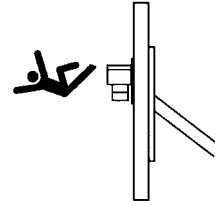
INGERSOLL-RAND

51996593





⚠ WARNING



**Riding rotary head/drifter.
Can cause severe injury
or death.**

Do not ride rotary head/drifter.
Lower drill guide to service.

INGERSOLL-RAND®

51949709

⚠ WARNING

**Rotating drill steel.
Can cause
severe injury or death.**

Keep clear.

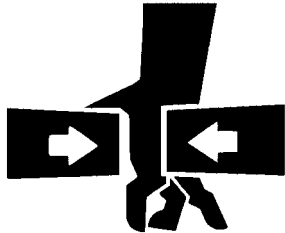
INGERSOLL-RAND®

51777456





▲ WARNING



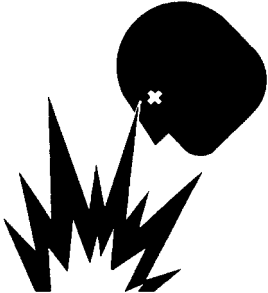
**Crush area.
Can cause severe
injury.**

Stay clear.

INGERSOLL-RAND®

51792695

▲ WARNING

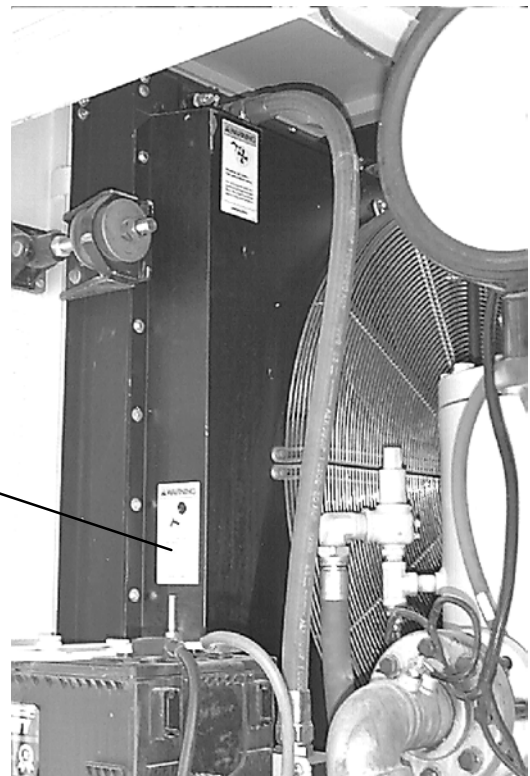


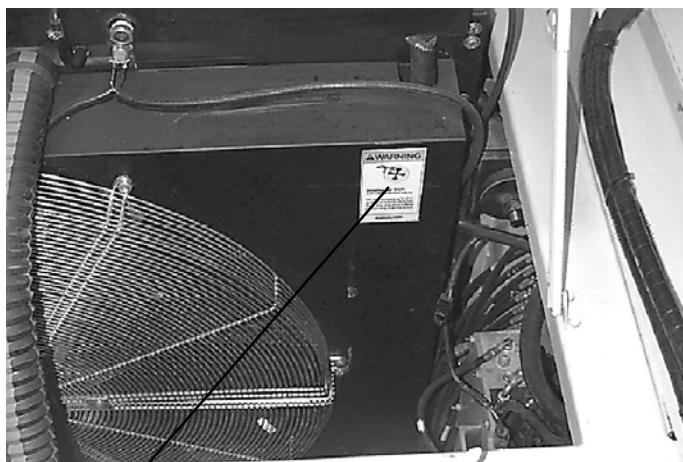
**Combustible gas.
Can cause severe burns,
blindness, or death.**

Keep sparks and
open flame away.

INGERSOLL-RAND®

51777365





▲ WARNING

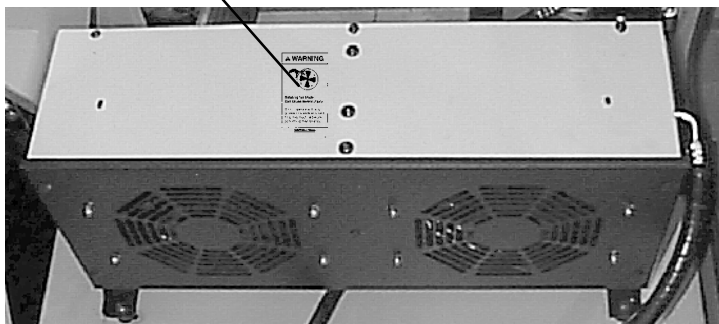


**Rotating fan blade.
Can cause severe injury.**

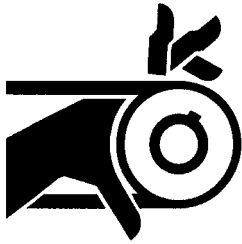
Do not operate with any
guards or shields removed.
Stop this machine before
performing maintenance.

INGERSOLL-RAND.

51777464



▲ WARNING

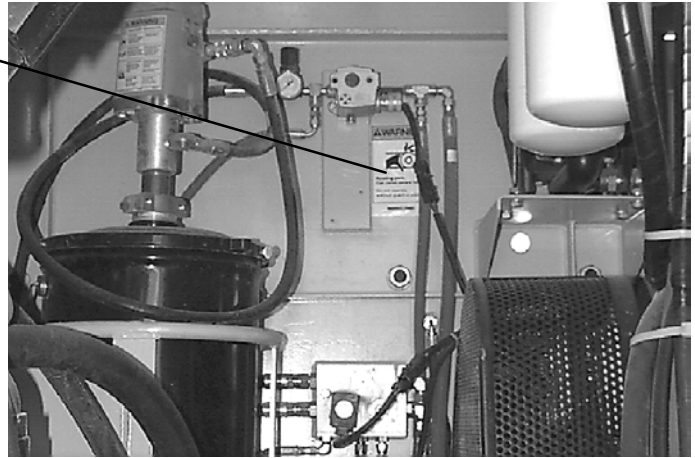


**Rotating parts.
Can cause
severe injury.**

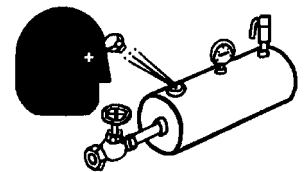
Do not operate
without guard
in place.

INGERSOLL-RAND®

51357408



▲ WARNING

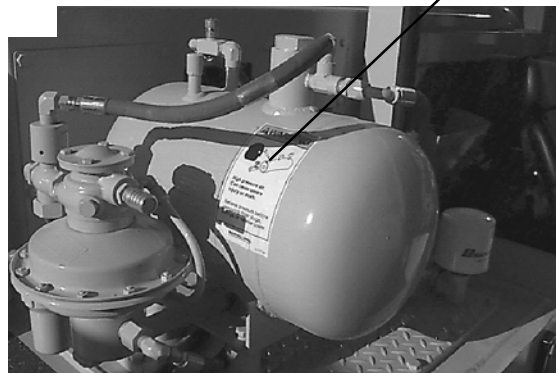


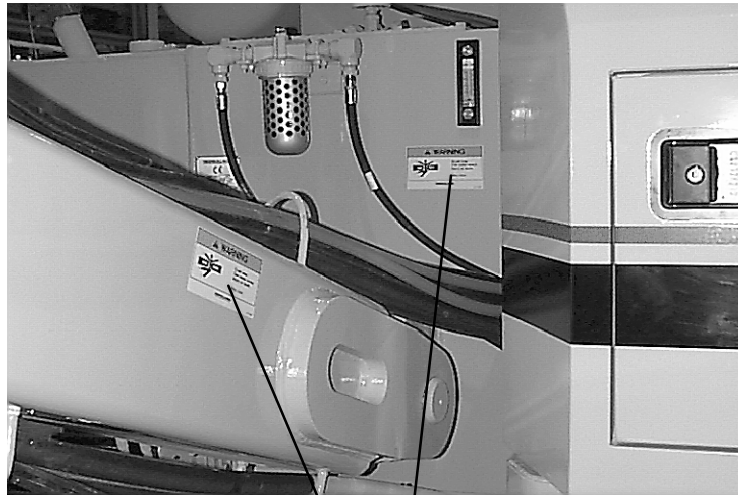
**High pressure air.
Can cause severe
injury or death.**

Relieve pressure before
removing filler plugs,
fittings, or receiver cover.

INGERSOLL-RAND®

51777381





▲ WARNING



**Crush area.
Can cause severe
injury or death.**

Stay clear.

INGERSOLL-RAND®

51777449





▲ WARNING



**Runaway machine.
Can cause severe
injury or death.**

Chock tracks
before declutching
propel drive.

INGERSOLL-RAND.

51917904



▲ WARNING



**Machine rollover.
Can cause severe
injury or death.**

Position boom and
guide to uphill side
and lowered position
when crossing slope.

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51778876





⚠ CAUTION

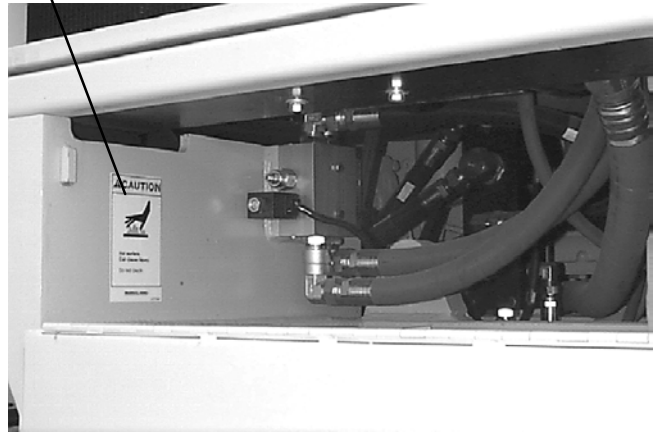
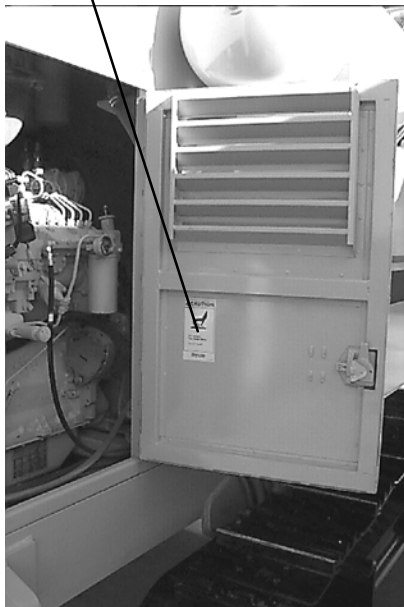
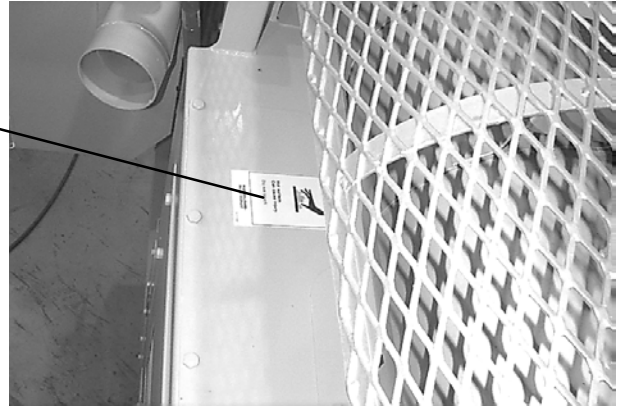


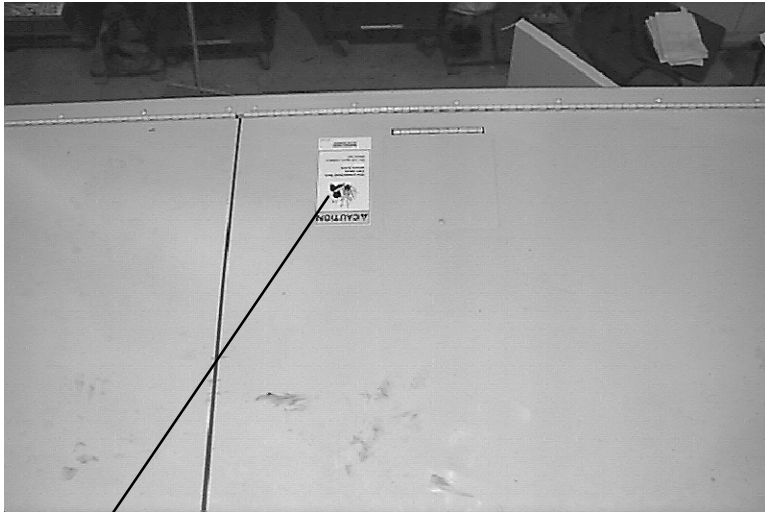
**Hot surface.
Can cause injury.**

Do not touch.

INGERSOLL-RAND.

51777407





▲ CAUTION



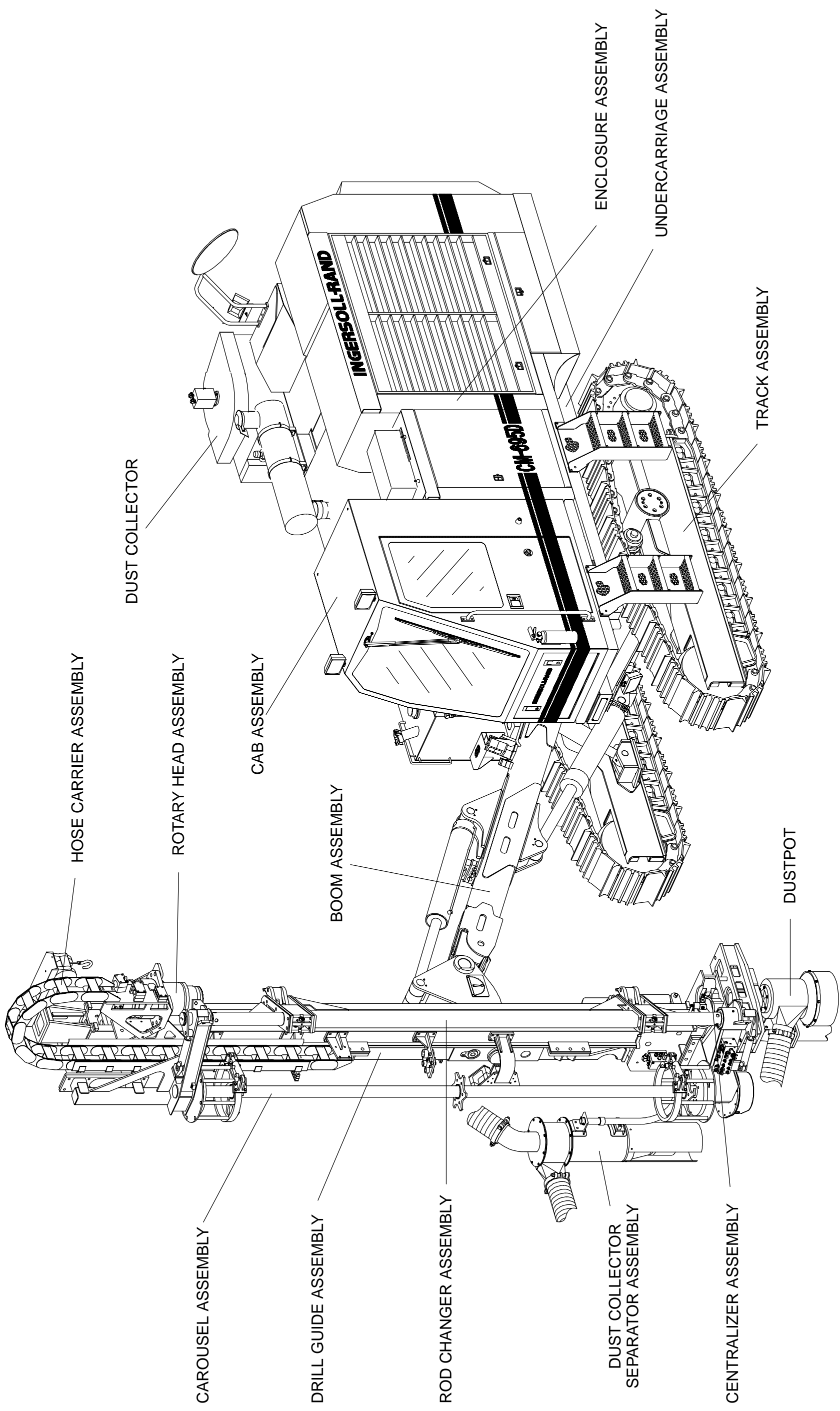
**Hot pressurized fluid.
Can cause
severe burns.**

Do not open radiator
while hot.

INGERSOLL-RAND®

51777415



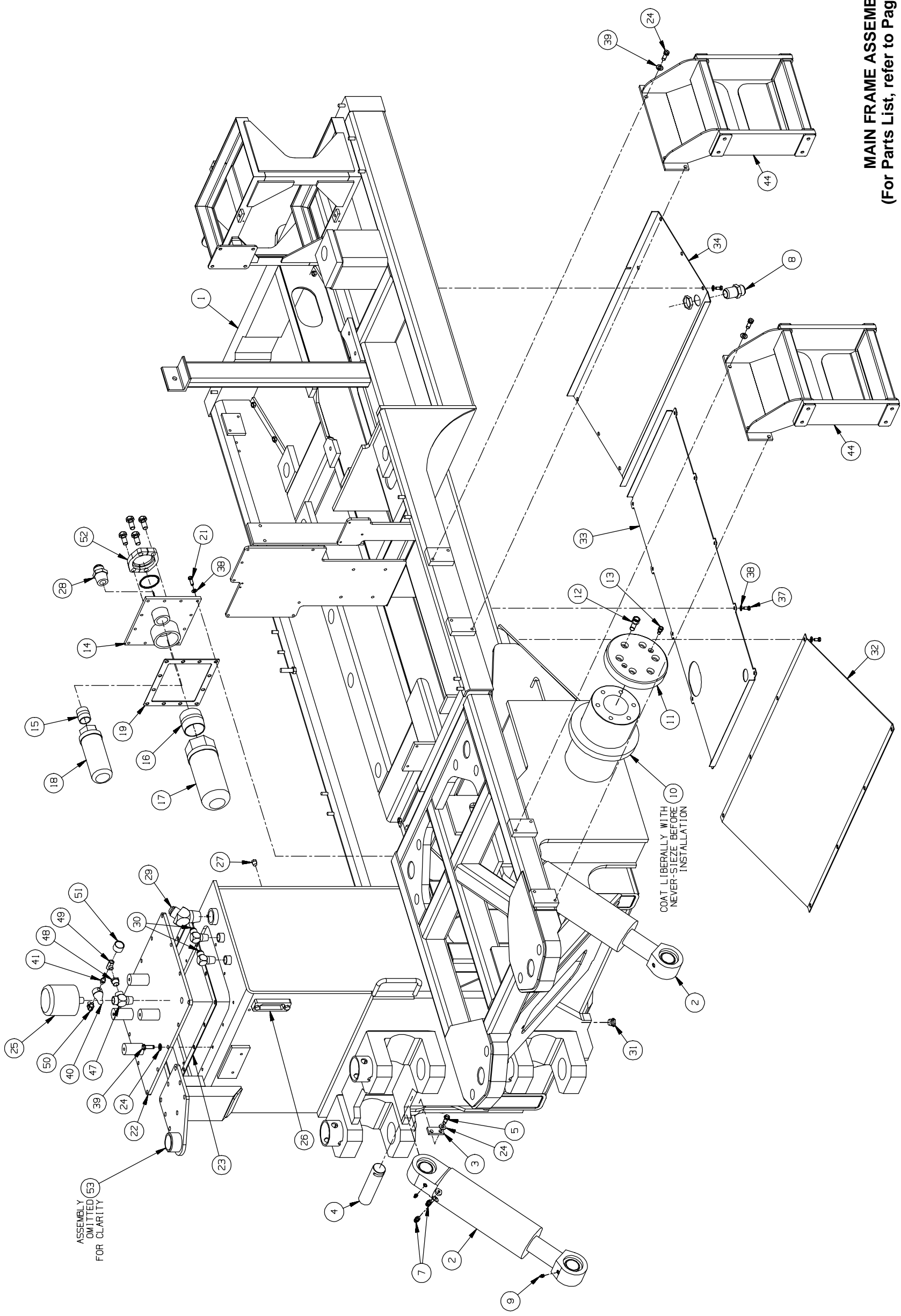


MAIN FRAME ASSEMBLY

Revision 1

September 5, 2000

Section 2.0



MAIN FRAME ASSEMBLY
(For Parts List, refer to Page 2.0-2)

MAIN FRAME ASSEMBLY
(For Illustration of parts, refer to Page 2.0-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

52285905		MAIN FRAME ASSEMBLY	
1	52134947	1	MAIN FRAME
2	51992303	2	CYLINDER, OSCILLATION
	51992410	1	.KIT, SEAL
3	51609089	2	PLATE, KEEPER
4	51607984	2	PIN, OSCILLATION CYLINDER
5	96714860	4	CAPSCREW
7	95365078	4	ADAPTER
9	95201281	4	FITTING, GREASE
10	52134863	2	PLATE, BEARING
11	51607992	2	PLATE, THRUST
12	96703095	12	CAPSCREW
13	96714837	6	CAPSCREW
14	51870798		MANIFOLD, SUCTION
15	95037859	1	BUSHING, REDUCING
16	95344446	1	NIPPLE
17	51612331	1	STRAINER, 3 INCH
18	51297133	1	SEPARATOR
19	51870806	1	GASKET, TANK
21	96714738	12	SCREW, HEX HEAD
22	51909042		COVER, HYDRAULIC TANK
23	51619054	1	GASKET, HYDRAULIC TANK
24	96702535	29	WASHER
25	51612364	1	BREATHER
	51778454	1	.KIT, REPAIR
26	51612356	1	GAUGE, RESERVOIR, HYDRAULIC OIL
27	51618478	1	SWITCH, LEVEL
28	95316964	1	ADAPTER
29	95279139	1	ELBOW
30	95279402	2	ELBOW
31	95737011	1	PLUG, PIPE
37	96712146	44	CAPSCREW
38	96701982	56	WASHER
39	96714894	18	SCREW, HEX HEAD
40	51612349	1	REGULATOR
46	95302543	1	SWIVEL

(CONTINUED)

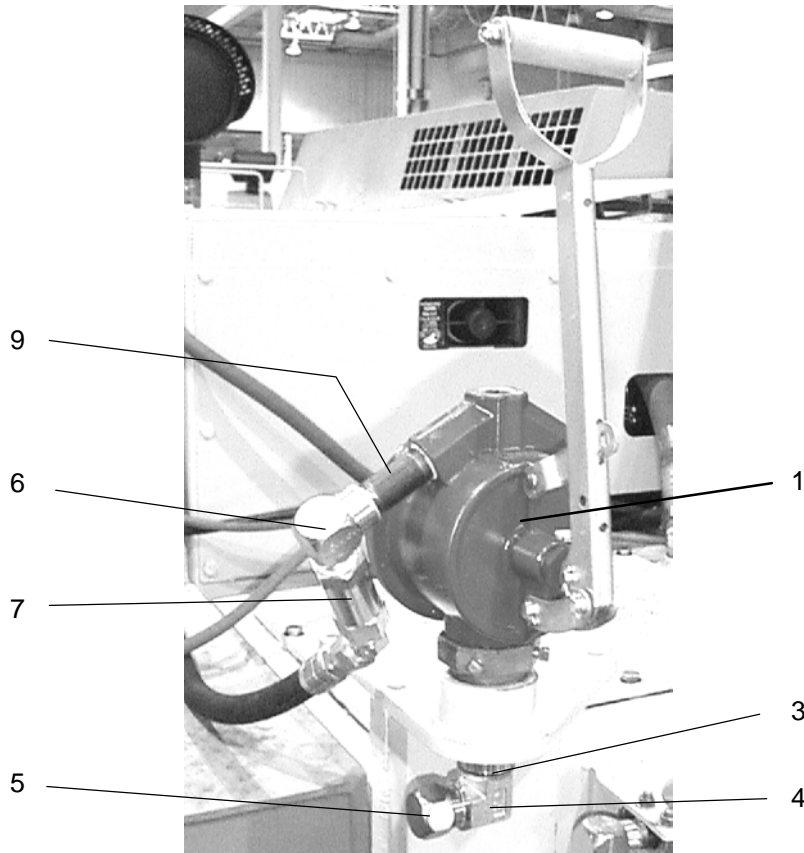
MAIN FRAME ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 2.0-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>
			<i>REMARKS</i>

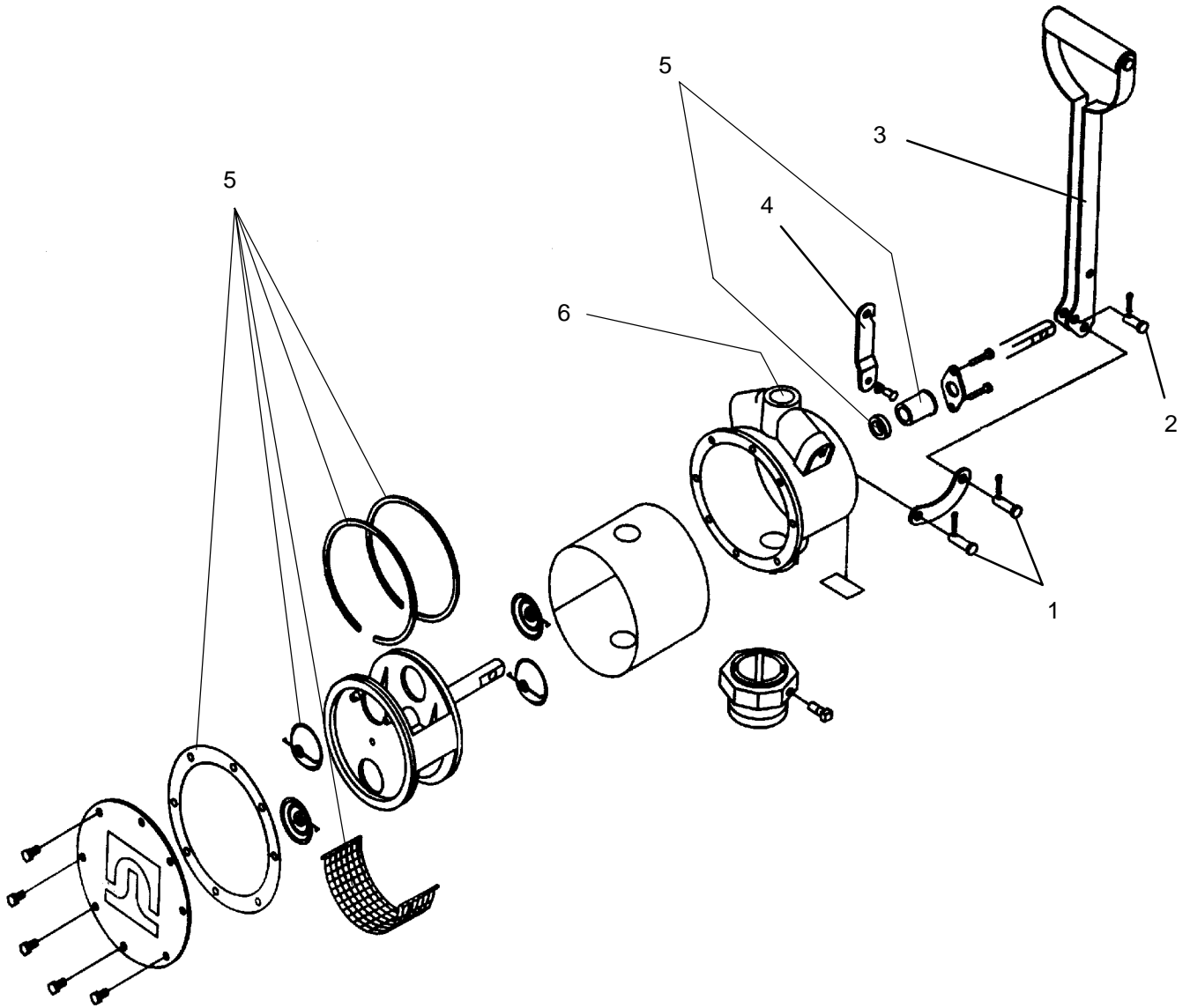
	52285905		MAIN FRAME ASSEMBLY (cont.)
47	95264941	1	TEE
48	95037453	1	BUSHING, REDUCING
49	95279923	1	TEE
50	95293403	1	ELBOW

51	51615946	1	GAUGE, PRESSURE (0-30 PSI)
52	51366615	1	FLANGE, SPLIT
53	52288198	1	ASSEMBLY, HYDRAULIC OIL FILL HAND PUMP <i>REFER TO PAGE 2.0-4</i>
44	52280849	2	ASSEMBLY, STEP <i>REFER TO PAGE 2.0-6</i>



REF.
NO. PART NO. QTY. PART NAME
REMARKS

52288198		HYDRAULIC OIL FILL HAND PUMP ASSEMBY	
1	51916526	1	PUMP, HAND <i>REFER TO PAGE 2.0-5</i>
3	95084133	1	NIPPLE, PIPE
4	95279238	1	ELBOW
5	95387924	1	CAP
6	95264909	1	ELBOW
7	50805118	1	VALVE, CHECK
8	95279105	1	ELBOW
9	95048443	1	NIPPLE, PIPE



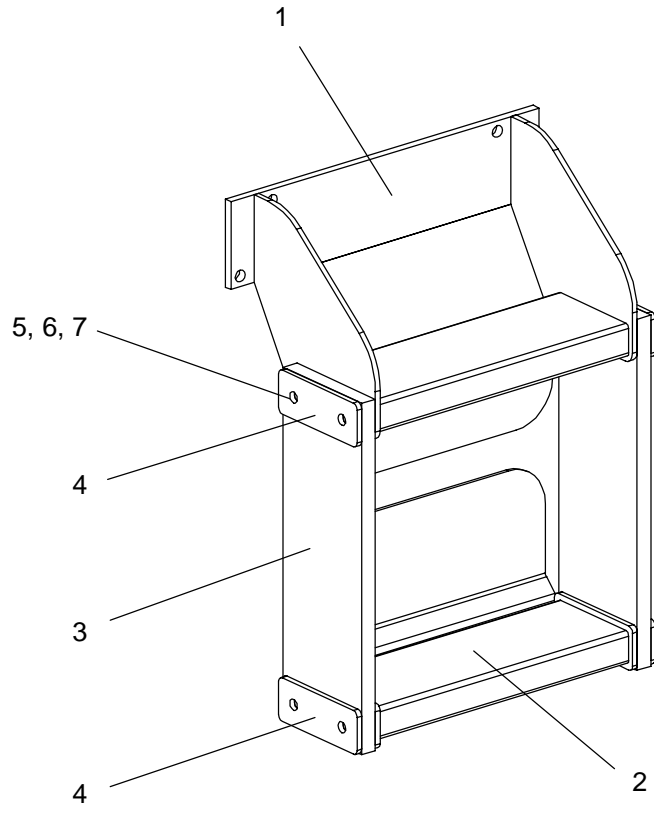
REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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51916526

HAND PUMP

1	51944056	1	PIN, CLEVIS (LINK)	
2	51944064	1	PIN, CLEVIS (SHAFT)	
3	51944072	1	ASSEMBLY, HANDLE	
4	51944080	1	LINK, LOCKING	
5	51944098	1	KIT, REPAIR	
6	95267191	1	PLUG, PIPE	
	52309796	1	KIT, AIR SECTION SEAL	
	52309804	1	KIT, FLUID SECTION DIAPHRAGM	



REF.
NO. PART NO. QTY. PART NAME
REMARKS

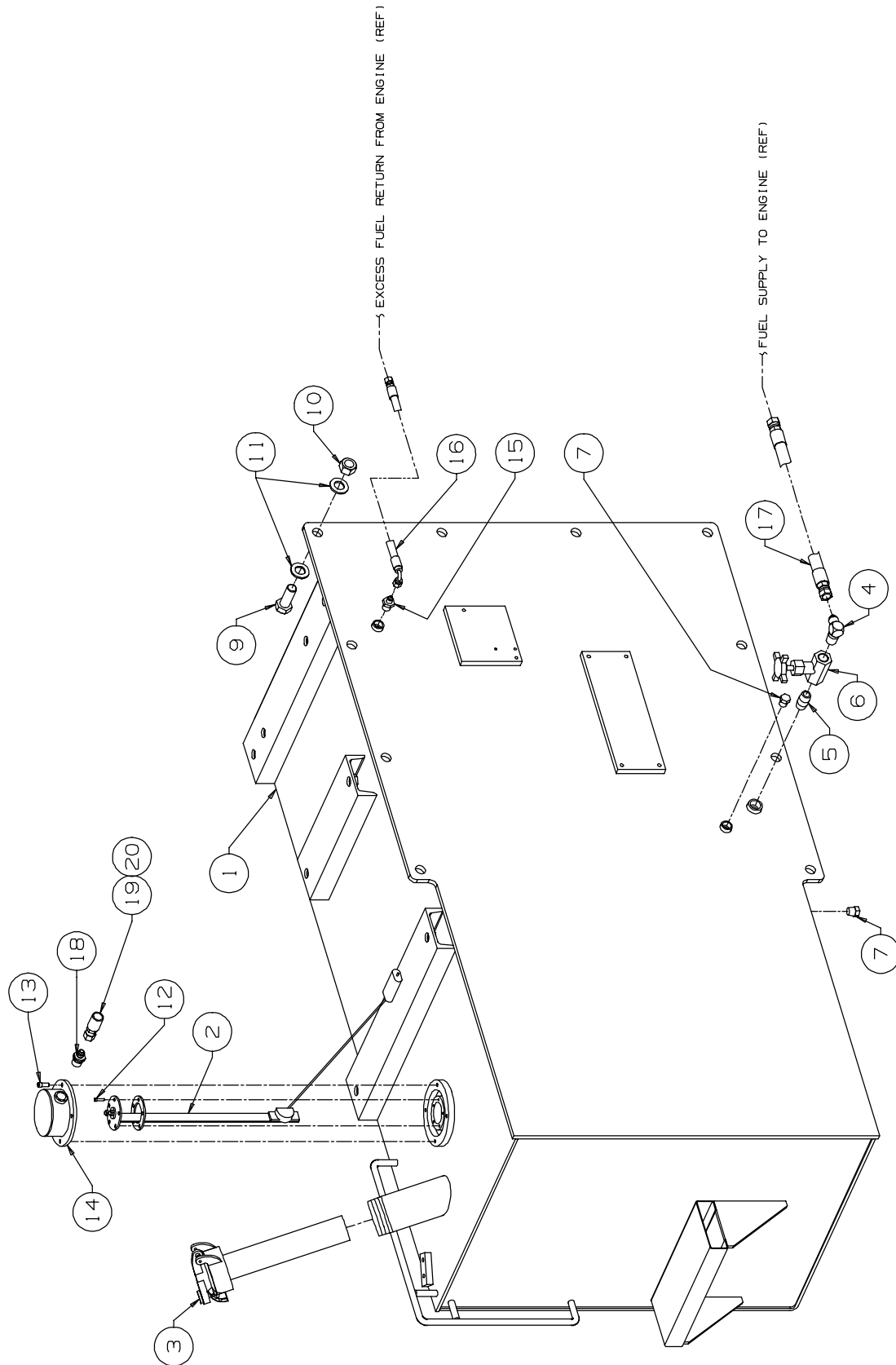
52280849		STEP ASSEMBLY	
1	52280856	1	TOP WELDMENT, STEP
2	52280864	1	BOTTOM WELDMENT, STEP
3	52280880	2	RUBBER, STEP
4	52280872	4	PLATE

5	96711890	8	CAPSCREW, HEX
6	96701412	8	WASHER, PLAIN
7	51862852	8	LOCKNUT

FUEL TANK ASSEMBLY

January 15, 1999

Section 2.1



FUEL TANK ASSEMBLY
(For Parts List, refer to Page 2.1-2)

FUEL TANK ASSEMBLY
(For Illustration of parts, refer to Page 2.1-1)

REF.

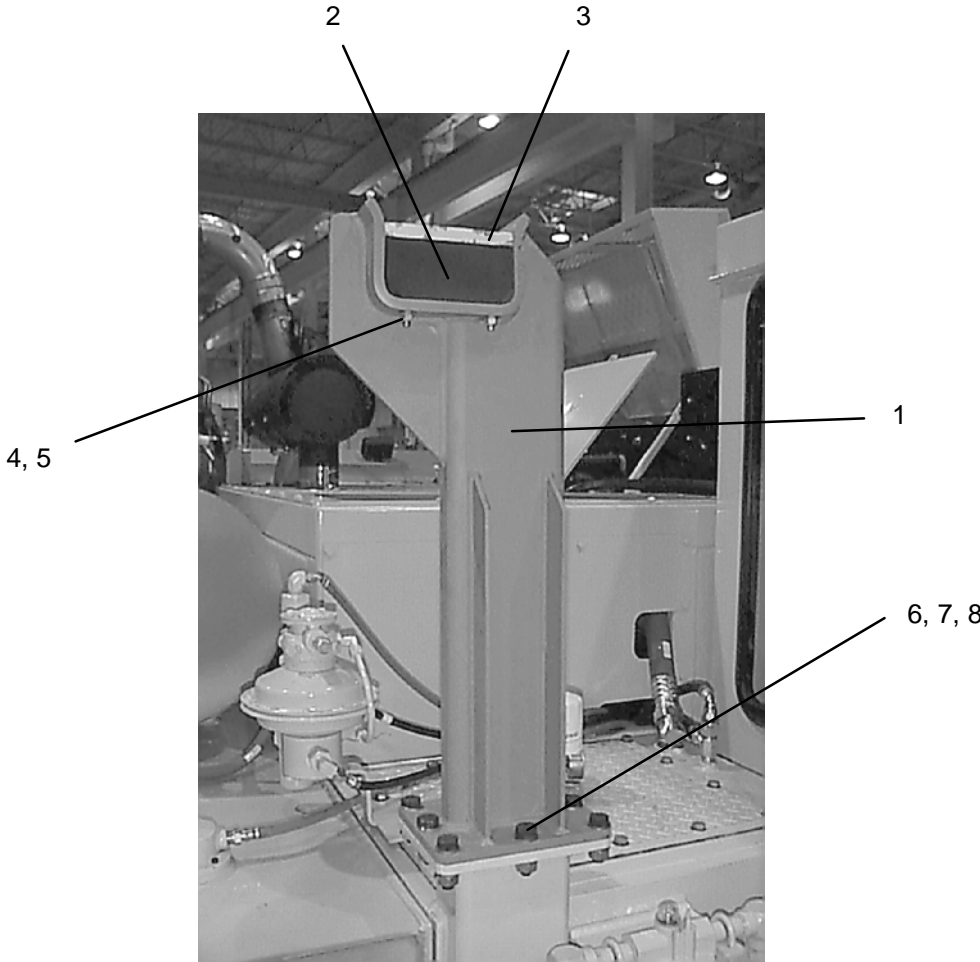
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
------------	-----------------	-------------	------------------	----------------

			51619153	FUEL TANK ASSEMBLY
1	51619104	1	TANK, FUEL	
2	51619161	1	SENDER, FUEL GAUGE	
3	51941979	1	UNIT, TANK FILL	
	51942860	1	.ASSEMBLY, SCREEN	
	51942878	1	.ASSEMBLY, HEAD	
4	95279535	1	ELBOW	
5	95417507	1	NIPPLE	
6	50139427	1	VALVE, NEEDLE	
7	95661930	2	PLUG, PIPE	
9	96703087	10	CAPSCREW	
10	96703665	10	NUT, HEX	
11	96700976	20	WASHER, FLAT	
12	95001384	5	SCREW, MACHINE	
13	96702964	4	CAPSCREW	
14	51355519	1	COVER, FUEL SENDER	
15	95231023	1	ADAPTER	
16	51029080	1	ASSEMBLY, HOSE	
17	51216166	1	ASSEMBLY, HOSE	
18	95231031	1	ADAPTER	
19	51713451	1	FITTING, SOCKETLESS	
20	51985604	1	HOSE	

GUIDE REST ASSEMBLY

January 15, 1999

Section 2.2



REF.
NO. PART NO. QTY. PART NAME
REMARKS

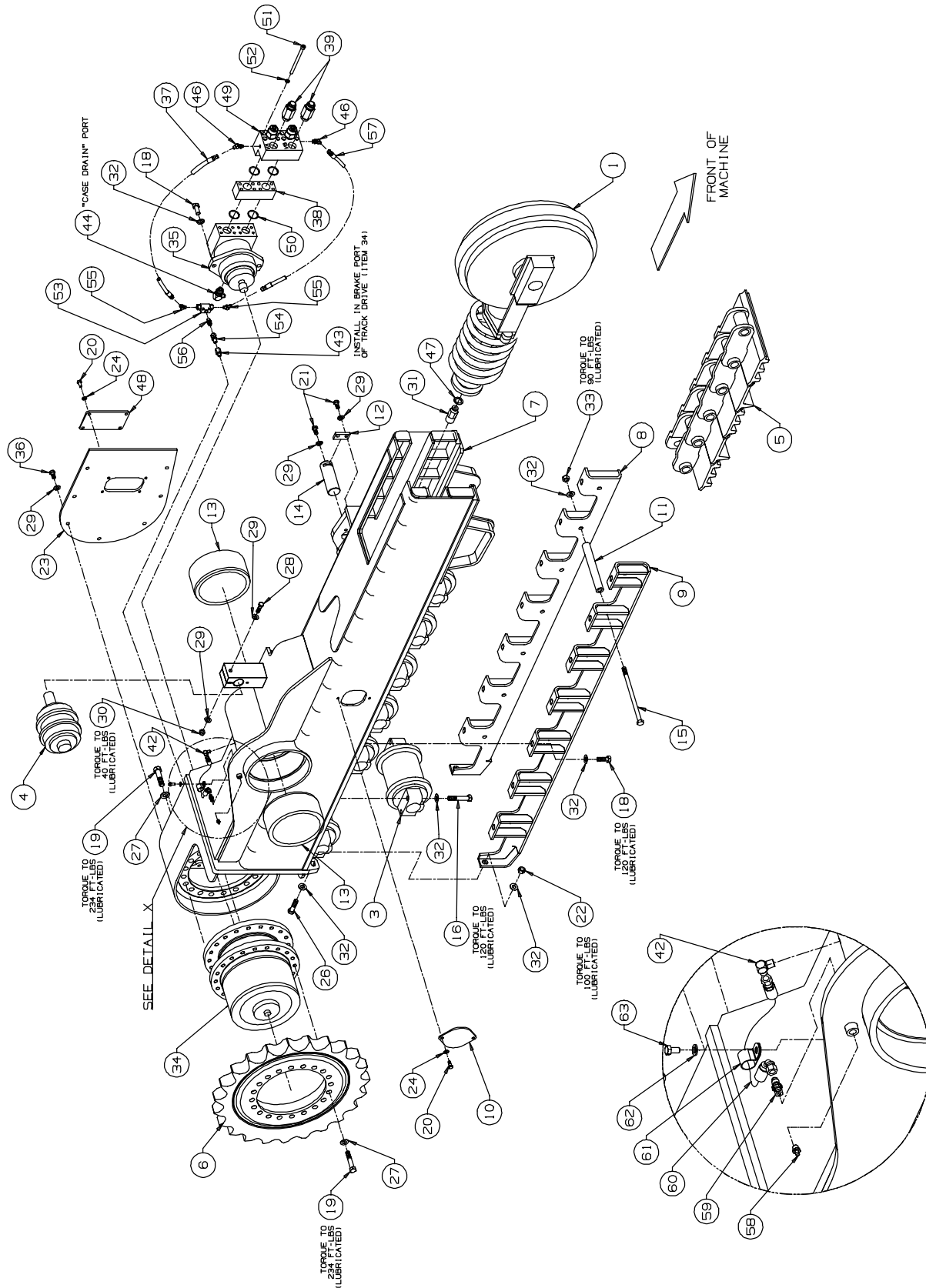
REF. NO.	PART NO.	QTY.	PART NAME	REMARKS
	52130127		GUIDE REST ASSEMBLY	
1	52122256	1	WELDMENT, HEADREST	
2	52091352	1	PAD, HEADREST	
3	52091360	1	PLATE, HEADREST	
4	95957544	4	SCREW, SHOULDER	
5	95417929	4	LOCKNUT	
6	96700216	8	CAPSCREW	
7	96701438	16	WASHER, PLAIN	
8	96703657	8	NUT, HEX	

TRACK ASSEMBLY

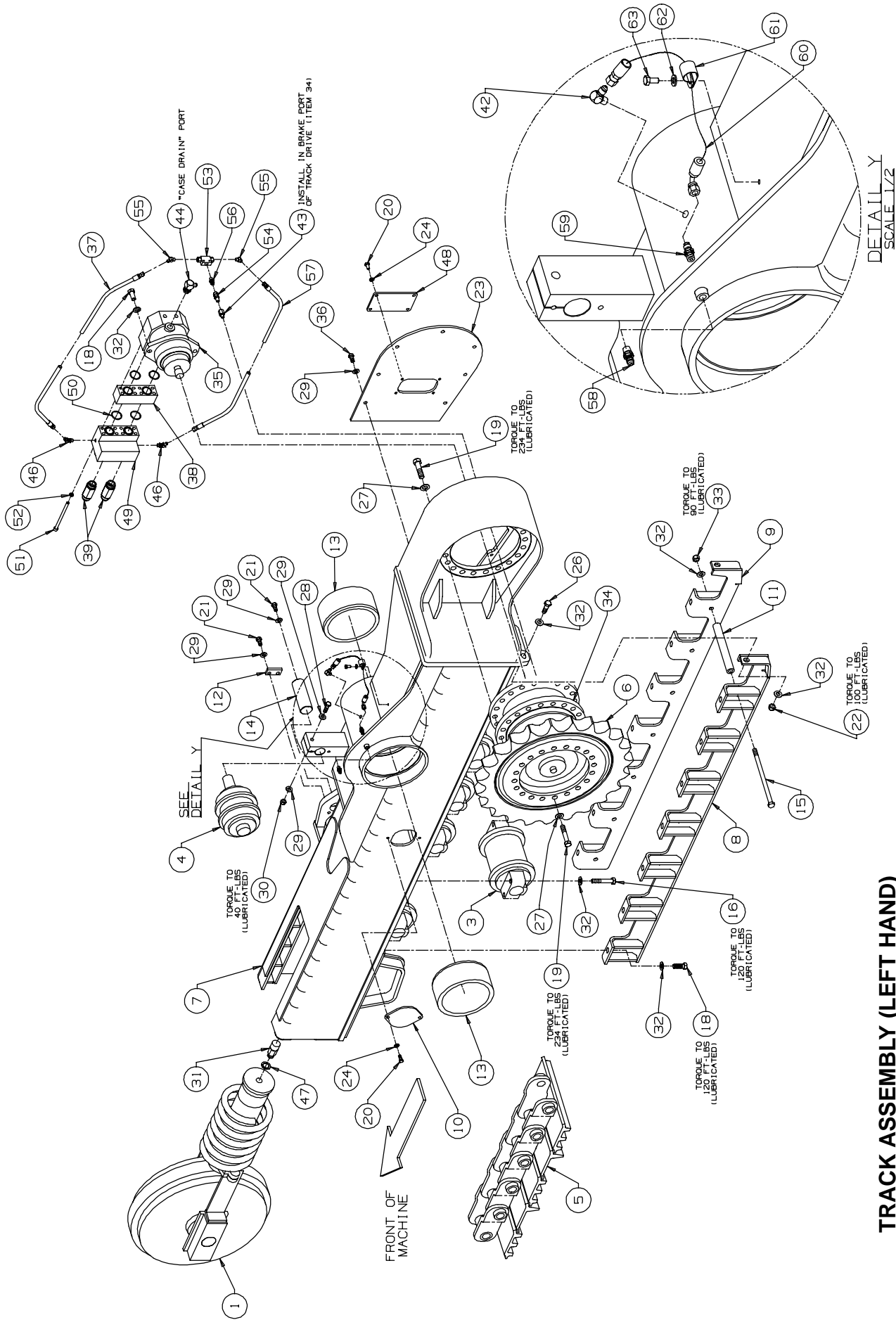
Revision 3

AUGUST 20, 2001

Section 3.0



TRACK ASSEMBLY (RIGHT HAND)
(For Parts List, refer to Page 3.0-3)



TRACK ASSEMBLY (LEFT HAND)
 (For Parts List, refer to Page 3.0-3)

TRACK ASSEMBLY
(For Illustration of parts, refer to Pages 3.0-1 thru 3.0-2)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52125184		TRACK ASSEMBLY (RH)	
	52125192		TRACK ASSEMBLY (LH)	
1	51611309	1	IDLER UNIT, TRACK	<i>REFER TO PAGE 3.0-5</i>
3	51611283	7	ROLLER, TRACK	<i>REFER TO PAGE 3.0-7</i>
4	51611291	1	ROLLER, CARRIER	
5	52113933	1	CHAIN, TRACK	<i>REFER TO PAGE 3.0-8</i>
6	52126463	1	SPROCKET, TRACK DRIVE	
7	52125200	1	TRACK FRAME (RIGHT HAND)	
7	52125218	1	TRACK FRAME (LEFT HAND)	
8	51616340	1	GUARD, ROCK (LEFT HAND)	
9	51616357	1	GUARD, ROCK (RIGHT HAND)	
10	52085701	1	PLATE, COVER	
11	51616373	7	SPACER, ROCK GUARD	
12	51609089	1	PLATE, KEEPER	
13	51952158	2	BUSHING, TRACK OSCILLATION	
14	51616399	1	PIN, OSCILLATION CYLINDER	
15	95981056	7	CAPSCREW	
16	96701503	28	CAPSCREW	
18	96703186	16	CAPSCREW	
19	96704481	40	CAPSCREW	
20	96702279	6	CAPSCREW	
21	96701495	3	CAPSCREW	
22	96727151	2	NUT	
23	51616407	1	COVER, TRACK DRIVE	
24	96701404	6	WASHER	
26	96715156	2	BOLT	
27	96726971	40	WASHER	
28	96704721	1	BOLT	
29	96701412	12	WASHER	
30	96705652	1	NUT, LOCK	
31	51236933	1	FITTING	
32	96701438	55	WASHER, PLAIN	

(CONTINUED)

NOTE: QUANTITIES SHOWN ARE FOR ONE TRACK ASSEMBLY.

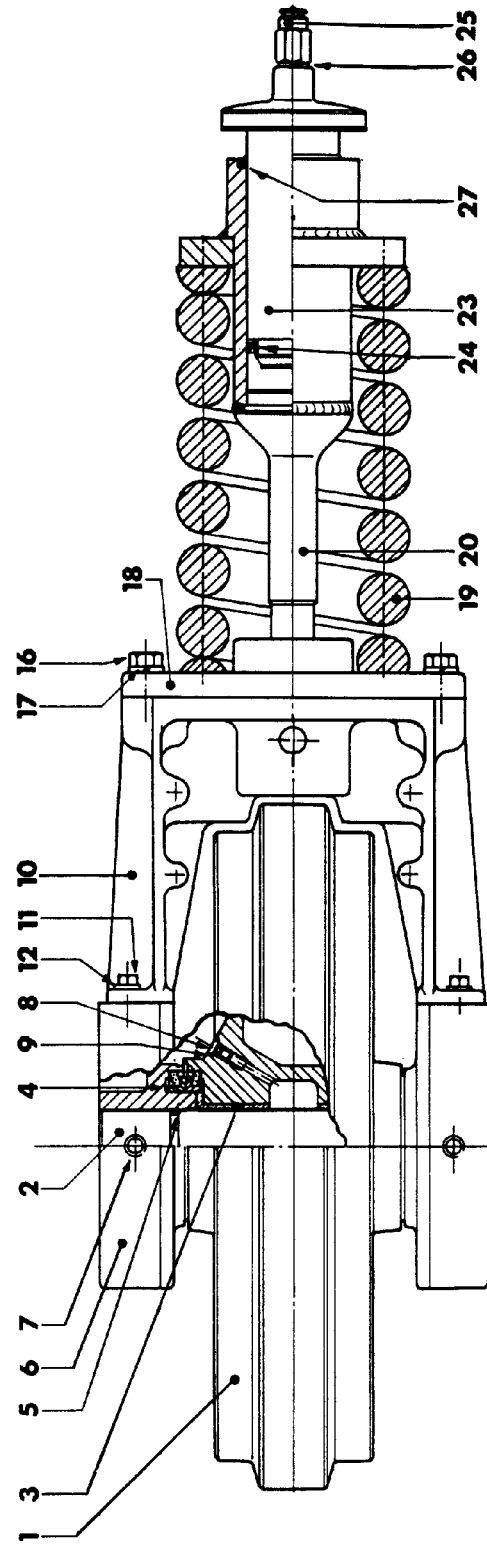
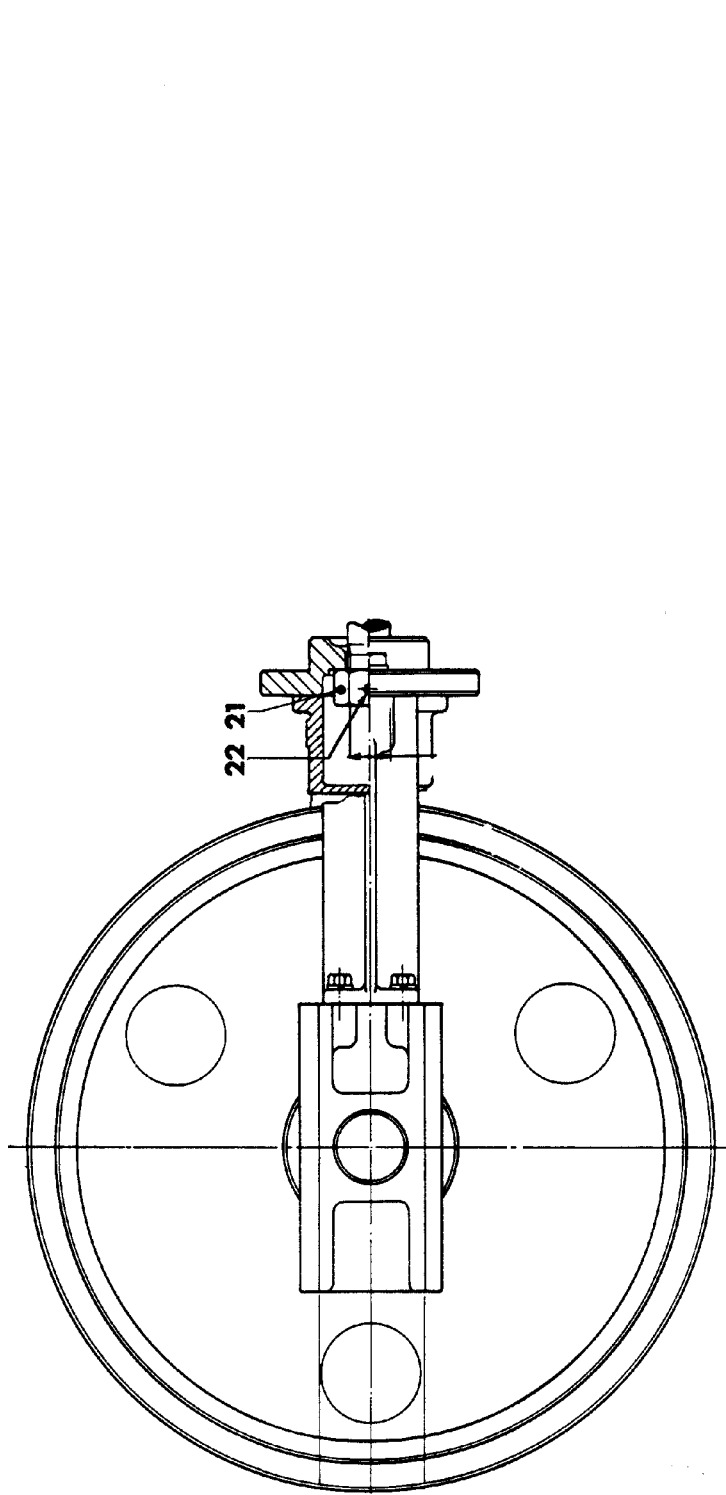
TRACK ASSEMBLY (cont.)
(For Illustration of parts, refer to Pages 3.0-1 thru 3.0-2)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52125184		TRACK ASSEMBLY (RH) (cont.)	
	52125192		TRACK ASSEMBLY (LH) (cont.)	
33	95923439	7	LOCKNUT, HEX	
# 34	52131653	1	ASSEMBLY, TRACK DRIVE	
				<i>REFER TO PAGE 3.0-10</i>
35	52102811	1	MOTOR, FINAL DRIVE HYDRAULIC	
	52105152	1	.KIT, OVERHAUL SEAL	
	52105160	1	.SEAL, SHAFT	
	52105178	1	.O-RING, INPUT HOUSING	
36	96702444	7	CAPSCREW	
37	51213858	2	ASSEMBLY, HOSE	
38	52131661	1	SPACER, TRAM MANIFOLD	
39	51372464	2	ADAPTER	
42	95293403	1	ADAPTER	
43	52134921	1	ADAPTER	
44	95918538	1	ELBOW	
46	95002937	2	ELBOW	
47	51236925	1	GASKET	
48	51616365	1	COVER, TRACK TENSIONER	
49	52102829	1	VALVE, HYDRAULIC TRAM COUNTERBALANCE	
	52104627	2	.VALVE, COUNTERBALANCE CARTRIDGE	
50	91310128	4	O-RING	
51	95980611	8	CAPSCREW	
52	95962460	8	LOCKWASHER	
53	50805100	1	VALVE, SHUTTLE	
54	51304434	1	ADAPTER	
55	95279055	2	ELBOW	
56	95316972	1	ADAPTER	
58	95201307	2	FITTING, GREASE	
59	95263380	2	ADAPTER	
60	51028371	2	ASSEMBLY, HOSE	
61	95368338	2	CLAMP	
62	92304609	2	WASHER	
63	96702816	2	CAPSCREW	

NOTE: QUANTITIES SHOWN ARE FOR ONE TRACK ASSEMBLY.

NOTE: ORDER PART NO. 52297777 FOR REMANUFACTURED TRACK DRIVE ASSEMBLY.



TRACK IDLER UNIT
 (For Parts List, refer to Page 3.0-7)

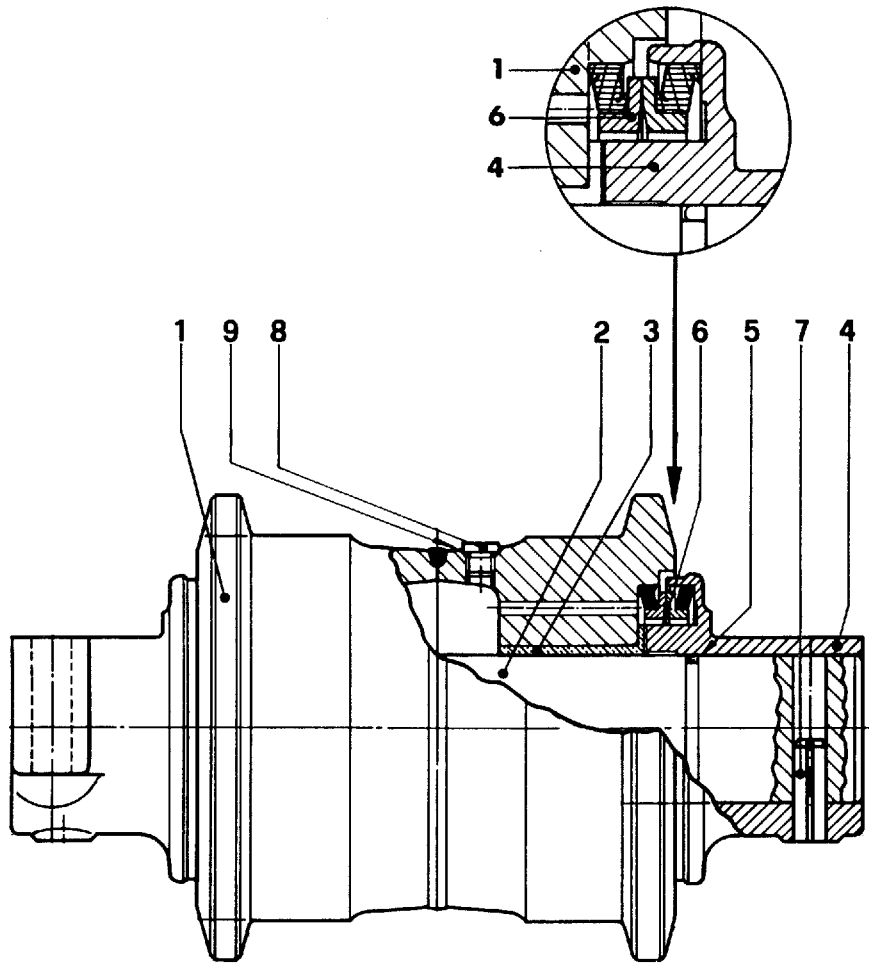
TRACK IDLER UNIT
(For Illustration of parts, refer to Page 3.0-6)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
------------	-----------------	-------------	------------------	----------------

51611309		TRACK IDLER UNIT		
1	++	1	WHEEL, IDLER	
2	++	1	SHAFT	
3	++	2	BUSHING	
4	51900892	2	GROUP, SEAL	
5	51900884	2	GASKET, SHAFT	
<hr/>				
6	++	2	BRACKET	
7	++	2	DOWEL	
8	++	1	PLUG	
9	++	1	GASKET	
10	++	1	FORK	
11	++	4	CAPSCREW	
<hr/>				
12	++	4	LOCKWASHER	
16	++	2	CAPSCREW	
17	++	2	LOCKWASHER	
18	++	1	FLANGE	
19	++	1	SPRING	
20	++	1	CYLINDER, GREASE	
<hr/>				
21	++	1	NUT	
22	++	1	PIN	
23	++	1	PISTON	
24	51900900	1	GASKET	
25	++	1	FITTING	
<hr/>				
26	++	1	GASKET	
27	51900918	1	GASKET, ERASER	

++ **NOTE:** THESE PARTS ARE NOT SOLD SEPARATELY.

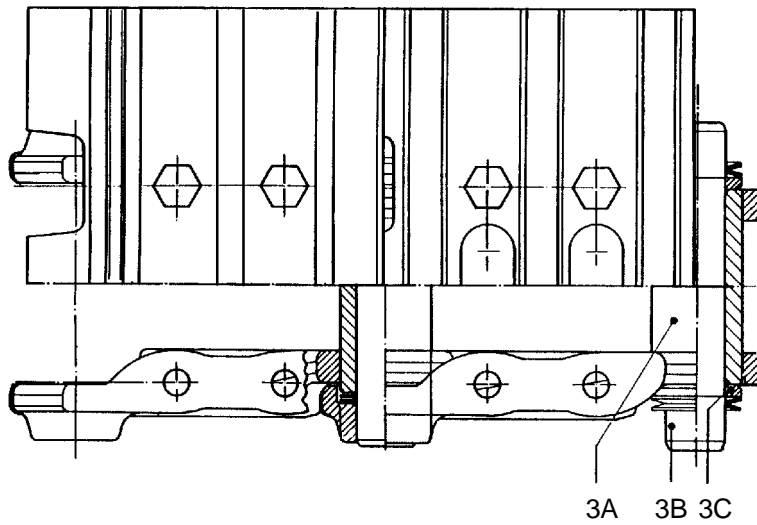
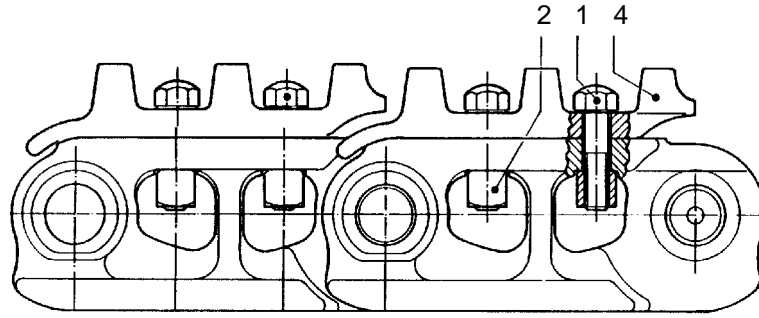


REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
-----	----------	------	-----------	---------

51611283		TRACK ROLLER ASSEMBLY		
1	++	1	ROLLER	
2	++	1	SHAFT	
3	++	2	BUSHING	
4	++	2	COLLAR	
5	51900884	2	GASKET, SHAFT	
6	51900892	2	GROUP, SEAL	
7	++	2	PIN	
8	++	2	PLUG	
9	++	1	GASKET	

++ **NOTE:** THESE PARTS ARE NOT SOLD SEPARATELY.



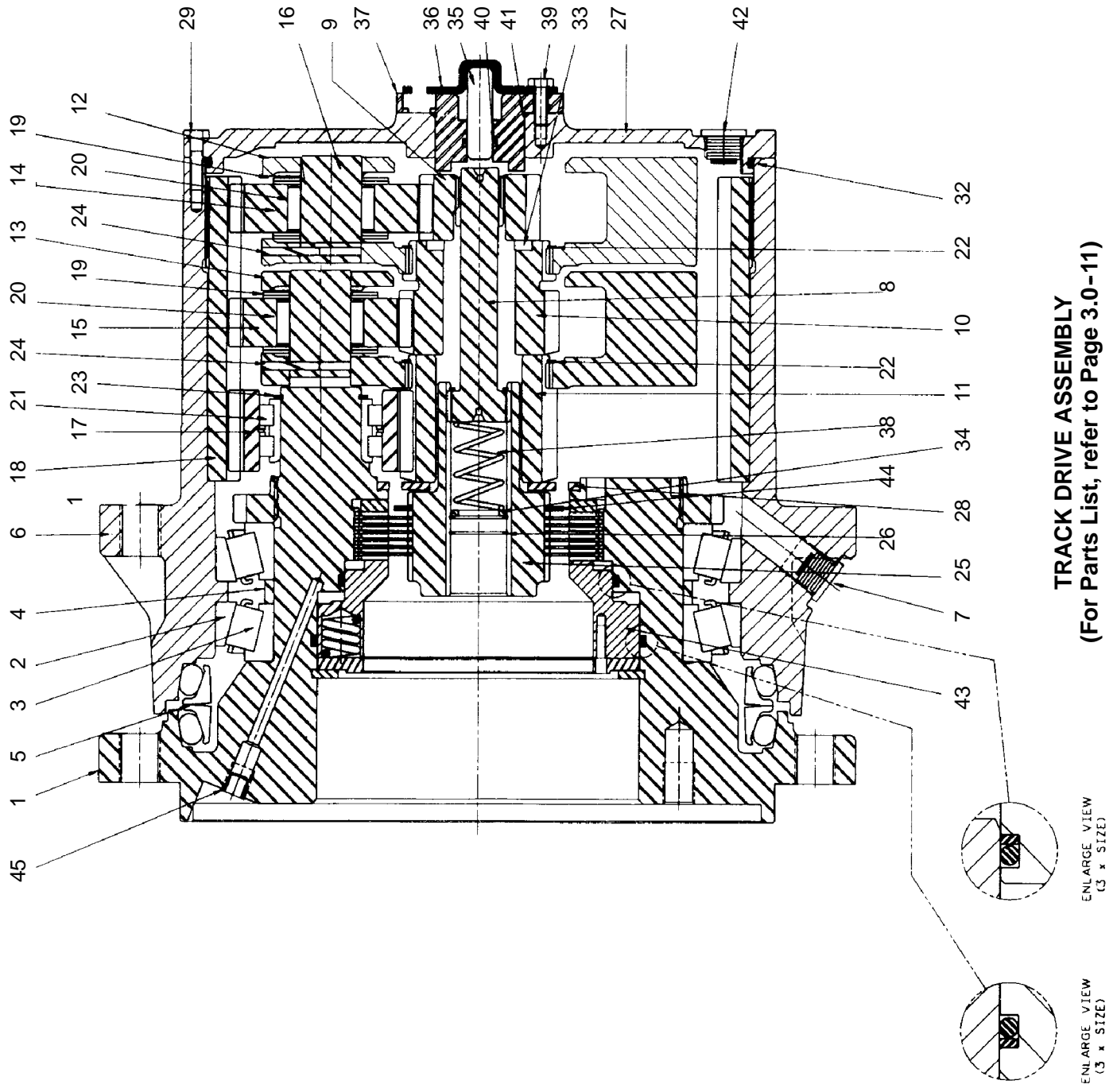
REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

52113933 TRACK CHAIN

1	51900926	168	BOLT, TRACK	
2	51900934	168	NUT, TRACK	
3	51900942	1	PIN, MASTER COMPLETE	
3A	++	1	.BUSHING, MASTER	
3B	++	1	.PIN, MASTER	
3C	++	2	.SPACER	
4	51900959	42	SHOE, TRIPLE GROUSER	

++ **NOTE:** THESE PARTS ARE NOT SOLD SEPARATELY.



TRACK DRIVE ASSEMBLY
 (For Parts List, refer to Page 3.0-11)

TRACK DRIVE ASSEMBLY
(For Illustration of parts, refer to Page 3.0-10)

<i>REF.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	52131653		TRACK DRIVE ASSEMBLY	
1	52137551	1	SPINDLE	
2	52137569	2	BEARING, TAPERED-CUP	
3	52137577	2	BEARING, TAPERED-CONE	
4	52137585	1	SPACER, THRUST	
5	52137593	1	SEAL, FACE	
6	52137601	1	HOUSING	
7	52137619	2	PLUG, PIPE	
8	52137627	1	SHAFT, INPUT	
9	52137635	1	GEAR, SUN	
10	52137643	1	GEAR, SUN	
11	52137650	1	GEAR, SUN	
12	52137668	1	CARRIER	
13	52137676	1	CARRIER	
14	52137684	3	GEAR, PLANET	
15	52137692	3	GEAR, PLANET	
16	52137700	6	SHAFT, PLANET	
17	52137718	1	ASSEMBLY, GEAR SET	
18	52137726	1	GEAR, RING	
19	59728824	24	WASHER, THRUST	
20	51013324	108	BEARING, NEEDLE	
21	52137734	5	BEARING, ROLLER	
22	52137742	2	RETAINER, RING (EXTERNAL)	
23	52137759	5	RETAINER, RING (EXTERNAL)	
24	59728774	6	PIN, GROOVE	
25	52114329	1	COUPLING	
26	52114345	3	RETAINER, RING (INTERNAL)	
27	52137767	1	COVER, PLATE	
28	52137775	1	SPACER, INPUT	
29	52137783	8	BOLT, HEX	
32	52137791	1	O-RING	
33	52137809	1	WASHER, THRUST	
34	59554485	1	SPACER, THRUST	
35	50876879	1	DISENGAGE, ROD	
36	50876861	1	DISENGAGE, CAP	
37	50876853	1	COVER, CAP	
38	52114337	1	SPRING	
39	59554576	4	BOLT, HEX	
40	59554600	1	O-RING	

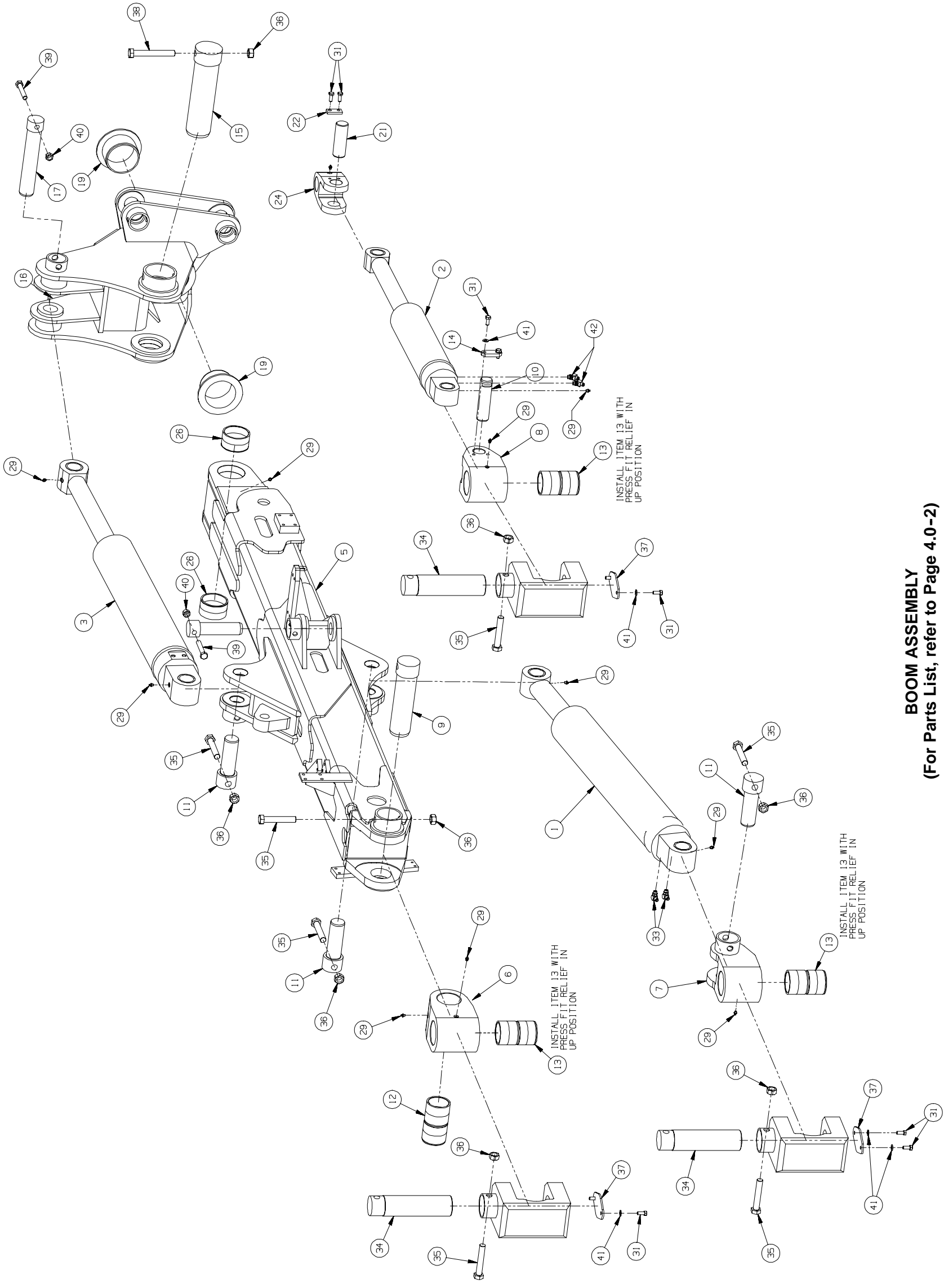
(CONTINUED)

TRACK DRIVE ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 3.0-10)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	52131653		TRACK DRIVE ASSEMBLY (cont.)
41	59576470	1	O-RING
42	52137619	3	PLUG, PIPE
43	52114352	1	BRAKE, INPUT
44	52114360	1	RETAINER, RING (EXTERNAL)
45	52137825	1	PLUG, PLASTIC



BOOM ASSEMBLY
(For Parts List, refer to Page 4.0-2)

BOOM ASSEMBLY
(For Illustration of parts, refer to Page 4.0-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
52103363			BOOM ASSEMBLY	
♠ 1	52087293	1	CYLINDER, BOOM LIFT	<i>REFER TO PAGE 4.0-4</i>
♠ 1	51992311	1	CYLINDER, BOOM LIFT	
	51992428	1	.KIT, SEAL	
♠ 2	52087343	1	CYLINDER, BOOM SWING	
	52087392		.KIT, SEAL	
♠ 2	51992329	1	CYLINDER, BOOM SWING	
	51992410	1	.KIT, SEAL	
♠ 3	52087301	1	CYLINDER, GUIDE DUMP	<i>REFER TO PAGE 4.0-5</i>
♠ 3	51992345	1	CYLINDER, GUIDE DUMP	
	51992444	1	.KIT, SEAL	
5	51862258	1	BOOM	
6	51608842	1	LINK, BOOM	
7	52295680	1	LINK, CYLINDER	
8	51608958	1	LINK, CYLINDER	
9	52282894	1	PIN, BOOM PIVOT	
10	51608974	1	PIN, BOOM SWING	
11	52295698	3	PIN, BOOM LIFT	
12	52295664	1	BUSHING	
13	52295631	3	BUSHING	
14	51608867	1	PLATE	
15	52282878	1	PIN, DUMP BASE	
16	52136819	1	BASE, DUMP	
17	52282860	1	PIN, GUIDE DUMP	
19	52295656	2	BUSHING, GUIDE SWING	
20	52087111	1	PIN, BOOM SWING	
21	51609071	1	PIN, BOOM SWING	
22	51609089	1	PLATE, KEEPER	
24	51609105	1	LINK, CYLINDER	
25	51609113	1	BUSHING	
26	52295649	2	BUSHING, GUIDE DUMP	
29	95201281	13	FITTING, GREASE	
30	96703012	3	CAPSCREW	
31	96714886	10	CAPSCREW	
32	96714480	4	CAPSCREW	

(CONTINUED)

♠ **NOTE:** REFER TO THE PART NUMBER STAMPED ON THE CYLINDER TO ORDER THE CORRECT SEAL KIT.

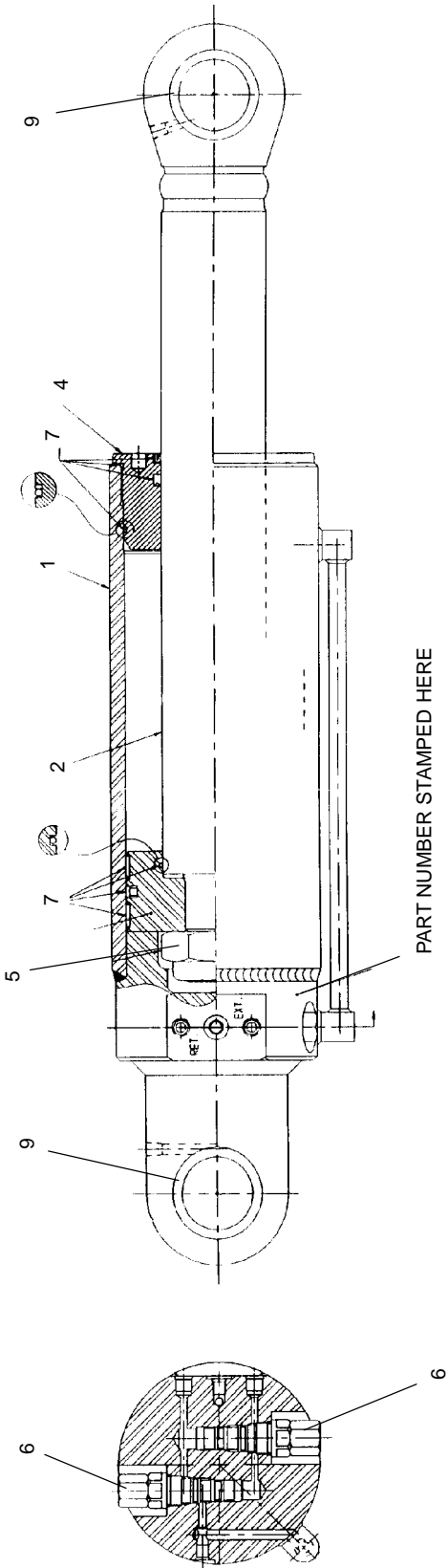
BOOM ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 4.0A-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

52103363		BOOM ASSEMBLY (cont.)	
33	95329975	6	ELBOW
34	52087137	3	PIN, BOOM
35	96702600	7	CAPSCREW
36	96703681	8	NUT, HEX

37	52096336	3	PLATE, PIN RETAINING
38	51193290	1	CAPSCREW
39	96727102	2	CAPSCREW
40	96704275	2	NUT
41	96702535	10	WASHER
42	95363339	2	ADAPTER

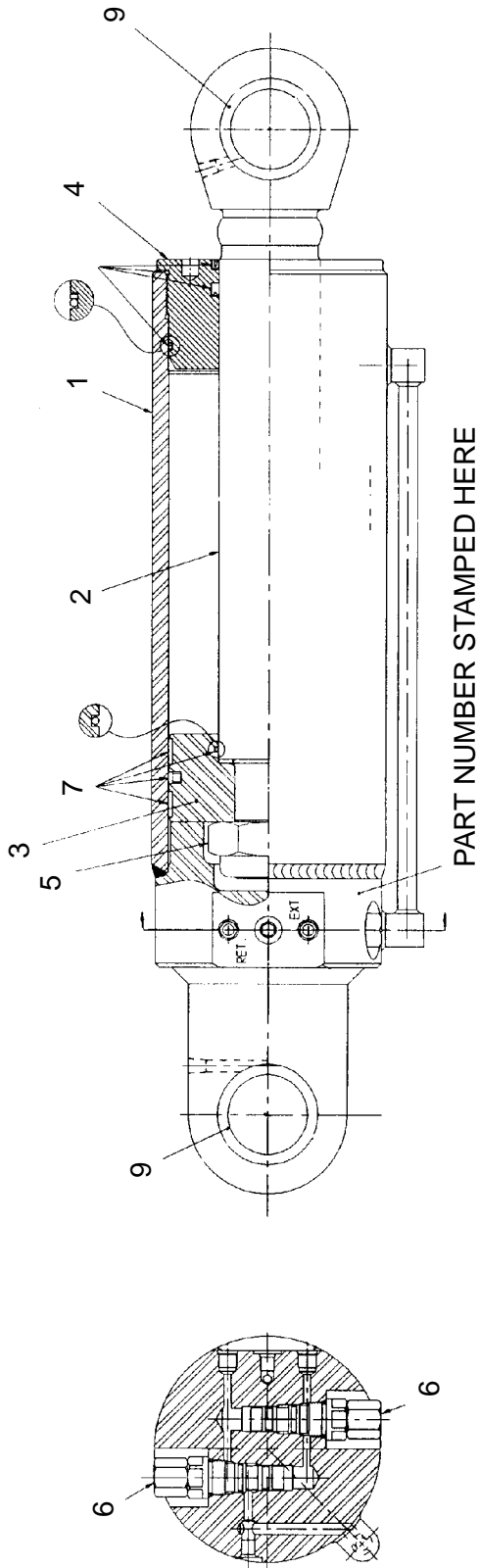


PART NUMBER STAMPED HERE

REF. PART NO. QTY. PART NAME
REMARKS

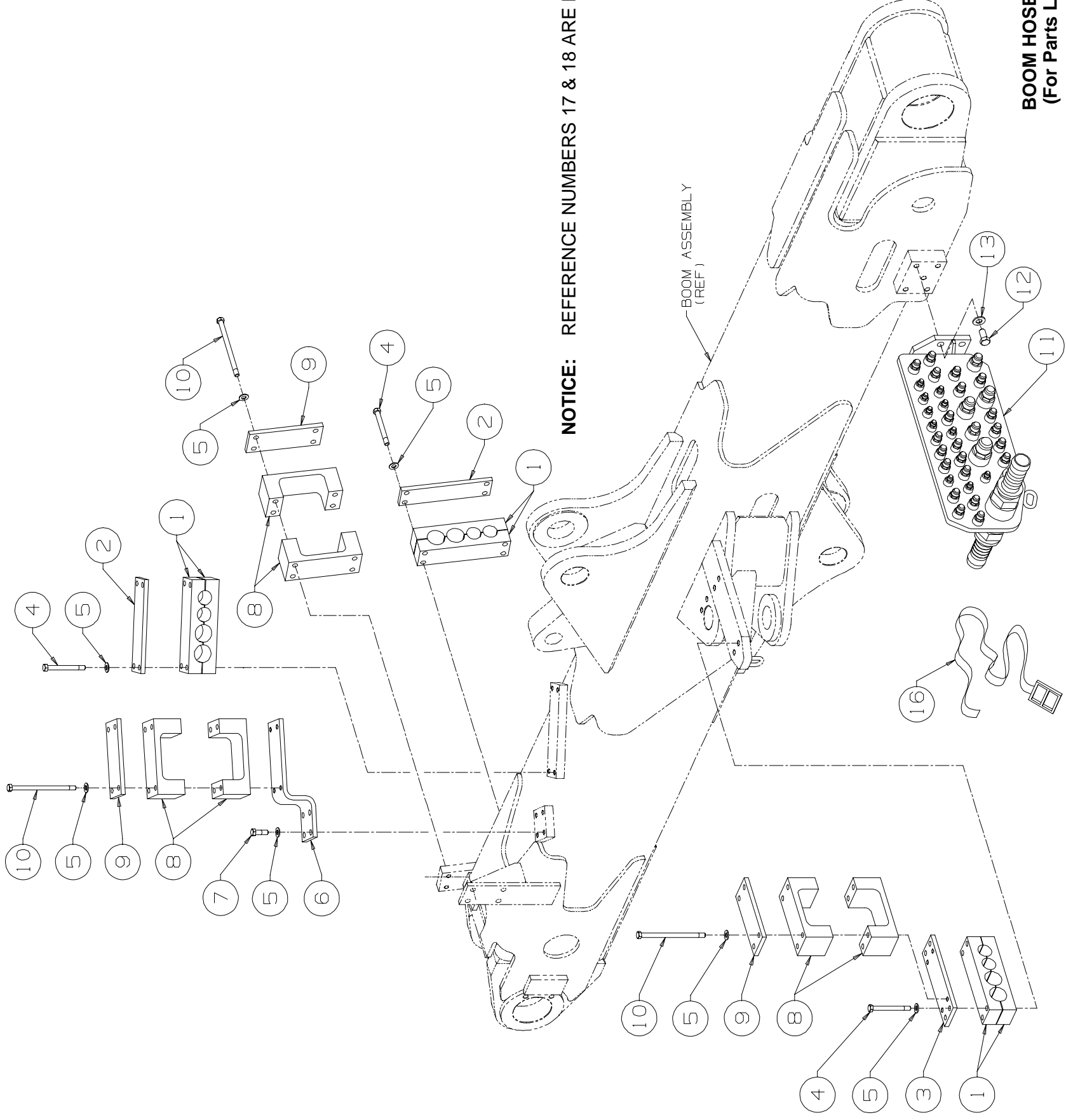
52087293 BOOM LIFT CYLINDER ASSEMBLY

1	52130820	1	ASSEMBLY, BARREL	
2	52130838	1	ASSEMBLY, PISTON ROD	
3	52130846	1	PISTON	
4	52130853	1	GLAND	
5	51993335	1	LOCKNUT	
6	51993160	2	VALVE, COUNTERBALANCE	
7	52087400	1	KIT, SEAL	
9	52130168	2	BUSHING, ROD EYE	



52087301 GUIDE DUMP CYLINDER ASSEMBLY

1	52130895	1	ASSEMBLY, BARREL
2	52130903	1	ASSEMBLY, PISTON ROD
3	51993319	1	PISTON
4	51993327	1	GLAND
5	51993335	1	LOCKNUT
6	51993160	2	VALVE, COUNTERBALANCE
7	51993343	1	KIT, SEAL
9	52106952	2	BUSHING, ROD EYE

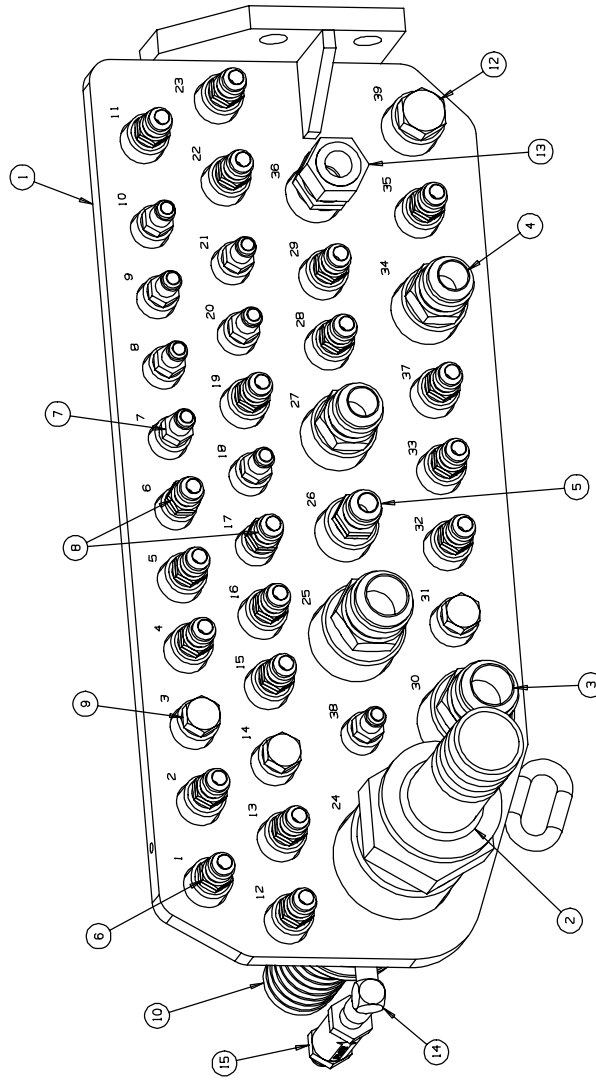


BOOM HOSE RETAINER ASSEMBLY
(For Parts List, refer to Page 4.1-2)

BOOM HOSE RETAINER ASSEMBLY
(For Illustration of parts, refer to Page 4.1-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	51873834		BOOM HOSE RETAINER ASSEMBLY	
1	51776409	6	CLAMP, HOSE	
2	51776417	2	PLATE, HOSE CLAMP	
3	51910727	1	PLATE, HOSE CLAMP	
4	96714779	12	CAPSCREW	
5	96700836	28	WASHER	
6	51909059	1	BRACKET, HOSE CLAMP	
7	96714738	4	CAPSCREW	
8	51776391	6	CLAMP, HOSE	
9	51776425	3	PLATE, HOSE CLAMP	
10	96714803	12	CAPSCREW, HEX HD	
11	51910719	1	ASSEMBLY, BOOM HOSE BULKHEAD	<i>REFER TO PAGE 4.1-3</i>
12	96714894	4	CAPSCREW	
13	96700844	4	WASHER	
16	52308681	6	STRAP, TIE	
17	52080025	20	TIE, LASHING CABLE	
18	52080033	10	TIE, LASHING CABLE	



- 2 - PORT No. 24
- 3 - PORT Nos. 25 and 30
- 4 - PORT Nos. 27 and 34
- 5 - PORT No. 26
- 6 - PORT Nos. 1, 2, 4, 5, 11, 12, 13, 15, 16, 19, 22, 23, 28, 29, 32, 33, 35, 37
- 7 - PORT Nos. 7, 8, 9, 10, 18, 20, 21, 38
- 8 - PORT Nos. 6 and 17
- 9 - PORT Nos. 3, 14, 31
- 10 - PORT No. 24

REF. NOTE:
 PORT No. 36 - GUIDE WIRING CONDUIT CONNECTION
 PORT No. 39 - NOT USED
 PORT Nos. 3 and 14 - HYD. ROD WINCH OPTION (REF.)

BOOM HOSE BULKHEAD ASSEMBLY
 (For Parts List, refer to Page 4.1-4)

BOOM HOSE BULKHEAD ASSEMBLY
(For Illustration of parts, refer to Page 4.1-3)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	51910719		BOOM HOSE BULKHEAD ASSEMBLY
1	51862480	1	PLATE, BOOM
2	50023886	1	STEM, HOSE
3	95219762	4	ADAPTER
4	95219747	4	ADAPTER
5	95219721	2	ADAPTER

6	95219713	36	ADAPTER
7	95263380	16	ADAPTER
8	95316972	4	ADAPTER
9	95661930	6	PLUG, PIPE
10	51910958	1	STEM, HOSE

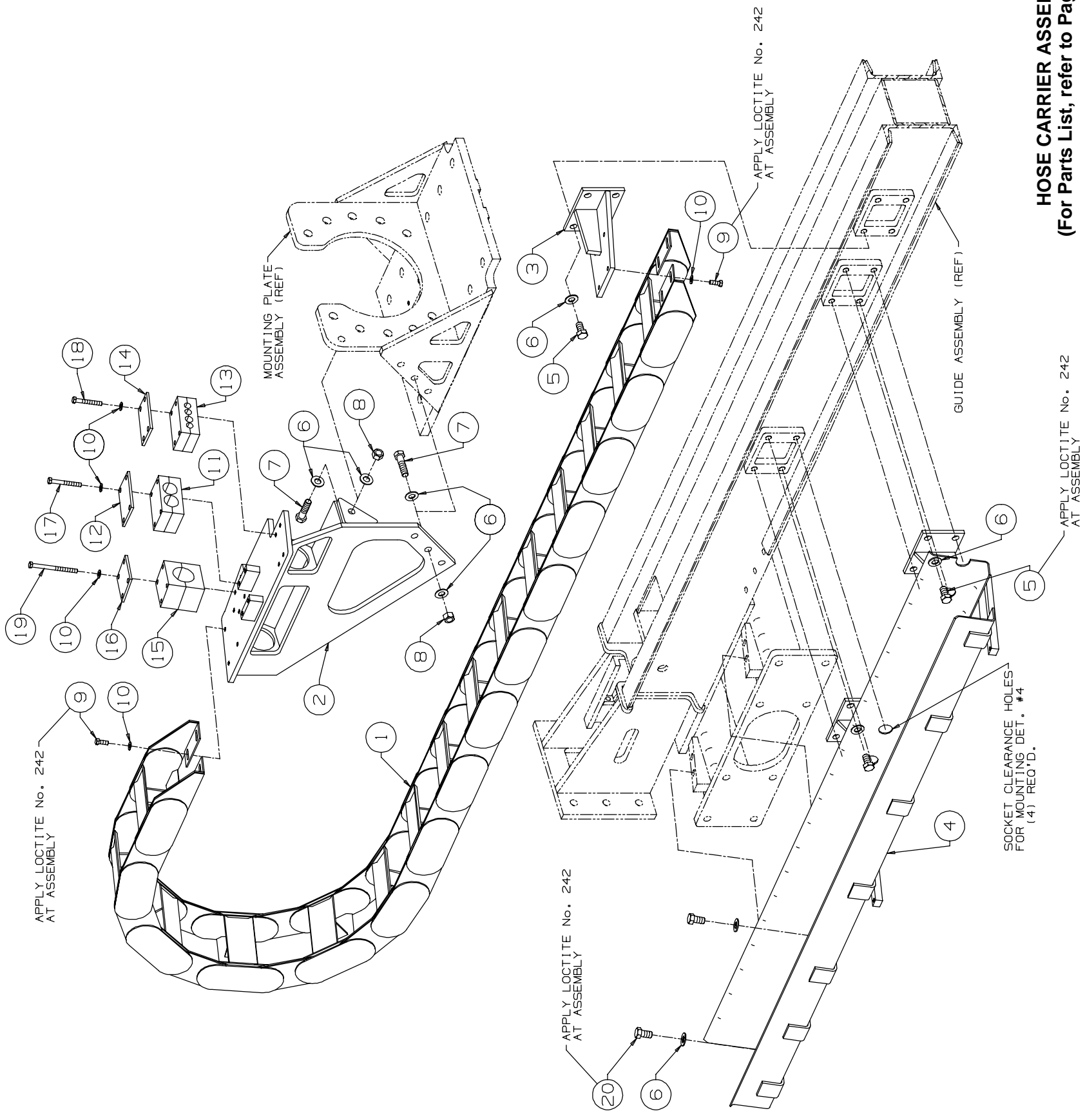
12	95344651	2	PLUG, PIPE
13	95245072	2	CONNECTOR
14	95279998	1	ELBOW
15	50573823	1	VALVE, CHECK

HOSE CARRIER ASSEMBLY

Revision 2

March 26, 2002

Section 5.0



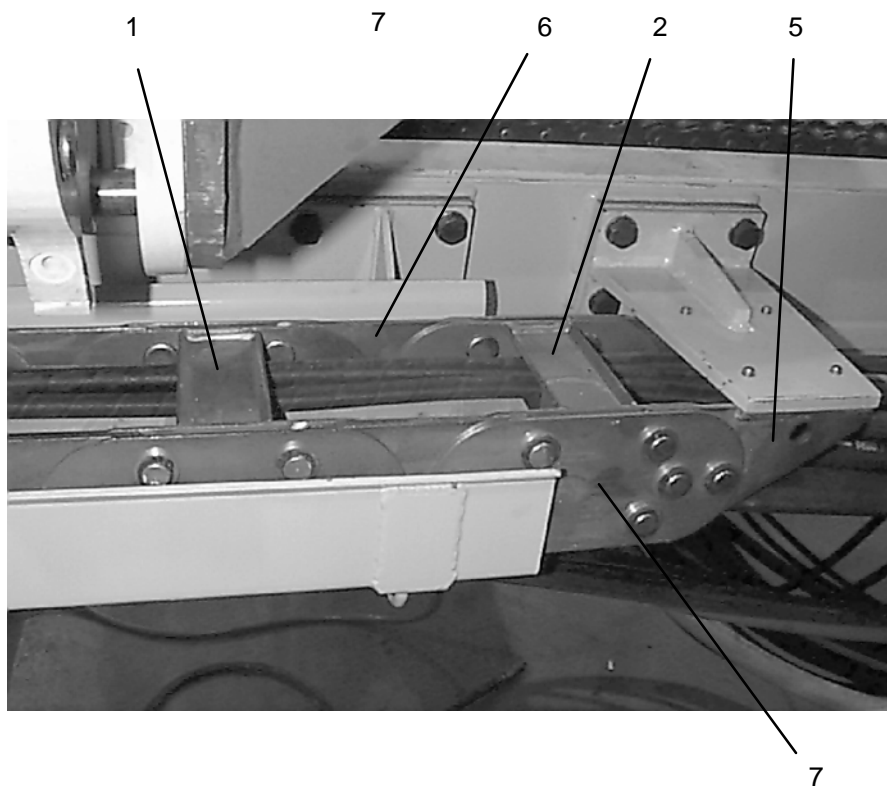
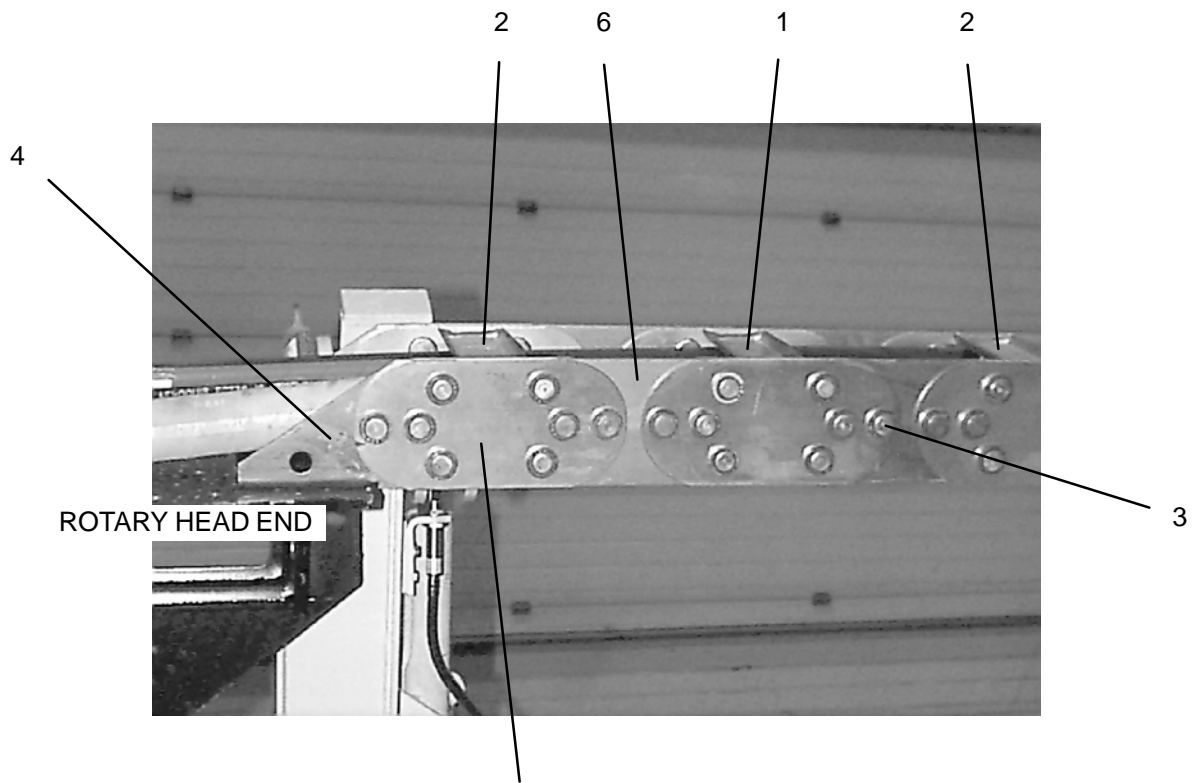
HOSE CARRIER ASSEMBLY
(For Parts List, refer to Page 5.0-2)

HOSE CARRIER ASSEMBLY
(For Illustration of parts, refer to Page 5.0-1)

REF.

NO.	PART NO.	QTY.	PART NAME
			REMARKS

			51862415	HOSE CARRIER ASSEMBLY
1	51997740	1	HOSE CARRIER	
				<i>REFER TO PAGE 5.0-3</i>
2	51788404	1	MOUNT, HOSE CARRIER, MOVING	
3	51788438	1	MOUNT, HOSE CARRIER, FIXED	
4	51788420	1	TRAY, HOSE CARRIER	
5	96703079	12	CAPSCREW	
6	96700968	24	WASHER, FLAT	
7	96700216	4	CAPSCREW	
8	96703657	4	NUT, HEX	
9	96702279	8	CAPSCREW	
10	96700836	16	WASHER	
11	51862647	1	CLAMP, HOSE, UPPER	
12	51862670	1	PLATE, HOSE CLAMP	
15	51862654	1	CLAMP, HOSE, MIDDLE	
16	51788412	1	PLATE, HOSE CLAMP	
17	96710488	4	CAPSCREW	
19	96714795	4	CAPSCREW	
20	96703426	4	CAPSCREW	



**Hose Carrier Assembly
(For Parts List, refer to Page 5.0-4)**

HOSE CARRIER ASSEMBLY
(For Illustration of parts, refer to Page 5.0-3)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	51997740		HOSE CARRIER	
--	-----------------	--	---------------------	--

1	52080124	7	CARRIER WELDMENT (WITHOUT SEPARATOR PLATES)	
2	52080132	8	CARRIER WELDMENT (WITH SEPARATOR PLATES)	
3	52080140	240	ASSEMBLY, LINK PIN	

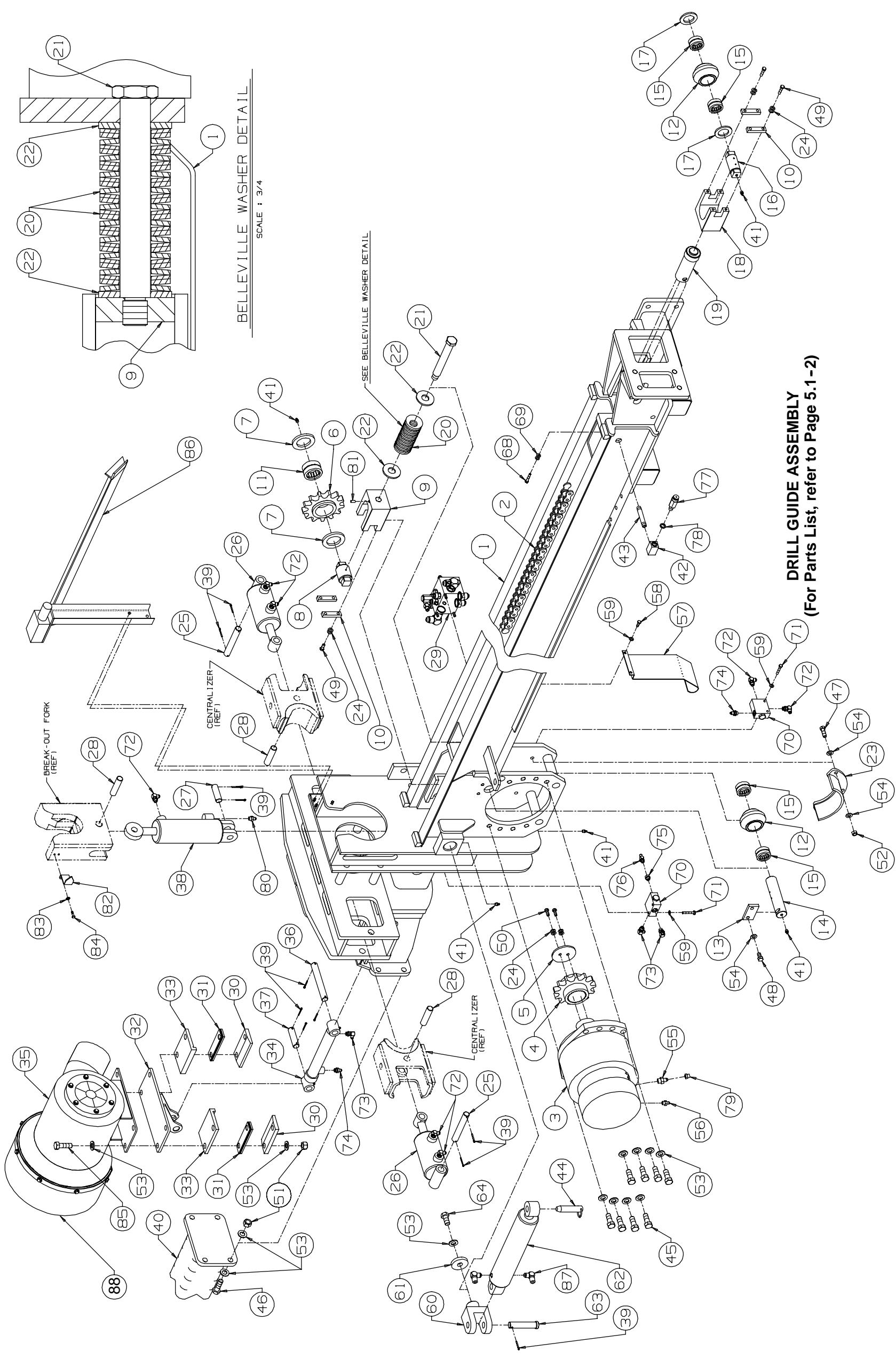
4	57673378	1	FOOT, MOUNTING	
5	52080165	1	FOOT, MOUNTING	
6	52080173	56	LINK, RADIUS	
7	52080181	30	LINK, CARRIER	

DRILL GUIDE ASSEMBLY

Revision 3

November 15, 2001

Section 5.1



DRILL GUIDE ASSEMBLY
(For Parts List, refer to Page 5.1-2)

DRILL GUIDE ASSEMBLY
(For Illustration of parts, refer to Page 5.1-1)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
		51788453		DRILL GUIDE ASSEMBLY	
	1	51788461	1	WELDMENT, GUIDE	
	2	51780625	1	CHAIN, FEED	
	3	51780617	1	MOTOR, HYDRAULIC FEED	<i>REFER TO PL6164, SECTION 5.5</i>
	4	51788362	1	SPROCKET, DRIVE	
	5	51788222	1	PLATE, SPROCKET RETAINING	
	6	51618817	1	SPROCKET, IDLER	
	7	51715795	2	WASHER, THRUST	
	8	51618825	1	PIN	
	9	51618858	1	YOKE	
	10	51618890	4	CAP, YOKE	
	11	51618833	1	BEARNG, NEEDLE	
	12	51788255	2	IDLER, CHAIN	
	13	51618767	1	PLATE, KEEPER	
	14	51788289	1	PIN, IDLER	
	15	51618809	4	BEARING	
	16	51788263	1	PIN, IDLER	
	17	51788230	2	WASHER, THRUST	
	18	51788297	1	YOKE, IDLER	
	19	51780377	1	CYLINDER, GREASE	
		51792042	1	.KIT, SEAL	
	20	51717627	30	WASHER, BELLEVILLE	
	21	51788248	1	BOLT, TENSIONING	
	22	51618882	2	WASHER, SPRING SEAT	
	23	51713717	1	RETAINER, CHAIN	
	24	51377398	20	WASHER	
	25	51005486	2	PIN	
	26	51909117	2	CYLINDER, HYDRAULIC CENTRALIZER	
		51944486	1	.KIT, SEAL	
	27	51788305	1	PIN, FORK CYLINDER	
	28	51005452	3	PIN	
	29	51909448	1	ASSEMBLY, FEED CONTROL MANIFOLD	<i>REFER TO PL6164, SECTION 9.13</i>
	30	51779163	2	CLAMP	
	31	51779171	2	PACK, SHIM	
	32	51779114	1	SLIDE, DUSTHOOD WELDMENT	
	33	51779155	2	PAD, HYDRAULIC CENTRALIZER WEAR	
	34	51989564	1	CYLINDER, HYDRAULIC DUSTHOOD	
		51992840	1	.KIT, SEAL	

(CONTINUED)

DRILL GUIDE ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 5.1-1)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
		51788453		DRILL GUIDE ASSEMBLY (cont.)	
	35	52137114	1	DUSTPOT (5 INCH)	REFER TO PL6164, SECTION 5.6
	35	52296704	1	DUSTPOT (6 INCH)	REFER TO PL6164, SECTION 5.6A
	36	51779361	1	PIN, CYLINDER	
	37	51779379	1	PIN, CYLINDER	
	38	51788339	1	CYLINDER, BREAKOUT FORK	
		51944502	1	.KIT, SEAL	
	39	95002705	11	PIN, COTTER	
	40	51909067	1	FOOT, STINGER	
	41	95201281	5	FITTING	
	42	51866333	1	MANIFOLD, GREASE	
	43	95280707	1	NIPPLE	
	44	51862696	1	PIN, BALL LOCK	
	45	96703343	8	CAPSCREW	
	46	96701867	4	CAPSCREW	
	47	96714894	3	CAPSCREW	
	48	96714829	2	CAPSCREW	
	49	96714746	8	CAPSCREW	
	50	96712146	2	CAPSCREW	
	51	96727136	8	NUT	
	52	96702857	3	NUT, HEX	
	53	96700976	25	WASHER, FLAT	
	54	96700844	8	WASHER	
	55	51377497	1	ADAPTER	
	56	51377505	1	ADAPTER	
	57	51874196	1	COVER, FEED CHAIN	
	58	96714605	2	CAPSCREW	
	59	96700828	6	WASHER	
	60	51874162	1	PIVOT, CHAIN WRENCH CYLINDER	
	61	51874170	1	PLATE, RETAINING	
	62	57155988	1	CYLINDER, HYDRAULIC CHAIN WRENCH	
		57156549	1	.KIT, SEAL	
	63	51779536	1	PIN, CYLINDER	
	64	96700901	1	CAPSCREW	
	68	95044038	2	CAPSCREW	
	69	51377406	4	WASHER, 5/16	
	70	50930460	2	VALVE, CHECK	

(CONTINUED)

DRILL GUIDE ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 5.1-1)

REF.

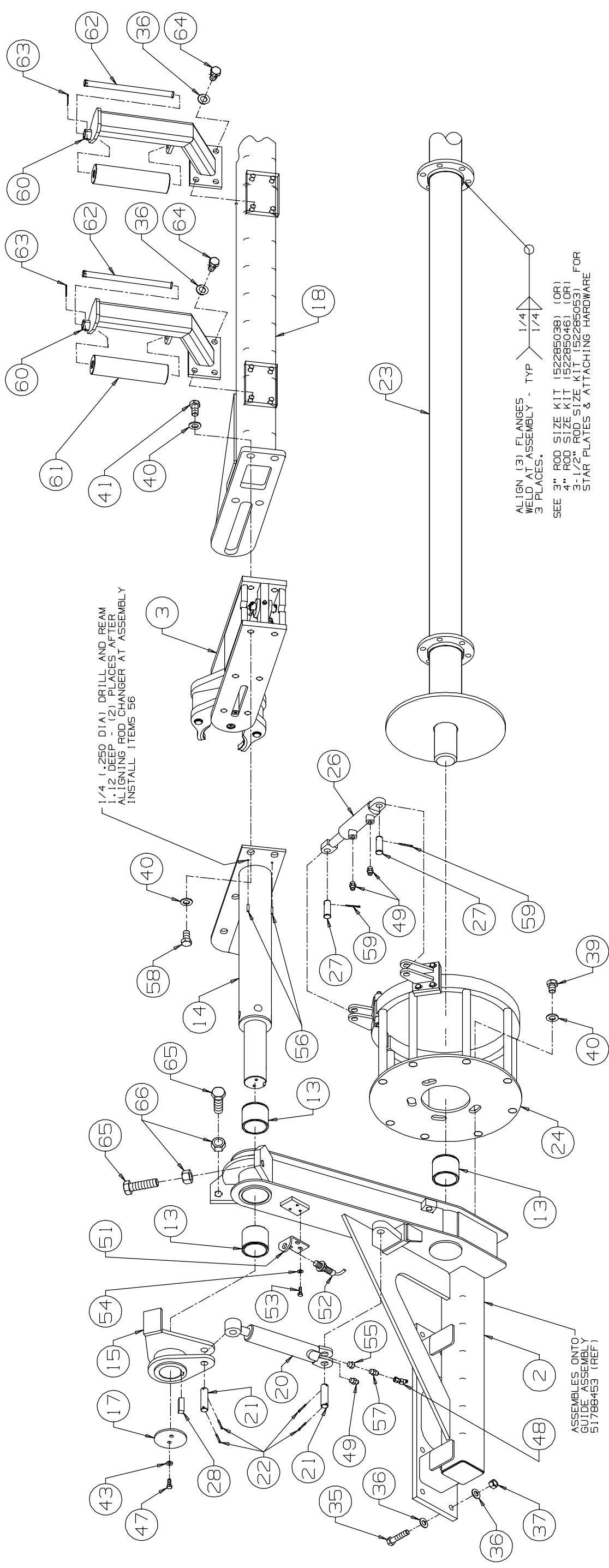
NO.	PART NO.	QTY.	PART NAME	REMARKS
<hr/>				
	51788453		DRILL GUIDE ASSEMBLY (cont.)	
71	96714654	4	CAPSCREW	
72	95329975	7	ELBOW	
73	95365094	3	ADAPTER	
74	95371258	2	ADAPTER	
75	95147674	1	REDUCER	
<hr/>				
76	95147971	1	TEE	
77	51236933	1	FITTING	
78	51236925	1	GASKET	
79	51028751	1	ADAPTER	
80	95365078	1	ADAPTER	
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81	96704119	1	SCREW, SET	
82	51948628	1	POINTER, STEEL FLATS	
83	96701289	2	WASHER	
84	96714548	2	CAPSCREW	
85	96703350	4	CAPSCREW	
<hr/>				
86	51994937	1	ASSEMBLY, SAFETY TRIP WIRE	<i>REFER TO PL6164, SECTION 5.7</i>
87	95356853	2	ADAPTER	
88	52137171	1	SKIRT, DUSTPOT	

ROD CHANGER ASSEMBLY

Revision 3

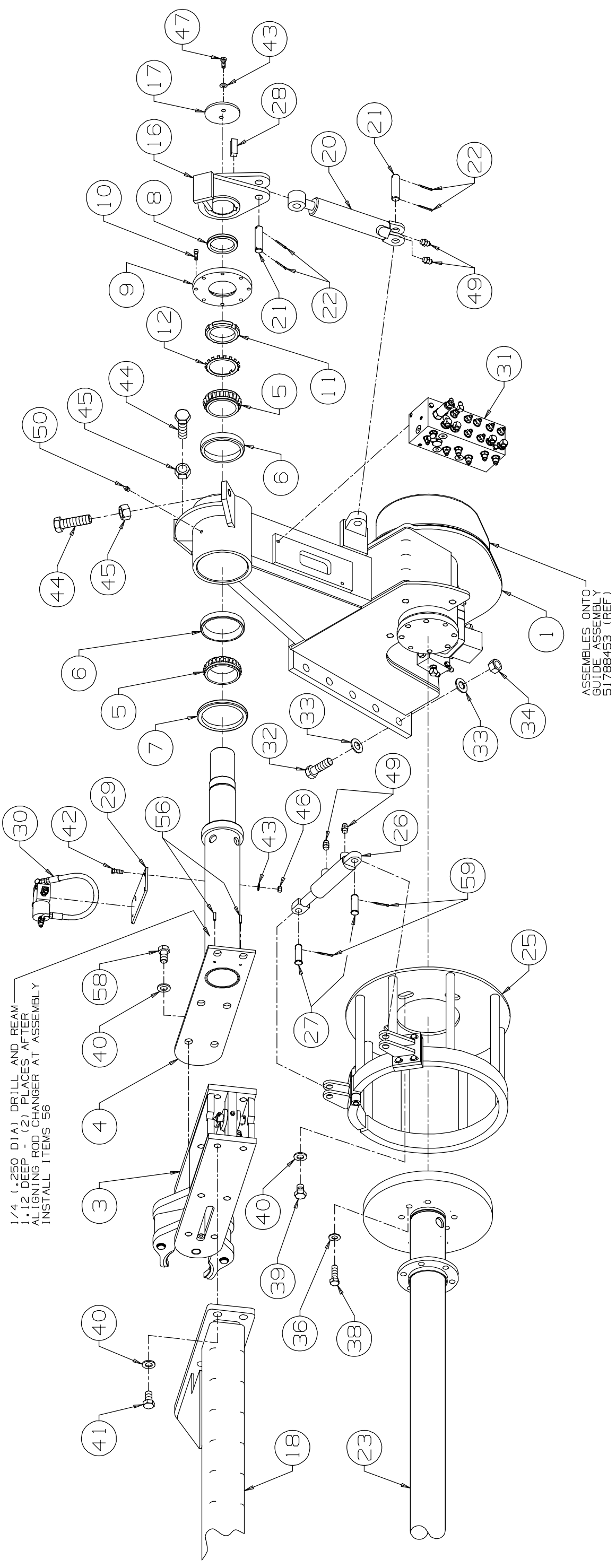
January 25, 2002

Section 5.2



ROD CHANGER ASSEMBLY
(For Parts List, refer to Page 5.2-3)
ROD CHANGER ASSEMBLY
(For Parts List, refer to Page 5.2-3)

UPPER ROD CAROUSEL



LOWER ROD CAROUSEL

ROD CHANGER ASSEMBLY
(For Parts List, refer to Page 5.2-3)

ROD CHANGER ASSEMBLY
 (For Illustration of parts, refer to Pages 5.2-1 & 5.2-2)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
		52284940		ROD CHANGER ASSEMBLY	
	1	52284957	1	ASSEMBLY, CAROUSEL DRIVE GROUP	<i>REFER TO PAGE 5.2-5</i>
	2	51780633	1	CAROUSEL, ROD (TOP WELDMENT)	
	3	52284965	2	ASSEMBLY, GRIPPER	<i>REFER TO PAGE 5.2-7</i>
	4	51780674	1	PIVOT, BOTTOM ROD SWING	
	5	95362190	2	CONE, BEARING	
	6	95362158	2	CUP, BEARING	
	7	51780567	1	SEAL, OIL	
	8	51780559	1	SEAL, OIL	
	9	51780591	1	RETAINER, SEAL	
	10	96714621	8	CAPSCREW	
	11	95209912	1	NUT, BEARNG LOCK	
	12	95212114	1	WASHER	
	13	51788594	3	BUSHING	
	14	51780666	1	PIVOT, ROD SWING, TOP	
	15	51780708	1	ROD SWING CLEVIS, TOP	
	16	51780690	1	ROD SWING CLEVIS, BOTTOM	
	17	51788222	2	PLATE, SPROCKET RETAINING	
	18	51780682	1	PIVOT, MIDDLE ROD SWING	
	20	51788578	2	CYLINDER, ROD CHANGER HYDRAULIC	
		51944494	1	.KIT, SEAL	
	21	51788636	4	PIN	
	22	95002705	8	PIN, COTTER	
	23	52286622	1	ROD, CAROUSEL	
	24	51780641	1	RETAINER, ROD, TOP	
	25	51780658	1	RETAINER, ROD, BOTTOM	
	26	51873891	2	CYLINDER, HYDRAULIC DOOR	
		51944536	1	.KIT, SEAL	
	27	51873875	4	PIN, HEADED CYLINDER	
	28	95293130	2	KEY	
	29	51909372	1	MOUNTING PLATE, NOZZLE	
	30	51909398	1	VALVE, GREASER, ASSEMBLY	<i>REFER TO PAGE 5.5-14</i>
	31	51909406	1	ASSEMBLY, AUTO ROD CHANGER MANIFOLD	<i>REFER TO PAGE 5.2-15</i>
	32	96705280	9	CAPSCREW, HEX HEAD	

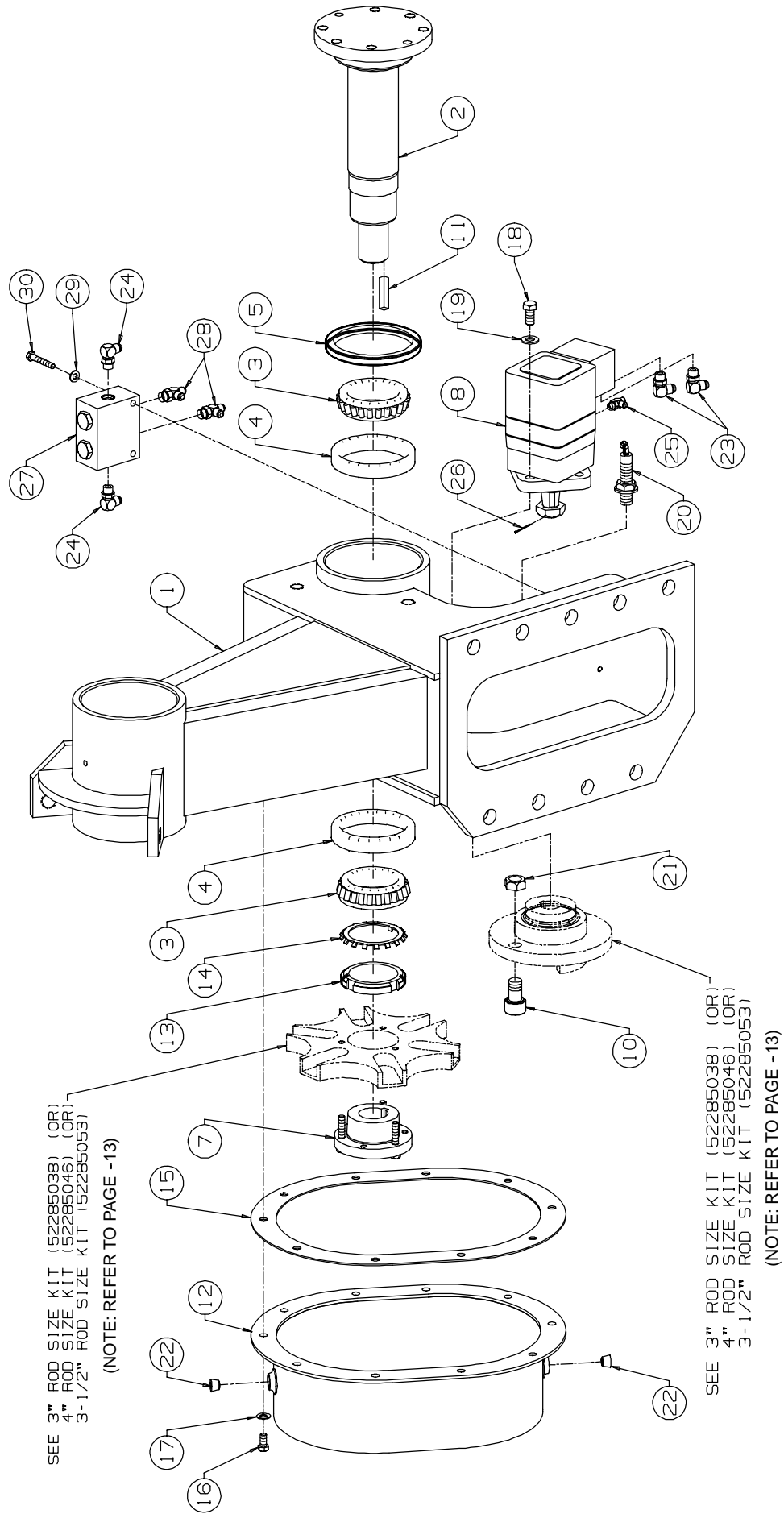
(CONTINUED)

ROD CHANGER ASSEMBLY (cont.)
(For Illustration of parts, refer to Pages 5.2-1 & 5.2-2)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
<hr/>				
	52284940		ROD CHANGER ASSEMBLY (cont.)	
33	96701305	18	WASHER	
34	96703673	9	NUT, HEX	
35	96702030	8	CAPSCREW, HEX HD	
36	96700968	30	WASHER, FLAT	
37	96703657	8	NUT, HEX/	
38	96700216	6	SCREW, HEX HD	
<hr/>				
39	96701875	7	CAPSCREW	
40	96700976	27	WASHER, FLAT	
41	96705298	8	CAPSCREW, HEX HD	
42	96714944	2	CAPSCREW, HEX HD.	
43	96700836	8	WASHER	
44	96711957	2	CAPSCREW, HEX HD.	
<hr/>				
45	51948602	2	NUT, JAM	
46	96701990	2	NUT, HEX	
47	96712146	4	CAPSCREW	
48	95653002	1	ELBOW	
49	95371258	7	ADAPTER	
50	95201547	1	FITTING, GREASE	
<hr/>				
51	51611390	1	BRACKET, PROXIMITY SWITCH	
52	51780575	1	SENSOR, OIL TIGHT PROXIMITY	
53	96714613	3	SCREW, HEX HD	
54	96700828	3	WASHER	
55	95147674	1	REDUCER	
56	95069522	4	PIN	
<hr/>				
57	95365086	1	ADAPTER	
58	96701875	12	CAPSCREW	
59	03167228	4	COTTER	
60	51999878	2	BRACKET, ROLLER	
61	51999886	2	ROLLER, HOSE CARRIER	
62	51999894	2	PIN, ROLLER	
<hr/>				
63	95900767	2	PIN, COTTER	
64	96703152	8	CAPSCREW	
65	96703962	2	CAPSCREW	
66	51326759	2	NUT	



SEE 3" ROD SIZE KIT (52285038) (OR)
 4" ROD SIZE KIT (52285046) (OR)
 3-1/2" ROD SIZE KIT (52285053)
 (NOTE: REFER TO PAGE -13)

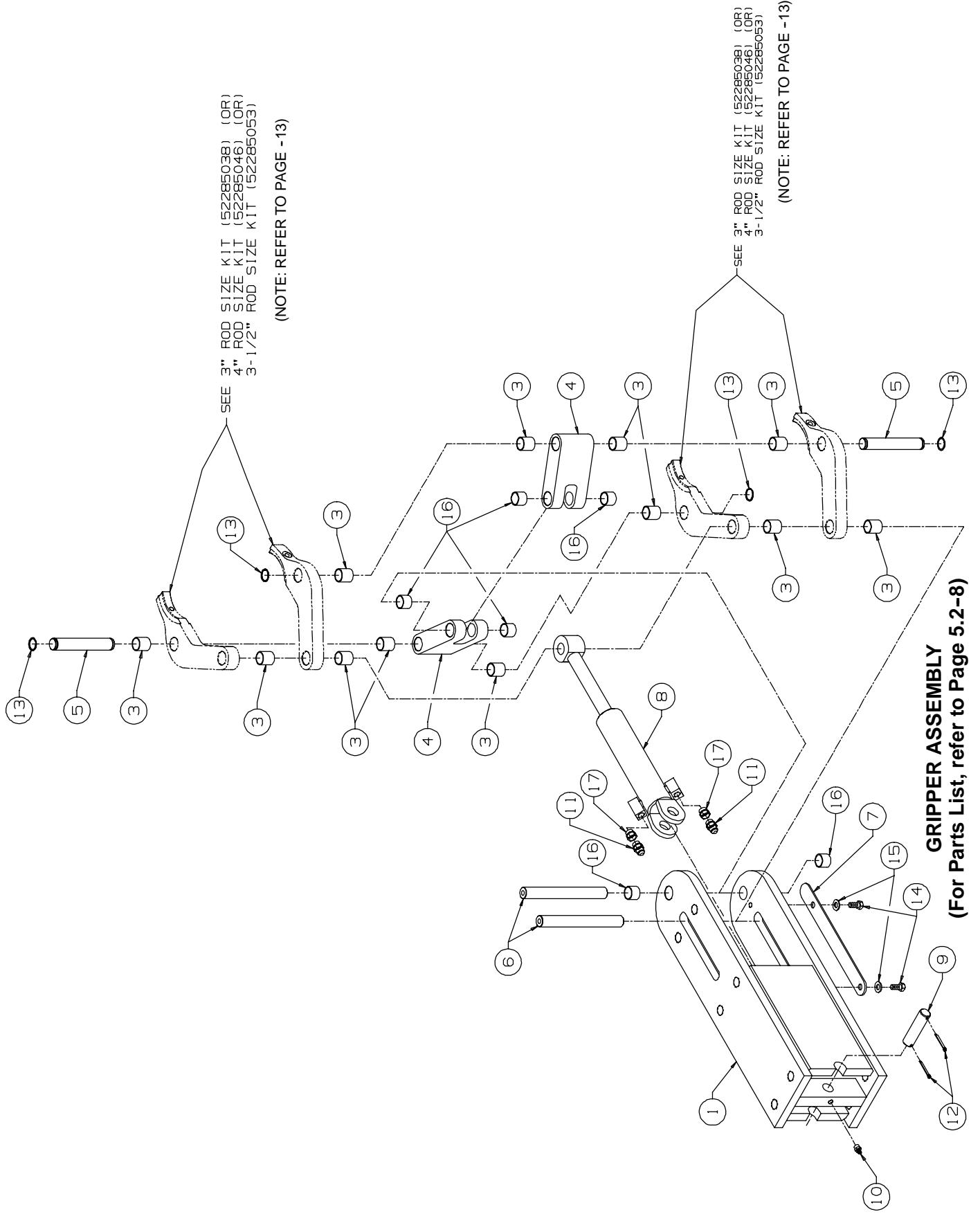
SEE 3" ROD SIZE KIT (52285038) (OR)
 4" ROD SIZE KIT (52285046) (OR)
 3-1/2" ROD SIZE KIT (52285053)
 (NOTE: REFER TO PAGE -13)

CAROUSEL DRIVE GROUP ASSEMBLY
 (For Parts List, refer to Page 5.2-6)

CAROUSEL DRIVE GROUP ASSEMBLY
(For Illustration of parts, refer to Page 5.2-5)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52284957		CAROUSEL DRIVE GROUP ASSEMBLY	
1	51780500	1	BASE, ROD CAROUSEL	
2	51780492	1	SPINDLE, ROD CAROUSEL	
3	95362190	2	CONE, BEARING	
4	95362158	2	CUP, BEARING	
5	51780567	1	SEAL, OIL	
7	51780526	1	BUSHING, SPLIT TAPER	
8	51780583	1	ASSEMBLY, HYDRAULIC MOTOR	<i>REFER TO PAGE 5.2-18</i>
10	51780534	1	ROLLER, TRACK	
11	95263976	1	KEY	
12	51780518	1	OIL PAN, ROD INDEXER	
13	95209912	1	NUT, BEARING LOCK	
14	95212114	1	WASHER	
15	51780609	1	GASKET, OIL PAN	
16	96712146	10	CAPSCREW	
17	96700836	10	WASHER	
18	96714886	4	CAPSCREW	
19	51616209	4	WASHER, SEAL	
20	51780575	1	SENSOR, OIL TIGHT PROXIMITY	
21	95245296	1	NUT, HEX JAM	
22	95730545	2	PLUG, PIPE	
23	95365094	2	ADAPTER	
24	95329975	2	ELBOW	
25	95147971	1	TEE	
26	95231494	1	PIN, COTTER	
27	50930452	1	VALVE, CHECK	
28	95453346	2	TEE	
29	96700828	2	WASHER	
30	96714654	2	CAPSCREW	
31	51908804	2	ADAPTER, RESTRICTOR	

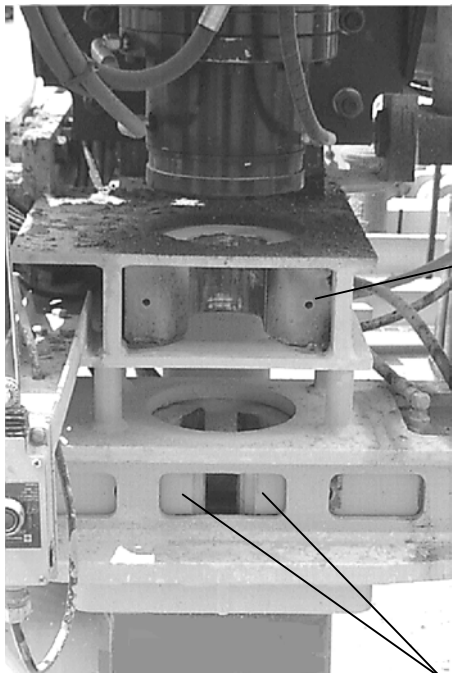


GRIPPER ASSEMBLY
(For Parts List, refer to Page 5.2-8)

GRIPPER ASSEMBLY
(For Illustration of parts, refer to Page 5.2-7)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
52284965			GRIPPER ASSEMBLY	
1	51788529	1	HOUSING, ROD GRIPPER	
3	51788552	12	BUSHING	
4	51788511	2	LINKAGE, GRIPPER	
5	51788545	2	PIN	
6	51788537	2	PIN	
7	51788560	1	PLATE, COVER	
8	51788578	1	CYLINDER, HYDRAULIC	
	51944494	1	.KIT, SEAL	
9	51788636	1	PIN	
10	95201547	1	FITTING, GREASE	
11	51916096	2	ADAPTER, LONG STRAIGHT	
12	95002705	2	PIN, COTTER	
13	51909364	4	RING, RETAINING, SPIROLOK	
14	96712146	2	CAPSCREW	
15	96700836	2	WASHER	
16	51910875	6	BUSHING	
17	95147674	2	REDUCER	

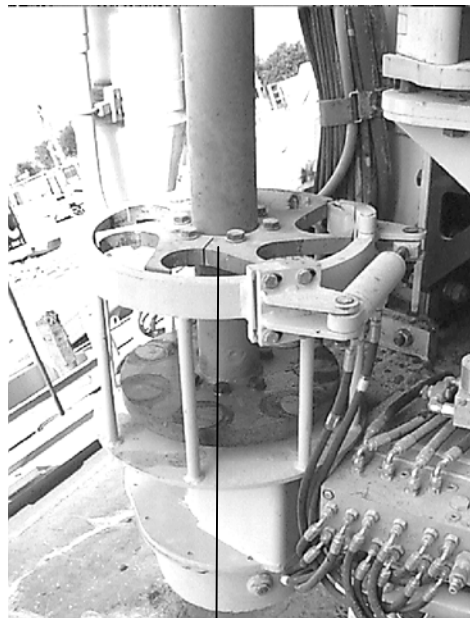


CENTRALIZER FORK

2

1

CENTRALIZER BUSHING



3, 5, 6, 7

CAROUSEL TOP/BOTTOM
STAR PLATE



9

TOP GAGE
MODIFICATION
(FOR 3 INCH ONLY)

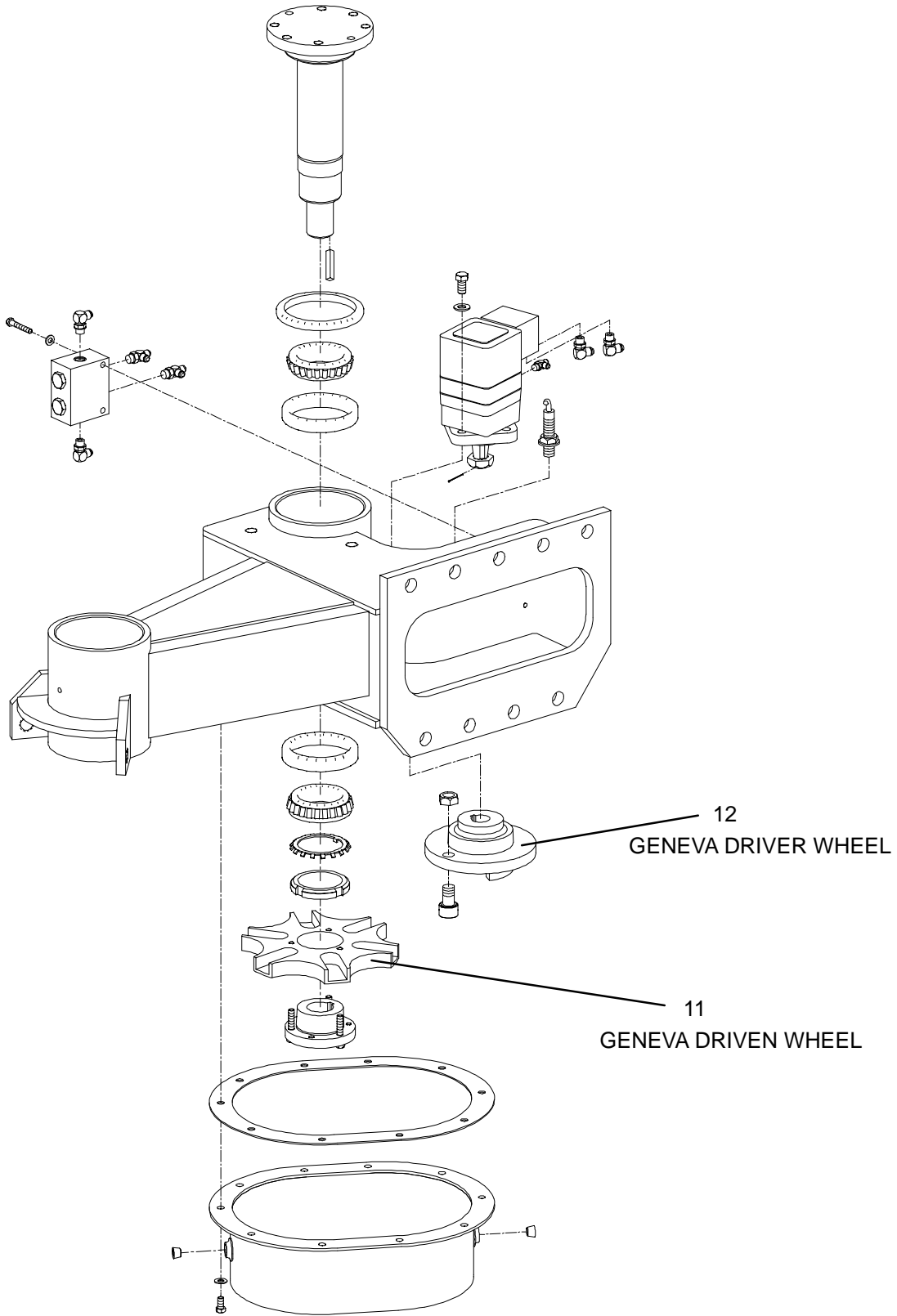
3, 5, 6, 7

CAROUSEL TOP/BOTTOM
STAR PLATE

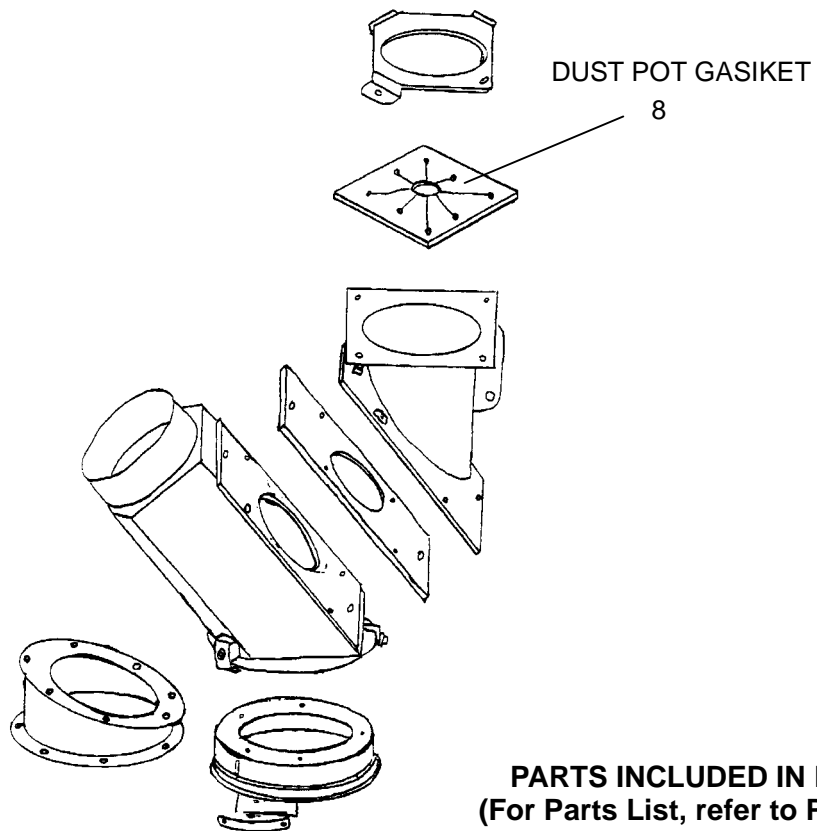
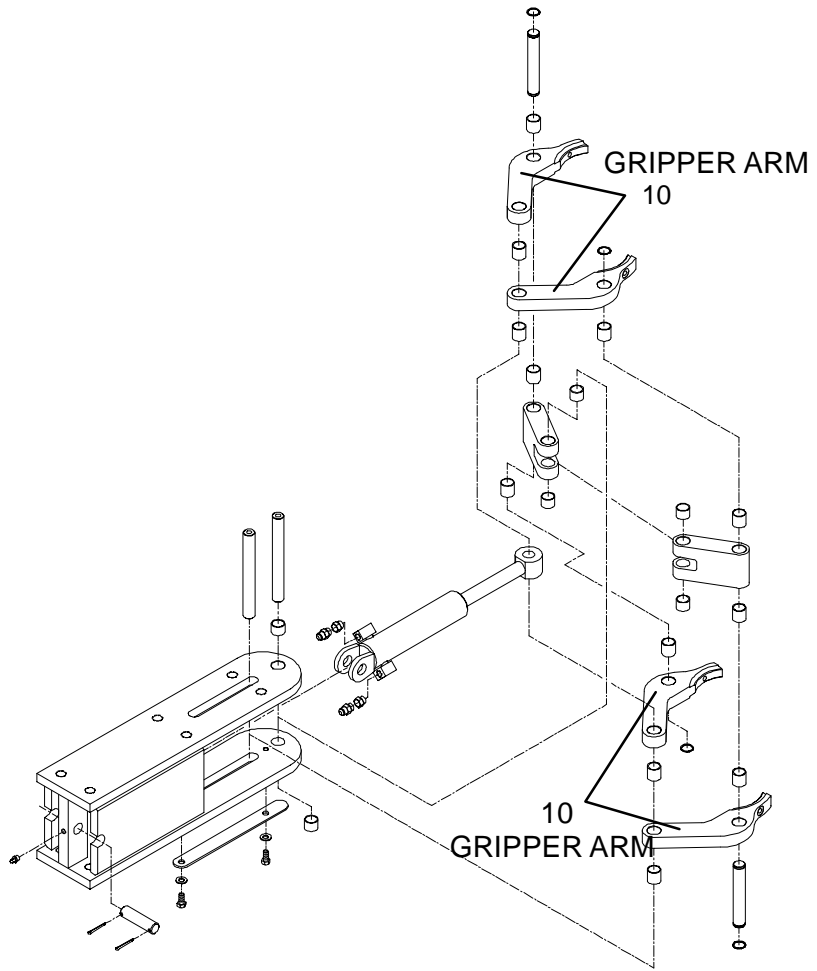
CAROUSEL MIDDLE
STAR PLATE

4, 5, 6, 7

PARTS INCLUDED IN ROD KITS
(For Parts List, refer to Page 5.2-12)



**PARTS INCLUDED IN ROD KITS
(For Parts List, refer to Page 5.2-12)**



PARTS INCLUDED IN ROD KITS
 (For Parts List, refer to Page 5.2-12)

3 INCH ROD SIZE KIT
(For Illustration of parts, refer to Pages 5.2-9 thru 5.2-11)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52285038		3 INCH ROD SIZE KIT	
1	51306454	1	BUSHING, CENTRALIZER	
2	51788677	1	FORK, CENTRALIZER	
3	52282704	2	PLATE, STAR, CAROUSEL, TOP/BOTTOM	
4	52282712	1	PLATE, STAR, CAROUSEL, MIDDLE	
5	96700216	18	SCREW, HEX HEAD	
6	96700968	36	WASHER, FLAT	
7	96703657	18	NUT, HEX	
8	51994978	1	GASKET, DUST POT	
9	51999142	1	MODIFICATION, TOP GATE, 3 INCH	
10	52282787	8	ARM, GRIPPER, 3 INCH ROD	
11	51999092	1	WHEEL, GENEVA DRIVEN (7 ROD)	
12	51999100	1	WHEEL, GENEVA DRIVER (7 ROD)	

3.5 INCH ROD SIZE KIT
(For Illustration of parts, refer to Pages 5.2-9 thru 5.2-11)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52285053		3.5 INCH ROD SIZE KIT	
1	52138088	2	BUSHING, CENTRALIZER	
2	52138070	1	FORK, CENTRALIZER	
3	52138203	2	WELDMENT, STAR, TOP/BOTTOM	
4	52138211	1	WELDMENT, STAR, MIDDLE	
5	96700216	18	SCREW, HEX HEAD	
6	96700968	36	WASHER, FLAT	
7	96703657	18	NUT, HEX	
8	51994978	1	GASKET, DUST POT	
10	52138112	8	ARM, GRIPPER, 3.5 INCH ROD	
11	51999092	1	WHEEL, GENEVA DRIVEN (7 ROD)	
12	51999100	1	WHEEL, GENEVA DRIVER (7 ROD)	

4 INCH ROD SIZE KIT
(For Illustration of parts, refer to Pages 5.2-9 thru 5.2-11)

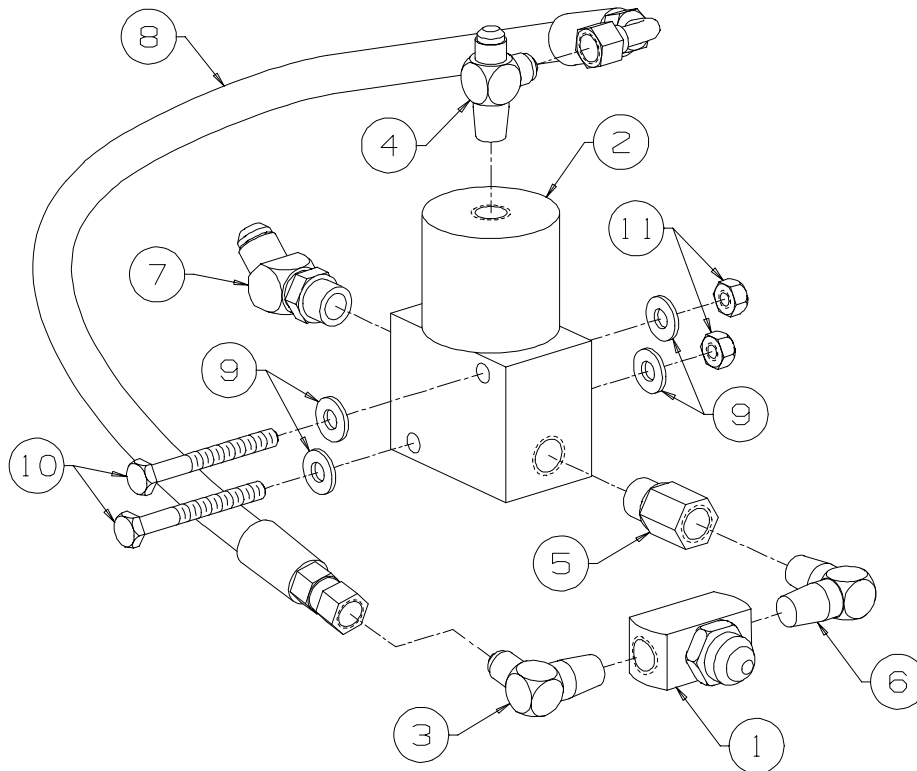
REF.

NO. PART NO. QTY. PART NAME
REMARKS

	52285046		4 INCH ROD SIZE KIT
1	51788271	1	BUSHING, CENTRALIZER
2	51788321	1	FORK, CENTRALIZER
3	52282720	2	WELDMENT, STAR, TOP/BOTTOM

4	52282738	1	WELDMENT,STAR, MIDDLE
5	96700216	18	SCREW, HEX HEAD
6	96700968	36	WASHER, FLAT

7	96703657	18	NUT, HEX
8	51994986	1	GASKET, DUST POT
10	52282795	8	ARM, GRIPPER, 4 INCH ROD
11	51780484	1	WHEEL, GENEVA DRIVEN (6 ROD)
12	51780476	1	WHEEL, GENEVA DRIVER (6 ROD)



REF.

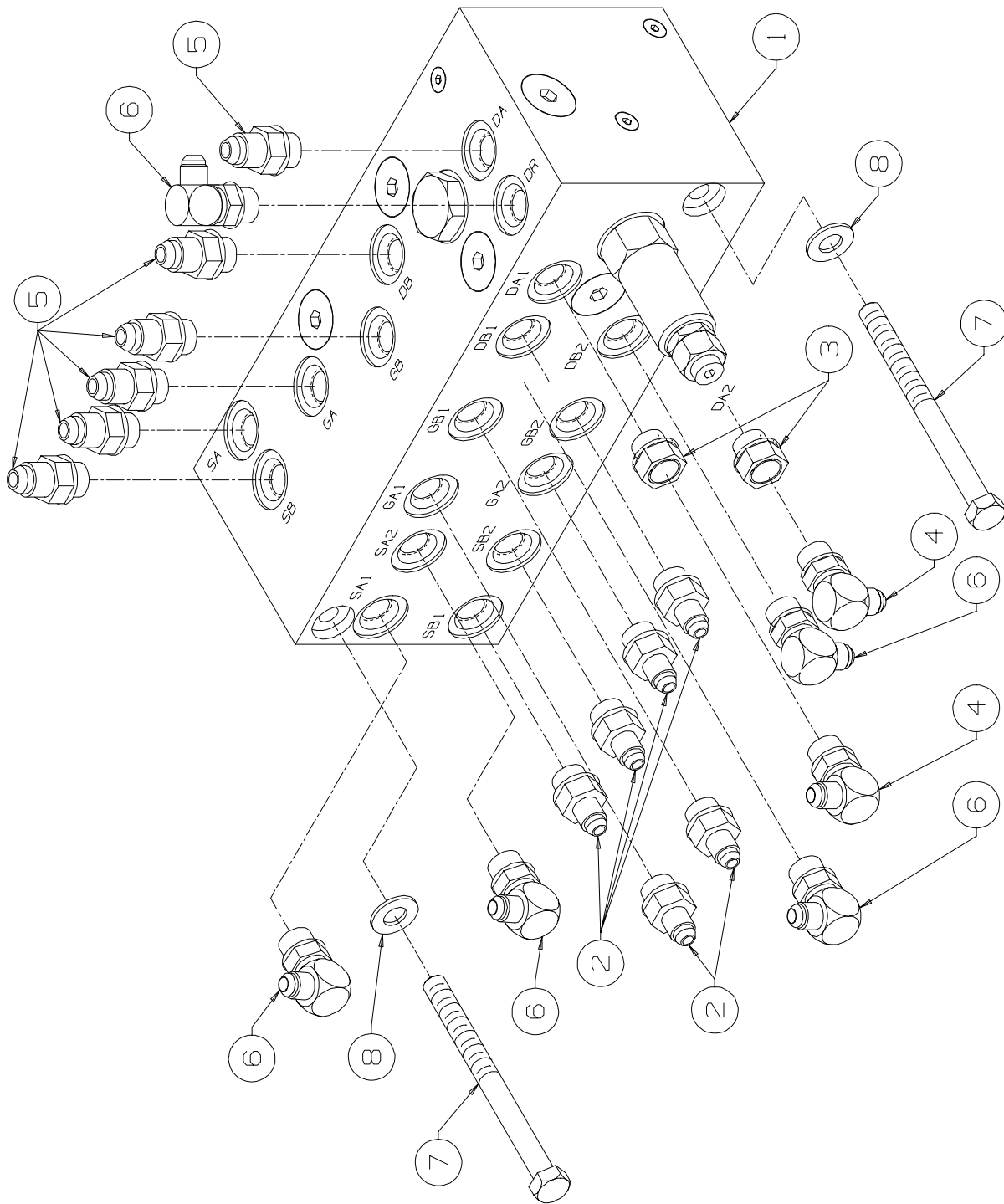
NO.	PART NO.	QTY.	PART NAME	REMARKS
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51909398 GREASER VALVE ASSEMBLY

1	51619088	1	NOZZLE, SPRAY	
	51948529	1	.AIR CAP, NOZZLE	
	51948537	1	.RETAINING RING, NOZZLE	
2	52130044	1	VALVE, PILOT OPERATED	
3	95293403	1	ELBOW	

4	95002598	1	TEE	
5	95655064	1	ADAPTER	
6	95654448	1	ELBOW	
7	95003273	1	ELBOW	
8	51916005	1	ASSEMBLY, HOSE	

9	96701289	4	WASHER	
10	96714555	2	CAPSCREW	
11	96703640	2	NUT, HEX	



AUTO ROD CHANGER MANIFOLD ASSEMBLY
 (For Illustration of parts, refer to Page 5.2-16)

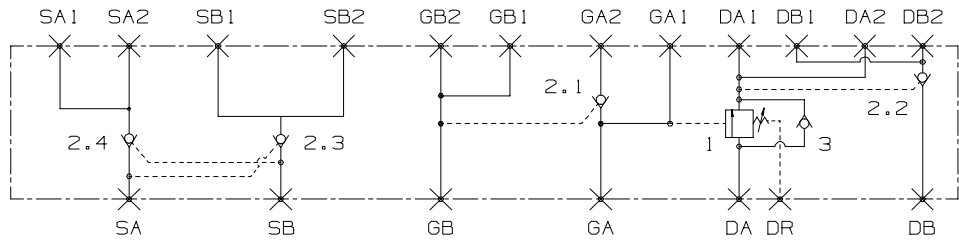
ROD CHANGER MANIFOLD ASSEMBLY
(For Illustration of parts, refer to Page 5.2-15)

REF.

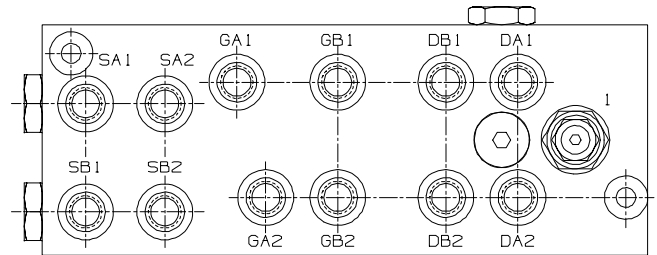
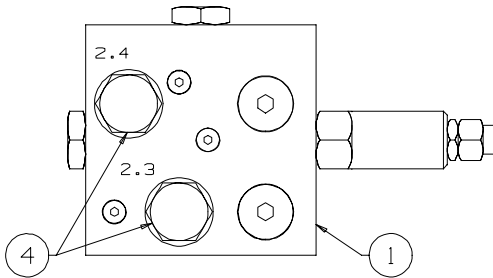
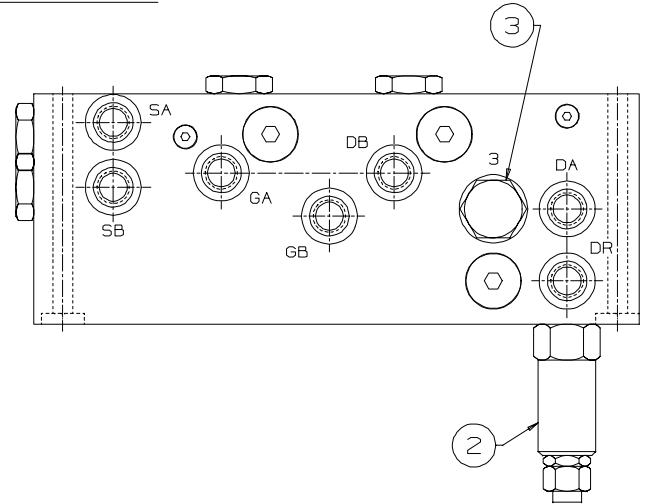
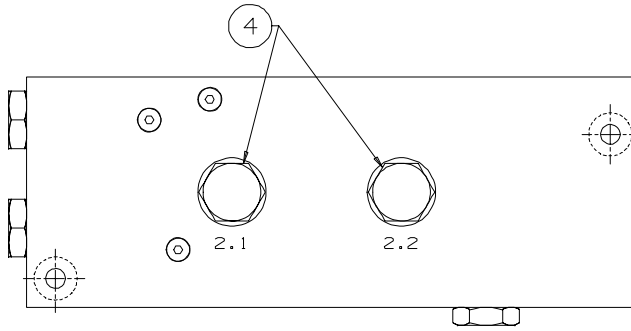
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	51909406		ROD CHANGER MANIFOLD ASSEMBLY	
1	51909125	1	MANIFOLD, ROD CHANGER	<i>REFER TO PAGE 5.2-17</i>
2	95371258	11	ADAPTER	
5	95365078	6	ADAPTER	

6	95365094	2	ADAPTER	
7	96714696	2	CAPSCREW	
8	96700828	2	WASHER	



HYDRAULIC SCHEMATIC

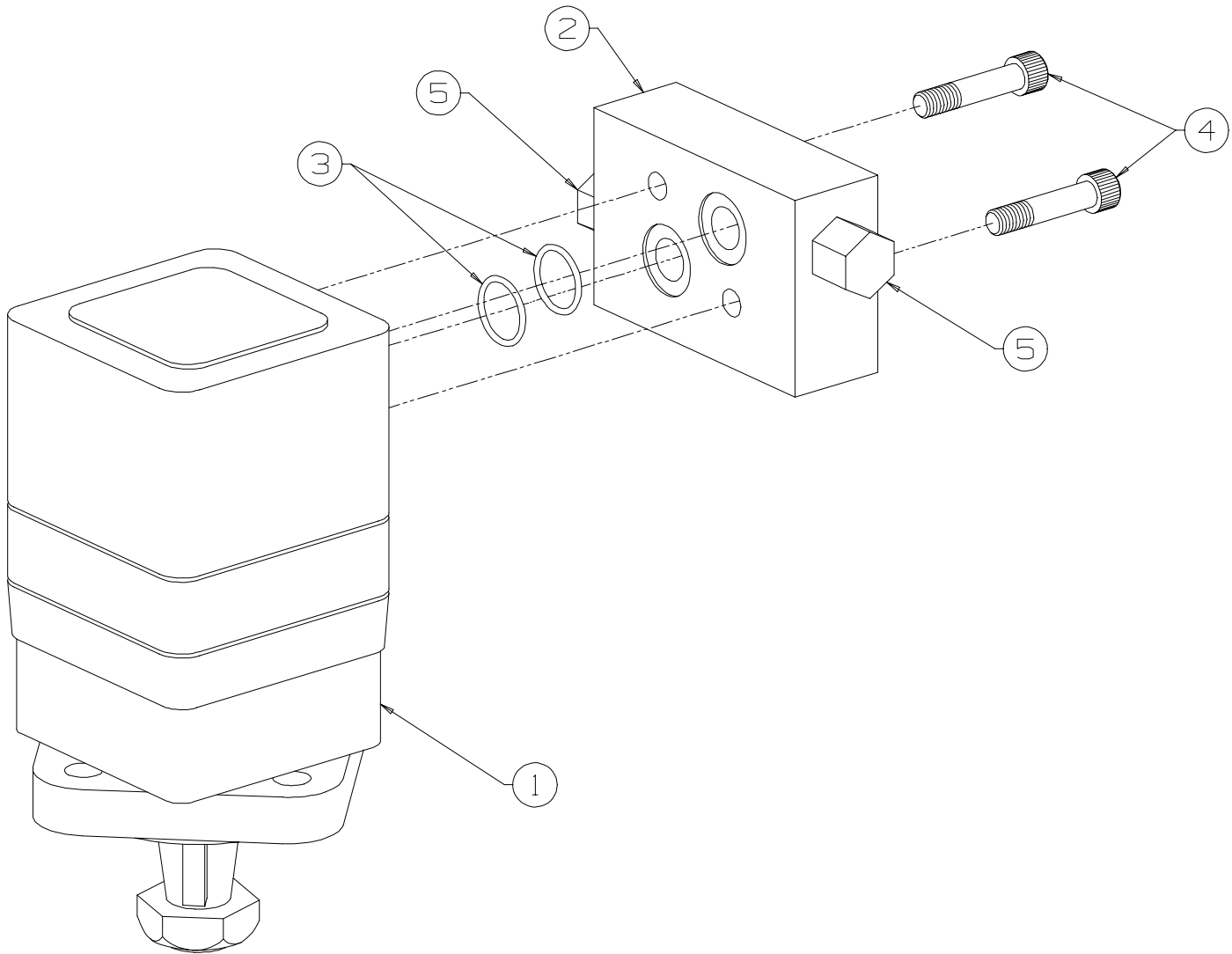


REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51909125		ROD CHANGER MANIFOLD	
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1	51910990	1	BLOCK, MANIFOLD	
2	51782613	1	CARTRIDGE, SEQUENCE	
3	51785871	1	CARTRIDGE, CHECK	
4	51782605	4	CARTRIDGE, PILOT CHECK	



REF.

NO. PART NO. QTY.

PART NAME

REMARKS

51780583

MOTOR ASSEMBLY

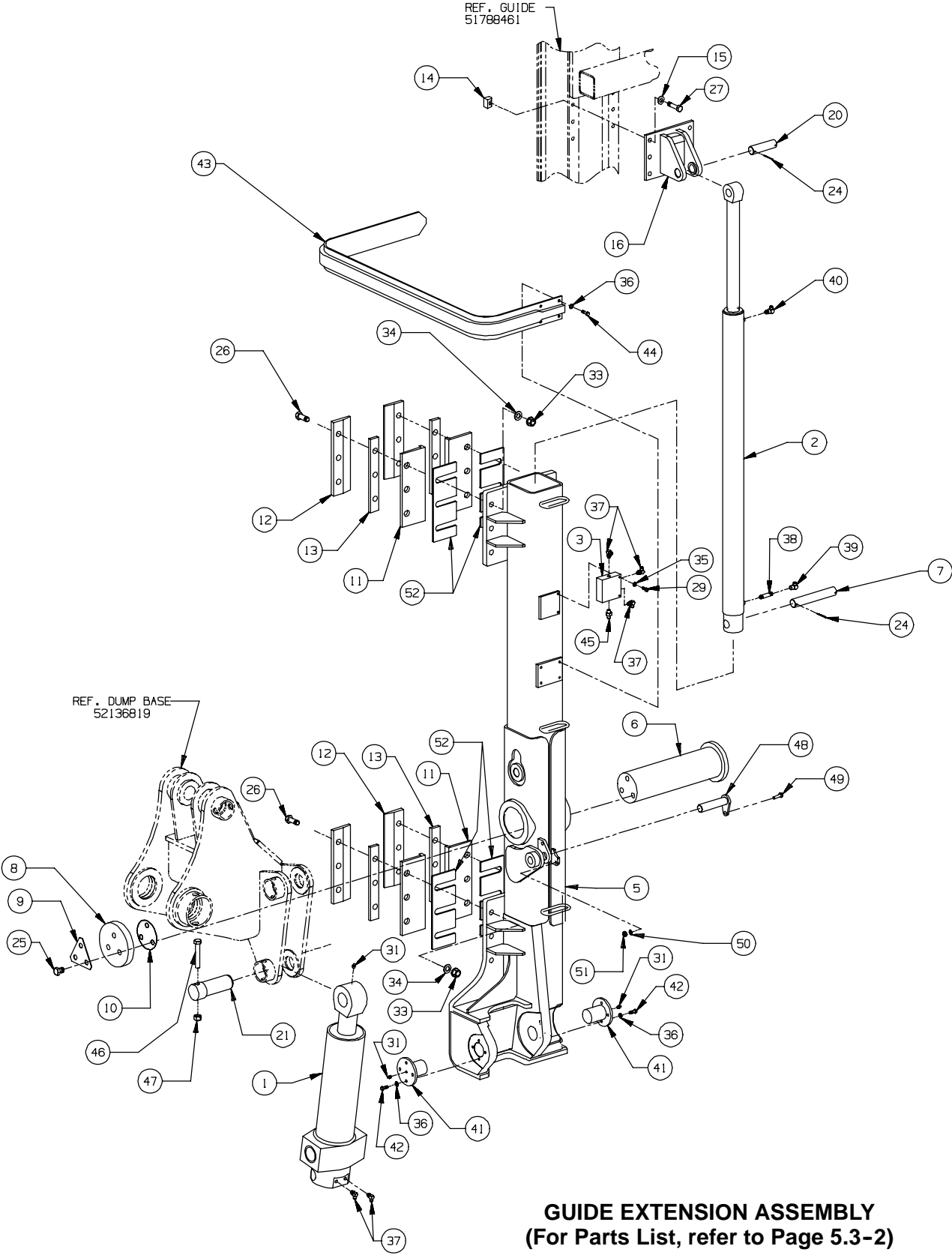
1	51909133	1	MOTOR, HYDRAULIC
2	51909141	1	MANIFOLD, HYDRAULIC BARE
3	95086484	2	O-RING
4	96700398	2	CAPSCREW
5	51918183	2	CARTRIDGE, FLOW CONTROL

GUIDE EXTENSION ASSEMBLY

Revision 2

April 4, 2002

Section 5.3



GUIDE EXTENSION ASSEMBLY
(For Parts List, refer to Page 5.3-2)

GUIDE EXTENSION ASSEMBLY
(For Illustration of parts, refer to Page 5.3-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	51862571		GUIDE EXTENSION ASSEMBLY	
1	57675977	1	CYLINDER, GUIDE SWING	
	51992436	1	,KIT, SEAL	
2	51992352	1	CYLINDER, GUIDE EXTENSION	
	51992451		.KIT, SEAL	
3	50930452	1	VALVE, CHECK	
5	52083052	1	WELDMENT, GUIDE EXTENSION TUBE	
6	51609196	1	PIN, SWING	
7	51862357	1	PIN, GUIDE EXTENSION CYLINDER	
8	51610723	1	PLATE, THRUST	
9	51610731	1	WASHER, LOCK	
10	51610749	1	SHIM PACK	
11	51782522	4	PAD, WEAR	
12	51782506	4	CLAMP STRIP	
13	51862340	4	SHIM PACK, GUIDE EXTENSION CLAMP	
14	51618619	6	NUT	
15	96700968	6	WASHER, FLAT	
16	51862225	1	ANCHOR, GUIDE EXTENSION	
20	51862332	1	PIN, GUIDE EXTENSION CYLINDER	
21	52282852	1	PIN, CYLINDER	
24	95093381	4	PIN, COTTER	
25	96703343	3	CAPSCREW	
26	96704077	12	CAPSCREW	
27	96701222	6	SCREW, HEX HEAD	
28	96714605	2	CAPSCREW	
29	96714654	2	CAPSCREW	
30	96714860	2	CAPSCREW	
31	95201281	3	FITTING, GREASE	
33	96727136	12	NUT	
34	96700976	12	WASHER, FLAT	
35	96700828	4	WASHER	
36	96700836	12	WASHER	
37	95329975	5	ELBOW	
38	95676243	1	NIPPLE, PIPE	
39	95279196	2	ELBOW	
40	95209094	1	ELBOW	
41	51609048	2	PIN, GUIDE DUMP	
42	96702774	8	CAPSCREW	
43	51873776	1	GUARD, DRILL ROD (GUIDE)	

(CONTINUED)

GUIDE EXTENSION ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 5.3-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

51862571		GUIDE EXTENSION ASSEMBLY (cont.)	
44	96712146	4	CAPSCREW
45	95365078	1	ADAPTER
46	96727102	1	CAPSCREW
47	96704275	1	NUT

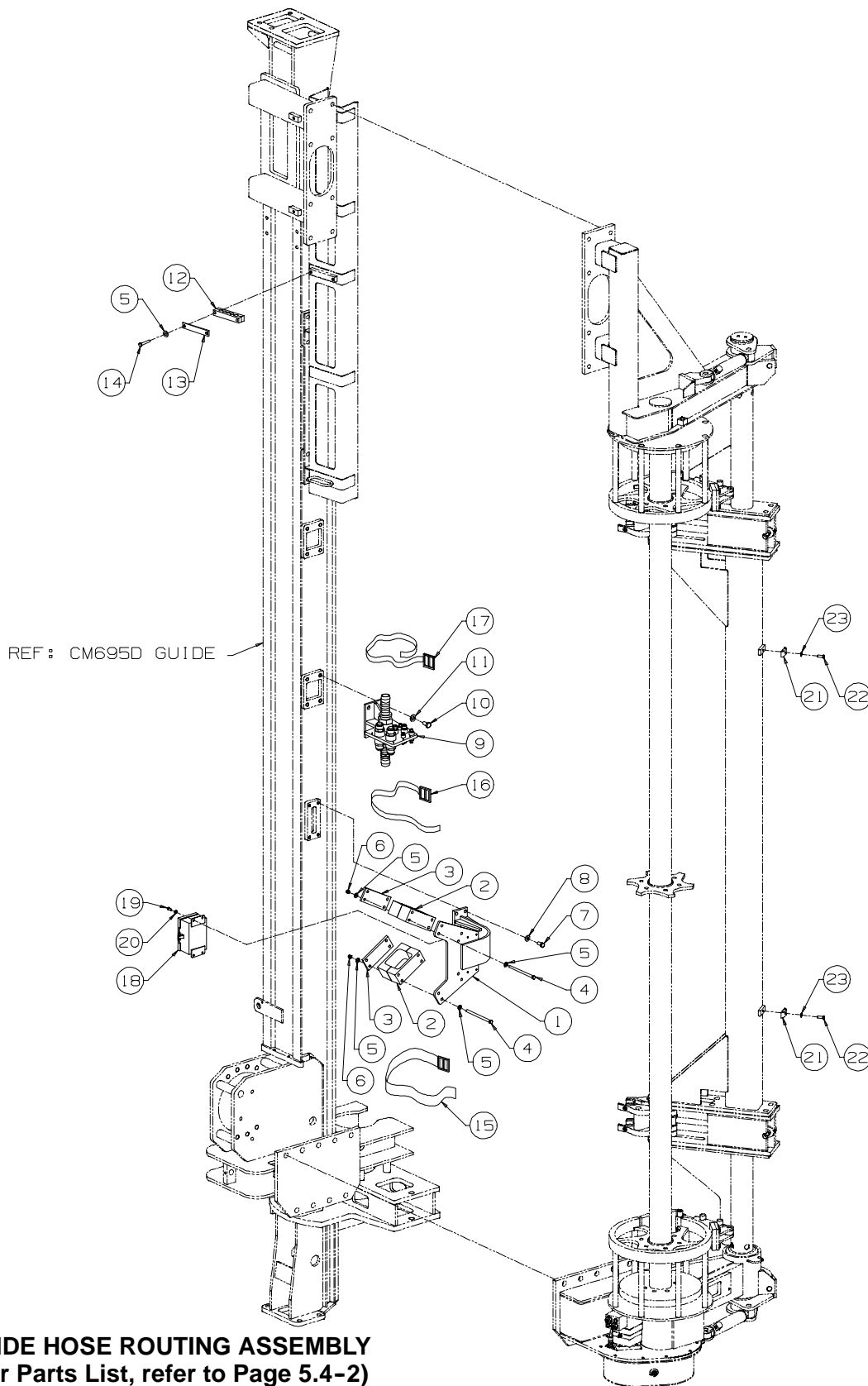
48	52284122	1	PIN, GUIDE INDEX
49	96714746	1	CAPSCREW
50	96712096	1	LOCKWASHER
51	96701990	1	NUT, HEX
52	52282845	4	SPACER, GUIDE EXTENSION TUBE

GUIDE HOSE ROUTING ASSEMBLY

Revision 1

July 27, 2000

Section 5.4

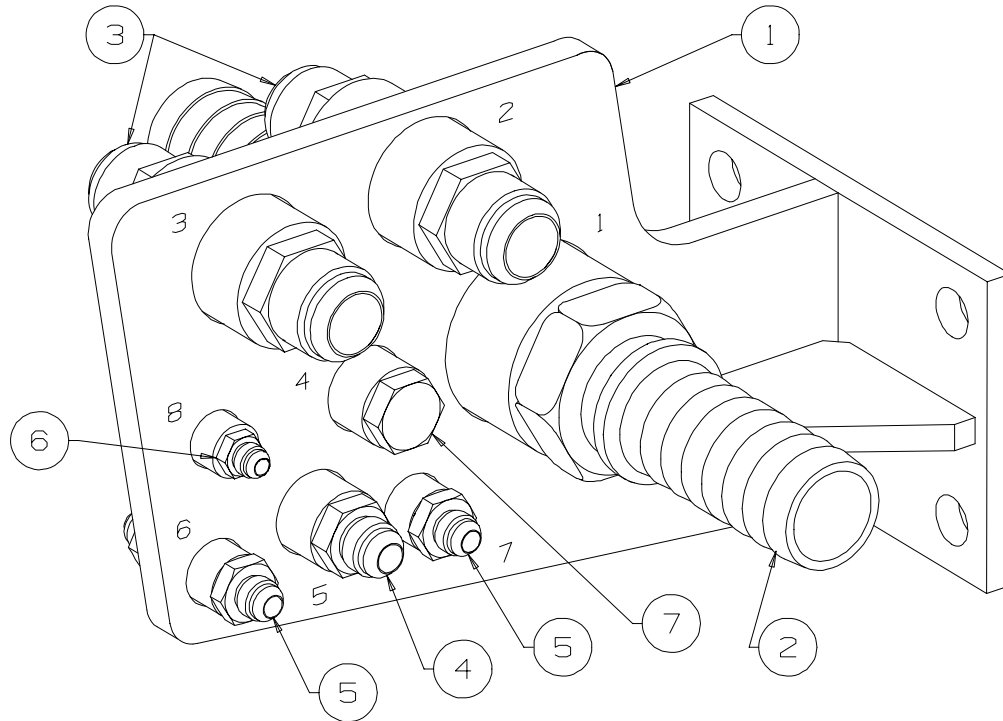


GUIDE HOSE ROUTING ASSEMBLY
(For Parts List, refer to Page 5.4-2)

GUIDE HOSE ROUTING ASSEMBLY
(For Illustration of parts, refer to Page 5.4-1)

REF.

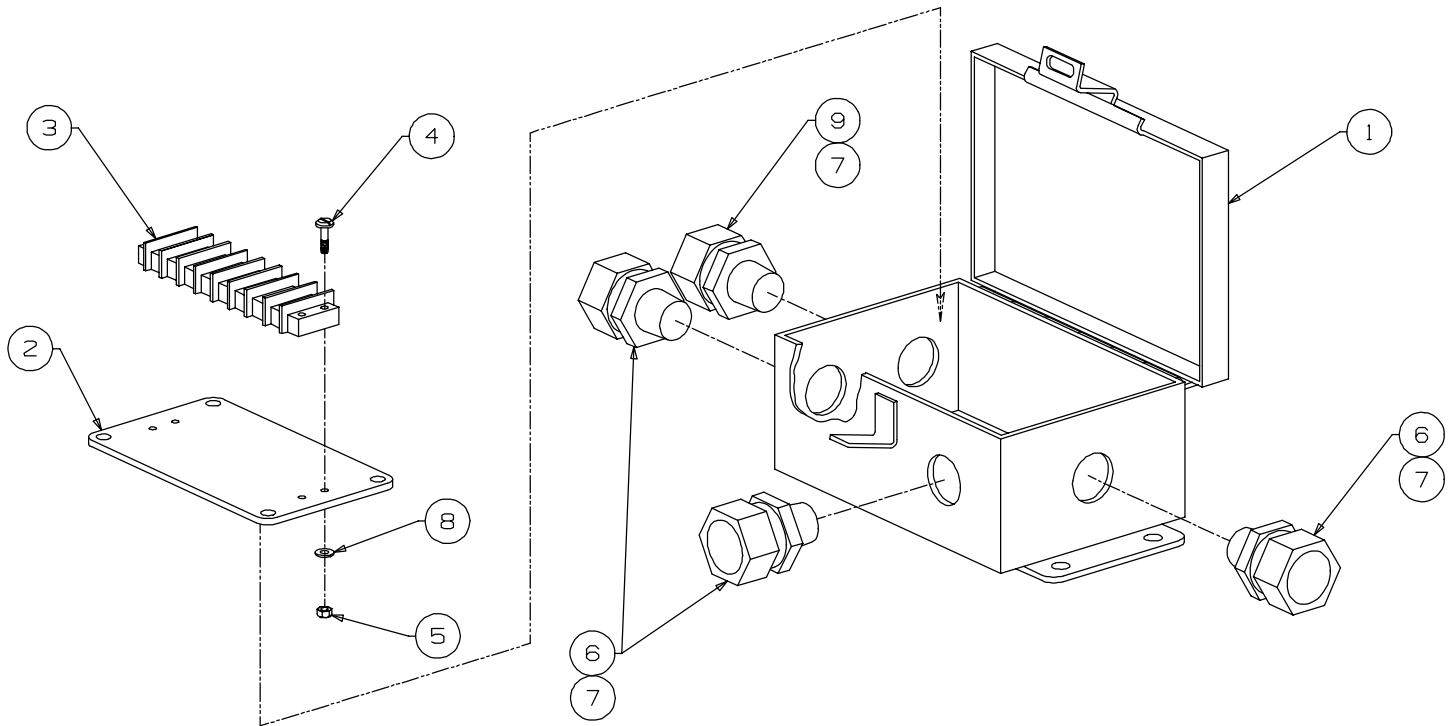
NO.	PART NO.	QTY.	PART NAME	REMARKS
51873842			GUIDE HOSE ROUTING ASSEMBLY	
1	52119005	1	SUPPORT, HOSE	
2	51776391	4	CLAMP, HOSE	
3	51776425	2	PLATE, HOSE CLAMP	
4	96714811	8	CAPSCREW	
5	96700836	18	WASHER	
6	96704333	8	NUT, HEX, LOCK	
7	96714860	4	CAPSCREW	
8	96700844	4	WASHER	
9	51910701	1	ASSEMBLY, GUIDE HOSE BULKHEAD	<i>REFER TO PAGE 5.4-3</i>
10	96703079	4	CAPSCREW	
11	96700968	4	WASHER, FLAT	
12	51958130	1	CLAMP, HOSE	
13	51958122	1	PLATE, HOSE CLAMP	
14	96705462	2	CAPSCREW	
15	52308681	6	STRAP	
16	51874600	6	STRAP	
17	51874618	6	STRAP	
18	51918399	1	ASSEMBLY, ELECTRICAL BOX	<i>REFER TO PAGE 5.4-4</i>
19	96714548	4	CAPSCREW	
20	96701289	4	WASHER	
21	50034826	3	CLAMP	
22	96703046	3	SCREW	
23	96701289	3	WASHER	



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51910701		GUIDE HOSE BULKHEAD ASSEMBLY	
1	51788446	1	BULKHEAD, HOSE CARRIER	
2	50023886	2	STEM, HOSE	
3	95219762	4	ADAPTER	
4	95219721	2	ADAPTER	
5	95219713	4	ADAPTER	
6	95263380	2	ADAPTER	
7	95344651	2	PLUG, PIPE	



REF.

NO. PART NO. QTY. PART NAME
REMARKS

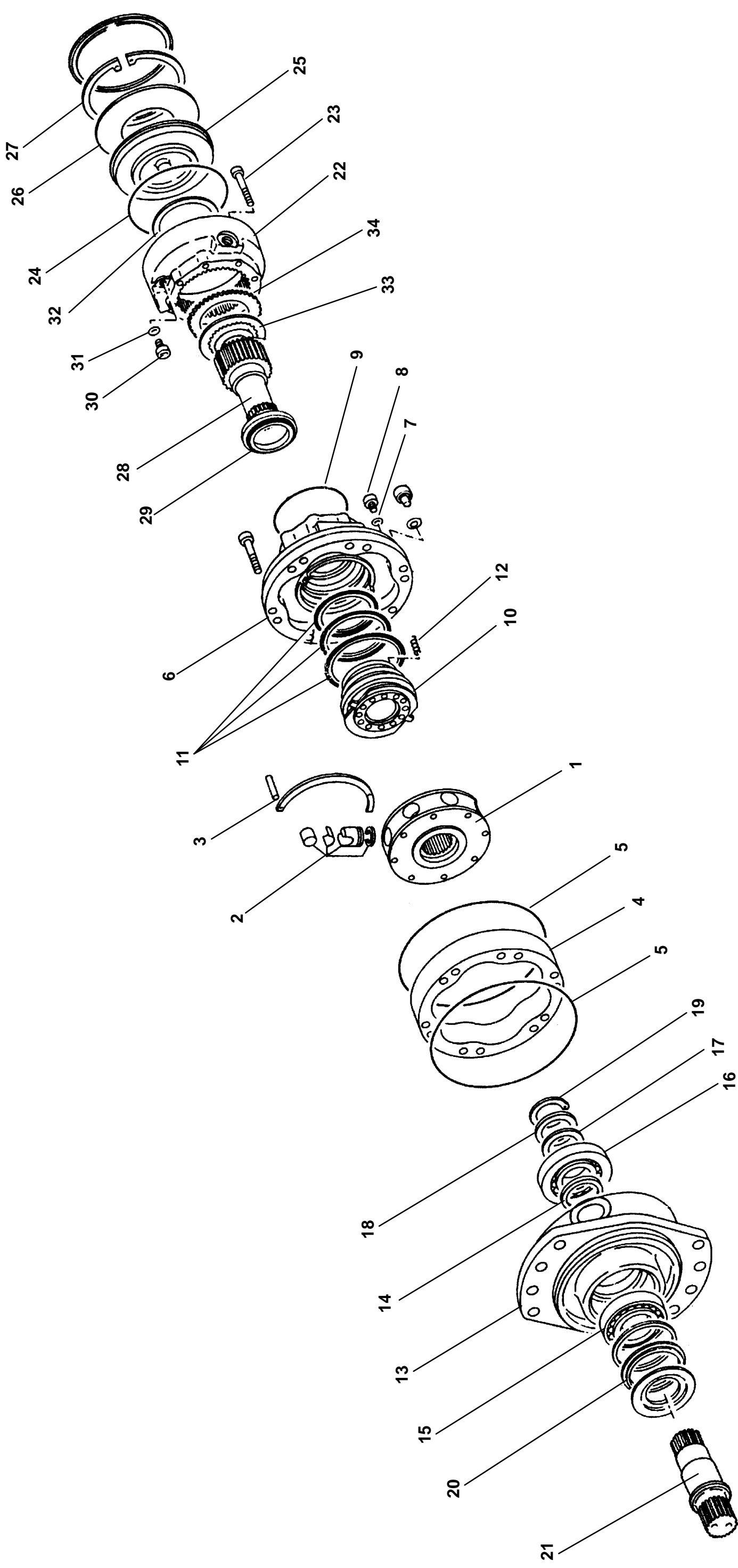
51918399		ELECTRICAL BOX ASSEMBLY	
1	51918373	1	BOX, ELECTRICAL
2	51918381	1	PANEL, ELECTRIC BOX
3	50906726	1	STRIP, TERMINAL
4	95410627	4	SCREW, MACHINE
5	95076717	4	NUT
6	95245072	3	CONNECTOR
7	51948735	4	LOCKNUT, 1/2 IN. SEAL
8	95326740	4	WASHER, FLAT
9	51874691	1	CONNECTOR

HYDRAULIC FEED MOTOR

Revision 2

November 26, 2001

Section 5.5



HYDRAULIC FEED MOTOR
(For Parts List, refer to Page 5.5-2)

HYDRAULIC FEED MOTOR
(For Illustration of parts, refer to Page 5.5-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
#	51780617		HYDRAULIC FEED MOTOR	
1	51949196	1	BLOCK, CYLINDER	
2	51949204	8	.PISTON	
3	51949212	1	.KIT, PISTON REPAIR	
4	51949220	1	CAM	
5	51728517	1	.O-RING, METRIC	
	51949246	1	PLATE	
6	51949253	1	.PLATE, COVER	
7	51949279	2	.WASHER	
8	51949287	2	.SCREW	
9	51949295	1	.SEAL	
10	51949303	1	.VALVE	
11	51949311	1	.RING, SEAL	
12	51949329	9	.SPRING	
	51949394	1	ASSEMBLY, SUPPORT	
13	51949402	1	.SUPPORT	
14	51949410	1	.SEAL, SHAFT (INNER)	
15	51949428	1	.BEARING	
16	51949436	1	.BEARING	
17	51949444	1	.SET, SHIM	
18	51949451	1	.WASHER	
19	51949469	1	.RING, SNAP	
20	51949477	1	.SEAL, SHAFT (OUTER)	
21	51949485	1	.SHAFT	
	51949493	1	ASSEMBLY, BRAKE	
22	51949501	1	.HOUSING, BRAKE	
23	51949519	8	.SCREW	
24	51949527	1	.O-RING	
25	51949535	1	.PISTON, BRAKE	
26	51949543	1	.WASHER, SPRING	
27	51949550	1	.RING, SNAP	
28	51949568	1	.SHAFT, BRAKE	
29	51949576	1	.KIT, BRAKE	
30	51949584	2	.SCREW, BLEED	
31	51949592	2	.SEAL	
32	XX	1	GEAR	
33	XX	1	GEAR	
34	XX	1	GEAR	
	51949600	1	.SET, GEAR	
	57661266	1	.SEAL KIT	

NOTE: ORDER PART NO. 52297793 FOR A REMANUFACTURED FEED MOTOR.

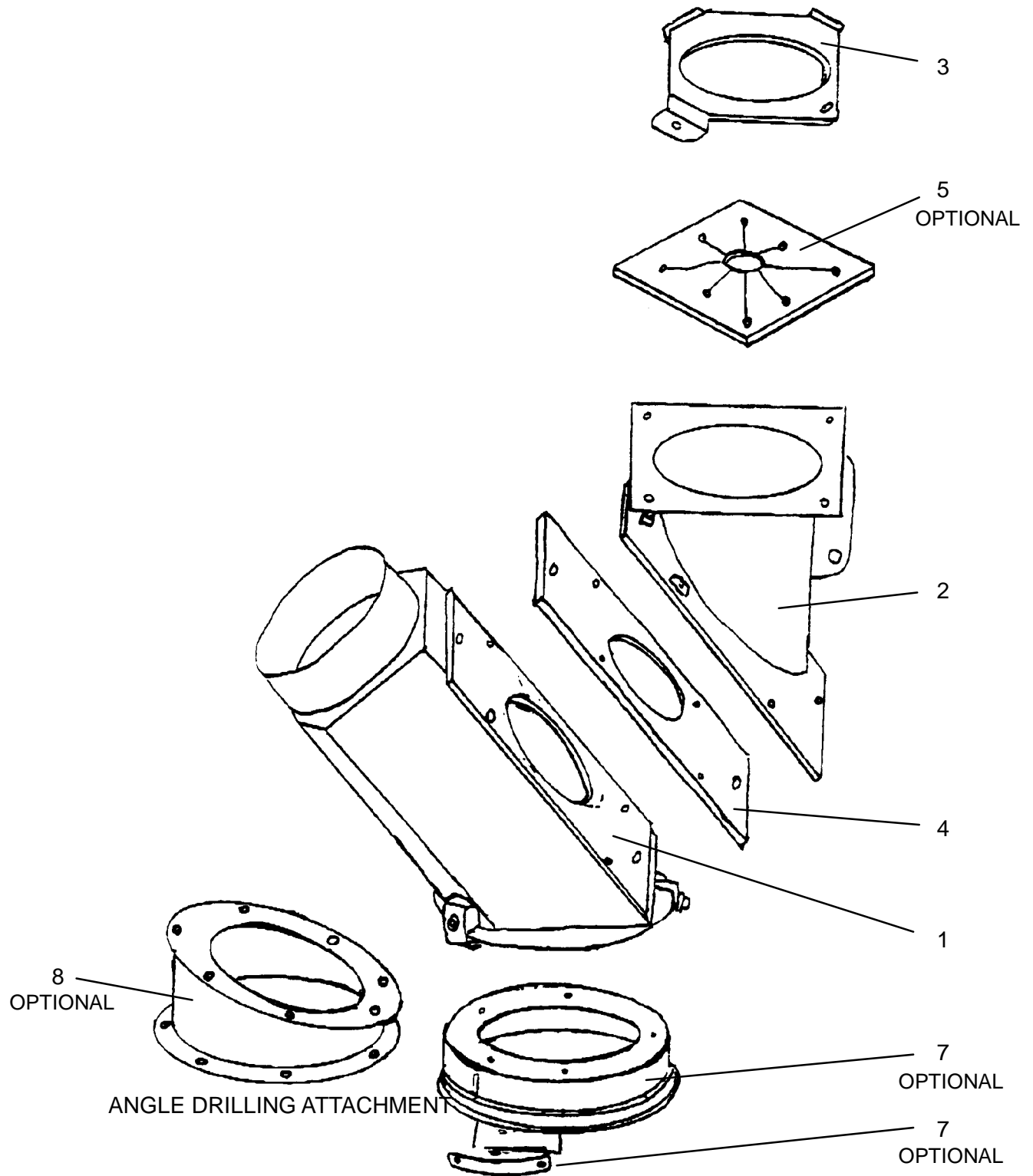
NOTICE: ORDER PART NUMBER 52080041 FOR MOTOR BRAKE COVER KIT.

DUSTPOT

(S/N 18069-18073)

January 15, 1999

Section 5.6



DUSTPOT
(For Parts List, refer to Page 5.6-2)

DUSTPOT
(For Illustration of parts, refer to Page 5.6-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52137114		DUSTPOT	
1	52137163	1	BODY, LOWER DUSTHOOD	
2	52137148	1	BODY, UPPER DUSTHOOD	
3	52137122	1	RETAINER, UPPER GASKET	
4	52137155	1	GASKET, INTERMEDIATE (UNIVERSAL)	

95919221	18	CAPSCREW
95943247	18	LOCKWASHER
95943254	10	NUT

5	51994978	1	GASKET, TOP FLOATING (3 INCH)	<i>NOTE: IF THE DUSTPOT IS ORDERED AS A SPARE, THIS GASKET IS NOT INCLUDED WITH IT. THE GASKET MUST BE ORDERED SEPARATELY. THIS GASKET IS FURNISHED WITH A NEW MACHINE.</i>
5	51994986	1	GASKET, TOP FLOATING (4 INCH)	<i>NOTE: IF THE DUSTPOT IS ORDERED AS A SPARE, THIS GASKET IS NOT INCLUDED WITH IT. THE GASKET MUST BE ORDERED SEPARATELY. THIS GASKET IS FURNISHED WITH A NEW MACHINE.</i>

OPTIONAL ACCESSORIES
(For Illustration of parts, refer to Page 5.6-1)
 (SHIPPED ONLY WHEN SPECIFICALLY ORDERED BY PART NO.)

REF.

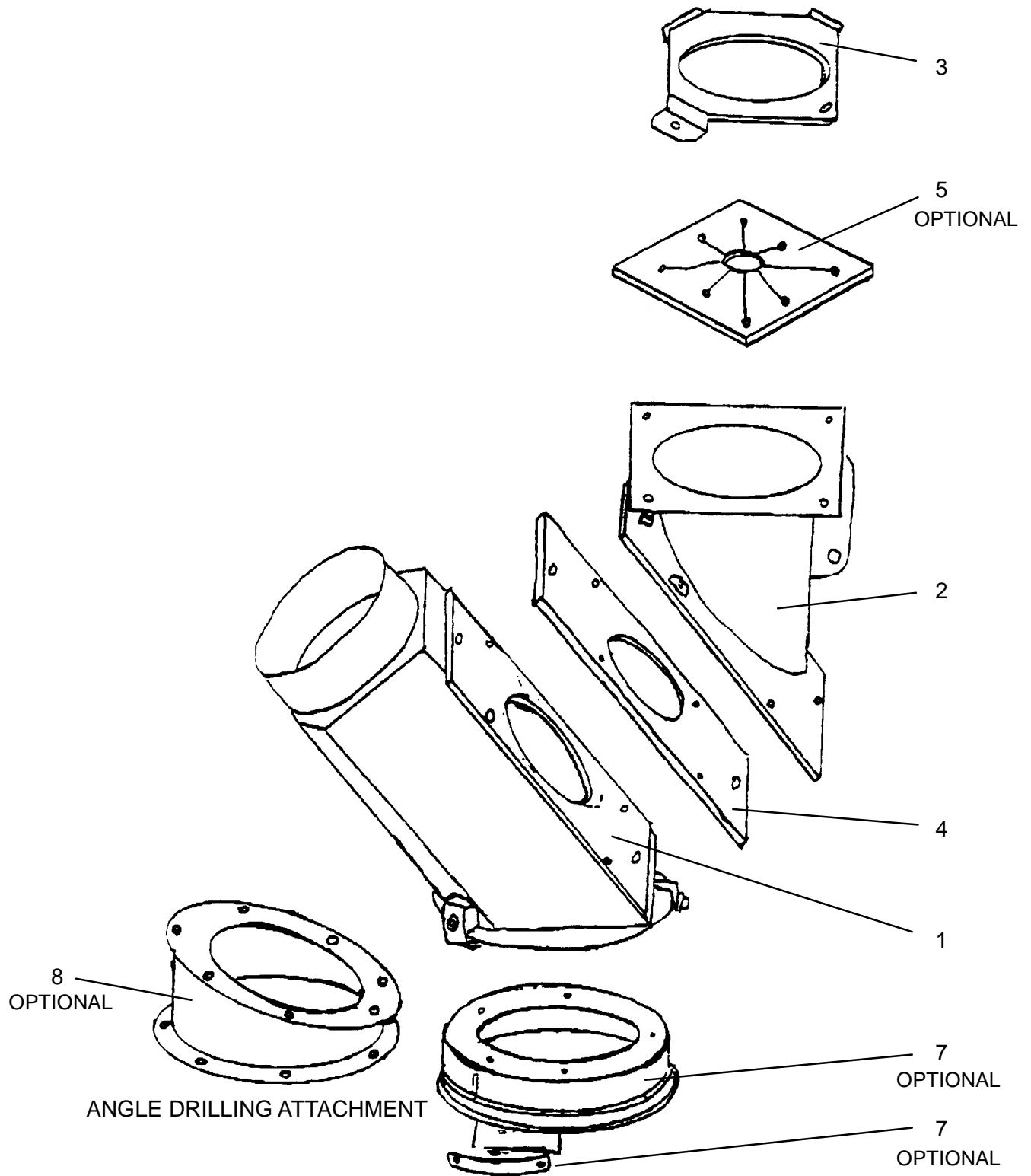
NO.	PART NO.	QTY.	PART NAME	REMARKS
4	52138054	1	GASKET, INTERMEDIATE (3 INCH)	
4	52138062	1	GASKET, INTERMEDIATE (4 INCH)	
7	52137171	1	SKIRT, 4 INCH HIGH RUBBER DEFLECTOR W/ATTACHING HARDWARE	
7	52103496	1	SKIRT, 8 INCH HIGH RUBBER DEFLECTOR W/ATTACHING HARDWARE	
8	52137130	1	ATTACHMENT, 20 DEGREE ANGLE	

6 INCH DUSTPOT

(S/N 18074 & ABOVE)

July 7, 1999

Section 5.6A



DUSTPOT
(For Parts List, refer to Page 5.6A-2)

DUSTPOT
(For Illustration of parts, refer to Page 5.6A-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

	52296704		DUSTPOT	
1	52298452	1	BODY, LOWER DUSTHOOD	
2	52137148	1	BODY, UPPER DUSTHOOD	
3	52137122	1	RETAINER, UPPER GASKET	
4	52138054	1	GASKET, INTERMEDIATE (3 INCH)	

	95919221	18	CAPSCREW	
	95943247	18	LOCKWASHER	
	95943254	10	NUT	
5	51990612	1	GASKET, TOP FLOATING (2 INCH)	

NOTE: IF THE DUSTPOT IS ORDERED AS A SPARE, THIS GASKET IS NOT INCLUDED WITH IT. THE GASKET MUST BE ORDERED SEPARATELY. THIS GASKET IS FURNISHED WITH A NEW MACHINE.

OPTIONAL ACCESSORIES
(For Illustration of parts, refer to Page 5.6A-1)
 (SHIPPED ONLY WHEN SPECIFICALLY ORDERED BY PART NO.)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

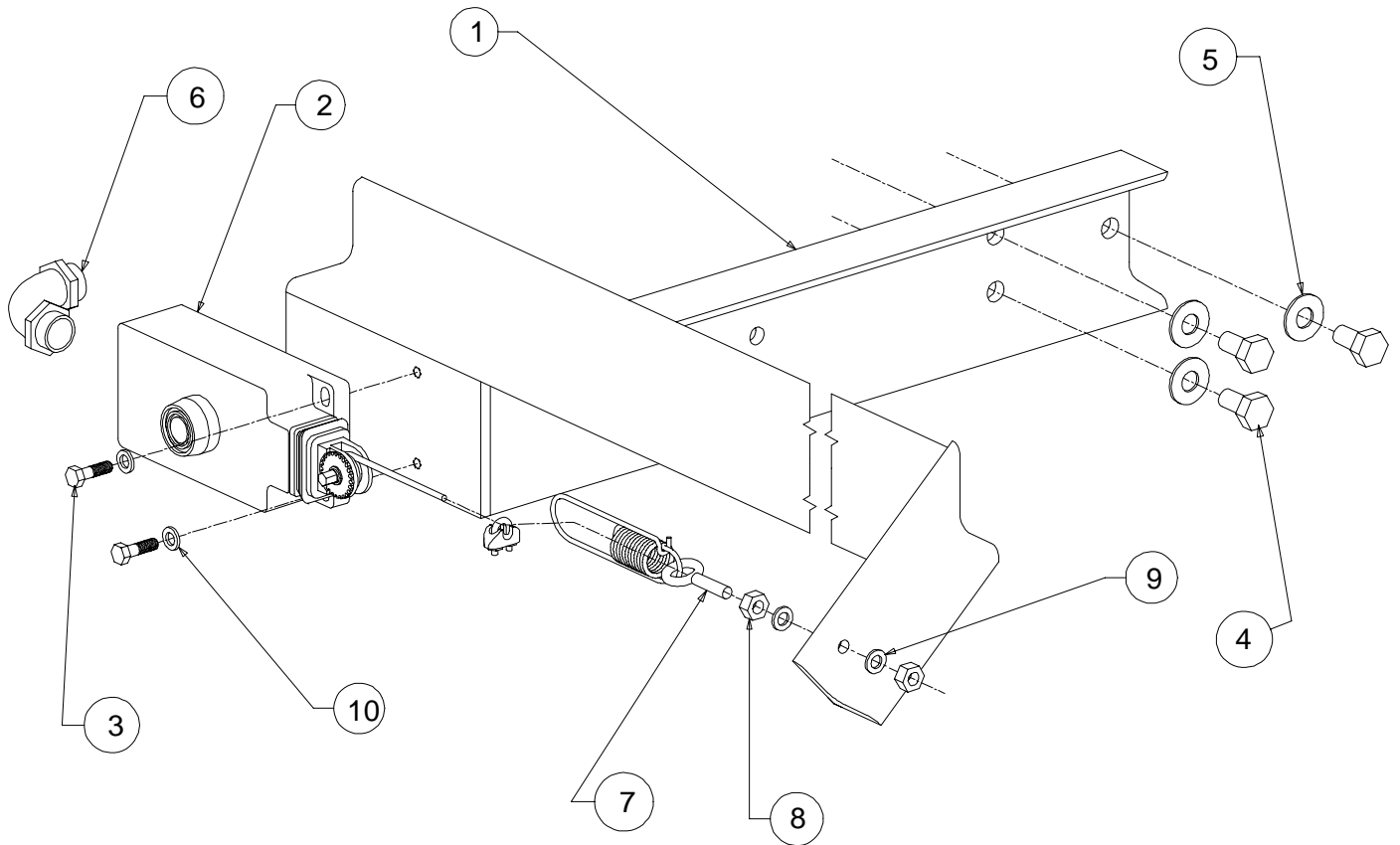
7	52137171	1	SKIRT, 4 INCH HIGH RUBBER DEFLECTOR W/ATTACHING HARDWARE	
7	52103496	1	SKIRT, 8 INCH HIGH RUBBER DEFLECTOR W/ATTACHING HARDWARE	
8	52137130	1	ATTACHMENT, 20 DEGREE ANGLE	

SAFETY TRIP WIRE ASSEMBLY

Revision 1

December 26, 2001

Section 5.7



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

	51994937		SAFETY TRIP WIRE ASSEMBLY	
--	-----------------	--	----------------------------------	--

1	51994218	1	BRACKET, TRIP WIRE	
2	<u>86415650</u>	1	SWITCH, SAFETY TRIP WIRE (INCLUDES: SWITCH, WIRE CABLE, SPRING CABLE END & WIRE THIMBLE)	
3	96703012	2	CAPSCREW	
4	96712146	3	CAPSCREW	
5	96700836	3	WASHER	
6	51874691	1	CONNECTOR	
7	51994952	1	EYEBOLT	
8	95077681	2	NUT	
9	95064655	2	WASHER	
10	96701289	2	WASHER	

ROTARY HEAD MOUNTING PLATE ASSEMBLY

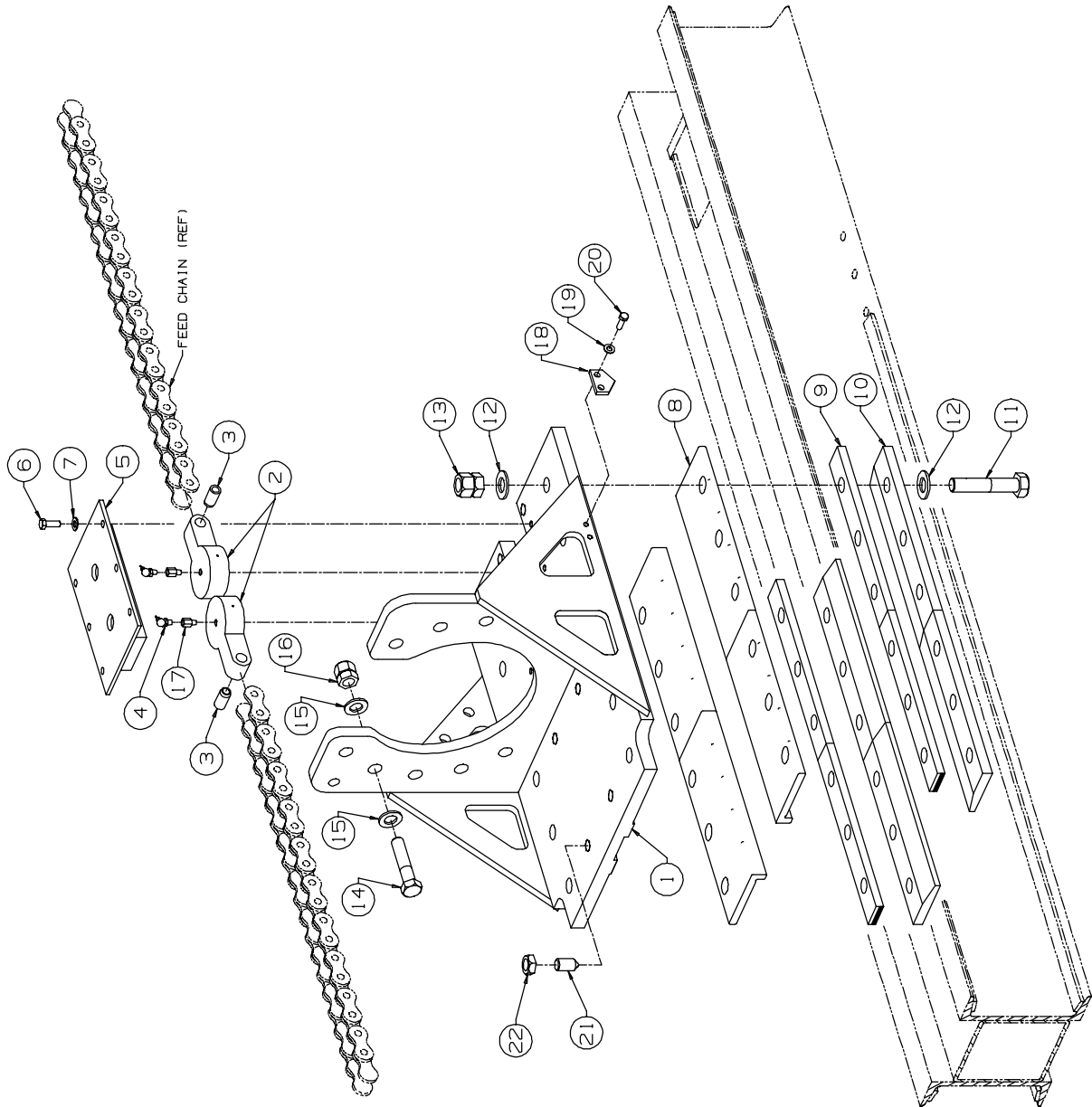
Revision 1

June 9, 2001

Section 5.8

NOTES:

1. TIGHTEN ITEMS 11 (MOUNTING PLATE BOLTS) AND BOTTOM HALF OF ITEMS 13 (LOCKNUTS) TO TORQUE VALUE OF 600 FT-LB (DRY).
2. TIGHTEN ITEMS 14 (ROTARY HEAD BOLTS) AND BOTTOM HALF OF ITEMS 16 (LOCKNUTS) TO TORQUE VALUE OF 350 FT-LB (DRY).
3. TIGHTEN TOP HALF OF ITEMS 13 AND 19, ONTO VALUE OF 175 FT-LB (DRY).
4. ADJUST WEAR PADS, SHIMS, AND CLAMPS (ITEMS 8, 9, AND 10) TO ALLOW FREE TRAVEL OF MOUNTING PLATE ASSEMBLY FOR FULL LENGTH CLEARANCE BETWEEN GUIDE CHANNELS AND WEAR PADS AND BETWEEN GUIDE WEAR STRIPS AND CLAMPS.



ROTARY HEAD MOUNTING PLATE ASSEMBLY
(For Parts List, refer to Page 5.8-2)

ROTARY HEAD MOUNTING PLATE ASSEMBLY
(For Illustration of parts, refer to Page 5.8-1)

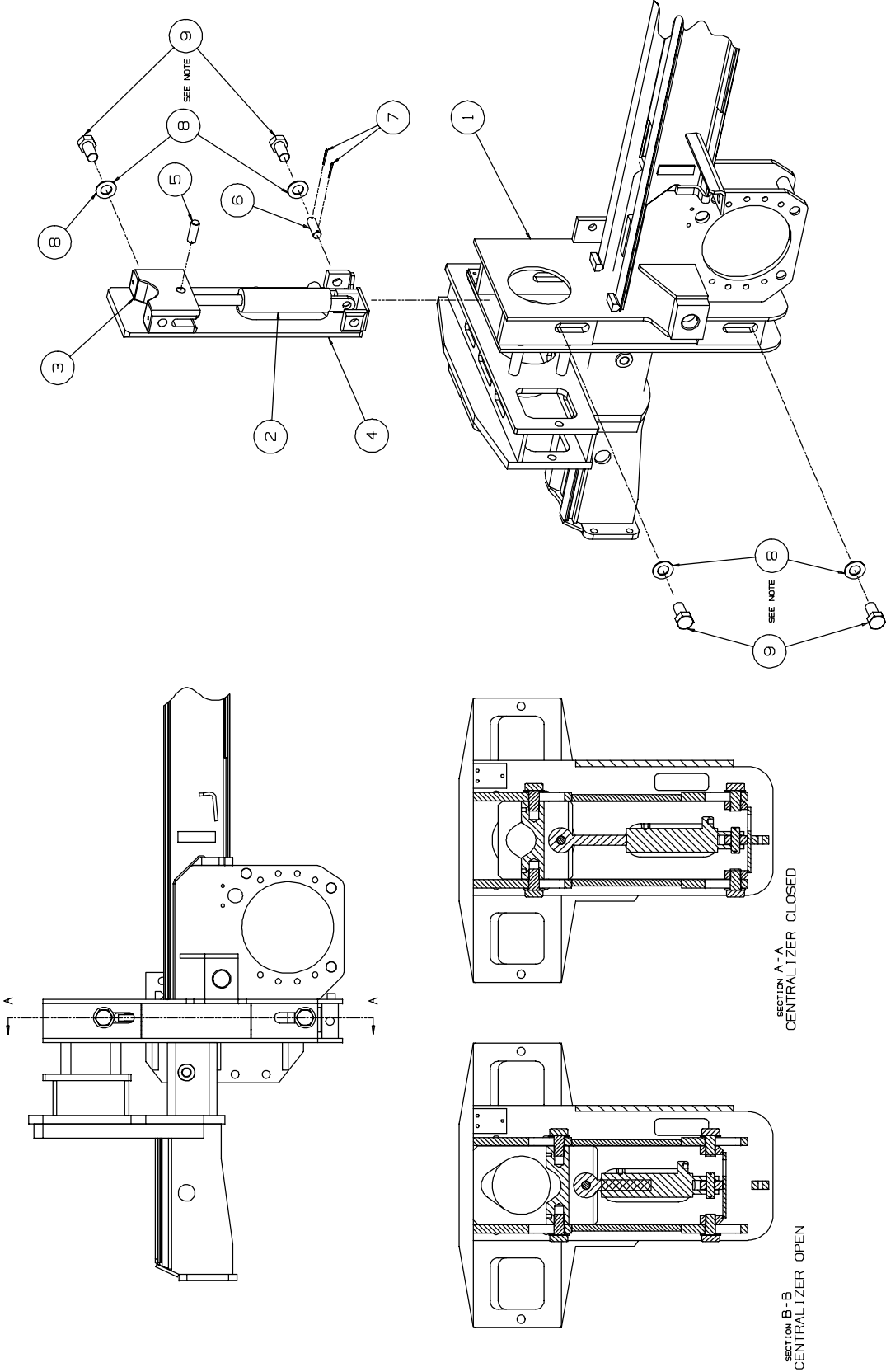
REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	51862365		ROTARY HEAD MOUNTING PLATE ASSEMBLY	
1	51782498	1	PLATE, MOUNTING	
2	51616621	2	ANCHOR, CHAIN	
3	51616647	2	BUSHING	
4	95447850	2	FITTING, GREASE	
5	51782514	1	COVER, CHAIN ANCHOR	
6	96714944	6	CAPSCREW	
7	96700836	6	WASHER	
8	51782522	4	PAD, WEAR	
9	51862340	4	SHIM PACK, GUIDE EXTENSION CLAMP	
10	51782506	4	CLAMP STRIP	
11	96705181	12	CAPSCREW	
12	96701305	24	WASHER	
13	51782308	12	NUT, LOCK	
14	96704044	10	CAPSCREW	
15	96700976	20	WASHER, FLAT	
16	51607794	10	NUT, DRAKE LOCK	
17	51862373	2	ADAPTER	
18	52316031	1	POINTER, BREAKOUT FORK	
19	92304609	2	WASHER, FLAT	
20	96714605	2	CAPSCREW	
21	03190550	8	SETSCREW	
22	95076907	8	NUT	

CENTRALIZER KIT (3-1/2" ROD)

June 12, 2000

Section 5.9



CENTRALIZER KIT (3-1/2" ROD)
 (For Parts List, refer to Page 5.9-2)

NOTE:
 CAPSCREWS, (ITEM 9) TO BE INSTALLED WITH MINIMAL CLEARANCE BETWEEN WASHERS, (ITEM 8) AND OUTSIDE OF SLOTTED PLATES, BUT, LOOSE ENOUGH TO ALLOW CENTRALIZER FORK AND SLIDE PLATE TO ACTUATE FREELY IN A SIZZERS ACTION WHEN THE HYDRAULIC CYLINDER EXTENDS AND RETRACTS.
 CAPSCREWS, (ITEM 9) REQUIRES THE USE OF LOCTITE 262 THREADLOCKER. APPLY TO BOTH FASTENER AND HOLE AT THREAD ENGAGEMENT AREA, FILLING THREAD ROOT. PRIOR TO APPLICATION, CLEAN BOTH FASTENER AND TAPPED HOLE.

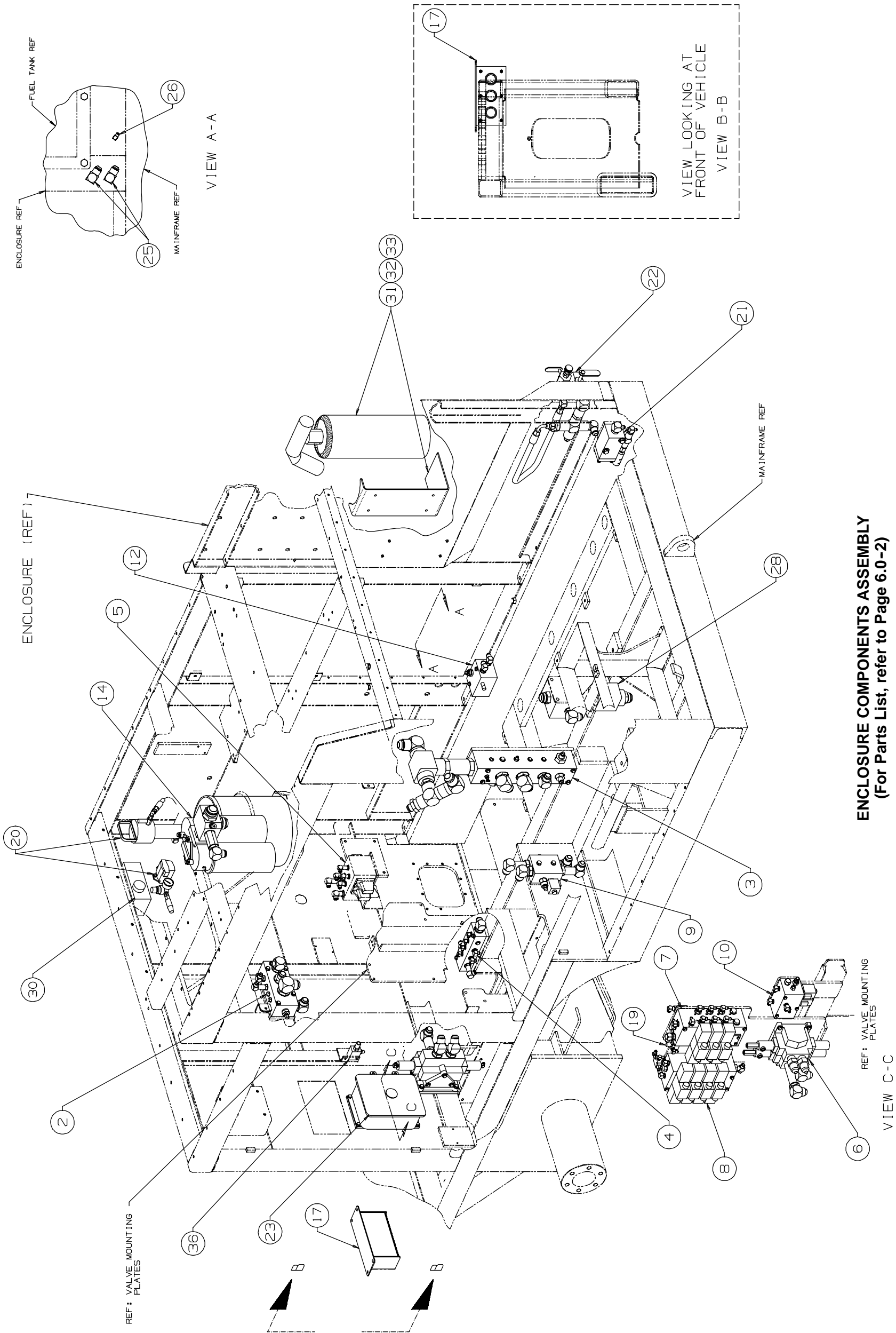
CENTRALIZER KIT (3-1/2" ROD)
(For Illustration of parts, refer to Page 5.9-1)

<i>REF.</i>				<i>SERIAL</i>
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>NO.</i>
			<i>REMARKS</i>	
			CENTRALIZER KIT (3-1/2" INCH ROD)	
1	52308871	1	MODIFICATION, CM695D GUIDE	
2	52308889	1	CYLINDER, HYDRAULIC	
3	52308897	1	FORK, CENTRALIZER, 3-1/2" ROD	
4	52308905	1	PLATE, CENTRALIZER SIDE	
5	52308913	1	PIN, FORK	
6	51788305	1	PIN, FORK CYLINDER	
7	95002705	2	PIN, COTTER	
8	95043170	4	WASHER	
9	52309432	4	CAPSCREW	

ENCLOSURE COMPONENTS ASSEMBLY

Revision 1
June 4, 1999

Section 6.0



ENCLOSURE COMPONENTS ASSEMBLY
(For Parts List, refer to Page 6.0-2)

ENCLOSURE COMPONENTS ASSEMBLY
(For Illustration of parts, refer to Page 6.0-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52103397		ENCLOSURE COMPONENTS ASSEMBLY	
2	51909166	1	ASSEMBLY, PRESSURE MANIFOLD <i>REFER TO PL6164, SECTION 6.1</i>	
3	51909174	1	ASSEMBLY, RETURN MANIFOLD <i>REFER TO PL6164, SECTION 6.2</i>	
4	51909224	1	ASSEMBLY, DRAIN MANIFOLD <i>REFER TO PL6164, SECTION 6.3</i>	
5	52134996	1	ASSEMBLY, FEED/ROTATION VALVE <i>REFER TO PL6164, SECTION 6.4</i>	
6	52134483	1	ASSEMBLY, TRAM VALVE <i>REFER TO PL6164, SECTION 6.5</i>	
7	51994655	1	ASSEMBLY, HIGH PRESSURE SOLENOID MANIFOLD <i>REFER TO PL6164, SECTION 6.6</i>	
8	51909216	1	ASSEMBLY, LOW PRESSURE SOLENOID MANIFOLD <i>REFER TO PL6164, SECTION 6.7</i>	
9	51776706	1	ASSEMBLY, FAN CONTROL <i>REFER TO PL6164, SECTION 6.8</i>	
10	51909257	1	ASSEMBLY, FEED SPEED MANIFOLD <i>REFER TO PL6164, SECTION 6.9</i>	
12	52130077	1	ASSEMBLY, DUST COLLECTOR MANIFOLD <i>REFER TO PL6164, SECTION 6.10</i>	
14	51776938	1	ASSEMBLY, RETURN FILTER <i>REFER TO PL6164, SECTION 6.11</i>	
17	51992485	1	ASSEMBLY, ELECTRIC BOX <i>REFER TO PL6164, SECTION 12.1</i>	
19	51909307	1	ASSEMBLY, BACKUP ALARM SWITCH <i>REFER TO PL6164, SECTION 6.12</i>	
● 20	51909315	1	ASSEMBLY, GREASER <i>REFER TO PL6164, SECTION 6.13</i>	
● 20	51713378	1	ASSEMBLY, GREASE PUMP <i>REFER TO PL6164, SECTION 6.13A</i>	
21	51909323	1	ASSEMBLY, BLOWDOWN VALVE <i>REFER TO PL6164, SECTION 6.14</i>	
22	51909349	1	ASSEMBLY, SERVICE AIR <i>REFER TO PL6164, SECTION 6.15</i>	
23	51909331	1	ASSEMBLY, ELECTRICAL BOX <i>REFER TO PL6164, SECTION 12.2</i>	

(CONTINUED)

- **NOTE:** REFER TO THE MACHINE ENCLOSURE TO IDENTIFY THE CORRECT GREASE PUMP ASSEMBLY ON YOUR MACHINE.

ENCLOSURE COMPONENTS ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 6.0-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	52103397		ENCLOSURE COMPONENTS ASSEMBLY (cont.)
25	95278974	2	FITTING
26	95278958	1	FITTING
28	51909430	1	ASSEMBLY, OIL MIXING <i>REFER TO PL6164, SECTION 6.16</i>
30	51992543	1	KIT, HORN <i>REFER TO PL6164, SECTION 6.17</i>

31	51991172	1	EXTINGUISHER, FIRE
32	96700828	6	WASHER
33	96714605	6	CAPSCREW
36	52083664	1	ASSEMBLY, ROTATION PILOT FLOW CONTROL VALVE <i>REFER TO PL6164, SECTION 6.22</i>

37	51994754	1	BRACKET, MIRROR BRACKET FOR TANK SIDE MIRROR
38	51994770	1	MIRROR, CONVEX
40	51618411	1	LIGHT, WORK
41	96714860	4	CAPSCREW

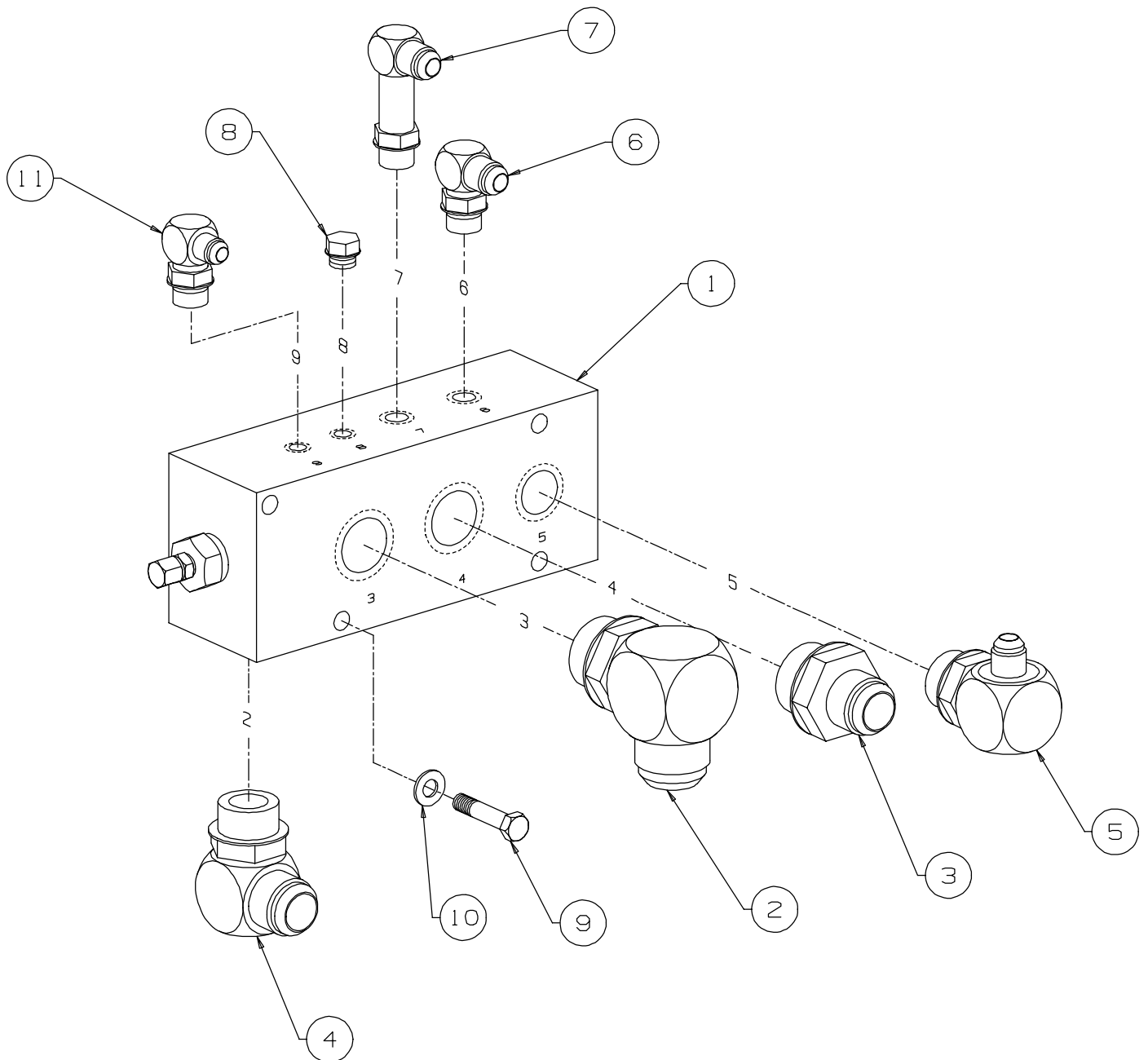
43	51776961	1	MIRROR, CONVEX
44	52103025	1	BRACKET, MIRROR
45	51914281	1	COVER, EXHAUST PIPE
46	52133279	1	HARNESS, WIRING
47	95933214	4	CAPSCREW

48	95294278	4	WASHER
49	96714613	2	CAPSCREW

PRESSURE MANIFOLD ASSEMBLY

January 15, 1999

Section 6.1



PRESSURE MANIFOLD ASSEMBLY
(For Parts List, refer to Page 6.1-2)

PRESSURE MANIFOLD ASSEMBLY
(For Illustration of parts, refer to Page 6.1-1)

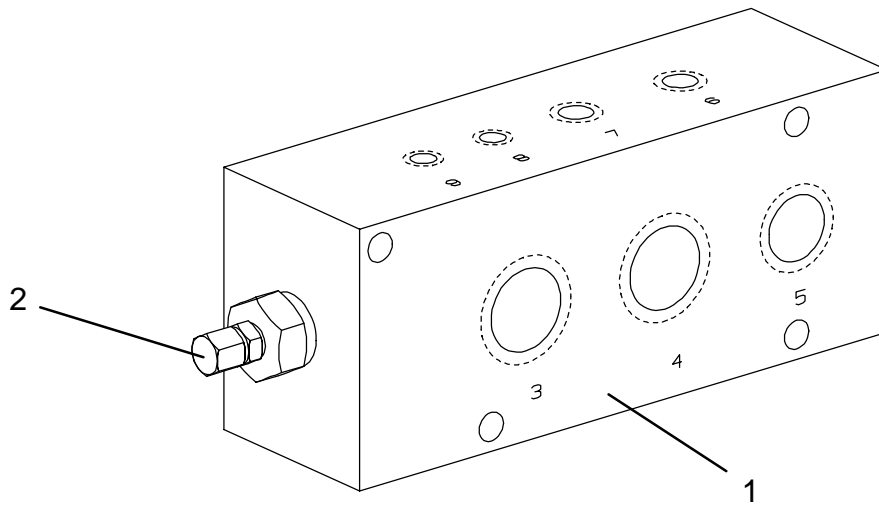
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	51909166		PRESSURE MANIFOLD ASSEMBLY	
1	51608628	1	MANIFOLD, PRESSURE	<i>REFER TO PAGE 6.1-3</i>
2	95357604	1	ADAPTER	
3	95402830	1	ADAPTER	

4	95280194	1	ELBOW	
5	95341673	1	ADAPTER	
6	95303335	1	ADAPTER	
7	95748760	1	ADAPTER	

8	95666996	2	ADAPTER	
9	96714779	4	CAPSCREW	
10	96700836	4	WASHER	
11	95365094	1	ADAPTER	



REF.
NO. PART NO. QTY. PART NAME
REMARKS

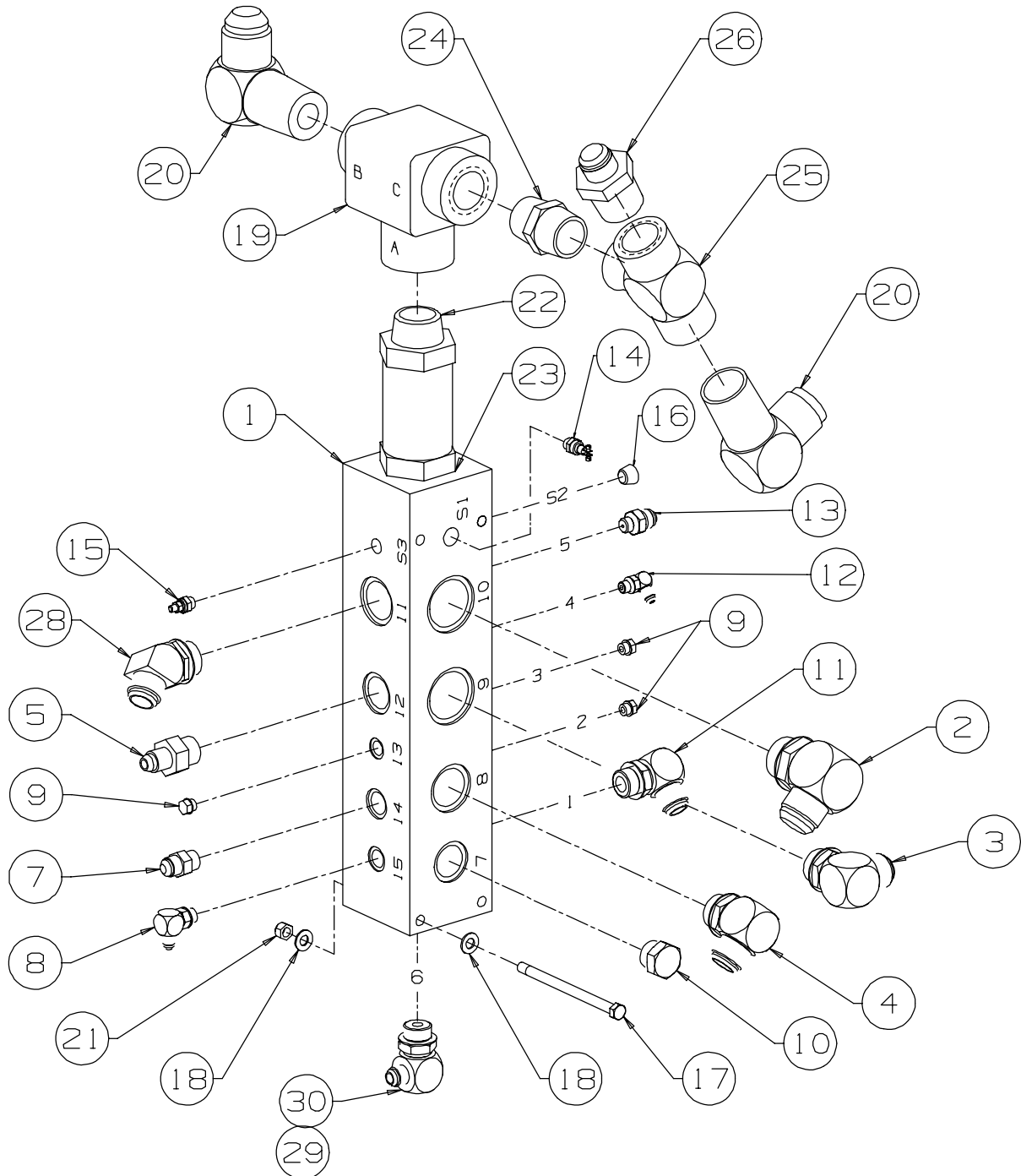
	51608628	1	PRESSURE MANIFOLD	
1	51776755	1	BLOCK, MANIFOLD	
2	51776631	1	VALVE, CARTRIDGE	
	51776813	1	.KIT, SEAL	

RETURN MANIFOLD ASSEMBLY

Revision 1

June 4, 1999

Section 6.2



RETURN MANIFOLD ASSEMBLY
(For Parts List, refer to Page 6.2-2)

RETURN MANIFOLD ASSEMBLY
(For Illustration of parts, refer to Page 6.2-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

51909174	RETURN MANIFOLD ASSEMBLY			
-----------------	---------------------------------	--	--	--

1	51608701	1	MANIFOLD, RETURN <i>REFER TO PAGE 6.2-3</i>	
2	95357604	1	ADAPTER	
3	95376133	1	ADAPTER	
4	95280194	1	ELBOW	

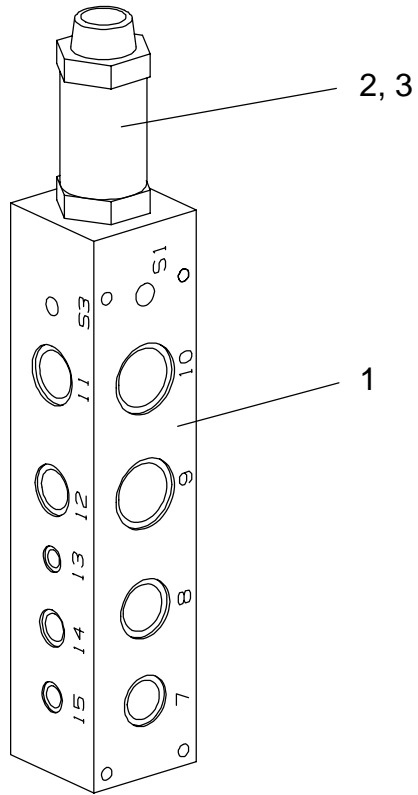
5	95357570	1	ADAPTER	
7	95303368	1	ADAPTER	
8	95365094	1	ADAPTER	
9	95754867	3	PLUG	
10	95785549	1	PLUG	

11	95280186	1	ADAPTER	
12	95341665	1	ELBOW	
13	95372173	1	ADAPTER	
14	51618510	1	SWITCH, TEMPERATURE	
15	51618346	1	SENDER, TEMPERATURE	

16	95344651	1	PLUG, PIPE	
17	96705686	4	CAPSCREW	
18	96700828	8	WASHER	
19	51952216	1	VALVE, THERMAL BYPASS	
	51990406	1	.KIT, REPAIR	

20	95279477	2	ELBOW	
21	96702840	4	NUT, HEX	
24	95365177	1	PIPE, MALE	
25	95678041	1	ADAPTER	
26	95465027	1	ADAPTER	

28	95003091	1	ELBOW	
29	50996313	1	NUT, CAP	
30	95341673	1	ADAPTER	



REF.

NO. PART NO. QTY.

PART NAME

REMARKS

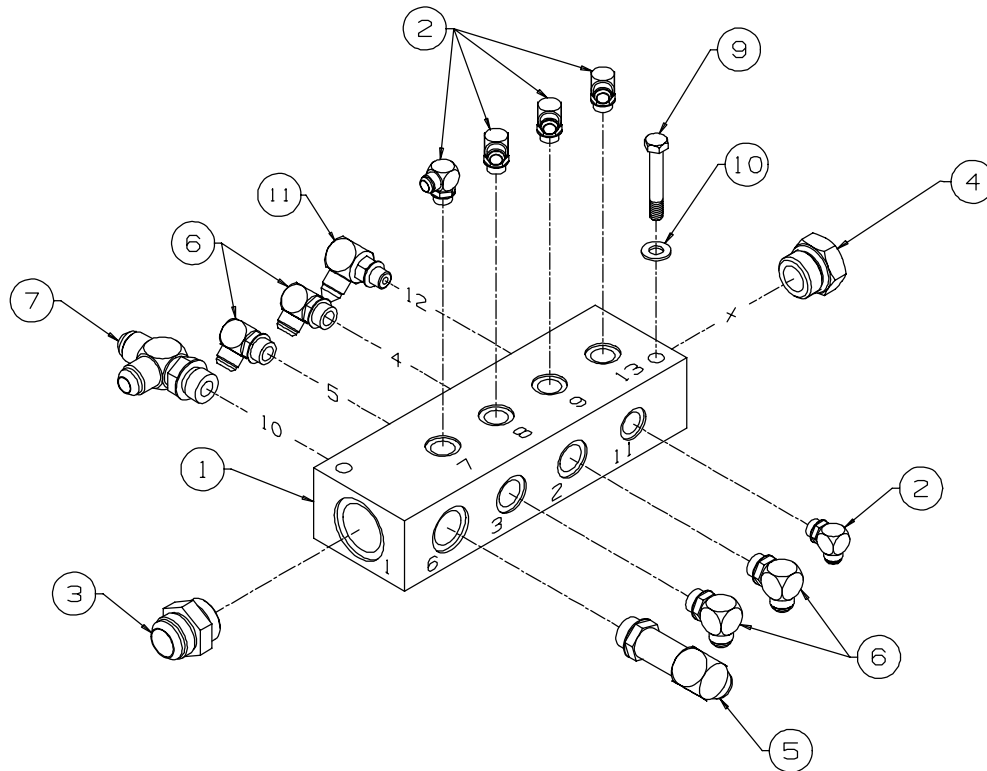
	51608701		HYDRAULIC RETURN MANIFOLD
1	51715837	1	BLOCK, MANIFOLD
2	51608719	1	VALVE, CHECK
3	95266441	1	O-RING

DRAIN MANIFOLD ASSEMBLY

Revision 1

June 4, 1999

Section 6.3



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51909224		DRAIN MANIFOLD ASSEMBLY	
--	----------	--	-------------------------	--

1	51608693	1	MANIFOLD, DRAIN	
2	95341665	5	ELBOW	
3	95356960	1	ADAPTER	

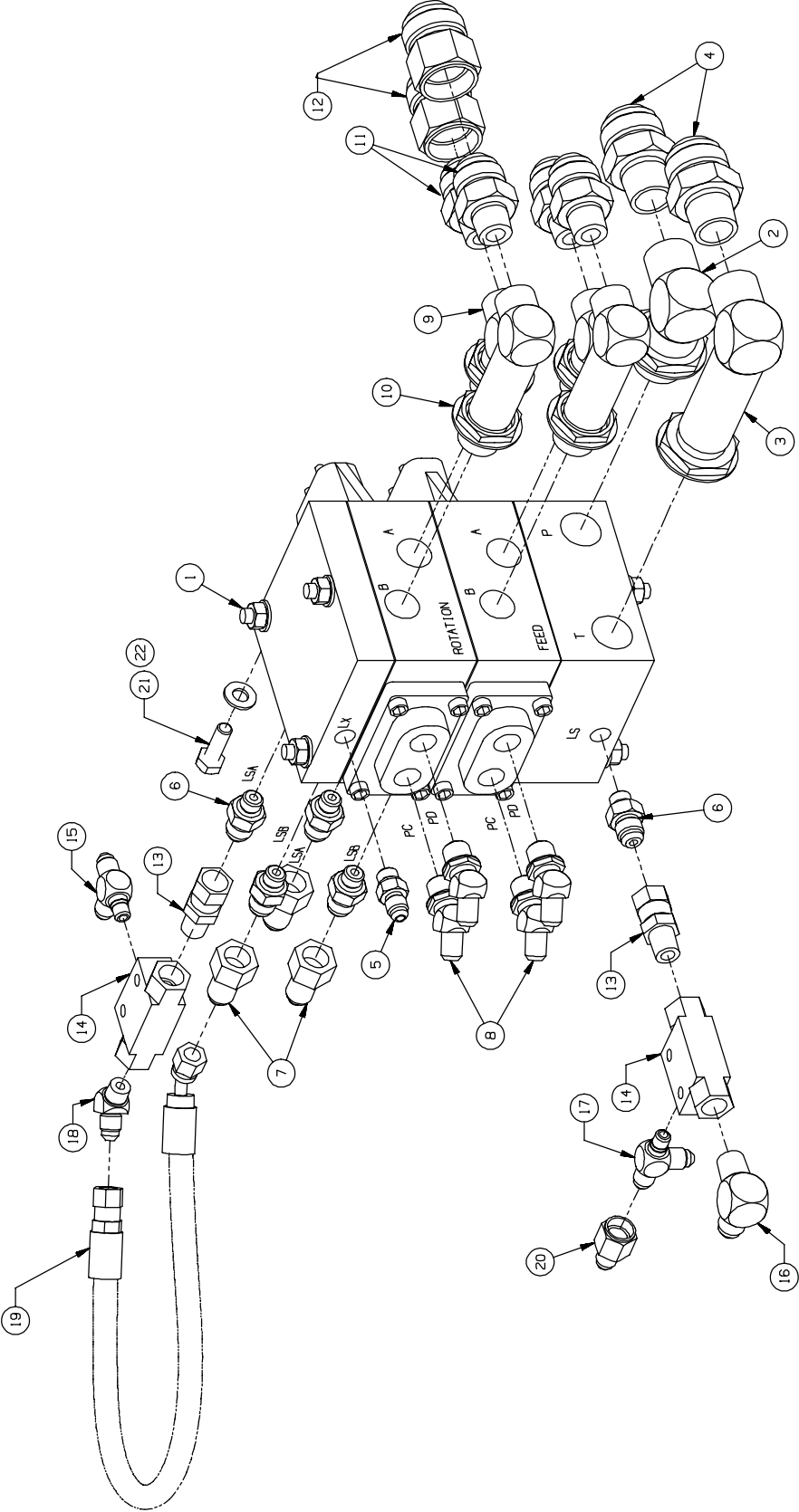
4	95280541	1	ADAPTER	
5	95748760	1	ADAPTER	
6	95329975	4	ELBOW	

7	95164653	1	TEE	
9	96714670	2	CAP	
10	96700828	2	WASHER	
11	95653614	1	ADAPTER	

FEED/ROTATION VALVE ASSEMBLY

Revision 1
June 8, 2001

Section 6.4



FEED/ROTATION VALVE ASSEMBLY
(For Parts List, refer to Page 6.4-2)

FEED/ROTATION VALVE ASSEMBLY
(For Illustration of parts, refer to Page 6.4-1)

REF.

NO.	PART NO.	QTY.	PART NAME
			REMARKS

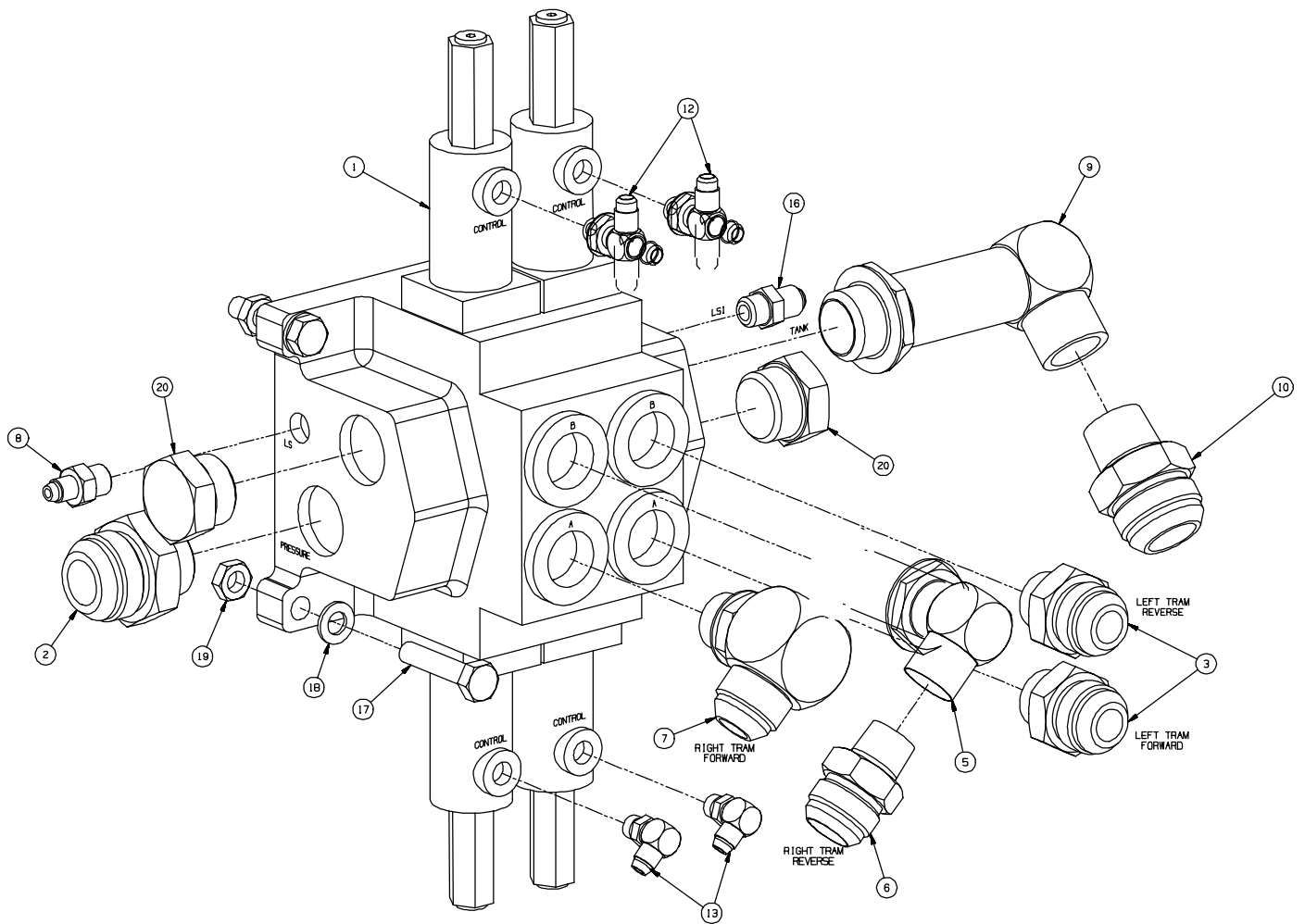
			52134996	FEED/ROTATION VALVE ASSEMBLY
1	52134467	1	VALVE, FEED & ROTATION	
2	95528600	1	ELBOW	
3	95528642	1	ELBOW	
4	95219754	2	ADAPTER	
5	52118510	1	ADAPTER	
6	51605541	5	ADAPTER	
7	51027928	5	ADAPTER	
8	95371258	4	ADAPTER	
9	52136769	2	ADAPTER, ELBOW	
10	52136777	2	ADAPTER, ELBOW, LONG	
11	95279378	4	ADAPTER	
12	52136785	2	ADAPTER	
13	51304434	2	ADAPTER	
14	50805100	2	SHUTTLE VALVE	
15	95419073	1	ADAPTER	
16	95293403	1	ADAPTER	
17	95748927	1	ADAPTER	
18	95279055	1	ADAPTER	
19	51028405	1	HOSE ASSEMBLY	
20	56955867	1	ADAPTER	
21	95933214	4	CAPSCREW	
22	95064671	4	WASHER	

TRAM VALVE ASSEMBLY

Revision 1

May 18, 1999

Section 6.5



TRAM VALVE ASSEMBLY
(For Parts List, refer to Page 6.5-2)

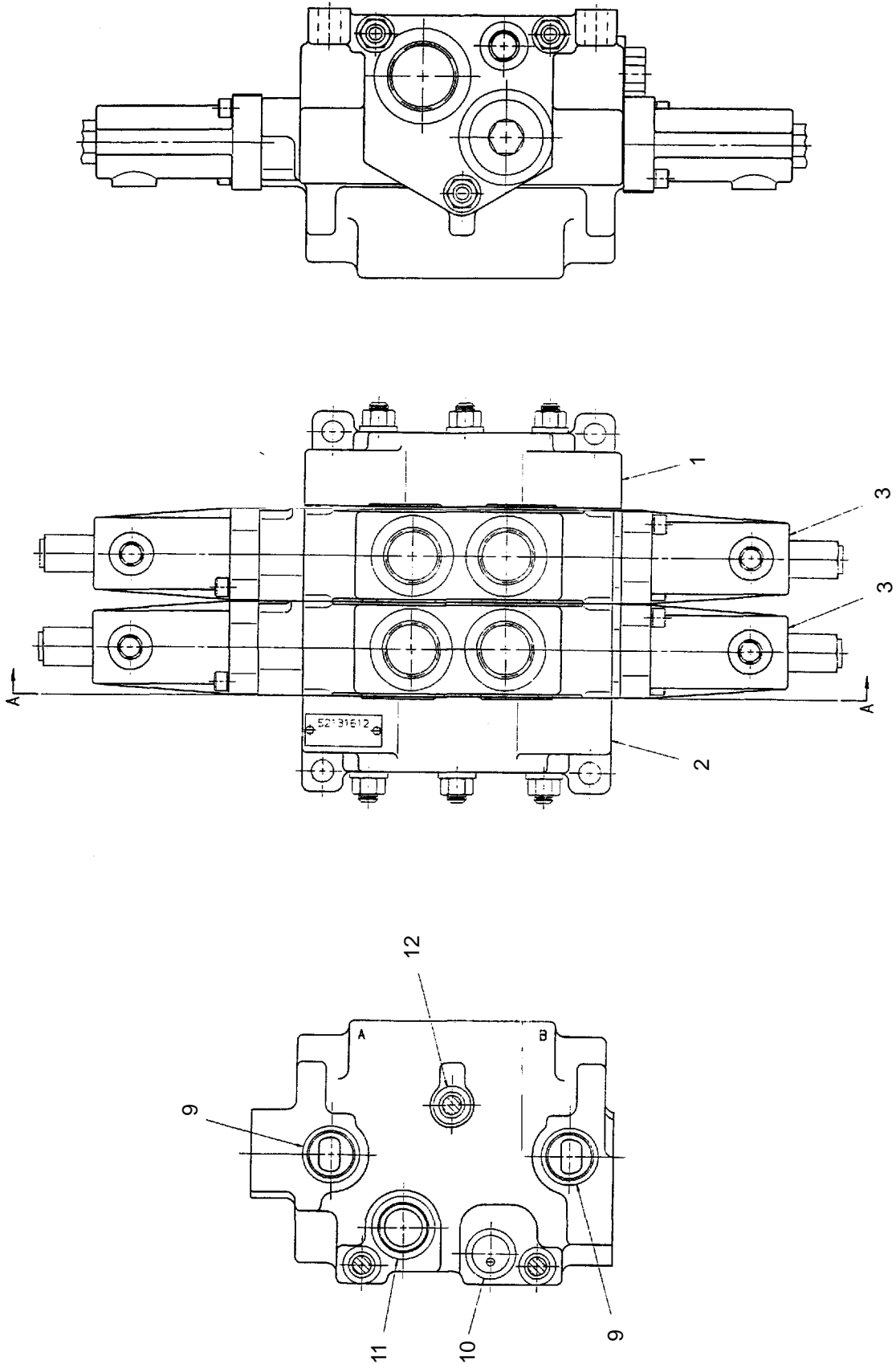
TRAM VALVE ASSEMBLY
(For Illustration of parts, refer to Page 6.5-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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			52134483	TRAM VALVE ASSEMBLY
1	52131612	1	VALVE, TRAM	
				<i>REFER TO PAGE 6.5-4</i>
2	95315289	1	ADAPTER	
3	95371217	2	ADAPTER	
5	95528642	1	ELBOW	
6	95219754	1	ADAPTER	
7	95368890	1	ADAPTER	
8	95371258	1	ADAPTER	
9	95528659	1	ADAPTER	
10	95328761	1	ADAPTER	
12	95147971	2	TEE	
13	95341665	2	ELBOW	
16	95365078	2	ADAPTER	
17	96702436	4	CAPSCREW	
18	96700836	8	WASHER	
19	96701990	4	NUT, HEX	
●	95326955	2	PLUG	

● **NOTE:** THIS PART IS NOT ILLUSTRATED.



TRAM VALVE
 (For Parts List, refer to Page 16.5-4)

TRAM VALVE
(For Illustration of parts, refer to Page 16.5-3)

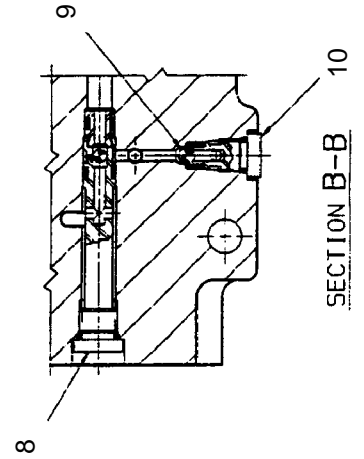
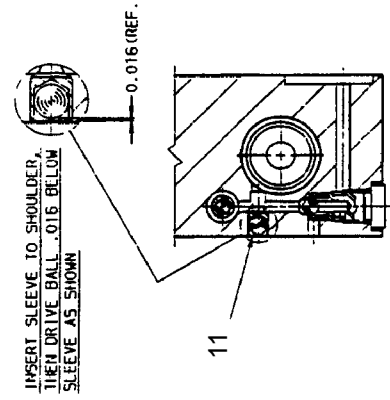
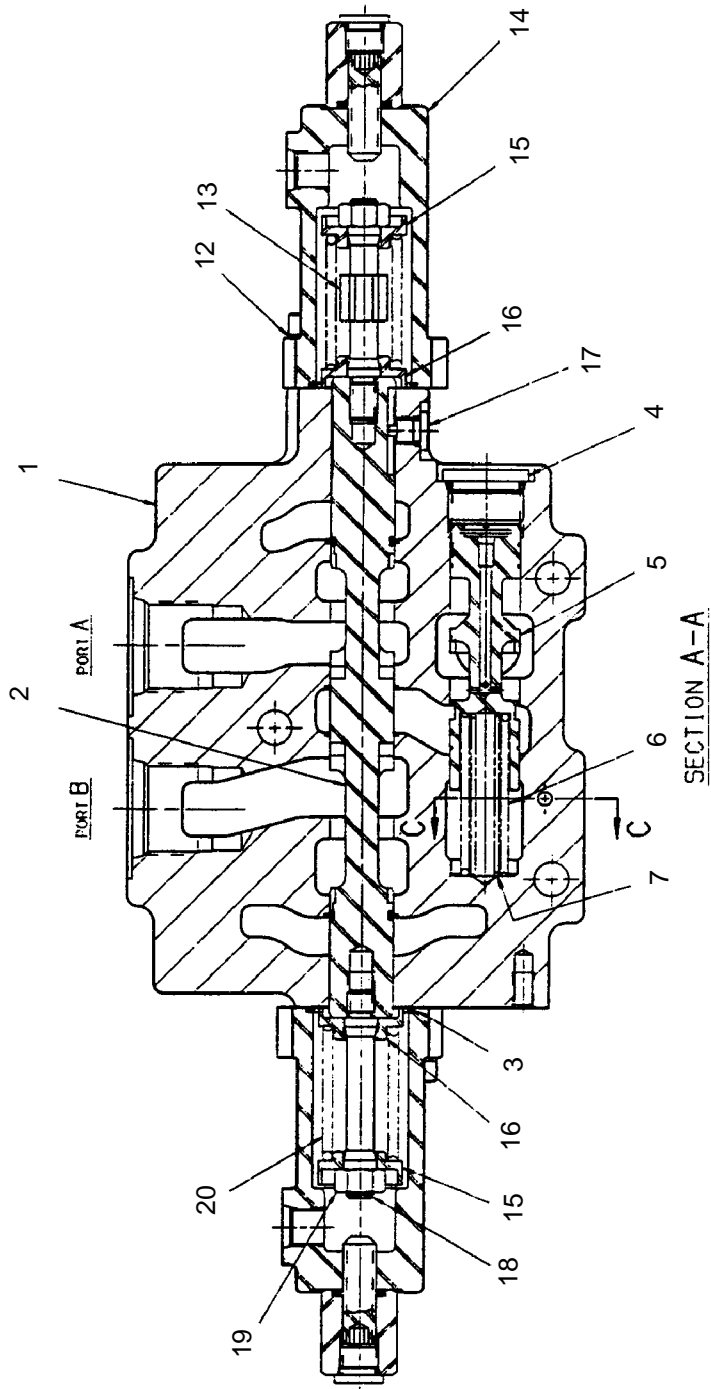
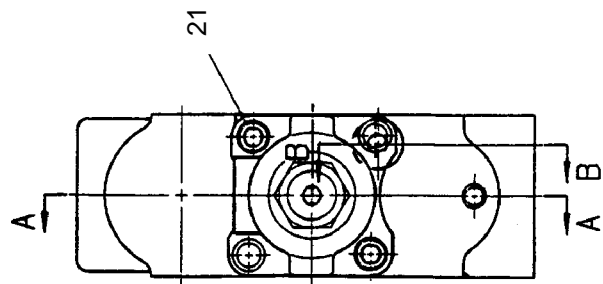
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	52131612		TRAM VALVE	
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1	51050417	1	COVER, INLET	
2	52136595	1	COVER, END	
3	52136603	2	ASSEMBLY, MOTOR BODY	
				<i>REFER TO PAGE 6.5-5</i>

8	52136587	3	STUD	
9	52107406	10	O-RING	
10	52106812	5	O-RING	
11	51719664	5	O-RING	
12	51050326	15	SHIM	



MOTOR BODY ASSEMBLY
(For Parts List, refer to Page 16.5-6)

MOTOR BODY ASSEMBLY
(For Illustration of parts, refer to Page 16.5-5)

REF.

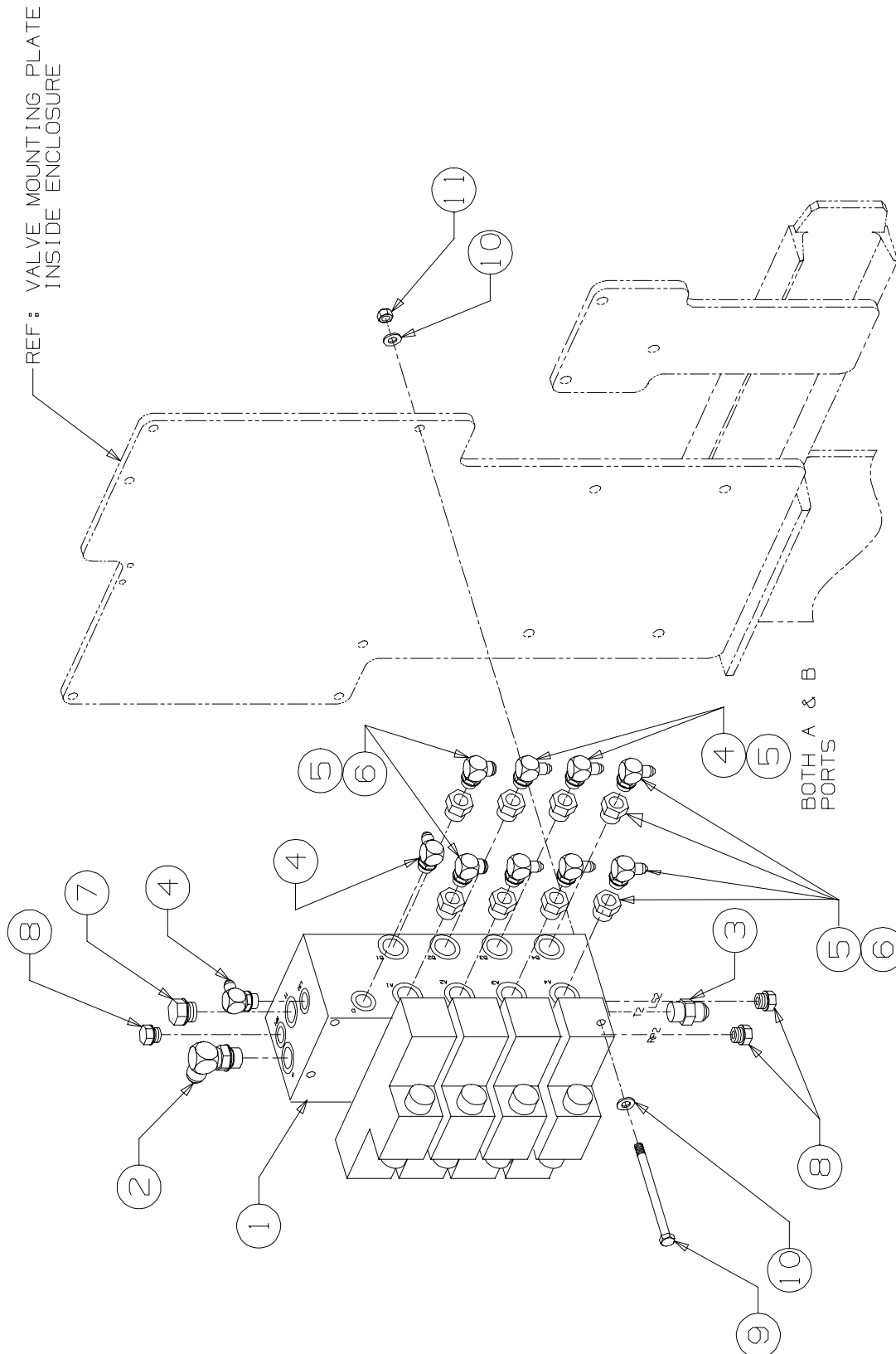
NO.	PART NO.	QTY.	PART NAME	REMARKS
	52136603		MOTOR BODY ASSEMBLY	
1	NSS	1	BODY, MOTOR	
2	52136611	1	SPOOL, SPECIAL	
3	52107497	2	O-RING	
4	51050532	1	PLUG, SOCKET HEAD W/O-RING	
5	52136629	1	SPOOL, COMPENSATOR	
6	51782084	1	SPRING, COMPENSATOR	
7	51947810	1	SPRING, COMPENSATOR	
8	52118098	1	HOUSING, PRIMARY	
9	51050516	1	BEARING, BALL	
10	52107851	1	ASSEMBLY, SHUTTLE PLUG SEAT	
11	51050466	1	PLUG	
12	51858553	4	WASHER	
13	51947638	1	COUPLING, SOLENOID	
14	52136637	2	ASSEMBLY, ACTUATOR HOUSING	
15	NSS	2	RETAINER, SPRING	
16	NSS	2	RETANER, SPRING	
17	NSS	1	ASSEMBLY, PLUG	
18	51947570	1	COUPLING, SOLENOID	
19	51947562	2	NUT	
20	51947794	2	SPRING	
21	51055796	4	CAPSCREW, SOCKET HEAD	

NSS NOTICE: THESE PARTS ARE NOT SOLD SEPARATELY.

HIGH PRESSURE SOLENOID MANIFOLD ASSEMBLY

January 15, 1999

Section 6.6



HIGH PRESSURE SOLENOID MANIFOLD ASSEMBLY
(For Parts List, refer to Page 6.6-2)

HIGH PRESSURE SOLENOID MANIFOLD ASSEMBLY
(For Illustration of parts, refer to Page 6.6-1)

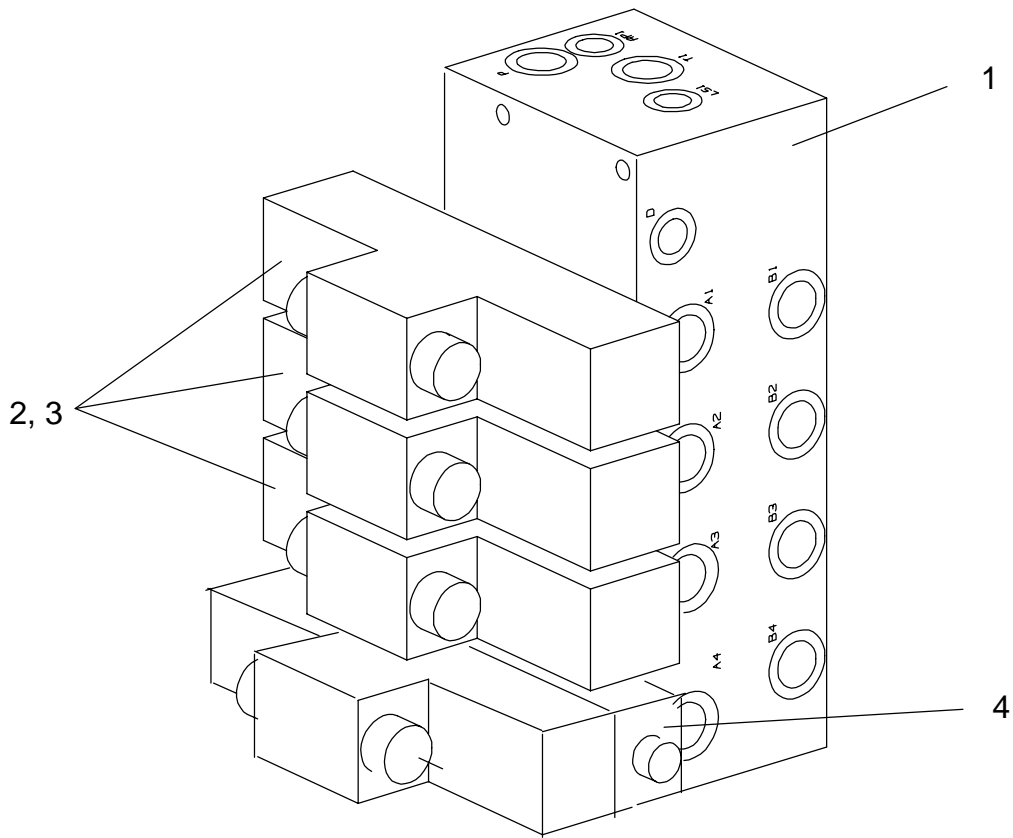
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	51994655		HIGH PRESSURE SOLENOID MANIFOLD ASSEMBLY	
1	51994630	1	MANIFOLD, HIGH PRESSURE SOLENOID	<i>REFER TO PAGE 6.6-3</i>
2	95303335	1	ADAPTER	
3	95303368	1	ADAPTER	

4	95365094	6	ADAPTER	
5	95650156	8	ADAPTER	
6	95329975	4	ELBOW	
7	95653317	1	PLUG	

8	95666996	1	ADAPTER	
9	96714720	3	CAPSCREW	
10	96700828	6	WASHER	
11	96702840	3	NUT, HEX	



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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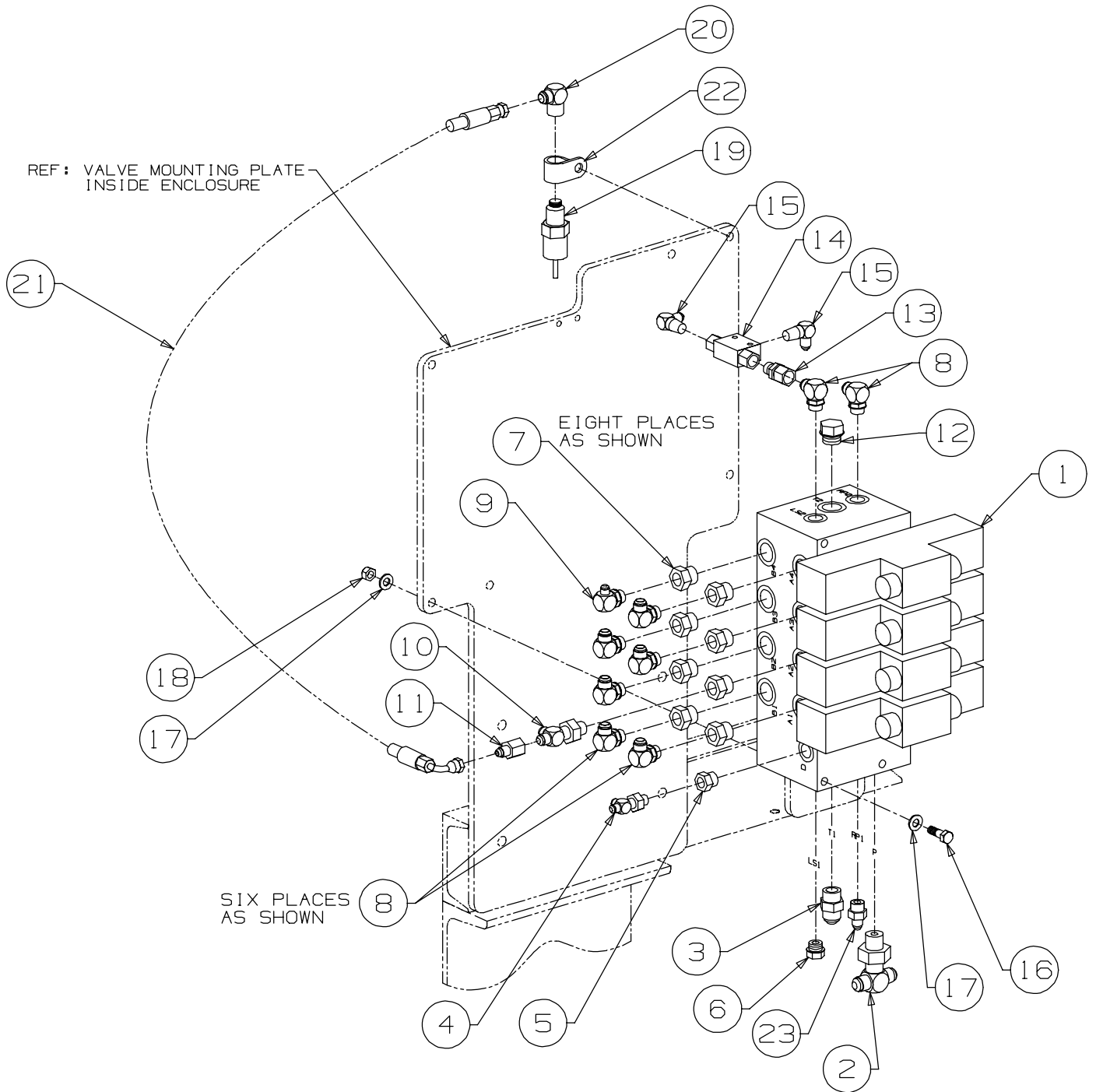
51994630 HIGH PRESSURE SOLENOID MANIFOLD

1	51874147	1	BLOCK, MANIFOLD	
2	51863025	3	VALVE, HYDRAULIC	
3	51862985	4	VALVE, CARTRIDGE	
4	51994648	1	BLOCK, DUAL RELIEF	

LOW PRESSURE SOLENOID MANIFOLD ASSEMBLY

January 15, 1999

Section 6.7



LOW PRESSURE SOLENOID MANIFOLD ASSEMBLY
(For Parts List, refer to Page 6.7-2)

LOW PRESSURE SOLENOID MANIFOLD ASSEMBLY
(For Illustration of parts, refer to Page 6.7-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	51909216		LOW PRESSURE SOLENOID MANIFOLD ASSEMBLY
1	51782621	1	MANIFOLD, LOW PRESSURE SOLENOID <i>REFER TO PAGE 6.7-3</i>
2	95473468	1	TEE
3	95303368	1	ADAPTER

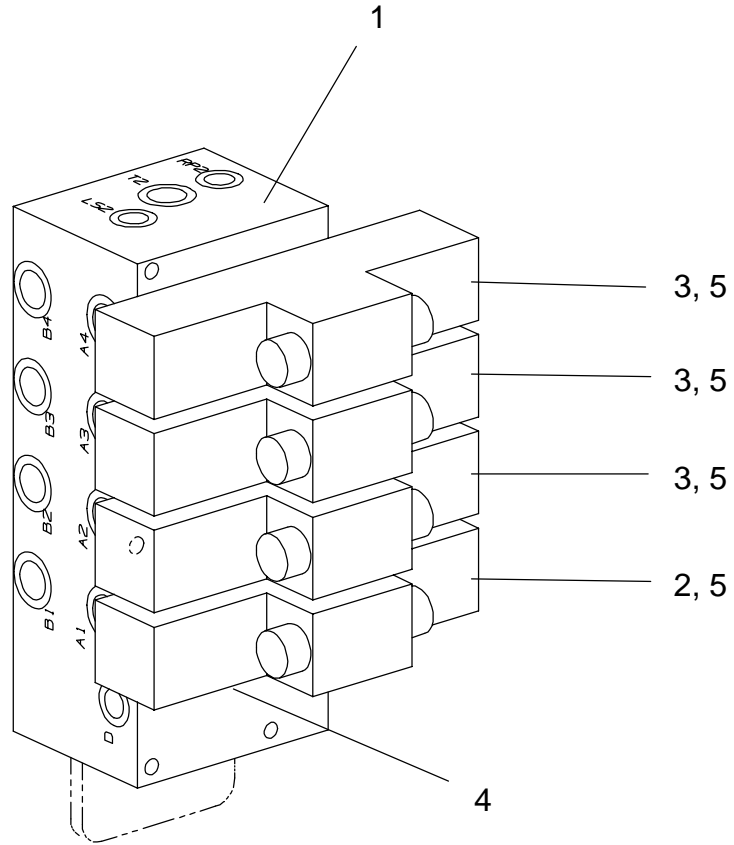
4	95147971	1	TEE
5	95147674	1	REDUCER
6	95666996	2	ADAPTER
7	95650156	8	ADAPTER

8	95329975	7	ELBOW
9	95365094	1	ADAPTER
10	95188710	1	TEE
11	51027928	1	ADAPTER

12	95653317	1	PLUG
13	51304434	1	ADAPTER
14	50805100	1	VALVE, SHUTTLE
15	95293403	2	ELBOW

16	96714720	3	CAPSCREW
17	96700828	6	WASHER
18	96702840	3	NUT, HEX
19	51910867	1	SWITCH, PRESSURE

20	95293353	1	ADAPTER
21	51028306	1	ASSEMBLY, HOSE
22	95654208	1	CLAMP, VINYL
23	95371258	1	ADAPTER



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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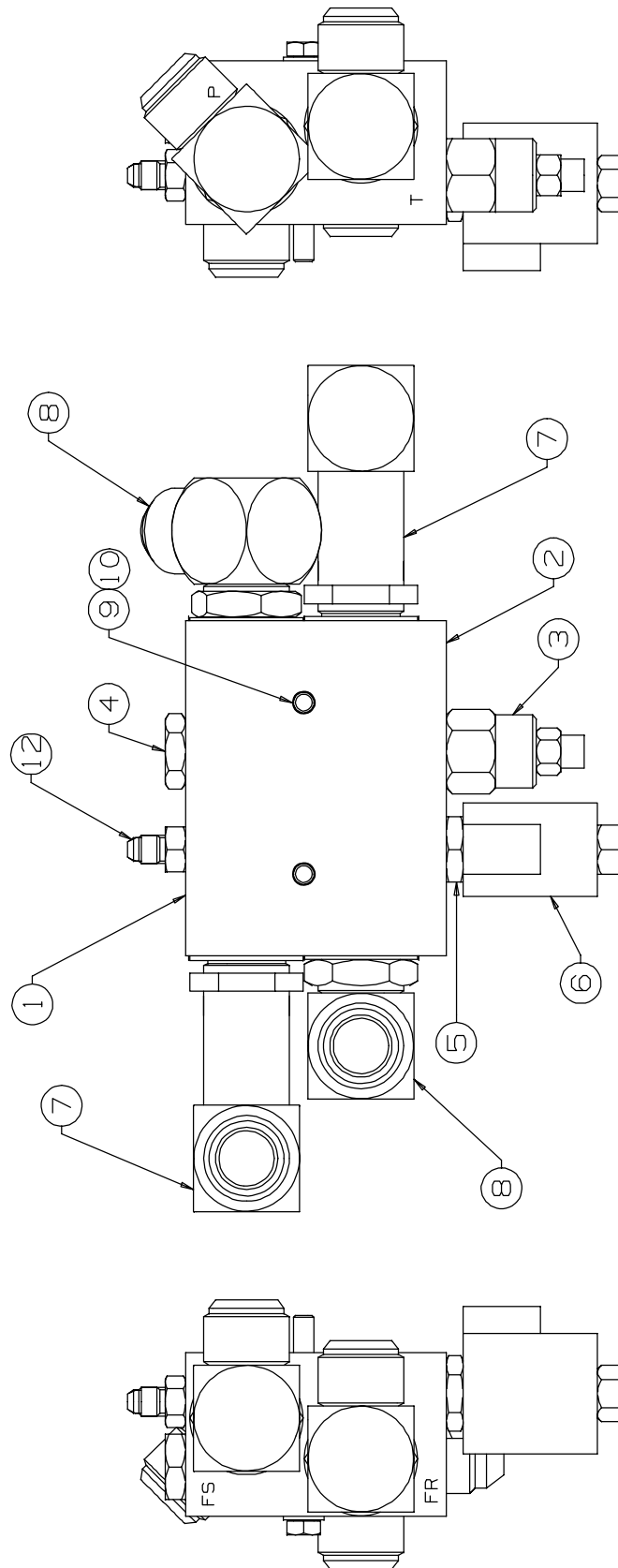
	51782621		LOW PRESSURE SOLENOID MANIFOLD	
1	51874147	1	BLOCK, MANIFOLD	
2	51862993	1	VALVE, HYDRAULIC	
3	51863025	3	VALVE, HYDRAULIC	
4	51716215	1	VALVE, CARTRIDGE	
5	51862985	4	VALVE, CARTRIDGE	

FAN CONTROL MANIFOLD ASSEMBLY

Revision 1

May 27, 1999

Section 6.8



FAN CONTROL MANIFOLD ASSEMBLY
(For Parts List, refer to Page 2)

FAN CONTROL MANIFOLD ASSEMBLY
(For Illustration of parts, refer to Page 1)

REF.

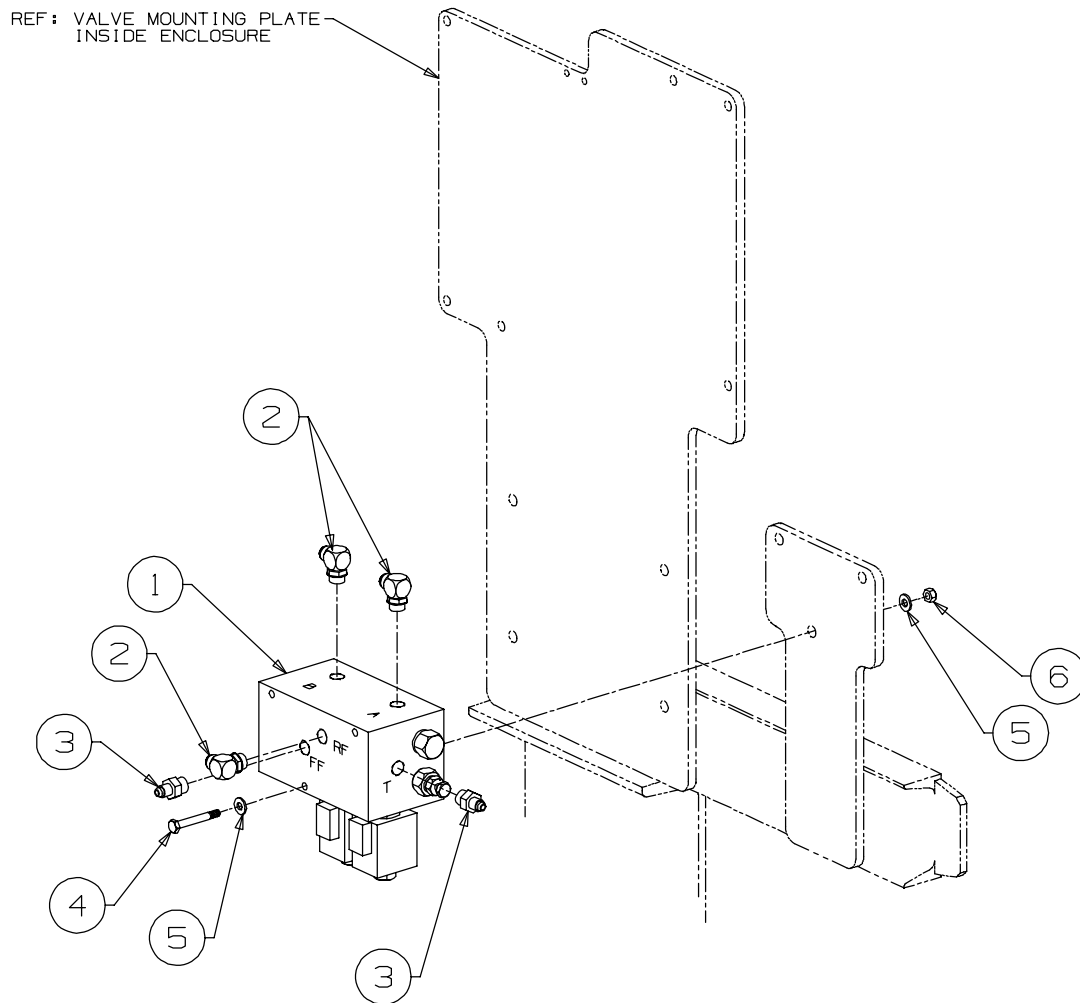
NO. PART NO. QTY. PART NAME
REMARKS

51776706		FAN CONTROL MANIFOLD ASSEMBLY	
1	51608271	1	MANIFOLD, FAN CONTROL
2	51776482	1	.BLOCK, MANIFOLD
3	51729655	1	.VALVE, RELIEF
	51776649	1	..KIT, SEAL
4	51776441	1	.VALVE, CARTRIDGE
	51776458	1	..KIT, SEAL
5	51776466	1	.VALVE, CARTRIDGE
	51776474	1	..KIT, SEAL
6	51785889	1	.COIL, SOLENOID
7	95089025	2	ELBOW
8	95280194	2	ELBOW
9	96714662	2	CAPSCREW
10	96700828	2	WASHER
12	95371258	1	ADAPTER
	51919488	13	ELECTRICAL WIRE LOOM

FEED SPEED MANIFOLD ASSEMBLY

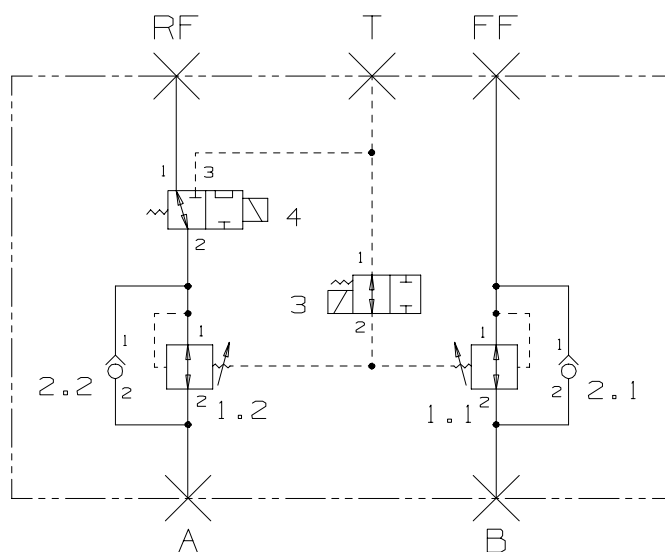
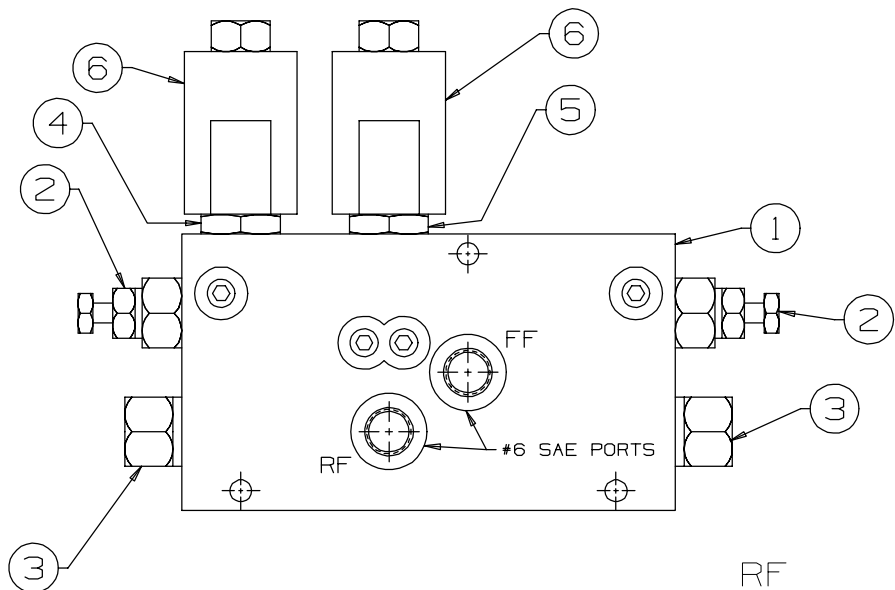
January 15, 1999

Section 6.9



REF.	NO.	PART NO.	QTY.	PART NAME	REMARKS
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		51909257		FEED SPEED MANIFOLD ASSEMBLY	
	1	51608230	1	MANIFOLD, FEED SPEED	REFER TO PAGE 6.9-2
	2	95365094	3	ADAPTER	
	3	95371258	2	ADAPTER	
	4	96714597	3	CAPSCREW	
	5	96701289	6	WASHER	
	6	96703640	3	NUT, HEX	



HYDRAULIC SCHEMATIC

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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51608230 FEED SPEED MANIFOLD

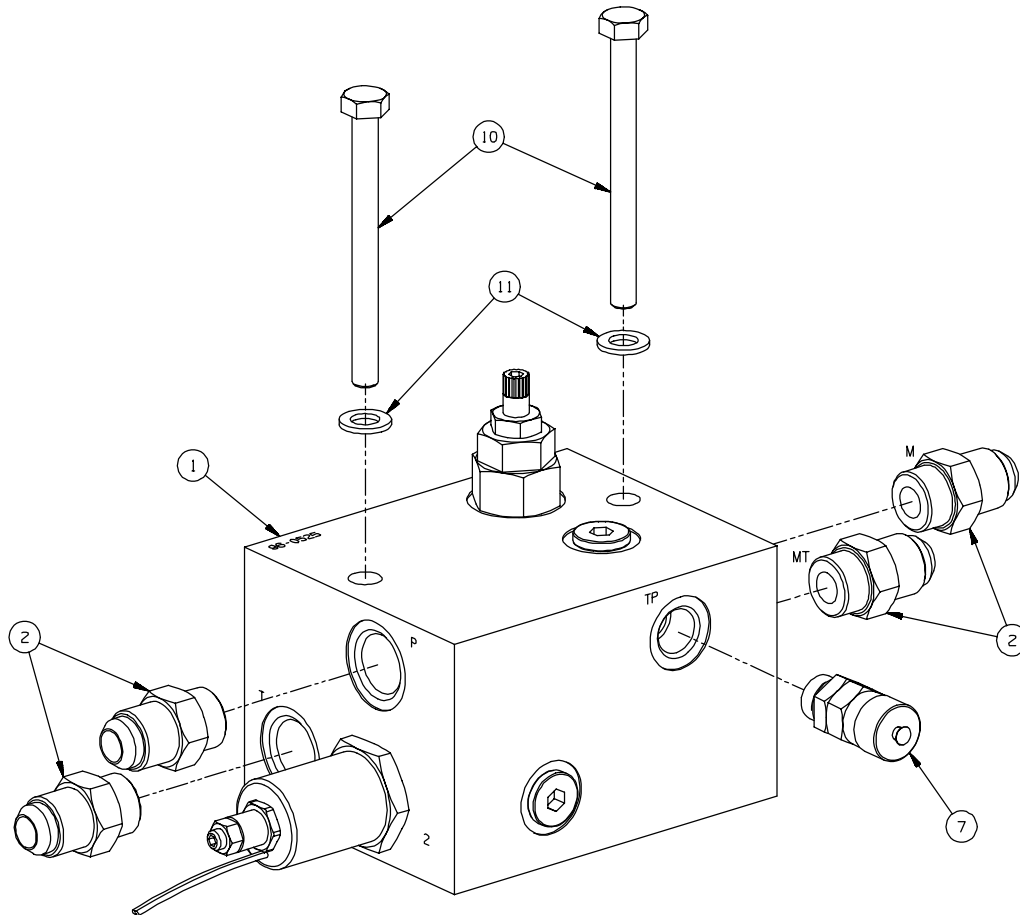
1	51776490	1	BLOCK, MANIFOLD	
2	51776508	2	VALVE, CARTRIDGE	
	56032865	1	.KIT, SEAL	
3	51874444	1	VALVE, CARTRIDGE CHECK	
4	51776466	1	VALVE, CARTRIDGE	
	51776474	1	.KIT, SEAL	
5	51776516	1	VALVE, CARTRIDGE	
	51776524	1	.KIT, SEAL	
6	51785889	2	COIL, SOLENOID	

DUST COLLECTOR MANIFOLD ASSEMBLY

Revision 2

January 10, 2001

Section 6.10



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	52130077		DUST COLLECTOR MANIFOLD ASSEMBLY	
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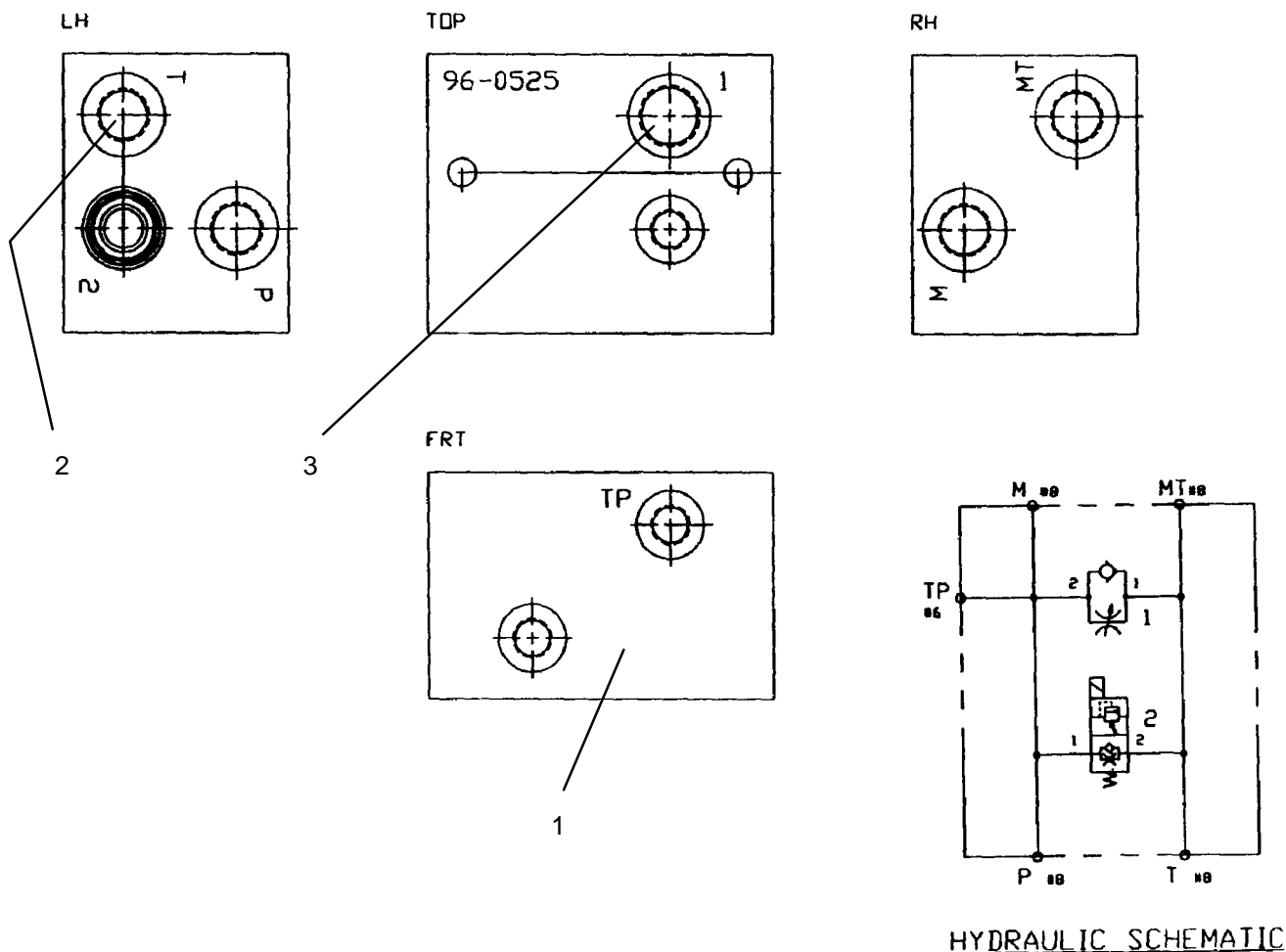
1	52130085	1	MANIFOLD, DUST COLLECTOR	REFER TO PAGE 6.10-2
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2	95303368	4	ADAPTER	
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7	51620664	1	FITTING, PRESSURE TEST	
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10	96714712	2	CAPSCREW	
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11	96700828	2	WASHER	
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REF. NO.	PART NO.	QTY.	PART NAME	REMARKS
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52130085 DUST COLLECTOR MANIFOLD

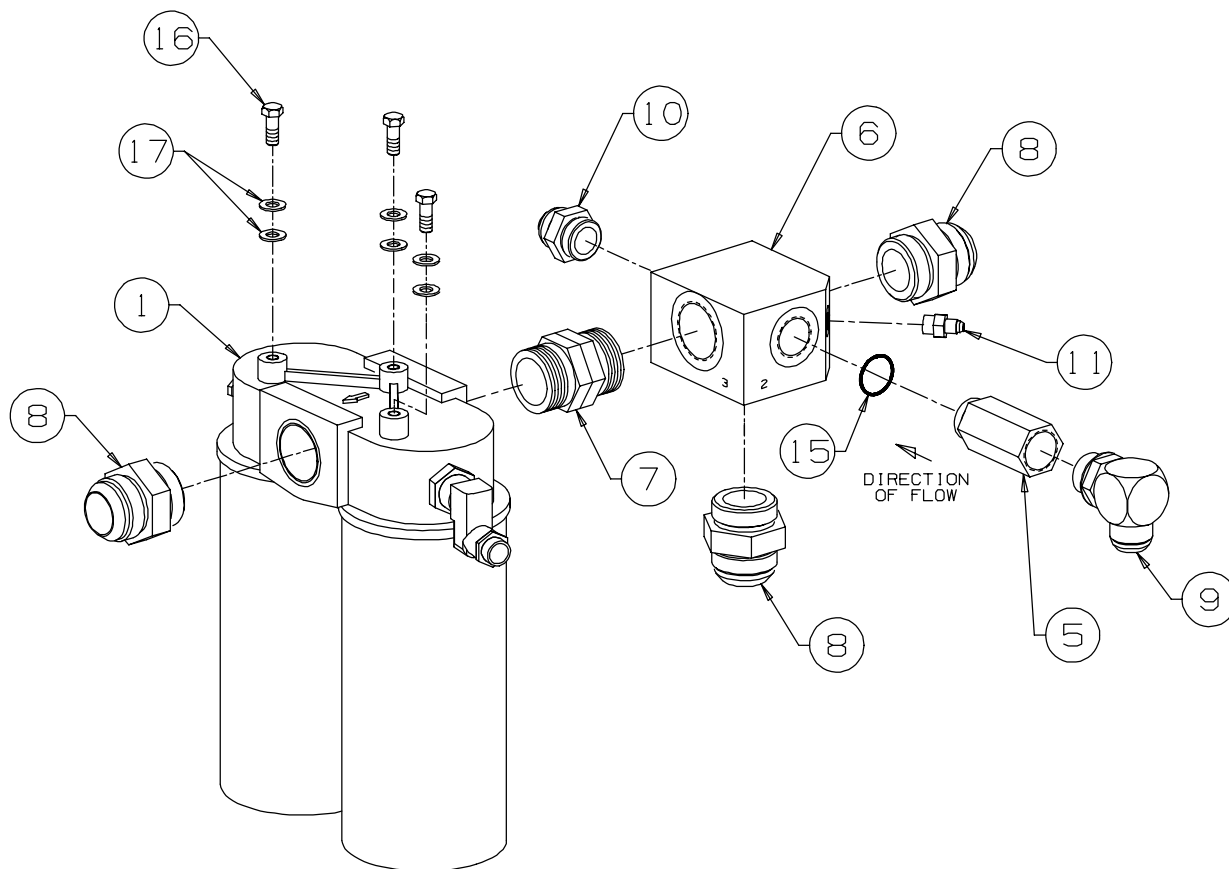
1	52134962	1	BODY, MANIFOLD	
2	52134970	1	VALVE, SOLENOID	
3	52134988	1	VALVE, FLOW CONTROL	
4	52314341	1	KIT, COIL	

RETURN FILTER ASSEMBLY

Revision 1

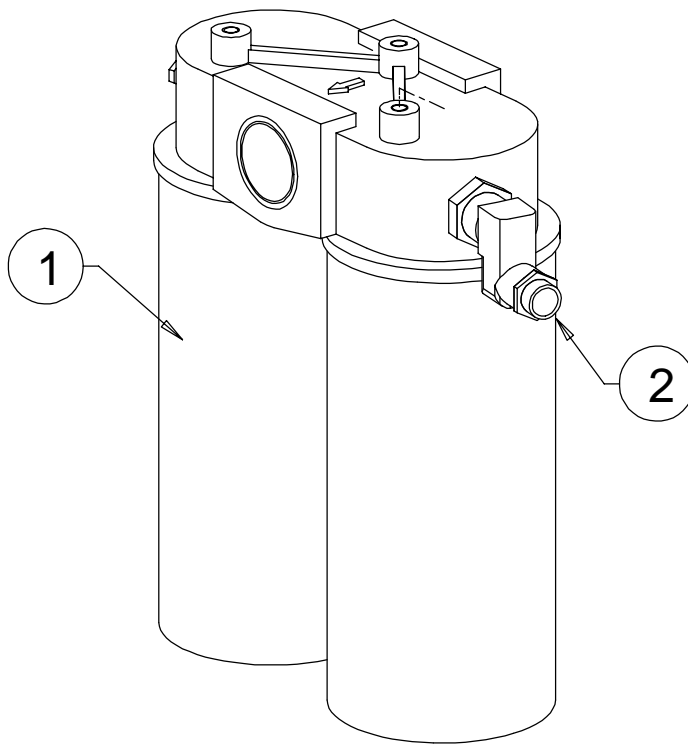
September 6, 2000

Section 6.11



REF.	NO.	PART NO.	QTY.	PART NAME	REMARKS
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		51776938		RETURN FILTER ASSEMBLY	
	1	52134830	1	FILTER, HYDRAULIC <i>REFER TO PAGE 6.11-2</i>	
	5	52310919	1	VALVE, CHECK	
	6	51952232	1	MANIFOLD, UNION	
	7	95867933	1	ADAPTER, O-RING	
	8	95310116	3	ADAPTER	
	9	95280194	1	ELBOW	
	10	95329983	1	ADAPTER	
	11	95371258	1	ADAPTER	
	14	95372199	2	PLUG, PIPE	
	15	95266433	1	O-RING	
	16	95929832	3	CAPSCREW	
	17	51791465	6	WASHER	



REF.

NO. PART NO. QTY.

PART NAME

REMARKS

52134830

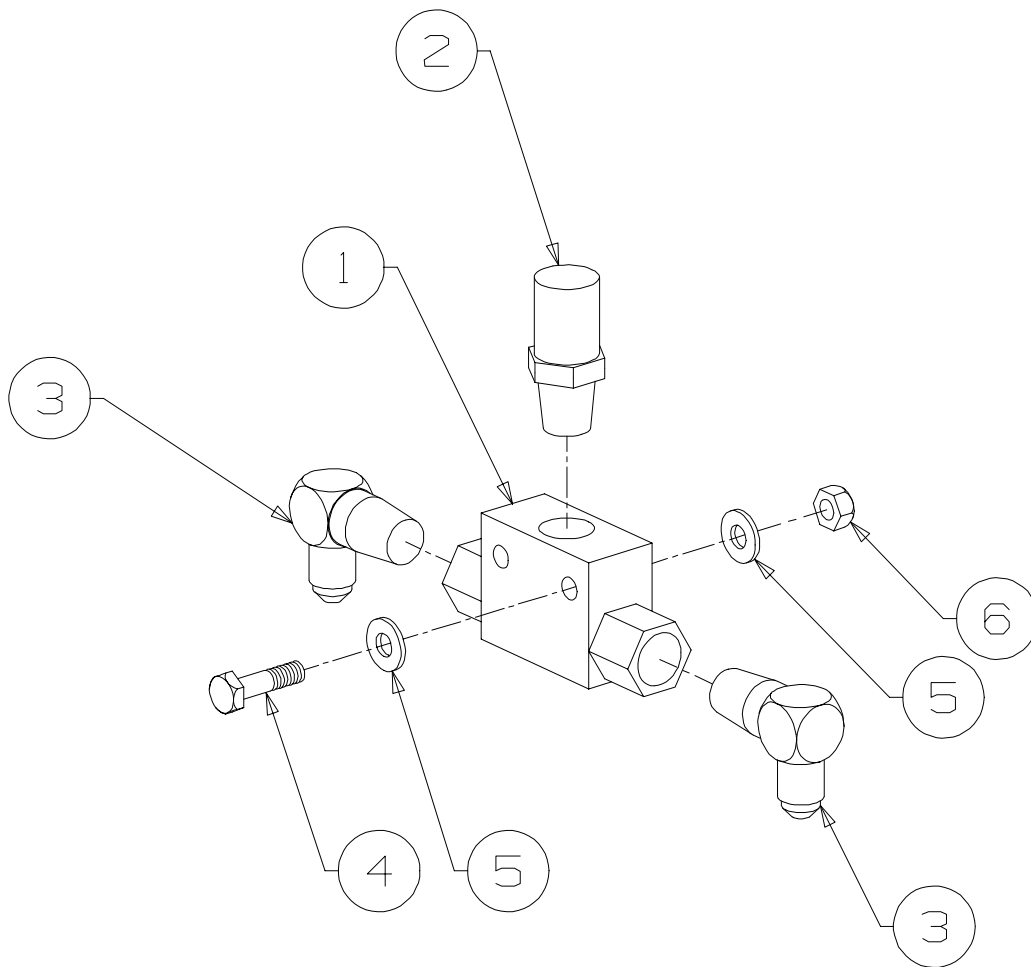
RETURN FILTER

1	51608503	2	ELEMENT, FILTER (3 MICRON)
2	52134848	1	SWITCH, PRESSURE

BACKUP ALARM SWITCH ASSEMBLY

January 15, 1999

Section 6.12



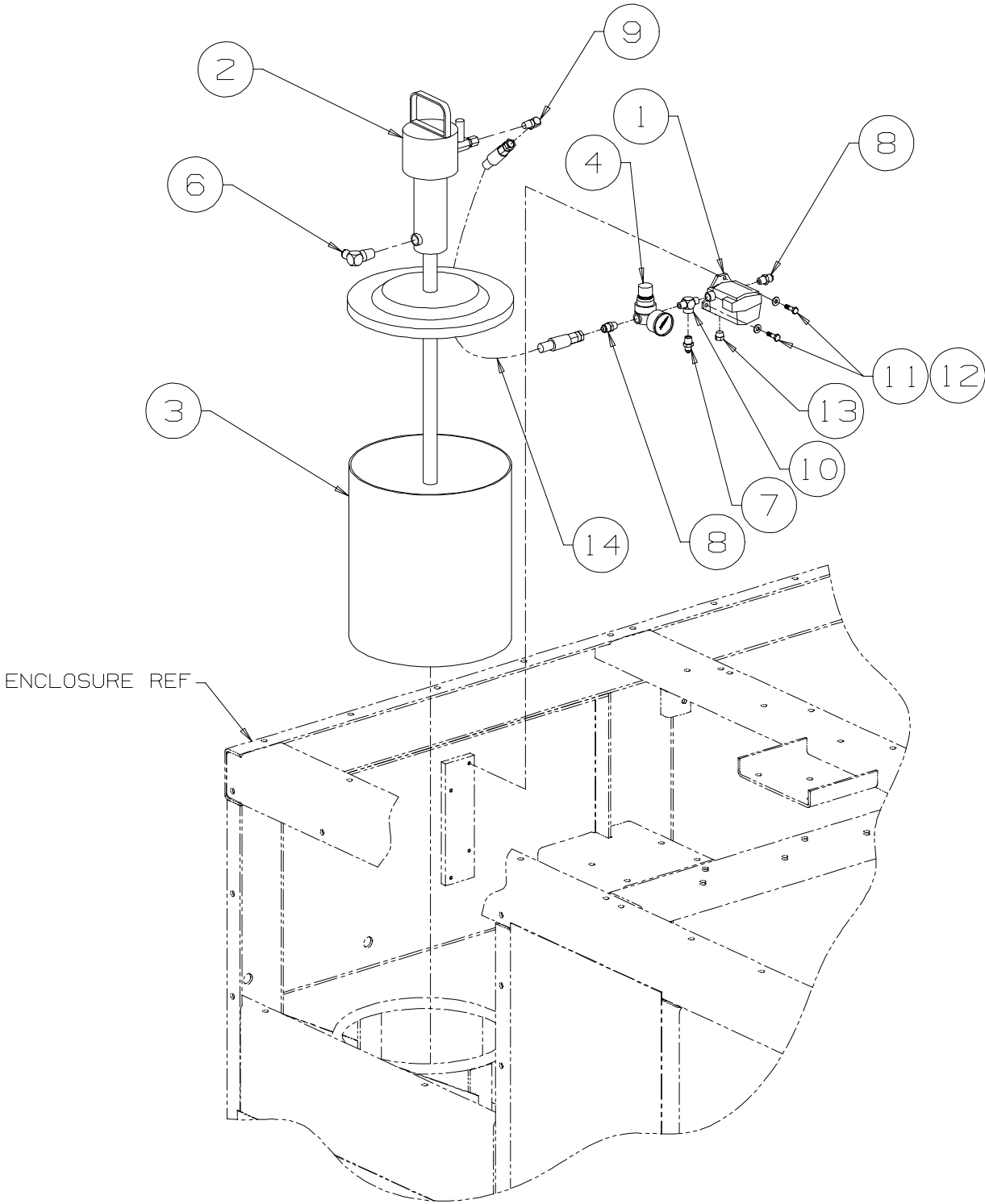
REF.	NO.	PART NO.	QTY.	PART NAME	REMARKS
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		51909307		BACKUP ALARM SWITCH ASSEMBLY	
	1	50805100	1	VALVE, SHUTTLE	
	2	51716017	1	SWITCH, PRESSURE	
	3	95293403	2	ELBOW	
	4	96714514	2	CAPSCREW	
	5	96714464	4	WASHER, FLAT	
	6	96703210	2	NUT, HEX	

GREASER ASSEMBLY

Revision 1
April 2, 1999

Section 6.13



GREASER ASSEMBLY
(For Parts List, refer to Page 6.13-2)

GREASER ASSEMBLY
 (For Illustration of parts, refer to Page 6.13-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	51909315		GREASER ASSEMBLY
1	51620318	1	VALVE, SOLENOID
	51790244	1	.ASSEMBLY, CONDUIT SEAL
	51790251	1	.ASSEMBLY, COIL
	51790236	1	.KIT, BODY
2	52127867	1	PUMP, GREASE
	52127925	1	.KIT, REPAIR

3	51373322	1	LUBRICANT, THREAD (5 GALLON)
4	51003267	1	REGULATOR
7	95263380	1	ADAPTER
8	95316972	2	ADAPTER
9	95209094	1	ELBOW

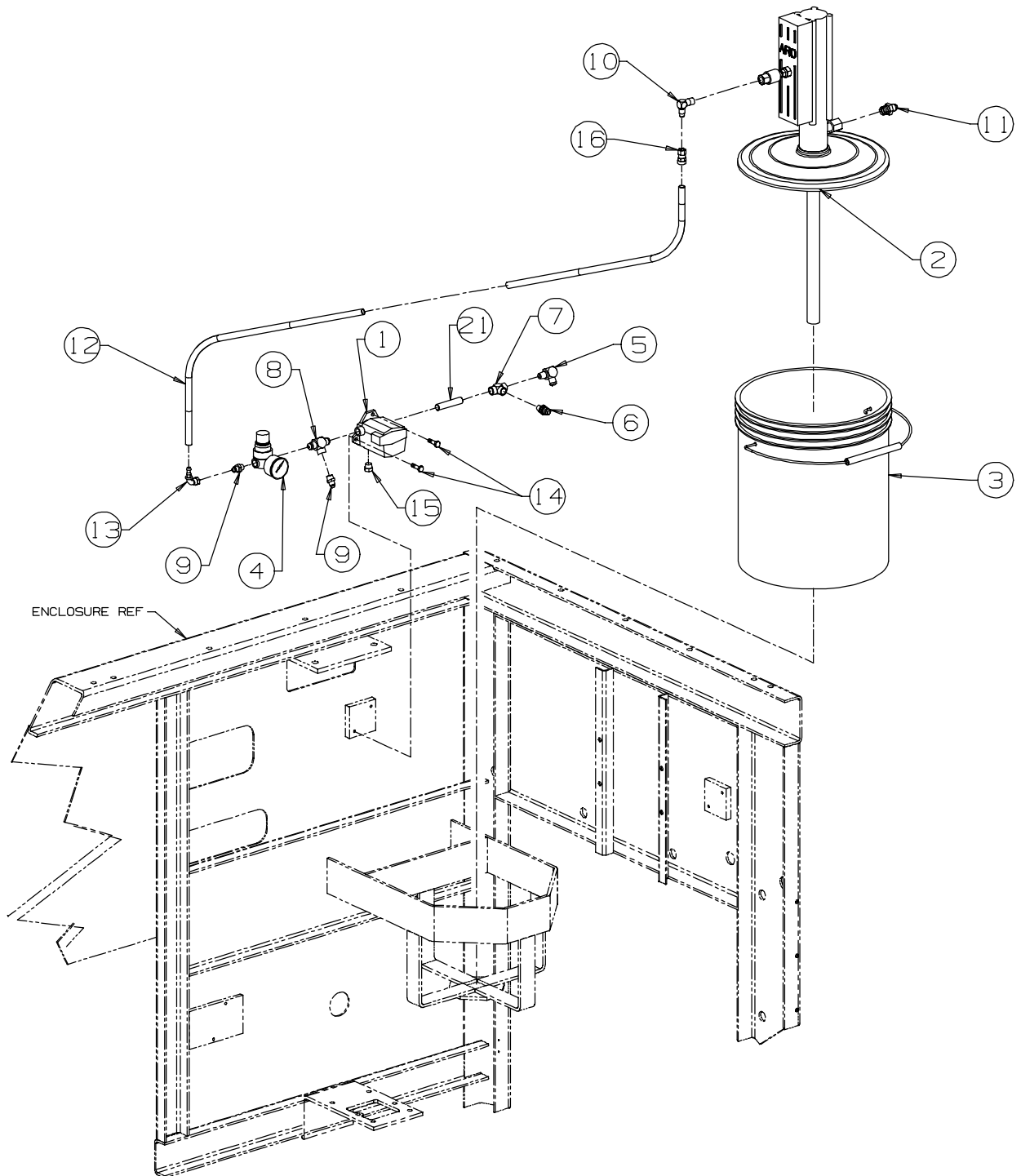
10	51352136	1	TEE
11	96714530	2	CAPSCREW
12	96701289	2	WASHER
13	03692076	1	PLUG, VENT
14	51231694	1	ASSEMBLY, HOSE

15	95279493	1	ELBOW
16	95293403	1	ELBOW
17	95302998	1	TEE

GREASE PUMP ASSEMBLY

June 4, 1999

Section 6.13A



GREASE PUMP ASSEMBLY
(For Parts List, refer to Page 6.13A-2)

GREASE PUMP ASSEMBLY
(For Illustration of parts, refer to Page 6.13A-1)

REF.

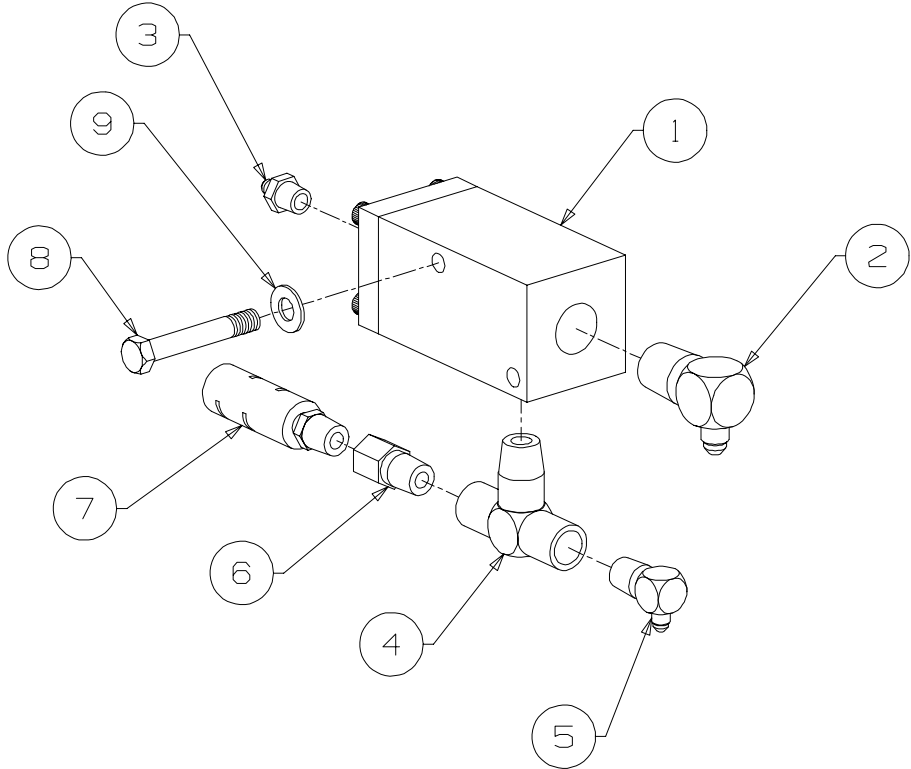
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	51713378		GREASE PUMP ASSEMBLY	
1	51620318	1	VALVE, SOLENOID	
	51790244	1	.ASSEMBLY, CONDUIT SEAL	
	51790251	1	.ASSEMBLY, COIL	
	51790236	1	.KIT, BODY	
2	52127867	1	PUMP, GREASE	
	52127925	1	.KIT, REPAIR	
<hr/>				
3	51373322	1	LUBRICANT, THREAD (5 GAL. CONTAINER)	
4	51003267	1	REGULATOR	
5	95209094	1	ELBOW	
6	95316972	1	ADAPTER	
7	95302998	1	TEE	
<hr/>				
8	51352136	1	TEE	
9	95263380	2	ADAPTER	
10	95293403	1	ELBOW	
11	95219713	1	ADAPTER	
12	51730273	1	HOSE	
<hr/>				
13	51730323	1	FITTING	
14	96714530	2	CAPSCREW	
15	03692076	1	PLUG VENT	
16	95302543	1	SWIVEL	
21	95048971	1	NIPPLE	

BLOW DOWN VALVE ASSEMBLY

January 15, 1999

Section 6.14



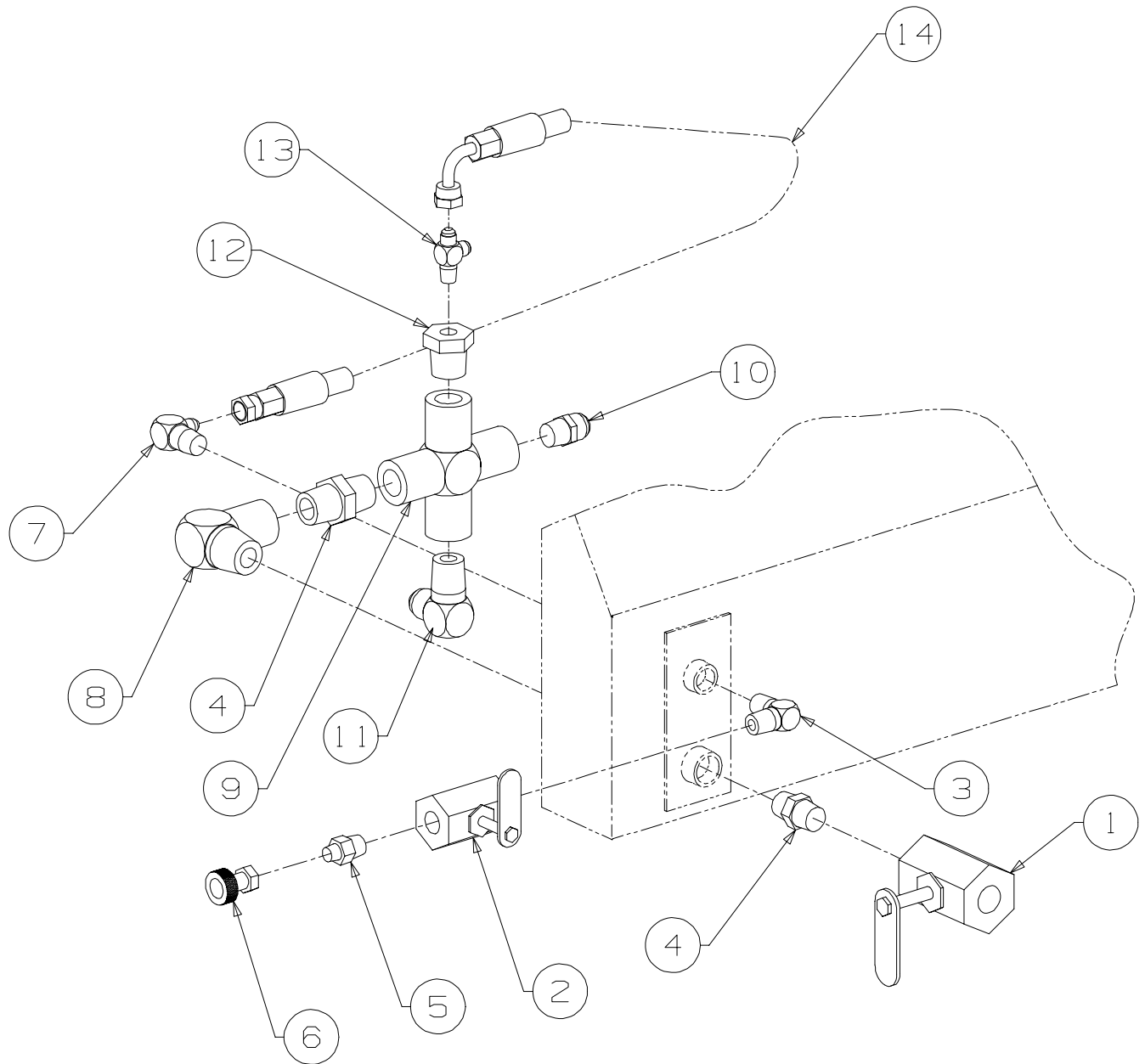
REF.
NO. PART NO. QTY. PART NAME
REMARKS

51909323		BLOW DOWN VALVE ASSEMBLY	
1	35849215	1	VALVE, AUTO BLOW DOWN
2	95279386	1	ELBOW
3	95231023	1	ADAPTER
4	95279949	2	TEE
5	95367025	1	ELBOW
6	51782407	1	ADAPTER, ORIFICE
7	35132299	1	SILENCER
8	96714761	2	CAPSCREW
9	96700836	2	WASHER
10	95056032	1	BUSHING, REDUCING

AIR SERVICE ASSEMBLY

January 15, 1999

Section 6.15



AIR SERVICE ASSEMBLY
(For Parts List, refer to Page 6.15-2)

AIR SERVICE ASSEMBLY
(For Illustration of parts, refer to Page 6.15-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

51909349		SERVICE AIR ASSEMBLY	
1	50788207	1	VALVE, BALL
2	50947357	1	VALVE, BALL
3	95317426	1	ELBOW
4	95315222	2	PIPE, MALE

5	95302733	1	ADAPTER
6	51027936	1	COUPLING
7	95279527	1	ELBOW
8	95264909	1	ELBOW

9	95364956	1	CROSS
10	95219747	1	ADAPTER
11	95279402	1	ELBOW
12	95037446	1	BUSHING, REDUCING

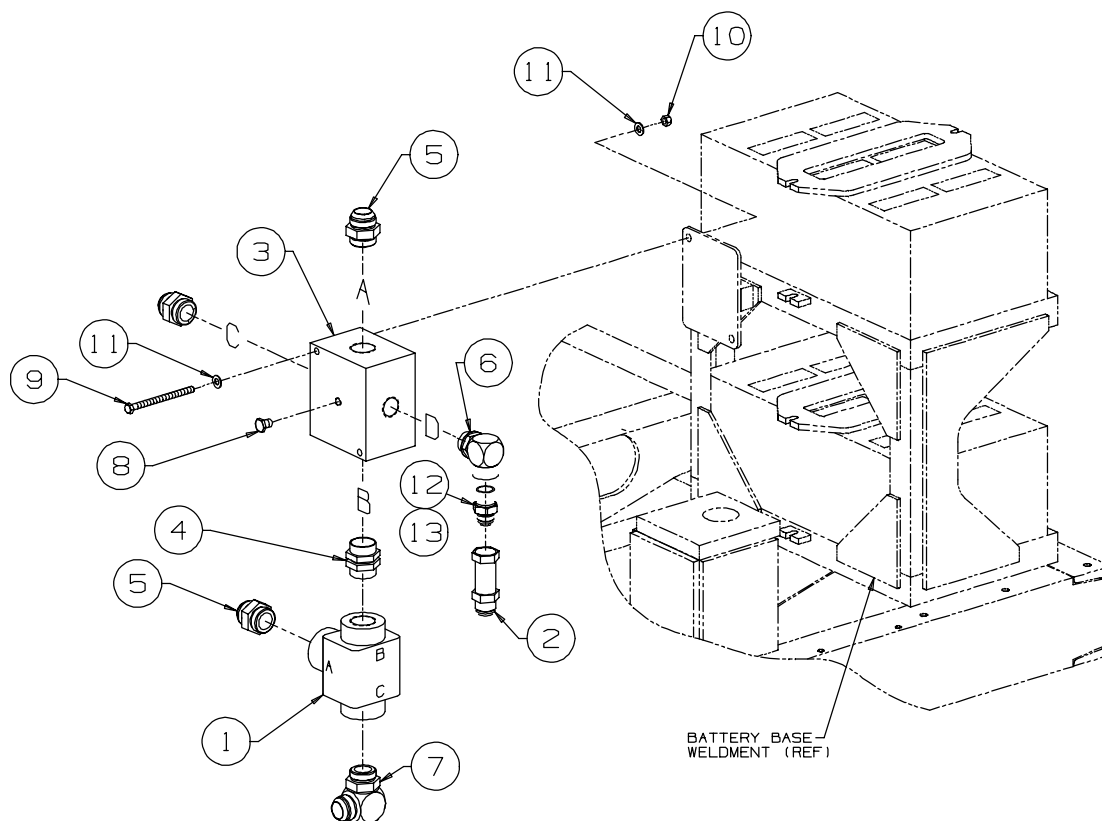
13	95734455	1	TEE
14	51910685	1	ASSEMBLY, HOSE

OIL MIXING VALVE ASSEMBLY

Revision 4

December 20, 2001

Section 6.16



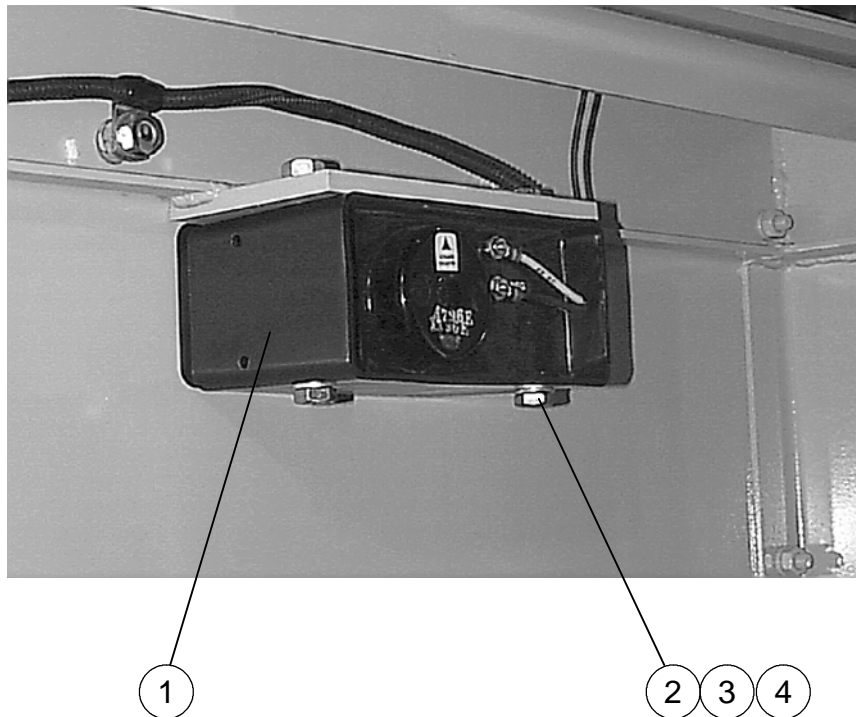
REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51909430		OIL MIXING VALVE ASSEMBLY	
1	51782431	1	VALVE, OIL MIXING	
	52293651	1	.ELEMENT, THERMOSTAT (150 DEGREE F)	
2	51782456	1	VALVE, CHECK	
3	51910693	1	MANIFOLD, UNION	
4	95427431	1	UNION, O-RING	
5	95356986	3	ADAPTER	
6	95528618	1	ADAPTER	
7	95357604	1	ADAPTER	
8	95323366	1	PLUG, O-RING BOSS	
9	57662181	2	CAPSCREW	
10	96701990	2	NUT, HEX	
11	96700836	4	WASHER	
12	95279329	1	ADAPTER	
13	95303756	1	O-RING	

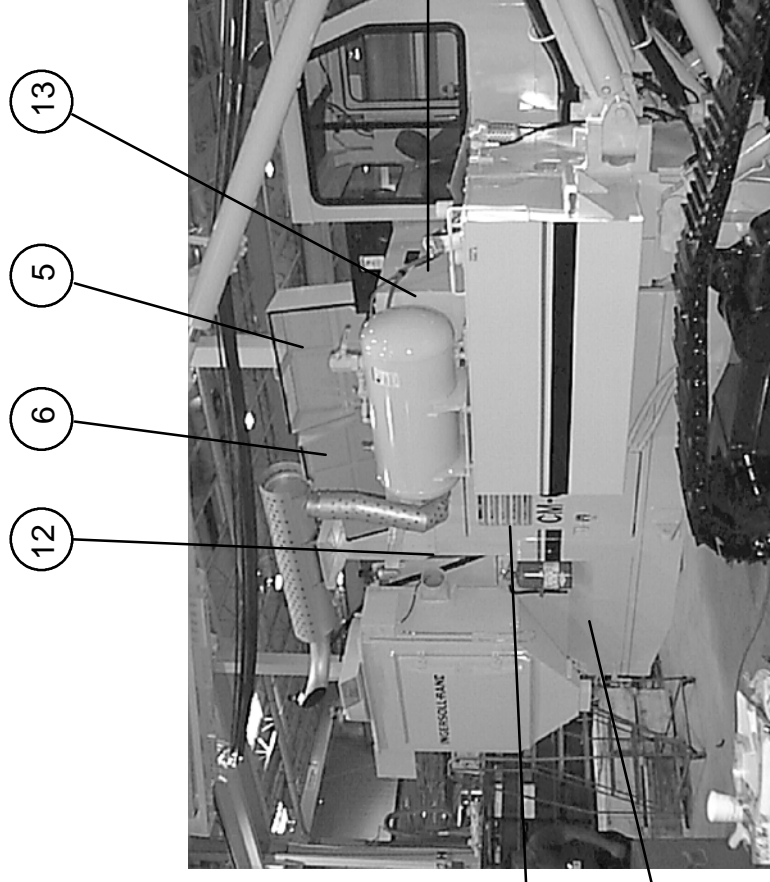
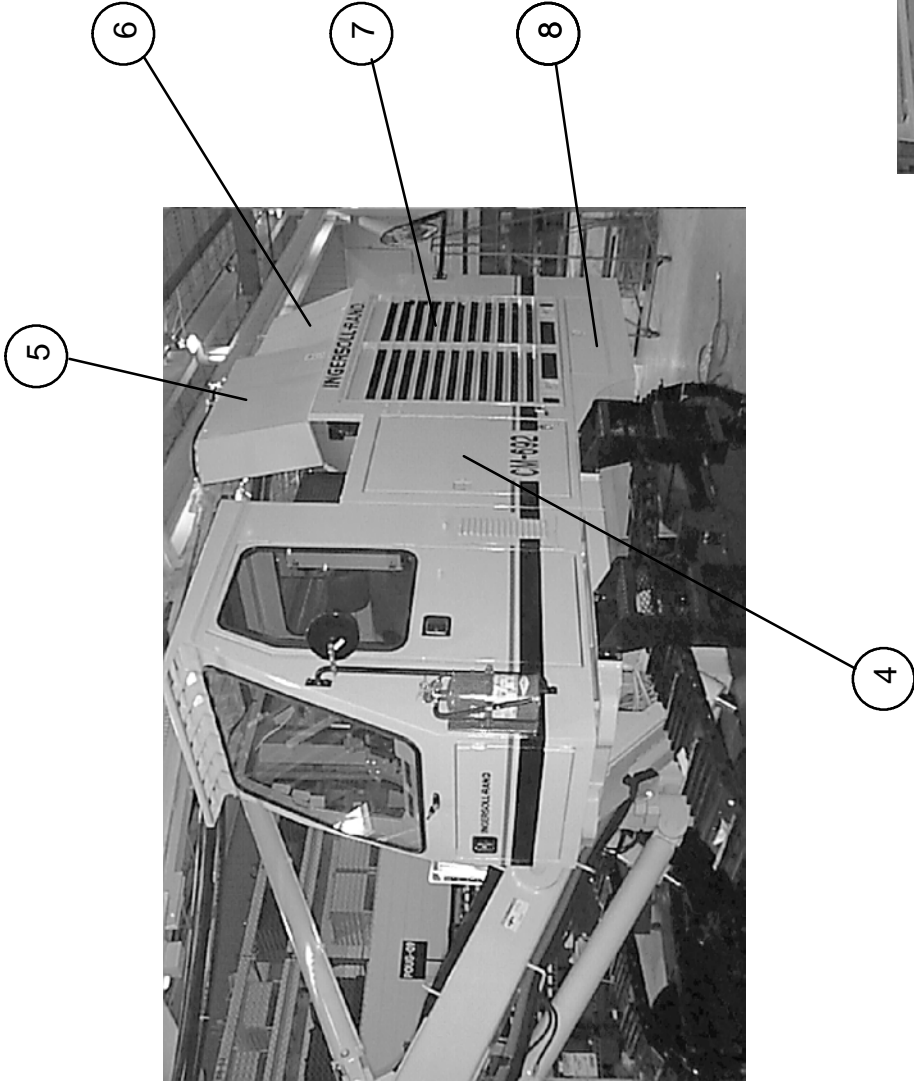
January 15, 1999

Section 6.17



<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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		51992543		HORN KIT	
1		51992535	1	HORN, 24 VDC	
2		96714761	2	CAPSCREW	
3		96701990	2	NUT, HEX	
4		96700836	4	WASHER	



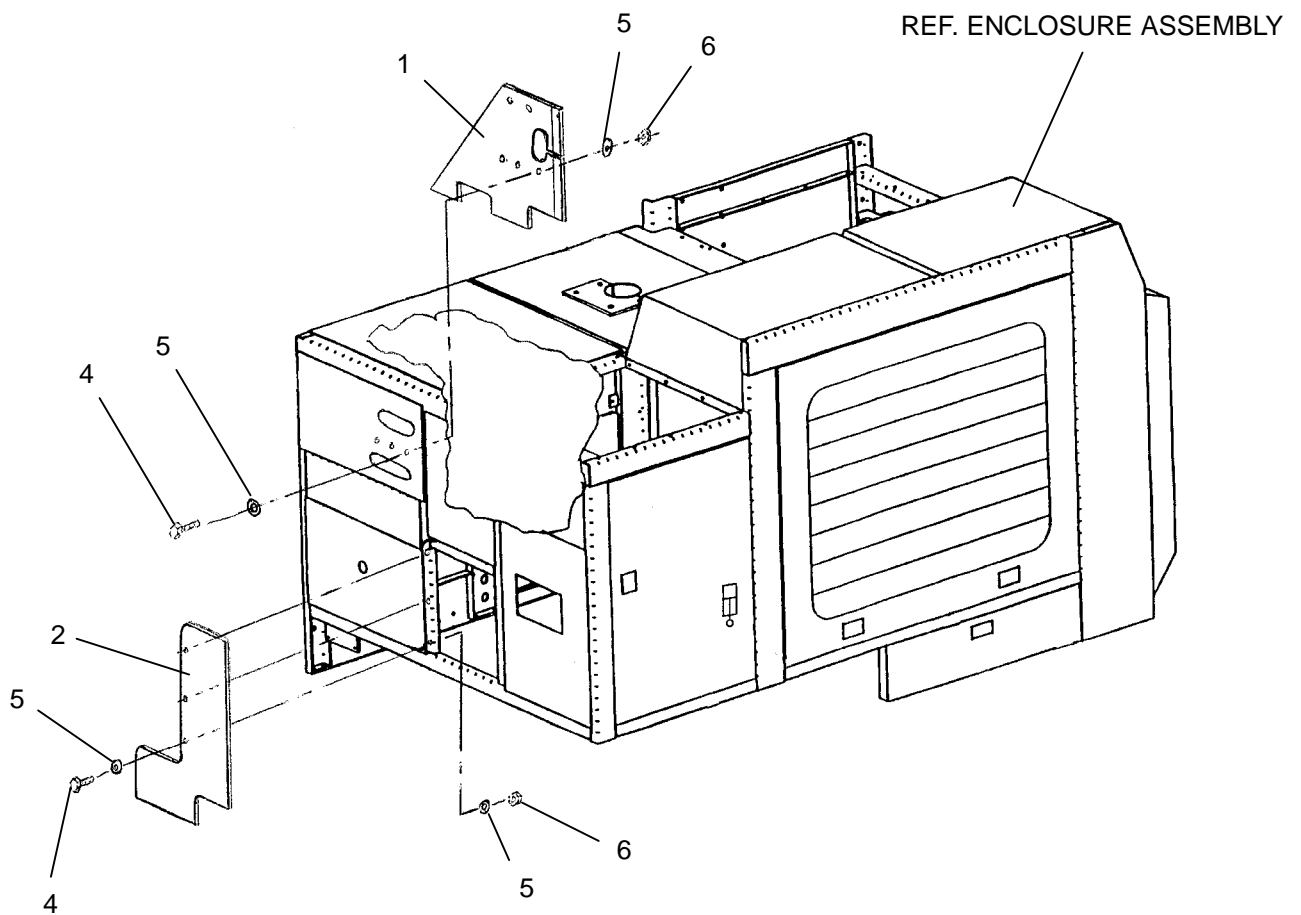
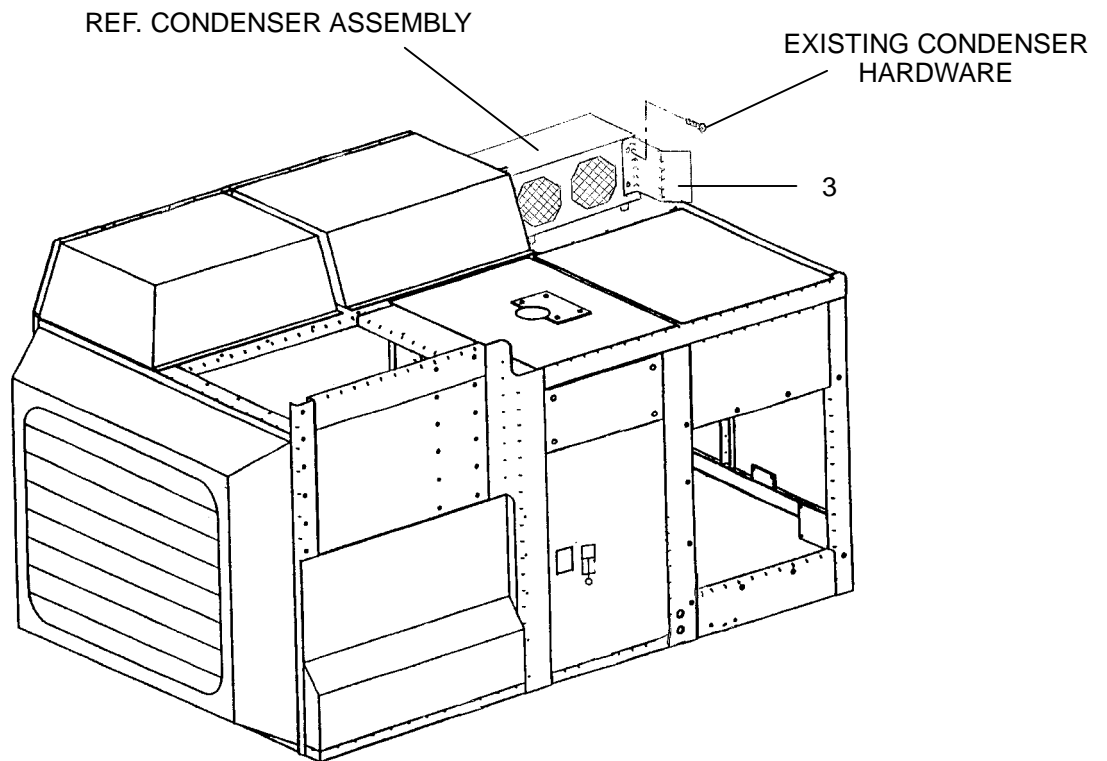
NOTE: THE PICTURES IN THIS SECTION WERE TAKEN OF MODEL CM692 CRAWLER; THE ENCLOSURE IS THE SAME FOR ECM690, CM692 & CM695D. THE ONLY DIFFERENCE BEING A KNOCK-OUT FOR THE CM692 EXHAUST COMES OUT THE SIDE AND A KNOCK-OUT FOR THE ECM690 & CM695D EXHAUST COMES THROUGH THE TOP.

ENCLOSURE ASSEMBLY
(For Parts List, refer to Page 6.18-2)

ENCLOSURE ASSEMBLY
(For Illustration of parts, refer to Page 6.18-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52103256		ENCLOSURE ASSEMBLY	
1	52137510	1	WELDMENT, ENCLOSURE FRAME	
2	51914273	1	PANEL, EXHAUST PIPE	
4	51943637	1	DOOR, LEFT SIDE BEHIND CAB	(HINGE, LATCH, AND ALL MOUNTING HARDWARE INCLUDED WITH DOOR)
	52103504	1	.LATCH, DOOR	
5	51943645	1	DOOR, TOP FRONT LEFT SIDE	(HINGE, LATCH, AND ALL MOUNTING HARDWARE INCLUDED WITH DOOR)
				(HINGE, LATCHES, AND ALL MOUNTING HARDWARE INCLUDED WITH DOOR)
	51990471	2	.LATCH, DOOR	
6	51943652	1	DOOR, TOP REAR LEFT SIDE	(HINGE, LATCH, AND ALL MOUNTING HARDWARE INCLUDED WITH DOOR)
	51990471	2	.LATCH, DOOR	
7	51943660	1	DOOR, SWING UP COOLER LEFT SIDE	
				(HINGE, LATCHES, GAS SPRING, AND ALL MOUNTING HARDWARE INCLUDED WITH DOOR)
	52103504	2	.LATCH, DOOR	
8	51943678	1	DOOR, SWING DOWN UNDER COOLER	
				(HINGE, LATCH, AND ALL MOUNTING HARDWARE INCLUDED WITH DOOR)
	52103504	1	.LATCH, DOOR	
9	51943686	1	DOOR, SWG UP REAR	(HINGE, LATCHES, GAS SPRINGS, AND ALL MOUNTING HARDWARE INCLUDED WITH DOOR)
	52103504	2	.LATCH, DOOR	
	51989093	2	.GAS SPRING, REAR DOOR	
10	51943694	1	DOOR, R.S. AT FUEL TANK	(HINGE, LATCH, AND ALL MOUNTING HARDWARE INCLUDED WITH DOOR)
	52103504	1	.LATCH, DOOR	
12	51943710	1	PANEL, DUST COLLECTOR	(ALL MOUNTING HARDWARE INCLUDED WITH PANEL)
13	51943728	1	PANEL, TOP SIDE	(ALL MOUNTING HARDWARE INCLUDED WITH PANEL)
14	51943736	1	PANEL, RIGHT FRONT	(ALL MOUNTING HARDWARE INCLUDED WITH PANEL)
	51994812	1	ASSEMBLY, DOOR EYEBOLT CATCH	
16	52300795	1	KIT, HOT AIR SHIELD	
			<i>REFER TO PAGE 6.18-3</i>	



HOT AIR SHIELD KIT
 (For Parts List, refer to Page 6.18-4)

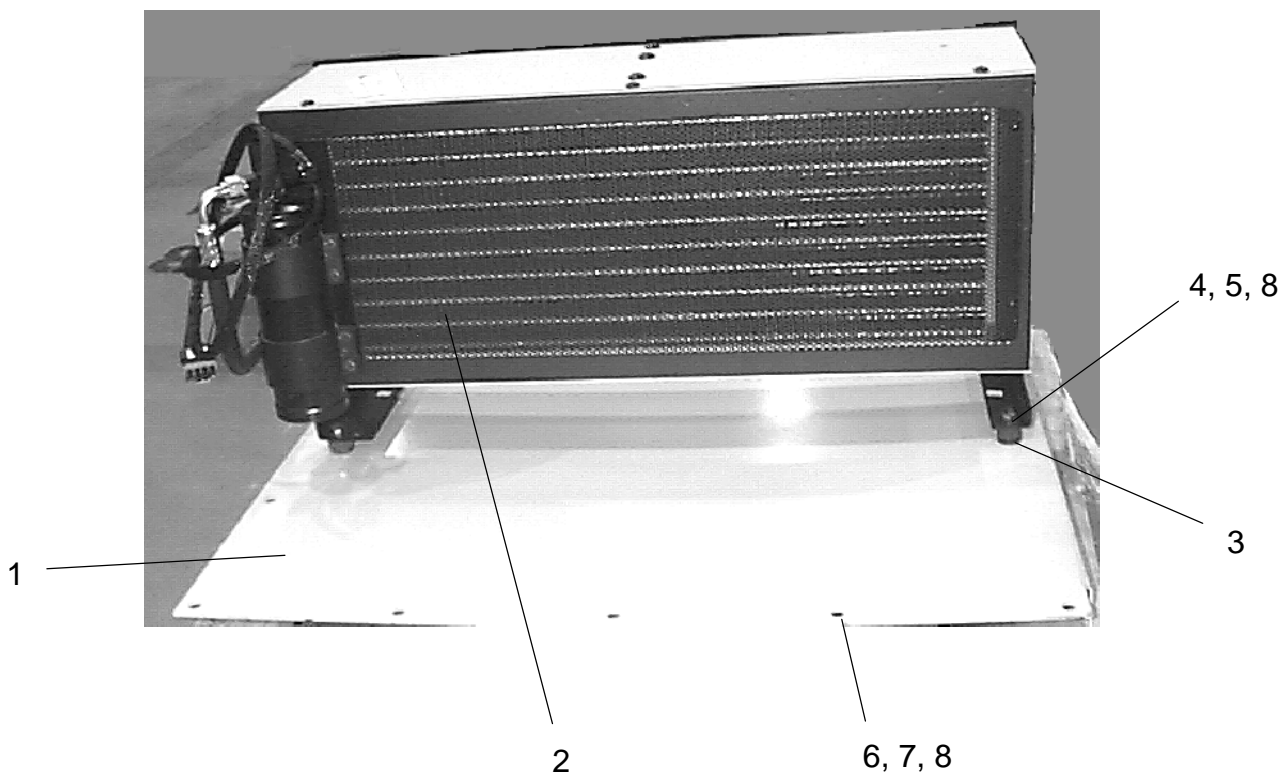
HOT AIR SHIELD KIT
(For Illustration of parts, refer to Page 6.18-3)

<i>REF.</i>				
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	52300795		HOT AIR SHIELD KIT	
1	52300761	1	SHIELD, HOT AIR UPPER	
2	52300753	1	SHIELD, HOT AIR LOWER	
3	52300787	1	SHIELD, DEFLECTING AIR FAN	
4	95920377	8	CAPSCREW	
5	50977271	16	WASHER	
6	95943262	8	LOCKNUT	

CONDENSOR COVER ASSEMBLY

January 15, 1999

Section 6.19



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
-----	----------	------	-----------	---------

	52092350		,CONDENSOR COVER ASSEMBLY	
1	52092368	1	COVER, ENCLOSURE, A/C	
2	52092376	1	CONDENSER, ELECTRIC 24VDC	
	52105962	1	.FILTER/DRYER	
	52130580	2	.ASSEMBLY, FAN CONDENSER	
	52130606	1	.COIL, CONDENSER	
3	51608156	4	ISOLATOR, VIBRATION	
4	95077756	8	NUT, HEX	
5	95064671	8	WASHER	
6	96702774	17	CAPSCREW	
7	96700836	17	WASHER	
8	96701990	21	NUT, HEX	

A/C-HEATER HOSE GROUP

January 15, 1999

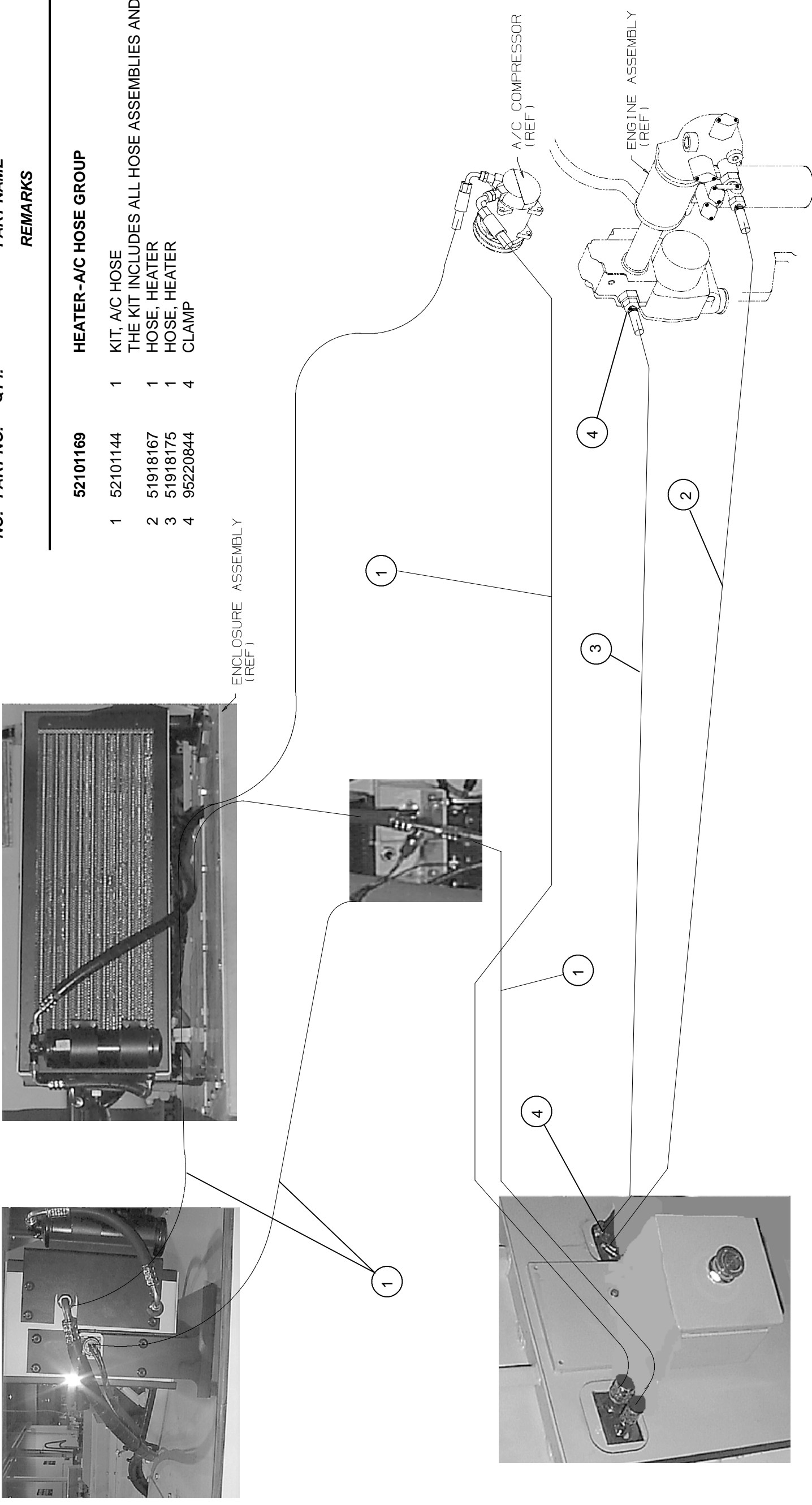
Section 6.20

REF. PART NO. QTY. PART NAME
REMARKS

52101169 HEATER -A/C HOSE GROUP

1	52101144	1	KIT, A/C HOSE
2	51918167	1	HOSE, HEATER
3	51918175	1	HOSE, HEATER
4	95220844	4	CLAMP

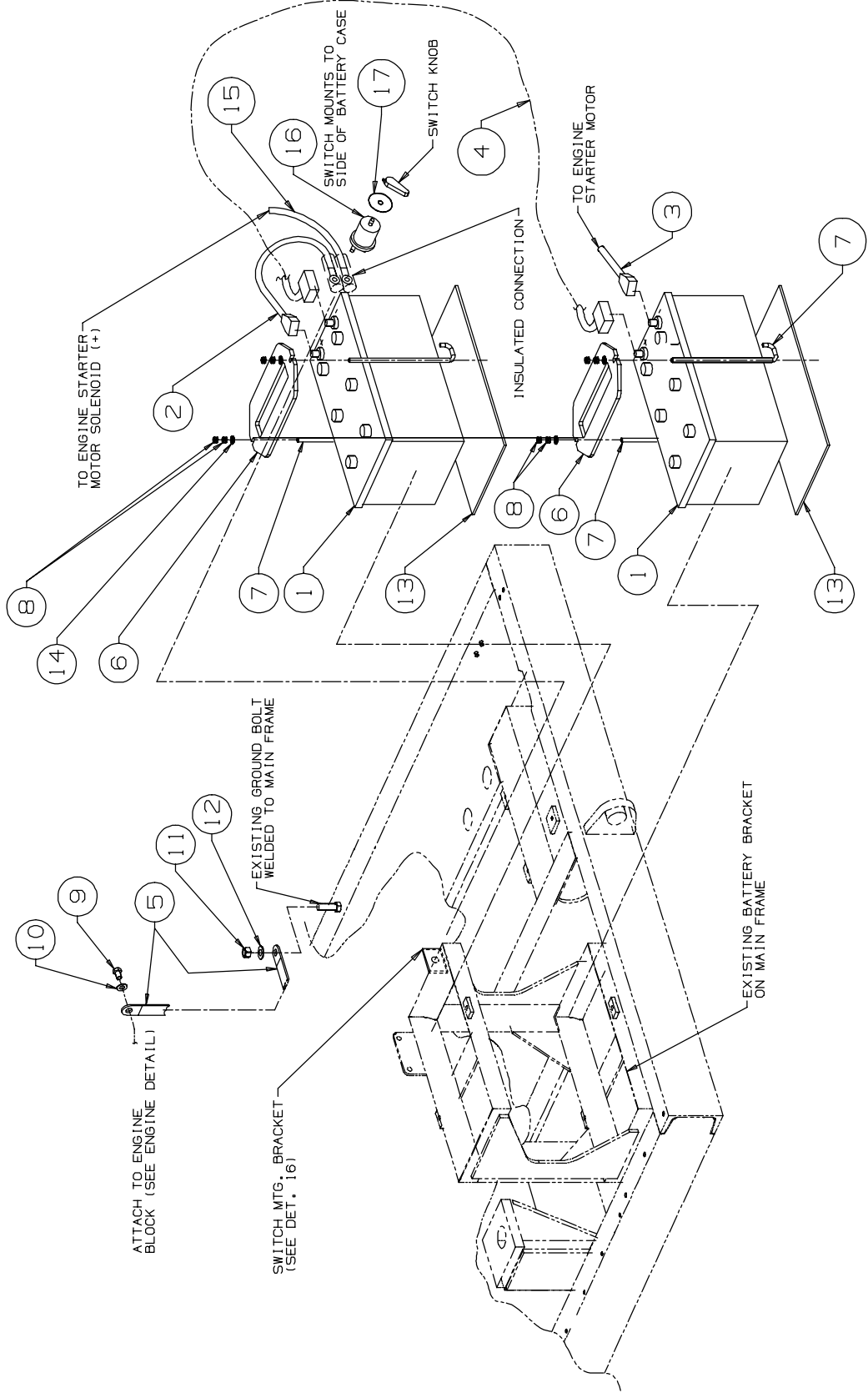
THE KIT INCLUDES ALL HOSE ASSEMBLIES AND SENSOR



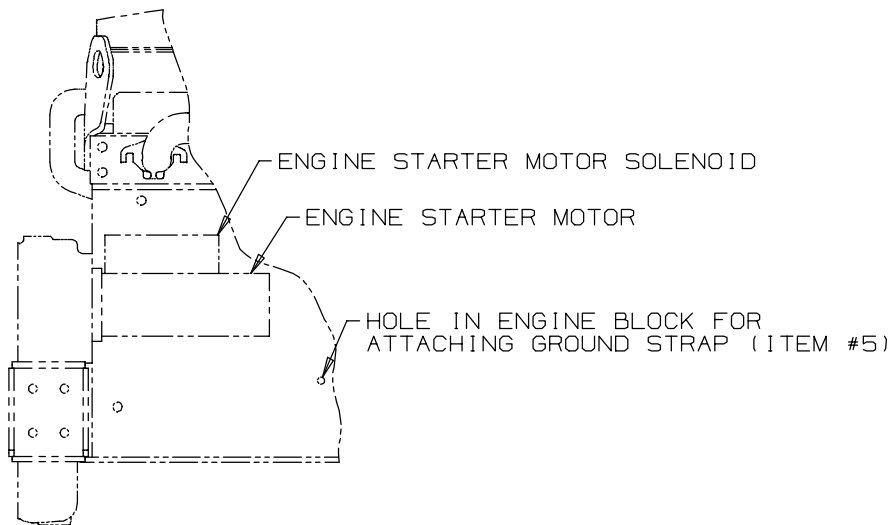
BATTERY ASSEMBLY

January 15, 1999

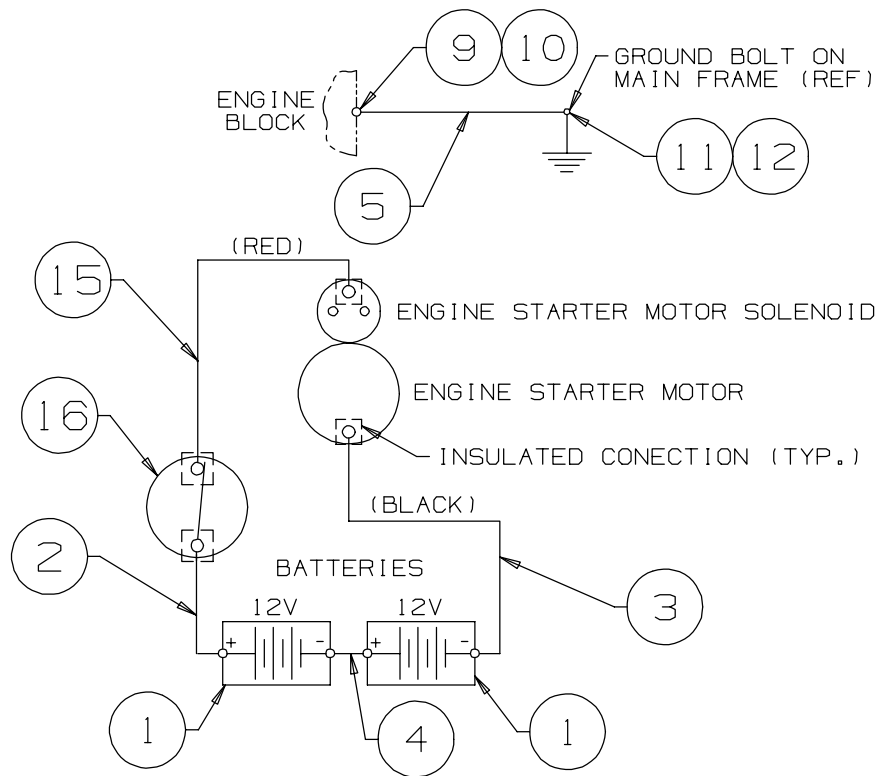
Section 6.21



BATTERY ASSEMBLY
(For Parts List, refer to Page 6.21 -3)



ENGINE DETAIL
 VIEWED FROM RIGHT SIDE
 1/8 SCALE



ELECTRICAL SCHEMATIC

BATTERY ASSEMBLY
 (For Parts List, refer to Page 6.21-3)

BATTERY ASSEMBLY
(For Illustration of parts, refer to Page 6.21-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	51994697		BATTERY ASSEMBLY
1	51618270	2	BATTERY, 12V
2	51994671	1	CABLE, BATTERY, POSITIVE
3	51916021	1	CABLE, BATTERY, NEGATIVE
4	51916039	1	CABLE, BATTERY, JUMPER

5	51775724	1	STRAP, GROUND
6	51728566	2	BRACKET, MANIFOLD
7	52086238	4	ROD CLAMP, BATTERY
8	96701990	8	NUT, HEX

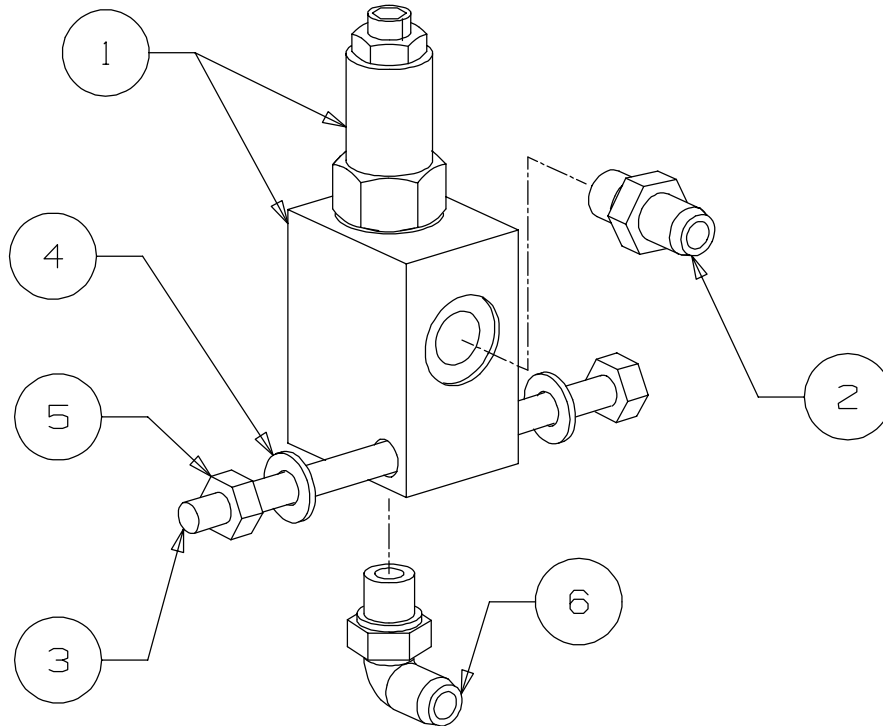
9	95919775	1	CAPSCREW
10	51948016	1	WASHER
11	96703657	1	NUT, HEX
12	96700968	1	WASHER, FLAT

13	51869915	2	PAD, BATTERY
14	96700836	4	WASHER
15	51994689	1	BATTERY CABLE, POSITIVE
16	50908086	1	SWITCH, BATTERY CUTOFF
17	52123346	1	PLATE, BATTERY CUTOFF SWITCH

ROTATION PILOT FLOW CONTROL VALVE

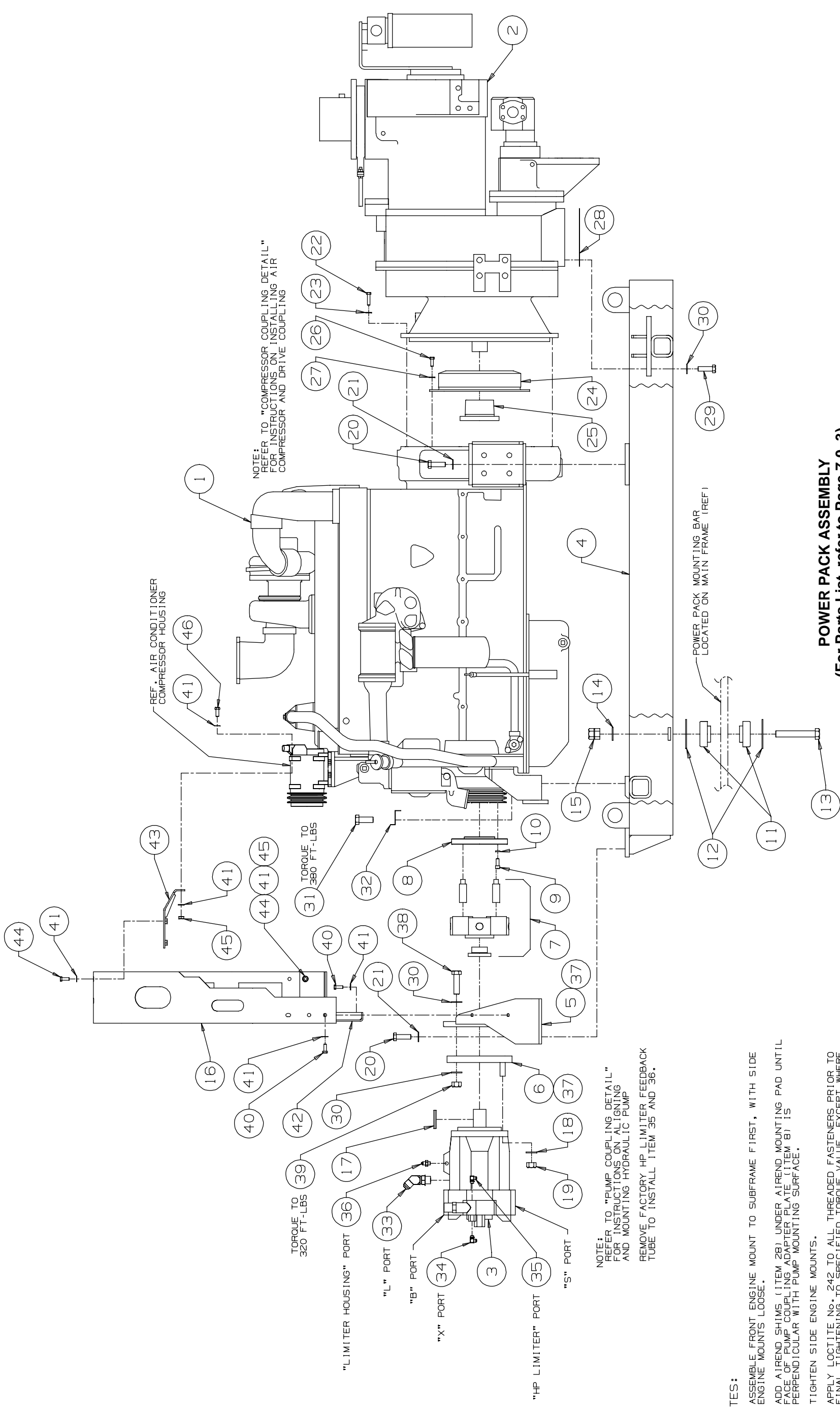
September 15, 1999

Section 6.22



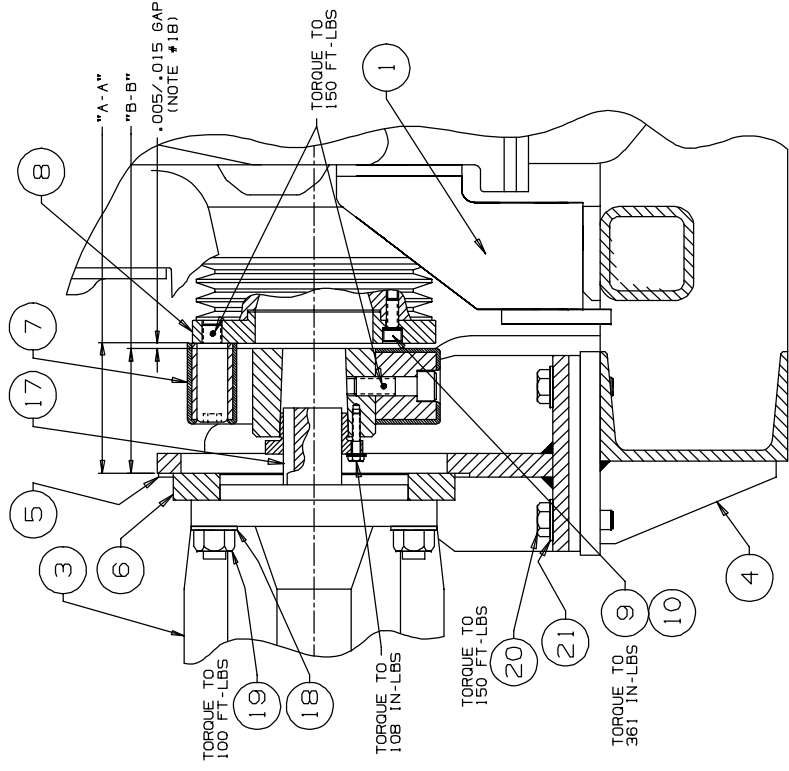
<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
-------------	------------	-----------------	-------------	------------------	----------------

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
		52083664		ROTATION PILOT FLOW CONTROL ASSEMBLY	
	1	52082633	1	VALVE, FLOW CONTROL	
	2	95365086	1	ADAPTER	
	3	96714670	1	CAPSCREW	
	4	96700828	2	WASHER	
	5	96702840	1	NUT, HEX	
	6	95341665	1	ELBOW	



- NOTES:
- 1) ASSEMBLE FRONT ENGINE MOUNT TO SUBFRAME FIRST, WITH SIDE ENGINE MOUNTS LOOSE.
 - 2) ADD AIR END SHIMS (ITEM 28) UNDER AIR END MOUNTING PAD UNTIL FACE OF PUMP COUPLING ADAPTER PLATE (ITEM 8) IS PERPENDICULAR WITH PUMP MOUNTING SURFACE.
 - 3) TIGHTEN SIDE ENGINE MOUNTS.
 - 4) APPLY LOCTITE No. 242 TO ALL THREADED FASTENERS PRIOR TO FINAL TIGHTENING TO SPECIFIED TORQUE VALUE, EXCEPT WHERE NOTED OTHERWISE.

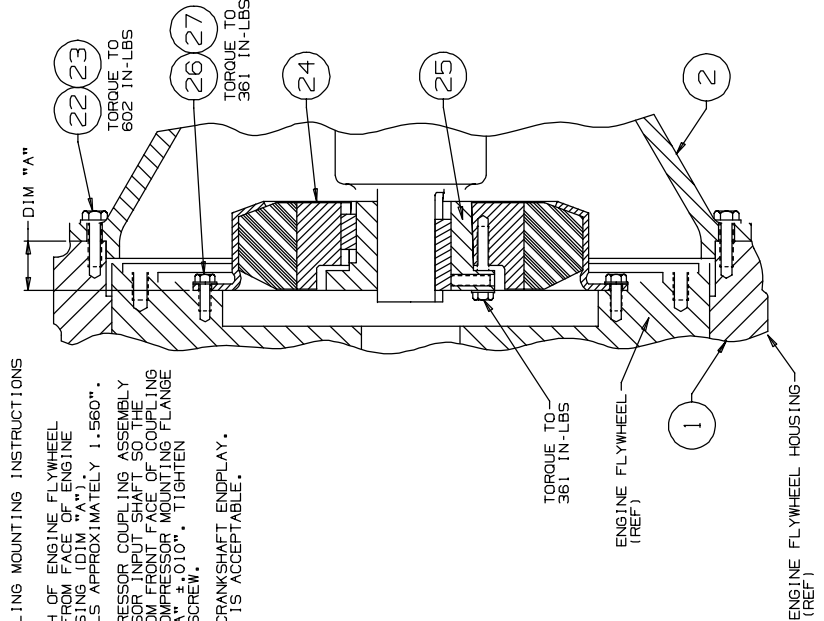
POWER PACK ASSEMBLY
(For Parts List, refer to Page 7.0-3)



PUMP COUPLING DETAIL

SCALE : 1/2

- HYDRAULIC PUMP MOUNTING INSTRUCTIONS
1. INSTALL PUMP MOUNTING BRACKET (5) ONTO SUBFRAME (4), BUT DO NOT TIGHTEN BOLTS. TORQUE TO 348 IN.-LBS (39NM).
 2. FEED AXIAL ALIGNMENT TOOL THROUGH 8.500" (216MM) DIA. HOLE IN PUMP MOUNTING BRACKET (ITEM 5) AND BOLT ONTO ADAPTER PLATE (ITEM 8) ON CRANKSHAFT PULLEY. THIS WILL LOCATE BRACKET AND ESTABLISH APPROPRIATE PERPENDICULARITY OF PUMP MOUNTING FACE AND CRANKSHAFT FACE. IF CLEARANCE BETWEEN SUBFRAME (4) AND PUMP MOUNTING BRACKET (5) DOES NOT COMPLETELY COVER PUMP MOUNTING BRACKET, IT MUST BE SHIMMED.
 3. TIGHTEN BOLTS TO 150 FT.-LBS (203 NM) ON PUMP MOUNTING BRACKET (5) ONTO SUBFRAME (4).
 4. AFTER PROPER ALIGNMENT HAS BEEN ACHIEVED, DRILL TWO 3/8 IN. (9.6MM) DIAMETER HOLES THROUGH PUMP MOUNTING BRACKET (5) AND THRU MOUNTING PLATE ON SUBFRAME (4). USE THE EXISTING TWO ROLL PINS (37) INTO THE HOLES.
 5. DISASSEMBLE AXIAL ALIGNMENT TOOL FROM THE CRANKSHAFT PULLEY.
 6. DISASSEMBLE COUPLING ADAPTER (8) FROM PUMP MOUNTING BRACKET (5).
 7. INSTALL RADIAL ALIGNMENT TOOL ONTO PUMP MOUNTING BRACKET (5) USING THE RADIAL ALIGNMENT TOOL TO ESTABLISH THE APPROPRIATE CONCENTRICITY OF PUMP INPUT SHAFT AND CRANKSHAFT CENTERLINE.
 8. TIGHTEN BOLTS (17) HOLDING ADAPTER PLATE (6) ONTO PUMP MOUNTING BRACKET (5). DRILL TWO 3/8 IN. (9.6MM) DIAMETER HOLES THRU ADAPTER PLATE (6) AND PUMP MOUNTING BRACKET (5) USING THE EXISTING 5/16 IN. (7.9MM) DIAMETER HOLES ALREADY IN ADAPTER BRACKET (5) AS A GUIDE.
 9. DISASSEMBLE ALIGNMENT TOOL FROM CRANKSHAFT PULLEY.
 10. DISASSEMBLE ADAPTER PLATE (6) FROM PUMP MOUNTING BRACKET (5).
 11. ASSEMBLE COUPLING ADAPTER (8) BACK ONTO THE PULLEY. TORQUE BOLTS TO 348 IN.-LBS (39NM). MEASURE THE DISTANCE "A-A" FROM THE FRONT FACE OF THE CRANKSHAFT ADAPTER PLATE (8) TO THE FRONT FACE OF THE PUMP MOUNTING BRACKET (5).
 12. INSTALL ADAPTER PLATE (6) ONTO HYDRAULIC PUMP (3), THEN INSTALL COUPLING (7) ONTO PUMP INPUT SHAFT.
 13. AFTER THE DRIVE COUPLING (7) IS INSTALLED ON THE PUMP INPUT SHAFT, MEASURE "B-B" FROM THE ENGINE END OF THE COUPLING TO THE ENGINE END OF THE ADAPTER PLATE (6). "B-B" SHOULD BE EQUAL TO OR SLIGHTLY LESS THAN THE DISTANCE "A-A", THAT WILL ENSURE THAT THE COUPLING CLEARANCE WILL BE AT LEAST .005/.015 IN. (.127/.381MM) WHEN EVERYTHING IS ASSEMBLED.
 14. ESTABLISH AXIAL LOCATION OF PUMP COUPLING (7) ON PUMP INPUT SHAFT. SNUG TAPERED BUSHING CAPSCREWS DOWN ENOUGH TO MAINTAIN AXIAL LOCATION.
 15. GRADUALLY TIGHTEN TAPERLOCK CAPSCREWS IN A CRISS-CROSS PATTERN.
 16. INSTALL FOUR (4) IN.-LBS SCREWS (PART OF 7) ONTO COUPLING ADAPTER (8). TORQUE TO 150 FT.-LBS (203 NM) (DO NOT USE LOCTITE ADHESIVE ON THE AXIAL SCREWS).
 17. INSTALL HYDRAULIC PUMP (3), ADAPTER PLATE (6), & DRIVE COUPLING (7) ONTO PUMP MOUNTING BRACKET (5).
 18. RE-CHECK GAP BETWEEN DRIVE COUPLING (7) AND COUPLING ADAPTER (8).
 19. IF THE GAP IS NOT WITHIN THE SPECIFIED RANGE, RE-DO ABOVE INSTRUCTIONS.
 20. IF THE GAP IS WITHIN THE SPECIFIED RANGE, INSTALL TWO ROLL PINS (37) INTO THE 3/8 IN. (9.6MM) HOLES TO SECURE ALIGNMENT OF ADAPTER PLATE (6) WITH PUMP MOUNTING BRACKET (5).
 21. TIGHTEN BOLTS FOR ADAPTER PLATE (6) ONTO PUMP MOUNTING BRACKET (5). TORQUE TO 150 FT.-LBS (203NM).



COMPRESSOR COUPLING DETAIL

SCALE : 1/2

- COMPRESSOR COUPLING MOUNTING INSTRUCTIONS
- 1) MEASURE DEPTH OF ENGINE FLYWHEEL COUNTERBORE FROM FACE OF ENGINE FLYWHEEL HOUSING (DIM "A"). DIM "A" EQUALS APPROXIMATELY 1.560".
 - 2) INSTALL COMPRESSOR COUPLING ASSEMBLY ONTO COMPRESSOR INPUT SHAFT SO THE DIMENSION FROM FRONT FACE OF COUPLING TO FACE OF COMPRESSOR MOUNTING FLANGE EQUALS DIM "A" ± .010". TIGHTEN BUSHING SET SCREW.
 - 3) CHECK TOTAL CRANKSHAFT ENDPLAY. .005 - .022" IS ACCEPTABLE.

POWER PACK ASSEMBLY
(For Parts List, refer to Page 7.0-3)

POWER PACK ASSEMBLY
(For Illustration of parts, refer to Pages 7.0-1 & 7.0-2)

REF.

NO. PART NO. QTY. PART NAME

REMARKS

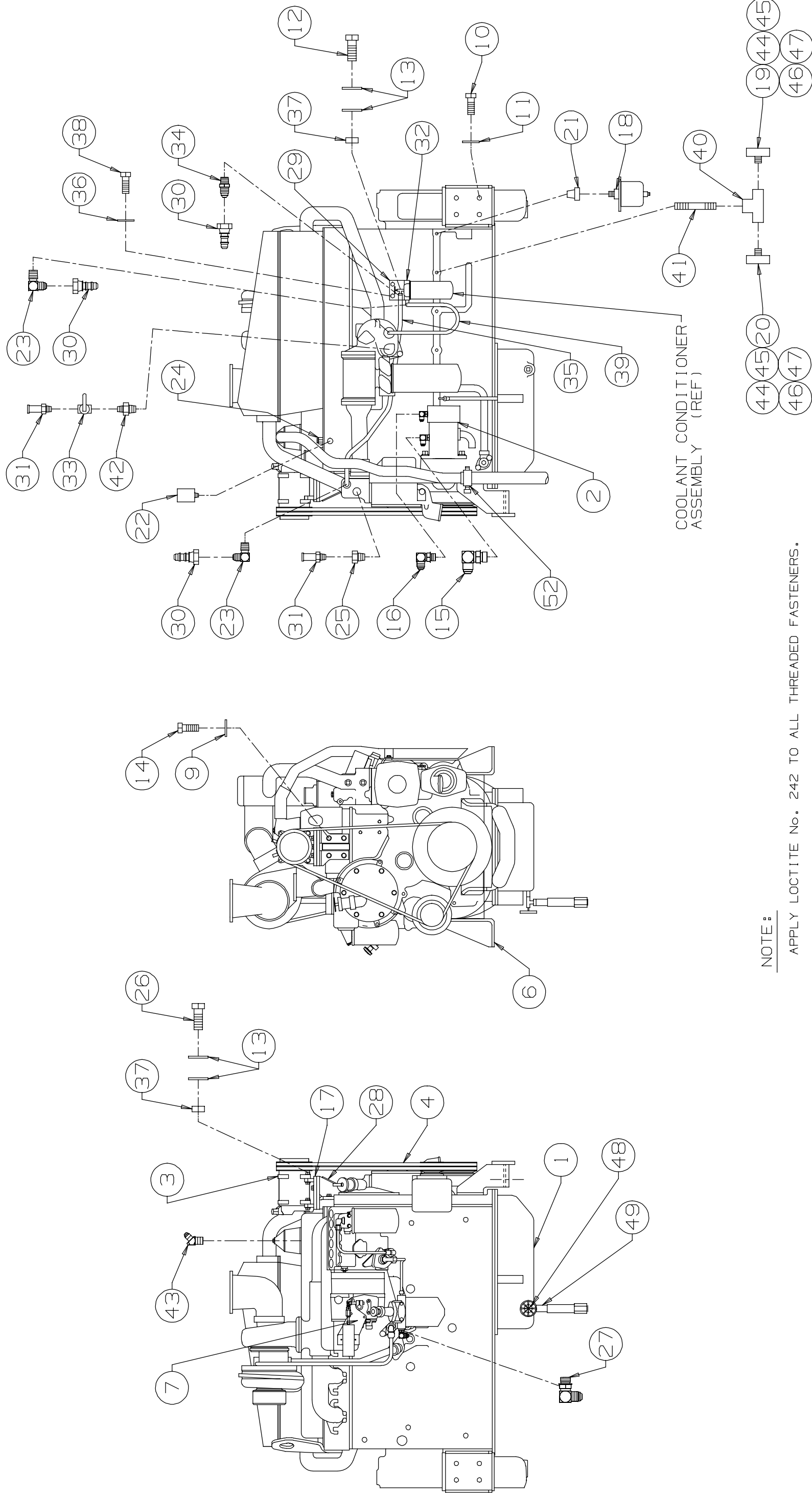
51728467		POWER PACK ASSEMBLY	
1	52130069	1	ASSEMBLY, ENGINE <i>REFER TO PAGE 7.0-5</i>
2	51782225	1	ASSEMBLY, AIR END <i>REFER TO PL6164, SECTION 8.1</i>
3	51989705	1	PUMP, MAIN HYDRAULIC <i>REFER TO PL6164, SECTION 9.0</i>
4	52134954	1	SUBFRAME, ENGINE/COMPRESSOR
5	51728376	1	BRACKET, PUMP MOUNT
6	51862431	1	PLATE, ADAPTER
7	51608495	1	COUPLING, DRIVE
8	51607786	1	ADAPTER, COUPLING
9	95055349	6	CAPSCREW
10	95096152	6	LOCKWASHER
11	51609584	16	ISOLATOR, REAR
12	51609592	16	WASHER, ISOLATOR MOUNT
13	95983318	8	CAPSCREW
14	52080736	8	WASHER
15	95955886	8	LOCKNUT
16	52132040	1	GUARD, ENGINE BELT
17	51862456	1	KEY, STEPPED
18	96702576	4	WASHER
19	96704275	4	NUT, HEX
20	50790427	10	BOLT
21	96700968	10	WASHER, FLAT
22	95388575	12	CAPSCREW
23	95264545	12	WASHER
24	35834795	1	COUPLING, FLYWHEEL DRIVE
25	52106796	1	BUSHING
26	95818837	8	CAPSCREW
27	95064689	8	WASHER
28	51728392	1	SHIM PACK, AIREND
29	96703087	4	CAPSCREW
30	96700976	12	WASHER, FLAT
31	95101770	1	CAPSCREW
32	52308855	1	WASHER, TAB
33	95679031	1	ELBOW
34	95653614	1	ELBOW

(CONTINUED)

POWER PACK ASSEMBLY (cont.)
(For Illustration of parts, refer to Pages 7.0-1 & 7.0-2)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
51728467			POWER PACK ASSEMBLY (cont.)	
37	95098695	4	PIN, ROLL	
38	96700208	4	SCREW, HEX HEAD	
39	96703665	4	NUT, HEX	
40	96712146	4	CAPSCREW	
41	96700836	4	WASHER	
42	52132057	1	FOOT, BELT GUARD MOUNTING	
43	52132131	1	PLATE, STIFFENER	
44	96702774	5	CAPSCREW	
45	96704333	6	NUT, HEX. LOCKNUT	
46	96702410	2	CAPSCREW	
47	52130101	1	ASSEMBLY, PUMP SUCTION HOSE	



NOTE:
 APPLY LOCTITE No. 242 TO ALL THREADED FASTENERS.

ENGINE ASSEMBLY
 (For Parts List, refer to Page 7.0-6)

ENGINE ASSEMBLY
(For Illustration of parts, refer to Page 7.0-5)

REF.

NO.	PART NO.	QTY.	PART NAME
			REMARKS

			52130069 ENGINE ASSEMBLY
1	52080447	1	ENGINE, DIESEL
2	52130051	1	PUMP, HYDRAULIC, TANDEM <i>REFER TO PAGE 7.0-12</i>
3	52080645	1	COMPRESSOR, A/C
4	51607810	2	V-BELT
			<hr/>
6	51728384	2	MOUNT, ENGINE
7	52130002	1	ASSEMBLY, GOVERNOR CONTROL <i>REFER TO PAGE 7.0-8</i>
8	95297602	2	CAPSCREW
9	95064697	6	WASHER
			<hr/>
10	95571741	8	CAPSCREW
11	95064705	8	WASHER
12	96702410	2	CAPSCREW
13	96700836	12	WASHER
14	95462750	4	CAPSCREW
			<hr/>
15	95280194	1	ELBOW
16	95330692	1	ELBOW
18	51607414	1	SENDER, OIL
19	51618353	1	SWITCH, OIL PRESSURE
20	51617421	1	SWITCH, OIL
			<hr/>
21	95037784	1	BUSHING, REDUCING
22	51607430	1	SENDER, TEMPERATURE
23	95279493	3	ELBOW
24	51618494	1	SWITCH, TEMPERATURE
25	95056032	1	BUSHING, REDUCING
			<hr/>
26	96719794	4	CAPSCREW
27	95303335	1	ADAPTER
28	52134517	1	BRACKET, A/C COMPRESSOR
29	51713428	1	PLATE, COOLANT CONDITIONER FILTER MOUNTING
30	51713451	4	FITTING, SOCKETLESS
			<hr/>
31	51713436	2	CONNECTOR
32	95200192	2	PLUG, PIPE
33	50947357	1	VALVE, BALL
34	95219713	1	ADAPTER
35	51713444	1	HOSE, AIR
			<hr/>
36	95064689	2	WASHER
37	96701990	6	NUT, HEX
38	95430534	2	CAPSCREW

(CONTINUED)

ENGINE ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 7.0-5)

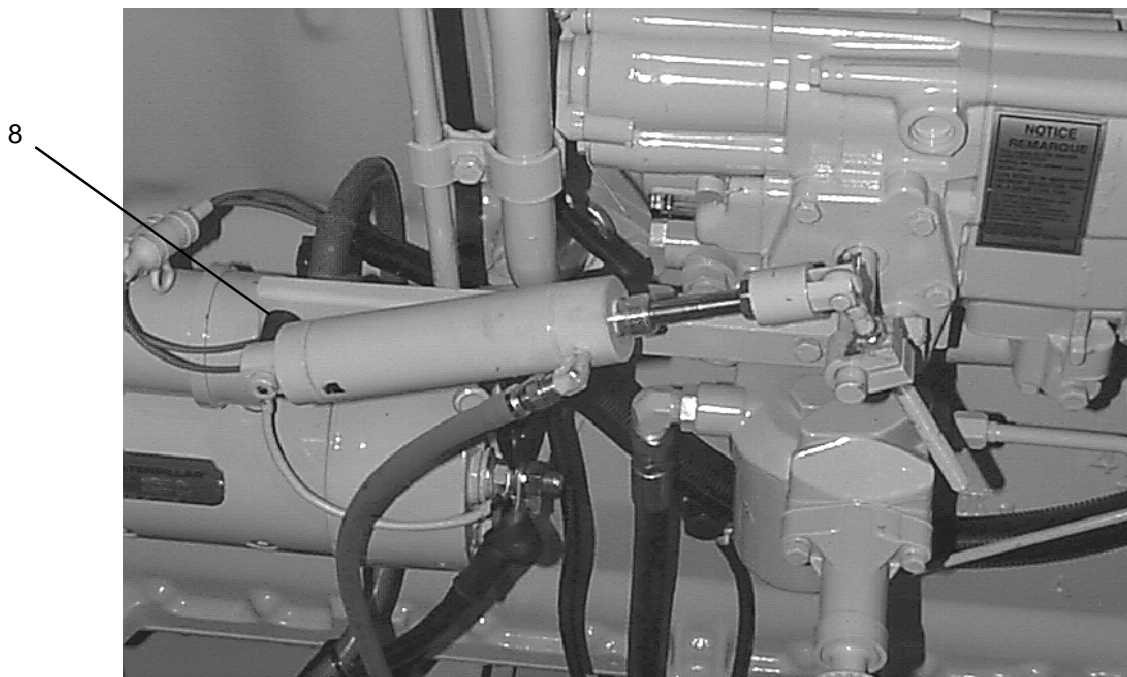
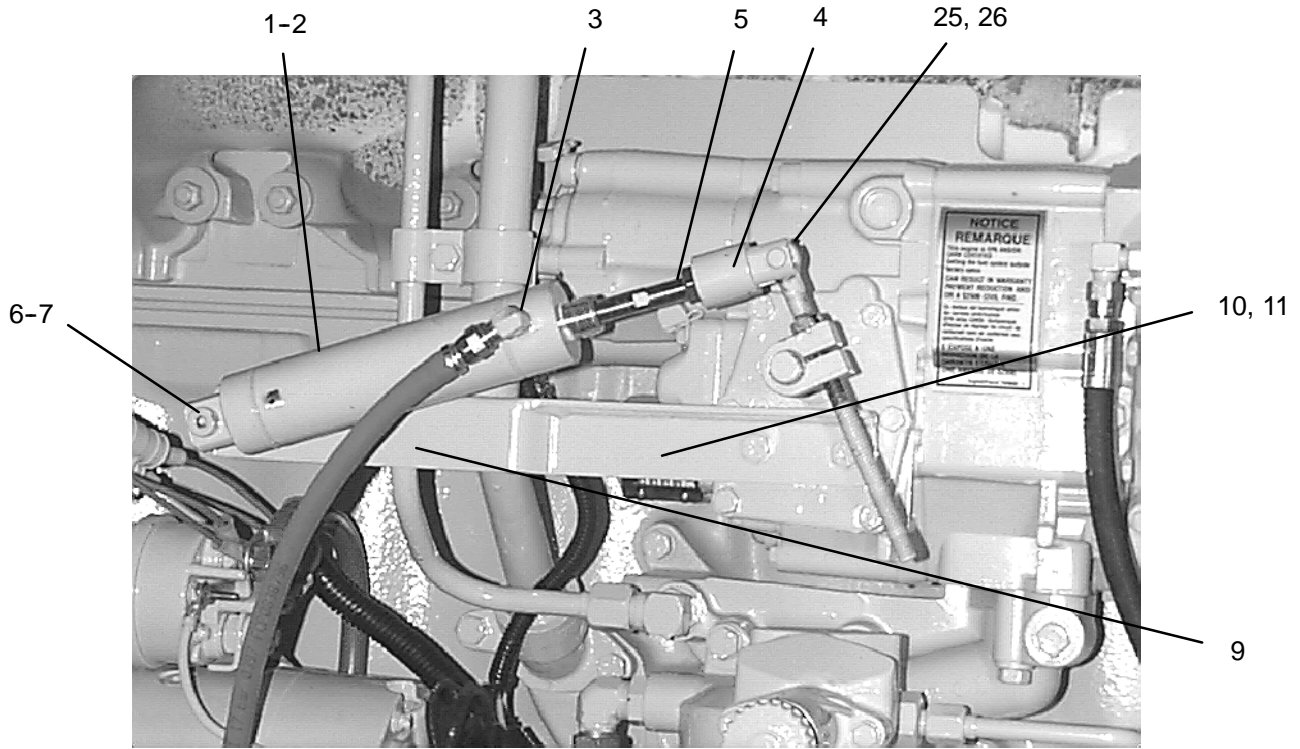
REF.

NO. PART NO. QTY. PART NAME
REMARKS

52130069		ENGINE ASSEMBLY (cont.)	
39	51776235	1	HOSE, AIR
40	95003620	1	TEE, REDUCING
41	95407631	1	NIPPLE
42	95323358	1	PIPE, MALE
43	95302170	1	ELBOW

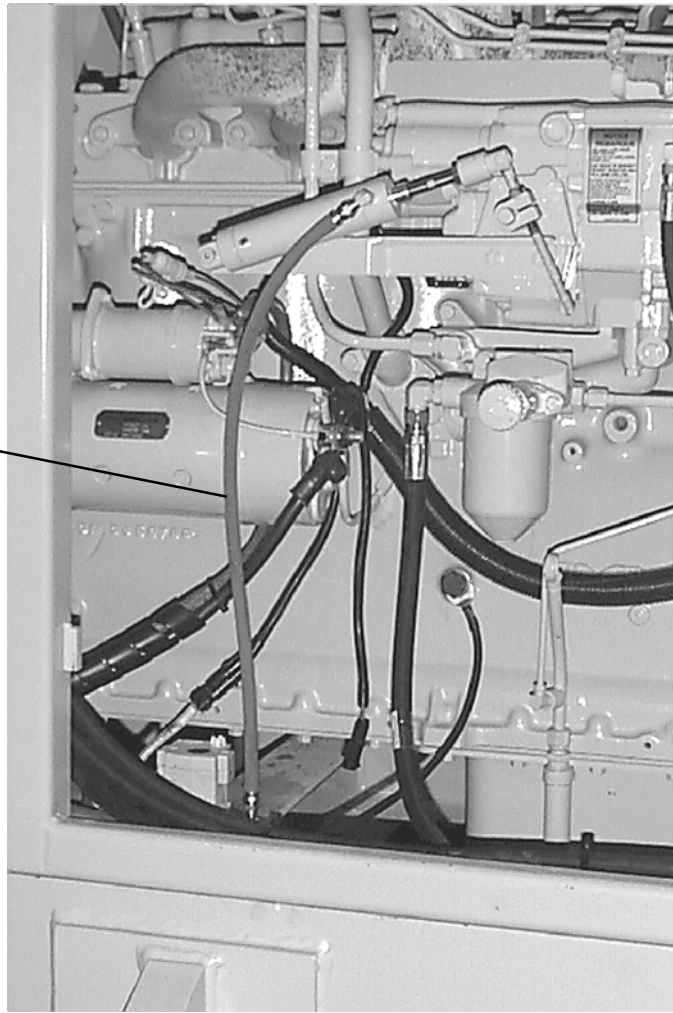
44	51722668	4	SEAL
45	51722650	4	SLEEVE
46	51791846	2	CONNECTOR
47	51919488	16	ELECTRICAL WIRE LOOM,1/4 IN.
48	52113982	1	VALVE, OIL DRAIN
49	52113990	1	ASSEMBLY, OIL DRAIN HOSE

50	95037784	1	BUSHING, REDUCING
52	52136934	1	KIT, ENGINE CRANKCASE VENTILATION HOSE



**GOVERNOR CONTROL ASSEMBLY
(For Parts List, refer to Page 7.0-11)**

21, 22



12, 13, 20

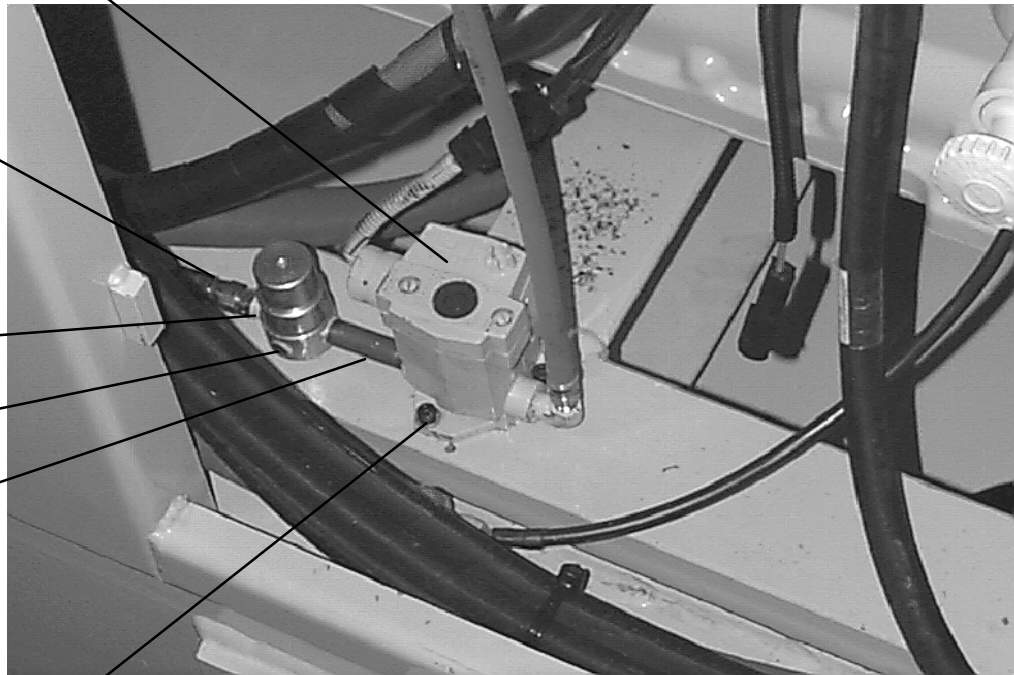
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16

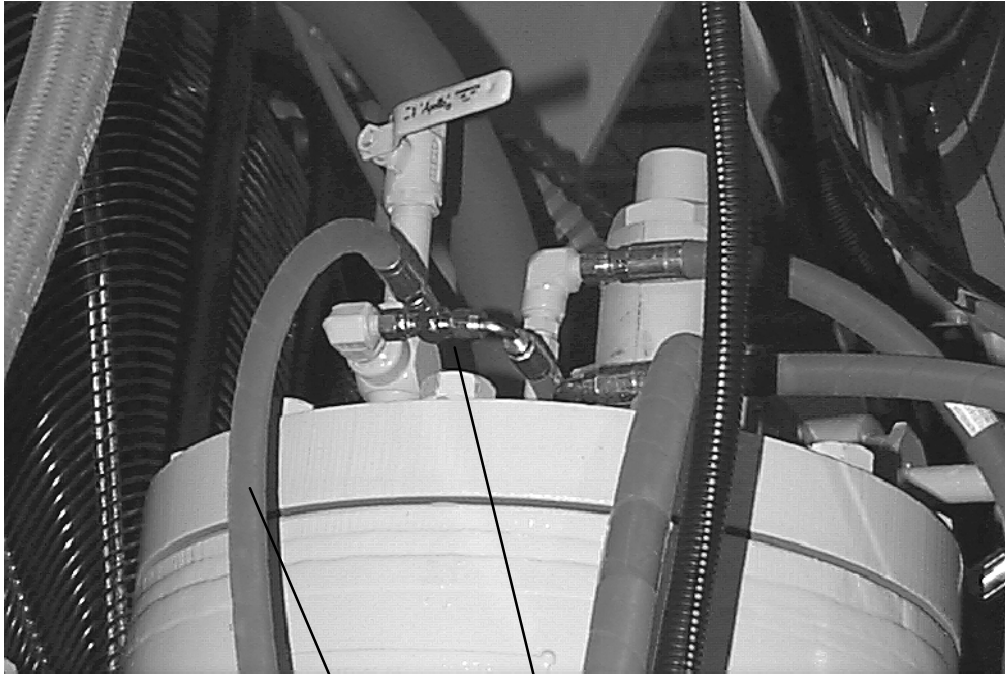
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14

18, 19



GOVERNOR CONTROL ASSEMBLY
(For Parts List, refer to Page 7.0-11)



23

24

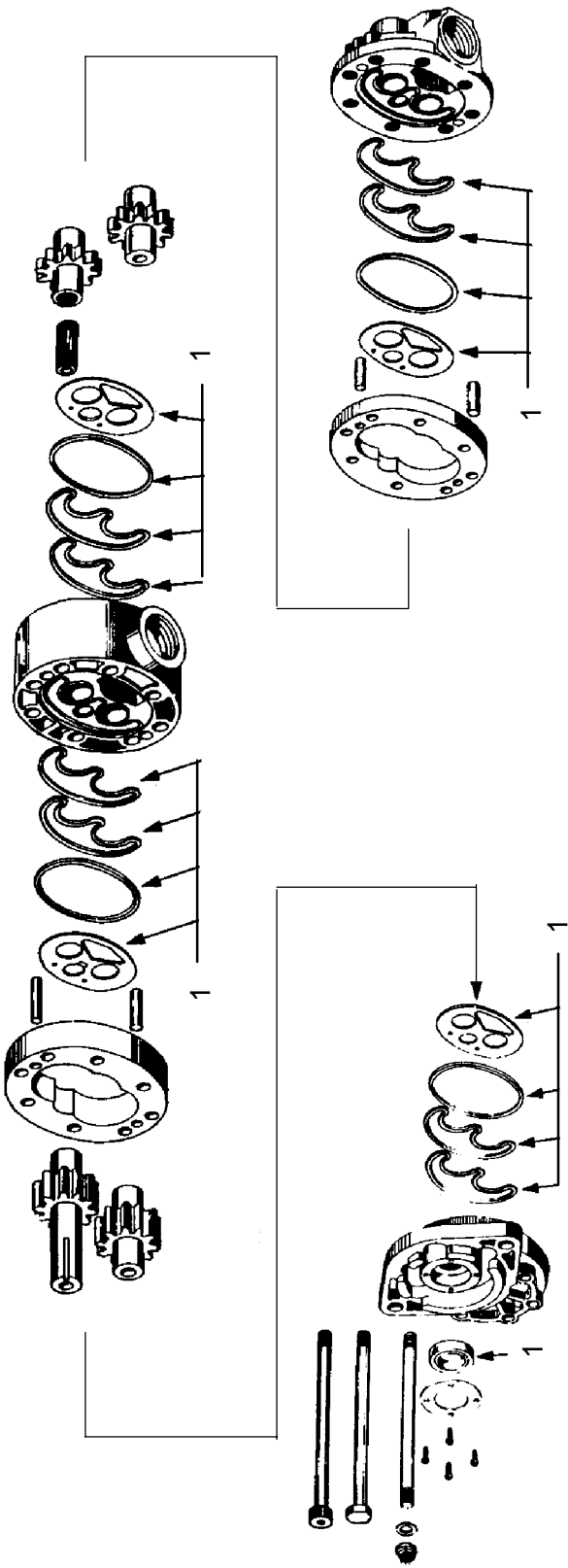
GOVERNOR CONTROL ASSEMBLY
(For Parts List, refer to Page 7.0-11)

GOVERNOR CONTROL ASSEMBLY
 (For Illustration of parts, refer to Pages 7.0-8 thru 7.0-10)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

52130002		GOVERNOR CONTROL ASSEMBLY	
1	35584689	1	CYLINDER, AIR
2	35288885	1	BUSHING, SLEEVE
3	95209086	1	ELBOW
4	52126307	1	CLEVIS, THROTTLE CONTROL
5	95245288	1	NUT, JAM
6	95648564	1	SCREW, SHOULDER
7	95285235	1	NUT, LOCK
8	52130010	1	SPACER
9	52298668	1	BRACKET, GOVERNOR CONTROL
10	95920609	6	CAPSCREW
11	95234464	6	WASHER
12	51620318	1	ASSEMBLY, SOLENOID VALVE
	51790244	1	.ASSEMBLY, CONDUIT SEAL
	51790251	1	.ASSEMBLY, COIL
	51790236	1	.KIT, BODY
13	03692076	1	PLUG, VENT
14	95048971	1	NIPPLE, PIPE
15	52130028	1	REGULATOR, AIR
16	95341673	1	ELBOW
17	95263380	1	ADAPTER
18	96714472	2	CAPSCREW
19	96701289	2	WASHER
20	51919488	4	ELECTRICAL WIRE LOOM, 1/4 IN.
21	51730281	1	HOSE
22	95302543	2	SWIVEL
23	51918472	1	ASSEMBLY, HOSE
24	95473443	1	TEE
25	52130036	1	PIN, CLEVIS
26	95002739	1	PIN, COTTER



REF. NO.	PART NO.	QTY.	PART NAME	REMARKS
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	52130051		HYDRAULIC TANDEM PUMP	
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1	52293115	1	.KIT, SEAL	
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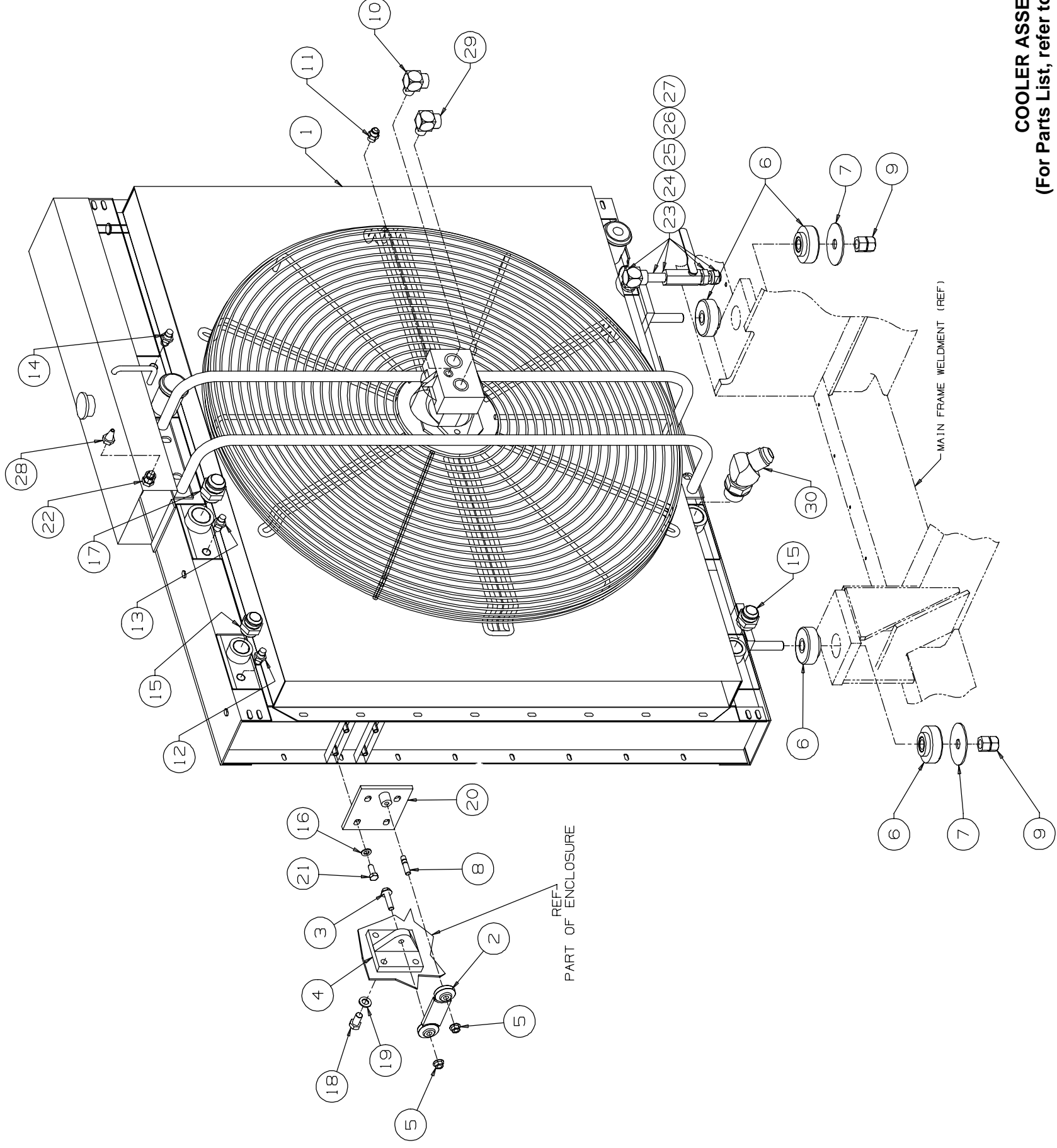
THESE FITTINGS FURNISHED WITH ENGINE ASSEMBLY.
(REFER TO SECTION 13.1.1-1)



COOLER ASSEMBLY

Revision 1
April 2, 1999

Section 7.1



COOLER ASSEMBLY
(For Parts List, refer to Page 7.1-2)

COOLER ASSEMBLY
(For Illustration of parts, refer to Page 7.1-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

51782316 COOLER ASSEMBLY

1	52289337	1	PACKAGE, COOLER <i>REFER TO PAGE 7.1-3</i>
2	52116761	2	ASSEMBLY, STRUT
3	96727185	2	BOLT
4	52282969	2	MOUNT, COOLER
5	96727730	4	NUT

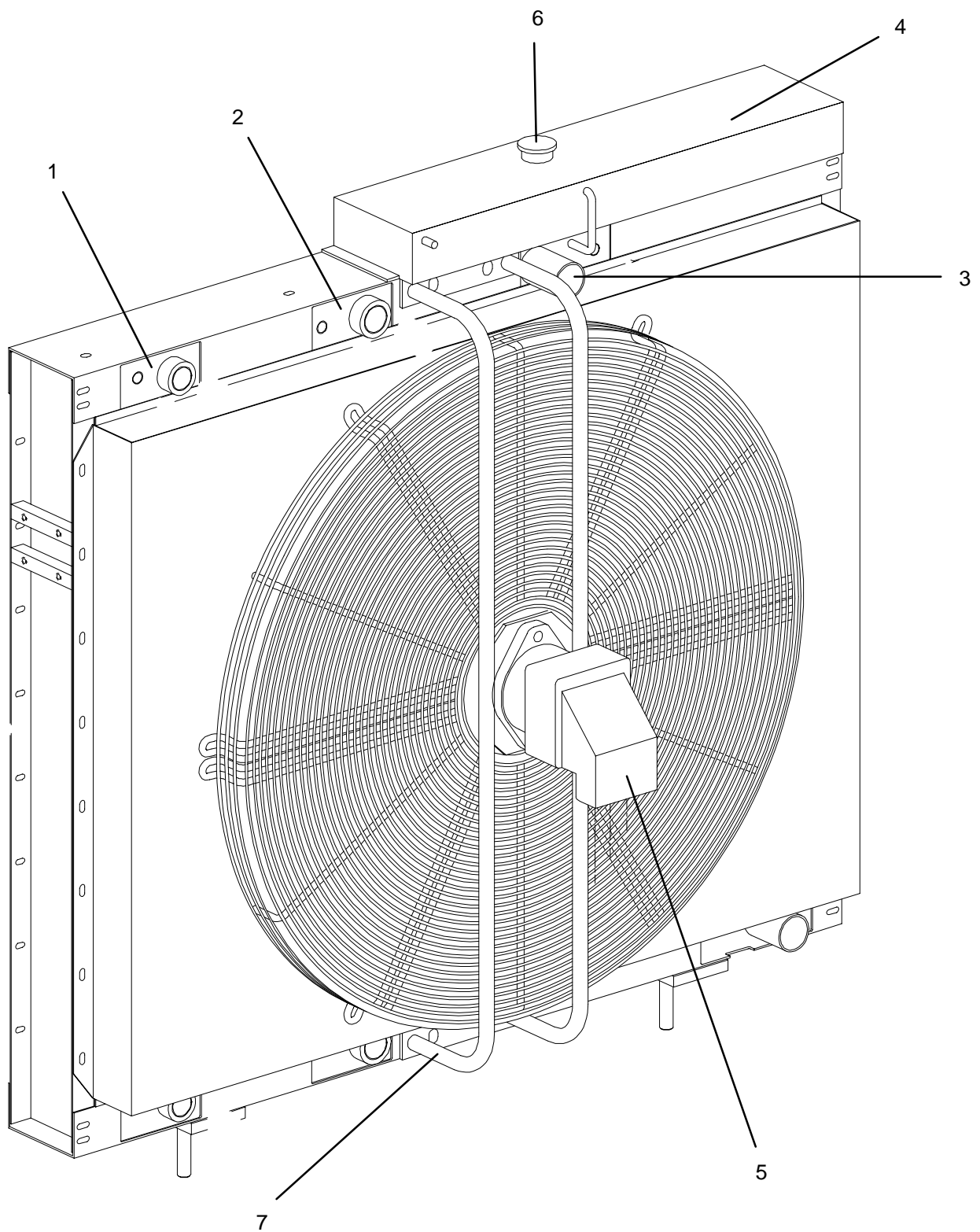
6	51609741	4	ISOLATOR, FRONT
7	51609592	2	WASHER
8	96727037	2	STUD
9	51782308	2	LOCKNUT
10	95376133	1	ADAPTER

11	95372173	1	ADAPTER
12	51619849	1	SWITCH, TEMPERATURE
13	51619856	1	SWITCH, HYDRAULIC
14	51619823	1	SWITCH, ENGINE
15	95356986	2	ADAPTER

16	96700844	8	WASHER
17	95310116	8	ADAPTER
18	96703079	8	CAPSCREW
19	96700968	8	WASHER, FLAT
20	52282977	2	MOUNT, COOLER

21	96714860	8	NUT, LOCK
22	95287629	1	ADAPTER
23	95644241	1	ELBOW
24	95315214	1	PIPE, MALE
25	50947357	1	VALVE, BALL

26	95219721	1	ADAPTER
27	50996313	1	NUT, CAP
28	95268215	1	SWIVEL
39	95280194	1	ELBOW
30	95003133	1	ELBOW



Cooler Package
(For Parts List, refer to Page 7.1-5)

COOLER PACKAGE
(For Illustration of parts, refer to Page 7.1-4)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
------------	-----------------	-------------	------------------	----------------

	52289337		COOLER PACKAGE	
1	51941953	1	COOLER, COMPRESSOR OIL	
2	51941961	1	COOLER, HYDRAULIC OIL	
3	52286721	1	RADIATOR, ENGINE	
4	51941847	1	TANK, SURGE	
<hr/>				
5	51999613	1	MOTOR, HYDRAULIC	
6	51792323	1	CAP, RADIATOR	
7	52095395	1	FAN, COOLER	
#	52126505	1	BUSHING, TAPERLOCK (1 INCH)	(REMOVE EXISTING BUSHING AND REPLACE WITH TAPERLOCK)
10	52123270	1	MOUNT, FAN MOTOR	
*	52127115	1	SHROUD	

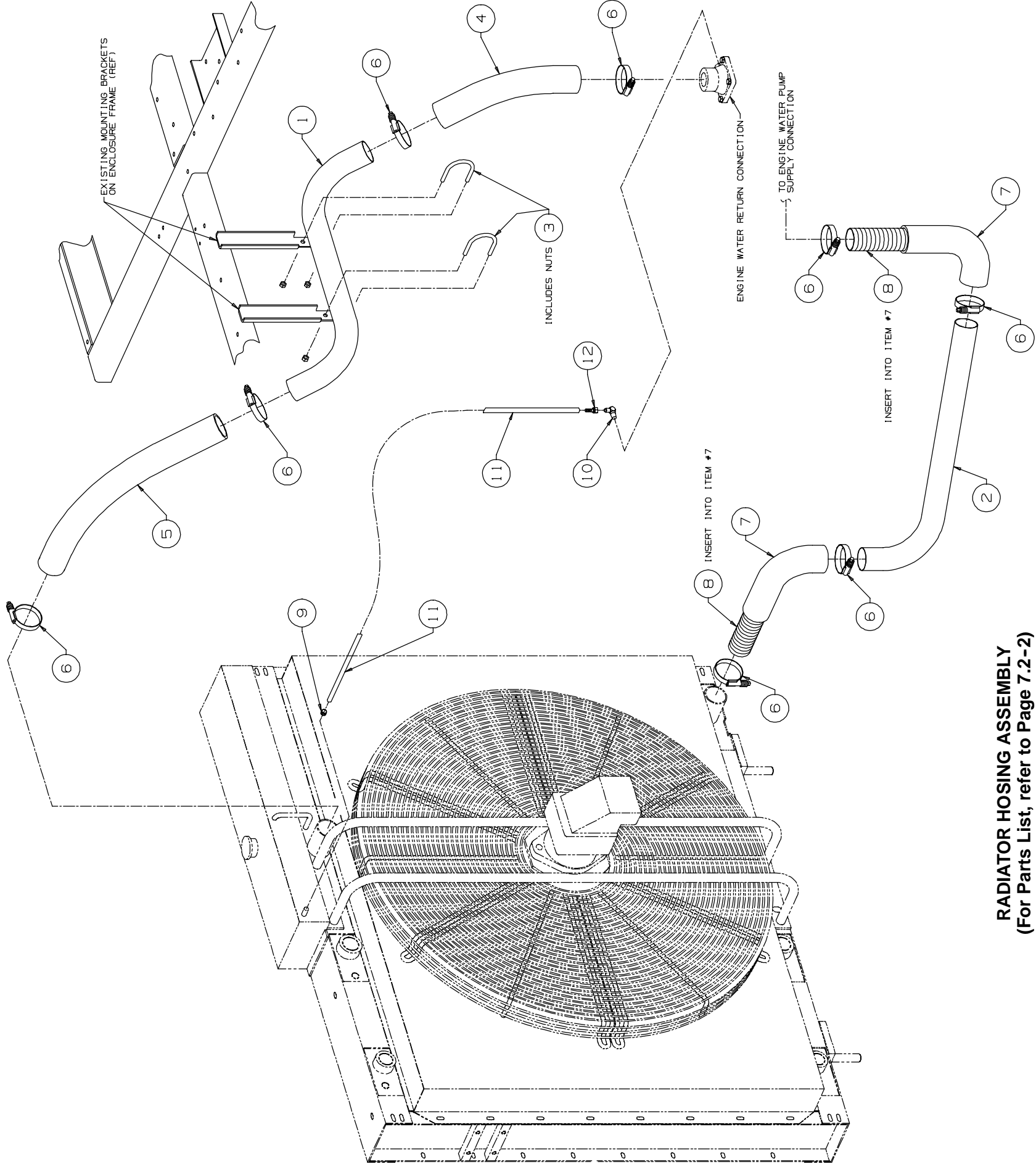
* **NOTE:** THIS PART IS NOT ILLUSTRATED.

NOTE: ORDER 54416466 TAPERLOCK BUSHING FOR 1-1/4 INCH SHAFT.

RADIATOR HOISING ASSEMBLY

January 15, 1999

Section 7.2



RADIATOR HOISING ASSEMBLY
(For Parts List, refer to Page 7.2-2)

RADIATOR HOISING ASSEMBLY
(For Illustration of parts, refer to Page 7.2-1)

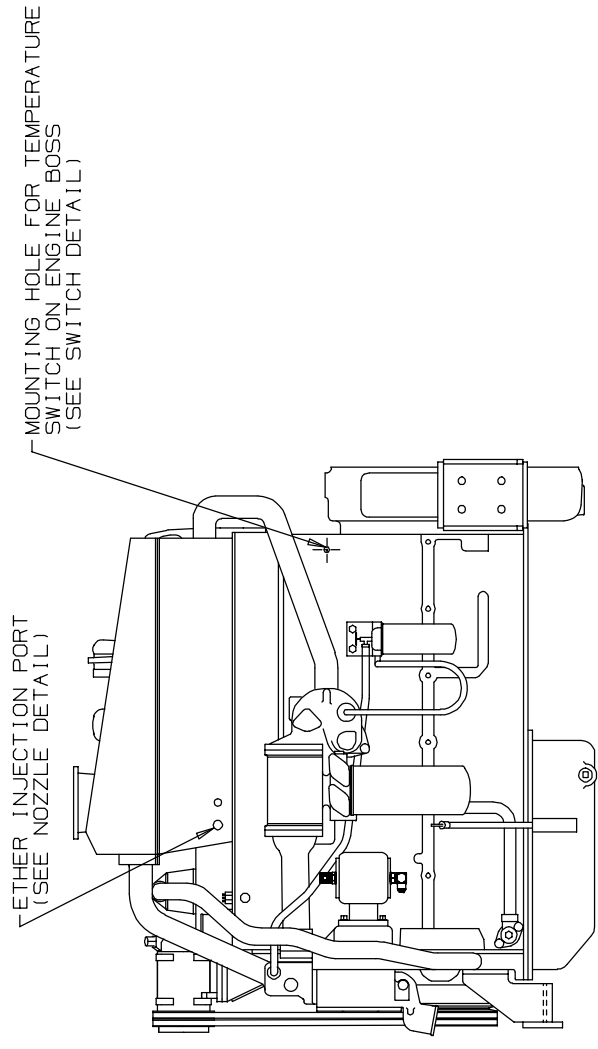
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	51869949		RADIATOR HOISING ASSEMBLY	
1	51869956	1	TUBE, RADIATOR, TOP	
2	51869964	1	TUBE, RADIATOR, BOTTOM	
3	51874220	2	U-BOLT	
4	51874238	1	HOSE, ENGINE COOLANT	
5	51874246	1	HOSE, ENGINE COOLANT	
6	51874253	8	CLAMP, HOSE	
7	51874261	2	ELBOW, ENGINE COOLANT	
8	51874279	2	COIL, INTERNAL SUPPORT	
9	95264776	1	CLAMP	
10	95293403	1	ELBOW	
11	51914380	1	HOSE	
12	95302543	1	SWIVEL	

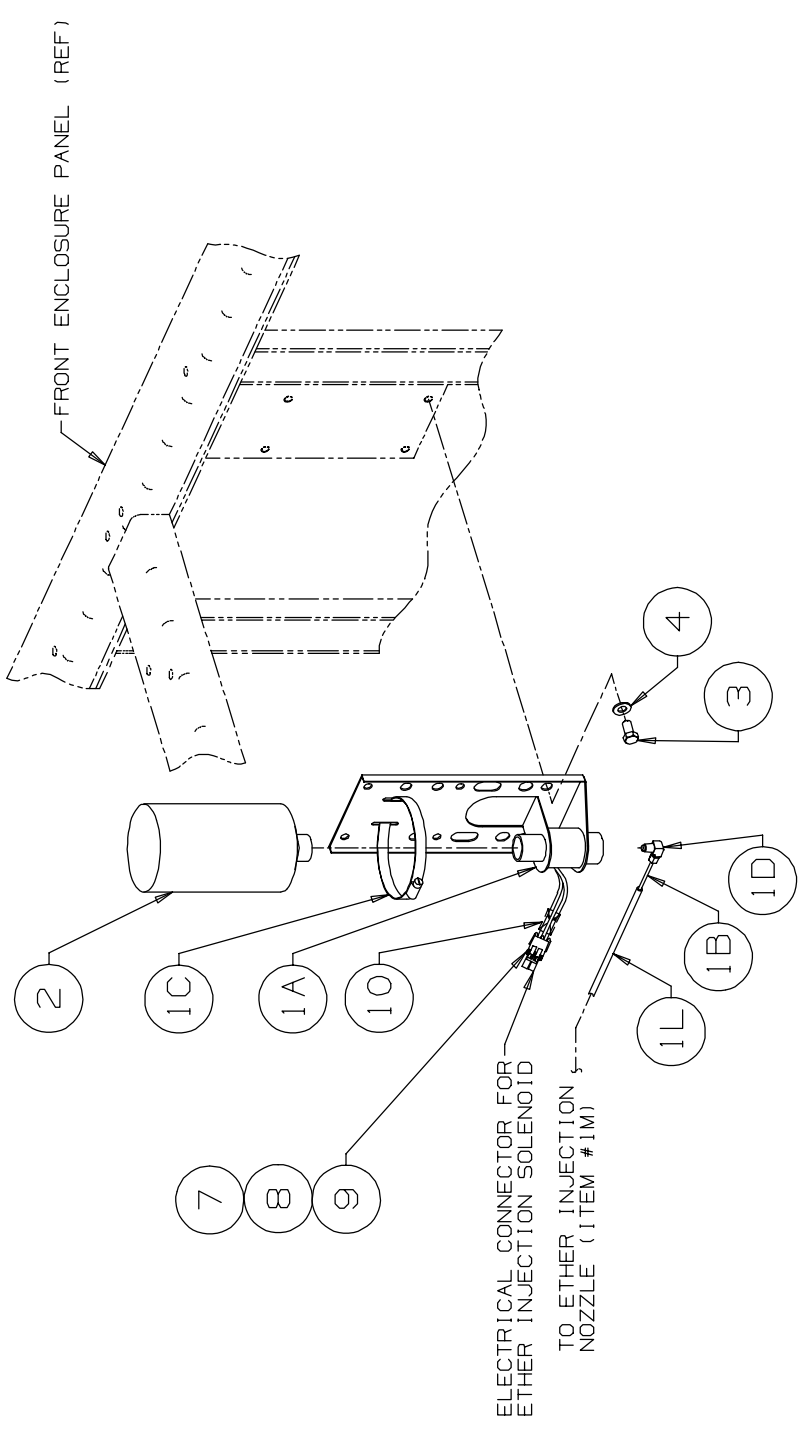
ETHER STARTING ASSEMBLY

January 15, 1999

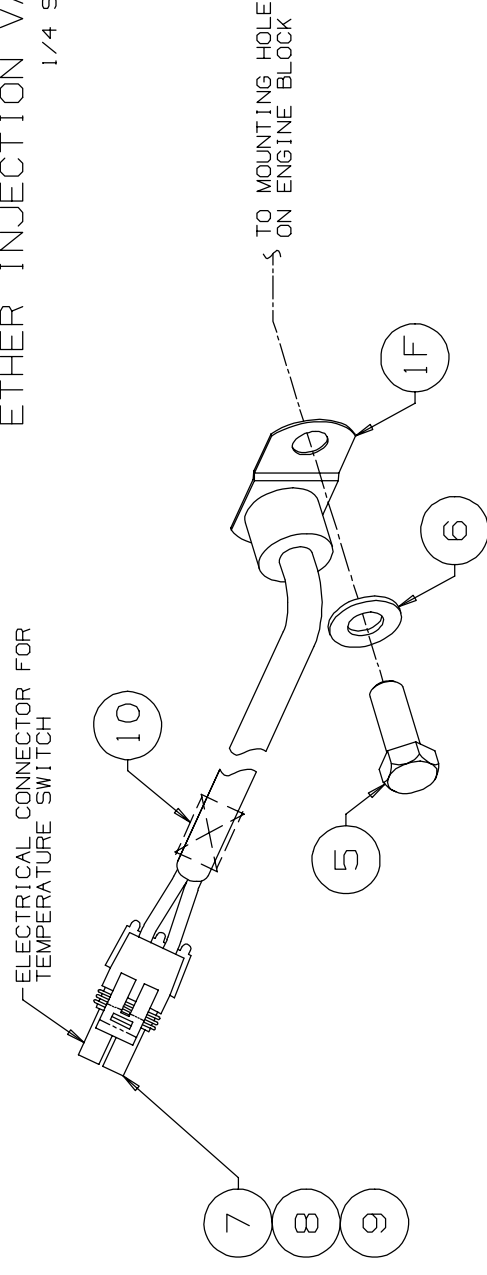
Section 7.3



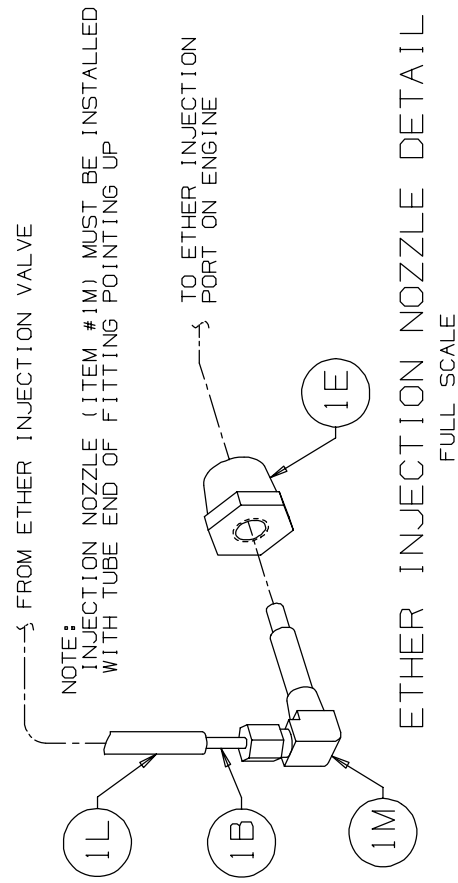
LEFT SIDE
ENGINE DETAIL
1/8 SCALE



ETHER INJECTION VALVE MOUNTING DETAIL
1/4 SCALE



TEMPERATURE SWITCH MOUNTING DETAIL
FULL SCALE



ETHER INJECTION NOZZLE DETAIL
FULL SCALE

1M	NOZZLE	220018
1L	LOOM	301591
1J	INSTRUCTION MANUAL	130533
1H	AIR FILTER LABEL	130497
1G	DASH LABEL	130492
1F	SWITCH-TEMPERATURE	301594
1E	BUSHING 1/2 X 1/8	300988
1D	"BLOCKOR" FITTING	240005
1C	CLAMP	301082
1B	TUBING	300441
1A	VALVE-INJECTION	424004
ITEM NUMBER	DESCRIPTION	VENDOR NUMBER

PARTS BREAKDOWN FOR ITEM #1

ETHER STARTING ASSEMBLY
(For Parts List, refer to Page 7.3-2)

ETHER STARTING ASSEMBLY
(For Illustration of parts, refer to Page 7.3-1)

REF.

NO.	PART NO.	QTY.	PART NAME
			REMARKS

51609030		ETHER STARTING ASSEMBLY	
1	51874345	1	KIT, ETHER INJECTION
1A	51789790	1	.VALVE, INJECTION
1B	++	1	.TUBING
1C	++	1	.CLAMP
1D	51308666	1	.BLOCKOR
1E	++	1	.BUSHING, REDUCING
1F	51914463	1	.SWITCH, TEMPERATURE
1L	++	1	.LOOM
1M	51914489	1	.NOZZLE, 90 DEGREE
2	▲	1	CYLINDER, ETHER
3	96705025	4	CAPSCREW
4	96700836	4	WASHER
5	95571949	1	CAPSCREW
6	51791457	1	WASHER ,5/16 FLAT
7	51722668	4	SEAL
8	51722650	4	SLEEVE
9	51791846	2	CONNECTOR
10	51919488	1	ELECTRICAL WIRE LOOM, 1/4 IN.

▲ **NOTE:** ORDER THIS CYLINDER DIRECTLY FROM THE MANUFACTURER: KOLD BAN INTERNATIONAL, ALGONQUIN, IL. 60102, THERE PART NUMBER IS 020020.

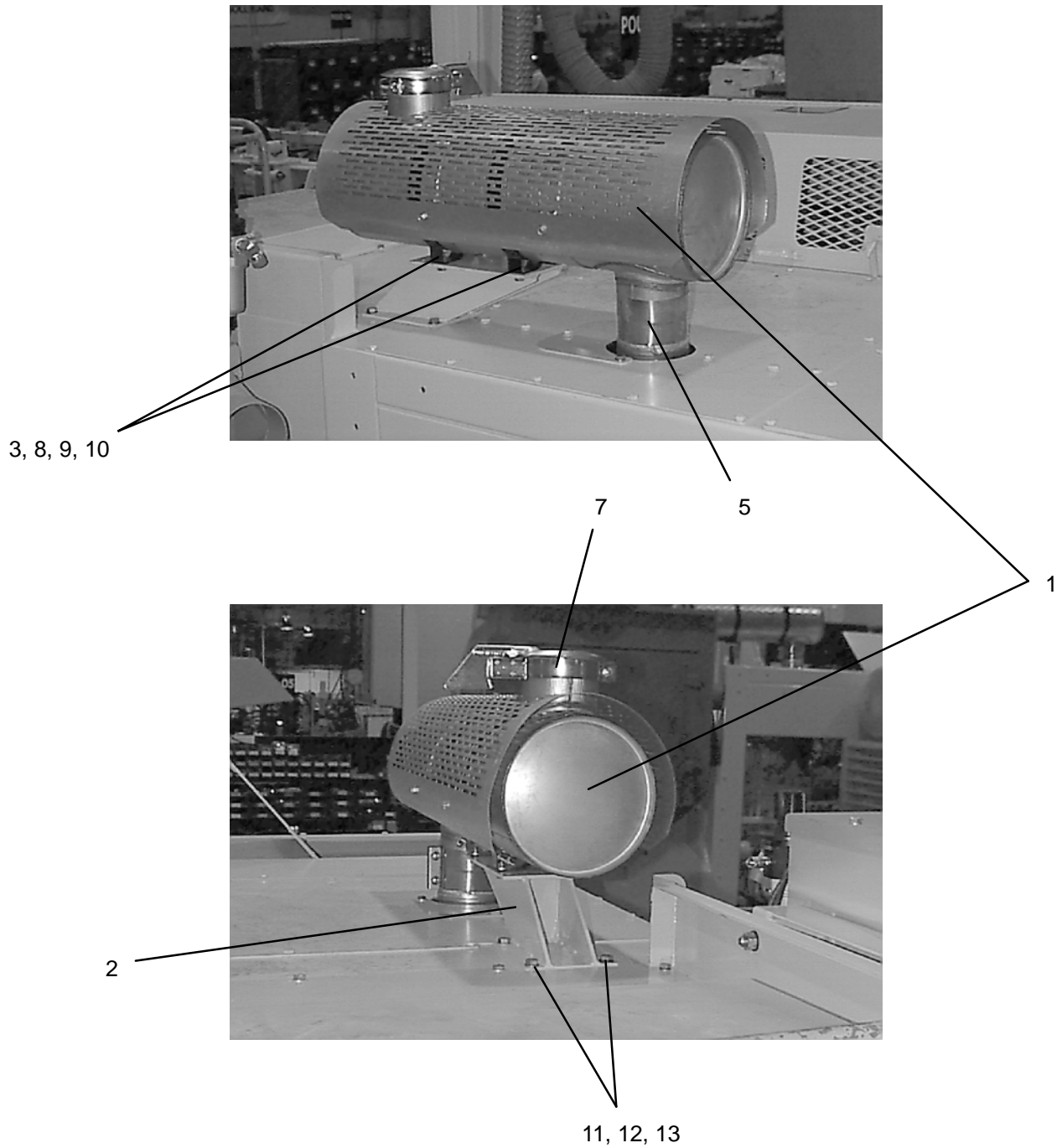
++ **NOTE:** THESE PARTS ARE NOT SOLD SEPARATELY.

ENGINE EXHAUST ASSEMBLY

January 15, 1999

Section 7.4

NOTE: HEAT SHIELD AND MUFFLER CANNOT BE ORDERED SEPARATELY.



ENGINE EXHAUST ASSEMBLY
(For Parts List, refer to Page 7.4-2)



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

52130143 ENGINE EXHAUST ASSEMBLY

1	52092491	1	MUFFLER, HEAT SHIELD	
2	52127784	1	MOUNT, MUFFLER	
3	50931955	2	STRAP, MOUNTING	
4	51728657	1	TUBING, FLEXIBLE EXHAUST	

5	51608123	2	CLAMP, SEAL	
7	51608149	1	RAIN CAP, EXHAUST	
8	96714944	4	CAPSCREW	
9	96701990	4	NUT, HEX	

10	96700836	8	WASHER	
11	96714951	4	CAPSCREW	
12	96702857	4	NUT, ,HEX	
13	96700844	8	WASHER	

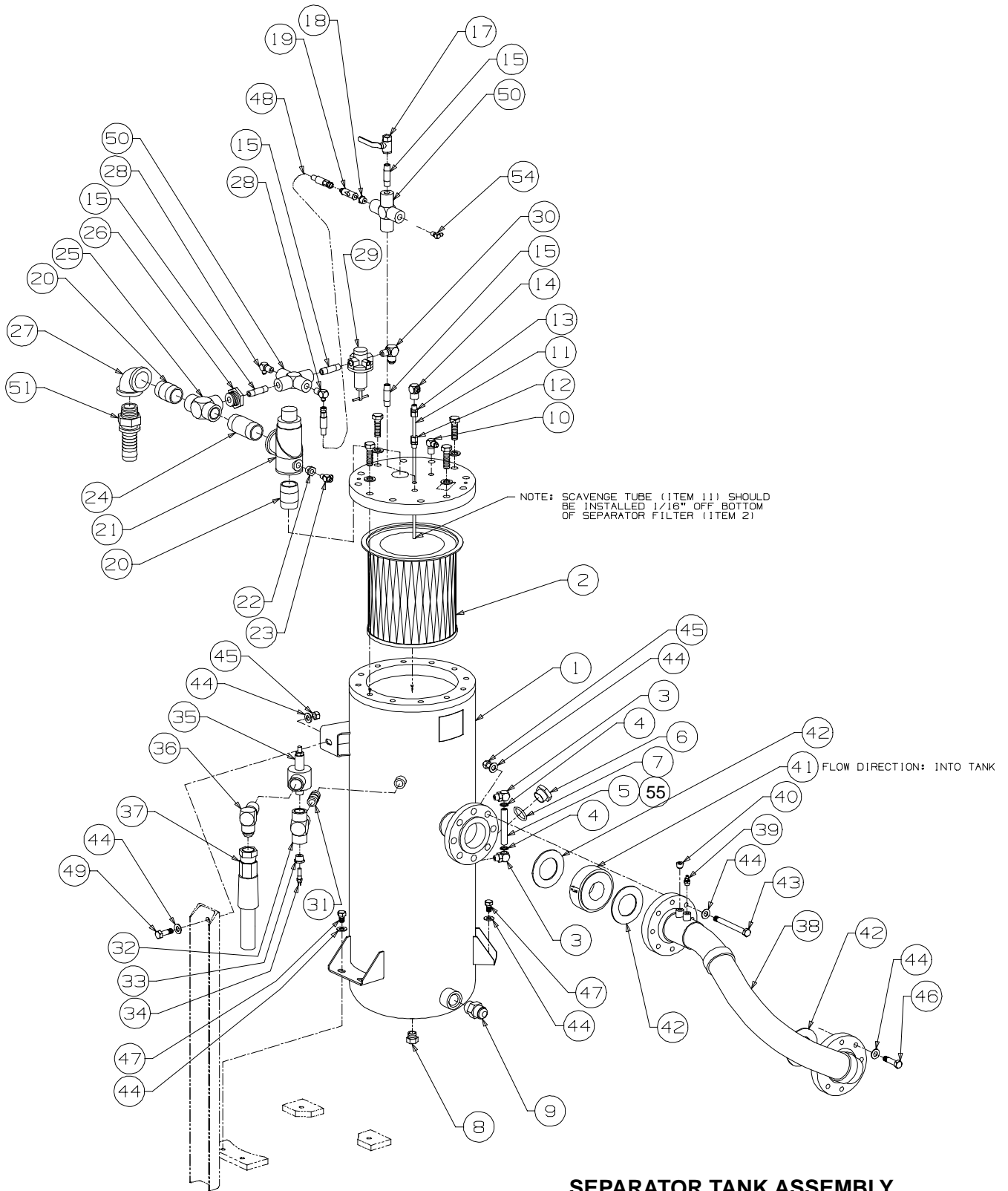
SEPARATOR TANK ASSEMBLY

Revision 1

(S/N 18069-18079)

May 17, 2001

Section 8.0



SEPARATOR TANK ASSEMBLY
(For Parts List, refer to Page 8.0-2)

SEPARATOR TANK ASSEMBLY
(For Illustration of parts, refer to Page 8.0-1)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>SERIAL</i>
				<i>REMARKS</i>	<i>NO.</i>
		51782555		SEPERATOR TANK ASSEMBLY	18069-18079
1	51782548	1		ASSEMBLY, SEPARATOR TANK	
2	35856376	1		ELEMENT, SEPARATOR	
3	35323955	2		FITTING	
4	35324649	2		GASKET	
5	92121532	1		TUBE, GAGE	
6	35579630	1		PLUG	
7	35279942	1		O-RING	
8	95280541	1		PLUG	
9	95356986	1		ADAPTER	
10	95279535	1		ELBOW	
11	51715829	1		TUBE, SCAVENGE	
12	51300895	1		FITTING	
13	51300903	1		FITTING	
14	95293379	1		ELBOW	
15	95243051	4		NIPPLE	
17	50947357	1		VALVE, BALL	
18	95037412	1		BUSHING, REDUCING	
19	50573823	1		VALVE, CHECK	
20	95097291	2		NIPPLE	
21	51728236	1		VALVE, MINIMUM PRESSURE	
22	95037347	1		BUSHING, REDUCING	
23	95730990	1		FITTING	
24	95243200	1		NIPPLE, PIPE	
25	95007969	1		TEE	
26	95038261	1		BUSHING, REDUCING	
27	95360459	1		ELBOW, REDUCING	
28	95101135	2		ADAPTER	
29	52089810	1		REGULATOR, HIGH TEMPERATURE	
30	95279543	1		ELBOW	
31	95242525	1		NIPPLE, PIPE	
32	95264974	1		TEE	
33	95037438	1		BUSHING, REDUCING	
34	36865756	1		SWITCH, THERMAL	
35	51728228	1		VALVE, SAFETY RELIEF	
36	95219861	1		ELBOW	
37	51782563	1		ASSEMBLY, HOSE	
38	51728343	1		PIPE, DISCHARGE	
39	51607430	1		SENDER, TEMPERATURE	

(CONTINUED)

SEPARATOR TANK ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 8.0-1)

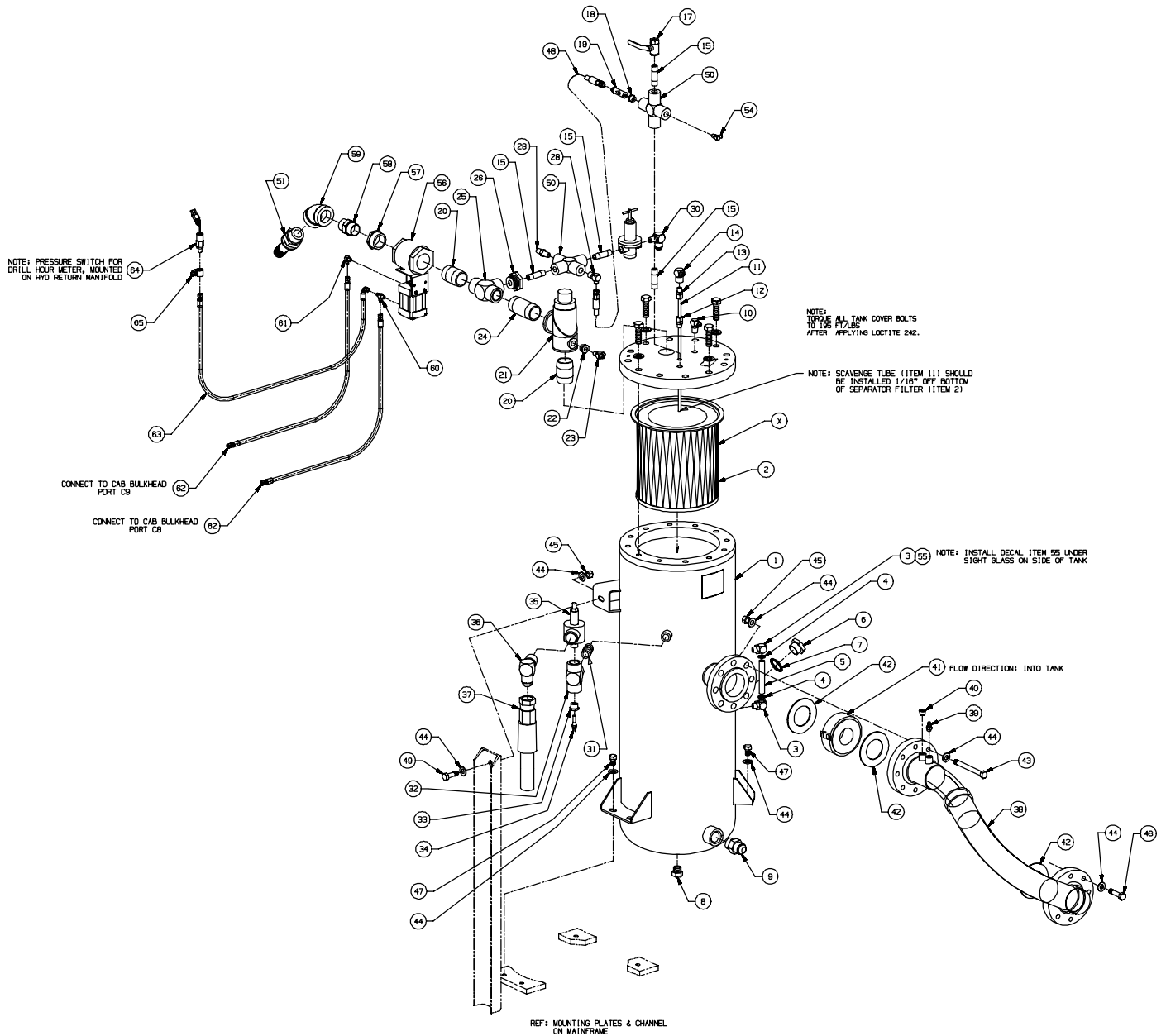
<i>REF.</i>				<i>SERIAL</i>
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>NO.</i>
			<i>REMARKS</i>	
	51782555		SEPERATOR TANK ASSEMBLY (cont.)	18069-18079
40	95344651	1	PLUG, PIPE	
41	36843720	1	VALVE, CHECK, 3 INCH	
42	95225116	3	GASKET, 3.0 IN FLANGE	
43	96703434	8	CAPSCREW	
44	96700968	30	WASHER, FLAT	
45	96703657	9	NUT, HEX	
46	96701222	8	SCREW, HEX HEAD	
47	96703426	4	CAPSCREW	
48	51909158	1	ASSEMBLY, HOSE	
49	96700216	1	SCREW, HEX HEAD	
50	95378907	2	CROSS	
51	50023886	1	STEM, HOSE	
54	95367025	1	ELBOW	
55	36512739	1	DECAL, OIL LEVEL	

SEPARATOR TANK ASSEMBLY

(S/N 18080 & ABOVE)

May 17, 2001

Section 8.0A



SEPARATOR TANK ASSEMBLY
(For Parts List, refer to Page 8.0A-2)

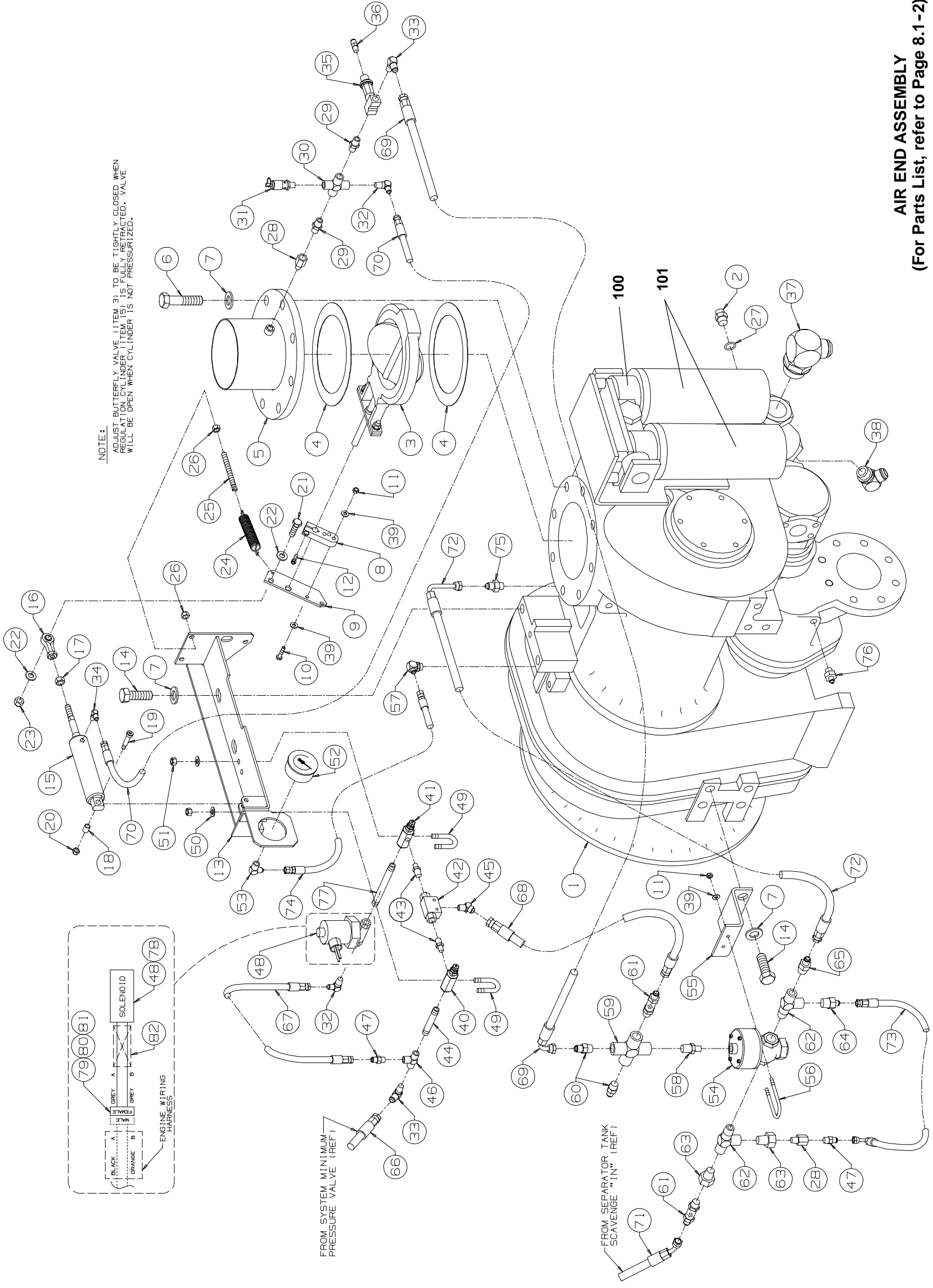
SEPARATOR TANK ASSEMBLY
(For Illustration of parts, refer to Page 8.0-1)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>SERIAL</i>
				<i>REMARKS</i>	<i>NO.</i>
		51782555		SEPERATOR TANK ASSEMBLY	18080 & ABOVE
1	51782548	1	TANK, SEPARATOR		
2	35856376	1	ELEMENT, SEPARATOR		
3	35323955	2	FITTING		
4	35324649	2	GASKET		
5	92121532	1	TUBE, GAGE		
6	35579630	1	PLUG		
7	35279942	1	O-RING		
8	95280541	1	PLUG		
9	95356986	1	ADAPTER		
10	95279535	1	ELBOW		
11	51715829	1	TUBE, SCAVENGE		
12	51300895	1	FITTING		
13	51300903	1	FITTING		
14	95293379	1	ELBOW		
15	95243051	4	NIPPLE		
17	50947357	1	VALVE, BALL		
18	95037412	1	BUSHING, REDUCING		
19	50573823	1	VALVE, CHECK		
20	95097291	2	NIPPLE		
21	51728236	1	VALVE, MINIMUM PRESSURE		
22	95037347	1	BUSHING, REDUCING		
23	95730990	1	FITTING		
24	95243200	1	NIPPLE, PIPE		
25	95007969	1	TEE		
26	95038261	1	BUSHING, REDUCING		
27	95360459	1	ELBOW, REDUCING		
28	95101135	2	ADAPTER		
29	52089810	1	REGULATOR, HIGH TEMPERATURE		
30	95279543	1	ELBOW		
31	95242525	1	NIPPLE, PIPE		
32	95264974	1	TEE		
33	95037438	1	BUSHING, REDUCING		
34	36865756	1	SWITCH, THERMAL		
35	51728228	1	VALVE, SAFETY RELIEF		
36	95219861	1	ELBOW		
37	51782563	1	ASSEMBLY, HOSE		
38	51728343	1	PIPE, DISCHARGE		
39	51607430	1	SENDER, TEMPERATURE		

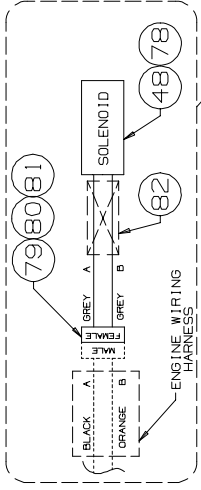
(CONTINUED)

SEPARATOR TANK ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 8.0-1)

<i>REF.</i>				<i>SERIAL</i>
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>NO.</i>
			<i>REMARKS</i>	
	51782555		SEPERATOR TANK ASSEMBLY (cont.)	18080 & ABOVE
40	95344651	1	PLUG, PIPE	
41	36843720	1	VALVE, CHECK, 3 INCH	
42	95225116	3	GASKET, 3.0 IN FLANGE	
43	96703434	8	CAPSCREW	
44	96700968	30	WASHER, FLAT	
45	96703657	9	NUT, HEX	
46	96701222	8	SCREW, HEX HEAD	
47	96703426	4	CAPSCREW	
48	51909158	1	ASSEMBLY, HOSE	
49	96700216	1	SCREW, HEX HEAD	
50	95378907	2	CROSS	
51	50023886	1	STEM, HOSE	
54	95367025	1	ELBOW	
55	36512739	1	DECAL, OIL LEVEL	
56	52288099	1	VALVE, BLOW AIR BALL	
57	95038212	1	BUSHING	
58	95365177	1	ADAPTER	
59	95230108	1	ELBOW	
60	95790622	1	TEE	
61	95293403	1	ADAPTER	
62	51060242	2	ASSEMBLY, HOSE	
63	51867208	1	ASSEMBLY, HOSE	
64	51716017	1	SWITCH, PRESSURE	
65	95654208	1	CLAMP, VINYL	



NOTE:
 ADJUST BUTTERFLY VALVE (ITEM 31) TO BE TIGHTLY CLOSED WHEN REGULATORY UNDERLINE IS NOT PRESSURIZED. VALVE WILL BE OPEN WHEN CYLINDER IS NOT PRESSURIZED.



FROM SYSTEM MINIMUM PRESSURE VALVE (REF)

FROM SEPARATOR TANK SCAVENGE "IN" (REF)

AIR END ASSEMBLY
 (For Parts List, refer to Page 8.1-2)

AIR END ASSEMBLY
(For Illustration of parts, refer to Page 8.1-1)

REF.

NO.	PART NO.	QTY.	PART NAME
			REMARKS

	51782225		AIR END ASSEMBLY
1	35086339	1	AIR END <i>REFER TO PAGE 8.1-5</i>
2	35596436	1	SWITCH, SHUT
3	35285626	1	VALVE, BUTTERFLY
4	95214524	2	GASKET, AIR INLET
5	51728665	1	FLANGE, AIR INLET

6	96701867	8	CAPSCREW
7	96700976	12	WASHER, FLAT
8	35264951	1	LEVER, CONTROL
9	35607910	1	LEVER, REGULATION
10	95105466	1	CAPSCREW

11	95467924	3	NUT
12	95067609	1	CAPSCREW
13	51873727	1	BRACKET, REGULATOR CYLINDER
14	96701875	4	CAPSCREW
15	35584689	1	CYLINDER, AIR

16	35300532	1	END, ROD
17	95245288	1	NUT
18	35288885	1	BUSHING, SLEEVE
19	95718045	1	SCREW, SHOULDER
20	95285235	1	NUT
21	95104022	1	CAPSCREW

22	95264545	2	WASHER
23	95505681	1	NUT, STOP
24	35579523	1	SPRING, EXTENSION
25	51782241	1	ROD, SPRING ADJUSTMENT
26	96701990	2	NUT, HEX
27	39404165	1	O-RING

28	51782258	2	ADAPTER, ORIFICE
29	95323457	2	NIPPLE
30	95279873	1	CROSS
31	35325133	1	VALVE, SAFETY
32	95293403	2	ELBOW
33	95209094	2	ELBOW

34	95209086	1	ELBOW
35	51874204	1	VALVE, PILOT AIR
36	95287629	1	ADAPTER
37	95829362	1	ELBOW

(CONTINUED)

AIR END ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 8.1-1)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
		51782225		AIR END ASSEMBLY (cont.)	
	38	95280186	1	ADAPTER	
	39	95064655	4	WASHER, FLAT	
	40	35315795	1	VALVE, REGULATOR	
	41	35325950	1	VALVE, REGULATOR	
	42	50805100	1	VALVE, SHUTTLE	
	43	95323481	2	PIPE, MALE	
	44	95084059	1	NIPPLE, PIPE	
	45	95279071	1	ELBOW	
	46	95302998	1	TEE	
	47	95263380	2	ADAPTER	
	48	51997732	1	VALVE, AIR 2-WAY SOLENOID	
	49	50792423	2	CLAMP, PIPE	
	50	95064689	4	WASHER	
	51	95417929	4	LOCKNUT	
	52	51782415	1	GAUGE, PRESSURE	
	53	95293353	1	ADAPTER	
	54	35316405	1	VALVE, ANTI-RUMBLE	
	55	51862639	1	BRACKET, ANTI-RUMBLE VALVE	
	56	95364477	1	U-BOLT	
	57	95365094	1	ADAPTER	
	58	95377156	1	PIPE, MALE	
	59	95356754	1	CROSS	
	60	95219713	2	ADAPTER	
	61	50573823	2	VALVE, CHECK	
	62	95264941	2	TEE	
	63	95037412	2	BUSHING, REDUCING	
	64	95330023	1	ADAPTER	
	65	95231031	1	ADAPTER	
	66	51916427	1	ASSEMBLY, HOSE	
	67	51916468	1	ASSEMBLY, HOSE	
	68	51910685	1	ASSEMBLY, HOSE	
	69	51916476	1	ASSEMBLY, HOSE	
	70	51916484	1	ASSEMBLY, HOSE	
	71	51916492	1	ASSEMBLY, HOSE	
	72	51916419	1	ASSEMBLY, HOSE	
	73	51360857	1	ASSEMBLY, HOSE	
	74	51916468	1	ASSEMBLY, HOSE	
	75	95365078	1	ADAPTER	

(CONTINUED)

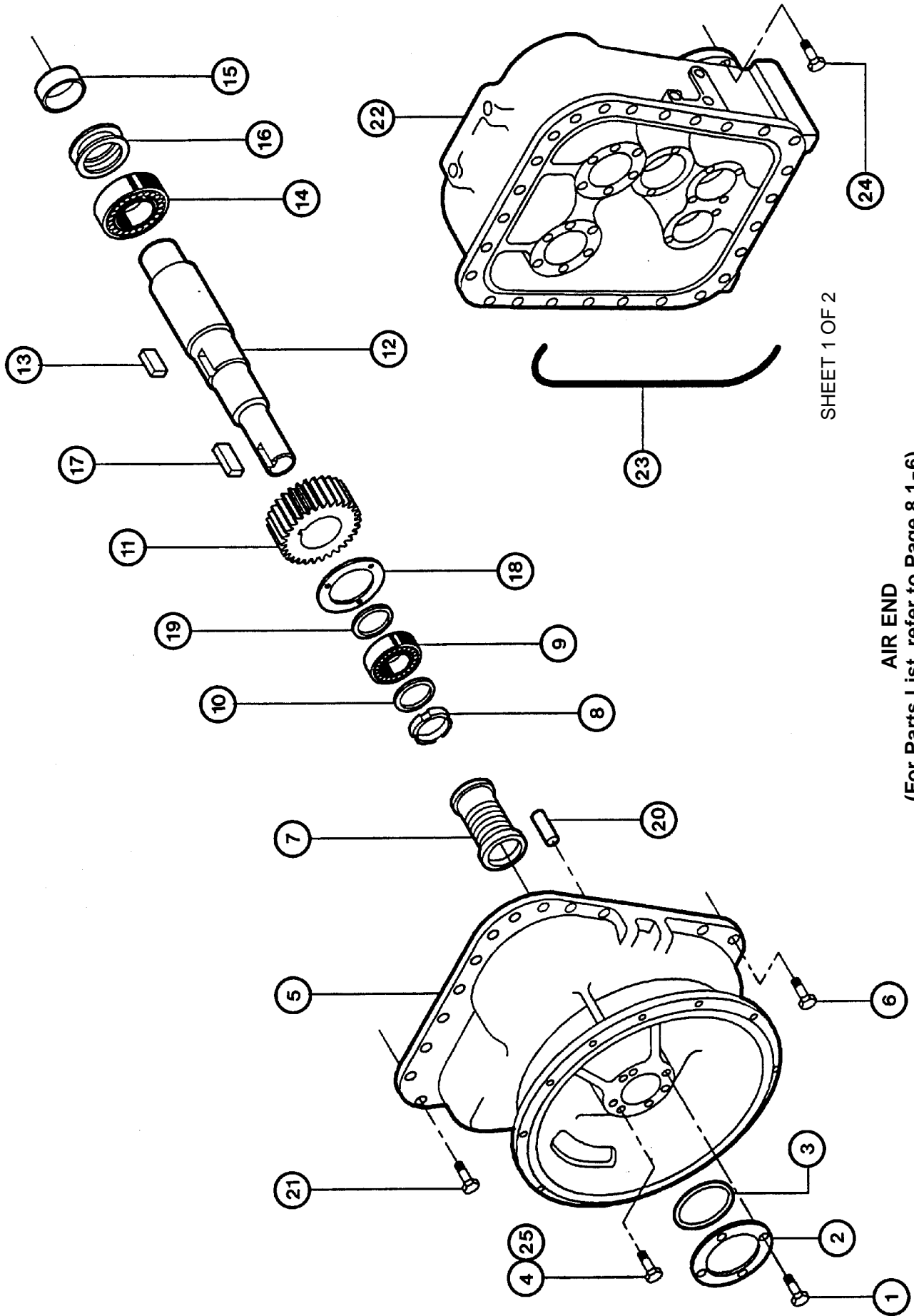
AIR END ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 8.1-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

51782225		AIR END ASSEMBLY (cont.)	
76	95371258	1	ADAPTER
77	95049011	1	NIPPLE
78	50839042	1	CONNECTOR
79	51722650	2	SLEEVE

80	51722668	2	SEAL
81	51791846	1	CONNECTOR
82	51919488	12	ELECTRICAL WIRE LOOM, 1/4 INCH
100	36756120	1	HEAD, FILTER
101	36758613	2	ELEMENT, FILTER



SHEET 1 OF 2

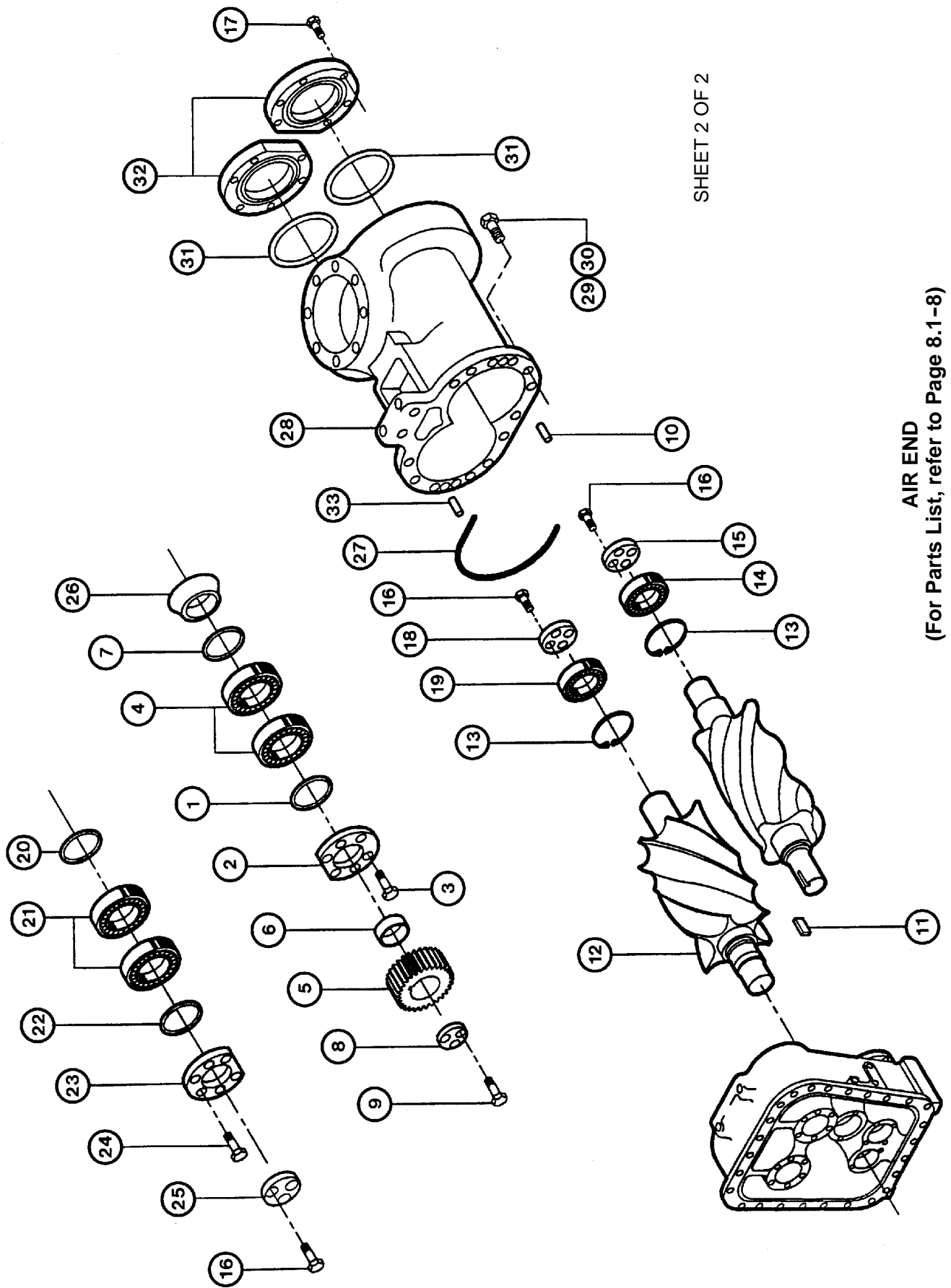
AIR END
 (For Parts List, refer to Page 8.1-6)

AIR END
(For Illustration of parts, refer to Page 8.1-5)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>SERIAL</i>
				<i>REMARKS</i>	<i>NO.</i>
		35086339		AIR END	
	1	36846988	1	BOLT	
	2	35856467	1	COVER, OIL SEAL	UP TO AIREND 6868U95
	2	39860192	1	ASSEMBLY, COVER	AIREND 6868U96, 9965U96 & ABOVE
	3	95022372	1	O-RING	
	4	35361286	1	BOLT	
	5	36750909	1	CASE, GEAR	
	6	35318146	1	BOLT	
●	7	35593516	1	SEAL, OIL	UP TO AIREND 6868U95
●	7	36865475	1	SEAL, OIL	AIREND 6868U96, 9965U96 & ABOVE
	8	35104082	1	NUT, LOCK	
	9	35610195	1	BEARING, TAPER ROLLER	
	10	35372002	1	SPACER	
	11	36746436	1	SET, GEAR	
	12	36504116	1	SHAFT, DRIVE	
	13	35355809	1	KEY	
	14	35610203	1	BEARING, TAPER ROLLER	
	15	35372010	1	SPACER	
	16	35372028	1	SET, SHIM	
	17	35364975	1	KEY	
	18	35610153	1	PLATE, RETAINING	
	19	35371996	1	SPACER	
	20	35336122	1	DOWEL	
	21	35272541	1	BOLT	
	22	36861367	1	HOUSING, MAIN	
	23	35355775	1	O-RING	
	24	35372533	1	BOLT	
	25	39101449	1	PLUG	

(CONTINUED)

- **NOTE:** THE TYPE OIL SEAL CAN BE DETERMINED BY OBSERVING THE SEAL COVER (2) OF THE AIR END. THE OLD OIL SEAL (7) INCORPORATED A SNAP RING ON THE STATIONARY SEAL MEMBER (7) AND IS VISIBLE AT THE SEAL COVER (2). THE NEW OIL SEAL DOES NOT HAVE A SNAP RING.



SHEET 2 OF 2

AIR END
 (For Parts List, refer to Page 8.1-8)

AIR END (cont.)
(For Illustration of parts, refer to Page 8.1-7)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>SERIAL</i>
				<i>REMARKS</i>	<i>NO.</i>
		35086339		AIR END (cont.)	
	1	35355791	1	O-RING	
	2	36738128	1	HOUSING, REAR BEARING	
	3	35355874	1	SET, SHIM	
	4	35600113	1	BEARING, TAPERED ROLLER	
	5	35355957	1	CLAMP, PLATE	
	6	35311463	1	BOLT	
	7	95026290	1	O-RING	
	8	35355924	1	SET, SHIM	
	9	35856350	1	COVER, REAR BEARING	
	10	35271188	1	BOLT	
	11	36851277	1	BOLT	
	12	35864644	1	COUPLING	
	13	95069522	1	PIN, DOWEL	
	14	35300193	1	CLAMP, PLATE	
	15	35600113	1	BEARING, TAPERED ROLLER	
	16	35355874	1	SET, SHIM	
	17	35355940	1	PISTON, THRUST	
	18	35272533	1	BOLT	
	19	35366657	1	PUMP, OIL	
	20	95000410	1	O-RING	
	21	39138128	1	BOLT	
	22	35600734	1	COVER, BEARING	
	23	95026290	1	O-RING	
	24	35355916	1	SET, SHIM	
	25	35355817	1	KEY	
	26	35336122	1	DOWEL	
	27	36006732	1	SET, ROTOR	
	28	35336130	1	DOWEL	
	29	35600014	1	BEARING, ROLLER	
	30	35300201	1	CLAMP, PLATE	
	31	35311463	1	BOLT	
	32	35355999	1	PLATE, RETAINING	
	33	35273408	1	BOLT	
	34	35355973	1	SPACER, BEARING	
	35	35355866	1	SPACER	
	36	35600022	1	BEARING, ROLLER	
	37	35355965	1	PLATE, RETAINING	
	38	36746436	1	SET, GEAR	

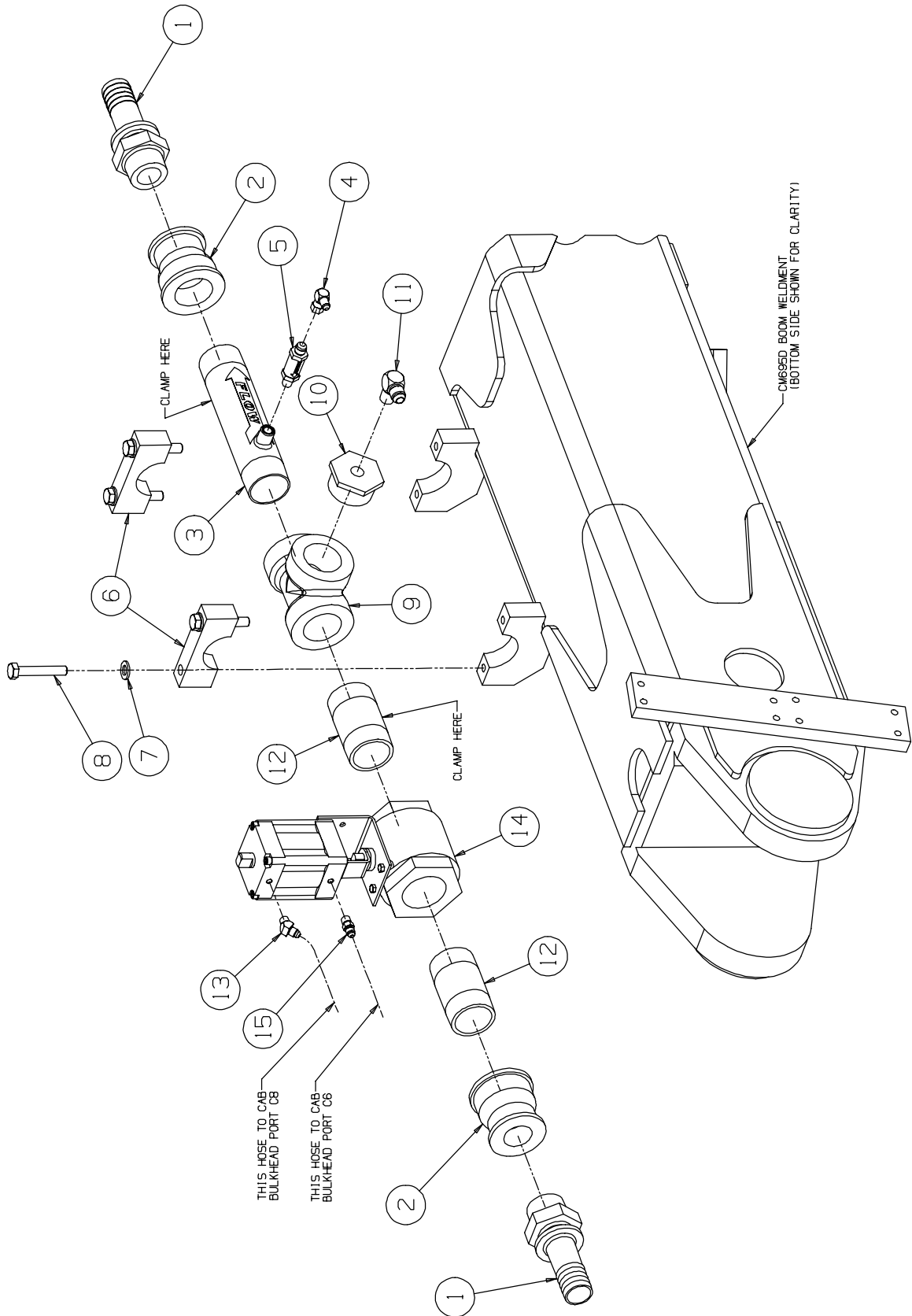
MAIN AIR PIPING ASSEMBLY

(S/N 18069-18079)

Revision 2

May 17, 2001

Section 8.2



MAIN AIR PIPING ASSEMBLY
(For Parts List, refer to Page 8.2-2)

MAIN AIR PIPING ASSEMBLY
(For Illustration of parts, refer to Page 8.2-1)

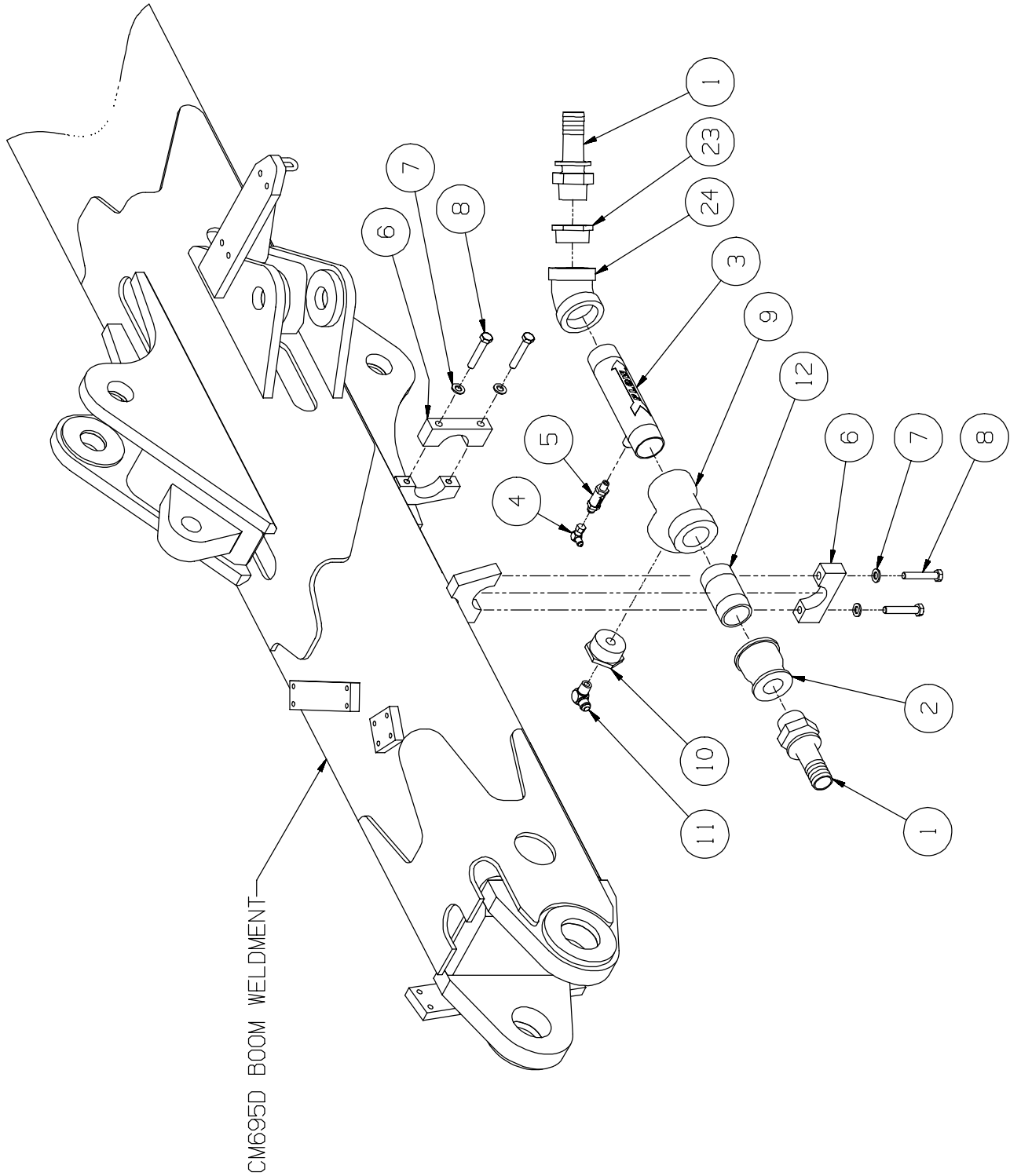
<i>REF.</i>				<i>SERIAL</i>
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>NO.</i>
			<i>REMARKS</i>	
	52080991		MAIN AIR PIPING ASSEMBLY	18069-18079
1	50023886	2	STEM, HOSE	
2	95010773	2	COUPLING, REDUCING	
3	50964576	1	LUBRICATOR	
4	95326930	1	ELBOW	
5	50573823	1	VALVE, CHECK	
6	51909091	2	CLAMP, AIR PIPE BLOCK	
7	96700844	4	WASHER	
8	96714928	4	CAPSCREW	
9	95007969	1	TEE	
10	95038261	1	BUSHING, REDUCING	
11	95279535	1	ELBOW	
12	95243200	2	NIPPLE	
13	95279055	1	ADAPTER	
14	52288099	1	VALVE, HYDRAULIC POWERED AIR	
15	95263380	1	ADAPTER	
16	51730398	1	ASSEMBLY, HOSE	
17	51087013	1	ASSEMBLY, HOSE	
18	95293296	1	FITTING	
19	51716017	1	SWITCH, PRESSURE	
20	95654208	1	CLAMP, VINYL	
21	95948980	1	HOSE, AIR	
22	50141720	2	CLAMP, HOSE	

MAIN AIR PIPING ASSEMBLY

(S/N 18080 & ABOVE)

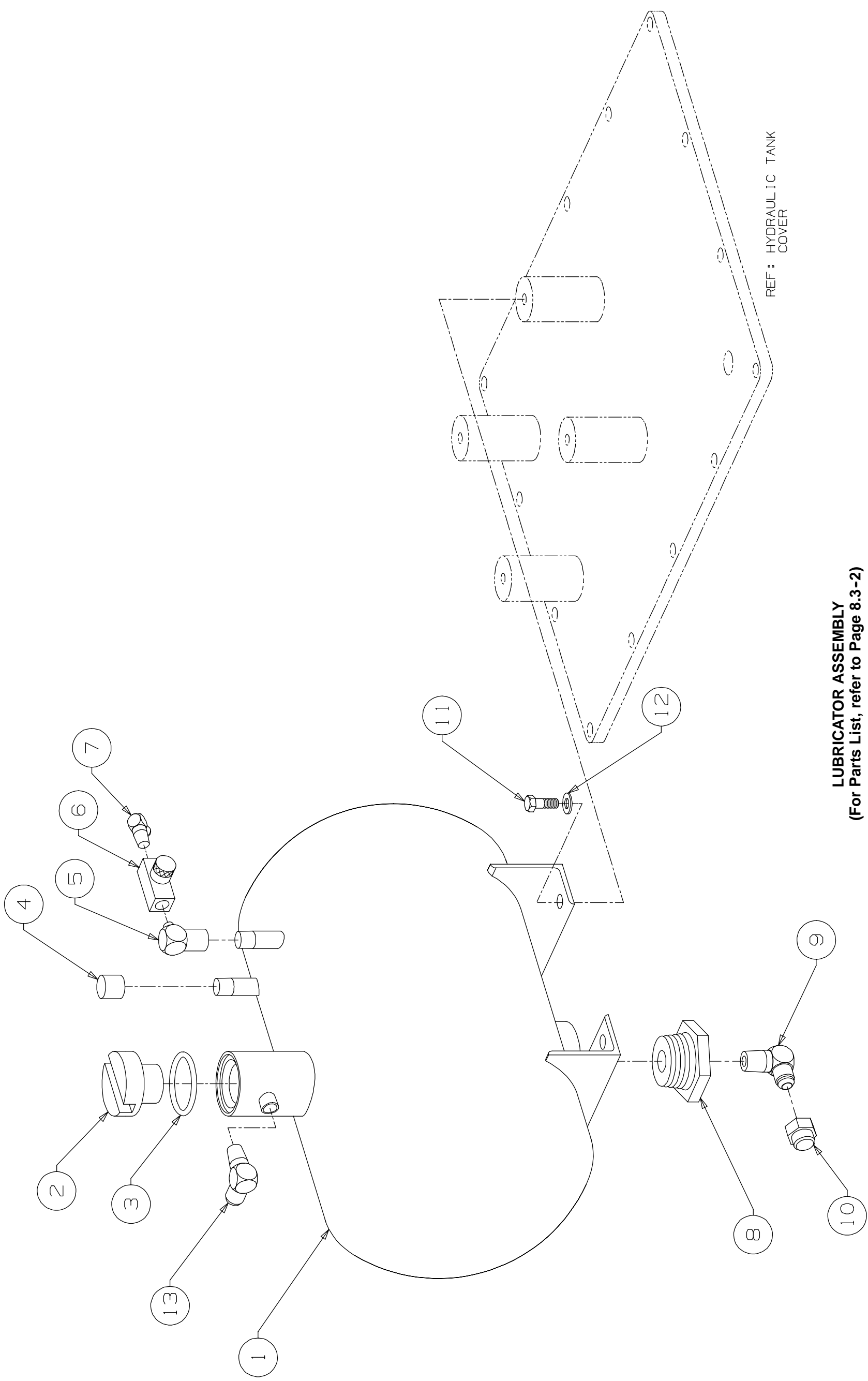
May 17, 2001

Section 8.2A



MAIN AIR PIPING ASSEMBLY
(For Illustration of parts, refer to Page 8.2A-1)

<i>REF.</i>				<i>SERIAL</i>
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>NO.</i>
			<i>REMARKS</i>	
	52080991		MAIN AIR PIPING ASSEMBLY	18080 & ABOVE
1	50023886	2	STEM, HOSE	
2	95010773	1	COUPLING, REDUCING	
3	50964576	1	LUBRICATOR	
4	95326930	1	ELBOW	
5	50573823	1	VALVE, CHECK	
6	51909091	2	CLAMP, AIR PIPE BLOCK	
7	96700844	4	WASHER	
8	96714928	4	CAPSCREW	
9	95007969	1	TEE	
10	95038261	1	BUSHING, REDUCING	
11	95279535	1	ELBOW	
12	95243200	1	NIPPLE	
18	95293296	1	FITTING	
21	95948980	1	HOSE, AIR	
22	50141720	2	CLAMP, HOSE	
23	95038212	1	BUSHING	
24	95338026	1	ELBOW	



LUBRICATOR ASSEMBLY
(For Parts List, refer to Page 8.3-2)

LUBRICATOR ASSEMBLY
(For Illustration of parts, refer to Page 8.3-1)

REF.

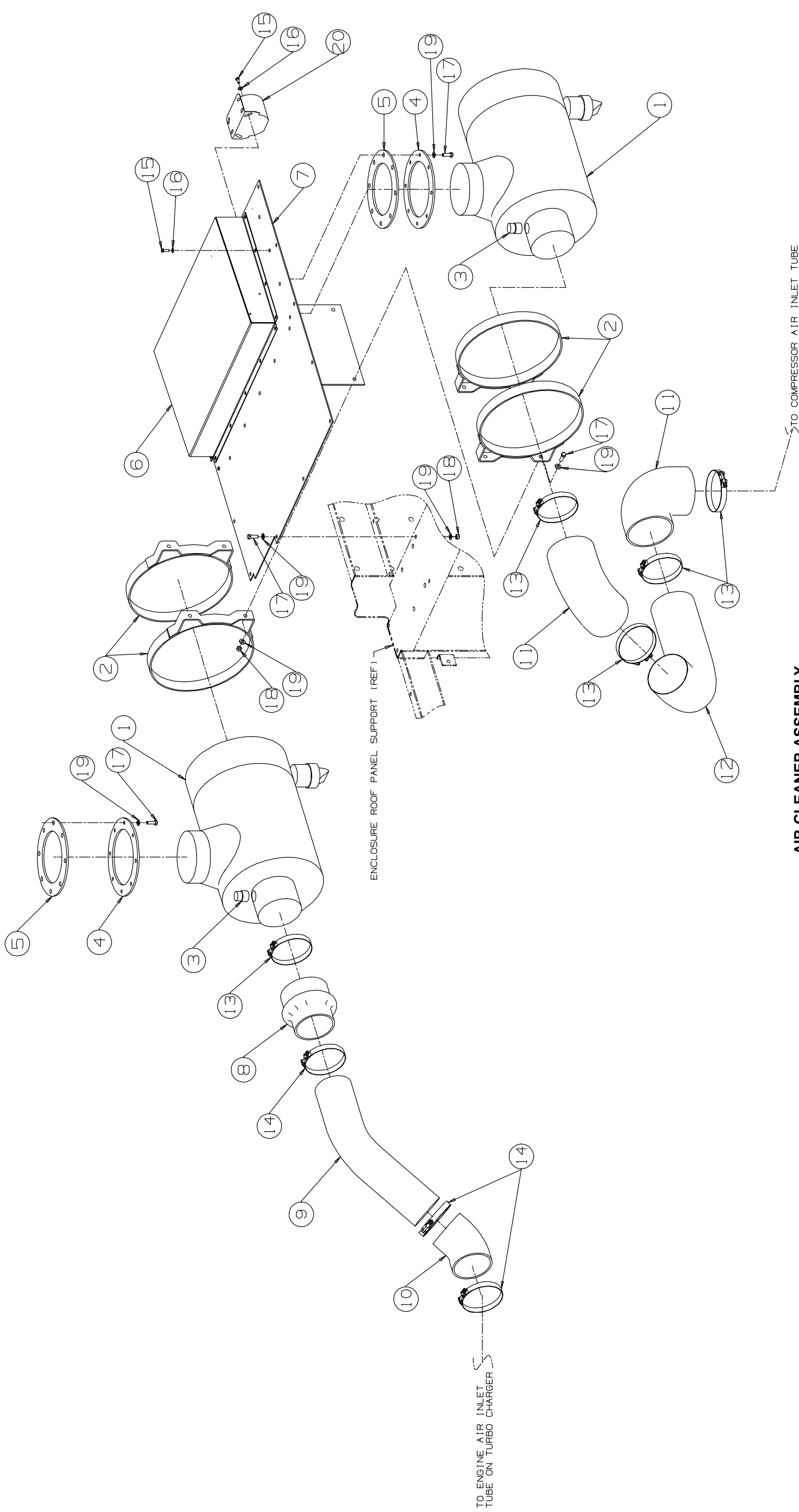
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
------------	-----------------	-------------	------------------	----------------

	51873818		LUBRICATOR ASSEMBLY	
1	51910859	1	TANK, LUBE (6.4 GAL)	
2	35579630	1	PLUG	
3	35279942	1	.O-RING	
4	95654372	1	CAP	
<hr/>				
5	95424370	1	ELBOW	
6	51005627	1	VALVE, NEEDLE	
7	95209094	1	ELBOW	
8	95038261	1	BUSHING, REDUCING	
<hr/>				
9	95279535	1	ELBOW	
10	95257325	1	CAP	
11	96714951	4	CAPSCREW	
12	96700844	4	WASHER	
<hr/>				
13	95221065	1	TEE	
14	95279493	2	ELBOW	

AIR CLEANER ASSEMBLY

January 15, 1999

Section 8.4

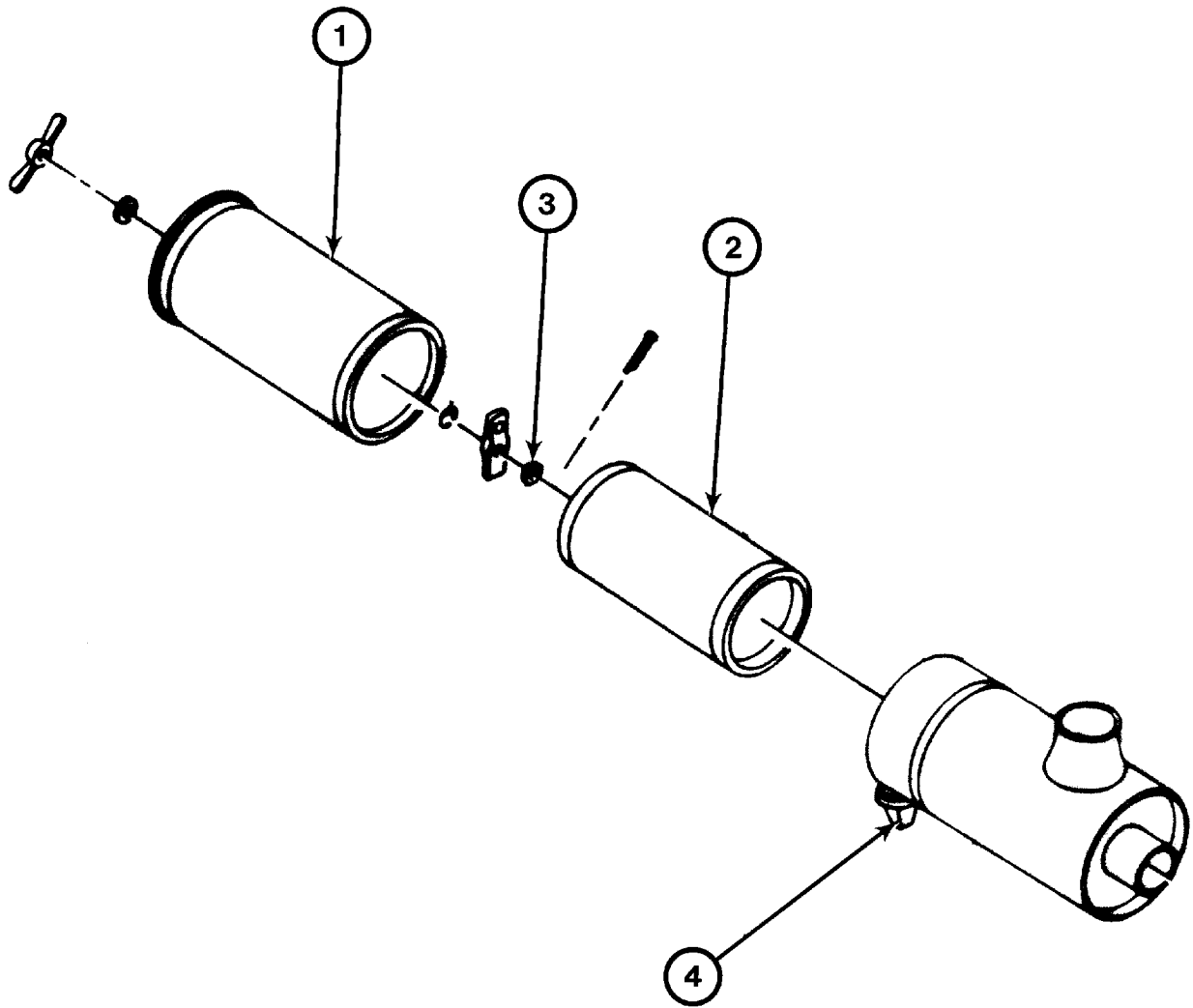


AIR CLEANER ASSEMBLY
(For Parts List, refer to Page 8.4-2)

AIR CLEANER ASSEMBLY
(For Illustration of parts, refer to Page 8.4-1)

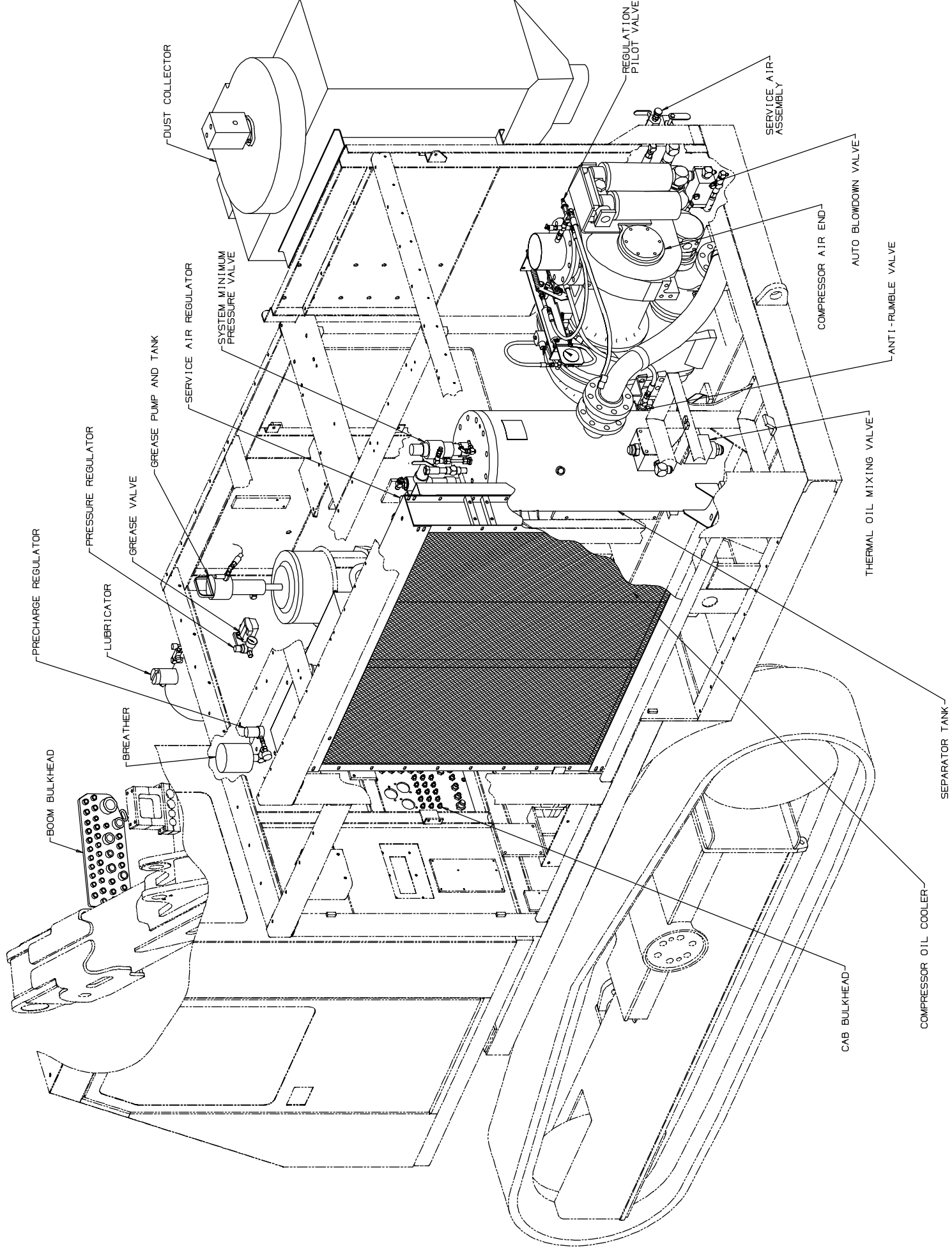
REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52113917		AIR CLEANER ASSEMBLY	
1	51619203	2	CLEANER, AIR	<i>REFER TO PAGE 8.4-3</i>
2	51619211	4	BAND, AIR CLEANER MOUNTING	
3	51618296	2	INDICATOR, RESTRICTION	
4	51728699	2	RETAINER, GASKET	
5	51728707	2	GASKET, AIR INLET	
6	52092392	1	COVER, AIR CLEANER	
7	52113909	1	BASE, AIR CLEANER	
8	51713238	1	REDUCER, HUMP	
9	51728681	1	TUBING, ENGINE AIR INLET	
10	51713246	1	ELBOW, 45 DEGREE	
11	56761554	2	ELBOW	
12	51728673	1	TUBING, AIR END AIR INLET	
13	51713295	5	CLAMP, T-BOLT	
14	51713287	3	CLAMP, T-BOLT	
15	96714472	14	CAPSCREW	
16	96701289	16	WASHER	
17	96714738	38	CAPSCREW	
18	96701990	23	NUT, HEX	
19	96700836	64	WASHER	
20	51857324	1	ASSEMBLY, BACKUP ALARM	
	51618288	1	.ALARM, BACKUP	
	51791879	1	.CONNECTOR	
	51795623	1	.CONNECTOR, MALE BULLET	

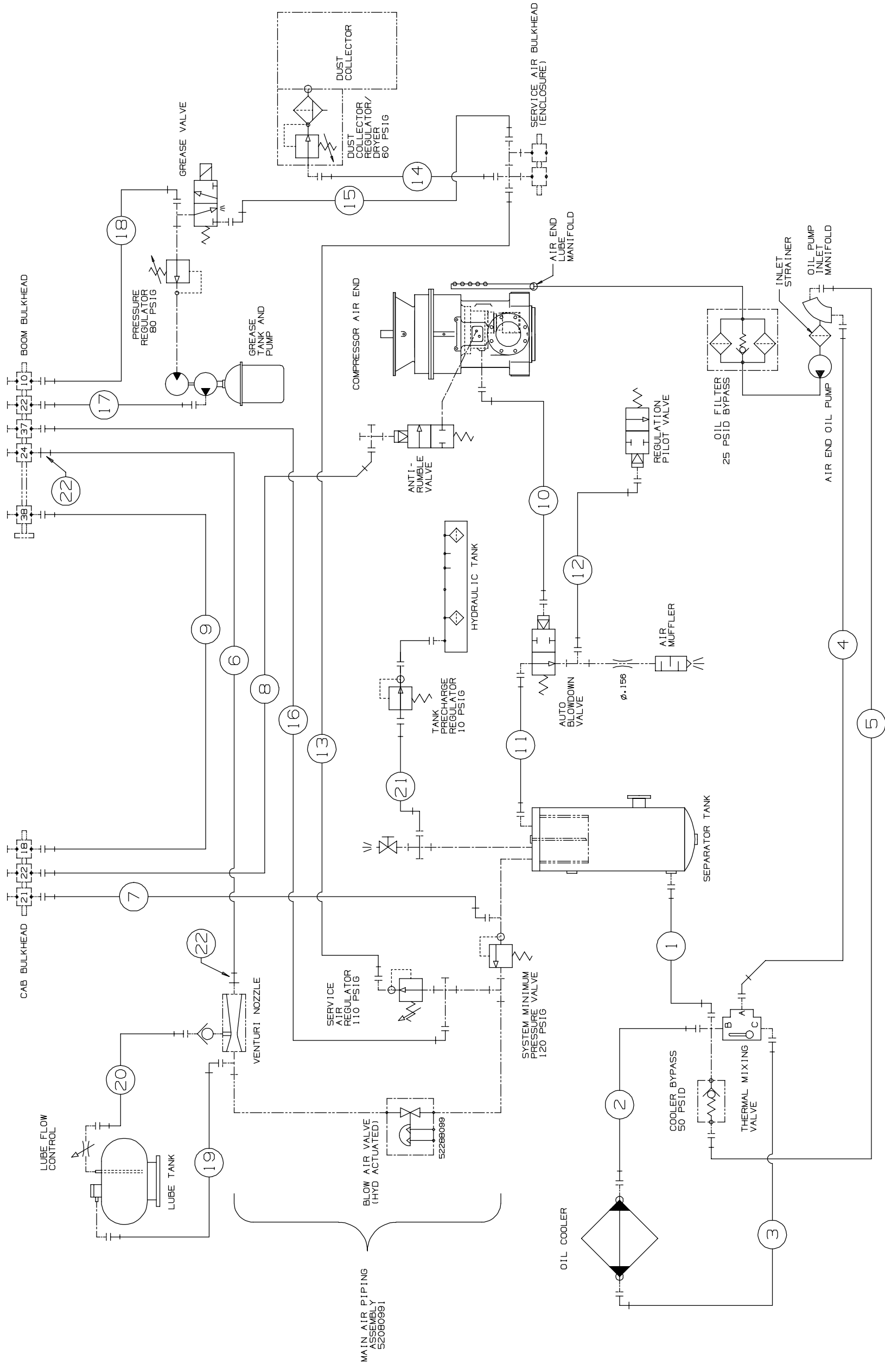


REF.
NO. PART NO. QTY. PART NAME
REMARKS

REF. NO.	PART NO.	QTY.	PART NAME	REMARKS
	51619203		AIR CLEANER	
1	35355395	1	ELEMENT, PRIMARY	
2	35355353	1	ELEMENT, SAFETY	
3	51940286	1	WASHER, GASKET	
4	51940294	1	VALVE, VACUATOR	



AIR HOSE GROUP
(For Parts List, refer to Page 8.5-3)



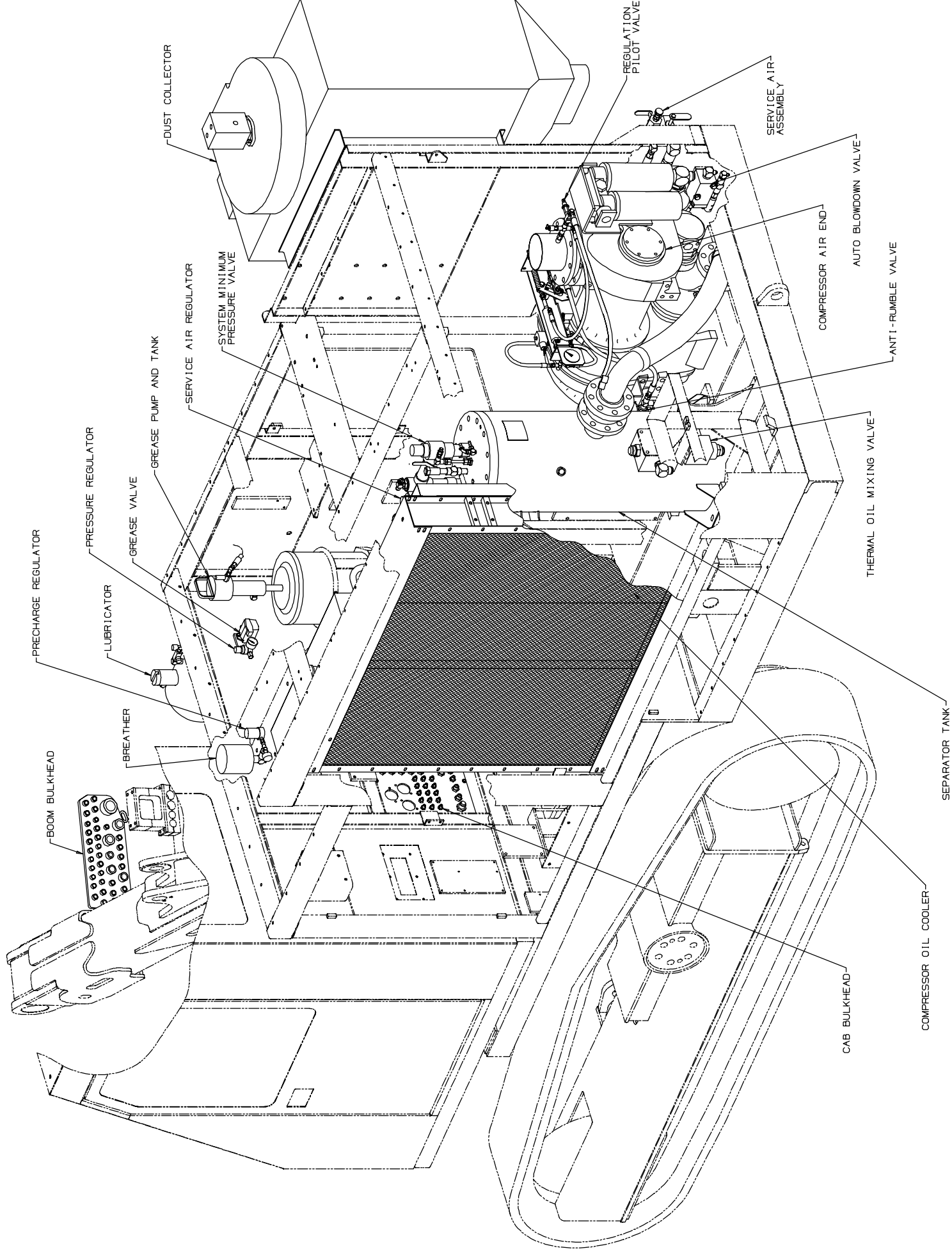
AIR HOSE GROUP
 (For Parts List, refer to Page 8.5-3)

AIR HOSE GROUP
(For Illustration of parts, refer to Pages 8.5-1 thru 8.5-2)

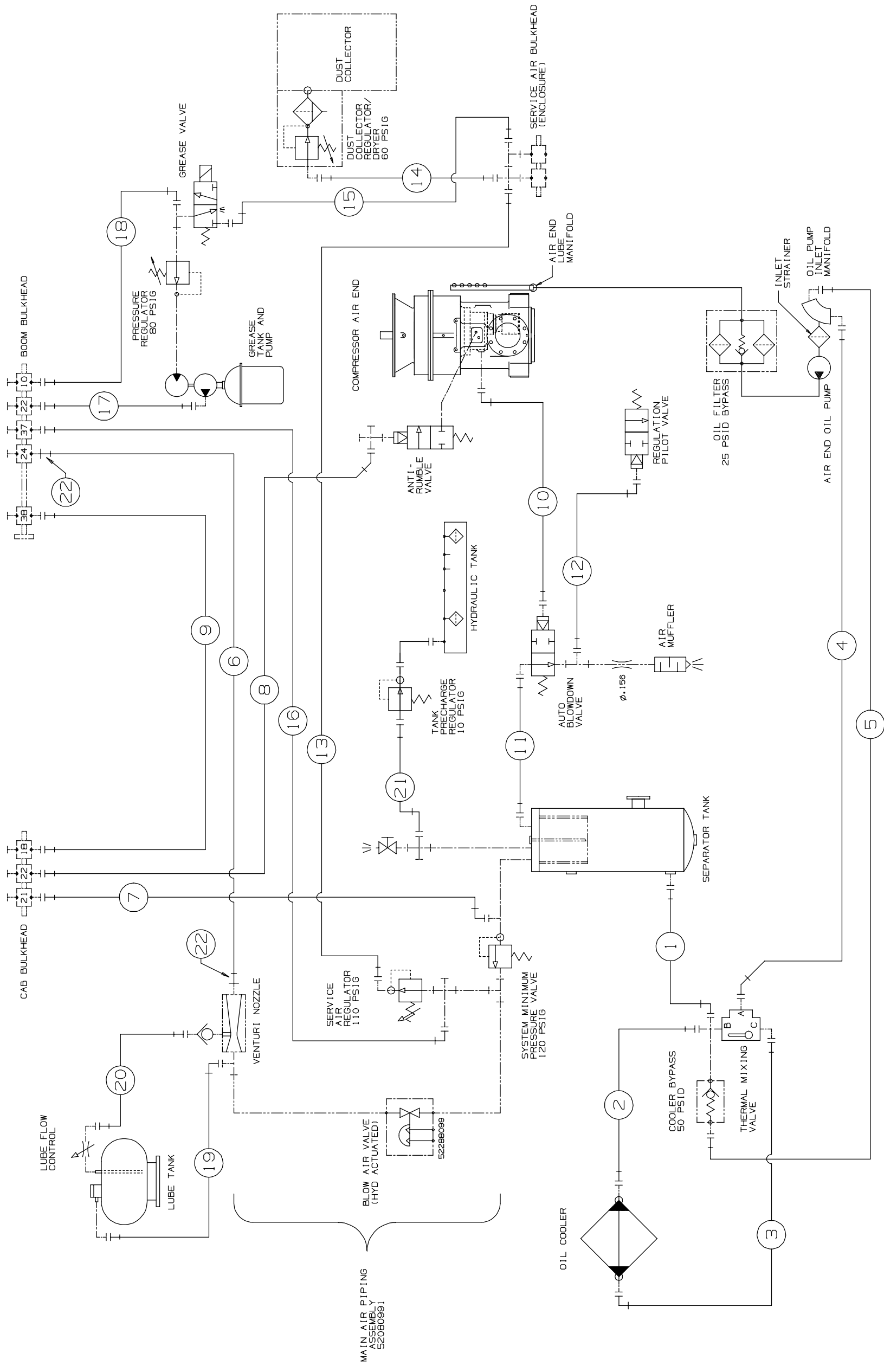
REF.

NO. PART NO. QTY. PART NAME
REMARKS

51910974		AIR HOSE GROUP	
1	51916211	1	ASSEMBLY, HOSE
2	51916229	1	ASSEMBLY, HOSE
3	51916237	1	ASSEMBLY, HOSE
4	51916245	1	ASSEMBLY, HOSE
5	51916252	1	ASSEMBLY, HOSE
6	95381331	1	HOSE
7	51916260	1	ASSEMBLY, HOSE
8	51916278	1	ASSEMBLY, HOSE
9	51916286	1	ASSEMBLY, HOSE
10	51916294	1	ASSEMBLY, HOSE
11	51916302	1	ASSEMBLY, HOSE
12	51916310	1	ASSEMBLY, HOSE
13	51916328	1	ASSEMBLY, HOSE
14	51785954	1	ASSEMBLY, HOSE
15	52303880	1	ASSEMBLY, HOSE
16	51916344	1	ASSEMBLY, HOSE
17	51300549	1	ASSEMBLY, HOSE
18	51916351	1	ASSEMBLY, HOSE
19	52080876	1	ASSEMBLY, HOSE
20	52080884	1	ASSEMBLY, HOSE
21	51916385	1	ASSEMBLY, HOSE
22	50141720	2	CLAMP, HOSE



AIR HOSE GROUP
(For Parts List, refer to Page 8.5A -3)



AIR HOSE GROUP
(For Parts List, refer to Page 8.5A-3)

AIR HOSE GROUP
(For Illustration of parts, refer to Pages 8.5A-1 thru 8.5A-2)

REF.

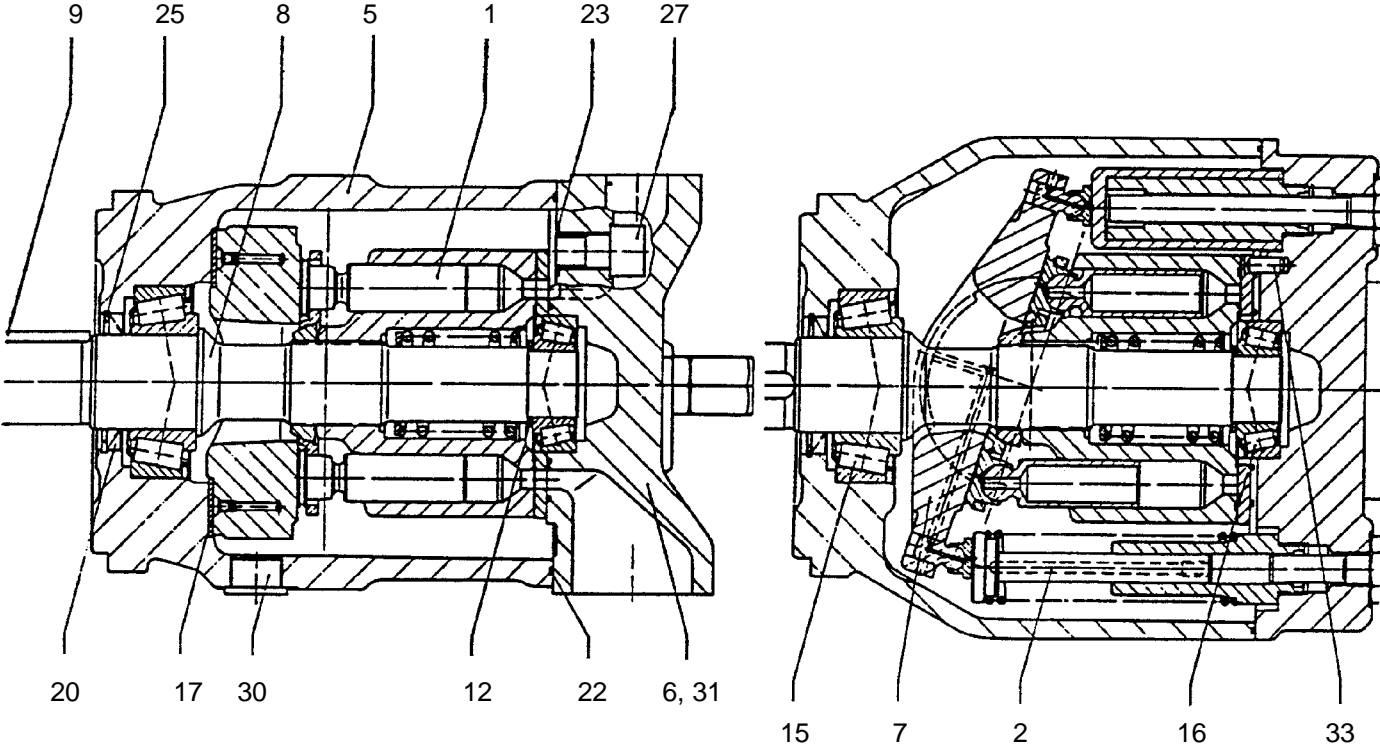
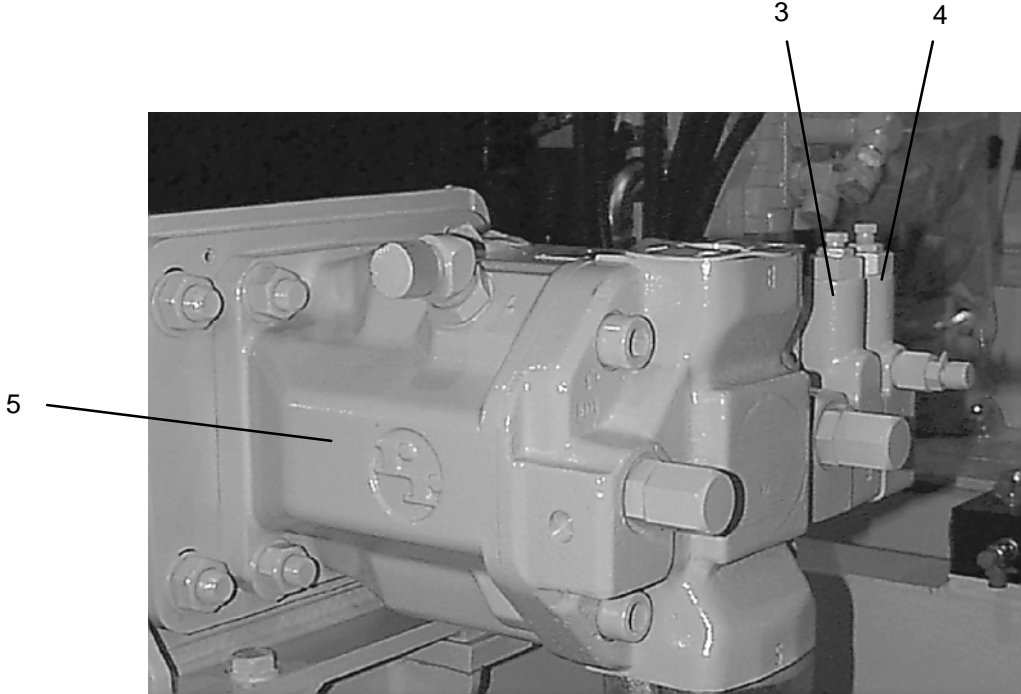
NO. PART NO. QTY. PART NAME
REMARKS

57685091		AIR HOSE GROUP	
1	51916211	1	ASSEMBLY, HOSE
2	51916229	1	ASSEMBLY, HOSE
3	51916237	1	ASSEMBLY, HOSE
4	51916245	1	ASSEMBLY, HOSE
5	51916252	1	ASSEMBLY, HOSE
6	95381331	1	HOSE
7	51916260	1	ASSEMBLY, HOSE
8	51916278	1	ASSEMBLY, HOSE
9	57687550	1	ASSEMBLY, HOSE
10	51916294	1	ASSEMBLY, HOSE
11	51916302	1	ASSEMBLY, HOSE
12	51916310	1	ASSEMBLY, HOSE
13	51916328	1	ASSEMBLY, HOSE
14	51785954	1	ASSEMBLY, HOSE
15	52303880	1	ASSEMBLY, HOSE
16	57687568	1	ASSEMBLY, HOSE
17	57687576	1	ASSEMBLY, HOSE
18	57687584	1	ASSEMBLY, HOSE
19	52080876	1	ASSEMBLY, HOSE
20	52080884	1	ASSEMBLY, HOSE
21	51916385	1	ASSEMBLY, HOSE
22	50141720	2	CLAMP, HOSE

MAIN HYDRAULIC PUMP

January 15, 1999

Section 9.0

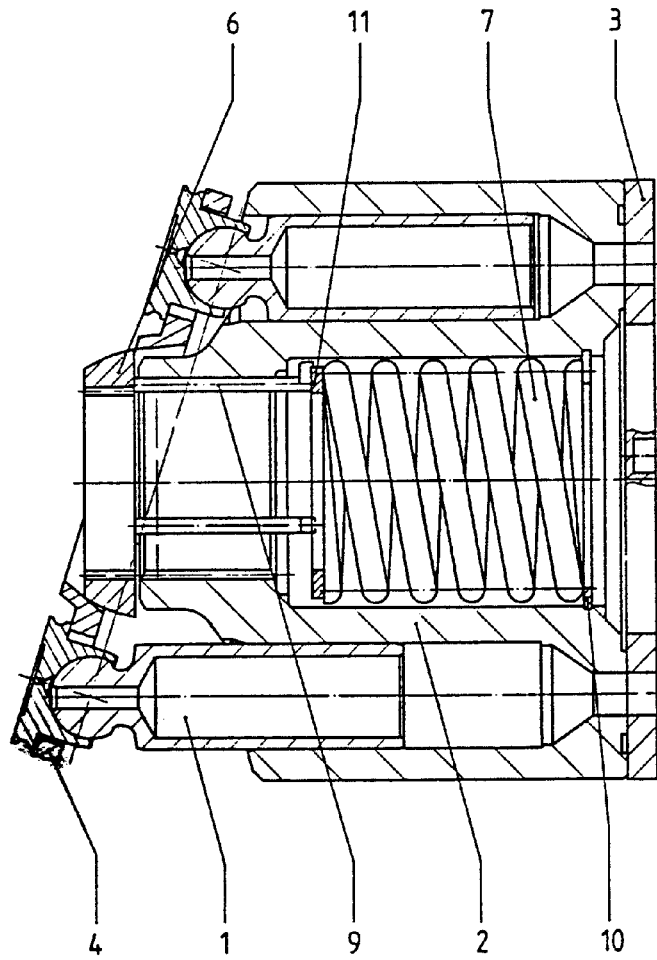


MAIN HYDRAULIC PUMP
(For Parts List, refer to Page 9.0-2)

MAIN HYDRAULIC PUMP
(For Illustration of parts, refer to Page 9.0-1)

REF.

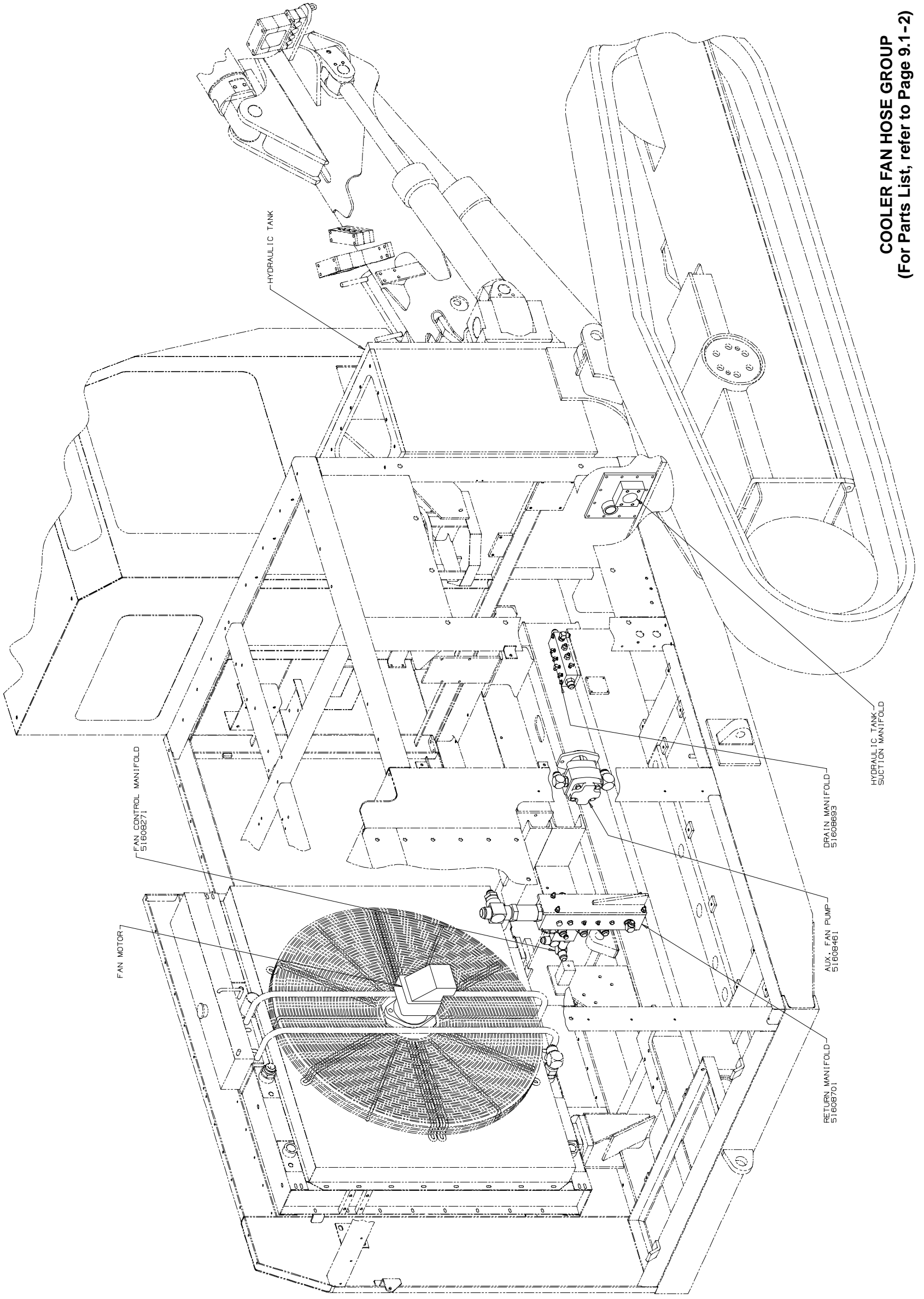
NO.	PART NO.	QTY.	PART NAME	REMARKS
51989705			MAIN HYDRAULIC PUMP	
1	51994515	1	ROTARY GROUP	
2	51903714	1	UNIT, CONTROL	
				<i>REFER TO PAGE 9.0-3</i>
3	51903664	1	ASSEMBLY, PILOT VALVE (PRESSURE COMPENSATOR)	
4	51994564	1	ASSEMBLY, PILOT VALVE (LOAD SENSE)	
5	51903722	1	HOUSING, PUMP	
6	51994523	1	PLATE, PORT	
7	52102985	1	PLATE, SWASH	
8	51903755	1	SHAFT, DRIVE	
9	51903763	1	SPRING, ADJUSTMENT	
10	51903698	1	SCREW, SOCKET	
12	51903771	1	SPACER, CONTROL PLATE	
15	51903789	1	BEARING, TAPERED ROLLER	
16	51903797	1	BEARING, TAPERED ROLLER	
17	51903805	2	PLATE, BEARING	
20	52102993	1	SEAL, SHAFT END	
22	52103009	1	O-RING	
23	51903839	4	O-RING	
25	52103017	1	RING, SAFETY	
27	51903854	4	SOCKET	
30	51903862	1	PLUG	
31	51352680	1	PLUG	
33	51903870	1	DOWEL	



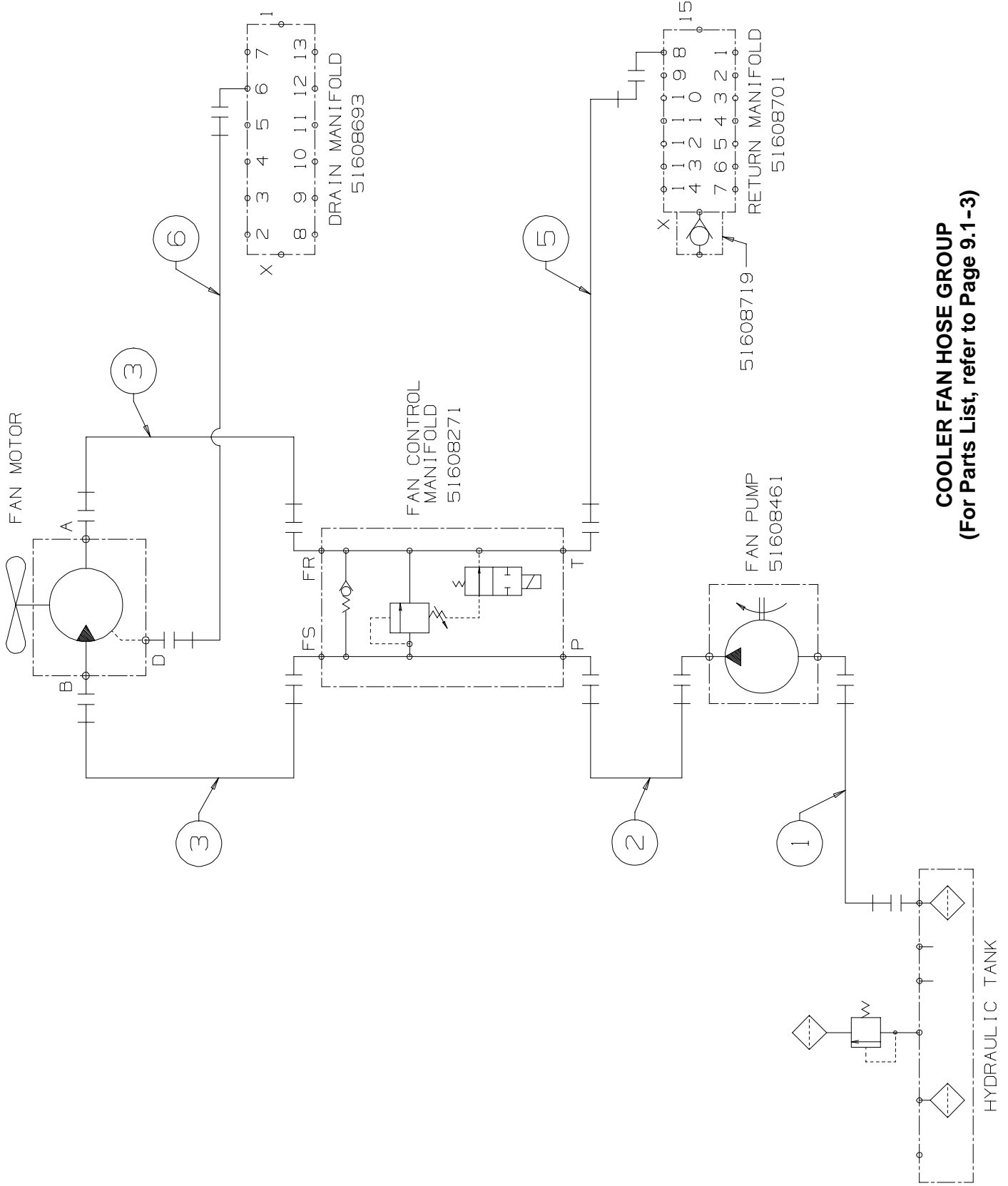
REF.

NO. PART NO. QTY. PART NAME
REMARKS

51903714		CONTROL UNIT	
1	51903995	1	PISTON, CONTROL
2	51904001	1	GUIDE, PISTON
3	51904019	1	PISTON, RETAINING
4	51904027	1	GUIDE, PISTON
6	51904035	1	SPRING
7	51904043	1	PIN, THREADED
8	51904050	2	NUT
9	51904068	4	O-RING
10	51904076	2	NUT, CAP
11	51904084	1	PIN, THREADED



COOLER FAN HOSE GROUP
(For Parts List, refer to Page 9.1 -2)



COOLER FAN HOSE GROUP
 (For Parts List, refer to Page 9.1-3)

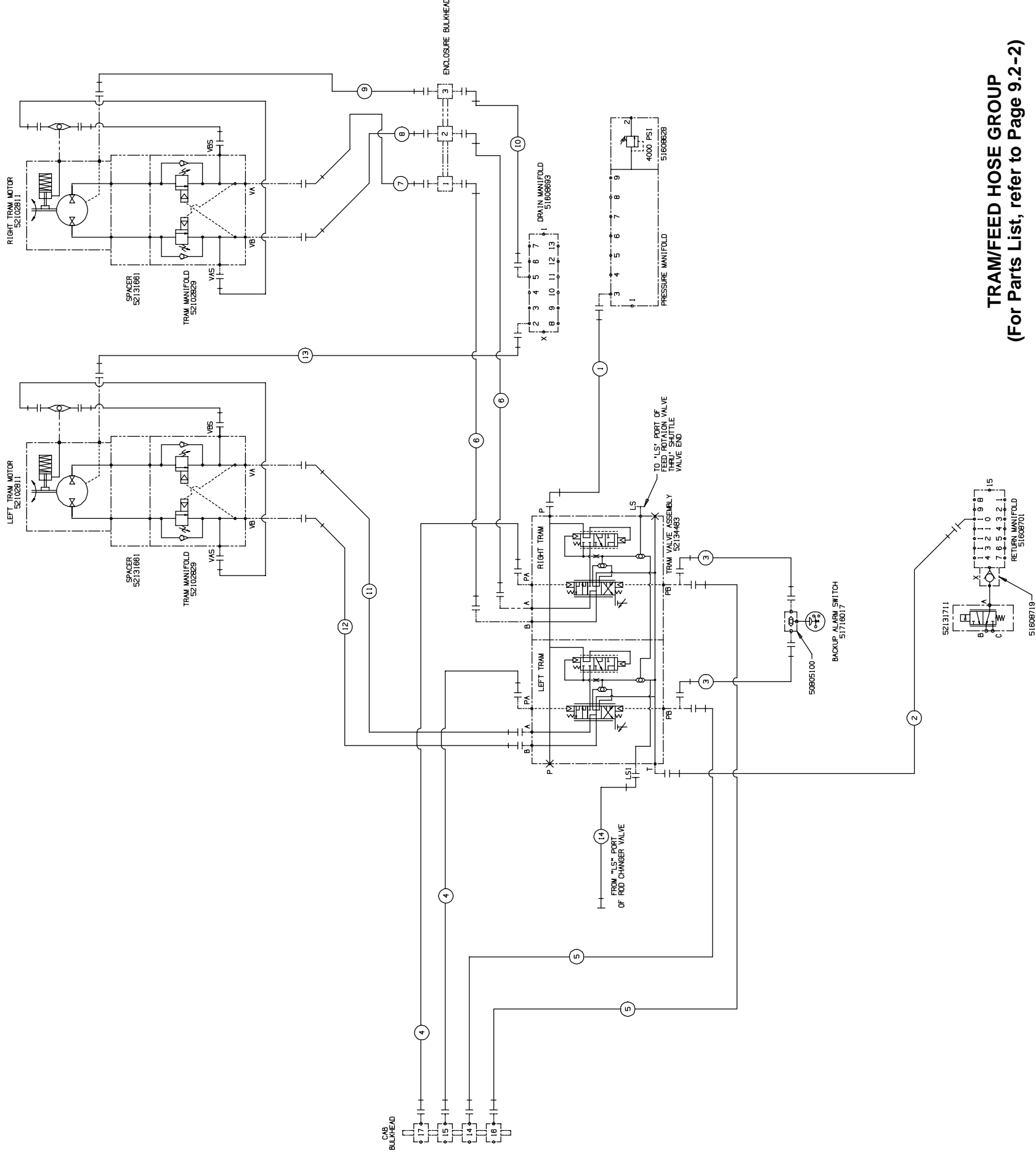
COOLER FAN HOSE GROUP
(For Illustration of parts, refer to Pages 9.1-1 thru 9.1-2)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	51910776		COOLER FAN HOSE GROUP
1	51867760	1	ASSEMBLY, HOSE
2	51983054	1	ASSEMBLY, HOSE

3	52088168	2	ASSEMBLY, HOSE
5	51214195	1	ASSEMBLY, HOSE
6	51863074	1	ASSEMBLY, HOSE



TRAM/FEEED HOSE GROUP
(For Parts List, refer to Page 9.2-2)

TRAM HOSE GROUP
(For Illustration of parts, refer to Page 9.2-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	52288339		TRAM HOSE GROUP
1	51910503	1	ASSEMBLY, HOSE
2	52280385	1	ASSEMBLY, HOSE
3	57015521	2	ASSEMBLY, HOSE
4	51366854	2	ASSEMBLY, HOSE

5	51867208	2	ASSEMBLY, HOSE
6	51910644	2	ASSEMBLY, HOSE
7	52280898	1	ASSEMBLY, HOSE
8	52280906	1	ASSEMBLY, HOSE

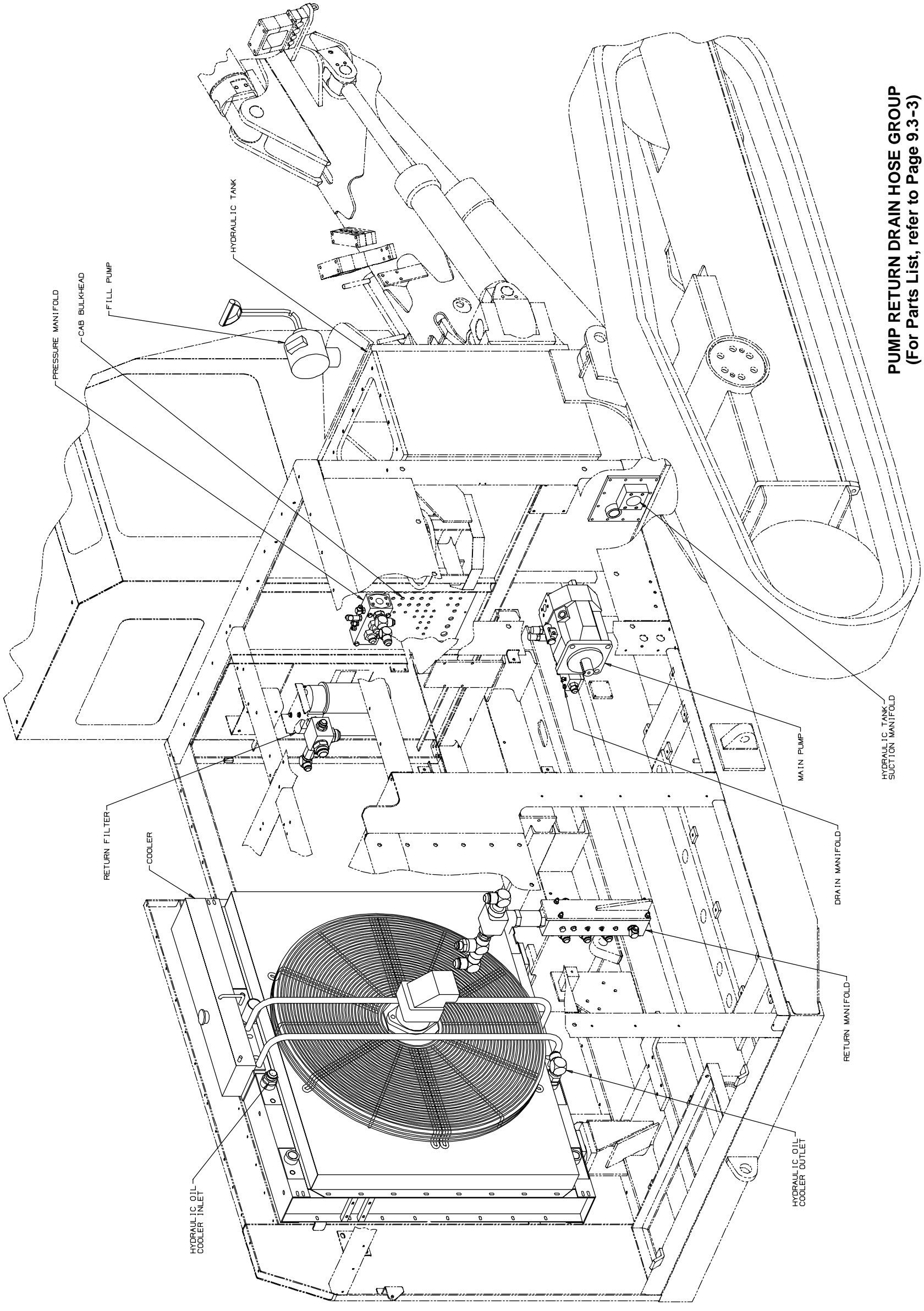
9	51059780	1	ASSEMBLY, HOSE
10	51059798	1	ASSEMBLY, HOSE
11	52282696	1	ASSEMBLY, HOSE
12	52288230	1	ASSEMBLY, HOSE

13	51867539	1	ASSEMBLY, HOSE
14	51060143	1	ASSEMBLY, HOSE

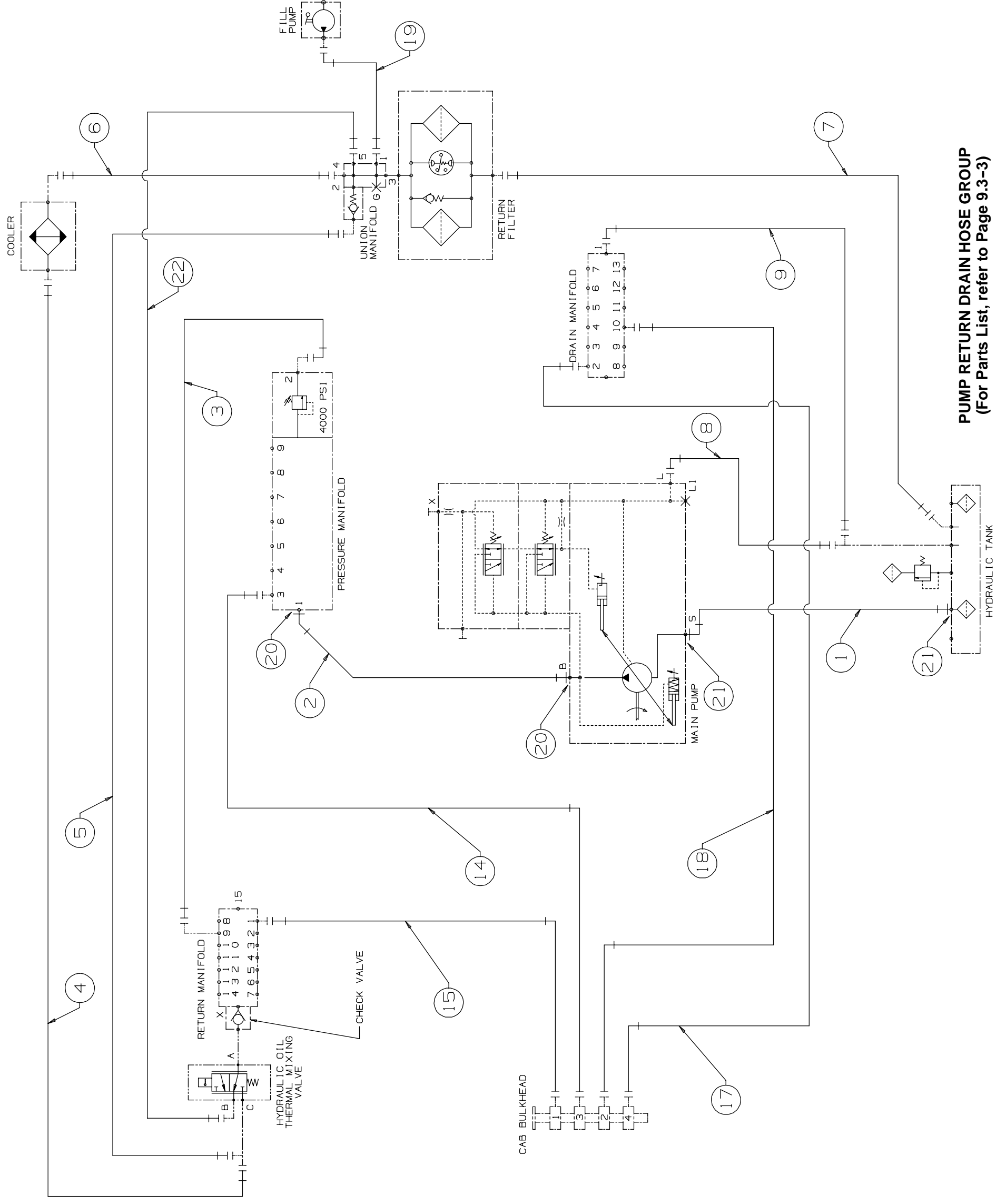
PUMP RETURN DRAIN HOSE GROUP

Revision 1
June 4, 1999

Section 9.3



PUMP RETURN DRAIN HOSE GROUP
(For Parts List, refer to Page 9.3-3)



PUMP RETURN DRAIN HOSE GROUP
(For Parts List, refer to Page 9.3-3)

PUMP RETURN DRAIN HOSE GROUP
(For Illustration of parts, refer to Pages 9.3-1 thru 9.3-2)

REF.

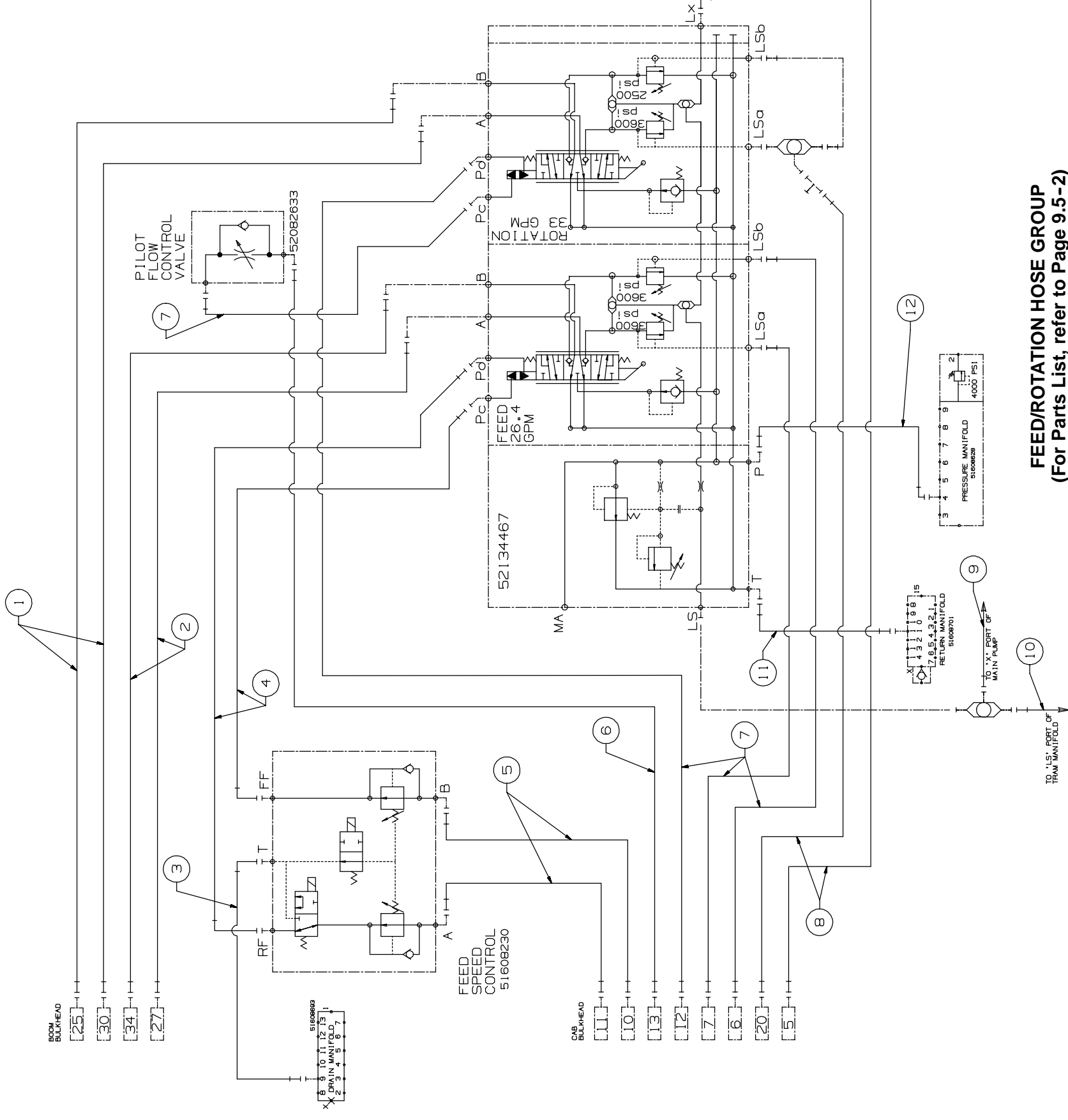
NO. PART NO. QTY. PART NAME
REMARKS

51910818		PUMP RETURN DRAIN HOSE GROUP	
1	51867729	1	ASSEMBLY, HOSE
2	51866986	1	ASSEMBLY, HOSE
3	51863199	1	ASSEMBLY, HOSE
4	51874436	1	ASSEMBLY, HOSE
5	51866721	1	ASSEMBLY, HOSE
6	51866747	1	ASSEMBLY, HOSE
7	51866739	1	ASSEMBLY, HOSE
8	51863140	1	ASSEMBLY, HOSE
9	51863140	1	ASSEMBLY, HOSE
14	51863058	1	ASSEMBLY, HOSE
15	51863157	1	ASSEMBLY, HOSE
17	51867471	1	ASSEMBLY, HOSE
18	51867695	1	ASSEMBLY, HOSE
19	51867307	1	ASSEMBLY, HOSE
20	51366649	2	FLANGE, SPLIT
	51367795	1	.O-RING
21	51366615	2	FLANGE, SPLIT
22	51351930	1	ASSEMBLY, HOSE

FEED/ROTATION HOSE GROUP

Revision 1
April 2, 1999

Section 9.5



FEED/ROTATION HOSE GROUP
(For Parts List, refer to Page 9.5-2)

FEED/ROTATION HOSE GROUP
(For Illustration of parts, refer to Page 9.5-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	52288321		FEED/ROTATION HOSE GROUP
1	52288305	2	ASSEMBLY, HOSE
2	52288313	2	ASSEMBLY, HOSE
3	51867208	1	ASSEMBLY, HOSE
4	51063980	2	ASSEMBLY, HOSE

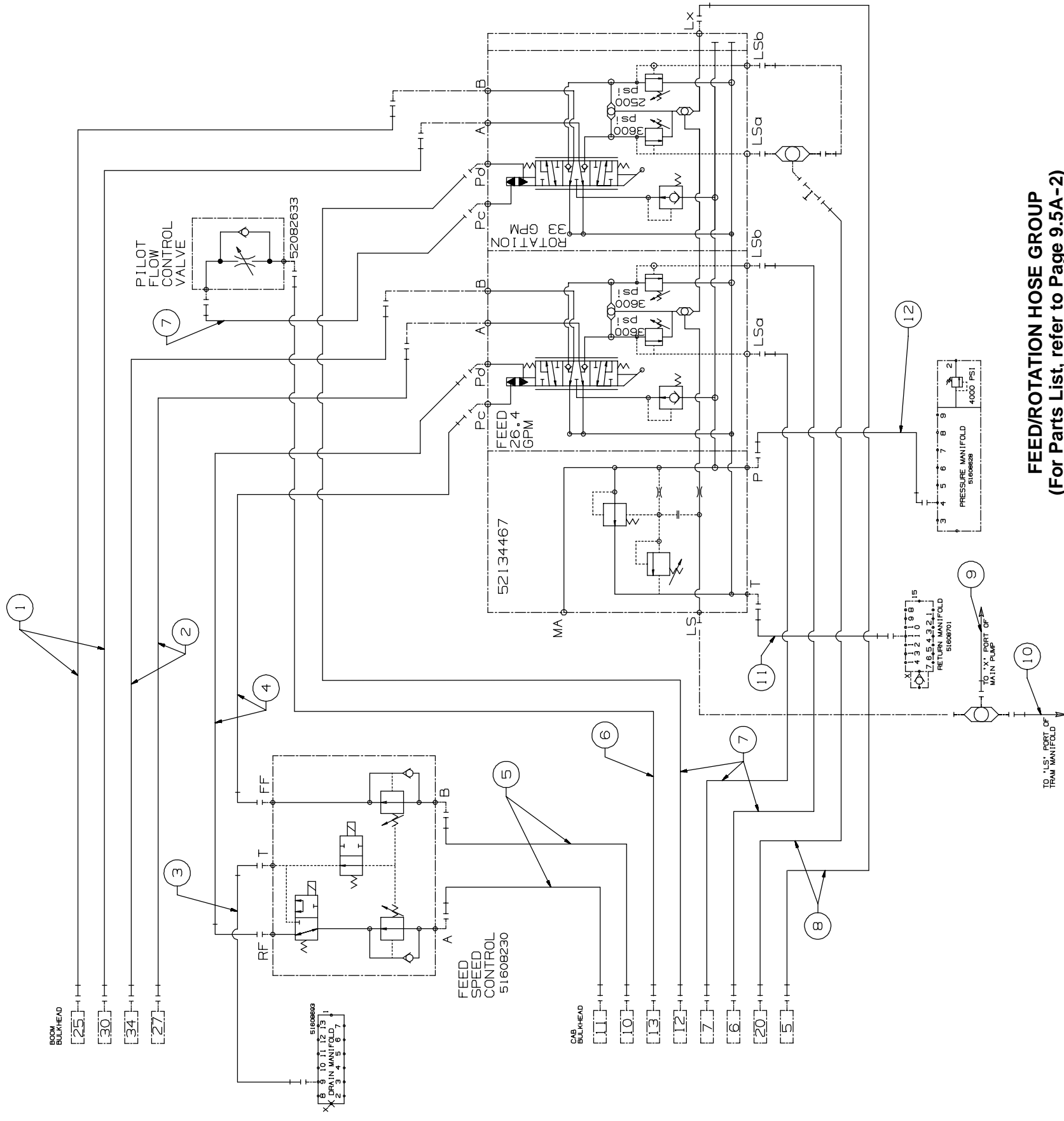
5	51867273	2	ASSEMBLY, HOSE
6	51069086	1	ASSEMBLY, HOSE
7	51867190	4	ASSEMBLY, HOSE
8	51867158	2	ASSEMBLY, HOSE

9	51028538	1	ASSEMBLY, HOSE
10	51783371	1	ASSEMBLY, HOSE
11	52282381	1	ASSEMBLY, HOSE
12	51866812	1	ASSEMBLY, HOSE

FEED/ROTATION HOSE GROUP

June 14, 2002

Section 9.5A



FEED/ROTATION HOSE GROUP
(For Parts List, refer to Page 9.5A-2)

FEED/ROTATION HOSE GROUP
(For Illustration of parts, refer to Page 9.5A-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

57685083		FEED/ROTATION HOSE GROUP	
1	57691636	2	ASSEMBLY, HOSE
2	57691644	2	ASSEMBLY, HOSE
3	51867208	1	ASSEMBLY, HOSE
4	51063980	2	ASSEMBLY, HOSE

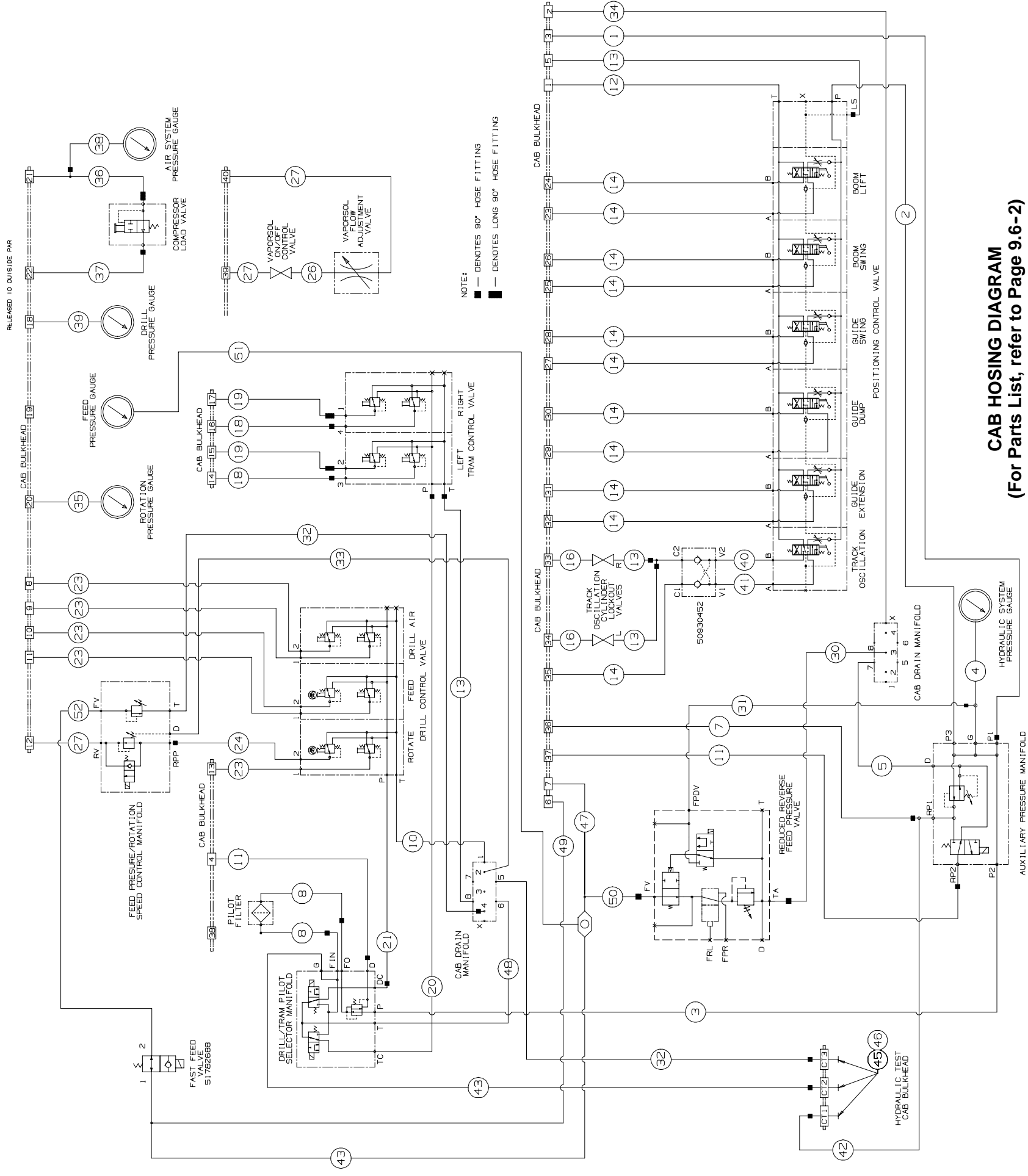
5	51867273	2	ASSEMBLY, HOSE
6	51069086	1	ASSEMBLY, HOSE
7	51867190	4	ASSEMBLY, HOSE
8	51867158	2	ASSEMBLY, HOSE

9	51028538	1	ASSEMBLY, HOSE
10	51783371	1	ASSEMBLY, HOSE
11	52282381	1	ASSEMBLY, HOSE
12	51866812	1	ASSEMBLY, HOSE

CAB HOISING DIAGRAM

Revision 2
June 26, 2001

Section 9.6



CAB HOISING DIAGRAM
(For Parts List, refer to Page 9.6-2)

CAB HOSING DIAGRAM
(For Illustration of parts, refer to Page 9.6-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

52120268		CAB HOSING DIAGRAM	
1	51351997	1	ASSEMBLY, HOSE
2	51867687	1	ASSEMBLY, HOSE
3	51300390	1	ASSEMBLY, HOSE
4	51867109	1	ASSEMBLY, HOSE
5	51059772	1	ASSEMBLY, HOSE
7	51359545	1	ASSEMBLY, HOSE
8	51028538	2	ASSEMBLY, HOSE
10	51215788	1	ASSEMBLY, HOSE
11	51867513	2	ASSEMBLY, HOSE
12	51078624	1	ASSEMBLY, HOSE
13	51867489	4	ASSEMBLY, HOSE
14	51863207	11	ASSEMBLY, HOSE
16	51366771	2	ASSEMBLY, HOSE
18	51029064	2	ASSEMBLY, HOSE
19	51874428	2	ASSEMBLY, HOSE
20	51354298	1	ASSEMBLY, HOSE
21	51028892	1	ASSEMBLY, HOSE
23	51867224	4	ASSEMBLY, HOSE
24	51030856	1	ASSEMBLY, HOSE
26	51069086	1	ASSEMBLY, HOSE
27	51030922	3	ASSEMBLY, HOSE
30	51064699	1	ASSEMBLY, HOSE
31	51231702	1	ASSEMBLY, HOSE
32	51867158	2	ASSEMBLY, HOSE
33	51867166	1	ASSEMBLY, HOSE
34	51306934	1	ASSEMBLY, HOSE
35	51867216	1	ASSEMBLY, HOSE
36	51916419	1	ASSEMBLY, HOSE
37	51916427	1	ASSEMBLY, HOSE
38	51990232	1	ASSEMBLY, HOSE
39	51916435	1	ASSEMBLY, HOSE
40	51366813	1	ASSEMBLY, HOSE
41	51359610	1	ASSEMBLY, HOSE
42	51231702	1	ASSEMBLY, HOSE
43	51028421	2	ASSEMBLY, HOSE
45	51984128	3	FITTING, BULKHEAD TEST
46	51985679	1	DECAL, BULKHEAD
47	51867208	1	ASSEMBLY, HOSE
48	51300846	1	ASSEMBLY, HOSE
49	51867190	1	ASSEMBLY, HOSE

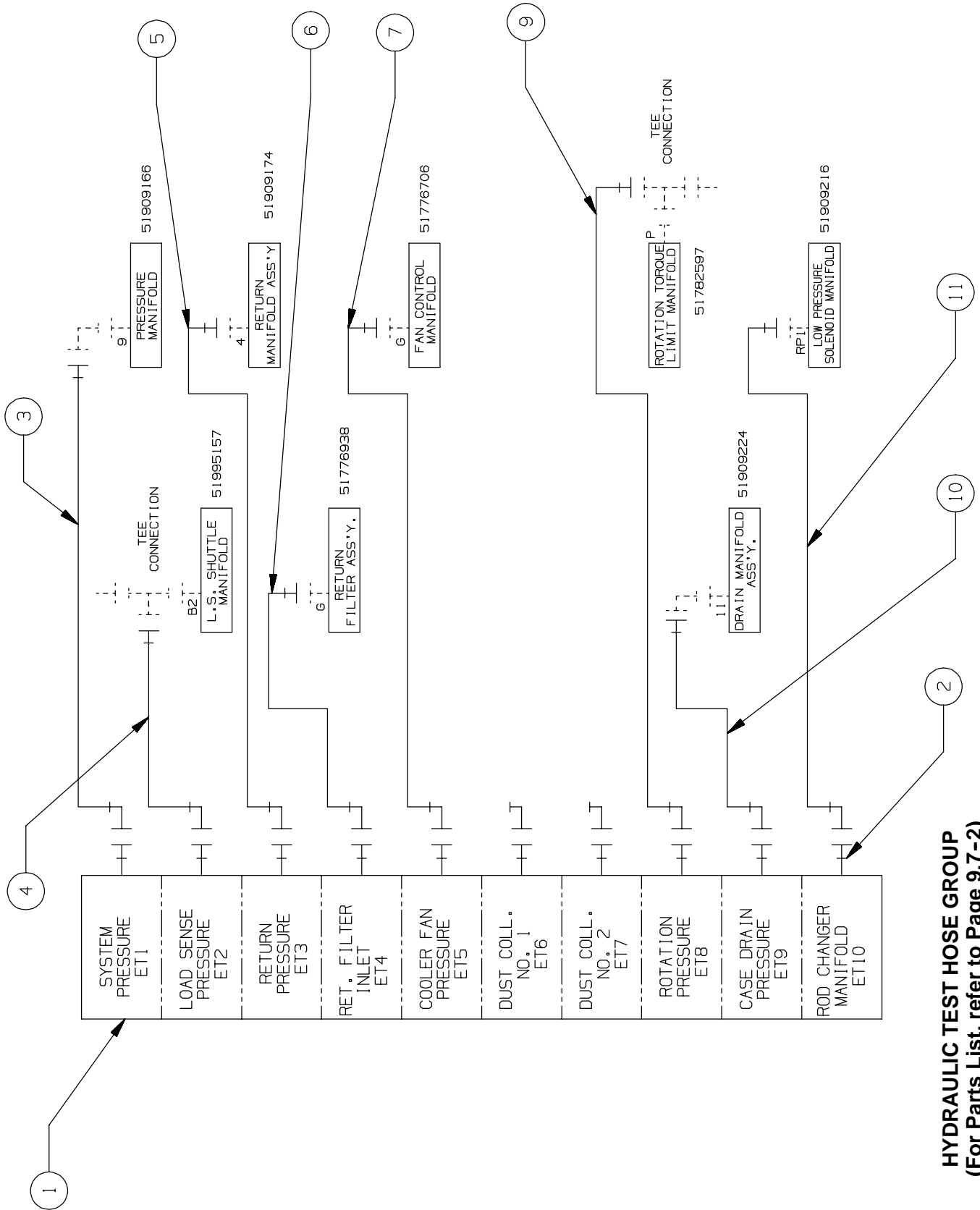
50	51041093	1	ASSEMBLY, HOSE
51	51366896	1	ASSEMBLY, HOSE
52	51043784	1	ASSEMBLY, HOSE

HYDRAULIC TEST HOSE GROUP

Revision 1

April 6, 1999

Section 9.7



HYDRAULIC TEST HOSE GROUP
(For Parts List, refer to Page 9.7-2)

HYDRAULIC TEST HOSE GROUP
(For Illustration of parts, refer to Page 9.7-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

51990885		HYDRAULIC TEST HOSE GROUP	
1	51990489	1	DECAL, HYDRAULIC TEST
2	51984128	10	FITTING, BULKHEAD TEST
3	51303840	1	ASSEMBLY, HOSE
4	51087013	1	ASSEMBLY, HOSE

5	51028587	1	ASSEMBLY, HOSE
6	51029114	1	ASSEMBLY, HOSE
7	51867158	1	ASSEMBLY, HOSE
9	51059905	1	ASSEMBLY, HOSE

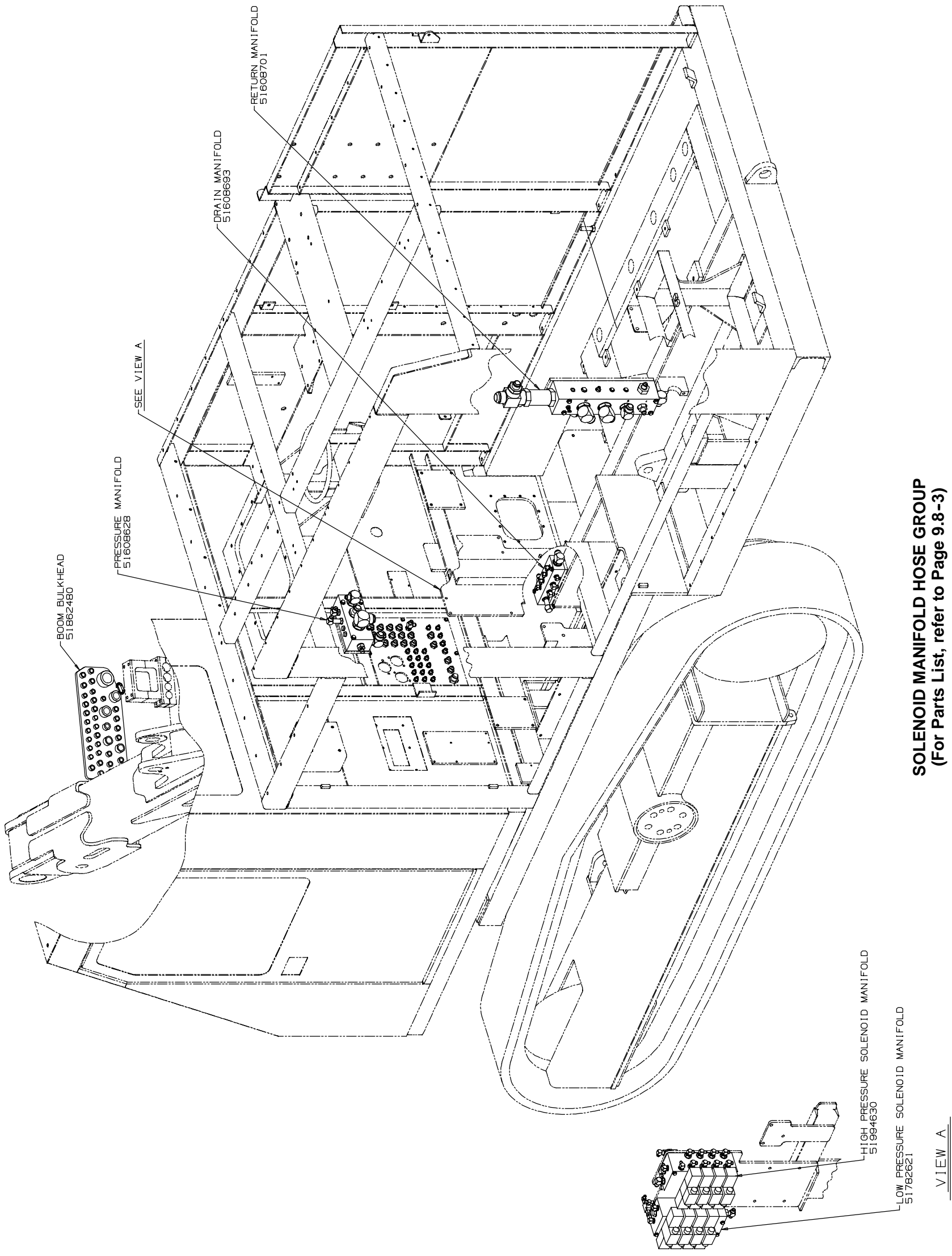
10	51867208	1	ASSEMBLY, HOSE
11	51028272	1	ASSEMBLY, HOSE

SOLENOID MANIFOLD HOSE GROUP

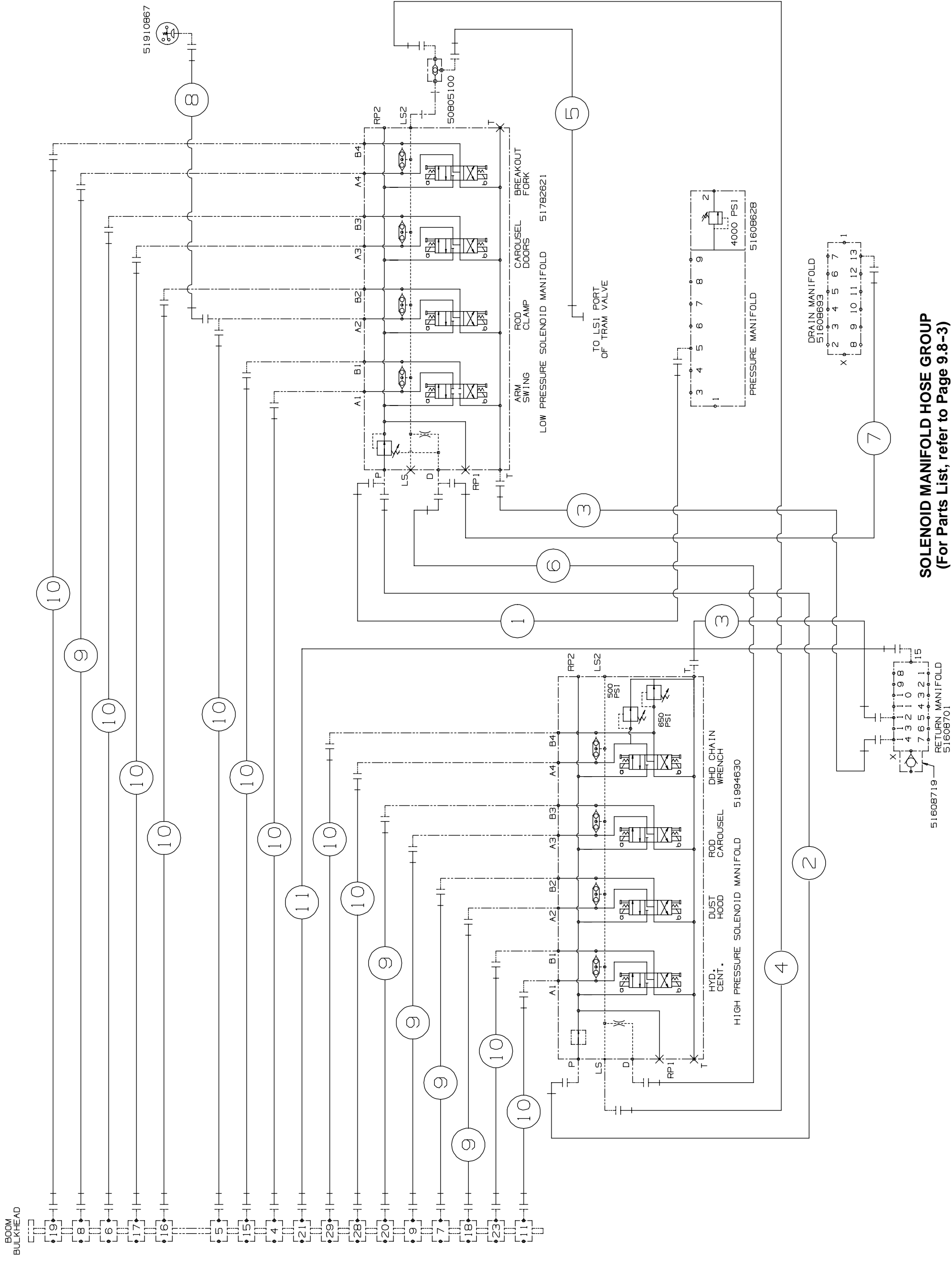
Revision 1

June 4, 1999

Section 9.8



SOLENOID MANIFOLD HOSE GROUP
(For Parts List, refer to Page 9.8-3)



SOLENOID MANIFOLD HOSE GROUP
 (For Parts List, refer to Page 9.8-3)

SOLENOID MANIFOLD HOSE GROUP
 (For Illustration of parts, refer to Pages 9.8-1 & 9.8-2)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	51910834		SOLENOID MANIFOLD HOSE GROUP
1	51910529	1	ASSEMBLY, HOSE
2	51028207	1	ASSEMBLY, HOSE
3	51351997	2	ASSEMBLY, HOSE

4	51867018	1	ASSEMBLY, HOSE
5	51064699	2	ASSEMBLY, HOSE
6	51366862	1	ASSEMBLY, HOSE

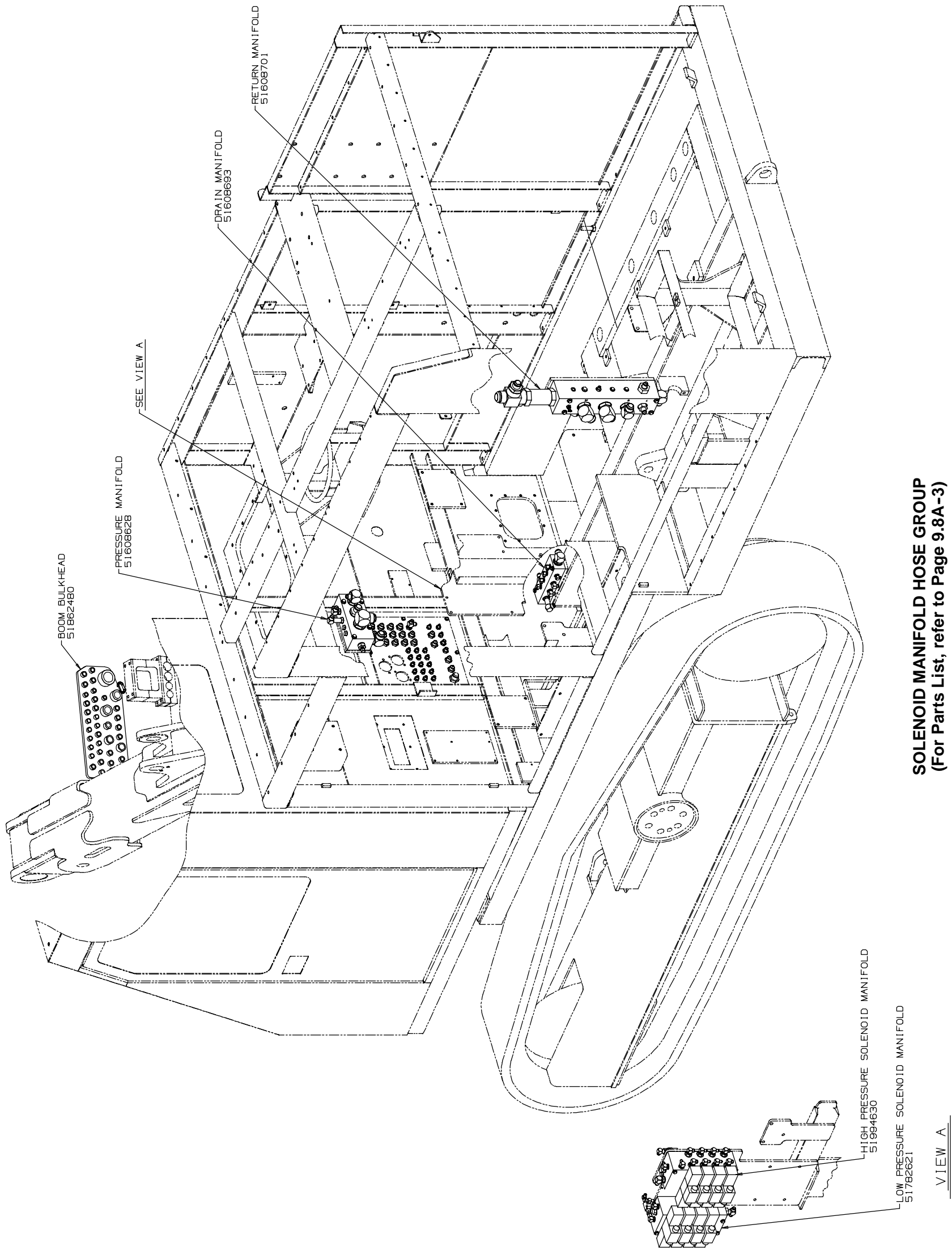
7	51303832	1	ASSEMBLY, HOSE
8	51028306	1	ASSEMBLY, HOSE
9	51028793	5	ASSEMBLY, HOSE

10	51867943	11	ASSEMBLY, HOSE
11	51868057	1	ASSEMBLY, HOSE

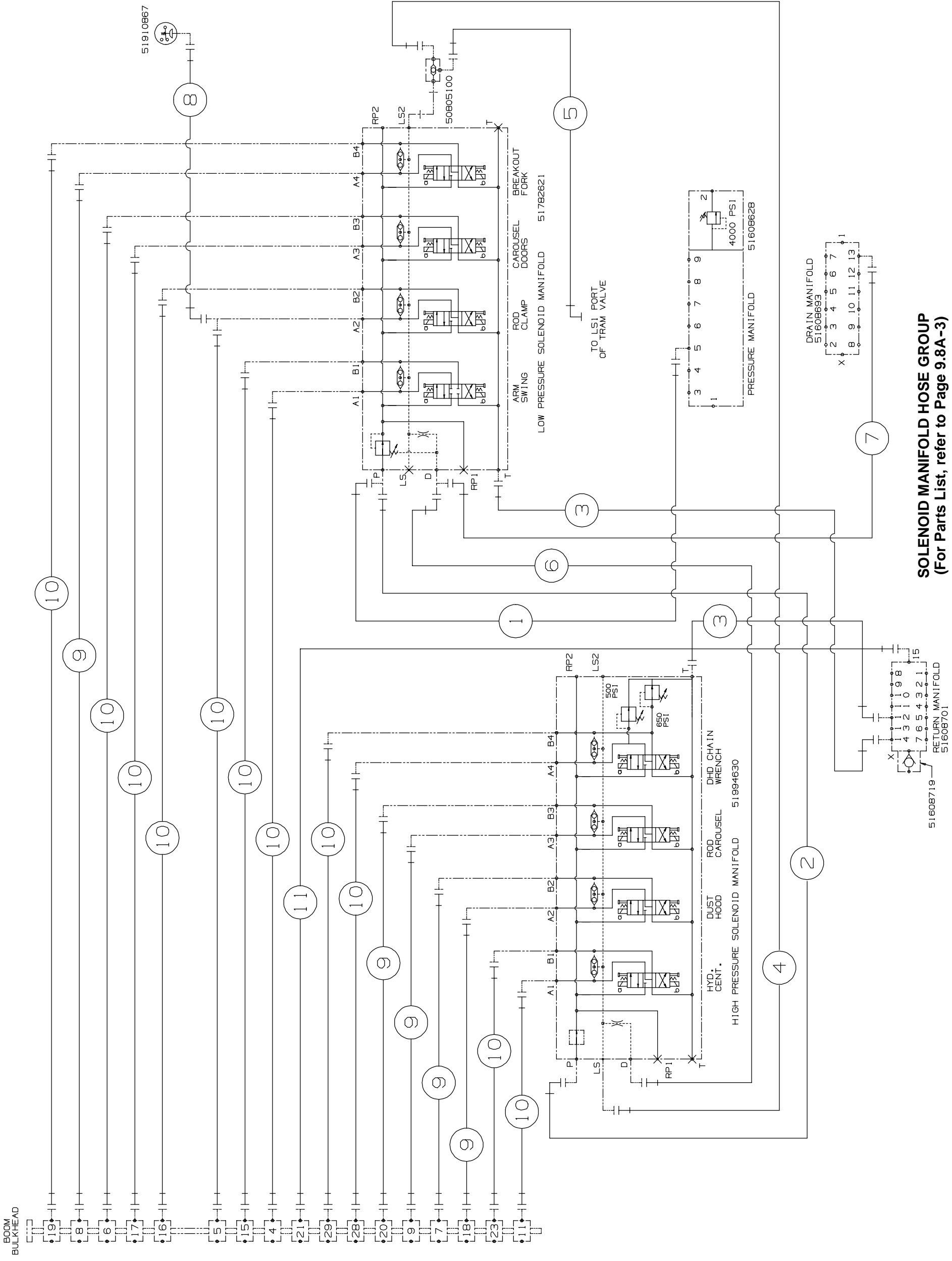
SOLENOID MANIFOLD HOSE GROUP ARCTIC

May 23, 2002

Section 9.8A



SOLENOID MANIFOLD HOSE GROUP
(For Parts List, refer to Page 9.8A -3)



SOLENOID MANIFOLD HOSE GROUP
 (For Parts List, refer to Page 9.8A-3)

SOLENOID MANIFOLD HOSE GROUP
(For Illustration of parts, refer to Pages 9.8A-1 & 9.8A-2)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

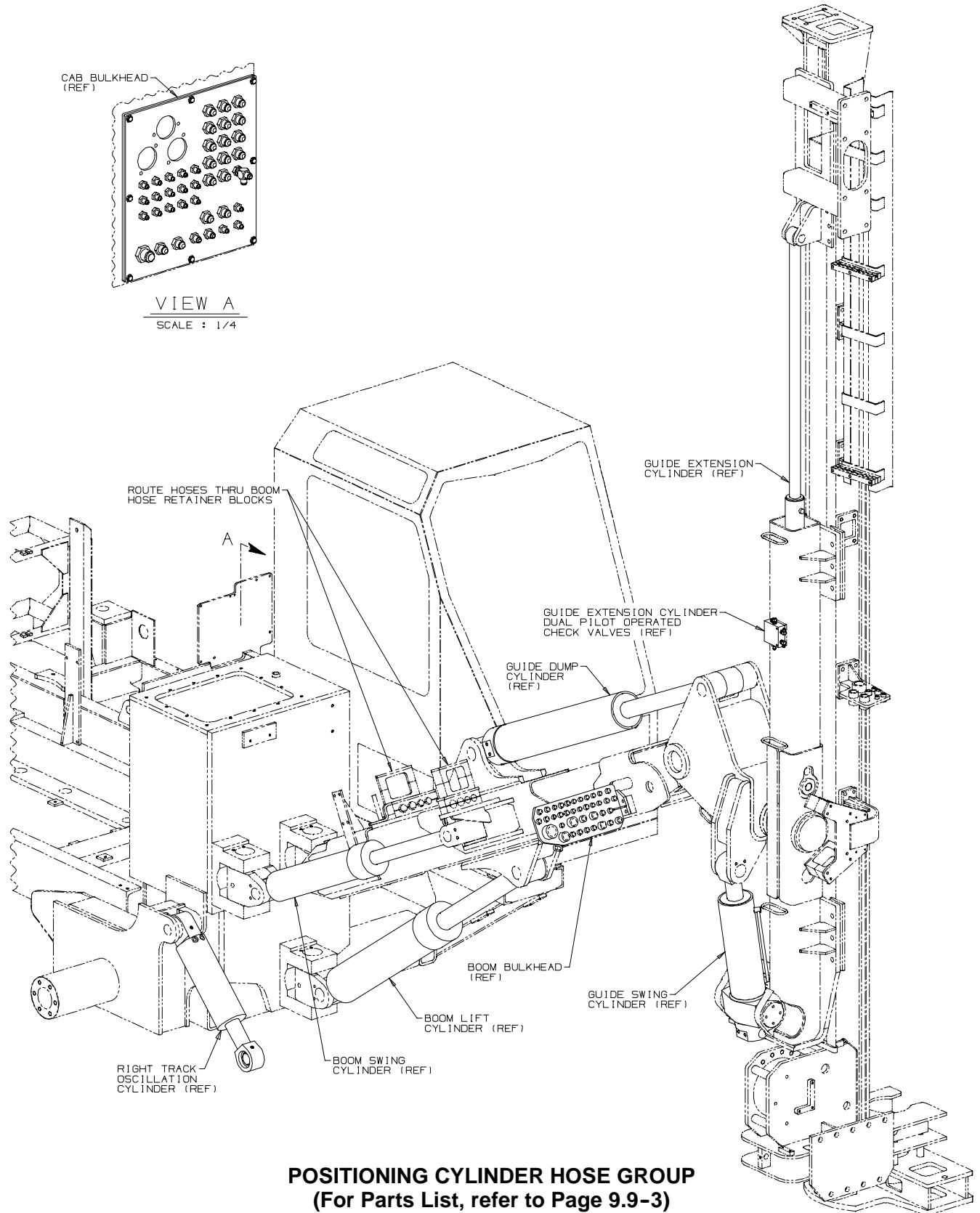
57685075		SOLENOID MANIFOLD HOSE GROUP	
1	51910529	1	ASSEMBLY, HOSE
2	51028207	1	ASSEMBLY, HOSE
3	51351997	2	ASSEMBLY, HOSE
4	51867018	1	ASSEMBLY, HOSE
5	51064699	2	ASSEMBLY, HOSE
6	51366862	1	ASSEMBLY, HOSE
7	51303832	1	ASSEMBLY, HOSE
8	51028306	1	ASSEMBLY, HOSE
9	57687865	5	ASSEMBLY, HOSE
10	57687873	11	ASSEMBLY, HOSE
11	57673980	1	ASSEMBLY, HOSE

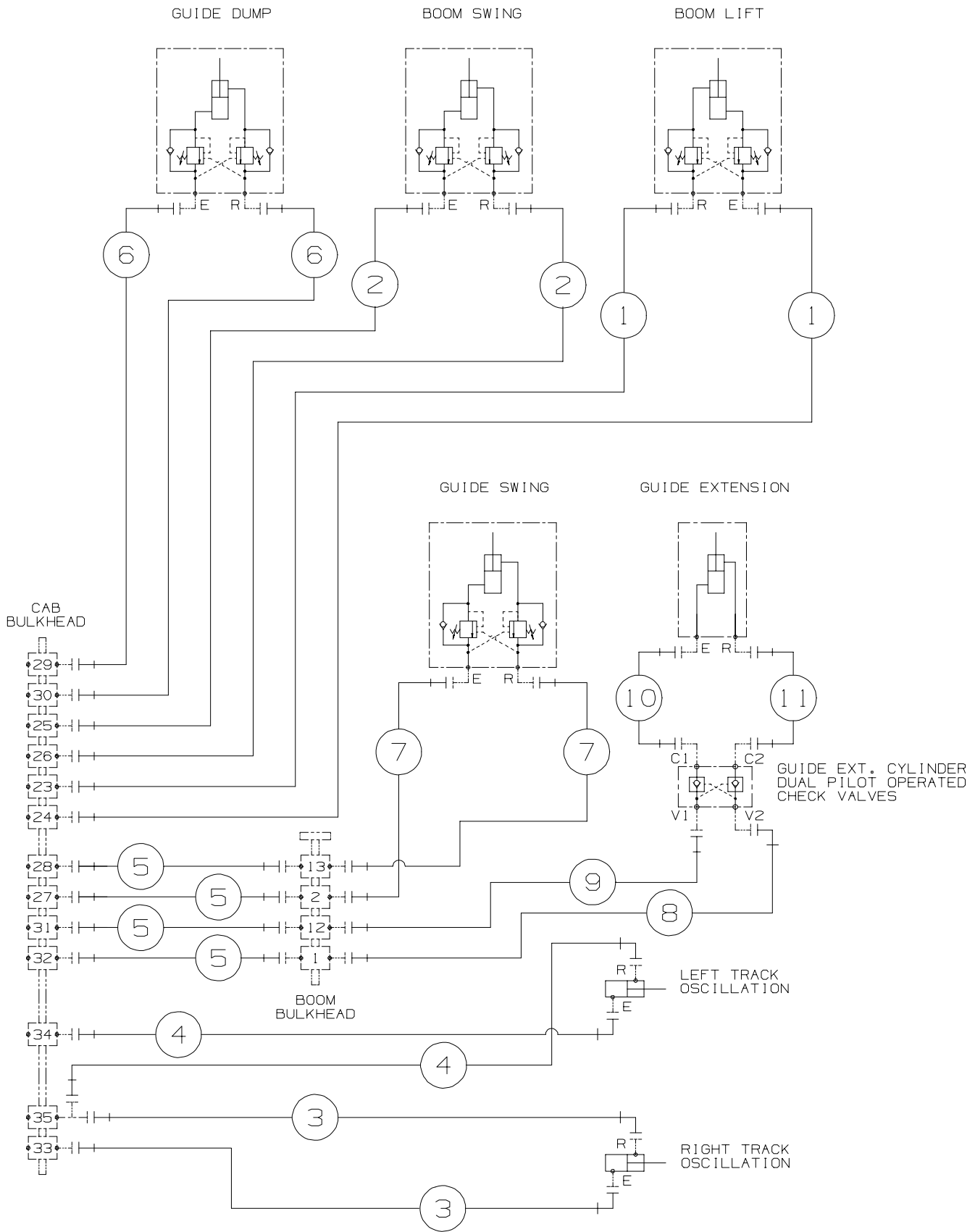
POSITIONING CYLINDER HOSE GROUP

Revision 1

August 30, 1999

Section 9.9





HOSING DIAGRAM

POSITIONING CYLINDER HOSE GROUP
(For Parts List, refer to Page 9.9-3)

POSITIONING CYLINDER HOSE GROUP
(For Illustration of parts, refer to Page 9.9-1 & 9.9-2)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	51910800		POSITIONING CYLINDER HOSE GROUP
1	51867521	2	ASSEMBLY, HOSE
2	51867554	2	ASSEMBLY, HOSE
3	51354298	2	ASSEMBLY, HOSE
4	51867505	2	ASSEMBLY, HOSE

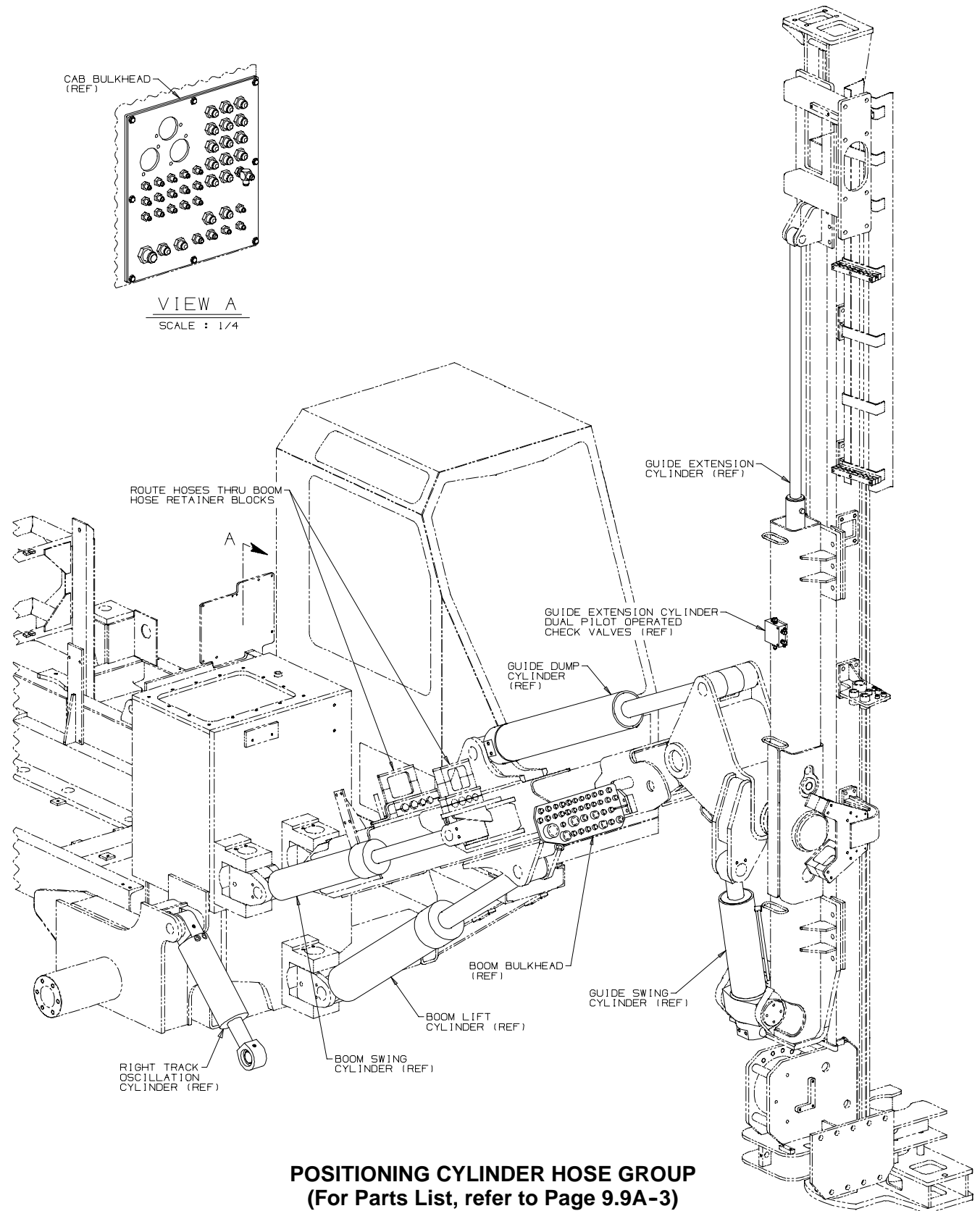
5	51867612	4	ASSEMBLY, HOSE
6	51300820	2	ASSEMBLY, HOSE
7	50979350	2	ASSEMBLY, HOSE
8	51867547	1	ASSEMBLY, HOSE

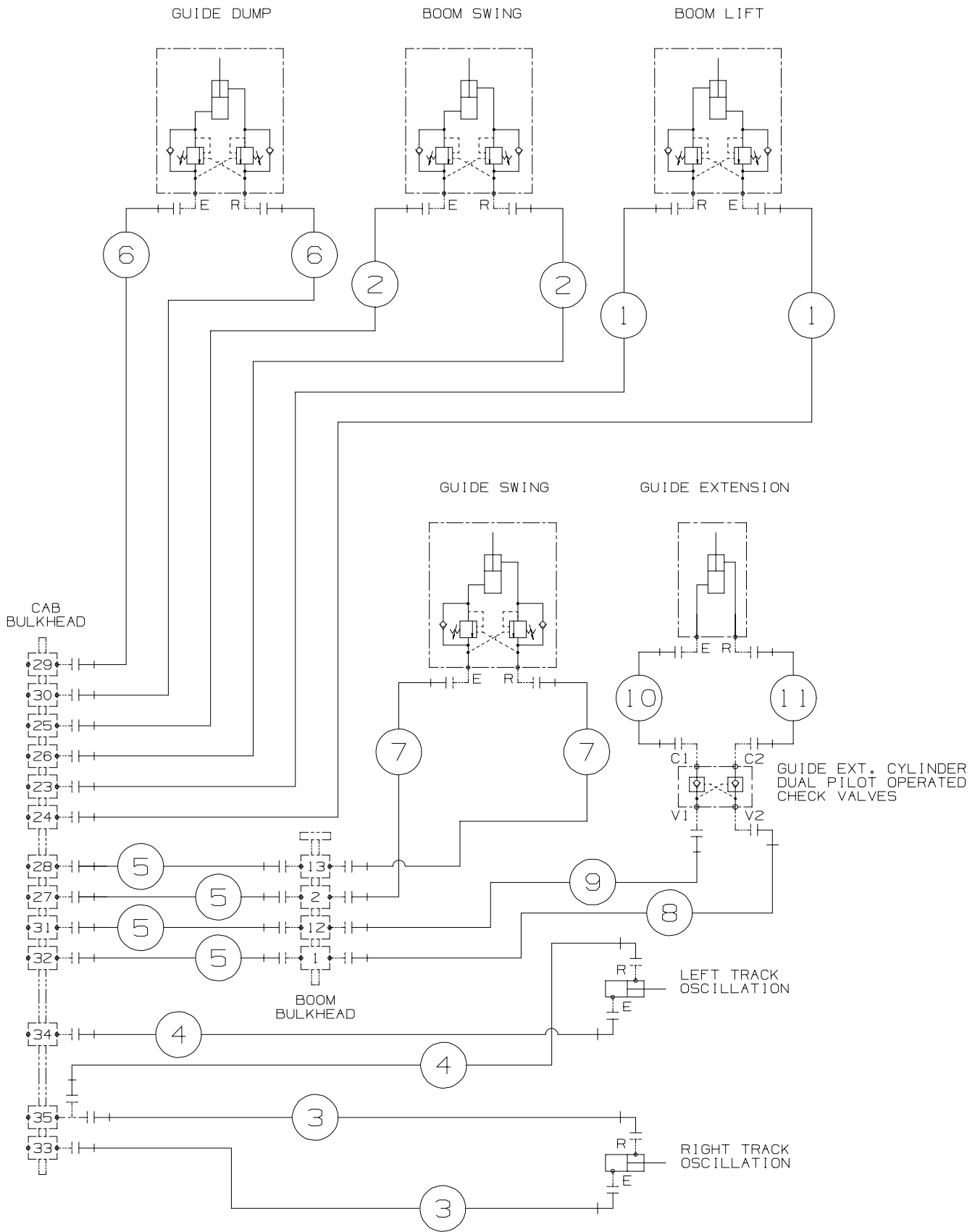
9	51867521	1	ASSEMBLY, HOSE
10	51300564	1	ASSEMBLY, HOSE
11	51300390	1	ASSEMBLY, HOSE

POSITIONING CYLINDER HOSE GROUP

May 23, 2002

Section 9.9A





HOSING DIAGRAM

POSITIONING CYLINDER HOSE GROUP
(For Parts List, refer to Page 9.9A-3)

POSITIONING CYLINDER HOSE GROUP
(For Illustration of parts, refer to Page 9.9A-1 & 9.9A-2)

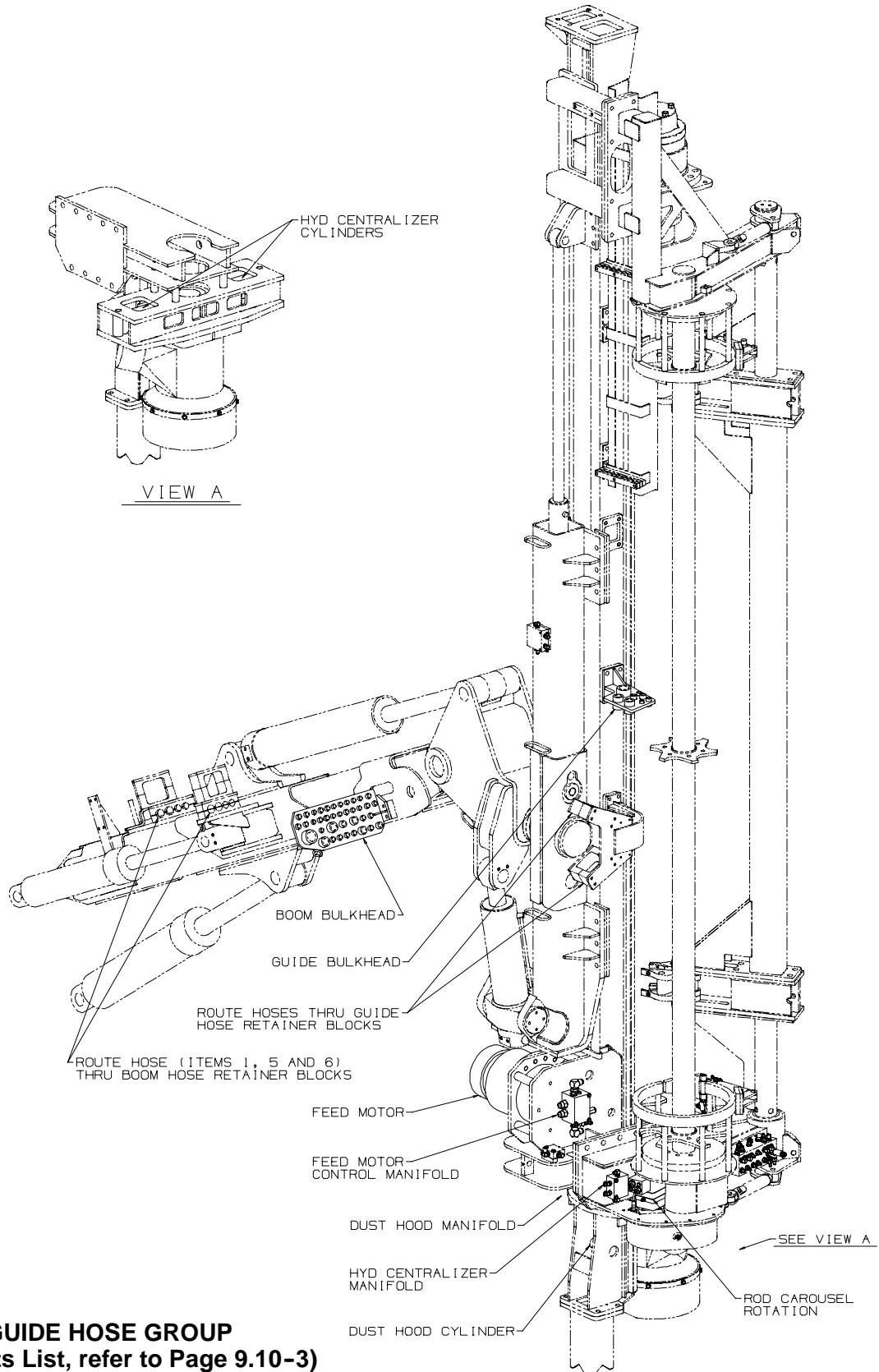
REF.

NO. PART NO. QTY. PART NAME
REMARKS

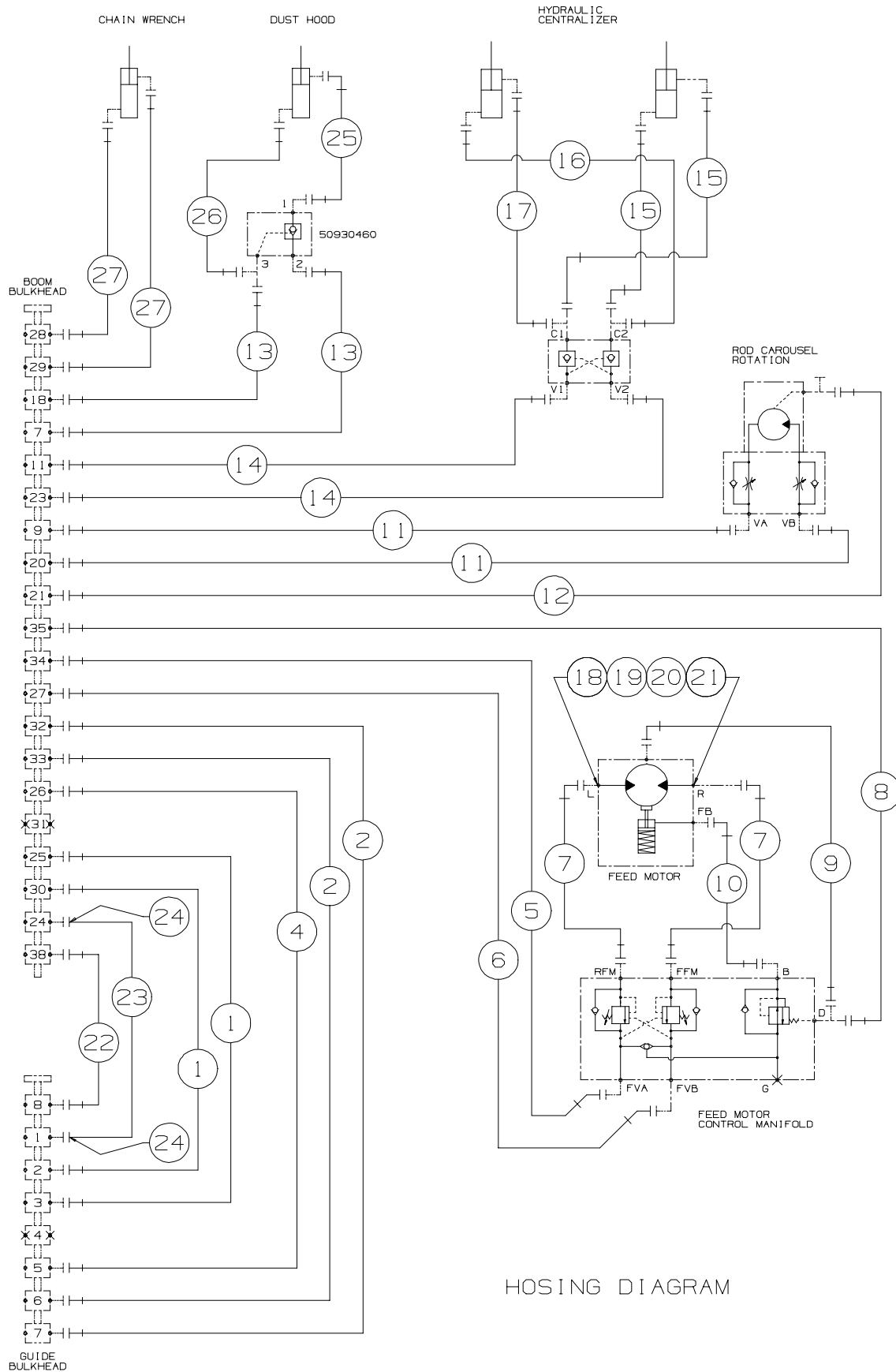
	57687501		POSITIONING CYLINDER HOSE GROUP
1	57687767	2	ASSEMBLY, HOSE
2	57687675	2	ASSEMBLY, HOSE
3	57687683	2	ASSEMBLY, HOSE
4	57687691	2	ASSEMBLY, HOSE

5	57687709	4	ASSEMBLY, HOSE
6	57687717	2	ASSEMBLY, HOSE
7	57687725	2	ASSEMBLY, HOSE
8	57687733	1	ASSEMBLY, HOSE

9	57687667	1	ASSEMBLY, HOSE
10	57687758	1	ASSEMBLY, HOSE
11	57687766	1	ASSEMBLY, HOSE



GUIDE HOSE GROUP
(For Parts List, refer to Page 9.10-3)



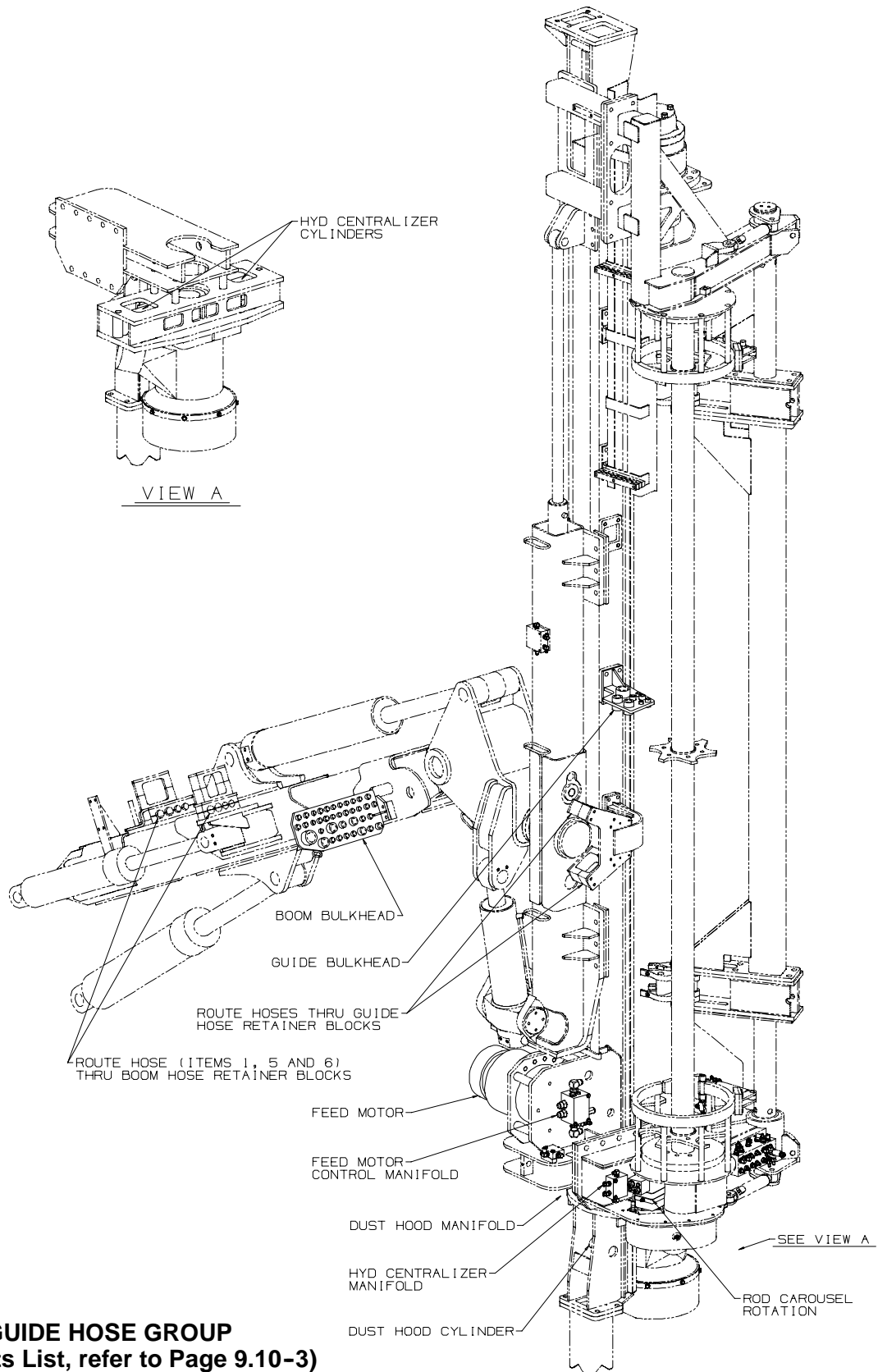
GUIDE HOSE GROUP
 (For Parts List, refer to Page 9.10-3)

GUIDE HOSE GROUP
(For Illustration of parts, refer to Pages 9.10-1 & 9.10-2)

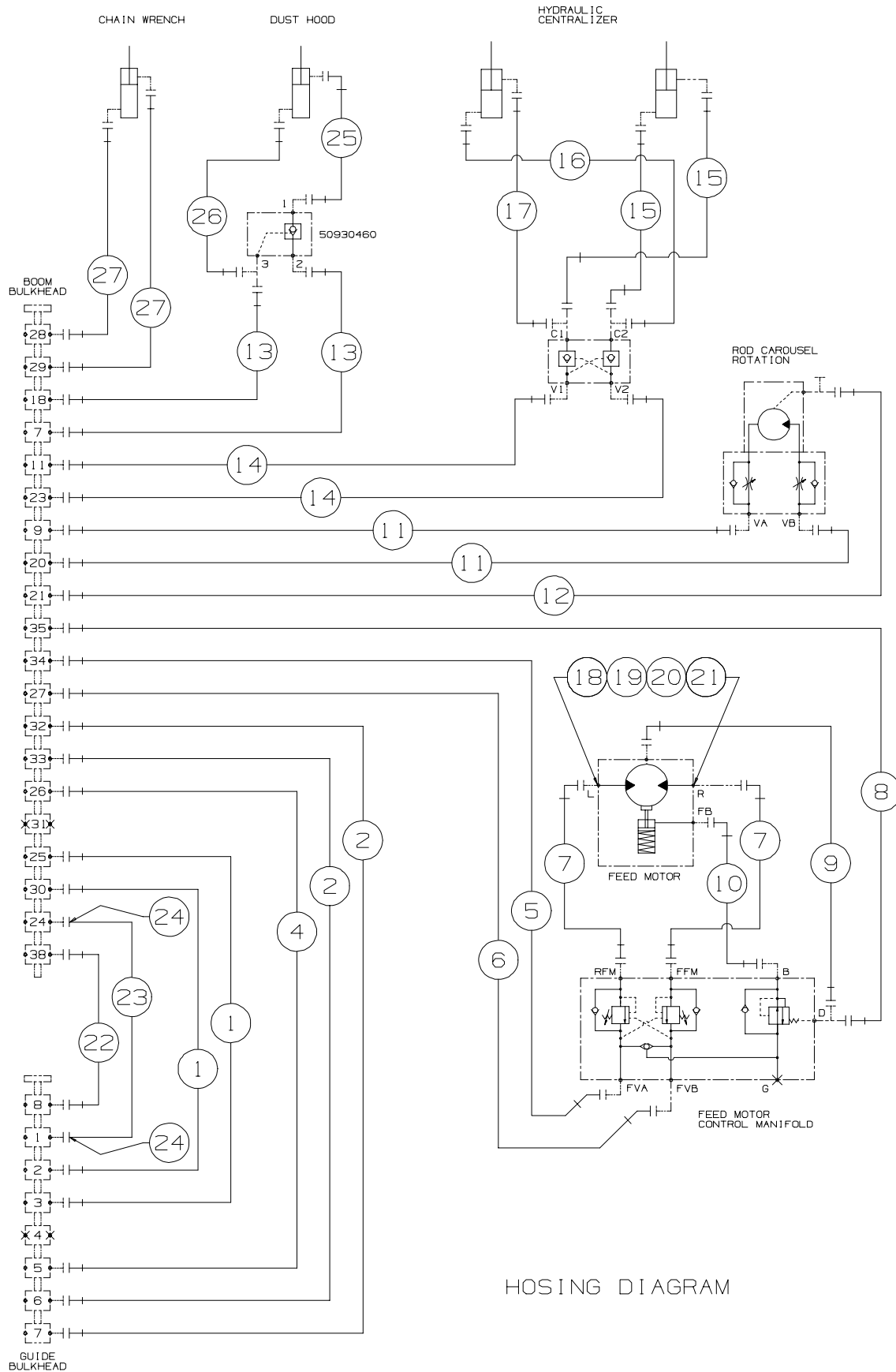
REF.

NO. PART NO. QTY. PART NAME
REMARKS

51910784		GUIDE HOSE GROUP	
1	51910586	2	ASSEMBLY, HOSE
2	51910594	2	ASSEMBLY, HOSE
4	51214864	1	ASSEMBLY, HOSE
5	51909497	1	ASSEMBLY, HOSE
6	51910628	1	ASSEMBLY, HOSE
7	51910636	2	ASSEMBLY, HOSE
8	51867570	1	ASSEMBLY, HOSE
9	51028579	1	ASSEMBLY, HOSE
10	51028579	1	ASSEMBLY, HOSE
11	51867919	2	ASSEMBLY, HOSE
12	51867919	1	ASSEMBLY, HOSE
13	51867919	2	ASSEMBLY, HOSE
14	51780898	2	ASSEMBLY, HOSE
15	51043750	2	ASSEMBLY, HOSE
16	51059723	1	ASSEMBLY, HOSE
17	51059723	1	ASSEMBLY, HOSE
18	51782654	4	FLANGE, SPLIT HALF
19	51782647	2	O-RING
20	96702410	8	CAPSCREW
21	96700836	8	WASHER
22	51916443	1	ASSEMBLY, HOSE
23	95940813	1	HOSE
24	50141720	2	CLAMP, HOSE
25	51030815	1	ASSEMBLY, HOSE
26	51063378	1	ASSEMBLY, HOSE
27	51994853	2	ASSEMBLY, HOSE



GUIDE HOSE GROUP
(For Parts List, refer to Page 9.10-3)



GUIDE HOSE GROUP
(For Parts List, refer to Page 9.10A-3)

GUIDE HOSE GROUP
(For Illustration of parts, refer to Pages 9.10A-1 & 9.10A-2)

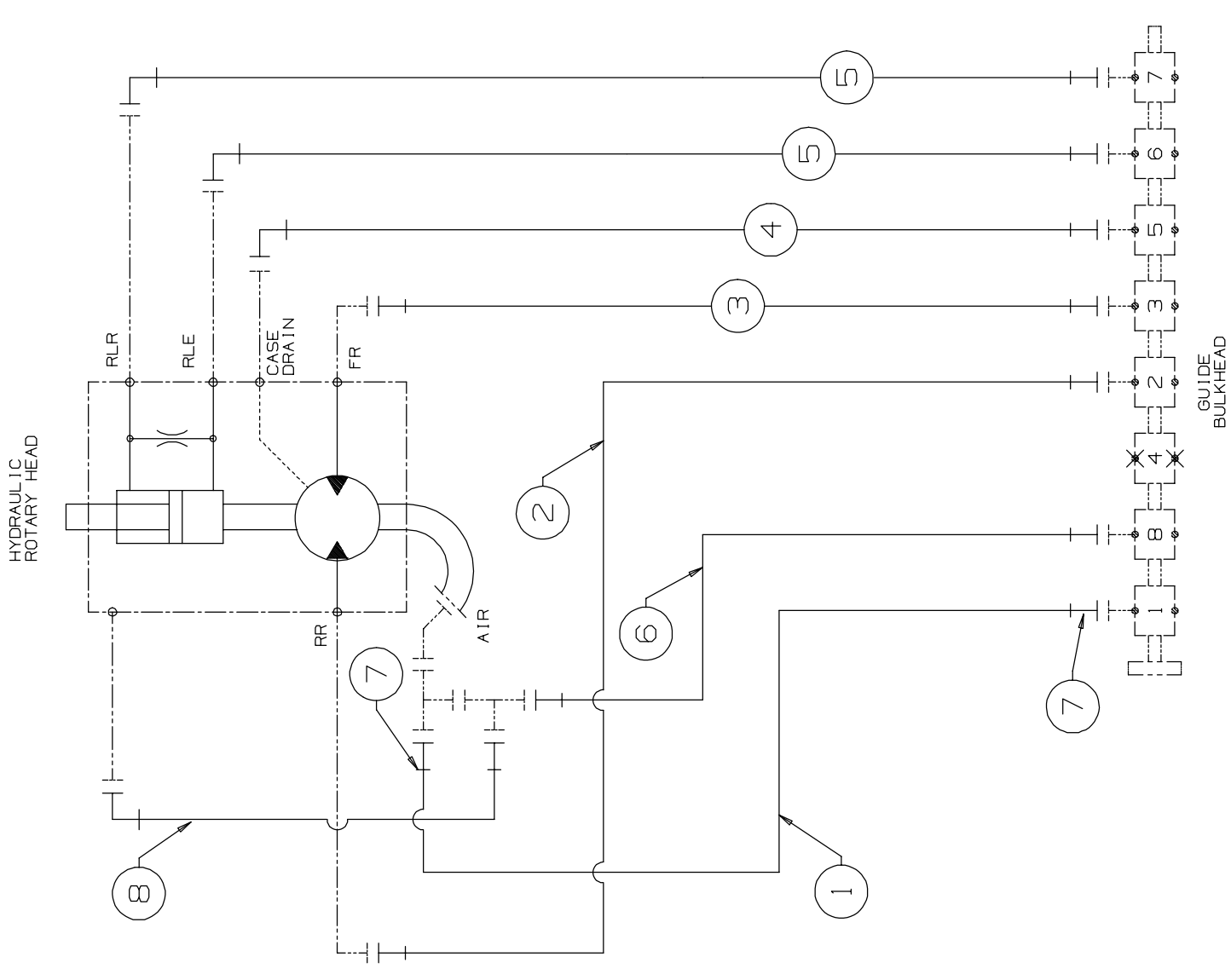
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	57687519		GUIDE HOSE GROUP	
1	57691602	2	ASSEMBLY, HOSE	
2	57687782	2	ASSEMBLY, HOSE	
4	57687790	1	ASSEMBLY, HOSE	
5	57691610	1	ASSEMBLY, HOSE	
6	57691628	1	ASSEMBLY, HOSE	
7	51910636	2	ASSEMBLY, HOSE	
8	51867570	1	ASSEMBLY, HOSE	
9	51028579	1	ASSEMBLY, HOSE	
10	51028579	1	ASSEMBLY, HOSE	
11	57687824	2	ASSEMBLY, HOSE	
12	57687824	1	ASSEMBLY, HOSE	
13	57687824	2	ASSEMBLY, HOSE	
14	57687832	2	ASSEMBLY, HOSE	
15	51043750	2	ASSEMBLY, HOSE	
16	51059723	1	ASSEMBLY, HOSE	
17	51059723	1	ASSEMBLY, HOSE	
18	51782654	4	FLANGE, SPLIT HALF	
19	51782647	2	O-RING	
20	96702410	8	CAPSCREW	
21	96700836	8	WASHER	
22	57687840	1	ASSEMBLY, HOSE	
23	95940813	1	HOSE	
24	50141720	2	CLAMP, HOSE	
25	51030815	1	ASSEMBLY, HOSE	
26	51063378	1	ASSEMBLY, HOSE	
27	57687857	2	ASSEMBLY, HOSE	

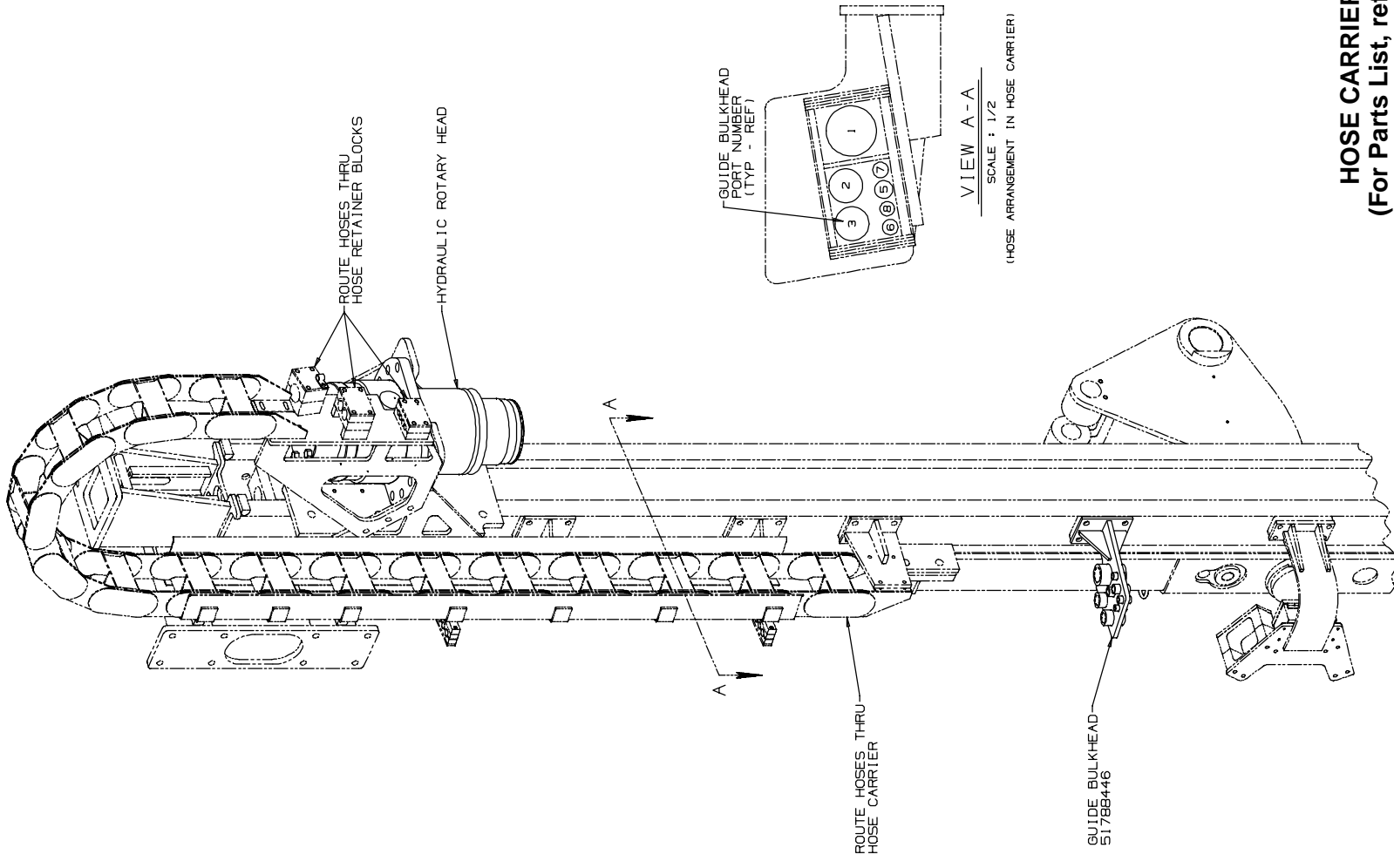
HOSE CARRIER HOSE GROUP

Revision 1
April 5, 1999

Section 9.11



HOSING DIAGRAM



HOSE CARRIER HOSE GROUP
(For Parts List, refer to Page 9.11 -2)

HOSE CARRIER HOSE GROUP
(For Illustration of parts, refer to Page 9.11-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	52138930		HOSE CARRIER HOSE GROUP
1	95371449	1	HOSE
2	51994879	1	ASSEMBLY, HOSE
3	51994887	1	ASSEMBLY, HOSE

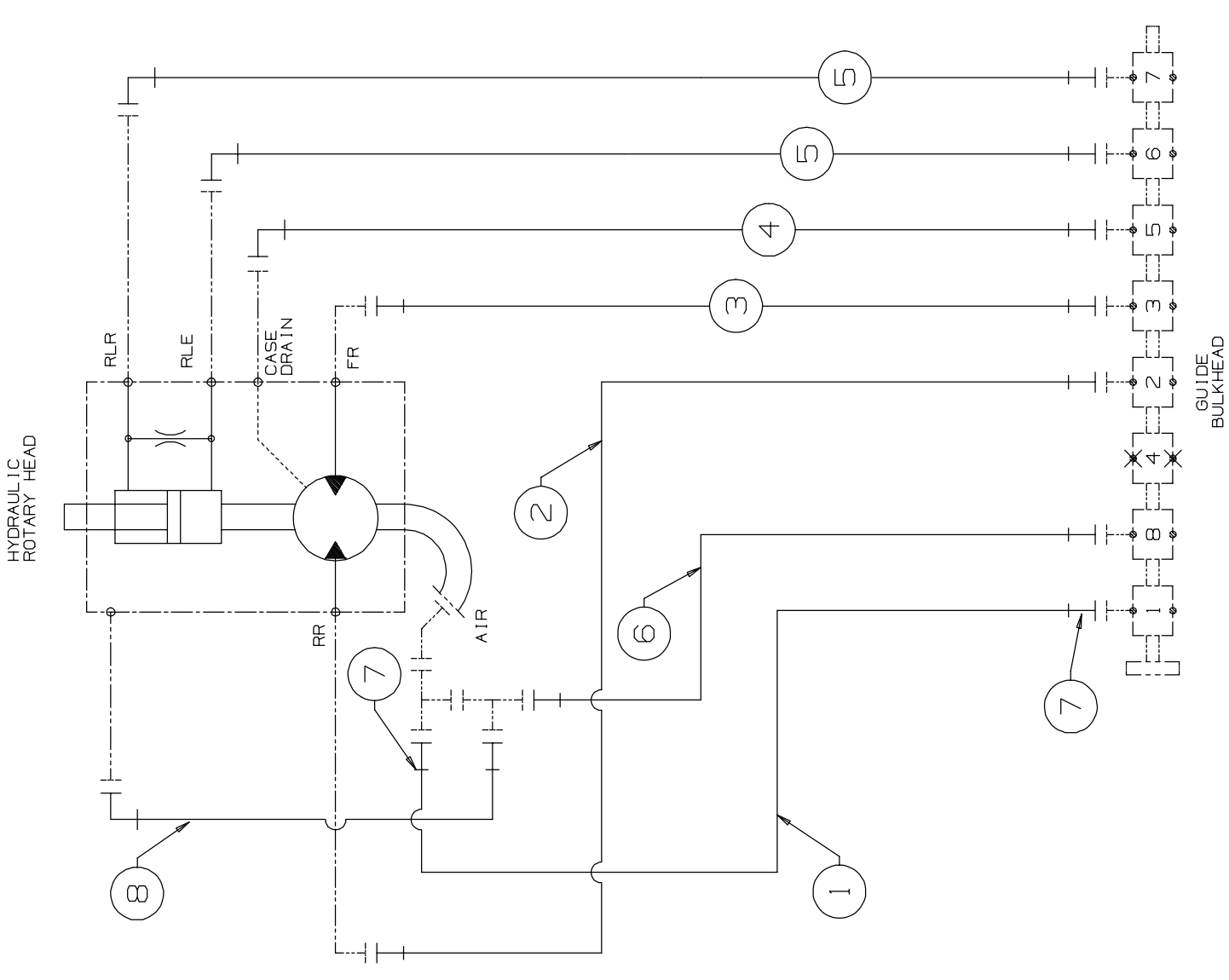
4	51994895	1	ASSEMBLY, HOSE
5	51994903	2	ASSEMBLY, HOSE
6	51867919	1	ASSEMBLY, HOSE

7	50141720	2	CLAMP, HOSE
8	95310231	1	CLAMP, VINYL

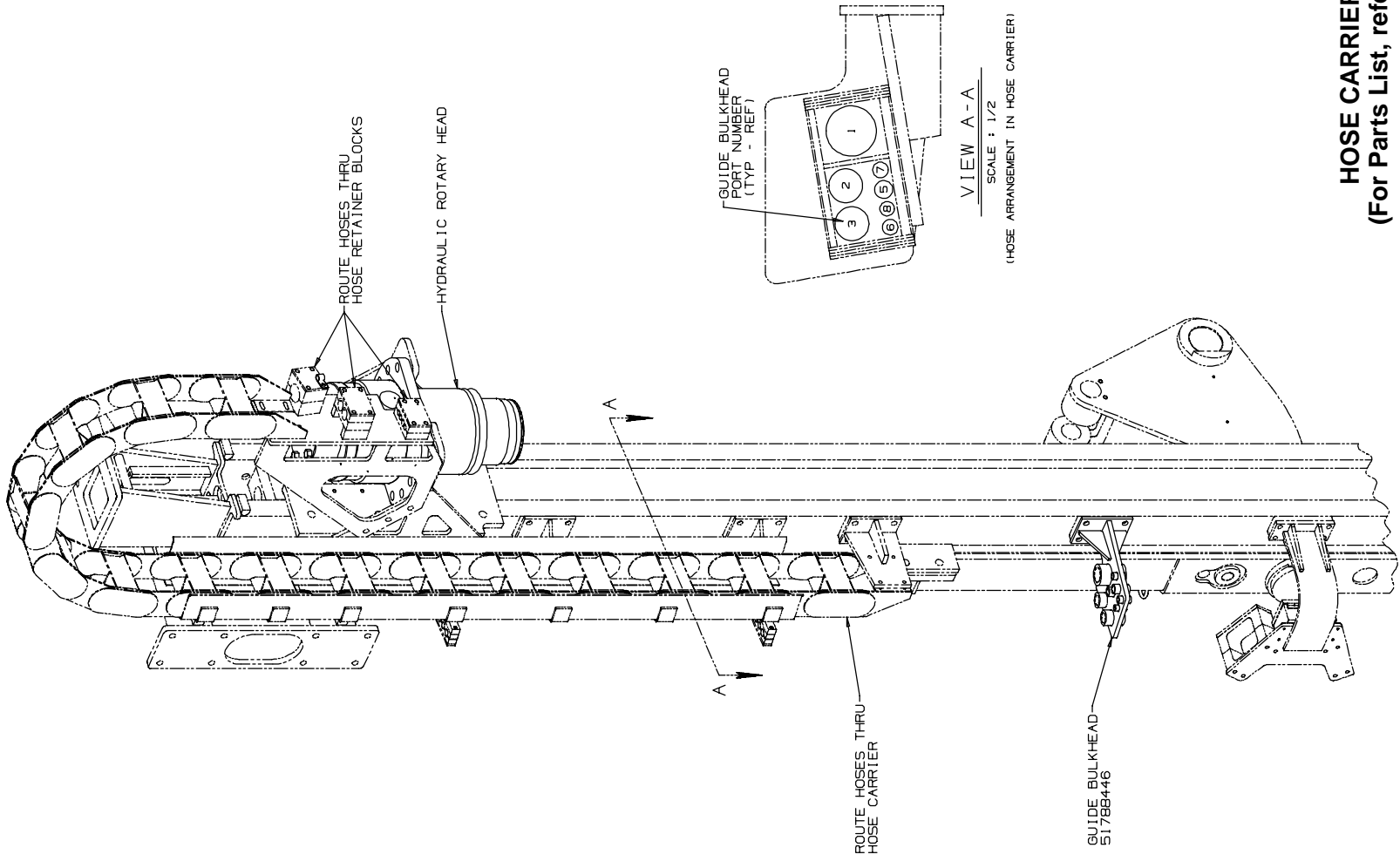
HOSE CARRIER HOSE GROUP

June 14, 2002

Section 9.11



HOSING DIAGRAM



HOSE CARRIER HOSE GROUP
(For Parts List, refer to Page 9.11A-2)

HOSE CARRIER HOSE GROUP
(For Illustration of parts, refer to Page 9.11A-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	57687527		HOSE CARRIER HOSE GROUP
1	95371449	1	HOSE
2	57691586	1	ASSEMBLY, HOSE
3	57691594	1	ASSEMBLY, HOSE

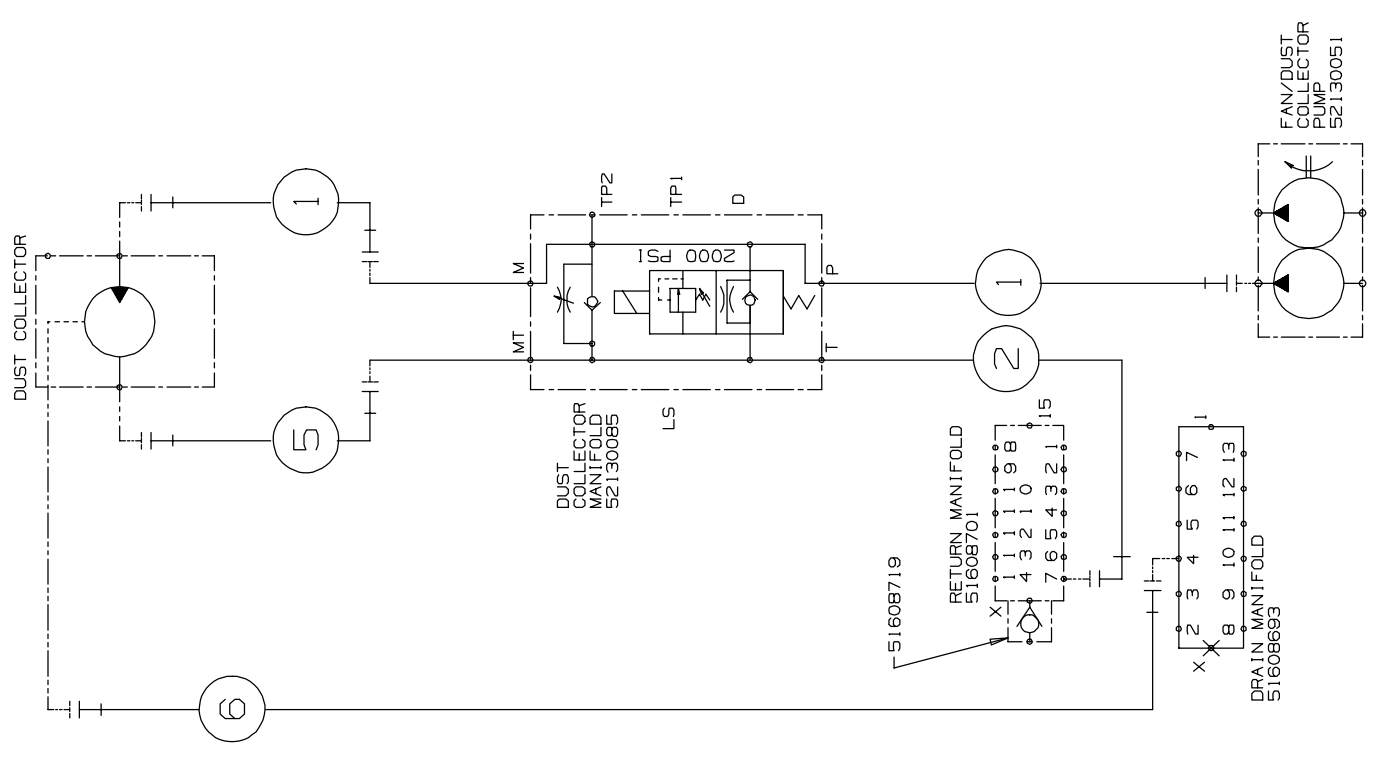
4	57687634	1	ASSEMBLY, HOSE
5	57687642	2	ASSEMBLY, HOSE
6	57687659	1	ASSEMBLY, HOSE

7	50141720	2	CLAMP, HOSE
8	95310231	1	CLAMP, VINYL

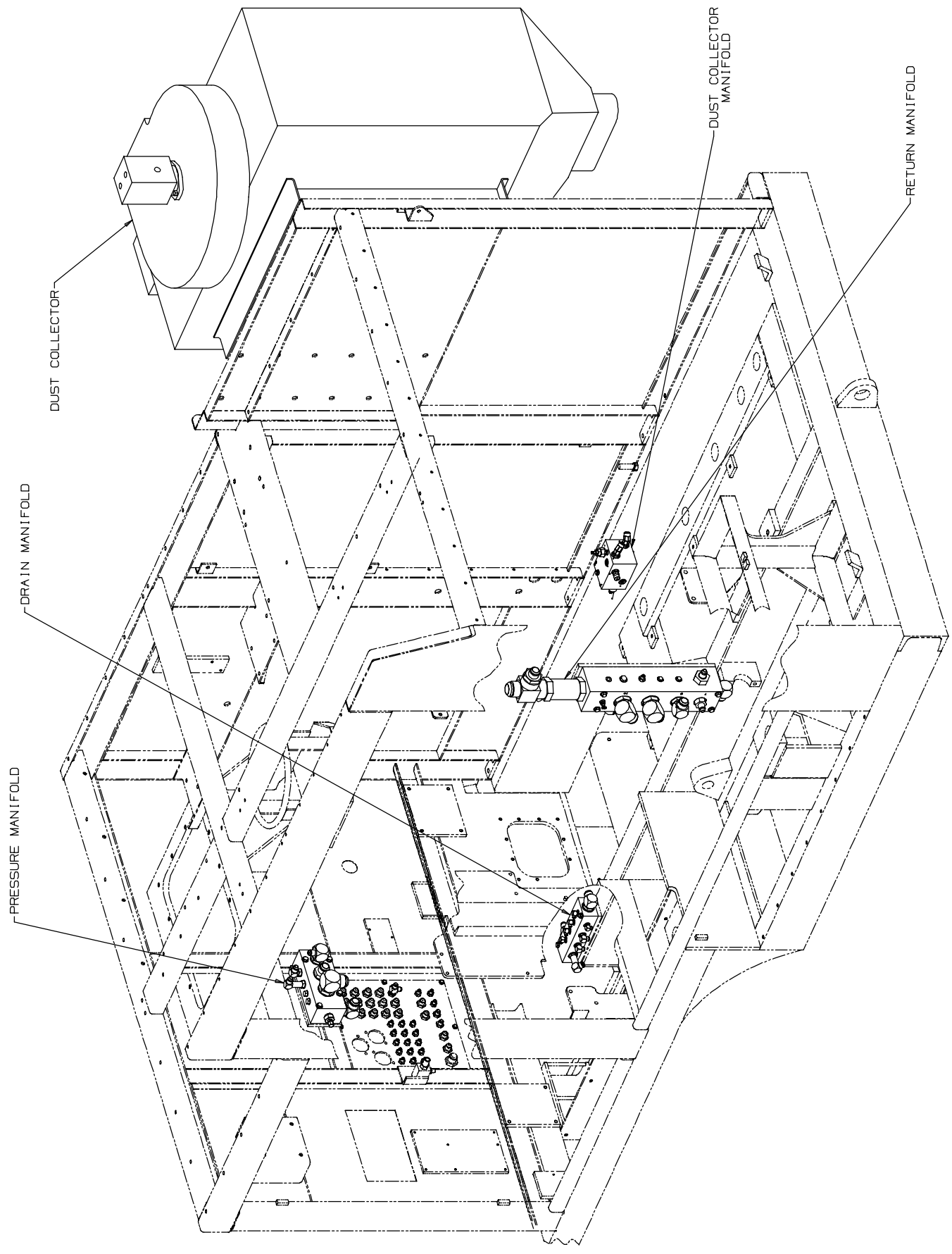
DUST COLLECTOR HOSE GROUP

Revision 1
June 4, 1999

Section 9.12



HOSING DIAGRAM



DUST COLLECTOR HOSE GROUP
(For Parts List, refer to Page 9.12-2)

DUST COLLECTOR HOSE GROUP
(For Illustration of parts, refer to Page 9.12-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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51910768

DUST COLLECTOR HOSE GROUP

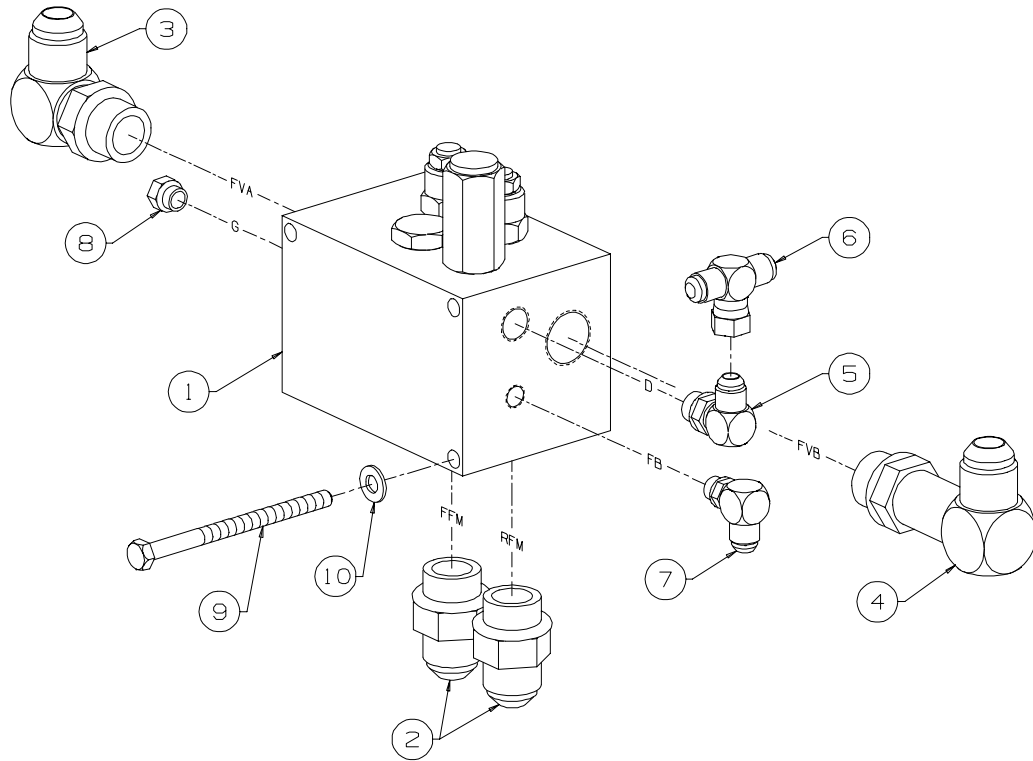
1	51916823	1	ASSEMBLY, HOSE	
2	51863082	1	ASSEMBLY, HOSE	

5	51863074	1	ASSEMBLY, HOSE	
6	51867604	1	ASSEMBLY, HOSE	

FEED CONTROL MANIFOLD ASSEMBLY

January 15, 1999

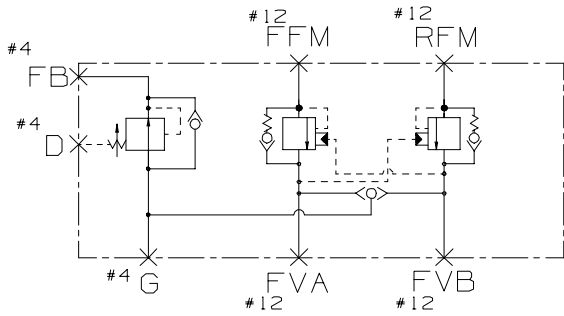
Section 9.13



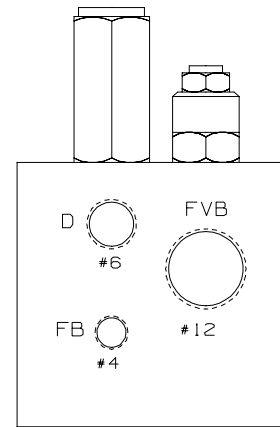
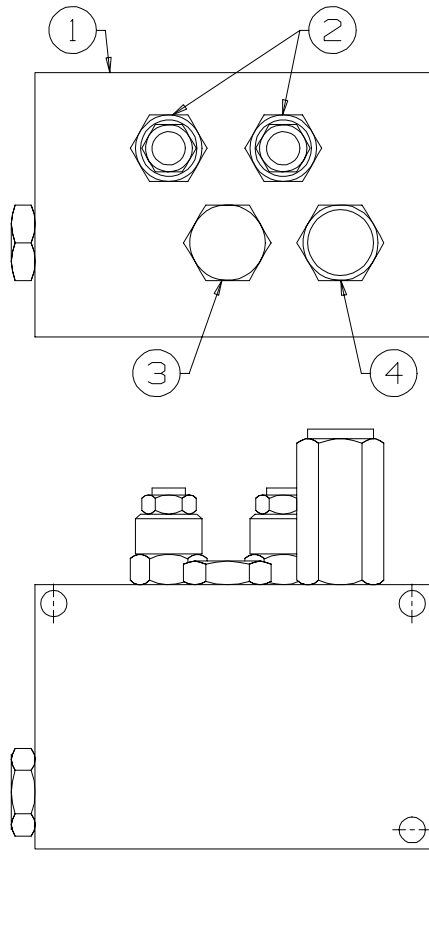
REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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51909448		FEED CONTROL MANIFOLD ASSEMBLY		
1	51608263	1	MANIFOLD, FEED MOTOR	REFER TO PAGE 9.13-2
2	95356960	2	ADAPTER	
3	95280186	1	ADAPTER	
4	95752465	1	ELBOW	
5	95329975	1	ELBOW	
6	95480117	1	TEE	
7	95653614	1	ELBOW	
8	51620664	2	FITTING, PRESSURE TEST	
9	96714696	3	BOLT	
10	96700828	3	WASHER	



HYDRAULIC SCHEMATIC



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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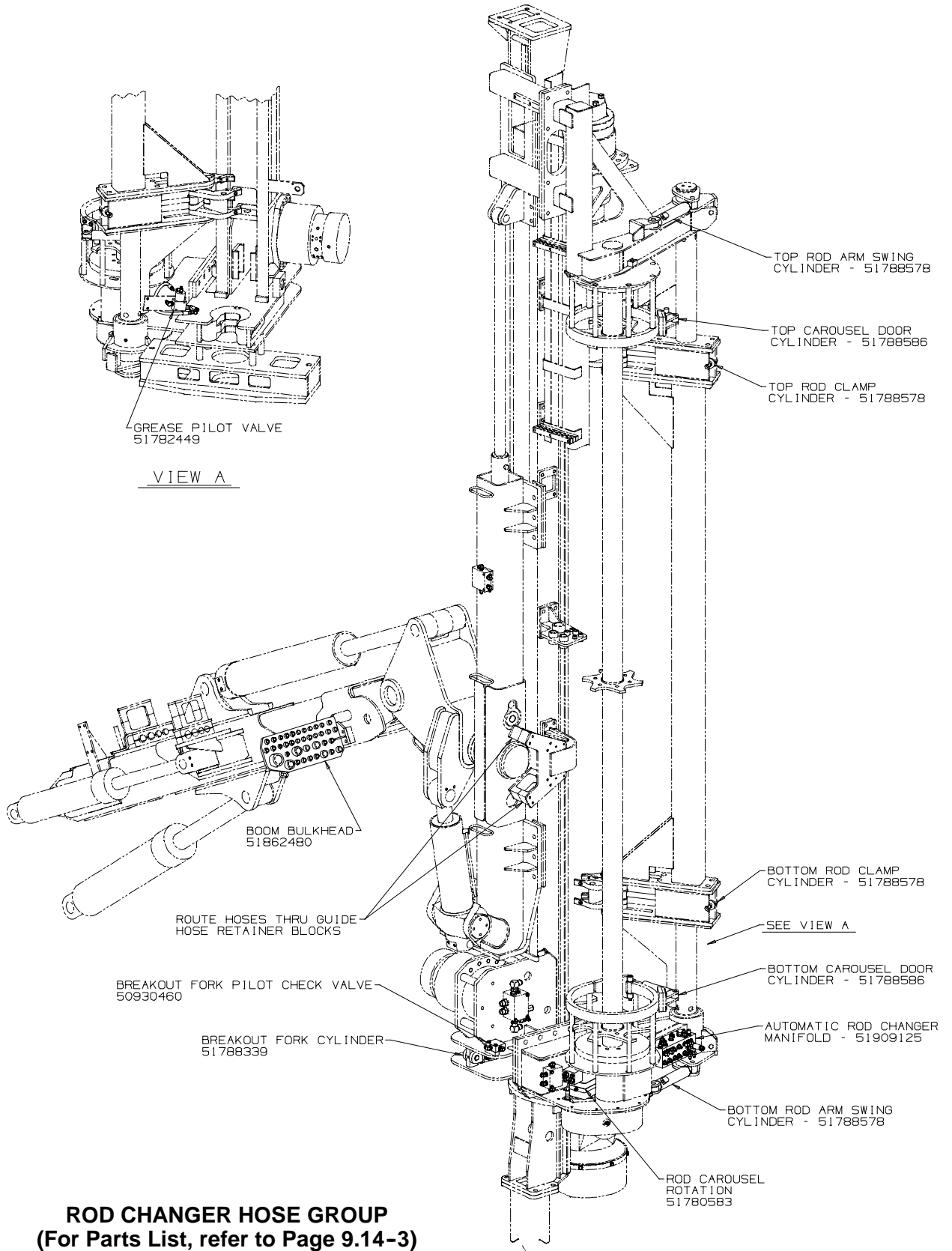
51608263 FEED MOTOR MANIFOLD

1	51776599	1	BLOCK, MANIFOLD	
2	51776607	2	VALVE, CARTRIDGE	
	51776607		KIT, SEAL	
3	51729846	1	VALVE, SHUTTLE	
4	51984367	1	VALVE, CARTRIDGE	
	51776581		KIT, SEAL	
5	51785871	1	CARTRIDGE, CHECK VALVE	
	51776458	1	.KIT, SEAL	

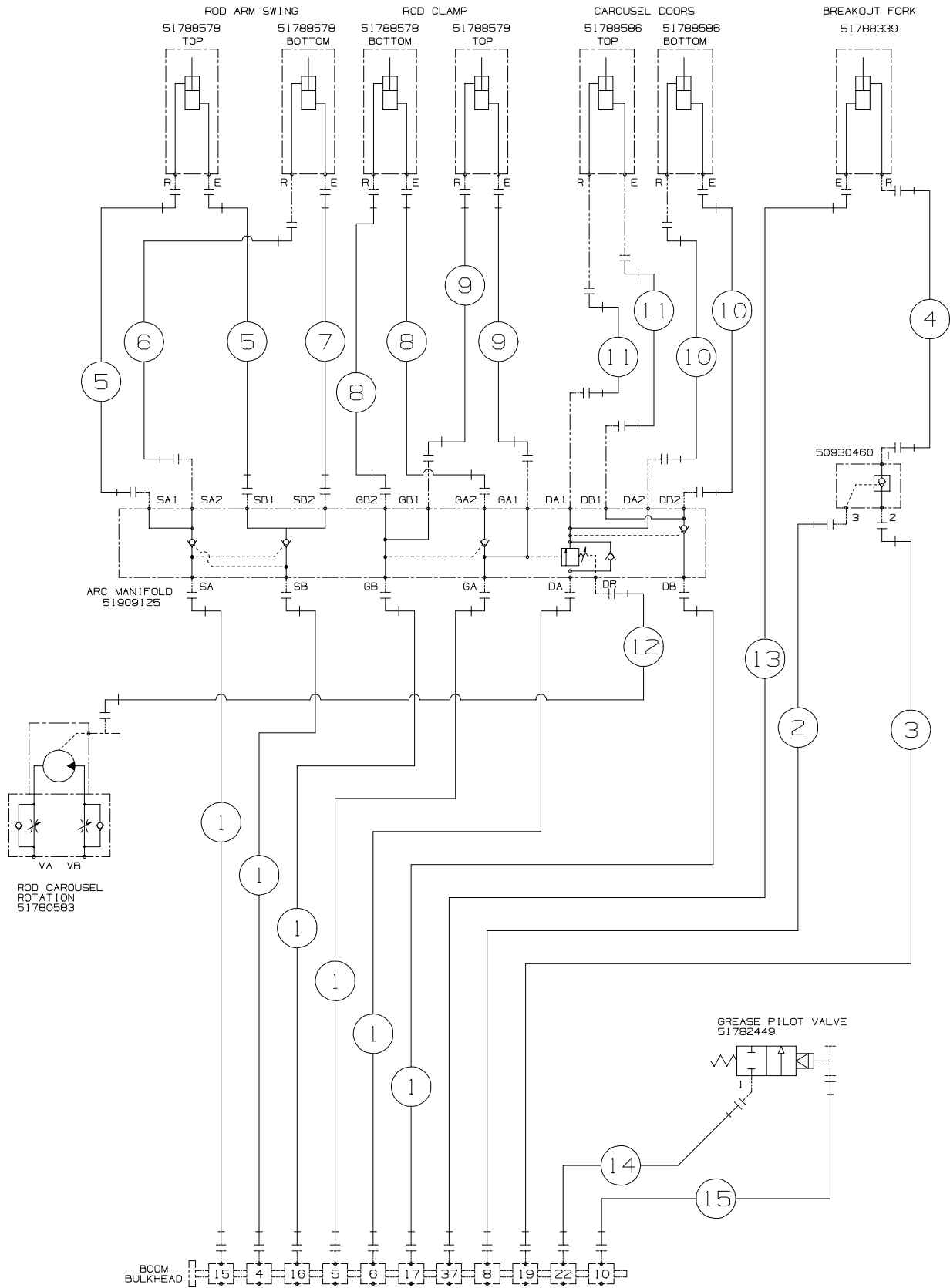
ROD CHANGER HOSE GROUP

January 15, 1999

Section 9.14



ROD CHANGER HOSE GROUP
(For Parts List, refer to Page 9.14-3)



HOSING DIAGRAM

**ROD CHANGER HOSE GROUP
(For Parts List, refer to Page 9.14-3)**

ROD CHANGER HOSE GROUP
(For Illustration of parts, refer to Pages 9.14-1 & 9.14-2)

REF.

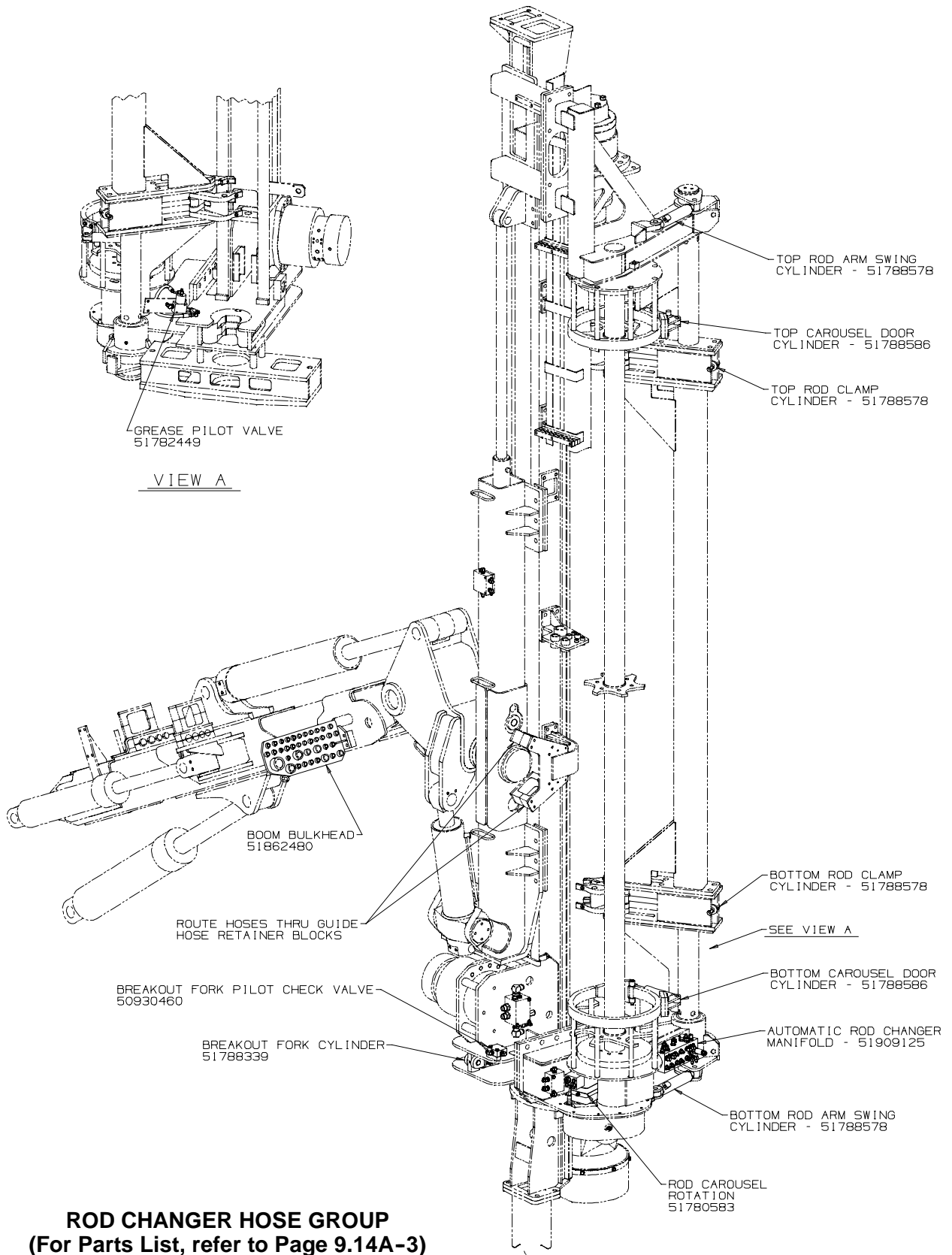
NO. PART NO. QTY. PART NAME
REMARKS

51910743		ROD CHANGER HOSE GROUP	
1	51994903	6	ASSEMBLY, HOSE
2	51867901	1	ASSEMBLY, HOSE
3	51910669	1	ASSEMBLY, HOSE
4	51059772	1	ASSEMBLY, HOSE
5	51916047	2	ASSEMBLY, HOSE
6	51041093	1	ASSEMBLY, HOSE
7	51867000	1	ASSEMBLY, HOSE
8	51060143	2	ASSEMBLY, HOSE
9	51916054	2	ASSEMBLY, HOSE
10	51041085	2	ASSEMBLY, HOSE
11	51916062	2	ASSEMBLY, HOSE
12	51867158	1	ASSEMBLY, HOSE
13	52082880	1	ASSEMBLY, HOSE
14	51300549	1	ASSEMBLY, HOSE
15	51916401	1	ASSEMBLY, HOSE

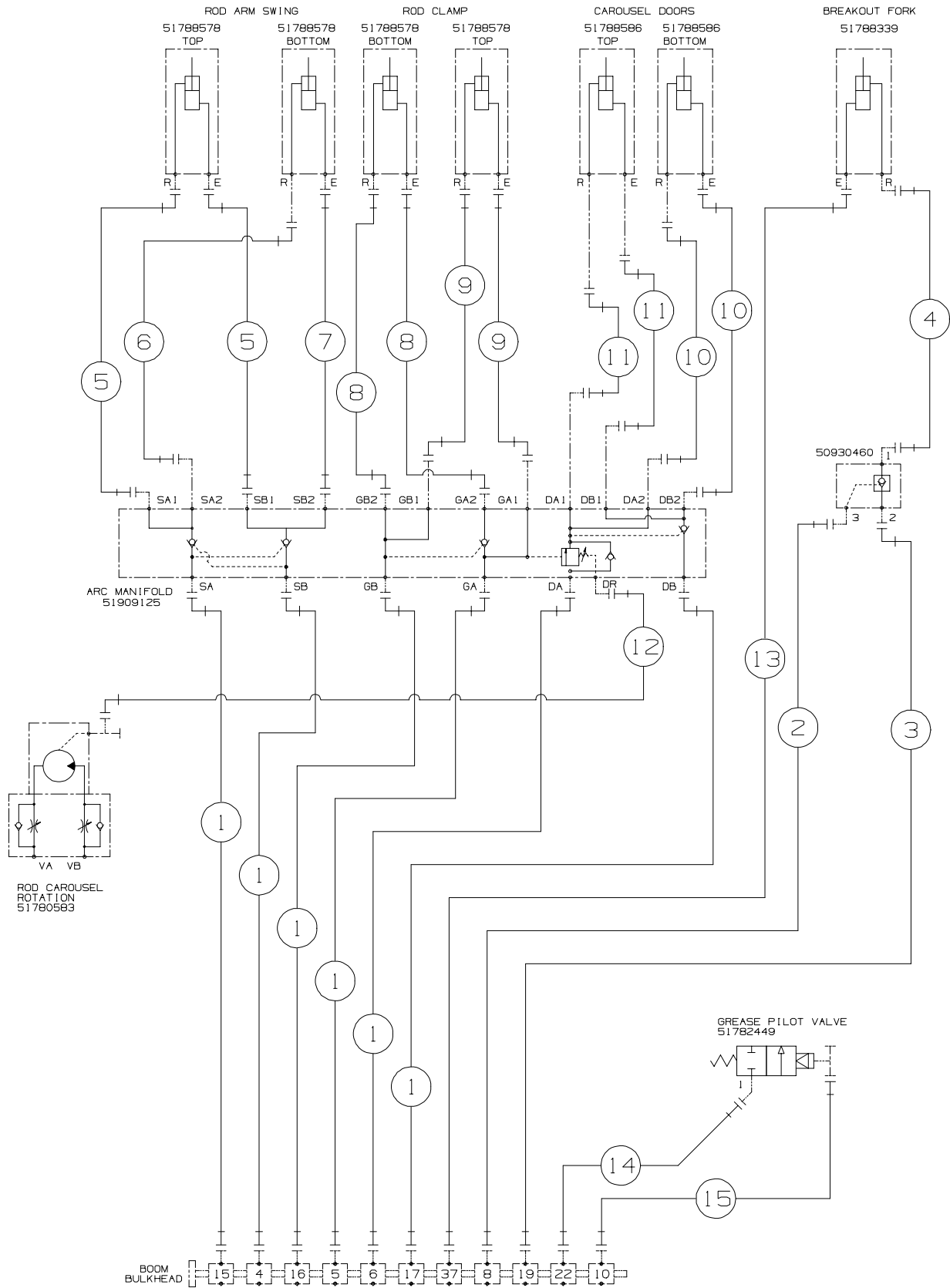
ROD CHANGER HOSE GROUP

May 23, 2002

Section 9.14A



ROD CHANGER HOSE GROUP
(For Parts List, refer to Page 9.14A-3)



HOSING DIAGRAM

**ROD CHANGER HOSE GROUP
(For Parts List, refer to Page 9.14A-3)**

ROD CHANGER HOSE GROUP
(For Illustration of parts, refer to Pages 9.14A-1 & 9.14A-2)

REF.

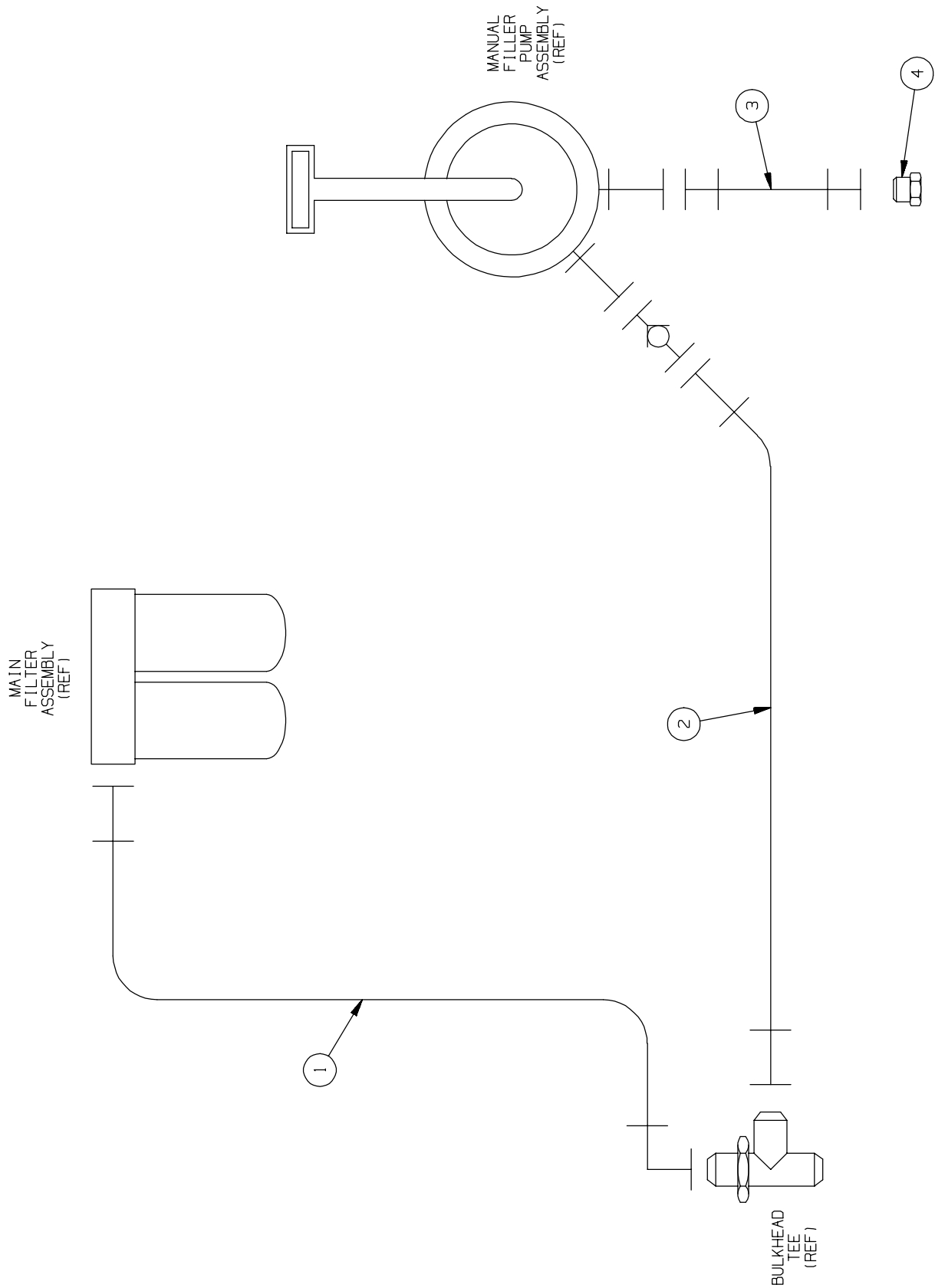
NO. PART NO. QTY. PART NAME
REMARKS

57687535		ROD CHANGER HOSE GROUP	
1	57687642	6	ASSEMBLY, HOSE
2	57687774	1	ASSEMBLY, HOSE
3	57687808	1	ASSEMBLY, HOSE
4	51059772	1	ASSEMBLY, HOSE
5	51916047	2	ASSEMBLY, HOSE
6	51041093	1	ASSEMBLY, HOSE
7	51867000	1	ASSEMBLY, HOSE
8	51060143	2	ASSEMBLY, HOSE
9	51916054	2	ASSEMBLY, HOSE
10	51041085	2	ASSEMBLY, HOSE
11	51916062	2	ASSEMBLY, HOSE
12	51867158	1	ASSEMBLY, HOSE
13	57687816	1	ASSEMBLY, HOSE
14	57687592	1	ASSEMBLY, HOSE
15	57687600	1	ASSEMBLY, HOSE

MANUAL FILLER PUMP HOSE GROUP

August 16, 1999

Section 9.15



MANUAL FILLER PUMP HOSE GROUP
(For Parts List, refer to Page 9.15-2)

MANUAL FILLER PUMP HOSE GROUP
(For Illustration of parts, refer to Page 9.15-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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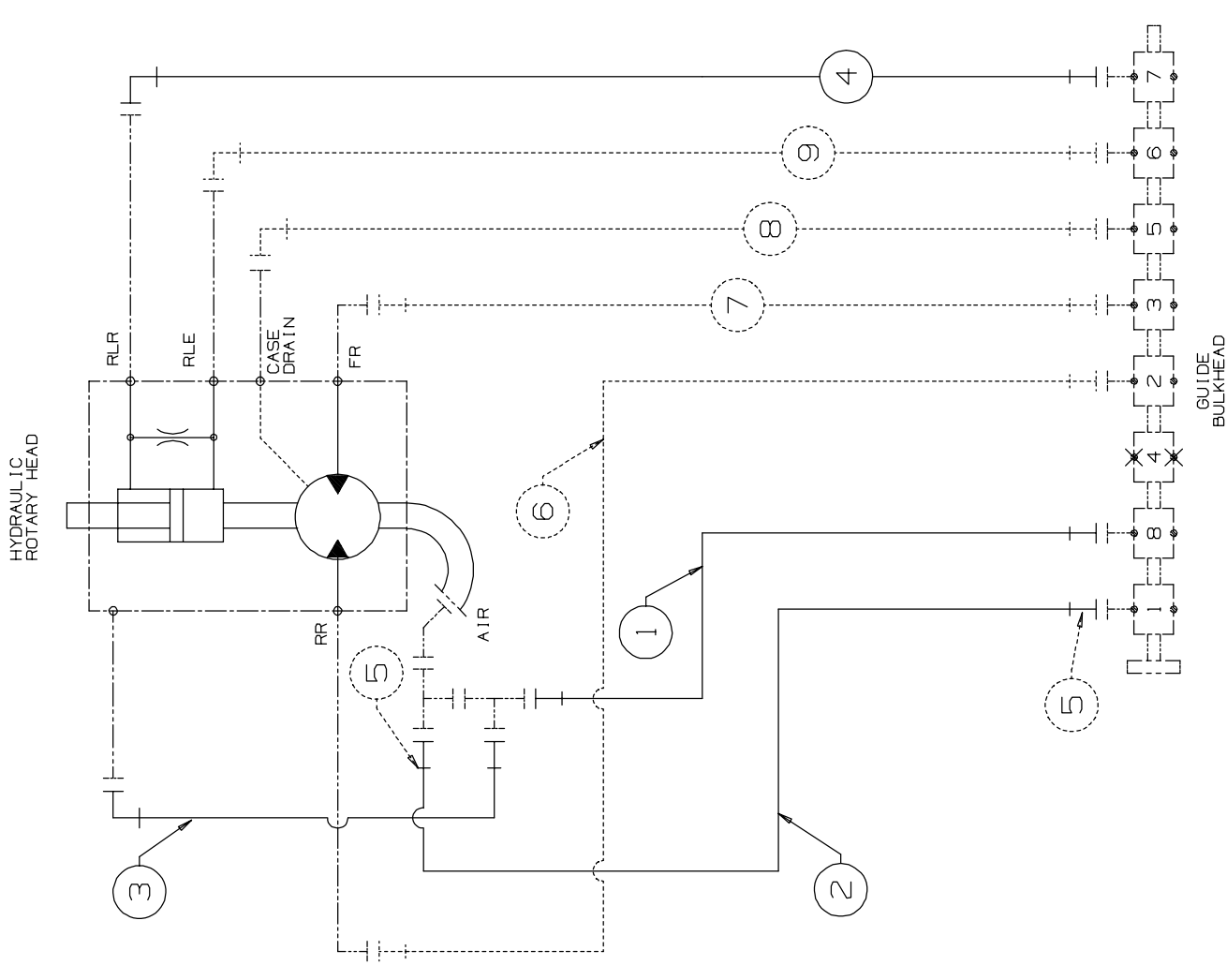
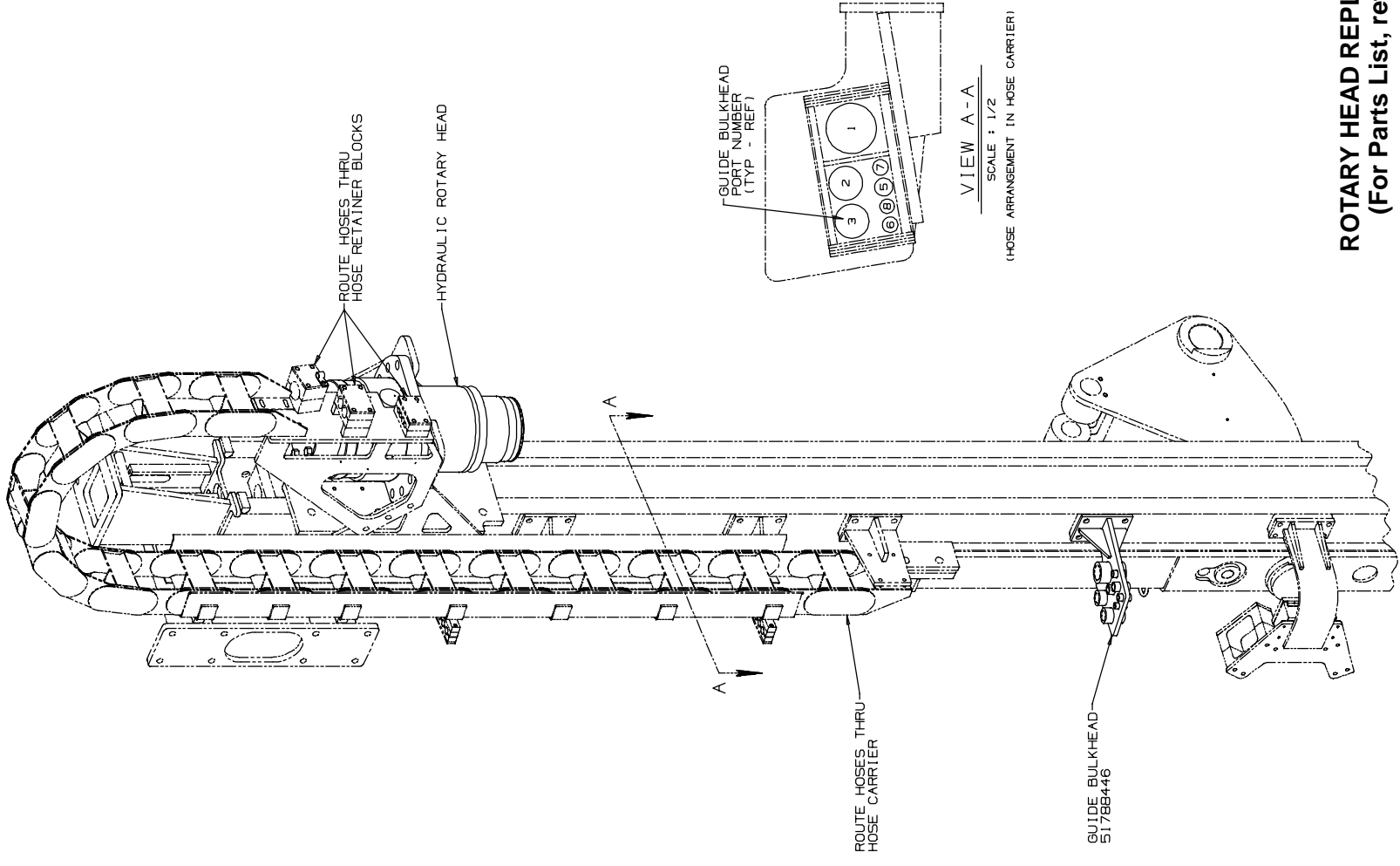
	52288271		MANUAL FILLER PUMP HOSE GROUP	
1	51028603	1	ASSEMBLY, HOSE	
2	52288289	1	ASSEMBLY, HOSE	

3	50978543	1	ASSEMBLY, HOSE	
4	95422838	1	PLUG	

ROTARY HEAD REPLACEMENT HOSE KIT

April 5, 1999

Section 9.15



HOSING DIAGRAM

NOTE: -

ITEMS SHOWN IN DASHED LINE ARE EXISTING WITH OLD ROTARY HEAD. THESE CAN BE USED WITH NEW ROTARY HEAD AS SHOWN.

ROTARY HEAD REPLACEMENT HOSE KIT
(For Parts List, refer to Page 9.15-2)

ROTARY HEAD REPLACEMENT HOSE KIT
(For Illustration of parts, refer to Page 9.15-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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52293610

ROTARY HEAD REPLACEMENT HOSE KIT

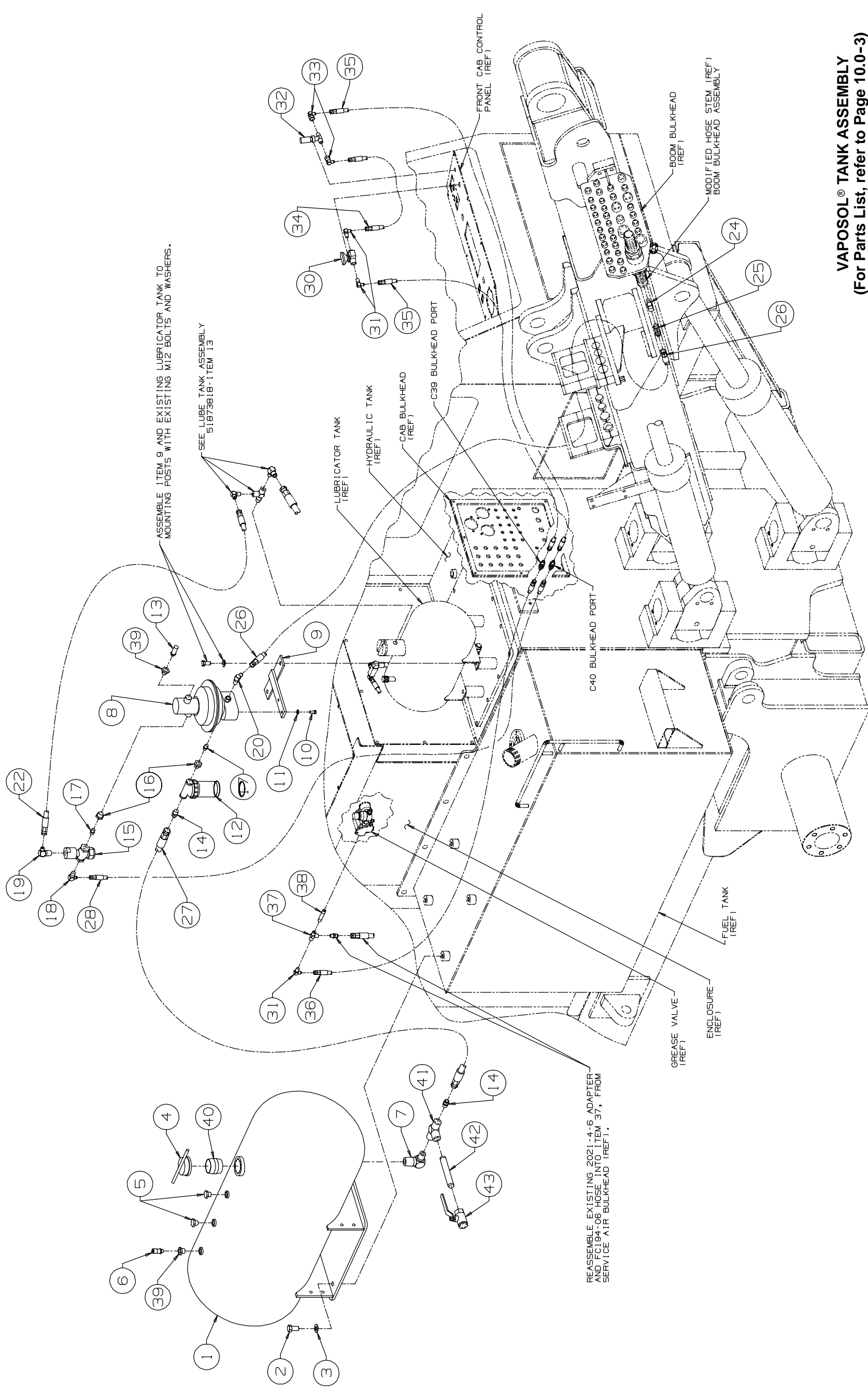
1	51867919	1	ASSEMBLY, HOSE	
2	95371449	1	HOSE	

3	51028348	1	ASSEMBLY, HOSE	
4	51994903	1	ASSEMBLY, HOSE	

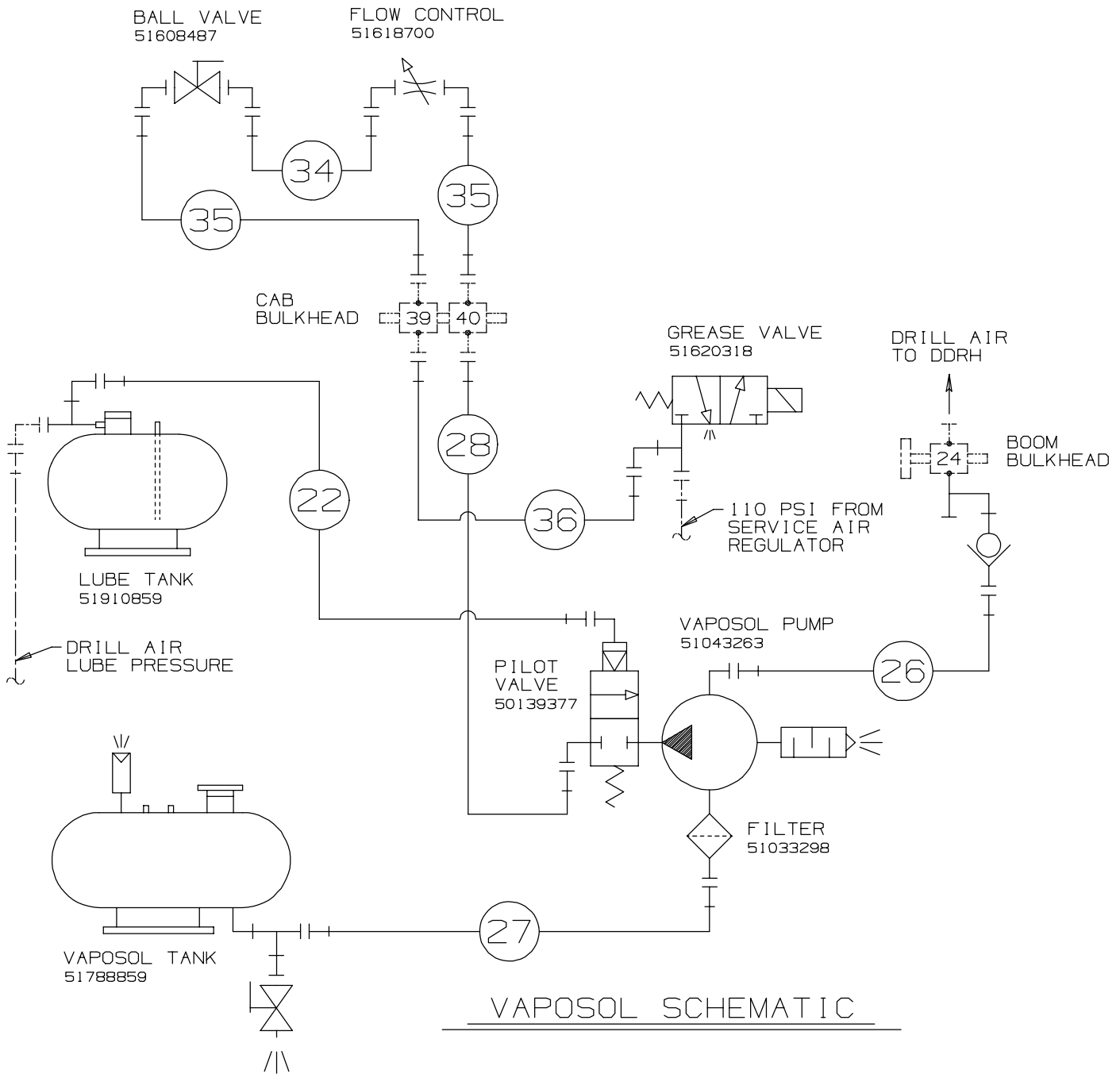
VAPOSOL® TANK ASSEMBLY

January 15, 1999

Section 10.0



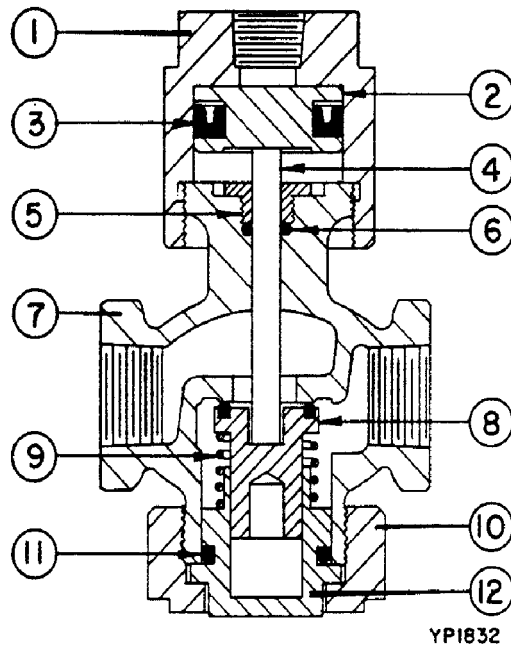
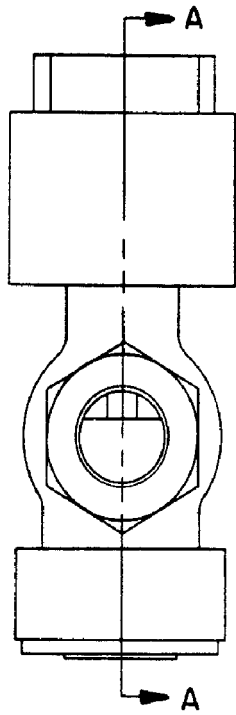
VAPOSOL® TANK ASSEMBLY
(For Parts List, refer to Page 10.0-3)



VAPOSOL® TANK ASSEMBLY
(For Parts List, refer to Page 10.0-3)

VAPOSOL® TANK ASSEMBLY
(For Illustration of parts, refer to Pages 10.0-1 & 10.0-2)

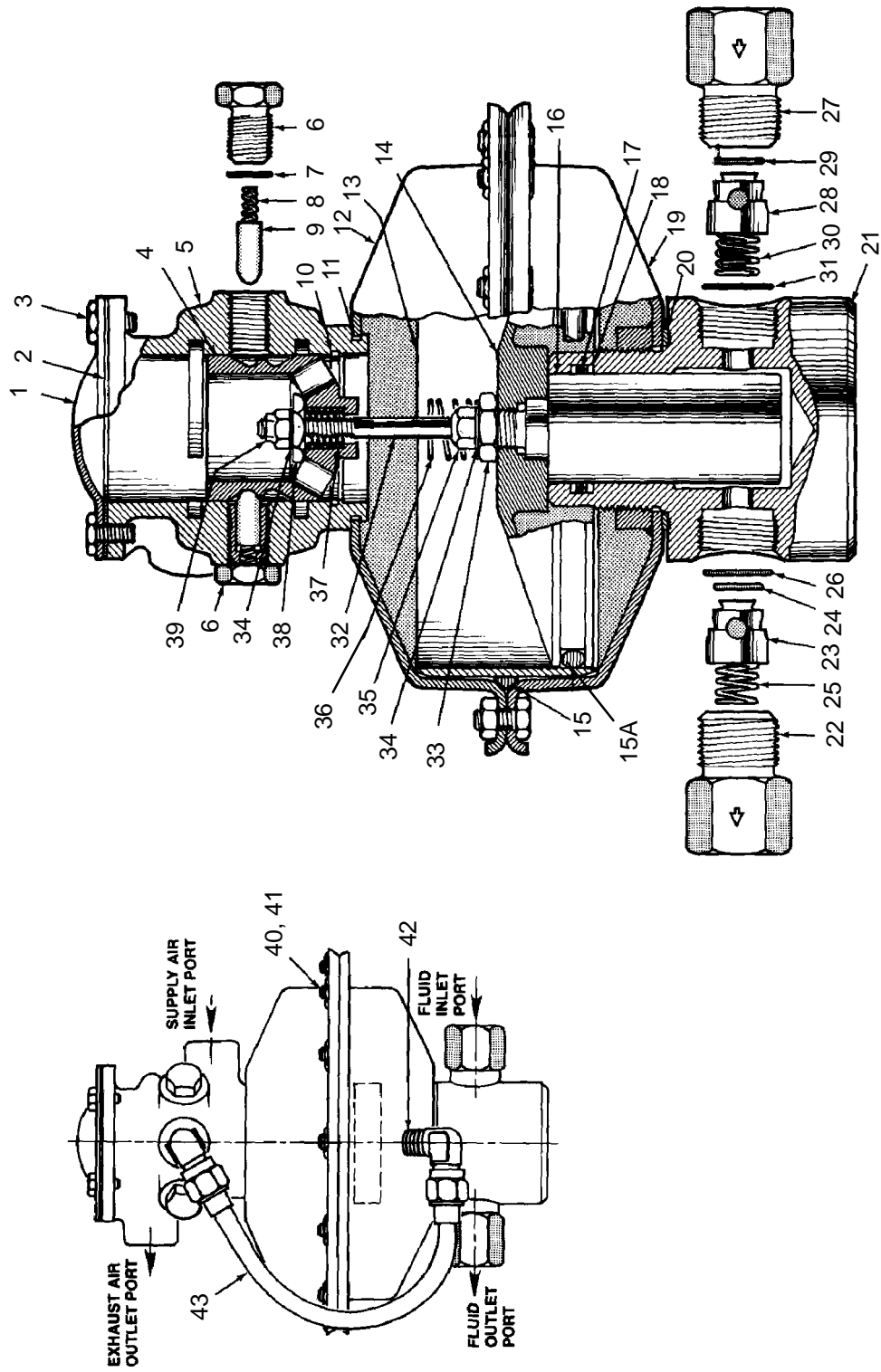
<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
		51918324		VAPOSAL TANK ASSEMBLY	
	1	51788859	1	TANK, VAPOSOL (40GAL)	
	2	96703079	4	CAPSCREW	
	3	96700968	4	WASHER, FLAT	
	4	51041721	1	CAP, TANK	
	5	95730545	2	PLUG, PIPE	
	6	03692076	1	PLUG VENT	
	7	95323341	1	ELBOW	
	8	52286036	1	PUMP, VAPOSOL	<i>REFER TO PAGE 10.0-5</i>
	9	51873784	1	BRACKET, WATER PUMP MOUNT	
	10	95101804	2	CAPSCREW	
	11	95064671	2	WASHER	
	12	51033298	1	STRAINER	
	13	36766731	1	MUFFLER, ORIFICED (.156)	
	14	95219721	2	ADAPTER	
	15	50139377	1	VALVE, PILOT	<i>REFER TO PAGE 10.0-4</i>
	16	95037347	2	BUSHING, REDUCING	
	17	95352738	2	PIPE, MALE	
	18	95335980	1	ELBOW	
	19	95279527	1	ELBOW	
	20	95279493	1	ELBOW	
	22	51910685	1	ASSEMBLY, HOSE	
	24	95279998	1	ELBOW	
	25	50573823	1	VALVE, CHECK	
	26	51918449	1	ASSEMBLY, HOSE	
	27	51918456	1	ASSEMBLY, HOSE	
	28	51916435	1	ASSEMBLY, HOSE	
	30	51608487	1	VALVE, BALL, PANEL MOUNT	
	31	95293403	3	ELBOW	
	32	51618700	1	FLOW, CONTROL, PANEL MOUNT	
	33	95293353	2	ADAPTER	
	34	51916468	1	ASSEMBLY, HOSE	
	35	51918464	2	ASSEMBLY, HOSE	
	36	51918472	1	ASSEMBLY, HOSE	
	37	95302998	1	TEE	
	38	95048971	1	NIPPLE, PIPE	
	39	95037412	2	BUSHING, REDUCING	
	40	95436747	1	NIPPLE	
	41	95264966	1	TEE	
	42	95049045	1	NIPPLE	
	43	50947357	1	VALVE, BALL	



SECTION A-A

REF.
NO. PART NO. QTY. PART NAME
REMARKS

REF. NO.	PART NO.	QTY.	PART NAME	REMARKS
	50139377		VALVE, PILOT	
1	50550938	1	CAP, PILOT	
2	50550920	1	PISTON	
3	50098839	1	U-CUP	
4	50550904	1	PIN	
5	50373745	1	GLAND	
6	50098821	1	O-RING	
7	50710698	1	BODY	
8	50097765	1	POPPET	
9	50097773	1	SPRING	
10	50550946	1	NUT	
11	50098813	1	O-RING	
12	50097732	1	GUIDE	



AIR PUMP ASSEMBLY
 (For Parts List, refer to Page 10.0-6)

AIR PUMP ASSEMBLY
(For Illustration of parts, refer to Page 10.0-5)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

52286036		AIR PUMP ASSEMBLY	
1	50085745	1	COVER
2	50137728	1	GASKET
3	50495696	4	CAPSCREW
	51069110	1	ASSEMBLY, AIR VALVE/HOUSING
4	++	1	.VALVE
5	++	1	.BODY
6	50084771	4	.BOLT
7	50084789	4	.O-RING
8	50084755	4	.SPRING
9	50457365	4	.PIN
10	50370998	1	.STOP
11	++	1	.GASKET
12	++	1	.HOUSING
13	50137694	1	CYLINDER
14	50088129	1	PISTON
15	50090190	1	O-RING
15A	52290889	1	SEAL
16	51069136	1	PISTON
17	50087618	1	PACKING
18	50090182	2	RING, BACKUP
	51069144	1	ASSEMBLY, BODY/HOUSING
19	++	1	.HOUSING, LOWER
20	++	1	.GASKET
21	++	1	.BODY
	51069177	1	ASSEMBLY, OUTLET VALVE
22	++	1	.BODY, CHECK VALVE
23	51069201	1	.ASSEMBLY, POPPET
	++	1	..POPPET
24	51069227	1	..PACKING, O-RING
25	50091297	1	.SPRING
26	52261294	1	.O-RING
	51069185	1	ASSEMBLY, INLET VALVE
27	++	1	.BODY, CHECK VALVE
28	51069201	1	.ASSEMBLY, POPPET
	++	1	..POPPET
29	51069227	1	..PACKING, O-RING
30	50091297	1	.SPRING
31	52261294	1	.O-RING
32	50088095	1	ROD, CONNECTING
33	51069235	1	NUT

(CONTINUED)

AIR PUMP ASSEMBLY (CONT.)
(For Illustration of parts, refer to Page 10.6-5)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

52286036		AIR PUMP ASSEMBLY (CONT.)	
34	50718238	2	LOCKWASHER
35	50091008	1	NUT, SHIFTING
36	50137702	1	SPRING
37	50454560	1	SPRING
38	50092923	1	NUT

39	50718246	1	NUT
40	50495696	12	CAPSCREW
41	51069243	12	NUT
42	50100593	2	ELBOW
43	51069250	1	ASSEMBLY, TUBE

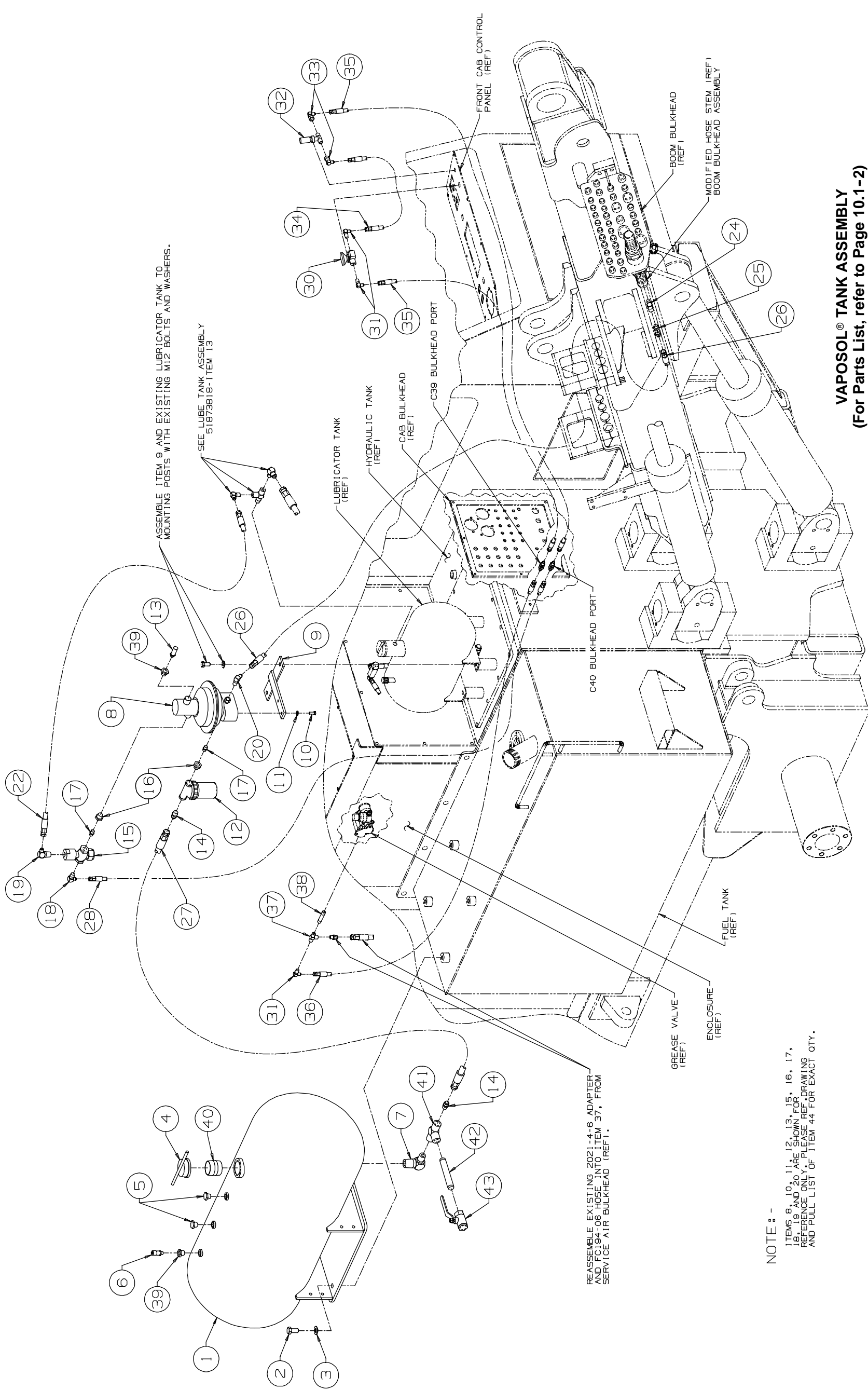
++ **NOTE:** THESE PARTS ARE NOT SOLD SEPARATELY.

VAPOSOL® TANK ASSEMBLY

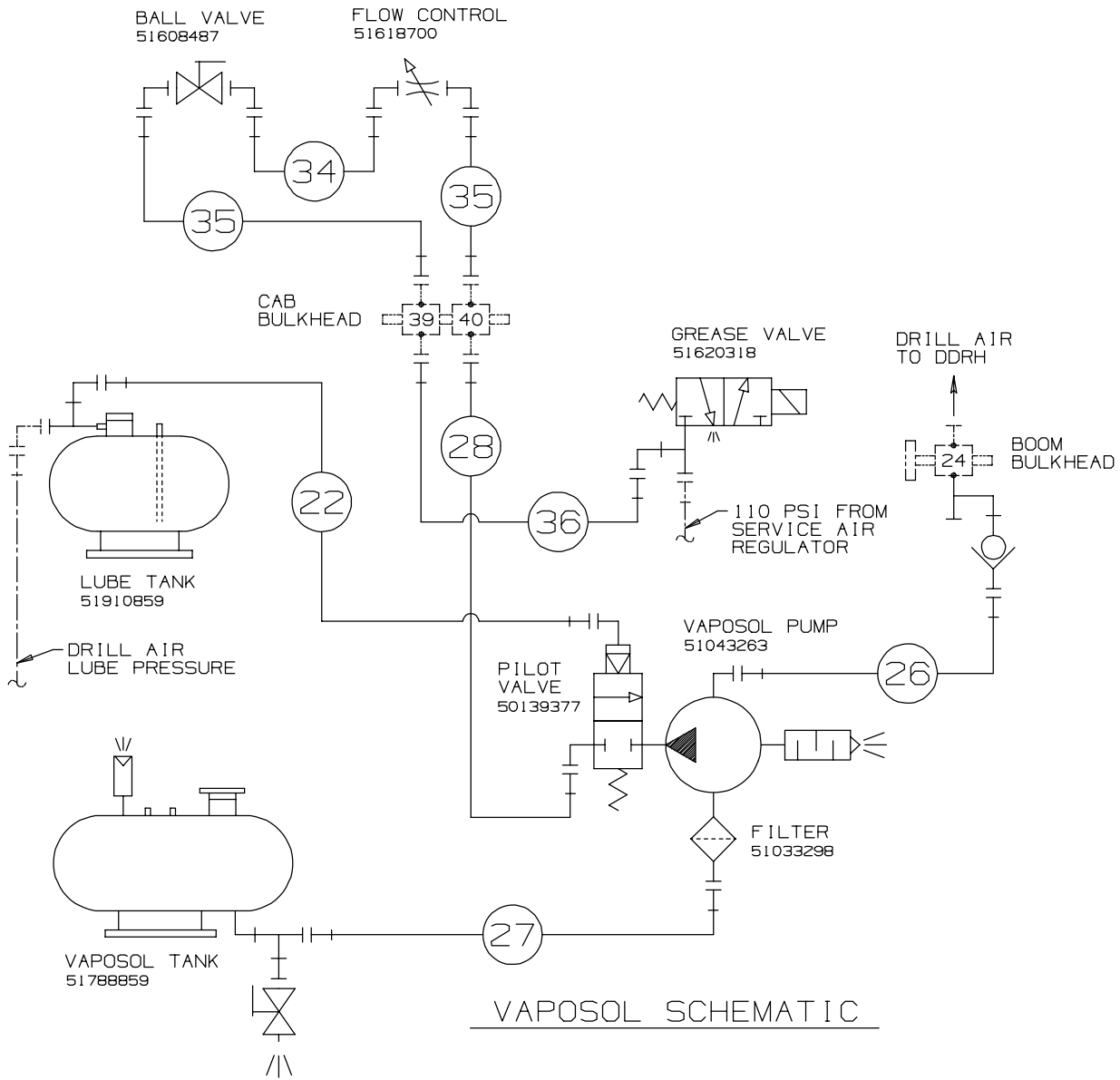
Revision 3

January 5, 2000

Section 10.1



VAPOSOL® TANK ASSEMBLY
(For Parts List, refer to Page 10.1-2)

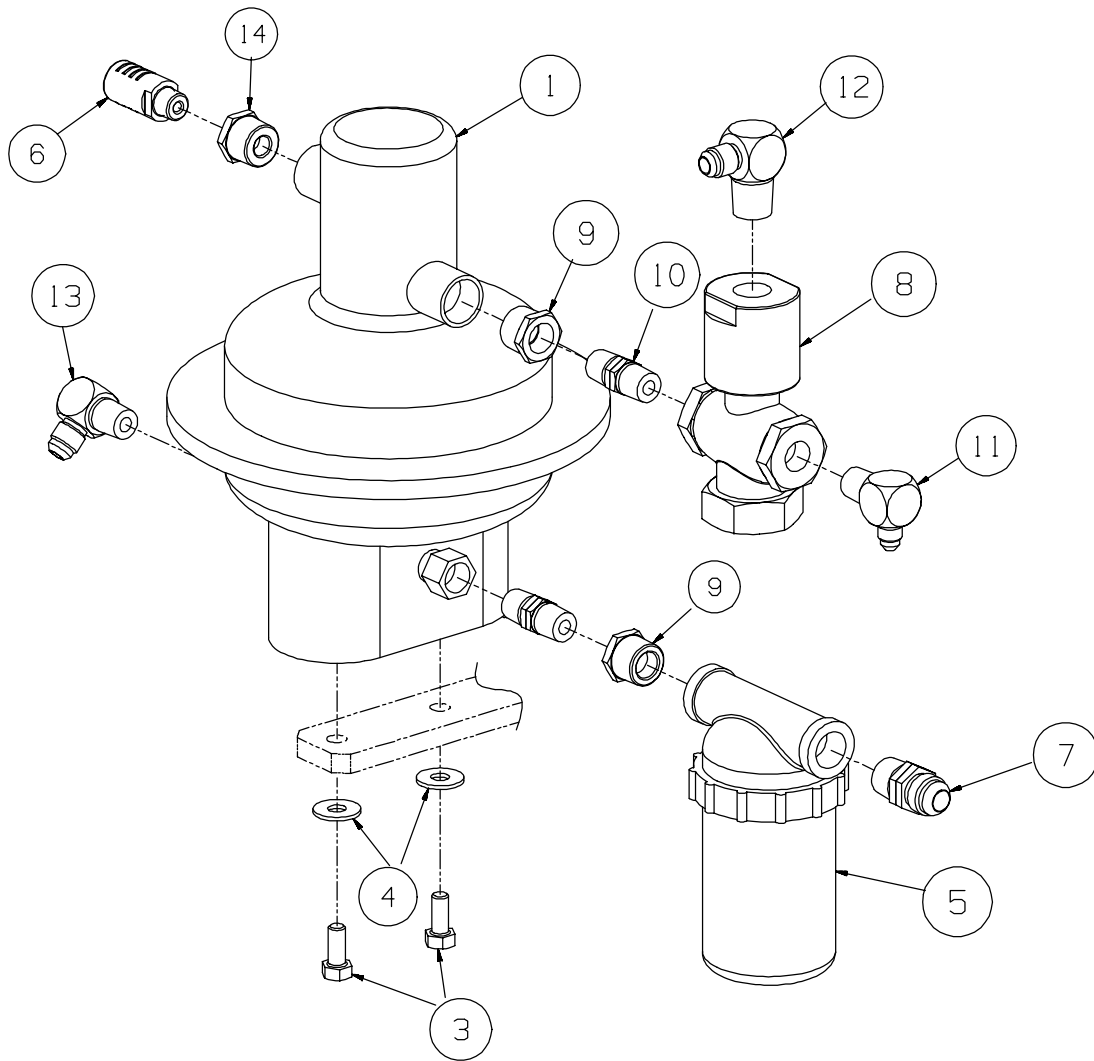


VAPOSOL® TANK ASSEMBLY
(For Parts List, refer to Page 10.1-3)

VAPOSOL® TANK ASSEMBLY
(For Illustration of parts, refer to Page 10.1-1 & 10.1-2)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
		51918324		VAPOSAL TANK ASSEMBLY	
	1	51788859	1	TANK, VAPOSOL (40GAL)	
	2	96703079	4	CAPSCREW	
	3	96700968	4	WASHER, FLAT	
	4	51041721	1	CAP, TANK	
	5	95730545	2	PLUG, PIPE	
	6	03692076	1	PLUG, VENT	
	7	95323341	1	ELBOW	
♣	8	52286036	0	PUMP, VAPOSOL	
	9	51873784	1	BRACKET, WATER PUMP MOUNT	
♣	10	95101804	0	CAPSCREW	
♣	11	95064671	0	WASHER	
♣	12	51033298	0	STRAINER	
♣	13	36766731	0	MUFFLER, ORIFICED (.156)	
	14	95219721	2	ADAPTER	
♣	15	50139377	0	VALVE	
♣	16	95037347	0	BUSHING, REDUCING	
♣	17	95352738	0	PIPE, MALE	
♣	18	95335980	0	ELBOW	
♣	19	95279527	0	ELBOW	
♣	20	95279493	0	ELBOW	
	22	51910685	1	ASSEMBLY, HOSE	
	24	95279998	1	ELBOW	
	25	50573823	1	VALVE, CHECK	
	26	51918449	1	ASSEMBLY, HOSE	
	27	52303898	1	ASSEMBLY, HOSE	
	28	51916435	1	ASSEMBLY, HOSE	
	30	51608487	1	VALVE, BALL, PANEL MOUNT	
	31	95293403	3	ELBOW	
	32	52298775	1	VALVE, NEEDLE	
	33	95263380	2	ADAPTER	
	34	51916468	1	ASSEMBLY, HOSE	
	35	51918464	2	ASSEMBLY, HOSE	
	36	51918472	1	ASSEMBLY, HOSE	
	37	95302998	1	TEE	
	38	95048971	1	NIPPLE	
	39	95037412	2	BUSHING, REDUCING	
	40	95436747	1	NIPPLE	
	41	95264966	1	TEE	
	42	95049045	1	NIPPLE	
	43	50947357	1	VALVE, BALL	

♣ **NOTE:** THESE PARTS ARE AVAILABLE AS A VAPOSOL ASSEMBLY. REFER TO PAGE 10.1-4..



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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52287851 VAPOSOL® PUMP ASSEMBLY

1	52286036	1	PUMP, VAPOSOL	
3	95101804	2	CAPSCREW	
4	95064671	2	WASHER	
5	51033298	1	STRAINER	
6	36766731	1	MUFFLER, ORIFICED	

7	95219721	1	ADAPTER	
8	50139377	1	VALVE	
9	95037347	2	BUSHING	
10	95352738	2	PIPE, MALE	
11	95335980	1	ELBOW	

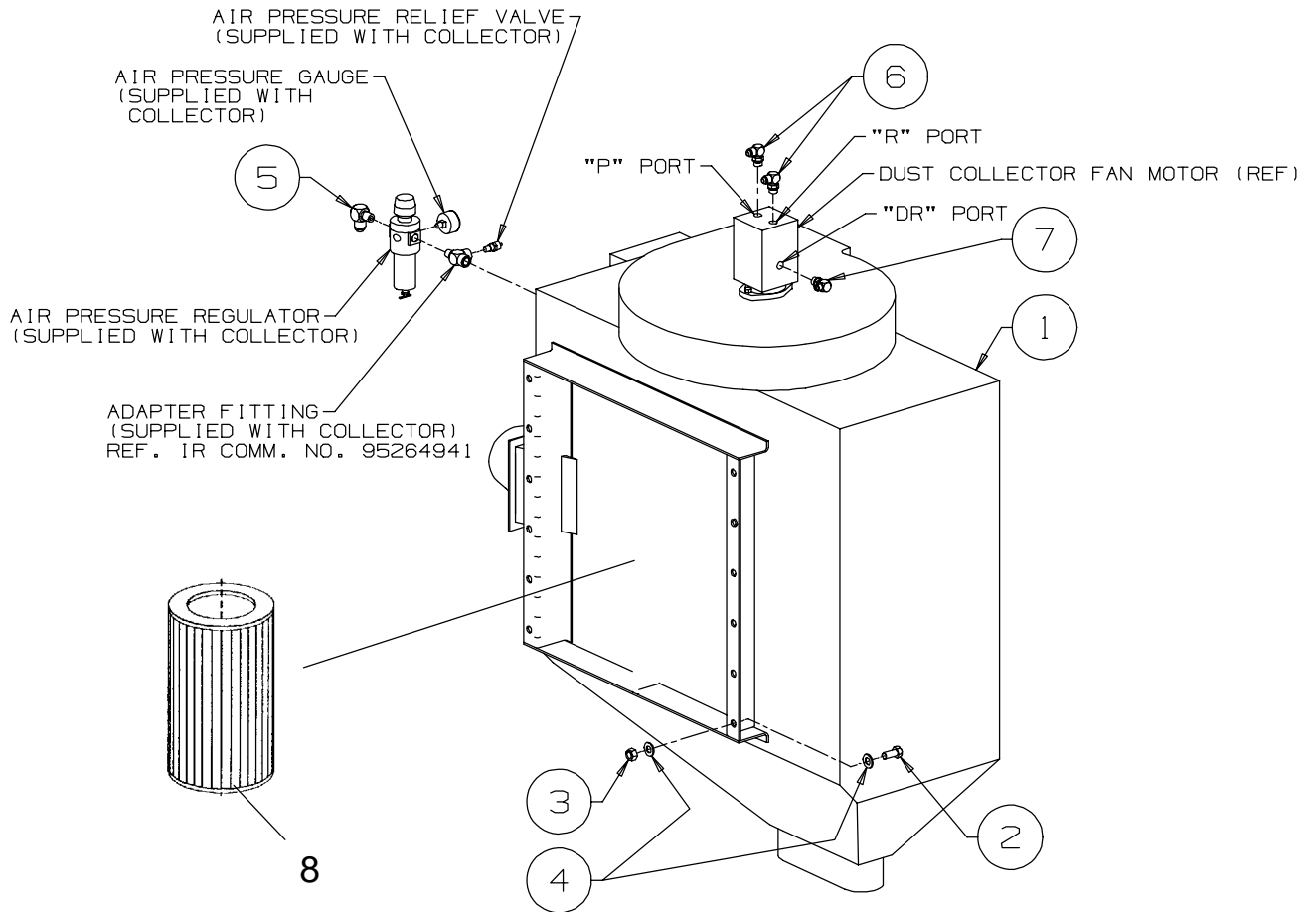
12	95279527	1	ELBOW	
13	95279493	1	ELBOW	
14	95037412	1	BUSHING	

DUST COLLECTOR ASSEMBLY

(S/N 18069-18073)

January 15, 1999

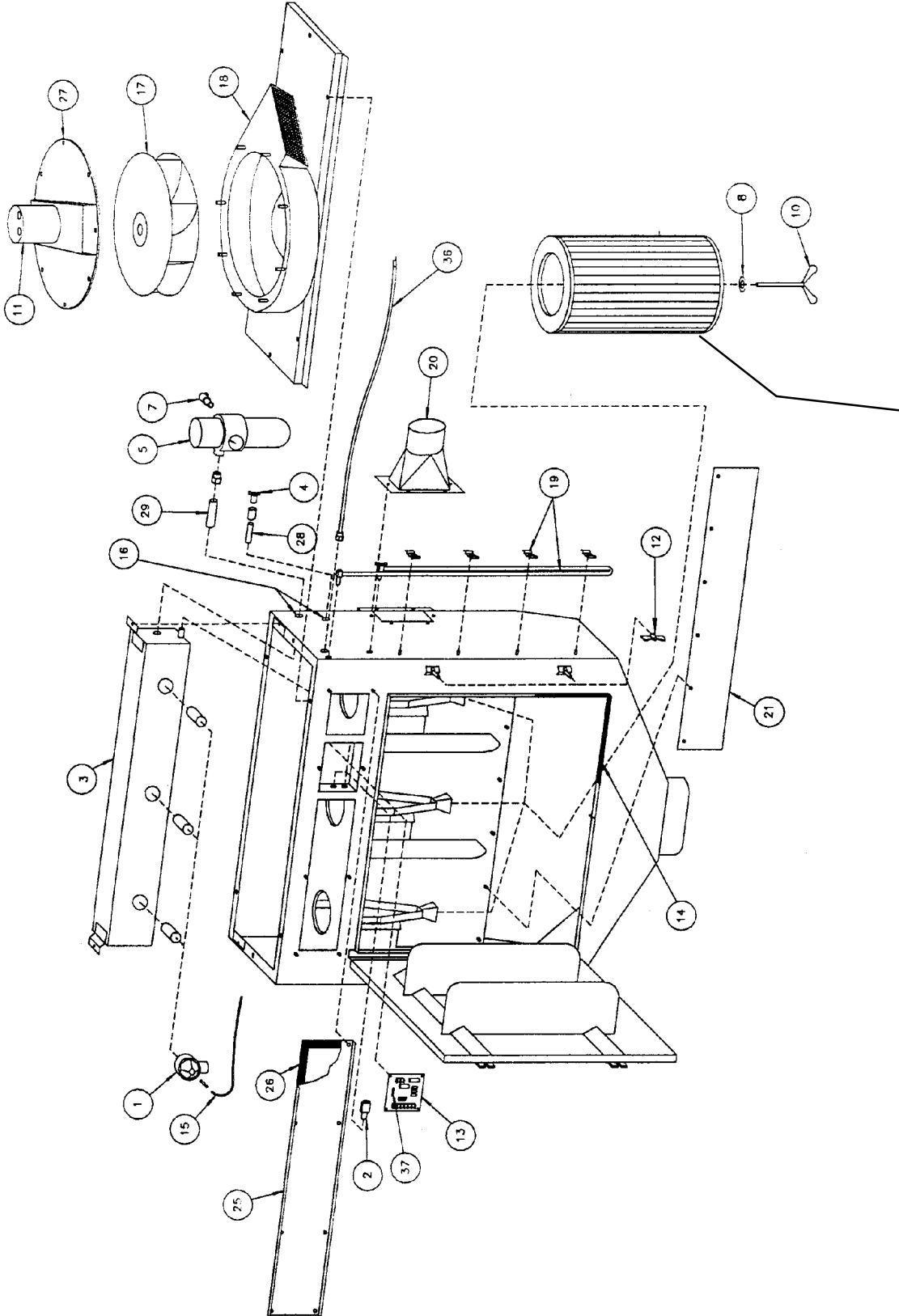
Section 10.2



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

	51869766		DUST COLLECTOR ASSEMBLY	
1	51948743	1	COLLECTOR, DUST <i>REFER TO PAGE 10.2-2</i>	
2	96714936	12	CAPSCREW	
3	96703657	12	NUT, HEX	
4	96700968	24	WASHER, FLAT	
5	95279543	1	ELBOW	
6	95303335	2	ADAPTER	
7	95356853	1	ADAPTER	
8	51793396	3	FILTER, DUST COLLECTOR	



REFER TO PAGE 10.2-1 FOR FILTER PART NUMBER.

DUST COLLECTOR
 (For Parts List, refer to Page 10.2-3)

DUST COLLECTOR
(For Illustration of parts, refer to Page 10.2-2)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

51948743		DUST COLLECTOR	
1	51793354	3	VALVE, GOYEN
	51793370	1	.ASSEMBLY, VALVE DIAPHRAGM
2	51793362	3	VALVE, SOLENOID
	51874550	1	.KIT, SOLENOID REPAIR
3	51952604	1	MANIFOLD, AIR
4	51793404	1	VALVE, AIR DRAIN
5	52096542	1	REGULATOR/FILTER
7	51903508	1	VALVE, RELIEF
8	51793453	3	WASHER, RUBBER
10	51793446	3	BOLT
11	52131323	1	MOTOR, ULTRA HYDRAULIC
12	51793438	2	NUT, WING
13	51793461	1	CARD, TIMER
14	51793412	1	GASKET, DOOR
15	51793495	1	TUBING
16	51793420	1	SET, CABINET GROMMET
17	52131331	1	FAN WHEEL, TAPERED HUB
18	52131349	1	HOUSING, BLOWER
19	52131257	1	ASSEMBLY, MANOMETER
20	51913606	1	INLET, 6 INCH
21	51913630	1	RUBBER, INTERNAL
25	52131356	1	PANEL, ACCESS
26	51956258	1	SEAL, ACCESS PANEL
27	52131364	1	PLATE, MOTOR MOUNTING
28	95048971	1	NIPPLE
29	95097424	1	NIPPLE
36	51776078	1	HARNESS, WIRING
37	95077269	1	NUT

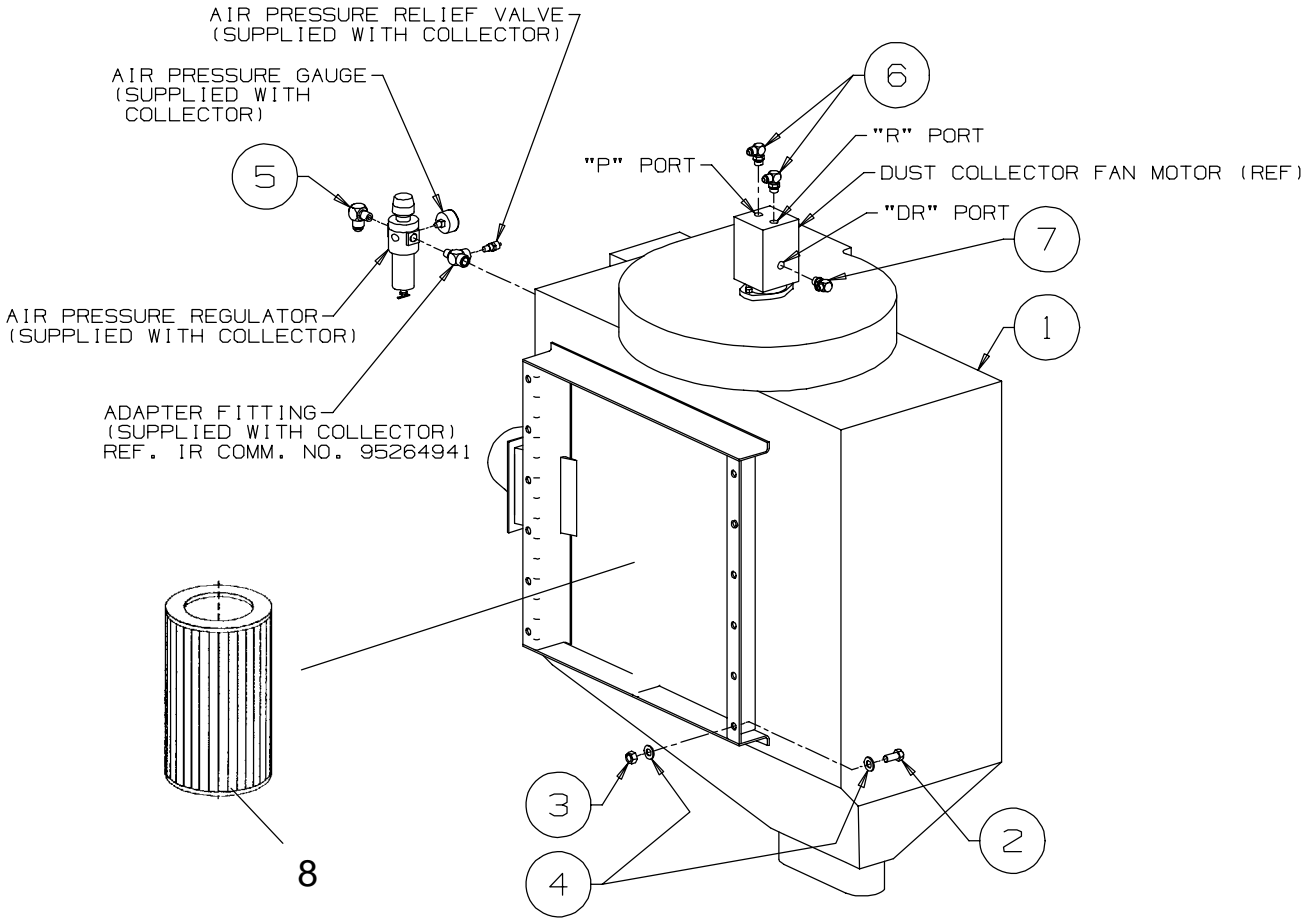
DUST COLLECTOR

(S/N 18074-18084)

Section 10.2A

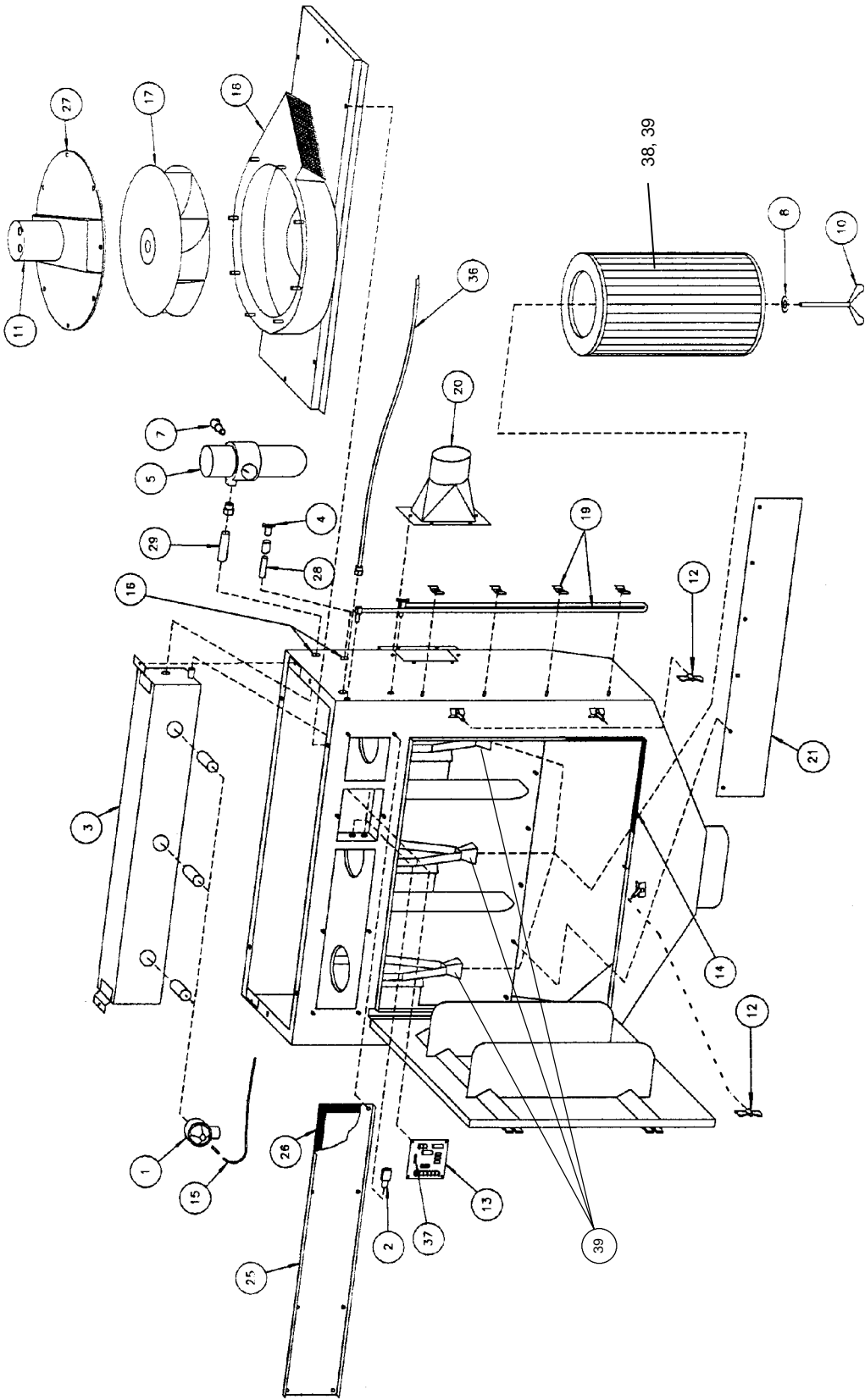
Revision 1

January 5, 2000



REF.	NO.	PART NO.	QTY.	PART NAME	REMARKS
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		51869766		DUST COLLECTOR ASSEMBLY	
	1	52293800	1	COLLECTOR, DUST	REFER TO PAGE 10.2-2
	2	96714936	12	CAPSCREW	
	3	96703657	12	NUT, HEX	
	4	96700968	24	WASHER, FLAT	
	5	95279543	1	ELBOW	
	6	95303335	2	ADAPTER	
	7	95356853	1	ADAPTER	
	8	52296670	3	FILTER, DUST COLLECTOR	



DUST COLLECTOR
 (For Parts List, refer to Page 10.2A-3)

DUST COLLECTOR
(For Illustration of parts, refer to Page 10.2A-2)

<i>REF.</i>					<i>SERIAL</i>
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>	<i>NO.</i>
	52293800		DUST COLLECTOR		18074-18084
1	52289014	3	VALVE, DIAPHRAGM AIR		
	52289329	1	.KIT, DIAPHRAGM ASSEMBLY AIR VALVE		
2	51793362	3	VALVE, SOLENOID		
	51874550	1	.KIT, SOLENOID REPAIR		
3	52289022	1	MANIFOLD, AIR		
4	51793404	1	VALVE, AIR DRAIN		
5	52096542	1	REGULATOR/FILTER		
7	51903508	1	VALVE, RELIEF		
8	51793453	3	WASHER, RUBBER		
10	51793446	3	BOLT, FILTER RETAINING		
11	52131323	1	MOTOR, ULTRA HYDRAULIC		
12	51793438	3	NUT, WING		
13	51793461	1	CARD, TIMER		
14	51793412	1	GASKET, DOOR		
15	51793495	1	TUBING		
16	51793420	1	SET, CABINET GROMMET		
17	52131331	1	FAN WHEEL, TAPERED HUB		
18	52131349	1	HOUSING, BLOWER		
19	52131257	1	ASSEMBLY, MANOMETER		
20	51913606	1	INLET, 6 INCH		
21	51913630	1	RUBBER, INTERNAL		
25	52131356	1	PANEL, ACCESS		
26	51956258	1	SEAL, ACCESS PANEL		
27	52131364	1	PLATE, MOTOR MOUNTING		
28	95048971	1	NIPPLE		
29	95097424	1	NIPPLE		
36	51776078	1	HARNESS, WIRE		
37	52130960	1	FUSE, TIMER		
38	++	3	FILTER (26 INCH)		
39	52296688	3	BRACKET, SWING (REQUIRED WHEN USING 26 INCH FILTER)		

++ NOTE: THE FILTERS ARE NOT FURNISHED WITH THE DUST COLLECTOR. THEY MUST BE ORDERED SEPARATELY. THE FILTER PART NUMBER IS 52296670.

DUST COLLECTOR

(S/N 18085 & ABOVE)

January 4, 2000

Section 10.2B

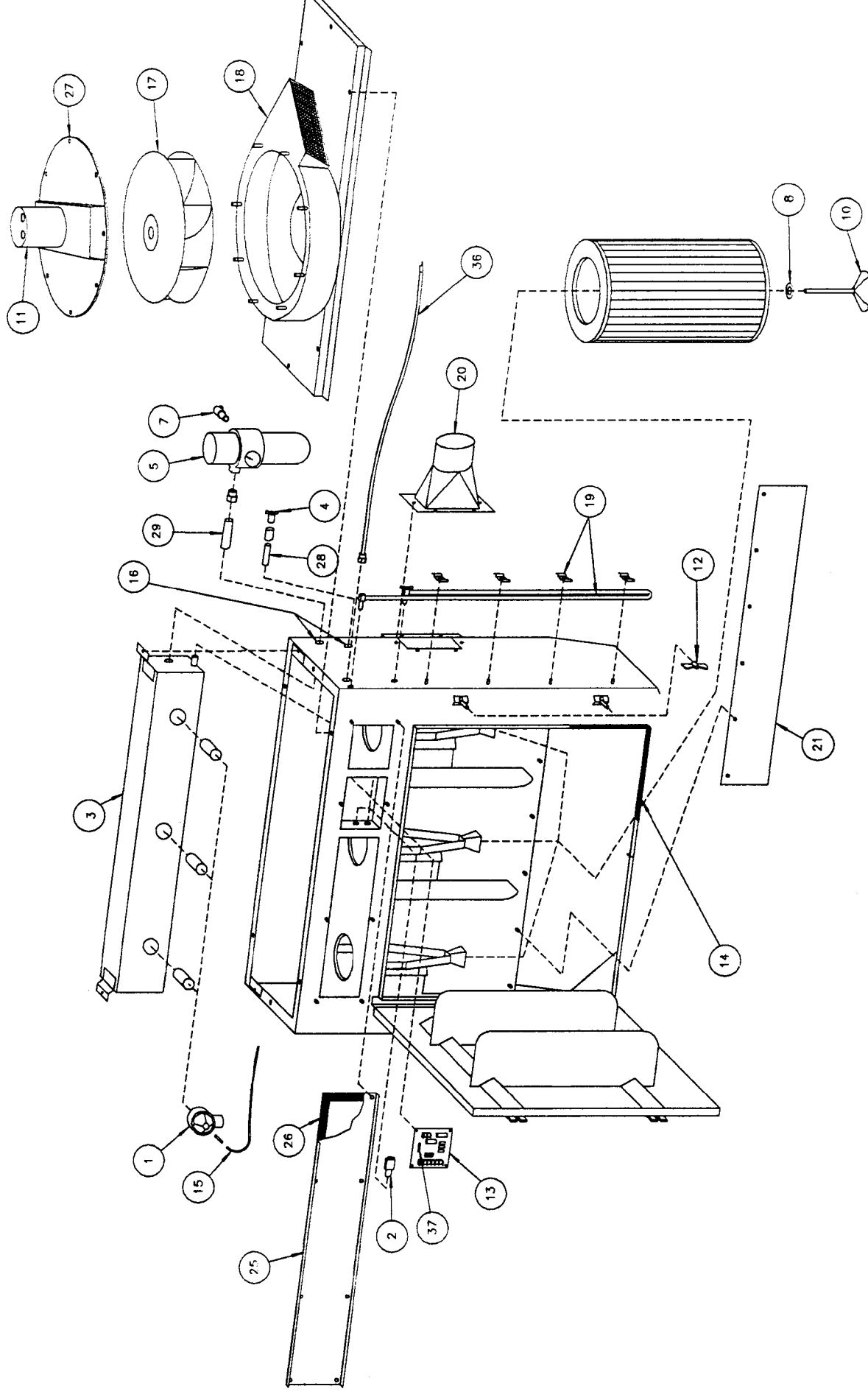
INSTRUCTIONS FOR CLEANING PTFE FILTERS

TO MAXIMIZE THE LIFE AND PERFORMANCE OF THE NEW PTFE FILTERS FOLLOW THE PROCEDURES LISTED BELOW:

1. PULSE FILTERS WITHOUT THE FAN RUNNING FOR 15-30 MINUTES.
2. REMOVE FILTERS FROM THE DUST COLLECTOR AND INSPECT FOR DAMAGE. **DO NOT** RE-USE DAMAGED ELEMENTS WITH BAD GASKETS, DENTED METAL PARTS OR TORN MEDIA.
3. VACUUM OR GENTLY BRUSH OFF CARTRIDGE TO REMOVE ANY EXCESS POWDER IF POSSIBLE.
4. USING COMPRESSED AIR (50 PSI [3 BAR] MAXIMUM) BLOW THE LOOSE DUST FROM THE FILTER (FROM THE INSIDE OUT) TO PREVENT FORCING DUST INTO THE PORES OF THE MEDIA. **DO NOT USE COMPRESSED AIR ON THE OUTSIDE SURFACE.**
5. USING A STANDARD GARDEN HOSE, GENTLY SPRAY THE FILTER FROM THE INSIDE OUT.
6. USING A STANDARD GARDEN HOSE, GENTLY SPRAY DOWN THE OUTSIDE SURFACE.
7. MILD DISHWASHING DETERGENT (JOY, DAWN, ETC.) CAN BE USED IF DESIRED. THE DETERGENT MUST BE THOROUGHLY RINSED OFF.
8. DRAIN WATER FROM FILTER BY INVERTING IN ALL DIRECTIONS.
9. LET FILTERS AIR DRY FOR A MINIMUM OF 72 HOURS BEFORE RE-USE.

▲ CAUTION

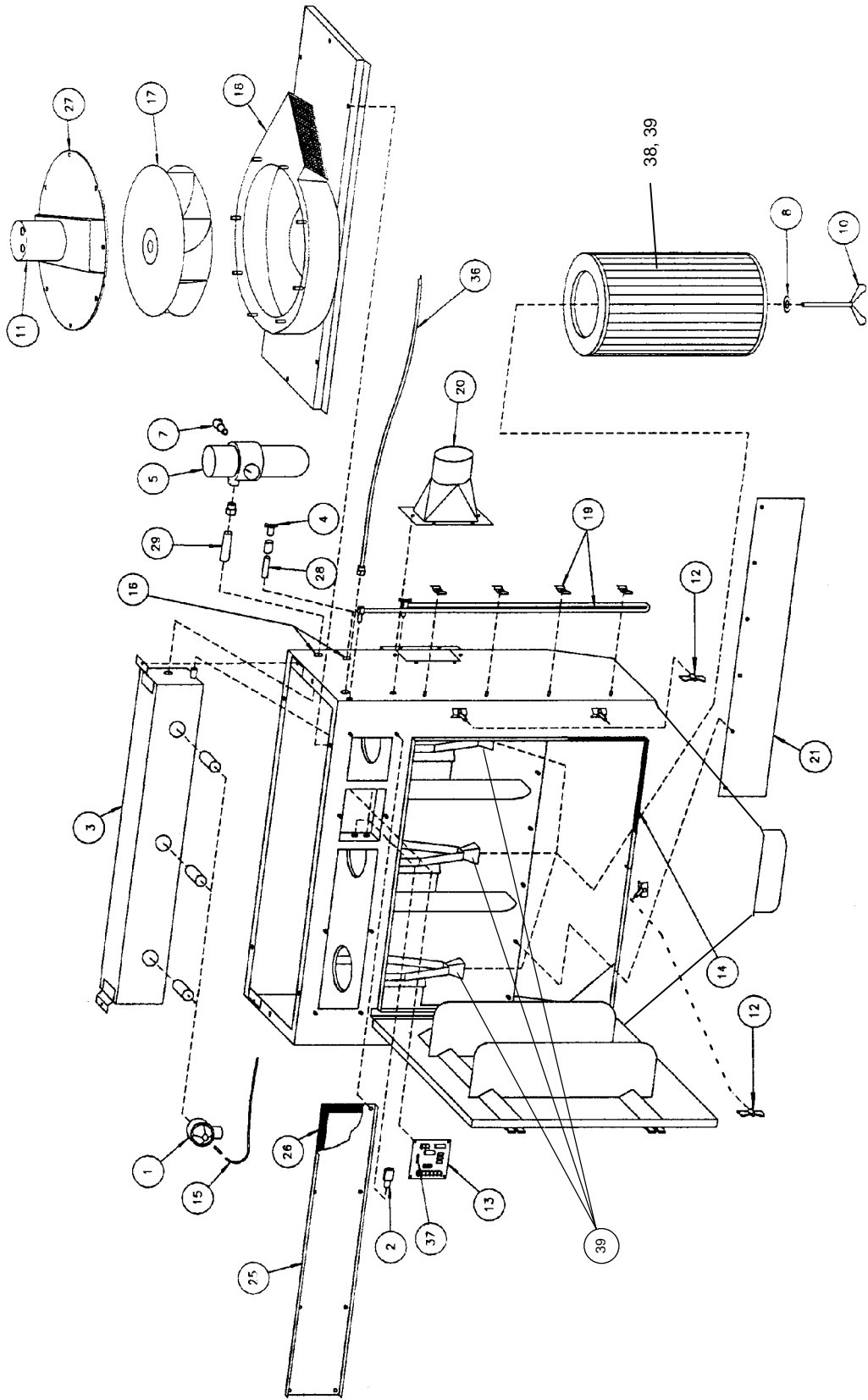
DO NOT USE HIGH PRESSURE OR HIGH TEMPERATURE WATER SPRAYERS ON THESE FILTERS. THIS WILL CAUSE DAMAGE TO THE PTFE MEMBRANE.



DUST COLLECTOR
(For Parts List, refer to Page 10.2B-2)

DUST COLLECTOR ASSEMBLY
 (For Illustration of parts, refer to Page 10.2B-1)

<i>REF.</i>				<i>SERIAL</i>
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>NO.</i>
			<i>REMARKS</i>	
			DUST COLLECTOR ASSEMBLY	18085 & ABOVE
1	52304466	1	COLLECTOR, DUST <i>REFER TO PAGE 10.2B-3</i>	
2	96714936	12	SCREW, HEX HEAD	
3	96703657	12	NUT, HEX	
4	96700968	24	WASHER, FLAT	
5	95279543	1	ELBOW	
8	52302189	3	FILTER (26 INCH POLYESTER)	



DUST COLLECTOR
 (For Parts List, refer to Page 10.2B-4)

DUST COLLECTOR
(For Illustration of parts, refer to Page 10.2B-1)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>SERIAL</i>
				<i>REMARKS</i>	<i>NO.</i>
		52304466		DUST COLLECTOR	18085 & ABOVE
●	1	52289014	3	VALVE, DIAPHRAGM AIR	
		52289329	1	.KIT, DIAPHRAGM ASSEMBLY AIR VALVE	
	2	51793362	3	VALVE, SOLENOID	
		51874550	1	.KIT, SOLENOID REPAIR	
●	3	52289022	1	MANIFOLD, AIR	
	4	51793404	1	VALVE, AIR DRAIN	
	5	52096542	1	REGULATOR/FILTER	
	7	51903508	1	VALVE, RELIEF	
	8	51793453	3	WASHER, RUBBER	
●	10	52302197	3	BOLT, FILTER RETAINING	
♣	11	52304508	1	MOTOR, ULTRA HYDRAULIC	
	12	51793438	3	NUT, WING	
	13	51793461	1	CARD, TIMER	
	14	51793412	1	GASKET, DOOR	
	15	51793495	1	TUBING	
	16	51793420	1	SET, CABINET GROMMET	
♣	17	52304482	1	FAN WHEEL, TAPERED HUB	
♣	18	52304490	1	HOUSING, BLOWER	
	19	52131257	1	ASSEMBLY, MANOMETER	
	20	51913606	1	INLET, 6 INCH	
	21	51913630	1	RUBBER, INTERNAL	
	25	52131356	1	PANEL, ACCESS	
	26	51956258	1	SEAL, ACCESS PANEL	
♣	27	52302171	1	PLATE, MOTOR MOUNTING	
	28	95048971	1	NIPPLE	
	29	95097424	1	NIPPLE	
	36	51776078	1	HARNESS, WIRE	
	37	52130960	1	FUSE, TIMER	
●	38	++	3	FILTER (26 INCH)	
●	39	52302205	3	BRACKET, SWING (REQUIRED WHEN USING 26 INCH FILTER)	

● **NOTE:** THESE PARTS ARE AVAILABLE AS DUST COLLECTOR KIT 52286630.

♣ **NOTE:** THESE PARTS ARE AVAILABLE AS HIGH SPEED FAN KIT 52304474.

++ **NOTE:** FILTERS (52302189) ARE NOT FURNISHED WITH THE DUST COLLECTOR. THEY MUST BE ORDERED SEPARATELY. THEY ARE FURNISHED WITH THE DUST COLLECTOR ASSEMBLY (52304516)

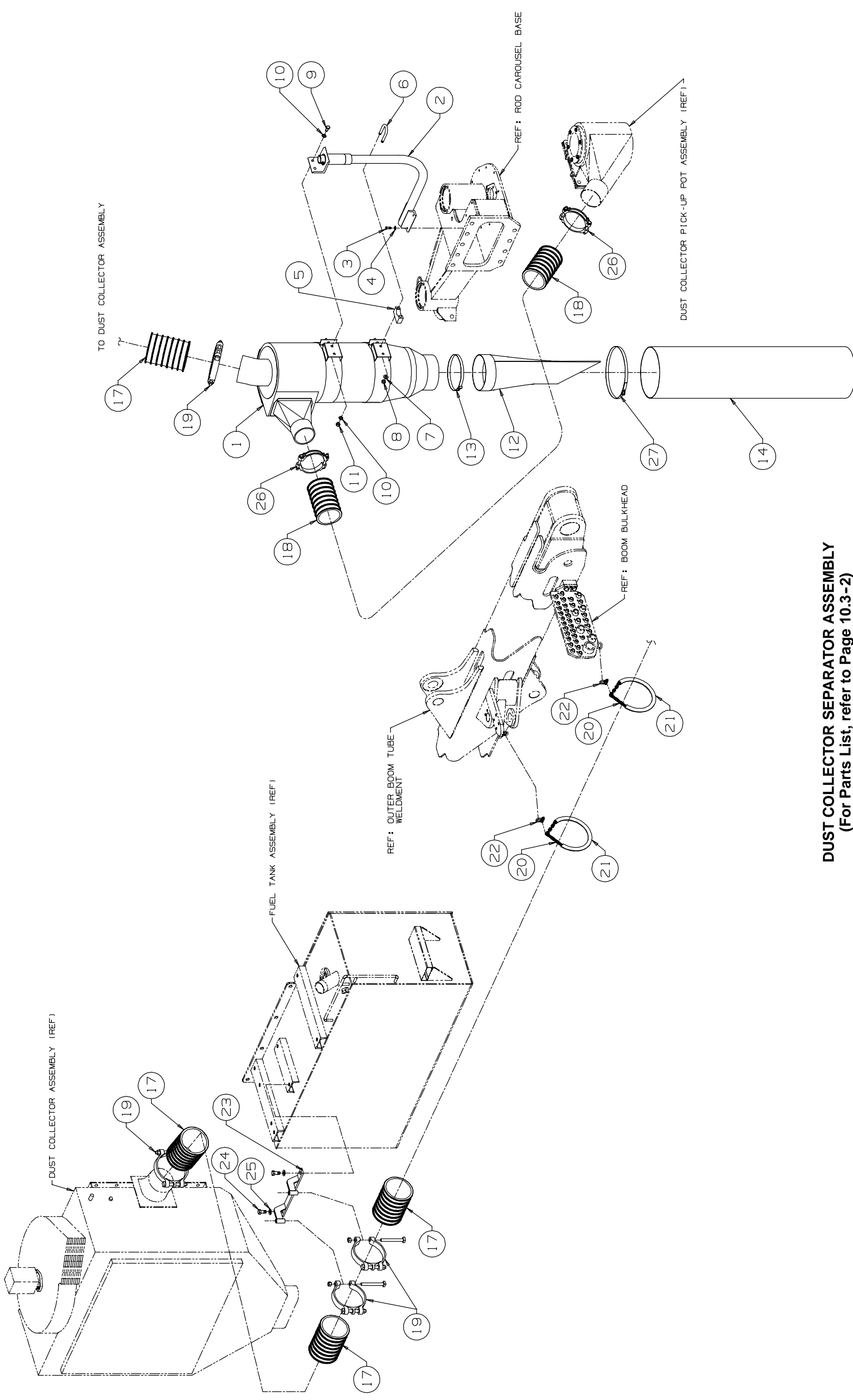
DUST COLLECTOR SEPARATOR ASSEMBLY

(S/N 18069-18073)

Section 10.3

Revision 2

January 6, 2000



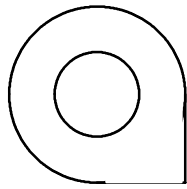
DUST COLLECTOR SEPARATOR ASSEMBLY
(For Parts List, refer to Page 10.3-2)

DUST COLLECTOR SEPARATOR ASSEMBLY
(For Illustration of parts, refer to Page 10.3-1)

REF.

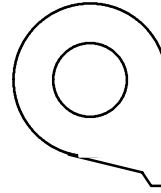
NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

	52136884		DUST COLLECTOR SEPARATOR ASSEMBLY	
1	52283066	1	SEPARATOR, PLASTICLONE	<i>REFER TO PAGE 10.3-3</i>
2	51874089	1	MOUNT, PRESKIMMER	
3	96702410	4	CAPSCREW	
4	96700836	4	WASHER	
5	51909422	1	SADDLE MOUNT, PRESKIMMER	
6	95353942	1	U-CLAMP	
7	95069597	2	WASHER	
8	95417929	2	LOCKNUT	
9	96714852	4	CAPSCREW	
10	96700844	8	WASHER	
11	96702857	4	NUT, HEX	
12	51785962	1	HOSE, DUMP	
13	51785988	1	CLAMP, HOSE	
14	51785970	1	SCREEN, WIND	
15	96714605	6	CAPSCREW	
16	96700828	6	WASHER	
17	52136868	1	HOSE, SUCTION	
18	52115888	1	HOSE, DUST COLLECTOR	
19	51869808	4	CLAMP, HOSE	
20	51791317	2	CHAIN	
21	03241395	2	HOSE, BULK	
22	51783017	2	SHACKLE, CHAIN	
23	51918274	1	BRACKET, HOSE	
24	96714936	2	CAPSCREW	
25	96700968	2	WASHER, FLAT	
26	51782860	2	CLAMP, HOSE	
27	52284825	1	BAND, WINDSCREEN MOUNTING	



TOP VIEW

NOTE: IF THE TOP VIEW OF THE SEPARATOR LOOKS LIKE THIS, REFER TO SECTION 12.14A.



TOP VIEW



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

	52283066		SEPARATOR, PLASTICLONE	
--	-----------------	--	-------------------------------	--

1	52284841	1	BODY, PLASTICLONE	
2	52129905	1	OUTLET, TOP, 6 INCH	
3	52137205	1	INLET, TRANSITION, 5 INCH	

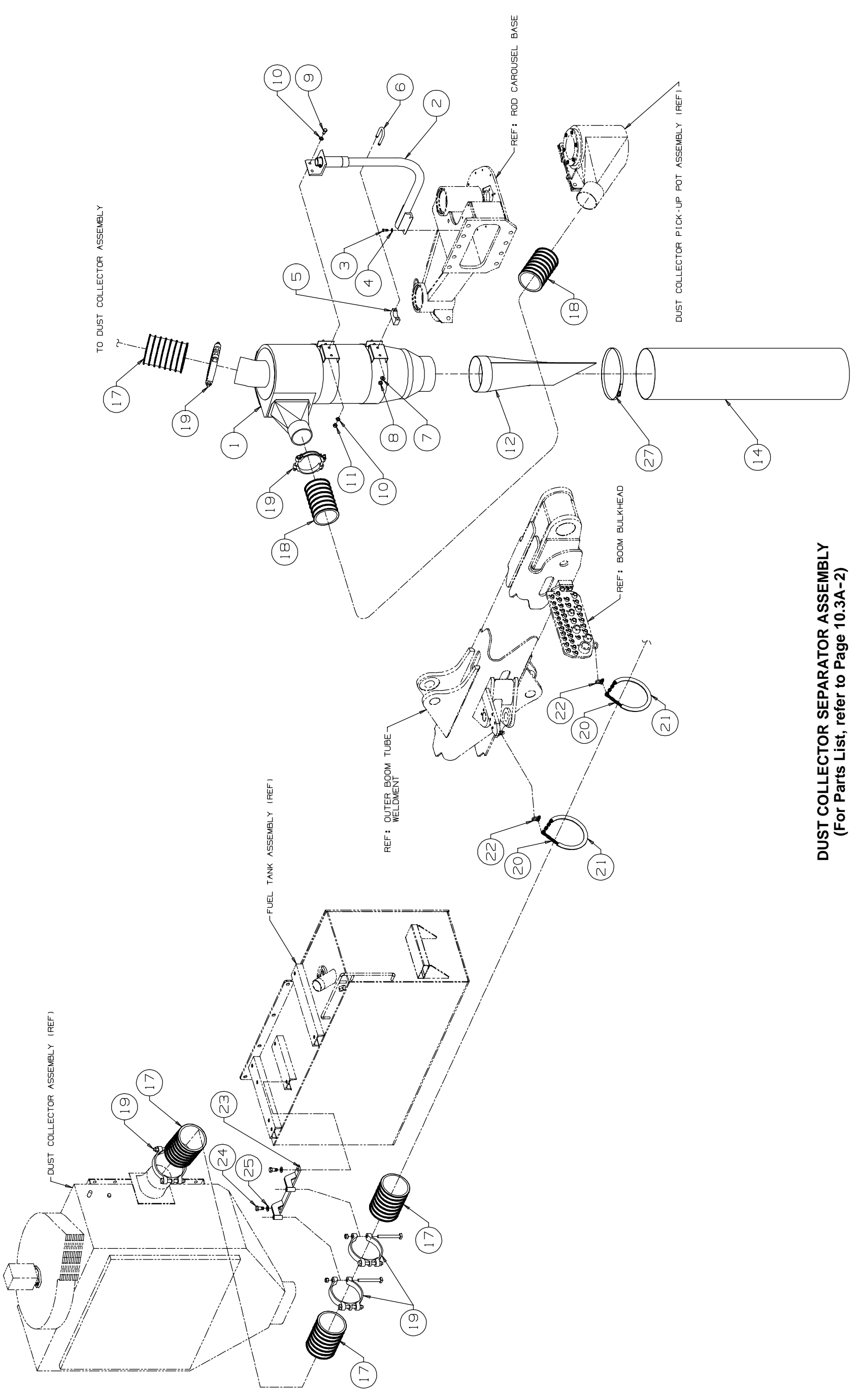
4	52284833	1	WEAR PLATE, REPLACEMENT	
5	52129939	2	BAND, MOUNTING	

DUST COLLECTOR SEPARATOR ASSEMBLY

(S/N 18074-18076)

July 21, 1999

Section 10.3A

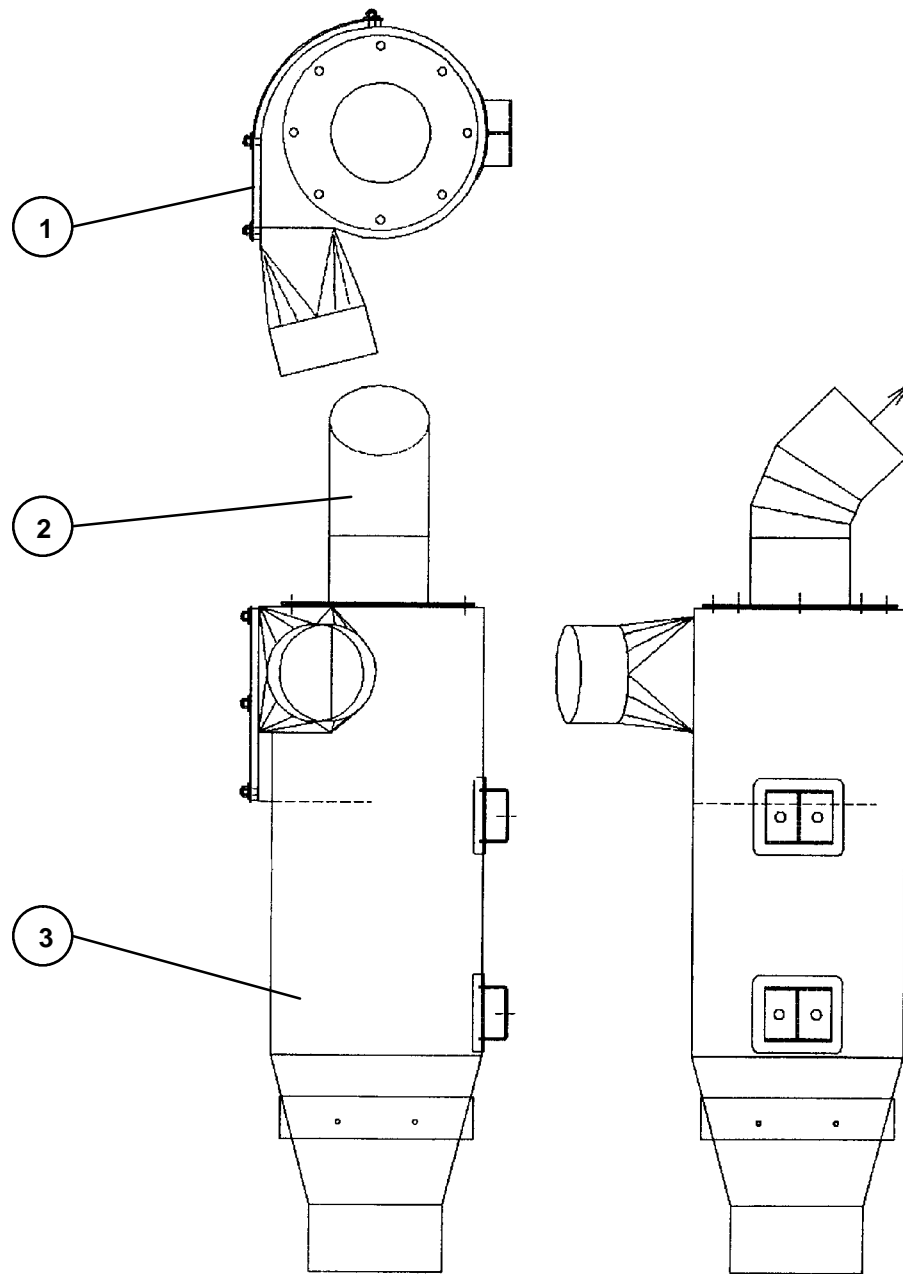


DUST COLLECTOR SEPARATOR ASSEMBLY
(For Parts List, refer to Page 10.3A-2)

DUST COLLECTOR SEPARATOR ASSEMBLY
(For Illustration of parts, refer to Page 10.3A-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52296720		DUST COLLECTOR SEPARATOR ASSEMBLY	
1	51999704	1	SEPARATOR, DUST COLLECTOR (STEEL)	<i>REFER TO PAGE 10.3A-3</i>
2	51874089	1	MOUNT, SEPARATOR	
3	96702410	4	CAPSCREW	
4	96700836	4	WASHER	
5	51909422	1	SADDLE MOUNT, SEPARATOR	
6	95353942	1	U-CLAMP	
7	95069597	2	WASHER	
8	95417929	2	LOCKNUT	
9	96714852	4	CAPSCREW	
10	96700844	8	WASHER	
11	96702857	4	NUT, HEX	
12	51785962	1	HOSE, DUMP	
13	51785988	1	CLAMP, HOSE	
14	51785970	1	SCREEN, WIND	
15	96714605	6	CAPSCREW	
16	96700828	6	WASHER	
17	52136868	1	HOSE, SUCTION	
18	51869824	1	HOSE, DUST COLLECTOR	
19	51869808	5	CLAMP, HOSE	
20	51791317	2	CHAIN	
21	03241395	2	HOSE, BULK	
22	51783017	2	SHACKLE, CHAIN	
23	51918274	1	BRACKET, HOSE	
24	96714936	2	CAPSCREW	
25	96700968	2	WASHER, FLAT	



REF.

NO. PART NO. QTY.

PART NAME

REMARKS

51999704 DUST COLLECTOR SEPARATOR (STEEL)

1 52119708 1 PANEL, REPLACEMENT
 2 52119732 1 SECTION, TOP
 3 52119740 1 SECTION, LOWER

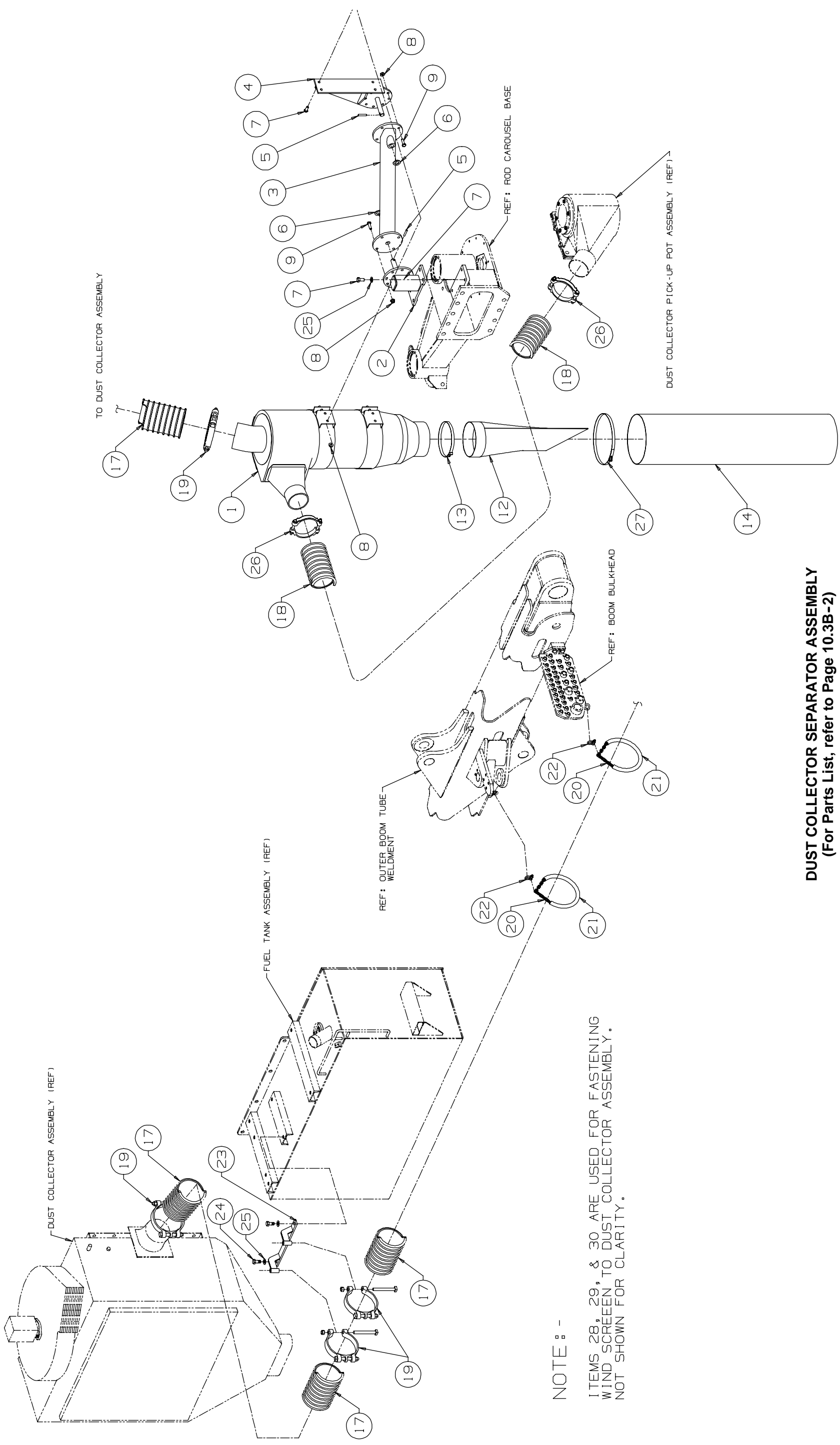
DUST COLLECTOR SEPARATOR ASSEMBLY

(S/N 18077 & ABOVE)

Section 10.3B

Revision 1

March 30, 2001



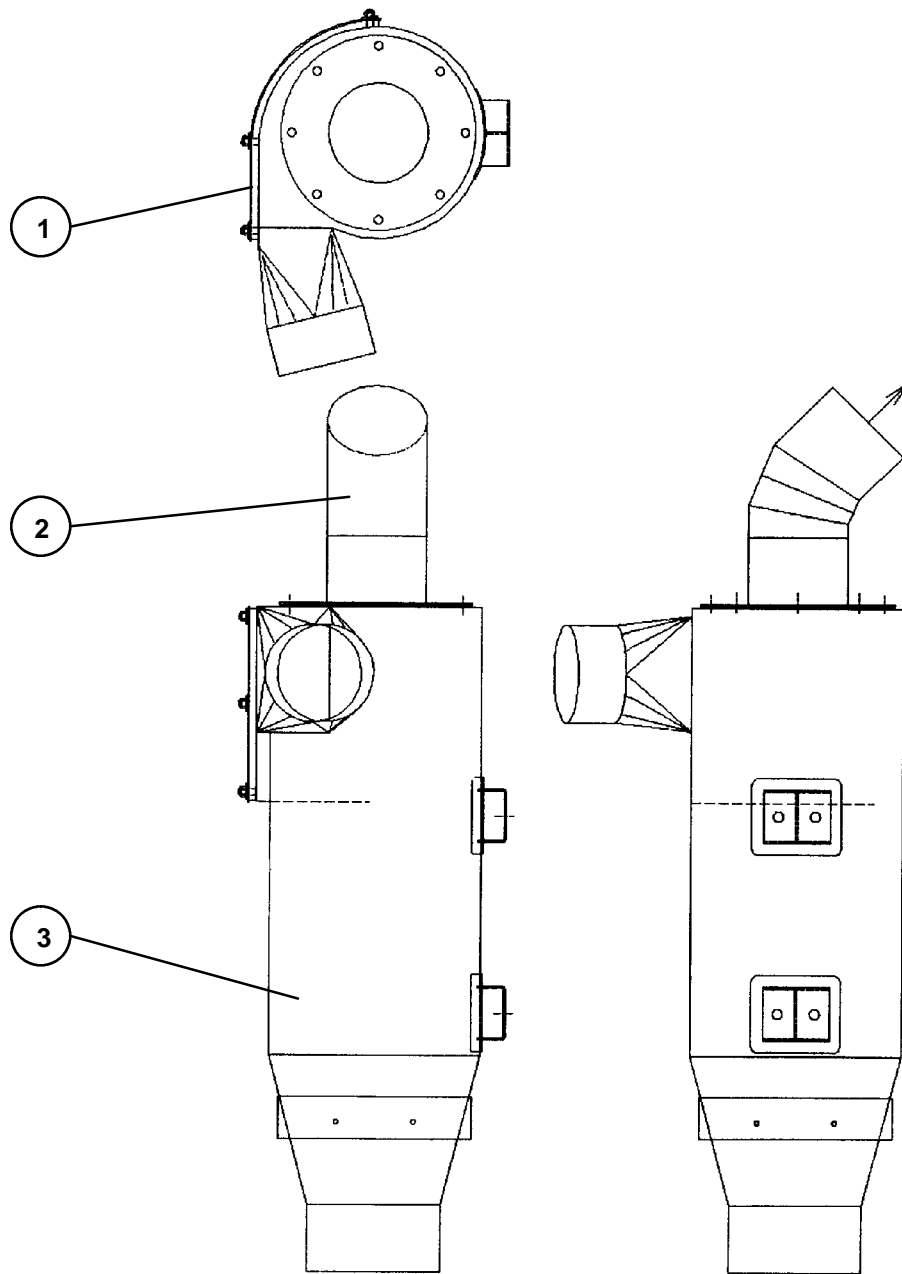
NOTE :-
ITEMS 28, 29, & 30 ARE USED FOR FASTENING
WIND SCREEN TO DUST COLLECTOR ASSEMBLY.
NOT SHOWN FOR CLARITY.

DUST COLLECTOR SEPARATOR ASSEMBLY
(For Parts List, refer to Page 10.3B-2)

DUST COLLECTOR SEPARATOR ASSEMBLY
(For Illustration of parts, refer to Page 10.3B-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52298817		DUST COLLECTOR SEPARATOR ASSEMBLY	
1	51999704	1	SEPARATOR, DUST COLLECTOR	<i>REFER TO PAGE 10.3B-3</i>
2	52298809	1	SUPPORT, SEPARATOR	
3	52115524	1	ARM, SEPARATOR PIVOT	
4	52115078	1	BRACKET, SEPARATOR	
5	95098703	2	PIN	
6	96726989	2	WASHER	
7	96703178	8	BOLT	
8	96727730	12	NUT, FLANGE	
9	96726740	8	BOLT	
12	51785962	1	HOSE, DUMP	
13	51785988	1	CLAMP, HOSE	
14	51785970	1	SCREEN, WIND	
17	52136868	1	HOSE	
18	51869824	1	HOSE	
19	51869808	5	CLAMP, HOSE	
20	51791317	2	CHAIN	
21	03241395	2	HOSE	
22	51783017	2	SHACKLE, CHAIN	
23	51918274	1	BRACKET, HOSE	
24	96714936	2	SCREW. HEX. HD	
25	96700968	6	WASHER, FLAT	
26	51782860	2	CLAMP, HOSE	
27	52284825	1	BAND, WIND SCREEN MOUNTING	



REF.

NO. PART NO. QTY.

PART NAME

REMARKS

51999704 DUST COLLECTOR SEPARATOR (STEEL)

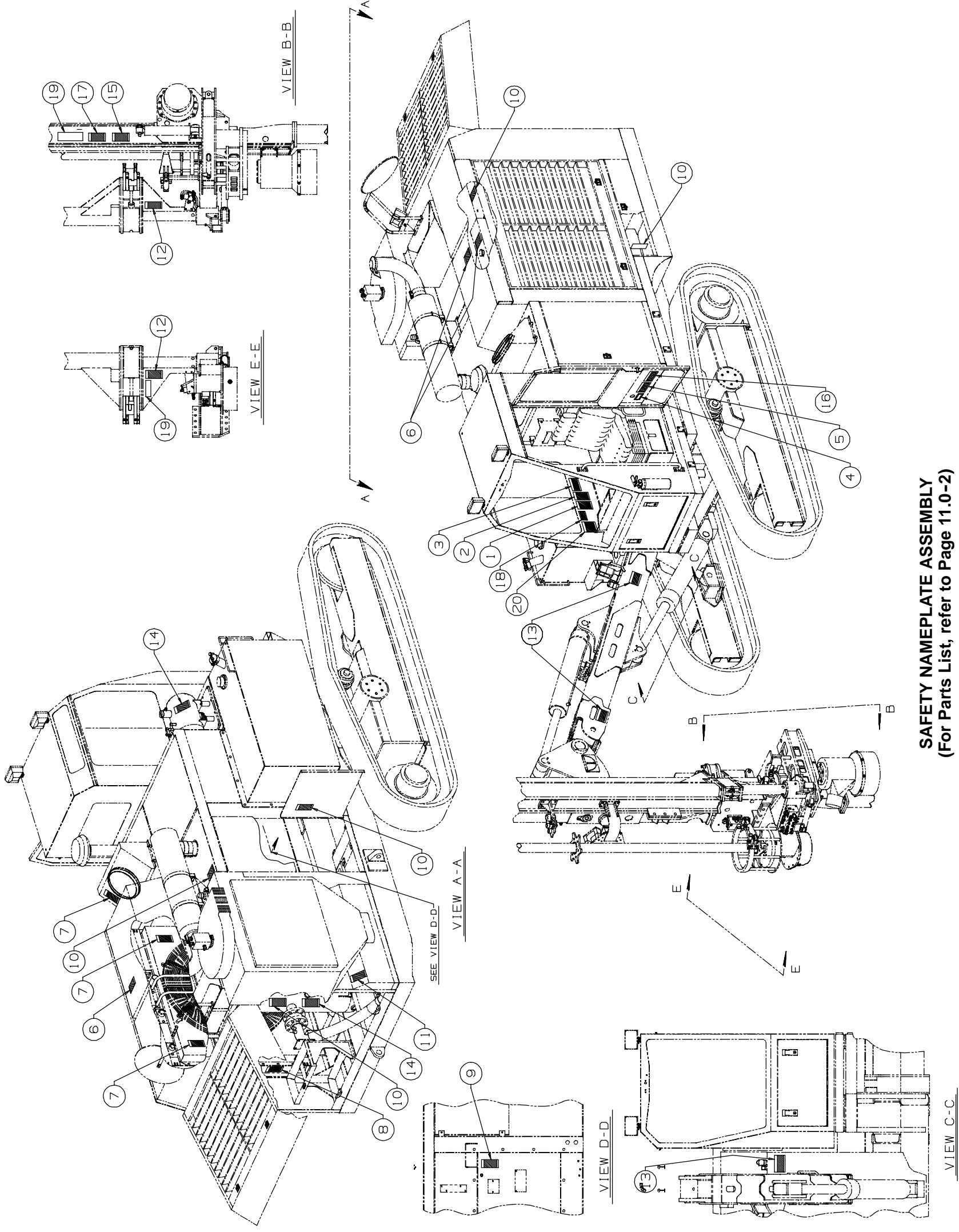
1	52119708	1	PANEL, REPLACEMENT
2	52119732	1	SECTION, TOP
3	52119740	1	SECTION, LOWER

SAFETY NAMEPLATE ASSEMBLY

Revision 1

March 10, 1999

Section 11.0



SAFETY NAMEPLATE ASSEMBLY
(For Parts List, refer to Page 11.0-2)

SAFETY NAMEPLATE ASSEMBLY
 (For Illustration of parts, refer to Page 11.0-1)

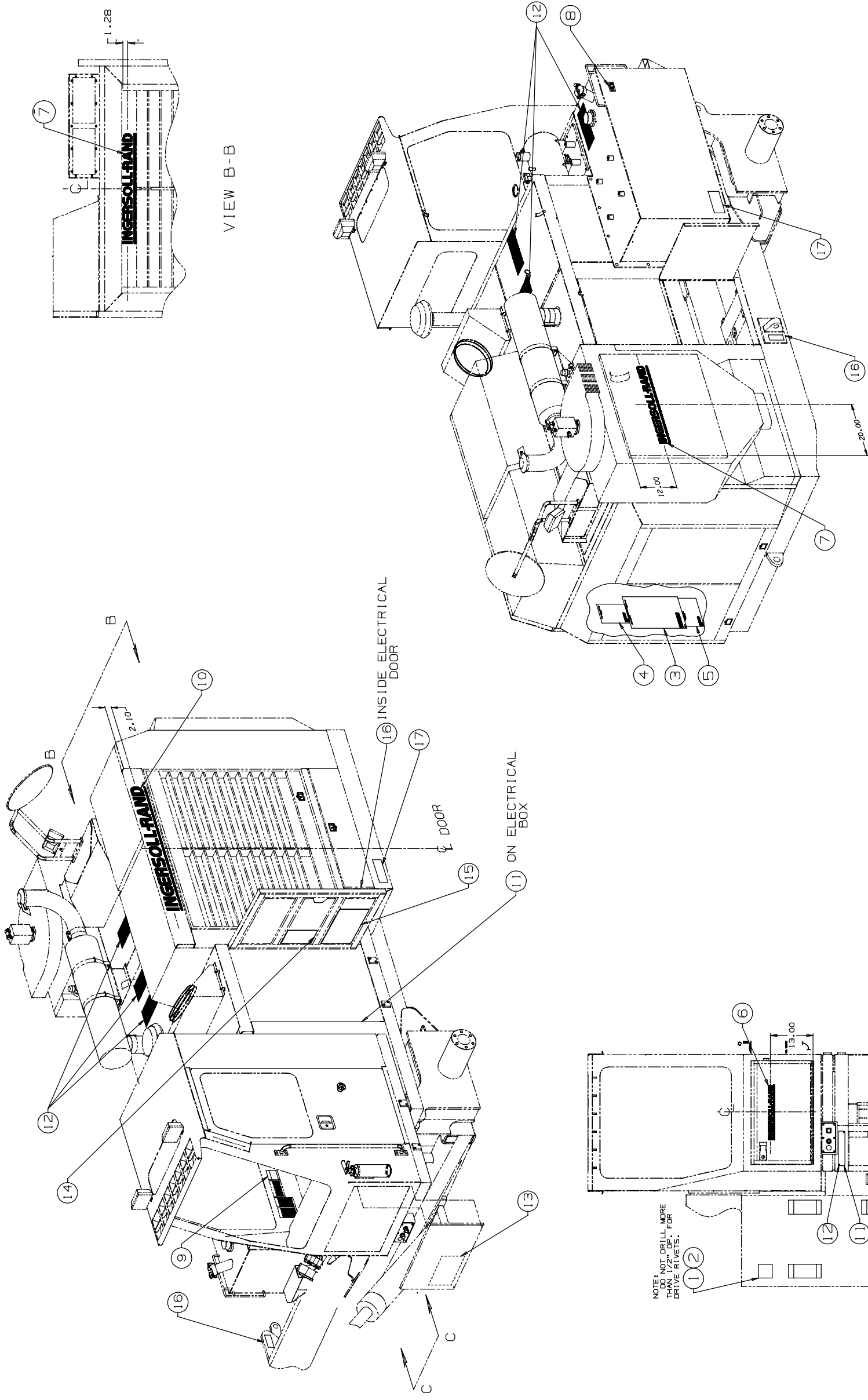
REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	51943900		SAFETY NAMEPLATE ASSEMBLY	
1	51777357	1	NAMEPLATE, DANGER	
2	51778876	1	NAMEPLATE, WARNING	
3	52292844	1	NAMEPLATE, WARNING "READ THE MANUAL"	
4	51792414	1	NAMEPLATE	
5	52292851	1	NAMEPLATE, WARNING "DO NOT ALTER THE MACHINE"	
6	51777415	2	NAMEPLATE, CAUTION "HIGH PRESSURE FLUID"	
7	51777464	3	NAMEPLATE, WARNING	
8	51777365	1	NAMEPLATE, WARNING "COMBUSTIBLE GAS"	
9	51357408	1	NAMEPLATE	
10	51777407	5	NAMEPLATE, WARNING "HOT SURFACE"	
11	51777373	1	NAMEPLATE, DANGER	
12	51792695	2	NAMEPLATE, WARNING "CRUSH AREA"	
13	51777449	3	NAMEPLATE, WARNING	
14	51777381	2	NAMEPLATE, WARNING	
15	51777456	1	NAMEPLATE, WARNING "ROTATING DRILL STEEL"	
16	51949691	1	NAMEPLATE, WARNING	
17	51949709	1	NAMEPLATE, WARNING	
18	51996593	1	PROPOSITION 65 WARNING	
19	51993145	2	NAMEPLATE, DANGER ZONE	
20	51997914	1	NAMEPLATE, STABILITY	
21	51917904	2	NAMEPLATE, WARNING	

NAMEPLATE/DECALS ASSEMBLY

January 15, 1999

Section 11.1



NAMEPLATE/DECALS ASSEMBLY
(For Parts List, refer to Page 11.1-2)

NAMEPLATE/DECALS ASSEMBLY
(For Illustration of parts, refer to Page 11.1-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	51994192		NAMEPLATE/DECALS ASSEMBLY	
1	++	1	NAMEPLATE, SERIAL NO.	
2	03154226	4	SCREW, DRIVE	
3	51943934	1	DECAL, MAINTENANCE SUMMARY	
4	51943991	1	DECAL, SERVICE ITEMS	
5	51948511	1	DECAL, LUBE ITEMS	
6	52086436	1	DECAL, CORPORATE SIGNATURE	
7	52086428	1	DECAL, CORPORATE SIGNATURE	
8	59731257	1	DECAL (DIESEL FUEL)	
9	51780906	1	NAMEPLATE "OPEN BOTH OSCILLATION"	
10	52086410	1	DECAL, CORPORATE SIGNATURE	
11	51991933	1	DECAL, EMERGENCY SHUTDOWN	
12	51994598	6	TRACTION TAPE, ADHESIVE	
13	51948701	1	DECAL, CAB MANIFOLDS	
14	51948685	1	DECAL, TRAM/SOL/FEED MANIFOLD	
15	51948693	1	DECAL, ENCLOSURE COMPONENTS	
16	51991867	3	NAMEPLATE, LIFT POINT	
17	51985968	2	NAMEPLATE, NOTICE "DO NOT TOW THIS MACHINE FASTER THAN 2 MPH (3.2 KPH)"	

++ NOTE: THE SERIAL NUMBER NAMEPLATE IS NOT SOLD SEPARATELY.

WIRING HARNESS KIT

January 15, 1999

Section 12.0

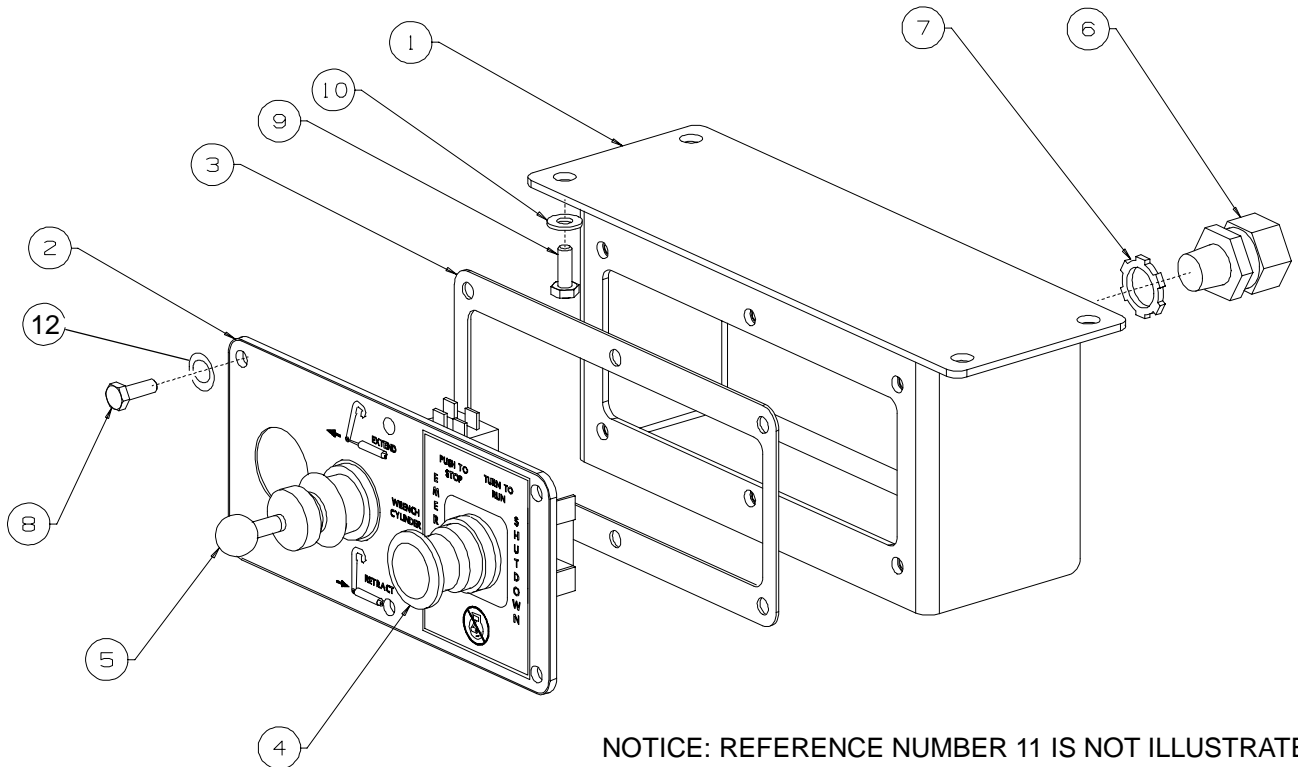
<i>REF.</i>			
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>
			<i>REMARKS</i>
	51998623		WIRING HARNESS KIT
1	51943751	1	WIRING HARNESS, ENCLOSURE
2	51943769	1	WIRING HARNESS, FAN/COOLER
3	51943785	1	WIRING HARNESS, ENGINE PANEL
4	51943801	1	WIRING HARNESS, CAB FRONT PANEL
5	51943819	1	WIRING HARNESS, CORNER PANEL
6	51943827	1	WIRING HARNESS, CAB SIDE PANEL
7	51948651	1	WIRING HARNESS, LOWER GUIDE
8	51998631	1	HARNESS, FUSE PANEL
9	51998649	1	HARNESS, CAB/LIGHTS/BOTTLE
10	51998656	1	HARNESS, RELAY PANEL
11	51998664	1	HARNESS, GUIDE TRUNK
12	51998672	1	HARNESS, TOP GUIDE
13	51994739	1	HARNESS, E-STOP/WRENCH
14	51994747	1	HARNESS, GUIDE SAFETY SWITCH

ELECTRIC BOX ASSEMBLY

(FOR WRENCH/HOIST/EMERGENCY STOP)

January 15, 1999

Section 12.1



NOTICE: REFERENCE NUMBER 11 IS NOT ILLUSTRATED.

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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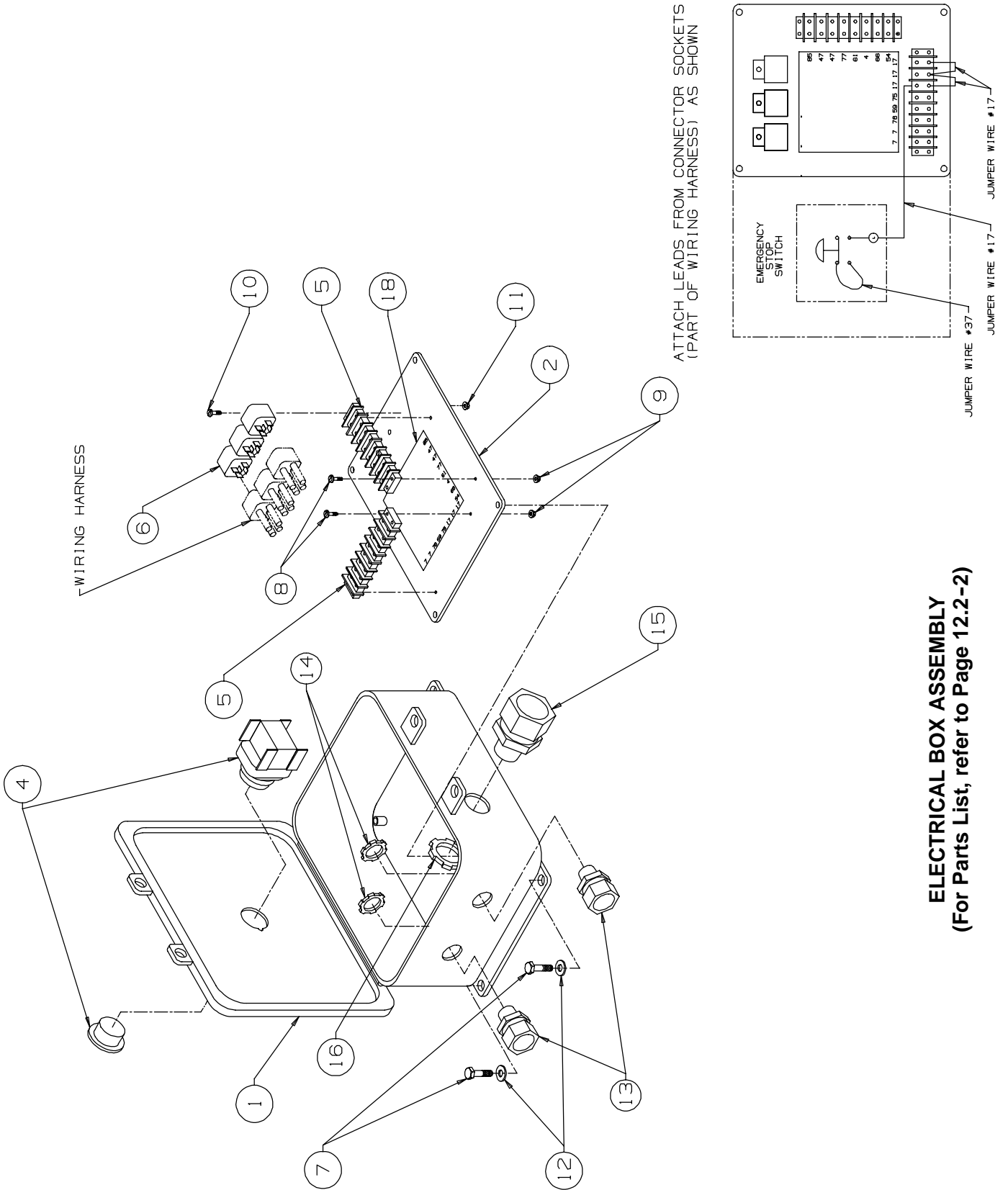
	51992485		ELECTRIC BOX ASSEMBLY	
1	51992493	1	BOX, ELECTRICAL	
2	51992477	1	NAMEPLATE, WRENCH/HOIST	
3	51915957	1	GASKET, ELECTRICAL PANEL	
4	51619922	1	SWITCH, STOP ASSEMBLY	
	51943959	1	.KNOB, MUSHROOM	
5	51869931	1	SWITCH, JOYSTICK (WRENCH CONTROL)	
	51985950	1	.BOOT, DUST	
6	95245072	2	CONNECTOR	
7	51948735	2	LOCKNUT, SEAL	
8	96727987	6	CAPSCREW	
9	96714613	4	CAPSCREW	
10	96700828	4	WASHER	
11	51720357	1	CONDUIT	
12	96701289	6	WASHER	

ELECTRICAL BOX ASSEMBLY

(FOR EMERGENCY STOP IN ENCLOSURE)

January 15, 1999

Section 12.2



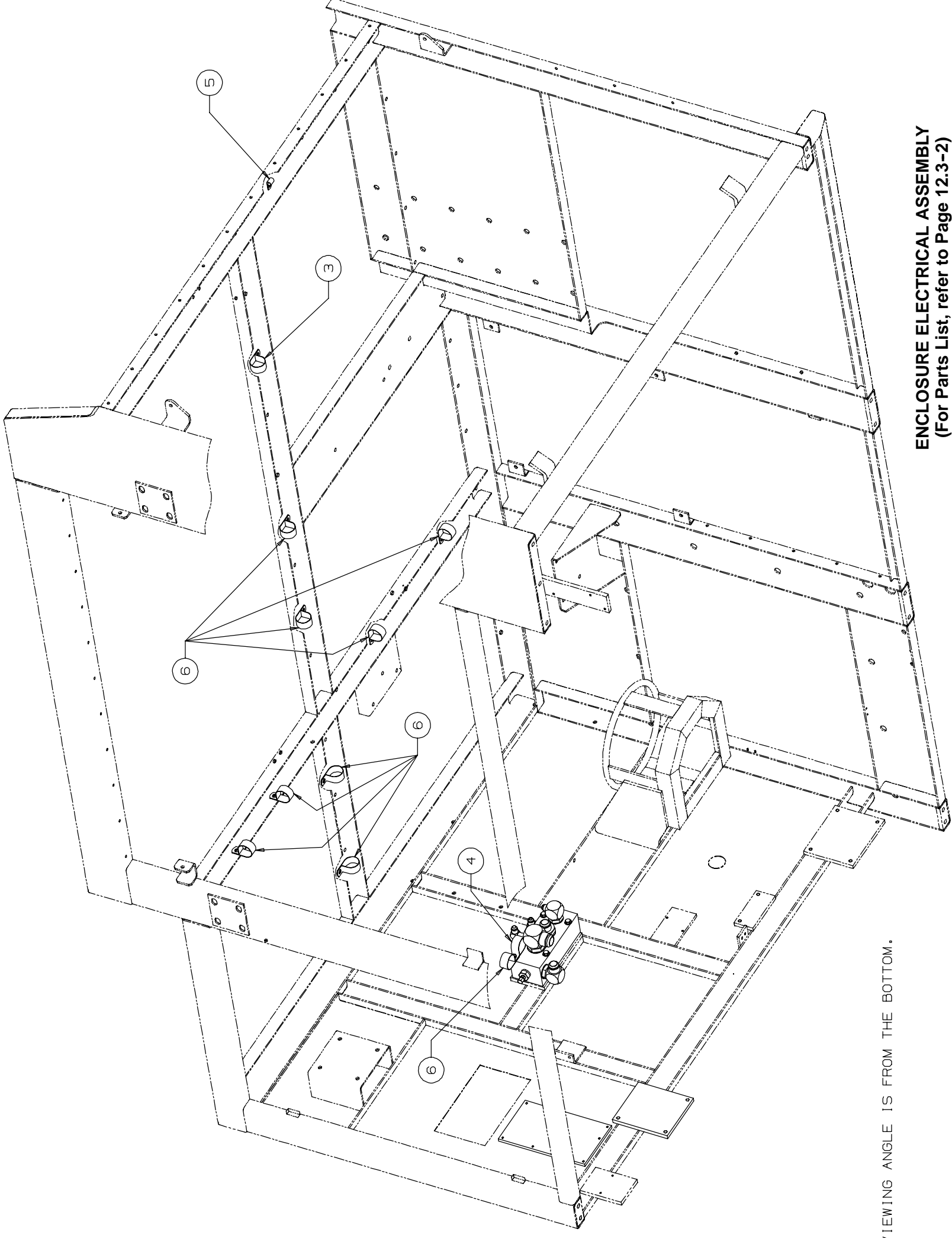
ELECTRICAL BOX ASSEMBLY
(For Parts List, refer to Page 12.2-2)

ELECTRICAL BOX ASSEMBLY
(For Illustration of parts, refer to Page 12.2-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	51909331		ELECTRICAL BOX ASSEMBLY	
1	51918282	1	BOX, ELECTRICAL	
2	51918290	1	PANEL, ELECTRICAL BOX	
4	51619922	1	SWITCH, EMERGENCY STOP	
	51943959	1	.KNOB, MUSHROOM	
5	50906726	2	STRIP, TERMINAL	
6	51716066	3	RELAY, 24 VDC	
7	96703046	4	CAPSCREW	
8	95410627	4	SCREW, MACHINE	
9	95076717	4	NUT	
10	95073953	3	SCREW, MACHINE	
11	95076725	4	NUT	
12	96701289	4	WASHER	
13	95245072	2	CONNECTOR	
14	51948735	2	LOCKNUT, SEAL	
15	51918498	1	CONNECTOR	
16	51943504	1	LOCKNUT, CONNECTOR	
18	51948669	1	DECAL, ELECTRICAL BOX	

NOTE:
ALL OTHER ITEMS ARE NOT SHOWN
FOR CLARITY.



VIEWING ANGLE IS FROM THE BOTTOM.

ENCLOSURE ELECTRICAL ASSEMBLY
(For Parts List, refer to Page 12.3-2)

ENCLOSURE ELECTRICAL ASSEMBLY
(For Illustration of parts, refer to Page 12.3-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
------------	-----------------	-------------	------------------	----------------

	51943876		ENCLOSURE ELECTRICAL ASSEMBLY	
3	95301859	1	CLAMP	
4	95396776	10	CLAMP ,HOSE	
5	95301842	4	CLAMP	

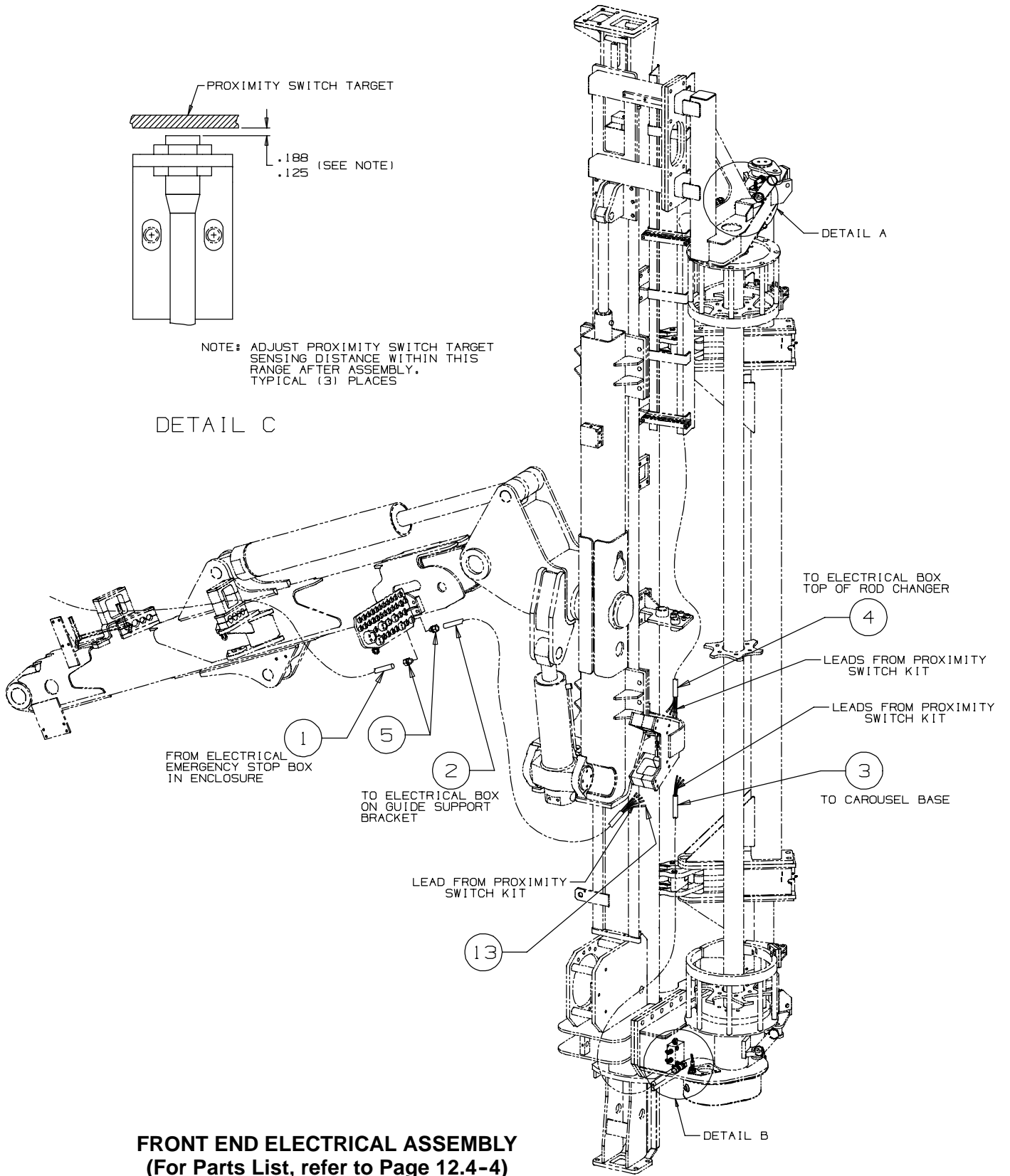
6	95378873	7	CLAMP, SUPORT	
7	51919488	72	ELECTRICAL WIRE LOOM	
8	57017915	120	LOOM, ELECTRICAL WIRE	
9	51722684	2	PRE-SHELL	
10	51791838	3	CONNECTOR	

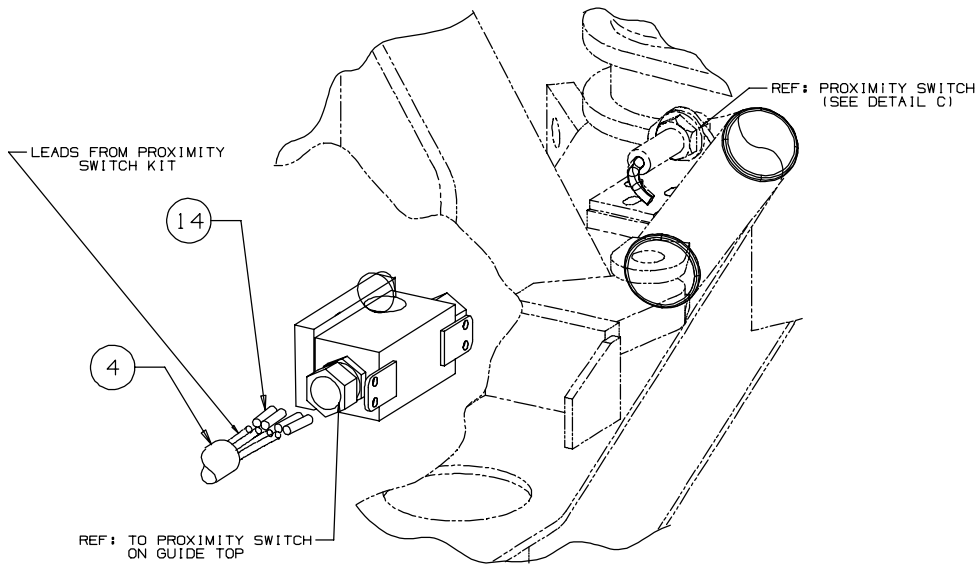
11	51722668	14	SEAL	
12	51722650	14	SLEEVE	
13	95301834	4	CLAMP	

FRONT END ELECTRICAL ASSEMBLY

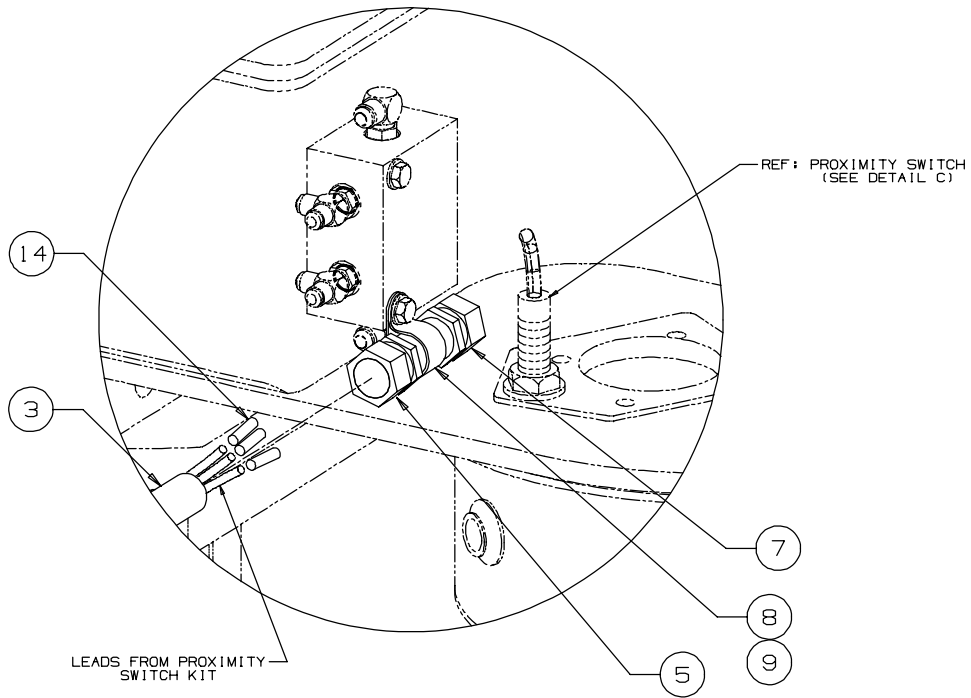
January 15, 1999

Section 12.4





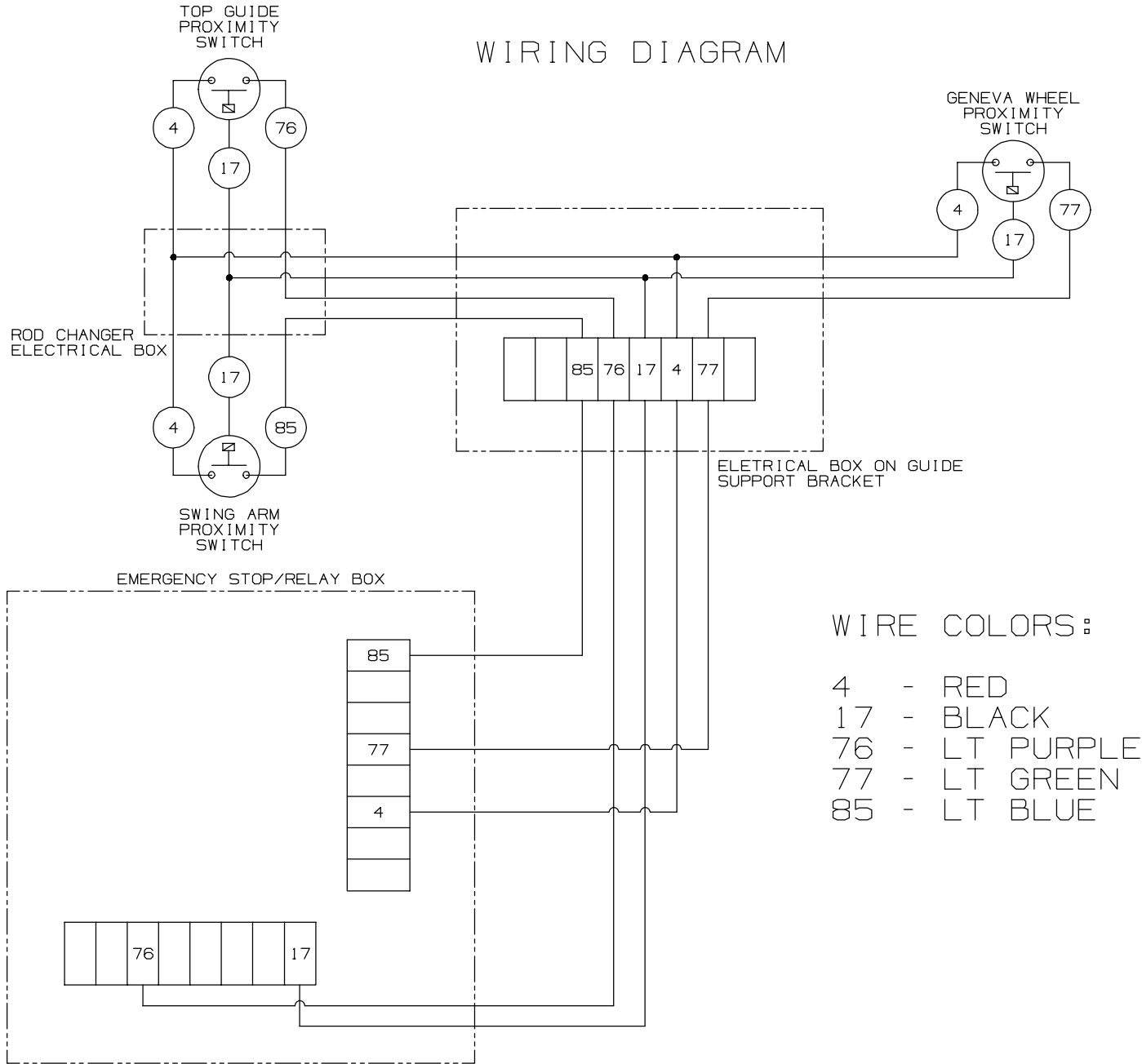
DETAIL A



DETAIL B

**FRONT END ELECTRICAL ASSEMBLY
(For Parts List, refer to Page 12.4-4)**

WIRING DIAGRAM



- WIRE COLORS :
- 4 - RED
 - 17 - BLACK
 - 76 - LT PURPLE
 - 77 - LT GREEN
 - 85 - LT BLUE

**FRONT END ELECTRICAL ASSEMBLY
(For Parts List, refer to Page 12.4-4)**

FRONT END ELECTRICAL ASSEMBLY
(For Illustration of parts, refer to Pages 12.4-1 thru 12.4-3)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
------------	-----------------	-------------	------------------	----------------

51943850	FRONT END ELECTRICAL ASSEMBLY		
-----------------	--------------------------------------	--	--

1	51720357	216	CONDUIT
2	51720357	144	CONDUIT
3	51720357	84	CONDUIT
4	51720357	132	CONDUIT
5	95245072	4	CONNECTOR

7	50839042	2	CONNECTOR
8	95513743	2	COUPLING, CONDUIT
9	95654208	2	CLAMP, VINYL
13	51874972	5	TONGUE, RING
14	95373882	6	SPLICE

-
- 96714738 1 CAPSCREW
 - 96701404 2 WASHER
 - 96704333 1 NUT, HEX LOCK

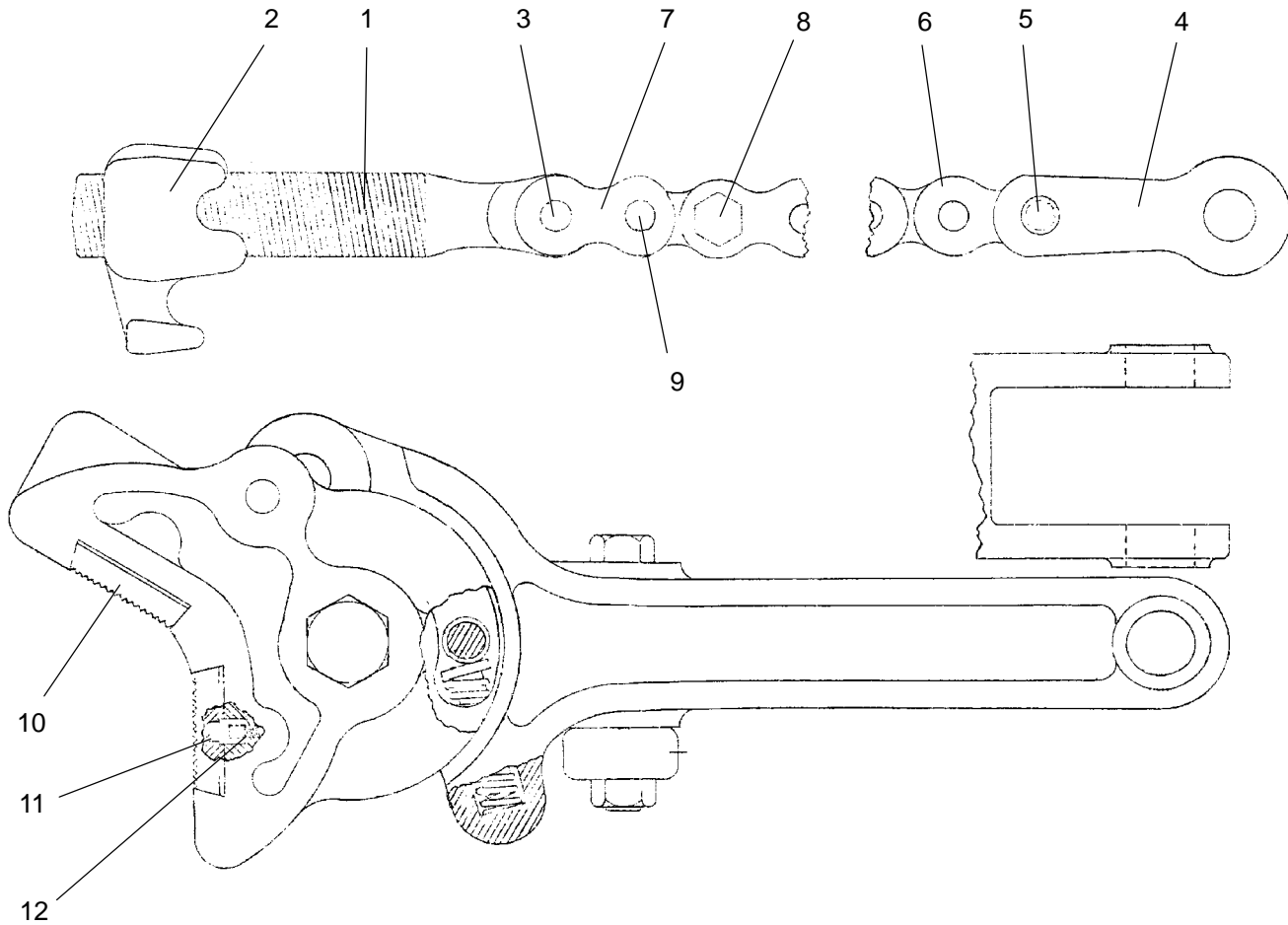
- **NOTE:** THESE PARTS ARE NOT ILLUSTRATED.

3 INCH ROD TOOL KIT

January 15, 1999

Section 13.0

<i>REF.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	51918340		3 INCH ROD TOOL KIT	
1	51785749	1	WRENCH, CHAIN	<i>REFER TO PAGE 13.0-2</i>
2	51918407	1	CHAIN, WRENCH	
3	51916161	1	WRENCH, J	18 INCH J-WRENCH FOR 2-1/4 INCH FLATS
4	51916153	1	WRENCH, J	18 INCH J-WRENCH FOR 2-5/8 INCH FLATS
5	51862514	1	CHUCK, BIT DETACHING	
6	51791770	1	CHUCK, BIT(BLANK)	
7	51792570	1	T/M CHUCK, BITS (TEMPLATE MANUAL FOR BLANK CHUCK BITS)	
8	51989077	1	ASSEMBLY, AIR HOSE	
9	51307882	1	ASSEMBLY, BLOW GUN	
10	50141829	1	GUN, GREASE	
11	50141894	1	HOSE, GREASE GUN	
12	51307874	1	ADAPTER	
13	50978543	1	ASSEMBLY, HOSE	
14	95422838	2	PLUG	
15	51943918	1	KIT, 100 HOUR FILTER	
	51608503	2	.FILTER, HYDRAULIC	
	51618221	1	.ELEMENT, FILTER	
	36758613	2	.ELEMENT, OIL FILTER	
	51914331	1	.ELEMENT, FILTER, ENGINE OIL	
	51914349	1	.ELEMENT, FILTER, ENGINE FUEL	
	51914356	1	.ELEMENT, FILTER, COOLANT	
16	51608503	2	FILTER, HYDRAULIC	
17	51918332	1	KIT ,HYDRAULIC SYSTEM TEST	<i>REFER TO PAGE 13.0-3</i>
18	51728616	1	TOOL-SPINDLE LOCK	



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51785749		CHAIN WRENCH	
1	51792588	1	SCREW, CHAIN	
2	51792554	1	NUT, CHAIN SCREW	
3	51792455	1	PIN	
4	51792539	1	LINK, MASTER	
5	51792463	1	PIN	
6	51792505	1	CHAIN	
7	++	49	LINKS	
8	51792489	3	BOLT AND NUT	
9	51792547	7	RIVET	
10	51792471	2	INSERT, KNURLED	
11	51792521	4	KEY, INSERT	
12	51792513	4	SPRING	

HYDRAULIC SYSTEM TEST KIT

REF.

NO. PART NO. QTY. PART NAME
REMARKS

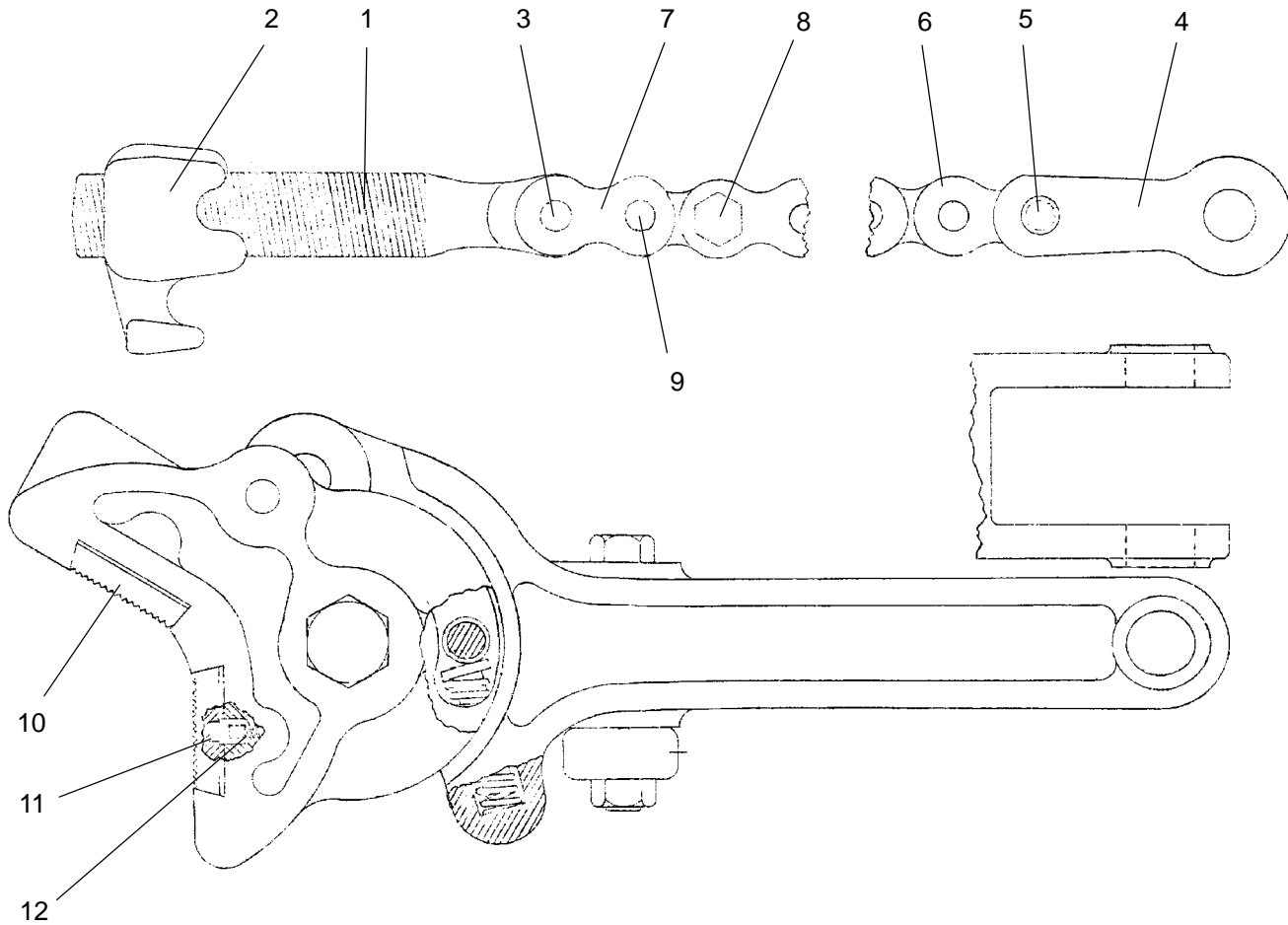
51918332		HYDRAULIC SYSTEM TEST KIT	
1	51074763	1	POUCH, MANUAL
2	52135274	1	GAUGE, PRESSURE, 300 PSI
3	51943975	1	GAUGE, PRESSURE, 3000 PSI
4	51943983	1	GAUGE, PRESSURE, 5000 PSI
5	51917425	2	HOSE, HYDRAULIC TEST
6	51867018	2	ASSEMBLY, HOSE
7	52135266	1	HOSE, HYDRAULIC TEST
8	95652996	2	TEE
9	95003182	4	TEE
10	95065322	1	TEE
11	95739306	1	TEE, SWIVEL RUN
12	95737482	2	TEE, SWIVEL RUN
13	56800717	1	REDUCER
14	56956220	1	ADAPTER
15	50995042	1	REDUCER, SWIVEL
16	51024214	1	FITTING
17	51027928	2	ADAPTER
18	95257333	2	CAP
19	95257341	2	CAP
20	95257325	2	CAP
21	95387890	2	CAP
22	95387924	1	CAP
23	95395505	2	PLUG
24	95415584	2	PLUG
25	95382206	2	PLUG
26	95404414	2	PLUG
27	95422838	1	PLUG

3.5 INCH ROD TOOL KIT

January 15, 1999

Section 13.1

<i>REF.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	52138963		3.5 INCH ROD TOOL KIT	
1	51785749	1	WRENCH, CHAIN	<i>REFER TO PAGE 13.1-2</i>
2	51916146	1	CHAIN, WRENCH	
3	50397397	1	WRENCH	
4	50984673	1	WRENCH, DHD	
5	52138955	1	WRENCH, J	
6	51862514	1	CHUCK, BIT DETACHING	
7	51791770	1	CHUCK, BIT (BLANK)	
8	51792570	1	T/M CHUCK,BITS	(TEMPLATE MANUAL FOR BLANK CHUCK BITS)
9	51989077	1	ASSEMBLY, AIR HOSE	
10	51307882	1	ASSEMBLY, BLOW GUN	
11	50141829	1	GUN, GREASE	
12	50141894	1	HOSE, GREASE GUN	
13	51307874	1	ADAPTER	
14	50978543	1	ASSEMBLY, HOSE	
15	95422838	2	PLUG	
16	51943918	1	KIT, 100 HOUR FILTER	
	51608503	2	.FILTER, HYDRAULIC	
	51618221	1	.ELEMENT, FILTER	
	36758613	2	.ELEMENT, OIL FILTER	
	51914331	1	.ELEMENT, FILTER, ENGINE OIL	
	51914349	1	.ELEMENT, FILTER, ENGINE FUEL	
	51914356	1	.ELEMENT, FILTER, COOLANT	
17	51608503	2	FILTER, HYDRAULIC	
18	51918332	1	KIT, HYDRAULIC SYSTEM TEST	<i>REFER TO PAGE 13.1-3</i>
19	52129111		PLATE, LOCKING	



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

	51785749		CHAIN WRENCH	
1	51792588	1	SCREW, CHAIN	
2	51792554	1	NUT, CHAIN SCREW	
3	51792455	1	PIN	
4	51792539	1	LINK, MASTER	
5	51792463	1	PIN	
6	51792505	1	CHAIN	
7	++	49	LINKS	
8	51792489	3	BOLT AND NUT	
9	51792547	7	RIVET	
10	51792471	2	INSERT, KNURLED	
11	51792521	4	KEY, INSERT	
12	51792513	4	SPRING	

HYDRAULIC SYSTEM TEST KIT

REF.

NO. PART NO. QTY. PART NAME
REMARKS

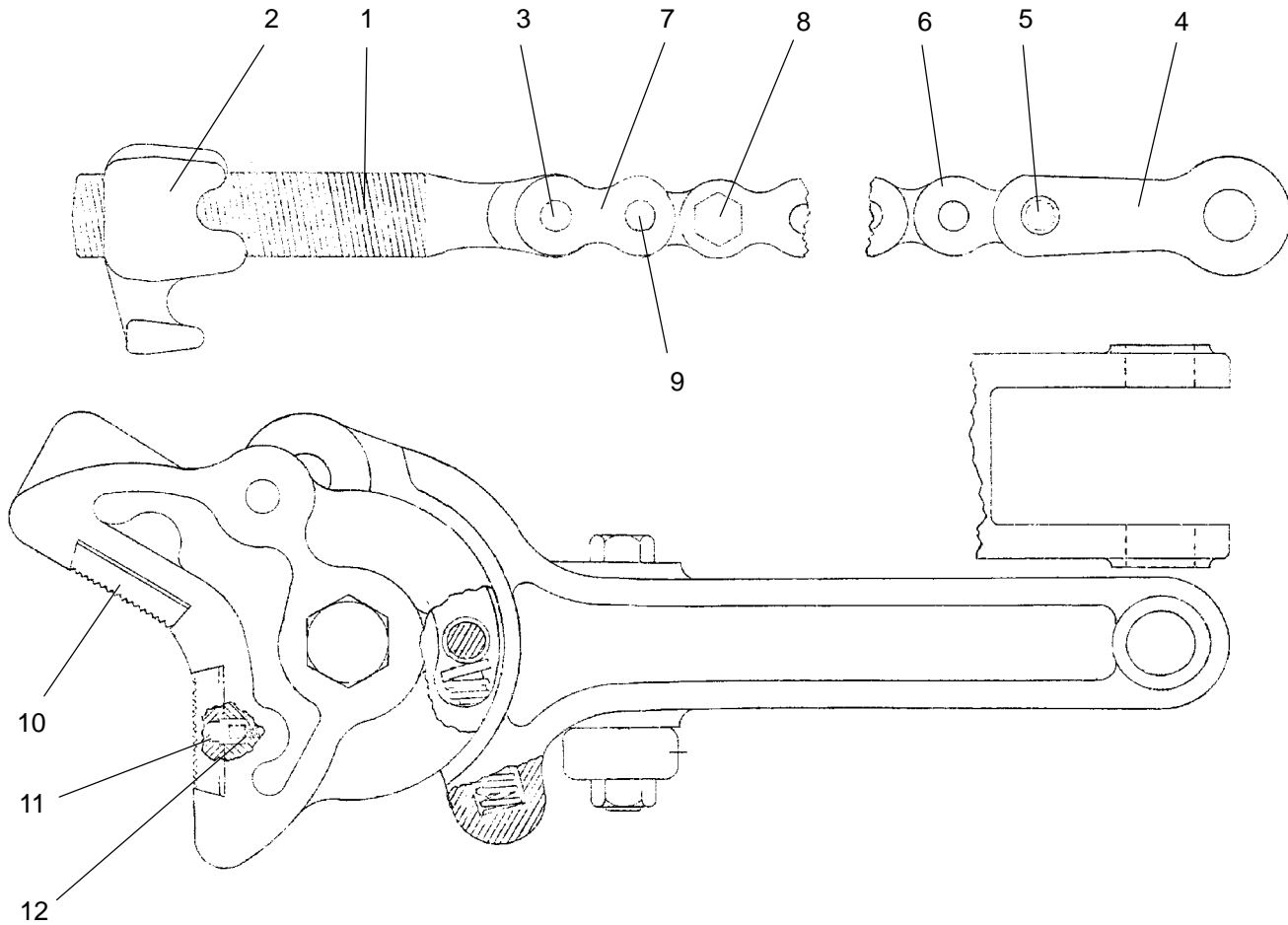
NO.	PART NO.	QTY.	PART NAME	REMARKS
	51918332		HYDRAULIC SYSTEM TEST KIT	
1	51074763	1	POUCH, MANUAL	
2	52135274	1	GAUGE, PRESSURE, 300 PSI	
3	51943975	1	GAUGE, PRESSURE, 3000 PSI	
4	51943983	1	GAUGE, PRESSURE, 5000 PSI	
5	51917425	2	HOSE, HYDRAULIC TEST	
6	51867018	2	ASSEMBLY, HOSE	
7	52135266	1	HOSE, HYDRAULIC TEST	
8	95652996	2	TEE	
9	95003182	4	TEE	
10	95065322	1	TEE	
11	95739306	1	TEE, SWIVEL RUN	
12	95737482	2	TEE, SWIVEL RUN	
13	56800717	1	REDUCER	
14	56956220	1	ADAPTER	
15	50995042	1	REDUCER, SWIVEL	
16	51024214	1	FITTING	
17	51027928	2	ADAPTER	
18	95257333	2	CAP	
19	95257341	2	CAP	
20	95257325	2	CAP	
21	95387890	2	CAP	
22	95387924	1	CAP	
23	95395505	2	PLUG	
24	95415584	2	PLUG	
25	95382206	2	PLUG	
26	95404414	2	PLUG	
27	95422838	1	PLUG	

4 INCH ROD TOOL KIT

January 15, 1999

Section 13.2

<i>REF.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	51873925		4 INCH ROD TOOL KIT	
1	51785749	1	WRENCH, CHAIN	<i>REFER TO PAGE 13.2-2</i>
2	51916146	1	CHAIN, WRENCH	
3	51067148	1	WRENCH, J	
4	51916138	1	WRENCH, J	
5	51862514	1	CHUCK, BIT DETACHING	
6	51791770	1	CHUCK, BIT (BLANK)	
7	51792570	1	T/M CHUCK, BITS (TEMPLATE MANUAL FOR BLANK CHUCK BITS)	
8	51989077	1	ASSEMBLY, AIR HOSE	
9	51307882	1	ASSEMBLY, BLOW GUN	
10	50141829	1	GUN, GREASE	
11	50141894	1	HOSE, GREASE GUN	
12	51307874	1	ADAPTER	
13	50978543	1	ASSEMBLY, HOSE	
14	95422838	2	PLUG	
15	51943918	1	KIT, 100 HOUR FILTER	
	51608503	2	.FILTER, HYDRAULIC	
	51618221	1	.ELEMENT, FILTER	
	36758613	2	.ELEMENT, OIL FILTER	
	51914331	1	.ELEMENT, FILTER, ENGINE OIL	
	51914349	1	.ELEMENT, FILTER, ENGINE FUEL	
	51914356	1	.ELEMENT, FILTER, COOLANT	
16	51608503	2	FILTER, HYDRAULIC	
17	51918332	1	KIT, HYDRAULIC SYSTEM TEST	<i>REFER TO PAGE 13.2-3</i>
18	51728616	1	TOOL-SPINDLE LOCK	



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51785749		CHAIN WRENCH	
1	51792588	1	SCREW, CHAIN	
2	51792554	1	NUT, CHAIN SCREW	
3	51792455	1	PIN	
4	51792539	1	LINK, MASTER	
5	51792463	1	PIN	
6	51792505	1	CHAIN	
7	++	49	LINKS	
8	51792489	3	BOLT AND NUT	
9	51792547	7	RIVET	
10	51792471	2	INSERT, KNURLED	
11	51792521	4	KEY, INSERT	
12	51792513	4	SPRING	

HYDRAULIC SYSTEM TEST KIT

REF.

NO. PART NO. QTY. PART NAME
REMARKS

51918332		HYDRAULIC SYSTEM TEST KIT	
1	51074763	1	POUCH, MANUAL
2	52135274	1	GAUGE, PRESSURE, 300 PSI
3	51943975	1	GAUGE, PRESSURE, 3000 PSI
4	51943983	1	GAUGE, PRESSURE, 5000 PSI
5	51917425	2	HOSE, HYDRAULIC TEST
6	51867018	2	ASSEMBLY, HOSE
7	52135266	1	HOSE, HYDRAULIC TEST
8	95652996	2	TEE
9	95003182	4	TEE
10	95065322	1	TEE
11	95739306	1	TEE, SWIVEL RUN
12	95737482	2	TEE, SWIVEL RUN
13	56800717	1	REDUCER
14	56956220	1	ADAPTER
15	50995042	1	REDUCER, SWIVEL
16	51024214	1	FITTING
17	51027928	2	ADAPTER
18	95257333	2	CAP
19	95257341	2	CAP
20	95257325	2	CAP
21	95387890	2	CAP
22	95387924	1	CAP
23	95395505	2	PLUG
24	95415584	2	PLUG
25	95382206	2	PLUG
26	95404414	2	PLUG
27	95422838	1	PLUG

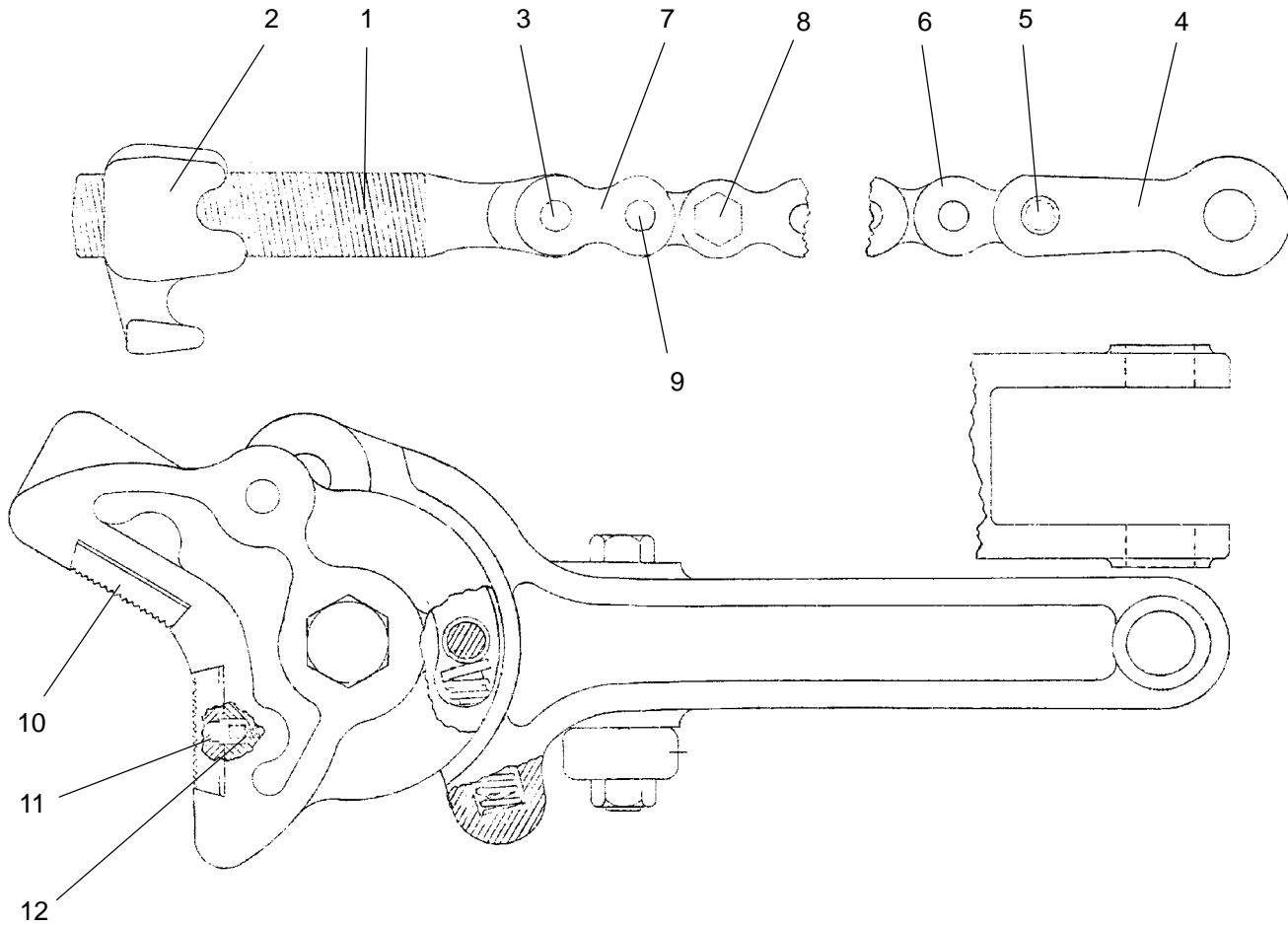
3.5 & 4 INCH ROD TOOL KIT

(USED W/2.50 "Z" THREAD)

April 5, 1999

Section 13.2A

<i>REF.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	52293784		3.5 & 4 INCH ROD TOOL KIT	
1	51785749	1	WRENCH, CHAIN	<i>REFER TO PAGE 13.2A-2</i>
2	51916146	1	CHAIN, WRENCH	
3	50984673	1	WRENCH, J (DHD)	
4	52138955	1	WRENCH, J (SUB-ADAPTER)	
5	51862514	1	CHUCK, BIT DETACHING	
6	51791770	1	CHUCK, BIT (BLANK)	
7	51792570	1	T/M CHUCK, BITS (TEMPLATE MANUAL FOR BLANK CHUCK BITS)	
8	51989077	1	ASSEMBLY, AIR HOSE	
9	51307882	1	ASSEMBLY, BLOW GUN	
10	50141829	1	GUN, GREASE	
11	50141894	1	HOSE, GREASE GUN	
12	51307874	1	ADAPTER	
13	50978543	1	ASSEMBLY, HOSE	
14	95422838	2	PLUG	
15	51943918	1	KIT, 100 HOUR FILTER	
	51608503	2	.FILTER, HYDRAULIC	
	51618221	1	.ELEMENT, FILTER	
	36758613	2	.ELEMENT, OIL FILTER	
	51914331	1	.ELEMENT, FILTER, ENGINE OIL	
	51914349	1	.ELEMENT, FILTER, ENGINE FUEL	
	51914356	1	.ELEMENT, FILTER, COOLANT	
16	51608503	2	FILTER, HYDRAULIC	
17	51918332	1	KIT, HYDRAULIC SYSTEM TEST	<i>REFER TO PAGE 13.2A-3</i>



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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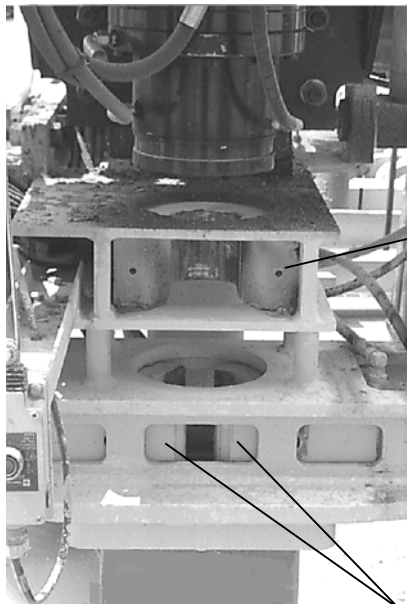
	51785749		CHAIN WRENCH	
1	51792588	1	SCREW, CHAIN	
2	51792554	1	NUT, CHAIN SCREW	
3	51792455	1	PIN	
4	51792539	1	LINK, MASTER	
5	51792463	1	PIN	
6	51792505	1	CHAIN	
7	++	49	LINKS	
8	51792489	3	BOLT AND NUT	
9	51792547	7	RIVET	
10	51792471	2	INSERT, KNURLED	
11	51792521	4	KEY, INSERT	
12	51792513	4	SPRING	

HYDRAULIC SYSTEM TEST KIT

REF.

NO. PART NO. QTY. PART NAME
REMARKS

51918332		HYDRAULIC SYSTEM TEST KIT	
1	51074763	1	POUCH, MANUAL
2	52135274	1	GAUGE, PRESSURE, 300 PSI
3	51943975	1	GAUGE, PRESSURE, 3000 PSI
4	51943983	1	GAUGE, PRESSURE, 5000 PSI
5	51917425	2	HOSE, HYDRAULIC TEST
6	51867018	2	ASSEMBLY, HOSE
7	52135266	1	HOSE, HYDRAULIC TEST
8	95652996	2	TEE
9	95003182	4	TEE
10	95065322	1	TEE
11	95739306	1	TEE, SWIVEL RUN
12	95737482	2	TEE, SWIVEL RUN
13	56800717	1	REDUCER
14	56956220	1	ADAPTER
15	50995042	1	REDUCER, SWIVEL
16	51024214	1	FITTING
17	51027928	2	ADAPTER
18	95257333	2	CAP
19	95257341	2	CAP
20	95257325	2	CAP
21	95387890	2	CAP
22	95387924	1	CAP
23	95395505	2	PLUG
24	95415584	2	PLUG
25	95382206	2	PLUG
26	95404414	2	PLUG
27	95422838	1	PLUG



CENTRALIZER FORK

2

1
CENTRALIZER BUSHING



3, 5, 6, 7
CAROUSEL TOP/BOTTOM
STAR PLATE

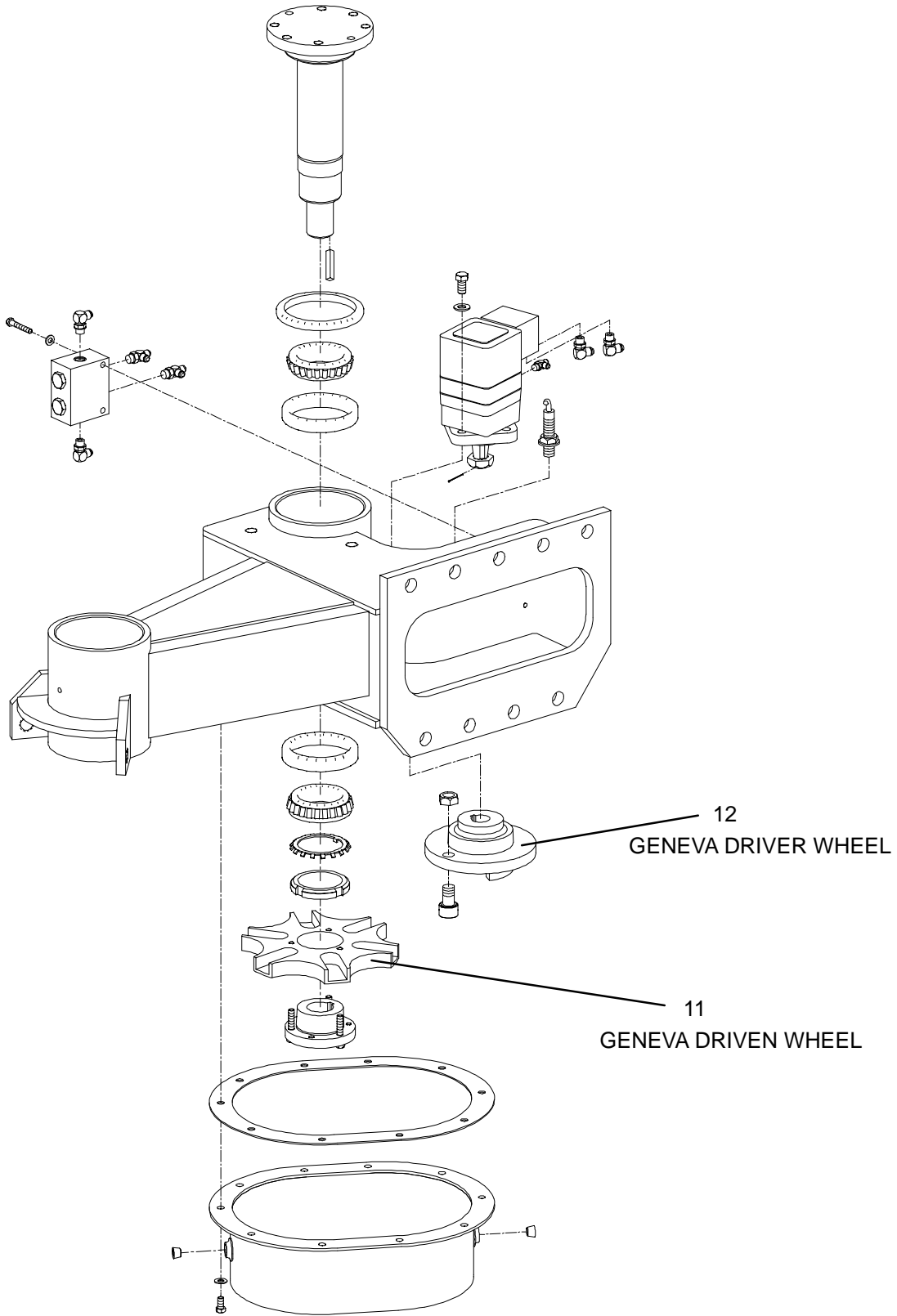


9
TOP GAGE
MODIFICATION
(FOR 3 INCH ONLY)

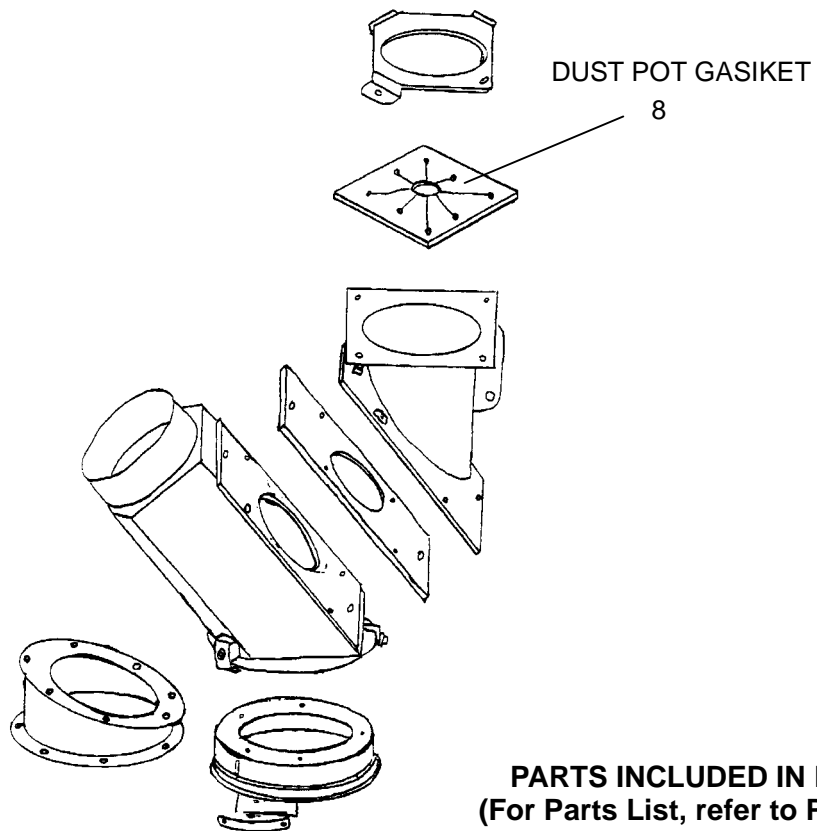
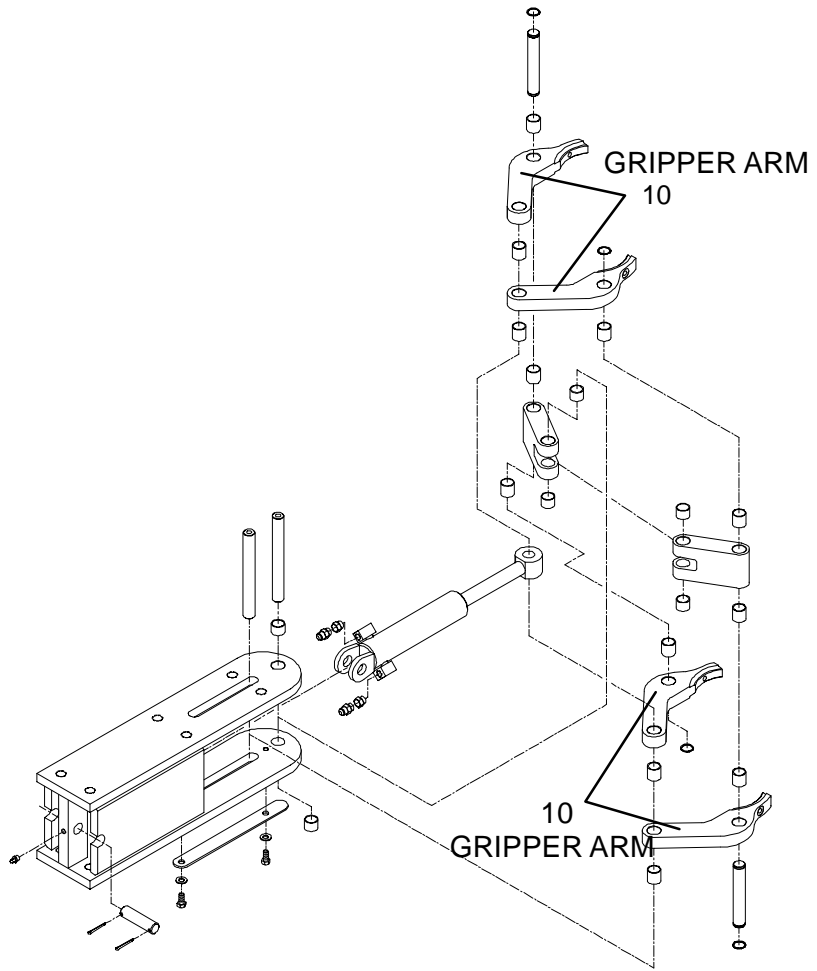
3, 5, 6, 7
CAROUSEL TOP/BOTTOM
STAR PLATE

CAROUSEL MIDDLE
STAR PLATE
4, 5, 6, 7

PARTS INCLUDED IN ROD KITS
(For Parts List, refer to Page 14.0-4)



**PARTS INCLUDED IN ROD KITS
(For Parts List, refer to Page 14.0-4)**



**PARTS INCLUDED IN ROD KITS
(For Parts List, refer to Page 14.0-4)**

3 INCH ROD SIZE KIT
(For Illustration of parts, refer to Pages 14.0-1 thru 14.0-3)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52285038		3 INCH ROD SIZE KIT	
1	51306454	1	BUSHING, CENTRALIZER	
2	51788677	1	FORK, CENTRALIZER	
3	52282704	2	PLATE, STAR, CAROUSEL, TOP/BOTTOM	
4	52282712	1	PLATE, STAR, CAROUSEL, MIDDLE	
5	96700216	18	SCREW, HEX HEAD	
6	96700968	36	WASHER, FLAT	
7	96703657	18	NUT, HEX	
8	51994978	1	GASKET, DUST POT	
9	51999142	1	MODIFICATION, TOP GATE, 3 INCH	
10	52282787	8	ARM, GRIPPER, 3 INCH ROD	
11	51999092	1	WHEEL, GENEVA DRIVEN (7 ROD)	
12	51999100	1	WHEEL, GENEVA DRIVER (7 ROD)	

3.5 INCH ROD SIZE KIT
(For Illustration of parts, refer to Pages 14.0-1 thru 14.0-3)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	52285053		3.5 INCH ROD SIZE KIT	
1	52138088	2	BUSHING, CENTRALIZER	
2	52138070	1	FORK, CENTRALIZER	
3	52138203	2	WELDMENT, STAR, TOP/BOTTOM	
4	52138211	1	WELDMENT, STAR, MIDDLE	
5	96700216	18	SCREW, HEX HEAD	
6	96700968	36	WASHER, FLAT	
7	96703657	18	NUT, HEX	
8	51994978	1	GASKET, DUST POT	
10	52138112	8	ARM, GRIPPER, 3.5 INCH ROD	
11	51999092	1	WHEEL, GENEVA DRIVEN (7 ROD)	
12	51999100	1	WHEEL, GENEVA DRIVER (7 ROD)	

4 INCH ROD SIZE KIT
(For Illustration of parts, refer to Pages 14.0-1 thru 14.0-3)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	52285046		4 INCH ROD SIZE KIT
1	51788271	1	BUSHING, CENTRALIZER
2	51788321	1	FORK, CENTRALIZER
3	52282720	2	WELDMENT, STAR, TOP/BOTTOM
4	52282738	1	WELDMENT,STAR, MIDDLE

5	96700216	18	SCREW, HEX HEAD
6	96700968	36	WASHER, FLAT
7	96703657	18	NUT, HEX
8	51994986	1	GASKET, DUST POT

10	52282795	8	ARM, GRIPPER, 4 INCH ROD
11	51780484	1	WHEEL, GENEVA DRIVEN (6 ROD)
12	51780476	1	WHEEL, GENEVA DRIVER (6 ROD)

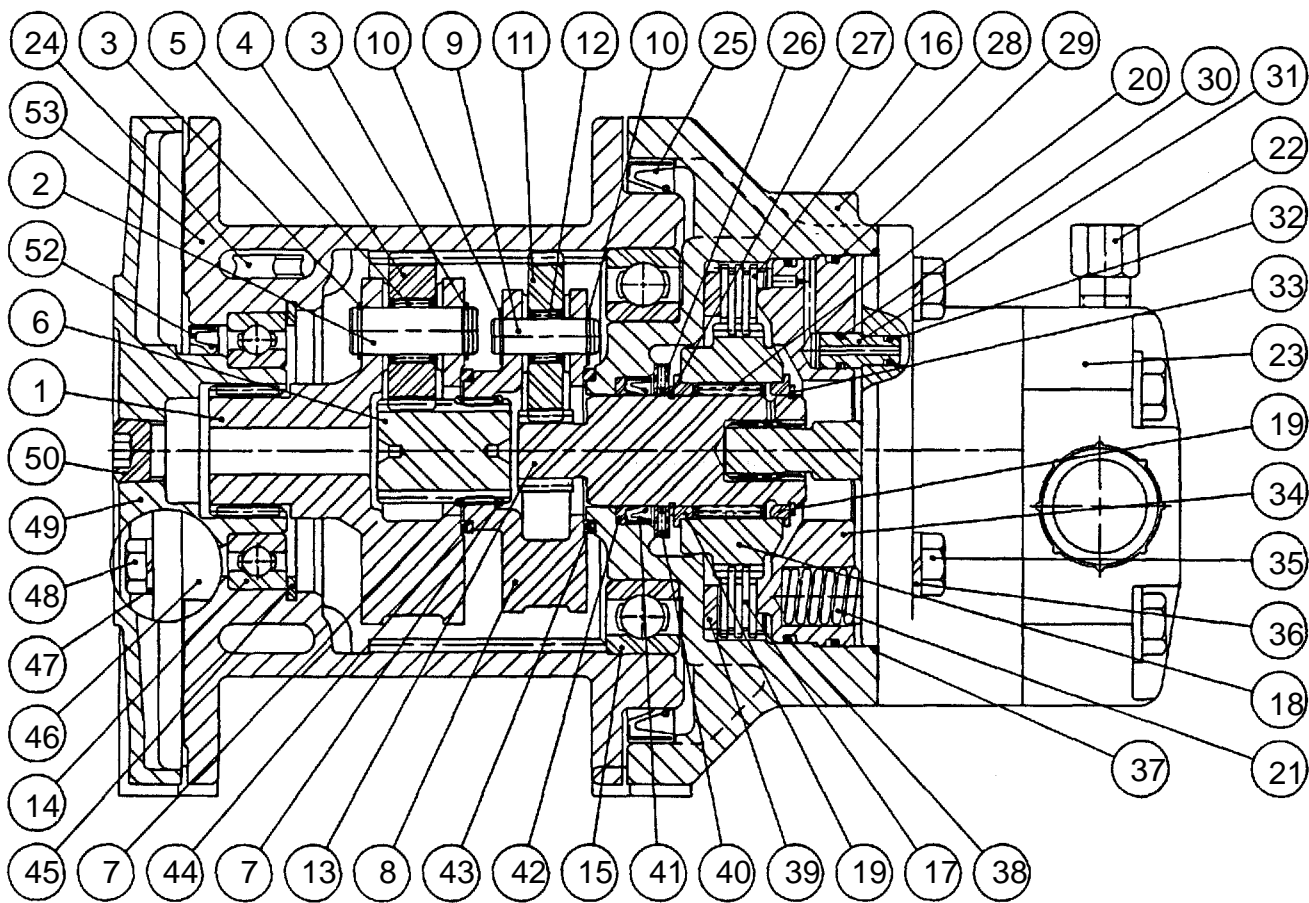
DRAWING NOT AVAILABLE AT TIME OF PRINTING

WINCH ASSEMBLY
(For Parts List, refer to Page 14.1 -2)

WINCH ASSEMBLY
(For Illustration of parts, refer to Page 14.1-1)

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
	51996148		WINCH ASSEMBLY	
1	51862522	1	WINCH, HYDRAULIC ROD, 1/2 TON	REFER TO PAGE 14.1-3
2	51783512	2	ADAPTER	
3	51874154	1	MOUNT, HOIST	
4	96700216	4	CAPSCREW	
5	96703657	4	NUT, HEX	
6	96700968	8	WASHER, FLAT	
7	95101812	4	CAPSCREW	
8	95285235	4	NUT	
9	95064671	8	WASHER	
10	50034826	2	CLAMP	
11	96701289	2	WASHER	
12	96703046	2	CAPSCREW	
13	51959047	1	CLAMP, HOSE	
14	96714761	8	CAPSCREW	
15	95209094	1	ELBOW	
16	95003182	1	TEE	
17	51300549	1	ASSEMBLY, HOSE	
18	51031573	8	TIE	
19	51867943	2	ASSEMBLY, HOSE	
20	51780963	2	ASSEMBLY, HOSE	
21	95219713	4	ADAPTER	
22	95356853	2	ADAPTER	
23	95650156	1	ADAPTER	
24	95837274	1	ELBOW	
25	95303368	1	ADAPTER	
26	95329975	2	ELBOW	
27	51620664	1	FITTING, PRESSURE TEST	
28	95365078	1	ADAPTER	
29	51366813	1	ASSEMBLY, HOSE	
30	51059772	1	ASSEMBLY, HOSE	
31	51216166	1	ASSEMBLY, HOSE	
32	51994788	1	MANIFOLD, WINCH CONTROL	
33	51869931	1	SWITCH, WINCH CONTROL JOYSTICK	
	51985950	1	.BOOT, DUST	
34	52080702	1	KIT, WIRING HARNESS	



HYDRAULIC ROD WINCH
 (For Parts List, refer to Page 14.1-5)

HYDRAULIC ROD WINCH
(For Illustration of parts, refer to Page 14.1-4)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

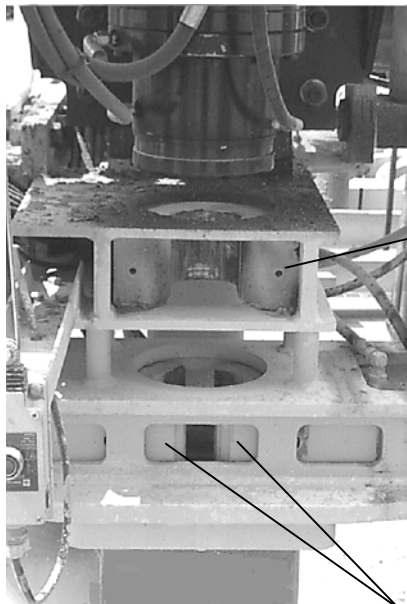
51862522		HYDRAULIC ROD WINCH	
1	51948495	1	HUB, FINAL PLANET
2	51948750	3	PIN, FINAL PLANET
3	51948768	6	CIRCLIP
4	51948776	3	GEAR, FINAL PLANET
5	51948784	3	BEARING, NEEDLE
6	51948982	1	SUNGEAR, FINAL
7	51948792	2	CIRCLIP
8	51948800	1	HUB, PRIMARY PLANET
9	51948818	3	PIN, PRIMARY PLANET
10	51948826	6	CIRCLIP
11	51948834	3	GEAR, PRIMARY PLANET
12	51948842	3	BEARING, NEEDLE
13	51948859	1	SUNGEAR, PRIMARY
14	51948867	1	BEARING, BALL
15	51948875	1	BEARING, BALL
16	51948883	3	PLATE, DIVIDER
17	51948891	2	PLATE, FRICTION
18	51948909	1	HUB, BRAKE
19	51948917	2	ALIGNER, SPRAG CLUTCH
20	51948925	1	CLUTCH, SPRING
21	51948941	6	SPRING, BRAKE
22	51948958	1	VALVE, SAFETY
23	51948966	1	ASSEMBLY, MOTOR

NOTE: REFERENCE NUMBERS 24 - 50 ARE NOT SOLD SEPARATELY.

4 INCH ROD SIZE KIT

April 5, 1999

Section 14.0A



CENTRALIZER FORK

2

1
CENTRALIZER BUSHING



3, 5, 6, 7

CAROUSEL TOP/BOTTOM
STAR PLATE

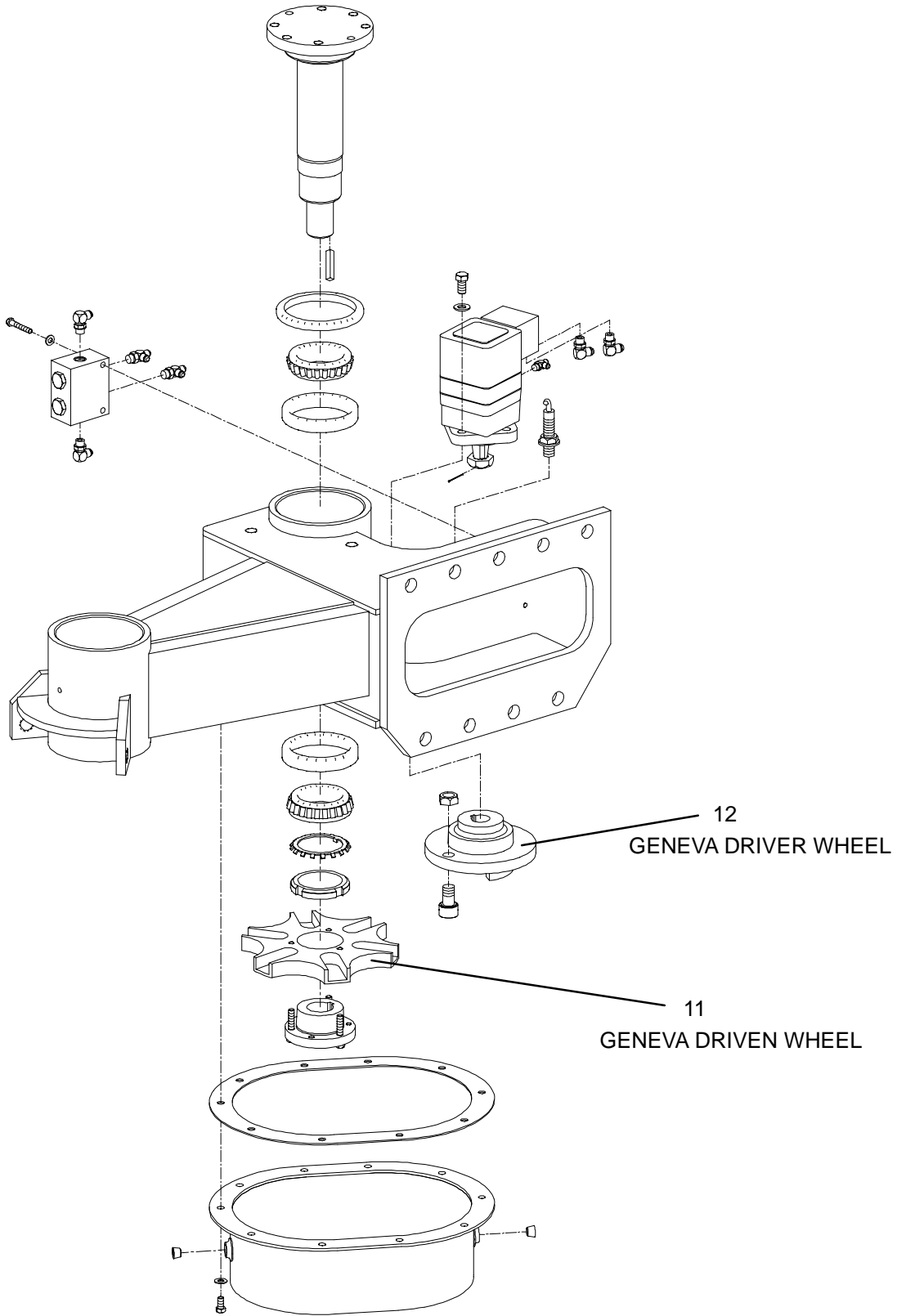


9
TOP GAGE
MODIFICATION
(FOR 3 INCH ONLY)

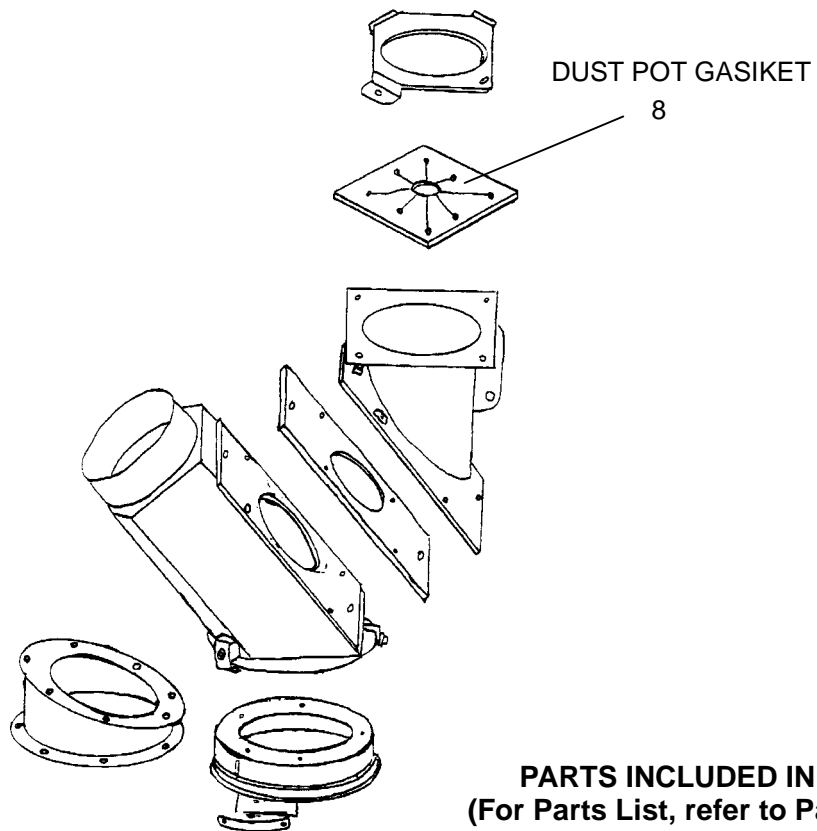
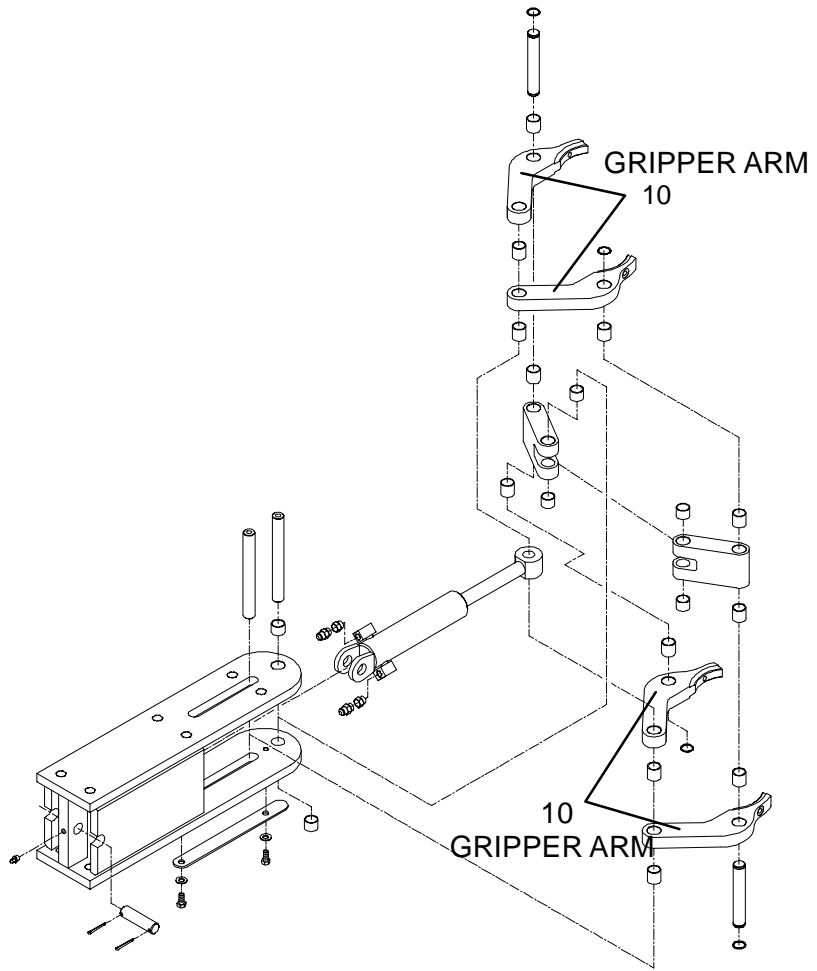
3, 5, 6, 7
CAROUSEL TOP/BOTTOM
STAR PLATE

CAROUSEL MIDDLE
STAR PLATE
4, 5, 6, 7

PARTS INCLUDED IN ROD KIT
(For Parts List, refer to Page 14.0A-4)



PARTS INCLUDED IN ROD KIT
(For Parts List, refer to Page 14.0A-4)



PARTS INCLUDED IN ROD KIT
 (For Parts List, refer to Page 14.0A-4)

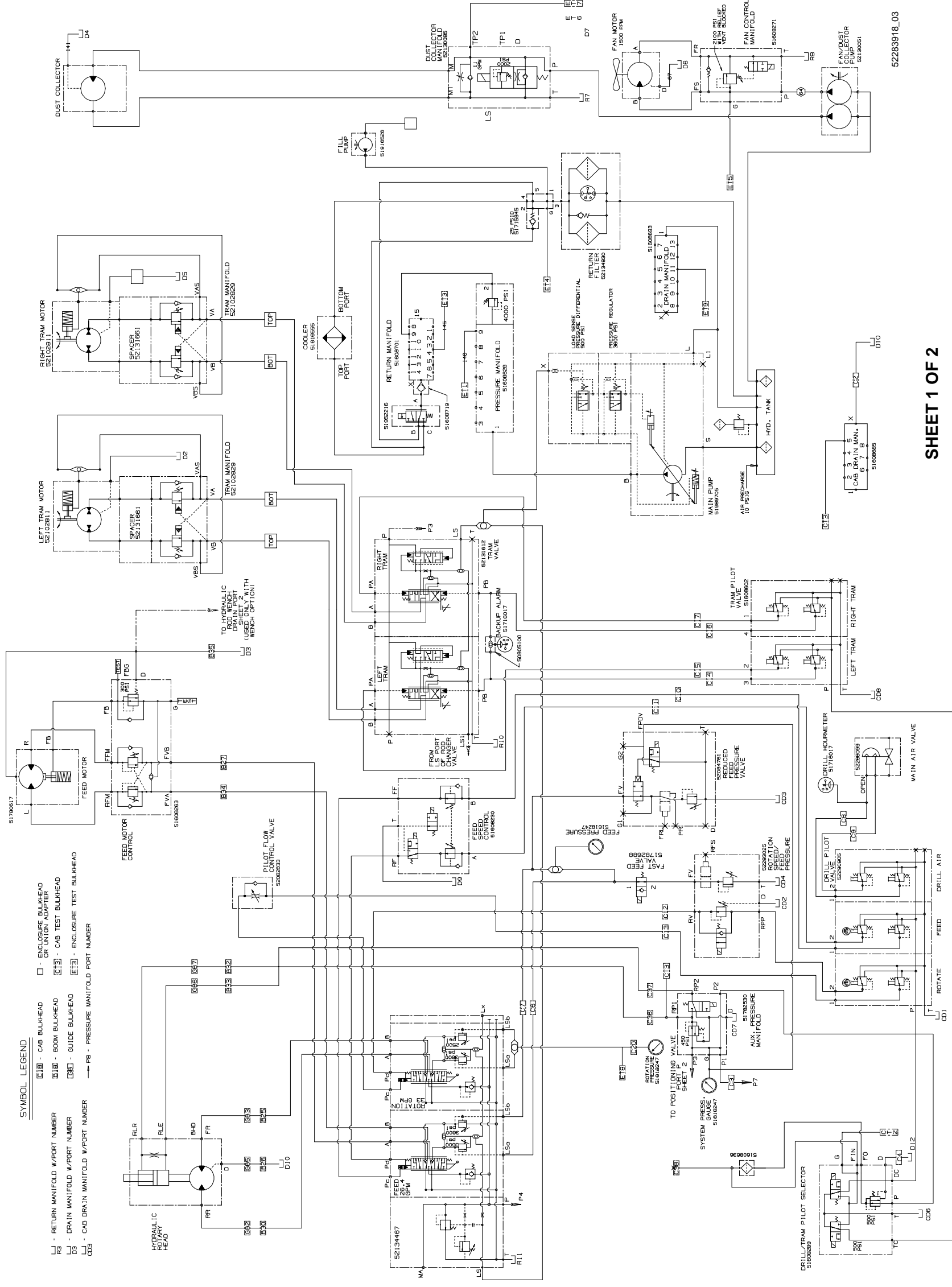
4 INCH ROD SIZE KIT
(For Illustration of parts, refer to Pages 14.0A-1 thru 14.0A-3)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
	52293768		4 INCH ROD SIZE KIT	
1	52293719	1	BUSHING, CENTRALIZER	
2	52293701	1	FORK, CENTRALIZER	
3	52282720	2	WELDMENT, STAR, TOP/BOTTOM	
4	52282738	1	WELDMENT,STAR, MIDDLE	
5	96700216	18	SCREW, HEX HEAD	
6	96700968	36	WASHER, FLAT	
7	96703657	18	NUT, HEX	
8	51994986	1	GASKET, DUST POT	
10	52282795	8	ARM, GRIPPER, 4 INCH ROD	
11	51780484	1	WHEEL, GENEVA DRIVEN (6 ROD)	
12	51780476	1	WHEEL, GENEVA DRIVER (6 ROD)	

HYDRAULIC SCHEMATIC (FOR 3 & 4 INCH DRILL PIPE) Section 15.0

Revision 1
March 26, 2001



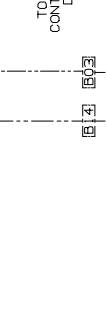
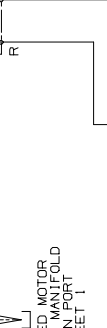
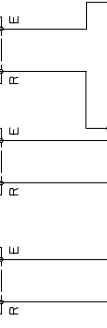
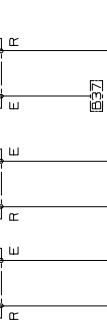
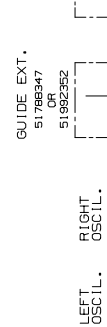
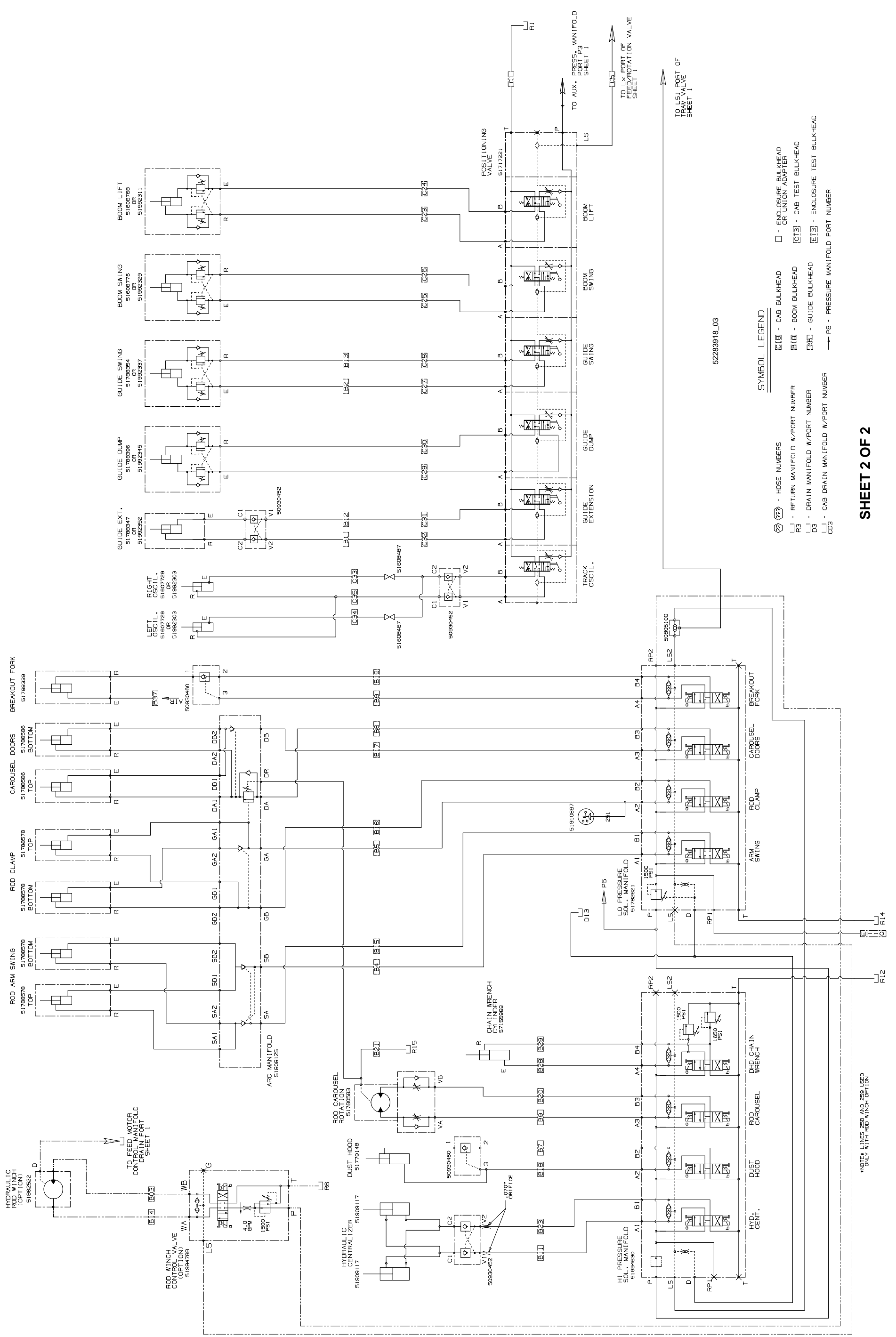
SYMBOL LEGEND

- - ENCLASURE BULKHEAD OR UNION ADAPTER
- [E13] - CAB TEST BULKHEAD
- [E13] - CAB TEST BULKHEAD
- [E13] - ENCLASURE TEST BULKHEAD
- [E13] - ENCLASURE TEST BULKHEAD
- [E13] - ENCLASURE TEST BULKHEAD
- - PRESSURE MANIFOLD PORT NUMBER

[E13] - RETURN MANIFOLD W/PORT NUMBER
 [E13] - BOOM BULKHEAD
 [E13] - CAB TEST BULKHEAD
 [E13] - GUIDE BULKHEAD
 [E13] - CAB DRAIN MANIFOLD W/PORT NUMBER
 [E13] - PRESSURE MANIFOLD PORT NUMBER

SHEET 1 OF 2

52283918_03



52283918_03

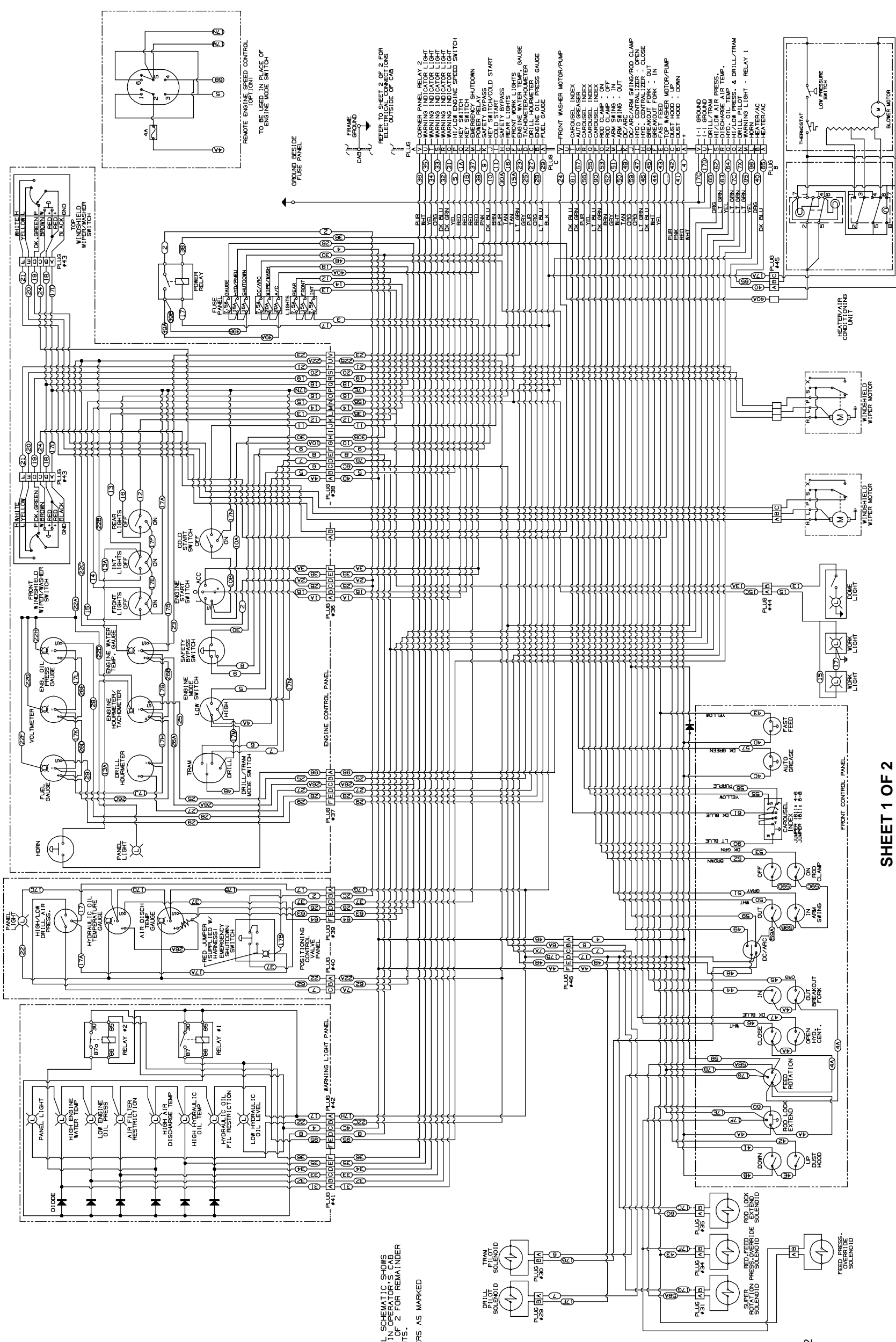
- SYMBOL LEGEND**
- HOSE NUMBERS
 - ENCLOSURE BULKHEAD OR UNION ADAPTER
 - RETURN MANIFOLD W/PORT NUMBER
 - BOOM BULKHEAD
 - CAB TEST BULKHEAD
 - DRAIN MANIFOLD W/PORT NUMBER
 - GUIDE BULKHEAD
 - ENCLOSURE TEST BULKHEAD
 - CAB DRAIN MANIFOLD W/PORT NUMBER
 - PRESSURE MANIFOLD PORT NUMBER

SHEET 2 OF 2

NOTE: LINES 258 AND 268 USED ONLY WITH ROD W/ANCH OPTION

ELECTRICAL SCHEMATIC FOR 3.5 INCH DRILL PIPE Section 15.1

Revision 2
March 26, 2001

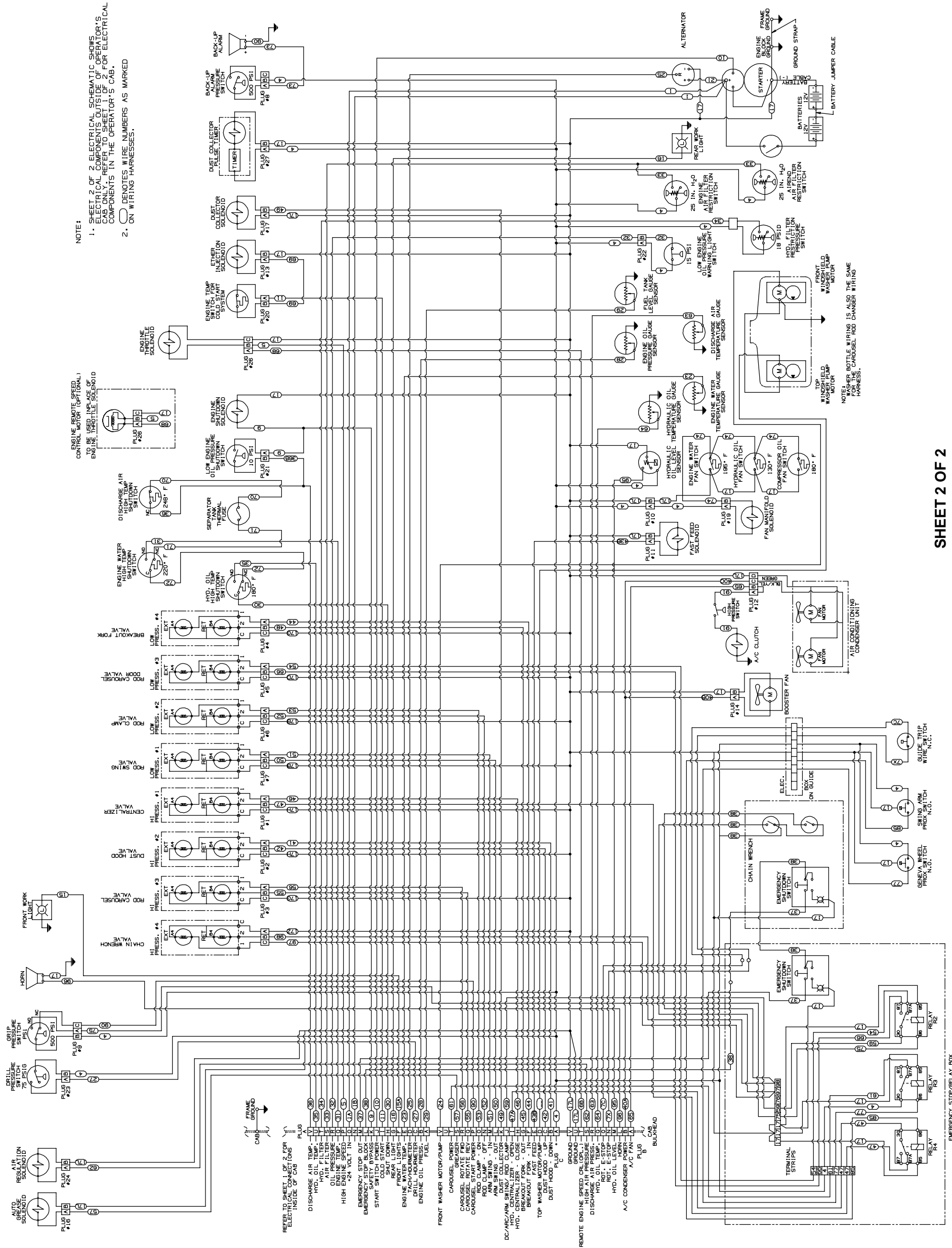


NOTE:
1. SHEET 1 OF 2 ELECTRICAL SCHEMATIC SHOWS ELECTRICAL COMPONENTS IN OPERATOR'S CAB ONLY. REFER TO SHEETS 2 OF 2 FOR REMAINDER OF ELECTRICAL COMPONENTS.
2. ○ DENOTES WIRE NUMBERS AS MARKED ON WIRING HARNESSSES.

52292364_02

SHEET 1 OF 2

NOTE:
 1. SHEET 2 OF 2 ELECTRICAL SCHEMATIC SHOWS ELECTRICAL COMPONENTS OUTSIDE OF OPERATOR'S CAB ONLY. REFER TO SHEET 1 OF 2 FOR ELECTRICAL COMPONENTS IN THE OPERATOR'S CAB.
 2. ○ DENOTES WIRE NUMBERS AS MARKED ON WIRING HARNESSSES.



SHEET 2 OF 2

52292364_02

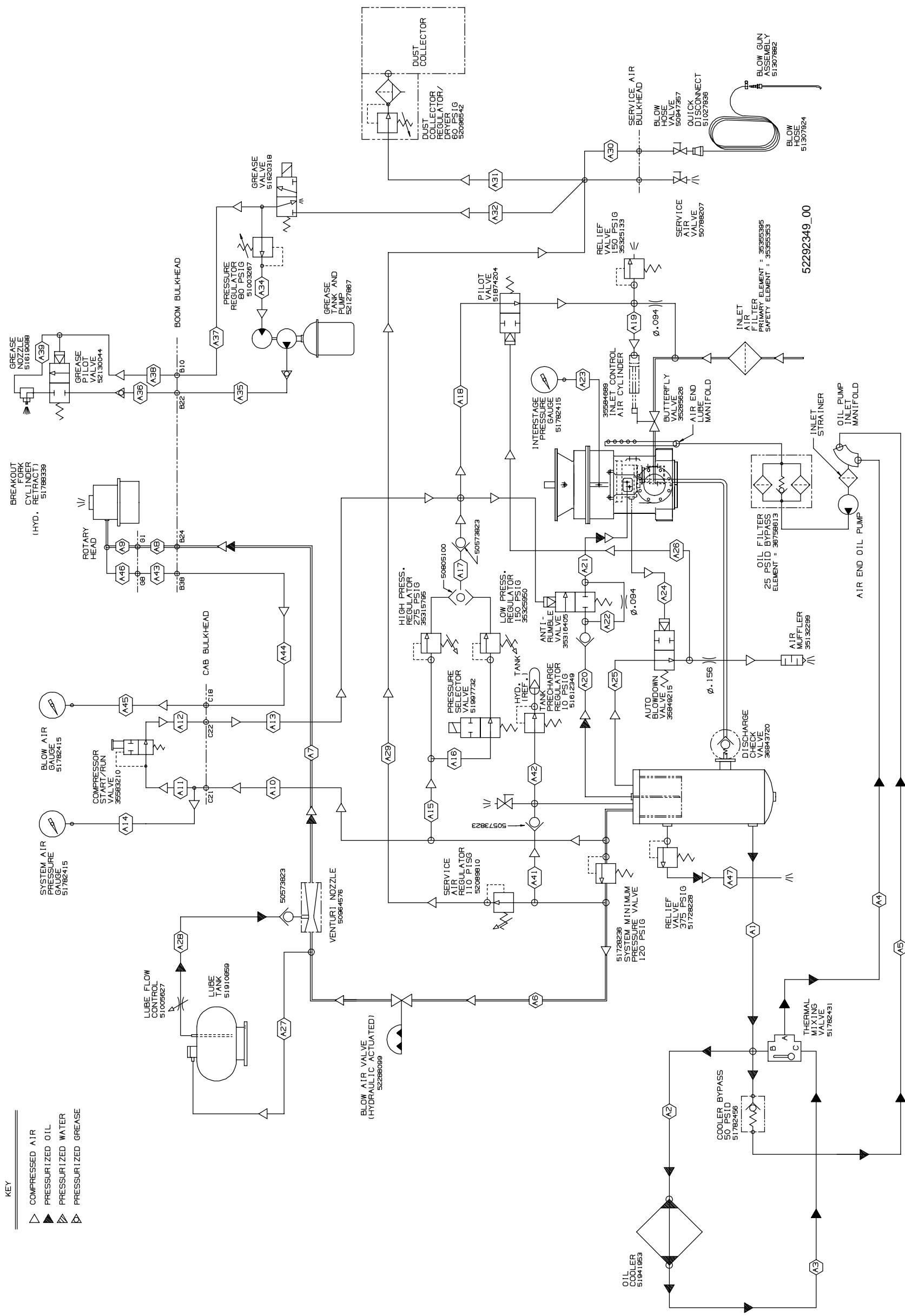
EMERGENCY STOP/RELAY BOX

NOTE: BOTTLE WIRING IS ALSO THE SAME FOR THE CAROUSEL ROD CHANGER WIRING HARNESS.

AIR/OIL/WATER SCHEMATIC (FOR 3.5 INCH DRILL PIPE)

January 15, 1999

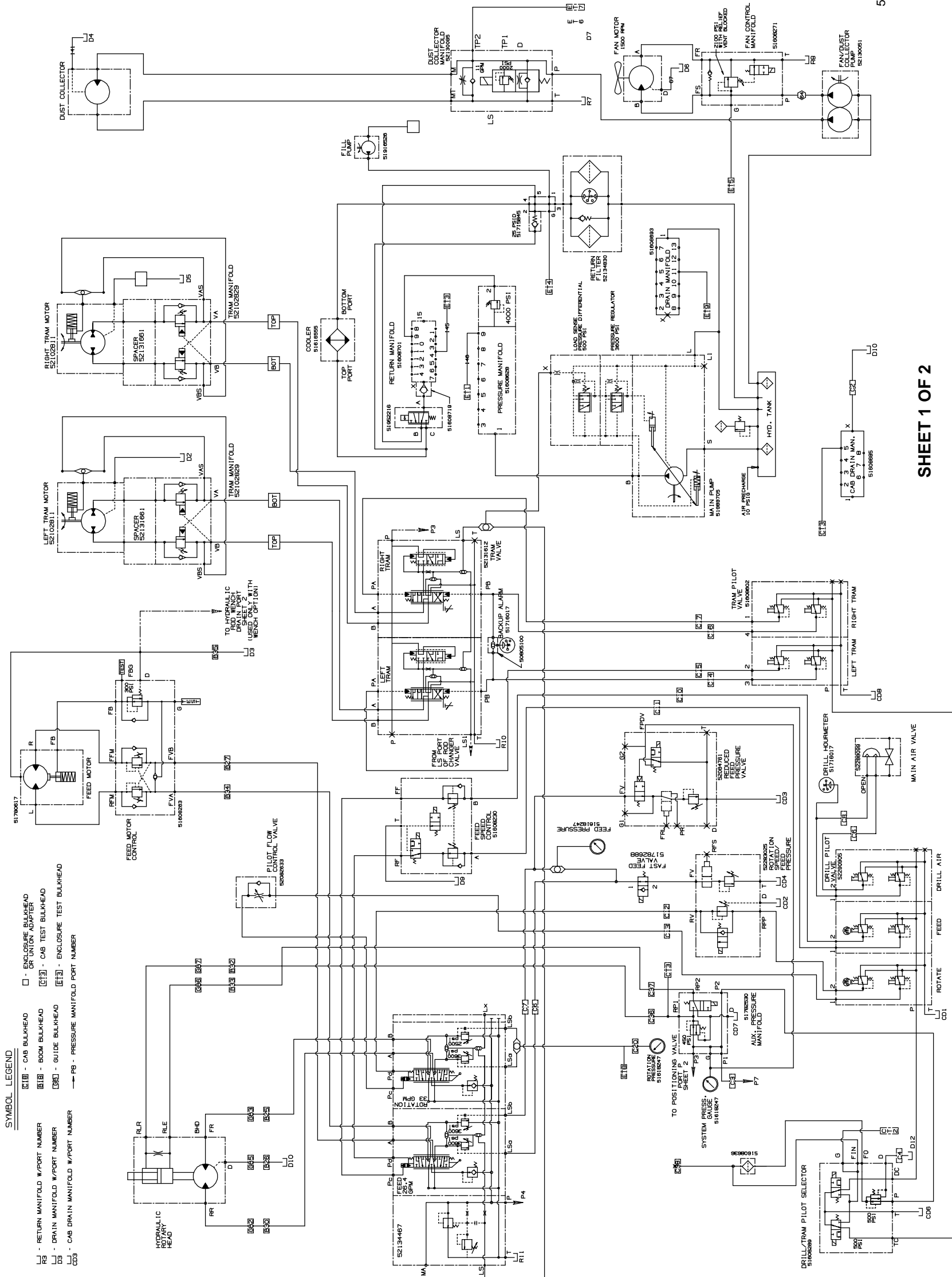
Section 15.2



HYDRAULIC SCHEMATIC (FOR 3.5 INCH DRILL PIPE)

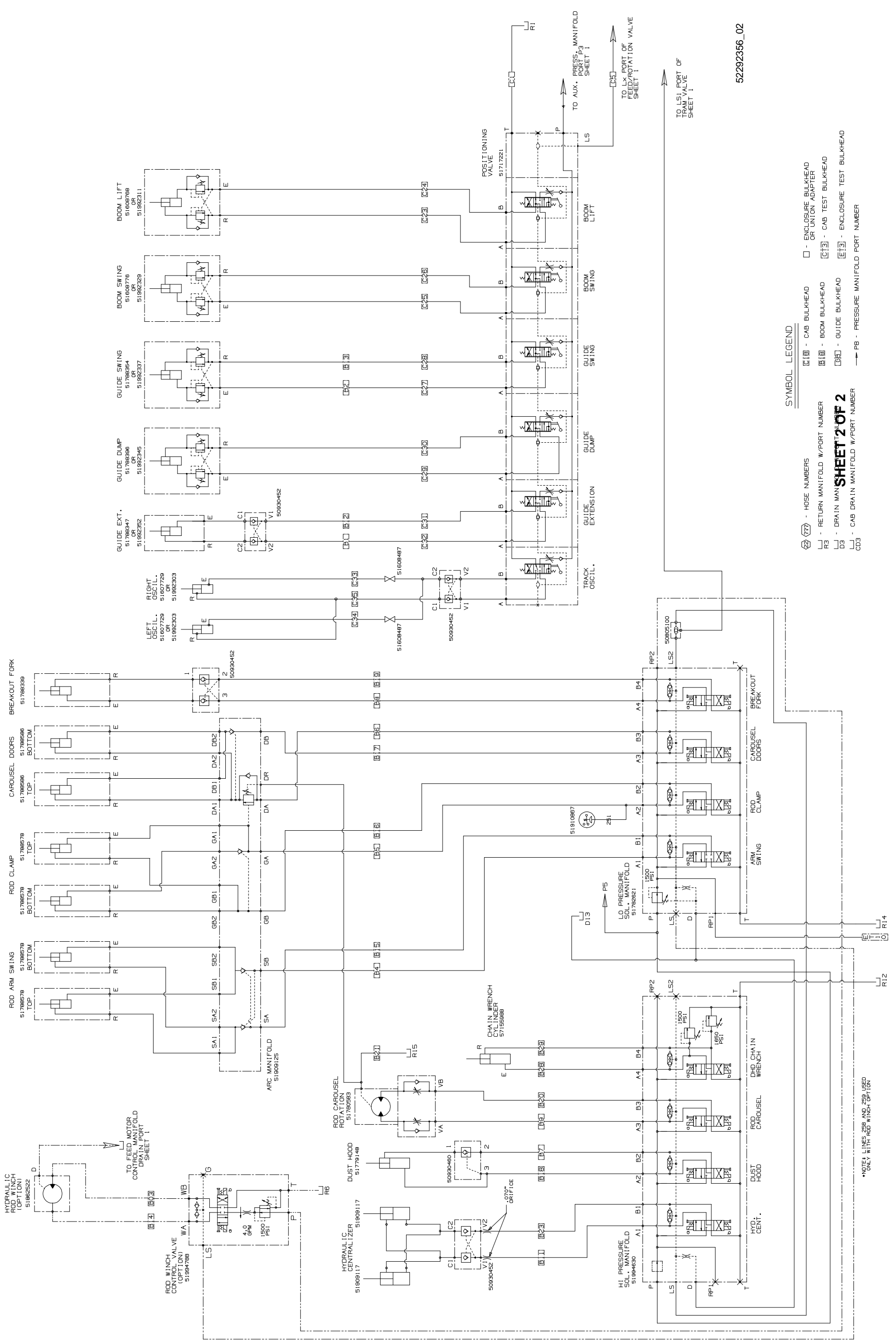
Section 15.3

Revision 1
March 26, 2001



52292356_02

SHEET 1 OF 2



- SYMBOL LEGEND**
- HOSE NUMBERS
 - RETURN MANIFOLD W/PORT NUMBER
 - DRAIN MANIFOLD W/PORT NUMBER
 - CAB DRAIN MANIFOLD W/PORT NUMBER
 - CAB BULKHEAD
 - BOOM BULKHEAD
 - GUIDE BULKHEAD
 - ENCLOSURE TEST BULKHEAD
 - PRESSURE MANIFOLD PORT NUMBER
 - ENCLOSURE BULKHEAD OR UNION ADAPTER
 - CAB TEST BULKHEAD

SHEET 2 OF 2

52292356_02

*NOTE: LINES 258 AND 259 USED ONLY WITH ROD W/ANCHOR

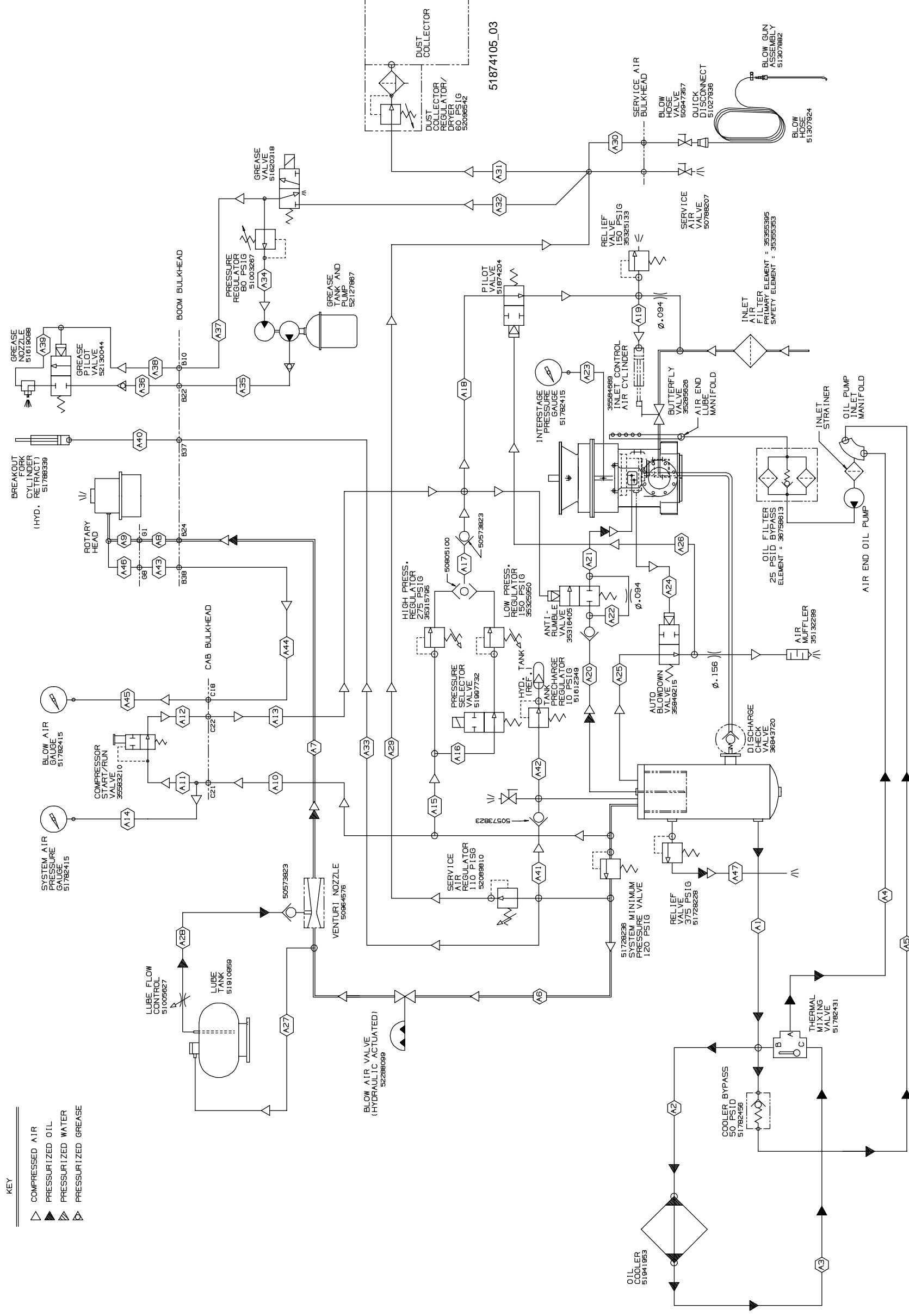
AIR/OIL/WATER SCHEMATIC

(FOR 3 & 4 INCH DRILL PIPE)

Section 15.4

Revision 1

April 2, 1999

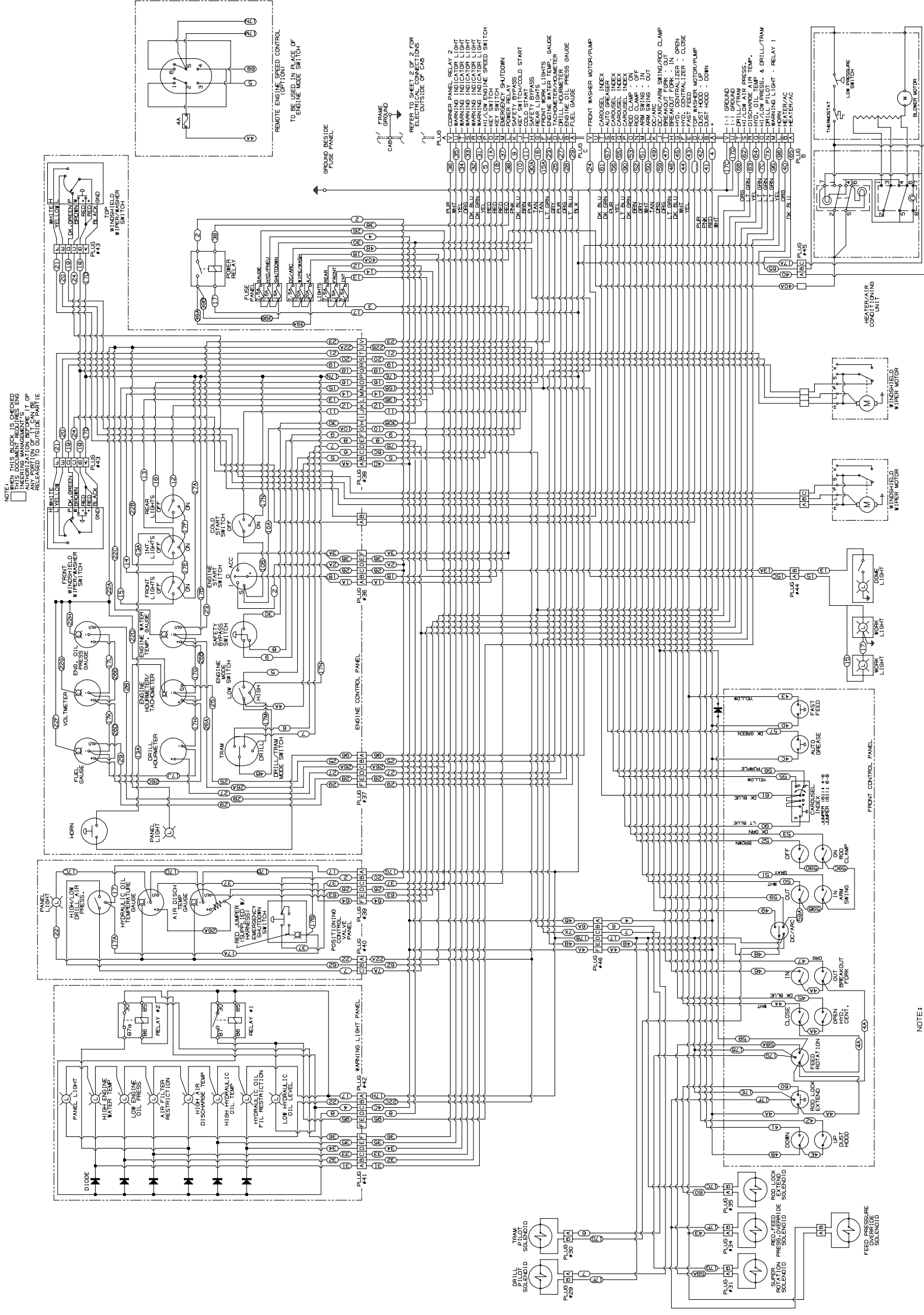


- KEY**
- ▷ COMPRESSED AIR
 - ▷ PRESSURIZED OIL
 - ▷ PRESSURIZED WATER
 - ▷ PRESSURIZED GREASE

ELECTRICAL SCHEMATIC (FOR 3 & 4 INCH DRILL PIPE)

Revision 2
March 26, 2001

Section 15.5

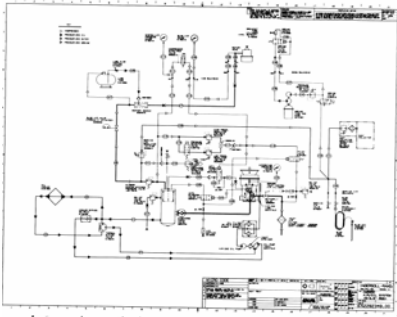


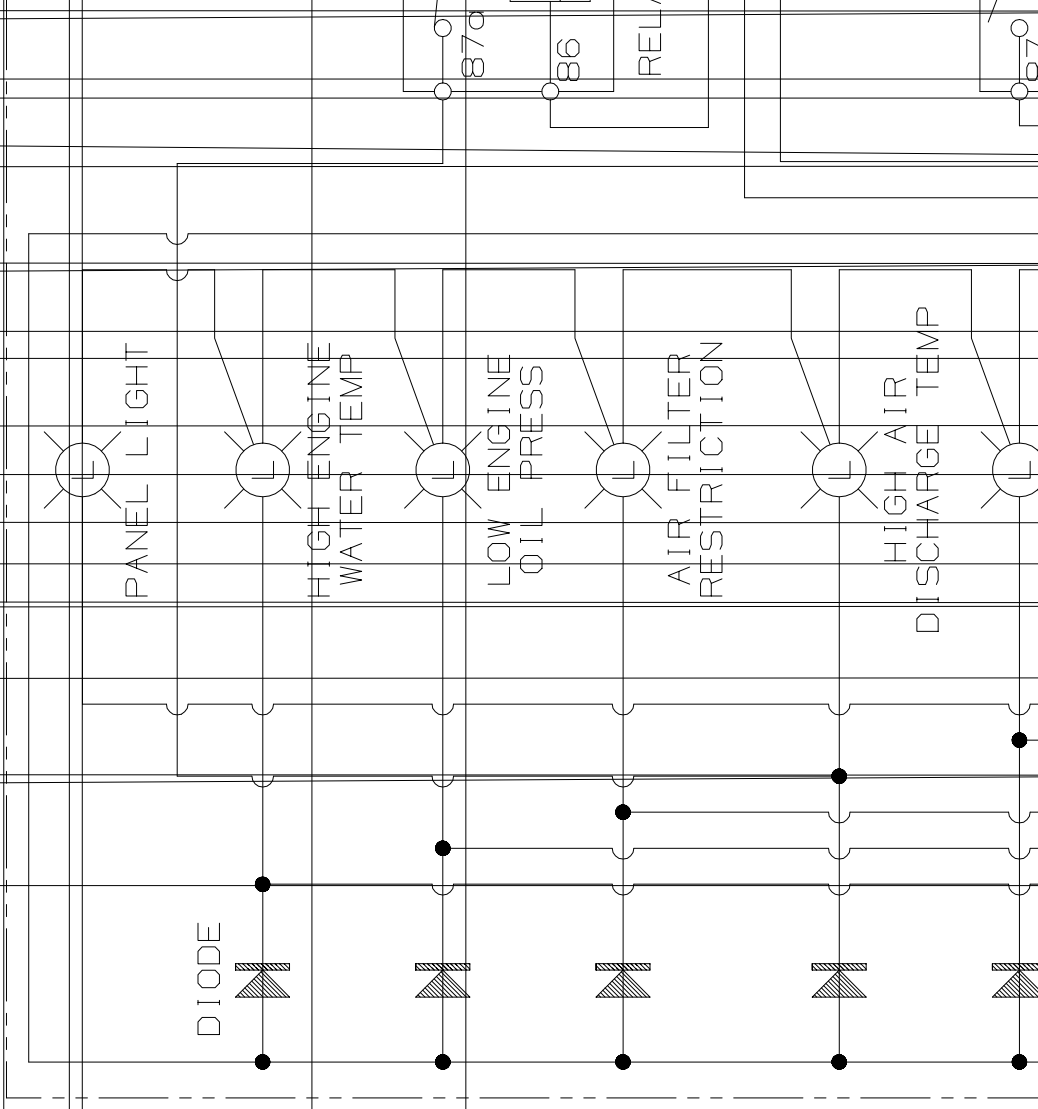
SHEET 1 OF 2

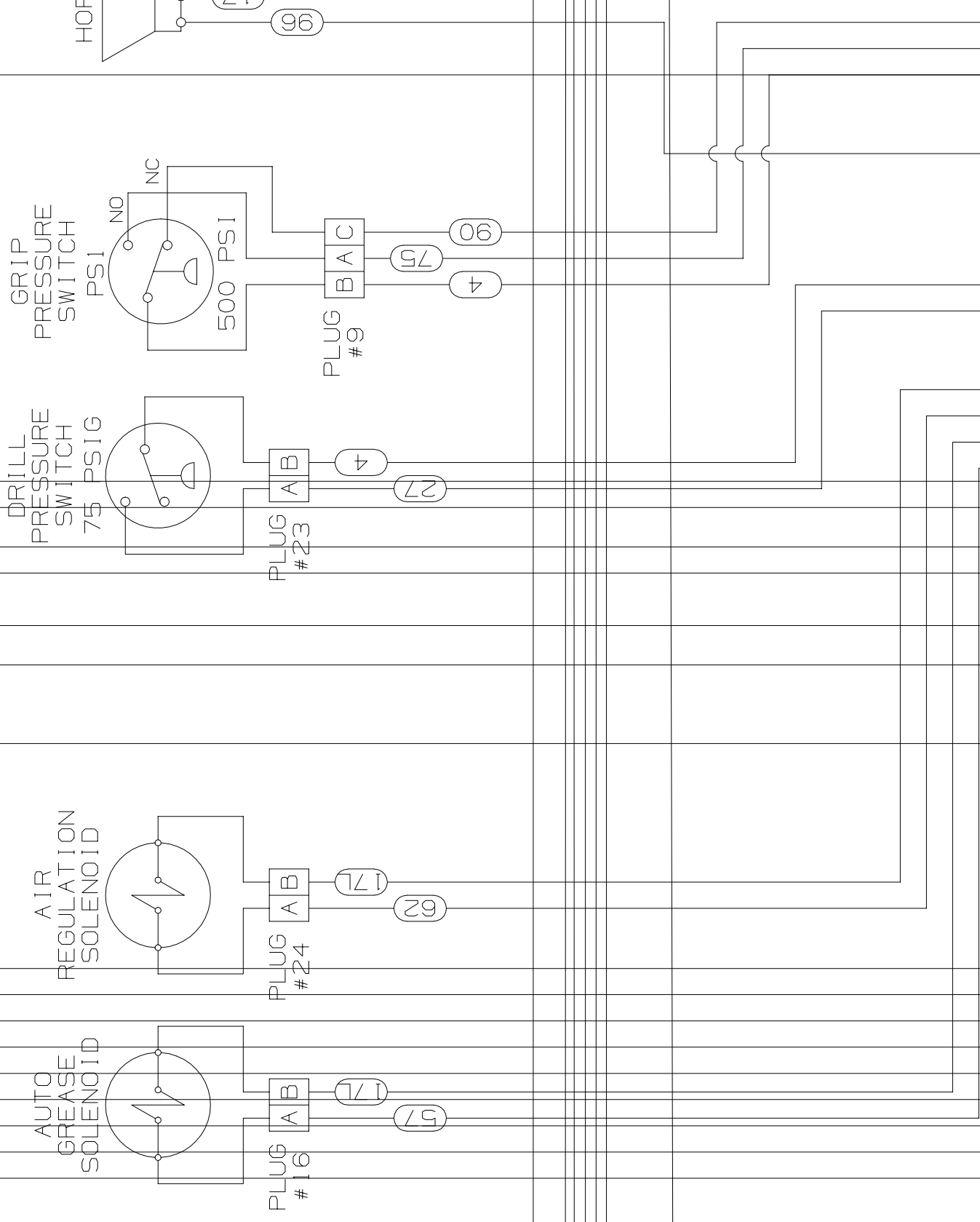
52100336_04

PL6164

15.5-1





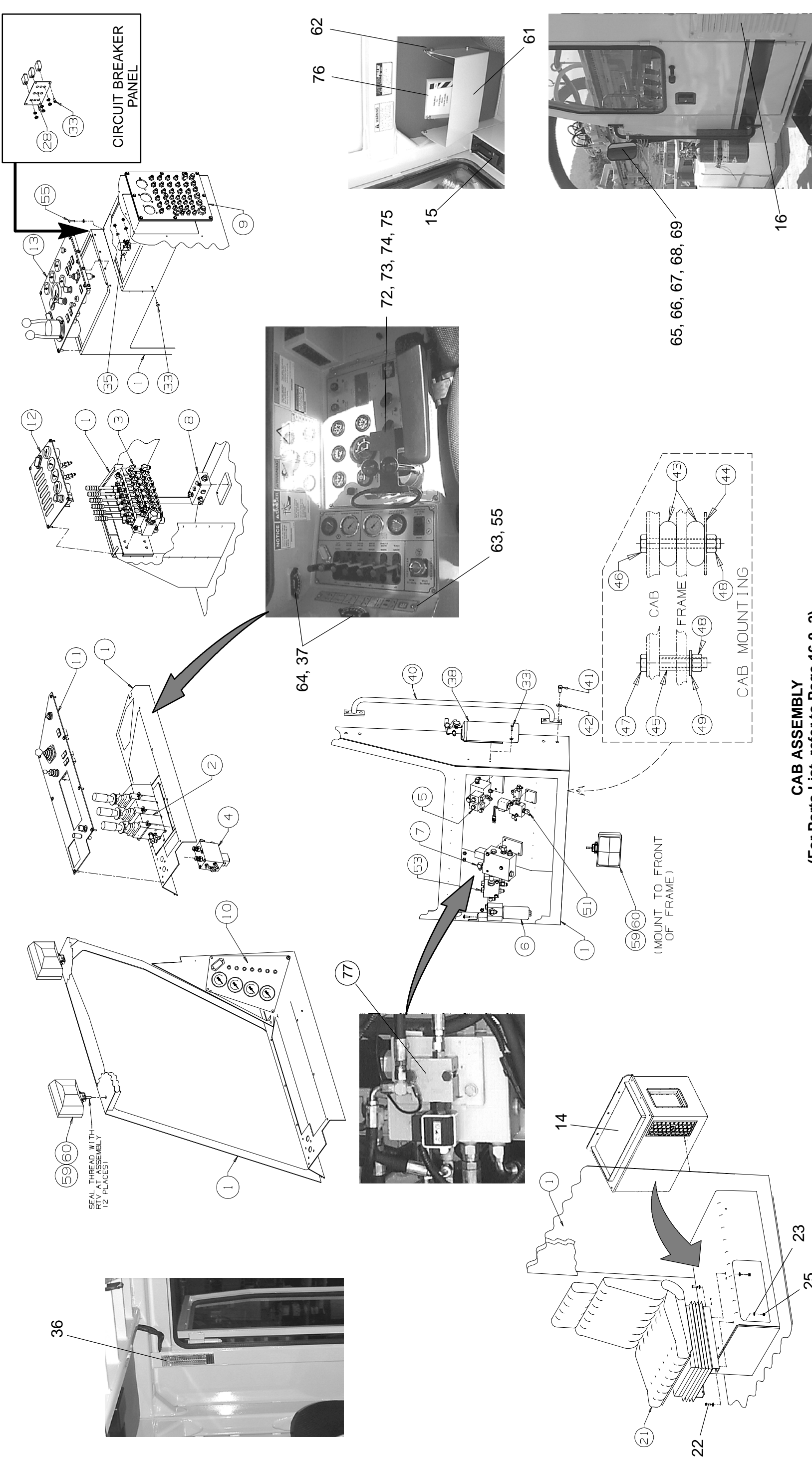


CAB ASSEMBLY

Revision 2

March 26, 2001

Section 16.0



CAB ASSEMBLY
(For Parts List, refer to Page 16.0-2)

CAB ASSEMBLY
(For Illustration of parts, refer to Page 16.0-1)

<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
		52103322		CAB ASSEMBLY	
	1	52092459	1	CAB (ROPS/FOPS)	<i>REFER TO PL6164, SECTION 16.1</i>
	2	51862605	1	ASSEMBLY, DRILL CONTROL VALVE	<i>REFER TO PL6164, SECTION 16.2</i>
	3	51862613	1	ASSEMBLY, POSITIONING VALVE	<i>REFER TO PL6164, SECTION 16.3</i>
	4	52285897	1	ASSEMBLY, FEED/ROTATION MANIFOLD	<i>REFER TO PL6164, SECTION 16.4</i>
	5	51862761	1	ASSEMBLY, PILOT SELECTOR MANIFOLD	<i>REFER TO PL6164, SECTION 16.5</i>
	6	51862779	1	ASSEMBLY, FILTER	<i>REFER TO PL6164, SECTION 16.6</i>
	7	51782332	1	ASSEMBLY, AUX. PRESSURE MANIFOLD	<i>REFER TO PL6164, SECTION 16.7</i>
	8	51782357	1	ASSEMBLY, CAB DRAIN MANIFOLD	<i>REFER TO PL6164, SECTION 16.8</i>
	9	52283561	1	ASSEMBLY, CAB BULKHEAD	<i>REFER TO PL6164, SECTION 16.9</i>
	10	51989952	1	ASSEMBLY, CORNER CONTROL PANEL	<i>REFER TO PL6164, SECTION 16.10</i>
	11	52103330	1	ASSEMBLY, FRONT CONTROL PANEL	<i>REFER TO PL6164, SECTION 16.11</i>
	12	51989770	1	ASSEMBLY, SIDE FORWARD CONTROL PANEL	<i>REFER TO PL6164, SECTION 16.12</i>
	13	52103348	1	ASSEMBLY, ENGINE CONTROL PANEL	<i>REFER TO PL6164, SECTION 16.13</i>
	14	52101110	1	UNIT, A/C & HEATER	
	15	52101136	1	CONTROL, SLIDE & FAN SWITCH	
	16	52101128	1	KIT, AIR FILTER & PLENUM	
	21	52287331	1	SEAT, OPERATOR CAB	
		52315942	1	.BELT, SEAT	
	22	96714605	4	SCREW, HEX HEAD	
	23	96700828	4	WASHER	
	25	96702840	4	NUT, HEX	
*	26	52120268	1	DIAGRAM, CAB HOSEING	<i>REFER TO PL6164, SECTION 15.5</i>
	28	52130234	1	ASSEMBLY, CIRCUIT BREAKER PANEL	<i>REFER TO PL6164, SECTION 16.14</i>
	33	96703046	11	CAPSCREW	
	35	51619492	1	SOLENOID	

* NOT ILLUSTRATED

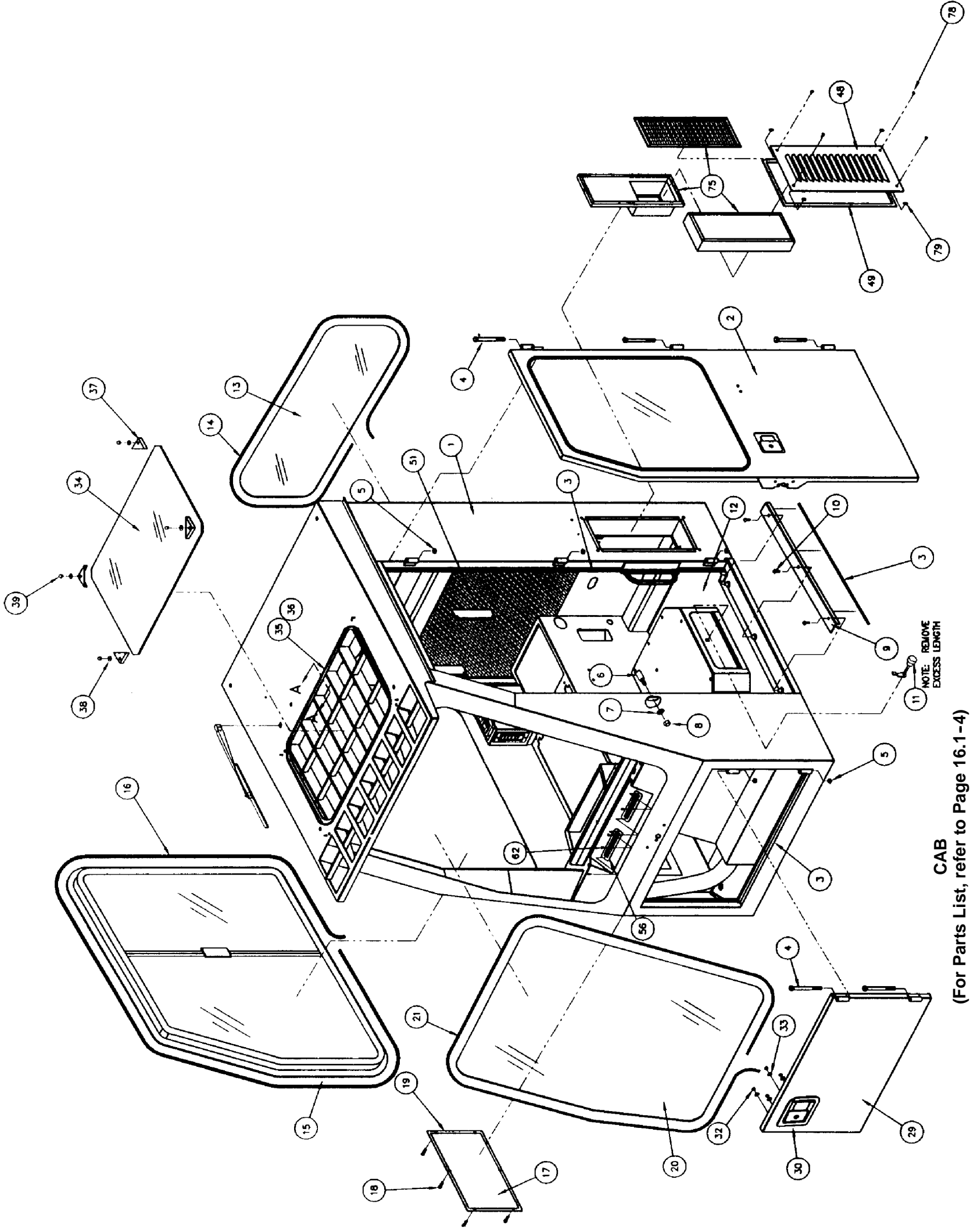
(CONTINUED)

CAB ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 16.0-1)

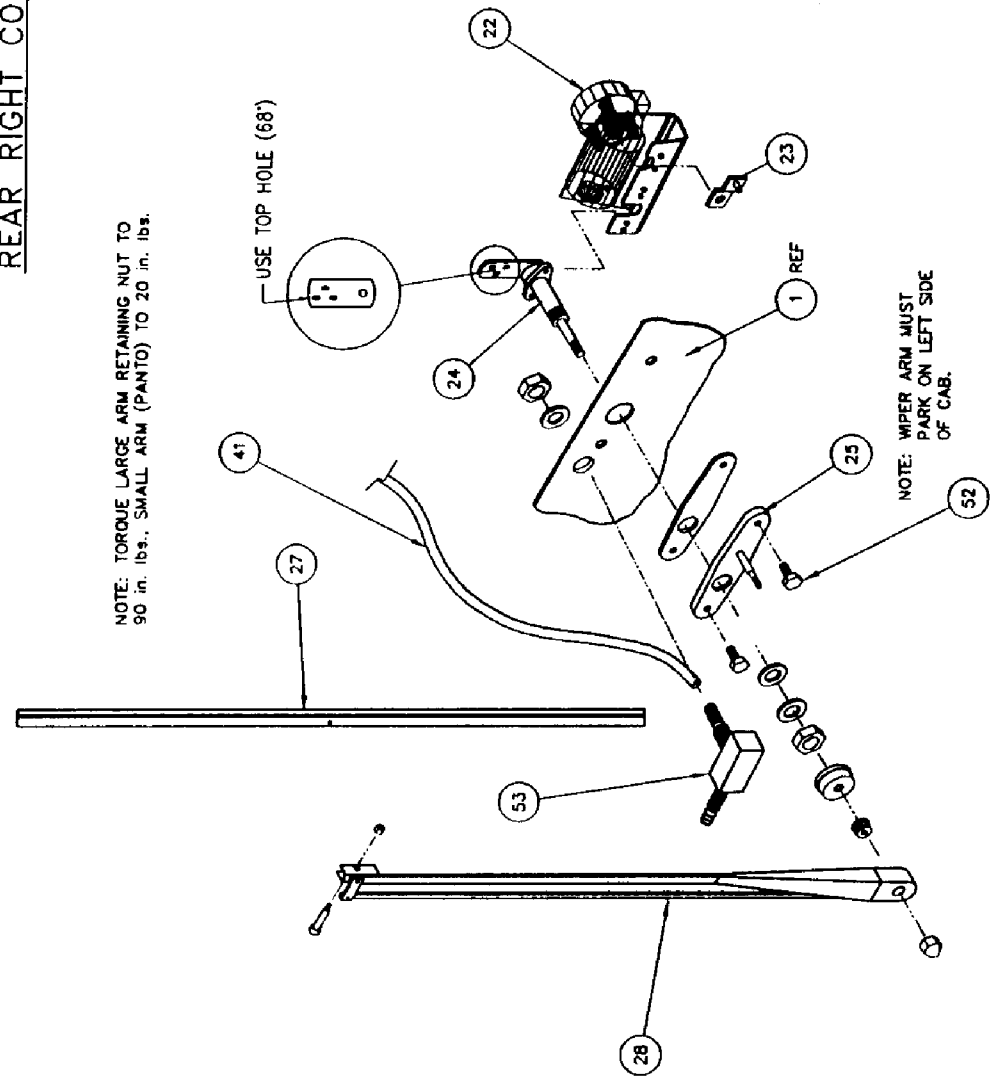
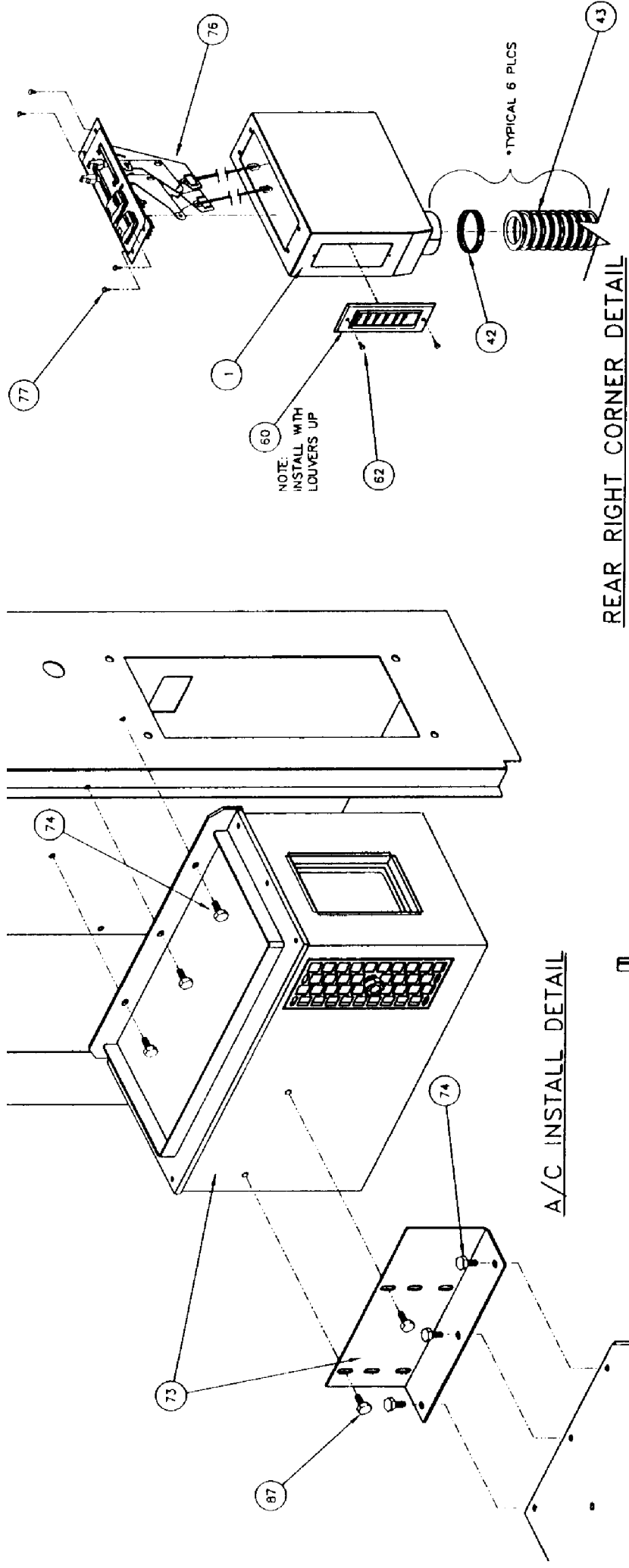
REF.

NO. PART NO. QTY. PART NAME
REMARKS

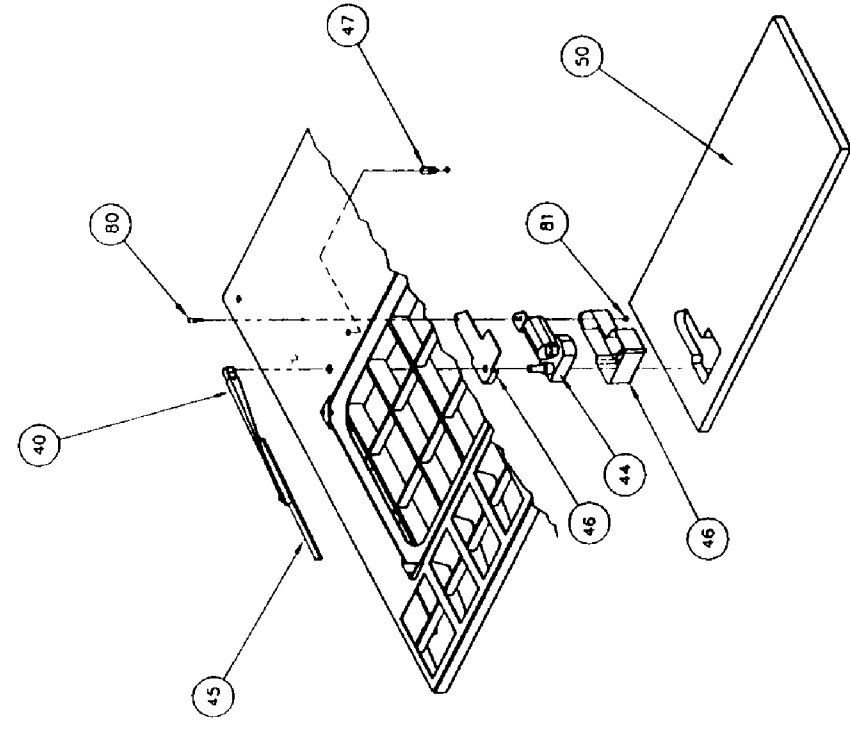
52103322		CAB ASSEMBLY (cont.)	
36	51618684	1	LIGHT, DOME
37	96728472	4	CAPSCREW/119M2AA99B
38	51991172	1	EXTINGUISHER, FIRE
40	52086154	1	RAIL, CAB GRAB
41	96714951	4	CAPSCREW
42	96700844	4	WASHER
43	51990638	4	MOUNT, VIBRATION ISOLATOR
44	51990646	4	WASHER, SNUBBER
45	51990653	8	SPACER
46	95920336	4	CAPSCREW
47	95920328	8	CAPSCREW
48	95941670	3	NUT, HEX
49	95951083	10	WASHER
51	52084985	1	ASSEMBLY, REVERSE FEED CONTROL MANIFOLD <i>REFER TO PL6164, SECTION 16.15</i>
53	51983443	1	ASSEMBLY, CHECK VALVE <i>REFER TO PL6164, SECTION 16.16</i>
55	96727987	6	CAPSCREW
59	51618411	3	LIGHT, WORK
	51618429		.LAMP, REPLACEMENT
60	95386587	3	TONGUE, RING
61	51990372	1	POUCH, MANUAL
62	96700000	4	CAPSCREW, HEX HEAD
63	52283454	1	PANEL, GUIDE SYMBOL
64	51997195	2	GAGE, LEVEL
65	52122793	1	MIRROR
66	51994762	1	BRACKET, MIRROR
67	95105466	1	CAPSCREW
68	95043196	1	LOCKWASHER
69	95077681	1	NUT
72	52132016	1	HANDREST, SUPPORT PLATE
73	52131588	1	HANDREST, FRAME
74	96702063	4	NUT, HEX
75	96701289	4	WASHER
76	52293073	1	SAFETY MANUAL ASSEMBLY
77	52315926	1	ASSEMBLY, FAST FEED VALVE <i>REFER TO PL6164, SECTION 16.19</i>



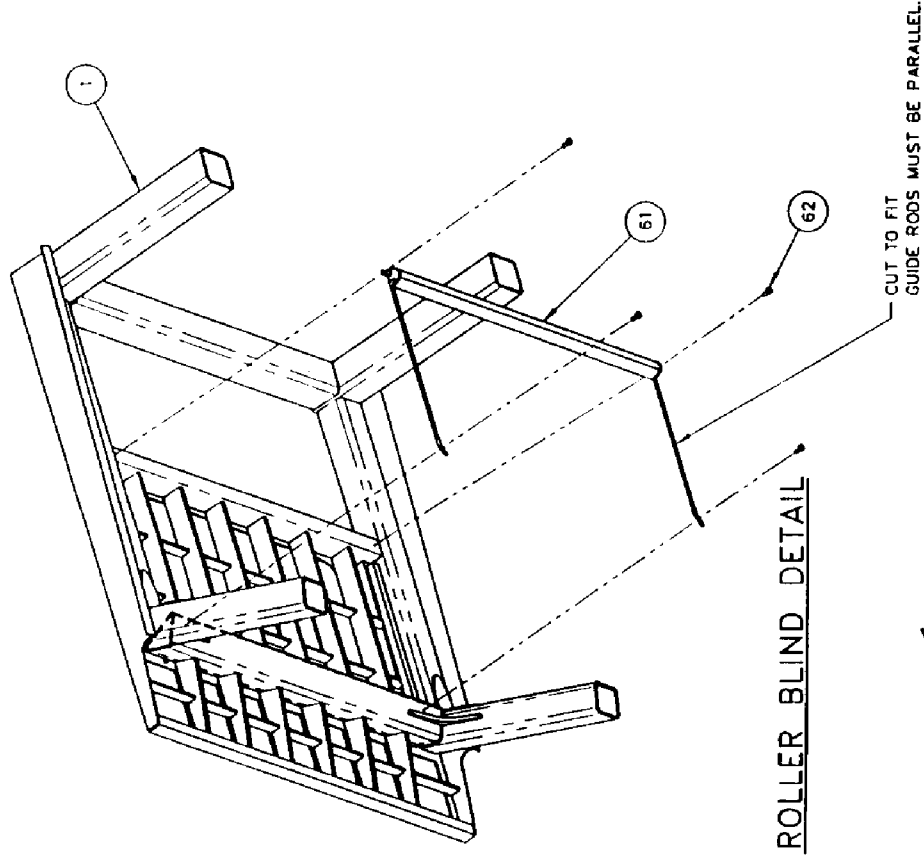
CAB
(For Parts List, refer to Page 16.1-4)



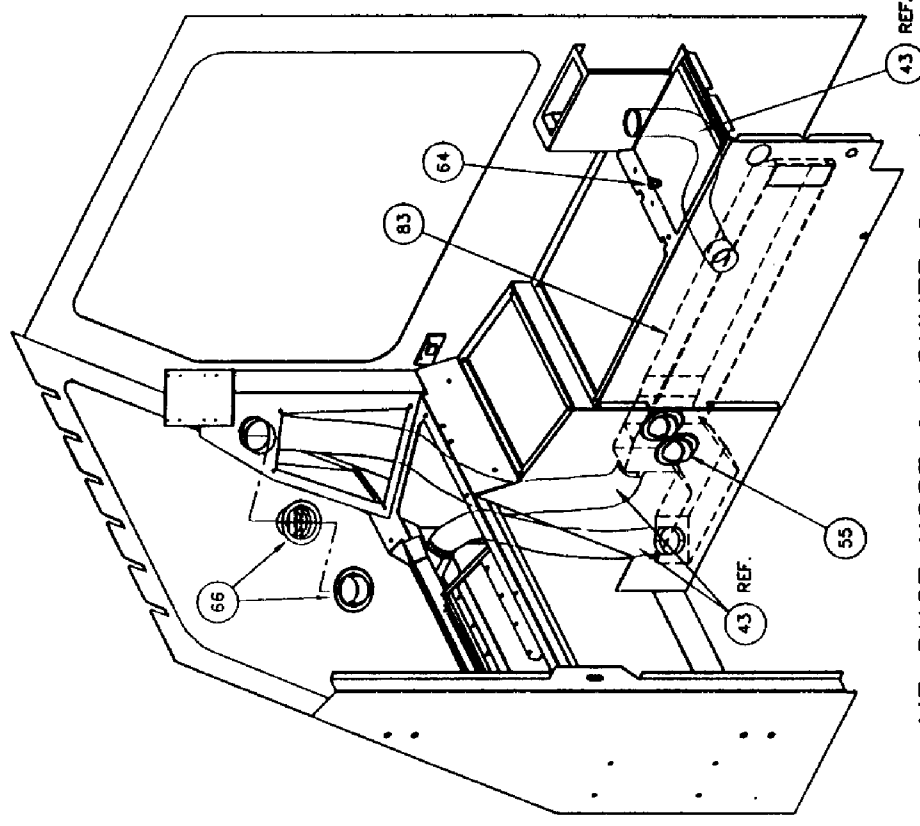
CAB
 (For Parts List, refer to Page 16.1-4)



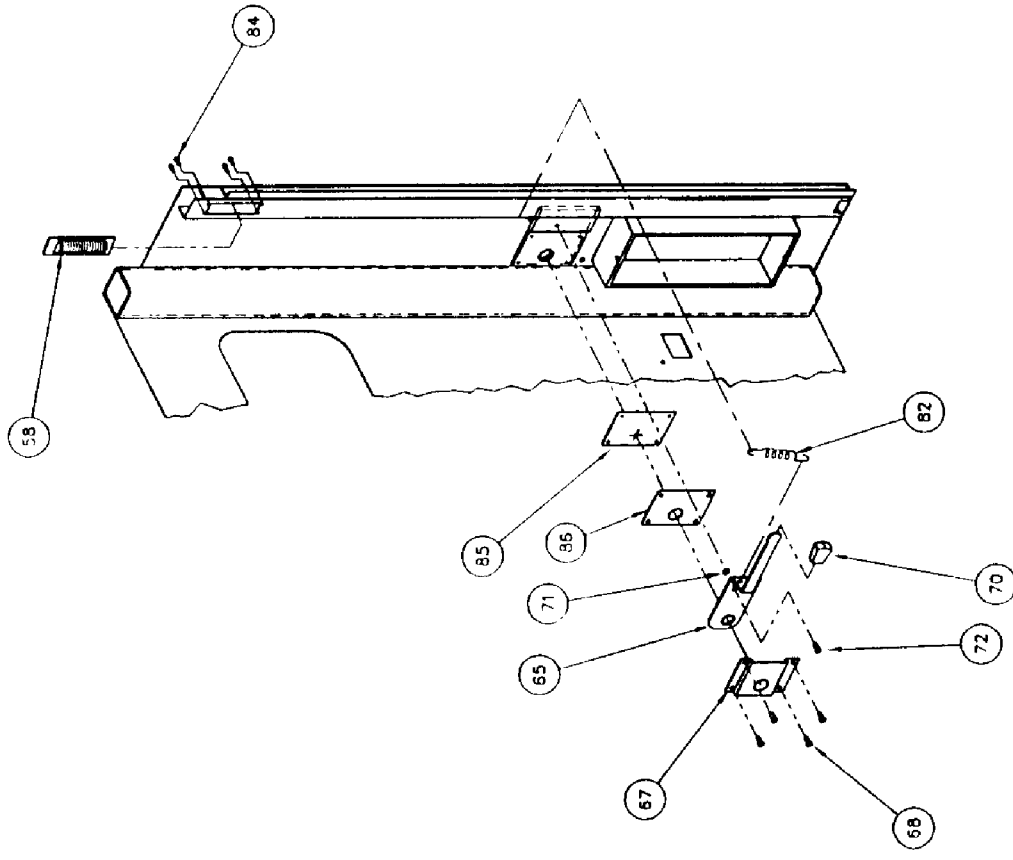
UPPER WIPER DETAIL



ROLLER BLIND DETAIL



AIR DUCT HOSE & LOUVER DETAIL



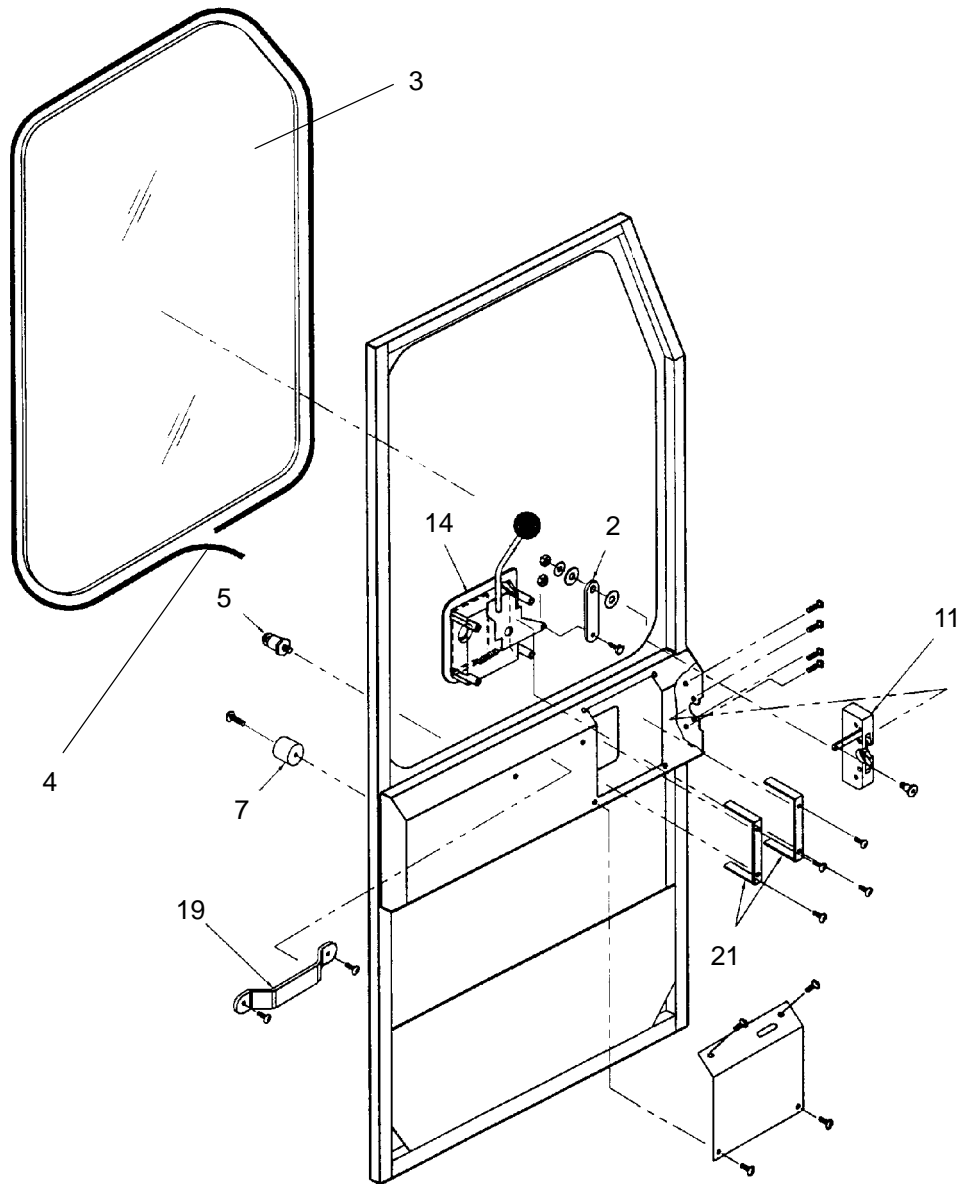
DOOR HOLD-BACK & DOME LIGHT DETAIL

CAB
(For Parts List, refer to Page 16.1-4)

CAB
(For Illustration of parts, refer to Pages 16.1-1 thru 16.1-3)

REF.

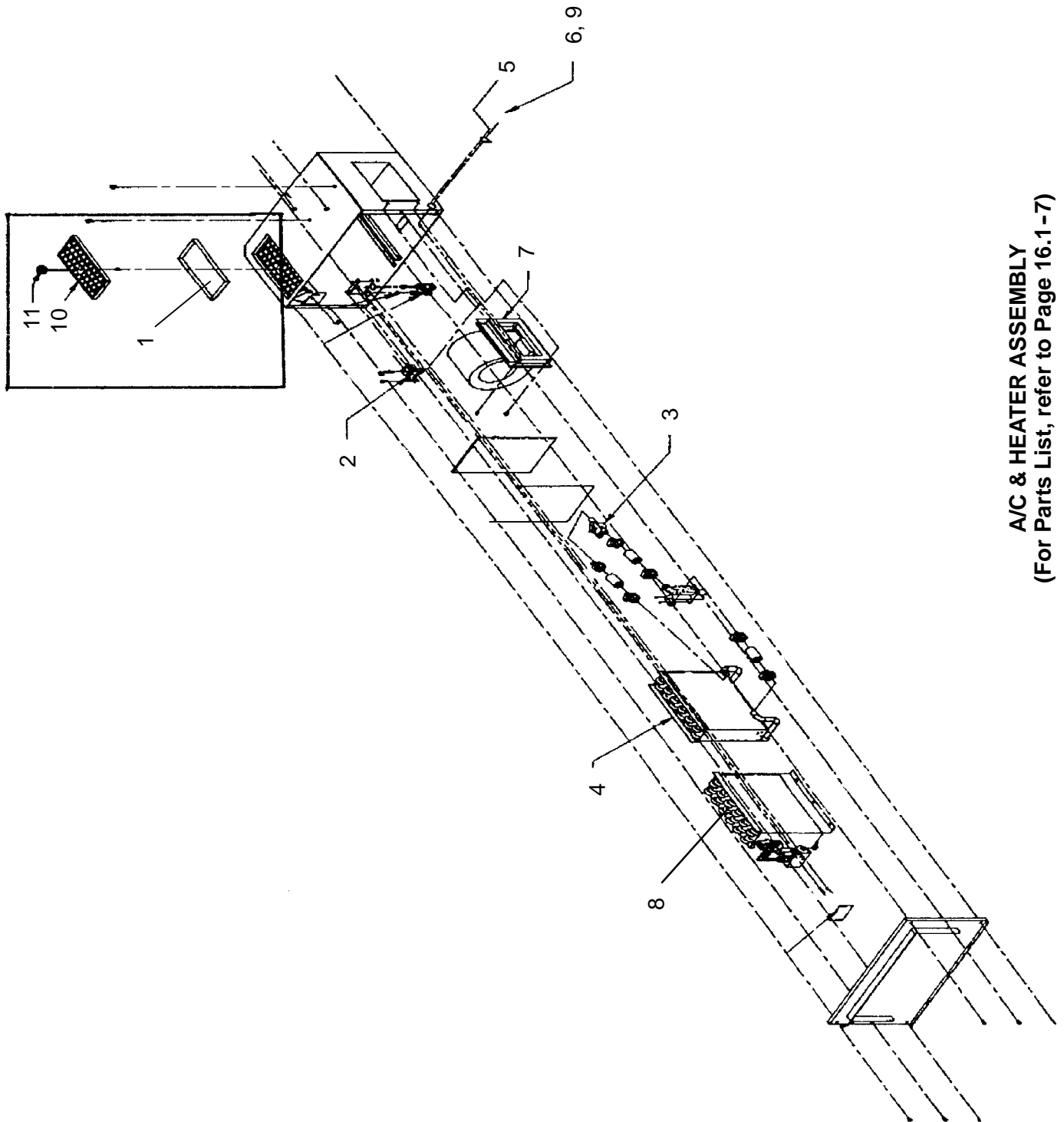
NO.	PART NO.	QTY.	PART NAME	REMARKS
	52092459		CAB (ROPS/FOPS)	
2	52106259	1	ASSEMBLY, DOOR	REFER TO PAGE 16.1-5
9	52106267	1	THRESHOLD	
11	52106275	1	LATCH	
17	52106283	1	DOOR, SIDE	
22	52106291	1	MOTOR, WIPER	
23	52106309	1	DRIVE, ARM	
24	52125838	1	SHAFT, WIPER PIVOT	
25	52106325	1	ASSEMBLY, PIVOT MOUNTING PLATE	
27	54386362	1	BLADE, WIPER	
28	52106358	1	ARM	
29	52106366	1	DOOR, FRONT ACCESS	
30	52106374	1	LATCH, PADDLE	
40	52106382	1	ARM, WIPER	
44	52106390	1	MOTOR, WIPER	
45	54386404	1	BLADE, WIPER	
46	52106416	1	COVER, WIPER	
47	52106424	1	ASSEMBLY, WASHER NOZZLE	
53	52106432	1	ASSEMBLY, WET ARM ADAPTER	
55	52106440	2	LOUVER	
56	52106457	2	LOUVER	
58	52106465	1	LIGHT, DOME	
60	52106473	1	LOUVER, AIR CIRCULATION	
61	52106481	1	ROLLER BOND W/RATCHET	
64	52106499	1	LATCH	
65	52106507	1	PLATE	
66	52106515	1	LOUVER	
67	52106523	1	RETAINER	
71	52106531	1	WASHER	
73	52297405	1	AIR CONDITIONING & HEATER	REFER TO PAGE 16.1-6
75	52101128	1	KIT, AIR FILTER	
76	52101136	1	CONTROL, SLIDE & FAN SWITCH	REFER TO PAGE 16.1-8
82	52106549	1	SPRING	
85	52106556	1	SEAL, DOOR	
86	52106564	1	PLATE, DOOR	



REF.

NO. PART NO. QTY. PART NAME
REMARKS

REF. NO.	PART NO.	QTY.	PART NAME	REMARKS
	52106259		DOOR ASSEMBLY	
2	52106572	1	LINK, DOOR	
3	52286374	1	GLASS, DOOR	
4	52286382	1	RUBBER, DOOR GLASS	
5	52106580	1	POST, DOOR HOLD-OPEN	
7	52106598	1	BUMPER, RUBBER	
11	52106606	1	LATCH, CAM	
14	52106614	1	LATCH	
19	52106622	1	HANDLE, INSIDE GRAB	
21	52106630	2	BRACKET, MOUNTING	



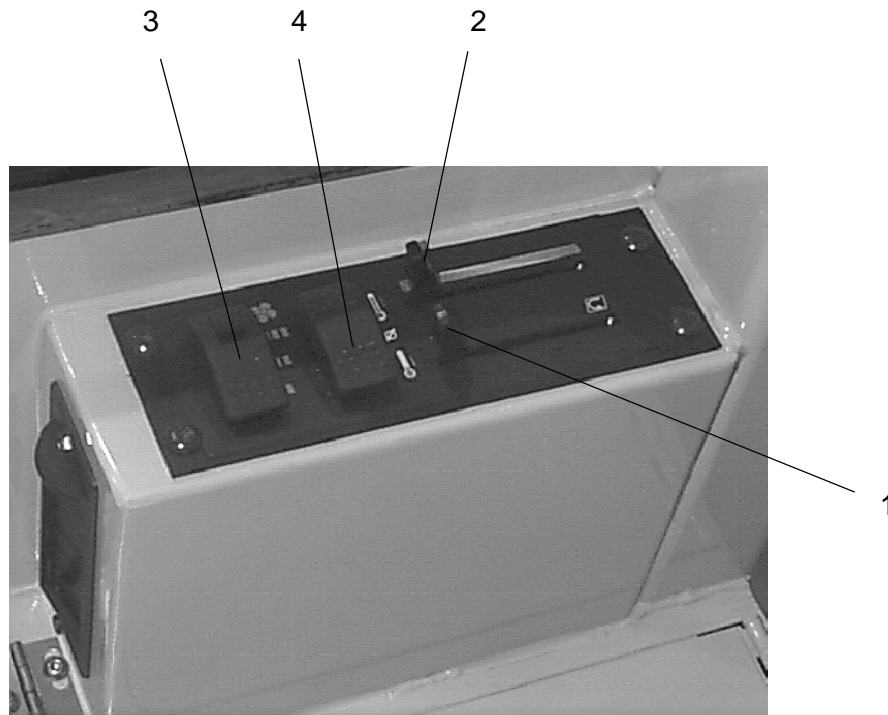
A/C & HEATER ASSEMBLY
 (For Parts List, refer to Page 16.1-7)

A/C & HEATER ASSEMBLY
(For Illustration of parts, refer to Page 16.1-6)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	52297405		A/C & HEATER UNIT	
1	52122009	1	FILTER, FOAM	
2	52122017	1	SWITCH, A/C	
3	52296076	1	VALVE, HEATER (METAL)	
4	52122033	1	COIL, HEATER	
<hr/>				
5	52296084	1	CABLE, HEATER CONTROL	
6	52122058	1	CABLE, RECIRCULATING CONTROL	
7	52122066	1	ASSEMBLY, BLOWER	
	52297454	1	.MOTOR, BLOWER	
8	52297538	1	ASSEMBLY, EVAPORATOR CORE	
	52297496	1	.COIL, RIFLED	
<hr/>				
	52297504	1	.VALVE, EXPANSION	
	52297488	1	.SWITCH, LOW PRESSURE	
	52293081	1	.KIT, A/C O-RING	
9	52297462	1	CLIP, CABLE RETAINER	
10	52297512	1	COVER, FILTER	
11	52297520	1	KNOB, DOOR	



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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52101136 SLIDE & FAN SWITCH CONTROL

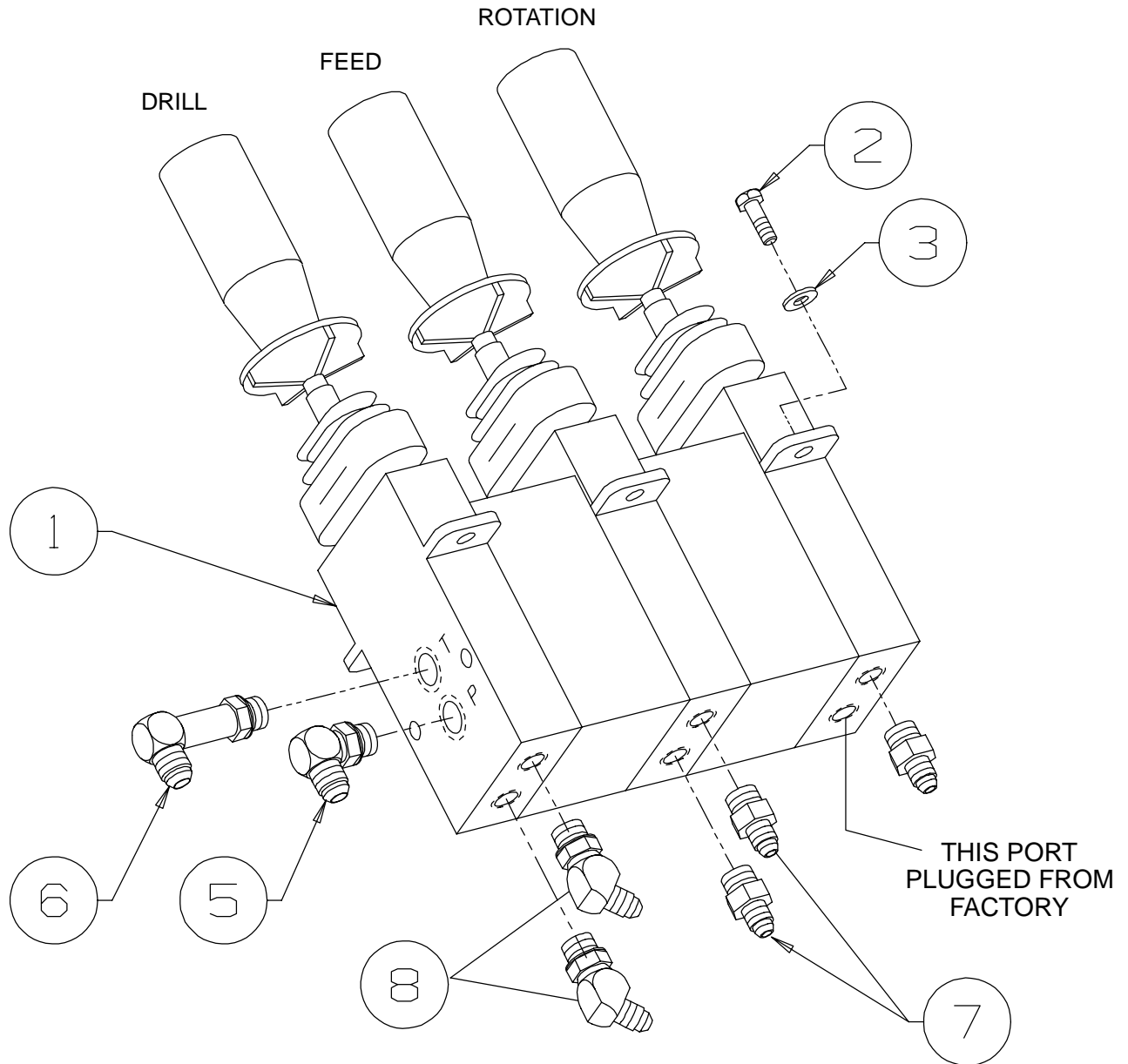
1	52122108	1	CONTROL, SLIDE RECIRCULATION	
2	52122116	1	CONTROL, SLIDE TEMPERATURE	
3	52122082	1	SWITCH, ROCKER	
4	52122090	1	SWITCH, ROCKER	

DRILL CONTROL VALVE ASSEMBLY

Revision 1

April 2, 1999

Section 16.2



DRILL CONTROL VALVE ASSEMBLY
(For Parts List, refer to Page 16.2-2)

DRILL CONTROL VALVE ASSEMBLY
(For Illustration of parts, refer to Page 16.2-1)

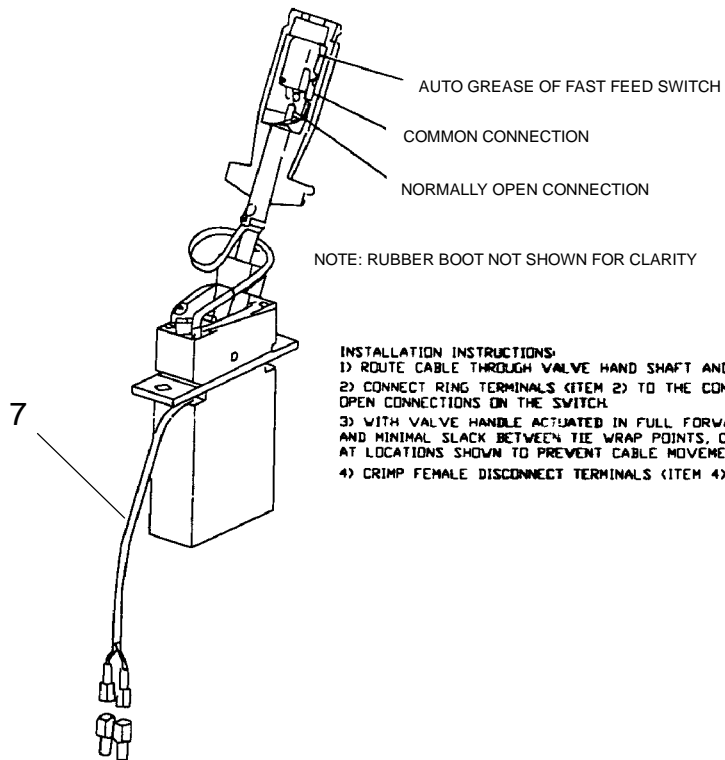
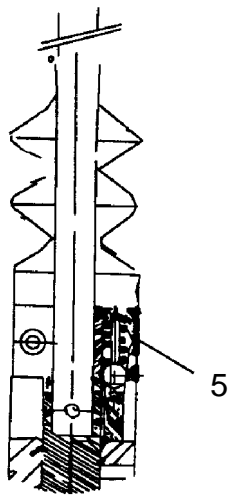
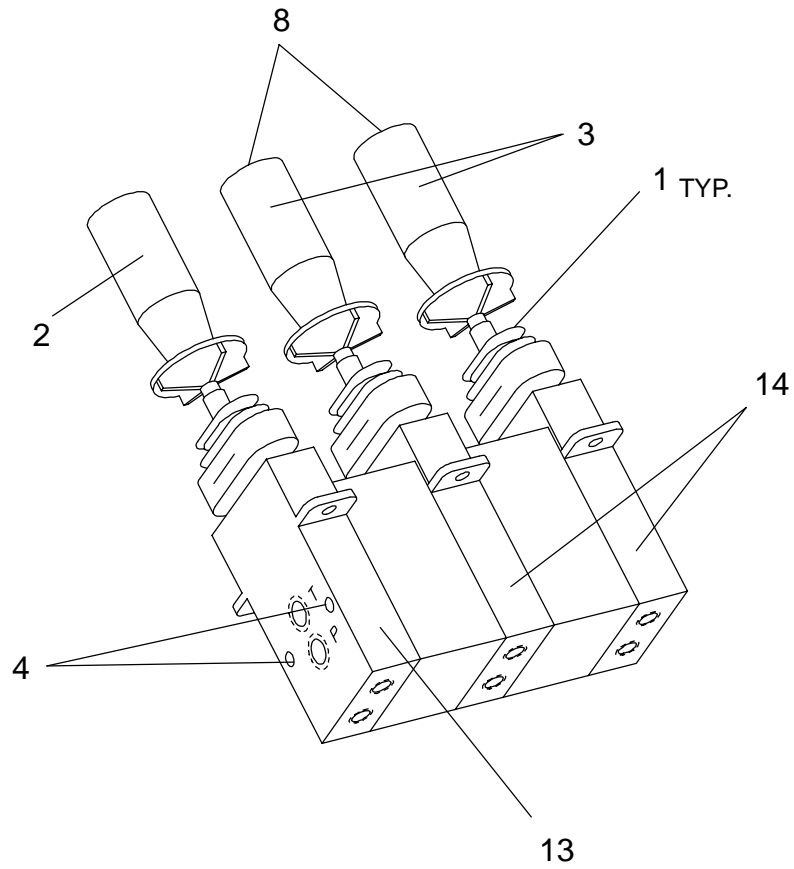
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	51862605		DRILL CONTROL VALVE ASSEMBLY	
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1	52290905	1	VALVE, HYDRAULIC PILOT CONTROL <i>REFER TO PAGE 16.2-3</i>	
2	96714522	6	CAPSCREW	
3	96701289	6	WASHER	

5	95329975	1	ELBOW	
6	95837274	1	ELBOW	
7	95371258	3	ADAPTER	
8	51715852	2	ELBOW	



INSTALLATION INSTRUCTIONS:
 1) ROUTE CABLE THROUGH VALVE HAND SHAFT AND HOLES IN VALVE BODY AS SHOWN.
 2) CONNECT RING TERMINALS (ITEM 2) TO THE COMMON AND NORMALLY OPEN CONNECTIONS ON THE SWITCH.
 3) WITH VALVE HANDLE ACTUATED IN FULL FORWARD DETENTED POSITION AND MINIMAL SLACK BETWEEN TIE WRAP POINTS, CLAMP TIE WRAPS (ITEM 5) AT LOCATIONS SHOWN TO PREVENT CABLE MOVEMENT.
 4) CRIMP FEMALE DISCONNECT TERMINALS (ITEM 4) ONTO CABLE ASSEMBLY

**DRILL CONTROL VALVE ASSEMBLY
 (For Parts List, refer to Page 16.2-3)**

HYDRAULIC PILOT CONTROL VALVE
(For Illustration of parts, refer to Page 16.2-4)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>
			<i>REMARKS</i>

	52290905		HYDRAULIC VALVE JOYSTICK ASSEMBLY
--	-----------------	--	------------------------------------------

1	51944387	3	ADAPTER, HOLLOW LEVER
2	51944395	1	ASSEMBLY ,HANDLE "T"
3	51944403	2	ASSEMBLY, HANDLE "U"
4	51982163	1	KIT, TIE ROD
5	51944429	2	SHIM

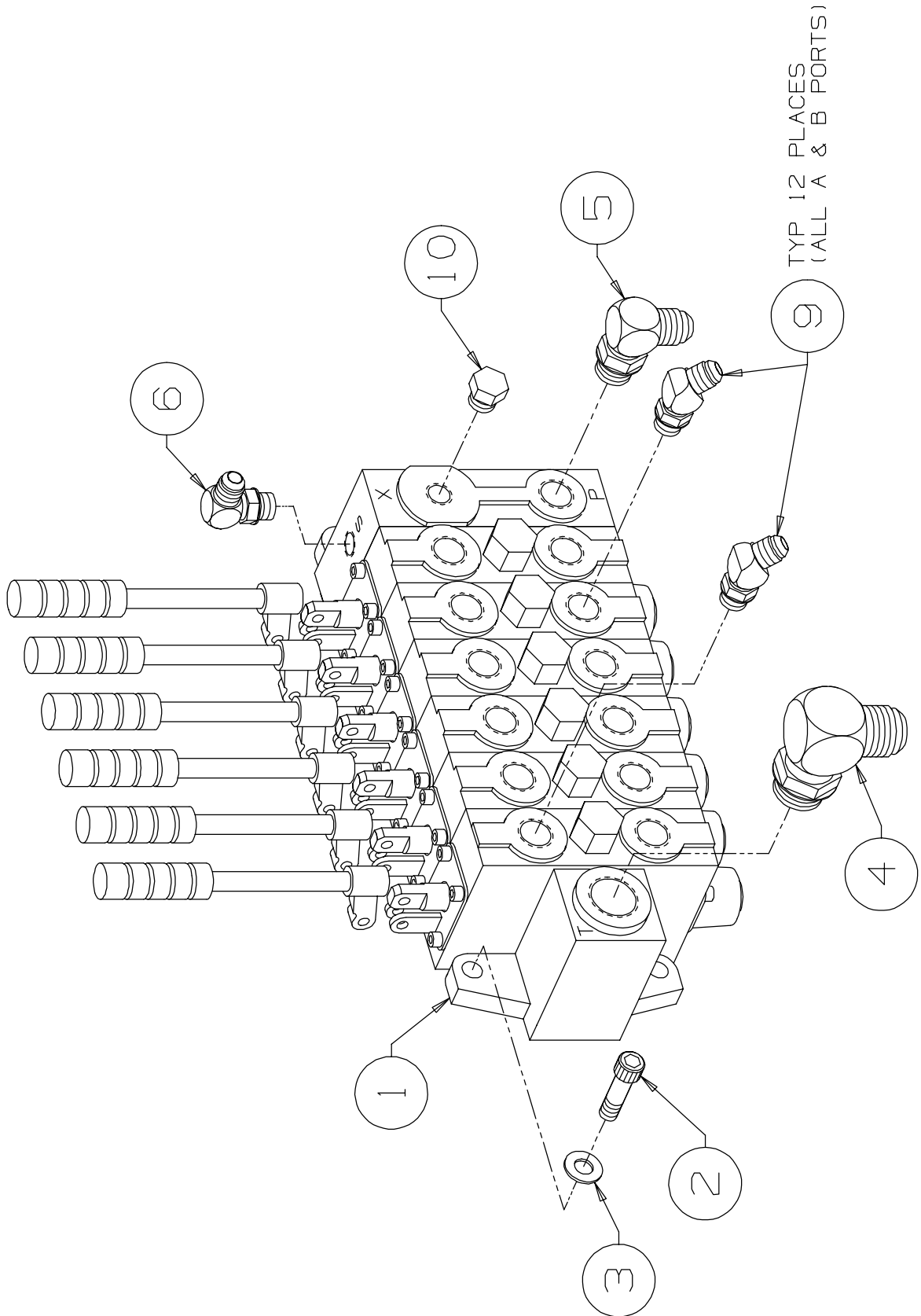
	■ 51944437	8	O-RING
	7 51952109	2	INSTALLATION, CABLE ASSEMBLY
	8 51952083	2	SWITCH, ELECTRICAL
	■ 52093614	1	KIT, PLUNGER
13	52131695	1	JOYSTICK, SINGLE HYDRAULIC
14	52119443	2	SECTION, VALVE
	■ 52131455	1	ASSY, DETENT

■ **NOTE:** THIS PART IS NOT ILLUSTRATED.

POSITIONING VALVE ASSEMBLY

January 15, 1999

Section 16.3



POSITIONING VALVE ASSEMBLY
(For Parts List, refer to Page 16.3-2)

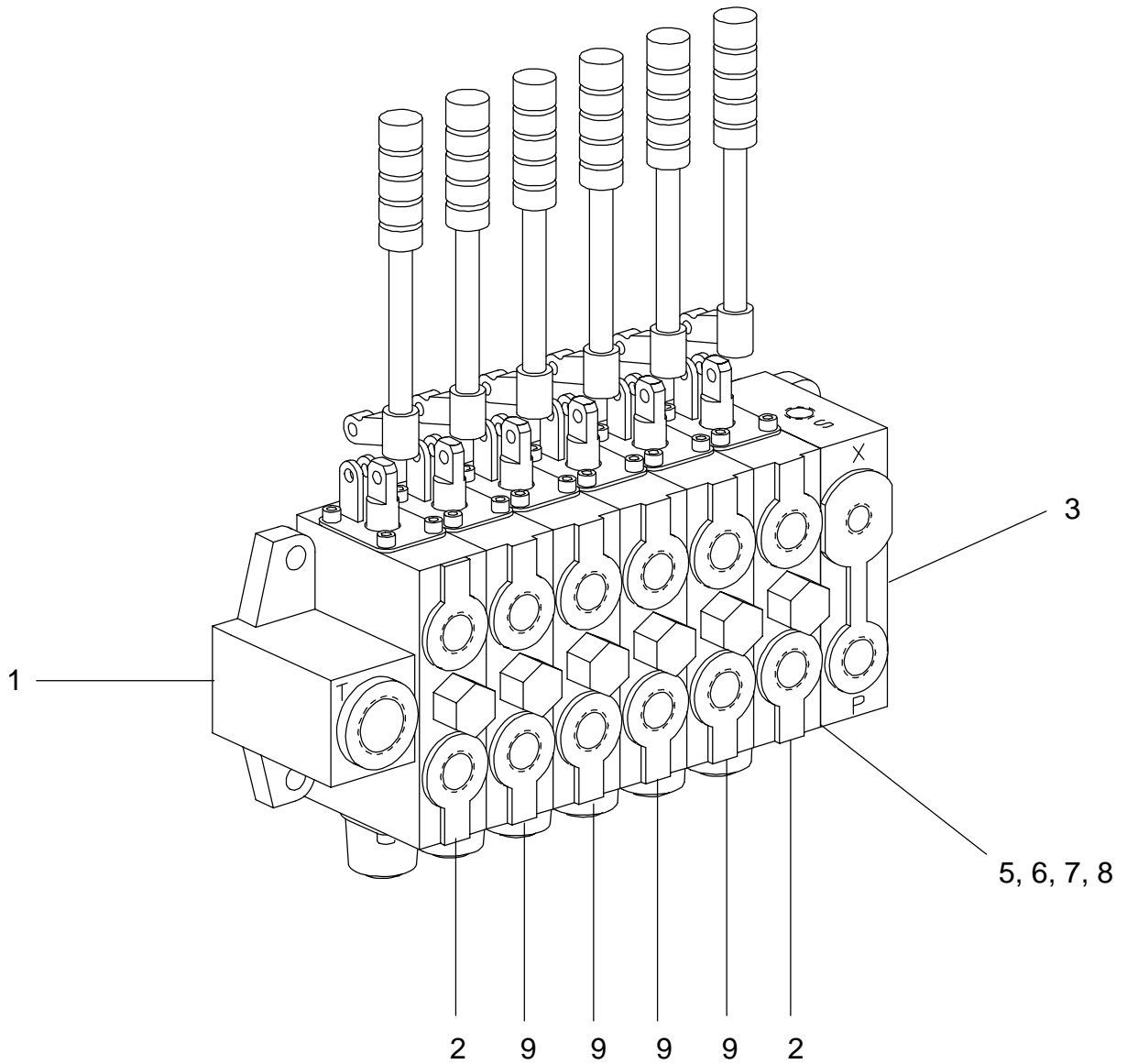
POSITIONING VALVE ASSEMBLY
(For Illustration of parts, refer to Page 16.3-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	51862613		POSITIONING VALVE ASSEMBLY	
1	51717221	1	VALVE, POSITIONING	<i>REFER TO PAGE 16.3-3</i>
2	96700398	4	CAPSCREW	
3	96700836	4	WASHER	

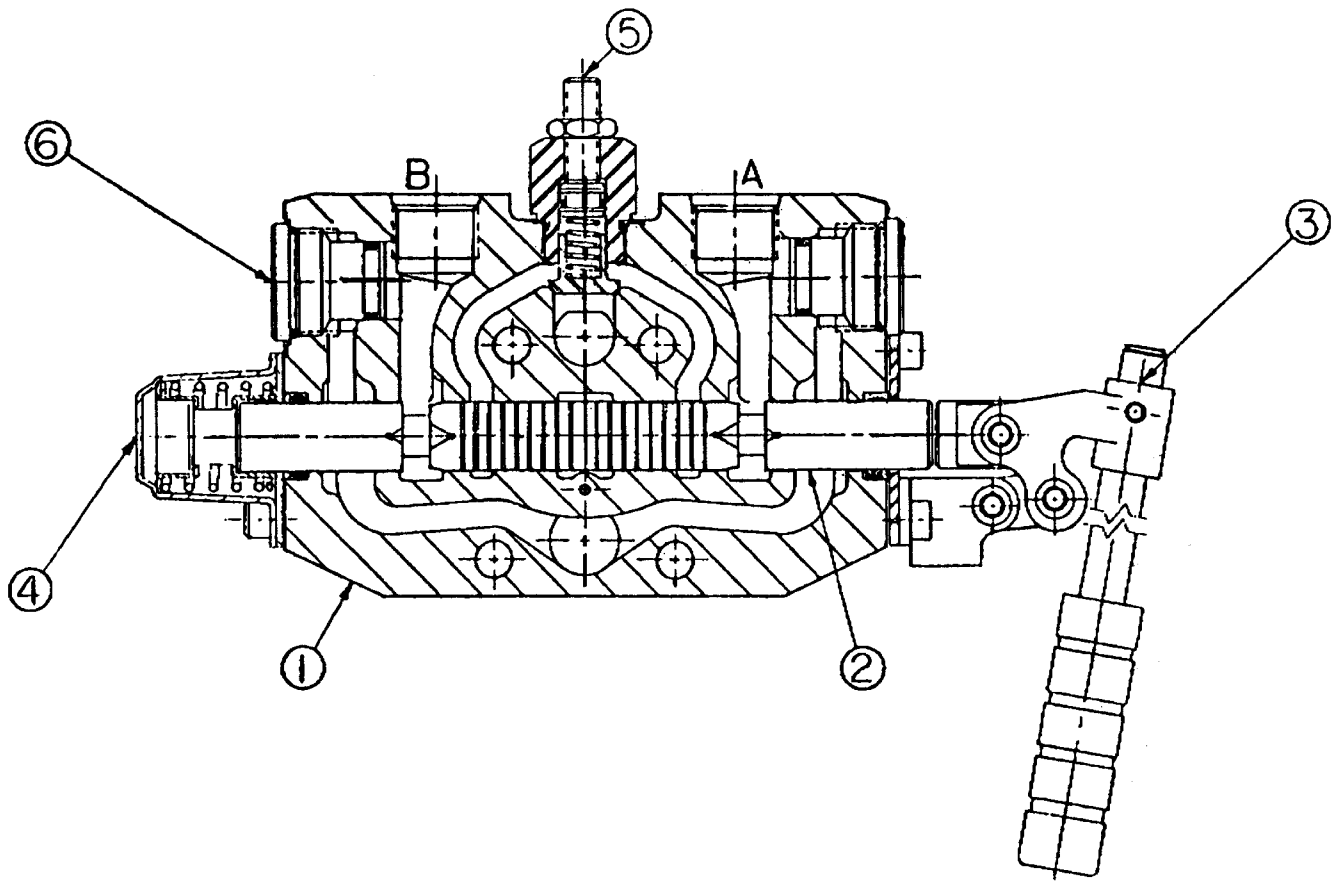
4	95280186	1	ADAPTER	
5	95303335	1	ADAPTER	
6	95329975	1	ELBOW	
9	51782365	12	ADAPTER	
10	95077145	2	PLUG	



REF. NO.	PART NO.	QTY.	PART NAME	REMARKS
----------	----------	------	-----------	---------

	51717221		POSITIONING VALVE	
1	51302016	1	INLET	
2	51724839	2	ASSEMBLY, SECTION	REFER TO PAGE 16.3-4
3	51302032	1	OUTLET	
●	51917714	1	KIT, TIE BOLT	
5	51917722	7	SEAL, O-RING	
6	51724896	7	O-RING	
7	51917730	5	BALL	
8	51302081	7	O-RING	
9	51917748	4	ASSEMBLY, MOTOR BODY SECTION	REFER TO PAGE 16.3-5

● **NOTE:** THIS PART IS NOT ILLUSTRATED.

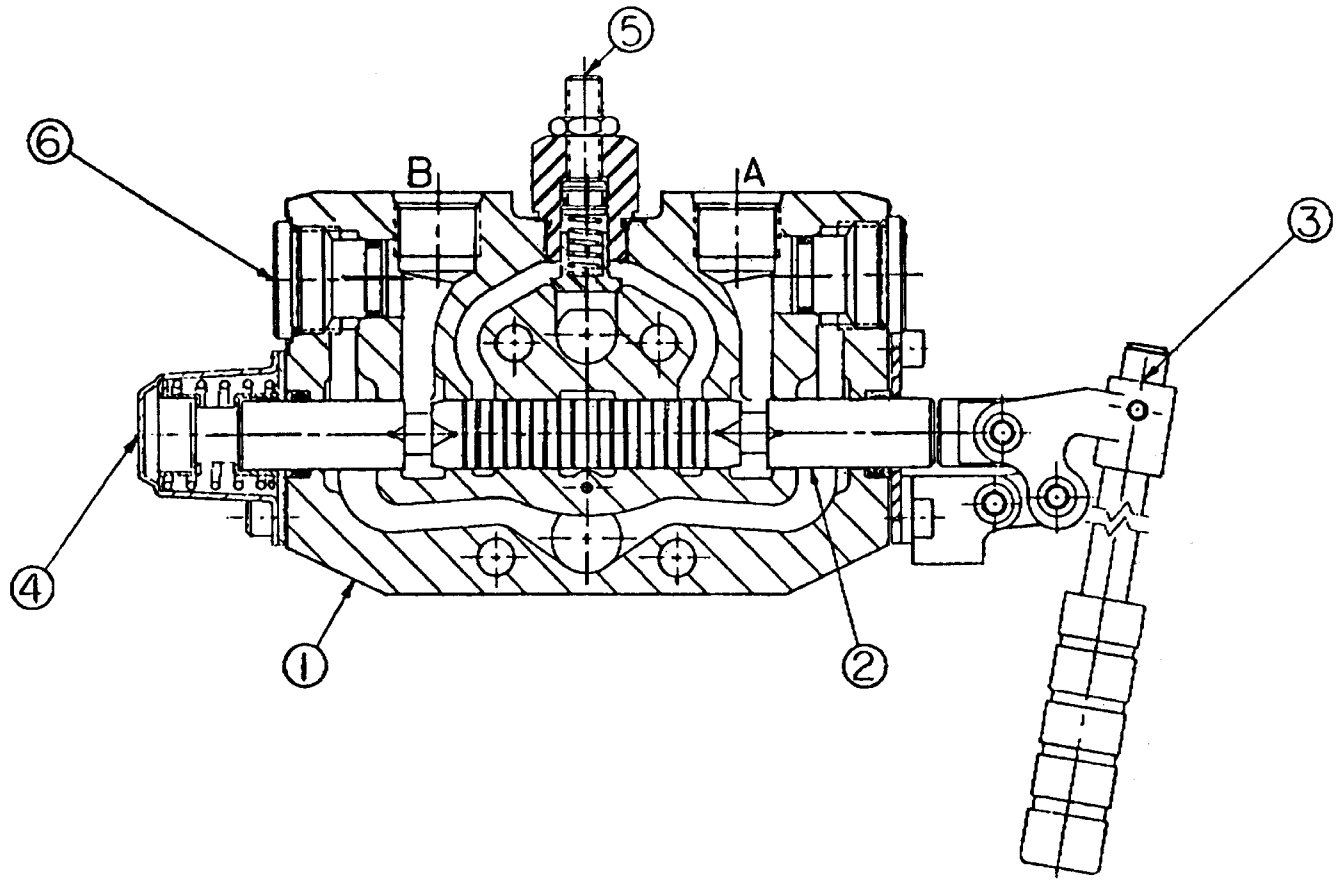


REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
-----	----------	------	-----------	---------

51724839 SECTION ASSEMBLY

1	51724920	1	BODY, VALVE	
2	51725075	1	SPOOL, STANDARD	
3	51917763	1	KIT, OPERATION	
4	51724953	1	KIT, DETENT	
5	51724961	1	KIT, ADJUST CHECK	
6	51724979	2	KIT, PORT PLUG	



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
-----	----------	------	-----------	---------

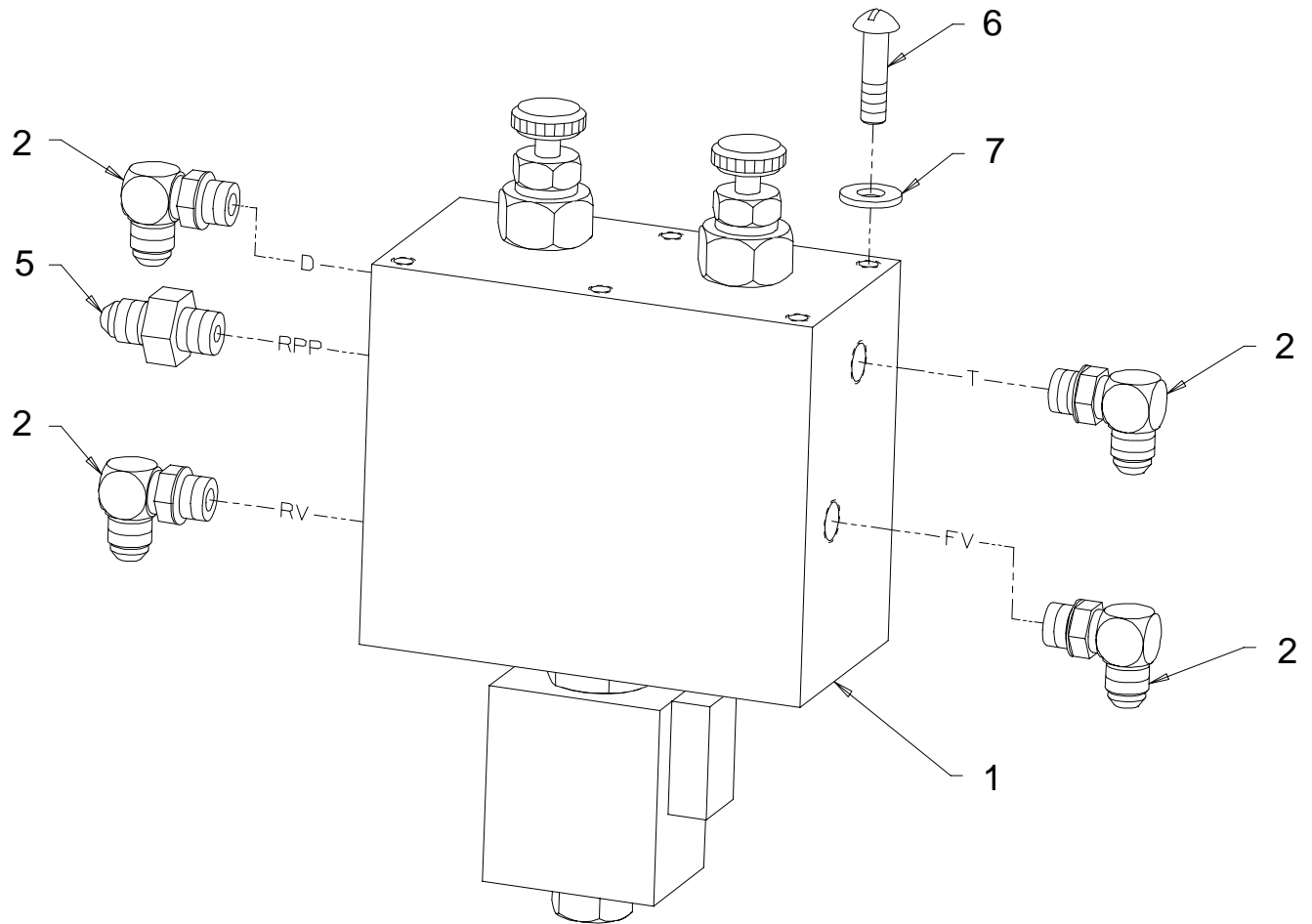
	51917748		MOTOR BODY SECTION	
1	51724920	1	BODY, VALVE	
2	51917755	1	SPOOL	
3	51917763	1	KIT, OPERATION	
4	51724953	1	KIT, OPERATON	
5	51724961	1	KIT, ADJUSTABLE CHECK	
6	51724979	2	KIT, PORT PLUG	

FEED/ROTATION MANIFOLD ASSEMBLY

Revision 1

January 5, 2000

Section 16.4

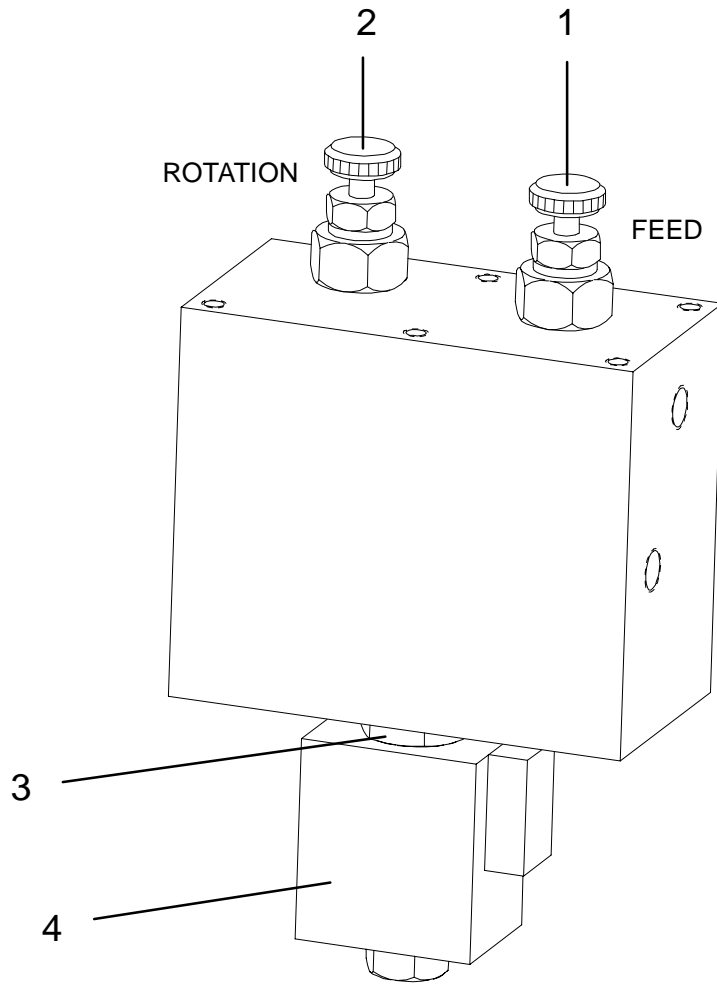


NOTE: THIS MANIFOLD MUST BE USED WITH THE DANFOSS ROTATION/FEED VALVE 52134467.

REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

	52285897		FEED/ROTATION MANIFOLD ASSEMBLY	
1	52283025	1	MANIFOLD, FEED/ROTATION	REFER TO PAGE 16.4-2
2	95341665	4	ELBOW	
5	95365086	1	ADAPTER	
6	96714522	4	CAPSCREW	
7	96701289	4	WASHER	



REF.

NO. PART NO. QTY.

PART NAME

REMARKS

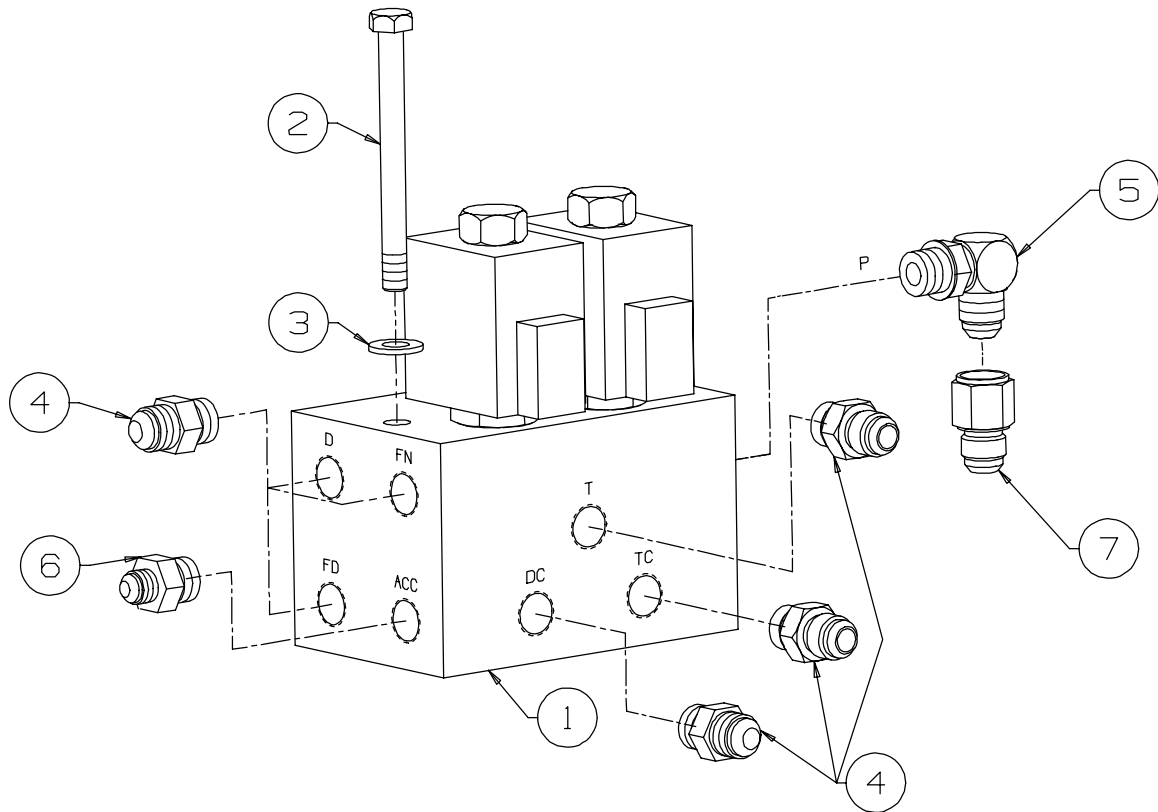
52283025		FEED/ROTATION MANIFOLD	
1	51776821	1	VALVE, CARTRIDGE
	51776623	1	.KIT, SEAL
2	52301033	1	VALVE, CARTIRIDGE
	51776458	1	.KIT, SEAL
3	51785848	1	CARTRIDGE, SOLENOID VALVE
4	51785889	1	COIL, SOLENOID

DRILL/TRAM PILOT SELECTOR MANIFOLD ASSEMBLY

Revision 1

July 28, 1999

Section 16.5



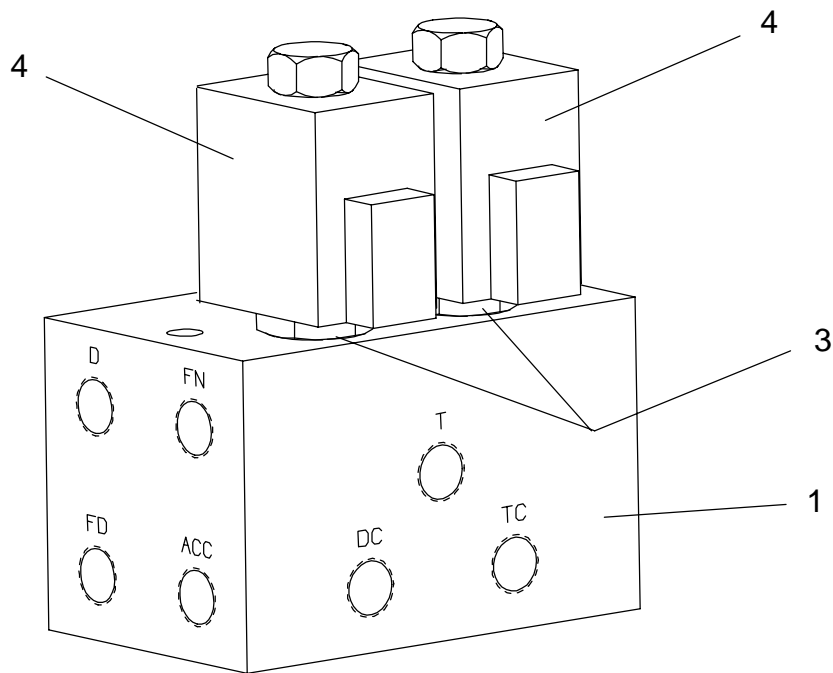
REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51862761		PILOT SELECTOR MANIFOLD ASSEMBLY	
--	-----------------	--	-----------------------------------------	--

1	51608289	1	MANIFOLD, DRILL/TRAM SELECTOR REFER TO PAGE 16.5-2	
2	96714712	2	CAPSCREW	
3	96700828	2	WASHER	

4	95365078	6	ADAPTER	
5	95329975	1	ELBOW	
6	95371258	1	ADAPTER	
7	51908804	1	ADAPTER, RESTRICTOR	



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
------------	-----------------	-------------	------------------	----------------

51608289 DRILL/TRAM SELECTOR MANIFOLD

1	51776565	1	BLOCK, MANIFOLD	
•	51984367	1	VALVE, CARTRIDGE	
	51776581	1	.KIT, SEAL	

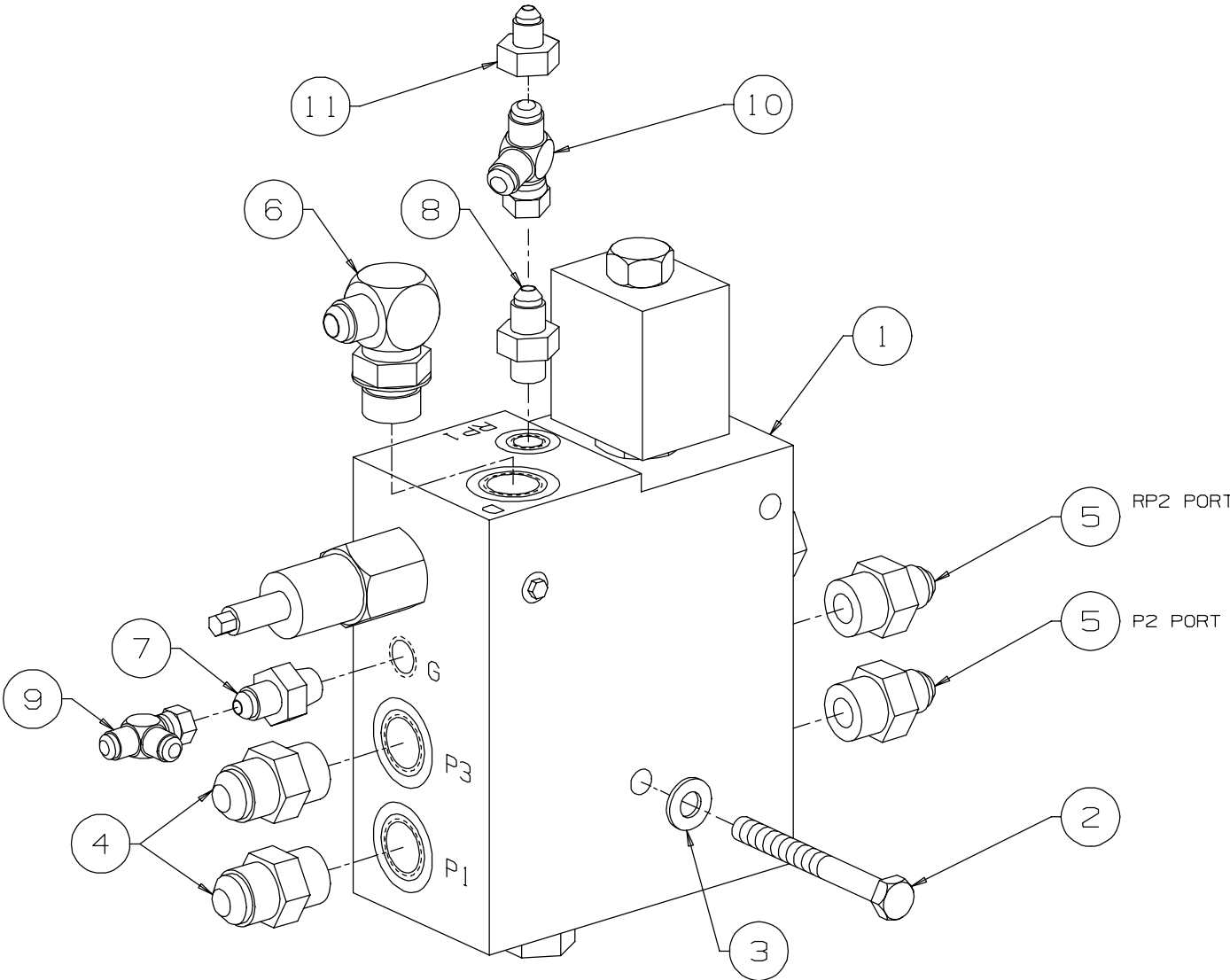
3	51776516	2	VALVE, CARTRIDGE	
	51776524	1	.KIT, SEAL	
4	51785889	2	COIL, SOLENOID	

- **NOTE:** THIS PART IS NOT ILLUSTRATED. THIS CARTRIDGE MOUNTS ON THE BACK SIDE OF THE MANIFOLD BODY.

AUX. PRESSURE MANIFOLD ASSEMBLY

January 15, 1999

Section 16.7



AUX. PRESSURE MANIFOLD ASSEMBLY
(For Parts List, refer to Page 16.7-2)

AUX. PRESSURE MANIFOLD ASSEMBLY
(For Illustration of parts, refer to Page 16.7-1)

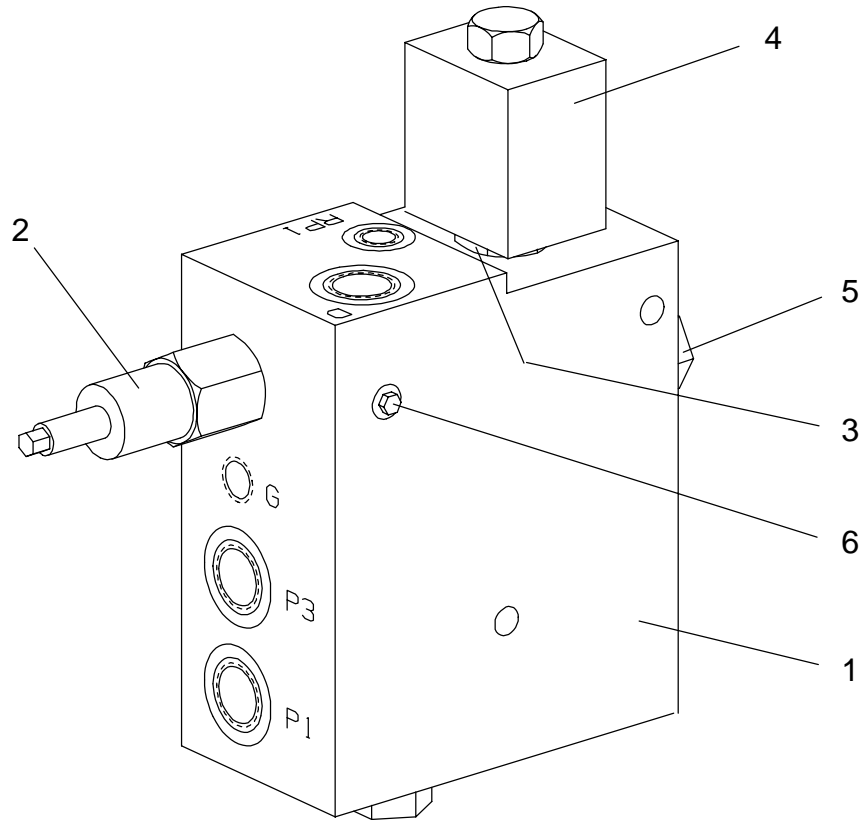
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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	51782332		AUX. PRESSURE MANIFOLD ASSEMBLY	
1	51782530	1	MANIFOLD, AUX. PRESSURE	<i>REFER TO PAGE 16.7-3</i>
2	96714662	2	CAPSCREW	
3	96700828	2	WASHER	

4	95303368	2	ADAPTER	
5	95356903	2	ADAPTER	
6	95356853	1	ADAPTER	
7	95263380	1	ADAPTER	

8	95402806	1	ADAPTER	
9	95652996	1	TEE	
10	95003182	1	TEE	
11	51027928	1	ADAPTER	



REF.

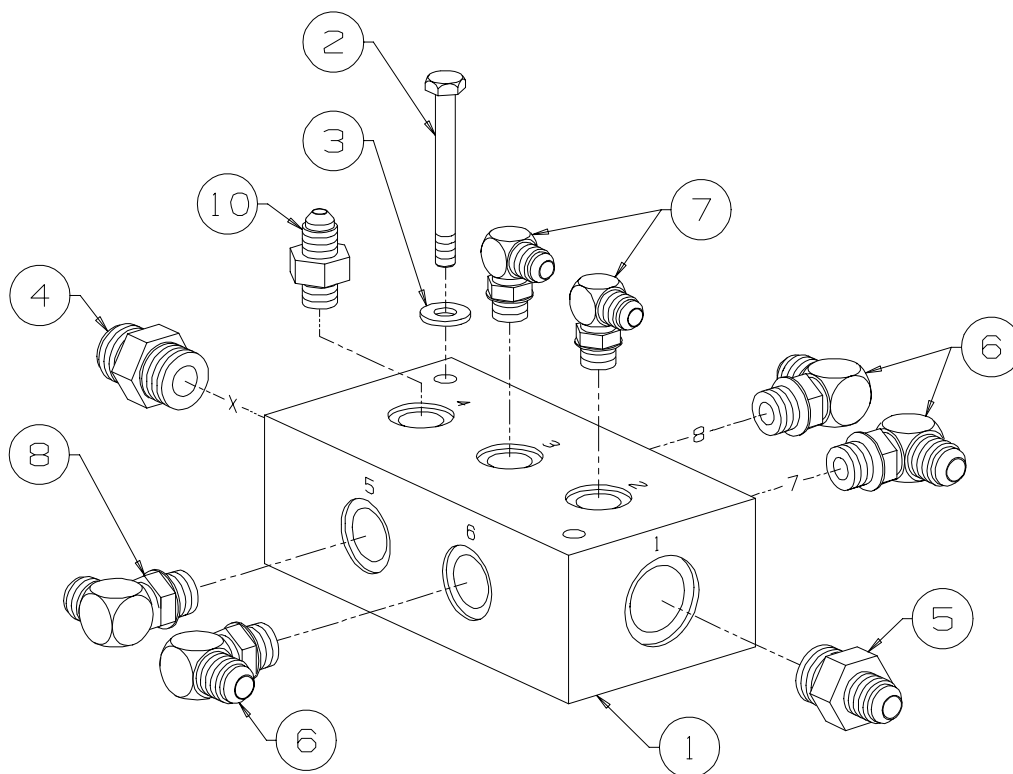
NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51782530		AUX. PRESSURE MANIFOLD	
1	51716207	1	BLOCK, MANIFOLD	
2	51716215	1	VALVE, CARTRIDGE	
	51776581	1	.KIT, SEAL	
3	51862829	1	VALVE, CARTRIDGE	
	51862837	1	.KIT, SEAL	
4	51986669	1	COIL, SOLENOID	
5	95504015	2	PLUG	
6	95926838	1	PLUG	

CAB DRAIN MANIFOLD ASSEMBLY

January 15, 1999

Section 16.8



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51782357		CAB DRAIN MANIFOLD ASSEMBLY	
1	51608685	1	MANIFOLD, CAB DRAIN	
2	96714555	2	CAPSCREW	
3	96701289	2	WASHER	
4	95303368	1	ADAPTER	
5	95356903	1	ADAPTER	
6	95329975	3	ELBOW	
7	95341665	2	ELBOW	
8	95365094	1	ADAPTER	
10	95365086	1	ADAPTER	

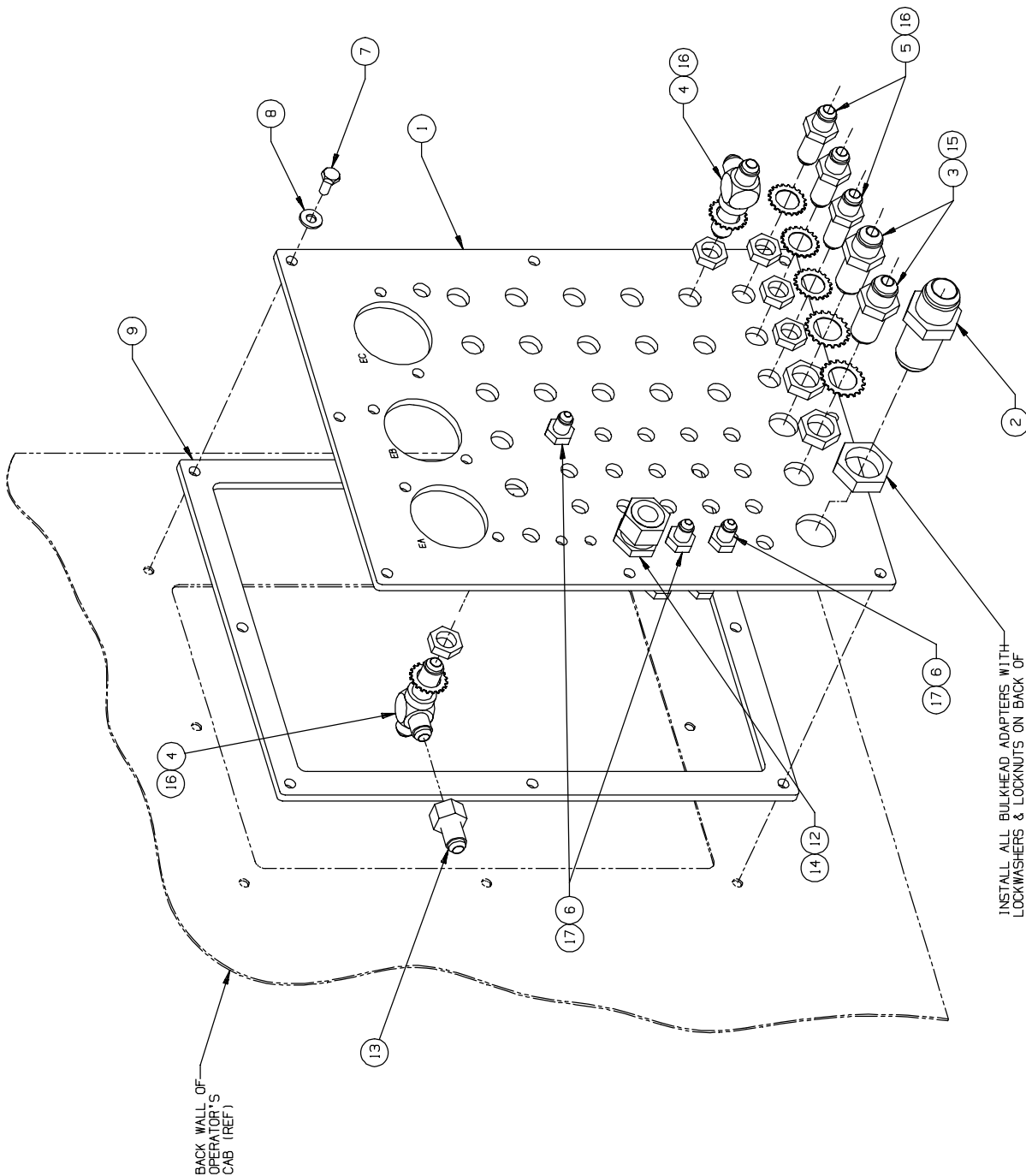
CAB BULKHEAD ASSEMBLY

Revision 1

June 4, 1999

Section 16.9

BULKHEAD ADAPTER CHART	
BULKHEAD NUMBER	ADAPTER ITEM NUMBER
1	2
2	3
3	3
4	5
5	5
6	6
7	6
8	6
9	6
10	6
11	6
12	6
13	6
14	6
15	6
16	6
17	6
18	6
19	6
20	6
21	4, 13
22	5
23	5
24	5
25	5
26	5
27	5
28	5
29	5
30	5
31	5
32	5
33	5
34	5
35	4
36	5
37	5
38	5
39	6
40	6
41	6, 18
42	N/A
43	6



NOTE:
REFER TO BULKHEAD ADAPTER
CHART FOR PORT DESIGNATIONS
OF BULKHEAD ADAPTERS (ITEMS
#5 THRU ITEM #9)

INSTALL ALL BULKHEAD ADAPTERS WITH
LOCKWASHERS & LOCKNUTS ON BACK OF
BULKHEAD PLATE (ITEM #1) WITH THE
EXCEPTION OF TEE (ITEM 4) IN PORT #21.
THE LOCKWASHER AND NUT IS IN THE FRONT

CAB BULKHEAD ASSEMBLY
(For Parts List, refer to Page 16.9-2)

CAB BULKHEAD ASSEMBLY
(For Illustration of parts, refer to Page 16.9-1)

REF.

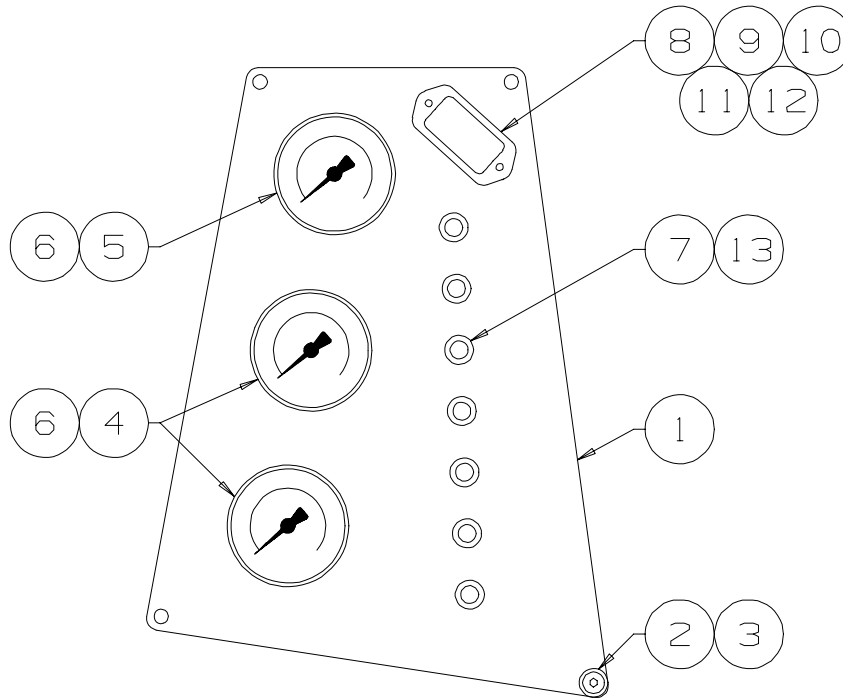
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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			52283561	CAB BULKHEAD ASSEMBLY
1	51989044	1	BULKHEAD, CAB	
2	95332599	1	FITTING	
3	95364964	2	FITTING	
4	50682749	2	TEE-BULKHEAD	
5	95364972	18	FITTING	
6	95282422	19	FITTING	
7	96712161	8	CAPSCREW	
8	96701289	8	WASHER	
9	51989150	1	GASKET, BULKHEAD	
12	95245072	1	CONNECTOR	
13	51027928	1	ADAPTER	
14	51300374	1	NUT, SEALING	
15	95201448	2	LOCKWASHER	
16	95866513	20	LOCKWASHER, INTERNAL TOOTH	
17	95248100	19	LOCKWASHER, INTERNAL TOOTH	

CORNER CONTROL PANEL ASSEMBLY

January 15, 1999

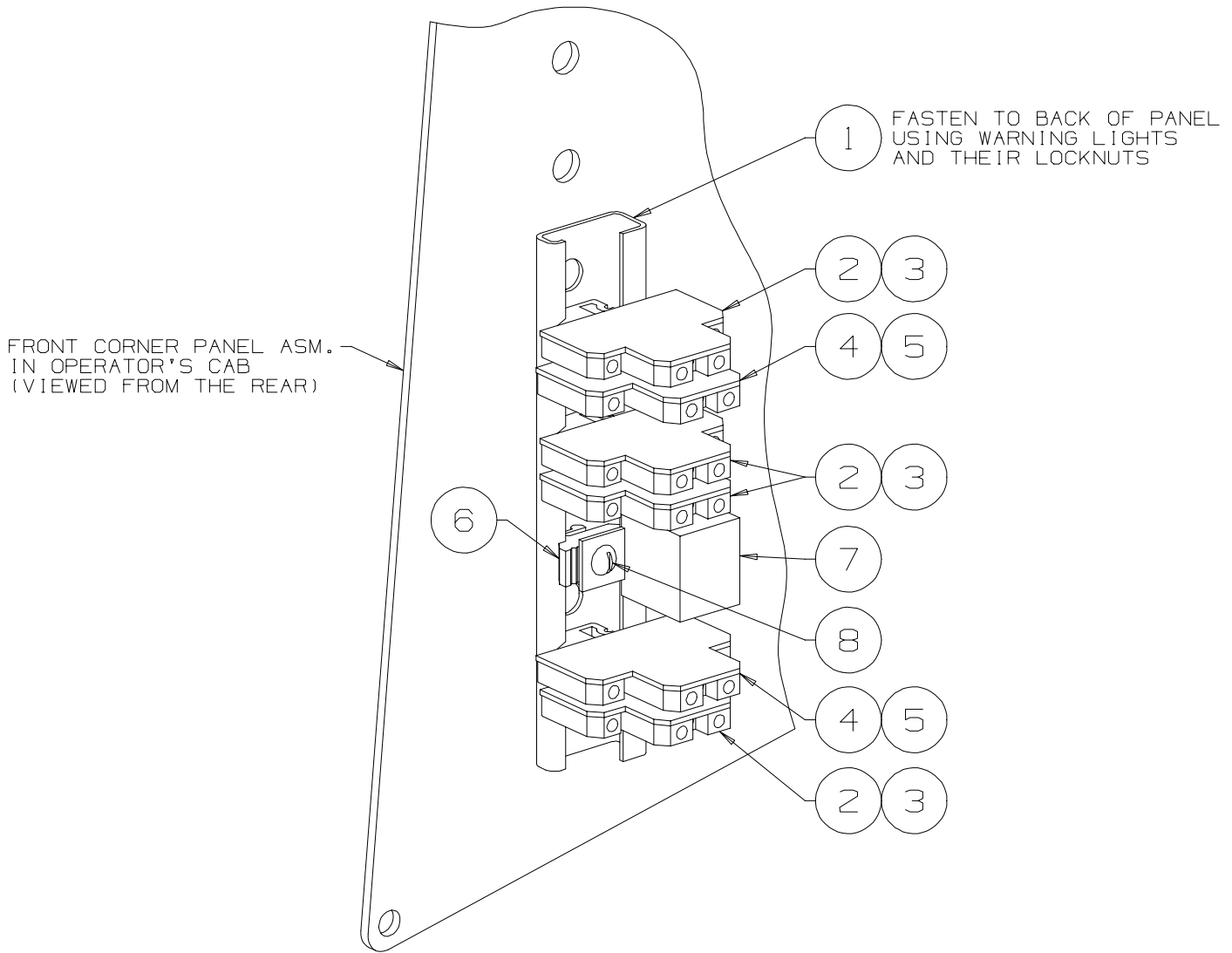
Section 16.10



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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NO.	PART NO.	QTY.	PART NAME	REMARKS
	51989952		CORNER CONTROL PANEL ASSEMBLY	
1	52282639	1	PANEL, FRONT CORNER	
2	96727987	4	CAPSCREW	
3	96701289	4	WASHER	
4	51618247	2	GAUGE, HYDRAULIC PRESSURE (FEED/ROTATION)	
5	51782415	1	GAUGE, PRESSURE (DRILL)	
6	95293353	3	ADAPTER	
7	51618437	7	LIGHT, INDICATOR	
8	51716116	1	LAMP, PANEL	
9	51716124	1	BULB, REPLACEMENT	
10	95410627	2	SCREW, MACH	
11	95076717	2	NUT	
12	95326740	2	WASHER, FLAT	
13	51990174	1	ASSEMBLY, DIODE BAR	REFER TO PAGE 16.10-2



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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51990174 DIODE BAR ASSEMBLY

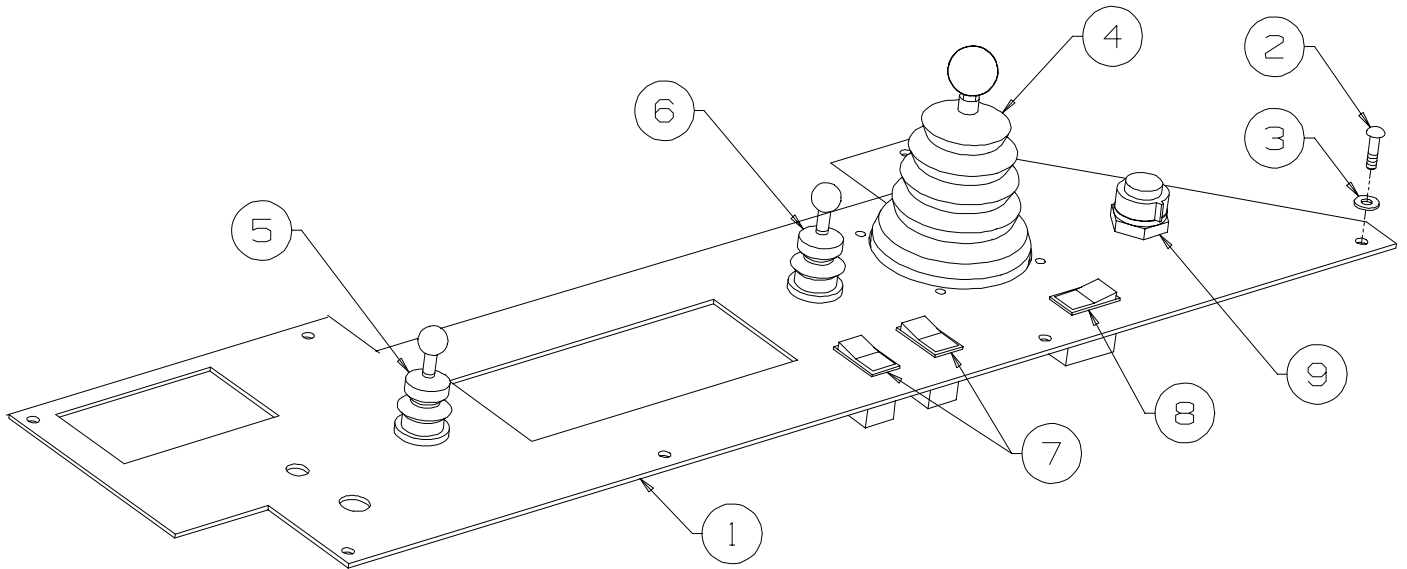
1	51874451	1	BRACKET, DIODE MOUNTING	
2	51918217	3	BLOCK, DIODE TERMINAL	
3	51918225	3	COVER, DIODE TERMINAL BLOCK	
4	51918233	3	BLOCK, TERMINAL GROUND	
5	51918241	3	COVER, TERMINAL GROUND BLOCK	
6	51918258	2	TERMINAL, MOUNTING	
7	51716066	2	RELAY, 24 VDC, SPDT	
8	95013793	2	SCREW, MACHINE	

FRONT CONTROL PANEL ASSEMBLY

Revision 2

June 7, 2000

Section 16.11



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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	52103330		FRONT CONTROL PANEL ASSEMBLY	
--	-----------------	--	-------------------------------------	--

1	52283447	1	PANEL, FRONT	
2	96727987	8	CAPSCREW	
3	96701289	8	WASHER	

4	52285863	1	SWITCH, JOYSTICK (ROD CHANGER)	
5	51869931	1	SWITCH, JOYSTICK (DUST COLLECTOR)	
	51985950	1	.BOOT, DUST	

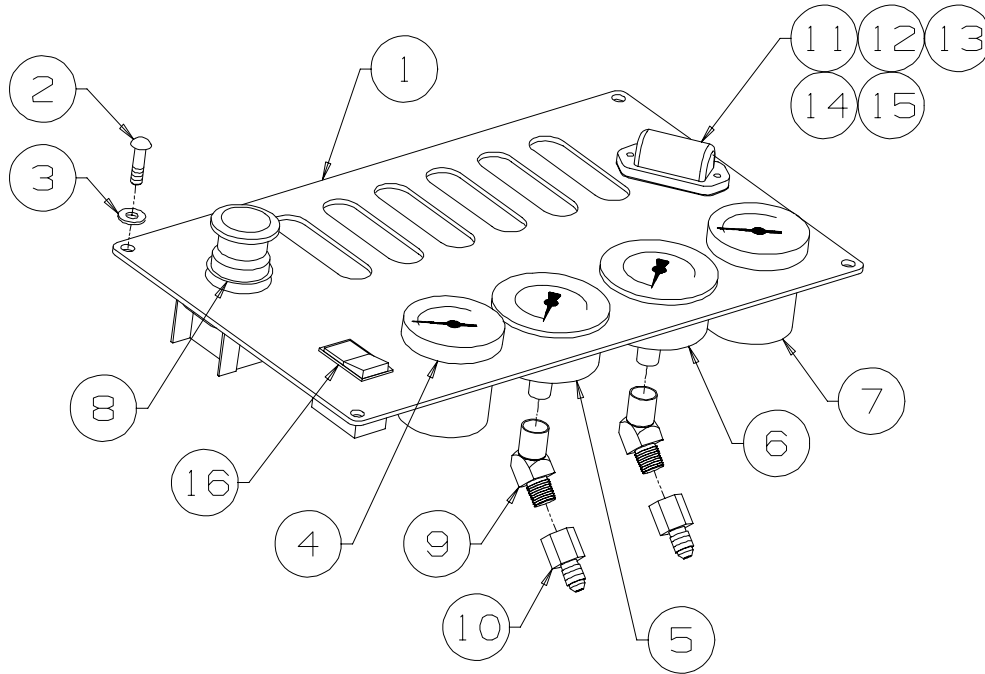
6	51869923	1	SWITCH, JOYSTICK (CENTRALIZER BREAKOUT FORK)	
	51985950	1	.BOOT, DUST	
7	51869832	2	SWITCH, ROCKER (FAST ROTATION & ROD LOCK)	

8	51869840	1	SWITCH, ROCKER (DUST COLLECTOR/ROD CHANGER)	
9	52297348	1	ASSEMBLY, SELECT/PUSH SWITCH (CONSISTS OF SWITCH, PANEL ADAPTER & 4 JUMPER WIRES)	
	52297355	1	.SWITCH	

SIDE FORWARD CONTROL PANEL ASSEMBLY

January 15, 1999

Section 16.12



REF.

NO. PART NO. QTY. PART NAME
REMARKS

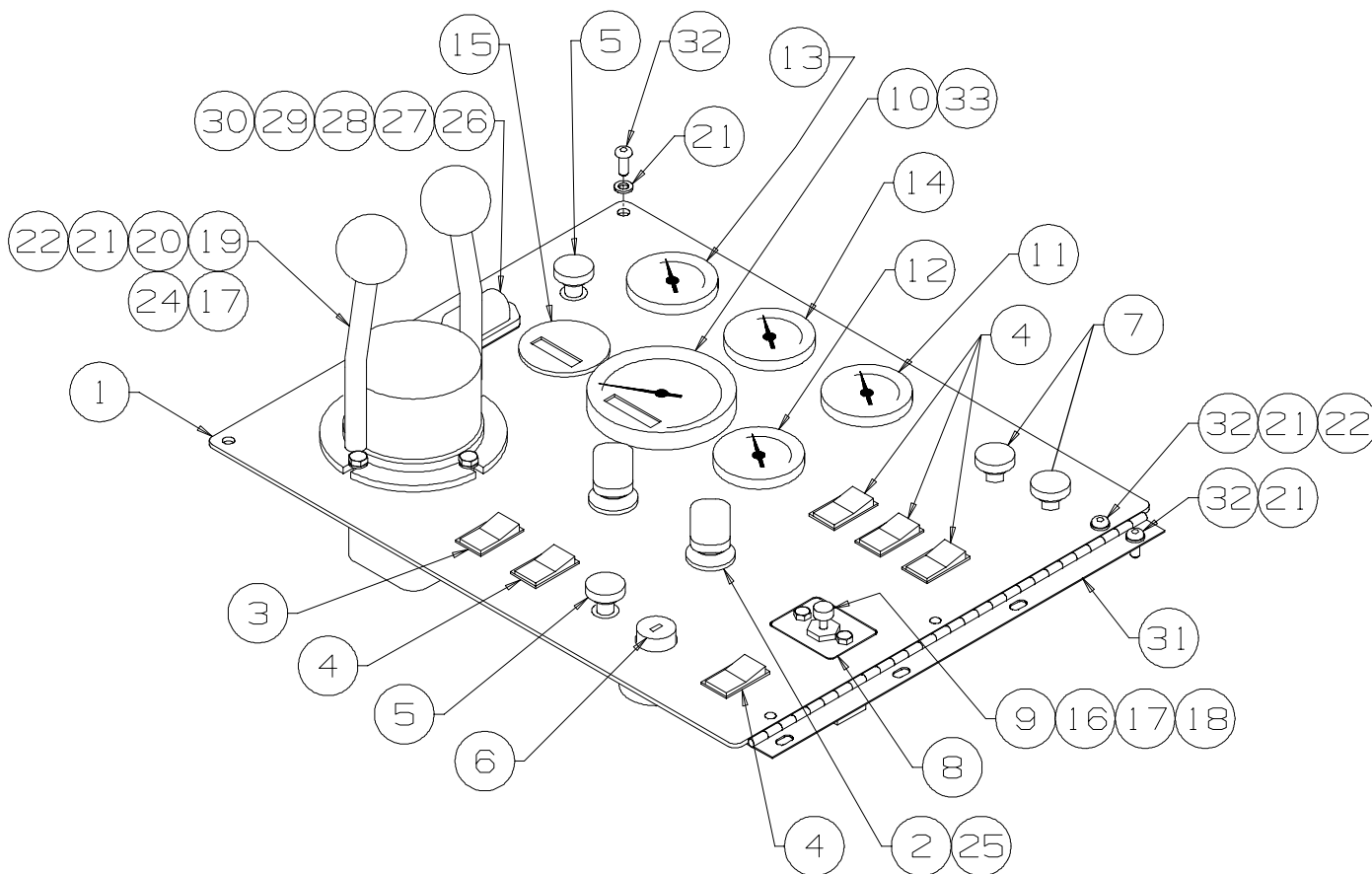
NO.	PART NO.	QTY.	PART NAME	REMARKS
	51989770		SIDE FORWARD CONTROL PANEL ASSEMBLY	
1	52283439	1	PANEL, SIDE FORWARD	
2	96727987	4	CAPSCREW	
3	96701289	4	WASHER	
4	51778884	1	GAUGE, AIR TEMPERATURE	
5	51782415	1	GAUGE, PRESSURE (AIR SYSTEM)	
6	51618247	1	GAUGE, HYDRAULIC PRESSURE	
7	51618338	1	GAUGE, OIL TEMPERATURE	
8	51619922	1	ASSEMBLY, STOP SWITCH	
	51943959	1	.KNOB, MUSHROOM	
9	95280079	2	ELBOW	
10	95293296	2	FITTING	
11	51716116	1	LAMP, PANEL	
12	51716124	1	BULB, REPLACEMENT	
13	95410627	2	SCREW, MACHINE	
14	95076717	2	NUT	
15	95326740	2	WASHER, FLAT	
16	51869832	1	SWITCH, ROCKER (DRILL AIR PRESSURE HI/LOW)	

ENGINE CONTROL PANEL ASSEMBLY

Revision 1

December 26, 2001

Section 16.13



REF.

NO. PART NO. QTY. PART NAME
REMARKS

REF. NO.	PART NO.	QTY.	PART NAME	REMARKS
	52103348		ENGINE CONTROL PANEL ASSEMBLY	
1	52282613	1	PANEL, SIDE AFT	
2	51608487	2	VALVE, BALL (RIGHT & LEFT OSCILLATION)	
3	51869840	1	SWITCH, ROCKER (TRAM/DRILL)	
4	51869832	5	SWITCH, ROCKER	
5	51607323	2	SWITCH (SAFETY BYPASS)	
6	52083680	1	SWITCH, IGNITION	
7	51618379	2	SWITCH, WIPER	
8	51869873	1	FACE PLATE, REGULATOR	
9	35583210	1	VALVE, AIR	
10	51607372	1	TACHOMETER	
11	51607406	1	GAUGE, OIL PRESSURE	

(CONTINUED)

FRONT CONTROL PANEL ASSEMBLY (cont.)
(For Illustration of parts, refer to Page 16.13-1)

REF.

NO. PART NO. QTY. PART NAME
REMARKS

	52103348		ENGINE CONTROL PANEL ASSEMBLY (cont.)
12	51607422	1	GAUGE, TEMPERATURE, WATER
13	51607448	1	GAUGE, FUEL
14	51607463	1	GAUGE, VOLTMETER
15	51607380	1	GAUGE, HOURMETER
16	95329975	1	ELBOW

17	95365078	3	ADAPTER
18	35307818	2	SCREW
19	51608602	1	VALVE, PILOT CONTROL
	51941490	1	.KIT, SEAL
20	96714522	4	CAPSCREW

21	96701289	20	WASHER
22	96702063	7	NUT, HEX
24	95371258	4	ADAPTER
25	95209094	4	ELBOW
26	51716116	1	LAMP, PANEL

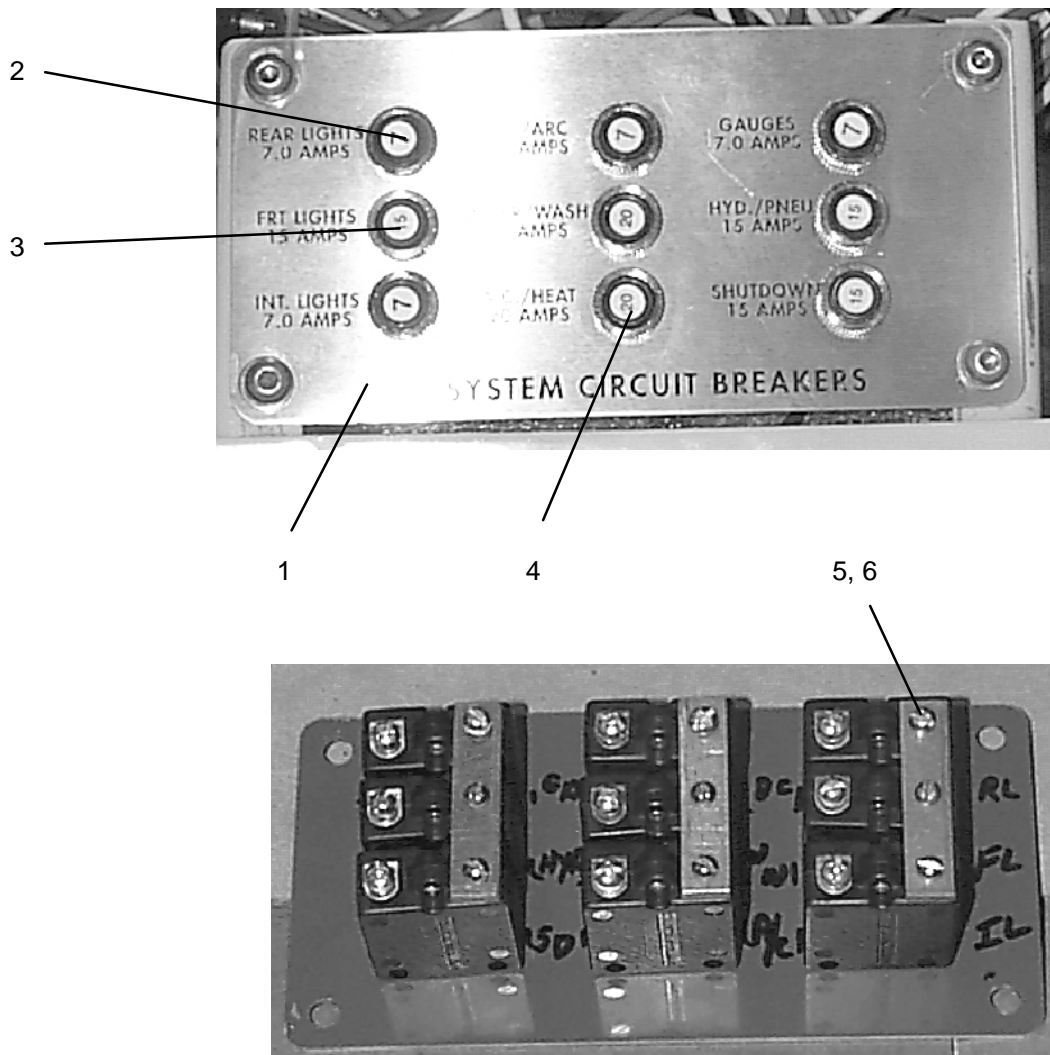
27	51716124	1	BULB, REPLACEMENT
28	95410627	2	SCREW, MACHINE
29	95076717	2	NUT
30	95326740	2	WASHER, FLAT
31	51862399	1	HINGE, CONTROL PANEL

32	96727987	9	CAPSCREW
33	51619906	1	KIT, LIGHT LIGHT KIT FOR TACHOMETER
34	51722668	6	SEAL
35	51723245	6	TERMINAL, SLEEVE
36	51786549	1	CONNECTOR, 6 PIN

CIRCUIT BREAKER PANEL ASSEMBLY

January 15, 1999

Section 16.14



REF.

NO.	PART NO.	QTY.	PART NAME	REMARKS
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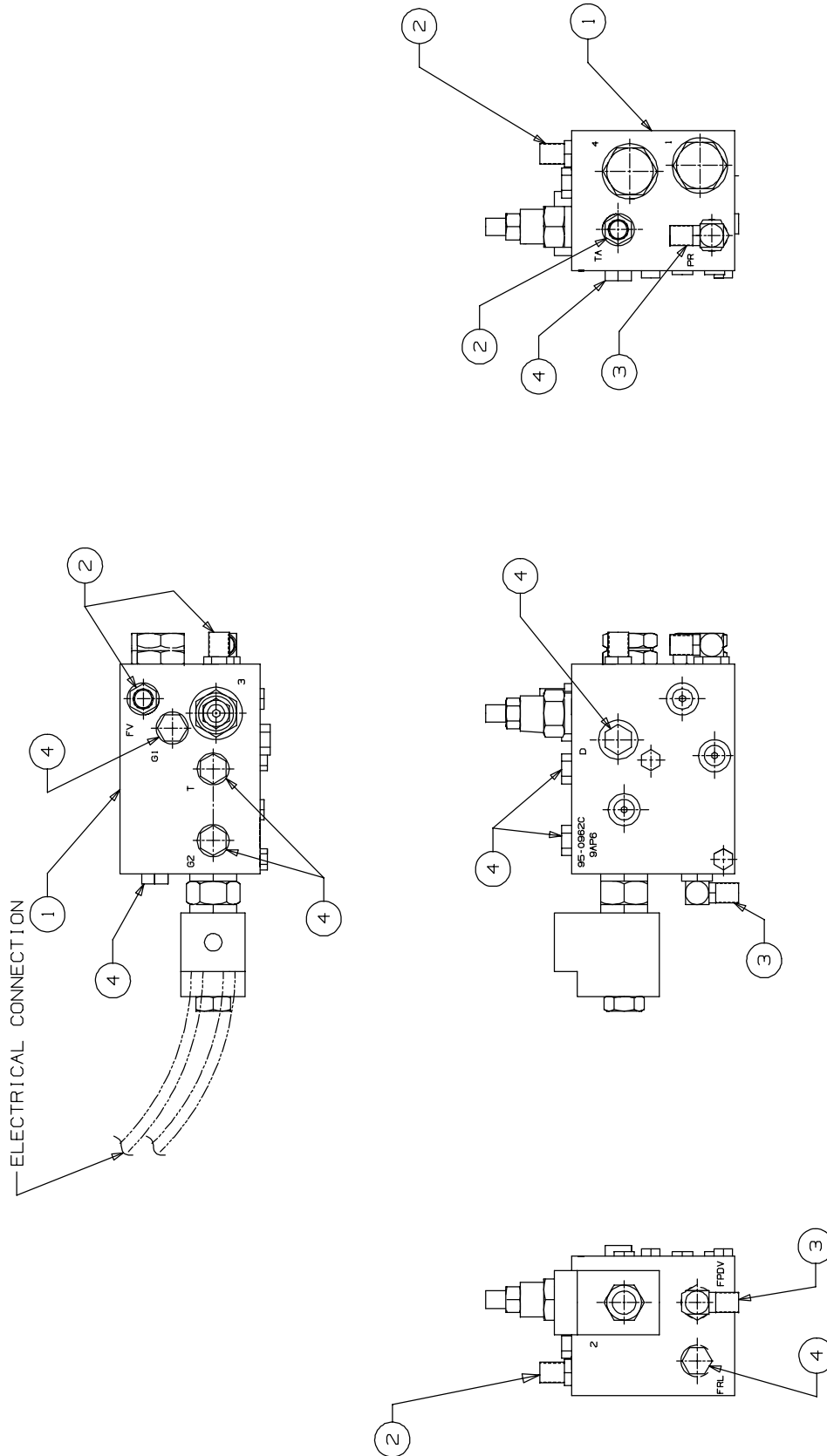
	52130234		CIRCUIT BREAKER PANEL ASSEMBLY	
1	52094018	1	PANEL, CIRCUIT BREAKER	
2	52094026	4	BREAKER, CIRCUIT, 7 AMP	
3	52094034	3	BREAKER, CIRCUIT, 15 AMP	
<hr/>				
4	52094042	2	BREAKER, CIRCUIT, 20 AMP	
5	51918480	3	JUMPER, FUSE PLATE	
6	52130242	9	SCREW, MACHINE	

REVERSE FEED CONTROL MANIFOLD ASSEMBLY

Revision 1

March 26, 2001

Section 16.15



REVERSE FEED CONTROL MANIFOLD ASSEMBLY
(For Parts List, refer to Page 16.15-2)

REVERSE FEED CONTROL MANIFOLD ASSEMBLY
(For Illustration of parts, refer to Page 16.15-1)

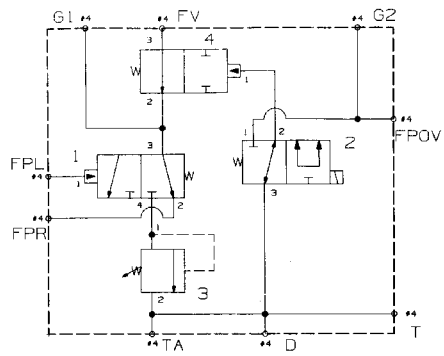
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
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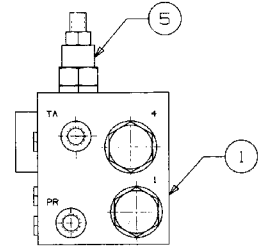
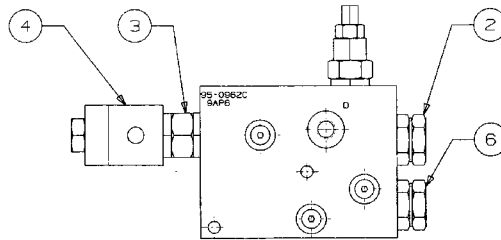
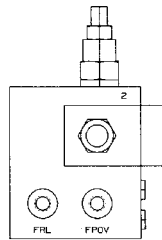
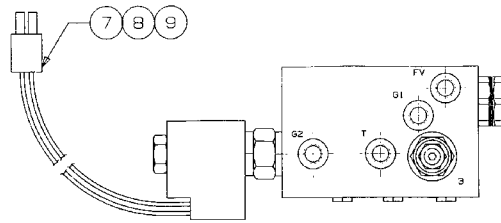
	52084985		REVERSE FEED CONTROL MANIFOLD ASSEMBLY	
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1	52084761	1	MANIFOLD, REVERSE FEED CONTROL <i>REFER TO PAGE 16.15-3</i>	
2	95365086	4	ADAPTER	

3	95341665	2	ELBOW	
4	95754867	5	PLUG	
7	96714589	2	CAPSCREW	
8	51919488	9	ELECTRICAL WIRE LOOM, 1/4 IN.	



HYDRAULIC SCHEMATIC



REF.

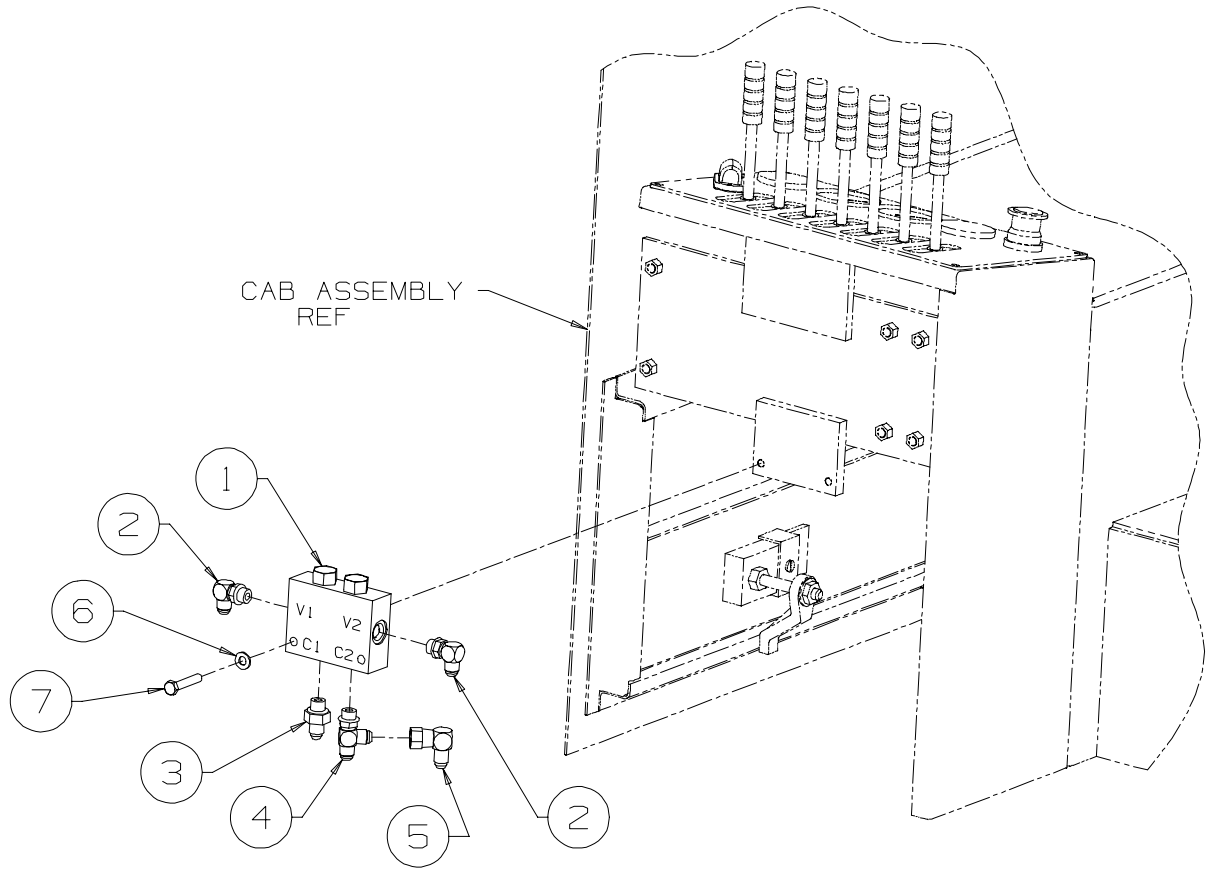
NO. PART NO. QTY. PART NAME
REMARKS

	52084761		REVERSE FEED CONTROL MANIFOLD	
	52129384	1	KIT, SEAL	
1	52085446	1	BLOCK, MANIFOLD	
2	51776839	1	VALVE, CARTRIDGE	
	51776524	1	.KIT, SEAL	
3	51858413	1	VALVE, CARTRIDGE (SOLENOID)	
4	51785889	1	COIL, SOLENOID	
5	51776821	1	VALVE, RELIEF	
	51776623	1	.KIT, SEAL	
6	52085107	1	VALVE, CARTRIDGE	
7	51722650	2	SLEEVE	
8	51722668	2	SEAL	
9	51791846	2	CONNECTOR	

OSCILLATION CYLINDERS LOCK CHECK VALVE ASSEMBLY

January 15, 1999

Section 16.16



REF.

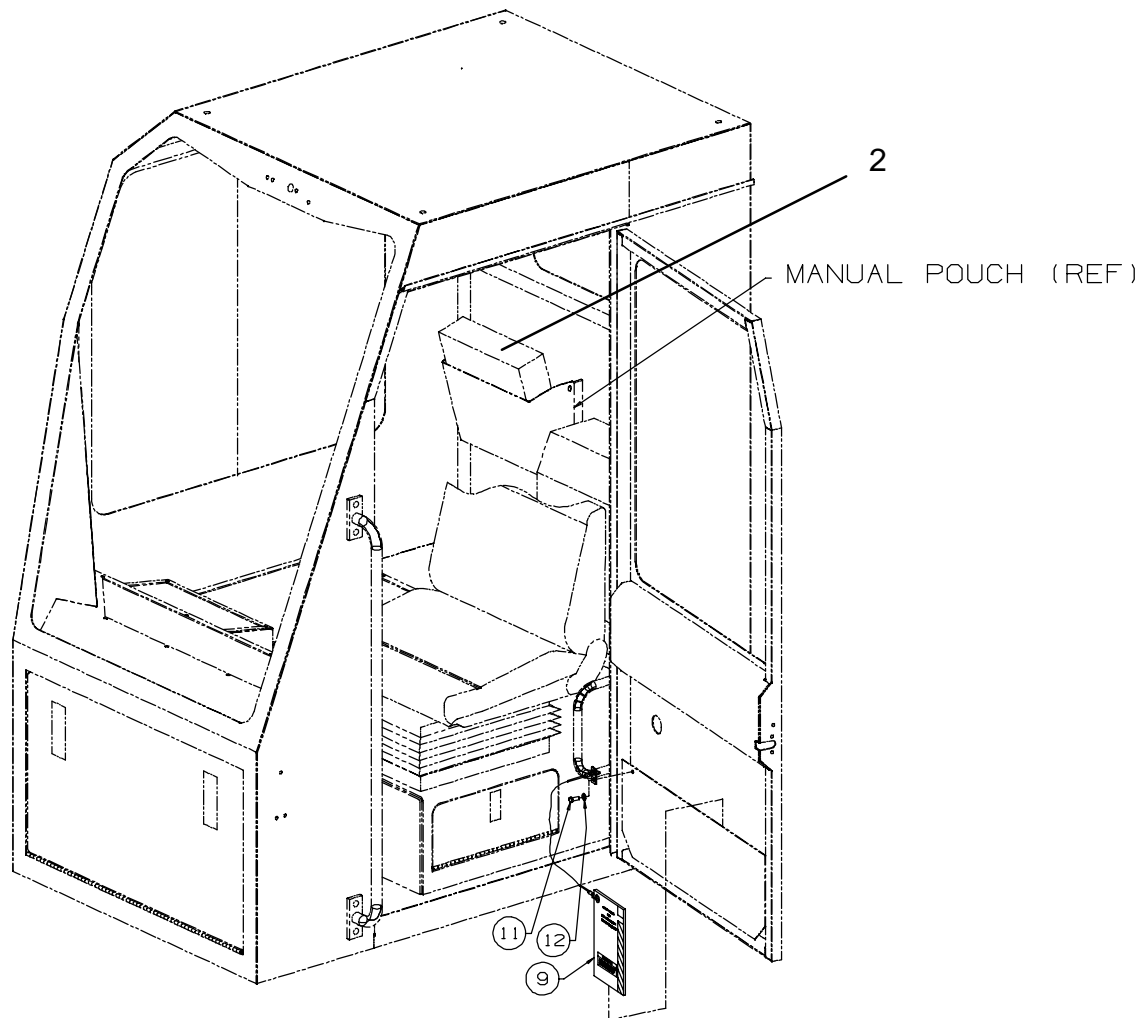
NO.	PART NO.	QTY.	PART NAME	REMARKS
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	51983443		CHECK VALVE ASSEMBLY	
1	50930452	1	VALVE, CHECK	
2	95329975	2	ELBOW	
3	95365078	1	ADAPTER	
4	95188710	1	TEE	
5	95326930	1	ELBOW	
6	92304609	2	WASHER, FLAT	
7	96714654	2	CAPSCREW	

POUCH & MANUALS ASSEMBLY

January 15, 1999

Section 16.17



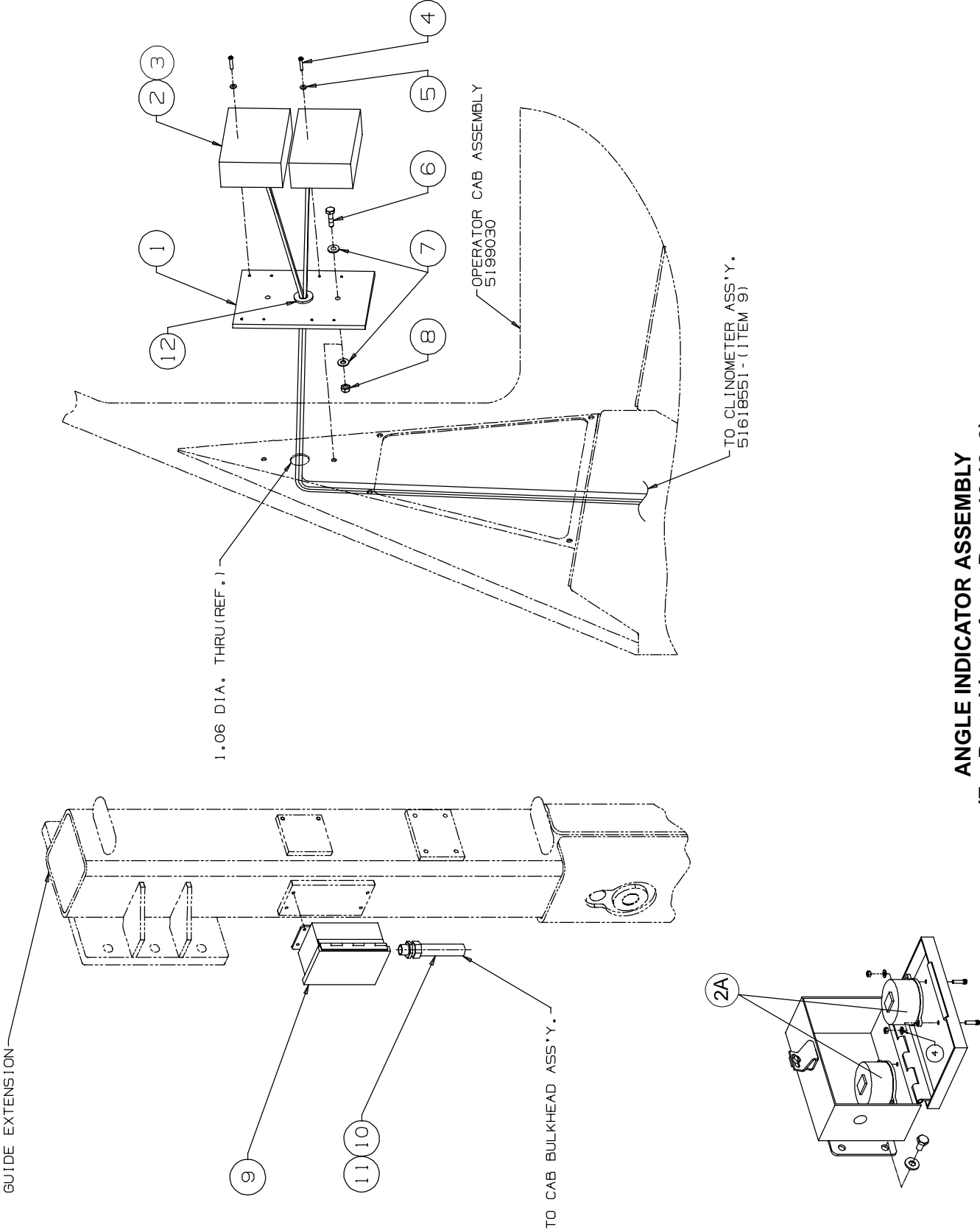
REF.	NO.	PART NO.	QTY.	PART NAME	REMARKS
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		51948578		POUCH AND MANUALS ASSEMBLY	
		50985043	2	BAG, PLASTIC	
2		52098654	1	CM695D/ENG TECHNICAL MANUALS	
		51856060	1	MANUAL, CIMA SAFETY/FORM RD-110	
		51946671	1	ENGINE LITERATURE GROUP	
9		51946663	1	SAFETY MANUAL AND CABLE ASSY	
		51945350	1	.MANUAL, SAFETY	
11		96703046	1	CAPSCREW	
12		96701289	1	WASHER	

ANGLE INDICATOR ASSEMBLY

January 15, 1999

Section 16.18



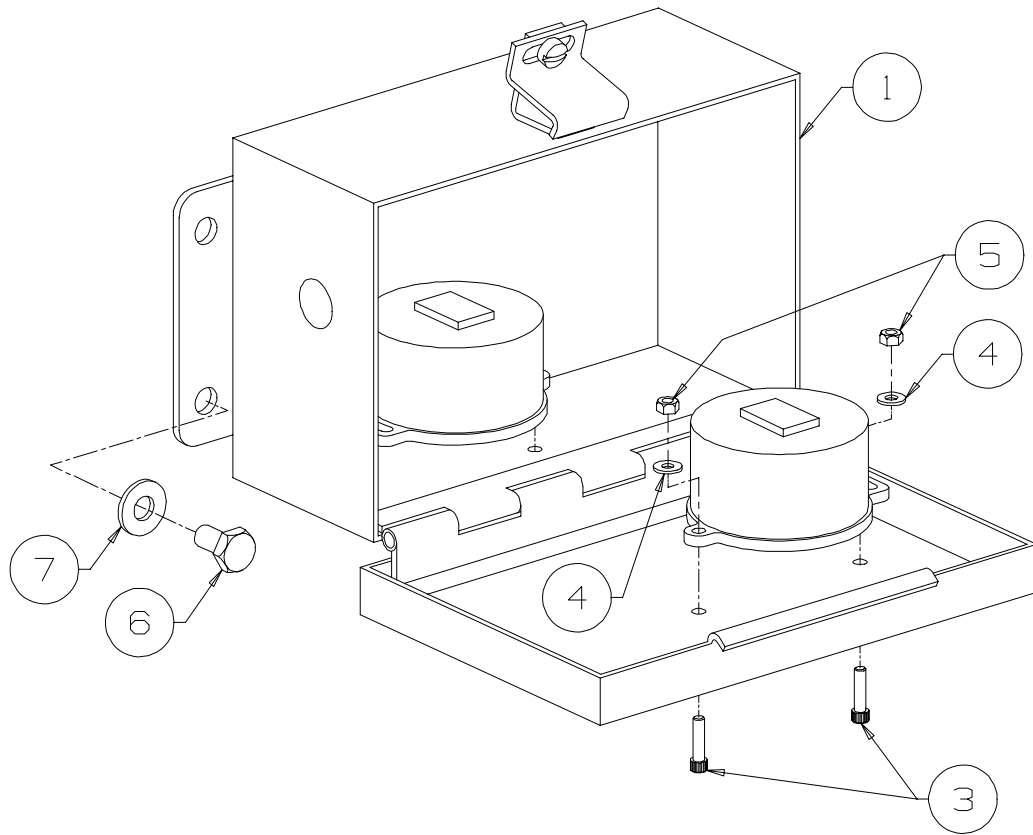
ANGLE INDICATOR ASSEMBLY
(For Parts List, refer to Page 16.18-2)

ANGLE INDICATOR ASSEMBLY
(For Illustration of parts, refer to Page 16.18-1)

REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>
			<i>REMARKS</i>

	51918001		ANGLE INDICATOR ASSEMBLY
1	51874212	1	PANEL, ANGLE INDICATOR
	52129145	2	KIT, ANGLE INDICATOR
2	51918019	1	.READOUT, ANGLE INDICATOR
2A	52126190	1	.CLINOMETER
3	52129400	1	.CABLE
<hr/>			
	52126208	1	.COUPLER, CABLE
4	95261731	8	SCREW, MACHINE
5	95326740	8	WASHER, FLAT
6	96714472	2	CAPSCREW
7	96701289	4	WASHER
<hr/>			
8	96702063	2	NUT, HEX
9	51618551	1	ASSEMBLY, CLINOMETER <i>REFER TO PAGE 16.18-3</i>
10	51720357	318	CONDUIT
11	95245072	3	CONNECTOR
12	52088002	1	GROMMET



REF.

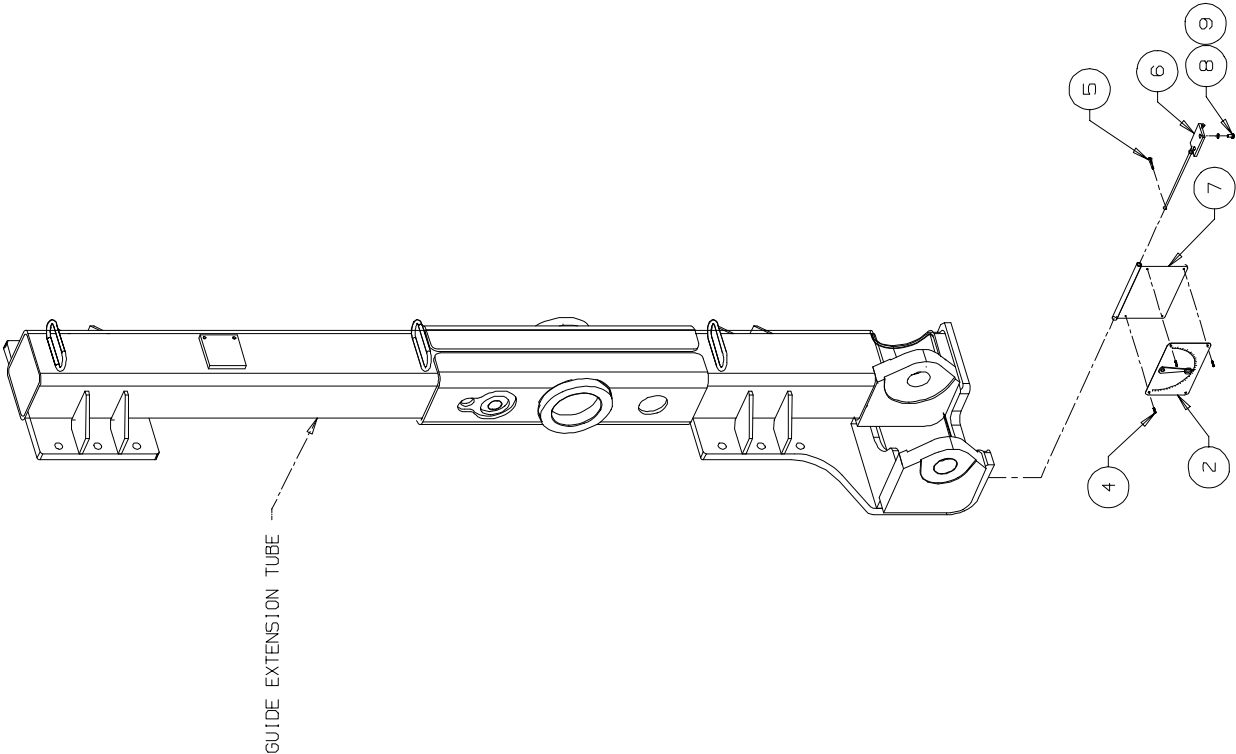
NO. PART NO. QTY. PART NAME
REMARKS

51618551		CLINOMETER ASSEMBLY	
1	51618528	1	ENCLOSURE
2	52126190	0	CLINOMETER (REFER TO PAGE 16.18-2)
3	96703319	4	CAPSCREW
4	96703327	4	LOCKWASHER
5	51165637	4	NUT
6	96714548	4	CAPSCREW
7	96701289	4	WASHER
8	52126208		COUPLER, CABLE

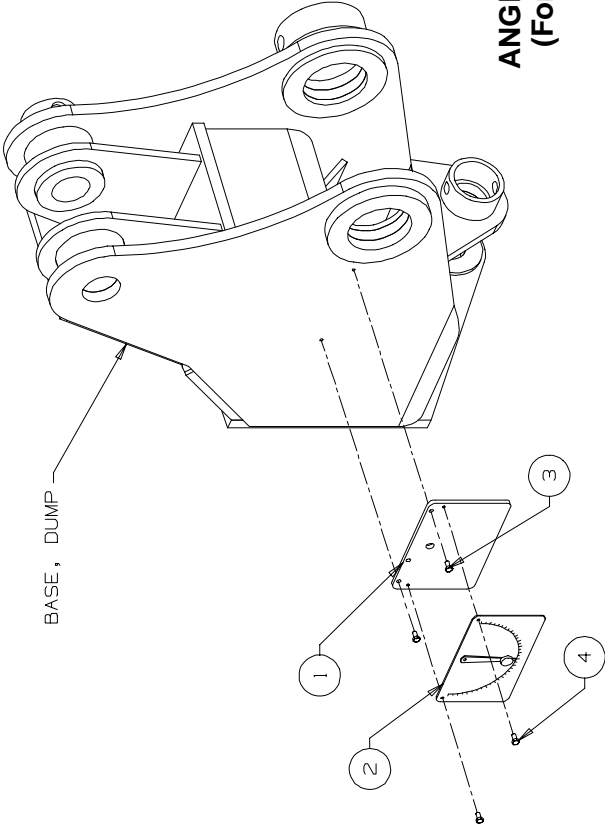
ANGLE INDICATOR ASSEMBLY

May 9, 2002

Section 16.18A



ANGLE INDICATOR ASSEMBLY
(For Parts List, refer to Page
16.18A-2)



ANGLE INDICATOR ASSEMBLY
(For Illustration of parts, refer to Page 16.18-1)

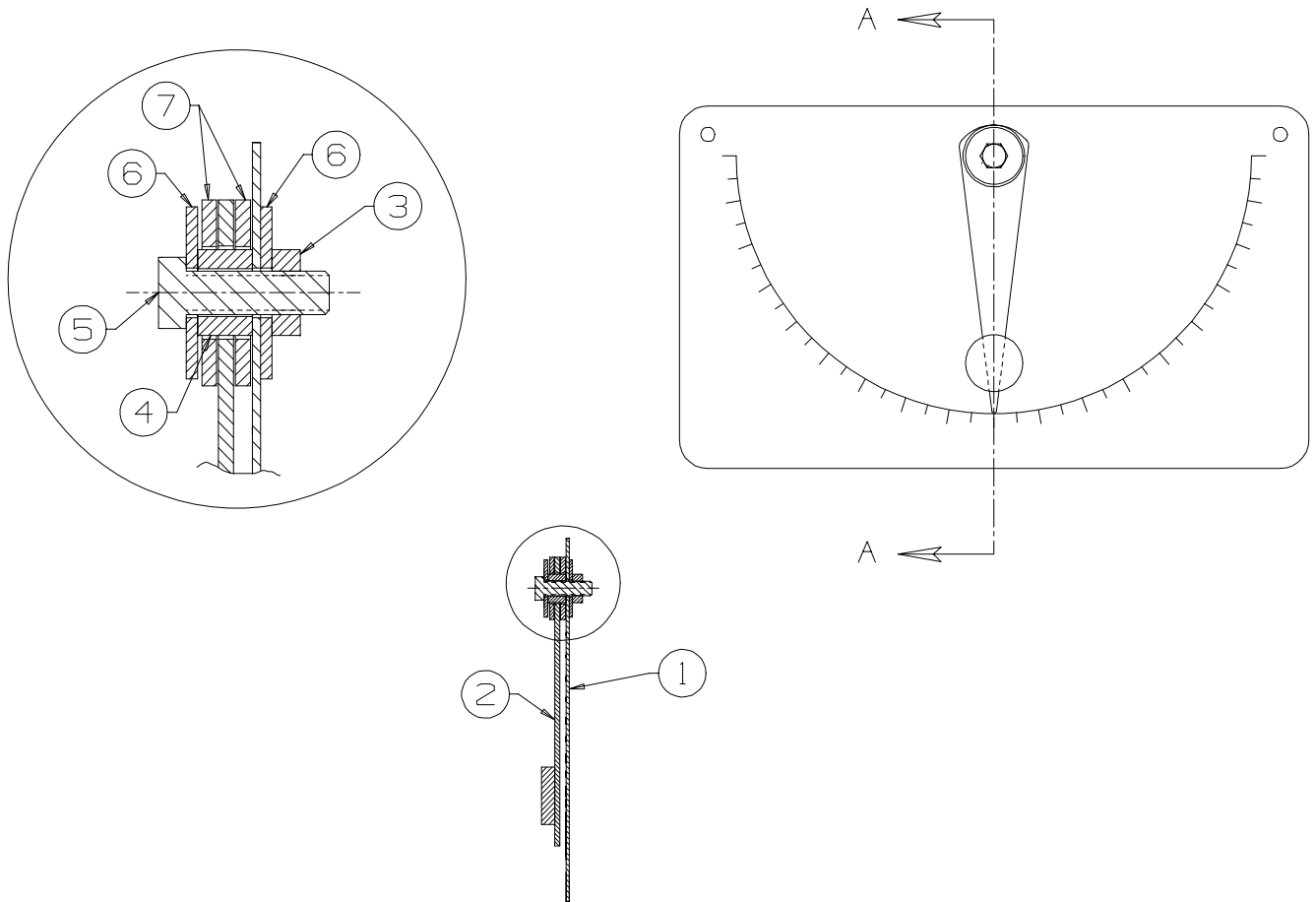
REF.

<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>REMARKS</i>
------------	-----------------	-------------	------------------	----------------

	57684854		ANGLE INDICATOR ASSEMBLY	
1	51609097	1	PANEL, ANGLE INDICATOR	
2	51611218	2	ASSY, GAUGE	
				<i>REFER TO PAGE 16.18A-3</i>
3	96703012	2	CAPSCREW	
4	96714480	8	CAPSCREW	
5	95201414	1	PIN, COTTER	

6	51610764	1	BRACKET, ANGLE PLATE	
7	51610772	1	PLATE	
8	96714605	2	SCREW	
9	96700828	2	WASHER	

ANGLE INDICATOR ASSEMBLY
(For Illustration of parts, refer to Page 16.18A-1)



<i>REF.</i>	<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>SECTION</i>	<i>PART NAME - A</i>	<i>REMARKS</i>
-------------	------------	-----------------	-------------	----------------	----------------------	----------------

51611218 GAUGE ASSEMBLY						
1	51611705	1	PLATE, GAUGE FACE			
2	51611713	1	POINTER, GAUGE			
3	96703756	1	NUT			
4	51713311	1	SPACER, GAUGE			
5	96703749	1	CAPSCREW			
6	51915668	2	WASHER			
7	96703772	2	WASHER			

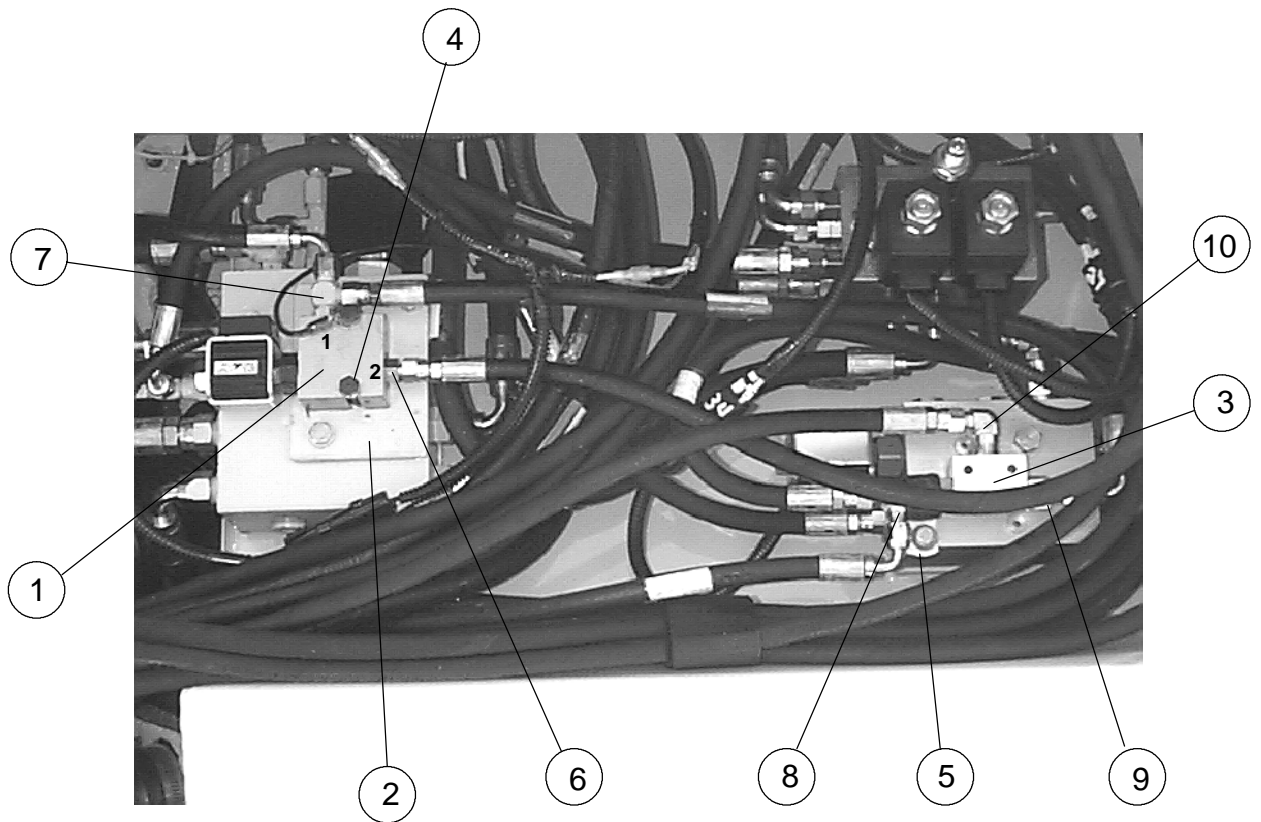
FAST FEED VALVE ASSEMBLY

March 26, 2000

Section 16.19



LOCATION



FAST FEED VALVE ASSEMBLY
(For Parts List, refer to Page 16.19-2)

FAST FEED VALVE ASSEMBLY
 (For Illustration of parts, refer to Page 16.19-1)

<i>REF.</i>				<i>SERIAL</i>
<i>NO.</i>	<i>PART NO.</i>	<i>QTY.</i>	<i>PART NAME</i>	<i>NO.</i>
			<i>REMARKS</i>	
52315926			FAST FEED VALVE ASSEMBLY	
1	51782688	1	VALVE, SOLENOID OPERATED, 2 WAY	
2	52310968	1	PLATE, VALVE MOUNTING	
3	50805100	1	VALVE, SHUTTLE	
4	96727623	2	CAPSCREW	
5	95654208	1	CLAMP, HOSE	
6	95365086	1	ADAPTER	
7	95147971	1	TEE	
8	95790622	1	TEE	
9	95263380	1	ADAPTER	
10	95293403	1	ELBOW	

MAINTENANCE, SPECIFICATIONS & SERVICE LIST

Revision 1

September 4, 1999

Section 17.0

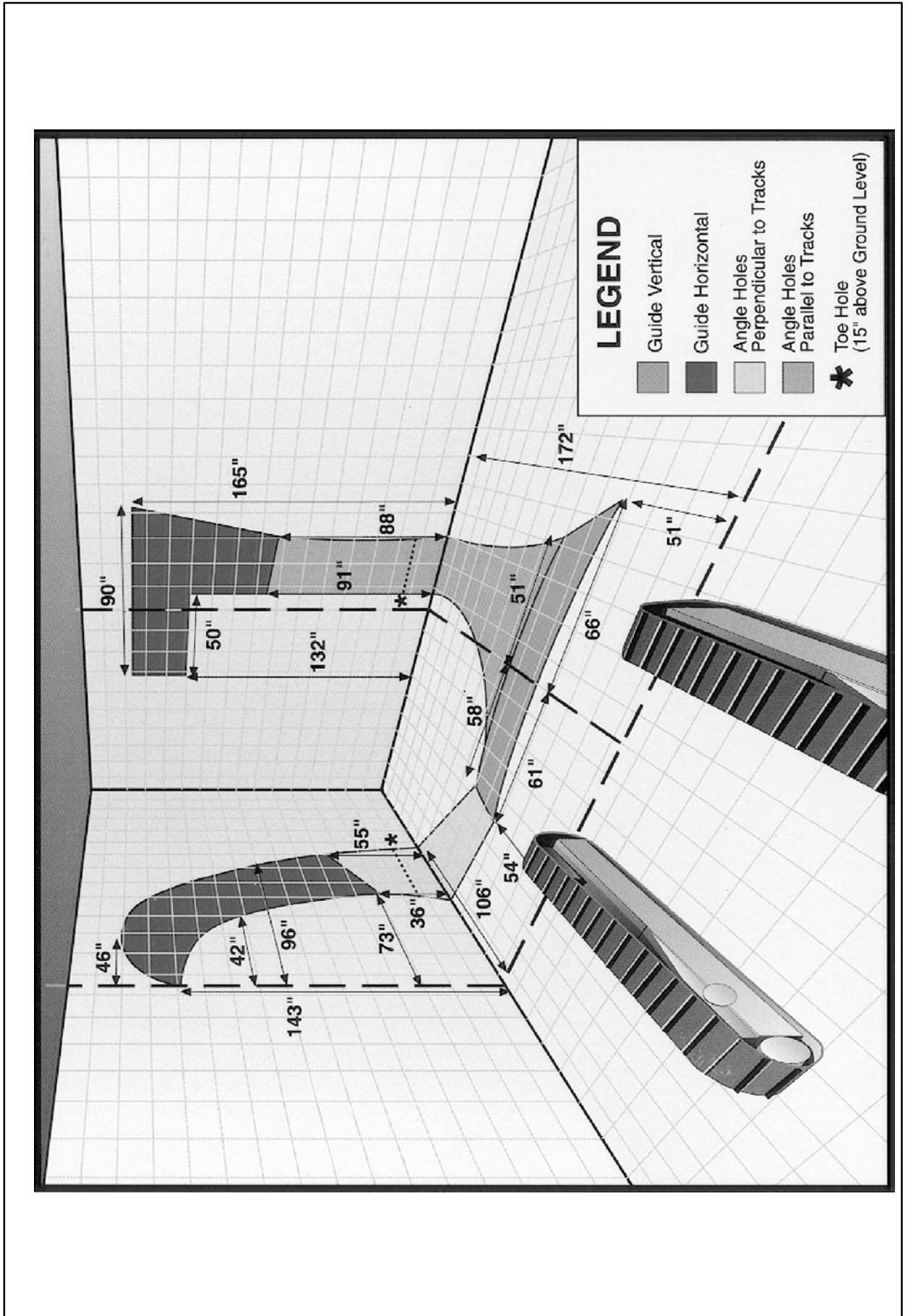
MACHINE SPECIFICATIONS

	US	METRIC
GENERAL SPECIFICATIONS:		
Weight (with all fluids filled, without drill pipe installed)	41,000 lbs.	18,636 kg
Overall Length - Trimming & Shipping	33.3 ft.	10 m
Overall Length - boom at 45° Guide Vertical	25.4 ft	7.7 m
Overall Height - boom at 45°		
Guide Vertical (with rotary head at bottom of drill guide)	21.6 ft	6.6 m
Guide Vertical (with rotary head at top of drill guide)	23 ft	7.1 m
Overall Width	8.2 ft	2.5 m
Track Oscillation	20°	20°
Gradeability	35°	35°
Ground Clearance	17 in.	432 mm
Trimming Speed	2 mph	3.2 km/hr
 BOOM AND GUIDE:		
Horizontal Boom Swing:		
Right	45°	45°
Left	20°	20°
Vertical Boom Lift		
Above Horizontal	50°	50°
Below Horizontal	20°	20°
Guide Swing Movement:		
Right	22°	22°
Left	90°	90°
Guide Dump Movement	110°	110°
Guide Extension	48 in.	1219 mm
Boom Length	120 in.	3.0 m
 ENGINE:		
Engine	Caterpillar 3306 DITA	
Rated Power (continuous)	310 bhp	231 kw
Operating Speed	2100 rpm	2100 rpm
Idle Speed	1200 rpm	1200 rpm
 COMPRESSOR:		
On Board Air Compressor	Ingersoll-Rand®	
Operating Air Pressure	290 psi	20 bar
Air Delivery Rate	600 scfm	17 m ³ /min
(Continued)		

MACHINE SPECIFICATIONS (cont.)

	US	METRIC
ROTARY HEAD: DDRH		
Weight	507 lb	230 kg
Rotation speed	0-175 rpm	
Max. Available Torque	3000 ft lbs @ 3600 psi	43782 Nm @ 250 bar
FLUID CAPACITIES:		
Fuel tank	155 gallons	587 liters
Hydraulic tank ♣	128 gallons	485 liters
Compressor	10 gallons	38 liters
Radiator (Engine & Radiator Total)	17 gallons	64 liters
Engine oil (with filter change)	29 quarts	28 liters
Vaposol® tank	40 gallons	151 liters
Final drive	1.8 - 2 quarts	1.9 liters
Lubricator	5 gallons	19 liters
Windshield wiper fluid reservoir	3 quarts	2.8 liters
<p>♣ The hydraulic tank volume does not include refilling the hydraulic lines on the machine.</p> <p>All the remainder of the capacities listed are for a complete refill.</p>		

DRILL COVERAGE PATTERN



FLUIDS AND LUBRICANTS

COMPRESSOR OIL (CO)

The compressor oil specified by I-R for use in all CM-695D high pressure air end applications is listed in Table 5. No substitute fluid shall be used. Refer to Table 5 for the proper compressor oil to be used during different weather conditions.

ENGINE OIL (EO)

Refer to the engine manual for the proper type of engine oil to use. Refer to Table 1 for the proper engine oil to be used during different weather conditions.

HYDRAULIC OIL (HO)

The hydraulic oil used in the machine must be a premium high viscosity index hydraulic oil with rust and oxidation, and anti-foam additives. It must be also extremely shear stable. Refer to Table 4 for the proper hydraulic oil to be used during different weather conditions.

ROCK DRILL OIL (RDO)

The rock drill oil used in the machine must be a well refined petroleum lubricating oil. It must be suitably compounded to provide the specified consistency and film strength and be further compounded to provide steam emulsion number. The latter is to provide a satisfactory lubricant for such drills where water or wet air is encountered. The rock drill oil must be substantially noncorrosive to steel, bronze, and contain little or no sulphur. It must also have a high viscosity index, and must conform to the physical and chemical properties located in Table 7. Refer to Table 8 for the proper rock drill oil to be used during different weather conditions.

FINAL DRIVE OIL (FDO)

The gear oil used in the machine must meet API classification GL-5 and MIL-21205C. Refer to Table 6 for the proper final drive oil to be used during different weather conditions.

DRILL STEEL LUBRICANT (DSL)

The drill steel lubricant used must be lead free and pumpable.

(cont.)

FLUIDS AND LUBRICANTS (cont.)

VAPOSOL® SOLUTION. (VS)

This VAPOSOL® solution is a commercial detergent mixed with water. Several commercial detergent agents are available for use with the VAPOSOL® Dust Control System. The following agent and mixture is recommended: Agent: Surfax 5107

Mixture: 1 gallon (3.79 liters) of detergent plus 9 gallons (34.1 liters) of water equals 10 gallons (37.9 L) of concentrated solution.

NOTICE

10 gallons (37.9 liters) of concentrated solution equals 320 cups.

1 cup of concentrated solution treats 20 gallons (75.7 liters) of fresh water.

The final solution is; 2 cups of concentrated solution for every 40 gallons (151.4 liters) of fresh water.

GREASE (GR)

The recommended grease for all pressure gun grease fittings should be premium lithium or lithium complex grease with extreme pressure additives. It must have excellent water resistance and rust preventive properties. Refer to Table 3 for the proper grease to be used during different weather conditions.

FLUID SPECIFICATIONS (cont.)

Table 1. Engine Oil Viscosity Recommendations

(EO) ENGINE OIL VISCOSITY RECOMMENDATIONS (API CLASS CE)											
ALL SEASONS											
		20W-40, 20W-50									
		15W-40									
WINTER CONDITIONS											
		10W-30									
ARCTIC CONDITIONS											
		5W-20 OR 5W-30									
		SYNTHETIC									
TEMP °C		-40	-30	-20	-10	0	10	20	30	40	50
RANGE °F		-40	-22	-4	14	32	50	68	86	104	122

Table 2. Antifreeze Recommendations

(AF) ANTI-FREEZE RECOMMENDATIONS											
ALL SEASONS											
		50% MIX OF ANTIFREEZE AND WATER									
ARCTIC CONDITIONS											
		SEE NOTE									
TEMP °C		-40	-30	-20	-10	0	10	20	30	40	50
RANGE °F		-40	-22	-4	14	32	50	68	86	104	122
NOTE: FOR USE IN THIS ENVIRONMENT, FOLLOW THE ANTIFREEZE MANUFACTURER'S RECOMMENDATIONS.											

Table 3. Grease Recommendations

(GR) GREASE RECOMMENDATIONS											
ALL SEASONS											
		NGLI GRADE 2									
WINTER CONDITIONS											
		NGLI GRADE 1									
ARCTIC CONDITIONS											
		NGLI GRADE 2									
		SYNTHETIC									
TEMP °C		-40	-30	-20	-10	0	10	20	30	40	50
RANGE °F		-40	-22	-4	14	32	50	68	86	104	122
NOTE: ALL GREASES MUST BE LITHIUM EXTREME PRESSURE GREASE.											

FLUID SPECIFICATIONS (cont.)

Table 4. Hydraulic Oil Viscosity Recommendations

(HO) HYDRAULIC OIL VISCOSITY RECOMMENDATIONS											
DESERT CONDITIONS											MOBIL DTE16M
ALL SEASONS											IR #51713170/51713188
WINTER CONDITIONS											MOBIL DTE13M
ARCTIC CONDITIONS											MOBIL SHC524 SYNTHETIC
TEMP	°C	-40	-30	-20	-10	0	10	20	30	40	50
RANGE	°F	-40	-22	-4	14	32	50	68	86	104	122

Table 5. Compressor Oil Viscosity Recommendations

(CO) COMPRESSOR OIL VISCOSITY RECOMMENDATIONS											
ALL SEASONS											INGERSOLL-RAND XHP 505 5 GAL: 54418835 55 GAL: 54418843
ARCTIC CONDITIONS											INGERSOLL-RAND PERFORMANCE 500 (SYNTHETIC ATF) 5 GAL: 35382936 55 GAL: 35382944
TEMP	°C	-40	-30	-20	-10	0	10	20	30	40	50
RANGE	°F	-40	-22	-4	14	32	50	68	86	104	122

Table 6. Final Drive Oil Viscosity Recommendations

(FDO) FINAL DRIVE OIL VISCOSITY RECOMMENDATIONS											
ALL SEASONS											SAE 80W-90 FOR API SERVICE GL5
ARCTIC CONDITIONS											SAE 75W-90 SYNTHETIC
TEMP	°C	-40	-30	-20	-10	0	10	20	30	40	50
RANGE	°F	-40	-22	-4	14	32	50	68	86	104	122

FLUID SPECIFICATIONS (cont.)

Table 7. Rock Drill Oil Viscosity Recommendations



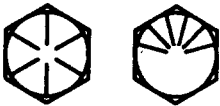





(RDO) ROCK DRILL OIL VISCOSITY RECOMMENDATIONS											
DESERT CONDITIONS											HEAVY
ALL SEASONS						MEDIUM					
WINTER CONDITIONS			LIGHT								
ARCTIC CONDITIONS	SYNTHETIC										
TEMP RANGE	°C	-40	-30	-20	-10	0	10	20	30	40	50
	°F	-40	-22	-4	14	32	50	68	86	104	122

Table 8. Rock Drill Oil Specifications

Characteristic	Test Procedure	Below 20°F (-7°C)	20°F to 90°F (-7°C to 32°C)	Above 90°F (32°C)
Viscosity:				
SUS at 100°F (38°C)	ASTM-D2161	175 min.	450 min.	750 min.
SUS at 210°F (99°C)	ASTM-D2161	46 min.	65 min.	85 min.
cST at 104°F (40°C)	ASTM-D445	37 min.	105 min.	160 min.
cST at 212°F (100°C)	ASTM-D445	6 min.	11 min.	16 min.
Pour Point, °F (°C) max.	ASTM-D97	-10°F (-23°C)	-10°F (-23°C)	0°F (-18°C)
Flash Point, °F (°C) min.	ASTM-D92	370°F (188°C)	400°F (204°C)	450°F (232°C)
Viscosity Index, min.	ASTM-D2270	90	90	90
Steam Emulsion No. min.	ASTM-1935-65	1200	1200	1200
Consistency	Stringy	Stringy	Stringy
Falex Load Test lbs (kg) [min]	ASTM-D2670	2000 lbs (907 kg)	2000 lbs (907 kg)	2000 lbs (907 kg)
Timken E.P. Test lbs (kg) [min]	ASTM-D2782	30 lbs (14 kg)	30 lbs (14 kg)	30 lbs (14 kg)

TORQUE SPECIFICATIONS

TABLE 9. SAE BOLT TORQUE SPECIFICATIONS

SAE Grade and Head Markings	NO MARK 1 or 2 	5 5.1 5.2 	8 8.2 	
SAE Grade and Nut Markings	NO MARK 2 	5  	8  	
	Grade 1	Grade 2	Grade 5, 5.1, or 5.2	Grade 8 or 8.2
	Lubricated^a	Lubricated^a	Lubricated^a	Lubricated^a
Size	Nm lb-ft	Nm lb-ft	Nm lb-ft	Nm lb-ft
1/4	3.7 2.8	6 4.5	9.5 7	13.5 10
5/16	7.7 5.5	12 9	20 15	28 21
3/8	14 10	22 16	35 26	50 36
7/16	22 16	35 26	55 41	80 58
1/2	33 25	53 39	85 63	120 90
9/16	48 36	75 56	125 90	175 130
5/8	67 50	105 78	170 125	215 160
3/4	120 87	190 140	300 225	425 310
7/8	190 140	190 140	490 360	700 500
1	290 210	290 210	725 540	1050 750
1-1/8	470 300	470 300	900 675	1450 1075
1-1/4	570 425	570 425	1300 950	2050 1500
1-3/8	750 550	750 550	1700 1250	2700 2000
1-1/2	1000 725	990 725	2250 1650	3600 2650

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only.

Fasteners are selected based on load carrying requirements (Always replace fasteners with identical grade as specified.)

^a "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings.

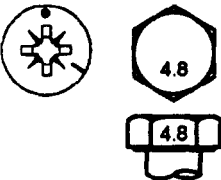

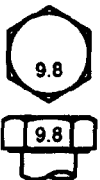
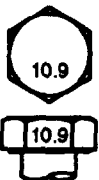
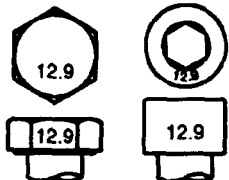
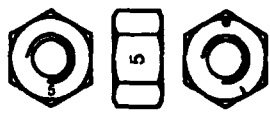
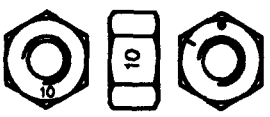
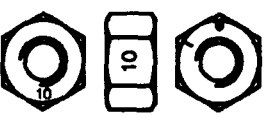
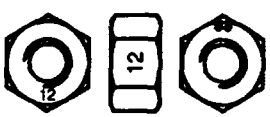
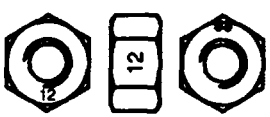
Fasteners should be replaced with the same or higher grade. (If higher grade fasteners are used, these should only be tightened to the strength of the original.)

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten toothed or serrated-type lock nuts to the full torque value.

TORQUE SPECIFICATIONS (cont.)

TABLE 10. METRIC BOLT TORQUE SPECIFICATIONS

Property class and Head Markings	4.8		8.8		9.8		10.9		12.9	
										
Property class and Nut Markings	5		10		10		10		12	
										
	Class 4.8		Class 8.8 or 9.8		Class 10.9		Class 12.9			
Size	Lubricated ^a		Lubricated ^a		Lubricated ^a		Lubricated ^a			
	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft
M6	4.8	3.5	9	6.5	13	9.5	15	11.5		
M8	12	8.5	22	16	32	24	37	28		
M10	23	17	43	32	63	47	75	55		
M12	40	29	75	55	110	80	130	95		
M14	63	47	120	88	175	130	205	150		
M16	100	73	190	140	275	200	320	240		
M18	135	100	260	195	375	275	440	325		
M20	190	140	375	275	530	400	625	460		
M22	260	190	510	375	725	540	850	625		
M24	330	250	650	475	925	675	1075	800		
M27	490	360	950	700	1350	1000	1600	1150		
M30	675	490	1300	950	1850	1350	2150	1600		
M33	900	675	1750	1300	2500	1850	2900	2150		
M36	1150	850	2250	1650	3200	2350	3750	2750		

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only.

Fasteners are selected based on load carrying requirements (Always replace fasteners with identical grade as specified.)

^a "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings.

Fasteners should be replaced with the same or higher grade. (If higher grade fasteners are used, these should only be tightened to the strength of the original.)

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten toothed or serrated-type lock nuts to the full torque value.

TORQUE SPECIFICATIONS (cont.)

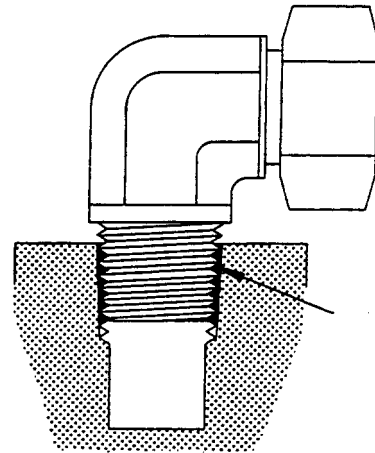
TABLE 11. HYDRAULIC FITTINGS TORQUE SPECIFICATIONS

PIPE THREAD FITTINGS

Make sure the threads and sealing surfaces are free from nicks, burrs, dirt, etc.

Tighten the fitting approximately 3 turns past finger tight.

Using a thread sealant such as Loctite Vibraseal™ is recommended over pipe dope or teflon tape. Teflon tape can plug filters, drain orifices, etc. and can cause hydraulic system failure



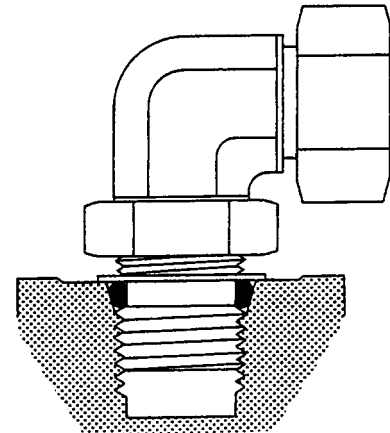
O-RING FITTINGS

Make sure the threads and sealing surfaces are free from nicks, burrs, dirt, etc.

Lubricate the o-ring with a light coat of hydraulic oil.

Adjustable o-ring fittings:
Hold fitting, and tighten nut.

Non-adjustable o-ring fittings:
Tighten fitting.



SIZE	THREAD	TORQUE
2	5/16"-24	7 - 8 foot pounds (10 - 11 Nm)
3	3/8"-24	14 - 16 foot pounds (19 - 21 Nm)
4	7/16"-20	16 - 18 foot pounds (21 - 24 Nm)
5	1/2"-20	22 - 24 foot pounds (29 - 32 Nm)
6	9/16"-18	24 - 26 foot pounds (33 - 35 Nm)
8	3/4"-16	40 - 43 foot pounds (54 - 59 Nm)
10	7/8"-14	68 - 70 foot pounds (92 - 95 Nm)
12	1 1/16"-12	98 - 102 foot pounds (133 - 138 Nm)
16	1 5/16"-12	146 - 154 foot pounds (198- 209 Nm)

TORQUE SPECIFICATIONS (cont.)

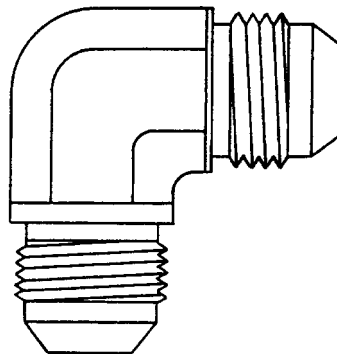
TABLE 11. HYDRAULIC FITTINGS TORQUE SPECIFICATIONS (CONT.)

JIC FITTINGS

Make sure the threads and sealing surfaces are free from nicks, burrs, dirt, etc.

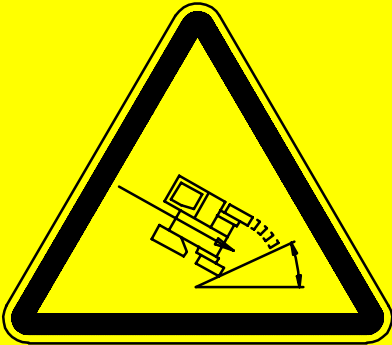




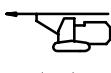

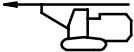
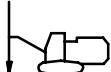






Tighten the fitting finger tight. Then tighten the fitting an additional number of flats as the chart indicates. One flat equals 1/6 of a turn.

Overtightening the fitting may deform or break the female side of the fitting, restricting oil flow or causing a leak.



Flats from Finger Tight		
SIZE	NEW FITTINGS	LOOSE FITTINGS
4 (1/4")	2 - 2 1/2	3/4 - 1
6 (3/8")	2 - 2 1/4	1
8 (1/2")	1 1/2 - 1 3/4	1
10 (5/8")	1 1/2 - 1 3/4	3/4
12 (3/4")	1 1/2	3/4
14 (7/8")	2	1 1/4
16 (1")	1 1/4 - 1 1/2	3/4 - 1
20 (1 1/4")	1 1/2	3/4 - 1
24 (1 1/2")	1 1/4 - 1 1/2	1 - 1 1/4
32 (2")	1 1/4	3/4 - 1

GRADEABILITY

					
CM695D					
 		25°	23°	22°	26°
		27°	17°	23°	22°
 		31°	23°	21°	34°
		31°	23°	32°	23°
		24°	28°	11°	38°
		20°	26°	31°	16°

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NOISE AND VIBRATION

NOISE: Tests conducted in accordance with ISO 4872.

OPERATOR'S POSITION

LEFT EAR = 79 db(A)
RIGHT EAR = 79 db(A)

<u>LOCATION</u>	<u>db(A)</u>
1	86.6
2	84.6
3	84.9
4	87.9
5	89.2
6	90.0
7	87.5
8	86.4
10	86.0
12	88.9

NOTE: LOCATION VALUES CORRESPOND TO MICROPHONE POSITIONS PER ISO4872-7.2.3, ALTERNATIVE B.

SURFACE SOUND PRESSURE LEVEL = 87.2 db(A).

CALCULATED "A" WEIGHTED SOUND POWER = 119.2 db(A).

VIBRATION: Tests conducted in accordance with ISO2631.

THE FOLLOWING IS THE GEOMETRIC SUM OF THE WEIGHTED OVERALL VALUES OF VIBRATION RECORDED FOR THE THREE AXIS OF THE BASICENTRIC COORDINATE SYSTEM.

X = 105.7 dB	0.1927 m/s ²
Y = 105.0 dB	0.1778 m/s ²
Z = 104.7 dB	0.1718 m/s ²
VIBRATION VECTOR SUM	0.4053 m/s ²