

Model CAS4110HT Hydraulic Driven Topdeck Compressor



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MANUAL PART NUMBER 99900784

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

PRECAUTIONS

Read before operating your compressor!

 <p>71393886</p>	<div style="background-color: red; color: white; padding: 5px; text-align: center;">  DANGER </div> <p>EXPLODING TANK WILL CAUSE DEATH, SERIOUS INJURY OR PROPERTY DAMAGE</p> <ul style="list-style-type: none"> ● Drain air tank after each use to prevent moisture build-up and corrosion which leads to tank failure. ● Assure that tank and compressor relief valves work properly, and are at correct pressure settings. ● DO NOT modify or repair air tank. ● NEVER drive vehicle with pressure in air tank.
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Failure to follow operating and maintenance procedures as outlined in this manual could result in equipment damage, personal injury or death. Follow all maintenance procedures and intervals.



Do not use air from this compressor for breathing or food processing. Air from this compressor will cause severe injury or death if used for breathing or food processing.



Maintenance must be performed only by trained and qualified personnel, using correct tools, specified torques and approved replacement parts.



Hot oil under pressure can cause severe injury or death. Shut down, let cool and relieve pressure in compressor before servicing.



All electrical components and cable wiring must be installed and grounded in accordance with NFPA, national electrical codes and applicable state and local codes.



Do not overfill the compressor with oil. Use correct quantity of manufacturer's lubricant. Repair leaks and clean spills immediately.



Before removing guards or servicing the compressor, disconnect all power supplies. Display warning signs and lock out electrical circuits.



Compressors generate high temperatures. Do not touch or otherwise come in contact with hot surfaces. Doing so can cause severe personal injury.



All guards must be in position and secure before and during operation.

TABLE OF CONTENTS

PARA	TITLE	PAGE
Section 1. GENERAL INFORMATION		
1-1.	INTRODUCTION	1-1
1-2.	COMPRESSOR SPECIFICATIONS	1-1
1-3.	ORDERING INFORMATION	1-1
Section 2. INSTALLATION		
2-1.	GENERAL	2-1
2-2.	PTO AND PUMP INSTALLATION	2-1
2-2-1.	PTO INSTALLATION	2-1
2-2-2.	DRIVELINE AND PUMP INSTALLATION	2-2
2-3.	TOPDECK COMPRESSOR INSTALLATION	2-3
2-4.	OIL COOLER (OPTIONAL)	2-3
Section 3. OPERATION		
3-1.	INTRODUCTION	3-1
3-2.	OPERATION	3-1
3-3.	SYSTEM SHUTDOWN	3-1
Section 4. PREVENTIVE MAINTENANCE		
4-1.	INTRODUCTION	4-1
4-2.	LUBRICATION	4-1
4-3.	HYDRAULIC SYSTEM	4-1
4-3-1.	HYDRAULIC FLUID SELECTION	4-1
4-3-2.	HYDRAULIC FLUID SPECIFICATIONS	4-1
4-3-3.	HYDRAULIC FLUID DETERIORATION	4-1
4-3-4.	HYDRAULIC SYSTEM PURGING	4-2
4-3-5.	FILTER ELEMENT REPLACEMENT	4-2
4-4.	PREVENTIVE MAINTENANCE CHECKLIST	4-3
Section 5. REPAIR		
5-1.	INTRODUCTION	5-1
5-2.	HYDRAULIC SYSTEM COMPONENTS	5-1
5-3.	DRIVE BELT	5-1
Section 6. PARTS		
6-1.	GENERAL	6-1
Section 7. REFERENCE		

LIST OF ILLUSTRATIONS

FIG	TITLE	PAGE
B-1.	PTO INSTALLATION	2-2
B-2.	DRIVELINE AND PUMP INSTALLATION	2-2
B-3.	MOUNTING HARDWARE	2-3
B-4.	MOUNTING HOLE PATTERN	2-4
B-5.	KILL SWITCH WIRING DIAGRAM	2-4
B-6.	OIL COOLER - GENERAL HYDRAULICS DIAGRAM	2-4
D-1.	HYDRAULIC FLUID SPECIFICATIONS	4-1
D-2.	PREVENTIVE MAINTENANCE CHECKLIST	4-3
E-1.	DRIVE BELT ADJUSTMENT	5-1
E-2.	HYDRAULIC SYSTEM TROUBLESHOOTING CHART	5-2
F-1.	CAS4110HT HYDRAULIC TOPDECK COMPRESSOR (23000142)	6-1
F-2.	CAS4110HT PLUMBING HOLE LAYOUT (99904407)	6-2
G-1.	TORQUE DATA CHART	7-1
G-2.	TIRE LOAD AND INFLATION PRESSURES	7-2

RECOMMENDED SPARE PARTS LIST

1 Year Supply

CAS4110HT HYDRAULIC DRIVEN TOPDECK COMPRESSOR

For Manual: 99900784

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

ASSEMBLY DESIGNATION	ITEM NO.	PART NO.	DESCRIPTION	QTY	CODE	SHELF LIFE (MO)	ORDER QTY
23000142.01.19970922			HYDRAULIC TOPDECK COMPRESSOR				
	10	70029548	VALVE BLOCK	1	W		
	11	89086120	OIL-30W NON-DETERGENT	1	P		
	13	70058048	BELT-POWER V	1	C		
	17	77041008	PRESSURE SWITCH	1	C		
	35	70048069	AIR FILTER	1	P		
	41	73054031	UNLOADER VALVE 155-175PSI	1	C		
	REF	70029548	MOTOR PART	1	C		
	REF	77041495	COIL	1	C		
	REF	73054962	CARTRIDGE & COIL	1	C		
	REF	73054740	RELIEF VALVE	1	C		
COMPRESSOR (R70)-70073084							
	REF	73054339	SAFETY VALVE	1	W		
	REF	70073722	LP INTAKE VALVE	1	W		
	REF	70141696	HP INTAKE VALVE	1	W		
	REF	70073721	LP EXHAUST VALVE	1	W		
	REF	70073429	HP EXHAUST VALVE	1	W		
	REF	70048009	AIR FILTER	1	P		
	REF	76391359	SEAL	1	W		

SECTION 1. GENERAL INFORMATION

1-1. INTRODUCTION

This manual provides information on the installation, operation and repair of the IMT CAS4110HT Hydraulic Top Deck Compressor.

Three means are used throughout this manual to gain the attention of operating and service personnel. They are NOTES, CAUTIONS and WARNINGS and are defined as follows:

NOTE

A NOTE IS USED TO EITHER CONVEY ADDITIONAL INFORMATION OR TO PROVIDE FURTHER EMPHASIS FOR A PREVIOUS POINT.

CAUTION

A CAUTION IS USED WHEN THERE IS THE STRONG POSSIBILITY OF DAMAGE TO THE EQUIPMENT OR PREMATURE EQUIPMENT FAILURE.

WARNING

A WARNING IS USED WHEN THERE IS THE POTENTIAL FOR PERSONAL INJURY OR DEATH.

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

1-2. COMPRESSOR SPECIFICATIONS

CAS44110HT

Delivery at 175 psi	104 cfm (2945 lpm)
Fluid capacity	59 gal (223 l)
Filter-Hydraulic Suction	100 mesh
Filter-Hydraulic Return	10 microns
Pressure Switch	175 psi off / 150 psi on (12 psi off/ 10 psi on)
Comp. Pulley RPM	900 rpm (800 - 1000)
Normal Op. Pressure	1850 psi (130 bar)
Maximum Pressure	2400 psi (165 bar)
GPM	28 gpm (106 lpm)
Motor Pulley Dia.	10.75" (27 cm)
Compressor Pulley Dia.	22.19" (56 cm)

1-3. ORDERING INFORMATION

When placing orders or requesting assistance, refer to the information below:

TO BE COMPLETED BY DEALER	
CHASSIS INFORMATION	
TRANSMISSION MAKE:	MODEL:
PTO NUMBER:	PTO %:
COMPRESSOR AND HYDRAULIC PUMP INFORMATION	
COMPRESSOR MODEL:	SERIAL NUMBER:
PUMP MAKE:	MODEL:
RESERVOIR CAPACITY:	ENGINE RPM:

CAS4110HT: 9990078419941223

1-2
NOTES

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SECTION 2. INSTALLATION

2-1. GENERAL

This section deals with the installation of the PTO and pump and the IMT hydraulic compressor. The instructions are intended as a guide to assist you with your particular installation. We can not cover every make, model and year of truck manufactured world-wide, so these instructions will provide only general information. Use this section as a guide only.

2-2. PTO AND PUMP INSTALLATION

The pump may either be installed directly on the PTO or, as an optional method, it may be driven by a driveline.

2-2-1. PTO INSTALLATION

Power take-off manufacturers provide specific installation instructions for their products. Those instructions should be followed when installing a PTO. Some trucks may require modification of the transmission cross-member to provide clearance and the exhaust pipe may need modification. Check with the PTO manufacturer's representative for specific instructions regarding your particular make, model and year of vehicle. The following instructions are a guide in this application.

1. If the vehicle is new, drain the transmission oil into a clean container for reuse. If the vehicle is used, drain and dispose of the transmission oil.
2. Temporarily install the PTO with the proper gaskets and only two studs. Snug the PTO down and check the backlash for maximum allowance of 1/32" to 1/16". If the backlash is excessive, remove gaskets and check backlash again until it is corrected.
3. Remove the PTO and apply Permatex® to the gaskets. If the holes for the studs are tapped through the transmission housing, apply Permatex to the studs and tighten them down. Make certain that the studs do not interfere with the transmission gears.

CAUTION

AVOID CONTACT OF PERMATEX WITH AUTOMATIC TRANSMISSION FLUID.

4. Install the PTO and gaskets. Torque the nuts to 30 - 35 ft-lbs (4.14 - 4.84 kg-m) for a 6-bolt PTO and 45 - 50 ft-lbs (6.22 - 6.91 kg-m) for 8-bolt PTO's. Recheck the backlash.

5. Install the shifter cable to suit conditions. Always allow for a slight overshift on lever or knob to ensure the PTO is fully disengaged.

CAUTION

IT IS IMPORTANT THAT ROOM BE ALLOWED FOR FULL ENGAGEMENT OF THE PTO. MODIFY THE EXHAUST OR OTHER OBSTRUCTIONS AS NEEDED.

CAUTION

AVOID SHARP BENDS IN THE SHIFTER CABLE. ALL BENDS SHOULD HAVE AT LEAST A 6" RADIUS. TIGHTER BENDS WILL CAUSE DIFFICULT OPERATION OF THE SHIFTER KNOB.

6. Replace the transmission oil. If the PTO is located below the transmission oil level, an additional quantity of oil will be required.
7. Start the engine, engage the PTO and allow it to run for 5-10 minutes. Check for leaks, unusual noise and proper operation.
8. Retorque the mounting bolts.

2-2-2. DRIVELINE AND PUMP INSTALLATION

The pump may be driven as shown in Figure B-2 as an optional method to the one shown in Figure B-1. The following steps are a guide in this application.

1. Install the PTO (refer to Paragraph 2-2-1).
2. Loosely bolt the pump mounting bracket (A) to the adjustable bracket (B).
3. Bolt the adjustable bracket to the frame at a point that will not exceed 48" (122 cm) from the PTO and will not cause a joint angle greater than 8°.
4. Check pump rotation and install pump, pump end yoke and PTO end yoke.
5. Size, cut and weld the driveline to the necessary length. Ensure driveline balance. Allow 1" (2.54 cm) extra for PTO end yoke.
6. Install driveline, lock set screws and lubricate U-joints.
7. Ensure all mounting bolts are tight.

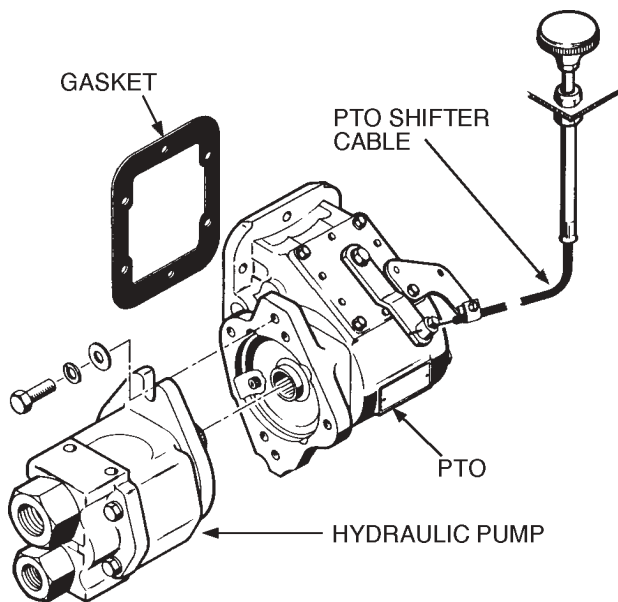


FIGURE B-1. PTO INSTALLATION

WARNING

THE INSTALLER OF THE DRIVELINE MUST INSPECT THE FINAL POSITION OF THE DRIVELINE TO DETERMINE WHETHER ITS LOCATION PROVIDES SUFFICIENT PROTECTION TO AN OPERATOR, OR OTHER PERSONNEL, FROM HAZARDS ASSOCIATED WITH A ROTATING DRIVELINE. IF PROTECTION IS INSUFFICIENT, THE INSTALLATION OF A GUARD IS REQUIRED. IF YOU ARE UNSURE OF METHODS TO GUARD A ROTATING DRIVELINE, CALL IOWA MOLD TOOLING CO., INC. FOR INSTRUCTIONS. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURY OR DEATH.

! DANGER



CONTACT WITH A ROTATING DRIVELINE
WILL CAUSE
DEATH OR SERIOUS INJURY
KEEP AWAY

- Keep clear of rotating drive shaft.
- Never work on or near an installed power take-off or driveline with the engine running.

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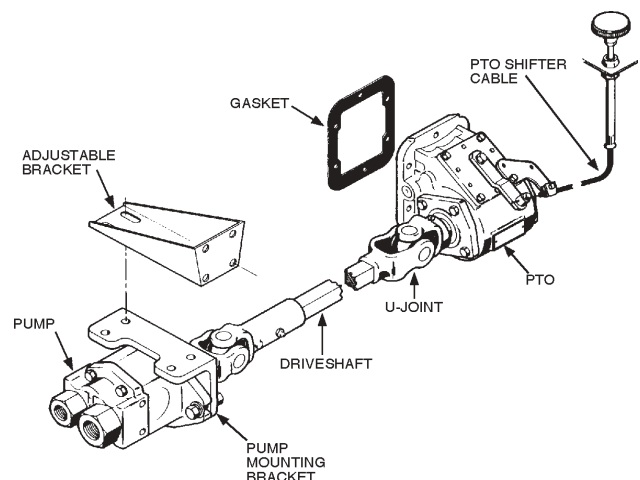


FIGURE B-2. DRIVELINE & PUMP INSTALLATION

2-3. TOPDECK COMPRESSOR INSTALLATION

The topdeck compressor is mounted on an oil reservoir which is bolted to the deck of the carrier vehicle. Due to variations, the instructions should be used as a guide only.

1. Locate compressor position on the deck. Layout mounting hole pattern per Figure B-4. Drill six 1/2" holes for mounting. Locate the positions of reservoir ports per Figure B-4 and drill two 3-1/4" holes for suction lines, two 3-1/4" holes for return lines and two 2" holes for drain lines.
2. Using 3/8" bolts, flat washers, lock washers and nuts, secure the compressor and tank to the deck of the truck.
3. Locate a position on the deck for a hole for the hose which runs from the pump to the control valve. Position the hole to provide the least interference with truck frame members, exhaust and driveshaft, and as near the compressor oil reservoir as possible. Drill a 1-3/4" hole at this location. Place a 1-3/4" diameter grommet into the hole to help prevent hose wear.
4. Route the hose through the hole and connect it to the pump and control valve using the fittings provided.
5. Drill a 2-1/4" hole in the bed of the truck for the hose from the cooler to the inlet side of the return filter. Install 2-3/4" diameter grommet into hole. Position the hole to provide the least interference with truck frame members, exhaust and driveshaft; and as near the compressor reservoir as possible. Install hose from cooler to return filter.
6. Drill two 5/8" diameter holes through the deck for the hoses from the air driven throttle control. Install the speed control on the engine. Route the hoses through these holes and connect them as shown in the Parts Section.
7. Install the barbed nipples, hose and hose clamps from the suction port of the reservoir to the suction filter.
8. Drill a 1" hole for the receiver drain as near the drain as possible and route a 1/2" diameter hose through the hole. Connect one end to the receiver drain. This will prevent drainage of the receiver onto the deck of the truck.

2-3

9. Connect the wiring to the compressor where applicable.

10. Fill the oil tank and open suction gate valve. Disconnect pressure hose at hydraulic pump. Engage the PTO and turn the engine with starter until oil comes out the pressure side of the pump. Connect pressure hose. Pull out the compressor switch and open the gate valve to the tank. Disengage the PTO and start the truck engine. Depress the clutch and engage the PTO. Release the clutch slowly. It may be necessary to allow the truck to idle until warmed up enough to pull at idle RPM. Push the compressor switch in. This will close the control valve and start the compressor. Allow the compressor to warm up (See Operation Section). Close the gate valve on the air tank. This will activate the speed control to the proper RPM. Check the system for leaks and proper operation.

11. Install compressor kill switch. See Figure B-5.

2-4. OIL COOLER (OPTIONAL)

Oil coolers vary in their installation dependent on available space and other considerations. Install the oil cooler either in front of the carrier vehicle's radiator or, as an alternative, in a protective structure which is cooled by an electric fan. Refer to Figure B-4 for general location within the hydraulic system.

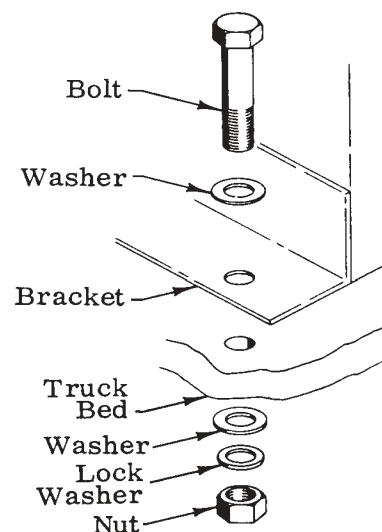


FIGURE B-3. MOUNTING HARDWARE

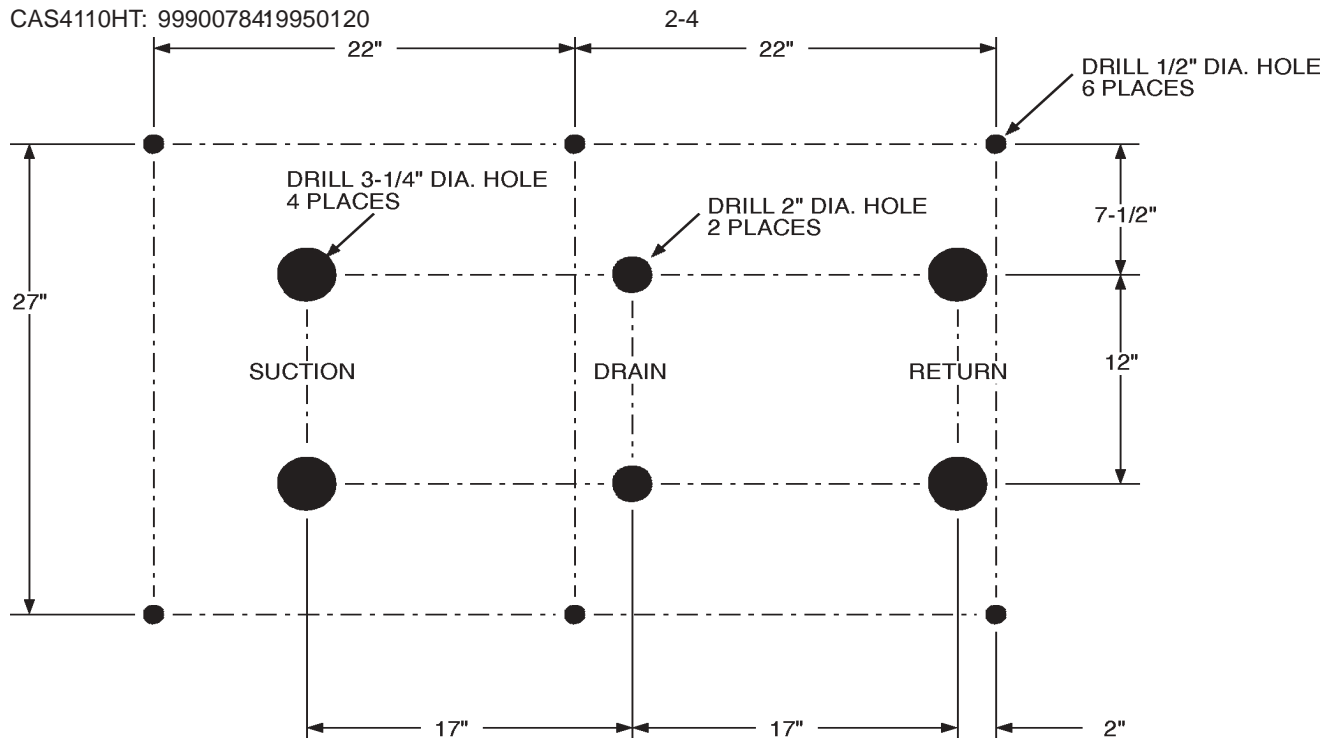
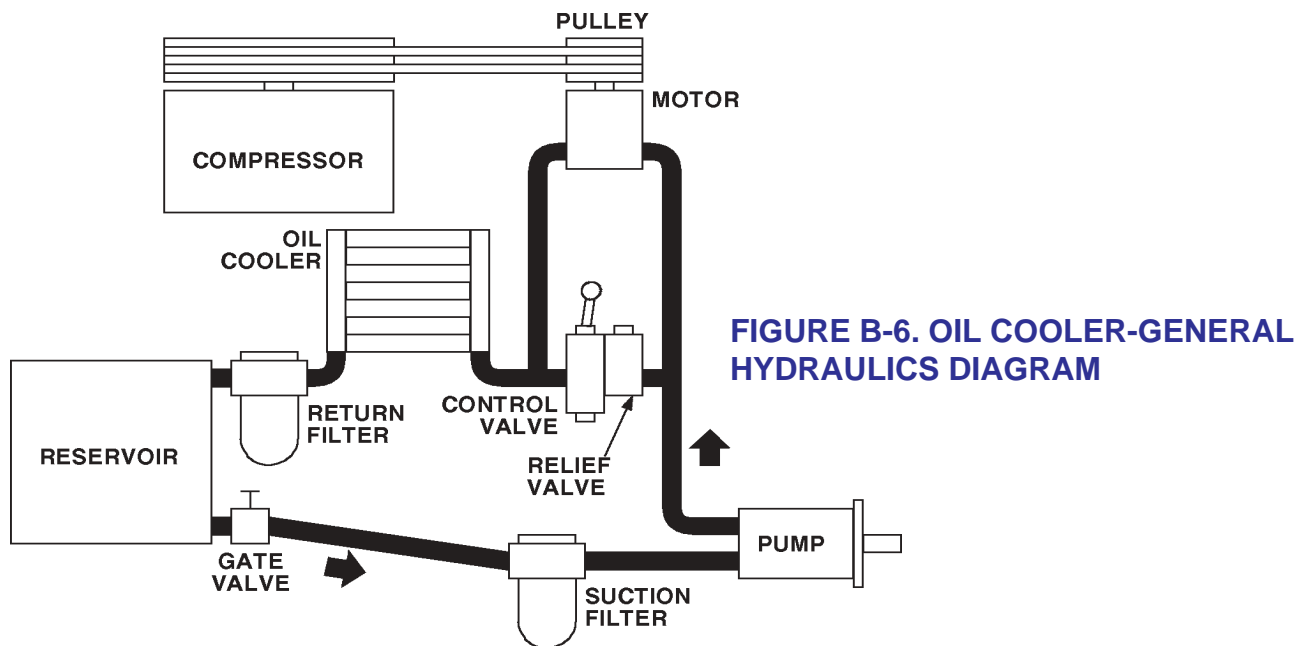
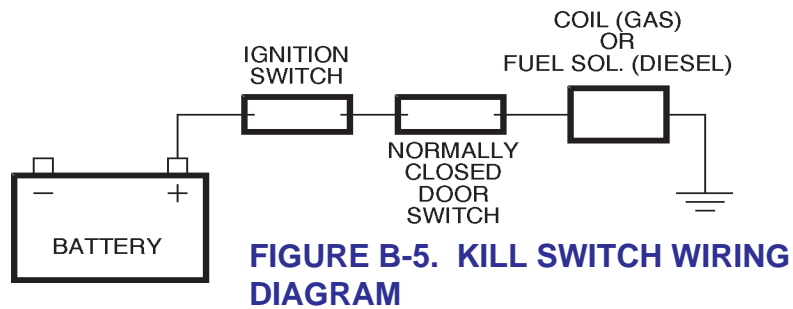


FIGURE B-4. MOUNTING HOLE PATTERN



SECTION 3. OPERATION

3-1. INTRODUCTION

This section deals with the proper methods of system operation and shutdown. These procedures should be followed to prevent damage and ensure efficient operation.

3-2. OPERATION

The compressor has an operating time limit of approximately 3-hours depending upon ambient air temperature (outside air temperature), weather conditions and whether an oil cooler has been installed.

CAUTION

THE HYDRAULIC OIL TEMPERATURE MUST NOT BE ALLOWED TO EXCEED 190°F (88°C). IF THE OIL TEMPERATURE REACHES THIS LIMIT, THE SYSTEM MUST BE SHUT DOWN AND ALLOWED TO COOL.

Oil coolers will extend the 3-hour limit.

To start the compressor:

- 1. Ensure the PTO is disengaged, control valve is open (pull the compressor switch out) and the receiver drain cock is open.
- 2. Start the truck engine and allow it to idle until it reaches the proper operating temperature (refer to the Owner’s Manual).
- 3. Depress the clutch, engage the PTO and carefully release the clutch pedal. Allow the system to warm up for the time period specified in below.

COMPRESSOR WARM-UP TIME	
AMBIENT AIR TEMPERATURE (°F)	IDLING TIME (WARM-UP)
+40 OR ABOVE	NONE
+20 TO +40	2 - 5 MINUTES
0 TO +20	5 - 10 MINUTES
-20 TO 0	10-15 MINUTES
-40 TO -20	15-20 MINUTES
BELOW -40	20 MINUTES MIN.

- 4. When starting the compressor, the RPM’s will automatically increase due to low volume of air in the system.

CAUTION

1000 RPM MAX.

Operating this unit in excess of 1000 RPM, measured at the compressor flywheel, will void your warranty. Engine RPM may be different.

3-3. SYSTEM SHUTDOWN.

System shutdown is accomplished as follows:

- 1. Allow the compressor to build to maximum pressure and the truck engine will automatically idle down.
- 2. Place the compressor control valve in the open (off) position.
- 3. Depress the clutch pedal and disengage the PTO.
- 4. Open the receiver drain cock and discharge the air in the receiver.

WARNING

FEDERAL LAW PROHIBITS DRIVING THE CARRIER VEHICLE ON PUBLIC ROADS WITH THE RECEIVER FILLED WITH COMPRESSED AIR. ALWAYS DRAIN THE RECEIVER BEFORE MOVING THE VEHICLE.

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Section 4. PREVENTIVE MAINTENANCE

4-1. INTRODUCTION

Proper maintenance on a regular schedule is essential to keep your unit operating efficiently. Proper maintenance procedures and required service intervals are outlined in this section. Personnel responsible for unit upkeep should become familiar with frequency and type of maintenance required and perform these tasks at recommended intervals.

4-2. LUBRICATION

The only lubrication required is on the carrier vehicle and the compressor itself. Refer to the appropriate Owner's Manual for information on the truck and compressor for the type and frequency of lubrication required.

4-3. HYDRAULIC SYSTEM

4-3-1. HYDRAULIC FLUID SELECTION

Minimum viscosity specifications for hydraulic oil to be used in the hydraulic system are given in Figure D-1. Any major oil company can supply products which meet these requirements.

Oils selected for use with this class of equipment, in addition to meeting viscosity requirements, should have the following additives:

1. Antifoam Inhibitors
2. Antioxidant Inhibitors
3. Rust Resistant Additives
4. Antiwear Additives

4-3-2. HYDRAULIC FLUID SPECIFICATIONS

Figure D-1 states oil specifications for a full range of operating temperatures encountered in the temperate zones. Arctic conditions present special requirements which are not in the scope of the table and must be analyzed individually. Consult your oil supplier for the proper hydraulic fluids for working under these severe conditions. Electric reservoir heaters are available to improve conditions at extremely low temperatures.

4-3-3. HYDRAULIC FLUID DETERIORATION

Contamination of the hydraulic fluid by solvents, water, dust or other abrasives will cause deterioration of the fluid. Sustained presence of the impurities will result in premature breakdown of antifoam, lubrication, anti-rust and viscosity properties. Introduction of water to the system and operation at high temperatures (above 180°F) will result in an increase in the oil oxidation rate. Oxidation produces varnish forming materials and sludge in the oil.

Operating the system on a sustained basis with contaminated or broken down oil will increase wear and can significantly shorten the efficient service life of the unit.

AMBIENT TEMPERATURE RANGE, °F	0-90	Below 32	32-90	Above 90
MINIMUM POUR POINT, °F	-30	-25	+10	+10
MAXIMUM VISCOSITY, SSU @ 0°F	4000	4000	---	---
MINIMUM VISCOSITY, SSU @ 100°F	140-190	100-130	150-200	200-315
MINIMUM VISCOSITY, SSU @ 210°F	40	41	43	47
MINIMUM VISCOSITY INDEX	139	90	90	90

FIGURE D-1. HYDRAULIC FLUID SPECIFICATIONS

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Periodically, draw off a sample of the oil and check the oil for breakdown. To check oil quality:

1. Place the oil in a clean glass.
2. Smell the oil to detect a burnt or rancid odor.
3. Visually examine the oil for a dark or cloudy appearance.
4. Allow the sample to stand for several minutes. Inspect the sample for water which will settle to the bottom of the glass if present. Water can result from a system leak or condensation due to temperature extremes.

When any of these conditions is observed, the system should be purged and filled with new oil. In addition, the oil should be changed in the reservoir and complete system:

1. After every 800 hours of operation or every six months, whichever occurs first.
2. After pump or other major hydraulic component failure, drain the hoses.

4-3-4. HYDRAULIC SYSTEM PURGING

Purging the hydraulic system requires a new oil supply sufficient to completely fill the reservoir, hoses, filters, valves, etc., and an extra allowance for loss during this procedure. To reduce oil loss, operate the engine at a low speed (idle).

When purging, new oil is supplied to the pump suction line via the reservoir, and the old oil is discharged through the reservoir return line.

Two operators will be required; one to operate the compressor and the other to regulate pump flow (engine speed).

Purging is accomplished as follows:

1. Drain the hydraulic reservoir and disconnect the suction hose to the pump. Drain the hose and reassemble. Change the suction filter cartridge (Paragraph 4-3-5).

NOTE

THE METHOD OF WASTE DISPOSAL IS LEFT TO THE DISCRETION OF SERVICE PERSONNEL.

4-2

2. Disconnect the reservoir return line at the reservoir and direct the discharge into a sump or waste container. Plug the return line port on the reservoir and fill the reservoir with clean oil (refer to Paragraph 4-3-1).

NOTE

BE THOROUGHLY FAMILIAR WITH THE FOLLOWING STEPS AND PREPARED TO PERFORM THEM IN AN UNINTERRUPTED SEQUENCE. IF THIS IS NOT DONE, EXCESSIVE OIL WASTE WILL OCCUR.

CAUTION

DO NOT ALLOW THE RESERVOIR LEVEL TO DROP BELOW 1/3 CAPACITY DURING THIS OPERATION.

3. Start the engine and engage the PTO. Slowly release the clutch. Activate the control valve so that the fluid passes through the motor. Allow fluid to discharge for about 15 seconds. Kill the engine.
4. Reconnect the return line to the reservoir port and change the return line filter. All components of the system are now purged.
5. Check the reservoir oil level and add oil as necessary.

4-3-5. FILTER ELEMENT REPLACEMENT

To avoid residue accumulation in the reservoir and to protect the hydraulic components (valves, pumps, motors, etc.), the filters must be serviced on a regular basis.

They must be changed after the initial 50-hours of new unit operation and every 200-hours thereafter. To change filter elements:

1. Shut the gate valve and remove the filter element.
2. Install the new filter ensuring proper rubber seal seating and tighten as much as possible using both hands.
3. Open the gate valve and check for leaks.

CAUTION

PUMP FAILURE CAN RESULT IF THE SHUTOFF VALVE IS LEFT CLOSED.

4-4. PREVENTIVE MAINTENANCE CHECKLIST

The checklist (Figure D-2) is designed to assist you in keeping your unit in efficient operating condition. Items in this section apply to the unit only. The carrier vehicle should also be inspected regularly (refer to the carrier vehicle's service manual).

ITEM	DESCRIPTION	INTERVAL						
		DAILY	WEEKLY	EVERY 200 HRS	HOURS/MONTHS			
					500/3	1000/6	1500/9	2000/12
COMPRESSOR	AIR INTAKE - INSPECT AND CLEAN							
	FRAME OIL LEVEL - CHECK							
	FRAME OIL - CHANGE **							
	VALVES - INSPECT AND CLEAN							
	INTER COOLER - CLEAN EXTERIOR							
	LOW OIL LEVEL SWITCH - CHECK							
	OPERATE SAFETY VALVES							
V-BELT DRIVE	CLEAN SAFETY VALVES							
	BELT TENSION - CHECK							
RECEIVER	DRAIN CONDENSATION - MANUAL							
	OPERATE SAFETY VALVES							
HYDRAULIC DRIVE SYSTEM	CHECK OIL RESERVOIR LEVEL							
	CHECK AND CHANGE FILTER							
	CHECK SAFETY DOOR SWITCH							
	CHECK PTO CABLE							
	CHECK SPEED CONTROL & RESET							
	CHANGE HYDRAULIC OIL							
GENERAL	CHECK FOR LEAKS AND REPAIR							
	CHECK AND TIGHTEN ALL BOLTS							
	CHECK ALL ELECT. CONNECTIONS							
	CHECK LUBRICATION							

* INTERVALS ARE LISTED IN HOURS/MONTHS, WHICHEVER COMES FIRST (UNLESS OTHERWISE SPECIFIED).

** REFER TO THE APPROPRIATE COMPRESSOR MANUAL FOR INFORMATION REGARDING TYPE OF OIL AND FREQUENCY OF CHANGE.

FIGURE D-2. PREVENTIVE MAINTENANCE CHECKLIST

SECTION 5. REPAIR

5-1. INTRODUCTION

This section deals with the disassembly and repair of the components as well as troubleshooting information.

5-2. HYDRAULIC SYSTEM COMPONENTS

Disassembly and repair of components in the hydraulic system requires special consideration for proper functioning and service life of the unit. These steps are to be followed whenever a hydraulic component is removed from the system.

1. ALWAYS relieve internal hydraulic pressure before proceeding with a repair, carefully loosen a fitting and allow the pressure to bleed off.
2. NEVER allow foreign matter (dirt, water, metal particles, etc.) to enter the system through the open connections. Cap or plug any openings. If dirt does get in, a filter change is required after 50 hours of operation.
3. ALWAYS check for high pressure leaks after completing a repair. A high pressure leak is hazardous and must be repaired.

5-3. DRIVE BELT

To adjust the drive belt tension and alignment:

1. Loosen the four bolts securing the motor mounting bracket to the base plate.
2. Turn the drawbolt in a clockwise direction to tighten the belt until there is 1/4" - 1/2" play at the center of the belt between the pulleys.
3. Adjust the alignment drawbolt until the motor pulley is square with the compressor. Use a straightedge across the compressor pulley (Figure E-3) and check the gap between the motor pulley and the straight edge. The gap (1-3/4") on the compressor side of the motor pulley should be the same as on the far side of the pulley.

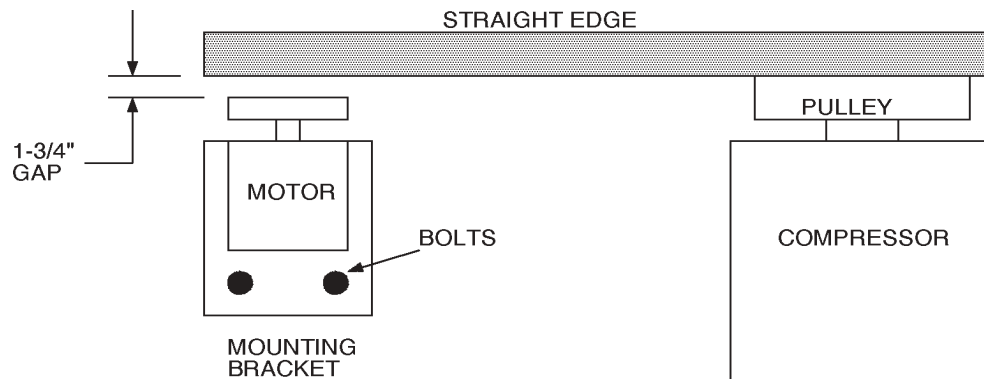


FIGURE E-1. DRIVE BELT ADJUSTMENT

SYMPTOM	PROBABLE CAUSE
AIR COMPRESSOR SLOWS DOWN AS AIR PRESSURE INCREASES AND THE ENGINE RPM REMAINS THE SAME OR INCREASES SLIGHTLY.	<p>1. RELIEF VALVE BYPASSING OIL. ADJUST RELIEF VALVE. TURN CLOCKWISE TO INCREASE BYPASS PRESSURE. IF THIS DOES NOT CORRECT THE PROBLEM, RETURN THE RELIEF VALVE TO THE ORIGINAL POSITION AND PROCEED WITH STEP 2.</p> <p>2. HYDRAULIC PUMP FAILURE. DISCONNECT THE PRESSURE HOSES AT THE MOTOR INLET SWIVEL (FIGURE F-1). CAP THE HOSE AND PLUG THE SWIVEL. IF THE SYSTEM DOES NOT HAVE A PRESSURE GAUGE, INSTALL ONE AT THE END OF THE HOSE FOR TESTING PURPOSES. ENGAGE THE PTO AND RELEASE THE CLUTCH SLOWLY. HYDRAULIC OIL PRESSURE SHOULD REACH 2300-2500 PSI BEFORE THE RELIEF VALVE OPENS.</p> <p>3. HYDRAULIC MOTOR OR VALVE FAILURE. DISCONNECT PRESSURE HOSE FROM PUMP (FIGURE F-1) AT GAUGE SWIVEL. CONNECT PRESSURE HOSE FROM PUMP TO MOTOR INLET SWIVEL. SHUT CONTROL VALVE. ENGAGE THE PTO AND START THE COMPRESSOR. IF THIS DOES NOT CORRECT THE PROBLEM, REPLACE THE MOTOR. IF THE PROBLEM IS CORRECTED, REPLACE THE VALVE.</p>
MOTOR DOES NOT TURN WHEN HYDRAULIC VALVE IS CLOSED. OIL DOES NOT REACH 2300-2500 PSI.	<p>1. COMPRESSOR LOCKED UP. DISCONNECT DRIVE SYSTEM AND TRY TO TURN THE COMPRESSOR BY HAND. IF IT CANNOT BE TURNED, REPAIR THE COMPRESSOR.</p> <p>2. HYDRAULIC MOTOR FAILURE. REPLACE THE MOTOR IF THE COMPRESSOR IS OPERATIONAL.</p>
MOTOR DOES NOT TURN WHEN HYDRAULIC SYSTEM IS ACTIVATED AND RELIEF VALVE REACHES 2300-2500 PSI.	1. HYDRAULIC MOTOR BEGINNING TO FAIL. REPLACE HYDRAULIC MOTOR BEFORE THE REST OF THE SYSTEM IS DAMAGED.
EXCESSIVE NOISE IN HYDRAULIC MOTOR AND MOTOR GETS VERY HOT	<p>1. RESTRICTION IN OIL HOSES AND FITTINGS. CHECK AND CORRECT ANY RESTRICTIONS.</p> <p>2. HYDRAULIC PUMP BEGINNING TO FAIL. REPLACE PUMP BEFORE IT DAMAGES THE REST OF THE SYSTEM.</p>
EXCESSIVE NOISE IN HYDRAULIC PUMP AND PUMP GETS VERY HOT	<p>1. RESTRICTIONS IN OIL HOSES AND FITTINGS. CHECK AND CORRECT ANY RESTRICTIONS.</p> <p>2. OIL TANK VENT PLUGGED. CHECK AND CLEAN OIL TANK VENT.</p> <p>3. HYDRAULIC OIL BREAKDOWN. DRAIN AND REPLACE.</p>
HYDRAULIC SYSTEM DAMAGES PUMPS.OIL TANK OVERFLOWS.	<p>1. TANK TOO FULL TO ALLOW FOR EXPANSION. DRAIN EXCESS OIL FROM THE TANK.</p> <p>2. OIL TANK VENT PLUGGED. CHECK AND CLEAN.</p> <p style="text-align: center;">NOTE</p> <div style="border: 1px solid black; padding: 5px;"> <p>IF YOUR TRUCK HAS TWO TANKS, THE RETURN HOSE FROM THE TOP TANK TO THE LOWER TANK MAY BE RESTRICTED</p> </div>
OIL IS COLD. COMPRESSOR IS STARTED COLD AND FAILS TO CONTINUE TO OPERATE.	1. COMPRESSOR STARTED TOO QUICKLY - INSUFFICIENT WARM-UP AND PUMP HAS FAILED. REPLACE THE PUMP, START COMPRESSOR AND ALLOW IT TO WARM UP (REFER TO SECTION 3).

FIGURE E-2. HYDRAULIC SYSTEM TROUBLESHOOTING CHART

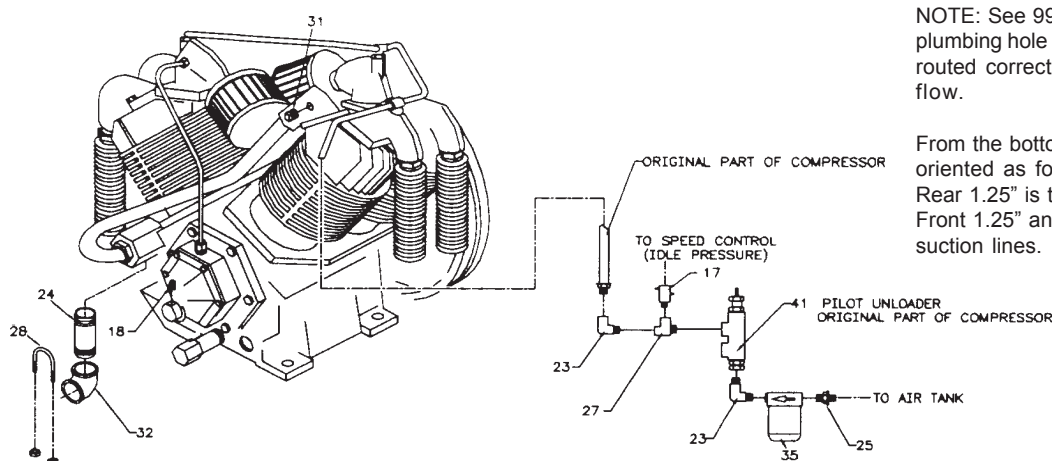
SECTION 6. PARTS

6-1. GENERAL

This section contains the exploded parts drawings with accompanying parts lists for associated assemblies. These drawings are intended to be used in conjunction with the instructions found elsewhere in this manual.

For information pertaining to the compressor, refer to its specific manual.

See Section 7 for reference data which may be useful in the repair and operation of your compressor.



NOTE: See 99904407 for compressor plumbing hole locations. Plumbing must be routed correctly for correct hydraulic fluid flow.

From the bottom, the reservoir fittings are oriented as follows:
Rear 1.25" is the inlet for return.
Front 1.25" and 1.50" are dedicated for outlet suction lines.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	52702368	RESERVOIR (54 GAL)	1	28.	72066503	MUFFLER CLAMP 1-3/4 W/NUTS	1
2.	52702595	BASE	1	29.	72060095	CAP SCR 1/2-13X2 HHGR5	4
3.	52711890	BELT SHROUD	1	31.	72053412	PIPE PLUG 1/4NPT SQHD	1
4.	60104650	SHROUD BRACE	1	32.	72053327	ELBOW 1-1/4 90°	1
5.	52706302	TIGHTENER BOLT 8"	2	34.	72063005	WASHER 1/2 WRT	6
6.	52702231	MOTOR MOUNT	1	35.	70048069	AIR FILTER	1
7.	70073084	COMPRESSOR PUMP	1	36.	72063053	WASHER 1/2 LOCK	4
8.	70056664	PULLEY (WAS 71056020)	1	37.	72063002	WASHER 5/16 WRT	10
9.	70056665	BUSHING-SPL TAPER (WAS 70056453)	1	38.	72062109	NUT 5/16-18 LOCK	5
10.	70029548	VALVE BLOCK	1	39.	72060091	CAP SCR 1/2-13X1 HHGR5	4
11.	89086120	OIL-30WT NON-DETERGENT	1.5GAL	40.	72060025	CAP SCR 5/16-18X1 HHGR5	5
12.	70029117	IDENTIFICATION PLACARD	1	41.	73054031	UNLOADER VALVE 155-175PSI	REF
13.	70058048	BELT-POWER V (9093 3093)	1			(PART OF COMPRESSOR)	
14.	60118716	KEY-OFFSET .25X.31X.39X1.50	1	42.	99900784	THIS MANUAL	1
15.	72062080	NUT 1/2 LOCK	4	43.	72532145	PLUG 1-5/8STR HH STL	1
16.	72053371	REDUCER BUSHING 1/4-1/8NPT	1	44.	70143815	OIL COOLER W/O FAN	1
17.	77041008	PRESSURE SWITCH	1	45.	72532833	BEAD NIPPLE 1MPT 1-1/4HOSE	1
18.	72053411	PIPE PLUG 1/8NPT SQHD	1	46.	72532834	BEAD NIPPLE 1MPT 1-1/4H 90°	2
19.	52702304	BOLT-SPECIAL HOLD DOWN	1	47.	72053741	ADAPTER #8MSTR 1/2FPT	1
20.	72062080	NUT 1/2-13 LOCK	6	48.	72066516	HOSE CLAMP 1-1/4 2-BOLT	2
21.	72060094	CAP SCR 1/2-13X1-3/4 HHGR5	5	49.	89393401	HOSE 1-1/4 HYD 100R4 X 24	1
23.	72532974	STREET ELBOW 1/4NPT 90°	2	50.	72060047	CAP SCR 3/8-16X1-1/2 HHGR5	4
24.	72532840	PIPE NIPPLE 1-1/4NPT X 5	1	51.	72062103	NUT 3/8 LOCK	4
25.	72532552	HOSE FITTING 1/4 1/4 BRS	1	52.	72063003	WASHER 3/8 WRT	8
27.	72532013	STREET TEE 1/4 BRS	1				

FIGURE F-1. CAS4110HT HYDRAULIC TOPDECK COMPRESSOR (23000142)

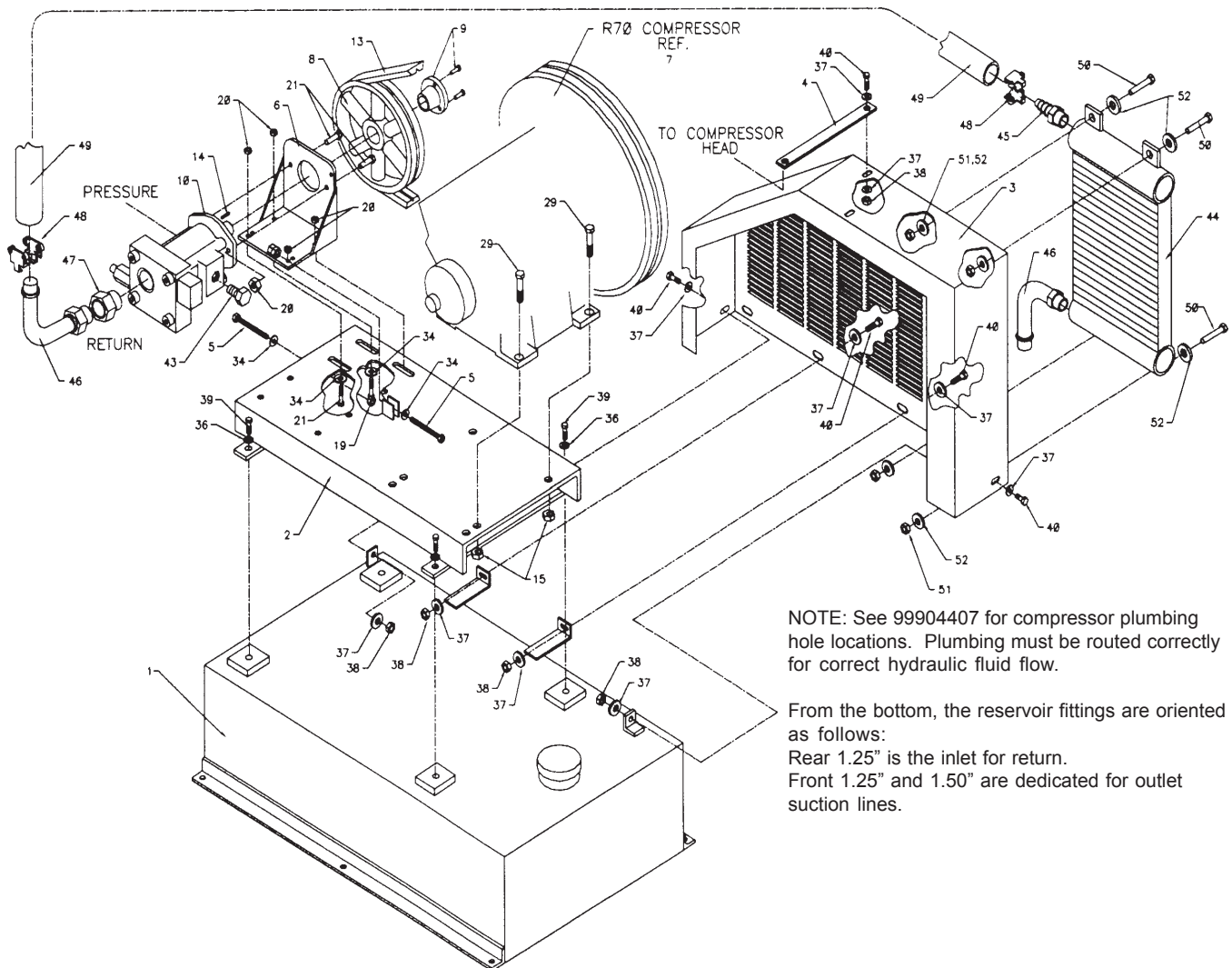


FIGURE F-1A. CAS4110HT HYDRAULIC TOPDECK COMPRESSOR (23000142)

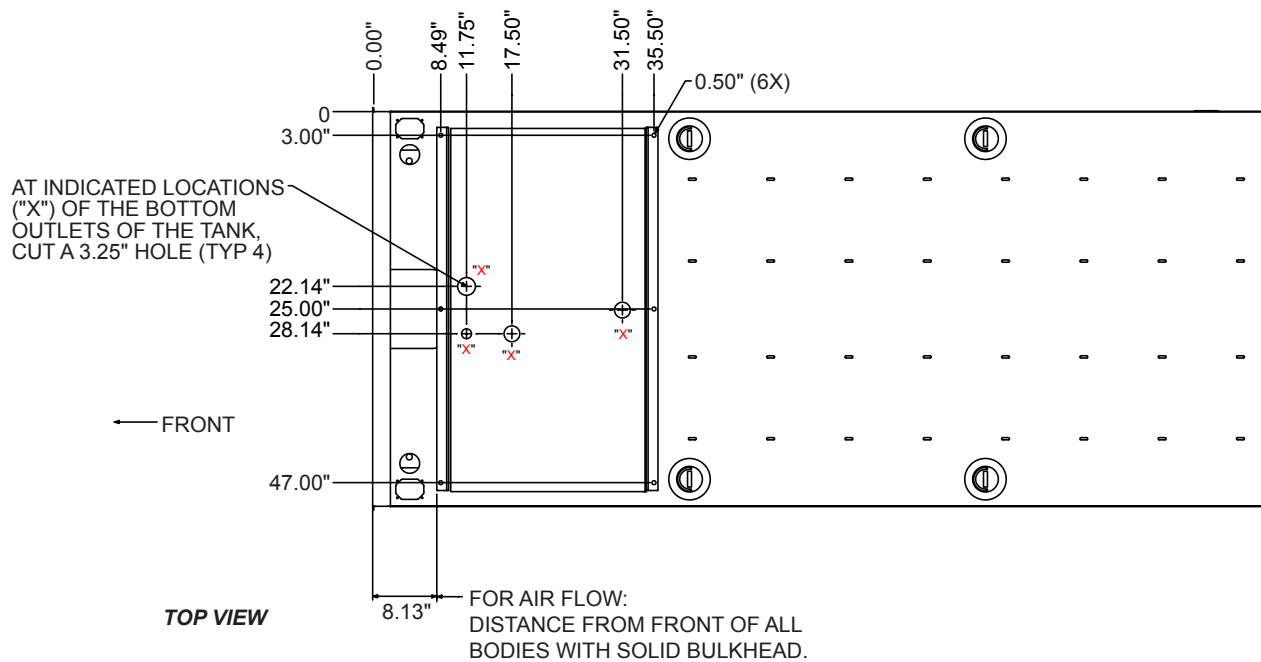




FIGURE F-2. CAS4110HT PLUMBING HOLE LAYOUT (99904407)



SECTION 7. REFERENCE

TORQUE DATA CHART - DOMESTIC

FINE THREAD BOLTS

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

COARSE THREAD BOLTS

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

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

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

FIGURE G-1. TORQUE DATA CHART

SINGLE TIRES FOR TRUCKS IN HIGHWAY SERVICE												
TIRE SIZE	LOAD RANGE	TIRE LOAD LIMITS AT VARIOUS INFLATION PRESSURES										
		50	55	60	65	70	75	80	85	90	95	100
7.00-20	D	2100	2260	2390	2530	2670	2790					
7.00-20	E	2100	2260	2390	2530	2670	2920	3030	3150			
7.50-20	D	2360	2530	2680	2840	2990	3140					
7.50-20	E	2360	2530	2680	2840	2990	3140	3270	3410	3530		
8.25-20	E	2800	3010	3190	3370	3560	3730	3890	4050			
8.25-20	F	2800	3010	3190	3370	3560	3730	3890	4050	4210	4350	4500
9.00-20	E		3560	3770	4000	4210	4410	4610				
9.00-20	F		3560	3770	4000	4210	4410	4610	4790	4970	5150	
10.00-20	F			4290	4530	4770	4990	5220	5430			
10.00-20	G			4290	4530	4770	4990	5220	5430	5640	5840	6040
11.00-20	F			4670	4940	5200	5450	5690	5920			
11.00-20	G			4670	4940	5200	5450	5690	5920	6140	6370	6590
11.00-22	F			4960	5240	5520	5790	6040	6290			
11.00-22	G			4960	5240	5520	5790	6040	6290	6530	6770	7000

DUAL TIRE FOR TRUCKS IN HIGHWAY SERVICE												
TIRE SIZE	LOAD RANGE	TIRE LOAD LIMITS AT VARIOUS INFLATION PRESSURES										
		40	45	50	55	60	65	70	75	80	85	90
7.00-20	D	1840	1980	2100	2220	2340	2450					
7.00-20	E	1840	1980	2100	2220	2340	2450	2560	2660	2760		
7.50-20	D	2070	2220	2350	2490	2620	2750					
7.50-20	E	2070	2220	2350	2490	2620	2750	2870	2990	3100		
8.25-20	E	2460	2640	2800	2960	3120	3270	3410	3550			
8.25-20	F	2460	2640	2800	2960	3120	3270	3410	3550	3690	3820	3950
9.00-20	E		3120	3310	3510	3690	3870	4040				
9.00-20	F		3120	3310	3510	3690	3870	4040	4200	4360	5420	
10.00-20	F			3760	3970	4180	4380	4580	4760			
10.00-20	G			3760	3970	4180	4380	4580	4760	4950	5120	5300
11.00-20	F			4100	4330	4560	4780	4990	5190			
11.00-20	G			4100	4330	4560	4780	4990	5190	5390	5590	5780
11.00-22	F			4350	4600	4840	5080	5300	5520			
11.00-22	G			4350	4600	4840	5080	5300	5520	5730	5940	6140

DEFINITE TIRE INFLATION PRESSURES ARE ESTABLISHED FOR EACH TIRE SIZE DEPENDING UPON THE LOAD IMPOSED ON THE TIRE. FOR GREATER STABILITY, RIDING COMFORT AND PROLONGED TIRE LIFE, TIRES SHOULD BE INFLATED FOR THE LOADS CARRIED. THE "LOAD AND INFLATION TABLE" SHOWN ABOVE, INDICATES THE PROPER INFLATION PRESSURES.

TIRE AND RIM ASSOCIATION STANDARD TIRE LOADS AT VARIOUS INFLATION PRESSURES. LOAD RANGE LETTERS AND CORRESPONDING PLY RATING (D=8 PLY, E=10 PLY, F=12 PLY AND G=14 PLY).

FIGURE G-2. TIRE LOAD AND INFLATION PRESSURES

CAS4110HT:99900784: 19950120

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