

Model CAS4110HU Hydraulic Driven Underdeck Compressor



IOWA MOLD TOOLING CO., INC.

BOX 189, 500 HWY 18 WEST, GARNER, IA 50438

TEL: 641-923-3711

TECHNICAL SUPPORT FAX: 641-923-2424

MANUAL PART NUMBER 99900783

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 style="text-align: center; font-weight: bold; margin-top: 10px;">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.

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RECOMMENDED SPARE PARTS LIST

1 Year Supply

CAS4110HU HYDRAULIC DRIVEN TOPDECK COMPRESSOR

For Manual: 99900783

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
23000143.01.19970403			HYDRAULIC UNDERDECK COMPRESSOR				
	6	70029548	MOTOR/VALVE BLOCK	1	W		
	10	70058538	BELT-POWER V	1	C		
	11	89086120	OIL-30WT NON-DETERGENT	1	P		
	26	77041008	PRESSURE SWITCH	1	C		
	33	73054031	UNLOADER VALVE	1	C		
	REF	70029548	MOTOR PART	1	C		
	REF	73054740	RELIEF VALVE	1	C		
	REF	77041495	COIL	1	C		
	REF	73054962	CARTRIDGE & SOLENOID	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 DA4110HU Hydraulic Under 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.

1-3. ORDERING INFORMATION

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

1-2. COMPRESSOR SPECIFICATIONS

CAS44110HU	
Delivery at 175 psi	104 cfm (2945 lpm)
Fluid capacity	47-62 gal (178- 235 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)

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:

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.

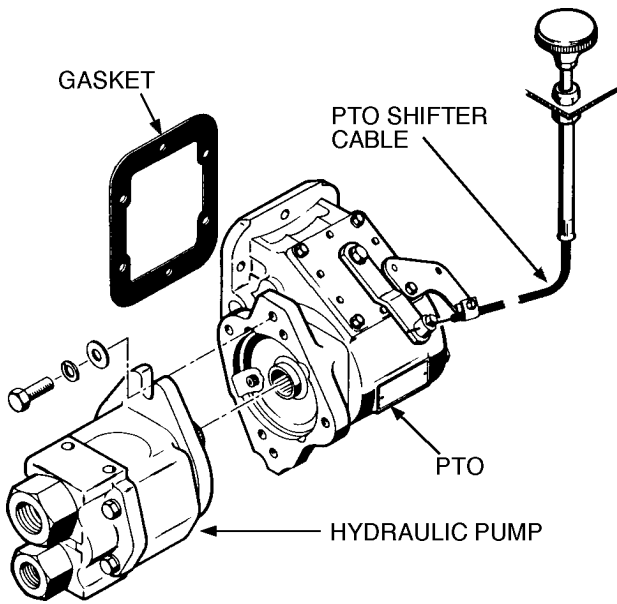


FIGURE B-1. PTO INSTALLATION

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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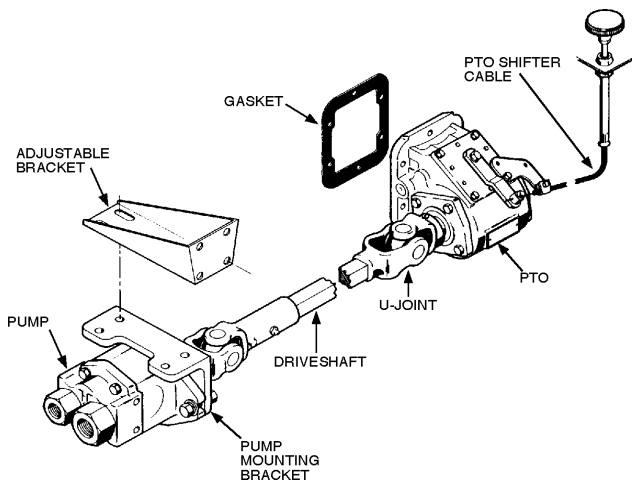


FIGURE B-2. DRIVELINE & PUMP INSTALLATION

2-3. UNDERDECK COMPRESSOR INSTALLATION

Due to variations, the instructions should be used as a guide only.

1. Position the compressor below the compressor compartment with the belt side to the rear of the compartment.
2. Lift the compressor base into position, so the base is flush with the bottom of the compartment. Be certain there is clearance within the compartment and no interference is present. Support the compressor in this position.
3. Using the base as a template, drill eight holes 17/32" diameter through the compartment.
4. Bolt the compressor base to the walls of the compartment using 1/2" grade 5 cap screws, flat washers and lock nuts.
5. Connect the hydraulic hose from the pump to the relief valve connected to the hydraulic drive motor on the compressor. See compressor assembly drawing.
6. Connect the return line to the reservoir. See compressor assembly drawing.
7. Torque all mounting bolts per Torque Data Chart if the compressor is positioned properly.

8. Connect the air hoses per the compressor assembly drawing.

9. Install the engine speed control as shown and connect hoses from compressor to speed control.

10. Fill the oil reservoir and open the suction gate valve. Disconnect the pressure hose at the hydraulic pump. Engage the PTO and turn the vehicle engine with the starter until oil flows through the pressure side of the pump. Reconnect the pressure hose. Pull out the compressor switch and open the gate valve to the air receiver. Disengage the PTO and start the truck. Depress clutch and engage PTO. Release the clutch slowly. It may be necessary to warm the truck engine so that it will pull at idle RPM. Push in the compressor switch. This will close the control valve and start the compressor. Allow for warm-up time. Close the gate valve on the air receiver. This will activate the speed control. Adjust the engine speed control for proper operating RPM. Check for system leaks and proper operation.

11. Install compressor kill switch. See Figure B-1.

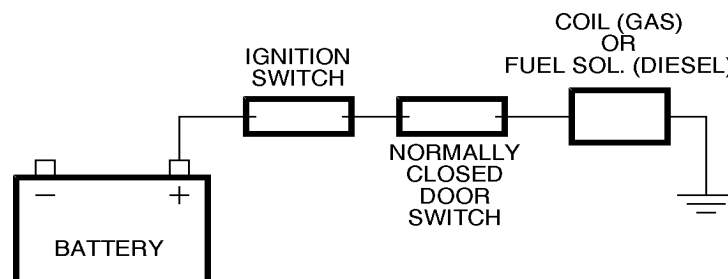


FIGURE B-3. KILL SWITCH WIRING DIAGRAM

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.

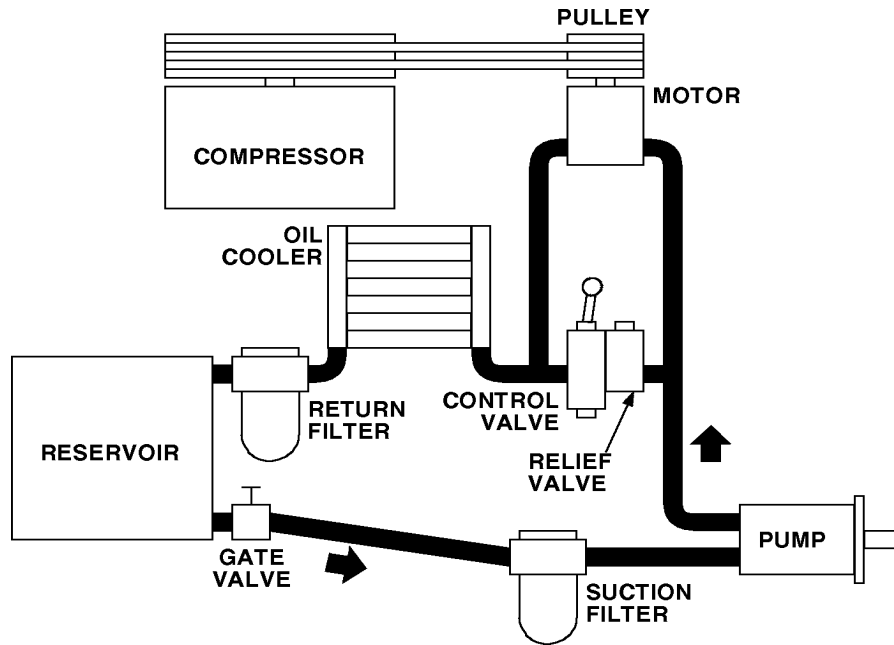


FIGURE B-4. OIL COOLER-GENERAL HYDRAULICS DIAGRAM

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.

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

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.

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 CLEAN SAFETY VALVES							
V-BELT DRIVE	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 CHECK FOR LEAKS AND REPAIR							
GENERAL	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.

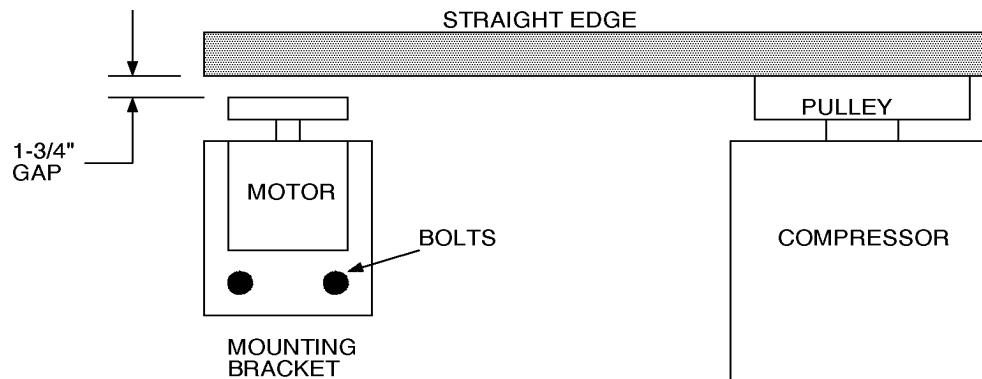


FIGURE E-1. DRIVE BELT ADJUSTMENT

SYMPTOM	PROBABLE CAUSE
<p>AIR COMPRESSOR SLOWS DOWN AS AIR PRESSURE INCREASES AND THE ENGINE RPM REMAINS THE SAME OR INCREASES SLIGHTLY.</p>	<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>
<p>MOTOR DOES NOT TURN WHEN HYDRAULIC VALVE IS CLOSED. OIL DOES NOT REACH 2300-2500 PSI.</p>	<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>
<p>MOTOR DOES NOT TURN WHEN HYDRAULIC SYSTEM IS ACTIVATED AND RELIEF VALVE REACHES 2300-2500 PSI.</p>	<p>1. HYDRAULIC MOTOR BEGINNING TO FAIL. REPLACE HYDRAULIC MOTOR BEFORE THE REST OF THE SYSTEM IS DAMAGED.</p>
<p>EXCESSIVE NOISE IN HYDRAULIC MOTOR AND MOTOR GETS VERY HOT</p>	<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>
<p>EXCESSIVE NOISE IN HYDRAULIC PUMP AND PUMP GETS VERY HOT</p>	<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>
<p>HYDRAULIC SYSTEM DAMAGES PUMPS.OIL TANK OVERFLOWS.</p>	<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>
<p>OIL IS COLD. COMPRESSOR IS STARTED COLD AND FAILS TO CONTINUE TO OPERATE.</p>	<p>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).</p>

FIGURE E-2. HYDRAULIC SYSTEM TROUBLESHOOTING CHART

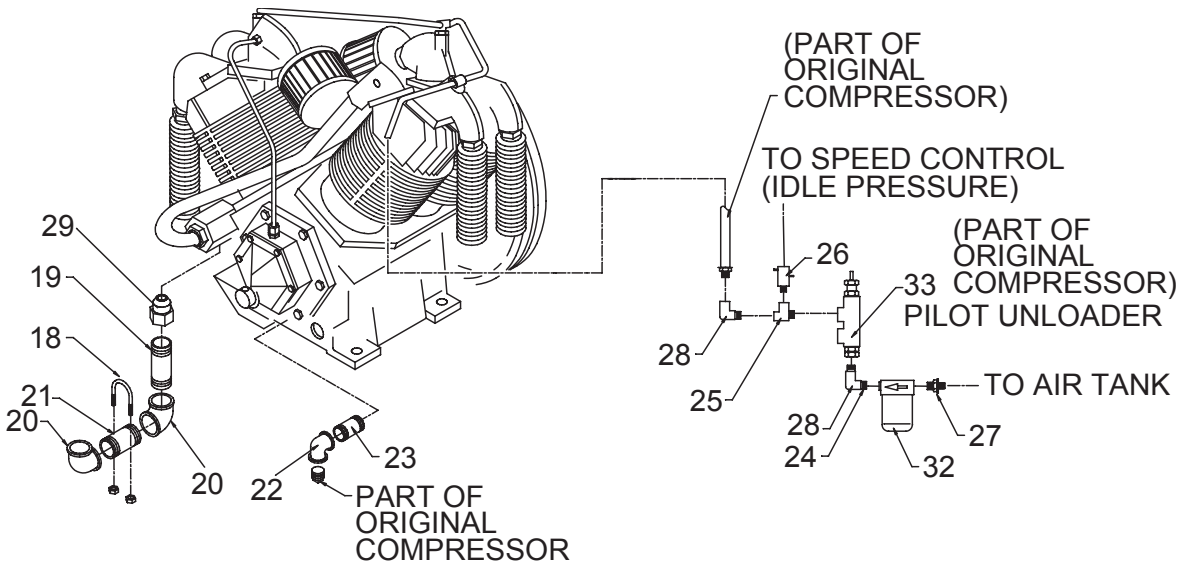
SECTION 6. PARTS

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.



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1.	52702376	BASE	1	22.	72053283	STREET ELBOW 3/8NPT 90°	1
2.	52070869	BRACKET-HYD MOTOR MTG	1	23.	72053049	PIPE NIPPLE 3/8NPT X CLOSE	1
3.	52706302	TIGHTENER BOLT 8"	2	24.	72053013	NIPPLE-PIPE BLK .25 X CLOSE	1
4.	60104598	TIGHTENER BAR	1	25.	72532013	STREET TEE 1/4NPT BRASS	3
5.	70073084	COMPRESSOR R70	1	26.	77041008	PRESSURE SWITCH	1
6.	70029548	MOTOR/VALVE BLOCK	1	27.	72532552	HOSE FITTING 1/4-1/4	2
7.	60118716	KEY-OFFSET .25X.31X.39X1.50	1	28.	72532974	STREET ELB 1/4NPT 90° SHORT	2
8.	70056664	PULLEY (WAS 71056020)	1	29.	72053651	ADAPTER 1-1/4NPT SWVL	1
9.	70056665	BUSHING-SPL TAPER (WAS 70056453)	1	30.	72066340	POP RIVET	2
10.	70580206	BELT-POWER V 9093 3096	1	31.	72533032	ELBOW-MJIC/45/FJIC 12 12	1
11.	89086120	OIL-30WT NON-DETERGENT	1.5GAL	32.	70048069	AIR FILTER	1
12.	70029117	IDENT PLACARD (NOT SHOWN)	1	33.	73054031	UNLOADER VALVE (155-175) (PART OF COMPRESSOR)	1REF
13.	72060095	CAP SCR 1/2-13X2 HHGR5	4	34.	72053767	ELBOW-MSTR/90/MJIC 12 12	1
14.	72062080	NUT 1/2-13 LOCK	12	35.	72532949	ADAPTER MSTR/FSTR 20 12	1
15.	72063005	WASHER 1/2 WRT	6	36.	72053589	STREET ELBOW 1/8NPT 90°	1
16.	72060094	CAP SCR 1/2-13X1-3/4 HHGR5	4	37.	99900783	MANUAL	1
17.	72060986	CAP SCR 1/2-13X2-3/4 HHGR5	2	38.	72532145	PLUG 1-5/8STR HH STL	1
18.	72066503	MUFFLER CLAMP 1-3/4	1	39.	72053013	NIPPLE-PIPE BLK .25 X CLOSE	1
19.	72532840	PIPE NIPPLE 1-1/4NPT X 5	1	40.	72532834	NIPPLE-BEAD 90 DEG 1 MPT 1.25	1
20.	72053327	ELBOW 1-1/4NPT 90°	2	41.	72053751	ADAPTER MSTR/FPT 16 1	1
21.	72053213	PIPE NIPPLE 1-1/4NPT X 3	1	42.	72053211	NIPPLE-PIPE BLK 1.25 X CLOSE	1
22.	72053283	STREET ELBOW 3/8NPT 90°	1				

FIGURE F-1. CAS4110HU HYDRAULIC UNDERDECK COMPRESSOR (23000143-1)

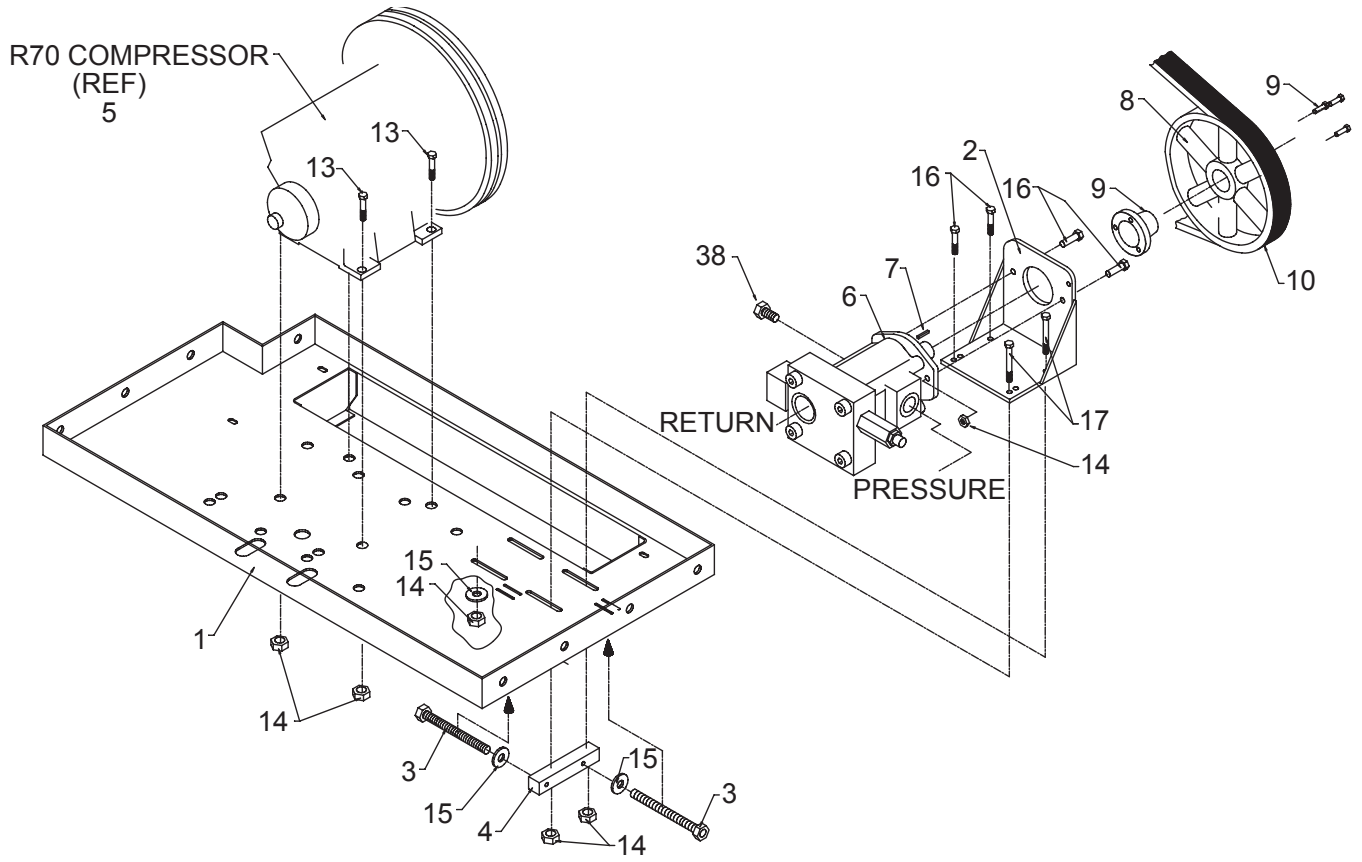






FIGURE F-1A. CAS4110HU HYDRAULIC UNDERDECK COMPRESSOR (23000143-2)

SECTION 7. REFERENCE

TORQUE DATA CHART - DOMESTIC

FINE THREAD BOLTS

COARSE THREAD BOLTS

SIZE (DIA-TPI)	BOLT DIA (INCHES)	TIGHTENING TORQUE				SIZE (DIA-TPI)	BOLT DIA (INCHES)	TIGHTENING TORQUE			
											
		SAE J429 GRADE 5		SAE J429 GRADE 8				SAE J429 GRADE 5		SAE J429 GRADE 8	
		PLAIN (FT-LB)	PLATED (FT-LB)	PLAIN (FT-LB)	PLATED (FT-LB)			PLAIN (FT-LB)	PLATED (FT-LB)	PLAIN (FT-LB)	PLATED (FT-LB)
5/16-24	0.3125	19	14	27	20	5/16-18	0.3125	17	13	25	18
3/8-24	0.3750	35	26	49	35	3/8-16	0.3750	31	23	44	33
7/16-20	0.4375	55	41	78	58	7/16-14	0.4375	49	37	70	52
1/2-20	0.5000	90	64	120	90	1/2-13	0.5000	75	57	105	80
9/16-18	0.5625	120	90	170	130	9/16-12	0.5625	110	82	155	115
5/8-18	0.6250	170	130	240	180	5/8-11	0.6250	150	115	220	160
3/4-16	0.7500	300	225	420	315	3/4-10	0.7500	265	200	375	280
7/8-11	0.8750	445	325	670	500	7/8-9	0.8750	395	295	605	455
1-12	1.0000	645	485	995	745	1-8	1.0000	590	445	910	680
1 1/8-12	1.1250	890	670	1445	1085	1 1/8-7	1.1250	795	595	1290	965
1 1/4-12	1.2500	1240	930	2010	1510	1 1/4-7	1.2500	1120	840	1815	1360
1-3/8-12	1.3750	1675	1255	2710	2035	1-3/8-6	1.3750	1470	1100	2380	1780
1 1/2-12	1.5000	2195	1645	3560	2670	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

CAS4110HU:99900783:

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BOX 189, GARNER, IA 50438-0189
TEL: 641-923-3711
TECHNICAL SUPPORT FAX: 641-923-2424