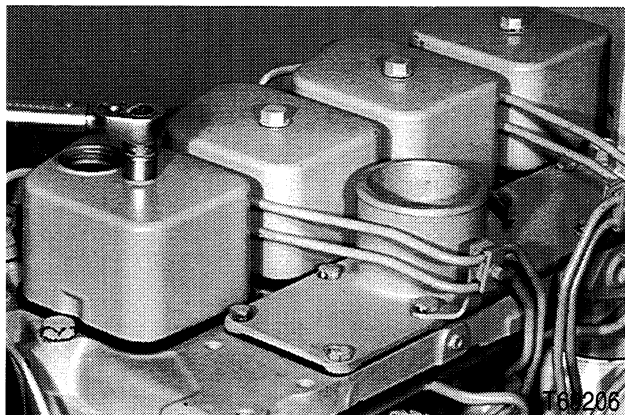
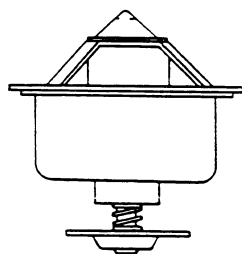


PREVIEW - YOUFIXTHIS.COM

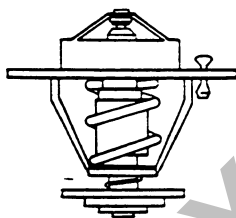
	Metric Valve
Belt Tensioner Retaining Bolt	39 to 47 Nm
Block Heater	11 to 13 Nm
Camshaft Retaining Bolts	21 to 27 Nm
Coolant Inlet Bolts	39 to 47 Nm
Connecting Rod Bolts	60 Nm Plus 60 Degrees (Lubricate Threads with Engine Oil)
Cylinder Head Torque Short Bolts	90 Nm Plus 90 Degrees
Long Bolts	120 Nm Plus 90 Degrees
Engine Lift Bracket Bolts (Rear)	71 to 83 Nm
Exhaust Manifold Bolts	39 to 47 Nm
Fan Pulley Bracket Bolts	23 to 26 Nm
Fan Pulley Bolts Grade 8.8 Size M8	37 to 43 Nm
Grade 10.9 Size M8	52 to 62 Nm
Grade 8.8 Size M10	51 to 62 Nm
Grade 10.9 Size M10	51 to 62 Nm
Flywheel Housing Bolts	54 to 66 Nm
Flywheel Retaining Bolts	130 to 144 Nm
Flywheel Housing Cover Bolts	21 to 27 Nm
Fuel Filter Inlet Bolt	29 to 35 Nm
Fuel Air Removal Bolt	5 to 7 Nm
Fuel Filter Inlet Nut	29 to 35 Nm
Fuel Line Fitting (High Pressure)	22 to 28 Nm
Fuel Line Fitting (Low Pressure)	22 to 28 Nm
Fuel Shutoff Solenoid	15 Nm
Front Cover Bolts	21 to 27 Nm
Front Housing Bolts	21 to 27 Nm
Injection Pump Drive Gear Nut	59 to 71 Nm
Injection Pump Lock Bolt (Lock Position)	8 Nm
Injection Pump Lock Bolt (Unlock Position)	20 Nm
Injection Pump Retaining Nuts	21 to 27 Nm
Injection Pump Bracket Bolts	21 to 27 Nm
Injector Leak Off Bolt	5 to 7 Nm
Injector Retaining Nut	55 to 65 Nm

STEP 120

Install the valve cover bolts and tighten to a torque of 21 to 27 Nm.

THERMOSTAT SERVICE**STEP 121**

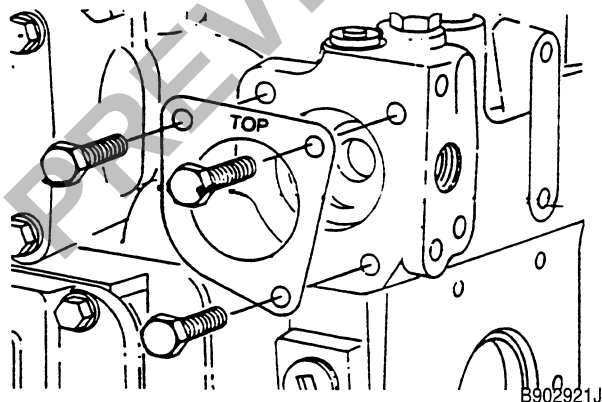
1. New Thermostat



2. Old Thermostat

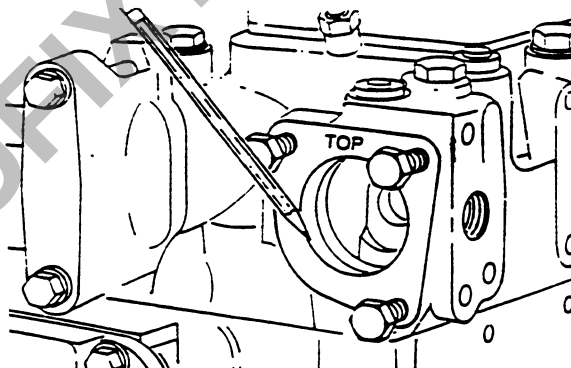
B902920J

A new thermostat has been released for use in your engine. If you removed an old thermostat from your engine, do the following steps to install a new thermostat.

STEP 122

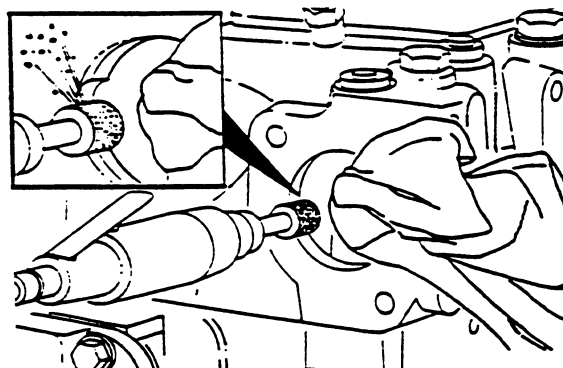
B902921J

Install the template that comes with the new thermostat kit.

STEP 123

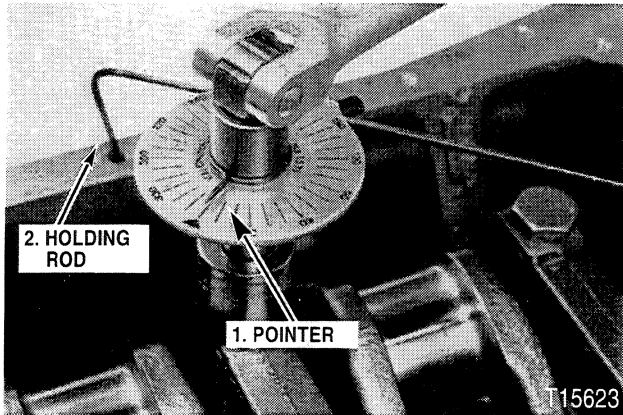
B902922J

If the cylinder head coolant passage is smaller than the ID of the template, the coolant passage will have to be made larger. Mark the ID of the template on the cylinder head.

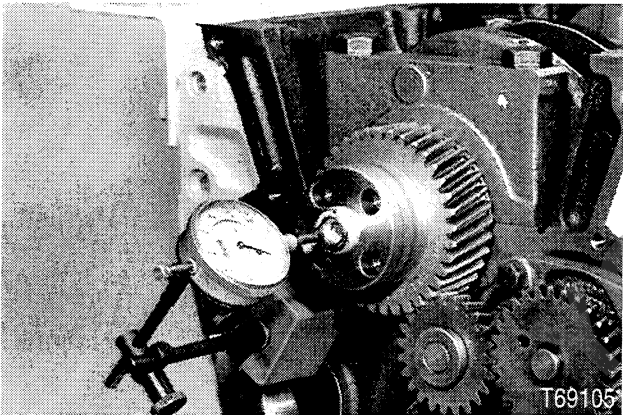
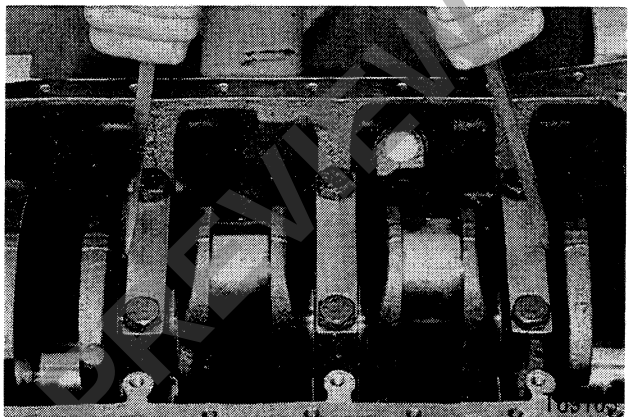
STEP 124

B902923J

Remove the template. Use a shop cloth in the coolant passage to keep metal shavings out of the engine. Use a rotary grinder to remove the material.

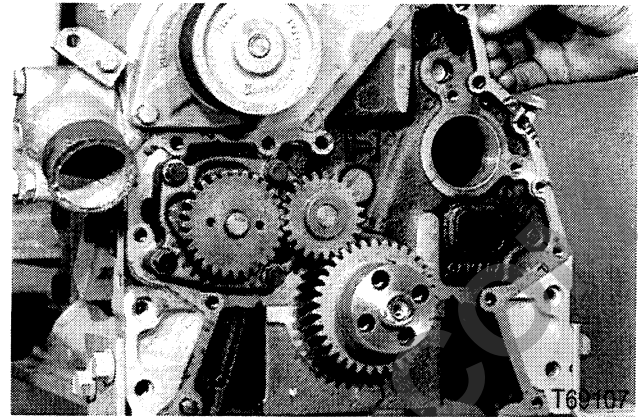
STEP 192

Install the torque angle gauge. Position and lock the holding rod. Turn the pointer to 60 degrees. Tighten the bolt until the pointer is at 0 degrees.

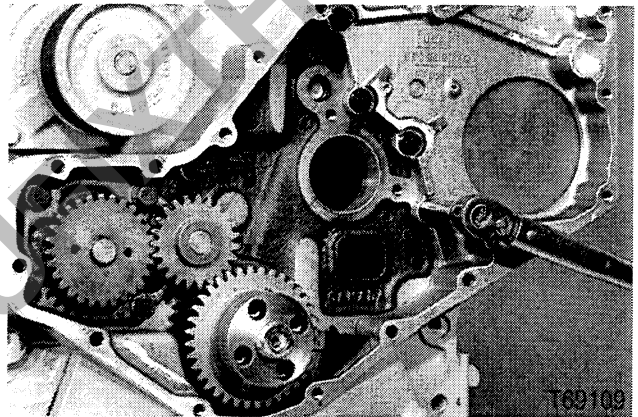
STEP 193

Put a dial indicator on the crankshaft gear. Check the crankshaft end clearance. The end clearance must be 0.041 to 0.119 mm. If the clearance is more than 0.119 mm, replace all the main bearing liners or the crankshaft.

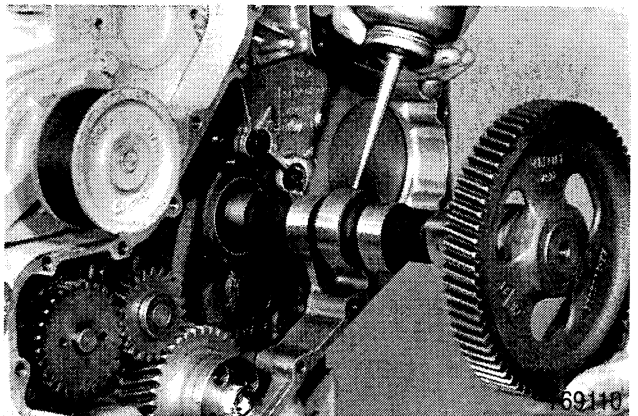
NOTE: To get an accurate reading, use a pry bar between the crankshaft and the number two and number four main bearing caps as shown above.

STEP 194

Install a new front housing gasket.

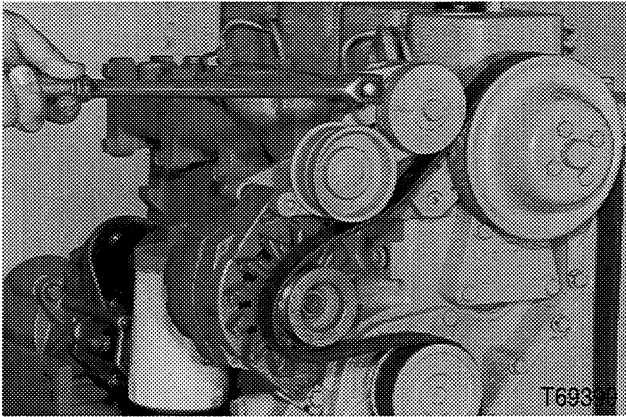
STEP 195

Install the front housing and tighten the bolts to a torque of 21 to 27 Nm.

STEP 196

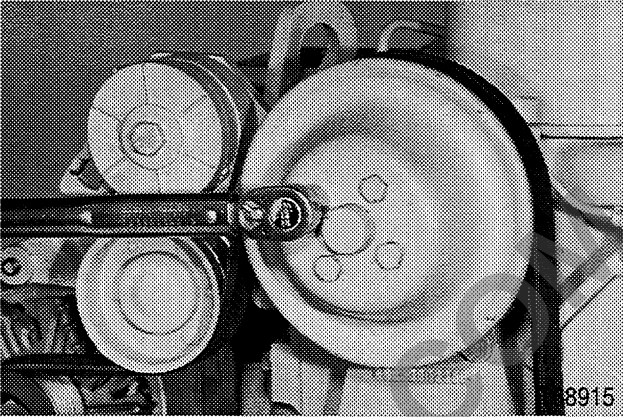
Add lubrication to the camshaft bearing journals. Use clean engine oil.

STEP 46



Lift the belt tensioner pulley and install the fan belt.

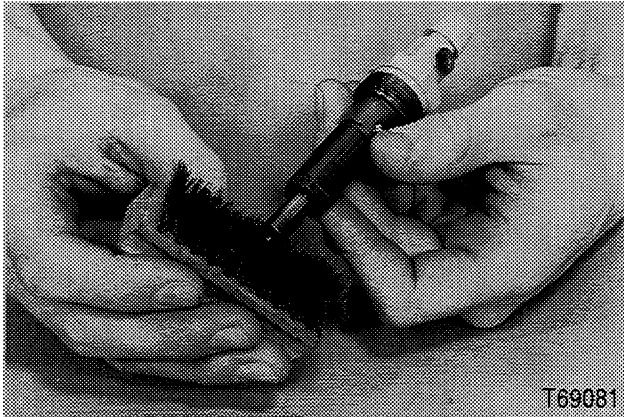
STEP 47



Tighten the fan belt pulley retaining bolts to a torque of:

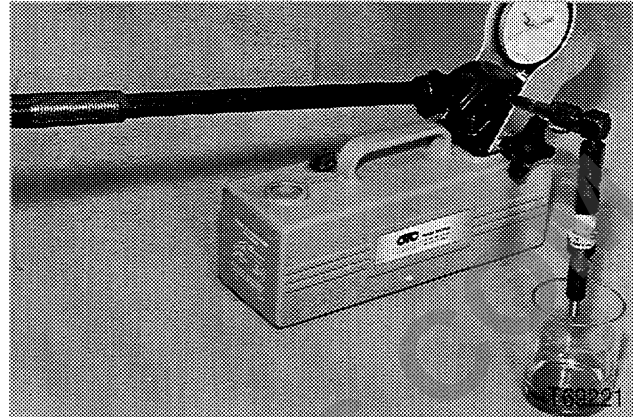
Grade 8.8 Size	26 to 31 Nm
Grade 10.9 Size M8	37 to 43 Nm
Grade 8.8 Size M10	51 to 62 Nm
Grade 10.9 Size M10	51 to 62 Nm

TESTING INJECTORS



The injector must be cleaned before testing the injector. Wash the body, nozzle tip and the cap nut in a solvent to remove external dirt, grease and carbon deposits from the cap, body and outside diameter of the tip.

IMPORTANT: Do not permit the wire brush to contact the tip (spray hole area) of the nozzle.



Connect the injector to the nozzle tester. The nozzle tip must be facing down.



WARNING: When testing or adjusting fuel injectors, do not put your hands or arms in front of spray. The spray will penetrate the skin causing serious personal injury. SM126A

Fuel from the spray orifices can enter clothing and skin, causing serious damage. The tip must always be put in a container to contain the spray.

Checking Opening Pressure

Close the pressure release valve and the gauge protection valve, operate the pump rapidly to flush the injector. Open the gauge protection valve and raise the pressure slowly until the injector valve opens (the gauge reading will fall quickly at this point). Check the opening pressure against the Specifications, refer to Page 3.

NOTE: There must not be more than 10.34 Bar (150 PSI) difference between any of the injectors that have been removed from the engine.

If the injectors do not meet the given opening pressure:

1. New injectors can be adjusted to the given opening pressure. Refer to Page 16.
2. Injectors in use must be disassembled and cleaned. Refer to Page 12.
3. Check for broken or weak opening pressure control springs.

The instrument cluster is located in the console.

<u>Check Points</u>	<u>Reading</u>	<u>Possible Cause of Bad Reading</u>
Terminal T18 to ground	Continuity	Check the circuit from the connector through the diode to the key switch (6). Check the diode in the circuit, see diode check on page 43. Also check the key switch (6).

NOTE: *Disconnect the tachometer wires from the instrument cluster.*

NOTE: *Turn the key switch to ON.*

Terminal for wire 23F to ground	12 volts	Check the circuit between the connector and the key switch (6). Also check the 10 ampere fuse in the fuse block (14) and the key switch (6).
Terminal for wire 10 to ground	Continuity	Check wire 10 to ground.
Terminal for wire 31S at the connector to terminal for wire 31S at the alternator (2)	Continuity	Check the circuit between the connector and the alternator (2).

NOTE: *Disconnect wire 31S from the alternator. Put the transmission control lever in NEUTRAL. Have another person start and run the engine at low idle.*

Terminal for wire 31S on the alternator to ground. Check for AC voltage.	6 volts AC	Bad alternator. See Section 4007 and repair the alternator.
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16 Hydraulic Filter Restriction Switch

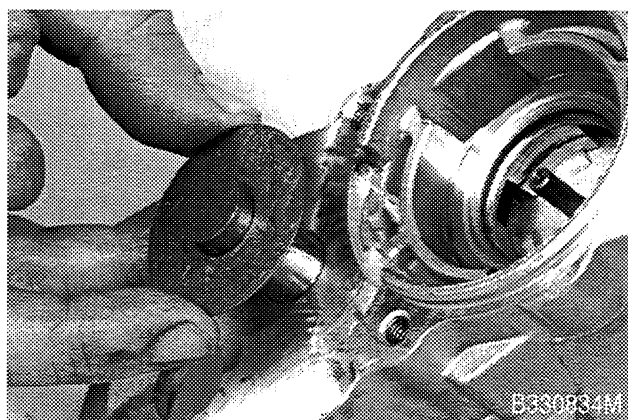
The hydraulic filter switch is located in the hydraulic filter housing.

<u>Check Points</u>	<u>Reading</u>	<u>Possible Cause of Bad Reading</u>
Check between the housing of the hydraulic filter switch and the filter housing	Continuity	Bad ground connection.

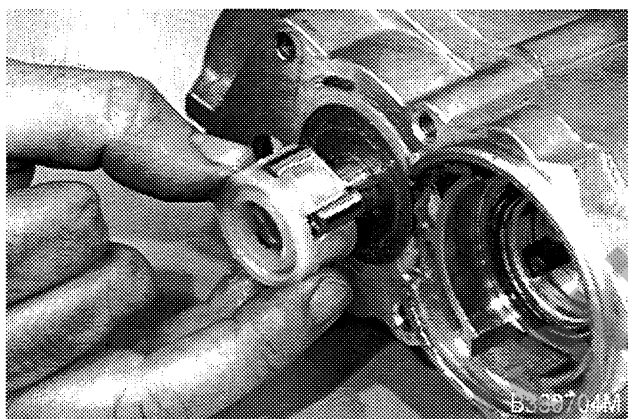
NOTE: *Turn the key switch to ON.*

Terminal for wire 36H to ground	12 volts	Check the circuit between the hydraulic filter and the instrument cluster (15). Also check the instrument cluster (15).
---------------------------------	----------	---

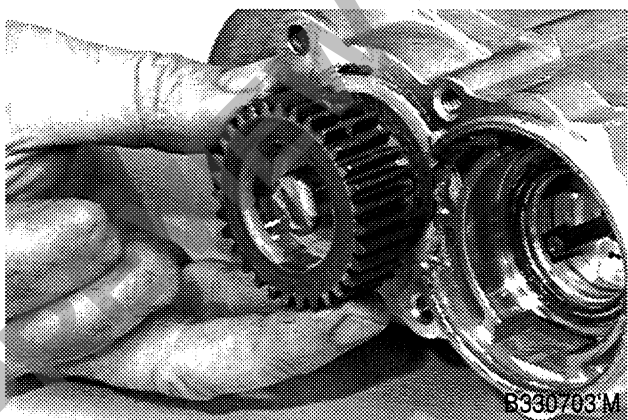
NOTE: *If the readings are good, replace the hydraulic filter switch.*

STEP 29

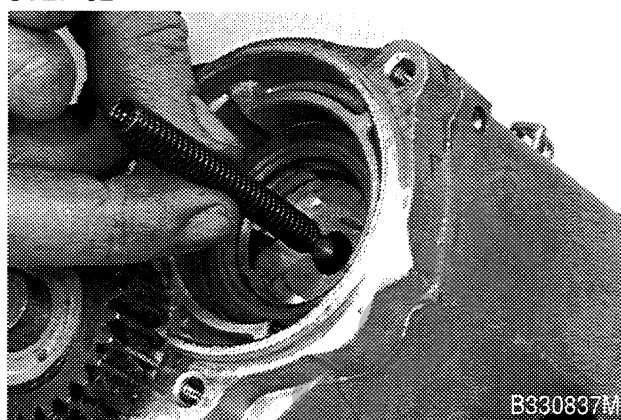
Install the thrust washer.

STEP 30

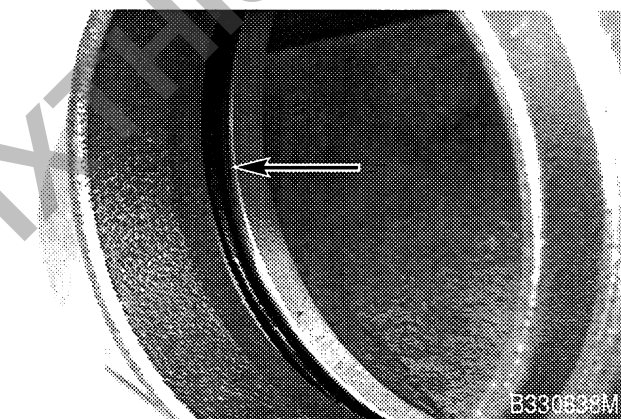
Install the bearing cage as shown.

STEP 31

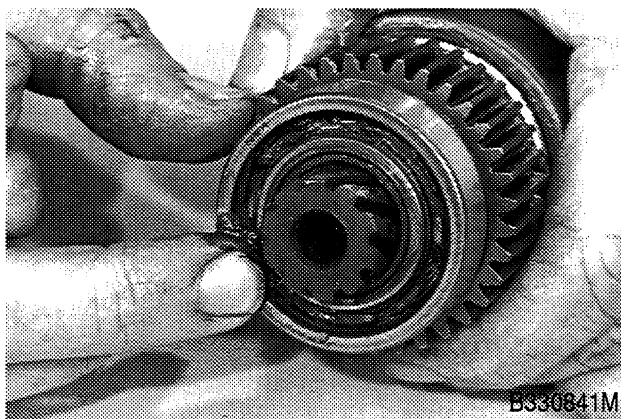
Install the idler gear.

STEP 32

Install the spring.

STEP 33

Install a new O-ring in the groove in the starter drive housing. Lubricate the O-ring.

STEP 34

Lubricate the open bearing on the starter drive with the grease specified on page 3.

FRONT AXLE - TWO WHEEL DRIVE MACHINES

Removal

1. Raise the front wheels above the floor and use suitable stands to hold the machine in place.
2. Loosen and remove the wheel bolts and remove the wheels.
3. Fasten an identification tag to one of the hoses for the steering cylinder.
4. Disconnect the hoses from the fittings in the steering cylinder. Install a plug in each hose and a cap on each fitting.
5. Remove the snap ring (1) from the rear of the pivot pin (2).
6. Remove the spacers (6).
7. Loosen and remove the grease fitting (4) from the end of the pivot pin (2).
8. Put a floor jack under the axle (5) to hold the axle (5) in position.
9. Drive the pivot pin (2) out of the frame.
10. Spacers (3 and 6) are used at the front and rear of the axle (5), between the axle (5) and the frame. Lower the axle (5) and remove the spacers (3 and 6).
11. Remove the axle (5) from under the machine.

Installation

1. Raise the axle (5) into alignment with the machine.
2. Loosen and remove the grease fitting (4) from the other end of the pivot pin (2). Install the pivot pin (2) with the tapered end of the pivot pin (2) toward the rear of the machine.
3. Install a spacer (3) between the front of the axle (5) and the frame. Use spacer(s) (3) to remove any end play.

4. Start the pivot pin (2) into the frame, spacer(s) (3) and axle (5).

5. Drive the pivot pin (2) into the rear pivot of the axle (5) but not through the rear pivot.

6. Install the spacer (6) between the rear of the axle (5) and the frame.

NOTE: Remove or install spacer(s) (3) as required between the front of the axle and the frame to remove any end play..

7. Drive the pivot pin (2) through the rear pivot and the frame.

8. Install the snap ring (1) on the tapered end of the pivot pin (2).

9. Hit the pivot pin (2) to move the pivot pin (2) toward the front of the machine as far as possible.

10. Check the end play between the frame and the snap ring (1) on the pivot pin (2) at the front of the machine. Use spacers (3) as required to remove any end play.

11. Install a grease fitting (4) in each end of the pivot pin (2). Tighten the grease fittings (4).

12. Loosen and remove the plugs from the hoses and the caps from the fittings for the steering cylinder.

13. Connect the hoses to the steering cylinder.

14. Install the wheels and wheel bolts. DO NOT use an impact wrench to tighten the wheel bolts.

15. Tighten the cap screws to 115 to 150 pound-feet (156 to 203 Nm)

16. Remove the stands and lower the wheels to the floor.

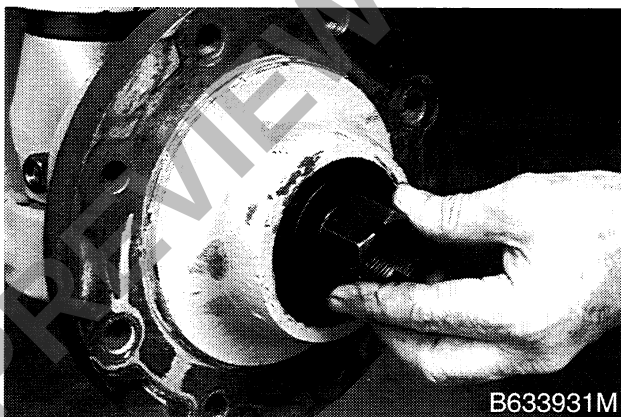
17. Lubricate the pivot pin (2) for the axle (5).

STEP 27

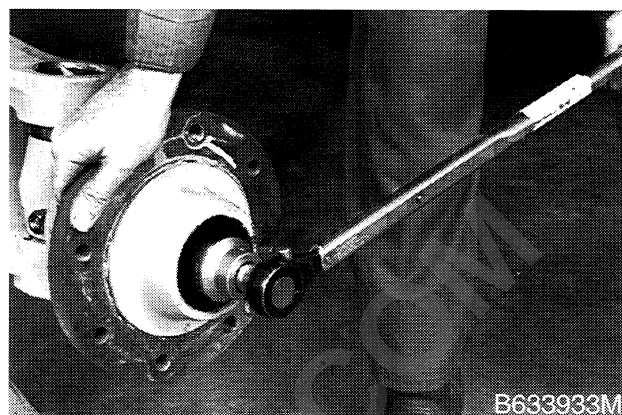
Install the hub onto the spindle.

STEP 28

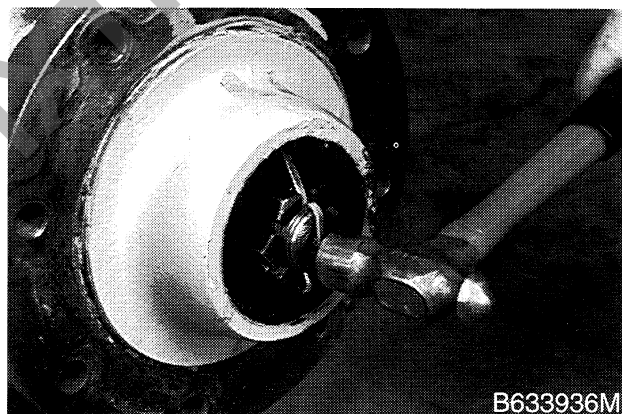
Install the outer wheel bearing.

STEP 29

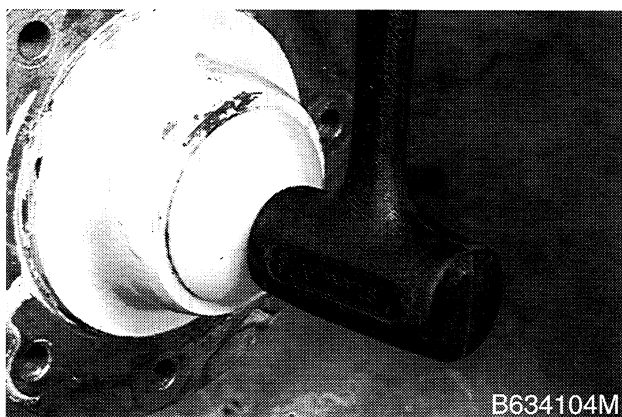
Install the flat washer and the nut.

STEP 30

Tighten the nut to a torque of 75 to 85 pound-feet (101 to 115 Nm) and turn the hub at the same time. Then loosen the nut to the first cotter pin hole.

STEP 31

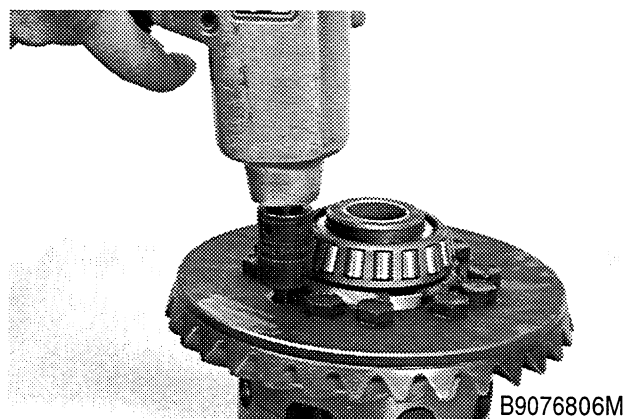
Install the cotter pin.

STEP 32

Install the cap.

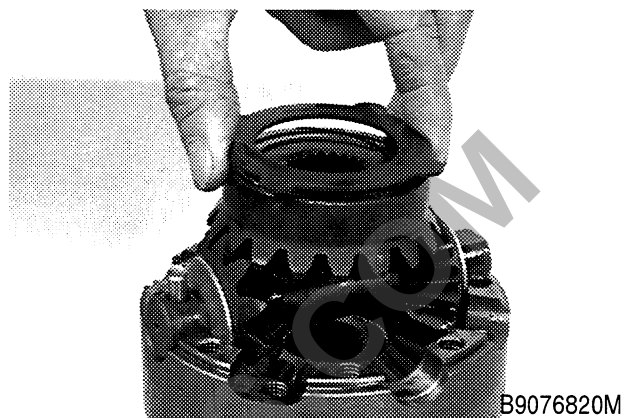
DISASSEMBLY OF DIFFERENTIAL

STEP 139



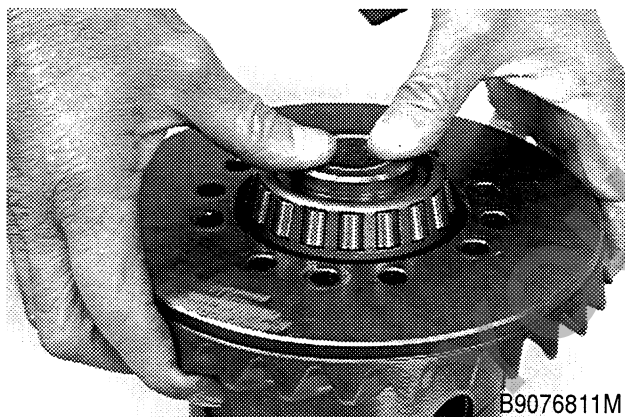
Remove the cap screws.

STEP 142



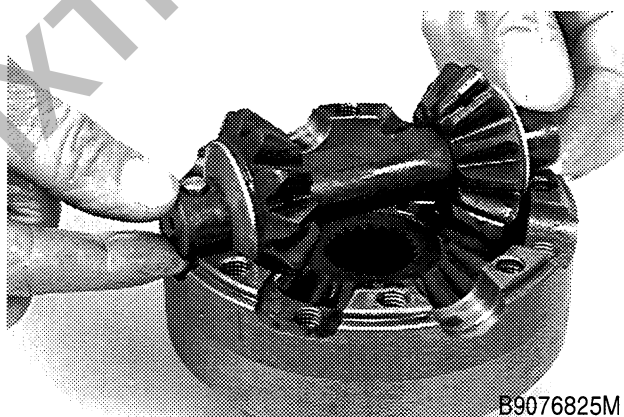
Remove the thrust washer and side gear.

STEP 140



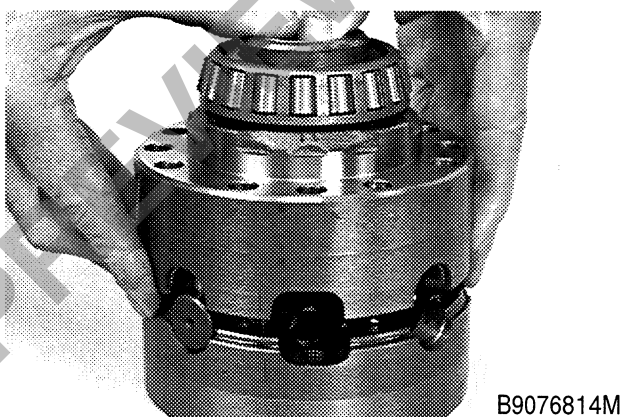
Remove the ring gear.

STEP 143



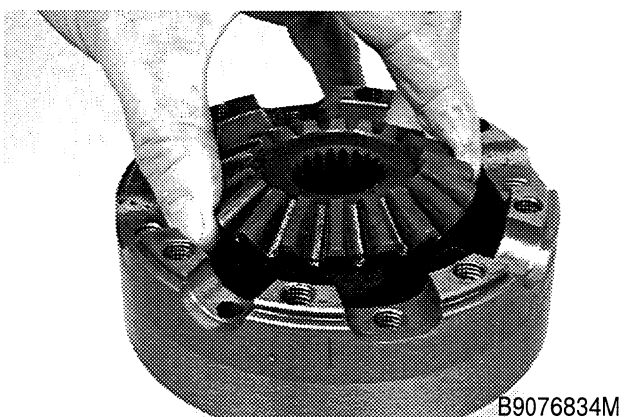
Remove the pinion shaft assembly and pin.

STEP 141



Separate the case halves.

STEP 144



Remove the side gear.

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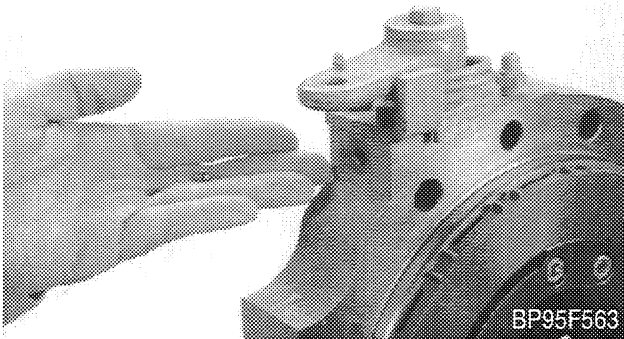
NOTE: The Case Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

NOTE: If your brake switch is early production, your brake switch can be updated to that shown for late production by using an additional steel ball, a 0.5 mm shim, and a M10 x 1 hex nut on your brake switch and following the instructions under late production for installation.

STEP 239

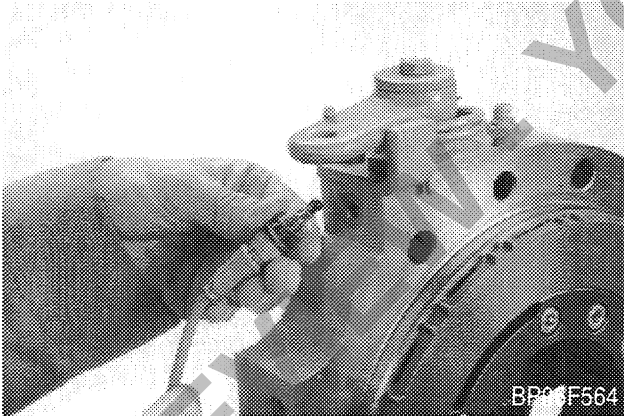
Do steps 240 through 242 for early production machines.

STEP 240



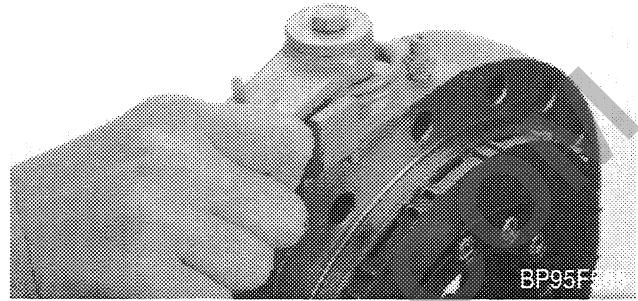
Install the steel ball.

STEP 241



Put one 0.5 mm shim and one 1.0 mm shim on the switch. Install the switch in the brake housing.

STEP 242



Connect an ohmmeter to the leads on the switch. Move the lever approximately 1/16 inch (1.6 mm) away from the stop. The ohmmeter must indicate that the switch will come on when the cam engages the retainer or slightly before.

1. If the ohmmeter indicates that the switch is working before the lever is moved, do the following steps in the order shown until the reading is correct:

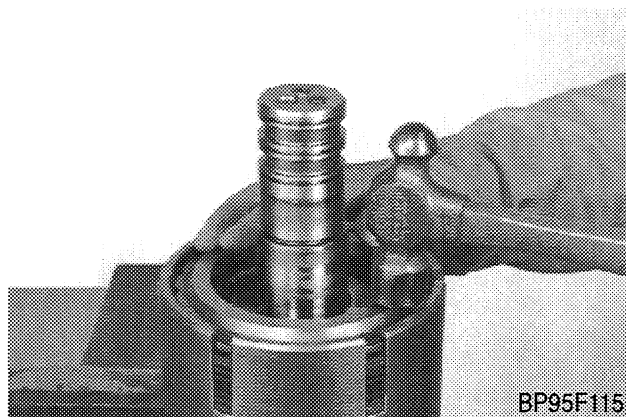
- A. Loosen the cap screws on the bracket and move the bracket away from the lever as far as possible. Tighten the cap screws.
- B. Remove the switch and add shim(s) as required until the switch is no longer working when against the stop.
- C. Repeat steps 235 through 238 and move the lever one tooth clockwise on the shaft.

NOTE: If step C is too much adjustment, turn the lever over and install the lever. This will allow a smaller adjustment of the lever on the shaft.

2. If the ohmmeter does not indicate that the switch is working when the lever is moved approximately 1/16 inch (1.6 mm) away from the stop, do the following steps in the order shown until the reading is correct:

- A. Remove shim(s) from the switch as required until the ohmmeter indicates the switch is working when the lever is moved approximately 1/16 inch (1.6 mm) away from the stop.
- B. Repeat steps 235 through 238 and move the lever one tooth counter counterclockwise on the shaft.

NOTE: If step B is too much adjustment, turn the lever over and install the lever. This will allow a smaller adjustment of the lever on the shaft.

STEP 120

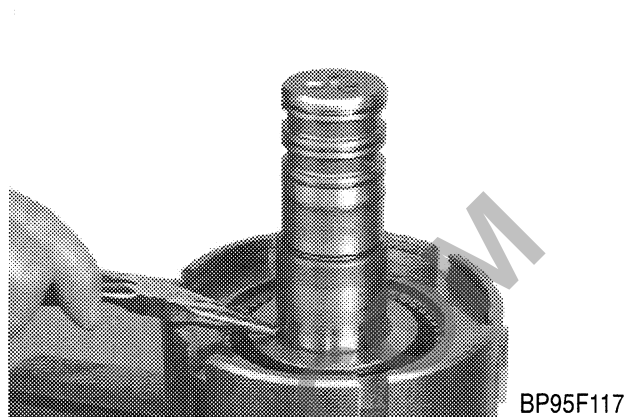
Tap lightly on the end plate to move the end plate down so that there is clearance between the snap ring and the end plate.

STEP 121

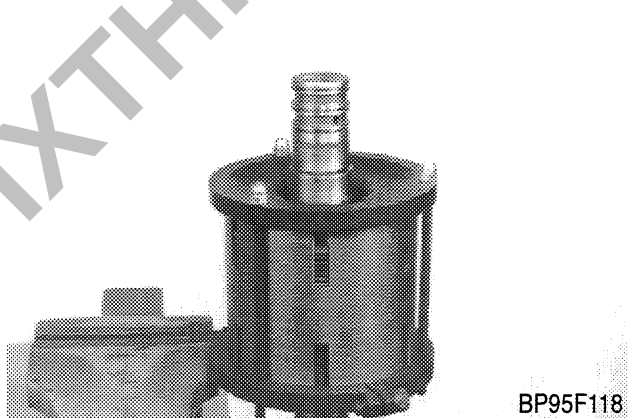
Remove the snap ring.

STEP 122

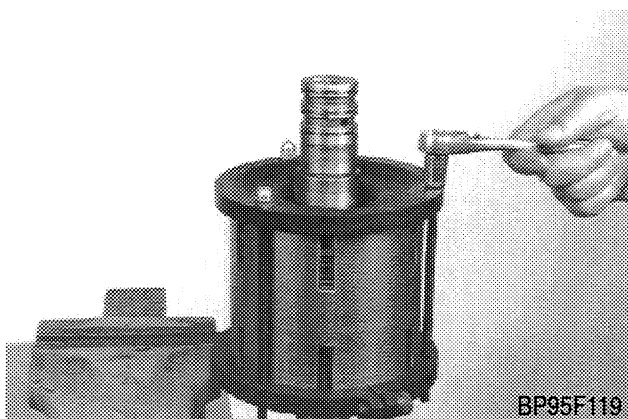
Use prybars to lift the end plate evenly. Remove the end plate.

STEP 123

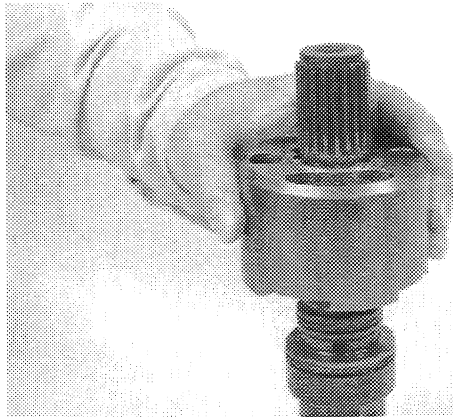
Remove the roll pin.

STEP 124

Install the top piece of the CAS-2379 special tool as shown. Use the three threaded rods and nuts to fasten the two pieces together.

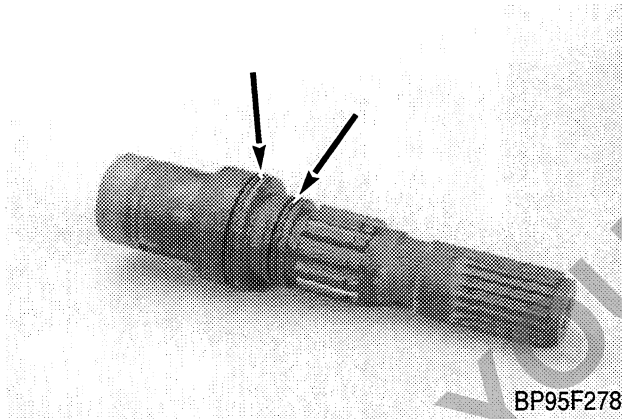
STEP 125

Tighten the nuts evenly to compress the spring. Compress the spring just enough to get access to the snap ring.

STEP 346

BP95F277

Remove the sleeve.

STEP 347

BP95F278

Remove the two O-rings from the shaft.

STEP 10

Drain the fluid from the master cylinder reservoir (5).

STEP 11

Disconnect the tubes (4) for the master cylinder reservoir (5) from the master cylinder (1).

STEP 12

Disconnect the tubes (6 and 7) from the master cylinder (1).

STEP 13

Loosen and remove the bolts (8) and lock washers (9) that fasten the master cylinder (1) to the frame.

STEP 14

Remove the master cylinder (1) from the frame.

STEP 15

Install caps on the tubes (6 and 7).

Installation

STEP 16

Hold the master cylinder (1) in alignment with the holes in the frame and install the lock washers (9) and bolts (8) that fasten the master cylinder (1) to the frame.

STEP 17

Connect the tubes (4, 6, and 7) to the master cylinder (1). Tighten the tube nuts on the tubes (4 and 6) to 120 to 182 pound-inches (13.5 to 20.5 Nm). Tighten the tube nuts on the tubes (5) to 195 to 239 pound-inches (22 to 27 Nm).

STEP 18

Put the clevis on the master cylinder in position on the brake pedal. Install the clevis pin (2) that fastens the clevis (3) to the brake pedal.

STEP 19

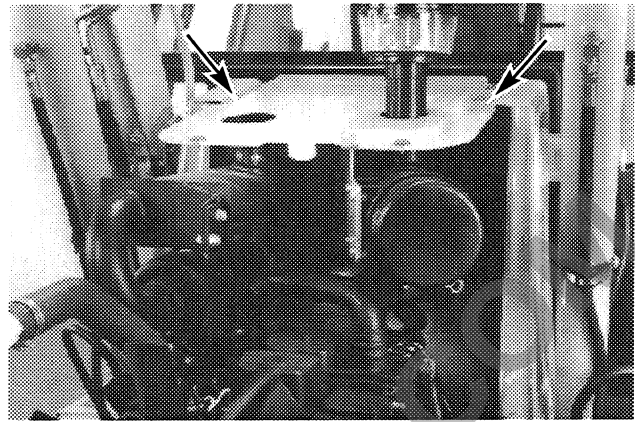
See page 6 and remove the air from the brake system.

STEP 20

Check for leakage at the master cylinder (1).

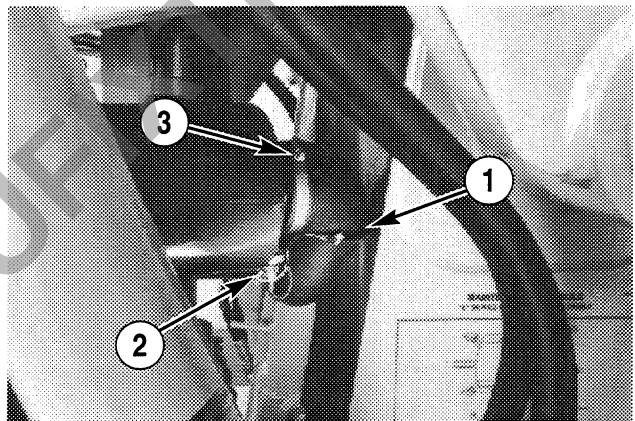
STEP 21

Put the insulator curtain in position on the frame. Install the bolts and flat washers that fasten the insulator curtain to the frame.

STEP 22

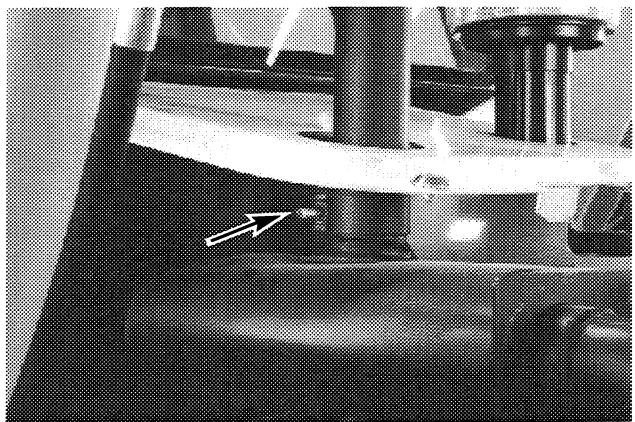
BP9502306

Put the cover and air cleaner assembly in position on the uprights. Install the cap screws and flat washers that fasten the cover to the uprights.

STEP 23

BP9502308

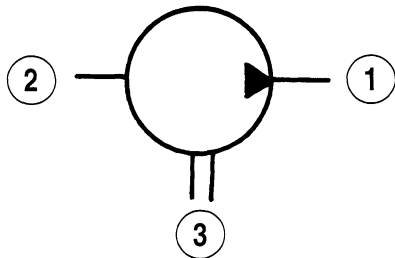
Connect the hose for the air cleaner. Tighten the clamp (3) on the air cleaner hose. Connect the electrical connectors (2) to the air restriction indicator. Install a new tie strap (1).

STEP 24

BP9502309

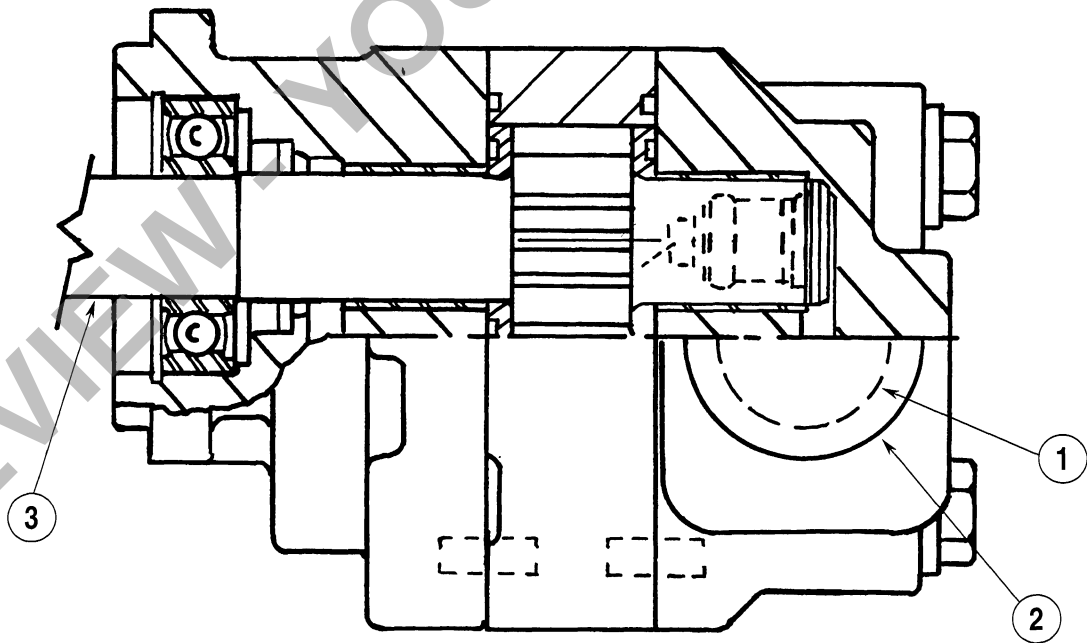
Put the exhaust pipe in position on the muffler. Tighten the clamp for the exhaust pipe at the muffler.

1 HYDRAULIC PUMP

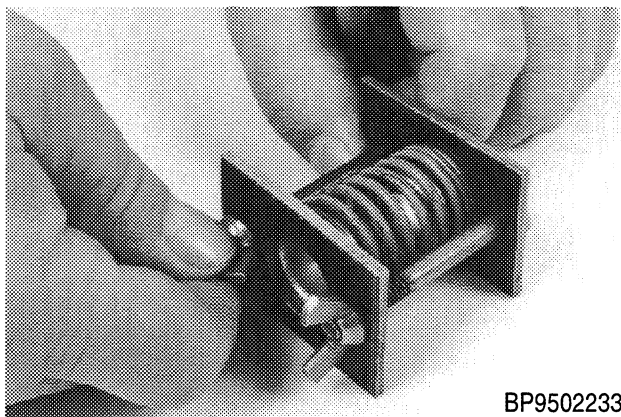


- 1. Outlet
- 2. Inlet
- 3. Drive Shaft

Generates oil flow for the complete hydraulic system.

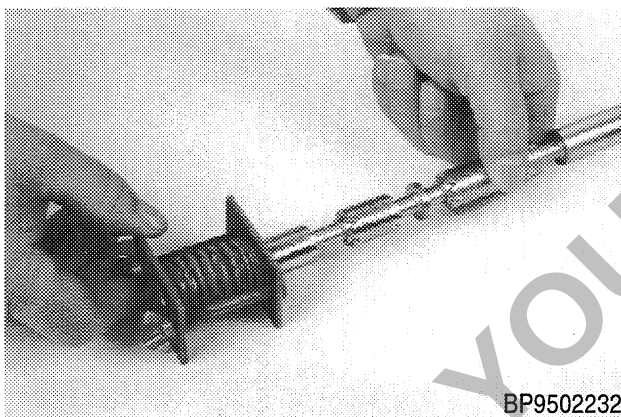


B9409097J

STEP 105

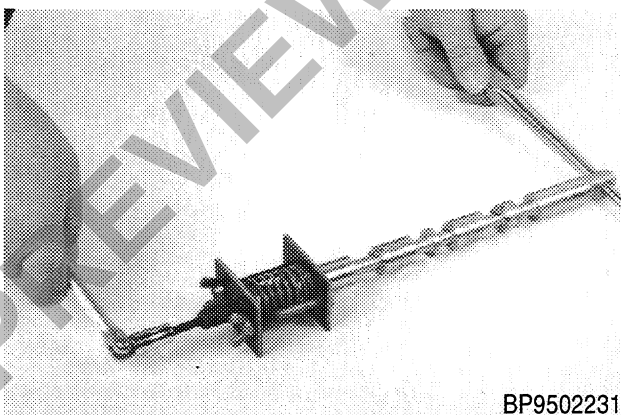
BP9502233

Assemble the spring and the spring seats. Use the spring compressing plates shown on page 4 to compress the spring.

STEP 106

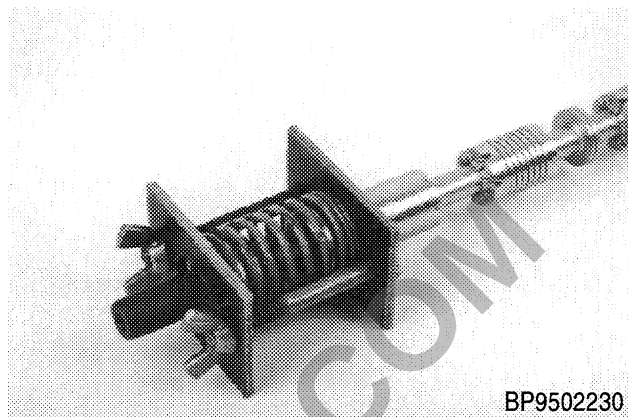
BP9502232

Install the spring and the spring seats on the spool.

STEP 107

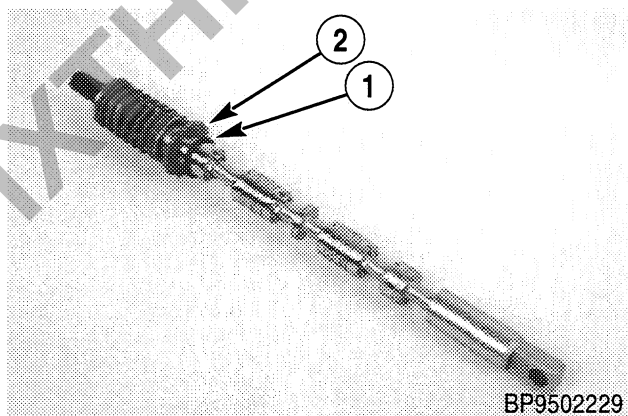
BP9502231

Apply Loctite 242 (blue) to the threads of the stud. Install the stud in the spool.

STEP 108

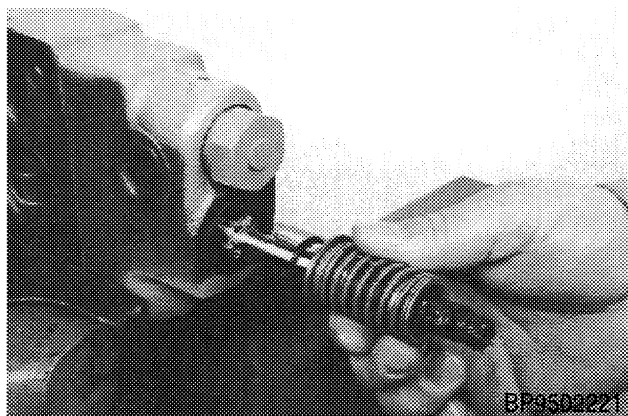
BP9502230

Remove the spring compressing plates.

STEP 109

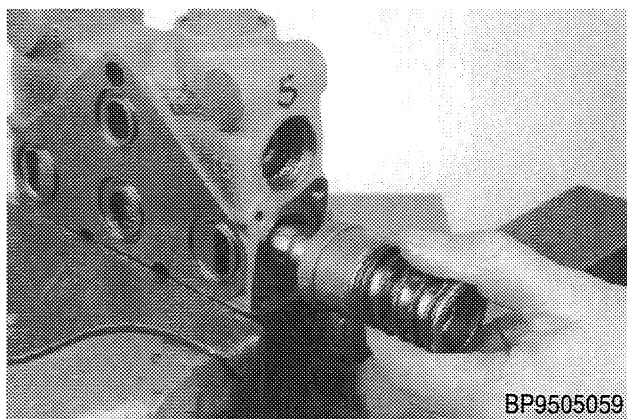
BP9502229

Use clean hydraulic oil to lubricate a new O-ring. Install the retainer (2) and a new O-ring (1) on the spool. Be careful so that you do not cut the O-ring (1) on the spool.

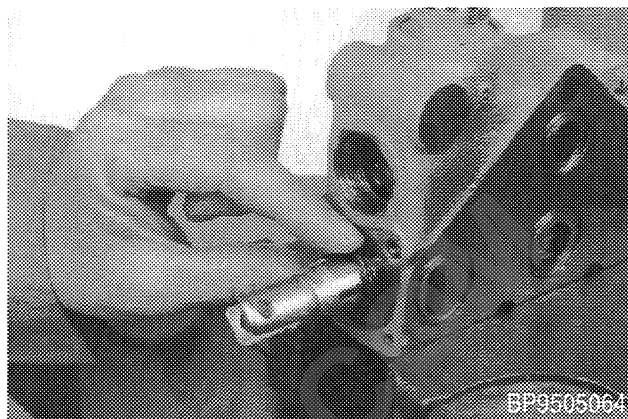
STEP 110

BP9502221

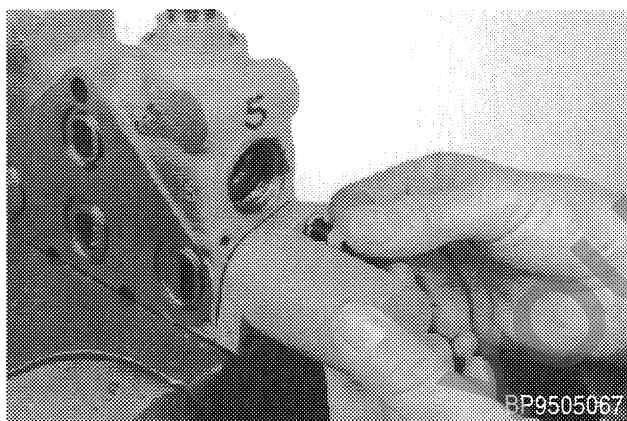
Use clean hydraulic oil to lubricate the spool and the spool bore. Install the spool.

STEP 79

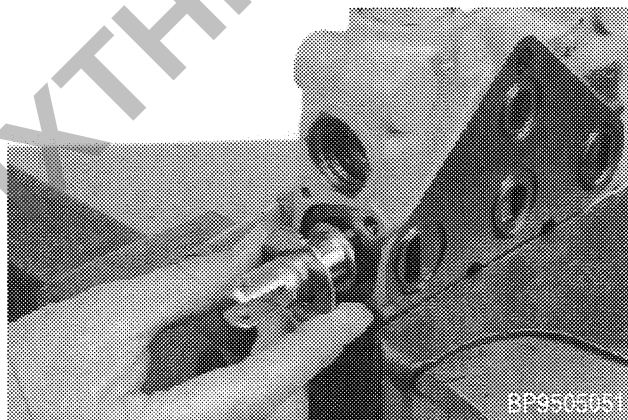
Lubricate the lift spool and spool bore with clean oil. Install the lift spool.

STEP 82

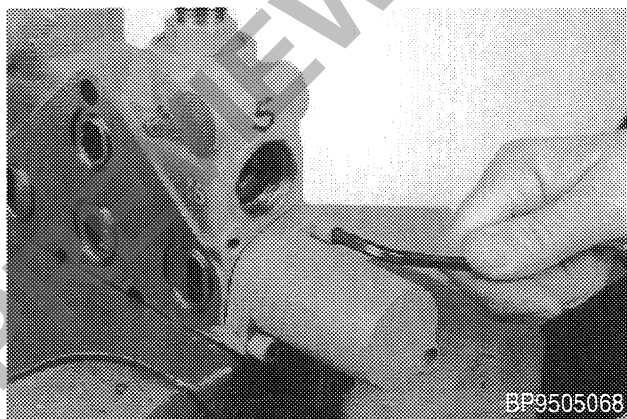
Install a new O-ring.

STEP 80

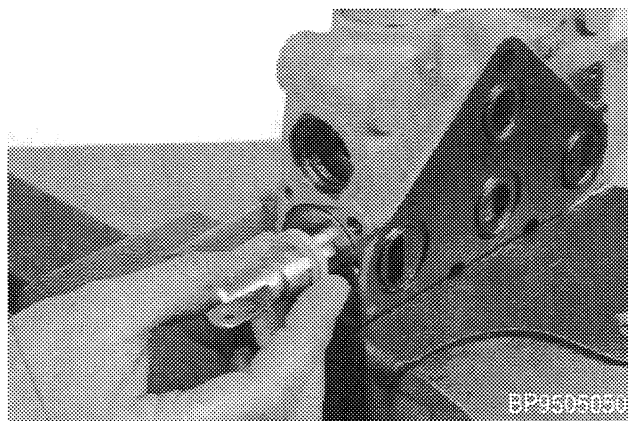
Install the spring cap.

STEP 83

Install the backup washer and flat washer.

STEP 81

Install and tighten the Allen head screws that hold the spring cap to a torque equal to 120 pound-inches (13.6 Nm).

STEP 84

Install a new wiper.

Section

8010

SOLENOID VALVES FOR MACHINES WITH OPTIONAL RIDE CONTROL

CASE CORPORATION
700 STATE STREET
RACINE, WI 53404 U.S.A.

Bur 7-52460

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Printed in U.S.A.
October 1996

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8010

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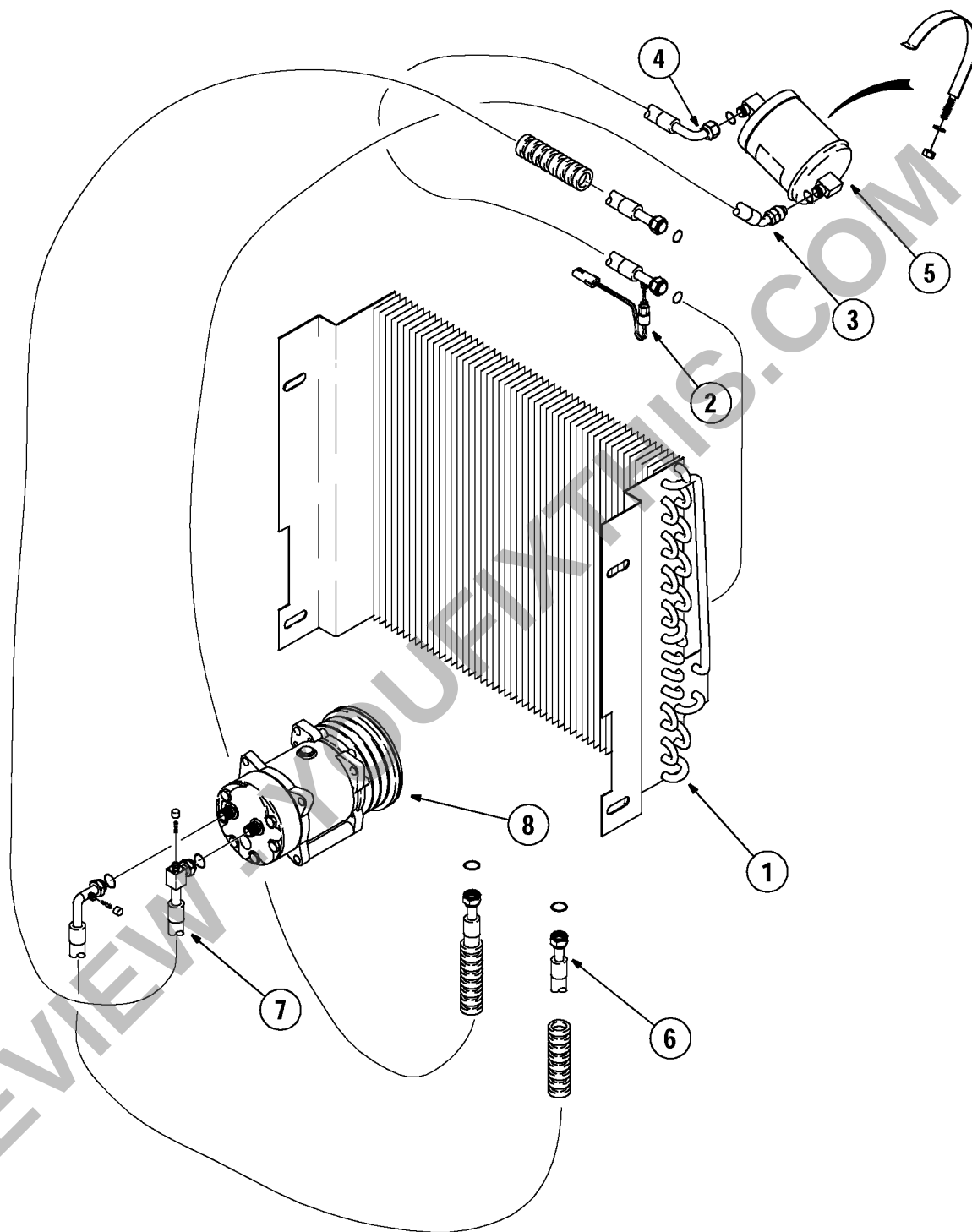
NOTE: The Case Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

SPECIAL TOOLS



A22094

Refrigerant Recovery, Recycling and Charging Station OEM-1418



- | | |
|---------------------------------------|-----------------------------------|
| 1. Condenser | 5. Receiver-Drier |
| 2. High Pressure Switch | 6. Hose - Compressor to Cab |
| 3. Hose - Receiver-Drier to Cab | 7. Hose - Compressor to Condenser |
| 4. Hose - Condenser to Receiver-Drier | 8. Compressor |

BT95F023

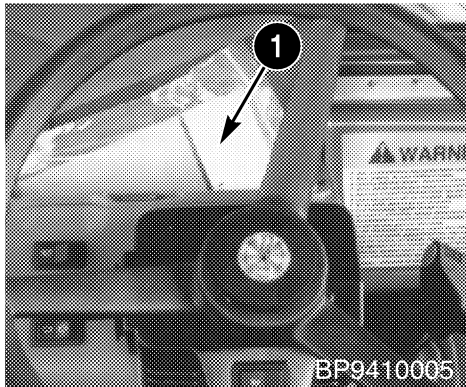
SAFETY / DECALS / HAND SIGNALS



SAFETY RULES



Most accidents involving machine operation and maintenance can be avoided by following basic rules and precautions. Read and understand all the safety messages in this manual, the EMI Safety Manual, and the safety decals on the machine before you operate or service the machine. See your Authorized Case dealer or the Case Corporation if you have any questions.



1. Operator's Manual Storage

Safety messages in this section point out situations which can be encountered during the normal operation and maintenance of your machine. These safety messages also give possible ways of dealing with these conditions.

Additional safety messages appear in the manual to indicate specific safety hazards.

READ THIS MANUAL COMPLETELY and make sure you understand the characteristics of speed, stability, steering, and operation of this machine.

Do not remove this manual or the safety manual from this machine. See your Case dealer for additional manuals. Also see the inside of the rear cover of this manual for detailed information for ordering manuals.

The safety information given in this manual does not replace safety codes, insurance regulations, or federal, state/provincial, or local laws. Make sure your machine has the correct equipment according to these rules or laws.

TRIM THIS EDGE

ENGINE STARTING AIDS



WARNING: Starting fluid (ether) can cause injury or death. An explosion can result if sparks, flame, or extreme heat contact the ether in the starting fluid container. Do not breathe starting fluid vapors. Wear face protection when you remove or install a starting fluid container or when you use an aerosol spray starting fluid. Use starting fluid according to instructions in this manual.

SA039

Case Starting Fluid - Hand Held Can

1. Make sure the parking brake is engaged and the direction control lever is in NEUTRAL.
2. Get another person to help you start the engine.
3. Push the foot throttle completely down.

4. Turn the engine key switch to START.
Have the second person inject the ether spray into the air intake.

NOTE: Do not operate the starter motor for more than 30 seconds at one time. Wait two minutes so the starter motor can cool.

5. When the engine starts, run at 1000 rpm until the coolant temperature is warm.

TRIM THIS EDGE

Coolant Levels



WARNING: Hot coolant can spray out if radiator cap is removed. To remove radiator cap:

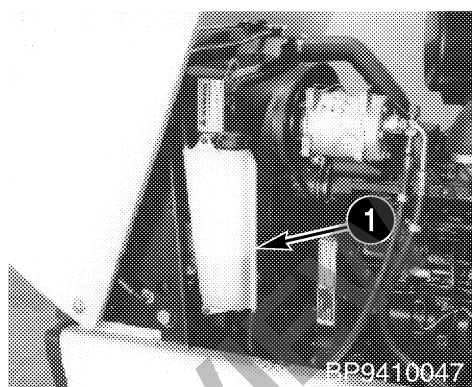
Let system cool, turn to first notch, then wait until all pressure is released. Scalding can result from fast removal of radiator cap.

Check and service engine cooling system according to maintenance instructions.

SA023

Coolant Reservoir Fluid Level

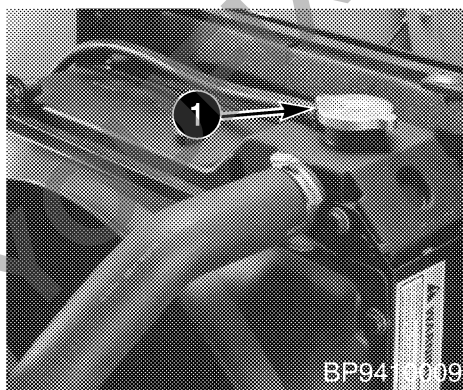
Check the coolant reservoir fluid level every 10 hours of operation or at the start of each day. Check the level when the coolant is cold and the engine is stopped. Do not remove the radiator cap during this check. The coolant level must be between the FULL and ADD marks on the reservoir. Add coolant as required to raise the coolant up to the FULL mark.



1. Coolant Reservoir

Radiator

Check the coolant level every 50 hours of operation when the coolant is cold and the engine is stopped. The coolant level must be up to the radiator opening.



1. Radiator Cap

NOTE: If the radiator coolant level is low and the coolant reservoir level is at the FULL mark, check for air leaks in the hose between the radiator and the coolant reservoir.

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