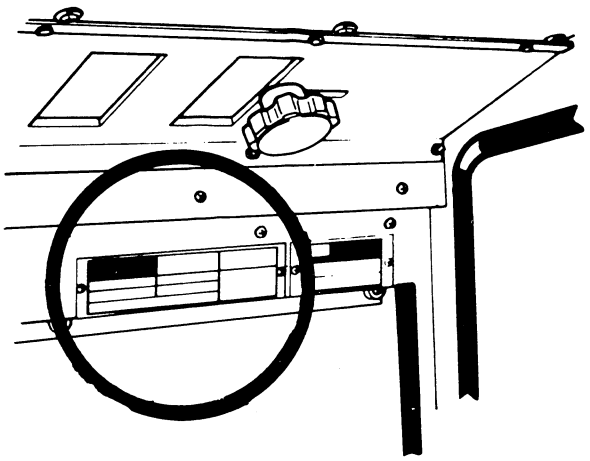
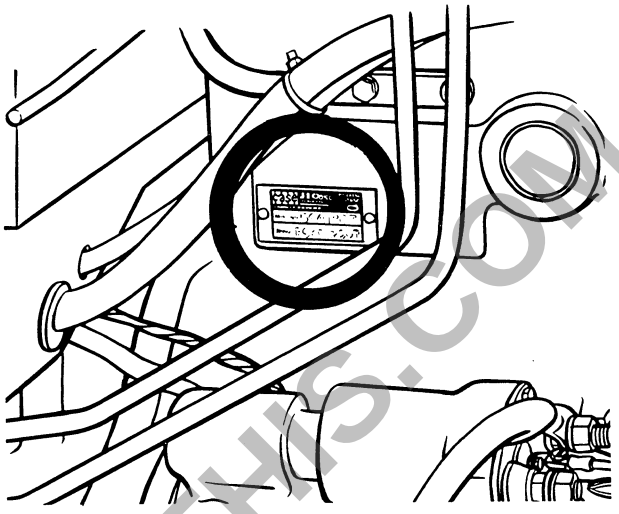
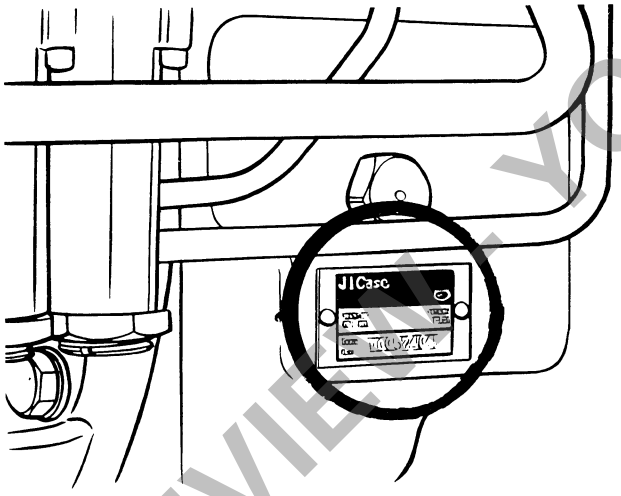
# SERIAL NUMBERS



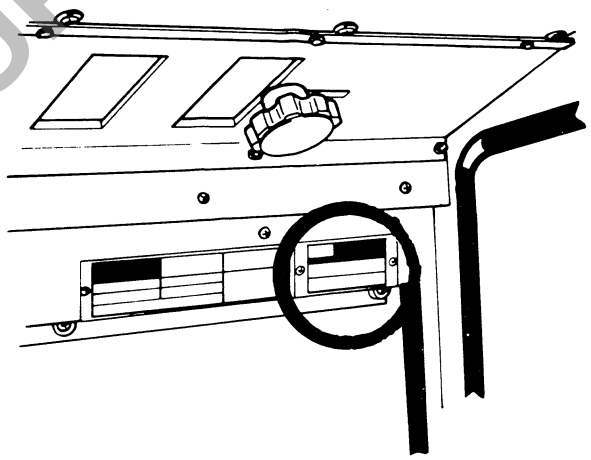
CAB SERIAL NUMBER PLATE



ENGINE SERIAL NUMBER PLATE




TRANSMISSION SERIAL NUMBER PLATE



MODEL AND PRODUCT IDENTIFICATION NUMBER PLATE

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# Section

# 1270

## BRAKE SYSTEM SPECIFICATIONS

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CASE CORPORATION

Rac 8-24880

Printed in U.S.A.
July, 1983

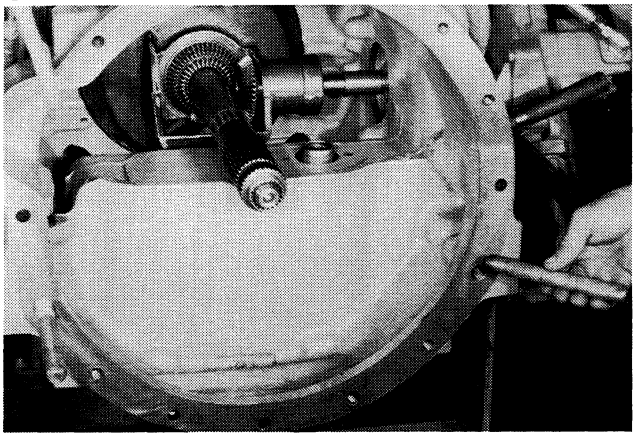
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# ASSEMBLING ENGINE TO TORQUE TUBE

## STEP 34

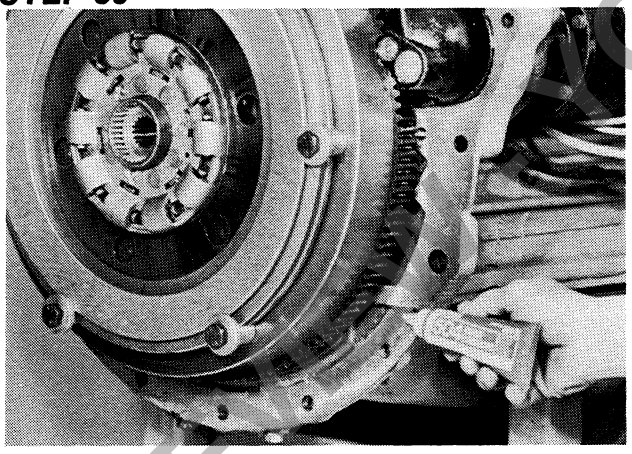
Assemble the engine to the torque tube by following the reverse order of Steps 33 through 1. Give specific attention to the following special assembly instructions.

## STEP 35



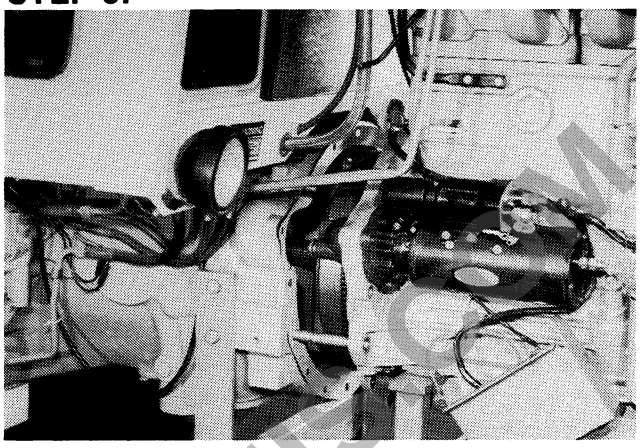
Install two 3/4" pilot studs in the torque tube housing.

## STEP 36



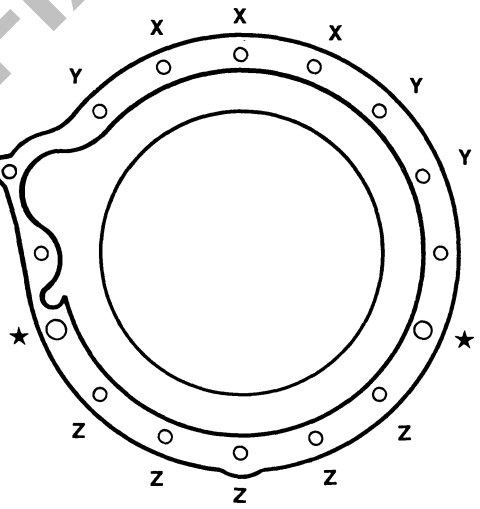
Apply Loctite 504 liquid gasket to the mounting surface.

## STEP 37



Push the engine and torque tube together. Rotate engine flywheel to align shaft splines with the torque limit splines, then push engine until mounting surfaces make contact.

## STEP 38




**X - 1/2 X 2" FERRY HEAD BOLTS**
**Y - 1/2 X 2" HEX HEAD BOLTS**
**Z - 1/2 X 1-5/8" HEX HEAD BOLTS**
**★ - 3/4 X 2-1/2" HEX HEAD BOLTS**

Install the retaining bolts as shown above.

Tighten bolts as follows:
1/2" bolts - 80 to 96 ft. lbs. (110 to 130 Nm) (11 to 13 kgm).
3/4" bolts - 270 to 324 ft. lbs. (365 to 440 Nm) (37 to 44 kgm).

Fill the transmission and cooling system with the correct amount of fluid.

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# Section

# 2225

## CYLINDER BLOCK, SLEEVES, PISTONS AND RODS

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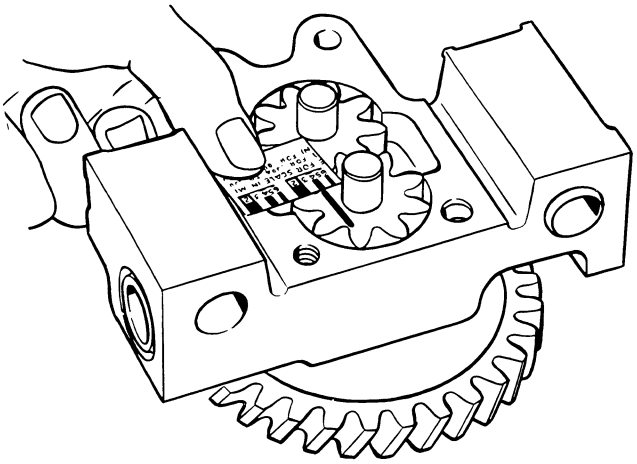
Rac 8-20150

Printed in U.S.A.
August, 1978

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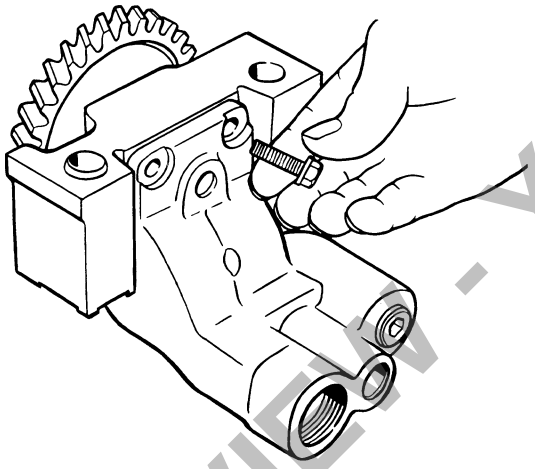
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**STEP 48**



Remove the cover from the body. Check the clearance between the cover and the gears. Use a Plastigage scale. Replace the pump if the clearance is more than 0.005" (0.127 mm).

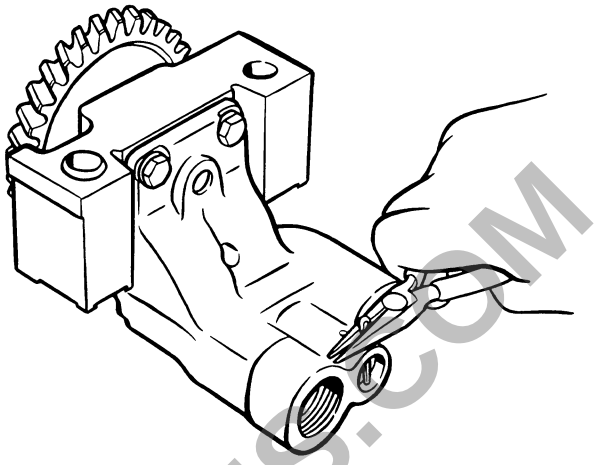
**STEP 49**



Put the cover on the body. Install and tighten the bolts to a torque of 24 to 29 ft. lbs. (33 to 39 Nm) (3.3 to 3.9 kgm).

**NOTE:** *Adjust the cover position while tightening the bolts to give free rotation to the shaft and gears.*

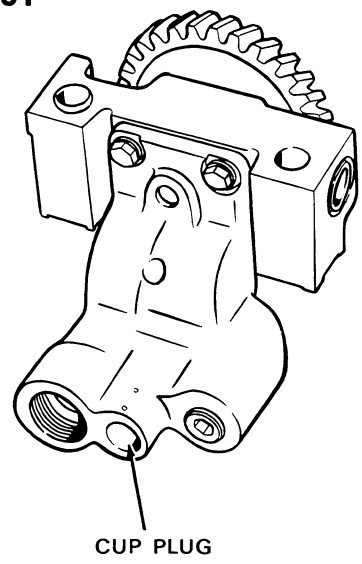
**STEP 50**



Remove the cotter pin that holds the relief valve and spring in position.

**NOTE:** *Be careful when removing the cotter pin. There is spring pressure behind the parts.*

**STEP 51**




Drill a hole in the cup plug. Remove the cup plug by pulling the cup plug out.

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# Section

# 2290

## RECONDITIONING LARGE BORE CASE ENGINE BLOCKS WITH THE PORTABLE CUTTING TOOL AND CHAMFER CUTTERS

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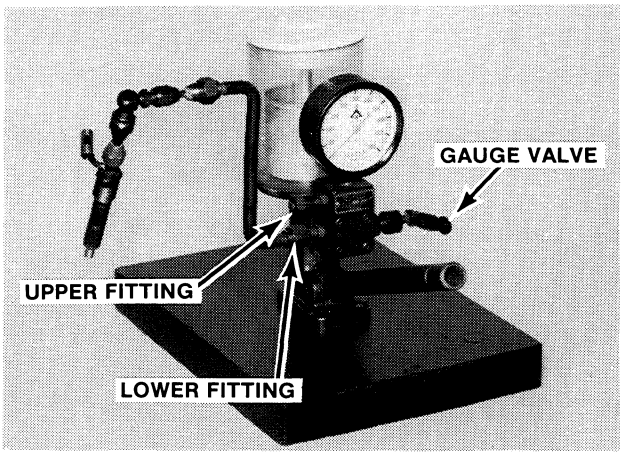
CASE CORPORATION

Rac 8-21170

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August, 1978

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# INJECTOR TEST STAND




A Diesel Fuel Injection Nozzle Tester (CAS-10091) (Bench Model) is needed for checking and adjusting the injectors. The following instructions will work for all models of test stands except for descriptions on adjustments to the test stand. Operating instructions are given with the test stand.

An Injector Kit (CAS-10093) is needed for maintenance of the injectors.

The test stand is used to make the following checks:

1. Check and adjust the injector opening pressure.

2. Check the injector assembly for fuel leakage.

3. Check the injector for an accurate spray pattern.

Fuel injectors must be checked on the test stand when making the following service operations:

1. An injector that has been removed from the engine for cleaning , must be checked on the test stand before the injector can be installed in the engine.

2. A new injector assembly must be checked on the test stand before the injector can be installed in the engine.

3. All the injectors must be removed and checked on the test stand during an engine overhaul.

4. An injector must be removed and checked on the test stand before the injector is disassembled, if the injector is the cause of engine performance that is not acceptable.

**IMPORTANT:** *The performance of an injector must be always checked on a test stand before the injector is disassembled. There is no need to disassemble or adjust the injector if the performance on the test stand is acceptable.*

## Test Stand Preparation

1. Open the gauge valve.

2. Fill the supply cup with fuel. A number of strokes of the pump handle will be necessary to remove the air that is in the system. There is a vent screw in the side of the housing. The screw is directly behind the lower discharge fitting. This screw is a priming assistance and the screw can be opened for complete ventilation.

3. The test stand has two discharge fittings to make testing easier. Connect the injector to the lower fitting when flushing the nozzle or checking the spray pattern. Close the gauge valve. This will separate the gauge and the nozzle from the test stand. The number of strokes of the pump handle can now be extended.

   Connect the injector to the upper fitting when testing for leakage rates or pressure falls. Close the gauge valve. This will separate the gauge and nozzle from the test stand so that accurate measurements can be taken.

4. The lower discharge fitting is used for normal tests on hydraulically operated nozzles. The upper discharge fitting is used for leakage rate measurements.

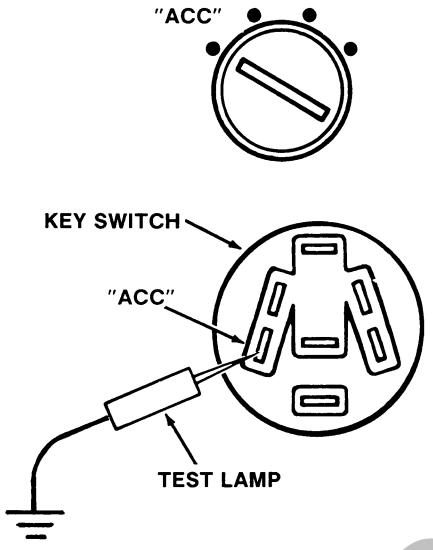
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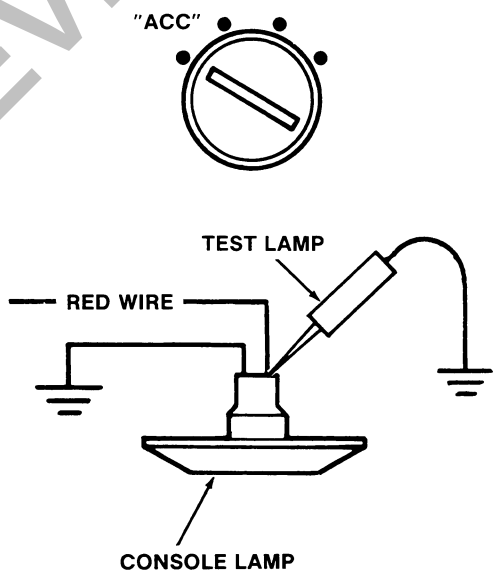
**STEP 8C**

| PROCEDURE | RESULT |
|---|---|
| Check power from the key switch:<br>a. Turn the key switch to the "ACC" position.<br>b. Connect one wire of a 12 volt test lamp to a good ground.<br>c. Connect the other test lamp wire to the "ACC" terminal on the key switch. Check for test lamp illumination. | a. Test lamp illuminates:<br>Repair the purple/white wire No. 62 between the key switch and the "Radio and Night Light" fuse in the fuse panel and<br>Go back to Step 8A<br>b. Test lamp does not illuminate:<br>Check key switch operation as in Step 1E and<br>Go back to Step 8A |




**STEP 8D**

| PROCEDURE | RESULT |
|---|---|
| Check power to console lamp:<br>a. Turn key switch to the "ACC" position.<br>b. Connect one wire of a 12 volt test lamp to a good ground.<br>c. Connect the other test lamp wire to the power wire (red wire) on the console lamp. Check for test lamp illumination. | a. Test lamp illuminates:<br>Repair console lamp ground and<br>Go back to Step 8A<br>b. Test lamp does not illuminate:<br>Check the pink/black wire No. 62B and the pink/yellow wire No. 62A between the "Radio and Night Light" fuse and the console lamp. Check the upper cab connector. Repair as necessary and<br>Go back to Step 8A |





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# Section

# 4230

## STARTING MOTOR
## Nippondenso

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**!MPORTANT:** *This starting motor was made using the metric system. All measurements and the checks must be made with metric tools to make sure of an accurate reading when inspecting parts.*

CASE CORPORATION

Rac 8-25980

Printed in U.S.A.
January, 1985

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# GENERAL INFORMATION

## Case Diagnostic Monitor

The Case Diagnostic Monitor is a fast and highly exact tool for the diagnosis of power shift transmission problems. The monitor connects into the electric shift harness in series with the solenoid valves and the shift controls. The monitor control box and test probe can be put inside the tractor cab so that testing can be done from the operators seat.

The Diagnostic Monitor uses the tractor batteries for power to do the tests. If the tractor batteries are too weak, the monitor will give instructions to charge the batteries before doing the tests.

The Diagnostic Monitor checks the current at the 10 pin connector against the current values in the monitor memory. If the monitor finds a fault, the operator will be told to make a test with the probe. This test is a check to make sure which component is at fault. If good contact is not made with the probe, the monitor will indicate that there is "No Signal" and will tell the operator to check the connection again. The monitor continues to give instructions to check connections until the component with the fault is found. Then, instructions are given to repair, replace or adjust the component at fault. If a fault is not found in the circuit under test, the monitor tells the operator that the circuit is correct and gives instructions to check the next circuit.

**IMPORTANT:** *Not following each instruction exactly or entering information that is the operators estimate can cause a wrong diagnosis. The monitor can only give a correct diagnosis when correct information is entered.*

The Diagntositc Monitor tests the tractor under both static and dynamic conditions. The static test checks the power shift circuits with the key switch "ON" and the engine not running. Always do the static test before going on to the dynamic test. The dynamic test is done with the engine running and with the pressure testing kit connected to the transmission test ports. The dynamic test compares gauge pressure information that the operator enters into the monitor along with the electrical signals the monitor receives from the pressure switches and solenoids to the transmission specifications kept in the monitor memory.

## Pressure Testing Kit

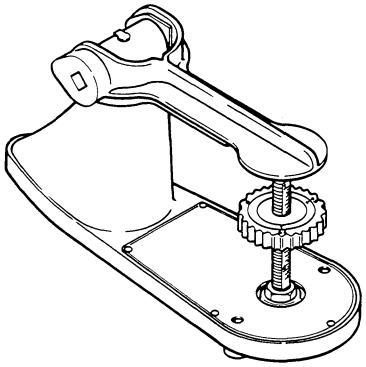
A Pressure Testing Kit is required to test the power shift transmission with the Diagnostic Monitor. A five gauge bar can be used to test the 12 speed transmission. To test the 24 speed transmission, a seven gauge bar is needed. Extension adapters are required to connect the gauge hoses to the test ports on the tractor. See the Special Tools page.

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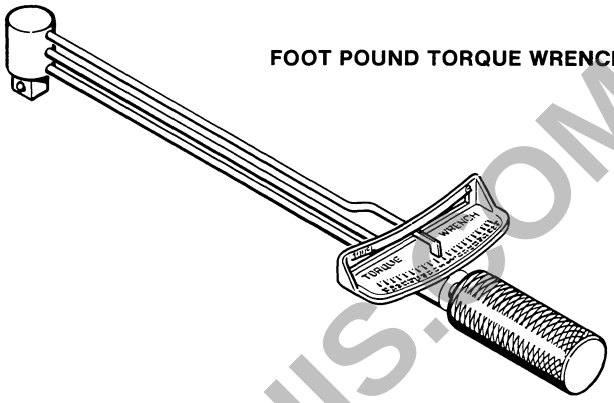


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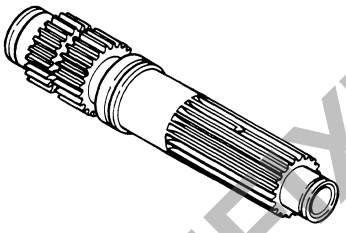
# SPECIAL TOOLS



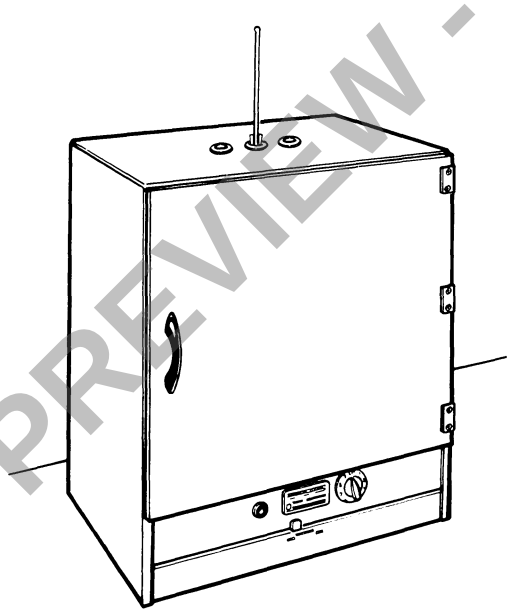
CAS-1357 COMPRESSION SPRING TESTER



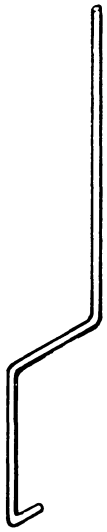
FOOT POUND TORQUE WRENCH



USE A76229 OR A76494 AS A PILOT FOR ALIGNING (C-2) AND (C-3) CLUTCH PLATES



CAS-10133 BEARING HEATER AND OVEN



CLUTCH PLATE HOLDERS - THREE NEEDED
2390 and 2394TRACTORS - PART NUMBER CAS-1083
2590 and 2594 TRACTORS - PART NUMBER CAS-1093

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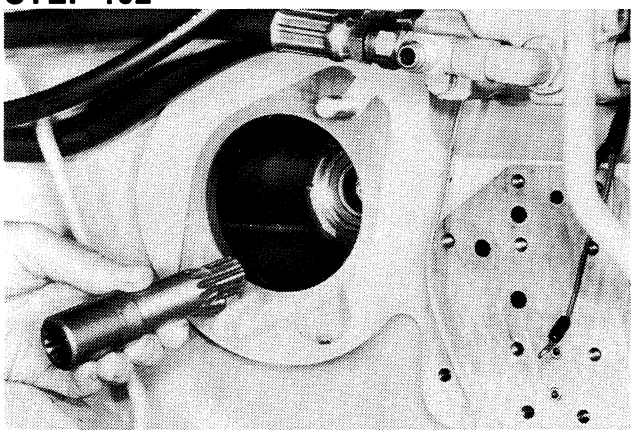


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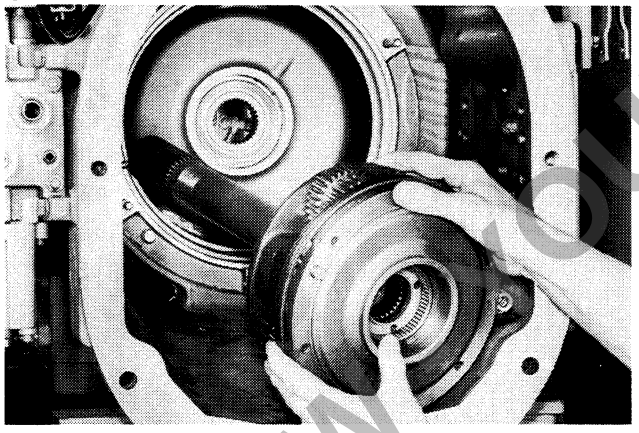
# Installation Of C-6 And The Planetary Carrier

**STEP 102**



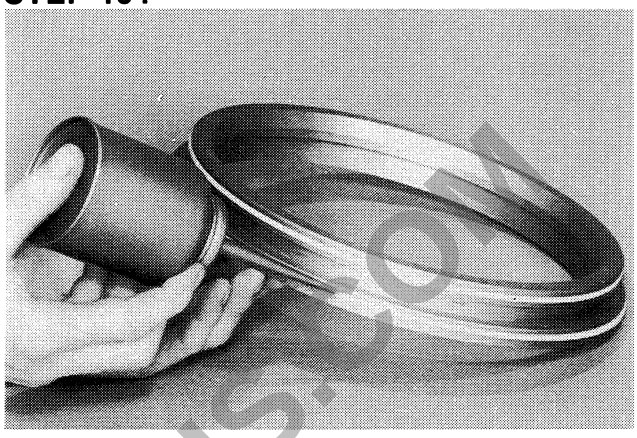
Install the hydraulic pump connecting shaft into the pump drive gear, so you can turn the pump drive gear in Step 103.

**STEP 103**



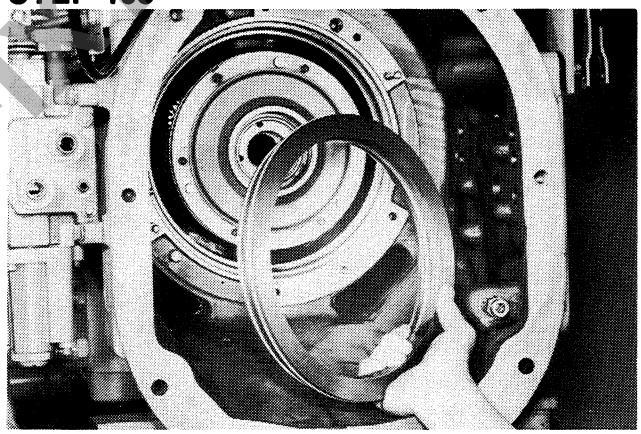
Install the planetary carrier into torque tube housing. The input shaft splines must first go through the splines in the hydraulic pump drive gear. Turn the hydraulic pump connecting shaft so that the pump drive gear splines and input shaft splines are align. Push the planetary carrier and turn to align the input shaft splines with the torque limiter splines.

**STEP 104**



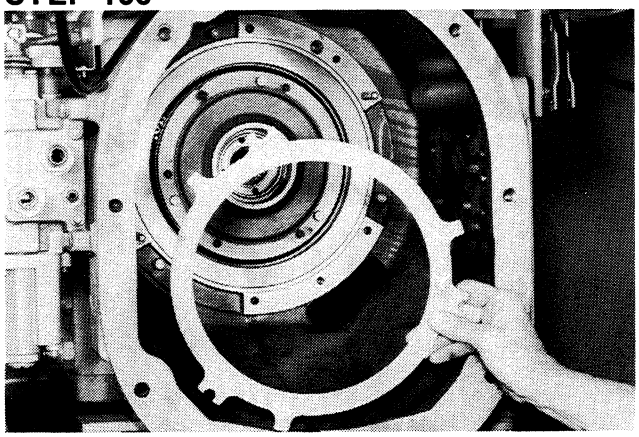
Lubricate the piston seals on C-6 piston with transmission oil.

**STEP 105**



Install the C-6 piston in the carrier.

**STEP 106**



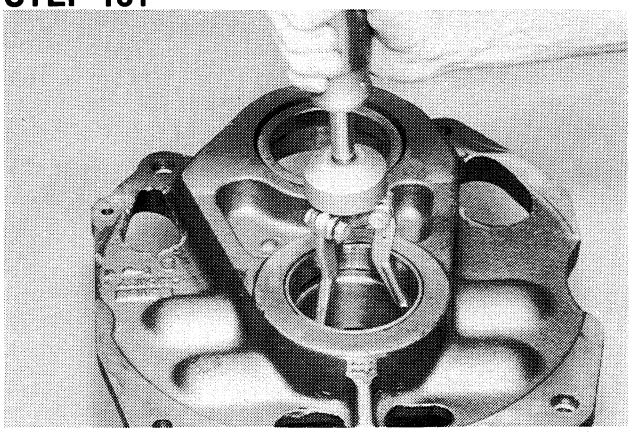
Install a steel clutch plate.

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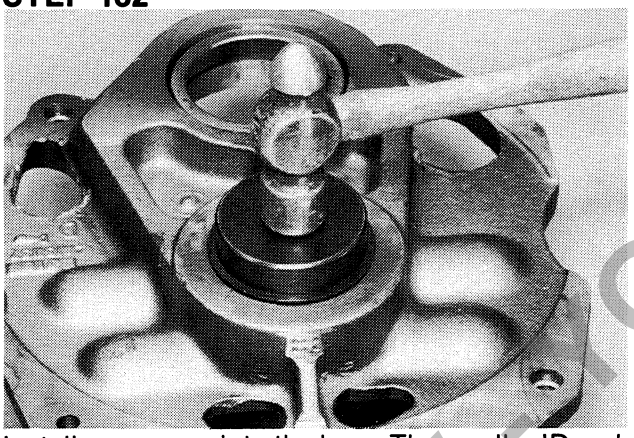
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**STEP 131**



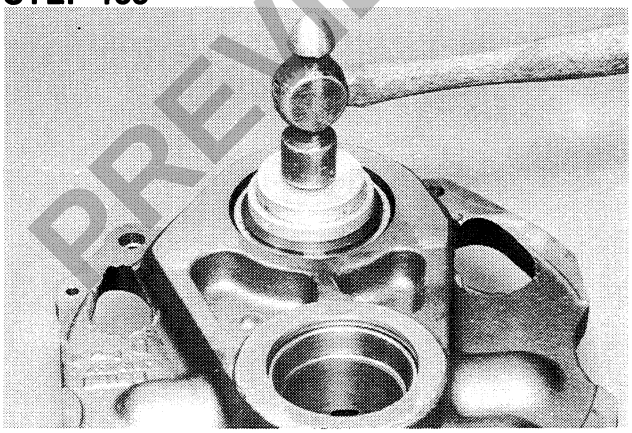
Use a puller to remove the front planetary bearing cup from the rear of the power shift carrier if the cup is damaged.

**STEP 132**



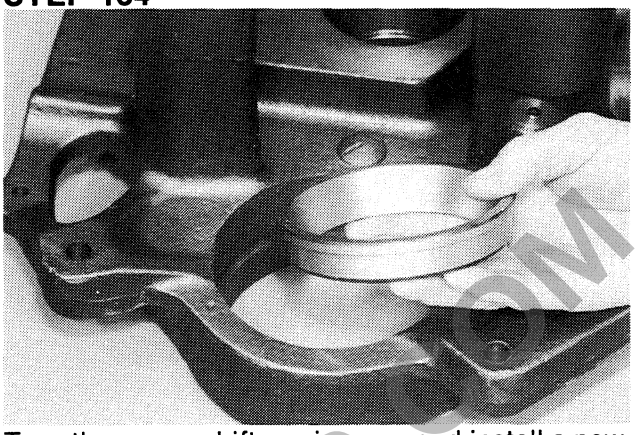
Install a new cup into the bore. The smaller ID end of the cup must go into the bore first. Drive the cup into the bore until the cup is seated.

**STEP 133**



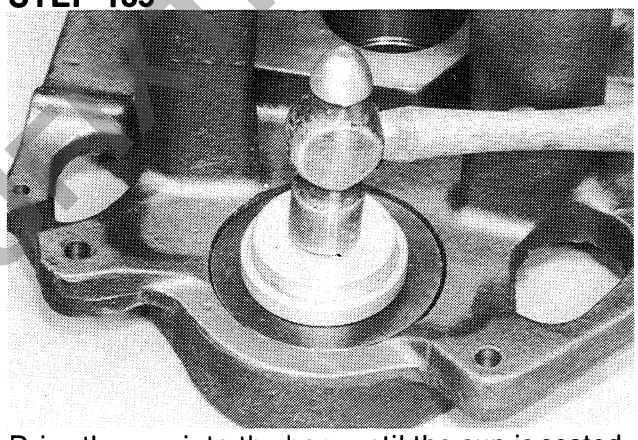
Drive the front bearing cup for the countershaft out of the power shift carrier if the cup is to be replaced.

**STEP 134**



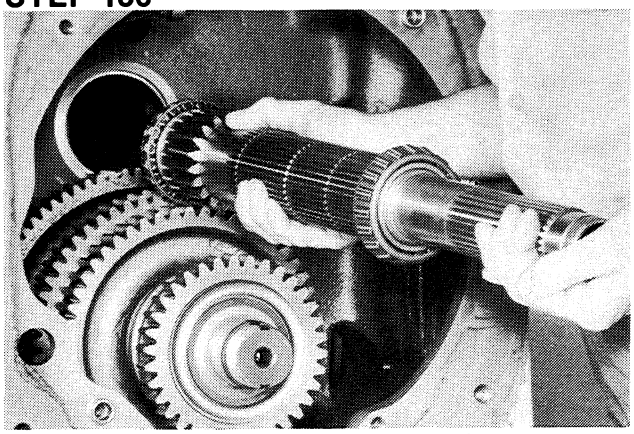
Turn the power shift carrier over and install a new cup into the bore. The smaller OD end of the cup must go into the bore first.

**STEP 135**



Drive the cup into the bore until the cup is seated.

**STEP 136**



Install the rear bearing cone on the planetary output shaft into the bearing cup in the transmission case. Keep the output shaft in position while the power shift carrier is being installed.

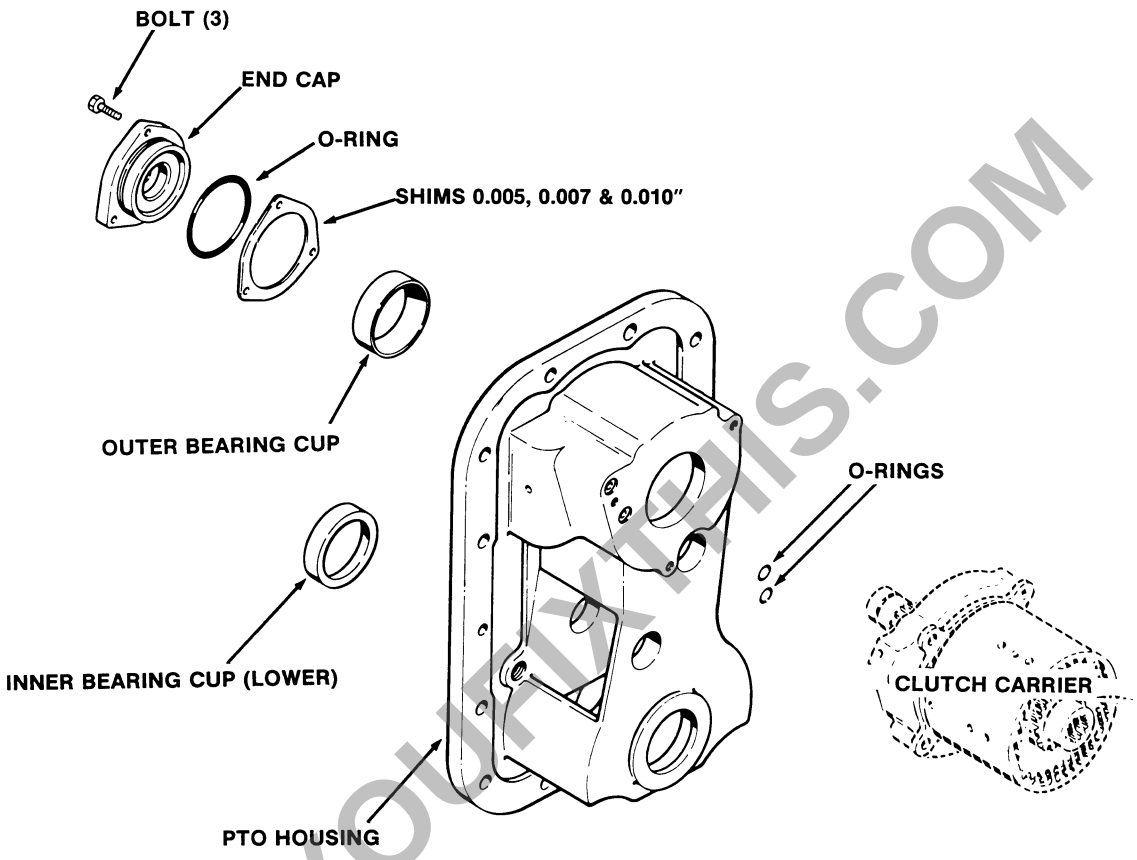
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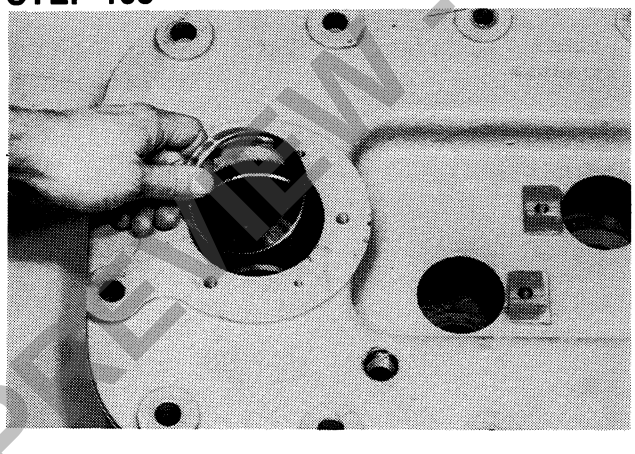
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# Installing the Clutch Carrier in the PTO Housing

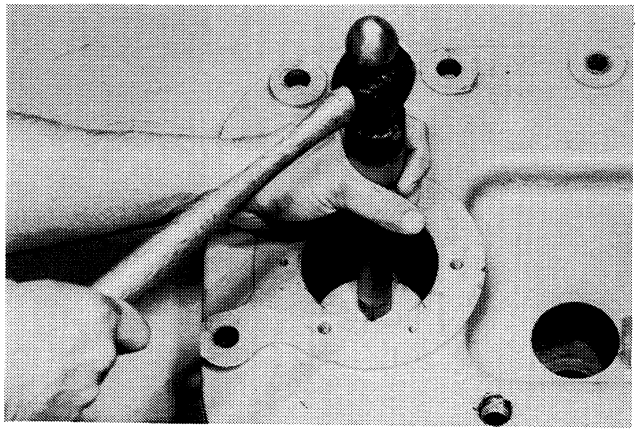



## STEP 103



Put the inner bearing cup in the lower bore of the PTO housing.

## STEP 104



Use OTC 630-16 driver and drive the inner bearing cup into the PTO housing.

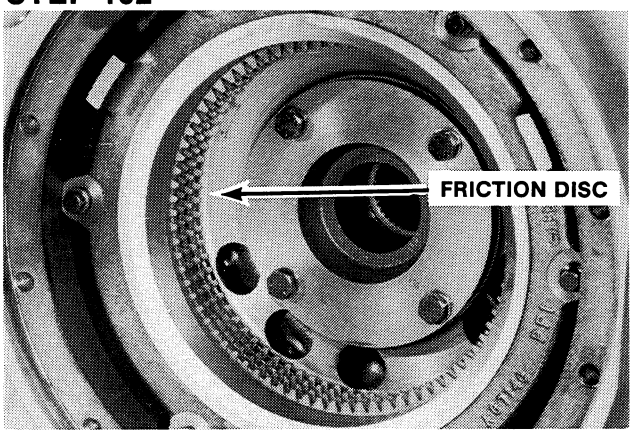
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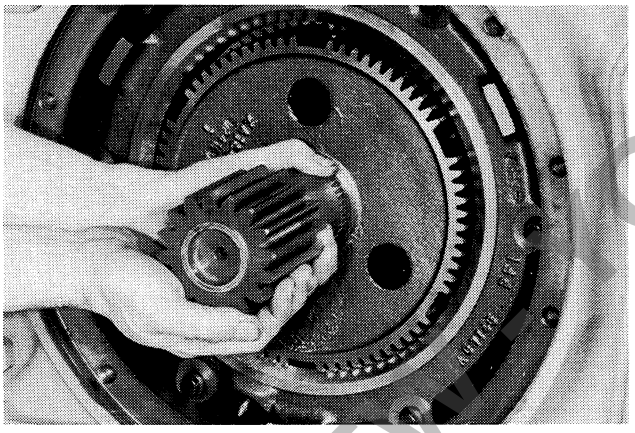
# Sun Gear And Axle Housing Installation

**STEP 102**




Make sure the brake friction discs move easy before the sun gear and brake hub are installed. If the friction discs do not move easy, see the Brake Section in this service manual for servicing the brakes.

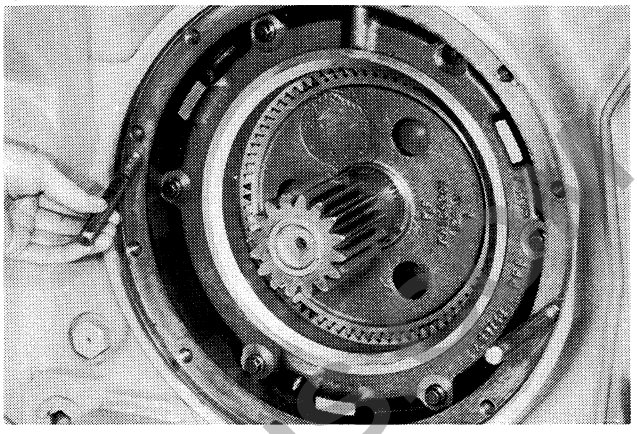
**STEP 103**



Install the sun gear and brake hub. Make sure all friction discs are installed on the brake hub.

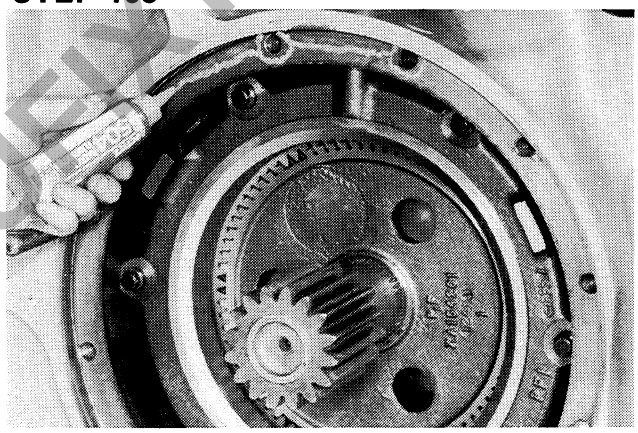
**NOTE:** *Damage will occur to the friction discs if the discs are not installed on the brake hub.*

**STEP 104**



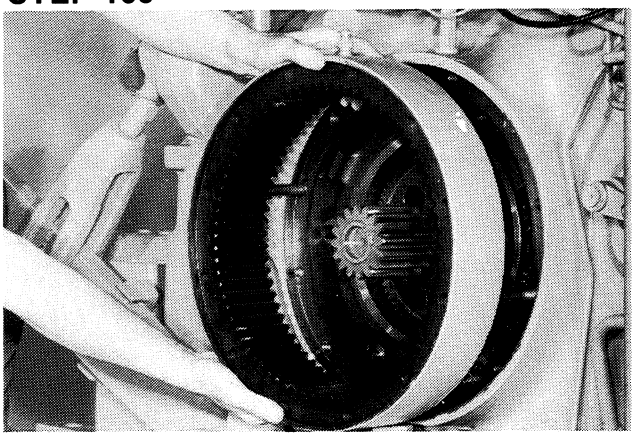
Install two 5/8 x 8 inch guide bolts in the transmission housing.

**STEP 105**



Put loctite 504 on the transmission housing where the planetary ring gear mounts.

**STEP 106**



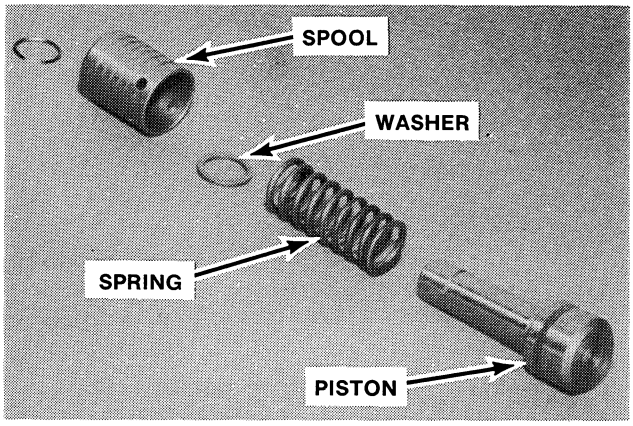
Install the planetary ring gear.

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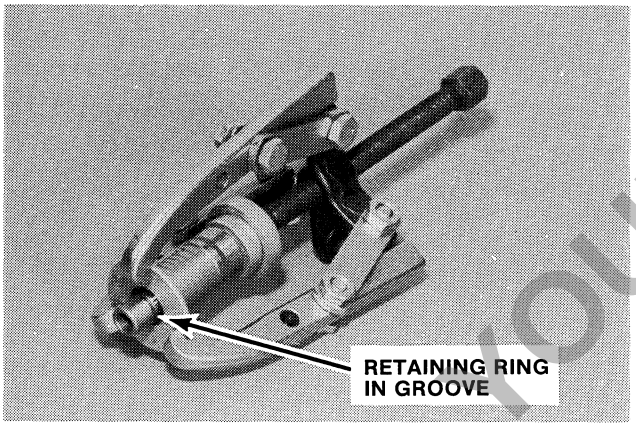
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## STEP 84



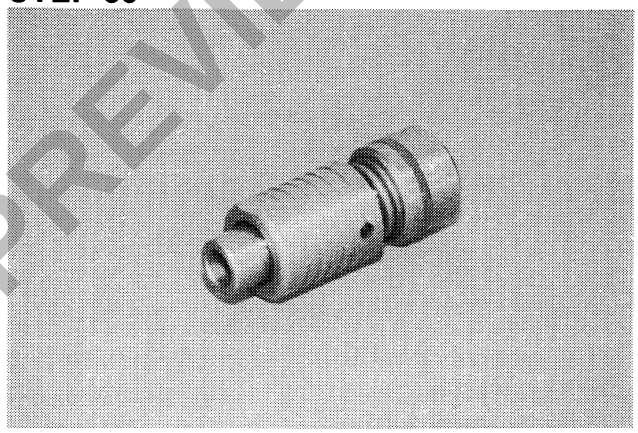

Assemble the spring, the washer and the spool on the pressure regulator piston.

## STEP 85



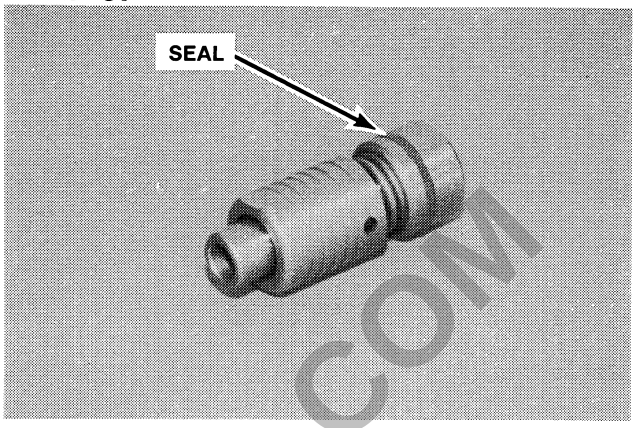

Compress the spring on the pressure regulator piston assembly using a 1/2 inch plain washer and a small puller. Use a small screwdriver to install the retaining ring in the piston groove.

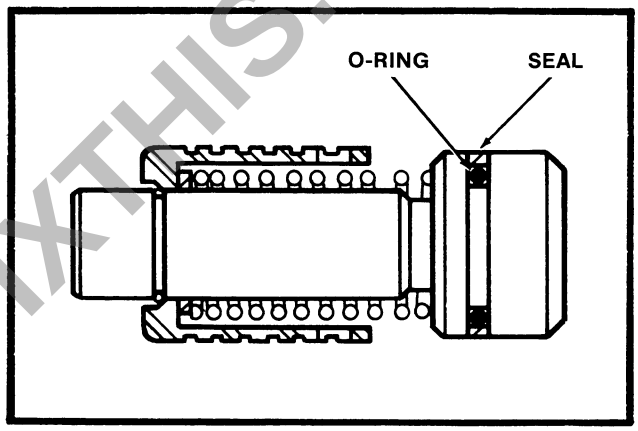
## STEP 86



Remove the pressure regulator piston from the puller.

## STEP 87

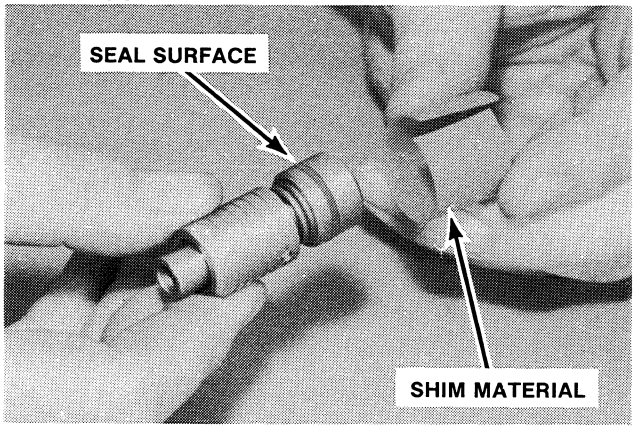



If the seal ring on the pressure regulator piston needs to be replaced, replace the o-ring under the seal ring also.

**NOTE:** *To make the installation of the seal ring easier, the seal ring can be heated in warm oil before installation. Do not heat the seal ring beyond a temperature of 150° F (66° C).*

## STEP 88



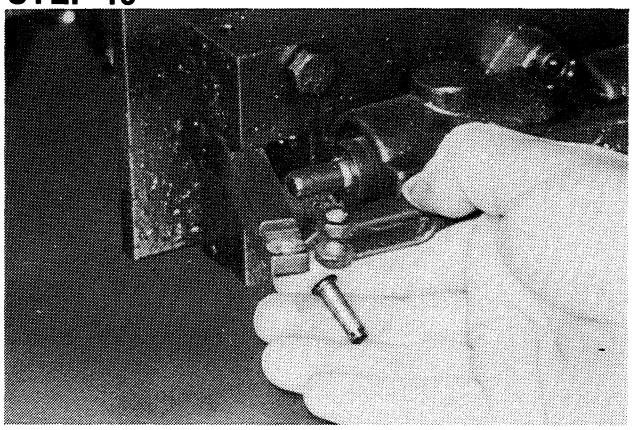

If the seal was replaced, cut a small piece of shim material that will be large enough to go around the complete seal surface of the piston.

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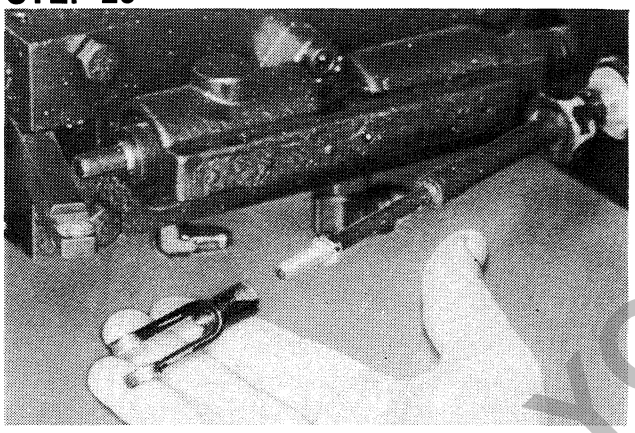
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**STEP 19**



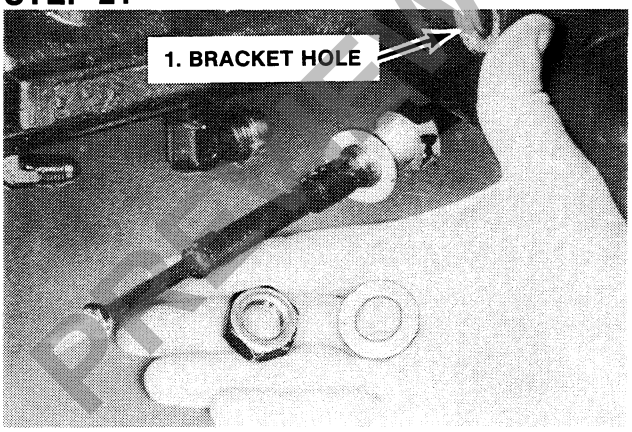
Disconnect the brake cable from the valve linkage.

**STEP 20**



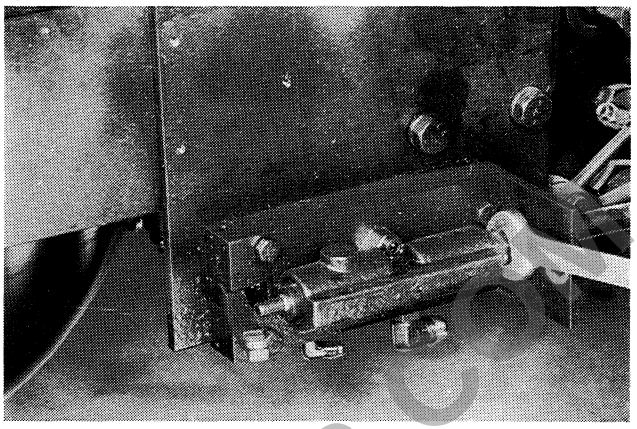
Remove the fork from the brake cable.

**STEP 21**



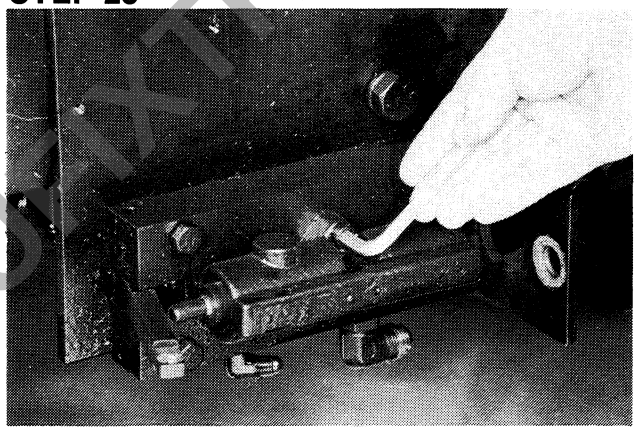

Remove the adjusting nut and the washer from the cable. Then remove the cable from the bracket hole.

**STEP 22**



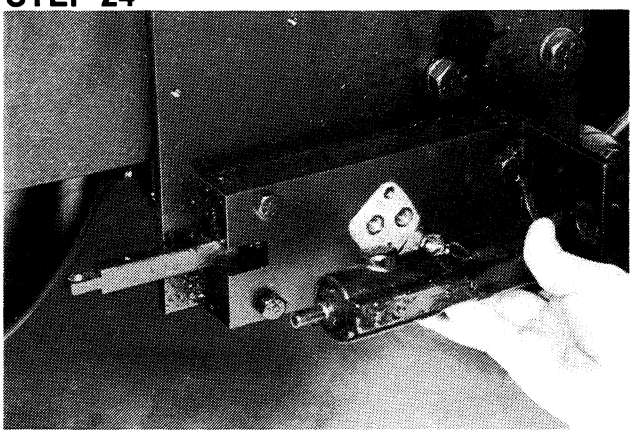
Disconnect the brake pressure line from the pressure regulator valve.

**STEP 23**



Remove the mounting bolts from the valve.

**STEP 24**



Remove the pressure regulator valve.

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# Section

# 8210

## HYDRAULIC OIL FILTERS

Written In *Clear And Simple English*

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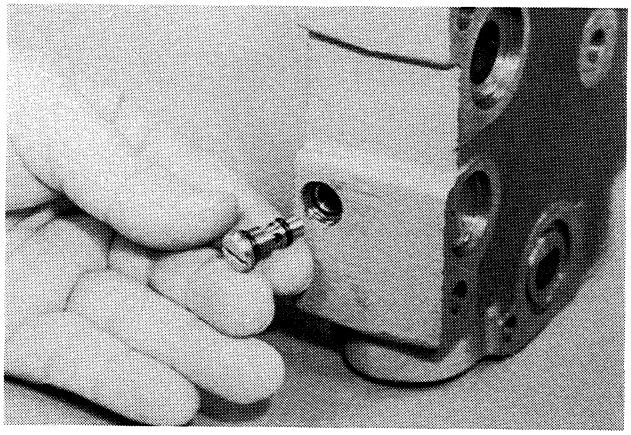
Rac 8-21110

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August, 1978

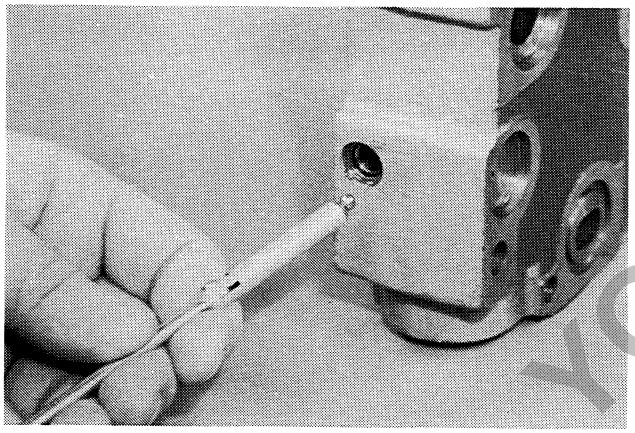
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**STEP 69**



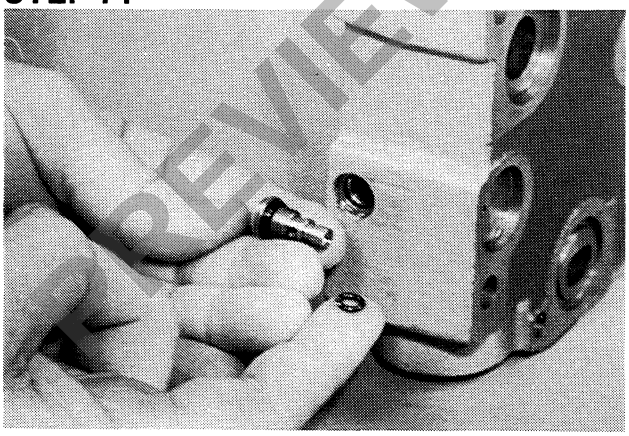
Remove the secondary shuttle.

**STEP 70**



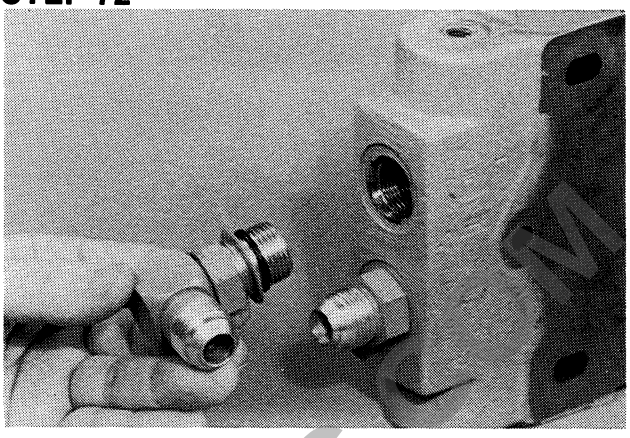
Remove the ball.

**STEP 71**



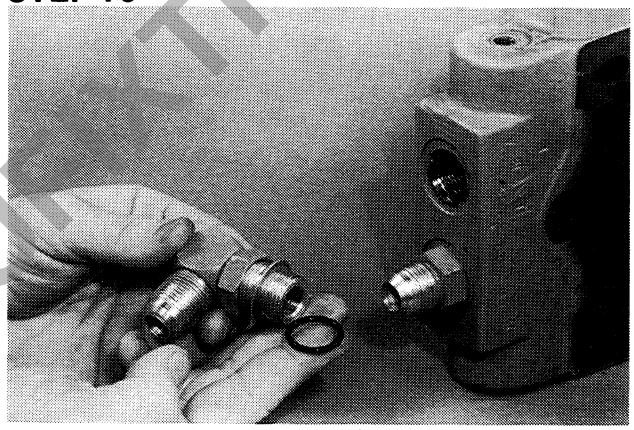
Remove the o-rings from the shuttle.

**STEP 72**



Remove the elbow.

**STEP 73**



Remove the o-ring from the elbow.

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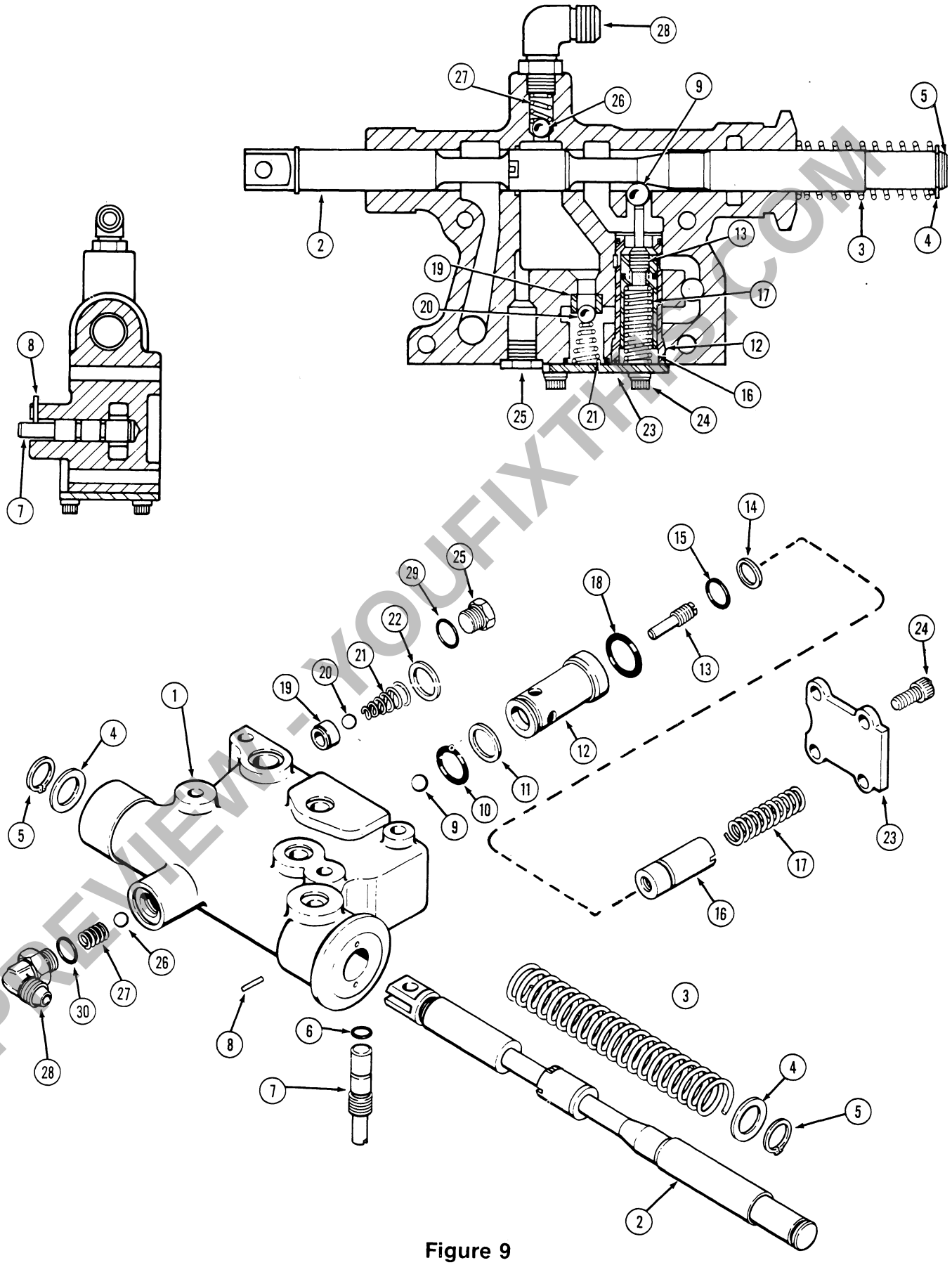


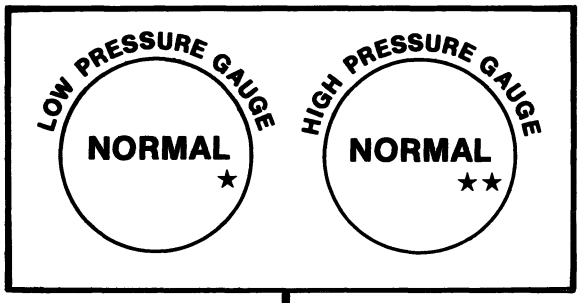

**Figure 9**

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# PROBLEM - ON-AND-OFF COOLING




★ Gauge reading between 7 to 30 PSI (48.1 to 207 kPa)(0.48 to 2.07 bar).

★★ Gauge reading same as pressure - temperature chart, Page 3.

**Moisture in the System - Indication:**

**A. System cools good during cool part of day, but does not cool during hot part of day.**

1. **Remove refrigerant from system - Too much moisture gets into expansion valve orifice and will freeze and stop refrigerant flow. See Section 9225.**
2. **Replace receiver-drier. The moisture removing material is full to capacity with moisture. See Section 9235.**
3. **Remove air and moisture from the system. See Section 9225. The time needed to remove a large amount of moisture will be two to three hours minimum.**
4. **Charge system with new refrigerant. See Section 9225.**
5. **Continue performance test for possible other problems.**

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# Section

# 9250

## OPERATORS SEAT
## With Air/Oil Suspension

Written In *Clear And Simple English*

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CASE CORPORATION

Rac 8-25511

Printed in U.S.A.
February, 1984 (Revised January, 1985)

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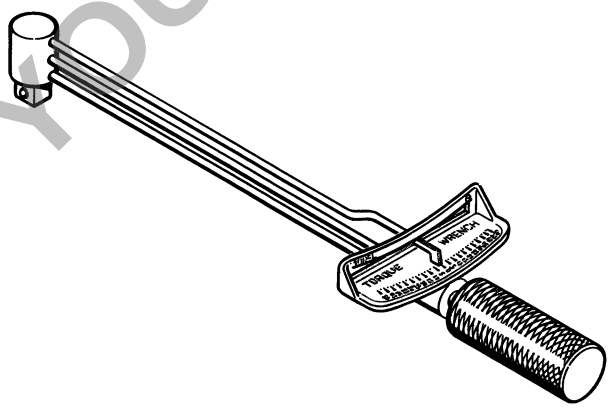
SERVICING THE CAB
Cab Removal ..... 4-11

Cab Installation ..... 12-19

## SPECIAL TORQUES

| | U.S. Value | Metric Value |
|---|---|---|
| 1/2 Inch Cab Mount Bolts | 80 to 96 lb ft | 109 to 130 Nm (10.9 to 13.0 kg/m) |
| 5/8 Inch Cab Mount Bolts | 150 to 180 lb ft | 203 to 244 Nm (20.3 to 24.4 kg/m) |
| Starter Ground Bolt | 110 to 132 lb ft | 149 to 179 Nm (14.9 to 17.9 kg/m) |

## SPECIAL TOOLS




**LB FT TORQUE WRENCH**

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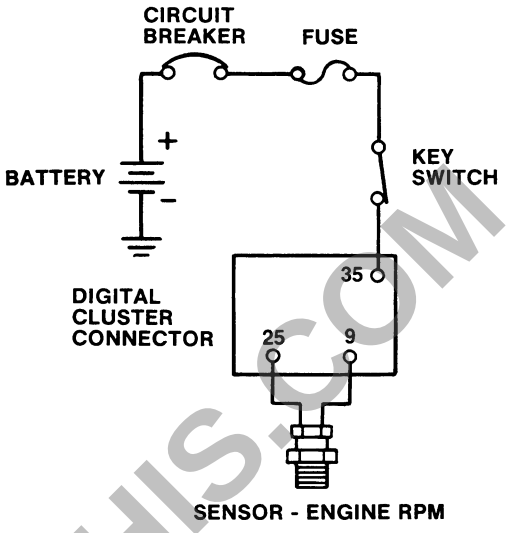


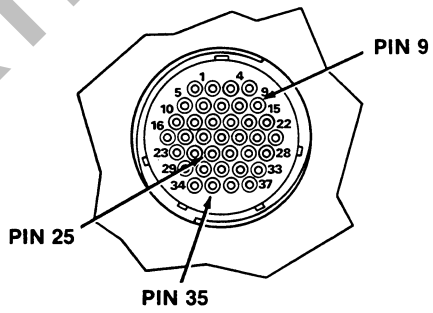
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## Checking Engine RPM Magnetic Sensor

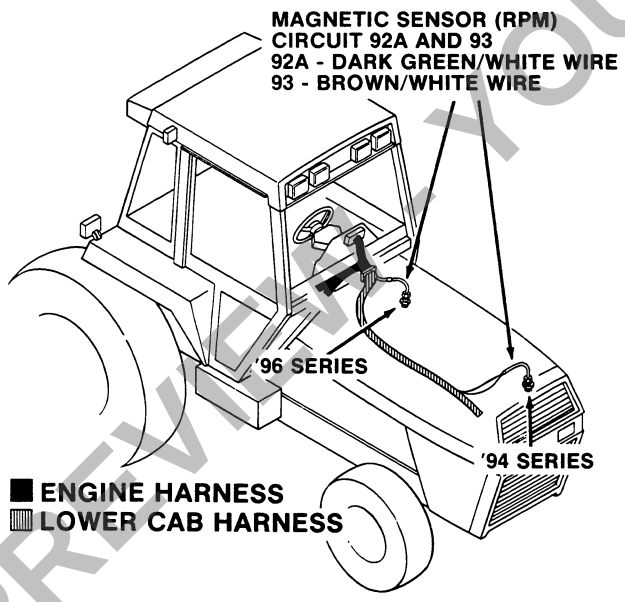
If the display shows 0 RPM with the engine running, check the magnetic sensor. There are three possible causes for the 0 reading. They are: 1. the sensor is disconnected, 2. the sensor is adjusted out too far from the gear, or 3. the sensor is defective. Check the sensor to make sure that the sensor is connected and adjusted properly. If the sensor is adjusted more than 1/2 to 3/4 of a turn from the gear, the RPM readings will be 0 or low when the RPM is actually maximum. After checking these conditions, make any necessary corrections.

If the display readings are still in error, check the wiring. With the tractor power OFF, disconnect the cluster pin connector. Put one ohmmeter lead on PIN 9 and the other lead on PIN 25. The resistance reading should be between 2500 to 3800 ohms. If the reading is 0 ohms, the magnetic sensor is shorted and should be replaced or the wiring is bad. If the reading is infinite ohms, the magnetic sensor or the wiring to it is open. **See Section 4205 for Complete Troubleshooting of the Instrument Cluster.**




DIGITAL CLUSTER PIN CONNECTOR (BACK VIEW)




| CONNECTOR PIN | FUNCTION |
|---|---|
| 9 | SENSOR FOR ENGINE RPM |
| 25 | GROUND FOR MAG SENSOR |
| 35 | 12 VOLT POWER FROM BATTERY |

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