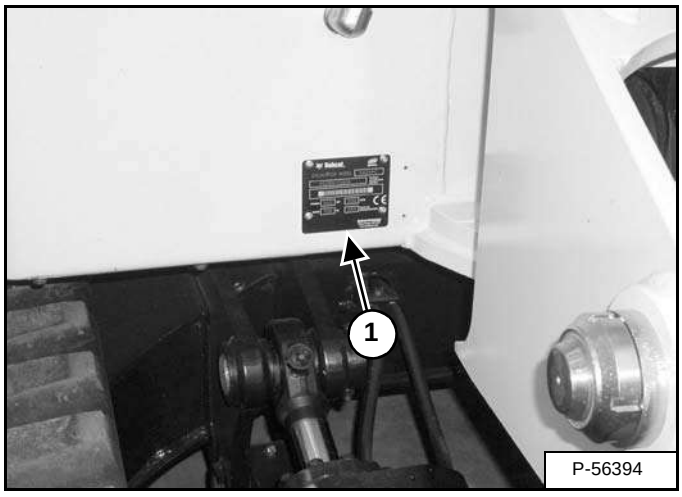
SERIAL NUMBER LOCATIONS

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

Excavator Serial Number

Figure 1



The excavator serial number plate (Item 1) is located on the frame of the machine in the location shown **[Figure 1]**.

Explanation of Excavator Serial Number:

XXXX XXXXX

- XXXXX — Module 2. - Production Sequence (Series)
- XXXX — Module 1. - Model / Engine Combination

1. The four digit Model/Engine Combination Module number identifies the model number and engine combination.

2. The five digit Production Sequence Number identifies the order which the excavator is produced.

Engine Serial Number

Figure 2

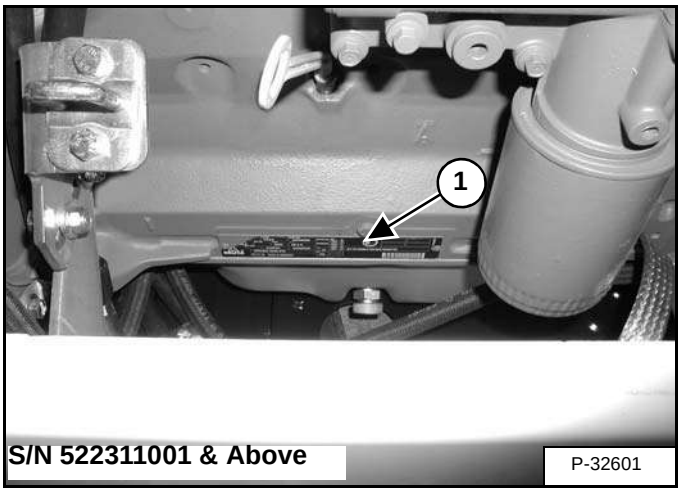
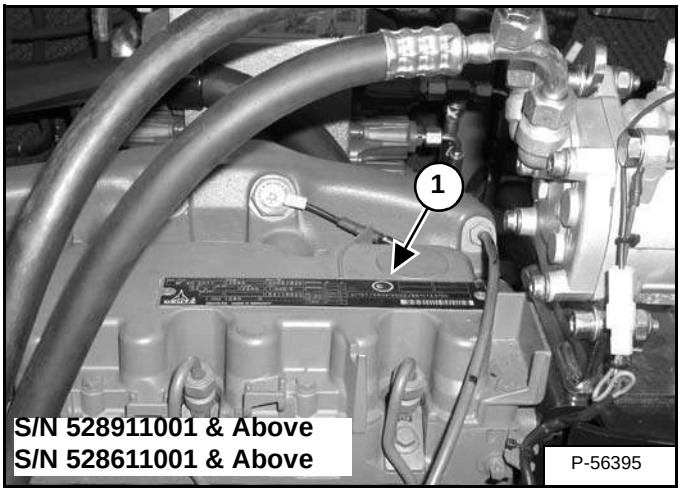


Figure 3



The engine serial number (Item 1) **[Figure 2]** & **[Figure 3]** is located on the engine in the locations shown.

Description

IMPORTANT

When repairing hydrostatic and hydraulic systems, clean the work area before disassembly and keep all parts clean. Always use caps and plugs on hoses, tubelines and ports to keep dirt out. Dirt can quickly damage the system.

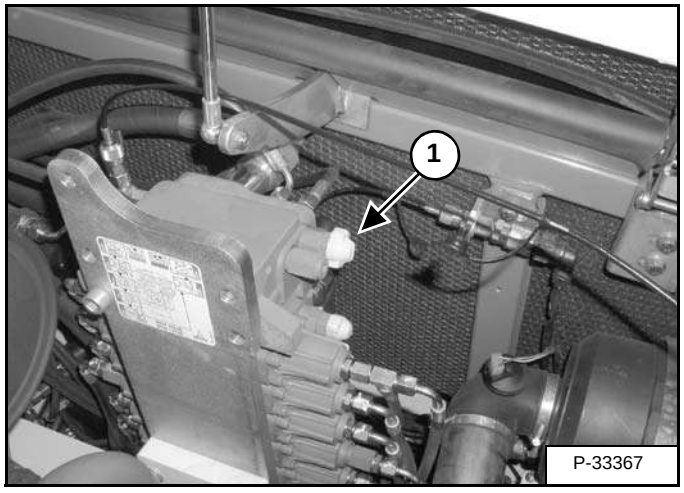
I-2003-0888

The hydraulic system has two separate hydraulic circuits.

The piston pump circuit supplies fluid to the six spool hydraulic control valve.

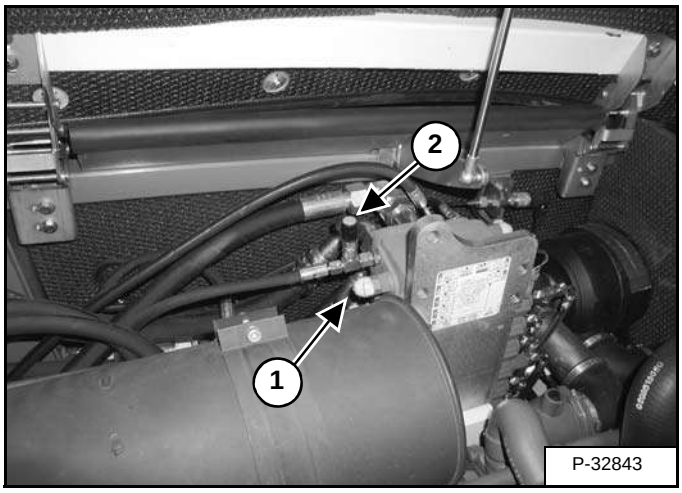
The six spool control valve contains the boom, arm, bucket auxiliary, left and right travel valve sections.

Figure 20-10-1



A load sense relief valve (Item 1) **[Figure 20-10-1]** and safety relief valve (Item 1) **[Figure 20-10-2]** protect the valve from high pressure.

Figure 20-10-2

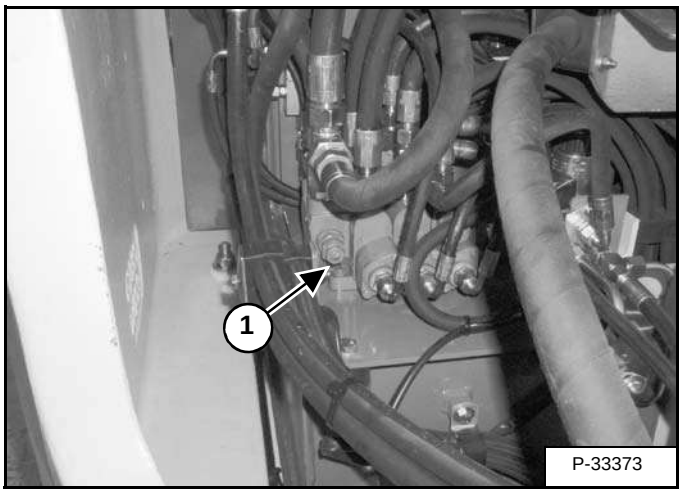


The coupler (Item 2) **[Figure 20-10-2]** is used to check the load sense relief valve, safety relief valve and piston pump torque limiter supply adjustment.

The gear pump circuit supplies fluid to the three spool hydraulic control valve.

The three spool control valve contains the upperstructure swing, blade and boom swing valve sections.

Figure 20-10-3

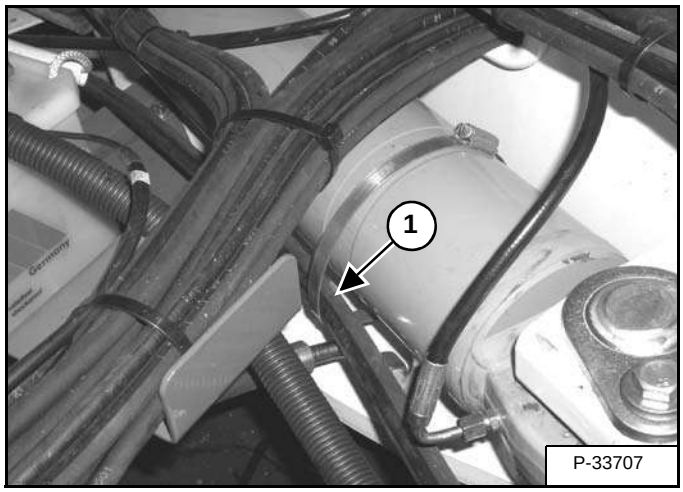


A main relief valve (Item 1) **[Figure 20-10-3]** protects the valve from high pressure.

BOOM OFFSET CYLINDER (CONT'D)

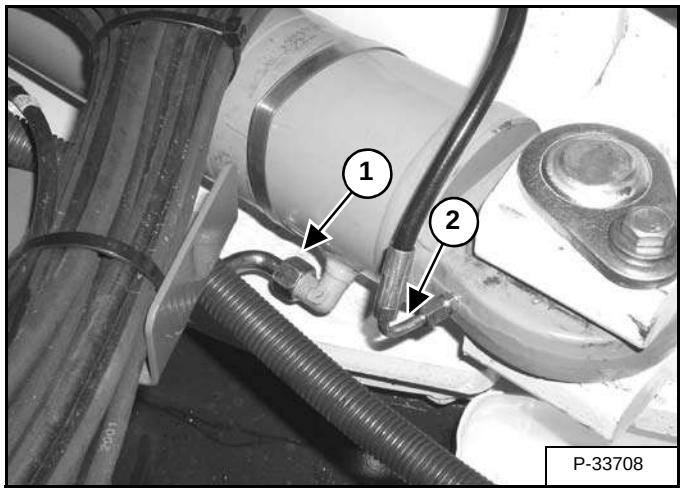
Removal And Installation (Cont'd)

Figure 20-22-18



Remove the rod end hose (Item 1) **[Figure 20-22-18]** from the clamp.

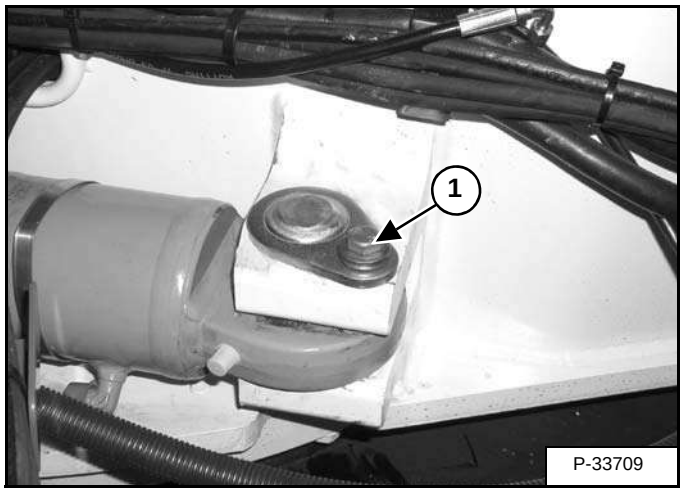
Figure 20-22-19



Remove the base end hose (Item 1) **[Figure 20-22-19]**.

Remove the remote grease hose (Item 2) **[Figure 20-22-19]**.

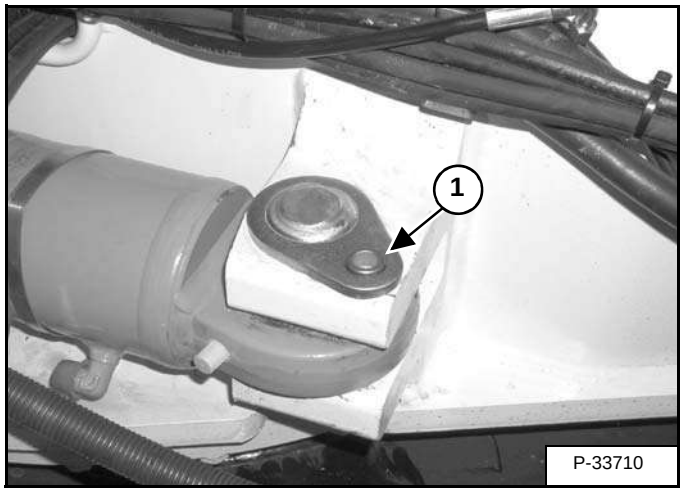
Figure 20-22-20



Remove the bolt (Item 1) **[Figure 20-22-20]**.

Installation: Tighten the bolt to 48-55 ft.-lb. (65-75 N•m) torque.

Figure 20-22-21

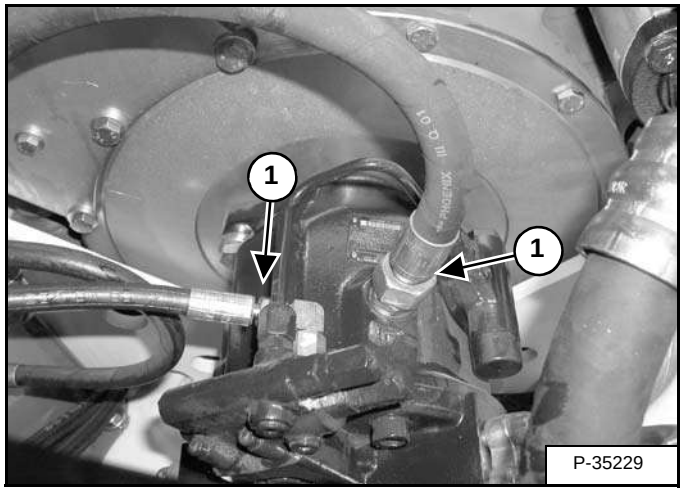


Remove the spacer (Item 1) **[Figure 20-22-21]**.

HYDRAULIC PISTON PUMP (S/N 522311001 & ABOVE) (CONT'D)

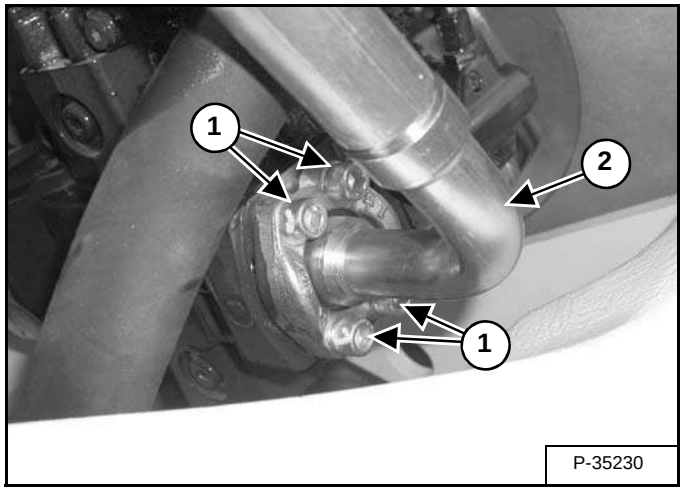
Removal And Installation (Cont'd)

Figure 20-50-36



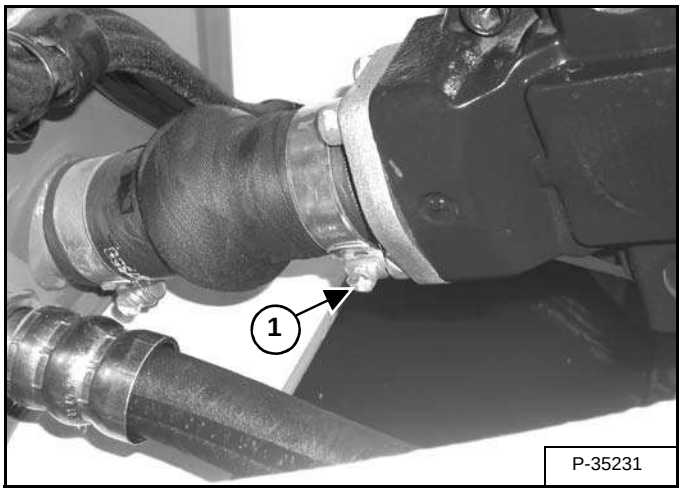
Remove the hoses (Item 1) **[Figure 20-50-36]** from the pump.

Figure 20-50-37



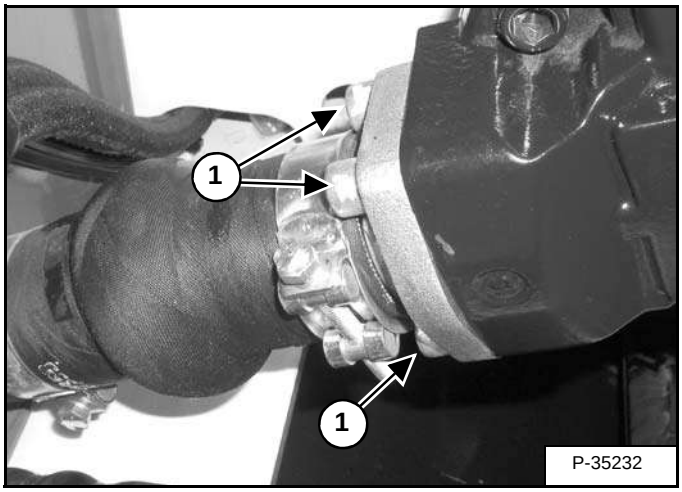
Remove the 4 bolts (Item 1) and remove the hose (Item 2) **[Figure 20-50-37]**.

Figure 20-50-38



Loosen the clamp (Item 1) **[Figure 20-50-38]**. Rotate the clamp to provide clearance to the suction fitting bolts.

Figure 20-50-39



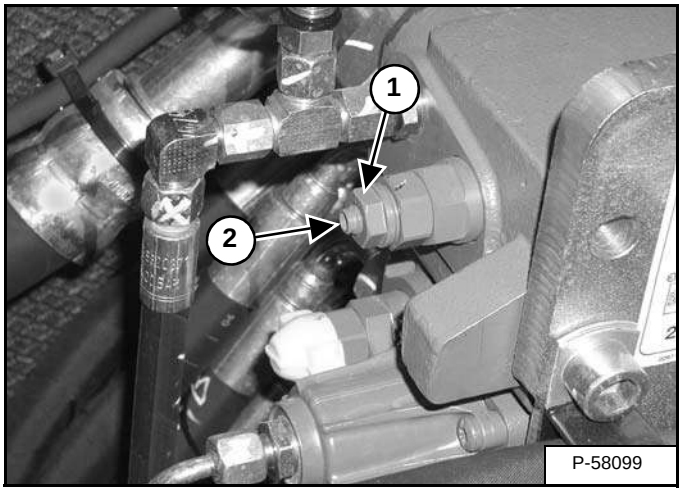
Remove the 4 bolts (Item 1) **[Figure 20-50-39]**.

HYDRAULIC PISTON PUMP (S/N 528911001 & ABOVE AND S/N 528611001 & ABOVE) (CONT'D)

Pump Testing (Cont'd)

Back-up Relief Valve Adjustment (Cont'd)

Figure 20-52-10



Loosen the lock nut (Item 1) **[Figure 20-52-10]**.

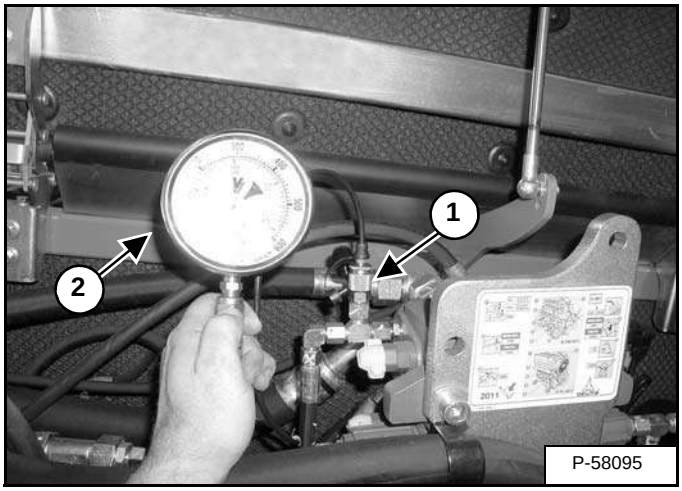
Turn the adjustment screw (Item 2) **[Figure 20-52-10]** in to increase pressure and out to decrease pressure.

NOTE: One quarter turn is approximately 200 PSI (13,8 bar).

Tighten the nut and retest the backup relief valve.

Load Sense Relief Valve Adjustment

Figure 20-52-11



Install a 5000 PSI (345 bar) pressure gauge on the test coupler (Item 1) **[Figure 20-52-11]**.

Move the engine speed control to the high idle position.

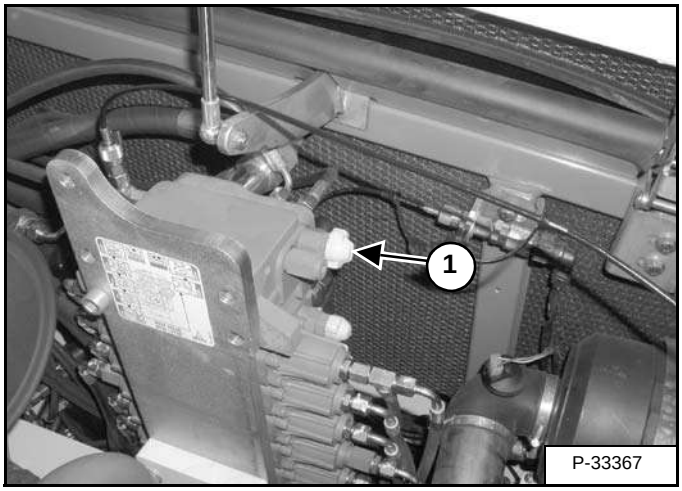
Curl the bucket until the bucket cylinder is fully extended and the relief valve opens.

Record the pressure.

The pressure at the gauge (Item 2) **[Figure 20-52-11]** should be 4060 PSI (280 bar).

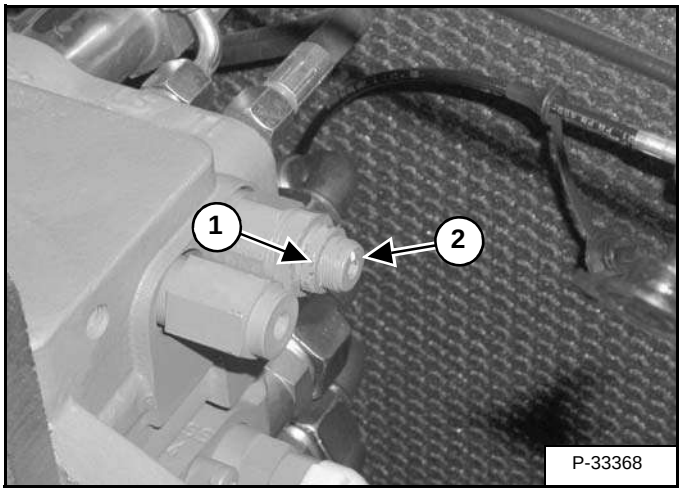
Stop the engine.

Figure 20-52-12



Remove the plastic cap (Item 1) **[Figure 20-52-12]**.

Figure 20-52-13



Loosen the lock nut (Item 1) **[Figure 20-52-13]**.

Turn the adjustment screw (Item 2) **[Figure 20-52-13]** in to increase pressure and out to decrease pressure.

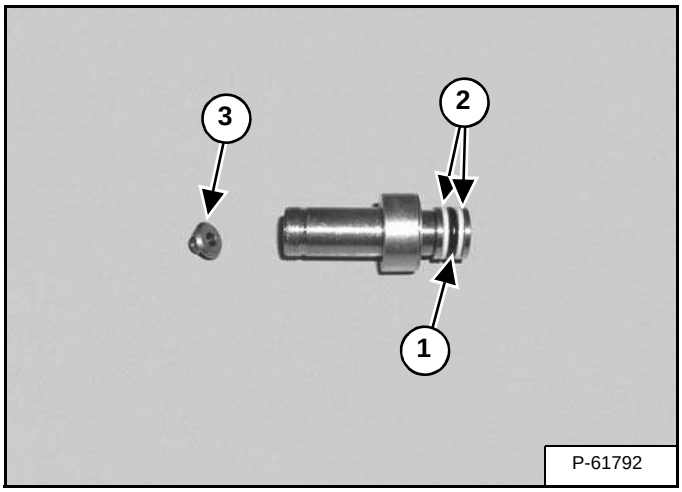
NOTE: One quarter turn is approximately 200 PSI (13,8 bar).

Tighten the lock nut and retest the load sense relief valve.

TRAVEL MOTOR (CONT'D)

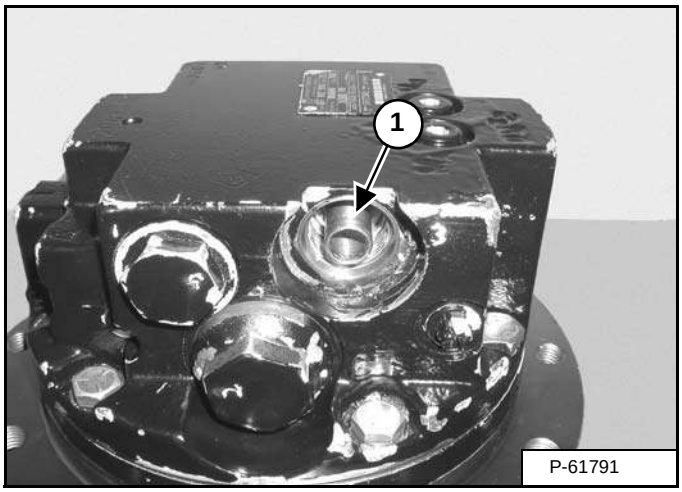
Assembly (Cont'd)

Figure 20-70-111



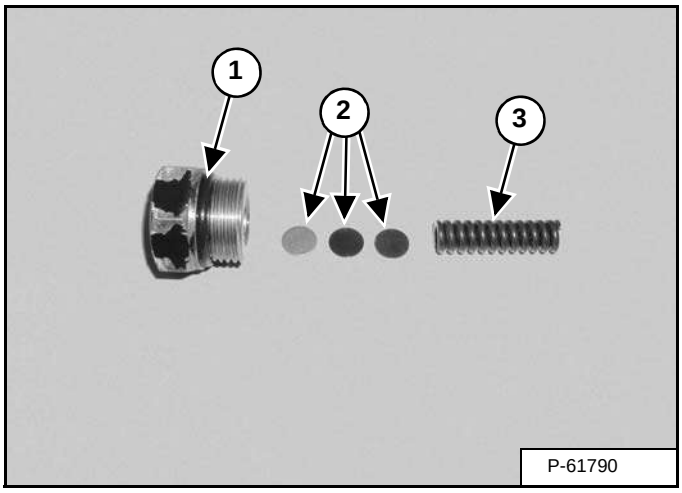
Install the O-ring (Item 1), back-up rings (Item 2), and poppet (Item 3) **[Figure 20-70-111]**.

Figure 20-70-112



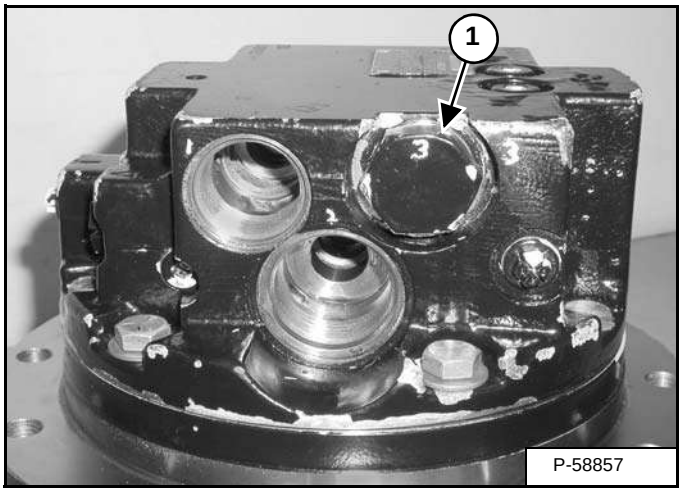
Install the spool (Item 1) **[Figure 20-70-112]**.

Figure 20-70-113



Install the O-ring (Item 1), shims (Item 2) and spring (Item 3) **[Figure 20-70-113]**.

Figure 20-70-114

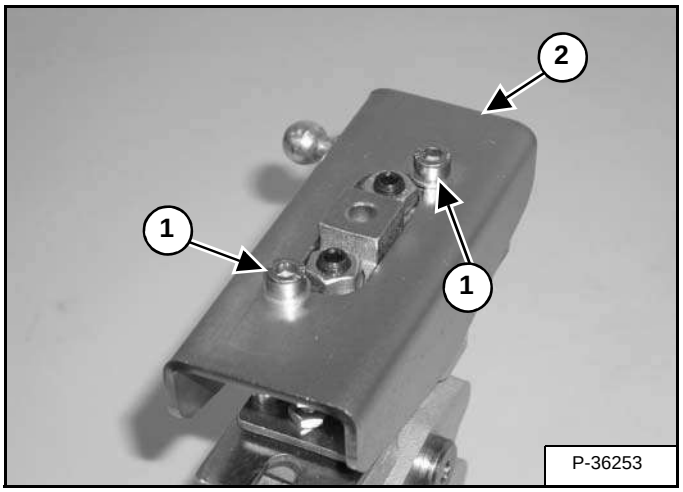


Install the plug (Item 1) **[Figure 20-70-114]**.

BLADE VALVE (CONT'D)

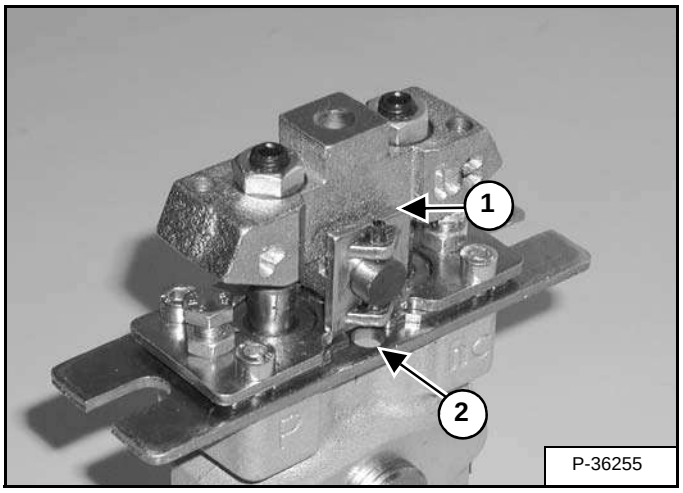
Disassembly And Assembly

Figure 20-180-4



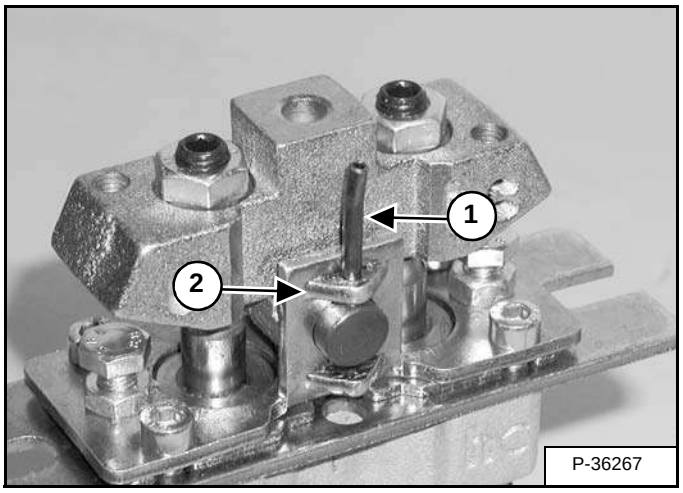
Remove the 2 bolts (Item 1) from the plate (Item 2) **[Figure 20-180-4]**. Remove the plate.

Figure 20-180-5



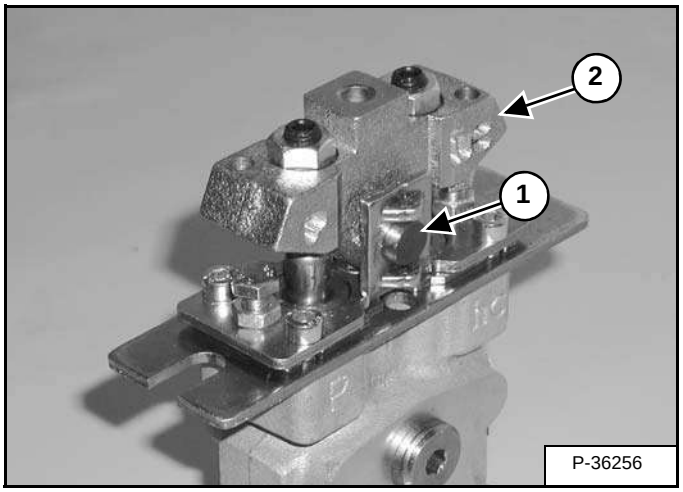
Remove the roll pin (Item 1) through the hole (Item 2) **[Figure 20-180-5]** in the bottom plate.

Figure 20-180-6



Installation: Install the roll pin (Item 1) through the tab (Item 2) **[Figure 20-180-6]** on the top of the block.

Figure 20-180-7

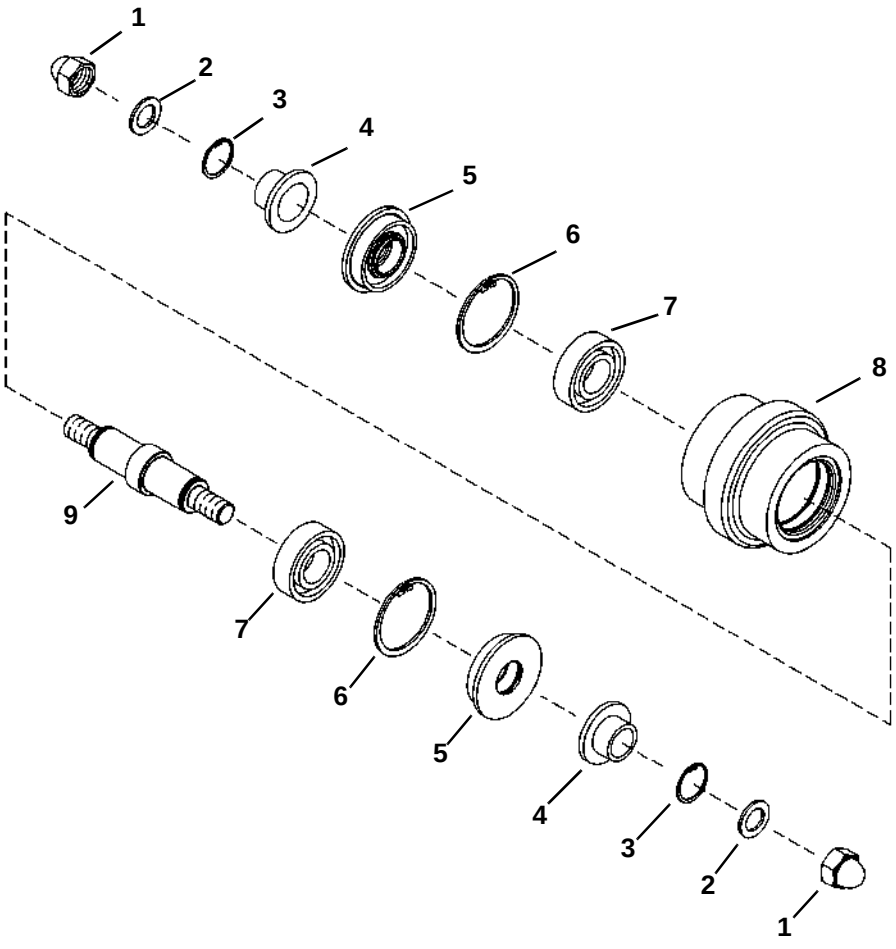


Remove the pin (Item 1) and block (Item 2) **[Figure 20-180-7]**.

UPPER TRACK ROLLER

Parts Identification

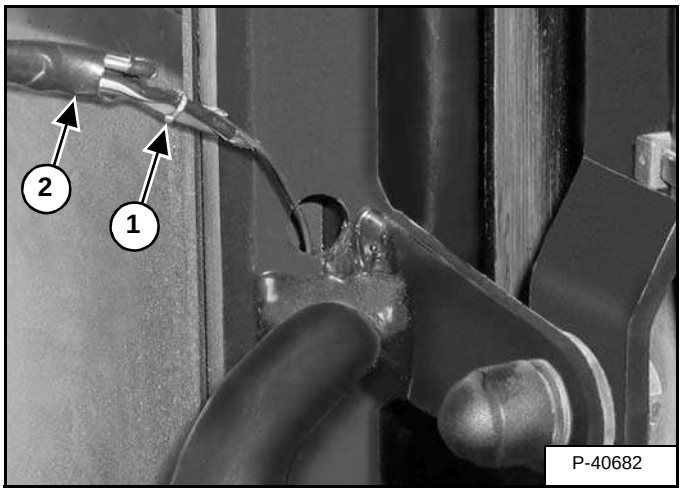
1. NUT
2. WASHER
3. SNAP RING
4. SEAL COVER
5. SEAL (TWO PIECE)
6. SNAP RING
7. BEARING
8. ROLLER
9. SHAFT



MS1757

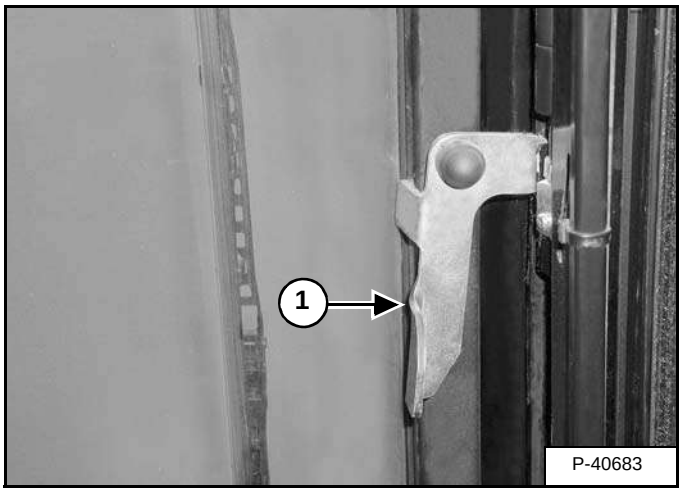
Front Window Removal And Installation (Cont'd)

Figure 40-20-36



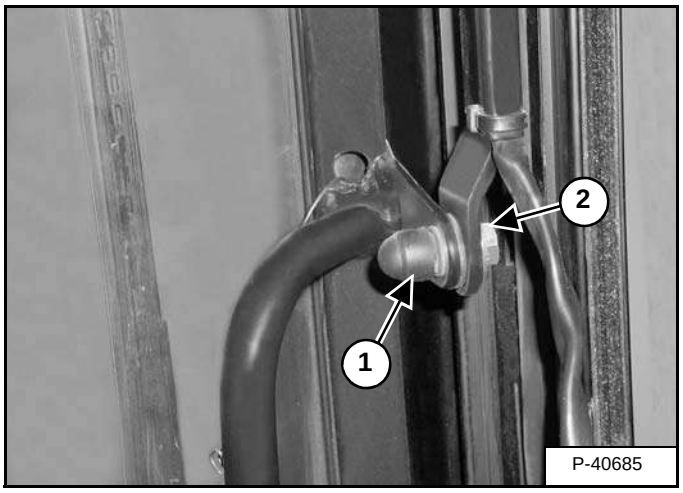
Remove the wire (Item 1) from the wire harness (Item 2) **[Figure 40-20-36]**.

Figure 40-20-37



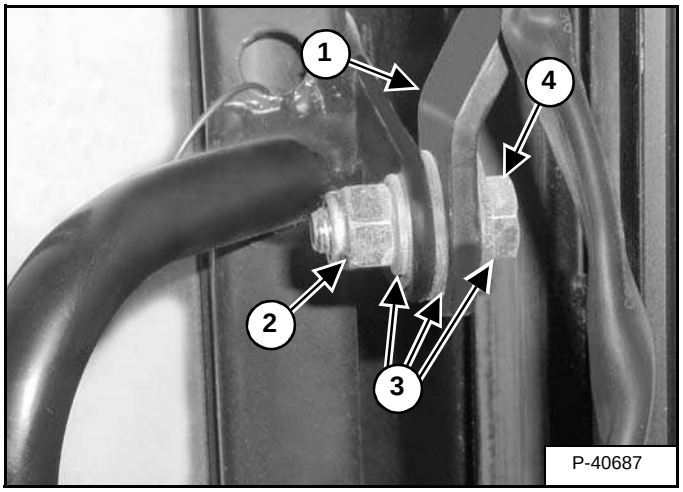
Make sure the front window latches (Item 1) **[Figure 40-20-37]** are in the latched position. (Both Sides)

Figure 40-20-38



Remove the caps (Item 1) from the pivot bolts (Item 2) **[Figure 40-20-38]**. (Both Sides)

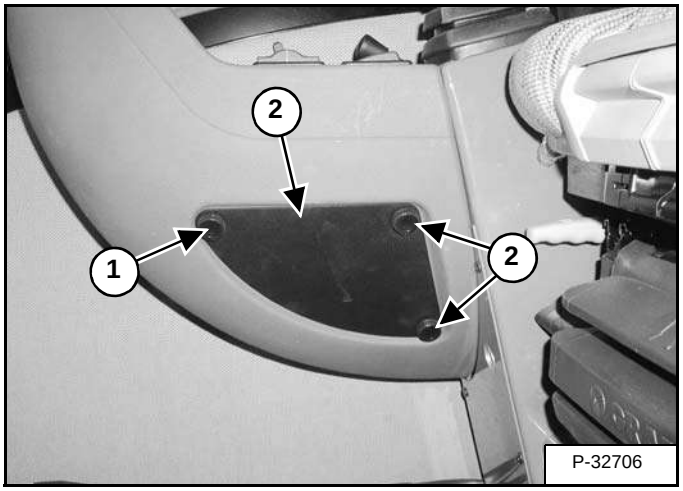
Figure 40-20-39



With the help of a second person, support the lift arms (Item 1) and remove the lock nut (Item 2) washers (Item 3) and bolt (Item 4) **[Figure 40-20-39]**. (Both Sides)

Fuse And Relay Location (S/N 528911001 & Above And S/N 528611001 & Above)

Figure 50-10-10



To check or replace the fuses in the right console, remove the screws (Item 1) and remove the cover (Item 2) **[Figure 50-10-10]**.

Figure 50-10-11

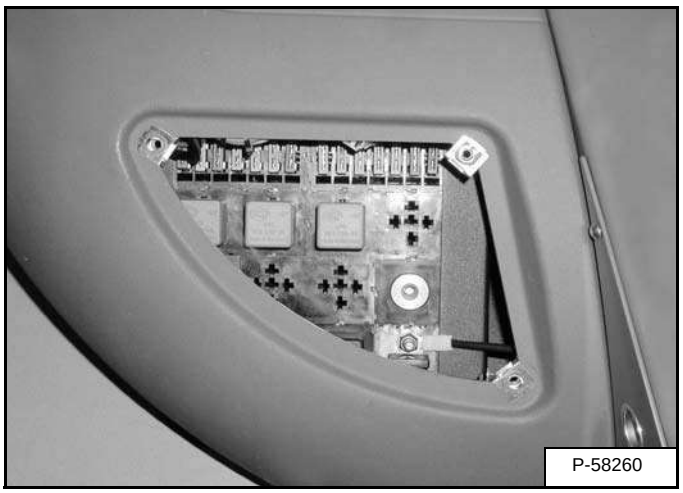
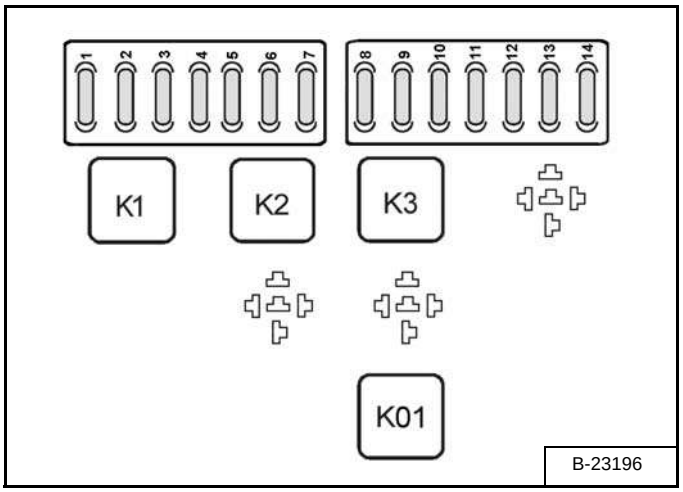


Figure 50-10-12



The location and sizes are shown below **[Figure 50-10-11]** & **[Figure 50-10-12]**.

REF.	DESCRIPTION	AMPERAGE
1	Key switch, interior light, security ignition (If equipped)	10A
2	Aux power outlet, radio, heater	15A
3	Rotating beacon (If equipped)	10A
4	Flood light (Front)	15S
5	Flood light (Back)	15A
6	Fuel pump	15A
7	Horn, panel light, security ignition (If equipped)	10A
8	Heater fan	15A
9	Wiper/washer, radio	15A
10	Hyd. oil level, hyd functions, overload warning	5A
11	Travel pressure switch	5A
12	Main hyd. system	5A
13	Left and right joystick	5A
14	Air conditioning box	10A
K1	Flood light (Front)	Relay
K2	Flood light (Rear)	Relay
K3	Open	Relay
K01	Switch power	Relay

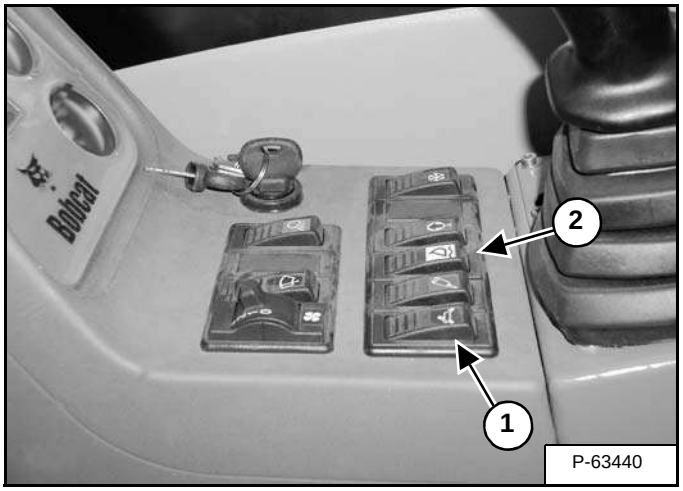
Always replace fuses with the same type and capacity.

TWO SPEED SWITCH

Removal And Installation

Turn the battery disconnect switch to the off position.

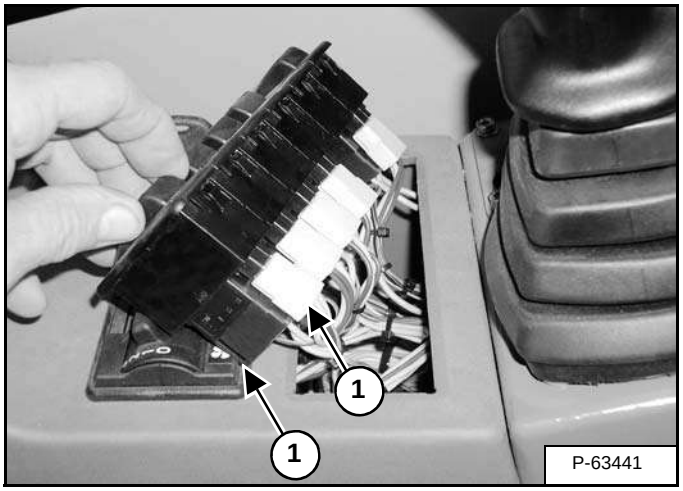
Figure 50-60-1



The two-speed switch (Item 1) **[Figure 50-60-1]** is located on the right console.

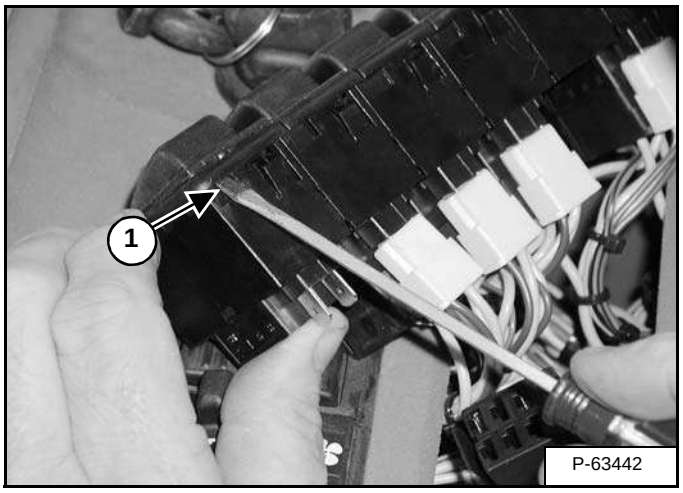
Raise the panel (Item 2) **[Figure 50-60-1]**.

Figure 50-60-2



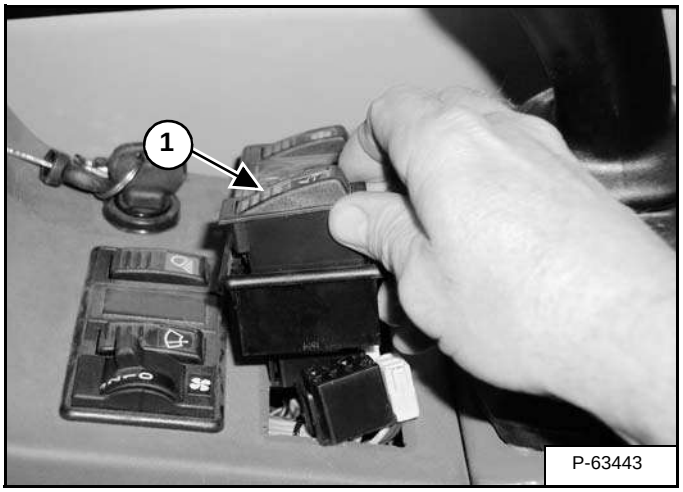
Disconnect the 2 wire connectors (Item 1) **[Figure 50-60-2]**.

Figure 50-60-3



Press in on the tab (Item 1) **[Figure 50-60-3]**. (Both ends)

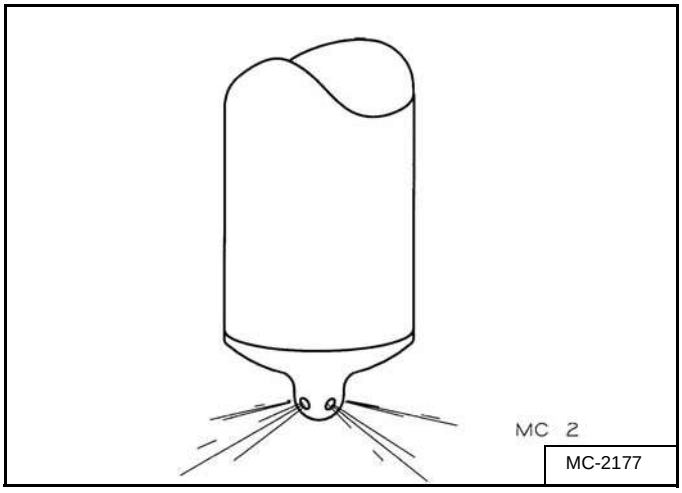
Figure 50-60-4



Remove the two speed switch (Item 1) **[Figure 50-60-4]**.

Fuel Injector Disassembly

Figure 60-50-55



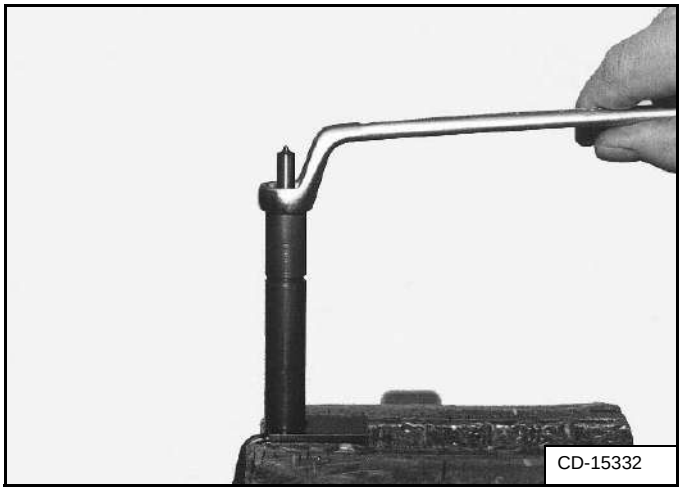
Check nozzles spray pattern **[Figure 60-50-55]**:

The spray pattern must be uniform from all four holes of the nozzle.

The nozzles are dirty or defective:

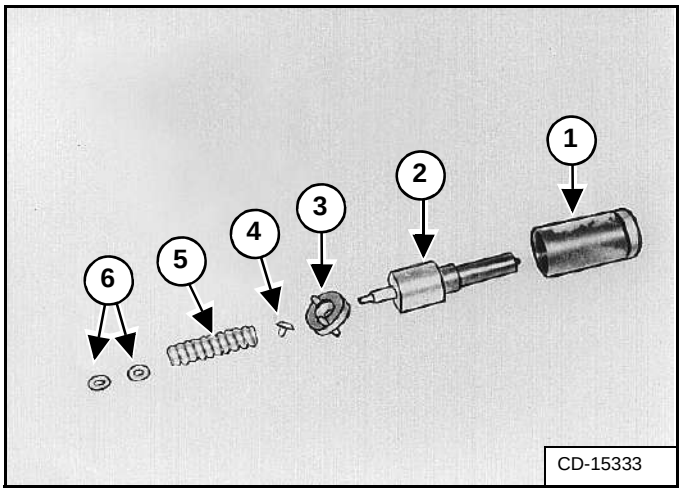
- If the spray pattern is not uniform.
- If fuel drips from the end of the nozzle.
- If the spray is a solid stream instead of a mist.

Figure 60-50-56



Remove the nozzle cap nut **[Figure 60-50-56]**.

Figure 60-50-57

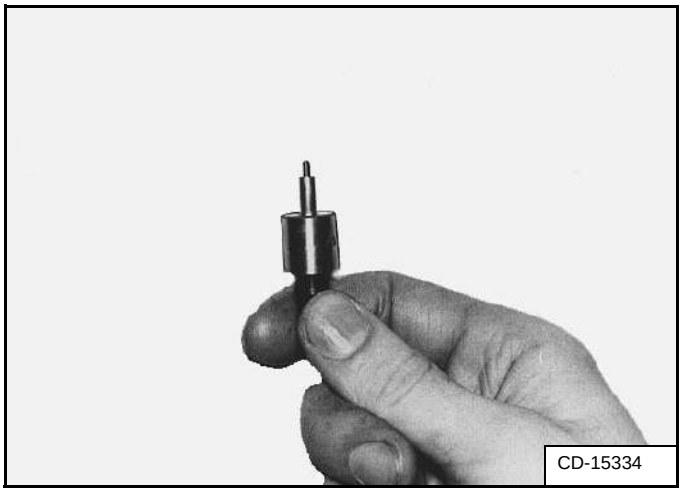


Disassemble the parts as shown in **[Figure 60-50-57]**.

1. Nozzle Cap Nut
2. Injector Nozzle
3. Adapter
4. Thrust Pin
5. Spring
6. Shim(s)

Wash all the parts in clean diesel fuel and blow dry using compressed air.

Figure 60-50-58



The nozzle needle and body **[Figure 60-50-58]** are lapped together and can not be exchanged with other nozzle parts.

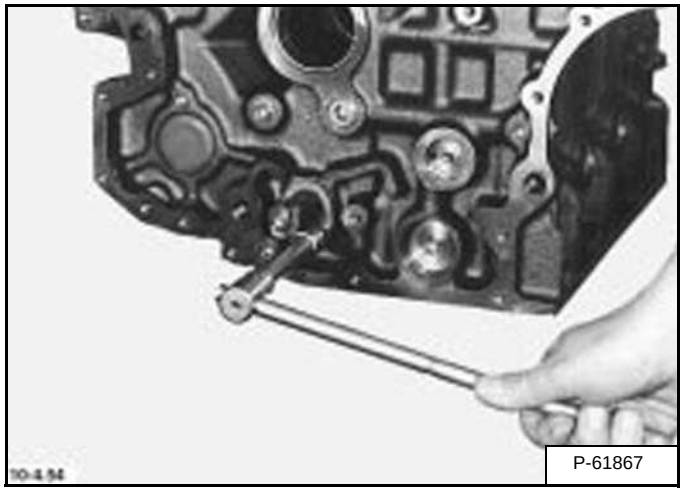
DO NOT touch the nozzle needle with your fingers.

When the nozzle body is held in the upright position, the needle should by its own weight slide slowly and smoothly on its seat **[Figure 60-50-58]**.

RECONDITIONING THE ENGINE (S/N 522311001 & ABOVE)

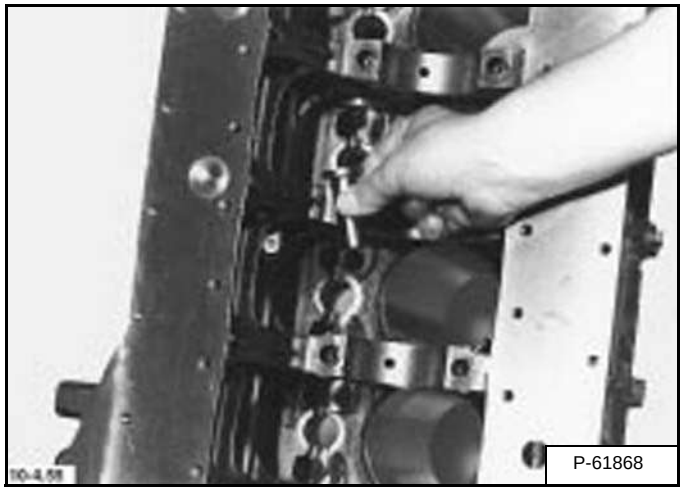
Disassembly (Cont'd)

Figure 60-80-24



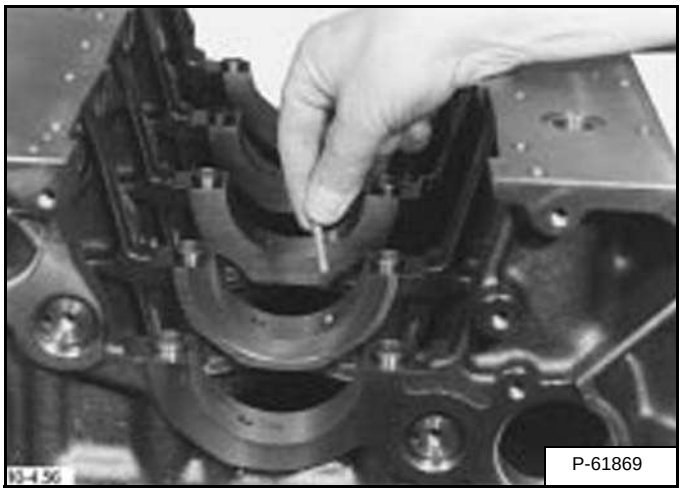
Remove the guide sleeve and control rod **[Figure 60-80-24]**.

Figure 60-80-25



Remove the tappets from the engine block **[Figure 60-80-25]**.

Figure 60-80-26



Remove the oil spray nozzles **[Figure 60-80-26]**.

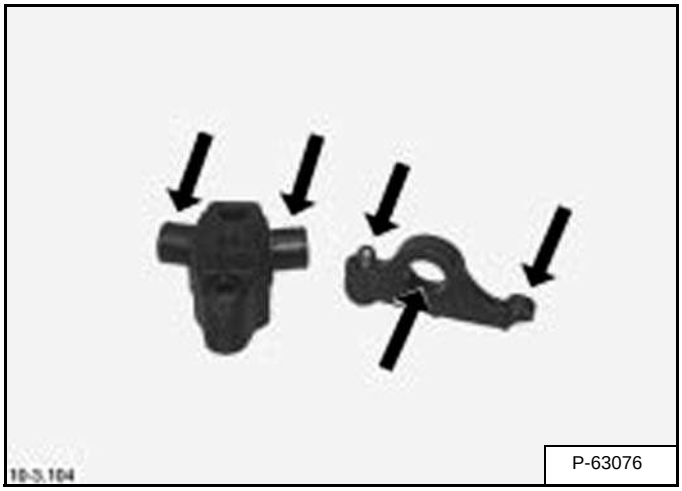
RECONDITIONING THE ENGINE (S/N 522311001 & ABOVE) (CONT'D)

Rocker Arm And Bracket, Checking

Figure 60-80-238

Disassemble the rocker arms from the bracket **[Figure 60-80-238]**.

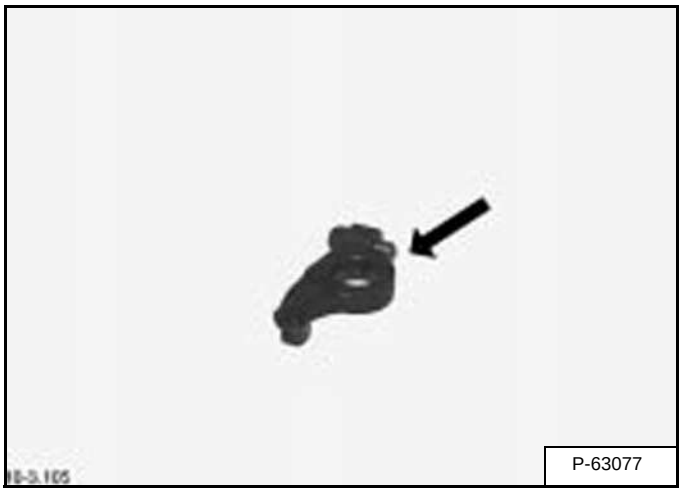
Figure 60-80-239



Check for wear at the following locations and replace as needed **[Figure 60-80-239]**:

Journals
Adjusting Bolt
Rocker Arm Contact Face
Bore

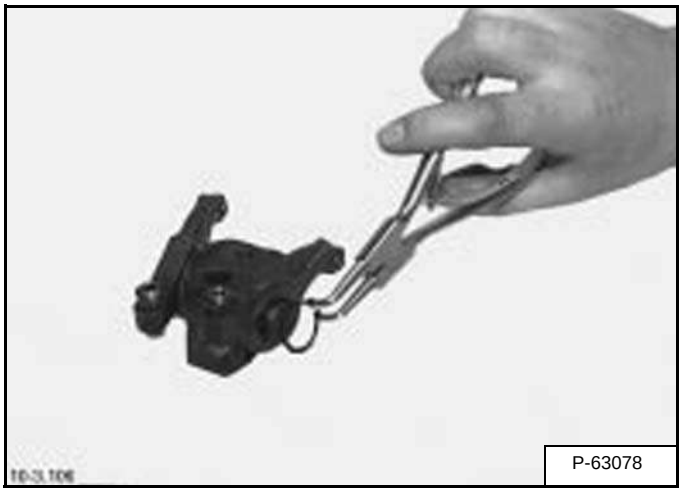
Figure 60-80-240



Check the oil passages that they are open and clean **[Figure 60-80-240]**.

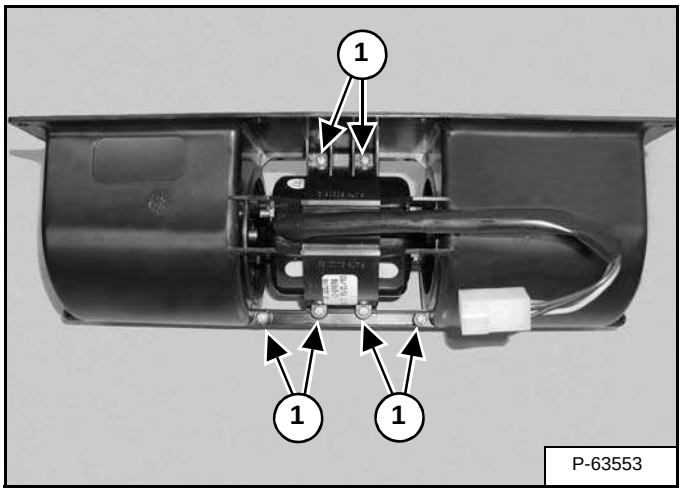
Install the rocker arms on the bracket.

Figure 60-80-241



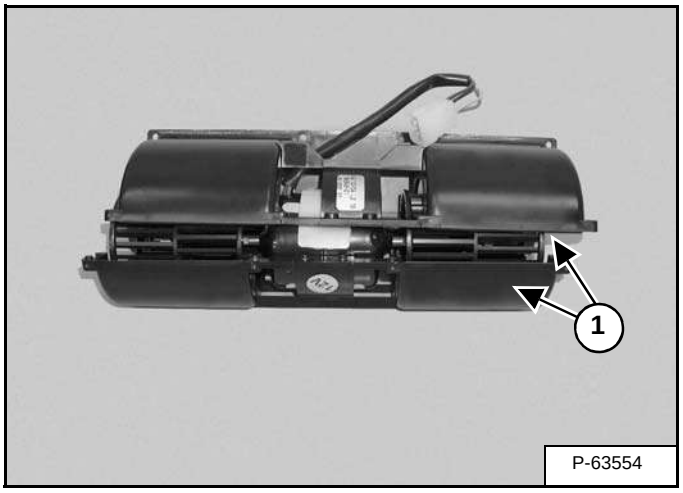
Install the snap ring **[Figure 60-80-241]**.

Figure 70-11-33



Remove the 6 screws (Item 1) **[Figure 70-11-33]**.

Figure 70-11-34

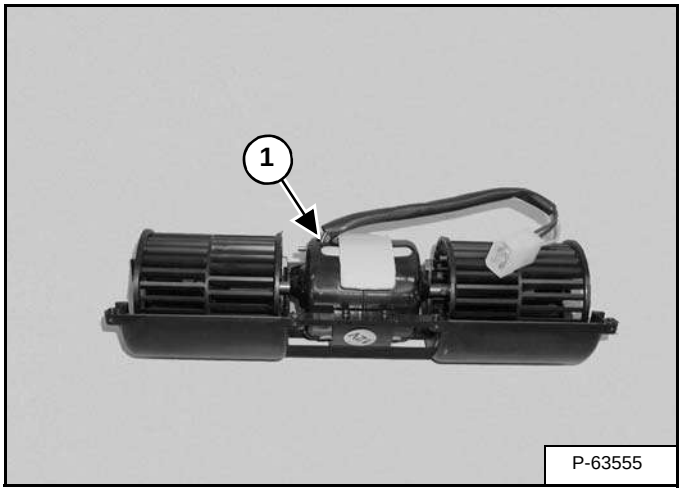


Separate the 2 housing sections (Item 1) **[Figure 70-11-34]**.

EVAPORATOR/HEATER UNIT (S/N 528911001 & ABOVE AND 528611001 & ABOVE) (CONT'D)

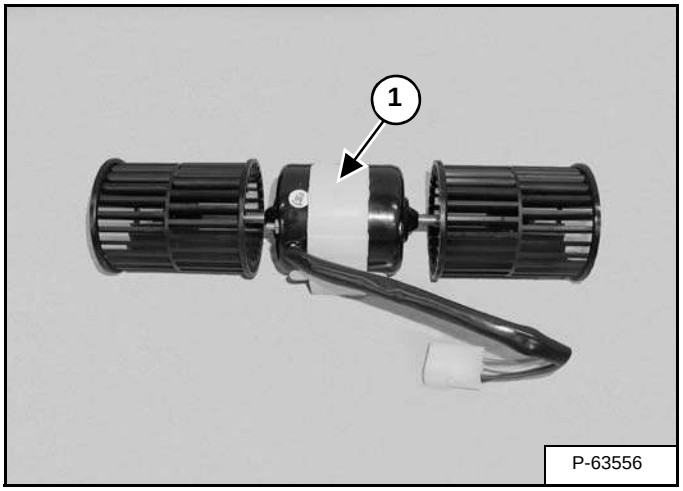
Disassembly And Assembly (Cont'd)

Figure 70-11-35



Remove the fan/motor assembly (Item 1) **[Figure 70-11-35]**.

Figure 70-11-36



Remove the cushion (Item 1) **[Figure 70-11-36]**.