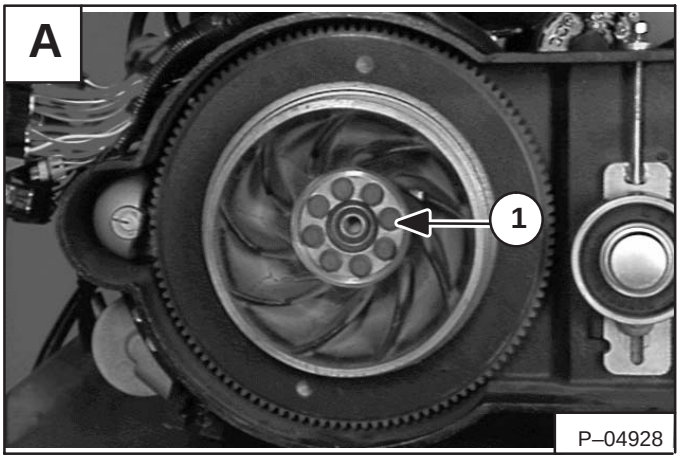
FLYWHEEL

Removal And Installation

Remove the drive belt. (See Page 3–1.)

Remove the bolts (Item 1) **[A]** from the flywheel.

Installation: Put LOCTITE on the flywheel bolts. Tighten the bolts to 83–90 ft.–lbs. (113–122 Nm) torque.



Remove the flywheel from the engine crankshaft **[B]**.

Flywheel Ring Gear

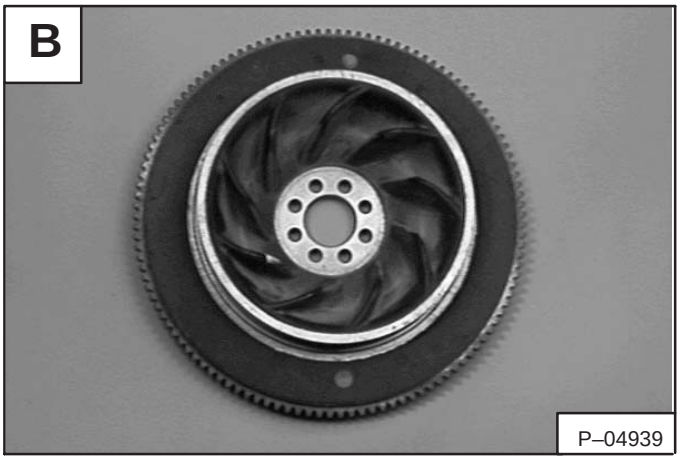
The ring gear on the flywheel is an interference fit. Heat the ring gear enough to expand it and hit it with a hammer to remove it evenly.

Clean the outer surface of the flywheel to give it a smooth fit.

Clean the new ring gear and heat it to a temperature of 450–500°F (232–260°C).

Fit the ring gear over the flywheel. Make sure the gear is on the seat correctly.

NOTE: Early S/N Loader does not have cooling fins in flywheel.



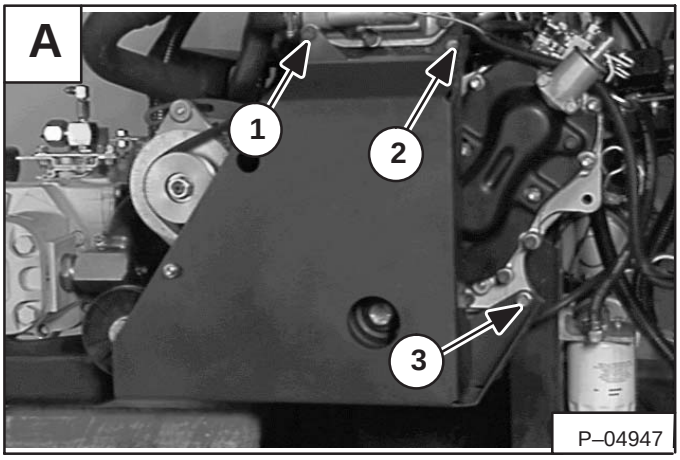
BELT SHIELD

Removal And Installation

Remove the mounting bolt (Item 1) **[A]** from the thermostat housing.

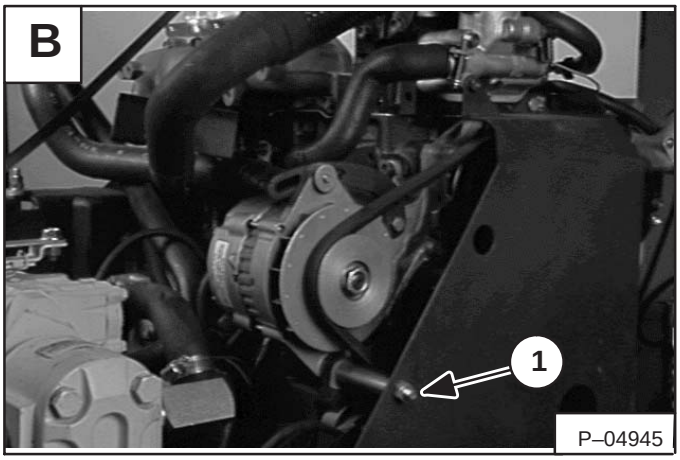
Remove the mounting bolt (Item 2) **[A]** from the cylinder head.

Remove the mounting bolt (Item 3) **[A]**.



Remove the mounting bolt (Item 1) **[B]** from the alternator mounting bracket.

Remove the belt shield from the engine.



ENGINE MOUNTS

Removal And Installation

There is a kit available to replace the existing engine mounts in older model 853 loaders.

Use the following procedure to install new engine mounts:

Remove the existing mount from the engine. Refer to engine Removal And Installation for engine mount locations.

Replace all four engine mounts (2 front and 2 rear).

Use the parts shown to install the new engine mounts **[A]**.

Item 1 – Square Nut – Used on left side engine mounts

Item 2 – Hex Nut – Used on right side engine mounts

Item 3 – Mount Washer

Item 4 – Engine Mount

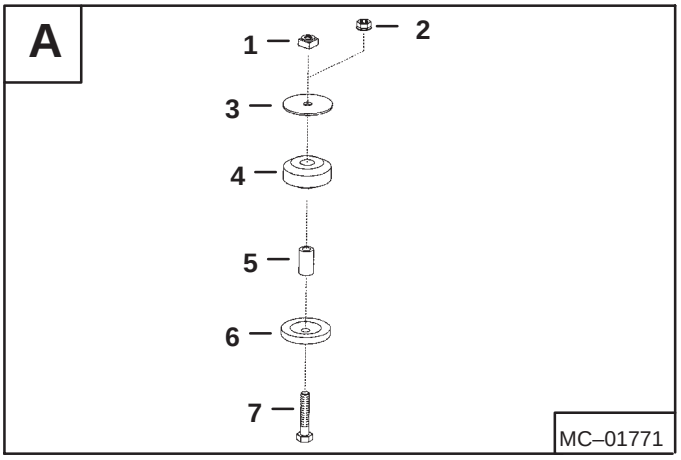
Item 5 – Tube Spacer – Front 1.47 inch (37,3 mm)
Rear 1.57 inch (39,9 mm)

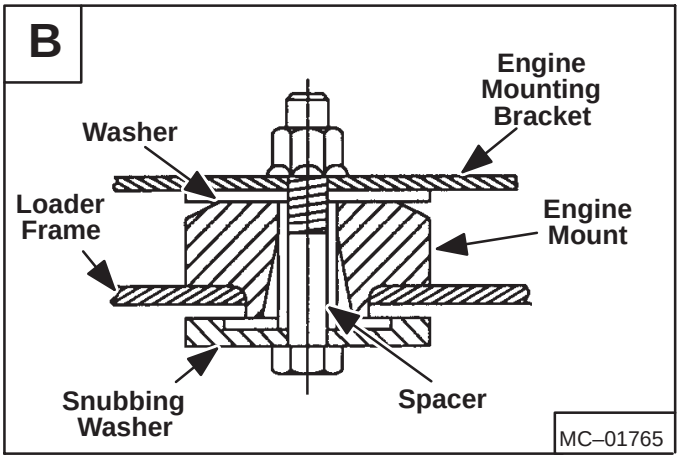
Item 6 – Snubbing Washer

Item 7 – Mounting Bolt

Install the new engine mount as shown in the cut away side view **[B]**.

Tighten the mounting bolts to 90–100 ft.–lbs. (125–130 Nm) torque.



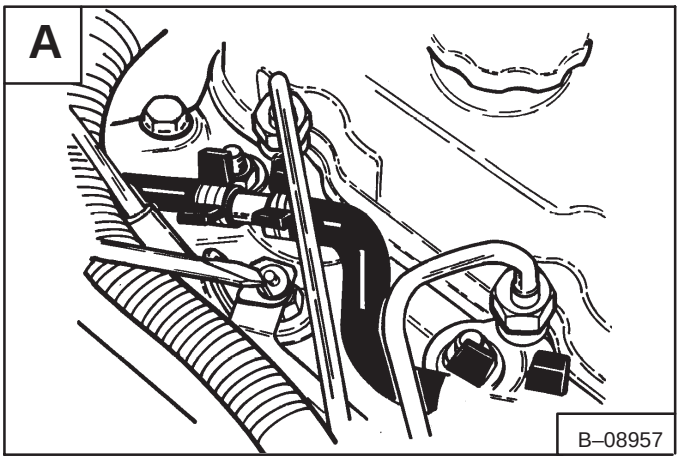


GLOW PLUGS

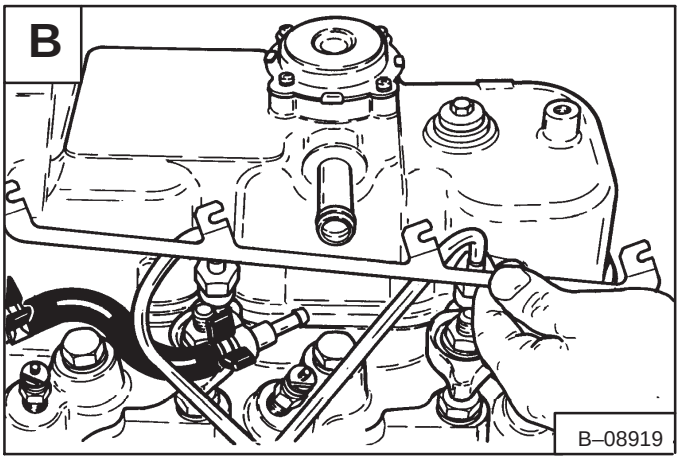
Removal And Installation

Disconnect the negative (–) cable from the battery.

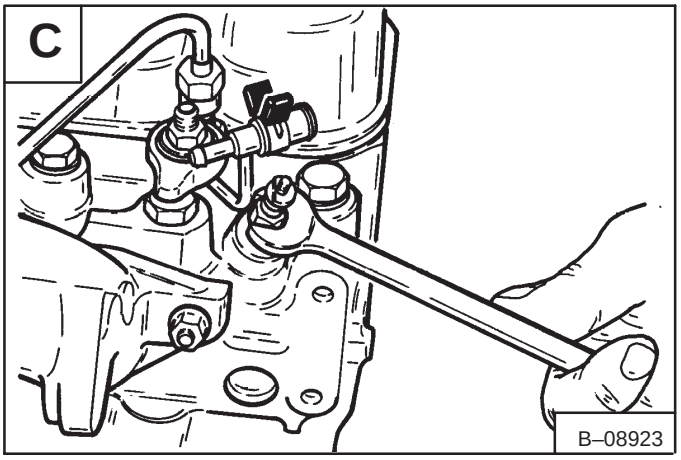
Remove the electrical bar holddown nuts at the glow plugs **[A]**.



Remove the electrical connector bar **[B]**.



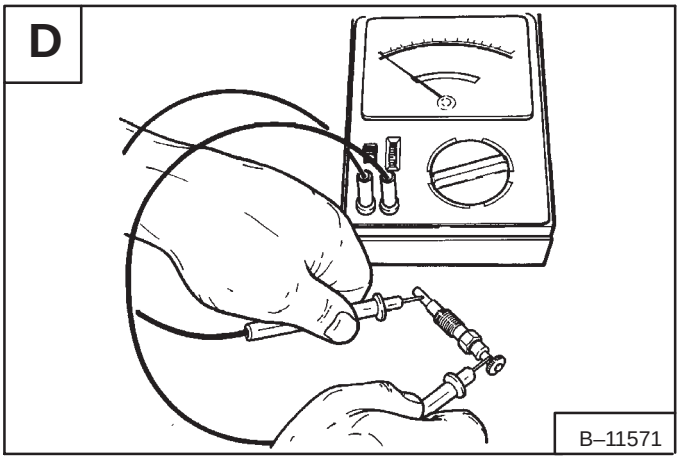
Remove the glow plug from the cylinder head **[C]**.



Checking The Glow Plugs

Connect the voltmeter to the terminal end of the glow plug. Touch the other lead from the voltmeter to the heating end of the glow plug **[D]**.

The reading must be approximately 1.5 ohms. If the resistance is zero ohms the glow plug has a short circuit. If the resistance is infinite, the coil of the glow plug is broken.

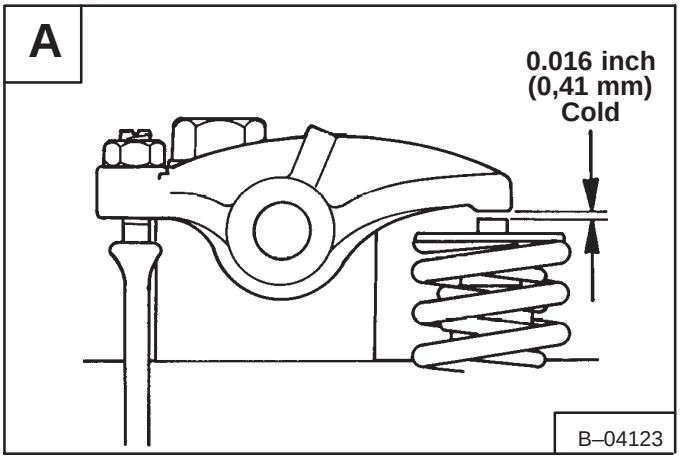


VALVE CLEARANCE

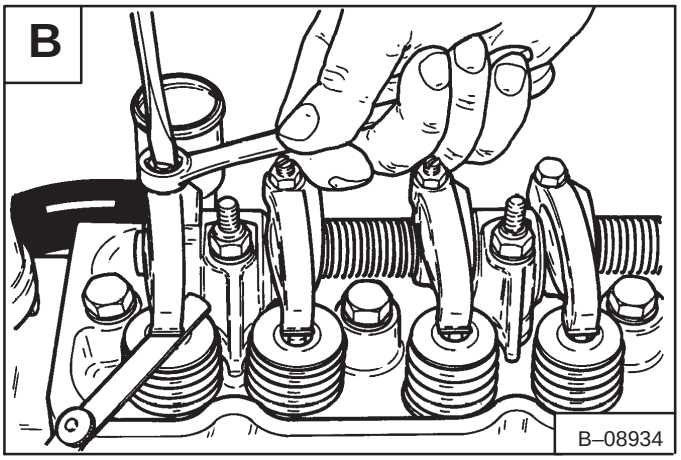
Adjustment

Make the valve clearance adjustment with engine stopped and cold.

The correct clearance is 0.016 inch (0,41 mm) with the engine cold **[A]**.



Put the correct size feeler gauge between the rocker arm and the valve stem. Turn the adjustment bolt until the clearance is correct **[B]**.



Use the following sequence to set the valve clearance:

	Front						Rear	
Cylinder No.	**1**		**2**		**3**		**4**	
Valve arrangement	I	E	I	E	I	E	I	E
Piston in No. 1 cylinder is at TDC on compression stroke	●	●	●			●		
Piston in No. 4 cylinder is at TDC on compression stroke				●	●		●	●

ENGINE COMPRESSION

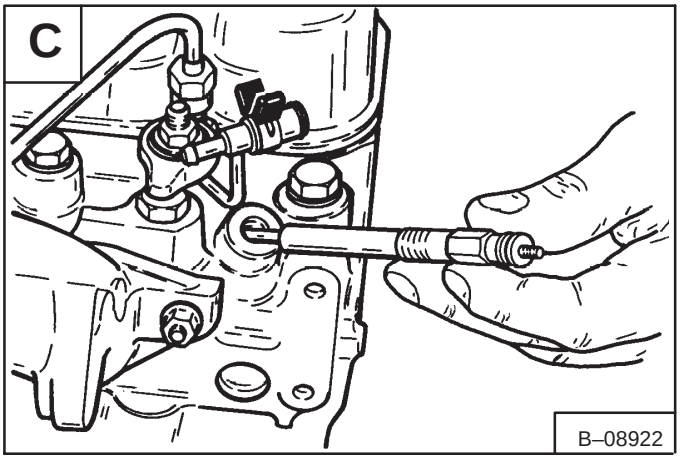
Checking

The tools listed will be needed to do the following procedure:

OEM1074 – Engine Compression Kit
MEL1268 – Compression Gauge Test Adapter

The engine must be at operating temperature.

Remove the glow plugs **[C]**. (See Page 7–40.)



Install the correct compression adapter into the cylinder head.

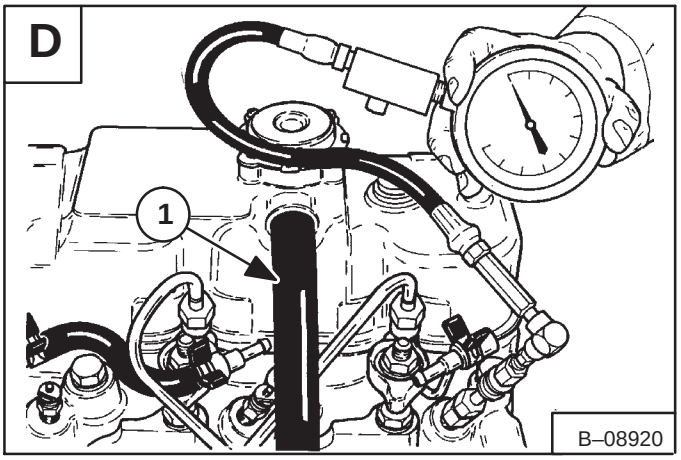
Connect the compression gauge **[D]**.

The engine must be turning at about 175 RPM.

The compression must be between 300–500 PSI (2069–3448 kPa) with no more than 50 PSI (345 kPa) difference between cylinders.

The engine has an open crankcase ventilation system.

The ventilation hose comes from the valve cover tube (Item 1) **[D]** and passes down the side of the engine block.



FUEL INJECTION PUMP

Description

The injection pump contains parts which have a very close tolerance and its operation has a direct effect on the performance of the engine.

IMPORTANT

Do not attempt to maintain or adjust unless you are trained and have the correct equipment.

I–2028–0289

Removal And Installation

Disconnect the throttle linkage.

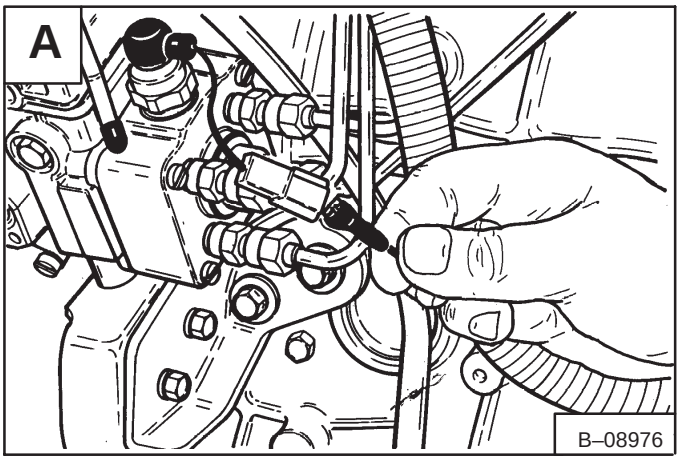
Disconnect the shut–off wire **[A]**.

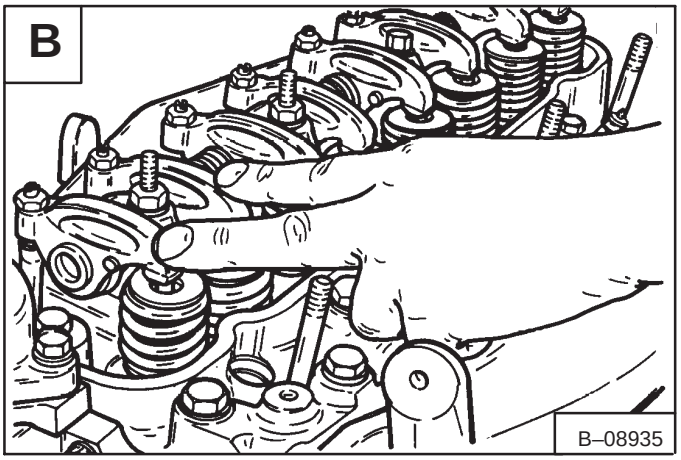
Remove the valve cover.

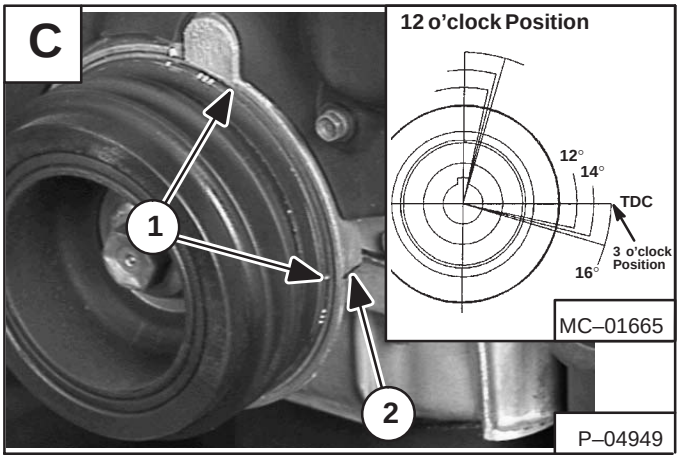
Rotate the engine until No. 1 piston is at TDC. Both valves at No. 1 cylinder are not moving and have clearance **[B]**.

The TDC mark (Item 1) **[C]** is located on the engine pulley v–belt groove.

There are two sets of timing marks on the engine pulley, one at 12 o'clock and the other at the 3 o'clock position. Use the timing marks located at the 3 o'clock position (Inset) **[C]**.



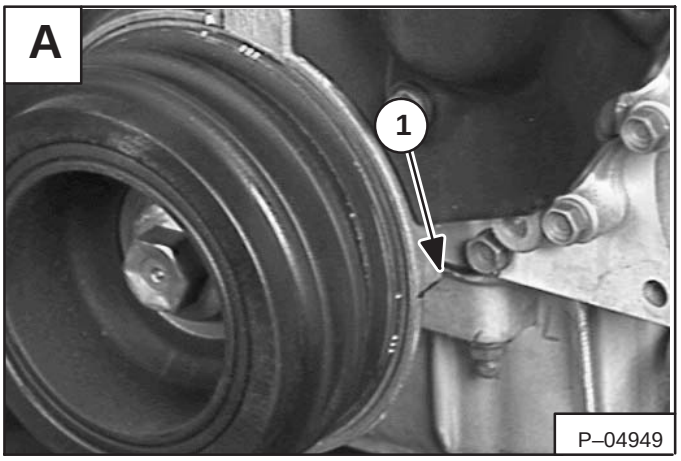


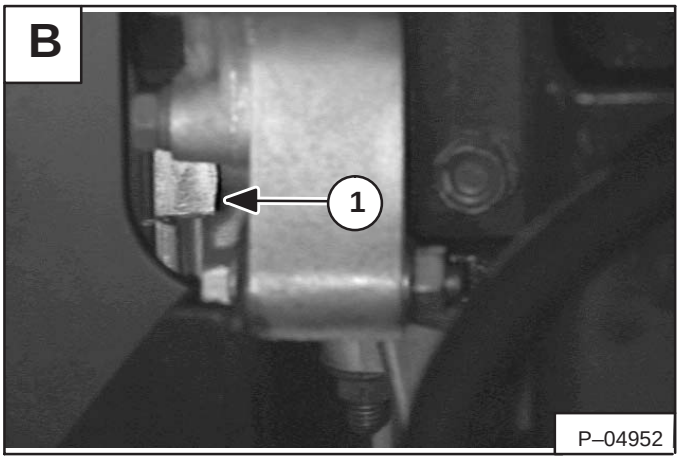


FUEL INJECTION PUMP (Cont'd)

Removal And Installation (Cont'd)

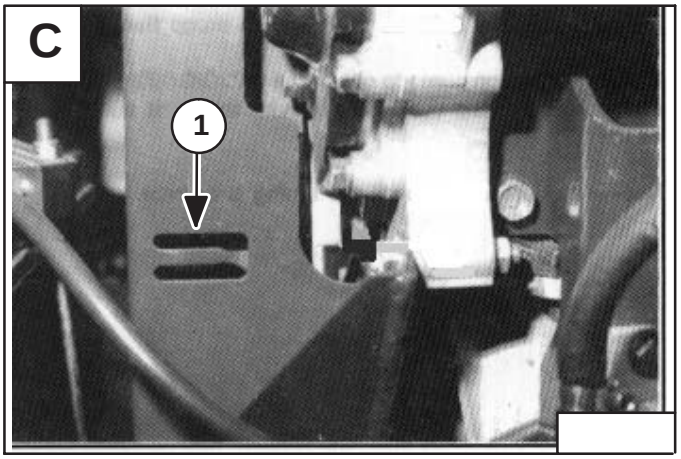
Use the parting line (off–set) (Item 2) **[A]** or (Item 1) **[B]** of the timing case cover to make alignment of the TDC mark.



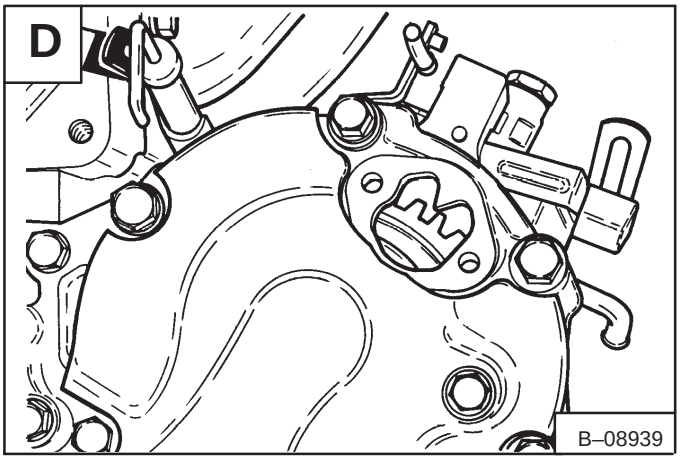


Early S/N Loader:

Disregard the pointer (Item 1) **[C]** in the belt shield for timing reference.



Align the mark on the injection pump gear with the pointer in the window **[D]**.



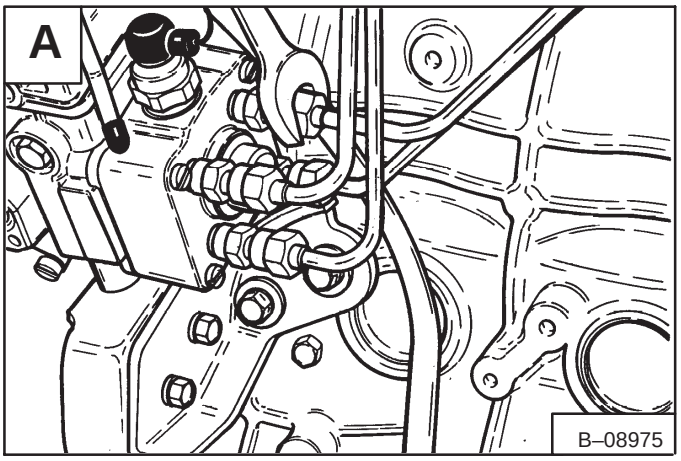
Removal And Installation (Cont'd)

IMPORTANT

Do not bend the high pressure fuel injection tubes when removing or installing them.

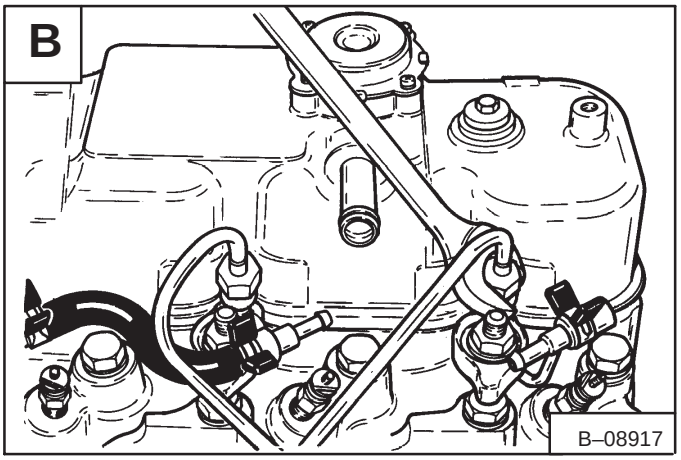
I–2029–0289

Disconnect the high pressure fuel lines at the injection pump **[A]**.

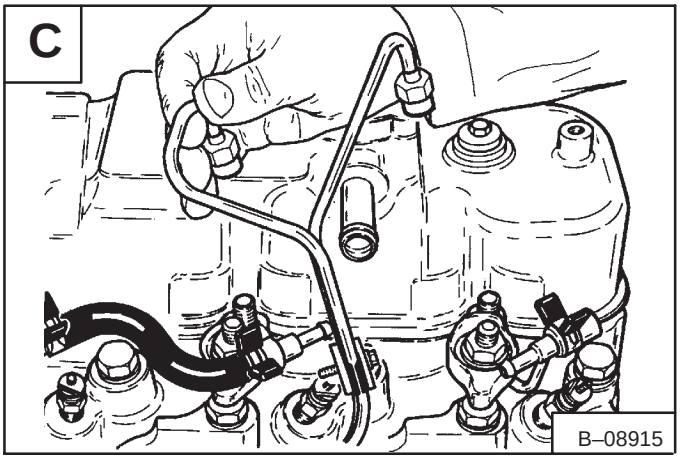


Disconnect the fuel lines at the injectors **[B]**.

Installation: Tighten the fittings on the high pressure fuel lines to 14–29 ft.–lbs. (19–39 Nm) torque.



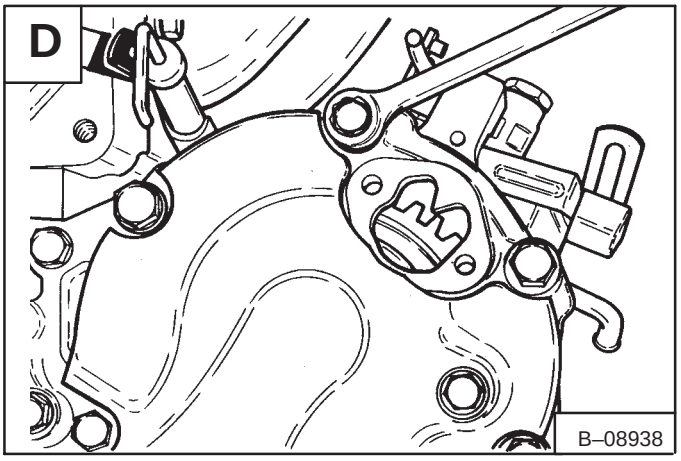
Remove the high pressure fuel lines from the engine **[C]**.



Align the mark in the window before removing the injection pump **[A]**.

Remove the bolts at the front of the timing case cover **[D]**.

***Installation*:** Tighten bolts & nuts to 10–17 ft.–lbs. (14–23 Nm) torque.



FUEL INJECTION PUMP (Cont'd)

Removal And Installation (Cont'd)

Remove the fuel injection pump **[A]**.

Installation: After the injection pump is installed, the air must be removed from the fuel system. (See Page 1–1.)

Also the injection pump timing must be set. (See Page 7–46.)