

## 6C2-6 DIESEL FUEL INJECTION

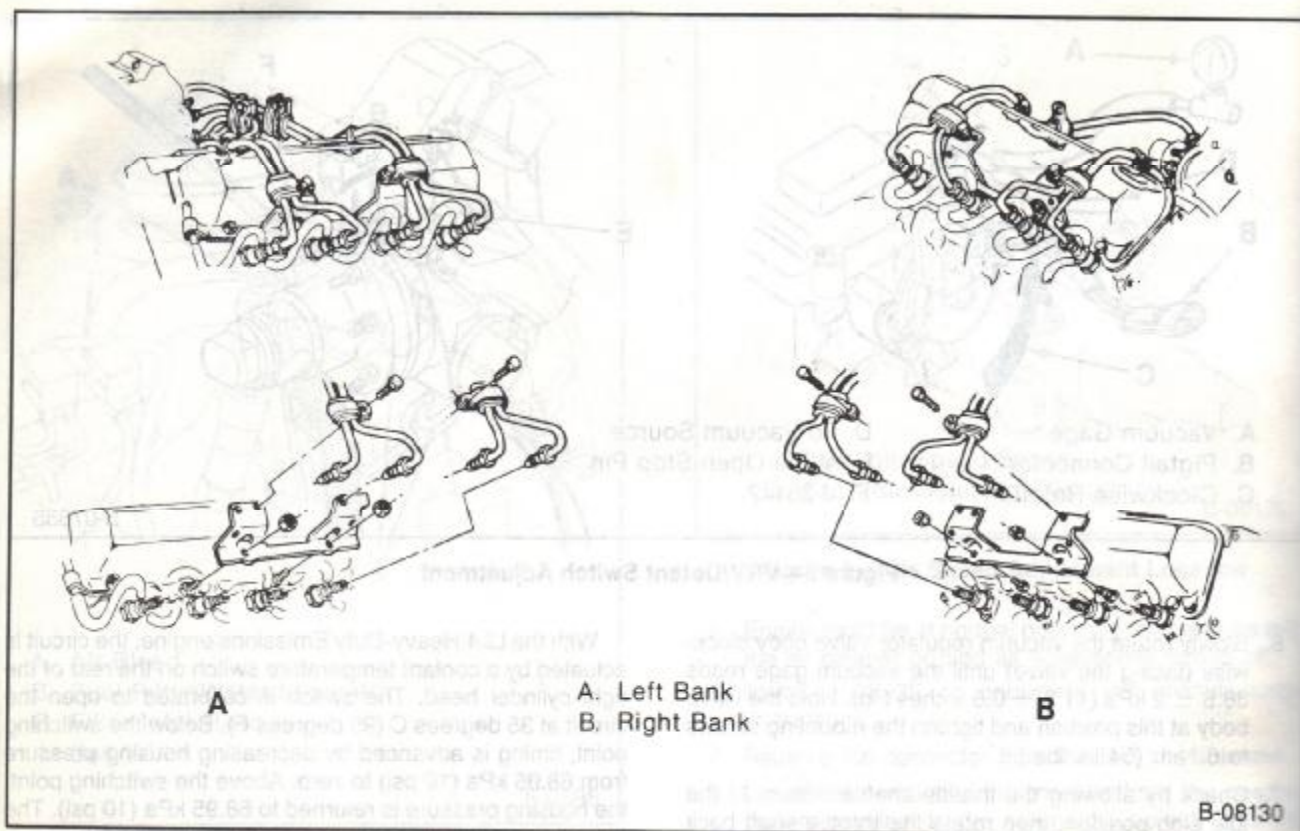


Figure 7—Fuel Injection Lines

2. Air cleaner at the valve cover.
3. Crankcase ventilator bracket.
4. Intake manifold bolts.
  - It may be necessary to loosen the vacuum pump hold down clamp and rotate the pump to gain access to all intake manifold bolts.
5. Injection line clips.
6. Intake manifold.
  - Install J 29644-1 to the intake ports.
7. Injection line clips at the loom brackets.
8. Injection lines at the nozzles.
  - Cap the lines and nozzles immediately.
  - Do not bend injection lines.
9. Injection lines at the pump.
  - Cap the lines and the pump fittings immediately.
  - Tag the lines for installation.

### →→ Install or Connect (Figures 7 and 8)

1. Injection lines at the pump.
  - Uncap the lines and pump fittings.
  - Refer to the tags for correct installation.
2. Injection lines at the nozzles.
  - Uncap the lines and nozzles.

### ↻ Tighten

- Fittings to 25 N·m (20 ft. lbs.).
3. Injection line clips at the loom brackets.
  4. Intake manifold.
    - Remove J 29644-1.

5. Injection line clips.
6. Intake manifold bolts.

### ↻ Tighten

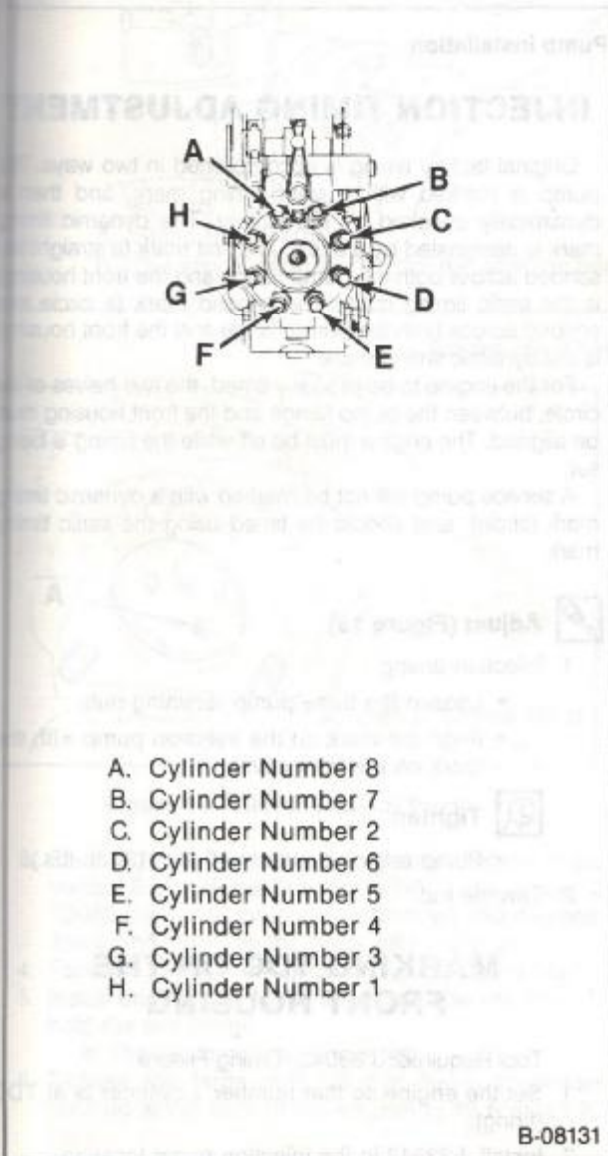
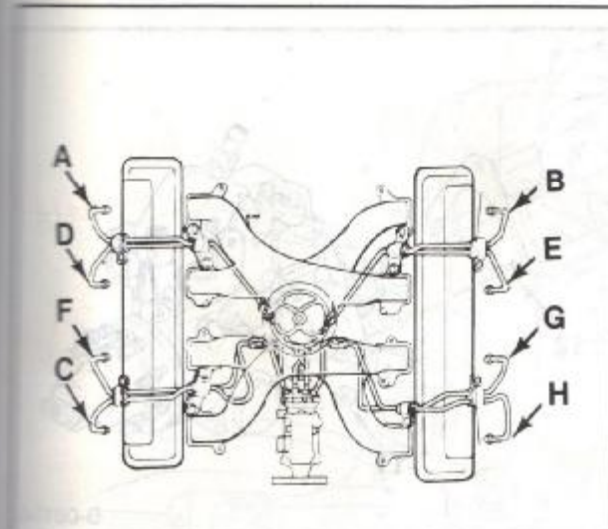
- Bolts to 40 N·m (30 ft. lbs.).
7. Crankcase ventilator bracket.
  8. Air cleaner.
  9. Battery negative cables.

## INJECTION PUMP REPLACEMENT

### ↔ Remove or Disconnect

Tool Required: J29664-1, Protective Covers

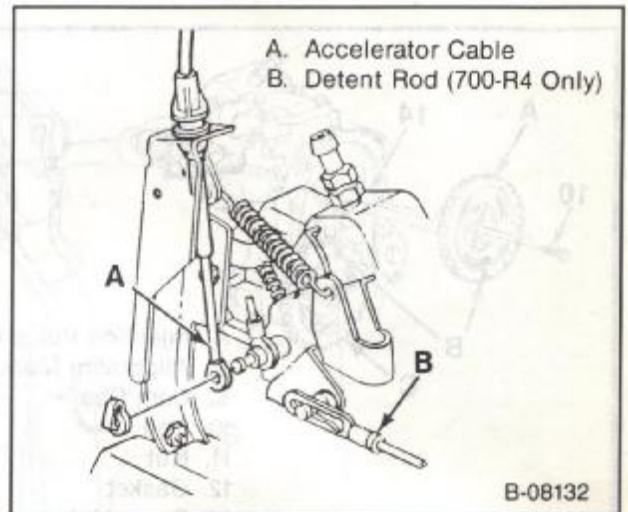
1. Battery negative cable.
2. Intake manifold.
  - Refer to 6.2 LITER DIESEL (SEC. 6A6).
3. Injection lines.
4. Accelerator cable at the injection pump (figure 9).
5. Detent cable (if equipped).
6. Fuel return line at the top of the injection pump.
7. Fuel inlet line from the injection pump.
8. All necessary wires and hoses from the injection pump.
9. Air conditioning hose retainer bracket (if equipped).
10. Oil fill tube (includes CDR valve vent hose).
11. Grommet.
  - Scribe or paint a mark on the front cover and the injection pump flange.



- A. Cylinder Number 8
- B. Cylinder Number 7
- C. Cylinder Number 2
- D. Cylinder Number 6
- E. Cylinder Number 5
- F. Cylinder Number 4
- G. Cylinder Number 3
- H. Cylinder Number 1

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**Figure 8—Injection Line Routing**



**Figure 9—Accelerator Linkage**

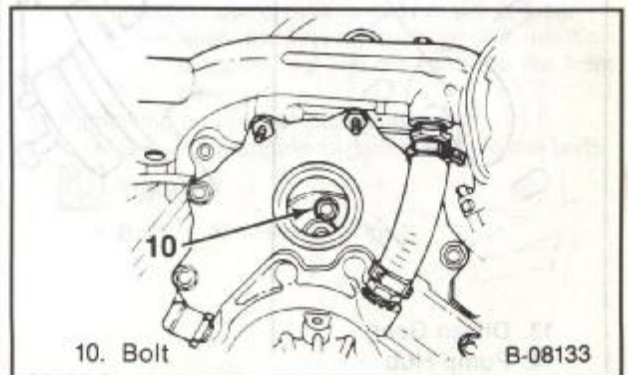
- Rotate the engine to gain access to the bolts that hold the driven gear to the injection pump.
  - Access is gained through the oil filler neck hole (figure 10).
- 12. Bolts (10).
- 13. Nuts (11) (figure 11).
- 14. Pump.
  - Cap all open lines and nozzles.
- 15. Gasket (12).

**Install or Connect**

1. New gasket (12).
2. Injection pump to the front cover.
  - Align the locating pin on the pump hub (14) with the slot in the injection pump driven gear (13) (figure 12).
  - Align the timing marks (figure 12).
3. Nuts (11) (figure 10).

**Tighten**

- Nuts to 40 N-m (30 ft. lbs.).
  - Check the timing mark alignment before fully torquing the nuts.



10. Bolt

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**Figure 10—Pump Drive Gear Bolts**

## 6C2-8 DIESEL FUEL INJECTION

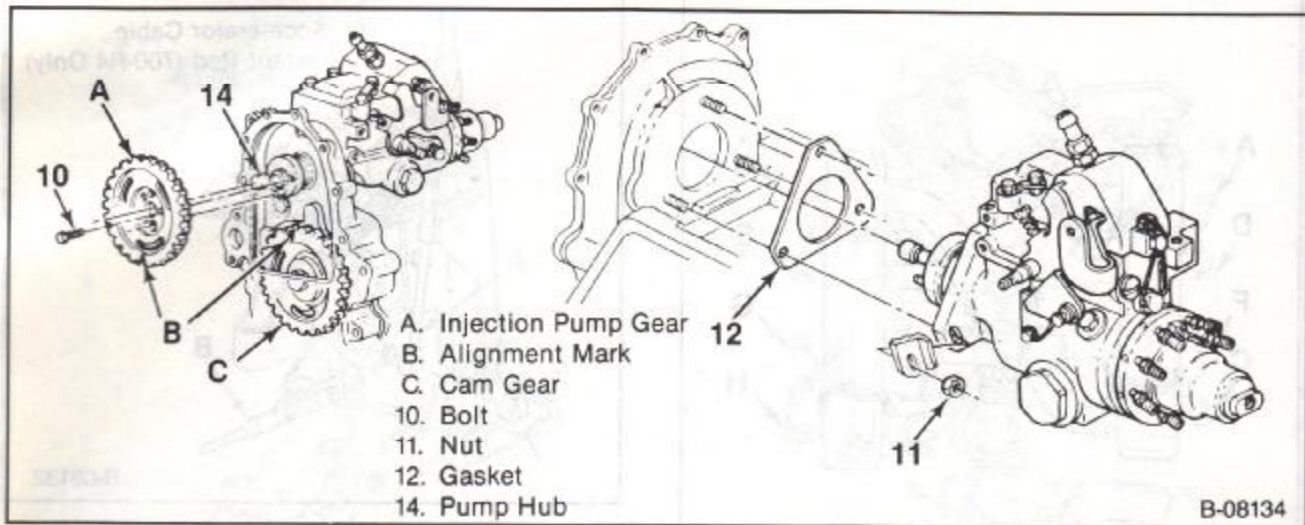


Figure 11—Injection Pump Installation

4. Drive gear to injection pump bolts (10) (figure 11).



### Tighten

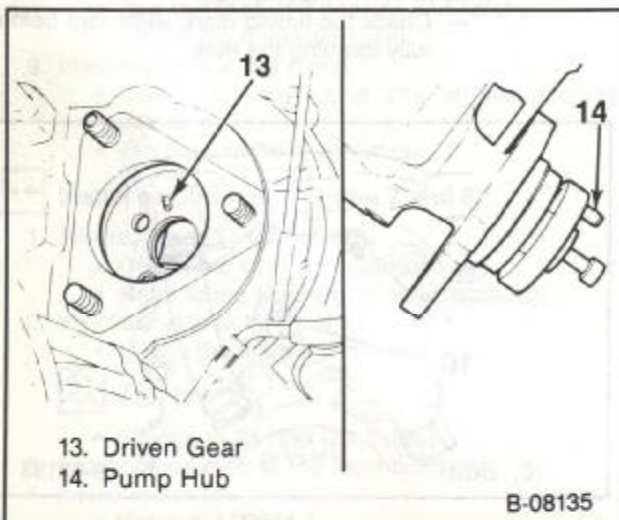
- Bolts to 25 N·m (20 ft. lbs.).

5. Grommet.
6. Oil fill tube including the CDR valve vent hose.
7. Air conditioning hose retainer bracket (if equipped).
8. Fuel feed line at the injection pump.



### Tighten

- Fitting to 25 N·m (20 ft. lbs.).
9. Fuel return line to the top of the injection pump.
  10. Detent cable (if equipped).
  11. All necessary wires and hoses.
  12. Accelerator cable.
  13. Injection lines.
  14. Intake manifold.
    - Refer to 6.2 LITER DIESEL (SEC. 6A6).
  15. Battery negative cable.



13. Driven Gear
14. Pump Hub

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Figure 12—Injection Pump Locating Pin

## INJECTION TIMING ADJUSTMENT

Original factory timing is accomplished in two ways. The pump is marked with a static timing mark, and then is dynamically checked by the factory. The dynamic timing mark is designated by a circle. The first mark (a straight line scribed across both the pump flange and the front housing) is the static timing mark. The second mark (a circle also scribed across both the pump flange and the front housing) is the dynamic timing mark.

For the engine to be properly timed, the two halves of the circle, between the pump flange and the front housing must be aligned. The engine must be off while the timing is being set.

A service pump will not be marked with a dynamic timing mark (circle), and should be timed using the static timing mark.



### Adjust (Figure 13)

1. Injection timing.
  - Loosen the three pump retaining nuts.
  - Align the mark on the injection pump with the mark on the front cover.



### Tighten

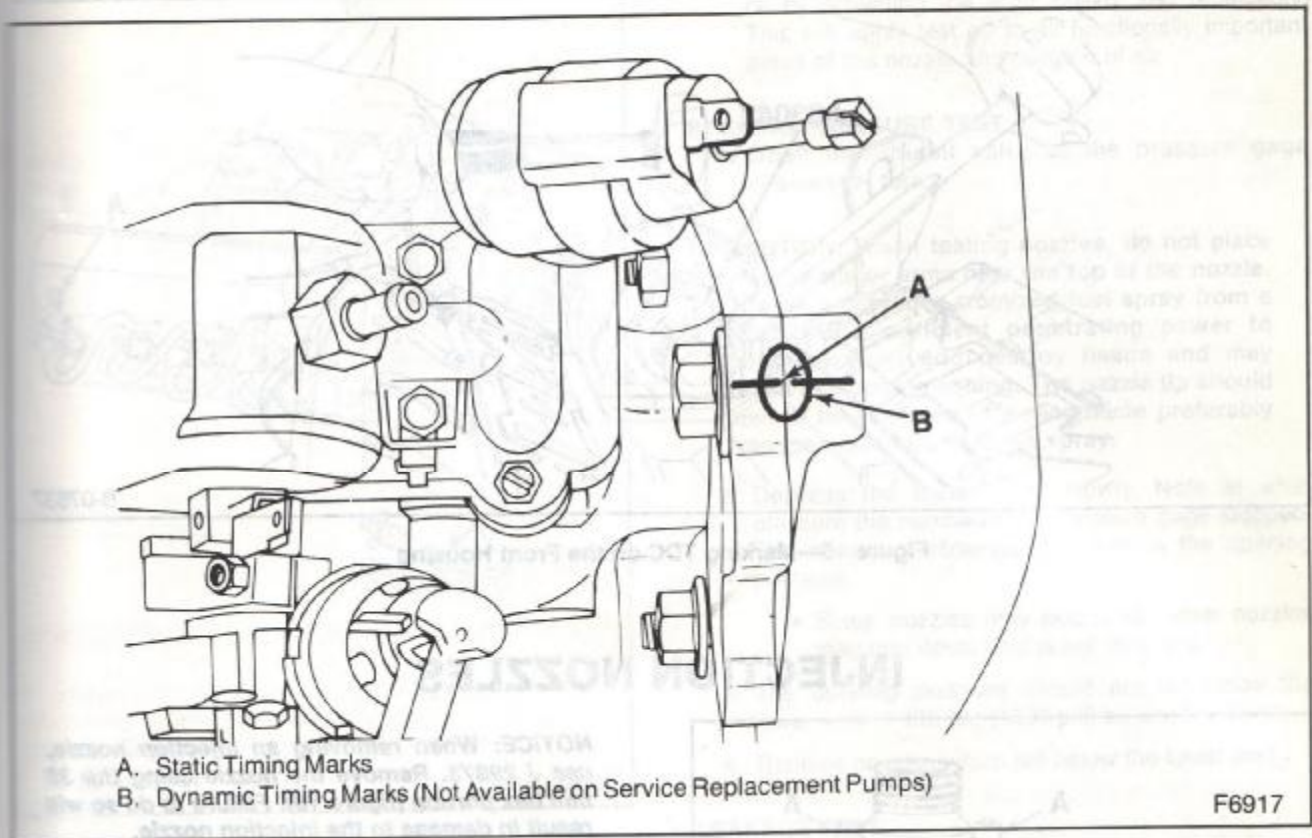
- Pump retaining nuts to 40 N·m (30 ft. lbs.).

2. Throttle rod.

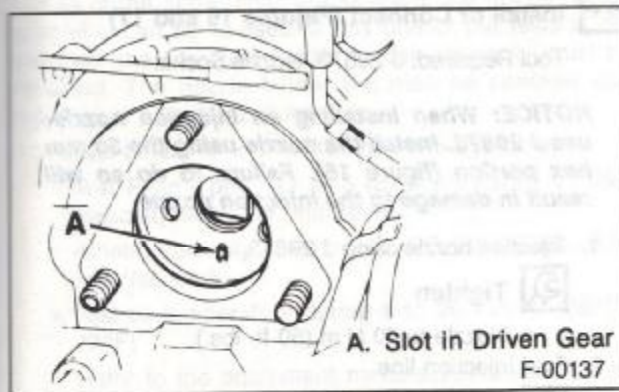
## MARKING TDC ON THE FRONT HOUSING

Tool Required: J 33042, Timing Fixture

1. Set the engine so that number 1 cylinder is at TDC (firing).
2. Install J-33042 in the injection pump location.
  - Do not use the gasket.



**Figure 13—Timing Alignment Marks**



**Figure 14—Slot in Injector Pump**

3. The slot in the injection pump gear should be in the vertical 6 o'clock position (figure 14). If not, remove J 33042 and rotate the engine crankshaft 360 degrees. The timing marks on the gears will be aligned.
4. Fasten J 33042 to the gear and tighten (figure 15).
5. Install one 10 mm nut to the upper housing stud to hold the tool flange.
  - The nut should be finger tight.
6. Tighten the large bolt (18 mm head) clockwise (looking at the front of the engine) to 48 N·m (35 ft. lbs.).
7. Tighten the 10 mm nut.

8. Check that the crankshaft has not rotated and that the tools did not bind.
9. Strike the scribe with a mallet to mark TDC on the front housing.
10. Remove J 33042.

**→→ Install or Connect**

1. Gasket.
2. Injection pump.
3. Nuts (finger tight).
4. One 8 mm bolt to attach the gear to the pump hub.

**⌚ Tighten**

- Bolt to 25 N·m (20 ft. lbs.).
- Injection pump nuts to 40 N·m (30 ft. lbs.).
  - Align the timing mark on the injection pump flange with the mark on the front cover.

5. Remaining pump gear attaching bolts.

- Rotate the engine to gain access to the bolts.

**⌚ Tighten**

- Bolts to 25 N·m (20 ft. lbs.).