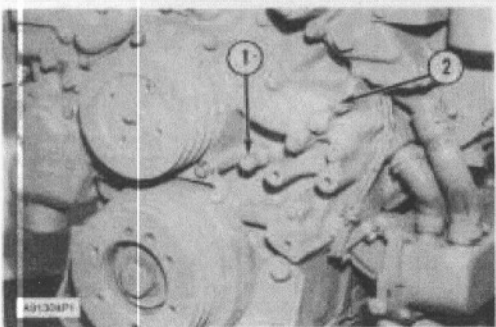


Stopping The Engine

## **Finding Top Center Compression Position For No. 1 Piston**

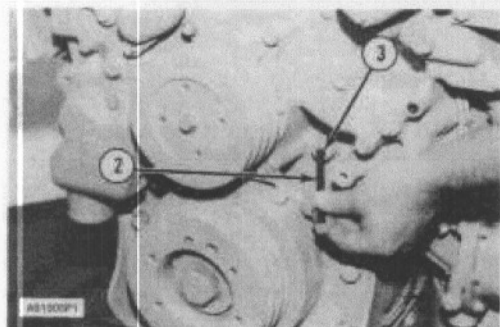
No. 1 piston at top center (TDC) on the compression stroke is the starting point for all timing procedures.

1. Remove fitting (1) from the timing hole (3) in the front cover. Put bolt (2) in timing hole (3).



Fitting And Bolt Location  
(1) Fitting. (2) Bolt.

2. Turn the crankshaft COUNTERCLOCKWISE (as seen from rear of engine) until bolt (2) will go into the hole in the drive gear for the camshaft.
3. Remove the valve cover on the right side of the engine (as seen from rear of engine). The two valves at the right front of the engine are the intake and exhaust valves for No. 1 cylinder.



**Installing Bolt**

(2) Bolt. (3) Timing hole.

4. The intake and exhaust valves for No. 1 cylinder must now be closed and the timing pointer will be in alignment with the TDC-1 on the damper assembly. The No. 1 piston is now at top center on the compression stroke.

## **Fuel System Adjustments**

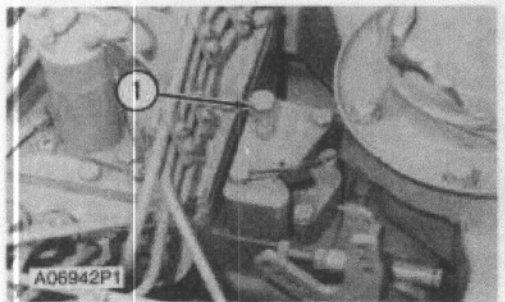
### **Checking Fuel Injection Pump Timing; On Engine**

The timing of the fuel injection pump can be checked and changed if necessary, to make compensation for movement in the taper sleeve drive or worn timing gears. The timing can be checked and if necessary, changed using the following method.

### **Checking Timing By Timing Pin Method**

<b>Tools Needed</b>		
6V4069	Puller	1
3P1544	Timing Pin	1

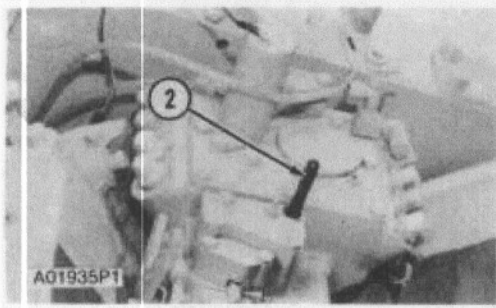
1. Remove bolt (1) from the timing pin hole.

**Timing Hole Bolt**

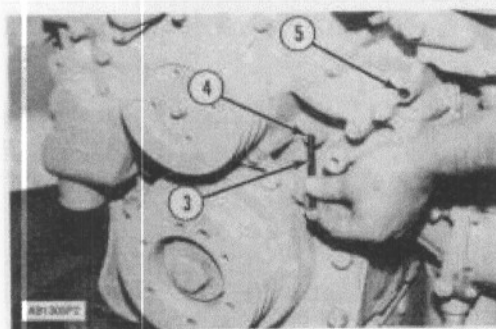
(1) Bolt.

2. Turn the crankshaft COUNTERCLOCKWISE (as seen from rear of engine) until timing pin (2) goes into the notch in the camshaft for the fuel injection pumps.

3. Remove the fitting from timing hole (4) in the front cover. Put bolt (3) through the front cover and into the hole with threads in the timing gear. The bolt from hole (5) can be used.



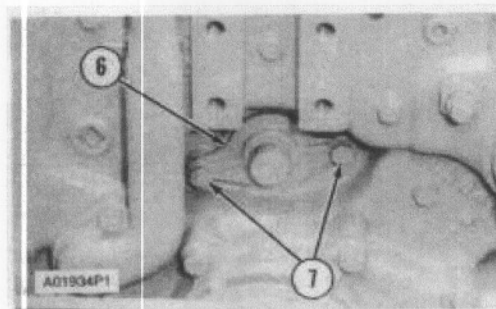
Timing Pin Installed  
(2) 3P1544 Timing Pin.



Installing Bolt  
(3) 1D4539 Bolt, 5/16 in.-18 NC, 63.5 mm (2.5 in.) long. (4) Timing hole. (5) Hole.

4. If the timing pin is in the notch in the camshaft for the fuel injection pumps, and bolt (3) goes into the hole in the timing gear through timing hole (4), the timing of the fuel injection pump is correct.

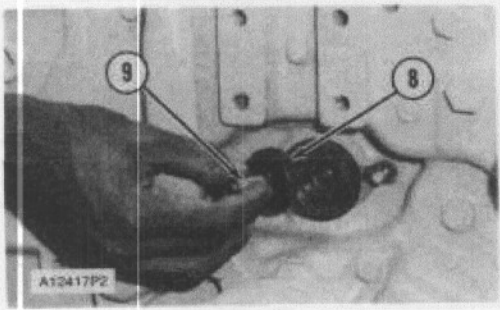
**NOTE:** If bolt (3) does not go in the hole in the timing gear with timing pin (2) in the notch in the camshaft, use the procedure that follows.



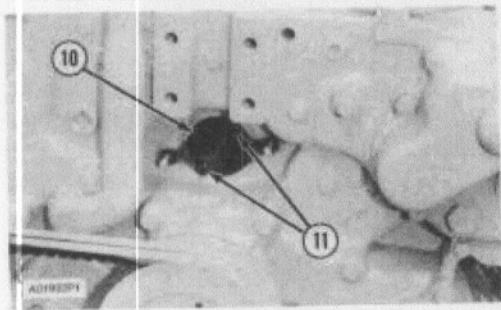
Location Of Cover  
(6) Cover for the tachometer drive assembly. (7) Nuts.

- a. Remove nuts (7) and the cover for the tachometer drive assembly (6).
- b. Remove the tachometer drive shaft (9) and washer (8) from the camshaft for the fuel injection pumps.

**NOTE:** Tachometer drive shaft (9) and washer (8) are removed as an assembly.



Location Of Bolt  
(8) Washer. (9) Tachometer drive shaft.



Loosening Drive Gear  
(10) 6V4069 Puller. (11) Bolts.

- c. Put 6V4069 Puller (10) on the camshaft for the fuel injection pumps. Tighten bolts (11) until the drive gear on the camshaft for the fuel injection pumps comes loose.
- d. Remove the 6V4069 Puller.
- e. Turn the crankshaft COUNTERCLOCKWISE (as seen from rear of engine) until bolt (3) goes into the hole in the timing gear. With timing pin (2) in the notch in the camshaft for the fuel injection pumps, and bolt (3) in the hole in the timing gear, the timing for the engine is correct.
- f. Install washer (8) and tachometer drive shaft (9). Tighten tachometer drive shaft to  $149 \pm 14$  N·m ( $110 \pm 10$  lb ft). Remove timing pin (2).