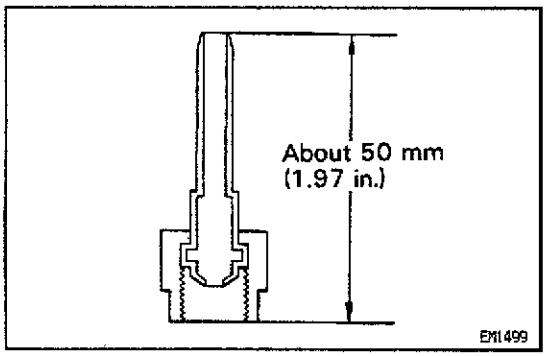
RECOMMENDED TOOLS

	09040–00010 Hexagon Wrench Set.	
	09200–00010 Engine Adjust Kit.	
	09904–00010 Expander Set.	

EQUIPMENT

Dial indicator	
Engine tune–up tester	
Vernier calipers	



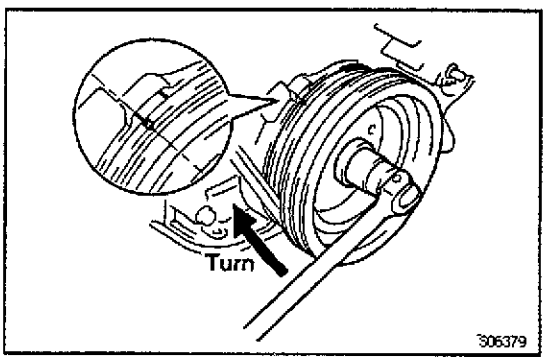
INJECTION TIMING INSPECTION AND ADJUSTMENT

1. PREPARE INSPECTION PIPE

Make an inspection pipe with a injection pipe as shown.

2. REMOVE CYLINDER HEAD COVER

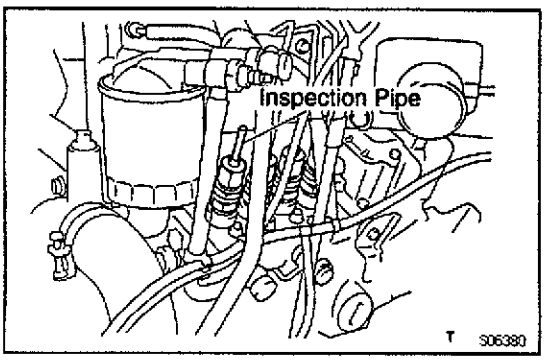
(See cylinder head removal)



3. SET NO. 1 CYLINDER TO 10° BTDC / COMPRESSION

(a) Align the groove on the pulley with the groove of the timing gear cover by turning the crankshaft clockwise with a wrench.

(b) Check that the rocker arms on the No.1 cylinder are loose and rocker arms on the No.4 cylinder are tight. If not turn the crankshaft one revolution (360°) and align the marks as above.



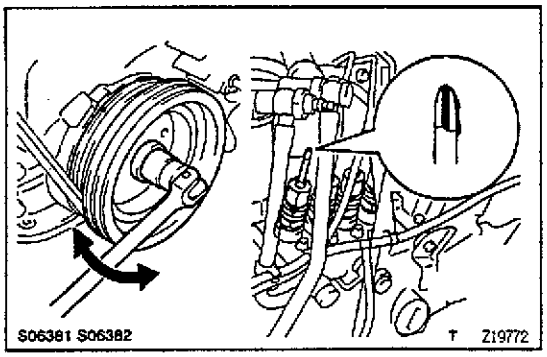
4. ADJUST INJECTION TIMING

(a) Remove the No.1 injection pipe.

(b) Remove the No.1 delivery valve holder, delivery valve and spring.

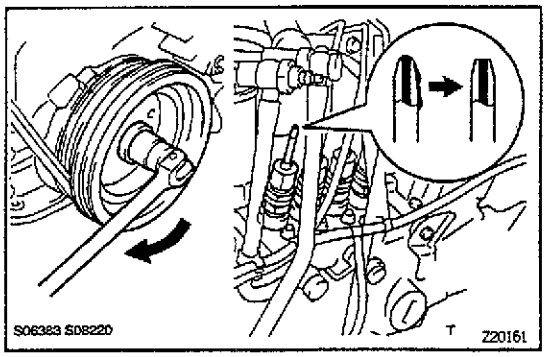
(c) Reinstall the No.1 delivery valve holder.

(d) Install the inspection pipe on the No.1 delivery valve holder.



(e) Turn the crankshaft slightly to left and right until fuel surfaces from the inspection pipe.
HINT: Perform the operation while moving the priming pump of the fuel filter to feed the fuel into the injection pump.

(f) Turn the crankshaft counterclockwise, set the No.1 cylinder just before the 10° BTDC/compression.



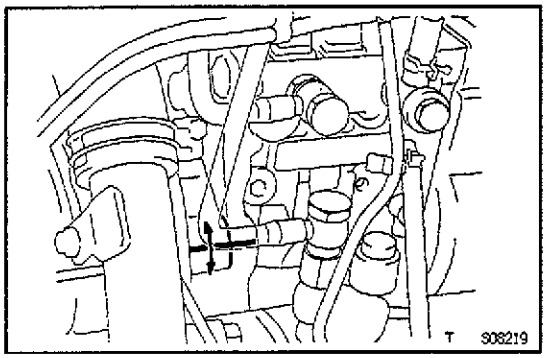
(g) Slowly turn the crankshaft clockwise.
HINT: Perform the operation while moving the priming pump of the fuel filter to feed the fuel into the injection pump.

(h) Check the crankshaft pulley position (injection timing position) when the rise of the fuel level in the inspection pipe stops.
Injection timing:
8 – 10° BTDC

(i) Loosen the other injection pipe union nuts, fuel pipe and oil pipe union bolt at the injection pump side.

(j) Loosen the nut holding the injection pump to pump stay.

(k) Loosen the 3 nuts holding the injection pump to the retainer.
NOTICE: If it is difficult to loosen the pump mounting nuts, remove the fuel filter.



(l) Adjust the injection timing by slightly tilting the injection pump body.
If the injection timing is retarded, advance it by tilting the pump toward the engine.
If the injection timing is advanced, retard it by tilting the pump away from the engine.

(m) Tighten the 3 nuts holding the injection pump to the retainer.
Torque: 42 N·m (429 kgf·cm, 31 ft·lbf)

(n) Tighten the nut holding the injection pump to pump stay.
Torque: 48.1 N·m (491 kgf·cm, 36 ft·lbf)

(o) Recheck the injection timing.

(p) Remove the inspection pipe and install the No.1 injection pipe.
Torque: 88.25 N·m (900 kgf·cm, 65 ft·lbf)