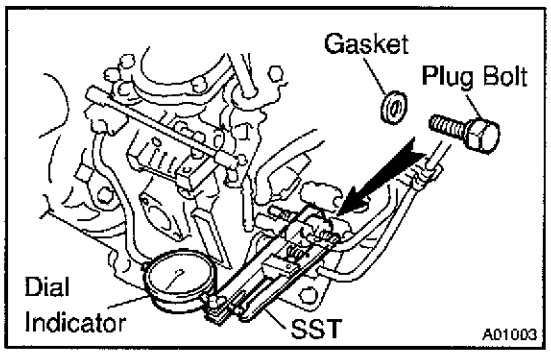
INJECTION TIMING

INSPECTION

EM059-01

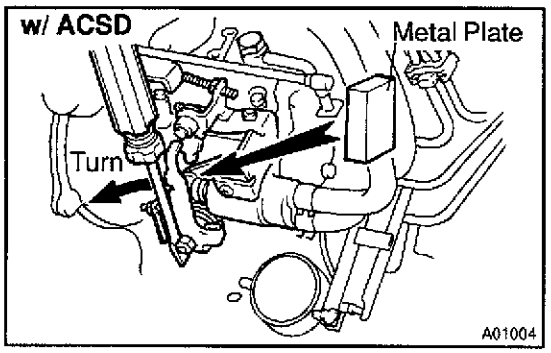
HINT:
Inspect and adjust the injection timing when the engine cold.



1. INSTALL SST AND DIAL INDICATOR

(a) Remove the plug bolt and gasket from the distributive head plug of the injection pump.

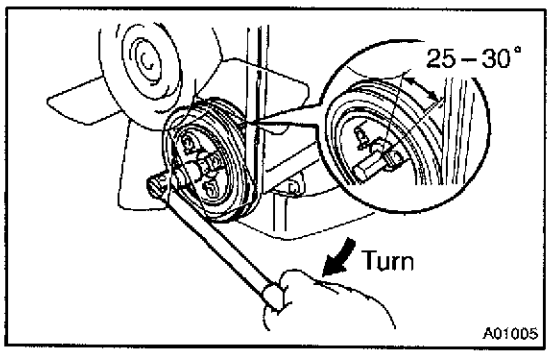
(b) Install SST (plunger stroke measuring tool) and a dial indicator to the plug bolt hole of distributive head plug.
SST 09275–54011



2. w/ ACSD:
RELEASE ACSD ADVANCE

(a) Using a screwdriver, turn the cold starting lever counterclockwise approx. 20°.

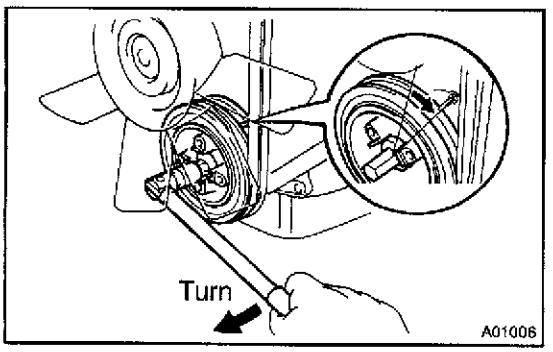
(b) Put a metal plate (thickness of 8.5 – 10.0 mm (0.335 – 0.394 in.)) between the cold starting lever and thermo wax plunger.



3. SET NO.1 OR NO.4 CYLINDER TO 25 – 30° BTDC/ COMPRESSION

Turn the crankshaft pulley clockwise so the pulley groove is 25 – 30° from the timing pointer.

NOTICE:
Do not turn the crankshaft pulley counterclockwise.



4. INSPECT AND ADJUST INJECTION TIMING

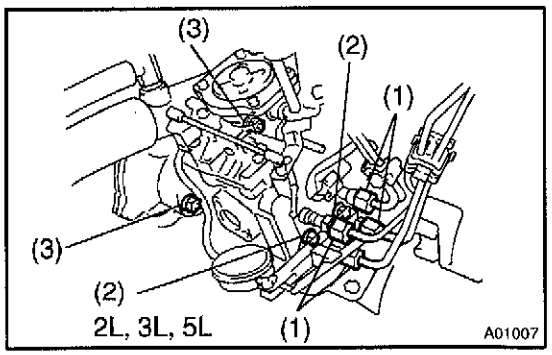
(a) Set the dial indicator at 0 mm (0 in.).

(b) Slowly rotate the crankshaft pulley clockwise until its groove is aligned with the timing pointer.

(c) Measure the plunger stroke.
Plunger stroke:

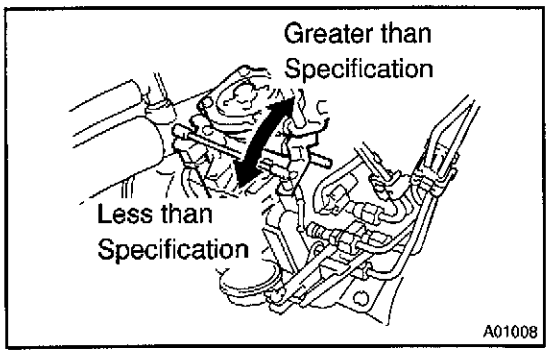
2L	w/ ACSD	0.44 – 0.56 mm (0.0173 – 0.0220 in.)
	w/o ACSD	0.84 – 0.96 mm (0.0331 – 0.0378 in.)
2L–T		0.54 – 0.66 mm (0.0213 – 0.0260 in.)
3L	w/ ACSD	0.54 – 0.66 mm (0.0213 – 0.0260 in.)
	w/o ACSD	0.84 – 0.96 mm (0.0331 – 0.0378 in.)
5L	w/ ACSD	0.44 – 0.56 mm (0.0173 – 0.0220 in.)
	w/o ACSD	0.64 – 0.76 mm (0.0252 – 0.0299 in.)

EM



(d) Loosen these nuts and bolts:
(1) 4 union nuts holding injection pipes to injection pump
(2) Bolt (2L–T) or 2 bolts (2L, 3L, 5L) holding injection pump to injection pump stay
(3) 2 nuts holding injection pump to timing belt case

NOTICE:
Do not turn the nuts more than 90°.



(e) Adjust plunger stroke by slightly tilting the injection pump body.

If the stroke is less than specification, tilt the pump toward the engine.
If the stroke is greater than specification, tilt the pump away from the engine.

(f) Tighten these nuts and bolts:
- 2 nuts holding injection pump to timing belt case

Torque: 20.5 N·m (210 kgf·cm, 15 ft·lbf)
- Bolt (2L–T) or 2 bolts (2L, 3L, 5L) holding injection pump to injection pump stay

Torque: 18 N·m (185 kgf·cm, 13 ft·lbf)
- 4 nuts holding injection pipes to injection pump

Torque: 24.5 N·m (250 kgf·cm, 18 ft·lbf)

(g) Recheck the plunger stroke.

5. REMOVE SST AND DIAL INDICATOR

6. w/ ACSD:
REMOVE METAL PLATE

(a) Remove the SST and dial indicator.
SST 09275–54011

(b) Install a new gasket and the plug bolt of the distributive head plug.
Torque: 17 N·m (170 kgf·cm, 12 ft·lbf)

7. START ENGINE AND CHECK FOR FUEL LEAKS