# PARTIAL ENGINE ASSY (15B–FTE)

1417H–01

## REPLACEMENT

1. **REMOVE ENGINE SERVICE HOLE SUB COVER SUB–ASSY (W/O TILT CAB CAB TYPE)** **(See page 14–62)**
2. **REMOVE ENGINE ASSY** **(See page 14–52)**
3. **REMOVE GENERATOR ASSY** **(See page 19–6)**
4. **REMOVE GENERATOR BRACKET SUB–ASSY**

(a) Remove the 4 bolts and generator bracket.

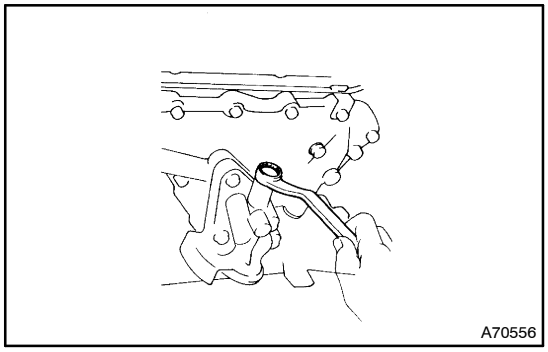
5. **REMOVE INJECTION PIPE SUB–ASSY NO.4** **(See page 11–60)**
6. **REMOVE INJECTION PIPE SUB–ASSY NO.3** **(See page 11–60)**
7. **REMOVE INJECTION PIPE SUB–ASSY NO.2** **(See page 11–60)**
8. **REMOVE INJECTION PIPE SUB–ASSY NO.1** **(See page 11–60)**
9. **REMOVE INJECTION PUMP ASSY** **(See page 11–64)**
10. **REMOVE ENGINE MOUNTING BRACKET FRONT NO.1 RH**

(a) Remove the 4 bolts and mounting bracket.

11. **REMOVE ENGINE MOUNTING BRACKET FRONT NO.1 LH**

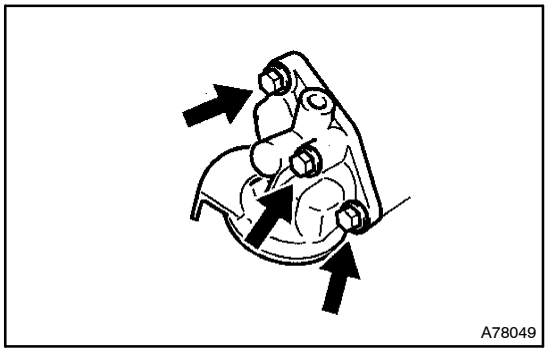
(a) Remove the 4 bolts and mounting bracket.

12. **REMOVE EXHAUST MANIFOLD** **(See page 15–2)**
13. **REMOVE OIL FILTER SUB–ASSY** **(See page 17–18)**

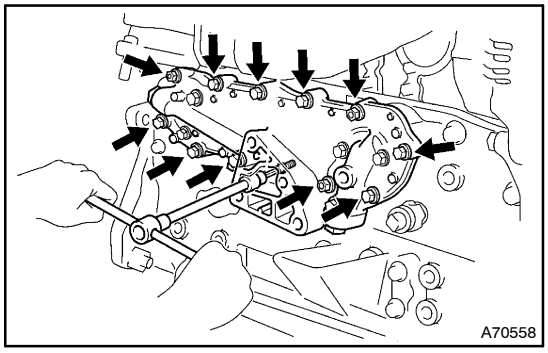



14. **REMOVE OIL FILTER BRACKET SUB–ASSY**

(a) Remove the plug, gasket, spring relief valve and gasket.




(b) Remove the 3 bolts, bracket and gasket.




**15. REMOVE OIL COOLER ASSY**

(a) Using a 6 mm hexagon wrench, remove the bolt and washer.

(b) Remove the 8 bolts, 3 nuts, oil cooler case and gasket.

**16. REMOVE WATER OUTLET HOUSING**

(a) Remove the 2 nuts holding the water outlet housing to the cylinder head.

(b) Disconnect the water bypass hose from the water pump, and remove the water outlet housing.

**17. REMOVE INTAKE MANIFOLD (See page 13–4)**

**18. REMOVE CRANKSHAFT POSITION SENSOR**

**19. REMOVE ENGINE OIL PRESSURE SWITCH ASSY**

(a) Using SST, remove the pressure switch.

SST 09816–30010

**20. REMOVE VACUUM PUMP ASSY**

(a) Remove the 2 bolts and vacuum pump.

**21. INSTALL VACUUM PUMP ASSY**

(a) Install the vacuum pump with the 2 bolts.

**Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)**

**22. INSTALL ENGINE OIL PRESSURE SWITCH ASSY**

(a) Apply adhesive to 2 or 3 threads of the pressure switch.

**Adhesive:**

**Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent**

**NOTICE:**

**Do not start the engine within 1 hour after the installation.**

(b) Using SST, install the oil pressure switch.

SST 09816–30010

**Torque: 15 N·m (150 kgf·cm, 11 ft·lbf)**

**23. INSTALL CRANKSHAFT POSITION SENSOR**

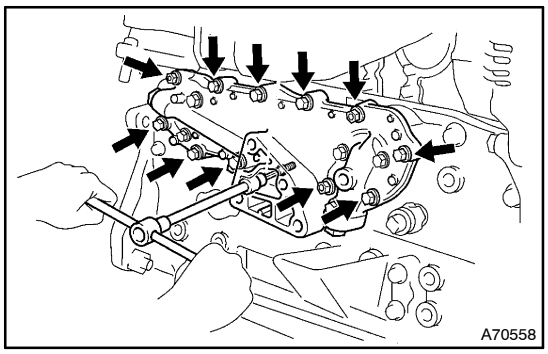
**24. INSTALL INTAKE MANIFOLD (See page 13–4)**

**25. INSTALL WATER OUTLET HOUSING**

(a) Connect the water bypass hose to the water pump.

(b) Install the water outlet housing with the 2 bolts.

**Torque: 18.5 N·m (189 kgf·cm, 14 ft·lbf)**



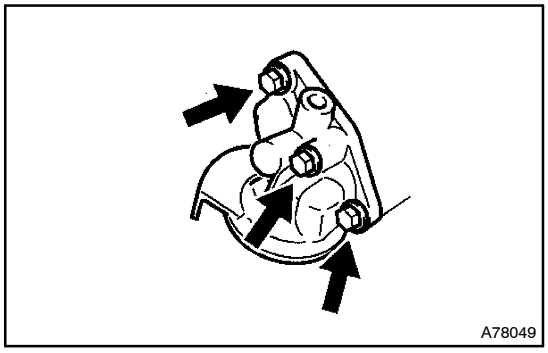

**26. INSTALL OIL COOLER ASSY**

(a) Install a new gasket, the oil cooler case with the 8 bolts and 3 nuts. Uniformly tighten the bolts and nuts in several passes.

**Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)**

(b) Using a 6 mm wrench, install the washer and bolt.

**Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)**




**27. INSTALL OIL FILTER BRACKET SUB–ASSY**

(a) Install a new gasket and the oil filter bracket with the 3 bolts.

**Torque: 44 N·m (449 kgf·cm, 32 ft·lbf)**

HINT:

Bolt length:

A 70 mm (2.95 in.)

B 55 mm (2.17 in.)

C 35 mm (1.38 in.)

(b) Install the relief valve and spring with a new gasket and the relief valve.

**Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)**

**28. INSTALL OIL FILTER SUB–ASSY (See page 17–18)**

**29. INSTALL EXHAUST MANIFOLD (See page 15–2)**

**30. INSTALL ENGINE MOUNTING BRACKET FRONT NO.1 LH**

(a) Install the engine mounting bracket with the 4 bolts.

**Torque: 44 N·m (449 kgf·cm, 32 ft·lbf)**

**31. INSTALL ENGINE MOUNTING BRACKET FRONT NO.1 RH**

(a) Install the engine mounting bracket with the 4 bolts.

**Torque: 44 N·m (449 kgf·cm, 32 ft·lbf)**

**32. INSTALL INJECTION PUMP ASSY (See page 11–64)**

**33. INSTALL INJECTION PIPE SUB–ASSY NO.1 (See page 11–60)**

**34. INSTALL INJECTION PIPE SUB–ASSY NO.2 (See page 11–60)**

**35. INSTALL INJECTION PIPE SUB–ASSY NO.3 (See page 11–60)**

**36. INSTALL INJECTION PIPE SUB–ASSY NO.4 (See page 11–60)**

**37. INSTALL GENERATOR BRACKET SUB–ASSY**

(a) Install the generator bracket with the 4 bolts.

**38. INSTALL GENERATOR ASSY (See page 19–6)**

**39. INSTALL ENGINE ASSY (See page 14–52)**