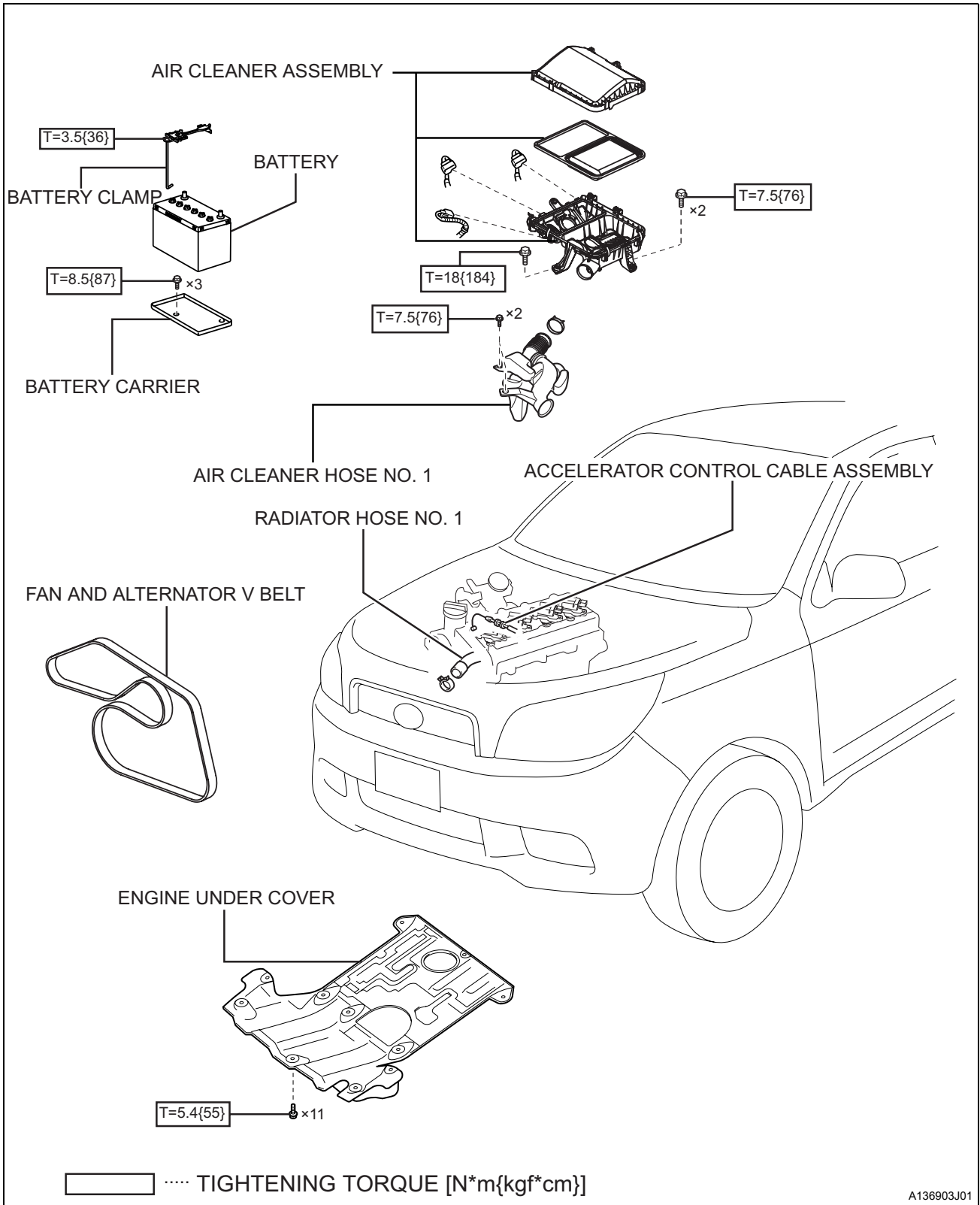
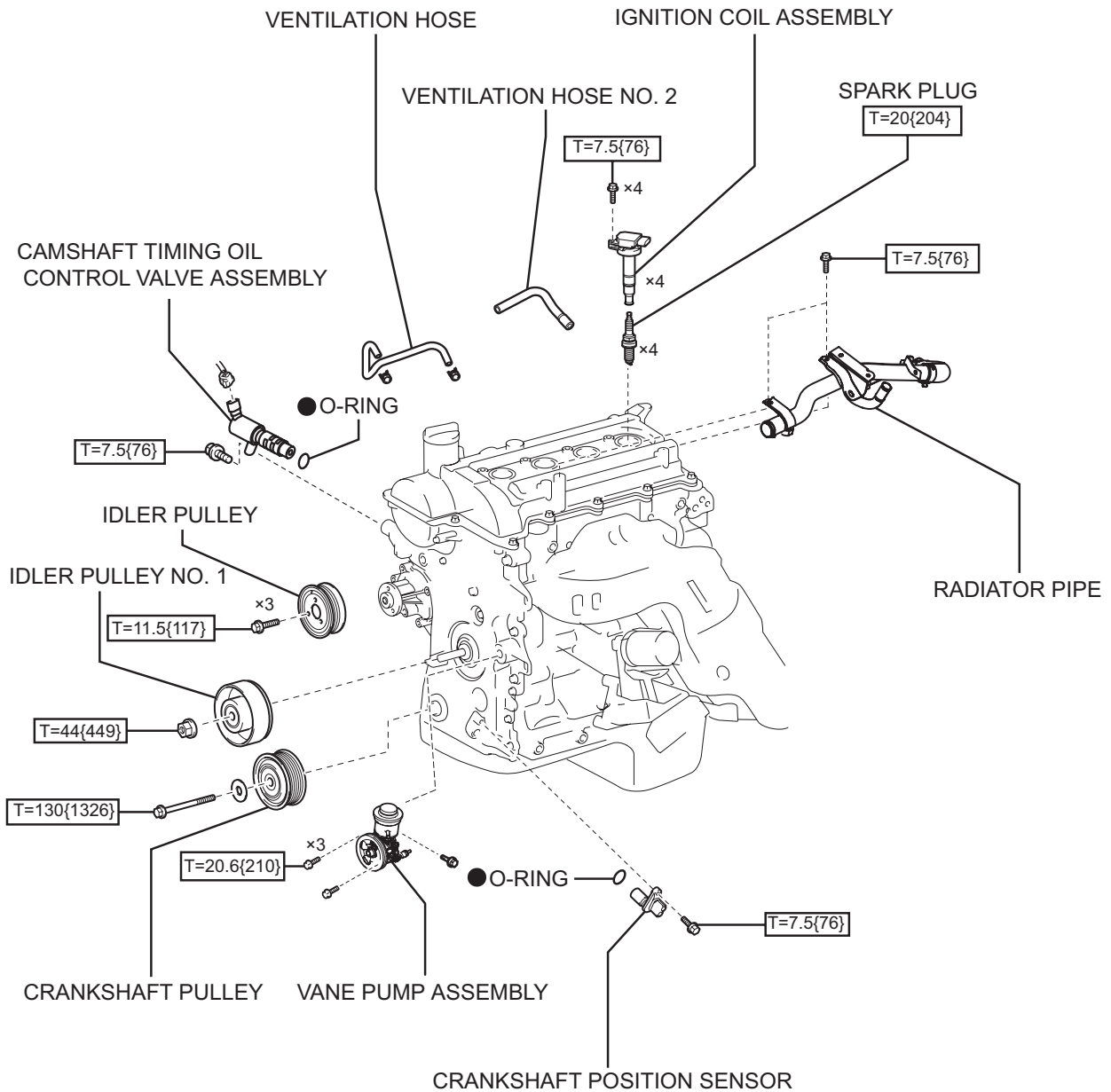


OIL PUMP ASSEMBLY (3SZ-VE)

COMPONENTS

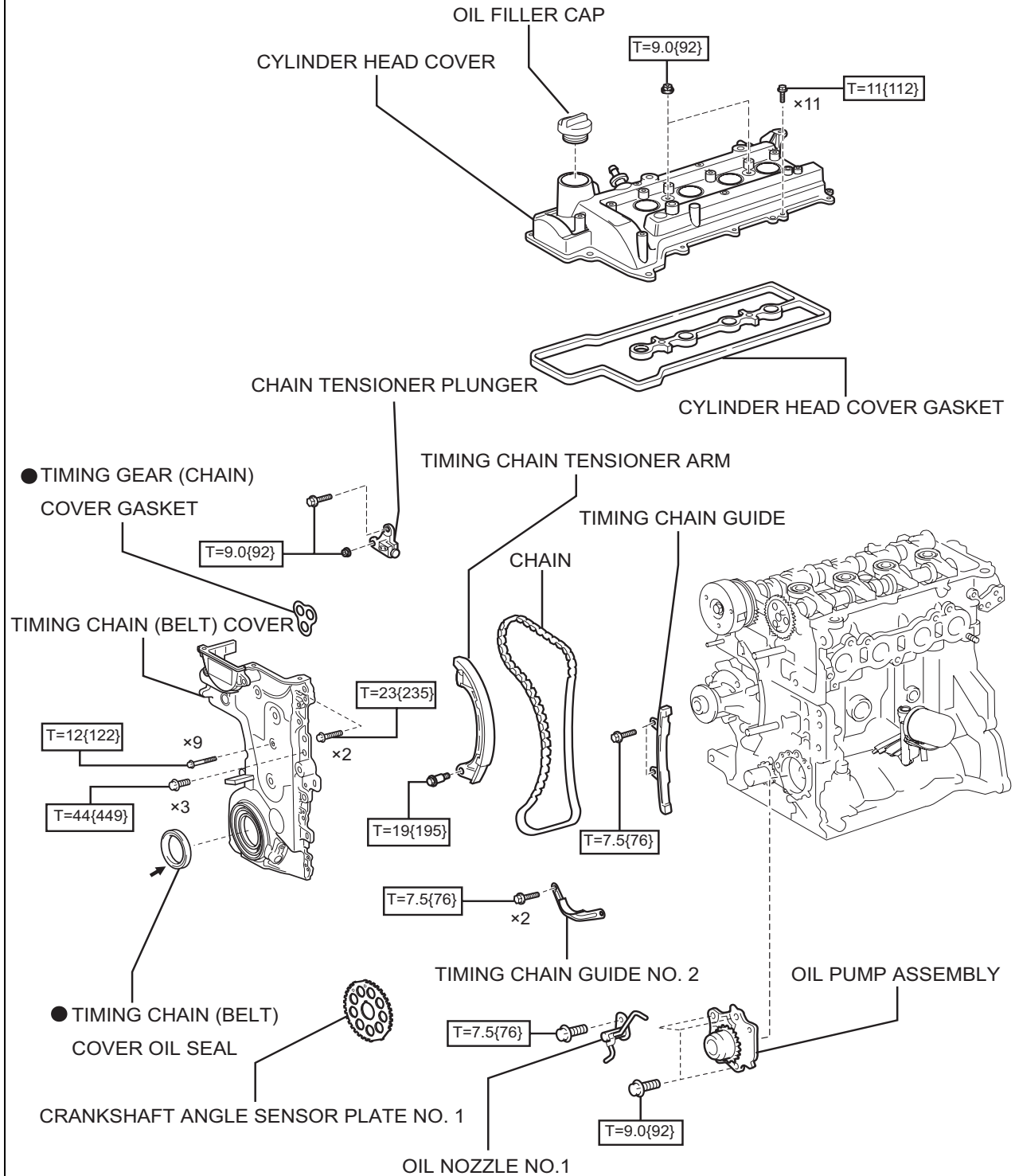




LU

T [] TIGHTENING TORQUE [N*m{kgf*cm}]

● NON-REUSEABLE PART



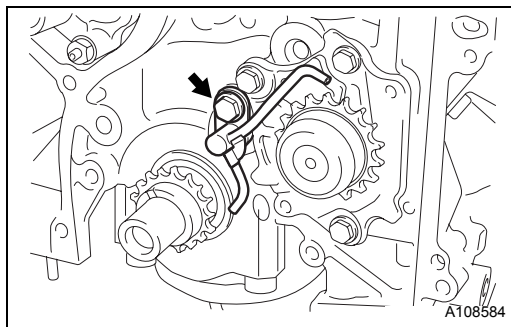
← MP GREASE

..... TIGHTENING TORQUE [N*m{kgf*cm}]

● NON-REUSEABLE PART

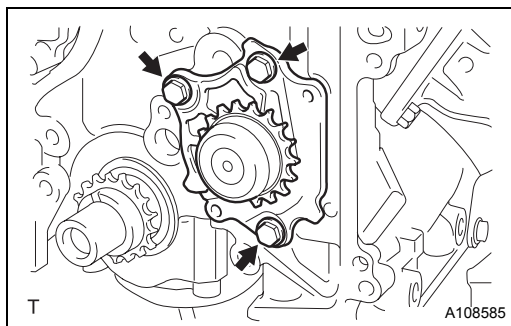
REMOVAL

1. **DISCONNECT NEGATIVE BATTERY TERMINAL**
(See page RS - 164.)
2. **REMOVE BATTERY CARRIER** (See page EM - 146)
3. **REMOVE ENGINE UNDER COVER**
4. **DRAIN ENGINE OIL** (See page EM - 43)
5. **DRAIN ENGINE COOLANT** (See page CO - 15)
6. **REMOVE AIR CLEANER ASSEMBLY** (See page EM - 146)
7. **REMOVE RADIATOR HOSE NO. 1** (See page CO - 15)
8. **REMOVE ACCELERATOR CONTROL GAUGE ASSEMBLY** (See page EM - 147)
9. **REMOVE FAN AND ALTERNATOR BELT** (See page EM - 8)
10. **REMOVE FAN PULLEY** (See page CO - 29)
11. **REMOVE VANE PUMP ASSEMBLY** (See page EM - 44)
12. **REMOVE IDLER PULLEY NO. 1** (See page EM - 150)
13. **DISCONNECT VENTILATION HOSE** (See page EM - 148)
14. **DISCONNECT NO. 2 VENTILATION HOSE** (See page EM - 147)
15. **REMOVE ENGINE ROOM MAIN WIRE** (See page EM - 147)
16. **REMOVE RADIATOR PIPE** (See page EM - 147)
17. **REMOVE IGNITION COIL ASSEMBLY** (See page EM - 150)
18. **REMOVE CYLINDER HEAD COVER** (See page EM - 151)
19. **REMOVE CRANKSHAFT PULLEY** (See page EM - 151)
20. **REMOVE CAMSHAFT TIMING OIL CONTROL VALVE ASSEMBLY**
(See page EM - 152)
21. **REMOVE TIMING CHAIN (BELT) COVER** (See page EM - 152)
22. **REMOVE TIMING CHAIN (BELT) COVER OIL SEAL** (See page EM - 153)
23. **REMOVE CRANK ANGLE SENSOR PLATE NO. 1** (See page EM - 108)
24. **REMOVE CHAIN TENSIONER PLUNGER** (See page EM - 108)
25. **REMOVE TIMING CHAIN TENSION ARM** (See page EM - 109)
26. **REMOVE TIMING CHAIN GUIDE** (See page EM - 109)
27. **REMOVE TIMING CHAIN GUIDE NO. 2** (See page EM - 110)
28. **REMOVE CHAIN**



29. REMOVE OIL NOZZLE NO. 1

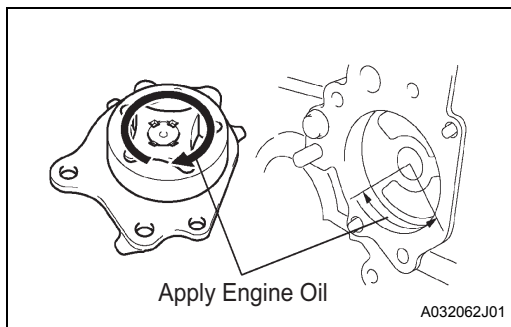
- (a) Remove the bolt. Then remove oil nozzle No. 1.



30. REMOVE OIL PUMP ASSEMBLY

- (a) Remove the 3 bolts. Then remove the oil pump assembly.

INSTALLATION



1. INSTALL OIL PUMP ASSEMBLY

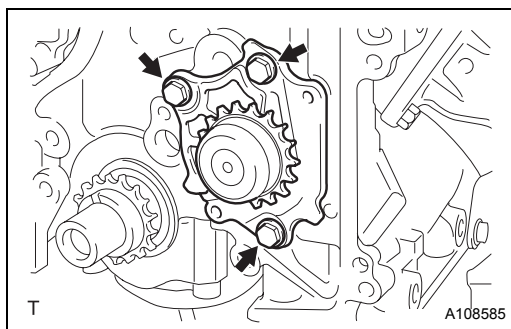
- (a) Apply a generous amount of engine oil to the location shown in the illustration.

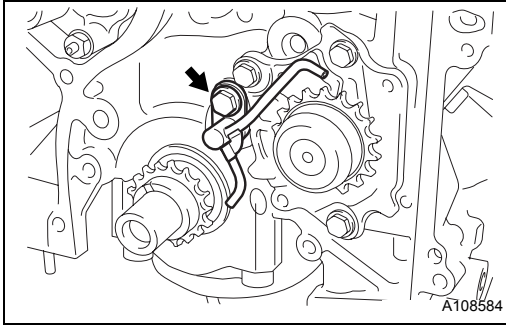
HINT:

- On the oil pump assembly side, apply the oil between the teeth of the inner and the outer rotors.
- On the cylinder block side, apply the oil to the lower outside periphery of the rotor hole (more than 90°).
- There is no distinction between the front and back sides of the outer rotor.
- Check the positioning pin.

- (b) Install the oil pump assembly with the 3 bolts.

Torque: 9.0 N*m (92 kgf*cm)





2. **INSTALL OIL NOZZLE NO. 1**
 - (a) Install the oil nozzle No. 1 with the bolt.
Torque: 7.5 N*m (76 kgf*cm)
3. **INSTALL CHAIN (See page EM - 110)**
4. **INSTALL TIMING CHAIN GUIDE NO. 2 (See page EM - 110)**
5. **INSTALL TIMING CHAIN GUIDE (See page EM - 111)**
6. **INSTALL TIMING CHAIN TENSION ARM (See page EM - 111)**
7. **INSTALL CHAIN TENSIONER PLUNGER (See page EM - 111)**
8. **INSTALL CRANK ANGLE SENSOR PLATE NO. 1 (See page EM - 111)**
9. **INSTALL TIMING CHAIN (BELT) COVER (See page EM - 160)**
10. **INSTALL TIMING CHAIN (BELT) COVER OIL SEAL (See page EM - 200)**
11. **INSTALL CRANK POSITION SENSOR (See page EM - 57)**
12. **INSTALL CAMSHAFT TIMING OIL CONTROL VALVE ASSEMBLY (See page EM - 162)**
13. **INSTALL CRANKSHAFT PULLEY (See page EM - 161)**
14. **INSTALL CYLINDER HEAD COVER (See page EM - 162)**
15. **INSTALL SPARK PLUG (See page EM - 162)**
16. **INSTALL IGNITION COIL ASSEMBLY (See page EM - 162)**
17. **INSTALL RADIATOR PIPE (See page EM - 166)**
18. **INSTALL ENGINE ROOM MAIN WIRE (See page EM - 165)**
19. **INSTALL VENTILATION HOSE (See page EM - 166)**
20. **INSTALL VENTILATION HOSE NO. 2 (See page EM - 166)**
21. **INSTALL IDLER PULLEY NO. 1 (See page EM - 163)**
22. **INSTALL VANE PUMP ASSEMBLY (See page EM - 68)**
23. **INSTALL FAN PULLEY (See page CO - 29)**
24. **INSTALL FAN AND ALTERNATOR V BELT (See page EM - 8)**
25. **ADJUST FAN AND ALTERNATOR V BELT (See page EM - 9)**
26. **CHECK FAN AND ALTERNATOR V BELT (See page EM - 9)**
27. **INSTALL ACCELERATOR CONTROL GAUGE ASSEMBLY (See page EM - 165)**
28. **INSTALL RADIATOR HOSE NO. 1 (See page CO - 18)**
29. **INSTALL AIR CLEANER ASSEMBLY (See page EM - 167)**
30. **INSTALL AIR CLEANER HOSE NO. 1 (See page CO - 19)**
31. **INSTALL BATTERY CARRIER (See page EM - 167)**
32. **INSTALL BATTERY**
33. **CONNECT NEGATIVE BATTERY TERMINAL (See page EM - 112)**
34. **REFILL ENGINE COOLANT (See page CO - 9)**
35. **REFILL ENGINE OIL**

- 36. CHECK FOR ENGINE COOLANT LEAKS (See page CO - 10)
- 37. CHECK FOR ENGINE OIL LEAKS
- 38. CHECK ENGINE OIL LEVEL (See page EM - 167)
- 39. CHECK IGNITION TIMING (See page EM - 1)
- 40. CHECK IDLE SPEED (See page EM - 2)
- 41. INSTALL ENGINE UNDER COVER (See page EM - 69)

