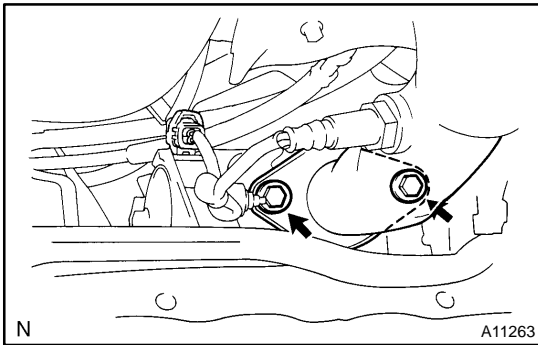


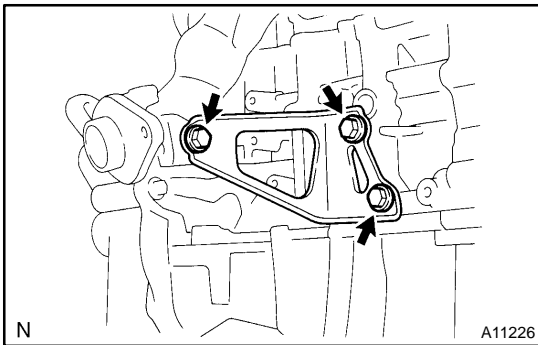
## REMOVAL

1. DRAIN ENGINE COOLANT
2. REMOVE WATER FILLER
  - (a) Disconnect the No. 3 radiator hose.
  - (b) Remove the 2 bolts and water filler.
3. REMOVE OUTER FRONT COWL TOP PANEL  
(See page [BO-31](#) )
4. REMOVE DRIVE BELT AND ALTERNATOR  
(See page [CH-7](#) )
5. REMOVE AIR CLEANER ASSEMBLY
6. DISCONNECT ACCELERATOR CABLE



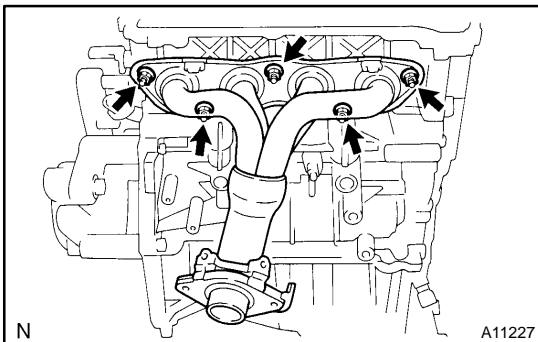
### 7. DISCONNECT CENTER EXHAUST PIPE FROM EXHAUST MANIFOLD

- (a) Remove the 2 bolts and 2 springs holding the front exhaust pipe to the exhaust manifold.
- (b) Remove the gasket.



### 8. REMOVE EXHAUST MANIFOLD STAY

Remove the 3 bolts and exhaust manifold stay.



### 9. REMOVE EXHAUST MANIFOLD

- (a) Remove the 4 bolts and upper heat insulator.
- (b) Remove the 3 bolts 2 nuts, exhaust manifold and gasket.

### 10. REMOVE IGNITION COIL (See page [IG-5](#) )

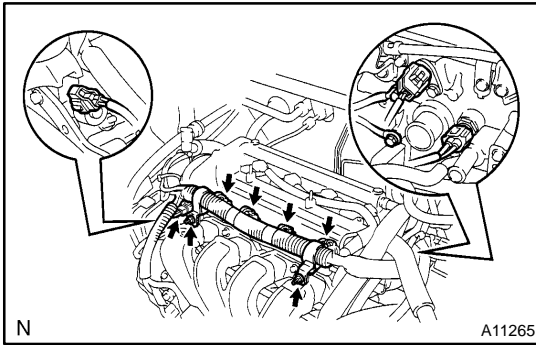
### 11. REMOVE SPARK PLUGS

(See page [IG-1](#) )

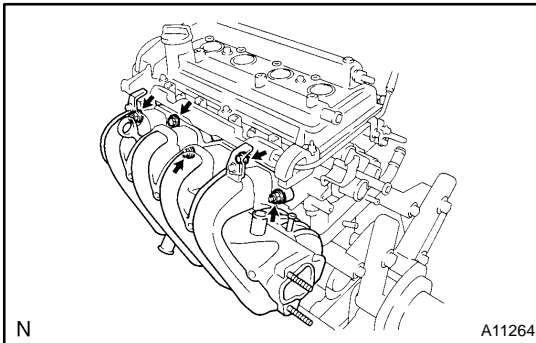
### 12. REMOVE PCV HOSES

### 13. REMOVE THROTTLE BODY

(See page [SF-34](#) )



- 14. DISCONNECT ENGINE WIRE FROM CYLINDER HEAD**
- Disconnect the ECT sensor connector
  - Disconnect the camshaft position sensor connector
  - Disconnect the oil control valve connector.
  - Disconnect the 4 injector connectors.
  - Disconnect the 2 ground wires
  - Remove the 2 nuts, and disconnect the engine wire protector from the 2 brackets on the intake manifold.

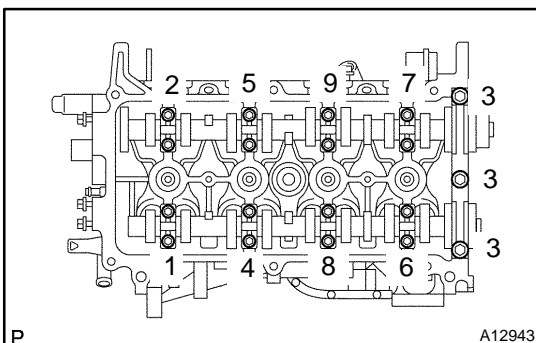


- 15. REMOVE INTAKE MANIFOLD**
- Disconnect the EVAP hose for ORVR
  - Disconnect the brake booster vacuum hose
  - Remove the 3 bolts, 2 nuts, intake manifold and gasket.
- 16. REMOVE CAMSHAFT POSITION SENSOR**
- 17. REMOVE ECT SENSOR**
- 18. REMOVE OIL CONTROL VALVE**
- 19. REMOVE PCV VALVE**
- 20. REMOVE OIL FILLER CAP**
- 21. REMOVE HEAD COVER (See page EM-15 )**
- 22. REMOVE INJECTOR (See page SF-20 )**
- 23. REMOVE TIMING CHAIN COVER (See page EM-15 )**
- 24. REMOVE CAMSHAFT TIMING SPROCKET AND VALVE TIMING CONTROL ASSEMBLY**

Hold the hexagonal head portion of the camshaft with a wrench, and remove the 2 bolts and timing sprocket and valve timing controller assembly.

**NOTICE:**

- Be careful not to damage the cylinder head and valve lifter with the wrench.
- Do not disassembly the valve timing controller assembly.

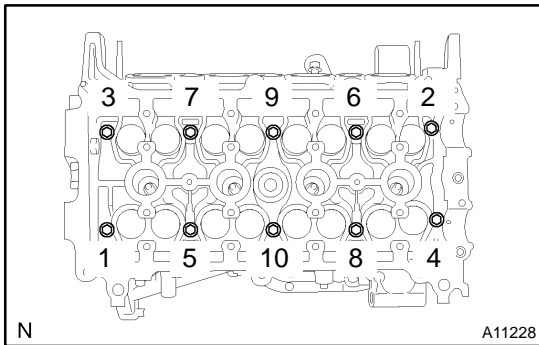


**25. REMOVE CAMSHAFTS**

Uniformly loosen and remove the 19 bearing cap bolts, in several passes, in the sequence shown, and remove the 9 bearing caps, intake and exhaust camshafts.

**26. REMOVE CYLINDER HEAD**

- Disconnect the upper radiator hose from the water hose union
- Disconnect the heater water hose from the water hose union

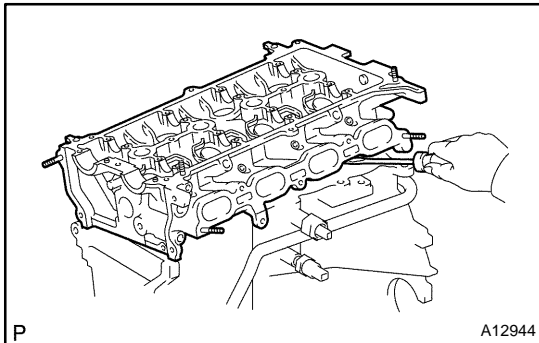


- (c) Using a 8 mm bi-hexagon wrench, uniformly loosen and remove the 10 cylinder head bolts, in several passes, in the sequence shown. Remove the 10 cylinder head bolts and plate washers.

**NOTICE:**

**Head warpage or cracking could result from removing bolts in an incorrect order.**

- (d) Remove the bolt holding the water bypass pipe to the cylinder head.



- (e) Lift the cylinder head from the dowels on the cylinder block and replace the cylinder head on wooden blocks on a bench.

**HINT:**

If the cylinder head is difficult to lift of, pry between the cylinder head and cylinder block with a screwdriver.

**NOTICE:**

**Be careful not to damage the contact surfaces of the cylinder head and cylinder block.**