EM1TR–01

REMOVAL

1. DRAIN ENGINE COOLANT

2. REMOVE TIMING BELT AND PULLEYS (See page EM–14)

3. REMOVE NO. 2 TIMING BELT COVER

Remove the 4 bolts, nut and timing belt cover.

4. REMOVE OIL FILTER (See page LU–2)

5. REMOVE INTAKE MANIFOLD STAY

Remove the 2 bolts and manifols stay.

6. REMOVE OIL DIPSTICK AND GUIDE

(a) Remove the bolt holding the dipstick guide to the intake manifold.

(b) Pull out the dipstick guide together with the dipstick.

7. REMOVE EGR PIPE

Remove the 2 bolts, 2 nuts, 2 gaskets and EGR pipe.

8. REMOVE EGR CONTROL VALVE

(a) Disconnect the vacuum hose from the E–VRV.

(b) Remove the EGR control valve and gasket.

9. REMOVE E–VRV

(a) Disconnect the vacuum hose from the No. 2 vacuum transmitting pipe.

(b) Remove the 2 bolts and E–VRV.

10. REMOVE FUEL INLET PIPE (See page FU–15)

11. REMOVE NO. 2 NOZZLE LEAKAGE PIPE

Remove the bolt, check valve, 2 union bolts, 3 gaskets and leakage pipe.

12. REMOVE COMMON RAIL

Remove the 3 bolts and common rail.

13. REMOVE INTAKE MANIFOLD

Remove the 2 nuts, 4 bolts, intake manifold and gasket.

14. REMOVE GLOW PLUGS

(a) Remove the 4 screw grommets.

(b) Remove the 4 nuts and glow plug connector.

(c) Remove the 4 glow plugs.

15. REMOVE WATER OUTLET

Remove the 2 bolts, water outlet and gasket.

16. REMOVE NO. 1 ENGINE HANGER

Remove the bolt and engine hanger.

17. REMOVE NO. 1 WATER BYPASS PIPE

Remove the 2 bolts and bypass pipe.

18. REMOVE EXHAUST MANIFOLD STAY

Remove the 2 bolts and manifold stay.

19. REMOVE TURBOCHARGER ASSEMBLY

(a) Remove the union bolt, 2 bolts ant 2 gaskets, and disconnect the turbo oil pipe from the cylinder block.

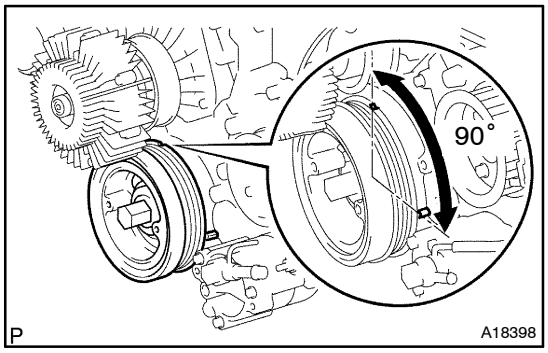
(b) Remove the 2 bolts holding the turbocharger stay to the cylinder block.

(c) Remove the 3 nuts, the turbocharger assembly and gasket.

20. REMOVE EXHAUST MANIFOLD

Remove the 6 bolts, 4 collars, 2 nuts, 2 plate washers, exhaust manifold and gasket.

21. REMOVE INJECTORS (See page FU–6)

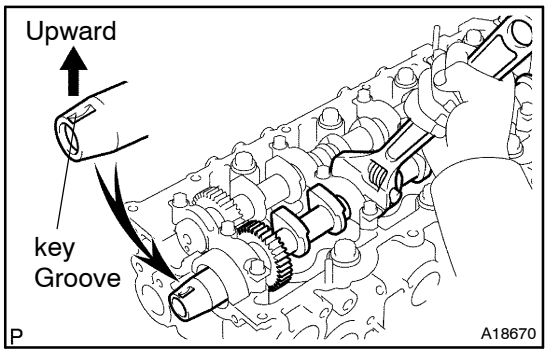


22. REMOVE CAMSHAFTS

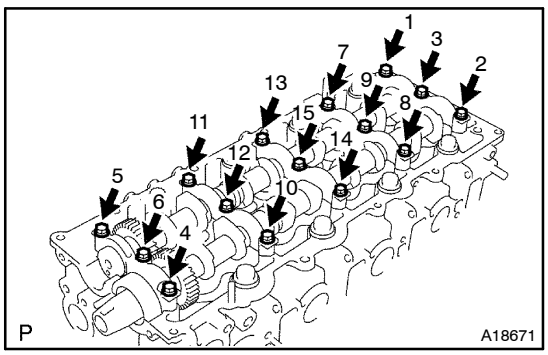
(a) Check the No. 1 cylinder to approx. 90° BTDC/compression.

HINT:

Set the No.1 cylinder to 90° BTDC/compression to avoid interference with the piston top and valve head.

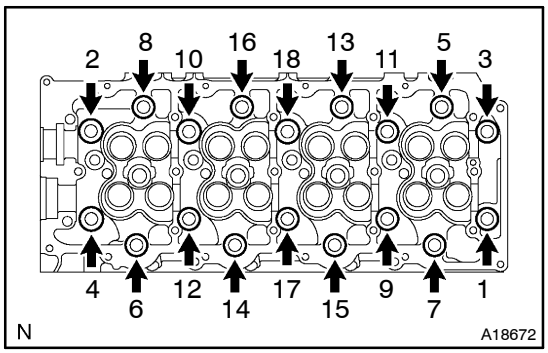


(b) Set the key groove of the camshaft, facing upward by turning the camshaft with a wrench.



(c) Uniformly loosen and remove the 15 bearing cap bolts, in several passes, in the sequence shown.

(d) Remove the 5 bearing caps, oil seal and 2 camshafts.



23. REMOVE CYLINDER HEAD

(a) Uniformly loosen and remove the 18 cylinder head bolts, in several passes, in the sequence shown.

NOTICE:

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

(b) Lift the cylinder head from the dowels on the cylinder block, and place the cylinder head on wooden blocks on a bench.

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

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