

Cylinder Head

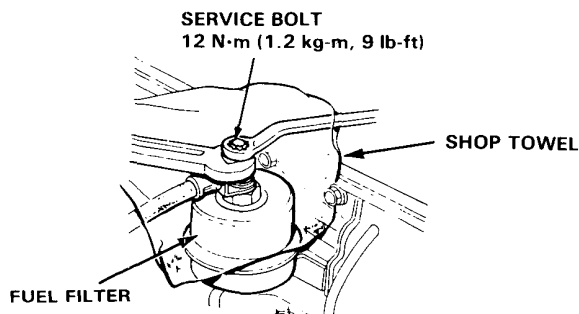
Removal (engine removal not required)

CAUTION: Do not remove the cylinder head until the coolant temperature drops below 38°C (100°F).

NOTE:

- Inspect the timing belt before removing the cylinder head.
 - Before removal of the cylinder head, turn the flywheel so that the No.1 cylinder is at top-deadcenter (page 6-15).
 - Mark all emissions hoses before disconnecting them.
1. Disconnect the negative terminal from the battery.
 2. Drain the cooling system.
 3. Disconnect the air intake duct and vacuum hose (page 5-2).
 4. Relieve fuel pressure.

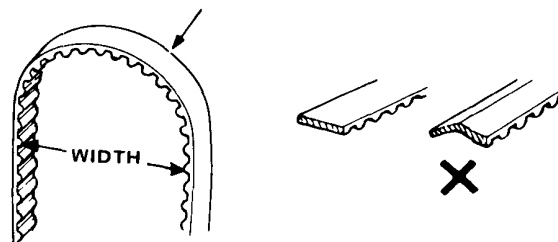
WARNING Do not smoke while working on fuel system, keep open flame or spark away from work area.



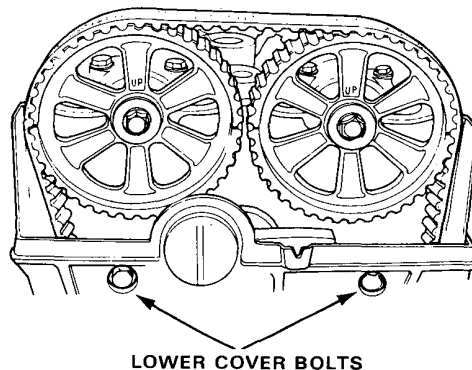
5. Disconnect the fuel hose and fuel return hose (page 5-3).
6. Remove the engine secondary ground cable from the valve cover.
7. Remove the brake booster vacuum tube from the intake manifold.
8. Disconnect the throttle cable at the throttle body (page 5-4).
9. Remove the spark plug caps from the spark plugs, then remove the distributor assembly.
10. Disconnect the hoses from the charcoal canister.
11. Disconnect the No. 1 control box emission hoses from the tubing manifold.
12. On cars equipped with air conditioning, disconnect the idle control solenoid hoses.
13. Disconnect the engine sub harness connectors and couplers from the cylinder head and intake manifold.
 - Four injector couplers
 - TA sensor connector
 - TW sensor connector
 - Ground terminals
 - Throttle sensor connector
 - Crankshaft angle sensor coupler.

14. Disconnect the oxygen sensor coupler.
15. Disconnect the upper radiator hose, heater inlet hose, and bypass inlet hose from the cylinder head (page 5-6).
16. Remove the hose between the thermostat housing and the intake manifold.
17. Remove the bolts attaching the exhaust manifold and bracket; then remove the manifold.
18. Remove the bolts attaching the intake manifold and bracket.
19. Disconnect the hose from the intake manifold to the breather chamber.
20. Remove the valve cover and the timing belt upper cover.
21. Loosen the tensioner adjustment bolt, then remove the timing belt.

CAUTION: Do not crimp or bend timing belt more than 90° or to less than 25 mm (1 in.) in diameter.



22. Remove the timing belt lower cover bolts, which are tightened to the cylinder head.



23. Remove the camshaft holder bolts, then remove the camshaft holders and the camshafts and rocker arms.
24. Remove the cylinder head bolts, then remove the cylinder head.

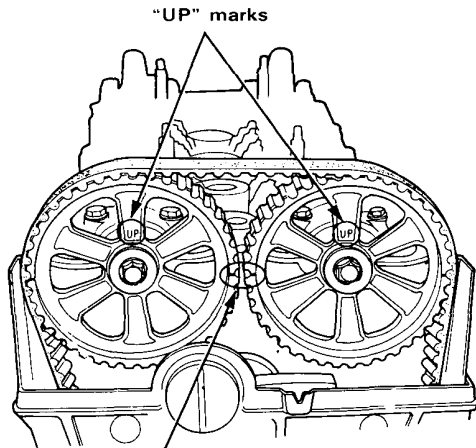
CAUTION: To prevent warpage, unscrew the bolts 1/3 turn each at a time; repeat the sequence until all bolts are loose.

25. Remove the exhaust manifold and intake manifold from the cylinder head.

Camshaft Pulley

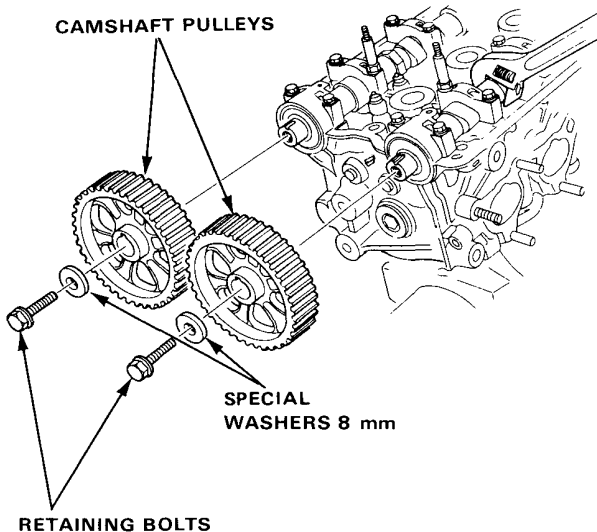
Removal

1. To ease reassembly, turn the pulley until the "UP" marks face up, and the front timing marks are aligned with the both marks on the pulley.



Align the marks on the pulleys

2. Remove the pulley retaining bolts and washers, then remove the pulleys.



NOTE: Before removing camshaft check camshaft end play.

Camshaft

Inspection

NOTE: Do not rotate camshaft during inspection.

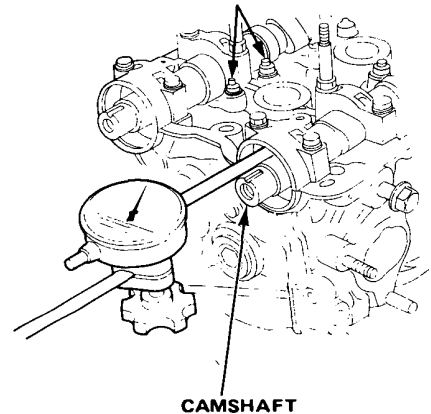
1. Loosen the adjusting screws.
2. Seat camshaft by prying it toward distributor end of head with screwdriver.
3. Zero dial indicator against the pulley end of the camshaft, then pry camshaft back toward it, and read end play.

Camshaft End Play:

Standard (New): 0.05—0.15 mm
(0.002—0.006 in.)

Service Limit: 0.5 mm (0.02 in.)

Unscrew the adjusting screws



4. Remove the bearing cap bolts from the cylinder head.

NOTE: Unscrew the bearing cap bolts, two turns at a time, in a criss-cross pattern, to prevent damaging valves or rocker arms.

- Lift camshaft out of cylinder head, wipe clean, then inspect lift ramps. Replace camshaft if lobes are pitted, scored, or excessively worn.
- Clean the camshaft bearing surfaces in the cylinder head, then set camshaft back in place.
- Insert plastigage strip across each journal.
- Install the bearing caps and torque bolts to values and in sequence shown on page 6-13.

(cont'd)