

## DISASSEMBLY

Place engine in a suitable engine stand.

Remove oil dipstick.

Drain oil and remove oil filter.

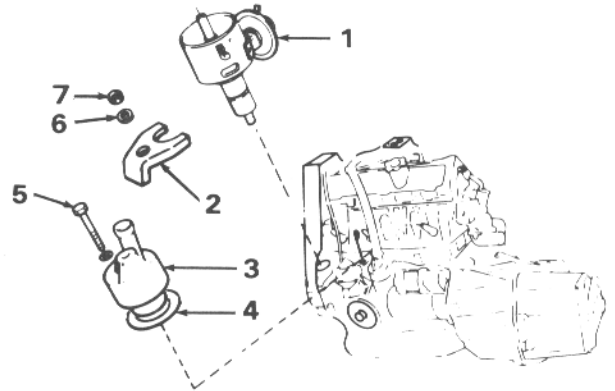
Disconnect vacuum line from distributor.

Remove nut (7), lockwasher (6), and clamp (2) holding distributor to engine, and remove distributor (1).

Remove bolt (5) and washer from cyclonic trap (3).

Remove cyclonic trap and gasket (4) with hose attached.

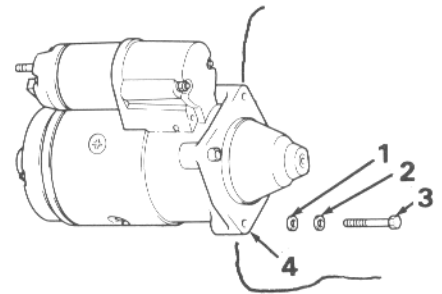
1. Distributor 2. Clamp 3. Cyclonic trap 4. Gasket 5. Bolt  
6. Lockwasher 7. Nut



Remove three bolts (3), lockwashers (2), and washers (1) holding starter to transmission.

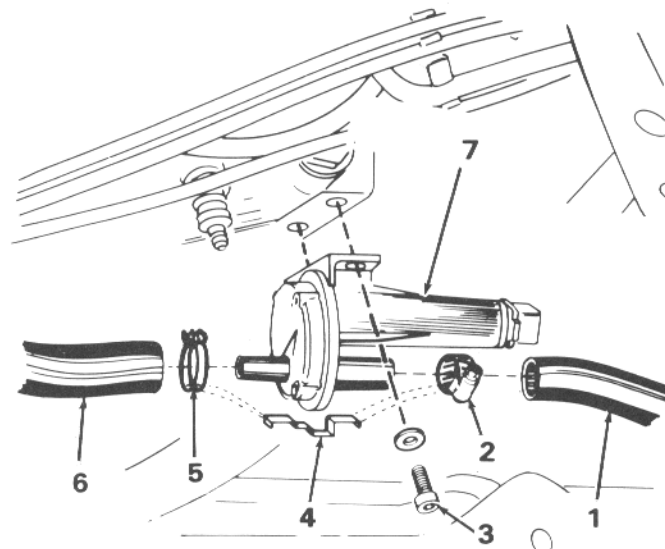
Remove starter (4) from transmission.

1. Washers 2. Lockwashers 3. Bolts 4. Starter



On vehicles with fuel injection, use a 5 mm hex wrench to remove two bolts (3) holding auxiliary air regulator (7) to cylinder block. Remove regulator with hoses (1 and 6) attached.

1. Hose 2. Clamp 3. Allen bolt 4. Clip 5. Clamp 6. Hose  
7. Auxiliary air regulator

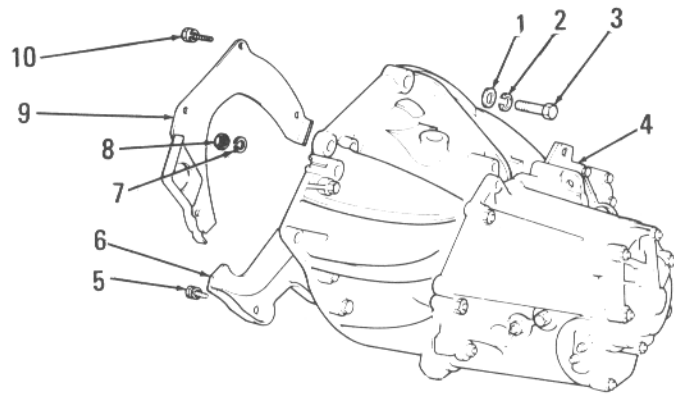


Remove two bolts (5) and remove shield (6) from transmission.

Remove the following: bolt (10), three bolts (3), lockwashers (2), washers (1), nut (8), and washer (7) and separate transmission and shield (9) from engine.

Slowly (a few turns each bolt) remove six bolts to remove clutch assembly from flywheel.

1. Washer 2. Lockwasher 3. Bolt 4. Transmission 5. Bolt  
6. Shield 7. Lockwasher 8. Nut 9. Shield 10. Bolt

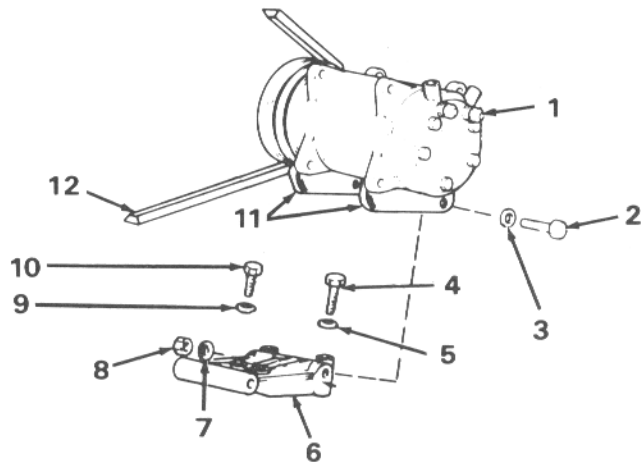


On air conditioned vehicles, remove two nuts (8), washers (7), bolts (2), and washers (3).

Remove belt (12) and compressor (1) complete with brackets (11).

Remove bolts (4 and 10) and lockwashers (5 and 9) to remove mount (6).

1. Compressor 2. Bolt 3. Washer 4. Bolt 5. Lockwasher  
6. Mount 7. Washer 8. Nut 9. Lockwasher 10. Bolt 11. Brackets  
12. Belt



On vehicles with integral voltage regulator, remove bolt (7), nuts, washers, lockwashers, and bolt (6) holding alternator to engine.

Remove alternator (3).

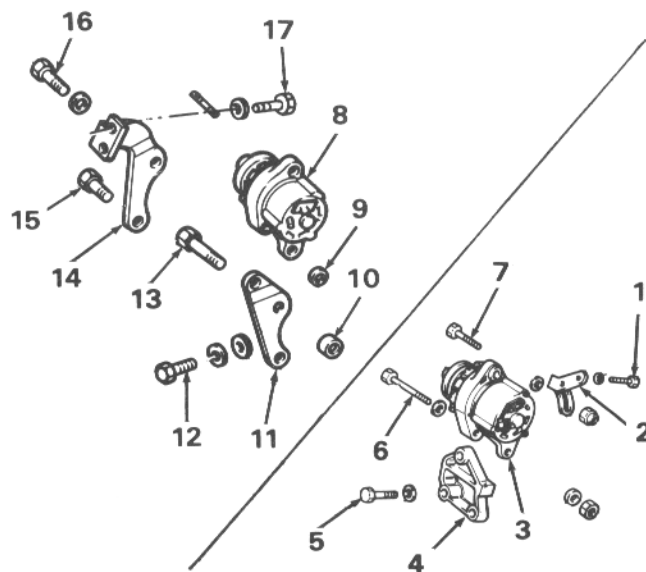
On vehicles with separate voltage regulator, remove bolts, washers, lockwashers holding alternator to engine.

Remove alternator (8).

Remove drive belt.

Remove bolts (5 and 17) to remove mounting brackets (4, 11, and 14).

1. Bolt 2. Bracket 3. Alternator (with integral voltage regulator)  
4. Bracket 5. Bolt 6. Bolt 7. Bolt 8. Alternator (with separate voltage regulator) 9. Spacer 10. Spacer 11. Bracket 12. Bolt  
13. Bolt 14. Bracket 15. Bolt 16. Bolt 17. Bolt



If equipped with air pump, loosen clamp (12) to disconnect hose (1) from check valve (16).

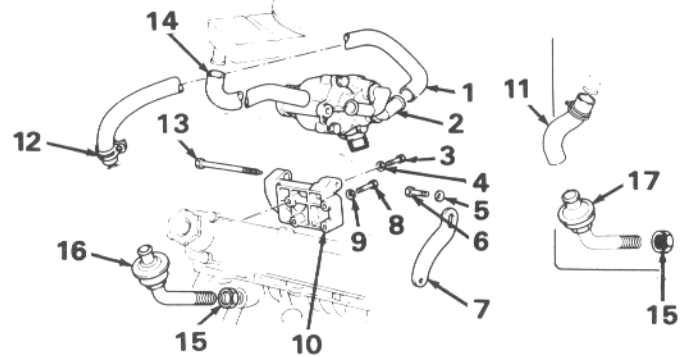
Remove bolt (6), washer (5), and bolt (13) to remove air pump (2) with hoses (1 and 14) attached.

Remove drive belt.

Remove bolts (3 and 8) and washers (4 and 9) to remove mounting bracket (10).

If not equipped with air pump, disconnect hose (11) from reed valve (17).

Remove locknut (15) holding check valve (16) or reed valve (17). Unscrew and remove valve.



1. Hose 2. Air pump 3. Bolt 4. Washer 5. Washer 6. Bolt  
7. Bracket 8. Bolt 9. Washer 10. Mounting bracket 11. Hose  
12. Clamp 13. Bolt 14. Hose 15. Locknut 16. Check valve  
(with air pump) 17. Reed valve (without air pump)

If equipped with EGR, remove three nuts (1), bolt (7), and washers (2 and 8) to remove tube (3), spacer (27) and gasket (26).

Remove two nuts (5), washers (6), and shield (4).

Unscrew fitting (25) to remove tube (9).

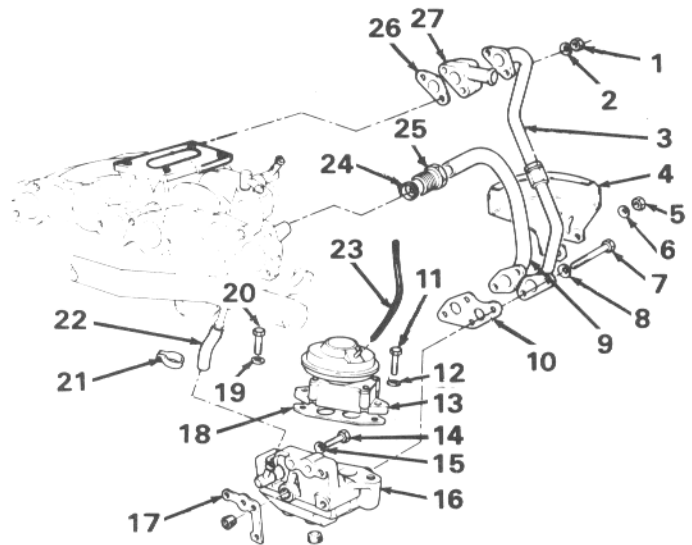
Remove gasket (10) and seal (24).

Disconnect vacuum line (23) from EGR valve (13).

Remove bolts (11 and 20) and washers (12 and 19) to remove EGR valve (13) and gasket (18).

Loosen clamp (21) to disconnect water hose (22) from water manifold.

Remove two bolts (14) and washers (15) to remove mounting base (16) and gasket (17).



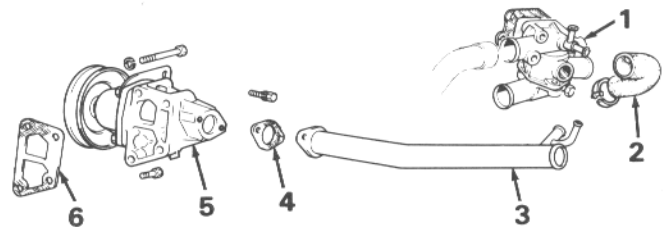
1. Nut 2. Washer 3. Tube 4. Shield 5. Nut 6. Washer 7. Bolt  
8. Washer 9. Tube 10. Gasket 11. Bolt 12. Washer  
13. EGR valve 14. Bolt 15. Washer 16. Mounting base 17. Gasket  
18. Gasket 19. Washer 20. Bolt 21. Clamp 22. Hose  
23. Vacuum line 24. Seal 25. Fitting 26. Gasket 27. Spacer

Loosen clamp and remove hose (2).

Remove two bolts and remove water manifold (3) and gasket (4).

Remove four bolts and washers holding water pump (5) to engine. Remove water pump and gasket (6).

Remove four bolts and washers holding thermostat assembly (1) to engine. Remove thermostat assembly and gasket.

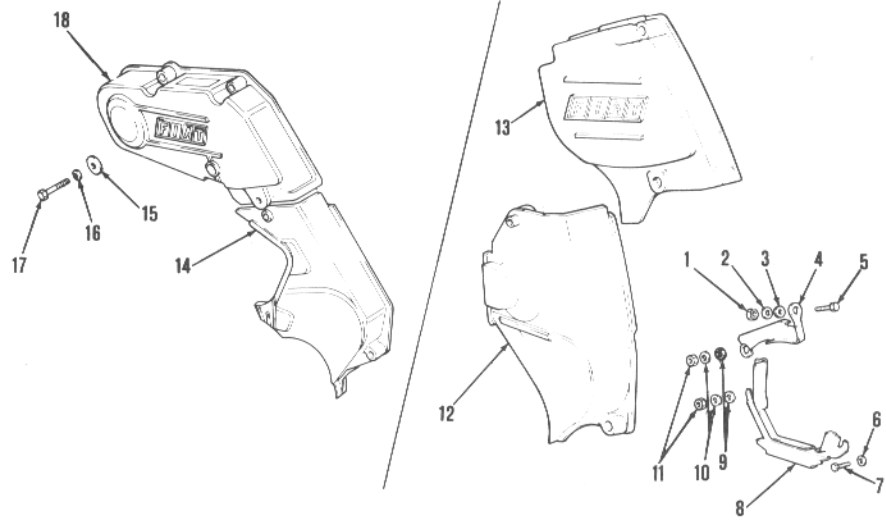


1. Thermostat assembly 2. Hose 3. Water manifold 4. Gasket  
5. Water pump 6. Gasket

Remove four bolts (17), lockwashers (16) and washers (15) to remove timing belt covers (12 and 13) (14 and 18 for air pump equipped vehicles).

Remove attaching hardware (1 to 3, 5 to 7, and 9 to 11) to remove shields (4 and 8).

- 1. Nut
- 2. Lockwasher
- 3. Washer
- 4. Shield
- 5. Bolt
- 6. Washer
- 7. Bolt
- 8. Shield
- 9. Washer
- 10. Lockwasher
- 11. Nut
- 12 and 13. Timing belt covers
- 14 and 18. Timing belt covers (with air pump)
- 15. Washer
- 16. Lockwasher
- 17. Bolt



Stop engine rotation by installing tool A.60640 on flywheel.

Remove two bolts (9) holding timing indicator (10) and remove indicator.

Remove camshaft sprocket bolt (11) and auxiliary shaft sprocket bolt (12).

Remove drive pulley nut (13) using wrench A.50121.

Remove nut (1), washers and spacer (2).

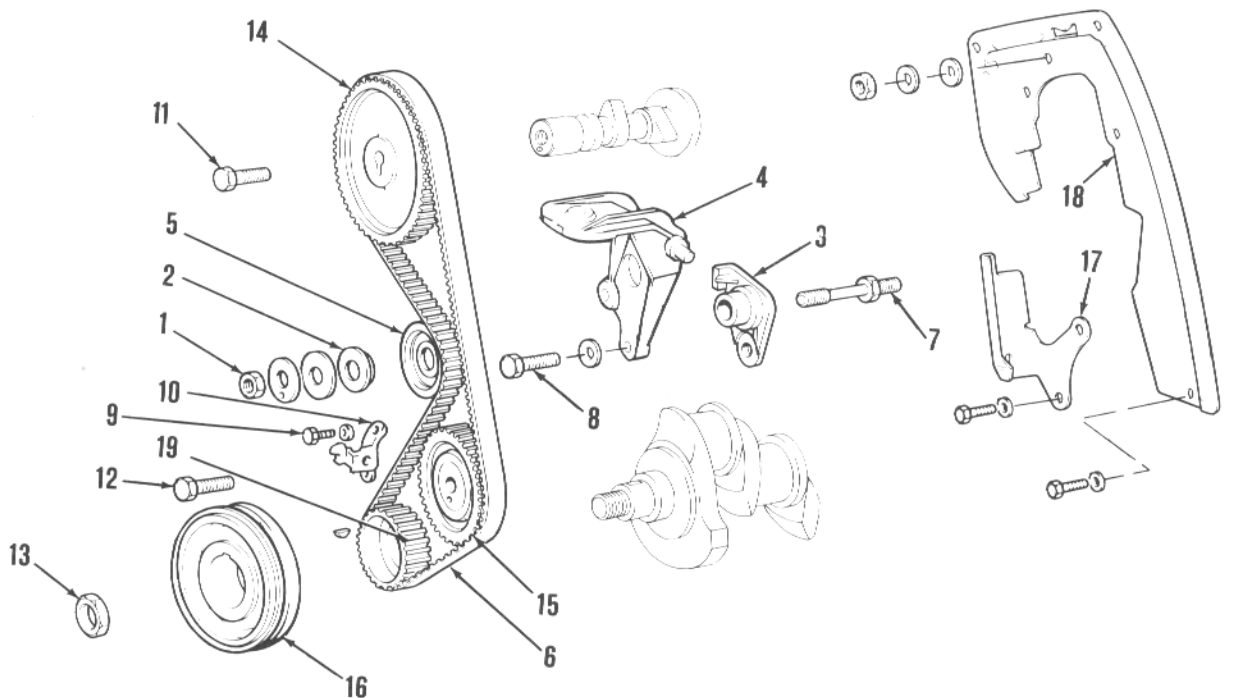
Press bracket (3) against tensioner in right engine mount (4) then remove pulley (5) and timing belt (6).

Remove tensioner support bracket (3) from stud (7), and remove stud.

Remove three bolts (8) holding engine mount (4) and remove mount.

Remove camshaft sprocket (14), auxiliary shaft sprocket (15), drive pulley (16) and belt drive sprocket (19).

Remove nuts and bolts holding belt shields (17 & 18) and remove shields.



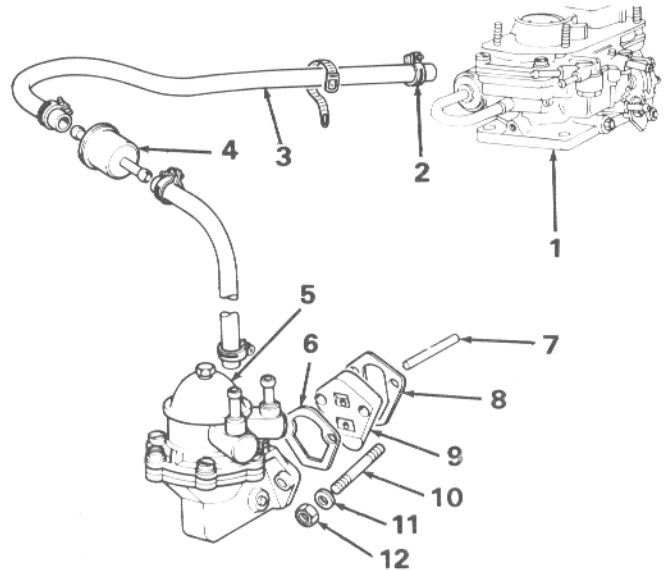
- |                              |                      |                              |                         |
|------------------------------|----------------------|------------------------------|-------------------------|
| 1. Nut                       | 6. Timing belt       | 11. Bolt                     | 16. Drive pulley        |
| 2. Spacer                    | 7. Stud              | 12. Bolt                     | 17. Belt shield         |
| 3. Tensioner support bracket | 8. Bolt              | 13. Nut                      | 18. Belt shield         |
| 4. Right engine mount        | 9. Bolt              | 14. Camshaft sprocket        | 19. Belt drive sprocket |
| 5. Tensioner pulley          | 10. Timing indicator | 15. Auxiliary shaft sprocket |                         |

On vehicles with carburetor, remove clamp (2) and fuel pump line (3) at carburetor (1). Leave filter (4) and fuel lines attached to pump (5).

Remove two nuts (12) and washers (11) from studs (10) holding pump to engine. Carefully remove pump from engine, being certain that actuating rod (7) is removed. When re-assembling, make sure that gaskets (6 and 8) and insulator (9) are installed in order shown.

**NOTE:** Gasket (8) comes in three different sizes which are used to adjust pump stroke (pressure).

- 1. Carburetor
- 2. Clamp
- 3. Fuel hose
- 4. Fuel filter
- 5. Fuel pump
- 6. Gasket
- 7. Actuating rod
- 8. Gasket
- 9. Insulator
- 10. Stud
- 11. Washer
- 12. Nut



Disconnect water line (1) from thermovalve housing (2) to carburetor (3) at carburetor by loosening clamp (4).

Disconnect main vacuum line (5) by pulling free at vacuum manifold (6).

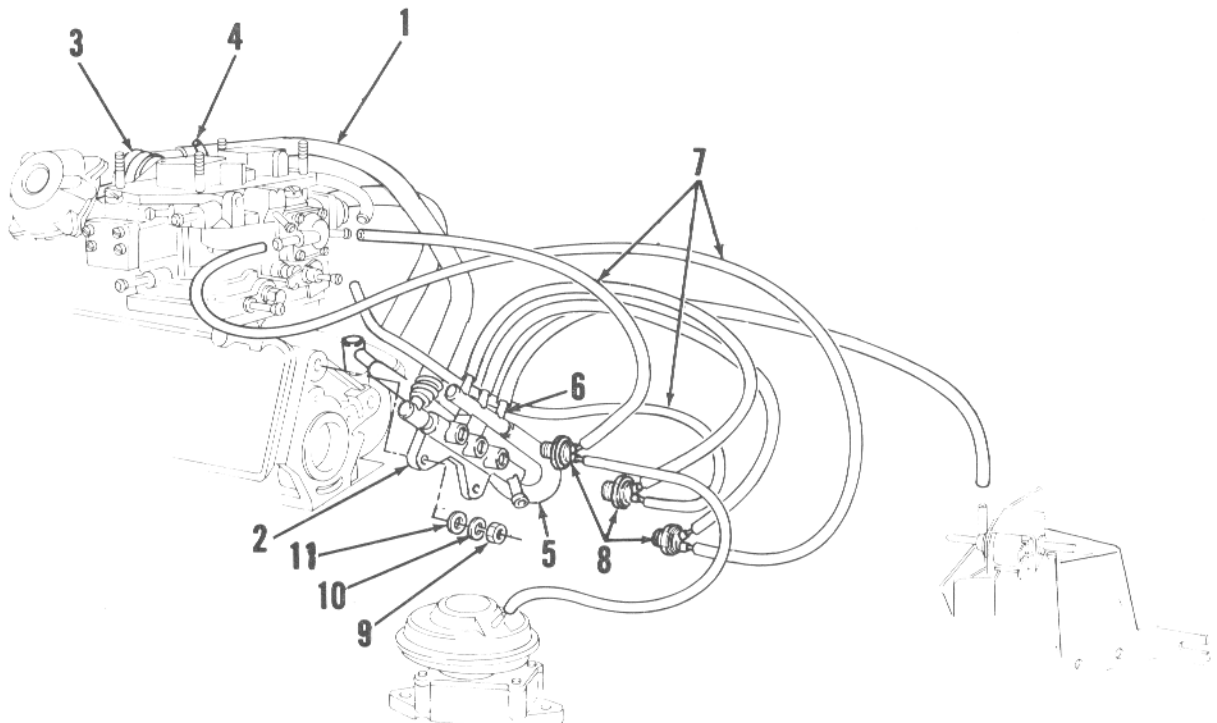
Disconnect vacuum lines (7) to carburetor by pulling free at carburetor.

**NOTE:** In order to minimize confusion during reinstallation of lines, do not remove thermovalves (8) or vacuum lines from thermovalve housing (2) unless they are to be replaced.

Remove two nuts (9), lockwashers (10) and washers (11).

Remove thermovalve housing (2) with attached lines and vacuum manifold (6).

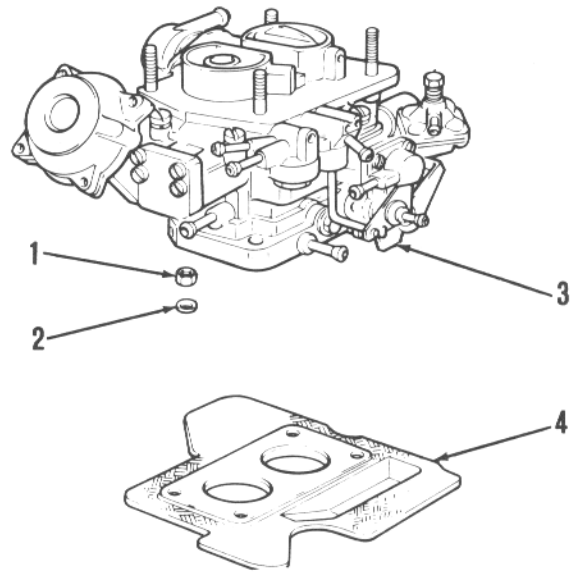
- 1. Water line
- 2. Thermovalve housing
- 3. Carburetor
- 4. Clamp
- 5. Main vacuum line
- 6. Vacuum manifold
- 7. Vacuum lines
- 8. Thermovalves
- 9. Nut
- 10. Lockwasher
- 11. Washer



On vehicles with carburetor, remove four nuts (1) and lockwashers (2) holding carburetor (3) and spacer (4) to intake manifold.

Remove carburetor (3) and spacer (4).

1. Nut 2. Lockwasher 3. Carburetor 4. Spacer

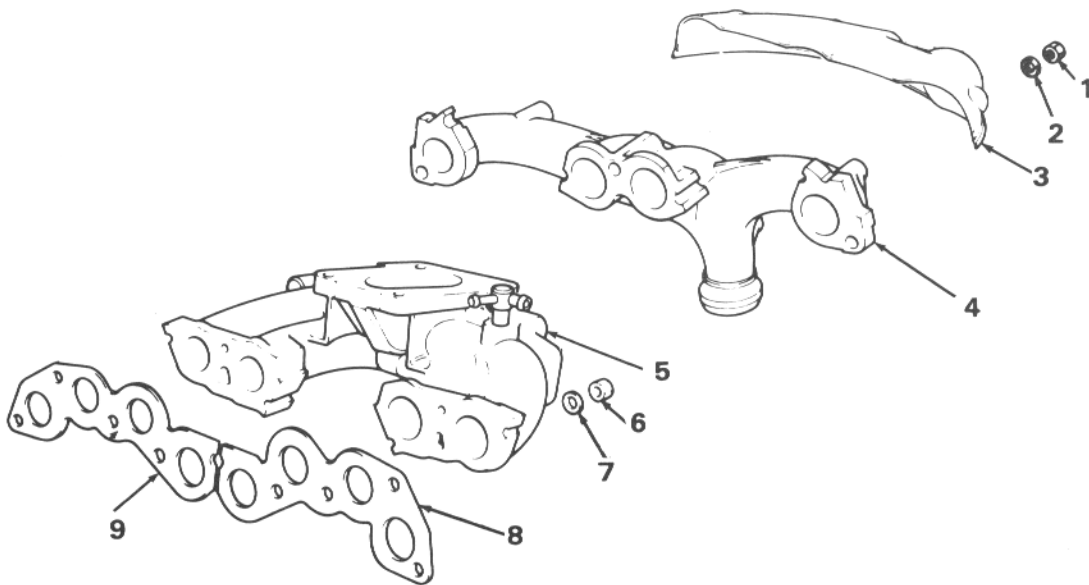


Remove three nuts (1) and washers (2) holding shield (3) to exhaust manifold (4). Remove shield.

Remove seven nuts (6) and washers (7) holding intake (5) and exhaust (4) manifolds to engine.

Remove manifolds and gaskets (8 and 9).

1. Nut  
2. Washer  
3. Shield  
4. Exhaust manifold  
5. Intake manifold  
6. Nut  
7. Washer  
8. Gasket  
9. Gasket



Using cylinder head tool A.50131, remove five nuts on carburetor side and five bolts on spark plug side.

Carefully remove cylinder head assembly. Lay on wooden blocks to protect open intake and exhaust valves from being bent.

Remove and discard cylinder head gasket.

To disassemble cylinder head, refer to 101.01.

On vehicles with fuel injection, disconnect accelerator cable from linkage.

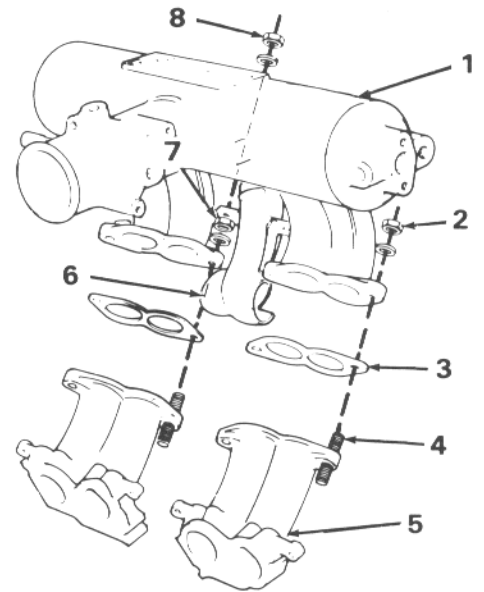
Remove two nuts (8) and washers holding cooling air duct (6) to studs (4) on manifold (5).

Disconnect cooling air hose from duct. Remove duct.

Remove four nuts (2) and washers holding air intake to manifold.

Carefully lift air intake (1) off studs (4) in manifold. Tilt air intake backwards.

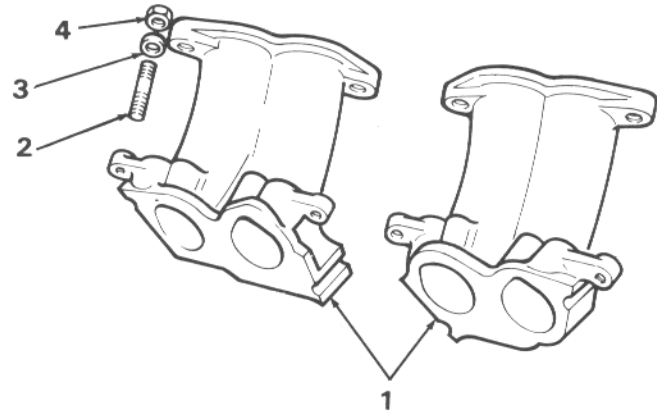
- 1. Air intake 2. Nut 3. Gasket 4. Stud 5. Manifold
- 6. Cooling air duct 7. Nut 8. Nut



Remove four nuts (4) and washers (3) holding air intake manifolds (1) to engine.

Remove intake manifolds.

- 1. Air intake manifolds 2. Stud 3. Washer 4. Nut



Remove three nuts (1) and washers holding shield (3) to exhaust manifold (4).

Remove nuts (5) and washers holding exhaust manifold to engine.

Remove exhaust manifold.

Using tool A.50131 for 19 mm hex bolts and nuts or tool A.50172 for 17 mm hex bolts, remove five nuts or bolts on intake side and five bolts on spark plug side.

Carefully remove cylinder head assembly. Lay on wooden blocks to protect open intake and exhaust valves from being bent.

Remove and discard cylinder head gasket.

To disassemble cylinder head, refer to section 101.01.

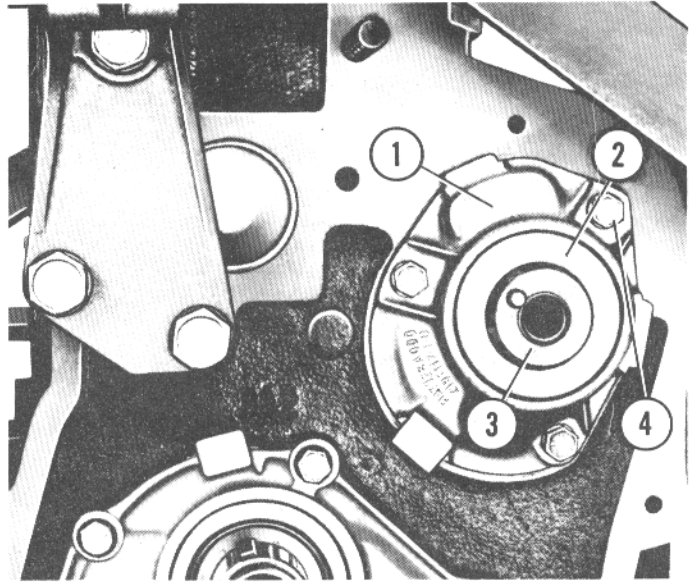
- 1. Nut 2. Washer 3. Shield 4. Exhaust manifold 5. Nut
- 6. Washer



Remove three bolts (4) and lockwashers holding auxiliary shaft lock plate (1) and seal (2).

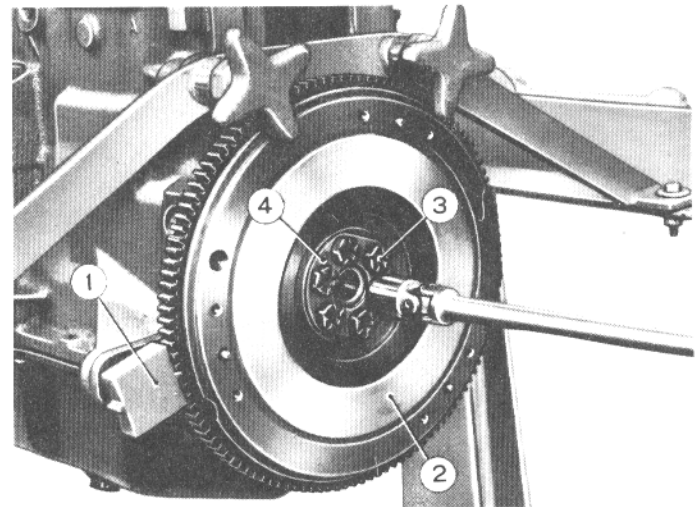
Remove plate/seal and then remove shaft (3).

1. Auxiliary shaft lock plate 2. Seal 3. Auxiliary shaft 4. Bolt



Remove six bolts (3) and washer plate (4) holding flywheel (2) to crankshaft, remove flywheel.

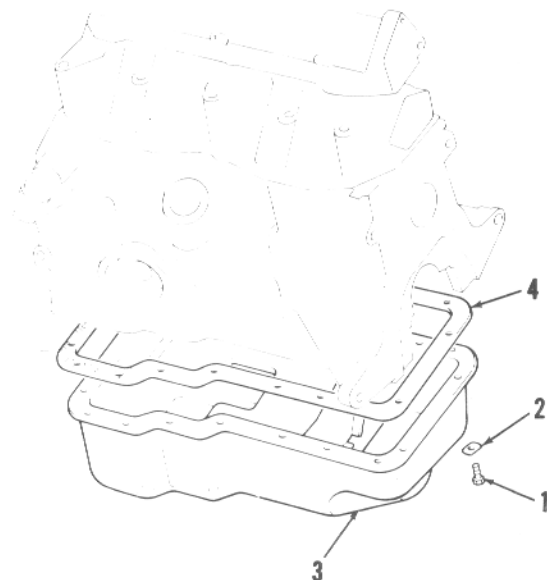
1. Tool A.60640 2. Flywheel 3. Bolt 4. Washer plate



Turn engine upside/down and remove twenty bolts (1) and lockwashers (2) holding oil pan (3).

Remove pan and gasket (4).

1. Bolt 2. Lockwasher 3. Oil pan 4. Gasket





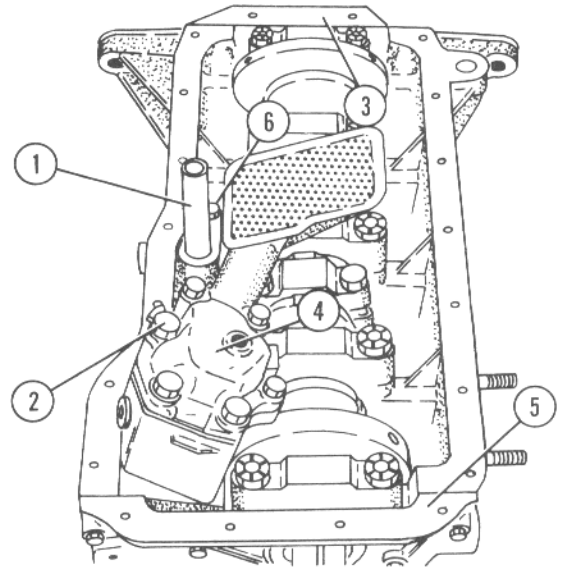
Remove six bolts and lockwashers holding flywheel end cover plate (3). Remove plate and gasket.

Remove five bolts and lockwashers holding timing gear end cover plate (5). Remove plate and gasket.

Remove three bolts (2) and lockwashers holding oil pump assembly (4). Remove pump and gasket.

Remove bolt (6) holding oil return pipe (1) and remove pipe.

1. Oil return pipe 2. Bolt 3. Flywheel end cover plate 4. Oil pump assembly 5. Timing gear end cover plate 6. Bolt



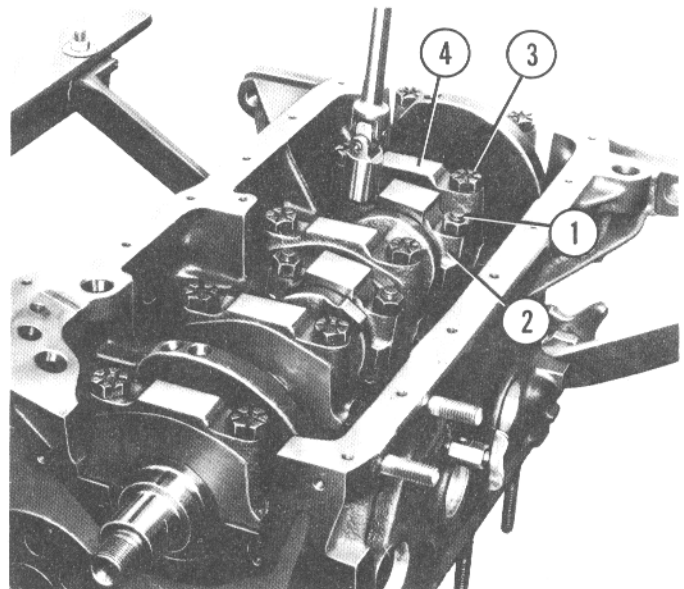
Remove nuts (1) holding connecting rod end caps (2). Remove caps complete with bearing inserts.

Remove four rod-piston assemblies from the top of cylinder block.

**NOTE:** Turning crankshaft will make this operation easier.

Remove bolts (3) holding main bearing caps (4). Remove caps along with lower bearing inserts.

1. Nut 2. Connecting rod end caps 3. Bolt 4. Main bearing caps



Remove crankshaft and take out upper bearing inserts.

Remove two thrust ring halves (1) from saddle bore at flywheel end.

1. Thrust ring halves

