

CAM-01, Camshaft Assembly Removal



Acrobat Printable Version

Tools Needed

- 8 mm Allen head socket or 8 mm hex key
- 6 mm Allen head socket and 6" socket extension OR Long 6 mm Allen head socket (preferred)

NOTE

If you happen to have the original tool kit that comes with the car, there is a long Allen head tool with a rubber socket for holding the bolt for removal (very nice). Also, if you HAVE to use a 6 mm socket and extension, make sure you tape the socket to the extension as they have a tendency to get knocked off and fall down inside the cam housing.

- 10 mm socket
- Flat tip screwdriver
- Flywheel lock 9206 (optional)
- 27 mm thin head open end wrench (cars with eccentric roller tensioners only)
- 19 mm socket (cars with eccentric roller only)
- 12 mm socket (cars with spring tensioners only)
- Pry bar or balance shaft pin spanner (cars with spring tensioners only)

Other Procedures Needed

- [FUEL-02](#), Fuel Injector and Fuel Rail Removal and Installation
- [IGN-01](#), Distributor Cap and Rotor Replacement
- [ENG-13](#), Locating and Setting Engine to Top Dead Center (TDC), Cylinder 1

Procedure

1. Disconnect the battery negative lead.
2. Using [ENG-13](#), set the engine to top dead center (TDC) for cylinder number 1.
3. Using [FUEL-02](#), remove the fuel rail and injectors.
4. Using [IGN-01](#), remove the distributor cap and rotor.
5. If equipped, disconnect the cruise control cable from the cruise control servo and move out of the way.
6. Remove the front timing/balance shaft belt covers (M6 bolts) using a 10 mm socket and ratchet.

7. Remove the front distributor housing cover (3 M6 bolts) using a 10 mm socket and ratchet.
8. On cars equipped with spring tensioners (87 Model Onward), perform the following:
 - a. The front plate of the spring tensioner resembles a triangle. Loosen, but do not remove, the locknut and bolt on the side of the triangle near the tensioning spring.
 - b. Remove the tension on the belt by pushing down on the tensioner lever arm. This can be done using a pry bar. However, the tool of choice is the factory balance shaft sprocket pin spanner. The pins on the spanner fit into two holes on the front of the spring tensioner for easy operation of the spring tensioner. With the spring still compressed, tighten the locking bolt and nut. This will allow you to re-install the belt without having to fight the spring tensioner.
9. On cars not equipped with spring tensioners (pre-'87), perform the following:
 - a. Loosen the camshaft tensioning roller lock nut and turn the camshaft tensioning roller nut beneath it in the clockwise direction to release the tension on the timing belt.
10. After the tension has been released from the camshaft belt, slide the belt off the camshaft sprocket. The cam belt does not need to be removed unless it is to facilitate work other than just the camshaft assembly removal.
11. Remove the two M6 bolts (10mm hex head) that attach the rear timing cover to the rear distributor housing.
12. If equipped, disconnect the sensor plug retaining strap on the engine lifting bracket at the back of the cam housing (M6 bolt - 10 wrench).
13. Using an 8 mm hex key or Allen head socket remove the plugs from the top of the cam housing.
14. Using a 6 mm Allen head socket and extension or long 6 mm Allen head socket, remove the cam housing retaining bolts (15 - M8 bolts).

NOTE

Two of the cam housing bolts also act as bracket bolts for the "hard pipe" section of the return line from the heater core. If only the cam housing is to be removed, the return line may remain connected and simply moved out of the way. However, if the head is to be removed as well, the return line should be removed. This will be detailed in the head removal procedure after the coolant system is drained and prior to removing the exhaust manifolds.

15. Remove the cam housing by lifting upward slightly and tilting the cam housing toward the right side of the car. By tilting the assembly you are attempting to keep the lifters in their respective openings in the bottom of the cam housing. This is important if the old lifters are to be reused. If the lifters must be removed, store them in a fashion that they can be identified for correct orientation during installation.