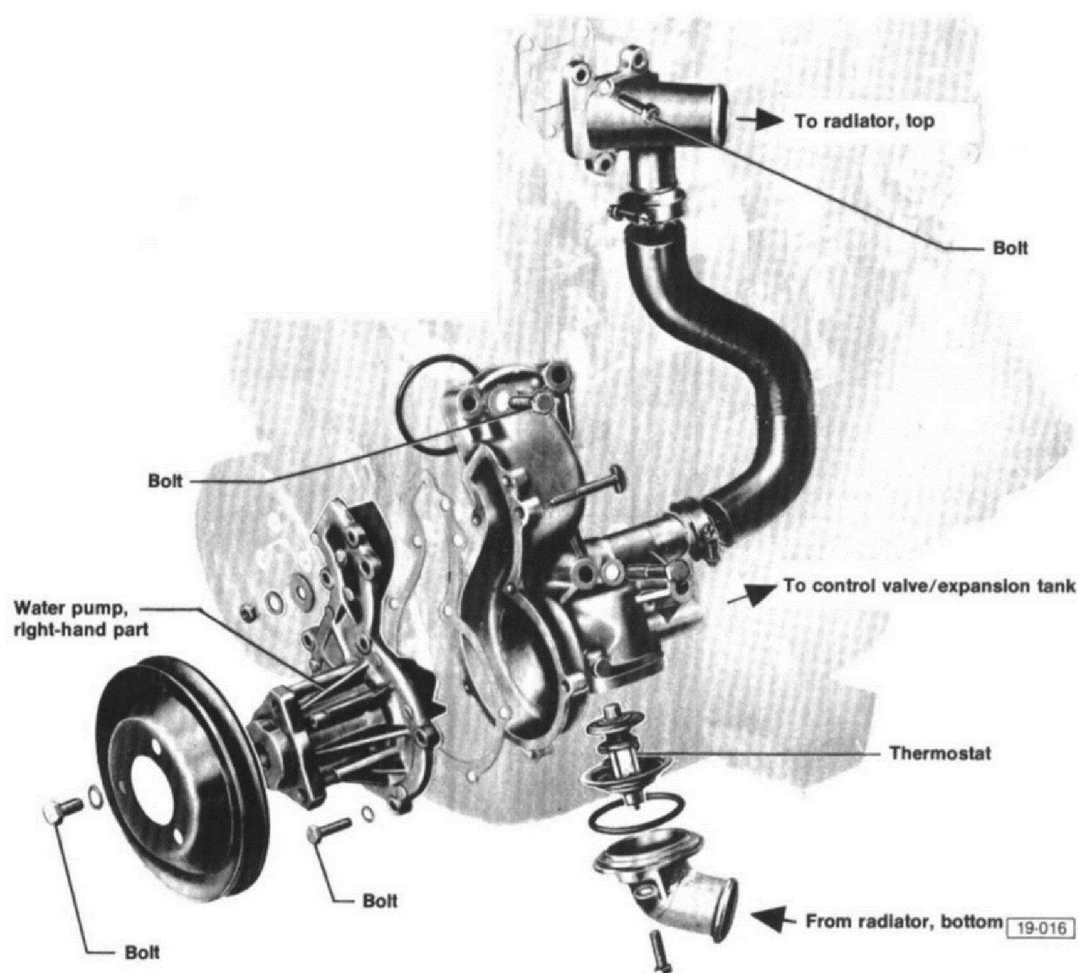


Water Pump: Service and Repair



The right-hand part of the water pump, which contains the shaft, the seals, the bearing, and the impeller, can be replaced separately. However, you can avoid removing the camshaft drive belt and sprockets by removing the water pump as a unit before you disassemble it.

For removal of the camshaft drive belt, refer to Engine/Timing Components/Timing Belt. See: Timing Components/Timing Belt/Service and Repair

To remove:

- Drain the coolant.
- Except on vehicles with power steering, loosen the upper and lower alternator mounting bolts. Loosen the bolt that holds the alternator belt adjusting bracket to the cylinder head, and then push the alternator as far as possible toward the engine so that you can take the V-belt off the alternator and water pump pulleys.

NOTE: Unless you are going to remove the water pump by working under the vehicle, or if the vehicle is equipped with air conditioning, you should remove the alternator completely for better access to the water pump mounting bolts.

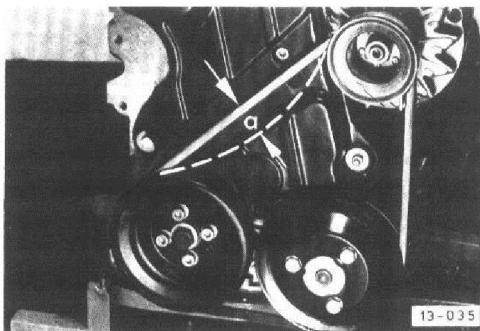
- On vehicles with power steering, remove the three nuts and washers that hold the pulley outer half to the power steering pump. Being careful to keep the V-belt adjusting shims in order, remove the shims and the pulley outer half, then remove the V- belt.
- Remove the socket-head bolt that holds the camshaft drive belt cover to the water pump.
- Disconnect both hoses from the left end of the water pump.
- Take out the four bolts that hold the water pump to the engine block. Two short bolts are at the top of the pump, one long bolt is at about the center of the pump, and one long bolt is between the two hose connections. Remove the pump as you take out the last bolt.

To install:

- Install a new O-ring in the recess that surrounds the water outlet in the pump's mounting flange. Clean the surface of the engine block where it will be contacted by the pump and the O-ring.

NOTE Do not use sealer between the water pump mounting flange and the engine block.

- Using all four mounting bolts, loosely install the water pump on the engine. Then, tightening each bolt a little at a time, torque the mounting bolts to **20 Nm (15 ft. lb.)**. Also install the socket-head bolt for the camshaft drive belt cover.
- On vehicles without power steering, install the V-belt on the crankshaft pulley, the water pump pulley, and the alternator pulley. Then adjust the V-belt tension by pulling the alternator away from the engine until dimension **a** is correct when you depress the V-belt.



Point at which V-belt should be depressed. On models without air conditioning, dimension **a** should be **2 mm (1/8 in.)** on new belts, or **5 mm (1/4 in.)** on used belts. On models with air conditioning, dimension **a** should be **10 mm (2/5 in.)** on new belts, or **15 mm (3/5 in.)** on used belts.

- On vehicles with power steering, install and adjust the V-belt.
- When the V-belt tension is correct, torque the lower alternator mounting bolts on vehicles without air conditioning to **20 Nm (15 ft. lb.)**. On vehicles with air conditioning, torque the alternator lower mounting bolt to **30 Nm (22 ft. lb.)**, and torque the adjusting bracket bolts to **25 Nm (18 ft. lb.)**.

CAUTION Do not tension the V-belts too tightly. Doing this may cause the alternator bearings, the water pump bearings, or the air pump bearings to fail after only a short period of service.

- Install the hoses and fill the cooling system.