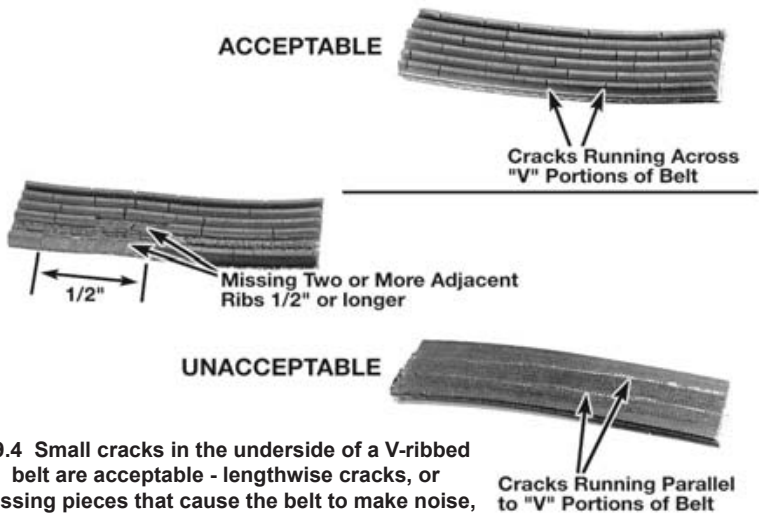
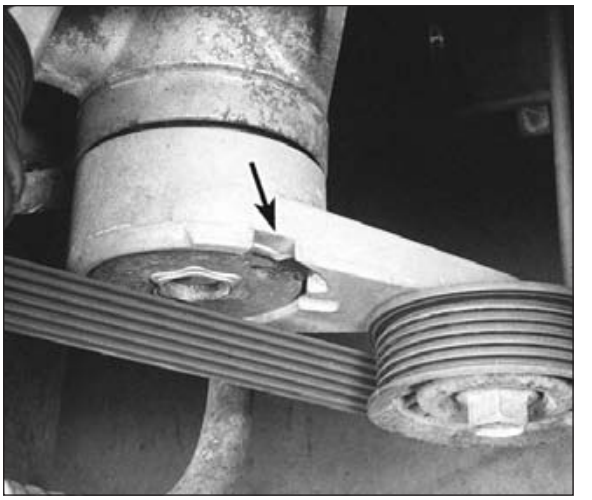


29.4 Small cracks in the underside of a V-ribbed belt are acceptable - lengthwise cracks, or missing pieces that cause the belt to make noise, are cause for replacement



29.5 Belt wear indicator marks are located on the side of the tensioner body - when the belt reaches the maximum wear mark it must be replaced

check the operation of the brakes. The pedal should feel solid when depressed, with no sponginess. **Warning:** *Do not operate the vehicle if you are in doubt about the effectiveness of the brake system.*

29 Drivebelt check and replacement (every 60,000 miles or 48 months)

Refer to illustrations 29.4, 29.5, 29.6 and 29.8

1 The drivebelts are located at the front of the engine and play an important role in the overall operation of the vehicle and its components. Due to their function and material make-up, the drivebelts are prone to failure after a period of time and should be inspected and adjusted periodically to prevent major engine damage.

2 The vehicles covered by this manual are equipped with a single self-adjusting serpentine drivebelt, which is used to drive all of the accessory components such as the alternator, power steering pump, water pump and air conditioning compressor.

Inspection

3 With the engine off, open the hood and locate the drivebelt at the front of the engine. Using your fingers (and a flashlight, if necessary), move along the belts checking for cracks and separation of the belt plies. Also check for fraying and glazing, which gives the belt a shiny appearance. Both sides of each belt should be inspected, which means you will have to twist the belt to check the underside.

4 Check the ribs on the underside of the belt. They should all be the same depth, with none of the surface uneven **(see illustration)**.

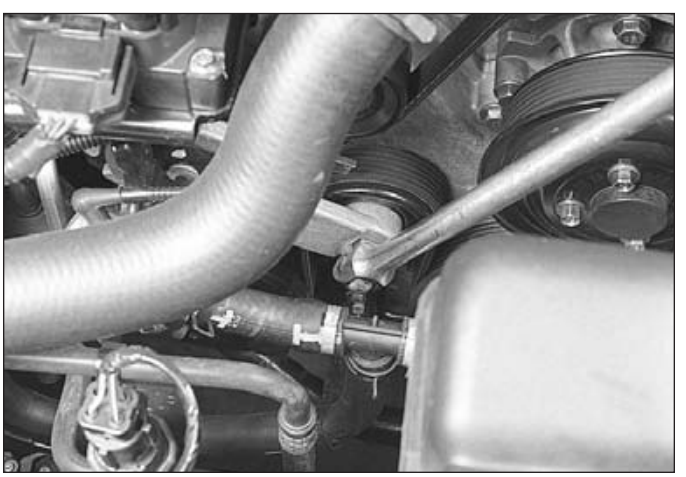
5 The tension of the belt is automatically adjusted by the belt tensioner and does not require any adjustments. Drivebelt wear can be checked visually by inspecting the wear indicator marks located on the side of the tensioner body. Locate the belt tensioner at the front of the engine on the right (passenger) side, adjacent to the lower crankshaft pulley, then find the tensioner operating marks **(see illustration)**. If the indicator mark is outside the operating range, the belt should be replaced.

Replacement

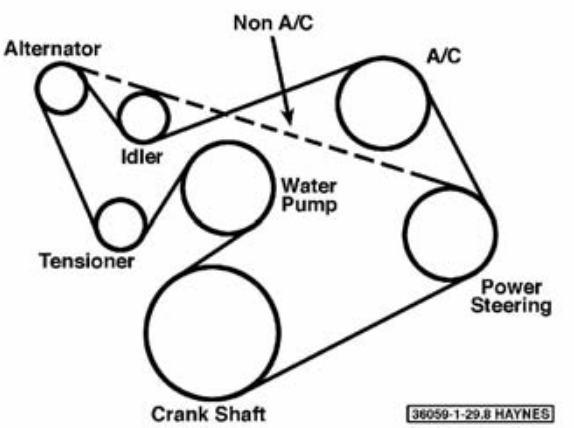
6 To replace the belt, rotate the tensioner to relieve the tension on the belt **(see illustration)**. Some models have a square hole in the tensioner arm that will accept a 1/2-inch drive breaker bar. On other models, place a wrench on the tensioner pulley bolt.

7 Remove the belt from the auxiliary components and carefully release the tensioner.

8 Route the new belt over the various pulleys, again rotating the tensioner to allow the belt to be installed, then release the belt tensioner. Make sure the belt fits properly into the pulley grooves - it must be completely engaged. **Note:** *Most models have a drivebelt routing decal on the upper radiator panel to help during drivebelt installation* **(see illustration)**.



29.6 Rotate the tensioner arm to relieve belt tension



29.8 The routing schematic for the serpentine belt is usually found on the fan shroud (this one's for the V6 engine)

30.2 With the engine running at idle, remove the PCV valve and verify that vacuum can be felt at the end of the valve

30 Positive Crankcase Ventilation (PCV) valve check (every 60,000 miles or 48 months)

Refer to illustration 30.2

Note: *To maintain efficient operation of the PCV system, clean the hoses and check the PCV valve at the intervals recommended in the maintenance schedule. For additional information on the PCV system,* refer to Chapter 6.

1 The PCV valve on all engines covered by this manual is located in the right (passenger's side) valve cover.

2 Start the engine and allow it to idle, then disconnect the PCV valve from the intake manifold at the front of the engine and feel for vacuum at the end of the valve **(see illustration)**. If vacuum is felt, the PCV valve/system is working properly (see Chapter 6 for additional PCV system information).

3 If no vacuum is felt, remove the valve and check for vacuum at the hose. If vacuum is present at the hose but not at the valve, replace the valve. If no vacuum is felt at the hose, check for a plugged or cracked hose between the PCV valve and the intake plenum.

4 Check the rubber grommet in the valve cover for cracks and distortion. If it's damaged, replace it.

5 If the valve is clogged, the hose is also probably plugged. Remove the hose between the valve and the intake manifold and clean it with solvent.

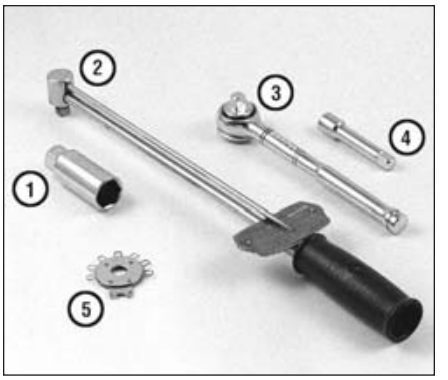
6 After cleaning the hose, inspect it for damage, wear and deterioration. Make sure it fits snugly on the fittings.

7 If necessary, install a new PCV valve.

31 Spark plug check and replacement (every 60,000 miles or 48 months)

Refer to illustrations 31.2, 31.5a, 31.5b, 31.6a, 31.6b, 31.8, 31.10a and 31.10b

1 Vehicles equipped with 4.2L engines have the spark plugs located on the sides of the engine. Vehicles equipped with 4.6L and 5.4L engines have the spark plugs located at the top of the engine.



31.2 Tools required for changing spark plugs

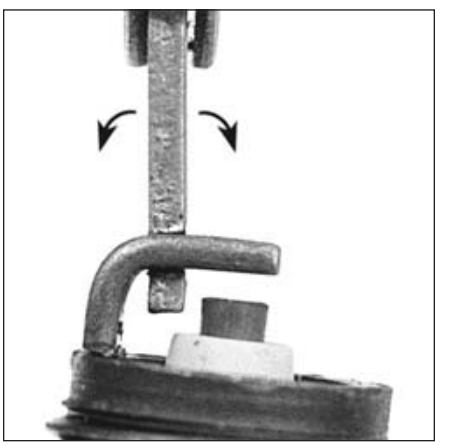
1 ***Spark plug socket*** *- This will have special padding inside to protect the spark plug's porcelain insulator*
2 ***Torque wrench*** *- Although not mandatory, using this tool is the best way to ensure the plugs are tightened properly*
3 ***Ratchet*** *- Standard hand tool to fit the spark plug socket*
4 ***Extension*** *- Depending on model and accessories, you may need special extensions and universal joints to reach one or more of the plugs*
5 ***Spark plug gap gauge*** *- This gauge for checking the gap comes in a variety of styles. Make sure the gap for your engine is included*

2 In most cases, the tools necessary for spark plug replacement include a spark plug socket which fits onto a ratchet (spark plug sockets are padded inside to prevent damage to the porcelain insulators on the new plugs), various extensions and a gap gauge to check and adjust the gaps on the new plugs **(see illustration)**. A special plug wire removal tool is available for separating the wire boots from the spark plugs, but it isn't absolutely necessary. A torque wrench should be used to tighten the new plugs.

3 The best approach when replacing the spark plugs is to purchase the new ones in advance, adjust them to the proper gap and replace the plugs one at a time. When buying the new spark plugs, be sure to obtain the correct plug type for your particular engine. This information can be found in the Specifications Section a the beginning of this Chapter, on the Emission Control Information label located under the hood or in the factory owner's manual. If differences exist between the plug specified on the emissions label, Specifications Section or in the owner's manual, assume that the emissions label is correct.

4 Allow the engine to cool completely before attempting to remove any of the plugs. Some engines are equipped with aluminum cylinder heads, which can be damaged if the spark plugs are removed when the engine is hot. While you are waiting for the engine to cool, check the new plugs for defects and adjust the gaps.

31.5a Spark plug manufacturers recommend using a wire-type gauge when checking the gap - if the wire does not slide between the electrodes with a slight drag, adjustment is required



31.5b To change the gap, bend the side electrode only, as indicated by the arrows, and be very careful not to crack or chip the porcelain insulator surrounding the center electrode

5 The gap is checked by inserting the proper thickness gauge between the electrodes at the tip of the plug **(see illustration)**. The gap between the electrodes should be the same as the one specified on the Emissions Control Information label. The wire should just slide between the electrodes with a slight amount of drag. If the gap is incorrect, use the adjuster on the gauge body to bend the curved side electrode slightly until the specified gap is obtained **(see illustration)**. If the side electrode is not exactly over the center electrode, bend it with the adjuster until it is. Check for cracks in the porcelain insulator (if any are found, the plug should not be used).

6 With the engine cool, remove the spark plug wire from one spark plug. Pull only on the boot at the end of the wire - do not pull