



7.5 Black, sooty deposits at the end of the exhaust pipe may be an indication that the carburetor needs adjustment or the engine is in need of a tune-up

the pipes, muffler and catalytic converter (if equipped). If the components can come into contact with the body or driveline parts, secure the exhaust system with new mountings.

5 This is also an ideal time to check the running condition of the engine by inspecting the very end of the tailpipe. The exhaust deposits here are an indication of engine tune. If the pipe is black and sooty (see illustration), or bright white deposits are found here, the engine is in need of a tune-up including a thorough carburetor inspection and adjustment.

8 Suspension and steering check

Refer to illustration 8.6 and 8.7

1 Whenever the front of the car is raised for service it is a good idea to visually check the suspension and steering components for wear.

2 Indications of a fault in these systems are: excessive play in the steering wheel before the front wheels react; excessive sway around corners or body movement over rough roads; binding at some point as the steering wheel is turned.

3 Before the car is raised for inspection, test the shock absorbers by pushing downward to rock the car at each corner. If you push the car down and it does not come back to a level position within one or two bounces, the shocks are worn and need to be replaced. As this is done, check for squeaks and strange noises from the suspension components. Information on shock absorber and suspension components can be found in Chapter 11.

4 Now raise the front end of the car and support firmly by jack stands placed under the frame rails. Because of the work to be done, make sure the car cannot fall from the stands.

5 Grab the top and bottom of the front tire with your hands and rock the tire/wheel on its



8.6 Rubber bushings in the steering and suspension systems will deteriorate and crack after a time, indicating replacement is necessary

spindle. If there is movement of more than 0.005 in, the wheel bearings should be serviced (see Section 24).

6 Crawl under the car and check for loose bolts, broken or disconnected parts and deteriorated rubber bushings (see illustration) on all suspension and steering components. Look for grease or fluid leaking from around the steering box. Check the power steering hoses and their connections for leaks.

7 Check the balljoints for wear (see illustration).

8 Have an assistant turn the steering wheel from side to side and check the steering components for free movement, chafing or binding. If the steering does not react with the movement of the steering wheel, try to determine where the slack is located.

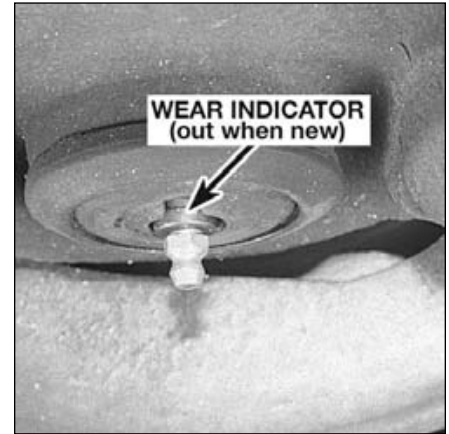
9 Engine drive belt check and adjustment

Refer to illustrations 9.1, 9.4, 9.6 and 9.7

1 The drive belts, or V-belts as they are sometimes called, at the front of the engine play an important role in the overall operation of the car and its components. Due to their function and material make-up, the belts are prone to failure after a period of time and should be inspected and adjusted periodically to prevent major engine damage (see illustration).

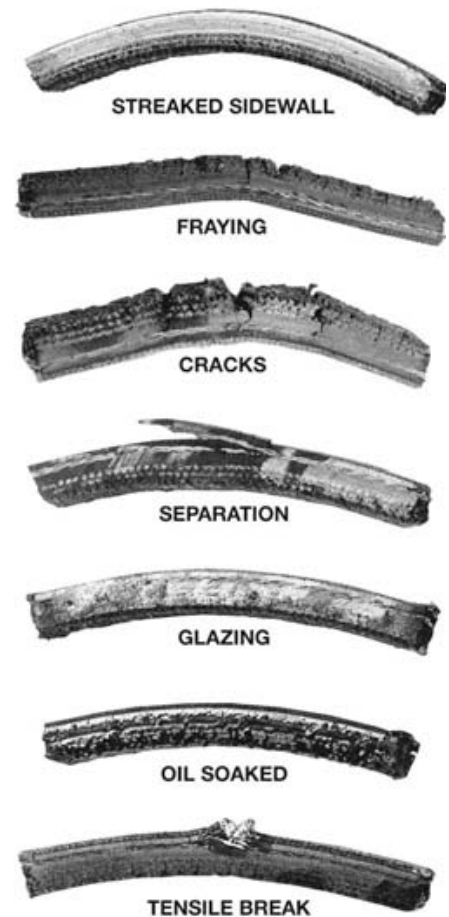
2 The number of belts used on a particular car depends on the accessories installed. Drive belts are used to turn: the generator (alternator); A.I.R. smog pump; power steering pump; water pump; fan; and air conditioning compressor. Depending on the pulley arrangement, a single belt may be used for more than one of these ancillary components.

3 With the engine off, open the hood and locate the various belts at the front of the engine. Using your fingers (and a flashlight if

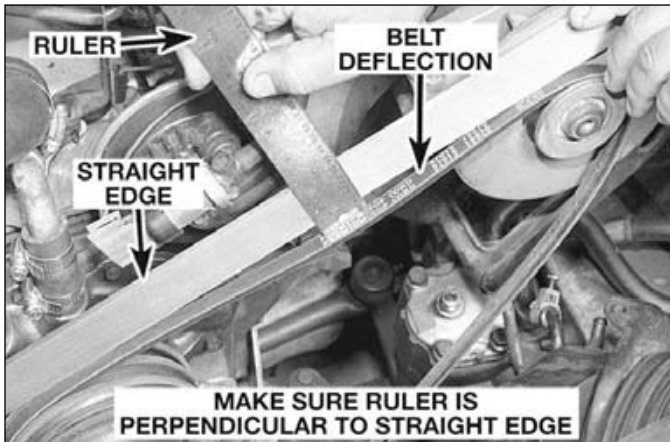


8.7 Wear indicators are built into the lower balljoints to aid in their inspection

necessary), move along the belts checking for cracks or separation. Also check for fraying and for glazing which gives the belt a shiny appearance. Both sides of the belts should be inspected, which means you will have to twist the belt to check the underside.



9.1 Here are some of the more common problems associated with drivebelts (check the drivebelts very carefully to prevent untimely breakdown)



9.4 Drivebelt tension can be checked with a straightedge and a ruler



9.6 Nearly all belt-driven components have a pivot bolt (top) and a strap or adjusting bolt (near bottom of alternator shown)

4 The tension of each belt is checked by pushing on the belt at a distance halfway between the pulleys. Push firmly with your thumb and see how much the belt moves downward (deflects) (see illustration). A rule of thumb, so to speak, is that if the distance (pulley center to pulley center) is between 7 inches and 11 inches the belt should deflect 1/4-inch. If the belt is longer and travels between pulleys spaced 12 inches to 16 inches apart, the belt should deflect 1/2-in.

5 If it is found necessary to adjust the belt tension, either to make the belt tighter or looser, this is done by moving the belt-driven accessory on its bracket.

6 For each component there will be an adjustment or strap bolt and a pivot bolt. Both bolts must be loosened slightly to enable you to move the component (see illustration).

7 After the two bolts have been loosened, move the component away from the engine (to tighten the belt) or toward the engine (to loosen the belt) (see illustration). Hold the accessory in this position and check the belt tension. If it is correct, tighten the two bolts until snug, then recheck the tension. If it is all right, fully tighten the two bolts.

8 It will often be necessary to use some sort of pry bar to move the accessory while the belt is adjusted. If this must be done to gain the proper leverage, be very careful not to damage the component being moved, or the part being pried against.

10 Fuel system check

Warning: Gasoline is extremely flammable, so take extra precautions when you work on any part of the fuel system. Don't smoke or allow open flames or bare light bulbs near the work area, and don't work in a garage where a natural gas-type appliance (such as a water heater or clothes dryer) with a pilot light is present. Since gasoline is carcinogenic, wear latex gloves when there's a possibility of being exposed to fuel, and, if you spill any fuel on your skin, rinse it off immediately with

soap and water. Mop up any spills immediately and do not store fuel-soaked rags where they could ignite. The fuel system is under constant pressure, so, if any fuel lines are to be disconnected, the fuel pressure in the system must be relieved first (see Chapter 4 for more information). When you perform any kind of work on the fuel system, wear safety glasses and have a Class B type fire extinguisher on hand.

1 There are certain precautions to take when inspecting or servicing the fuel system components. Work in a well ventilated area and do not allow open flames (cigarettes, appliance pilot lights, etc.) to get near the work area. Mop up spills immediately and do not store fuel-soaked rags where they could ignite.

2 The fuel system is under some amount of pressure, so if any fuel lines are disconnected for servicing, be prepared to catch the fuel as it spurts out. Plug all disconnected fuel lines immediately after disconnection to prevent the tank from emptying itself.

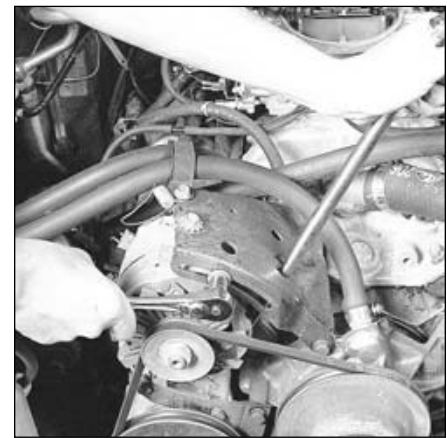
3 The fuel system is most easily checked with the car raised on a hoist where the components under the car are readily visible and accessible.

4 If the smell of gasoline is noticed while driving, or after the car has sat in the sun, the system should be thoroughly inspected immediately.

5 Remove the gas filler cap and check for damage, corrosion and a proper sealing imprint on the gasket. Replace the cap with a new one if necessary.

6 With the car raised, inspect the gas tank and filler neck for punctures, cracks or any damage. The connection between the filler neck and the tank is especially critical. Sometimes a rubber filler neck will leak due to loose clamps or deteriorated rubber; problems a home mechanic can usually rectify.

7 Do not under any circumstances try to repair a fuel tank yourself (except rubber components) unless you have considerable experience. A welding torch or any open flame can easily cause the fuel vapors to explode if the proper precautions are not taken.



9.7 Adjusting the belt tension by gently prying on the component as the adjustment bolt is tightened

8 Carefully check all rubber hoses and metal lines leading away from the fuel tank. Check for loose connections, deteriorated hose, crimped lines or damage of any kind. Follow these lines up to the front of the car, carefully inspecting them all the way. Repair or replace damaged sections as necessary.

9 If a fuel odor is still evident after the inspection, refer to Section 31 on the evaporative emissions system and Section 16 for carburetor adjustment.

11 Positive Crankcase Ventilation (PCV) valve replacement

Refer to illustrations 11.3, 11.4 and 11.5

1 The PCV valve can usually be found pushed into one of the rocker arm covers at the side of the engine. There will be a hose connected to the valve which runs to either the carburetor or the intake manifold.

2 When purchasing a replacement PCV valve, make sure it is for your particular vehicle, model year and engine size.

3 Pull the valve (with the hose attached) from its rubber grommet in the rocker arm