



Fig. 95 Disconnect the plug wire retaining clips from the wires and . . .

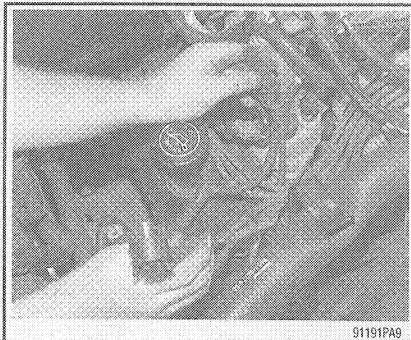


Fig. 96 . . . remove the plug wires from the engine

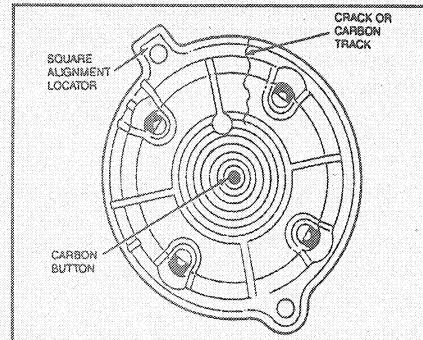


Fig. 97 Inspection points for the distributor cap

**To install:**

Ensure that, when replacing plug wires, the wires are routed correctly and through the proper retainers. Failure to route the wires properly can lead to radio ignition noise and crossfiring of the plugs, or shorting of the leads to ground.

8. Coat the spark plug terminal end (or inside of the plug boot) with dielectric compound, install the boot onto the spark plug. Make sure it "clicks" on.

**\*\*\* WARNING**

On the 4.6L engine, it is critical to vehicle operation that the spark plug wires be properly installed at the spark plugs and ignition coils. If one spark plug wire is not properly installed, both spark plugs connected to that ignition coil may not fire under load.

9. Route the wire through the necessary retainer clips and separators.

10. Route the wires along the engine, keeping the proper clearances.

11. Install the wire to the proper distributor cap or ignition coil terminal, making sure the boot is firmly seated. On the 4.6L engine, make sure the coil boot locking tabs are engaged. Keep the proper firing order.

On the 4.6L engine, the spark plug boot must be positioned 45 degrees from crankshaft centerline (outboard and forward) to make sure the boot seal is fully seated.

- 12. Install spark plug wire retainers.
- 13. Install air cleaner assembly.

**Distributor Cap and Rotor**

**REMOVAL AND INSTALLATION**

- 1. Disconnect the negative battery cable.
- 2. Remove the rubber cap cover (if equipped), from the distributor cap.
- 3. Remove the secondary wiring (spark plug wires) if a new cap is being installed.

Record wire placement at each wire location in order to maintain the correct firing order.

- 4. On the 3.8L engine, remove the two retain-

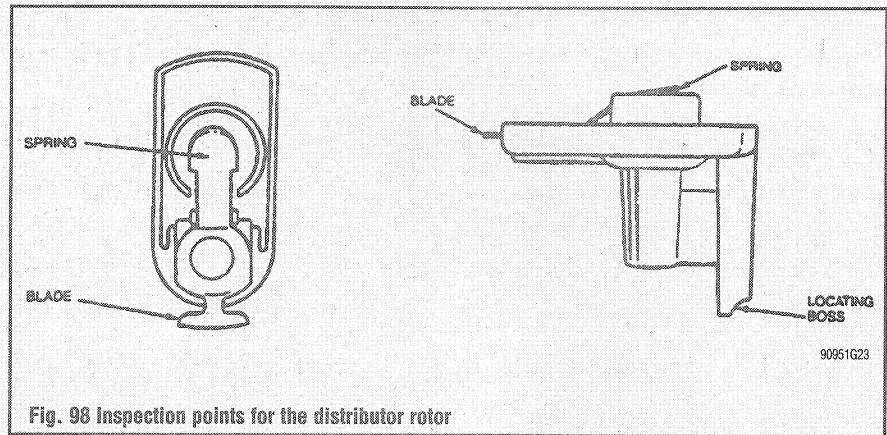


Fig. 98 Inspection points for the distributor rotor

ing screws in the cap to disengage it from the distributor housing.

5. On the 5.0L engine, unsnap the retaining clips holding the cap to the distributor housing.

6. Remove the cap, this exposes the ignition rotor.

7. Note the position of the rotor before removal.

**To install:**

8. To install the rotor, align it to the distributor shaft.

9. Seat the distributor cap onto the distributor housing, making sure to align the cap properly.

10. Install the cap screws carefully to hold the cap in place; or snap the retaining clips onto the distributor cap.

11. Install the negative battery cable.

**INSPECTION**

See Figures 97 and 98

A physical inspection of the distributor cap and rotor should be done at the same time as the plug wires are being checked. When inspecting the distributor cap, check for obvious signs of damage, such as a broken tower, crack in the body of the cap, or external carbon tracks. When checking on the inside of the cap, use a bright light to illuminate the inner surface. Check for charred or eroded terminals, inspect for carbon tracks that go from terminal to terminal or run to the bottom of the cap. Look for a worn or damaged rotor button (center electrode). Also, take a close look at the inside terminals for metal to metal contact. Damaged or cut

terminals could mean a rotor or cap that was not properly installed; or it could mean that the distributor housing has worn beyond its limits and the shaft is wobbling when it rotates, or that the distributor shaft is bent.

**Ignition Timing**

Ignition timing is the measurement, in degrees of crankshaft rotation, of the point at which the spark plugs fire in each of the cylinders. It is measured in degrees before or after Top Dead Center (TDC) of the compression stroke.

Ideally, the air/fuel mixture in the cylinder will be ignited by the spark plug just as the piston passes TDC of the compression stroke. If this happens, the piston will be beginning the power stroke just as the compressed and ignited air/fuel mixture starts to expand. The expansion of the air/fuel mixture then forces the piston down on the power stroke and turns the crankshaft.

Because it takes a fraction of a second for the spark plug to ignite the mixture in the cylinder, the spark plug must fire a little before the piston reaches TDC. Otherwise, the mixture will not be completely ignited as the piston passes TDC and the full power of the explosion will not be used by the engine.

The timing measurement is given in degrees of crankshaft rotation before the piston reaches TDC (BTDC, or Before Top Dead Center). If the setting for the ignition timing is 10 BTDC, each spark plug must fire 10 degrees before each piston reaches TDC. This only holds true, however, when the engine is at idle speed.