

11. Remove the oil filter, then disconnect the radiator lower hose at the water pump.
12. Remove the oil pan. For details, please refer to the procedure located earlier in this section.
13. Lower the vehicle.
14. Remove the front cover attaching bolts.

➔ **Do not overlook the cover-attaching bolt located behind the oil filter adapter. The front cover will break if pried upon and not all of the attaching bolts are removed.**

15. Remove the ignition-timing indicator.
16. Remove the front cover and water pump as an assembly. Remove the cover gasket and discard.

➔ **The front cover houses the oil pump. If a new front cover is to be installed, remove the water pump and oil pump from the old front cover.**

**To install:**

17. Lightly oil all bolt and stud threads before installation. Clean all gasket surfaces on the front cover, cylinder block, and fuel pump. If reusing the front cover, replace crankshaft front oil seal.
18. If a new front cover is to be installed, complete the following:
  - a. Install the oil pump gears.
  - b. Clean the water pump gasket surface.
 Position a new water pump gasket on the front cover and install the water pump. Install the pump attaching bolts and tighten to 15–22 ft. lbs. (20–30 Nm).
19. Install the distributor drive gear.
20. Lubricate the crankshaft front oil seal with clean engine oil.
21. Position a new cover gasket on the cylinder block and install the front cover/water pump assembly using dowels for proper alignment. A suitable contact adhesive is recommended to hold the gasket in position while the front cover is installed.
22. Position and install the ignition-timing indicator.
23. Install the front cover attaching bolts. Apply Loctite® or equivalent, to the threads of the bolt installed below the oil filter housing prior to installation. This bolt is to be installed and tightened last. Tighten all bolts to 15–22 ft. lbs. (20–30 Nm).
24. Raise the vehicle and support safely.
25. Install the oil pan. Connect the radiator lower hose. Install a new oil filter.
26. Coat the crankshaft damper sealing surface with clean engine oil.
27. Position the crankshaft pulley key in the crankshaft keyway.
28. Install the damper with damper washer and attaching bolt. Tighten the bolt to 103–132 ft. lbs. (140–179 Nm).
29. Install the crankshaft pulley and tighten the attaching bolts 19–28 ft. lbs. (26–38 Nm).
30. Lower the vehicle.
31. Connect the coolant bypass hose.
32. Install the distributor with rotor pointing at No. 1 distributor cap tower. Install the distributor cap and coil wire.
33. Connect the radiator upper hose at thermostat housing.
34. Connect the heater hose.
35. If equipped with air conditioning, install compressor and mounting brackets.
36. Install the power steering pump and mounting brackets.

37. Position the accessory drive belt over the pulleys.

38. Install the water pump pulley. Position the accessory drive belt over water pump pulley and tighten the belt.

39. Connect the negative battery cable. Fill the crankcase and cooling system to the proper level.

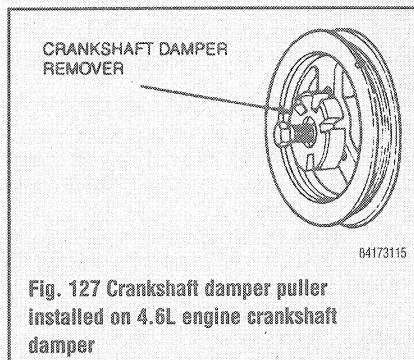
40. Install the air cleaner assembly and air intake duct.

41. Start the engine and check for leaks.
42. Check the ignition timing and adjust as required.

### 4.6L Engine

➔ **See Figures 127, 128 and 129**

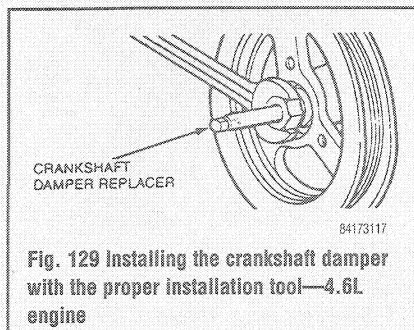
1. Disconnect the negative battery cable.
2. Release the belt tensioner and remove the accessory drive belt.
3. Raise and safely support the vehicle.
4. Remove the crankshaft damper retaining bolt and washer. Remove the damper using a suitable puller.



**Fig. 127 Crankshaft damper puller installed on 4.6L engine crankshaft damper**



**Fig. 128 Apply silicone sealer to the damper keyway as shown—4.6L engine**



**Fig. 129 Installing the crankshaft damper with the proper installation tool—4.6L engine**

**To install:**

5. Apply clean engine oil to the sealing surface of the damper. Apply a small amount of silicone sealer to the rear of the damper keyway. Using a damper installer, install the crankshaft damper. Be sure the key on the crankshaft aligns with the keyway in the damper.

**\*\* WARNING**

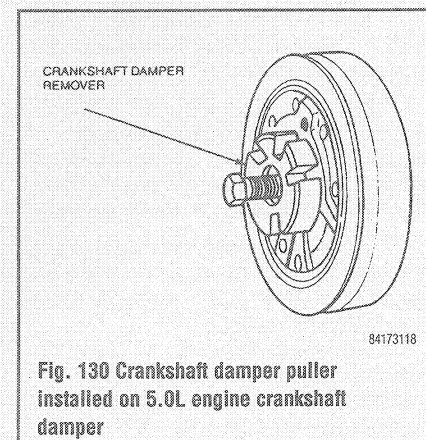
**Do not drive the damper onto the crankshaft with a hammer; damage to the crankshaft and/or thrust bearings may result. Always use a crankshaft damper installation tool.**

6. Install the crankshaft damper retaining bolt and washer and tighten to 114–121 ft. lbs. (155–165 Nm).
7. Lower the vehicle and install the accessory drive belt.
8. Connect the negative battery cable, start the engine, and check for leaks.

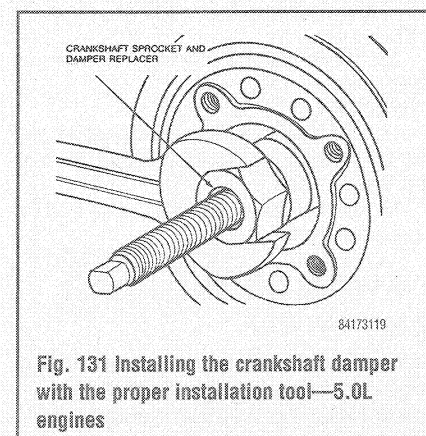
### 5.0L Engines

➔ **See Figures 130 and 131**

1. Disconnect the negative battery cable.
2. Remove the fan shroud and position it back over the fan. Remove the fan/clutch assembly and shroud.
3. Remove the accessory drive belts.
4. Remove the crankshaft pulley from the damper and remove the damper retaining bolt. Remove the damper using a suitable puller.



**Fig. 130 Crankshaft damper puller installed on 5.0L engine crankshaft damper**



**Fig. 131 Installing the crankshaft damper with the proper installation tool—5.0L engines**