

## REMOVAL & INSTALLATION

**CAUTION:** This application is an interference engine. Do not rotate camshaft or crankshaft when timing belt is removed, or engine damage may occur.

### TIMING BELT

**CAUTION:** DO NOT turn crankshaft or camshafts while timing belt is removed.

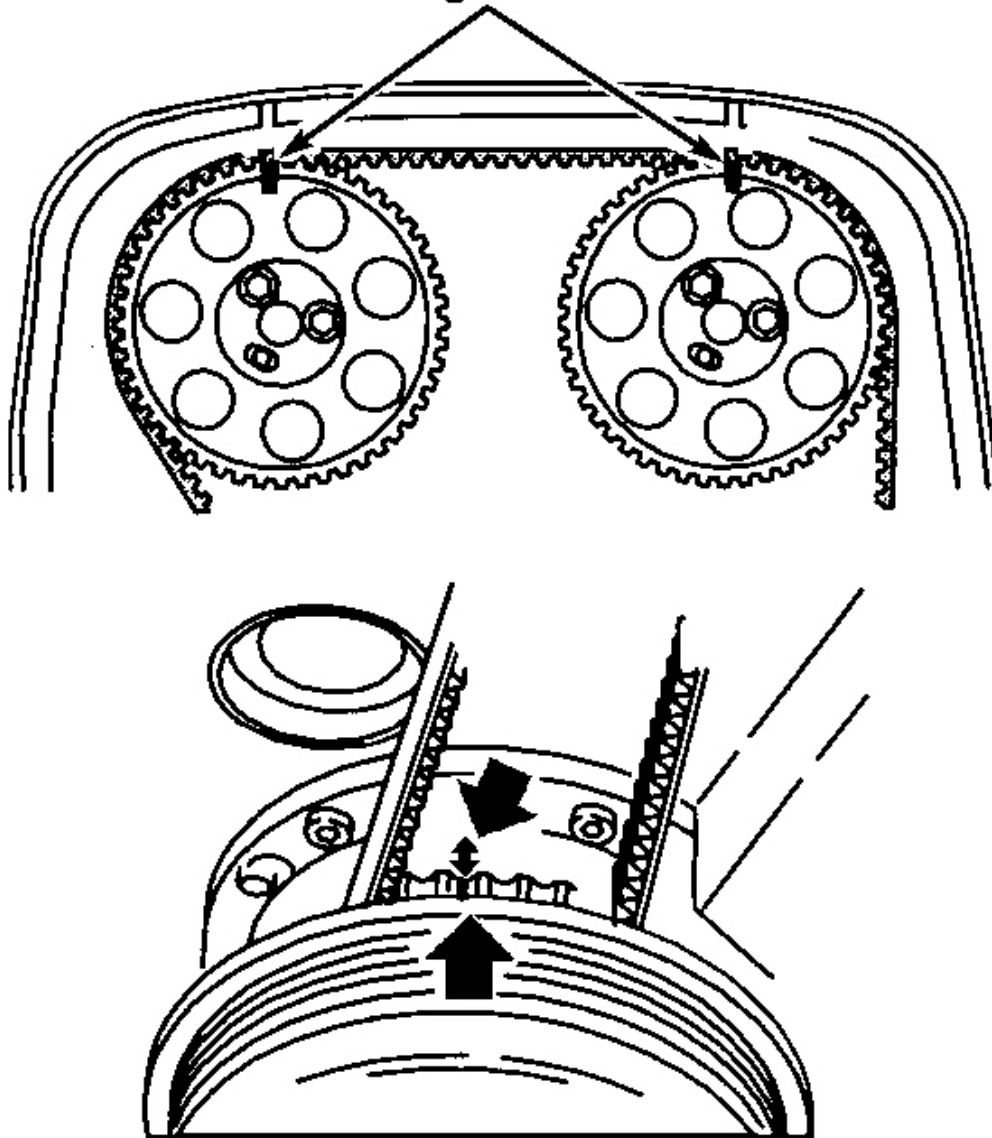
#### Removal

1. Remove key from ignition switch. On all models except C70, remove cross brace between front shock towers.

**WARNING:** DO NOT spill power steering fluid. It is extremely flammable.

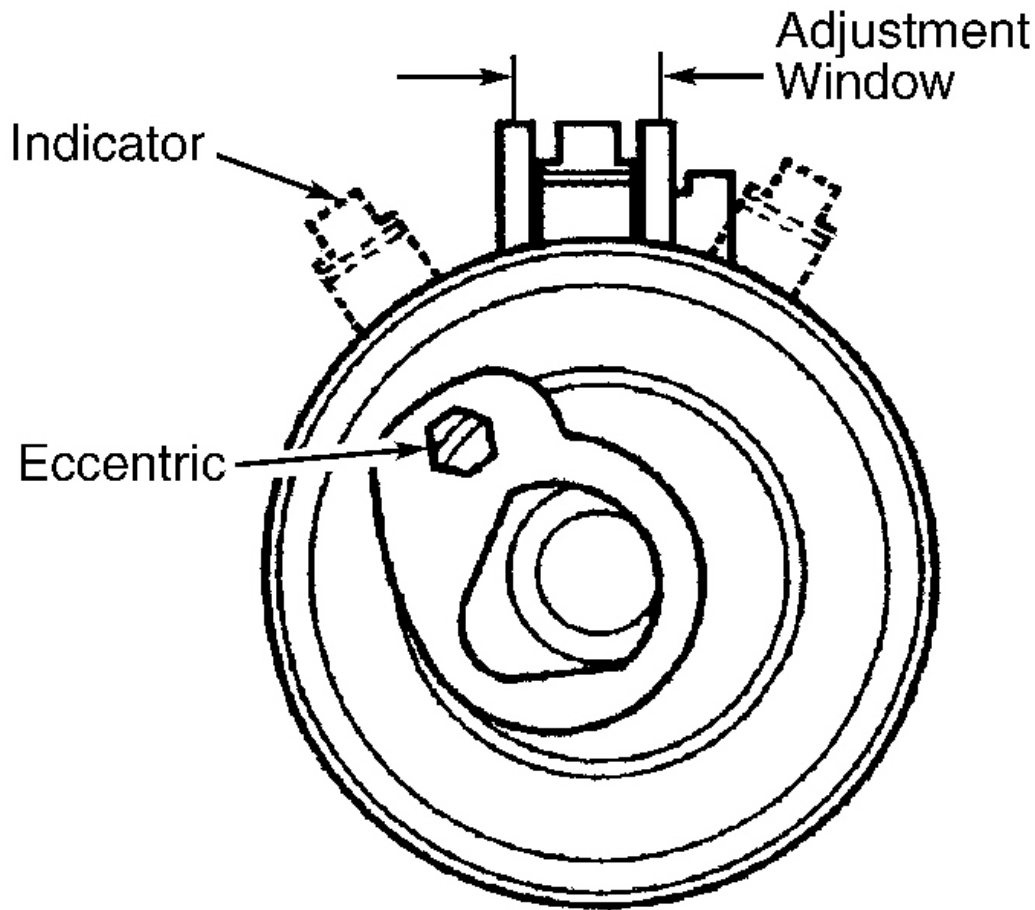
2. On all models, remove upper timing belt cover. Remove power steering pump reservoir with hoses attached, and set aside. Remove coolant reservoir and set aside. If necessary, use a small screwdriver and remove plastic cover on accessory belt tensioner. Use a wrench and turn accessory belt tensioner clockwise to release tension and remove accessory drive belt.
3. Remove front timing belt cover. Raise and support vehicle. Remove right front wheel. Remove nut from fender liner cover.
4. Install upper timing belt cover. Turn crankshaft clockwise (as viewed from timing belt end of engine) to align timing marks on timing belt cover, crankshaft pulley and camshaft sprockets. See **Fig. 1**. Turn crankshaft an additional 1/4 turn clockwise, and then back again until timing marks align.
5. Remove upper timing belt cover. Loosen timing belt tensioner pulley center bolt slightly. Holding center bolt, turn tensioner eccentric clockwise with a 6-mm Allen wrench. Turn eccentric until hole for Allen wrench is at 10 o'clock position. See **Fig. 2**.
6. Remove timing belt from tension pulley, camshaft pulley and water pump.
7. Holding vibration damper stationary with Counterhold (999 5433) or equivalent, work vibration damper loose. Remove timing belt.

### Camshaft Sprocket Timing Marks



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**Fig. 1: Aligning Crankshaft & Camshaft Timing Marks**  
Courtesy of VOLVO CARS OF NORTH AMERICA.



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**Fig. 2: Identifying Timing Belt Tensioner**

Courtesy of VOLVO CARS OF NORTH AMERICA.

**Inspection**

Spin tensioner and idler pulleys, and listen for bearing noise. Ensure pulley surfaces in contact with belt are clean and smooth.

**Installation**

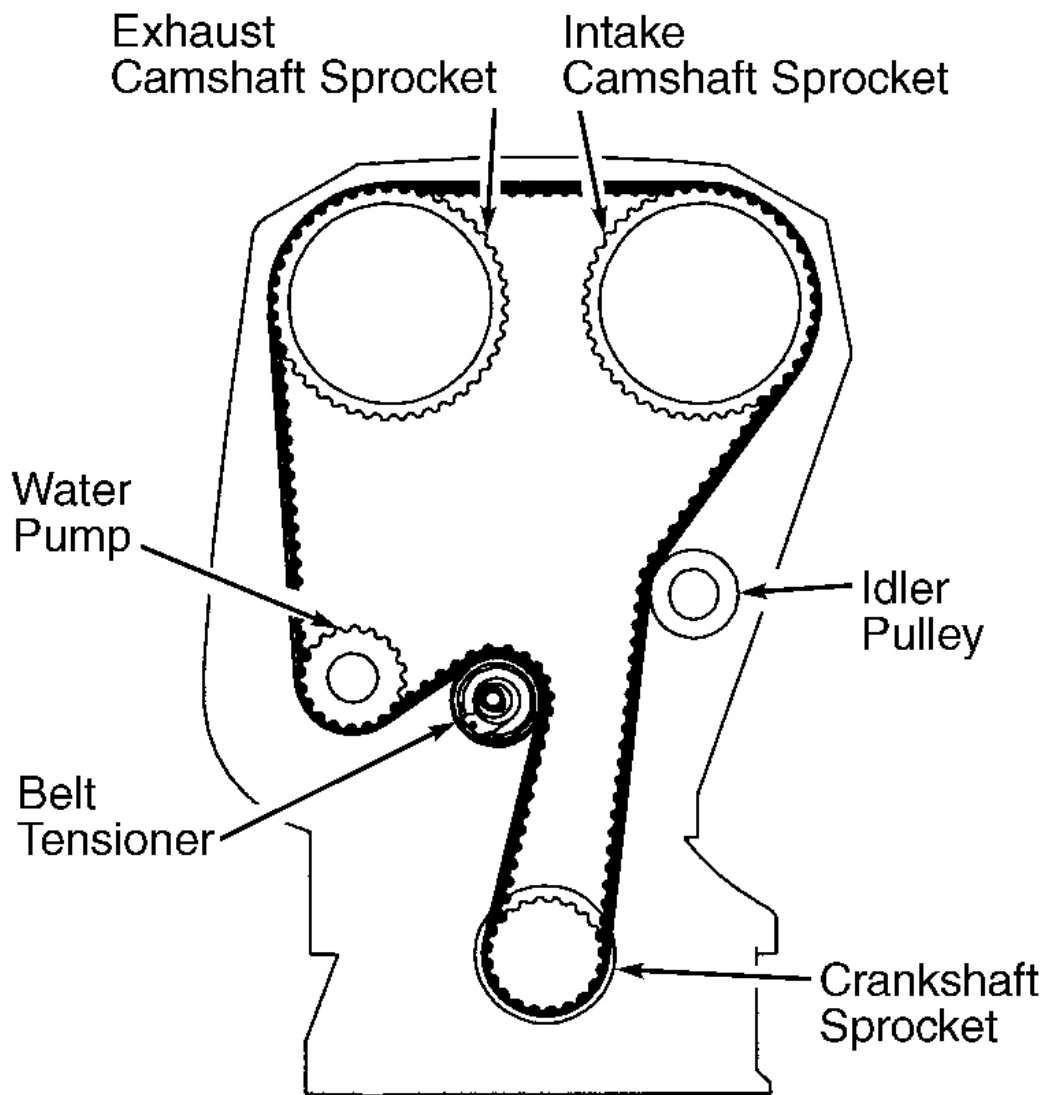
1. If timing belt tensioner was removed, ensure tensioner fork is installed with fork centered over rib on engine block.
2. Place timing belt around crankshaft pulley. Install vibration damper. Install vibration damper center bolt.

Hold vibration damper stationary with Counterhold (999 5433) or equivalent, and tighten center bolt to specification. See **TORQUE SPECIFICATIONS** . Remove Counterhold and install NEW screws. Tighten to specification. See **TORQUE SPECIFICATIONS** .

3. Place timing belt around idler pulley, intake camshaft pulley, exhaust camshaft pulley, water pump and timing belt tensioner. See **Fig. 3** .

**NOTE:**        **Timing belt tension MUST be adjusted when engine is cold. Around 68°F (20°C) is best temperature.**

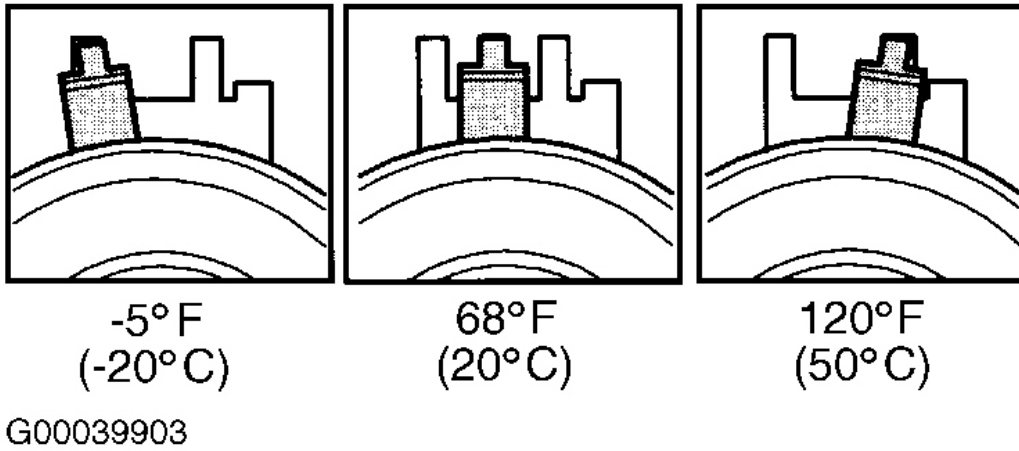
4. Slowly turn crankshaft clockwise (as viewed from timing belt end of engine) until timing belt is tensioned. Belt should be tight between intake camshaft sprocket, idler pulley and crankshaft sprocket.
5. Hold timing belt tensioner pulley bolt secure, and turn tensioner eccentric counterclockwise until tensioner needle passes to right of center position. See **Fig. 4** .
6. Turn tensioner eccentric back until needle reaches marked position corresponding to engine temperature. At 68°F (20°C), needle must be centered in window.
7. Holding timing belt tensioner eccentric steady, tighten center bolt to 15 ft. lbs. (20 N.m). Ensure tensioner needle is still in correct position. Press timing belt to see if indicator on tensioner moves easily.
8. Turn crankshaft 2 revolutions in normal direction of rotation. Ensure camshaft and crankshaft sprocket timing marks are still aligned. Ensure timing belt tensioner indicator is in correct position for engine temperature.
9. Install front timing belt cover. Install upper timing belt cover. Tighten bolts to specification. See **TORQUE SPECIFICATIONS** . Install accessory drive belt. Install power steering reservoir. Check power steering fluid level. Refill, if necessary.
10. Install coolant reservoir. Install fender liner cover. Install front wheel. On all models except C70, install cross brace between shock towers. Tighten fasteners to specification. See **TORQUE SPECIFICATIONS** .



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**Fig. 3: Identifying Timing Belt Routing**

Courtesy of VOLVO CARS OF NORTH AMERICA.



**Fig. 4: Adjusting Timing Belt Tension**  
Courtesy of VOLVO CARS OF NORTH AMERICA.