

**VOLKSWAGEN**

**2.0L 4-Cylinder - AEG, AVH, AZG, BDC & BEV Engines**

**MANUFACTURER'S SUGGESTED SCHEDULED MAINTENANCE**

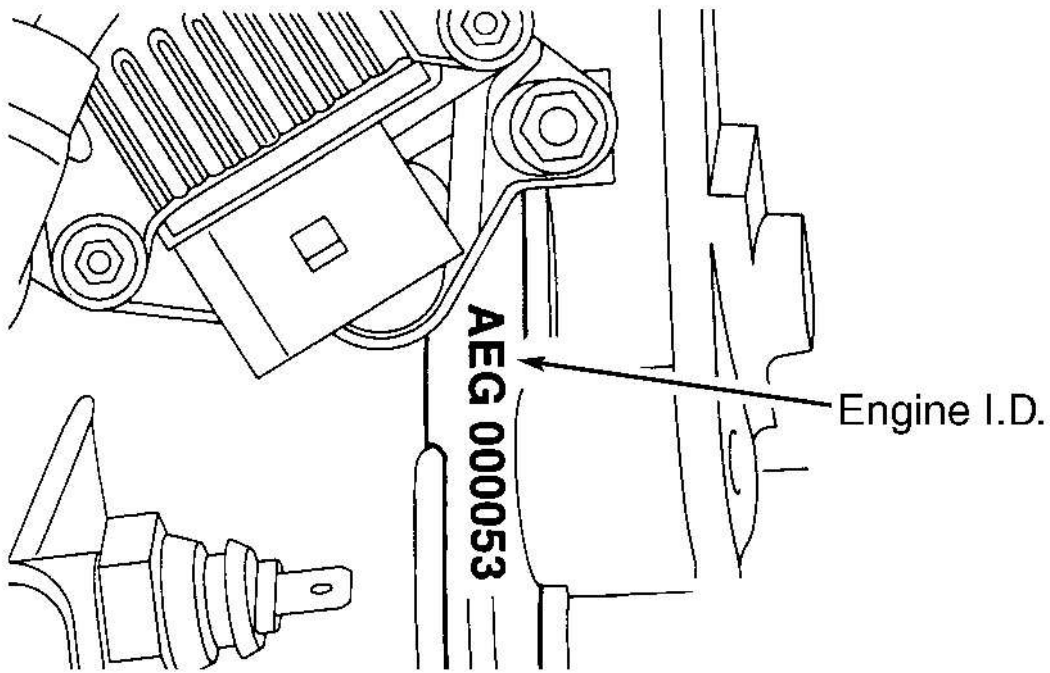
For 1998-00 model years, although the manufacturer does not recommend a specific scheduled maintenance interval, belt manufacturers suggest the belt be replaced at 60,000 mile intervals. For 2001-03 model years, the manufacturer recommends the belt be replaced at 105,000 mile intervals.

**NOTE:** For 2004, manufacturer does not provide a timing belt replacement interval.

**REMOVAL & INSTALLATION**

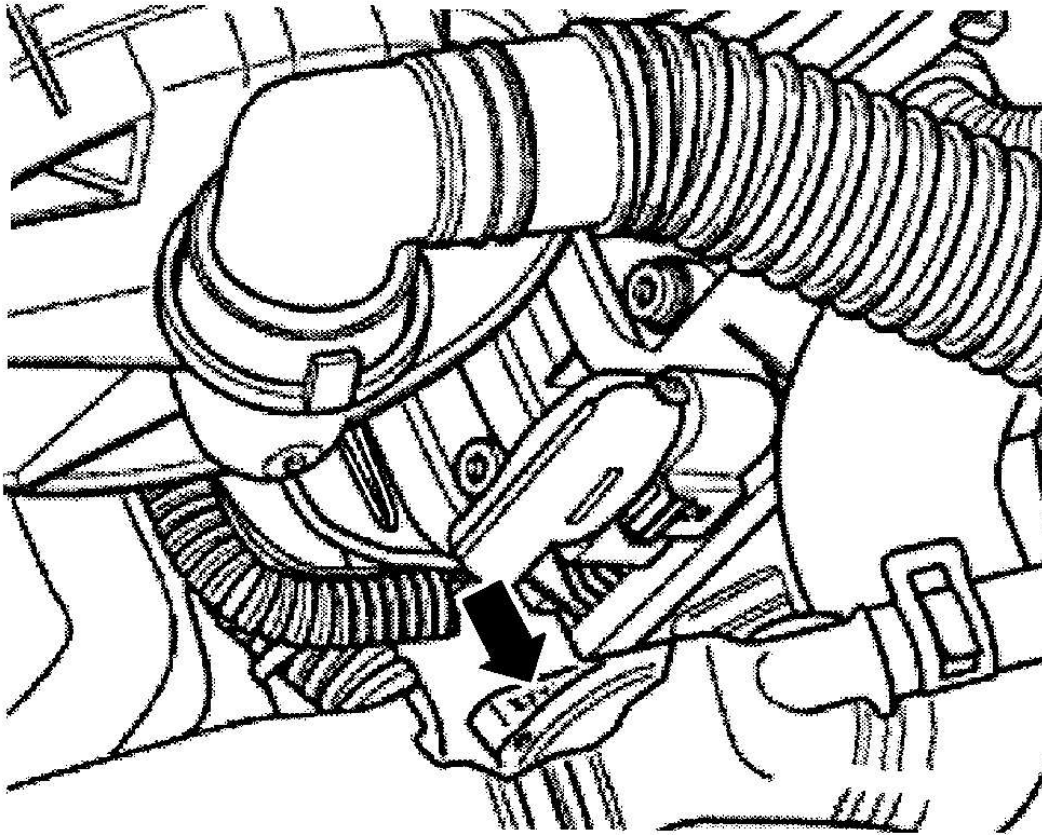
**CAUTION:** This application is an interference engine. Do not rotate camshaft or crankshaft when timing belt is removed, or engine damage may occur.

**NOTE:** Engine code AEG is stamped into machined pad on front of cylinder block above crankcase breather, near cylinder head mating surface. See Fig. 1 . For all other 2.0L engines, engine code is stamped on transmission mating flange at the rear of the engine. See Fig. 2 . For all engines, code can also be found on the vehicle data plate and on a sticker on the timing belt cover.



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**Fig. 1: Locating Engine Identification Code (AEG)**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.



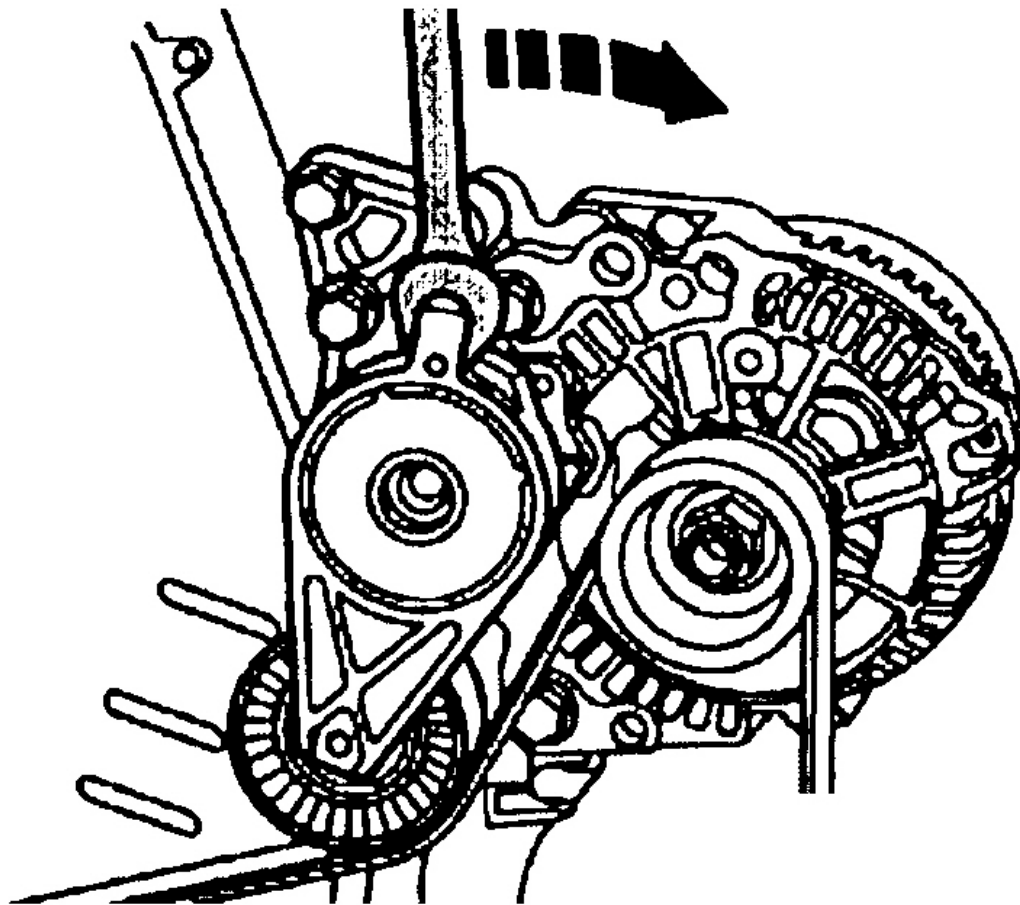
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**Fig. 2: Locating Engine Identification Code (AVH, AZG, BDC & BEV)**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.

## TIMING BELT

### Removal (AEG, AVH, AZG, BEV & BDC Engine Codes)

1. Remove right hand insulation tray from engine compartment. Remove engine cover. Rotate serpentine belt tensioner clockwise to relieve belt tension. Remove serpentine belt. See **Fig. 3** . Lock in place using Mandrel (T10060) or a drift.



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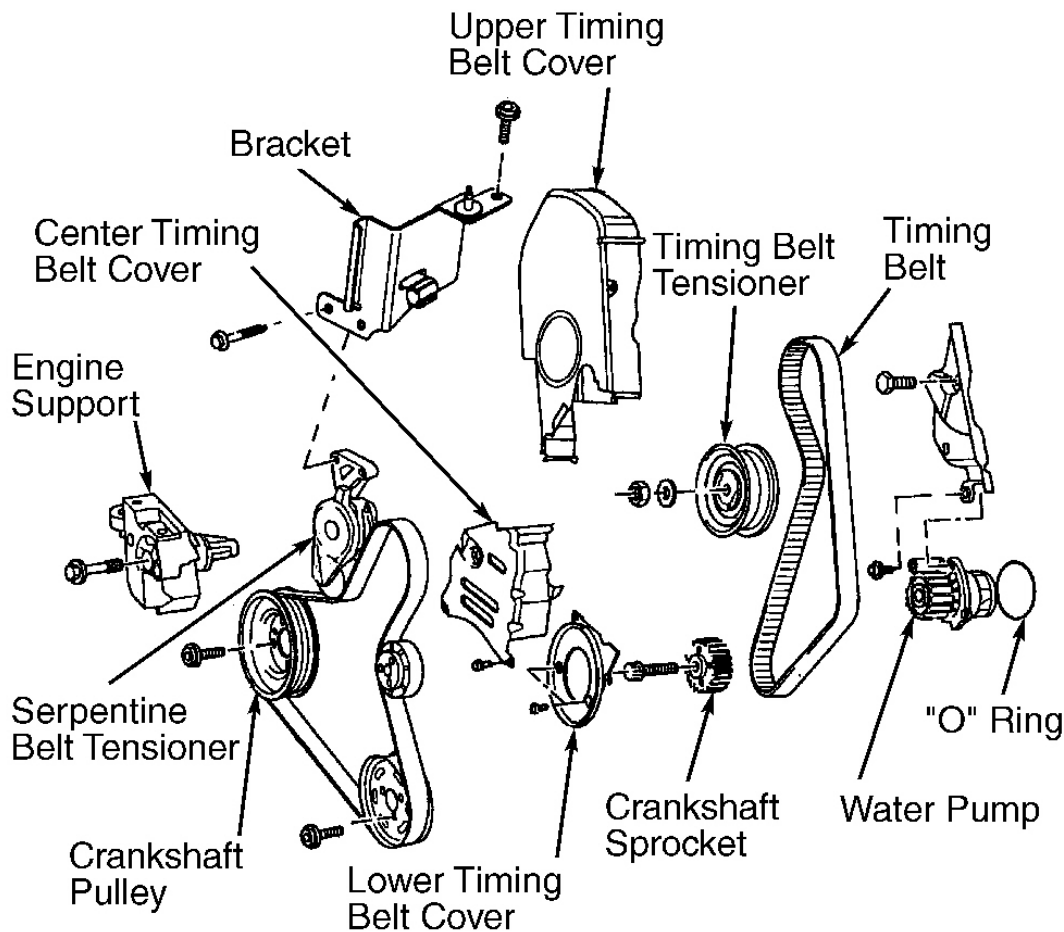
**Fig. 3: Releasing Serpentine Belt Tensioner**

Courtesy of VOLKSWAGEN UNITED STATES, INC.

2. Remove serpentine belt tensioner assembly. See **Fig. 4** . Turn crankshaft to TDC position. See **Fig. 5** . Align TDC marks visible in bellhousing access hole. See **Fig. 6** . Remove upper timing belt cover. Ensure camshaft sprocket timing mark aligns with mark on rear cover. See **Fig. 5** .
3. Support engine from above or below with floor jack to take engine weight off of mounts. Remove coolant reservoir and set aside. On Golf and Jetta, remove power steering reservoir (hoses attached), and set aside. On New Beetle, pull off EVAP hoses at EVAP canister and throttle valve housing.
4. On all models, remove engine mount from timing belt end of engine. See **Fig. 7** . Remove crankshaft pulley from crankshaft sprocket. It is NOT necessary to remove center bolt (center bolt is torque-to-yield type that must be replaced if removed).
5. Remove timing belt covers. Remove engine support from front of engine. See **Fig. 4** .

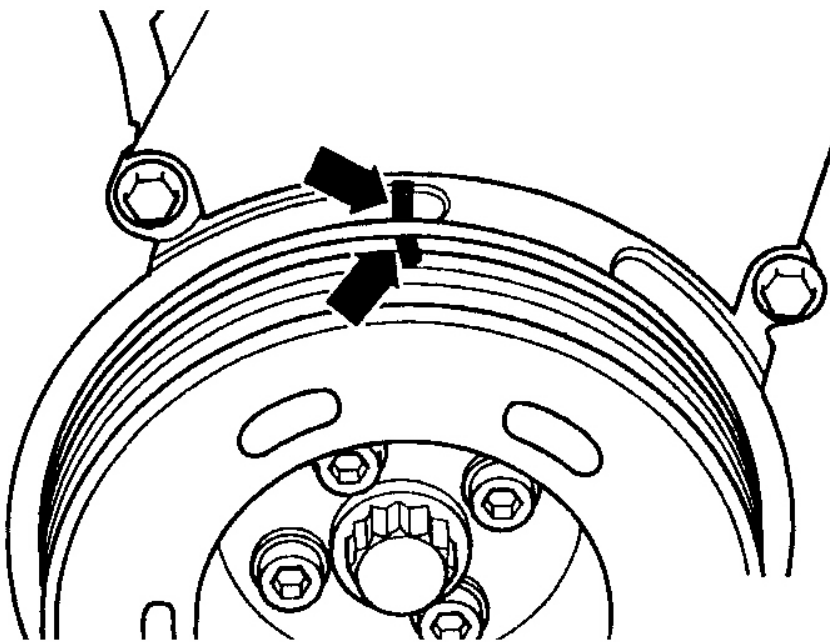
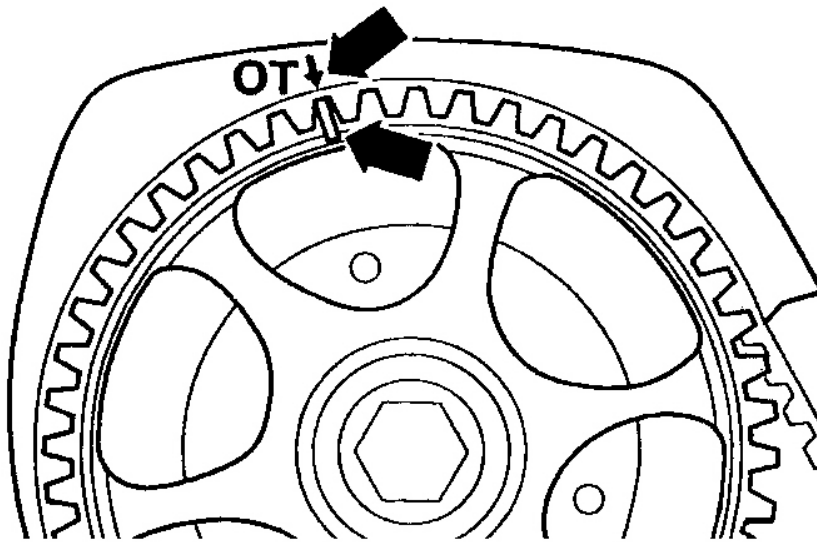
**CAUTION: To prevent valves from contacting piston, DO NOT rotate camshaft or crankshaft with timing belt removed.**

6. If reusing old belt, mark belt with arrow to indicate original direction of rotation. Loosen timing belt tensioner nut and rotate timing belt tensioner away from belt to remove timing belt. See **Fig. 8**.



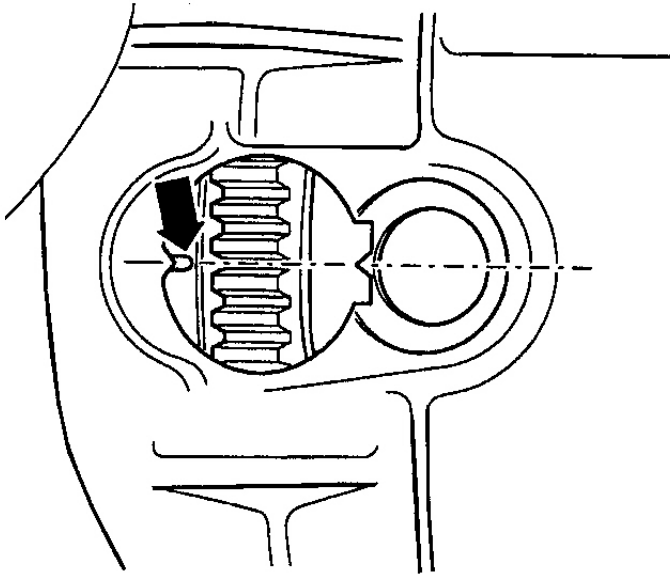
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**Fig. 4: Exploded View Of Timing Belt & Components (AEG, AVH, AZG, BDC & BEV Engine Codes)**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

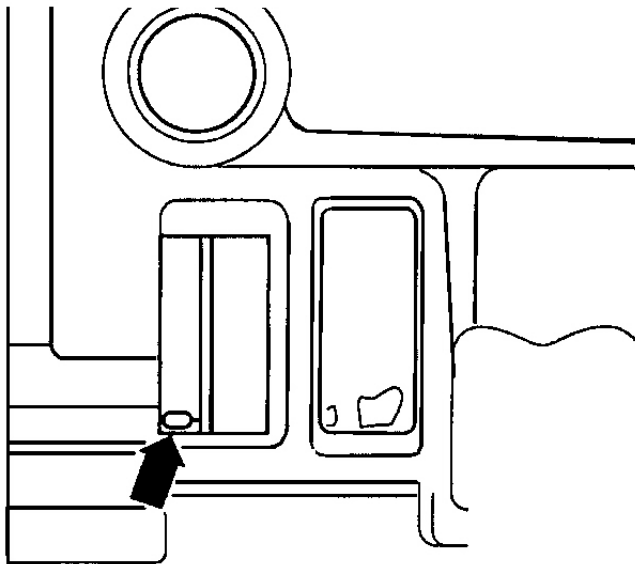


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**Fig. 5: Aligning Crankshaft & Camshaft Timing Marks**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.



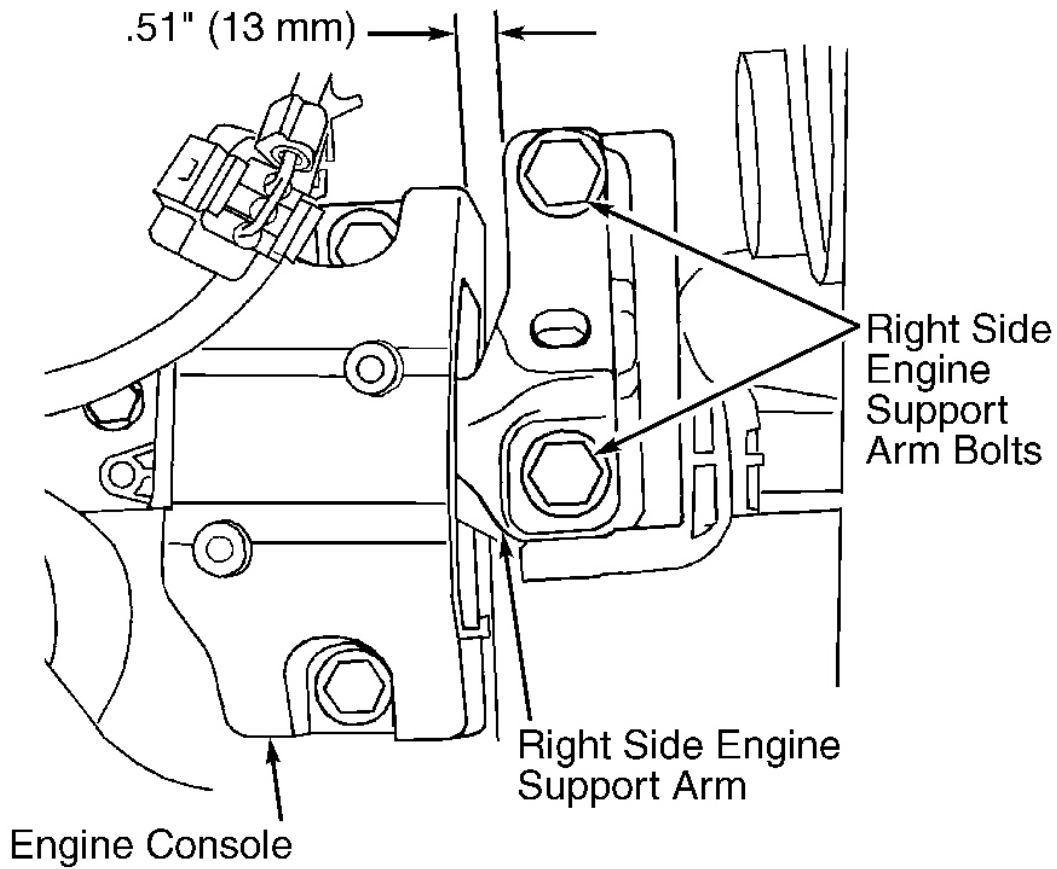
MANUAL TRANSMISSION



AUTOMATIC TRANSMISSION

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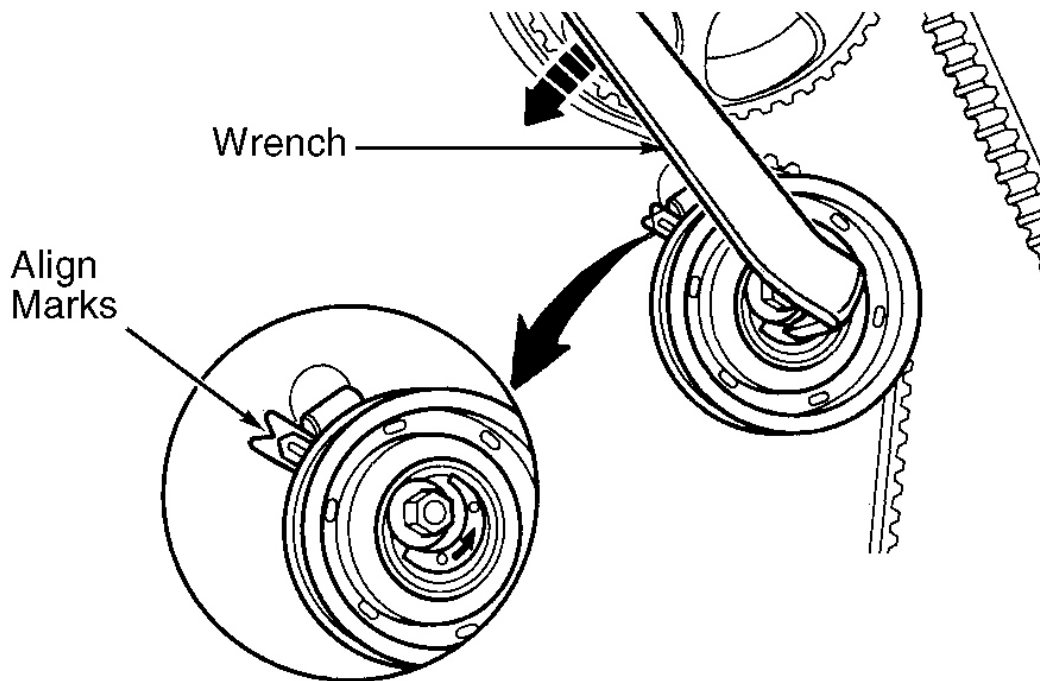
**Fig. 6: Locating TDC Mark on Transaxle**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.



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**Fig. 7: Identifying Right-Hand Engine Mount**  
Courtesy of VOLKSWAGEN UNITED STATES, INC.





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**Fig. 8: Releasing/Adjusting Timing Belt Tension**  
 Courtesy of VOLKSWAGEN UNITED STATES, INC.

**Installation (AEG, AVH, AZG, BDC & BEV Engine Codes)**

1. Ensure crankshaft and camshaft timing marks are still aligned. See **Fig. 5** and **Fig. 6**.
2. Install timing belt around crankshaft and water pump sprockets. Install engine support on front of engine block. Tighten mounting bolts to specification. See **TORQUE SPECIFICATIONS**.
3. Install timing belt lower and center covers. Install crankshaft pulley and tighten bolts to specification. Install engine mount-to-body and engine support. Remove floor jack or engine support bar from engine.
4. Install timing belt on camshaft sprocket and timing belt tensioner. Make sure there is no slack in timing belt.
5. To tension timing belt, engine must be at most warm to the touch. Rotate tensioner pulley counterclockwise until tensioner arrow is aligned with cut-out on cylinder head. See **Fig. 8**.
6. Tighten tensioner pulley center nut to specification. Rotate crankshaft 2 revolutions in normal direction of rotation, and recheck check belt tension. Adjust tension as necessary. Recheck all timing marks again.
7. Install upper timing belt cover. Install serpentine belt tensioner and serpentine belt. To complete installation, reverse removal procedure. Tighten all fasteners to specification. See **TORQUE SPECIFICATIONS**.

**TORQUE SPECIFICATIONS**

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**1999 Volkswagen New Beetle GL**

VOLKSWAGEN 2.0L 4-Cylinder - AEG, AVH, AZG, BDC &amp; BEV Engines

**TORQUE SPECIFICATIONS**

<b>Application</b>	<b>Ft. Lbs. (N.m)</b>
Camshaft Sprocket Bolt	74 (100)
Camshaft Sprocket Sealing Plug	18 (25)
<b>Crankshaft Pulley Socket-Head Bolts</b>	
Golf, GTI & Jetta	30 (40)
New Beetle	18 (25)
Crankshaft Sprocket Center Bolt	(1) , (2) 66 (90)
<b>Engine Mounting Bolts</b>	
Engine Support-To-Engine Block	33 (45)
Mounting Bracket-To-Body (Small Bolt)	18 (25)
Mounting Bracket-To-Body Bolts (Large Bolts) (1)	(2)
Mount-To-Body	74 (100)
Serpentine Belt Tensioner Bolt	18 (25)
Timing Belt Tensioner Center Nut	15 (20)
Water Pump Bolt	11 (15)
	<b>INCH Lbs. (N.m)</b>
Timing Belt Cover Bolt	89 (10)
Valve Cover Retaining Nut	89 (10)
(1) Replace torque-to-yield bolt on installation.	
(2) First tighten to (40 N.m), then tighten bolts an additional 90 degrees (1/4 turn).	