

Recommended Installation Procedure

ATech Timing Belt Tensioner

979178 - VW 2.5L, 5cyl. TDI - Release Date: 20/JAN/04

979154 - VW 2.5L, 5cyl. Gas – Release Date: 26/NOV/06

Initial Preparation:

- ◆ **Caution:** The procedure to access the timing belt tensioner and all other timing driven components must be done according to VW's guidelines.
- ◆ The mounting of the Timing Belt Tensioner (see fig. 1) is done on the engine with a stud (provided on the engine block) and an *M8 Mounting nut*.

Engine temperature:

1. The tensioner must be installed on the engine at room temperature by allowing the engine to stabilize to room temperature for proper belt tension adjustment. **Do not attempt to install a tensioner onto a hot engine.** (For reference, the minimum engine cooling period is 4 hours in tropical climatic regions).

Crankshaft and Camshaft TDC position setup

2. Rotate the crankshaft **CLOCKWISE ONLY** to **TDC** (Top Dead Center) position (i.e. #1 cylinder firing position), review VW's Guidelines on how to set the crankshaft and camshaft position at TDC. For this application:
 - ◆ The crankshaft sprocket timing mark has to be aligned with the timing mark on the engine block. Review VW's guidelines for location and access.
 - ◆ The camshaft timing mark has to also align with the mark on the rear cover. Review VW's guidelines for location and access.

Caution:

If the alignment of the crankshaft and the engine block is missed, DO NOT rotate the crankshaft counterclockwise to the correct position, but rather rotate the Crankshaft 2 more full rotations with the camshaft to the timing position. This is to be accomplished while the belt is still attached. Also, DO NOT at anytime rotate the crankshaft and the camshaft when the timing belt is removed.

Belt and Timing Belt Tensioner removal

3. Once the procedure for setting the TDC position is completed, loosen the *M8 Mounting nut* and rotate the Timing Belt Tensioner away from the belt (**clockwise**) to release the belt tension using a 6mm hex key.
4. Remove the timing belt, the tensioner's *M8 Mounting nut* and the OLD Timing Belt Tensioner. It is recommended to replace the timing belt during the replacement of the Timing Belt Tensioner.

Installation of the Timing Belt Tensioner and the Belt

5. Install a new Timing Belt Tensioner on the engine mounting stud, and engage the spring tang hook of the Timing Belt Tensioner (fig.1) with the slot on the timing rear cover. Ensure that the Timing Belt Tensioner is properly seated on the engine mounting surface.
6. Hand tighten (lightly) the *M8 Mounting nut*.
7. Install the timing belt being careful to engage the appropriate teeth of all the corresponding sprockets as per drive layout (see fig. 2) starting with the crankshaft, the idler and working counterclockwise the water pump and camshaft sprocket. Ensure that the belt is tight between the crankshaft and camshaft sprockets. Manually tension (hold) the belt over the Timing Belt Tensioner.

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8. Engage a 6mm Hex Key with the Timing Belt Tensioner's arm Hex Hole and rotate the Timing Belt Tensioner **clockwise** until enough space is provided to install the belt. Once the belt is installed over the Timing Belt Tensioner pulley remove the 6mm Hex Key.
Note: Ensure that during the rotation of the Timing Belt Tensioner in the clockwise direction that the M8 mounting nut does not tighten on the Timing Belt Tensioner.
9. Rotate the crankshaft 2 full turns. Just before reaching the TDC, slow down the manual rotation and align the TDC marks.
10. Torque the mounting nut to **15-20 Nm**.

Verification of TDC Position

11. Rotate the Crankshaft 2 complete revolutions **CLOCKWISE manually** for proper seating of the belt until the crankshaft is repositioned at the TDC position. Use the slow rotation at the end of the second turn.
 - ◆ Check the **TDC** alignment of the crankshaft and the camshaft per VW's guide lines. If the alignment of all sprockets are within the guidelines, the installation is complete.
 - ◆ If any of the crankshaft or camshaft sprockets are not aligned at the TDC position, the belt has to be removed and the installation procedure has to be repeated starting at step 2. *However, the Timing Belt Tensioner does not have to be removed.*

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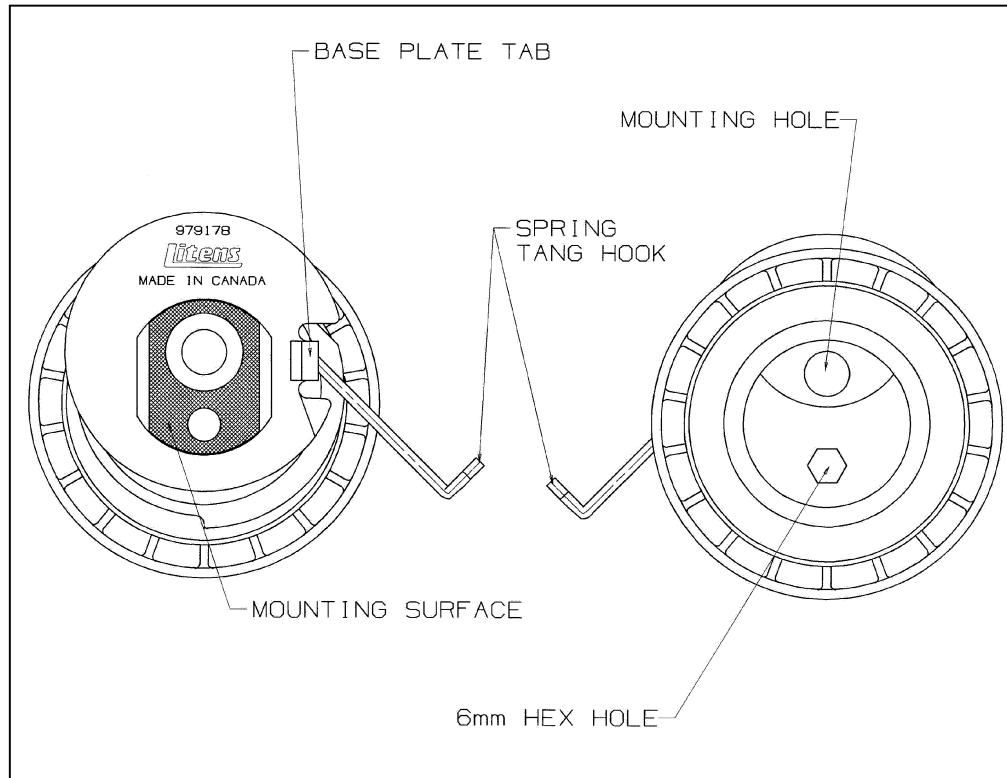


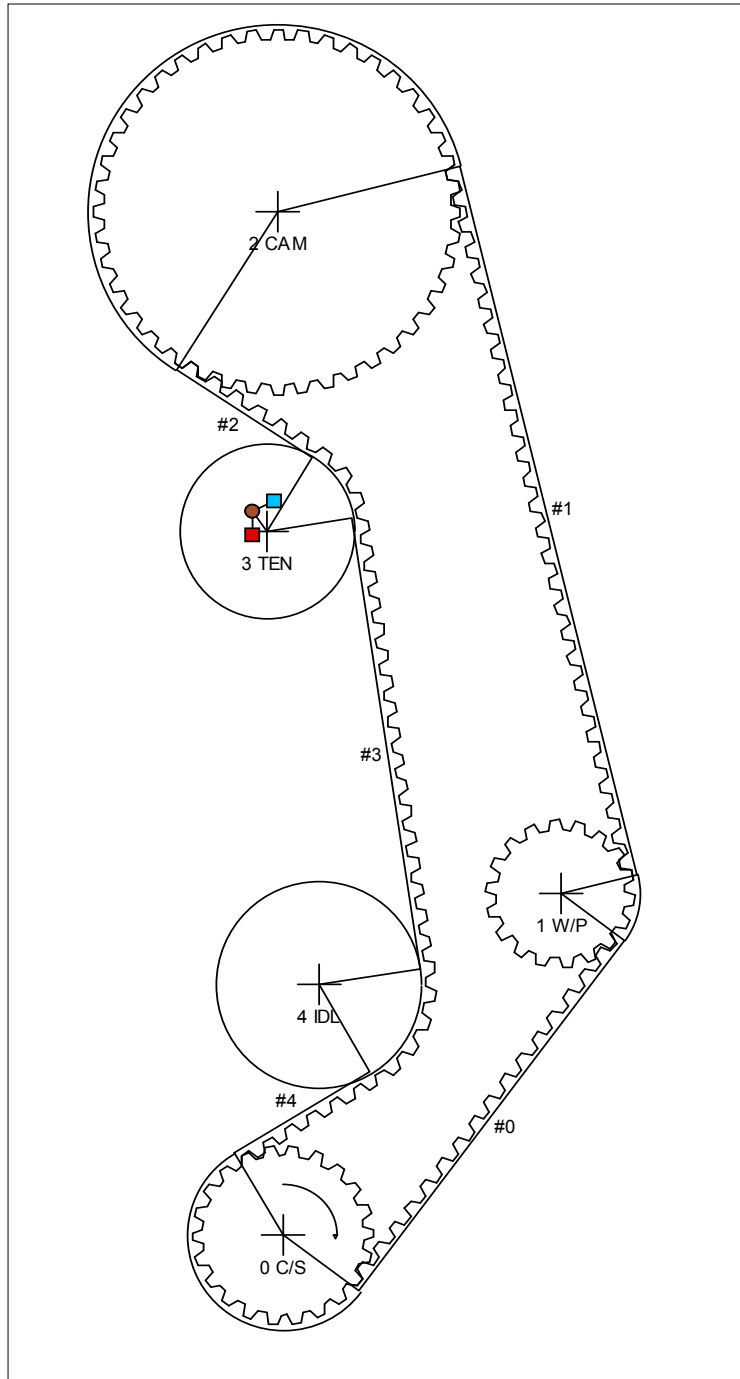
Figure 1: Timing Belt Tensioner

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0,C/S: Crankshaft - 1,W/P: Water Pump - 2,CAM: Camshaft - 3,TEN: TIMING BELT TENSIONER (TBT) - 4,IDL: Idler

Figure 2: Timing Drive Layout