

Recommended Installation Procedure

Atech Timing Belt Tensioner 979344
VW EA111 1.0L/1.6L TASSE 16V (Gas)
(Revision Date: 10/24/2003)

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.

Cold Engine – Cold tensioner:

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

Crank and Camshaft 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 crank and cam shaft position at TDC. For this application:
The mark of crankshaft has to be aligned with the one on the engine block, see Fig.3.
The marks of camshafts have to line up, see Fig.2.

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 camshafts to the timing position. This is to be accomplished while the belt is still attached.

Belt and TBT Tensioner removal

Once the procedure for setting the TDC is completed according to **VW's** guidelines:

3. Loosen the Mounting Bolt and rotate the TBT's installation shaft away from the belt (Counterclockwise) to release the belt tension.
4. Remove the timing belt, the tensioner's Mounting Bolt and the OLD TBT.

Initial Setup of the TBT (Timing Belt Tensioner)

5. Mount the new TBT (see Fig. 4) on the engine ensuring that the tensioner's Anti-Rotation Fingers fit into the Guiding Nut on the engine (see Fig 4 + 5).
6. Rotate the TBT installation shaft washer **CLOCKWISE** until its Hex Hole is pointing at "**5 O'clock position**", see Fig. 5. Hand tighten (lightly) the M8 mounting bolt. This will maximize the belt clearance for ease of installation.

Installation of the TBT and the Belt

9. Install the timing belt being careful to engage the appropriate teeth of all the corresponding sprockets as per drive layout (see Fig.1) starting with the crankshaft and working counterclockwise.
8. Rotate the Installation Shaft Washer **CLOCKWISE** with a 6 mm Hex Key. Make sure to hold the mounting bolt with 13mm wrench for preventing it from turning when rotating the installation shaft. The Tensioner assembly will move against the belt and the Arm Pointer will eventually start to move **CLOCKWISE** (See Fig. 6).

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9. Continue rotating the Installation Shaft until the Arm pointer is positioned within the Nominal Position Window, (see Fig 6 & 7). Lock the tensioner in this position by torquing the Mounting Bolt to **19±3Nm**.

Caution:

Do not over-torque or under-torque the mounting Bolt.

Do not disturb the TDC position during this procedure.

Verification of the Nominal Position

10. Remove the 6mm Hex Key, the 13mm Wrench, Rotate the Crankshaft two complete revolutions **clockwise manually** for proper seating of the belt until the crankshaft is repositioned at the TDC position.

Caution: Repositioning the crankshaft to TDC position must be done only during clockwise rotation, do not rotate the Crankshaft counterclockwise to the correct position, but rather rotate the Crankshaft 2 more full rotations to the alignment points.

11. Check the position of the Arm Pointer.
If the Arm Pointer aligns with **Nominal Position Window** (see Fig 7), the installation is complete.
If not, proceed as follows. (The installation needs to be re-adjusted until the proper position is achieved).

Re-adjustment

12. Re-set the crankshaft and camshafts at TDC position if not done already. Engage the 6mm Hex Key and retain the installation shaft's position while loosening the Mounting Bolt with the 13mm Wrench. The Mounting Bolt and the Tensioner do not need to be removed.
13. Rotate the Installation Shaft with the Hex Key until the Arm Pointer aligns with **Nominal Position Window** (see Fig 6 & 7).
14. Re-torque the Mounting Bolt (**19±3 Nm**) while preventing the Installation Shaft from turning by holding it with the Hex Key (see Fig 5).
15. Repeat step #10, #11.

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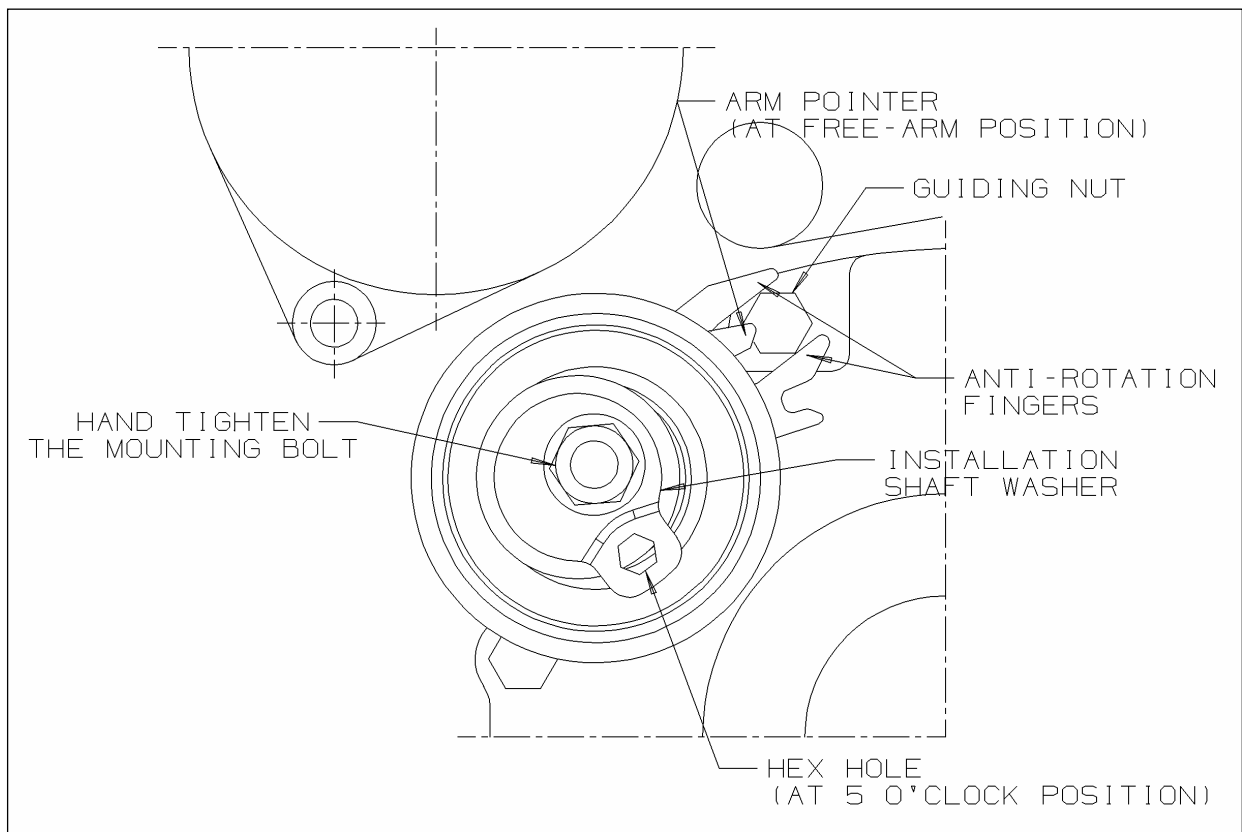
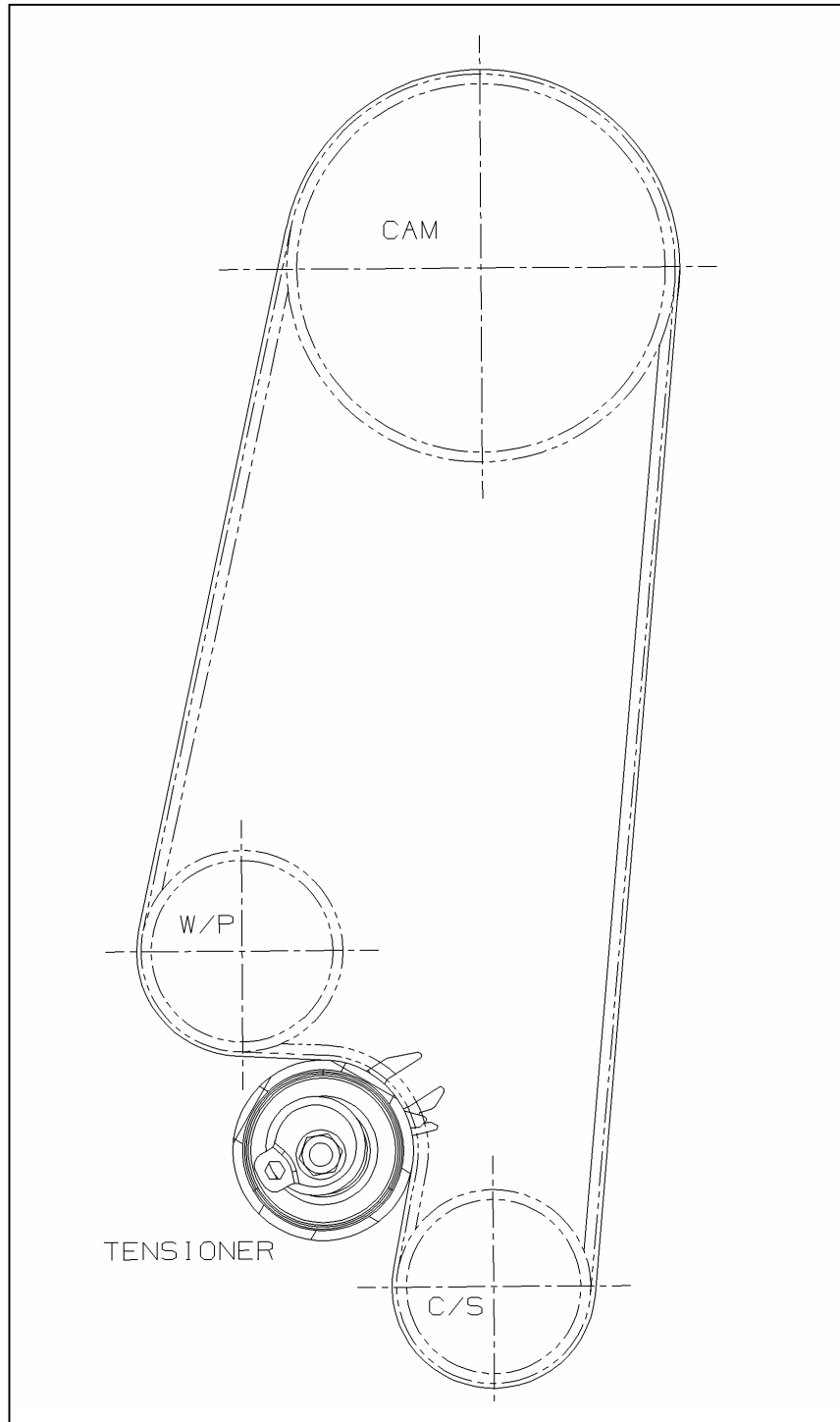


Figure 1: Tensioner shown at Free-Arm position placed on the mounting surface

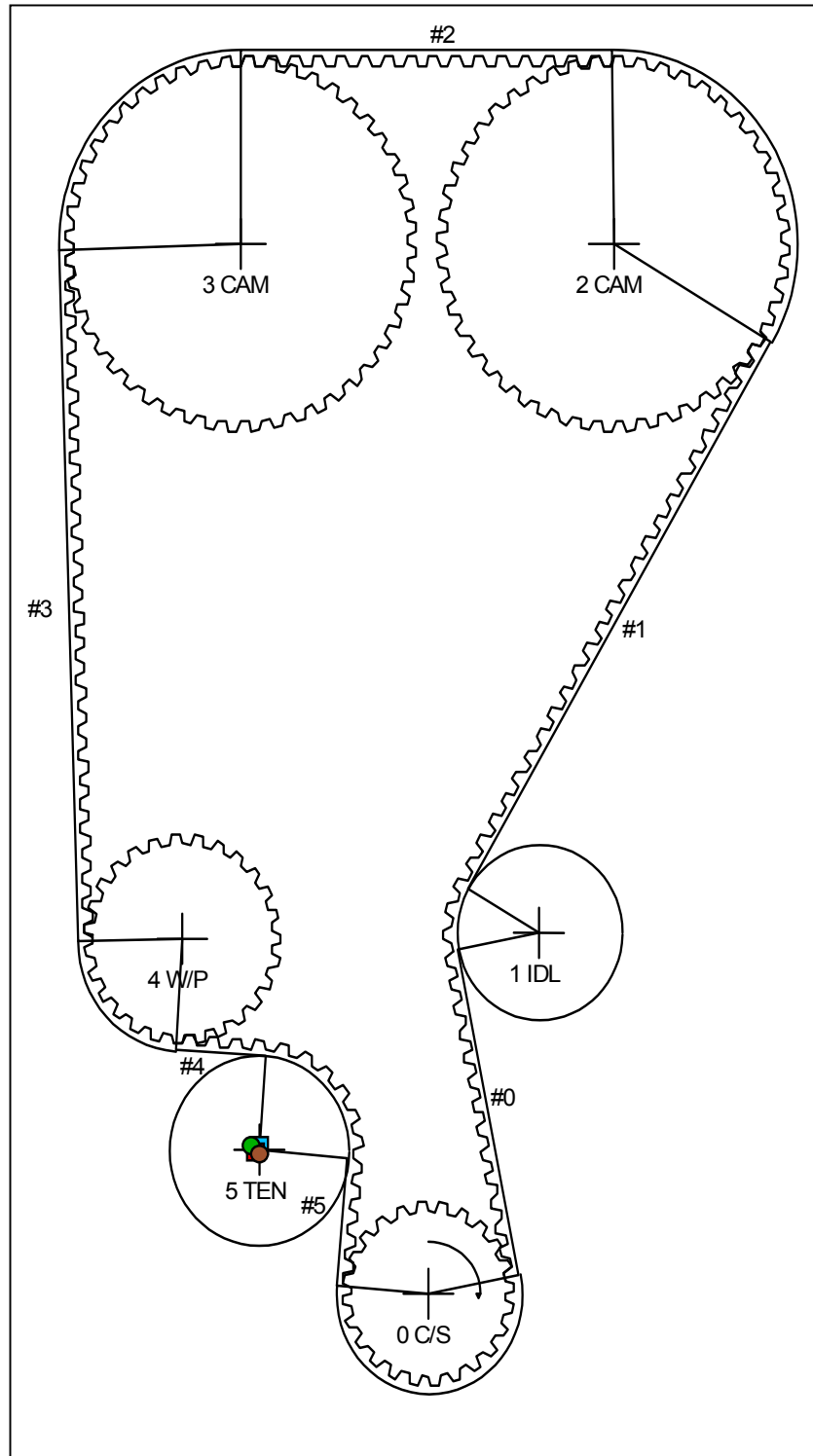
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C/S: Crankshaft, CAM: Camshaft, W/P: Water Pump, Tensioner

Figure 2 a: Belt layout for 979272 and 979548 (VW EA111/EA111 RSH)

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0: Crankshaft, 1: Idler, 2+3: Camshaft, 4: Water Pump, 5: Tensioner

Figure 2b: Timing layout for 979344 (VW EA111 1.0L/1.6L Tasse 16V)

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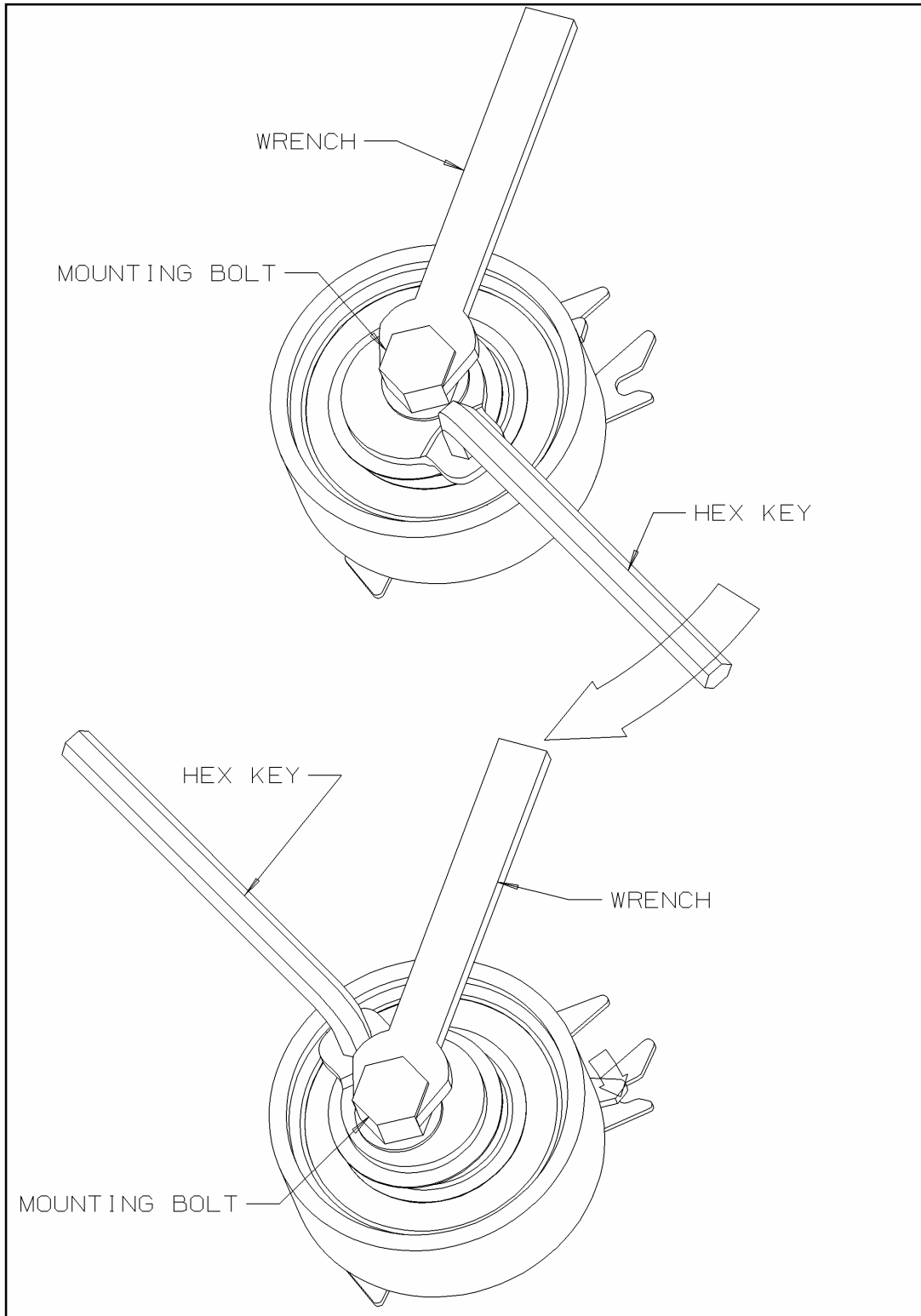


Figure 3: Adjustment of Tensioner with Hex Key

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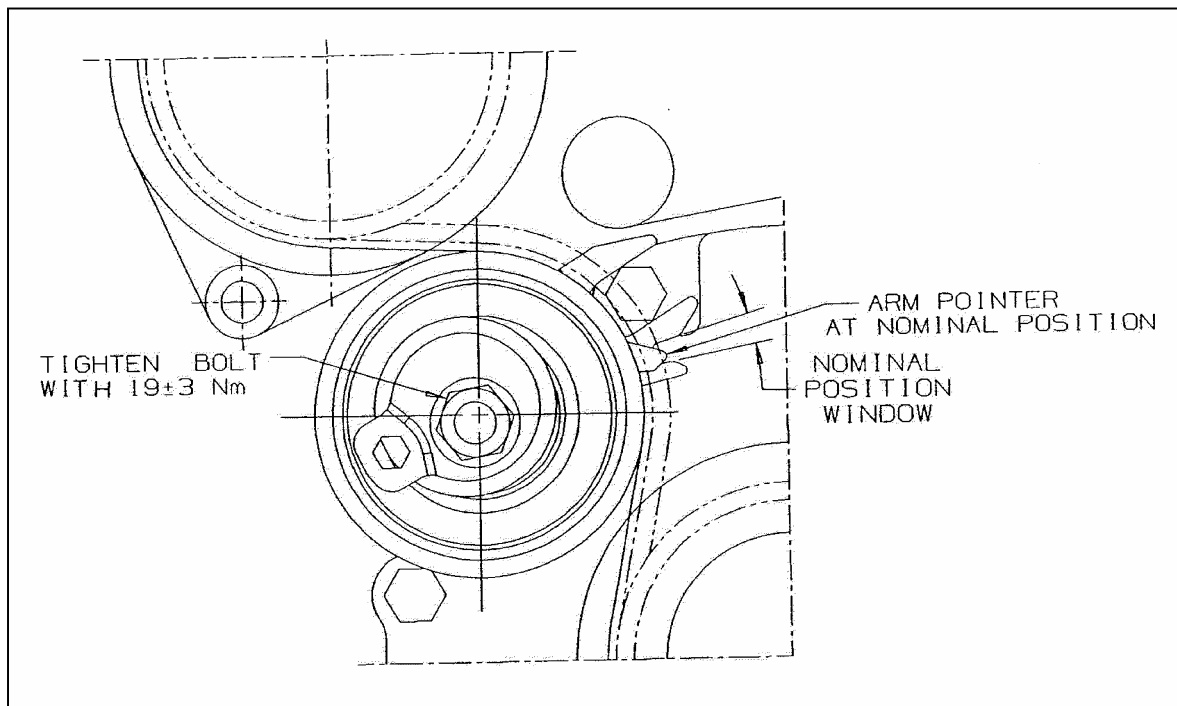


Figure 4: Final Installation