

**RECOMMENDED INSTALLATION PROCEDURE**  
**ATECH TIMING BELT TENSIONER 979455 FOR AFTERMARKET**  
**OPEL 1.4/1.6L DOHC, FAM 1**  
(Revision date: February 24, 2005)

**Initial Preparation:**

**Caution: The procedure to access the timing belt tensioner and all other timing driven components must be done according to OPEL's guidelines.**

Bolt: Use only the Torx Head M8 bolt as shown in Fig 1 to avoid interference with the cover of the timing drive.

**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 4 hours in tropical climatic regions)

**Crank and camshafts position setup:**

2. Rotate the crankshaft **CLOCKWISE ONLY** and align the marks on the Crankshaft sprocket with the corresponding mark on the engine block. At this point, the Camshaft sprockets' marks should also be aligned. It is recommended at this point to lock the camshafts together using a camshaft sprocket locking tool as shown in Fig. 3.

**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 two (2) more full rotations **CLOCKWISE** to the alignment point.**

3. Loosen the mounting bolt and rotate the installation shaft **CLOCKWISE** to release the tension from the belt. Remove the timing belt and the OLD TBT.

**Initial Setup of the TBT (Timing Belt Tensioner)**

4. Mount the new TBT on the engine. The TBT's Locator Tab should fit in the Anti-Rotation Slot in the oil pump housing on the engine (See Fig 6). Ensure that the TBT's arm pointer is below the flange of the water pump sprocket.
5. Rotate the Installation Shaft until its Hex Hole is pointing at the "7 O'clock position" then hand tighten (lightly) the Torx T40 Mounting Bolt (See Fig. 6). It is recommended that the Mounting Bolt should be hand tightened and loosened a ¼ (quarter) of a turn to aid in the installation of the belt.

**Installation of the TBT and Belt**

6. Install the timing belt being careful to engage the appropriate teeth of all the corresponding sprockets as per drive layout starting with the crankshaft and working counterclockwise (See Fig 4).

**Caution:**

**Do not disturb the position of the crankshaft or camshaft sprockets during this procedure.**

7. Using a Torx T40 Wrench to prevent the rotation of the Mounting Bolt, rotate the Installation Shaft **COUNTERCLOCKWISE** with a 6 mm Hex Key. The tensioner assembly

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will move against the belt and the Arm Pointer will eventually start to move **CLOCKWISE** (See Fig. 7).

8. Continue rotating the Installation Shaft until the Arm Pointer aligns with the right-hand edge of the Base Tab, then lock the tensioner in this position by torquing the Torx Bolt to **18~23 Nm** (See Fig. 8).

**Caution: The arm pointer must not pass the right-hand edge of the Base Tab during installation.**

**Verification of the Nominal Position**

9. Remove the 6mm Hex Key, the Torx T40 Wrench, and the Camshaft sprockets locking tool.
10. Rotate the crankshaft two (2) complete revolutions **clockwise manually** for proper seating of the belt until the crankshaft is aligned with the corresponding mark on the engine block. Check the following:
  - Crankshaft mark is aligned.
  - Camshaft sprockets' marks are aligned.If the alignment of all the sprockets is not correct, the belt has to be taken off and the installation procedure has to be repeated starting at step 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 CLOCKWISE rotations to the alignment points.**
11. Check the position of the Arm Pointer.

If the Arm Pointer aligns with the **New Belt Position Notch**, the installation is complete (See Figure 9).

**If not**, proceed as follows. The installation needs to be re-adjusted until the proper position is achieved.

**Re-adjustment**

TBT re-adjustment is required if the arm pointer does not align within the New Belt Position Notch of the rear plate (max./min. range). Re-lock the camshafts at TDC position if not done already.

12. Engage the 6mm Hex Key with the Installation Shaft and retain its position while loosening the Mounting Bolt with the Torx T40 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 the New Belt Position Notch (See Figure 9).
14. Re-torque the Mounting Bolt (**18~23 Nm**) while preventing the Installation Shaft from turning by holding it with the Hex Key.
15. Repeat step # 9, #10 and #11.

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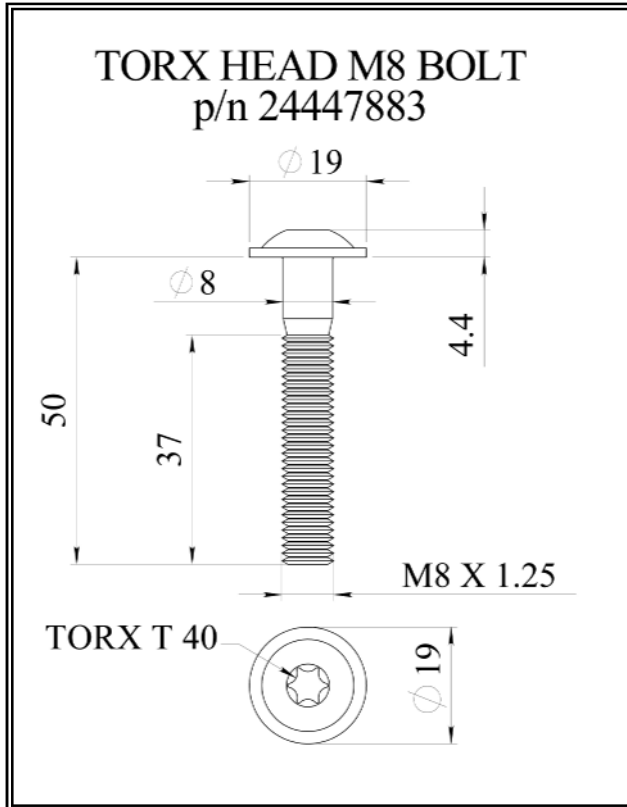


Fig 1: TBT MOUNTING BOLT

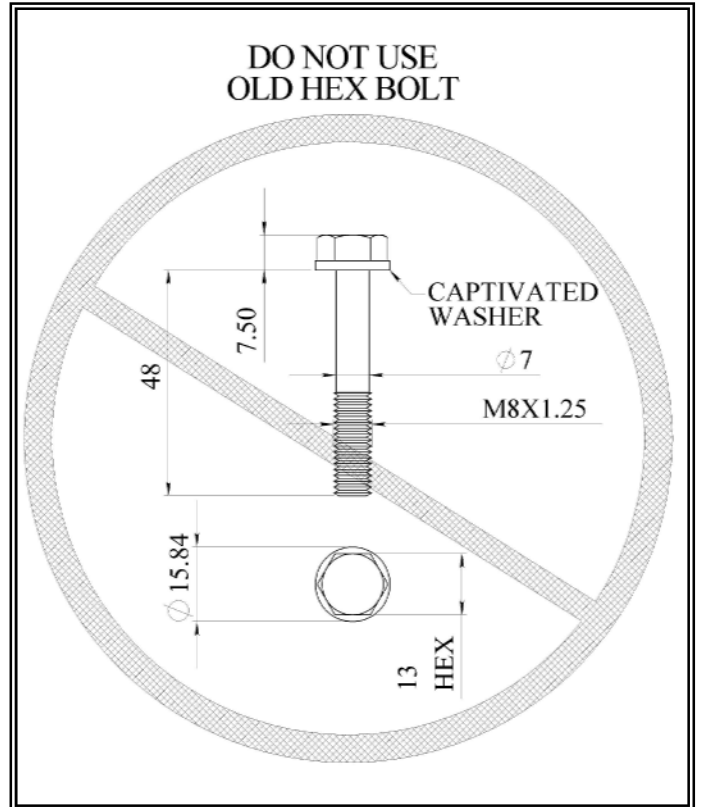


Fig 2: OLD TBT MOUNTING BOLT  
**Caution: Do Not Use**

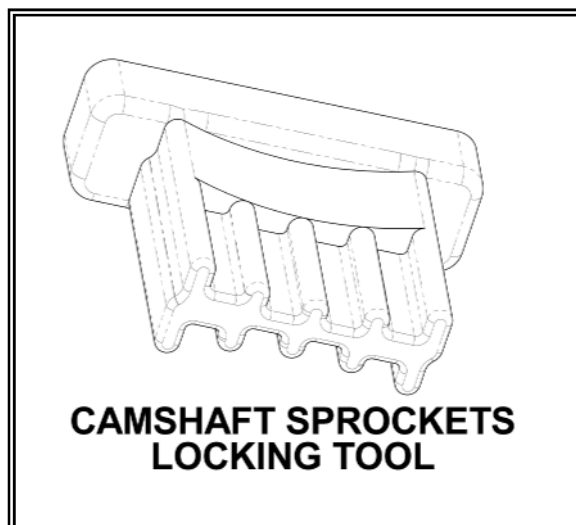


Fig 3: Camshaft Sprockets Locking Tool

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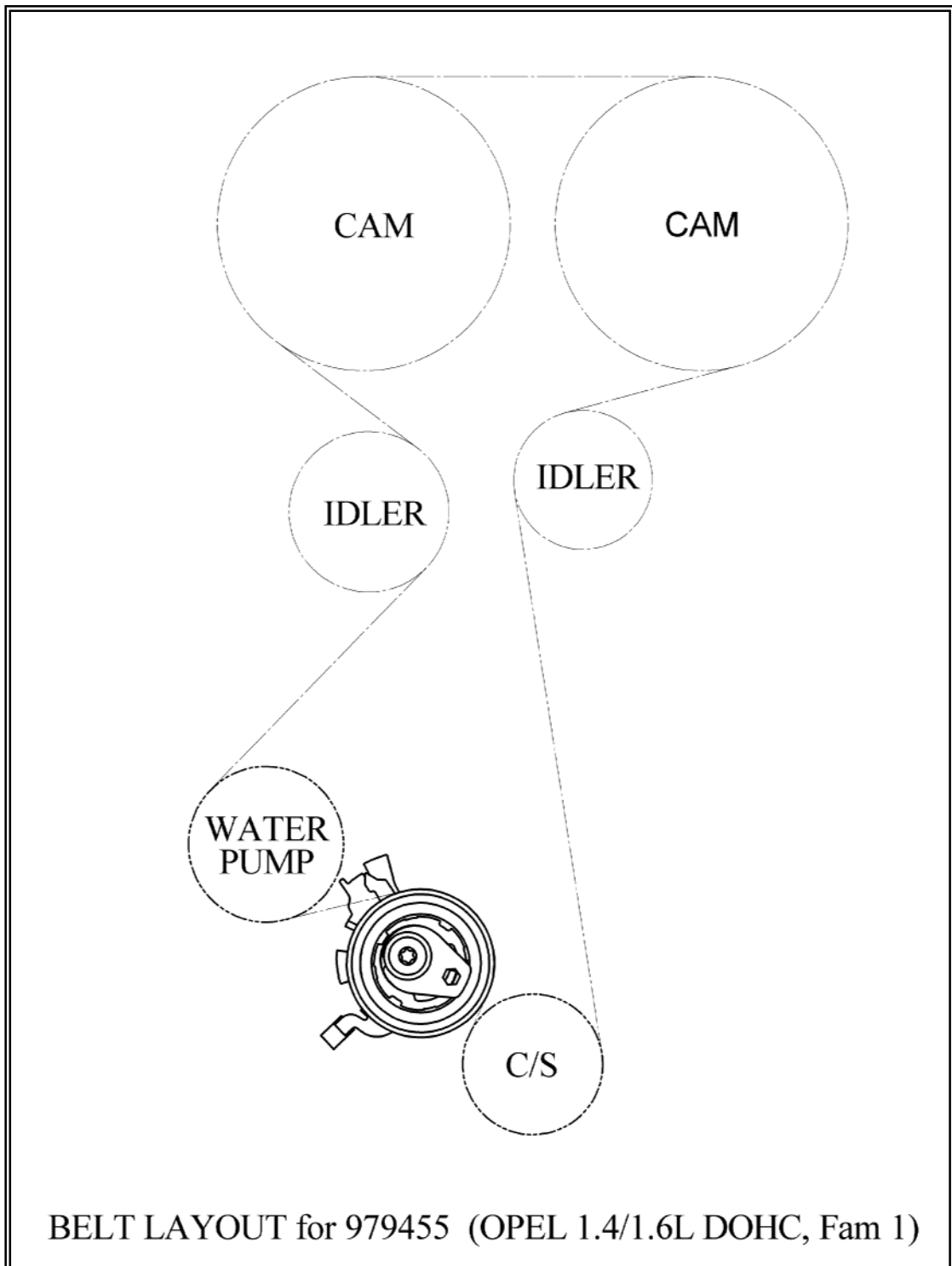


Fig. 4: Belt Layout 979455

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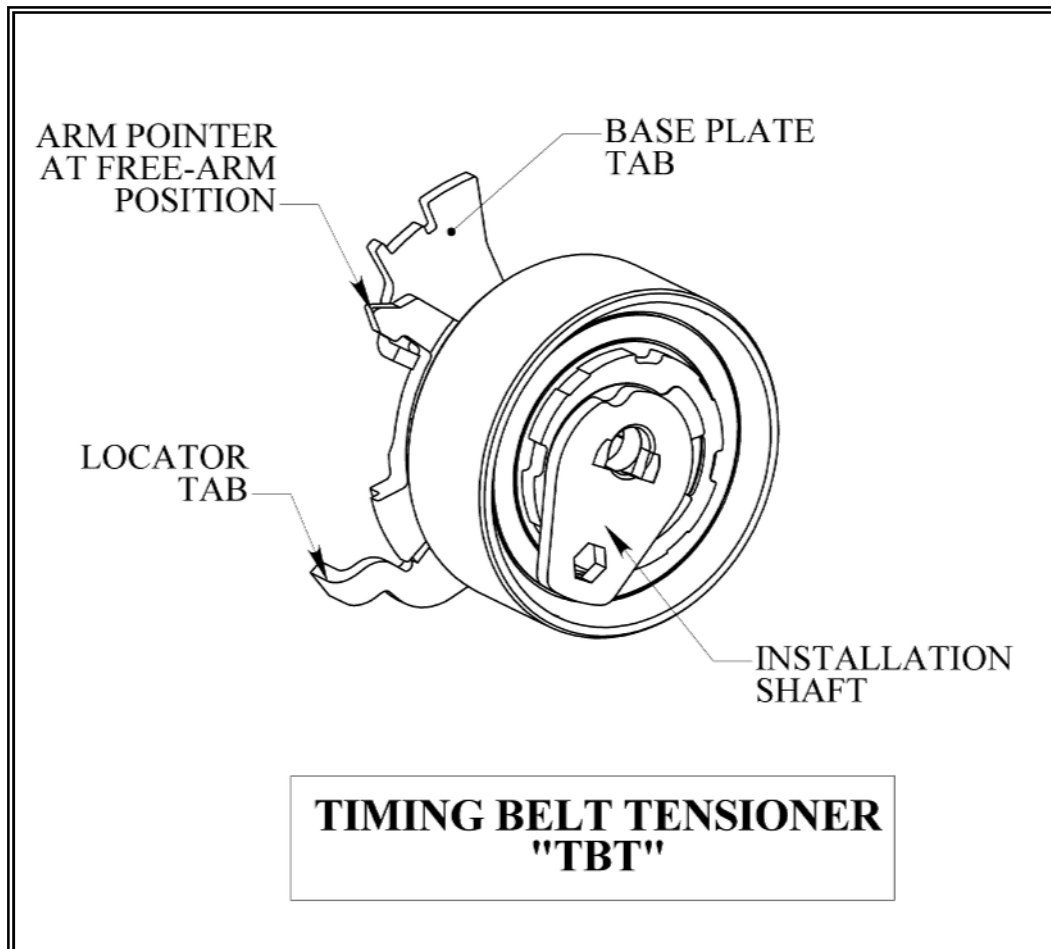


Fig. 5: Timing Belt Tensioner

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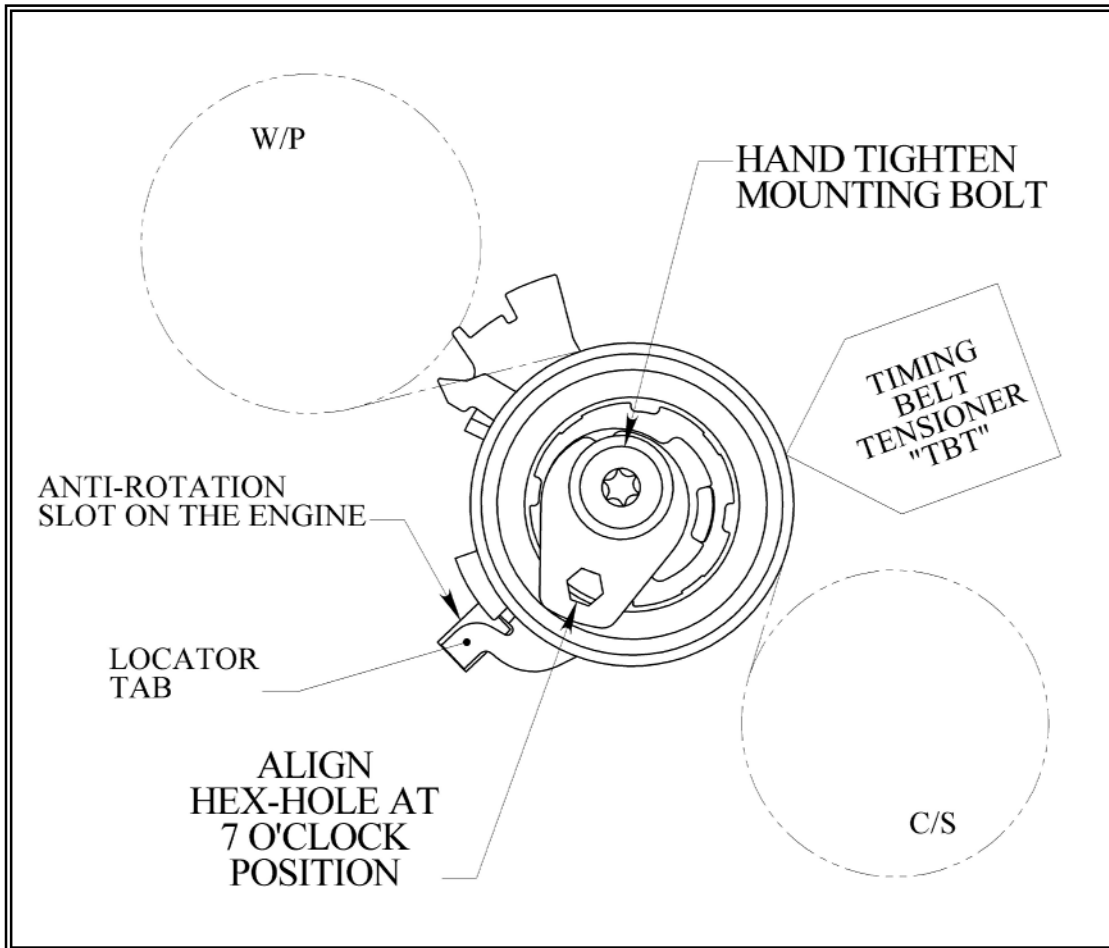


Fig. 6: Pre-tightening set up of the Timing Belt Tensioner on the engine.

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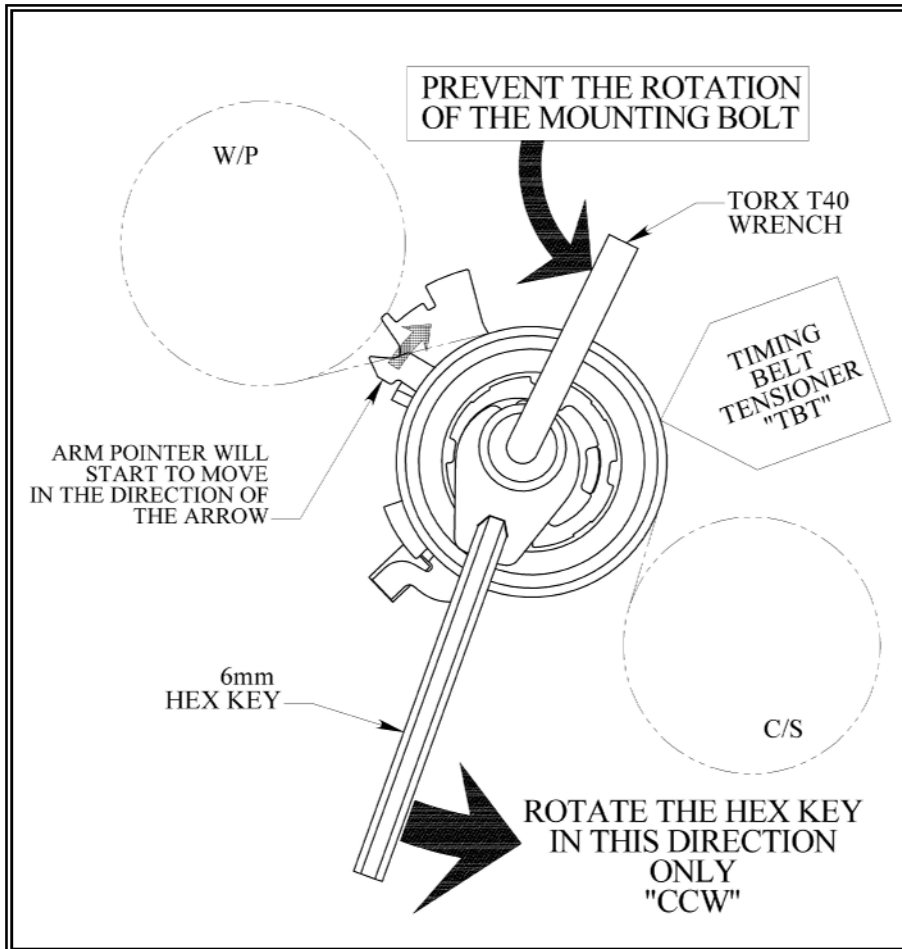


Fig. 7: TBT Direction of Installation.

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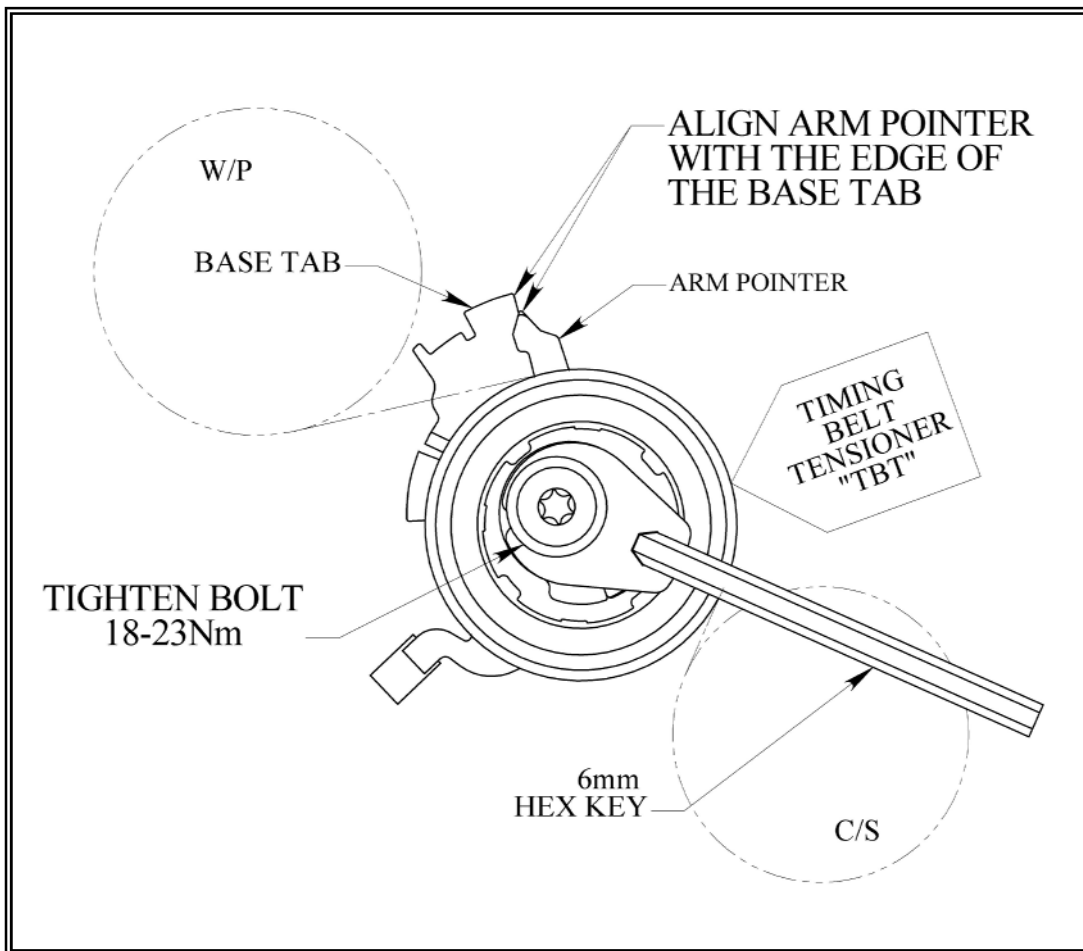


Fig. 8: Initial setup of the TBT during installation.



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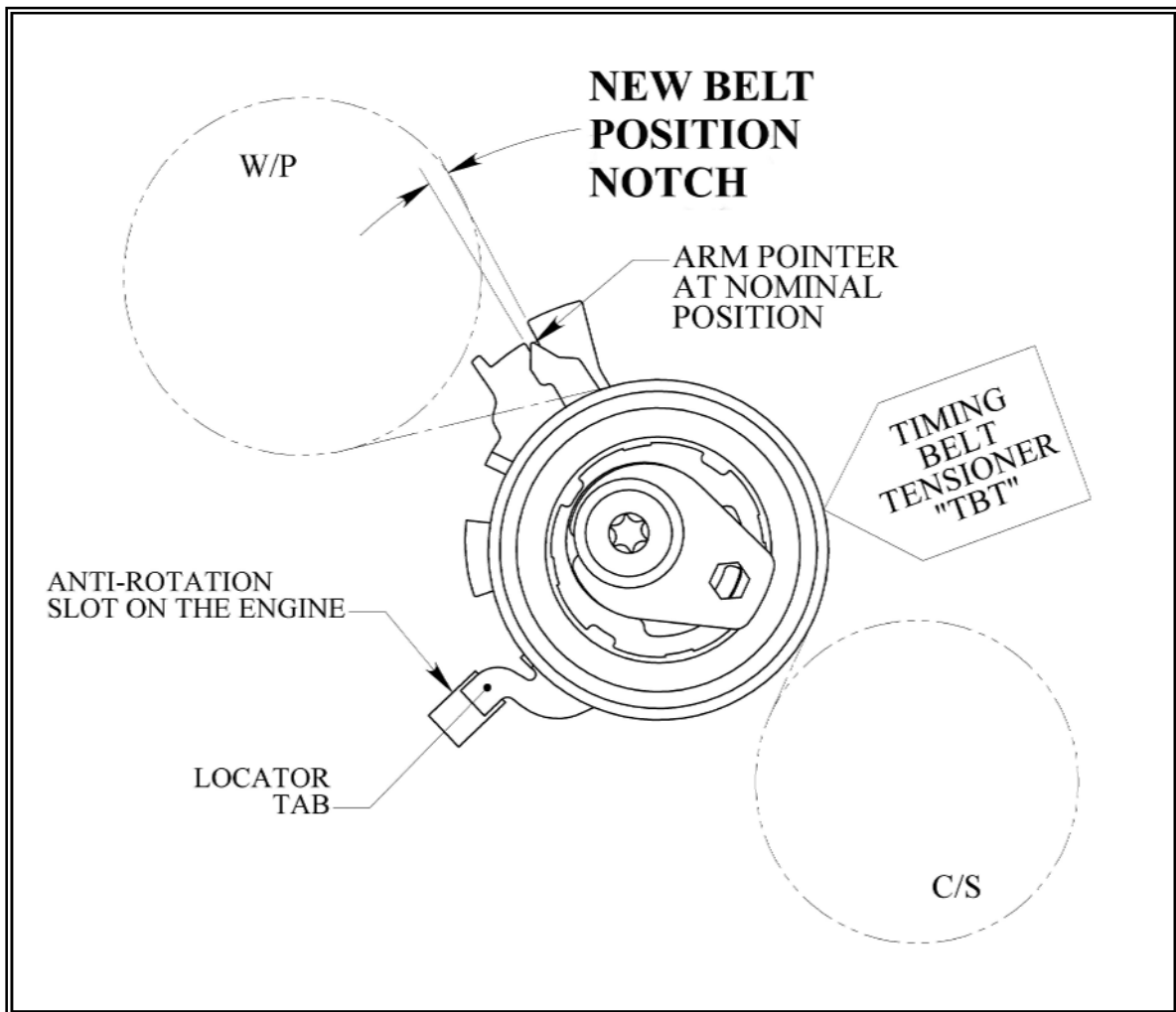


Fig. 9: TBT's pointer position after installation.