

## Recommended Installation Procedure

ATech Timing Belt Tensioner 979809

OPEL FAM. I, 3<sup>rd</sup> Gen, 1.6/1.8L

(03 November 2011)

### Caution:

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

### Engine temperature:

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 tensioner onto a hot engine.** (For reference, the minimum engine cooling period is 4 hours in tropical climatic regions).

### Crankshaft and Camshafts TDC position setup:

2. Rotate the crankshaft **CLOCKWISE ONLY** to **TDC** (Top Dead Center) position (i.e. #1 cylinder firing position), Figs. 2.1 and 2.2. Review OPEL's guidelines on how to locate and lock the crankshaft and camshafts position at TDC.

#### Caution:

**If the alignment of the TDC position 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 locking points. This is to be accomplished while the belt is still attached. Also, DO NOT at anytime rotate the crankshaft and the camshafts when the timing belt is removed.**

### Belt and Tensioner removal

3. Once the procedure for setting the TDC is completed, engage a 6mm Hex Key into the tensioner arm Hex Hole and rotate the arm clockwise to load stop, this will release the belt tension and maximize the belt clearance with the tensioner.
4. Hold the Hex Key at load stop and remove the timing belt.
5. Release the Hex Key to freearm position slowly and remove it. Loosen and remove the M8 Mounting Bolt, remove the **OLD Tensioner**. It is recommended to replace the timing belt during the replacement of the tensioner.

### Installation of the Timing Belt Tensioner and the Belt

6. Ensure that the tensioner mounting surface on the engine block is clean and free from gouges or bumps that will affect the mounting and operation of the tensioner.
7. Install the new tensioner on the engine (Figs. 3 and 5), ensuring that the spring tang engages the slot on the engine block for correct tensioner orientation. The base plate index tab fits into the clearance slot on the engine mounting surface (Fig. 5) and the tensioner is seated on the mounting surface properly.
8. Hold the tensioner by engaging the 6mm Hex key into the arm Hex Hole and torque the M8 Torx Mounting Bolt (Fig.4) to **23 ~ 27 Nm**. Remove the Hex Key.

**Caution: If the Hex Key is not used for support of the tensioner during the torquing of the mounting bolt, the spring tang will be damaged and the tensioner will be improperly oriented, which will result in engine failure.**

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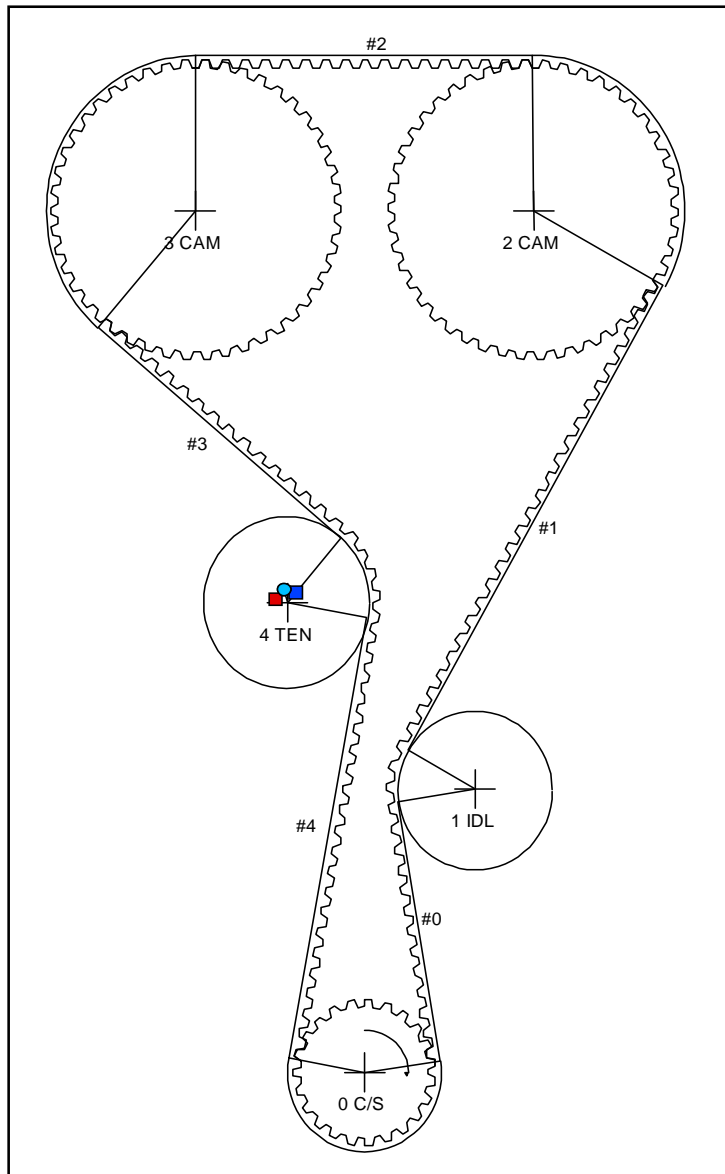
9. Install the timing belt being careful to engage the appropriate teeth of all the corresponding sprockets as per drive layout (Fig.1) starting with the crankshaft and working counterclockwise engaging the crankshaft sprocket, idler and camshaft sprockets. Hold the belt taut (stretched tight) away from the tensioner.
10. Engage the 6mm Hex Key with the tensioner arm Hex Hole and rotate the arm clockwise away from the belt to the load stop and install the belt on the tensioner.
11. Slowly release load on the Hex Key and allow the tensioner to rotate counterclockwise against the belt. Remove the 6mm Hex Key and any other tools for setting the TDC position.

### Verification of TDC Position

12. Rotate the Crankshaft 2 complete revolutions **CLOCKWISE manually** for proper seating of the belt until the crankshaft is repositioned at the TDC position.
  - ◆ Check the **TDC** alignment of the crankshaft and the camshafts, (Fig. 2.1 and 2.2). If the alignment of all the 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.

**Caution: If the alignment of the crankshaft and its corresponding mark on the engine is missed, do not rotate the Crankshaft counterclockwise to the correct position, but rather rotate the Crankshaft 2 more full rotations to the alignment point. If this procedure is not properly followed, engine damage will occur.**

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0: Crankshaft, 1: Idler, 2&3: Camshafts, 4: Belt, 5: Tensioner

**Figure 1: Timing Drive Engine Layout**  
(OPEL FAM. I, 3<sup>rd</sup> Generation, 1.6/1.8L)

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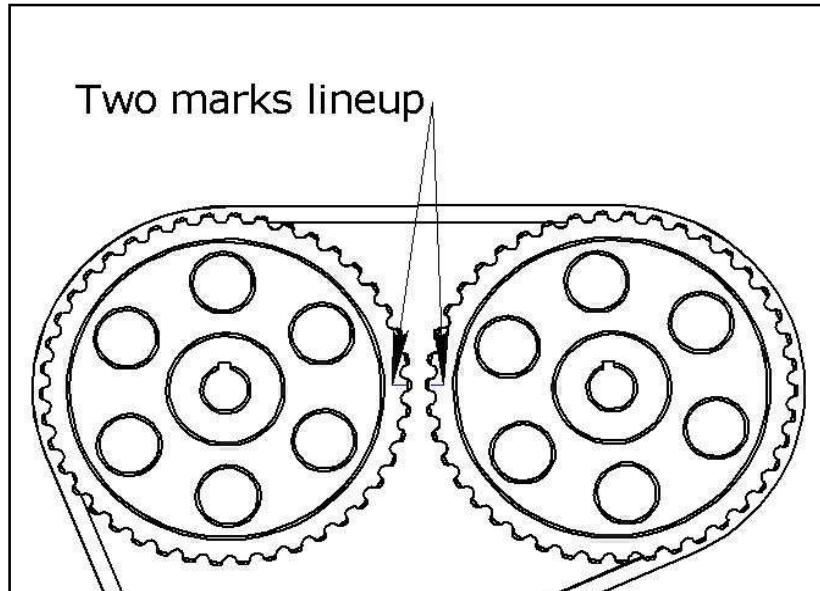


Figure 2.1. Camshafts Aligned at TDC Position

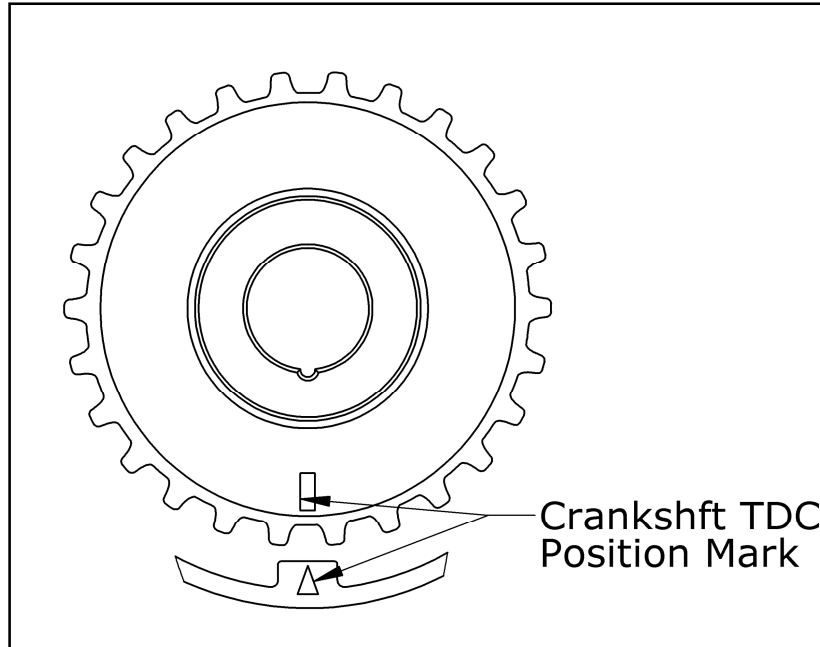


Figure 2.2. Crankshaft Aligned at TDC Position

Figure 2: Camshafts and Crankshaft TDC Position

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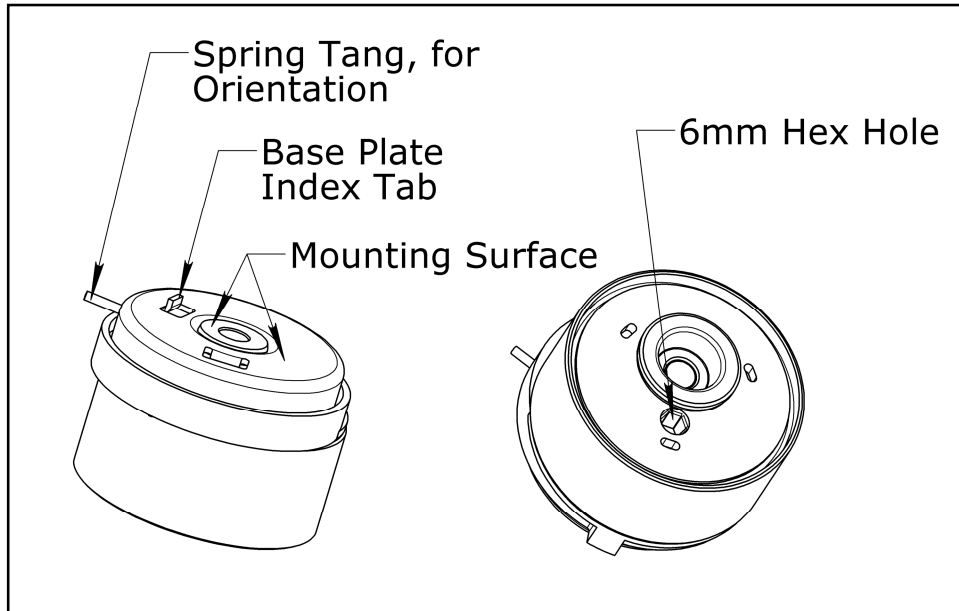


Figure 3: Tensioner shown as shipped

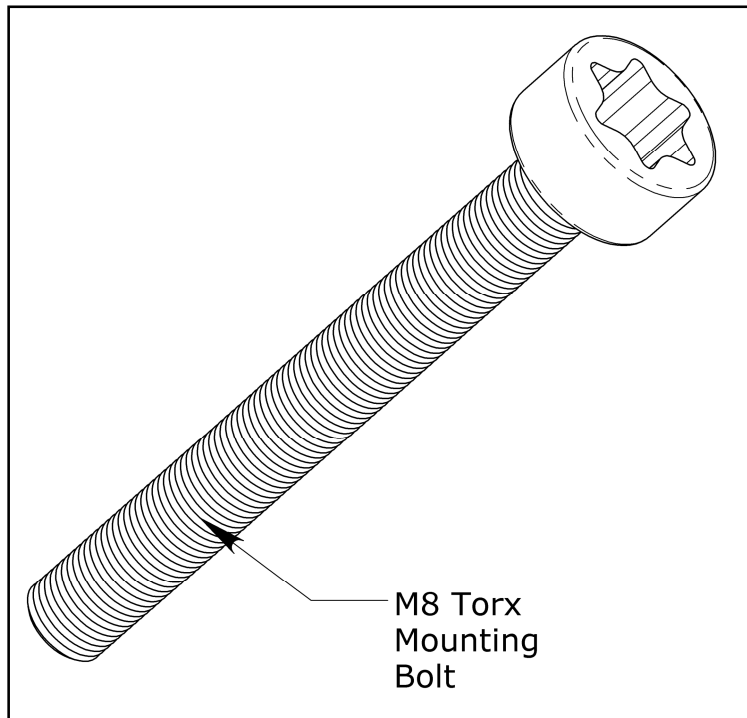


Figure 4: Tensioner Mounting Bolt

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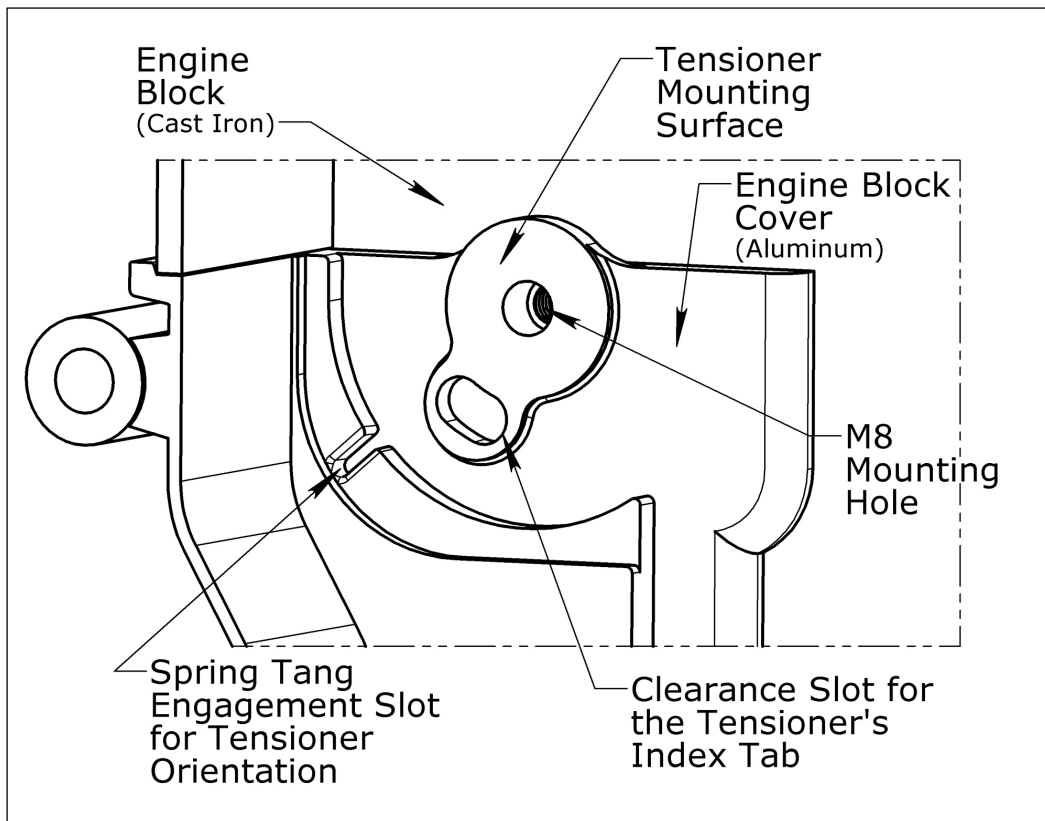


Figure 5: Tensioner Mounting Base