

# RECOMMENDED INSTALLATION PROCEDURE

## TIMING BELT TENSIONER (979297) FOR AFTERMARKET

### - FIAT TORQUE ENGINE -

(Revision date: 03/14/2001)

1. Allow the engine and tensioner to stabilize to the same relative ambient temperature (20° C) before installing a tensioner for proper belt tension adjustment. Do not attempt to install a cool tensioner onto a hot engine or vice versa.
2. Rotate both the crankshaft and camshaft CLOCKWISE to TDC (Top Dead Center) position (i.e. #1 cylinder firing position). This defined position is to be the position where there is no action (positive or negative) from the camshaft or other sprockets. One should find no sudden movement or abrupt action from either of the sprockets. Generally cam & crankshaft sprockets have to line up with equivalent markings on the engine block to indicate TDC.

#### Removal of Timing Belt (In case of new engine build, skip step #3)

3. Using the installation tool, hold the tensioner position and loosen the tensioner mounting nut. Allow the tensioner to move left until the belt can be removed and then remove the belt.

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

4. Place a new tensioner onto the mounting bracket. Tensioner's Anti-Rotation Slot should fit over the Anti-Rotation Pin on the bracket (See Figure 1).
5. Slide the tensioner to the farthest left for easier routing of the timing belt and hand tighten the M8 Mounting Nut (See Figure 2).

#### Pre-Installation of the TBT

6. Install the timing belt being careful to engage the appropriate teeth of all the corresponding sprockets as per drive layout (See Figure 3).  
**(Caution:** Do not disturb the position of the crankshaft or camshaft sprockets during this procedure.)
7. Push the tensioner into the belt using the installation tool. The tensioner assembly will move against the belt and the Arm will eventually start to move CLOCKWISE. Continue pushing the tensioner until its maximum travel position (See Figure 4).
8. Lock the tensioner in this position by tightening the Mounting Nut with **30.0 ± 5.5 Nm** of torque.
9. Rotate the crankshaft two (2) complete revolutions manually for proper seating of the belt until the crankshaft is repositioned at the TDC position.  
**Note: Repositioning the crankshaft to the TDC position must be done only during the clockwise rotation.**  
Verify that all timing indicators on camshaft sprockets, crankshaft sprocket and water pump sprocket align with corresponding indicators (See Figure 3).

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10. Using the installation tool to hold the tensioner position, loosen the tensioner Mounting Nut enough to allow movement. Watching the movement of the arm pointer, slowly retract the tensioner away from the belt until the Nominal Position Indicator Mark on the tensioner arm aligns with the Position Indicator on the front plate (See Figure 5).  
**Note: Do not allow the tensioner to snap free or steps 7, 8, 9 must be repeated.**
11. Torque the Mounting Nut to  $30.0 \pm 5.5$  Nm using a torque wrench. Engine should then be rotated per step 9 to confirm tensioner position is correct. If not, repeat steps 9, 10.
12. Tensioner should have small oscillation about the nominal position with the engine running at idle (See Figure 6)
13. Disclaimer
14. Every step of this installation MUST be properly performed or engine damage can occur.

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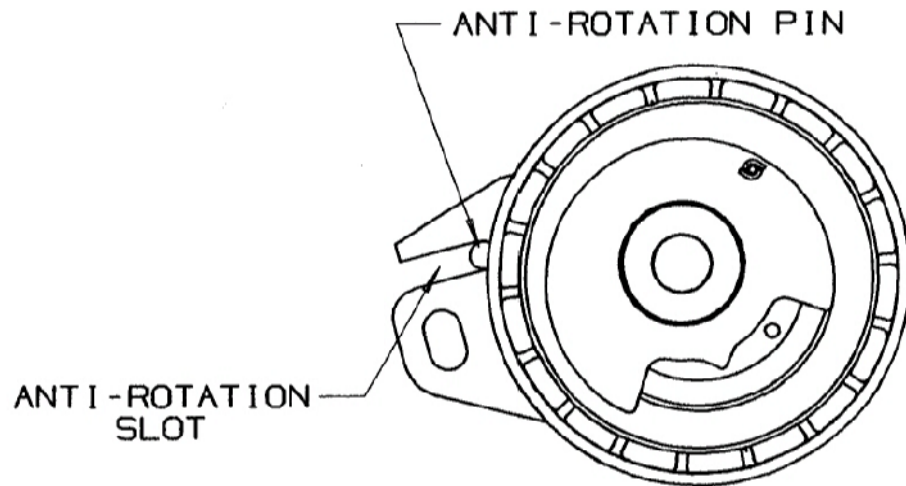


Figure 1: Tensioner Shown at Free-Arm Position Placed on the Mounting Bracket.

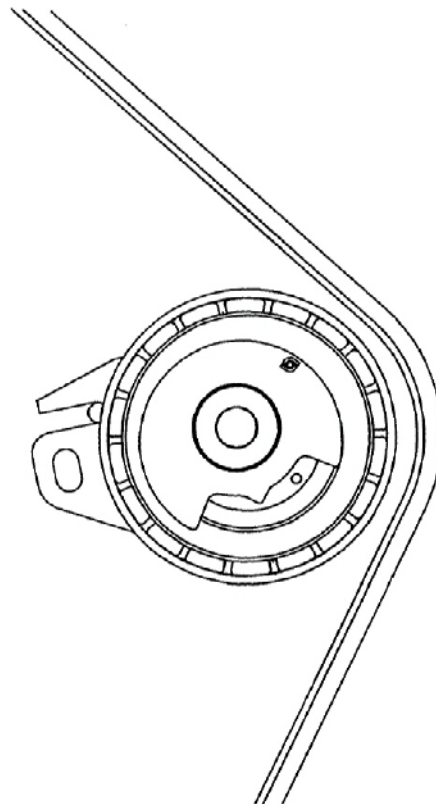


Figure 2: Belt Installation Position.

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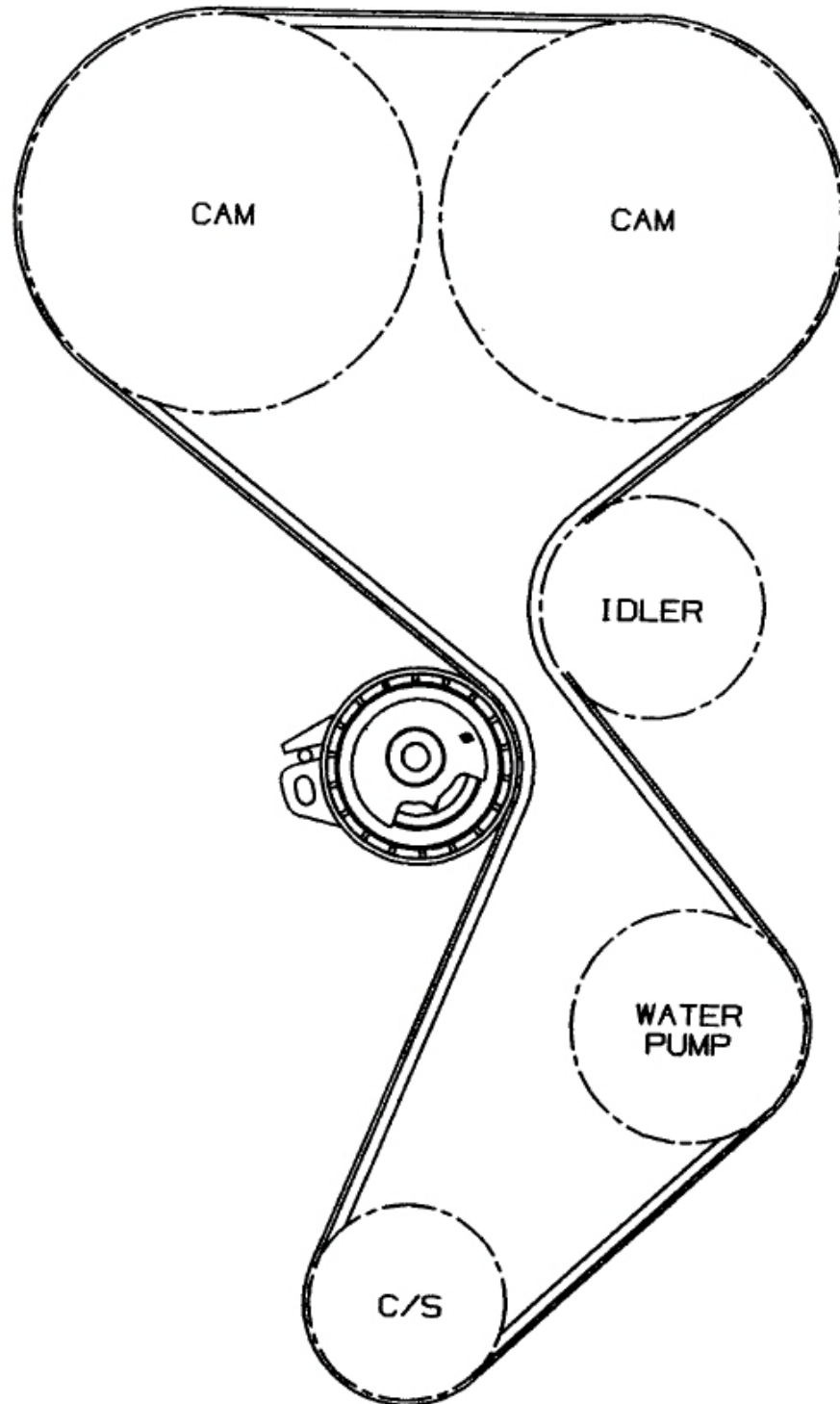


Figure 3: Belt Layout.

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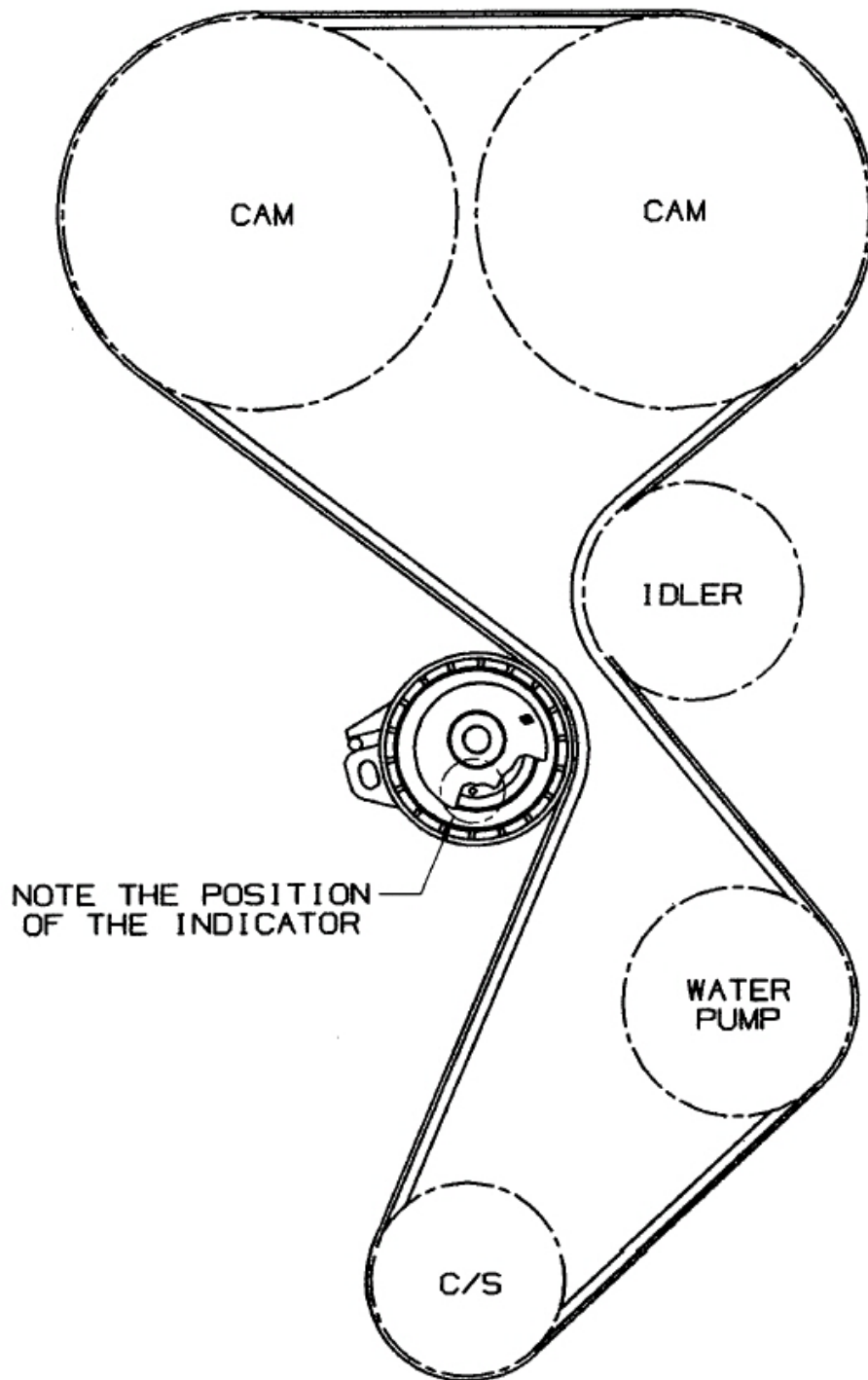


Figure 4: Proper Initial Setup of Tensioner.

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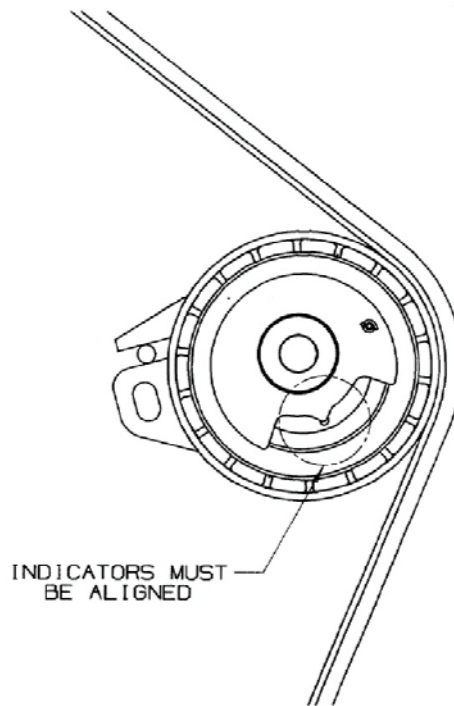


Figure 5: Verification of Tensioner Installation

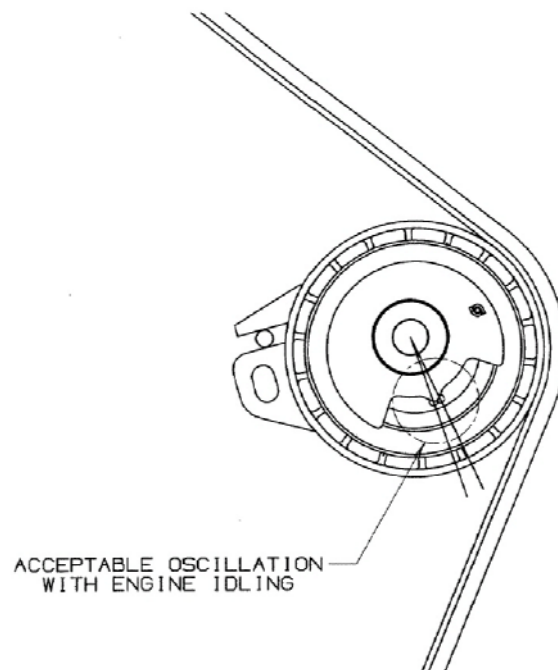


Figure 6: Acceptable Tensioner  
Oscillation with Engine Idling