

Recommended Installation Procedure
Timing Belt Tensioner 979672 (979597)
2.0L DOHC, RENAULT F4R Turbo, F4R712
1.8L DOHC, RENAULT F4P720
(05/18/2004)

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 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), follow car manufacturer's guidelines.

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. 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 is completed, use a 6mm Allen key to prevent the rotation of the installation shaft and loosen the mounting bolt (Figure 2 and 3). Once the mounting bolt is loosened, rotate the installation shaft counterclockwise to release the belt tension.
4. Remove the timing belt, the tensioner's mounting bolt and the OLD timing belt tensioner. It is always recommended to replace the timing belt during the replacement of the tensioner.

Initial Setup of the timing belt tensioner

5. Mount the new timing belt tensioner on the engine with an M8 bolt, and ensure that the tensioner Locator Tab (Figure 2) is engaged with the Anti-Rotation Slot in the cylinder head.
6. Rotate the Installation Shaft until the 6mm Hex Hole is pointing at the "7 O'clock" position (Figure 3). This will maximize the belt clearance with the timing belt tensioner for ease of installation. Hand tighten the M8 Mounting Bolt (Figure 3).

Installation of the timing belt tensioner and the timing Belt

7. Install the timing belt being careful to engage the appropriate teeth of all the corresponding sprockets as per drive layout (Figure 1a and 1b) starting with the crankshaft and working **COUNTERCLOCKWISE ONLY**.
Caution: Do not disturb the position of the crankshaft or camshaft sprockets during this procedure.

Recommended Installation Procedure
Timing Belt Tensioner 979672 (979597)
2.0L DOHC, RENAULT F4R Turbo, F4R712
1.8L DOHC, RENAULT F4P720
(05/18/2004)

8. Rotate the Installation Shaft **CLOCKWISE** with an Allen (hex) Key. Make sure to hold the mounting bolt with a wrench in order to prevent it from turning when rotating the Installation Shaft. The tensioner assembly will move against the belt and the Arm will eventually start to move **CLOCKWISE** (Figure 4).
9. Continue rotating the Installation Shaft until the arm pointer moves past the nominal position notch towards the load stop side by approximately **10°~20°**. While holding the installation shaft, tighten the M8 Mounting Bolt to **18~23 Nm** (Figure 5).

Verification of the Nominal Position

10. Rotate the crankshaft at least 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 at TDC 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.

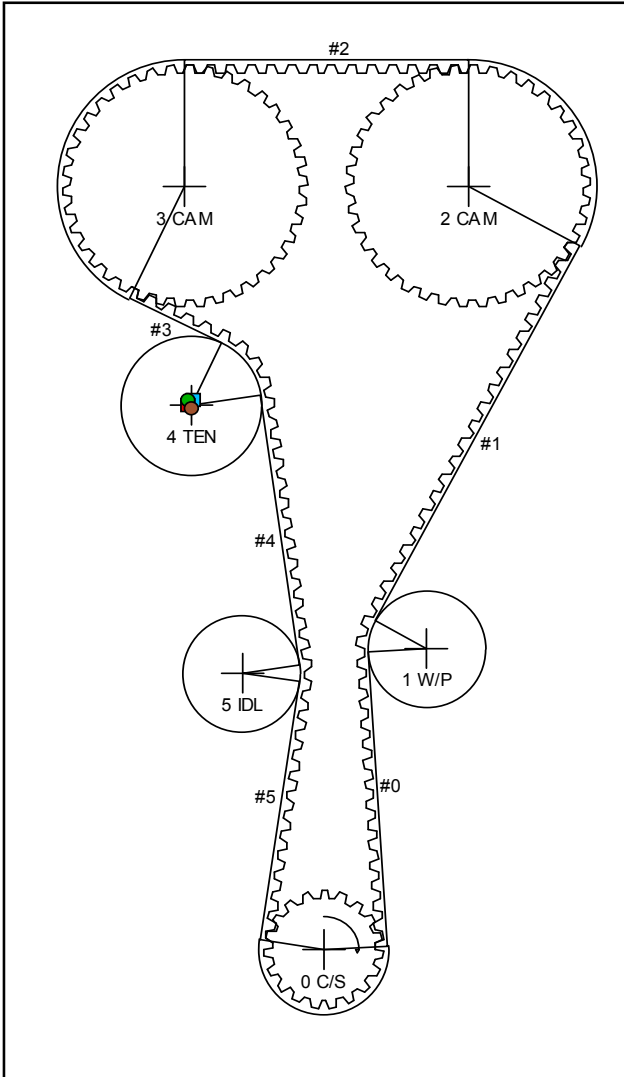
11. Check the position of the Arm Pointer.
 - If the Arm Pointer aligns with the Nominal Position Notch in the front plate, the installation is complete (Figure 6).
 - If not, proceed as follows. The installation of the timing belt tensioner needs to be adjusted until the proper position is achieved.

Readjustment

The timing belt tensioner re-adjustment is required if the arm pointer does not align within the Nominal Position Notch in the front plate.

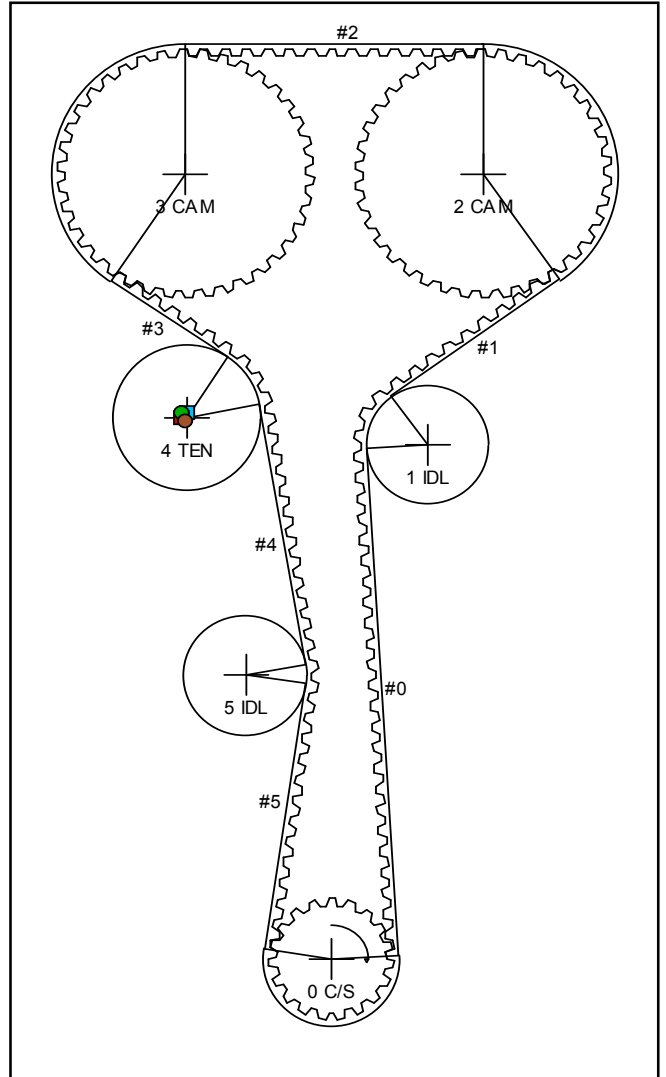
12. Engage the 6mm Allen key into the installation shaft and retain its position while loosening the Mounting Bolt with the Wrench. The Mounting Bolt and the Tensioner do not need to be removed (Figure 7).
13. Rotate the installation shaft **COUNTERCLOCKWISE** with the Allen Key until the Arm Pointer moves past the nominal position notch towards the Free-Arm side (Figure 7a), and then rotate the installation shaft **CLOCKWISE** until the arm pointer aligns with the Nominal Position Notch (Figures 7b and 6).
14. Tighten the Mounting Bolt (18~23 Nm) torque while preventing the Installation Shaft from turning using the Hex Key (Figure 7b).
15. Repeat steps #10 and #11.

Recommended Installation Procedure
Timing Belt Tensioner 979672 (979597)
2.0L DOHC, RENAULT F4R Turbo, F4R712
1.8L DOHC, RENAULT F4P720
(05/18/2004)



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

Figure 1(a): Belt Layout with Water Pump



0: Crankshaft, 1: Idler, 2 and 3: Camshaft
4: Tensioner, 5: Idler

Figure 1(b): Belt Layout without Water Pump

Recommended Installation Procedure
Timing Belt Tensioner 979672 (979597)
2.0L DOHC, RENAULT F4R Turbo, F4R712
1.8L DOHC, RENAULT F4P720
(05/18/2004)

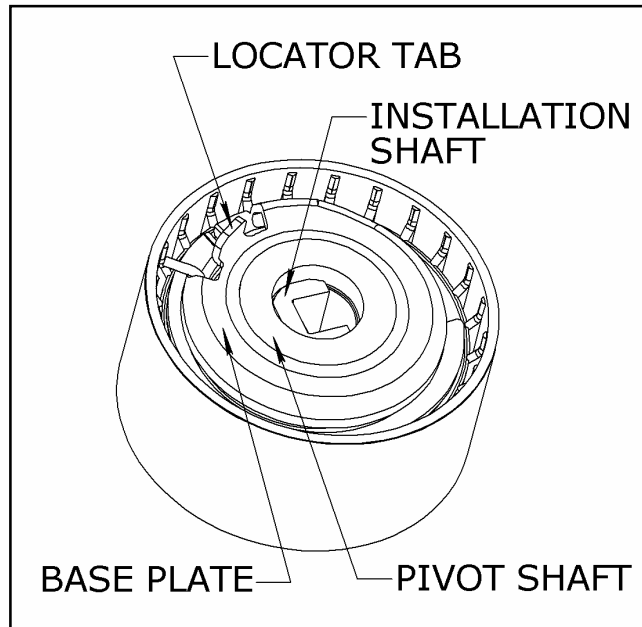


Figure 2: Tensioner's back view

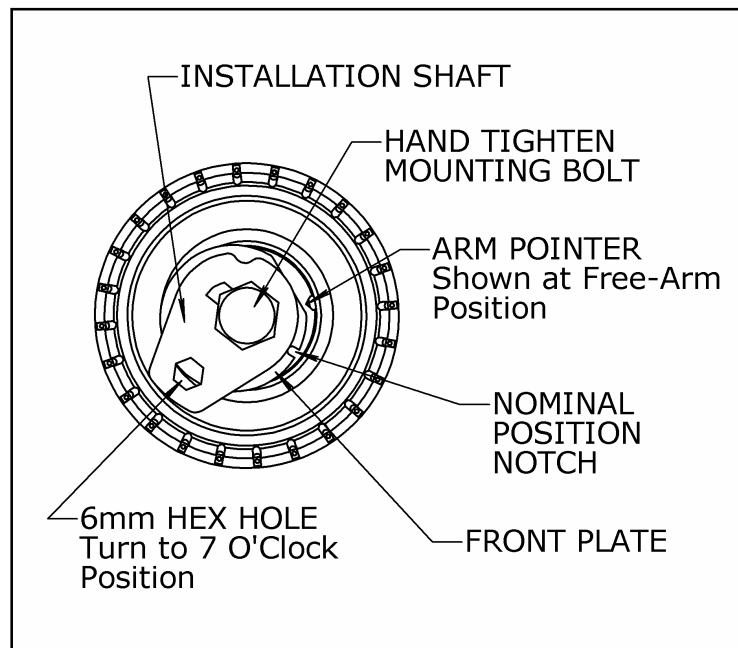


Figure 3: Initial Setup of the timing belt tensioner

Recommended Installation Procedure
 Timing Belt Tensioner 979672 (979597)
 2.0L DOHC, RENAULT F4R Turbo, F4R712
 1.8L DOHC, RENAULT F4P720
 (05/18/2004)

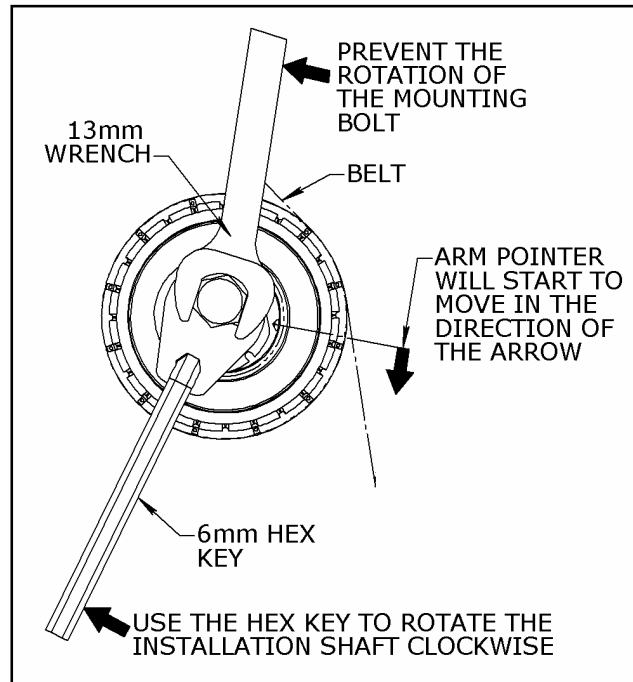


Figure 4: Tensioner Rotation Direction during Installation

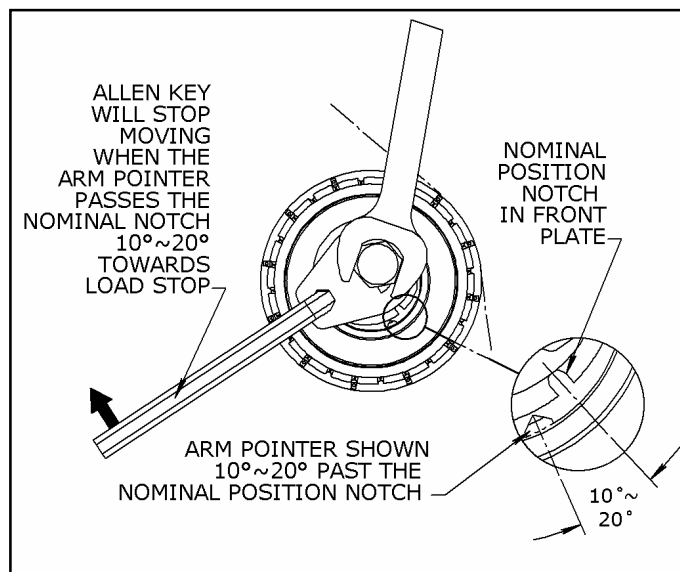


Figure 5: Tensioner Shown at 10°~20° past the nominal notch

Recommended Installation Procedure
 Timing Belt Tensioner 979672 (979597)
 2.0L DOHC, RENAULT F4R Turbo, F4R712
 1.8L DOHC, RENAULT F4P720
 (05/18/2004)

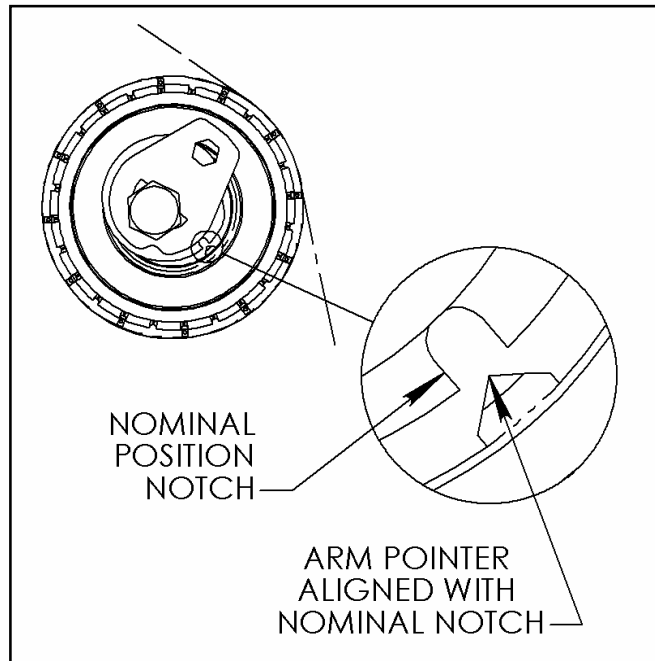


Figure 6: Tensioner Shown at Nominal Position

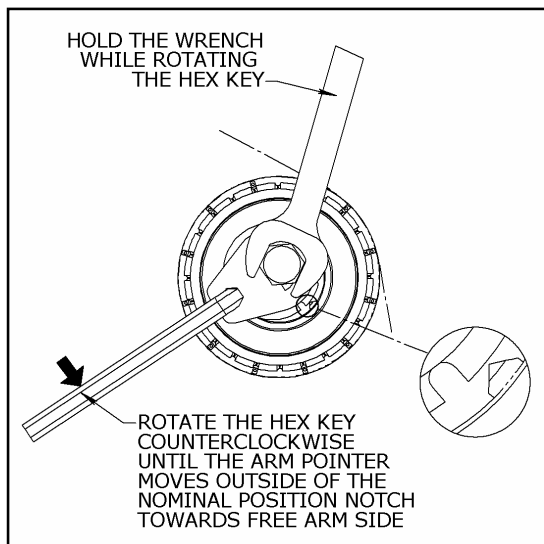


Figure 7a: Tensioner Re-adjustment towards Free-arm

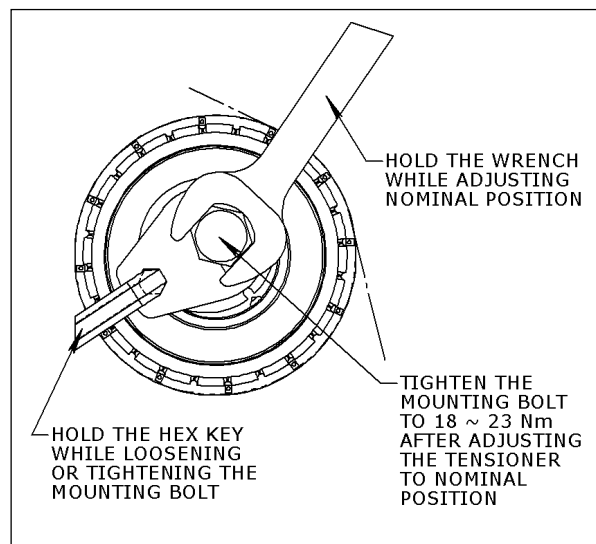


Figure 7b: Tensioner Re-adjustment back to nominal position