



TECH NOTE

AUTOMOTIVE – TIMING SYSTEM

BULLETIN: TSB_027_AU

FOLLOWING THE OEM INSTALLATION PROCEDURE CORRECTLY IS CRITICAL ON 4D56 DOHC ENGINES

PART NUMBER:

- T1602
 - TCK1602
 - TCKH1602
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MAKE:

- Mitsubishi
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MODEL:

- Challenger
 - Triton
 - L200
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ENGINE:

- 2.5L Diesel (4D56 DOHC)
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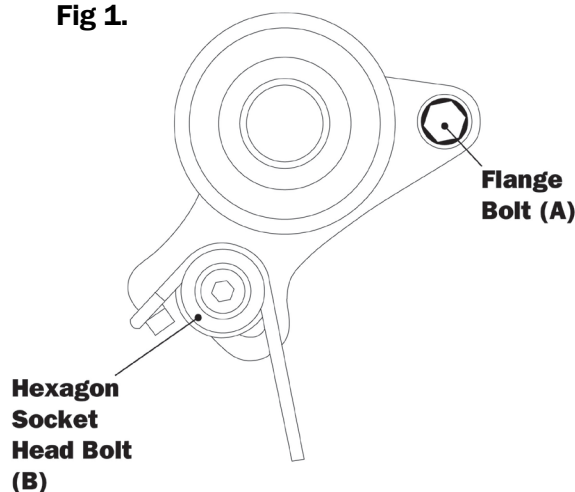
There are several steps in the installation procedure for the above applications that if not carried out correctly may result in premature system failure and catastrophic engine damage.

While following every step closely is important, below are steps that are critical to ensure correct installation and trouble free operation.

Key points for balance shaft component installation:

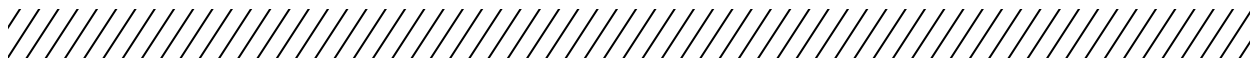
- Never turn the crankshaft anti-clockwise
- When installing the balance shaft tensioner spring ensure the shorter end is facing toward the water pump
- When the balance shaft belt is fitted ensure that the tension side is not slack
- Tighten the hexagon socket head bolt first (Fig. 1 Bolt (B): 20nm) then tighten the tensioner assembly mounting flange bolt (Fig 1. Bolt (A): 23nm)
- Observe correct tightening sequence, otherwise belt tension will not be correct
- Incorrect belt tension can result in the tensioner spring making contact with the belt and/or tensioner pulley

Fig 1.





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- Ensure deflection of 4-5mm is reached on the balance shaft timing belt opposite the tensioner assembly half-way between the crank shaft and cam shaft (as illustrated in the OEM installation procedure).

Key points for camshaft component installation:

- Carry out hydraulic tensioner bleed-out procedure (refer Gates technical Service Bulletin TSB_019_AU)
- Install hydraulic tensioner while leaving the retaining pin installed
- When installing the tensioner assembly ensure bolt is tightened to 48nm
- In the order below install the timing belt without slack:
 1. Crankshaft sprocket
 2. Idler pulley
 3. Injection pump sprocket
 4. Idler pulley
 5. Camshaft sprocket
 6. Tensioner pulley
- The final step is to release the pin on the hydraulic tensioner.

Note: The information in this tech bulletin is not the complete recommended installation procedure. These are just some of the steps that are crucial in order to have trouble free operation. Failure to follow the complete recommended OE procedure can and has resulted in:

- Camshaft assembly bolt braking.
- Balance shaft tensioner failure.
- Timing belt jumping teeth.
- Balance shaft belt shredding and interfering with the camshaft belt.

This is an interference engine; any system failure will most likely result in significant engine damage.

Failure to follow the OEM installation procedure will void your warranty.

Images of failed balance shaft tensioner pulleys due to incorrect installation:

