



Technical Service Information

FORD MAZDA 4R44/5R55 ENGINE DAMAGE DURING R&R

COMPLAINT: 2003-2011 Ford Ranger and 2003-2010 Mazda B-2300 with the 2.3L 4 cylinder engine and 4R44/5R55 series transmission may incur engine damage after transmission R&R.

CAUSE: The cause may be, that during removal of the transmission, the crankshaft bolt that retains the front pulley/harmonic balancer was used to rotate the crankshaft as there is little access to the flywheel for removing torque converter nuts. Note: A starter switch can not be used on these models as the starter has to be removed to access the window for removing the torque converter nuts, as shown in Figure 1. The issue with using the crankshaft bolt is only if the bolt is loosened or if the ratchet and socket are mistakenly left on the bolt and the engine is started after the R&R process. The crankshaft on these models is not keyed to the timing gear and front pulley/harmonic balancer and when the bolt comes loose during start up it damages valves and the pistons in the engine as it quickly goes out of time.

CORRECTION: To verify that the balancer has not moved refer to Figure 2 and see the line-up hole in the balancer to the front cover of the engine. When turning the crankshaft, only rotate it in a clock-wise rotation. Remove tools before starting engine!

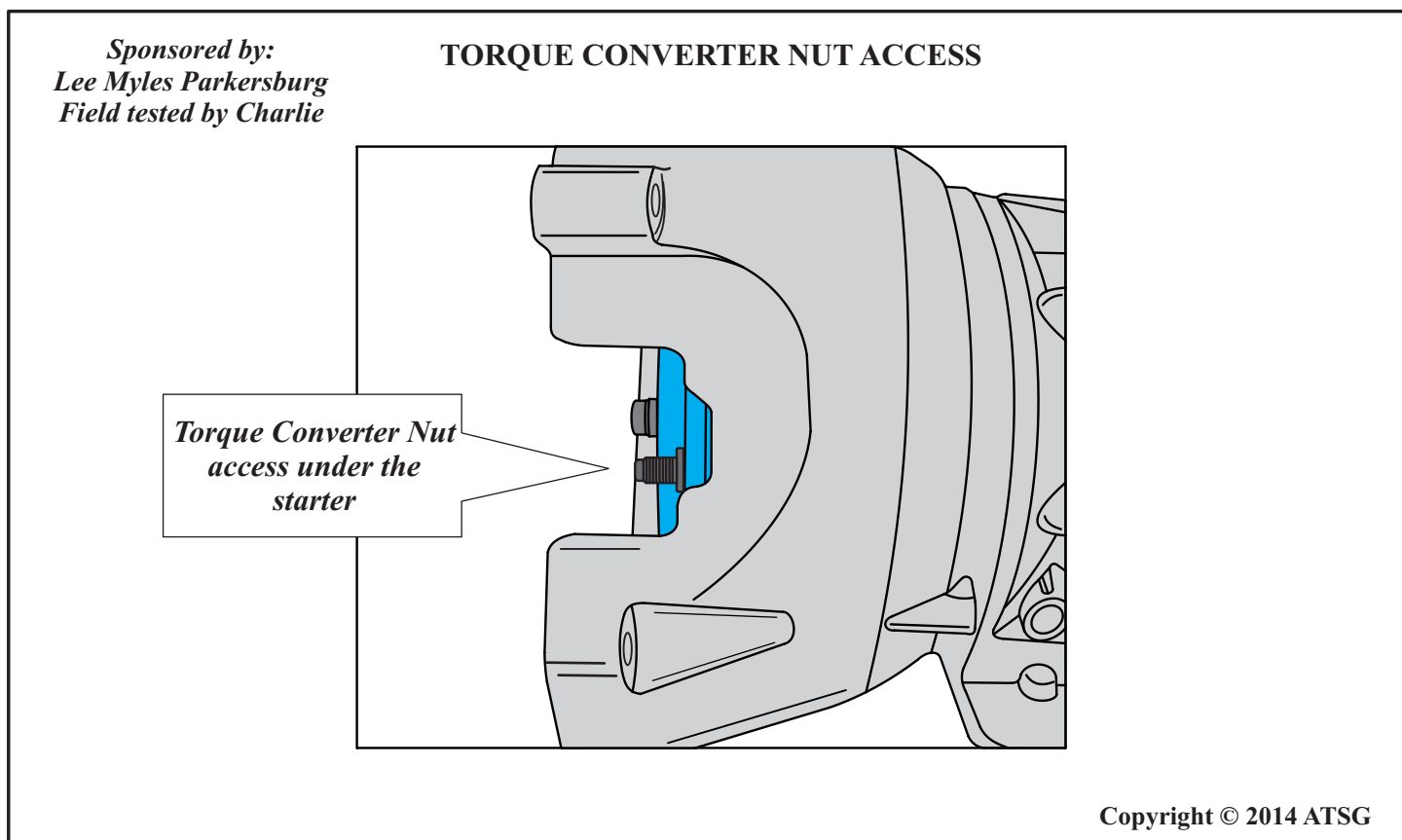
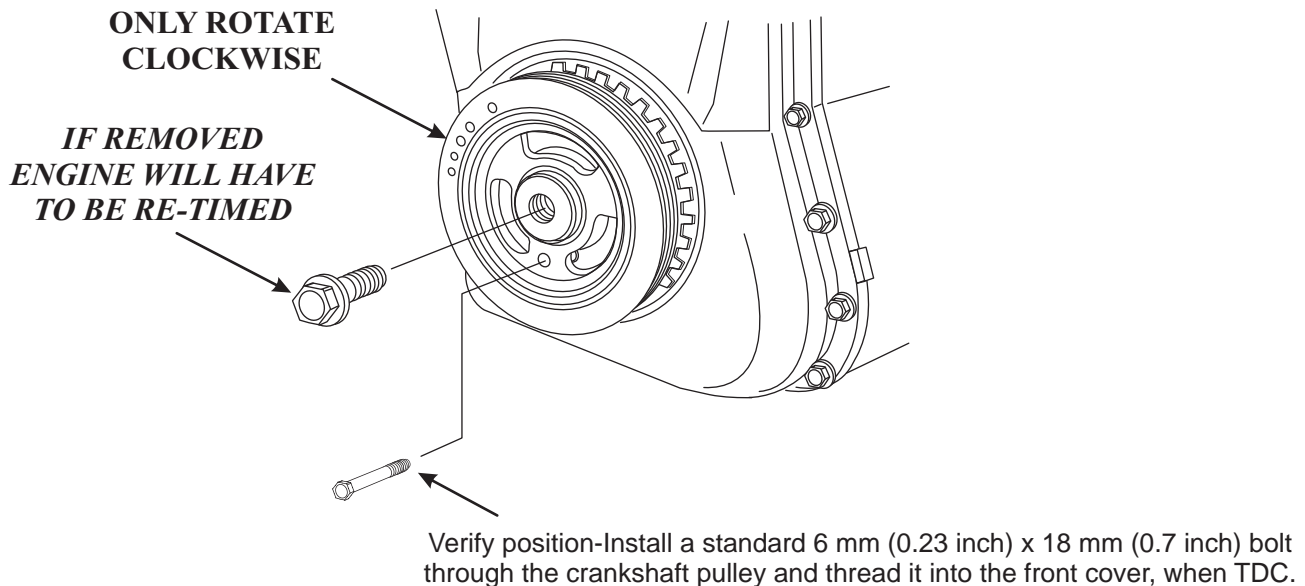


Figure 1

CRANKSHAFT BOLT INFORMATION

CAUTION: The crankshaft, the crankshaft sprocket and the pulley are fitted together by friction, with diamond washers between the flange faces on each part. For that reason, the crankshaft sprocket is also unfastened if you loosen the pulley. Therefore the engine must be re-timed each time the damper is removed. Otherwise severe damage can occur!!!



NOTICE: The crankshaft must remain in the Top Dead Center (TDC) position during installation of the pulley bolt or damage to the engine may occur. Therefore, the crankshaft pulley must be held in place with the Drive Pinion Flange Holding Fixture and the Adapter for 205-126 and the bolt should be installed using hand tools only. Consult O.E. manual for additional tools for holding the balancer and crankshaft during the torquing process and specifications.

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Figure 2