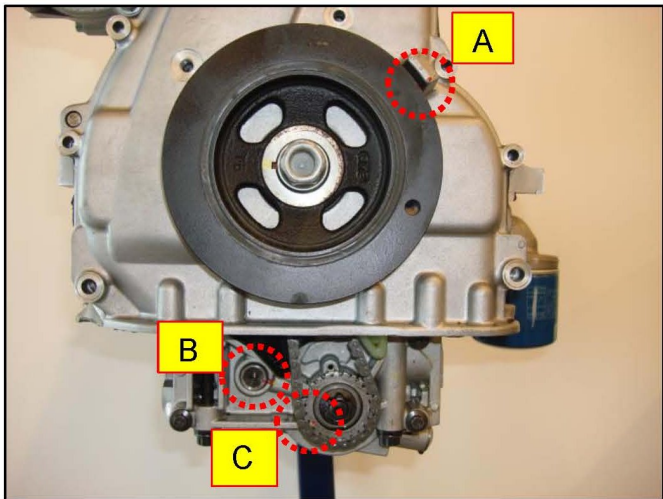


## Oil Pump - Balance Shaft Module Assembly Installation for 2006-2018 Hyundai 2.0 & 2.4L Engines

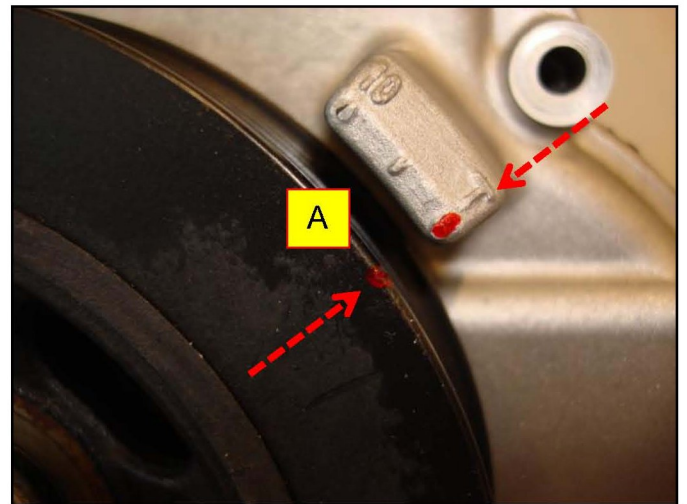
The AERA Technical Committee offers the following information on oil pump – balance shaft module (BSM) assembly installation for 2006-2018 Hyundai 2.0 & 2.4L engines. This information should be referenced anytime the BSM is being installed.

This bulletin provides information regarding the proper indexing of the timing marks of the oil pump module installation on vehicles equipped with Theta 4-cylinder engines. If the oil pump module timing marks are improperly indexed, abnormal engine vibration may result.



**Figure 1. Timing Marks**

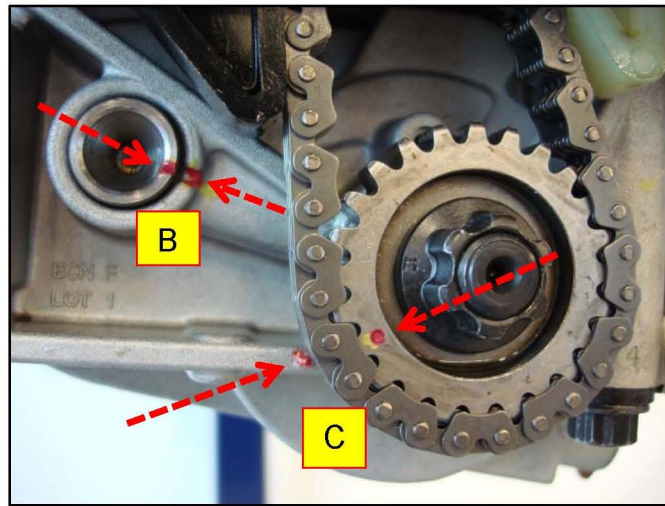
1. Locate the timing marks for (A) crankshaft pulley and timing chain cover, (B) counter balance driven shaft and housing, (C) oil pump driven sprocket and housing as shown in Figure 1.



**Figure 2. Crankshaft Pulley Marks**

**Notice:** The RED colored marks in the photos are for visualization purposes only. Marking colors on the actual engine may vary.

2. Rotate the (A) crankshaft pulley until the notched mark on the pulley lines up with the 0°TDC sight mark "T" on the timing chain cover.



**Figure 3. BSM Timing Marks**

3. Confirm that the (B) counter balance driven shaft and housing marks are lined up when the (C) oil pump driven sprocket and housing marks are lined up. If the (C) oil pump driven sprocket and housing marks are not lined up, then repeat Step 2 above by rotating the crankshaft pulley one complete turn clockwise. Step 2 may need to be repeated up to 3 times until the marks for both (B) and (C) line up.

It should be Noted:

- The counter balance driven shaft (B) turns twice the crankshaft speed.
- The oil pump driven sprocket (C) returns to the same indexed position after 4 complete clockwise rotations of the crankshaft pulley (A).