TT258 – August 9, 2006

**Primary Drive / Starter Noise Complaints**

Several dealers and customers have commented about a “clunking” noise coming from the primary housing during start up. Most dealers suspect a loose compensator because the noise seems to come from the front of the housing. Customers tend to associate it with a starter issue like improper starter drive engagement into the clutch’s ring gear. In fact the condition they are noticing is what is referred to as “Starter Knock”. This is a normal sound and condition for all 2007 Twin Cam models.

Changes in the primary drive system increased the diameter and inertial effects of the rotating components (clutch and sprocket assembly, ring gear, and engine sprocket). Also, the engine control system is calibrated to start the engine as quickly as possible (short crank to run times) and to run up to the predetermined engine idle speed as quickly as possible to provide very positive starting.

Because the engine fires and then runs up to speed very quickly, there is a large torque input and instantaneous speed differential between the engine and spring loaded compensator mounted between the engine and the driveline. The compensator is there to dampen the high torque spikes inherent in a large displacement V-Twin.

Because of the increased inertia in the rotating components in the driveline, their rotational speed cannot increase as fast as the engine, so the springs in the compensator momentarily bottom and results in the sound that you hear.

The same sound exists in the 2006 Dyna models, but to a lesser extent. The increase in displacement to 1584cc increased the torque spike and speed differential in the 2007’s and causes the sound to be more noticeable.

There is no damage associated with the compensator bottoming.

Identifying characteristics of this condition:

1. It may be intermittent, as it is dependant on the start up conditions and how quickly the ignition and engine RPM occurs.
2. It will be a single event. Once the starter is disengaged or the compensator is loaded the sound will stop, unlike a loose sprocket assembly.
3. The condition may be more noticeable on Touring models due to the shorter primary drive (shaft center to center distance) and associated shorter chain run. The extra body parts like fairings and saddlebags also tend to reflect powertrain sounds upward, towards your ears.