

Understanding the LT5 Cranking to Fire Time

Cranking to fire time on the LT5 varies from engine to engine from one to three seconds. Some people, especially new owners, wonder if this is a symptom of a problem. It is normal and definitely is not an indicator of a problem.

Modern engines have higher resolution crankshaft timing sensors. They can determine the crankshaft position after only a small amount of rotation and can fire quickly. The LT5 has a very low-resolution crankshaft timing wheel. It has only nine timing slots. The ninth slot sets an index point.

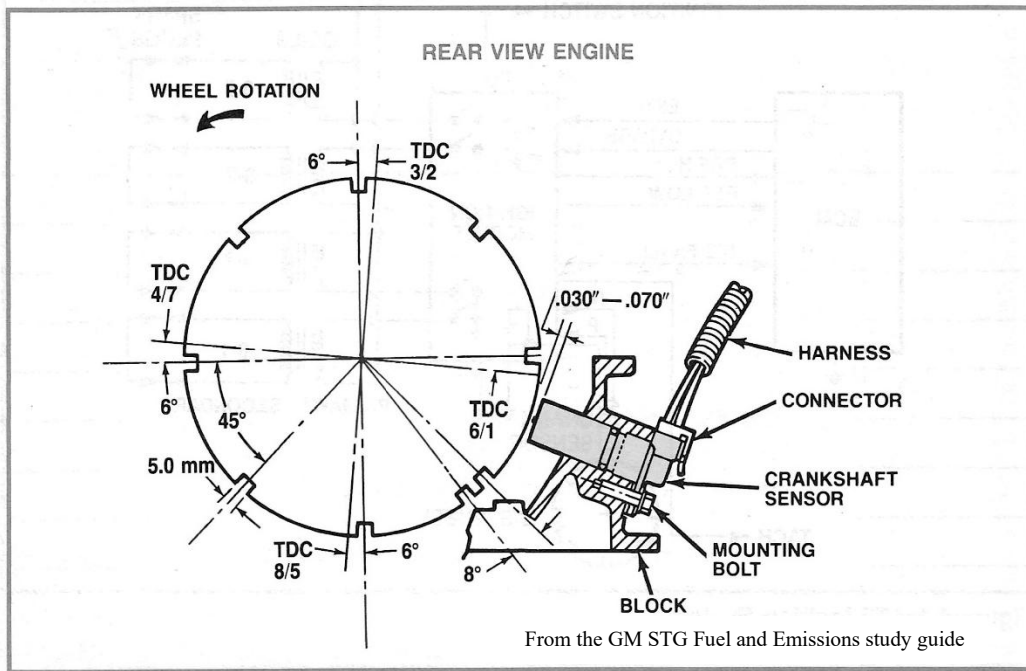


Figure 4-2. LT5 Crankshaft and Sensor Configuration

If the engine should stop just after the index slot, it would need to turn one whole turn just to begin the synchronization process. The study guide states that the first cylinder to fire is number four. Then in addition to the full turn the crankshaft needs to for synchronization, a little more than 90 degrees more rotation is needed to reach the cylinder number four timing slot.

To Lotus's credit they located the timing wheel in the center of the crankshaft to minimize torsional timing variation.

In contrast to this the L98 engine can fire after only a 90 degree turn because the distributor rotor is mechanically synchronized to always point to the correct next cylinder.

Note that there is a bug in the LT5 ignition module logic that can cause a backfire in the plenum if the ignition key is released in anticipation of the engine firing. A backfire can blow the MAP sensor hose off. Then the engine would run very rich with fuel. To avoid this, hold the key in the

crank position until you hear that the engine has fired. This causes no stress for the starter because it has an overrun clutch.