Initial Cylinder Synchronization for Engine Starting

Camshaft position sensor (CMPS)

The camshaft position sensor is a Hall-effect sensor which provides the ECM with a sequencing input so that correct ignition and fuel injection will begin with two-thirds of an engine revolution at engine start. The CMPS rotor has six "windows" of different width to positively identify each cylinder. As a window passes the sensor, the ECM is able to identify the cylinder (1 through 6).

The CMPS is necessary because the crankshaft position sensor (CKPS) gap identifies TDC position for *both* cylinders 1 and 6. Without the CMPS sequencing input, the ECM would attempt engine start by trial and error, firing each cylinder in sequence; several engine revolutions might be required for successful engine start. CMPS input is not required by the ECM once the engine is started.

CMPS installation procedure

With the engine at cylinder 1 compression TDC, the dot on the CMPS rotor should align with the circle in the inspection window.