

- Fuel level is above 15%
- Injector cutout torque reduction is inactive
- Power take off (PTO) operation is disabled

COLD START EMISSION REDUCTION MONITOR > COLD START EMISSION REDUCTION COMPONENT MONITOR > COLD START SPARK TIMING MONITOR OPERATION

Once the waiting period is complete, the monitor compares the average difference between desired and commanded spark to a calibrated threshold that is a function of the engine coolant temperature at start. If the difference exceeds the calibrated threshold, a DTC is set.

- DTC: P050B Cold start ignition timing performance
- Monitor execution: Once per driving cycle, during the first 15 seconds of a cold start
- Monitor sequence: None
- Monitoring duration: Data gathering occurs during the first 15 seconds of a cold start. The decision to set P050B is made 300 seconds after start. This delay gives time for other diagnostics (for example, misfire monitor) to determine if another DTC should set instead of P050B.

COLD START EMISSION REDUCTION MONITOR > COLD START EMISSION REDUCTION COMPONENT MONITOR > SPARK TIMING MONITOR ENTRY CONDITIONS

- Barometric pressure of 76.2 kPa (22.5 in-Hg) or greater
- Engine coolant temperature at start is between -17.8°C (35°F) and 37.8°C (100°F)
- Catalyst temperature at start is between -17.8°C (35°F) and 51.7°C (125°F)
- Fuel level is above 15%
- Injector cutout torque reduction is inactive
- PTO operation is disabled

COLD START EMISSION REDUCTION MONITOR > COLD START EMISSION REDUCTION COMPONENT MONITOR > COLD START VARIABLE CAM TIMING (VCT) MONITOR

If the VCT cam phasing is used during a cold start to improve catalyst heating, the VCT system checks the functionality by monitoring the closed loop cam position error correction. If the correct cam position cannot be maintained and the system has an advance or retard error greater than the malfunction threshold, a cold start emission reduction VCT control malfunction is indicated.