

DIAGNOSTIC TROUBLE CODE CHART

HINT:

Parameters listed in the chart may not be exactly the same as your readings due to the type of instrument or other factors. □

If a malfunction code is displayed during the DTC check in check mode, check the circuit for the codes listed in the table below. For details of each code, refer to "See Page" under the respective "DTC No." in the this chart.

| DTC No. (See Page) | Detection Item | Trouble Area | MIL*1 | Memory |
|-----------------------|--|--|-------|--------|
| P0010 (05-63) | Camshaft Position "A" Actuator Circuit (Bank 1) | <ul style="list-style-type: none"> • Open or short in oil control valve circuit • Oil control valve • ECM | ○ | ○ |
| P0011 (05-69) | Camshaft Position "A" –Timing Over-Advanced or System Performance (Bank 1) | <ul style="list-style-type: none"> • Valve timing • Oil control valve • Camshaft timing gear assembly • ECM | ○ | ○ |
| P0012 (05-69) | Camshaft Position "A" –Timing Over- Retarded (Bank 1) | <ul style="list-style-type: none"> • Same as DTC P0011 | ○ | ○ |
| P0016 (05-77) | Crankshaft Position – Camshaft Position Correlation (Bank 1 Sensor A) | <ul style="list-style-type: none"> • Mechanical system (Timing chain has jumped a tooth, chain stretched) • ECM | ○ | ○ |
| P0031 (05-79) | Oxygen (A/F) Sensor Heater Control Circuit Low (Bank 1 Sensor 1) | <ul style="list-style-type: none"> • Open or short in heater circuit of A/F sensor • A/F sensor heater • EFI M relay (Integration relay) • ECM | ○ | ○ |
| P0032 (05-79) | Oxygen (A/F) Sensor Heater Control Circuit High (Bank 1 Sensor 1) | <ul style="list-style-type: none"> • Short in heater circuit of A/F sensor • A/F sensor heater • EFI M relay (Integration relay) • ECM | ○ | ○ |
| P0037 (05-84) | Oxygen Sensor Heater Control Circuit Low (Bank 1 Sensor 2) | <ul style="list-style-type: none"> • Open or short in heater circuit of the heated oxygen sensor • Heated oxygen sensor heater • EFI M relay (integration relay) • ECM | ○ | ○ |
| P0038 (05-84) | Oxygen Sensor Heater Control Circuit High (Bank 1 Sensor 2) | <ul style="list-style-type: none"> • Short in heater circuit of the heated oxygen sensor • Heated oxygen sensor heater • EFI M relay (integration relay) • ECM | ○ | ○ |
| P0100 (05-89) | Mass or Volume Air Flow Circuit | <ul style="list-style-type: none"> • Open or short in mass air flow meter circuit • Mass air flow meter • ECM | ○ | ○ |
| P0101 (05-96) | Mass or Volume Air Flow Circuit Range/Performance Problem | <ul style="list-style-type: none"> • Mass air flow meter | ○ | ○ |
| P0102 (05-89) | Mass or Volume Air Flow Circuit Low Input | <ul style="list-style-type: none"> • Open in mass air flow meter circuit • Mass air flow meter • ECM | ○ | ○ |
| P0103 (05-89) | Mass or Volume Air Flow Circuit High Input | <ul style="list-style-type: none"> • Short in mass air flow meter circuit • Mass air flow meter • ECM | ○ | ○ |
| P0110 (05-98) | Intake Air Temperature Circuit | <ul style="list-style-type: none"> • Open or short in intake air temperature sensor circuit • Intake air temperature sensor (built in mass air flow meter) • ECM | ○ | ○ |
| P0112 (05-98) | Intake Air Temperature Circuit Low Input | <ul style="list-style-type: none"> • Short in intake air temperature sensor circuit • Intake air temperature sensor (built in mass air flow meter) • ECM | ○ | ○ |
| P0113 (05-98) | Intake Air Temperature Circuit High Input | <ul style="list-style-type: none"> • Open in intake air temperature sensor circuit • Intake air temperature sensor (built in mass air flow meter) • ECM | ○ | ○ |

| DTC No. (See Page) | Detection Item | Trouble Area | MIL*1 | Memory |
|-----------------------|--|--|-------|--------|
| P0115 (05-103) | Engine Coolant Temperature Circuit | <ul style="list-style-type: none"> • Open or short in engine coolant temperature sensor circuit • Engine coolant temperature sensor • ECM | ○ | ○ |
| P0116 (05-108) | Engine Coolant Temperature Circuit Range/Performance Problem | <ul style="list-style-type: none"> • Engine coolant temperature sensor | ○ | ○ |
| P0117 (05-103) | Engine Coolant Temperature Circuit Low Input | <ul style="list-style-type: none"> • Short in engine coolant temperature sensor circuit • Engine coolant temperature sensor • ECM | ○ | ○ |
| P0118 (05-103) | Engine Coolant Temperature Circuit High Input | <ul style="list-style-type: none"> • Open in engine coolant temperature sensor circuit • Engine coolant temperature sensor • ECM | ○ | ○ |
| P0120 (05-110) | Throttle/Pedal Position Sensor/Switch "A" Circuit | <ul style="list-style-type: none"> • Open or short in throttle position sensor circuit • Throttle position sensor (built in throttle body) • ECM | ○ | ○ |
| P0121 (05-117) | Throttle/Pedal Position Sensor/Switch "A" Circuit Range/Performance Problem | <ul style="list-style-type: none"> • Throttle position sensor (built in throttle body) | ○ | ○ |
| P0122 (05-110) | Throttle/Pedal Position Sensor/Switch "A" Circuit Low Input | <ul style="list-style-type: none"> • Throttle position sensor • Open in VTA1 circuit • Open in VC circuit (when the VC circuit is open, DTCs P0222 and P2135 are also output simultaneously) • ECM | ○ | ○ |
| P0123 (05-110) | Throttle/Pedal Position Sensor/Switch "A" Circuit High Input | <ul style="list-style-type: none"> • Throttle position sensor (built in throttle body) • Open in VTA circuit • Open in E2 circuit • VC and VTA circuits are short-circuited • ECM | ○ | ○ |
| P0125 (05-119) | Insufficient Coolant Temperature for Closed Loop Fuel Control | <ul style="list-style-type: none"> • Cooling system • Engine coolant temperature sensor • Thermostat | ○ | ○ |
| P0128 (05-122) | Coolant Thermostat (Coolant Temperature Below Thermostat Regulating Temperature) | <ul style="list-style-type: none"> • Thermostat • Cooling system • Engine coolant temperature sensor • ECM | ○ | ○ |
| P0136 (05-125) | Oxygen Sensor Circuit Malfunction (Bank 1 sensor 2) | <ul style="list-style-type: none"> • Heated oxygen sensor | ○ | ○ |
| P0137 (05-125) | Oxygen Sensor Circuit Low Voltage (Bank 1 Sensor 2) | <ul style="list-style-type: none"> • Open or short in heated oxygen sensor circuit • Heated oxygen sensor • Heated oxygen sensor heater • EFI M relay (integration relay) | ○ | ○ |
| P0138 (05-125) | Oxygen Sensor Circuit High Voltage (Bank 1 Sensor 2) | <ul style="list-style-type: none"> • Short in heated oxygen sensor circuit • Heated oxygen sensor | ○ | ○ |
| P0171 (05-143) | System Too Lean (Bank 1) | <ul style="list-style-type: none"> • Air induction system • Injector has blockage • Mass air flow meter • Engine coolant temperature sensor • Fuel pressure • Gas leakage in exhaust system • Open or short in A/F sensor (bank 1 sensor 1) circuit • A/F sensor (bank 1 sensor 1) • A/F sensor heater (bank 1 sensor 1) • EFI M relay (integration relay) • PCV valve and hose • PCV hose connection • ECM | ○ | ○ |

DIAGNOSTICS – SFI SYSTEM

| DTC No. (See Page) | Detection Item | Trouble Area | MIL*1 | Memory |
|-----------------------|--|---|-------|--------|
| P0172 (05-143) | System Too Rich (Bank 1) | <ul style="list-style-type: none"> • Injector has leakage or blockage • Mass air flow meter • Engine coolant temperature sensor • Ignition system • Fuel pressure • Gas leakage in exhaust system • Open or short in A/F sensor (bank 1 sensor 1) circuit • A/F sensor (bank 1 sensor 1) • A/F sensor heater (bank 1 sensor 1) • EFI M relay (integration relay) • ECM | ○ | ○ |
| P0220 (05-110) | Throttle/Pedal Position Sensor/ Switch "B" Circuit | <ul style="list-style-type: none"> • Open or short in throttle position sensor circuit • Throttle position sensor • ECM | ○ | ○ |
| P0222 (05-110) | Throttle/Pedal Position Sensor/ Switch "B" Circuit Low Input | <ul style="list-style-type: none"> • Throttle position sensor • Open in VTA2 circuit • Open in VC circuit (when the VC circuit is open, DTCs P0122 and P2135 are also output simultaneously) | ○ | ○ |
| P0223 (05-110) | Throttle/Pedal Position Sensor/ Switch "B" Circuit High Input | <ul style="list-style-type: none"> • Throttle position sensor | ○ | ○ |
| P0300 (05-157) | Random/Multiple Cylinder Misfire Detected | <ul style="list-style-type: none"> • Open or short in engine wire harness • Connector connection • Vacuum hose connection • Ignition system • Injector • Fuel pressure • Mass air flow meter • Engine coolant temperature sensor • Compression pressure • Valve clearance • Valve timing • PCV hose connection • PCV hose • ECM | ○*2 | ○ |
| P0301 (05-157) | Cylinder 1 Misfire Detected | <ul style="list-style-type: none"> • Same as DTC P0300 | ○*2 | ○ |
| P0302 (05-157) | Cylinder 2 Misfire Detected | <ul style="list-style-type: none"> • Same as DTC P0300 | ○*2 | ○ |
| P0303 (05-157) | Cylinder 3 Misfire Detected | <ul style="list-style-type: none"> • Same as DTC P0300 | ○*2 | ○ |
| P0304 (05-157) | Cylinder 4 Misfire Detected | <ul style="list-style-type: none"> • Same as DTC P0300 | ○*2 | ○ |
| P0325 (05-172) | Knock Sensor 1 Circuit (Bank 1 or Single Sensor) | <ul style="list-style-type: none"> • Open or short in knock sensor circuit • Knock sensor (looseness) • ECM | ○ | ○ |
| P0327 (05-172) | Knock Sensor 1 Circuit Low In- put (Bank 1 or Single Sensor) | <ul style="list-style-type: none"> • Short in knock sensor circuit • Knock sensor • ECM | ○ | ○ |
| P0328 (05-172) | Knock Sensor 1 Circuit High In- put (Bank 1 or Single Sensor) | <ul style="list-style-type: none"> • Open in knock sensor circuit • Knock sensor • ECM | ○ | ○ |
| P0335 (05-177) | Crankshaft Position Sensor "A" Circuit | <ul style="list-style-type: none"> • Open or short in crankshaft position sensor circuit • Crankshaft position sensor • Signal plate (crankshaft) • ECM | ○ | ○ |

| DTC No. (See Page) | Detection Item | Trouble Area | MIL*1 | Memory |
|-----------------------|--|--|-------|--------|
| P0340 (05-181) | Camshaft Position Sensor "A" Circuit (Bank 1 or Single Sensor) | <ul style="list-style-type: none"> • Open or short in camshaft position sensor circuit • Camshaft position sensor • Camshaft timing pulley • Timing chain has jumped a tooth • ECM | ○ | ○ |
| P0341 (05-181) | Camshaft Position Sensor "A" Circuit Range/Performance (Bank 1 or Single Sensor) | <ul style="list-style-type: none"> • Same as DTC P0340 | ○ | ○ |
| P0351 *3 (05-185) | Ignition Coil "A" Primary/Secondary Circuit | <ul style="list-style-type: none"> • Ignition system • Open or short in IGF or IGT1 circuit between ignition coil with igniter and ECM • No.1 ignition coil with igniter • ECM | ○ | ○ |
| P0352 *3 (05-185) | Ignition Coil "B" Primary/Secondary Circuit | <ul style="list-style-type: none"> • Ignition system • Open or short in IGF or IGT2 circuit between ignition coil with igniter and ECM • No.2 ignition coil with igniter • ECM | ○ | ○ |
| P0353 *3 (05-185) | Ignition Coil "C" Primary/Secondary Circuit | <ul style="list-style-type: none"> • Ignition system • Open or short in IGF or IGT3 circuit between ignition coil with igniter and ECM • No.3 ignition coil with igniter • ECM | ○ | ○ |
| P0354 *3 (05-185) | Ignition Coil "D" Primary/Secondary Circuit | <ul style="list-style-type: none"> • Ignition system • Open or short in IGF or IGT4 circuit between ignition coil with igniter and ECM • No.4 ignition coil with igniter • ECM | ○ | ○ |
| P0420 (05-195) | Catalyst System Efficiency Below Threshold (Bank 1) | <ul style="list-style-type: none"> • Gas leakage in exhaust system • A/F sensor (bank 1 sensor 1) • Heated oxygen sensor (bank 1 sensor 2) • Three-way catalytic converter (Exhaust manifold) | ○ | ○ |
| P0441 (05-202) | Evaporative Emission Control System Incorrect Purge Flow | <ul style="list-style-type: none"> • Fuel tank cap is incorrectly installed • Fuel tank cap is cracked or damaged • Vacuum hose is cracked, blocked, damaged or disconnected ((1), (2), (3), (4), (5), (6) and (7) in Fig. 1) • Open or short in vapor pressure sensor circuit • Vapor pressure sensor • Open or short in VSV circuit for EVAP • VSV for EVAP • Open or short in VSV circuit for CCV • VSV for CCV • Open or short in VSV circuit for pressure switching valve • VSV for pressure switching valve • Fuel tank is cracked or damaged • Charcoal canister is cracked or damaged • Fuel tank over fill check valve is cracked or damaged • ECM | ○ | ○ |

DIAGNOSTICS – SFI SYSTEM

| DTC No. (See Page) | Detection Item | Trouble Area | MIL*1 | Memory |
|-----------------------|--|---|-------|--------|
| P0442 (05-231) | Evaporative Emission Control System Leak Detected (small leak) | <ul style="list-style-type: none"> • Fuel tank cap is incorrectly installed • Fuel tank cap is cracked or damaged • Vacuum hose cracks is blocked, damaged or disconnected ((1), (2), (3), (4), (5), (6) and (7) in Fig. 1 of the circuit description) • Open or short in vapor pressure sensor circuit • Vapor pressure sensor • Open or short in VSV circuit for EVAP • VSV for EVAP • Open or short in VSV circuit for CCV • VSV for CCV • Open or short in VSV circuit for pressure switching valve • VSV for pressure switching valve • Fuel tank is cracked or damaged • Charcoal canister is cracked or damaged • Fuel tank over fill check valve is cracked or damaged • ECM | ○ | ○ |
| P0446 (05-202) | Evaporative Emission Control System Vent Control Circuit | <ul style="list-style-type: none"> • Same as DTC P0441 | ○ | ○ |
| P0451 (05-255) | Evaporative Emission Control System Pressure Sensor/Switch Range/Performance | <ul style="list-style-type: none"> • Open or short in vapor pressure sensor circuit • Vapor pressure sensor • ECM | ○ | ○ |
| P0452 (05-255) | Evaporative Emission Control System Pressure Sensor/Switch Low Input | <ul style="list-style-type: none"> • Same as DTC P0451 | ○ | ○ |
| P0453 (05-255) | Evaporative Emission Control System Pressure Sensor/Switch High Input | <ul style="list-style-type: none"> • Same as DTC P0451 | ○ | ○ |
| P0455 (05-231) | Evaporative Emission Control System Leak Detected (gross leak) | <ul style="list-style-type: none"> • Same as DTC P0442 | | |
| P0456 (05-231) | Evaporative Emission Control System Leak Detected (very small leak) | <ul style="list-style-type: none"> • Same as DTC P0442 | ○ | ○ |
| P0505 (05-261) | Idle Air Control System | <ul style="list-style-type: none"> • Open or short in idle speed control (ISC) valve circuit • Idle speed control (ISC) valve has stuck closed • ECM • Air induction system • PCV valve and hose | ○ | ○ |
| P0560 (05-264) | System Voltage | <ul style="list-style-type: none"> • Open in back up power source circuit • ECM | ○ | ○ |
| P0604 (05-268) | Internal Control Module Random Access Memory (RAM) Error | <ul style="list-style-type: none"> • ECM | ○ | ○ |
| P0606 (05-268) | ECM/PCM Processor | <ul style="list-style-type: none"> • ECM | ○ | — |
| P0607 (05-268) | Control Module Performance | <ul style="list-style-type: none"> • ECM | ○ | ○ |
| P0657 (05-268) | Actuator Supply Voltage Circuit/Open | <ul style="list-style-type: none"> • ECM | ○ | ○ |
| P1115 (05-270) | Coolant Temperature Sensor Circuit For Coolant Heat Storage System | <ul style="list-style-type: none"> • Coolant heat storage tank outlet temperature sensor • Open or short in temperature sensor circuit • ECM | ○ | ○ |
| P1116 (05-275) | Coolant Temperature Sensor Circuit Stuck For Coolant Heat Storage System | <ul style="list-style-type: none"> • Coolant heat storage tank outlet temperature sensor • Cooling system (clogging) | ○ | ○ |
| P1117 (05-270) | Coolant Temperature Sensor Circuit Low For Coolant Heat Storage System | <ul style="list-style-type: none"> • Coolant heat storage tank outlet temperature sensor • Short in temperature sensor circuit • ECM | ○ | ○ |

| DTC No. (See Page) | Detection Item | Trouble Area | MIL*1 | Memory |
|-----------------------|---|--|-------|--------|
| P1118 (05-270) | Coolant Temperature Sensor Circuit High For Coolant Heat Storage System | <ul style="list-style-type: none"> Coolant heat storage tank outlet temperature sensor Open in temperature sensor circuit ECM | ○ | ○ |
| P1120 (05-277) | Coolant Flow Control Valve Position Sensor Circuit | <ul style="list-style-type: none"> Open or short in water valve position sensor circuit Water valve (Coolant flow control valve) ECM | ○ | ○ |
| P1121 (05-284) | Coolant Flow Control Valve Position Sensor Circuit Stuck | <ul style="list-style-type: none"> Water valve (Coolant flow control valve) Cooling system (clogging) | ○ | ○ |
| P1122 (05-277) | Coolant Flow Control Valve Position Sensor Circuit Low | <ul style="list-style-type: none"> Water valve (Coolant flow control valve) Short in WBAD (valve position signal) circuit Open in VC circuit ECM | ○ | ○ |
| P1123 (05-277) | Coolant Flow Control Valve Position Sensor Circuit High | <ul style="list-style-type: none"> Water valve (Coolant flow control valve) Open in E2 circuit VC and WBAD circuits are short-circuited Open in WBAD circuit ECM | ○ | ○ |
| P1150 (05-290) | Coolant Path Clog Up For Coolant Heat Storage System | <ul style="list-style-type: none"> Coolant heat storage tank outlet temperature sensor Water valve (Coolant flow control valve) Cooling system (clogging) Heat storage tank ECM | ○ | ○ |
| P1151 (05-297) | Coolant Heat Storage Tank | <ul style="list-style-type: none"> Heat storage tank | ○ | ○ |
| P1455 (05-299) | Vapor Reducing Fuel Tank System Malfunction | <ul style="list-style-type: none"> Fuel Tank | ○ | ○ |
| P2102 (05-301) | Throttle Actuator Control Motor Circuit Low | <ul style="list-style-type: none"> Open or short in throttle control motor circuit Throttle control motor ECM | ○ | ○ |
| P2103 (05-301) | Throttle Actuator Control Motor Circuit High | <ul style="list-style-type: none"> Short in throttle control motor circuit Throttle control motor Throttle valve Throttle body assembly ECM | ○ | ○ |
| P2111 (05-305) | Throttle Actuator Control System Stuck Open | <ul style="list-style-type: none"> Throttle control motor circuit Throttle control motor Throttle body Throttle valve | ○ | ○ |
| P2112 (05-305) | Throttle Actuator Control System Stuck Closed | <ul style="list-style-type: none"> Throttle control motor circuit Throttle control motor Throttle body Throttle valve | ○ | ○ |
| P2118 (05-308) | Throttle Actuator Control Motor Current Range/Performance | <ul style="list-style-type: none"> Open in ETCS power source circuit ETCS fuse ECM | ○ | ○ |
| P2119 (05-312) | Throttle Actuator Control Throttle Body Range/Performance | <ul style="list-style-type: none"> Electric throttle control system ECM | ○ | ○ |
| P2135 (05-110) | Throttle/Pedal Position Sensor/Switch "A"/"B" Voltage Correlation | <ul style="list-style-type: none"> VTA and VTA2 circuits are short-circuited Open in VC circuit Throttle position sensor | ○ | ○ |

DIAGNOSTICS – SFI SYSTEM

| DTC No. (See Page) | Detection Item | Trouble Area | MIL*1 | Memory |
|-----------------------|---|---|-------|--------|
| P2195 (05-314) | Oxygen (A/F) Sensor Signal Stuck Lean (Bank 1 Sensor 1) | <ul style="list-style-type: none"> • Open or short in A/F sensor (bank 1 sensor 1) circuit • A/F sensor (bank 1 sensor 1) • A/F sensor heater • Integration relay • A/F sensor heater and relay circuit • Air induction system • Fuel pressure • Injector • PCV hose connection • ECM | ○ | ○ |
| P2196 (05-314) | Oxygen (A/F) Sensor Signal Stuck Rich (Bank 1 Sensor 1) | <ul style="list-style-type: none"> • Same as DTC P2195 | ○ | ○ |
| P2238 (05-327) | Oxygen Sensor Pumping Current Circuit Low (for A/F sensor Bank 1 sensor 1) | <ul style="list-style-type: none"> • Open or short in A/F sensor (bank 1 sensor 1) • A/F sensor (bank 1 sensor 1) • A/F sensor heater • EFI M relay (integration relay) • A/F sensor heater and relay circuit • ECM | ○ | ○ |
| P2239 (05-327) | Oxygen Sensor Pumping Current Circuit High (for A/F sensor Bank 1 sensor 1) | <ul style="list-style-type: none"> • Same as DTC P2238 | ○ | ○ |
| P2252 (05-327) | Oxygen Sensor Reference Ground Circuit Low (for A/F sensor Bank 1 sensor1) | <ul style="list-style-type: none"> • Same as DTC P2238 | ○ | ○ |
| P2253 (05-327) | Oxygen Sensor Reference Ground Circuit High (for A/F sensor Bank 1 sensor1) | <ul style="list-style-type: none"> • Same as DTC P2238 | ○ | ○ |
| P2601 (05-333) | Coolant Pump Control Circuit Range/Performance | <ul style="list-style-type: none"> • CHS water pump • CHS water pump relay • Open or short in CHS water pump circuit • ECM | ○ | ○ |
| P2610 (05-344) | ECM/PCM Internal Engine Off Timer Performance | <ul style="list-style-type: none"> • ECM | ○ | ○ |
| P2A00 (05-345) | A/F Sensor Circuit Slow Response (Bank 1 Sensor 1) | <ul style="list-style-type: none"> • Open or short in A/F sensor (bank 1 sensor 1) circuit • A/F sensor (bank 1 sensor 1) • A/F sensor heater • EFI M relay (integration relay) • A/F sensor heater and relay circuit • Air induction system • Fuel pressure • Injector • PCV hose connection • ECM | ○ | ○ |
| P3190 (05-357) | Poor Engine Power | <ul style="list-style-type: none"> • Air induction system • Throttle body • Fuel pressure • Engine • Air flow meter • Lack of fuel • Engine coolant temperature sensor • Crankshaft position sensor • Camshaft position sensor • ECM | ○ | ○ |

| DTC No. (See Page) | Detection Item | Trouble Area | MIL*1 | Memory |
|-----------------------|--------------------------------|--|-------|--------|
| P3191 (05-357) | Engine Does Not Start | <ul style="list-style-type: none"> • Air induction system • Throttle body • Fuel pressure • Engine • Air flow meter • Lack of fuel • Engine coolant temperature sensor • Crankshaft position sensor • Camshaft position sensor • ECM | ○ | ○ |
| P3193 (05-357) | Fuel Run Out | <ul style="list-style-type: none"> • Lack of fuel • ECM | ○ | ○ |
| U0293 (05-364) | Lost Communication With HV ECU | <ul style="list-style-type: none"> • Wire harness • HV ECU • ECM | ○ | ○ |

*1: "○" ... MIL illuminates, "—" ... MIL does not illuminate.

*2: MIL illuminates or blinks

*3: This DTC indicates malfunction related to the primary circuit.