

PRODEMAND

YMMS: 2007 Lincoln MKX
 Engine: 3.5L Eng
 VIN:

Jan 26, 2021
 License:
 Odometer:

P0161 - O2 HEATER CIRCUIT (BANK 2, SENSOR 2)

P0161 - O2 HEATER CIRCUIT (BANK 2, SENSOR 2)

Description:	See the description for DTC P0135.		
Possible Causes:	See the possible causes for DTC P0135.		
Diagnostic Aids:	See the diagnostic aids for DTC P0135.		
Application	Key On Engine Off	Key On Engine Running	Continuous Memory
All	refer to PINPOINT TEST DW .		

PINPOINT TEST DW: Heated Oxygen Sensor (HO2S)

INTRODUCTION

WARNING: Crown Victoria Police Interceptor vehicles equipped with fire suppression system, refer to FIRE SUPPRESSION SYSTEM article for Important Safety Warnings. Failure to follow these instructions may result in personal injury.

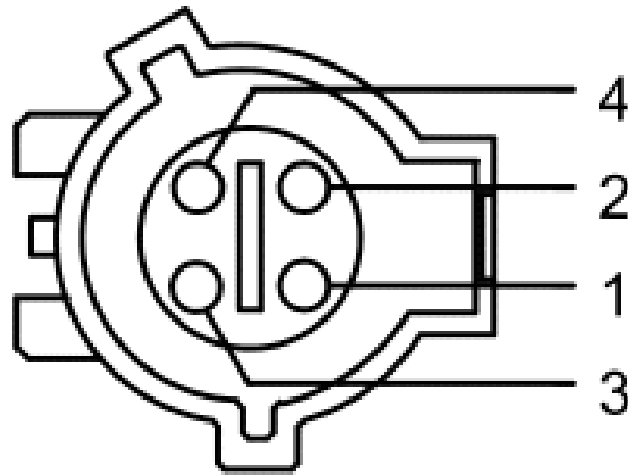
WARNING: While conducting tests on a hot engine take all safety precautions to prevent skin contact with hot engine components. Failure to follow these instructions may result in personal injury.

This pinpoint test is intended to diagnose the following:

- HO2S/O2S (9F472)
- HO2S/O2S (9G444)
- harness circuits: HO2S, HO2S Heater, VPWR, and SIGRTN
- powertrain control module (PCM) (12A650)

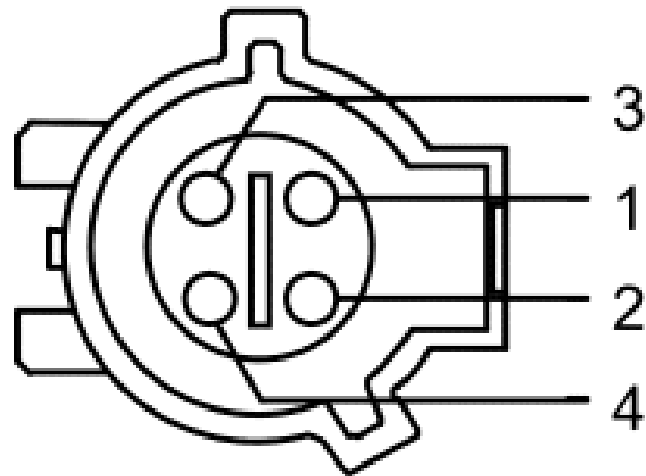
The pin numbering for the connector is in reference to the connector lock tab. Not all connector key combinations are shown

Fig 1: Heated Oxygen Sensor-Front (HO2S-Front) Connector - A

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Courtesy of FORD MOTOR CO.

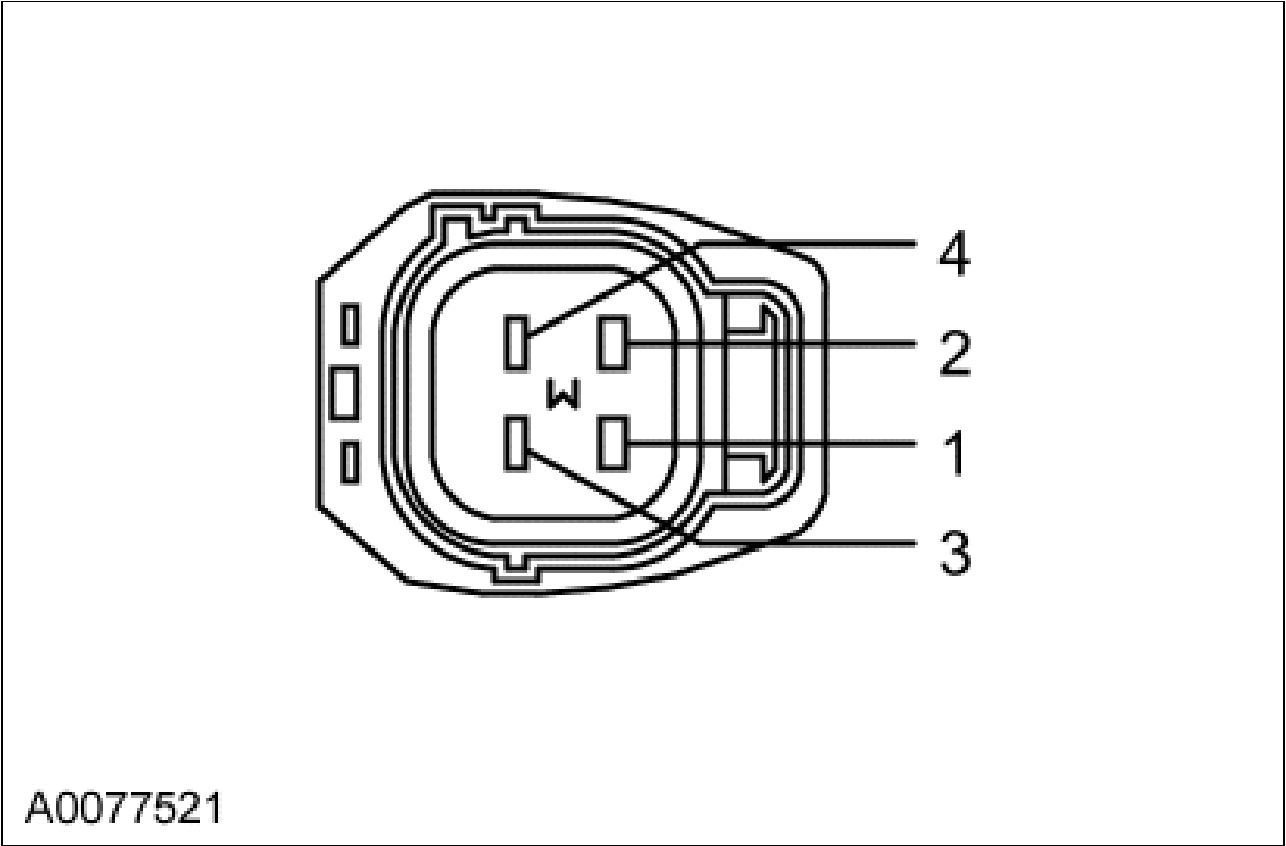
Fig 2: Heated Oxygen Sensor-Front (HO2S-Front) Connector - B



A0077561

Courtesy of FORD MOTOR CO.

Fig 3: Heated Oxygen Sensor-Front (HO2S-Front) Connector - C

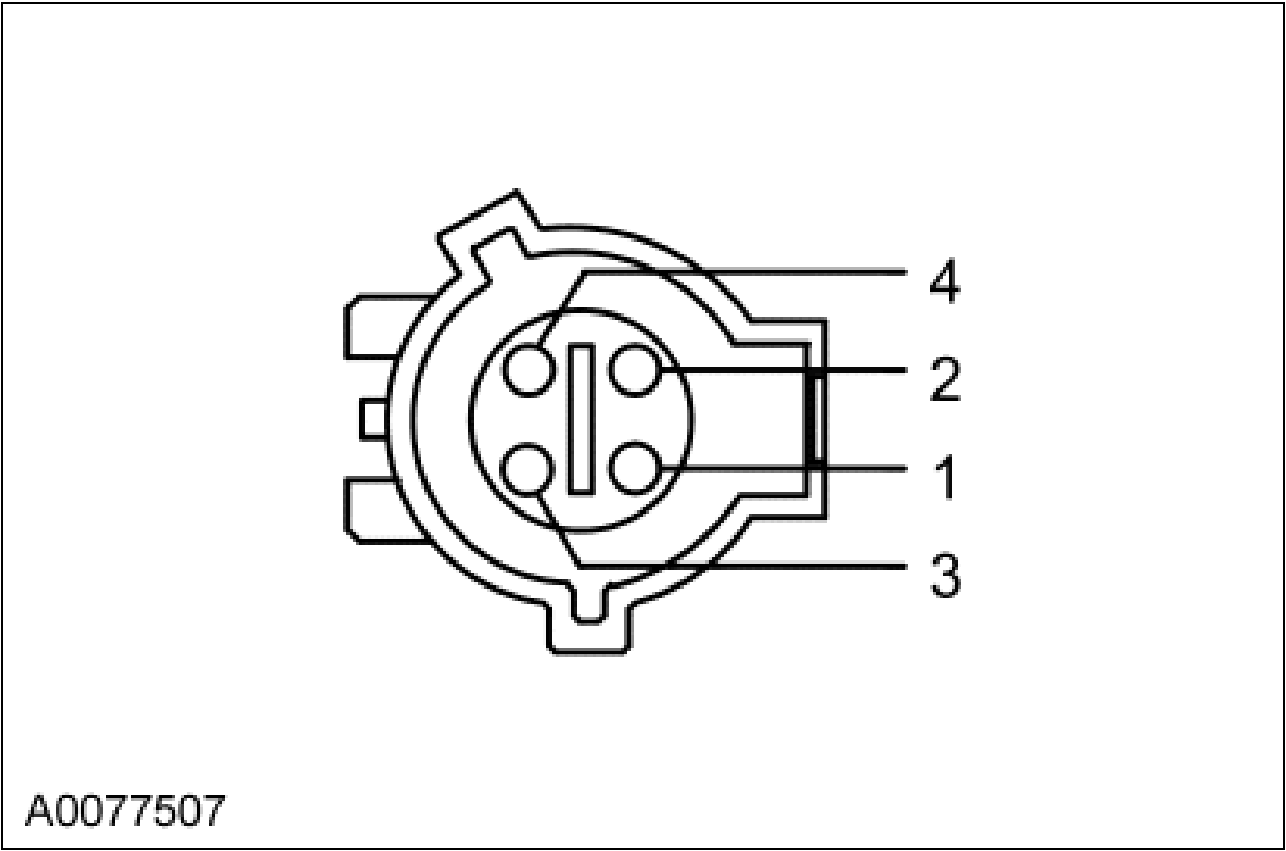


Vehicle	Connector	Pin	Circuit
E-Series, Edge, Escape, F-Super Duty, Freestar/Monterey, Fusion, Mariner, Milan, MKX, MKZ	A	1 3 4 2	VPWR SIGRTN HO2S Signal HO2S Heater
Expedition, Navigator	B	1 3 4 2	VPWR SIGRTN HO2S Signal HO2S Heater
Focus	C	1 3 4 2	VPWR SIGRTN HO2S Signal HO2S Heater
All other vehicles	B	2 4	VPWR SIGRTN

	3	HO2S Signal
	1	HO2S Heater

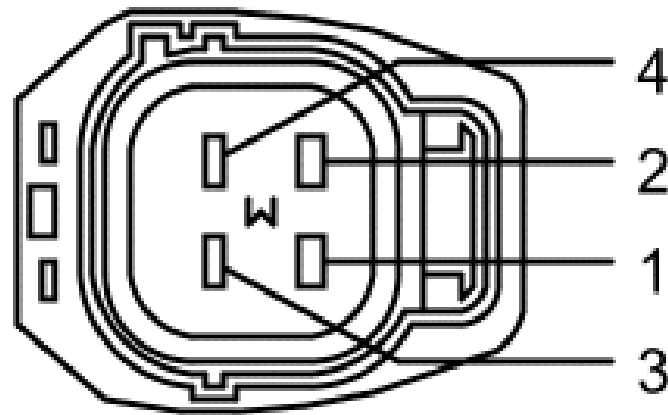
The pin numbering for the connector is in reference to the connector lock tab. Not all connector key combinations are shown

Fig 4: Heated Oxygen Sensor-Rear (HO2S-Rear) Connector - A



Courtesy of FORD MOTOR CO.

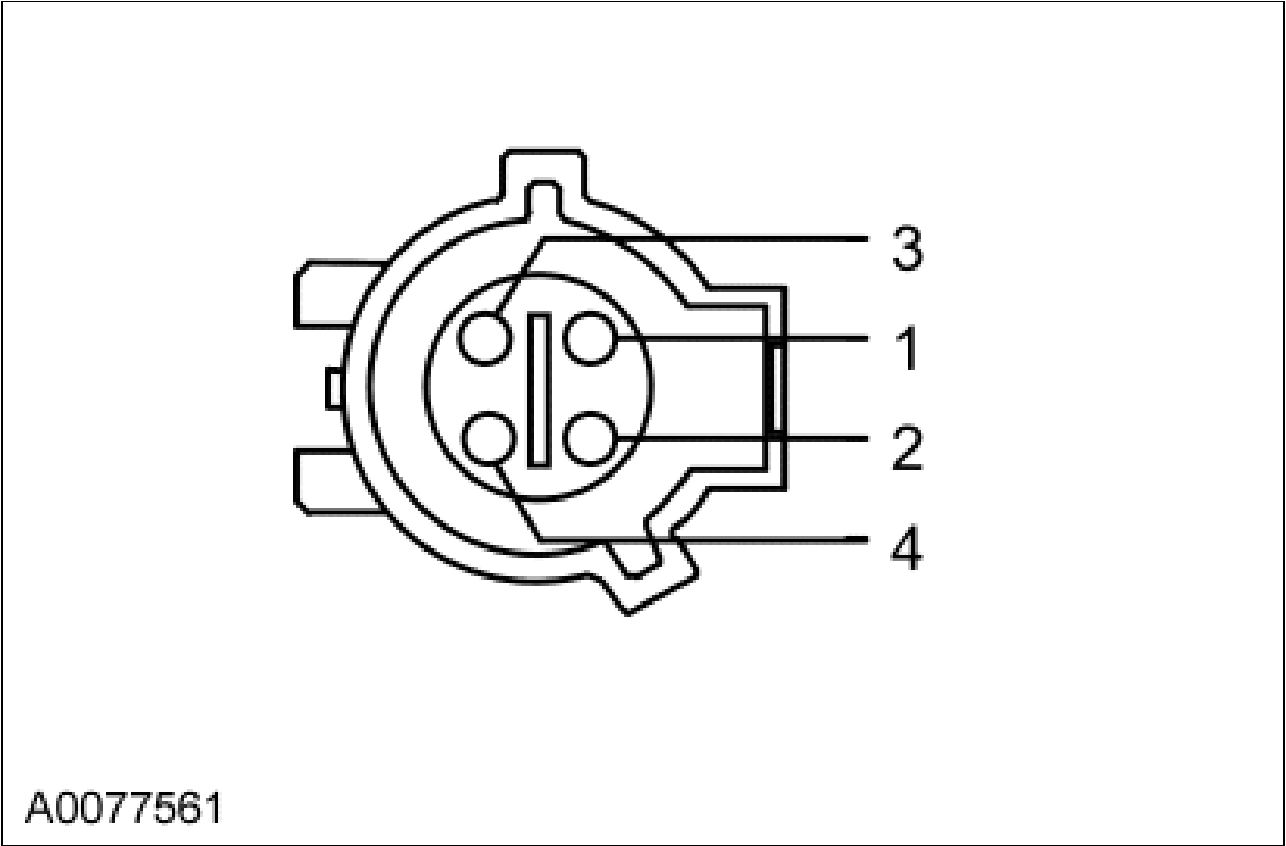
Fig 5: Heated Oxygen Sensor-Rear (HO2S-Rear) Connector - B



A0077521

Courtesy of FORD MOTOR CO.

Fig 6: Heated Oxygen Sensor-Rear (HO2S-Rear) Connector - C



Vehicle	Connector	Pin	Circuit
Escape, F-150, Freestar/Monterey, Mariner, Mark LT	A	1 3 4 2	VPWR SIGRTN HO2S Signal HO2S Heater
Focus	B	1 3 4 2	VPWR SIGRTN HO2S Signal HO2S Heater
All other vehicles	C	2 4 3 1	VPWR SIGRTN HO2S Signal HO2S Heater

Powertrain Control Module (PCM) Connector

For PCM connector views or reference values, refer to the REFERENCE VALUES article.

Vehicle	Connector	Pin	Circuit
E-Series 6.8L, E-Series 5.4L 5R100, F-Super Duty 6.8L	170 Pin	E28 E69 E29	HO2S11 HTR11 HO2S21

		E70 T24 T47 T25 T48 B14 B38 B35 E58, T41	HTR21 HO2S12 HTR12 HO2S22 HTR22 HO2S13 HTR13 VPWR SIGRTN
Edge, MKX	190 Pin	E29 E69 E28 E70 E23 E1 E24 E2 B51 E58	HO2S11 HTR11 HO2S21 HTR21 HO2S12 HTR12 HO2S22 HTR22 VPWR SIGRTN
Escape 3.0L, Mariner 3.0L	150 (50-50-50) Pin	E30 E49 E26 E48 T24 T47 T25 T48 B35 E41, T41	HO2S11 HTR11 HO2S21 HTR21 HO2S12 HTR12 HO2S22 HTR22 VPWR SIGRTN
Escape 2.3L, Mariner 2.3L	150 (50-50-50) Pin	E30 E49 T24 T47 B35 E41, T41	HO2S11 HTR11 HO2S12 HTR12 VPWR SIGRTN
Expedition, Navigator	140 Pin	E29 E69 E28 E70 B39 B10 B40 B11 B51 E58	HO2S11 HTR11 HO2S21 HTR21 HO2S12 HTR12 HO2S22 HTR22 VPWR SIGRTN
F-150, Mark LT	190 Pin	E29 E69 E28 E70 T22	HO2S11 HTR11 HO2S21 HTR21 HO2S12

		T1 T21 T12 B51 E58, T43	HTR12 HO2S22 HTR22 VPWR SIGRTN
Five Hundred, Freestyle, Montego	150 (50-50-50) Pin	E30 E49 E31 E50 T24 T47 T25 T48 B35 E41, T41	HO2S11 HTR11 HO2S21 HTR21 HO2S12 HTR12 HO2S22 HTR22 VPWR SIGRTN
Focus	150 (50-50-50) Pin	E30 E49 T24 T47 T25 T48 B35 E41, T41	HO2S11 HTR11 HO2S12 HTR12 HO2S13 HTR13 VPWR SIGRTN
Freestar/Monterey, Taurus	104 Pin	60 93 87 94 35 95 61 96 71 91	HO2S11 HTR11 HO2S21 HTR21 HO2S12 HTR12 HO2S22 HTR22 VPWR SIGRTN
Fusion 2.3L PZEV, Milan 2.3L PZEV	140 Pin	E28 E69 E3 E23 E5 E25 B51 E58	HO2S11 HTR11 HO2S12 HTR12 HO2S13 HTR13 VPWR SIGRTN
Fusion 2.3L, Milan 2.3L	140 Pin	E28 E69 E3 E23 B51 E58	HO2S11 HTR11 HO2S12 HTR12 VPWR SIGRTN
Fusion 3.0L, Milan 3.0L,	140 Pin	E28 E69	HO2S11 HTR11

MKZ		E29 E70 E3 E23 E4 E24 B51 E58	HO2S21 HTR21 HO2S12 HTR12 HO2S22 HTR22 VPWR SIGRTN
Ranger 2.3L	170 Pin	E28 E69 T24 T47 B35 E58, T41	HO2S11 HTR11 HO2S12 HTR12 VPWR SIGRTN
All other vehicles	170 Pin	E28 E69 E29 E70 T24 T47 T25 T48 B35 E58, T41	HO2S11 HTR11 HO2S21 HTR21 HO2S12 HTR12 HO2S22 HTR22 VPWR SIGRTN

TEST PROCEDURE

DW1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)

Are DTCs P0040, P0041, P0053, P0054, P0055, P0059, P0060, P0132, P0133, P0135, P0138, P0139, P0141, P0144, P0147, P0152, P0153, P0155, P0158, P0159, P0161, or P1127 present?

Yes	No
For DTCs P0040 or P0041, GO to DW2. For DTCs P0053, P0054, P0055, P0059 or P0060, GO to DW14. For DTCs P0132, P0138, P0144, P0152 or P0158, GO to DW20. For DTCs P0133 or P0153, GO to DW3. For DTCs P0135, P0139, P0141, P0147, P0155, P0159 or P0161, GO to DW9. For DTC P1127, GO to DW19.	For all others, GO to DIAGNOSTIC TROUBLE CODE (DTC) CHARTS AND DESCRIPTIONS .

DW2 KOER DTCS P0040 AND P0041: CROSSED SENSOR WIRES

Key in OFF position.

Check the vehicle repair history.

Verify the HO2S connectors are connected to the correct engine bank.

Is a concern present?

Yes	No

REPAIR as necessary.
CLEAR the DTCs. REPEAT the self-test.

Unable to duplicate or identify the concern at this time.
refer to PINPOINT TEST Z.

DW3 CONTINUOUS MEMORY DTCS P0133 AND P0153: CARRY OUT THE KOER SELF-TEST

Engine at normal operating temperature.

Carry out the KOER self-test.

Are DTCs P0040, P0041 or P1127 present?

Yes	No
DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to DIAGNOSTIC TROUBLE CODE (DTC) CHARTS AND DESCRIPTIONS .	GO to DW4.

DW4 CHECK THE HO2S RESPONSE TEST RESULTS

Key ON, engine OFF.

Access the diagnostic monitoring test results for the HO2S11 and HO2S21.

Is the indicated value greater than the minimum threshold?

Yes	No
CLEAR the DTCs. GO to DW3.	GO to DW5.

DW5 CHECK FOR UNMETERED AIR LEAKS

NOTE: Fuel calculations can be affected by unmetered air leaks.

Carefully inspect the following areas for potential air leaks:

hoses connecting to the mass air flow (MAF) sensor assembly

hoses connecting to the throttle body

intake manifold gasket leaks

PCV system

the vacuum lines are disconnected

improperly seated engine oil dipstick, tube or oil fill cap

exhaust leaks at flanges and gaskets

Are any air leaks present?

Yes	No
REPAIR the source of the air leak. RESET the keep alive memory (KAM). REFER to RESETTING THE KEEP ALIVE MEMORY (KAM) . REPEAT the self-test.	GO to DW6.

DW6 CHECK THE HO2S CIRCUIT CONTINUITY

NOTE: HO2S is displayed as O2S on the scan tool.

HO2S connector disconnected.

Check the connector (both halves) for any water contamination.

Connect a 5 amp fused jumper wire between the following:

Point A HO2S Connector, Harness Side	Point B HO2S Connector, Harness Side
HO2S Signal	VPWR

Key ON, engine running.

Access the PCM and monitor the HO2S Signal PID.

Is the voltage greater than 1 V?

Yes	No
INSTALL a new HO2S. REFER to the appropriate ELECTRONIC ENGINE CONTROLS article. CHANGE the engine oil and oil filter. RESET the keep alive memory (KAM). REFER to RESETTING THE KEEP ALIVE MEMORY (KAM) . REPEAT the self-test.	GO to DW7.

DW7 CHECK THE HO2S CIRCUIT(S) FOR AN OPEN IN THE HARNESS

NOTE: A vehicle hoist may be required to access the HO2S harness.

Key in OFF position.

Remove the jumper wire(s).

Visually inspect the HO2S harness for exposed wiring, water contamination, corrosion, and proper assembly.

PCM connector disconnected.

Measure the resistance between:

(+) PCM Connector, Harness Side	(-) HO2S Connector, Harness Side
HO2S Signal	HO2S Signal
SIGRTN	SIGRTN

Are the resistances less than 5 ohms?

Yes	No
GO to DW8.	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

DW8 CHECK THE HO2S CIRCUIT FOR A SHORT TO VPWR IN THE HARNESS

Measure the resistance between:

(+) PCM Connector, Harness Side	(-) PCM Connector, Harness Side
HO2S Signal	VPWR

Is the resistance greater than 10K ohms?

Yes	No
GO to DW9.	GO to DW12.

DW9 DTCS P0135, P0139, P0141, P0147, P0155, P0159 OR P0161: CHECK FOR A SOURCE OF POTENTIAL HO2S CONTAMINATION

Investigate the following items as potential sources of HO2S contamination:

- use of unapproved silicon sealers
- fuel contaminated by silicon additives
- excessive oil consumption
- glycol leaking internally in the engine
- lead-contaminated fuel
- short drive cycles in cold weather
- use of unapproved cleaning agents

Is a concern present?

Yes	No
REPAIR the source of the contamination. CHANGE the engine oil and oil filter. RESET the keep alive memory (KAM). REFER to RESETTING THE KEEP ALIVE MEMORY (KAM) . REPEAT the self-test.	GO to DW10.

DW10 VISUALLY INSPECT THE HO2S HARNESS

PCM connector connected.

Visually inspect the HO2S harness for exposed wiring, water contamination, corrosion, and proper assembly.

Is a concern present?

Yes	No
REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.	For DTCs P0139 or P0159, GO to DW11. For all others, GO to DW12.

DW11 CHECK THE EXHAUST SYSTEM FOR LEAKS AND MODIFICATIONS

Check for leaks in the exhaust system.

Visually inspect the vehicle for aftermarket accessories and performance modifications.

Is a concern present?

Yes	No
REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.	GO to DW25.

DW12 CHECK THE HO2S AND SIGRTN CIRCUITS FOR AN OPEN IN THE HARNESS

NOTE: Verify the harness pins are in the proper location.

Measure the resistance between:

(+) PCM Connector, Harness Side	(-) HO2S Connector, Harness Side
HO2S Signal	HO2S Signal
SIGRTN	SIGRTN

Are the resistances less than 5 ohms?

Yes	No
GO to DW13.	REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.

DW13 CARRY OUT THE KOEO ON DEMAND SELF-TEST

Key ON, engine OFF.

Check for KOEO DTCs.

Are DTCs P0135, P0141, P0147, P0155 or P0161 present?

Yes	No
GO to DW14.	GO to DW15.

DW14 DTCS P0053, P0054, P0055, P0059 AND P0060: CHECK FOR VPWR IN THE HARNESS

NOTE: If DTCs P0053, P0054, P0055, P0059, or P0060 are present, test their related circuits individually.

Key in OFF position.

HO2S connector disconnected.

Key ON, engine OFF.

Measure the voltage between:

(+) HO2S Connector, Harness Side	(-) HO2S Connector, Harness Side
VPWR	SIGRTN

Is the voltage greater than 10 V?

Yes	No
GO to DW15.	REPAIR the open circuit. CHECK the fuses. CLEAR the DTCs. REPEAT the self-test.

DW15 CHECK THE HO2S HEATER FOR SHORTS IN THE HARNESS

NOTE: If DTCs P0053, P0054, P0055, P0059, or P0060 are present, test their related circuits individually.

Key in OFF position.
 HO2S connector disconnected.
 PCM connector disconnected.
 Measure the resistance between:

(+) HO2S Connector, Harness Side	(-) Vehicle Battery
HO2S Heater	Negative terminal

Measure the resistance between:

(+) HO2S Connector, Harness Side	(-) HO2S Connector, Harness Side
HO2S Heater	VPWR
HO2S Heater	SIGRTN
HO2S Heater	HO2S Signal

Are the resistances greater than 10K ohms?

Yes	No
GO to DW16.	REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.

DW16 CHECK THE HO2S HEATER CIRCUIT FOR AN OPEN IN THE HARNESS

Measure the resistance between:

(+) PCM Connector, Harness Side	(-) HO2S Connector, Harness Side
HO2S Heater	HO2S Heater

Is the resistance less than 5 ohms?

Yes	No
GO to DW17.	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

DW17 CHECK THE INTERNAL RESISTANCE OF THE HO2S HEATER

Measure the resistance between:

(+) HO2S Connector, Component Side	(-) HO2S Connector, Component Side
HO2S Heater	VPWR

Is the resistance between 3 - 30 ohms?

Yes	No
GO to DW18.	INSTALL a new HO2S. REFER to the appropriate ELECTRONIC ENGINE CONTROLS article. RESET the keep alive memory (KAM). REFER to RESETTNG THE KEEP ALIVE MEMORY (KAM) . REPEAT the self-test.

DW18 CHECK THE HO2S HEATER CIRCUIT FOR AN INTERNAL SHORT TO SIGRTN OR GND

Measure the resistance between:

(+) HO2S Connector, Component Side	(-) HO2S Connector, Component Side
HO2S Heater	SIGRTN

Measure the resistance between:

(+) HO2S Connector, Component Side	(-) Vehicle Battery
HO2S Heater	Negative terminal

Is the resistance greater than 10K ohms?

Yes	No
GO to DW25.	INSTALL a new HO2S. REFER to the appropriate ELECTRONIC ENGINE CONTROLS article. RESET the keep alive memory (KAM). REFER to RESETTNG THE KEEP ALIVE MEMORY (KAM) . REPEAT the self-test.

DW19 KOER DTC P1127: EXHAUST TEMPERATURE OUT OF RANGE

NOTE: Address all other DTCs before proceeding.

Key ON, engine running.

Engine at normal operating temperature.

Access the PCM and monitor the HO2S Heater PID.

Is the PID state ON?

Yes	No
CARRY OUT the KOER self-test.	RUN the engine until the PID indicates ON. CARRY OUT the KOER self-test.

DW20 DTCS P0132, P0138, P0144, P0152 AND P0158: VISUALLY INSPECT THE HO2S HARNESS

NOTE: Disconnect the suspect HO2S harness connector.
Only the suspect HO2S needs to be diagnosed.

Key in OFF position.

HO2S connector disconnected.

Visually inspect the HO2S harness.

check the connector (both halves) for contamination

make sure the connector pins are fully seated

Is a concern present?

Yes	No
REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.	GO to DW21.

DW21 CHECK THE HO2S SIGNAL LEVEL TOO HIGH

HO2S connector connected.

Key ON, engine running.

Access the PCM and monitor the HO2S Signal PID.

Is the voltage less than 1.1 V?

Yes	No
GO to DW22.	GO to DW23.

DW22 CARRY OUT A THOROUGH WIGGLE TEST ON THE HO2S HARNESS

Key in OFF position.

Key ON, engine OFF.

Access the PCM and monitor the HO2S Signal PID.

Carry out a thorough wiggle test on the HO2S harness.

Does the voltage change during the wiggle test?

Yes	No
REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.	refer to PINPOINT TEST Z.

DW23 CHECK THE HO2S SIGNAL FOR A SHORT TO VPWR INSIDE THE SENSOR

Key in OFF position.

HO2S connector disconnected.

Key ON, engine running.

Access the PCM and monitor the HO2S Signal PID.

Is the voltage less than 1.1 V?

Yes	No
INSTALL a new HO2S. REFER to the appropriate ELECTRONIC ENGINE CONTROLS article. RESET the keep alive memory (KAM). REFER to RESETTING THE KEEP ALIVE MEMORY (KAM) . REPEAT the self-test.	GO to DW24.

DW24 CHECK THE HO2S CIRCUIT FOR A SHORT TO VPWR IN THE HARNESS

Key in OFF position.

PCM connector disconnected.

Key ON, engine OFF.

Measure the voltage between:

(+) HO2S Connector, Harness Side	(-)
HO2S Signal	Ground

Is any voltage present?

Yes	No
REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.	GO to DW25.

DW25 CHECK FOR CORRECT PCM OPERATION

Disconnect all the PCM connectors.

Visually inspect for:

pushed out pins

corrosion

Connect all the PCM connectors and make sure they seat correctly.

Carry out the PCM self-test and verify the concern is still present.

Is the concern still present?

Yes	No
INSTALL a new PCM. REFER to FLASH ELECTRICALLY ERASABLE PROGRAMMABLE READ ONLY MEMORY (EEPROM) .	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

DIAGNOSTIC TROUBLE CODE (DTC) CHARTS AND DESCRIPTIONS

Question: No power - anybody seen this? - RESOLVED

Question: po308

NOTE: Refer to the applicable service information article to diagnose the body and chassis DTCs.

DTC INDEX**DIAGNOSTIC TROUBLE CODES (DTC) LIST**

DTC	Description
DTC P0010	INTAKE CAMSHAFT POSITION ACTUATOR CIRCUIT/OPEN (BANK 1)
DTC P0011	INTAKE CAMSHAFT POSITION TIMING - OVER-ADVANCED (BANK 1)
DTC P0012	INTAKE CAMSHAFT POSITION TIMING - OVER-RETARDED (BANK 1)
DTC P0016	CRANKSHAFT POSITION - CAMSHAFT POSITION CORRELATION - BANK 1 SENSOR A
DTC P0018	CRANKSHAFT POSITION - CAMSHAFT POSITION CORRELATION - BANK 2 SENSOR A
DTC P0020	INTAKE CAMSHAFT POSITION ACTUATOR CIRCUIT/OPEN (BANK 2)
DTC P0021	INTAKE CAMSHAFT POSITION TIMING - OVER-ADVANCED (BANK 2)
DTC P0022	INTAKE CAMSHAFT POSITION TIMING - OVER-RETARDED (BANK 2)
DTC P0040	OXYGEN SENSOR SIGNALS SWAPPED BANK 1 SENSOR 1/BANK 2 SENSOR 1

DTC P0041	OXYGEN SENSOR SIGNALS SWAPPED BANK 1 SENSOR 2/BANK 2 SENSOR 2
DTC P0053	HO2S HEATER RESISTANCE (BANK 1, SENSOR 1)
DTC P0054	HO2S HEATER RESISTANCE (BANK 1, SENSOR 2)
DTC P0055	HO2S HEATER RESISTANCE (BANK 1, SENSOR 3)
DTC P0059	HO2S HEATER RESISTANCE (BANK 2, SENSOR 1)
DTC P0060	HO2S HEATER RESISTANCE (BANK 2, SENSOR 2)
DTC P0068	MANIFOLD ABSOLUTE PRESSURE (MAP)/MASS AIR FLOW (MAF) - THROTTLE POSITION CORRELATION
DTC P0097	INTAKE AIR TEMPERATURE SENSOR 2 CIRCUIT LOW
DTC P0098	INTAKE AIR TEMPERATURE SENSOR 2 CIRCUIT HIGH
DTC P0102	MASS OR VOLUME AIR FLOW A CIRCUIT LOW
DTC P0103	MASS OR VOLUME AIR FLOW A CIRCUIT HIGH
DTC P0104	MASS OR VOLUME AIR FLOW A CIRCUIT INTERMITTENT/ERRATIC
DTC P0106	MANIFOLD ABSOLUTE PRESSURE (MAP/BARO) SENSOR RANGE/PERFORMANCE
DTC P0107	MANIFOLD ABSOLUTE PRESSURE (MAP)/BAROMETRIC PRESSURE (BARO) SENSOR LOW
DTC P0108	MANIFOLD ABSOLUTE PRESSURE (MAP)/BAROMETRIC PRESSURE (BARO) SENSOR HIGH
DTC P0109	MANIFOLD ABSOLUTE PRESSURE (MAP)/BAROMETRIC PRESSURE (BARO) SENSOR INTERMITTENT
DTC P0111	INTAKE AIR TEMPERATURE (IAT) SENSOR 1 CIRCUIT RANGE/PERFORMANCE
DTC P0112	INTAKE AIR TEMPERATURE (IAT) SENSOR 1 CIRCUIT LOW
DTC P0113	INTAKE AIR TEMPERATURE (IAT) SENSOR 1 CIRCUIT HIGH
DTC P0114	INTAKE AIR TEMPERATURE (IAT) SENSOR 1 INTERMITTENT/ERRATIC
DTC P0116	ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT RANGE/PERFORMANCE
DTC P0117	ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT LOW
DTC P0118	ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT HIGH
DTC P0119	ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1 CIRCUIT INTERMITTENT/ERRATIC
DTC P0121	THROTTLE/PEDAL POSITION SENSOR A CIRCUIT RANGE/PERFORMANCE
DTC P0122	THROTTLE/PEDAL POSITION SENSOR A CIRCUIT LOW
DTC P0123	THROTTLE/PEDAL POSITION SENSOR A CIRCUIT HIGH
DTC P0125	INSUFFICIENT COOLANT TEMPERATURE FOR CLOSED LOOP FUEL CONTROL
DTC P0127	INTAKE AIR TEMPERATURE (IAT) TOO HIGH

DTC P0128	COOLANT THERMOSTAT (COOLANT TEMPERATURE BELOW THERMOSTAT REGULATING TEMPERATURE)
DTC P012B	TURBOCHARGER/SUPERCHARGER INLET PRESSURE SENSOR CIRCUIT RANGE/PERFORMANCE
DTC P012C	TURBOCHARGER/SUPERCHARGER INLET PRESSURE SENSOR CIRCUIT LOW
DTC P012D	TURBOCHARGER/SUPERCHARGER INLET PRESSURE SENSOR CIRCUIT HIGH
DTC P012E	TURBOCHARGER/SUPERCHARGER INLET PRESSURE SENSOR CIRCUIT INTERMITTENT/ERRATIC
DTC P0132	O2 CIRCUIT HIGH VOLTAGE (BANK 1, SENSOR 1)
DTC P0133	O2 CIRCUIT SLOW RESPONSE (BANK 1, SENSOR 1)
DTC P0135	O2 HEATER CIRCUIT (BANK 1, SENSOR 1)
DTC P0138	O2 CIRCUIT HIGH VOLTAGE (BANK 1, SENSOR 2)
DTC P0139	O2 CIRCUIT SLOW RESPONSE (BANK 1, SENSOR 2)
DTC P0141	O2 HEATER CIRCUIT (BANK 1, SENSOR 2)
DTC P0144	O2 CIRCUIT HIGH VOLTAGE (BANK 1, SENSOR 3)
DTC P0147	O2 HEATER CIRCUIT (BANK 1, SENSOR 3)
DTC P0148	FUEL DELIVERY ERROR
DTC P0152	O2 CIRCUIT HIGH VOLTAGE (BANK 2, SENSOR 1)
DTC P0153	O2 CIRCUIT SLOW RESPONSE (BANK 2, SENSOR 1)
DTC P0155	O2 HEATER CIRCUIT (BANK 2, SENSOR 1)
DTC P0158	O2 CIRCUIT HIGH VOLTAGE (BANK 2, SENSOR 2)
DTC P0159	O2 CIRCUIT SLOW RESPONSE (BANK 2, SENSOR 2)
DTC P0161	O2 HEATER CIRCUIT (BANK 2, SENSOR 2)
DTC P0171	SYSTEM TOO LEAN (BANK 1)
DTC P0172	SYSTEM TOO RICH (BANK 1)
DTC P0174	SYSTEM TOO LEAN (BANK 2)
DTC P0175	SYSTEM TOO RICH (BANK 2)
DTC P0180	FUEL TEMPERATURE SENSOR A CIRCUIT
DTC P0181	FUEL TEMPERATURE SENSOR A CIRCUIT RANGE/PERFORMANCE
DTC P0182	FUEL TEMPERATURE SENSOR A CIRCUIT LOW
DTC P0183	FUEL TEMPERATURE SENSOR A CIRCUIT HIGH
DTC P0190	FUEL RAIL PRESSURE SENSOR A CIRCUIT
DTC P0191	FUEL RAIL PRESSURE SENSOR A CIRCUIT RANGE/PERFORMANCE
DTC P0192	FUEL RAIL PRESSURE SENSOR A CIRCUIT LOW

DTC P0193	FUEL RAIL PRESSURE SENSOR A CIRCUIT HIGH
DTC P0196	ENGINE OIL TEMPERATURE (EOT) SENSOR CIRCUIT RANGE/PERFORMANCE
DTC P0197	ENGINE OIL TEMPERATURE (EOT) SENSOR CIRCUIT LOW
DTC P0198	ENGINE OIL TEMPERATURE (EOT) SENSOR CIRCUIT HIGH
DTC P020X	INJECTOR CIRCUIT/OPEN - CYLINDER X
DTC P0210	INJECTOR CIRCUIT/OPEN - CYLINDER 10
DTC P0217	ENGINE COOLANT OVER-TEMPERATURE CONDITION
DTC P0218	TRANSMISSION FLUID TEMPERATURE OVER-TEMPERATURE CONDITION
DTC P0219	ENGINE OVER SPEED CONDITION
DTC P0221	THROTTLE/PEDAL POSITION SENSOR/SWITCH B CIRCUIT RANGE/PERFORMANCE
DTC P0222	THROTTLE/PEDAL POSITION SENSOR/SWITCH B CIRCUIT LOW
DTC P0223	THROTTLE/PEDAL POSITION SENSOR/SWITCH B CIRCUIT HIGH
DTC P0230	FUEL PUMP PRIMARY CIRCUIT
DTC P0231	FUEL PUMP SECONDARY CIRCUIT LOW
DTC P0232	FUEL PUMP SECONDARY CIRCUIT HIGH
DTC P0297	VEHICLE OVER SPEED CONDITION
DTC P0298	ENGINE OIL OVER TEMPERATURE CONDITION
DTC P0300	RANDOM MISFIRE DETECTED
DTC P0301 - P0309	CYLINDER X MISFIRE DETECTED
DTC P0310	CYLINDER 10 MISFIRE DETECTED
DTC P0315	CRANKSHAFT POSITION SYSTEM VARIATION NOT LEARNED.
DTC P0316	MISFIRE DETECTED ON STARTUP (FIRST 1000 REVOLUTIONS)
DTC P0320	IGNITION/DISTRIBUTOR ENGINE SPEED INPUT CIRCUIT
DTC P0325	KNOCK SENSOR 1 CIRCUIT (BANK 1)
DTC P0326	KNOCK SENSOR 1 CIRCUIT RANGE/PERFORMANCE (BANK 1)
DTC P0330	KNOCK SENSOR 2 CIRCUIT (BANK 2)
DTC P0331	KNOCK SENSOR 2 CIRCUIT RANGE/PERFORMANCE (BANK 2)
DTC P0340	CAMSHAFT POSITION SENSOR A CIRCUIT (BANK 1 OR SINGLE SENSOR)
DTC P0344	CAMSHAFT POSITION SENSOR A CIRCUIT INTERMITTENT (BANK 1 OR SINGLE SENSOR)
DTC P0345	CAMSHAFT POSITION SENSOR A CIRCUIT (BANK 2)
DTC P0349	CAMSHAFT POSITION SENSOR A CIRCUIT INTERMITTENT (BANK 2)

DTC P0350	IGNITION COIL PRIMARY/SECONDARY CIRCUIT
DTC P0351	IGNITION COIL A PRIMARY/SECONDARY CIRCUIT
DTC P0352	IGNITION COIL B PRIMARY/SECONDARY CIRCUIT
DTC P0353	IGNITION COIL C PRIMARY/SECONDARY CIRCUIT
DTC P0354	IGNITION COIL D PRIMARY/SECONDARY CIRCUIT
DTC P0355	IGNITION COIL E PRIMARY/SECONDARY CIRCUIT
DTC P0356	IGNITION COIL F PRIMARY/SECONDARY CIRCUIT
DTC P0357	IGNITION COIL G PRIMARY/SECONDARY CIRCUIT
DTC P0358	IGNITION COIL H PRIMARY/SECONDARY CIRCUIT
DTC P0359	IGNITION COIL I PRIMARY/SECONDARY CIRCUIT
DTC P0360	IGNITION COIL J PRIMARY/SECONDARY CIRCUIT
DTC P0400	EXHAUST GAS RECIRCULATION (EGR) FLOW
DTC P0401	EXHAUST GAS RECIRCULATION (EGR) FLOW INSUFFICIENT DETECTED
DTC P0402	EXHAUST GAS RECIRCULATION (EGR) FLOW EXCESSIVE DETECTED
DTC P0403	EXHAUST GAS RECIRCULATION (EGR) CONTROL CIRCUIT
DTC P0405	EXHAUST GAS RECIRCULATION (EGR) SENSOR A CIRCUIT LOW
DTC P0406	EXHAUST GAS RECIRCULATION (EGR) SENSOR A CIRCUIT HIGH
DTC P0410	SECONDARY AIR INJECTION (AIR) SYSTEM
DTC P0412	SECONDARY AIR INJECTION (AIR) SYSTEM - SWITCHING VALVE A CIRCUIT
DTC P0420	CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 1)
DTC P0430	CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (BANK 2)
DTC P0442	EVAPORATIVE EMISSION SYSTEM LEAK DETECTED (SMALL LEAK)
DTC P0443	EVAPORATIVE EMISSION SYSTEM PURGE CONTROL VALVE CIRCUIT
DTC P0446	EVAPORATIVE EMISSION SYSTEM VENT CONTROL CIRCUIT
DTC P0451	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH RANGE/PERFORMANCE
DTC P0452	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH LOW
DTC P0453	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH HIGH
DTC P0454	EVAPORATIVE EMISSION SYSTEM PRESSURE SENSOR/SWITCH INTERMITTENT
DTC P0455	EVAPORATIVE EMISSION SYSTEM LEAK DETECTED (GROSS LEAK/NO FLOW)
DTC P0456	EVAPORATIVE EMISSION SYSTEM LEAK DETECTED (VERY SMALL LEAK)
DTC P0457	EVAPORATIVE EMISSION SYSTEM LEAK DETECTED (FUEL CAP LOOSE/OFF)
DTC P0460	FUEL LEVEL SENSOR A CIRCUIT

DTC P0461	FUEL LEVEL SENSOR A CIRCUIT RANGE/PERFORMANCE
DTC P0462	FUEL LEVEL SENSOR A CIRCUIT LOW
DTC P0463	FUEL LEVEL SENSOR A CIRCUIT HIGH
DTC P0480	FAN 1 CONTROL CIRCUIT
DTC P0481	FAN 2 CONTROL CIRCUIT
DTC P0482	FAN 3 CONTROL CIRCUIT
DTC P0483	FAN PERFORMANCE
DTC P0491	SECONDARY AIR INJECTION (AIR) SYSTEM INSUFFICIENT FLOW (BANK 1)
DTC P0500	VEHICLE SPEED SENSOR (VSS) A
DTC P0503	VEHICLE SPEED SENSOR (VSS) A INTERMITTENT/ERRATIC/HIGH
DTC P0505	IDLE AIR CONTROL (IAC) SYSTEM
DTC P0506	IDLE AIR CONTROL (IAC) SYSTEM RPM LOWER THAN EXPECTED
DTC P0507	IDLE AIR CONTROL (IAC) SYSTEM RPM HIGHER THAN EXPECTED
DTC P050A	COLD START IDLE AIR CONTROL PERFORMANCE
DTC P050B	COLD START IGNITION TIMING PERFORMANCE
DTC P050E	COLD START ENGINE EXHAUST TEMPERATURE OUT OF RANGE
DTC P0511	IDLE AIR CONTROL (IAC) CIRCUIT
DTC P0512	STARTER REQUEST CIRCUIT
DTC P0528	FAN SPEED SENSOR CIRCUIT NO SIGNAL
DTC P0532	A/C PRESSURE REFRIGERANT SENSOR A CIRCUIT LOW
DTC P0533	A/C REFRIGERANT PRESSURE SENSOR A CIRCUIT HIGH
DTC P0534	A/C REFRIGERANT CHARGE LOSS
DTC P0537	A/C EVAPORATOR TEMPERATURE SENSOR CIRCUIT LOW
DTC P0538	A/C EVAPORATOR TEMPERATURE SENSOR CIRCUIT HIGH
DTC P053A	POSITIVE CRANKCASE VENTILATION (PCV) HEATER CONTROL CIRCUIT / OPEN
DTC P0552	POWER STEERING PRESSURE (PSP) SENSOR/SWITCH CIRCUIT LOW
DTC P0553	POWER STEERING PRESSURE (PSP) SENSOR CIRCUIT HIGH INPUT
DTC P0563	SYSTEM VOLTAGE HIGH
DTC P0579	CRUISE CONTROL MULTIFUNCTION INPUT A CIRCUIT RANGE / PERFORMANCE
DTC P0581	CRUISE CONTROL MULTIFUNCTION INPUT A CIRCUIT HIGH
DTC P0600	SERIAL COMMUNICATION LINK
DTC P0602	POWERTRAIN CONTROL MODULE (PCM) PROGRAMMING ERROR
DTC P0603	INTERNAL CONTROL MODULE KEEP ALIVE MEMORY (KAM) ERROR

DTC P0604	INTERNAL CONTROL MODULE RANDOM ACCESS MEMORY (RAM) ERROR
DTC P0605	INTERNAL CONTROL MODULE READ ONLY MEMORY (ROM) ERROR
DTC P0606	CONTROL MODULE PROCESSOR
DTC P0607	CONTROL MODULE PERFORMANCE
DTC P060A	INTERNAL CONTROL MODULE MONITORING PROCESSOR PERFORMANCE
DTC P060B	INTERNAL CONTROL MODULE A/D PROCESSING PERFORMANCE
DTC P060C	INTERNAL CONTROL MODULE MAIN PROCESSOR PERFORMANCE
DTC P0610	CONTROL MODULE VEHICLE OPTIONS ERROR
DTC P061B	INTERNAL CONTROL MODULE TORQUE CALCULATION PERFORMANCE
DTC P061C	INTERNAL CONTROL MODULE ENGINE RPM PERFORMANCE
DTC P061D	INTERNAL CONTROL MODULE ENGINE AIR MASS PERFORMANCE
DTC P061F	INTERNAL CONTROL MODULE THROTTLE ACTUATOR CONTROLLER PERFORMANCE
DTC P0620	GENERATOR CONTROL CIRCUIT
DTC P0622	GENERATOR FIELD TERMINAL CIRCUIT
DTC P0625	GENERATOR FIELD TERMINAL CIRCUIT LOW
DTC P0626	GENERATOR FIELD TERMINAL CIRCUIT HIGH
DTC P062C	INTERNAL CONTROL MODULE VEHICLE SPEED PERFORMANCE
DTC P062F	INTERNAL CONTROL MODULE EEPROM ERROR
DTC P0642	SENSOR REFERENCE VOLTAGE A CIRCUIT LOW
DTC P0643	SENSOR REFERENCE VOLTAGE A CIRCUIT HIGH
DTC P0645	AIR CONDITIONING CLUTCH RELAY (A/CCR) CONTROL CIRCUIT
DTC P0657	ACTUATOR SUPPLY VOLTAGE A CIRCUIT/OPEN
DTC P0660	INTAKE MANIFOLD TUNING VALVE (IMTV) CONTROL CIRCUIT OPEN - BANK 1
DTC P0663	INTAKE MANIFOLD TUNING VALVE (IMTV) CONTROL CIRCUIT OPEN - BANK 2
DTC P0685	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER RELAY CONTROL CIRCUIT/OPEN
DTC P0689	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER RELAY SENSE CIRCUIT LOW
DTC P0690	ELECTRONIC CONTROL MODULE (ECM)/POWERTRAIN CONTROL MODULE (PCM) POWER RELAY SENSE CIRCUIT HIGH
DTC P0703	BRAKE SWITCH B INPUT CIRCUIT
DTC P0704	CLUTCH SWITCH INPUT CIRCUIT
DTC P0705	TRANSMISSION RANGE SENSOR A CIRCUIT (PRNDL) INPUT
DTC P0707	TRANSMISSION RANGE SENSOR A CIRCUIT LOW

DTC P0708	TRANSMISSION RANGE SENSOR A CIRCUIT HIGH
DTC P071X	TRANSMISSION CODE
DTC P0720	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT
DTC P0721	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT RANGE/PERFORMANCE
DTC P0722	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT NO SIGNAL
DTC P0723	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT INTERMITTENT
DTC P073X	TRANSMISSION CODE
DTC P074X	TRANSMISSION CODE
DTC P075X	TRANSMISSION CODE
DTC P076X	TRANSMISSION CODE
DTC P077X	TRANSMISSION CODE
DTC P078X	TRANSMISSION CODE
DTC P079X	TRANSMISSION CODE
DTC P0815	UPSHIFT SWITCH CIRCUIT
DTC P0830	CLUTCH PEDAL SWITCH A CIRCUIT
DTC P0833	CLUTCH PEDAL SWITCH B CIRCUIT
DTC P0840	TRANSMISSION FLUID PRESSURE SENSOR/SWITCH A CIRCUIT
DTC P09XX	TRANSMISSION CODE
DTC P1000	ON-BOARD DIAGNOSTIC (OBD) SYSTEMS READINESS TEST NOT COMPLETE
DTC P1001	KEY ON ENGINE RUNNING (KOER) NOT ABLE TO COMPLETE, KOER ABORTED
DTC P1100	MASS AIR FLOW (MAF) SENSOR CIRCUIT INTERMITTENT
DTC P1101	MASS AIR FLOW (MAF) SENSOR OUT OF SELF-TEST RANGE
DTC P1112	INTAKE AIR TEMPERATURE (IAT) CIRCUIT INTERMITTENT
DTC P1114	INTAKE AIR TEMPERATURE 2 (IAT2) CIRCUIT LOW (SUPERCHARGED/TURBOCHARGED ENGINES)
DTC P1115	INTAKE AIR TEMPERATURE 2 (IAT2) CIRCUIT HIGH (SUPERCHARGED/TURBOCHARGED ENGINES)
DTC P1116	ENGINE COOLANT TEMPERATURE (ECT) SENSOR OUT OF SELF-TEST RANGE
DTC P1117	ENGINE COOLANT TEMPERATURE (ECT) SENSOR CIRCUIT INTERMITTENT
DTC P1120	THROTTLE POSITION SENSOR A OUT OF RANGE LOW (RATCH TOO LOW)
DTC P1124	THROTTLE POSITION SENSOR A OUT OF SELF-TEST RANGE
DTC P1127	EXHAUST TEMPERATURE OUT OF RANGE, O2 SENSOR TESTS NOT COMPLETED
DTC P115E	THROTTLE ACTUATOR CONTROL (TAC) THROTTLE BODY AIR FLOW TRIM AT MAX LIMIT

DTC P117A	ENGINE OIL OVER TEMPERATURE - FORCED LIMITED POWER
DTC P1184	ENGINE OIL TEMPERATURE (EOT) SENSOR OUT OF SELF-TEST RANGE
DTC P1227	WASTEGATE FAILED CLOSED (OVER PRESSURE)
DTC P1228	WASTEGATE FAILED OPEN (UNDER PRESSURE)
DTC P1229	CHARGE AIR COOLER (CAC) PUMP DRIVER
DTC P1233	FUEL PUMP DRIVER MODULE DISABLED OR OFF LINE
DTC P1234	FUEL PUMP DRIVER MODULE DISABLED OR OFF LINE
DTC P1235	FUEL PUMP CONTROL OUT OF RANGE
DTC P1236	FUEL PUMP CONTROL OUT OF RANGE
DTC P1237	FUEL PUMP SECONDARY CIRCUIT
DTC P1238	FUEL PUMP SECONDARY CIRCUIT
DTC P1244	ALTERNATOR LOAD HIGH INPUT
DTC P1245	ALTERNATOR LOAD LOW INPUT
DTC P1246	ALTERNATOR LOAD INPUT
DTC P1260	THEFT DETECTED, VEHICLE IMMOBILIZED
DTC P1270	ENGINE RPM OR VEHICLE SPEED LIMITER REACHED
DTC P1285	CYLINDER HEAD OVER TEMPERATURE CONDITION
DTC P1288	CYLINDER HEAD TEMPERATURE (CHT) SENSOR OUT OF SELF-TEST RANGE
DTC P1289	CYLINDER HEAD TEMPERATURE (CHT) SENSOR CIRCUIT HIGH
DTC P128A	CYLINDER HEAD TEMPERATURE (CHT) SENSOR CIRCUIT INTERMITTENT/ERRATIC
DTC P1290	CYLINDER HEAD TEMPERATURE (CHT) SENSOR CIRCUIT LOW
DTC P1299	CYLINDER HEAD OVER TEMPERATURE PROTECTION ACTIVE
DTC P1336	CRANKSHAFT/CAMSHAFT SENSOR RANGE/PERFORMANCE
DTC P1397	SYSTEM VOLTAGE OUT OF SELF -TEST RANGE
DTC P1405	DIFFERENTIAL PRESSURE FEEDBACK SENSOR UPSTREAM HOSE OFF OR PLUGGED
DTC P1406	DIFFERENTIAL PRESSURE FEEDBACK SENSOR DOWNSTREAM HOSE OFF OR PLUGGED
DTC P1408	EXHAUST GAS RECIRCULATION (EGR) FLOW OUT OF SELF-TEST RANGE (NON- MIL)
DTC P1409	EXHAUST GAS RECIRCULATION (EGR) VACUUM REGULATOR SOLENOID CIRCUIT
DTC P1436	A/C EVAPORATOR AIR TEMPERATURE CIRCUIT LOW
DTC P1437	A/C EVAPORATOR AIR TEMPERATURE CIRCUIT HIGH

DTC P1443	EVAPORATIVE EMISSION SYSTEM CONTROL VALVE (LOW/NO FLOW)
DTC P1450	UNABLE TO BLEED UP FUEL TANK VACUUM
DTC P1451	EVAPORATIVE EMISSION SYSTEM VENT CONTROL CIRCUIT
DTC P145E	PCV HEATER CONTROL B CIRCUIT
DTC P1460	WIDE OPEN THROTTLE A/C CUTOUT CIRCUIT
DTC P1461	A/C PRESSURE SENSOR CIRCUIT HIGH
DTC P1462	AIR CONDITIONING PRESSURE (A/CP) SENSOR LOW VOLTAGE DETECTED
DTC P1463	AIR CONDITIONING PRESSURE SENSOR (A/CP) INSUFFICIENT PRESSURE CHANGE
DTC P1464	A/C DEMAND OUT OF SELF-TEST RANGE
DTC P1469	RAPID A/C CYCLING
DTC P1474	FAN CONTROL PRIMARY CIRCUIT
DTC P1477	ADDITIONAL FAN RELAY CIRCUIT
DTC P1479	HIGH FAN CONTROL PRIMARY CIRCUIT
DTC P1489	PCV HEATER CONTROL CIRCUIT
DTC P1500	VEHICLE SPEED SENSOR (VSS)
DTC P1501	VEHICLE SPEED SENSOR (VSS) OUT OF SELF-TEST RANGE
DTC P1502	VEHICLE SPEED SENSOR (VSS) INTERMITTENT
DTC P1504	IDLE AIR CONTROL (IAC) CIRCUIT
DTC P1506	IDLE AIR CONTROL (IAC) OVERSPEED ERROR
DTC P1507	IDLE AIR CONTROL (IAC) UNDERSPEED ERROR
DTC P1512	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK CLOSED (BANK 1)
DTC P1513	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK CLOSED (BANK 2)
DTC P1516	INTAKE MANIFOLD RUNNER CONTROL (IMRC) INPUT ERROR (BANK 1)
DTC P1517	INTAKE MANIFOLD RUNNER CONTROL (IMRC) INPUT ERROR (BANK 2)
DTC P1518	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK OPEN BANK 1
DTC P1519	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK CLOSED BANK 1
DTC P151A	INTAKE MANIFOLD RUNNER CONTROLLER PERFORMANCE
DTC P1520	INTAKE MANIFOLD RUNNER CONTROL (IMRC) CIRCUIT
DTC P1537	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK OPEN (BANK 1)
DTC P1538	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK OPEN (BANK 2)
DTC P1548	ENGINE AIR FILTER RESTRICTION
DTC P1549	INTAKE MANIFOLD COMMUNICATION CONTROL (IMCC) CIRCUIT (BANK 1)

DTC P1550	POWER STEERING PRESSURE (PSP) SENSOR OUT OF SELF-TEST RANGE
DTC P1572	BRAKE PEDAL SWITCH CIRCUIT
DTC P1576	PEDAL POSITION NOT AVAILABLE
DTC P1582	ELECTRONIC THROTTLE MONITOR DATA AVAILABLE
DTC P1633	KEEP ALIVE POWER (KAPWR) VOLTAGE TOO LOW
DTC P1635	TIRE/AXLE RATIO OUT OF ACCEPTABLE RANGE
DTC P1636	INDUCTIVE SIGNATURE CHIP COMMUNICATION ERROR
DTC P1639	VEHICLE ID (VID) BLOCK CORRUPTED, NOT PROGRAMMED
DTC P1640	POWERTRAIN DTCS AVAILABLE IN ANOTHER MODULE
DTC P1641	FUEL PUMP PRIMARY CIRCUIT
DTC P1650	POWER STEERING PRESSURE (PSP) SWITCH OUT OF SELF-TEST RANGE
DTC P1651	POWER STEERING PRESSURE (PSP) SWITCH INPUT
DTC P1674	CONTROL MODULE SOFTWARE CORRUPTED
DTC P1703	BRAKE SWITCH OUT OF SELF-TEST RANGE
DTC P1705	TRANSMISSION RANGE SENSOR OUT OF SELF-TEST RANGE
DTC P1709	PARK/NEUTRAL POSITION (PNP) SWITCH OUT OF SELF-TEST RANGE
DTC P1729	4X4L SWITCH
DTC P1780	TRANSMISSION CONTROL SWITCH (TCS) OUT OF SELF-TEST RANGE
DTC P1781	4X4L SWITCH OUT OF SELF-TEST RANGE
DTC P17XX	
DTC P18XX	
DTC P1900	OUTPUT SHAFT SPEED (OSS) SENSOR CIRCUIT INTERMITTENT
DTC P1901	TURBINE SHAFT SPEED (TSS) SENSOR CIRCUIT INTERMITTENT
DTC P2004	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK OPEN (BANK 1)
DTC P2005	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK OPEN (BANK 2)
DTC P2006	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK CLOSED (BANK 1)
DTC P2007	INTAKE MANIFOLD RUNNER CONTROL (IMRC) STUCK CLOSED (BANK 2)
DTC P2008	INTAKE MANIFOLD RUNNER CONTROL (IMRC) CIRCUIT OPEN (BANK 1)
DTC P2014	INTAKE MANIFOLD RUNNER POSITION SENSOR/SWITCH CIRCUIT (BANK 1)
DTC P2015	INTAKE MANIFOLD RUNNER POSITION SENSOR/SWITCH CIRCUIT RANGE/PERFORMANCE (BANK 1)
DTC P2019	INTAKE MANIFOLD RUNNER POSITION SENSOR/SWITCH CIRCUIT (BANK 2)
DTC P2020	INTAKE MANIFOLD RUNNER POSITION SENSOR/SWITCH CIRCUIT RANGE/PERFORMANCE (BANK 2)

DTC P2065	FUEL LEVEL SENSOR B CIRCUIT
DTC P2066	FUEL LEVEL SENSOR B CIRCUIT RANGE/PERFORMANCE
DTC P2067	FUEL LEVEL SENSOR B CIRCUIT LOW
DTC P2068	FUEL LEVEL SENSOR B CIRCUIT HIGH
DTC P2070	INTAKE MANIFOLD TUNING VALVE (IMTV) STUCK OPEN BANK 1
DTC P2071	INTAKE MANIFOLD TUNING VALVE (IMTV) STUCK CLOSED BANK 1
DTC P2072	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - ICE BREAKAGE
DTC P2100	THROTTLE ACTUATOR CONTROL (TAC) MOTOR CIRCUIT/OPEN
DTC P2101	THROTTLE ACTUATOR CONTROL (TAC) MOTOR RANGE/PERFORMANCE
DTC P2104	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - FORCED IDLE
DTC P2105	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - FORCED ENGINE SHUTDOWN
DTC P2106	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - FORCED LIMITED POWER
DTC P2107	THROTTLE ACTUATOR CONTROL (TAC) MODULE PROCESSOR
DTC P2110	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - FORCED LIMITED RPM
DTC P2111	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - STUCK OPEN
DTC P2112	THROTTLE ACTUATOR CONTROL (TAC) SYSTEM - STUCK CLOSED
DTC P2121	THROTTLE/PEDAL POSITION SENSOR/SWITCH D CIRCUIT RANGE/PERFORMANCE
DTC P2122	THROTTLE/PEDAL POSITION SENSOR/SWITCH D CIRCUIT LOW
DTC P2123	THROTTLE/PEDAL POSITION SENSOR/SWITCH D CIRCUIT HIGH
DTC P2126	THROTTLE/PEDAL POSITION SENSOR/SWITCH E CIRCUIT RANGE/PERFORMANCE
DTC P2127	THROTTLE/PEDAL POSITION SENSOR/SWITCH E CIRCUIT LOW
DTC P2128	THROTTLE/PEDAL POSITION SENSOR/SWITCH E CIRCUIT HIGH
DTC P2131	THROTTLE/PEDAL POSITION SENSOR/SWITCH F CIRCUIT RANGE/PERFORMANCE
DTC P2132	THROTTLE/PEDAL POSITION SENSOR/SWITCH F CIRCUIT LOW
DTC P2133	THROTTLE/PEDAL POSITION SENSOR/SWITCH F CIRCUIT HIGH
DTC P2135	THROTTLE/PEDAL POSITION SENSOR/SWITCH A/B VOLTAGE CORRELATION
DTC P2195	O2 SENSOR SIGNAL BIASED/STUCK LEAN - BANK 1, SENSOR 1
DTC P2196	O2 SENSOR SIGNAL BIASED/STUCK RICH - BANK 1, SENSOR 1
DTC P2197	O2 SENSOR SIGNAL BIASED/STUCK LEAN - BANK 2, SENSOR 1
DTC P2198	O2 SENSOR SIGNAL BIASED/STUCK RICH - BANK 2, SENSOR 1
DTC P2257	SECONDARY AIR INJECTION (AIR) SYSTEM CONTROL A CIRCUIT LOW

DTC P2258	SECONDARY AIR INJECTION (AIR) SYSTEM CONTROL A CIRCUIT HIGH
DTC P2270	O2 SENSOR SIGNAL STUCK LEAN - BANK 1, SENSOR 2
DTC P2271	O2 SENSOR SIGNAL STUCK RICH - BANK 1, SENSOR 2
DTC P2272	O2 SENSOR SIGNAL STUCK LEAN - BANK 2, SENSOR 2
DTC P2273	O2 SENSOR SIGNAL STUCK RICH - BANK 2, SENSOR 2
DTC P2274	O2 SENSOR SIGNAL STUCK LEAN - BANK 1, SENSOR 3
DTC P2275	O2 SENSOR SIGNAL STUCK RICH - BANK 1, SENSOR 3
DTC P2448	SECONDARY AIR INJECTION SYSTEM HIGH AIRFLOW (BANK 1)
DTC P260F	EVAPORATIVE SYSTEM MONITORING PROCESSOR PERFORMANCE
DTC PXXXX	
DTC U0101	LOST COMMUNICATION WITH TRANSAXLE CONTROL MODULE (TCM)
DTC U0121	LOST COMMUNICATION WITH THE ANTI-LOCK BRAKE SYSTEM (ABS) CONTROL MODULE
DTC U0155	LOST COMMUNICATION WITH INSTRUMENT PANEL CLUSTER CONTROL MODULE
DTC U0300	INTERNAL CONTROL MODULE SOFTWARE INCOMPATIBILITY
DTC U1039	SCP (J1850) INVALID OR MISSING DATA FOR VEHICLE SPEED
DTC UXXXX	NETWORK COMMUNICATION DIAGNOSTIC TROUBLE CODE (DTC)