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## 2023 Ford Bronco Sport Service and Repair Manual

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PCM (powertrain control module)	P013E:00	O2 Sensor Delayed Response - Rich To Lean (Bank 1 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P0140:00	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P0141:00	O2 Sensor Heater Circuit (Bank 1 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P014A:00	O2 Sensor Delayed Response - Rich To Lean (Bank 2 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P0150:00	O2 Sensor Circuit (Bank 2 Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
PCM (powertrain control module)	P0151:00	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
PCM (powertrain control module)	P0152:00	O2 Sensor Circuit High Voltage (Bank 2 Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
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PCM (powertrain control module)	P0154:00	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
PCM (powertrain control module)	P0155:00	O2 Sensor Heater Circuit (Bank 2 Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
PCM (powertrain control module)	P0157:00	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>

PCM (powertrain control module)	P1138:00	Lack Of HO2S12 Switches - Sensor Indicates Rich: No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P1157:00	Lack Of HO2S22 Switches - Sensor Indicates Lean: No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P1158:00	Lack Of HO2S22 Switches - Sensor Indicates Rich: No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P1646:00	Linear O2 Sensor Control Chip (Bank 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
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PCM (powertrain control module)	P164A:00	O2 Sensor Positive Current Trim Circuit Performance (Bank 1 Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
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PCM (powertrain control module)	P2096:00	Post Catalyst Fuel Trim System Too Lean (Bank 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
PCM (powertrain control module)	P2097:00	Post Catalyst Fuel Trim System Too Rich (Bank 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
PCM (powertrain control module)	P2098:00	Post Catalyst Fuel Trim System Too Lean (Bank 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
PCM (powertrain control module)	P2099:00	Post Catalyst Fuel Trim System Too Rich (Bank 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>

PCM (powertrain control module)	P2254:00	O2 Sensor Negative Current Control Circuit/Open (Bank 2 Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>
PCM (powertrain control module)	P2270:00	O2 Sensor Signal Biased/Stuck Lean (Bank 1 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P2270:00	O2 Sensor Signal Biased/Stuck Lean (Bank 1 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P2271:00	O2 Sensor Signal Biased/Stuck Rich (Bank 1 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P2271:00	O2 Sensor Signal Biased/Stuck Rich (Bank 1 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P2272:00	O2 Sensor Signal Biased/Stuck Lean (Bank 2 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P2272:00	O2 Sensor Signal Biased/Stuck Lean (Bank 2 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P2273:00	O2 Sensor Signal Biased/Stuck Rich (Bank 2 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P2273:00	O2 Sensor Signal Biased/Stuck Rich (Bank 2 Sensor 2): No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P2297:00	O2 Sensor Out Of Range During Deceleration (Bank 1, Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DW</a>
PCM (powertrain control module)	P2626:00	O2 Sensor Positive Current Trim Circuit / Open (Bank 1 Sensor 1): No Sub Type Information	<a href="#">GO to Pinpoint Test DZ</a>

PCM (powertrain control module)	P2BF0:00	Fuel Control System B Too Lean Bank 1: No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P2BF1:00	Fuel Control System B Too Rich Bank 1: No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P2BF2:00	Fuel Control System B Too Lean Bank 2: No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>
PCM (powertrain control module)	P2BF3:00	Fuel Control System B Too Rich Bank 2: No Sub Type Information	<a href="#">GO to Pinpoint Test H</a>

### Global Customer Symptom Code (GCSC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#)

(100-00 General Information, Description and Operation).

### Global Customer Symptom Code Chart

Customer Symptom	Action
Start/Run/Move>Running>Failed Emissions Testing	<a href="#">GO to Pinpoint Test DZ</a>
Start/Run/Move>Running>Failed Emissions Testing	<a href="#">GO to Pinpoint Test H</a>
Driving Performance/Runs Rough	<a href="#">GO to Pinpoint Test H</a>

### Pinpoint Tests

#### PINPOINT TEST DW : HEATED OXYGEN SENSOR (HO2S)

#### 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.

#### Normal Operation and Fault Conditions

PCM (powertrain control module) P0054:00	HO2S Heater Resistance (Bank 1, Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) detects the heater current requirements are too low or too high in the HTR12 circuit.
PCM (powertrain control module) P0056:00	HO2S Heater Control Circuit (Bank 2, Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) detects the sensor does not warm up to the required temperature in a calibrated amount of time. This DTC (diagnostic trouble code) also sets when the PCM (powertrain control module) is not able to maintain the required temperature after the sensor is warm. The PCM (powertrain control module) controls the HO2S (heated oxygen sensor) bank 2, sensor 2 heater ON and OFF duty cycle to maintain a calibrated temperature.
PCM (powertrain control module) P0060:00	HO2S Heater Resistance (Bank 2, Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) detects the heater current requirements are too low or too high in the HTR22 circuit.
PCM (powertrain control module) P00D2:00	HO2S Heater Control Circuit Range/Performance (Bank 1 Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) detects the internal impedance of the heated oxygen sensor bank 1, sensor 2 exceeds the calibrated threshold.
PCM (powertrain control module) P0136:00	O2 Sensor Circuit (Bank 1 Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) detects a concern with one of the circuits used to determine the oxygen content in the exhaust gas.
PCM (powertrain control module) P0137:00	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) detects a concern with one of the circuits used to determine the oxygen content in the exhaust gas.

module) P013C:00	2): No Sub Type Information	measures the response rate of the rear HO2S (heated oxygen sensor) to a rich to lean transition. This monitor is highly sensitive to exhaust leaks near the rear HO2S (heated oxygen sensor) . Check for leaks in the exhaust system.
PCM (powertrain control module) P013E:00	O2 Sensor Delayed Response - Rich to Lean (Bank 1 Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) , after three consecutive intrusive attempts, the cannot force the signal greater than the calibrated rich value. Also, if the signal voltage remains greater than the lean value after a calibrated amount of time with the fuel injectors off, a counter is incremented. This DTC (diagnostic trouble code) also sets when after three consecutive occurrences the signal is not less than the calibrated lean value. During a deceleration fuel shut-off event, the PCM (powertrain control module) monitors the HO2S (heated oxygen sensor) bank 1, sensor 2 signal to determine if the signal is stuck in range. The PCM (powertrain control module) expects the signal to exceed a calibrated rich or lean value within a calibrated amount of time. If the signal voltage remains less than the rich value after a number of occurrences, the PCM (powertrain control module) intrusively controls the fuel system rich over increasing time periods in an attempt to force the signal to greater than the calibrated rich value. Check for leaks in the exhaust system. Check for an intermittent HO2S12 or HO2S22 signal.
PCM (powertrain control module) P0140:00	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) is unable to detect movement in the sensor signal while the air to fuel ratio is oscillating. If the sensor signal value is not changing from the default value, the PCM (powertrain control module) commands an oscillating air to fuel ratio attempting to detect some movement in the signal value. An O2S12 PID (parameter identification) switching across 0.45 volt from 0.2 to 0.9 volts indicates a normal switching HO2S (heated oxygen sensor) .
PCM (powertrain control module) P0141:00	O2 Sensor Heater Circuit (Bank 1 Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) detects an open or short circuit is detected or the HO2S (heated oxygen sensor) bank 1, sensor 2 heater current draw exceeds a calibrated limit.
PCM (powertrain	O2 Sensor Delayed Response - Rich to	Sets when the PCM (powertrain control module) , after three consecutive intrusive attempts, the cannot force the signal greater

PCM (powertrain control module) P0161:00	O2 Sensor Heater Circuit (Bank 2 Sensor 2): No Sub Type Information	Sets when the PCM (powertrain control module) detects an open or short from the universal HO2S (heated oxygen sensor) bank 2, sensor 2 heater circuit.
PCM (powertrain control module) P2270:00	O2 Sensor Signal Stuck Lean - Bank 1, Sensor 2: No Sub Type Information	Sets when the PCM (powertrain control module) detects the HO2S (heated oxygen sensor) bank 1, sensor 2 signal is less than the calibrated rich value during the current key cycle and, after three consecutive intrusive events, the signal cannot be forced greater than the calibrated rich value. Check for leaks in the exhaust system. Check for an intermittent HO2S12 signal.
PCM (powertrain control module) P2271:00	O2 Sensor Signal Stuck Rich - Bank 1, Sensor 2: No Sub Type Information	Sets when the PCM (powertrain control module) detects the HO2S (heated oxygen sensor) bank 1, sensor 2 signal is greater than the calibrated lean value during the current key cycle and, after three consecutive intrusive events, the signal cannot be forced less than the calibrated lean value. Check for leaks in the exhaust system. Check for an intermittent HO2S12 signal.
PCM (powertrain control module) P2272:00	O2 Sensor Signal Stuck Lean - Bank 2, Sensor 2: No Sub Type Information	Sets when the PCM (powertrain control module) detects the HO2S (heated oxygen sensor) bank 2, sensor 2 signal is less than the calibrated rich value during the current key cycle and, after three consecutive intrusive events, the signal cannot be forced greater than the calibrated rich value. Check for leaks in the exhaust system. Check for an intermittent HO2S22 signal.
PCM (powertrain control module) P2273:00	O2 Sensor Signal Stuck Rich - Bank 2, Sensor 2: No Sub Type Information	This DTC (diagnostic trouble code) sets when the HO2S (heated oxygen sensor) bank 2, sensor 2 signal is greater than the calibrated lean value during the current key cycle and, after three consecutive intrusive events, the signal cannot be forced less than the calibrated lean value. Check for leaks in the exhaust system. Check for an intermittent HO2S22 signal.
PCM (powertrain control module) P2297:00	O2 Sensor Out of Range During Deceleration Bank 1, Sensor 1: No Sub Type Information	Sets when the PCM (powertrain control module) detects the measured value for the HO2S (heated oxygen sensor) bank 1, sensor 1 is slower than the measured value of the HO2S (heated oxygen sensor) bank 1, sensor 2. During a deceleration fuel shut-off event, the PCM (powertrain control module) monitors how quickly the rear HO2S (heated oxygen sensor) switches from rich to lean. The measured rate of the rich to lean switch is compared



Only diagnose the suspect universal HO2S indicated by the DTC.

### Normal Operation and Fault Conditions

Refer to the DTC (diagnostic trouble code) Fault Trigger Conditions.

### DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0030:00	HO2S Heater Control Circuit (Bank 1, Sensor 1): No Sub Type Information	Sets when PCM (powertrain control module) detects the sensor does not warm up to the required temperature in a calibrated amount of time. This DTC (diagnostic trouble code) also sets when the PCM (powertrain control module) is not able to maintain the required temperature after the sensor is warm. The PCM (powertrain control module) controls the heater ON and OFF duty cycle to maintain a calibrated temperature.
PCM (powertrain control module) P0040:00	Oxygen Sensor Signals Swapped Bank 1 Sensor 1 / Bank 2 Sensor 1: No Sub Type Information	Sets when PCM (powertrain control module) detects no response from the universal HO2S (heated oxygen sensor) being tested. The HO2S (heated oxygen sensor) monitor determines if the universal HO2S (heated oxygen sensor) signal response for a fuel shift corresponds to the correct engine bank. Connect the universal HO2S (heated oxygen sensor) connector to the correct bank.
PCM (powertrain control module) P0050:00	HO2S Heater Control Circuit (Bank 2, Sensor 1): No Sub Type Information	Sets when PCM (powertrain control module) detects the sensor does not warm up to the required temperature in a calibrated amount of time. This DTC (diagnostic trouble code) also sets when the PCM (powertrain control module) is not able to maintain the required temperature after the sensor is warm. The PCM (powertrain control module) controls the universal HO2S (heated oxygen sensor) bank 2, sensor 1 heater ON and OFF duty cycle to maintain a calibrated temperature.
PCM (powertrain control module) P0053:00	HO2S Heater Resistance (Bank 1, Sensor 1): No Sub Type Information	Sets when PCM (powertrain control module) detects the heater current requirements are too low or too high in the UO2SHTR11 circuit .

PCM (powertrain control module) P0135:00	O2 Sensor Heater Circuit (Bank 1 Sensor 1): No Sub Type Information	Sets when PCM (powertrain control module) detects an open or short circuit is detected or the heater current draw exceeds a calibrated limit.
PCM (powertrain control module) P0150:00	O2 Sensor Circuit (Bank 2 Sensor 1): No Sub Type Information	Sets when PCM (powertrain control module) detects a concern with one of the circuits used to determine the oxygen content in the exhaust gas.
PCM (powertrain control module) P0151:00	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 1): No Sub Type Information	Sets when PCM (powertrain control module) detects a concern with one of the circuits used to determine the oxygen content in the exhaust gas. An engine stall condition or an extremely rich air to fuel ratio may set this DTC (diagnostic trouble code) . Diagnose any engine stall or rich air to fuel ratio concerns before diagnosing this DTC (diagnostic trouble code) . An engine stall condition or an extremely rich air to fuel ratio may set this DTC (diagnostic trouble code) . Diagnose any engine stall or rich air to fuel ratio concerns before diagnosing this DTC (diagnostic trouble code) .
PCM (powertrain control module) P0152:00	O2 Sensor Circuit High Voltage (Bank 2 Sensor 1): No Sub Type Information	Sets when PCM (powertrain control module) detects an over voltage concern with one of the circuits used to determine the oxygen content in the exhaust gas.
PCM (powertrain control module) P0153:00	O2 Sensor Circuit Slow Response (Bank 2 Sensor 1): No Sub Type Information	Sets when PCM (powertrain control module) detects the oxygen sensor signal does not reach the predicted amplitude within a predetermined response time. The PCM (powertrain control module) monitors the universal HO2S (heated oxygen sensor) bank 2, sensor 1 response time by commanding a calibrated fuel control routine. This routine sets the air to fuel ratio to a calibrated limit to produce a predictable oxygen sensor signal amplitude.
PCM (powertrain control	O2 Sensor Circuit No Activity Detected (Bank 2	Sets when PCM (powertrain control module) detects no movement in the sensor signal while the air to fuel ratio is oscillating. If the sensor signal value is not changing from the default value, the PCM