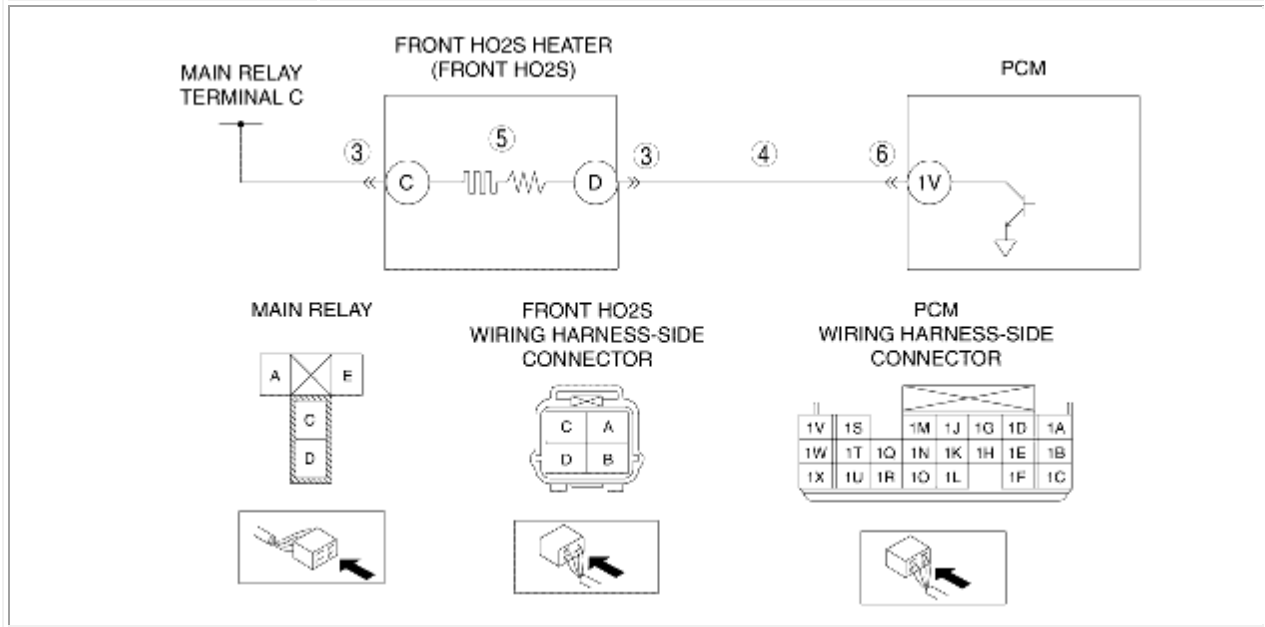


DTC P0031

BHE010200001W02

DTC P0031	Front HO2S heater control circuit low
DETECTION CONDITION	<ul style="list-style-type: none"> The PCM monitors the front HO2S heater control voltage when the PCM turns the front HO2S heater off. If the control voltage exceeds 25 % of the battery voltage, the PCM determines that the front HO2S heater control circuit voltage is low. <p>Diagnostic support note</p> <ul style="list-style-type: none"> This is a continuous monitor (HO2S heater). The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. PENDING CODE is available if the PCM detects the above malfunction condition during the first drive cycle. FREEZE FRAME DATA is available. The DTC is stored in the PCM memory.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Front HO2S heater malfunction Connector or terminal malfunction Short to power supply in wiring harness between front HO2S terminal D and PCM terminal 1V PCM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	VERIFY FREEZE FRAME DATA HAS	Yes	Go to the next step.
		No	Record the FREEZE FRAME DATA on the

	<p>BEEN RECORDED</p> <ul style="list-style-type: none"> • Has FREEZE FRAME DATA been recorded? 		repair order, then go to the next step.
2	<p>VERIFY RELATED REPAIR INFORMATION AVAILABILITY</p> <ul style="list-style-type: none"> • Verify related service repair information availability. • Is any related repair information available? 	Yes	Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step.
		No	Go to the next step.
3	<p>INSPECT FRONT HO2S CONNECTOR FOR POOR CONNECTION</p> <ul style="list-style-type: none"> • Turn the ignition switch off. • Disconnect the front HO2S connector. • Inspect for poor connection (such as damaged/pulled-out pins, and corrosion). • Is there any malfunction? 	Yes	Repair or replace the terminal, then go to Step 7.
		No	Go to the next step.
4	<p>INSPECT FRONT HO2S HEATER CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY</p> <ul style="list-style-type: none"> • Turn the ignition switch to the ON position (Engine off). • Measure the voltage between front HO2S terminal D (wiring harness-side) and body GND. • Is the voltage B+? 	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 7.
		No	Go to the next step.
5	<p>INSPECT FRONT HO2S HEATER</p> <ul style="list-style-type: none"> • Inspect the front HO2S heater. (See FRONT HEATED OXYGEN SENSOR (HO2S) INSPECTION.) • Is there any malfunction? 	Yes	Replace the front HO2S, then go to Step 7. (See FRONT HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION.)
		No	Go to the next step.
6	<p>INSPECT PCM CONNECTOR FOR POOR CONNECTION</p> <ul style="list-style-type: none"> • Turn the ignition switch off. • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, and corrosion). • Is there any malfunction? 	Yes	Repair or replace the terminal, then go to the next step.
		No	Go to the next step.
7	<p>VERIFY TROUBLESHOOTING OF DTC P0031 COMPLETED</p> <ul style="list-style-type: none"> • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the WDS or equivalent. • Perform the DRIVE MODE 1 and 3. (See OBD DRIVE MODE.) 	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION.)
		No	Go to the next step.

	<ul style="list-style-type: none"> • Is the PENDING CODE same as the DTC present? 		
8	VERIFY AFTER REPAIR PROCEDURE <ul style="list-style-type: none"> • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE.) • Are any DTCs present? 	Yes	Go to the applicable DTC inspection. (See DTC TABLE.)
		No	DTC troubleshooting completed.