

# P0171 / P0172: Fuel System Too Lean / Rich

## DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
DTC P0171: Total fuel trim is higher than specified value or short term fuel trim is higher than specified value for more than 1 min. (2 driving cycle detection logic) DTC P0172: Total fuel trim is lower than specified value or short term fuel trim is lower than specified value for more than 1 min. (2 driving cycle detection logic)	<ul style="list-style-type: none"> <li>• Vacuum leakage</li> <li>• Exhaust gas leakage</li> <li>• Fuel pressure out of specification</li> <li>• Fuel injector malfunction</li> <li>• Heated oxygen sensor-1 malfunction</li> <li>• MAF sensor malfunction</li> <li>• ECT sensor malfunction</li> </ul>

## DTC Confirmation Procedure

- 1) With ignition switch turned OFF, connect scan tool.
- 2) Turn ON ignition switch and print Freeze Frame Data or write them down using scan tool.
- 3) Clear DTC using scan tool.
- 4) Start engine and warm up to normal operating temperature.
- 5) Operate vehicle with condition as noted freeze frame data for 5 min.
- 6) Stop vehicle and check DTC and pending DTC.

## DTC Troubleshooting

Step	Action	Yes	No
1	Was "Engine and Emission Control System Check" performed?	Go to Step 2.	Go to "Engine and Emission Control System Check".
2	Is there DTC(s) other than fuel system (DTC P0171 / P0172)?	Go to applicable DTC diag. flow.	Go to Step 3.
3	Intake system and exhaust system for leakage check Are intake system and exhaust system in good condition?	Go to Step 4.	Repair or replace defective part.
4	Fuel pressure check  1) Check fuel pressure referring to "Fuel Pressure Check". Is check result satisfactory?	Go to Step 5.	Repair or replace defective part.
5	Fuel injectors and its circuit check  1) Check fuel injectors referring to "Fuel Injector Inspection in Section 1G". Is check result satisfactory?	Go to Step 6.	Faulty injector(s) or its circuit.
6	Visual inspection  1) Check MAF sensor and air intake system. • Objects which block measuring duct and resistor of MAF sensor. • Other air flow which does not pass MAF sensor. Are they in good condition?	Go to Step 7.	Repair or replace defective part.

Step	Action	Yes	No
7	<p>MAF sensor for performance check</p> <p>1) With ignition switch turned OFF, install scan tool.</p> <p>2) Start engine and warm up to normal operating temperature.</p> <p>3) Check MAF value using scan tool (Refer to "Scan Tool Data" for normal value.).</p> <p>Is each value within specified range?</p>	Go to Step 8.	Go to "DTC P0101: Mass Air Flow Circuit Range / Performance".
8	<p>ECT sensor for performance check</p> <p>1) Check ECT sensor referring to Step 3 and 4 of "DTC P0118: Engine Coolant Temperature Circuit High".</p> <p>Is check result satisfactory?</p>	Go to Step 9.	Faulty ECT sensor or its circuit.
9	<p>HO2S-1 for performance check</p> <p>1) Check HO2S-1 referring to Step 3 of "DTC P0131 / P0132: O2 Sensor (HO2S) Circuit Low Voltage / High Voltage (Sensor-1)".</p> <p>Is check result satisfactory?</p>	Substitute a known-good ECM and recheck.	Faulty HO2S-1 or its circuit.