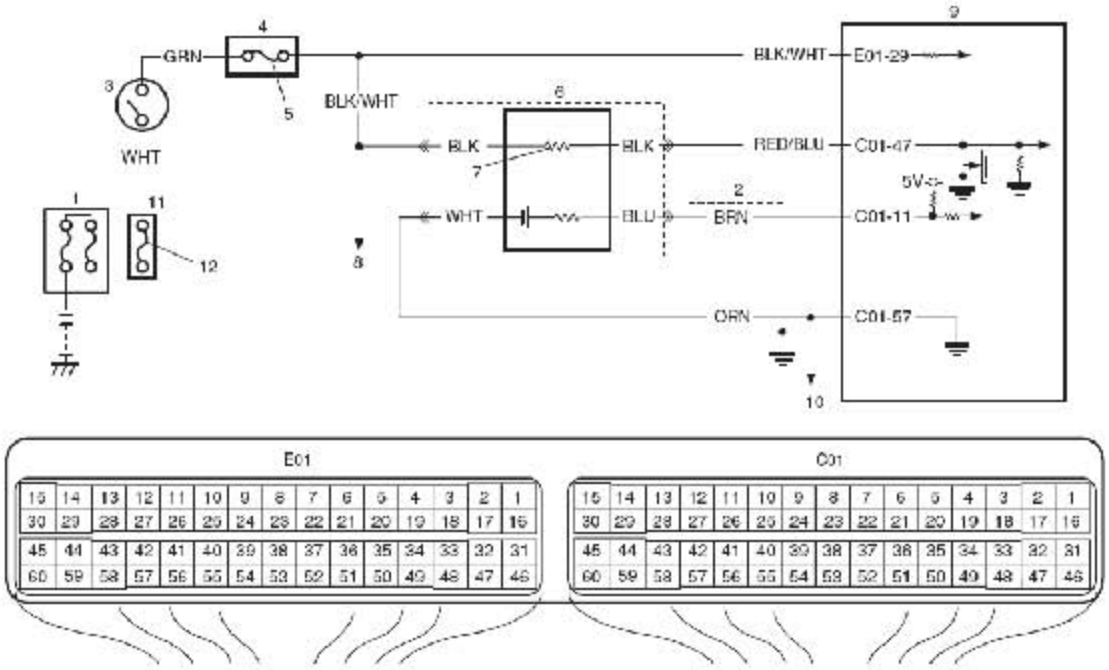
P0137 / P0138: O2 Sensor (HO2S) Circuit Low Voltage / High Voltage (Sensor-2)

Wiring Diagram



1. Main fuse box	4. Junction block assembly	7. Heater	10. To HO2S-1
2. Shield wire	5. "IG COIL" fuse	8. To HO2S-1 heater	11. Individual circuit fuse box No.1
3. Ignition switch	6. HO2S-2	9. ECM	12. "IG ACC" fuse

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
DTC P0137: HO2S-2 voltage is lower than specified value while engine is idling after driving with high engine load (high speed) for specified time. And HO2S-2 max. voltage minus HO2S-2 min. voltage is less than specified value for 40 sec. (2 driving cycle detection logic) DTC P0138: HO2S-2 voltage is higher than specified value while engine is idling after driving with high engine load (high speed) for specified time. And HO2S-2 max. voltage minus HO2S-2 min. voltage is less than specified value for 40 sec. (2 driving cycle detection logic)	•HO2S-2 • HO2S-2 circuit • Fuel system •ECM • Fuel shortage • Exhaust system • Air intake system

DTC Confirmation Procedure

1) With ignition switch turned OFF, connect scan tool.
2) Turn ON ignition switch and clear DTC using scan tool.
3) Start engine and warm up to normal operating temperature.
4) Increase vehicle speed to 60 – 80 km/h (37 – 50 mile/h) at 5th gear or D range.
5) Release accelerator pedal and with engine brake applied, keep vehicle coasting (with fuel cut for 4 sec. or more),then stop vehicle and run engine at idle speed for 60 sec. or more.
6) Repeat Step 4).
7) Keep above vehicle speed for 8 min. or more. (Throttle valve opening is kept constant in this step.)
8) Repeat Step 5).
9) 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) and HO2S-2 (DTC P0140)?	Go to applicable DTC diag. flow.	Go to Step 3.
3	HO2S-2 and its circuit check 1) Connect scan tool to DLC with ignition switch turned OFF. 2) Warm up engine to normal operating temperature and keep it at 2000 r/min. for 60 sec. 3) Repeat racing engine (Repeat depressing accelerator pedal 5 to 6 times continuously to enrich A/F mixture and take foot off from pedal to enlean it). Does HO2S-2 output voltage indicate deflection between over 0.35 V and below 0.25 V?	Go to "DTC P0171 / P0172: Fuel System Too Lean / Rich".	Go to Step 4.

Step	Action	Yes	No
4	HO2S-2 ground check 1) Disconnect connector from HO2S-2 with ignition switch turned OFF. 2) Check for proper connection to HO2S-2 connector at "RED/BLU", "BRN", "ORN" and "BLK/WHT" wire terminals. 3) If connections are OK, measure resistance between "ORN" wire terminal of HO2S-2 connector and engine ground. Is resistance less than 5 Ω?	Go to Step 5.	"ORN" wire is open or high resistance circuit. Poor "C01-57" terminal connection. Faulty ECM ground. If they are OK, substitute a known-good ECM and recheck.
5	Wire circuit check 1) Turn OFF ignition switch. 2) Remove ECM from its bracket with ECM connectors connected. 3) Measure resistance between "BRN" wire terminal of HO2S-2 connector and "C01-11" terminal of ECM connector. Is resistance less than 5 Ω?	Go to Step 6.	"BRN" wire is high resistance circuit or open circuit. Poor "C01-11" terminal connection. If they are OK, substitute a known-good ECM and recheck.
6	Wire circuit check 1) Disconnect connectors from ECM with ignition switch turned OFF. 2) Measure resistance between "BRN" wire terminal of HO2S-2 connector and vehicle body ground. Is resistance infinity?	Go to Step 7.	"BRN" wire is shorted to ground circuit.
7	HO2S-2 signal circuit check 1) Measure voltage between "BRN" wire terminal of HO2S-2 connector and vehicle body ground. Is voltage 0 V?	Go to Step 8.	"BRN" wire is shorted to other circuit.

Step	Action	Yes	No
8	HO2S-2 heater circuit check 1) Check HO2S-2 heater circuit P0038: HO2S Heater Control Circuit Low / High (Sensor-2)". Is circuit in good condition?	Go to Step 9.	Repair HO2S-2 circuit.
9	Exhaust system check 1) Check exhaust system for exhaust gas leakage. Is it OK?	Go to Step 4 in "DTC P0171 / P0172: Fuel System Too Lean / Rich". If it is in good condition,	Repair leakage of exhaust system.
10	Air intake system check 1) Check air intake system for clog or leak. Is it OK?	go to Step 10. Replace HO2S-2 referring to "Heated Oxygen Sensor (HO2S-1 and HO2S-2) Removal and Installation (If Equipped) in Section 1C". Is DTC still exists, substitute a known-good ECM and recheck.	Repair or replace air intake system.