P0300 / P0301 / P0302 / P0303 / P0304: Random Misfire Detected / Cylinder 1 / Cylinder 2 / Cylinder 3 / Cylinder 4 Misfire Detected

System Description

ECM measures the angle of the crankshaft based on the pulse signal from the CKP sensor and CMP sensor for each cylinder. If it detects a large change in the angle speed of the crankshaft, it concludes occurrence of a misfire. When the number of misfire is counted by ECM beyond the DTC detecting condition, it determines the cylinder where the misfire occurred and output it as DTC.

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) Drive vehicle under freeze frame data condition as noted for 1 min. or more.
5) 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	Does fuel level meter indicate "E" level (empty)?	Add fuel and recheck.	Go to Step 3.
3	Fuel quality check 1) Check that there is fuel of good quality in the fuel tank. Is it OK?	Go to Step 4.	Clean in fuel system circuit and change fuel.

Step	Action	Yes	No
4	Ignition system check 1) Check spark plug and ignition spark of cylinder where misfire occurs, referring to "Spark Plug Inspection in Section 1H" and "Ignition Spark Test in Section 1H". Are they in good condition?	Go to Step 5.	Faulty ignition coil, wire harness, spark plug or other system parts.
5	Fuel injector circuit check 1) Using sound scope, check each injector operating sound at engine cranking or idling. Do all injectors make operating sound?	Go to Step 6.	Check coupler connection and wire harness of injector not making operating sound and injector itself. If OK, substitute a known-good ECM and recheck.
6	Fuel pressure check 1) Check fuel pressure referring to "Fuel Pressure Check". Is check result satisfactory?	Go to Step 7.	Repair or replace fuel system.
7	Fuel injector check 1) Check fuel injector(s) referring to "Fuel Injector Inspection in Section 1G". Is check result satisfactory?	Go to Step 8.	Replace defective injector.
8	Ignition timing check 1) Check ignition timing referring to "Ignition Timing Inspection in Section 1H". Is check result satisfactory?	Go to Step 9.	Check related sensors.

Step	Action	Yes	No
9	EGR system check 1) Check EGR system referring to "EGR System Inspection (If Equipped) in Section 1B". Is check result satisfactory?	Go to Step 10.	Repair or replace EGR system.
10	Exhaust system check 1) Check exhaust system for exhaust gas clogged. Is it OK?	Go to Step 11.	Repair clogged of exhaust system.
11	Engine mechanical system check Check engine mechanical parts or system which can cause engine rough idle or poor performance. • Engine compression (Refer to "Compression Check in Section 1D".) • Valve lash (Refer to "Valve Lash (Clearance) Inspection in Section 1D".) • Valve timing (Refer to "Timing Chain and Chain Tensioner Removal and Installation in Section 1D".) Are they in good condition?	Check wire harness and connection of ECM ground, ignition system and fuel injector for intermittent open and short.	Repair or replace defective part.