

DTC P0300 [LF]

B3E010201085W01

DTC P0300	Random misfire detected
DETECTION CONDITION	<ul style="list-style-type: none"> The PCM monitors CKP sensor input signal interval time. The PCM calculates change of interval time for each cylinder. If change of interval time exceeds preprogrammed criteria, the PCM detects misfire in the corresponding cylinder. While the engine is running, the PCM counts number of misfires that occurred at 200 crankshaft revolutions and 1,000 crankshaft revolutions and calculates misfire ratio for each crankshaft revolution. If the ratio exceeds the preprogrammed criteria, the PCM determines that a misfire, which can damage catalytic converter or affect emission performance, has occurred. <p>Diagnostic support note</p> <ul style="list-style-type: none"> This is a continuous monitor (MISFIRE). MIL illuminates if the PCM detects the misfire which affects emission performance in two consecutive drive cycles or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. The MIL flashes if the PCM detects the misfire which can damage the catalytic converter during first drive cycle. Therefore, PENDING CODE is not available while the MIL flashes. PENDING CODE is available if the PCM detects the misfire which affects emission performance during first drive cycle. FREEZE FRAME DATA is available. DTC is stored in the PCM memory.
POSSIBLE CAUSE	<ul style="list-style-type: none"> CKP sensor malfunction CMP sensor malfunction Ignition coil malfunction Erratic signal to ignition coil Spark plug malfunction MAF sensor contamination Excess air suction in intake air system (between MAF sensor and intake manifold) Fuel pump malfunction Fuel pressure regulator (built-in fuel pump unit) malfunction Fuel line clogged Fuel filter clogged Fuel leakage in fuel line Fuel runout Poor quality fuel Purge control solenoid valve malfunction PCV valve malfunction EGR valve malfunction Vacuum hoses damages or improper connection Related connector and terminal malfunction Related wiring harness malfunction Insufficient compression

Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED • Has FREEZE FRAME DATA been recorded?	Yes Go to the next step.
		No Record the FREEZE FRAME DATA on repair order, then go to the next step.
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY • Verify related service repair information availability. • Is any related repair information available?	Yes Perform repair or diagnosis according to the available repair information. • If vehicle is not repaired, go to the next step.
		No Go to the next step.

3	VERIFY RELATED PENDING CODE OR STORED DTC <ul style="list-style-type: none"> • Turn the ignition switch off, then to the ON position (Engine off). • Verify related pending code or stored DTCs. • Are other DTCs present? 	Yes	Go to the appropriate DTC troubleshooting. (See DTC TABLE [LF] .)
		No	Go to the next step.
4	VERIFY CURRENT INPUT SIGNAL STATUS (KEY TO ON/IDLE) <ul style="list-style-type: none"> • Access BOO, ECT, IAT, MAF, RPM, TP, and VSS PIDs using WDS or equivalent. (See PCM INSPECTION [LF].) • Is there any signal that is far out of specification when the ignition switch is turned to the ON position and the engine idles? 	Yes	Inspect suspected circuit and/or part according to inspection results. (See PCM INSPECTION [LF] .) Then go to Step 21.
		No	Go to the next step.
5	VERIFY CURRENT INPUT SIGNAL STATUS UNDER TROUBLE CONDITION <ul style="list-style-type: none"> • Inspect the same PIDs as in Step 4 while simulating FREEZE FRAME DATA condition. • Is there any signal which causes drastic changes? 	Yes	Inspect suspected circuit and/or part according to inspection results. (See PCM INSPECTION [LF] .) Then go to Step 21.
		No	Go to the next step.
6	INSPECT CMP SENSOR <ul style="list-style-type: none"> • Inspect CMP sensor. (See CAMSHAFT POSITION (CMP) SENSOR INSPECTION [LF].) • Is CMP sensor normal? 	Yes	Go to the next step.
		No	Inspect installation condition and damages on timing belt and gears, repair the malfunctioning part. • If it is normal, replace the CMP sensor. Then go to Step 21.
7	VERIFY CKP SENSOR INSTALLATION CONDITION <ul style="list-style-type: none"> • Inspect for CKP sensor looseness. • Is CKP sensor loosen? 	Yes	Retighten the CKP sensor, then go to Step 21.
		No	Go to the next step.
8	INSPECT IGNITION COIL WIRING HARNESSES <ul style="list-style-type: none"> • Inspect the ignition coil related wiring harness condition (intermittent open or short circuit) for all cylinders. • Are wiring harness conditions normal? 	Yes	Go to the next step.
		No	Repair the wiring harnesses, then go to Step 21.
9	INSPECT IGNITION SYSTEM OPERATION <ul style="list-style-type: none"> • Turn the ignition switch off. • Perform spark test. (See Spark Test.) • Is strong blue spark visible at each cylinder? 	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to spark test result. Then go to Step 21.
10	INSPECT POWER SUPPLY TERMINAL AT IGNITION COIL CONNECTOR <ul style="list-style-type: none"> • Disconnect the ignition coil connector. • Turn the ignition switch to the ON position (Engine off). • Measure the voltage between ignition coil terminal A (wiring harness-side) and body ground. • Is the voltage reading B+? 	Yes	Go to the next step.
		No	Inspect for open circuit in wiring harness between ignition coil terminal A and ignition switch. Repair or replace the wiring harness, then go to Step 21.
11	INSPECT IGNITION COIL RESISTANCE <ul style="list-style-type: none"> • Inspect ignition coil resistance. (See IGNITION COIL INSPECTION [LF].) • Is coil resistance normal? 	Yes	Go to step 21.
		No	Replace the ignition coil, then go to Step 21.
	INSPECT MAF PID		

12	<ul style="list-style-type: none"> • Start the engine. • Access MAF PID using the WDS or equivalent. • Race the engine and verify that MAF PID changes quickly according to change in the engine speed. • Is MAF PID response normal? 	Yes	Go to the next step.
		No	Replace the MAF sensor, then go to Step 21.
13	INSPECT EXCESSIVE AIR SUCTION IN INTAKE AIR SYSTEM <ul style="list-style-type: none"> • Inspect for air leakage at following: <ul style="list-style-type: none"> - Between the MAF sensor and throttle body - Between throttle body and intake manifold • Is there any malfunction? 	Yes	Repair or replace suspected part, then go to Step 21.
		No	Go to the next step.
14	INSPECT FUEL LINE PRESSURE <ul style="list-style-type: none"> • Inspect fuel line pressure. (See FUEL LINE PRESSURE INSPECTION [ZJ, Z6, LF].) • Is fuel line pressure normal? 	Yes	Go to step 16.
		No	If the fuel line pressure is too low, go to the next step. If the fuel line pressure is excess high, replace the fuel pump unit, then go to Step 21.
15	INSPECT FUEL LINE FROM FUEL PUMP TO FUEL DELIVERY PIPE <ul style="list-style-type: none"> • Visually inspect fuel line for fuel leakage. • Is there any fuel leakage? 	Yes	Replace suspected fuel line, then go to Step 21.
		No	Inspect fuel filters for following: <ul style="list-style-type: none"> • Foreign materials or stain inside fuel filter (low-pressure side) Perform following actions depend on the result above. <ul style="list-style-type: none"> • If foreign materials or stain is found inside fuel filter (low-pressure side), clean the fuel tank and filter (low-pressure side). • If normal, replace the fuel pump unit. Then, go to Step 21.
16	INSPECT ENGINE COMPRESSION <ul style="list-style-type: none"> • Inspect engine compression. (See COMPRESSION INSPECTION [LF].) • Is it normal? 	Yes	Go to the next step.
		No	Perform engine overhaul for repairs, then go to Step 21.
17	INSPECT OPERATION OF PURGE CONTROL SOLENOID VALVE <ul style="list-style-type: none"> • Turn the ignition switch off. • Connect the vacuum pump to purge control solenoid valve and apply vacuum to solenoid. • Verify that solenoid holds vacuum. • Turn the ignition switch to the ON position (Engine off). • Access EVAPCP PID in SIMULATION TEST using the WDS or equivalent. • Set duty value to 100% for EVAPCP PID. • Apply vacuum while turning solenoid from OFF to ON and simulating EVAPCP PID with 100% duty value. • Verify that solenoid releases vacuum while solenoid is turned ON. • Is purge control solenoid valve operation normal? 	Yes	Go to the next step.
		No	Replace the purge control solenoid valve, then go to Step 21.
	INSPECT PCV VALVE OPERATION <ul style="list-style-type: none"> • Turn the ignition switch off. • Remove PCV valve and inspect valve 	Yes	Replace the PCV valve, then go to Step 21.

18	operation. (See POSITIVE CRANKCASE VENTILATION (PCV) VALVE INSPECTION [ZJ, Z6, LF] .) • Is PCV valve operation normal?	No	Go to the next step.
19	INSPECT OPERATION OF EGR VALVE • Remove the EGR valve. • Visually inspect the EGR valve for stuck to open. • Is EGR valve stuck to open?	Yes	Repair or replace the EGR valve, then go to Step 21.
		No	Go to the next step.
20	INSPECT SEALING OF ENGINE COOLANT PASSAGE • Perform engine coolant leakage inspection. (See ENGINE COOLANT LEAKAGE INSPECTION .) • Is there any malfunction?	Yes	Go to the next step.
		No	Repair or replace the malfunctioning part according to inspection result. Then go to the next step.
21	VERIFY TROUBLESHOOTING OF MISFIRE DTC COMPLETED • Make sure to reconnect all disconnected connectors. • Turn the ignition switch to the ON position (Engine off). • Clear the DTC from the memory using the WDS or equivalent. • Perform the PCM Adaptive Memory Produce Drive Mode. (See OBD DRIVE MODE [LF] .) • Is the PENDING CODE for this DTC present?	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [LF] .)
		No	Go to the next step.
22	VERIFY AFTER REPAIR PROCEDURE • Perform the "After Repair Procedure". (See AFTER REPAIR PROCEDURE [LF] .) • Are any DTC present?	Yes	Go to the applicable DTC troubleshooting. (See DTC TABLE [LF] .)
		No	Troubleshooting completed.