



Emission Control System

General Information



Main catalyst efficiency deterioration

Diagnostic trouble code No. P0420	Main catalyst efficiency deterioration (bank1)
Related items	<ul style="list-style-type: none"> Catalytic converter deteriorated <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTICE</p> <p>If any codes relating to HO2S sensor, MAFS, injectors, a P0170~P0175 are present, do all repairs associated with them before proceeding with this troubleshooting procedure.</p> </div>

Step	Inspection		Action
1	Connect SCAN TOOL to data link connector or OBD-II check connector. Turn ignition to ON and check other DTCs. Are DTC P0300~P0306, P0115, P0116, P0125, P0130~P0134, P0030~P0032, P0136~P0140, P0036~P0038, P1168, and/or P0170~P0175 set?	Yes	Do all repairs associated with those codes before proceeding this procedure.
		No	Go to step 2.
2	Start engine and warm up to operating temperature. Using SCAN TOOL, monitor both front HO2S and rear HO2S signals. Do both signals switch lean to rich and rich to lean?	Yes	Replace catalytic converter as necessary.
		No	Go to step 3.
3	Release fuel pressure and attach fuel pressure gauge to service port on fuel rail. Start an engine and warm up to operating temperature. Check for fuel pressure at idle. • Fuel pressure at idle: 43~46 psi (296~317kPa, 3.02~3.23kg/cm ²) Is fuel pressure within specification?	Yes	Go to step 4.
		No	Check fuel delivery system.
4	Check exhaust system for leaks, cracks, loose connection (especially exhaust manifold, catalyst around rear HO2S, etc). Is exhaust system okay?	Yes	Go to step 5.
		No	Repair or replace as necessary.
5	Check for any split, disconnected or perforated vacuum hoses. Also, check PCV valve for proper operation. Are vacuum hoses and PCV okay?	Yes	Go to step 6.
		No	Replace faulty vacuum hoses or PCV.
6	Check for fuel injector operation. Are fuel injectors working normal and dispensing proper volume?	Yes	Go to step 7.
		No	Repair as necessary.

7	Check intake system for leaks, cracks, loose connection as following items : <ul style="list-style-type: none"> • Throttle body gasket • Gasket between intake manifold and surge tank • Seals between intake manifold and fuel injectors • Seals between surge tank and PCV valves Is intake system okay?	Yes	Replace catalytic converter as necessary.
		No	Repair or replace as necessary.
8	Return vehicle to original condition. Clear all diagnostic trouble codes. Verify by driving vehicle with SCAN TOOL connected and monitor for pending codes.		



Main catalyst efficiency deterioration

Diagnostic trouble code No. P0430	Main catalyst efficiency deterioration (bank2)
Related items	<ul style="list-style-type: none"> Catalytic converter deteriorated <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTICE</p> <p>If any codes relating to HO2S sensor, MAFS, injectors, P0170~P0175 are present, do all repairs associated with them before proceeding with this troubleshooting procedure.</p> </div>

Step	Inspection		Action
1	Connect SCAN TOOL to data link connector or OBD-II check connector. Turn ignition to ON and check any other DTCs. Are DTC P0300~P0306, P0115, P0116, P0125, P0150~P0154, P0050~P0052, P0156~P0160, P1169, and/or P0170~P0175 set?	Yes	Do all repairs associated with those codes before proceeding this procedure.
		No	Go to step 2.
2	Start engine and warm up to operating temperature. Using SCAN TOOL, monitor both front HO2S and rear HO2S signals. Do both signals switch lean to rich and rich to lean?	Yes	Replace catalytic converter as necessary.
		No	Go to step 3.
3	Release fuel pressure and attach fuel pressure gauge to service port on fuel rail. Start an engine and warm up to operating temperature. Check for fuel pressure at idle. • Fuel pressure at idle: 43~46 psi (296~317kPa, 3.02~3.23kg/cm ²) Is fuel pressure within specification?	Yes	Go to step 4.
		No	Check fuel delivery system.
4	Check exhaust system for leaks, cracks, loose connection (especially exhaust manifold, catalyst around rear HO2S, etc). Is exhaust system okay?	Yes	Go to step 5.
		No	Repair or replace as necessary.
5	Check for any split, disconnected or perforated vacuum hoses. Also, check PCV valve for proper operation. Are vacuum hoses and PCV okay?	Yes	Go to step 6.
		No	Replace faulty vacuum hoses or PCV.
6	Check for fuel injector operation. Are fuel injectors working normal and dispensing proper volume?	Yes	Go to step 7.
		No	Repair as necessary.
7	Check intake system for leaks, cracks, loose connection as following items:	Yes	Replace catalytic converter as necessary.

	<ul style="list-style-type: none"> • Throttle body gasket • Gasket between intake manifold and surge tank • Seals between intake manifold and fuel injectors • Seals between surge tank and PCV valves 		
		No	Repair or replace as necessary.
	Is intake system okay?		
8	Return vehicle to original condition. Clear all diagnostic trouble codes. Verify by driving vehicle with SCAN TOOL connected and monitor for pending codes.		



EVAP emission control system purge solenoid valve circuit malfunction

Diagnostic trouble code No. P0443	EVAP emission control system purge solenoid valve circuit malfunction
Related items	<ul style="list-style-type: none"> • Open or short between main relay and purge solenoid valve • Open or short between purge solenoid valve and ECM • Faulty purge solenoid valve

Step	Inspection	Action
1	Thoroughly check PSV for loose, bent, corroded, contaminated, deteriorated or damaged connectors. Is any problem present?	Yes Repair as necessary.
		No Go to step 2.
2	Turn ignition to OFF and disconnect PSV connector. Turn ignition to ON and measure voltage of PSV power circuit between PSV harness connector and chassis ground. • Specification: approximately B+ Is voltage within specification?	Yes Go to step 3.
		No Open circuit or short circuit to chassis ground between PSV harness connector and main relay. Repair as necessary.
3	Turn ignition to OFF. PSV connector is still disconnected. Measure resistance between PSV battery power and signal terminal. • Specification: approximately 26Ω @ 20°C(68°F) Is resistance within specification?	Yes Check PSV for poor terminal contacts due to oxidation, bent deformed, or misplaced terminals. Repair as necessary.
		No Temporarily install a known good PSV and check for proper operation. If problem is corrected, replace PSV.
4	Turn ignition to OFF and disconnect ECM connector. Measure resistance of PSV signal circuit between PSV harness connector and ECM harness connector. • Specification: below 1Ω Does resistance indicate continuity circuit?	Yes Go to step 5.
		No Open circuit between PSV harness connector and ECM harness connector. Repair as necessary.
5	ECM connector PSV connector is still disconnected. Measure resistance between PSV harness connector and chassis ground at PSV signal circuit. Measure resistance between PSV battery voltage circuit and signal circuit. • Specification: infinite	Yes Temporarily install a known good PSV and check for proper operation. If problem is corrected, replace PSV.
		No Short circuit to chassis ground between PSV harness connector and ECM harness connector. Short circuit between PSV battery power circuit and signal circuit.

	Does resistance indicate open circuit?	Repair as necessary.
6	Return vehicle to original condition. Clear all diagnostic trouble codes. Verify by driving vehicle with SCAN TOOL connected and monitor for pending codes.	