



Service Bulletin

File in Section: -

Bulletin No.: PI1207D

Date: November, 2014

PRELIMINARY INFORMATION

Subject: Spark Knock (Detonation) Type Noise, Malfunction Indicator Lamp Illuminated (MIL), DTC P0324

Models: 2014 Chevrolet Spark
Equipped with 4 Cylinder, 1.2L Engine (RPO LLO)

This PI has been revised to update the Parts Information table. Please discard PI1207C.

Condition/Concern

Some customers may comment the Malfunction Indicator Lamp (MIL) is illuminated and that a rattle or spark knock type noise can be heard while driving.

When diagnosing the condition, the technician may find DTC P0324 set current (fault active).

This condition may be caused by piston slap. The piston slap falls into the same frequency range as detonation. The ECM may be interpreting the piston slap as detonation and adjusting the engine performance accordingly.

Recommendation/Instructions

Note: The engine may exhibit a mechanical knock, tick or rattle noise during the inspection. In addition, the Malfunction Indicator Lamp (MIL) may illuminate and diagnostic trouble code (DTC) P0324 may set. Read and perform the diagnostic test in the inspection procedure below to determine if a vehicle repair is required.

Inspection Procedure

Perform the following steps to determine if the repair procedure is required:

1. Allow the vehicle to cold soak overnight.
2. With the ignition key in the on position and the engine off, install GDS2 and select Module Diagnosis >Engine Control Module >Diagnostic Trouble Codes (DTC)>View Codes and Clear Codes.
3. Select Data Display>Ignition Data and monitor the Total Knock Retard Parameter.
4. On vehicles equipped with **Automatic Transmissions:**
 - 4.1. Set the parking brake.
 - 4.2. Start the vehicle and run at idle for 10 seconds.
 - 4.3. Firmly apply and hold the brake and place the vehicle into 'D' drive.
 - 4.4. Raise and hold the engine speed between 1800 and 2000 RPM for 10 seconds and then return to idle for 5 seconds. Repeat this cycle 7 times.
5. On vehicles equipped with **Manual Transmissions:**
 - 5.1. Start the vehicle and run at idle for 10 seconds.
 - 5.2. Drive vehicle in gear at 1800 to 2000 RPM for 10 seconds (light brake application will aid to maintain engine load in the 2000 RPM range) stop and idle for 5 seconds. Repeat this cycle 5 times.
6. Turn off the engine.
7. Review the GDS2 session log Total Knock Retard Parameter.
 - If the readings during the raised RPM testing were continuously above 6.0 degrees for more than 5 seconds, the vehicle requires repair. Refer to the repair procedure section below.
 - If the readings during the raised RPM testing were NOT continuously above 6.0 degrees for more than 5 seconds, no further action is required within the scope of this bulletin. Refer to SI to further diagnose the concern.

Repair Procedure

Important: Additional parts will need to be ordered using the electronic parts catalog. These parts include the cylinder head gasket, cylinder head bolts, piston rod bolts, oil pan, exhaust manifold mounting bolts and gaskets, exhaust head pipe attachment nuts and gasket and other associated parts. Refer to the Parts Information section below for the complete list of required replacement components. These parts must be replaced during the piston replacement procedure. Do not reuse any of the listed components.

Replace all four piston assemblies. Refer to Piston, Connecting Rod, and Bearing Replacement in SI.

Parts Information

Part Number	Description	Qty
25193932	Piston	4
96830652	Retainer-Piston Pin	4
96864000	Bolt-Connecting Rod	8
96416362	Bolt/Screw – Cyl. Hd.	10
94525091	Washer – Cyl. Hd.	10
25187952	Gasket – Cyl. Hd.	1
25183348	Gasket – Cam Cover	1
25189002	Oil Pan	1
25186670	Gasket – Exhaust Manifold	1
25182093	Bolt/Screw – Exhaust Manifold	10
15032594	Nut – Catalytic Converter Pipe	3
96337657	Gasket – Exhaust Front Pipe	1
11588725	Bolt – Water Pump	4
94515437	Nut – Drive Shaft	2
94525149	Washer – Drive Shaft	2

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
4080438*	Diagnose Spark Knock (Detonation) Type Noise, Malfunction Indicator Lamp Illuminated (MIL), DTC P0324	0.5 hr
4066890	Piston, Connecting Rod, and Bearing Replacement	Use Published Labor Operation Time

*This is a unique Labor Operation for Bulletin use only. It will not be published in the Labor Time Guide.