



Service Bulletin

Bulletin No.: 22-NA-067

Date: March, 2023

TECHNICAL

Subject: Poor Engine Performance, PCV Bypass Hose and Charge Air Cooler (CAC) Restricted for LUV Engines, Malfunction Indicator Lamp (MIL) Illuminated - DTC P0299, P0234, P0236, P2261, P2227, P00C7 Set

Attention: This issue can occur in all weather conditions. When operating the vehicle in extremely cold conditions at or below -18°C/ 0°F, the vehicle may experience icing under these extreme conditions if moisture/condensation is present in the system.

Brand:	Model:	Model Year:		VIN Breakpoint:		Engine:	Transmission:
		from	to	from	to		
Buick	Encore	2013	2020	—		1.4L (RPO LUV)	—
Chevrolet	Cruze	2011	2016				
	Sonic	2012	2020				
	Trax	2013	2020				
Opel	Ampera	2012	2015				
Vauxhall	Ampera	2012	2015				

Involved Region or Country	North America, Europe
Condition	<p>Some customers may comment that when driving their vehicle, they may experience one or several of the following conditions:</p> <ul style="list-style-type: none"> • Loss of power. • Smoke out the tail pipe. • Hesitation on acceleration. • Stalling condition. • Burning oil odor possibly caused by oil leak. • After driving for a period of time, the driveability issues seem to diminish. • Malfunction Indicator Lamp (MIL) Illuminated. <p>This condition may also cause an increase in crankcase pressure, creating oil leaks at seals and gaskets.</p> <p>Technicians may find one or more of the following DTCs set:</p> <ul style="list-style-type: none"> • P0299 • P0234 • P0236 • P2227 • P2261 • P00C7
Cause	<p>This condition may be caused by one or more of the following:</p> <ul style="list-style-type: none"> • Restricted flow through the bypass solenoid. • Moisture from the intake vacuum reservoir accumulating and damaging the bypass solenoid. • Contamination (ice /water/oil/sludge/ice) at the charge air bypass valve. • Ice accumulating in the intake manifold forming and blocking the PCV passage in the cylinder head. • Ice accumulation in the charge air cooler, restricting air flow to the throttle body. • Plugged crank case vent tube from ice forming in the tube during very cold weather conditions.

Correction	<p>If contamination (Ice/water /oil/sludge/ice) at charge air bypass valve is found:</p> <ul style="list-style-type: none"> • Clean the charge air bypass valve. • Replace the intake manifold. • Replace the charge air bypass valve only if necessary.
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Important: Service agents must comply with all International, Federal, State, Provincial, and/or Local laws applicable to the activities it performs under this bulletin, including but not limited to handling, deploying, preparing, classifying, packaging, marking, labeling, and shipping dangerous goods. In the event of a conflict between the procedures set forth in this bulletin and the laws that apply to your dealership, you must follow those applicable laws.

Turbocharger, Intake Manifold and Cylinder Head Inspection



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1. Inspect the charge air bypass valve for ice/oil/water/sludge build-up in the vacuum side port.



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- If there is oil/water build-up in the valve port, disassemble and clean the components. Refer to *Charge Air Bypass Valve Replacement* in SI.
 - **Only if necessary**, replace the components.
 - Desired boost pressure vs actual boost pressure not within limits and no trouble found on waste gate actuator or No excessive play/no damage from turbocharger - Then **Do Not** replace turbocharger.
 - Clean charge air bypass valve and replace the intake manifold.
2. Remove the intake manifold. Refer to *Intake Manifold Replacement* in SI.



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3. Inspect the vacuum ports of the intake manifold for ice/water/oil/sludge accumulation.



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4. Inspect the PCV intake runner for blockage (carbon/oil/water/sludge/ice) build-up blocking the cylinder head as shown above.



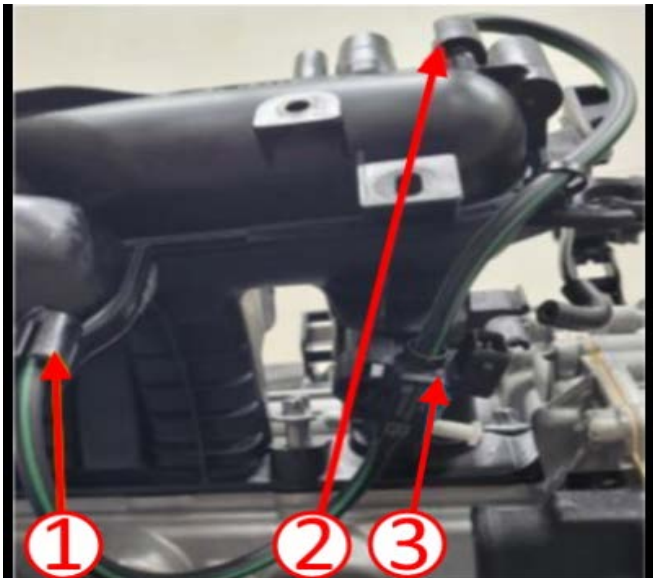
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5. Clean any ice/sludge/water/carbon out of the cylinder head, cam cover and PCV pipes.

If above condition exists, then replace the intake manifold. Refer to *Intake Manifold Replacement* in SI.

Intake Manifold Redesign Inspection and Familiarization

New intake manifold with a re-designed intake positive pressure port location. Solenoid location is electrical connector forward. The vacuum feed is in the same location. If the solenoid is found to be loose, review the location of the electrical connector. If the connector is facing the head of the assembly, it is installed backwards and will need to be removed and installed correctly.

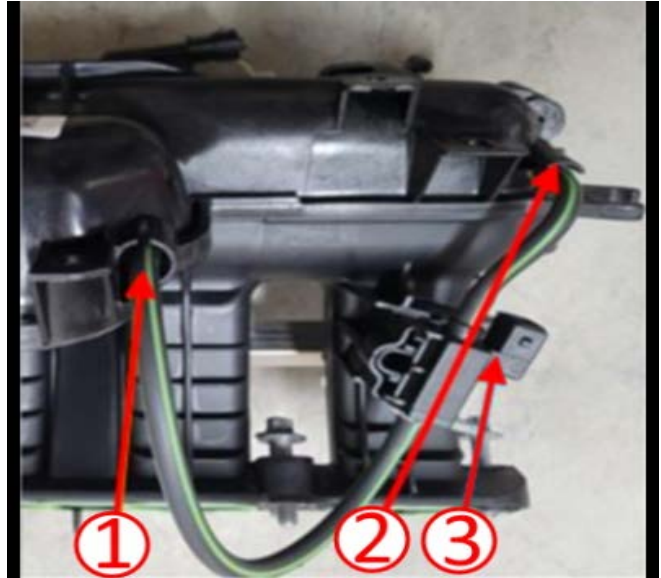


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Old Design Intake Manifold

- Bypass Valve Vacuum (1)
- Intake Positive Pressure Port (2)
- Solenoid/Electrical Connector (3)

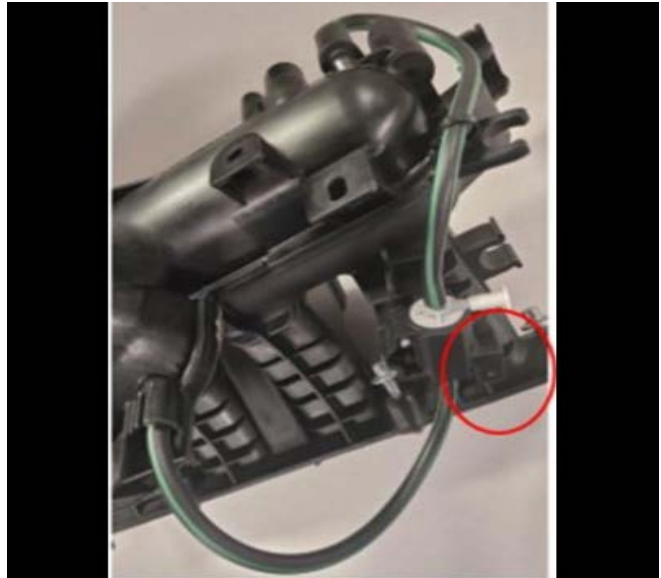
Note: The electrical receptacle location. Remove and re-install the lines and solenoid as they are retained to the intake if installed incorrectly. Tabs reversed, the solenoid is keyed and will not be seated in retainers.



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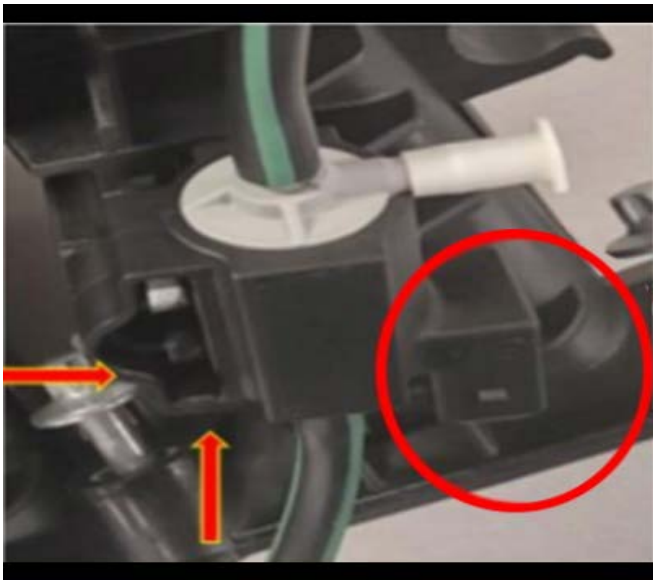
New Design Intake Manifold

- Bypass Valve Vacuum (1)
- Intake Positive Pressure Port (2)
- Solenoid/Electrical Connector (3)



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New Design Intake with incorrect solenoid installation.



6145030

New Design Intake with solenoid retainers not seated and the electrical connector facing the cylinder head. Keyed section of intake not level with solenoid body.

Parts Information

Causal Part	Description	Part Number	Qty
N/A	MANIFOLD, INT	28289977	1
N/A	VLV, CHRGR AIR BYPASS	55590593	1

Warranty Information

Note: Only select the Labor Operation that corresponds with the repair performed.

For vehicles repaired under the Powertrain coverage, use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Note: Warranty Coverage Code E applies to Labor Operation 4088558.

Labor Operation	Description	Vehicle	Labor Time
4088558*	Inspection and Cleaning	All	0.3 hr
Add	Intake Manifold Inspection, Cleaning and Replacement	Encore	1.0 hr
Add		Cruze	1.4 hrs
Add		Sonic	1.5 hrs
Add		Trax	1.0 hr
Add		Ampera	0.8 hr
Add	Charge Air Bypass Valve Cleaning or Replacement	All	1.3 hrs

*This is a unique Labor Operation for bulletin use only.

Version	3
Modified	Released August 08, 2022 Revised August 31, 2022 – Updated the first statement in Condition section, added Intake Manifold Redesign Inspection and Familiarization section and removed ELR and Volt vehicles from Warranty Information. Revised March 17, 2023 – Removed cold weather conditions from the Subject, added Attention statement and additional information to Cause section.

