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

Brand: Model: Model Year: VIN Breakpoint:
Buick Encore 2013 2020
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: Some customers may comment that when driving their vehicle, they may experience one or several of the following conditions:
- 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.

This condition may also cause an increase in crankcase pressure, creating oil leaks at seals and gaskets.

Technicians may find one or more of the following DTCs set:
- P0299
- P0234
- P0236
- P2227
- P2261
- P00C7

Cause: This condition may be caused by one or more of the following:
- Plugged crank case vent tube from ice forming in the tube during very cold weather conditions.
- 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.
- Contamination (ice/water/oil/sludge) at the charge air bypass valve.

Correction: If contamination (Ice/water/oil/sludge) at charge air bypass valve is found:
- Clean the charge air bypass valve.
- Replace the intake manifold.
- Replace the charge air bypass valve only if necessary.
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

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

   • 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.

3. Inspect the vacuum ports of the intake manifold for ice/water/oil accumulation.
4. Inspect the PCV intake runner for ice build-up blocking the cylinder head as shown above.

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.

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.

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

New Design Intake with incorrect solenoid installation.

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

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<th>Causal Part</th>
<th>Description</th>
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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.

<table>
<thead>
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<th>Labor Operation</th>
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<th>Labor Time</th>
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<tr>
<td>4088558*</td>
<td>Inspection and Cleaning</td>
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<td>Add</td>
<td>Charge Air Bypass Valve Cleaning or Replacement</td>
<td>All</td>
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*This is a unique Labor Operation for bulletin use only.

Version

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.