



# Service Bulletin

File in Section: -

Bulletin No.: PI0675

Date: February, 2012

## PRELIMINARY INFORMATION

**Subject:** Information for No Trouble Found (NTF) Turbochargers Returned to Warranty Part Center (WPC)

**Models:** 2011-2012 Chevrolet Cruze  
2012 Chevrolet Sonic  
Equipped with Engine RPO LUJ or LUV

### Condition/Concern

The warranty part center (WPC) has received turbochargers (TC) returned by Service Agents that have been identified as no trouble found (NTF). All turbochargers that are returned to the Warranty Parts Center (WPC) are inspected by engineering for root cause failure.

The purpose of this information is to reduce the number of NTF turbochargers being returned to the WPC by informing the Service Department personnel of what inspections and/or diagnosis to perform, prior to returning a TC to the WPC.

### Recommendation/Instructions

#### Causes of Misdiagnosis Leading to Returned Turbochargers with No Trouble Found (NTF)

Before replacing a turbocharger, the following information should be reviewed for the condition that was observed and the recommendations followed:

#### Turbochargers Returned for Engine Coolant Leaks

While not totally impossible, it is highly unlikely that the turbocharger will be the source of an engine coolant leak into the intake or exhaust system. The turbocharger does not have any moving parts or seals for the engine coolant, that would enable it to leak internally into the intake or exhaust system.

If the condition is low coolant, an observed external coolant leak, a coolant leak into the intake or exhaust system, a lack of heat, damaged components, an inoperative cooling fan, etc., in order to identify the cause, perform the following as needed:

1. Understand and verify the customer concern. Perform the Diagnostic System Check - Vehicle and utilize Strategy Based Diagnosis.
2. Verify the proper engine coolant level.
3. Perform a visual/physical inspection of the entire cooling system. Refer to Loss of Coolant in SI.
4. Inspect for any aftermarket devices or customer modifications. Refer to Checking Aftermarket Accessories in SI.
5. Pressure test the cooling system and inspect for a leak. Refer to Cooling System Leak Testing in SI.
6. Inspect for a coolant leak on the exterior of the turbocharger, by using dye and a black light.
7. Verify the proper operation of the cooling system fan. Refer to Cooling Fan Inoperative in SI.

#### Engine Coolant Cooling Fan Continues to Run When the Ignition is Turned OFF

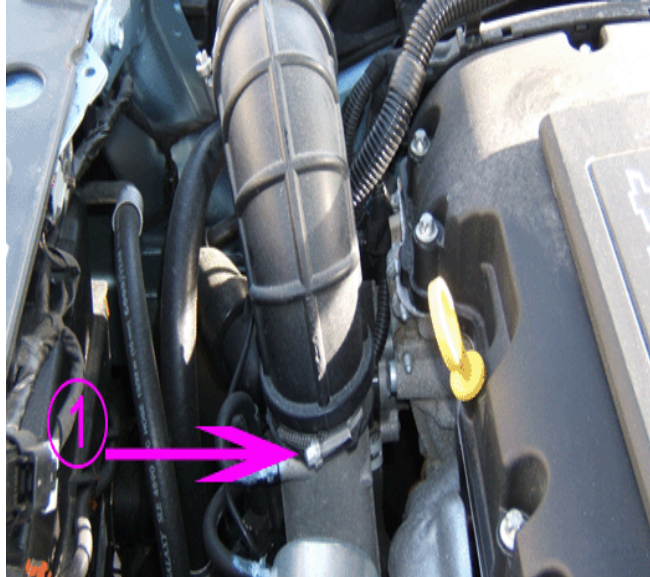
Depending on certain operating conditions that include engine run time, ambient air temperature, engine coolant temperature, mass air flow through the engine, etc., the control module may command the fan ON, after the ignition is turned OFF, for a calibrated amount of time in order to reduce TC temperature. This is normal and proper operation.

#### Turbochargers Returned for Engine Oil Leaks

If the condition is low engine oil, excessive oil consumption, oil leaking into the air intake system, or the exhaust system, oil leaking at the tail pipe, oil in the positive crankcase ventilation (PCV) system hose, excessive smoke, etc., in order to identify the cause, perform the following as needed:

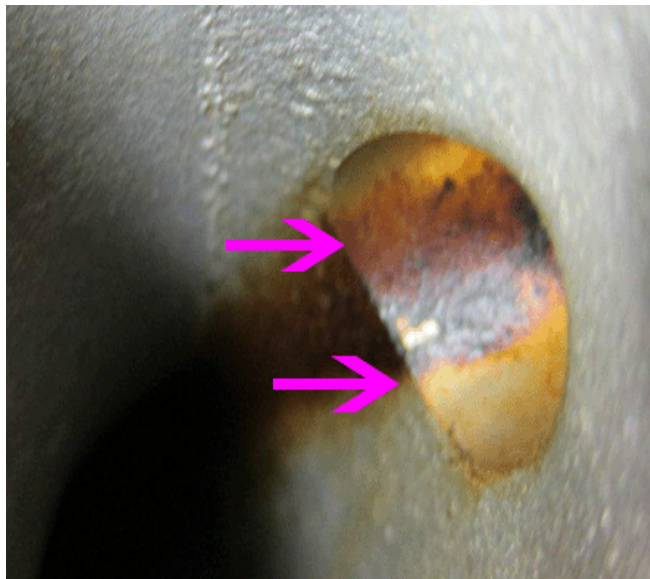
1. Understand and verify the customer concern. Perform the Diagnostic System Check - Vehicle and utilize Strategy Based Diagnosis.
2. Verify the proper engine oil level.
3. Perform a visual/physical inspection of the entire engine. Refer to Oil Leak Diagnosis and Oil Consumption Diagnosis in SI.

4. Inspect for any aftermarket devices or customer modifications. Refer to Checking Aftermarket Accessories in SI.

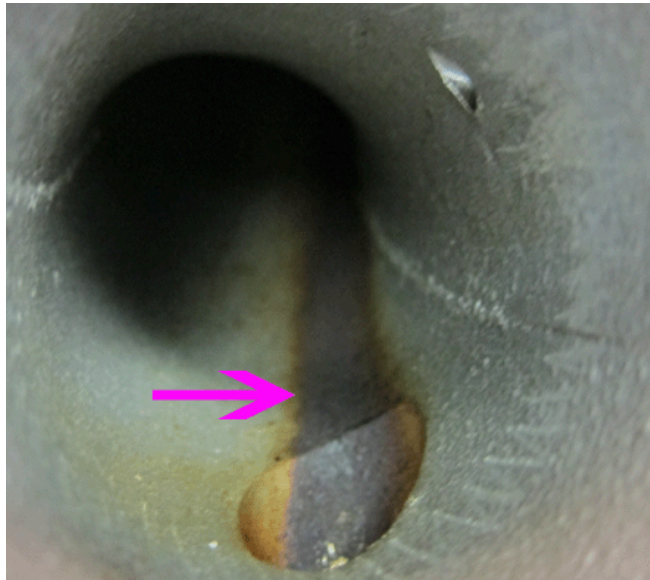


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5. Loosen the clamp (1) on the turbocharger rubber outside air inlet duct.  
6. Remove the turbocharger rubber outside air inlet duct.

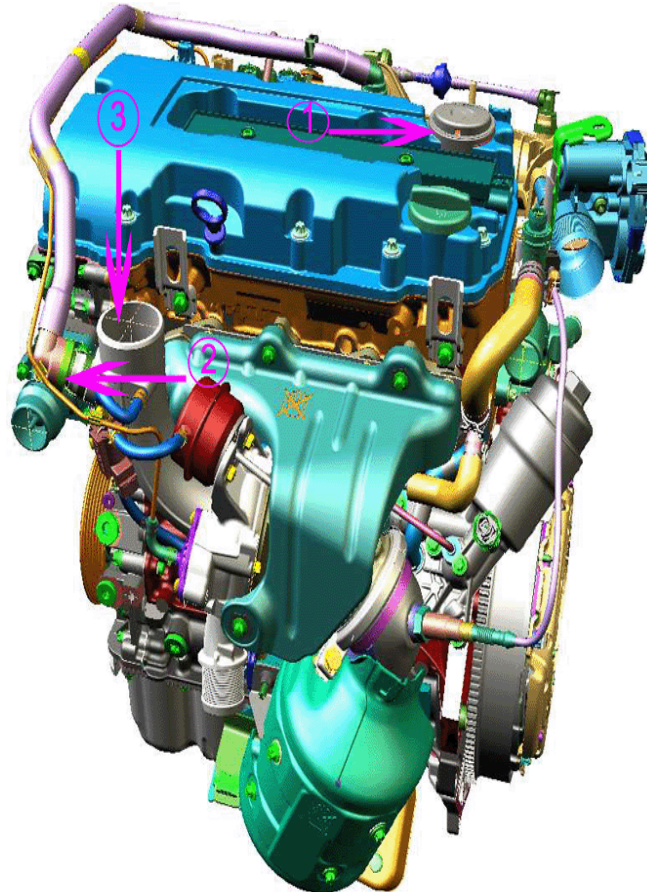


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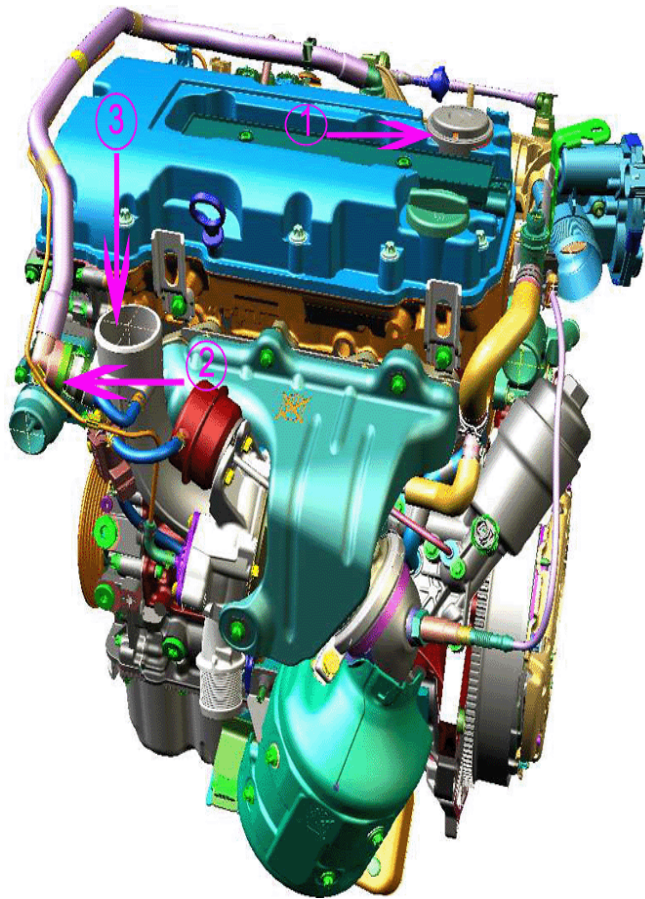
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**Notice:** The views shown in the graphics are for identifying NORMAL oil staining in the opening for the PCV fresh air intake hose and the stain travel into the TC bore and DO NOT represent an oil leak.



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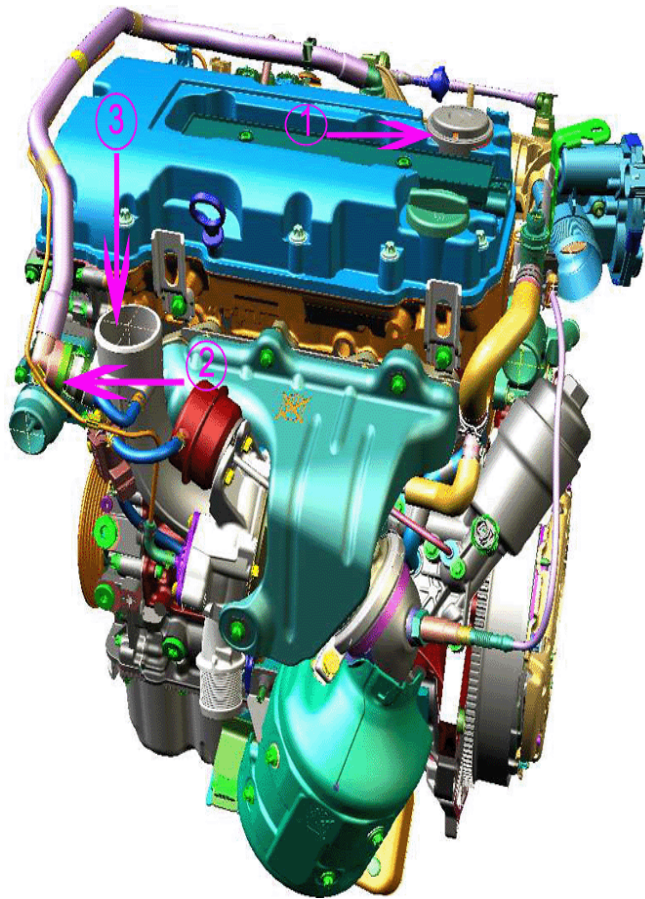
7. Inspect the inside of the turbocharger outside air inlet tube (3) for oil leaking into the opening in the TC bore for the PCV fresh air intake hose.
  - ⇒ If oil is leaking into the opening in the TC bore for the PCV fresh air intake hose, proceed to Step 8.
  - ⇒ If oil is not leaking into the opening in the TC bore for the PCV fresh air intake hose, proceed to Step 10.



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8. Remove the PCV fresh air intake hose (2), from the TC outside air inlet tube (3).
9. Inspect the inside of the PCV hose for oil.





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⇒ If the PCV hose has oil in it, then replace the positive crankcase ventilation valve (1).

10. Inspect the turbocharger oil feed pipe for leaks, restrictions, damage or blockage. Refer to Turbocharger Oil Feed Pipe Replacement in SI.
11. Inspect the turbocharger oil return pipe for leaks, restrictions, damage or blockage. Refer to Turbocharger Oil Return Pipe Replacement in SI.
12. Inspect for the presence of oil in the exhaust system.  
⇒ If oil is present in the exhaust system, then inspect the turbocharger for an oil leak.

### **Turbochargers Returned for Noise**

If the condition is noise, in order to identify the cause, perform the following as needed:

1. Understand and verify the customer concern. Perform the Diagnostic System Check - Vehicle and utilize Strategy Based Diagnosis.
2. To help isolate the source of the noise, use chassis ears J39570 or SA9217NE or an equivalent in the following areas:
  - The air conditioning (A/C) system. Refer to Noise Diagnosis - Air Conditioning (A/C) System in SI.
  - The transmission. Refer to the following in SI:
    - Noise and Vibration Analysis.
    - Torque Converter Diagnosis.
    - Whine/Growl Noise.
  - The generator. Refer to Generator Noise Diagnosis in SI.
  - The engine. Refer to the following in SI:
    - Engine Noise on Start-Up, but Only Lasting a Few Seconds.
    - Upper Engine Noise, Regardless of Engine Speed.
    - Lower Engine Noise, Regardless of Engine Speed.
    - Engine Noise Under Load.
    - Drive Belt Rumbling and Vibration Diagnosis.

**Turbocharger Replaced - Inspection to Perform**

When a turbocharger replacement is deemed necessary, it is critical that the turbocharger oil feed pipe and turbocharger oil return pipe are inspected for any leaks, restrictions, damage or blockage. Refer to Turbocharger Oil Feed Pipe Replacement and Turbocharger Oil Return Pipe Replacement in SI.