

# 2014 Chevrolet Cruze L4-1.8L

Vehicle > Engine, Cooling and Exhaust > Cooling System > Testing and Inspection > Symptom  
Related Diagnostic Procedures

## LOSS OF COOLANT

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Step	Action	Yes	No
<b>DEFINITION:</b> The cooling system is losing coolant either internally or externally. <b>Special Tools</b> BO-42220 - Universal 12V Leak Detection Lamp For equivalent regional tools, refer to Special Tools.			
1	Are you sent here from Symptoms?	Go to Step 2	Go to Symptoms - Engine Cooling
2	Repair any present DTCs. Refer to Diagnostic System Check - Vehicle. Is the action complete?	Go to Step 3	—
3	Inspect the coolant level. Is the coolant at the proper level?	Go to Step 5	Go to Step 4
4	Fill the cooling system to the proper level. Refer to Cooling System Draining and Filling. Is the action complete?	Go to Step 5	—
5	If the engine is suspected to have a coolant leak into a cylinder, the coolant can hydraulically lock the engine. Does the engine crankshaft rotate?	Go to Step 6	Go to Step 12
6	Engine overheating can cause a loss of coolant. Is the engine overheating?	Go to Step 28	Go to Step 7
7	Extended operation with a low coolant level can cause engine internal component failure. Is the engine knocking?	Go to Step 30	Go to Step 8
8	1. Idle the engine at normal operating temperature. 2. Inspect for heavy white smoke coming out of the exhaust pipe. Is a heavy white smoke present from the exhaust pipe?	Go to Step 9	Go to Step 10
9	Coolant in the exhaust system creates a distinctive, burning coolant odor in the exhaust. Condensation in the exhaust system can cause an odorless white smoke during engine warm up. Does the white smoke have a burning coolant type odor?	Go to Step 29	Go to Step 10
10	<b>Warning:</b> Refer to Moving Parts and Hot Surfaces Warning. With the engine idling, inspect the coolant recovery system. Does the coolant recovery system discharge coolant while the engine is	Go to Step 15	Go to Step 11

Step	Action	Yes	No
	idling?		
11	<p>Visually inspect the hoses, pipes and hose clamps at the following locations:</p> <ul style="list-style-type: none"> <li>• The coolant surge tank</li> <li>• The heater core</li> <li>• The radiator</li> </ul> <p>Are any of the hoses, clamps or pipes leaking?</p>	Go to Step 21	Go to Step 12
12	<p>Visually inspect the following components:</p> <ul style="list-style-type: none"> <li>• The coolant pressure cap</li> <li>• The core plugs</li> <li>• The cylinder head gaskets</li> <li>• The engine block</li> <li>• The intake manifold</li> <li>• The radiator</li> <li>• The thermostat housing</li> <li>• The water pump</li> </ul> <p>Are any of the listed components leaking?</p>	Go to Step 21	Go to Step 13
13	<p>1. Pressure test the cooling system. Refer to Cooling System Leak Testing. 2. With the cooling system pressurized, visually inspect the components listed in steps 11 and 12.</p> <p>Are any leaks present?</p>	Go to Step 21	Go to Step 14
14	<p>Pressure test the coolant pressure cap.</p> <p>Does the coolant pressure cap hold pressure?</p>	Go to Step 15	Go to Step 22
15	<p>Inspect for the following conditions:</p> <ul style="list-style-type: none"> <li>• A coolant smell inside of the vehicle</li> <li>• Coolant in the HVAC module drain tube</li> <li>• Coolant on the vehicle floor covering near the HVAC module</li> </ul> <p>Is coolant present?</p>	Go to Step 23	Go to Step 16
16	<p>1. Add 30 ml (1 oz) of Extended Life Coolant Leak Detection Dye to the cooling system for each 15 L (4 gal) of coolant. Refer to Approximate Fluid Capacities. 2. Start the vehicle and allow the engine to reach normal operating temperature. 3. Shut the engine off. 4. Use BO-42220 - detection lamp to visually inspect the components listed in steps 11 and 12.</p> <p>Are any leaks present?</p>	Go to Step 21	Go to Step 17

Step	Action	Yes	No
17	Use BO-42220 - detection lamp to inspect for the following conditions: <ul style="list-style-type: none"> <li>Coolant dye in the HVAC module drain tube</li> <li>Coolant dye on the vehicle floor covering near the HVAC module</li> </ul> Is coolant dye present?	Go to Step 23	Go to Step 18
18	Inspect the underside of the engine oil fill cap for a gray/white milky substance. Is a milky substance under the oil fill cap?	Go to Step 19	Go to Step 20
19	Inspect the engine oil fluid level indicator for a gray/white milky substance. Is a milky substance on the engine oil fluid level indicator?	Go to Step 29	Go to Step 20
20	Inspect the automatic transmission oil fluid level indicator, if equipped, for a gray/white milky substance. Is there a milky substance on the automatic transmission fluid level indicator?	Go to Step 24	Go to Step 32
21	Repair or replace the leaking component. Refer to the appropriate repair. Is the repair complete?	Go to Step 32	—
22	Replace the coolant pressure cap. Is the repair complete?	Go to Step 32	—
23	Replace the heater core. Refer to Heater Core Replacement. Is the repair complete?	Go to Step 32	—
24	1. Remove the transmission oil cooler lines from the radiator. 2. Pressure test the cooling system. Refer to Cooling System Leak Testing. 3. Inspect the transmission oil cooler for coolant. Is coolant present?	Go to Step 25	Go to Step 26
25	1. Replace the radiator. Refer to Radiator Replacement. 2. Service the automatic transmission. Is the repair complete?	Go to Step 32	—
26	Install the cooler lines to the radiator. Is the action complete?	Go to Step 32	—
27	Repair the engine no crank condition. Is the repair complete?	Go to Step 32	—
28	Repair the engine overheating condition. Is the repair complete?	Go to Step 32	—
29	Repair the engine internal coolant leak. Is the repair complete?	Go to Step 32	—
30	Repair the engine knock. Is the repair complete?	Go to Step 32	—
31	Repair the combustion pressure in the cooling system problem. Is the repair complete?	Go to Step 32	—

Step	Action	Yes	No
32	Operate the system in order to verify the repair. Did you find and correct the condition?	System OK	Go to Step 2