



Service Bulletin

Bulletin No.: 23-NA-061

Date: June, 2023

INFORMATION

Subject: Diagnostic Tip for Checking Exhaust System for Leaks for the L5P Engines, Malfunction Indicator Lamp (MIL) Illuminated - DTC P0402, P0421, P11D5, P20EE, P2459, P2463, P249D, and/or P249E

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		from	to	from	to		
Chevrolet	Silverado	2017	2018			L5P	
	Silverado 2500HD/3500HD	2019	2024				
GMC	Sierra	2017	2018				
	Sierra 2500HD/3500HD	2022	2024				

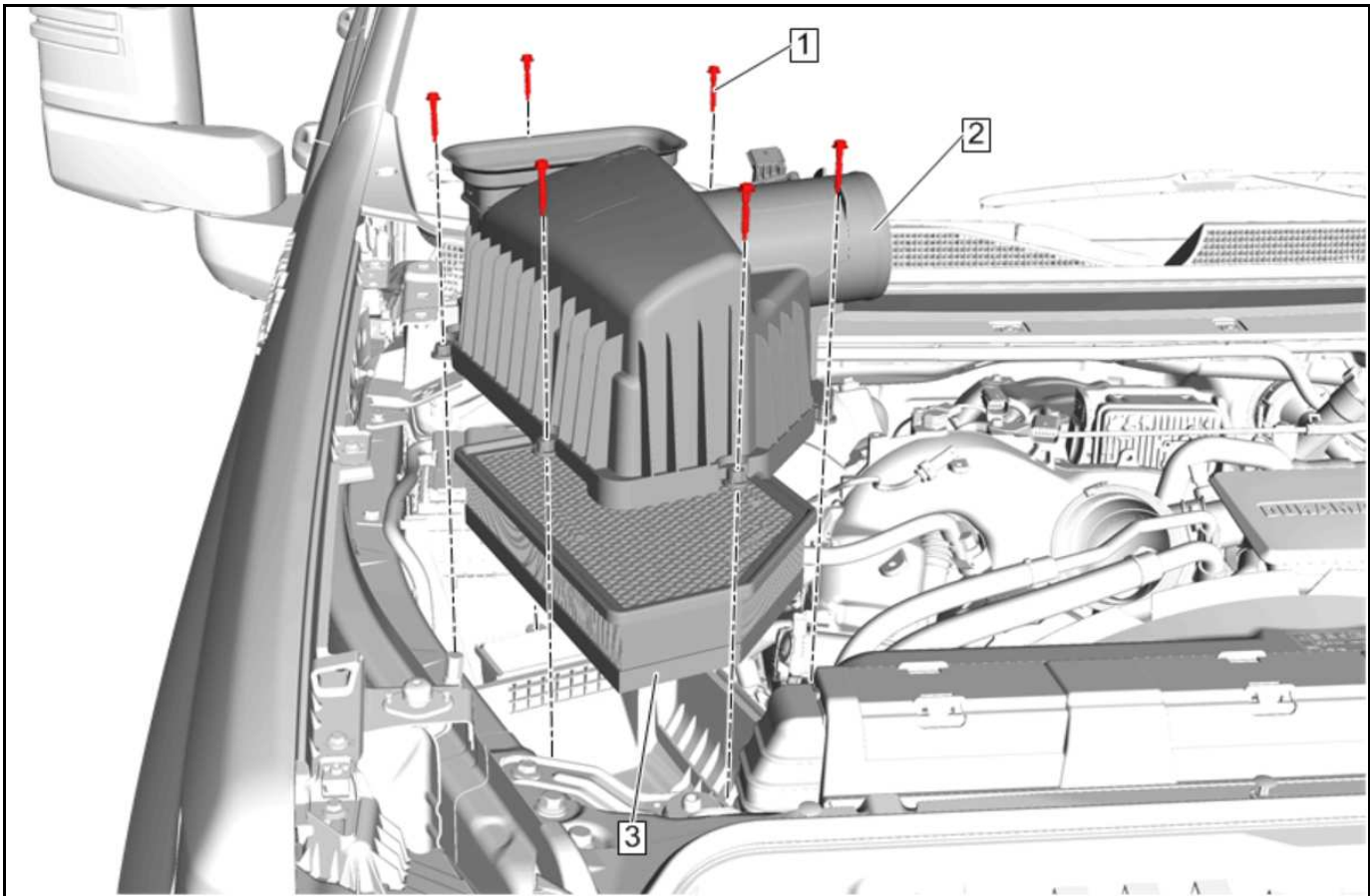
Involved Region or Country	North America, Russia, Middle East, Chile, Colombia, Ecuador, Paraguay, Peru, Japan, Cadillac Korea (South Korea), Thailand, Australia/New Zealand
Condition	<p>Some customers may comment on one or more of the following conditions:</p> <ul style="list-style-type: none"> • MIL illuminated • Exhaust odor • Hiss, whine, squeal, whistle, tick, screeching, flutter, or howling noise during exhaust brake • Whining <p>Technicians may comment on one or more of the following DTCs set in the Engine Control Module (ECM):</p> <ul style="list-style-type: none"> • P0402: Exhaust Gas Recirculation (EGR) Flow Excessive • P0421: Catalytic Converter Low Efficiency • P11D5: Nitrogen Oxides Sensor 2 Exceeded Minimum Learning Limit • P20EE: Nitrogen Oxides Catalytic Converter Efficiency Below Threshold • P2459: Particulate Filter Regeneration Frequency • P2463: Particulate Filter Soot Accumulation • P249D: Closed Loop Reductant Injection Control At Limit - Flow Too Low • P249E: Closed Loop Reductant Injection Control At Limit - Flow Too High
Cause	This condition may be caused by an exhaust leak.

<p>Correction</p>	<p>There are two different types of leak tests that can be performed on the induction or exhaust system. The first is a smoke leak test where the area being tested is filled with pressurized smoke and the leak is detected by visually inspecting for smoke exiting the system. The second is a pressure leak test where soapy water is applied to the outside of the area being tested and leaks are visually identified by the presence of bubbles forming over the leaking area.</p> <p>Advantages to using a Smoke leak test vs. a Pressure leak test:</p> <ul style="list-style-type: none"> • Smoke is easy to see exiting relatively large leak locations. The smoke bellows out. • You can sometimes smell the smoke to help identify a leak location. <p>Disadvantages to using a Smoke leak test vs. a Pressure leak test:</p> <ul style="list-style-type: none"> • Smoke is hard to see exiting a small leak as the smoke is traveling fast. • Smoke can be removed when it passes through a DPF. <p>Advantages to using a Pressure leak test vs. a Smoke leak test:</p> <ul style="list-style-type: none"> • Bubbles will easily form over a small leak making it easy to spot. • You can leave soapy water on the surface being tested while you go to eat lunch. When you return, you should still see bubbles. <p>Disadvantages to using a Pressure leak test vs. a Smoke leak test:</p> <ul style="list-style-type: none"> • It is very difficult for a soap film to form over a large leak to make a bubble.
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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.

Service Procedure

Note: A leak at the turbocharger vane actuator shaft is considered a normal condition. Any smoke or bubbles from this area should be ignored.



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1. Remove the air filter (3) from the air filter housing. Refer to *Air Cleaner Element Replacement* in the Service Manual.



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2. Put the air filter in a plastic bag.
3. Re-install the air filter into the air filter housing.
4. Raise the vehicle.

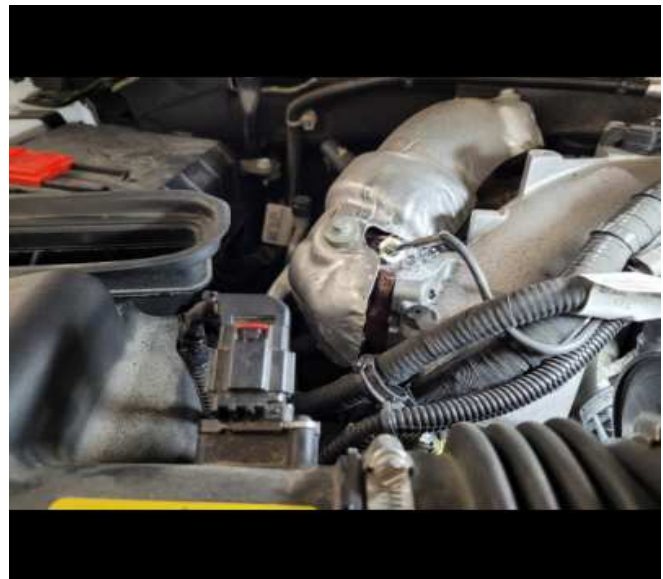


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5. Install the inflatable adapter for the GE-52250 machine and insert it into the tailpipe.
6. Attach the GE-52250 to the adapter and shop air supply.
7. Command the vapor test and adjust the test pressure to 34–55 kPa (5-8 psi).
8. Using a soapy water mixture, spray all connections, welds, and sensors with the soapy water mixture, and look for air leaks (See Examples of Exhaust Leak Areas of Concern section below).
9. Once all the leaks are detected and corrected, verify that the exhaust is sealed by retesting with the GE-52250.

Examples of Exhaust Leak Areas of Concern

Examples of leaks: This is considered an acceptable leak from the turbocharger:



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Exhaust temp sensor



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DEF Injector



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Left side exhaust manifold

Example of Normal Exhaust Leak Area



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Normal turbocharger seal leakage

Version	2
Modified	Released March 31, 2023 Revised June 05, 2023 - Revised Subject.

