



Preliminary Information

PIT5404C Squeak Chirp Whistle Rattle Type Noise from Rear of Vehicle (Passive Exhaust Valve) or Buffeting Vibration Drone Exhaust Tone Change Body Pressure Booming (AFM Exhaust)

Models

Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Chevrolet	Suburban	2015 - 2016	SOP	07/01/2016	5.3L	All
Chevrolet	Tahoe	2015 - 2016	SOP	07/01/2016	5.3L	All
Chevrolet	Silverado 1500	2014 - 2017	SOP	12/14/2016 for Plants G and Z*	4.3L or 5.3L	All
GMC	Yukon Models	2015 - 2016	SOP	07/01/2016	5.3L	All
GMC	Sierra 1500	2014 - 2017	SOP	12/14/2016 for Plants G and Z*	4.3L or 5.3L	All
Cadillac	Escalade Models	2015 - 2017	All	All	6.2L	All
GMC	Sierra 1500 Denali	2014 - 2017	All	All	6.2L	All
GMC	Yukon Denali Models	2015 - 2017	All	All	6.2L	All

* For Build Plant Information See 11th Position of VIN

Supersession Statement

This PI was superseded to update the recommendation. Please discard PIT5404B.

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

Involved Region or Country:	North America and North America Export Regions
Condition:	<p>Some customers may comment on any of the following concerns:</p> <ul style="list-style-type: none"> - Squeak, whistle, rattle or chirp type noise from the rear of the vehicle - Exhaust tone change or exhaust drone type noise - Buffeting vibration or body pressure booming <p>These concerns may be most noticeable when the engine transitions in and out of Active Fuel Management (AFM) mode, or while the engine is operating in V4 (4-cylinder) Active Fuel Management (AFM) mode in the 1,100-1,400 RPM range.</p> <p>While some slight changes in exhaust tone and/or vibration/drone type noises can be normal when the engine is in V4 mode, there have been complaints of them being excessive.</p> <p>Note: If the concerns are excessive, they may excite the roof sheet metal and compound the issue. (See the latest version of PIT5318.)</p>
Cause:	These concerns may be caused by the Passive Exhaust Valve (PEV), located in the exhaust muffler and tail pipe assembly, making noise or effecting exhaust tone, or may be caused by an exhaust leak at the clamp joint.

Correction for 4.3L and 5.3L ONLY:

1: Verify the concern is present Only during V4 mode. (During evaluation, monitor Instant Fuel Economy screen in DIC, or on scan tool to determine V4 vs V8 mode.)

1.1: Once the concern is duplicated in Drive, shift trans into manual 5th or 6th to operate in V8-only mode and re-test under same conditions.

1.2: Switch back and forth between Drive and manual 5th or 6th to turn concern On/Off.

Note: Using a Pico scope, AFM V4 mode operation will display as E2 for a V8 engine, and E1 for a V6 engine.

If the concern is qualified to be present only during V4 mode operation, an updated exhaust to address this concern is now available for vehicles built before the build dates listed. See Notes following before proceeding to Parts table in this PI.

If the noise is not present during V4 mode operation, it may occur during transitions between V4 and V8 modes - as a Test Only, perform the following diagnostic steps:

2: Temporarily lock the PEV in the open position, as shown in the latest version of PI1201, and re-evaluate. If the noise is eliminated or changes greatly in severity, an updated exhaust and PEV to address this concern is now available for vehicles built before the build dates listed. See Notes following before proceeding to Parts table in this PI.

Note: The updated design exhaust has the passive exhaust valve (PEV) located in front of the muffler; the original design exhaust has the PEV located behind the muffler. Proceed to the Parts Information table in this PI.

Note: Ensure there are no leaks at the exhaust band (Norma) clamp joint after the new exhaust has been installed. It has been found in some cases that a leak at the clamp joint could allow some level of exhaust tone change or exhaust vibration/drone type noise and/or buffeting vibration or body pressure booming to occur. Refer to latest version of PIP5442. If no exhaust leak is found, replace the exhaust. Proceed to the Parts Information table in this PI.

Correction for 6.2L ONLY:

1: Verify the concern is present Only during V4 mode. (During evaluation, monitor Instant Fuel Economy screen in DIC, or on scan tool to determine V4 vs V8 mode.)

1.1: Once the concern is duplicated in Drive, shift trans into manual 5th or 6th to operate in V8-only mode and re-test under same conditions.

1.2: Switch back and forth between Drive and manual 5th or 6th to turn concern On/Off.

Note: Using a Pico scope, AFM V4 mode operation will display as E2 for a V8 engine. (Frequency will likely measure in the 36-48 Hz range depending on speed.)

If the concern is qualified to be present only during V4 mode operation, continue further with this PI.

If the noise is not present during V4 mode operation, it may occur during transitions between V4 and V8 modes – as a Test Only, perform the following diagnostic steps:

2: Temporarily lock the PEV in the open position, as shown in the latest version of PI1201, and re-evaluate. If the noise is eliminated or changes greatly in severity, the PEV is the source of the noise.

Note: There have been continuous improvements made to the 6.2L passive exhaust valve (PEV) to help address squeak, chirp, whistle, rattle type noises emanating from the PEV. Refer to the parts catalog.

3. If the condition is present regardless of V4 or V8 mode, and was not changed with the PEV test, refer to published PI diagnostics.

Exhaust System Inspection:

1. Ensure there are no leaks at the exhaust band (Norma) clamp joint. It has been found in some cases that a leak at the clamp joint could allow some level of exhaust tone change or exhaust vibration/drone type noise and/or buffeting vibration or body pressure booming to occur. Refer to latest version of PIP5442.



2. If no leaks were found at the exhaust band clamp joint, inspect exhaust system components for the following; both COLD and HOT; in NEUTRAL, FORWARD and REVERSE gears:

- Loose and/or missing fasteners
- Heat shields damaged
- Joints and/or couplings not properly seated: Nuts, bolts, studs, clamps, straps
- Bracket and/or insulator mounting concerns
- Inadequate clearance to body and/or chassis components
- Improper alignment
- Disconnected and/or missing insulators
- Cracked, dry-rotted, and/or oil-soaked insulators
- Stretched, twisted, broken, torn, and/or collapsed insulators
- Bent, twisted, cracked, and/or deformed brackets

3. Repair and/or replace exhaust system components as indicated by the inspection, then re-evaluate the condition.

Exhaust and Powertrain Settling Process:

Incorrectly seated and/or aligned powertrain components and/or exhaust system components may create a transfer path into the passenger compartment. Perform the following procedure to re-bed the powertrain/exhaust:

1. Loosen, but do not remove, the engine mount to frame bolts and the transmission/transfer case mount to crossmember nuts.
2. Loosen, but do not remove, exhaust system hangers.
3. Ensure that the exhaust flexible coupling, if equipped, moves freely.
4. With the vehicle on the ground at ride height, set the park brake and apply the base brake.
5. Turn Traction Control Off, and brake torque in Drive and Reverse – engine at operating temperature – then place in Neutral and turn engine Off.
6. Using Only Hand Tools, tighten all of the loosened fasteners to specs with the powertrain in a relaxed position, then ensure exhaust hangers are seated correctly.

Exhaust Test:

If after performing the above suggestions, the concern has not been resolved or improved, as a Test Only, swap the exhaust muffler and tail pipe assembly from a known good truck. If this corrects or improves the concern, replace the exhaust muffler and tail pipe assembly on the concern vehicle.

Active Noise Cancellation (ANC) System Operation:

The Active Noise Cancellation system is a method used to reduce the perception of certain undesirable sounds generated by the engine into the vehicle cabin. If the system is not working or working incorrectly this can be the cause or a contributor of the issue.

Main components of ANC system:

- 3 microphones in the vehicle headliner.
- A discrete engine speed (RPM) signal from the engine control module to the amplifier
- Active Noise Cancellation electronics and software integrated into the audio amplifier
- The vehicle speaker system, connected to the amplifier, to output the desired cancellation frequencies

The ANC system is operational under the following conditions:

- The amplifier has passed all self-diagnostic checks
- All doors are closed
- Battery voltage is between 9.5 V and 16 V
- The vehicle cabin temperature is less than 140°F (60°C)
- Engine speed is between 550 and 3000 RPM

ANC system Diagnostic Tips:

1. Inspect for any aftermarket audio components. If the audio system has been altered this will hinder ANC operation and will cause increased exhaust drone.
2. Inspect for anything inside the truck that may be blocking the speakers and/or microphones.
3. Inspect for any DTC's; example: B0560, B1277, B127C, B127D, door ajar issues/DTC's, etc.
4. Disable the ANC system by removing the AMP fuse. If the exhaust drone noise improves there may be an issue with the ANC system. Some examples of system issues have been: faulty speaker or subwoofer, speaker or subwoofer improperly wired (-/+ wires backward), speaker or subwoofer inoperative, microphone out of position in headliner, etc.

Note: The Audio System Diagnostic CD EL-50334-6 contains audio tracks that can be used to test the speakers.

If the concern is qualified to be present only during V4 mode operation, but is deemed to be normal by comparing to a like vehicle with 6.2L, and no issues were found following the exhaust inspection, settling at test steps, and the ANC system has been verified to be operating correctly, then no further repairs should be made, as this is a normal characteristic.

Parts Information

The following parts apply to 4.3L or 5.3L equipped vehicles only:

Part Number	Description	Qty
23385910	Muffler Ams-Exh (W/ Exh Pipe) – 5.3L Long Wheel Base SUV CK15906	1
23385911	Muffler Ams-Exh (W/ Exh Pipe) – 5.3L Short Wheel Base SUV CK15706	1
84020521	Muffler Ams-Exh (W/ Exh Pipe) – 4.3L LV3, 5.3L L83 Crew Cab 6' 6" Bed CK15743	1
84020522	Muffler Ams-Exh (W/ Exh Pipe) – 4.3L LV3, 5.3L L83 Crew Cab 5' 8" Bed CK15543 or 4.3L LV3, 5.3L L83 Double Cab 6' 6" Bed CK15753	1
84020523	Muffler Ams-Exh (W/ Exh Pipe) – 4.3L LV3, 5.3L L83 Regular Cab 8' Bed CK15903	1
84020524	Muffler Ams-Exh (W/ Exh Pipe) – 4.3L LV3, 5.3L L83 Regular Cab 6' 6" Bed CK15703	1

Warranty Information

For 6.2L equipped vehicles, the correction for this concern may be one of several repairs described above. For vehicles repaired under warranty, please use the appropriate warranty labor operation based on the actual cause and repair.

For 4.3L or 5.3L equipped vehicles only, with exhaust replacement:

Labor Operation	Description	Labor Time
4051980	Exhaust Muffler with Resonator, Exhaust, and Tail Pipe Replacement	Use Published Labor Operation Time

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.

Additional SI Keywords

drone



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