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## #13-06-01-001A: Information on Customer Questions About Valve Guide Wear - (Jun 4, 2015)

**Subject:** Information on Customer Questions About Valve Guide Wear

**Models:** 2006-2013 Chevrolet Corvette 427, Corvette Z06  
2014 Chevrolet Camaro Z/28  
Equipped with 7.0L V8 Engine (RPO LS7)



**Attention:** This Bulletin also applies to any of the above models that may be Export vehicles.

**This Bulletin has been revised to add the 2014 Camaro Z/28 and the Valve Guide Measuring (7.0L) procedure. Please discard Corporate Bulletin Number 13-06-01-001.**

### Customer Concern

Some owners of Corvettes equipped with the LS7 7.0L V8 engine may ask your dealership to check their vehicle for valve guide wear because of information that has been distributed on the internet, primarily at Corvette enthusiast sites. Due to these postings, some customers that have not had an issue may ask to have their vehicle checked. If a customer presents their vehicle and requests the valve guides be checked, the following information may be helpful to you and alleviate any concern for your customer.

### Valve Guide Wear / Noise Concerns

To address any concern the customer may have, listen to the customer's request and ask the following questions to differentiate if the customer has experienced a correctable engine concern or has anxiety over information they may have read.

**Important:** It is important to investigate all concerns and relay good factual information to your customer. If a customer indicates a concern about valve guide wear, it is possible they may have a valid unrelated engine issue, and do not know how to express the actual concern.

1. Have you experienced any concerns or difficulties that would indicate an engine problem?
2. Is the Check Engine Light ON? Does the vehicle exhibit any starting/running concerns?
3. If the concern is noise related, ask for a description of the type of noise heard?

Once the information is collected, and the nature of the customers concerns are known, here are some guidelines for appropriate actions:

- For any driveability, starting, running or found DTC code issues, if the car is under the respective warranty period, repair the vehicle following normal diagnostics as outlined in the Electronic Service Information (SI). If the vehicle is out of the warranty period, explain the available options for the customer.
- If the customer indicated a concern with engine noise; warm the vehicle to operating temperature and compare it to similar vehicles. If the vehicle does not exhibit unusual noises or malfunctions, the customer should be told there is nothing to indicate the need to disassemble the engine to determine valve guide wear. The LS7 is a high performance motor and as such is built with an emphasis on power while retaining the lowest possible noise and vibration characteristics. Some valve train noise may be evident, which is a by product of the performance nature of this engine. General Motors has reviewed paid

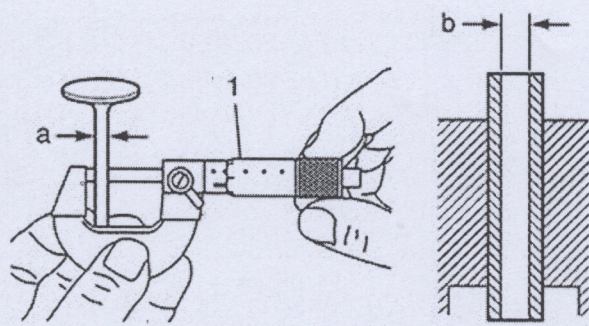
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warranty claims for valve and head replacement for the Corvette LS7 and the numbers of incidents are very low with no indication of an excessive wear issue.

- If the customer's sole concern is based on information collected over the internet, with no verifiable symptom, and the customer insists the engine be disassembled and verified, it should be explained to the customer that any charges for the inspection would be at the customer's expense. Valve guides are an internal engine component subject to wear over the life of the vehicle. If there is excessive wear (beyond the indicated service limit) after the investigation is completed, GM will cover the inspection and repair expense for vehicles covered under the Powertrain Limited warranty.
- *If the customer indicated a concern with engine noise and unusual operating noises in the engine's valvetrain are determined to be evident, perform the following procedure to inspect for valve guide wear:*

### Valve Guide Measuring (7.0L)



**Caution:** Do not clean titanium components with chlorinated solvents. Brake parts, and similar cleaning solvents, safety solvents, or refrigerant that contains chlorofluorocarbons (CFCs) should not be used. Using chlorinated solvents to clean titanium components can result in component damage, leading to stress corrosion cracking that may be undetected with normal visual inspection. Acceptable materials for cleaning titanium components include non-chlorinated solvents, alcohol, acetone, and methanol.

**Caution:** Excessive valve stem-to-guide clearance may cause a noisy valve train, premature valve stem oil seal wear, component damage, and/or excessive engine oil consumption.

**Caution:** Insufficient valve stem-to-guide clearance will result in noisy or sticking valves. Valves that are too tight may disturb engine smoothness or lead to component damage.

1. Measure the valve stem to guide clearance.
  - 1.1. Using a micrometer (1) measure the diameter of the valve stem (a).
  - 1.2. Using a ball style measuring gauge, measure the inner diameter (b) of the valve guide at the specified depth. Refer to Engine Mechanical Specifications in SI.
  - 1.3. Subtract the valve stem diameter (a) from the valve guide inner diameter (b) to obtain the valve stem to guide clearance.



2. If the clearance measurement between the valve stem and guide is not within specification, the valve and/or the cylinder head must be replaced. Refer to Engine Mechanical Specifications in SI.

### **Aftermarket Equipment and Valve Guide Wear**

The use of performance engine modifications has been found to accelerate valve guide wear. Replacement aftermarket mechanical parts, or software calibrations, may adversely affect the wear of these and other components. Any modification to the engine of GM vehicles voids the powertrain coverage portion of the vehicle warranty. For additional information on GM policies regarding aftermarket equipment and calibrations, please refer to the GM Service Policy & Procedures Manual, article 1.4.14 (Voided Warranties and Branded Titles) and article 1.2.2.12 (Non-GM Parts & Equipment and Original Equipment Alterations), along with the latest versions of Corporate Bulletin numbers 09-00-89-016 and 09-06-04-026 for additional information.

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have that condition. See your GM dealer for information on whether your vehicle may benefit from the information.



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