



(Back Office Only) - Engine Brake Vibration When In High Setting - 13L Engine With Variable Geometry Turbo (VGT) - US17 And Newer Emissions (Common Rail Fuel System)



> Internal Content

Overview

Engine brake vibration in its most noticeable form can be caused by several things. Possibilities include failed Exhaust Brake Rockers that don't engage the engine brake cam lobes as required, the Engine Brake Solenoid not functioning correctly, or a Turbocharger that is failing. Note that the Intake Throttle Valve (ITV) is not utilized for engine braking and should not be suspected unless its position shows to be below 90% (78 degrees) during engine brake activation.

One recent case was confirmed to have been the Exhaust Brake Rocker Arms. However, several of the recent complaints do not appear to have a root cause.

In these cases, the complaint seems to be based on the perception of a light vibration during engine braking on high setting that exceeds what the owner/operator perceives as acceptable. For this reason, in cases where it is more perception than vibration, someone with experience should test drive the truck to verify that an issue exists.

In cases of actual excessive vibration such as failed exhaust brake rockers, the vibration is commonly felt throughout the cab, and will likely be accompanied by the dash shaking and/or rattling.

If a chassis with a manual transmission is experiencing shaking or vibration through the shifter only, Hagerstown product engineering may need to measure the vibration profile at the driver's seat base and review the data to ensure it is within the acceptable limit.

Procedure

Vibration complaints will need to be assessed on a case-by-case basis at the discretion of the dealer's District Service Manager (DSM), Uptime Center staff (Dealer Technical Support) and Service Engineering (Reliability).



- The first assessment should be done by the DSM

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- If the DSM cannot detect excessive vibration and if possible, request that another driver operate the truck under the same conditions in which the complaint is occurring.

- This can be a staff member or driver at the servicing dealer.

• **The driver should not be told that (s)he is checking for vibration.** An assessment of general performance during engine braking with the switch on high setting should be requested.

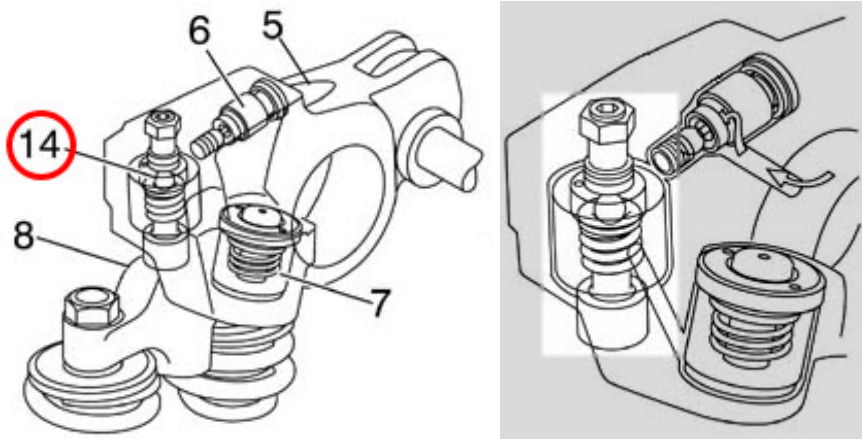
- Have the rocker shaft oil pressure monitored during the test drive.

- Pressure with the engine brake **inactive** should be 14.5 psi +1.4/-0.7 psi (100 kPa +10/-5 kPa)

- Pressure with the engine brake **active** should be approximately 29 psi (200 kPa)

- If there is high certainty that the vibration is abnormal:

- The power (slave) pistons in the exhaust rockers should be inspected to confirm they are not backing out or loose.



- The slave piston rides on the exhaust valve bridge as shown above (Number 14), and is the only part of the rocker that can be removed.

• **NOTE:** In cases where rocker arms are replaced, it may be found that the part number of the rocker arm in Impact is 22418147. This number is now blocked in Parts Compass and cannot be ordered. When ordering, part number 21406640 is correct.



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