



Preliminary Information

PIT6154A Diagnostic Tip For Steering Wheel Oscillation Wobble Shimmy Dither Vibration

Models

Brand:	Model:	Model Years:	VIN:		Engine:	Transmissions:
			from	to		
Chevrolet	Silverado 3500 HD	2024	All	All	All	All
GMC	Sierra 3500 HD	2024	All	All	All	All

Involved Region or Country	North America
Additional Options (RPO)	With RPO DZW - DUAL REAR WHEEL
Condition	Some customers may comment on a vibration or that the steering wheel has an oscillation, wobble, shimmy and/or dither. These concerns typically happen at speeds higher than 40 mph and sometimes are aggravated after hitting a bump.
Cause	The cause of this condition could be excessive runout within the front hub extensions (1), shown below.

Correction:

Important Please Read: On trucks with RPO NV8, if they develop an imbalance/vibration (example tires out of balance) the power steering control module (PSCM) has a feature that will learn and help remove some of the imbalance/vibration felt in the steering wheel. The PSCM can only provide a certain amount of correction and when the issue causing the imbalance/vibration gets bad enough then the driver will start to feel the concern in the steering wheel. The PSCM learns this mitigation behavior over time (several hundred miles) and after any repair is made to fix an imbalance/vibration and before a road test, the feature **MUST BE** reset. If it is not reset after a repair, then during a road test the PSCM will still be trying to mitigate the imbalance/vibration that it had previously learned, but now is no longer present. Eventually, the PSCM will learn the issue is no longer present, but it can take a few hundred miles to relearn. To reset this feature, use GDS2 to reset the Active Pull/Drift Compensation Learn by going into the K43 Power Steering Control Module > Configuration and Reset Functions > Power Steering Pressure Sensor Learn > Power Steering Active Pull/Drift Compensation Learn and press the Execute Control Sequence.

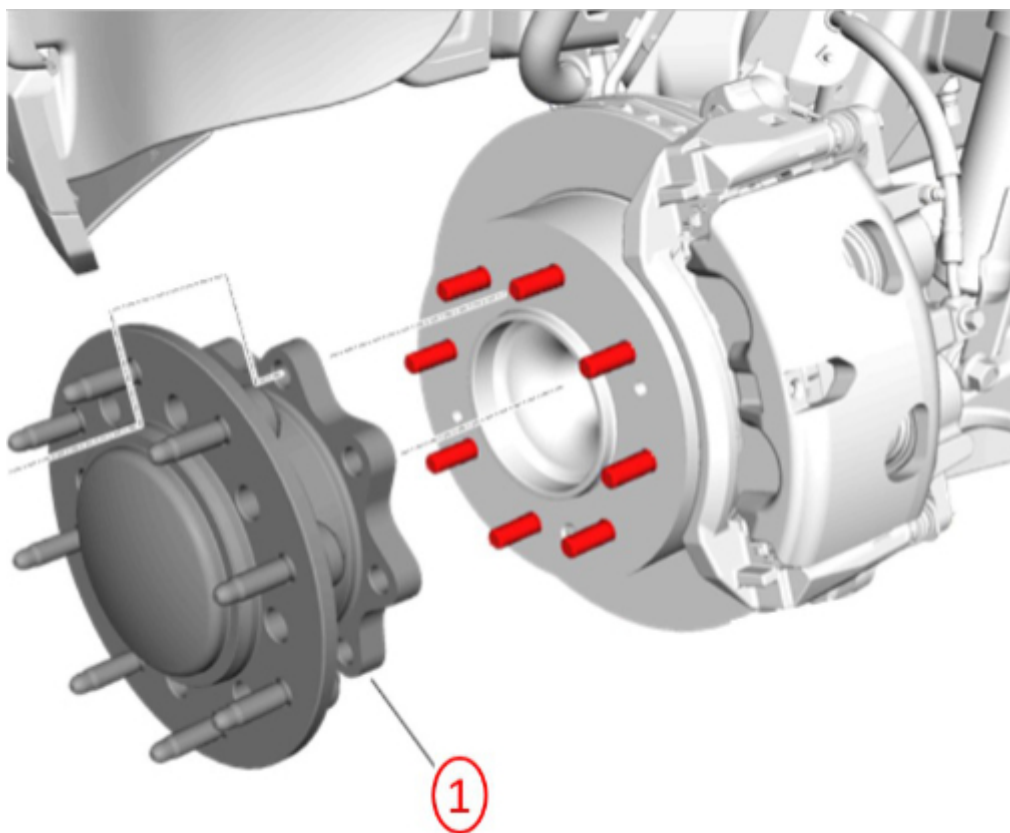
If after following normal SI diagnostics and a root cause has not been found, then inspect the front hub extensions for excessive runout. Remove the wheel and tire assemblies and then use a dial indicator to measure the face of the hub extension where the wheel mounts. Slowly rotate the hub extension while measuring the runout, it should not exceed .005" (.127 mm). If the hub extension has excessive runout, then remove it and use the dial indicator to measure the runout on the face of the brake rotor where the hub extension mounts, again it should not exceed .005" (.127 mm). If the rotor face is within spec, but the hub extension is out of spec then the hub extension will need to be replaced. In some cases, the hub extension may not need to be replaced if the brake rotor face has some runout, but within spec. It may be possible to index the low spot on the rotor face with the high spot on the hub extension, then remeasure the hub extension runout to see if it is now within spec. On trucks with RPO NV8, please read the important statement above before going on a test drive.

NOTE: After installing a new front hub extension, recheck the runout to verify it does not exceed .005" (.127 mm).

Remember: SI vibration diagnostics are found under General Information > Vibration Diagnosis and Correction > Diagnostic Information and Procedures

Additional Diagnostic Tips

1. Wheel/Tire balancing can also be a contributing factor. The wheel/tire assemblies on HD trucks can be difficult to properly mount/center on the Hunter 9700 wheel balancer if the proper adapter is not used. Please reference the latest version of 10-03-10-001 for the proper wheel adapters. It is recommended to get the road force values to less than 30 lbs for the FRONT tires.
2. When reinstalling the front wheel/tire assemblies onto the vehicle, it is important to get them centered on the hub extension. These trucks do not use tapered lug nuts and when the wheel/tire assembly is installed on the vehicle, if there is any play in the center pilot hole the weight of the assembly will cause the wheel not to be centered on the hub extension. After placing the front wheel/tire assembly on the hub, temporarily install 2 to 4 tapered lug nuts that are equally spaced around the wheel studs and lightly snug them up, shown below (2). The tapered lug nuts will help center the wheel/tire assembly onto the hub extension. Then reinstall the proper factory lug nuts in the other open stud locations and tighten down equally. Once the proper lug nuts are tightened down now REMOVE the tapered lug nuts, reinstall the remaining factory lug nuts in their place and torque all lug nuts down equally to specification.
3. On trucks with RPO NV8, after making any repair to fix an imbalance/vibration please read the important statement above before going on a test drive.





Warranty Information

For vehicles repaired under the Bumper-to-Bumper coverage (Canada Base Warranty coverage), use the following labor operation. Reference the Applicable Warranties section of Investigate Vehicle History (IVH) for coverage information.

Labor Operation	Description	Labor Time
8030530	Front Wheel Hub Extension Replacement	Use Published Labor time

Version History

Version	2
Modified	04/24/2024 - Created on. 05/23/2024 - Updates to the correction section.

