

Howling, humming, droning, vibrations from drivetrain

Topic number	LI35.31-P-056961
Version	1
Design group	35.31 Rear axle center assembly
Date	08-12-2013
Validity	Affects all rear-wheel drive vehicles and 4MATIC vehicles
Reason for change	Document no. changed under remedial action.

Complaint:

Howling, humming, droning, vibrations from the drivetrain in a specific vehicle speed range (e.g. between 50 mph and 55 mph)

If the complaint applies to the entire vehicle speed range - The differential has bearing damage.

Note: Two new damage types are available:

G 5 Noise in entire vehicle speed range - Bearing damage (see reference noise in attachment).

G 6 Noise within limited speeds

Attachments	
File	Designation
Bearing Noise Reference File.mp3	Reference File

Cause:

Drivetrain complaints can be traced to a number of different causes.

Imbalance of the wheels, imbalance of the propeller shaft flange, a stressed drivetrain and unfavorable positioning of the propeller shaft relative to the rear axle differential.

Remedy:

We recommend performing a test drive first to establish the nature of the complaint.

For accurate analysis and localization of the noise, use the "Steelman Chassis Ear" noise diagnosis kit (Optional Equipment - Please contact our Approved Equipment provider BASS, formerly known as SPX, at 1-888-458-4040)

Vibrations, humming and droning, howling may all be caused by imbalance of the wheels, tire flat spots or radial and lateral runout of the wheels.

The following procedure is recommended:

- 1.) Fit new, balanced genuine Mercedes-Benz wheels (test wheels) on the vehicle. Then perform a test drive.
- 2.) Check the bolted connections of the propeller shaft:

Are all the bolts present?

Are all the bolts the same length?

Do all bolted connections have washers?

Check the tightening torques (see WIS)

3.) Change the positioning of the rear axle differential flange relative to the propeller shaft:

Three-arm flange: Twist through 120 degrees

Four-arm flange: Twist through 90 degrees

4.) Relieve stress in the engine mounts, transmission mounts, exhaust system, flexible coupling, propeller shaft intermediate bearing/center bearing (LI22.10-P-056910).

Check flexible coupling for cracks and replace if necessary

Relieve stress in propeller shaft intermediate bearing/center bearing (if the intermediate bearing/center bearing has to be replaced, the aluminum version must be used).

When relieving the stress in the intermediate bearing/center bearing of the propeller shaft, make sure that the vehicle is standing with all four wheels on the ground.

With the bolts of the intermediate bearing/center bearing slackened, push the vehicle forward and back or wiggle the propeller shaft.

Then retighten the bolts to the specified tightening torque (AR41.10-P-0100CW).

5.) Measure inclination angle of propeller shaft and correct if necessary.

Symptoms
Power transmission / Power transmission, noise / Howling/whistling
Power transmission / Differential / Rear axle differential / Rear axle differential, noise / Howling
Power transmission / Drive shaft / Propeller shaft / Propeller shaft - noises / Humming/droning