Whining / Humming Noise in the Drivetrain In the Area of the Rear Axle During Cornering

Topic number	LI35.31-P-080353
Version	1
Function group	35.31 - Rear axle center assembly
Date	9/14/26
Validity	BR167, 206, 214, 236, 223, and 254 NOT applicable to AMG vehicles equipped with Code 467 – Electronically Controlled Locking Differential
Reason for change	

Complaint

Whining / humming noises (described as foghorn-like) from the drivetrain in the rear axle area during cornering. *(figure 1)*

On the above-mentioned vehicles with a mileage up to 15,000 km (about 9,300 mi), noises can occur from the rear axle differential.

Attachments

File	Description
20250120_150536.mp4	figure 1 - noise example

Cause

Drivetrain resonance caused by the gear mesh of the ring and pinion in the rear axle differential in combination with installed damper elements on the axle shafts.

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Remedy

For precise noise analysis and localization, use the chassis ear/NVH kit and the following driving procedure:

1. Drive the vehicle in a tight circle with the steering at full lock in **both** clockwise and counter clockwise directions.

- Vary engine load during the maneuvers

If a foghorn-like noise occurs comparable to the reference video, the vehicle exhibits the condition

If the noise is present:

1. Add 15 ml of additive *(Friction Modifier)* into the rear axle differential via the filler plug

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IMPORTANT NOTE: Do NOT use Friction Modifier in vehicles equipped with an electronically controlled locking differential (Code 467).

2. Tighten the filler plug

3. Drive the vehicle until the rear axle differential reaches operating temperature

Note: Proper activation of the additive requires elevated oil temperatures

After the test drive to operating temperature, evaluate the noise when the rear axle is cold and when warm.

If the noise is no longer present:

The issue is resolved and the vehicle can be released.

If there is noticeable improvement:

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The vehicle can be released with the explanation that the noise will gradually disappear over an extended driving distance.

If the noise is still present and remains unchanged:

Replace the rear axle differential.

Disclaimer

NOTE: The information contained in this document is intended for use by trained, professional technicians with the knowledge to properly and safely perform diagnosis and repairs on Mercedes-Benz vehicles, using Mercedes-Benz approved tools and equipment. It informs service technicians about conditions that could occur in certain vehicles and provides information that could assist in proper vehicle diagnosis, service, or repair. It does not indicate that a defect is present in any vehicle referenced in this document nor does it imply warranty coverage. DO NOT assume that a symptom or condition, or a described cause of a symptom or condition, affects any particular vehicle or groups of vehicles, or that a described repair applies to any particular vehicle or

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groups of vehicles. There can be multiple causes resulting in the same or similar symptoms or conditions described in this document, and trained professional service technicians must use their diagnostic skills to make evaluations on a case-by-case basis. The information contained in this document does not guarantee warranty coverage nor does it extend the vehicle's warranty in any way.

Symptoms

Power transmission > Differential > Rear axle differential > Noises > Howling

Parts

Part number	ES1	ES2	Designation	Quantity	Note	EPC
A 000 989 31 07	09		Friction Modifier MB6178A	1	Additive for rear axle differential oil	

Operation numbers/damage codes

Op. no.	Operation text	Time	Damage code	Note
350000		0.5 H	35001G6	

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