

Vibrations/ humming when moving off or maneuvering with the wheels turned

Topic number	LI35.00-P-072963
Version	4
Function group	35.00 - General
Date	7/14/21
Validity	Only affects vehicles of model series C117, 156, 176, 246 with 4x4 drive (SA code M005); the AMG model designations are not affected.
Reason for change	Document number adjusted
Reason for block	New TIPS document with flushing procedure published

Complaint

-Humming/vibrations/shudders from area of rear axle while maneuvering or when starting from a stop or when driving in the low vehicle speed range, with heavy acceleration.

-The concern is more pronounced when driving with the wheels turned in

-The concern does not occur when connector of rear axle solenoid valve (Y68/3) is unplugged

-Repair instructions do not apply to the complaint of rear axle differential howling noise nor if there is external oil loss

Cause

New findings regarding the repair method.

Remedy

Comply at all times with the following procedure; the notes and specifications contained in AP document AP35.00-P-3501A Change rear axle oil, must be observed for all operation steps.

1. Investigate complaint:

- Perform a test drive:
- 1x to check the customer complaint.
- 1x with connector on rear axle differential unplugged - check whether the concern is still present.
- If the concern no longer occurs when the connector is unplugged, process the vehicle as described in the document.
- If the concern is still present with the connector unplugged, any further work in accordance with this document will not resolve the issue and must not be carried out.

XENTRY TIPS

2.Perform oil change in rear axle differential:

- Drain oil from rear axle differential.
- Turn rear wheels 10x in direction of travel (to ensure that all the oil is drained from the rear axle differential).
- Fill rear axle differential with fresh oil.

3.Perform a test drive:

- Perform a 10-minute test drive (approx. 2 km).

4.Flush rear axle differential:

- Drain oil from rear axle differential.
- Turn rear wheels 10x in direction of travel (to ensure that all the oil is drained from the rear axle differential).
- Fill rear axle differential with fresh oil.

5.Reset service data in all-wheel drive control unit:

- Reset service data in all-wheel drive control unit using the diagnostic system (see operation step 14 in AP35.00-P-3501A Change rear axle oil).

6a.Perform function test on component part "all-wheel drive solenoid valve":

- In a parking lot, drive in a circle with full steering lock applied and, using the diagnostic system, perform a function test on component part "all-wheel drive solenoid valve Y68/3" while driving the vehicle (see operation step 15 in AP35.00-P-3501A Change rear axle oil).
- After completing the function test on component part "all-wheel drive solenoid valve", the breaking-in process for component part "rear axle differential" must be run.

6b.Run breaking-in process for component part "rear-axle differential" (add-on 18998 must be installed for XENTRY version 12/20 and add-on 18999 for version 03/21; alternatively use a later version):

- Using the diagnostic tool, in all-wheel drive control unit N45 (transfer case), in the menu "Teach-in processes --> Solenoid valve", start the "breaking-in process for component part rear-axle differential".
- Drive in a circle as specified in the test instructions.

XENTRY TIPS

7. Perform a final test drive:

- Perform a test drive and re-assess vehicle; if the concern can no longer be reproduced, check oil level again in rear-axle differential and correct if necessary
- Check whether oil level in rear-axle differential is up to filler hole; correct if necessary.

Note !!!

Final test drive

If, after two oil changes and the breaking-in program, the final test drive reveals that the concern has not been rectified, check whether the cause may lie elsewhere, or in other drivetrain areas/major assemblies (FDCT, engine, etc.), before replacing the rear axle differential.

WIS-References		
Document number	Title	Note
AP35.00-P-3501A	Rear axle oil change	In addition to the oil change, the rear axle differential must be flushed with oil.

Symptoms
Power transmission > Function > Jolting/shuddering during start-off
Power transmission > Function > Vibrates
Power transmission > Noises > Humming/droning
Power transmission > Differential > Rear axle differential > Noises > Knocks
Power transmission > Differential > Rear axle differential > Noises > Chattering

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note
			35001G6	