Headlamp Leak Test

Topic number	LI82.10-P-078896
Version	2
Function group	82.10 - Exterior lights
Date	2/24/26
Validity	All
Reason for change	Adjustment to remedy

Complaint
Headlamps leaking or fogged

Cause
The fogging of the headlamp is a natural phenomenon which can occur under certain climatic conditions.
In contrast to a leaky headlamp, physical fogging does not result in a technical impairment of the headlamp.

A leak test must be performed to determine if physical fogging exists or if the headlamp is leaky.

Remedy
Check for external damage:
You can identify a damaged headlamp in the following way:
For headlamps with a closed system
1. Check the headlamps for any external damage and check also for correct seating of the Gore-diaphragm/correct latching of the cover caps.
2. If the headlamp exhibits any external damage, replace the headlamp.
For headlamps with an open system
1. Check the headlamps for any external damage and seal off the vent, then make sure the cover caps are latched correctly into place.
2. If the headlamp exhibits any external damage, replace the headlamp.

Note:
External damage to the headlamp does not present a warranty or goodwill case.

1. Clear fogged/condensed LED headlamps and LED rear lamps:
1. Drive the vehicle into the workshop (temperature higher than +18 °C/+64.4°F).
Note: Do not perform an engine wash before the defogging test.
2. Switch off the engine and connect battery support via a charger.
3. Open the hood or trunk.
4. Switch on the lights.
5. Leave the vehicle in this state for 60 minutes.
6. Check for formation of condensation, a significant reduction in the formation of condensation must be clearly recognizable (thawing progress).
7. If the condensation has disappeared, nothing else has to be done.

Note:
If defrosting has been performed, you can skip the first step.

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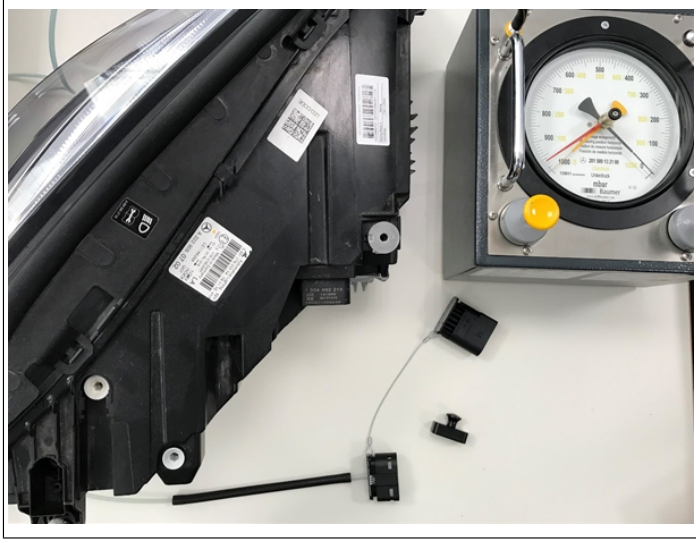
2. Leak test of headlamp with overpressure:
• Connect test adapter to pressure tester. (Figure 1)
• Check test adapter for leak tightness. To do so, connect plug and coupling (picture 2) and apply a maximum overpressure of 30 mbar.
The pressure must remain constant. If the pressure does not remain constant, use a new adapter.
• All vents have to be sealed with sealing compound and the existing diaphragm with the stamp (picture 3 [3]). (Picture 4)
Make allowance for the different headlamp variants here (there are different outlet openings).
• Check if the headlamp needs to be removed to gain access to the diagnostic socket on the headlamp housing.
• Plug the adapter onto the diagnostic socket on the headlamp housing. (Picture 5).
• Apply a maximum of 30 mbar overpressure to the headlamp housing.
Note: If the maximum overpressure of 50 mbar is exceeded the headlamp seal will be damaged (picture 6).
• If a pressure drop of less than 10 mbar is measured within 30 seconds, the headlamp is tight and there is natural physical condensation.
• If a higher pressure drop than 10 mbar is measured within 30 seconds, the headlamp is leaky.
Note: The leaky position can be localized with the aid of soap suds.

If the pressure test is not passed, the headlamp is leaky. If the cause cannot be rectified, the headlamp must be replaced.

Note:
If the headlamp is replaced, no dry packs may be installed on the new replacement headlamp.
AR82.10-P-5455WT was created for the pressure test. **NOTE - As of Sept 2025 the pressure testing tool is not finalized and may require modifications to fit properly.
This AR can be used as a reference manual for all closed headlamps.
In the event of an open headlamp system, the vent ducts must be sealed before the pressure test.

Attachments

File	Description
(1).jpg 	Figure 1

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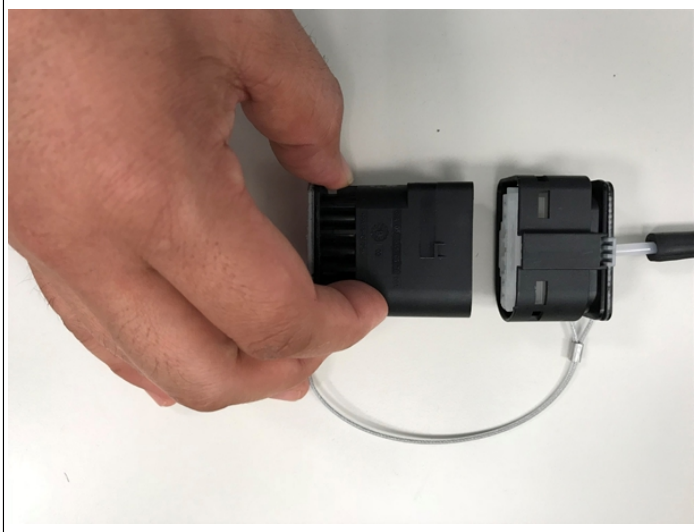
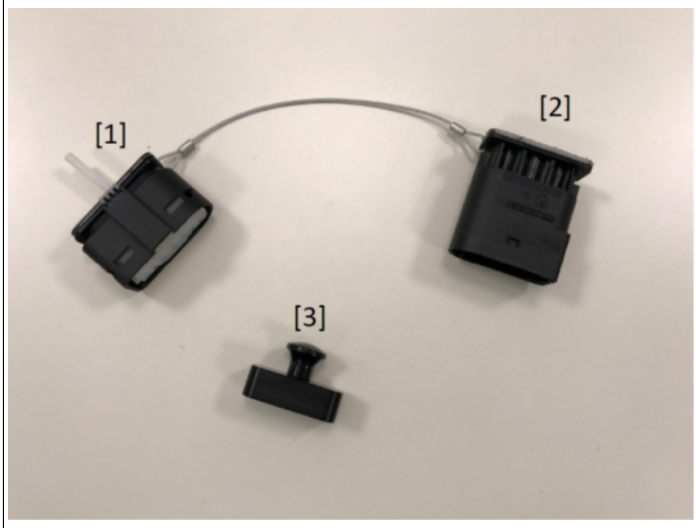
(2).jpg 	Picture 2
(3).jpg 	Picture 3
(4).jpg 	Picture 4

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(5).jpg	Picture 5

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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 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
Lighting > Exterior lights > Front fog lights > Malfunction
Lighting > Exterior lights > Driving lights > Main headlamps > Fogged
Lighting > Exterior lights > Driving lights > Taillamp > Fogged

Parts

Part number	ES1	ES2	Designation	Quantity	Note	EPC
W000589059100			Test adapter	1		

Operation numbers/damage codes

Op. no.	Operation text	Time	Damage code	Note

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