

# Technical Service Bulletin

<b>Topic</b>	Front Exterior Lighting Steamed Up/Leaks   12-24MY
<b>Market area</b>	Australia E04 Bentley rest Asia and Australia (6E04),China 723 Volkswagen (Anhui) Automotive CO (6723),China 796 VW Import Comp. Ltd (Vico), Beijing (6796),Germany E02 Bentley rest Europe (6E02),Japan E03 Bentley Japan (6E03),Korea, (South) E08 Bentley South Korea (6E08),United Arab Emirates E06 Bentley Middle East and Africa (6E06), United Kingdom E01 Bentley UK (6E01),United States E05 Bentley USA and rest America (6E05)
<b>Brand</b>	Bentley
<b>Transaction No.</b>	2050542/8
<b>Level</b>	EH
<b>Status</b>	Released for publishing
<b>Release date</b>	Jun 30, 2025

## New customer code

Object of complaint	Complaint type	Position
lighting, signaling -> exterior lights -> headlamps	leaks -> water entering	
lighting, signaling -> exterior lights -> fog lamp -> fog lamp diffuser lens	component, automotive fluids -> fogged	
lighting, signaling -> exterior lights -> headlamps -> headlamp clear-glass lens	component, automotive fluids -> fogged	> no instruction <
lighting, signaling -> exterior lights -> fog lamp	leaks -> water entering	

## Vehicle data

### All Models

#### Sales types

Type	MY	Brand	Designation	Engine code	Gearbox code	Final drive code
*	2012	E		*	*	*
*	2013	E		*	*	*
*	2018	E		*	*	*
*	2019	E		*	*	*
*	2020	E		*	*	*
*	2021	E		*	*	*
*	2014	E		*	*	*
*	2015	E		*	*	*
*	2016	E		*	*	*
*	2017	E		*	*	*

*	2022	E		*	*	*
*	2023	E		*	*	*
*	2024	E		*	*	*

## Documents

Document name
<a href="#">master.xml</a>
<a href="#">testplan.pdf</a>
<a href="#">checkliste_2017.doc</a>

### Condition

**Customer statement:**

1. The lens of the headlights/front fog lamps are steamed up/damp from the inside with minor drips (Figure 1).



Figure 1

**Important: Observe accounting instructions.**

2. Water is in the headlight as water marks/large droplets (Figure 2).



Figure 2

**Workshop findings:**

**Customer statement for 1 (Figure 1):** The lenses of the headlights/front fog lamps are steamed up/damp from the inside with minor drips.

**Customer statement for 2 (Figure 2):** Water is in the headlights/fog lamps, big drips on the complete lens. Leak on the headlights/front fog lamp.

## Technical Background

This TPI describes the procedure for when moisture is found in the headlights

1. Damp air settles on the inner lens of the headlights/fog lamps, with recognisable misting in certain weather conditions (comparable with the steaming up of spectacle lenses when entering a warm room in winter or of the bathroom mirror after a shower).
2. Leak on the headlights/front fog lamps. For example through open covers, a damaged seal of the cap or similar.

### Revision history – TPI 2050542/8

Added Bentley specific photograph examples to the document

## Production Solution

1. Not affected.
2. Continuous fixing of detected causes.

## Service



**The following points have to be completed to prevent an unnecessary replacement of exterior lighting and another customer complaint about the front exterior lighting:**

In the event of a complaint about moisture in the headlights or tail lights we recommend using the checklist and the test plan attached to the TPI, as well as the reference photos, to determine the cause.

1. In case of a headlight complaint the light emission surface on the lens must be clear after a journey of 5-10 minutes with sufficient ventilation (for example country road/motorway) and switched-on dipped beam .



**The remaining inside surfaces may still have some condensation on them after the drive; this is not a problem.**

The time for the clearing process depends on the outside temperature, the relative air humidity and the vehicle speed (at higher speeds the ventilation of the headlights is better).

If this is the case, use the argumentation aid (physical situation under Customer information.



### NOTICE

**NOTE: This is normal, in this case, a replacement of the headlights will NOT fix the problem and lead to a repeat repair.**

2. In case of an obvious water ingress/leak (a lot of drips on the inside of the lens, Figure 2) use the test plan attached to establish the cause.

Dry the affected light with filtered, oil-free compressed air.

In case of water ingress (damaged seal/lens) perform the appropriate repairs according to the repair manual/parts catalogue and check whether the connectors or connections of any control units fitted, are damaged by corrosion.

Ask the customer to keep an eye on the situation. If despite the above repair, the customer complains again about leaking headlights/front fog lamps and water ingress or lots of drips can still be recognised after the checks, referring to Rep. Gr 94 - Replace the headlamps according to the repair manual/parts catalogue.



The decision whether to replace components of the front exterior lighting is yours.

A technical repair enquiry to support the warranty accounting is not effective.

Even after a repair to fix a water ingress/leak components of the front exterior lighting may be steamed-up. The physical steaming-up must not be equated with renewed water ingress (drips in the headlight) and does not justify the replacement of components.

## Warranty



- Components of the front exterior lighting submitted under warranty and determined as correct according to the test instructions of the manufacturer will be redebited. As part of the check by the manufacturer a pressure of 30 mbar is applied to the affected component of the front exterior lighting and a leakage check performed with a water bath.
- A simultaneous complaint on both front headlights because of a leak is very unlikely, as the fitted headlights were not installed at the same time, on the same production line or produced at the same location. A parts replacement on both sides would not be effective. In this case please use the customer information below.
- The completed checklist (in the attachment) and photos of the complaint must be attached to the sent-in components of the front exterior lighting.
- If a warranty claim is made, the complaint must be documented (including photos and vehicle identification number).
- Relevant photos of the complaint must be attached to every vehicle report.

## Additional Information

### Argumentation with LED lights:

When switched on, lights with LED technology do not warm up the lens, as there are no infrared segments in the emitted light. Here only the pressure difference on the vents caused by the driving provides a through-flow and thus a clearing-up. The vents are arranged in such a way that the lens is cleared after driving a few kilometres.

### Argumentation with conventional headlights/front fog lamps:

There are often complaints about steamed-up lenses on headlights/front fog lamps.

Air from outside circulates in ventilated headlights/front fog lamps. The open, splash water protected ventilation system (necessary for pressure compensation) leads to different "climate zones" in the headlight/front fog lamp. For example very hot sections where the lens is warmed up by the light and relatively cool ones where the lens is cooled down by the air stream.

High air humidity and temperature differences between headlight interior and surrounding area (sometimes when driving) can lead to condensation on the inside of the lenses, mainly in winter or in wet weather.

The steaming-up of the headlights/front fog lamps can be compared with a steamed-up windscreen but which can be kept clear by the defroster vent.

This can for example occur particularly after driving through a car wash, steam jets of the engine or the front end or overnight temperature changes.

Particularly in the after-heating phase when the hot engine heats up the back of the headlight/front fog lamp while the lens is cooled down by fresh air, the slightest humidity settles straight away on the inside of the lens. On lenses with clear glass optics this phenomenon is more recognisable.

The physical steaming-up of the headlights/front fog lamps is an optical phenomenon which does not affect the function of the headlights (light output). Because of the materials used the steaming-up cannot lead to corrosion in the headlights /front fog lamps.

If the headlights/front fog lamps are steamed up, the light emission surface on the lens must be clear after a journey of 5-10 minutes with sufficient ventilation (for example country road/motorway) and switched-on dipped beam . It is no problem if the remaining surfaces of the inner lens are steamed-up after a journey.

This phenomenon can occur on every headlight/fog lamp, as it is physically related.

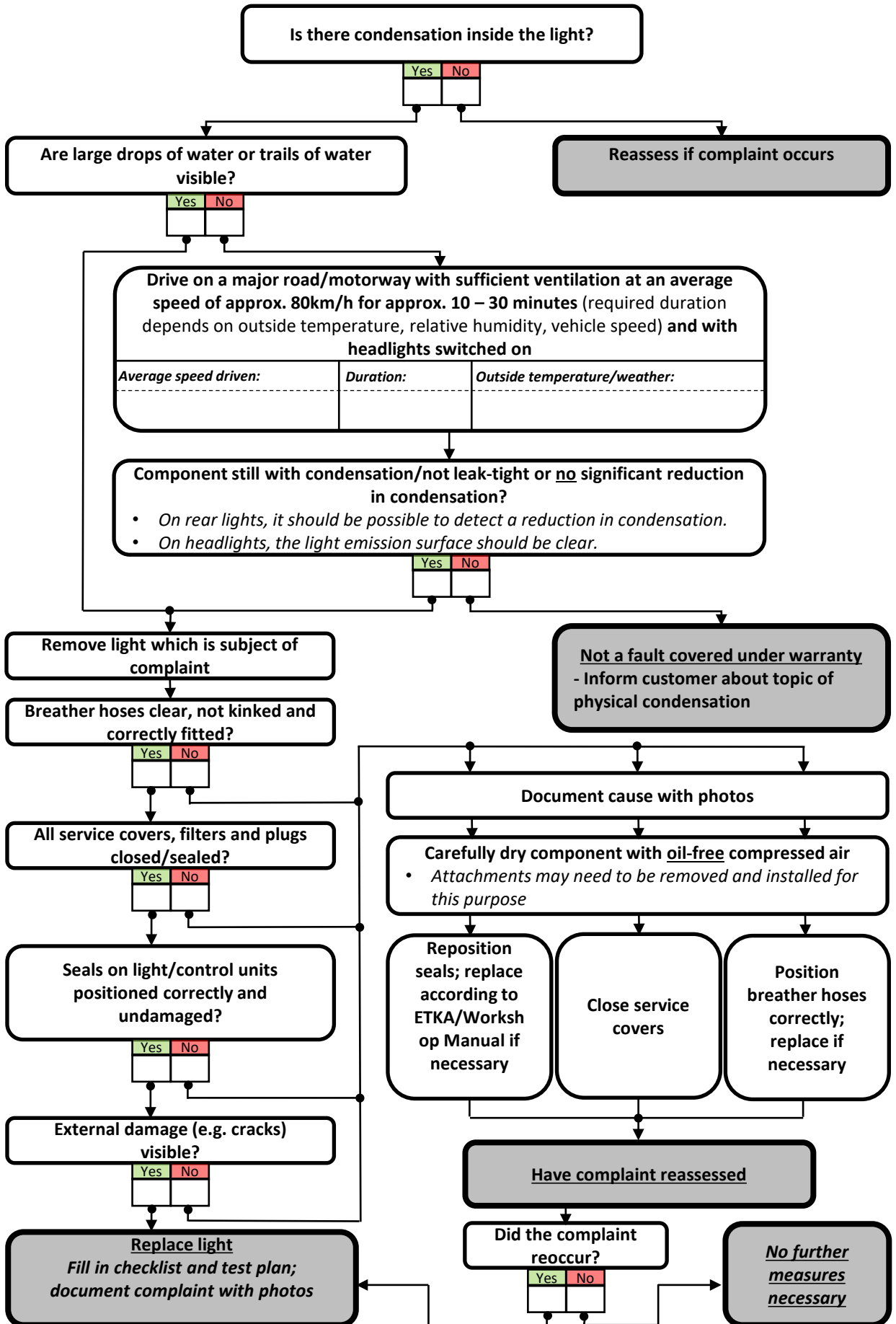


**A replacement of the headlights/front fog lamps with physically related steaming-up is not permitted, as this is not a technical fault in the sense of warranty.**

Please mark test steps followed.

Date: \_\_\_\_\_

# Test plan



Drive on a major road/motorway with sufficient ventilation at an average speed of approx. 80km/h for approx. 10 – 30 minutes (required duration depends on outside temperature, relative humidity, vehicle speed) and with headlights switched on

Average speed driven:	Duration:	Outside temperature/weather:

Component still with condensation/not leak-tight or no significant reduction in condensation?

- On rear lights, it should be possible to detect a reduction in condensation.
- On headlights, the light emission surface should be clear.

Remove light which is subject of complaint

Breather hoses clear, not kinked and correctly fitted?

All service covers, filters and plugs closed/sealed?

Seals on light/control units positioned correctly and undamaged?

External damage (e.g. cracks) visible?

**Replace light**  
Fill in checklist and test plan; document complaint with photos

Document cause with photos

Carefully dry component with oil-free compressed air

- Attachments may need to be removed and installed for this purpose

Reposition seals; replace according to ETKA/Workshop Manual if necessary

Close service covers

Position breather hoses correctly; replace if necessary

Have complaint reassessed

Did the complaint reoccur?

No further measures necessary

**Not a fault covered under warranty**  
- Inform customer about topic of physical condensation

# Checklist: Headlamps leak/steamed-up

Dealer number: /	Customer:
Dealer name:	Registration number:
Order number:	Vehicle type (6 digit):
Contact person:	Vehicle identification number:
Tel.:	Date of registration:
Fax No.:	Mileage:

**Points to be checked:** Headlamps: Halogen  Xenon  LED

Fog lamp:

Tail light cluster: Interior  Exterior

Side indicators:

**Workshop findings:**

Steamed-up  Leaks  right  left  Both sides

Right part number:

Left part number:

Please read from fitted headlamps

		Yes	No
Are the headlamps / fog lamps / rear lights / side indicators steamed up now?		<input type="checkbox"/>	<input type="checkbox"/>
Has the customer accepted the argumentation (as in service info: 2050542)		<input type="checkbox"/>	<input type="checkbox"/>
Repeat repair?		<input type="checkbox"/>	<input type="checkbox"/>
Have the points in the Service info been completed?		<input type="checkbox"/>	<input type="checkbox"/>
Are there traces of dried-up water drops inside the headlamps / the fog lamps / the rear lights / side indicators?		<input type="checkbox"/>	<input type="checkbox"/>
Are all service lids on the headlamps / fog lamps / rear lights closed?		<input type="checkbox"/>	<input type="checkbox"/>
Spray water on headlamps / fog lamps / rear lights / side indicators or put vehicle in car wash: Does water get in?		<input type="checkbox"/>	<input type="checkbox"/>
Is there any mechanical damage which could cause a leak?		<input type="checkbox"/>	<input type="checkbox"/>
Park the vehicle in the workshop area (normal temperature): Do the headlamps / fog lamps / rear lights / side indicators thaw?		<input type="checkbox"/>	<input type="checkbox"/>
Is the thawing speeded up by switching on the vehicle light?		<input type="checkbox"/>	<input type="checkbox"/>
Have the headlamps / fog lamps / rear lights / side indicators been removed and dried?		<input type="checkbox"/>	<input type="checkbox"/>
Have the headlamps / fog lamps / rear lights / side indicators been replaced before?		<input type="checkbox"/>	<input type="checkbox"/>
When did the complaint occur?	After being in car wash/high pressure cleaner	<input type="checkbox"/>	<input type="checkbox"/>
	After journey	<input type="checkbox"/>	<input type="checkbox"/>
	Urban <input type="checkbox"/> Country road <input type="checkbox"/> Motorway <input type="checkbox"/>		
	The car was parked: Outside <input type="checkbox"/> In the garage <input type="checkbox"/>		
Was the light switched on		<input type="checkbox"/>	<input type="checkbox"/>
Weather:	Dry <input type="checkbox"/> Fog <input type="checkbox"/> Rain <input type="checkbox"/> Snow <input type="checkbox"/>		
temperature ca. °C	Is the "Coming Home" function used (if fitted)?	<input type="checkbox"/>	<input type="checkbox"/>

Remarks:

**Note:** The check list is used to support the assessment and completion of the complaint.