

# Technical Service Bulletin

|                        |                            |
|------------------------|----------------------------|
| <b>Topic</b>           | Brake noise identification |
| <b>Market area</b>     | Bentley: worldwide (2WBE)  |
| <b>Brand</b>           | Bentley                    |
| <b>Transaction No.</b> | 2052785/7                  |
| <b>Level</b>           | EH                         |
| <b>Status</b>          | Released for publishing    |
| <b>Release date</b>    | Mar 2, 2022                |

## New customer code

| Object of complaint                               | Complaint type              | Position |
|---|-----------------------------|----------|
| chassis -> brakes, brake regulation -> foot brake | noises, vibrations -> noise |          |

## Vehicle data

### Continental Series,Mulsanne,Bentayga,Flying Spur Series

#### Sales types

| Type | MY   | Brand | Designation | Engine code | Gearbox code | Final drive code |
|------|------|-------|-------------|-------------|--------------|------------------|
| 393* | 2012 | E     |             | *           | *            | *                |
| 393* | 2013 | E     |             | *           | *            | *                |
| 393* | 2014 | E     |             | *           | *            | *                |
| 393* | 2015 | E     |             | *           | *            | *                |
| 393* | 2016 | E     |             | *           | *            | *                |
| 393* | 2017 | E     |             | *           | *            | *                |
| 394* | 2012 | E     |             | *           | *            | *                |
| 394* | 2013 | E     |             | *           | *            | *                |
| 394* | 2014 | E     |             | *           | *            | *                |
| 394* | 2015 | E     |             | *           | *            | *                |
| 394* | 2016 | E     |             | *           | *            | *                |
| 394* | 2017 | E     |             | *           | *            | *                |
| 394* | 2018 | E     |             | *           | *            | *                |
| 3S3* | 2018 | E     |             | *           | *            | *                |
| 3S3* | 2019 | E     |             | *           | *            | *                |
| 3S3* | 2020 | E     |             | *           | *            | *                |
| 3S3* | 2021 | E     |             | *           | *            | *                |
| 3S3* | 2022 | E     |             | *           | *            | *                |
| 3S4* | 2019 | E     |             | *           | *            | *                |
| 3S4* | 2020 | E     |             | *           | *            | *                |
| 3S4* | 2021 | E     |             | *           | *            | *                |
| 3S4* | 2022 | E     |             | *           | *            | *                |
| 3W*  | 2004 | E     |             | *           | *            | *                |
| 3W*  | 2005 | E     |             | *           | *            | *                |
| 3W*  | 2006 | E     |             | *           | *            | *                |
| 3W*  | 2007 | E     |             | *           | *            | *                |
| 3W*  | 2008 | E     |             | *           | *            | *                |
| 3W*  | 2009 | E     |             | *           | *            | *                |
| 3W*  | 2010 | E     |             | *           | *            | *                |
| 3Y*  | 2011 | E     |             | *           | *            | *                |
| 3Y*  | 2012 | E     |             | *           | *            | *                |
| 3Y*  | 2013 | E     |             | *           | *            | *                |
| 3Y*  | 2014 | E     |             | *           | *            | *                |
| 3Y*  | 2015 | E     |             | *           | *            | *                |
| 3Y*  | 2016 | E     |             | *           | *            | *                |
| 3Y*  | 2017 | E     |             | *           | *            | *                |
| 3Y*  | 2018 | E     |             | *           | *            | *                |
| 3Y*  | 2019 | E     |             | *           | *            | *                |

|      |      |   |  |   |   |   |
|------|------|---|--|---|---|---|
| 3Y*  | 2020 | E |  | * | * | * |
| 4V1* | 2017 | E |  | * | * | * |
| 4V1* | 2018 | E |  | * | * | * |
| 4V1* | 2019 | E |  | * | * | * |
| 4V1* | 2020 | E |  | * | * | * |
| 4V1* | 2021 | E |  | * | * | * |
| 4V1* | 2022 | E |  | * | * | * |
| 4W2* | 2014 | E |  | * | * | * |
| 4W2* | 2015 | E |  | * | * | * |
| 4W2* | 2016 | E |  | * | * | * |
| 4W2* | 2017 | E |  | * | * | * |
| 4W2* | 2018 | E |  | * | * | * |
| ZG2* | 2020 | E |  | * | * | * |
| ZG2* | 2021 | E |  | * | * | * |
| ZG2* | 2022 | E |  | * | * | * |

## Documents

| Document name                                |
|--|
| <a href="#">master.xml</a>                   |
| <a href="#">brakenoisequestionnaire.xlsx</a> |
| <a href="#">flowchart.docx</a>               |

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## Condition

### Customer statement:

Noise complaint from the braking system.

### Workshop findings:

The noise can be reproduced and clearly assigned to the braking system.

## Technical Background

Brake noises can be attributed to many causes. Eight of the most common causes are:

1. Brake discs or pads are close to their wear limit.
2. New brake pads and/or discs have not been properly bedded in after installation.
3. Aftermarket pads or discs are installed.
4. There is debris such as small stones, grit, road salt or sand between the brake disc and pad.
5. Discs are covered in rust. Rust can form when the vehicle has been stationary for long periods of time (Figure 1).

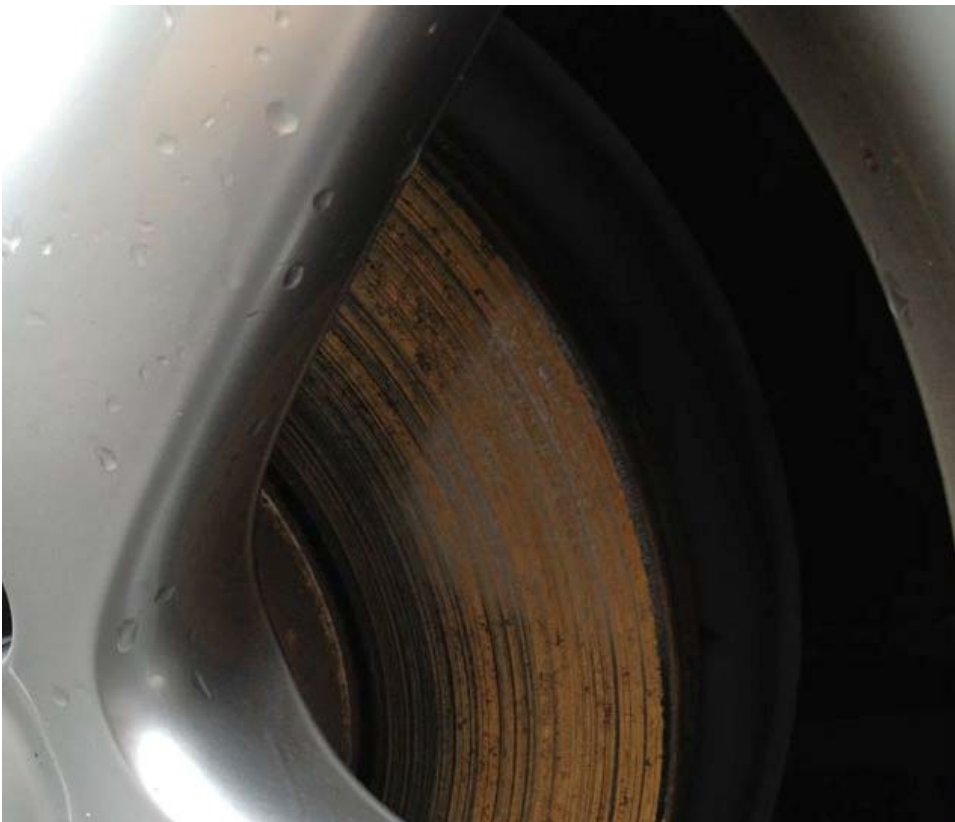


Figure 1

6. Discs have a groove in them (Figure 2)



Figure 2

7. There is chemical contamination on the braking surface of the disc due to a wheel or tyre cleaner being sprayed directly onto the disc (Figure 3).

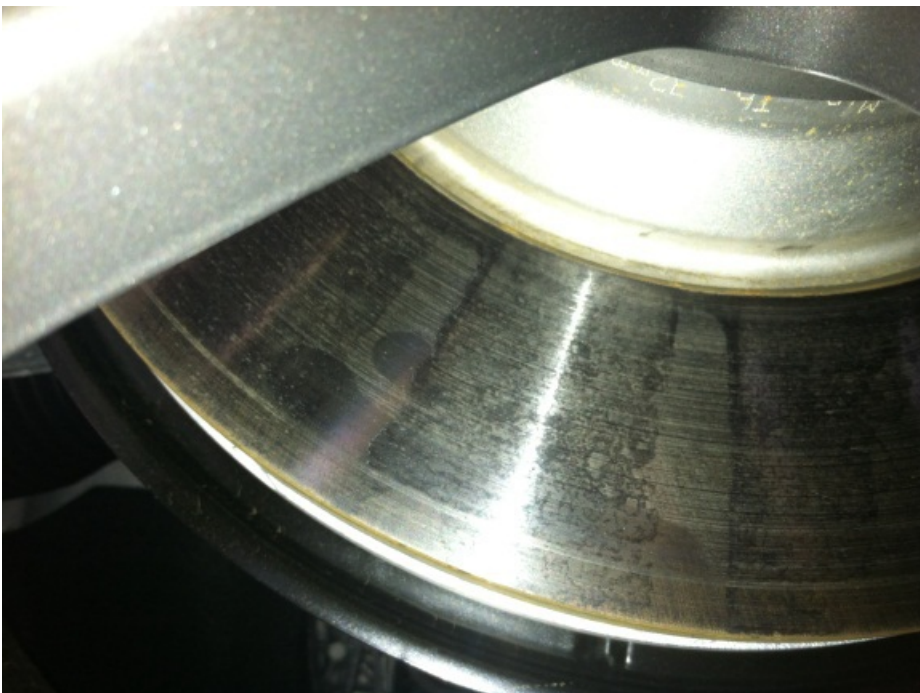


Figure 3

8. There are 'pad marks' on the brake disc as a result of the brake pad material transferring to the discs. This can occur when a vehicle has been stood for long periods of time in a wet or snowy environment (Figure 4).



Figure 4

## Production Solution

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## Service

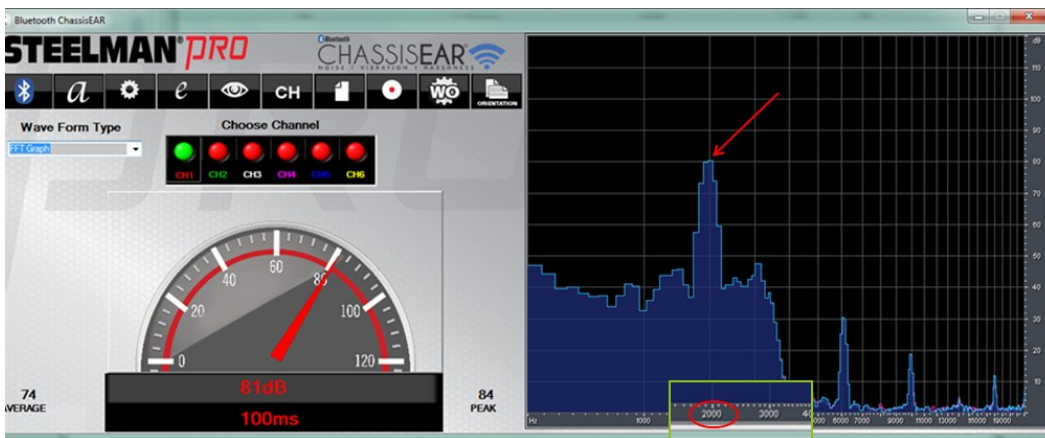
**Note: For correct diagnosis and repair the attached Flowchart must be followed.**

1. Check the overall condition of the brakes to determine if the brake noise can be attributed to one of the causes listed in the *Technical Background* section of this TPI. If the noise is not a result of one these causes, proceed with point 2.
2. Record the noise and frequency

For the frequency analysis and the noise recording we recommend using the Chassis Ear Tool **WT 10437**.

To record the noise and measure the frequency using WT 10437 Chassis Ear Tool follow these instructions;

Refer to 'File recording' in the WT 10437 user instructions.



Using the microphone provided in the kit, record the noise from outside of the vehicle.

If the noise is only replicable during a road test, the microphone still needs to be positioned outside of the cabin for the best results. The assistance of a second technician is required.



### WARNING

**Do NOT attempt to carry out the road test alone. The driver's concentration MUST be focused on the road at ALL times.**



### WARNING

**Observe usual road safety procedures and speed limits.**

Select 'FFT Graph' as **Wave Form Type** and read the peak achieved during the recording as highlighted in the example above (in this case brake squeal peak frequency is 2000Hz).

Save the file to your device.

The sound recording/video can also be taken from a mobile telephone as long as the noise is clearly identifiable.

If the noise cannot be reproduced a customer recording of the noise is also acceptable.

3. Check to see if a TPI is available that matches the customer complaint and recorded frequency. If there is an applicable TPI available, apply it and complete a DISS complaint to include 'Workshop findings' only (No repair query required).

Should there be no applicable TPI, proceed with point 4.

4. Raise a DISS technical query. Both the completed 'Brake noise questionnaire' and the sound/video recording must be attached.

## **Warranty**

**Warranty claims about noise complaints caused by the brake system are only possible with a completed 'Brake noise questionnaire' and an audio/video recording.**