


FAULT PATTERN CATALOG: VIBRATION WHEN BRAKING/STEERING WHEEL VIBRATION

Defect catalog

BMW Group	Damage catalogue	Version: 1.2
		Valid: 01.05.2018
	M Compound brake disc	Side 1 von 10

I. Damage of brake components

Vehicle use on race track or similar, non-approved accessories and use of cleaning agents as well as non-compliance with Owners Manual guidelines lead to irreparable brake damage (not covered by Warranty). Customer symptoms typically include vibrations felt through the brake pedal and steering wheel during braking (steering wheel rotational oscillations).

II. Aim

Guarantee of a complete audit trail and justifiable invoicing of brake discs and brake pads and periphery parts according to warranty guidelines.

III. Scope

Vehicle type: Vehicles of M GmbH with Compound brake disc

Production time period: no restriction

SA: no restriction

LA: no restriction

- Wear/overheating caused by vehicle use on race track or similar.
- Strong thermal load at disc face recognized by hot spots/heat spot.
- Color / deformation of the brake caliper M-Logo
- Dust boot in the braking saddle burnt/melted
- Use of axle track widening alloy wheel plates or unsuitable "rim accessories" and or non-approved equipment
- Use of non-approved, aggressive alloy rim cleaning agents.

Statements from Owner's Manual

Driving on a racing track

The higher mechanical and thermal loads involved in driving on racing tracks lead to increased wear. This wear is not covered by the warranty. The vehicle is not conceived for use in motor sports competitions.

Before driving on a racing track, have the vehicle checked at a Service Partner of the manufacturer or another qualified Service Partner or a specialist workshop.

The standard brake pads and the wear displays are not designed for racing track operation.

Further information and advice can be obtained from a Service Partner of the manufacturer or another qualified Service Partner or a specialist workshop.

After washing the vehicle

After the vehicle has been washed, briefly apply the brakes to dry them otherwise the braking effectiveness may be temporarily reduced. The heat generated by braking dries the brake discs

Corrosion of the brake disc

Corrosion of the brake discs and contamination of the brake pads increase in the following circumstances:

- ▷ Low mileage.
- ▷ Extended periods when the vehicle is not used.
- ▷ Infrequent use of the brakes.
- ▷ Aggressive, acidic or alkaline cleaning agents.

Should corrosion form on the brake discs, the brakes will tend to respond with a pulsating effect that generally cannot be corrected.

Care of special parts

Light alloy wheels

When cleaning the wheels while they are installed on the vehicle, only use neutral rim cleaner with a pH value of between 5 and 9. Do not use any abrasive cleaners or steam cleaners above 60 °C/140 °F. Observe the manufacturer's instructions.

Corrosive, acidic or alkaline cleaners may destroy the protective layer of neighbouring parts, such as brake discs, for example.

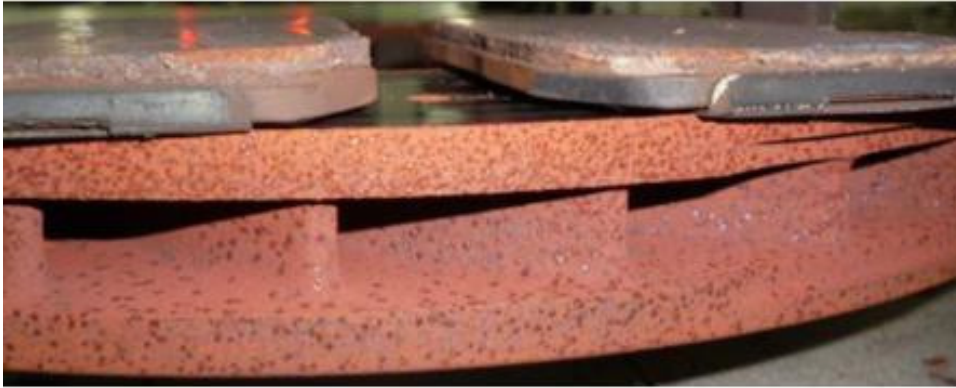
After cleaning, briefly apply the brakes to dry them. The heat generated by braking dries the brake discs and brake pads, and protects them against corrosion.

IV. Damage patterns

- **Wear/overheating by vehicle use on race track or similar**

Extreme thermal load of the brake/s identified by burnt and recent discoloration of the brake pad back plate. Shiny appearance of orange/red "rust" in the area of the cooling channels visible. Subject to extreme thermal load results negatively impacting on the compound of the brake components and their structure.

Invoicing through warranty is not permitted.



- **Strong thermal load at disc face recognised by hot spots/heat spots.**

Permanent structural changes evident that result from changes to the cast material of the compound brake disc, caused by excessive temperature peaks. This leads to symptoms that typically include vibrations felt through the brake pedal and steering wheel during braking. As a rule, similar cases without structure change in the material of the brake disc can be removed again through normal-use braking over time.

Invoicing through warranty is not permitted.



- **Color change of the braking saddle/logo recognizable**

(e.g. color blue green)

By wear and/or overheating caused by vehicle use on race track or similar.

Invoicing through warranty is not permitted.



- **Dust boot in the braking saddle burnt/melted**

By wear and/or overheating caused by vehicle use on race track or similar.

Invoicing through warranty is not permitted.



- **Use of axle track widening alloy wheel plates or unsuitable "rims accessories" and or non-approved equipment.**

The use of such accessories influences the suspension, steering arms and geometry, the steering circle rolling radius, individual dimensional tolerances and axis geometry are changed. Additional related problems are the changes to the designed resonance and frequencies of the complete braking system therefore limiting the overall braking performance.

Invoicing through warranty is not permitted.



- **Use of non-approved aggressive alloy rim cleaning agents.**

Brake discs (working frictional surface and all other parts); brake calipers, brake pads, back plates, wheel hubs and balancing weights are subject to discoloration from corrosive wheel cleaning agents. This includes finer detail such as at the M logo. A distinct lack of braking after cleaning intensifies the corrosion further.

Invoicing through warranty is not permitted.



Corrosive balancing weights



M logo



V. Repair

- Repair manual 34 11 220 / 34 21 320

Both brake discs in front (or behind) from-and install/replace.

- Repair manual 34 11 000 / 34 21 200

Brake pads of both disc brakes in front (or behind) from-and install/replace.

- Repair manual 34 00 xxx

General notes concerning brake discs/brake pad replacement.

VI. Indications for the customer communication

Following note into operator's manual:

- Sales "driving on a racetrack"
- Sales "care - light alloy wheels"
- Sales "after vehicle cleaning"
- Sales "corrosion of the brake disc"

VII. Invoice

- To ensure successful auditing through Warranty, photographic evidence should be available if requested. Within the "**BMW/BMW M/BMW I - International Warranty manual**" is a corresponding documentation that requests specific justification; "photo documentation in the guarantee case".
- A suitable photo of the defective component in question (max. 2 MB) has to be uploaded with the application. The documentation has to be provided when required (supporting the claim and guarantee audit or GWKS application examination).