

# BRAKE DISCS TROUBLE TRACER CHART



## ABNORMAL WEAR ▶

**Excessive wear. Disc thickness is lower than the 'Minimum Thickness'.**



**What caused it?** Discs were not inspected regularly or replaced at the correct moment.  
**What is the effect?** Lower performance, excessive noise and vibration while braking  
**How do you fix it?** Fully inspect the braking system and associated components. Replace any failed components and fit new discs with the right torque and sequence recommended by the manufacturer during tightening.

**Disc heavily used with surface grooves.**



**What caused it?** Excessive or full brake pad wear results the brake pad backplate contacting the disc (metal to metal). This will make grooves in the disc surface.  
**What is the effect?** Increased stopping distances/ very low braking efficiency and grinding noise.  
**How do you fix it?** Change discs and pads. Make sure the wear indicator is working.

**Deep grooving between pad and disc.**



**What caused it?** Extreme pad and disc wear may result in movement of the backplate within caliper. In this case, the backplate of the worn pad has separated from its seat within caliper causing grooving between hat and disc surface.  
**What is the effect?** Lower braking efficiency with a longer pedal stroke and more noise.  
**How do you fix it?** Change discs and pads. Check and, if necessary, repair the caliper.

## MISUSE/THERMAL DAMAGE ▶

**Radial cracks/blue spots corresponding to the venting frames.**



**What caused it?** Blue spots are a result of rising cracks caused by metallurgical change in the surface material making it hard and brittle. This is common in cases of overloading the brakes beyond normal design limits. This could result from aggressive driving, excessive payload or intensive/unusual brake use.  
**What is the effect?** Reducing brake performance, noise and vibrations.  
**How do you fix it?** Replace discs, avoid brake system misuse and make more efficient use of engine/gears to lower the speed.

**Colouring of changing intensity and shades (blue, violet or golden).**



**What caused it?** Poor bedding-in. If not accurately bedded, surfaces where friction appears get overheated. This leads to a metallurgical change on the friction surface.  
**What is the effect?** Bad brake efficiency caused by decreased friction. Vibrations can occur which may lower the life of the pad and disc.  
**How do you fix it?** Change the discs and hold on to the right bedding procedure, i.e. moderate use of brake during the first 200 kilometers.

## INCORRECT ASSEMBLY ▶

**Contact surface distortion, and/or visual cracks around the fitment holes.**



**What caused it?** Tightening sequence incorrect, not enough tightening torque used.  
**What is the effect?** Vibration on initial brake applications.  
**How do you fix it?** Replace discs and adhere to both correct fitment sequence and torque settings recommended by the manufacturer.

**Detached or distorted Hub contact surface.**



**What caused it?** Needless tightening and failure to observe recommended torque and sequence by the manufacturer during tightening.  
**What is the effect?** Complete brake failure, disc contact surface is detached.  
**How do you fix it?** Fully inspect the braking system and associated components. Replace any failed component and install new discs.

**Disc areas show some blue spots/darker color. Indication of localized overheating.**



**What caused it?** Excessive hub run-out and uneven disc-to-pad contact generates vibration that causes localized heat.  
**What is the effect?** Constantly increasing noise and vibration.  
**How do you fix it?** Correct wheel hub run-out within correct tolerances.

**Distortion of the hub contact surface and/or cracking around it.**



**What caused it?** Too much severe tightening torque used on positioning screw.  
**What is the effect?** Vibrations observed from the first brake applications onwards  
**How do you fix it?** Change discs avoiding excessive tightening torque. Positioning screws are just expected to ensure that the discs are positioned correctly.

**Hub surface with dirt and/or rust.**



**What caused it?** Contamination on hub surface. This results in misalignment during mounting leading to irregular contact between pad and disc surfaces and irregular wear of the disc.  
**What is the effect?** Disc thickness variation which leads to oscillation of the disc surface that will result in noise and vibration. The effect becomes increasingly bigger with use.  
**How do you fix it?** Remove disc and carefully clean surfaces of wheel hub and disc. This erases rust and other debris. Control that there is no distortion or damage to the support surface.

## ASSOCIATED COMPONENT FAILURE ▶

**Disc hat detached from the braking surface.**



**What caused it?** Mechanical stress caused by misalignment and wrong assembly/positioning of the caliper and the disc. This causes asymmetrical wear of the braking surface.  
**What is the effect?** Loud noise and vibration during braking with entire mechanical breakdown after detachment.  
**How do you fix it?** Fully inspect the braking system and associated components. Replace any failed components and install new discs observing recommended torque and sequence by the manufacturer.

**Grooving on the disc.**



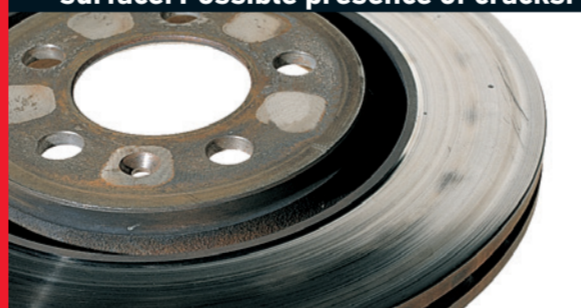
**What caused it?** Loose rough/sharp particles like dirt, road or water. Or badly mixed friction material between pads and disc.  
**What is the effect?** Lower brake efficiency caused by reduced braking contact surface and noise during braking and normal driving.  
**How do you fix it?** Install new pads and discs.

**Contamination of the disc surface, glazing and/or dark spots.**



**What caused it?** Friction material deposits on disc surface. This usually appears where bad quality brake pads have been installed.  
**What is the effect?** Vibration, bad braking efficiency and tough pedal.  
**How do you fix it?** By installing great quality brake pads with friction material that suit the brake and the vehicle.

**Unbalanced wear of braking surfaces. Blue spots in the middle of braking surface. Possible presence of cracks.**



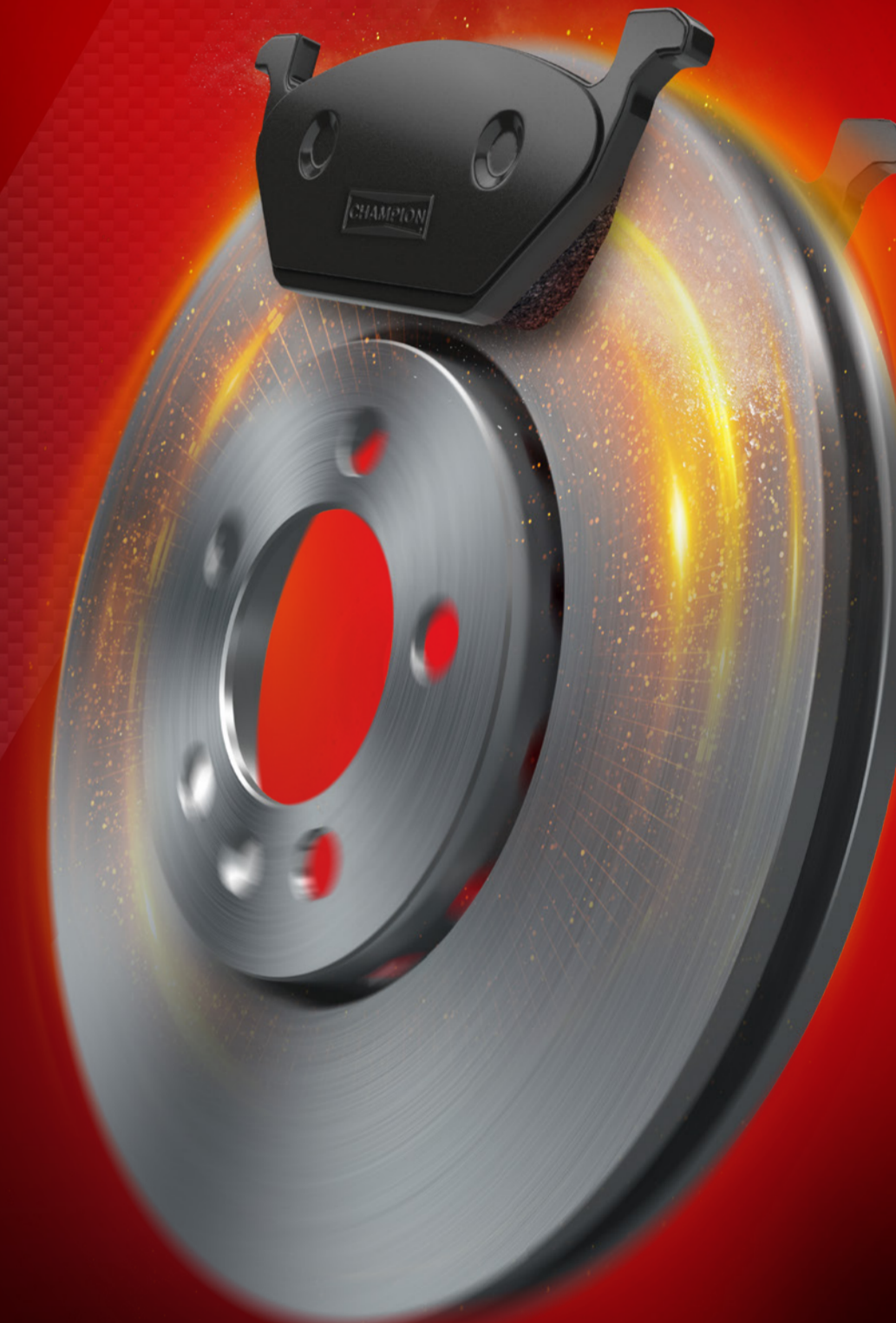
**What caused it?** Incorrect assembly of the caliper and/or pads can cause the pads being at a different angle to the disc, each side wearing at changed rates. Blue spots are generated by severe localized overheating.  
**What is the effect?** Progressive onset of vibrations, due to heat spots. Probable reducing of the brake efficiency.  
**How do you fix it?** Inspect and repair caliper. Replace pads.

**Unbalanced wear of brake pads. Major wear on one pad with minimal wear on the other side.**



**What caused it?** One brake pad is in constant contact with disc. This causes the pad to wear down to the metal backplate.  
**What is the effect?** Constant grinding noise, vibration and low braking efficiency. Possible unbalanced braking action with car pulling to one side.  
**How do you fix it?** Check caliper, replace or repair. Change brake pads and discs if necessary.

All the listed problems above are linked to disc issues. Other causes may be at the origin of these problems too.



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