CHAMPION®

FEDERAL-MOGUL MOTORPARTS

BRAKE PADS TROUBLE TRACER CHART

Unequal wear - disc scoring

Appearance. Unequal wear pattern on the pad

What caused it? No full contact between brake pad and disc, disc scoring by dust or excessive wear. New pads with a worn disc may also show this effect.

What is the effect? Lower braking efficiency.

How do you fix it? Change brake pads and brake discs.

Unequal wear - wear lip

Appearance. Unequal wear on the pad surface.

What caused it? An unevenly worn brake disc or 'wear lip' on the disc will cause this pattern of wear on the brake pad.

What is the effect? Premature pad wear.

How do you fix it? Change brake discs and pads.

Pad fitting not correct

Appearance. Pads are damaged.

What caused it? These 'handed' pads are not the same to each other in this set. Not correctly fitted will result in damaged pads.

What is the effect? Pads are damaged and lower braking performance.

How do you fix it? Follow the instructions of the manufacturer to change the pad set.

Damaged backplate

Appearance. A back plate that is damaged.

What caused it? Not correctly assembled, or needless force used during fitting.

What is the effect? Lower braking efficiency, irregular pad wear and braking noise.

How do you fix it? Change brake pad set.

Tapered pads

Appearance. Irregular wear or tapered pads

What caused it? Distortion of the caliper and the slides are sticking and needless caliper clearance.

What is the effect? Premature pad wear and noise while braking. Unequal braking pressure.

How do you fix it? Replace pad set and maintain and service caliper. Note: some cars use pads that are tapered by design.

Unequal wear within a set

Appearance. One or more brake pads within an axle set is extremely worn.

What caused it? The caliper guide pins or piston is not working properly or is sticking.

What is the effect? The brake pulls the car to one side. Unequal & overly rapid pad wear.

How do you fix it? Maintain all caliper slides and pistons, change pads and/or check discs and change if needed.

Contaminated pad

Appearance. Contamination of the Friction material with either oil, grease or brake fluid.

What caused it? Spilling fluid during maintenance or leakage from the caliper.

What is the effect? The vehicle pulls to one side during braking and the decreasing of the braking performance.

How do you fix it? Identify and repair cause of contamination. Replace whole brake pad set.

Glazing

Appearance. The brake pad friction material is glazed

What caused it? High periodic pad temperature over short time periods. Overly hard braking during bedding-in period.

What is the effect? Temporary reductions of the brake performance

How do you fix it? When there is light glazing, no action is needed. If you see heavy glazing, replace brake pad set and check disc condition.

Pads are worn out

Appearance. The friction material is totally worn out.

What caused it? There hasn't been a regular check of pad wear or a good brake maintenance.

What is the effect? The car pulls to one side during braking, damage on the disc and brake noise.

How do you fix it? Damage check on the discs. Change pad set and disc if there is damage.

Cracked pads

Appearance. Small cracks in the middle of the pad

What caused it? Cracks illustrate that the caliper is sticking. The piston flexes the back plate causing the back plate to bend, cracking the friction material.

What is the effect? Noise while braking, irregular pad wear, car pulling to one side when braking and overheating on one side of the car.

How do you fix it? Maintain/service caliper and replace brake pad set.

Side crumbling

Appearance. Unequal wear pattern on the pad.

What caused it? Brake pad is sticking within the caliper. This causes the brake pad to stay in contact with the disc with associated needless pad temperature.

What is the effect? Pad surface may glaze which will lower the brake performance.

How do you fix it? Determine the cause of caliper sticking. Service the caliper and/or replace the whole brake pad set.

Denaturing

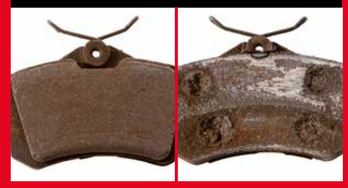
Appearance. Part of the friction material is charred or burnt (see white sides).

What caused it? Prolonged extreme pad temperature due to intensive braking or dragging of the brake pad on the disc.

What is the effect? Lower initial brake efficiency, extreme material deterioration and abnormal wear. Material becomes brittle and cracks are shown.

How do you fix it? Find the cause for the overheating of the brake pad. Is the damage extensive? Change brake pad set.

Rust on pads



Appearance. Rust between the friction material and back plate.

What caused it? A brake pad is sticking in the caliper bracket when braking, bending the back plate, cracking the friction material. Corrosion makes it worse, splitting the friction material and back plate.

What is the effect? Noise and soft pedal feel and once material has separated, you are not able to brake.

How do you fix it? Change brake pad set. Clean and maintain caliper to ensure pad fits smoothly into the caliper during installation.

Metal pick up

Appearance. Metal ingrained on the friction surface.

What caused it? When you brake normal, small particles of the disc surface break off. Typically, these are burnt off by the intense heat as dust. During extremely wet conditions these are quenched, cooled fast to solid material, and adhere to the brake pad surface.

What is the effect? This has no detrimental effect on braking performance, however, in extreme cases, disc damage will be caused or brake squeal.

How do you fix it? Change discs and pads in extreme cases.

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