CAM
AUTO DEVELOPMENTS

THE ULTIMATE BRAKING GUIDE

– VOLUME 3

In this concluding part of our 3-part blog series on braking, we take a closer look at the humble brake pad. Put simply, the brakes in your car are made up from a number of different components that, when operated by the driver, stop the car from moving.

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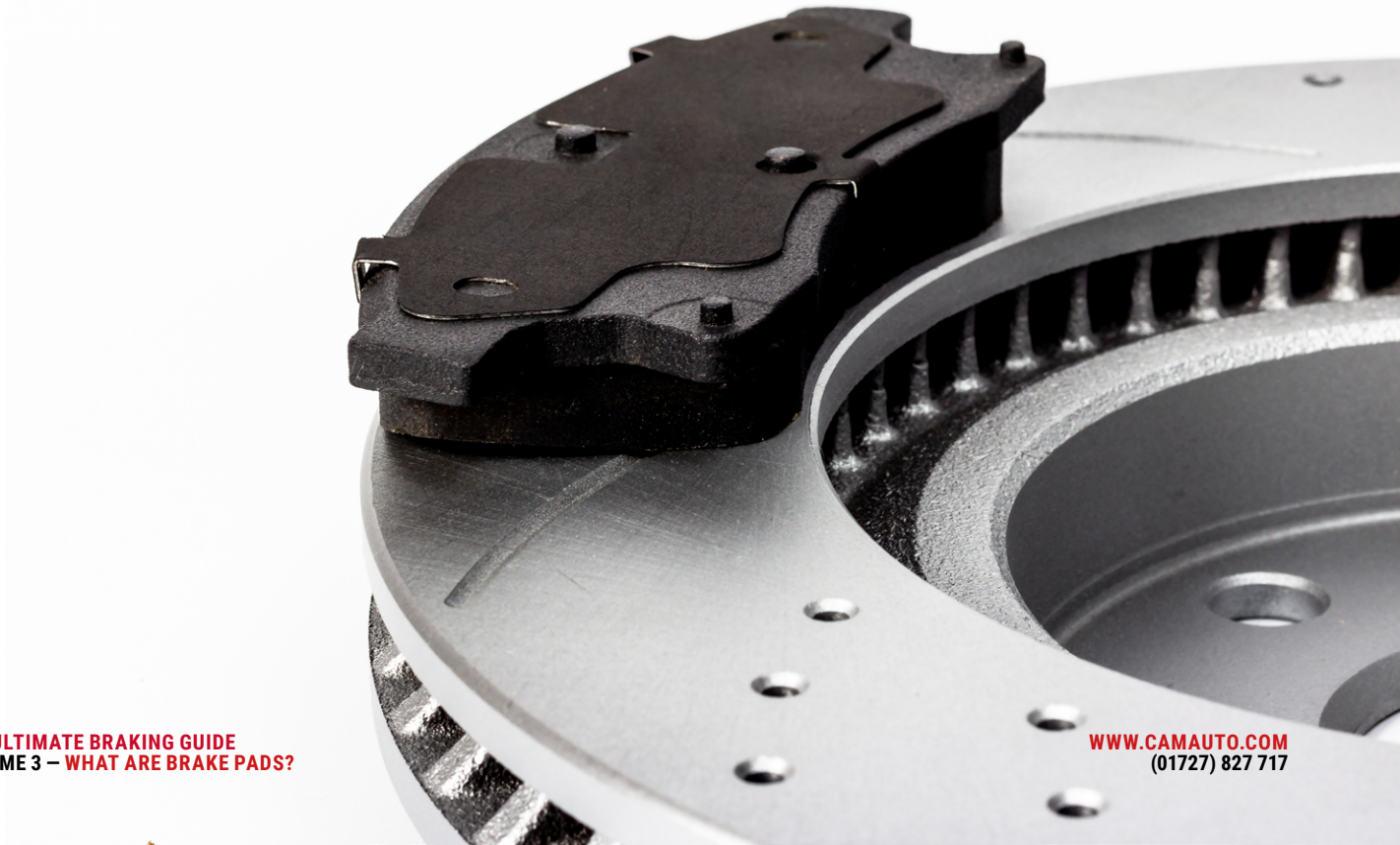
What do brake pads do?

Whether you plan to take to the road or race track, your car's brake pads are a vital part of the braking system as a whole.

The brake pads work by squeezing the brake's rotors (also known as discs), applying pressure and making them come to a stop when the driver has pressed down on the brake pedal. Once these discs have stopped rotating the car stops moving too.

The vehicle's brake pads undergo extreme stress, given the weight of the average truck, car or motorcycle, plus the amount of pressure applied to them, either gradually or suddenly.



Brake pads in performance vehicles

In performance cars the brakes don't just bring the car to a stop, they are also responsible for handling the vehicle through turns. Even when the car appears to be in full acceleration mode the brakes are getting just as well used, so it is vital that high performance brake pads are up to the job.

One of the most important considerations for brake pads in motorsport, is their ability to cope with heat. If they become too hot, they are likely to fail and may even boil the brake fluid in the process, which could have catastrophic consequences. For this reason, brake pads designed for this use are made from ceramic and carbon fibres. Whilst they are much more expensive than every day brake pads, they are very light weight and can withstand extreme heat, delivering consistency throughout races.

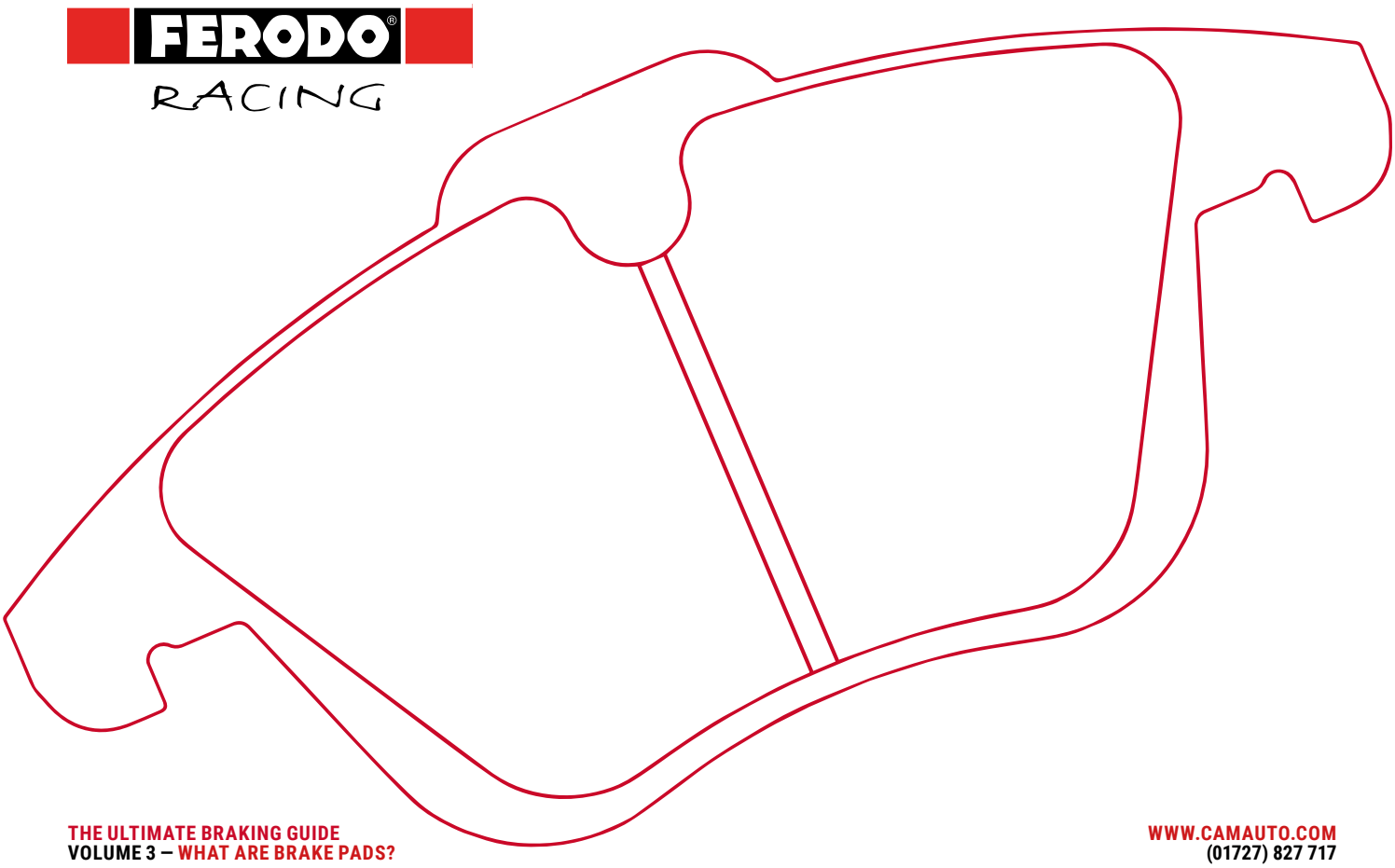
Racing brake pads

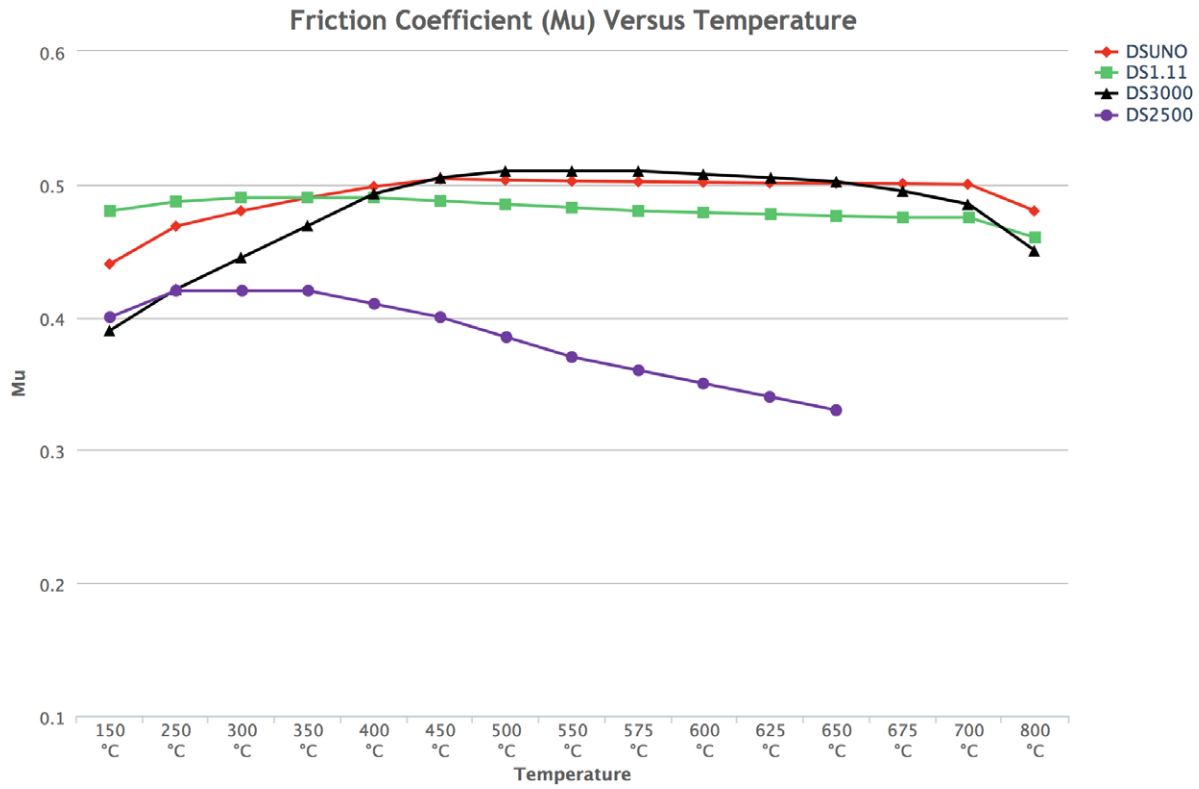
Developed specifically for motorsport, racing brake pads are available in a selection of different compounds, depending on the intended use and the driver's preferences. All Ferodo's racing brake pads are manufactured at their dedicated facility in Italy, to the highest quality standards with 26 individual quality controls for each batch.

Unlike many other similar products on the market, Ferodo's brake pads are designed to cause minimal wear to brake discs, resulting in optimal life for both pad and disc. Careful consideration has gone into minimising the risk of brake fluid boiling by adding a thermal underlayer between the backing plate and friction material. Ordinarily, without this layer the brake caliper's temperature can reach up to 80 degrees C, causing the brakes to fade.

As high clamping forces are common in motorsport, all of the pad back-plates are manufactured from high tensile steel. This ensures consistency, strength and reduction in distortion.

At CAM we stock a range of high performance Ferodo brake pads, the highest specification of performance brake pads on the replacement market. If you are not sure what the difference between the types of pad are, take a look at our handy guide on the next page.





Dynamometer simulation of Touring Car front axle. DS2500 shown for comparison only, as would never be used in this application

DS2500 (H)

The DS2500 is at the top of the league when it comes to high performance track day pads. Suitable for many rear pure race applications and light front duty, its main characteristics are:

- Track day & light race use for all vehicles
- Road style refinement with race material ability to withstand heat
- Average friction coefficient of 0.42 over working temperature range of 20 – 500 degrees C

DS1.11 (W/WB)

Boasting a long life span and superb durability during its use, the DS1.11 is the ultimate in high performance brake pads. Not only will it withstand the highest temperatures a brake pad could ever endure, the performance of the pad will remain consistent throughout its entire lifespan.

- Heavy-duty endurance material
- Applications — touring car, GT, single seat
- Average friction coefficient 0.46 over working temperature range of 200 – 700 degrees C
- Long life
- Works well with discs

DS3000 (R)

The DS3000 has contributed to many racing, rally and GT championship victories around the world so it's easy to see why it has set the standard in braking.

- Heavy duty all-round material choice
- Short bedding time
- Multiple applications including touring car, rally, Group N, single seat and hill-climb
- Average friction coefficient 0.48 over working temperature range of 200 – 650 degrees C

DSUNO (Z/ZB)

Described at the 'ultimate feel-good pad' the DSUNO is a heavy-duty racing pad designed to provide a high friction output, combined with superior pad/disc life. Improved modulability results in a reduced risk of wheel lock without any output loss.

- Heavy-duty semi-endurance material
- Applications — touring car, GT, single seat, rally
- Average friction coefficient 0.48 over working temperature range of 200 – 700 degrees C
- Very controllable torque output
- Works well with discs
- Long life span

Pad bedding

When replacing racing brake pads, it is important they are bedded to ensure the pads are brought to full race temperatures safely. If bedding occurs too quickly, glazing can occur. Safe bedding is achieved through a series of laps where full speed is attained but light braking pressure is used, then allowing the pads to cool down fully before racing.

At least 15 trial brake applications should be performed, apart from DS1.11 or DSUNO with a B Suffix in the part numbers which have already been heat testing during manufacture – these require five applications only.

View **Part 1** and **Part 2** of our blog series or browse our full range of **Ferodo Racing Brake Pads**.

For everthing else, visit **camauto.com**