



PRESS RELEASE

New Brembo brake systems for the 2010 Formula 1 World Championship

Stezzano, 12th March 2010. *Brembo brake systems evolve and adapt in response to requirements imposed by the new technical regulations for the 2010 F1 season.*

Among the most significant changes is the notable weight shift that will occur during the race, which means the brake balance must be managed differently.

This year, like last, there will be six teams on the track using brake systems supplied by Brembo: BMW Sauber F1 Team, MERCEDES GP PETRONAS F1 Team, Red Bull Racing, Scuderia Ferrari Marlboro, Scuderia Toro Rosso, and the HRT F1 Team.

2009 season: immediate success for lighter and more compact rear brakes

The set-up for brake systems used in the 2009 season had been influenced mainly by two factors: the reduction of downforce — especially on the rear end — and the change to slick tyres. This had led to improved performance at the front end, allowing the adoption of lighter and more compact brakes at the rear.

It is memorable that the top four drivers and the top two teams in the standings at the end of the 2009 season were racing with Brembo systems, and that these were victorious at circuits notoriously hard on brakes: the Bahrain GP was won by Button (BrawnGP) with Vettel (Red Bull Racing) in second place, whilst at Monza, Barrichello and Button made it a one-two for BrawnGP.

Both these venues have again been included in the 2010 Formula 1 calendar, and there is also a welcome return to the demanding Montreal circuit, where BMW and Brembo captured the top two places on the podium in 2008.

More weight means heavier workload for brake systems

The technical regulations for 2010 throw up certain key aspects that will increase the amount of energy dissipated by the brakes. First of all, the minimum weight of the car (including coolant, oil and driver body weight) increases from 605 to 620 kg, but still more of a challenge will be managing the fuel load needed for the entire race — around 120 kg more on the starting grid.

With no more refuelling, the teams must now use tanks of 230-240 litres capacity as against 100 litres in 2009, which means that around 160 kg will be shed during the course of the race, inevitably altering the general balance of the car. Accordingly,



the aim of Brembo engineers has been to develop systems with a greater capacity to dissipate energy, and a high standard of efficiency under every kind of load condition — and therefore at any temperature — especially as the cars will be carrying minimal fuel loads during qualifying. This means an imperative requirement for materials and systems able to operate across a wide thermal spectrum.

Similarly, with front tyre treads now 20 mm narrower, there will be a different balance of braking power, dictated by a different distribution of grip between the front and rear axles. During the 2009 season, the proportion of grip at the front wheels would reach perhaps 60...65%, whereas in 2010 this will come down to around 53%.

New friction materials for discs and pads

Brembo continues to explore new avenues in the development of friction materials for discs and pads, with the aim of making these same materials more manageable, given the wide ranges of operating torque and temperature values envisaged.

Because the front and rear brakes are used more frequently during the first half of the race, the performance of the friction material needs to be monitored closely. Engineers must also address the problem of 'vitrification', a chemical process tending to occur on certain tracks when the brakes are not under any great stress. This will be minimized by adopting materials better suited for operation at low torques/temperatures.

Brakes will be more and more decisive

With the increase in weight, the longer wheelbase dictated by a larger fuel tank, the reduced width of the front tyres, and the introduction of new turning vanes resulting in less downforce, brakes will have an even more important part to play in overtaking. And remember, brakes will have an increasingly decisive influence on the outcome of races, now that the impact of fuel strategies has been completely eliminated.

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