PRESS RELEASE

Brembo reconfirms its leadership in technological challenge in World Championship Formula 1 2012

Stezzano, March 2012. *Involved with Formula 1 since 1975, Brembo claims leader status yet again this year in the premier motorsport competition, as supplier of brake systems to six of the current teams: Red Bull Racing (reigning World Champions), HRT F1 Team, MERCEDES AMG PETRONAS Formula One Team, Sauber F1 Team, Scuderia Ferrari and Scuderia Toro Rosso.*

Brembo will support the work of each team — bringing technological innovation, maximum reliability and integrated solutions — in their quest to implement the 2012 technical regulations as competitively as they can. The new brake systems have been developed to meet the constraints imposed by the latest FIA regulations and by the characteristics of the new tyres: two factors that will impact significantly on braking performance.
Now that blown diffusers have been banned, there will be less downforce on the rear end of the car than in 2011, with the result that a greater proportion of the braking force is transferred to the front axle. In addition, the new cars will need to be more controllable during application of the brakes; this is essential for best possible management of the entry into bends, and avoiding the damage caused by locking the wheels.
The optimum engineering properties of carbon material used for discs and pads made by Brembo will ensure that the brake system can be adapted readily to the new practical needs of different drivers.

Increased front end braking force to compensate for less downforce at the rear
The main technical changes in the 2012 regulations that can influence how brake systems work are: developments in tyres, and the elimination of downforce favoured previously by blown diffusers (now banned). This has been done by moving the exhaust outlets away from the diffusers and modifying the engine electronics so as to avoid the detonation effect on release.
Given that no substantial variations are envisaged in terms of grip, braking will not be influenced to any great degree by the new tyres, which have a squarer profile and are made of compounds designed to ensure consistent degradation.
The changes introduced by the FIA affecting exhaust systems, on the other hand, will mean a significant reduction of downforce at the rear, resulting in a different balance of braking forces, now shifted more onto the front axle than previously. Maximum control over the braking action is therefore crucial, and this the key attribute of the carbon material developed by Brembo.

Brake systems tailor-made, but the same carbon for everyone

Over the years, Brembo has had to adapt to a demand for extensive customization of brake systems, deriving from the different solutions adopted by F1 car designers. The six teams supplied by Brembo require a brake system that is increasingly "tailor-made", closely integrated with the design of the car and certain to undergo continual development during the course of the season.

The factors involved in customization of a system are its rigidity, signifying the most advantageous compromise between the various parts making up the corner assembly — wheel, hub carrier, disc and brake caliper — and control of the air flow through the wheel, which is a factor in determining the number of load points. Depending on their aerodynamic configuration, the cars will have spaces of varying dimensions in which to house the brake caliper, i.e. clearances, fixing angles and position relative to the suspension. Added to these variables, there is the choice of disc and pad thicknesses (within the range specified by FIA regulations).

On the other hand, all the teams using Brembo brakes are supplied with the same disc and pad materials — Brembo CER100 and Brembo CCR400, respectively. The aim is to render these compounds more manageable, given the wide ranges of torque and operating temperatures in play.

Significant numbers

In the course of a full season, each team is supplied by Brembo with the following material for its 2 cars:

- 10 sets of calipers (i.e. 4 x 10 components),
- Between 140 and 240 discs
- Between 280 and 480 pads

Some 10 hours continuous manufacturing activity are required to produce a caliper, although in reality the process is interrupted by other steps including various surface treatments, assembly and subsequent testing. Both the materials and the steps of the entire process are 100% tested, in keeping with the concept of total quality demanded by the application.

About Brembo SpA

Brembo SpA is the world leader and acknowledged innovator of the disc brake technology for automotive vehicles. Brembo supplies high performance brake systems - for the most important manufacturers of cars, commercial vehicles and motorbikes worldwide - as well as clutches, seats, seat belts and other components for racing only. Moreover, Brembo is also a leader in the racing sector and has won more than 200 championships. Today the company operates in 15 countries of 3 continents, with 35 production and business sites, and a pool of more than 6700 employees, about 10% of whom are engineers and product specialists active in the R&D. 2011 turnover is € 1,255 million. Brembo is the owner of the Brembo, Breco, Bybre, Marchesini, Sabelt brands and operates through the AP Racing brand.

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