

NEW ERA FOR FORMULA ONE WITH BREMBO GROUP SUPPLYING ALL 10 TEAMS IN 2022

Stezzano (Italy), 14 March, 2022 – Brembo has confirmed its commitment to the Formula One World Championship ahead of the new season, which starts on 20 March with the Bahrain Grand Prix. This year the industry-leading innovator of brake technology has designed customised systems for each team, drawing on extensive experience gained over 47 Formula One seasons, in which cars with Brembo brakes have won 27 Drivers' World Championships, 31 Constructors' World Championships and 463 Grand Prix races. The company will also supply most of the cars with hydraulic (calipers, pumps and by-wire units) and friction parts (carbon discs and pads).

New braking systems specifically for 2022 single seaters

Brembo brakes will have a key role to play in the 2022 Formula One season. The Group's technicians have designed an all-new braking system that complies with the latest FIA regulations and limits while ensuring performance remains front and centre. **These regulations see wheel diameter increase from 13 inches to 18 inches and this in turn requires larger brake discs.** For 2022, the diameter of Brembo front axle carbon discs increases from 278mm up to as much as 328mm, while the maximum thickness remains unchanged at 32mm. Those on the rear axle increase from 266mm to 280mm, with the thickness increasing from 28mm to 32mm.

Positioning of the calipers and pads has also been part of the redesign.

Another important point of difference concerns the air intake flaps, which are "*prescribed components*" and so must be identical across all Formula One cars. This change limits their use in increasing aerodynamic load and cooling the braking system.

Other regulations have affected brake disc design still further. Until 2021, discs could be pierced with up to 1,480 holes of 2.5mm diameter. This year, the requirements allow for between 1,000 and 1,100 holes at the front and around 900 at the back, compared with 1,050 holes previously. The updated rules also impose a new minimum diameter of 3mm. This means that while disc thickness stays the same, there will be fewer and larger holes, reducing cooling ability. Perforated brake pads have also been banned this season so Brembo is offering teams a choice of two alternative configurations.

In terms of weight, the 2022 braking system is around 700g heavier per wheel, adding almost 3kg to the total weight of cars compared to last season.

Brembo Group calipers for all teams

The 2022 season marks another important milestone for Brembo: **we are supplying calipers to all 10 teams for the first time since 1975.** Nine teams will be supplied with Brembo calipers, while the last will be supplied with calipers made by AP Racing, the Coventry-based company owned by the Brembo Group.

All 20 Formula One drivers will have new nickel-plated and machined from billet six-piston calipers, the maximum number allowed by the regulations. Five teams will also use the by-wire units developed by Brembo and AP Racing to manage rear braking, which balances out the braking forces between front and rear axles.

Customization, telemetry and maintenance

Every Formula One car is set up differently. **Some teams prefer lighter and less rigid calipers, while others opt for stiffer, heavier set-ups. Brembo group engineers worked with each team to optimise the weight/stiffness ratio and customize the brake calipers in each car.** In-wheel sensors keep teams informed of disc and caliper temperatures at all times, so they and the drivers can regulate and optimise the performance of braking.

Understanding the 2022 regulations

One of the most significant changes for 2022 affects the least visible part of the cars – the underbody. Gone is the scalino (or "step-front") in favour of two Venturi tunnels that assist in the creation of downforce. It's a move that makes the vehicle far less sensitive to turbulence caused by the one in front, meaning chasing cars can stay closer for longer when attempting to overtake.

All aerodynamics permitted in the 2021 season have been banned, including bargeboards. In response, the wings have been simplified and have a new look. There have also been important changes to the tyres, which as well as being set lower have a greater rim diameter, allowing wheel covers to be mounted. The latter make the tyres stiffer, similar to those on street supercars. The new regulations and lower-set tyres have in turn prompted teams to review suspension design.

All this work has been carried out within the new 2022 budget cap of \$140 million per team, down from \$145 million in 2021. Should teams want to, they can further customise the cars' dynamic air intakes, engine covers and wing profile, among other things.

For the 2022 season, cars will be heavier than last year, with the total weight rising from 752kg to 795kg. This, along with the new aerodynamics, means drivers will have to get used to new braking points around each circuit against the past.

About Brembo SpA

Brembo SpA is the world leader and acknowledged innovator of 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 and other components for racing. Brembo is also a leader in the racing sector and has won more than 500 championships. Today the company operates in 15 countries on 3 continents, with 29 production and business sites, and a pool of over 12,200 employees, about 10% of whom are engineers and product specialists active in R&D. 2021 turnover was € 2,777.6 million (31.12.2021). Brembo is the owner of the Brembo, AP, AP Racing, Breco, Bybre, J.Juan, Marchesini and SBS Friction brands.

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