



*543 PlayStation Slim consoles, 5,000 katanas, the 130R and 60 Japanese people help to explain brake use on the Japanese circuit.*

## **The Japanese GP according to Brembo**

### ***An in-depth look at Formula 1 brake use on the Suzuka Circuit***

The Suzuka International Racing Course will host the 17th race of the 2016 Formula 1 World Championship from 7 September to 9 October.

Located in Suzuka City 150 km from Osaka in the Mie prefecture, the circuit was built at the request of Soichiro Honda. It became the first Japanese circuit to meet international standards when it was inaugurated in 1962, but it has hosted Formula 1 only since 1987. In 2003 the track was modified at several spots, resulting in a loss of about fifty metres.

At Suzuka, like at the other very "driven" tracks, the fast, wide curves (such as the legendary 130R where the single-seaters take it at full throttle) lead to only slightly challenging braking. Indeed, the single-seaters shoulder only one particularly abrupt braking section.

According to Brembo technicians, who have classified the 21 World Championship tracks on a scale of 1 to 10, the Suzuka Circuit falls into the category of tracks that present a low level of difficulty on the brakes. The Japanese track earned a 4 on the difficulty index, the same score obtained by Spa-Francorchamps and higher only than Silverstone and Interlagos.

#### **Brake Use During the GP**

The track is 5,807 metres long and contains 18 curves, but there are only 11 braking sections because the radius and width at some points (mainly the 130R, the S Curve and the Dunlop Curve) do not require use of the brakes. This results in time spent in braking that totals only 11% of the overall duration of the race (just over 10 seconds per lap), the lowest percentage in the World Championship, along with Silverstone.

It registers a seasonal record with a negative trend for energy dissipated in braking during the GP race by each single-seater: 81 kWh, which is only slightly more than one-third of the analogous value obtained by the Albert Park Circuit in Melbourne. 81 kWh is a value that corresponds to the average amount of energy consumed by 60 Japanese citizens during the race.

The mean deceleration, at just 2.8 g, is positioned among the 3 lowest this season, together with the tracks at Monaco and Mexico City. From the starting line to the chequered flag, each driver applies a total load of 55 tonnes on the pedal, the same weight as 5,000 katana swords.

#### **The Most Challenging Stops**

Of the 11 braking sections at the Suzuka International Racing Course none are classified by Brembo technicians as very challenging on the brakes, but 5 present a medium level of difficulty and 6 light. The most challenging overall is Curve 16 because it requires drivers to go from 306 km/h to 85 km/h in just 1.62 seconds and 144 metres, the same length of 543 PlayStation 4 Slim consoles placed one next to the other. The drivers apply a load of 145 kg on the brake pedal and undergo a deceleration of 4.1 g.

Greater deceleration is registered at the first curve (4.3 g) because the cars are going faster when they approach the turn, 318 km/h. To drop to 117 km/h they only require 81 metres, which is equivalent to just over the length of 3 cars on the Shinkansen train, and 1.08 seconds.

At curves 4, 17 and 18 on the other hand, the braking distance is restricted to just 18 metres, which is very little considering that the cars go from 229 km/h to 185 km/h at Curve 4 in a mere 68 hundredths of a second.

#### **Brembo Victories**

The single-seaters with Brembo brakes have won 18 of the 31 Japanese GP races contested. Seven of these victories went to Ferrari, however during the first edition held in Fuji in 1976, it lost the Drivers' World Championship title that all thought it had already won. Michael Schumacher won five times with Ferrari, while Sebastian Vettel was victorious at four of the last six editions with Red Bull.