



Five water polo fields, 65 Audi TT cars and 210 residents help to explain brake use on the Hungarian circuit.

The Hungarian GP according to Brembo

An in-depth look at the use of brakes by Formula 1 cars on the Hungaroring

The Hungaroring will host the 11th race of the 2016 Formula 1 World Championship from 22 to 24 July.

Located about twenty kilometres from Budapest, the Hungaroring has been the seat of the Hungarian GP continuously since 1986. The track has been modified with respect to early editions of the race: a chicane has been eliminated, the start-finish straight is longer, and curve 12 has been redesigned. The circuit is tight and twisty and is characterised by a high aerodynamic load. Most of it is quite driven, but there is a rather demanding braking section right after the main straight stretch.

According to Brembo technicians, who classified the 21 World Championship tracks on a scale of 1 to 10, the Hungaroring is in the category of tracks that present mid-level difficulty for the brakes. The Hungarian track earned a 7 on the difficulty index, which is identical to what the other winding circuits in Monaco and Montreal scored.

Brake use during the GP

The presence of a single straightaway results in there being 11 braking sections per lap; however, the drivers turn to their brakes only 18% of the duration of the overall race. The key to succeeding in the race boils down to managing the temperature of the friction material so that the performance remains constant and the wear is kept under control.

The average deceleration measures 3.7 g. The energy dissipated in braking by each vehicle over the entire GP race comes to 160 kWh, which is equivalent to the amount of electricity consumed by 210 Hungarian residents during the course of the competition.

From the starting line to the chequered flag, each driver applies a load of 83 tonnes on the pedal, the same weight as 65 Audi TT cars produced in the Gyor plant.

The most challenging stops

Of the 11 braking sections on the Hungaroring, Brembo technicians have classified only 2 as hard on the brakes, whilst 6 present mid-level difficulty and 3 light.

The first braking section after the starting line is by far the most difficult: the single-seaters come in at 340 km/h and brake for 1.56 seconds to slow down to 86 km/h in just 144 metres, the same length as 5 water polo fields in succession.

The braking systems and the drivers have to make an incredible effort to face the deceleration of 5.6 g, applying a load of 158 kg on the pedal.

The braking section at curve 4 is also challenging (a load of 127 kg on the brake pedal), in spite of a more moderate amount of time spent on the brakes: just 86-hundredths of a second, enough however to go from 311 km/h to 189 km/h.

Among the mid-level braking sections, curve 11 deserves a closer look because the single-seaters use merely 26 metres, the length of one basketball court, to go from 272 km/h to 187 km/h: the drivers are subjected to a deceleration of 3.9 g for every 78-hundredths of a second.

Brembo Victories

Single-seaters with Brembo brakes have won 13 of the 30 Hungarian GP races competed in.

Just under half of the victories were earned by Ferrari (6), with Michael Schumacher winning 4 of these. 9 of the winning drivers had cars equipped with Brembo brakes.