



## The Aragón MotoGP according to Brembo

An in-depth look at the premium class' use of braking systems  
at MotorLand Aragón

MotorLand Aragón will host the 14th race of the 2016 MotoGP World Championship from 23 to 25 September.

The circuit is located near Alcañiz in Aragón, in north-eastern Spain. The track was designed by the German architect Hermann Tilke in collaboration with rider Pedro De La Rosa, and it was inaugurated on 6 September 2009. The MotoGP race has been held there since 2010 when it became the 4th World Championship GP on the Iberian peninsula.

The track used for motorcycle racing measures 5.077 km and is made up of two long straightaways that are separated by just a pair of curves. Curiously, while all of the fastest laps have been made by Spanish riders, the highest speed ever reached goes to Stefan Bradl: 341.6 km/h in 2013.

The circuit is considered rather technical and quite challenging for the brakes because it doesn't allow the braking system to cool down well, especially on the first part of the track. That section contains an intense sequence of tight curves that can put stress on the brakes.

According to Brembo technicians, who work with all of the MotoGP riders (Brembo is supplier to 100% of the premium class riders), MotorLand Aragón falls into the category of very challenging tracks for the brakes. On a scale of 1 to 5, it earned a 4 on the difficulty index, the same score given to 3 other tracks including the other Spanish circuit, Jerez.

### Brake Use During the GP

The MotoGP bikes turn to their brakes 11 times per lap and a good part of those occur on the first half of the track. The second section is decidedly faster thanks to a 968-metre straightaway where the MotoGP bikes exceed 340 km/h. The brakes are used for more than 31 seconds per lap, which is 28% of the entire GP race. This many curves placed so close together translates into an average deceleration that is relatively low: 1.13 g. Adding up all of the force applied by a rider on the brake lever during the entire GP, the sum is more than 587.4 kg, which is equivalent to the weight of 170 whole Jamón de Teruel hams.

### The Most Challenging Stops

Of the 11 braking sections at MotorLand Aragón, only one is considered highly challenging on the brakes, but 6 present mid-level difficulty and 4 are light.

The first curve is the hardest on the braking system because to take it, the bikes have to slow down by more than 200 km/h, going from 288 to 86 km/h in 244 metres, just slightly more than the length of Zaragoza's Puente de Piedra (Stone Bridge). The riders apply 7 kg of force on the brake lever and are subjected to a deceleration of 1.5 g.

Braking at Curve 16, the second to the last, is also noteworthy: the bikes travel 264 metres and go from 343 to 146 km/h in 4 seconds net. Curve 12 requires using the brakes for the longest amount of time: 4.7 seconds to reduce their speed from 263 to 96 km/h.

The only curve on the track named for a rider is the uphill turn 3, called the Carlos Checa, which requires limited use of the brakes: only 1.7 seconds with a 3.8 kg load on the lever and a 56 km/h drop in velocity that takes the bikes from 206 to 150 km/h.

### Brembo Victories

Bikes with Brembo brakes have won all 6 of the GP races at Aragón: Honda won 3 times and Yamaha twice, and in 2010, Ducati took the victory at the inaugural race with Casey Stoner. In the last two editions, Jorge Lorenzo was victorious. Valentino Rossi has yet to stand on the top step of the podium here.