Motor Brake

The motor brake is the most advanced brake, offering the most realistic cycling experience. The brake force is controlled dynamically. This means that the resistance is calculated and adjusted continually to simulate natural road resistance, including during descents.

When calculating the brake resistance, all physical formulas a cyclist encounters on the road are applied, in order to create a situation that is as realistic as possible. Air and rolling resistance, gradient percentage, weight, air pressure, wind speed, temperature, altitude, inertia and brake properties are all taken into account and calculated hundreds of times per second to achieve a realistic feel.

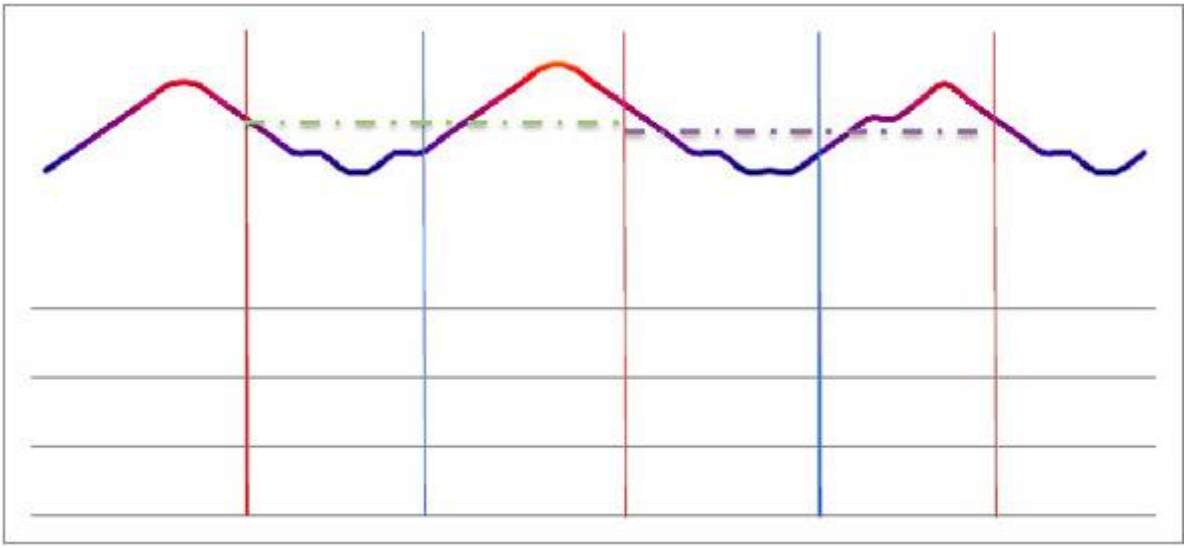
A virtual flywheel dynamically controls the brake force. This means that the resistance is calculated and adjusted continually to simulate natural road resistance. Whereas other trainers use a flywheel to pass the dead centre, the i-Genius Multiplayer uses calculations to predict the movements of the bike and simulate the action of a flywheel. The Genius even has a downhill drive. The wheel keeps turning, so you do not need to pedal, just like in real life. The virtual flywheel can generate a variable inertia effect, allowing it to simulate the bike movements of all cyclists up to a specific bodyweight (125 kg max.) in a highly accurate manner.

LED lights
The motor brake is equipped with LED lights that move to the rhythm of your cadence. The red lights light up when the power output is high. When the power output is low, the green lights are more visible. The i-Genius Multiplayer has to be plugged into the power grid, apart from this the trainer is wireless.

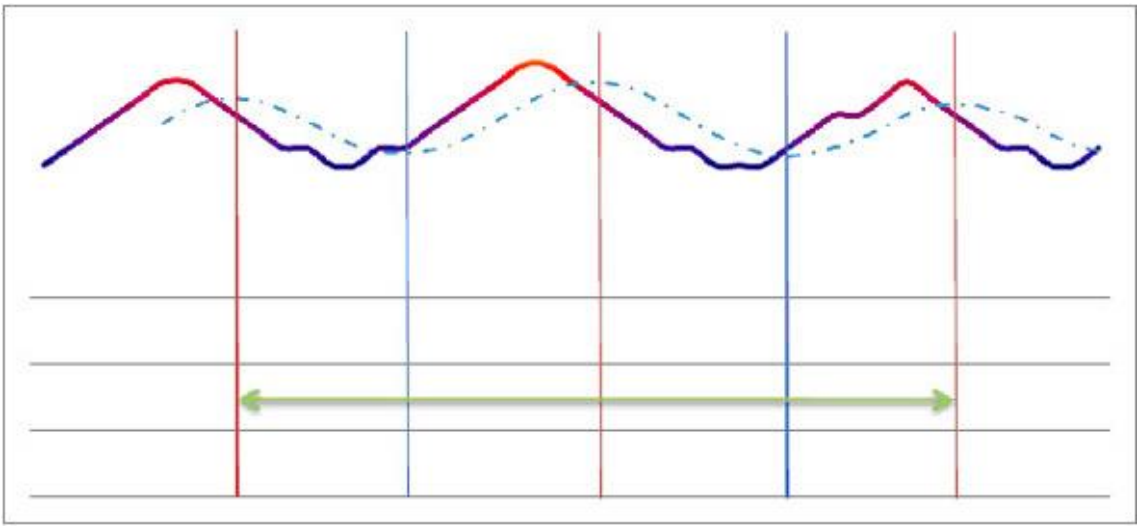
Cadence
The i-Genius Multiplayer works without a cadence sensor. The cadence is derived from the variation in force on the pedals and recorded by highly accurate electronic sensors.

Measure without a sensor on the bicycle

Cadence is measured without the help of a cadence sensor. When you are cycling there is always a variation in power that is applied to the pedals. Without a fixed connection between shoe and pedal this variation in power is quite big and when pushing with one leg, you will end up pushing the other pedal against your foot. When there is a fixed connection between pedal and shoe you will be able to pull the pedals as well. Thus a more efficient transmission of power comes about. When we look at trained cyclists who are capable of 'turning the pedals' smoothly, this difference in power is very small, but a difference nevertheless and therefore measurable. This difference in power will ultimately lead to a variation in speed which is measured in the braking unit.



By looking at variations with regard to an average it is possible to analyse if there is a cycle in the push off. During a full revolution of the left and right crank the lapse of time between the points as indicated in the graph is measured. This is used to calculate cadence.



Tacx