

# ADD - Aprilia Dynamic Damping

The brand new electronically controlled suspension system developed by Aprilia and protected by four patents, the benchmark in motorcycling on a global level where **technology, efficiency and reliability** are concerned. After APRC, the highly sophisticated "package" of electronics systems which equips the RSV4 and Tuono V4, once again Aprilia demonstrates that they are **pioneers in the field of electronics applied to bikes** with the introduction of a suspension system which uses automotive components to guarantee maximum reliability: a glance to the future, thanks to its vast possibilities of development and diversified applications.



ADD has two primary objectives: one is to **optimise rider comfort** and the other is to further **improve general rideability and safety**.

The system measures the energy transmitted by bumps on the road surface to the bike and **adjusts the hydraulic fork calibration and shock absorber in real time** to minimise accelerations on the frame and consequently maximise comfort.

To achieve **maximum performance** at any fork and shock absorber operating frequency, ADD uses a patented "**MIX**" "**comfort oriented**" **algorithm** which combines the principles of the well-known skyhook and acceleration driven damping algorithms.



The system recognises different riding phases (**acceleration, throttle release, braking, constant throttle**) and adjusts the baseline fork and shock absorber settings thanks to yet another patent which allows specific hydraulic calibration curves to be defined within the adjustment range.

The **great precision** of the system is left to a range of sensors which are derived from the automotive world and which allow the forks and shock absorber travel speed to be very accurately measured. In this field, Aprilia has patented a unique solution for measuring the travel speed of the forks using a pressure sensor.



The ADD package also includes a built in piggy back shock absorber which is electrically adjustable in spring preload to **4 predefined settings**, indicated by specific icons on the digital instrument panel: rider only, rider with passenger, rider only with panniers and rider and passenger with panniers.

This exclusive Aprilia system is patented as is the automatic preload control mode for the rear spring. Once this option has been selected, the system can detect the bike's load by itself (weight of fuel, rider, passenger, luggage, etc.) and automatically adjust preload to the optimum value to balance the bike properly. This allows the rider to concentrate on riding and makes Aprilia the first motorcycle manufacturer in the world to have introduced **active suspension**.