

## **Introduction of Two-Motor Electronic Throttle Body Technology for Fuel Supply Systems for the Latest Supersport Models**



**A fuel supply system that provides the appropriate mixture of air and fuel to the cylinder. The history of the carburetor, with which the negative pressure generated by the piston moving up and down in the engine creates a mixture of air and fuel to be supplied to the cylinder, is long. Then there is the fuel injection system in which fuel pressurized by a pump is injected by injectors to create a mixture of air and fuel. There are many variations of both, and the fuel supply system is selected to match the character of the vehicle in which it is installed.**

**At the 2025 EICMA, the two-motor electronic throttle bodies used in the latest supersport models will be on display, along with successive models of these fuel supply systems, which have become more sophisticated with the passage of time. Our display will present the technological advances in fuel supply systems for internal combustion engines.**

In 2025, Honda's factory team, Team HRC, won the FIM Endurance World Championship / Suzuka 8 Hours Endurance Road Race, completing 217 laps. The victory was achieved in a harsh environment with a high-speed sprint-like race and temperatures approaching 40 degrees Celsius. Astemo's ETB (Electronic Throttle Body), which was installed in the factory machine "Honda CBR1000RR-R FIREBLADE SP," also contributed to the victory.

In addition, vehicles equipped with this system are competing in FIM Superbike World Championship (WSBK), FIM Endurance World Championship, and All Japan Road Race Championship/JSB1000 class. The same system continues to be used in the latest CBR1000RR-R.

Astemo's electronic throttle body, unveiled at the 2023 EICMA and mounted on the 2024 Honda CBR1000RR-R, features two center-placed motors, a world first for an electronic throttle body on an L-series inline four-cylinder engine. The ability to mount two motors without increasing the overall width of the unit has improved drivability by allowing independent control of the two cylinders on each side of the engine while maintaining the vehicle's aerodynamic characteristics.

The most significant feature is the placement of an integrated connector in the middle of the four parallel positioned throttle bores. By placing two motors on each side and two drive shafts inside the connector, the two cylinders on each side are independently controlled.

It thereby improves traction by opening the left and right throttle valves one set at a time in the low throttle opening range, and improves control of engine output while the tires maintain their grip. Even during deceleration, the left and right sets of throttle valves can now be controlled to increase the effectiveness of engine braking by changing the way they open.

By reducing the load carried by a single motor, the throttle valves, which are driven by the motors, are better able to follow the rider's operation throughout the entire range. This makes riding more fun with a sense of security in a wide range of riding situations, from racing circuits to public roads.

The integrated connector located in the center of the throttle body houses the parts, such as springs and gears, that are connected to the motors to drive the throttle valves. The major challenge in designing this two-motor electronic throttle body was how to make these parts thin and strong. This integrated connector is Astemo's patented technology.

\*Information contained in this Technical Information is current as of November 3, 2025, but may be subject to change without prior notice.