

DENSO Develops a New low cost Fuel Injection System for Small Motorcycles

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KARIYA (Japan) – Global automotive supplier DENSO Corporation has developed a new electronic fuel injection system for small motorcycles called DIET-FI*. DIET-FI is the world's first fuel injection system that doesn't use a throttle position sensor or engine temperature sensor. Instead, it uses newly developed control technologies that ensure the same fuel economy and environmental performance as conventional fuel injection systems, thus cutting costs.

*DIET-FI (DENSO Intelligent Economical Technology-Fuel Injection)

Usually, fuel injection systems are only used in motorcycles, but in recent years there has been a growing need to apply these systems to smaller motorized bikes up to the size of 150cc that are used in emerging markets, like China.

DENSO researched this trend and identified a low-cost fuel injection system that delivers similar fuel economy and environmental performance as conventional systems but with fewer components.

DENSO's DIET-FI has five fewer components than conventional systems. Through extensive research, DENSO developed control technologies that were able to eliminate the throttle position sensor, intake air temperature sensor, engine temperature sensor and ISC idle speed control step motor. Specific compensation technologies include a temperature estimation control that integrates a thermistor into an electronic control unit and a fuel metering control to determine acceleration/deceleration using an intake air pipe pressure sensor.

DIET-FI is currently manufactured by Gongcheng DENSO (Chongqing) Co., Ltd., a group company that manufactures motorcycle components and supplied to Wuyang-Honda Motors (Guangzhou) Co., Ltd.

DENSO is committed to developing environmental technologies that help improve fuel economy and reduce emissions, as well as develop products suited to the regional's needs.

[Reference: Overview of FI systems (electronic fuel injection systems)]
FI systems for motorcycles consist of sensors, actuators, and ECUs to ensure high-precision control of the air-fuel ratio. The optimal fuel injection volume is calculated based on the air volume, engine condition, etc., which are detected by sensors. The fuel from the fuel pump is fed into the engine by injectors with high precision.

The widespread application of FI systems to small motorcycles will require smaller components, simpler systems, fewer components, and lower cost compared with four-wheelers and large motorcycles.

DENSO Corporation, headquartered in Kariya, Aichi prefecture, Japan, is a leading global automotive supplier of advanced technology, systems and components in the areas of thermal, powertrain control, electronics and information and safety. Its customers include all the world's major carmakers. Worldwide, the company has more than 200 subsidiaries and affiliates in 38 countries and regions (including Japan) and employs nearly 140,000 people. Consolidated global sales for the fiscal year ending March 31, 2014, totaled US\$39.8 billion. Last fiscal year, DENSO spent 9.0 percent of its global consolidated sales on research and development. DENSO common stock is traded on the Tokyo and Nagoya stock exchanges. For more information, go to www.globaldenso.com, or visit our media center at or visit our media website at www.densomediacycenter.com.

Currently, in North America, DENSO employs more than 17,000 people at 32 consolidated companies and affiliates. Of these, 28 are manufacturing facilities located in the U.S., Canada and Mexico. In the U.S. alone, DENSO employs more than 14,000 people in California, Michigan, North Carolina, South Carolina, Tennessee, Kentucky, Georgia, Iowa, Ohio, and Arkansas. DENSO's North American consolidated sales totaling US\$7.9 billion for the fiscal year ending March 31, 2014.

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