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# Made to measure

Legislation has prompted suppliers such as Re-Sol to develop more accurate fuel test equipment that can mimic the conditions found in the real world

WORDS BY RACHEL EVANS



MAIN: Peter Kaub, Re-Sol's president

BELOW: Design reviews help achieve optimum performance

The recent trend toward smaller engines and the push toward improved fuel economy have affected the product portfolio of supplier Re-Sol. The US-based company develops fuel-flow measurement equipment used to test all different types of engines, particularly gasoline direct injection (GDI) and diesel powertrains, for the passenger, truck and off-highway heavy-duty markets. It also supplies calibration equipment.

These systems are developed with each application in mind and tailored to individual customer requirements. Every system is tested thoroughly and a support service is provided once a product is delivered. Peter Kaub, president of Re-Sol, says, "Customers don't just want a box full of components – an off-the-shelf item – but a solution that fits the application."

Re-Sol will be on hand to discuss potential projects at the upcoming Automotive Testing Expo North America, along with its latest products including the new mobile GDI pump system (more details available in the *Products and Services* section on page 158).

In the gasoline and ethanol segment, solutions are optimized for applications where fuel is not being returned back to the fuel tank. "In these cases, the system can be optimized for fast responses and extremely low flow rates," explains Kaub.

"We have also recently built add-on systems for supplying engines with 350 bar of fuel pressure. Future systems will exceed



that pressure by far. These are needed in R&D when testing single-cylinder engines." For testing diesel drivetrains, Re-Sol tailors its systems to the needs of small engines found mostly in Europe, and for the needs of heavy-duty diesel engines. "For this purpose, we have developed mobile systems and also stationary wall-mounted systems," Kaub reports.

A number of different sensors can be used to measure fuel flow, with choice typically driven by budget and application.

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Re-Sol's measurement tools can be used to test with a variety of fuels, from pure gasoline to alcohol-based fuels or diesel and military fuels.

According to Kaub, two main types of design configuration for a fuel consumption measurement system have been widely

However, a key aspect in obtaining accurate fuel consumption test data relates not only to the sensor used, but the processing of the data, according to Kaub. Re-Sol puts a major emphasis on digital communication to eliminate the human error that arises when signal converters are scaled wrong. Kaub says, "We supply a variety of digital communication forms in order to connect to almost every test cell computer supplier."

A calibration lab completes the company's service offering. It is accredited according to the quality standard ISO9001 and also recently obtained ISO17025 accreditation. ◀