press release

KOLBENSCHMIDT PIERBURG

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Pierburg GmbH

Fit for the future with a compact EGR valve

The Euro 5 exhaust emissions standard has existed since 2009. The stricter Euro 6 norm will take effect in 2014. In order to fulfil these and future regulations Pierburg GmbH, Neuss, has various modules for exhaust gas recirculation (EGR) in its product range. New is an electromotive EGR valve that provides for continual reduction in the size of engine and vehicle installation space thanks to its very small and compact construction. It is especially suited for utilization in petrol and small diesel motors. The valve has attracted considerable interest from customers from the beginning and it will enter series production for its first vehicle application with a renowned OEM starting in 2013.

The effectiveness of exhaust gas recirculation is based on lowering the combustion temperature in diesel and petrol engines. The lowered temperature reduces the formation of nitric oxides. In the case of petrol engines, the de-throtteling of the engine when operating at partial load, allows a reduction of fuel consumption. The new compact exhaust gas recirculation valve will be operated via a gear-driven DC motor and comes equipped with a contactless Hall sensor for valve position recognition. Depending on customer requirements, it may also feature electromagnetic insulation or an integrated water cooling system. It will be available as a stand-alone solution, plug-in or as a fully integrated module.

A well-thought-out comprehensive system

The EGR valve consists of a temperature-resistant, partially cooled actuator and a valve unit which is connected with the actuator via a coupled valve rod. This design promotes a thermal decoupling that is indispensable given the high exhaust temperatures. As with the current valve generation, the perpendicular alignment of the valve axis relative to the actuator axis constitutes a favourable solution with regard to the package requirements on the engine and/or in the vehicle, which especially is made possible through the new compact actuator concept.

With regard to construction materials, the high thermal, mechanical and chemical stresses require the use of highly heat and corrosion-resistant steels. Functional aspects such as low pressure losses and good controllability – especially at small flowrates – are furthermore among the basic requirements for this valve.

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