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Rheinmetall receives order from American carmaker: New kind of coolant valve goes into series production

The automotive sector of the Düsseldorf-based Rheinmetall Group has booked its first order for a special application of coolant valves. Placed by a major American carmaker and destined for the NAFTA market, the order has a lifetime value of over US\$25 million.

Series production of the valves is scheduled to start in 2019, with the contract set to run for about five years.

The innovative valves play a lead role in intelligent thermal and energy management on modern vehicle engines. These often have several cooling circuits which are controllable with the aid of switching seat valves. As from model year 2020, this particular customer will be installing several versions of such valves on gasoline and diesel engines for pick-ups with over 6 liters displacement. They will take over functions in the cooling circuit of the transmission, ensuring that it reaches operating temperature faster by switching off the coolant flow when the engine is started. This also helps to reduce emissions.

Energy management supply and demand

While many engine components now need extra power, the amount of available energy in the engine is declining. A case in point: the amount of heat generated by direct-injection engines and by electric motors is quite moderate. Assuring an adequate degree of heating and cooling comfort at all ambient temperatures requires supplementary measures.

Another factor is that on many of today's high power density engines, there are numerous components and systems—electronics, charge air, exhaust gas recirculation, battery—all with extra cooling requirements. To enable intelligent control of all these cooling circuits, Rheinmetall Automotive has developed state-of-the-art valves that switch the coolant circuits on or off. The aim is to cool the components according to their needs and to heat others when the engine starts, with the ultimate objective of reducing friction as well as CO₂ emissions.