

Electrical-Electronic Actuators

Pressure already exists to provide solutions compatible with the evolution of turbocharger technology towards even more precise control and feedback systems. It is in this context that Helical is already actively engaged in the development of electrical actuators. The challenge is to make electrical actuators as robust as pneumatic ones, and able to withstand the same extreme conditions of high and low temperatures and vibration.

Modern diesel engines electronically control the amount of fuel injected into the cylinders, therefore it would be advantageous to control electronically the supply of air also.

The addition of a Helical Rotary Electrical Actuator (REA) to a variable geometry turbocharger means that the vehicle's ECU will be able to accurately control the amount of air entering the cylinders via the REA's advanced on-board CAN Bus electronics and high-torque motor and gearbox arrangement. There is also the added benefit of faster response times when compared to a conventional pneumatic Actuator.

The Helical REA has been developed to withstand the extremely harsh environment found "under bonnet" e.g. temperature resistance up to 180°C, vibration test resistance to automotive requirements (varies by customer) and moisture/corrosion resistance in accordance with ASTM B117 salt spray tests.