

Fuel Pump Optimization - Rotary Torque Torque

Industry: Industrial Automation

Summary

Customer Need / Challenge

A nationally renowned race team was using a flow bench to measure fuel pump performance. They wanted to determine if they could reduce the power consumption of the pump by further analyzing the precise torque it produced.

Interface Solution

An Interface Model T25 High Speed Rotary Torque Transducer was integrated into the pump drive to directly measure the torque required to spin the pump.

Results

Using this data collected from the T25 in conjunction with the pressure and volume measurements of the fuel flow, the race team was able to characterize fuel pump performance vs. drive line torque, and then minimize the required drive power while maintaining the needed pressure and flow for efficient fuel delivery.

Materials

- T25 Rotary Torque Transducer with USB logging and graphing option.
- Interface Shaft Style Torque Transducer Couplings.

How It Works

1. The electric motor spins the fuel pump.
2. The Model T25 Rotary Torque Transducer measures the torque required to spin the pump.
3. The Data feeds to the PC Software for analysis. The software displays Torque, RPM & Horsepower.
4. Flow bench measures pressure and volume of fuel flow.
5. The Fuel pump is tuned to minimize required drive power while maintaining the required pressure and flow for proper fuel delivery.

