Engine Supercharger Power Consumption

Industry: Automotive

Summary

Customer Need/Challenge

- A customer needed to measure the crankshaft power required to spin a supercharger installed on a gas vehicle engine.
- The sensor had to able to survive the large radial force imparted by the belt tension.

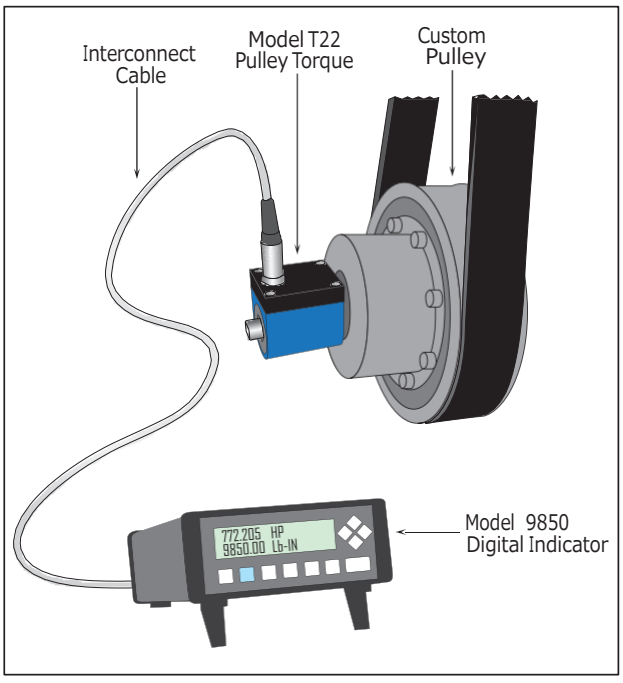
Interface Solution

- A Model T22 Pulley Torque Transducer was installed on the engine crankshaft to measure the engine power required to turn the supercharger drive belt.
- A Model 9850 Digital Indicator was utilized to collect the data from the torque transducer.

Results

- The customer was able to accurately measure the exact power consumed by the super-charger and use the data to complete an efficiency budget analysis.
- They then made adjustments to optimize the efficiency of the supercharger.

Sketch



Materials

Interface Products

- Model T22 - Pulley Torque Transducer 500 Nm Range
- Model 9850 Digital Indicator
- Interconnect Cable

Additional Materials

- Custom pulley to mount to sensor

Other Possible Configurations

- Model T22 can also be mounted on to the super-charger input shaft.

How It Works

1) Customer pulley is manufactured to replace the existing crank pulley, but with a thru-hole and bolt pattern to mount to the Model T22 Pulley Torque Transducer flange.
2) Model T22 Pulley Torque Transducer is installed on to the engine crank shaft on the front of the engine in place of a normal pulley.
3) Model T22 Pulley Torque measures the torque required to spin the supercharger.
4) Data feeds to the Model 9850 Digital Indicator.
5) Customer uses the data to complete all efficiency budget analysis.
6) Adjustments are made to optimize the efficiency of the supercharger.

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Interface Force Measurements Ltd. • Unit 19 Wellington Business Pk, Dukes Ride, Crowthorne, Berkshire RG45 6LS UK •Phone: +44 (0)1344 776666 • Fax: +44(0)1344 774765• E-mail Info@interface.uk.com• www.interfaceforce.com •