KAMAN APPLICATION NOTE

Engine Dynamics

GOAL

Engine manufacturers continue to improve the quality, durability, and economy of the internal combustion engine. To accomplish their goals, they rely on sensor technologies that provide:

High resolution
High frequency response
High reliability

.....all in an extremely harsh environment!

SOLUTIONS

KD-2306
KD-2446
KDM-8206
EXTREME ENVIRONMENT SENSORS

Non-contact displacement sensors based on proven eddy current, balanced bridge technology handle this well. With a wide selection of standard and application-specific models to choose from, rugged and reliable, high-performance eddy current sensors are the ideal solution for demanding engine dynamics applications.

THE KAMAN ADVANTAGE

With over 40 years of design, development, and application of eddy current technology, there is very little that is new to Kaman Precision Products. Engine dynamics testing has been a continuing area of application for Kaman's displacement sensors, that offer:

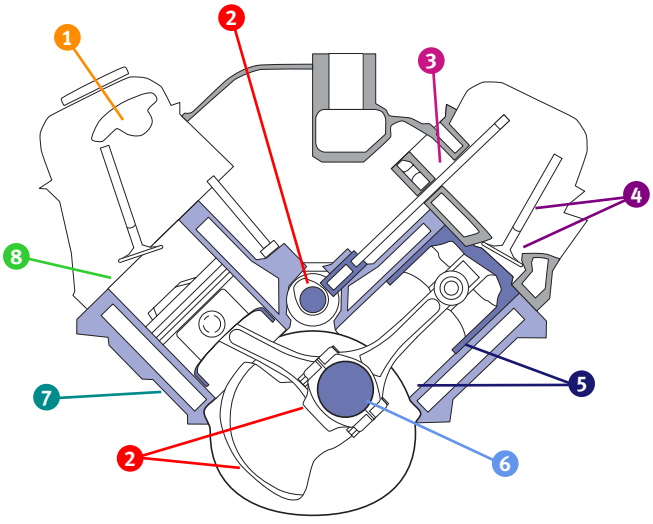
Rugged reliable technology. Operating temperatures to 1000 °F, pressures to 20,000 psi.

Eddy current technology. Performance unaffected by environment: grease, oil, water, dirt, grime, radiation, humidity, etc.

High-performance output. Submicron resolution, frequency response to 120 KHz, thermal stability to 0.02%.

Custom solutions. Tell us what you need, and we will do our best to meet performance/price goals.

Figure 1. Kaman's eddy current sensors measure engine dynamics to 50 KHz at up to 1000 °F with better than 1 micron accuracy.



1. *Rocker arm movement / lifter leakdown*
2. *Axial camshaft / crankshaft run-out / balancing*
3. *Pushrod deflection*
4. *Valve lift and valve float investigation*
5. *Piston slap and skirt clearance*
6. *Static bearing clearance on crank journal*
7. *Engine mount deflection*
8. *Dynamic/head gasket clearance*
9. *Fuel injection needle lift (not shown)*
10. *Turbo shaft runout (not shown)*

Every application is unique.
Contact Kaman for application engineering assistance.

800-552-6267 | kamansensors.com | measuring@kaman.com

KAMAN PRECISION PRODUCTS