

# Fundamentals of cylinder pressure measurement

## Seminar description

Cylinder pressure indication is an integral part of the engine development process, making it possible to analyze the combustion process and, in conjunction with low-pressure measurement technology, gas exchange and improve an engine's efficiency and performance. Achieving a better understanding of the complex workings of an engine requires a basic understanding of how to use the entire measuring chain and of the options available for analyzing measurement data. This seminar teaches basic knowledge of cylinder pressure indication and serves as a refresher for participants' existing knowledge.

## Seminar content

- Principle of crank angle-based cylinder pressure measurement and its significance for engine development
- Knowledge of the required components: pressure sensor, amplifier, crank angle encoder, indicating system
- Basic data acquisition terminology: crank angle resolution, sampling rate, memory, number of channels
- Methods for determining the zero line and top dead center
- Interfaces to systems on the test bench and in the vehicle
- Characteristics of the pressure curve and simplified thermodynamic analysis
- Potential measuring errors and their influence on results variables

## Goal

Participants will become familiar with the components and operation of the indication measuring chain, the relationship between pressure and volume in a cylinder and the essential parameters of an indication analysis.

## Target group

Employees in Testing and R&D departments

## Prerequisite for participation

None

## Duration

1/2 day

9:00 a.m.–1:30 p.m.

## Seminar number

9966B11-6-1-2

This seminar can also be held on-site at your company upon request. Please inquire about dates and cost.

## Register at:

[training.de@kistler.com](mailto:training.de@kistler.com)