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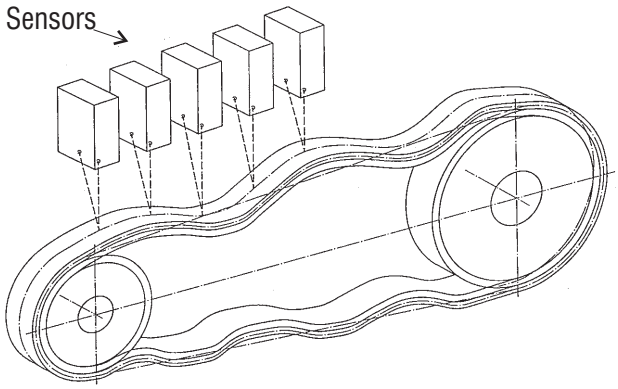
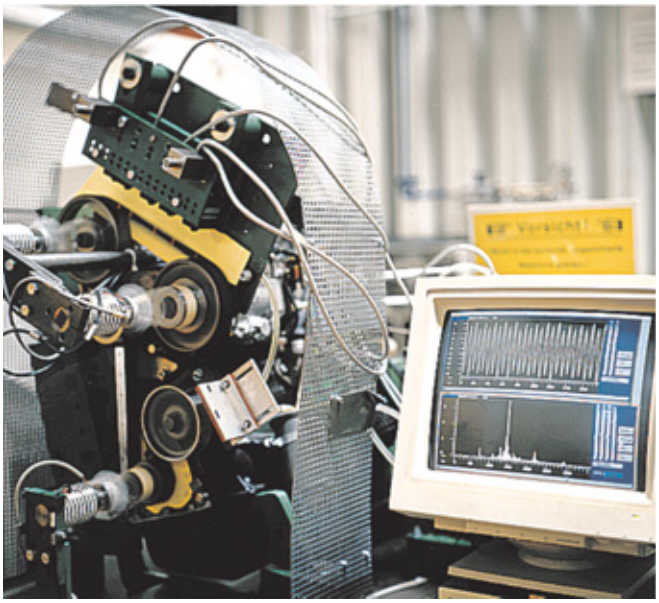
Examination of the oscillation behaviour of toothed-belt camshaft drives

To examine the influence of various system and operating parameters on the dynamic behaviour of multi-disk drives a belt oscillation test bench has been set up which simulates the toothed-belt drive system of a direct injection motor vehicle diesel engine. The periodically fluctuating shaft torques generate rotary oscillations in the toothed-belt drive, which lead to transverse belt oscillation. Five laser optical position measuring systems are arranged closely side by side, so that oscillations of higher order can also be measured safely.





Technical details

- Measuring range: ± 5 mm
- Accuracy: ± 0,1 mm
- Resolution: ± 0,02 mm
- Band width: 0 - 1 kHz
- Dimensions: sensor width ≤ 25 mm
- Object: black belt (india rubber)

Ambient conditions

- Temperature: 10 - 40 °C
- Medium: air

System configuration optoNCDT

5 x LD1605-10 optical displacement sensor
2 x PS1605 power supply
5 x PC1605-3 cable
Personal computer with customer-specific software

Reasons for choosing the system

- Non-contacting
- Reliable and accurate
- On-wearing
- Small sensor designs
- Small light spot diameters
- Large basic distances to the measuring object

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