

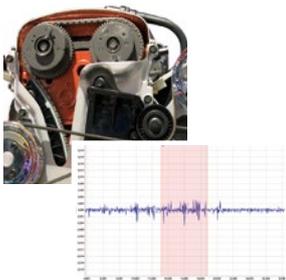
PRODUCT

# cyberScan CT R200

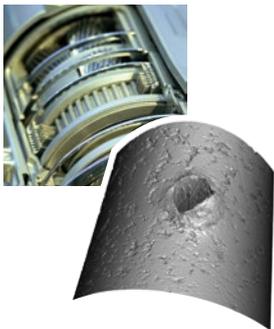
- HIGH-SPEED SURFACE MEASUREMENT ON ROUND PARTS
- FOR DIAMETERS FROM 5 MM TO 200 MM
- USER FRIENDLY CONCEPT
- SOPHISTICATED ANALYSIS AND AUTOMATION SOFTWARE



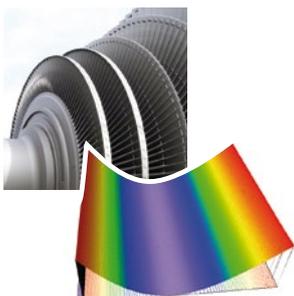
Roughness measurement on an engine part



Defect on a transmission shaft



Diameter of a turbine part



## OVERVIEW

The CT R200 is a non-contact profilometer with a rotary stage, a 200 mm x-axis, and an automated z-axis. Round parts are placed on the rotary stage, the x- and the z-axis move the sensor close to the surface of interest. Then the autofocus routine positions the sensor in the optimal distance to the surface. The sample starts rotating and the system collects a highly accurate profile along the entire diameter. Using the automated x- and z- axis, different diameters on the same part can be scanned.

A confocal sensor of 10 nm height resolution at a measurement range of 300 microns is mounted on the closed loop x-axis and measures with a data rate of 14 kHz. One scan of a 100 mm diameter with a lateral resolution of 5 microns lasts 7 seconds.

In case the roundness of the part exceeds the range of the sensor, the x-axis adjusts the distance to the part automatically in real time during the scanning process. The height reading is a combination of the calibrated x-axis signal and the sensor height readout.

## APPLICATIONS

The CT R200 was originally designed for measuring precision rotationally symmetrical parts with critical dimensions and properties on surfaces of inner and outer diameters. Using angled optics the sensor can measure inner surfaces down to a diameter of 35 mm. The system detects surface defects like scratches and measures technical surface parameter like roughness as well as diameter and roundness. Typical analyses are

- Rmax, Rv (depth of a scratch)
- Ra, Rz, Rp, etc.
- Diameter
- Roundness

The system is used to measure and control surface parameters on precision parts for gear boxes, transmission systems or any other components that require highly accurate measurement and inspection. Due to the fast cycle time the system can be fully integrated into the production process. Dedicated interfaces allow the integration of an automated handling system.

## SOFTWARE

The proprietary cyberTECHNOLOGIES, Windows based software package SCAN SUITE combines system control, data collection and data analysis in a user friendly interface. Comprehensive profile and roughness analyses conforming to DIN ISO are included. All important surface parameters as well as roundness and diameter are measured automatically and the results can be combined with user defined input fields or barcode input and are stored in a database.

## TECHNOLOGY

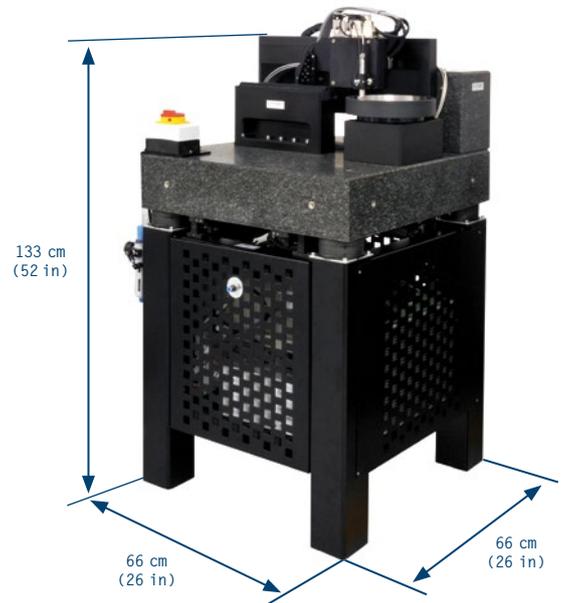
- Fast and accurate 3-axis scanning system for round parts
- Measurement speed: 14 kHz
- Precision rotary stage with torque motor and 0.0001° resolution
- Magnetic linear motor with 200 mm travel in x, lateral resolution 50 nm
- closed loop control and autofocus function
- 50 mm motorized z-axis, resolution 1 µm
- Inner diameter from 35 mm to 200 mm
- Outer diameter from 5 mm to 190 mm
- Chromatic white light sensor
- Resolution 10 nm

## SYSTEM INCLUDES

- CT R200 base unit with motorized x-, z- and rotary stage
- One angled CHR-300 sensor (see sensor specifications)
- Granite base with vibration isolated floor stand and integrated electronic panel
- PC Workstation (current version)
- Factory installed Windows XP
- cyberTECHNOLOGIES SCAN SUITE license
- 22" widescreen monitor, keyboard, mouse
- Reference manuals and user guides

## OPTIONS

- Extended x- and z-axis travel for larger parts
- Traceable calibration tools and certification targets



## SPECIFICATIONS

DIMENSIONS  
(L X W X H)

660 x 660 x 1330 [mm]  
(26 x 26 x 52 [in])

WEIGHT

250 kg (550 lbs)

SYSTEM CONTROLLER

Includes Motion Control,  
Sensor Controller (14 kHz), Power Supplies,  
USB Interface to Workstation

WORKSTATION PC

Inquire about current specification,  
22" widescreen monitor

CONNECTIONS

Ethernet, DVD Drive, USB (front and back side),  
Parallel Port, Keyboard, Mouse, DVI and Analog  
Video Output

POWER REQUIREMENTS

100-240 V AC, 50-60 Hz, 2.0 amps (240 V), 5 amps (100 V)

OPERATING TEMPERATURE

20°C (68 F)

LINEAR ENCODER RESOLUTION

x: 50 nm, z: 100 nm, phi: 0.0001°

MINIMUM LATERAL RESOLUTION

1 micron

TRAVEL LIMIT IN X

260 mm (10.2 in)

TRAVEL LIMIT IN Z

50 mm (2 in)

MAXIMUM LOAD ON PLATFORM

10 kg

AVAILABLE SENSORS

Confocal White Light Sensors