

# SURFCOM NEX

One system, every possibility:  
surface, contour or both?

All SURFCOM NEX machines in the 001 to 141 series use the same base column. Only the sensors are different. By purchasing a sensor, you can turn your surface measuring instrument into a contour measuring system – or vice versa. Furthermore, additional sensors can be retrofitted, e.g. a hybrid sensor or a white light sensor.



## Benefits

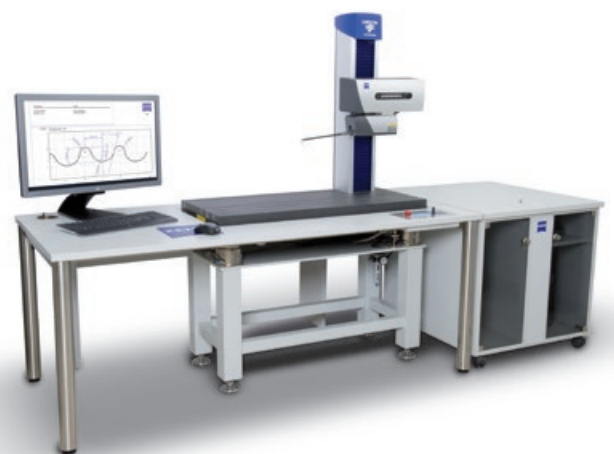
- Future-proof modular system, can be upgraded on site
- Considerably faster, less maintenance and fewer vibrations than standard system designs thanks to the patented non-contact linear drive in the X axis
- Topography measurements up to seven times faster than systems with a spindle drive
- Can be used with numerous sensors: surface, contour, hybrid or white light sensors
- Topography function or lead twist measurement function can be quickly upgraded on site
- Optional rotation tracing driver for standards-compliant effective surface measurement on rotationally symmetric features
- Optional hand wheel to turn the tracing driver  $\pm 15^\circ$
- Can be upgraded through a combined CNC modular system: Y table, horizontal rotary table, vertical rotary table (see p. 32)
- Various furniture solutions for SD versions and fully enclosed DX versions or compact FX versions with integrated active vibration damping and a minimal footprint



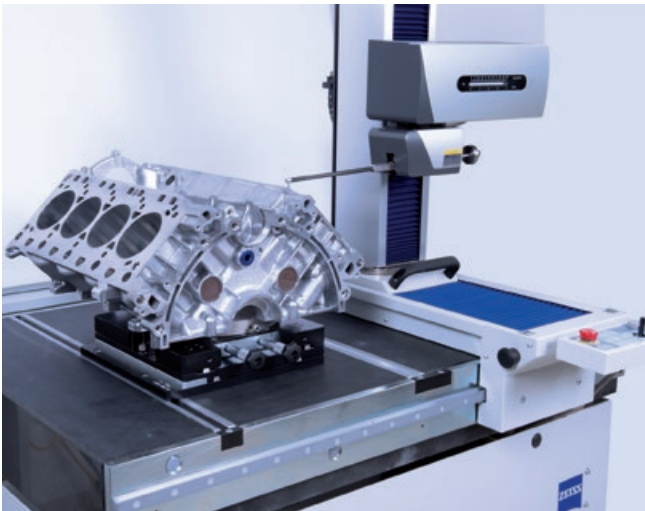
*FX version: a compact and active vibration-damping base*



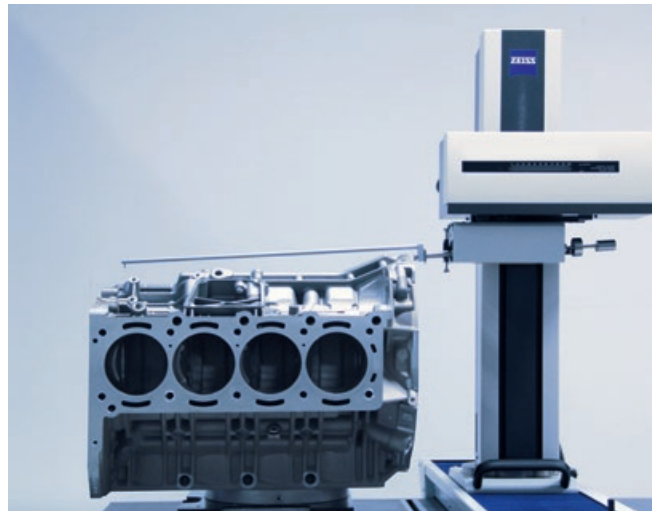
*DX version: measuring machine, including fully enclosed, active vibration-damping furniture*



*SD version: various furniture solutions available upon request*



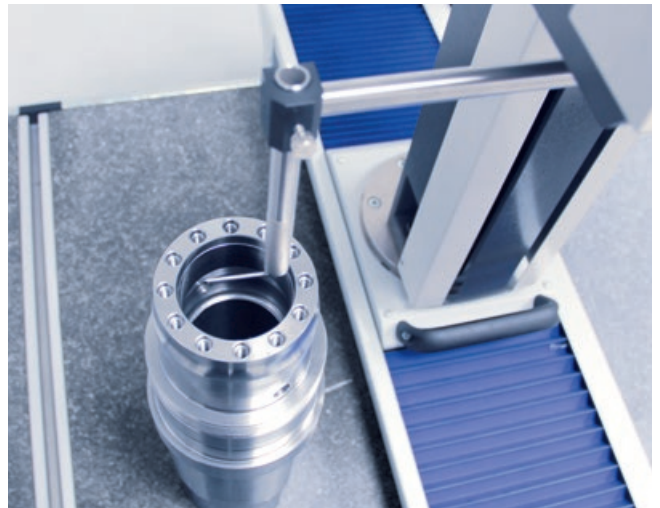
Tailored solutions, such as the XY positioning table, available upon request



Long standard styli (529 mm) for simple contour measurements on deep features



Optional rotating tracing driver for standards-compliant inspection of rotationally symmetrical workpieces



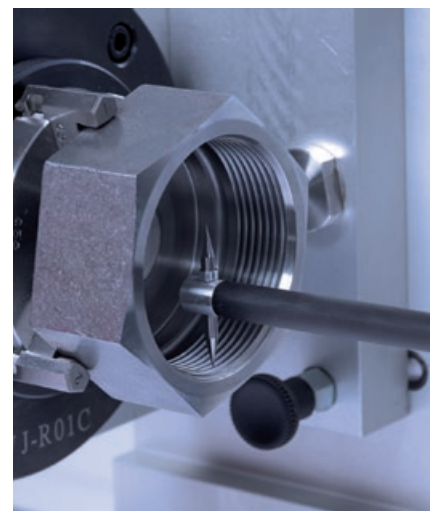
Surface measurements on plane surfaces, even with very deep features



Optional: hand wheel for turning the tracing driver up to  $\pm 15^\circ$

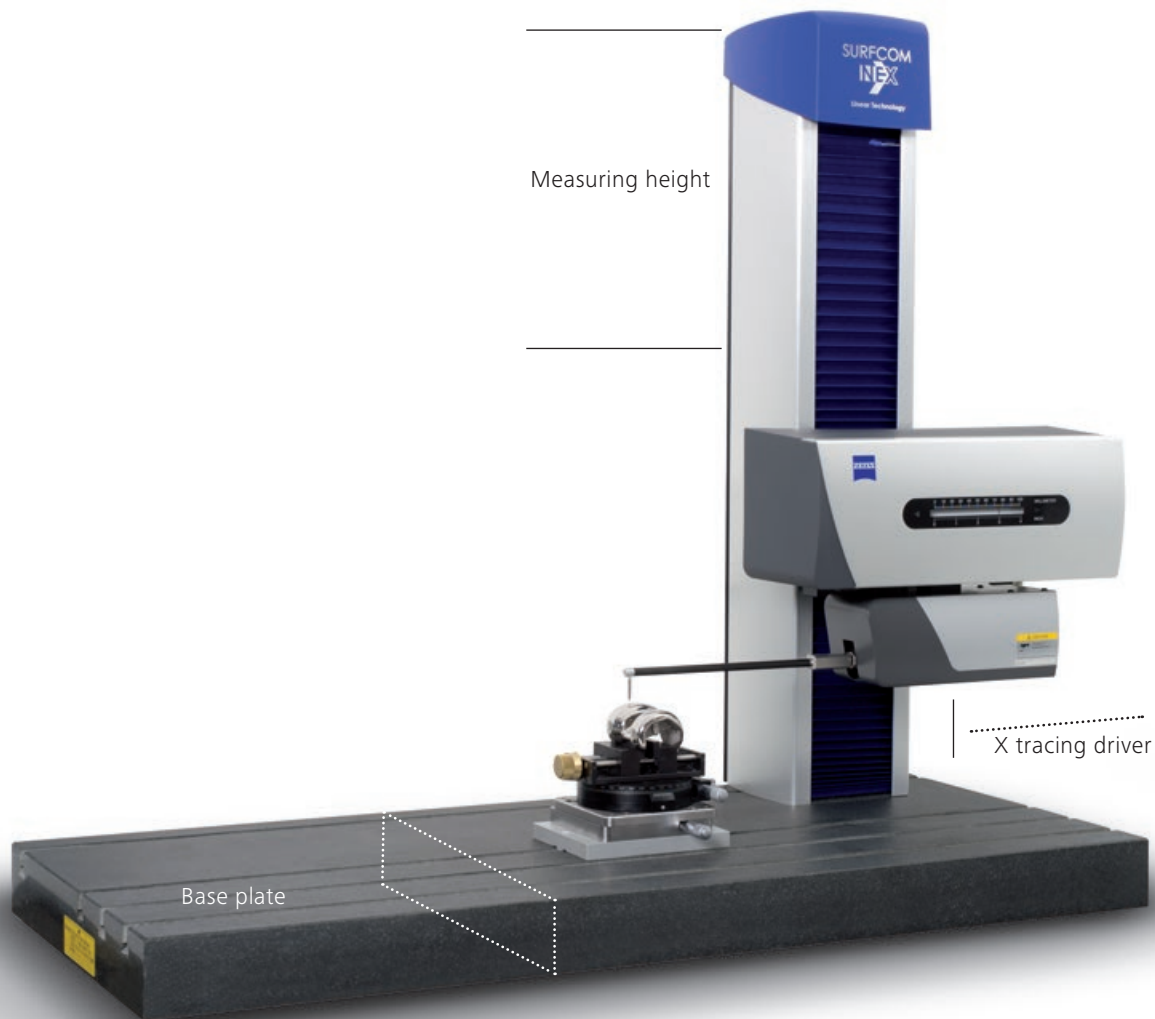


Magnet fixture for precise positioning and quickly changing the sensing arm



Optional T stylus for simple diameter and wall thickness measurements

# Size variations



## Sizes

<b>X tracing driver</b>	100 or 200 mm
<b>Measuring height</b>	250, 450 or 650 mm
<b>Base plate</b>	600 x 450 mm or 1,000 x 450 mm

## Size nomenclature

- 1\_ X tracing driver 100 mm
- 2\_ X tracing driver 200 mm
- \_2 Z measuring height: 250 mm, Base plate: 600 x 450 mm
- \_3 Z measuring height: 450 mm, Base plate: 600 x 450 mm
- \_4 Z measuring height: 450 mm, Base plate: 1,000 x 450 mm
- \_5 Z measuring height: 650 mm, Base plate: 1,000 x 450 mm

e. g. SURFCOM NEX 001-SD-**23**:

200 mm X tracing driver, 450 mm measuring height, 600 x 450 mm base plate

# SURFCOM NEX modular system

The measuring task determines the sensor

In order to be able to optimally meet your particular needs, the SURFCOM NEX system offers different sensors which can be combined with each other.

## Roughness



*SURFCOM NEX 001*

## Roughness



*White light sensor*

## Contour



*SURFCOM NEX 040*

## Contour



*SURFCOM NEX 030*

## Roughness and contour



*SURFCOM NEX 100*

## Sensor nomenclature

- \_ \_1** Surface
- 1\_ \_** Hybrid
- \_3\_** Contour
- \_4\_** Contour with increased precision and automatic probing force

# An overview of the SURFCOM NEX system



## Optional for all systems

- Expandable sensors: surface, hybrid, contour
- Topography and lead twist measurement function can be quickly upgraded on site
- Optional rotating tracing driver
- Hand wheel for turning the tracing driver (up to  $\pm 15^\circ$ )
- CNC module for automation
- Different furniture solutions



## White light sensor

Quick optical surface measurement

### Sensors

- Chromatic interferometric surface sensor

### Technical data summary

#### Resolution

10  $\mu\text{m}$

#### Measuring accuracy

0.1  $\mu\text{m}$

#### Working distance

4.5 mm

#### Measurement angle to object surface

$90^\circ \pm 30^\circ$

#### Measuring spot diameter

5  $\mu\text{m}$



## SURFCOM NEX 001

Convenient measuring station for surface measurements

### Sensors

- Surface sensor

### Technical data summary

#### Resolution

0.1 nm at 6.4  $\mu\text{m}$  range  
20 nm at 1,000  $\mu\text{m}$  range

#### Straightness error

0.15  $\mu\text{m}$  with 100 mm measuring path

#### Traversing length/resolution

0.016  $\mu\text{m}$

#### Measuring speed

up to 20 mm/s

#### Positioning speed

up to 60 mm/s



### SURFCOM NEX 100

Measure contours and roughness quickly and precisely in one measuring run

#### Sensors

- Highly accurate, wide-range dual probe for contour and surface measurements
- Measuring range up to 15 mm

#### Technical data summary

##### Resolution

1 nm with 0.05 mm measuring path  
100 nm with 5 mm measuring path

##### Straightness error

0.15  $\mu\text{m}$  with 100 mm measuring path

##### Z axis measuring error

$\pm(1.0 + 2H/100)$   $\mu\text{m}$

##### Traversing length/resolution

0.1  $\mu\text{m}$

##### Stylus deflection

5/10/15 mm

##### Measuring speed

up to 20 mm/s

##### Positioning speed

up to 60 mm/s



### SURFCOM NEX 030

A flexible CNC measuring station for easy contour measuring, collision protection comes standard

#### Sensors

- Contour sensor
- Easy to change sensing arms by using a magnetic change-out interface
- Manual probing force configuration

#### Technical data summary

##### Resolution

0.04  $\mu\text{m}$

##### Straightness error

1  $\mu\text{m}$  with 100 mm measuring path  
2  $\mu\text{m}$  with 200 mm measuring path

##### Z axis measuring error

$\pm(1.5 + 2H/100)$   $\mu\text{m}$

##### Traversing length/resolution

0.016  $\mu\text{m}$

##### Stylus deflection

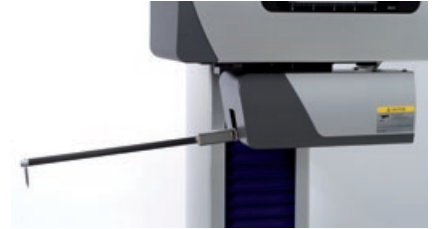
60.00 mm

##### Measuring speed

up to 20 mm/s

##### Positioning speed

up to 60 mm/s



### SURFCOM NEX 040

Flexible CNC measuring station for easy contour measurements with increased precision and automatic probing force configuration and collision protection comes standard.

#### Sensors

- Contour sensor
- Easy to change sensing arms by using a magnetic change-out interface
- Automatic probing force configuration in the range of 2 to 30 mN

#### Technical data summary

##### Resolution

0.02  $\mu\text{m}$

##### Straightness error

1  $\mu\text{m}$  with 100 mm measuring path  
2  $\mu\text{m}$  with 200 mm measuring path

##### Z axis measuring error

$\pm(0.8 + 2H/100)$   $\mu\text{m}$

##### Traversing length/resolution

0.016  $\mu\text{m}$

##### Stylus deflection

60.00 mm

##### Measuring speed

up to 20 mm/s

##### Positioning speed

up to 60 mm/s



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