



## **RONDCOM NEX Series**

R-NEX  $\alpha$  | Rs | Rs  $\alpha$

# RONDCOM NEX

## Functional Beauty

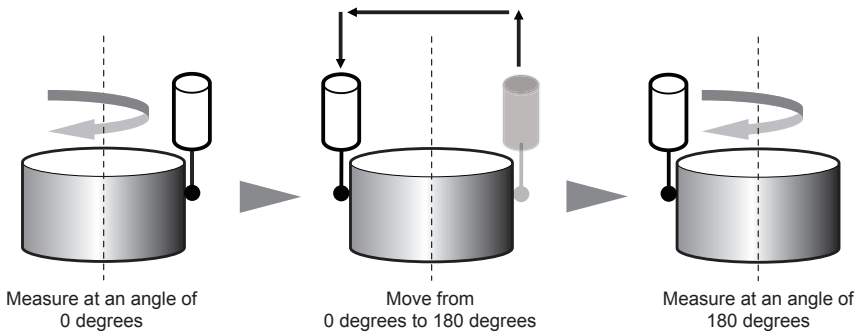
Its rotation accuracy of  $(0.02 + 3.2 H/10000) \mu\text{m}$ , the highest accuracy in this class, satisfies demand for highly accurate measurement of machined parts. It provides enhanced measurement functions for different types of workpieces, excellent maintainability, and an ergonomic design that combines beauty and usability.

The RONDCOM NEX series, the perfect combination of function and design, is advancing toward a new global standard.



## Diameter measurement function (Opposite Pair Method) **PATENTED**

Superior feature to measure inner/outer diameter with high repeatability. Measure a workpiece at angles of 0 and 180 degrees on the table. The evaluation algorithm implemented as the standard to correct the errors by temperature change and generatrix line shifting, performs highly precise diameter measurements.

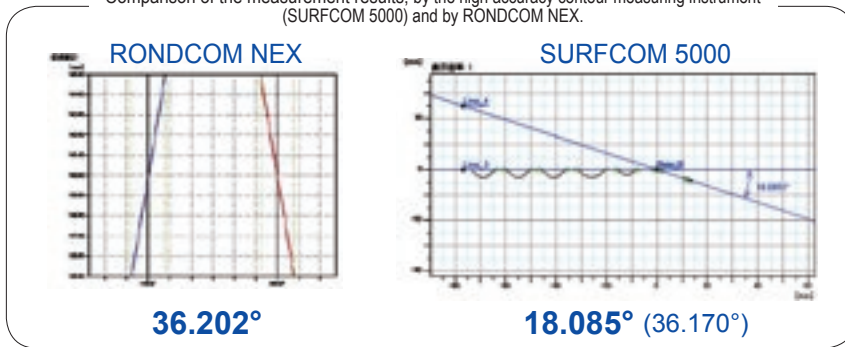


Example of the measurement

## R-axis taper following function\*

The straightness of the tapered surface can be measured by this function. Taper angle and straightness can be measured even if it exceeds the range of the detector.

Comparison of the measurement results, by the high accuracy contour measuring instrument (SURFCOM 5000) and by RONDCOM NEX.



\* Taper angle may have an impact on the accuracy of the straightness measurement. Contact us for details.



Example of the measurement

## Offset detector holder **PATENTED**

※ RONDCOM NEX  
100/200 system – manual detection



The offset-type detector holder is our unique mechanism that places the stylus at 80 mm from the center of the R-axis to prevent interference between the R-axis arm and the workpiece. This holder also has another advantage. Even when the conventional holder is pushed down, the direction of the detector does not change. Therefore, the detector has to be manually rotated 90 degrees when measurement switches between outer/inner diameters and upper/lower surfaces. But when this offset holder is pushed down, the detector simultaneously changes its direction 90 degrees without requiring manual rotation.

※ RONDCOM NEX  
300 system – CNC detection (see page 5)

## Upgradeable from Manual to CNC

The original footprint remains unchanged so there is no disruption to your workspace. So even when a manual machine has been installed because only a small number of workpieces need to be measured, you can upgrade it at any time as needed.

\* Except RONDCOM NEX Rs a series

### ● Conventional measuring instrument



### ● RONDCOM NEX 100 and NEX 200/300 series



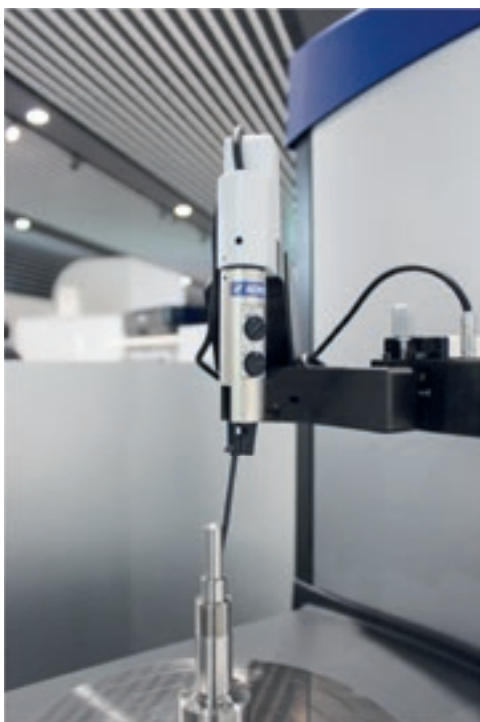
# RONDCOM NEX Rs

## Plays a dual role in roundness and surface texture measurements

RONDCOM NEX Rs is capable of performing cylindrical/roundness and surface texture measurements, eliminating the need for two separate machines.

It provides the highest rotation accuracy of  $(0.02 + 3.2H/10000)$   $\mu\text{m}$  in this class, which is critical to roundness and cylindrical form measurements. By simply changing to the surface texture measurement detector, it can perform surface texture measurement in the axis, radial and rotational directions along the applicable axis at high accuracy in accordance with ISO/JIS requirements.

The RONDCOM NEX Rs series is a next-generation measuring machine capable of performing very precise roundness/cylindrical form and surface texture measurements.



○  $\lambda$  ◎ ▯ ...



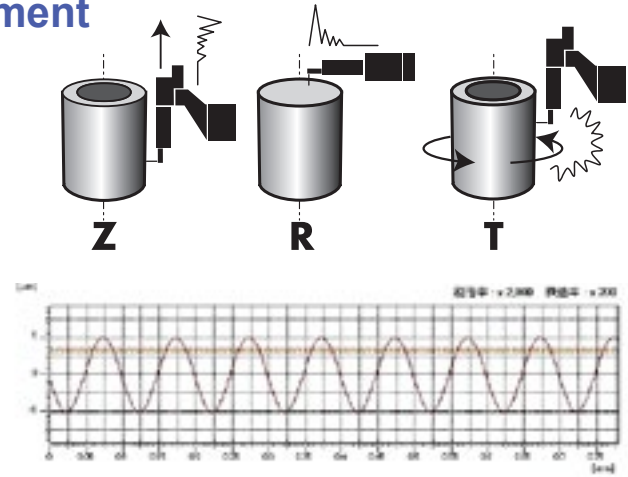
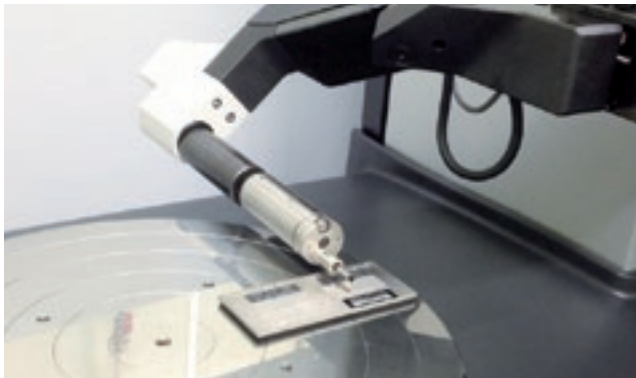
Ra, Rz, Rp, Rv ...

\*This image is an example of usage of the detector E-DT-R290A (optional item) designated for surface roughness measurement.



## High accuracy roughness measurement

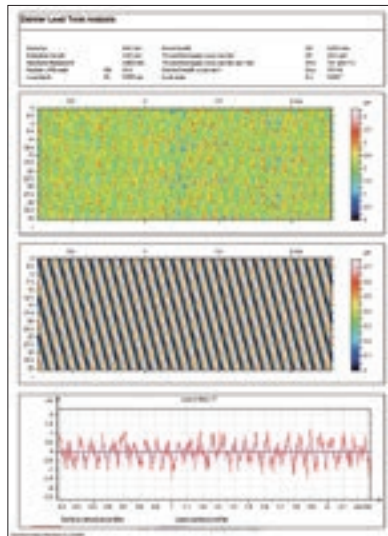
Achieve high accuracy roughness measurement in R-axis, T-axis and Z-axis. Ra ≥ 2.0 nm



(Measurement example)  
R-axis direct operated roughness measurement (roughness example)

## Lead twist measurement (Optional), following MBN 31007-7

Measure the periodic and fine twist structure of cylindrical shafts. An analysis is available by visualizing the twist structure.



\*3D profile analysis software SURFCOM MAP (Expert mode) will be attached.

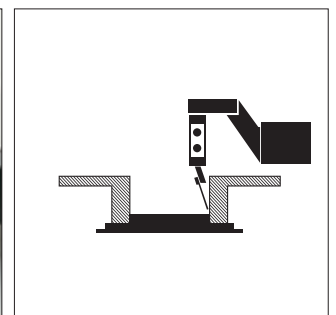
## Offset CNC detector holder **PATENTED**

\*RONDCOM NEX series common function  
Comes as standard with the 300 series

The offset-type detector holder, ACCRETECH unique mechanism, places the stylus at 80 mm from the center of the R-axis to prevent interference between the R-axis arm and the workpiece.

The CNC holder on the NEX series 300 system automatically controls detector attitude for inner/outer diameters, upper/lower and tapered surface measurements, significantly increasing measurement efficiency.

The detector is also compatible with the manual holder on the 100/200 system, meaning that customers with both the 100/200 and 300 series do not need an extra holder thus reducing maintenance costs.



# RONDCOM NEX $\alpha$ /NEX Rs $\alpha$

## Similar but different

While the RONDCOM NEX series maintains its beautiful design and functions and the highest accuracy of its class, this newly developed series also achieves a maximum loading mass of 60 kg as a result of a complete review of the platform design. It has expanded the range of workpieces that can be measured with the same accuracy and usability.

RONDCOM NEX and RONDCOM NEX Rs look similar but there are differences. The latter is specifically designed to measure heavy workpieces with high accuracy.



## Maximum loading mass 60 kg

The highest NEX series model for eccentric and heavy workpieces



An example of measuring a crankshaft using an exclusive jig tool



## Perfect balance of heavy workpiece measurement and high accuracy

The platform, including the base and air spindle structure, was thoroughly reviewed to achieve a maximum loading mass of 60 kg while guaranteeing the high accuracy of the NEX series. It provides the world highest accuracy in this class. By combining the high column specification for long workpieces, the range of workpieces that can be measured has been significantly expanded. RONDCOM NEX and RONDCOM NEX Rs  $\alpha$  look similar but are actually different. This new model provides both heavy item measurement and high accuracy perfectly.

## Equipped with a newly developed small highly rigid low-vibration spindle

This  $\alpha$  series is equipped with a newly developed small highly rigid low-vibration air spindle. The conventional NEX series uses an air pressure of 0.3 MPa, while this  $\alpha$  series uses 0.4 MPa. An increase in working pressure usually increases the vibration of the table, which may affect accuracy. But the application of the unique low-vibration air bearing technology we have developed for the NEX Rs air spindle has enabled this average-sized roundness measuring machine to be loaded with heavy workpieces.

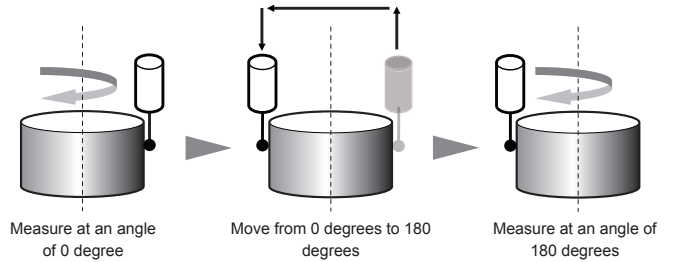
# RONDCOM NEX series common functions

## Diagonal diameter measuring function **PATENTED**

Superior feature to measure inner/outer diameter with high repeatability. Measure a workpiece at angles of 0 and 180 degrees on the table. The evaluation algorithm implemented as standard to correct the errors by temperature change and generatrix line shifting, performs highly precise diameter measurements.



Example of the measurement



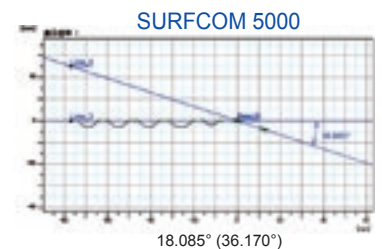
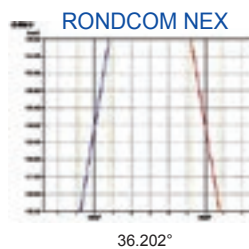
## R-axis tracking roundness/taper angle measurement function\*

The tapered surface can be measured by this function. Taper angle and straightness can be measured even if it exceeds the range of the detector.

\* Taper angle may have an impact on the accuracy of the straightness measurement. Contact us for details.



Example of the measurement



### Automatic lubrication system mounted on Z-axis column

Almost maintenance-free due to automatic lubrication of the column.

### Weight-saving and high rigidity due to ceramic R-axis arm

The linear expansion coefficient of ceramic is smaller and weighs half as much as iron but the material is harder. Its weight is reduced but the rigidity is higher and additionally, it is hardly affected by changes in environmental temperature.

### Fully covered main body and column

Minimizes effect of disturbance from air-conditioner and other factors due to functional design.

### Equipped with optical linear scale in Z-axis column

When measuring using the tilt adjusting function, it is not necessary to set up the measuring height.

### ACCTee Integrated Analysis Software

Innovative approach to measurement with new concept. All-in-one software for measurement and analysis based on electronic form system.

### Rustproof SUS table

Using SUS for the table ensures that it is rust resistant. Oil coating is not needed, Maintenance-free.

### Extension of centering stroke

Extend the centering stroke to  $\pm 5$  mm by extending the table diameter to  $\Phi 235$  mm.

### Spiral cylindricity measuring function

Spiral cylindricity measurement by combining table rotation with rectilinear movement. Z positioning is not needed, which saves 30% of cylindricity measurement time compared to conventional measuring instruments.



RONDCOM NEX DX model

### Storage area for PC

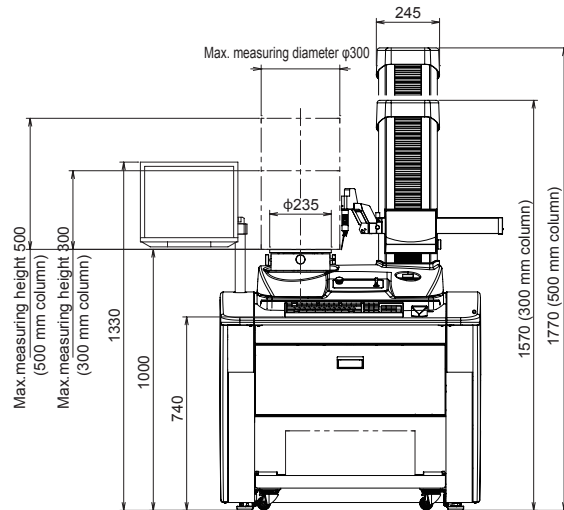
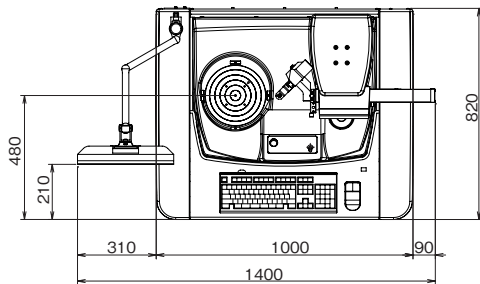
### Printer

with drawer mechanism.

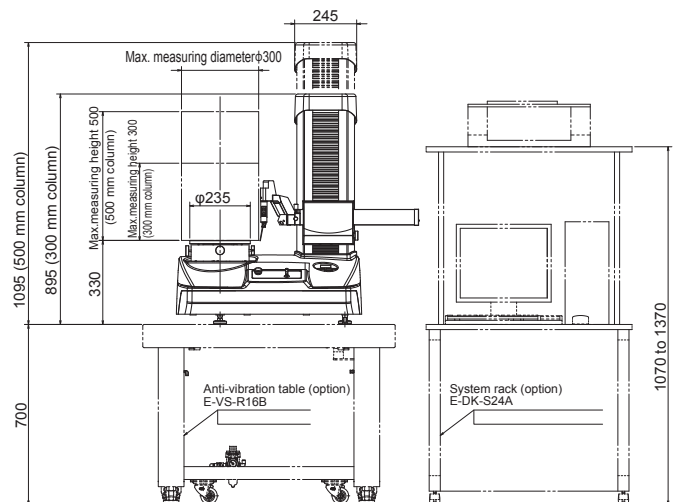
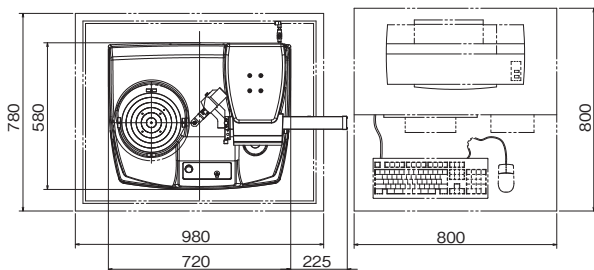


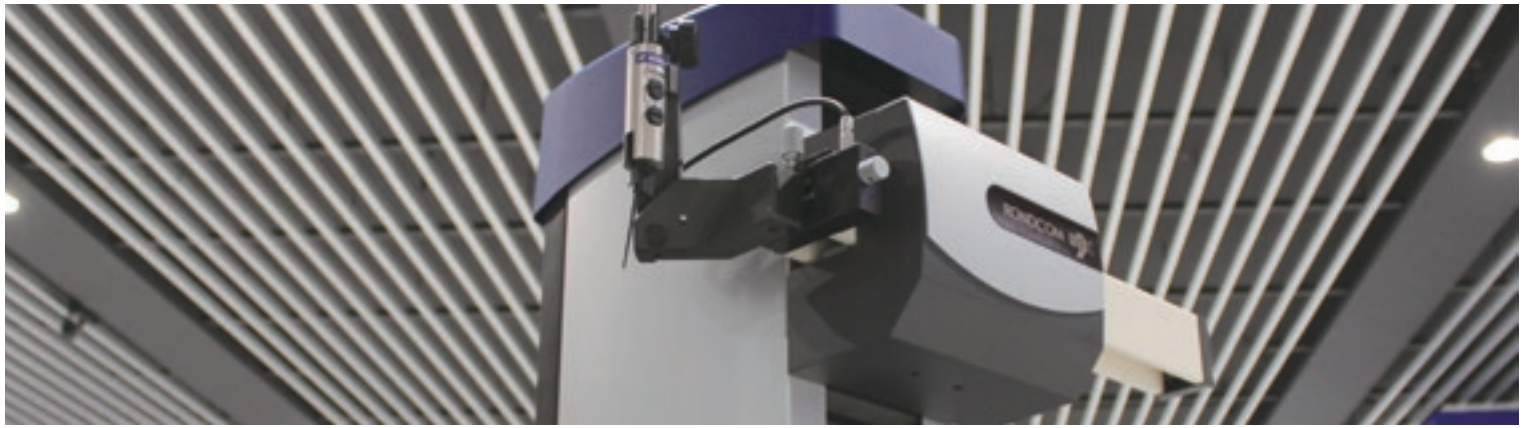
# External view (RONDCOM NEX series)

## DX model



## SD model





## RONDCOM NEX/RONDCOM NEX α Specifications

### Hardware

| Item                      |  | Model  | RONDCOM NEX (-11, -12)<br>RONDCOM NEX α (-21, -22)  |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|--|--|---|------|------|------|------|------|------|------|------|------|------|------|
|                           |  |  | 100   |      |      |      | 200  |      |      |      | 300  |      |      |      |
|                           |  |  | SD  |      | DX   |      | SD   |      | DX   |      | SD   |      | DX   |      |
| Model <sup>*1</sup>       |  |  | 11  | 12   | 11   | 12   | 11   | 12   | 11   | 12   | 11   | 12   | 11   | 12   |
|                           |  |  | 21  | 22   | 21   | 22   | 21   | 22   | 21   | 22   | 21   | 22   | 21   | 22   |
| Alignment                 |  |  | Manual  |      |      |      | CNC  |      |      |      |      |      |      |      |
| Offset detector holder    |  |  | Manual  |      |      |      |      |      | CNC  |      |      |      |      |      |
| Measuring range           |  | Max. measuring diameter (mm)   | Φ 300 (outer diameter)<br>Φ 360 (inner diameter)  |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Radial feed range (R-axis) (mm)  | 180   |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Up/down feed range (Z-axis) (mm)   | 300   | 500  | 300  | 500  | 300  | 500  | 300  | 500  | 300  | 500  | 300  | 500  |
|                           |  | Max. loading diameter (mm)   | Φ 580   |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Max. measuring height (mm)   | 300   | 500  | 300  | 500  | 300  | 500  | 300  | 500  | 300  | 500  | 300  | 500  |
|                           |  | Depth of measurement (mm)  | 150 <sup>*2</sup>   |      |      |      |      |      |      |      |      |      |      |      |
| Accuracy                  | Rotation accuracy <sup>*3</sup>            | Radial direction (μm)  | (0.02 + 3.2H/10000)   |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Axis direction (μm)  | (0.02 + 3.2R/10000)   |      |      |      |      |      |      |      |      |      |      |      |
|                           | Straightness accuracy                      | Up/down direction (Z-axis) (μm/mm)   | 0.15  | 0.23 | 0.15 | 0.23 | 0.15 | 0.23 | 0.15 | 0.23 | 0.15 | 0.23 | 0.15 | 0.23 |
|                           |  | Radial direction (R-axis) (μm/mm)  | 0.10/100  |      |      |      |      |      |      |      |      |      |      |      |
|                           | Parallelism accuracy                       | Z-axis/T-axis (μm/mm)  | 0.7   | 1.0  | 0.7  | 1.0  | 0.7  | 1.0  | 0.7  | 1.0  | 0.7  | 1.0  | 0.7  | 1.0  |
|                           | Squareness accuracy                        | R-axis/T-axis (μm/mm)  | 1.0/150   |      |      |      |      |      |      |      |      |      |      |      |
| Scale indication accuracy | R-axis (μm)                                | (0.5 + L/180 + 2L Δ T/100) L: travel distance (mm) Δ T: temperature difference between standard condition (20°C) and environmental temperature (°C). |   |      |      |      |      |      |      |      |      |      |      |      |
| Speed                     | Measurement speed                          | Rotational speed (θ-axis) (/min)   | 1~10  |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Up/down speed (Z-axis) (mm/s)  | 0.5~10  |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Radial direction speed (R-axis) (mm/s)   | 0.5~10  |      |      |      |      |      |      |      |      |      |      |      |
|                           | Movement speed                             | Rotational speed (θ-axis) (/min)   | max. 20   |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Up/down speed (Z-axis) (mm/s)  | 5~60  |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Radial direction speed (R-axis) (mm/s)   | 5~30  |      |      |      |      |      |      |      |      |      |      |      |
| Table                     | Max. loading mass                          | Table diameter (mm)  | Φ 235   |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Centering range (mm)   | ±5  |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Tilting range (°)  | ±1  |      |      |      |      |      |      |      |      |      |      |      |
|                           | Max. loading mass                          | NEX (kg)   | 30  |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | NEX α (kg)   | 60  |      |      |      |      |      |      |      |      |      |      |      |
| Detector/<br>Stylus       | Detector E-DT-R120A (equipped as standard) | Measuring force (mN)   | 30~100  |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Linear range (μm)  | ±1000   |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Functions  | Switching outer or inner diameter, Front/over travel adjustment function, Emergency stop function |      |      |      |      |      |      |      |      |      |      |      |
|                           | Stylus EM46000-S302 (equipped as standard) | Stylus ball diameter (mm)  | Φ 1.6   |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Stylus length (mm)   | 53  |      |      |      |      |      |      |      |      |      |      |      |
|                           |  | Stylus ball material   | Carbide   |      |      |      |      |      |      |      |      |      |      |      |

\*1 NEX-11 (Max loading mass 30 kg, 300 mm column), NEX-12 (Max loading mass 30 kg, 500 mm column)

NEX α-21 (Max loading mass 60 kg, 300 mm column), NEX α-22 (Max loading mass 60 kg, 500 mm column)

\*2 Please contact our sales personnel as there may be limitations due to the measurement diameter, and the combination of detector and stylus.

\*3 JIS B 7451-1997 compliant. H is the height of the measurement point from the upper surface of the table in mm, and R is the distance from the rotational center of the table in mm.



## ■ Software

| Item                               | Model                          | RONDCOM NEX (-11, -12)<br>RONDCOM NEX α (-21, -22)   |    |   |    |     |    |    |    |     |    |    |    |
|------------------------------------|--------------------------------|--|----|---|----|-----|----|----|----|-----|----|----|----|
|                                    |                                | 100  |    |   |    | 200 |    |    |    | 300 |    |    |    |
|                                    |                                | SD   |    | DX  |    | SD  |    | DX |    | SD  |    | DX |    |
| Model*1                            |                                | 11   | 12 | 11  | 12 | 11  | 12 | 11 | 12 | 11  | 12 | 11 | 12 |
|                                    |                                | 21   | 22 | 21  | 22 | 21  | 22 | 21 | 22 | 21  | 22 | 21 | 22 |
| Number of sampling                 |                                | 14400  |    |   |    |     |    |    |    |     |    |    |    |
| Type of filter                     | Digital filter                 | Gaussian/2RC/spline/robust (spline)  |    |   |    |     |    |    |    |     |    |    |    |
| Cut-off value                      | Rotational direction (θ-axis)  | Low pass   |    | can set any value in range of 15, 50, 150, 500, 1500 peaks/rotation, 15~1500 peaks/rotation |    |     |    |    |    |     |    |    |    |
|                                    |                                | Band pass  |    | 1~1500 peaks/rotation   |    |     |    |    |    |     |    |    |    |
|                                    | Rectilinear direction (Z-axis) | Low pass   |    | 0.025, 0.08, 0.25, 0.8, 2.5, 8 mm (any value in 0.0001 mm units)                            |    |     |    |    |    |     |    |    |    |
| Roundness evaluation of form error |                                | MZCII (min. zone circle method), LSCII (least square circle method), MICII (max. inscribed circle method), MCCII (min. circumscribed circle method), N.C. (no compensation)  |    |   |    |     |    |    |    |     |    |    |    |
| Measuring items                    | Rotational direction           | Roundness, flatness, flatness (compound), parallelism, concentricity, coaxiality, cylindricity, diameter deviation, squareness, thickness variation, partial circle  |    |   |    |     |    |    |    |     |    |    |    |
|                                    | Rectilinear direction          | Straightness (Z), straightness (R), cylindricity, squareness, parallelism, diameter deviation, axis straightness   |    |   |    |     |    |    |    |     |    |    |    |
| Analysis processing functions      |                                | Notch function (level, angle, cursor), combination of roundness evaluation methods, nominal value collation, cylinder 3D profile display (line drawing, shading, contour line), real-time display, profile characteristic graph display (bearing area curve, amplitude distribution function, power spectrum), CNC automatic measuring function, automatic centering/tilting adjustment function (except for NEX 100, NEX α 100) |    |   |    |     |    |    |    |     |    |    |    |
| Display item                       |                                | Measuring settings, measuring parameters, comments, printer output settings, profile graphics (expansion plan, 3D plan), error messages, etc.  |    |   |    |     |    |    |    |     |    |    |    |

## ■ Specifications

|                        |  |          |   |             |             |             |             |             |             |             |             |             |             |             |             |
|------------------------|--|----------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Installation dimension | Width                                    | (mm)     | 720   |             | 1400        |             | 720         |             | 1400        |             | 720         |             | 1400        |             |             |
|                        | Depth                                    | (mm)     | 580   |             | 820         |             | 580         |             | 820         |             | 580         |             | 820         |             |             |
|                        | Height                                   | NEX      | (mm)  | 895         | 1095        | 1570        | 1770        | 895         | 1095        | 1570        | 1770        | 895         | 1095        | 1570        | 1770        |
| NEX α                  |  | (mm)     | 900   | 1100        | 1570        | 1770        | 900         | 1100        | 1570        | 1770        | 900         | 1100        | 1570        | 1770        |             |
| Weight                 | NEX                                      | Machine  | (kg)  | Approx. 170 | Approx. 180 | Approx. 330 | Approx. 340 | Approx. 170 | Approx. 180 | Approx. 330 | Approx. 340 | Approx. 170 | Approx. 180 | Approx. 330 | Approx. 340 |
|                        |  | Computer | (kg)  | Approx. 10  |             | Approx. 10  |             | Approx. 10  |             | Approx. 10  |             | Approx. 10  |             | Approx. 10  |             |
|                        | NEX α                                    | Machine  | (kg)  | Approx. 190 | Approx. 200 | Approx. 350 | Approx. 360 | Approx. 190 | Approx. 200 | Approx. 350 | Approx. 360 | Approx. 190 | Approx. 200 | Approx. 350 | Approx. 360 |
|                        |  | Computer | (kg)  | Approx. 10  |             | Approx. 10  |             | Approx. 10  |             | Approx. 10  |             | Approx. 10  |             | Approx. 10  |             |
| Power supply           | Voltage, frequency                       | (V, Hz)  | AC100 ~ 240, 50/60 (grounding required)             |             |             |             |             |             |             |             |             |             |             |             |             |
|                        | Power consumption                        | (VA)     | Approx. 530   |             |             |             |             |             |             |             |             |             |             |             |             |
| Air supply             | Supply air pressure                      | NEX      | (MPa)   | 0.35~0.7    |             |             |             |             |             |             |             |             |             |             |             |
|                        |  | NEX α    | (MPa)   | 0.45~0.7    |             |             |             |             |             |             |             |             |             |             |             |
|                        | Working air pressure                     | NEX      | (MPa)   | 0.3         |             |             |             |             |             |             |             |             |             |             |             |
|                        |  | NEX α    | (MPa)   | 0.4         |             |             |             |             |             |             |             |             |             |             |             |
|                        | Air consumption volume                   | NEX      | (NL/min)  | 30          |             |             |             |             |             |             |             |             |             |             |             |
|                        | NEX α                                    | (NL/min) | 40  |             |             |             |             |             |             |             |             |             |             |             |             |
|                        | Air supply connecting nipple (main unit) |          | One-touch pipe joint for outer diameter φ 8 mm hose |             |             |             |             |             |             |             |             |             |             |             |             |
| Operating environment  | Operating temperature                    | (°C)     | 10~30   |             |             |             |             |             |             |             |             |             |             |             |             |
|                        | Guaranteed accuracy temperature range    | (°C)     | 20±2  |             |             |             |             |             |             |             |             |             |             |             |             |

# RONDCOM NEX Rs/RONDCOM NEX Rs $\alpha$ Specifications

## Hardware

| Item                    |   | Model  | RONDCOM NEX Rs (-11, -12)<br>RONDCOM NEX Rs $\alpha$ (-21, -22)     |   |            |           |           |           |           |           |  |
|-------------------------|---|--|---|---|------------|-----------|-----------|-----------|-----------|-----------|--|
|                         |   |  | 200   |   |            |           | 300       |           |           |           |  |
|                         |   |  | SD  |   | DX         |           | SD        |           | DX        |           |  |
| Model*1                 |   |  | 11  | 12  | 11         | 12        | 11        | 12        | 11        | 12        |  |
|                         |   |  | 21  | 22  | 21         | 22        | 21        | 22        | 21        | 22        |  |
| Alignment               |   |  | CNC   |   |            |           |           |           |           |           |  |
| Offset detector holder  |   |  | Manual  |   |            |           | CNC       |           |           |           |  |
| Measuring range         |   | Max. measuring range (mm)                                      | $\Phi$ 300 (outer diameter)<br>$\Phi$ 360 (inner diameter)          |   |            |           |           |           |           |           |  |
|                         |   | Radial feed range (R-axis) (mm)                                | 180   |   |            |           |           |           |           |           |  |
|                         |   | Up/down feed range (Z-axis) (mm)                               | 300   | 500   | 300        | 500       | 300       | 500       | 300       | 500       |  |
|                         |   | Max. loading diameter (mm)                                     | $\Phi$ 580  |   |            |           |           |           |           |           |  |
|                         |   | Max. measuring height (mm)                                     | 300   | 500   | 300        | 500       | 300       | 500       | 300       | 500       |  |
|                         |   | Max. measuring depth (mm)                                      | 150 *2  |   |            |           |           |           |           |           |  |
| Accuracy                | Rotation accuracy *3                        | Radial direction ( $\mu$ m)                                    | (0.02 + 3.2H/10000)   |   |            |           |           |           |           |           |  |
|                         |   | Axis direction ( $\mu$ m)                                      | (0.02 + 3.2R/10000)   |   |            |           |           |           |           |           |  |
|                         | Straightness accuracy                       | Up/down direction (Z-axis) ( $\mu$ m/mm)                       | 0.10/100  |   |            |           |           |           |           |           |  |
|                         |   | Radial direction (R-axis) ( $\mu$ m/mm)                        | 0.15 /300   | 0.23 /500   | 0.15 /300  | 0.23 /500 | 0.15 /300 | 0.23 /500 | 0.15 /300 | 0.23 /500 |  |
|                         | Parallelism accuracy                        | Z-axis/T-axis ( $\mu$ m/mm)                                    | 0.7 /300  | 1.0 /500  | 0.7 /300   | 1.0 /500  | 0.7 /300  | 1.0 /500  | 0.7 /300  | 1.0 /500  |  |
|                         | Squareness accuracy                         | R-axis/T-axis ( $\mu$ m/mm)                                    | 1.0/150   |   |            |           |           |           |           |           |  |
| Speed                   | Measuring speed                             | Rotation speed ( $\theta$ -axis) (/min)                        | 1~10 (rotation measurement), 0.01~1 (roughness measurement)         |   |            |           |           |           |           |           |  |
|                         |   | Up/down speed (Z-axis) (mm/s)                                  | 0.5~10 (linear motion measurement), 0.1~1.5 (roughness measurement) |   |            |           |           |           |           |           |  |
|                         |   | Radial direction speed (R-axis) (mm/s)                         | 0.5~10 (linear motion measurement), 0.1~1.5 (roughness measurement) |   |            |           |           |           |           |           |  |
|                         | Movement speed                              | Rotation speed ( $\theta$ -axis) (/min)                        | max. 20   |   |            |           |           |           |           |           |  |
|                         |   | Up/down speed (Z-axis) (mm/s)                                  | 5~60  |   |            |           |           |           |           |           |  |
|                         |   | Radial direction speed (R-axis) (mm/s)                         | 5~30  |   |            |           |           |           |           |           |  |
| Table                   |   | Table diameter (mm)  | $\Phi$ 235  |   |            |           |           |           |           |           |  |
|                         |   | Centering range (mm)   | $\pm$ 5   |   |            |           |           |           |           |           |  |
|                         |   | Tilting range ( $^{\circ}$ )                                   | $\pm$ 1   |   |            |           |           |           |           |           |  |
|                         | Max. loading mass                           | NEX Rs (kg)  | 30  |   |            |           |           |           |           |           |  |
|                         |   | NEX Rs $\alpha$ (kg)   | 60  |   |            |           |           |           |           |           |  |
| Detector/Stylus         | Roundness measurement                       | Detector E-DT-R120A (equipped as standard)                     | Measuring force (mN)  | 30~100  |            |           |           |           |           |           |  |
|                         |   |  | Linear range ( $\mu$ m)   | $\pm$ 1000  |            |           |           |           |           |           |  |
|                         |   |  | Functions   | Switching outer or inner diameter, Front/over travel adjustment function, Emergency stop function |            |           |           |           |           |           |  |
|                         |   | Stylus EM46000-S302 (equipped as standard)                     | Stylus ball diameter (mm)   | $\Phi$ 1.6  |            |           |           |           |           |           |  |
|                         |   |  | Length (mm)   | 53  |            |           |           |           |           |           |  |
|                         | Roundness and Surface roughness measurement | low measuring force detector E-DT-R168B (equipped as standard) | Measuring force (mN)  | 4   |            |           |           |           |           |           |  |
|                         |   |  | Linear range ( $\mu$ m)   | $\pm$ 400   |            |           |           |           |           |           |  |
|                         |   |  | Stylus (Roundness measurement) 010 2505 (equipped as standard)      | Stylus ball diameter (mm)   | $\Phi$ 1.6 |           |           |           |           |           |  |
|                         |   | Length (mm)  |   | 26.5  |            |           |           |           |           |           |  |
|                         |   | Stylus (Roughness measurement) 010 2501 (equipped as standard) | Stylus ball material  | Ruby  |            |           |           |           |           |           |  |
| Stylus shape ( $\mu$ m) | SR5 (90 $^{\circ}$ cone)                    |  |   |   |            |           |           |           |           |           |  |
|                         |   | Length (mm)  | 26.5  |   |            |           |           |           |           |           |  |
|                         |   | Stylus material  | Diamond   |   |            |           |           |           |           |           |  |

\*1 NEX Rs-11 (Max loading mass 30 kg, 300 mm column), NEX Rs-12 (Max loading mass 30 kg, 500 mm column)

NEX Rs  $\alpha$ -21 (Max loading mass 60 kg, 300 mm column), NEX Rs  $\alpha$ -22 (Max loading mass 60 kg, 500 mm column)

\*2 Please contact our sales personnel as there may be limitations due to the measurement diameter, and the combination of detector and stylus.

\*3 JIS B 7451-1997 compliant. H is the height of the measurement point from the upper surface of the table in mm, and R is the distance from the rotational center of the table in mm.



## ■ Software

| Item                               | Model                                  | RONDCOM NEX Rs (-11, -12)<br>RONDCOM NEX Rs $\alpha$ (-21, -22)  |    |    |    |     |    |    |    |
|------------------------------------|--|--|----|----|----|-----|----|----|----|
|                                    |  | 200  |    |    |    | 300 |    |    |    |
|                                    |  | SD   |    | DX |    | SD  |    | DX |    |
| Model*1                            |  | 11   | 12 | 11 | 12 | 11  | 12 | 11 | 12 |
|                                    |  | 21   | 22 | 21 | 22 | 21  | 22 | 21 | 22 |
| Number of sampling                 |  | 14400  |    |    |    |     |    |    |    |
| Type of filter                     | Digital filter                         | Gaussian/2RC/spline/robust(spline)   |    |    |    |     |    |    |    |
| Cut-off value                      | Rotational direction ( $\theta$ -axis) | Low pass<br>can set any value in range of 15, 50, 150, 500, 1500 peaks/rotation,<br>15~1500 peaks/rotation   |    |    |    |     |    |    |    |
|                                    | Rectilinear direction (Z-axis)         | Band pass<br>1~1500 peaks/rotation   |    |    |    |     |    |    |    |
| Roundness evaluation of form error |  | 0.025, 0.08, 0.25, 0.8, 2.5, 8 mm (any value in 0.0001 mm units)   |    |    |    |     |    |    |    |
| Measuring items                    | Rotational direction                   | MZCII (min. zone circle method), LSCII (least square circle method),<br>MICII (max. inscribed circle method), MCCII (min. circumscribed circle<br>method), N.C. (no compensation)  |    |    |    |     |    |    |    |
|                                    | Rectilinear direction                  | Roundness, flatness, flatness (compound), parallelism, concentricity,<br>coaxiality, cylindricity, diameter deviation, squareness, thickness varia-<br>tion, run-out, partial circle   |    |    |    |     |    |    |    |
| Roughness analysis item            | Standard                               | Straightness (Z), straightness (R), cylindricity, squareness, parallelism,<br>diameter deviation, axis straightness  |    |    |    |     |    |    |    |
|                                    | Parameter                              | Complied with JIS-2013, JIS-2001, JIS-1994, JIS-1982, ISO-2009,<br>ISO-1997, ISO-1984, DIN-1990, ASME-2002, ASME-1995  |    |    |    |     |    |    |    |
|                                    | Evaluation curve                       | Ra, Rq, Ry, Rp, Rv, Rc, Rz, Rmax, Rt, Rz.J, R3z, Sm, S, R<br>$\Delta a$ , R $\Delta q$ , R $\lambda a$ , R $\lambda q$ , TILT A, Ir, Pt, Pc, Rsk, Rku, Rk,<br>Rpk, Rvk, Mr1, Mr2, VO, K, tp, Rmr, tp2, Rmr2, R $\delta c$ ,<br>AVH, Hmax, Hmin, AREA, NCRX, R, Rx, AR, NR, CPM, SR, SAR  |    |    |    |     |    |    |    |
|                                    | Characteristic graph                   | Profile curve, roughness curve, filtered waviness curve, rolling circle<br>waviness curve, rolling circle center line waviness curve, ISO13565-1<br>profile curve, ISO13565-1 roughness curve, roughness motif curve,<br>waviness motif curve, envelope waviness curve   |    |    |    |     |    |    |    |
|                                    | Tilting adjustment methods             | Bearing area curve, amplitude distribution graph, power spectrum curve<br>Least square straight line correction, n-dimension polynomial correction,<br>both ends correction, least square circle correction, least square oval<br>correction, spline correction, robust (spline) correction, spline curve<br>correction  |    |    |    |     |    |    |    |
| Analysis processing functions      |  | Notch function (level, angle, cursor), combination of roundness evalua-<br>tion methods, nominal value collation, cylinder 3D profile display (line<br>drawing, shading, contour line), real-time display, profile characteristic<br>graph display (bearing area curve, amplitude distribution function, power<br>spectrum), CNC automatic measuring function, automatic centering/<br>tilting adjustment function |    |    |    |     |    |    |    |
| Display item                       |  | Measuring settings, measuring parameters, comments, printer output<br>settings, profile graphics (expansion plan, 3D plan), error messages,<br>etc.  |    |    |    |     |    |    |    |

## ■ Specifications

|  |   |  |             |             |             |             |             |             |             |             |
|--|---|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Installation dimension                   | Width (mm)  | 720  |             | 1400        |             | 720         |             | 1400        |             |             |
|  | Depth (mm)  | 580  |             | 820         |             | 580         |             | 820         |             |             |
|  | Height  | NEX Rs (mm)  | 920         | 1120        | 1595        | 1795        | 920         | 1120        | 1570        | 1570        |
|  |   | NEX Rs $\alpha$ (mm)                                     | 925         | 1125        | 1595        | 1795        | 925         | 1125        | 1595        | 1795        |
| Weight                                   | NEX Rs  | Machine (kg)   | Approx. 170 | Approx. 180 | Approx. 330 | Approx. 340 | Approx. 170 | Approx. 180 | Approx. 330 | Approx. 340 |
|  |   | Computer (kg)  | Approx.10   |             |             |             | Approx.10   |             |             |             |
|  | NEX Rs $\alpha$                                       | Machine (kg)   | Approx. 190 | Approx. 200 | Approx. 350 | Approx. 360 | Approx. 190 | Approx. 200 | Approx. 350 | Approx. 360 |
|  |   | Computer (kg)  | Approx.10   |             |             |             | Approx.10   |             |             |             |
| Power supply                             | Voltage, frequency (V, Hz)                            | AC100 ~ 240, 50/60 (grounding required)                  |             |             |             |             |             |             |             |             |
|  | Power consumption (VA)                                | Approx. 630  |             |             |             |             |             |             |             |             |
| Air supply                               | Supply air pressure                                   | NEX Rs (MPa)   | 0.35~0.7    |             |             |             |             |             |             |             |
|  |   | NEX Rs $\alpha$ (MPa)                                    | 0.45~0.7    |             |             |             |             |             |             |             |
|  | Working air pressure                                  | NEX Rs (MPa)   | 0.3         |             |             |             |             |             |             |             |
|  |   | NEX Rs $\alpha$ (MPa)                                    | 0.4         |             |             |             |             |             |             |             |
|  | Air consumption volume                                | NEX Rs (NL/min)  | 30          |             |             |             |             |             |             |             |
|  |   | NEX Rs $\alpha$ (NL/min)                                 | 40          |             |             |             |             |             |             |             |
| Air supply connecting nipple (main unit) |   | One-touch pipe joint for outer diameter $\Phi$ 8 mm hose |             |             |             |             |             |             |             |             |
| Operating environment                    | Operating temperature ( $^{\circ}$ C)                 | 10~30  |             |             |             |             |             |             |             |             |
|  | Guaranteed accuracy temperature range ( $^{\circ}$ C) | 20 $\pm$ 2   |             |             |             |             |             |             |             |             |

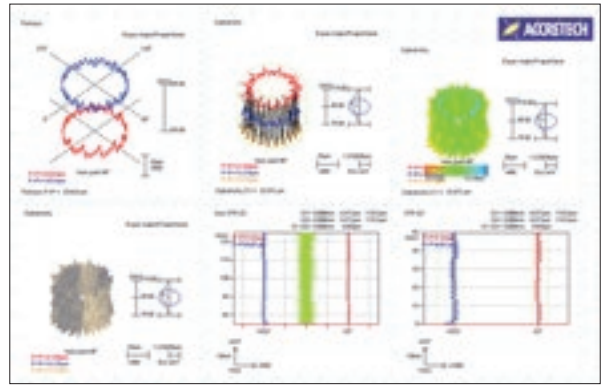
## Integrated Analysis Software ACCTee

### Easy-to-Use Interface for Leading-Edge Operability

ACCTee is equipped with a Windows style user interface that is easy for users to understand and operate. User-friendly and intuitive icons guide you through a series of operations from measurement to printing the analysis results.



Example of measurement/analysis window



Example of printing

### Naming convention based on the system configuration and selection

Product name **RONDCOM NEX / NEX Rs**  
**RONDCOM NEX  $\alpha$  / NEX Rs  $\alpha$**



#### 1 System selection

RONDCOM NEX \*\*\* SD/DX-○○

| ***        | Alignment | Detector holder        |
|------------|-----------|------------------------|
| <b>100</b> | Manual    | Manual detector holder |
| <b>200</b> | Automatic | Manual detector holder |
| <b>300</b> | Automatic | CNC detector holder    |

#### 2 Type selection

RONDCOM NEX \*\*\* SD/DX-○○

| Type |    |
|------|----|
| SD   | DX |
|      |    |

#### 3 Column selection

RONDCOM NEX / NEX Rs \*\*\* SD/DX-○○

| ○○        | Type of column |
|-----------|----------------|
| <b>11</b> | 300 mm column  |
| <b>12</b> | 500 mm column  |

RONDCOM NEX  $\alpha$  / NEX Rs  $\alpha$  \*\*\* SD/DX-○○

| ○○        | Type of column |
|-----------|----------------|
| <b>21</b> | 300 mm column  |
| <b>22</b> | 500 mm column  |

## Specialized option for RONDCOM NEX series

| Name  | Model        | External view | Specifications  |
|---|--------------|---------------|---|
| All position detector                         | E-DT-R120A   |               | Measuring range: ±1000 μm<br>Measuring force: 30 to 100 mN<br>Front adjustment mechanism<br>ID/OD switch function   |
| Offset detector holder                        | E-DH-R845A   |               | Standard equipment for RONDCOM NEX 100/200 System<br>Throat height H: 153 mm<br>Throat depth D: 65 mm   |
| Offset detector holder 1.5:1 model            | E-DH-R892A   |               | For RONDCOM NEX 100/200 System<br>Throat height H: 191 mm<br>Throat depth D: 65 mm<br>Stylus sensitivity 1.5: 1   |
| Offset CNC detector holder                    | E-DH-RB28B   |               | Standard equipment for RONDCOM NEX 300<br>Throat height H: 153 mm<br>Throat depth D: 65 mm  |
| Offset CNC detector holder 1.5:1 model        | E-DH-RB30B   |               | For RONDCOM NEX 300 System<br>Throat height H: 191 mm<br>Throat depth D: 65 mm<br>Stylus sensitivity 1.5: 1   |
| Horizontal feed coupling                      | E-DH-RB08A   |               | Shared use for RONDCOM NEX/NEX Rs   |
| Holder for facing diameter measurement        | E-DH-RB09A   |               | Shared use for RONDCOM NEX/NEX Rs<br>For max. outer diameter: Φ100mm and under<br>*Need horizontal feed coupling (E-DH-RB08A), when using this holder   |
| Diameter master                               | E-MG-R88A    |               | Outer diameter Φ 24.5 mm<br>Inner diameter Φ 13.7 mm<br>Actual measured value data attached<br>*Master workpieces with the identical diameter to measured workpieces are available. Please ask the sales department about the production of custom-ordered master workpieces. |
| Stylus  | EM46000-S864 |               | Facing diameter measurement recommended   |
| Magnification calibration set                 | E-MC-R33A    |               | Max. calibration range: 400 μm<br>Min. scale interval: 0.2 μm<br>Weight: 1.7 kg   |
| Anti-vibration table (RONDCOM NEX/NEX Rs)     | E-VS-R16B    |               | Anti-vibration system: Diaphragm air spring<br>Natural frequency: V = 2 Hz, H = 2.2 Hz<br>Load weight: 250 kg<br>Air Source: 350 kPa to 700 kPa<br>Dimension: 980W x 780D x 700H mm,<br>760W1 x 560D1 mm<br>Weight: 190 kg  |
| Anti-vibration table (RONDCOM NEX α/NEX Rs α) | E-VS-R21B    |               | Anti-vibration system: Diaphragm air spring<br>Natural frequency: V = 1.6 Hz, H = 2 Hz<br>Load weight: 550 kg<br>Air Source: 350 kPa to 700 kPa<br>Dimension: 1074W x 820D x 700H mm,<br>850W1 x 560D1 mm<br>Weight: 340 kg   |
| System rack                                   | E-DK-S24A    |               | Dimensions:<br>800 mm x 800 mm x (1070 to 1370) mm<br>Weight: 44.5 kg   |



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