**RONDHCOM NEX**

Top class high accuracy roundness cylindrical profile measuring instrument

**Rotation accuracy** (0.02 + 3.2 H/10000) μm

Equipped with full new function and meets a need of machined parts high accuracy measurement. It is a top class high accuracy roundness cylindrical profile measuring instrument.

**Opposed 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 the standard to correct the errors by temperature change and generatrix line shifting, performs highly-precise diameter measurement.

**R-axis taper following function**

The straightness of tapered surface can be measured by the 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 measurement accuracy at straightness. Contact us for details.

Example of the measurement

Comparison of the measurement results, by the high accuracy contour measuring instrument (SURFCOM 5000) and by RONDHCOM NEX.
CNC upgrade available

To meet the needs of many users, it is now possible to upgrade a manual machine to a CNC machine. The CNC conversion is amazingly easy and makes no change to the installation space. If you have installed a manual machine because only a small quantity of workpieces had to be measured, the machine can be upgraded in the same space whenever necessary.

- Conventional measuring instrument
- Repurchase
- CNC machine

- RONDCOM NEX 100 and NEX 200/300 series

Automatic lubrication function mounted on Z-axis column
Almost maintenance-free by automatic lubrication to column.

Full-covered main body and column
Minimization of effect of disturbance from air-conditioner and others by functional design.

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

Rust proof by adopting SUS table
Adopting SUS for the table frees from rust.
Unnecessity of oil coating.
Maintenance-free.

Extension of centering stroke
Extend the centering stroke to ±5 mm by extending the table diameter to Φ 235 mm.

Spiral cylindricity measuring function
Spiral cylindricity measurement by combining table rotation with rectilinear movement. Unnecessity of Z positioning saves 30% of cylindricity measurement time compared to conventional manner.
# RONDCOM NEX/NEXα Specification

## Hardware

### Measuring range

<table>
<thead>
<tr>
<th>Measuring range</th>
<th>SD</th>
<th>DX</th>
<th>SD</th>
<th>DX</th>
<th>SD</th>
<th>DX</th>
<th>SD</th>
<th>DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. measuring diameter (mm)</td>
<td>100</td>
<td>200</td>
<td>100</td>
<td>200</td>
<td>100</td>
<td>200</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Radial feed range (R-axis) (mm)</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>Up/downward feed range (Z-axis) (mm)</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>Max. loading diameter (mm)</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>Max. measuring height (mm)</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
<td>300</td>
<td>500</td>
</tr>
<tr>
<td>Max. measuring depth (mm)</td>
<td>310</td>
<td></td>
<td>310</td>
<td></td>
<td>310</td>
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<td>310</td>
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</tbody>
</table>

### Accuracy

#### Rotational accuracy

<table>
<thead>
<tr>
<th>Rotational accuracy</th>
<th>SD</th>
<th>DX</th>
<th>SD</th>
<th>DX</th>
<th>SD</th>
<th>DX</th>
<th>SD</th>
<th>DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radial direction</td>
<td>0.15/300</td>
<td>0.23/500</td>
<td>0.15/300</td>
<td>0.23/500</td>
<td>0.15/300</td>
<td>0.23/500</td>
<td>0.15/300</td>
<td>0.23/500</td>
</tr>
<tr>
<td>Axial direction</td>
<td>(0.02 + 3.2H/10000)</td>
<td>(0.02 + 3.2R/10000)</td>
<td>(0.02 + 3.2H/10000)</td>
<td>(0.02 + 3.2R/10000)</td>
<td>(0.02 + 3.2H/10000)</td>
<td>(0.02 + 3.2R/10000)</td>
<td>(0.02 + 3.2H/10000)</td>
<td>(0.02 + 3.2R/10000)</td>
</tr>
</tbody>
</table>

#### Straightness accuracy

| Vertical direction (Z-axis) (µm/mm) | 0.10/100 | 0.15/300 | 0.23/500 | 0.10/100 | 0.15/300 | 0.23/500 | 0.10/100 | 0.15/300 | 0.23/500 |
| Radial direction (R-axis) (µm/mm)  | 0.7/1800 | 1.0/500  | 1.2/1000 | 0.7/1800 | 1.0/500  | 1.2/1000 | 0.7/1800 | 1.0/500  | 1.2/1000 |

### Flatness accuracy

| Z-axis/T-axis (µm/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 (µm/mm) | 1.0/1500 |

### Scale indication accuracy

| Scale indication accuracy | (0.5 + L/180 + 2L/1000 + T/1000) |

## Speed

### Measuring speed

<table>
<thead>
<tr>
<th>Measuring speed</th>
<th>SD</th>
<th>DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotational speed (θ-axis) (/min)</td>
<td>1 to 10</td>
<td>1 to 10</td>
</tr>
<tr>
<td>Up/downward speed (Z-axis) (mm/s)</td>
<td>0.5 to 10</td>
<td>0.5 to 10</td>
</tr>
</tbody>
</table>

### Movement speed

<table>
<thead>
<tr>
<th>Movement speed</th>
<th>SD</th>
<th>DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotational speed (θ-axis) (/min)</td>
<td>max. 20</td>
<td>max. 20</td>
</tr>
<tr>
<td>Up/downward speed (Z-axis) (mm/s)</td>
<td>5 to 60</td>
<td>5 to 60</td>
</tr>
<tr>
<td>Radial direction speed (R-axis) (mm/s)</td>
<td>5 to 30</td>
<td>5 to 30</td>
</tr>
</tbody>
</table>

## Table

<table>
<thead>
<tr>
<th>Table</th>
<th>SD</th>
<th>DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table diameter (mm)</td>
<td>235</td>
<td>235</td>
</tr>
<tr>
<td>Centering range (mm)</td>
<td>±5</td>
<td>±5</td>
</tr>
<tr>
<td>Tilling range (°)</td>
<td>±1</td>
<td>±1</td>
</tr>
</tbody>
</table>

## Max. loading mass

<table>
<thead>
<tr>
<th>Max. loading mass</th>
<th>SD</th>
<th>DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEX</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>NEX α</td>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>

## Detector/stylus

### Detector/stylus

<table>
<thead>
<tr>
<th>Detector/stylus</th>
<th>SD</th>
<th>DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring force (mN)</td>
<td>30 to 100</td>
<td>30 to 100</td>
</tr>
<tr>
<td>Rectilinear range (µm)</td>
<td>±1000</td>
<td>±1000</td>
</tr>
</tbody>
</table>

### Stylus

<table>
<thead>
<tr>
<th>Stylus</th>
<th>SD</th>
<th>DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylus ball diameter (mm)</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Length (mm)</td>
<td>53</td>
<td>53</td>
</tr>
</tbody>
</table>

### Functions

- Inner/outer diameter switching function
- Front/over travel function
- Safety stop function

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*1 NEX-11 (Max. loading mass 30 kg, 300 mm column), NEX-12 (Max. loading mass 30 kg, 500 mm column)
*2 NEX-21 (Max. loading mass 60 kg, 300 mm column), NEX α-22 (Max. loading mass 60 kg, 500 mm column)
*3 JIS B 7451-1997 compliant
*4 When using measurement diameter extension offset-type detector holder E-DH-RBB86A (optional)
Software

<table>
<thead>
<tr>
<th>Items</th>
<th>Model</th>
<th>RONDCom NEX (-11, -12)</th>
<th>RONDCom NEX α (-21, -22)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>DX</td>
<td>SD</td>
</tr>
<tr>
<td>Number of sampling (point)</td>
<td>11</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>22</td>
<td>21</td>
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<tr>
<td></td>
<td>21</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Model*1</td>
<td>14400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter type</td>
<td>Digital filter</td>
<td>Gaussian, 2RC, Spline, Robust (spline)</td>
<td></td>
</tr>
<tr>
<td>Cutoff value</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rotational direction (θ-axis)</td>
<td>Lowpass</td>
<td>15, 50, 150, 500, 1500 peaks/rotation, settable any value in range 15 to 1500 peak/rotation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bandpass</td>
<td>1 to 1500 peaks/rotation</td>
<td></td>
</tr>
<tr>
<td>Rectilinear direction (Z-axis)</td>
<td>Lowpass</td>
<td>0.025, 0.08, 0.25, 0.8, 2.5, 8 nm (any value in 0.0001 nm units)</td>
<td></td>
</tr>
<tr>
<td>Roundness evaluation of form error</td>
<td></td>
<td>MZC (min. zone circle method), LSC (least square circle method), MIC (max. inscribed circle method), MCC (min. circumscribed circle method), N.C. (no compensation)</td>
<td></td>
</tr>
<tr>
<td>Measuring items</td>
<td></td>
<td>Rotundity, flatness, flatness (compound), parallelism, concentricity, coaxiality, cylindricity, diameter deviation, squareness, thickness variation, run-out, partial circle</td>
<td></td>
</tr>
<tr>
<td>Rotational direction</td>
<td></td>
<td>Straightness (Z), straightness (R), axis straightness, diameter deviation, cylindricity, squareness, parallelism</td>
<td></td>
</tr>
<tr>
<td>Rectilinear direction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysis processing function</td>
<td>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/titling adjustment function (except for NEX 100 and NEX α 100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display items</td>
<td></td>
<td>Measuring conditions, measuring parameters, comments, printer output conditions, profile graphics (expansion plan, 3D plan), error messages, etc.</td>
<td></td>
</tr>
</tbody>
</table>

Specification

<table>
<thead>
<tr>
<th>Installation dimensions</th>
<th>Width (mm)</th>
<th>720</th>
<th>1400</th>
<th>720</th>
<th>1400</th>
<th>720</th>
<th>1400</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Depth (mm)</td>
<td>580</td>
<td>820</td>
<td>580</td>
<td>820</td>
<td>580</td>
<td>820</td>
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<tr>
<td>Height</td>
<td>NEX (mm)</td>
<td>895</td>
<td>1095</td>
<td>1570</td>
<td>1770</td>
<td>895</td>
<td>1095</td>
</tr>
<tr>
<td></td>
<td>NEX α (mm)</td>
<td>900</td>
<td>1100</td>
<td>1570</td>
<td>1770</td>
<td>900</td>
<td>1100</td>
</tr>
<tr>
<td>Main unit weight</td>
<td>Measurement unit (kg)</td>
<td>Approx 170</td>
<td>Approx 180</td>
<td>Approx 330</td>
<td>Approx 340</td>
<td>Approx 170</td>
<td>Approx 180</td>
</tr>
<tr>
<td></td>
<td>Data processing unit (kg)</td>
<td>Approx 10</td>
<td>Approx 30</td>
<td>Approx 10</td>
<td>Approx 30</td>
<td>Approx 10</td>
<td>Approx 30</td>
</tr>
<tr>
<td>NEX α</td>
<td>Measurement unit (kg)</td>
<td>Approx 190</td>
<td>Approx 200</td>
<td>Approx 350</td>
<td>Approx 360</td>
<td>Approx 190</td>
<td>Approx 200</td>
</tr>
<tr>
<td></td>
<td>Data processing unit (kg)</td>
<td>Approx 10</td>
<td>Approx 30</td>
<td>Approx 10</td>
<td>Approx 30</td>
<td>Approx 10</td>
<td>Approx 30</td>
</tr>
<tr>
<td>Power</td>
<td>Power supply/frequency (V, Hz)</td>
<td>AC100 to 240, 50/60 (grounding required)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power consumption (VA)</td>
<td>Approx 530</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air supply</td>
<td>Supply pressure NEX (MPa)</td>
<td>0.35 to 0.7</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>NEX α (MPa)</td>
<td>0.45 to 0.7</td>
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<td>Working air pressure NEX (MPa)</td>
<td>0.3</td>
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<td>NEX α (MPa)</td>
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<td></td>
<td></td>
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<td>Air consumption NEX (NL/min)</td>
<td>30</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>NEX α (NL/min)</td>
<td>40</td>
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<tr>
<td></td>
<td>Air supply connecting nipple (main unit)</td>
<td>One touch pipe joint for outer diameter Φ 8 hose</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Operating environment</td>
<td>Operating temperature range (°C)</td>
<td>10 to 30</td>
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<tr>
<td></td>
<td>Guaranteed accuracy temperature range (°C)</td>
<td>20±2</td>
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<td></td>
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