Designed for Machine Tool Spindles

Ultra High Speed Angular Contact Ball Bearings
With Newly Developed SURSAVE™ Cage

High performance in a wide range of applications:
Low NRRO, low heat-generation, and high speed performance achieved with new outer ring guided cage

Features

1. Low NRRO
   Reduced NRRO (Non-Repeatable RunOut) by 50% compared with conventional products

2. Low Torque
   Reduced torque by 20% compared with conventional products

3. High Speed Performance
   $d_m n$ 3 million was achieved
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Low NRRO
50% reduced NRRO contributes to improved surface finish of workpiece.

Low Torque
20% reduced torque contributes to low heat generation and energy savings.

Formulation of Bearing Numbers

Bearing Number Example

Nominal Bore Diameter
Bearing Type
Dimension Series
Material
Cage

80
BNR
10
H
TSR
V1V
SU
EL
P4
MTSX

Grease
Accuracy
Preload
Arrangement
Seal

Applicable Product Series

Nominal Bore Diameter
Bearing Type
Dimension Series
Material Code
Inner and Outer Ring
Balls
Seal

<table>
<thead>
<tr>
<th>Nominal Bore Diameter</th>
<th>Bearing Type</th>
<th>Dimension Series</th>
<th>Material Code</th>
<th>Inner and Outer Ring</th>
<th>Balls</th>
<th>Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø30~90, Ø100, Ø110</td>
<td>BNR BER</td>
<td>10*1</td>
<td>S</td>
<td>Bearing steel (SUJ2)</td>
<td></td>
<td>BNR or BER</td>
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<td></td>
<td></td>
<td></td>
<td>E</td>
<td>Ultra long life rolling elements (EQTF)</td>
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<td></td>
<td></td>
<td></td>
<td>H</td>
<td>Ceramic (Si3N4)</td>
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<td></td>
<td>X</td>
<td>Heat resistant steel for high speed operation (SHX)</td>
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<td>Bearing steel (SUJ2)</td>
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<td>Open type</td>
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<td></td>
<td></td>
<td>Ultra long life rolling elements (EQTF)</td>
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<td>Rubber non-contact seal</td>
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<td></td>
<td>Ceramic (Si3N4)</td>
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</tr>
</tbody>
</table>

*1 Plan to expand support to dimension series 19.
*2 For ball materials, Robust S (SUJ2) is available at 30BxR10 to 40BxR10, and Robust E (EQTF) is available at 45BxR10 to 110BxR10. (BxR: BNR or BER)

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