RD Type (Light Contact) Sealed Ball Bearings

Superior Performance Through These Advanced Engineering Features

- **Mandrel**
  - Reinforces Seal

- **Reduced Friction Torque**
  - Excellent Outer Lip Flexibility
  - Reduces Friction Torque

- **Improved Seal Performance**
  - Protuberance at the Tip of the Outer Lip
  - Improves Seal Performance

- **Unique Lubrication System**
  - Inner Lip Seal Prevents Grease Leakage By Directing it Toward Bearing Interior

- **Contamination Barrier**
  - Seal Lips Form a Labyrinth for Optimum Sealing Efficiency

In general, non-contact type products are used in applications requiring low torque, and contact type products in applications requiring a tight seal.

Koyo’s RD type sealed ball bearing was developed to meet the demand for bearings that provide both low torque and a tight seal.

Koyo’s efforts in R&D resulted in our newly developed RD type sealed ball bearings to satisfy these demands. With torque as low as that of non-contact sealed ball bearings, yet a seal nearly as tight as contact type product, superior protection from water and dust has been achieved.
RD Type (Light Contact) Sealed Ball Bearing

Performance of RD Seal Design

- **Low Starting Torque**
  - Friction torque is significantly less than full contact type seals and nearly equal to non-contact seals and shields.

- **Superior Protection Against Water**
  - RD Seal design is superior to full contact type seal design for maximum protection from dust and water.

- **Superior Protection Against Dust**
  - Volume of water penetrating into bearing, g

Slight Temperature Rise

- (Test Conditions)
  - Bearing: 6303
  - Grease: Synthetic and Mineral Base Oil
    - Consistency No. 2
    - (Volume: 40% of Space)
  - Radial Load: 50N
  - Dustproof Test: Conducted in Aluminum Power Atmosphere
  - Waterproof Test: Mist Atmosphere

Reduction of Friction Torque

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<th>Sealed ball bearings</th>
<th>Shielded ball bearings</th>
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<td>Light-contact type</td>
<td>Contact type</td>
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<tr>
<td>2RD</td>
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<tr>
<td>2RS</td>
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<tr>
<td>2RK</td>
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<td>2RU</td>
<td>(d)</td>
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<tr>
<td>ZZ</td>
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**Friction torque**
- ZZ: Low
- 2RU: Low
- 2RS: High
- 2RK: High

**Grease retention**
- ZZ: Very good
- 2RU: Better than ZZ type
- 2RS: Very good
- 2RK: Very good

**Protection against dust**
- ZZ: Good
- 2RU: Better than ZZ type
- 2RS: Better than 2RU type
- 2RK: Very good

**Protection against water**
- ZZ: Not very good
- 2RU: Better than ZZ type
- 2RS: Better than ZZ type
- 2RK: Very good

**Limiting speed (maximum)**
- ZZ: dₘ=450 000
- 2RU: dₘ=300 000
- 2RS: dₘ=300 000
- 2RK: dₘ=500 000
- 2RU: dₘ=500 000

**Operating temperature range**
- ZZ: -30~110
- 2RU: -30~110
- 2RS: -30~110
- 2RK: -30~110

(Reference) Comparison of Various Sealed and Shielded Ball Bearings

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