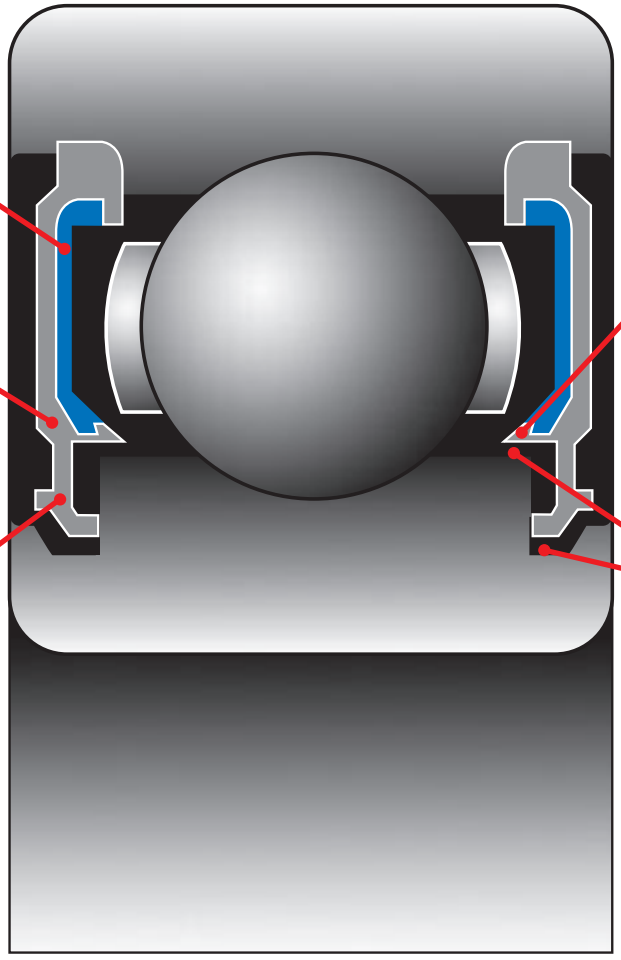
RD Type (Light Contact) Sealed Ball Bearings

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.

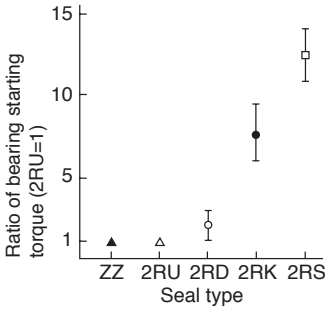
Koyo's efforts in R&D resulted in our newly developed RD type sealed ball bearings to satisify these demands. With torque as low as that of non-contact sealed ball bearings, yet a seal nearly as tight as contact type product, superior protection from water and dust has been achieved.

Koyo®

RD Type (Light Contact) Sealed Ball Bearing

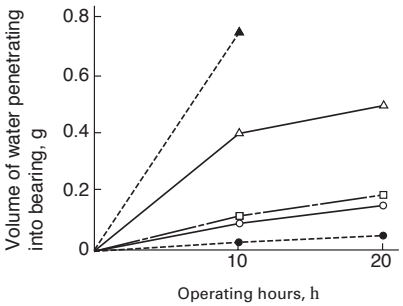
Performance of RD Seal Design

Low Starting Torque

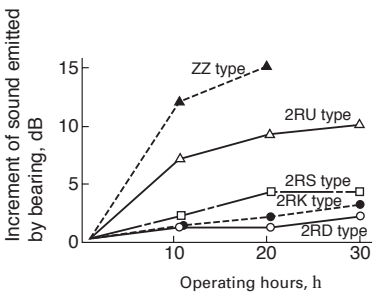


Friction torque is significantly less than full contact type seals and nearly equal to non-contact seals and shields

Superior Protection Against Water

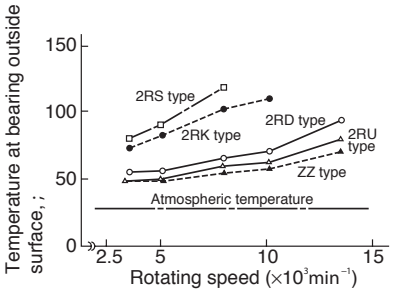


Superior Protection Against Dust



RD Seal design is superior to full contact type seal design for maximum protection from dust and water.

Slight Temperature Rise



(Test Conditions)
Bearing:
6303

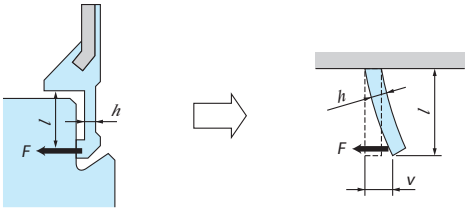
Grease:
Synthetic and Mineral Base Oil
Consistency No. 2
(Volume: 40% of Space)

Radial Load:
50N

Dustproof Test:
Conducted in Aluminum Power Atmosphere

Waterproof Test:
Mist Atmosphere

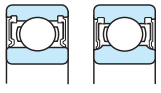
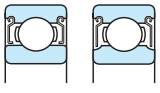
Reduction of Friction Torque



$$F = \frac{Ev}{4}\left(\frac{h}{l}\right)^3 b$$

F : Force resulting from rubber elasticity (N)
E : Young's modulus for rubber (N/mm²)
v : Interference (mm)
l : Seal outer lip length (mm)
h : Seal outer lip thickness (mm)
b : Microwidth in circumferential direction (mm)

(Reference) Comparison of Various Sealed and Shielded Ball Bearings

Type / Characteristics	Sealed ball bearings				Shielded ball bearings
	Light-contact type	Contact type		Non-contact type	Non-contact type
	2RD	2RS	2RK	2RU	ZZ
	 (a)	 (b) [1] (c)	 (d)	 (e)	 (f) [2] (g)
Friction torque	Low	High	High	Low	Low
Grease retention	Very good	Very good	Very good	Better than ZZ type	Good
Protection against dust	Very good	Better than 2RU type	Very good	Better than ZZ type	Good
Protection against water	Good	Good	Very good	Better than ZZ type	Not very good
Limiting speed [3] (maximum)	$d_m n$=450 000	$d_m n$=300 000	$d_m n$=300 000	$d_m n$=500 000	$d_m n$=500 000
Operating temperature range [4]	–30~ 110;	–30~ 100;	–30~ 100;	–30~ 110;	–30~ 110;

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