

Koyo[®]

Slim Series
DEEP GROOVE BALL BEARINGS



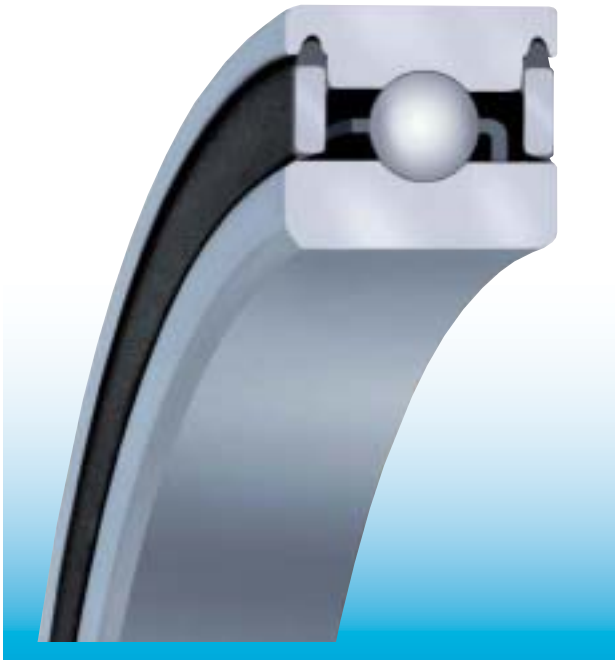
KOYO SEIKO CO., LTD.

CAT. NO.172E

Slim Series DEEP GROOVE BALL BEARINGS

For size and weight reduction of equipment of OA facilities and various other machines. Series of slim type deep groove ball bearings to ISO standards.

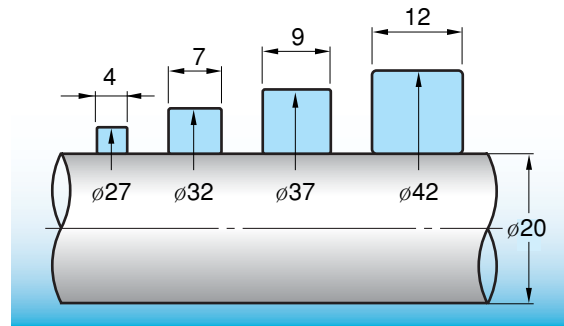
Structures



Line-up of slim type ball bearings based on Koyo's reliable technologies and past experience.

Comparison of bearing sizes

Bearing No.: 6704 6804 6904 6004



Features

Small size and light weight

In the most popular type of bearings, the 6000 series, the required space for their installation will be reduced to about 1/3.

Low torque

Small cross-sectional area indicate that these bearings require low running torque. In addition, the 6700 bearing series incorporates particularly low-friction contact seals.

Various sealing types

Wide choices are available in mounting methods and lubrication system, for shielded type, non-contact type sealed and contact type sealed bearing are provided.

Grease packed to meet your specific needs

The required quantity of general-purpose grease is packed in sealed bearings. Various types of grease are also available to meet the conditions of your specific applications.

Representative types of grease and their applications are listed in Table 2.

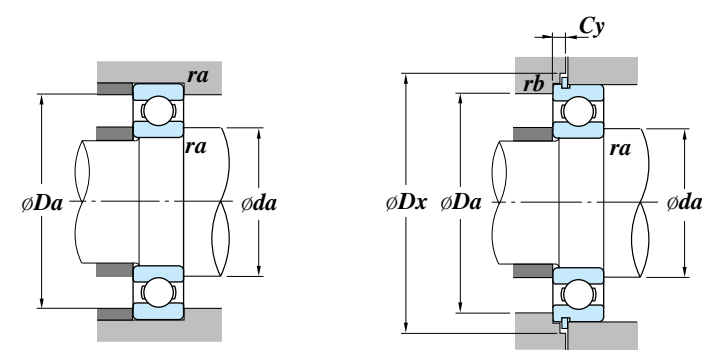
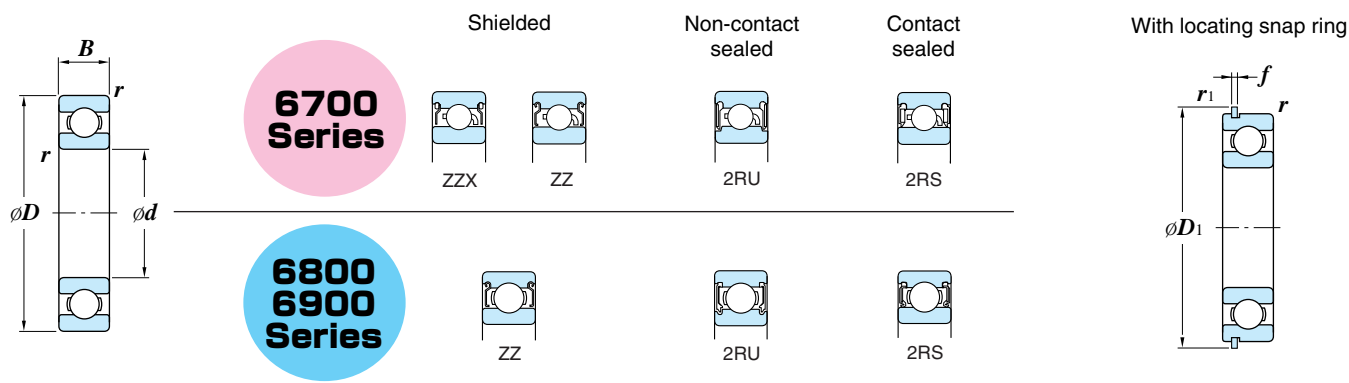
Dimension Table

■ Boundary dimension

■ Series variation

■ Installation

■ Equivalent radial load



Dynamic equivalent radial load : $P_r = X F_r + Y F_a$ (For X and Y, see the Table below.)
 Static equivalent radial load : $P_{0r} = 0.6 F_r + 0.5 F_a$
 (when $P_{0r} < F_r$, $P_{0r} = F_r$)

Fa/Cor	e	Fa/Fr ≤ e		Fa/Fr > e	
		X	Y	X	Y
0.014	0.19	1	0	0.56	2.30
0.028	0.22				1.99
0.056	0.26				1.71
0.084	0.28				1.55
0.11	0.30				1.45
0.17	0.34				1.31
0.28	0.38				1.15
0.42	0.42				1.04
0.56	0.44				1.00

Boundary Dimensions (mm)					Basic Load Ratings (kN)		Limiting Speeds (rpm)			Bearing No.					Dimensions of Locating Snap Ring (mm)		Mounting Dimensions (mm)						(Ref.) Mass (kg)
d	D	B	r	r ₁	Cr	Cor	Grease lubrication (Open type ZZ, ZZ, 2RU)	Oil lubrication (2RS)	Oil lubrication (Open type ZZ)	Open type	Shielded	Non-contact sealed	Contact sealed	With locating snap ring	D ₁ (max.)	f ±0.05	da (min.)	Da (max.)	Dx (min.)	Cy (max.)	ra (max.)	rb (max.)	(Open type)
10	15	3	0.1	-	0.85	0.44	39000	25000	47000	6700	-	-	-	-	-	-	10.8	14.2	-	-	0.1	-	0.0015
	19	5	0.3	-	1.70	0.84	37000	22000	43000	6800	6800 ZZ	6800 2RU	6800 2RS	-	-	-	12	17	-	-	0.3	0.3	0.005
	22	6	0.3	0.3	2.70	1.25	34000	21000	41000	6900	6900 ZZ	6900 2RU	6900 2RS	6900 NR	24.8	0.65	12	20	25.5	1.5	0.3	0.3	0.010
12	18	4	0.2	-	0.92	0.53	34000	20000	41000	6701	6701 ZZX	6701 2RU	6701 2RS	-	-	-	13.6	16.4	-	-	0.2	-	0.003
	21	5	0.3	-	1.90	1.05	33000	20000	39000	6801	6801 ZZ	6801 2RU	6801 2RS	-	-	-	14	19	-	-	0.3	0.3	0.006
	24	6	0.3	0.3	2.90	1.45	31000	18000	36000	6901	6901 ZZ	6901 2RU	6901 2RS	6901 NR	26.8	0.65	14	22	27.5	1.5	0.3	0.3	0.011
15	21	4	0.2	-	0.93	0.58	29000	16000	35000	6702	6702 ZZX	6702 2RU	6702 2RS	-	-	-	16.6	19.4	-	-	0.2	-	0.004
	24	5	0.3	-	2.10	1.25	28000	16000	33000	6802	6802 ZZ	6802 2RU	6802 2RS	-	-	-	17	22	-	-	0.3	0.3	0.007
	28	7	0.3	0.3	4.30	2.25	26000	15000	30000	6902	6902 ZZ	6902 2RU	6902 2RS	6902 NR	30.8	0.8	17	26	31.5	1.9	0.3	0.3	0.017
17	23	4	0.2	-	0.99	0.66	27000	15000	32000	6703	6703 ZZ	6703 2RU	6703 2RS	-	-	-	18.6	21.4	-	-	0.2	-	0.005
	26	5	0.3	-	2.60	1.55	26000	14000	30000	6803	6803 ZZ	6803 2RU	6803 2RS	-	-	-	19	24	-	-	0.3	0.3	0.008
	30	7	0.3	0.3	4.60	2.55	23000	13000	28000	6903	6903 ZZ	6903 2RU	6903 2RS	6903 NR	33.2	0.8	19	28	33.5	1.9	0.3	0.3	0.018
20	27	4	0.2	-	1.05	0.73	23000	12000	27000	6704	6704 ZZ	6704 2RU	6704 2RS	-	-	-	21.6	25.4	-	-	0.2	-	0.006
	32	7	0.3	0.3	4.00	2.45	21000	12000	25000	6804	6804 ZZ	6804 2RU	6804 2RS	6804 NR	34.8	0.8	22	30	35.5	1.9	0.3	0.3	0.018
	37	9	0.3	0.3	6.35	3.70	19000	11000	23000	6904	6904 ZZ	6904 2RU	6904 2RS	6904 NR	39.8	0.8	22	35	40.5	2.3	0.3	0.3	0.036
25	32	4	0.2	-	1.10	0.84	19000	10000	22000	6705	6705 ZZ	6705 2RU	6705 2RS	-	-	-	26.6	30.4	-	-	0.2	-	0.006
	37	7	0.3	0.3	4.30	2.95	18000	10000	21000	6805	6805 ZZ	6805 2RU	6805 2RS	6805 NR	39.8	0.8	27	35	40.5	1.9	0.3	0.3	0.022
	42	9	0.3	0.3	7.00	4.55	16000	9300	19000	6905	6905 ZZ	6905 2RU	6905 2RS	6905 NR	44.8	0.8	27	40	45.5	2.3	0.3	0.3	0.041
30	37	4	0.2	-	1.15	0.95	16000	8800	19000	6706	6706 ZZ	6706 2RU	6706 2RS	-	-	-	31.6	35.4	-	-	0.2	-	0.008
	42	7	0.3	0.3	4.55	3.40	15000	8600	18000	6806	6806 ZZ	6806 2RU	6806 2RS	6806 NR	44.8	0.8	32	40	45.5	1.9	0.3	0.3	0.026
	47	9	0.3	0.3	7.25	5.00	14000	8200	17000	6906	6906 ZZ	6906 2RU	6906 2RS	6906 NR	49.8	0.8	32	45	50.5	2.3	0.3	0.3	0.045
35	47	7	0.3	0.3	4.75	3.85	13000	7400	16000	6807	6807 ZZ	6807 2RU	6807 2RS	6807 NR	49.8	0.8	37	45	50.5	1.9	0.3	0.3	0.030
	55	10	0.6	0.6	10.9	7.75	12000	6800	14000	6907	6907 ZZ	6907 2RU	6907 2RS	6907 NR	57.8	0.8	39	51	58.5	2.3	0.6	0.6	0.073
40	52	7	0.3	0.3	4.95	4.20	12000	6700	14000	6808	6808 ZZ	6808 2RU	6808 2RS	6808 NR	54.8	0.8	42	50	55.5	1.9	0.3	0.3	0.033
	62	12	0.6	0.6	13.7	9.95	11000	6100	13000	6908	6908 ZZ	6908 2RU	6908 2RS	6908 NR	64.8	0.8	44	58	65.5	2.3	0.6	0.6	0.112
45	58	7	0.3	0.3	6.20	5.40	11000	5900	13000	6809	6809 ZZ	6809 2RU	6809 2RS	6809 NR	60.8	0.8	47	56	61.5	1.9	0.3	0.3	0.040
	68	12	0.6	0.6	14.1	10.9	9700	5500	11000	6909	6909 ZZ	6909 2RU	6909 2RS	6909 NR	70.8	0.8	49	64	72	2.3	0.6	0.6	0.132
50	65	7	0.3	0.3	6.60	6.10	9600	5200	11000	6810	6810 ZZ	6810 2RU	6810 2RS	6810 NR	67.8	0.8	52	63	68.5	1.9	0.3	0.3	0.052
	72	12	0.6	0.6	14.5	11.7	9000	5000	11000	6910	6910 ZZ	6910 2RU	6910 2RS	6910 NR	74.8	0.8	54	68	76	2.3	0.6	0.6	0.133

■ Dimension Stabilizing Treatment

When operating bearing over a long time at a temperature of over 120°C, normal heat treatment is insufficient to prevent dimension change. Special heat treatment is required for stabilization of dimensions.

Table 1 shows codes and operating temperature range for special heat treatment.

Table 1 Dimension Stabilizing Treatment

Code	Operating Temperature Range
S0	Over 100°C up to 150°C
S1	Over 150°C up to 200°C
S2	Over 200°C up to 250°C

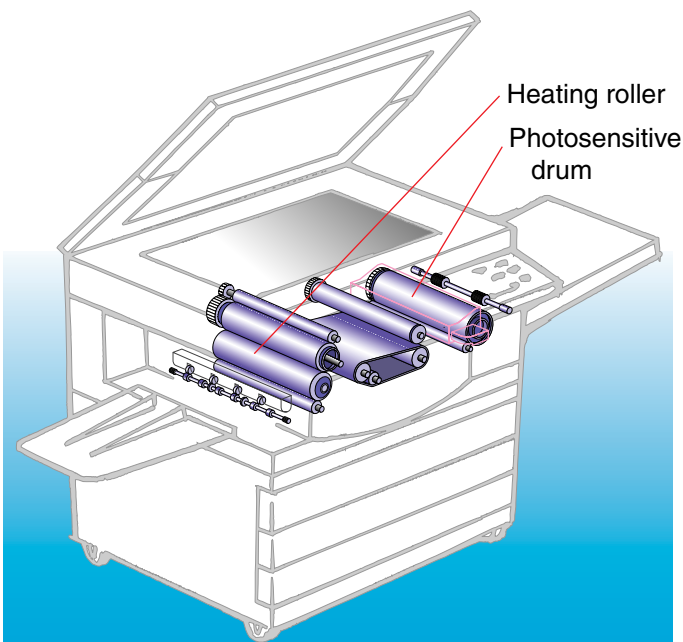
■ Grease

Table 2 shows typical grease for sealed or shielded bearings. If bearings are to be operated under special conditions, please contact Koyo.

Table 2 Characteristics of Usual Grease and Its Application

Name of Grease	Maker	Thickener	Base Oil	Operating Temperature Range(°C)	Example of Application
ALVANIA 1	Showa Shell Sekiyu	Lithium soap	Mineral oil	-20 to 80	Fishing reel
ALVANIA 2	Showa Shell Sekiyu	Lithium soap	Mineral oil	-10 to 100	General purpose
MULTEMP SRL	Kyodo Yushi	Lithium soap	Ester oil	-40 to 130	Wide operating temperature range
MOLYKOTE 44M	Dow Corning Toray Silicone	Lithium soap	Silicone oil	-30 to 180	Heating roller of copying machine
BARRIERTA JFE552	NOK Clüber	Fluorinated polymer	Fluorinated oil	-30 to 250	

■ Application Example in Copying Machine



Slim series bearings are suitable for photosensitive drums, heating roller support, and other parts that require space-saving designs.



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