MOTION & CONTROL

NSK

N Series Thin-Section Ball Bearings

Metric and Inch Designs

Leading the mechatronics era, N Series Thin-Section Bearings facilitate the compact design of industrial robots and medical, audio-visual and office automation equipment.

Contents

1. N Series Metric Design Ball Bearings

NB7 Type

An NSK original, the NB7 type is the thinnest deep groove ball bearing. The minimal space required for the bearing facilitates downsizing of equipment.

68 and 69 Types

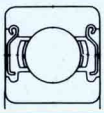
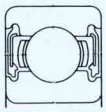
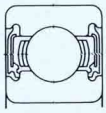
These are thin deep groove ball bearings available in open and sealed types. Bearings with a snap ring are also available. The 68 and 69 types are low maintenance and they facilitate the simple design of bearing surroundings.

Features

- Low frictional and irregular torque ensure highly efficient power transmission and smooth rotating performance.
- The high accuracy of the bearings enables excellent high-speed performance.

Features of shielded and sealed bearings

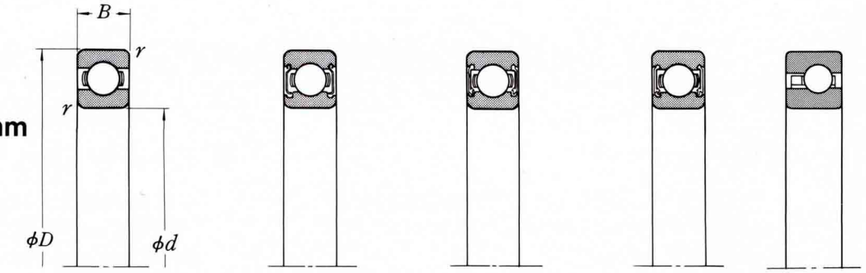
The table below compares the features of shielded, non-contact sealed and contact sealed bearings.

Type / Features	Shielded Type (ZZ)	Non-Contact Rubber Sealed Type(VV)	Contact Rubber Sealed Type(DDU)
			
Torque	Low	Low	Higher than ZZ and VV due to seal contact
Speed capability	Good	Good	Limited by seal contact
Grease sealing effectiveness	Good	Better than ZZ	A little better than VV
Resistance to foreign particles and debris	Good	Better than ZZ (serviceable in moderately particle-contaminated environments)	Best (serviceable even in very particle-contaminated environments)
Water resistance	Not suitable	Not suitable	Good (serviceable even if liquids are splashed on bearing)
Operating temperature (1)	−10 to +110°C	−10 to +110°C	−10 to +100°C

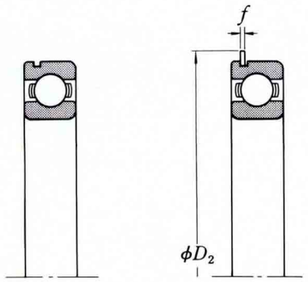
Note (1) The temperature ranges apply to standard bearings. Using cold-or heat-resistant grease and changing the type of rubber can extend the operating temperature ranges. Please contact NSK for details.

NB Type
68 Type
69 Type

Bore Diameter: 10～55 mm

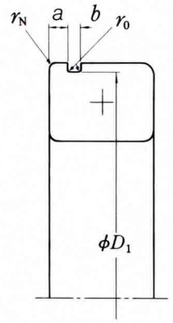


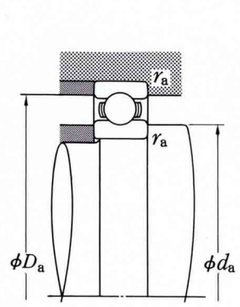
Open | Shielded ZZ | Non-Contact Sealed VV | Contact Sealed DD·DDU | NB7··A

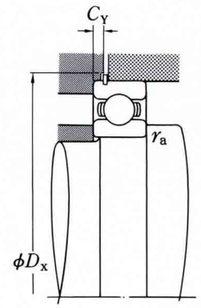


With Snap Ring Groove N

With Snap Ring NR

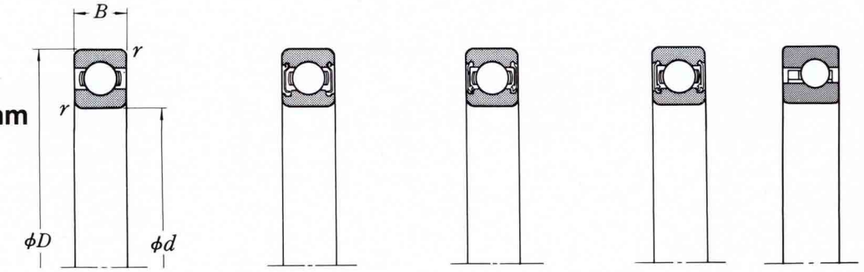




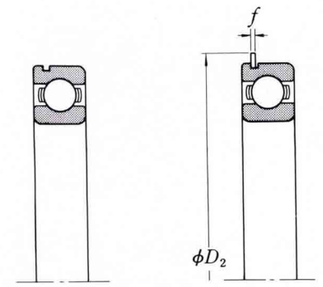


Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers						Snap Ring Groove Dimensions (mm)					Snap Ring Dimensions (mm)		Abutment and Fillet Dimensions (mm)					Mass (kg)
d	D	B	r min	C_r	C_{0r}	Open	Shielded	Sealed		With Snap Ring Groove	With Snap Ring	a max	b min	D_1 max	r_0 max	r_N min	D_2 max	f max	d_a min	D_a max	r_a max	D_x min	C_Y max	approx
10	15	3	0.15	960	515	**NB 700**	—	—	—	—	—	—	—	—	—	—	—	—	11.5	13.5	0.1	—	—	0.001
	19	5	0.3	1 720	840	**6800**	**ZZ**	**VV**	**DD**	—	—	—	—	—	—	—	—	—	12	17	0.3	—	—	0.005
	22	6	0.3	2 700	1 270	**6900**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.05	0.8	20.8	0.2	0.3	24.8	0.7	12	20	0.3	25.5	1.5	0.010
12	18	4	0.2	1 070	655	**NB 701**	—	—	—	—	—	—	—	—	—	—	—	—	14	16	0.2	—	—	0.003
	21	5	0.3	1 920	1 040	**6801**	**ZZ**	**VV**	**DD**	—	—	—	—	—	—	—	—	—	14	19	0.3	—	—	0.006
	24	6	0.3	2 890	1 460	**6901**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.05	0.8	22.8	0.2	0.3	26.8	0.7	14	22	0.3	27.5	1.5	0.011
15	21	4	0.2	1 150	800	**NB 702**	—	—	—	—	—	—	—	—	—	—	—	—	17	19	0.2	—	—	0.004
	24	5	0.3	2 070	1 260	**6802**	**ZZ**	**VV**	**DD**	—	—	—	—	—	—	—	—	—	17	22	0.3	—	—	0.007
	28	7	0.3	4 350	2 260	**6902**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.3	0.95	26.7	0.25	0.3	30.8	0.85	17	26	0.3	31.5	1.8	0.016
17	23	4	0.2	1 200	895	**NB 703**	—	—	—	—	—	—	—	—	—	—	—	—	19	21	0.2	—	—	0.004
	26	5	0.3	2 630	1 570	**6803**	**ZZ**	**VV**	**DD**	—	—	—	—	—	—	—	—	—	19	24	0.3	—	—	0.008
	30	7	0.3	4 600	2 550	**6903**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.3	0.95	28.7	0.25	0.3	32.8	0.85	19	28	0.3	33.5	1.8	0.017
20	27	4	0.2	1 790	1 340	**NB 704**	—	—	—	—	—	—	—	—	—	—	—	—	22	25	0.2	—	—	0.005
	32	7	0.3	4 000	2 470	**6804**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.3	0.95	30.7	0.25	0.3	34.8	0.85	22	30	0.3	35.5	1.8	0.018
	37	9	0.3	6 400	3 700	**6904**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.7	0.95	35.7	0.25	0.3	39.8	0.85	22	35	0.3	40.5	2.3	0.038
25	32	4	0.2	1 930	1 650	**NB 705**	—	—	—	—	—	—	—	—	—	—	—	—	27	30	0.2	—	—	0.007
	37	7	0.3	4 500	3 150	**6805**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.3	0.95	35.7	0.25	0.3	39.8	0.85	27	35	0.3	40.5	1.8	0.021
	42	9	0.3	7 050	4 550	**6905**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.7	0.95	40.7	0.25	0.3	44.8	0.85	27	40	0.3	45.5	2.3	0.043
30	37	4	0.2	2 050	1 950	**NB 706**	—	—	—	—	—	—	—	—	—	—	—	—	32	35	0.2	—	—	0.008
	42	7	0.3	4 700	3 650	**6806**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.3	0.95	40.7	0.25	0.3	44.8	0.85	32	40	0.3	45.5	1.8	0.024
	47	9	0.3	7 250	5 000	**6906**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.7	0.95	45.7	0.25	0.3	49.8	0.85	32	45	0.3	50.5	2.3	0.052
35	44	5	0.3	2 810	2 760	**NB 707**	—	—	—	—	—	—	—	—	—	—	—	—	37	42	0.3	—	—	0.015
	47	7	0.3	4 900	4 100	**6807**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.3	0.95	45.7	0.25	0.3	49.8	0.85	37	45	0.3	50.5	1.8	0.027
	55	10	0.6	10 600	7 250	**6907**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.7	0.95	53.7	0.25	0.5	57.8	0.85	39	51	0.6	58.5	2.3	0.076
40	50	6	0.3	3 650	3 600	**NB 708**	—	—	—	—	—	—	—	—	—	—	—	—	42	48	0.3	—	—	0.022
	52	7	0.3	4 900	4 350	**6808**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.3	0.95	50.7	0.25	0.3	54.8	0.85	42	50	0.3	55.5	1.8	0.031
	62	12	0.6	13 700	10 000	**6908**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.7	0.95	60.7	0.25	0.5	64.8	0.85	44	58	0.6	65.5	2.3	0.112
45	55	6	0.3	3 800	4 050	**NB 709**	—	—	—	—	—	—	—	—	—	—	—	—	47	53	0.3	—	—	0.024
	58	7	0.3	5 350	5 250	**6809**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.3	0.95	56.7	0.25	0.3	60.8	0.85	47	56	0.3	61.5	1.8	0.039
	68	12	0.6	14100	10 900	**6909**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.7	0.95	66.7	0.25	0.5	70.8	0.85	49	64	0.6	72	2.3	0.126
50	62	6	0.3	5 550	5 750	**NB 710**	—	—	—	—	—	—	—	—	—	—	—	—	52	60	0.3	—	—	0.033
	65	7	0.3	6 400	6 200	**6810**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.3	0.95	63.7	0.25	0.3	67.8	0.85	52	63	0.3	68.5	1.8	0.050
	72	12	0.6	14 500	11 700	**6910**	**ZZ**	**VV**	**DDU**	**N**	**NR**	1.7	0.95	70.7	0.25	0.5	74.8	0.85	54	68	0.6	76	2.3	0.135
55	68	7	0.3	6 850	7 100	**NB 711A**	—	—	—	—	—	—	—	—	—	—	—	—	57	66	0.3	—	—	0.044
	72	9	0.3	8 800	8 500	**6811**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.7	0.95	70.7	0.25	0.3	74.8	0.85	57	70	0.3	76	2.3	0.081
	80	13	1	16 000	13 300	**6911**	**ZZ**	**VV**	**DDU**	**N**	**NR**	2.1	1.3	77.9	0.4	0.5	84.4	1.12	60	75	1	86	2.9	0.189

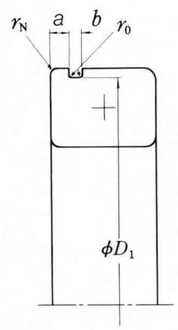
NB Type
68 Type
69 Type
Bore Diameter: 60~120 mm

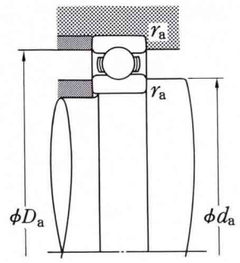


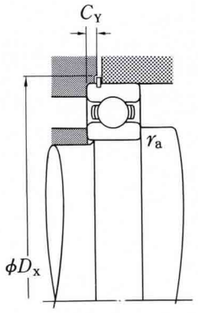
Open | Shielded ZZ | Non-Contact Sealed VV | Contact Sealed DD·DDU | NB7··A



With Snap Ring Groove N | With Snap Ring NR

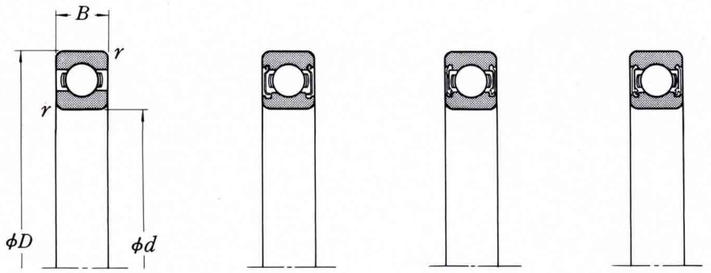




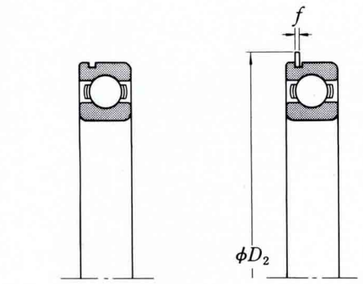


Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers						Snap Ring Groove Dimensions (mm)					Snap Ring Dimensions (mm)		Abutment and Fillet Dimensions (mm)					Mass (kg)
d	D	B	r min	C_r	C_{0r}	Open	Shielded	Sealed		With Snap Ring Groove	With Snap Ring	a max	b min	D_1 max	r_0 max	r_N min	D_2 max	f max	d_a min	D_a max	r_a max	D_x min	C_Y max	approx
60	75	7	0.3	7 000	7 700	**NB 712A**	—	—	—	—	—	—	—	—	—	—	—	—	62	73	0.3	—	—	0.056
	78	10	0.3	11 500	10 900	**6812**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.7	1.3	76.2	0.4	0.3	82.7	1.12	62	76	0.3	84	2.5	0.103
	85	13	1	19 400	16 300	**6912**	**ZZ**	**VV**	**DDU**	**N**	**NR**	2.1	1.3	82.9	0.4	0.5	89.4	1.12	65	80	1	91	2.9	0.192
65	80	7	0.3	7 200	8 300	**NB 713A**	—	—	—	—	—	—	—	—	—	—	—	—	67	78	0.3	—	—	0.060
	85	10	0.6	11 900	12 100	**6813**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.7	1.3	82.9	0.4	0.5	89.4	1.12	69	81	0.6	91	2.5	0.128
	90	13	1	17 400	16 100	**6913**	**ZZ**	**VV**	**DDU**	**N**	**NR**	2.1	1.3	87.9	0.4	0.5	94.4	1.12	70	85	1	96	2.9	0.218
70	85	7	0.3	7 350	8 900	**NB 714A**	—	—	—	—	—	—	—	—	—	—	—	—	72	83	0.3	—	—	0.064
	90	10	0.6	12 100	12 700	**6814**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.7	1.3	87.9	0.4	0.5	94.4	1.12	74	86	0.6	96	2.5	0.134
	100	16	1	23 700	21 200	**6914**	**ZZ**	**VV**	**DDU**	**N**	**NR**	2.5	1.3	97.9	0.4	0.5	104.4	1.12	75	95	1	106	3.3	0.349
75	90	7	0.3	7 550	9 500	**NB 715A**	—	—	—	—	—	—	—	—	—	—	—	—	77	88	0.3	—	—	0.068
	95	10	0.6	12 500	13 900	**6815**	**ZZ**	**VV**	—	**N**	**NR**	1.7	1.3	92.9	0.4	0.5	99.4	1.12	79	91	0.6	101	2.5	0.149
	105	16	1	24 400	22 600	**6915**	**ZZ**	**VV**	—	**N**	**NR**	2.5	1.3	102.6	0.4	0.5	110.7	1.12	80	100	1	112	3.3	0.364
80	95	7	0.3	7 700	10 100	**NB 716A**	—	—	—	—	—	—	—	—	—	—	—	—	82	93	0.3	—	—	0.072
	100	10	0.6	12 700	14 500	**6816**	**ZZ**	**VV**	**DD**	**N**	**NR**	1.7	1.3	97.9	0.4	0.5	104.4	1.12	84	96	0.6	106	2.5	0.150
	110	16	1	25 000	24 000	**6916**	**ZZ**	**VV**	**DDU**	**N**	**NR**	2.5	1.3	107.6	0.4	0.5	115.7	1.12	85	105	1	117	3.3	0.391
85	105	10	0.6	14 400	16 600	**NB 717A**	—	—	—	—	—	—	—	—	—	—	—	—	89	101	0.6	—	—	0.149
	110	13	1	18 700	20 000	**6817**	**ZZ**	**VV**	—	**N**	**NR**	2.1	1.3	107.6	0.4	0.5	115.7	1.12	90	105	1	117	2.9	0.263
	120	18	1.1	32 000	29 600	**6917**	**ZZ**	**VV**	—	**N**	**NR**	3.3	1.3	117.6	0.4	0.5	125.7	1.12	91.5	113.5	1	127	4.1	0.550
90	110	10	0.6	14 600	17 300	**NB 718A**	—	—	—	—	—	—	—	—	—	—	—	—	94	106	0.6	—	—	0.157
	115	13	1	19 000	21 000	**6818**	**ZZ**	**VV**	—	**N**	**NR**	2.1	1.3	112.6	0.4	0.5	120.7	1.12	95	110	1	122	2.9	0.276
	125	18	1.1	33 000	31 500	**6918**	**ZZ**	**VV**	**DDU**	**N**	**NR**	3.3	1.3	122.6	0.4	0.5	130.7	1.12	96.5	118.5	1	132	4.1	0.585
95	115	10	0.6	15 000	18 600	**NB 719A**	—	—	—	—	—	—	—	—	—	—	—	—	99	111	0.6	—	—	0.165
	120	13	1	19 300	22 000	**6819**	—	**VV**	**DD**	**N**	**NR**	2.1	1.3	117.6	0.4	0.5	125.7	1.12	100	115	1	127	2.9	0.297
	130	18	1.1	33 500	33 500	**6919**	**ZZ**	**VV**	—	**N**	**NR**	3.3	1.3	127.6	0.4	0.5	135.7	1.12	101.5	123.5	1	137	4.1	0.600
100	120	10	0.6	15 200	19 300	**NB 720A**	—	—	—	—	—	—	—	—	—	—	—	—	104	116	0.6	—	—	0.173
	125	13	1	19 600	23 000	**6820**	**ZZ**	**VV**	**DD**	**N**	**NR**	2.1	1.3	122.6	0.4	0.5	130.7	1.12	105	120	1	132	2.9	0.310
	140	20	1.1	43 000	42 000	**6920**	**ZZ**	**VV**	**DDU**	**N**	**NR**	3.3	1.9	137.6	0.6	0.5	145.7	1.7	106.5	133.5	1	147	4.7	0.828
105	130	13	1	19 800	23 900	**6821**	—	**VV**	—	**N**	**NR**	2.1	1.3	127.6	0.4	0.5	135.7	1.12	110	125	1	137	2.9	0.324
	145	20	1.1	42 500	42 000	**6921**	**ZZ**	**VV**	—	**N**	**NR**	3.3	1.9	142.6	0.6	0.5	150.7	1.7	111.5	138.5	1	152	4.7	0.856
110	140	16	1	28 100	32 500	**6822**	—	**VV**	—	**N**	**NR**	2.5	1.9	137.6	0.6	0.5	145.7	1.7	115	135	1	147	3.9	0.497
	150	20	1.1	43 500	44 500	**6922**	**ZZ**	—	**DDU**	**N**	**NR**	3.3	1.9	147.6	0.6	0.5	155.7	1.7	116.5	143.5	1	157	4.7	0.893
120	150	16	1	28 900	35 500	**6824**	**ZZ**	**VV**	**DD**	**N**	**NR**	2.5	1.9	147.6	0.6	0.5	155.7	1.7	125	145	1	157	3.9	0.537
	165	22	1.1	53 000	54 000	**6924**	**ZZ**	—	—	**N**	**NR**	3.7	1.9	161.8	0.6	0.5	171.5	1.7	126.5	158.5	1	173	5.1	1.210

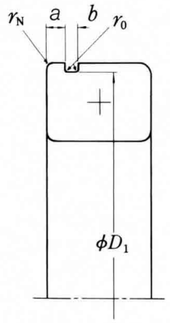
68 Type
69 Type
Bore Diameter: 130~380 mm

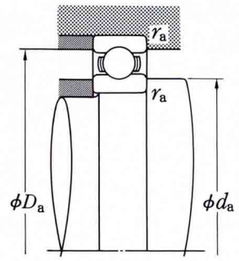


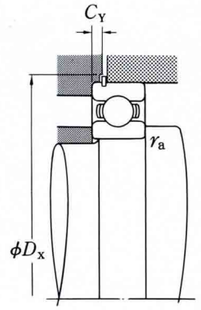
Open | Shielded ZZ·ZZS | Non-Contact Sealed VV | Contact Sealed DDU



With Snap Ring Groove N | With Snap Ring NR





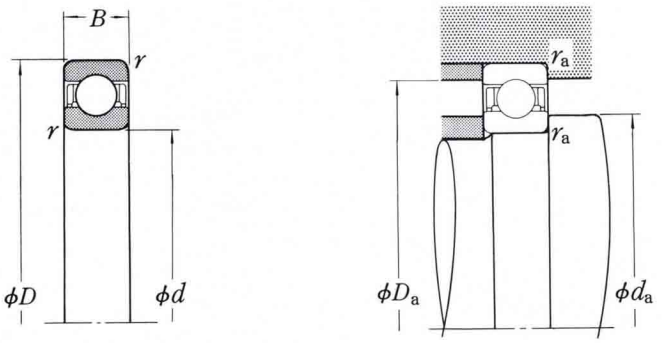


Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers					
								Sealed			
d	D	B	r min	C_r	C_{0r}	Open	Shielded			With Snap Ring Groove	With Snap Ring
130	165	18	1.1	37 000	44 000	**6826**	—	**VV**	—	**N**	**NR**
	180	24	1.5	65 000	67 500	**6926**	**ZZ**	—	—	**N**	**NR**
140	175	18	1.1	38 500	48 000	**6828**	**ZZ**	**VV**	**DDU**	**N**	**NR**
	190	24	1.5	66 500	72 000	**6928**	**ZZS**	**VV**	—	**N**	**NR**
150	190	20	1.1	47 500	58 500	**6830**	—	—	—	**N**	**NR**
	210	28	2	85 000	90 500	**6930**	**ZZS**	—	—	—	—
160	200	20	1.1	48 500	61 000	**6832**	**ZZS**	**VV**	**DDU**	**N**	**NR**
	220	28	2	87 000	96 000	**6932**	**ZZS**	—	**DDU**	—	—
170	215	22	1.1	60 000	75 000	**6834**	**ZZS**	**VV**	**DDU**	—	—
	230	28	2	86 000	97 000	**6934**	**ZZS**	—	—	—	—
180	225	22	1.1	60 500	78 500	**6836**	—	—	—	—	—
	250	33	2	119 000	128 000	**6936**	**ZZS**	—	—	—	—
190	240	24	1.5	73 000	93 500	**6838**	—	**VV**	—	—	—
	260	33	2	113 000	127 000	**6938**	—	—	—	—	—
200	250	24	1.5	74 000	98 000	**6840**	—	—	—	—	—
	280	38	2.1	143 000	158 000	**6940**	**ZZS**	—	—	—	—
220	270	24	1.5	76 500	107 000	**6844**	—	—	—	—	—
	300	38	2.1	146 000	169 000	**6944**	—	—	—	—	—
240	300	28	2	98 500	137 000	**6848**	—	—	—	—	—
	320	38	2.1	154 000	190 000	**6948**	**ZZS**	—	—	—	—
260	320	28	2	101 000	148 000	**6852**	—	—	—	—	—
	360	46	2.1	204 000	255 000	**6952**	—	—	—	—	—
280	350	33	2	133 000	191 000	**6856**	—	—	—	—	—
	380	46	2.1	209 000	272 000	**6956**	**ZZS**	—	—	—	—
300	380	38	2.1	166 000	233 000	**6860**	—	—	—	—	—
	420	56	3	269 000	370 000	**6960**	—	—	—	—	—
320	400	38	2.1	168 000	244 000	**6864**	—	—	—	—	—
	440	56	3	266 000	375 000	**6964**	—	—	—	—	—
340	420	38	2.1	175 000	265 000	**6868**	—	—	—	—	—
	460	56	3	273 000	400 000	**6968**	—	—	—	—	—
360	440	38	2.1	192 000	290 000	**6872**	—	—	—	—	—
	480	56	3	280 000	425 000	**6972**	—	—	—	—	—
380	480	46	2.1	238 000	375 000	**6876**	—	—	—	—	—
	520	65	4	325 000	510 000	**6976**	—	—	—	—	—

Snap Ring Groove Dimensions (mm)					Snap Ring Dimensions (mm)		Abutment and Fillet Dimensions (mm)					Mass (kg)
a max	b min	D_1 max	r_0 max	r_N min	D_2 max	f max	d_a min	D_a max	r_a max	D_x min	C_Y max	approx
3.3	1.9	161.8	0.6	0.5	171.5	1.7	136.5	158.5	1	173	4.7	0.758
3.7	1.9	176.8	0.6	0.5	186.5	1.7	138	172	1.5	188	5.1	1.57
3.3	1.9	171.8	0.6	0.5	181.5	1.7	146.5	168.5	1	183	4.7	0.832
3.7	1.9	186.8	0.6	0.5	196.5	1.7	148	182	1.5	198	5.1	1.67
3.3	1.9	186.8	0.6	0.5	196.5	1.7	156.5	183.5	1	198	4.7	1.15
—	—	—	—	—	—	—	159	201	2	—	—	2.59
3.3	1.9	196.8	0.6	0.5	206.5	1.7	166.5	193.5	1	208	4.7	1.23
—	—	—	—	—	—	—	169	211	2	—	—	2.71
—	—	—	—	—	—	—	176.5	208.5	1	—	—	1.59
—	—	—	—	—	—	—	179	221	2	—	—	2.85
—	—	—	—	—	—	—	186.5	218.5	1	—	—	1.72
—	—	—	—	—	—	—	189	241	2	—	—	4.16
—	—	—	—	—	—	—	198	232	1.5	—	—	2.18
—	—	—	—	—	—	—	199	251	2	—	—	5.18
—	—	—	—	—	—	—	208	242	1.5	—	—	2.67
—	—	—	—	—	—	—	211	269	2	—	—	7.28
—	—	—	—	—	—	—	228	262	1.5	—	—	2.90
—	—	—	—	—	—	—	231	289	2	—	—	7.88
—	—	—	—	—	—	—	249	291	2	—	—	4.48
—	—	—	—	—	—	—	251	309	2	—	—	8.49
—	—	—	—	—	—	—	269	311	2	—	—	4.84
—	—	—	—	—	—	—	271	349	2	—	—	14.0
—	—	—	—	—	—	—	289	341	2	—	—	7.20
—	—	—	—	—	—	—	291	369	2	—	—	15.1
—	—	—	—	—	—	—	311	369	2	—	—	10.3
—	—	—	—	—	—	—	313	407	2.5	—	—	23.9
—	—	—	—	—	—	—	331	389	2	—	—	10.8
—	—	—	—	—	—	—	333	427	2.5	—	—	25.3
—	—	—	—	—	—	—	351	409	2	—	—	11.5
—	—	—	—	—	—	—	353	447	2.5	—	—	26.6
—	—	—	—	—	—	—	371	429	2	—	—	11.8
—	—	—	—	—	—	—	373	467	2.5	—	—	27.9
—	—	—	—	—	—	—	391	469	2	—	—	19.5
—	—	—	—	—	—	—	396	504	3	—	—	40.0

Remark Machined cages are used in bearings of the 68 Type from bearing number 6840 and up, and in the 69 Type from 6938 and up.

68 Type
69 Type
Bore Diameter: 400~800 mm



Open

Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	r min	C_r	C_{0r}	Open	d_a min	D_a max	r_a max	approx
400	500	46	2.1	241 000	390 000	**6880**	411	489	2	20.5
	540	65	4	335 000	540 000	**6980**	416	524	3	42.0
420	520	46	2.1	245 000	410 000	**6884**	431	509	2	21.4
	560	65	4	340 000	570 000	**6984**	436	544	3	43.6
440	540	46	2.1	248 000	425 000	**6888**	451	529	2	22.3
	600	74	4	395 000	680 000	**6988**	456	584	3	60.2
460	580	56	3	310 000	550 000	**6892**	473	567	2.5	34.3
	620	74	4	405 000	720 000	**6992**	476	604	3	62.6
480	600	56	3	315 000	575 000	**6896**	493	587	2.5	35.4
	650	78	5	450 000	815 000	**6996**	500	630	4	73.5
500	620	56	3	320 000	600 000	**68/500**	513	607	2.5	37.2
	670	78	5	460 000	865 000	**69/500**	520	650	4	82.0
530	650	56	3	325 000	625 000	**68/530**	543	637	2.5	39.1
	710	82	5	455 000	870 000	**69/530**	550	690	4	89.8
560	680	56	3	330 000	650 000	**68/560**	573	667	2.5	41.5
	750	85	5	525 000	1 040 000	**69/560**	580	730	4	105
600	730	60	3	355 000	735 000	**68/600**	613	717	2.5	50.9
	800	90	5	550 000	1 160 000	**69/600**	620	780	4	120
630	780	69	4	420 000	890 000	**68/630**	646	764	3	71.3
	850	100	6	625 000	1 350 000	**69/630**	656	824	5	163
670	820	69	4	435 000	965 000	**68/670**	686	804	3	75.4
	900	103	6	675 000	1 460 000	**69/670**	696	874	5	181
710	870	74	4	480 000	1 100 000	**68/710**	726	854	3	92.6
	950	106	6	715 000	1 640 000	**69/710**	736	924	5	208
750	920	78	5	525 000	1 260 000	**68/750**	770	900	4	110
	1 000	112	6	785 000	1 840 000	**69/750**	776	974	5	245
800	980	82	5	530 000	1 310 000	**68/800**	820	960	4	132
	1 060	115	6	825 000	2 050 000	**69/800**	826	1 034	5	278

Radial Internal Clearances

Units: μm

Nominal Bore Diameter d (mm)		Clearance							
		C2		Normal		C3		C4	
over	incl	min	max	min	max	min	max	min	max
–	**10**	0	7	2	13	8	23	14	29
10	**18**	0	9	3	18	11	25	18	33
18	**24**	0	10	5	20	13	28	20	36
24	**30**	1	11	5	20	13	28	23	41
30	**40**	1	11	6	20	15	33	28	46
40	**50**	1	11	6	23	18	36	30	51
50	**65**	1	15	8	28	23	43	38	61
65	**80**	1	15	10	30	25	51	46	71
80	**100**	1	18	12	36	30	58	53	84
100	**120**	2	20	15	41	36	66	61	97
120	**140**	2	23	18	48	41	81	71	114
140	**160**	2	23	18	53	46	91	81	130
160	**180**	2	25	20	61	53	102	91	147
180	**200**	2	30	25	71	63	117	107	163
200	**225**	–	32	25	80	74	134	124	189
225	**250**	–	35	30	90	84	149	144	214
250	**280**	–	40	35	95	89	159	154	234
280	**315**	–	50	50	110	110	180	190	265
315	**355**	–	55	55	125	125	200	215	295
355	**400**	–	65	65	140	140	225	245	330
400	**450**	–	75	75	160	160	255	275	370
450	**500**	–	85	85	180	180	290	315	420
500	**560**	–	90	90	200	200	325	320	465
560	**630**	–	100	100	220	220	355	350	515
630	**710**	–	110	100	240	230	380	370	560
710	**800**	–	120	110	260	250	410	400	610

Remark When selecting clearance smaller than normal for NB7 bearings, please contact NSK.

Tolerances

Tolerances for Inner Rings and Width of Outer Rings

Nominal Bore Diameter d (mm)		Single Plane Mean Bore Diameter Deviation Δ_{dmp}								Deviation of a Single Inner (or Outer) Ring Width Δ_{Bs} (又は Δ_{Cs})			
		Normal		class6		class5		class4		Normal	class6	class5	class4
over	incl	high	low	high	low	high	low	high	low	high	low	high	low
—	**10**	0	− 8	0	− 7	0	− 5	0	− 4	0	−120	0	− 40
10	**18**	0	− 8	0	− 7	0	− 5	0	− 4	0	−120	0	− 80
18	**30**	0	−10	0	− 8	0	− 6	0	− 5	0	−120	0	−120
30	**50**	0	−12	0	−10	0	− 8	0	− 6	0	−120	0	−120
50	**80**	0	−15	0	−12	0	− 9	0	− 7	0	−150	0	−150
80	**120**	0	−20	0	−15	0	−10	0	− 8	0	−200	0	−200
120	**180**	0	−25	0	−18	0	−13	0	−10	0	−250	0	−250
180	**250**	0	−30	0	−22	0	−15	0	−12	0	−300	0	−300
250	**315**	0	−35	0	−25	0	−18	—	—	0	−350	0	−350
315	**400**	0	−40	0	−30	0	−23	—	—	0	−400	0	−400
400	**500**	0	−45	0	−35	—	—	—	—	0	−450	—	—
500	**630**	0	−50	0	−40	—	—	—	—	0	−500	—	—
630	**800**	0	−75	—	—	—	—	—	—	0	−750	—	—

Remark For high-precision NB7 bearings, please contact NSK.

Units:μm

Inner (Outer) Ring Width Variation V_{Bs} (or V_{Cs})				Radial Runout of Assembled Brg Inner Bing K_{ia}				Inner Ring Reference Face Runout with Bore S_d		Assembled Brg Inner Ring Face Runout with Raceway S_{ia}	
Inner Ring (or Outer Ring)		Inner Ring		Normal	class6	class5	class4	class5	class4	class5	class4
Normal	class6	class5	class4								
max	max	max	max	max	max	max	max	max	max	max	max
15	15	5	2.5	10	6	3.5	2.5	7	3	7	3
20	20	5	2.5	10	7	3.5	2.5	7	3	7	3
20	20	5	2.5	13	8	4	3	8	4	8	4
20	20	5	3	15	10	5	4	8	4	8	4
25	25	6	4	20	10	5	4	8	5	8	4
25	25	7	4	25	13	6	5	9	5	9	5
30	30	8	5	30	18	8	6	10	6	10	7
30	30	10	6	40	20	10	8	11	7	13	8
35	35	13	—	50	25	13	—	13	—	15	—
40	45	15	—	60	30	15	—	15	—	20	—
50	45	—	—	65	35	—	—	—	—	—	—
60	50	—	—	70	40	—	—	—	—	—	—
70	—	—	—	80	—	—	—	—	—	—	—

Tolerances for Outer Rings

Nominal Outside Diameter D (mm)		Single Plane Mean Outside Diameter Deviation Δ_{Dmp}								Deviation of a Single Outer Ring Width V_{Cs}		Variation of Brg Outside Surface Generatrix Inclination with Outer Bing Face S_D	
		Normal		class6		class5		class4		class5	class4	class5	class4
over	incl	high	low	high	low	high	low	high	low	max	max	max	max
—	**18**	0	− 8	0	− 7	0	− 5	0	− 4	5	2.5	8	4
18	**30**	0	− 9	0	− 8	0	− 6	0	− 5	5	2.5	8	4
30	**50**	0	− 11	0	− 9	0	− 7	0	− 6	5	2.5	8	4
50	**80**	0	− 13	0	−11	0	− 9	0	− 7	6	3	8	4
80	**120**	0	− 15	0	−13	0	−10	0	− 8	8	4	9	5
120	**150**	0	− 18	0	−15	0	−11	0	− 9	8	5	10	5
150	**180**	0	− 25	0	−18	0	−13	0	−10	8	5	10	5
180	**250**	0	− 30	0	−20	0	−15	0	−11	10	7	11	7
250	**315**	0	− 35	0	−25	0	−18	0	−13	11	7	13	8
315	**400**	0	− 40	0	−28	0	−20	0	−15	13	8	13	10
400	**500**	0	− 45	0	−33	0	−23	—	—	15	—	15	—
500	**630**	0	− 50	0	−38	0	−28	—	—	18	—	18	—
630	**800**	0	− 75	0	−45	0	−35	—	—	20	—	20	—
800	**1 000**	0	−100	0	−60	—	—	—	—	—	—	—	—
1 000	**1 250**	0	−125	—	—	—	—	—	—	—	—	—	—

Remark For high-precision NB7 bearings, please contact NSK.

Units:μm

Radial Runout of Assembled Brg Outer Ring K_{ea}				Assembled Brg Outer Ring Face Runout with Raceway S_{ea}	
Normal	class6	class5	class4	class5	class4
max	max	max	max	max	max
15	8	5	3	8	5
15	9	6	4	8	5
20	10	7	5	8	5
25	13	8	5	10	5
35	18	10	6	11	6
40	20	11	7	13	7
45	23	13	8	14	8
50	25	15	10	15	10
60	30	18	11	18	10
70	35	20	13	20	13
80	40	23	—	23	—
100	50	25	—	25	—
120	60	30	—	30	—
140	75	—	—	—	—
160	—	—	—	—	—

Tolerances and Radial Internal Clearances in NBC Type Ball Bearings (Class PK1)

Standard tolerances and radial internal clearances in NBC-type ball bearings are listed below. If bearings with higher accuracy or special clearance are required, please contact NSK.

Units:μm

Nominal Bearing Bore Diameter d (mm)		Single Plane Mean Bore Diameter Deviation Δ_{dmp}		Single Plane Mean Outside Diameter Deviation Δ_{Dmp}		Deviation of a Single Inner Ring Width Δ_{Bs}		Radial Internal Clearance	
over	incl	high	low	high	low	high	low	min	max
—	**25.400**	0	−10	0	−13	0	−127	25	41
25.400	**38.100**	0	−13	0	−13	0	−127	30	46
38.100	**63.500**	0	−15	0	−13	0	−127	30	61
63.500	**76.200**	0	−15	0	−15	0	−127	30	61
76.200	**101.600**	0	−20	0	−15	0	−127	41	71
101.600	**114.300**	0	−20	0	−20	0	−127	41	71
114.300	**127.000**	0	−25	0	−20	0	−127	51	86
127.000	**165.100**	0	−25	0	−25	0	−127	51	86
165.100	**177.800**	0	−25	0	−30	0	−127	51	86
177.800	**228.600**	0	−30	0	−30	0	−127	61	107
228.600	**304.800**	0	−36	0	−36	0	−127	71	122
304.800	**355.600**	0	−41	0	−41	0	−254	81	132
355.600	**457.200**	0	−46	0	−46	0	−254	91	142
457.200	**508.000**	0	−51	0	−51	0	−254	102	152
508.000	**762.000**	0	−76	0	−76	0	−254	152	203

Tolerances and Redial Internal Clearances in NBA and NBX Type Ball Bearings (Class PK1)

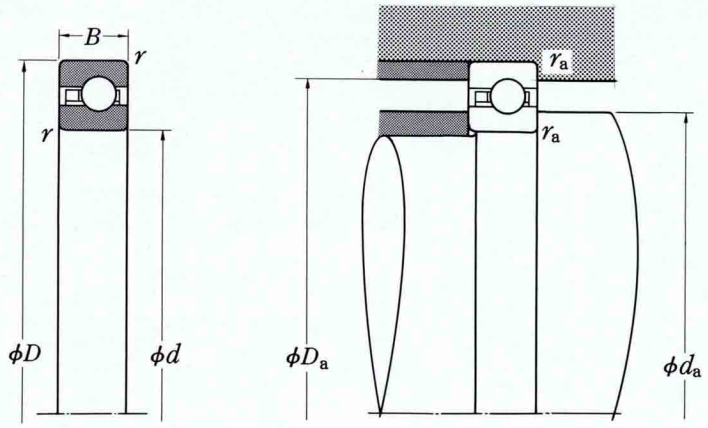
Standard tolerances in NBA and NBX-type ball bearings and radial internal clearances in NBX-type ball bearings are listed below. If bearings with higher accuracy or special clearance are required, please contact NSK.

Units:μm

Nominal Bearing Bore Diameter d (mm)		Single Plane Mean Bore Diameter Deviation Δ_{dmp}		Single Plane Mean Outside Diameter Deviation Δ_{Dmp}		Deviation of a Single Inner Ring Width Δ_{Bs}		Radial Internal Clearance	
over	incl	high	low	high	low	high	low	min	max
—	**25.400**	0	−10	0	−13	0	−127	25	38
25.400	**38.100**	0	−13	0	−13	0	−127	30	43
38.100	**63.500**	0	−15	0	−13	0	−127	30	56
63.500	**76.200**	0	−15	0	−15	0	−127	30	56
76.200	**101.600**	0	−20	0	−15	0	−127	41	66
101.600	**114.300**	0	−20	0	−20	0	−127	41	66
114.300	**127.000**	0	−25	0	−20	0	−127	51	76
127.000	**165.100**	0	−25	0	−25	0	−127	51	76
165.100	**177.800**	0	−25	0	−30	0	−127	51	76
177.800	**228.600**	0	−30	0	−30	0	−127	61	86
228.600	**304.800**	0	−36	0	−36	0	−127	71	97
304.800	**355.600**	0	−36	0	−36	0	−254	71	97
355.600	**457.200**	0	−41	0	−41	0	−254	81	107
457.200	**762.000**	0	−46	0	−46	0	−254	91	117
762.000	**1 016.000**	0	−51	0	−51	0	−254	102	127

NBC Type

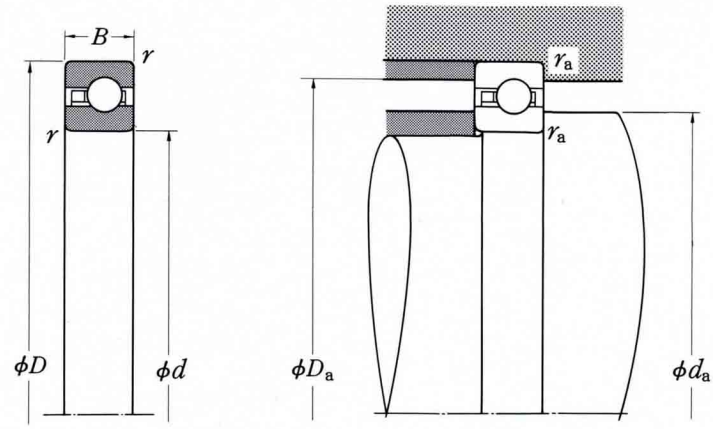
Bore Diameter: 25.4~127.0 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	$r\ ^{+0.5}_{0}$	C_r	C_{0r}		d_a min	D_a max	r_a max	approx
25.400	34.925	4.762	0.4	2 480	2 010	**NBC 2504**	28.5	31.5	0.4	0.012
38.100	47.625	4.762	0.4	2 810	2 880	**NBC 3804**	41.5	44.5	0.4	0.018
50.800	63.500	6.350	0.7	4 500	4 750	**NBC 5006**	55	59.5	0.6	0.043
	66.675	7.938	1.1	6 350	6 250	**NBC 5007**	56	61.5	1	0.070
63.500	76.200	6.350	0.7	4 850	5 900	**NBC 6306**	67.5	72	0.6	0.054
	79.375	7.938	1.1	6 900	7 700	**NBC 6307**	68.5	74	1	0.084
76.200	88.900	6.350	0.7	5 200	7 050	**NBC 7606**	80.5	84.5	0.6	0.060
	92.075	7.938	1.1	7 350	9 200	**NBC 7607**	81.5	87	1	0.10
88.900	101.600	6.350	0.7	5 450	8 200	**NBC 8806**	93	97.5	0.6	0.070
	104.775	7.938	1.1	7 750	10 700	**NBC 8807**	94	99.5	1	0.11
101.600	114.300	6.350	0.7	5 750	9 350	**NBC10106**	106	110	0.6	0.080
	117.475	7.938	1.1	8 150	12 200	**NBC10107**	107	112	1	0.13
	120.650	9.525	1.1	10 300	14 200	**NBC10109**	107	115.5	1	0.18
	127.000	12.700	1.6	15 700	19 100	**NBC10112**	108	121	1.5	0.35
	139.700	19.050	2.1	28 200	29 200	**NBC10119**	109	132.5	2	0.82
	152.400	25.400	2.1	42 500	39 500	**NBC10125**	109	145	2	1.60
107.950	120.650	6.350	0.7	5 850	9 900	**NBC10706**	112	116.5	0.6	0.089
	123.825	7.938	1.1	8 250	12 800	**NBC10707**	113	118.5	1	0.14
	127.000	9.525	1.1	10 500	15 000	**NBC10709**	113	122	1	0.20
	133.350	12.700	1.6	15 800	19 900	**NBC10712**	114	127	1.5	0.37
	146.050	19.050	2.1	28 800	31 000	**NBC10719**	115	139	2	0.90
	158.750	25.400	2.1	42 000	40 000	**NBC10725**	115	151.5	2	1.70
114.300	127.000	6.350	0.7	6 000	10 500	**NBC11406**	118.5	123	0.6	0.094
	130.175	7.938	1.1	8 450	13 700	**NBC11407**	119.5	125	1	0.15
	133.350	9.525	1.1	10 800	15 900	**NBC11409**	119.5	128	1	0.20
	139.700	12.700	1.6	16 300	21 400	**NBC11412**	120.5	133.5	1.5	0.38
	152.400	19.050	2.1	29 400	32 500	**NBC11419**	121.5	145	2	0.90
	165.100	25.400	2.1	43 500	43 000	**NBC11425**	121.5	158	2	1.75
120.650	133.350	6.350	0.7	6 100	11 100	**NBC12006**	125	129	0.6	0.099
	136.525	7.938	1.1	8 600	14 300	**NBC12007**	126	131.5	1	0.16
	139.700	9.525	1.1	11 000	16 700	**NBC12009**	126	134.5	1	0.22
	146.050	12.700	1.6	16 500	22 100	**NBC12012**	127	140	1.5	0.40
	158.750	19.050	2.1	29 900	34 500	**NBC12019**	120	151.5	2	0.95
	171.450	25.400	2.1	45 000	46 000	**NBC12025**	128	164	2	1.85
127.000	139.700	6.350	0.7	6 200	11 600	**NBC12706**	131	135.5	0.6	0.10
	142.875	7.938	1.1	8 800	15 200	**NBC12707**	132	137.5	1	0.16
	146.050	9.525	1.1	11 200	17 600	**NBC12709**	132	141	1	0.23
	152.400	12.700	1.6	16 900	23 600	**NBC12712**	133	146	1.5	0.40
	165.100	19.050	2.1	30 500	36 000	**NBC12719**	134	158	2	1.00
	177.800	25.400	2.1	46 000	49 000	**NBC12725**	134	170.5	2	1.80

NBC Type

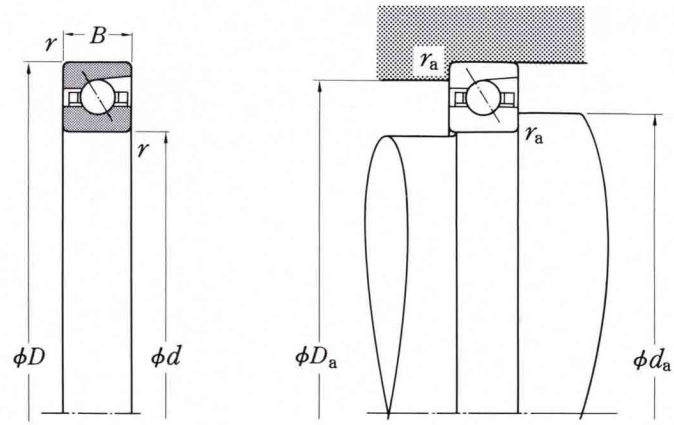
Bore Diameter: 139.7～635 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	r $^{+0.5}_{0}$	C_r	C_{0r}		d_a min	D_a max	r_a max	approx
139.700	152.400	6.350	0.7	6 400	12 800	**NBC13906**	144	148	0.6	0.11
	155.575	7.938	1.1	9 100	16 700	**NBC13907**	145	150.5	1	0.18
	158.750	9.525	1.1	11 500	19 300	**NBC13909**	145	153.5	1	0.26
	165.100	12.700	1.6	17 500	25 900	**NBC13912**	146	159	1.5	0.45
	177.800	19.050	2.1	31 500	39 500	**NBC13919**	147	170.5	2	1.15
	190.500	25.400	2.1	47 000	52 000	**NBC13925**	147	183.5	2	2.10
152.400	165.100	6.350	0.7	6 600	13 900	**NBC15206**	156.5	161	0.6	0.12
	168.275	7.938	1.1	9 400	18 200	**NBC15207**	157.5	163	1	0.20
	171.450	9.525	1.1	11 900	21 000	**NBC15209**	157.5	166	1	0.28
	177.800	12.700	1.6	18 100	28 200	**NBC15212**	158.5	171.5	1.5	0.50
	190.500	19.050	2.1	32 500	43 000	**NBC15219**	159.5	183.5	2	1.20
	203.200	25.400	2.1	49 500	58 000	**NBC15225**	159.5	196	2	2.20
165.100	177.800	6.350	0.7	6 800	15 100	**NBC16506**	169.5	173.5	0.6	0.13
	180.975	7.938	1.1	9 650	19 600	**NBC16507**	170.5	175.5	1	0.21
	184.150	9.525	1.1	12 200	22 700	**NBC16509**	170.5	179	1	0.30
	190.500	12.700	1.6	18 600	30 500	**NBC16512**	171.5	184.5	1.5	0.55
	203.200	19.050	2.1	33 500	46 500	**NBC16519**	172.5	196	2	1.25
	215.900	25.400	2.1	50 000	61 000	**NBC16525**	172.5	208.5	2	2.30
177.800	190.500	6.350	0.7	7 000	16 200	**NBC17706**	182	186.5	0.6	0.14
	193.675	7.938	1.1	9 900	21 100	**NBC17707**	183	188.5	1	0.23
	196.850	9.525	1.1	12 600	24 500	**NBC17709**	183	191.5	1	0.32
	215.900	19.050	2.1	34 500	50 000	**NBC17719**	185	208.5	2	1.30
	228.600	25.400	2.1	52 000	67 000	**NBC17725**	185	221.5	2	2.50
190.500	228.600	19.050	2.1	35 000	53 000	**NBC19019**	197.5	221.5	2	1.40
	241.300	25.400	2.1	52 500	70 500	**NBC19025**	197.5	234	2	2.65
203.200	241.300	19.050	2.1	36 000	56 500	**NBC20319**	210.5	234	2	1.50
	254.000	25.400	2.1	54 500	76 500	**NBC20325**	210.5	247	2	2.80
228.600	266.700	19.050	2.1	37 500	63 500	**NBC22819**	236	259.5	2	1.70
	279.400	25.400	2.1	57 000	85 500	**NBC22825**	236	272	2	3.10
254.000	292.100	19.050	2.1	39 000	70 500	**NBC25419**	261	285	2	1.85
	304.800	25.400	2.1	59 000	94 500	**NBC25425**	261	297.5	2	3.40
279.400	330.200	25.400	2.1	61 000	104 000	**NBC27925**	286.5	323	2	3.75
304.800	355.600	25.400	2.1	63 000	113 000	**NBC30425**	312	348.5	2	4.00
355.600	406.400	25.400	2.1	66 500	131 000	**NBC35525**	363	399	2	4.70
406.400	457.200	25.400	2.1	69 500	149 000	**NBC40625**	413.5	450	2	5.20
457.200	508.000	25.400	2.1	72 500	168 000	**NBC45725**	464.5	501	2	6.10
508.000	558.800	25.400	2.1	75 000	186 000	**NBC50825**	515	551.5	2	6.75
635.000	685.800	25.400	2.1	81 500	232 000	**NBC63525**	642	678.5	2	8.35

NBA Type

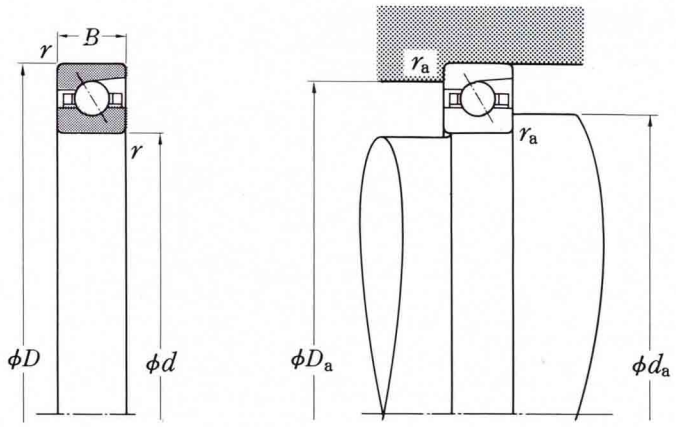
Bore Diameter: 25.4~127.0 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	r $^{+0.5}_{0}$	C_r	C_{0r}		d_a min	D_a max	r_a max	approx
25.400	34.925	4.762	0.4	2 620	2 360	**NBA 2504**	28.5	31.5	0.4	0.013
38.100	47.625	4.762	0.4	3 050	3 500	**NBA 3804**	41.5	44.5	0.4	0.018
50.800	63.500	6.350	0.7	4 750	5 550	**NBA 5006**	55	59.5	0.6	0.046
	66.675	7.938	1.1	6 750	7 350	**NBA 5007**	56	61.5	1	0.076
63.500	76.200	6.350	0.7	5 100	6 900	**NBA 6306**	67.5	72	0.6	0.057
	79.375	7.938	1.1	7 350	9 200	**NBA 6307**	68.5	74	1	0.090
76.200	88.900	6.350	0.7	5 450	8 200	**NBA 7606**	80.5	84.5	0.6	0.067
	92.075	7.938	1.1	7 700	10 700	**NBA 7607**	81.5	87	1	0.11
88.900	101.600	6.350	0.7	5 750	9 550	**NBA 8806**	93	97.5	0.6	0.077
	104.775	7.938	1.1	8 200	12 500	**NBA 8807**	94	99.5	1	0.13
101.600	114.300	6.350	0.7	6 000	10 800	**NBA10106**	106	110	0.6	0.087
	117.475	7.938	1.1	8 600	14 300	**NBA10107**	107	112	1	0.14
	120.650	9.525	1.1	11 200	17 300	**NBA10109**	107	115.5	1	0.20
	127.000	12.700	1.6	16 500	22 200	**NBA10112**	108	121	1.5	0.37
	139.700	19.050	2.1	30 500	35 000	**NBA10119**	109	132.5	2	0.90
	152.400	25.400	2.1	45 000	46 500	**NBA10125**	109	145	2	1.70
107.950	120.650	6.350	0.7	6 150	11 500	**NBA10706**	112	116.5	0.6	0.093
	123.825	7.938	1.1	8 750	15 100	**NBA10707**	113	118.5	1	0.15
	127.000	9.525	1.1	11 500	18 400	**NBA10709**	113	122	1	0.22
	133.350	12.700	1.6	16 800	23 600	**NBA10712**	114	127	1.5	0.40
	146.050	19.050	2.1	30 500	36 500	**NBA10719**	115	139	2	0.95
	158.750	25.400	2.1	46 000	49 500	**NBA10725**	115	151.5	2	1.80
114.300	127.000	6.350	0.7	6 250	12 200	**NBA11406**	118.5	123	0.6	0.098
	130.175	7.938	1.1	8 900	15 900	**NBA11407**	119.5	125	1	0.16
	133.350	9.525	1.1	11 700	19 500	**NBA11409**	119.5	128	1	0.23
	139.700	12.700	1.6	17 200	24 900	**NBA11412**	120.5	133.5	1.5	0.41
	152.400	19.050	2.1	31 500	39 500	**NBA11419**	121.5	145	2	1.00
	165.100	25.400	2.1	47 000	52 000	**NBA11425**	121.5	158	2	1.85
120.650	133.350	6.350	0.7	6 400	12 800	**NBA12006**	125	129	0.6	0.10
	136.525	7.938	1.1	9 150	16 900	**NBA12007**	126	131.5	1	0.16
	139.700	9.525	1.1	12 000	20 600	**NBA12009**	126	134.5	1	0.24
	146.050	12.700	1.6	17 500	26 200	**NBA12012**	127	140	1.5	0.43
	158.750	19.050	2.1	32 000	41 000	**NBA12019**	128	151.5	2	1.05
	171.450	25.400	2.1	48 000	54 500	**NBA12025**	128	164	2	1.95
127.000	139.700	6.350	0.7	6 500	13 500	**NBA12706**	131	135.5	0.6	0.11
	142.875	7.938	1.1	9 250	17 700	**NBA12707**	132	137.5	1	0.17
	146.050	9.525	1.1	12 200	21 700	**NBA12709**	132	141	1	0.25
	152.400	12.700	1.6	17 800	27 500	**NBA12712**	133	146	1.5	0.46
	165.100	19.050	2.1	32 500	42 500	**NBA12719**	134	158	2	1.10
	177.800	25.400	2.1	49 000	57 500	**NBA12725**	134	170.5	2	2.05

NBA Type

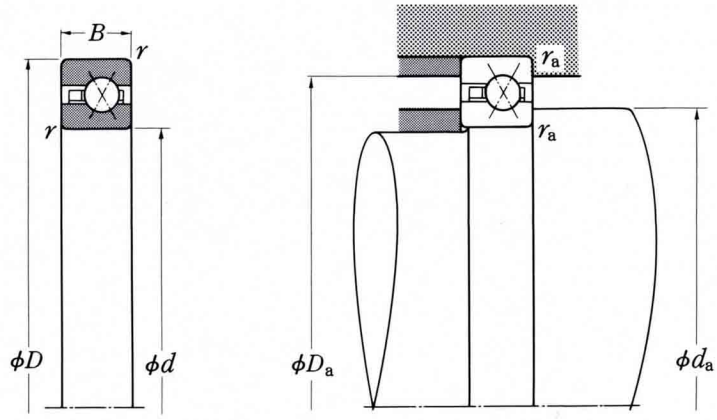
Bore Diameter: 139.7～635 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	r $^{+0.5}_{0}$	C_r	C_{0r}		d_a min	D_a max	r_a max	approx
139.700	152.400	6.350	0.7	6 750	14 800	**NBA13906**	144	148	0.6	0.12
	155.575	7.938	1.1	9 600	19 500	**NBA13907**	145	150.5	1	0.19
	158.750	9.525	1.1	12 500	23 600	**NBA13909**	145	153.5	1	0.27
	165.100	12.700	1.6	18 400	30 000	**NBA13912**	146	159	1.5	0.50
	177.800	19.050	2.1	35 500	47 000	**NBA13919**	147	170.5	2	1.20
	190.500	25.400	2.1	50 500	62 500	**NBA13925**	147	183.5	2	2.20
152.400	165.100	6.350	0.7	6 950	16 100	**NBA15206**	156.5	161	0.6	0.13
	168.275	7.938	1.1	9 900	21 300	**NBA15207**	157.5	163	1	0.20
	171.450	9.525	1.1	13 000	25 800	**NBA15209**	157.5	166	1	0.30
	177.800	12.700	1.6	19 000	33 000	**NBA15212**	158.5	171.5	1.5	0.54
	190.500	19.050	2.1	35 000	51 500	**NBA15219**	159.5	183.5	2	1.30
	203.200	25.400	2.1	52 000	68 000	**NBA15225**	159.5	196	2	2.35
165.100	177.800	6.350	0.7	7 150	17 500	**NBA16506**	169.5	173.5	0.6	0.14
	180.975	7.938	1.1	10 100	22 900	**NBA16507**	170.5	175.5	1	0.22
	184.150	9.525	1.1	13 400	28 100	**NBA16509**	170.5	179	1	0.32
	190.500	12.700	1.6	19 500	35 500	**NBA16512**	171.5	184.5	1.5	0.58
	203.200	19.050	2.1	36 000	56 000	**NBA16519**	172.5	196	2	1.40
	215.900	25.400	2.1	53 500	73 000	**NBA16525**	172.5	208.5	2	2.55
177.800	190.500	6.350	0.7	7 350	18 800	**NBA17706**	182	186.5	0.6	0.15
	193.675	7.938	1.1	10 400	24 700	**NBA17707**	183	188.5	1	0.24
	196.850	9.525	1.1	13 700	29 900	**NBA17709**	183	191.5	1	0.34
	215.900	19.050	2.1	37 000	60 500	**NBA17719**	185	208.5	2	1.45
	228.600	25.400	2.1	55 000	78 500	**NBA17725**	185	221.5	2	2.70
190.500	228.600	19.050	2.1	37 500	63 500	**NBA19019**	197.5	221.5	2	1.55
	241.300	25.400	2.1	56 000	83 500	**NBA19025**	197.5	234	2	2.90
203.200	241.300	19.050	2.1	38 500	68 000	**NBA20319**	210.5	234	2	1.65
	254.000	25.400	2.1	57 500	89 000	**NBA20325**	210.5	247	2	3.00
228.600	266.700	19.050	2.1	40 500	76 500	**NBA22819**	236	259.5	2	1.85
	279.400	25.400	2.1	60 000	99 500	**NBA22825**	236	272	2	3.40
254.000	292.100	19.050	2.1	41 500	84 000	**NBA25419**	261	285	2	2.00
	304.800	25.400	2.1	62 000	110 000	**NBA25425**	261	297.5	2	3.75
279.400	330.200	25.400	2.1	64 000	121 000	**NBA27925**	286.5	323	2	4.00
304.800	355.600	25.400	2.1	66 000	131 000	**NBA30425**	312	348.5	2	4.40
355.600	406.400	25.400	2.1	69 500	152 000	**NBA35525**	363	399	2	5.10
406.400	457.200	25.400	2.1	73 000	174 000	**NBA40625**	413.5	450	2	5.75
457.200	508.000	25.400	2.1	76 000	195 000	**NBA45725**	464.5	501	2	6.45
508.000	558.800	25.400	2.1	79 000	216 000	**NBA50825**	515	551.5	2	7.00
635.000	685.800	25.400	2.1	85 500	269 000	**NBA63525**	642	678.5	2	8.70

NBX Type

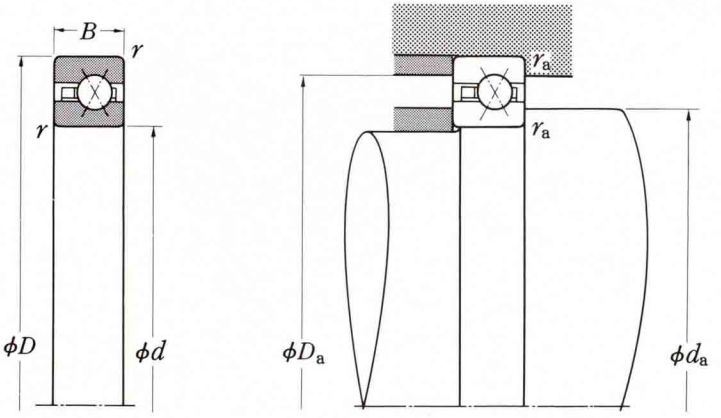
Bore Diameter: 25.4~127.0 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	r $^{+0.5}_{0}$	C_r	C_{0r}		d_a min	D_a max	r_a max	approx
25.400	34.925	4.762	0.4	2 170	1 770	**NBX 2504**	28.5	31.5	0.4	0.012
38.100	47.625	4.762	0.4	2 440	2 520	**NBX 3804**	41.5	44.5	0.4	0.018
50.800	63.500	6.350	0.7	3 900	4 150	**NBX 5006**	55	59.5	0.6	0.043
	66.675	7.938	1.1	5 550	5 450	**NBX 5007**	56	61.5	1	0.070
63.500	76.200	6.350	0.7	4 200	5 150	**NBX 6306**	67.5	72	0.6	0.054
	79.375	7.938	1.1	6 000	6 750	**NBX 6307**	68.5	74	1	0.084
76.200	88.900	6.350	0.7	4 500	6 150	**NBX 7606**	80.5	84.5	0.6	0.060
	92.075	7.938	1.1	6 400	8 050	**NBX 7607**	81.5	87	1	0.10
88.900	101.600	6.350	0.7	4 750	7 150	**NBX 8806**	93	97.5	0.6	0.070
	104.775	7.938	1.1	6 750	9 350	**NBX 8807**	94	99.5	1	0.11
101.600	114.300	6.350	0.7	4 950	8 150	**NBX10106**	106	110	0.6	0.080
	117.475	7.938	1.1	7 050	10 600	**NBX10107**	107	112	1	0.13
	120.650	9.525	1.1	8 950	12 400	**NBX10109**	107	115.5	1	0.18
	127.000	12.700	1.6	13 600	16 700	**NBX10112**	108	121	1.5	0.35
	139.700	19.050	2.1	24 600	25 700	**NBX10119**	109	132.5	2	0.82
	152.400	25.400	2.1	37 500	35 000	**NBX10125**	109	145	2	1.60
107.950	120.650	6.350	0.7	5 050	8 650	**NBX10706**	112	116.5	0.6	0.089
	123.825	7.938	1.1	7 150	11 200	**NBX10707**	113	118.5	1	0.14
	127.000	9.525	1.1	9 150	13 100	**NBX10709**	113	122	1	0.20
	133.350	12.700	1.6	13 700	17 400	**NBX10712**	114	127	1.5	0.37
	146.050	19.050	2.1	25 100	27 100	**NBX10719**	115	139	2	0.90
	158.750	25.400	2.1	37 000	35 500	**NBX10725**	115	151.5	2	1.70
114.300	127.000	6.350	0.7	5 200	9 150	**NBX11406**	118.5	123	0.6	0.094
	130.175	7.938	1.1	7 350	11 900	**NBX11407**	119.5	125	1	0.15
	133.350	9.525	1.1	9 350	13 800	**NBX11409**	119.5	128	1	0.20
	139.700	12.700	1.6	14 200	18 700	**NBX11412**	120.5	133.5	1.5	0.38
	152.400	19.050	2.1	25 600	28 600	**NBX11419**	121.5	145	2	0.90
	165.100	25.400	2.1	38 000	38 000	**NBX11425**	121.5	158	2	1.75
120.650	133.350	6.350	0.7	5 300	9 600	**NBX12006**	125	129	0.6	0.099
	136.525	7.938	1.1	7 450	12 400	**NBX12007**	126	131.5	1	0.16
	139.700	9.525	1.1	9 500	14 600	**NBX12009**	126	134.5	1	0.22
	146.050	12.700	1.6	14 300	19 300	**NBX12012**	127	140	1.5	0.40
	158.750	19.050	2.1	26 100	30 000	**NBX12019**	128	151.5	2	0.95
	171.450	25.400	2.1	39 000	40 500	**NBX12025**	128	164	2	1.85
127.000	139.700	6.350	0.7	5 350	10 100	**NBX12706**	131	135.5	0.6	0.10
	142.875	7.938	1.1	7 600	13 200	**NBX12707**	132	137.5	1	0.16
	146.050	9.525	1.1	9 650	15 300	**NBX12709**	132	141	1	0.23
	152.400	12.700	1.6	14 700	20 700	**NBX12712**	133	146	1.5	0.40
	165.100	19.050	2.1	26 500	31 500	**NBX12719**	134	158	2	1.00
	177.800	25.400	2.1	40 500	43 000	**NBX12725**	134	170.5	2	1.80

NBX Type

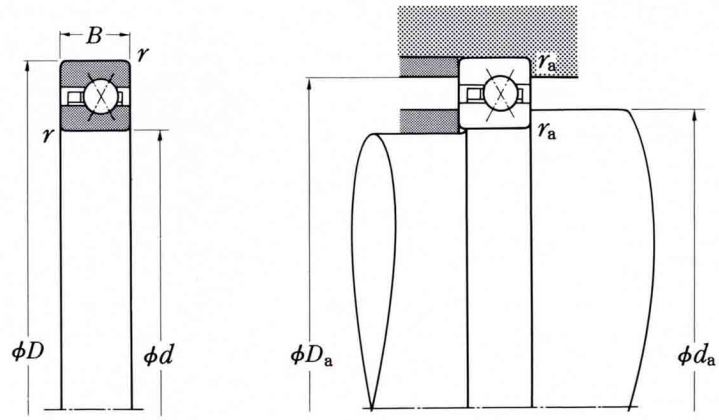
Bore Diameter: 139.7～228.6 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	$r\ ^{+0.5}_{0}$	C_r	C_{0r}		d_a min	D_a max	r_a max	approx
139.700	152.400	6.350	0.7	5 550	11 100	**NBX13906**	144	148	0.6	0.11
	155.575	7.938	1.1	7 900	14 500	**NBX13907**	145	150.5	1	0.18
	158.750	9.525	1.1	10 000	16 800	**NBX13909**	145	153.5	1	0.26
	165.100	12.700	1.6	15 200	22 600	**NBX13912**	146	159	1.5	0.45
	177.800	19.050	2.1	27 400	34 500	**NBX13919**	147	170.5	2	1.15
	190.500	25.400	2.1	41 000	45 500	**NBX13925**	147	183.5	2	2.10
152.400	165.100	6.350	0.7	5 750	12 100	**NBX15206**	156.5	161	0.6	0.12
	168.275	7.938	1.1	8 100	15 800	**NBX15207**	157.5	163	1	0.20
	171.450	9.525	1.1	10 300	18 300	**NBX15209**	157.5	166	1	0.28
	177.800	12.700	1.6	15 700	24 600	**NBX15212**	158.5	171.5	1.5	0.50
	190.500	19.050	2.1	28 200	37 500	**NBX15219**	159.5	183.5	2	1.20
	203.200	25.400	2.1	43 000	51 000	**NBX15225**	159.5	196	2	2.20
165.100	177.800	6.350	0.7	5 900	13 100	**NBX16506**	169.5	173.5	0.6	0.13
	180.975	7.938	1.1	8 350	17 100	**NBX16507**	170.5	175.5	1	0.21
	184.150	9.525	1.1	10 600	19 800	**NBX16509**	170.5	179	1	0.30
	190.500	12.700	1.6	16 100	26 600	**NBX16512**	171.5	184.5	1.5	0.55
	203.200	19.050	2.1	29 000	40 500	**NBX16519**	172.5	196	2	1.25
	215.900	25.400	2.1	43 500	53 500	**NBX16525**	172.5	208.5	2	2.30
177.800	190.500	6.350	0.7	6 050	14 100	**NBX17706**	182	186.5	0.6	0.14
	193.675	7.938	1.1	8 600	18 400	**NBX17707**	183	188.5	1	0.23
	196.850	9.525	1.1	10 900	21 300	**NBX17709**	183	191.5	1	0.32
	203.200	12.700	1.6	16 500	28 600	**NBX17712**	184	197	1.5	0.60
	215.900	19.050	2.1	29 800	43 500	**NBX17719**	184	208.5	2	1.30
	228.600	25.400	2.1	45 500	59 000	**NBX17725**	185	221.5	2	2.50
190.500	206.375	7.938	1.1	8 800	19 700	**NBX19007**	195.5	201	1	0.24
	209.550	9.525	1.1	11 100	22 800	**NBX19009**	195.5	204.5	1	0.35
	215.900	12.700	1.6	16 900	30 500	**NBX19012**	196.5	209.5	1.5	0.64
	228.600	19.050	2.1	30 500	46 500	**NBX19019**	197.5	221.5	2	1.40
	241.300	25.400	2.1	46 000	61 500	**NBX19025**	197.5	234	2	2.65
203.200	219.075	7.938	1.1	9 000	21 000	**NBX20307**	208.5	214	1	0.26
	222.250	9.525	1.1	11 400	24 200	**NBX20309**	208.5	217	1	0.37
	228.600	12.700	1.6	17 300	32 500	**NBX20312**	209.5	222.5	1.5	0.68
	241.300	19.050	2.1	31 000	49 500	**NBX20319**	210.5	234	2	1.50
	254.000	25.400	2.1	47 500	66 500	**NBX20325**	210.5	247	2	2.80
228.600	247.650	9.525	1.1	11 900	27 200	**NBX22809**	234	242.5	1	0.41
	254.000	12.700	1.6	18 000	36 500	**NBX22812**	235	248	1.5	0.76
	266.700	19.050	2.1	32 500	55 500	**NBX22819**	236	259.5	2	1.70
	279.400	25.400	2.1	49 500	74 500	**NBX22825**	236	272	2	3.10

NBX Type

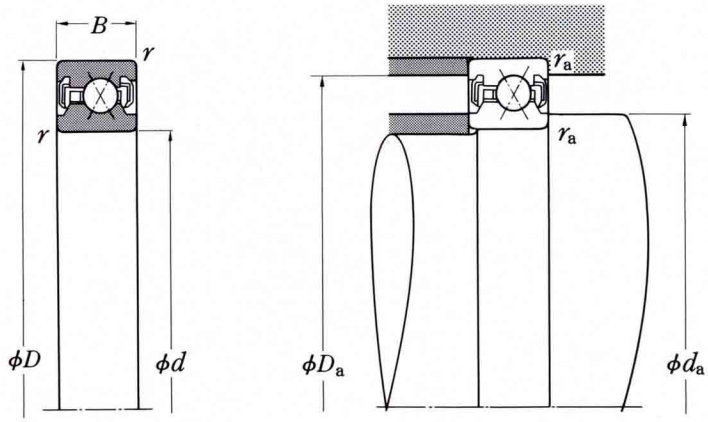
Bore Diameter: 254.0~1 016.0 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	r $^{+0.5}_{0}$	C_r	C_{0r}		d_a min	D_a max	r_a max	approx
254.000	273.050	9.525	1.1	12 300	30 000	**NBX25409**	259	268	1	0.46
	279.400	12.700	1.6	18 700	40 500	**NBX25412**	260	273	1.5	0.84
	292.100	19.050	2.1	33 500	61 500	**NBX25419**	261	285	2	1.85
	304.800	25.400	2.1	51 000	82 500	**NBX25425**	261	297.5	2	3.40
279.400	298.450	9.525	1.1	12 800	33 000	**NBX27909**	284.5	293	1	0.50
	304.800	12.700	1.6	19 300	44 500	**NBX27912**	285.5	298.5	1.5	0.92
	317.500	19.050	2.1	35 000	67 500	**NBX27919**	286.5	310.5	2	2.10
	330.200	25.400	2.1	53 000	90 500	**NBX27925**	286.5	323	2	3.75
304.800	323.850	9.525	1.1	13 200	36 000	**NBX30409**	310	318.5	1	0.54
	330.200	12.700	1.6	20 000	48 500	**NBX30412**	311	324	1.5	1.00
	342.900	19.050	2.1	36 000	73 000	**NBX30419**	312	335.5	2	2.30
	355.600	25.400	2.1	54 500	98 500	**NBX30425**	312	348.5	2	4.00
355.600	381.000	12.700	1.6	21 100	56 500	**NBX35512**	362	375	1.5	1.15
	393.700	19.050	2.1	38 000	85 000	**NBX35519**	363	386.5	2	2.65
	406.400	25.400	2.1	57 500	114 000	**NBX35525**	363	399	2	4.70
406.400	431.800	12.700	1.6	22 100	64 500	**NBX40612**	412.5	425.5	1.5	1.30
	444.500	19.050	2.1	39 500	97 000	**NBX40619**	413.5	437.5	2	3.00
	457.200	25.400	2.1	60 500	130 000	**NBX40625**	413.5	450	2	5.20
457.200	508.000	25.400	2.1	63 000	146 000	**NBX45725**	464.5	501	2	6.10
508.000	558.800	25.400	2.1	65 000	162 000	**NBX50825**	515	551.5	2	6.75
635.000	685.800	25.400	2.1	70 500	202 000	**NBX63525**	642	678.5	2	8.35
762.000	812.800	25.400	2.1	75 000	241 000	**NBX76225**	769	805.5	2	9.90
889.000	939.800	25.400	2.1	79 500	281 000	**NBX88925**	896	932.5	2	11.50
1 016.000	1 066.800	25.400	2.1	83 500	320 000	**NBX101625**	1 023	1 059.5	2	13.10

NBX Sealed Type

Bore Diameter: 101.6~304.8 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	$r^{+0.5}_{0}$	C_r	C_{0r}		d_a min	D_a max	r_a max	approx
101.600	120.650	12.700	0.4	8 950	12 400	**NBX10112DD**	105	117.5	0.4	0.24
107.950	127.000	12.700	0.4	9 150	13 100	**NBX10712DD**	111	124	0.4	0.25
114.300	133.350	12.700	0.4	9 350	13 800	**NBX11412DD**	117.5	130	0.4	0.27
120.650	139.700	12.700	0.4	9 500	14 600	**NBX12012DD**	124	136.5	0.4	0.28
127.000	146.050	12.700	0.4	9 650	15 300	**NBX12712DD**	130	143	0.4	0.30
139.700	158.750	12.700	0.4	10 000	16 800	**NBX13912DD**	143	155.5	0.4	0.34
152.400	171.450	12.700	0.4	10 300	18 300	**NBX15212DD**	155.5	168	0.4	0.37
165.100	184.150	12.700	0.4	10 600	19 800	**NBX16512DD**	168.5	181	0.4	0.40
177.800	196.850	12.700	0.4	10 900	21 300	**NBX17712DD**	181	193.5	0.4	0.42
190.500	209.550	12.700	0.4	11 100	22 800	**NBX19012DD**	193.5	206.5	0.4	0.45
203.200	222.250	12.700	0.4	11 400	24 200	**NBX20312DD**	206.5	219	0.4	0.48
228.600	247.650	12.700	0.4	11 900	27 200	**NBX22812DD**	232	244.5	0.4	0.54
254.000	273.050	12.700	0.4	12 300	30 000	**NBX25412DD**	257	270	0.4	0.60
279.400	298.450	12.700	0.4	12 800	33 000	**NBX27912DD**	282.5	295	0.4	0.66
304.800	323.850	12.700	0.4	13 200	36 000	**NBX30412DD**	308	320.5	0.4	0.72

Remark For sealed bearings other than those listed above, please contact NSK.