

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.

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Types: NBC, NBA, NBX and Sealed NBX

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

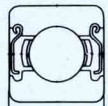
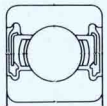
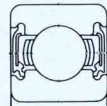
These are thin deep groove ball bearings available in open and sealed types. Bearings with a snap ring are also available. The 68 and 69 types are low maintenance and they facilitate the simple design of bearing surroundings.

■ 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.

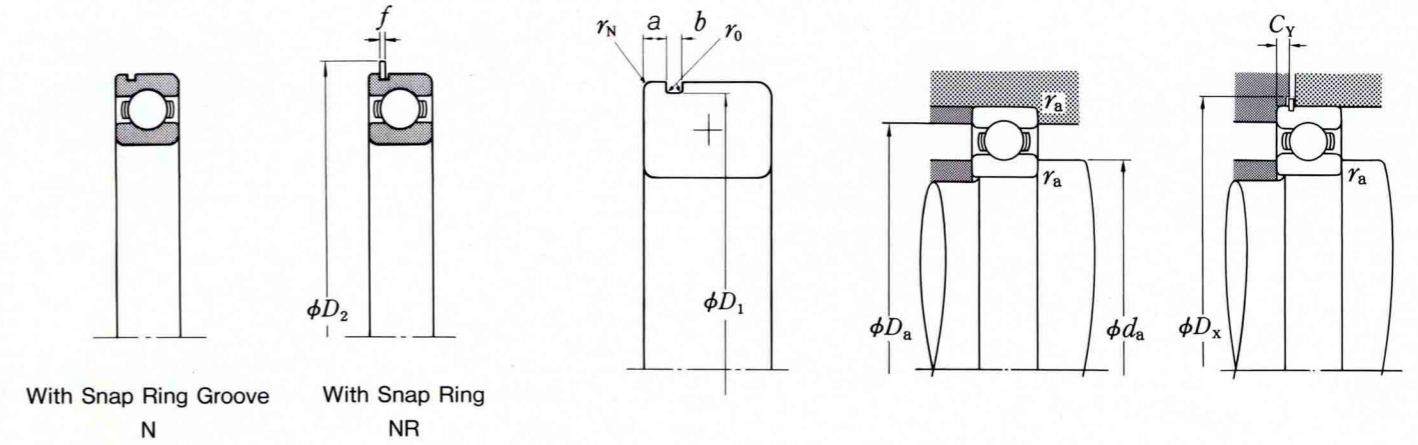
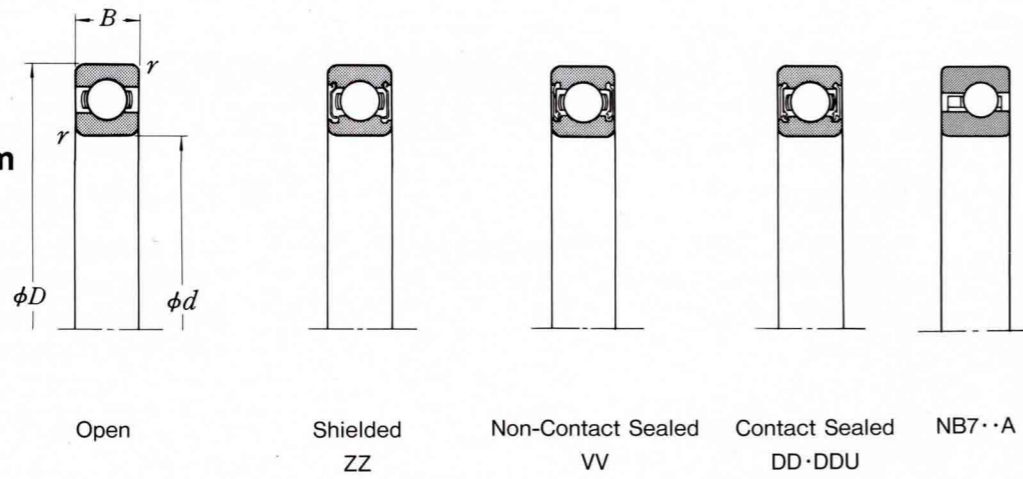
■ Features of shielded and sealed bearings

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

Type	Shielded Type (ZZ)	Non-Contact Rubber Sealed Type (VV)	Contact Rubber Sealed Type (DDU)
Features			
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.

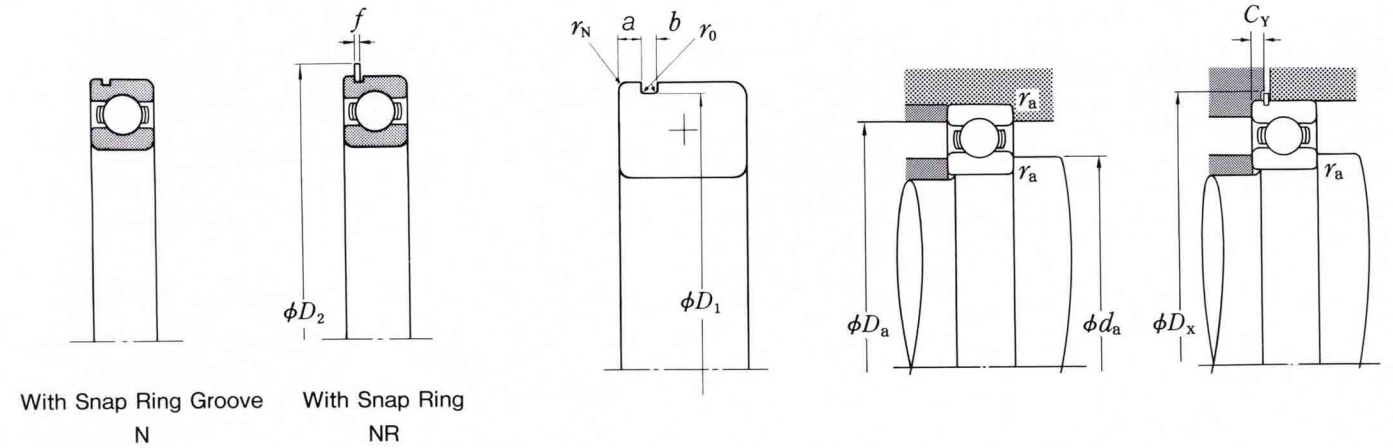
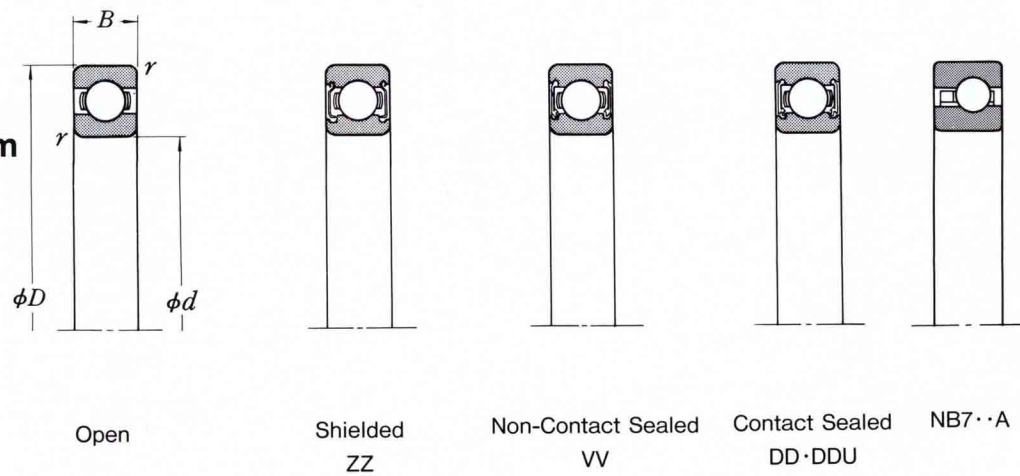
NB Type
68 Type
69 Type
Bore Diameter: 10~55 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers				
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> _{min}	<i>C_r</i>	<i>C_{0r}</i>	Open	Shielded	Sealed	With Snap Ring Groove	With Snap Ring
10	15	3	0.15	960	515	NB 700	—	—	—	—
	19	5	0.3	1 720	840	6800	ZZ	VV	DD	—
	22	6	0.3	2 700	1 270	6900	ZZ	VV	DD	N NR
12	18	4	0.2	1 070	655	NB 701	—	—	—	—
	21	5	0.3	1 920	1 040	6801	ZZ	VV	DD	—
	24	6	0.3	2 890	1 460	6901	ZZ	VV	DD	N NR
15	21	4	0.2	1 150	800	NB 702	—	—	—	—
	24	5	0.3	2 070	1 260	6802	ZZ	VV	DD	—
	28	7	0.3	4 350	2 260	6902	ZZ	VV	DD	N NR
17	23	4	0.2	1 200	895	NB 703	—	—	—	—
	26	5	0.3	2 630	1 570	6803	ZZ	VV	DD	—
	30	7	0.3	4 600	2 550	6903	ZZ	VV	DDU	N NR
20	27	4	0.2	1 790	1 340	NB 704	—	—	—	—
	32	7	0.3	4 000	2 470	6804	ZZ	VV	DD	N NR
	37	9	0.3	6 400	3 700	6904	ZZ	VV	DDU	N NR
25	32	4	0.2	1 930	1 650	NB 705	—	—	—	—
	37	7	0.3	4 500	3 150	6805	ZZ	VV	DD	N NR
	42	9	0.3	7 050	4 550	6905	ZZ	VV	DDU	N NR
30	37	4	0.2	2 050	1 950	NB 706	—	—	—	—
	42	7	0.3	4 700	3 650	6806	ZZ	VV	DD	N NR
	47	9	0.3	7 250	5 000	6906	ZZ	VV	DDU	N NR
35	44	5	0.3	2 810	2 760	NB 707	—	—	—	—
	47	7	0.3	4 900	4 100	6807	ZZ	VV	DD	N NR
	55	10	0.6	10 600	7 250	6907	ZZ	VV	DDU	N NR
40	50	6	0.3	3 650	3 600	NB 708	—	—	—	—
	52	7	0.3	4 900	4 350	6808	ZZ	VV	DD	N NR
	62	12	0.6	13 700	10 000	6908	ZZ	VV	DDU	N NR
45	55	6	0.3	3 800	4 050	NB 709	—	—	—	—
	58	7	0.3	5 350	5 250	6809	ZZ	VV	DD	N NR
	68	12	0.6	14 100	10 900	6909	ZZ	VV	DDU	N NR
50	62	6	0.3	5 550	5 750	NB 710	—	—	—	—
	65	7	0.3	6 400	6 200	6810	ZZ	VV	DDU	N NR
	72	12	0.6	14 500	11 700	6910	ZZ	VV	DDU	N NR
55	68	7	0.3	6 850	7 100	NB 711A	—	—	—	—
	72	9	0.3	8 800	8 500	6811	ZZ	VV	DD	N NR
	80	13	1	16 000	13 300	6911	ZZ	VV	DDU	N NR

Snap Ring Groove Dimensions (mm)					Snap Ring Dimensions (mm)		Abutment and Fillet Dimensions (mm)					Mass (kg)
<i>a</i> _{max}	<i>b</i> _{min}	<i>D</i> ₁ _{max}	<i>r</i> ₀ _{max}	<i>r</i> _N _{min}	<i>D</i> ₂ _{max}	<i>f</i> _{max}	<i>d</i> _a _{min}	<i>D</i> _a _{max}	<i>r</i> _a _{max}	<i>D</i> _x _{min}	<i>C</i> _Y _{max}	approx
—	—	—	—	—	—	—	11.5	13.5	0.1	—	—	0.001
—	—	—	—	—	—	—	12	17	0.3	—	—	0.005
1.05	0.8	20.8	0.2	0.3	24.8	0.7	12	20	0.3	25.5	1.5	0.010
—	—	—	—	—	—	—	14	16	0.2	—	—	0.003
—	—	—	—	—	—	—	14	19	0.3	—	—	0.006
1.05	0.8	22.8	0.2	0.3	26.8	0.7	14	22	0.3	27.5	1.5	0.011
—	—	—	—	—	—	—	17	19	0.2	—	—	0.004
—	—	—	—	—	—	—	17	22	0.3	—	—	0.007
1.3	0.95	26.7	0.25	0.3	30.8	0.85	17	26	0.3	31.5	1.8	0.016
—	—	—	—	—	—	—	19	21	0.2	—	—	0.004
—	—	—	—	—	—	—	19	24	0.3	—	—	0.008
1.3	0.95	28.7	0.25	0.3	32.8	0.85	19	28	0.3	33.5	1.8	0.017
—	—	—	—	—	—	—	22	25	0.2	—	—	0.005
1.3	0.95	30.7	0.25	0.3	34.8	0.85	22	30	0.3	35.5	1.8	0.018
1.7	0.95	35.7	0.25	0.3	39.8	0.85	22	35	0.3	40.5	2.3	0.038
—	—	—	—	—	—	—	27	30	0.2	—	—	0.007
1.3	0.95	35.7	0.25	0.3	39.8	0.85	27	35	0.3	40.5	1.8	0.021
1.7	0.95	40.7	0.25	0.3	44.8	0.85	27	40	0.3	45.5	2.3	0.043
—	—	—	—	—	—	—	32	35	0.2	—	—	0.008
1.3	0.95	40.7	0.25	0.3	44.8	0.85	32	40	0.3	45.5	1.8	0.024
1.7	0.95	45.7	0.25	0.3	49.8	0.85	32	45	0.3	50.5	2.3	0.052
—	—	—	—	—	—	—	37	42	0.3	—	—	0.015
1.3	0.95	45.7	0.25	0.3	49.8	0.85	37	45	0.3	50.5	1.8	0.027
1.7	0.95	53.7	0.25	0.5	57.8	0.85	39	51	0.6	58.5	2.3	0.076
—	—	—	—	—	—	—	42	48	0.3	—	—	0.022
1.3	0.95	50.7	0.25	0.3	54.8	0.85	42	50	0.3	55.5	1.8	0.031
1.7	0.95	60.7	0.25	0.5	64.8	0.85	44	58	0.6	65.5	2.3	0.112
—	—	—	—	—	—	—	47	53	0.3	—	—	0.024
1.3	0.95	56.7	0.25	0.3	60.8	0.85	47	56	0.3	61.5	1.8	0.039
1.7	0.95	66.7	0.25	0.5	70.8	0.85	49	64	0.6	72	2.3	0.126
—	—	—	—	—	—	—	52	60	0.3	—	—	0.033
1.3	0.95	63.7	0.25	0.3	67.8	0.85	52	63	0.3	68.5	1.8	0.050
1.7	0.95	70.7	0.25	0.5	74.8	0.85	54	68	0.6	76	2.3	0.135
—	—	—	—	—	—	—	57	66	0.3	—	—	0.044
1.7	0.95	70.7	0.25	0.3	74.8	0.85	57	70	0.3	76	2.3	0.081
2.1	1.3	77.9	0.4	0.5	84.4	1.12	60	75	1	86	2.9	0.189

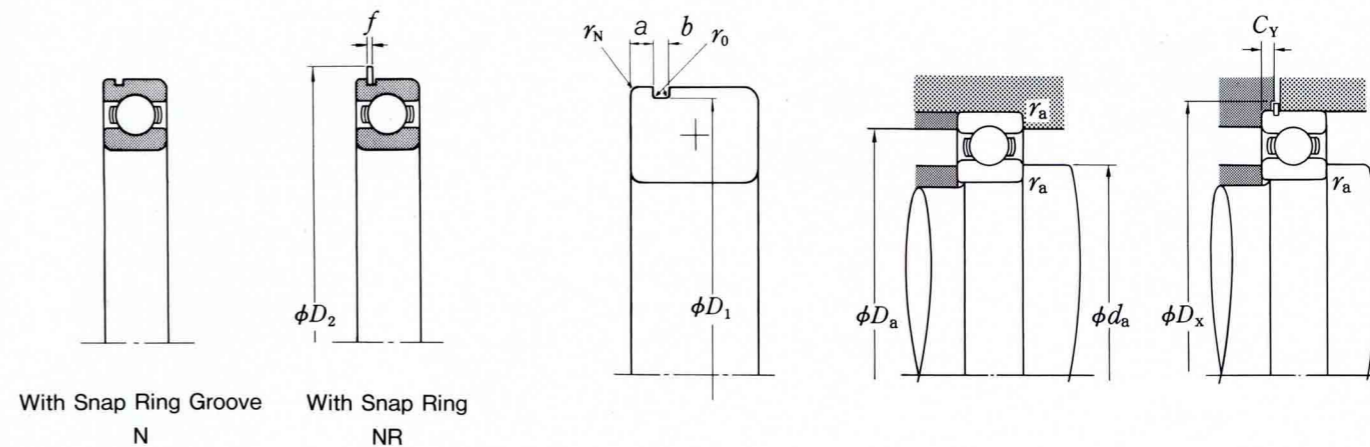
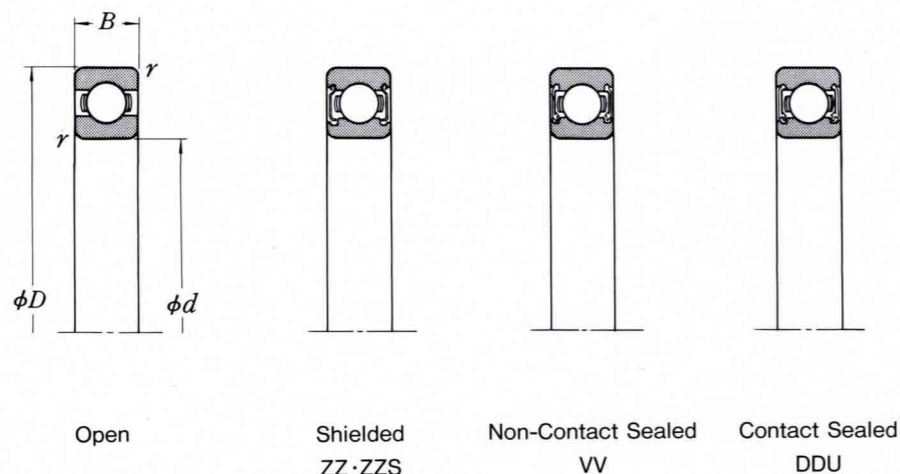
NB Type
68 Type
69 Type
Bore Diameter: 60~120 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers				
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> _{min}	<i>C_r</i>	<i>C_{0r}</i>	Open	Shielded	Sealed	With Snap Ring Groove	With Snap Ring
60	75	7	0.3	7 000	7 700	NB 712A	—	—	—	—
	78	10	0.3	11 500	10 900	6812	ZZ	VV	DD	N
	85	13	1	19 400	16 300	6912	ZZ	VV	DDU	N
65	80	7	0.3	7 200	8 300	NB 713A	—	—	—	—
	85	10	0.6	11 900	12 100	6813	ZZ	VV	DD	N
	90	13	1	17 400	16 100	6913	ZZ	VV	DDU	N
70	85	7	0.3	7 350	8 900	NB 714A	—	—	—	—
	90	10	0.6	12 100	12 700	6814	ZZ	VV	DD	N
	100	16	1	23 700	21 200	6914	ZZ	VV	DDU	N
75	90	7	0.3	7 550	9 500	NB 715A	—	—	—	—
	95	10	0.6	12 500	13 900	6815	ZZ	VV	—	N
	105	16	1	24 400	22 600	6915	ZZ	VV	—	N
80	95	7	0.3	7 700	10 100	NB 716A	—	—	—	—
	100	10	0.6	12 700	14 500	6816	ZZ	VV	DD	N
	110	16	1	25 000	24 000	6916	ZZ	VV	DDU	N
85	105	10	0.6	14 400	16 600	NB 717A	—	—	—	—
	110	13	1	18 700	20 000	6817	ZZ	VV	—	N
	120	18	1.1	32 000	29 600	6917	ZZ	VV	—	N
90	110	10	0.6	14 600	17 300	NB 718A	—	—	—	—
	115	13	1	19 000	21 000	6818	ZZ	VV	—	N
	125	18	1.1	33 000	31 500	6918	ZZ	VV	DDU	N
95	115	10	0.6	15 000	18 600	NB 719A	—	—	—	—
	120	13	1	19 300	22 000	6819	—	VV	DD	N
	130	18	1.1	33 500	33 500	6919	ZZ	VV	—	N
100	120	10	0.6	15 200	19 300	NB 720A	—	—	—	—
	125	13	1	19 600	23 000	6820	ZZ	VV	DD	N
	140	20	1.1	43 000	42 000	6920	ZZ	VV	DDU	N
105	130	13	1	19 800	23 900	6821	—	VV	—	N
	145	20	1.1	42 500	42 000	6921	ZZ	VV	—	N
110	140	16	1	28 100	32 500	6822	—	VV	—	N
	150	20	1.1	43 500	44 500	6922	ZZ	—	DDU	N
120	150	16	1	28 900	35 500	6824	ZZ	VV	DD	N
	165	22	1.1	53 000	54 000	6924	ZZ	—	—	N

Snap Ring Groove Dimensions (mm)					Snap Ring Dimensions (mm)		Abutment and Fillet Dimensions (mm)					Mass (kg)
<i>a</i> _{max}	<i>b</i> _{min}	<i>D</i> ₁ _{max}	<i>r</i> ₀ _{max}	<i>r</i> _N _{min}	<i>D</i> ₂ _{max}	<i>f</i> _{max}	<i>d</i> _a _{min}	<i>D</i> _a _{max}	<i>r</i> _a _{max}	<i>D</i> _x _{min}	<i>C</i> _Y _{max}	approx
—	—	—	—	—	—	—	62	73	0.3	—	—	0.056
1.7	1.3	76.2	0.4	0.3	82.7	1.12	62	76	0.3	84	2.5	0.103
2.1	1.3	82.9	0.4	0.5	89.4	1.12	65	80	1	91	2.9	0.192
—	—	—	—	—	—	—	67	78	0.3	—	—	0.060
1.7	1.3	82.9	0.4	0.5	89.4	1.12	69	81	0.6	91	2.5	0.128
2.1	1.3	87.9	0.4	0.5	94.4	1.12	70	85	1	96	2.9	0.218
—	—	—	—	—	—	—	72	83	0.3	—	—	0.064
1.7	1.3	87.9	0.4	0.5	94.4	1.12	74	86	0.6	96	2.5	0.134
2.5	1.3	97.9	0.4	0.5	104.4	1.12	75	95	1	106	3.3	0.349
—	—	—	—	—	—	—	77	88	0.3	—	—	0.068
1.7	1.3	92.9	0.4	0.5	99.4	1.12	79	91	0.6	101	2.5	0.149
2.5	1.3	102.6	0.4	0.5	110.7	1.12	80	100	1	112	3.3	0.364
—	—	—	—	—	—	—	82	93	0.3	—	—	0.072
1.7	1.3	97.9	0.4	0.5	104.4	1.12	84	96	0.6	106	2.5	0.150
2.5	1.3	107.6	0.4	0.5	115.7	1.12	85	105	1	117	3.3	0.391
—	—	—	—	—	—	—	89	101	0.6	—	—	0.149
2.1	1.3	107.6	0.4	0.5	115.7	1.12	90	105	1	117	2.9	0.263
3.3	1.3	117.6	0.4	0.5	125.7	1.12	91.5	113.5	1	127	4.1	0.550
—	—	—	—	—	—	—	94	106	0.6	—	—	0.157
2.1	1.3	112.6	0.4	0.5	120.7	1.12	95	110	1	122	2.9	0.276
3.3	1.3	122.6	0.4	0.5	130.7	1.12	96.5	118.5	1	132	4.1	0.585
—	—	—	—	—	—	—	99	111	0.6	—	—	0.165
2.1	1.3	117.6	0.4	0.5	125.7	1.12	100	115	1	127	2.9	0.297
3.3	1.3	127.6	0.4	0.5	135.7	1.12	101.5	123.5	1	137	4.1	0.600
—	—	—	—	—	—	—	104	116	0.6	—	—	0.173
2.1	1.3	122.6	0.4	0.5	130.7	1.12	105	120	1	132	2.9	0.310
3.3	1.9	137.6	0.6	0.5	145.7	1.7	106.5	133.5	1	147	4.7	0.828
2.1	1.3	127.6	0.4	0.5	135.7	1.12	110	125	1	137	2.9	0.324
3.3	1.9	142.6	0.6	0.5	150.7	1.7	111.5	138.5	1	152	4.7	0.856
2.5	1.9	137.6	0.6	0.5	145.7	1.7	115	135	1	147	3.9	0.497
3.3	1.9	147.6	0.6	0.5	155.7	1.7	116.5	143.5	1	157	4.7	0.893
2.5	1.9	147.6	0.6	0.5	155.7	1.7	125	145	1	157	3.9	0.537
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



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers					
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> min	<i>C_r</i>	<i>C_{0r}</i>	Open	Shielded	Sealed	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)
<i>a</i> max	<i>b</i> min	<i>D</i> ₁ max	<i>r</i> ₀ max	<i>r</i> _N min	<i>D</i> ₂ max	<i>f</i> max	<i>d</i> _a min	<i>D</i> _a max	<i>r</i> _a max	<i>D</i> _x min	<i>C</i> _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

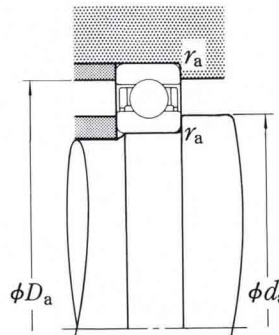
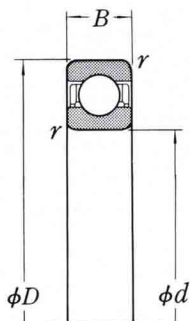
Remark Machined cages are used in bearings of the 68 Type from bearing number 6840 and up, and in the 69 Type from 6938 and up.

N Series Metric Design Ball Bearings

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 6980	411	489	2	20.5
	540	65	4	335 000	540 000		416	524	3	42.0
420	520	46	2.1	245 000	410 000	6884 6984	431	509	2	21.4
	560	65	4	340 000	570 000		436	544	3	43.6
440	540	46	2.1	248 000	425 000	6888 6988	451	529	2	22.3
	600	74	4	395 000	680 000		456	584	3	60.2
460	580	56	3	310 000	550 000	6892 6992	473	567	2.5	34.3
	620	74	4	405 000	720 000		476	604	3	62.6
480	600	56	3	315 000	575 000	6896 6996	493	587	2.5	35.4
	650	78	5	450 000	815 000		500	630	4	73.5
500	620	56	3	320 000	600 000	68/500 69/500	513	607	2.5	37.2
	670	78	5	460 000	865 000		520	650	4	82.0
530	650	56	3	325 000	625 000	68/530 69/530	543	637	2.5	39.1
	710	82	5	455 000	870 000		550	690	4	89.8
560	680	56	3	330 000	650 000	68/560 69/560	573	667	2.5	41.5
	750	85	5	525 000	1 040 000		580	730	4	105
600	730	60	3	355 000	735 000	68/600 69/600	613	717	2.5	50.9
	800	90	5	550 000	1 160 000		620	780	4	120
630	780	69	4	420 000	890 000	68/630 69/630	646	764	3	71.3
	850	100	6	625 000	1 350 000		656	824	5	163
670	820	69	4	435 000	965 000	68/670 69/670	686	804	3	75.4
	900	103	6	675 000	1 460 000		696	874	5	181
710	870	74	4	480 000	1 100 000	68/710 69/710	726	854	3	92.6
	950	106	6	715 000	1 640 000		736	924	5	208
750	920	78	5	525 000	1 260 000	68/750 69/750	770	900	4	110
	1 000	112	6	785 000	1 840 000		776	974	5	245
800	980	82	5	530 000	1 310 000	68/800 69/800	820	960	4	132
	1 060	115	6	825 000	2 050 000		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 <i>d</i> (mm)		Single Plane Mean Bore Diameter Deviation Δd_{mp}								Deviation of a Single Inner (or Outer) Ring Width ΔB_s (又は ΔC_s)			
		Normal		class6		class5		class4		Normal	class6	class5	class4
		high	low	high	low	high	low	high	low				
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.

Tolerances for Outer Rings

Nominal Outside Diameter <i>D</i> (mm)		Single Plane Mean Outside Diameter Deviation ΔD_{mp}								Deviation of a Single Outer Ring Width V_{Cs}		Variation of Brg Outside Surface Generatrix Inclination with Outer Ring Face S_D	
		Normal		class6		class5		class4		class5	class4	class5	class4
		high	low	high	low	high	low	high	low				
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

Inner (Outer) Ring Width Variation V_{Bs} (or V_{Cs})				Radial Runout of Assembled Brg Inner Ring 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	—	—	—	—	—	—	—

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 Δd_{mp}		Single Plane Mean Outside Diameter Deviation ΔD_{mp}		Deviation of a Single Inner Ring Width ΔB_s		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 Radial 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.

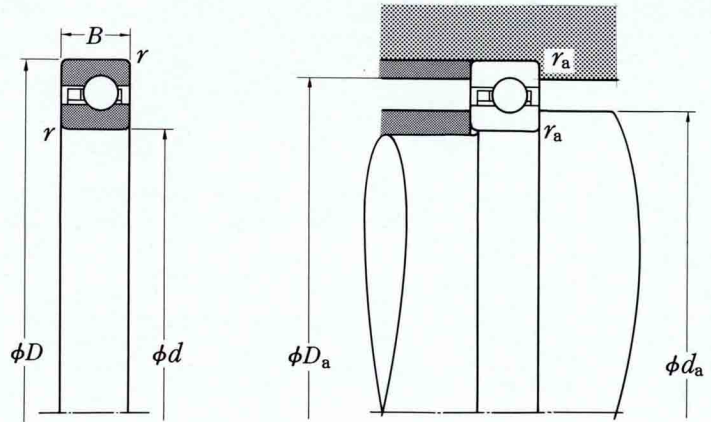
Units: μm

Nominal Bearing Bore Diameter d (mm)		Single Plane Mean Bore Diameter Deviation Δd_{mp}		Single Plane Mean Outside Diameter Deviation ΔD_{mp}		Deviation of a Single Inner Ring Width ΔB_s		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

N Series Inch Design Ball Bearings

NBC Type

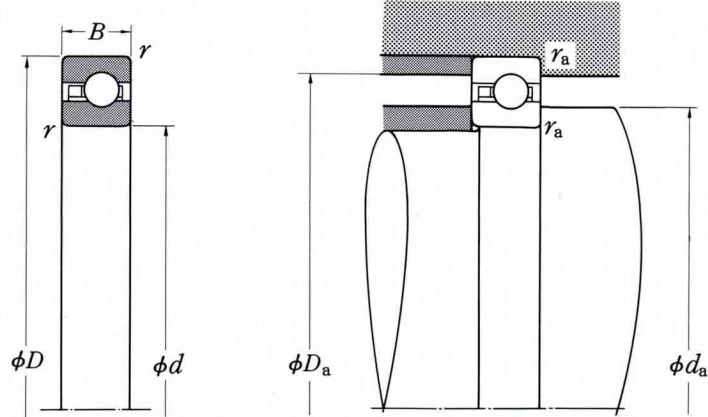
Bore Diameter: 25.4~127.0 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> ^{+0.5}	<i>C_r</i>	<i>C_{0r}</i>		<i>d_a</i> min	<i>D_a</i> max	<i>r_a</i> 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
107.950	152.400	25.400	2.1	42 500	39 500	NBC10125	109	145	2	1.60
	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
114.300	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
	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
120.650	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
	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
127.000	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
	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

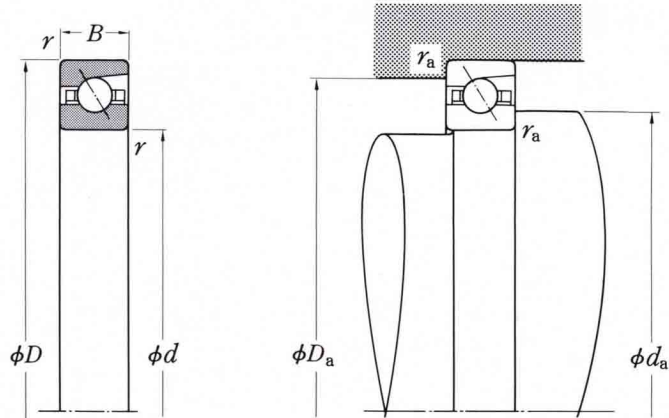


Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> ^{+0.5} ₀	<i>C_r</i>	<i>C_{0r}</i>		<i>d_a</i> min	<i>D_a</i> max	<i>r_a</i> max	approx
139.700	152.400	6.350	0.7	6 400	12 800	NBC13906	144	148	0.6	0.11
	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
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

N Series Inch Design Ball Bearings

NBA Type

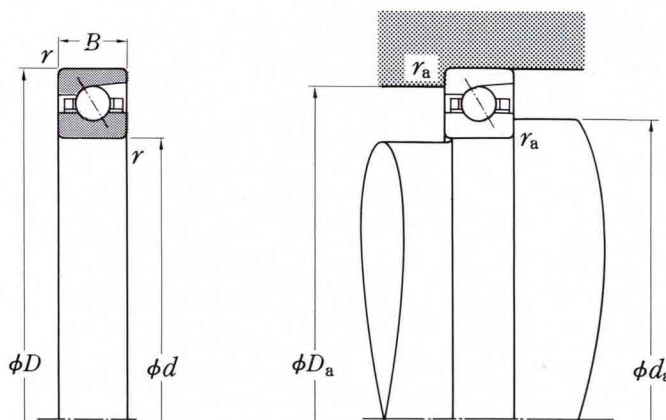
Bore Diameter: 25.4~127.0 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	$r^{+0.5}_0$	C_T	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
107.950	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
	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
114.300	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
120.650	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
127.000	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
	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
127.000	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
127.000	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

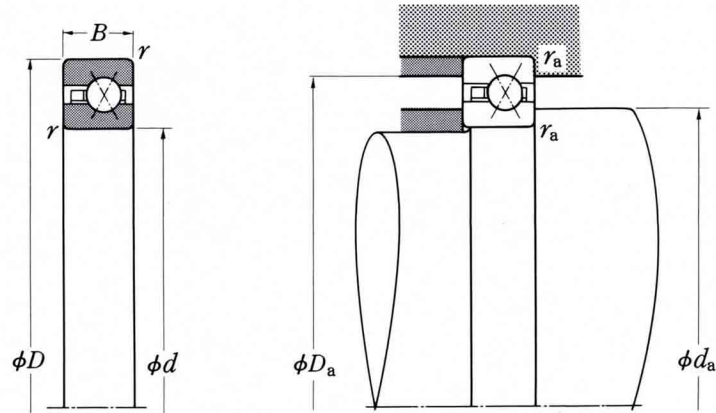


Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg) approx
<i>d</i>	<i>D</i>	<i>B</i>	$r_{0}^{+0.5}$	<i>C_R</i>	<i>C_{0R}</i>		<i>d_a</i> min	<i>D_a</i> max	<i>r_a</i> max	
139.700	152.400	6.350	0.7	6 750	14 800	NBA13906	144	148	0.6	0.12
	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
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

N Series Inch Design Ball Bearings

NBX Type

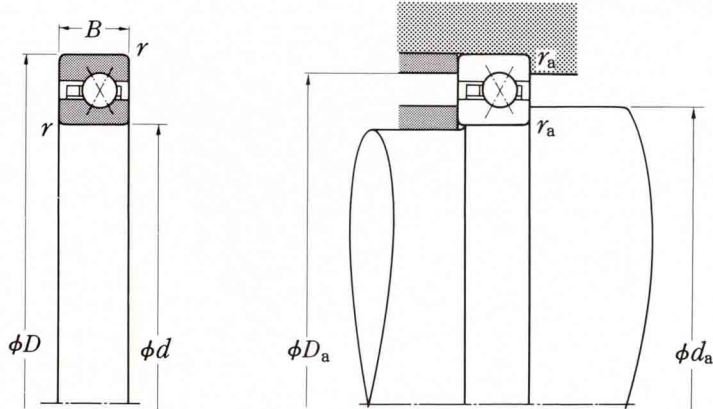
Bore Diameter: 25.4~127.0 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
d	D	B	$r \begin{smallmatrix} +0.5 \\ 0 \end{smallmatrix}$	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
107.950	152.400	25.400	2.1	37 500	35 000	NBX10125	109	145	2	1.60
	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
114.300	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
	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
120.650	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
	133.350	6.350	0.7	5 300	9 600	NBX12006	125	129	0.6	0.099
127.000	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

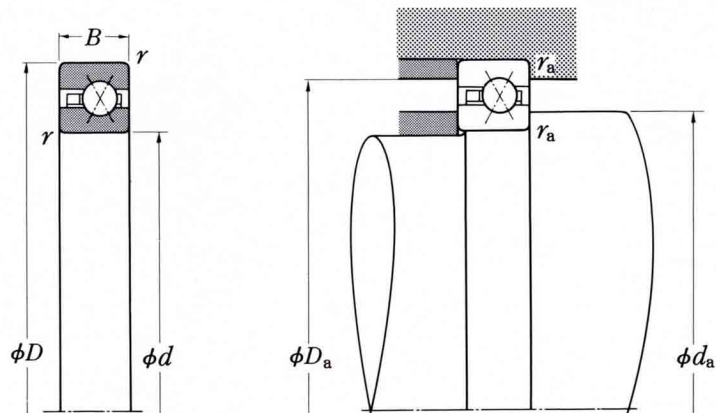


Boundary Dimensions (mm)				Basic Load Ratings (N)		Bearing Numbers	Abutment and Fillet Dimensions (mm)			Mass (kg)
<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> ^{+0.5} ₀	<i>C_r</i>	<i>C_{0r}</i>		<i>d_a</i> min	<i>D_a</i> max	<i>r_a</i> max	approx
139.700	152.400	6.350	0.7	5 550	11 100	NBX13906	144	148	0.6	0.11
	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

N Series Inch Design Ball Bearings

NBX Type

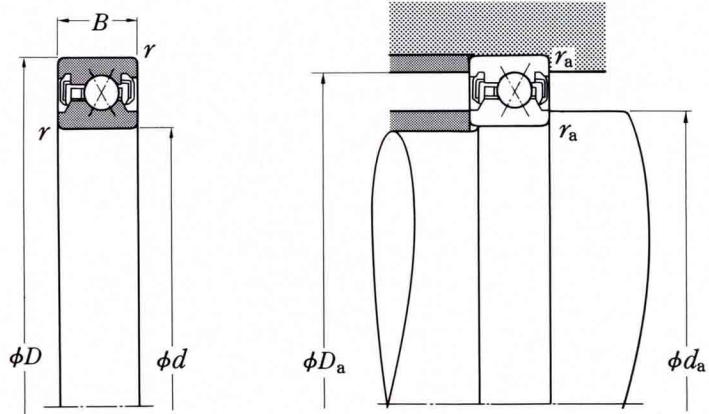
Bore Diameter: 254.0~1 016.0 mm



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) approx
<i>d</i>	<i>D</i>	<i>B</i>	$r \begin{smallmatrix} +0.5 \\ 0 \end{smallmatrix}$	<i>C_r</i>	<i>C_{0r}</i>		<i>d_a</i> min	<i>D_a</i> max	<i>r_a</i> max	
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.