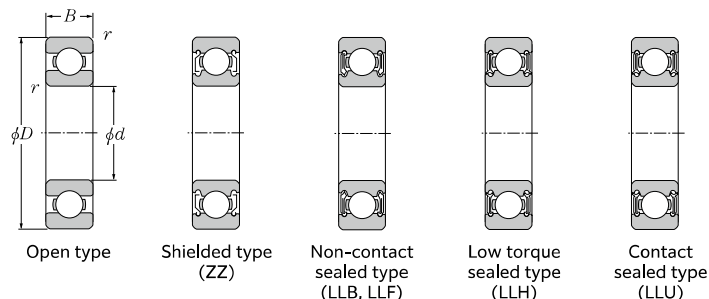


Deep Groove Ball Bearings

NTN



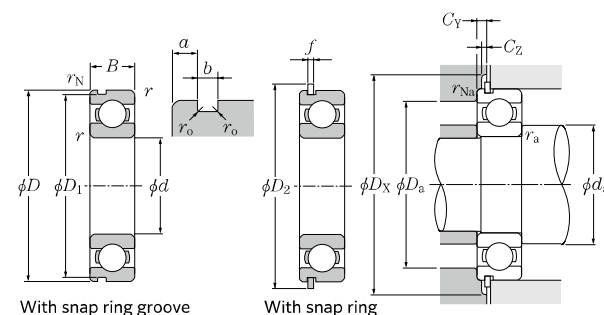
d 20 ~ 35mm

Boundary dimensions				Basic load rating		Fatigue load limit kN	Factor	Allowable speed					Bearing number				
				dynamic kN	static kN			min ⁻¹		Grease Open type, ZZ, LLB, LLF	Oil Open type, Z, LB, LF	LLH LLH	LLU LLU	Open type	Shielded or sealed type ²⁾ (See drawings)		
d	D	B	r _s min ¹⁾	r _{NS} Min.	C _r	C _{0r}	C _u	f ₀									
20	72	19	1.1	—	31.5	13.9	1.09	11.4	12 000	14 000	—	—	6404	ZZ	—	—	—
22	44	12	0.6	0.5	10.4	5.05	0.395	13.9	17 000	20 000	13 000	10 000	60/22	ZZ	LLB	LLH	LLU
	50	14	1	0.5	14.3	6.80	0.500	13.5	14 000	17 000	12 000	9 700	62/22	ZZ	LLB	LLH	LLU
	56	16	1.1	0.5	20.4	9.25	0.725	12.4	13 000	15 000	11 000	9 200	63/22	ZZ	LLB	LLH	LLU
25	32	4	0.2	—	1.21	0.840	0.036	15.8	4 000	4 600	—	—	6705	—	LLF	—	—
	37	7	0.3	0.3	4.75	2.95	0.208	16.1	18 000	21 000	—	10 000	6805JR	ZZ	LLB	—	LLU
	42	9	0.3	0.3	7.80	4.55	0.345	15.4	16 000	19 000	11 700	9 800	6905	ZZ	LLB	LLH	LLU
	47	8	0.3	—	9.25	5.10	0.400	15.1	15 000	18 000	—	—	16005	—	—	—	—
	47	12	0.6	0.5	11.2	5.85	0.380	14.5	15 000	18 000	11 000	9 400	6005	ZZ	LLB	LLH	LLU
	52	15	1	0.5	15.5	7.85	0.550	13.9	13 000	15 000	11 000	8 900	6205	ZZ	LLB	LLH	LLU
	62	17	1.1	0.5	23.5	10.9	0.855	12.6	12 000	14 000	9 700	8 100	6305	ZZ	LLB	LLH	LLU
	80	21	1.5	—	38.5	17.5	1.36	11.6	10 000	12 000	—	—	6405	ZZ	—	—	—
28	52	12	0.6	0.5	13.8	7.40	0.580	14.5	14 000	16 000	10 000	8 400	60/28	ZZ	LLB	LLH	LLU
	58	16	1	0.5	19.8	9.75	0.720	13.4	12 000	14 000	9 700	8 100	62/28	ZZ	LLB	LLH	LLU
	68	18	1.1	0.5	29.6	14.0	1.10	12.4	11 000	13 000	8 900	7 400	63/28	ZZ	LLB	LLH	LLU
30	37	4	0.2	—	1.27	0.950	0.041	15.7	3 300	3 800	—	—	6706	—	LLF	—	—
	42	7	0.3	0.3	5.20	3.65	0.244	16.5	15 000	18 000	10 500	8 800	6806JR	ZZ	LLB	LLH	LLU
	47	9	0.3	0.3	8.00	5.00	0.365	15.8	14 000	17 000	10 000	8 400	6906	ZZ	LLB	LLH	LLU
	55	9	0.3	—	12.5	7.35	0.570	15.2	13 000	15 000	—	—	16006	—	—	—	—
	55	13	1	0.5	14.7	8.30	0.650	14.8	13 000	15 000	9 200	7 700	6006	ZZ	LLB	LLH	LLU
	62	16	1	0.5	21.6	11.3	0.795	13.8	11 000	13 000	8 800	7 300	6206	ZZ	LLB	LLH	LLU
	72	19	1.1	0.5	29.5	15.0	1.14	13.3	10 000	12 000	7 900	6 600	6306	ZZ	LLB	LLH	LLU
	90	23	1.5	—	48.0	23.9	1.86	12.3	8 800	10 000	—	—	6406	ZZ	—	—	—
32	58	13	1	0.5	13.1	8.05	0.615	15.4	12 000	15 000	8 700	7 200	60/32	ZZ	LLB	LLH	LLU
	65	17	1	0.5	23.0	11.6	0.840	13.6	11 000	12 000	8 400	7 100	62/32	ZZ	LLB	LLH	LLU
	75	20	1.1	0.5	33.0	16.9	1.30	13.1	9 500	11 000	7 700	6 500	63/32	ZZ	LLB	LLH	LLU
35	47	7	0.3	0.3	5.45	4.05	0.268	16.4	13 000	16 000	—	7 600	6807JR	ZZ	LLB	—	LLU
	55	10	0.6	0.5	10.6	6.85	0.495	15.8	12 000	15 000	8 500	7 100	6907	ZZ	LLB	LLH	LLU
	62	9	0.3	—	12.9	8.20	0.605	15.6	12 000	14 000	—	—	16007	—	—	—	—
	62	14	1	0.5	17.7	10.3	0.805	14.8	12 000	14 000	8 200	6 800	6007	ZZ	LLB	LLH	LLU
	72	17	1.1	0.5	28.4	15.3	1.09	13.8	9 800	11 000	7 600	6 300	6207	ZZ	LLB	LLH	LLU
	80	21	1.5	0.5	37.0	19.1	1.47	13.1	8 800	10 000	7 300	6 000	6307	ZZ	LLB	LLH	LLU
	100	25	1.5	—	61.0	31.0	2.43	12.3	7 800	9 100	—	—	6407	ZZ	—	—	—

1) Smallest allowable dimension for chamfer dimension r. 2) This bearing number is for double sealed and double shielded type bearings, but single sealed and single shielded type are also available. B-24

Deep Groove Ball Bearings

NTN



Dynamic equivalent radial load

$$P_r = X F_r + Y F_a$$

$\frac{f_0 \cdot F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \leq e$	$\frac{F_a}{F_r} > e$	
0.172	0.19	X	Y	2.30
0.345	0.22			1.99
0.689	0.26			1.71
1.03	0.28			1.55
1.38	0.30	1	0	1.45
2.07	0.34			1.31
3.45	0.38			1.15
5.17	0.42			1.04
6.89	0.44			1.00

Static equivalent radial load

$$P_{0r} = 0.6 F_r + 0.5 F_a$$

When $P_{0r} < F_r$ use $P_{0r} = F_r$.

Bearing number	Snap ring groove dimensions				Snap ring dimensions		Installation-related dimensions										Mass ⁵⁾
	mm				mm		mm										kg
	Groove / Snap ring³⁾ (See drawings)	<i>D</i> ₁ Max.	<i>a</i> Max.	<i>b</i> Min.	<i>r</i> ₀ Max.	<i>D</i> ₂ Max.	<i>f</i> Max.	Min.	<i>d</i> _a Max. ⁴⁾	<i>D</i> _a Max.	<i>D</i> _X (approx.)	<i>C</i> _Y Max.	<i>C</i> _Z Min.	<i>r</i> _{as} Max.	<i>r</i> _{Nas} Max.	(approx.)	
—	—	—	—	—	—	—	—	26.5	35.5	65.5	—	—	—	1	—	0.4	
N	NR	41.75	2.06	1.35	0.4	48.3	1.12	26	26.5	40	49	2.9	1.2	0.6	0.5	0.074	
N	NR	47.6	2.46	1.35	0.4	55.7	1.12	27	29.5	45	56.5	3.3	1.2	1	0.5	0.117	
N	NR	53.6	2.46	1.35	0.4	61.7	1.12	28.5	31	49.5	62.5	3.3	1.2	1	0.5	0.176	
—	—	—	—	—	—	—	—	26.6	27.3	30.4	—	—	—	0.2	—	0.005	
N	NR	35.7	1.3	0.95	0.25	39.8	0.85	27	28	35	40.5	1.9	0.9	0.3	0.3	0.022	
N	NR	40.7	1.7	0.95	0.25	44.8	0.85	27	29	40	45.5	2.3	0.9	0.3	0.3	0.042	
—	—	—	—	—	—	—	—	27	—	45	—	—	—	0.3	—	0.06	
N	NR	44.6	2.06	1.35	0.4	52.7	1.12	29	30.5	43	53.5	2.9	1.2	0.6	0.5	0.08	
N	NR	49.73	2.46	1.35	0.4	57.9	1.12	30	32	47	58.5	3.3	1.2	1	0.5	0.128	
N	NR	59.61	3.28	1.9	0.6	67.7	1.7	31.5	35	55.5	68.5	4.6	1.7	1	0.5	0.232	
—	—	—	—	—	—	—	—	33	41	72	—	—	—	1.5	—	0.53	
N	NR	49.73	2.06	1.35	0.4	57.9	1.12	32	34	48	58.5	2.9	1.2	0.6	0.5	0.098	
N	NR	55.6	2.46	1.35	0.4	63.7	1.12	33	35.5	53	64.5	3.3	1.2	1	0.5	0.171	
N	NR	64.82	3.28	1.9	0.6	74.6	1.7	34.5	38.5	61.5	76	4.6	1.7	1	0.5	0.284	
—	—	—	—	—	—	—	—	31.6	32.3	35.4	—	—	—	0.2	—	0.006	
N	NR	40.7	1.3	0.95	0.25	44.8	0.85	32	33	40	45.5	1.9	0.9	0.3	0.3	0.026	
N	NR	45.7	1.7	0.95	0.25	49.8	0.85	32	34	45	50.5	2.3	0.9	0.3	0.3	0.048	
—	—	—	—	—	—	—	—	32	—	53	—	—	—	0.3	—	0.091	
N	NR	52.6	2.08	1.35	0.4	60.7	1.12	35	37	50	61.5	2.9	1.2	1	0.5	0.116	
N	NR	59.61	3.28	1.9	0.6	67.7	1.7	35	39	57	68.5	4.6	1.7	1	0.5	0.199	
N	NR	68.81	3.28	1.9	0.6	78.6	1.7	36.5	43	65.5	80	4.6	1.7	1	0.5	0.36	
—	—	—	—	—	—	—	—	38	49	82	—	—	—	1.5	—	0.735	
N	NR	55.6	2.08	1.35	0.4	63.7	1.12	37	39	53	64.5	2.9	1.2	1	0.5	0.129	
N	NR	62.6	3.28	1.9	0.6	70.7	1.7	37	40	60	71.5	4.6	1.7	1	0.5	0.226	
N	NR	71.83	3.28	1.9	0.6	81.6	1.7	38.5	43.5	68.5	83	4.6	1.7	1	0.5	0.382	
N	NR	45.7	1.3	0.95	0.25	49.8	0.85	37	38	45	50.5	1.9	0.9	0.3	0.3	0.029	
N	NR	53.7	1.7	0.95	0.25	57.8	0.85	39	40	51	58.5	2.3	0.9	0.6	0.5	0.074	
—	—	—	—	—	—	—	—	37	—	60	—	—	—	0.3	—	0.11	
N	NR	59.61	2.08	1.9	0.6	67.7	1.7	40	42	57	68.5	3.4	1.7	1	0.5	0.155	
N	NR	68.81	3.28	1.9	0.6	78.6	1.7	41.5	45	65.5	80	4.6	1.7	1	0.5	0.288	
N	NR	76.81	3.28	1.9	0.6	86.6	1.7	43	47	72	88	4.6	1.7	1.5	0.5	0.457	
—	—	—	—	—	—	—	—	43	56.5	92	—	—	—	1.5	—	0.952	