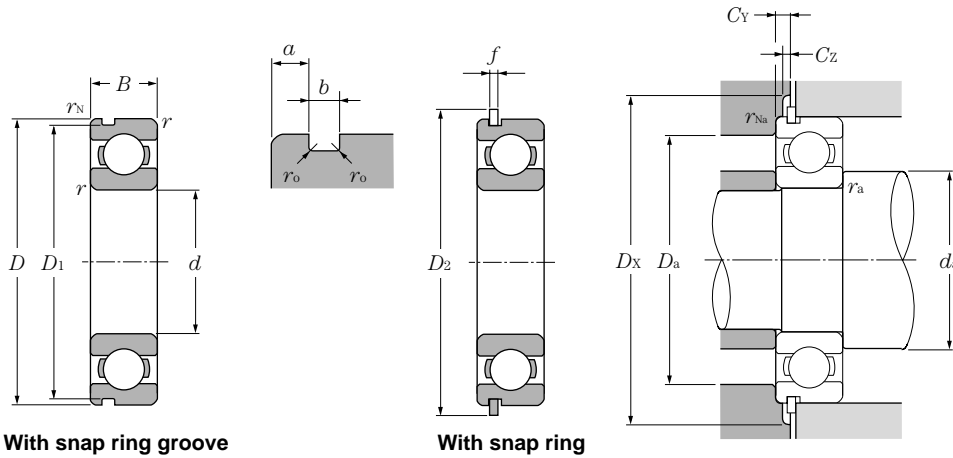


**d 65 ~ 85mm**

d	Boundary dimensions				Basic load ratings				Limiting speeds			Bearing numbers			
	mm				dynamic		static		rpm			open type	sealed type	non-contact type	contact type
	D	B	r <sub>s min</sub> <sup>①</sup>	r <sub>NS min</sub>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	grease open type ZZ	oil open type LLB	LLU				
<b>65</b>	85	10	0.6	0.5	11.6	11.0	1,180	1,120	7,400	8,700	4,100	<b>6813</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	90	13	1	0.5	17.4	16.1	1,770	1,640	7,000	8,200	4,000	<b>6913</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	100	11	0.6		20.5	18.7	2,090	1,910	6,500	7,700		<b>16013</b>			
	100	18	1.1	0.5	30.5	25.2	3,100	2,570	6,500	7,700	3,900	<b>6013</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	120	23	1.5	0.5	57.5	40.0	5,850	4,100	5,500	6,500	3,600	<b>6213</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	140	33	2.1	0.5	92.5	60.0	9,450	6,100	4,900	5,800	3,300	<b>6313</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	160	37	2.1		111	72.5	11,300	7,400	4,400	5,200		<b>6413</b>			
<b>70</b>	90	10	0.6	0.5	12.1	11.9	1,230	1,220	6,900	8,100	3,800	<b>6814</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	100	16	1	0.5	23.7	21.2	2,420	2,160	6,500	7,700	3,700	<b>6914</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	110	13	0.6		24.4	22.6	2,480	2,300	6,100	7,100		<b>16014</b>			
	110	20	1.1	0.5	38.0	31.0	3,900	3,150	6,100	7,100	3,600	<b>6014</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	125	24	1.5	0.5	62.0	44.0	6,350	4,500	5,100	6,000	3,400	<b>6214</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	150	35	2.1	0.5	104	68.0	10,600	6,950	4,600	5,400	3,100	<b>6314</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	180	42	3		128	89.5	13,100	9,100	4,100	4,800		<b>6414</b>			
<b>75</b>	95	10	0.6	0.5	12.5	12.9	1,280	1,310	6,400	7,600	3,600	<b>6815</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	105	16	1	0.5	24.4	22.6	2,480	2,300	6,100	7,200	3,500	<b>6915</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	115	13	0.6		25.0	24.0	2,540	2,450	5,700	6,700		<b>16015</b>			
	115	20	1.1	0.5	39.5	33.5	4,050	3,400	5,700	6,700	3,300	<b>6015</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	130	25	1.5	0.5	66.0	49.5	6,750	5,050	4,800	5,600	3,200	<b>6215</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	160	37	2.1	0.5	113	77.0	11,600	7,850	4,300	5,000	2,900	<b>6315</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	190	45	3		138	99.0	14,000	10,100	3,800	4,500		<b>6415</b>			
<b>80</b>	100	10	0.6	0.5	12.7	13.3	1,290	1,360	6,000	7,100	3,400	<b>6816</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	110	16	1	0.5	24.9	24.0	2,540	2,450	5,700	6,700	3,200	<b>6916</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	125	14	0.6		25.4	25.1	2,590	2,560	5,300	6,200		<b>16016</b>			
	125	22	1.1	0.5	47.5	40.0	4,850	4,050	5,300	6,200	3,100	<b>6016</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	140	26	2	0.5	72.5	53.0	7,400	5,400	4,500	5,300	3,000	<b>6216</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	170	39	2.1	0.5	123	86.5	12,500	8,850	4,000	4,700	2,700	<b>6316</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	200	48	3		164	125	16,700	12,800	3,600	4,200		<b>6416</b>			
<b>85</b>	110	13	1	0.5	18.7	19.0	1,910	1,940	5,700	6,700	3,100	<b>6817</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	120	18	1.1	0.5	32.0	29.6	3,250	3,000	5,400	6,300	3,000	<b>6917</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	130	14	0.6		25.9	26.2	2,640	2,670	5,000	5,900		<b>16017</b>			
	130	22	1.1	0.5	49.5	43.0	5,050	4,400	5,000	5,900	2,900	<b>6017</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	150	28	2	0.5	83.5	64.0	8,500	6,500	4,200	5,000	2,800	<b>6217</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>
	180	41	3	0.5	133	97.0	13,500	9,850	3,800	4,500	2,600	<b>6317</b>	<b>ZZ</b>	<b>LLB</b>	<b>LLU</b>

① Smallest allowable dimension for chamfer dimension r.



### Equivalent bearing load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{C_{or}}$	e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.010	0.18				2.46
0.020	0.20				2.14
0.040	0.24				1.83
0.070	0.27				1.61
0.10	0.29				1.48
0.15	0.32	1	0	0.56	1.35
0.20	0.35				1.25
0.30	0.38				1.13
0.40	0.41				1.05
0.50	0.44				1.00

### static

$$P_{or} = 0.6F_r + 0.5F_a$$

When  $P_{or} < F_r$  use  $P_{or} = F_r$

Bearing numbers		Snap ring groove dimensions mm				Snap ring dimensions mm		Abutment and fillet dimensions mm								Mass <sup>④</sup> kg
snap ring groove	snap ring	D <sub>1</sub> max	a max	b min	r <sub>o</sub> max	D <sub>2</sub> max	f max	d <sub>a</sub> min	d <sub>a</sub> max <sup>③</sup>	D <sub>a</sub> max	D <sub>X</sub> (approx.)	C <sub>Y</sub> max	C <sub>Z</sub> min	r <sub>as</sub> max	r <sub>Nas</sub> max	(approx.)
N	NR	82.9	1.7	1.3	0.4	89.4	1.12	69	70	81	91	2.5	1.2	0.6	0.5	0.128
N	NR	87.9	2.1	1.3	0.4	94.4	1.12	70	71.5	85	96	2.9	1.2	1	0.5	0.206
								69		96				0.6		0.307
N	NR	96.8	2.87	2.7	0.6	106.5	2.46	71.5	74	93.5	108	5	2.5	1	0.5	0.421
N	NR	115.21	4.06	3.1	0.6	129.7	2.82	73	80.5	112	131.5	6.5	2.9	1.5	0.5	0.99
N	NR	135.23	4.9	3.1	0.6	149.7	2.82	76	86	129	152	7.3	2.9	2	0.5	2.08
								76		149				2		3.3
N	NR	87.9	1.7	1.3	0.4	94.4	1.12	74	75.5	86	96	2.5	1.2	0.6	0.5	0.137
N	NR	97.9	2.5	1.3	0.4	104.4	1.12	75	77.5	95	106	3.3	1.2	1	0.5	0.334
								74		106				0.6		0.441
N	NR	106.81	2.87	2.7	0.6	116.6	2.46	76.5	80.5	103.5	118	5	2.5	1	0.5	0.604
N	NR	120.22	4.06	3.1	0.6	134.7	2.82	78	85	117	136.5	6.5	2.9	1.5	0.5	1.07
N	NR	145.24	4.9	3.1	0.6	159.7	2.82	81	92.5	139	162	7.3	2.9	2	0.5	2.52
								83		167				2.5		4.83
N	NR	92.9	1.7	1.3	0.4	99.4	1.12	79	80	91	101	2.5	1.2	0.6	0.5	0.145
N	NR	102.6	2.5	1.3	0.4	110.7	1.12	80	82.5	100	112	3.3	1.2	1	0.5	0.353
								79		111				0.6		0.464
N	NR	111.81	2.87	2.7	0.6	121.6	2.46	81.5	85.5	108.5	123	5	2.5	1	0.5	0.649
N	NR	125.22	4.06	3.1	0.6	139.7	2.82	83	90.5	122	141.5	6.5	2.9	1.5	0.5	1.18
N	NR	155.22	4.9	3.1	0.6	169.7	2.82	86	99	149	172	7.3	2.9	2	0.5	3.02
								88		177				2.5		5.72
N	NR	97.9	1.7	1.3	0.4	104.4	1.12	84	85	96	106	2.5	1.2	0.6	0.5	0.154
N	NR	107.6	2.5	1.3	0.4	115.7	1.12	85	88	105	117	3.3	1.2	1	0.5	0.373
								84		121				0.6		0.597
N	NR	120.22	2.87	3.1	0.6	134.7	2.82	86.5	91.5	118.5	136.5	5.3	2.9	1	0.5	0.854
N	NR	135.23	4.9	3.1	0.6	149.7	2.82	89	95.5	131	152	7.3	2.9	2	0.5	1.4
N	NR	163.65	5.69	3.5	0.6	182.9	3.1	91	105	159	185	8.4	3.1	2	0.5	3.59
								93		187				2.5		6.76
N	NR	107.6	2.1	1.3	0.4	115.7	1.12	90	91	105	117	2.9	1.2	1	0.5	0.27
N	NR	117.6	3.3	1.3	0.4	125.7	1.12	91.5	94	113.5	127	4.1	1.2	1	0.5	0.536
								89		126				0.6		0.626
N	NR	125.22	2.87	3.1	0.6	139.7	2.82	91.5	97	123.5	141.5	5.3	2.9	1	0.5	0.89
N	NR	145.24	4.9	3.1	0.6	159.7	2.82	94	103	141	162	7.3	2.9	2	0.5	1.79
N	NR	173.66	5.69	3.5	0.6	192.9	3.1	98	112	167	195	8.4	3.1	2.5	0.5	4.23

② Sealed and shielded bearings are also available. ③ This dimension applies to sealed and shielded bearings. ④ Does not include bearings with snap rings.