

Bearings for special applications

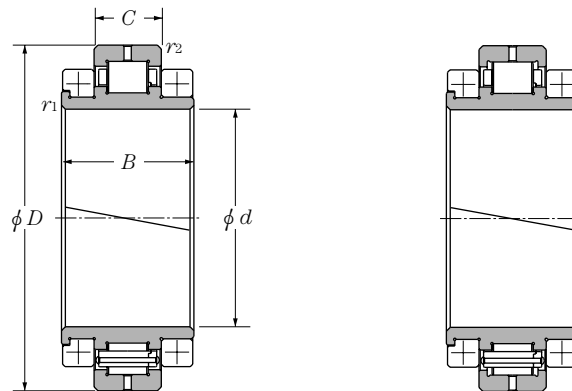
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Bearings for special applications



- Since the inner ring, outer ring and cage are split in two parts, it is possible to mount the bearing in places where a united bearing is difficult or impossible to mount. (ie. Places where mounting from the shaft end is impossible, an obstacle exists on the shaft, or the shaft is very long.)
- Inspection and maintenance after mounting is easy.



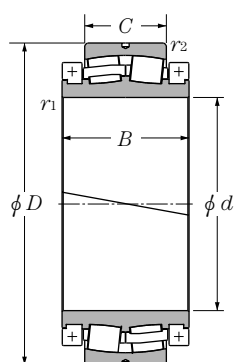
Drawing A
Fixed side

Drawing B
Free side

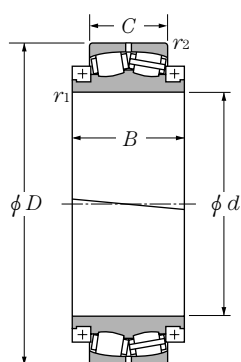
d 120~770mm

d	Boundary dimensions					dynamic kN	Basic load ratings		static kgf	Bearing ^① numbers	Drawing no.
	D	B	C	r ₁	r ₂		static	dynamic			
120	R254	125	60	C4	4	450	510	46,000	52,000	* RE2436 * RE2437	B A
127	254	114.3	63.5	C5	C2	555	720	56,500	73,500	RE2512	A
160	240	76	38	C3	C3	238	340	24,200	35,000	RE3220 RE3221	A B
164	240	76	38	C3	C3	238	340	24,200	35,000	RE3308 RE3309	A B
170	R340	120	56	C3.5	3.5	435	565	44,500	57,500	* RE3420 * RE3421	A B
180	285.75	109	55.5	C3.5	C3.5	415	580	42,500	59,000	RE3617	A
190	290	92	46	C3.5	C3.5	350	510	36,500	52,000	RE3812 RE3813	A B
200	311.15	109.5	60.3	C3.2	C3.2	480	760	49,000	77,500	RE4022	A
210	360	92	46	C3	C3	370	595	37,500	60,500	RE4206 RE4207	A B
230	360	92	46	C3	C3	350	550	35,500	56,500	RE4604 RE4605	A B
235	360	92	46	C3	C3	350	550	35,500	56,500	RE4702 RE4703	A B
260	360	92	46	C3	C3	350	550	35,500	56,500	RE5209 RE5210	A B
280	400	92	48	C3	C3	460	755	47,000	77,000	RE5606 RE5607	B A
320	622.3	272	160.4	C12	C6	2,900	4,250	295,000	435,000	RE6405	A
335	480	115	56	C3	C3	545	955	56,000	97,500	RE6702 RE6703	A B
360	R600	200	116	C6	6	1,940	3,250	198,000	330,000	* RE7203	B
460	740	294	170	C4	C4	3,650	6,150	370,000	625,000	RE9208	B
500	850.9	360	210	C12	C6	5,250	9,050	535,000	525,000	RE10013	B
575	800	180	90	C3	C3	1,370	2,570	140,000	262,000	RE11501 RE11502	A B
640	900	200	103	C3	C3	1,650	3,150	168,000	325,000	RE12801 RE12802	A B
670	900	200	103	C3	C3	1,650	3,150	168,000	325,000	RE13405 RE13406	A B
770	1,070	300	180	C2.5	C6	5,300	12,000	540,000	1,230,000	RE15404 RE15405	A B

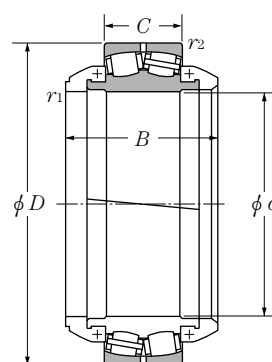
① The marked "*" bearings has a spherical surface of outer rings outside dia.
Remarks: 1. The above drawings are typical examples. Please contact NTN Engineering.
C-2



Drawing A



Drawing B



Drawing C

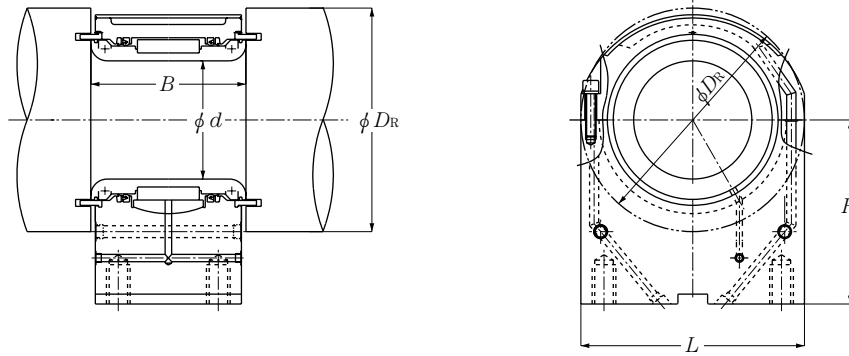
d 150~1,400mm

d	Boundary dimensions					dynamic		Basic load ratings		Bearing [®] numbers	Drawing no.
	D	B	C	r ₁	r ₂	C _r	C _{or}	static	static		
	mm					kN		kgf			
150	260	121	67	2.1	2.1	420	720	43,000	73,500	2PE3012	A
190	290	150	90	2.1	2.1	785	1,440	80,000	147,000	2PE3801	A
200	340	152	90	3	3	935	1,620	95,000	165,000	2PE4002	A
240	400	173	104	4	4	1,070	1,990	109,000	203,000	2PE4802	A
315.9	530	210	133	5	5	2,130	4,150	218,000	420,000	2PE6301	A
320	480	226	121	7.5	4	1,590	2,930	163,000	299,000	2PE6401	A
360	540	212	134	3	5	2,270	4,350	231,000	445,000	2PE7202	A
505	750	248	140	5	5	2,680	6,200	273,000	635,000	2PE10101	A
530	750	248	140	5	5	2,680	6,200	273,000	633,000	2PE10601	A
850	1,280	375	249	12	12	8,800	19,900	895,000	2,020,000	2PE17009	A
1 120	1,540	525	355	7.5	7.5	14,200	43,500	1,450,000	4,400,000	2PE22401	B
1 200	1,700	790	410	—	9.5	17,200	44,000	1,750,000	4,500,000	2PE24004	C
1 200	1,700	695	410	—	9.5	15,600	44,000	1,590,000	4,500,000	2PE24005	C
1 400	1,900	880	530	—	12	22,900	65,500	2,340,000	6,650,000	2PE28001	C

● Double–Fractured Split Cylindrical Roller Bearings: Continuous Casting Equipment

NTN

- These bearings are designed to be a full complement roller type and have high rating load for heavy loads, ultra low speed rotation and space-saving.
- These bearings provide a multi-seal with a labyrinth ring, seal ring and special rubber seal to prevent water from invading.
- The clamping ring of the inner ring is not needed anymore and the structure of direct clamping is applied to make a compact bearing.
- Bearings have a self-aligning nature due to the roll deflection since the outer ring outside diameter and the housing inner diameter are spherical.
- Application of a water cooling jacket type housing controls rising bearing temperatures.



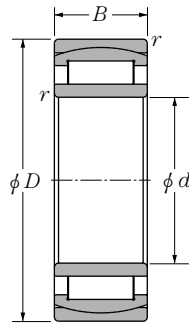
d 100~230mm

d	Boundary dimensions				dynamic kN	static kN	Basic load ratings		Bearing numbers	Housing No.
	B	H	L	DR			dynamic kgf	static kgf		
100	154	145	210	210	355	790	36,000	80,500	RE2038V	SS2020
	169	132	220	225	475	950	48,500	96,500	RE2039V	SS2021
110	154	150	230	230	425	1,040	43,500	106,000	RE2224V	SS2228
	154	180	230	230	390	930	40,000	94,500	RE2225V	SS2230
		155	230	225						SS2234
115	173	220	240	240	505	940	51,500	95,500	RE2306V	SS2304
120	151	190	240	250	395	970	40,000	99,000	RE2439V	SS2420
130	154	190	270	270	430	1,110	43,500	113,000	RE2628	SS2637
140	179	245	270	270	600	1,240	61,500	126,000	RE2827V	SS2835
	191	250	265	265	525	1,280	53,500	131,000	RE2824V	SS2825
145	196	260	280	280	630	1,440	64,500	147,000	RE2906V	SS2908
	208	270	295	295	765	1,780	78,000	182,000	RE2907V	SS2907
150	169	180	265	300	695	1,700	70,500	173,000	RE3036V	SS3043
165	228	280	320	320	930	2,210	95,000	225,000	RE3311V	SS3303
180	169	217.5	335	335	815	2,010	83,000	205,000	RE3621V	SS3616
	235	280	340	340	1,030	2,580	106,000	263,000	RE3620V	SS3415
190	233	280	370	370	1,320	3,100	134,000	320,000	RE3815V	SS3804
230	239	300	450	450	1,590	3,700	162,000	380,000	RE4606	SS4601

Cylindrical Roller Bearings With Self-Aligning Rings: Continuous Casting Equipment

NTN

- These bearings are designed to be a full complement roller type and have high rating load.
- Bearings have a self-aligning nature since the outer ring outside surface and aligning ring inside surface are spherical.

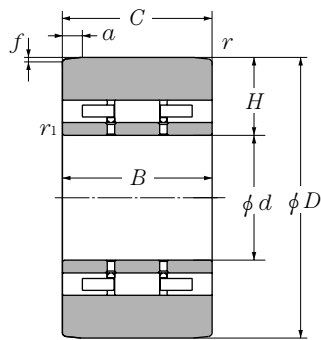


d 55~200mm

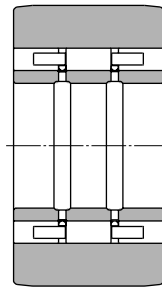
d	Boundary dimensions			Basic load ratings				Bearing numbers
	D	B	$r_{s\ min}^{\text{①}}$	dynamic kN	static kN	dynamic kgf	static kgf	
55	90	32	1.1	85	203	8,700	20,700	R11A11V R11A12V
	100	25	1.5	94.5	146	9,650	14,900	
75	130	31	1.5	146	236	14,900	24,100	R1564V
110	170	60	2	297	720	30,500	73,000	R2260V R2252V
	180	56	2	325	635	33,000	65,000	
120	200	80	2	450	980	46,000	100,000	R2481V
130	200	69	2	405	935	41,500	95,500	R2674V R2677V
	210	80	2	495	1,090	50,500	112,000	
140	210	69	2	420	990	42,500	101,000	R2858V R2859V
	225	85	2.1	545	1,230	56,000	125,000	
150	250	100	2.1	710	1,620	72,500	165,000	R3056V
160	270	109	2.1	855	1,830	87,500	186,000	R3261V
170	260	90	2.1	635	1,510	65,000	154,000	R3444V
180	280	100	2.1	785	1,870	80,500	191,000	R3646V
200	340	112	3	1 160	2,470	119,000	252,000	R4051V

① Smallest allowable dimension for chamfer dimension r.

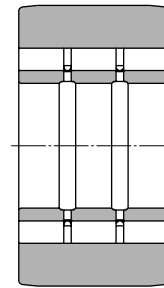
- Since bearings are directly used in preparing rolls, the thickness of the outer ring is designed to be thicker than regular bearings.
- Since high accuracy under heavy loads is required, these bearings are designed to have a capacity for heavy loads and high accuracy.
- Several bearings are assembled on one shaft for operation, and the mutual difference of assembled thickness (Dimension H) of bearings on the same shaft is very minimal.
- When the outer ring outside surface is worn, it is possible to recycle it by grinding it to a certain level.



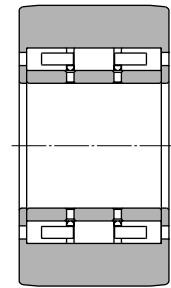
Drawing A



Drawing B



Drawing C

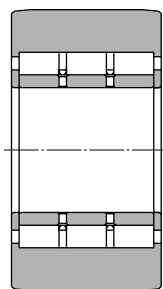


Drawing D

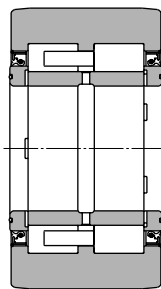
d 70~180mm

d	Boundary dimensions					Basic load ratings				Drawing no.	
	D	B	C	$r_{s\ min}^{\text{①}}$	$r_{is\ min}^{\text{①}}$	dynamic kN	static kN	dynamic kgf	static kgf		
70	160	90	90	1.5	0.6	455	855	46,500	87,000	3RCS1414VUP 3RCS1418UP	C
	160	90	90	1.5	0.6	355	605	36,000	61,500		B
90	220	96	94	3.0	1.1	470	695	48,000	71,000	2R1840LLUP-1 3R1827VUP 3R1829UP 3R1826UP	F
	220	120	120	2.0	0.3	775	1,510	79,000	154,000		E
	220	120	120	2.0	1.5	650	1,150	66,000	118,000		D
	200	130	130	2.0	1.5	675	1,260	69,000	128,000		D
100	255	120	120	1.5	1.0	715	1,350	73,000	138,000	3RCS2035UP	A
130	300	160	159.5	1.5	2.0	1,480	2,700	151,000	275,000	3RCS2659UPV1 3RCS2629UP	A
	300	172.6	172.6	1.5	2.0	1,580	2,930	161,000	299,000		A
180	406.4	171.04	171.04	2.5	4.0	2,060	3,800	210,000	390,000	3RCS3615UP 3RCS3618UP	B
	406.4	224	224	1.45	4.0	2,350	4,500	240,000	460,000		B

① Minimal allowable dimension for chamfer dimension r or r_s .



Drawing E

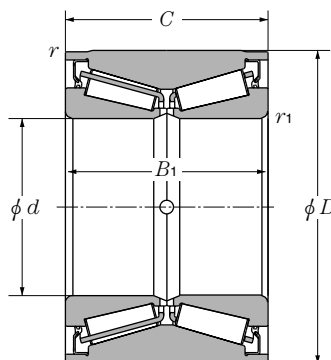


Drawing F

Sloping outer ring		Assembled thickness mm	Necessary number	Mass kg
mm	mm			
<i>a</i>	<i>f</i>	<i>H</i>	(P/C)	(approx.)
6	0.035	44.981 (± 0.010)	32	10.7
6	0.035	44.981 (± 0.010)	32	10.7
21	0.5	64.980 (± 0.008)	64	21.7
6	0.035	64.978 (± 0.008)	32	27.6
20.6	0.12	64.973 (0 \sim -0.010)	40	27.5
6	0.1	64.960 (± 0.008)	40	29.8
10	0.1	62.474 (0.010 \sim 0)	32	28.0
10	0.1	84.954 (± 0.008)	40	67.4
10	0.1	84.954 (± 0.008)	40	73.0
25	0.15	113.150 (± 0.010)	56	132
25	0.15	113.150 (± 0.010)	40	170

Enclosed-Type Tapered Roller Bearings for Wheels: Sintering Machines

- The double lip contact seal, which has a tight seal, is installed with the bearing side face to prevent dust from entering the bearings.
- Greasing the bearings is possible when a notch is positioned at the central part of inner ring.

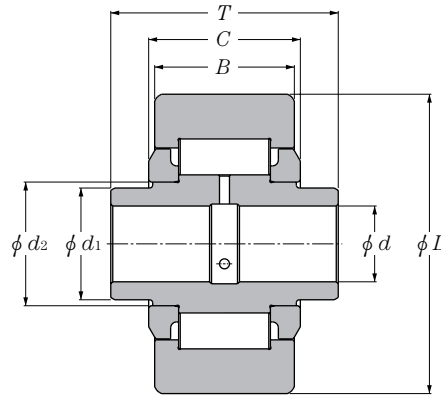


d 85~130mm

d	Boundary dimensions					Basic load ratings				Bearing numbers
	D	B ₁	C	r _{smin} ^①	r _{1smin} ^①	dynamic kN	static kN	dynamic kgf	static kgf	
85	180	115	115	2.5	0.6	440	715	45,000	73,000	CRI-1760LL
95	180	100	100	3.0	1.0	530	835	54,500	85,500	CRI-1959LL *
100	180	100	100	2.5	0.8	440	675	45,000	68,500	CRI-2070LL
110	200	100	100	3.0	1.0	605	965	61,500	98,500	CRI-2272LL
130	230	138	138	3.0	0.3	820	1,660	83,500	169,000	CRI-2666LL

① Minimal allowable dimension for chamfer dimension r or r₁.
Remarks: 1. The marked "*" bearings are not prepared with oil holes.

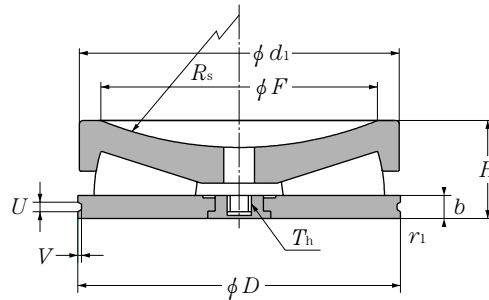
- Since the outer ring directly supports heavy loads, the thickness of outer ring is designed to be thicker than regular bearings.
- For operation under heavy loads and extremely low speed rotation, these bearings are designed to be a full complement roller type and have high loads capacity.
- To prevent foreign matter from entering the bearing, a labyrinth structure is applied, which has a narrower clearance between outer ring and rib ring.



d 28.3~56mm

d	Boundary dimensions						Basic load ratings			Bearing numbers	
	d ₁	d ₂	D	B	C	T	dynamic kN	static kN	dynamic kgf		static kgf
28.3	44.05	47	125	55	62	94	197	241	20,100	24,500	R06A31V
38.4	60	66	150	90	99	138	390	585	40,000	59,500	R08A31V
38.7	56	56	150	70	75	112	315	420	32,500	42,500	R08A24V
41.75	64.16	71	175	80	85	125	395	575	40,500	59,000	R08A02V
45	73	73	150	60	60	60	278	405	28,300	41,000	R09A20V
46	73	73	150	60	60	60	278	405	28,300	41,000	R09A21V
50	72	72	156	60	70	70	280	355	28,600	36,500	R1099V
56	74	74	160	51	55	49	261	310	26,600	31,500	R11A01V R11A13V
	73	73	150	60	60	60	278	405	28,300	41,000	

- These bearings are designed to be a full complement roller type and have high static rating load for large axial load applications.
- Inner ring surface is spherical (convex or concave) to allow its circle center to meet the tip of the pressing screw.
- For hoisting, bearings are designed to have a hole or bushing at the center of the inner ring, and a bushing on the outer ring.



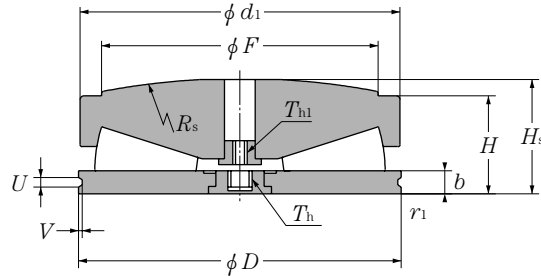
D 149.225~641.350mm

Boundary dimensions					Basic load ratings static		Bearing numbers
mm					kN	kgf	
D	d_1	H	F	$r_{1s \min}$ ^①	C_{0a}	C_{0a}	
149.225	146.900	47.625	127.000	1.6	2,280	233,000	CRT0402V
174.625	172.300	52.375	152.400	1.6	3,300	335,000	CRT0503V
203.200	200.800	65.075	177.800	1.6	4,550	465,000	CRT0607V
266.700	264.300	80.950	228.600	1.6	7,750	790,000	CRT0701V
320.675	318.300	95.250	279.400	1.6	11,800	1,200,000	CRT0814V
377.825	375.500	111.125	330.200	1.6	16,300	1,660,000	CRT0908V
409.575	407.200	122.225	355.600	3.2	19,300	1,960,000	CRT1006V
438.150	435.800	130.175	381.000	3.2	21,600	2,210,000	CRT1104V
495.300	492.900	146.050	431.800	3.2	27,300	2,780,000	CRT1209V
495.300	492.900	146.050	431.800	3.2	32,000	3,250,000	CRT1212V
523.875	521.500	152.400	457.200	3.2	32,000	3,300,000	CRT1409V
554.000	555.000	190.500	465.430	1.7	36,000	3,700,000	CRT1206V
555.625	553.300	165.100	482.600	3.2	36,000	3,650,000	CRT1516V
581.025	578.700	168.275	508.000	3.2	38,500	3,950,000	CRT1610V
609.600	607.200	177.800	533.400	3.2	44,000	4,500,000	CRT1806V
641.350	639.000	184.150	558.800	3.2	49,000	4,950,000	CRT1807V

① Smallest allowable dimension for chamfer dimension r_1 .

R_s	Dimensions				T_h	Mass kg (approx.)
	b	U	V	T_h		
228.6	12.7	4.7	1.2	M12	4.4	
228.6	12.7	4.7	1.2	M12	6.7	
254	15.875	6.4	1.2	M12	11	
304.8	19.05	7.9	2	M20	24.1	
381	22.225	10.3	2.4	M20	41.3	
457.2	25.4	10.3	2.4	M24	73.7	
508	28.575	10.3	2.4	M24	87.2	
508	31.75	13.5	3.2	M24	105	
558.8	34.925	13.5	3.2	M24	150	
1,270	34.925	13.5	3.2	M24	150	
635	34.925	13.5	3.2	M24	175	
1,270	50	9.5	6	M24	245	
635	38.1	13.5	3.2	M24	214	
711.2	38.1	13.5	3.2	M24	238	
762	38.1	13.5	3.2	M24	277	
762	38.1	13.5	3.2	M24	317	

- These bearings are designed to be a full complement roller type and have high static rating load for large axial load applications.
- Inner ring surface is spherical (convex or concave) to allow its circle center to meet the tip of the pressing screw.
- For hoisting, bearings are designed to have a hole or bushing at the center of the inner ring, and a bushing on the outer ring.



D 149.225~641.350mm

Boundary dimensions					Basic load ratings static		Bearing numbers
mm					kN	kgf	
D	d_1	H	F	$r_{1s\min}$ ^①	C_{0a}	C_{0a}	
149.225	146.900	80	127.000	1.6	2,280	233,000	CRT0401V
174.625	172.300	61.392	152.400	1.6	3,300	335,000	CRT0504V
203.200	200.800	75	177.800	1.6	4,650	475,000	CRT0606V
266.700	264.300	94.412	228.600	1.6	7,750	790,000	CRT0505V
320.675	318.300	110.973	279.400	1.6	11,800	1,200,000	CRT0811V
377.825	375.500	129.007	330.200	1.6	16,300	1,660,000	CRT0909V
409.575	407.200	140.767	355.600	3.2	19,300	1,960,000	CRT1007V
438.150	435.800	150.673	381.000	3.2	21,600	2,210,000	CRT1105V
482.600	480.212	145.542	419.100	3.2	27,200	2,770,000	CRT1307V
495.300	492.900	170.612	431.800	3.2	32,000	3,250,000	CRT1211V
523.875	521.500	174.35	457.200	3.2	32,500	3,350,000	CRT1412V
533.400	533.400	177.8	457.200	1.6	33,500	3,400,000	CRT1411V
555.625	553.300	190.856	482.600	3.2	36,000	3,650,000	CRT1517V
581.025	578.700	193.78	508.000	3.2	39,000	4,000,000	CRT1214V
581.225	578.700	193.777	508.000	3.2	38,500	3,950,000	CRT1601V
609.600	607.240	202.167	533.400	3.2	44,500	4,550,000	CRT1812V
641.350	639.000	212.674	558.800	3.2	49,000	4,950,000	CRT1808V

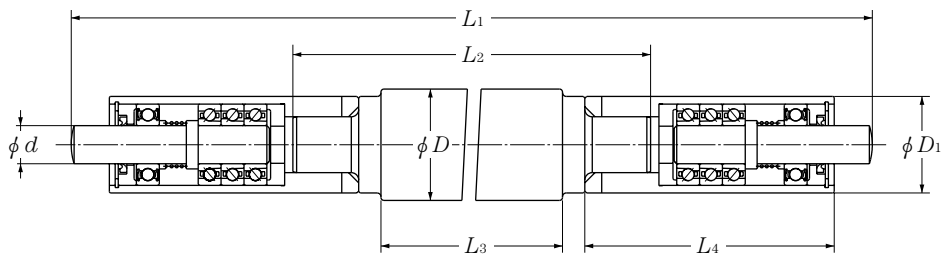
① Smallest allowable dimension for chamfer dimension r_1 .

R_s	H_s	Dimensions					T_{h1} ②	Mass kg (approx.)
		b	U	V	T_h			
457.2	47.625	12.7	4.7	1.2	M12	—	6.6	
457.2	52.375	12.7	4.7	1.2	M12	—	10.1	
508	65.075	15.875	6.4	1.2	M12	M16	17	
609.6	80.950	19.05	7.9	2	M20	—	36.2	
762	95.250	22.225	10.3	2.4	M20	—	61.3	
914.4	111.125	25.4	10.3	2.4	M24	—	98.8	
1,016	122.225	28.575	10.3	2.4	M24	—	127	
1,016	130.175	31.75	13.5	3.2	M24	—	155	
1,905	130.175	38.1	13.5	3.2	M24	—	182	
1,066.8	146.050	34.925	13.5	3.2	M24	—	215	
1,270	152.400	34.925	13.49	3.18	M24	—	259	
1,981.2	161.925	31.75	9.5	9.5	M24	—	271	
1,270	165.100	38.1	13.5	3.2	M24	—	316	
1,320.8	166.880	38.1	13.5	6	M24	M42	350	
1,422.4	168.275	38.1	13.5	3.2	M24	—	350	
1,524	177.800	38.1	13.5	3.2	M30	M42	388	
1,524	184.150	38.1	13.5	3.2	M24	—	469	

② "—" means that is not prepared with a bush.

- This unit has a precision small diameter and a long scaled roll, with the surface roughness of the roll designed to be low.
- Angular ball bearings are assembled in multiple rows in the cartridge to obtain high load capacity in both axial directions and at high speed.
- This unit has established both low torque operation and tight sealing by a labyrinth structure and low-contact seals.

Cartridge Unit

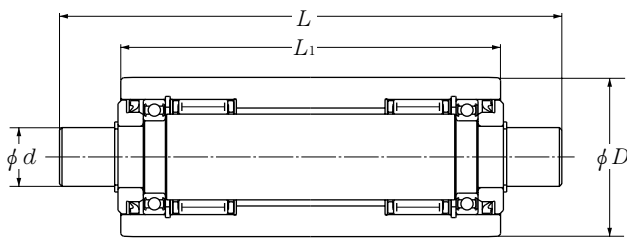


d 8~15mm

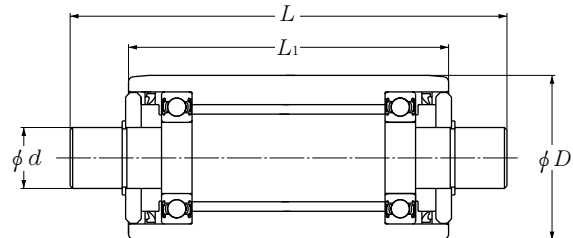
Bearing numbers	Boundary dimensions							Allowable axiale load	
	d	D	L_1	L_2	L_3	D_1	L_4	kN	kgf
CU8A01W+WK30/150	8	30	1,716	1,552	1,500	26	92	1.85	189
CU8A05W+WK50/185	8	50	2,066	1,902	1,850	26	92	1.85	189
CU8A05W+IM38/185	8	38	2,066	1,902	1,850	26	92	1.85	189
CU10B01W+WK25/220	10	25	2,433.5	2,280	2,200	24	80	0.715	73
CU10B01W+WK20/180	10	20	2,033.5	1,880	1,800	24	80	0.715	73
CU12B04W+WK40/150	12	40	1,716	1,566	1,500	32	92	2.02	206
CU12B07W+WK30/220	12	30	2,433.5	2,288	2,200	28	85	1.49	151
CU12B07W+IM38/180	12	38	2,033.5	1,888	1,800	28	85	1.49	151
CU12B08W+WK40/210	12	40	2,332	2,170	2,100	38	100	2.02	206
CU15A04W+IM60/220	15	60	2,433.5	2,270	2,200	38	94	3.78	380

- This unit has established both low torque operation and tight sealing by a labyrinth structure and low-contact seals.
- When further low torque is requested, the roll unit (Model BUB), which uses only the deep groove ball bearings, is available.
- Since the unit is used as a backup roll, the accuracy and its surface roughness are designed to be low.

Backup Unit



Type NKZ

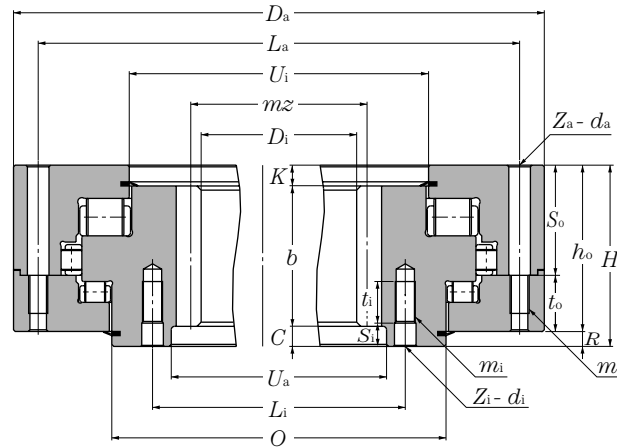


Type BUB

d 13~70mm

Bearing numbers	Boundary dimensions				Basic load ratings				Mass kg (approx.)
	mm				dynamic	static	dynamic	static	
	d	D	L	L_1	C_r	C_{or}	C_r	C_{or}	
NKZ 13×34×190-2	13	34	190	150	42	68	4,300	6,900	1
NKZ 16×38×192	16	38	192	170	35.5	55.5	3,600	5,650	1.4
NKZ 20×50×153-1	20	50	153	115	77.5	116	7,900	11,900	1.9
BUB 24×63.5×150-01	24	63.5	190	140	26.6	23.4	2,710	2,390	2.4
NKZ 24×65×205-6	24	65	205	155	82.5	122	8,450	12,500	3.9
NKZ 24×65×294	24	65	294	244	98	153	10,000	15,600	5.8
NKZ 24×65×314-4	24	65	314	275	84	150	8,600	15,300	6.5
BUB 24×65×320-03	24	65	320	274	19.2	14.8	1,950	1,510	6.5
NKZ 26×75×208-5	26	75	208	160	112	163	11,400	16,700	5.1
NKZ 28×75×150	28	75	150	108	112	163	11,400	16,700	3.6
NKZ 30×65×196	30	65	196	146	114	186	11,600	18,900	3.8
NKZ 30×75×150-24	30	75	150	110	125	187	12,700	19,000	3.7
NKZ 30×75×230-19	30	75	230	180	151	228	15,400	23,200	5.8
NKZ 30×75×326-12	30	75	326	276	151	228	15,400	23,200	8.5
NKZ 40×90×195	40	90	195	145	128	214	13,000	21,900	7
NKZ 70×150×345-4	70	150	345	250	515	905	52,500	92,500	34.5

- These are compound type bearings which unite the double row thrust roller bearing and the radial roller bearing.
- These bearings are designed so that rollers in each row support axial and moment loads respectively, and high rigidity and long life can be obtained since the rolling parts make line contact.
- They are suitable for tunnel excavating machines or cranes with frequent turns.

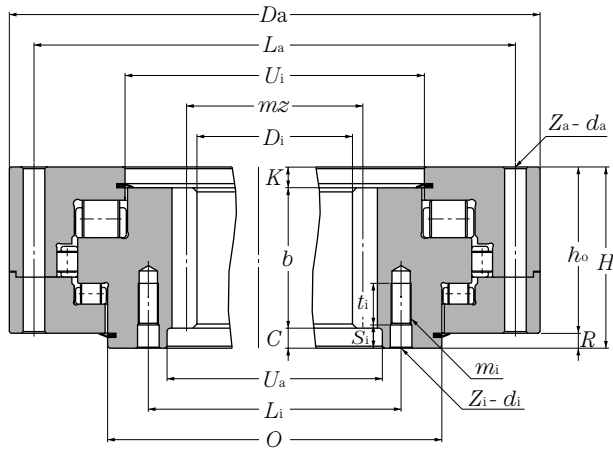


Drawing A

D_i 1,104~4,000mm

Boundary dimensions	Gear spec						Setting holes (inner ring)						Setting holes (outer ring)					
	D_i	D_a	H	mz	m	z	b	L_i	z_1 (n)	d_i	S_i	m_i	t_i	L_a	z_a (n)	d_a	s_o	t_o
1,104	1,510	175	1,128	12	94	140	1,230	36	ϕ 26	30	M24X3	45	1,460	36	ϕ 26	108	52	M24X3
1,400	1,850	220	1,428	14	102	120	1,520	48	ϕ 26	30	M24X3	50	1,795	48	ϕ 26	—	—	—
1,620	2,180	260	1,656	18	92	180	1,800	40	ϕ 33	30	M30X3.5	60	2,115	40 ^①	ϕ 33	—	—	—
2,172	2,660	230	2,196	12	183	170	2,300	48	ϕ 33	35	M30X3.5	60	2,595	48	ϕ 33	—	—	—
2,784	3,305	240	2,808	12	234	140	2,910	42	ϕ 33	30	M30X3.5	55	3,240	42	ϕ 33	—	—	—
4,000	4,700	348	4,032	16	252	210	4,175	88	ϕ 42	50	M39X4	70	4,615	88	ϕ 42	226	80	M39X4

① Disparity positioned

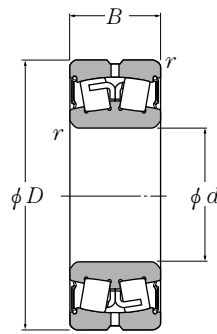


Drawing B

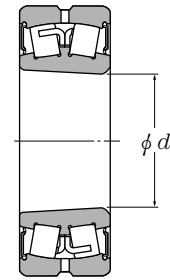
Unit mm

Bearing numbers	Drawing no.	Dimensions							Basic load ratings					Mass kg (approx.)
		O	U_i	U_a	R	K	C	main thrust line	static kN sub thrust line	radial line	main thrust line	static Tonf sub thrust line	radial line	
K2N-RTD22602PX1	A	1,306	1,284	1,166	15	15	20	11,500	6,700	1,410	1,170	680	143	930
K2N-RTD28601PX1	B	1,618	1,576	1,475	20	15	85	20,500	10,800	2,200	2,100	1,110	225	1,550
K2N-RTD33102PX1	B	1,902	1,844	1,710	20	25	55	28,900	14,600	3,050	2,950	1,490	310	2,650
K2N-RTD43902PX1	B	2,391	2,364	2,235	30	20	40	27,500	18,600	2,280	2,800	1,900	233	2,600
K2N-RTD56205PX1	B	3,034	3,000	2,846	20	15	85	36,500	22,000	4,500	3,700	2,240	460	3,850
K2N-RTD80602PX1	A	4,321	4,219	4,085	20	52	86	114,000	50,500	17,000	11,600	5,150	1,740	10,300

- Special contact type rubber seal prevents foreign matter from entering the bearings.
- Compact design enables bearings to be mounted with the standard type of plummer blocks (SN5, SN2).
- Greasing bearings is possible since lubrication grooves and holes are provided on the outer ring.
- Bearings are prelubricated with grease and can be directly mounted on machines.



Cylindrical bore

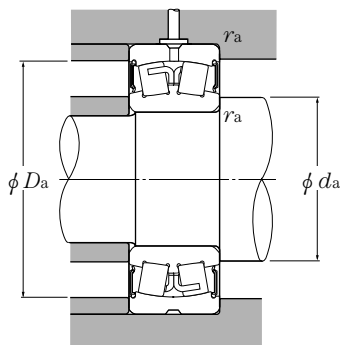


Tapered bore
taper 1:12

d 60~160mm

d	Boundary dimensions			dynamic kN	Basic load ratings		dynamic kgf	static kgf	Bearing numbers	
	D	B	r _{s min} ^①		C _r	C _{or}			C _r	C _{or}
60	110	36	1.5	115	147	11,700	15,000	LH-WA22212BLLS	LH-WA22212BLLSK	
65	120	39	1.5	143	179	14,600	18,300	LH-WA22213BLLS	LH-WA22213BLLSK	
70	125	39	1.5	154	201	15,700	20,500	LH-WA22214BLLS	LH-WA22214BLLSK	
75	130	39	1.5	166	223	16,900	22,800	LH-WA22215BLLS	LH-WA22215BLLSK	
80	140	41	2	179	239	18,300	24,400	LH-WA22216BLLS	LH-WA22216BLLSK	
85	150	44	2	206	272	21,000	27,800	LH-WA22217BLLS	LH-WA22217BLLSK	
90	160	50.4	2	256	345	26,200	35,000	LH-WA22218BLLS	LH-WA22218BLLSK	
95	170	51	2.1	294	390	30,000	39,500	WA22219BLLS	WA22219BLLSK	
100	180	60.3	2.1	315	415	32,000	42,500	WA22220BLLS	WA22220BLLSK	
110	200	69.8	2.1	410	570	42,000	58,000	WA22222BLLS	WA22222BLLSK	
120	215	76	2.1	485	700	49,500	71,500	WA22224BLLS	WA22224BLLSK	
130	230	80	3	570	790	58,000	80,500	WA22226BLLS	WA22226BLLSK	
140	250	88	3	685	975	70,000	99,500	WA22228BLLS	WA22228BLLSK	
150	270	96	3	775	1,160	79,000	119,000	WA22230BLLS	WA22230BLLSK	
160	290	104	3	870	1,290	88,500	132,000	WA22232BLLS	WA22232BLLSK	

① Smallest allowable dimension for chamfer dimension r. ② "K" indicates bearings have tapered bore with a taper ratio of 1: 12.



Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

static

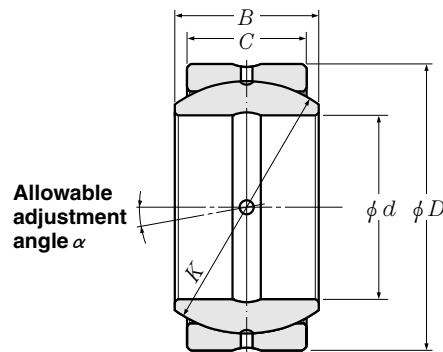
$$P_{0r} = F_r + Y_0 F_a$$

For values of e , Y_2 and Y_0 see the table below.

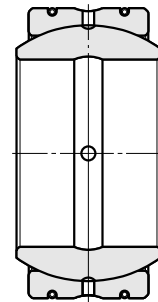
Abutment and fillet dimensions				Constant	Axial load factors			Mass (approx.)	
mm				e	Y_1	Y_2	Y_0	kg	
min	d_a max	D_a max	r_{as} max					Cylindrical bore	Tapered bore
68.5	74.5	101.5	1.5	0.27	2.49	3.71	2.44	1.41	1.37
73.5	80	111.5	1.5	0.28	2.42	3.60	2.37	1.80	1.76
78.5	84	116.5	1.5	0.26	2.55	3.80	2.50	1.91	1.86
83.5	89.5	121.5	1.5	0.24	2.81	4.19	2.75	2.06	2.00
90	94.5	130	2	0.26	2.64	3.93	2.58	2.51	2.45
95	101	140	2	0.26	2.60	3.88	2.55	3.08	3.01
100	107	150	2	0.26	2.55	3.80	2.49	4.08	3.97
107	114	158	2	0.26	2.63	3.92	2.57	4.71	4.59
112	119	168	2	0.26	2.55	3.80	2.49	6.01	5.83
122	133	188	2	0.27	2.51	3.74	2.46	8.87	8.60
132	147	203	2	0.27	2.47	3.68	2.42	11.2	10.9
144	154	216	2.5	0.28	2.39	3.56	2.33	12.5	12.1
154	168	236	2.5	0.28	2.39	3.55	2.33	16.9	16.3
164	185	256	2.5	0.27	2.46	3.66	2.40	22.6	21.9
174	197	276	2.5	0.28	2.42	3.60	2.37	28.0	27.2

- These are self-aligning sliding bearings: the sliding parts form a spherical surface. The bearings also can support radial loads and axial loads in either direction.
- A lubricant (oil or grease) should be used since the sliding parts are steel on steel.
- These bearings are suitable for swinging and aligning movements, and used in joint-movement parts for industrial and construction machines.

Grease up type



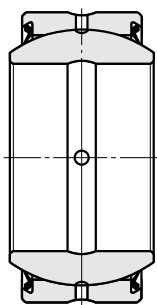
Drawing A
Divided by 1 place (outer ring)



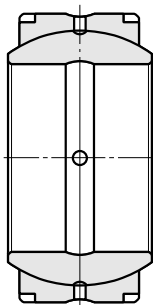
Drawing B
Divided by 2 place (outer ring)

d 110~420mm

d	Boundary dimensions					α (deg.)	Basic load ratings				Bearing numbers
	D	B	C	K	dynamic kN		static	dynamic kgf	static		
	mm	mm	mm	mm		C_d	C_s	C_d	C_s		
110	180	85	70	160	6	1,100,000	6,600,000	112,000	670,000	W2222	
	180	100	75	160	10	1,180,000	7,050,000	120,000	720,000	W2225	
180	260	105	60	225	12	1,110,000	6,670,000	113,000	680,000	W3617	
200	290	130	120	250	2	2,550,000	15,300,000	260,000	1,560,000	W4029	
260	430	215	195	375	3	6,350,000	38,000,000	645,000	3,900,000	W52A07	
280	350	69	69	320	—	2,170,000	13,000,000	221,000	1,320,000	W5605	
	430	220	140	375	10	4,900,000	29,600,000	500,000	3,010,000	W5613	
300	440	190	150	380	6	5,000,000	30,500,000	510,000	3,050,000	W6022	
320	440	160	120	380	6	4,200,000	25,300,000	430,000	2,580,000	W6415	
380	480	100	100	430	—	4,200,000	25,300,000	430,000	2,580,000	W7601	
420	540	120	120	480	—	5,650,000	34,000,000	575,000	3,450,000	W8407	



Drawing C
Divided by 1 place (outer ring)
Plastic sealed



Drawing D
Divided by 2 place (outer ring)
Retaining ring (shrinkage fit) type
($D \geq 500\text{mm}$)

Drawing no.	Mass kg (approx.)	Remarks
A	9.42	
C	10.3	
A	16.1	Inner ring outside dia. with oil groove
B	33.0	Inner ring outside dia. with oil groove
B	140	Inner ring outside dia. with oil groove
B	18.7	Without oil hole, oil groove
B	106	Inner ring outside dia. with oil groove
B	101	Inner ring outside dia. with oil groove
B	72	Inner ring outside dia. with oil groove
B	52.9	Without oil hole, oil groove
D	85.0	Without oil hole, oil groove