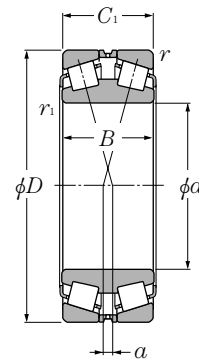


# Double Row Tapered Roller Bearings

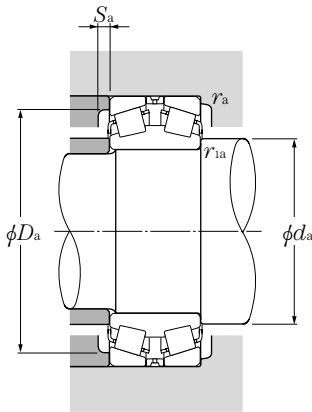
## Face-to-face arrangement



d 110 ~ 280mm

d	Boundary dimensions					dynamic kN	Basic load ratings			Limiting speeds	
	D	B	C <sub>1</sub>	r <sub>1s min</sub> <sup>1)</sup>	r <sub>s min</sub> <sup>1)</sup>		static	dynamic	static	grease	oil
	mm						C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	min <sup>-1</sup>	
								kgf			
110	180	56	56	2.5	2	298	485	30 500	49 500	1 600	2 200
120	180	46	46	2.5	2	230	375	23 500	38 000	1 500	2 100
	200	62	62	2.5	2	370	610	38 000	62 500	1 500	2 000
130	200	52	52	2.5	2	294	490	29 900	50 000	1 400	1 900
	210	64	64	2.5	2	410	675	42 000	69 000	1 400	1 800
140	210	53	53	2.5	2	300	535	30 500	54 500	1 300	1 800
	225	68	68	3	2.5	390	650	40 000	66 000	1 200	1 700
150	225	56	56	3	2.5	355	630	36 000	64 500	1 200	1 600
	250	80	80	3	2.5	600	1 040	61 500	106 000	1 200	1 500
160	240	60	60	3	2.5	430	765	44 000	78 000	1 100	1 500
	270	86	86	3	2.5	675	1 180	69 000	120 000	1 100	1 400
170	260	67	67	3	2.5	490	865	50 000	88 000	1 100	1 400
	280	88	88	3	2.5	725	1 270	74 000	130 000	1 000	1 300
180	280	74	74	3	2.5	580	1 050	59 500	107 000	1 000	1 300
	300	96	96	4	3	885	1 530	90 500	156 000	940	1 300
190	290	75	75	3	2.5	615	1 110	63 000	113 000	940	1 300
	320	104	104	4	3	985	1 710	100 000	174 000	890	1 200
200	310	82	82	3	2.5	720	1 320	73 000	135 000	900	1 200
	340	112	112	4	3	1 090	1 910	111 000	195 000	840	1 100
220	340	90	90	4	3	880	1 650	89 500	168 000	810	1 100
	370	120	120	5	4	1 220	2 260	125 000	230 000	760	1 000
240	360	92	92	4	3	910	1 770	92 500	181 000	730	980
	400	128	128	5	4	1 400	2 600	142 000	265 000	690	920
260	400	104	104	5	4	1 150	2 190	117 000	223 000	670	900
	440	144	144	5	4	1 960	3 750	200 000	380 000	630	840
280	420	106	106	5	4	1 200	2 340	123 000	238 000	620	820

1) Minimum allowable dimension for chamfer dimension r or r<sub>1</sub>.



### Equivalent radial load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

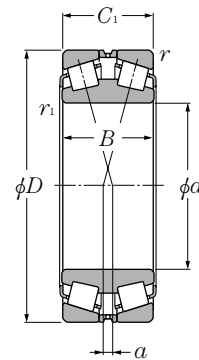
### static

$$P_{or} = F_r + Y_0 F_a$$

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

Bearing numbers	Abutment and fillet dimensions						Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)	
	mm								<i>e</i>	Y <sub>1</sub>	Y <sub>2</sub>		Y <sub>0</sub>
	<i>d<sub>a</sub></i> max	<i>D<sub>a</sub></i> max	<i>D<sub>a</sub></i> min	<i>S<sub>a</sub></i> min	<i>r<sub>1as</sub></i> max	<i>r<sub>as</sub></i> max							
323122	124	170	160	8	2	2	1	0.33	2.03	3.02	1.98	5.6	
323024	134	170	164	8	2	2	12	0.37	1.80	2.69	1.76	4.08	
323124	134	190	175	8	2	2	6.5	0.37	1.80	2.69	1.76	7.82	
323026	144	190	184	8	2	2	13.5	0.37	1.80	2.69	1.76	5.92	
323126	144	200	185	8	2	2	7.5	0.37	1.80	2.69	1.76	8.58	
323028	155	200	190	8	2	2	10	0.37	1.84	2.74	1.80	6.4	
323128	156	213	200	10	2.5	2	8	0.37	1.80	2.69	1.76	10.7	
323030	165	213	205	10	2.5	2	15.5	0.37	1.80	2.69	1.76	7.76	
323130	168	238	220	10	2.5	2	6.5	0.37	1.80	2.69	1.76	15.7	
323032	175	228	215	10	2.5	2	17.5	0.37	1.80	2.69	1.76	9.46	
323132E1	178	258	240	10	2.5	2	8	0.37	1.80	2.69	1.76	20	
323034	185	248	235	10	2.5	2	18	0.37	1.80	2.69	1.76	12.8	
323134E1	188	268	250	10	2.5	2	8.5	0.37	1.80	2.69	1.76	21.5	
323036E1	198	268	250	10	2.5	2	17	0.37	1.80	2.69	1.76	16.5	
323136E1	200	286	265	12	3	2.5	8	0.37	1.80	2.69	1.76	27.2	
323038E1	208	278	260	12	2.5	2	17.5	0.37	1.80	2.69	1.76	17.9	
323138	212	306	285	12	3	2.5	8.5	0.37	1.80	2.69	1.76	34	
323040E1	218	298	280	12	2.5	2	19	0.37	1.80	2.69	1.76	21.7	
323140	222	326	300	12	3	2.5	8.5	0.37	1.80	2.69	1.76	41.7	
323044E1	242	326	310	12	3	2.5	21.5	0.37	1.80	2.69	1.76	29.8	
323144	248	352	325	14	4	3	14	0.40	1.68	2.50	1.64	52.2	
323048E1	269	346	321.5	14	3	2.5	25.5	0.37	1.80	2.69	1.76	32.6	
323148	268	382	355	14	4	3	17	0.40	1.68	2.50	1.64	64.6	
323052	285	382	365	14	4	3	25	0.37	1.80	2.69	1.76	47.3	
323152	290	422	385	16	4	3	16.5	0.40	1.68	2.50	1.64	90	
323056	305	402	385	16	4	3	29.5	0.37	1.80	2.69	1.76	51.2	

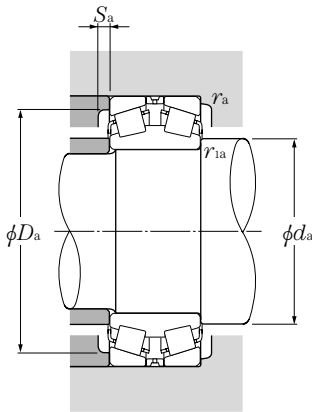
## Face-to-face arrangement



**d** 280 ~ 500mm

d	Boundary dimensions					dynamic kN	Basic load ratings			Limiting speeds	
	D	B	C <sub>1</sub>	r <sub>1s min</sub> <sup>1)</sup>	r <sub>s min</sub> <sup>1)</sup>		static	dynamic	static	grease	oil
	mm						C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	min <sup>-1</sup>	
								kgf			
<b>280</b>	460	146	146	6	5	1 940	3 650	198 000	375 000	580	770
<b>300</b>	460	118	118	5	4	1 610	3 150	165 000	320 000	570	760
	500	160	160	6	5	2 100	4 050	214 000	415 000	530	710
<b>320</b>	480	121	121	5	4	1 580	3 100	162 000	315 000	530	710
	540	176	176	6	5	2 500	4 900	255 000	500 000	500	660
<b>340</b>	520	133	133	6	5	1 890	3 750	193 000	380 000	500	660
	580	190	190	6	5	3 350	6 500	345 000	660 000	460	620
<b>360</b>	540	134	134	6	5	2 050	4 200	209 000	430 000	460	620
	600	192	192	6	5	3 200	6 500	325 000	660 000	430	580
<b>380</b>	560	135	135	6	5	2 080	4 350	213 000	445 000	440	580
	620	194	194	6	5	3 350	6 700	340 000	685 000	410	540
<b>400</b>	600	148	148	6	5	2 530	5 450	258 000	555 000	410	550
	650	200	200	6	6	3 750	7 850	385 000	800 000	380	510
<b>420</b>	620	150	150	6	5	2 650	5 900	270 000	600 000	390	520
	700	224	224	6	6	4 800	9 700	490 000	990 000	360	480
<b>440</b>	650	157	157	6	6	2 600	5 450	266 000	560 000	370	490
	720	226	226	6	6	5 000	10 300	510 000	1 050 000	340	460
<b>460</b>	680	163	163	6	6	3 050	6 600	310 000	670 000	350	470
	760	240	240	7.5	7.5	4 900	10 300	500 000	1 050 000	320	430
<b>480</b>	700	165	165	6	6	3 050	6 700	310 000	685 000	330	450
	790	248	248	7.5	7.5	5 300	11 100	540 000	1 130 000	310	410
<b>500</b>	720	167	167	6	6	3 050	6 900	315 000	700 000	320	420
	830	264	264	7.5	7.5	6 400	14 000	650 000	1 420 000	290	390

1) Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



### Equivalent radial load dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

$$P_{or} = F_r + Y_o F_a$$

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

Bearing numbers	Abutment and fillet dimensions						Load center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d<sub>a</sub></i> max	<i>D<sub>a</sub></i> max	mm		<i>r<sub>1as</sub></i> max	<i>r<sub>as</sub></i> max			<i>Y<sub>1</sub></i>	<i>Y<sub>2</sub></i>	<i>Y<sub>o</sub></i>	
		min	<i>S<sub>a</sub></i> min									
<b>323156</b>	315	438	400	16	5	4	16	0.40	1.68	2.50	1.64	95.8
<b>323060</b>	330	442	425	16	4	3	31	0.37	1.80	2.69	1.76	70.7
<b>323160</b>	335	478	440	16	5	4	18	0.40	1.68	2.50	1.64	126
<b>323064</b>	350	462	440	16	4	3	34	0.37	1.80	2.69	1.76	76.3
<b>323164</b>	355	518	480	18	5	4	18.5	0.40	1.68	2.50	1.64	164
<b>323068</b>	370	498	480	18	5	4	36	0.37	1.80	2.69	1.76	101
<b>323168</b>	380	558	515	18	5	4	35.5	0.40	1.68	2.50	1.64	207
<b>323072</b>	395	518	495	18	5	4	41	0.37	1.80	2.69	1.76	107
<b>323172</b>	400	578	535	18	5	4	25.5	0.40	1.68	2.50	1.64	218
<b>323076</b>	415	538	515	18	5	4	44.5	0.37	1.80	2.69	1.76	113
<b>323176</b>	420	598	550	20	5	4	29	0.40	1.68	2.50	1.64	229
<b>323080</b>	440	578	550	18	5	4	45	0.37	1.80	2.69	1.76	146
<b>323180</b>	445	622	580	20	5	5	32.5	0.40	1.68	2.50	1.64	259
<b>323084</b>	460	598	570	20	5	4	48.5	0.37	1.80	2.69	1.76	154
<b>323184</b>	465	672	625	25	5	5	60	0.40	1.68	2.50	1.64	346
<b>323088</b>	480	622	600	20	5	5	53.5	0.37	1.80	2.69	1.76	177
<b>323188</b>	485	692	645	25	5	5	44	0.40	1.68	2.50	1.64	361
<b>323092</b>	500	652	620	25	5	5	56.5	0.37	1.80	2.69	1.76	201
<b>323192</b>	525	724	660	25	6	6	34.5	0.40	1.68	2.50	1.64	431
<b>323096</b>	520	672	640	25	5	5	63	0.37	1.80	2.69	1.76	211
<b>323196</b>	547.5	754	688.5	30	6	6	36	0.40	1.68	2.50	1.64	478
<b>3230/500</b>	540	692	655	25	5	5	61.5	0.37	1.80	2.69	1.76	221
<b>5E-3231/500G2</b>	550	794	740	30	6	6	37.5	0.40	1.68	2.50	1.64	570