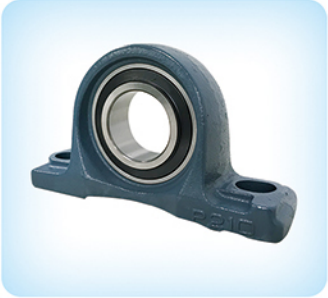


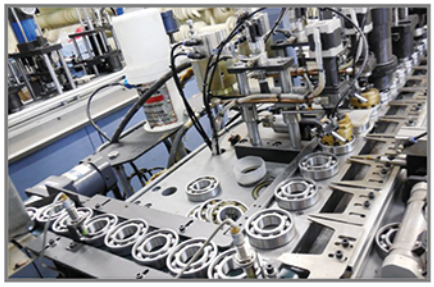


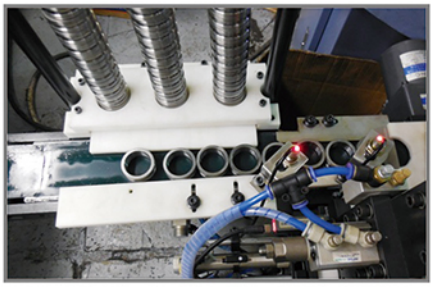



上海晟悦轴承有限公司

Shanghai Shengyue Bearing CO.,LTD

Factory Equipment



Production Packaging





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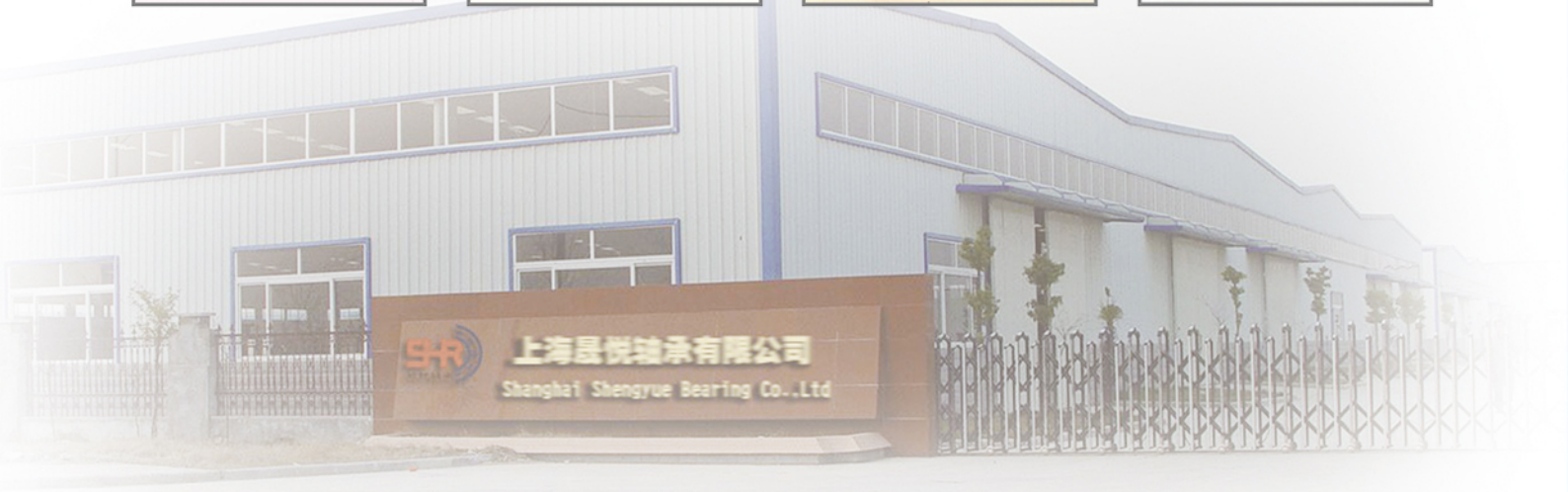
INTRODUCTION

Our company is a professional bearing manufacturer and dealer in china.We have been engaged in bearing industry for 18 years and made international trade of bearing import and export for more than 11 years.We have our own brand "SYBR" and factory applied ISO9001:2000 certificate for certification authority.We attend international bearing fairs, put in many B2B website and achieve many customers all over the world also bulid up good reputation from our customers.

Our company is specialized in ball bearing,roller bearing,housing units, and automotive bearings with accessories. Also we can customize various large non-standard products such as the most competitive products according to customers' demands.

Meanwhile we have good cooperate relationship with world famous bearing manufacturer SKF FAG INA NSK NTN KOYO NACHI TIMKEN ASAHI THK.Depend on top bearing quality ensures us to have many clients in the world like America,Europe,Africa and the Middle East.We have complete bearing in stock which makes the delivery time fastly.

By ceaselessly improve our quality and after-sale service,we have confidence in cooperating with every potential customer.



Deep Groove Ball Bearing

SYBR Deep Groove Ball Bearings Description

Deep groove ball bearings, the most common form of rolling bearings, are used in many types of applications; particularly those where high speeds and low power loss are required.SYBR Deep groove ball bearings can handle not only radial forces, but also moderate axial loads in both directions. They are easy to install and can be deployed in a variety of confi gurations.

SYBR deep groove ball bearings guarantee strong performance, quiet running and maintenance-free operation for many years. In much the same way that every product is carefully checked several times using automated measuring equipment, each assembled unit undergoes various tests before delivery in order to guarantee the highest quality.

SYBR Deep Groove Ball Bearings Construction

Reference

Bearing Range

R	Inch series
60	Metric extra light series
62	Metric light series
63	Metric medium series
68	Metric ultra thin section
69	Metric thin section
BL3	Metric maximum capacity medium series

Internal Clearance

C2	Less than normal
CN	Normal
CM	Electric motor
C3	More than normal

Noise Level

E	NSK electric motor noise quality
ER	NSK critical noise quality

Grease Fill

L	Light fill
S	Standard fill
H	Heavy fill

62 | 05 | T1X | ZZ | NR | C3 | E | NS7 | S

Bore Size

Miniature	Normal
1 : 1 mm	**00** : 10 mm
2 : 2 mm	**01** : 12 mm
3 : 3 mm	**02** : 15 mm
Up to 00	**03** : 17 mm
	04 : 20 mm

(Normal bearings: 04 and above multiply by 5 to get bore in mm)

Shields and Seals

Blank	Open bearing
Z	Single metal shield
ZZ	Double metal shields
RS	Single contact seal
2RS	Double contact seals

Grease Code

NS7
NSC
ENS
EA3
EA5
EA6

Cages

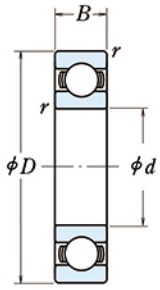
J	Pressed steel cage (normally omitted)
W	Pressed steel crown cage (miniature only)
T1X	Polyamide crown cage

Retention

blank	Plain outer ring
N	Snap ring groove in outer ring
NR	Snap ring groove with snap ring in outer ring

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 10-22mm

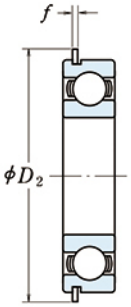


Open Type

Shielded Type
ZZ

Sealed Type
2RS

With Snap
Ring Groove
N

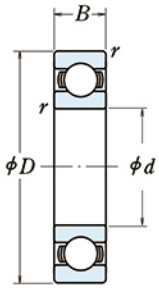


With
Snap Ring
NR

Boundary Dimensions				Basic Load Ratings				Factor	Limiting Speeds (min–1)			Bearing Numbers			Mass
(mm)				(N)		{kgf}			Grease		Oil				(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	f_0	Open Z · 2Z	RS.2RS	Open Z	Open	Shielded	Sealed	approx.
10	19	5	0.3	1720	840	175	86	14.8	34000	24000	40000	**6800**	**ZZ**	**2RS**	**0.005**
	22	6	0.3	2700	1270	275	129	14	32000	22000	38000	**6900**	**ZZ**	**2RS**	**0.009**
	26	8	0.3	4550	1970	465	201	12.4	30000	22000	36000	**6000**	**ZZ**	**2RS**	**0.018**
	30	9	0.6	5100	2390	520	244	13.2	24000	18000	30000	**6200**	**ZZ**	**2RS**	**0.032**
	35	11	0.6	8100	3450	825	350	11.2	22000	17000	26000	**6300**	**ZZ**	**2RS**	**0.052**
12	21	5	0.3	1920	1040	195	106	15.3	32000	20000	38000	**6801**	**ZZ**	**2RS**	**0.006**
	24	6	0.3	2890	1460	295	149	14.5	30000	20000	36000	**6901**	**ZZ**	**2RS**	**0.01**
	28	7	0.3	5100	2370	520	241	13	28000	—	32000	**16001**	**—**	**—**	**0.019**
	28	8	0.3	5100	2370	520	241	13	28000	18000	32000	**6001**	**ZZ**	**2RS**	**0.022**
	32	10	0.6	6800	3050	695	310	12.3	22000	17000	28000	**6201**	**ZZ**	**2RS**	**0.037**
	37	12	1	9700	4200	990	425	11.1	20000	16000	24000	**6301**	**ZZ**	**2RS**	**0.06**
15	24	5	0.3	2070	1260	212	128	15.8	28000	17000	34000	**6802**	**ZZ**	**2RS**	**0.007**
	28	7	0.3	4350	2260	440	230	14.3	26000	17000	30000	**6902**	**ZZ**	**2RS**	**0.015**
	32	8	0.3	5600	2830	570	289	13.9	24000	—	28000	**16002**	**—**	**—**	**0.027**
	32	9	0.3	5600	2830	570	289	13.9	24000	15000	28000	**6002**	**ZZ**	**2RS**	**0.031**
	35	11	0.6	7650	3750	780	380	13.2	20000	14000	24000	**6202**	**ZZ**	**2RS**	**0.045**
	42	13	1	11400	5450	1170	555	12.3	17000	13000	20000	**6302**	**ZZ**	**2RS**	**0.083**
17	26	5	0.3	2630	1570	268	160	15.7	26000	15000	30000	**6803**	**ZZ**	**2RS**	**0.007**
	30	7	0.3	4600	2550	470	260	14.7	24000	15000	28000	**6903**	**ZZ**	**2RS**	**0.017**
	35	8	0.3	6000	3250	610	330	14.4	22000	—	26000	**16003**	**—**	**—**	**0.033**
	35	10	0.3	6000	3250	610	330	14.4	22000	13000	26000	**6003**	**ZZ**	**2RS**	**0.041**
	40	12	0.6	9550	4800	975	490	13.2	17000	12000	20000	**6203**	**ZZ**	**2RS**	**0.067**
	47	14	1	13600	6650	1390	675	12.4	15000	11000	18000	**6303**	**ZZ**	**2RS**	**0.113**
20	32	7	0.3	4000	2470	410	252	15.5	22000	13000	26000	**6804**	**ZZ**	**2RS**	**0.017**
	37	9	0.3	6400	3700	650	375	14.7	19000	12000	22000	**6904**	**ZZ**	**2RS**	**0.037**
	42	8	0.3	7900	4450	810	455	14.5	18000	—	20000	**16004**	**—**	**—**	**0.048**
	42	12	0.6	9400	5000	955	510	13.8	18000	11000	20000	**6004**	**ZZ**	**2RS**	**0.068**
	47	14	1	12800	6600	1300	670	13.1	15000	11000	18000	**6204**	**ZZ**	**2RS**	**0.107**
	52	15	1.1	15900	7900	1620	805	12.4	14000	10000	17000	**6304**	**ZZ**	**2RS**	**0.145**
22	44	12	0.6	9400	5050	960	515	14	17000	11000	20000	**60/22**	**ZZ**	**2RS**	**0.074**
	50	14	1	12900	6800	1320	695	13.5	14000	9500	16000	**62/22**	**ZZ**	**2RS**	**0.119**
	56	16	1.1	18400	9250	1870	940	12.4	13000	9500	16000	**63/22**	**ZZ**	**2RS**	**0.179**

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 25-45mm

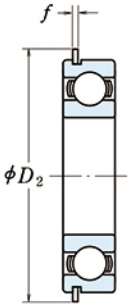


Open Type

Shielded Type
ZZ

Sealed Type
2RS

With Snap
Ring Groove
N

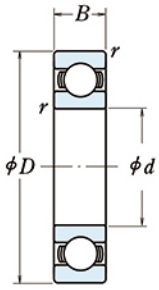


With
Snap Ring
NR

Boundary Dimensions				Basic Load Ratings				Factor	Limiting Speeds (min–1)			Bearing Numbers			Mass
(mm)				(N)		{kgf}			Grease		Oil				(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	f_0	Open Z · 2Z	RS.2RS	Open Z	Open	Shielded	Sealed	approx.
25	37	7	0.3	4500	3150	455	320	16.1	18000	10000	22000	**6805**	**ZZ**	**2RS**	**0.021**
	42	9	0.3	7050	4550	715	460	15.4	16000	10000	19000	**6905**	**ZZ**	**2RS**	**0.042**
	47	8	0.3	8850	5600	905	570	15.1	15000	—	18000	**16005**	**—**	**—**	**0.059**
	47	12	0.6	10100	5850	1030	595	14.5	15000	9500	18000	**6005**	**ZZ**	**2RS**	**0.079**
	52	15	1	14000	7850	1430	800	13.9	13000	9000	15000	**6205**	**ZZ**	**2RS**	**0.129**
	62	17	1.1	20600	11200	2100	1150	13.2	11000	8000	13000	**6305**	**ZZ**	**2RS**	**0.235**
28	52	12	0.6	12500	7400	1270	755	14.5	14000	8500	16000	**60/28**	**ZZ**	**2RS**	**0.096**
	58	16	1	16600	9500	1700	970	13.9	12000	8000	14000	**62/28**	**ZZ**	**2RS**	**0.175**
	68	18	1.1	26700	14000	2730	1430	12.4	10000	7500	13000	**63/28**	**ZZ**	**2RS**	**0.287**
30	42	7	0.3	4700	3650	480	370	16.4	15000	9000	18000	**6806**	**ZZ**	**2RS**	**0.024**
	47	9	0.3	7250	5000	740	510	15.8	14000	8500	17000	**6906**	**ZZ**	**2RS**	**0.052**
	55	9	0.3	11200	7350	1150	750	15.2	13000	—	15000	**16006**	**—**	**—**	**0.087**
	55	13	1	13200	8300	1350	845	14.7	13000	8000	15000	**6006**	**ZZ**	**2RS**	**0.116**
	62	16	1	19500	11300	1980	1150	13.8	11000	7500	13000	**6206**	**ZZ**	**2RS**	**0.199**
	72	19	1.1	26700	15000	2720	1530	13.3	9500	6700	12000	**6306**	**ZZ**	**2RS**	**0.345**
32	58	13	1	15100	9150	1530	935	14.5	12000	7500	14000	**60/32**	**ZZ**	**2RS**	**0.122**
	65	17	1	20700	11600	2120	1190	13.6	10000	7100	12000	**62/32**	**ZZ**	**2RS**	**0.225**
	75	20	1.1	29900	17000	3050	1730	13.2	9000	6300	11000	**63/32**	**ZZ**	**2RS**	**0.389**
35	47	7	0.3	4900	4100	500	420	16.7	14000	7500	16000	**6807**	**ZZ**	**2RS**	**0.027**
	55	10	0.6	10600	7250	1080	740	15.5	12000	7500	15000	**6907**	**ZZ**	**2RS**	**0.075**
	62	9	0.3	11700	8200	1190	835	15.6	11000	—	13000	**16007**	**—**	**—**	**0.107**
	62	14	1	16000	10300	1630	1050	14.8	11000	6700	13000	**6007**	**ZZ**	**2RS**	**0.151**
	72	17	1.1	25700	15300	2620	1560	13.8	9500	6300	11000	**6207**	**ZZ**	**2RS**	**0.284**
	80	21	1.5	33500	19200	3400	1960	13.2	8500	6000	10000	**6307**	**ZZ**	**2RS**	**0.464**
40	52	7	0.3	6350	5550	650	565	17	12000	6700	14000	**6808**	**ZZ**	**2RS**	**0.031**
	62	12	0.6	13700	10000	1390	1020	15.7	11000	6300	13000	**6908**	**ZZ**	**2RS**	**0.112**
	68	9	0.3	12600	9650	1290	985	16	10000	—	12000	**16008**	**—**	**—**	**0.13**
	68	15	1	16800	11500	1710	1180	15.3	10000	6000	12000	**6008**	**ZZ**	**2RS**	**0.19**
	80	18	1.1	29100	17900	2970	1820	14	8500	5600	10000	**6208**	**ZZ**	**2RS**	**0.366**
	90	23	1.5	40500	24000	4150	2450	13.2	7500	5300	9000	**6308**	**ZZ**	**2RS**	**0.636**
45	58	7	0.3	6600	6150	670	625	17.2	11000	6000	13000	**6809**	**ZZ**	**2RS**	**0.038**
	68	12	0.6	14100	10900	1440	1110	15.9	9500	5600	12000	**6909**	**ZZ**	**2RS**	**0.126**
	75	10	0.6	14900	11400	1520	1160	15.9	9000	—	11000	**16009**	**—**	**—**	**0.167**
	75	16	1	20900	15200	2140	1550	15.3	9000	5300	11000	**6009**	**ZZ**	**2RS**	**0.241**
	85	19	1.1	31500	20400	3200	2080	14.4	7500	5300	9000	**6209**	**ZZ**	**2RS**	**0.42**
	100	25	1.5	53000	32000	5400	3250	13.1	6700	4800	8000	**6309**	**2Z**	**2RS**	**0.829**

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 50-75mm

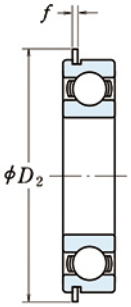


Open Type

Shielded Type
ZZ

Sealed Type
2RS

With Snap
Ring Groove
N

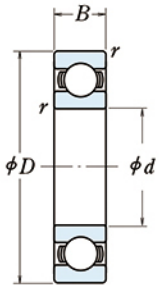


With
Snap Ring
NR

Boundary Dimensions				Basic Load Ratings				Factor	Limiting Speeds (min–1)			Bearing Numbers			Mass
(mm)				(N)		{kgf}			Grease		Oil				(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	f_0	Open Z · 2Z	RS.2RS	Open Z	Open	Shielded	Sealed	approx.
50	65	7	0.3	6400	6200	655	635	17.2	9500	5300	11000	**6810**	**ZZ**	**2RS**	**0.05**
	72	12	0.6	14500	11700	1480	1200	16.1	9000	5300	11000	**6910**	**ZZ**	**2RS**	**0.135**
	80	10	0.6	15400	12400	1570	1260	16.1	8500	—	10000	**16010**	**—**	**—**	**0.175**
	80	16	1	21800	16600	2220	1700	15.6	8500	4800	10000	**6010**	**ZZ**	**2RS**	**0.261**
	90	20	1.1	35000	23200	3600	2370	14.4	7100	4800	8500	**6210**	**ZZ**	**2RS**	**0.459**
	110	27	2	62000	38500	6300	3900	13.2	6000	4300	7500	**6310**	**ZZ**	**2RS**	**1.06**
55	72	9	0.3	8800	8500	900	865	17	8500	4800	10000	**6811**	**ZZ**	**2RS**	**0.081**
	80	13	1	16000	13300	1630	1350	16.2	8000	4500	9500	**6911**	**ZZ**	**2RS**	**0.189**
	90	11	0.6	19400	16300	1980	1660	16.2	7500	—	9000	**16011**	**—**	**—**	**0.257**
	90	18	1.1	28300	21200	2880	2170	15.3	7500	4500	9000	**6011**	**ZZ**	**2RS**	**0.381**
	100	21	1.5	43500	29300	4450	2980	14.3	6300	4300	7500	**6211**	**ZZ**	**2RS**	**0.619**
	120	29	2	71500	44500	7300	4550	13.1	5600	4000	6700	**6311**	**ZZ**	**2RS**	**1.37**
60	78	10	0.3	11500	10900	1170	1120	16.9	8000	4500	9500	**6812**	**ZZ**	**2RS**	**0.103**
	85	13	1	19400	16300	1980	1660	16.2	7500	4300	9000	**6912**	**ZZ**	**2RS**	**0.192**
	95	11	0.6	20000	17500	2040	1780	16.3	7100	—	8500	**16012**	**—**	**—**	**0.281**
	95	18	1.1	29500	23200	3000	2370	15.6	7100	4000	8500	**6012**	**ZZ**	**2RS**	**0.412**
	110	22	1.5	52500	36000	5350	3700	14.3	5600	3800	7100	**6212**	**ZZ**	**2RS**	**0.783**
	130	31	2.1	82000	52000	8350	5300	13.1	5300	3600	6300	**6312**	**ZZ**	**2RS**	**1.72**
65	85	10	0.6	11900	12100	1220	1230	17	7500	4000	8500	**6813**	**ZZ**	**2RS**	**0.128**
	90	13	1	17400	16100	1770	1640	16.6	7100	4000	8500	**6913**	**ZZ**	**2RS**	**0.218**
	100	11	0.6	20500	18700	2090	1910	16.5	6700	—	8000	**16013**	**—**	**—**	**0.3**
	100	18	1.1	30500	25200	3100	2570	15.8	6700	4000	8000	**6013**	**ZZ**	**2RS**	**0.439**
	120	23	1.5	57500	40000	5850	4100	14.4	5300	3600	6300	**6213**	**ZZ**	**2RS**	**1**
	140	33	2.1	92500	60000	9450	6100	13.2	4800	3400	6000	**6313**	**ZZ**	**2RS**	**2.11**
70	90	10	0.6	12100	12700	1230	1300	17.2	6700	3800	8000	**6814**	**ZZ**	**2RS**	**0.134**
	100	16	1	23700	21200	2420	2160	16.3	6300	3600	7500	**6914**	**ZZ**	**2RS**	**0.349**
	110	13	0.6	26800	23600	2730	2410	16.3	6000	—	7100	**16014**	**—**	**—**	**0.441**
	110	20	1.1	38000	31000	3900	3150	15.6	6000	3600	7100	**6014**	**ZZ**	**2RS**	**0.608**
	125	24	1.5	62000	44000	6350	4500	14.5	5000	3400	6300	**6214**	**ZZ**	**2RS**	**1.09**
	150	35	2.1	104000	68000	10600	6950	13.2	4500	3200	5300	**6314**	**ZZ**	**2RS**	**2.57**
75	95	10	0.6	12500	13900	1280	1410	17.3	6300	3600	7500	**6815**	**ZZ**	**2RS**	**0.149**
	105	16	1	24400	22600	2480	2300	16.5	6000	3400	7100	**6915**	**ZZ**	**2RS**	**0.364**
	115	13	0.6	27600	25300	2820	2580	16.4	5600	—	6700	**16015**	**—**	**—**	**0.463**
	115	20	1.1	39500	33500	4050	3400	15.8	5600	3400	6700	**6015**	**ZZ**	**2RS**	**0.649**
	130	25	1.5	66000	49500	6750	5050	14.7	4800	3200	5600	**6215**	**ZZ**	**2RS**	**1.19**
	160	37	2.1	113000	77000	11600	7850	13.2	4300	2800	5000	**6315**	**ZZ**	**2RS**	**3.08**

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 80-105mm

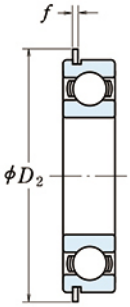


Open Type

Shielded Type
ZZ

Sealed Type
2RS

With Snap
Ring Groove
N

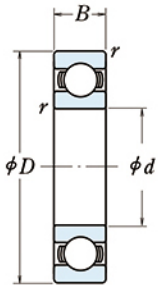


With
Snap Ring
NR

Boundary Dimensions				Basic Load Ratings				Factor	Limiting Speeds (min–1)			Bearing Numbers			Mass
(mm)				(N)		{kgf}			Grease		Oil				(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	f_0	Open Z · 2Z	RS.2RS	Open Z	Open	Shielded	Sealed	approx.
80	100	10	0.6	12700	14500	1290	1470	17.4	6000	3400	7100	**6816**	**ZZ**	**2RS**	**0.151**
	110	16	1	25000	24000	2540	2450	16.6	5600	3200	6700	**6916**	**ZZ**	**2RS**	**0.391**
	125	14	0.6	32000	29600	3250	3000	16.4	5300	—	6300	**16016**	**—**	**—**	**0.621**
	125	22	1.1	47500	40000	4850	4050	15.6	5300	3200	6300	**6016**	**ZZ**	**2RS**	**0.872**
	140	26	2	72500	53000	7400	5400	14.6	4500	3000	5300	**6216**	**ZZ**	**2RS**	**1.42**
	170	39	2.1	123000	86500	12500	8850	13.3	4000	2800	4800	**6316**	**ZZ**	**2RS**	**3.67**
85	110	13	1	18700	20000	1910	2040	17.1	5600	3200	6700	**6817**	**ZZ**	**2RS**	**0.263**
	120	18	1.1	32000	29600	3250	3000	16.4	5300	3000	6300	**6917**	**ZZ**	**2RS**	**0.55**
	130	14	0.6	33000	31500	3350	3200	16.5	5000	—	6000	**16017**	**—**	**—**	**0.652**
	130	22	1.1	49500	43000	5050	4400	15.8	5000	3000	6000	**6017**	**ZZ**	**2RS**	**0.918**
	150	28	2	84000	62000	8550	6300	14.5	4300	2800	5000	**6217**	**ZZ**	**2RS**	**1.76**
	180	41	3	133000	97000	13500	9850	13.3	3800	2600	4500	**6317**	**ZZ**	**2RS**	**4.28**
90	115	13	1	19000	21000	1940	2140	17.2	5300	3000	6300	**6818**	**ZZ**	**2RS**	**0.276**
	125	18	1.1	33000	31500	3350	3200	16.5	5000	2800	6000	**6918**	**ZZ**	**2RS**	**0.585**
	140	16	1	41500	39500	4250	4000	16.3	4800	—	5600	**16018**	**—**	**—**	**0.873**
	140	24	1.5	58000	50000	5950	5050	15.6	4800	2800	5600	**6018**	**ZZ**	**2RS**	**1.19**
	160	30	2	96000	71500	9800	7300	14.5	4000	2600	4800	**6218**	**ZZ**	**2RS**	**2.18**
	190	43	3	143000	107000	14500	11000	13.3	3600	2400	4300	**6318**	**ZZ**	**2RS**	**4.98**
95	120	13	1	19300	22000	1970	2240	17.2	5000	2800	6000	**6819**	**ZZ**	**2RS**	**0.297**
	130	18	1.1	33500	33500	3450	3400	16.6	4800	2800	5600	**6919**	**ZZ**	**2RS**	**0.601**
	145	16	1	43000	42000	4350	4250	16.4	4500	—	5300	**16019**	**—**	**—**	**0.904**
	145	24	1.5	60500	54000	6150	5500	15.8	4500	2600	5300	**6019**	**ZZ**	**2RS**	**1.23**
	170	32	2.1	109000	82000	11100	8350	14.4	3800	2600	4500	**6219**	**ZZ**	**2RS**	**2.64**
	200	45	3	153000	119000	15600	12100	13.3	3000	2400	3600	**6319**	**ZZ**	**2RS**	**5.76**
100	125	13	1	19600	23000	2000	2340	17.3	4800	2800	5600	**6820**	**ZZ**	**2RS**	**0.31**
	140	20	1.1	43000	42000	4350	4250	16.4	4500	2600	5300	**6920**	**ZZ**	**2RS**	**0.828**
	150	16	1	42500	42000	4300	4300	16.5	4300	—	5300	**16020**	**—**	**—**	**0.945**
	150	24	1.5	60000	54000	6150	5550	15.9	4300	2600	5300	**6020**	**ZZ**	**2RS**	**1.29**
	180	34	2.1	122000	93000	12500	9500	14.4	3600	2400	4300	**6220**	**ZZ**	**2RS**	**3.17**
	215	47	3	173000	141000	17700	14400	13.2	2800	2200	3400	**6320**	**ZZ**	**2RS**	**7.04**
105	130	13	1	19800	23900	2020	2440	17.4	4800	2600	5600	**6821**	**ZZ**	**2RS**	**0.324**
	145	20	1.1	42500	42000	4300	4300	16.5	4300	—	5300	**6921**	**ZZ**	**—**	**0.856**
	160	18	1	52000	50500	5300	5150	16.3	4000	—	4800	**16021**	**—**	**—**	**1.24**
	160	26	2	72500	66000	7400	6700	15.8	4000	2400	4800	**6021**	**ZZ**	**2RS**	**1.58**
	190	36	2.1	133000	105000	13600	10700	14.4	3400	2200	4000	**6221**	**ZZ**	**2RS**	**3.79**
	225	49	3	184000	154000	18700	15700	13.2	2600	2000	3200	**6321**	**ZZ**	**2RS**	**8.09**

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 110-160mm

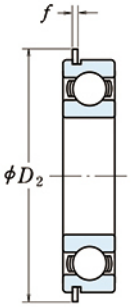


Open Type

Shielded Type
ZZ

Sealed Type
2RS

With Snap
Ring Groove
N

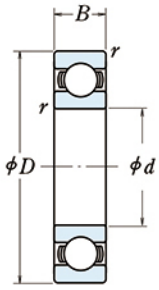


With
Snap Ring
NR

Boundary Dimensions				Basic Load Ratings				Factor	Limiting Speeds (min–1)			Bearing Numbers			Mass
(mm)				(N)		{kgf}			Grease		Oil				(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	f_0	Open Z · 2Z	RS.2RS	Open Z	Open	Shielded	Sealed	approx.
110	140	16	1	28100	32500	2860	3350	17.1	4300	2400	5300	**6822**	**ZZ**	**2RS**	**0.497**
	150	20	1.1	43500	44500	4450	4550	16.6	4300	2400	5000	**6922**	**ZZ**	**2RS**	**0.893**
	170	19	1	57500	56500	5850	5800	16.3	3800	—	4500	**16022**	**—**	**—**	**1.51**
	170	28	2	85000	73000	8650	7450	15.5	3800	2200	4500	**6022**	**ZZ**	**2RS**	**1.94**
	200	38	2.1	144000	117000	14700	11900	14.3	2800	2200	3400	**6222**	**ZZ**	**2RS**	**4.45**
	240	50	3	205000	179000	20900	18300	13.2	2400	—	3000	**6322**	**ZZ**	**—**	**9.51**
120	150	16	1	28900	35500	2950	3650	17.3	4000	2200	4800	**6824**	**ZZ**	**2RS**	**0.537**
	165	22	1.1	53000	54000	5400	5500	16.5	3800	—	4500	**6924**	**ZZ**	**—**	**1.21**
	180	19	1	56500	57500	5800	5850	16.5	3600	—	4300	**16024**	**—**	**—**	**1.6**
	180	28	2	88000	80000	9000	8150	15.7	3600	2200	4300	**6024**	**ZZ**	**2RS**	**2.08**
	215	40	2.1	155000	131000	15800	13400	14.4	2600	2000	3200	**6224**	**ZZ**	**2RS**	**5.29**
	260	55	3	207000	185000	21100	18800	13.5	2200	1800	2800	**6324**	**ZZ**	**2RS**	**12.5**
130	165	18	1.1	37000	44000	3750	4450	17.1	3600	2000	4300	**6826**	**ZZ**	**2RS**	**0.758**
	180	24	1.5	65000	67500	6650	6850	16.5	3400	—	4000	**6926**	**ZZ**	**2RS**	**1.57**
	200	22	1.1	75500	77500	7700	7900	16.4	3000	—	3600	**16026**	**—**	**—**	**2.4**
	200	33	2	106000	101000	10800	10300	15.8	3000	1900	3600	**6026**	**ZZ**	**2RS**	**3.26**
	230	40	3	167000	146000	17000	14900	14.5	2400	—	3000	**6226**	**ZZ**	**—**	**5.96**
	280	58	4	229000	214000	23400	21800	13.6	2200	—	2600	**6326**	**ZZ**	**—**	**15.2**
140	175	18	1.1	38500	48000	3900	4850	17.3	3400	1900	4000	**6828**	**ZZ**	**2RS**	**0.832**
	190	24	1.5	66500	72000	6800	7300	16.6	3200	—	3800	**6928**	**ZZ**	**—**	**1.67**
	210	22	1.1	77500	82500	7900	8400	16.5	2800	—	3400	**16028**	**—**	**—**	**2.84**
	210	33	2	110000	109000	11200	11100	16	2800	1800	3400	**6028**	**ZZ**	**2RS**	**3.48**
	250	42	3	166000	150000	17000	15300	14.9	2200	1700	2800	**6228**	**ZZ**	**2RS**	**7.68**
	300	62	4	253000	246000	25800	25100	13.6	2000	—	2400	**6328**	**ZZ**	**—**	**18.5**
150	190	20	1.1	47500	58500	4850	5950	17.1	3200	1800	3800	**6830**	**ZZ**	**2RS**	**1.15**
	210	28	2	85000	90500	8650	9200	16.5	2600	1700	3200	**6930**	**ZZ**	**2RS**	**3.01**
	225	24	1.1	84000	91000	8550	9250	16.6	2600	—	3000	**16030**	**—**	**—**	**3.62**
	225	35	2.1	126000	126000	12800	12800	15.9	2600	1700	3000	**6030**	**ZZ**	**2RS**	**4.24**
	270	45	3	176000	168000	18000	17100	15.1	2000	—	2600	**6230**	**ZZ**	**—**	**10**
	320	65	4	274000	284000	28000	28900	13.9	1800	—	2200	**6330**	**ZZ**	**—**	**22.7**
160	200	20	1.1	48500	61000	4950	6250	17.2	2600	1700	3200	**6832**	**ZZ**	**2RS**	**1.23**
	220	28	2	87000	96000	8850	9800	16.6	2600	1600	3000	**6932**	**ZZ**	**2RS**	**2.71**
	240	25	1.5	99000	108000	10100	11000	16.5	2400	—	2800	**16032**	**—**	**—**	**4.2**
	240	38	2.1	137000	135000	13900	13800	15.9	2400	1600	2800	**6032**	**ZZ**	**2RS**	**5.15**
	290	48	3	185000	186000	18900	19000	15.4	1900	—	2400	**6232**	**ZZ**	**—**	**12.8**
	340	68	4	278000	287000	28300	29200	13.9	1700	—	2000	**6332**	**ZZ**	**—**	**26.2**

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 170-240mm

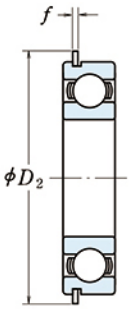


Open Type

Shielded Type
ZZ

Sealed Type
2RS

With Snap
Ring Groove
N

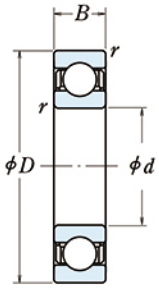


With
Snap Ring
NR

Boundary Dimensions				Basic Load Ratings				Factor	Limiting Speeds (min–1)			Bearing Numbers			Mass
(mm)				(N)		{kgf}			Grease		Oil				(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	f_0	Open Z · 2Z	RS.2RS	Open Z	Open	Shielded	Sealed	approx.
170	215	22	1.1	60000	75000	6100	7650	17.1	2600	1600	3000	**6834**	**ZZ**	**2RS**	**1.86**
	230	28	2	86000	97000	8750	9850	16.7	2400	—	2800	**6934**	**ZZ**	—	**3.34**
	260	28	1.5	114000	126000	11700	12900	16.5	2200	—	2600	**16034**	—	—	**5.71**
	260	42	2.1	161000	161000	16400	16400	15.8	2200	—	2600	**6034**	**ZZ**	—	**6.89**
	310	52	4	212000	224000	21700	22800	15.3	1800	—	2200	**6234**	—	—	**15.8**
	360	72	4	325000	355000	33500	36000	13.6	1600	—	2000	**6334**	—	—	**36.6**
180	225	22	1.1	60500	78500	6200	8000	17.2	2400	—	2800	**6836**	—	—	**1.98**
	250	33	2	119000	128000	12100	13100	16.4	2200	—	2600	**6936**	**ZZ**	—	**4.16**
	280	31	2	145000	157000	14700	16000	16.3	2000	—	2400	**16036**	—	—	**7.5**
	280	46	2.1	180000	185000	18400	18800	15.6	2000	—	2400	**6036**	**ZZ**	—	**8.88**
	320	52	4	227000	241000	23200	24600	15.1	1700	—	2000	**6236**	—	—	**15.9**
	380	75	4	355000	405000	36000	41500	13.9	1500	—	1800	**6336**	—	—	**43.1**
190	240	24	1.5	73000	93500	7450	9550	17.1	2200	—	2600	**6838**	—	—	**2.53**
	260	33	2	113000	127000	11500	13000	16.6	2200	—	2600	**6938**	—	—	**5.18**
	290	31	2	149000	168000	15200	17100	16.4	2000	—	2400	**16038**	—	—	**7.78**
	290	46	2.1	188000	201000	19200	20500	15.8	2000	—	2400	**6038**	**ZZ**	—	**9.39**
	340	55	4	255000	282000	26000	28700	15	1600	—	2000	**6238**	—	—	**22.3**
	400	78	5	355000	415000	36000	42500	14.1	1400	—	1700	**6338**	—	—	**49.7**
200	250	24	1.5	74000	98000	7550	10000	17.2	2200	—	2600	**6840**	—	—	**2.67**
	280	38	2.1	143000	158000	14600	16100	16.4	2000	—	2400	**6940**	**ZZ**	—	**7.28**
	310	34	2	161000	180000	16400	18300	16.4	1900	—	2200	**16040**	—	—	**10**
	310	51	2.1	207000	226000	21100	23000	15.6	1900	—	2200	**6040**	**ZZ**	—	**12**
	360	58	4	269000	310000	27400	31500	15.2	1500	—	1800	**6240**	—	—	**26.7**
	420	80	5	380000	445000	38500	45500	13.8	1300	—	1600	**6340**	—	—	**55.3**
220	270	24	1.5	76500	107000	7800	10900	17.4	1900	—	2400	**6844**	**ZZ**	—	**2.9**
	300	38	2.1	146000	169000	47900	17300	16.6	1800	—	2200	**6944**	**ZZ**	—	**7.88**
	340	37	2.1	180000	217000	18400	22100	16.5	1600	—	2000	**16044**	—	—	**13.1**
	340	56	3	235000	271000	24000	27600	15.6	1700	—	2000	**6044**	**ZZ**	—	**18.6**
	400	65	4	310000	375000	31500	38500	15.1	1300	—	1600	**6244**	—	—	**37.4**
	460	88	5	410000	520000	42000	53000	14.3	1200	—	1500	**6344**	—	—	**73.9**
240	300	28	2	98500	137000	10000	14000	17.3	1700	—	2000	**6848**	—	—	**4.48**
	320	38	2.1	154000	190000	15700	19400	16.8	1700	—	2000	**6948**	**ZZ**	—	**8.49**
	360	37	2.1	196000	243000	19900	24700	16.5	1500	—	1900	**16048**	—	—	**13.9**
	360	56	3	244000	296000	24900	30000	15.9	1500	—	1900	**6048**	—	—	**19.9**
	440	72	4	340000	430000	34500	44000	15.2	1200	—	1500	**6248**	—	—	**50.5**
	500	95	5	470000	625000	48000	63500	14.2	1100	—	1300	**6348**	—	—	**94.4**

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 260-360mm

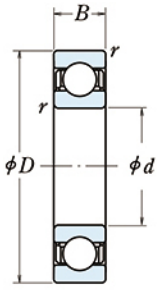


Open Type

Boundary Dimensions				Basic Load Ratings				Factor	Limiting Speeds (min–1)		Bearing Numbers	Mass
(mm)				(N)		{kgf}			Grease	Oil		(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	f_0			Open	approx.
260	320	28	2	101000	148000	10300	15100	17.4	1600	1900	**6852**	**4.84**
	360	46	2.1	204000	255000	20800	26000	16.5	1500	1800	**6952**	**14**
	400	44	3	237000	310000	24100	31500	16.4	1400	1700	**16052**	**21.1**
	400	65	4	291000	375000	29700	38500	15.8	1400	1700	**6052**	**29.4**
	480	80	5	400000	540000	41000	55000	15.1	1100	1300	**6252**	**67**
	540	102	6	505000	710000	51500	72500	14.6	1000	1200	**6352**	**118**
280	350	33	2	133000	191000	13600	19500	17.3	1500	1700	**6856**	**7.2**
	380	46	2.1	209000	272000	21300	27700	16.6	1400	1700	**6956**	**15.1**
	420	44	3	243000	330000	24700	33500	16.5	1300	1600	**16056**	**22.7**
	420	65	4	300000	410000	31000	41500	16	1300	1600	**6056**	**31.2**
	500	80	5	400000	550000	41000	56000	15.2	1000	1300	**6256**	**70.4**
	580	108	6	570000	840000	58000	86000	14.5	900	1100	**6356**	**144**
300	380	38	2.1	166000	233000	17000	23800	17.1	1300	1600	**6860**	**10.3**
	420	56	3	269000	370000	27400	38000	16.4	1300	1500	**6960**	**23.9**
	460	50	4	285000	405000	29000	41000	16.4	1200	1400	**16060**	**31.5**
	460	74	4	355000	500000	36500	51000	15.8	1200	1400	**6060**	**44.2**
	540	85	5	465000	670000	47500	68500	15.1	950	1200	**6260**	**87.8**
320	400	38	2.1	168000	244000	17200	24900	17.2	1300	1500	**6864**	**10.8**
	440	56	3	266000	375000	27100	38000	16.5	1200	1400	**6964**	**25.3**
	480	50	4	293000	430000	29800	44000	16.5	1100	1300	**16064**	**33.2**
	480	74	4	390000	570000	40000	58000	15.7	1100	1300	**6064**	**46.5**
	580	92	5	530000	805000	54500	82500	15	850	1100	**6264**	**111**
340	420	38	2.1	175000	265000	17800	27100	17.3	1200	1400	**6868**	**11.5**
	460	56	3	273000	400000	27800	40500	16.6	1100	1300	**6968**	**26.6**
	520	82	5	440000	660000	45000	67500	15.6	1000	1200	**6068**	**62.3**
	620	92	6	530000	820000	54000	83500	15.3	800	1000	**6268**	**129**
360	440	38	2.1	192000	290000	19600	29600	17.3	1100	1300	**6872**	**11.8**
	480	56	3	280000	425000	28500	43000	16.7	1100	1300	**6972**	**27.9**
	540	82	5	460000	720000	47000	73500	15.7	950	1200	**6072**	**65.3**
	650	95	6	555000	905000	57000	92000	15.4	750	950	**6272**	**145**

SINGLE-ROW DEEP GROOVE BALL BEARINGS

Bore Diameter 380-600mm



Open Type

Boundary Dimensions				Basic Load Ratings				Factor	Limiting Speeds (min–1)		Bearing Numbers	Mass
(mm)				(N)		{kgf}			Grease	Oil		(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	f_0			Open	approx.
380	480	46	2.1	238000	375000	24200	38000	17.1	1000	1200	**6876**	**19.5**
	520	65	4	325000	510000	33000	52000	16.6	950	1200	**6976**	**40**
	560	82	5	455000	725000	46500	74000	15.9	900	1100	**6076**	**68**
400	500	46	2.1	241000	390000	24600	40000	17.2	950	1200	**6880**	**20.5**
	540	65	4	335000	540000	34000	55000	16.7	900	1100	**6980**	**42**
	600	90	5	510000	825000	52000	84000	15.7	850	1000	**6080**	**88.4**
420	520	46	2.1	245000	410000	25000	41500	17.3	900	1100	**6884**	**21.4**
	560	65	4	340000	570000	35000	58500	16.8	900	1100	**6984**	**43.6**
	620	90	5	530000	895000	54000	91000	15.8	800	1000	**6084**	**92.2**
440	540	46	2.1	248000	425000	25300	43500	17.4	900	1100	**6888**	**22.3**
	600	74	4	395000	680000	40500	69000	16.6	800	1000	**6988**	**60.2**
	650	94	6	550000	965000	56000	98500	16	750	900	**6088**	**106**
460	580	56	3	310000	550000	31500	56000	17.1	800	1000	**6892**	**34.3**
	620	74	4	405000	720000	41500	73500	16.7	800	950	**6992**	**62.6**
	680	100	6	605000	1080000	62000	110000	15.8	710	850	**6092**	**123**
480	600	56	3	315000	575000	32000	58500	17.2	800	950	**6896**	**35.4**
	650	78	5	450000	815000	45500	83000	16.6	750	900	**6996**	**73.5**
	700	100	6	605000	1090000	61500	111000	15.9	710	850	**6096**	**127**
500	620	56	3	320000	600000	33000	61000	17.3	750	900	**68/500**	**37.2**
	670	78	5	460000	865000	47000	88000	16.7	710	850	**69/500**	**82**
	720	100	6	630000	1170000	64000	120000	16	670	800	**60/500**	**131**
530	650	56	3	325000	625000	33000	63500	17.4	710	850	**68/530**	**39.8**
	710	82	5	455000	870000	46500	88500	16.8	670	800	**69/530**	**89.8**
	780	112	6	680000	1300000	69500	133000	16	600	750	**60/530**	**184**
560	680	56	3	330000	650000	33500	66500	17.4	670	800	**68/560**	**41.5**
	750	85	5	525000	1040000	53500	106000	16.7	600	750	**69/560**	**105**
	820	115	6	735000	1500000	75000	153000	16.2	560	670	**60/560**	**203**
600	730	60	3	355000	735000	36000	75000	17.5	600	710	**68/600**	**50.9**
	800	90	5	550000	1160000	56500	118000	16.9	560	670	**69/600**	**120**
	870	118	6	790000	1640000	80500	168000	16.1	530	630	**60/600**	**236**

Angular Contact Ball Bearing

SYBR Angular Contact Ball Bearing Description

Angular Contact Ball Bearings mainly used for undertaking combined load both from radius and axle and also for pure axle load, rotator speed is high.

Material of bearings is choosed on refining bearing steel GCr15(100Cr6, SUJ2) and other type of bearing steel, balls are adopting Gcr15(100Cr6, SUJ2) or ceramic.

The bearings are classified as 7000C(15°)、7000AC(25°)、7000B(40°) in accordance with their contact angle, other bearings with different contact angular are available on request.

SYBR Angular Contact Ball Bearing Construction

S 70 10 C T /P5 DB B

Type Code
S-Ceramic ball
No-Steel ball

Dimension Series
70-Equal to ISO10
72-Equal to ISO02
73-Equal to ISO03

Bearing Bore Diameter
00-bore diameter 10mm
01-bore diameter 12mm
02-bore diameter 15mm
03-bore diameter 17mm
04(×5)-bore diameter 20mm
.....

Contact Angle
C-contact angle 15°
AC-contact angle 25°
A-contact angle 30°
B-contact angle 40°

Preload
A-Light preload
B-Medium preload
C-Heavy preload
G-Special preload

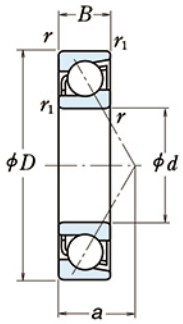
Mounting
DT-Tandem arrangement
DB-Back to back
DF-Face to face
TBT-Two tandem and back to back
.....
G-Universal

Precision Grade
P0-Class 0
P6-Class 6
P5-Class 5
P4-Class 4

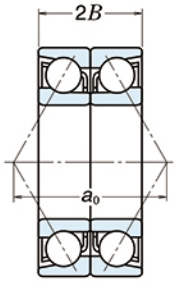
Material of retainer
T-Phenolic
J-Pressed steel
M-Machined brass

ANGULAR CONTACT BALL BEARINGS

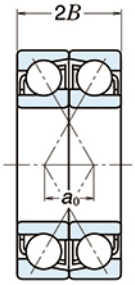
SINGLE/MATCHED MOUNTINGS
Bore Diameter 25-40mm



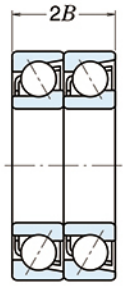
Single



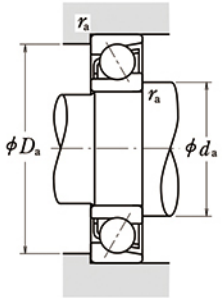
Back-to-Back
DB



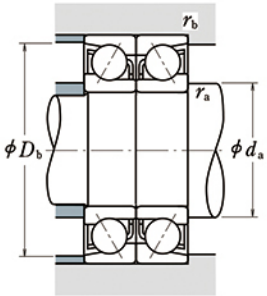
Face-to-Face
DF

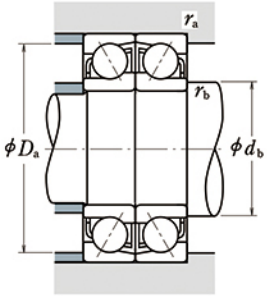


Tandem
DT



Boundary Dimensions					Basic Load Ratings (Single)				Factor	Limiting Speeds (1)		Eff.Load Centers (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)					(N)		{kgf}			(min–1)		a	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	$r1_{min}$	C_r	C_{0r}	C_r	C_{0r}	f_0	Grease	Oil		min.	max.	max.	approx.
25	62	17	1.1	0.6	24400	14600	2490	1490	—	9000	13000	26.7	32	55	1	0.241
	62	17	1.1	0.6	27200	14900	2770	1520	—	10000	15000	26.8	32	55	1	0.229
30	47	9	0.3	0.15	7850	5950	800	605	—	18000	24000	13.5	32.5	44.5	0.3	0.049
	47	9	0.3	0.15	8300	6250	845	640	15.9	22000	28000	9.7	32.5	44.5	0.3	0.049
	55	13	1	0.6	14500	10100	1480	1030	—	13000	18000	18.8	36	49	1	0.116
	55	13	1	0.6	15100	10300	1540	1050	14.9	19000	26000	12.2	36	49	1	0.134
	62	16	1	0.6	22500	14800	2300	1510	—	12000	17000	21.3	36	56	1	0.197
	62	16	1	0.6	20500	13500	2090	1380	—	8500	12000	27.3	36	56	1	0.202
	62	16	1	0.6	23700	14300	2420	1460	—	10000	14000	27.3	36	56	1	0.194
	62	16	1	0.6	23000	14700	2350	1500	13.9	18000	24000	14.2	36	56	1	0.222
	72	19	1.1	0.6	33500	20900	3450	2130	—	9000	12000	24.2	37	65	1	0.346
	72	19	1.1	0.6	31000	19300	3150	1960	—	8000	11000	30.9	37	65	1	0.354
	72	19	1.1	0.6	36500	20600	3700	2100	—	9000	13000	30.9	37	65	1	0.336
35	55	10	0.6	0.3	11400	8700	1170	885	—	15000	20000	15.5	40	50	0.6	0.074
	55	10	0.6	0.3	12100	9150	1230	930	15.7	18000	24000	11	40	50	0.6	0.074
	62	14	1	0.6	18300	13400	1870	1370	—	12000	16000	21	41	56	1	0.153
	62	14	1	0.6	19100	13700	1950	1390	15	17000	22000	13.5	41	56	1	0.173
	72	17	1.1	0.6	29700	20100	3050	2050	—	10000	14000	23.9	42	65	1	0.287
	72	17	1.1	0.6	27100	18400	2760	1870	—	7500	10000	30.9	42	65	1	0.294
	72	17	1.1	0.6	32500	19600	3300	1990	—	8500	12000	30.9	42	65	1	0.271
	72	17	1.1	0.6	30500	19900	3100	2030	13.9	15000	20000	15.7	42	65	1	0.32
	80	21	1.5	1	40000	26300	4050	2680	—	8000	10000	27.1	44	71	1.5	0.464
	80	21	1.5	1	36500	24200	3750	2460	—	7100	9500	34.6	44	71	1.5	0.474
	80	21	1.5	1	40500	24400	4100	2490	—	8000	11000	34.6	44	71	1.5	0.451
40	62	12	0.6	0.3	14300	11200	1460	1140	—	14000	18000	17.9	45	57	0.6	0.11
	62	12	0.6	0.3	15100	11700	1540	1200	15.7	16000	22000	12.8	45	57	0.6	0.109
	68	15	1	0.6	19500	15400	1990	1570	—	10000	14000	23.1	46	62	1	0.19
	68	15	1	0.6	20600	15900	2100	1620	15.4	15000	20000	14.7	46	62	1	0.213
	80	18	1.1	0.6	35500	25100	3600	2560	—	9500	13000	26.3	47	73	1	0.375
	80	18	1.1	0.6	32000	23000	3250	2340	—	6700	9000	34.2	47	73	1	0.383





Dynamic Equivalent Load $P = XF_r + YF_a$

Contact Angle	$\frac{if_0F_a}{C_{or}}$*	e	Single, DT				DB or DF			
			$F_a/F_r \leqq e$		$F_a/F_r > e$		$F_a/F_r \leqq e$		$F_a/F_r > e$	
			X	Y	X	Y	X	Y	X	Y
15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
	0.357	0.40	1	0	0.44	1.40	1	1.57	0.72	2.28
	0.714	0.43	1	0	0.44	1.30	1	1.46	0.72	2.11
	1.07	0.46	1	0	0.44	1.23	1	1.38	0.72	2.00
	1.43	0.47	1	0	0.44	1.19	1	1.34	0.72	1.93
	2.14	0.50	1	0	0.44	1.12	1	1.26	0.72	1.82
	3.57	0.55	1	0	0.44	1.02	1	1.14	0.72	1.66
	5.35	0.56	1	0	0.44	1.00	1	1.12	0.72	1.63
25°	—	0.68	1	0	0.41	0.87	1	0.92	0.67	1.41
30°	—	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	—	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

*For i, use 2 for DB, DF and 1 for DT

Static Equivalent Load $P_0 = X_0F_r + Y_0F_a$

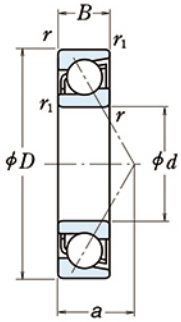
Contact Angle	Single, DT		DB or DF	
	X_0	Y_0	X_0	Y_0
15°	0.5	0.46	1	0.92
25°	0.5	0.38	1	0.76
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

Single or DT mounting
When $F_r > 0.5F_r + Y_0F_a$ use $P_0 = F_r$

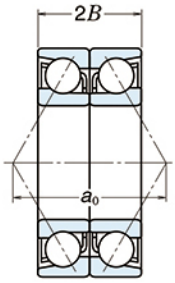
Bearing Numbers (2)				Basic Load Ratings (Matched)				Limiting Speeds (1) (Matched)		Load Center Spacings (mm)		Abutment and Fillet Dimensions (mm)		
				(N)		{kgf}		(min–1)		a_0		d_b (3)	D_b	r_b (3)
Single	Duplex			C_r	C_{0r}	C_r	C_{0r}	Grease	Oil	DB	DF	min.	max.	max.
7305 B	DB	DF	DT	39500	29300	4050	2980	7500	10000	53.5	19.5	30	57	0.6
*7305 BEA				—	—	—	—	8500	12000	53.5	19.5	30	57	0.6
7906 AC	DB	DF	DT	12800	11900	1300	1210	14000	19000	27	9	—	45.8	0.15
7906 C	DB	DF	DT	13500	12500	1380	1280	17000	24000	19.3	1.3	—	45.8	0.15
7006 A	DB	DF	DT	23600	20200	2410	2060	11000	15000	37.5	11.5	35	50	0.6
7006 C	DB	DF	DT	24600	20500	2510	2090	15000	22000	24.4	1.6	—	50	0.6
7206 A	DB	DF	DT	36500	29500	3750	3000	10000	13000	42.6	10.6	35	57	0.6
7206 B	DB	DF	DT	33500	27000	3400	2760	7100	9500	54.6	22.6	35	57	0.6
*7206 BEA				—	—	—	—	8000	11000	54.6	22.6	35	57	0.6
7206 C	DB	DF	DT	37500	29300	3800	2990	14000	20000	28.3	3.7	—	57	0.6
7306 A	DB	DF	DT	54500	41500	5600	4250	7100	9500	48.4	10.4	35	67	0.6
7306 B	DB	DF	DT	50500	38500	5150	3950	6300	8500	61.8	23.8	35	67	0.6
*7306 BEA				—	—	—	—	7100	10000	61.8	23.8	35	67	0.6
7907 AC	DB	DF	DT	18600	17400	1890	1770	12000	17000	31	11	—	52.5	0.3
7907 C	DB	DF	DT	19600	18300	2000	1860	14000	20000	22.1	2.1	—	52.5	0.3
7007 A	DB	DF	DT	29700	26800	3050	2740	9500	13000	42	14	40	57	0.6
7007 C	DB	DF	DT	31000	27300	3150	2790	13000	19000	27	1	—	57	0.6
7207 A	DB	DF	DT	48500	40000	4900	4100	8500	12000	47.9	13.9	40	67	0.6
7207 B	DB	DF	DT	44000	36500	4500	3750	6000	8000	61.9	27.9	40	67	0.6
*7207BEA				—	—	—	—	6700	9500	61.9	27.9	40	67	0.6
7207 C	DB	DF	DT	49500	40000	5050	4050	12000	17000	31.3	2.7	—	67	0.6
7307 A	DB	DF	DT	65000	52500	6600	5350	6300	8500	54.2	12.2	41	74	1
7307 B	DB	DF	DT	59500	48500	6100	4950	5600	7500	69.2	27.2	41	74	1
*7307 BEA				—	—	—	—	6300	9000	69.2	27.2	41	74	1
7908 AC	DB	DF	DT	23300	22300	2370	2270	11000	15000	35.8	11.8	—	59.5	0.3
7908 C	DB	DF	DT	24600	23500	2510	2390	13000	18000	25.7	1.7	—	59.5	0.3
7008 A	DB	DF	DT	31500	31000	3250	3150	8500	11000	46.2	16.2	45	63	0.6
7008 C	DB	DF	DT	33500	32000	3400	3250	12000	17000	29.5	0.5	—	63	0.6
7208 A	DB	DF	DT	57500	50500	5850	5150	7500	10000	52.6	16.6	45	75	0.6
7208 B	DB	DF	DT	52000	46000	5300	4700	5300	7500	68.3	32.3	45	75	0.6

ANGULAR CONTACT BALL BEARINGS

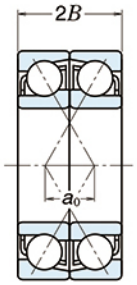
SINGLE/MATCHED MOUNTINGS
Bore Diameter 40-55mm



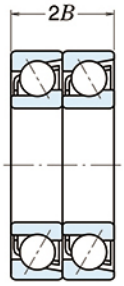
Single



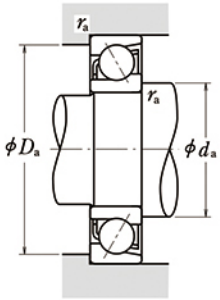
Back-to-Back
DB



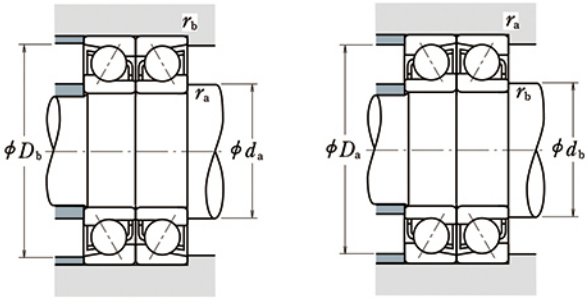
Face-to-Face
DF



Tandem
DT



Boundary Dimensions					Basic Load Ratings (Single)				Factor	Limiting Speeds (1)		Eff.Load Centers (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)					(N)		{kgf}			(min–1)		a	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	$r1_{min}$	C_r	C_{0r}	C_r	C_{0r}	f_0	Grease	Oil		min.	max.	max.	approx.
40	80	18	1.1	0.6	38500	24500	3900	2500	—	7500	11000	34.2	47	73	1	0.357
	80	18	1.1	0.6	36500	25200	3700	2570	14.1	14000	19000	17	47	73	1	0.418
	90	23	1.5	1	49000	33000	5000	3350	—	7100	9000	30.3	49	81	1.5	0.633
	90	23	1.5	1	45000	30500	4550	3100	—	6300	8500	38.8	49	81	1.5	0.648
	90	23	1.5	1	53000	33000	5400	3350	—	7100	10000	38.8	49	81	1.5	0.619
45	68	12	0.6	0.3	15100	12700	1540	1290	—	12000	17000	19.2	50	63	0.6	0.13
	68	12	0.6	0.3	16000	13400	1630	1360	16	14000	20000	13.6	50	63	0.6	0.129
	75	16	1	0.6	23100	18700	2360	1910	—	9500	13000	25.3	51	69	1	0.25
	75	16	1	0.6	24400	19300	2490	1960	15.4	14000	19000	16	51	69	1	0.274
	85	19	1.1	0.6	39500	28700	4050	2930	—	8500	12000	28.3	52	78	1	0.411
	85	19	1.1	0.6	36000	26200	3650	2680	—	6300	8500	36.8	52	78	1	0.421
	85	19	1.1	0.6	40500	27100	4100	2760	—	7100	10000	36.8	52	78	1	0.4
	85	19	1.1	0.6	41000	28800	4150	2940	14.2	12000	17000	18.2	52	78	1	0.468
	100	25	1.5	1	63500	43500	6450	4450	—	6300	8500	33.4	54	91	1.5	0.848
	100	25	1.5	1	58500	40000	5950	4100	—	5600	7500	42.9	54	91	1.5	0.869
	100	25	1.5	1	62500	39500	6400	4050	—	6300	9000	42.9	54	91	1.5	0.823
50	72	12	0.6	0.3	15900	14200	1630	1450	—	11000	15000	20.2	55	67	0.6	0.132
	72	12	0.6	0.3	16900	15000	1720	1530	16.2	13000	18000	14.2	55	67	0.6	0.13
	80	16	1	0.6	24500	21100	2500	2150	—	8500	12000	26.8	56	74	1	0.263
	80	16	1	0.6	26000	21900	2650	2230	15.7	12000	17000	16.7	56	74	1	0.293
	90	20	1.1	0.6	41500	31500	4200	3200	—	8000	11000	30.2	57	83	1	0.466
	90	20	1.1	0.6	37500	28600	3800	2920	—	5600	8000	39.4	57	83	1	0.477
	90	20	1.1	0.6	42000	29700	4300	3050	—	6300	9500	39.4	57	83	1	0.453
	90	20	1.1	0.6	43000	31500	4350	3250	14.5	12000	16000	19.4	57	83	1	0.528
	110	27	2	1	74000	52000	7550	5300	—	5600	7500	36.6	60	100	2	1.1
	110	27	2	1	68000	48000	6950	4900	—	5000	6700	47.1	60	100	2	1.12
	110	27	2	1	78000	50500	7950	5150	—	5600	8000	47.1	60	100	2	1.07
55	80	13	1	0.6	18100	16800	1840	1710	—	10000	14000	22.2	61	74	1	0.184
	80	13	1	0.6	19100	17700	1950	1810	16.3	12000	16000	15.5	61	74	1	0.182
	90	18	1.1	0.6	32500	27700	3300	2830	—	7500	11000	29.9	62	83	1	0.391



Dynamic Equivalent Load $P = XF_r + YF_a$

Contact Angle	$\frac{i f_0 F_a}{C_{or}}$*	e	Single, DT				DB or DF			
			$F_a/F_r \leq e$		$F_a/F_r > e$		$F_a/F_r \leq e$		$F_a/F_r > e$	
			X	Y	X	Y	X	Y	X	Y
15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
	0.357	0.40	1	0	0.44	1.40	1	1.57	0.72	2.28
	0.714	0.43	1	0	0.44	1.30	1	1.46	0.72	2.11
	1.07	0.46	1	0	0.44	1.23	1	1.38	0.72	2.00
	1.43	0.47	1	0	0.44	1.19	1	1.34	0.72	1.93
	2.14	0.50	1	0	0.44	1.12	1	1.26	0.72	1.82
	3.57	0.55	1	0	0.44	1.02	1	1.14	0.72	1.66
	5.35	0.56	1	0	0.44	1.00	1	1.12	0.72	1.63
25°	—	0.68	1	0	0.41	0.87	1	0.92	0.67	1.41
30°	—	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	—	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

*For i, use 2 for DB, DF and 1 for DT

Static Equivalent Load $P_0 = X_0F_r + Y_0F_a$

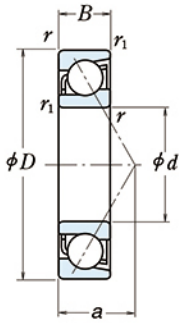
Contact Angle	Single, DT		DB or DF	
	X_0	Y_0	X_0	Y_0
15°	0.5	0.46	1	0.92
25°	0.5	0.38	1	0.76
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

Single or DT mounting
When $F_r > 0.5F_r + Y_0F_a$ use $P_0 = F_r$

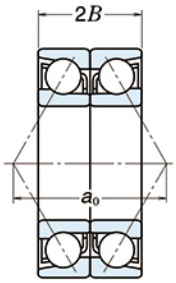
Bearing Numbers (2)				Basic Load Ratings (Matched)				Limiting Speeds (1) (Matched)		Load Center Spacings (mm)		Abutment and Fillet Dimensions (mm)		
				(N)		{kgf}		(min–1)		a_0		d_b (3)	D_b	r_b (3)
Single	Duplex			C_r	C_{0r}	C_r	C_{0r}	Grease	Oil	DB	DF	min.	max.	max.
*7208 BEA				—	—	—	—	6000	8500	68.3	32.3	45	75	0.6
7208 C	DB	DF	DT	59000	50500	6000	5150	11000	15000	34.1	1.9	—	75	0.6
7308 A	DB	DF	DT	79500	66000	8100	6700	5600	7500	60.5	14.5	46	84	1
7308 B	DB	DF	DT	73000	60500	7400	6200	5000	6700	77.5	31.5	46	84	1
*7308 BEA				—	—	—	—	5600	8000	77.5	31.5	46	84	1
7909 AC	DB	DF	DT	24600	25400	2510	2590	9500	13000	38.4	14.4	—	65.5	0.3
7909 C	DB	DF	DT	26000	26800	2660	2730	12000	16000	27.1	3.1	—	65.5	0.3
7009 A	DB	DF	DT	37500	37500	3850	3800	7500	10000	50.6	18.6	50	70	0.6
7009 C	DB	DF	DT	39500	38500	4050	3950	11000	15000	32.1	0.1	—	70	0.6
7209 A	DB	DF	DT	64500	57500	6550	5850	7100	9500	56.5	18.5	50	80	0.6
7209 B	DB	DF	DT	58500	52500	5950	5350	5000	6700	73.5	35.5	50	80	0.6
*7209 BEA				—	—	—	—	5600	8000	73.5	35.5	50	80	0.6
7209 C	DB	DF	DT	66500	57500	6750	5850	10000	14000	36.4	1.6	—	80	0.6
7309 A	DB	DF	DT	103000	87000	10500	8900	5000	6700	66.9	16.9	51	94	1
7309 B	DB	DF	DT	95000	80500	9650	8200	4500	6000	85.8	35.8	51	94	1
*7309 BEA				—	—	—	—	5000	7100	85.8	35.8	51	94	1
7910 AC	DB	DF	DT	25900	28400	2640	2900	9000	12000	40.5	16.5	—	69.5	0.3
7910 C	DB	DF	DT	27400	30000	2800	3050	11000	15000	28.3	4.3	—	69.5	0.3
7010 A	DB	DF	DT	40000	42000	4050	4300	7100	9500	53.5	21.5	55	75	0.6
7010 C	DB	DF	DT	42000	44000	4300	4450	10000	14000	33.4	1.4	—	75	0.6
7210 A	DB	DF	DT	67000	63000	6850	6400	6300	9000	60.4	20.4	55	85	0.6
7210 B	DB	DF	DT	60500	57000	6200	5850	4500	6300	78.7	38.7	55	85	0.6
*7210 BEA				—	—	—	—	5000	7500	78.7	38.7	55	85	0.6
7210 C	DB	DF	DT	69500	63500	7100	6450	9500	13000	38.7	1.3	—	85	0.6
7310 A	DB	DF	DT	121000	104000	12300	10600	4500	6000	73.2	19.2	56	104	1
7310 B	DB	DF	DT	111000	96000	11300	9800	4000	5600	94.1	40.1	56	104	1
*7310 BEA				—	—	—	—	4500	6700	94.1	40.1	56	104	1
7911 AC	DB	DF	DT	29300	33500	2990	3400	8000	11000	44.5	18.5	—	75	0.6
7911 C	DB	DF	DT	31000	35500	3150	3600	9500	13000	31.1	5.1	—	75	0.6
7011 A	DB	DF	DT	52500	55500	5350	5650	6300	8500	59.9	23.9	60	85	0.6

ANGULAR CONTACT BALL BEARINGS

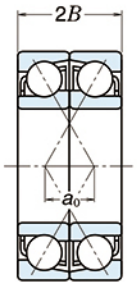
SINGLE/MATCHED MOUNTINGS
Bore Diameter 55-65mm



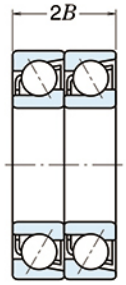
Single



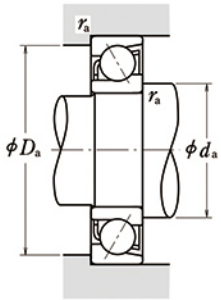
Back-to-Back
DB



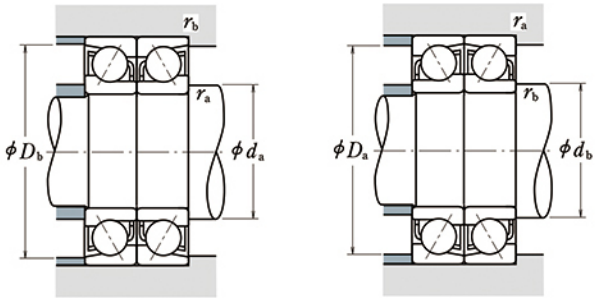
Face-to-Face
DF



Tandem
DT



Boundary Dimensions					Basic Load Ratings (Single)				Factor	Limiting Speeds (1)		Eff.Load Centers (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)					(N)		{kgf}			(min–1)		a	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	$r1_{min}$	C_r	C_{0r}	C_r	C_{0r}	f_0	Grease	Oil		min.	max.	max.	approx.
55	90	18	1.1	0.6	34000	28600	500	2920	15.5	11000	15000	18.7	62	83	1	0.43
	100	21	1.5	1	51000	39500	200	4050	—	7100	10000	32.9	64	91	1.5	0.613
	100	21	1.5	1	46500	36000	700	3700	—	5300	7100	43	64	91	1.5	0.627
	100	21	1.5	1	51500	37000	250	3800	—	6000	8500	43	64	91	1.5	0.596
	100	21	1.5	1	53000	40000	400	4100	14.5	10000	14000	20.9	64	91	1.5	0.688
	120	29	2	1	86000	61500	750	6250	—	5000	6700	39.8	65	110	2	1.41
	120	29	2	1	79000	56500	50	5750	—	4500	6300	51.2	65	110	2	1.45
	120	29	2	1	89000	58500	100	6000	—	5000	7500	51.2	65	110	2	1.36
60	85	13	1	0.6	18300	17700	870	1810	—	9500	13000	23.4	66	79	1	0.197
	85	13	1	0.6	19400	18700	980	1910	16.5	11000	15000	16.2	66	79	1	0.194
	95	18	1.1	0.6	33000	29500	350	3000	—	7100	10000	31.4	67	88	1	0.417
	95	18	1.1	0.6	35000	30500	600	3150	15.7	10000	14000	19.4	67	88	1	0.46
	110	22	1.5	1	62000	48500	300	4950	—	6700	9000	35.5	69	101	1.5	0.798
	110	22	1.5	1	56000	44500	700	4550	—	4800	6300	46.7	69	101	1.5	0.815
	110	22	1.5	1	61500	45000	300	4600	—	5300	7500	46.7	69	101	1.5	0.791
	110	22	1.5	1	64000	49000	550	5000	14.4	9500	13000	22.4	69	101	1.5	0.889
	130	31	2.1	1.1	98000	71500	0	7250	—	4800	6300	42.9	72	118	2	1.74
	130	31	2.1	1.1	90000	65500	200	6700	—	4300	5600	55.4	72	118	2	1.78
	130	31	2.1	1.1	102000	68500	500	7000	—	4800	6700	55.4	72	118	2	1.7
65	90	13	1	0.6	19100	19400	940	1980	—	9000	12000	24.6	71	84	1	0.211
	90	13	1	0.6	20200	20500	60	2090	16.7	10000	14000	16.9	71	84	1	0.208
	100	18	1.1	0.6	35000	33000	550	3350	—	6700	9500	32.8	72	93	1	0.455
	100	18	1.1	0.6	37000	34500	800	3500	15.9	10000	13000	20	72	93	1	0.493
	120	23	1.5	1	70500	58000	150	5900	—	6000	8500	38.2	74	111	1.5	1.03
	120	23	1.5	1	63500	52500	500	5350	—	4300	6000	50.3	74	111	1.5	1.05
	120	23	1.5	1	70000	53500	150	5450	—	4800	7100	50.3	74	111	1.5	1.01
	120	23	1.5	1	73000	58500	450	6000	14.6	9000	12000	23.9	74	111	1.5	1.14
	140	33	2.1	1.1	111000	82000	300	8350	—	4300	6000	46.1	77	128	2	2.12
	140	33	2.1	1.1	102000	75500	400	7700	—	3800	5300	59.5	77	128	2	2.17
	140	33	2.1	1.1	114000	77000	600	7850	—	4300	6300	59.5	77	128	2	2.09



Dynamic Equivalent Load $P = XF_r + YF_a$

Contact Angle	$\frac{i f_0 F_a^*}{C_{or}}$	e	Single, DT $F_a/F_r \leq e$ X	Single, DT $F_a/F_r \leq e$ Y	Single, DT $F_a/F_r > e$ X	Single, DT $F_a/F_r > e$ Y	DB or DF $F_a/F_r \leq e$ X	DB or DF $F_a/F_r \leq e$ Y	DB or DF $F_a/F_r > e$ X	DB or DF $F_a/F_r > e$ Y
15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
	0.357	0.40	1	0	0.44	1.40	1	1.57	0.72	2.28
	0.714	0.43	1	0	0.44	1.30	1	1.46	0.72	2.11
	1.07	0.46	1	0	0.44	1.23	1	1.38	0.72	2.00
	1.43	0.47	1	0	0.44	1.19	1	1.34	0.72	1.93
	2.14	0.50	1	0	0.44	1.12	1	1.26	0.72	1.82
	3.57	0.55	1	0	0.44	1.02	1	1.14	0.72	1.66
	5.35	0.56	1	0	0.44	1.00	1	1.12	0.72	1.63
25°	—	0.68	1	0	0.41	0.87	1	0.92	0.67	1.41
30°	—	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	—	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

*For i, use 2 for DB, DF and 1 for DT

Static Equivalent Load $P_0 = X_0F_r + Y_0F_a$

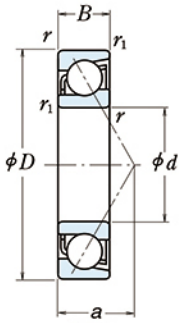
Contact Angle	Single, DT X_0	Single, DT Y_0	DB or DF X_0	DB or DF Y_0
15°	0.5	0.46	1	0.92
25°	0.5	0.38	1	0.76
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

Single or DT mounting
When $F_r > 0.5F_r + Y_0F_a$ use $P_0 = F_r$

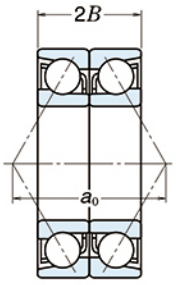
Bearing Numbers (2)				Basic Load Ratings (Matched)				Limiting Speeds (1) (Matched)		Load Center Spacings (mm)		Abutment and Fillet Dimensions (mm)		
				(N)		{kgf}		(min–1)		a_0		d_b (3)	D_b	r_b (3)
Single	Duplex			C_r	C_{0r}	C_r	C_{0r}	Grease	Oil	DB	DF	min.	max.	max.
7011 C	DB	DF	DT	55500	57500	5650	5850	9000	12000	37.4	1.4	—	85	0.6
7211 A	DB	DF	DT	83000	79000	8450	8050	6000	8000	65.7	23.7	61	94	1
*7211 B	DB	DF	DT	75000	72000	7650	7350	4000	5600	86	44	61	94	1
*7211 BEA				—	—	—	—	4500	6700	86	44	61	94	1
7211 C	DB	DF	DT	86000	80000	8800	8150	8500	12000	41.7	0.3	—	94	1
7311 A	DB	DF	DT	139000	123000	14200	12500	4000	5600	79.5	21.5	61	114	1
7311 B	DB	DF	DT	128000	113000	13100	11500	3600	5000	102.4	44.4	61	114	1
*7311 BEA				—	—	—	—	4000	6000	102.4	44.4	61	114	1
7912 AC	DB	DF	DT	29800	35500	3050	3600	7500	10000	46.8	20.8	—	80	0.6
7912 C	DB	DF	DT	31500	37500	3200	3800	9000	12000	32.4	6.4	—	80	0.6
7012 A	DB	DF	DT	53500	59000	5450	6000	6000	8000	62.7	26.7	65	90	0.6
7012 C	DB	DF	DT	57000	61500	5800	6250	8500	12000	38.8	2.8	—	90	0.6
7212 A	DB	DF	DT	100000	97500	10200	9950	5300	7100	71.1	27.1	66	104	1
7212 B	DB	DF	DT	91000	89000	9300	9050	3800	5300	93.3	49.3	66	104	1
*7212 BEA				—	—	—	—	4300	6000	93.3	49.3	66	104	1
7212 C	DB	DF	DT	104000	98500	10600	10000	7500	11000	44.8	0.8	—	104	1
7312 A	DB	DF	DT	159000	143000	16200	14500	3800	5000	85.9	23.9	67	123	1
7312 B	DB	DF	DT	146000	131000	14900	13400	3400	4500	110.7	48.7	67	123	1
*7312 BEA				—	—	—	—	3800	5600	110.7	48.7	67	123	1
7913 AC	DB	DF	DT	31000	39000	3150	3950	7100	9500	49.1	23.1	—	85	0.6
7913 C	DB	DF	DT	33000	41000	3350	4200	8500	12000	33.8	7.8	—	85	0.6
7013 A	DB	DF	DT	56500	65500	5750	6700	5600	7500	65.6	29.6	70	95	0.6
7013 C	DB	DF	DT	60500	68500	6150	7000	8000	11000	40.1	4.1	—	95	0.6
7213 A	DB	DF	DT	114000	116000	11600	11800	4800	6700	76.4	30.4	71	114	1
7213 B	DB	DF	DT	103000	105000	10500	10700	3400	4800	100.6	54.6	71	114	1
*7213 BEA				—	—	—	—	3800	5600	100.6	54.6	71	114	1
7213 C	DB	DF	DT	119000	117000	12100	12000	7100	9500	47.8	1.8	—	114	1
7313 A	DB	DF	DT	180000	164000	18400	16700	3600	4800	92.2	26.2	72	133	1
7313 B	DB	DF	DT	166000	151000	16900	15400	3200	4300	119	53	72	133	1
*7313 BEA				—	—	—	—	3600	5000	119	53	72	133	1

ANGULAR CONTACT BALL BEARINGS

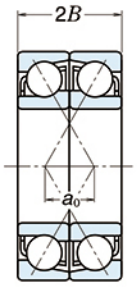
SINGLE/MATCHED MOUNTINGS
Bore Diameter 70-80mm



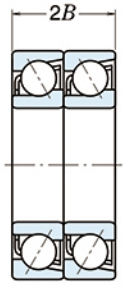
Single



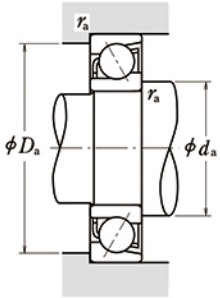
Back-to-Back
DB



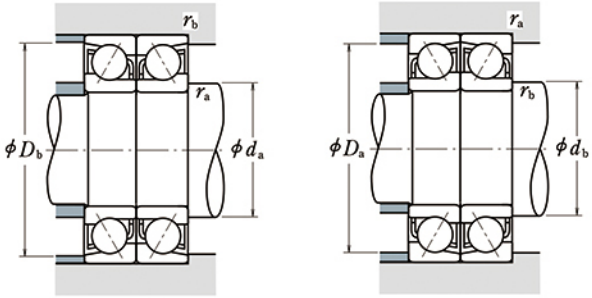
Face-to-Face
DF



Tandem
DT



Boundary Dimensions					Basic Load Ratings (Single)				Factor	Limiting Speeds (1)		Eff.Load Centers (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)					(N)		{kgf}			(min–1)		a	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	$r1_{min}$	C_r	C_{0r}	C_r	C_{0r}	f_0	Grease	Oil		min.	max.	max.	approx.
70	100	16	1	0.6	26500	26300	2710	2680	—	8000	11000	27.8	76	94	1	0.341
	100	16	1	0.6	28100	27800	2870	2830	16.4	9500	13000	19.4	76	94	1	0.338
	110	20	1.1	0.6	44000	41500	4500	4200	—	6300	8500	36	77	103	1	0.625
	110	20	1.1	0.6	47000	43000	4800	4400	15.7	9000	12000	22.1	77	103	1	0.698
	125	24	1.5	1	76500	63500	7800	6500	—	5600	8000	40.1	79	116	1.5	1.11
	125	24	1.5	1	69000	58000	7050	5900	—	4000	5600	52.9	79	116	1.5	1.14
	125	24	1.5	1	75500	58500	7700	6000	—	4500	6700	52.9	79	116	1.5	1.08
	125	24	1.5	1	79500	64500	8100	6600	14.6	8500	11000	25.1	79	116	1.5	1.24
	150	35	2.1	1.1	125000	93500	12700	9550	—	4000	5300	49.3	82	138	2	2.6
	150	35	2.1	1.1	114000	86000	11700	8750	—	3600	5000	63.6	82	138	2	2.65
	150	35	2.1	1.1	124000	87500	12600	8900	—	4000	6000	63.7	82	138	2	2.53
75	105	16	1	0.6	26900	27700	2750	2820	—	7500	10000	29	81	99	1	0.355
	105	16	1	0.6	28600	29300	2910	2980	16.6	9000	12000	20.1	81	99	1	0.357
	115	20	1.1	0.6	45000	43500	4600	4450	—	6000	8000	37.4	82	108	1	0.661
	115	20	1.1	0.6	48000	45500	4900	4650	15.9	8500	12000	22.7	82	108	1	0.748
	130	25	1.5	1	76000	64500	7750	6550	—	5600	7500	42.1	84	121	1.5	1.19
	130	25	1.5	1	68500	58500	7000	5950	—	3800	5300	55.5	84	121	1.5	1.22
	130	25	1.5	1	78500	63500	8000	6450	—	4300	6300	55.5	84	121	1.5	1.18
	130	25	1.5	1	83000	70000	8450	7100	14.8	8000	11000	26.2	84	121	1.5	1.36
	160	37	2.1	1.1	136000	106000	13800	10800	—	3800	5000	52.4	87	148	2	3.13
	160	37	2.1	1.1	125000	97500	12700	9900	—	3400	4800	67.8	87	148	2	3.19
80	110	16	1	0.6	27300	29000	2790	2960	—	7100	10000	30.2	86	104	1	0.38
	110	16	1	0.6	29000	30500	2960	3150	16.7	8500	12000	20.7	86	104	1	0.376
	125	22	1.1	0.6	55000	53000	5650	5400	—	5600	7500	40.6	87	118	1	0.88
	125	22	1.1	0.6	58500	55500	6000	5650	15.7	8000	11000	24.7	87	118	1	0.966
	140	26	2	1	89000	76000	9100	7750	—	5000	7100	44.8	90	130	2	1.46
	140	26	2	1	80500	69500	8200	7050	—	3600	5000	59.1	90	130	2	1.49
	140	26	2	1	87500	70000	8950	7150	—	4000	6000	59.2	87	148	2	1.42
	140	26	2	1	93000	77500	9450	7900	14.7	7500	10000	27.7	90	130	2	1.63
	170	39	2.1	1.1	147000	119000	15000	12100	—	3600	4800	55.6	92	158	2	3.71
	170	39	2.1	1.1	135000	109000	13800	11100	—	3200	4300	71.9	92	158	2	3.79



Dynamic Equivalent Load $P = XF_r + YF_a$

Contact Angle	$\frac{if_0F_a}{C_{0r}}$*	e	Single, DT				DB or DF			
			$F_a/F_r \leq e$		$F_a/F_r > e$		$F_a/F_r \leq e$		$F_a/F_r > e$	
			X	Y	X	Y	X	Y	X	Y
15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
	0.357	0.40	1	0	0.44	1.40	1	1.57	0.72	2.28
	0.714	0.43	1	0	0.44	1.30	1	1.46	0.72	2.11
	1.07	0.46	1	0	0.44	1.23	1	1.38	0.72	2.00
	1.43	0.47	1	0	0.44	1.19	1	1.34	0.72	1.93
	2.14	0.50	1	0	0.44	1.12	1	1.26	0.72	1.82
	3.57	0.55	1	0	0.44	1.02	1	1.14	0.72	1.66
	5.35	0.56	1	0	0.44	1.00	1	1.12	0.72	1.63
25°	—	0.68	1	0	0.41	0.87	1	0.92	0.67	1.41
30°	—	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	—	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

*For i, use 2 for DB, DF and 1 for DT

Static Equivalent Load $P_0 = X_0F_r + Y_0F_a$

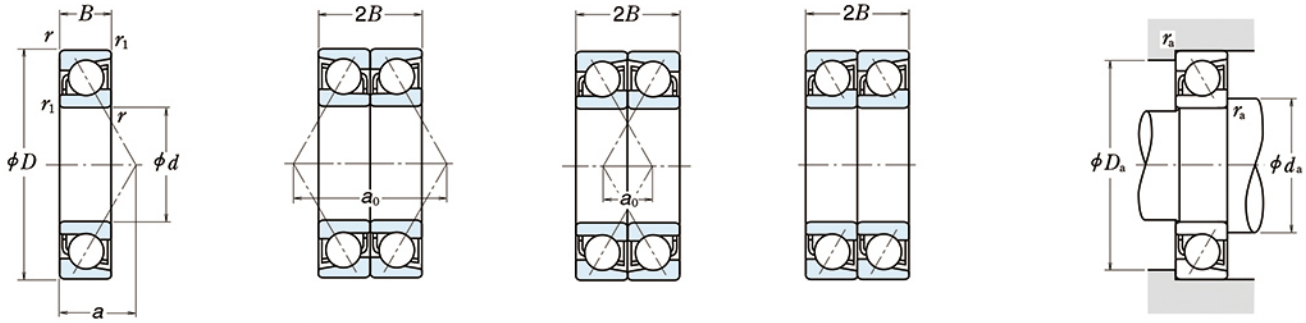
Contact Angle	Single, DT		DB or DF	
	X_0	Y_0	X_0	Y_0
15°	0.5	0.46	1	0.92
25°	0.5	0.38	1	0.76
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

Single or DT mounting
When $F_r > 0.5F_r + Y_0F_a$ use $P_0 = F_r$

Bearing Numbers (2)				Basic Load Ratings (Matched)				Limiting Speeds (1) (Matched)		Load Center Spacings (mm)		Abutment and Fillet Dimensions (mm)		
				(N)		{kgf}		(min–1)		a_0		d_b (3)	D_b	r_b (3)
Single	Duplex			C_r	C_{0r}	C_r	C_{0r}	Grease	Oil	DB	DF	min.	max.	max.
7914 AC	DB	DF	DT	43000	52500	4400	5350	6300	9000	55.6	23.6	—	95	0.6
7914 C	DB	DF	DT	45500	55500	4650	5650	7500	11000	38.8	6.8	—	95	0.6
7014 A	DB	DF	DT	71500	82500	7300	8450	5000	6700	72	32	75	105	0.6
7014 C	DB	DF	DT	76000	86000	7750	8750	7100	10000	44.1	4.1	—	105	0.6
7214 A	DB	DF	DT	124000	127000	12600	13000	4500	6300	80.3	32.3	76	119	1
7214 B	DB	DF	DT	112000	116000	11500	11800	3200	4500	105.8	57.8	76	119	1
*7214 BEA				—	—	—	—	3600	5300	105.8	57.8	76	119	1
7214 C	DB	DF	DT	129000	129000	13200	13200	6700	9000	50.1	2.1	—	119	1
7314 A	DB	DF	DT	203000	187000	20700	19100	3200	4300	98.5	28.5	77	143	1
7314 B	DB	DF	DT	186000	172000	19000	17500	2800	4000	127.3	57.3	77	143	1
*7314 BEA				—	—	—	—	3200	4800	127.3	57.3	77	143	1
7915 AC	DB	DF	DT	44000	55500	4450	5650	6000	8500	58	26	—	100	0.6
7915 C	DB	DF	DT	46500	58500	4750	5950	7100	10000	40.1	8.1	—	100	0.6
7015 A	DB	DF	DT	73000	87500	7450	8900	4800	6700	74.8	34.8	80	110	0.6
7015 C	DB	DF	DT	78000	91500	7950	9300	6700	9500	45.4	5.4	—	110	0.6
7215 A	DB	DF	DT	123000	129000	12600	13100	4300	6000	84.2	34.2	81	124	1
7215 B	DB	DF	DT	112000	117000	11400	11900	3200	4300	111	61	81	124	1
*7215 BEA				—	—	—	—	3600	5000	111	61	81	124	1
7215 C	DB	DF	DT	134000	140000	13700	14200	6300	9000	52.4	2.4	—	124	1
7315 A	DB	DF	DT	221000	212000	22500	21600	3000	4000	104.8	30.8	82	153	1
7315 B	DB	DF	DT	202000	195000	20600	19800	2800	3800	135.6	61.6	82	153	1
7916 AC	DB	DF	DT	44500	58000	4550	5900	5600	8000	60.3	28.3	—	105	0.6
7916 C	DB	DF	DT	47000	61500	4800	6250	6700	9500	41.5	9.5	—	105	0.6
7016 A	DB	DF	DT	89500	106000	9150	10800	4300	6000	81.2	37.2	85	120	0.6
7016 C	DB	DF	DT	95500	111000	9700	11300	6300	9000	49.4	5.4	—	120	0.6
7216 A	DB	DF	DT	145000	152000	14700	15600	4000	5600	89.5	37.5	86	134	1
7216 B	DB	DF	DT	131000	139000	13300	14100	2800	4000	118.3	66.3	86	134	1
*7216 BEA				—	—	—	—	3200	4800	118.3	66.3	82	153	1
7216 C	DB	DF	DT	151000	155000	15400	15800	6000	8000	55.5	3.5	—	134	1
7316 A	DB	DF	DT	239000	238000	24400	24200	2800	3800	111.2	33.2	87	163	1
7316 B	DB	DF	DT	219000	218000	22400	22300	2600	3400	143.9	65.9	87	163	1

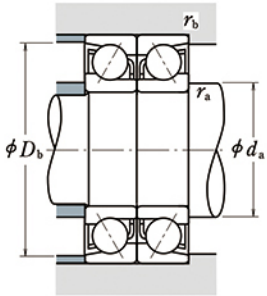
ANGULAR CONTACT BALL BEARINGS

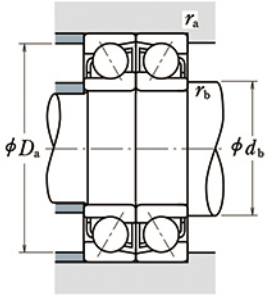
SINGLE/MATCHED MOUNTINGS
Bore Diameter 85-100mm



Single | Back-to-Back DB | Face-to-Face DF | Tandem DT

Boundary Dimensions					Basic Load Ratings (Single)				Factor	Limiting Speeds (1)		Eff.Load Centers (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)					(N)		{kgf}			(min–1)		a	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	$r1_{min}$	C_r	C_{0r}	C_r	C_{0r}	f_0	Grease	Oil		min.	max.	max.	approx.
85	120	18	1.1	0.6	36500	38500	3750	3900	—	6700	9000	32.9	92	113	1	0.541
	120	18	1.1	0.6	39000	40500	3950	4150	16.5	8000	11000	22.7	92	113	1	0.534
	130	22	1.1	0.6	56500	56000	5750	5700	—	5300	7100	42	92	123	1	0.913
	130	22	1.1	0.6	60000	58500	6150	6000	15.9	7500	10000	25.4	92	123	1	1.01
	150	28	2	1	103000	89000	10500	9100	—	4800	6700	47.9	95	140	2	1.83
	150	28	2	1	93000	81000	9500	8250	—	3400	4800	63.3	95	140	2	1.87
	150	28	2	1	107000	90500	10900	9250	14.7	6700	9500	29.7	95	140	2	2.04
	180	41	3	1.1	159000	133000	16200	13500	—	3400	4500	58.8	99	166	2.5	4.33
	180	41	3	1.1	146000	122000	14800	12400	—	3000	4000	76.1	99	166	2.5	4.42
90	125	18	1.1	0.6	39500	43500	4000	4450	—	6300	8500	34.1	97	118	1	0.56
	125	18	1.1	0.6	41500	46000	4250	4700	16.6	7500	10000	23.4	97	118	1	0.563
	140	24	1.5	1	67500	66500	6850	6750	—	4800	6700	45.2	99	131	1.5	1.19
	140	24	1.5	1	71500	69000	7300	7050	15.7	7100	9500	27.4	99	131	1.5	1.34
	160	30	2	1	118000	103000	12000	10500	—	4500	6000	51.1	100	150	2	2.25
	160	30	2	1	107000	94000	10900	9550	—	3200	4300	67.4	100	150	2	2.29
	160	30	2	1	123000	105000	12500	10700	14.6	6300	9000	31.7	100	150	2	2.51
	190	43	3	1.1	171000	147000	17400	15000	—	3200	4300	61.9	104	176	2.5	5.06
	190	43	3	1.1	156000	135000	15900	13800	—	2800	3800	80.2	104	176	2.5	5.17
95	130	18	1.1	0.6	40000	45500	4050	4650	—	6000	8500	35.2	102	123	1	0.597
	130	18	1.1	0.6	42500	48000	4300	4900	16.7	7100	10000	24.1	102	123	1	0.591
	145	24	1.5	1	67000	67000	6800	6800	—	4500	6300	46.6	104	136	1.5	1.43
	145	24	1.5	1	73500	73000	7500	7450	15.9	6700	9000	28.1	104	136	1.5	1.42
	170	32	2.1	1.1	128000	111000	13000	11300	—	4300	5600	54.2	107	158	2	2.68
	170	32	2.1	1.1	116000	101000	11800	10300	—	3000	4000	71.6	107	158	2	2.74
	170	32	2.1	1.1	133000	112000	13500	11400	14.6	6000	8500	33.7	107	158	2	3.05
	200	45	3	1.1	183000	162000	18600	16600	—	3000	4000	65.1	109	186	2.5	5.83
	200	45	3	1.1	16700	149000	17100	15200	—	2600	3600	84.3	109	186	2.5	5.98
100	140	20	1.1	0.6	47500	51500	4850	5250	—	5600	8000	38	107	133	1	0.804
	140	20	1.1	0.6	50000	54000	5100	5550	16.5	6700	9000	26.1	107	133	1	0.794
	150	24	1.5	1	68500	70500	6950	7200	—	4500	6000	48.1	109	141	1.5	1.48





Dynamic Equivalent Load $P = XF_r + YF_a$

Contact Angle	$\frac{if_0F_a^*}{C_{0r}}$	e	Single, DT				DB or DF			
			$F_a/F_r \leq e$		$F_a/F_r > e$		$F_a/F_r \leq e$		$F_a/F_r > e$	
			X	Y	X	Y	X	Y	X	Y
15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
	0.357	0.40	1	0	0.44	1.40	1	1.57	0.72	2.28
	0.714	0.43	1	0	0.44	1.30	1	1.46	0.72	2.11
	1.07	0.46	1	0	0.44	1.23	1	1.38	0.72	2.00
	1.43	0.47	1	0	0.44	1.19	1	1.34	0.72	1.93
	2.14	0.50	1	0	0.44	1.12	1	1.26	0.72	1.82
	3.57	0.55	1	0	0.44	1.02	1	1.14	0.72	1.66
	5.35	0.56	1	0	0.44	1.00	1	1.12	0.72	1.63
25°	—	0.68	1	0	0.41	0.87	1	0.92	0.67	1.41
30°	—	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	—	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

*For i, use 2 for DB, DF and 1 for DT

Static Equivalent Load $P_0 = X_0F_r + Y_0F_a$

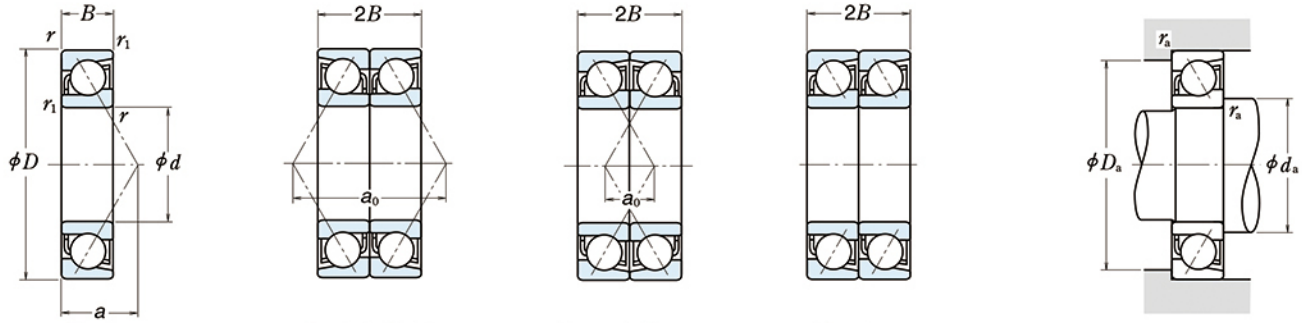
Contact Angle	Single, DT		DB or DF	
	X_0	Y_0	X_0	Y_0
15°	0.5	0.46	1	0.92
25°	0.5	0.38	1	0.76
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

Single or DT mounting
When $F_r > 0.5F_r + Y_0F_a$ use $P_0 = F_r$

Bearing Numbers (2)				Basic Load Ratings (Matched)				Limiting Speeds (1) (Matched)		Load Center Spacings (mm)		Abutment and Fillet Dimensions (mm)		
				(N)		{kgf}		(min–1)		a_0		d_b (3)	D_b	r_b (3)
Single	Duplex			C_r	C_{0r}	C_r	C_{0r}	Grease	Oil	DB	DF	min.	max.	max.
7917 AC	DB	DF	DT	59500	77000	6100	7850	5300	7500	65.8	29.8	—	115	0.6
7917 C	DB	DF	DT	63000	81500	6450	8300	6300	9000	45.5	9.5	—	115	0.6
7017 A	DB	DF	DT	91500	112000	9350	11400	4300	5600	84.1	40.1	90	125	0.6
7017 C	DB	DF	DT	98000	117000	9950	12000	6000	8500	50.8	6.8	—	125	0.6
7217 A	DB	DF	DT	167000	178000	17100	18200	3800	5300	95.8	39.8	91	144	1
7217 B	DB	DF	DT	151000	162000	15400	16500	2800	3800	126.6	70.6	91	144	1
7217 C	DB	DF	DT	174000	181000	17800	18500	5600	7500	59.5	3.5	—	144	1
7317 A	DB	DF	DT	258000	265000	26300	27000	2600	3600	117.5	35.5	92	173	1
7317 B	DB	DF	DT	236000	244000	24100	24800	2400	3200	152.2	70.2	92	173	1
7918 AC	DB	DF	DT	64000	87000	6500	8900	5000	7100	68.1	32.1	—	120	0.6
7918 C	DB	DF	DT	67500	92000	6900	9400	6000	8500	46.8	10.8	—	120	0.6
7018 A	DB	DF	DT	109000	133000	11200	13500	3800	5300	90.4	42.4	96	134	1
7018 C	DB	DF	DT	116000	138000	11900	14100	5600	8000	54.8	6.8	—	134	1
7218 A	DB	DF	DT	191000	206000	19500	21000	3600	5000	102.2	42.2	96	154	1
7218 B	DB	DF	DT	173000	188000	17700	19100	2600	3400	134.9	74.9	96	154	1
7218 C	DB	DF	DT	199000	209000	20300	21400	5300	7100	63.5	3.5	—	154	1
7318 A	DB	DF	DT	277000	294000	28300	30000	2600	3400	123.8	37.8	97	183	1
7318 B	DB	DF	DT	254000	270000	25900	27600	2200	3000	160.5	74.5	97	183	1
7919 AC	DB	DF	DT	64500	91000	6600	9250	4800	6700	70.5	34.5	—	125	0.6
7919 C	DB	DF	DT	68500	96000	7000	9800	5600	8000	48.1	12.1	—	125	0.6
7019 A	DB	DF	DT	109000	134000	11100	13600	3800	5000	93.3	45.3	—	139	1
7019 C	DB	DF	DT	119000	146000	12200	14900	5300	7500	56.1	8.1	—	139	1
7219 A	DB	DF	DT	208000	221000	21200	22600	3400	4500	108.5	44.5	102	163	1
7219 B	DB	DF	DT	188000	202000	19200	20500	2400	3200	143.2	79.2	102	163	1
7219 C	DB	DF	DT	216000	224000	22000	22800	4800	6700	67.5	3.5	—	163	1
7319 A	DB	DF	DT	297000	325000	30500	33000	2400	3200	130.2	40.2	102	193	1
7319 B	DB	DF	DT	272000	298000	27700	30500	2200	3000	168.7	78.7	102	193	1
7920 AC	DB	DF	DT	77000	103000	7850	10500	4500	6300	76	36	—	135	0.6
7920 C	DB	DF	DT	81500	108000	8300	11100	5300	7500	52.2	12.2	—	135	0.6
7020 A	DB	DF	DT	111000	141000	11300	14400	3600	5000	96.2	48.2	—	144	1

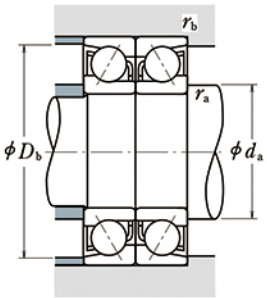
ANGULAR CONTACT BALL BEARINGS

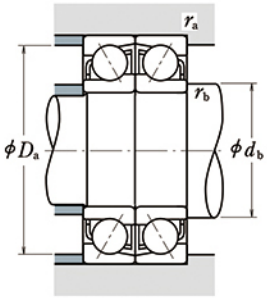
SINGLE/MATCHED MOUNTINGS
Bore Diameter 100-120mm



Single | Back-to-Back DB | Face-to-Face DF | Tandem DT

Boundary Dimensions					Basic Load Ratings (Single)				Factor	Limiting Speeds (1)		Eff.Load Centers (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)					(N)		{kgf}			(min–1)		a	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	$r1_{min}$	C_r	C_{0r}	C_r	C_{0r}	f_0	Grease	Oil		min.	max.	max.	approx.
100	150	24	1.5	1	75500	77000	7700	7900	16	6300	9000	28.7	109	141	1.5	1.46
	180	34	2.1	1.1	144000	126000	14700	12800	—	4000	5300	57.4	112	168	2	3.22
	180	34	2.1	1.1	130000	114000	13300	11700	—	2800	3800	75.7	112	168	2	3.28
	180	34	2.1	1.1	149000	127000	15200	12900	14.5	5600	8000	35.7	112	168	2	3.65
	215	47	3	1.1	207000	193000	21100	19700	—	2800	3800	69	114	201	2.5	7.29
	215	47	3	1.1	190000	178000	19400	18100	—	2400	3400	89.6	114	201	2.5	7.43
105	145	20	1.1	0.6	48000	54000	4900	5500	—	5600	7500	39.2	112	138	1	0.82
	145	20	1.1	0.6	51000	57000	5200	5800	16.6	6300	9000	26.7	112	138	1	0.826
	160	26	2	1	80000	81500	8150	8350	—	4300	5600	51.2	115	150	2	1.84
	160	26	2	1	88000	89500	9000	9100	15.9	6000	8500	30.7	115	150	2	1.82
	190	36	2.1	1.1	157000	142000	16000	14400	—	3800	5000	60.6	117	178	2	3.84
	190	36	2.1	1.1	142000	129000	14500	13100	—	2600	3600	79.9	117	178	2	3.92
	190	36	2.1	1.1	162000	143000	16600	14600	14.5	5300	7500	37.7	117	178	2	4.33
	225	49	3	1.1	208000	193000	21200	19700	—	2600	3600	72.1	119	211	2.5	9.34
	225	49	3	1.1	191000	177000	19400	18100	—	2400	3200	93.7	119	211	2.5	9.43
110	150	20	1.1	0.6	49000	56000	5000	5750	—	5300	7100	40.3	117	143	1	0.877
	150	20	1.1	0.6	52000	59500	5300	6050	16.7	6300	8500	27.4	117	143	1	0.867
	170	28	2	1	96500	95500	9850	9700	—	4000	5300	54.4	120	160	2	2.28
	170	28	2	1	106000	104000	10800	10600	15.6	5600	8000	32.7	120	160	2	2.26
	200	38	2.1	1.1	170000	158000	17300	16100	—	3600	4800	63.7	122	188	2	4.49
	200	38	2.1	1.1	154000	144000	15700	14700	—	2600	3400	84	122	188	2	4.58
	200	38	2.1	1.1	176000	160000	17900	16300	14.5	5000	7100	39.8	122	188	2	5.1
	240	50	3	1.1	220000	215000	22500	21900	—	2600	3400	75.5	124	226	2.5	1.1
	240	50	3	1.1	201000	197000	20500	20100	—	2200	3000	98.4	124	226	2.5	1.2
120	165	22	1.1	0.6	67000	77000	6900	7850	—	4800	6300	44.2	127	158	1	1.15
	165	22	1.1	0.6	72000	81000	7300	8300	16.5	5600	7500	30.1	127	158	1	1.15
	180	28	2	1	102000	107000	10400	10900	—	3600	5000	57.3	130	170	2	2.45
	215	40	2.1	1.1	183000	177000	18600	18100	—	3200	4500	68.3	132	203	2	6.22
	215	40	2.1	1.1	165000	162000	16900	16500	—	2400	3200	90.3	132	203	2	6.26
	260	55	3	1.1	246000	252000	25100	25700	—	2200	3000	82.3	134	246	2.5	4.5
	260	55	3	1.1	225000	231000	23000	23600	—	2000	2800	107.2	134	246	2.5	4.4





Dynamic Equivalent Load $P = XF_r + YF_a$

Contact Angle	$\frac{i f_0 F_a}{C_{0r}}$*	e	Single, DT				DB or DF			
			$F_a/F_r \leq e$		$F_a/F_r > e$		$F_a/F_r \leq e$		$F_a/F_r > e$	
			X	Y	X	Y	X	Y	X	Y
15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
	0.357	0.40	1	0	0.44	1.40	1	1.57	0.72	2.28
	0.714	0.43	1	0	0.44	1.30	1	1.46	0.72	2.11
	1.07	0.46	1	0	0.44	1.23	1	1.38	0.72	2.00
	1.43	0.47	1	0	0.44	1.19	1	1.34	0.72	1.93
	2.14	0.50	1	0	0.44	1.12	1	1.26	0.72	1.82
	3.57	0.55	1	0	0.44	1.02	1	1.14	0.72	1.66
	5.35	0.56	1	0	0.44	1.00	1	1.12	0.72	1.63
25°	—	0.68	1	0	0.41	0.87	1	0.92	0.67	1.41
30°	—	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	—	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

*For i, use 2 for DB, DF and 1 for DT

Static Equivalent Load $P_0 = X_0F_r + Y_0F_a$

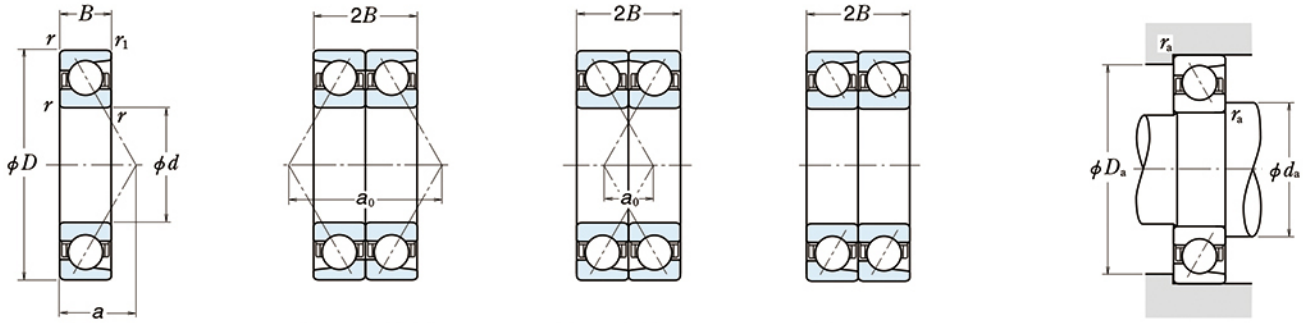
Contact Angle	Single, DT		DB or DF	
	X_0	Y_0	X_0	Y_0
15°	0.5	0.46	1	0.92
25°	0.5	0.38	1	0.76
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

Single or DT mounting
When $F_r > 0.5F_r + Y_0F_a$ use $P_0 = F_r$

Bearing Numbers (2)				Basic Load Ratings (Matched)				Limiting Speeds (1) (Matched)		Load Center Spacings (mm)		Abutment and Fillet Dimensions (mm)		
				(N)		{kgf}		(min–1)		a_0		d_b (3)	D_b	r_b (3)
Single	Duplex			C_r	C_{0r}	C_r	C_{0r}	Grease	Oil	DB	DF	min.	max.	max.
7020 C	DB	DF	DT	122000	154000	12500	15800	5300	7100	57.5	9.5	—	144	1
7220 A	DB	DF	DT	233000	251000	23800	25600	3200	4300	114.8	46.8	107	173	1
7220 B	DB	DF	DT	212000	229000	21600	23300	2200	3000	151.5	83.5	107	173	1
7220 C	DB	DF	DT	242000	254000	24700	25900	4500	6300	71.5	3.5	—	173	1
7320 A	DB	DF	DT	335000	385000	34500	39500	2200	3000	137.9	43.9	107	208	1
7320 B	DB	DF	DT	310000	355000	31500	36000	2000	2800	179.2	85.2	107	208	1
7921 AC	DB	DF	DT	78500	108000	8000	11000	4300	6000	78.3	38.3	—	140	0.6
7921 C	DB	DF	DT	83000	114000	8450	11600	5300	7100	53.5	13.5	—	140	0.6
7021 A	DB	DF	DT	130000	163000	13300	16700	3400	4500	102.5	50.5	—	154	1
7021 C	DB	DF	DT	143000	179000	14600	18200	4800	6700	61.5	9.5	—	154	1
7221 A	DB	DF	DT	254000	283000	25900	28900	3000	4000	121.2	49.2	112	183	1
7221 B	DB	DF	DT	231000	258000	23500	26300	2200	3000	159.8	87.8	112	183	1
7221 C	DB	DF	DT	264000	286000	26900	29100	4300	6000	75.5	3.5	—	183	1
7321 A	DB	DF	DT	335000	385000	34500	39500	2200	2800	144.3	46.3	—	218	1
7321 B	DB	DF	DT	310000	355000	31500	36000	1900	2600	187.4	89.4	—	218	1
7922 AC	DB	DF	DT	79500	112000	8100	11500	4300	5600	80.6	40.6	—	145	0.6
7922 C	DB	DF	DT	84500	119000	8600	12100	5000	6700	54.8	14.8	—	145	0.6
7022 A	DB	DF	DT	157000	191000	16000	19400	3200	4300	108.8	52.8	—	164	1
7022 C	DB	DF	DT	172000	208000	17600	21200	4500	6300	65.5	9.5	—	164	1
7222 A	DB	DF	DT	276000	315000	28100	32500	2800	4000	127.5	51.5	117	193	1
7222 B	DB	DF	DT	250000	289000	25500	29400	2000	2800	168.1	92.1	117	193	1
7222 C	DB	DF	DT	286000	320000	29200	32500	4000	5600	79.5	3.5	—	193	1
7322 A	DB	DF	DT	360000	430000	36500	44000	2000	2600	151	51	—	233	1
7322 B	DB	DF	DT	325000	395000	33500	40000	1800	2400	196.8	96.8	—	233	1
7924 AC	DB	DF	DT	110000	154000	11200	15700	3800	5300	88.5	44.5	—	160	0.6
7924 C	DB	DF	DT	117000	162000	11900	16600	4500	6300	60.2	16.2	—	160	0.6
7024 A	DB	DF	DT	166000	213000	16900	21700	3000	4000	114.6	58.6	—	174	1
7224 A	DB	DF	DT	297000	355000	30500	36000	2600	3600	136.7	56.7	—	208	1
7224 B	DB	DF	DT	269000	325000	27400	33000	1900	2600	180.5	100.5	—	208	1
7324 A	DB	DF	DT	400000	505000	41000	51500	1800	2400	164.7	54.7	—	253	1
7324 B	DB	DF	DT	365000	460000	37500	47000	1600	2200	214.4	104.4	—	253	1

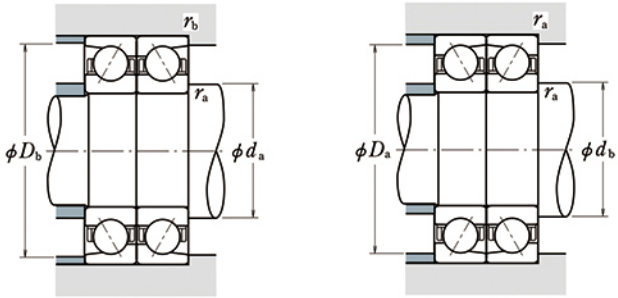
ANGULAR CONTACT BALL BEARINGS

SINGLE/MATCHED MOUNTINGS
Bore Diameter 130-170mm



Single | Back-to-Back DB | Face-to-Face DF | Tandem DT

Boundary Dimensions					Basic Load Ratings (Single)				Factor	Limiting Speeds (1)		Eff.Load Centers (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)					(N)		{kgf}			(min–1)		a	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	$r1_{min}$	C_r	C_{0r}	C_r	C_{0r}	f_0	Grease	Oil		min.	max.	max.	approx.
130	180	24	1.5	1	74000	86000	7550	8750	—	4300	6000	48.1	139	171	1.5	1.54
	180	24	1.5	1	78500	91000	8000	9250	16.5	5000	7100	32.8	139	171	1.5	1.5
	200	33	2	1	117000	125000	12000	12800	—	3400	4500	64.1	140	190	2	3.68
	230	40	3	1.1	189000	193000	19300	19600	—	2400	3200	72	144	216	2.5	7.06
	230	40	3	1.1	171000	175000	17400	17800	—	2200	3000	95.5	144	216	2.5	7.1
	280	58	4	1.5	273000	293000	27900	29800	—	2200	2800	88.2	148	262	3	17.5
	280	58	4	1.5	250000	268000	25500	27400	—	1900	2600	115	148	262	3	17.6
140	190	24	1.5	1	75000	90000	7650	9200	—	4000	5600	50.5	149	181	1.5	1.63
	190	24	1.5	1	79500	95500	8100	9700	16.7	4800	6700	34.1	149	181	1.5	1.63
	210	33	2	1	120000	133000	12200	13500	—	3200	4300	67	150	200	2	3.9
	250	42	3	1.1	218000	234000	22300	23900	—	2200	3000	77.3	154	236	2.5	8.92
	250	42	3	1.1	197000	213000	20100	21700	—	2000	2800	102.8	154	236	2.5	8.94
	300	62	4	1.5	300000	335000	30500	34500	—	2000	2600	94.5	158	282	3	21.4
	300	62	4	1.5	275000	310000	28100	31500	—	1700	2400	123.3	158	282	3	21.6
150	210	28	2	1	96000	115000	9850	11800	—	3800	5000	56	160	200	2	2.97
	210	28	2	1	102000	122000	10400	12400	16.6	4300	6000	38.1	160	200	2	2.96
	225	35	2.1	1.1	137000	154000	14000	15700	—	2400	3000	71.6	162	213	2	4.75
	270	45	3	1.1	248000	280000	25300	28500	—	2000	2800	83.1	164	256	2.5	11.2
	270	45	3	1.1	225000	254000	22900	25900	—	1800	2600	110.6	164	256	2.5	11.2
	320	65	4	1.5	315000	370000	32500	38000	—	1800	2400	100.3	168	302	3	26
	320	65	4	1.5	289000	340000	29400	34500	—	1600	2200	131.1	168	302	3	25.9
160	220	28	2	1	106000	133000	10800	13500	16.7	3800	5000	39.4	170	210	2	3.1
	240	38	2.1	1.1	155000	176000	15800	18000	—	2200	2800	76.7	172	228	2	5.77
	290	48	3	1.1	263000	305000	26800	31500	—	1900	2600	89	174	276	2.5	14.1
	290	48	3	1.1	238000	279000	24200	28400	—	1700	2400	118.4	174	276	2.5	14.2
	340	68	4	1.5	345000	420000	35500	43000	—	1700	2200	106.2	178	322	3	30.7
	340	68	4	1.5	315000	385000	32000	39500	—	1500	2000	138.9	178	322	3	30.8
170	230	28	2	1	113000	148000	11500	15100	16.8	3600	4800	40.8	180	220	2	3.36
	260	42	2.1	1.1	186000	214000	19000	21900	—	2000	2600	83.1	182	248	2	7.9
	310	52	4	1.5	295000	360000	30000	36500	—	1800	2400	95.3	188	292	3	17.3
	310	52	4	1.5	266000	325000	27200	33000	—	1600	2200	126.7	188	292	3	17.6
	360	72	4	1.5	390000	485000	39500	49500	—	1600	2200	112.5	188	342	3	35.8
	360	72	4	1.5	355000	445000	36000	45500	—	1400	2000	147.2	188	342	3	35.6



Dynamic Equivalent Load $P = XF_r + YF_a$

Contact Angle	$\frac{i f_0 F_a}{C_{or}}$*	e	Single, DT				DB or DF			
			$F_a/F_r \leq e$		$F_a/F_r > e$		$F_a/F_r \leq e$		$F_a/F_r > e$	
			X	Y	X	Y	X	Y	X	Y
15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
	0.357	0.40	1	0	0.44	1.40	1	1.57	0.72	2.28
	0.714	0.43	1	0	0.44	1.30	1	1.46	0.72	2.11
	1.07	0.46	1	0	0.44	1.23	1	1.38	0.72	2.00
	1.43	0.47	1	0	0.44	1.19	1	1.34	0.72	1.93
	2.14	0.50	1	0	0.44	1.12	1	1.26	0.72	1.82
	3.57	0.55	1	0	0.44	1.02	1	1.14	0.72	1.66
	5.35	0.56	1	0	0.44	1.00	1	1.12	0.72	1.63
25°	—	0.68	1	0	0.41	0.87	1	0.92	0.67	1.41
30°	—	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	—	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

*For i, use 2 for DB, DF and 1 for DT

Static Equivalent Load $P_0 = X_0F_r + Y_0F_a$

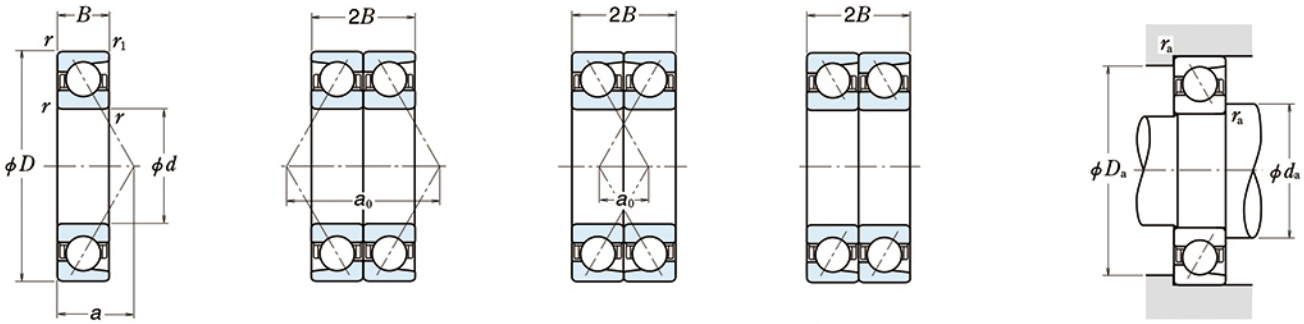
Contact Angle	Single, DT		DB or DF	
	X_0	Y_0	X_0	Y_0
15°	0.5	0.46	1	0.92
25°	0.5	0.38	1	0.76
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

Single or DT mounting
When $F_r > 0.5F_r + Y_0F_a$ use $P_0 = F_r$

Bearing Numbers (2)				Basic Load Ratings (Matched)				Limiting Speeds (1) (Matched)		Load Center Spacings (mm)		Abutment and Fillet Dimensions (mm)		
				(N)		{kgf}		(min–1)		a_0		d_b (3)	D_b	r_b (3)
Single	Duplex			C_r	C_{0r}	C_r	C_{0r}	Grease	Oil	DB	DF	min.	max.	max.
7926 AC	DB	DF	DT	120000	172000	12300	17500	3400	4800	96.3	48.3	—	174	1
7926 C	DB	DF	DT	128000	182000	13000	18500	4000	5600	65.5	17.5	—	174	1
7026 A	DB	DF	DT	191000	251000	19400	25600	2600	3600	128.3	62.3	—	194	1
7226 A	DB	DF	DT	310000	385000	31500	39500	1900	2600	143.9	63.9	—	223	1
7226 B	DB	DF	DT	278000	350000	28300	35500	1700	2400	191	111	—	223	1
7326 A	DB	DF	DT	445000	585000	45500	59500	1700	2200	176.3	60.3	—	271	1.5
7326 B	DB	DF	DT	405000	535000	41500	54500	1500	2000	230	114	—	271	1.5
7928 AC	DB	DF	DT	122000	180000	12400	18400	3200	4500	100.9	52.9	—	184	1
7928 C	DB	DF	DT	129000	191000	13200	19400	3800	5300	68.2	20.2	—	184	1
7028 A	DB	DF	DT	194000	265000	19800	27000	2600	3400	134	68	—	204	1
7228 A	DB	DF	DT	355000	470000	36000	48000	1800	2400	154.6	70.6	—	243	1
7228 B	DB	DF	DT	320000	425000	32500	43500	1600	2200	205.6	121.6	—	243	1
7328 A	DB	DF	DT	490000	670000	50000	68500	1600	2000	189	65	—	291	1.5
7328 B	DB	DF	DT	445000	615000	45500	63000	1400	1900	246.6	122.6	—	291	1.5
7930 AC	DB	DF	DT	157000	231000	16000	23500	3000	4000	112	56	—	204	1
7930 C	DB	DF	DT	166000	244000	16900	24900	3600	4800	76.2	20.2	—	204	1
7030 A	DB	DF	DT	222000	305000	22700	31500	1900	2400	143.3	73.3	—	218	1
7230 A	DB	DF	DT	405000	560000	41000	57000	1600	2200	166.3	76.3	—	263	1
7230 B	DB	DF	DT	365000	510000	37000	52000	1500	2000	221.2	131.2	—	263	1
7330 A	DB	DF	DT	515000	745000	52500	75500	1500	1900	200.7	70.7	—	311	1.5
7330 B	DB	DF	DT	470000	680000	48000	69500	1300	1800	262.2	132.2	—	311	1.5
7932 C	DB	DF	DT	173000	265000	17600	27000	3000	4000	78.9	22.9	—	214	1
7032 A	DB	DF	DT	252000	355000	25700	36000	1700	2400	153.5	77.5	—	233	1
7232 A	DB	DF	DT	425000	615000	43500	62500	1500	2000	177.9	81.9	—	283	1
7232 B	DB	DF	DT	385000	555000	39500	57000	1400	1900	236.8	140.8	—	283	1
7332 A	DB	DF	DT	565000	845000	57500	86000	1400	1800	212.3	76.3	—	331	1.5
7332 B	DB	DF	DT	515000	770000	52500	78500	1200	1700	277.8	141.8	—	331	1.5
7934 C	DB	DF	DT	183000	297000	18700	30000	2800	3800	81.6	25.6	—	224	1
7034 A	DB	DF	DT	300000	430000	31000	43500	1600	2200	166.1	82.1	—	253	1
7234 A	DB	DF	DT	480000	715000	49000	73000	1400	1900	190.6	86.6	—	301	1.5
7234 B	DB	DF	DT	435000	650000	44000	66500	1300	1700	253.4	149.4	—	301	1.5
7334 A	DB	DF	DT	630000	970000	64500	99000	1300	1700	225	81	—	351	1.5
7334 B	DB	DF	DT	575000	890000	59000	90500	1100	1600	294.3	150.3	—	351	1.5

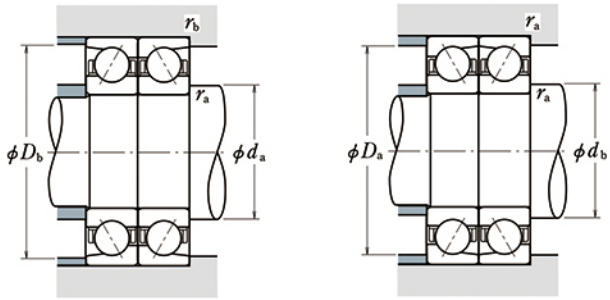
ANGULAR CONTACT BALL BEARINGS

SINGLE/MATCHED MOUNTINGS
Bore Diameter 180-200mm



Single | Back-to-Back DB | Face-to-Face DF | Tandem DT

Boundary Dimensions					Basic Load Ratings (Single)				Factor	Limiting Speeds (1)		Eff.Load Centers (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)					(N)		{kgf}			(min–1)		a	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	$r1_{min}$	C_r	C_{0r}	C_r	C_{0r}	f_0	Grease	Oil		min.	max.	max.	approx.
180	250	33	2	1	145000	184000	14800	18800	16.6	3200	4500	45.3	190	240	2	4.9
	280	46	2.1	1.1	207000	252000	21100	25700	—	1900	2400	89.4	192	268	2	10.5
	320	52	4	1.5	305000	385000	31000	39000	—	1700	2200	98.2	198	302	3	18.1
	320	52	4	1.5	276000	350000	28100	35500	—	1500	2000	130.9	198	302	3	18.4
	380	75	4	1.5	410000	535000	41500	54500	—	1500	2000	118.3	198	362	3	42.1
	380	75	4	1.5	375000	490000	38000	50000	—	1300	1800	155	198	362	3	42.6
190	260	33	2	1	147000	192000	15000	19600	16.7	3000	4300	46.6	200	250	2	4.98
	290	46	2.1	1.1	224000	280000	22800	28600	—	1800	2400	92.3	202	278	2	11.3
	340	55	4	1.5	315000	410000	32000	42000	—	1600	2200	104	208	322	3	22.4
	340	55	4	1.5	284000	375000	28900	38000	—	1400	2000	138.7	208	322	3	22.5
	400	78	5	2	450000	600000	46000	61000	—	1400	1900	124.2	212	378	4	47.5
	400	78	5	2	410000	550000	42000	56000	—	1300	1700	162.8	212	378	4	47.2
200	280	38	2.1	1.1	189000	244000	19300	24900	16.5	2800	4000	51.2	212	268	2	6.85
	310	51	2.1	1.1	240000	310000	24500	31500	—	1700	2200	99.1	212	298	2	13.7
	360	58	4	1.5	335000	450000	34500	46000	—	1500	2000	109.8	218	342	3	26.5
	360	58	4	1.5	305000	410000	31000	41500	—	1300	1800	146.5	218	342	3	26.6
	420	80	5	2	475000	660000	48500	67000	—	1300	1800	129.5	222	398	4	54.4
	420	80	5	2	430000	600000	44000	61500	—	1200	1600	170.1	222	398	4	55.3



Dynamic Equivalent Load $P = XF_r + YF_a$

Contact Angle	$\frac{if_0F_a}{C_{or}}$*	e	Single, DT				DB or DF			
			$F_a/F_r \leq e$		$F_a/F_r > e$		$F_a/F_r \leq e$		$F_a/F_r > e$	
			X	Y	X	Y	X	Y	X	Y
15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
	0.357	0.40	1	0	0.44	1.40	1	1.57	0.72	2.28
	0.714	0.43	1	0	0.44	1.30	1	1.46	0.72	2.11
	1.07	0.46	1	0	0.44	1.23	1	1.38	0.72	2.00
	1.43	0.47	1	0	0.44	1.19	1	1.34	0.72	1.93
	2.14	0.50	1	0	0.44	1.12	1	1.26	0.72	1.82
	3.57	0.55	1	0	0.44	1.02	1	1.14	0.72	1.66
	5.35	0.56	1	0	0.44	1.00	1	1.12	0.72	1.63
25°	—	0.68	1	0	0.41	0.87	1	0.92	0.67	1.41
30°	—	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	—	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

*For i, use 2 for DB, DF and 1 for DT

Static Equivalent Load $P_0 = X_0F_r + Y_0F_a$

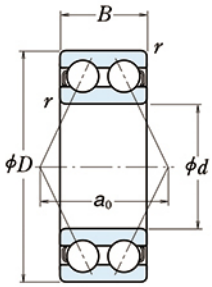
Contact Angle	Single, DT		DB or DF	
	X_0	Y_0	X_0	Y_0
15°	0.5	0.46	1	0.92
25°	0.5	0.38	1	0.76
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

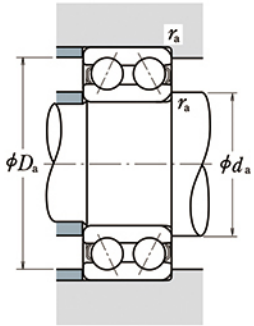
Single or DT mounting When $F_r > 0.5F_r + Y_0F_a$ use $P_0 = F_r$

Bearing Numbers (2)				Basic Load Ratings (Matched)				Limiting Speeds (1) (Matched)		Load Center Spacings (mm)		Abutment and Fillet Dimensions (mm)		
				(N)		{kgf}		(min–1)		a_0		d_b (3)	D_b	r_b (3)
Single	Duplex			C_r	C_{0r}	C_r	C_{0r}	Grease	Oil	DB	DF	min.	max.	max.
7936 C	DB	DF	DT	236000	370000	24000	37500	2600	3600	90.6	24.6	—	244	1
7036 A	DB	DF	DT	335000	505000	34500	51500	1500	2000	178.8	86.8	—	273	1
7236 A	DB	DF	DT	495000	770000	50500	78500	1400	1800	196.3	92.3	—	311	1.5
7236 B	DB	DF	DT	450000	700000	45500	71000	1200	1700	261.8	157.8	—	311	1.5
7336 A	DB	DF	DT	665000	1070000	68000	109000	1200	1600	236.6	86.6	—	371	1.5
7336 B	DB	DF	DT	605000	975000	62000	99500	1100	1500	309.9	159.9	—	371	1.5
7938 C	DB	DF	DT	239000	385000	24400	39000	2400	3400	93.3	27.3	—	254	1
7038 A	DB	DF	DT	36500	560000	37000	57000	1400	1900	184.6	92.6	—	283	1
7238 A	DB	DF	DT	510000	825000	52000	84000	1300	1700	208	98	—	331	1.5
7238 B	DB	DF	DT	460000	750000	47000	76000	1100	1600	277.3	167.3	—	331	1.5
7338 A	DB	DF	DT	730000	1200000	745000	122000	1100	1500	248.3	92.3	—	390	2
7338 B	DB	DF	DT	670000	1100000	68000	112000	1000	1400	325.5	169.5	—	390	2
7940 C	DB	DF	DT	305000	490000	31500	50000	2200	3200	102.3	26.3	—	273	1
7040 A	DB	DF	DT	390000	620000	40000	63500	1300	1800	198.2	96.2	—	303	1
7240 A	DB	DF	DT	550000	900000	56000	92000	1200	1600	219.6	103.6	—	351	1.5
7240 B	DB	DF	DT	495000	815000	50500	83000	1100	1500	292.9	176.9	—	351	1.5
7340 A	DB	DF	DT	770000	1320000	78500	134000	1100	1400	259	99	—	410	2
7340 B	DB	DF	DT	700000	1200000	71500	123000	950	1300	340.1	180.1	—	410	2

Double-Row Angular Contact Ball Bearing

30xx, 38xx series





Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leq e$		$F_a/F_r > e$		e
X	Y	X	Y	
1	0.92	0.67	1.41	0.68

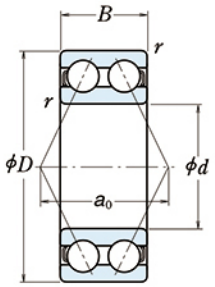
Static Equivalent Load

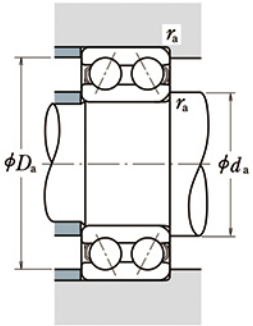
$P_0 = F_r + 0.76\,F_a$

Boundary Dimensions			Basic Load Ratings				Limiting Speeds		Bearing Numbers	Mass
(mm)			(N)		{kgf}		(min–1)			(kg)
d	D	B	C_r	C_{0r}	C_r	C_{0r}	Grease	Oil		approx.
10	26	12	5500	3200	560	325	18000	23000	**3000**	0.02
12	28	12	6100	3700	620	375	17000	22000	**3001**	0.02
15	32	13	8500	5400	865	550	14500	18000	**3002**	0.03
17	35	14	9000	6000	920	610	12500	16000	**3003**	0.04
20	32	10	4900	3900	500	400	13000	14300	**3804**	0.02
	37	13	9300	6600	950	675	12000	13200	**3904**	0.04
	42	16	14200	9600	1450	980	11000	13000	**3004**	0.08
25	37	10	5500	4900	560	500	11500	12700	**3805**	0.02
	42	13	9600	7500	980	765	1100	12300	**3905**	0.06
	47	16	15200	11000	1550	1120	9500	12000	**3005**	0.11
30	42	10	5700	5600	580	570	10000	11500	**3806**	0.03
	47	13	9900	8300	1010	845	9500	10500	**3906**	0.09
	55	19	20300	15500	2070	1580	8000	10000	**3006**	0.16
35	47	10	6100	6200	625	635	8500	10000	**3807**	0.03
	55	15	12900	11300	1320	1150	8000	9500	**3907**	0.13
	62	20	24200	20400	2470	2080	6500	8500	**3007**	0.24
40	52	10	6400	6900	650	700	7000	8500	**3808**	0.04
	62	16	17400	15800	1770	1600	6500	8000	**3908**	0.15
	68	21	24500	20800	2500	2150	6000	7800	**3008**	0.27
45	58	10	6700	7700	685	785	6300	7000	**3809**	0.05
	68	16	17900	17200	1820	1750	6000	6800	**3909**	0.18
	75	23	39300	36400	4000	3700	5600	6200	**3009**	0.36
50	65	12	7000	8400	710	850	6000	7500	**3810**	0.07
	72	16	19100	19600	1950	2000	5800	7200	**3910**	0.18
	80	23	42300	41900	4300	4270	5300	6600	**3010**	0.39
55	72	13	12800	14400	1300	1450	5500	6500	**3811**	0.11
	80	19	20000	21700	2040	2200	5300	6200	**3911**	0.28
	990	26	43700	44700	4450	4560	4800	5800	**3011**	0.58
60	78	14	13600	16200	1390	1650	5000	5500	**3812**	0.14
	85	19	21000	23800	2150	2400	4800	5300	**5312**	0.31
	95	26	47200	53400	4800	5450	4400	5000	**3012**	0.62
65	85	15	15100	18300	1540	1850	4700	5200	**3813**	0.18
	90	19	21400	24800	2180	2500	4500	5000	**3913**	0.32
	100	26	49500	59200	5050	6050	4000	4800	**3013**	0.66

Double-Row Angular Contact Ball Bearing

Bore Diameter 10-85mm





Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leqq e$		$F_a/F_r > e$		e
X	Y	X	Y	
1	0.92	0.67	1.41	0.68

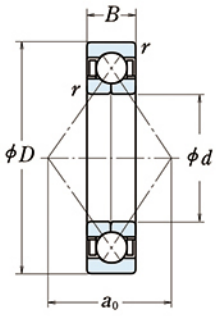
Static Equivalent Load

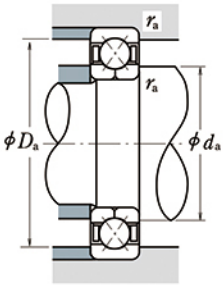
$P_0 = F_r + 0.76\,F_a$

Boundary Dimensions				Basic Load Ratings				Limiting Speeds		Bearing Numbers	Load Center Spacings (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)				(N)		{kgf}		(min–1)			a_0	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	Grease	Oil			min.	max.	max.	approx.
10	30	14.3	0.6	7150	3900	730	400	17000	22000	**5200**	14.5	15	25	0.6	0.05
12	32	15.9	0.6	10500	5800	1070	590	15000	20000	**5201**	16.7	17	27	0.6	0.06
15	35	15.9	0.6	11700	7050	1190	715	13000	17000	**5202**	18.3	20	30	0.6	0.07
	42	19	1	17600	10200	1800	1040	11000	15000	**5302**	22	21	36	1	0.11
17	40	17.5	0.6	14600	9050	1490	920	11000	15000	**5203**	20.8	22	35	0.6	0.09
	47	22.2	1	21000	12600	2140	1280	10000	13000	**5303**	25	23	41	1	0.14
20	47	20.6	1	19600	12400	2000	1270	10000	13000	**5204**	24.3	26	41	1	0.12
	52	22.2	1.1	24600	15000	2510	1530	9000	12000	**5304**	26.7	27	45	1	0.23
25	52	20.6	1	21300	14700	2170	1500	8500	11000	**5205**	26.8	31	46	1	0.19
	62	25.4	1.1	32500	20700	3350	2110	7500	10000	**5305**	31.8	32	55	1	0.34
30	62	23.8	1	29600	21100	3000	2150	7100	9500	**5206**	31.6	36	56	1	0.29
	72	30.2	1.1	40500	28100	4150	2870	6300	8500	**5306**	36.5	37	65	1	0.51
35	72	27	1.1	39000	28700	4000	2920	6300	8000	**5207**	36.6	42	65	1	0.43
	80	34.9	1.5	51000	36000	5200	3700	5600	7500	**5307**	41.6	44	71	1.5	0.79
40	80	30.2	1.1	44000	33500	4500	3400	5600	7100	**5208**	41.5	47	73	1	0.57
	90	36.5	1.5	56500	41000	5800	4200	5300	6700	**5308**	45.5	49	81	1.5	1.05
45	85	30.2	1.1	49500	38000	5050	3900	5000	6700	**5209**	43.4	52	78	1	0.62
	100	39.7	1.5	68500	51000	7000	5200	4500	6000	**5309**	50.6	54	91	1.5	1.4
50	90	30.2	1.1	53000	43500	5400	4400	4800	6000	**5210**	45.9	57	83	1	0.67
	110	44.4	2	81500	61500	8300	6250	4300	5600	**5310**	55.6	60	100	2	1.95
55	100	33.3	1.5	56000	49000	5700	5000	4300	5600	**5211**	50.1	64	91	1.5	0.96
	120	49.2	2	95000	73000	9700	7450	3800	5000	**5311**	60.6	65	110	2	2.3
60	110	36.5	1.5	69000	62000	7050	6300	3800	5000	**5212**	56.5	69	101	1.5	1.35
	130	54	2.1	125000	98500	12800	10000	3400	4500	**5312**	69.2	72	118	2	3.15
65	120	38.1	1.5	76500	69000	7800	7050	3600	4500	**5213**	59.7	74	111	1.5	1.65
	140	58.7	2.1	142000	113000	14500	11500	3200	4300	**5313**	72.8	77	128	2	3.85
70	125	39.7	1.5	94000	82000	9600	8400	3400	4500	**5214**	63.8	79	116	1.5	1.8
	150	63.5	2.1	159000	128000	16200	13100	3000	3800	**5314**	78.3	82	138	2	4.9
75	130	41.3	1.5	93500	83000	9550	8500	3200	4300	**5215**	66.1	84	121	1.5	1.9
80	140	44.4	2	99000	93000	10100	9500	3000	3800	**5216**	69.6	90	130	2	2.5
85	150	49.2	2	116000	110000	11800	11200	2800	3600	**5217**	75.3	95	140	2	3.4

FOUR-POINT CONTACT BALL BEARINGS

Bore Diameter 30-95mm





Dynamic Equivalent Load

$P_a = F_a$

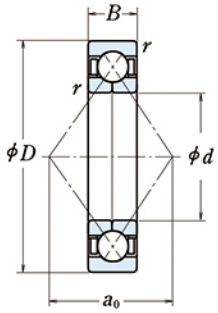
Static Equivalent Load

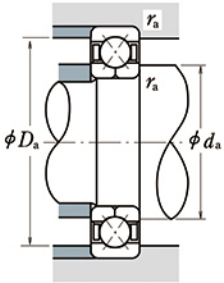
$P_{0a} = F_a$

Boundary Dimensions				Basic Load Ratings				Limiting Speeds		Bearing Numbers	Load Center Spacings (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)				(N)		{kgf}		(min–1)			a_0	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	Grease	Oil			min.	max.	max.	approx.
10	62	16	1	31000	45000	3150	4600	8500	12000	**QJ206**	32.2	36	56	1	0.24
12	72	19	1.1	46000	63000	4700	6450	8000	11000	**QJ306**	35.7	37	65	1	0.42
15	72	17	1.1	41000	61500	4200	6250	7500	10000	**QJ207**	37.5	42	65	1	0.35
	80	21	1.5	55000	80000	5600	8150	7100	9500	**QJ307**	40.3	44	71	1.5	0.57
17	80	18	1.1	49000	77500	5000	7900	6700	9000	**QJ208**	42	47	73	1	0.45
	90	23	1.5	67000	100000	6850	10200	6300	8500	**QJ308**	45.5	49	81	1.5	0.78
20	85	19	1.1	55000	88500	5600	9000	6300	8500	**QJ209**	45.5	52	78	1	0.52
	100	25	1.5	87500	133000	8900	13500	5600	7500	**QJ309**	50.8	54	91	1.5	1.05
25	90	20	1.1	57000	97000	5850	9900	5600	8000	**QJ210**	49	57	83	1	0.59
	110	27	2	102000	159000	10400	16200	5000	6700	**QJ310**	56	60	100	2	1.35
30	100	21	1.5	71000	122000	7200	12500	5300	7100	**QJ211**	54.3	64	91	1.5	0.77
	120	29	2	118000	187000	12000	19100	4500	6300	**QJ311**	61.3	65	110	2	1.75
35	110	22	1.5	85500	150000	8750	15300	4800	6300	**QJ212**	59.5	69	101	1.5	0.98
	130	31	2.1	135000	217000	13800	22200	4300	5600	**QJ312**	66.5	72	118	2	2.15
40	120	23	1.5	97500	179000	9950	18300	4300	6000	**QJ213**	64.8	74	111	1.5	1.2
	140	33	2.1	153000	250000	15600	25500	3800	5300	**QJ313**	71.8	77	128	2	2.7
45	125	24	1.5	106000	197000	10800	20100	4000	5600	**QJ214**	68.3	79	116	1.5	1.3
	150	35	2.1	172000	285000	17500	29100	3600	5000	**QJ314**	77	82	138	2	3.18
50	130	25	1.5	110000	212000	11200	21700	3800	5300	**QJ215**	71.8	84	121	1.5	1.5
	160	37	2.1	187000	320000	19100	33000	3400	4800	**QJ315**	82.3	87	148	2	3.9
55	125	22	1.1	77000	167000	7850	17000	3800	5300	**QJ 1016**	71.8	87	118	1	1.05
	140	26	2	124000	236000	12600	24100	3600	5000	**QJ216**	77	90	130	2	1.85
60	170	39	2.1	202000	360000	20600	37000	3200	4300	**QJ316**	87.5	92	158	2	4.6
	130	22	1.1	79000	176000	8050	18000	3800	5000	**QJ 1017**	75.3	92	123	1	1.1
65	150	28	2	143000	276000	14600	28200	3400	4800	**QJ217**	82.3	95	140	2	2.2
	180	41	3	218000	405000	22300	41000	3000	4000	**QJ317**	92.8	99	166	2.5	5.34
70	140	24	1.5	94000	208000	9600	21200	3400	4800	**QJ 1018**	80.5	99	131	1.5	1.45
	160	30	2	164000	320000	16700	32500	3200	4300	**QJ218**	87.5	100	150	2	2.75
75	190	43	3	235000	450000	23900	45500	2800	3800	**QJ318**	98	104	176	2.5	6.4
80	145	24	1.5	96500	220000	9800	22500	3400	4500	**QJ 1019**	84	104	136	1.5	1.5
85	170	32	2.1	177000	340000	18000	35000	3000	4000	**QJ219**	92.8	107	158	2	3.35
	200	45	3	251000	495000	25600	50500	2600	3600	**QJ319**	103.3	109	186	2.5	7.4

FOUR-POINT CONTACT BALL BEARINGS

Bore Diameter 100-200mm





Dynamic Equivalent Load

$P_a = F_a$

Static Equivalent Load

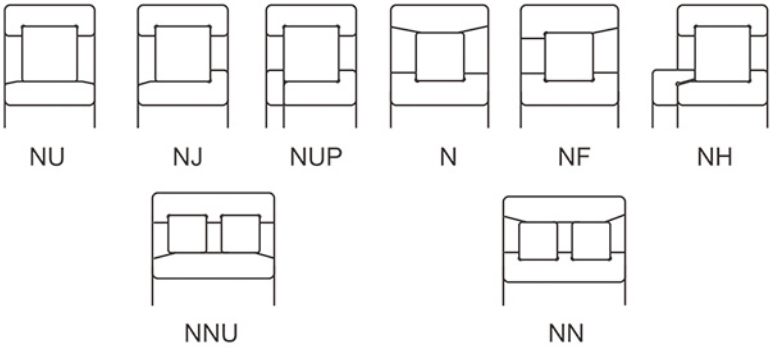
$P_{0a} = F_a$

Boundary Dimensions				Basic Load Ratings				Limiting Speeds		Bearing Numbers	Load Center Spacings (mm)	Abutment and Fillet Dimensions (mm)			Mass
(mm)				(N)		{kgf}		(min–1)			a_0	d_a	D_a	r_a	(kg)
d	D	B	r_{min}	C_r	C_{0r}	C_r	C_{0r}	Grease	Oil			min.	max.	max.	approx.
100	150	24	1.5	98500	232000	10000	23700	3200	4300	**QJ 1020**	87.5	109	141	1.5	1.6
	180	34	2.1	199000	390000	20300	39500	2800	3800	**QJ220**	98	112	168	2	4
	215	47	3	300000	640000	31000	65500	2400	3400	**QJ320**	110.3	114	201	2.5	9.3
105	160	26	2	115000	269000	11800	27400	3000	4000	**QJ 1021**	92.8	115	150	2	2
	190	36	2.1	217000	435000	22100	44500	2600	3600	**QJ221**	103.3	117	178	2	4.7
	225	49	3	305000	640000	31000	65500	2400	3200	**QJ321**	115.5	119	211	2.5	10.5
110	170	28	2	139000	315000	14200	32000	2800	3800	**QJ 1022**	98	120	160	2	2.5
	200	38	2.1	235000	490000	24000	50000	2600	3400	**QJ222**	108.5	122	188	2	5.6
	240	50	3	320000	710000	32500	72500	2200	3000	**QJ322**	122.5	124	226	2.5	12.5
120	180	28	2	147000	350000	15000	36000	2600	3600	**QJ 1024**	105	130	170	2	2.65
	215	40	2.1	265000	585000	27000	60000	2400	3200	**QJ224**	117.3	132	203	2	6.9
	260	55	3	360000	835000	36500	85500	2000	2800	**QJ324**	133	134	246	2.5	15.4
130	200	33	2	169000	415000	17300	42000	2400	3200	**QJ 1026**	115.5	140	190	2	4
	230	40	3	274000	635000	28000	65000	2200	3000	**QJ226**	126	144	216	2.5	7.7
	280	58	4	400000	970000	40500	99000	1900	2600	**QJ326**	143.5	148	262	3	19
140	210	33	2	172000	435000	17600	44500	2200	3000	**QJ 1028**	122.5	150	200	2	4.3
	250	42	3	239000	710000	29900	72500	2000	2800	**QJ228**	136.5	154	236	2.5	9.8
	300	62	4	440000	1110000	44500	114000	1700	2400	**QJ328**	154	158	282	3	24
150	225	35	2.1	197000	505000	20100	51500	2000	2800	**QJ 1030**	131.3	162	213	2	5.2
	270	45	3	315000	785000	32000	80000	1800	2600	**QJ230**	147	164	256	2.5	12
	320	65	4	460000	1230000	47000	125000	1600	2200	**QJ330**	164.5	168	302	3	29
160	240	38	2.1	224000	580000	22800	59000	1900	2600	**QJ 1032**	140	172	228	2	6.4
	290	48	3	380000	1010000	39000	103000	1700	2400	**QJ232**	157.5	174	276	2.5	15
	340	68	4	505000	1400000	51500	143000	1500	2000	**QJ332**	175.1	178	322	3	31
170	260	42	2.1	268000	705000	27300	72000	1800	2400	**QJ 1034**	150.5	182	248	2	8.6
	310	52	4	425000	1180000	43500	121000	1600	2200	**QJ234**	168	188	292	3	19.5
	360	72	4	565000	1610000	57500	164000	1400	2000	**QJ334**	185.6	188	342	3	41
180	280	46	2.1	299000	830000	30500	84500	1700	2200	**QJ 1036**	161	192	268	2	11
	320	52	4	440000	1270000	45000	130000	1500	2000	**QJ236**	175.1	198	302	3	20.5
	380	75	4	595000	1770000	60500	180000	1300	1800	**QJ336**	196.1	198	362	3	48
190	290	46	2.1	325000	925000	33000	94000	1600	2200	**QJ 1038**	168	202	278	2	11.5
	340	55	4	440000	1290000	44500	131000	1400	2000	**QJ238**	185.6	208	322	3	23
	400	78	5	655000	1980000	67000	202000	1300	1700	**QJ338**	206.6	212	378	4	54.5
200	310	51	2.1	345000	1020000	35500	104000	1500	2000	**QJ 1040**	178.6	212	298	2	15
	360	58	4	490000	1480000	49500	151000	1300	1800	**QJ240**	196.1	218	342	3	27
	420	80	5	690000	2180000	70500	222000	1200	1600	**QJ340**	217.1	222	398	4	61.5

Cylindrical Roller Bearing

SYBR CYLINDRICAL ROLLER BEARINGS DESIGN, TYPES, AND FEATURES

Depending on the existence of ribs on their rings, Cylindrical Roller Bearings are classified into the following types.



Types NU, N, NNU, and NN are suitable as free-end bearings. Types NJ and NF can sustain limited axial loads in one direction. Types NH and NUP can be used as fixed-end bearings.

NH-type cylindrical roller bearings consist of the NJ-type cylindrical roller bearings and HJ-type L-shaped thrust collars

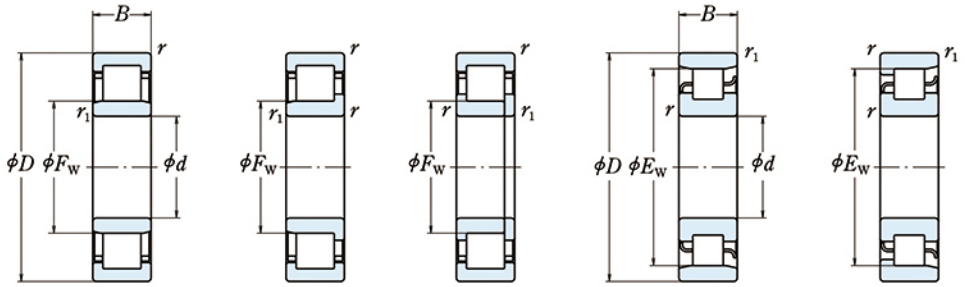
The inner ring loose rib of a NUP-type cylindrical roller bearing should be mounted so that the marked side is on the outside.

Standard Cages for Cylindrical Roller Bearings

Series	Pressed Steel Cages(W)	Machined Brass Cages (M)	Molded Polyamide Cages (T)
NJ10**	—	1005 – 10/500	—
N2**	204 – 230	232 – 264	—
NU2**	214 – 230	232 – 264	—
NU2**E	205E – 213E	214E – 240E	204E
NU22**	2204 – 2230	2232 – 2252	—
NU22**E	—	2222E – 2240E	2204E – 2220E
N3**	304 – 324	326 – 352	—
NU3**	312 – 330	332 – 352	—
NU3**E	305E – 311E	312E – 340E	304E
NU3**E	2304 – 2320	2322 – 2340	—
NU23**E	—	2322E – 2340E	2304E – 2320E
NU4**	405 – 416	417 – 430	—

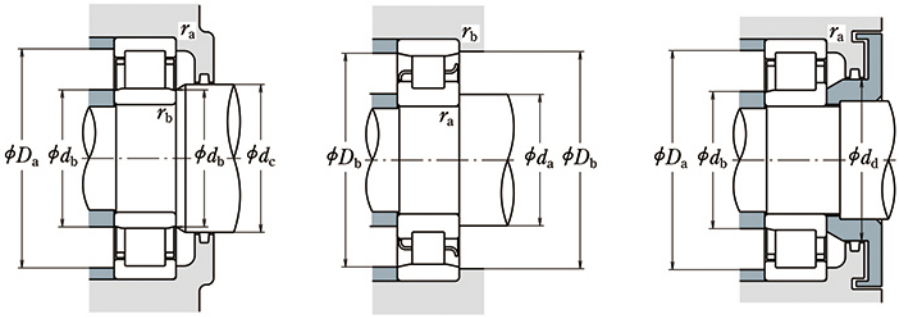
Single-Row Cylindrical Roller Bearings

Bore Diameter 20-35mm



NU NJ NUP N NF

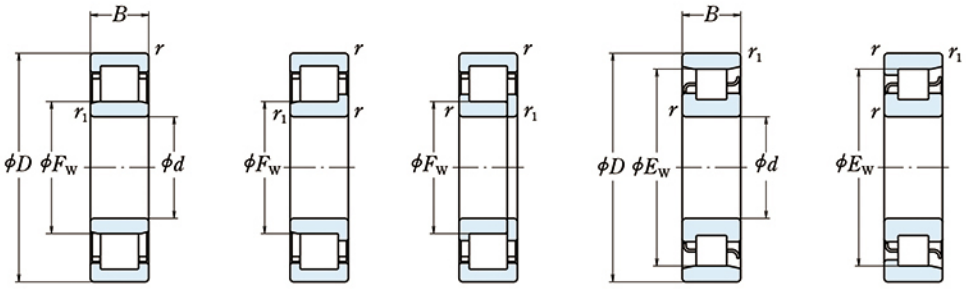
Boundary Dimensions							Basic Load Ratings		Limiting Speeds(1)		Bearing Numbers(2)					
(mm)							(N)		(min–1)		(3)					
d	D	B	r_{min}	$r1_{min}$	F_W	E_w	C_r	C_{0r}	Grease	Oil	NU		NJ	NUP	N	NF
20	47	14	1	0.6	—	40	15400	12700	15000	18000	**N204**	—	—	—	**N**	**NF**
	47	14	1	0.6	26.5	—	25700	22600	13000	16000	**NU204 ET**	**NU**	**NJ**	**NUP**	—	—
	47	18	1	0.6	27	—	20700	18400	13000	16000	**NU2204**	**NU**	**NJ**	—	—	—
	47	18	1	0.6	26.5	—	30500	28300	13000	16000	**NU2204 ET**	**NU**	**NJ**	**NUP**	—	—
	52	15	1.1	0.6	—	44.5	21400	17300	12000	15000	**N304**	—	—	—	**N**	**NF**
	52	15	1.1	0.6	27.5	—	31500	26900	12000	15000	**NU304 ET**	**NU**	**NJ**	**NUP**	—	—
	52	21	1.1	0.6	28.5	—	30500	27200	11000	14000	**NU2304**	**NU**	**NJ**	**NUP**	—	—
	52	21	1.1	0.6	27.5	—	42000	39000	11000	14000	**NU2304 ET**	**NU**	**NJ**	**NUP**	—	—
25	47	12	0.6	0.3	30.5	—	14300	13100	15000	18000	**NU1005**	**NU**	—	—	—	—
	52	15	1	0.6	—	45	17700	15700	13000	16000	**N205**	—	—	—	**N**	**NF**
	52	15	1	0.6	31.5	—	29300	27700	12000	14000	**NU205 EJ**	**NU**	**NJ**	**NUP**	—	—
	52	18	1	0.6	31.5	—	35000	34500	12000	14000	**NU2205 ET**	**NU**	**NJ**	**NUP**	—	—
	62	17	1.1	1.1	—	53	29300	25200	10000	13000	**N305**	—	—	—	**N**	**NF**
	62	17	1.1	1.1	34	—	41500	37500	10000	12000	**NU305 EJ**	**NU**	**NJ**	**NUP**	—	—
	62	24	1.1	1.1	34	—	57000	56000	9000	11000	**NU2305 ET**	**NU**	**NJ**	**NUP**	—	—
	80	21	1.5	1.5	38.8	62.8	46500	40000	9000	11000	**NU405**	**NU**	**NJ**	—	**N**	**NF**
30	55	13	1	0.6	36.5	48.5	19700	19600	12000	15000	**NU1006**	**NU**	—	—	**N**	—
	62	16	1	0.6	—	53.5	24900	23300	11000	13000	**N206**	—	—	—	**N**	**NF**
	62	16	1	0.6	37.5	—	39000	37500	9500	12000	**NU206 EJ**	**NU**	**NJ**	**NUP**	—	—
	62	20	1	0.6	37.5	—	49000	50000	9500	12000	**NU2206 ET**	**NU**	**NJ**	**NUP**	—	—
	72	19	1.1	1.1	—	62	38500	35000	8500	11000	**N306**	—	—	—	**N**	**NF**
	72	19	1.1	1.1	40.5	—	53000	50000	8500	10000	**NU306 EJ**	**NU**	**NJ**	**NUP**	—	—
	72	27	1.1	1.1	40.5	—	74500	77500	8000	9500	**NU2306 ET**	**NU**	**NJ**	**NUP**	—	—
	90	23	1.5	1.5	45	73	62500	55000	7500	9500	**NU406**	**NU**	**NJ**	—	**N**	**NF**
35	62	14	1	0.6	42	55	22600	23200	11000	13000	**NU1007**	**NU**	**NJ**	—	**N**	—
	72	17	1.1	0.6	—	61.8	35500	34000	9500	11000	**N207**	—	—	—	**N**	**NF**
	72	17	1.1	0.6	44	—	50500	50000	8500	10000	**NU207 EJ**	**NU**	**NJ**	**NUP**	—	—
	72	23	1.1	0.6	44	—	61500	65500	8500	10000	**NU2207 ET**	**NU**	**NJ**	**NUP**	—	—
	80	21	1.5	1.1	—	68.2	49500	47000	8000	9500	**N307**	—	—	—	**N**	**NF**
	80	21	1.5	1.1	46.2	—	66500	65500	7500	9500	**NU307 EJ**	**NU**	**NJ**	**NUP**	—	—
	80	31	1.5	1.1	46.2	—	93000	101000	6700	8500	**NU2307 ET**	**NU**	**NJ**	**NUP**	—	—
	100	25	1.5	1.5	53	83	75500	69000	6700	8000	**NU407**	**NU**	**NJ**	—	**N**	**NF**



Abutment and Fillet Dimensions (mm)										Mass
d_a(4)	d_b	d_b(5)	d_c	d_d	D_a(4)	D_b	D_b	r_a	r_b	(kg)
min.	min.	max.	min.	min.	max.	max.	min.	max.	max.	approx.
25	—	—	—	—	—	43	42	1	0.6	0.107
25	24	25	29	32	42	—	—	1	0.6	0.107
25	24	25	29	32	42	—	—	1	0.6	0.144
25	24	25	29	32	42	—	—	1	0.6	0.138
26.5	—	—	—	—	—	48	46	1	0.6	0.148
26.5	24	26	30	33	45.5	—	—	1	0.6	0.145
26.5	24	27	30	33	45.5	—	—	1	0.6	0.217
26.5	24	26	30	33	45.5	—	—	1	0.6	0.209
—	27	30	32	—	43	—	—	0.6	0.3	0.094
30	—	—	—	—	—	48	46	1	0.6	0.135
30	29	30	34	37	47	—	—	1	0.6	0.136
30	29	30	34	37	47	—	—	1	0.6	0.16
31.5	—	—	—	—	—	55.5	50	1	1	0.233
31.5	31.5	32	37	40	55.5	—	—	1	1	0.269
31.5	31.5	32	37	40	55.5	—	—	1	1	0.338
33	33	37	41	46	72	72	64	1.5	1.5	0.57
35	34	36	38	—	50	51	49	1	0.5	0.136
35	—	—	—	—	—	58	56	1	0.6	0.208
35	34	36	40	44	57	—	—	1	0.6	0.205
35	34	36	40	44	57	—	—	1	0.6	0.255
36.5	—	—	—	—	—	65.5	64	1	1	0.353
36.5	36.5	39	44	48	65.5	—	—	1	1	0.409
36.5	36.5	39	44	48	65.5	—	—	1	1	0.518
38	38	43	47	52	82	82	75	1.5	1.5	0.758
40	39	41	44	—	57	58	56	1	0.5	0.18
41.5	—	—	—	—	—	68	64	1	0.6	0.301
41.5	39	42	46	50	65.5	—	—	1	0.6	0.304
41.5	39	42	46	50	65.5	—	—	1	0.6	0.4
43	—	—	—	—	—	73.5	70	1.5	1	0.476
41.5	41.5	44	48	53	72	—	—	1.5	1	0.545
43	41.5	44	48	53	72	—	—	1.5	1	0.711
43	43	51	55	61	92	92	85	1.5	1.5	1.01

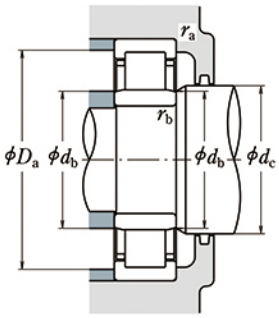
Single-Row Cylindrical Roller Bearings

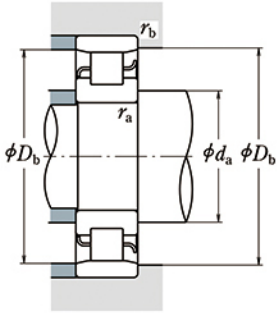
Bore Diameter 40-55mm

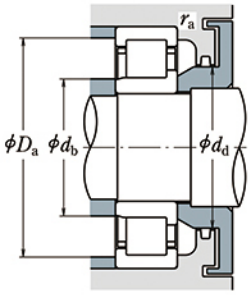


NU NJ NUP N NF

Boundary Dimensions							Basic Load Ratings		Limiting Speeds(1)		Bearing Numbers(2)					
(mm)							(N)		(min–1)		(3)					
d	D	B	r_{min}	$r1_{min}$	F_W	E_w	C_r	C_{0r}	Grease	Oil	NU		NJ	NUP	N	NF
40	68	15	1	0.6	47	61	27300	29000	10000	12000	**NU1008**	**NU**	**NJ**	**NUP**	**N**	**—**
	80	18	1.1	1.1	—	70	43500	43000	8500	10000	**N208**	**—**	**—**	**—**	**N**	**NF**
	80	18	1.1	1.1	49.5	—	55500	55500	7500	9000	**NU208 EJ**	**NU**	**NJ**	**NUP**	**—**	**—**
	80	23	1.1	1.1	49.5	—	72500	77500	7500	9000	**NU2208 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	90	23	1.5	1.5	—	77.5	58500	57000	6700	8500	**N308**	**—**	**—**	**—**	**N**	**NF**
	90	23	1.5	1.5	52	—	83000	81500	6700	8000	**NU308 EJ**	**NU**	**NJ**	**NUP**	**—**	**—**
	90	33	1.5	1.5	52	—	114000	122000	6000	7500	**NU2308 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	110	27	2	2	58	92	95500	89000	6000	7500	**NU408**	**NU**	**NJ**	**NUP**	**N**	**NF**
45	75	16	1	0.6	52.5	67.5	32500	35500	9000	11000	**NU1009**	**NU**	**—**	**—**	**N**	**NF**
	85	19	1.1	1.1	—	75	46000	47000	7500	9000	**N209**	**—**	**—**	**—**	**N**	**NF**
	85	19	1.1	1.1	54.5	—	63000	66500	6700	8000	**NU209 EJ**	**NU**	**NJ**	**NUP**	**—**	**—**
	85	23	1.1	1.1	54.5	—	76000	84500	6700	8500	**NU2209 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	100	25	1.5	1.5	—	86.5	79000	77500	6300	7500	**N309**	**—**	**—**	**—**	**N**	**NF**
	100	25	1.5	1.5	58.5	—	97500	98500	6000	7500	**NU309 EJ**	**NU**	**NJ**	**NUP**	**—**	**—**
	100	36	1.5	1.5	58.5	—	137000	153000	5300	6700	**NU2309 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	120	29	2	2	64.5	100.5	107000	102000	5600	6700	**NU409**	**NU**	**NJ**	**NUP**	**N**	**NF**
50	80	16	1	0.6	57.5	72.5	32000	36000	8000	10000	**NU1010**	**NU**	**NJ**	**NUP**	**N**	**—**
	90	20	1.1	1.1	—	80.4	48000	51000	7100	8500	**N210**	**—**	**—**	**—**	**N**	**NF**
	90	20	1.1	1.1	59.5	—	69000	76500	6300	7500	**NU210 EJ**	**NU**	**NJ**	**NUP**	**—**	**—**
	90	23	1.1	1.1	59.5	—	83500	97000	6300	8000	**NU2210 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	110	27	2	2	—	95	87000	86000	5600	6700	**N310**	**—**	**—**	**—**	**N**	**NF**
	110	27	2	2	65	—	110000	113000	5000	6000	**NU310 EJ**	**NU**	**NJ**	**NUP**	**—**	**—**
	110	40	2	2	65	—	163000	187000	5000	6300	**NU2310 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	130	31	2.1	2.1	—	110.8	139000	136000	5000	6000	**N410**	**—**	**—**	**—**	**N**	**NF**
	130	31	2.1	2.1	70.8	110.8	129000	124000	5000	6000	**NU410**	**NU**	**NJ**	**NUP**	**N**	**NF**
55	90	18	1.1	1	64.5	80.5	37500	44000	7500	9000	**NU1011**	**NU**	**NJ**	**—**	**N**	**—**
	100	21	1.5	1.1	—	88.5	58000	62500	6300	7500	**N211**	**—**	**—**	**—**	**N**	**NF**
	100	21	1.5	1.1	66	—	86500	98500	5600	7100	**NU211 EJ**	**NU**	**NJ**	**NUP**	**—**	**—**
	100	25	1.5	1.1	66	—	101000	122000	5600	7100	**NU2211 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	120	29	2	2	—	104.5	111000	111000	5000	6300	**N311**	**—**	**—**	**—**	**N**	**NF**
	120	29	2	2	70.5	—	137000	143000	4500	5600	**NU311 EJ**	**NU**	**NJ**	**NUP**	**—**	**—**
	120	43	2	2	70.5	—	201000	233000	4500	5600	**NU2311 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	140	33	2.1	2.1	77.2	117.2	139000	138000	4500	5600	**NU411**	**NU**	**NJ**	**NUP**	**N**	**NF**



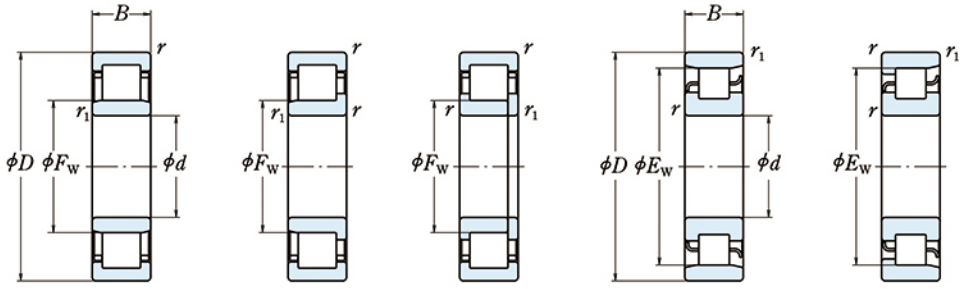




Abutment and Fillet Dimensions (mm)										Mass
d_a(4)	d_b	d_b(5)	d_c	d_d	D_a(4)	D_b	D_b	r_a	r_b	(kg)
min.	min.	max.	min.	min.	max.	max.	min.	max.	max.	approx.
45	44	46	49	—	63	64	62	1	0.6	0.223
46.5	—	—	—	—	—	73.5	72	1	1	0.375
46.5	46.5	48	52	56	73.5	—	—	1	1	0.379
46.5	46.5	48	52	56	73.5	—	—	1	1	0.48
48	—	—	—	—	—	82	79	1.5	1.5	0.649
48	48	50	55	60	82	—	—	1.5	1.5	0.747
48	48	50	55	60	82	—	—	1.5	1.5	0.933
49	49	56	60	67	101	101	94	2	2	1.28
50	49	51	54	—	70	71	68	1	0.6	0.279
51.5	—	—	—	—	—	78.5	77	1	1	0.429
51.5	51.5	52	57	61	78.5	—	—	1	1	0.438
51.5	51.5	52	57	61	78.5	—	—	1	1	0.521
53	—	—	—	—	—	92	77	1.5	1.5	0.869
53	53	56	60	66	92	—	—	1.5	1.5	1.01
53	53	56	60	66	92	—	—	1.5	1.5	1.28
54	54	62	66	74	111	111	103	2	2	1.62
55	54	56	59	—	75	76	73	1	0.6	0.301
56.5	—	—	—	—	—	83.5	82	1	1	0.483
56.5	56.5	57	62	67	83.5	—	—	1	1	0.5
56.5	56.5	57	62	67	83.5	—	—	1	1	0.562
59	—	—	—	—	—	101	97	2	2	1.11
59	59	63	67	73	101	—	—	2	2	1.3
59	59	63	67	73	101	—	—	2	2	1.7
65	—	—	—	—	—	117	113	2	2	2
61	61	68	73	81	119	119	113.3	2	2	1.99
61.5	60	63	66	—	83.5	85	82	1	1	0.445
63	—	—	—	—	—	93.5	91	1.5	1	0.634
63	61.5	64	68	73	92	—	—	1.5	1	0.669
63	61.5	64	68	73	92	—	—	1.5	1	0.783
64	—	—	—	—	—	111	107	2	2	1.42
64	64	68	72	80	111	—	—	2	2	1.64
64	64	68	72	80	111	—	—	2	2	2.18
66	66	75	79	87	129	129	119	2	2	2.5

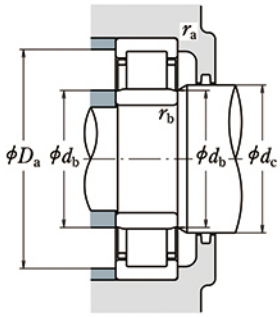
Single-Row Cylindrical Roller Bearings

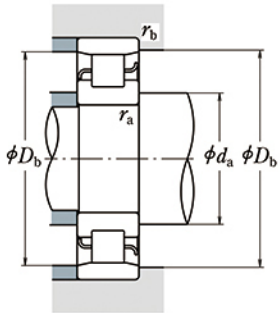
Bore Diameter 60-75mm

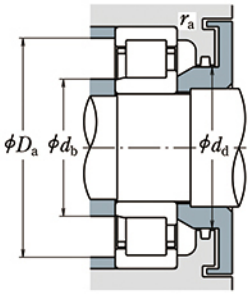


NU NJ NUP N NF

Boundary Dimensions							Basic Load Ratings		Limiting Speeds(1)		Bearing Numbers(2)					
(mm)							(N)		(min–1)		(3)					
d	D	B	r_{min}	$r1_{min}$	F_W	E_w	C_r	C_{0r}	Grease	Oil	NU		NJ	NUP	N	NF
60	95	18	1.1	1	69.5	85.5	40000	48500	6700	8500	**NU1012**	**NU**	**NJ**	—	**N**	**NF**
	110	22	1.5	1.5	—	97.5	68500	75000	6000	7100	**N212**	—	—	—	**N**	**NF**
	110	22	1.5	1.5	72	—	97500	107000	5300	6300	**NU212 EJ**	**NU**	**NJ**	**NUP**	—	—
	110	28	1.5	1.5	72	—	131000	157000	5300	6300	**NU2212 ET**	**NU**	**NJ**	**NUP**	—	—
	130	31	2.1	2.1	—	113	124000	126000	4800	5600	**N312**	—	—	—	**N**	**NF**
	130	31	2.1	2.1	77	—	124000	126000	4800	5600	**NU312**	**NU**	**NJ**	**NUP**	—	—
	130	31	2.1	2.1	77	—	150000	157000	4800	5600	**NU312 EM**	**NU**	**NJ**	**NUP**	—	—
	130	46	2.1	2.1	77	—	222000	262000	4300	5300	**NU2312 ET**	**NU**	**NJ**	**NUP**	—	—
	150	35	2.1	2.1	83	127	167000	168000	4300	5300	**NU412**	**NU**	**NJ**	**NUP**	**N**	**NF**
65	100	18	1.1	1	74.5	90.5	41000	51000	6300	8000	**NU1013**	**NU**	**NJ**	—	**N**	**NF**
	120	23	1.5	1.5	—	105.6	84000	94500	5300	6300	**N213**	—	—	—	**N**	**NF**
	120	23	1.5	1.5	78.5	—	108000	119000	4800	5600	**NU213 EJ**	**NU**	**NJ**	**NUP**	—	—
	120	31	1.5	1.5	78.5	—	149000	181000	4800	6000	**NU2213 ET**	**NU**	**NJ**	**NUP**	—	—
	140	33	2.1	2.1	—	121.5	135000	139000	4300	5300	**N313**	—	—	—	**N**	**NF**
	140	33	2.1	2.1	83.5	—	135000	139000	4300	5300	**NU313**	**NU**	**NJ**	**NUP**	—	—
	140	33	2.1	2.1	82.5	—	181000	191000	4300	5300	**NU313 EM**	**NU**	**NJ**	**NUP**	—	—
	140	48	2.1	2.1	82.5	—	233000	265000	3800	4800	**NU2313 ET**	**NU**	**NJ**	**NUP**	—	—
	160	37	2.1	2.1	89.3	135.3	182000	186000	4000	4800	**NU413**	**NU**	**NJ**	—	**N**	**NF**
70	110	20	1.1	1	80	100	58500	70500	6000	7100	**NU1014**	**NU**	**NJ**	**NUP**	**N**	**NF**
	125	24	1.5	1.5	—	110.5	83500	95000	5000	6300	**N214**	—	—	—	**N**	**NF**
	125	24	1.5	1.5	83.5	—	119000	137000	5000	6300	**NU214 EM**	**NU**	**NJ**	**NUP**	—	—
	125	31	1.5	1.5	83.5	—	156000	194000	4500	5600	**NU2214 ET**	**NU**	**NJ**	**NUP**	—	—
	150	35	2.1	2.1	—	130	149000	156000	4000	5000	**N314**	—	—	—	**N**	**NF**
	150	35	2.1	2.1	90	—	158000	168000	4000	5000	**NU314**	**NU**	**NJ**	**NUP**	—	—
	150	35	2.1	2.1	89	—	205000	222000	4000	5000	**NU314 EM**	**NU**	**NJ**	**NUP**	—	—
	150	51	2.1	2.1	89	—	274000	325000	3600	4500	**NU2314 ET**	**NU**	**NJ**	**NUP**	—	—
	180	42	3	3	100	152	228000	236000	3600	4300	**NU414**	**NU**	**NJ**	**NUP**	**N**	**NF**
75	115	20	1.1	1	85	105	60000	74500	5600	6700	**NU1015**	**NU**	—	—	**N**	**NF**
	130	25	1.5	1.5	—	116.5	96500	111000	4800	6000	**N215**	—	—	—	**N**	**NF**
	130	25	1.5	1.5	88.5	—	130000	156000	4800	6000	**NU215 EM**	**NU**	**NJ**	**NUP**	—	—
	130	31	1.5	1.5	88.5	—	162000	207000	4300	5300	**NU2215 ET**	**NU**	**NJ**	**NUP**	—	—
	160	37	2.1	2.1	—	139.5	179000	189000	3800	4800	**N315**	—	—	—	**N**	**NF**
	160	37	2.1	2.1	95.5	—	179000	189000	3800	4800	**NU315**	**NU**	**NJ**	**NUP**	—	—
	160	37	2.1	2.1	95	—	240000	263000	3800	4800	**NU315 EM**	**NU**	**NJ**	**NUP**	—	—
	160	55	2.1	2.1	95	—	330000	395000	3400	4300	**NU2315 ET**	**NU**	**NJ**	**NUP**	—	—
	190	45	3	3	104.5	160.5	262000	274000	3400	4000	**NU415**	**NU**	**NJ**	—	**N**	**NF**



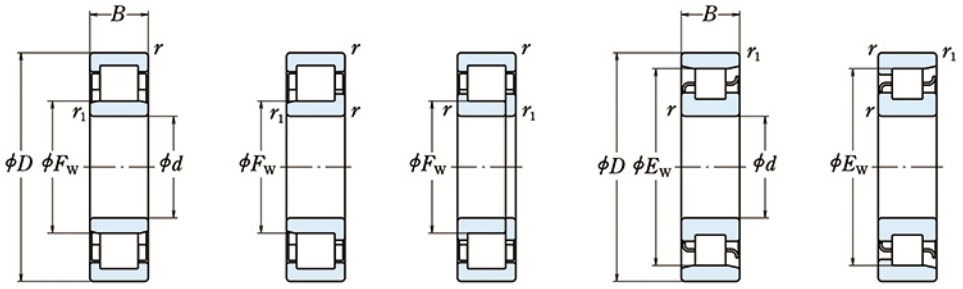




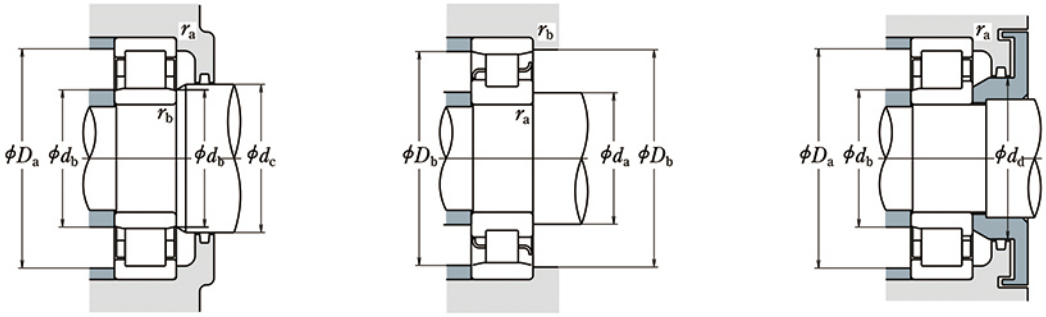
Abutment and Fillet Dimensions (mm)										Mass
d_a(4)	d_b	d_b(5)	d_c	d_d	D_a(4)	D_b	D_b	r_a	r_b	(kg)
min.	min.	max.	min.	min.	max.	max.	min.	max.	max.	approx.
66.5	65	68	71	—	88.5	90	87	1	1	0.474
68	—	—	—	—	—	102	100	1.5	1.5	0.823
68	68	70	75	80	102	—	—	1.5	1.5	0.824
68	68	70	75	80	102	—	—	1.5	1.5	1.06
71	—	—	—	—	—	119	115	2	2	1.78
71	71	75	79	86	119	—	—	2	2	1.82
71	71	75	79	86	119	—	—	2	2	2.06
71	71	75	79	86	119	—	—	2	2	2.7
71	71	80	85	94	139	139	130	2	2	3.04
71.5	70	73	76	—	93.5	95	92	1	1	0.504
73	—	—	—	—	—	112	108	1.5	1.5	1.05
73	73	76	81	87	112	—	—	1.5	1.5	1.05
73	73	76	81	87	112	—	—	1.5	1.5	1.41
76	—	—	—	—	—	129	125	2	2	2.17
76	76	81	85	93	129	—	—	2	2	2.23
76	76	80	85	93	129	—	—	2	2	2.56
76	76	80	85	93	129	—	—	2	2	3.16
76	76	86	91	100	149	149	138.8	2	2	3.63
76.5	75	79	82	—	103.5	105	101	1	1	0.693
78	—	—	—	—	—	117	113	1.5	1.5	1.14
78	78	81	86	92	117	—	—	1.5	1.5	1.29
78	78	81	86	92	117	—	—	1.5	1.5	1.49
81	—	—	—	—	—	139	133.5	2	2	2.67
81	81	87	92	100	139	—	—	2	2	2.75
81	81	86	92	100	139	—	—	2	2	3.09
81	81	86	92	100	139	—	—	2	2	3.92
83	83	97	102	112	167	167	155	2.5	2.5	5.28
81.5	80	83	87	—	108.5	110	106	1	1	0.731
83	—	—	—	—	—	122	119	1.5	1.5	1.23
83	83	86	90	96	122	—	—	1.5	1.5	1.44
83	83	86	90	96	122	—	—	1.5	1.5	1.57
86	—	—	—	—	—	149	143	2	2	3.2
86	86	93	97	106	149	—	—	2	2	3.26
86	86	92	97	106	149	—	—	2	2	3.73
86	86	92	97	106	149	—	—	2	2	4.86
88	88	102	107	118	177	177	164	2.5	2.5	6.27

Single-Row Cylindrical Roller Bearings

Bore Diameter 80-95mm



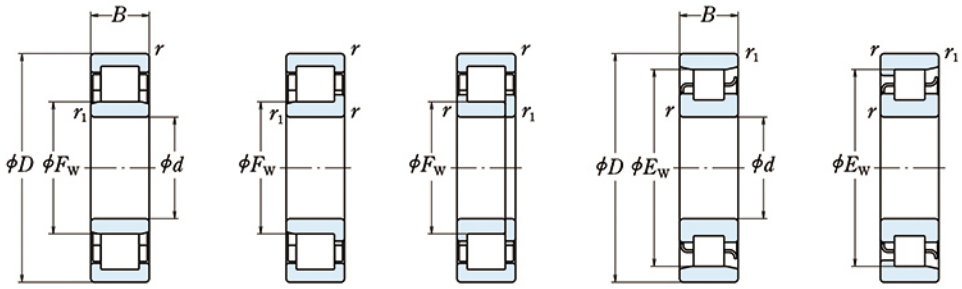
Boundary Dimensions							Basic Load Ratings		Limiting Speeds(1)		Bearing Numbers(2)					
(mm)							(N)		(min–1)		(3)					
d	D	B	r_{min}	$r1_{min}$	F_W	E_w	C_r	C_{0r}	Grease	Oil	NU		NJ	NUP	N	NF
80	125	22	1.1	1	91.5	113.5	72500	90500	5300	6300	**NU1016**	**NU**	**—**	**NUP**	**N**	**—**
	140	26	2	2	—	125.3	106000	122000	4500	5300	**N216**	**—**	**—**	**—**	**N**	**NF**
	140	26	2	2	95.3	—	139000	167000	4500	5300	**NU216 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	140	33	2	2	95.3	—	186000	243000	4000	5000	**NU2216 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	170	39	2.1	2.1	—	147	190000	207000	3600	4300	**N316**	**—**	**—**	**—**	**N**	**NF**
	170	39	2.1	2.1	101	—	256000	282000	3600	4300	**NU316 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	170	58	2.1	2.1	101	—	355000	430000	3200	4000	**NU2316 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	200	48	3	3	110	170	299000	315000	3200	3800	**NU416**	**NU**	**NJ**	**—**	**N**	**NF**
85	130	22	1.1	1	96.5	118.5	74500	95500	5000	6000	**NU1017**	**NU**	**—**	**—**	**N**	**—**
	150	28	2	2	—	133.8	120000	140000	4300	5000	**N217**	**—**	**—**	**—**	**N**	**NF**
	150	28	2	2	100.5	—	167000	199000	4300	5000	**NU217 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	150	36	2	2	100.5	—	217000	279000	3800	4500	**NU2217 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	180	41	3	3	—	156	225000	247000	3400	4000	**N317**	**—**	**—**	**—**	**N**	**NF**
	180	41	3	3	108	—	212000	228000	3400	4000	**NU317**	**NU**	**NJ**	**NUP**	**—**	**—**
	180	41	3	3	108	—	291000	330000	3400	4000	**NU317 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	180	60	3	3	108	—	395000	485000	3000	3800	**NU2317 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	210	52	4	4	113	177	335000	350000	3000	3800	**NU417**	**NU**	**NJ**	**—**	**N**	**NF**
90	140	24	1.5	1.1	103	127	88000	114000	4500	5600	**NU1018**	**NU**	**—**	**NUP**	**N**	**—**
	160	30	2	2	—	143	152000	178000	4000	4800	**N218**	**—**	**—**	**—**	**N**	**NF**
	160	30	2	2	107	—	182000	217000	4000	4800	**NU218 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	160	40	2	2	107	—	242000	315000	3600	4300	**NU2218 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	190	43	3	3	—	165	240000	265000	3200	3800	**N318**	**—**	**—**	**—**	**N**	**NF**
	190	43	3	3	115	—	240000	265000	3200	3800	**NU318**	**NU**	**NJ**	**NUP**	**—**	**—**
	190	43	3	3	113.5	—	315000	355000	3200	3800	**NU318 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	190	64	3	3	113.5	—	435000	535000	2800	3400	**NU2318 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	225	54	4	4	123.5	191.5	375000	400000	2800	3400	**NU418**	**NU**	**NJ**	**—**	**N**	**NF**
95	145	24	1.5	1.1	108	132	90500	120000	4300	5300	**NU1019**	**NU**	**NJ**	**—**	**N**	**—**
	170	32	2.1	2.1	—	151.5	166000	196000	3800	4500	**N219**	**—**	**—**	**—**	**N**	**NF**
	170	32	2.1	2.1	112.5	—	220000	265000	3800	4500	**NU219 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	170	43	2.1	2.1	112.5	—	286000	370000	3400	4000	**NU2219 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	200	45	3	3	—	173.5	259000	289000	3000	3600	**N319**	**—**	**—**	**—**	**N**	**NF**
	200	45	3	3	121.5	—	259000	289000	3000	3600	**NU319**	**NU**	**NJ**	**NUP**	**—**	**—**
	200	45	3	3	121.5	—	335000	385000	3000	3600	**NU319 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	200	67	3	3	121.5	—	460000	585000	2600	3400	**NU2319 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	240	55	4	4	133.5	201.5	400000	445000	2600	3200	**NU419**	**NU**	**NJ**	**NUP**	**—**	**NF**



Abutment and Fillet Dimensions (mm)										Mass
d_a(4)	d_b	d_b(5)	d_c	d_d	D_a(4)	D_b	D_b	r_a	r_b	(kg)
min.	min.	max.	min.	min.	max.	max.	min.	max.	max.	approx.
86.5	85	90	94	—	118.5	120	115	1	1	0.969
89	—	—	—	—	—	131	128	2	2	1.47
89	89	92	97	104	131	—	—	2	2	1.7
89	89	92	97	104	131	—	—	2	2	1.96
91	—	—	—	—	—	159	150	2	2	3.85
91	91	98	105	114	159	—	—	2	2	4.45
91	91	98	105	114	159	—	—	2	2	5.73
93	93	107	112	124	187	187	173	2.5	2.5	7.36
91.5	90	95	99	—	123.5	125	120	1	1	1.01
94	—	—	—	—	—	141	137	2	2	1.87
94	94	98	104	110	141	—	—	2	2	2.11
94	94	98	104	110	141	—	—	2	2	2.44
98	—	—	—	—	—	167	159	2.5	2.5	4.53
98	98	105	110	119	167	—	—	2.5	2.5	4.6
98	98	105	110	119	167	—	—	2.5	2.5	5.26
98	98	105	110	119	167	—	—	2.5	2.5	6.77
101	101	110	115	128	194	194	180	3	3	9.56
98	96.5	101	106	—	132	133.5	129	1.5	1	1.35
99	—	—	—	—	—	151	146	2	2	2.31
99	99	104	109	116	151	—	—	2	2	2.6
99	99	104	109	116	151	—	—	2	2	3.11
103	—	—	—	—	—	177	168	2.5	2.5	5.31
103	103	112	117	127	177	—	—	2.5	2.5	5.38
103	103	111	117	127	177	—	—	2.5	2.5	6.1
103	103	111	117	127	177	—	—	2.5	2.5	7.9
106	106	120	125	139	209	209	196	3	3	11.5
103	101.5	106	111	—	137	138.5	134	1.5	1	1.41
106	—	—	—	—	—	159	155	2	2	2.79
106	106	110	116	123	159	—	—	2	2	3.17
106	106	110	116	123	159	—	—	2	2	3.81
108	—	—	—	—	—	187	177	2.5	2.5	6.09
108	108	118	124	134	187	—	—	2.5	2.5	6.23
108	108	118	124	134	187	—	—	2.5	2.5	7.13
108	108	118	124	134	187	—	—	2.5	2.5	9.21
111	111	130	136	149	224	224	206	3	3	13.6

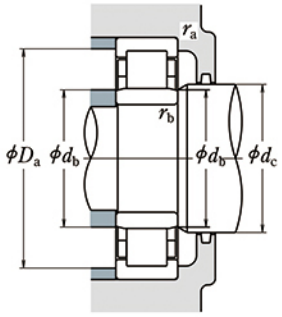
Single-Row Cylindrical Roller Bearings

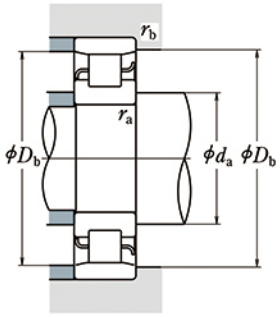
Bore Diameter 100-120mm

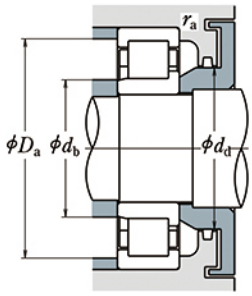


NU NJ NUP N NF

Boundary Dimensions							Basic Load Ratings		Limiting Speeds(1)		Bearing Numbers(2)					
(mm)							(N)		(min–1)		(3)					
d	D	B	r_{min}	$r1_{min}$	F_W	E_w	C_r	C_{0r}	Grease	Oil	NU		NJ	NUP	N	NF
100	150	24	1.5	1.1	113	137	93000	126000	4300	5300	**NU1020**	**NU**	**NJ**	**NUP**	**N**	**—**
	180	34	2.1	2.1	—	160	183000	217000	3600	4300	**N220**	**—**	**—**	**—**	**N**	**NF**
	180	34	2.1	2.1	119	—	249000	305000	3600	4300	**NU220 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	180	46	2.1	2.1	119	—	335000	445000	3200	3800	**NU2220 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	215	47	3	3	—	185.5	299000	335000	2800	3400	**N320**	**—**	**—**	**—**	**N**	**NF**
	215	47	3	3	129.5	—	299000	335000	2800	3400	**NU320**	**NU**	**NJ**	**NUP**	**—**	**—**
	215	47	3	3	127.5	—	380000	425000	2800	3400	**NU320 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	215	73	3	3	127.5	—	570000	715000	2400	3000	**NU2320 ET**	**NU**	**NJ**	**NUP**	**—**	**—**
	250	58	4	4	139	211	450000	500000	2600	3000	**NU420**	**NU**	**NJ**	**—**	**N**	**NF**
105	160	26	2	1.1	119.5	145.5	109000	149000	4000	4800	**NU1021**	**NU**	**—**	**—**	**N**	**NF**
	190	36	2.1	2.1	—	168.8	201000	241000	3400	4000	**N221**	**—**	**—**	**—**	**N**	**NF**
	190	36	2.1	2.1	125	—	262000	310000	3400	4000	**NU221 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	225	49	3	3	—	195	340000	390000	2600	3200	**N321**	**—**	**—**	**—**	**N**	**NF**
	225	49	3	3	133	—	425000	480000	2600	3200	**NU321 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	260	60	4	4	144.5	220.5	495000	555000	2400	3000	**NU421**	**NU**	**NJ**	**—**	**N**	**NF**
110	170	28	2	1.1	125	155	131000	174000	3800	4500	**NU1022**	**NU**	**NJ**	**—**	**N**	**NF**
	200	38	2.1	2.1	—	178.5	229000	272000	3200	3800	**N222**	**—**	**—**	**—**	**N**	**NF**
	200	38	2.1	2.1	132.5	—	293000	365000	3200	3800	**NU222 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	200	53	2.1	2.1	132.5	—	385000	515000	2800	3400	**NU2222 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	240	50	3	3	—	207	380000	435000	2600	3000	**N322**	**—**	**—**	**—**	**N**	**NF**
	240	50	3	3	143	—	450000	525000	2600	3000	**NU322 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	280	65	4	4	155	—	550000	620000	2200	2800	**NU422**	**NU**	**NJ**	**—**	**—**	**—**
120	180	28	2	1.1	135	165	139000	191000	3400	4300	**NU1024**	**NU**	**NJ**	**NUP**	**N**	**—**
	215	40	2.1	2.1	—	191.5	260000	320000	3000	3400	**N224**	**—**	**—**	**—**	**N**	**NF**
	215	40	2.1	2.1	143.5	—	335000	420000	3000	3400	**NU224 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	215	58	2.1	2.1	143.5	—	450000	620000	2600	3200	**NU2224 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	260	55	3	3	—	226	450000	510000	2200	2800	**N324**	**—**	**—**	**—**	**N**	**NF**
	260	55	3	3	154	—	530000	610000	2200	2800	**NU324 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	260	86	3	3	154	—	795000	1030000	2000	2600	**NU2324 EM**	**NU**	**NJ**	**NUP**	**—**	**—**
	310	72	5	5	170	260	675000	770000	2000	2400	**NU424**	**NU**	**NJ**	**NUP**	**N**	**—**



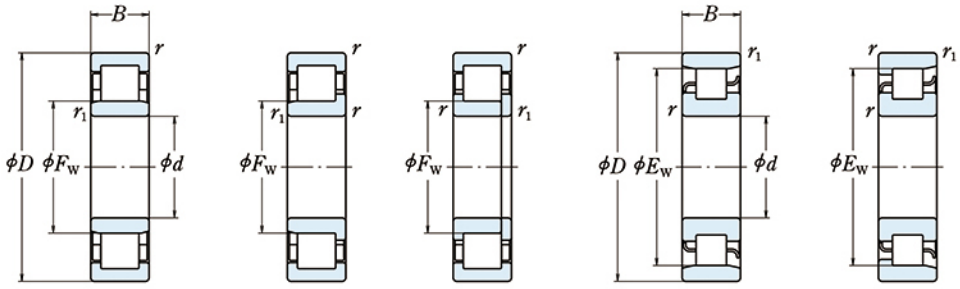




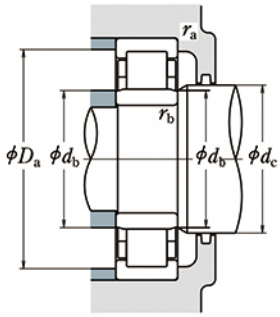
Abutment and Fillet Dimensions (mm)										Mass
d_a(4)	d_b	d_b(5)	d_c	d_d	D_a(4)	D_b	D_b	r_a	r_b	(kg)
min.	min.	max.	min.	min.	max.	max.	min.	max.	max.	approx.
108	106.5	111	116	—	142	143.5	139	1.5	1	1.47
111	—	—	—	—	—	169	163	2	2	3.36
111	111	116	122	130	169	—	—	2	2	3.81
111	111	116	122	130	169	—	—	2	2	4.69
113	—	—	—	—	—	202	190	2.5	2.5	7.59
113	113	126	132	143	202	—	—	2.5	2.5	7.69
113	113	124	132	143	202	—	—	2.5	2.5	8.63
113	113	124	132	143	202	—	—	2.5	2.5	11.8
116	116	135	141	156	234	234	215	3	3	15.5
114	111.5	118	122	—	151	153.5	147	2	1	1.83
116	—	—	—	—	—	179	172	2	2	4
116	116	121	129	137	179	—	—	2	2	4.58
118	—	—	—	—	—	212	199	2.5	2.5	8.69
118	118	131	137	149	212	—	—	2.5	2.5	9.84
121	121	141	147	162	244	244	225	3	3	17.3
119	116.5	123	128	—	161	163.5	157	2	1	2.27
121	—	—	—	—	—	189	182	2	2	4.64
121	121	129	135	144	189	—	—	2	2	5.37
121	121	129	135	144	189	—	—	2	2	7.65
123	—	—	—	—	—	227	211	2.5	2.5	10.3
123	123	139	145	158	227	—	—	2.5	2.5	11.8
126	126	151	157	173	264	—	—	3	3	22.1
129	126.5	133	138	—	171	173.5	167	2	1	2.43
131	—	—	—	—	—	204	196	2	2	5.63
131	131	140	146	156	204	—	—	2	2	6.43
131	131	140	146	156	204	—	—	2	2	9.51
133	—	—	—	—	—	247	230	2.5	2.5	12.9
133	133	150	156	171	247	—	—	2.5	2.5	15
133	133	150	156	171	247	—	—	2.5	2.5	25
140	140	166	172	190	290	290	266	4	4	30.2

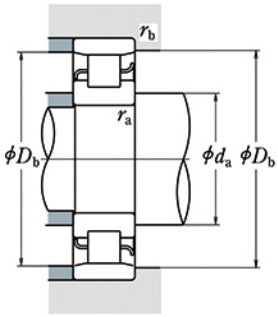
Single-Row Cylindrical Roller Bearings

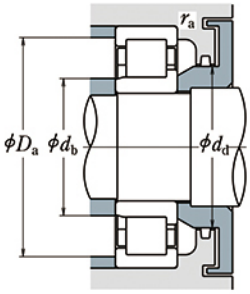
Bore Diameter 130-160mm



Boundary Dimensions							Basic Load Ratings		Limiting Speeds(1)		Bearing Numbers(2)					
(mm)							(N)		(min–1)		(3)					
d	D	B	r_{min}	$r1_{min}$	F_W	E_w	C_r	C_{0r}	Grease	Oil	NU		NJ	NUP	N	NF
130	200	33	2	1.1	148	182	172000	238000	3200	3800	**NU1026**	**NU**	**NJ**	—	**N**	**NF**
	230	40	3	3	—	204	270000	340000	2600	3200	**N226**	—	—	—	**N**	**NF**
	230	40	3	3	153.5	—	365000	455000	2600	3200	**NU 226 EM**	**NU**	**NJ**	**NUP**	—	—
	230	64	3	3	153.5	—	530000	735000	2400	3000	**NU2226 EM**	**NU**	**NJ**	**NUP**	—	—
	280	58	4	4	—	243	500000	570000	2200	2600	**N326**	—	—	—	**N**	**NF**
	280	58	4	4	167	—	615000	735000	2200	2600	**NU326EM**	**NU**	**NJ**	**NUP**	—	—
	280	93	4	4	167	—	920000	1230000	1900	2400	**NU2326EM**	**NU**	**NJ**	**NUP**	—	—
	340	78	5	5	185	285	825000	955000	1800	2200	**NU 426**	**NU**	**NJ**	—	—	**NF**
140	210	33	2	1.1	158	192	176000	250000	3000	3600	**NU1028**	**NU**	**NJ**	**NUP**	**N**	—
	250	42	3	3	—	221	297000	375000	2400	3000	**N228**	—	—	—	**N**	**NF**
	250	42	3	3	169	—	395000	515000	2400	3000	**NU228EM**	**NU**	**NJ**	**NUP**	—	—
	250	68	3	3	169	—	550000	790000	2200	2800	**NU2228EM**	**NU**	**NJ**	**NUP**	—	—
	300	62	4	4	—	260	550000	640000	2000	2400	**N328**	—	—	—	**N**	**NF**
	300	62	4	4	180	—	665000	795000	2000	2400	**NU328EM**	**NU**	**NJ**	**NUP**	—	—
	300	102	4	4	180	—	1020000	1380000	1700	2200	**NU2328EM**	**NU**	**NJ**	**NUP**	—	—
	360	82	5	5	198	302	875000	1020000	1700	2000	**NU 428**	**NU**	**NJ**	—	**N**	—
150	225	35	2.1	1.5	169.5	205.5	202000	294000	2800	3400	**NU1030**	**NU**	**NJ**	—	**N**	**NF**
	270	45	3	3	—	238	360000	465000	2200	2800	**N230**	—	—	—	**N**	**NF**
	270	45	3	3	182	—	450000	595000	2200	2800	**NU230EM**	**NU**	**NJ**	**NUP**	—	—
	270	73	3	3	182	—	635000	930000	2000	2600	**NU2230EM**	**NU**	**NJ**	**NUP**	—	—
	320	65	4	4	—	277	665000	805000	1800	2200	**N330**	—	—	—	**N**	**NF**
	320	65	4	4	193	—	760000	920000	1800	2200	**NU330EM**	**NU**	**NJ**	**NUP**	—	—
	320	108	4	4	193	—	1160000	1600000	1600	2000	**NU2330EM**	**NU**	**NJ**	**NUP**	—	—
	380	85	5	5	213	—	930000	1120000	1600	2000	**NU 430**	**NU**	**NJ**	—	—	—
160	240	38	2.1	1.5	180	220	238000	340000	2600	3200	**NU1032**	**NU**	**NJ**	—	**N**	**NF**
	290	48	3	3	—	255	430000	570000	2200	2600	**N232**	—	—	—	**N**	**NF**
	290	48	3	3	195	—	500000	665000	2200	2600	**NU232EM**	**NU**	**NJ**	**NUP**	—	—
	290	80	3	3	193	—	810000	1190000	1900	2400	**NU2232EM**	**NU**	**NJ**	**NUP**	—	—
	340	68	4	4	—	292	700000	875000	1700	2000	**N332**	—	—	—	**N**	—
	340	68	4	4	204	—	860000	1050000	1700	2000	**NU332EM**	**NU**	**NJ**	**NUP**	—	—
	340	114	4	4	204	—	1310000	1820000	1500	1900	**NU2332EM**	**NU**	**NJ**	**NUP**	—	—



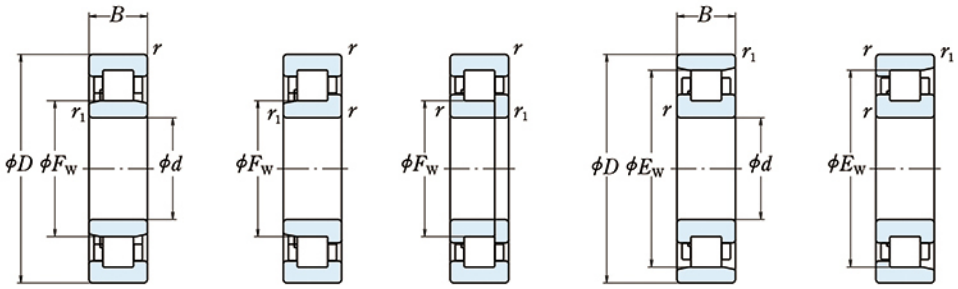




Abutment and Fillet Dimensions (mm)										Mass
d_a(4)	d_b	d_b(5)	d_c	d_d	D_a(4)	D_b	D_b	r_a	r_b	(kg)
min.	min.	max.	min.	min.	max.	max.	min.	max.	max.	approx.
139	136.5	146	151	—	191	193.5	184	2	1	3.66
143	—	—	—	—	—	217	208	2.5	2.5	6.48
143	143	150	158	168	217	—	—	2.5	2.5	8.03
143	143	150	158	168	217	—	—	2.5	2.5	9.44
146	—	—	—	—	—	264	247.5	3	3	17.7
146	146	163	169	184	264	—	—	3	3	18.7
146	146	163	169	184	264	—	—	3	3	30
150	150	180	187	208	320	320	291	4	4	39.6
149	146.5	156	161	—	201	203.5	194	2	1	3.87
153	—	—	—	—	—	237	225	2.5	2.5	8.08
153	153	165	171	182	237	—	—	2.5	2.5	9.38
153	153	165	171	182	237	—	—	2.5	2.5	15.2
156	—	—	—	—	—	284	266	3	3	21.7
156	156	176	182	198	284	—	—	3	3	22.8
156	156	176	182	198	284	—	—	3	3	37.7
160	160	193	200	222	340	340	308	4	4	46.4
161	158	167	173	—	214	217	208	2	1.5	4.77
163	—	—	—	—	—	257	242	2.5	2.5	10.4
163	163	177	184	196	257	—	—	2.5	2.5	11.9
163	163	177	184	196	257	—	—	2.5	2.5	19.3
166	—	—	—	—	—	304	283	3	3	25.8
166	166	188	195	213	304	—	—	3	3	27.1
166	166	188	195	213	304	—	—	3	3	45.1
170	170	208	216	237	360	—	—	4	4	55.8
171	168	178	184	—	229	232	222	2	1.5	5.81
173	—	—	—	—	—	277	261	2.5	2.5	14.1
173	173	190	197	210	277	—	—	2.5	2.5	14.7
173	173	188	197	210	277	—	—	2.5	2.5	24.5
176	—	—	—	—	—	324	298	3	3	30.8
176	176	199	211	228	324	—	—	3	3	32.1
176	176	199	211	228	324	—	—	3	3	53.9

Single-Row Cylindrical Roller Bearings

Bore Diameter 170-220mm



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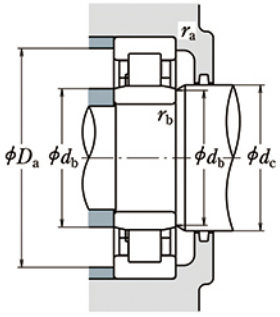
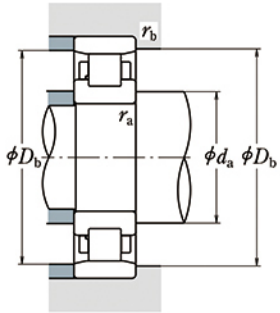
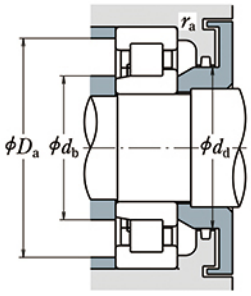
Boundary Dimensions							Basic Load Ratings		Limiting Speeds(1)		Bearing Numbers(2)					
(mm)							(N)		(min–1)		(3)					
d	D	B	r_{min}	$r1_{min}$	F_W	E_w	C_r	C_{0r}	Grease	Oil	NU		NJ	NUP	N	NF
170	260	42	2.1	2.1	193	237	287000	415000	2400	2800	NU1034	NU	NJ	—	N N	—
	310	52	4	4	—	272	475000	635000	2000	2400	N 234	—	—	—	—	NF
	310	52	4	4	207	—	605000	800000	2000	2400	NU234EM	NU	NJ	NUP	—	—
	310	86	4	4	205	—	925000	1330000	1800	2200	NU2234EM	NU	NJ	NUP	N	—
	360	72	4	4	—	310	795000	1010000	1600	2000	N 334	—	—	—	N	—
	360	72	4	4	218	—	930000	1150000	1600	2000	NU334EM	NU	NU	NUP	—	—
	360	120	4	4	216	—	1490000	2070000	1400	1800	NU2334EM	NU	NJ	NUP	—	—
180	280	46	2.1	2.1	205	255	355000	510000	2200	2600	NU1036	NU	NJ	—	N	NF
	320	52	4	4	—	282	495000	675000	1900	2200	N 236	—	—	—	N	NF
	320	52	4	4	217	—	625000	850000	1900	2200	NU236EM	NU	NJ	NUP	—	—
	320	86	4	4	215	—	1010000	1510000	1700	2000	NU2236EM	NU	NJ	NUP	—	—
	380	75	4	4	—	328	905000	1150000	1500	1800	N 336	—	—	—	N	NF
	380	75	4	4	231	—	985000	1230000	1500	1800	NU336EM	NU	NJ	NUP	—	—
	380	126	4	4	227	—	1560000	2220000	1300	1700	NU2336EM	NU	NJ	NUP	—	—
190	290	46	2.1	2.1	215	265	365000	535000	2000	2600	NU1038	NU	NJ	—	N	—
	340	55	4	4	—	299	555000	770000	1800	2200	N 238	—	—	—	N	NF
	340	55	4	4	230	—	695000	955000	1800	2200	NU238EM	NU	NJ	NUP	—	—
	340	92	4	4	228	—	1100000	1670000	1600	2000	NU2238EM	NU	NJ	NUP	—	—
	400	78	5	5	—	345	975000	1260000	1400	1700	N 338	—	—	—	N	—
	400	78	5	5	245	—	1060000	1340000	1400	1700	NU338EM	NU	NJ	NUP	—	—
	400	132	5	5	240	—	1770000	2520000	1300	1600	NU2338EM	NU	NJ	NUP	—	—
200	310	51	2.1	2.1	229	281	390000	580000	2000	2400	NU1040	NU	NJ	—	N	NF
	360	58	4	4	—	316	620000	865000	1700	2000	N 240	—	—	—	N	NF
	360	58	4	4	243	—	765000	1060000	1700	2000	NU240EM	NU	NJ	NUP	—	—
	360	98	4	4	241	—	1220000	1870000	1500	1800	NU2240EM	NU	NJ	NUP	—	—
	420	80	5	5	—	360	975000	1270000	1300	1600	N 340	—	—	—	N	NF
	420	80	5	5	258	—	1140000	1450000	1300	1600	NU340EM	NU	NJ	NUP	—	—
	420	138	5	5	253	—	1910000	2760000	1200	1500	NU2340EM	NU	NJ	NUP	—	—
220	340	56	3	3	250	310	500000	750000	1800	2200	NU1044	NU	NJ	—	N	—
	400	65	4	4	—	350	760000	1080000	1500	1800	N 244	—	—	—	N	NF
	400	65	4	4	270	—	760000	1080000	1500	1800	NU 244	NU	NJ	NUP	—	—
	400	108	4	4	270	—	1140000	1810000	1300	1600	NU2244	NU	—	—	—	—
	460	88	5	5	—	396	1190000	1570000	1200	1500	N 344	—	—	—	N	—
	460	88	5	5	284	—	1190000	1570000	1200	1500	NU 344	NU	NJ	—	—	—



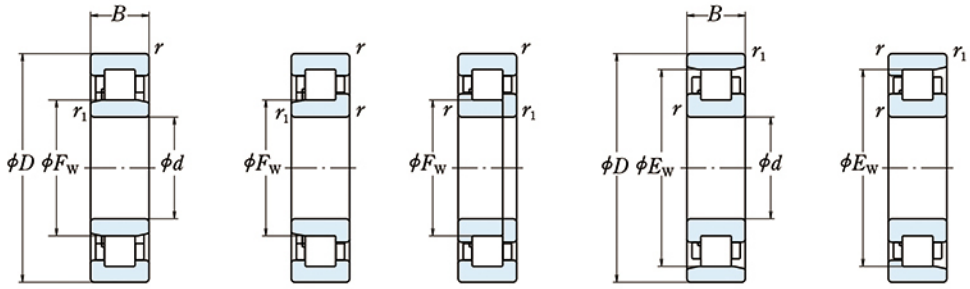




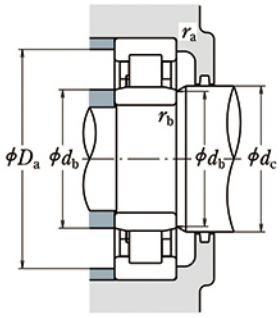
Abutment and Fillet Dimensions (mm)										Mass
d_a(2)	d_b	d_b(3)	d_c	d_d	D_a(2)	D_b	D_b	r_a	r_b	(kg)
min.	min.	max.	min.	min.	max.	max.	min.	max.	max.	approx.
181	181	190	197	—	249	249	239	2	2	7.91
186	—	—	—	—	—	294	278	3	3	17.4
186	186	202	211	223	294	—	—	3	3	18.3
186	186	200	211	223	294	—	—	3	3	29.9
186	—	—	—	—	—	344	316	3	3	36.6
186	186	213	223	241	344	—	—	3	3	37.9
186	186	210	223	241	344	—	—	3	3	63.4
191	191	202	209	—	269	269	258	2	2	10.2
196	—	—	—	—	—	304	288	3	3	18.1
196	196	212	221	233	304	—	—	3	3	19
196	196	210	221	233	304	—	—	3	3	31.4
196	—	—	—	—	—	364	335	3	3	42.6
196	196	226	235	255	364	—	—	3	3	44
196	196	222	235	255	364	—	—	3	3	74.6
201	201	212	219	—	279	279	268	2	2	10.7
206	—	—	—	—	—	324	305	3	3	22
206	206	225	234	247	324	—	—	3	3	23
206	206	223	234	247	324	—	—	3	3	38.3
210	—	—	—	—	—	380	352	4	4	48.7
210	210	240	248	268	380	—	—	4	4	50.6
210	210	235	248	268	380	—	—	4	4	86.2
211	211	226	233	—	299	299	284	2	2	14
216	—	—	—	—	—	344	323	3	3	26.2
216	216	238	247	261	344	—	—	3	3	27.4
216	216	235	247	261	344	—	—	3	3	46.1
220	—	—	—	—	—	400	367	4	4	55.3
220	220	252	263	283	400	—	—	4	4	57.1
220	220	247	263	283	400	—	—	4	4	99.3
233	233	247	254	—	327	327	313	2.5	2.5	18.2
236	—	—	—	—	—	384	357	3	3	37
236	236	264	273	289	384	—	—	3	3	37.3
—	236	264	273	289	384	—	—	3	3	61.8
240	—	—	—	—	—	440	403	4	4	72.8
240	240	278	287	307	440	—	—	4	4	74.6

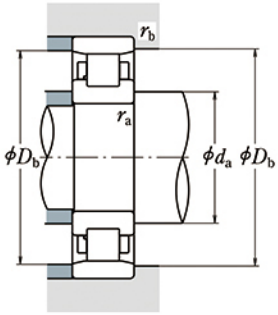
Single-Row Cylindrical Roller Bearings

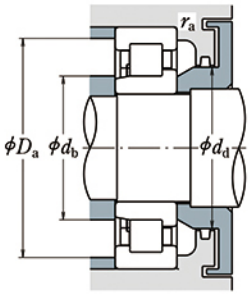
Bore Diameter 240-500mm



Boundary Dimensions							Basic Load Ratings		Limiting Speeds		Bearing Numbers					
(mm)							(N)		(min–1)		(1)					
d	D	B	r_{min}	$r1_{min}$	F_W	E_w	C_r	C_{0r}	Grease	Oil	NU		NJ	NUP	N	NF
240	360	56	3	3	270	330	530000	820000	1600	2000	**NU1048**	**NU**	**NJ**	—	**N**	—
	440	72	4	4	—	385	935000	1340000	1300	1600	**N248**	—	—	—	**N**	**NF**
	440	72	4	4	295	—	935000	1340000	1300	1600	**NU 248**	**NU**	**NJ**	**NUP**	—	—
	440	120	4	4	295	—	1440000	2320000	1200	1500	**NU2248**	**NU**	—	—	—	—
	500	95	5	5	—	430	1360000	1820000	1100	1300	**N348**	—	—	—	**N**	—
	500	95	5	5	310	—	1360000	1820000	1100	1300	**NU 348**	**NU**	**NJ**	—	—	—
260	400	65	4	4	296	364	645000	1000000	1500	1800	**NU1052**	**NU**	**NJ**	—	**N**	**NF**
	480	80	5	5	—	420	1100000	1580000	1200	1500	**N252**	—	—	—	**N**	—
	480	80	5	5	320	—	1100000	1580000	1200	1500	**NU 252**	**NU**	**NJ**	—	—	—
	480	130	5	5	320	—	1710000	2770000	1100	1300	**NU2252**	**NU**	—	**NUP**	—	—
	540	102	6	6	336	—	1540000	2090000	1000	1200	**NU 352**	**NU**	**NJ**	—	—	—
280	420	65	4	4	316	384	660000	1050000	1400	1700	**NU1056**	**NU**	**NJ**	**NUP**	**N**	**NF**
	500	80	5	5	—	440	1140000	1680000	1100	1400	**N256**	—	—	—	**N**	**NF**
	500	80	5	5	340	—	1140000	1680000	1100	1400	**NU 256**	**NU**	**NJ**	—	—	—
300	460	74	4	4	340	420	885000	1400000	1300	1500	**NU1060**	**NU**	**NJ**	—	**N**	**NF**
	540	85	5	5	364	—	1400000	2070000	1100	1300	**NU 260**	**NU**	**NJ**	—	—	—
320	480	74	4	4	360	440	905000	1470000	1200	1400	**NU1064**	**NU**	—	—	**N**	**NF**
	580	92	5	5	—	510	1540000	2270000	950	1200	**N264**	—	—	—	**N**	—
	580	92	5	5	390	—	1540000	2270000	950	1200	**NU 264**	**NU**	**NJ**	—	—	—
340	520	82	5	5	385	475	1080000	1740000	1100	1300	**NU1068**	**NU**	**NJ**	—	**N**	**NF**
360	540	82	5	5	405	495	1110000	1830000	1000	1300	**NU1072**	**NU**	—	—	**N**	**NF**
380	560	82	5	5	425	—	1140000	1910000	1000	1200	**NU1076**	**NU**	—	—	—	—
400	600	90	5	5	450	550	1360000	2280000	900	1100	**NU1080**	**NU**	—	**NUP**	**N**	—
420	620	90	5	5	470	570	1390000	2380000	850	1100	**NU1084**	**NU**	—	—	**N**	—
440	650	94	6	6	493	—	1470000	2530000	800	1000	**NU1088**	**NU**	—	—	—	—
460	680	100	6	6	516	624	1580000	2740000	750	950	**NU1092**	**NU**	—	**NUP**	**N**	—
480	700	100	6	6	536	644	1620000	2860000	750	900	**NU1096**	**NU**	**NJ**	—	**N**	—
500	720	100	6	6	556	664	1660000	2970000	710	850	**NU10/500**	**NU**	—	—	**N**	—



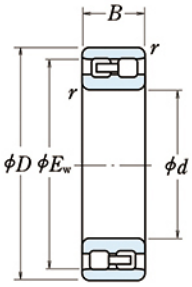




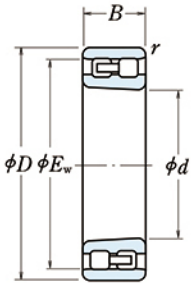
Abutment and Fillet Dimensions (mm)										Mass
d_a(2)	d_b	d_b(3)	d_c	d_d	D_a(2)	D_b	D_b	r_a	r_b	(kg)
min.	min.	max.	min.	min.	max.	max.	min.	max.	max.	approx.
253	253	266	275	—	347	347	333	2.5	2.5	19.5
256	—	—	—	—	—	424	392	3	3	49.6
256	256	289	298	316	424	—	—	3	3	50.4
—	256	289	298	316	424	—	—	3	3	84.9
260	—	—	—	—	—	480	438	4	4	92.3
260	260	304	313	333	480	—	—	4	4	94.6
276	276	292	300	—	384	384	367	3	3	29.1
280	—	—	—	—	—	460	428	4	4	66.2
280	280	314	323	343	460	—	—	4	4	67.1
280	280	314	323	343	460	—	—	4	4	111
286	286	330	339	359	514	—	—	5	5	118
296	296	312	320	—	404	404	387	3	3	30.8
300	—	—	—	—	—	480	448	4	4	69.6
300	300	334	344	364	480	—	—	4	4	70.7
316	316	336	344	—	444	444	424	3	3	43.7
320	320	358	368	391	520	—	—	4	4	89.2
336	336	356	365	—	464	464	444	3	3	46.1
340	—	—	—	—	—	560	519	4	4	110
340	340	384	394	420	560	—	—	4	4	112
360	360	381	390	—	500	500	479	4	4	61.8
380	380	400	410	—	520	520	499	4	4	64.6
—	400	420	430	—	540	—	—	4	4	67.5
420	420	445	455	—	580	580	554.5	4	4	88.2
440	440	465	475	—	600	600	574.5	4	4	91.7
—	466	488	498	—	624	—	—	5	5	105
486	486	511	521	—	654	654	628.5	5	5	123
506	506	531	541	—	674	674	654	5	5	127
526	526	551	558	—	694	694	674	5	5	131

DOUBLE-ROW CYLINDRICAL ROLLER BEARINGS

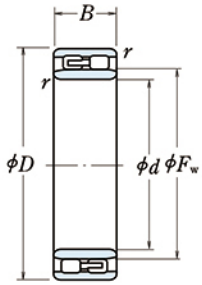
Bore Diameter 25–140 mm



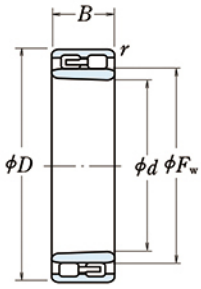
NN
Cylindrical Bore



NN
Tapered Bore

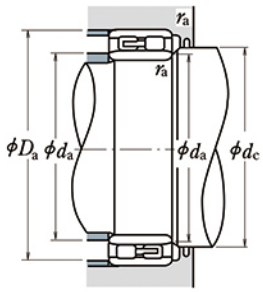


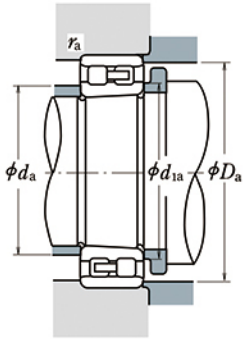
NNU
Cylindrical Bore



NNU
Tapered Bore

Boundary Dimensions						Basic Load Ratings		Limiting Speeds	
(mm)						(N)		(min–1)	
d	D	B	r_{min}	F_W	E_w	C_r	C_{0r}	Grease	Oil
25	47	16	0.6	—	41.3	25800	30000	14000	17000
30	55	19	1	—	48.5	31000	37000	12000	14000
35	62	20	1	—	55	39500	50000	10000	12000
40	68	21	1	—	61	43500	55500	9000	11000
45	75	23	1	—	67.5	52000	68500	8500	10000
50	80	23	1	—	72.5	53000	72500	7500	9000
55	90	26	1.1	—	81	69500	96500	6700	8000
60	95	26	1.1	—	86.1	73500	106000	6300	7500
65	100	26	1.1	—	91	77000	116000	6000	7100
70	110	30	1.1	—	100	97500	148000	5600	6700
75	115	30	1.1	—	105	96500	149000	5300	6300
80	125	34	1.1	—	113	119000	186000	4800	6000
85	130	34	1.1	—	118	125000	201000	4500	5600
90	140	37	1.5	—	127	143000	228000	4300	5000
95	145	37	1.5	—	132	150000	246000	4000	5000
100	140	40	1.1	112	—	155000	295000	4000	5000
	150	37	1.5	—	137	157000	265000	4000	4800
105	145	40	1.1	117	—	161000	315000	3800	4800
	160	41	2	—	146	198000	320000	3800	4500
110	150	40	1.1	122	—	167000	335000	3600	4500
	170	45	2	—	155	229000	375000	3400	4300
120	165	45	1.1	133.5	—	183000	360000	3200	4000
	180	46	2	—	165	239000	405000	3200	3800
130	180	50	1.5	144	—	274000	545000	3000	3800
	200	52	2	—	182	284000	475000	3000	3600
140	190	50	1.5	154	—	283000	585000	2800	3600
	210	53	2	—	192	298000	515000	2800	3400

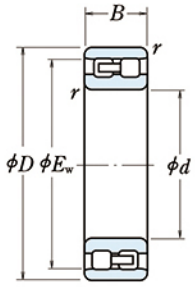




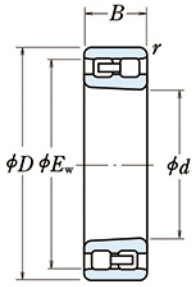
Bearing Numbers		Abutment and Fillet Dimensions (mm)							Mass
		d_b(2)		d_{1a}	d_c	D_a		r_a	(kg)
Cylindrical Bore	Tapered Bore(1)	min.	max.	min.	min.	max.	min.	max.	approx.
NN 3005	**NN 3005 K**	29	—	29	—	43	42	0.6	0.127
NN 3006	**NN 3006 K**	35	—	36	—	50	50	1	0.198
NN 3007	**NN 3007 K**	40	—	41	—	57	56	1	0.258
NN 3008	**NN 3008 K**	45	—	46	—	63	62	1	0.309
NN 3009	**NN 3009 K**	50	—	51	—	70	69	1	0.407
NN 3010	**NN 3010 K**	55	—	56	—	75	74	1	0.436
NN 3011	**NN 3011 K**	61.5	—	62	—	83.5	83	1	0.647
NN 3012	**NN 3012 K**	66.5	—	67	—	88.5	88	1	0.693
NN 3013	**NN 3013 K**	71.5	—	72	—	93.5	93	1	0.741
NN 3014	**NN 3014 K**	76.5	—	77	—	103.5	102	1	1.06
NN 3015	**NN 3015 K**	81.5	—	82	—	108.5	107	1	1.11
NN 3016	**NN 3016 K**	86.5	—	87	—	118.5	115	1	1.54
NN 3017	**NN 3017 K**	91.5	—	92	—	123.5	120	1	1.63
NN 3018	**NN 3018 K**	98	—	99	—	132	129	1.5	2.09
NN 3019	**NN 3019 K**	103	—	104	—	137	134	1.5	2.19
NNU 4920	**NNU 4920 K**	106.5	111	108	115	133.5	—	1	1.9
NN 3020	**NN 3020 K**	108	—	109	—	142	139	1.5	2.28
NNU 4921	**NNU 4921 K**	111.5	116	113	120	138.5	—	1	1.99
NN 3021	**NN 3021 K**	114	—	115	—	151	148	2	2.88
NNU 4922	**NNU 4922 K**	116.5	121	118	125	143.5	—	1	2.07
NN 3022	**NN 3022 K**	119	—	121	—	161	157	2	3.71
NNU 4924	**NNU 4924 K**	126.5	133	128	137	158.5	—	1	2.85
NN 3024	**NN 3024 K**	129	—	131	—	171	167	2	4.04
NNU 4926	**NNU 4926 K**	138	143	140	148	172	—	1.5	3.85
NN 3026	**NN 3026 K**	139	—	141	—	191	185	2	5.88
NNU 4928	**NNU 4928 K**	148	153	150	158	182	—	1.5	4.08
NN 3028	**NN 3028 K**	149	—	151	—	201	195	2	6.34

DOUBLE-ROW CYLINDRICAL ROLLER BEARINGS

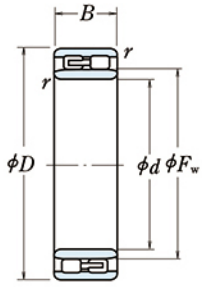
Bore Diameter 150–360 mm



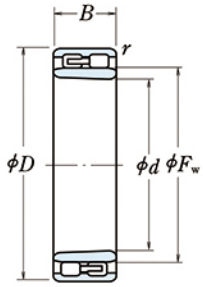
NN
Cylindrical Bore



NN
Tapered Bore

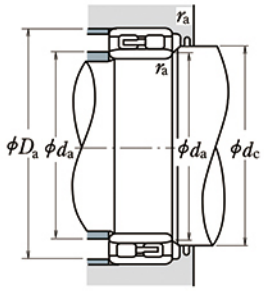


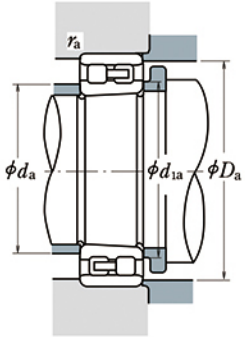
NNU
Cylindrical Bore



NNU
Tapered Bore

Boundary Dimensions						Basic Load Ratings		Limiting Speeds	
(mm)						(N)		(min–1)	
d	D	B	r_{min}	F_W	E_w	C_r	C_{0r}	Grease	Oil
150	210	60	2	167	—	350000	715000	2600	3200
	225	56	2.1	—	206	335000	585000	2600	3000
160	220	60	2	177	—	365000	760000	2400	3000
	240	60	2.1	—	219	375000	660000	2400	2800
170	230	60	2	187	—	375000	805000	2400	2800
	260	67	2.1	—	236	450000	805000	2200	2600
180	250	69	2	200	—	480000	1020000	2200	2600
	280	74	2.1	—	255	565000	995000	2000	2400
190	260	69	2	211.5	—	485000	1060000	2000	2600
	290	75	2.1	—	265	595000	1080000	2000	2400
200	280	80	2.1	223	—	570000	1220000	1900	2400
	310	82	2.1	—	282	655000	1170000	1800	2200
220	300	80	2.1	243	—	600000	1330000	1700	2200
	340	90	3	—	310	815000	1480000	1700	2000
240	320	80	2.1	263	—	625000	1450000	1600	2000
	360	92	3	—	330	855000	1600000	1500	1800
260	360	100	2.1	289	—	935000	2100000	1400	1800
	400	104	4	—	364	1030000	1920000	1400	1700
280	380	100	2.1	309	—	960000	2230000	1300	1700
	420	106	4	—	384	1080000	2080000	1300	1500
300	420	118	3	336	—	1230000	2870000	1200	1500
	460	118	4	—	418	1290000	2460000	1200	1400
320	440	118	3	356	—	1260000	3050000	1100	1400
	480	121	4	—	438	1350000	2670000	1100	1300
340	520	133	5	—	473	1670000	3300000	1000	1200
360	540	134	5	—	493	1700000	3450000	950	1200





Bearing Numbers		Abutment and Fillet Dimensions (mm)							Mass
		d_b(2)		d_{1a}	d_c	D_a		r_a	(kg)
Cylindrical Bore	Tapered Bore(1)	min.	max.	min.	min.	max.	min.	max.	approx.
NNU 4930	**NNU 4930 K**	159	166	162	171	201	—	2	6.39
NN 3030	**NN 3030 K**	161	—	162	—	214	209	2	7.77
NNU 4932	**NNU 4932 K**	169	176	172	182	211	—	2	6.76
NN 3032	**NN 3032 K**	171	—	172	—	229	222	2	9.41
NNU 4934	**NNU 4934 K**	179	186	182	192	221	—	2	7.12
NN 3034	**NN 3034 K**	181	—	183	—	249	239	2	12.8
NNU 4936	**NNU 4936 K**	189	199	193	205	241	—	2	10.4
NN 3036	**NN 3036 K**	191	—	193	—	269	258	2	16.8
NNU 4938	**NNU 4938 K**	199	211	203	217	251	—	2	10.9
NN 3038	**NN 3038 K**	201	—	203	—	279	268	2	17.8
NNU 4940	**NNU 4940 K**	211	222	214	228	269	—	2	15.3
NN 3040	**NN 3040 K**	211	—	214	—	299	285	2	22.7
NNU 4944	**NNU 4944 K**	231	242	234	248	289	—	2	16.6
NN 3044	**NN 3044 K**	233	—	236	—	327	313	2.5	29.6
NNU 4948	**NNU 4948 K**	251	262	254	269	309	—	2	18
NN 3048	**NN 3048 K**	253	—	256	—	347	334	2.5	32.7
NNU 4952	**NNU 4952 K**	271	288	275	295	349	—	2	31.1
NN 3052	**NN 3052 K**	276	—	278	—	384	368	3	47.7
NNU 4956	**NNU 4956 K**	291	308	295	315	369	—	2	33
NN 3056	**NN 3056 K**	296	—	298	—	404	388	3	51.1
NNU 4960	**NNU 4960 K**	313	335	318	343	407	—	2.5	51.9
NN 3060	**NN 3060 K**	316	—	319	—	444	422	3	70.7
NNU 4964	**NNU 4964 K**	333	355	338	363	427	—	2.5	54.9
NN 3064	**NN 3064 K**	336	—	340	—	464	442	3	76.6
NN 3068	**NN 3068 K**	360	—	365	—	500	477	4	102
NN 3072	**NN 3072 K**	380	—	385	—	520	497	4	106

Tapered Roller Bearing

Tapered Roller Bearings Description:

Tapered roller bearings are designed to take combined heavy radial loads and heavy thrust loads in one direction while operating at moderate speeds. The bearings shown are single row with a cone and cup (inner and outer rings) and a pressed steel retainer.

Nomenclature — Metric Tapered Roller Bearings

322

Series

30200	3220
30300	32300
31300	32900
32000	33000
	33100
	33200

10

Bore Size

(04 and up: multiply last two numbers by 5 to get bore in mm)

02: 12mm 08: 40mm

03: 17mm 10: 50mm

04: 20mm 20: 100mm

Special bore sizes are as follows:

/22: 22mm /32: 32mm

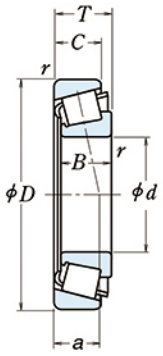
/28: 28mm

Interchange — Inch Tapered Roller Bearings

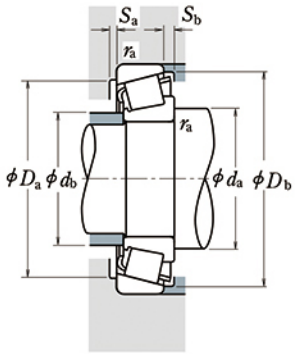
DESCRIPTION		INTERCHANGE			
		NSK	SKF	TIMKEN	FAG
Prefix	EXTRA HEAVY	EH	EH	EH	KEH
	HEAVIER THAN HEAVY	HH	HH	HH	KHH
	HEAVY	H	H	H	KH
	HEAVY MEDIUM	HM	HM	HM	KHM
	MEDIUM	M	M	M	KM
	LIGHT MEDIUM	LM	LM	LM	KLM
	LIGHT	L	L	L	KL
	LIGHTER THAN LIGHT	LL	LL	LL	KLL
	EXTRA LIGHT	EL	EL	EL	KEL
Cup Angle	0° TO 23°59'59.99	1xxxx	1xxxx	1xxxx	1xxxx
	24° TO 25°29'59.99	2xxxx	2xxxx	2xxxx	2xxxx
	25°30' TO 26°59'59.99	3xxxx	3xxxx	3xxxx	3xxxx
	27° TO 28°29'59.99	4xxxx	4xxxx	4xxxx	4xxxx
	28°30' TO 30°29'59.99	5xxxx	5xxxx	5xxxx	5xxxx
	30°30' TO 32°29'59.99	6xxxx	6xxxx	6xxxx	6xxxx
	32°30' TO 35°59'59.99	7xxxx	7xxxx	7xxxx	7xxxx
	36° TO 44°59'59.99	8xxxx	8xxxx	8xxxx	8xxxx
	45° up, but not thrust only	9xxxx	9xxxx	9xxxx	9xxxx
	CONFORMS TO AFBMA STANDARD	R			
	CASE CARBURIZED CUP & CONE	G			

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 15 – 28 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	Cone r min.	Cup r min.	(N) C_r	(N) C_{0r}	{kgf} C_r	{kgf} C_{0r}	(min–1) Grease	(min–1) Oil
15	35	11.75	11	10	0.6	0.6	14800	13200	1510	1350	11000	15000
	42	14.25	13	11	1	1	23600	21100	2400	2160	9500	13000
17	40	13.25	12	11	1	1	20100	19900	2050	2030	9500	13000
	40	17.25	16	14	1	1	27100	28000	2770	2860	9500	13000
	47	15.25	14	12	1	1	29200	26700	2980	2720	8500	12000
	47	15.25	14	10.5	1	1	22000	20300	2240	2070	8000	11000
	47	20.25	19	16	1	1	37500	36500	3800	3750	8500	11000
20	42	15	15	12	0.6	0.6	24600	27400	2510	2800	9000	12000
	47	15.25	14	12	1	1	27900	28500	2850	2900	8000	11000
	47	19.25	18	15	1	1	35500	37500	3650	3850	8500	11000
	52	16.25	15	13	1.5	1.5	35000	33500	35550	3400	7500	10000
	52	16.25	15	12	1.5	1.5	25300	24500	2580	2490	7100	10000
	52	22.25	21	18	1.5	1.5	45500	47500	4650	4850	8000	11000
22	44	15	15	11.5	0.6	0.6	25600	29400	2610	3000	8500	11000
	50	15.25	14	12	1	1	29200	30500	2980	3150	7500	10000
	50	19.25	18	15	1	1	36500	40500	3750	4100	7500	11000
	56	17.25	16	14	1.5	1.5	37000	36500	3750	3750	7100	9500
25	47	15	15	11.5	0.6	0.6	27400	33000	2800	3400	8000	11000
	47	17	17	14	0.6	0.6	31000	38000	3150	3900	8000	11000
	52	16.25	15	13	1	1	32000	35000	3300	3550	7100	10000
	52	19.25	18	16	1	1	40000	45000	4050	4600	7100	10000
	52	22	22	18	1	1	47500	56500	4850	5750	7500	10000
	62	18.25	17	15	1.5	1.5	47500	46000	4850	4700	6300	8500
	62	18.25	17	13	1.5	1.5	38000	40500	3900	4100	5600	8000
	62	18.25	17	13	1.5	1.5	38000	40500	3900	4100	5600	8000
	62	25.25	24	20	1.5	1.5	62500	66000	6400	6750	6300	8500
28	52	16	16	12	1	1	32000	39000	3300	3950	7100	9500
	58	17.25	16	14	1	1	39500	41500	4050	4200	6300	9000
	58	20.25	19	16	1	1	47500	54000	4850	5500	6300	9000
	68	19.75	18	15	1.5	1.5	55000	55500	5650	5650	6000	8000



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leqq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

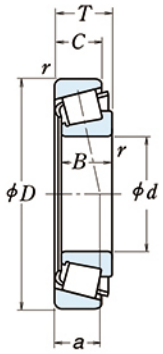
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

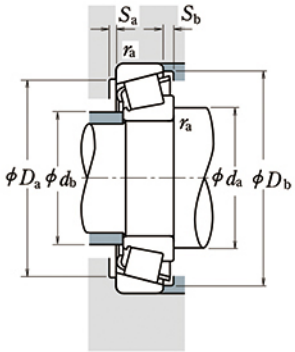
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
30202	23	19	30	30	33	2	1.5	0.6	0.6	8.2	0.32	1.9	1	0.053
30302	24	22	36	36	38.5	2	3	1	1	9.5	0.29	2.1	1.2	0.098
30203	26	23	34	34	37.5	2	2	1	1	9.7	0.35	1.7	0.96	0.079
32203	26	22	34	34	37	2	3	1	1	11.2	0.31	1.9	1.1	0.103
30303	26	24	41	40	43	2	3	1	1	10.4	0.29	2.1	1.2	0.134
30303 D	29	23	41	34	44	2	4.5	1	1	15.4	0.81	0.74	0.41	0.129
32303	28	23	41	39	43	2	4	1	1	12.5	0.29	2.1	1.2	0.178
32004	28	24	37	35	40	3	3	0.6	0.6	10.6	0.37	1.6	0.88	0.097
30204	29	27	41	40	44	2	3	1	1	11	0.35	1.7	0.96	0.127
32204	29	25	41	38	44.5	3	4	1	1	12.6	0.33	1.8	1	0.161
30304	31	27	44	44	47.5	2	3	1.5	1.5	11.6	0.3	2	1.1	0.172
30304 D	34	26	43	37	49	2	4	1.5	1.5	16.7	0.81	0.74	0.41	0.168
32304	33	26	43	42	48	3	4	1.5	1.5	13.9	0.3	2	1.1	0.241
320/22	30	27	39	37	42	3	3.5	0.6	0.6	11.1	0.4	1.5	0.83	0.103
302/22	31	29	44	42	47	2	3	1	1	11.6	0.37	1.6	0.9	0.139
322/22	31	28	44	41	47	2	4	1	1	13.5	0.37	1.6	0.89	0.18
303/22	33	30	47	46	50	2	3	1.5	1.5	12.4	0.32	1.9	1	0.208
32005	33	30	42	40	45	3	3.5	0.6	0.6	11.8	0.43	1.4	0.77	0.116
33005	33	29	42	41	44	3	3	0.6	0.6	11	0.29	2.1	1.1	0.131
30205	34	31	46	44	48.5	2	3	1	1	12.7	0.37	1.6	0.88	0.157
32205	34	30	46	44	50	2	3	1	1	13.5	0.36	1.7	0.92	0.189
33205	34	29	46	43	49.5	4	4	1	1	14.1	0.35	1.7	0.94	0.221
30305	36	34	54	54	57	2	3	1.5	1.5	13.2	0.3	2	1.1	0.27
30305 D	39	34	53	47	59	2	5	1.5	1.5	19.9	0.83	0.73	0.4	0.265
31305	39	33	53	47	59	3	5	1.5	1.5	19.9	0.83	0.73	0.4	0.265
32305	38	32	53	51	57	3	5	1.5	1.5	15.6	0.3	2	1.1	0.376
320/28	37	33	46	44	50	3	4	1	1	12.8	0.43	1.4	0.77	0.146
302/28	37	34	52	50	55	2	3	1	1	13.2	0.35	1.7	0.93	0.203
322/28	37	34	52	49	55	2	4	1	1	14.6	0.37	1.6	0.89	0.243
303/28	39	37	59	58	61	2	4.5	1.5	1.5	14.5	0.31	1.9	1.1	0.341

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 30 – 35 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	Cone r min.	Cup r min.	(N) C_r	(N) C_{0r}	{kgf} C_r	{kgf} C_{0r}	(min–1) Grease	(min–1) Oil
30	47	12	12	9	0.3	0.3	17600	24400	1800	2490	7500	10000
	55	17	17	13	1	1	36000	44500	3700	4550	6700	9000
	55	20	20	16	1	1	42000	54000	4250	5500	6700	9000
	62	17.25	16	14	1	1	43000	47500	4400	4850	6000	8000
	62	21.25	20	17	1	1	52000	60000	5300	6150	6000	8500
	62	25	25	19.5	1	1	66500	79500	6800	8100	6000	8000
	72	20.75	19	16	1.5	1.5	59500	60000	6050	6100	5300	7500
	72	20.75	19	14	1.5	1.5	49000	52500	5000	5350	4800	6700
	72	20.75	19	14	1.5	1.5	49000	52500	5000	5350	4800	6800
	72	28.75	27	23	1.5	1.5	80000	88500	8150	9000	5600	7500
32	58	17	17	13	1	1	37500	47000	3800	4800	6300	8500
	58	21	20	16	1	1	41000	50000	4150	5100	6300	8500
	65	18.25	17	15	1	1	48500	54000	4950	5500	5600	8000
	65	22.25	21	18	1	1	56000	65000	5700	6650	6000	8000
	65	26	26	20.5	1	1	70000	86500	7150	8850	5600	8000
	75	21.75	20	17	1.5	1.5	56000	56000	5700	5700	5300	7100
35	55	14	14	11.5	0.6	0.6	27400	39000	2790	3950	6300	8500
	62	18	18	14	1	1	43500	55500	4400	5650	5600	8000
	62	21	21	17	1	1	49000	65000	4950	6650	5600	8000
	72	18.25	17	15	1.5	1.5	54000	59500	5500	6050	5300	7100
	72	24.25	23	19	1.5	1.5	70500	83500	7150	8550	5300	7100
	72	28	28	22	1.5	1.5	86500	108000	8850	11100	5300	7100
	80	22.75	21	18	2	1.5	76000	79000	7750	8050	4800	6700
	80	22.75	21	15	2	1.5	62000	68000	6350	6950	4300	6000
	80	22.75	21	15	2	1.5	62000	68000	6350	6950	4300	6000
	80	32.75	31	25	2	1.5	99000	111000	10100	11300	5000	6700



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leqq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

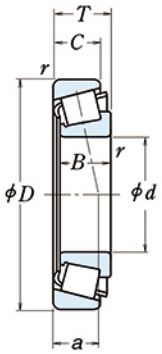
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

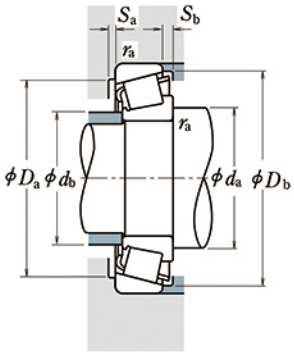
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32906	34	34	44	42	44	3	3	0.3	0.3	9.2	0.32	1.9	1	0.074
32006	39	35	49	47	53	3	4	1	1	13.5	0.43	1.4	0.77	0.172
33006	39	35	49	48	52	3	4	1	1	13.1	0.29	2.1	1.1	0.208
30206	39	37	56	52	58	2	3	1	1	13.9	0.37	1.6	0.88	0.238
32206	39	36	56	51	58.5	2	4	1	1	15.4	0.37	1.6	0.88	0.297
33206	39	35	56	52	59.5	5	5.5	1	1	16.1	0.34	1.8	0.97	0.355
30306	41	40	63	62	66	3	4.5	1.5	1.5	15.1	0.32	1.9	1.1	0.403
30306 D	44	40	63	55	68	3	6.5	1.5	1.5	23.1	0.83	0.73	0.4	0.393
31306	44	40	63	55	68	3	6.5	1.5	1.5	23.1	0.83	0.73	0.4	0.393
32306	43	38	63	59	66	3	5.5	1.5	1.5	18	0.32	1.9	1.1	0.57
320/32	41	37	52	49	55	3	4	1	1	14.2	0.45	1.3	0.73	0.191
330/32	41	37	52	50	55	2	4	1	1	13.8	0.31	1.9	1.1	0.225
302/32	41	39	59	56	61	3	3	1	1	14.7	0.37	1.6	0.88	0.277
322/32	41	38	59	54	61	3	4	1	1	15.9	0.37	1.6	0.88	0.336
332/32	41	38	59	55	62	5	5.5	1	1	17	0.35	1.7	0.95	0.4
303/32	44	42	66	64	68	3	4.5	1.5	1.5	15.9	0.33	1.8	1	0.435
32907	43	40	50	50	52.5	3	2.5	0.6	0.6	10.7	0.29	2.1	1.1	0.123
32007	44	40	56	54	60	4	4	1	1	15	0.45	1.3	0.73	0.229
33007	44	40	56	55	59	4	4	1	1	14.1	0.31	2	1.1	0.267
30207	46	43	63	62	67	3	3	1.5	1.5	15	0.37	1.6	0.88	0.34
32207	46	42	63	61	67.5	3	5	1.5	1.5	17.9	0.37	1.6	0.88	0.456
33207	46	41	63	61	68	5	6	1.5	1.5	18.3	0.35	1.7	0.93	0.54
30307	47	45	71	69	74	3	4.5	2	1.5	16.7	0.32	1.9	1.1	0.538
30307 D	51	44	71	62	77	3	7.5	2	1.5	25.2	0.83	0.73	0.4	0.519
31307	51	44	71	62	77	3	7.5	2	1.5	25.2	0.83	0.73	0.4	0.52
32307	49	43	71	66	74	3	7.5	2	1.5	20.7	0.32	1.9	1.1	0.765

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 40 – 50 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	Cone r min.	Cup r min.	(N) C_r	(N) C_{0r}	{kgf} C_r	{kgf} C_{0r}	(min–1) Grease	(min–1) Oil
40	62	15	15	12	0.6	0.6	34000	47000	3450	4800	5600	7500
	68	19	19	14.5	1	1	53000	71000	5400	7250	5300	7100
	68	22	22	18	1	1	59000	81500	6000	8300	5300	7100
	75	26	26	20.5	1.5	1.5	78500	101000	8000	10300	4800	6700
	80	19.75	18	16	1.5	1.5	63500	70000	6450	7150	4800	6300
	80	24.75	23	19	1.5	1.5	77000	90500	7900	9200	4800	6300
	80	32	32	25	1.5	1.5	107000	137000	10900	14000	4800	6300
	90	25.25	23	20	2	1.5	90500	101000	9250	10300	4300	5600
	90	25.25	23	17	2	1.5	80000	89500	8150	9150	3800	5300
	90	25.25	23	17	2	1.5	80000	89500	8150	9150	3800	5300
	90	35.25	33	27	2	1.5	120000	145000	12200	14800	4300	6000
45	68	15	15	12	0.6	0.6	34500	50500	3550	5150	5000	6700
	75	20	20	15.5	1	1	60000	83000	6150	8450	4500	6300
	75	24	24	19	1	1	69000	99000	7050	10100	4800	6300
	80	26	26	20.5	1.5	1.5	84000	113000	8550	11600	4500	6000
	85	20.75	19	16	1.5	1.5	68500	79500	6950	8100	4300	6000
	85	24.75	23	19	1.5	1.5	83000	102000	8500	10400	4300	6000
	85	32	32	25	1.5	1.5	111000	147000	11300	15000	4300	6000
	95	29	26.5	20	2.5	2.5	88500	109000	9050	11100	3600	5000
	95	36	35	30	2.5	2.5	139000	174000	14200	17800	4000	5300
	100	27.25	25	22	2	1.5	112000	127000	11400	12900	3800	5300
	100	27.25	25	18	2	1.5	95500	109000	9750	11100	3400	4800
	100	27.25	25	18	2	1.5	95500	109000	9750	11100	3400	4800
	100	38.25	36	30	2	1.5	144000	177000	14700	18000	3800	5300
50	100	36	35	30	2.5	2.5	144000	185000	14600	18800	3800	5000
	72	15	15	12	0.6	0.6	36000	54000	3650	5500	4500	6300
	80	20	20	15.5	1	1	61000	87000	6250	8900	4300	6000
	80	24	24	19	1	1	70500	104000	7150	10600	4300	6000
	85	26	26	20	1.5	1.5	89000	126000	9100	12800	4300	5600
	90	21.75	20	17	1.5	1.5	76000	91500	7750	9300	4000	5300
	90	24.75	23	19	1.5	1.5	87500	109000	8900	11100	4000	5300
	90	32	32	24.5	1.5	1.5	118000	165000	12100	16800	4000	5300
	105	32	29	22	3	3	109000	133000	11100	13600	3200	4500
	110	29.25	27	23	2.5	2	130000	148000	13300	15100	3400	4800
	110	29.25	27	19	2.5	2	114000	132000	11700	13400	3200	4300
	110	29.25	27	19	2.5	2	114000	132000	11700	13400	3200	4300
	110	42.25	40	33	2.5	2	176000	220000	17900	22400	3600	4800
	110	42.25	40	33	2.5	2	164000	218000	16800	22200	3400	4800



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leqq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

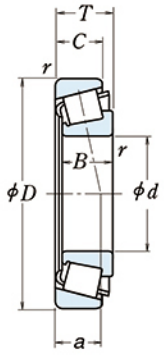
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

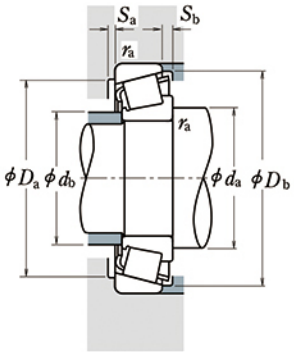
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32908	48	44	57	57	59	3	3	0.6	0.6	11.5	0.29	2.1	1.1	0.161
32008	49	45	62	60	65.5	4	4.5	1	1	15	0.38	1.6	0.87	0.28
33008	49	45	62	61	65	4	4	1	1	14.6	0.28	2.1	1.2	0.322
33108	51	46	66	65	71	4	5.5	1.5	1.5	18	0.36	1.7	0.93	0.503
30208	51	48	71	69	75	3	3.5	1.5	1.5	16.6	0.37	1.6	0.88	0.437
32208	51	48	71	68	75	3	5.5	1.5	1.5	18.9	0.37	1.6	0.88	0.548
33208	51	46	71	67	76	5	7	1.5	1.5	20.8	0.36	1.7	0.92	0.744
30308	52	52	81	76	82	3	5	2	1.5	19.5	0.35	1.7	0.96	0.758
30308 D	56	50	81	70	87	3	8	2	1.5	28.7	0.83	0.73	0.4	0.728
31308	56	50	81	70	87	3	8	2	1.5	28.7	0.83	0.73	0.4	0.728
32308	54	50	81	73	82	3	8	2	1.5	23.4	0.35	1.7	0.96	1.05
32909	53	50	63	62	64	3	3	0.6	0.6	12.3	0.32	1.9	1	0.187
32009	54	51	69	67	72	4	4.5	1	1	16.6	0.39	1.5	0.84	0.354
33009	54	51	69	67	71	4	5	1	1	16.3	0.29	2	1.1	0.414
33109	56	51	71	69	77	4	5.5	1.5	1.5	19.1	0.38	1.6	0.86	0.552
30209	56	53	76	74	80	3	4.5	1.5	1.5	18.3	0.41	1.5	0.81	0.488
32209	56	53	76	73	81	3	5.5	1.5	1.5	20.1	0.41	1.5	0.81	0.602
33209	56	51	76	72	81	5	7	1.5	1.5	22	0.39	1.6	0.86	0.817
T 7 FC045	60	53	83	71	91	3	9	2	2	32.1	0.87	0.69	0.38	0.918
T 2 ED045	60	54	83	79	89	5	6	2	2	23.5	0.32	1.9	1.02	1.22
30309	57	58	91	86	93	3	5	2	1.5	21.1	0.35	1.7	0.96	1.01
30309 D	61	57	91	79	96	3	9	2	1.5	31.5	0.83	0.73	0.4	0.957
31309	61	57	91	79	96	3	9	2	1.5	31.5	0.83	0.73	0.4	0.947
32309	59	56	91	82	93	3	8	2	1.5	25	0.35	1.7	0.96	1.42
T 2 ED050	65	59	88	83	94	6	6	2	2	24.2	0.34	1.8	0.96	1.3
32910	58	54	67	66	69	3	3	0.6	0.6	13.5	0.34	1.8	0.97	0.193
32010	59	56	74	71	77	4	4.5	1	1	17.9	0.42	1.4	0.78	0.38
33010	59	55	74	71	76	4	5	1	1	17.4	0.32	1.9	1	0.452
33110	61	56	76	74	82	4	6	1.5	1.5	20.3	0.41	1.5	0.8	0.597
30210	61	58	81	79	85	3	4.5	1.5	1.5	19.6	0.42	1.4	0.79	0.557
32210	61	57	81	78	86	3	5.5	1.5	1.5	21	0.42	1.4	0.79	0.642
33210	61	56	81	76	87	5	7.5	1.5	1.5	23.2	0.41	1.5	0.8	0.867
T 7 FC050	74	59	91	78	100	5	10	2.5	2.5	36.4	0.87	0.69	0.38	1.22
30310	65	65	100	95	102	3	6	2	2	23.1	0.35	1.7	0.96	1.28
30310 D	70	62	100	87	105	3	10	2	2	34.3	0.83	0.73	0.4	1.26
31310	70	62	100	87	105	3	10	2	2	34.3	0.83	0.73	0.4	1.26
32310	68	62	100	91	102	3	9	2	2	28	0.35	1.7	0.96	1.88
32310 CJ	68	59	100	82	103	3	9	2	2	32.8	0.55	1.1	0.6	1.93

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 55 – 65 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	r Cone	r Cup	(N)		{kgf}		(min–1)	
					min.		C_r	C_{0r}	C_r	C_{0r}	Grease	Oil
55	80	17	17	14	1	1	45500	74500	4600	7600	4300	5600
	90	23	23	17.5	1.5	1.5	81500	117000	8300	11900	3800	5300
	90	27	27	21	1.5	1.5	91500	138000	9300	14000	3800	5300
	95	30	30	23	1.5	1.5	112000	158000	11500	16100	3800	5000
	100	22.75	21	18	2	1.5	94500	113000	9650	11500	3600	5000
	100	26.75	25	21	2	1.5	110000	137000	11200	14000	3600	5000
	100	35	35	27	2	1.5	141000	193000	14400	19700	3600	5000
	115	34	31	23.5	3	3	126000	164000	12800	16700	3000	4300
	120	31.5	29	25	2.5	2	150000	171000	15200	17500	3200	4300
	120	31.5	29	21	2.5	2	131000	153000	13400	15600	2800	4000
	120	31.5	29	21	2.5	2	131000	153000	13400	15600	2800	4000
60	120	45.5	43	35	2.5	2	204000	258000	20800	26300	3200	4300
	85	17	17	14	1	1	49000	84500	5000	8650	3800	5300
	95	23	23	17.5	1.5	1.5	85500	127000	8700	12900	3600	5000
	95	27	27	21	1.5	1.5	96000	150000	9800	15300	3600	5000
	100	30	30	23	1.5	1.5	115000	166000	11700	16900	3400	4800
	110	23.75	22	19	2	1.5	104000	123000	10600	12500	3400	4500
	110	29.75	28	24	2	1.5	131000	167000	13400	17000	3400	4500
	110	38	38	29	2	1.5	166000	231000	16900	23600	3400	4500
	125	37	33.5	26	3	3	151000	197000	15400	20100	2800	3800
	130	33.5	31	26	3	2.5	174000	201000	17700	20500	3000	4000
	130	33.5	31	22	3	2.5	151000	177000	15400	18100	2600	3800
65	130	33.5	31	22	3	2.5	151000	177000	15400	18100	2600	3800
	130	48.5	46	37	3	2.5	233000	295000	23700	30000	3000	4000
	90	17	17	14	1	1	49000	86500	5000	8800	3600	5000
	100	23	23	17.5	1.5	1.5	86500	132000	8800	13500	3400	4500
	100	27	27	21	1.5	1.5	97500	156000	9950	15900	3400	4500
	110	34	34	26.5	1.5	1.5	148000	218000	15100	22200	3200	4300
	120	24.75	23	20	2	1.5	122000	151000	12500	15400	3000	4000
	120	32.75	31	27	2	1.5	157000	202000	16000	20600	3000	4000
	120	41	41	32	2	1.5	202000	282000	20600	28800	3000	4000
	140	36	33	28	3	2.5	200000	233000	20400	23800	2600	3600
	140	36	33	23	3	2.5	173000	205000	17700	20900	2400	3400
	140	36	33	23	3	2.5	173000	205000	17700	20900	2400	3400
	140	51	48	39	3	2.5	267000	340000	27300	35000	2800	3800



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

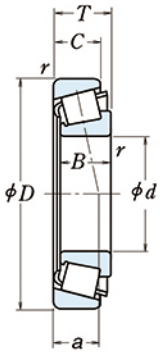
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

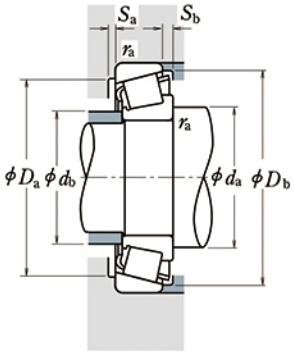
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32911	64	60	74	73	76	4	3	1	1	14.6	0.31	1.9	1.1	0.282
32011	66	62	81	80	86	4	5.5	1.5	1.5	19.7	0.41	1.5	0.81	0.568
33011	66	62	81	80	86	5	6	1.5	1.5	19.2	0.31	1.9	1.1	0.657
33111	66	62	86	82	91	5	7	1.5	1.5	22.4	0.37	1.6	0.88	0.877
30211	67	64	91	89	94	4	4.5	2	1.5	20.9	0.41	1.5	0.81	0.736
32211	67	63	91	87	95	4	5.5	2	1.5	22.7	0.41	1.5	0.81	0.859
33211	67	62	91	86	96	6	8	2	1.5	25.2	0.4	1.5	0.83	1.18
T 7 FC055	73	66	101	86	109	4	10.5	2.5	2.5	39	0.87	0.69	0.38	1.58
30311	70	71	110	104	111	4	6.5	2	2	24.6	0.35	1.7	0.96	1.63
30311 D	75	67	110	94	114	4	10.5	2	2	37	0.83	0.73	0.4	1.58
31311	75	67	110	94	114	4	10.5	2	2	37	0.83	0.73	0.4	1.58
32311	73	67	110	99	111	4	10.5	2	2	29.9	0.35	1.7	0.96	2.39
32912	69	65	79	78	81	4	3	1	1	15.5	0.33	1.8	1	0.306
32012	71	66	86	85	91	4	5.5	1.5	1.5	20.9	0.43	1.4	0.77	0.608
33012	71	66	86	85	90	5	6	1.5	1.5	20	0.33	1.8	1	0.713
33112	71	68	91	88	96	5	7	1.5	1.5	23.6	0.4	1.5	0.83	0.91
30212	72	69	101	96	103	4	4.5	2	1.5	22	0.41	1.5	0.81	0.93
32212	72	68	101	95	104	4	5.5	2	1.5	24.1	0.41	1.5	0.81	1.18
33212	72	68	101	94	105	6	9	2	1.5	27.6	0.4	1.5	0.82	1.56
T 7 FC060	78	72	111	94	119	4	11	2.5	2.5	41.4	0.82	0.73	0.4	2.03
30312	78	77	118	112	120	4	7.5	2.5	2	26	0.35	1.7	0.96	2.03
30312 D	84	74	118	103	125	4	11.5	2.5	2	40.3	0.83	0.73	0.4	1.98
31312	84	74	118	103	125	4	11.5	2.5	2	40.3	0.83	0.73	0.4	1.98
32312	81	74	118	107	120	4	11.5	2.5	2	31.4	0.35	1.7	0.96	2.96
32913	74	70	84	82	86	4	3	1	1	16.8	0.35	1.7	0.93	0.323
32013	76	71	91	90	97	4	5.5	1.5	1.5	22.4	0.46	1.3	0.72	0.646
33013	76	71	91	90	96	5	6	1.5	1.5	21.1	0.35	1.7	0.95	0.76
33113	76	73	101	96	106	6	7.5	1.5	1.5	26	0.39	1.5	0.85	1.32
30213	77	78	111	106	113	4	4.5	2	1.5	23.8	0.41	1.5	0.81	1.18
32213	77	75	111	104	115	4	5.5	2	1.5	27.1	0.41	1.5	0.81	1.55
33213	77	74	111	102	115	6	9	2	1.5	29.2	0.39	1.5	0.85	2.04
30313	83	83	128	121	130	4	8	2.5	2	27.9	0.35	1.7	0.96	2.51
30313 D	89	80	128	111	133	4	13	2.5	2	43.2	0.83	0.73	0.4	2.43
31313	89	80	128	111	133	4	13	2.5	2	43.2	0.83	0.73	0.4	2.43
32313	86	80	128	116	130	4	12	2.5	2	34	0.35	1.7	0.96	3.6

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 70 – 80 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	Cone r min.	Cup r min.	(N) C_r	(N) C_{0r}	{kgf} C_r	{kgf} C_{0r}	(min–1) Grease	(min–1) Oil
70	100	20	20	16	1	1	70000	113000	7150	11500	3200	4500
	110	25	25	19	1.5	1.5	104000	158000	10600	16100	3200	4300
	110	31	31	25.5	1.5	1.5	127000	204000	12900	20800	3000	4300
	120	37	37	29	2	1.5	177000	262000	18100	26700	3000	4000
	125	26.25	24	21	2	1.5	132000	163000	13500	16700	2800	4000
	125	33.25	31	27	2	1.5	157000	205000	16100	20900	2800	4000
	125	41	41	32	2	1.5	209000	299000	21300	30500	2800	4000
	140	39	35.5	27	3	3	177000	229000	18000	23400	2400	3400
	150	38	35	30	3	2.5	227000	268000	23200	27400	2400	3400
	150	38	35	25	3	2.5	192000	229000	19600	23300	2200	3200
	150	38	35	25	3	2.5	192000	229000	19600	23300	2200	3200
	150	54	51	42	3	2.5	300000	390000	30500	39500	2600	3400
75	105	20	20	16	1	1	72500	120000	7400	12300	3200	4300
	115	25	25	19	1.5	1.5	109000	171000	11100	17400	3000	4000
	115	31	31	25.5	1.5	1.5	133000	220000	13500	22500	3000	4000
	125	37	37	29	2	2	182000	275000	18600	28100	2800	3800
	130	27.25	25	22	2	1.5	143000	182000	14600	18500	2800	3800
	130	33.25	31	27	2	1.5	165000	219000	16900	22400	2800	3800
	130	41	41	31	2	1.5	215000	315000	21900	32000	2800	3800
	160	40	37	31	3	2.5	253000	300000	25800	30500	2400	3200
	160	40	37	26	3	2.5	211000	251000	21500	25600	2200	3000
	160	40	37	26	3	2.5	211000	251000	21500	25600	2200	3000
	160	58	55	45	3	2.5	340000	445000	35000	45500	2400	3200
80	110	20	20	16	1	1	75000	128000	7650	13100	3000	4000
	125	29	29	22	1.5	1.5	140000	222000	14300	22700	2800	3600
	125	36	36	29.5	1.5	1.5	172000	282000	17500	28800	2800	3600
	130	37	37	29	2	1.5	186000	289000	19000	29400	2600	3600
	140	28.25	26	22	2.5	2	157000	195000	16000	19900	2600	3400
	140	35.25	33	28	2.5	2	192000	254000	19600	25900	2600	3400
	140	46	46	35	2.5	2	256000	385000	26200	39000	2600	3400
	170	42.5	39	33	3	2.5	276000	330000	28200	33500	2200	3000
	170	42.5	39	27	3	2.5	235000	283000	24000	28900	2000	2800
	170	42.5	39	27	3	2.5	235000	283000	24000	28900	2000	2800
	170	61.5	58	48	3	2.5	385000	505000	39000	515000	2200	3000



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leqq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

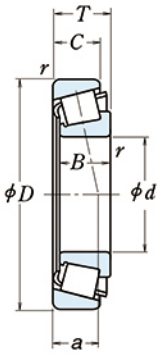
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

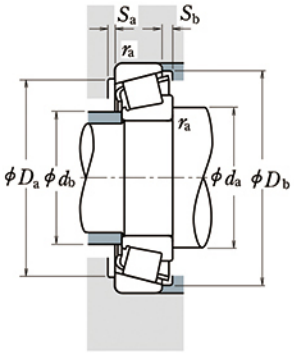
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32914	79	76	94	93	96	4	4	1	1	17.6	0.32	1.9	1.1	0.494
32014	81	77	101	98	105	5	6	1.5	1.5	23.7	0.43	1.4	0.76	0.869
33014	81	78	101	100	105	5	5.5	1.5	1.5	22.2	0.28	2.1	1.2	1.11
33114	82	79	111	104	115	6	8	2	1.5	27.9	0.38	1.6	0.87	1.71
30214	82	81	116	110	118	4	5	2	1.5	25.6	0.42	1.4	0.79	1.3
32214	82	80	116	108	119	4	6	2	1.5	28.6	0.42	1.4	0.79	1.66
33214	82	78	116	107	120	7	9	2	1.5	30.4	0.41	1.5	0.81	2.15
T 7 FC070	88	79	126	106	133	5	12	2.5	2.5	46.4	0.87	0.69	0.38	2.55
30314	88	89	138	132	140	4	8	2.5	2	29.7	0.35	1.7	0.96	3.03
30314 D	94	85	138	118	142	4	13	2.5	2	45.8	0.83	0.73	0.4	2.94
31314	94	85	138	118	142	4	13	2.5	2	45.8	0.83	0.73	0.4	2.94
32314	91	86	138	124	140	4	12	2.5	2	36.1	0.35	1.7	0.96	4.35
32915	84	81	99	98	101	4	4	1	1	18.7	0.33	1.8	0.99	0.53
32015	86	82	106	103	110	5	6	1.5	1.5	25.1	0.46	1.3	0.72	0.925
33015	86	83	106	104	110	6	5.5	1.5	1.5	23	0.3	2	1.1	1.18
33115	87	83	115	109	120	6	8	2	2	29.2	0.4	1.5	0.83	1.8
30215	87	85	121	115	124	4	5	2	1.5	27	0.44	1.4	0.76	1.43
32215	87	84	121	113	125	4	6	2	1.5	29.8	0.44	1.4	0.76	1.72
33215	87	83	121	111	125	7	10	2	1.5	31.6	0.43	1.4	0.77	2.25
30315	93	95	148	141	149	4	9	2.5	2	31.8	0.35	1.7	0.96	3.63
30315 D	99	91	148	129	152	6	14	2.5	2	48.8	0.83	0.73	0.4	3.47
31315	99	91	148	129	152	6	14	2.5	2	48.8	0.83	0.73	0.4	3.47
32315	96	91	148	134	149	4	13	2.5	2	38.9	0.35	1.7	0.96	5.31
32916	89	85	104	102	106	4	4	1	1	19.8	0.35	1.7	0.94	0.56
32016	91	89	116	112	120	6	7	1.5	1.5	26.9	0.42	1.4	0.78	1.32
33016	91	88	116	112	119	6	6.5	1.5	1.5	25.5	0.28	2.2	1.2	1.66
33116	82	88	121	113	126	6	8	2	1.5	30.4	0.42	1.4	0.79	1.88
30216	95	91	130	124	132	4	6	2	2	28.1	0.42	1.4	0.79	1.68
32216	95	90	130	122	134	4	7	2	2	30.6	0.42	1.4	0.79	2.13
33216	95	89	130	119	135	7	11	2	2	34.8	0.43	1.4	0.78	2.93
30316	98	102	158	150	159	4	9.5	2.5	2	34	0.35	1.7	0.96	4.27
30316 D	104	97	158	136	159	6	15.5	2.5	2	51.8	0.83	0.73	0.4	4.07
31316	104	97	158	136	159	6	15.5	2.5	2	51.8	0.83	0.73	0.4	4.07
32316	101	98	158	143	159	4	13.5	2.5	2	41.4	0.35	1.7	0.96	6.35

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 85 – 100 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	Cone r min.	Cup r min.	(N) C_r	(N) C_{0r}	{kgf} C_r	{kgf} C_{0r}	(min–1) Grease	(min–1) Oil
85	120	23	23	18	1.5	1.5	93500	157000	9550	16000	2800	3800
	130	29	29	22	1.5	1.5	143000	231000	14600	23600	2600	3600
	130	36	36	29.5	1.5	1.5	180000	305000	18400	31000	2600	3600
	140	41	41	32	2.5	2	230000	365000	23500	37000	2400	3400
	150	30.5	28	24	2.5	2	184000	233000	18700	23800	2400	3200
	150	38.5	36	30	2.5	2	210000	277000	21400	28200	2200	3200
	150	49	49	37	2.5	2	281000	415000	28700	42500	2400	3200
	180	44.5	41	34	4	3	310000	375000	31500	38000	2000	2800
	180	44.5	41	28	4	3	261000	315000	26600	32000	1900	2600
	180	44.5	41	28	4	3	261000	315000	26600	32000	1900	2600
	180	63.5	60	49	4	3	410000	535000	42000	54500	2000	2800
90	125	23	23	18	1.5	1.5	97000	167000	9850	17000	2600	3600
	140	32	32	24	2	1.5	170000	273000	17300	27800	2400	3200
	140	39	39	32.5	2	1.5	220000	360000	22400	37000	2400	3200
	150	45	45	35	2.5	2	259000	405000	26500	41500	2400	3200
	160	32.5	30	26	2.5	2	201000	256000	20500	26100	2200	3000
	160	42.5	40	34	2.5	2	256000	35000	26100	35500	2200	3000
	190	46.5	43	36	4	3	345000	425000	35500	43000	1900	2600
	190	46.5	43	30	4	3	264000	315000	26900	32000	1800	2400
	190	46.5	43	30	4	3	264000	315000	26900	32000	1800	2400
	190	67.5	64	53	4	3	450000	590000	46000	60500	2000	2600
95	130	23	23	18	1.5	1.5	98000	172000	10000	17500	2400	3400
	145	32	32	24	2	1.5	173000	283000	17600	28900	2400	3200
	145	39	39	32.5	2	1.5	231000	390000	23500	39500	2400	3200
	160	46	46	38	3	3	283000	445000	28800	45500	2200	3000
	170	34.5	32	27	3	2.5	223000	286000	22800	29200	2200	2800
	170	45.5	43	37	3	2.5	289000	400000	29500	40500	2200	2800
	200	49.5	45	38	4	3	370000	455000	38000	46500	1900	2600
	200	49.5	45	32	4	3	310000	375000	31500	38500	1700	2400
	200	49.5	45	32	4	3	310000	375000	31500	38500	1700	2400
	200	71.5	67	55	4	3	525000	710000	53500	72500	1900	2600
100	140	25	25	20	1.5	1.5	117000	205000	12000	20900	2200	3200
	145	24	22.5	17.5	3	3	113000	163000	11500	16600	2200	3000
	150	32	32	24	2	1.5	176000	294000	17900	30000	2200	3000
	150	39	39	32.5	2	1.5	235000	405000	24000	41500	2200	3000
	165	52	52	40	2.5	2	315000	515000	32500	52500	2000	2800
	180	37	34	29	3	2.5	255000	330000	26000	34000	2000	2600
	180	49	46	39	3	2.5	325000	450000	33000	46000	2000	2600
	180	63	63	48	3	2.5	410000	635000	42000	65000	2000	2600
	215	51.5	47	39	4	3	425000	525000	43000	53500	1700	2400
	215	56.5	51	35	4	3	385000	505000	39000	51500	1500	2200
	215	77.5	73	60	4	3	565000	755000	57500	77000	1700	2400



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leqq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

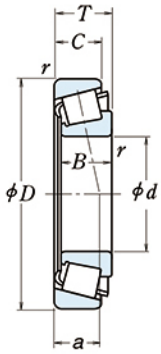
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

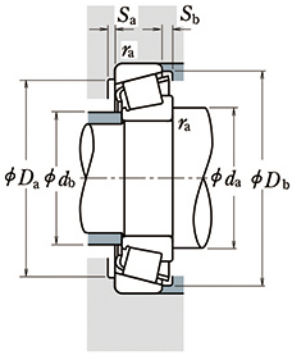
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32917	96	92	111	111	115	5	5	1.5	1.5	20.9	0.33	1.8	1	0.8
32017	96	94	121	116	125	6	7	1.5	1.5	28.2	0.44	1.4	0.75	1.38
33017	96	94	121	117	125	6	6.5	1.5	1.5	26.5	0.29	2.1	1.1	1.75
33117	100	94	130	122	135	7	9	2	2	32.7	0.41	1.5	0.81	2.51
30217	100	97	140	133	141	5	6.5	2	2	30.3	0.42	1.4	0.79	2.12
32217	100	96	140	131	142	5	8.5	2	2	33.9	0.42	1.4	0.79	2.64
33217	100	95	140	129	144	7	12	2	2	37.3	0.42	1.4	0.79	3.57
30317	106	108	166	157	167	5	10.5	3	2.5	35.8	0.35	1.7	0.96	5.08
30317 D	113	103	166	144	169	6	16.5	3	2.5	55.4	0.83	0.73	0.4	4.88
31317	113	103	166	144	169	6	16.5	3	2.5	55.4	0.83	0.73	0.4	4.88
32317	110	104	166	151	167	5	14.5	3	2.5	43.6	0.35	1.7	0.96	7.31
32918	101	97	116	116	120	5	5	1.5	1.5	22	0.34	1.8	0.96	0.838
32018	102	99	131	124	134	6	8	2	1.5	29.7	0.42	1.4	0.78	1.78
33018	102	99	131	129	135	7	6.5	2	1.5	27.9	0.27	2.2	1.2	2.21
33118	105	100	140	132	144	7	10	2	2	35.2	0.4	1.5	0.83	3.14
30218	105	103	150	141	150	5	6.5	2	2	31.7	0.42	1.4	0.79	2.6
32218	105	102	150	139	152	5	8.5	2	2	36.2	0.42	1.4	0.79	3.41
30318	111	114	176	176	176	5	10.5	3	2.5	37.3	0.35	1.7	0.96	5.91
30318 D	118	110	176	152	179	6	16.5	3	2.5	58.7	0.83	0.73	0.4	5.52
31318	118	110	176	152	179	6	16.5	3	2.5	58.7	0.83	0.73	0.4	5.52
32318	115	109	176	158	177	5	14.5	3	2.5	46.5	0.35	1.7	0.96	8.6
32919	106	102	121	121	125	5	5	1.5	1.5	23.2	0.36	1.7	0.92	0.877
32019	107	104	136	131	140	6	8	2	1.5	31.2	0.44	1.4	0.75	1.88
33019	107	103	136	133	139	7	6.5	2	1.5	28.6	0.28	2.2	1.2	2.3
T 2 ED095	113	108	146	141	152	6	8	2.5	2.5	34.5	0.34	1.8	0.97	3.74
30219	113	110	158	150	159	5	7.5	2.5	2	33.7	0.42	1.4	0.79	3.13
32219	113	108	158	147	161	5	8.5	2.5	2	39.3	0.42	1.4	0.79	4.22
30319	116	119	186	172	184	5	11.5	3	2.5	38.6	0.35	1.7	0.96	6.92
30319 D	123	115	186	158	187	6	17.5	3	2.5	61.9	0.83	0.73	0.4	6.64
31319	123	115	186	158	187	6	17.5	3	2.5	61.9	0.83	0.73	0.4	6.64
32319	120	115	186	167	186	5	16.5	3	2.5	48.6	0.35	1.7	0.96	10.4
32920	111	109	132	132	134	5	5	1.5	1.5	24.2	0.33	1.8	1	1.18
T 4 CB100	118	108	135	135	142	6	6.5	2.5	2.5	30.1	0.47	1.3	0.7	1.18
32020	112	109	141	136	144	6	8	2	1.5	32.5	0.46	1.3	0.72	1.95
33020	112	107	141	137	143	7	6.5	2	1.5	29.3	0.29	2.1	1.2	2.38
33120	115	110	155	144	159	8	12	2	2	40.5	0.41	1.5	0.81	4.32
30220	118	116	168	158	168	5	8	2.5	2	36.1	0.42	1.4	0.79	3.78
32220	118	115	168	155	171	5	10	2.5	2	41.5	0.42	1.4	0.79	5.05
33220	118	113	168	152	172	10	15	2.5	2	46	0.4	1.5	0.82	6.76
30320	121	128	201	185	197	5	12.5	3	2.5	41.4	0.35	1.7	0.96	8.41
31320	136	125	201	169	202	7	21.5	3	2.5	67.7	0.83	0.73	0.4	9.02
32320	125	125	201	178	200	5	17.5	3	2.5	53.2	0.35	1.7	0.96	12.7

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 105 – 130 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	r Cone	r Cup	(N)		{kgf}		(min–1)	
					min.		C_r	C_{0r}	C_r	C_{0r}	Grease	Oil
105	145	25	25	20	1.5	1.5	119000	212000	12100	21600	2200	3000
	160	35	35	26	2.5	2	204000	340000	20800	34500	2000	2800
	160	43	43	34	2.5	2	256000	435000	26100	44000	2000	2800
	190	39	36	30	3	2.5	280000	365000	28500	37500	1900	2600
	190	53	50	43	3	2.5	360000	510000	37000	52000	1900	2600
	225	53.5	49	41	4	3	455000	565000	46500	57500	1600	2200
	225	58	53	36	4	3	415000	540000	42000	55000	1500	2000
	225	81.5	77	63	4	3	670000	925000	68000	94500	1700	2200
110	150	25	25	20	1.5	1.5	123000	224000	12500	22800	2200	2800
	170	38	38	29	2.5	2	236000	390000	24000	40000	2000	2600
	170	47	47	37	2.5	2	294000	515000	30000	52500	2000	2600
	180	56	56	43	2.5	2	365000	610000	37500	62000	1900	2600
	200	41	38	32	3	2.5	315000	420000	32000	43000	1800	2400
	200	56	53	46	3	2.5	400000	565000	40500	57500	1800	2400
	240	54.5	50	42	4	3	485000	595000	49500	60500	1500	2000
	240	63	57	38	4	3	470000	605000	48000	62000	1400	1900
	240	84.5	80	65	4	3	675000	910000	68500	93000	1500	2000
120	165	29	29	23	1.5	1.5	161000	291000	16400	29700	1900	2600
	170	27	25	19.5	3	3	153000	243000	51600	24800	1800	2600
	180	38	38	29	2.5	2	242000	405000	24600	41000	1800	2400
	180	48	48	38	2.5	2	300000	540000	30500	55000	1800	2600
	200	62	62	48	2.5	2	460000	755000	46500	77000	1700	2400
	215	43.5	40	34	3	2.5	335000	450000	34000	46000	1600	2200
	215	61.5	58	50	3	2.5	440000	635000	44500	65000	1600	2200
	260	59.5	55	46	4	3	535000	655000	54500	67000	1400	1900
	260	68	62	42	4	3	560000	730000	57000	74500	1300	1800
	260	90.5	86	69	4	3	770000	1060000	78500	10800	1400	1900
130	180	32	30	26	2	1.5	167000	281000	17000	28600	1800	2400
	180	32	32	25	2	1.5	200000	365000	20400	37500	1800	2400
	185	29	27	21	3	3	183000	296000	18600	30000	1700	2400
	200	45	45	34	2.5	2	320000	535000	32500	54500	1600	2200
	200	55	55	43	2.5	2	395000	715000	40500	73000	1700	2200
	230	43.75	40	34	4	3	375000	505000	38000	51500	1500	2000
	230	67.75	64	54	4	3	530000	790000	54000	80500	1500	2000
	280	63.75	58	49	5	4	545000	675000	56000	68500	1300	1800
	280	63.75	58	49	5	4	650000	820000	66000	83500	1300	1800
	280	72	66	44	5	4	625000	820000	63500	83500	1200	1700
	280	98.75	93	78	5	4	830000	1150000	84500	117000	1300	1800



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leqq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

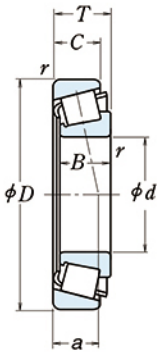
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

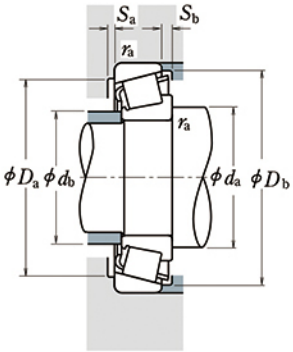
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32921	116	114	137	137	140	5	5	1.5	1.5	25.3	0.34	1.8	0.96	1.23
32021	120	115	150	144	154	6	9	2	2	34.3	0.44	1.4	0.74	2.48
33021	120	115	150	146	153	7	9	2	2	30.9	0.28	2.1	1.2	3.03
30221	123	123	178	166	177	6	9	2.5	2	38.1	0.42	1.4	0.79	4.51
32221	123	120	178	162	180	5	10	2.5	2	44.8	0.42	1.4	0.79	6.25
30321	126	133	211	195	206	6	12.5	3	2.5	43.3	0.35	1.7	0.96	9.52
31321	141	130	211	177	211	7	22	3	2.5	70.2	0.83	0.73	0.4	10
32321	130	129	211	186	209	6	18.5	3	2.5	55.2	0.35	1.7	0.96	14.9
32922	121	119	142	142	145	5	5	1.5	1.5	26.5	0.36	1.7	0.93	1.29
32022	125	121	160	153	163	7	9	2	2	35.9	0.43	1.4	0.77	3.09
33022	125	121	160	153	161	7	10	2	2	33.7	0.29	2.1	1.2	3.84
33122	125	121	170	156	174	9	13	2	2	44.1	0.42	1.4	0.79	5.54
30222	128	129	188	175	187	6	9	2.5	2	40.2	0.42	1.4	0.79	5.28
32222	128	127	188	171	190	5	10	2.5	2	47.2	0.42	1.4	0.79	7.35
30322	131	143	226	208	220	6	12.5	3	2.5	45.1	0.35	1.7	0.96	11
31322	146	136	226	191	224	7	25	3	2.5	74.8	0.83	0.73	0.4	12.3
32322	135	139	226	201	222	6	19.5	3	2.5	58.6	0.35	1.7	0.96	17.1
32924	131	129	156	155	160	6	6	1.5	1.5	29.2	0.35	1.7	0.95	1.8
T 4 CB120	138	129	158	158	164	7	7.5	2.5	2.5	35	0.47	1.3	0.7	1.78
32024	135	131	170	162	173	7	9	2	2	39.7	0.46	1.3	0.72	3.27
33024	135	130	168	161	171	6	10	2	2	36	0.31	2	1.1	4.2
33124	135	133	190	173	192	9	14	2	2	47.9	0.4	1.5	0.83	7.67
30224	138	141	203	190	201	6	9.5	2.5	2	44.4	0.44	1.4	0.76	6.28
32224	138	137	203	181	204	6	11.5	2.5	2	52.1	0.44	1.4	0.76	9
30324	141	154	246	223	237	6	13.5	3	2.5	50	0.35	1.7	0.96	13.9
31324	156	148	246	206	244	9	26	3	2.5	81.7	0.83	0.73	0.4	15.6
32324	145	149	246	216	239	6	21.5	3	2.5	62.5	0.35	1.7	0.96	21.8
32926	142	141	171	168	175	6	6	2	1.5	34.7	0.36	1.7	0.92	2.25
32926	142	140	170	168	173	6	7	2	1.5	31.4	0.34	1.8	0.97	2.46
T 4 CB130	148	141	171	171	179	8	8	2.5	2.5	37.5	0.47	1.3	0.7	2.32
32026	145	144	190	179	192	8	11	2	2	43.9	0.43	1.4	0.76	5.06
33026	145	144	188	179	192	8	12	2	2	42.4	0.34	1.8	0.97	6.25
30226	151	151	216	205	217	7	9.5	3	2.5	45.9	0.44	1.4	0.76	7.25
32226	151	147	216	196	219	7	13.5	3	2.5	57	0.44	1.4	0.76	11.3
30326	157	168	262	239	255	8	14.5	4	3	53.9	0.36	1.7	0.92	16.6
30326	157	166	262	241	255	8	14.5	4	3	52.8	0.35	1.7	0.96	17.2
31326	174	159	262	220	261	9	28	4	3	87.1	0.83	0.73	0.4	18.8
32326	162	165	262	233	263	8	20.5	4	3	69.2	0.36	1.7	0.92	26.6

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 140 – 270 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	Cone r min.	Cup r min.	(N) C_r	(N) C_{0r}	{kgf} C_r	{kgf} C_{0r}	(min–1) Grease	(min–1) Oil
140	190	32	32	25	2	1.5	206000	390000	21000	39500	1700	2200
	210	45	45	34	2.5	2	325000	555000	33000	57000	1600	2200
	210	56	56	44	2.5	2	410000	770000	42000	78500	1600	2200
	250	45.75	42	36	4	3	390000	515000	40000	52500	1400	1900
	250	71.75	68	58	4	3	610000	915000	62000	93500	1400	1900
	300	67.75	62	53	5	4	740000	945000	75500	96500	1200	1700
	300	77	70	47	5	4	695000	955000	71000	97500	1100	1500
	300	107.75	102	85	5	4	985000	1440000	101000	147000	1200	1600
150	210	38	36	31	2.5	2	247000	440000	25200	45000	1500	2000
	210	38	38	30	2.5	2	281000	520000	28600	53000	1500	2000
	225	48	48	36	3	2.5	375000	650000	38000	66500	1400	2000
	225	59	59	46	3	2.5	435000	805000	44000	82000	1400	2000
	270	49	45	38	4	3	485000	665000	49000	67500	1300	1800
	270	77	73	60	4	3	705000	1080000	71500	110000	1300	1800
	320	72	65	55	5	4	690000	860000	70000	87500	1100	1500
	320	72	65	55	5	4	825000	1060000	84500	108000	1100	1600
	320	82	75	50	5	4	790000	1100000	80500	112000	1000	1400
	320	114	108	90	5	4	1120000	1700000	114000	174000	1100	1500
160	220	38	38	30	2.5	2	296000	570000	30000	58000	1400	1900
	240	51	51	38	3	2.5	425000	750000	43500	76500	1300	1800
	290	52	48	40	4	3	530000	730000	54000	74500	1200	1600
	290	84	80	67	4	3	795000	1220000	81000	125000	1200	1600
	340	75	68	58	5	4	765000	960000	78000	98000	1000	1400
	340	75	68	58	5	4	870000	1110000	89000	113000	1100	1400
	340	75	68	48	5	4	675000	875000	69000	89000	950	1300
	340	121	114	95	5	4	1210000	1770000	123000	181000	1000	1400
170	230	38	36	31	2.5	2.5	258000	485000	26300	49500	1300	1800
	230	38	38	30	2.5	2	294000	560000	30000	57000	1400	1800
	260	57	57	43	3	2.5	505000	890000	51500	90500	1200	1700
	310	57	52	43	5	4	630000	885000	64000	90000	1100	1500
	310	91	86	71	5	4	930000	1450000	94500	148000	1100	1500
	360	80	72	62	5	4	845000	1080000	86000	110000	950	1300
	360	80	72	62	5	4	960000	1230000	98000	125000	1000	1300
	360	80	72	50	5	4	760000	1040000	77500	106000	900	1200
	360	127	120	100	5	4	1370000	2050000	140000	209000	1000	1300



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leqq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

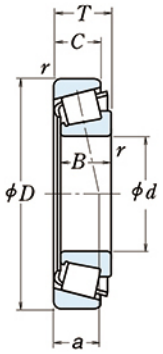
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

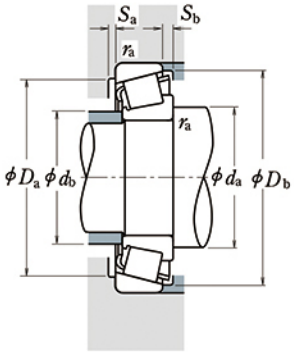
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32928	152	150	180	178	184	6	7	2	1.5	33.6	0.36	1.7	0.92	2.64
32028	155	152	200	189	202	8	11	2	2	46.6	0.46	1.3	0.72	5.32
33028	155	153	198	189	202	7	12	2	2	45.5	0.36	1.7	0.92	6.74
30228	161	164	236	221	234	7	9.5	3	2.5	48.9	0.44	1.4	0.76	8.74
32228	161	159	236	213	238	9	13.5	3	2.5	60.5	0.44	1.4	0.76	14.3
30328	167	177	282	256	273	9	14.5	4	3	55.7	0.35	1.7	0.96	21.1
31328	184	174	282	236	280	9	30	4	3	92.9	0.83	0.73	0.4	28.5
32328	172	177	282	246	281	9	22.5	4	3	76.4	0.37	1.6	0.88	33.9
32930	165	162	200	195	201	7	7	2	2	36.7	0.33	1.8	1	3.8
32930	165	163	198	196	202	7	8	2	2	36.5	0.33	1.8	1	4.05
32030	168	164	213	202	216	8	12	2.5	2	49.8	0.46	1.3	0.72	6.6
33030	168	165	213	203	217	8	13	2.5	2	48.7	0.36	1.7	0.9	8.07
30230	171	175	256	236	250	7	11	3	2.5	51.3	0.44	1.4	0.76	11.2
32230	171	171	256	228	254	8	17	3	2.5	64.7	0.44	1.4	0.76	17.8
30330	177	193	302	275	292	8	17	4	3	61.4	0.36	1.7	0.92	24.2
30330	177	190	302	276	292	8	17	4	3	60	0.35	1.7	0.96	25
31330	194	187	302	253	300	9	32	4	3	99.3	0.83	0.73	0.4	28.5
32330	182	191	302	262	297	8	24	4	3	81.5	0.37	1.6	0.88	41.4
32932	175	173	208	206	212	7	8	2	2	38.7	0.35	1.7	0.95	4.32
32032	178	175	228	216	231	8	13	2.5	2	53	0.46	1.3	0.72	7.93
30232	181	189	276	253	269	8	12	3	2.5	55	0.44	1.4	0.76	13.7
32232	181	184	276	243	274	10	17	3	2.5	70.5	0.44	1.4	0.76	22.7
30332	187	205	322	293	311	10	17	4	3	64.6	0.36	1.7	0.92	28.4
30332	187	201	322	293	310	10	17	4	3	62.9	0.35	1.7	0.96	29.2
30332 D	196	198	322	270	313	9	27	4	3	99.4	0.81	0.74	0.41	27.5
32332	192	202	322	281	319	10	26	4	3	87.1	0.37	1.6	0.88	48.3
32934	185	183	220	216	223	7	7	2	2	41.6	0.36	1.7	0.9	4.3
32934	185	180	218	215	222	7	8	2	2	41.7	0.38	1.6	0.86	4.44
32034	188	187	248	232	249	10	14	2.5	2	56.6	0.44	1.4	0.74	10.6
30234	197	202	292	273	288	8	14	4	3	59.4	0.44	1.4	0.76	17.1
32234	197	197	292	262	294	10	20	4	3	76.4	0.44	1.4	0.76	28
30334	197	221	342	312	332	10	18	4	3	70.1	0.37	1.6	0.9	33.5
30334	197	214	342	310	329	10	18	4	3	67.3	0.35	1.7	0.96	34.5
30334 D	206	215	342	288	332	10	30	4	3	107.3	0.81	0.74	0.41	33.4
32334	202	213	342	297	337	10	27	4	3	91.3	0.37	1.6	0.88	57

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 180– 240 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	Cone r min.	Cup r min.	(N) C_r	(N) C_{0r}	{kgf} C_r	{kgf} C_{0r}	(min–1) Grease	(min–1) Oil
180	250	45	45	34	2.5	2	350000	685000	36000	69500	1300	1700
	280	64	64	48	3	2.5	640000	1130000	65000	115000	1200	1600
	320	57	52	43	5	4	650000	930000	66000	95000	1100	1400
	320	91	86	71	5	4	960000	1540000	98000	157000	1100	1400
	380	83	75	64	5	4	935000	1230000	95500	126000	900	1300
	380	83	75	53	5	4	820000	1120000	83500	114000	850	1200
	380	134	126	106	5	4	1520000	2290000	155000	234000	950	1300
190	260	45	45	34	2.5	2	365000	715000	37000	73000	1200	1600
	290	64	64	48	3	2.5	650000	1170000	66000	119000	1100	1500
	340	60	55	46	5	4	715000	1020000	73000	104000	1000	1300
	340	97	92	75	5	4	1110000	1770000	113000	181000	1000	1400
	400	86	78	65	6	5	1010000	1340000	103000	136000	850	1200
	400	140	132	109	6	5	1660000	2580000	169000	263000	850	1200
200	280	51	48	41	3	2.5	410000	780000	42000	80000	1100	1500
	280	51	51	39	3	2.5	480000	935000	48500	95000	1100	1500
	310	70	70	53	3	2.5	760000	1370000	77500	139000	1000	1400
	360	64	58	48	5	4	795000	1120000	81000	114000	950	1300
	360	104	98	82	5	4	1210000	1920000	123000	196000	950	1300
	420	89	80	67	6	5	1030000	1390000	105000	142000	850	1200
	420	89	80	56	6	5	965000	1330000	98500	136000	750	1000
	420	146	138	115	6	5	1820000	2870000	185000	292000	800	1100
220	300	51	51	39	3	2.5	490000	990000	50000	101000	1000	1400
	340	76	76	57	4	3	885000	1610000	90500	164000	950	1300
	400	72	65	54	5	4	810000	1150000	82500	117000	850	1100
	400	114	108	90	5	4	1340000	2120000	137000	225000	850	1100
	460	97	88	73	6	5	1430000	1990000	146000	203000	750	1000
	460	154	145	122	6	5	2020000	3200000	206000	325000	750	1000
240	320	51	51	39	3	2.5	500000	1040000	51000	107000	950	1300
	360	76	76	57	4	3	920000	1730000	94000	177000	850	1200
	440	79	72	60	5	4	990000	1400000	101000	142000	750	1000
	440	127	120	100	5	4	1630000	2730000	166000	278000	750	1000
	500	105	95	80	6	5	1660000	2340000	169000	238000	670	950
	500	165	155	132	6	5	2520000	4100000	257000	415000	670	900



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

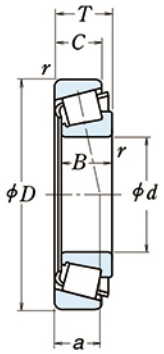
When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

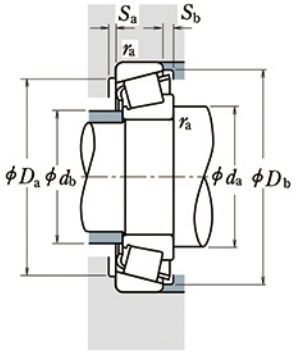
Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32936	195	192	240	227	241	8	11	2	2	53.9	0.48	1.3	0.69	6.56
32036	198	199	268	248	267	10	16	2.5	2	60.4	0.42	1.4	0.78	14.3
30236	207	210	302	281	297	9	14	4	3	61.8	0.45	1.3	0.73	17.8
32236	207	205	302	270	303	10	20	4	3	78.9	0.45	1.3	0.73	29.8
30336	207	233	362	324	345	10	19	4	3	72.5	0.36	1.7	0.92	39.3
30336 D	216	229	362	304	352	10	30	4	3	113.1	0.81	0.74	0.41	38.5
32336	212	225	362	310	353	10	28	4	3	96.6	0.37	1.6	0.88	66.8
32938	205	201	250	237	251	8	11	2	2	55.3	0.48	1.3	0.69	6.83
32038	208	209	278	258	279	10	16	2.5	2	63.4	0.44	1.4	0.75	14.9
30238	217	223	322	302	318	9	14	4	3	65.6	0.44	1.4	0.76	21.4
32238	217	216	322	290	323	10	22	4	3	80.5	0.44	1.4	0.76	35.2
30338	223	248	378	346	366	11	21	5	4	76.1	0.36	1.7	0.92	46
32338	229	243	378	332	375	11	31	5	4	102.7	0.37	1.6	0.88	78.9
32940	218	217	268	256	269	9	10	2.5	2	53.4	0.37	1.6	0.88	9.26
32940	218	216	268	258	271	9	12	2.5	2	54.2	0.39	1.5	0.84	9.65
32040	218	221	298	277	297	11	17	2.5	2	67.4	0.43	1.4	0.77	18.9
30240	227	236	342	318	336	10	16	4	3	69.1	0.44	1.4	0.76	25.5
32240	227	230	342	305	340	11	22	4	3	85.1	0.41	1.5	0.81	42.6
30340	233	253	398	346	368	11	22	5	4	81.4	0.37	1.6	0.88	52.3
30340 D	244	253	398	336	385	11	33	5	4	122.9	0.81	0.74	0.41	49.6
32340	239	253	398	346	392	11	31	5	4	106.7	0.37	1.6	0.88	90.9
32944	238	235	288	278	293	9	12	2.5	2	59.2	0.43	1.4	0.78	10.3
32044	241	244	326	303	326	12	19	3	2.5	73.6	0.43	1.4	0.77	24.4
30244	247	267	382	350	367	11	18	4	3	74.7	0.4	1.5	0.82	33.6
32244	247	260	382	340	377	12	24	4	3	93	0.4	1.5	0.82	57.4
30344	253	283	438	390	414	12	24	5	4	85.4	0.36	1.7	0.92	72.4
32344	259	274	438	372	421	12	32	5	4	114.9	0.37	1.6	0.88	114
32948	258	255	308	297	314	9	12	2.5	2	65.1	0.46	1.3	0.72	11.1
32048	261	262	346	321	346	12	19	3	2.5	79.1	0.46	1.3	0.72	26.2
30248	267	288	422	384	408	11	19	4	3	85.1	0.44	1.4	0.74	45.2
32248	267	285	422	374	416	12	27	4	3	102.5	0.4	1.5	0.82	78
30348	273	308	478	422	447	12	25	5	4	92.8	0.36	1.7	0.92	92.6
32348	279	301	478	410	464	12	33	5	4	123.2	0.37	1.6	0.88	145

SINGLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 260 – 440 mm



Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds	
d	D	T	B	C	Cone r min.	Cup r min.	(N) C_r	(N) C_{0r}	{kgf} C_r	{kgf} C_{0r}	(min–1) Grease	(min–1) Oil
260	360	63.5	63.5	48	3	2.5	730000	1450000	74500	148000	850	1100
	400	87	87	65	5	4	1160000	2160000	118000	220000	800	1100
	480	89	80	67	6	5	1190000	1700000	121000	174000	670	900
	480	137	130	106	6	5	1900000	3300000	194000	335000	670	950
	540	113	102	85	6	6	1870000	2640000	190000	269000	630	850
	540	176	165	136	6	6	2910000	4800000	297000	490000	630	850
280	380	63.5	63.5	48	3	2.5	765000	1580000	78000	162000	800	1100
	420	87	87	65	5	4	1180000	2240000	120000	228000	710	1000
	500	89	80	67	6	5	1240000	1900000	127000	194000	630	850
	500	137	130	106	6	5	1950000	3450000	199000	355000	630	850
	580	187	175	145	6	6	3300000	5400000	335000	550000	560	800
300	420	76	72	62	4	3	895000	1820000	91000	186000	710	950
	420	76	76	57	4	3	1010000	2100000	103000	214000	710	950
	460	100	100	74	5	4	1440000	2700000	147000	275000	670	900
	540	96	85	71	6	5	1440000	2100000	147000	214000	600	800
	540	149	140	115	6	5	2220000	3700000	226000	380000	600	800
320	440	76	72	63	4	3	900000	1880000	92000	192000	970	900
	440	76	76	57	4	3	1040000	2220000	106000	227000	670	900
	480	100	100	74	5	4	1510000	2910000	153000	297000	630	850
	580	104	92	75	6	5	1640000	2420000	168000	247000	530	750
	580	159	150	125	6	5	2860000	5050000	292000	515000	530	750
	670	210	200	170	7.5	7.5	4200000	7100000	430000	72500	480	670
340	460	76	72	63	4	3	910000	1940000	93000	197000	630	850
	460	76	76	57	4	3	1050000	2220000	107000	226000	630	850
	520	112	106	92	6	5	1650000	3400000	168000	345000	560	750
360	480	76	72	62	4	3	945000	2100000	96500	214000	600	800
	480	76	76	57	4	3	1080000	2340000	110000	239000	560	800
	540	112	106	92	6	5	1680000	3500000	171000	355000	530	750
380	520	87	82	71	5	4	1210000	2550000	124000	260000	560	750
400	540	87	82	71	5	4	1250000	2700000	128000	276000	530	710
	600	125	118	100	6	5	1960000	4050000	200000	415000	480	670
420	560	87	82	72	5	4	1300000	2810000	132000	287000	500	670
	620	125	118	100	6	5	2000000	4200000	204000	430000	450	630
440	650	130	122	104	6	6	2230000	4600000	227000	470000	430	600



Dynamic Equivalent Load

$P = XF_r + YF_a$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	0	0.4	Y_1

Static Equivalent Load

$P_0 = 0.5F_r + Y_0F_a$

When $F_r > 0.5F_r + Y_0F_a$, use $P_0 = F_r$

The values of e, Y_1, and Y_0 are given in the table below.

Bearing Numbers	Abutment and Fillet Dimensions (mm)									Eff. Load Centers	Constant	Axial Load Factors		Mass
	d_a	d_b	D_a		D_b	S_a	S_b	Cone r_a	Cup r_a	(mm)				(kg)
	min.	max.	max.	min.	min.	min.	min.	min.	max.	a	e	Y_1	Y_0	approx.
32952	278	278	348	333	347	11	15.5	2.5	2	69.8	0.41	1.5	0.81	18.6
32052	287	287	382	357	383	14	22	4	3	86.3	0.43	1.4	0.76	38.5
30252	293	316	458	421	447	12	22	5	4	94.6	0.44	1.4	0.74	60.7
32252	293	305	458	394	446	14	31	5	4	116	0.45	1.3	0.73	103
30352	293	336	512	460	487	16	28	5	5	101.6	0.36	1.7	0.92	114
32352	293	328	512	441	495	13	40	5	5	130.5	0.37	1.6	0.88	188
32956	298	297	368	352	368	12	15.5	2.5	2	75.3	0.43	1.4	0.76	20
32056	307	305	402	374	402	14	22	4	3	91.6	0.46	1.3	0.72	40.6
30256	313	339	478	436	462	12	22	5	4	98.5	0.44	1.4	0.74	66.3
32256	313	325	478	412	467	14	31	5	4	123.1	0.47	1.3	0.7	109
32356	319	353	552	475	532	14	42	5	5	139.6	0.37	1.6	0.89	224
32960	321	326	406	386	405	13	14	3	2.5	79.3	0.37	1.6	0.88	30.5
32960	321	324	406	387	405	13	19	3	2.5	79.9	0.39	1.5	0.84	31.4
32060	327	330	442	408	439	15	26	4	3	98.4	0.43	1.4	0.76	56.6
30260	333	355	518	470	499	14	25	5	4	105.1	0.44	1.4	0.74	80.6
32260	333	352	518	458	514	15	34	5	4	131.7	0.46	1.3	0.72	132
32964	341	345	426	404	425	13	13	3	2.5	84.3	0.39	1.5	0.84	32
32964	341	344	426	406	426	13	19	3	2.5	85	0.42	1.4	0.79	33.3
32064	347	350	462	430	461	15	26	4	3	104.5	0.46	1.3	0.72	60
30264	353	381	558	503	533	14	29	5	4	113.7	0.44	1.4	0.74	99.3
32264	353	383	558	487	550	15	34	5	4	141.7	0.46	1.3	0.72	175
32364	383	412	634	547	616	14	42	6	6	157.5	0.37	1.6	0.88	343
32968	361	364	446	426	446	13	13	3	2.5	89.2	0.41	1.5	0.8	33.6
32968	361	362	446	427	446	13	19	3	2.5	91	0.44	1.4	0.75	34.3
32068	373	386	498	464	496	3.5	22	5	4	104.5	0.37	1.6	0.89	83.7
32972	381	386	466	445	465	14	14	3	2.5	91.4	0.4	1.5	0.82	35.8
32972	381	381	466	445	466	13	19	3	2.5	96.8	0.46	1.3	0.72	36.1
32072	393	402	518	480	514	5.5	22	5	4	108.6	0.38	1.6	0.86	86.5
32976	407	406	502	478	501	16	16	4	3	95.2	0.39	1.6	0.86	49.5
32980	427	428	522	499	524	16	16	4	3	100.8	0.4	1.5	0.82	52.7
32080	433	443	578	533	565	5	25	5	4	115.3	0.36	1.7	0.92	116
32984	447	448	542	521	544	3.5	15	4	3	106.1	0.41	1.5	0.81	54.8
32084	453	463	598	552	586	6.5	25	5	4	120	0.37	1.6	0.88	121
32088	473	487	622	582	616	5	26	5	5	126.3	0.36	1.7	0.92	136