

## TAPERED ROLLER BEARINGS

### METRIC DESIGN TAPERED ROLLER BEARINGS

Bore Diameter 15 – 100mm .....	B120
Bore Diameter 105 – 240mm .....	B128
Bore Diameter 260 – 440mm .....	B134

### INCH DESIGN TAPERED ROLLER BEARINGS

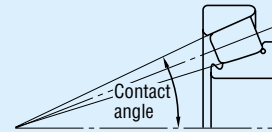
Bore Diameter 12.000 – 47.625mm .....	B136
Bore Diameter 48.412 – 69.850mm .....	B150
Bore Diameter 70.000 – 206.375mm.....	B158

The index for inch design tapered roller bearings is in Appendix 14 (Page C26).

### DOUBLE-ROW TAPERED ROLLER BEARINGS

Bore Diameter 40 – 260mm .....	B172
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**Four-Row Tapered Roller Bearings** are described on pages B334 to B339.



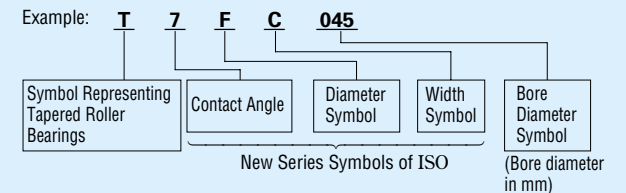
### DESIGN, TYPES, AND FEATURES

Tapered roller bearings are designed so the apices of the cones formed by the raceways of the cone and cup and the conical rollers all coincide at one point on the axis of the bearing. When a radial load is imposed, an axial force component occurs; therefore, it is necessary to use two bearings in opposition or some other multiple arrangement.

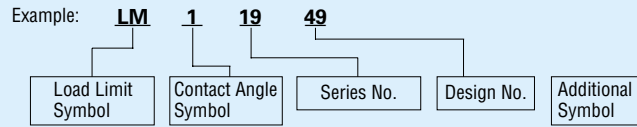
For metric-design medium-angle and steep-angle tapered roller bearings, the respective contact angle symbol C or D is added after the bore number. For normal-angle tapered roller bearings, no contact angle symbol is used. Medium-angle tapered roller bearings are primarily used for the pinion shafts of differential gears of automobiles.

Among those with high load capacity(HR series), some bearings have the basic number suffixed by J to conform to the specifications of ISO for the cup back face raceway diameter, cup width, and contact angle. Therefore, the cone assembly and cup of bearings with the same basic number suffixed by J are internationally interchangeable.

Among metric-design tapered roller bearings specified by ISO 355, there are those having new dimensions that are different than the dimension series 3XX used in the past. Part of them are listed in the bearing tables. They conform to the specifications of ISO for the smaller end diameter of the cup and contact angle. The cone and cup assemblies are internationally interchangeable. The bearing number formulation, which is different than that for past metric design, is as follows:



Besides metric design tapered roller bearings, there are also inch design bearings. For the cone assemblies and cups of inch design bearings, except four-row tapered roller bearings, the bearing numbers are approximately formulated as follows:



For tapered roller bearings, besides single-row bearings, there are also various combinations of bearings. The cages of tapered roller bearings are usually pressed steel.

**Table 1 Design and Featured of Combinations of Tapered Roller Bearings**

Figure	Arrangement	Examples of Bearing No.	Features
	Back-to-back	HR30210JDB+KLR10	Two standard bearings are combined. The bearing clearances are adjusted by cone spacers or cup spacers. The cones and cups and spacers are marked with serial numbers and mating marks. Components with the same serial number can be assembled referring to the matching symbols.
	Face-to-face	HR30210JDF+KR	
	KBE Type	100KBE31+L	The KBE type is a back-to-back arrangement of bearings with the cup and spacer integrated, and the KH type is a face-to-face arrangement in which the cones are integrated. Since the bearing clearance is adjusted using spacers, it is necessary for components to have the same serial number for assembly with reference to matching symbols.
	KH Type	110KH31+K	

**TOLERANCES AND RUNNING ACCURACY**

**METRIC DESIGN TAPERED ROLLER BEARINGS** ..... Table 8.3 (Pages A64 to A67)

**INCH DESIGN TAPERED ROLLER BEARINGS** ..... Table 8.4 (Pages A68 and A69)

Among inch design tapered roller bearings, there are those to which the following precision classes apply. For more details, please consult with NSK.

(1) J line bearings(in the bearing tables, bearings preceded by ▲)

**Table 2 Tolerances for Cones(CLASS K)**

Units :  $\mu\text{m}$

Nominal Bore Diameter $d$ (mm)		$\Delta d_{mp}$		$V_{dp}$	$V_{dmp}$	$K_{ia}$
over	incl.	high	low	max.	max.	max.
10	18	0	-12	12	9	15
18	30	0	-12	12	9	18
30	50	0	-12	12	9	20
50	80	0	-15	15	11	25
80	120	0	-20	20	15	30
120	180	0	-25	25	19	35
180	250	0	-30	30	23	50
250	315	0	-35	35	26	60
315	400	0	-40	40	30	70

**Table 3 Tolerances for Cups(CALSS K)**

Units :  $\mu\text{m}$

Nominal Outside Diameter $D$ (mm)		$\Delta D_{mp}$		$V_{Dp}$	$V_{Dmp}$	$K_{ea}$
over	incl.	high	low	max.	max.	max.
18	30	0	-12	12	9	18
30	50	0	-14	14	11	20
50	80	0	-16	16	12	25
80	120	0	-18	18	14	35
120	150	0	-20	20	15	40
150	180	0	-25	25	19	45
180	250	0	-30	30	23	50
250	315	0	-35	35	26	60
315	400	0	-40	40	30	70
400	500	0	-45	45	34	80

**Table 4 Tolerances for Effective Widths of Cone Assemblies and Cups, and Overall Width (CLASS K)**

Units :  $\mu\text{m}$

Nominal Bore Diameter $d$ (mm)		Effective Width Deviation of Cone Assembly $\Delta T_{1s}$		Effective Width Deviation of Cup $\Delta T_{2s}$		Overall Width Deviation $\Delta T_s$	
over	incl.	high	low	high	low	high	low
10	80	+100	0	+100	0	+200	0
80	120	+100	-100	+100	-100	+200	-200
120	315	+150	-150	+200	-100	+350	-250
315	400	+200	-200	+200	-200	+400	-400

(2) Bearings for Front Axles of Automobiles  
(In the bearing tables, those preceded by t)

**Table 5 Tolerances for Bore Diameter and Overall Width**

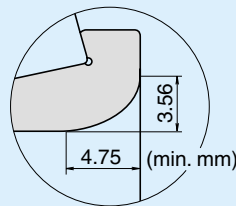
Units :  $\mu\text{m}$

Nominal Bore Diameter $d$				Bore Diameter Deviation $\Delta d_s$		Overall Width Deviation $\Delta T_s$	
over	incl.		high	low	high	low	
(mm)	1/25.4	(mm)	1/25.4				
—		76.200	3.0000	+20	0	+356	0

The tolerances for outside diameter and those for radial runout of the cones and cups conform to Table 8.4.2 (Pages A68 and A69).

(3) Special Chamfer Dimensions

For bearings marked "spec." in the column of  $r$  in the bearing tables, the chamfer dimension of the cone back-face side is as shown on the following figure.



**RECOMMENDED FITS**

**METRIC DESIGN TAPERED ROLLER BEARINGS** ..... Table 9.2 (Page A84)  
Table 9.4 (Page A85)

**INCH DESIGN TAPERED ROLLER BEARINGS** ..... Table 9.6 (Page A86)  
Table 9.7 (Page A87)

**INTERNAL CLEARANCE**

**METRIC DESIGN TAPERED ROLLER BEARINGS**  
(Matched and Double-Row) ..... Table 9.16 (Page A93)  
**INCH DESIGN TAPERED ROLLER BEARINGS**  
(Matched and Double-Row) ..... Table 9.16 (Page A93)

**DIMENSIONS RELATED TO MOUNTING**

The dimensions related to mounting tapered roller bearings are listed in the bearing tables. Since the cages protrude from the ring faces of tapered roller bearings, please use care when designing shafts and housings.

When heavy axial loads are imposed, the shaft shoulder dimensions and strength must be sufficient to support the cone rib.

**PERMISSIBLE MISALIGNMENT**

The permissible misalignment angle for tapered roller bearings is approximately 0.0009 radian (3').

**LIMITING SPEEDS**

The limiting speeds listed in the bearing tables should be adjusted depending on the bearing load conditions. Also, higher speeds are attainable by making changes in the lubrication method, cage design, etc. Refer to Page A37 for detailed information.

**PRECAUTIONS FOR USE OF TAPERED ROLLER BEARINGS**

1. If the load on tapered roller bearings becomes too small, or if the ratio of the axial and radial loads for matched bearings exceeds 'e' (e is listed in the bearing tables) during operation, slippage between the rollers and raceways occurs, which may result in smearing. Especially with large bearings since the weight of the rollers and cage is high. If such load conditions are expected, please contact NSK for selection of the bearings.
2. Confirm the dimension of "Abutment and Fillet Dimensions" of  $D_a$ ,  $D_b$ ,  $S_a$ ,  $S_b$  at the time of the HR series adoption.

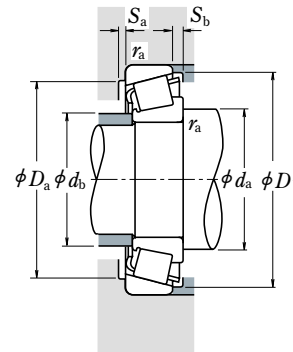
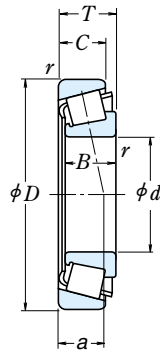








Bore Diameter 55 – 65 mm



**Dynamic Equivalent Load**

$$P = X F_r + Y F_a$$

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

**Static Equivalent Load**

$$P_0 = 0.5 F_r + Y_0 F_a$$

When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$

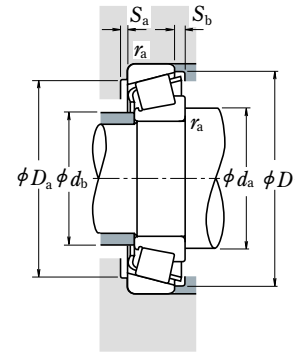
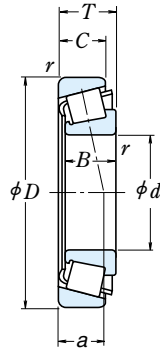
The values of  $e$ ,  $Y_1$ , and  $Y_0$  are given in the table below.

Boundary Dimensions (mm)					Basic Load Ratings				Limiting Speeds				
$d$	$D$	$T$	$B$	$C$	Cone		(N)		(min <sup>-1</sup> )				
					$r$	Cup	$C_r$	$C_{0r}$	$C_r$	$C_{0r}$	Grease	Oil	
					min.								
55	80	17	17	14	1	1	45 500	74 500	4 600	7 600	4 300	5 600	
	90	23	23	17.5	1.5	1.5	81 500	117 000	8 300	11 900	3 800	5 300	
	90	27	27	21	1.5	1.5	91 500	138 000	9 300	14 000	3 800	5 300	
	95	30	30	23	1.5	1.5	112 000	158 000	11 500	16 100	3 800	5 000	
	100	22.75	21	18	2	1.5	94 500	113 000	9 650	11 500	3 600	5 000	
	100	26.75	25	21	2	1.5	110 000	137 000	11 200	14 000	3 600	5 000	
	100	35	35	27	2	1.5	141 000	193 000	14 400	19 700	3 600	5 000	
	115	34	31	23.5	3	3	126 000	164 000	12 800	16 700	3 000	4 300	
	120	31.5	29	25	2.5	2	150 000	171 000	15 200	17 500	3 200	4 300	
	120	31.5	29	21	2.5	2	131 000	153 000	13 400	15 600	2 800	4 000	
	120	31.5	29	21	2.5	2	131 000	153 000	13 400	15 600	2 800	4 000	
	120	45.5	43	35	2.5	2	204 000	258 000	20 800	26 300	3 200	4 300	
	120	45.5	43	35	2.5	2	195 000	262 000	19 900	26 700	3 200	4 300	
	60	85	17	17	14	1	1	49 000	84 500	5 000	8 650	3 800	5 300
		95	23	23	17.5	1.5	1.5	85 500	127 000	8 700	12 900	3 600	5 000
		95	27	27	21	1.5	1.5	96 000	150 000	9 800	15 300	3 600	5 000
100		30	30	23	1.5	1.5	115 000	166 000	11 700	16 900	3 400	4 800	
110		23.75	22	19	2	1.5	104 000	123 000	10 600	12 500	3 400	4 500	
110		29.75	28	24	2	1.5	131 000	167 000	13 400	17 000	3 400	4 500	
110		38	38	29	2	1.5	166 000	231 000	16 900	23 600	3 400	4 500	
125		37	33.5	26	3	3	151 000	197 000	15 400	20 100	2 800	3 800	
130		33.5	31	26	3	2.5	174 000	201 000	17 700	20 500	3 000	4 000	
130		33.5	31	22	3	2.5	151 000	177 000	15 400	18 100	2 600	3 800	
130		33.5	31	22	3	2.5	151 000	177 000	15 400	18 100	2 600	3 800	
130		48.5	46	37	3	2.5	233 000	295 000	23 700	30 000	3 000	4 000	
130		48.5	46	35	3	2.5	196 000	249 000	20 000	25 400	2 800	3 800	
65		90	17	17	14	1	1	49 000	86 500	5 000	8 800	3 600	5 000
		100	23	23	17.5	1.5	1.5	86 500	132 000	8 800	13 500	3 400	4 500
		100	27	27	21	1.5	1.5	97 500	156 000	9 950	15 900	3 400	4 500
	110	34	34	26.5	1.5	1.5	148 000	218 000	15 100	22 200	3 200	4 300	
	120	24.75	23	20	2	1.5	122 000	151 000	12 500	15 400	3 000	4 000	
	120	32.75	31	27	2	1.5	157 000	202 000	16 000	20 600	3 000	4 000	
	120	41	41	32	2	1.5	202 000	282 000	20 600	28 800	3 000	4 000	
	140	36	33	28	3	2.5	200 000	233 000	20 400	23 800	2 600	3 600	
	140	36	33	23	3	2.5	173 000	205 000	17 700	20 900	2 400	3 400	
	140	36	33	23	3	2.5	173 000	205 000	17 700	20 900	2 400	3 400	
	140	51	48	39	3	2.5	267 000	340 000	27 300	35 000	2 800	3 800	

Bearing Numbers	ISO355 Dimension Series approx.	Abutment and Fillet Dimensions (mm)						Cone Cup	Eff. Load Centers (mm) $a$	Constant $e$	Axial Load Factors		Mass (kg) approx.		
		$d_a$ min.	$d_b$ max.	$D_a$ max.	$D_b$ min.	$S_a$ min.	$S_b$ min.				$Y_1$	$Y_0$			
<b>HR 32911 J</b>	2BC	64	60	74	73	76	4	3	1	1	14.6	0.31	1.9	1.1	0.282
<b>HR 32011 XJ</b>	3CC	66	62	81	80	86	4	5.5	1.5	1.5	19.7	0.41	1.5	0.81	0.568
<b>HR 33011 J</b>	2CE	66	62	81	80	86	5	6	1.5	1.5	19.2	0.31	1.9	1.1	0.657
<b>HR 33111 J</b>	3CE	66	62	86	82	91	5	7	1.5	1.5	22.4	0.37	1.6	0.88	0.877
<b>HR 30211 J</b>	3DB	67	64	91	89	94	4	4.5	2	1.5	20.9	0.41	1.5	0.81	0.736
<b>HR 32211 J</b>	3DC	67	63	91	87	95	4	5.5	2	1.5	22.7	0.41	1.5	0.81	0.859
<b>HR 33211 J</b>	3DE	67	62	91	86	96	6	8	2	1.5	25.2	0.40	1.5	0.83	1.18
<b>T 7 FC055</b>	7FC	73	66	101	86	109	4	10.5	2.5	2.5	39.0	0.87	0.69	0.38	1.58
<b>HR 30311 J</b>	2FB	70	71	110	104	111	4	6.5	2	2	24.6	0.35	1.7	0.96	1.63
<b>HR 30311 DJ</b>	7FB	75	67	110	94	114	4	10.5	2	2	37.0	0.83	0.73	0.40	1.58
<b>HR 31311 J</b>	7FB	75	67	110	94	114	4	10.5	2	2	37.0	0.83	0.73	0.40	1.58
<b>HR 32311 J</b>	2FD	73	67	110	99	111	4	10.5	2	2	29.9	0.35	1.7	0.96	2.39
<b>HR 32311 CJ</b>	5FD	73	65	110	91	112	4	10.5	2	2	35.8	0.55	1.1	0.60	2.47
<b>HR 32912 J</b>	2BC	69	65	79	78	81	4	3	1	1	15.5	0.33	1.8	1.0	0.306
<b>HR 32012 XJ</b>	4CC	71	66	86	85	91	4	5.5	1.5	1.5	20.9	0.43	1.4	0.77	0.608
<b>HR 33012 J</b>	2CE	71	66	86	85	90	5	6	1.5	1.5	20.0	0.33	1.8	1.0	0.713
<b>HR 33112 J</b>	3CE	71	68	91	88	96	5	7	1.5	1.5	23.6	0.40	1.5	0.83	0.91
<b>HR 30212 J</b>	3EB	72	69	101	96	103	4	4.5	2	1.5	22.0	0.41	1.5	0.81	0.930
<b>HR 32212 J</b>	3EC	72	68	101	95	104	4	5.5	2	1.5	24.1	0.41	1.5	0.81	1.18
<b>HR 33212 J</b>	3EE	72	68	101	94	105	6	9	2	1.5	27.6	0.40	1.5	0.82	1.56
<b>T 7 FC060</b>	7FC	78	72	111	94	119	4	11	2.5	2.5	41.4	0.82	0.73	0.40	2.03
<b>HR 30312 J</b>	2FB	78	77	118	112	120	4	7.5	2.5	2	26.0	0.35	1.7	0.96	2.03
<b>HR 30312 DJ</b>	7FB	84	74	118	103	125	4	11.5	2.5	2	40.3	0.83	0.73	0.40	1.98
<b>HR 31312 J</b>	7FB	84	74	118	103	125	4	11.5	2.5	2	40.3	0.83	0.73	0.40	1.98
<b>HR 32312 J</b>	2FD	81	74	118	107	120	4	11.5	2.5	2	31.4	0.35	1.7	0.96	2.96
<b>32312 C</b>	—	81	74	116	102	125	4	13.5	2.5	2	39.9	0.58	1.0	0.57	2.86
<b>HR 32913 J</b>	2BC	74	70	84	82	86	4	3	1	1	16.8	0.35	1.7	0.93	0.323
<b>HR 32013 XJ</b>	4CC	76	71	91	90	97	4	5.5	1.5	1.5	22.4	0.46	1.3	0.72	0.646
<b>HR 33013 J</b>	2CE	76	71	91	90	96	5	6	1.5	1.5	21.1	0.35	1.7	0.95	0.76
<b>HR 33113 J</b>	3DE	76	73	101	96	106	6	7.5	1.5	1.5	26.0	0.39	1.5	0.85	1.32
<b>HR 30213 J</b>	3EB	77	78	111	106	113	4	4.5	2	1.5	23.8	0.41	1.5	0.81	1.18
<b>HR 32213 J</b>	3EC	77	75	111	104	115	4	5.5	2	1.5	27.1	0.41	1.5	0.81	1.55
<b>HR 33213 J</b>	3EE	77	74	111	102	115	6	9	2	1.5	29.2	0.39	1.5	0.85	2.04
<b>HR 30313 J</b>	2GB	83	83	128	121	130	4	8	2.5	2	27.9	0.35	1.7	0.96	2.51
<b>HR 30313 DJ</b>	7GB	89	80	128	111	133	4	13	2.5	2	43.2	0.83	0.73	0.40	2.43
<b>HR 31313 J</b>	7GB	89	80	128	111	133	4	13	2.5	2	43.2	0.83	0.73	0.40	2.43
<b>HR 32313 J</b>	2GD	86	80	128	116	130	4	12	2.5	2	34.0	0.35	1.7	0.96	3.6

**Remarks** The suffix C represents medium-angle tapered roller bearings. Since they are designed for specific applications, please consult NSK when using bearings with suffix C.

Bore Diameter 70 – 80 mm



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.

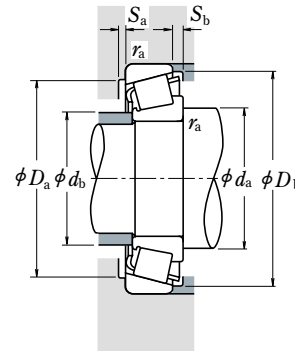
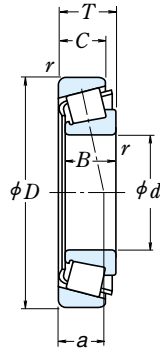
d	Boundary Dimensions (mm)				Cone r min.	Cup r min.	Basic Load Ratings				Limiting Speeds (min <sup>-1</sup> )	
	D	T	B	C			(N)	(kgf)	Grease	Oil		
70	100	20	20	16	1	1	70 000	113 000	7 150	11 500	3 200	4 500
	110	25	25	19	1.5	1.5	104 000	158 000	10 600	16 100	3 200	4 300
	110	31	31	25.5	1.5	1.5	127 000	204 000	12 900	20 800	3 000	4 300
	120	37	37	29	2	1.5	177 000	262 000	18 100	26 700	3 000	4 000
	125	26.25	24	21	2	1.5	132 000	163 000	13 500	16 700	2 800	4 000
	125	33.25	31	27	2	1.5	157 000	205 000	16 100	20 900	2 800	4 000
	125	41	41	32	2	1.5	209 000	299 000	21 300	30 500	2 800	4 000
	140	39	35.5	27	3	3	177 000	229 000	18 000	23 400	2 400	3 400
	150	38	35	30	3	2.5	227 000	268 000	23 200	27 400	2 400	3 400
	150	38	35	25	3	2.5	192 000	229 000	19 600	23 300	2 200	3 200
	150	38	35	25	3	2.5	192 000	229 000	19 600	23 300	2 200	3 200
	150	54	51	42	3	2.5	300 000	390 000	30 500	39 500	2 600	3 400
150	54	51	42	3	2.5	280 000	390 000	28 600	39 500	2 400	3 400	
75	105	20	20	16	1	1	72 500	120 000	7 400	12 300	3 200	4 300
	115	25	25	19	1.5	1.5	109 000	171 000	11 100	17 400	3 000	4 000
	115	31	31	25.5	1.5	1.5	133 000	220 000	13 500	22 500	3 000	4 000
	125	37	37	29	2	2	182 000	275 000	18 600	28 100	2 800	3 800
	130	27.25	25	22	2	1.5	143 000	182 000	14 600	18 500	2 800	3 800
	130	33.25	31	27	2	1.5	165 000	219 000	16 900	22 400	2 800	3 800
	130	41	41	31	2	1.5	215 000	315 000	21 900	32 000	2 800	3 800
	160	40	37	31	3	2.5	253 000	300 000	25 800	30 500	2 400	3 200
	160	40	37	26	3	2.5	211 000	251 000	21 500	25 600	2 200	3 000
	160	40	37	26	3	2.5	211 000	251 000	21 500	25 600	2 200	3 000
	160	58	55	45	3	2.5	340 000	445 000	35 000	45 500	2 400	3 200
	160	58	55	43	3	2.5	310 000	420 000	32 000	43 000	2 200	3 200
80	110	20	20	16	1	1	75 000	128 000	7 650	13 100	3 000	4 000
	125	29	29	22	1.5	1.5	140 000	222 000	14 300	22 700	2 800	3 600
	125	36	36	29.5	1.5	1.5	172 000	282 000	17 500	28 800	2 800	3 600
	130	37	37	29	2	1.5	186 000	289 000	19 000	29 400	2 600	3 600
	140	28.25	26	22	2.5	2	157 000	195 000	16 000	19 900	2 600	3 400
	140	28.25	26	20	2.5	2	147 000	190 000	15 000	19 400	2 400	3 400
	140	35.25	33	28	2.5	2	192 000	254 000	19 600	25 900	2 600	3 400
	140	46	46	35	2.5	2	256 000	385 000	26 200	39 000	2 600	3 400
	170	42.5	39	33	3	2.5	276 000	330 000	28 200	33 500	2 200	3 000
	170	42.5	39	27	3	2.5	235 000	283 000	24 000	28 900	2 000	2 800
	170	42.5	39	27	3	2.5	235 000	283 000	24 000	28 900	2 000	2 800
	170	61.5	58	48	3	2.5	385 000	505 000	39 000	51 500	2 200	3 000
170	61.5	58	48	3	2.5	365 000	530 000	37 500	54 000	2 200	3 000	

Remarks The suffix CA represents medium-angle tapered roller bearings. Since they are designed for specific applications, please consult NSK when using bearings with suffix CA.

Bearing Numbers	ISO355 Dimension Series approx.	Abutment and Fillet Dimensions (mm)						Cone r_a max.	Cup r_a max.	Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg) approx.	
		d_a min.	d_b max.	D_a max.	D_b min.	S_a min.	S_b min.					Y_1	Y_0		
HR 32914 J	2BC	79	76	94	93	96	4	4	1	1	17.6	0.32	1.9	1.1	0.494
	4CC	81	77	101	98	105	5	6	1.5	1.5	23.7	0.43	1.4	0.76	0.869
	2CE	81	78	101	100	105	5	5.5	1.5	1.5	22.2	0.28	2.1	1.2	1.11
HR 33114 J	3DE	82	79	111	104	115	6	8	2	1.5	27.9	0.38	1.6	0.87	1.71
	3EB	82	81	116	110	118	4	5	2	1.5	25.6	0.42	1.4	0.79	1.3
	3EC	82	80	116	108	119	4	6	2	1.5	28.6	0.42	1.4	0.79	1.66
HR 33214 J	3EE	82	78	116	107	120	7	9	2	1.5	30.4	0.41	1.5	0.81	2.15
	T 7 FC070	7FC	88	79	126	106	5	12	2.5	2.5	46.4	0.87	0.69	0.38	2.55
	2GB	88	89	138	132	140	4	8	2.5	2	29.7	0.35	1.7	0.96	3.03
HR 30314 DJ	7GB	94	85	138	118	142	4	13	2.5	2	45.8	0.83	0.73	0.40	2.94
	7GB	94	85	138	118	142	4	13	2.5	2	45.8	0.83	0.73	0.40	2.94
	2GD	91	86	138	124	140	4	12	2.5	2	36.1	0.35	1.7	0.96	4.35
HR 32314 CJ	5GD	91	84	138	115	141	4	12	2.5	2	43.3	0.55	1.1	0.60	4.47
HR 32915 J	2BC	84	81	99	98	101	4	4	1	1	18.7	0.33	1.8	0.99	0.53
	4CC	86	82	106	103	110	5	6	1.5	1.5	25.1	0.46	1.3	0.72	0.925
	2CE	86	83	106	104	110	6	5.5	1.5	1.5	23.0	0.30	2.0	1.1	1.18
HR 33115 J	3DE	87	83	115	109	120	6	8	2	2	29.2	0.40	1.5	0.83	1.8
	4DB	87	85	121	115	124	4	5	2	1.5	27.0	0.44	1.4	0.76	1.43
	4DC	87	84	121	113	125	4	6	2	1.5	29.8	0.44	1.4	0.76	1.72
HR 33215 J	3EE	87	83	121	111	125	7	10	2	1.5	31.6	0.43	1.4	0.77	2.25
	2GB	93	95	148	141	149	4	9	2.5	2	31.8	0.35	1.7	0.96	3.63
	7GB	99	91	148	129	152	6	14	2.5	2	48.8	0.83	0.73	0.40	3.47
HR 31315 J	7GB	99	91	148	129	152	6	14	2.5	2	48.8	0.83	0.73	0.40	3.47
	2GD	96	91	148	134	149	4	13	2.5	2	38.9	0.35	1.7	0.96	5.31
	32315 CA	—	96	90	148	124	4	15	2.5	2	47.7	0.58	1.0	0.57	5.3
HR 32916 J	2BC	89	85	104	102	106	4	4	1	1	19.8	0.35	1.7	0.94	0.56
	3CC	91	89	116	112	120	6	7	1.5	1.5	26.9	0.42	1.4	0.78	1.32
	2CE	91	88	116	112	119	6	6.5	1.5	1.5	25.5	0.28	2.2	1.2	1.66
HR 33116 J	3DE	82	88	121	113	126	6	8	2	1.5	30.4	0.42	1.4	0.79	1.88
	3EB	95	91	130	124	132	4	6	2	2	28.1	0.42	1.4	0.79	1.68
	30216 CA	—	95	92	130	122	4	8	2	2	33.8	0.58	1.0	0.57	1.66
HR 32216 J	3EC	95	90	130	122	134	4	7	2	2	30.6	0.42	1.4	0.79	2.13
	3EE	95	89	130	119	135	7	11	2	2	34.8	0.43	1.4	0.78	2.93
	2GB	98	102	158	150	159	4	9.5	2.5	2	34.0	0.35	1.7	0.96	4.27
HR 30316 DJ	7GB	104	97	158	136	159	6	15.5	2.5	2	51.8	0.83	0.73	0.40	4.07
	7GB	104	97	158	136	159	6	15.5	2.5	2	51.8	0.83	0.73	0.40	4.07
	2GD	101	98	158	143	159	4	13.5	2.5	2	41.4	0.35	1.7	0.96	6.35
HR 32316 CJ	5GD	101	95	158	132	160	4	13.5	2.5	2	49.3	0.55	1.1	0.60	6.59



Bore Diameter 85 – 100 mm



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

$$P_0 = 0.5F_r + Y_0F_a$$

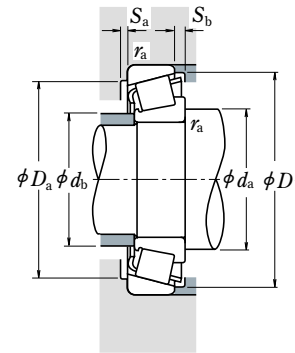
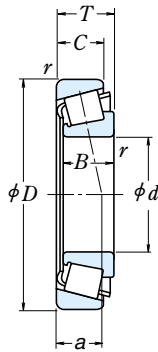
When  $F_r > 0.5F_r + Y_0F_a$ , use  $P_0 = F_r$

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

d	Boundary Dimensions (mm)				Cone		Basic Load Ratings				Limiting Speeds			
	D	T	B	C	r min.	Cup	(N)	(kgf)	C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
85	120	23	23	18	1.5	1.5	93 500	157 000	9 550	16 000	2 800	3 800		
	130	29	29	22	1.5	1.5	143 000	231 000	14 600	23 600	2 600	3 600		
	130	36	36	29.5	1.5	1.5	180 000	305 000	18 400	31 000	2 600	3 600		
	140	41	41	32	2.5	2	230 000	365 000	23 500	37 000	2 400	3 400		
	150	30.5	28	24	2.5	2	184 000	233 000	18 700	23 800	2 400	3 200		
	150	30.5	28	22	2.5	2	171 000	226 000	17 500	23 000	2 200	3 200		
	150	38.5	36	30	2.5	2	210 000	277 000	21 400	28 200	2 200	3 200		
	150	49	49	37	2.5	2	281 000	415 000	28 700	42 500	2 400	3 200		
	180	44.5	41	34	4	3	310 000	375 000	31 500	38 000	2 000	2 800		
	180	44.5	41	28	4	3	261 000	315 000	26 600	32 000	1 900	2 600		
90	125	23	23	18	1.5	1.5	97 000	167 000	9 850	17 000	2 600	3 600		
	140	32	32	24	2	1.5	170 000	273 000	17 300	27 800	2 400	3 200		
	140	39	39	32.5	2	1.5	220 000	360 000	22 400	37 000	2 400	3 200		
	150	45	45	35	2.5	2	259 000	405 000	26 500	41 500	2 400	3 200		
	160	32.5	30	26	2.5	2	201 000	256 000	20 500	26 100	2 200	3 000		
	160	42.5	40	34	2.5	2	256 000	350 000	26 100	35 500	2 200	3 000		
	190	46.5	43	36	4	3	345 000	425 000	35 500	43 000	1 900	2 600		
	190	46.5	43	30	4	3	264 000	315 000	26 900	32 000	1 800	2 400		
	190	46.5	43	30	4	3	264 000	315 000	26 900	32 000	1 800	2 400		
	190	67.5	64	53	4	3	450 000	590 000	46 000	60 500	2 000	2 600		
95	130	23	23	18	1.5	1.5	98 000	172 000	10 000	17 500	2 400	3 400		
	145	32	32	24	2	1.5	173 000	283 000	17 600	28 900	2 400	3 200		
	145	39	39	32.5	2	1.5	231 000	390 000	23 500	39 500	2 400	3 200		
	160	46	46	38	3	3	283 000	445 000	28 800	45 500	2 200	3 000		
	170	34.5	32	27	3	2.5	223 000	286 000	22 800	29 200	2 200	2 800		
	170	45.5	43	37	3	2.5	289 000	400 000	29 500	40 500	2 200	2 800		
	200	49.5	45	38	4	3	370 000	455 000	38 000	46 500	1 900	2 600		
	200	49.5	45	36	4	3	350 000	435 000	35 500	44 000	1 800	2 400		
	200	49.5	45	32	4	3	310 000	375 000	31 500	38 500	1 700	2 400		
	200	49.5	45	32	4	3	310 000	375 000	31 500	38 500	1 700	2 400		
100	140	25	25	20	1.5	1.5	117 000	205 000	12 000	20 900	2 200	3 200		
	145	24	22.5	17.5	3	3	113 000	163 000	11 500	16 600	2 200	3 000		
	150	32	32	24	2	1.5	176 000	294 000	17 900	30 000	2 200	3 000		
	150	39	39	32.5	2	1.5	235 000	405 000	24 000	41 500	2 200	3 000		
	165	52	52	40	2.5	2	315 000	515 000	32 500	52 500	2 000	2 800		
	180	37	34	29	3	2.5	255 000	330 000	26 000	34 000	2 000	2 600		
	180	49	46	39	3	2.5	325 000	450 000	33 000	46 000	2 000	2 600		
	180	63	63	48	3	2.5	410 000	635 000	42 000	65 000	2 000	2 600		
	215	51.5	47	39	4	3	425 000	525 000	43 000	53 500	1 700	2 400		
	215	56.5	51	35	4	3	385 000	505 000	39 000	51 500	1 500	2 200		
215	77.5	73	60	4	3	565 000	755 000	57 500	77 000	1 700	2 400			

Bearing Numbers	ISO355 Dimension Series approx.	Abutment and Fillet Dimensions (mm)						Cone		Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg) approx.	
		d <sub>a</sub> min.	d <sub>b</sub> max.	D <sub>a</sub> max.	D <sub>b</sub> min.	S <sub>a</sub> min.	S <sub>b</sub> min.	r <sub>a</sub> min.	r <sub>a</sub> max.			Y <sub>1</sub>	Y <sub>0</sub>		
HR 32917 J	2BC	96	92	111	111	115	5	5	1.5	1.5	20.9	0.33	1.8	1.0	0.8
HR 32017 XJ	4CC	96	94	121	116	125	6	7	1.5	1.5	28.2	0.44	1.4	0.75	1.38
HR 33017 J	2CE	96	94	121	117	125	6	6.5	1.5	1.5	26.5	0.29	2.1	1.1	1.75
HR 33117 J	3DE	100	94	130	122	135	7	9	2	2	32.7	0.41	1.5	0.81	2.51
HR 30217 J	3EB	100	97	140	133	141	5	6.5	2	2	30.3	0.42	1.4	0.79	2.12
30217 CA	—	100	98	140	131	142	5	8.5	2	2	36.2	0.58	1.0	0.57	2.07
HR 32217 J	3EC	100	96	140	131	142	5	8.5	2	2	33.9	0.42	1.4	0.79	2.64
HR 33217 J	3FE	100	95	140	129	144	7	12	2	2	37.3	0.42	1.4	0.79	3.57
HR 30317 J	2GB	106	108	166	157	167	5	10.5	3	2.5	35.8	0.35	1.7	0.96	5.08
HR 30317 DJ	7GB	113	103	166	144	169	6	16.5	3	2.5	55.4	0.83	0.73	0.40	4.88
HR 31317 J	7GB	113	103	166	144	169	6	16.5	3	2.5	55.4	0.83	0.73	0.40	4.88
HR 32317 J	2GD	110	104	166	151	167	5	14.5	3	2.5	43.6	0.35	1.7	0.96	7.31
HR 32918 J	2BC	101	97	116	116	120	5	5	1.5	1.5	22.0	0.34	1.8	0.96	0.838
HR 32018 XJ	3CC	102	99	131	124	134	6	8	2	1.5	29.7	0.42	1.4	0.78	1.78
HR 33018 J	2CE	102	99	131	129	135	7	6.5	2	1.5	27.9	0.27	2.2	1.2	2.21
HR 33118 J	3DE	105	100	140	132	144	7	10	2	2	35.2	0.40	1.5	0.83	3.14
HR 30218 J	3FB	105	103	150	141	150	5	6.5	2	2	31.7	0.42	1.4	0.79	2.6
HR 32218 J	3FC	105	102	150	139	152	5	8.5	2	2	36.2	0.42	1.4	0.79	3.41
HR 30318 J	2GB	111	114	176	176	176	5	10.5	3	2.5	37.3	0.35	1.7	0.96	5.91
HR 30318 DJ	7GB	118	110	176	152	179	6	16.5	3	2.5	58.7	0.83	0.73	0.40	5.52
HR 31318 J	7GB	118	110	176	152	179	6	16.5	3	2.5	58.7	0.83	0.73	0.40	5.52
HR 32318 J	2GD	115	109	176	158	177	5	14.5	3	2.5	46.5	0.35	1.7	0.96	8.6
HR 32919 J	2BC	106	102	121	121	125	5	5	1.5	1.5	23.2	0.36	1.7	0.92	0.877
HR 32019 XJ	4CC	107	104	136	131	140	6	8	2	1.5	31.2	0.44	1.4	0.75	1.88
HR 33019 J	2CE	107	103	136	133	139	7	6.5	2	1.5	28.6	0.28	2.2	1.2	2.3
T 2 ED095	2ED	113	108	146	141	152	6	8	2.5	2.5	34.5	0.34	1.8	0.97	3.74
HR 30219 J	3FB	113	110	158	150	159	5	7.5	2.5	2	33.7	0.42	1.4	0.79	3.13
HR 32219 J	3FC	113	108	158	147	161	5	8.5	2.5	2	39.3	0.42	1.4	0.79	4.22
HR 30319 J	2GB	116	119	186	172	184	5	11.5	3	2.5	38.6	0.35	1.7	0.96	6.92
30319 CA	—	116	119	186	168	188	5	13.5	3	2.5	48.6	0.54	1.1	0.61	6.71
HR 30319 DJ	7GB	123	115	186	158	187	6	17.5	3	2.5	61.9	0.83	0.73	0.40	6.64
HR 31319 J	7GB	123	115	186	158	187	6	17.5	3	2.5	61.9	0.83	0.73	0.40	6.64
HR 32319 J	2GD	120	115	186	167	186	5	16.5	3	2.5	48.6	0.35	1.7	0.96	10.4
HR 32920 J	2CC	111	109	132	132	134	5	5	1.5	1.5	24.2	0.33	1.8	1.0	1.18
T 4 CB100	4CB	118	108	135	135	142	6	6.5	2.5	2.5	30.1	0.47	1.3	0.70	1.18
HR 32020 XJ	4CC	112	109	141	136	144	6	8	2	1.5	32.5	0.46	1.3	0.72	1.95
HR 33020 J	2CE	112	107	141	137	143	7	6.5	2	1.5	29.3	0.29	2.1	1.2	2.38
HR 33120 J	3EE	115	110	155	144	159	8	12	2	2	40.5	0.41	1.5	0.81	4.32
HR 30220 J	3FB	118	116	168	158	168	5	8	2.5	2	36.1	0.42	1.4	0.79	3.78
HR 32220 J	3FC	118	115	168	155	171	5	10	2.5	2	41.5	0.42	1.4	0.79	5.05
HR 33220 J	3FE	118	113	168	152	172	10	15	2.5	2	46.0	0.40	1.5	0.82	6.76
HR 30320 J	2GB	121	128	201	185	197	5	12.5	3	2.5	41.4	0.35	1.7	0.96	8.41
HR 31320 J	7GB	136	125	201	169	202	7	21.5	3	2.5	67.7	0.83	0.73	0.40	9.02
HR 32320 J	2GD	125	12												

Bore Diameter 105 – 130 mm



Dynamic Equivalent Load

$$P = X F_r + Y F_a$$

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

Static Equivalent Load

$$P_0 = 0.5 F_r + Y_0 F_a$$

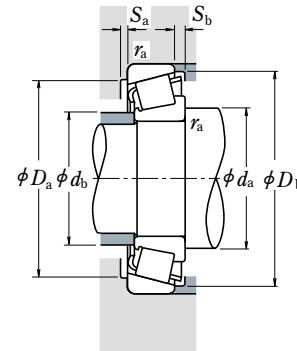
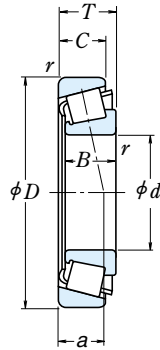
When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$

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

Boundary Dimensions (mm)							Basic Load Ratings				Limiting Speeds (min <sup>-1</sup> )	
d	D	T	B	C	Cone r min.	Cup r min.	(N) $C_r$	(kgf) $C_{0r}$	$C_r$	$C_{0r}$	Grease	Oil
105	145	25	25	20	1.5	1.5	119 000	212 000	12 100	21 600	2 200	3 000
	160	35	35	26	2.5	2	204 000	340 000	20 800	34 500	2 000	2 800
	160	43	43	34	2.5	2	256 000	435 000	26 100	44 000	2 000	2 800
	190	39	36	30	3	2.5	280 000	365 000	28 500	37 500	1 900	2 600
	190	53	50	43	3	2.5	360 000	510 000	37 000	52 000	1 900	2 600
	225	53.5	49	41	4	3	455 000	565 000	46 500	57 500	1 600	2 200
	225	58	53	36	4	3	415 000	540 000	42 000	55 000	1 500	2 000
	225	81.5	77	63	4	3	670 000	925 000	68 000	94 500	1 700	2 200
110	150	25	25	20	1.5	1.5	123 000	224 000	12 500	22 800	2 200	2 800
	170	38	38	29	2.5	2	236 000	390 000	24 000	40 000	2 000	2 600
	170	47	47	37	2.5	2	294 000	515 000	30 000	52 500	2 000	2 600
	180	56	56	43	2.5	2	365 000	610 000	37 500	62 000	1 900	2 600
	200	41	38	32	3	2.5	315 000	420 000	32 000	43 000	1 800	2 400
	200	56	53	46	3	2.5	400 000	565 000	40 500	57 500	1 800	2 400
	240	54.5	50	42	4	3	485 000	595 000	49 500	60 500	1 500	2 000
	240	63	57	38	4	3	470 000	605 000	48 000	62 000	1 400	1 900
	240	84.5	80	65	4	3	675 000	910 000	68 500	93 000	1 500	2 000
120	165	29	29	23	1.5	1.5	161 000	291 000	16 400	29 700	1 900	2 600
	170	27	25	19.5	3	3	153 000	243 000	15 600	24 800	1 800	2 600
	180	38	38	29	2.5	2	242 000	405 000	24 600	41 000	1 800	2 400
	180	48	48	38	2.5	2	300 000	540 000	30 500	55 000	1 800	2 600
	200	62	62	48	2.5	2	460 000	755 000	46 500	77 000	1 700	2 400
	215	43.5	40	34	3	2.5	335 000	450 000	34 000	46 000	1 600	2 200
	215	61.5	58	50	3	2.5	440 000	635 000	44 500	65 000	1 600	2 200
	260	59.5	55	46	4	3	535 000	655 000	54 500	67 000	1 400	1 900
	260	68	62	42	4	3	560 000	730 000	57 000	74 500	1 300	1 800
	260	90.5	86	69	4	3	770 000	1 060 000	78 500	108 000	1 400	1 900
130	180	32	30	26	2	1.5	167 000	281 000	17 000	28 600	1 800	2 400
	180	32	32	25	2	1.5	200 000	365 000	20 400	37 500	1 800	2 400
	185	29	27	21	3	3	183 000	296 000	18 600	30 000	1 700	2 400
	200	45	45	34	2.5	2	320 000	535 000	32 500	54 500	1 600	2 200
	200	55	55	43	2.5	2	395 000	715 000	40 500	73 000	1 700	2 200
	230	43.75	40	34	4	3	375 000	505 000	38 000	51 500	1 500	2 000
	230	67.75	64	54	4	3	530 000	790 000	54 000	80 500	1 500	2 000
	280	63.75	58	49	5	4	545 000	675 000	56 000	68 500	1 300	1 800
	280	63.75	58	49	5	4	650 000	820 000	66 000	83 500	1 300	1 800
	280	72	66	44	5	4	625 000	820 000	63 500	83 500	1 200	1 700
	280	98.75	93	78	5	4	830 000	1 150 000	84 500	117 000	1 300	1 800

Bearing Numbers	ISO355 Dimension Series approx.	Abutment and Fillet Dimensions (mm)								Eff. Load Centers (mm) $\bar{a}$	Constant $e$	Axial Load Factors		Mass (kg) approx.	
		$d_a$ min.	$d_b$ max.	$D_a$ max.	$D_b$ min.	$S_a$ min.	$S_b$ min.	Cone $r_a$ max.	Cup $r_a$ max.			$Y_1$	$Y_0$		
<b>HR 32921 J</b>	2CC	116	114	137	137	140	5	5	1.5	1.5	25.3	0.34	1.8	0.96	1.23
<b>HR 32021 XJ</b>	4DC	120	115	150	144	154	6	9	2	2	34.3	0.44	1.4	0.74	2.48
<b>HR 33021 J</b>	2DE	120	115	150	146	153	7	9	2	2	30.9	0.28	2.1	1.2	3.03
<b>HR 30221 J</b>	3FB	123	123	178	166	177	6	9	2.5	2	38.1	0.42	1.4	0.79	4.51
<b>HR 32221 J</b>	3FC	123	120	178	162	180	5	10	2.5	2	44.8	0.42	1.4	0.79	6.25
<b>HR 30321 J</b>	2GB	126	133	211	195	206	6	12.5	3	2.5	43.3	0.35	1.7	0.96	9.52
<b>HR 31321 J</b>	7GB	141	130	211	177	211	7	22	3	2.5	70.2	0.83	0.73	0.40	10
<b>HR 32321 J</b>	2GD	130	129	211	186	209	6	18.5	3	2.5	55.2	0.35	1.7	0.96	14.9
<b>HR 32922 J</b>	2CC	121	119	142	142	145	5	5	1.5	1.5	26.5	0.36	1.7	0.93	1.29
<b>HR 32022 XJ</b>	4DC	125	121	160	153	163	7	9	2	2	35.9	0.43	1.4	0.77	3.09
<b>HR 33022 J</b>	2DE	125	121	160	153	161	7	10	2	2	33.7	0.29	2.1	1.2	3.84
<b>HR 33122 J</b>	3EE	125	121	170	156	174	9	13	2	2	44.1	0.42	1.4	0.79	5.54
<b>HR 30222 J</b>	3FB	128	129	188	175	187	6	9	2.5	2	40.2	0.42	1.4	0.79	5.28
<b>HR 32222 J</b>	3FC	128	127	188	171	190	5	10	2.5	2	47.2	0.42	1.4	0.79	7.35
<b>HR 30322 J</b>	2GB	131	143	226	208	220	6	12.5	3	2.5	45.1	0.35	1.7	0.96	11
<b>HR 31322 J</b>	7GB	146	136	226	191	224	7	25	3	2.5	74.8	0.83	0.73	0.40	12.3
<b>HR 32322 J</b>	2GD	135	139	226	201	222	6	19.5	3	2.5	58.6	0.35	1.7	0.96	17.1
<b>HR 32924 J</b>	2CC	131	129	156	155	160	6	6	1.5	1.5	29.2	0.35	1.7	0.95	1.8
<b>T 4 CB120</b>	4CB	138	129	158	158	164	7	7.5	2.5	2.5	35.0	0.47	1.3	0.70	1.78
<b>HR 32024 XJ</b>	4DC	135	131	170	162	173	7	9	2	2	39.7	0.46	1.3	0.72	3.27
<b>HR 33024 J</b>	2DE	135	130	168	161	171	6	10	2	2	36.0	0.31	2.0	1.1	4.2
<b>HR 33124 J</b>	3FE	135	133	190	173	192	9	14	2	2	47.9	0.40	1.5	0.83	7.67
<b>HR 30224 J</b>	4FB	138	141	203	190	201	6	9.5	2.5	2	44.4	0.44	1.4	0.76	6.28
<b>HR 32224 J</b>	4FD	138	137	203	181	204	6	11.5	2.5	2	52.1	0.44	1.4	0.76	9.0
<b>HR 30324 J</b>	2GB	141	154	246	223	237	6	13.5	3	2.5	50.0	0.35	1.7	0.96	13.9
<b>HR 31324 J</b>	7GB	156	148	246	206	244	9	26	3	2.5	81.7	0.83	0.73	0.40	15.6
<b>HR 32324 J</b>	2GD	145	149	246	216	239	6	21.5	3	2.5	62.5	0.35	1.7	0.96	21.8
<b>32926</b>	—	142	141	171	168	175	6	6	2	1.5	34.7	0.36	1.7	0.92	2.25
<b>HR 32926 J</b>	2CC	142	140	170	168	173	6	7	2	1.5	31.4	0.34	1.8	0.97	2.46
<b>T 4 CB130</b>	4CB	148	141	171	171	179	8	8	2.5	2.5	37.5	0.47	1.3	0.70	2.32
<b>HR 32026 XJ</b>	4EC	145	144	190	179	192	8	11	2	2	43.9	0.43	1.4	0.76	5.06
<b>HR 33026 J</b>	2EE	145	144	188	179	192	8	12	2	2	42.4	0.34	1.8	0.97	6.25
<b>HR 30226 J</b>	4FB	151	151	216	205	217	7	9.5	3	2.5	45.9	0.44	1.4	0.76	7.25
<b>HR 32226 J</b>	4FD	151	147	216	196	219	7	13.5	3	2.5	57.0	0.44	1.4	0.76	11.3
<b>30326</b>	—	157	168	262	239	255	8	14.5	4	3	53.9	0.36	1.7	0.92	16.6
<b>HR 30326 J</b>	2GB	157	166	262	241	255	8	14.5	4	3	52.8	0.35	1.7	0.96	17.2
<b>HR 31326 J</b>	7GB	174	159	262	220	261	9	28	4	3	87.1	0.83	0.73	0.40	18.8
<b>32326</b>	—	162	165	262	233	263	8	20.5	4	3	69.2	0.36	1.7	0.92	26.6

Bore Diameter 140 – 170 mm



**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  $P_0 = F_r$

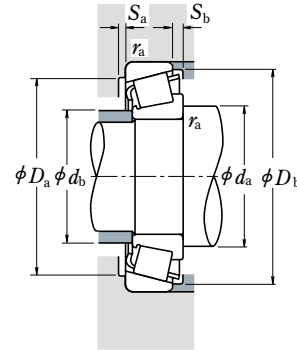
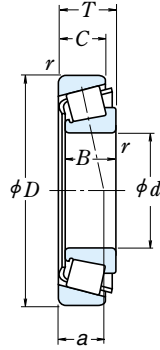
The values of  $e$ ,  $Y_1$ , and  $Y_0$  are given in the table below.

d	Boundary Dimensions (mm)				Cone		Basic Load Ratings				Limiting Speeds	
	D	T	B	C	r	Cup min.	C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
<b>140</b>	190	32	32	25	2	1.5	206 000	390 000	21 000	39 500	1 700	2 200
	210	45	45	34	2.5	2	325 000	555 000	33 000	57 000	1 600	2 200
	210	56	56	44	2.5	2	410 000	770 000	42 000	78 500	1 600	2 200
	250	45.75	42	36	4	3	390 000	515 000	40 000	52 500	1 400	1 900
	250	71.75	68	58	4	3	610 000	915 000	62 000	93 500	1 400	1 900
	300	67.75	62	53	5	4	740 000	945 000	75 500	96 500	1 200	1 700
	300	77	70	47	5	4	695 000	955 000	71 000	97 500	1 100	1 500
	300	107.75	102	85	5	4	985 000	1 440 000	101 000	147 000	1 200	1 600
	<b>150</b>	210	38	36	31	2.5	2	247 000	440 000	25 200	45 000	1 500
210		38	38	30	2.5	2	281 000	520 000	28 600	53 000	1 500	2 000
225		48	48	36	3	2.5	375 000	650 000	38 000	66 500	1 400	2 000
	225	59	59	46	3	2.5	435 000	805 000	44 000	82 000	1 400	2 000
	270	49	45	38	4	3	485 000	665 000	49 000	67 500	1 300	1 800
	270	77	73	60	4	3	705 000	1 080 000	71 500	110 000	1 300	1 800
	320	72	65	55	5	4	690 000	860 000	70 000	87 500	1 100	1 500
	320	72	65	55	5	4	825 000	1 060 000	84 500	108 000	1 100	1 600
	320	82	75	50	5	4	790 000	1 100 000	80 500	112 000	1 000	1 400
320	114	108	90	5	4	1 120 000	1 700 000	114 000	174 000	1 100	1 500	
<b>160</b>	220	38	38	30	2.5	2	296 000	570 000	30 000	58 000	1 400	1 900
	240	51	51	38	3	2.5	425 000	750 000	43 500	76 500	1 300	1 800
	290	52	48	40	4	3	530 000	730 000	54 000	74 500	1 200	1 600
	290	84	80	67	4	3	795 000	1 220 000	81 000	125 000	1 200	1 600
	340	75	68	58	5	4	765 000	960 000	78 000	98 000	1 000	1 400
	340	75	68	58	5	4	870 000	1 110 000	89 000	113 000	1 100	1 400
	340	75	68	48	5	4	675 000	875 000	69 000	89 000	950	1 300
	340	121	114	95	5	4	1 210 000	1 770 000	123 000	181 000	1 000	1 400
	<b>170</b>	230	38	36	31	2.5	2.5	258 000	485 000	26 300	49 500	1 300
230		38	38	30	2.5	2	294 000	560 000	30 000	57 000	1 400	1 800
260		57	57	43	3	2.5	505 000	890 000	51 500	90 500	1 200	1 700
	310	57	52	43	5	4	630 000	885 000	64 000	90 000	1 100	1 500
	310	91	86	71	5	4	930 000	1 450 000	94 500	148 000	1 100	1 500
	360	80	72	62	5	4	845 000	1 080 000	86 000	110 000	950	1 300
	360	80	72	62	5	4	960 000	1 230 000	98 000	125 000	1 000	1 300
	360	80	72	50	5	4	760 000	1 040 000	77 500	106 000	900	1 200
	360	127	120	100	5	4	1 370 000	2 050 000	140 000	209 000	1 000	1 300

Bearing Numbers	ISO355 Dimension Series approx.	Abutment and Fillet Dimensions (mm)						Cone Cup		Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg) approx.	
		d <sub>a</sub> min.	d <sub>b</sub> max.	D <sub>a</sub> max.	D <sub>b</sub> min.	S <sub>a</sub> min.	S <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>a</sub> min.			Y <sub>1</sub>	Y <sub>0</sub>		
<b>HR 32928 J</b>	2CC	152	150	180	178	184	6	7	2	1.5	33.6	0.36	1.7	0.92	2.64
<b>HR 32028 XJ</b>	4DC	155	152	200	189	202	8	11	2	2	46.6	0.46	1.3	0.72	5.32
<b>HR 33028 J</b>	2DE	155	153	198	189	202	7	12	2	2	45.5	0.36	1.7	0.92	6.74
<b>HR 30228 J</b>	4FB	161	164	236	221	234	7	9.5	3	2.5	48.9	0.44	1.4	0.76	8.74
<b>HR 32228 J</b>	4FD	161	159	236	213	238	9	13.5	3	2.5	60.5	0.44	1.4	0.76	14.3
<b>HR 30328 J</b>	2GB	167	177	282	256	273	9	14.5	4	3	55.7	0.35	1.7	0.96	21.1
<b>HR 31328 J</b>	7GB	184	174	282	236	280	9	30	4	3	92.9	0.83	0.73	0.40	28.5
<b>32328</b>	—	172	177	282	246	281	9	22.5	4	3	76.4	0.37	1.6	0.88	33.9
<b>32930</b>	—	165	162	200	195	201	7	7	2	2	36.7	0.33	1.8	1.0	3.8
<b>HR 32930 J</b>	2DC	165	163	198	196	202	7	8	2	2	36.5	0.33	1.8	1.0	4.05
<b>HR 32030 XJ</b>	4EC	168	164	213	202	216	8	12	2.5	2	49.8	0.46	1.3	0.72	6.6
<b>HR 33030 J</b>	2EE	168	165	213	203	217	8	13	2.5	2	48.7	0.36	1.7	0.90	8.07
<b>HR 30230 J</b>	2GB	171	175	256	236	250	7	11	3	2.5	51.3	0.44	1.4	0.76	11.2
<b>HR 32230 J</b>	4GD	171	171	256	228	254	8	17	3	2.5	64.7	0.44	1.4	0.76	17.8
<b>30330</b>	—	177	193	302	275	292	8	17	4	3	61.4	0.36	1.7	0.92	24.2
<b>HR 30330 J</b>	2GB	177	190	302	276	292	8	17	4	3	60.0	0.35	1.7	0.96	25
<b>HR 31330 J</b>	7GB	194	187	302	253	300	9	32	4	3	99.3	0.83	0.73	0.40	28.5
<b>32330</b>	—	182	191	302	262	297	8	24	4	3	81.5	0.37	1.6	0.88	41.4
<b>HR 32932 J</b>	2DC	175	173	208	206	212	7	8	2	2	38.7	0.35	1.7	0.95	4.32
<b>HR 32032 XJ</b>	4EC	178	175	228	216	231	8	13	2.5	2	53.0	0.46	1.3	0.72	7.93
<b>HR 30232 J</b>	4GB	181	189	276	253	269	8	12	3	2.5	55.0	0.44	1.4	0.76	13.7
<b>HR 32232 J</b>	4GD	181	184	276	243	274	10	17	3	2.5	70.5	0.44	1.4	0.76	22.7
<b>30332</b>	—	187	205	322	293	311	10	17	4	3	64.6	0.36	1.7	0.92	28.4
<b>HR 30332 J</b>	2GB	187	201	322	293	310	10	17	4	3	62.9	0.35	1.7	0.96	29.2
<b>30332 D</b>	—	196	198	322	270	313	9	27	4	3	99.4	0.81	0.74	0.41	27.5
<b>32332</b>	—	192	202	322	281	319	10	26	4	3	87.1	0.37	1.6	0.88	48.3
<b>32934</b>	—	185	183	220	216	223	7	7	2	2	41.6	0.36	1.7	0.90	4.3
<b>HR 32934 J</b>	3DC	185	180	218	215	222	7	8	2	2	41.7	0.38	1.6	0.86	4.44
<b>HR 32034 XJ</b>	4EC	188	187	248	232	249	10	14	2.5	2	56.6	0.44	1.4	0.74	10.6
<b>HR 30234 J</b>	4GB	197	202	292	273	288	8	14	4	3	59.4	0.44	1.4	0.76	17.1
<b>HR 32234 J</b>	4GD	197	197	292	262	294	10	20	4	3	76.4	0.44	1.4	0.76	28
<b>30334</b>	—	197	221	342	312	332	10	18	4	3	70.1	0.37	1.6	0.90	33.5
<b>HR 30334 J</b>	2GB	197	214	342	310	329	10	18	4	3	67.3	0.35	1.7	0.96	34.5
<b>30334 D</b>	—	206	215	342	288	332	10	30	4	3	107.3	0.81	0.74	0.41	33.4
<b>32334</b>	—	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



### 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

$$P_0 = 0.5F_r + Y_0F_a$$

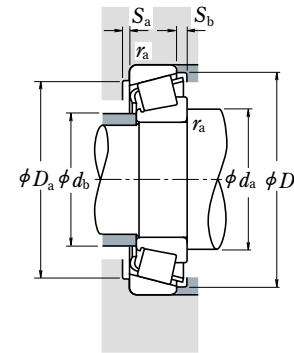
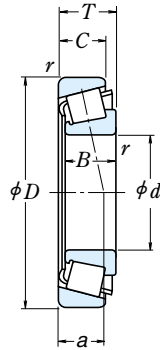
When  $F_r > 0.5F_r + Y_0F_a$ , use  $P_0 = F_r$

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

Boundary Dimensions (mm)						Basic Load Ratings (N) {kgf}				Limiting Speeds (min <sup>-1</sup> )			
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	Cone Cup <i>r</i> min.	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>	Grease	Oil		
<b>180</b>	250	45	45	34	2.5	2	350 000	685 000	36 000	69 500	1 300	1 700	
	280	64	64	48	3	2.5	640 000	1 130 000	65 000	115 000	1 200	1 600	
	320	57	52	43	5	4	650 000	930 000	66 000	95 000	1 100	1 400	
	320	91	86	71	5	4	960 000	1 540 000	98 000	157 000	1 100	1 400	
	380	83	75	64	5	4	935 000	1 230 000	95 500	126 000	900	1 300	
	380	83	75	53	5	4	820 000	1 120 000	83 500	114 000	850	1 200	
	380	134	126	106	5	4	1 520 000	2 290 000	155 000	234 000	950	1 300	
	<b>190</b>	260	45	45	34	2.5	2	365 000	715 000	37 000	73 000	1 200	1 600
		290	64	64	48	3	2.5	650 000	1 170 000	66 000	119 000	1 100	1 500
		340	60	55	46	5	4	715 000	1 020 000	73 000	104 000	1 000	1 300
340		97	92	75	5	4	1 110 000	1 770 000	113 000	181 000	1 000	1 400	
<b>200</b>	400	86	78	65	6	5	1 010 000	1 340 000	103 000	136 000	850	1 200	
	400	140	132	109	6	5	1 660 000	2 580 000	169 000	263 000	850	1 200	
	280	51	48	41	3	2.5	410 000	780 000	42 000	80 000	1 100	1 500	
	280	51	51	39	3	2.5	480 000	935 000	48 500	95 000	1 100	1 500	
	310	70	70	53	3	2.5	760 000	1 370 000	77 500	139 000	1 000	1 400	
	360	64	58	48	5	4	795 000	1 120 000	81 000	114 000	950	1 300	
	360	104	98	82	5	4	1 210 000	1 920 000	123 000	196 000	950	1 300	
	420	89	80	67	6	5	1 030 000	1 390 000	105 000	142 000	850	1 200	
	420	89	80	56	6	5	965 000	1 330 000	98 500	136 000	750	1 000	
	420	146	138	115	6	5	1 820 000	2 870 000	185 000	292 000	800	1 100	
<b>220</b>	300	51	51	39	3	2.5	490 000	990 000	50 000	101 000	1 000	1 400	
	340	76	76	57	4	3	885 000	1 610 000	90 500	164 000	950	1 300	
	400	72	65	54	5	4	810 000	1 150 000	82 500	117 000	850	1 100	
	400	114	108	90	5	4	1 340 000	2 210 000	137 000	225 000	850	1 100	
	460	97	88	73	6	5	1 430 000	1 990 000	146 000	203 000	750	1 000	
	460	154	145	122	6	5	2 020 000	3 200 000	206 000	325 000	750	1 000	
<b>240</b>	320	51	51	39	3	2.5	500 000	1 040 000	51 000	107 000	950	1 300	
	360	76	76	57	4	3	920 000	1 730 000	94 000	177 000	850	1 200	
	440	79	72	60	5	4	990 000	1 400 000	101 000	142 000	750	1 000	
	440	127	120	100	5	4	1 630 000	2 730 000	166 000	278 000	750	1 000	
	500	105	95	80	6	5	1 660 000	2 340 000	169 000	238 000	670	950	
	500	165	155	132	6	5	2 520 000	4 100 000	257 000	415 000	670	900	

Bearing Numbers	ISO355 Dimension Series approx.	Abutment and Fillet Dimensions (mm)								Cone Cup <i>r<sub>a</sub></i> max.	Eff. Load Centers (mm) <i>a</i>	Constant <i>e</i>	Axial Load Factors		Mass (kg) approx.
		<i>d<sub>a</sub></i> min.	<i>d<sub>b</sub></i> max.	<i>D<sub>a</sub></i> max.	<i>D<sub>b</sub></i> min.	<i>S<sub>a</sub></i> min.	<i>S<sub>b</sub></i> min.	$Y_1$	$Y_0$						
<b>HR 32936 J</b> <b>HR 32036 XJ</b> <b>HR 30236 J</b>	4DC	195	192	240	227	241	8	11	2	2	53.9	0.48	1.3	0.69	6.56
	3FD	198	199	268	248	267	10	16	2.5	2	60.4	0.42	1.4	0.78	14.3
	4GB	207	210	302	281	297	9	14	4	3	61.8	0.45	1.3	0.73	17.8
<b>HR 32236 J</b> <b>30336</b> <b>30336 D</b> <b>32336</b>	4GD	207	205	302	270	303	10	20	4	3	78.9	0.45	1.3	0.73	29.8
	—	207	233	362	324	345	10	19	4	3	72.5	0.36	1.7	0.92	39.3
	—	216	229	362	304	352	10	30	4	3	113.1	0.81	0.74	0.41	38.5
	—	212	225	362	310	353	10	28	4	3	96.6	0.37	1.6	0.88	66.8
<b>HR 32938 J</b> <b>HR 32038 XJ</b> <b>HR 30238 J</b>	4DC	205	201	250	237	251	8	11	2	2	55.3	0.48	1.3	0.69	6.83
	4FD	208	209	278	258	279	10	16	2.5	2	63.4	0.44	1.4	0.75	14.9
	4GB	217	223	322	302	318	9	14	4	3	65.6	0.44	1.4	0.76	21.4
<b>HR 32238 J</b> <b>30338</b> <b>32338</b>	4GD	217	216	322	290	323	10	22	4	3	80.5	0.44	1.4	0.76	35.2
	—	223	248	378	346	366	11	21	5	4	76.1	0.36	1.7	0.92	46
	—	229	243	378	332	375	11	31	5	4	102.7	0.37	1.6	0.88	78.9
<b>32940</b> <b>HR 32940 J</b> <b>HR 32040 XJ</b>	—	218	217	268	256	269	9	10	2.5	2	53.4	0.37	1.6	0.88	9.26
	3EC	218	216	268	258	271	9	12	2.5	2	54.2	0.39	1.5	0.84	9.65
	4FD	218	221	298	277	297	11	17	2.5	2	67.4	0.43	1.4	0.77	18.9
<b>HR 30240 J</b> <b>HR 32240 J</b> <b>30340</b>	4GB	227	236	342	318	336	10	16	4	3	69.1	0.44	1.4	0.76	25.5
	3GD	227	230	342	305	340	11	22	4	3	85.1	0.41	1.5	0.81	42.6
	—	233	253	398	346	368	11	22	5	4	81.4	0.37	1.6	0.88	52.3
<b>30340 D</b> <b>32340</b>	—	244	253	398	336	385	11	33	5	4	122.9	0.81	0.74	0.41	49.6
	—	239	253	398	346	392	11	31	5	4	106.7	0.37	1.6	0.88	90.9
<b>HR 32944 J</b> <b>HR 32044 XJ</b> <b>30244</b>	3EC	238	235	288	278	293	9	12	2.5	2	59.2	0.43	1.4	0.78	10.3
	4FD	241	244	326	303	326	12	19	3	2.5	73.6	0.43	1.4	0.77	24.4
	—	247	267	382	350	367	11	18	4	3	74.7	0.40	1.5	0.82	33.6
<b>32244</b> <b>30344</b> <b>32344</b>	—	247	260	382	340	377	12	24	4	3	93.0	0.40	1.5	0.82	57.4
	—	253	283	438	390	414	12	24	5	4	85.4	0.36	1.7	0.92	72.4
	—	259	274	438	372	421	12	32	5	4	114.9	0.37	1.6	0.88	114
<b>HR 32948 J</b> <b>HR 32048 XJ</b> <b>30248</b>	4EC	258	255	308	297	314	9	12	2.5	2	65.1	0.46	1.3	0.72	11.1
	4FD	261	262	346	321	346	12	19	3	2.5	79.1	0.46	1.3	0.72	26.2
	—	267	288	422	384	408	11	19	4	3	85.1	0.44	1.4	0.74	45.2
<b>32248</b> <b>30348</b> <b>32348</b>	—	267	285	422	374	416	12	27	4	3	102.5	0.40	1.5	0.82	78
	—	273	308	478	422	447	12	25	5	4	92.8	0.36	1.7	0.92	92.6
	—	279	301	478	410	464	12	33	5	4	123.2	0.37	1.6	0.88	145

Bore Diameter 260 – 440 mm



Dynamic Equivalent Load

$$P = X F_r + Y F_a$$

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

Static Equivalent Load

$$P_0 = 0.5 F_r + Y_0 F_a$$

When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$

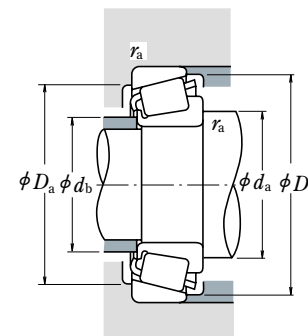
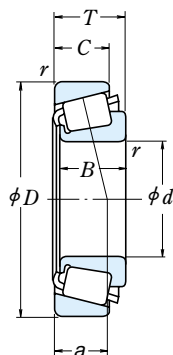
The values of  $e$ ,  $Y_1$ , and  $Y_0$  are given in the table below.

d	Boundary Dimensions (mm)					Cone		Basic Load Ratings				Limiting Speeds	
	D	T	B	C	r	Cup	(N)		{kgf}		(min <sup>-1</sup> )		
					min.		C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	
260	360	63.5	63.5	48	3	2.5	730 000	1 450 000	74 500	148 000	850	1 100	
	400	87	87	65	5	4	1 160 000	2 160 000	118 000	220 000	800	1 100	
	480	89	80	67	6	5	1 190 000	1 700 000	121 000	174 000	670	900	
280	480	137	130	106	6	5	1 900 000	3 300 000	194 000	335 000	670	950	
	540	113	102	85	6	6	1 870 000	2 640 000	190 000	269 000	630	850	
	540	176	165	136	6	6	2 910 000	4 800 000	297 000	490 000	630	850	
300	420	76	72	62	4	3	895 000	1 820 000	91 000	186 000	710	950	
	420	76	76	57	4	3	1 010 000	2 100 000	103 000	214 000	710	950	
	460	100	100	74	5	4	1 440 000	2 700 000	147 000	275 000	670	900	
320	540	96	85	71	6	5	1 440 000	2 100 000	147 000	214 000	600	800	
	540	149	140	115	6	5	2 220 000	3 700 000	226 000	380 000	600	800	
	440	76	72	63	4	3	900 000	1 880 000	92 000	192 000	970	900	
340	440	76	76	57	4	3	1 040 000	2 220 000	106 000	227 000	670	900	
	480	100	100	74	5	4	1 510 000	2 910 000	153 000	297 000	630	850	
	580	104	92	75	6	5	1 640 000	2 420 000	168 000	247 000	530	750	
360	580	159	150	125	6	5	2 860 000	5 050 000	292 000	515 000	530	750	
	670	210	200	170	7.5	7.5	4 200 000	7 100 000	430 000	725 000	480	670	
	460	76	72	63	4	3	910 000	1 940 000	93 000	197 000	630	850	
380	460	76	76	57	4	3	1 050 000	2 220 000	107 000	226 000	630	850	
	520	112	106	92	6	5	1 650 000	3 400 000	168 000	345 000	560	750	
	480	76	72	62	4	3	945 000	2 100 000	96 500	214 000	600	800	
400	480	76	76	57	4	3	1 080 000	2 340 000	110 000	239 000	560	800	
	540	112	106	92	6	5	1 680 000	3 500 000	171 000	355 000	530	750	
	520	87	82	71	5	4	1 210 000	2 550 000	124 000	260 000	560	750	
420	540	87	82	71	5	4	1 250 000	2 700 000	128 000	276 000	530	710	
	600	125	118	100	6	5	1 960 000	4 050 000	200 000	415 000	480	670	
440	560	87	82	72	5	4	1 300 000	2 810 000	132 000	287 000	500	670	
	620	125	118	100	6	5	2 000 000	4 200 000	204 000	430 000	450	630	
440	650	130	122	104	6	6	2 230 000	4 600 000	227 000	470 000	430	600	

Bearing Numbers	ISO355 Dimension Series approx.	Abutment and Fillet Dimensions (mm)							Cone Cup r <sub>a</sub> max.	Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg) approx.	
		d <sub>a</sub> min.	d <sub>b</sub> max.	D <sub>a</sub> max.	D <sub>b</sub> min.	S <sub>a</sub> min.	S <sub>b</sub> min.	Y <sub>1</sub>				Y <sub>0</sub>			
		<b>HR 32952 J</b>	3EC	278	278	348	333	347				11	15.5		2.5
<b>HR 32052 XJ</b>	4FC	287	287	382	357	383	14	22	4	3	86.3	0.43	1.4	0.76	38.5
<b>30252</b>	—	293	316	458	421	447	12	22	5	4	94.6	0.44	1.4	0.74	60.7
<b>32252</b>	—	293	305	458	394	446	14	31	5	4	116.0	0.45	1.3	0.73	103
<b>30352</b>	—	293	336	512	460	487	16	28	5	5	101.6	0.36	1.7	0.92	114
<b>32352</b>	—	293	328	512	441	495	13	40	5	5	130.5	0.37	1.6	0.88	188
<b>HR 32956 J</b>	4EC	298	297	368	352	368	12	15.5	2.5	2	75.3	0.43	1.4	0.76	20
<b>HR 32056 XJ</b>	4FC	307	305	402	374	402	14	22	4	3	91.6	0.46	1.3	0.72	40.6
<b>30256</b>	—	313	339	478	436	462	12	22	5	4	98.5	0.44	1.4	0.74	66.3
<b>32256</b>	—	313	325	478	412	467	14	31	5	4	123.1	0.47	1.3	0.70	109
<b>32356</b>	—	319	353	552	475	532	14	42	5	5	139.6	0.37	1.6	0.89	224
<b>32960</b>	—	321	326	406	386	405	13	14	3	2.5	79.3	0.37	1.6	0.88	30.5
<b>HR 32960 J</b>	3FD	321	324	406	387	405	13	19	3	2.5	79.9	0.39	1.5	0.84	31.4
<b>HR 32060 XJ</b>	4GD	327	330	442	408	439	15	26	4	3	98.4	0.43	1.4	0.76	56.6
<b>30260</b>	—	333	355	518	470	499	14	25	5	4	105.1	0.44	1.4	0.74	80.6
<b>32260</b>	—	333	352	518	458	514	15	34	5	4	131.7	0.46	1.3	0.72	132
<b>32964</b>	—	341	345	426	404	425	13	13	3	2.5	84.3	0.39	1.5	0.84	32
<b>HR 32964 J</b>	3FD	341	344	426	406	426	13	19	3	2.5	85.0	0.42	1.4	0.79	33.3
<b>HR 32064 XJ</b>	4GD	347	350	462	430	461	15	26	4	3	104.5	0.46	1.3	0.72	60
<b>30264</b>	—	353	381	558	503	533	14	29	5	4	113.7	0.44	1.4	0.74	99.3
<b>32264</b>	—	353	383	558	487	550	15	34	5	4	141.7	0.46	1.3	0.72	175
<b>32364</b>	—	383	412	634	547	616	14	42	6	6	157.5	0.37	1.6	0.88	343
<b>32968</b>	—	361	364	446	426	446	13	13	3	2.5	89.2	0.41	1.5	0.80	33.6
<b>HR 32968 J</b>	4FD	361	362	446	427	446	13	19	3	2.5	91.0	0.44	1.4	0.75	34.3
<b>32068</b>	—	373	386	498	464	496	3.5	22	5	4	104.5	0.37	1.6	0.89	83.7
<b>32972</b>	—	381	386	466	445	465	14	14	3	2.5	91.4	0.40	1.5	0.82	35.8
<b>HR 32972 J</b>	4FD	381	381	466	445	466	13	19	3	2.5	96.8	0.46	1.3	0.72	36.1
<b>32072</b>	—	393	402	518	480	514	5.5	22	5	4	108.6	0.38	1.6	0.86	86.5
<b>32976</b>	—	407	406	502	478	501	16	16	4	3	95.2	0.39	1.6	0.86	49.5
<b>32980</b>	—	427	428	522	499	524	16	16	4	3	100.8	0.40	1.5	0.82	52.7
<b>32080</b>	—	433	443	578	533	565	5	25	5	4	115.3	0.36	1.7	0.92	116
<b>32984</b>	—	447	448	542	521	544	3.5	15	4	3	106.1	0.41	1.5	0.81	54.8
<b>32084</b>	—	453	463	598	552	586	6.5	25	5	4	120.0	0.37	1.6	0.88	121
<b>32088</b>	—	473	487	622	582	616	5	26	5	5	126.3	0.36	1.7	0.92	136

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 12.000 – 22.225 mm



### 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.

Boundary Dimensions (mm)						Basic Load Ratings (N)				Limiting Speeds (min <sup>-1</sup> )		
d	D	T	B	C	Cone r min.	C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub> {kgf}	C <sub>0r</sub> {kgf}	Grease	Oil	
12.000	31.991	10.008	10.785	7.938	0.8	1.3	10 300	8 900	1 050	905	13 000	18 000
12.700	34.988	10.998	10.988	8.730	1.3	1.3	11 700	10 900	1 200	1 110	12 000	16 000
15.000	34.988	10.998	10.988	8.730	0.8	1.3	11 700	10 900	1 200	1 110	12 000	16 000
15.875	34.988	10.998	10.998	8.712	1.3	1.3	13 800	13 400	1 410	1 360	11 000	15 000
	39.992	12.014	11.153	9.525	1.3	1.3	14 900	15 700	1 520	1 600	9 500	13 000
	41.275	14.288	14.681	11.112	1.3	2.0	21 300	19 900	2 170	2 030	10 000	13 000
	42.862	14.288	14.288	9.525	1.5	1.5	17 300	17 200	1 770	1 750	8 500	12 000
	42.862	16.670	16.670	13.495	1.5	1.5	26 900	26 300	2 750	2 680	9 500	13 000
	44.450	15.494	14.381	11.430	1.5	1.5	23 800	23 900	2 430	2 440	8 500	11 000
	49.225	19.845	21.539	14.288	0.8	1.3	37 500	37 000	3 800	3 800	8 500	11 000
16.000	47.000	21.000	21.000	16.000	1.0	2.0	35 000	36 500	3 600	3 750	9 000	12 000
16.993	39.992	12.014	11.153	9.525	0.8	1.3	14 900	15 700	1 520	1 600	9 500	13 000
17.455	36.525	11.112	11.112	7.938	1.5	1.5	11 600	11 000	1 190	1 120	10 000	14 000
17.462	39.878	13.843	14.605	10.668	1.3	1.3	22 500	22 500	2 290	2 290	10 000	13 000
	47.000	14.381	14.381	11.112	0.8	1.3	23 800	23 900	2 430	2 440	8 500	11 000
19.050	39.992	12.014	11.153	9.525	1.0	1.3	14 900	15 700	1 520	1 600	9 500	13 000
	45.237	15.494	16.637	12.065	1.3	1.3	28 500	28 900	2 910	2 950	9 000	12 000
	47.000	14.381	14.381	11.112	1.3	1.3	23 800	23 900	2 430	2 440	8 500	11 000
	49.225	18.034	19.050	14.288	1.3	1.3	37 500	37 000	3 800	3 800	8 500	11 000
	49.225	19.845	21.539	14.288	1.2	1.3	37 500	37 000	3 800	3 800	8 500	11 000
	49.225	21.209	19.050	17.462	1.3	1.5	37 500	37 000	3 800	3 800	8 500	11 000
	49.225	23.020	21.539	17.462	C1.5	3.5	37 500	37 000	3 800	3 800	8 500	11 000
	53.975	22.225	21.839	15.875	1.5	2.3	40 500	39 500	4 150	4 000	7 500	10 000
19.990	47.000	14.381	14.381	11.112	1.5	1.3	23 800	23 900	2 430	2 440	8 500	11 000
20.000	51.994	15.011	14.260	12.700	1.5	1.3	26 000	27 900	2 650	2 840	7 500	10 000
20.625	49.225	23.020	21.539	17.462	1.5	1.5	37 500	37 000	3 800	3 800	8 500	11 000
20.638	49.225	19.845	19.845	15.875	1.5	1.5	36 000	37 000	3 650	3 750	8 000	11 000
21.430	50.005	17.526	18.288	13.970	1.3	1.3	38 500	40 000	3 950	4 100	8 000	11 000
22.000	45.237	15.494	16.637	12.065	1.3	1.3	29 200	33 500	2 980	3 400	8 500	11 000
	45.975	15.494	16.637	12.065	1.3	1.3	29 200	33 500	2 980	3 400	8 500	11 000
22.225	50.005	13.495	14.260	9.525	1.3	1.0	26 000	27 900	2 650	2 840	7 500	10 000
	50.005	17.526	18.288	13.970	1.3	1.3	38 500	40 000	3 950	4 100	8 000	11 000
	52.388	19.368	20.168	14.288	1.5	1.5	40 500	43 000	4 100	4 400	7 500	10 000
	53.975	19.368	20.168	14.288	1.5	1.5	40 500	43 000	4 100	4 400	7 500	10 000
	56.896	19.368	19.837	15.875	1.3	1.3	38 000	40 500	3 900	4 150	7 100	9 500
	57.150	22.225	22.225	17.462	0.8	1.5	48 000	50 000	4 850	5 100	7 100	9 500

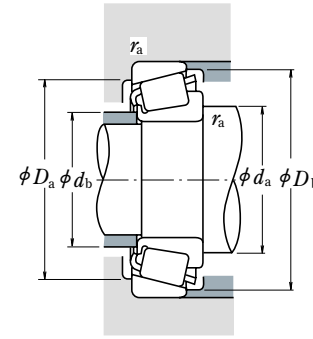
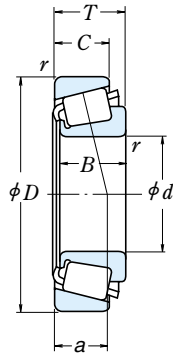
Bearing Numbers		Abutment and Fillet Dimensions (mm)					Eff. Load Centers (mm)	Constant	Axial Load Factors		Mass (kg)		
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>	Cone r <sub>a</sub> max.	a	e	Y <sub>1</sub>	Y <sub>0</sub>	approx. CONE	CUP	
*A 2047	A 2126	16.5	15.5	26	29	0.8	1.3	6.8	0.41	1.5	0.81	0.023	0.017
A 4050	A 4138	18.5	17	29	32	1.3	1.3	8.2	0.45	1.3	0.73	0.033	0.022
*A 4059	A 4138	19.5	19	29	32	0.8	1.3	8.2	0.45	1.3	0.73	0.029	0.022
L 21549	L 21511	21.5	19.5	29	32.5	1.3	1.3	7.7	0.32	1.9	1.0	0.031	0.018
A 6062	A 6157	22	20.5	34	37	1.3	1.3	10.3	0.53	1.1	0.63	0.044	0.031
03062	03162	21.5	20	34	37.5	1.3	2	9.1	0.31	1.9	1.1	0.061	0.035
11590	11520	24.5	22.5	34.5	39.5	1.5	1.5	13.0	0.70	0.85	0.47	0.061	0.040
17580	17520	23	21	36.5	39	1.5	1.5	10.6	0.33	1.8	1.0	0.075	0.048
05062	05175	23.5	21	38	42	1.5	1.5	11.2	0.36	1.7	0.93	0.081	0.039
09062	09195	22	21.5	42	44.5	0.8	1.3	10.7	0.27	2.3	1.2	0.139	0.065
*HM 81649	**HM 81610	27.5	23	37.5	43	1	2	14.9	0.55	1.1	0.60	0.115	0.082
A 6067	A 6157	22	21	34	37	0.8	1.3	10.3	0.53	1.1	0.63	0.042	0.031
A 5069	A 5144	23.5	21.5	30	33.5	1.5	1.5	8.9	0.49	1.2	0.68	0.030	0.020
† LM 11749	† LM 11710	23	21.5	34	37	1.3	1.3	8.7	0.29	2.1	1.2	0.055	0.028
05068	05185	23	22.5	40.5	42.5	0.8	1.3	10.1	0.36	1.7	0.93	0.082	0.047
A 6075	A 6157	24	23	34	37	1	1.3	10.3	0.53	1.1	0.63	0.037	0.031
† LM 11949	† LM 11910	25	23.5	39.5	41.5	1.3	1.3	9.5	0.30	2.0	1.1	0.081	0.044
05075	05185	25	23.5	40.5	42.5	1.3	1.3	10.1	0.36	1.7	0.93	0.077	0.047
09067	09195	25.5	24	42	44.5	1.3	1.3	10.7	0.27	2.3	1.2	0.115	0.065
09078	09195	25.5	24	42	44.5	1.2	1.3	10.7	0.27	2.3	1.2	0.124	0.065
09067	09196	25.5	24	41.5	44.5	1.3	1.5	13.8	0.27	2.3	1.2	0.115	0.085
09074	09194	26	24	39	44.5	1.5	3.5	13.8	0.27	2.3	1.2	0.124	0.082
21075	21212	31.5	26	43	50	1.5	2.3	16.3	0.59	1.0	0.56	0.156	0.097
05079	05185	26.5	24	40.5	42.5	1.5	1.3	10.1	0.36	1.7	0.93	0.073	0.047
07079	07204	27.5	27	45	48	1.5	1.3	12.1	0.40	1.5	0.82	0.105	0.061
09081	09196	27.5	25.5	41.5	44.5	1.5	1.5	13.8	0.27	2.3	1.2	0.115	0.085
12580	12520	28.5	26	42.5	45.5	1.5	1.5	12.9	0.32	1.9	1.0	0.114	0.067
† M 12649	† M 12610	27.5	25.5	44	46	1.3	1.3	10.9	0.28	2.2	1.2	0.115	0.059
*† LM 12749	† LM 12710	27.5	26	39.5	42.5	1.3	1.3	10.0	0.31	2.0	1.1	0.078	0.038
*† LM 12749	† LM 12711	27.5	26	40	42.5	1.3	1.3	10.0	0.31	2.0	1.1	0.078	0.043
07087	07196	28.5	27	44.5	47	1.3	1	10.6	0.40	1.5	0.82	0.097	0.035
† M 12648	† M 12610	28.5	26.5	44	46	1.3	1.3	10.9	0.28	2.2	1.2	0.111	0.059
1380	1328	29.5	27	45	48.5	1.5	1.5	11.3	0.29	2.1	1.1	0.137	0.067
1380	1328	29.5	27	45	48.5	1.5	1.5	11.3	0.29	2.1	1.1	0.137	0.067
1380	1328	29.5	27	46	49	1.5	1.5	11.3	0.29	2.1	1.1	0.137	0.082
1755	1729	29	27.5	49	51	1.3	1.3	12.2	0.31	2.0	1.1	0.152	0.102
1280	1220	29.5	29	49	52	0.8	1.5	15.1	0.35	1.7	0.95	0.183	0.106

- Notes
- \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).
  - \*\* The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69).
  - † The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B114).
  - \* † The tolerance for the bore diameter is 0 to -20 μm, and for overall bearing width is +356 to 0 μm.



SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 22.606 – 28.575 mm



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.

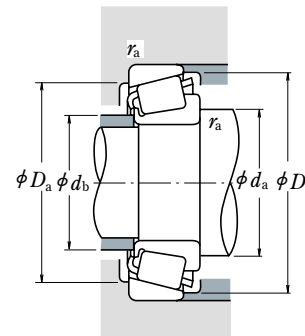
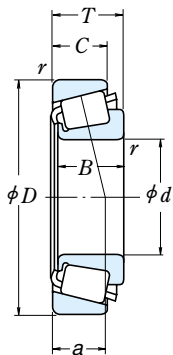
Boundary Dimensions (mm)					Basic Load Ratings				Limiting Speeds			
$d$	$D$	$T$	$B$	$C$	Cone $r$ Cup		(N)		(min <sup>-1</sup> )			
					min.		$C_r$	$C_{0r}$	{kgf}	Grease	Oil	
							$C_r$	$C_{0r}$	$C_r$	$C_{0r}$		
<b>22.606</b>	47.000	15.500	15.500	12.000	1.5	1.0	26 300	30 000	2 680	3 100	8 000	11 000
<b>23.812</b>	50.292	14.224	14.732	10.668	1.5	1.3	27 600	32 000	2 820	3 250	7 100	10 000
	56.896	19.368	19.837	15.875	0.8	1.3	38 000	40 500	3 900	4 150	7 100	9 500
<b>24.000</b>	55.000	25.000	25.000	21.000	2.0	2.0	49 500	55 000	5 050	5 650	7 100	9 500
<b>24.981</b>	51.994	15.011	14.260	12.700	1.5	1.3	26 000	27 900	2 650	2 840	7 500	10 000
	52.001	15.011	14.260	12.700	1.5	2.0	26 000	27 900	2 650	2 840	7 500	10 000
	62.000	16.002	16.566	14.288	1.5	1.5	37 000	39 500	3 750	4 000	6 300	8 500
<b>25.000</b>	50.005	13.495	14.260	9.525	1.5	1.0	26 000	27 900	2 650	2 840	7 500	10 000
	51.994	15.011	14.260	12.700	1.5	1.3	26 000	27 900	2 650	2 840	7 500	10 000
<b>25.400</b>	50.005	13.495	14.260	9.525	3.3	1.0	26 000	27 900	2 650	2 840	7 500	10 000
	50.005	13.495	14.260	9.525	1.0	1.0	26 000	27 900	2 650	2 840	7 500	10 000
	50.292	14.224	14.732	10.668	1.3	1.3	27 600	32 000	2 820	3 250	7 100	10 000
	57.150	17.462	17.462	13.495	1.3	1.5	39 500	45 500	4 050	4 650	6 700	9 000
	57.150	19.431	19.431	14.732	1.5	1.5	42 500	49 000	4 300	5 000	6 700	9 000
	59.530	23.368	23.114	18.288	0.8	1.5	50 000	58 000	5 100	5 900	6 300	9 000
	62.000	19.050	20.638	14.288	0.8	1.3	46 000	53 000	4 700	5 400	6 000	8 000
	63.500	20.638	20.638	15.875	3.5	1.5	46 000	53 000	4 700	5 400	6 000	8 000
	64.292	21.433	21.433	16.670	1.5	1.5	51 000	64 500	5 200	6 600	5 600	8 000
	65.088	22.225	21.463	15.875	1.5	1.5	45 000	47 500	4 600	4 850	5 600	8 000
	68.262	22.225	22.225	17.462	0.8	1.5	55 000	64 000	5 600	6 550	5 600	7 500
	72.233	25.400	25.400	19.842	0.8	2.3	63 500	83 500	6 500	8 500	5 000	7 100
	72.626	24.608	24.257	17.462	2.3	1.5	60 000	58 000	6 100	5 900	5 600	7 500
<b>26.988</b>	50.292	14.224	14.732	10.668	3.5	1.3	27 600	32 000	2 820	3 250	7 100	10 000
	57.150	19.845	19.355	15.875	3.3	1.5	40 000	44 500	4 100	4 500	6 700	9 000
	60.325	19.842	17.462	15.875	3.5	1.5	39 500	45 500	4 050	4 650	6 700	9 000
	62.000	19.050	20.638	14.288	0.8	1.3	46 000	53 000	4 700	5 400	6 000	8 000
<b>28.575</b>	57.150	19.845	19.355	15.875	3.5	1.5	40 000	44 500	4 100	4 500	6 700	9 000
	59.131	15.875	16.764	11.811	spec.	1.3	34 500	41 500	3 550	4 200	6 300	8 500
	62.000	19.050	20.638	14.288	3.5	1.3	46 000	53 000	4 700	5 400	6 000	8 000
	62.000	19.050	20.638	14.288	0.8	1.3	46 000	53 000	4 700	5 400	6 000	8 000
	64.292	21.433	21.433	16.670	1.5	1.5	51 000	64 500	5 200	6 600	5 600	8 000
	68.262	22.225	22.225	17.462	0.8	1.5	55 000	64 000	5 600	6 550	5 600	7 500
	72.626	24.608	24.257	17.462	4.8	1.5	60 000	58 000	6 100	5 900	5 600	7 500
	72.626	24.608	24.257	17.462	1.5	1.5	60 000	58 000	6 100	5 900	5 600	7 500
	73.025	22.225	22.225	17.462	0.8	3.3	54 500	64 500	5 550	6 600	5 300	7 100

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Eff. Load Centers (mm)		Constant		Axial Load Factors		Mass (kg)	
CONE	CUP	$d_a$	$d_b$	$D_a$	$D_b$	Cone $r_a$ Cup	$a$	$e$	$Y_1$	$Y_0$	CONE	approx. CUP	
						max.							
<b>LM 72849</b>	<b>LM 72810</b>	29	27	40.5	44.5	1.5	1	12.2	0.47	1.3	0.70	0.086	0.046
† <b>L 44640</b>	† <b>L 44610</b>	30.5	28.5	44.5	47	1.5	1.3	10.9	0.37	1.6	0.88	0.097	0.039
<b>1779</b>	<b>1729</b>	29.5	28.5	49	51	0.8	1.3	12.2	0.31	2.0	1.1	0.143	0.102
<b>▲ JHM 33449</b>	<b>▲ JHM 33410</b>	35	30	47	52	2	2	15.8	0.35	1.7	0.93	0.181	0.107
<b>07098</b>	<b>07204</b>	31	29	45	48	1.5	1.3	12.1	0.40	1.5	0.82	0.085	0.061
<b>07098</b>	<b>07205</b>	31	29	44.5	48	1.5	2	12.1	0.40	1.5	0.82	0.085	0.061
<b>17098</b>	<b>17244</b>	33	30.5	54	57	1.5	1.5	12.8	0.38	1.6	0.86	0.165	0.091
<b>07097</b>	<b>07196</b>	31	29	44.5	47	1.5	1	10.6	0.40	1.5	0.82	0.085	0.035
<b>07097</b>	<b>07204</b>	31	29	45	48	1.5	1.3	12.1	0.40	1.5	0.82	0.085	0.061
<b>07100 SA</b>	<b>07196</b>	35	29.5	44.5	47	3.3	1	10.6	0.40	1.5	0.82	0.082	0.035
<b>07100</b>	<b>07196</b>	30.5	29.5	44.5	47	1	1	10.6	0.40	1.5	0.82	0.084	0.035
† <b>L 44643</b>	† <b>L 44610</b>	31.5	29.5	44.5	47	1.3	1.3	10.9	0.37	1.6	0.88	0.090	0.039
<b>15578</b>	<b>15520</b>	32.5	30.5	51	53	1.3	1.5	12.4	0.35	1.7	0.95	0.151	0.070
<b>M 84548</b>	<b>M 84510</b>	36	33	48.5	54	1.5	1.5	16.1	0.55	1.1	0.60	0.156	0.089
<b>M 84249</b>	<b>M 84210</b>	36	32.5	49.5	56	0.8	1.5	18.3	0.55	1.1	0.60	0.194	0.13
<b>15101</b>	<b>15245</b>	32.5	31.5	55	58	0.8	1.3	13.3	0.35	1.7	0.94	0.222	0.081
<b>15100</b>	<b>15250 X</b>	38	31.5	55	59	3.5	1.5	14.9	0.35	1.7	0.94	0.22	0.113
<b>M 86643</b>	<b>M 86610</b>	38	36.5	54	61	1.5	1.5	17.7	0.55	1.1	0.60	0.246	0.128
<b>23100</b>	<b>23256</b>	39	34.5	53	61	1.5	1.5	20.0	0.73	0.82	0.45	0.214	0.142
<b>02473</b>	<b>02420</b>	34.5	33.5	59	63	0.8	1.5	16.9	0.42	1.4	0.79	0.28	0.152
<b>HM 88630</b>	<b>HM 88610</b>	39.5	39.5	60	69	0.8	2.3	20.7	0.55	1.1	0.60	0.398	0.188
<b>41100</b>	<b>41286</b>	41	36.5	61	68	2.3	1.5	20.7	0.60	1.0	0.55	0.32	0.177
† <b>L 44649</b>	† <b>L 44610</b>	37.5	31	44.5	47	3.5	1.3	10.9	0.37	1.6	0.88	0.081	0.039
<b>1997 X</b>	<b>1922</b>	37.5	31.5	51	53.5	3.3	1.5	13.9	0.33	1.8	1.0	0.152	0.077
<b>15580</b>	<b>15523</b>	38.5	32	51	54	3.5	1.5	14.7	0.35	1.7	0.95	0.141	0.123
<b>15106</b>	<b>15245</b>	33.5	33	55	58	0.8	1.3	13.3	0.35	1.7	0.94	0.211	0.081
<b>1988</b>	<b>1922</b>	39.5	33.5	51	53.5	3.5	1.5	13.9	0.33	1.8	1.0	0.141	0.077
† <b>LM 67043</b>	† <b>LM 67010</b>	40	33.5	52	56	3.5	1.3	12.6	0.41	1.5	0.80	0.147	0.062
<b>15112</b>	<b>15245</b>	40	34	55	58	3.5	1.3	13.3	0.35	1.7	0.94	0.199	0.081
<b>15113</b>	<b>15245</b>	34.5	34	55	58	0.8	1.3	13.3	0.35	1.7	0.94	0.20	0.081
<b>M 86647</b>	<b>M 86610</b>	40	38	54	61	1.5	1.5	17.7	0.55	1.1	0.60	0.223	0.128
<b>02474</b>	<b>02420</b>	36.5	36	59	63	0.8	1.5	16.9	0.42	1.4	0.79	0.257	0.152
<b>41125</b>	<b>41286</b>	48	36.5	61	68	4.8	1.5	20.7	0.60	1.0	0.55	0.292	0.177
<b>41126</b>	<b>41286</b>	41.5	36.5	61	68	1.5	1.5	20.7	0.60	1.0	0.55	0.295	0.177
<b>02872</b>	<b>02820</b>	37.5	37	62	68	0.8	3.3	18.3	0.45	1.3	0.73	0.321	0.16

Notes † The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B114).  
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 29.000 – 32.000 mm



### Dynamic Equivalent Load

$$P = X F_r + Y F_a$$

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

### Static Equivalent Load

$$P_0 = 0.5 F_r + Y_0 F_a$$

When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$

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

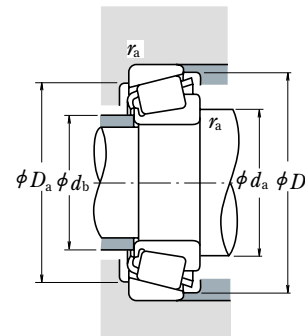
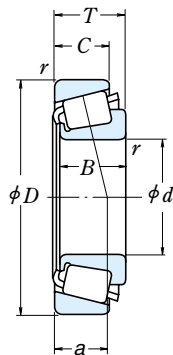
d	Boundary Dimensions (mm)					Cone r min.	Cup	Basic Load Ratings (N)				Limiting Speeds (min <sup>-1</sup> )	
	D	T	B	C	C <sub>r</sub>			C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	
29.000	50.292	14.224	14.732	10.668	3.5	1.3	26 800	34 000	2 730	3 500	7 100	9 500	
29.367	66.421	23.812	25.433	19.050	3.5	1.3	65 000	73 000	6 600	7 450	6 000	8 000	
30.000	62.000	16.002	16.566	14.288	1.5	1.5	37 000	39 500	3 750	4 000	6 300	8 500	
	62.000	19.050	20.638	14.288	1.3	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
	63.500	20.638	20.638	15.875	1.3	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
	72.000	19.000	18.923	15.875	1.5	1.5	52 000	56 000	5 300	5 700	5 600	7 500	
30.112	62.000	19.050	20.638	14.288	0.8	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
30.162	58.738	14.684	15.080	10.716	3.5	1.0	28 800	33 500	2 940	3 450	6 000	8 000	
	64.292	21.433	21.433	16.670	1.5	1.5	51 000	64 500	5 200	6 600	5 600	8 000	
	68.262	22.225	22.225	17.462	2.3	1.5	55 500	70 500	5 650	7 200	5 300	7 500	
	69.850	23.812	25.357	19.050	2.3	1.3	71 000	84 000	7 200	8 550	5 600	7 500	
	69.850	23.812	25.357	19.050	0.8	1.3	71 000	84 000	7 200	8 550	5 600	7 500	
	76.200	24.608	24.074	16.670	1.5	C3.3	67 500	69 500	6 850	7 100	5 000	6 700	
30.213	62.000	19.050	20.638	14.288	3.5	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
	62.000	19.050	20.638	14.288	0.8	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
	62.000	19.050	20.638	14.288	1.5	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
30.955	64.292	21.433	21.433	16.670	1.5	1.5	51 000	64 500	5 200	6 600	5 600	8 000	
31.750	58.738	14.684	15.080	10.716	1.0	1.0	28 800	33 500	2 940	3 450	6 000	8 000	
	59.131	15.875	16.764	11.811	spec.	1.3	34 500	41 500	3 550	4 200	6 300	8 500	
	62.000	18.161	19.050	14.288	spec.	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
	62.000	19.050	20.638	14.288	0.8	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
	62.000	19.050	20.638	14.288	3.5	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
	63.500	20.638	20.638	15.875	0.8	1.3	46 000	53 000	4 700	5 400	6 000	8 000	
	68.262	22.225	22.225	17.462	3.5	1.5	55 000	64 000	5 600	6 550	5 600	7 500	
	68.262	22.225	22.225	17.462	1.5	1.5	55 500	70 500	5 650	7 200	5 300	7 500	
	69.012	19.845	19.583	15.875	3.5	1.3	47 000	56 000	4 800	5 700	5 600	7 500	
	69.012	26.982	26.721	15.875	4.3	3.3	47 000	56 000	4 800	5 700	5 600	7 500	
	69.850	23.812	25.357	19.050	0.8	1.3	71 000	84 000	7 200	8 550	5 600	7 500	
	69.850	23.812	25.357	19.050	3.5	1.3	71 000	84 000	7 200	8 550	5 600	7 500	
	72.626	30.162	29.997	23.812	0.8	3.3	79 500	90 000	8 100	9 200	5 300	7 500	
	73.025	29.370	27.783	23.020	1.3	3.3	74 000	100 000	7 550	10 200	5 000	7 100	
	80.000	21.000	22.403	17.826	0.8	1.3	68 500	75 500	6 950	7 700	4 500	6 300	
32.000	72.233	25.400	25.400	19.842	3.3	2.3	63 500	83 500	6 500	8 500	5 000	7 100	

Bearing Numbers		Abutment and Fillet Dimensions (mm)					Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg)		
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>	Cone r <sub>a</sub> max.			Y <sub>1</sub>	Y <sub>0</sub>	approx. CONE	CUP	
† L 45449	† L 45410	39.5	33	44.5	48	3.5	1.3	10.8	0.37	1.6	0.89	0.079	0.036
2690	2631	41	35	58	60	3.5	1.3	14.3	0.25	2.4	1.3	0.242	0.165
* 17118	17244	37	34.5	54	57	1.5	1.5	12.8	0.38	1.6	0.86	0.136	0.091
* 15117	15245	36.5	35	55	58	1.3	1.3	13.3	0.35	1.7	0.94	0.189	0.081
* 15117	15250	36.5	35	56	59	1.3	1.3	14.9	0.35	1.7	0.94	0.189	0.113
* 26118	26283	38	36	62	65	1.5	1.5	14.8	0.36	1.7	0.92	0.225	0.163
15116	15245	36	35.5	55	58	0.8	1.3	13.3	0.35	1.7	0.94	0.189	0.081
08118	08231	41.5	35	52	55	3.5	1	13.3	0.47	1.3	0.70	0.12	0.057
M 86649	M 86610	41	38	54	61	1.5	1.5	17.7	0.55	1.1	0.60	0.211	0.128
M 88043	M 88010	43.5	39.5	58	65	2.3	1.5	19.1	0.55	1.1	0.60	0.263	0.146
2558	2523	40	36.5	61	64	2.3	1.3	14.5	0.27	2.2	1.2	0.297	0.169
2559	2523	37	36.5	61	64	0.8	1.3	14.5	0.27	2.2	1.2	0.298	0.169
43118	43300	45	42	64	73	1.5	3.3	22.9	0.67	0.90	0.49	0.383	0.146
15118	15245	41.5	35.5	55	58	3.5	1.3	13.3	0.35	1.7	0.94	0.186	0.081
15120	15245	36	35.5	55	58	0.8	1.3	13.3	0.35	1.7	0.94	0.188	0.081
15119	15245	37.5	35.5	55	58	1.5	1.3	13.3	0.35	1.7	0.94	0.188	0.081
M 86648 A	M 86610	42	38	54	61	1.5	1.5	17.7	0.55	1.1	0.60	0.205	0.128
08125	08231	37.5	36	52	55	1	1	13.3	0.47	1.3	0.70	0.113	0.057
† LM 67048	† LM 67010	42.5	36	52	56	3.5	1.3	12.6	0.41	1.5	0.80	0.127	0.062
15123	15245	42.5	36.5	55	58	3.5	1.3	13.3	0.35	1.7	0.94	0.165	0.081
15126	15245	37	36.5	55	58	0.8	1.3	13.3	0.35	1.7	0.94	0.176	0.081
15125	15245	42.5	36.5	55	58	3.5	1.3	13.3	0.35	1.7	0.94	0.174	0.081
15126	15250	37	36.5	56	59	0.8	1.3	14.9	0.35	1.7	0.94	0.176	0.113
02475	02420	44.5	38.5	59	63	3.5	1.5	16.9	0.42	1.4	0.79	0.229	0.152
M 88046	M 88010	43	40.5	58	65	1.5	1.5	19.1	0.55	1.1	0.60	0.25	0.146
14125 A	14276	44	37.5	60	63	3.5	1.3	15.3	0.38	1.6	0.86	0.219	0.135
14123 A	14274	41.5	37.5	59	63	4.3	3.3	15.1	0.38	1.6	0.87	0.289	0.132
2580	2523	38.5	37.5	61	64	0.8	1.3	14.5	0.27	2.2	1.2	0.282	0.169
2582	2523	44	37.5	61	64	3.5	1.3	14.5	0.27	2.2	1.2	0.28	0.169
3188	3120	39.5	39.5	61	67	0.8	3.3	19.6	0.33	1.8	0.99	0.368	0.225
HM 88542	HM 88510	45.5	42.5	59	70	1.3	3.3	23.5	0.55	1.1	0.60	0.379	0.242
346	332	40	39.5	73	75	0.8	1.3	14.6	0.27	2.2	1.2	0.419	0.146
*HM 88638	HM 88610	48.5	42.5	60	69	3.3	2.3	20.7	0.55	1.1	0.60	0.337	0.188

Notes \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).  
† The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B114).

**SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)**

Bore Diameter 33.338 – 35.000 mm



**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.

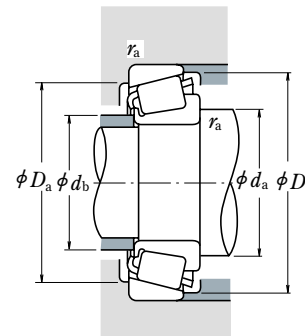
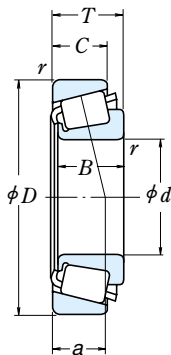
d	Boundary Dimensions (mm)					Cone r min.	Cup r	Basic Load Ratings (N)				Limiting Speeds (min <sup>-1</sup> )	
	D	T	B	C	$C_r$			$C_{0r}$	$C_r$	$C_{0r}$	Grease	Oil	
<b>33.338</b>	66.675	20.638	20.638	15.875	3.5	1.5	46 000	53 500	4 650	5 450	5 600	7 500	
	68.262	22.225	22.225	17.462	0.8	1.5	55 500	70 500	5 650	7 200	5 300	7 500	
	69.012	19.845	19.583	15.875	3.5	3.3	47 000	56 000	4 800	5 700	5 600	7 500	
	69.012	19.845	19.583	15.875	0.8	1.3	47 000	56 000	4 800	5 700	5 600	7 500	
	69.850	23.812	25.357	19.050	3.5	1.3	71 000	84 000	7 200	8 550	5 600	7 500	
	72.000	19.000	18.923	15.875	3.5	1.5	52 000	56 000	5 300	5 700	5 600	7 500	
	72.626	30.162	29.997	23.812	0.8	3.3	79 500	90 000	8 100	9 200	5 300	7 500	
	73.025	29.370	27.783	23.020	0.8	3.3	74 000	100 000	7 550	10 200	5 000	7 100	
	76.200	29.370	28.575	23.020	3.8	0.8	78 500	106 000	8 000	10 800	4 800	6 700	
	76.200	29.370	28.575	23.020	0.8	3.3	78 500	106 000	8 000	10 800	4 800	6 700	
	79.375	25.400	24.074	17.462	3.5	1.5	67 500	69 500	6 850	7 100	5 000	6 700	
	<b>34.925</b>	65.088	18.034	18.288	13.970	spec.	1.3	47 500	57 500	4 850	5 900	5 600	7 500
65.088		20.320	18.288	16.256	spec.	1.3	47 500	57 500	4 850	5 900	5 600	7 500	
66.675		20.638	20.638	16.670	3.5	2.3	53 000	62 500	5 400	6 400	5 600	7 500	
69.012		19.845	19.583	15.875	3.5	1.3	47 000	56 000	4 800	5 700	5 600	7 500	
69.012		19.845	19.583	15.875	1.5	1.3	47 000	56 000	4 800	5 700	5 600	7 500	
72.233		25.400	25.400	19.842	2.3	2.3	63 500	83 500	6 500	8 500	5 000	7 100	
73.025		22.225	22.225	17.462	0.8	3.3	54 500	64 500	5 550	6 600	5 300	7 100	
73.025		22.225	23.812	17.462	3.5	3.3	63 500	77 000	6 500	7 850	5 300	7 100	
73.025		23.812	24.608	19.050	1.5	0.8	71 000	86 000	7 250	8 750	5 300	7 100	
73.025		23.812	24.608	19.050	3.5	2.3	71 000	86 000	7 250	8 750	5 300	7 100	
76.200		29.370	28.575	23.020	0.8	0.8	78 500	106 000	8 000	10 800	4 800	6 700	
76.200		29.370	28.575	23.020	3.5	0.8	78 500	106 000	8 000	10 800	4 800	6 700	
<b>34.976</b>	68.262	15.875	16.520	11.908	1.5	1.5	45 000	53 500	4 600	5 450	5 300	7 100	
	72.085	22.385	19.583	18.415	1.3	2.3	47 000	56 000	4 800	5 700	5 600	7 500	
	80.000	21.006	20.940	15.875	1.5	1.5	56 500	64 500	5 750	6 600	5 000	6 700	
	<b>35.000</b>	59.131	15.875	16.764	11.938	spec.	1.3	35 000	47 000	3 550	4 750	6 000	8 000
		59.975	15.875	16.764	11.938	spec.	1.3	35 000	47 000	3 550	4 750	6 000	8 000
		62.000	16.700	17.000	13.600	spec.	1.0	38 000	50 000	3 900	5 100	5 600	8 000
		62.000	16.700	17.000	13.600	spec.	1.5	38 000	50 000	3 900	5 100	5 600	8 000
		65.987	20.638	20.638	16.670	3.5	2.3	53 000	62 500	5 400	6 400	5 600	7 500
		73.025	26.988	26.975	22.225	3.5	0.8	75 500	88 500	7 650	9 050	5 300	7 500

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Cone r <sub>a</sub> max.	Cup r <sub>a</sub> max.	Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg)	
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>					Y <sub>1</sub>	Y <sub>0</sub>	CONE approx.	CUP approx.
<b>1680</b>	<b>1620</b>	44.5	38.5	58	61	3.5	1.5	15.2	0.37	1.6	0.89	0.196	0.121
<b>M 88048</b>	<b>M 88010</b>	42.5	41	58	65	0.8	1.5	19.0	0.55	1.1	0.60	0.236	0.146
<b>14130</b>	<b>14274</b>	45	38.5	59	63	3.5	3.3	15.3	0.38	1.6	0.86	0.207	0.132
<b>14131</b>	<b>14276</b>	39.5	38.5	60	63	0.8	1.3	15.3	0.38	1.6	0.86	0.209	0.135
<b>2585</b>	<b>2523</b>	45	39	61	64	3.5	1.3	14.5	0.27	2.2	1.2	0.263	0.169
<b>26131</b>	<b>26283</b>	44.5	38.5	62	65	3.5	1.5	14.7	0.36	1.7	0.92	0.20	0.163
<b>3197</b>	<b>3120</b>	41.5	40.5	61	67	0.8	3.3	19.6	0.33	1.8	0.99	0.348	0.225
<b>HM 88547</b>	<b>HM 88510</b>	45.5	42.5	59	70	0.8	3.3	23.5	0.55	1.1	0.60	0.362	0.242
<b>HM 89444</b>	<b>HM 89411</b>	53	44.5	65	73	3.8	0.8	23.6	0.55	1.1	0.60	0.419	0.261
<b>HM 89443</b>	<b>HM 89410</b>	46.5	44.5	62	73	0.8	3.3	23.6	0.55	1.1	0.60	0.421	0.257
<b>43131</b>	<b>43312</b>	51	42	67	74	3.5	1.5	23.7	0.67	0.90	0.49	0.348	0.22
† <b>LM 48548</b>	† <b>LM 48510</b>	46	40	58	61	3.5	1.3	14.1	0.38	1.6	0.88	0.172	0.087
† <b>LM 48548</b>	† <b>LM 48511</b>	46	40	58	61	3.5	1.3	16.4	0.38	1.6	0.88	0.172	0.108
<b>M 38549</b>	<b>M 38510</b>	46.5	40	58	62	3.5	2.3	15.2	0.35	1.7	0.94	0.194	0.112
<b>14138 A</b>	<b>14276</b>	46	40	60	63	3.5	1.3	15.3	0.38	1.6	0.86	0.194	0.135
<b>14137 A</b>	<b>14276</b>	42	40	60	63	1.5	1.3	15.1	0.38	1.6	0.86	0.196	0.135
<b>HM 88649</b>	<b>HM 88610</b>	48.5	42.5	60	69	2.3	2.3	20.7	0.55	1.1	0.60	0.307	0.188
<b>02878</b>	<b>02820</b>	42.5	42	62	68	0.8	3.3	18.3	0.45	1.3	0.73	0.266	0.16
<b>2877</b>	<b>2820</b>	47	41.5	63	68	3.5	3.3	16.1	0.37	1.6	0.90	0.291	0.15
<b>25877</b>	<b>25821</b>	43	40.5	65	68	1.5	0.8	15.7	0.29	2.1	1.1	0.306	0.167
<b>25878</b>	<b>25820</b>	47	40.5	64	68	3.5	2.3	15.7	0.29	2.1	1.1	0.304	0.165
<b>HM 89446 A</b>	<b>HM 89411</b>	47.5	44.5	65	73	0.8	0.8	23.6	0.55	1.1	0.60	0.403	0.261
<b>HM 89446</b>	<b>HM 89411</b>	53	44.5	65	73	3.5	0.8	23.6	0.55	1.1	0.60	0.40	0.261
<b>HM 89446</b>	<b>HM 89410</b>	53	44.5	62	73	3.5	3.3	23.6	0.55	1.1	0.60	0.40	0.257
<b>31594</b>	<b>31520</b>	46	43.5	64	72	1.5	3.3	21.6	0.40	1.5	0.82	0.404	0.235
<b>3478</b>	<b>3420</b>	50	43.5	67	74	3.5	3.3	20.0	0.37	1.6	0.90	0.448	0.259
<b>19138</b>	<b>19268</b>	42.5	40.5	61	65	1.5	1.5	14.5	0.44	1.4	0.74	0.196	0.073
<b>14139</b>	<b>14283</b>	41.5	40	60	65	1.3	2.3	17.7	0.38	1.6	0.87	0.198	0.21
<b>28138</b>	<b>28315</b>	43.5	41	69	73	1.5	1.5	16.0	0.40	1.5	0.82	0.308	0.199
*† <b>L 68149</b>	† <b>L 68110</b>	45.5	39	52	56	3.5	1.3	13.2	0.42	1.4	0.79	0.117	0.056
*† <b>L 68149</b>	† <b>L 68111</b>	45.5	39	53	56	3.5	1.3	13.2	0.42	1.4	0.79	0.117	0.064
* <b>LM 78349</b>	** <b>LM 78310</b>	46	40	55	59	3.5	1	14.4	0.44	1.4	0.74	0.137	0.074
* <b>LM 78349</b>	** <b>LM 78310 A</b>	46	40	54	59	3.5	1.5	14.4	0.44	1.4	0.74	0.138	0.073
<b>M 38547</b>	<b>M 38511</b>	46	39.5	59	61	3.5	2.3	15.2	0.35	1.7	0.94	0.193	0.103
<b>23691</b>	<b>23621</b>	49	42	63	68	3.5	0.8	18.1	0.37	1.6	0.89	0.309	0.212

- Notes**
- \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).
  - \*\* The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69).
  - † The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B114).
  - \* † The tolerance for the bore diameter is 0 to -20 μm, and for overall bearing width is +356 to 0 μm.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 35.717 – 41.275 mm



### 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.

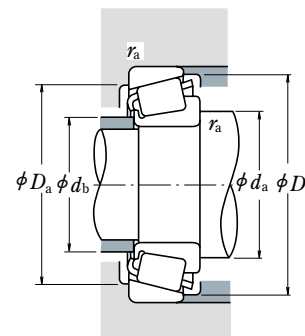
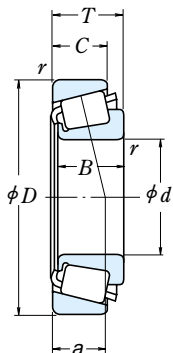
Boundary Dimensions (mm)					Cone $r$ Cup min.	Basic Load Ratings				Limiting Speeds		
$d$	$D$	$T$	$B$	$C$		(N)	(kgf)		(min <sup>-1</sup> )			
						$C_r$	$C_{0r}$	$C_r$	$C_{0r}$	Grease	Oil	
35.717	72.233	25.400	25.400	19.842	3.5	2.3	63 500	83 500	6 500	8 500	5 000	7 100
36.487	73.025	23.812	24.608	19.050	1.5	0.8	71 000	86 000	7 250	8 750	5 300	7 100
36.512	76.200	29.370	28.575	23.020	3.5	3.3	78 500	106 000	8 000	10 800	4 800	6 700
	79.375	29.370	29.771	23.812	0.8	3.3	88 000	106 000	8 950	10 800	4 800	6 700
	88.501	25.400	23.698	17.462	2.3	1.5	73 000	81 000	7 450	8 250	4 000	5 600
	93.662	31.750	31.750	26.195	1.5	3.3	110 000	142 000	11 200	14 400	4 000	5 600
38.000	63.000	17.000	17.000	13.500	spec.	1.3	38 500	52 000	3 900	5 300	5 600	7 500
38.100	63.500	12.700	11.908	9.525	1.5	0.8	24 100	30 500	2 460	3 100	5 300	7 100
	65.088	18.034	18.288	13.970	2.3	1.3	42 500	55 000	4 300	5 650	5 300	7 500
	65.088	18.034	18.288	13.970	spec.	1.3	42 500	55 000	4 300	5 650	5 300	7 500
	65.088	19.812	18.288	15.748	2.3	1.3	42 500	55 000	4 300	5 650	5 300	7 500
	68.262	15.875	16.520	11.908	1.5	1.5	45 000	53 500	4 600	5 450	5 300	7 100
	69.012	19.050	19.050	15.083	2.0	2.3	49 000	61 000	4 950	6 250	5 300	7 100
	69.012	19.050	19.050	15.083	3.5	0.8	49 000	61 000	4 950	6 250	5 300	7 100
	72.238	20.638	20.638	15.875	3.5	1.3	48 500	59 500	4 950	6 050	5 300	7 100
	73.025	23.812	25.654	19.050	3.5	0.8	73 500	91 000	7 500	9 300	5 000	6 700
	76.200	23.812	25.654	19.050	3.5	3.3	73 500	91 000	7 500	9 300	5 000	6 700
	76.200	23.812	25.654	19.050	3.5	0.8	73 500	91 000	7 500	9 300	5 000	6 700
	79.375	29.370	29.771	23.812	3.5	3.3	88 000	106 000	8 950	10 800	4 800	6 700
	80.035	24.608	23.698	18.512	0.8	1.5	69 000	84 500	7 000	8 600	4 500	6 300
	82.550	29.370	28.575	23.020	0.8	3.3	87 000	117 000	8 850	11 900	4 500	6 000
	88.501	25.400	23.698	17.462	2.3	1.5	73 000	81 000	7 450	8 250	4 000	5 600
	88.501	26.988	29.083	22.225	3.5	1.5	96 500	109 000	9 800	11 100	4 500	6 000
	95.250	30.958	28.301	20.638	1.5	0.8	87 500	97 000	8 950	9 850	3 600	5 300
39.688	73.025	25.654	22.098	21.336	0.8	2.3	62 500	80 000	6 400	8 150	5 000	6 700
	76.200	23.812	25.654	19.050	3.5	3.3	73 500	91 000	7 500	9 300	5 000	6 700
	80.167	29.370	30.391	23.812	0.8	3.3	92 500	108 000	9 450	11 000	4 800	6 300
40.000	80.000	21.000	22.403	17.826	3.5	1.3	68 500	75 500	6 950	7 700	4 500	6 300
	80.000	21.000	22.403	17.826	0.8	1.3	68 500	75 500	6 950	7 700	4 500	6 300
	88.501	25.400	23.698	17.462	2.3	1.5	73 000	81 000	7 450	8 250	4 000	5 600
41.000	68.000	17.500	18.000	13.500	spec.	1.5	43 500	58 000	4 450	5 950	5 300	7 100
41.275	73.025	16.667	17.462	12.700	3.5	1.5	44 500	54 000	4 550	5 500	4 800	6 700
	73.431	19.558	19.812	14.732	3.5	0.8	54 500	67 000	5 550	6 850	4 800	6 700
	73.431	21.430	19.812	16.604	3.5	0.8	54 500	67 000	5 550	6 850	4 800	6 700

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Cone $r_a$ Cup max.	Eff. Load Centers (mm)	Constant	Axial Load Factors		Mass (kg)		
CONE	CUP	$d_a$	$d_b$	$D_a$	$D_b$				$a$	$e$	$Y_1$	$Y_0$	approx. CONE
HM 88648	HM 88610	52	43	60	69	3.5	2.3	20.7	0.55	1.1	0.60	0.298	0.188
25880	25821	44	42	65	68	1.5	0.8	15.7	0.29	2.1	1.1	0.291	0.167
HM 89449	HM 89410	54	44.5	62	73	3.5	3.3	23.6	0.55	1.1	0.60	0.38	0.257
3479	3420	45.5	44.5	67	74	0.8	3.3	20.0	0.37	1.6	0.90	0.429	0.259
44143	44348	54	50	75	84	2.3	1.5	27.9	0.78	0.77	0.42	0.502	0.245
46143	46368	48.5	46.5	79	87	1.5	3.3	24.0	0.40	1.5	0.82	0.765	0.405
▲ JL 69349	▲ JL 69310	49	42.5	56	60	3.5	1.3	14.6	0.42	1.4	0.79	0.132	0.071
13889	13830	45	42.5	59	60	1.5	0.8	11.9	0.35	1.7	0.95	0.109	0.046
LM 29749	LM 29710	46	42.5	59	62	2.3	1.3	13.7	0.33	1.8	0.99	0.16	0.079
LM 29748	LM 29710	49	42.5	59	62	3.5	1.3	13.7	0.33	1.8	0.99	0.158	0.079
LM 29749	LM 29711	46	42.5	58	62	2.3	1.3	15.5	0.33	1.8	0.99	0.16	0.094
19150	19268	45	43	61	65	1.5	1.5	14.5	0.44	1.4	0.74	0.173	0.073
13687	13621	46.5	43	61	65	2	2.3	15.8	0.40	1.5	0.82	0.193	0.104
13685	13620	49.5	43	62	65	3.5	0.8	15.8	0.40	1.5	0.82	0.191	0.105
16150	16284	49.5	43	63	67	3.5	1.3	16.0	0.40	1.5	0.82	0.212	0.146
2788	2735 X	50	43.5	66	69	3.5	0.8	15.9	0.30	2.0	1.1	0.312	0.135
2788	2720	50	43.5	66	70	3.5	3.3	15.9	0.30	2.0	1.1	0.312	0.187
2788	2729	50	43.5	68	70	3.5	0.8	15.9	0.30	2.0	1.1	0.312	0.191
3490	3420	52	45.5	67	74	3.5	3.3	20.0	0.37	1.6	0.90	0.404	0.259
27880	27820	48	47	68	75	0.8	1.5	21.5	0.56	1.1	0.59	0.362	0.209
HM 801346	HM 801310	51	49	68	78	0.8	3.3	24.2	0.55	1.1	0.60	0.483	0.282
44150	44348	55	51	75	84	2.3	1.5	27.9	0.78	0.77	0.42	0.484	0.245
418	414	51	44.5	77	80	3.5	1.5	17.1	0.26	2.3	1.3	0.50	0.329
53150	53375	55	53	81	89	1.5	0.8	30.7	0.74	0.81	0.45	0.665	0.365
M 201047	M 201011	45.5	48	64	69	0.8	2.3	19.7	0.33	1.8	0.99	0.266	0.169
2789	2720	52	45	66	70	3.5	3.3	15.9	0.30	2.0	1.1	0.292	0.187
3386	3320	46.5	45.5	70	75	0.8	3.3	18.4	0.27	2.2	1.2	0.442	0.217
344	332	52	45.5	73	75	3.5	1.3	14.5	0.27	2.2	1.2	0.338	0.146
344 A	332	46	45.5	73	75	0.8	1.3	14.5	0.27	2.2	1.2	0.339	0.146
44157	44348	56	51	75	84	2.3	1.5	27.9	0.78	0.77	0.42	0.463	0.245
* LM 300849	** LM 300811	52	45	61	65	3.5	1.5	13.9	0.35	1.7	0.95	0.16	0.082
18590	18520	53	46	66	69	3.5	1.5	14.0	0.35	1.7	0.94	0.199	0.086
LM 501349	LM 501310	53	46.5	67	70	3.5	0.8	16.3	0.40	1.5	0.83	0.226	0.108
LM 501349	LM 501314	53	46.5	66	70	3.5	0.8	18.2	0.40	1.5	0.83	0.226	0.129

- Notes
- \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).
  - \*\* The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69).
  - ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 41.275 – 44.450 mm



### Dynamic Equivalent Load

$$P = X F_r + Y F_a$$

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

### Static Equivalent Load

$P_0 = 0.5 F_r + Y_0 F_a$   
 When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$   
 The values of  $e$ ,  $Y_1$ , and  $Y_0$  are given in the table below.

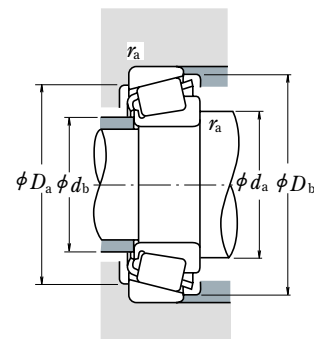
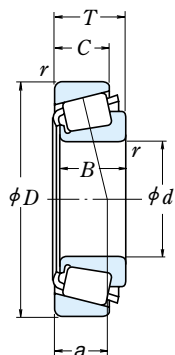
Boundary Dimensions (mm)					Basic Load Ratings (kgf)				Limiting Speeds ( $\text{min}^{-1}$ )			
d	D	T	B	C	Cone r min.	Cup r max.	$C_r$	$C_{0r}$	$C_r$	$C_{0r}$	Grease	Oil
41.275	76.200	18.009	17.384	14.288	1.5	1.5	42 500	51 000	4 350	5 200	4 500	6 300
	76.200	22.225	23.020	17.462	3.5	0.8	66 000	82 000	6 700	8 400	4 800	6 700
	76.200	25.400	23.020	20.638	3.5	2.3	66 000	82 000	6 700	8 400	4 800	6 700
	79.375	23.812	25.400	19.050	3.5	0.8	77 000	98 500	7 850	10 000	4 800	6 300
	80.000	21.000	22.403	17.826	0.8	1.3	68 500	75 500	6 950	7 700	4 500	6 300
	80.000	21.000	22.403	17.826	3.5	1.3	68 500	75 500	6 950	7 700	4 500	6 300
	80.167	25.400	25.400	20.638	3.5	3.3	77 000	98 500	7 850	10 000	4 800	6 300
	82.550	26.543	25.654	20.193	3.5	3.3	78 500	102 000	8 000	10 400	4 300	6 000
	85.725	30.162	30.162	23.812	3.5	3.3	91 000	115 000	9 300	11 700	4 300	6 000
	87.312	30.162	30.886	23.812	0.8	3.3	96 000	120 000	9 800	12 200	4 300	6 000
42.862	88.501	25.400	23.698	17.462	2.3	1.5	73 000	81 000	7 450	8 250	4 000	5 600
	88.900	30.162	29.370	23.020	3.5	3.3	96 500	129 000	9 800	13 200	4 000	5 600
	88.900	30.162	29.370	23.020	0.8	3.3	96 500	129 000	9 800	13 200	4 000	5 600
	90.488	39.688	40.386	33.338	3.5	3.3	139 000	180 000	14 200	18 400	4 300	5 600
	93.662	31.750	31.750	26.195	0.8	3.3	110 000	142 000	11 200	14 400	4 000	5 600
	95.250	30.162	29.370	23.020	3.5	3.3	106 000	143 000	10 800	14 500	3 800	5 300
	98.425	30.958	28.301	20.638	1.5	0.8	87 500	97 000	8 950	9 850	3 600	5 300
	76.992	17.462	17.145	11.908	1.5	1.5	44 000	54 000	4 450	5 500	4 500	6 000
	82.550	19.842	19.837	15.080	2.3	1.5	58 500	69 000	5 950	7 050	4 500	6 300
	82.931	23.812	25.400	19.050	2.3	0.8	76 500	99 000	7 800	10 100	4 500	6 000
42.875	82.931	26.988	25.400	22.225	2.3	2.3	76 500	99 000	7 800	10 100	4 500	6 000
	76.200	25.400	25.400	20.638	3.5	1.5	77 000	98 500	7 850	10 000	4 800	6 300
	80.000	21.000	22.403	17.826	3.5	1.3	68 500	75 500	6 950	7 700	4 500	6 300
	82.931	26.988	25.400	22.225	3.5	2.3	76 500	99 000	7 800	10 100	4 500	6 000
43.000	83.058	23.812	25.400	19.050	3.5	3.3	76 500	99 000	7 800	10 100	4 500	6 000
	74.988	19.368	19.837	14.288	1.5	1.3	52 500	68 000	5 350	6 900	4 800	6 300
	44.450	80.962	19.050	17.462	14.288	0.3	1.5	45 000	57 000	4 600	5 800	4 300
82.931		23.812	25.400	19.050	3.5	0.8	76 500	99 000	7 800	10 100	4 500	6 000
83.058		23.812	25.400	19.050	3.5	3.3	76 500	99 000	7 800	10 100	4 500	6 000
87.312		30.162	30.886	23.812	3.5	3.3	96 000	120 000	9 800	12 200	4 300	6 000
88.900		30.162	29.370	23.020	3.5	3.3	96 500	129 000	9 800	13 200	4 000	5 600
93.264		30.162	30.302	23.812	3.5	3.2	103 000	136 000	10 500	13 900	3 800	5 300
93.662		31.750	31.750	25.400	0.8	3.3	120 000	147 000	12 200	15 000	4 000	5 600
93.662		31.750	31.750	25.400	3.5	3.3	120 000	147 000	12 200	15 000	4 000	5 600
93.662		31.750	31.750	26.195	3.5	3.3	110 000	142 000	11 200	14 400	4 000	5 600
95.250		27.783	29.901	22.225	3.5	2.3	106 000	126 000	10 800	12 900	4 300	5 600

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Eff. Load Centers (mm)		Constant	Axial Load Factors		Mass (kg)			
CONE	CUP	$d_a$	$d_b$	$D_a$	$D_b$	Cone $r_a$ max.	Cup $r_a$ max.	e	$Y_1$	$Y_0$	CONE approx.	CUP approx.		
11162	11300	49	46.5	67	71	1.5	1.5	17.4	0.49	1.2	0.68	0.212	0.129	
	24780	24720	53	47.5	68	72	3.5	0.8	17.0	0.39	1.5	0.84	0.279	0.15
	24780	24721	54	47	66	72	3.5	2.3	20.2	0.39	1.5	0.84	0.279	0.189
	26882	26822	54	47	71	74	3.5	0.8	16.4	0.32	1.9	1.0	0.349	0.186
	336	332	47	46	73	75	0.8	1.3	14.5	0.27	2.2	1.2	0.325	0.146
	342	332	53	46	73	75	3.5	1.3	14.5	0.27	2.2	1.2	0.323	0.146
	26882	26820	54	47	69	74	3.5	3.3	18.0	0.32	1.9	1.0	0.349	0.219
	M 802048	M 802011	57	51	70	79	3.5	3.3	22.9	0.55	1.1	0.60	0.406	0.23
	3877	3820	57	50	73	81	3.5	3.3	21.8	0.40	1.5	0.82	0.506	0.285
	3576	3525	49	48	75	81	0.8	3.3	19.5	0.31	2.0	1.1	0.532	0.304
44162	44348	57	51	75	84	2.3	1.5	28.0	0.78	0.77	0.42	0.447	0.245	
HM 803146	HM 803110	60	53	74	85	3.5	3.3	25.6	0.55	1.1	0.60	0.579	0.322	
HM 803145	HM 803110	54	53	74	85	0.8	3.3	25.6	0.55	1.1	0.60	0.582	0.322	
4388	4335	57	51	77	85	3.5	3.3	24.6	0.28	2.1	1.2	0.789	0.459	
46162	46368	52	51	79	87	0.8	3.3	24.0	0.40	1.5	0.82	0.695	0.405	
HM 804840	HM 804810	61	54	81	91	3.5	3.3	26.1	0.55	1.1	0.60	0.726	0.354	
53162	53387	57	53	82	91	1.5	0.8	30.7	0.74	0.81	0.45	0.618	0.442	
12168	12303	51	48.5	68	73	1.5	1.5	17.7	0.51	1.2	0.65	0.228	0.098	
22168	22325	52	48.5	73	76	2.3	1.5	17.6	0.43	1.4	0.77	0.283	0.176	
25578	25520	53	49.5	74	77	2.3	0.8	17.6	0.33	1.8	0.99	0.383	0.203	
25578	25523	53	49.5	72	77	2.3	2.3	20.8	0.33	1.8	0.99	0.383	0.248	
26884	26823	55	48.5	69	73	3.5	1.5	18.0	0.32	1.9	1.0	0.337	0.136	
342 S	332	54	47.5	73	75	3.5	1.3	14.5	0.27	2.2	1.2	0.305	0.146	
25577	25523	55	49	72	77	3.5	2.3	20.8	0.33	1.8	0.99	0.381	0.248	
25577	25521	55	49	72	77	3.5	3.3	17.6	0.33	1.8	0.99	0.381	0.201	
* 16986	16929	51	48.5	67	71	1.5	1.3	17.2	0.44	1.4	0.74	0.24	0.106	
13175	13318	50	50	72	76	0.3	1.5	20.1	0.53	1.1	0.63	0.252	0.144	
25580	25520	57	50	74	77	3.5	0.8	17.6	0.33	1.8	0.99	0.359	0.203	
25580	25521	56	51	72	78	3.5	3.3	17.6	0.33	1.8	0.99	0.359	0.201	
3578	3525	57	51	75	81	3.5	3.3	19.5	0.31	2.0	1.1	0.477	0.304	
HM 803149	HM 803110	62	53	74	85	3.5	3.3	25.6	0.55	1.1	0.60	0.528	0.322	
3782	3720	58	52	82	88	3.5	3.2	22.4	0.34	1.8	0.97	0.678	0.292	
49176	49368	54	53	82	87	0.8	3.3	21.6	0.36	1.7	0.92	0.648	0.371	
49175	49368	59	53	82	87	3.5	3.3	21.6	0.36	1.7	0.92	0.645	0.371	
46176	46368	60	54	79	87	3.5	3.3	24.0	0.40	1.5	0.82	0.635	0.405	
438	432	57	51	83	87	3.5	2.3	18.6	0.28	2.1	1.2	0.555	0.384	

Note \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 44.450 – 47.625 mm



### 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.

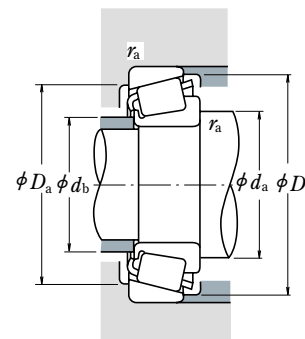
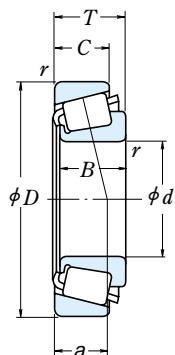
$d$	Boundary Dimensions (mm)					Cone $r$ min.	Cup	Basic Load Ratings (N) (kgf)				Limiting Speeds (min <sup>-1</sup> )	
	$D$	$T$	$B$	$C$	$C_r$			$C_{0r}$	$C_r$	$C_{0r}$	Grease	Oil	
<b>44.450</b>	95.250	30.162	29.370	23.020	3.5	3.3	106 000	143 000	10 800	14 500	3 800	5 300	
	95.250	30.958	28.301	20.638	3.5	0.8	87 500	97 000	8 950	9 850	3 600	5 300	
	95.250	30.958	28.301	20.638	1.3	0.8	87 500	97 000	8 950	9 850	3 600	5 300	
	95.250	30.958	28.301	20.638	2.0	0.8	87 500	97 000	8 950	9 850	3 600	5 300	
	95.250	30.958	28.301	22.225	1.3	0.8	100 000	122 000	10 200	12 500	3 600	5 000	
	95.250	30.958	28.575	22.225	3.5	0.8	100 000	122 000	10 200	12 500	3 600	5 000	
	98.425	30.958	28.301	20.638	3.5	0.8	87 500	97 000	8 950	9 850	3 600	5 300	
	103.188	43.658	44.475	36.512	1.3	3.3	178 000	238 000	18 100	24 300	3 800	5 000	
	104.775	36.512	36.512	28.575	3.5	3.3	139 000	192 000	14 200	19 600	3 400	4 800	
	107.950	27.783	29.317	22.225	3.5	0.8	116 000	149 000	11 800	15 200	3 400	4 800	
	111.125	30.162	26.909	20.638	3.5	3.3	92 500	110 000	9 450	11 200	3 200	4 300	
114.300	44.450	44.450	34.925	3.5	3.3	172 000	205 000	17 500	20 900	3 600	4 800		
<b>44.983</b>	82.931	23.812	25.400	19.050	1.5	0.8	76 500	99 000	7 800	10 100	4 500	6 000	
	93.264	20.638	22.225	15.082	0.8	1.3	77 000	93 000	7 900	9 500	3 800	5 300	
<b>45.000</b>	79.985	19.842	20.638	15.080	2.0	1.3	62 000	78 500	6 300	8 000	4 500	6 000	
	77.788	19.842	19.842	15.080	3.5	0.8	56 000	71 000	5 700	7 250	4 500	6 300	
<b>45.242</b>	73.431	19.558	19.812	15.748	3.5	0.8	53 500	75 000	5 450	7 650	4 800	6 300	
	77.788	19.842	19.842	15.080	3.5	0.8	56 000	71 000	5 700	7 250	4 500	6 300	
<b>45.618</b>	82.931	23.812	25.400	19.050	3.5	0.8	76 500	99 000	7 800	10 100	4 500	6 000	
	82.931	26.988	25.400	22.225	3.5	2.3	76 500	99 000	7 800	10 100	4 500	6 000	
<b>46.000</b>	75.000	18.000	18.000	14.000	2.3	1.5	51 000	71 500	5 200	7 300	4 500	6 300	
	79.375	17.462	17.462	13.495	2.8	1.5	46 000	57 000	4 700	5 800	4 500	6 000	
<b>46.038</b>	80.962	19.050	17.462	14.288	0.8	1.5	45 000	57 000	4 600	5 800	4 300	6 000	
	85.000	20.638	21.692	17.462	2.3	1.3	71 500	81 500	7 300	8 300	4 300	6 000	
	85.000	25.400	25.608	20.638	3.5	1.3	79 500	105 000	8 100	10 700	4 300	6 000	
	95.250	27.783	29.901	22.225	3.5	0.8	106 000	126 000	10 800	12 900	4 300	5 600	
<b>47.625</b>	88.900	20.638	22.225	16.513	3.5	1.3	73 000	85 000	7 450	8 650	4 000	5 600	
	88.900	25.400	25.400	19.050	3.5	3.3	86 000	107 000	8 750	10 900	4 000	5 600	
	95.250	30.162	29.370	23.020	3.5	3.3	106 000	143 000	10 800	14 500	3 800	5 300	
	101.600	34.925	36.068	26.988	3.5	3.3	137 000	169 000	14 000	17 200	3 800	5 000	
	111.125	30.162	26.909	20.638	3.5	3.3	92 500	110 000	9 450	11 200	3 200	4 300	
	112.712	30.162	26.909	20.638	3.5	3.3	92 500	110 000	9 450	11 200	3 200	4 300	
	117.475	33.338	31.750	23.812	3.5	3.3	137 000	156 000	13 900	15 900	3 200	4 300	
	123.825	36.512	32.791	25.400	3.5	3.3	143 000	160 000	14 600	16 400	3 000	4 000	

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Cone $r_a$ max.	Cup	Eff. Load Centers (mm) $a$	Constant $e$	Axial Load Factors		Mass (kg)		
CONE	CUP	$d_a$	$d_b$	$D_a$	$D_b$					$Y_1$	$Y_0$	CONE approx.	CUP	
<b>HM 804843</b>	<b>HM 804810</b>	63	57	81	91	3.5	3.3	26.1	0.55	1.1	0.60	0.677	0.354	
	<b>53177</b>	<b>53375</b>	63	53	81	89	3.5	0.8	30.7	0.74	0.81	0.45	0.572	0.365
	<b>53176</b>	<b>53375</b>	59	53	81	89	1.3	0.8	30.7	0.74	0.81	0.45	0.574	0.365
	<b>53178</b>	<b>53375</b>	60	53	81	89	2	0.8	30.7	0.74	0.81	0.45	0.574	0.365
	<b>HM 903247</b>	<b>HM 903210</b>	61	54	81	91	1.3	0.8	31.5	0.74	0.81	0.45	0.651	0.389
	<b>HM 903249</b>	<b>HM 903210</b>	65	54	81	91	3.5	0.8	31.5	0.74	0.81	0.45	0.635	0.389
	<b>53177</b>	<b>53387</b>	63	53	82	91	3.5	0.8	30.7	0.74	0.81	0.45	0.568	0.442
	<b>5356</b>	<b>5335</b>	58	56	89	97	1.3	3.3	27.0	0.30	2.0	1.1	1.23	0.637
	<b>HM 807040</b>	<b>HM 807010</b>	66	59	89	100	3.5	3.3	29.7	0.49	1.2	0.68	1.14	0.502
	<b>460</b>	<b>453 A</b>	60	54	97	100	3.5	0.8	20.7	0.34	1.8	0.98	0.93	0.42
	<b>55175</b>	<b>55437</b>	67	60	92	105	3.5	3.3	37.3	0.88	0.68	0.37	0.867	0.514
<b>65385</b>	<b>65320</b>	65	59	97	107	3.5	3.3	32.2	0.43	1.4	0.77	1.39	0.894	
<b>25584</b>	<b>25520</b>	53	51	74	77	1.5	0.8	17.6	0.33	1.8	0.99	0.354	0.203	
	<b>376</b>	<b>374</b>	54	54	85	88	0.8	1.3	17.1	0.34	1.8	0.97	0.492	0.174
	<b>17887</b>	<b>17831</b>	57	52	68	74	2	1.3	15.9	0.37	1.6	0.90	0.274	0.136
	<b>LM 102949</b>	<b>LM 102910</b>	56	50	68	70	3.5	0.8	14.6	0.31	2.0	1.1	0.213	0.102
<b>LM 603049</b>	<b>LM 603011</b>	57	50	71	74	3.5	0.8	17.2	0.43	1.4	0.77	0.249	0.119	
<b>LM 603049</b>	<b>LM 603012</b>	57	50	70	74	3.5	0.8	18.8	0.43	1.4	0.77	0.249	0.137	
<b>25590</b>	<b>25520</b>	58	51	74	77	3.5	0.8	17.6	0.33	1.8	0.99	0.343	0.203	
	<b>25523</b>	58	51	72	77	3.5	2.3	20.8	0.33	1.8	0.99	0.343	0.248	
<b>* LM 503349</b>	<b>** LM 503310</b>	55	51	67	71	2.3	1.5	15.9	0.40	1.5	0.82	0.209	0.096	
<b>18690</b>	<b>18620</b>	56	51	71	74	2.8	1.5	15.5	0.37	1.6	0.88	0.211	0.126	
<b>13181</b>	<b>13318</b>	52	52	72	76	0.8	1.5	20.1	0.53	1.1	0.63	0.236	0.144	
<b>359 S</b>	<b>354 A</b>	55	51	77	80	2.3	1.3	15.4	0.31	2.0	1.1	0.343	0.162	
<b>2984</b>	<b>2924</b>	58	52	76	80	3.5	1.3	19.0	0.35	1.7	0.95	0.397	0.223	
<b>436</b>	<b>432 A</b>	59	52	84	87	3.5	0.8	18.6	0.28	2.1	1.2	0.536	0.381	
<b>369 A</b>	<b>362 A</b>	60	53	81	84	3.5	1.3	16.6	0.32	1.9	1.0	0.381	0.166	
<b>M 804049</b>	<b>M 804010</b>	63	56	77	85	3.5	3.3	23.8	0.55	1.1	0.60	0.455	0.218	
<b>HM 804846</b>	<b>HM 804810</b>	66	57	81	91	3.5	3.3	26.1	0.55	1.1	0.60	0.626	0.354	
<b>528</b>	<b>522</b>	62	55	89	95	3.5	3.3	22.1	0.29	2.1	1.2	0.894	0.416	
<b>55187</b>	<b>55437</b>	69	62	92	105	3.5	3.3	37.3	0.88	0.68	0.37	0.817	0.514	
<b>55187</b>	<b>55443</b>	69	62	92	106	3.5	3.3	37.3	0.88	0.68	0.37	0.816	0.554	
<b>66187</b>	<b>66462</b>	66	62	100	111	3.5	3.3	32.1	0.63	0.96	0.53	1.19	0.552	
<b>72187</b>	<b>72487</b>	72	66	102	116	3.5	3.3	37.0	0.74	0.81	0.45	1.29	0.79	

**Notes** \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).  
 \*\* The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69).



Bore Diameter 48.412 – 52.388 mm



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.

<i>d</i>	Boundary Dimensions (mm)					Cone <i>r</i> min.	Cup	Basic Load Ratings (N)				Limiting Speeds (min <sup>-1</sup> )	
	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>			<i>C<sub>0r</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>	Grease	Oil	
<b>48.412</b>	95.250	30.162	29.370	23.020	3.5	3.3	106 000	143 000	10 800	14 500	3 800	5 300	
	95.250	30.162	29.370	23.020	2.3	3.3	106 000	143 000	10 800	14 500	3 800	5 300	
<b>49.212</b>	104.775	36.512	36.512	28.575	3.5	0.8	139 000	192 000	14 200	19 600	3 400	4 800	
	114.300	44.450	44.450	36.068	3.5	3.3	196 000	243 000	20 000	24 800	3 400	4 800	
<b>50.000</b>	82.000	21.500	21.500	17.000	3.0	0.5	71 000	96 000	7 250	9 800	4 300	5 600	
	82.550	21.590	22.225	16.510	0.5	1.3	71 000	96 000	7 250	9 800	4 300	5 600	
	88.900	20.638	22.225	16.513	2.3	1.3	73 000	85 000	7 450	8 650	4 000	5 600	
	90.000	28.000	28.000	23.000	3.0	2.5	104 000	136 000	10 600	13 900	4 000	5 600	
105.000	37.000	36.000	29.000	3.0	2.5	139 000	192 000	14 200	19 600	3 400	4 800		
	<b>50.800</b>	80.962	18.258	18.258	1.5	1.5	53 000	81 000	5 400	8 250	4 300	5 600	
	82.550	23.622	22.225	18.542	3.5	0.8	71 000	96 000	7 250	9 800	4 300	5 600	
	82.931	21.590	22.225	16.510	3.5	1.3	71 000	96 000	7 250	9 800	4 300	5 600	
	85.000	17.462	17.462	13.495	3.5	1.5	48 500	63 000	4 950	6 450	4 300	5 600	
	85.725	19.050	18.263	12.700	1.5	1.5	42 500	54 000	4 350	5 500	4 000	5 300	
	88.900	20.638	22.225	16.513	3.5	1.3	73 000	85 000	7 450	8 650	4 000	5 600	
	88.900	20.638	22.225	16.513	1.5	1.3	73 000	85 000	7 450	8 650	4 000	5 600	
	92.075	24.608	25.400	19.845	3.5	0.8	84 500	117 000	8 600	11 900	4 000	5 300	
	93.264	30.162	30.302	23.812	0.8	0.8	103 000	136 000	10 500	13 900	3 800	5 300	
	93.264	30.162	30.302	23.812	3.5	0.8	103 000	136 000	10 500	13 900	3 800	5 300	
	95.250	27.783	28.575	22.225	3.5	2.3	110 000	144 000	11 200	14 700	3 800	5 300	
	101.600	31.750	31.750	25.400	3.5	3.3	118 000	150 000	12 100	15 200	3 600	5 000	
	101.600	34.925	36.068	26.988	0.8	3.3	137 000	169 000	14 000	17 200	3 800	5 000	
	101.600	34.925	36.068	26.988	3.5	3.3	137 000	169 000	14 000	17 200	3 800	5 000	
	104.775	36.512	36.512	28.575	3.5	0.8	139 000	192 000	14 200	19 600	3 400	4 800	
	104.775	36.512	36.512	28.575	3.5	3.3	139 000	192 000	14 200	19 600	3 400	4 800	
	108.966	34.925	36.512	26.988	3.5	3.3	145 000	181 000	14 700	18 500	3 600	4 800	
	111.125	30.162	26.909	20.638	3.5	3.3	113 000	152 000	11 500	15 400	3 000	4 300	
	111.125	30.162	26.909	20.638	3.5	3.3	92 500	110 000	9 450	11 200	3 200	4 300	
	123.825	36.512	32.791	25.400	3.5	3.3	162 000	199 000	16 500	20 300	2 800	4 000	
	123.825	36.512	32.791	25.400	3.5	3.3	143 000	160 000	14 600	16 400	3 000	4 000	
	127.000	44.450	44.450	34.925	3.5	3.3	199 000	258 000	20 200	26 300	3 000	4 000	
	127.000	50.800	52.388	41.275	3.5	3.3	236 000	300 000	24 000	31 000	3 200	4 300	
<b>52.388</b>	92.075	24.608	25.400	19.845	3.5	0.8	84 500	117 000	8 600	11 900	4 000	5 300	
	100.000	25.000	22.225	21.824	2.3	2.0	77 000	93 000	7 900	9 500	3 800	5 300	
	111.125	30.162	26.909	20.638	3.5	3.3	92 500	110 000	9 450	11 200	3 200	4 300	

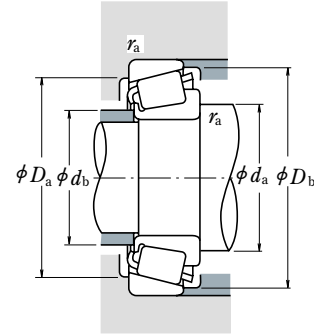
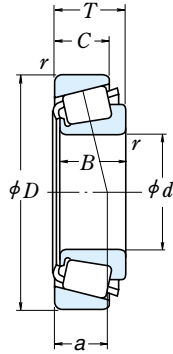
Bearing Numbers		Abutment and Fillet Dimensions (mm)					Eff. Load Centers (mm)	Constant	Axial Load Factors		Mass (kg)		
CONE	CUP	<i>d<sub>a</sub></i>	<i>d<sub>b</sub></i>	<i>D<sub>a</sub></i>	<i>D<sub>b</sub></i>	Cone <i>r<sub>a</sub></i> max.			<i>e</i>	$Y_1$	$Y_0$	approx. CONE	CUP
<b>HM 804849</b>	<b>HM 804810</b>	66	57	81	91	3.5	3.3	26.1	0.55	1.1	0.60	0.61	0.354
<b>HM 804848</b>	<b>HM 804810</b>	63	57	81	91	2.3	3.3	26.1	0.55	1.1	0.60	0.614	0.354
<b>HM 807044</b>	<b>HM 807011</b>	69	63	91	100	3.5	0.8	29.7	0.49	1.2	0.68	1.03	0.508
<b>HH 506348</b>	<b>HH 506310</b>	71	61	97	107	3.5	3.3	30.8	0.40	1.5	0.82	1.43	0.837
<b>▲ JLM 104948</b>	<b>▲ JLM 104910</b>	60	55	76	78	3	0.5	16.1	0.31	2.0	1.1	0.306	0.129
<b>* LM 104947 A</b>	<b>LM 104911</b>	55	55	75	78	0.5	1.3	15.7	0.31	2.0	1.1	0.316	0.133
<b>366</b>	<b>362 A</b>	59	55	81	84	2.3	1.3	16.6	0.32	1.9	1.0	0.351	0.166
<b>▲ JM 205149</b>	<b>▲ JM 205110</b>	62	57	80	85	3	2.5	19.9	0.33	1.8	1.0	0.507	0.246
<b>▲ JHM 807045</b>	<b>▲ JHM 807012</b>	69	63	90	100	3	2.5	29.7	0.49	1.2	0.68	1.01	0.523
<b>L 305649</b>	<b>L 305610</b>	58	56	73	77	1.5	1.5	15.7	0.36	1.7	0.93	0.239	0.119
<b>LM 104949</b>	<b>LM 104911 A</b>	62	55	75	78	3.5	0.8	17.8	0.31	2.0	1.1	0.303	0.156
<b>LM 104949</b>	<b>LM 104912</b>	62	55	75	78	3.5	1.3	15.7	0.31	2.0	1.1	0.301	0.14
<b>18790</b>	<b>18720</b>	62	56	77	80	3.5	1.5	16.7	0.41	1.5	0.81	0.239	0.136
<b>18200</b>	<b>18337</b>	59	56	76	81	1.5	1.5	21.0	0.57	1.1	0.58	0.268	0.136
<b>368 A</b>	<b>362 A</b>	62	56	81	84	3.5	1.3	16.6	0.32	1.9	1.0	0.338	0.166
<b>368</b>	<b>362 A</b>	58	56	81	84	1.5	1.3	16.6	0.32	1.9	1.0	0.341	0.166
<b>28580</b>	<b>28521</b>	63	57	83	87	3.5	0.8	20.0	0.38	1.6	0.87	0.46	0.247
<b>3775</b>	<b>3730</b>	58	58	84	88	0.8	0.8	22.4	0.34	1.8	0.97	0.568	0.297
<b>3780</b>	<b>3730</b>	64	58	84	88	3.5	0.8	22.4	0.34	1.8	0.97	0.564	0.297
<b>33889</b>	<b>33821</b>	64	58	85	90	3.5	2.3	19.8	0.33	1.8	1.0	0.601	0.267
<b>49585</b>	<b>49520</b>	66	59	88	96	3.5	3.3	23.4	0.40	1.5	0.82	0.744	0.389
<b>529</b>	<b>522</b>	59	58	89	95	0.8	3.3	22.1	0.29	2.1	1.2	0.822	0.416
<b>529 X</b>	<b>522</b>	65	58	89	95	3.5	3.3	22.1	0.29	2.1	1.2	0.819	0.416
<b>HM 807046</b>	<b>HM 807011</b>	70	63	91	100	3.5	0.8	29.7	0.49	1.2	0.68	0.992	0.508
<b>HM 807046</b>	<b>HM 807010</b>	70	63	89	100	3.5	3.3	29.7	0.49	1.2	0.68	0.993	0.502
<b>59200</b>	<b>59429</b>	68	61	93	101	3.5	3.3	25.4	0.40	1.5	0.82	0.943	0.594
<b>55200 C</b>	<b>55437</b>	71	65	92	105	3.5	3.3	37.6	0.88	0.68	0.37	0.845	0.514
<b>55200</b>	<b>55437</b>	71	64	92	105	3.5	3.3	37.3	0.88	0.68	0.37	0.767	0.514
<b>72200 C</b>	<b>72487</b>	77	67	102	116	3.5	3.3	38.0	0.74	0.81	0.45	1.33	0.79
<b>72200</b>	<b>72487</b>	74	66	102	116	3.5	3.3	37.0	0.74	0.81	0.45	1.22	0.79
<b>65200</b>	<b>65500</b>	75	69	107	119	3.5	3.3	35.0	0.49	1.2	0.68	1.86	1.03
<b>6279</b>	<b>6220</b>	71	65	108	117	3.5	3.3	30.7	0.30	2.0	1.1	2.08	1.22
<b>28584</b>	<b>28521</b>	65	58	83	87	3.5	0.8	20.0	0.38	1.6	0.87	0.435	0.247
<b>377</b>	<b>372</b>	62	58	86	90	2.3	2	21.4	0.34	1.8	0.97	0.392	0.435
<b>55206</b>	<b>55437</b>	72	64	92	105	3.5	3.3	37.3	0.88	0.68	0.37	0.737	0.514

Notes \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).  
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)



Bore Diameter 53.975 – 58.738 mm



**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**

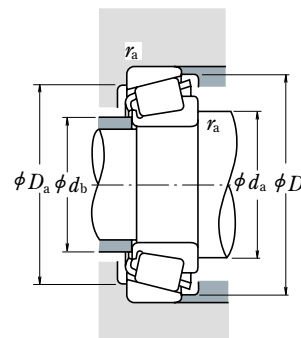
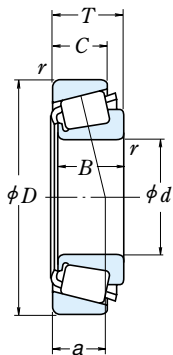
$P_0 = 0.5F_r + Y_0F_a$   
 When  $F_r > 0.5F_r + Y_0F_a$ , use  $P_0 = F_r$   
 The values of  $e$ ,  $Y_1$ , and  $Y_0$  are given in the table below.

Boundary Dimensions (mm)						Basic Load Ratings (N) (kgf)				Limiting Speeds (min <sup>-1</sup> )	
d	D	T	B	C	Cone r Cup min.	C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
<b>53.975</b>	104.775	39.688	40.157	33.338	3.5 3.3	148 000	207 000	15 100	21 100	3 600	4 800
	107.950	36.512	36.957	28.575	3.5 3.3	144 000	182 000	14 700	18 500	3 600	4 800
	122.238	33.338	31.750	23.812	3.5 3.3	135 000	156 000	13 800	15 900	3 000	4 000
	123.825	36.512	32.791	25.400	3.5 3.3	143 000	160 000	14 600	16 400	3 000	4 000
	123.825	36.512	32.791	25.400	3.5 3.3	162 000	199 000	16 500	20 300	2 800	4 000
	123.825	38.100	36.678	30.162	3.5 3.3	161 000	221 000	16 400	22 500	3 000	4 000
	127.000	44.450	44.450	34.925	3.5 3.3	199 000	258 000	20 200	26 300	3 000	4 000
	127.000	50.800	52.388	41.275	3.5 3.3	236 000	300 000	24 000	31 000	3 200	4 300
	130.175	36.512	33.338	23.812	3.5 3.3	133 000	154 000	13 600	15 700	2 600	3 600
<b>55.000</b>	90.000	23.000	23.000	18.500	1.5 0.5	79 000	111 000	8 050	11 300	3 800	5 300
	95.000	29.000	29.000	23.500	1.5 2.5	111 000	152 000	11 300	15 500	3 800	5 000
	96.838	21.000	21.946	15.875	2.3 0.8	80 500	100 000	8 200	10 200	3 600	5 000
	110.000	39.000	39.000	32.000	3.0 2.5	177 000	225 000	18 000	23 000	3 400	4 500
	115.000	41.021	41.275	31.496	3.0 3.0	172 000	214 000	17 500	21 800	3 200	4 500
<b>55.562</b>	97.630	24.608	24.608	19.446	3.5 0.8	89 000	129 000	9 100	13 100	3 600	5 000
	122.238	43.658	43.764	36.512	1.3 3.3	198 000	292 000	20 200	29 700	3 000	4 000
	123.825	36.512	32.791	25.400	3.5 3.3	143 000	160 000	14 600	16 400	3 000	4 000
	123.825	36.512	32.791	25.400	3.5 3.3	162 000	199 000	16 500	20 300	2 800	4 000
<b>57.150</b>	96.838	21.000	21.946	15.875	3.5 0.8	80 500	100 000	8 200	10 200	3 600	5 000
	96.838	21.000	21.946	15.875	2.3 0.8	80 500	100 000	8 200	10 200	3 600	5 000
	96.838	25.400	21.946	20.275	3.5 2.3	80 500	100 000	8 200	10 200	3 600	5 000
	98.425	21.000	21.946	17.826	3.5 0.8	80 500	100 000	8 200	10 200	3 600	5 000
	104.775	30.162	29.317	24.605	3.5 3.3	116 000	149 000	11 800	15 200	3 400	4 800
	104.775	30.162	29.317	24.605	2.3 3.3	116 000	149 000	11 800	15 200	3 400	4 800
	104.775	30.162	30.958	23.812	0.8 3.3	130 000	170 000	13 300	17 400	3 400	4 800
	104.775	30.162	30.958	23.812	0.8 0.8	130 000	170 000	13 300	17 400	3 400	4 800
	122.238	33.338	31.750	23.812	3.5 3.3	135 000	156 000	13 800	15 900	3 000	4 000
	123.825	36.512	32.791	25.400	3.5 3.3	162 000	199 000	16 500	20 300	2 800	4 000
	123.825	38.100	36.678	30.162	3.5 3.3	161 000	221 000	16 400	22 500	3 000	4 000
	140.030	36.512	33.236	23.520	3.5 2.3	152 000	183 000	15 500	18 700	2 600	3 600
	144.983	36.000	33.236	23.007	3.5 3.5	152 000	183 000	15 500	18 700	2 600	3 600
	149.225	53.975	54.229	44.450	3.5 3.3	287 000	410 000	29 300	41 500	2 600	3 400
<b>57.531</b>	96.838	21.000	21.946	15.875	3.5 0.8	80 500	100 000	8 200	10 200	3 600	5 000
<b>58.738</b>	112.712	33.338	30.048	26.988	3.5 3.3	120 000	173 000	12 200	17 700	3 200	4 300

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Eff. Load Centers (mm)		Constant	Axial Load Factors		Mass (kg)	
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>	a	e	Y <sub>1</sub>	Y <sub>0</sub>	approx. CONE	CUP	
<b>4595</b>	<b>4535</b>	70	63	90	99	3.5 3.3	27.4	0.34	1.79	0.98	0.989	0.589
<b>539</b>	<b>532 X</b>	68	61	94	100	3.5 3.3	24.3	0.30	2.0	1.1	0.88	0.57
<b>66584</b>	<b>66520</b>	75	68	105	116	3.5 3.3	34.3	0.67	0.90	0.50	1.2	0.558
<b>72212</b>	<b>72487</b>	77	66	102	116	3.5 3.3	37.0	0.74	0.81	0.45	1.16	0.79
<b>72212 C</b>	<b>72487</b>	79	67	102	116	3.5 3.3	38.0	0.74	0.81	0.45	1.27	0.79
<b>557 S</b>	<b>552 A</b>	71	65	109	116	3.5 3.3	28.8	0.35	1.7	0.95	1.49	0.764
<b>65212</b>	<b>65500</b>	77	71	107	119	3.5 3.3	35.0	0.49	1.2	0.68	1.76	1.03
<b>6280</b>	<b>6220</b>	74	67	108	117	3.5 3.3	30.7	0.30	2.0	1.1	1.97	1.22
<b>HM911242</b>	<b>HM911210</b>	79	74	109	124	3.5 3.3	42.2	0.82	0.73	0.40	1.45	0.725
<b>▲ JLM506849</b>	<b>▲ JLM506810</b>	63	61	82	86	1.5 0.5	19.7	0.40	1.5	0.82	0.378	0.186
<b>▲ JM207049</b>	<b>▲ JM207010</b>	64	62	85	91	1.5 2.5	21.3	0.33	1.8	0.99	0.59	0.26
<b>385</b>	<b>382 A</b>	65	61	89	92	2.3 0.8	17.6	0.35	1.7	0.93	0.455	0.179
<b>▲ JH307749</b>	<b>▲ JH307710</b>	71	64	97	104	3 2.5	27.2	0.35	1.7	0.95	1.13	0.567
<b>622 X</b>	<b>614 X</b>	70	64	101	108	3 3	26.6	0.31	1.9	1.1	1.3	0.597
<b>28680</b>	<b>28622</b>	68	62	88	92	3.5 0.8	21.3	0.40	1.5	0.82	0.499	0.27
<b>5566</b>	<b>5535</b>	70	68	106	116	1.3 3.3	29.9	0.36	1.7	0.92	1.76	0.815
<b>72218</b>	<b>72487</b>	78	66	102	116	3.5 3.3	37.0	0.74	0.81	0.45	1.12	0.79
<b>72218 C</b>	<b>72487</b>	80	67	102	116	3.5 3.3	38.0	0.74	0.81	0.45	1.23	0.79
<b>387 A</b>	<b>382 A</b>	69	62	89	92	3.5 0.8	17.6	0.35	1.7	0.93	0.42	0.179
<b>387</b>	<b>382 A</b>	66	62	89	92	2.3 0.8	17.6	0.35	1.7	0.93	0.423	0.179
<b>387 A</b>	<b>382 S</b>	69	62	87	91	3.5 2.3	22.0	0.35	1.7	0.93	0.42	0.249
<b>387 A</b>	<b>382</b>	69	62	90	92	3.5 0.8	17.6	0.35	1.7	0.93	0.42	0.226
<b>469</b>	<b>453 X</b>	70	63	92	98	3.5 3.3	23.1	0.34	1.8	0.98	0.692	0.376
<b>462</b>	<b>453 X</b>	67	63	92	98	2.3 3.3	23.1	0.34	1.8	0.98	0.694	0.376
<b>45289</b>	<b>45220</b>	65	65	93	99	0.8 3.3	21.9	0.33	1.8	0.99	0.752	0.347
<b>45289</b>	<b>45221</b>	65	65	95	99	0.8 0.8	21.9	0.33	1.8	0.99	0.76	0.35
<b>66587</b>	<b>66520</b>	77	71	105	116	3.5 3.3	34.3	0.67	0.90	0.50	1.14	0.558
<b>72225 C</b>	<b>72487</b>	81	67	102	116	3.5 3.3	38.0	0.74	0.81	0.45	1.19	0.79
<b>555 S</b>	<b>552 A</b>	83	68	109	116	3.5 3.3	28.8	0.35	1.7	0.95	1.41	0.764
<b>78225</b>	<b>78551</b>	83	77	117	132	3.5 2.3	44.2	0.87	0.69	0.38	1.67	0.926
<b>78225</b>	<b>78571</b>	83	77	118	132	3.5 3.5	43.6	0.87	0.69	0.38	1.68	1.08
<b>6455</b>	<b>6420</b>	81	75	129	140	3.5 3.3	39.0	0.36	1.7	0.91	3.49	1.63
<b>388 A</b>	<b>382 A</b>	69	63	89	92	3.5 0.8	17.6	0.35	1.7	0.93	0.416	0.179
<b>3981</b>	<b>3926</b>	73	67	98	106	3.5 3.3	28.7	0.40	1.5	0.82	0.899	0.541

Note ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

Bore Diameter 60.000 – 64.963 mm



**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.

d	Boundary Dimensions (mm)					Cone r min.	Cup r	Basic Load Ratings (N)				Limiting Speeds (min <sup>-1</sup> )	
	D	T	B	C	C <sub>r</sub>			C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	
60.000	95.000	24.000	24.000	19.000	5.0	2.5	86 500	125 000	8 800	12 800	3 600	5 000	
	104.775	21.433	22.000	15.875	2.3	2.0	83 500	107 000	8 500	10 900	3 400	4 500	
	110.000	22.000	21.996	18.824	0.8	1.3	85 500	113 000	8 750	11 500	3 200	4 300	
	122.238	33.338	31.750	23.812	3.5	3.3	135 000	156 000	13 800	15 900	3 000	4 000	
60.325	100.000	25.400	25.400	19.845	3.5	3.3	91 000	135 000	9 250	13 700	3 400	4 800	
	101.600	25.400	25.400	19.845	3.5	3.3	91 000	135 000	9 250	13 700	3 400	4 800	
	122.238	38.100	36.678	30.162	2.3	3.3	161 000	221 000	16 400	22 500	3 000	4 000	
	122.238	38.100	38.354	29.718	8.0	1.5	188 000	245 000	19 200	25 000	3 000	4 000	
61.912	101.600	25.400	25.400	19.845	3.5	3.3	91 000	135 000	9 250	13 700	3 400	4 800	
	122.238	43.658	43.764	36.512	0.8	3.3	198 000	292 000	20 200	29 700	3 000	4 000	
	127.000	44.450	44.450	34.925	3.5	3.3	199 000	258 000	20 200	26 300	3 000	4 000	
	130.175	41.275	41.275	31.750	3.5	3.3	195 000	263 000	19 800	26 800	2 800	3 800	
63.500	94.458	19.050	19.050	15.083	1.5	1.5	59 000	100 000	6 050	10 200	3 600	4 800	
	104.775	21.433	22.000	15.875	2.0	2.0	83 500	107 000	8 500	10 900	3 400	4 500	
	107.950	25.400	25.400	19.050	1.5	3.3	90 000	138 000	9 150	14 100	3 200	4 300	
	110.000	22.000	21.996	18.824	3.5	1.3	85 500	113 000	8 750	11 500	3 200	4 300	
64.963	107.950	25.400	25.400	19.050	1.5	3.3	90 000	138 000	9 150	14 100	3 200	4 300	
	112.712	30.162	30.162	23.812	3.5	3.3	142 000	202 000	14 500	20 600	3 200	4 300	
	112.712	33.338	30.048	26.988	3.5	3.3	120 000	173 000	12 200	17 700	3 200	4 300	
	122.238	38.100	38.354	29.718	7.0	3.3	188 000	245 000	19 200	25 000	3 000	4 000	
60.000	122.238	38.100	38.354	29.718	7.0	1.5	188 000	245 000	19 200	25 000	3 000	4 000	
	122.238	38.100	38.354	29.718	3.5	1.5	188 000	245 000	19 200	25 000	3 000	4 000	
	122.238	43.658	43.764	36.512	3.5	3.3	198 000	292 000	20 200	29 700	3 000	4 000	
	123.825	38.100	36.678	30.162	3.5	3.3	161 000	221 000	16 400	22 500	3 000	4 000	
60.325	127.000	36.512	36.170	28.575	3.5	3.3	166 000	234 000	16 900	23 900	2 800	3 800	
	130.175	41.275	41.275	31.750	3.5	3.3	195 000	263 000	19 800	26 800	2 800	3 800	
	136.525	36.512	33.236	23.520	2.3	3.3	152 000	183 000	15 500	18 700	2 600	3 600	
	136.525	41.275	41.275	31.750	3.5	3.3	195 000	263 000	19 800	26 800	2 800	3 800	
61.912	140.030	36.512	33.236	23.520	2.3	3.3	152 000	183 000	15 500	18 700	2 600	3 600	
	140.030	36.512	33.236	23.520	2.3	3.3	152 000	183 000	15 500	18 700	2 600	3 600	
	140.030	36.512	33.236	23.520	2.3	3.3	152 000	183 000	15 500	18 700	2 600	3 600	
	140.030	36.512	33.236	23.520	2.3	3.3	152 000	183 000	15 500	18 700	2 600	3 600	

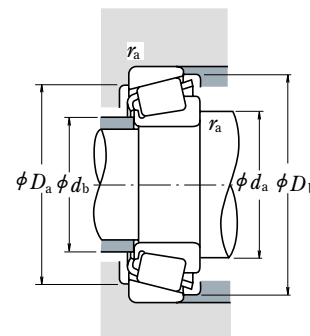
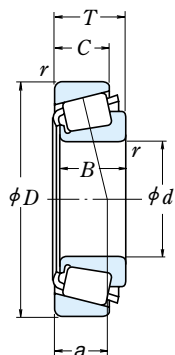
Bearing Numbers		Abutment and Fillet Dimensions (mm)				Cone r <sub>a</sub> max.	Cup r <sub>b</sub> max.	Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg)	
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>					Y <sub>1</sub>	Y <sub>0</sub>	approx. CONE	CUP
▲ JLM 508748 * 39236 397 66585	▲ JLM 508710 39412 394 A 66520	75	66	85	91	5	2.5	21.6	0.40	1.5	0.82	0.43	0.20
		71	67	96	100	2.3	2	20.0	0.39	1.5	0.85	0.559	0.186
		69	68	101	104	0.8	1.3	20.9	0.40	1.5	0.82	0.642	0.263
		79	73	105	116	3.5	3.3	34.3	0.67	0.90	0.50	1.07	0.558
28985 28985 558	28921 28920 553 X	73	67	89	96	3.5	3.3	22.9	0.43	1.4	0.78	0.538	0.232
		73	67	90	97	3.5	3.3	22.9	0.43	1.4	0.78	0.538	0.272
		73	69	108	115	2.3	3.3	28.8	0.35	1.7	0.95	1.33	0.692
		85	70	110	116	8	1.5	27.0	0.34	1.8	0.98	1.43	0.604
HM 212044 5582 65237	HM 212010 5535 65500	73	72	106	116	0.8	3.3	29.9	0.36	1.7	0.92	1.61	0.815
		82	71	107	119	3.5	3.3	35.0	0.49	1.2	0.68	1.56	1.03
		78	72	116	124	3.5	3.3	29.9	0.36	1.7	0.91	1.87	0.712
		81	74	117	126	3.5	3.3	35.0	0.32	1.8	1.0	2.45	1.39
H 715334 H 913842 9180	H 715311 H 913810 9121	84	78	119	132	3.5	3.3	37.1	0.47	1.3	0.70	2.51	0.961
		90	82	124	138	3.5	3.3	44.4	0.78	0.77	0.42	2.2	0.898
		90	81	130	145	3.5	3.3	44.3	0.66	0.92	0.50	2.77	1.21
		71	69	86	91	1.5	1.5	19.6	0.42	1.4	0.78	0.306	0.154
L 610549 39250 29586	L 610510 39412 29520	73	69	96	100	2	2	20.0	0.39	1.5	0.85	0.501	0.186
		73	71	96	103	1.5	3.3	24.0	0.46	1.3	0.72	0.661	0.281
		77	70	101	104	3.5	1.3	20.9	0.40	1.5	0.82	0.58	0.263
		73	70	101	104	1.5	1.3	20.9	0.40	1.5	0.82	0.583	0.263
3982 39585 3982	3920 3926	77	71	99	106	3.5	3.2	25.5	0.40	1.5	0.82	0.789	0.454
		77	71	101	107	3.5	3.3	23.5	0.34	1.8	0.97	0.899	0.359
		78	71	98	106	3.5	3.3	28.7	0.40	1.5	0.82	0.789	0.541
		87	73	108	116	7	3.3	26.9	0.34	1.8	0.98	1.34	0.598
HM 212047 HM 212046 5584	HM 212010 HM 212010 5535	87	73	110	116	7	1.5	26.9	0.34	1.8	0.98	1.34	0.604
		80	73	110	116	3.5	1.5	26.9	0.34	1.8	0.98	1.35	0.604
		81	75	106	116	3.5	3.3	29.9	0.36	1.7	0.92	1.5	0.815
		78	73	109	116	3.5	3.3	28.8	0.35	1.7	0.95	1.23	0.764
559 565 639	522 A 563 633	80	73	112	120	3.5	3.3	28.3	0.36	1.6	0.91	1.46	0.655
		81	74	116	124	3.5	3.3	29.9	0.36	1.7	0.91	1.77	0.712
		85	79	115	130	2.3	3.3	44.2	0.87	0.69	0.38	1.51	0.782
		79	76	119	125	3.5	3.3	29.9	0.36	1.7	0.91	1.77	1.04
78250 639 78250	78537 632 78551	85	79	117	132	2.3	2.3	44.2	0.87	0.69	0.38	1.51	0.926
		81	74	112	120	3.5	3.3	28.3	0.36	1.6	0.91	1.41	0.655

Notes \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).  
 ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)



Bore Diameter 65.000 – 69.850 mm



Dynamic Equivalent Load

$$P = X F_r + Y F_a$$

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

Static Equivalent Load

$P_0 = 0.5 F_r + Y_0 F_a$   
 When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$   
 The values of  $e$ ,  $Y_1$ , and  $Y_0$  are given in the table below.

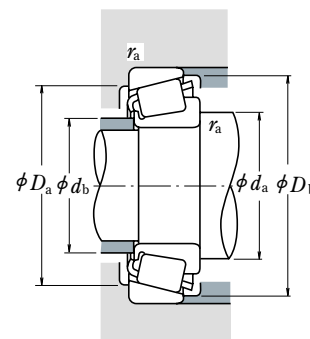
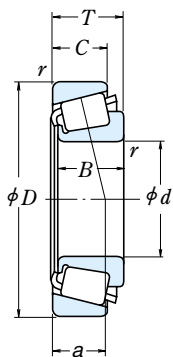
Boundary Dimensions (mm)						Basic Load Ratings (N) (kgf)				Limiting Speeds (min <sup>-1</sup> )		
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	Cone <i>r</i> min.	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>	Grease	Oil	
<b>65.000</b>	105.000	24.000	23.000	18.500	3.0	93 000	126 000	9 500	12 900	3 400	4 500	
	110.000	28.000	28.000	22.500	3.0	120 000	173 000	12 200	17 700	3 200	4 300	
	120.000	29.002	29.007	23.444	2.3	123 000	169 000	12 500	17 200	3 000	4 000	
	120.000	39.000	38.500	32.000	3.0	185 000	249 000	18 800	25 400	3 000	4 000	
<b>65.088</b>	135.755	53.975	56.007	44.450	3.5	264 000	355 000	27 000	36 000	2 800	3 800	
	136.525	46.038	46.038	36.512	3.5	233 000	370 000	23 800	37 500	2 600	3 400	
<b>66.675</b>	110.000	22.000	21.996	18.824	0.8	85 500	113 000	8 750	11 500	3 200	4 300	
	110.000	22.000	21.996	18.824	3.5	85 500	113 000	8 750	11 500	3 200	4 300	
	112.712	30.162	30.048	23.812	3.5	120 000	173 000	12 200	17 700	3 200	4 300	
	112.712	30.162	30.048	23.812	5.5	120 000	173 000	12 200	17 700	3 200	4 300	
	112.712	30.162	30.162	23.812	3.5	142 000	202 000	14 500	20 600	3 200	4 300	
	112.712	30.162	30.162	23.812	3.5	142 000	202 000	14 500	20 600	3 200	4 300	
	117.475	30.162	30.162	23.812	3.5	119 000	179 000	12 200	18 300	3 000	4 000	
	122.238	38.100	36.678	30.162	3.5	161 000	221 000	16 400	22 500	3 000	4 000	
	122.238	38.100	38.354	29.718	3.5	188 000	245 000	19 200	25 000	3 000	4 000	
	122.238	38.100	38.354	29.718	3.5	188 000	245 000	19 200	25 000	3 000	4 000	
	123.825	38.100	36.678	30.162	3.5	161 000	221 000	16 400	22 500	3 000	4 000	
<b>68.262</b>	136.525	46.038	46.038	36.512	3.5	233 000	370 000	23 800	37 500	2 600	3 400	
	110.000	22.000	21.996	18.824	2.3	85 500	113 000	8 750	11 500	3 200	4 300	
	120.000	29.795	29.007	24.237	3.5	123 000	169 000	12 500	17 200	3 000	4 000	
	122.238	38.100	36.678	30.162	3.5	161 000	221 000	16 400	22 500	3 000	4 000	
	127.000	36.512	36.170	28.575	3.5	166 000	234 000	16 900	23 900	2 800	3 800	
	136.525	41.275	41.275	31.750	3.5	229 000	297 000	23 300	30 500	2 600	3 600	
	136.525	46.038	46.038	36.512	3.5	233 000	370 000	23 800	37 500	2 600	3 400	
	152.400	47.625	46.038	31.750	3.5	237 000	267 000	24 200	27 300	2 400	3 400	
	<b>69.850</b>	112.712	22.225	21.996	15.875	1.5	85 000	113 000	8 650	11 500	3 000	4 000
		112.712	25.400	25.400	19.050	1.5	96 000	152 000	9 800	15 500	2 800	4 000
117.475		30.162	30.162	23.812	3.5	119 000	179 000	12 200	18 300	3 000	4 000	
120.000		32.545	32.545	26.195	3.5	152 000	225 000	15 500	22 900	3 000	4 000	
120.650		25.400	25.400	19.050	1.5	96 000	152 000	9 800	15 500	2 800	4 000	
127.000		36.512	36.170	28.575	3.5	166 000	234 000	16 900	23 900	2 800	3 800	
130.175		41.275	41.275	31.750	3.5	195 000	263 000	19 800	26 800	2 800	3 800	
146.050		41.275	39.688	25.400	3.5	193 000	225 000	19 700	22 900	2 400	3 400	
146.050		41.275	41.275	31.750	3.5	207 000	296 000	21 100	30 000	2 400	3 200	
149.225		53.975	54.229	44.450	5.0	287 000	410 000	29 300	41 500	2 600	3 400	
150.089		44.450	46.672	36.512	3.5	265 000	370 000	27 000	37 500	2 400	3 200	

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Cone <i>r<sub>a</sub></i> max.	Eff. Load Centers (mm) <i>a</i>	Constant <i>e</i>	Axial Load Factors		Mass (kg)		
CONE	CUP	<i>d<sub>a</sub></i>	<i>d<sub>b</sub></i>	<i>D<sub>a</sub></i>	<i>D<sub>b</sub></i>				$Y_1$	$Y_0$	CONE approx.	CUP	
▲ JLM 710949	▲ JLM 710910	77	71	96	101	3	1	23.7	0.45	1.3	0.73	0.526	0.237
▲ JM 511946	▲ JM 511910	78	72	99	105	3	2.5	24.5	0.40	1.5	0.82	0.72	0.342
478	472 A	77	73	106	114	2.3	3.3	24.3	0.38	1.6	0.86	0.942	0.466
▲ JH 211749	▲ JH 211710	80	74	107	114	3	2.5	27.9	0.34	1.8	0.98	1.25	0.625
6379	6320	84	77	117	126	3.5	3.3	35.0	0.32	1.8	1.0	2.25	1.39
H 715340	H 715311	88	82	118	132	3.5	3.3	37.1	0.47	1.3	0.70	2.4	0.961
395 A	394 A	73	73	101	104	0.8	1.3	20.9	0.40	1.5	0.82	0.528	0.263
395 S	394 A	79	73	101	104	3.5	1.3	20.9	0.40	1.5	0.82	0.524	0.263
3984	3920	80	74	99	106	3.5	3.2	25.5	0.40	1.5	0.82	0.712	0.454
3994	3920	84	74	99	106	5.5	3.2	25.5	0.40	1.5	0.82	0.706	0.454
39590	39521	80	74	103	107	3.5	0.8	23.5	0.34	1.8	0.97	0.822	0.365
39590	39520	80	74	101	107	3.5	3.3	23.5	0.34	1.8	0.97	0.822	0.359
33262	33462	81	75	104	112	3.5	3.3	26.8	0.44	1.4	0.76	0.911	0.442
560	553 X	81	75	108	115	3.5	3.3	28.8	0.35	1.7	0.95	1.14	0.692
HM 212049	HM 212010	82	75	110	116	3.5	1.5	26.9	0.34	1.8	0.98	1.25	0.604
HM 212049	HM 212011	81	74	108	116	3.5	3.3	26.9	0.34	1.8	0.98	1.25	0.598
560	552 A	81	75	109	116	3.5	3.3	28.8	0.35	1.7	0.95	1.14	0.764
H 715341	H 715311	89	83	118	132	3.5	3.3	37.1	0.47	1.3	0.70	2.34	0.961
399 A	394 A	78	74	101	104	2.3	1.3	20.9	0.40	1.5	0.82	0.497	0.263
480	472	83	76	106	113	3.5	2	25.1	0.38	1.6	0.86	0.862	0.493
560 S	553 X	83	76	108	115	3.5	3.3	28.8	0.35	1.7	0.95	1.09	0.692
570	563	83	77	112	120	3.5	3.3	28.3	0.36	1.6	0.91	1.32	0.655
H 414245	H 414210	86	82	121	129	3.5	3.3	30.6	0.36	1.7	0.92	1.95	0.796
H 715343	H 715311	90	84	118	132	3.5	3.3	37.1	0.47	1.3	0.70	2.28	0.961
9185	9121	94	81	130	145	3.5	3.3	44.3	0.66	0.92	0.50	2.53	1.21
LM 613449	LM 613410	78	76	104	107	1.5	0.8	22.1	0.42	1.4	0.79	0.562	0.238
29675	29620	80	77	101	109	1.5	3.3	26.3	0.49	1.2	0.68	0.695	0.273
33275	33462	84	77	104	112	3.5	3.3	26.8	0.44	1.4	0.76	0.83	0.442
47487	47420	84	78	107	114	3.5	3.3	26.0	0.36	1.7	0.92	1.02	0.477
29675	29630	79	78	105	113	1.5	3.3	26.3	0.49	1.2	0.68	0.695	0.489
566	563 X	85	78	114	120	3.5	0.8	28.3	0.36	1.6	0.91	1.27	0.658
643	633	86	80	116	124	3.5	3.3	29.9	0.36	1.7	0.91	1.56	0.712
H 913849	H 913810	95	82	124	138	3.5	3.3	44.4	0.78	0.77	0.42	1.95	0.898
655	653	88	82	131	139	3.5	3.3	33.2	0.41	1.5	0.81	2.35	0.891
6454	6420	94	85	129	140	5	3.3	39.0	0.36	1.7	0.91	2.95	1.63
745 A	742	88	82	134	142	3.5	3.3	32.5	0.33	1.8	1.0	2.82	1.07

Note ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 70.000 – 76.200 mm



### Dynamic Equivalent Load

$$P = X F_r + Y F_a$$

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

### Static Equivalent Load

$$P_0 = 0.5 F_r + Y_0 F_a$$

When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$

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

d	Boundary Dimensions (mm)					Cone r		Basic Load Ratings (N)				Limiting Speeds (min <sup>-1</sup> )	
	D	T	B	C	Cup min.	Cup	C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	
70.000	110.000	26.000	25.000	20.500	1.0	2.5	98 500	152 000	10 000	15 500	3 000	4 000	
	115.000	29.000	29.000	23.000	3.0	2.5	126 000	177 000	12 900	18 100	3 000	4 000	
	120.000	29.795	29.007	24.237	2.0	2.0	123 000	169 000	12 500	17 200	3 000	4 000	
71.438	117.475	30.162	30.162	23.812	3.5	3.3	119 000	179 000	12 200	18 300	3 000	4 000	
	120.000	32.545	32.545	26.195	3.5	3.3	152 000	225 000	15 500	22 900	3 000	4 000	
	127.000	36.512	36.170	28.575	6.4	3.3	166 000	234 000	16 900	23 900	2 800	3 800	
	127.000	36.512	36.170	28.575	3.5	3.3	166 000	234 000	16 900	23 900	2 800	3 800	
	130.175	41.275	41.275	31.750	6.4	3.3	195 000	263 000	19 800	26 800	2 800	3 800	
	136.525	41.275	41.275	31.750	3.5	3.3	195 000	263 000	19 800	26 800	2 800	3 800	
	136.525	41.275	41.275	31.750	3.5	3.3	229 000	297 000	23 300	30 500	2 600	3 600	
	136.525	46.038	46.038	36.512	3.5	3.3	233 000	370 000	23 800	37 500	2 600	3 400	
	73.025	112.712	25.400	25.400	19.050	3.5	3.3	96 000	152 000	9 800	15 500	2 800	4 000
		117.475	30.162	30.162	23.812	3.5	3.3	119 000	179 000	12 200	18 300	3 000	4 000
		127.000	36.512	36.170	28.575	3.5	3.3	166 000	234 000	16 900	23 900	2 800	3 800
146.050		41.275	41.275	31.750	3.5	3.3	207 000	296 000	21 100	30 000	2 400	3 200	
149.225	53.975	54.229	44.450	3.5	3.3	287 000	410 000	29 300	41 500	2 600	3 400		
73.817	127.000	36.512	36.170	28.575	0.8	3.3	166 000	234 000	16 900	23 900	2 800	3 800	
	74.612	150.000	41.275	41.275	3.5	3.0	207 000	296 000	21 100	30 000	2 400	3 200	
75.000	115.000	25.000	25.000	19.000	3.0	2.5	101 000	150 000	10 300	15 300	3 000	4 000	
	120.000	31.000	29.500	25.000	3.0	2.5	129 000	198 000	13 100	20 200	2 800	3 800	
	145.000	51.000	51.000	42.000	3.0	2.5	283 000	410 000	28 900	41 500	2 600	3 400	
76.200	121.442	24.608	23.012	17.462	2.0	2.0	89 000	124 000	9 100	12 600	2 800	3 800	
	127.000	30.162	31.000	22.225	3.5	3.3	134 000	195 000	13 700	19 900	2 800	3 800	
	127.000	30.162	31.001	22.225	6.4	3.3	134 000	195 000	13 700	19 900	2 800	3 800	
	133.350	33.338	33.338	26.195	0.8	3.3	154 000	237 000	15 700	24 200	2 600	3 600	
	135.733	44.450	46.101	34.925	3.5	3.3	216 000	340 000	22 000	35 000	2 600	3 600	
	136.525	30.162	29.769	22.225	3.5	3.3	130 000	192 000	13 300	19 600	2 600	3 400	
	136.525	30.162	29.769	22.225	6.4	3.3	130 000	192 000	13 300	19 600	2 600	3 400	
	139.992	36.512	36.098	28.575	3.5	3.3	175 000	260 000	17 800	26 500	2 600	3 400	
	149.225	53.975	54.229	44.450	3.5	3.3	287 000	410 000	29 300	41 500	2 600	3 400	
	152.400	39.688	36.322	30.162	3.5	3.2	183 000	285 000	18 700	29 100	2 200	3 200	
	152.400	41.275	41.275	31.750	3.5	3.3	207 000	296 000	21 100	30 000	2 400	3 200	
	161.925	49.212	46.038	31.750	3.5	3.3	248 000	290 000	25 300	29 600	2 200	3 000	
	161.925	53.975	55.100	42.862	3.5	3.3	325 000	480 000	33 000	49 000	2 200	3 000	
	161.925	53.975	55.100	42.862	6.4	3.3	325 000	480 000	33 000	49 000	2 200	3 000	
	161.925	53.975	55.100	42.862	6.4	0.8	325 000	480 000	33 000	49 000	2 200	3 000	

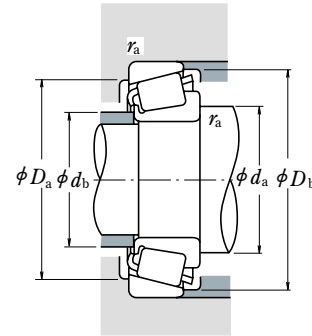
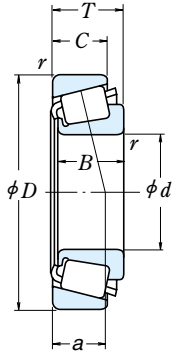
Bearing Numbers		Abutment and Fillet Dimensions (mm)					Eff. Load Centers (mm)	Constant	Axial Load Factors		Mass (kg)		
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>	Cone r <sub>a</sub> max.			e	Y <sub>1</sub>	Y <sub>0</sub>	CONE approx.	CUP
▲ JLM 813049	▲ JLM 813010	78	77	98	105	1	2.5	26.2	0.49	1.2	0.68	0.604	0.304
▲ JM 612949	▲ JM 612910	83	77	103	110	3	2.5	26.4	0.43	1.4	0.77	0.800	0.362
484	472	80	78	106	113	2	2	25.1	0.38	1.6	0.86	0.822	0.493
33281	33462	85	79	104	112	3.5	3.3	26.8	0.44	1.4	0.76	0.789	0.442
47490	47420	86	79	107	114	3.5	3.3	26.0	0.36	1.7	0.92	0.983	0.477
567 S	563	92	80	112	120	6.4	3.3	28.3	0.36	1.6	0.91	1.21	0.655
567 A	563	86	80	112	120	3.5	3.3	28.3	0.36	1.6	0.91	1.23	0.655
645	633	93	81	116	124	6.4	3.3	29.9	0.36	1.7	0.91	1.49	0.712
644	632	87	81	118	125	3.5	3.3	29.9	0.36	1.7	0.91	1.5	1.04
H 414249	H 414210	89	83	121	129	3.5	3.3	30.6	0.36	1.7	0.92	1.83	0.796
H 715345	H 715311	92	84	119	132	3.5	3.3	37.1	0.47	1.3	0.70	2.15	0.961
29685	29620	86	80	101	109	3.5	3.3	26.3	0.49	1.2	0.68	0.62	0.273
33287	33462	87	80	104	112	3.5	3.3	26.8	0.44	1.4	0.76	0.746	0.442
567	563	88	81	112	120	3.5	3.3	28.3	0.36	1.6	0.91	1.17	0.655
657	653	91	85	131	139	3.5	3.3	33.2	0.41	1.5	0.81	2.24	0.891
6460	6420	93	87	129	140	3.5	3.3	39.0	0.36	1.7	0.91	2.8	1.63
568	563	83	82	112	120	0.8	3.3	28.3	0.36	1.6	0.91	1.15	0.655
658	653 X	92	86	133	141	3.5	3	33.2	0.41	1.5	0.81	2.37	0.932
▲ JLM 714149	▲ JLM 714110	87	81	104	110	3	2.5	25.3	0.46	1.3	0.72	0.638	0.272
▲ JM 714249	▲ JM 714210	88	83	108	115	3	2.5	28.8	0.44	1.4	0.74	0.863	0.436
▲ JH 415647	▲ JH 415610	94	89	129	139	3	2.5	36.7	0.36	1.7	0.91	2.64	1.19
34300	34478	86	84	111	116	2	2	26.3	0.45	1.3	0.73	0.65	0.316
42687	42620	90	84	114	121	3.5	3.3	27.3	0.42	1.4	0.79	1.03	0.438
42688	42620	94	84	114	121	6.4	3.3	27.3	0.42	1.4	0.79	1.01	0.438
47680	47620	86	85	119	128	0.8	3.3	29.0	0.40	1.5	0.82	1.39	0.577
5760	5735	94	88	119	130	3.5	3.3	32.9	0.41	1.5	0.81	1.86	0.887
495 A	493	92	86	122	130	3.5	3.3	28.7	0.44	1.4	0.74	1.27	0.55
495 AX	493	98	86	122	130	6.4	3.3	28.7	0.44	1.4	0.74	1.26	0.55
575	572	92	86	125	133	3.5	3.3	31.1	0.40	1.5	0.82	1.61	0.788
6461	6420	96	89	129	140	3.5	3.3	39.0	0.36	1.7	0.91	2.64	1.63
590 A	592 A	95	89	135	145	3.5	3.2	37.1	0.44	1.4	0.75	2.2	1.06
659	652	93	87	134	141	3.5	3.3	33.2	0.41	1.5	0.81	2.11	1.26
9285	9220	103	90	138	153	3.5	3.3	49.8	0.71	0.85	0.47	2.82	1.4
6576	6535	99	92	141	154	3.5	3.3	40.7	0.40	1.5	0.82	3.74	1.67
6575	6535	104	92	141	154	6.4	3.3	40.7	0.40	1.5	0.82	3.73	1.67
6575	6536	104	92	144	154	6.4	0.8	40.7	0.40	1.5	0.82	3.73	1.68

Note ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

**SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)**



**Bore Diameter 76.200 – 83.345 mm**



**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.

d	Boundary Dimensions (mm)					Cone r min.	Cup	Basic Load Ratings (N) (kgf)				Limiting Speeds (min <sup>-1</sup> )	
	D	T	B	C	C <sub>r</sub>			C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	
76.200	168.275	53.975	56.363	41.275	6.4	3.3	345 000	470 000	35 000	48 000	2 200	3 000	
	168.275	53.975	56.363	41.275	0.8	3.3	345 000	470 000	35 000	48 000	2 200	3 000	
	171.450	49.212	46.038	31.750	3.5	3.3	257 000	310 000	26 200	32 000	2 000	2 800	
	177.800	55.562	50.800	34.925	3.5	3.3	257 000	310 000	26 200	32 000	2 000	2 800	
77.788	121.442	24.608	23.012	17.462	3.5	2.0	89 000	124 000	9 100	12 600	2 800	3 800	
	127.000	30.162	31.000	22.225	3.5	3.3	134 000	195 000	13 700	19 900	2 800	3 800	
	135.733	44.450	46.101	34.925	3.5	3.3	216 000	340 000	22 000	35 000	2 600	3 600	
79.375	146.050	41.275	41.275	31.750	3.5	3.3	207 000	296 000	21 100	30 000	2 400	3 200	
	150.089	44.450	46.672	36.512	3.5	3.3	265 000	370 000	27 000	37 500	2 400	3 200	
80.000	130.000	35.000	34.000	28.500	3.0	2.5	166 000	251 000	17 000	25 600	2 600	3 600	
80.962	136.525	30.162	29.769	22.225	3.5	3.3	130 000	192 000	13 300	19 600	2 600	3 400	
	139.700	36.512	36.098	28.575	3.5	3.3	175 000	260 000	17 800	26 500	2 600	3 400	
	139.992	36.512	36.098	28.575	3.5	3.3	175 000	260 000	17 800	26 500	2 600	3 400	
	139.992	36.512	36.098	28.575	3.5	3.3	175 000	260 000	17 800	26 500	2 600	3 400	
82.550	125.412	25.400	25.400	19.845	3.5	1.5	102 000	164 000	10 400	16 700	2 600	3 600	
	133.350	30.162	29.769	22.225	3.5	3.3	130 000	192 000	13 300	19 600	2 600	3 400	
	133.350	33.338	33.338	26.195	3.5	3.3	154 000	237 000	15 700	24 200	2 600	3 600	
	133.350	33.338	33.338	26.195	0.8	3.3	154 000	237 000	15 700	24 200	2 600	3 600	
	133.350	39.688	39.688	32.545	6.8	3.3	179 000	310 000	18 300	31 500	2 600	3 600	
	136.525	30.162	29.769	22.225	3.5	3.3	130 000	192 000	13 300	19 600	2 600	3 400	
	139.700	36.512	36.098	28.575	3.5	3.3	175 000	260 000	17 800	26 500	2 600	3 400	
	139.992	36.512	36.098	28.575	3.5	3.3	175 000	260 000	17 800	26 500	2 600	3 400	
	139.992	36.512	36.098	28.575	6.8	3.3	175 000	260 000	17 800	26 500	2 600	3 400	
	146.050	41.275	41.275	31.750	3.5	3.3	207 000	296 000	21 100	30 000	2 400	3 200	
	150.000	44.455	46.672	35.000	3.5	3.3	265 000	370 000	27 000	37 500	2 400	3 200	
83.345	150.089	44.450	46.672	36.512	3.5	3.3	265 000	370 000	27 000	37 500	2 400	3 200	
	152.400	41.275	41.275	31.750	3.5	3.3	207 000	296 000	21 100	30 000	2 400	3 200	
	161.925	47.625	48.260	38.100	3.5	3.3	274 000	390 000	28 000	40 000	2 200	3 000	
	161.925	53.975	55.100	42.862	3.5	3.3	325 000	480 000	33 000	49 000	2 200	3 000	
	168.275	47.625	48.260	38.100	3.5	3.3	274 000	390 000	28 000	40 000	2 200	3 000	
	168.275	53.975	56.363	41.275	3.5	3.3	345 000	470 000	35 000	48 000	2 200	3 000	
	125.412	25.400	25.400	19.845	3.5	1.5	102 000	164 000	10 400	16 700	2 600	3 600	
125.412	25.400	25.400	19.845	0.8	1.5	102 000	164 000	10 400	16 700	2 600	3 600		

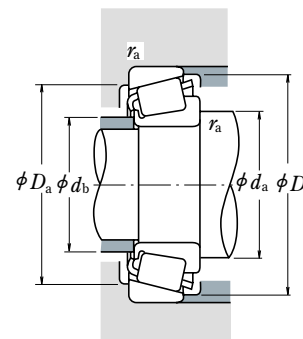
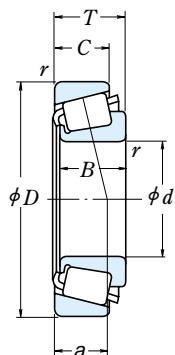
Bearing Numbers		Abutment and Fillet Dimensions (mm)					Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg)	
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>	Cone r <sub>a</sub> max.			Y <sub>1</sub>	Y <sub>0</sub>	approx. CONE	CUP
<b>843</b>	<b>832</b>	101	89	149	155	6.4	3.3	0.30	2.0	1.1	4.11	1.74
<b>837</b>	<b>832</b>	90	89	149	155	0.8	3.3	0.30	2.0	1.1	4.13	1.74
<b>9380</b>	<b>9321</b>	105	98	147	164	3.5	3.3	0.76	0.79	0.43	3.47	1.51
<b>9378</b>	<b>9320</b>	105	98	148	164	3.5	3.3	0.76	0.79	0.43	3.71	2.24
<b>34306</b>	<b>34478</b>	90	84	110	116	3.5	2	0.45	1.3	0.73	0.612	0.316
<b>42690</b>	<b>42620</b>	91	85	114	121	3.5	3.3	0.42	1.4	0.79	0.976	0.438
<b>5795</b>	<b>5735</b>	96	89	119	130	3.5	3.3	0.41	1.5	0.81	1.79	0.887
<b>661</b>	<b>653</b>	96	90	131	139	3.5	3.3	0.41	1.5	0.81	1.99	0.891
<b>750</b>	<b>742</b>	96	90	134	142	3.5	3.3	0.33	1.8	1.0	2.42	1.07
<b>▲ JM 515649</b>	<b>▲ JM 515610</b>	94	88	117	125	3	2.5	0.39	1.5	0.85	1.18	0.583
<b>496</b>	<b>493</b>	95	89	122	130	3.5	3.3	0.44	1.4	0.74	1.13	0.55
<b>581</b>	<b>572 X</b>	96	90	125	133	3.5	3.3	0.40	1.5	0.82	1.44	0.774
<b>581</b>	<b>572</b>	96	90	125	133	3.5	3.3	0.40	1.5	0.82	1.44	0.788
<b>27687</b>	<b>27620</b>	96	89	115	120	3.5	1.5	0.42	1.4	0.79	0.747	0.348
<b>495</b>	<b>492 A</b>	97	90	120	128	3.5	3.3	0.44	1.4	0.74	1.08	0.434
<b>47686</b>	<b>47620</b>	97	90	119	128	3.5	3.3	0.40	1.5	0.82	1.18	0.577
<b>47685</b>	<b>47620</b>	90	90	119	128	0.8	3.3	0.40	1.5	0.82	1.18	0.577
<b>47687</b>	<b>47620</b>	103	90	119	128	6.8	3.3	0.40	1.5	0.82	1.16	0.577
<b>HM 516448</b>	<b>HM 516410</b>	105	92	118	128	6.8	3.3	0.40	1.5	0.82	1.35	0.767
<b>495</b>	<b>493</b>	97	90	122	130	3.5	3.3	0.44	1.4	0.74	1.08	0.55
<b>580</b>	<b>572 X</b>	98	91	125	133	3.5	3.3	0.40	1.5	0.82	1.39	0.774
<b>580</b>	<b>572</b>	98	91	125	133	3.5	3.3	0.40	1.5	0.82	1.39	0.788
<b>582</b>	<b>572</b>	104	91	125	133	6.8	3.3	0.40	1.5	0.82	1.37	0.788
<b>663</b>	<b>653</b>	99	92	131	139	3.5	3.3	0.41	1.5	0.81	1.85	0.891
<b>749 A</b>	<b>743</b>	99	93	134	142	3.5	3.3	0.33	1.8	1.0	2.26	1.04
<b>749 A</b>	<b>742</b>	98	93	135	143	3.5	3.3	0.33	1.8	1.0	2.26	1.07
<b>663</b>	<b>652</b>	99	92	134	141	3.5	3.3	0.41	1.5	0.81	1.85	1.26
<b>757</b>	<b>752</b>	100	94	144	150	3.5	3.3	0.34	1.8	0.97	2.79	1.61
<b>6559</b>	<b>6535</b>	104	98	141	154	3.5	3.3	0.40	1.5	0.82	3.4	1.67
<b>757</b>	<b>753</b>	100	94	147	150	3.5	3.3	0.34	1.8	0.97	2.79	2.1
<b>842</b>	<b>832</b>	101	94	149	155	3.5	3.3	0.30	2.0	1.1	3.76	1.74
<b>27690</b>	<b>27620</b>	96	90	115	120	3.5	1.5	0.42	1.4	0.79	0.727	0.348
<b>27689</b>	<b>27620</b>	90	90	115	120	0.8	1.5	0.42	1.4	0.79	0.732	0.348

**Note** ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.



# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 84.138 – 90.488 mm



### 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.

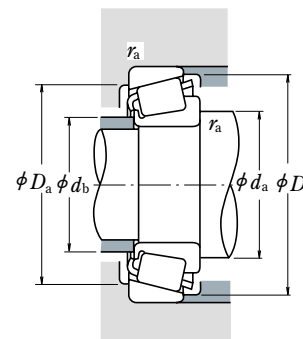
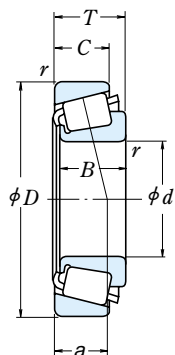
Boundary Dimensions (mm)					Basic Load Ratings				Limiting Speeds			
$d$	$D$	$T$	$B$	$C$	Cone $r$ min.	Cup $r$ min.	$C_r$ (N)	$C_{0r}$ (kgf)	$C_r$ (kgf)	$C_{0r}$ (kgf)	Grease ( $\text{min}^{-1}$ )	Oil ( $\text{min}^{-1}$ )
<b>84.138</b>	136.525	30.162	29.769	22.225	3.5	3.3	130 000	192 000	13 300	19 600	2 600	3 400
	146.050	41.275	41.275	31.750	3.5	3.3	207 000	296 000	21 100	30 000	2 400	3 200
	171.450	49.212	46.038	31.750	3.5	3.3	257 000	310 000	26 200	32 000	2 000	2 800
<b>85.000</b>	130.000	30.000	29.000	24.000	6.0	2.5	138 000	222 000	14 100	22 700	2 600	3 600
	130.000	30.000	29.000	24.000	3.0	2.5	138 000	222 000	14 100	22 700	2 600	3 600
	140.000	39.000	38.000	31.500	3.0	2.5	202 000	305 000	20 600	31 000	2 400	3 400
	150.000	46.000	46.000	38.000	3.0	2.5	275 000	390 000	28 000	40 000	2 400	3 200
<b>85.026</b>	150.089	44.450	46.672	36.512	3.5	3.3	265 000	370 000	27 000	37 500	2 400	3 200
	150.089	44.450	46.672	36.512	5.0	3.3	265 000	370 000	27 000	37 500	2 400	3 200
<b>85.725</b>	133.350	30.162	29.769	22.225	3.5	3.3	130 000	192 000	13 300	19 600	2 600	3 400
	136.525	30.162	29.769	22.225	3.5	3.3	130 000	192 000	13 300	19 600	2 600	3 400
	142.138	42.862	42.862	34.133	4.8	3.3	221 000	360 000	22 500	36 500	2 400	3 400
<b>85.026</b>	146.050	41.275	41.275	31.750	6.4	3.3	207 000	296 000	21 100	30 000	2 400	3 200
	146.050	41.275	41.275	31.750	3.5	3.3	207 000	296 000	21 100	30 000	2 400	3 200
	152.400	39.688	36.322	30.162	3.5	3.2	183 000	285 000	18 700	29 100	2 200	3 200
	161.925	47.625	48.260	38.100	3.5	3.3	274 000	390 000	28 000	40 000	2 200	3 000
	161.925	47.625	48.260	38.100	7.0	3.3	274 000	390 000	28 000	40 000	2 200	3 000
	161.925	53.975	55.100	42.862	3.5	3.3	325 000	480 000	33 000	49 000	2 200	3 000
<b>87.312</b>	168.275	47.625	48.260	38.100	3.5	3.3	274 000	390 000	28 000	40 000	2 200	3 000
	168.275	53.975	56.363	41.275	3.5	3.3	345 000	470 000	35 000	48 000	2 200	3 000
<b>88.900</b>	190.500	57.150	57.531	46.038	8.0	3.3	390 000	520 000	39 500	53 500	1 900	2 600
	190.500	57.150	57.531	46.038	8.0	3.3	390 000	520 000	39 500	53 500	1 900	2 600
<b>90.000</b>	145.000	35.000	34.000	27.000	3.0	2.5	190 000	285 000	19 400	29 000	2 400	3 200
	147.000	40.000	40.000	32.500	7.0	3.5	229 000	345 000	23 400	35 000	2 400	3 200
	155.000	44.000	44.000	35.500	3.0	2.5	274 000	395 000	28 000	40 000	2 200	3 000
	161.925	47.625	48.260	38.100	3.5	3.3	274 000	390 000	28 000	40 000	2 200	3 000
	190.500	57.150	57.531	44.450	8.0	3.3	355 000	500 000	36 000	51 000	1 900	2 600
	190.500	57.150	57.531	46.038	8.0	3.3	390 000	520 000	39 500	53 500	1 900	2 600
<b>90.488</b>	145.000	35.000	34.000	27.000	3.0	2.5	190 000	285 000	19 400	29 000	2 400	3 200
	147.000	40.000	40.000	32.500	7.0	3.5	229 000	345 000	23 400	35 000	2 400	3 200
	155.000	44.000	44.000	35.500	3.0	2.5	274 000	395 000	28 000	40 000	2 200	3 000

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Eff. Load Centers (mm)		Constant	Axial Load Factors		Mass (kg)	
CONE	CUP	$d_a$	$d_b$	$D_a$	$D_b$	Cone $r_a$ max.	Cup $r_a$ max.	$a$	$e$	$Y_1$	$Y_0$	approx. CONE CUP
<b>498</b>	<b>493</b>	98	91	122	130	3.5	3.3	28.7	0.44	1.4	0.74	1.04 0.55
		99	93	131	139	3.5	3.3	33.2	0.41	1.5	0.81	1.79 0.891
		111	98	147	164	3.5	3.3	54.1	0.76	0.79	0.43	3.11 1.51
<b>▲ JM 716648</b>	<b>▲ JM 716610</b>	104	92	117	125	6	2.5	29.5	0.44	1.4	0.74	0.931 0.461
		98	92	117	125	3	2.5	29.5	0.44	1.4	0.74	0.943 0.461
		100	94	125	134	3	2.5	33.3	0.41	1.5	0.81	1.55 0.768
		101	95	134	142	3	2.5	33.9	0.33	1.8	0.99	2.29 1.09
<b>749</b>	<b>742</b>	101	95	134	142	3.5	3.3	32.5	0.33	1.8	1.0	2.14 1.07
		104	95	134	142	5	3.3	32.5	0.33	1.8	1.0	2.14 1.07
<b>497</b>	<b>492 A</b>	99	93	120	128	3.5	3.3	28.7	0.44	1.4	0.74	0.987 0.434
		99	93	122	130	3.5	3.3	28.7	0.44	1.4	0.74	0.987 0.55
<b>HM 617049</b>	<b>HM 617010</b>	106	95	125	137	4.8	3.3	35.4	0.43	1.4	0.76	1.77 0.911
		107	95	131	139	6.4	3.3	33.2	0.41	1.5	0.81	1.71 0.891
<b>665 A</b>	<b>653</b>	102	95	131	139	3.5	3.3	33.2	0.41	1.5	0.81	1.72 0.891
		102	96	135	144	3.5	3.2	37.1	0.44	1.4	0.75	1.85 1.06
<b>758</b>	<b>752</b>	103	97	144	150	3.5	3.3	35.6	0.34	1.8	0.97	2.63 1.61
		105	99	149	160	3.5	3.3	38.3	0.47	1.3	0.70	2.91 1.24
<b>HH 221432</b>	<b>HH 221410</b>	118	103	171	179	8	3.3	42.3	0.33	1.8	0.99	5.51 2.24
		104	98	134	143	3	3.3	34.9	0.49	1.2	0.67	1.39 0.711
<b>42350</b>	<b>42587</b>	104	98	135	144	3.5	3.2	37.1	0.44	1.4	0.75	1.73 1.06
		107	96	137	148	6.4	3.3	33.1	0.40	1.5	0.82	2.11 1.076
<b>HM 518445</b>	<b>HM 518410</b>	107	96	137	148	6.4	3.3	33.1	0.40	1.5	0.82	2.11 1.076
		106	99	144	150	3.5	3.3	35.6	0.34	1.8	0.97	2.47 1.61
<b>759</b>	<b>752</b>	113	99	144	150	7	3.3	35.6	0.34	1.8	0.97	2.45 1.61
		109	102	141	154	3.5	3.3	40.7	0.40	1.5	0.82	3.03 1.67
<b>759</b>	<b>753</b>	106	99	147	150	3.5	3.3	35.6	0.34	1.8	0.97	2.47 2.1
		106	100	149	155	3.5	3.3	35.2	0.30	2.0	1.1	3.39 1.74
<b>855</b>	<b>854</b>	118	103	170	174	8	3.3	41.8	0.33	1.8	0.99	4.99 2.55
		120	105	171	179	8	3.3	42.3	0.33	1.8	0.99	5.41 2.24
<b>▲ JM 718149</b>	<b>▲ JM 718110</b>	105	99	131	139	3	2.5	33.0	0.44	1.4	0.74	1.49 0.66
		111	98	133	141	7	3.5	30.8	0.33	1.8	0.99	1.77 0.796
<b>*HM 218248</b>	<b>**HM 218210</b>	106	100	140	148	3	2.5	34.1	0.34	1.7	0.96	2.32 1.01
		106	100	140	148	3	2.5	34.1	0.34	1.7	0.96	2.32 1.01
<b>▲ JHM 318448</b>	<b>▲ JHM 318410</b>	106	100	140	148	3	2.5	34.1	0.34	1.7	0.96	2.32 1.01
		107	101	144	150	3.5	3.3	35.6	0.34	1.8	0.97	2.38 1.61

- Notes**
- \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).
  - \*\* The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69).
  - ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 92.075 – 100.012 mm



### Dynamic Equivalent Load

$$P = X F_r + Y F_a$$

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

### Static Equivalent Load

$P_0 = 0.5 F_r + Y_0 F_a$   
 When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$   
 The values of  $e$ ,  $Y_1$ , and  $Y_0$  are given in the table below.

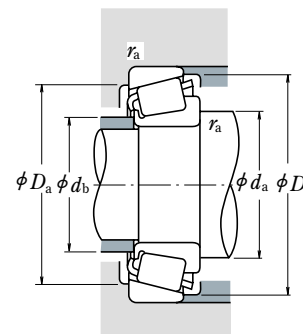
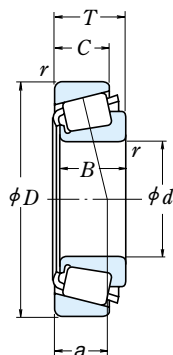
d	Boundary Dimensions (mm)					Cone r min.	Cup r min.	Basic Load Ratings (N) {kgf}				Limiting Speeds (min <sup>-1</sup> )	
	D	T	B	C	C <sub>r</sub>			C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	
92.075	146.050	33.338	34.925	26.195	3.5	3.3	169 000	280 000	17 300	28 500	2 400	3 200	
	148.430	28.575	28.971	21.433	3.5	3.0	140 000	218 000	14 300	22 300	2 200	3 000	
	152.400	39.688	36.322	30.162	3.5	3.2	183 000	285 000	18 700	29 100	2 200	3 200	
93.662	148.430	28.575	28.971	21.433	3.0	3.0	140 000	218 000	14 300	22 300	2 200	3 000	
	149.225	31.750	28.971	24.608	3.0	3.3	140 000	218 000	14 300	22 300	2 200	3 000	
	152.400	39.688	36.322	30.162	3.5	3.2	183 000	285 000	18 700	29 100	2 200	3 200	
95.000	150.000	35.000	34.000	27.000	3.0	2.5	183 000	285 000	18 700	29 100	2 200	3 200	
	146.050	33.338	34.925	26.195	3.5	3.3	169 000	280 000	17 300	28 500	2 400	3 200	
	148.430	28.575	28.971	21.433	3.0	3.0	140 000	218 000	14 300	22 300	2 200	3 000	
95.250	149.225	31.750	28.971	24.608	3.5	3.3	140 000	218 000	14 300	22 300	2 200	3 000	
	152.400	39.688	36.322	30.162	3.5	3.2	183 000	285 000	18 700	29 100	2 200	3 200	
	152.400	39.688	36.322	30.162	3.5	3.2	183 000	285 000	18 700	29 100	2 200	3 200	
96.838	148.430	28.575	28.971	21.433	3.5	3.0	140 000	218 000	14 300	22 300	2 200	3 000	
	149.225	31.750	28.971	24.606	3.5	3.3	140 000	218 000	14 300	22 300	2 200	3 000	
	149.225	31.750	28.971	24.606	3.5	3.3	140 000	218 000	14 300	22 300	2 200	3 000	
98.425	161.925	36.512	36.116	26.195	3.5	3.3	191 000	310 000	19 500	31 500	2 000	2 800	
	168.275	41.275	30.162	38.100	3.5	3.3	223 000	345 000	22 700	35 000	2 000	2 800	
	180.975	47.625	48.006	38.100	3.5	3.3	258 000	375 000	26 300	38 500	2 000	2 600	
99.982	190.500	57.150	57.531	44.450	3.5	3.3	355 000	500 000	36 000	51 000	1 900	2 600	
	190.500	57.150	57.531	46.038	3.5	3.3	390 000	520 000	39 500	53 500	1 900	2 600	
	190.500	57.150	57.531	46.038	6.4	3.3	390 000	520 000	39 500	53 500	1 900	2 600	
100.000	150.000	32.000	30.000	26.000	2.3	2.3	146 000	235 000	14 900	24 000	2 200	3 000	
	155.000	36.000	35.000	28.000	3.0	2.5	191 000	325 000	19 500	33 000	2 000	2 800	
	160.000	41.000	40.000	32.000	3.0	2.5	239 000	380 000	24 400	38 500	2 000	2 800	
100.012	157.162	36.512	36.116	26.195	3.5	3.3	191 000	310 000	19 500	31 500	2 000	2 800	

Bearing Numbers		Abutment and Fillet Dimensions (mm)				Cone r <sub>a</sub> max.	Cup r <sub>a</sub> max.	Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg)	
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>					Y <sub>1</sub>	Y <sub>0</sub>	approx. CONE	CUP
47890 42362 598	47820 42584 592 A	107	101	131	140	3.5	3.3	32.3	0.45	1.3	0.74	1.46	0.664
		107	101	134	142	3.5	3	31.8	0.49	1.2	0.67	1.29	0.553
		107	101	135	144	3.5	3.2	37.1	0.44	1.4	0.75	1.6	1.06
598 A 681 857	592 A 672 854	113	101	135	144	6.4	3.2	37.1	0.44	1.4	0.75	1.59	1.06
		110	104	149	160	3.5	3.3	38.3	0.47	1.3	0.70	2.62	1.24
		121	106	170	174	8	3.3	41.8	0.33	1.8	0.99	4.78	2.55
42368 42368 597	42584 42587 592 A	107	102	134	142	3	3	31.8	0.49	1.2	0.67	1.24	0.553
		107	102	134	143	3	3.3	34.9	0.49	1.2	0.67	1.24	0.711
		109	102	135	144	3.5	3.2	37.1	0.44	1.4	0.75	1.54	1.06
▲ JM 719149	▲ JM 719113	109	104	135	143	3	2.5	33.4	0.44	1.4	0.75	1.46	0.765
47896 42375 42376	47820 42584 42587	110	103	131	140	3.5	3.3	32.3	0.45	1.3	0.74	1.33	0.664
		108	103	134	142	3	3	31.8	0.49	1.2	0.67	1.18	0.553
		109	103	134	143	3.5	3.3	34.9	0.49	1.2	0.67	1.18	0.711
594 594 683	592 A 592 672	110	104	135	144	3.5	3.2	37.1	0.44	1.4	0.75	1.47	1.06
		109	103	135	145	3.5	3.3	37.1	0.44	1.4	0.75	1.47	1.12
		113	106	149	160	3.5	3.3	38.3	0.47	1.3	0.70	2.47	1.24
77375 776 864	77675 772 854	117	105	152	159	3.5	3.3	37.8	0.37	1.6	0.90	2.91	1.67
		114	107	161	168	3.5	3.3	39.1	0.39	1.6	0.86	3.25	1.99
		123	108	170	174	8	3.3	41.8	0.33	1.8	0.99	4.57	2.55
HH 221440	HH 221410	125	110	171	179	8	3.3	42.3	0.33	1.8	0.99	5.0	2.24
42381 42381	42584 42587	110	104	134	142	3.5	3	31.8	0.49	1.2	0.67	1.13	0.553
		111	105	135	143	3.5	3.3	34.9	0.49	1.2	0.67	1.13	0.711
		114	108	144	154	3.5	3.3	36.1	0.47	1.3	0.69	1.89	0.942
52387 685 779	52637 672 772	116	109	149	160	3.5	3.3	38.3	0.47	1.3	0.70	2.32	1.24
		116	110	161	168	3.5	3.3	39.1	0.39	1.6	0.86	3.06	1.99
		118	111	170	174	3.5	3.3	41.8	0.33	1.8	0.99	4.38	2.55
HH 221442	HH 221410	119	113	171	179	3.5	3.3	42.3	0.33	1.8	0.99	4.81	2.24
HH 221447	HH 221410	126	114	171	179	6.4	3.3	42.3	0.33	1.8	0.99	4.68	2.24
▲ JLM 820048	▲ JLM 820012	111	107	135	144	2.3	2.3	36.8	0.50	1.2	0.66	1.27	0.616
▲ JM 720249	▲ JM 720210	115	109	140	149	3	2.5	36.8	0.47	1.3	0.70	1.68	0.772
▲ JHM 720249	▲ JHM 720210	117	109	143	154	3	2.5	38.2	0.47	1.3	0.70	2.09	0.974
52393	52618	116	109	142	152	3.5	3.3	36.1	0.47	1.3	0.69	1.81	0.702

Note ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 101.600 – 117.475 mm



### Dynamic Equivalent Load

$$P = X F_r + Y F_a$$

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

### Static Equivalent Load

$$P_0 = 0.5 F_r + Y_0 F_a$$

When  $F_r > 0.5 F_r + Y_0 F_a$ , use  $P_0 = F_r$

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

Bore Diameter (mm)	Boundary Dimensions (mm)					Cone r min.	Cup r max.	Basic Load Ratings (N) (kgf)				Limiting Speeds (min <sup>-1</sup> )	
	d	D	T	B	C			C <sub>r</sub>	C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
101.600	157.162	36.512	36.116	26.195	3.5	3.3	191 000	310 000	19 500	31 500	2 000	2 800	
	161.925	36.512	36.116	26.195	3.5	3.3	191 000	310 000	19 500	31 500	2 000	2 800	
	168.275	41.275	41.275	30.162	3.5	3.3	223 000	345 000	22 700	35 000	2 000	2 800	
104.775	180.975	47.625	48.006	38.100	3.5	3.3	258 000	375 000	26 300	38 500	2 000	2 600	
	190.500	57.150	57.531	44.450	8.0	3.3	355 000	500 000	36 000	51 000	1 900	2 600	
	190.500	57.150	57.531	46.038	8.0	3.3	390 000	520 000	39 500	53 500	1 900	2 600	
	212.725	66.675	66.675	53.975	7.0	3.3	570 000	810 000	58 000	82 500	1 700	2 200	
	180.975	47.625	48.006	38.100	7.0	3.3	258 000	375 000	26 300	38 500	2 000	2 600	
106.362	180.975	47.625	48.006	38.100	3.5	3.3	258 000	375 000	26 300	38 500	2 000	2 600	
	190.500	47.625	49.212	34.925	3.5	3.3	296 000	465 000	30 000	47 000	1 800	2 400	
	190.500	47.625	49.212	34.925	3.5	3.3	296 000	465 000	30 000	47 000	1 800	2 400	
109.987	159.987	34.925	34.925	26.988	3.5	3.3	164 000	315 000	16 700	32 000	2 000	2 800	
	159.987	34.925	34.925	26.988	8.0	3.3	164 000	315 000	16 700	32 000	2 000	2 800	
	159.987	34.925	34.925	26.988	8.0	3.3	164 000	315 000	16 700	32 000	2 000	2 800	
110.000	177.800	41.275	41.275	30.162	3.5	3.3	232 000	375 000	23 700	38 000	1 800	2 600	
	165.000	35.000	35.000	26.500	3.0	2.5	195 000	320 000	19 800	33 000	2 000	2 600	
	180.000	47.000	46.000	38.000	3.0	2.5	310 000	490 000	31 500	50 000	1 900	2 600	
111.125	190.500	47.625	49.212	34.925	3.5	3.3	296 000	465 000	30 000	47 000	1 800	2 400	
	152.400	21.433	21.433	16.670	1.5	1.5	89 500	178 000	9 100	18 100	2 000	2 800	
	177.800	41.275	41.275	30.162	3.5	3.3	232 000	375 000	23 700	38 000	1 800	2 600	
114.300	180.000	34.925	31.750	25.400	3.5	0.8	174 000	254 000	17 800	25 900	1 800	2 400	
	190.500	47.625	49.212	34.925	3.5	3.3	296 000	465 000	30 000	47 000	1 800	2 400	
	212.725	66.675	66.675	53.975	7.0	3.3	475 000	700 000	48 500	71 500	1 700	2 400	
	212.725	66.675	66.675	53.975	7.0	3.3	570 000	810 000	58 000	82 500	1 700	2 200	
	190.500	47.625	49.212	34.925	3.5	3.3	296 000	465 000	30 000	47 000	1 800	2 400	
115.087	190.500	47.625	49.212	34.925	3.5	3.3	296 000	465 000	30 000	47 000	1 800	2 400	
	117.475	180.975	34.925	31.750	3.5	3.3	174 000	254 000	17 800	25 900	1 800	2 400	

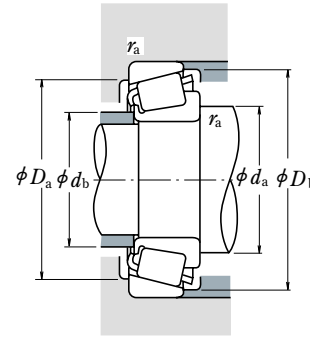
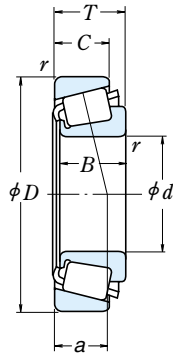
Bearing Numbers		Abutment and Fillet Dimensions (mm)					Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg)		
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>	Cone r <sub>a</sub> max.			Y <sub>1</sub>	Y <sub>0</sub>	approx. CONE	CUP	
52400	52618	117	111	142	152	3.5	3.3	36.1	0.47	1.3	0.69	1.75	0.702
52400	52637	117	111	144	154	3.5	3.3	36.1	0.47	1.3	0.69	1.75	0.942
687	672	118	112	149	160	3.5	3.3	38.3	0.47	1.3	0.70	2.15	1.24
780	772	119	113	161	168	3.5	3.3	39.1	0.39	1.6	0.86	2.88	1.99
861	854	129	114	170	174	8	3.3	41.8	0.33	1.8	0.99	4.13	2.55
HH 221449	HH 221410	131	116	171	179	8	3.3	42.3	0.33	1.8	0.99	4.55	2.24
HH 224335	HH 224310	132	121	192	202	7	3.3	47.3	0.33	1.8	1.0	8.14	3.06
787	772	129	116	161	168	7	3.3	39.1	0.39	1.6	0.86	2.66	1.99
782	772	122	116	161	168	3.5	3.3	39.1	0.39	1.6	0.86	2.68	1.99
71412	71750	124	118	171	181	3.5	3.3	40.1	0.42	1.4	0.79	4.0	1.71
56418	56650	122	116	149	159	3.5	3.3	38.6	0.50	1.2	0.66	1.87	0.861
37425	37625	122	115	143	152	3.5	3.3	37.0	0.61	0.99	0.54	0.886	0.488
LM 522546	LM 522510	122	116	146	154	3.5	3.3	33.7	0.40	1.5	0.82	1.65	0.784
48190	48120	122	116	146	156	3.5	3.3	38.7	0.51	1.2	0.65	1.59	0.83
56425	56650	123	117	149	159	3.5	3.3	38.6	0.50	1.2	0.66	1.8	0.861
71425	71750	126	120	171	181	3.5	3.3	40.1	0.42	1.4	0.79	3.79	1.71
HH 224340	HH 224310	139	126	192	202	8	3.3	47.3	0.33	1.8	1.0	7.58	3.06
LM 522549	LM 522510	124	118	146	154	3.5	3.3	33.7	0.40	1.5	0.82	1.53	0.784
LM 522548	LM 522510	133	118	146	154	8	3.3	33.7	0.40	1.5	0.82	1.53	0.784
64433	64700	128	121	160	172	3.5	3.3	42.4	0.52	1.2	0.64	2.64	1.11
▲ JM 822049	▲ JM 822010	124	119	149	159	3	2.5	38.3	0.50	1.2	0.66	1.64	0.842
▲ JHM 522649	▲ JHM 522610	127	122	162	172	3	2.5	40.9	0.41	1.5	0.81	3.12	1.51
71437	71750	129	123	171	181	3.5	3.3	40.1	0.42	1.4	0.79	3.58	1.71
L 623149	L 623110	123	121	143	148	1.5	1.5	27.4	0.41	1.5	0.80	0.725	0.344
64450	64700	131	125	160	172	3.5	3.3	42.4	0.52	1.2	0.64	2.39	1.11
68450	** 68709	130	123	165	172	3.5	0.8	40.0	0.50	1.2	0.66	1.95	1.0
71450	71750	132	125	171	181	3.5	3.3	40.1	0.42	1.4	0.79	3.37	1.71
938	932	141	128	187	193	7	3.3	46.9	0.33	1.8	1.0	6.01	4.11
HH 224346	HH 224310	143	131	192	202	7	3.3	47.3	0.33	1.8	1.0	7.01	3.06
71453	71750	133	126	171	181	3.5	3.3	40.1	0.42	1.4	0.79	3.31	1.71
68462	68712	132	125	163	172	3.5	3.3	40.0	0.50	1.2	0.66	1.73	1.05

Notes \*\* The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69).

▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 120.000 – 165.100 mm



### 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.

d	Boundary Dimensions (mm)					Cone r min.	Cup r	Basic Load Ratings (N) {kgf}				Limiting Speeds (min <sup>-1</sup> )	
	D	T	B	C	C <sub>r</sub>			C <sub>0r</sub>	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	
120.000	170.000	25.400	25.400	19.050	3.3	3.3	130 000	219 000	13 200	22 300	1 900	2 600	
	174.625	35.720	36.512	27.783	3.5	1.5	212 000	385 000	21 600	39 000	1 900	2 600	
120.650	182.562	39.688	38.100	33.338	3.5	3.3	228 000	445 000	23 200	45 000	1 800	2 400	
	206.375	47.625	47.625	34.925	3.3	3.3	320 000	530 000	32 500	54 000	1 600	2 200	
123.825	182.562	39.688	38.100	33.338	3.5	3.3	228 000	445 000	23 200	45 000	1 800	2 400	
	125.000	175.000	25.400	25.400	18.288	3.3	3.3	134 000	232 000	13 700	23 600	1 800	2 400
127.000	165.895	18.258	17.462	13.495	1.5	1.5	84 500	149 000	8 650	15 200	1 900	2 600	
	182.562	39.688	38.100	33.338	3.5	3.3	228 000	445 000	23 200	45 000	1 800	2 400	
	196.850	46.038	46.038	38.100	3.5	3.3	315 000	560 000	32 000	57 500	1 700	2 200	
	215.900	47.625	47.625	34.925	3.5	3.3	287 000	495 000	29 300	50 000	1 500	2 000	
	128.588	206.375	47.625	47.625	34.925	3.3	3.3	320 000	530 000	32 500	54 000	1 600	2 200
130.000	206.375	47.625	47.625	34.925	3.5	3.3	320 000	530 000	32 500	54 000	1 600	2 200	
130.175	203.200	46.038	46.038	38.100	3.5	3.3	315 000	560 000	32 000	57 500	1 700	2 200	
	206.375	47.625	47.625	34.925	3.5	3.3	320 000	530 000	32 500	54 000	1 600	2 200	
133.350	177.008	25.400	26.195	20.638	1.5	1.5	124 000	258 000	12 700	26 300	1 800	2 400	
	190.500	39.688	39.688	33.338	3.5	3.3	240 000	485 000	24 500	49 500	1 700	2 200	
	196.850	46.038	46.038	38.100	3.5	3.3	315 000	560 000	32 000	57 500	1 700	2 200	
	215.900	47.625	47.625	34.925	3.5	3.3	287 000	495 000	29 300	50 000	1 500	2 000	
136.525	190.500	39.688	39.688	33.338	3.5	3.3	240 000	485 000	24 500	49 500	1 700	2 200	
	217.488	47.625	47.625	34.925	3.5	3.3	287 000	495 000	29 300	50 000	1 500	2 000	
139.700	187.325	28.575	29.370	23.020	1.5	1.5	153 000	305 000	15 600	31 500	1 700	2 200	
	215.900	47.625	47.625	34.925	3.5	3.3	287 000	495 000	29 300	50 000	1 500	2 000	
	254.000	66.675	66.675	47.625	7.0	3.3	515 000	830 000	52 500	84 500	1 300	1 800	
142.875	200.025	41.275	39.688	34.130	3.5	3.3	227 000	460 000	23 100	46 500	1 600	2 200	
146.050	193.675	28.575	28.575	23.020	1.5	1.5	170 000	355 000	17 300	36 500	1 600	2 200	
	236.538	57.150	56.642	44.450	3.5	3.3	455 000	720 000	46 000	73 500	1 400	1 900	
	254.000	66.675	66.675	47.625	7.0	3.3	515 000	830 000	52 500	84 500	1 300	1 800	
149.225	254.000	66.675	66.675	47.625	7.0	3.3	515 000	830 000	52 500	84 500	1 300	1 800	
152.400	254.000	66.675	66.675	47.625	7.0	3.3	515 000	830 000	52 500	84 500	1 300	1 800	
158.750	225.425	41.275	39.688	33.338	3.5	3.3	240 000	540 000	24 400	55 000	1 400	1 900	
	165.100	247.650	47.625	47.625	38.100	3.5	3.3	345 000	705 000	35 500	71 500	1 300	1 700

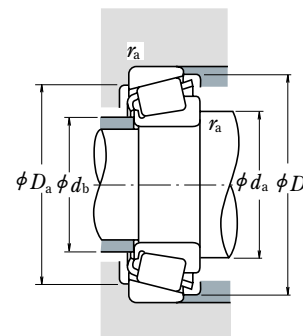
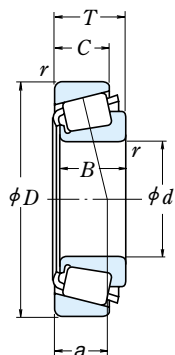
Bearing Numbers		Abutment and Fillet Dimensions (mm)					Eff. Load Centers (mm) a	Constant e	Axial Load Factors		Mass (kg)		
CONE	CUP	d <sub>a</sub>	d <sub>b</sub>	D <sub>a</sub>	D <sub>b</sub>	Cone r <sub>a</sub> max.			Y <sub>1</sub>	Y <sub>0</sub>	approx. CONE	CUP	
▲ JL 724348	▲ JL 724314	132	127	156	163	3.3	3.3	32.9	0.46	1.3	0.72	1.08	0.591
* M 224748	M 224710	135	129	163	168	3.5	1.5	32.2	0.33	1.8	0.99	1.9	0.866
48282	48220	136	133	168	176	3.5	3.3	34.2	0.31	2.0	1.1	2.56	1.14
795	792	139	134	186	198	3.3	3.3	45.7	0.46	1.3	0.72	4.44	1.9
48286	48220	139	133	168	176	3.5	3.3	34.2	0.31	2.0	1.1	2.37	1.14
▲ JL 725346	▲ JL 725316	138	133	161	168	3.3	3.3	34.3	0.48	1.3	0.69	1.19	0.573
LL 225749	LL 225710	135	132	158	160	1.5	1.5	24.2	0.33	1.8	0.99	0.647	0.288
48290	48220	141	135	168	176	3.5	3.3	34.2	0.31	2.0	1.1	2.19	1.14
67388	67322	144	138	180	189	3.5	3.3	39.7	0.34	1.7	0.96	3.74	1.46
74500	74850	148	141	196	208	3.5	3.3	48.4	0.49	1.2	0.68	4.92	1.99
799	792	146	140	186	198	3.3	3.3	45.7	0.46	1.3	0.72	3.86	1.9
797	792	148	141	186	198	3.5	3.3	45.7	0.46	1.3	0.72	3.76	1.9
67389	67320	146	141	183	191	3.5	3.3	39.7	0.34	1.7	0.96	3.51	2.06
799 A	792	148	142	186	198	3.5	3.3	45.7	0.46	1.3	0.72	3.74	1.9
L 327249	L 327210	143	141	167	171	1.5	1.5	29.5	0.35	1.7	0.95	1.18	0.55
48385	48320	148	142	177	184	3.5	3.3	35.9	0.32	1.9	1.0	2.58	1.16
67390	67322	149	143	180	189	3.5	3.3	39.7	0.34	1.7	0.96	3.27	1.46
74525	74850	152	146	196	208	3.5	3.3	48.4	0.49	1.2	0.68	4.44	1.99
48393	48320	151	144	177	184	3.5	3.3	35.9	0.32	1.9	1.0	2.37	1.16
74537	74856	155	148	197	210	3.5	3.3	48.4	0.49	1.2	0.68	4.19	2.13
LM 328448	LM 328410	149	147	176	182	1.5	1.5	31.7	0.36	1.7	0.93	1.59	0.67
74550	74850	158	151	196	208	3.5	3.3	48.4	0.49	1.2	0.68	3.93	1.99
99550	99100	170	156	227	238	7	3.3	55.3	0.41	1.5	0.81	9.99	3.83
48685	48620	158	151	185	193	3.5	3.3	37.6	0.34	1.8	0.98	2.63	1.19
36690	36620	155	154	182	188	1.5	1.5	33.5	0.37	1.6	0.90	1.64	0.725
HM 231140	HM 231110	164	160	217	224	3.5	3.3	45.9	0.32	1.9	1.0	6.07	2.93
99575	99100	175	162	227	238	7	3.3	55.3	0.41	1.5	0.81	9.24	3.83
99587	99100	178	165	227	238	7	3.3	55.3	0.41	1.5	0.81	8.86	3.83
99600	99100	181	167	227	238	7	3.3	55.3	0.41	1.5	0.81	8.46	3.83
46780	46720	176	169	209	218	3.5	3.3	44.3	0.38	1.6	0.86	3.69	1.66
67780	67720	185	179	229	240	3.5	3.3	52.4	0.44	1.4	0.75	5.83	2.33

Notes \* The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68).

▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

# SINGLE-ROW TAPERED ROLLER BEARINGS (INCH DESIGN)

Bore Diameter 170.000 – 206.375 mm



### 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  $P_0 = F_r$

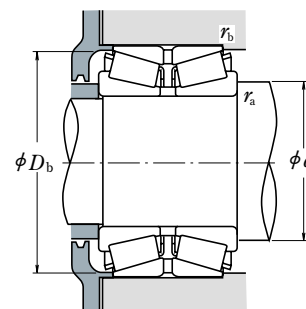
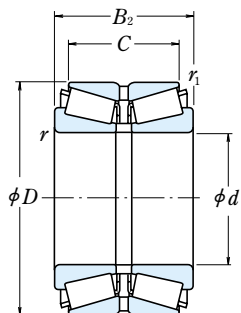
The values of  $e$ ,  $Y_1$ , and  $Y_0$  are given in the table below.

$d$	Boundary Dimensions (mm)					Cone $r$ min.	Cup $r$ max.	Basic Load Ratings (N)				Limiting Speeds ( $\text{min}^{-1}$ )	
	$D$	$T$	$B$	$C$	$C_r$			$C_{0r}$	$C_r$	$C_{0r}$	Grease	Oil	
<b>170.000</b>	230.000	39.000	38.000	31.000	3.0	2.5	278 000	520 000	28 300	53 000	1 300	1 800	
	240.000	46.000	44.500	37.000	3.0	2.5	380 000	720 000	39 000	73 000	1 300	1 800	
<b>174.625</b>	247.650	47.625	47.625	38.100	3.5	3.3	345 000	705 000	35 500	71 500	1 300	1 700	
<b>177.800</b>	227.012	30.162	30.162	23.020	1.5	1.5	181 000	415 000	18 500	42 000	1 300	1 800	
	247.650	47.625	47.625	38.100	3.5	3.3	345 000	705 000	35 500	71 500	1 300	1 700	
	260.350	53.975	53.975	41.275	3.5	3.3	455 000	835 000	46 500	85 000	1 200	1 700	
<b>190.000</b>	260.000	46.000	44.000	36.500	3.0	2.5	370 000	730 000	38 000	74 500	1 100	1 600	
	266.700	47.625	46.833	38.100	3.5	3.3	345 000	720 000	35 000	73 000	1 100	1 500	
<b>190.500</b>	266.700	47.625	46.833	38.100	3.5	3.3	345 000	720 000	35 000	73 000	1 100	1 500	
<b>200.000</b>	300.000	65.000	62.000	51.000	3.5	2.5	615 000	1 130 000	62 500	116 000	1 000	1 400	
<b>203.200</b>	282.575	46.038	46.038	36.512	3.5	3.3	365 000	800 000	37 500	81 500	1 000	1 400	
	282.575	46.038	46.038	36.512	3.5	3.3	365 000	800 000	37 500	81 500	1 000	1 400	

Bearing Numbers		Abutment and Fillet Dimensions (mm)						Eff. Load Centers (mm) $a$	Constant $e$	Axial Load Factors		Mass (kg)	
CONE	CUP	$d_a$	$d_b$	$D_a$	$D_b$	Cone $r_a$ max.	Cup $r_a$ max.			$Y_1$	$Y_0$	approx. CONE	CUP
▲ <b>JHM 534149</b>	▲ <b>JHM 534110</b>	184	178	217	224	3	2.5	43.2	0.38	1.6	0.86	3.1	1.3
▲ <b>JM 734449</b>	▲ <b>JM 734410</b>	185	180	222	232	3	2.5	50.5	0.44	1.4	0.75	4.42	2.02
<b>67787</b>	<b>67720</b>	192	185	229	240	3.5	3.3	52.4	0.44	1.4	0.75	4.88	2.33
<b>36990</b>	<b>36920</b>	189	186	214	221	1.5	1.5	42.9	0.44	1.4	0.75	2.1	0.907
<b>67790</b>	<b>67720</b>	194	188	229	240	3.5	3.3	52.4	0.44	1.4	0.75	4.56	2.33
<b>M 236849</b>	<b>M 236810</b>	195	192	241	249	3.5	3.3	47.5	0.33	1.8	0.99	6.49	2.86
▲ <b>JM 738249</b>	▲ <b>JM 738210</b>	206	200	242	252	3	2.5	56.4	0.48	1.3	0.69	4.73	2.2
<b>67885</b>	<b>67820</b>	209	203	246	259	3.5	3.3	57.9	0.48	1.3	0.69	5.4	2.64
▲ <b>JHM 840449</b>	▲ <b>JHM 840410</b>	223	215	273	289	3.5	2.5	73.1	0.52	1.2	0.63	10.3	5.19
<b>67983</b>	<b>67920</b>	222	216	260	275	3.5	3.3	61.9	0.51	1.2	0.65	6.03	2.82
<b>67985</b>	<b>67920</b>	224	219	260	275	3.5	3.3	61.9	0.51	1.2	0.65	5.66	2.82

Note ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B113 and B114.

Bore Diameter 40 – 90 mm



Dynamic Equivalent Load

$$P = XF_r + YF_a$$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	$Y_3$	0.67	$Y_2$

Static Equivalent Load

$$P_0 = F_r + Y_0 F_a$$

The values of  $e$ ,  $Y_2$ ,  $Y_3$ , and  $Y_0$  are given in the table below.

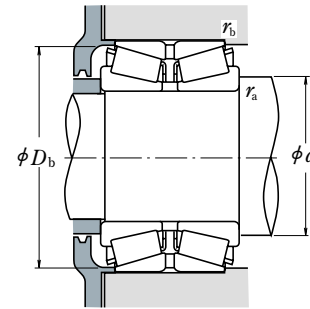
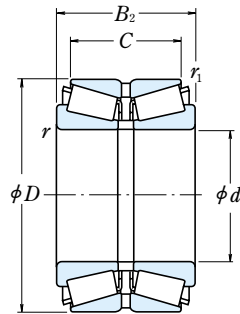
d	Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	
	D	B <sub>2</sub>	C	r min.	r <sub>1</sub> min.	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
40	80	45	37.5	1.5	0.6	109 000	140 000	3 700	5 100
	85	47	37.5	1.5	0.6	117 000	159 000	3 400	4 700
45	85	55	43.5	1.5	0.6	143 000	204 000	3 400	4 700
	90	48	38.5	1.5	0.6	131 000	183 000	3 200	4 400
50	90	49	39.5	1.5	0.6	131 000	183 000	3 200	4 400
	90	55	43.5	1.5	0.6	150 000	218 000	3 200	4 400
55	110	64	51.5	2.5	0.6	224 000	297 000	2 700	3 700
	100	51	41.5	2	0.6	162 000	226 000	2 900	3 900
60	100	52	42.5	2	0.6	162 000	226 000	2 900	3 900
	100	60	48.5	2	0.6	188 000	274 000	2 900	3 900
65	120	70	57	2.5	0.6	256 000	342 000	2 500	3 400
	110	53	43.5	2	0.6	178 000	246 000	2 700	3 600
70	110	66	54.5	2	0.6	225 000	335 000	2 700	3 600
	130	74	59	3	1	298 000	405 000	2 300	3 200
75	120	56	46.5	2	0.6	210 000	300 000	2 400	3 200
	120	57	47.5	2	0.6	210 000	300 000	2 400	3 200
80	120	73	61.5	2	0.6	269 000	405 000	2 400	3 300
	140	79	63	3	1	340 000	465 000	2 100	2 900
85	125	57	46.5	2	0.6	227 000	325 000	2 300	3 100
	125	59	48.5	2	0.6	227 000	325 000	2 300	3 100
90	125	74	61.5	2	0.6	270 000	410 000	2 300	3 100
	150	83	67	3	1	390 000	535 000	2 000	2 700
95	130	62	51.5	2	0.6	245 000	365 000	2 200	3 000
	130	74	61.5	2	0.6	283 000	440 000	2 200	3 000
100	160	87	69	3	1	435 000	600 000	1 900	2 500
	140	61	49	2.5	0.6	269 000	390 000	2 000	2 800
105	140	64	51.5	2.5	0.6	269 000	390 000	2 000	2 800
	140	78	63.5	2.5	0.6	330 000	505 000	2 000	2 800
110	170	92	73	3	1	475 000	655 000	1 700	2 400
	150	70	57	2.5	0.6	315 000	465 000	1 900	2 600
115	150	86	69	2.5	0.6	360 000	555 000	1 900	2 600
	180	98	77	4	1	530 000	745 000	1 600	2 200
120	160	71	58	2.5	0.6	345 000	510 000	1 800	2 400
	160	74	61	2.5	0.6	345 000	510 000	1 800	2 400
125	160	94	77	2.5	0.6	440 000	700 000	1 800	2 400

Bearing Numbers	Abutment and Fillet Dimensions (mm)				Constant e	Axial Load Factors			Mass (kg) approx.
	d <sub>a</sub> min.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.		Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>0</sub>	
HR 40 KBE 42+L	51	75	1.5	0.6	0.37	2.7	1.8	1.8	0.97
HR 45 KBE 42+L	56	81	1.5	0.6	0.40	2.5	1.7	1.6	1.08
HR 45 KBE 52X+L	56	81	1.5	0.6	0.40	2.5	1.7	1.6	1.31
HR 50 KBE 042+L	61	87	1.5	0.6	0.42	2.4	1.6	1.6	1.20
HR 50 KBE 42+L	61	87	1.5	0.6	0.42	2.4	1.6	1.6	1.22
HR 50 KBE 52X+L	61	87	1.5	0.6	0.42	2.4	1.6	1.6	1.39
HR 50 KBE 043+L	65	104	2	0.6	0.35	2.9	2.0	1.9	2.77
HR 55 KBE 042+L	67	96	2	0.6	0.40	2.5	1.7	1.6	1.59
HR 55 KBE 1003+L	67	96	2	0.6	0.40	2.5	1.7	1.6	1.63
HR 55 KBE 52X+L	67	97	2	0.6	0.40	2.5	1.7	1.6	1.88
HR 55 KBE 43+L	70	113	2	0.6	0.35	2.9	2.0	1.9	3.52
HR 60 KBE 042+L	72	105	2	0.6	0.40	2.5	1.7	1.6	2.03
HR 60 KBE 52X+L	72	106	2	0.6	0.40	2.5	1.7	1.6	2.52
HR 60 KBE 43+L	78	122	2.5	1	0.35	2.9	2.0	1.9	4.40
HR 65 KBE 42+L	77	115	2	0.6	0.40	2.5	1.7	1.6	2.58
HR 65 KBE 1202+L	77	115	2	0.6	0.40	2.5	1.7	1.6	2.61
HR 65 KBE 52X+L	77	117	2	0.6	0.40	2.5	1.7	1.6	3.35
HR 65 KBE 43+L	83	132	2.5	1	0.55	2.9	2.0	1.9	5.42
HR 70 KBE 042+L	82	120	2	0.6	0.42	2.4	1.6	1.6	2.79
HR 70 KBE 42+L	82	120	2	0.6	0.42	2.4	1.6	1.6	2.85
HR 70 KBE 52X+L	82	121	2	0.6	0.42	2.4	1.6	1.6	3.58
HR 70 KBE 43+L	88	142	2.5	1	0.35	2.9	2.0	1.9	6.45
HR 75 KBE 42+L	87	126	2	0.6	0.44	2.3	1.6	1.5	3.15
HR 75 KBE 52X+L	87	127	2	0.6	0.44	2.3	1.6	1.5	3.73
HR 75 KBE 043+L	93	151	2.5	1	0.35	2.9	2.0	1.9	7.66
HR 80 KBE 042+L	95	134	2	0.6	0.42	2.4	1.6	1.6	3.70
HR 80 KBE 42+L	95	134	2	0.6	0.42	2.4	1.6	1.6	3.70
HR 80 KBE 52X+L	95	136	2	0.6	0.42	2.4	1.6	1.6	4.59
HR 80 KBE 043+L	98	161	2.5	1	0.35	2.9	2.0	1.9	9.02
HR 85 KBE 42+L	100	143	2	0.6	0.42	2.4	1.6	1.6	4.69
HR 85 KBE 52X+L	100	144	2	0.6	0.42	2.4	1.6	1.6	5.70
HR 85 KBE 043+L	106	169	3	1	0.35	2.9	2.0	1.9	10.8
HR 90 KBE 042+L	105	152	2	0.6	0.42	2.4	1.6	1.6	5.53
HR 90 KBE 42+L	105	152	2	0.6	0.42	2.4	1.6	1.6	5.71
HR 90 KBE 52X+L	105	154	2	0.6	0.42	2.4	1.6	1.6	7.26

Remarks For other double-row tapered roller bearings not listed above, please contact NSK.



Bore Diameter 90 – 120 mm



Dynamic Equivalent Load

$$P = XF_r + YF_a$$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	$Y_3$	0.67	$Y_2$

Static Equivalent Load

$$P_0 = F_r + Y_0 F_a$$

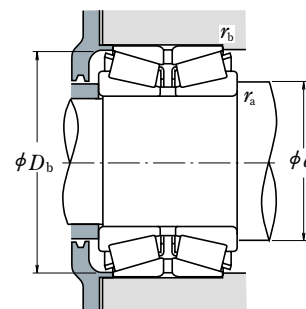
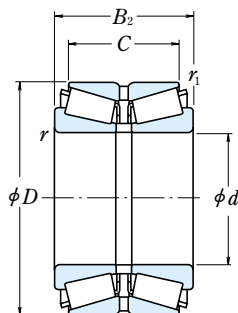
The values of  $e$ ,  $Y_2$ ,  $Y_3$ , and  $Y_0$  are given in the table below.

d	Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	
	D	B <sub>2</sub>	C	r min.	r <sub>1</sub> min.	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
90	190	102	81	4	1	595 000	845 000	1 600	2 100
	190	144	115	4	1	770 000	1 180 000	1 600	2 200
95	170	78	63	3	1	385 000	570 000	1 700	2 300
	170	100	83	3	1	495 000	800 000	1 700	2 300
	200	108	85	4	1	640 000	910 000	1 500	2 000
100	165	52	46	2.5	0.6	222 000	340 000	1 700	2 300
	180	81	64	3	1	435 000	665 000	1 600	2 200
	180	81	65	3	1	435 000	665 000	1 600	2 200
	180	82	66	3	1	435 000	665 000	1 600	2 200
	180	83	67	3	1	435 000	665 000	1 600	2 200
	180	105	85	3	1	555 000	905 000	1 600	2 200
	180	107	87	3	1	555 000	905 000	1 600	2 200
	180	110	90	3	1	555 000	905 000	1 600	2 200
	215	112	87	4	1	725 000	1 050 000	1 400	1 900
	105	190	88	70	3	1	480 000	735 000	1 500
190		117	96	3	1	620 000	1 020 000	1 500	2 000
190		115	95	3	1	620 000	1 020 000	1 500	2 000
225		116	91	4	1	780 000	1 130 000	1 300	1 800
110		180	56	50	2.5	0.6	264 000	400 000	1 500
	180	70	56	2.5	0.6	340 000	555 000	1 500	2 000
	180	125	100	2.5	0.6	550 000	1 060 000	1 500	2 100
	200	90	72	3	1	540 000	840 000	1 400	1 900
	200	92	74	3	1	540 000	840 000	1 400	1 900
	200	120	100	3	1	685 000	1 130 000	1 400	1 900
	200	121	101	3	1	685 000	1 130 000	1 400	1 900
240	118	93	4	1.5	830 000	1 190 000	1 200	1 700	
120	180	46	41	2.5	0.6	184 000	296 000	1 500	2 000
	180	58	46	2.5	0.6	260 000	450 000	1 500	2 000
	200	62	55	2.5	0.6	310 000	500 000	1 400	1 800
	200	78	62	2.5	0.6	415 000	690 000	1 400	1 900
	200	100	84	2.5	0.6	515 000	885 000	1 400	1 800
	215	97	78	3	1	575 000	900 000	1 300	1 800
	215	132	109	3	1	750 000	1 270 000	1 300	1 800
	260	128	101	4	1	915 000	1 310 000	1 100	1 500
	260	188	145	4	1	1 320 000	2 110 000	1 100	1 500

Bearing Numbers	Abutment and Fillet Dimensions (mm)				Constant e	Axial Load Factors			Mass (kg) approx.
	d <sub>a</sub> min.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.		Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>0</sub>	
HR 90 KBE 043+L	111	178	3	1	0.35	2.9	2.0	1.9	12.7
HR 90 KBE 1901+L	111	179	3	1	0.35	2.9	2.0	1.9	17.9
HR 95 KBE 42+L	113	161	2.5	1	0.42	2.4	1.6	1.6	6.75
HR 95 KBE 52+L	113	163	2.5	1	0.42	2.4	1.6	1.6	8.60
HR 95 KBE 43+L	116	187	3	1	0.35	2.9	2.0	1.9	14.7
100 KBE 31+L	115	156	2	0.6	0.33	3.0	2.0	2.0	4.04
HR100 KBE 1805+L	118	170	2.5	1	0.42	2.4	1.6	1.6	8.16
HR100 KBE 042+L	118	170	2.5	1	0.42	2.4	1.6	1.6	8.13
HR100 KBE 1801+L	118	170	2.5	1	0.42	2.4	1.6	1.6	8.22
HR100 KBE 42+L	118	170	2.5	1	0.42	2.4	1.6	1.6	8.7
HR100 KBE 1802+L	118	173	2.5	1	0.42	2.4	1.6	1.6	10.6
HR100 KBE 52X+L	118	173	2.5	1	0.42	2.4	1.6	1.6	10.7
HR100 KBE 1804+L	118	173	2.5	1	0.42	2.4	1.6	1.6	11
HR100 KBE 043+L	121	200	3	1	0.35	2.9	2.0	1.9	18.1
HR105 KBE 42X+L	123	179	2.5	1	0.42	2.4	1.6	1.6	9.76
HR105 KBE 1902+L	123	182	2.5	1	0.42	2.4	1.6	1.6	13.4
HR105 KBE 52+L	123	182	2.5	1	0.42	2.4	1.6	1.6	13.1
HR105 KBE 043+L	126	209	3	1	0.35	2.9	2.0	1.9	20.4
110 KBE 31+L	125	172	2	0.6	0.39	2.6	1.7	1.7	5.11
110 KBE 031+L	125	172	2	0.6	0.39	2.6	1.7	1.7	6.33
110 KBE 1802+L	125	172	2	0.6	0.26	3.8	2.6	2.5	11.4
HR110 KBE 42+L	128	190	2.5	1	0.42	2.4	1.6	1.6	11.2
HR110 KBE 42X+L	128	190	2.5	1	0.42	2.4	1.6	1.6	11.5
HR110 KBE 2001+L	128	193	2.5	1	0.42	2.4	1.6	1.6	15.4
HR110 KBE 52X+L	128	193	2.5	1	0.42	2.4	1.6	1.6	15.2
HR110 KBE 043+L	131	223	3	1.5	0.35	2.9	2.0	1.9	23.6
120 KBE 30+L	135	172	2	0.6	0.40	2.5	1.7	1.6	3.75
120 KBE 030+L	135	172	2	0.6	0.39	2.6	1.7	1.7	4.64
120 KBE 31+L	135	190	2	0.6	0.39	2.6	1.7	1.7	7.35
120 KBE 031+L	135	190	2	0.6	0.39	2.6	1.7	1.7	8.97
120 KBE 2001+L	135	193	2	0.6	0.37	2.7	1.8	1.8	11.3
HR120 KBE 42X+L	138	204	2.5	1	0.44	2.3	1.6	1.5	13.7
HR120 KBE 52X+L	138	207	2.5	1	0.44	2.3	1.6	1.5	18.8
HR120 KBE 43+L	141	240	3	1	0.35	2.9	2.0	1.9	29.4
HR120 KBE 2601+L	141	242	3	1	0.35	2.9	2.0	1.9	44.6

Remarks For other double-row tapered roller bearings not listed above, please contact NSK.

Bore Diameter 125 – 150 mm



Dynamic Equivalent Load

$$P = XF_r + YF_a$$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	$Y_3$	0.67	$Y_2$

Static Equivalent Load

$$P_0 = F_r + Y_0 F_a$$

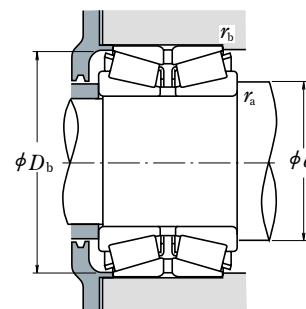
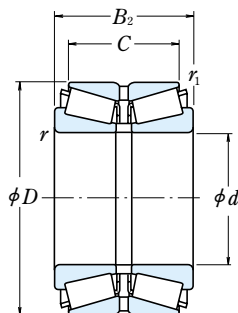
The values of  $e$ ,  $Y_2$ ,  $Y_3$ , and  $Y_0$  are given in the table below.

d	Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )	
	D	B <sub>2</sub>	C	r min.	r <sub>1</sub> min.	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil
125	210	110	88	4	1	560 000	1 030 000	1 300	1 800
130	230	98	78.5	4	1	640 000	1 010 000	1 200	1 600
	230	100	80.5	4	1	640 000	1 010 000	1 200	1 600
	280	137	107.5	5	1.5	940 000	1 350 000	1 000	1 400
130	230	145	115	4	1	905 000	1 580 000	1 200	1 700
	230	145	117.5	4	1	905 000	1 580 000	1 200	1 700
	230	150	120	4	1	905 000	1 580 000	1 200	1 700
140	210	53	47	2.5	0.6	280 000	495 000	1 200	1 700
	210	66	53	2.5	1	305 000	530 000	1 200	1 700
	210	106	94	2.5	0.6	555 000	1 200 000	1 300	1 700
140	225	68	61	3	1	400 000	630 000	1 200	1 600
	225	84	68	3	1	490 000	850 000	1 200	1 600
	225	85	68	3	1	490 000	850 000	1 200	1 600
140	230	120	94	3	1	685 000	1 270 000	1 200	1 600
	230	140	110	3	1	820 000	1 550 000	1 200	1 600
	240	132	106	4	1.5	685 000	1 360 000	1 100	1 500
140	250	102	82.5	4	1	670 000	1 030 000	1 100	1 500
	250	153	125.5	4	1	1 040 000	1 830 000	1 100	1 500
	300	145	115.5	5	1.5	1 030 000	1 480 000	1 000	1 300
150	225	56	50	3	1	300 000	545 000	1 200	1 600
	225	70	56	3	1	395 000	685 000	1 200	1 600
	250	80	71	3	1	510 000	810 000	1 100	1 400
150	250	100	80	3	1	630 000	1 090 000	1 100	1 400
	250	115	95	3	1	745 000	1 320 000	1 100	1 500
	260	150	115	4	1	815 000	1 520 000	1 100	1 400
150	270	109	87	4	1	830 000	1 330 000	1 000	1 400
	270	164	130	4	1	1 210 000	2 150 000	1 000	1 400
	270	174	140	4	1	1 210 000	2 150 000	1 000	1 400
320	154	120	5	1.5	1 420 000	2 130 000	900	1 200	

Remarks For other double-row tapered roller bearings not listed above, please contact NSK.

Bearing Numbers	Abutment and Fillet Dimensions (mm)				Constant e	Axial Load Factors			Mass (kg) approx.
	d <sub>a</sub> min.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.		Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>0</sub>	
125 KBE 2101+L	146	201	3	1	0.43	2.3	1.6	1.5	14.5
HR130 KBE 42+L	151	220	3	1	0.44	2.3	1.6	1.5	15.8
HR130 KBE 2301+L	151	220	3	1	0.44	2.3	1.6	1.5	15.9
130 KBE 43+L	157	258	4	1.5	0.36	2.8	1.9	1.8	35
HR130 KBE 2302+L	151	221	3	1	0.44	2.3	1.6	1.5	24.1
HR130 KBE 52+L	151	222	3	1	0.44	2.3	1.6	1.5	23.8
HR130 KBE 2303+L	151	221	3	1	0.44	2.3	1.6	1.5	24.2
140 KBE 30+L	155	202	2	0.6	0.39	2.6	1.7	1.7	6.02
140 KBE 030+L	155	202	2	1	0.40	2.5	1.7	1.6	7.02
140 KBE 2101+L	155	202	2	0.6	0.33	3.0	2.0	2.0	12.3
140 KBE 31+L	158	216	2.5	1	0.39	2.6	1.7	1.7	9.31
140 KBE 031+L	158	215	2.5	1	0.39	2.6	1.7	1.7	11.6
140 KBE 2201+L	158	215	2.5	1	0.39	2.6	1.7	1.7	11.7
140 KBE 2301+L	158	220	2.5	1	0.33	3.0	2.0	2.0	17.6
140 KBE 2302+L	158	221	2.5	1	0.35	2.9	2.0	1.9	20.7
140 KBE 2401+L	161	227	3	1.5	0.44	2.3	1.5	1.5	22.7
HR140 KBE 42+L	161	237	3	1	0.44	2.3	1.6	1.5	18.9
HR140 KBE 52X+L	161	241	3	1	0.44	2.3	1.6	1.5	29.6
140 KBE 43+L	167	275	4	1.5	0.36	2.8	1.9	1.8	42.6
150 KBE 30+L	168	213	2.5	1	0.35	2.9	2.0	1.9	7.41
150 KBE 030+L	168	215	2.5	1	0.35	2.9	2.0	1.9	8.70
150 KBE 31+L	168	240	2.5	1	0.40	2.5	1.7	1.6	14.2
150 KBE 031+L	168	238	2.5	1	0.39	2.6	1.7	1.7	17.8
150 KBE 2502+L	168	238	2.5	1	0.37	2.7	1.8	1.8	20.9
150 KBE 2601+L	171	242	3	1	0.43	2.3	1.6	1.5	30.0
HR150 KBE 42+L	171	253	3	1	0.44	2.3	1.6	1.5	24.3
HR150 KBE 52X+L	171	257	3	1	0.44	2.3	1.6	1.5	37.3
HR150 KBE 2701+L	171	257	3	1	0.44	2.3	1.6	1.5	39.7
HR150 KBE 43+L	177	295	4	1.5	0.35	2.9	2.0	1.9	53.4

Bore Diameter 160 – 200 mm



Dynamic Equivalent Load

$$P = XF_r + YF_a$$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	$Y_3$	0.67	$Y_2$

Static Equivalent Load

$$P_0 = F_r + Y_0 F_a$$

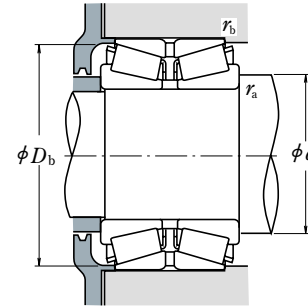
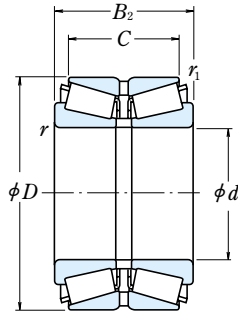
The values of  $e$ ,  $Y_2$ ,  $Y_3$ , and  $Y_0$  are given in the table below.

d	Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (min <sup>-1</sup> )		
	D	B <sub>2</sub>	C	r min.	r <sub>1</sub> min.	C <sub>r</sub>	C <sub>0r</sub>	Grease	Oil	
160	240	60	53	3	1	355 000	580 000	1 100	1 500	
	240	75	60	3	1	395 000	710 000	1 100	1 500	
	240	110	90	3	1	650 000	1 290 000	1 100	1 500	
	270	86	76	3	1	540 000	885 000	1 000	1 300	
	270	108	86	3	1	775 000	1 380 000	1 000	1 300	
	270	140	120	3	1	990 000	1 880 000	1 000	1 300	
	280	150	125	4	1	1 100 000	2 020 000	1 000	1 300	
	290	115	91	4	1	800 000	1 220 000	900	1 300	
165	290	150	125	4	1	1 140 000	2 130 000	900	1 300	
	170	250	85	65	3	1	435 000	845 000	1 000	1 400
		260	67	60	3	1	400 000	700 000	1 000	1 300
		260	84	67	3	1	575 000	1 030 000	1 000	1 300
	280	88	78	3	1	630 000	1 040 000	900	1 300	
	280	110	88	3	1	820 000	1 450 000	900	1 300	
	280	150	130	3	1	1 110 000	2 160 000	1 000	1 300	
	310	192	152	5	1.5	1 590 000	2 910 000	900	1 200	
180	280	74	66	3	1	455 000	810 000	900	1 300	
	280	93	74	3	1	655 000	1 220 000	900	1 200	
	300	96	85	4	1.5	725 000	1 210 000	900	1 200	
	300	120	96	4	1.5	940 000	1 690 000	900	1 200	
	320	127	99	5	1.5	895 000	1 390 000	800	1 200	
	320	192	152	5	1.5	1 640 000	3 050 000	900	1 200	
	340	180	140	5	1.5	1 410 000	2 510 000	800	1 100	
	190	290	75	67	3	1	490 000	845 000	900	1 200
290		94	75	3	1	670 000	1 230 000	900	1 200	
320		104	92	4	1.5	800 000	1 380 000	800	1 100	
320		130	104	4	1.5	1 070 000	1 960 000	800	1 100	
340		133	105	5	1.5	990 000	1 580 000	800	1 100	
340		204	160	5	1.5	1 910 000	3 550 000	800	1 100	
200	310	152	123	3	1	1 300 000	2 740 000	800	1 100	
	320	146	110	5	1.5	990 000	2 120 000	800	1 100	
	330	180	140	5	1.5	1 390 000	2 730 000	800	1 100	
	340	112	100	4	1.5	940 000	1 670 000	800	1 000	
	340	140	112	4	1.5	1 260 000	2 250 000	800	1 000	
	360	142	110	5	1.5	1 100 000	1 780 000	700	1 000	
	360	218	174	5	1.5	2 070 000	3 850 000	800	1 000	

Bearing Numbers	Abutment and Fillet Dimensions (mm)				Constant e	Axial Load Factors			Mass (kg) approx.
	d <sub>a</sub> min.	D <sub>b</sub> min.	r <sub>a</sub> max.	r <sub>b</sub> max.		Y <sub>2</sub>	Y <sub>3</sub>	Y <sub>0</sub>	
160 KBE 30+L	178	231	2.5	1	0.37	2.7	1.8	1.8	8.56
160 KBE 030+L	178	230	2.5	1	0.40	2.5	1.7	1.6	10.5
160 KBE 2401+L	178	232	2.5	1	0.38	2.6	1.8	1.7	16.2
160 KBE 31+L	178	255	2.5	1	0.40	2.5	1.7	1.6	18.6
160 KBE 031+L	178	256	2.5	1	0.39	2.6	1.7	1.7	23.1
160 KBE 2701+L	178	261	2.5	1	0.39	2.6	1.7	1.7	30.6
160 KBE 2801+L	181	266	3	1	0.32	3.2	2.1	2.1	35.9
160 KBE 42+L	181	275	3	1	0.43	2.3	1.6	1.5	28.2
HR160 KBE 52X+L	181	277	3	1	0.44	2.3	1.6	1.5	47.3
160 KBE 43+L	187	314	4	1.5	0.36	2.8	1.9	1.8	60.4
165 KBE 2901+L	186	272	3	1	0.33	3.1	2.1	2.0	39.5
170 KBE 2501+L	188	241	2.5	1	0.44	2.3	1.5	1.5	12.3
170 KBE 30+L	188	248	2.5	1	0.40	2.5	1.7	1.6	11.8
170 KBE 030+L	188	249	2.5	1	0.39	2.6	1.7	1.7	14.4
170 KBE 31+L	188	266	2.5	1	0.39	2.6	1.7	1.7	19.7
170 KBE 031+L	188	268	2.5	1	0.39	2.6	1.7	1.7	24.2
170 KBE 2802+L	188	269	2.5	1	0.39	2.6	1.7	1.7	34.6
HR170 KBE 52X+L	197	297	4	1.5	0.44	2.3	1.6	1.5	57.3
180 KBE 30+L	198	265	2.5	1	0.40	2.5	1.7	1.6	15.4
180 KBE 030+L	198	265	2.5	1	0.35	2.9	2.0	1.9	14.4
180 KBE 31+L	201	284	3	1.5	0.39	2.6	1.7	1.7	24.8
180 KBE 031+L	201	287	3	1.5	0.39	2.6	1.7	1.7	31.1
180 KBE 42+L	207	300	4	1.5	0.44	2.3	1.5	1.5	36.5
HR180 KBE 52X+L	207	308	4	1.5	0.45	2.2	1.5	1.5	59.2
180 KBE 3401+L	207	305	4	1.5	0.43	2.3	1.6	1.5	68.1
190 KBE 30+L	208	279	2.5	1	0.39	2.6	1.7	1.7	16.2
190 KBE 030+L	208	279	2.5	1	0.40	2.5	1.7	1.6	20.1
190 KBE 31+L	211	301	3	1.5	0.40	2.5	1.7	1.6	30.9
190 KBE 031+L	211	302	3	1.5	0.39	2.6	1.7	1.7	39.0
190 KBE 42+L	217	320	4	1.5	0.40	2.5	1.7	1.6	43.9
HR190 KBE 52X+L	217	327	4	1.5	0.44	2.3	1.6	1.5	70.8
HR200 KBE 3101+L	218	301	2.5	1	0.43	2.3	1.6	1.5	40.1
200 KBE 3201+L	227	301	4	1.5	0.52	1.9	1.3	1.3	41.6
200 KBE 3301+L	227	316	4	1.5	0.42	2.4	1.6	1.6	54.4
200 KBE 31+L	221	321	3	1.5	0.40	2.5	1.7	1.6	38.8
200 KBE 031+L	221	324	3	1.5	0.39	2.6	1.7	1.7	47.0
200 KBE 42+L	227	338	4	1.5	0.40	2.5	1.7	1.6	52.6
HR200 KBE 52+L	227	344	4	1.5	0.41	2.5	1.7	1.6	88.3

Remarks For other double-row tapered roller bearings not listed above, please contact NSK.

Bore Diameter 206 – 260 mm



Dynamic Equivalent Load

$$P = XF_r + YF_a$$

$F_a/F_r \leq e$		$F_a/F_r > e$	
X	Y	X	Y
1	$Y_3$	0.67	$Y_2$

Static Equivalent Load

$$P_0 = F_r + Y_0 F_a$$

The values of  $e$ ,  $Y_2$ ,  $Y_3$ , and  $Y_0$  are given in the table below.

$d$	Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds ( $\text{min}^{-1}$ )	
	$D$	$B_2$	$C$	$r$ min.	$r_1$ min.	$C_r$	$C_{0r}$	Grease	Oil
<b>206</b>	283	102	83	4	1.5	580 000	1 430 000	900	1 200
<b>210</b>	355	116	103	4	1.5	905 000	1 520 000	700	1 000
<b>220</b>	300	110	88	3	1	730 000	1 710 000	800	1 100
	340	90	80	4	1.5	695 000	1 280 000	700	1 000
	340	113	90	4	1.5	920 000	1 830 000	700	1 000
<b>240</b>	370	120	107	5	1.5	1 110 000	1 940 000	700	1 000
	370	150	120	5	1.5	1 460 000	2 760 000	700	1 000
	400	158	122	5	1.5	1 390 000	2 300 000	600	900
<b>250</b>	360	92	82	4	1.5	780 000	1 490 000	700	900
	360	115	92	4	1.5	1 020 000	2 040 000	700	900
	400	128	114	5	1.5	1 180 000	2 190 000	600	900
<b>260</b>	400	160	128	5	1.5	1 620 000	3 050 000	600	900
	400	209	168	5	1.5	2 220 000	4 450 000	600	900
	380	98	87	4	1	795 000	1 460 000	600	900
<b>260</b>	400	104	92	5	1.5	895 000	1 670 000	600	800
	400	130	104	5	1.5	1 210 000	2 460 000	600	800
	440	144	128	5	1.5	1 540 000	2 760 000	600	800
	440	172	145	5	1.5	1 870 000	3 500 000	600	800
	440	180	144	5	1.5	2 110 000	4 150 000	600	800

Remarks For other double-row tapered roller bearings not listed above, please contact NSK.

Bearing Numbers	Abutment and Fillet Dimensions (mm)				Constant $e$	Axial Load Factors			Mass (kg) approx.
	$d_a$ min.	$D_b$ min.	$r_a$ max.	$r_b$ max.		$Y_2$	$Y_3$	$Y_0$	
<b>206 KBE 2801+L</b>	227	275	3	1.5	0.51	2.0	1.3	1.3	18.1
<b>210 KBE 31+L</b>	231	338	3	1.5	0.46	2.2	1.5	1.4	41.7
<b>220 KBE 3001+L</b>	238	292	2.5	1	0.37	2.7	1.8	1.8	21.2
<b>220 KBE 30+L</b>	241	324	3	1.5	0.40	2.5	1.7	1.6	27.9
<b>220 KBE 030+L</b>	241	327	3	1.5	0.40	2.5	1.7	1.6	34.7
<b>220 KBE 31+L</b>	247	345	4	1.5	0.39	2.6	1.7	1.7	48.3
<b>220 KBE 031+L</b>	247	349	4	1.5	0.39	2.6	1.7	1.7	60.2
<b>220 KBE 42+L</b>	247	371	4	1.5	0.40	2.5	1.7	1.6	74.2
<b>240 KBE 30+L</b>	261	344	3	1.5	0.39	2.6	1.7	1.7	30.1
<b>240 KBE 030+L</b>	261	344	3	1.5	0.35	2.9	2.0	1.9	37.3
<b>240 KBE 31+L</b>	267	380	4	1.5	0.43	2.3	1.6	1.5	60.0
<b>240 KBE 031+L</b>	267	378	4	1.5	0.39	2.6	1.7	1.7	73.6
<b>240 KBE 4003+L</b>	267	384	4	1.5	0.33	3.0	2.0	2.0	96.4
<b>250 KBE 3801+L</b>	271	365	3	1	0.40	2.5	1.7	1.6	35.5
<b>260 KBE 30+L</b>	287	379	4	1.5	0.40	2.5	1.7	1.6	43.4
<b>260 KBE 030+L</b>	287	382	4	1.5	0.40	2.5	1.7	1.6	54.1
<b>260 KBE 31+L</b>	287	416	4	1.5	0.39	2.6	1.7	1.7	82.5
<b>260 KBE 4401+L</b>	287	414	4	1.5	0.38	2.6	1.8	1.7	98.1
<b>260 KBE 031+L</b>	287	416	4	1.5	0.39	2.6	1.7	1.7	104.0