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Single-Row Tapered Roller Bearings

Nomenclature - Metric Tapered Roller Bearings

Prefix
HR: High Capacity

Bore Size
(04 and up: multiply last two numbers by 5 to get bore in mm)
02: 12mm **08:** 40mm
03: 17mm **10:** 50mm
04: 20mm **20:** 100mm
Special bore sizes are as follows:
/22: 22mm **/32:** 32mm
/28: 28mm

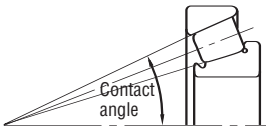
Interchangeability
J: Cup angle and raceway diameter conform to ISO 355
X: Dimension series 32000 and 32900 the major dimensions conform to ISO 355

HR **322** **10** **C** **J**

Series
30200 32200
30300 32300
31300 32900
32000 33000
33100
33200

Contact Angle
Blank: Standard angle = 15° to 17°
C: Medium angle = 17° to 24°
D: Steep angle = 24° and over

DESIGN, TYPES AND FEATURES

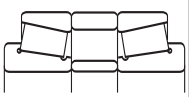
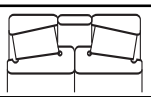
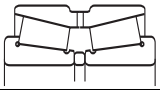
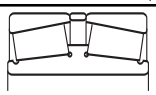


Tapered roller bearings are designed so the apices of the cones formed by the raceways of the cone and cup and the conical rollers all coincide at one point on the axis of the bearing. When a radial load is imposed, an axial force component occurs; therefore, it is necessary to use two bearings in opposition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

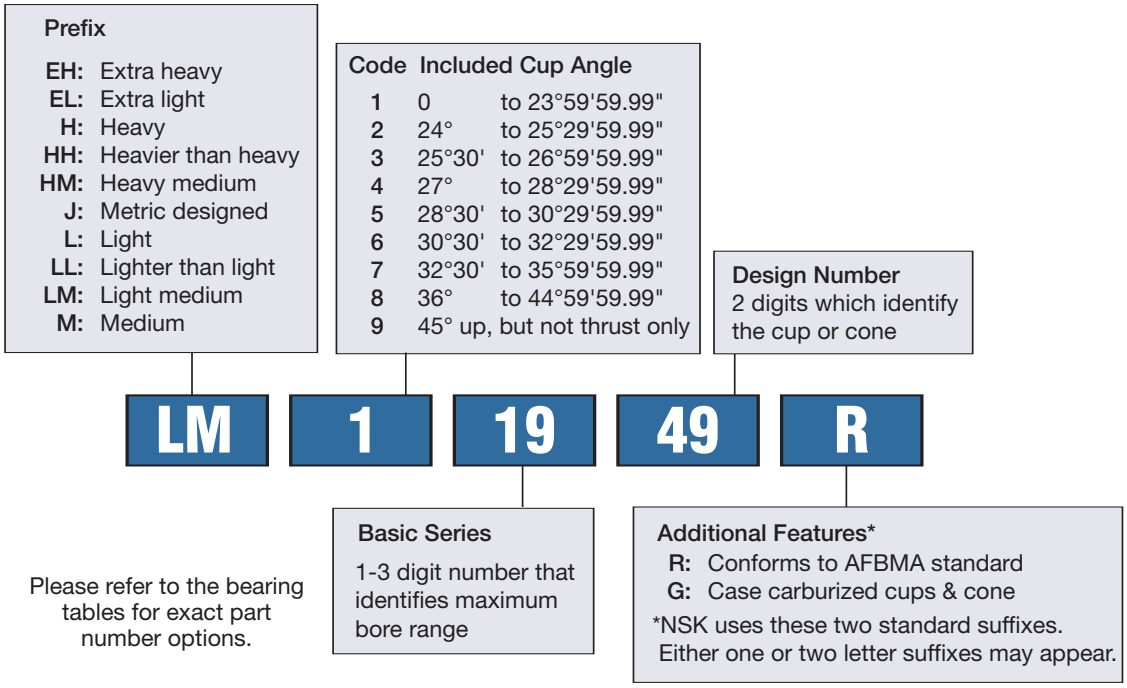
Medium-angle tapered roller bearings are primarily used for the pinion shafts of differential gears of automobiles.

Design and Featured of Combinations of Tapered Roller Bearings

	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	

Tapered Roller Bearings

Nomenclature - Inch Tapered Roller Bearings



Shown below are some common applications utilizing a tapered roller bearing design. The design allows for combinations of heavy radial and thrust loads with low to moderate speeds. This section covers only single row tapers although NSK manufactures a full line of two and four row tapers as well. For more details on multiple row tapered roller bearings, please see the Rolling Mill section of this catalog or contact an NSK representative.

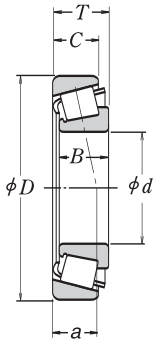
Metric designs function the same as their inch series cousins, the difference lies in the units of measure. NSK metric tapers are standardly supplied with cup and cone together, while inch series bearings are available by the cup, cone, or cup and cone. The applications shown below are for either metric or inch bearings, with the equipment manufacturer choosing the preference of dimensional measurements. Metric tapers are usually found in equipment designed in Europe or Asia.

APPLICATIONS

- Guide Boxes in Bar and Rod Mills
- Pumps and Compressors
- Cranes and Hoists
- Gears and Drives
- Stamping Presses
- Machine Tool Spindles
- Bow Thrusts on Ships
- Speed Reducers
- Transmissions
- Sheaves
- Conveyor and Transfer Equipment
- Coupling Equipment
- Construction Equipment
- Mining Equipment
- Oil Field Equipment
- Automotive Front and Rear Axles
- Plastic Forming Equipment
- Agriculture Equipment
- Motorcycle Wheels
- Pinion Shafts of Differential Gears
- Drum Shafts
- Crankshafts
- Crushers

Single-Row Tapered Roller Bearings

Bore Diameter 15 - 28 mm

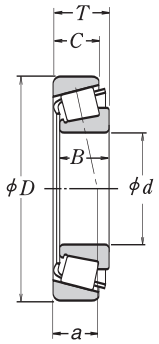


Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
15	35	11.75	11	10	14 800	13 200	11 000	15 000	**30202**	0.053
	42	14.25	13	11	23 600	21 100	9 500	13 000	**HR 30302 J**	0.098
17	40	13.25	12	11	20 100	19 900	9 500	13 000	**HR 30203 J**	0.079
	40	17.25	16	14	27 100	28 000	9 500	13 000	**HR 32203 J**	0.103
	47	15.25	14	12	29 200	26 700	8 500	12 000	**HR 30303 J**	0.134
	47	15.25	14	10.5	22 000	20 300	8 000	11 000	**30303 D**	0.129
	47	20.25	19	16	37 500	36 500	8 500	11 000	**HR 32303 J**	0.178
20	42	15	15	12	24 600	27 400	9 000	12 000	**HR 32004 XJ**	0.097
	47	15.25	14	12	27 900	28 500	8 000	11 000	**HR 30204 J**	0.127
	47	15.25	14	12	23 900	24 000	8 000	11 000	**HR 30204 C-A-**	0.126
	47	19.25	18	15	35 500	37 500	8 500	11 000	**HR 32204 J**	0.161
	47	19.25	18	15	31 500	33 500	8 000	11 000	**HR 32204 CJ**	0.166
	52	16.25	15	13	35 000	33 500	7 500	10 000	**HR 30304 J**	0.172
	52	16.25	15	12	25 300	24 500	7 100	10 000	**30304 D**	0.168
	52	22.25	21	18	45 500	47 500	8 000	11 000	**HR 32304 J**	0.241
22	44	15	15	11.5	25 600	29 400	8 500	11 000	**HR 320/22 XJ**	0.103
	50	15.25	14	12	29 200	30 500	7 500	10 000	**HR 302/22**	0.139
	50	15.25	14	12	27 200	29 500	7 500	10 000	**HR 302/22 C**	0.144
	50	19.25	18	15	36 500	40 500	7 500	11 000	**HR 322/22**	0.18
	50	19.25	18	15	33 500	39 500	7 500	10 000	**HR 322/22 C**	0.185
	56	17.25	16	14	37 000	36 500	7 100	9 500	**HR 303/22**	0.208
	56	17.25	16	13	34 500	34 000	6 700	9 500	**HR 303/22 C**	0.207
25	47	15	15	11.5	27 400	33 000	8 000	11 000	**HR 32005 XJ**	0.116
	47	17	17	14	31 000	38 000	8 000	11 000	**HR 33005 J**	0.131
	52	16.25	15	13	32 000	35 000	7 100	10 000	**HR 30205 J**	0.157
	52	16.25	15	12	28 100	31 500	9 700	9 500	**HR 30205 C**	0.155
	52	19.25	18	16	40 000	45 000	7 100	10 000	**HR 32205 J**	0.189
	52	19.25	18	15	35 000	42 000	7 100	9 500	**HR 32205 C**	0.19
	52	22	22	18	47 500	56 500	7 500	10 000	**HR 33205 J**	0.221
	62	18.25	17	15	47 500	46 000	6 300	8 500	**HR 30305 J**	0.27
	62	18.25	17	14	42 000	45 000	6 000	8 500	**HR 30305 C**	0.276
	62	18.25	17	13	38 000	40 500	5 600	8 000	**HR 30305 DJ**	0.265
	62	18.25	17	13	38 000	40 500	5 600	8 000	**HR 31305 J**	0.265
	62	25.25	24	20	62 500	66 000	6 300	8 500	**HR 32305 J**	0.376
28	52	16	16	12	32 000	39 000	7 100	9 500	**HR 320/28 XJ**	0.146
	58	17.25	16	14	39 500	41 500	6 300	9 000	**HR 302/28**	0.203
	58	17.25	16	12	34 000	38 500	6 300	8 500	**HR 302/28 C**	0.198
	58	20.25	19	16	47 500	54 000	6 300	9 000	**HR 322/28**	0.243
	58	20.25	19	16	42 000	49 500	6 300	9 000	**HR 322/28 CJ**	0.251
	68	19.75	18	15	55 000	55 500	6 000	8 000	**HR 303/28**	0.341
	68	19.75	18	14	49 500	50 500	5 600	7 500	**HR 303/28 C**	0.335

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

Single-Row Tapered Roller Bearings

Bore Diameter 30 - 35 mm

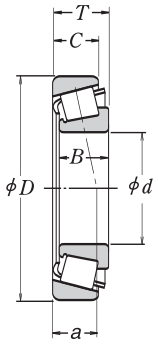


Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
30	47	12	12	9	17 600	24 400	7 500	10 000	HR 32906 J	0.074
	55	17	17	13	36 000	44 500	6 700	9 000	HR 32006 XJ	0.172
	55	20	20	16	42 000	54 000	6 700	9 000	HR 33006 J	0.208
	62	17.25	16	14	43 000	47 500	6 000	8 000	HR 30206 J	0.238
	62	17.25	16	12	35 500	37 000	5 600	7 500	HR 30206 C	0.221
	62	21.25	20	17	52 000	60 000	6 000	8 500	HR 32206 J	0.297
	62	21.25	20	16	48 000	56 000	6 000	8 000	HR 32206 C	0.293
	62	25	25	19.5	66 500	79 500	6 000	8 000	HR 33206 J	0.355
	72	20.75	19	16	59 500	60 000	5 300	7 500	HR 30306 J	0.403
	72	20.75	19	14	56 500	55 500	5 300	7 100	HR 30306 C	0.383
	72	20.75	19	14	49 000	52 500	4 800	6 700	HR 30306 DJ	0.393
	72	20.75	19	14	49 000	52 500	4 800	6 800	HR 31306 J	0.393
	72	28.75	27	23	80 000	88 500	5 600	7 500	HR 32306 J	0.57
	72	28.75	27	23	76 000	86 500	5 600	7 500	HR 32306 CJ	0.583
32	58	17	17	13	37 500	47 000	6 300	8 500	HR 320/32 XJ	0.191
	58	21	20	16	41 000	50 000	6 300	8 500	330/32	0.225
	65	18.25	17	15	48 500	54 000	5 600	8 000	HR 302/32	0.277
	65	18.25	17	14	45 500	52 500	5 600	7 500	HR 302/32 C	0.273
	65	22.25	21	18	56 000	65 000	6 000	8 000	HR 322/32	0.336
	65	22.25	21	17	49 500	60 000	5 600	7 500	HR 322/32 C	0.335
	65	26	26	20.5	70 000	86 500	5 600	8 000	HR 332/32 J	0.40
	75	21.75	20	17	56 000	56 000	5 300	7 100	303/32	0.435
35	55	14	14	11.5	27 400	39 000	6 300	8 500	HR 32907 J	0.123
	62	18	18	14	43 500	55 500	5 600	8 000	HR 32007 XJ	0.229
	62	21	21	17	49 000	65 000	5 600	8 000	HR 33007 J	0.267
	72	18.25	17	15	54 000	59 500	5 300	7 100	HR 30207 J	0.34
	72	18.25	17	13	47 000	54 500	5 000	6 700	HR 30207 C	0.331
	72	24.25	23	19	70 500	83 500	5 300	7 100	HR 32207 J	0.456
	72	24.25	23	18	60 500	71 500	5 000	7 100	HR 32207 C	0.442
	72	28	28	22	86 500	108 000	5 300	7 100	HR 33207 J	0.54
	80	22.75	21	18	76 000	79 000	4 800	6 700	HR 30307 J	0.538
	80	22.75	21	16	68 000	70 500	4 800	6 300	HR 30307 C	0.518
	80	22.75	21	15	62 000	68 000	4 300	6 000	HR 30307 DJ	0.519
	80	22.75	21	15	62 000	68 000	4 300	6 000	HR 31307 J	0.52
	80	32.75	31	25	99 000	111 000	5 000	6 700	HR 32307 J	0.765

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

Single-Row Tapered Roller Bearings

Bore Diameter 40 - 50 mm

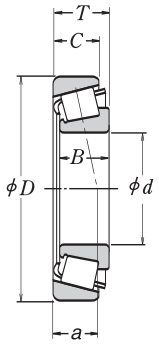


Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
40	62	15	15	12	34 000	47 000	5 600	7 500	HR 32908 J	0.161
	68	19	19	14.5	53 000	71 000	5 300	7 100	HR 32008 XJ	0.28
	68	22	22	18	59 000	81 500	5 300	7 100	HR 33008 J	0.322
	75	26	26	20.5	78 500	101 000	4 800	6 700	HR 33108 J	0.503
	80	19.75	18	16	63 500	70 000	4 800	6 300	HR 30208 J	0.437
	80	24.75	23	19	77 000	90 500	4 800	6 300	HR 32208 J	0.548
	80	24.75	23	19	74 000	90 500	4 500	6 300	HR 32208 CJ	0.558
	80	32	32	25	107 000	137 000	4 800	6 300	HR 33208 J	0.744
	90	25.25	23	20	90 500	101 000	4 300	5 600	HR 30308 J	0.758
	90	25.25	23	18	84 500	93 500	4 300	5 600	HR 30308 C	0.735
	90	25.25	23	17	80 000	89 500	3 800	5 300	HR 30308 DJ	0.728
	90	25.25	23	17	80 000	89 500	3 800	5 300	HR 31308 J	0.728
	90	35.25	33	27	120 000	145 000	4 300	6 000	HR 32308 J	1.05
45	68	15	15	12	34 500	50 500	5 000	6 700	HR 32909 J	0.187
	75	20	20	15.5	60 000	83 000	4 500	6 300	HR 32009 XJ	0.354
	75	24	24	19	69 000	99 000	4 800	6 300	HR 33009 J	0.414
	80	26	26	20.5	84 000	113 000	4 500	6 000	HR 33109 J	0.552
	85	20.75	19	16	68 500	79 500	4 300	6 000	HR 30209 J	0.488
	85	24.75	23	19	83 000	102 000	4 300	6 000	HR 32209 J	0.602
	85	24.75	23	19	75 500	95 500	4 300	5 600	HR 32209 CJ	0.603
	85	32	32	25	111 000	147 000	4 300	6 000	HR 33209 J	0.817
	95	29	26.5	20	88 500	109 000	3 600	5 000	T7 FC045	0.918
	95	36	35	30	139 000	174 000	4 000	5 300	T2 ED045	1.22
	100	27.25	25	22	112 000	127 000	3 800	5 300	HR 30309 J	1.01
	100	27.25	25	18	95 500	109 000	3 400	4 800	HR 30309 DJ	0.957
	100	27.25	25	18	95 500	109 000	3 400	4 800	HR 31309 J	0.947
	100	38.25	36	30	144 000	177 000	3 800	5 300	HR 32309 J	1.42
50	100	36	35	30	144 000	185 000	3 800	5 000	T2 ED050	1.3
	72	15	15	12	36 000	54 000	4 500	6 300	HR 32910 J	0.193
	80	20	20	15.5	61 000	87 000	4 300	6 000	HR 32010 XJ	0.38
	80	24	24	19	70 500	104 000	4 300	6 000	HR 33010 J	0.452
	85	26	26	20	89 000	126 000	4 300	5 600	HR 33110 J	0.597
	90	21.75	20	17	76 000	91 500	4 000	5 300	HR 30210 J	0.557
	90	24.75	23	19	87 500	109 000	4 000	5 300	HR 32210 J	0.642
	90	24.75	23	18	77 500	102 000	3 800	5 300	HR 32210 CJ	0.655
	90	32	32	24.5	118 000	165 000	4 000	5 300	HR 33210 J	0.867
	105	32	29	22	109 000	133 000	3 200	4 500	T7 FC050	1.22
	110	29.25	27	23	130 000	148 000	3 400	4 800	HR 30310 J	1.28
	110	29.25	27	19	114 000	132 000	3 200	4 300	HR 30310 DJ	1.26
	110	29.25	27	19	114 000	132 000	3 200	4 300	HR 31310 J	1.26
	110	42.25	40	33	176 000	220 000	3 600	4 800	HR 32310 J	1.88
	110	42.25	40	33	164 000	218 000	3 400	4 800	HR 32310 CJ	1.93

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

Single-Row Tapered Roller Bearings

Bore Diameter 55 - 65 mm

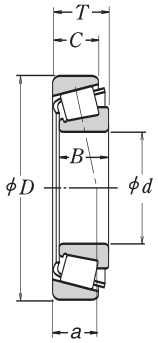


Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
55	80	17	17	14	45 500	74 500	4 300	5 600	HR 32911 J	0.282
	90	23	23	17.5	81 500	117 000	3 800	5 300	HR 32011 XJ	0.568
	90	27	27	21	91 500	138 000	3 800	5 300	HR 33011 J	0.657
	95	30	30	23	112 000	158 000	3 800	5 000	HR 33111 J	0.877
	100	22.75	21	18	94 500	113 000	3 600	5 000	HR 30211 J	0.736
	100	26.75	25	21	110 000	137 000	3 600	5 000	HR 32211 J	0.859
	100	35	35	27	141 000	193 000	3 600	5 000	HR 33211 J	1.18
	115	34	31	23.5	126 000	164 000	3 000	4 300	T7 FC055	1.58
	120	31.5	29	25	150 000	171 000	3 200	4 300	HR 30311 J	1.63
	120	31.5	29	21	131 000	153 000	2 800	4 000	HR 30311 DJ	1.58
	120	31.5	29	21	131 000	153 000	2 800	4 000	HR 31311 J	1.58
	120	45.5	43	35	204 000	258 000	3 200	4 300	HR 32311 J	2.39
	120	45.5	43	35	195 000	262 000	3 200	4 300	HR 32311 CJ	2.47
60	85	17	17	14	49 000	84 500	3 800	5 300	HR 32912 J	0.306
	95	23	23	17.5	85 500	127 000	3 600	5 000	HR 32012 XJ	0.608
	95	27	27	21	96 000	150 000	3 600	5 000	HR 33012 J	0.713
	100	30	30	23	115 000	166 000	3 400	4 800	HR 33112 J	0.91
	110	23.75	22	19	104 000	123 000	3 400	4 500	HR 30212 J	0.930
	110	29.75	28	24	131 000	167 000	3 400	4 500	HR 32212 J	1.18
	110	38	38	29	166 000	231 000	3 400	4 500	HR 33212 J	1.56
	125	37	33.5	26	151 000	197 000	2 800	3 800	T7 FC060	2.03
	130	33.5	31	26	174 000	201 000	3 000	4 000	HR 30312 J	2.03
	130	33.5	31	22	151 000	177 000	2 600	3 800	HR 30312 DJ	1.98
	130	33.5	31	22	151 000	177 000	2 600	3 800	HR 31312 J	1.98
	130	48.5	46	37	233 000	295 000	3 000	4 000	HR 32312 J	2.96
	130	48.5	46	35	196 000	249 000	2 800	3 800	32312 C	2.86
65	90	17	17	14	49 000	86 500	3 600	5 000	HR 32913 J	0.323
	100	23	23	17.5	86 500	132 000	3 400	4 500	HR 32013 XJ	0.646
	100	27	27	21	97 500	156 000	3 400	4 500	HR 33013 J	0.76
	110	34	34	26.5	148 000	218 000	3 200	4 300	HR 33113 J	1.32
	120	24.75	23	20	122 000	151 000	3 000	4 000	HR 30213 J	1.18
	120	32.75	31	27	157 000	202 000	3 000	4 000	HR 32213 J	1.55
	120	41	41	32	202 000	282 000	3 000	4 000	HR 33213 J	2.04
	140	36	33	28	200 000	233 000	2 600	3 600	HR 30313 J	2.51
	140	36	33	23	173 000	205 000	2 400	3 400	HR 30313 DJ	2.43
	140	36	33	23	173 000	205 000	2 400	3 400	HR 31313 J	2.43
	140	51	48	39	267 000	340 000	2 800	3 800	HR 32313 J	3.6

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

Single-Row Tapered Roller Bearings

Bore Diameter 70 - 80 mm

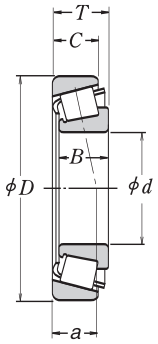


Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
70	100	20	20	16	70 000	113 000	3 200	4 500	**HR 32914 J**	0.494
	110	25	25	19	104 000	158 000	3 200	4 300	**HR 32014 XJ**	0.869
	110	31	31	25.5	127 000	204 000	3 000	4 300	**HR 33014 J**	1.11
	120	37	37	29	177 000	262 000	3 000	4 000	**HR 33114 J**	1.71
	125	26.25	24	21	132 000	163 000	2 800	4 000	**HR 30214 J**	1.3
	125	33.25	31	27	157 000	205 000	2 800	4 000	**HR 32214 J**	1.66
	125	41	41	32	209 000	299 000	2 800	4 000	**HR 33214 J**	2.15
	140	39	35.5	27	177 000	229 000	2 400	3 400	**T7 FC070**	2.55
	150	38	35	30	227 000	268 000	2 400	3 400	**HR 30314 J**	3.03
	150	38	35	25	192 000	229 000	2 200	3 200	**HR 30314 DJ**	2.94
	150	38	35	25	192 000	229 000	2 200	3 200	**HR 31314 J**	2.94
	150	54	51	42	300 000	390 000	2 600	3 400	**HR 32314 J**	4.35
	150	54	51	42	280 000	390 000	2 400	3 400	**HR 32314 CJ**	4.47
75	105	20	20	16	72 500	120 000	3 200	4 300	**HR 32915 J**	0.53
	115	25	25	19	109 000	171 000	3 000	4 000	**HR 32015 XJ**	0.925
	115	31	31	25.5	133 000	220 000	3 000	4 000	**HR 33015 J**	1.18
	125	37	37	29	182 000	275 000	2 800	3 800	**HR 33115 J**	1.8
	130	27.25	25	22	143 000	182 000	2 800	3 800	**HR 30215 J**	1.43
	130	33.25	31	27	165 000	219 000	2 800	3 800	**HR 32215 J**	1.72
	130	41	41	31	215 000	315 000	2 800	3 800	**HR 33215 J**	2.25
	160	40	37	31	253 000	300 000	2 400	3 200	**HR 30315 J**	3.63
	160	40	37	26	211 000	251 000	2 200	3 000	**HR 30315 DJ**	3.47
	160	40	37	26	211 000	251 000	2 200	3 000	**HR 31315 J**	3.47
	160	58	55	45	340 000	445 000	2 400	3 200	**HR 32315 J**	5.31
	160	58	55	43	310 000	420 000	2 200	3 200	**32315 CA**	5.3
80	110	20	20	16	75 000	128 000	3 000	4 000	**HR 32916 J**	0.56
	125	29	29	22	140 000	222 000	2 800	3 600	**HR 32016 XJ**	1.32
	125	36	36	29.5	172 000	282 000	2 800	3 600	**HR 33016 J**	1.66
	130	37	37	29	186 000	289 000	2 600	3 600	**HR 33116 J**	1.88
	140	28.25	26	22	157 000	195 000	2 600	3 400	**HR 30216 J**	1.68
	140	28.25	26	20	147 000	190 000	2 400	3 400	**30216 CA**	1.66
	140	35.25	33	28	192 000	254 000	2 600	3 400	**HR 32216 J**	2.13
	140	46	46	35	256 000	385 000	2 600	3 400	**HR 33216 J**	2.93
	170	42.5	39	33	276 000	330 000	2 200	3 000	**HR 30316 J**	4.27
	170	42.5	39	27	235 000	283 000	2 000	2 800	**HR 30316 DJ**	4.07
	170	42.5	39	27	235 000	283 000	2 000	2 800	**HR 31316 J**	4.07
	170	61.5	58	48	385 000	505 000	2 200	3 000	**HR 32316 J**	6.35
	170	61.5	58	48	365 000	530 000	2 200	3 000	**HR 32316 CJ**	6.59

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

Single-Row Tapered Roller Bearings

Bore Diameter 85 - 100 mm

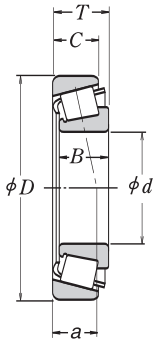


Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
85	120	23	23	18	93 500	157 000	2 800	3 800	HR 32917 J	0.8
	130	29	29	22	143 000	231 000	2 600	3 600	HR 32017 XJ	1.38
	130	36	36	29.5	180 000	305 000	2 600	3 600	HR 33017 J	1.75
	140	41	41	32	230 000	365 000	2 400	3 400	HR 33117 J	2.51
	150	30.5	28	24	184 000	233 000	2 400	3 200	HR 30217 J	2.12
	150	30.5	28	22	171 000	226 000	2 200	3 200	30217 CA	2.07
	150	38.5	36	30	210 000	277 000	2 200	3 200	HR 32217 J	2.64
	150	49	49	37	281 000	415 000	2 400	3 200	HR 33217 J	3.57
	180	44.5	41	34	310 000	375 000	2 000	2 800	HR 30317 J	5.08
	180	44.5	41	28	261 000	315 000	1 900	2 600	HR 30317 DJ	4.88
	180	44.5	41	28	261 000	315 000	1 900	2 600	HR 31317 J	4.88
	180	63.5	60	49	410 000	535 000	2 000	2 800	HR 32317 J	7.31
90	125	23	23	18	97 000	167 000	2 600	3 600	HR 32918 J	0.838
	140	32	32	24	170 000	273 000	2 400	3 200	HR 32018 XJ	1.78
	140	39	39	32.5	220 000	360 000	2 400	3 200	HR 33018 J	2.21
	150	45	45	35	259 000	405 000	2 400	3 200	HR 33118 J	3.14
	160	32.5	30	26	201 000	256 000	2 200	3 000	HR 30218 J	2.6
	160	42.5	40	34	256 000	350 000	2 200	3 000	HR 32218 J	3.41
	190	46.5	43	36	345 000	425 000	1 900	2 600	HR 30318 J	5.91
	190	46.5	43	30	264 000	315 000	1 800	2 400	HR 30318 DJ	5.52
	190	46.5	43	30	264 000	315 000	1 800	2 400	HR 31318 J	5.52
	190	67.5	64	53	450 000	590 000	2 000	2 600	HR 32318 J	8.6
95	130	23	23	18	98 000	172 000	2 400	3 400	HR 32919 J	0.877
	145	32	32	24	173 000	283 000	2 400	3 200	HR 32019 XJ	1.88
	145	39	39	32.5	231 000	390 000	2 400	3 200	HR 33019 J	2.3
	160	46	46	38	283 000	445 000	2 200	3 000	T2 ED095	3.74
	170	34.5	32	27	223 000	286 000	2 200	2 800	HR 30219 J	3.13
	170	45.5	43	37	289 000	400 000	2 200	2 800	HR 32219 J	4.22
	200	49.5	45	38	370 000	455 000	1 900	2 600	HR 30319 J	6.92
	200	49.5	45	36	350 000	430 000	1 800	2 400	30319 CA	6.71
	200	49.5	45	32	310 000	375 000	1 700	2 400	HR 30319 DJ	6.64
	200	49.5	45	32	310 000	375 000	1 700	2 400	HR 31319 J	6.64
	200	71.5	67	55	525 000	710 000	1 900	2 600	HR 32319 J	10.4
100	140	25	25	20	117 000	205 000	2 200	3 200	HR 32920 J	1.18
	145	24	22.5	17.5	113 000	163 000	2 200	3 000	T4 CB100	1.18
	150	32	32	24	176 000	294 000	2 200	3 000	HR 32020 XJ	1.95
	150	39	39	32.5	235 000	405 000	2 200	3 000	HR 33020 J	2.38
	165	52	52	40	315 000	515 000	2 000	2 800	HR 33120 J	4.32
	180	37	34	29	255 000	330 000	2 000	2 600	HR 30220 J	3.78
	180	49	46	39	325 000	450 000	2 000	2 600	HR 32220 J	5.05
	180	63	63	48	410 000	635 000	2 000	2 600	HR 33220 J	6.76
	215	51.5	47	39	425 000	525 000	1 700	2 400	HR 30320 J	8.41
	215	56.5	51	35	385 000	505 000	1 500	2 200	HR 31320 J	9.02
	215	77.5	73	60	565 000	755 000	1 700	2 400	HR 32320 J	12.7

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

Single-Row Tapered Roller Bearings

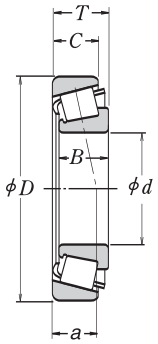
Bore Diameter 105 - 130 mm



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
105	145	25	25	20	119 000	212 000	2 200	3 000	**HR 32921 J**	1.23
	160	35	35	26	204 000	340 000	2 000	2 800	**HR 32021 XJ**	2.48
	160	43	43	34	256 000	435 000	2 000	2 800	**HR 33021 J**	3.03
	190	39	36	30	280 000	365 000	1 900	2 600	**HR 30221 J**	4.51
	190	53	50	43	360 000	510 000	1 900	2 600	**HR 32221 J**	6.25
	225	53.5	49	41	455 000	565 000	1 600	2 200	**HR 30321 J**	9.52
	225	58	53	36	415 000	540 000	1 500	2 000	**HR 31321 J**	10
	225	81.5	77	63	670 000	925 000	1 700	2 200	**HR 32321 J**	14.9
110	150	25	25	20	123 000	224 000	2 200	2 800	**HR 32922 J**	1.29
	170	38	38	29	236 000	390 000	2 000	2 600	**HR 32022 XJ**	3.09
	170	47	47	37	294 000	515 000	2 000	2 600	**HR 33022 J**	3.84
	180	56	56	43	365 000	610 000	1 900	2 600	**HR 33122 J**	5.54
	200	41	38	32	315 000	420 000	1 800	2 400	**HR 30222 J**	5.28
	200	56	53	46	400 000	565 000	1 800	2 400	**HR 32222 J**	7.35
	240	54.5	50	42	485 000	595 000	1 500	2 000	**HR 30322 J**	11
	240	63	57	38	470 000	605 000	1 400	1 900	**HR 31322 J**	12.3
	240	84.5	80	65	675 000	910 000	1 500	2 000	**HR 32322 J**	17.1
120	165	29	29	23	161 000	291 000	1 900	2 600	**HR 32924 J**	1.8
	170	27	25	19.5	153 000	243 000	1 800	2 600	**T4 CB120**	1.78
	180	38	38	29	242 000	405 000	1 800	2 400	**HR 32024 XJ**	3.27
	180	48	48	38	300 000	540 000	1 800	2 600	**HR 33024 J**	4.2
	200	62	62	48	460 000	755 000	1 700	2 400	**HR 33124 J**	7.67
	215	43.5	40	34	335 000	450 000	1 600	2 200	**HR 30224 J**	6.28
	215	61.5	58	50	440 000	635 000	1 600	2 200	**HR 32224 J**	9.0
	260	59.5	55	46	535 000	655 000	1 400	1 900	**HR 30324 J**	13.9
	260	68	62	42	560 000	730 000	1 300	1 800	**HR 31324 J**	15.6
	260	90.5	86	69	770 000	1 060 000	1 400	1 900	**HR 32324 J**	21.8
130	180	32	30	26	167 000	281 000	1 800	2 400	**32926**	2.25
	180	32	32	25	200 000	365 000	1 800	2 400	**HR 32926 J**	2.46
	185	29	27	21	183 000	296 000	1 700	2 400	**T4 CB130**	2.32
	200	45	45	34	320 000	535 000	1 600	2 200	**HR 32026 XJ**	5.06
	200	55	55	43	395 000	715 000	1 700	2 200	**HR 33026 J**	6.25
	230	43.75	40	34	375 000	505 000	1 500	2 000	**HR 30226 J**	7.25
	230	67.75	64	54	530 000	790 000	1 500	2 000	**HR 32226 J**	11.3
	280	63.75	58	49	545 000	675 000	1 300	1 800	**30326**	16.6
	280	63.75	58	49	650 000	820 000	1 300	1 800	**HR 30326 J**	17.2
	280	72	66	44	625 000	820 000	1 200	1 700	**HR 31326 J**	18.8
	280	98.75	93	78	830 000	1 150 000	1 300	1 800	**32326**	26.6

Single-Row Tapered Roller Bearings

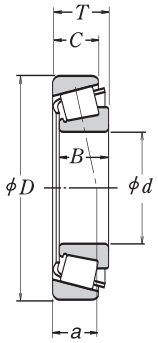
Bore Diameter 140 - 170 mm



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
140	190	32	32	25	206 000	390 000	1 700	2 200	**HR 32928 J**	2.64
	210	45	45	34	325 000	555 000	1 600	2 200	**HR 32028 XJ**	5.32
	210	56	56	44	410 000	770 000	1 600	2 200	**HR 33028 J**	6.74
	250	45.75	42	36	390 000	515 000	1 400	1 900	**HR 30228 J**	8.74
	250	71.75	68	58	610 000	915 000	1 400	1 900	**HR 32228 J**	14.3
	300	67.75	62	53	740 000	945 000	1 200	1 700	**HR 30328 J**	21.1
	300	77	70	47	695 000	955 000	1 100	1 500	**HR 31328 J**	28.5
	300	107.75	102	85	985 000	1 440 000	1 200	1 600	**32328**	33.9
150	210	38	36	31	247 000	440 000	1 500	2 000	**32930**	3.8
	210	38	38	30	281 000	520 000	1 500	2 000	**HR 32930 J**	4.05
	225	48	48	36	375 000	650 000	1 400	2 000	**HR 32030 XJ**	6.6
	225	59	59	46	435 000	805 000	1 400	2 000	**HR 33030 J**	8.07
	270	49	45	38	485 000	665 000	1 300	1 800	**HR 30230 J**	11.2
	270	77	73	60	705 000	1 080 000	1 300	1 800	**HR 32230 J**	17.8
	320	72	65	55	690 000	860 000	1 100	1 500	**30330**	24.2
	320	72	65	55	825 000	1 060 000	1 100	1 600	**HR 30330 J**	25
	320	82	75	50	790 000	1 100 000	1 000	1 400	**HR 31330 J**	28.5
	320	114	108	90	1 120 000	1 700 000	1 100	1 500	**32330**	41.4
160	220	38	38	30	296 000	570 000	1 400	1 900	**HR 32932 J**	4.32
	240	51	51	38	425 000	750 000	1 300	1 800	**HR 32032 XJ**	7.93
	290	52	48	40	530 000	730 000	1 200	1 600	**HR 30232 J**	13.7
	290	84	80	67	795 000	1 120 000	1 200	1 600	**HR 32232 J**	22.7
	340	75	68	58	765 000	960 000	1 000	1 400	**30332**	28.4
	340	75	68	58	870 000	1 110 000	1 100	1 400	**HR 30332 J**	29.2
	340	75	68	48	675 000	875 000	950	1 300	**30332 D**	27.5
	340	121	114	95	1 210 000	1 770 000	1 000	1 400	**32332**	48.3
170	230	38	36	31	258 000	485 000	1 300	1 800	**32934**	4.3
	230	38	38	30	294 000	560 000	1 400	1 800	**HR 32934 J**	4.44
	260	57	57	43	505 000	890 000	1 200	1 700	**HR 32034 XJ**	10.6
	310	57	52	43	630 000	885 000	1 100	1 500	**HR 30234 J**	17.1
	310	91	86	71	930 000	1 450 000	1 100	1 500	**HR 32234 J**	28
	360	80	72	62	845 000	1 080 000	950	1 300	**30334**	33.5
	360	80	72	62	960 000	1 230 000	1 000	1 300	**HR 30334 J**	34.5
	360	80	72	50	760 000	1 040 000	900	1 200	**30334 D**	33.4
	360	127	120	100	1 370 000	2 050 000	1 000	1 300	**32334**	57

Single-Row Tapered Roller Bearings

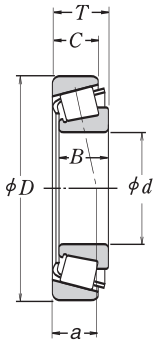
Bore Diameter 180 - 240 mm



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
180	250	45	45	34	350 000	685 000	1 300	1 700	**HR 32936 J**	6.56
	280	64	64	48	640 000	1 130 000	1 200	1 600	**HR 32036 XJ**	14.3
	320	57	52	43	650 000	930 000	1 100	1 400	**HR 30236 J**	17.8
	320	91	86	71	960 000	1 540 000	1 100	1 400	**HR 32236 J**	29.8
	380	83	75	64	935 000	1 230 000	900	1 300	**30336**	39.3
	380	83	75	53	820 000	1 120 000	850	1 200	**30336 D**	38.5
	380	134	126	106	1 520 000	2 290 000	950	1 300	**32336**	66.8
190	260	45	45	34	365 000	715 000	1 200	1 600	**HR 32938 J**	6.83
	290	64	64	48	650 000	1 170 000	1 100	1 500	**HR 32038 XJ**	14.9
	340	60	55	46	760 000	1 080 000	1 000	1 300	**HR 30238 J**	21.4
	340	97	92	75	1 110 000	1 770 000	1 000	1 400	**HR 32238 J**	35.2
	400	86	78	65	1 010 000	1 340 000	850	1 200	**30338**	46
	400	140	132	109	1 660 000	2 580 000	850	1 200	**32338**	78.9
200	280	51	48	41	410 000	780 000	1 100	1 500	**32940**	9.26
	280	51	51	39	480 000	935 000	1 100	1 500	**HR 32940 J**	9.65
	310	70	70	53	760 000	1 370 000	1 000	1 400	**HR 32040 XJ**	18.9
	360	64	58	48	825 000	1 180 000	950	1 300	**HR 30240 J**	25.1
	360	104	98	82	1 210 000	1 920 000	950	1 300	**HR 32240 J**	42.6
	420	89	80	67	1 030 000	1 390 000	850	1 200	**30340**	52.3
	420	89	80	56	965 000	1 330 000	750	1 000	**30340 D**	49.6
	420	146	138	115	1 820 000	2 870 000	800	1 100	**32340**	90.9
220	300	51	51	39	490 000	990 000	1 000	1 400	**HR 32944 J**	10.3
	340	76	76	57	885 000	1 610 000	950	1 300	**HR 32044 XJ**	24.4
	400	72	65	54	810 000	1 150 000	850	1 100	**30244**	33.6
	400	114	108	90	1 340 000	2 210 000	850	1 100	**32244**	57.4
	460	97	88	73	1 430 000	1 990 000	750	1 000	**30344**	72.4
	460	154	145	122	2 020 000	3 200 000	750	1 000	**32344**	114
240	320	51	51	39	500 000	1 040 000	950	1 300	**HR 32948 J**	11.1
	360	76	76	57	920 000	1 730 000	850	1 200	**HR 32048 XJ**	26.2
	440	79	72	60	990 000	1 400 000	750	1 000	**30248**	45.2
	440	127	120	100	1 630 000	2 730 000	750	1 000	**32248**	78
	500	105	95	80	1 660 000	2 340 000	670	950	**30348**	92.6
	500	165	155	132	2 520 000	4 100 000	670	900	**32348**	145

Single-Row Tapered Roller Bearings

Bore Diameter 260 - 440 mm



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers	Mass (kg)
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil		approx
260	360	63.5	63.5	48	730 000	1 450 000	850	1 100	**HR 32952 J**	18.6
	400	87	87	65	1 160 000	2 160 000	800	1 100	**HR 32052 XJ**	38.5
	480	89	80	67	1 190 000	1 700 000	670	900	**30252**	60.7
	480	137	130	106	1 900 000	3 300 000	670	950	**32252**	103
	540	113	102	85	1 870 000	2 640 000	630	850	**30352**	114
	540	176	165	136	2 910 000	4 800 000	630	850	**32352**	188
280	380	63.5	63.5	48	765 000	1 580 000	800	1 100	**HR 32956 J**	20
	420	87	87	65	1 180 000	2 240 000	710	1 000	**HR 32056 XJ**	40.6
	500	89	80	67	1 240 000	1 900 000	630	850	**30256**	66.3
	500	137	130	106	1 950 000	3 450 000	630	850	**32256**	109
	580	187	175	145	3 300 000	5 400 000	560	800	**32356**	224
300	420	76	72	62	895 000	1 820 000	710	950	**32960**	30.5
	420	76	76	57	1 010 000	2 100 000	710	950	**HR 32960 J**	31.4
	460	100	100	74	1 440 000	2 700 000	670	900	**HR 32060 XJ**	56.6
	540	96	85	71	1 440 000	2 100 000	600	800	**30260**	80.6
	540	149	140	115	2 220 000	3 700 000	600	800	**32260**	132
320	440	76	72	63	900 000	1 880 000	970	900	**32964**	32
	440	76	76	57	1 040 000	2 220 000	670	900	**HR 32964 J**	33.3
	480	100	100	74	1 510 000	2 910 000	630	850	**HR 32064 XJ**	60
	580	104	92	75	1 640 000	2 420 000	530	750	**30264**	99.3
	580	159	150	125	2 860 000	5 050 000	530	750	**32264**	175
	670	210	200	170	4 200 000	7 100 000	480	670	**32364**	343
340	460	76	72	63	910 000	1 940 000	630	850	**32968**	33.6
	460	76	76	57	1 050 000	2 220 000	630	850	**HR 32968 J**	34.3
	520	112	106	92	1 650 000	3 400 000	560	750	**32068**	83.7
360	480	76	72	62	945 000	2 100 000	600	800	**32972**	35.8
	480	76	76	57	1 080 000	2 340 000	560	800	**HR 32972 J**	36.1
	540	112	106	92	1 680 000	3 500 000	530	750	**32072**	86.5
380	520	87	82	71	1 210 000	2 550 000	560	750	**32976**	49.5
400	540	87	82	71	1 250 000	2 700 000	530	710	**32980**	52.7
	600	125	118	100	1 960 000	4 050 000	480	670	**32080**	116
420	560	87	82	72	1 300 000	2 810 000	500	670	**32984**	54.8
	620	125	118	100	2 000 000	4 200 000	450	630	**32084**	121
440	650	130	122	104	2 230 000	4 600 000	430	600	**32088**	136

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Single-Row Tapered Roller Bearings

Bore Diameter 12.000 - 22.225 mm

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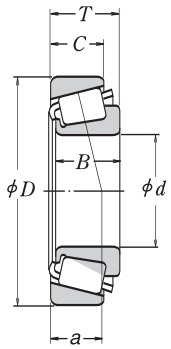

Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
12.000	31.991	10.008	10.785	7.938	10 300	8 900	13 000	18 000	*A 2047	A 2126	0.023	0.017
12.700	34.988	10.998	10.988	8.730	11 700	10 900	12 000	16 000	A 4050	A 4138	0.033	0.022
15.000	34.988	10.998	10.988	8.730	11 700	10 900	12 000	16 000	*A 4059	A 4138	0.029	0.022
15.875	34.988	10.998	10.998	8.712	13 800	13 400	11 000	15 000	L 21549	L 21511	0.031	0.018
	39.992	12.014	11.153	9.525	14 900	15 700	9 500	13 000	A 6062	A 6157	0.044	0.031
	41.275	14.288	14.681	11.112	21 300	19 900	10 000	13 000	03062	03162	0.061	0.035
	42.862	14.288	14.288	9.525	17 300	17 200	8 500	12 000	11590	11520	0.061	0.040
	42.862	16.670	16.670	13.495	26 900	26 300	9 500	13 000	17580	17520	0.075	0.048
	44.450	15.494	14.381	11.430	23 800	23 900	8 500	11 000	05062	05175	0.081	0.039
	49.225	19.845	21.539	14.288	37 500	37 000	8 500	11 000	09062	09195	0.139	0.065
16.000	47.000	21.000	21.000	16.000	35 000	36 500	9 000	12 000	*HM 81649	**HM 81610	0.115	0.082
16.993	39.992	12.014	11.153	9.525	14 900	15 700	9 500	13 000	A 6067	A 6157	0.042	0.031
17.455	36.525	11.112	11.112	7.938	11 600	11 000	10 000	14 000	A 5069	A 5144	0.030	0.020
17.462	39.878	13.843	14.605	10.668	22 500	22 500	10 000	13 000	† LM 11749	† LM 11710	0.055	0.028
	47.000	14.381	14.381	11.112	23 800	23 900	8 500	11 000	05068	05185	0.082	0.047
19.050	39.992	12.014	11.153	9.525	14 900	15 700	9 500	13 000	A 6075	A 6157	0.037	0.031
	45.237	15.494	16.637	12.065	28 500	28 900	9 000	12 000	† LM 11949	† LM 11910	0.081	0.044
	47.000	14.381	14.381	11.112	23 800	23 900	8 500	11 000	05075	05185	0.077	0.047
	49.225	18.034	19.050	14.288	37 500	37 000	8 500	11 000	09067	09195	0.115	0.065
	49.225	19.845	21.539	14.288	37 500	37 000	8 500	11 000	09078	09195	0.124	0.065
	49.225	21.209	19.050	17.462	37 500	37 000	8 500	11 000	09067	09196	0.115	0.085
	49.225	23.020	21.539	17.462	37 500	37 000	8 500	11 000	09074	09194	0.124	0.082
	53.975	22.225	21.839	15.875	40 500	39 500	7 500	10 000	21075	21212	0.156	0.097
19.990	47.000	14.381	14.381	11.112	23 800	23 900	8 500	11 000	05079	05185	0.073	0.047
20.000	51.994	15.011	14.260	12.700	26 000	27 900	7 500	10 000	07079	07204	0.105	0.061
20.625	49.225	23.020	21.539	17.462	37 500	37 000	8 500	11 000	09081	09196	0.115	0.085
20.638	49.225	19.845	19.845	15.875	36 000	37 000	8 000	11 000	12580	12520	0.114	0.067
21.430	50.005	17.526	18.288	13.970	38 500	40 000	8 000	11 000	† M 12649	† M 12610	0.115	0.059
22.000	45.237	15.494	16.637	12.065	29 200	33 500	8 500	11 000	*† LM 12749	† LM 12710	0.078	0.038
	45.975	15.494	16.637	12.065	29 200	33 500	8 500	11 000	*† LM 12749	† LM 12711	0.078	0.043
22.225	50.005	13.495	14.260	9.525	26 000	27 900	7 500	10 000	07087	07196	0.097	0.035
	50.005	17.526	18.288	13.970	38 500	40 000	8 000	11 000	† M 12648	† M 12610	0.111	0.059
	52.388	19.368	20.168	14.288	40 500	43 000	7 500	10 000	1380	1328	0.137	0.067
	53.975	19.368	20.168	14.288	40 500	43 000	7 500	10 000	1380	1329	0.137	0.082
	56.896	19.368	19.837	15.875	38 000	40 500	7 100	9 500	1755	1729	0.152	0.102
	57.150	22.225	22.225	17.462	48 000	50 000	7 100	9 500	1280	1220	0.183	0.106

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).
** The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69 in CAT.E1102c).
† The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B110 in CAT.E1102c).
*† 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

Bore Diameter 22.606 - 28.575 mm

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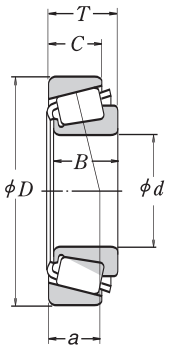

Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
22.606	47.000	15.500	15.500	12.000	26 300	30 000	8 000	11 000	LM 72849	LM 72810	0.086	0.046
23.812	50.292	14.224	14.732	10.668	27 600	32 000	7 100	10 000	† L 44640	† L 44610	0.097	0.039
	56.896	19.368	19.837	15.875	38 000	40 500	7 100	9 500	1779	1729	0.143	0.102
24.000	55.000	25.000	25.000	21.000	49 500	55 000	7 100	9 500	▲JHM 33449	▲JHM 33410	0.181	0.107
24.981	51.994	15.011	14.260	12.700	26 000	27 900	7 500	10 000	07098	07204	0.085	0.061
	52.001	15.011	14.260	12.700	26 000	27 900	7 500	10 000	07098	07205	0.085	0.061
	62.000	16.002	16.566	14.288	37 000	39 500	6 300	8 500	17098	17244	0.165	0.091
25.000	50.005	13.495	14.260	9.525	26 000	27 900	7 500	10 000	07097	07196	0.085	0.035
	51.994	15.011	14.260	12.700	26 000	27 900	7 500	10 000	07097	07204	0.085	0.061
25.400	50.005	13.495	14.260	9.525	26 000	27 900	7 500	10 000	07100 SA	07196	0.082	0.035
	50.005	13.495	14.260	9.525	26 000	27 900	7 500	10 000	07100	07196	0.084	0.035
	50.292	14.224	14.732	10.668	27 600	32 000	7 100	10 000	† L 44643	† L 44610	0.090	0.039
	57.150	17.462	17.462	13.495	39 500	45 500	6 700	9 000	15578	15520	0.151	0.070
	57.150	19.431	19.431	14.732	42 500	49 000	6 700	9 000	M 84548	M 84510	0.156	0.089
	59.530	23.368	23.114	18.288	50 000	58 000	6 300	9 000	M 84249	M 84210	0.194	0.13
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15101	15245	0.222	0.081
	63.500	20.638	20.638	15.875	46 000	53 000	6 000	8 000	15100	15250X	0.22	0.113
	64.292	21.433	21.433	16.670	51 000	64 500	5 600	8 000	M 86643	M 86610	0.246	0.128
	65.088	22.225	21.463	15.875	45 000	47 500	5 600	8 000	23100	23256	0.214	0.142
	68.262	22.225	22.225	17.462	55 000	64 000	5 600	7 500	02473	02420	0.28	0.152
	72.233	25.400	25.400	19.842	63 500	83 500	5 000	7 100	HM 88630	HM 88610	0.398	0.188
	72.626	24.608	24.257	17.462	60 000	58 000	5 600	7 500	41100	41286	0.32	0.177
26.988	50.292	14.224	14.732	10.668	27 600	32 000	7 100	10 000	† L 44649	† L 44610	0.081	0.039
	57.150	19.845	19.355	15.875	40 000	44 500	6 700	9 000	1997 X	1922	0.152	0.077
	60.325	19.842	17.462	15.875	39 500	45 500	6 700	9 000	15580	15523	0.141	0.123
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15106	15245	0.211	0.081
28.575	57.150	19.845	19.355	15.875	40 000	44 500	6 700	9 000	1988	1922	0.141	0.077
	59.131	15.875	16.764	11.811	34 500	41 500	6 300	8 500	† LM 67043	† LM 67010	0.147	0.062
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15112	15245	0.199	0.081
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15113	15245	0.20	0.081
	64.292	21.433	21.433	16.670	51 000	64 500	5 600	8 000	M 86647	M 86610	0.223	0.128
	68.262	22.225	22.225	17.462	55 000	64 000	5 600	7 500	02474	02420	0.257	0.152
	72.626	24.608	24.257	17.462	60 000	58 000	5 600	7 500	41125	41286	0.292	0.177
	72.626	24.608	24.257	17.462	60 000	58 000	5 600	7 500	41126	41286	0.295	0.177
	73.025	22.225	22.225	17.462	54 500	64 500	5 300	7 100	02872	02820	0.321	0.16

Notes † The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B110 in CAT.E1102c).
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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Single-Row Tapered Roller Bearings

Bore Diameter 29.000-32.000 mm

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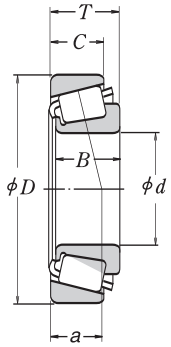

Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
29.000	50.292	14.224	14.732	10.668	26 800	34 000	7 100	9 500	† L 45449	† L 45410	0.079	0.036
29.367	66.421	23.812	25.433	19.050	65 000	73 000	6 000	8 000	2690	2631	0.242	0.165
30.000	62.000	16.002	16.566	14.288	37 000	39 500	6 300	8 500	* 17118	17244	0.136	0.091
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	* 15117	15245	0.189	0.081
	63.500	20.638	20.638	15.875	46 000	53 000	6 000	8 000	* 15117	15250	0.189	0.113
	72.000	19.000	18.923	15.875	52 000	56 000	5 600	7 500	* 26118	26283	0.225	0.163
30.112	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15116	15245	0.189	0.081
30.162	58.738	14.684	15.080	10.716	28 800	33 500	6 000	8 000	08118	08231	0.12	0.057
	64.292	21.433	21.433	16.670	51 000	64 500	5 600	8 000	M 86649	M 86610	0.211	0.128
	68.262	22.225	22.225	17.462	55 500	70 500	5 300	7 500	M 88043	M 88010	0.263	0.146
	69.850	23.812	25.357	19.050	71 000	84 000	5 600	7 500	2558	2523	0.297	0.169
	69.850	23.812	25.357	19.050	71 000	84 000	5 600	7 500	2559	2523	0.298	0.169
	76.200	24.608	24.074	16.670	67 500	69 500	5 000	6 700	43118	43300	0.383	0.146
30.213	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15118	15245	0.186	0.081
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15120	15245	0.188	0.081
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15119	15245	0.188	0.081
30.955	64.292	21.433	21.433	16.670	51 000	64 500	5 600	8 000	M 86648 A	M 86610	0.205	0.128
31.750	58.738	14.684	15.080	10.716	28 800	33 500	6 000	8 000	08125	08231	0.113	0.057
	59.131	15.875	16.764	11.811	34 500	41 500	6 300	8 500	† LM 67048	† LM 67010	0.127	0.062
	62.000	18.161	19.050	14.288	46 000	53 000	6 000	8 000	15123	15245	0.165	0.081
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15126	15245	0.176	0.081
	62.000	19.050	20.638	14.288	46 000	53 000	6 000	8 000	15125	15245	0.174	0.081
	63.500	20.638	20.638	15.875	46 000	53 000	6 000	8 000	15126	15250	0.176	0.113
	68.262	22.225	22.225	17.462	55 000	64 000	5 600	7 500	02475	02420	0.229	0.152
	68.262	22.225	22.225	17.462	55 500	70 500	5 300	7 500	M 88046	M 88010	0.25	0.146
	69.012	19.845	19.583	15.875	47 000	56 000	5 600	7 500	14125 A	14276	0.219	0.135
	69.012	26.982	26.721	15.875	47 000	56 000	5 600	7 500	14123 A	14274	0.289	0.132
	69.850	23.812	25.357	19.050	71 000	84 000	5 600	7 500	2580	2523	0.282	0.169
	69.850	23.812	25.357	19.050	71 000	84 000	5 600	7 500	2582	2523	0.28	0.169
	72.626	30.162	29.997	23.812	79 500	90 000	5 300	7 500	3188	3120	0.368	0.225
	73.025	29.370	27.783	23.020	74 000	100 000	5 000	7 100	HM 88542	HM 88510	0.379	0.242
	80.000	21.000	22.403	17.826	68 500	75 500	4 500	6 300	346	332	0.419	0.146
32.000	72.233	25.400	25.400	19.842	63 500	83 500	5 000	7 100	*HM 88638	HM 88610	0.337	0.188

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).
† The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B110 in CAT.E1102c).

Single-Row Tapered Roller Bearings

Bore Diameter 33.338 - 35.000 mm

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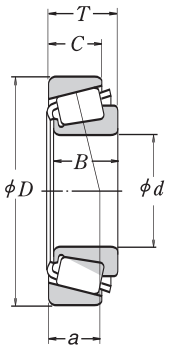


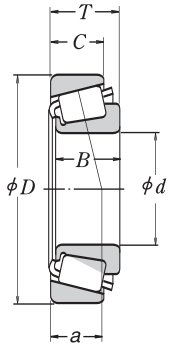
Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
33.338	66.675	20.638	20.638	15.875	46 000	53 500	5 600	7 500	1680	1620	0.196	0.121
	68.262	22.225	22.225	17.462	55 500	70 500	5 300	7 500	M 88048	M 88010	0.236	0.146
	69.012	19.845	19.583	15.875	47 000	56 000	5 600	7 500	14130	14274	0.207	0.132
	69.012	19.845	19.583	15.875	47 000	56 000	5 600	7 500	14131	14276	0.209	0.135
	69.850	23.812	25.357	19.050	71 000	84 000	5 600	7 500	2585	2523	0.263	0.169
	72.000	19.000	18.923	15.875	52 000	56 000	5 600	7 500	26131	26283	0.20	0.163
	72.626	30.162	29.997	23.812	79 500	90 000	5 300	7 500	3197	3120	0.348	0.225
	73.025	29.370	27.783	23.020	74 000	100 000	5 000	7 100	HM 88547	HM 88510	0.362	0.242
	76.200	29.370	28.575	23.020	78 500	106 000	4 800	6 700	HM 89444	HM 89411	0.419	0.261
	76.200	29.370	28.575	23.020	78 500	106 000	4 800	6 700	HM 89443	HM 89410	0.421	0.257
	79.375	25.400	24.074	17.462	67 500	69 500	5 000	6 700	43131	43312	0.348	0.22
34.925	65.088	18.034	18.288	13.970	47 500	57 500	5 600	7 500	† LM 48548	† LM 48510	0.172	0.087
	65.088	20.320	18.288	16.256	47 500	57 500	5 600	7 500	† LM 48548	† LM 48511	0.172	0.108
	66.675	20.638	20.638	16.670	53 000	62 500	5 600	7 500	M 38549	M 38510	0.194	0.112
	69.012	19.845	19.583	15.875	47 000	56 000	5 600	7 500	14138 A	14276	0.194	0.135
	69.012	19.845	19.583	15.875	47 000	56 000	5 600	7 500	14137 A	14276	0.196	0.135
	72.233	25.400	25.400	19.842	63 500	83 500	5 000	7 100	HM 88649	HM 88610	0.307	0.188
	73.025	22.225	22.225	17.462	54 500	64 500	5 300	7 100	02878	02820	0.266	0.16
	73.025	22.225	23.812	17.462	63 500	77 000	5 300	7 100	2877	2820	0.291	0.15
	73.025	23.812	24.608	19.050	71 000	86 000	5 300	7 100	25877	25821	0.306	0.167
	73.025	23.812	24.608	19.050	71 000	86 000	5 300	7 100	25878	25820	0.304	0.165
	76.200	29.370	28.575	23.020	78 500	106 000	4 800	6 700	HM 89446 A	HM 89411	0.403	0.261
	76.200	29.370	28.575	23.020	78 500	106 000	4 800	6 700	HM 89446	HM 89411	0.40	0.261
	76.200	29.370	28.575	23.020	78 500	106 000	4 800	6 700	HM 89446	HM 89410	0.40	0.257
	76.200	29.370	28.575	23.812	80 500	96 500	5 000	6 700	31594	31520	0.404	0.235
	79.375	29.370	29.771	23.812	88 000	106 000	4 800	6 700	3478	3420	0.448	0.259
34.976	68.262	15.875	16.520	11.908	45 000	53 500	5 300	7 100	19138	19268	0.196	0.073
	72.085	22.385	19.583	18.415	47 000	56 000	5 600	7 500	14139	14283	0.198	0.21
	80.000	21.006	20.940	15.875	56 500	64 500	5 000	6 700	28138	28315	0.308	0.199
35.000	59.131	15.875	16.764	11.938	35 000	47 000	6 000	8 000	*† L 68149	†L 68110	0.117	0.056
	59.975	15.875	16.764	11.938	35 000	47 000	6 000	8 000	*† L 68149	†L 68111	0.117	0.064
	62.000	16.700	17.000	13.600	38 000	50 000	5 600	8 000	* LM 78349	** LM 78310	0.137	0.074
	62.000	16.700	17.000	13.600	38 000	50 000	5 600	8 000	* LM 78349	** LM 78310A	0.138	0.073
	65.987	20.638	20.638	16.670	53 000	62 500	5 600	7 500	M 38547	M 38511	0.193	0.103
	73.025	26.988	26.975	22.225	75 500	88 500	5 300	7 500	23691	23621	0.309	0.212

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).
** The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69 in CAT.E1102c).
† The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B110 in CAT.E1102c).
*† 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

Bore Diameter 35.717 - 41.275 mm

INCH DESIGN



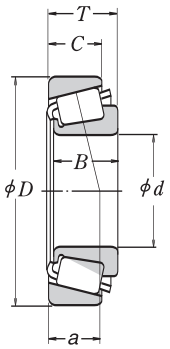
Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
35.717	72.233	25.400	25.400	19.842	63 500	83 500	5 000	7 100	**HM 88648**	**HM 88610**	0.298	0.188
36.487	73.025	23.812	24.608	19.050	71 000	86 000	5 300	7 100	**25880**	**25821**	0.291	0.167
36.512	76.200	29.370	28.575	23.020	78 500	106 000	4 800	6 700	**HM 89449**	**HM 89410**	0.38	0.257
	79.375	29.370	29.771	23.812	88 000	106 000	4 800	6 700	**3479**	**3420**	0.429	0.259
	88.501	25.400	23.698	17.462	73 000	81 000	4 000	5 600	**44143**	**44348**	0.502	0.245
	93.662	31.750	31.750	26.195	110 000	142 000	4 000	5 600	**46143**	**46368**	0.765	0.405
38.000	63.000	17.000	17.000	13.500	38 500	52 000	5 600	7 500	**▲JL 69349**	**▲JL 69310**	0.132	0.071
38.100	63.500	12.700	11.908	9.525	24 100	30 500	5 300	7 100	**13889**	**13830**	0.109	0.046
	65.088	18.034	18.288	13.970	42 500	55 000	5 300	7 500	**LM 29749**	**LM 29710**	0.16	0.079
	65.088	18.034	18.288	13.970	42 500	55 000	5 300	7 500	**LM 29748**	**LM 29710**	0.158	0.079
	65.088	19.812	18.288	15.748	42 500	55 000	5 300	7 500	**LM 29749**	**LM 29711**	0.16	0.094
	68.262	15.875	16.520	11.908	45 000	53 500	5 300	7 100	**19150**	**19268**	0.173	0.073
	69.012	19.050	19.050	15.083	49 000	61 000	5 300	7 100	**13687**	**13621**	0.193	0.104
	69.012	19.050	19.050	15.083	49 000	61 000	5 300	7 100	**13685**	**13620**	0.191	0.105
	72.238	20.638	20.638	15.875	48 500	59 500	5 300	7 100	**16150**	**16284**	0.212	0.146
	73.025	23.812	25.654	19.050	73 500	91 000	5 000	6 700	**2788**	**2735X**	0.312	0.135
	76.200	23.812	25.654	19.050	73 500	91 000	5 000	6 700	**2788**	**2720**	0.312	0.187
	76.200	23.812	25.654	19.050	73 500	91 000	5 000	6 700	**2788**	**2729**	0.312	0.191
	79.375	29.370	29.771	23.812	88 000	106 000	4 800	6 700	**3490**	**3420**	0.404	0.259
	80.035	24.608	23.698	18.512	69 000	84 500	4 500	6 300	**27880**	**27820**	0.362	0.209
	82.550	29.370	28.575	23.020	87 000	117 000	4 500	6 000	**HM 801346**	**HM 801310**	0.483	0.282
	88.501	25.400	23.698	17.462	73 000	81 000	4 000	5 600	**44150**	**44348**	0.484	0.245
	88.501	26.988	29.083	22.225	96 500	109 000	4 500	6 000	**418**	**414**	0.50	0.329
	95.250	30.958	28.301	20.638	87 500	97 000	3 600	5 300	**53150**	**53375**	0.665	0.365
39.688	73.025	25.654	22.098	21.336	62 500	80 000	5 000	6 700	**M 201047**	**M 201011**	0.266	0.169
	76.200	23.812	25.654	19.050	73 500	91 000	5 000	6 700	**2789**	**2720**	0.292	0.187
	80.167	29.370	30.391	23.812	92 500	108 000	4 800	6 300	**3386**	**3320**	0.442	0.217
40.000	80.000	21.000	22.403	17.826	68 500	75 500	4 500	6 300	**344**	**332**	0.338	0.146
	80.000	21.000	22.403	17.826	68 500	75 500	4 500	6 300	**344 A**	**332**	0.339	0.146
	88.501	25.400	23.698	17.462	73 000	81 000	4 000	5 600	**44157**	**44348**	0.463	0.245
41.000	68.000	17.500	18.000	13.500	43 500	58 000	5 300	7 100	*** LM 300849**	**** LM 300811**	0.16	0.082
41.275	73.025	16.667	17.462	12.700	44 500	54 000	4 800	6 700	**18590**	**18520**	0.199	0.086
	73.431	19.558	19.812	14.732	54 500	67 000	4 800	6 700	**LM 501349**	**LM 501310**	0.226	0.108
	73.431	21.430	19.812	16.604	54 500	67 000	4 800	6 700	**LM 501349**	**LM 501314**	0.226	0.129

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).
** The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69 in CAT.E1102c).
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

Single-Row Tapered Roller Bearings

Bore Diameter 41.275 - 44.450 mm

INCH DESIGN



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
41.275	76.200	18.009	17.384	14.288	42 500	51 000	4 500	6 300	**11162**	**11300**	0.212	0.129
	76.200	22.225	23.020	17.462	66 000	82 000	4 800	6 700	**24780**	**24720**	0.279	0.15
	76.200	25.400	23.020	20.638	66 000	82 000	4 800	6 700	**24780**	**24721**	0.279	0.189
	79.375	23.812	25.400	19.050	77 000	98 500	4 800	6 300	**26882**	**26822**	0.349	0.186
	80.000	21.000	22.403	17.826	68 500	75 500	4 500	6 300	**336**	**332**	0.325	0.146
	80.000	21.000	22.403	17.826	68 500	75 500	4 500	6 300	**342**	**332**	0.323	0.146
	80.167	25.400	25.400	20.638	77 000	98 500	4 800	6 300	**26882**	**26820**	0.349	0.219
	82.550	26.543	25.654	20.193	78 500	102 000	4 300	6 000	**M 802048**	**M 802011**	0.406	0.23
	85.725	30.162	30.162	23.812	91 000	115 000	4 300	6 000	**3877**	**3820**	0.506	0.285
	87.312	30.162	30.886	23.812	96 000	120 000	4 300	6 000	**3576**	**3525**	0.532	0.304
	88.501	25.400	23.698	17.462	73 000	81 000	4 000	5 600	**44162**	**44348**	0.447	0.245
	88.900	30.162	29.370	23.020	96 500	129 000	4 000	5 600	**HM 803146**	**HM 803110**	0.579	0.322
	88.900	30.162	29.370	23.020	96 500	129 000	4 000	5 600	**HM 803145**	**HM 803110**	0.582	0.322
	90.488	39.688	40.386	33.338	139 000	180 000	4 300	5 600	**4388**	**4335**	0.789	0.459
	93.662	31.750	31.750	26.195	110 000	142 000	4 000	5 600	**46162**	**46368**	0.695	0.405
	95.250	30.162	29.370	23.020	106 000	143 000	3 800	5 300	**HM 804840**	**HM 804810**	0.726	0.354
	98.425	30.958	28.301	20.638	87 500	97 000	3 600	5 300	**53162**	**53387**	0.618	0.442
42.862	76.992	17.462	17.145	11.908	44 000	54 000	4 500	6 000	**12168**	**12303**	0.228	0.098
	82.550	19.842	19.837	15.080	58 500	69 000	4 500	6 300	**22168**	**22325**	0.283	0.176
	82.931	23.812	25.400	19.050	76 500	99 000	4 500	6 000	**25578**	**25520**	0.383	0.203
	82.931	26.988	25.400	22.225	76 500	99 000	4 500	6 000	**25578**	**25523**	0.383	0.248
42.875	76.200	25.400	25.400	20.638	77 000	98 500	4 800	6 300	**26884**	**26823**	0.337	0.136
	80.000	21.000	22.403	17.826	68 500	75 500	4 500	6 300	**342 S**	**332**	0.305	0.146
	82.931	26.988	25.400	22.225	76 500	99 000	4 500	6 000	**25577**	**25523**	0.381	0.248
	83.058	23.812	25.400	19.050	76 500	99 000	4 500	6 000	**25577**	**25521**	0.381	0.201
43.000	74.988	19.368	19.837	14.288	52 500	68 000	4 800	6 300	*** 16986**	**16929**	0.24	0.106
44.450	80.962	19.050	17.462	14.288	45 000	57 000	4 300	6 000	**13175**	**13318**	0.252	0.144
	82.931	23.812	25.400	19.050	76 500	99 000	4 500	6 000	**25580**	**25520**	0.359	0.203
	83.058	23.812	25.400	19.050	76 500	99 000	4 500	6 000	**25580**	**25521**	0.359	0.201
	87.312	30.162	30.886	23.812	96 000	120 000	4 300	6 000	**3578**	**3525**	0.477	0.304
	88.900	30.162	29.370	23.020	96 500	129 000	4 000	5 600	**HM 803149**	**HM 803110**	0.528	0.322
	93.264	30.162	30.302	23.812	103 000	136 000	3 800	5 300	**3782**	**3720**	0.678	0.292
	93.662	31.750	31.750	25.400	120 000	147 000	4 000	5 600	**49176**	**49368**	0.648	0.371
	93.662	31.750	31.750	25.400	120 000	147 000	4 000	5 600	**49175**	**49368**	0.645	0.371
	93.662	31.750	31.750	26.195	110 000	142 000	4 000	5 600	**46176**	**46368**	0.635	0.405
	95.250	27.783	29.901	22.225	106 000	126 000	4 300	5 600	**438**	**432**	0.555	0.384

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).

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Single-Row Tapered Roller Bearings

Bore Diameter 44.450 - 47.625 mm

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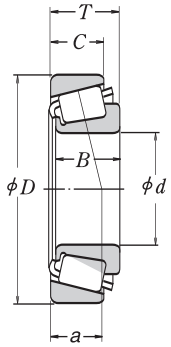

Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
44.450	95.250	30.162	29.370	23.020	106 000	143 000	3 800	5 300	**HM 804843**	**HM 804810**	0.677	0.354
	95.250	30.958	28.301	20.638	87 500	97 000	3 600	5 300	**53177**	**53375**	0.572	0.365
	95.250	30.958	28.301	20.638	87 500	97 000	3 600	5 300	**53176**	**53375**	0.574	0.365
	95.250	30.958	28.301	20.638	87 500	97 000	3 600	5 300	**53178**	**53375**	0.574	0.365
	95.250	30.958	28.301	22.225	100 000	122 000	3 600	5 000	**HM 903247**	**HM 903210**	0.651	0.389
	95.250	30.958	28.575	22.225	100 000	122 000	3 600	5 000	**HM 903249**	**HM 903210**	0.635	0.389
	98.425	30.958	28.301	20.638	87 500	97 000	3 600	5 300	**53177**	**53387**	0.568	0.442
	103.188	43.658	44.475	36.512	178 000	238 000	3 800	5 000	**5356**	**5335**	1.23	0.637
	104.775	36.512	36.512	28.575	139 000	192 000	3 400	4 800	**HM 807040**	**HM 807010**	1.14	0.502
	107.950	27.783	29.317	22.225	116 000	149 000	3 400	4 800	**460**	**453A**	0.93	0.42
	111.125	30.162	26.909	20.638	92 500	110 000	3 200	4 300	**55175**	**55437**	0.867	0.514
	114.300	44.450	44.450	34.925	172 000	205 000	3 600	4 800	**65385**	**65320**	1.39	0.894
44.983	82.931	23.812	25.400	19.050	76 500	99 000	4 500	6 000	**25584**	**25520**	0.354	0.203
45.000	93.264	20.638	22.225	15.082	77 000	93 000	3 800	5 300	**376**	**374**	0.492	0.174
45.230	79.985	19.842	20.638	15.080	62 000	78 500	4 500	6 000	**17887**	**17831**	0.274	0.136
45.242	73.431	19.558	19.812	15.748	53 500	75 000	4 800	6 300	**LM 102949**	**LM 102910**	0.213	0.102
	77.788	19.842	19.842	15.080	56 000	71 000	4 500	6 300	**LM 603049**	**LM 603011**	0.249	0.119
	77.788	21.430	19.842	16.667	56 000	71 000	4 500	6 300	**LM 603049**	**LM 603012**	0.249	0.137
45.618	82.931	23.812	25.400	19.050	76 500	99 000	4 500	6 000	**25590**	**25520**	0.343	0.203
	82.931	26.988	25.400	22.225	76 500	99 000	4 500	6 000	**25590**	**25523**	0.343	0.248
46.000	75.000	18.000	18.000	14.000	51 000	71 500	4 500	6 300	* **LM 503349**	** **LM 503310**	0.209	0.096
46.038	79.375	17.462	17.462	13.495	46 000	57 000	4 500	6 000	**18690**	**18620**	0.211	0.126
	80.962	19.050	17.462	14.288	45 000	57 000	4 300	6 000	**13181**	**13318**	0.236	0.144
	85.000	20.638	21.692	17.462	71 500	81 500	4 300	6 000	**359 S**	**354A**	0.343	0.162
	85.000	25.400	25.608	20.638	79 500	105 000	4 300	6 000	**2984**	**2924**	0.397	0.223
	95.250	27.783	29.901	22.225	106 000	126 000	4 300	5 600	**436**	**432A**	0.536	0.381
47.625	88.900	20.638	22.225	16.513	73 000	85 000	4 000	5 600	**369 A**	**362A**	0.381	0.166
	88.900	25.400	25.400	19.050	86 000	107 000	4 000	5 600	**M 804049**	**M 804010**	0.455	0.218
	95.250	30.162	29.370	23.020	106 000	143 000	3 800	5 300	**HM 804846**	**HM 804810**	0.626	0.354
	101.600	34.925	36.068	26.988	137 000	169 000	3 800	5 000	**528**	**522**	0.894	0.416
	111.125	30.162	26.909	20.638	92 500	110 000	3 200	4 300	**55187**	**55437**	0.817	0.514
	112.712	30.162	26.909	20.638	92 500	110 000	3 200	4 300	**55187**	**55443**	0.816	0.554
	117.475	33.338	31.750	23.812	137 000	156 000	3 200	4 300	**66187**	**66462**	1.19	0.552
	123.825	36.512	32.791	25.400	143 000	160 000	3 000	4 000	**72187**	**72487**	1.29	0.79

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).
** The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69 in CAT.E1102c).

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Single-Row Tapered Roller Bearings

Bore Diameter 48.412 - 52.388 mm

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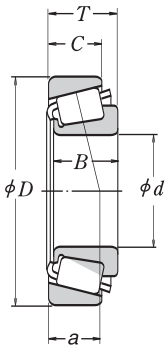

Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
48.412	95.250	30.162	29.370	23.020	106 000	143 000	3 800	5 300	HM 804849	HM 804810	0.61	0.354
	95.250	30.162	29.370	23.020	106 000	143 000	3 800	5 300	HM 804848	HM 804810	0.614	0.354
49.212	104.775	36.512	36.512	28.575	139 000	192 000	3 400	4 800	HM 807044	HM 807011	1.03	0.508
	114.300	44.450	44.450	36.068	196 000	243 000	3 400	4 800	HH 506348	HH 506310	1.43	0.837
50.000	82.000	21.500	21.500	17.000	71 000	96 000	4 300	5 600	▲JLM 104948	▲JLM 104910	0.306	0.129
	82.550	21.590	22.225	16.510	71 000	96 000	4 300	5 600	* LM 104947 A	LM 104911	0.316	0.133
	88.900	20.638	22.225	16.513	73 000	85 000	4 000	5 600	366	362A	0.351	0.166
	90.000	28.000	28.000	23.000	104 000	136 000	4 000	5 600	▲JM 205149	▲JM 205110	0.507	0.246
	105.000	37.000	36.000	29.000	139 000	192 000	3 400	4 800	▲JHM 807045	▲JHM 807012	1.01	0.523
50.800	80.962	18.258	18.258	14.288	53 000	81 000	4 300	5 600	L 305649	L 305610	0.239	0.119
	82.550	23.622	22.225	18.542	71 000	96 000	4 300	5 600	LM 104949	LM 104911A	0.303	0.156
	82.931	21.590	22.225	16.510	71 000	96 000	4 300	5 600	LM 104949	LM 104912	0.301	0.14
	85.000	17.462	17.462	13.495	48 500	63 000	4 300	5 600	18790	18720	0.239	0.136
	85.725	19.050	18.263	12.700	42 500	54 000	4 000	5 300	18200	18337	0.268	0.136
	88.900	20.638	22.225	16.513	73 000	85 000	4 000	5 600	368 A	362A	0.338	0.166
	88.900	20.638	22.225	16.513	73 000	85 000	4 000	5 600	368	362A	0.341	0.166
	92.075	24.608	25.400	19.845	84 500	117 000	4 000	5 300	28580	28521	0.46	0.247
	93.264	30.162	30.302	23.812	103 000	136 000	3 800	5 300	3775	3730	0.568	0.297
	93.264	30.162	30.302	23.812	103 000	136 000	3 800	5 300	3780	3730	0.564	0.297
	95.250	27.783	28.575	22.225	110 000	144 000	3 800	5 300	33889	33821	0.601	0.267
	101.600	31.750	31.750	25.400	118 000	150 000	3 600	5 000	49585	49520	0.744	0.389
	101.600	34.925	36.068	26.988	137 000	169 000	3 800	5 000	529	522	0.822	0.416
	101.600	34.925	36.068	26.988	137 000	169 000	3 800	5 000	529 X	522	0.819	0.416
	104.775	36.512	36.512	28.575	139 000	192 000	3 400	4 800	HM 807046	HM 807011	0.992	0.508
	104.775	36.512	36.512	28.575	139 000	192 000	3 400	4 800	HM 807046	HM 807010	0.993	0.502
	108.966	34.925	36.512	26.988	145 000	181 000	3 600	4 800	59200	59429	0.943	0.594
	111.125	30.162	26.909	20.638	113 000	152 000	3 000	4 300	55200 C	55437	0.845	0.514
	111.125	30.162	26.909	20.638	92 500	110 000	3 200	4 300	55200	55437	0.767	0.514
	123.825	36.512	32.791	25.400	162 000	199 000	2 800	4 000	72200 C	72487	1.33	0.79
	123.825	36.512	32.791	25.400	143 000	160 000	3 000	4 000	72200	72487	1.22	0.79
	127.000	44.450	44.450	34.925	199 000	258 000	3 000	4 000	65200	65500	1.86	1.03
	127.000	50.800	52.388	41.275	236 000	300 000	3 200	4 300	6279	6220	2.08	1.22
52.388	92.075	24.608	25.400	19.845	84 500	117 000	4 000	5 300	28584	28521	0.435	0.247
	100.000	25.000	22.225	21.824	77 000	93 000	3 800	5 300	377	372	0.392	0.435
	111.125	30.162	26.909	20.638	92 500	110 000	3 200	4 300	55206	55437	0.737	0.514

Notes † The tolerances for the bore diameter and overall bearing width differ from the standard (See Table 5 on Page B110 in CAT.E1102c).
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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Single-Row Tapered Roller Bearings

Bore Diameter 53.975 - 58.738 mm

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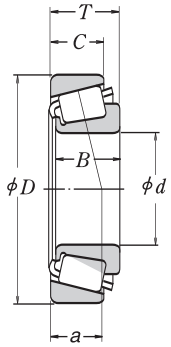

Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	approx CUP
53.975	104.775	39.688	40.157	33.338	150 000	210 000	3 600	4 800	4595	4535	0.972	0.583
	107.950	36.512	36.957	28.575	144 000	182 000	3 600	4 800	539	532 X	0.88	0.57
	122.238	33.338	31.750	23.812	135 000	156 000	3 000	4 000	66584	66520	1.2	0.558
	123.825	36.512	32.791	25.400	143 000	160 000	3 000	4 000	72212	72487	1.16	0.79
	123.825	36.512	32.791	25.400	162 000	199 000	2 800	4 000	72212 C	72487	1.27	0.79
	123.825	38.100	36.678	30.162	161 000	221 000	3 000	4 000	557 S	552 A	1.49	0.764
	127.000	44.450	44.450	34.925	199 000	258 000	3 000	4 000	65212	65500	1.76	1.03
	127.000	50.800	52.388	41.275	236 000	300 000	3 200	4 300	6280	6220	1.97	1.22
	130.175	36.512	33.338	23.812	133 000	154 000	2 600	3 600	HM911242	HM911210	1.45	0.725
55.000	90.000	23.000	23.000	18.500	79 000	111 000	3 800	5 300	▲JLM506849	▲JLM506810	0.378	0.186
	95.000	29.000	29.000	23.500	111 000	152 000	3 800	5 000	▲JM207049	▲JM207010	0.59	0.26
	96.838	21.000	21.946	15.875	80 500	100 000	3 600	5 000	385	382 A	0.455	0.179
	110.000	39.000	39.000	32.000	177 000	225 000	3 400	4 500	▲JH307749	▲JH307710	1.13	0.567
	115.000	41.021	41.275	31.496	172 000	214 000	3 200	4 500	622 X	614 X	1.3	0.597
55.562	97.630	24.608	24.608	19.446	89 000	129 000	3 600	5 000	28680	28622	0.499	0.27
	122.238	43.658	43.764	36.512	198 000	292 000	3 000	4 000	5566	5535	1.76	0.815
	123.825	36.512	32.791	25.400	143 000	160 000	3 000	4 000	72218	72487	1.12	0.79
	123.825	36.512	32.791	25.400	162 000	199 000	2 800	4 000	72218 C	72487	1.23	0.79
57.150	96.838	21.000	21.946	15.875	80 500	100 000	3 600	5 000	387 A	382 A	0.42	0.179
	96.838	21.000	21.946	15.875	80 500	100 000	3 600	5 000	387	382 A	0.423	0.179
	96.838	25.400	21.946	20.275	80 500	100 000	3 600	5 000	387 A	382 S	**0.42**	**0.249**
	98.425	21.000	21.946	17.826	80 500	100 000	3 600	5 000	387 A	382	0.42	0.226
	104.775	30.162	29.317	24.605	116 000	149 000	3 400	4 800	469	453 X	0.692	0.376
	104.775	30.162	29.317	24.605	116 000	149 000	3 400	4 800	462	453 X	0.694	0.376
	104.775	30.162	30.958	23.812	130 000	170 000	3 400	4 800	45289	45220	0.752	0.347
	104.775	30.162	30.958	23.812	130 000	170 000	3 400	4 800	45289	45221	0.76	0.35
	122.238	33.338	31.750	23.812	135 000	156 000	3 000	4 000	66587	66520	1.14	0.558
	123.825	36.512	32.791	25.400	162 000	199 000	2 800	4 000	72225 C	72487	1.19	0.79
	123.825	38.100	36.678	30.162	161 000	221 000	3 000	4 000	555 S	552 A	1.41	0.764
	140.030	36.512	33.236	23.520	152 000	183 000	2 600	3 600	78225	78551	1.67	0.926
	144.983	36.000	33.236	23.007	152 000	183 000	2 600	3 600	78225	78571	1.68	1.08
	149.225	53.975	54.229	44.450	287 000	410 000	2 600	3 400	6455	6420	3.49	1.63
57.531	96.838	21.000	21.946	15.875	80 500	100 000	3 600	5 000	388 A	382 A	0.416	0.179
58.738	112.712	33.338	30.048	26.988	120 000	173 000	3 200	4 300	3981	3926	0.899	0.541

Notes ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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Single-Row Tapered Roller Bearings

Bore Diameter 60.000 - 64.963 mm

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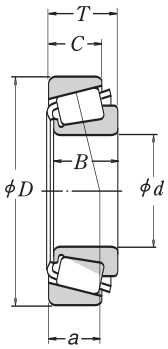

Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
60.000	95.000	24.000	24.000	19.000	86 500	125 000	3 600	5 000	▲JLM 508748	▲JLM 508710	0.43	0.20
	104.775	21.433	22.000	15.875	83 500	107 000	3 400	4 500	* 39236	39412	0.559	0.186
	110.000	22.000	21.996	18.824	85 500	113 000	3 200	4 300	397	394 A	0.642	0.263
	122.238	33.338	31.750	23.812	135 000	156 000	3 000	4 000	66585	66520	1.07	0.558
60.325	100.000	25.400	25.400	19.845	91 000	135 000	3 400	4 800	28985	28921	0.538	0.232
	101.600	25.400	25.400	19.845	91 000	135 000	3 400	4 800	28985	28920	0.538	0.272
	122.238	38.100	36.678	30.162	161 000	221 000	3 000	4 000	558	553 X	1.33	0.692
	122.238	38.100	38.354	29.718	188 000	245 000	3 000	4 000	HM 212044	HM 212010	1.43	0.604
	122.238	43.658	43.764	36.512	198 000	292 000	3 000	4 000	5582	5535	1.61	0.815
	127.000	44.450	44.450	34.925	199 000	258 000	3 000	4 000	65237	65500	1.56	1.03
	130.175	41.275	41.275	31.750	195 000	263 000	2 800	3 800	637	633	1.87	0.712
	135.755	53.975	56.007	44.450	264 000	355 000	2 800	3 800	6376	6320	2.45	1.39
61.912	136.525	46.038	46.038	36.512	233 000	370 000	2 600	3 400	H 715334	H 715311	2.51	0.961
	146.050	41.275	39.688	25.400	193 000	225 000	2 400	3 400	H 913842	H 913810	2.2	0.898
	152.400	47.625	46.038	31.750	237 000	267 000	2 400	3 400	9180	9121	2.77	1.21
63.500	94.458	19.050	19.050	15.083	59 000	100 000	3 600	4 800	L 610549	L 610510	0.306	0.154
	104.775	21.433	22.000	15.875	83 500	107 000	3 400	4 500	39250	39412	0.501	0.186
	107.950	25.400	25.400	19.050	90 000	138 000	3 200	4 300	29586	29520	0.661	0.281
	110.000	22.000	21.996	18.824	85 500	113 000	3 200	4 300	395	394 A	0.58	0.263
	110.000	22.000	21.996	18.824	85 500	113 000	3 200	4 300	390 A	394 A	0.583	0.263
	112.712	30.162	30.048	23.812	120 000	173 000	3 200	4 300	3982	3920	0.789	0.454
	112.712	30.162	30.162	23.812	142 000	202 000	3 200	4 300	39585	39520	0.899	0.359
	112.712	33.338	30.048	26.988	120 000	173 000	3 200	4 300	3982	3926	0.789	0.541
	122.238	38.100	38.354	29.718	188 000	245 000	3 000	4 000	HM 212047	HM 212011	1.34	0.598
	122.238	38.100	38.354	29.718	188 000	245 000	3 000	4 000	HM 212047	HM 212010	1.34	0.604
	122.238	38.100	38.354	29.718	188 000	245 000	3 000	4 000	HM 212046	HM 212010	1.35	0.604
	122.238	43.658	43.764	36.512	198 000	292 000	3 000	4 000	5584	5535	1.5	0.815
	123.825	38.100	36.678	30.162	161 000	221 000	3 000	4 000	559	522 A	1.23	0.764
	127.000	36.512	36.170	28.575	166 000	234 000	2 800	3 800	565	563	1.46	0.655
	130.175	41.275	41.275	31.750	195 000	263 000	2 800	3 800	639	633	1.77	0.712
	136.525	36.512	33.236	23.520	152 000	183 000	2 600	3 600	78250	78537	1.51	0.782
	136.525	41.275	41.275	31.750	195 000	263 000	2 800	3 800	639	632	1.77	1.04
	140.030	36.512	33.236	23.520	152 000	183 000	2 600	3 600	78250	78551	1.51	0.926
64.963	127.000	36.512	36.170	28.575	166 000	234 000	2 800	3 800	569	563	1.41	0.655

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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Single-Row Tapered Roller Bearings

Bore Diameter 65.000 - 69.850 mm

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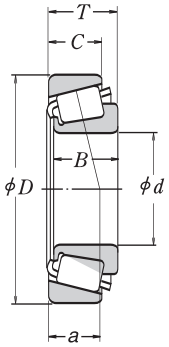


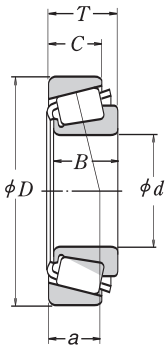
Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	approx CUP
65.000	105.000	24.000	23.000	18.500	93 000	126 000	3 400	4 500	▲JLM 710949	▲JLM 710910	0.526	0.237
	110.000	28.000	28.000	22.500	120 000	173 000	3 200	4 300	▲JM 511946	▲JM 511910	0.72	0.342
	120.000	29.002	29.007	23.444	123 000	169 000	3 000	4 000	478	472A	0.942	0.466
	120.000	39.000	38.500	32.000	185 000	249 000	3 000	4 000	▲JH 211749	▲JH 211710	1.25	0.625
65.088	135.755	53.975	56.007	44.450	264 000	355 000	2 800	3 800	6379	6320	2.25	1.39
	136.525	46.038	46.038	36.512	233 000	370 000	2 600	3 400	H 715340	H 715311	2.4	0.961
66.675	110.000	22.000	21.996	18.824	85 500	113 000	3 200	4 300	395 A	394A	0.528	0.263
	110.000	22.000	21.996	18.824	85 500	113 000	3 200	4 300	395 S	394A	0.524	0.263
	112.712	30.162	30.048	23.812	120 000	173 000	3 200	4 300	3984	3920	0.712	0.454
	112.712	30.162	30.048	23.812	120 000	173 000	3 200	4 300	3994	3920	0.706	0.454
	112.712	30.162	30.162	23.812	142 000	202 000	3 200	4 300	39590	39521	0.822	0.365
	112.712	30.162	30.162	23.812	142 000	202 000	3 200	4 300	39590	39520	0.822	0.359
	117.475	30.162	30.162	23.812	119 000	179 000	3 000	4 000	33262	33462	0.911	0.442
	122.238	38.100	36.678	30.162	161 000	221 000	3 000	4 000	560	553X	1.14	0.692
	122.238	38.100	38.354	29.718	188 000	245 000	3 000	4 000	HM 212049	HM 212010	1.25	0.604
	122.238	38.100	38.354	29.718	188 000	245 000	3 000	4 000	HM 212049	HM 212011	1.25	0.598
	123.825	38.100	36.678	30.162	161 000	221 000	3 000	4 000	560	552A	1.14	0.764
	136.525	46.038	46.038	36.512	233 000	370 000	2 600	3 400	H 715341	H 715311	2.34	0.961
68.262	110.000	22.000	21.996	18.824	85 500	113 000	3 200	4 300	399 A	394A	0.497	0.263
	120.000	29.795	29.007	24.237	123 000	169 000	3 000	4 000	480	472	0.862	0.493
	122.238	38.100	36.678	30.162	161 000	221 000	3 000	4 000	560 S	553X	1.09	0.692
	127.000	36.512	36.170	28.575	166 000	234 000	2 800	3 800	570	563	1.32	0.655
	136.525	41.275	41.275	31.750	229 000	297 000	2 600	3 600	H 414245	H 414210	1.95	0.796
	136.525	46.038	46.038	36.512	233 000	370 000	2 600	3 400	H 715343	H 715311	2.28	0.961
	152.400	47.625	46.038	31.750	237 000	267 000	2 400	3 400	9185	9121	2.53	1.21
69.850	112.712	22.225	21.996	15.875	85 000	113 000	3 000	4 000	LM 613449	LM 613410	0.562	0.238
	112.712	25.400	25.400	19.050	96 000	152 000	2 800	4 000	29675	29620	0.695	0.273
	117.475	30.162	30.162	23.812	119 000	179 000	3 000	4 000	33275	33462	0.83	0.442
	120.000	32.545	32.545	26.195	152 000	225 000	3 000	4 000	47487	47420	1.02	0.477
	120.650	25.400	25.400	19.050	96 000	152 000	2 800	4 000	29675	29630	0.695	0.489
	127.000	36.512	36.170	28.575	166 000	234 000	2 800	3 800	566	563X	1.27	0.658
	130.175	41.275	41.275	31.750	195 000	263 000	2 800	3 800	643	633	1.56	0.712
	146.050	41.275	39.688	25.400	193 000	225 000	2 400	3 400	H 913849	H 913810	1.95	0.898
	146.050	41.275	41.275	31.750	207 000	296 000	2 400	3 200	655	653	2.35	0.891
	149.225	53.975	54.229	44.450	287 000	410 000	2 600	3 400	6454	6420	2.95	1.63
	150.089	44.450	46.672	36.512	265 000	370 000	2 400	3 200	745 A	742	2.82	1.07

Notes ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

Single-Row Tapered Roller Bearings

Bore Diameter 70.000 - 76.200 mm

INCH DESIGN



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
70.000	110.000	26.000	25.000	20.500	98 500	152 000	3 000	4 000	▲JLM 813049	▲JLM 813010	0.604	0.304
	115.000	29.000	29.000	23.000	126 000	177 000	3 000	4 000	▲JM 612949	▲JM 612910	0.800	0.362
	120.000	29.795	29.007	24.237	123 000	169 000	3 000	4 000	484	472	0.822	0.493
71.438	117.475	30.162	30.162	23.812	119 000	179 000	3 000	4 000	33281	33462	0.789	0.442
	120.000	32.545	32.545	26.195	152 000	225 000	3 000	4 000	47490	47420	0.983	0.477
	127.000	36.512	36.170	28.575	166 000	234 000	2 800	3 800	567 S	563	1.21	0.655
	127.000	36.512	36.170	28.575	166 000	234 000	2 800	3 800	567 A	563	1.23	0.655
	130.175	41.275	41.275	31.750	195 000	263 000	2 800	3 800	645	633	1.49	0.712
	136.525	41.275	41.275	31.750	195 000	263 000	2 800	3 800	644	632	1.5	1.04
	136.525	41.275	41.275	31.750	229 000	297 000	2 600	3 600	H 414249	H 414210	1.83	0.796
	136.525	46.038	46.038	36.512	233 000	370 000	2 600	3 400	H 715345	H 715311	2.15	0.961
73.025	112.712	25.400	25.400	19.050	96 000	152 000	2 800	4 000	29685	29620	0.62	0.273
	117.475	30.162	30.162	23.812	119 000	179 000	3 000	4 000	33287	33462	0.746	0.442
	127.000	36.512	36.170	28.575	166 000	234 000	2 800	3 800	567	563	1.17	0.655
	146.050	41.275	41.275	31.750	207 000	296 000	2 400	3 200	657	653	2.24	0.891
	149.225	53.975	54.229	44.450	287 000	410 000	2 600	3 400	6460	6420	2.8	1.63
73.817	127.000	36.512	36.170	28.575	166 000	234 000	2 800	3 800	568	563	1.15	0.655
74.612	150.000	41.275	41.275	31.750	207 000	296 000	2 400	3 200	658	653 X	2.37	0.932
75.000	115.000	25.000	25.000	19.000	101 000	150 000	3 000	4 000	▲JLM 714149	▲JLM 714110	0.638	0.272
	120.000	31.000	29.500	25.000	129 000	198 000	2 800	3 800	▲JM 714249	▲JM 714210	0.863	0.436
	145.000	51.000	51.000	42.000	287 000	410 000	2 600	3 400	▲JH 415647	▲JH 415610	2.64	1.19
76.200	121.442	24.608	23.012	17.462	89 000	124 000	2 800	3 800	34300	34478	0.65	0.316
	127.000	30.162	31.000	22.225	134 000	195 000	2 800	3 800	42687	42620	1.03	0.438
	127.000	30.162	31.001	22.225	134 000	195 000	2 800	3 800	42688	42620	1.01	0.438
	133.350	33.338	33.338	26.195	154 000	237 000	2 600	3 600	47680	47620	1.39	0.577
	135.732	44.450	46.101	34.925	216 000	340 000	2 600	3 600	5760	5735	1.86	0.887
	136.525	30.162	29.769	22.225	130 000	192 000	2 600	3 400	495 A	493	1.27	0.55
	136.525	30.162	29.769	22.225	130 000	192 000	2 600	3 400	495 AX	493	1.26	0.55
	139.992	36.512	36.098	28.575	175 000	260 000	2 600	3 400	575	572	1.61	0.788
	149.225	53.975	54.229	44.450	287 000	410 000	2 600	3 400	6461	6420	2.64	1.63
	152.400	39.688	36.322	30.162	183 000	285 000	2 200	3 200	590 A	592 A	2.2	1.06
	152.400	41.275	41.275	31.750	207 000	296 000	2 400	3 200	659	652	2.11	1.26
	161.925	49.212	46.038	31.750	248 000	290 000	2 200	3 000	9285	9220	2.82	1.4
	161.925	53.975	55.100	42.862	325 000	480 000	2 200	3 000	6576	6535	3.74	1.67
	161.925	53.975	55.100	42.862	325 000	480 000	2 200	3 000	6575	6535	3.73	1.67
	161.925	53.975	55.100	42.862	325 000	480 000	2 200	3 000	6575	6536	3.73	1.68

Notes ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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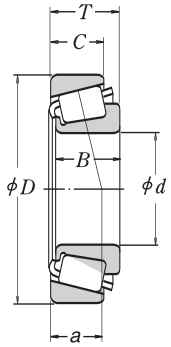
Single-Row Tapered Roller Bearings

Bore Diameter 76.200 - 83.345 mm

INCH DESIGN



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
76.200	168.275	53.975	56.363	41.275	345 000	470 000	2 200	3 000	**843**	**832**	4.11	1.74
	168.275	53.975	56.363	41.275	345 000	470 000	2 200	3 000	**837**	**832**	4.13	1.74
	171.450	49.212	46.038	31.750	257 000	310 000	2 000	2 800	**9380**	**9321**	3.47	1.51
	177.800	55.562	50.800	34.925	257 000	310 000	2 000	2 800	**9378**	**9320**	3.71	2.24
77.788	121.442	24.608	23.012	17.462	89 000	124 000	2 800	3 800	**34306**	**34478**	0.612	0.316
	127.000	30.162	31.000	22.225	134 000	195 000	2 800	3 800	**42690**	**42620**	0.976	0.438
	135.733	44.450	46.101	34.925	216 000	340 000	2 600	3 600	**5795**	**5735**	1.79	0.887
79.375	146.050	41.275	41.275	31.750	207 000	296 000	2 400	3 200	**661**	**653**	1.99	0.891
	150.089	44.450	46.672	36.512	265 000	370 000	2 400	3 200	**750**	**742**	2.42	1.07
80.000	130.000	35.000	34.000	28.500	166 000	251 000	2 600	3 600	**▲JM 515649**	**▲JM 515610**	1.18	0.583
80.962	136.525	30.162	29.769	22.225	130 000	192 000	2 600	3 400	**496**	**493**	1.13	0.55
	139.700	36.512	36.098	28.575	175 000	260 000	2 600	3 400	**581**	**572X**	1.44	0.774
	139.992	36.512	36.098	28.575	175 000	260 000	2 600	3 400	**581**	**572**	1.44	0.788
82.550	125.412	25.400	25.400	19.845	102 000	164 000	2 600	3 600	**27687**	**27620**	0.747	0.348
	133.350	30.162	29.769	22.225	130 000	192 000	2 600	3 400	**495**	**492A**	1.08	0.434
	133.350	33.338	33.338	26.195	154 000	237 000	2 600	3 600	**47686**	**47620**	1.18	0.577
	133.350	33.338	33.338	26.195	154 000	237 000	2 600	3 600	**47685**	**47620**	1.18	0.577
	133.350	33.338	33.338	26.195	154 000	237 000	2 600	3 600	**47687**	**47620**	1.16	0.577
	133.350	39.688	39.688	32.545	179 000	310 000	2 600	3 600	**HM 516448**	**HM 516410**	1.35	0.767
	136.525	30.162	29.769	22.225	130 000	192 000	2 600	3 400	**495**	**493**	1.08	0.55
	139.700	36.512	36.098	28.575	175 000	260 000	2 600	3 400	**580**	**572X**	1.39	0.774
	139.992	36.512	36.098	28.575	175 000	260 000	2 600	3 400	**580**	**572**	1.39	0.788
	139.992	36.512	36.098	28.575	175 000	260 000	2 600	3 400	**582**	**572**	1.37	0.788
	146.050	41.275	41.275	31.750	207 000	296 000	2 400	3 200	**663**	**653**	1.85	0.891
	150.000	44.455	46.672	35.000	265 000	370 000	2 400	3 200	**749 A**	**743**	2.26	1.04
	150.089	44.450	46.672	36.512	265 000	370 000	2 400	3 200	**749 A**	**742**	2.26	1.07
	152.400	41.275	41.275	31.750	207 000	296 000	2 400	3 200	**663**	**652**	1.85	1.26
	161.925	47.625	48.260	38.100	274 000	390 000	2 200	3 000	**757**	**752**	2.79	1.61
	161.925	53.975	55.100	42.862	325 000	480 000	2 200	3 000	**6559**	**6535**	3.4	1.67
	168.275	47.625	48.260	38.100	274 000	390 000	2 200	3 000	**757**	**753**	2.79	2.1
	168.275	53.975	56.363	41.275	345 000	470 000	2 200	3 000	**842**	**832**	3.76	1.74
83.345	125.412	25.400	25.400	19.845	102 000	164 000	2 600	3 600	**27690**	**27620**	0.727	0.348
	125.412	25.400	25.400	19.845	102 000	164 000	2 600	3 600	**27689**	**27620**	0.732	0.348

Notes ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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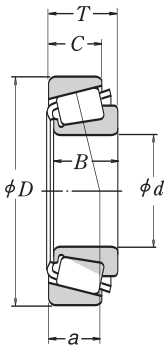
Single-Row Tapered Roller Bearings

Bore Diameter 84.138 - 90.488 mm

INCH DESIGN



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
84.138	136.525	30.162	29.769	22.225	130 000	192 000	2 600	3 400	**498**	**493**	1.04	0.55
	146.050	41.275	41.275	31.750	207 000	296 000	2 400	3 200	**664**	**653**	1.79	0.891
	171.450	49.212	46.038	31.750	257 000	310 000	2 000	2 800	**9385**	**9321**	3.11	1.51
85.000	130.000	30.000	29.000	24.000	138 000	222 000	2 600	3 600	**▲JM 716648**	**▲JM 716610**	0.931	0.461
	130.000	30.000	29.000	24.000	138 000	222 000	2 600	3 600	**▲JM 716649**	**▲JM 716610**	0.943	0.461
	140.000	39.000	38.000	31.500	202 000	305 000	2 400	3 400	**▲JHM 516849**	**▲JHM 516810**	1.55	0.768
	150.000	46.000	46.000	38.000	275 000	390 000	2 400	3 200	**▲JH 217249**	**▲JH 217210**	2.29	1.09
85.026	150.089	44.450	46.672	36.512	265 000	370 000	2 400	3 200	**749**	**742**	2.14	1.07
	150.089	44.450	46.672	36.512	265 000	370 000	2 400	3 200	**749 S**	**742**	2.14	1.07
85.725	133.350	30.162	29.769	22.225	130 000	192 000	2 600	3 400	**497**	**492A**	0.987	0.434
	136.525	30.162	29.769	22.225	130 000	192 000	2 600	3 400	**497**	**493**	0.987	0.55
	142.138	42.862	42.862	34.133	221 000	360 000	2 400	3 400	**HM 617049**	**HM 617010**	1.77	0.911
	146.050	41.275	41.275	31.750	207 000	296 000	2 400	3 200	**665 A**	**653**	1.71	0.891
	146.050	41.275	41.275	31.750	207 000	296 000	2 400	3 200	**665**	**653**	1.72	0.891
	152.400	39.688	36.322	30.162	183 000	285 000	2 200	3 200	**596**	**592A**	1.85	1.06
	161.925	47.625	48.260	38.100	274 000	390 000	2 200	3 000	**758**	**752**	2.63	1.61
	168.275	41.275	41.275	30.162	223 000	345 000	2 000	2 800	**677**	**672**	2.91	1.24
87.312	190.500	57.150	57.531	46.038	390 000	520 000	1 900	2 600	**HH 221432**	**HH 221410**	5.51	2.24
88.900	149.225	31.750	28.971	24.608	140 000	218 000	2 200	3 000	**42350**	**42587**	1.39	0.711
	152.400	39.688	36.322	30.162	183 000	285 000	2 200	3 200	**593**	**592A**	1.73	1.06
	152.400	39.688	39.688	30.162	253 000	365 000	2 200	3 200	**HM 518445**	**HM 518410**	2.11	0.776
	161.925	47.625	48.260	38.100	274 000	390 000	2 200	3 000	**759**	**752**	2.47	1.61
	161.925	47.625	48.260	38.100	274 000	390 000	2 200	3 000	**766**	**752**	2.45	1.61
	161.925	53.975	55.100	42.862	325 000	480 000	2 200	3 000	**6580**	**6535**	3.03	1.67
	168.275	47.625	48.260	38.100	274 000	390 000	2 200	3 000	**759**	**753**	2.47	2.1
	168.275	53.975	56.363	41.275	345 000	470 000	2 200	3 000	**850**	**832**	3.39	1.74
	190.500	57.150	57.531	44.450	355 000	500 000	1 900	2 600	**855**	**854**	4.99	2.55
	190.500	57.150	57.531	46.038	390 000	520 000	1 900	2 600	**HH 221434**	**HH 221410**	5.41	2.24
90.000	145.000	35.000	34.000	27.000	190 000	285 000	2 400	3 200	**▲JM 718149**	**▲JM 718110**	1.49	0.66
	147.000	40.000	40.000	32.500	229 000	345 000	2 400	3 200	***HM 218248**	****HM 218210**	1.77	0.796
	155.000	44.000	44.000	35.500	274 000	395 000	2 200	3 000	**▲JHM 318448**	**▲JHM 318410**	2.32	1.01
90.488	161.925	47.625	48.260	38.100	274 000	390 000	2 200	3 000	**760**	**752**	2.38	1.61

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).
** The maximum outside diameter is listed and its tolerance is negative (See Table 8.4.2 on Pages A68 and A69 in CAT.E1102c).
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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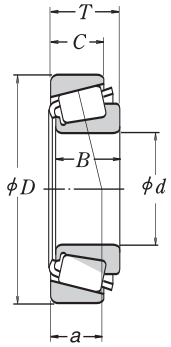
Single-Row Tapered Roller Bearings

Bore Diameter 92.075 - 100.012 mm

INCH DESIGN



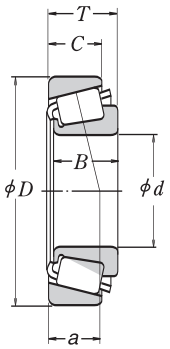
Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
92.075	146.050	33.338	34.925	26.195	169 000	280 000	2 400	3 200	**47890**	**47820**	1.46	0.664
	148.430	28.575	28.971	21.433	140 000	218 000	2 200	3 000	**42362**	**42584**	1.29	0.553
	152.400	39.688	36.322	30.162	183 000	285 000	2 200	3 200	**598**	**592A**	1.6	1.06
	152.400	39.688	36.322	30.162	183 000	285 000	2 200	3 200	**598 A**	**592A**	1.59	1.06
	168.275	41.275	41.275	30.162	223 000	345 000	2 000	2 800	**681**	**672**	2.62	1.24
	190.500	57.150	57.531	44.450	355 000	500 000	1 900	2 600	**857**	**854**	4.78	2.55
93.662	148.430	28.575	28.971	21.433	140 000	218 000	2 200	3 000	**42368**	**42584**	1.24	0.553
	149.225	31.750	28.971	24.608	140 000	218 000	2 200	3 000	**42368**	**42587**	1.24	0.711
	152.400	39.688	36.322	30.162	183 000	285 000	2 200	3 200	**597**	**592A**	1.54	1.06
95.000	150.000	35.000	34.000	27.000	183 000	285 000	2 200	3 200	**▲JM 719149**	**▲JM 719113**	1.46	0.765
95.250	146.050	33.338	34.925	26.195	169 000	280 000	2 400	3 200	**47896**	**47820**	1.33	0.664
	148.430	28.575	28.971	21.433	140 000	218 000	2 200	3 000	**42375**	**42584**	1.18	0.553
	149.225	31.750	28.971	24.608	140 000	218 000	2 200	3 000	**42376**	**42587**	1.18	0.711
	152.400	39.688	36.322	30.162	183 000	285 000	2 200	3 200	**594**	**592A**	1.47	1.06
	152.400	39.688	36.322	33.338	183 000	285 000	2 200	3 200	**594**	**592**	1.47	1.12
	168.275	41.275	41.275	30.162	223 000	345 000	2 000	2 800	**683**	**672**	2.47	1.24
	171.450	47.625	48.260	38.100	282 000	415 000	2 000	2 800	**77375**	**77675**	2.91	1.67
	180.975	47.625	48.006	38.100	258 000	375 000	2 000	2 600	**776**	**772**	3.25	1.99
	190.500	57.150	57.531	44.450	355 000	500 000	1 900	2 600	**864**	**854**	4.57	2.55
	190.500	57.150	57.531	46.038	390 000	520 000	1 900	2 600	**HH 221440**	**HH 221410**	5.0	2.24
96.838	148.430	28.575	28.971	21.433	140 000	218 000	2 200	3 000	**42381**	**42584**	1.13	0.553
	149.225	31.750	28.971	24.606	140 000	218 000	2 200	3 000	**42381**	**42587**	1.13	0.711
98.425	161.925	36.512	36.116	26.195	191 000	310 000	2 000	2 800	**52387**	**52637**	1.89	0.942
	168.275	41.275	41.275	30.162	223 000	345 000	2 000	2 800	**685**	**672**	2.32	1.24
	180.975	47.625	48.006	38.100	258 000	375 000	2 000	2 600	**779**	**772**	3.06	1.99
	190.500	57.150	57.531	44.450	355 000	500 000	1 900	2 600	**866**	**854**	4.38	2.55
	190.500	57.150	57.531	46.038	390 000	520 000	1 900	2 600	**HH 221442**	**HH 221410**	4.81	2.24
99.982	190.500	57.150	57.531	46.038	390 000	520 000	1 900	2 600	**HH 221447**	**HH 221410**	4.68	2.24
100.000	150.000	32.000	30.000	26.000	146 000	235 000	2 200	3 000	**▲JLM 820048**	**▲JLM 820012**	1.27	0.616
	155.000	36.000	35.000	28.000	191 000	325 000	2 000	2 800	**▲JM 720249**	**▲JM 720210**	1.68	0.772
	160.000	41.000	40.000	32.000	239 000	380 000	2 000	2 800	**▲JHM 720249**	**▲JHM 720210**	2.09	0.974
100.012	157.162	36.512	36.116	26.195	191 000	310 000	2 000	2 800	**52393**	**52618**	1.81	0.702

Notes ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

Single-Row Tapered Roller Bearings

Bore Diameter 101.600 - 117.475 mm

INCH DESIGN



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
101.600	157.162	36.512	36.116	26.195	191 000	310 000	2 000	2 800	**52400**	**52618**	1.75	0.702
	161.925	36.512	36.116	26.195	191 000	310 000	2 000	2 800	**52400**	**52637**	1.75	0.942
	168.275	41.275	41.275	30.162	223 000	345 000	2 000	2 800	**687**	**672**	2.15	1.24
	180.975	47.625	48.006	38.100	258 000	375 000	2 000	2 600	**780**	**772**	2.88	1.99
	190.500	57.150	57.531	44.450	355 000	500 000	1 900	2 600	**861**	**854**	4.13	2.55
	190.500	57.150	57.531	46.038	390 000	520 000	1 900	2 600	**HH 221449**	**HH 221410**	4.55	2.24
	212.725	66.675	66.675	53.975	570 000	810 000	1 700	2 200	**HH 224335**	**HH 224310**	8.14	3.06
104.775	180.975	47.625	48.006	38.100	258 000	375 000	2 000	2 600	**787**	**772**	2.66	1.99
	180.975	47.625	48.006	38.100	258 000	375 000	2 000	2 600	**782**	**772**	2.68	1.99
	190.500	47.625	49.212	34.925	296 000	465 000	1 800	2 400	**71412**	**71750**	4.0	1.71
106.362	165.100	36.512	36.512	26.988	195 000	320 000	2 000	2 600	**56418**	**56650**	1.87	0.861
107.950	158.750	23.020	21.438	15.875	102 000	165 000	2 000	2 800	**37425**	**37625**	0.886	0.488
	159.987	34.925	34.925	26.988	164 000	315 000	2 000	2 800	**LM 522546**	**LM 522510**	1.65	0.784
	161.925	34.925	34.925	26.988	164 000	280 000	2 000	2 800	**48190**	**48120**	1.59	0.83
	165.100	36.512	36.512	26.988	195 000	320 000	2 000	2 600	**56425**	**56650**	1.8	0.861
	190.500	47.625	49.212	34.925	296 000	465 000	1 800	2 400	**71425**	**71750**	3.79	1.71
	212.725	66.675	66.675	53.975	570 000	810 000	1 700	2 200	**HH 224340**	**HH 224310**	7.58	3.06
109.987	159.987	34.925	34.925	26.988	164 000	315 000	2 000	2 800	**LM 522549**	**LM 522510**	1.55	0.784
	159.987	34.925	34.925	26.988	164 000	315 000	2 000	2 800	**LM 522548**	**LM 522510**	1.53	0.784
109.992	177.800	41.275	41.275	30.162	232 000	375 000	1 800	2 600	**64433**	**64700**	2.64	1.11
110.000	165.000	35.000	35.000	26.500	195 000	320 000	2 000	2 600	**▲JM 822049**	**▲JM 822010**	1.64	0.842
	180.000	47.000	46.000	38.000	310 000	490 000	1 900	2 600	**▲JHM 522649**	**▲JHM 522610**	3.12	1.51
111.125	190.500	47.625	49.212	34.925	296 000	465 000	1 800	2 400	**71437**	**71750**	3.58	1.71
114.300	152.400	21.433	21.433	16.670	89 500	178 000	2 000	2 800	**L 623149**	**L 623110**	0.725	0.344
	177.800	41.275	41.275	30.162	232 000	375 000	1 800	2 600	**64450**	**64700**	2.39	1.11
	180.000	34.925	31.750	25.400	174 000	254 000	1 800	2 400	**68450**	**** 68709**	1.95	1.0
	190.500	47.625	49.212	34.925	296 000	465 000	1 800	2 400	**71450**	**71750**	3.37	1.71
	212.725	66.675	66.675	53.975	475 000	700 000	1 700	2 400	**938**	**932**	6.01	4.11
	212.725	66.675	66.675	53.975	570 000	810 000	1 700	2 200	**HH 224346**	**HH 224310**	7.01	3.06
115.087	190.500	47.625	49.212	34.925	296 000	465 000	1 800	2 400	**71453**	**71750**	3.31	1.71
117.475	180.975	34.925	31.750	25.400	174 000	254 000	1 800	2 400	**68462**	**68712**	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 in CAT.E1102c).
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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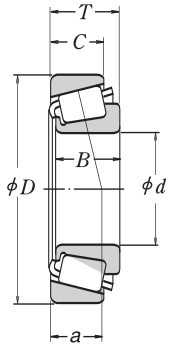
Single-Row Tapered Roller Bearings

Bore Diameter 120.000 - 165.100 mm **INCH DESIGN**



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
120.000	170.000	25.400	25.400	19.050	130 000	219 000	1 900	2 600	▲JL 724348	▲JL 724314	1.08	0.591
	174.625	35.720	36.512	27.783	212 000	385 000	1 900	2 600	* M 224748	M 224710	1.9	0.866
120.650	182.562	39.688	38.100	33.338	228 000	445 000	1 800	2 400	48282	48220	2.56	1.14
	206.375	47.625	47.625	34.925	320 000	530 000	1 600	2 200	795	792	4.44	1.9
123.825	182.562	39.688	38.100	33.338	228 000	445 000	1 800	2 400	48286	48220	2.37	1.14
125.000	175.000	25.400	25.400	18.288	134 000	232 000	1 800	2 400	▲JL 725346	▲JL 725316	1.19	0.573
127.000	165.895	18.258	17.462	13.495	84 500	149 000	1 900	2 600	LL 225749	LL 225710	0.647	0.288
	182.562	39.688	38.100	33.338	228 000	445 000	1 800	2 400	48290	48220	2.19	1.14
	196.850	46.038	46.038	38.100	315 000	560 000	1 700	2 200	67388	67322	3.74	1.46
	215.900	47.625	47.625	34.925	287 000	495 000	1 500	2 000	74500	74850	4.92	1.99
128.588	206.375	47.625	47.625	34.925	320 000	530 000	1 600	2 200	799	792	3.86	1.9
130.000	206.375	47.625	47.625	34.925	320 000	530 000	1 600	2 200	797	792	3.76	1.9
130.175	203.200	46.038	46.038	38.100	315 000	560 000	1 700	2 200	67389	67320	3.51	2.06
	206.375	47.625	47.625	34.925	320 000	530 000	1 600	2 200	799 A	792	3.74	1.9
133.350	177.008	25.400	26.195	20.638	124 000	258 000	1 800	2 400	L 327249	L 327210	1.18	0.55
	190.500	39.688	39.688	33.338	240 000	485 000	1 700	2 200	48385	48320	2.58	1.16
	196.850	46.038	46.038	38.100	315 000	560 000	1 700	2 200	67390	67322	3.27	1.46
	215.900	47.625	47.625	34.925	287 000	495 000	1 500	2 000	74525	74850	4.44	1.99
136.525	190.500	39.688	39.688	33.338	240 000	485 000	1 700	2 200	48393	48320	2.37	1.16
	217.488	47.625	47.625	34.925	287 000	495 000	1 500	2 000	74537	74856	4.19	2.13
139.700	187.325	28.575	29.370	23.020	153 000	305 000	1 700	2 200	LM 328448	LM 328410	1.59	0.67
	215.900	47.625	47.625	34.925	287 000	495 000	1 500	2 000	74550	74850	3.93	1.99
	254.000	66.675	66.675	47.625	515 000	830 000	1 300	1 800	99550	99100	9.99	3.83
142.875	200.025	41.275	39.688	34.130	227 000	460 000	1 600	2 200	48685	48620	2.63	1.19
146.050	193.675	28.575	28.575	23.020	170 000	355 000	1 600	2 200	36690	36620	1.64	0.725
	236.538	57.150	56.642	44.450	455 000	720 000	1 400	1 900	HM 231140	HM 231110	6.07	2.93
	254.000	66.675	66.675	47.625	515 000	830 000	1 300	1 800	99575	99100	9.24	3.83
149.225	254.000	66.675	66.675	47.625	515 000	830 000	1 300	1 800	99587	99100	8.86	3.83
152.400	254.000	66.675	66.675	47.625	515 000	830 000	1 300	1 800	99600	99100	8.46	3.83
158.750	225.425	41.275	39.688	33.338	240 000	540 000	1 400	1 900	46780	46720	3.69	1.66
165.100	247.650	47.625	47.625	38.100	345 000	705 000	1 300	1 700	67780	67720	5.83	2.33

Notes * The maximum bore diameter is listed and its tolerance is negative (See Table 8.4.1 on Page A68 in CAT.E1102c).
▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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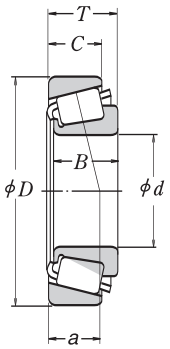
Single-Row Tapered Roller Bearings

Bore Diameter 170.000 - 206.375 mm **INCH DESIGN**



Boundary Dimensions (mm)					Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)	
d	*D*	*T*	*B*	*C*	C_r	C_{0r}	Grease	Oil	CONE	CUP	approx CONE	CUP
170.000	230.000	39.000	38.000	31.000	278 000	520 000	1 300	1 800	▲**JHM 534149**	▲**JHM 534110**	3.1	1.3
	240.000	46.000	44.500	37.000	380 000	720 000	1 300	1 800	▲**JM 734449**	▲**JM 734410**	4.42	2.02
174.625	247.650	47.625	47.625	38.100	345 000	705 000	1 300	1 700	**67787**	**67720**	4.88	2.33
177.800	227.012	30.162	30.162	23.020	181 000	415 000	1 300	1 800	**36990**	**36920**	2.1	0.907
	247.650	47.625	47.625	38.100	345 000	705 000	1 300	1 700	**67790**	**67720**	4.56	2.33
	260.350	53.975	53.975	41.275	455 000	835 000	1 200	1 700	**M 236849**	**M 236810**	6.49	2.86
190.000	260.000	46.000	44.000	36.500	370 000	730 000	1 100	1 600	▲**JM 738249**	▲**JM 738210**	4.73	2.2
190.500	266.700	47.625	46.833	38.100	345 000	720 000	1 100	1 500	**67885**	**67820**	5.4	2.64
200.000	300.000	65.000	62.000	51.000	615 000	1 130 000	1 000	1 400	▲**JHM 840449**	▲**JHM 840410**	10.3	5.19
203.200	282.575	46.038	46.038	36.512	365 000	800 000	1 000	1 400	**67983**	**67920**	6.03	2.82
206.375	282.575	46.038	46.038	36.512	365 000	800 000	1 000	1 400	**67985**	**67920**	5.66	2.82

Notes ▲ The tolerances are listed in Tables 2, 3 and 4 on Pages B109 and B110 in CAT. E1102c.

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Notes

Spherical Roller Bearings

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Spherical Roller Bearings

Basic Type
22200: Spherical roller, medium
22300: Spherical roller, heavy
23000: Spherical roller, very light
23100: Spherical roller, light
23200: Spherical roller, medium, wide
23900: Spherical roller, extra light
24000: Spherical roller, very light, wide
24100: Spherical roller, light, wide

Lubrication Features
E3: Holes only,outer
E4: Groove & holes,outer
E7: Groove & holes,outer & inner
blank: No relubriction feature

Bore Type
blank: Cylindrical bore
K: 1:12 Tapered bore
K30: 1:30 Tapered bore

Other Features
P52: Outer ring accuracy
P53: Inner ring accuracy
P55: Both ring accuracy
U22: Special inspection measure
S11: Inner and outer ring Heat stabilized to 200°C

231	72	CAM	K	E4	C3	P53S11

Bore Size (multiply last two numbers by 5 to get bore in mm)
20: 100mm **48:** 240mm
32: 160mm **96:** 480mm
500 millimeters and larger written as :
/500: 500mm **/710:** 710mm
/630: 630mm **/1000:** 1000mm

Cage Options
CAM: One piece brass cage, guide ring
C,CD: Two piece steel cage guide ring
EA: High capacity steel cage
H: Two piece polyamide cage
M: Two piece brass cage, integral guide flange

Internal Clearance
C2: Tight
blank: Normal
C3: Loose
C4: Extra Loose

Please refer to the bearing tables for exact part number options.

DESIGN, TYPES, AND FEATURES

Shown in the figures, types EA, C, CD, CA, which are designed for high load capacity, are available. Types EA, C and CD have pressed steel cages, and type CA has machined brass cages. Type EA has especially high load capacity, and features such as low torque, and high strength cage.


EA


C and CD


CA

An oil groove and holes are provided in the outer ring to supply lubricant and the bearing numbers are suffixed with E4.

To use bearings with oil grooves and holes, it is recommended to provide an oil groove in the housing bore, since the depth of the groove in the bearing is limited. The number and dimensions of the oil groove and holes are shown in Tables 1 and 2.

When bearings with a hole for a locking pin to prevent outer ring rotation are required, please inform NSK.

APPLICATIONS

- Continuous Casters
  - Support roll
  - Guide roll
  - Pinch roll
  - Table roll
- Other Metal Mill Equipment
- Shaker Screens and Other Vibratory Equipment
- Paper Making Equipment
  - Calender rolls
  - Dryer rolls
  - Fourdrinier
  - etc.
- Mining Equipment
  - Drag lines
  - Gyratory crushers
  - Continuous miners
  - Jaw crushers
  - etc.
- Blowers and Fans
- Rubber and Plastic Forming Equipment
  - Extruders
  - Granulators
  - etc.
- Pumps and Compressors
  - Deep well
  - Slurry
  - etc.
- Gears, Drives and Reducers
- Construction Equipment
- Oil Field Equipment
  - Pump jacks
  - Compounders
  - Derricks
  - Hoists
  - etc.
- Overhead Cranes, Crane Hooks, Hoists
- Metal Forming Equipment
- Railroad Generators and Alternators

Spherical Roller Bearings

Radial Internal Clearances

Units : μm

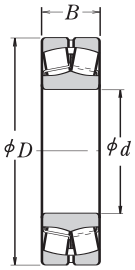
Nominal Bore Dia. d (mm)		Clearance in Bearings with Cylindrical Bores										Clearance in Bearings with Tapered Bores									
		C2		CN		C3		C4		C5		C2		CN		C3		C4		C5	
over	incl	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
24	30	15	25	25	40	40	55	55	75	75	95	20	30	30	40	40	55	55	75	75	95
30	40	15	30	30	45	45	60	60	80	80	100	25	35	35	50	50	65	65	85	85	105
40	50	20	35	35	55	55	75	75	100	100	125	30	45	45	60	60	80	80	100	100	130
50	65	20	40	40	65	65	90	90	120	120	150	40	55	55	75	75	95	95	120	120	160
65	80	30	50	50	80	80	110	110	145	145	180	50	70	70	95	95	120	120	150	150	200
80	100	35	60	60	100	100	135	135	180	180	225	55	80	80	110	110	140	140	180	180	230
100	120	40	75	75	120	120	160	160	210	210	260	65	100	100	135	135	170	170	220	220	280
120	140	50	95	95	145	145	190	190	240	240	300	80	120	120	160	160	200	200	260	260	330
140	160	60	110	110	170	170	220	220	280	280	350	90	130	130	180	180	230	230	300	300	380
160	180	65	120	120	180	180	240	240	310	310	390	100	140	140	200	200	260	260	340	340	430
180	200	70	130	130	200	200	260	260	340	340	430	110	160	160	220	220	290	290	370	370	470
200	225	80	140	140	220	220	290	290	380	380	470	120	180	180	250	250	320	320	410	410	520
225	250	90	150	150	240	240	320	320	420	420	520	140	200	200	270	270	350	350	450	450	570
250	280	100	170	170	260	260	350	350	460	460	570	150	220	220	300	300	390	390	490	490	620
280	315	110	190	190	280	280	370	370	500	500	630	170	240	240	330	330	430	430	540	540	680
315	355	120	200	200	310	310	410	410	550	550	690	190	270	270	360	360	470	470	590	590	740
355	400	130	220	220	340	340	450	450	600	600	750	210	300	300	400	400	520	520	650	650	820
400	450	140	240	240	370	370	500	500	660	660	820	230	330	330	440	440	570	570	720	720	910
450	500	140	260	260	410	410	550	550	720	720	900	260	370	370	490	490	630	630	790	790	1 000
500	560	150	280	280	440	440	600	600	780	780	1 000	290	410	410	540	540	680	680	870	870	1 100
560	630	170	310	310	480	480	650	650	850	850	1 100	320	460	460	600	600	760	760	980	980	1 230
630	710	190	350	350	530	530	700	700	920	920	1 190	350	510	510	670	670	850	850	1 090	1 090	1 360
710	800	210	390	390	580	580	770	770	1 010	1 010	1 300	390	570	570	750	750	960	960	1 220	1 220	1 500
800	900	230	430	430	650	650	860	860	1 120	1 120	1 440	440	640	640	840	840	1 070	1 070	1 370	1 370	1 690
900	1 000	260	480	480	710	710	930	930	1 220	1 220	1 570	490	710	710	930	930	1 190	1 190	1 520	1 520	1 860
1 000	1 120	290	530	530	780	780	1 020	1 020	1 330	—	—	530	770	770	1 030	1 030	1 300	1 300	1 670	—	—
1 120	1 250	320	580	580	860	860	1 120	1 120	1 460	—	—	570	830	830	1 120	1 120	1 420	1 420	1 830	—	—
1 250	1 400	350	640	640	950	950	1 240	1 240	1 620	—	—	620	910	910	1 230	1 230	1 560	1 560	2 000	—	—

Interchange

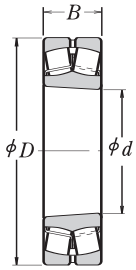
	Description	NSK	SKF	FAG	NTN	SNR
Part number	See Interchange list					
	Polyamide Cage	H		TVPB		
	Steel Cage	C,CD,EA	Blank	Blank	J	A
	Machined Brass Cage	M, CAM	ECA,ECAC	M,MA,MB	L1	M,MB
	Extra Capacity	Blank	E,Explorer	E,E1	E	E
	Tight Clearance	C2	C2	C2	C2	J20
	Normal Clearance	Blank	Blank	Blank	Blank	Blank
	Loose Clearance	C3	C3	C3	C3	C3
	Extra Loose Clearance	C4	C4	C4	C4	C4
	Tapered bore 1:12	K	K	K	K	K
	Tapered bore 1:30	K30	K30	K30	K30	K30
	Grease Groove and Holes	E4	W33	Blank,S	D1	B33
	Heat Stabilization	S11	Blank	Blank	Blank	Blank
	Vibrating Equipment Specification	U15VS	A15,VA405	T41A	UAVS1	F800,F801

Spherical Roller Bearings

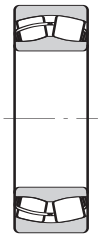
Bore Diameter 20 - 55 mm



Cylindrical Bore



Tapered Bore



Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
20	52	15	29 300	26 900	6 300	8 200	**21304CDE4**	**21304CDKE4**	0.17
25	52	18	37 500	37 000	7 100	9 000	**22205CE4**	**22205CKE4**	0.17
	62	17	43 000	40 500	5 300	6 700	**21305CDE4**	**21305CDKE4**	0.26
30	62	20	50 000	50 000	6 000	7 500	**22206CE4**	**22206CKE4**	0.27
	72	19	55 000	54 000	4 500	6 000	**21306CDE4**	**21306CDKE4**	0.39
35	72	23	69 000	71 000	5 300	6 700	**22207CE4**	**22207CKE4**	0.42
	80	21	71 500	76 000	4 000	5 300	**21307CDE4**	**21307CDKE4**	0.53
40	80	23	90 500	99 500	6 000	7 500	**22208EAE4**	**22208EAKE4**	0.50
	90	23	94 500	111 000	5 300	7 000	**21308EAE4**	**21308EAKE4**	0.73
	90	33	136 000	153 000	4 500	6 000	**22308EAE4**	**22308EAKE4**	0.98
45	85	23	94 500	111 000	5 300	7 000	**22209EAE4**	**22209EAKE4**	0.55
	100	25	119 000	144 000	4 500	5 600	**21309EAE4**	**21309EAKE4**	0.96
	100	36	166 000	195 000	4 000	5 300	**22309EAE4**	**22309EAKE4**	1.34
50	90	23	99 000	119 000	5 000	6 300	**22210EAE4**	**22210EAKE4**	0.61
	110	27	142 000	174 000	4 300	5 300	**21310EAE4**	**21310EAKE4**	1.21
	110	40	197 000	234 000	3 800	4 800	**22310EAE4**	**22310EAKE4**	1.78
55	100	25	119 000	144 000	4 500	5 600	**22211EAE4**	**22211EAKE4**	0.81
	120	29	142 000	174 000	4 300	5 300	**21311EAE4**	**21311EAKE4**	1.58
	120	43	234 000	292 000	3 400	4 300	**22311EAE4**	**22311EAKE4**	2.3

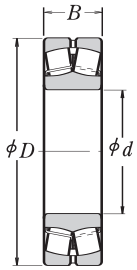
Note (1) The suffix K represents bearings with tapered bores (1 : 12)

Remarks: 1. An oil groove and holes are standard for the EA type.

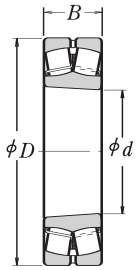
2. For the dimensions of adapters and withdrawal sleeves, refer to Pages B354, B355, and B362 in CAT. E1102c.

Spherical Roller Bearings

Bore Diameter 60 - 85 mm



Cylindrical Bore



Tapered Bore

Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
60	95	26	98 500	141 000	3 600	4 500	23012CE4	23012CKE4	0.68
	110	28	142 000	174 000	4 300	5 300	22212EAE4	22212EAKE4	1.1
	130	31	190 000	244 000	3 400	4 300	21312EAE4	21312EAKE4	1.98
	130	46	271 000	340 000	3 200	4 000	22312EAE4	22312EAKE4	2.89
65	120	31	177 000	230 000	3 800	4 800	22213EAE4	22213EAKE4	1.51
	140	33	212 000	275 000	3 200	4 000	21313EAE4	21313EAKE4	2.45
	140	48	300 000	380 000	3 000	3 800	22313EAE4	22313EAKE4	3.52
70	125	31	180 000	232 000	3 600	4 500	22214EAE4	22214EAKE4	1.58
	150	35	250 000	325 000	3 000	3 800	21314EAE4	21314EAKE4	3.0
	150	51	340 000	435 000	2 800	3 400	22314EAE4	22314EAKE4	4.28
75	130	31	190 000	244 000	3 400	4 300	22215EAE4	22215EAKE4	1.64
	160	37	250 000	325 000	3 000	3 800	21315EAE4	21315EAKE4	3.64
	160	55	390 000	505 000	2 600	3 200	22315EAE4	22315EAKE4	5.26
80	140	33	212 000	275 000	3 200	4 000	22216EAE4	22216EAKE4	2.01
	170	39	284 000	375 000	2 800	3 600	21316EAE4	21316EAKE4	4.32
	170	58	435 000	565 000	2 400	3 000	22316EAE4	22316EAKE4	6.23
85	150	36	250 000	325 000	3 000	3 800	22217EAE4	22217EAKE4	2.54
	180	41	289 000	395 000	2 800	3 600	21317EAE4	21317EAKE4	5.2
	180	60	480 000	630 000	2 200	2 800	22317EAE4	22317EAKE4	7.23

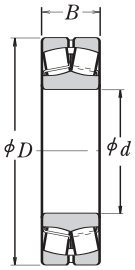
Note (1) The suffix K represents bearings with tapered bores (1 : 12)

Remarks: 1. An oil groove and holes are standard for the EA type.

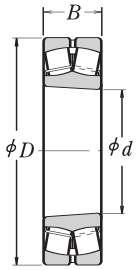
2. For the dimensions of adapters and withdrawal sleeves, refer to Pages B354, B355, and B362 in CAT. E1102c.

Spherical Roller Bearings

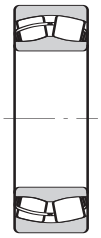
Bore Diameter 90 - 110 mm



Cylindrical Bore



Tapered Bore



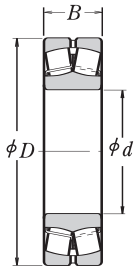
Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
90	160	40	289 000	395 000	2 800	3 600	**22218EAE4**	**22218EAKE4**	3.3
	160	52.4	340 000	490 000	1 800	2 400	**23218CE4**	**23218CKE4**	4.51
	190	43	330 000	450 000	2 600	3 400	**21318EAE4**	**21318EAKE4**	6.1
	190	64	535 000	705 000	2 200	2 600	**22318EAE4**	**22318EAKE4**	8.56
95	170	43	330 000	450 000	2 600	3 400	**22219EAE4**	**22219EAKE4**	4.04
	170	55.6	370 000	525 000	1 700	2 200	**23219CAE4**	**23219CAKE4**	5.33
	200	45	345 000	435 000	1 500	2 000	**21319CE4**	**21319CKE4**	6.92
	200	67	590 000	780 000	2 000	2 600	**22319EAE4**	**22319EAKE4**	9.91
100	150	37	212 000	335 000	2 200	2 800	**23020CDE4**	**23020CDKE4**	2.31
	150	50	276 000	470 000	1 800	2 400	**24020CE4**	**24020CK30E4**	3.08
	165	52	345 000	530 000	1 700	2 200	**23120CE4**	**23120CKE4**	4.38
	165	65	345 000	535 000	1 700	2 200	**24120CAE4**	**24120CAK30E4**	5.42
	180	46	365 000	490 000	2 400	3 200	**22220EAE4**	**22220EAKE4**	4.84
	180	60.3	420 000	605 000	1 600	2 200	**23220CE4**	**23220CKE4**	6.6
	215	47	395 000	485 000	1 400	1 900	**21320CE4**	**21320CKE4**	8.46
	215	73	690 000	930 000	1 900	2 400	**22320EAE4**	**22320EAKE4**	12.7
110	170	45	293 000	465 000	2 000	2 400	**23022CDE4**	**23022CDKE4**	3.76
	170	60	380 000	645 000	1 600	2 200	**24022CE4**	**24022CK30E4**	4.96
	180	56	385 000	630 000	1 600	2 000	**23122CE4**	**23122CKE4**	5.7
	180	69	460 000	750 000	1 600	2 000	**24122CE4**	**24122CK30E4**	6.84
	200	53	485 000	645 000	2 200	2 800	**22222EAE4**	**22222EAKE4**	6.99
	200	69.8	515 000	760 000	1 500	1 900	**23222CE4**	**23222CKE4**	9.54
	240	50	450 000	545 000	1 300	1 700	**21322CAE4**	**21322CAKE4**	11.2
	240	80	825 000	1 120 000	1 700	2 200	**22322EAE4**	**22322EAKE4**	17.6

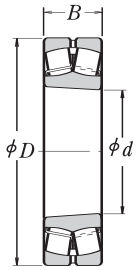
Note Remarks:
(1) The suffix K represents bearings with tapered bores (1 : 12 or 1 : 30)
1. An oil groove and holes are standard for the EA type.
2. For the dimensions of adapters and withdrawal sleeves, refer to Pages B356, B357, and B362, B363 in CAT. E1102c.

Spherical Roller Bearings

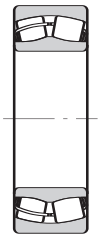
Bore Diameter 120 - 150 mm



Cylindrical Bore



Tapered Bore



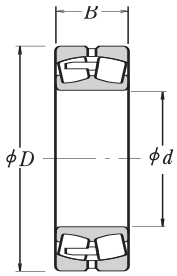
Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
120	180	46	315 000	525 000	1 800	2 200	**23024CDE4**	**23024CDKE4**	4.11
	180	60	395 000	705 000	1 500	2 000	**24024CE4**	**24024CK30E4**	5.33
	200	62	465 000	720 000	1 400	1 800	**23124CE4**	**23124CKE4**	7.85
	200	80	575 000	950 000	1 400	1 800	**24124CE4**	**24124CK30E4**	10
	215	58	550 000	765 000	2 000	2 600	**22224EAE4**	**22224EAKE4**	8.8
	215	76	630 000	970 000	1 300	1 700	**23224CE4**	**23224CKE4**	12.1
	260	86	955 000	1 320 000	1 600	2 000	**22324EAE4**	**22324EAKE4**	22.2
130	200	52	400 000	655 000	1 700	2 000	**23026CDE4**	**23026CDKE4**	5.98
	200	69	495 000	865 000	1 400	1 800	**24026CE4**	**24026CK30E4**	7.84
	210	64	505 000	825 000	1 300	1 700	**23126CE4**	**23126CKE4**	8.69
	210	80	590 000	1 010 000	1 300	1 700	**24126CE4**	**24126CK30E4**	10.7
	230	64	655 000	940 000	1 900	2 400	**22226EAE4**	**22226EAKE4**	11
	230	80	700 000	1 080 000	1 200	1 600	**23226CE4**	**23226CKE4**	14.3
	280	93	995 000	1 350 000	1 300	1 600	**22326CE4**	**22326CKE4**	28.1
140	210	53	420 000	715 000	1 600	1 900	**23028CDE4**	**23028CDKE4**	6.49
	210	69	525 000	945 000	1 300	1 700	**24028CE4**	**24028CK30E4**	8.37
	225	68	580 000	945 000	1 200	1 600	**23128CE4**	**23128CKE4**	10.5
	225	85	670 000	1 160 000	1 200	1 600	**24128CE4**	**24128CK30E4**	13
	250	68	645 000	930 000	1 400	1 700	**22228CDE4**	**22228CDKE4**	14.5
	250	88	835 000	1 300 000	1 100	1 500	**23228CE4**	**23228CKE4**	18.8
	300	102	1 160 000	1 590 000	1 200	1 500	**22328CE4**	**22328CKE4**	35.4
150	225	56	470 000	815 000	1 400	1 800	**23030CDE4**	**23030CDKE4**	7.9
	225	75	590 000	1 090 000	1 200	1 500	**24030CE4**	**24030CK30E4**	10.5
	250	80	725 000	1 180 000	1 100	1 400	**23130CE4**	**23130CKE4**	15.8
	250	100	890 000	1 530 000	1 100	1 400	**24130CE4**	**24130CK30E4**	19.8
	270	73	765 000	1 120 000	1 300	1 600	**22230CDE4**	**22230CDKE4**	18.4
	270	96	975 000	1 560 000	1 100	1 400	**23230CE4**	**23230CKE4**	24.2
	320	108	1 220 000	1 690 000	1 100	1 400	**22330CAE4**	**22330CAKE4**	41.5

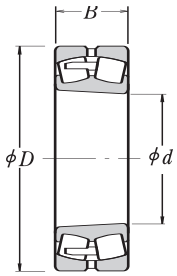
Note Remarks:
(1) The suffix K represents bearings with tapered bores (1 : 12 or 1 : 30)
1. An oil groove and holes are standard for the EA type.
2. For the dimensions of adapters and withdrawal sleeves, refer to Pages B357, B358, B349 and B363, B364 in CAT. E1102c.

Spherical Roller Bearings

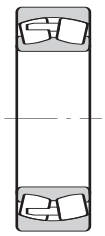
Bore Diameter 160 - 190 mm



Cylindrical Bore



Tapered Bore



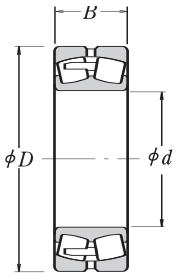
Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
160	220	45	360 000	675 000	1 400	1 800	**23932CAE4**	**23932CAKE4**	4.97
	240	60	540 000	955 000	1 300	1 700	**23032CDE4**	**23032CDKE4**	9.66
	240	80	680 000	1 260 000	1 100	1 400	**24032CE4**	**24032CK30E4**	12.7
	270	86	855 000	1 400 000	1 000	1 300	**23132CE4**	**23132CKE4**	20.3
	270	109	1 040 000	1 760 000	1 000	1 300	**24132CE4**	**24132CK30E4**	25.4
	290	80	910 000	1 320 000	1 200	1 500	**22232CDE4**	**22232CDKE4**	23.1
	290	104	1 100 000	1 770 000	1 000	1 300	**23232CE4**	**23232CKE4**	30.5
	340	114	1 360 000	1 900 000	1 100	1 300	**22332CAE4**	**22332CAKE4**	49.3
170	230	45	350 000	660 000	1 400	1 800	**23934BCAE4**	**23934BCAKE4**	5.38
	260	67	640 000	1 090 000	1 200	1 600	**23034CDE4**	**23034CDKE4**	13
	260	90	825 000	1 520 000	1 000	1 300	**24034CE4**	**24034CK30E4**	17.3
	280	88	940 000	1 570 000	1 000	1 300	**23134CE4**	**23134CKE4**	21.8
	280	109	1 080 000	1 860 000	1 000	1 300	**24134CE4**	**24134CK30E4**	26.6
	310	86	990 000	1 500 000	1 100	1 400	**22234CDE4**	**22234CDKE4**	28.8
	310	110	1 200 000	1 910 000	900	1 200	**23234CE4**	**23234CKE4**	36.4
	360	120	1 580 000	2 110 000	1 000	1 200	**22334CAE4**	**22334CAKE4**	57.9
180	250	52	470 000	890 000	1 200	1 600	**23936CAE4**	**23936CAKE4**	7.64
	280	74	750 000	1 270 000	1 200	1 400	**23036CDE4**	**23036CDKE4**	17.1
	280	100	965 000	1 750 000	950	1 200	**24036CE4**	**24036CK30E4**	22.7
	300	96	1 050 000	1 760 000	900	1 200	**23136CE4**	**23136CKE4**	27.5
	300	118	1 190 000	2 040 000	900	1 200	**24136CE4**	**24136CK30E4**	33.1
	320	86	1 020 000	1 540 000	1 100	1 300	**22236CDE4**	**22236CDKE4**	30.2
	320	112	1 300 000	2 110 000	850	1 100	**23236CE4**	**23236CKE4**	38.9
	380	126	1 740 000	2 340 000	950	1 200	**22336CAE4**	**22336CAKE4**	67
190	260	52	460 000	875 000	1 200	1 500	**23938CAE4**	**23938CAKE4**	8.03
	290	75	775 000	1 350 000	1 100	1 400	**23038CAE4**	**23038CAKE4**	17.6
	290	100	975 000	1 840 000	900	1 200	**24038CE4**	**24038CK30E4**	24
	320	104	1 190 000	2 020 000	850	1 100	**23138CE4**	**23138CKE4**	34.5
	320	128	1 370 000	2 330 000	850	1 100	**24138CE4**	**24138CK30E4**	41.5
	340	92	1 140 000	1 730 000	1 000	1 200	**22238CAE4**	**22238CAKE4**	35.5
	340	120	1 440 000	2 350 000	800	1 100	**23238CE4**	**23238CKE4**	47.6
	400	132	1 890 000	2 590 000	900	1 100	**22338CAE4**	**22338CAKE4**	77.6

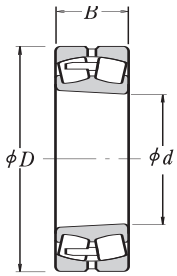
Note (1) The suffix K or K30 represents bearings with tapered bores (1 : 12 or 1 : 30)
Remarks: For the dimensions of adapters and withdrawal sleeves, refer to Pages B358 and B364 in CAT. E1102c.

Spherical Roller Bearings

Bore Diameter 200 - 260 mm



Cylindrical Bore



Tapered Bore

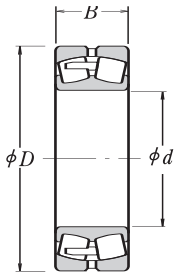
Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
200	280	60	570 000	1 060 000	1 100	1 400	23940CAE4	23940CAKE4	11
	310	82	940 000	1 700 000	1 000	1 300	23040CAE4	23040CAKE4	22.6
	310	109	1 140 000	2 120 000	850	1 100	24040CE4	24040CK30E4	30.4
	340	112	1 360 000	2 330 000	800	1 000	23140CE4	23140CKE4	42.7
	340	140	1 570 000	2 670 000	800	1 000	24140CE4	24140CK30E4	51.3
	360	98	1 300 000	2 010 000	950	1 200	22240CAE4	22240CAKE4	42.6
	360	128	1 660 000	2 750 000	750	1 000	23240CE4	23240CKE4	57.1
	420	138	2 000 000	2 990 000	850	1 000	22340CAE4	22340CAKE4	92.6
220	300	60	625 000	1 240 000	1 000	1 300	23944CAE4	23944CAKE4	12.2
	340	90	1 090 000	1 980 000	950	1 200	23044CAE4	23044CAKE4	29.7
	340	118	1 360 000	2 600 000	750	1 000	24044CE4	24044CK30E4	40.5
	370	120	1 570 000	2 710 000	710	950	23144CE4	23144CKE4	53
	370	150	1 800 000	3 200 000	710	950	24144CE4	24144CK30E4	66.7
	400	108	1 570 000	2 430 000	850	1 000	22244CAE4	22244CAKE4	59
	400	144	2 020 000	3 400 000	670	900	23244CE4	23244CKE4	80.4
	460	145	2 350 000	3 400 000	750	950	22344CAE4	22344CAKE4	116
240	320	60	635 000	1 300 000	950	1 200	23948CAE4	23948CAKE4	13.3
	360	92	1 160 000	2 140 000	850	1 100	23048CAE4	23048CAKE4	32.6
	360	118	1 390 000	2 730 000	710	950	24048CE4	24048CK30E4	43.4
	400	128	1 790 000	3 100 000	670	850	23148CE4	23148CKE4	66.9
	400	160	2 130 000	3 800 000	670	850	24148CE4	24148CK30E4	79.5
	440	120	1 870 000	2 890 000	750	950	22248CAE4	22248CAKE4	80.2
	440	160	2 440 000	4 050 000	630	800	23248CAE4	23248CAKE4	106
	500	155	2 600 000	3 800 000	670	850	22348CAE4	22348CAKE4	147
260	360	75	930 000	1 870 000	850	1 000	23952CAE4	23952CAKE4	23
	400	104	1 430 000	2 580 000	800	950	23052CAE4	23052CAKE4	46.6
	400	140	1 810 000	3 500 000	630	850	24052CAE4	24052CAK30E4	62.6
	440	144	2 160 000	3 750 000	600	800	23152CAE4	23152CAKE4	88.2
	440	180	2 560 000	4 700 000	600	800	24152CAE4	24152CAK30E4	109
	480	130	2 180 000	3 400 000	670	850	22252CAE4	22252CAKE4	104
	480	174	2 740 000	4 550 000	560	750	23252CAE4	23252CAKE4	137
	540	165	3 100 000	4 600 000	630	800	22352CAE4	22352CAKE4	180

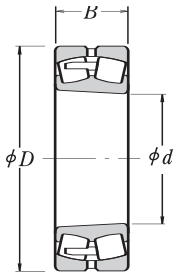
Note (1) The suffix K or K30 represents bearings with tapered bores (1 : 12 or 1 : 30)
Remarks: For the dimensions of adapters and withdrawal sleeves, refer to Pages B359 and B365 in CAT. E1102c.

Spherical Roller Bearings

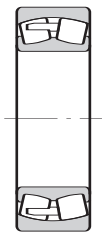
Bore Diameter 280 - 340 mm



Cylindrical Bore



Tapered Bore



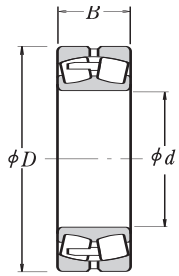
Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
280	380	75	925 000	1 950 000	800	950	**23956CAE4**	**23956CAKE4**	24.5
	420	106	1 540 000	2 950 000	710	900	**23056CAE4**	**23056CAKE4**	50.5
	420	140	1 880 000	3 800 000	600	800	**24056CAE4**	**24056CAK30E4**	66.4
	460	146	2 230 000	4 000 000	560	750	**23156CAE4**	**23156CAKE4**	94.3
	460	180	2 640 000	5 000 000	560	750	**24156CAE4**	**24156CAK30E4**	115
	500	130	2 280 000	3 650 000	630	800	**22256CAE4**	**22256CAKE4**	110
	500	176	2 880 000	4 900 000	530	670	**23256CAE4**	**23256CAKE4**	147
	580	175	3 500 000	5 150 000	560	710	**22356CAE4**	**22356CAKE4**	221
300	420	90	1 230 000	2 490 000	710	900	**23960CAE4**	**23960CAKE4**	38.2
	460	118	1 920 000	3 700 000	670	850	**23060CAE4**	**23060CAKE4**	70.5
	460	160	2 310 000	4 600 000	530	710	**24060CAE4**	**24060CAK30E4**	93.6
	500	160	2 670 000	4 800 000	500	670	**23160CAE4**	**23160CAKE4**	125
	500	200	3 100 000	5 800 000	500	670	**24160CAE4**	**24160CAK30E4**	152
	540	140	2 610 000	4 250 000	600	750	**22260CAE4**	**22260CAKE4**	139
	540	192	3 400 000	5 900 000	480	630	**23260CAE4**	**23260CAKE4**	189
320	440	90	1 300 000	2 750 000	670	850	**23964CAE4**	**23964CAKE4**	40.6
	480	121	1 960 000	3 850 000	630	800	**23064CAE4**	**23064CAKE4**	75.6
	480	160	2 440 000	5 050 000	500	670	**24064CAE4**	**24064CAK30E4**	99.7
	540	176	3 050 000	5 500 000	480	600	**23164CAE4**	**23164CAKE4**	162
	540	218	3 550 000	6 650 000	480	600	**24164CAE4**	**24164CAK30E4**	196
	580	150	2 990 000	4 850 000	530	670	**22264CAE4**	**22264CAKE4**	174
	580	208	3 900 000	6 900 000	450	600	**23264CAE4**	**23264CAKE4**	239
340	460	90	1 330 000	2 840 000	630	800	**23968CAE4**	**23968CAKE4**	42.4
	520	133	2 280 000	4 400 000	560	710	**23068CAE4**	**23068CAKE4**	101
	520	180	2 920 000	6 050 000	480	600	**24068CAE4**	**24068CAK30E4**	135
	580	190	3 600 000	6 600 000	430	560	**23168CAE4**	**23168CAKE4**	206
	580	243	4 250 000	7 900 000	430	560	**24168CAE4**	**24168CAK30E4**	257
	620	224	4 400 000	7 800 000	400	530	**23268CAE4**	**23268CAKE4**	295

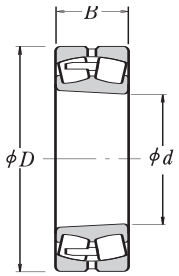
Note Remarks: (1) The suffix K or K30 represents bearings with tapered bores (1 : 12 or 1 : 30)
For the dimensions of adapters and withdrawal sleeves, refer to Pages B359, B360, B365 and B366 in CAT. E1102c.

Spherical Roller Bearings

Bore Diameter 360 - 440 mm



Cylindrical Bore



Tapered Bore

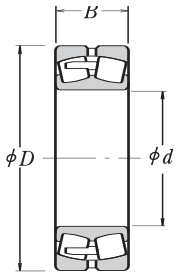
Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
360	480	90	1 390 000	3 050 000	600	750	23972CAE4	23972CAKE4	44.7
	540	134	2 390 000	4 700 000	530	670	23072CAE4	23072CAKE4	106
	540	180	2 930 000	6 100 000	450	600	24072CAE4	24072CAK30E4	139
	600	192	3 800 000	7 100 000	400	530	23172CAE4	23172CAKE4	217
	600	243	4 200 000	8 000 000	400	530	24172CAE4	24172CAK30E4	264
	650	232	4 800 000	8 550 000	380	500	23272CAE4	23272CAKE4	342
380	520	106	1 870 000	4 100 000	530	670	23976CAE4	23976CAKE4	65.4
	560	135	2 500 000	5 100 000	530	630	23076CAE4	23076CAKE4	113
	560	180	3 050 000	6 600 000	430	560	24076CAE4	24076CAK30E4	148
	620	194	4 000 000	7 600 000	400	500	23176CAE4	23176CAKE4	229
	620	243	4 350 000	8 450 000	400	500	24176CAE4	24176CAK30E4	275
	680	240	5 150 000	9 200 000	360	480	23276CAE4	23276CAKE4	372
400	540	106	1 890 000	4 250 000	530	630	23980CAE4	23980CAKE4	69.1
	600	148	2 970 000	5 900 000	480	600	23080CAE4	23080CAKE4	146
	600	200	3 600 000	7 600 000	400	500	24080CAE4	24080CAK30E4	193
	650	200	4 150 000	7 900 000	380	480	23180CAE4	23180CAKE4	257
	650	250	4 950 000	10 100 000	380	480	24180CAE4	24180CAK30E4	316
	720	256	5 800 000	10 400 000	340	450	23280CAE4	23280CAKE4	449
420	560	106	1 870 000	4 250 000	500	600	23984CAE4	23984CAKE4	71.6
	620	150	2 910 000	5 850 000	450	560	23084CAE4	23084CAKE4	151
	620	200	3 750 000	8 100 000	380	480	24084CAE4	24084CAK30E4	199
	700	224	5 000 000	9 400 000	340	450	23184CAE4	23184CAKE4	341
	700	280	6 000 000	12 000 000	340	450	24184CAE4	24184CAK30E4	421
	760	272	6 450 000	11 700 000	320	430	23284CAE4	23284CAKE4	534
440	600	118	2 190 000	4 800 000	450	560	23988CAE4	23988CAKE4	96.3
	650	157	3 150 000	6 350 000	430	530	23088CAE4	23088CAKE4	173
	650	212	4 150 000	9 100 000	360	450	24088CAE4	24088CAK30E4	237
	720	226	5 300 000	10 300 000	320	430	23188CAE4	23188CAKE4	360
	720	280	6 000 000	12 100 000	320	430	24188CAE4	24188CAK30E4	433
	790	280	6 900 000	12 800 000	300	400	23288CAE4	23288CAKE4	594

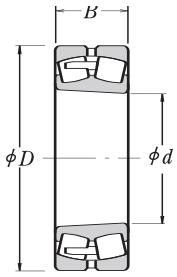
Note (1) The suffix K or K30 represents bearings with tapered bores (1 : 12 or 1 : 30)
Remarks: For the dimensions of adapters and withdrawal sleeves, refer to Pages B360, B366 and B367 in CAT. E1102c.

Spherical Roller Bearings

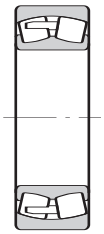
Bore Diameter 460 - 560 mm



Cylindrical Bore



Tapered Bore



Without an Oil Groove or Holes

Boundary Dimensions (mm)			Basic Load Ratings (N)		Limiting Speeds (rpm)		Bearing Numbers		Mass (kg)
d	*D*	*B*	C_r	C_{0r}	Grease	Oil	Cylindrical Bore	Tapered Bore(1)	approx
460	620	118	2 220 000	4 950 000	430	530	23992CAE4	23992CAKE4	100
	680	163	3 450 000	7 100 000	400	500	23092CAE4	23092CAKE4	201
	680	218	4 500 000	9 950 000	340	430	24092CAE4	24092CAK30E4	266
	760	240	5 700 000	10 900 000	300	400	23192CAE4	23192CAKE4	423
	760	300	6 300 000	12 400 000	300	400	24192CAE4	24192CAK30E4	512
	830	296	7 350 000	13 700 000	280	380	23292CAE4	23292CAKE4	691
480	650	128	2 580 000	5 850 000	400	500	23996CAE4	23996CAKE4	121
	700	165	3 800 000	7 950 000	400	480	23096CAE4	23096CAKE4	211
	700	218	4 600 000	10 200 000	320	430	24096CAE4	24096CAK30E4	270
	790	248	6 050 000	11 700 000	300	380	23196CAE4	23196CAKE4	475
	790	308	7 150 000	14 600 000	300	380	24196CAE4	24196CAK30E4	567
	870	310	7 850 000	14 400 000	260	360	23296CAE4	23296CAKE4	795
500	670	128	2 460 000	5 550 000	400	500	239/500CAE4	239/500CAKE4	124
	720	167	3 750 000	8 100 000	380	480	230/500CAE4	230/500CAKE4	220
	720	218	4 450 000	9 900 000	300	400	240/500CAE4	240/500CAK30E4	276
	830	264	6 850 000	13 400 000	280	360	231/500CAE4	231/500CAKE4	567
	830	325	8 000 000	16 000 000	280	360	241/500CAE4	241/500CAK30E4	666
	920	336	9 000 000	16 600 000	260	320	232/500CAE4	232/500CAKE4	969
530	710	136	2 930 000	6 800 000	360	450	239/530CAE4	239/530CAKE4	149
	780	185	4 400 000	9 200 000	340	430	230/530CAE4	230/530CAKE4	298
	780	250	5 400 000	11 800 000	280	360	240/530CAE4	240/530CAK30E4	390
	870	272	7 150 000	14 100 000	260	340	231/530CAE4	231/530CAKE4	628
	870	335	8 500 000	17 500 000	260	340	241/530CAE4	241/530CAK30E4	773
	980	355	10 100 000	18 800 000	240	300	232/530CAE4	232/530CAKE4	1170
560	750	140	3 100 000	7 250 000	340	430	239/560CAE4	239/560CAKE4	172
	820	195	5 000 000	10 700 000	320	400	230/560CAE4	230/560CAKE4	344
	820	258	5 950 000	13 300 000	260	340	240/560CAE4	240/560CAK30E4	440
	920	280	7 850 000	15 500 000	240	320	231/560CAE4	231/560CAKE4	727
	920	355	9 400 000	19 600 000	240	320	241/560CAE4	241/560CAK30E4	886
	1 030	365	10 900 000	20 500 000	220	280	232/560CAE4	232/560CAKE4	1320

Note (1) The suffix K or K30 represents bearings with tapered bores (1 : 12 or 1 : 30)
Remarks: For the dimensions of adapters and withdrawal sleeves, refer to Pages B361 and B367 in CAT. E1102c.

Notes

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Notes

Thrust Bearings

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Thrust Bearings

BALL THRUST BEARINGS

Basic Type & Design
- **51:** Ball Thrust, single direction, Metric
- **52:** Ball Thrust, double direction, Metric
- **53:** Ball Thrust, single direction, w/aligning seat, Metric
- **54:** Ball Thrust, double direction, w/aligning seat, Metric
- **XLT,LT, MT:** Ball Thrust, single direction, Inch

Cage Type
- **blank:** Steel
- **M:** Brass

53	2	05	M	U

Series
- **1:** Extra light
- **2:** Light
- **3:** Medium
- **4:** Heavy
- **XLT:** Extra light
- **LT:** Light
- **MT:** Medium

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

00:	10mm	**04:**	20mm
01:	12mm	**05:**	25mm
02:	15mm	**12:**	60mm
03:	17mm	**20:**	100mm

Inches: directly indicated

Other Features
- **U:** w/Aligning seat washer
- **X:** Modified boundry to ISO
- **P5:** Precision Class 5 (ABEC 5)

DESIGN, TYPES, AND FEATURES

BALL THRUST BEARINGS are composed of washer-like bearing rings with raceway grooves for the balls. The ring attached to the shaft is called the inner ring or tight washer and the ring attached to the housing is called the outer ring or loose washer. In double direction thrust ball bearings there are three rings, with the center ring fixed to the shaft. Single direction thrust ball bearings can support axial loads in one direction only; double direction, in two. Both are available with an aligning seat and washer beneath the outer ring to compensate for shaft misalignment or deflection.

CYLINDRICAL ROLLER THRUST BEARINGS are thrust bearings containing cylindrical rollers. They can sustain only axial loads, but they are suitable for heavy loads and have high axial rigidity.

The cages are machined brass.

SPHERICAL THRUST ROLLER BEARINGS have a spherical raceway in the outer ring with the rollers diagonally arranged in a single row. These bearings have a very high axial load capacity and are capable of taking moderate radial loads when an axial load is imposed. Because of the configuration of their rolling elements, spherical roller thrust bearings are capable of handling misalignment and are suited for moderate speed operation.

Thrust Bearings

SPHERICAL THRUST ROLLER BEARINGS

Basic Type & Design
292xx: Spherical Roller Thrust, Light
293xx: Spherical Roller Thrust, Medium
294xx: Spherical Roller Thrust, Heavy

Cage Type
E: Pressed Steel*
M: Machined Brass (not always shown in the part number)

293 **26** **E**

Bore Size (05 and up: multiply last two numbers by 5 to get bore in mm)
05: 25mm **48:** 240mm
20: 100mm **96:** 480mm
500 millimeters and larger written as :
/500: 500mm **/710:** 710mm
/630: 630mm **/1000:** 1000mm

Please refer to the bearing tables for exact part number options.

APPLICATIONS

Listed below are popular applications for the two thrust bearing styles shown in this section. They are ball thrust bearings and spherical roller thrust bearings. Also available, but not shown, are cylindrical roller thrust bearings (TMP) and tapered roller thrust bearings (TT, TTF or V-Flat). Please consult an NSK representative for more information.

The ball thrust bearings are designed to handle thrust loads while operating at moderate speeds. These bearings can be ordered with an aligning seat and aligning washer if misalignment or deflection can not be avoided.

The spherical thrust bearings are designed to handle very heavy thrust loads in one direction while operating at low to moderate speeds. The design of the spherical thrust will also allow for some radial load while thrust load is imposed. The spherical shape of the outer ring raceway makes these bearings excellent for handling misalignment.

Ball Thrust Bearings

- Screw Jacks
- Machine Tool Spindle Tail Stock
- Vertical Openers (Spinning and Weaving Machines)

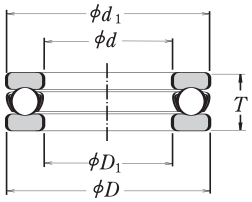
Spherical Thrust Bearings

- Deep Well Pumps
- Centrifugal Pumps
- Power Plant Preheater
- Coal Pulverizer
- Plastic Forming Equipment
- Crane Hook
- Industrial Gear Boxes
- Axial Piston Pumps

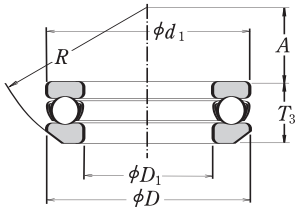
Thrust Bearings

SINGLE-DIRECTION THRUST BALL BEARINGS

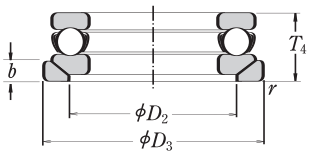
Bore Diameter 10 - 50 mm



With Flat Seat



With Aligning Seat



With Aligning Seat Washer

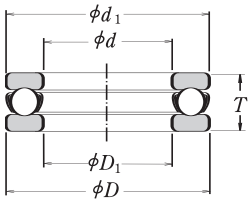
Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d	D_1	D	d_1	T	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
10	11	24	24	9	**51100**	10 100	14 000	6 700	10 000	0.019
	12	26	26	11	**51200**	12 800	17 100	6 000	9 000	0.028
12	13	26	26	9	**51101**	10 400	15 400	6 700	10 000	0.021
	14	28	28	11	**51201**	13 300	19 000	5 600	8 500	0.031
15	16	28	28	9	**51102**	10 600	16 800	6 300	9 500	0.023
	17	32	32	12	**51202**	16 700	24 800	5 000	7 500	0.043
17	18	30	30	9	**51103**	11 400	19 500	6 000	9 000	0.025
	19	35	35	12	**51203**	17 300	27 300	4 800	7 500	0.050
20	21	35	35	10	**51104**	15 100	26 600	5 300	8 000	0.037
	22	40	40	14	**51204**	22 500	37 500	4 300	6 300	0.077
25	26	42	42	11	**51105**	19 700	37 000	4 800	7 100	0.056
	27	47	47	15	**51205**	28 000	50 500	3 800	5 600	0.111
	27	52	52	18	**51305**	36 000	61 500	3 200	5 000	0.169
	27	60	60	24	**51405**	56 000	89 500	2 600	4 000	0.334
30	32	47	47	11	**51106**	20 600	42 000	4 300	6 700	0.064
	32	52	52	16	**51206**	29 500	58 000	3 400	5 300	0.137
	32	60	60	21	**51306**	43 000	78 500	2 800	4 300	0.267
	32	70	70	28	**51406**	73 000	126 000	2 200	3 400	0.519
35	37	52	52	12	**51107**	22 100	49 500	4 000	6 000	0.081
	37	62	62	18	**51207**	39 500	78 000	3 000	4 500	0.21
	37	68	68	24	**51307**	56 000	105 000	2 400	3 800	0.386
	37	80	80	32	**51407**	87 500	155 000	2 000	3 000	0.769
40	42	60	60	13	**51108**	27 100	63 000	3 600	5 300	0.12
	42	68	68	19	**51208**	47 500	98 500	2 800	4 300	0.27
	42	78	78	26	**51308**	70 000	135 000	2 200	3 400	0.536
	42	90	90	36	**51408**	103 000	188 000	1 700	2 600	1.1
45	47	65	65	14	**51109**	28 100	69 000	3 400	5 000	0.143
	47	73	73	20	**51209**	48 000	105 000	2 600	4 000	0.31
	47	85	85	28	**51309**	80 500	163 000	2 000	3 000	0.672
	47	100	100	39	**51409**	128 000	246 000	1 600	2 400	1.46
50	52	70	70	14	**51110**	29 000	75 500	3 200	4 800	0.153
	52	78	78	22	**51210**	49 000	111 000	2 400	3 600	0.378
	52	95	95	31	**51310**	97 500	202 000	1 800	2 800	0.931
	52	110	110	43	**51410**	147 000	288 000	1 400	2 200	1.94

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

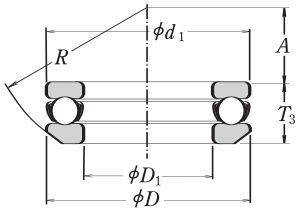
Thrust Bearings

SINGLE-DIRECTION THRUST BALL BEARINGS

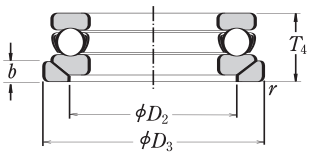
Bore Diameter 55 - 100 mm



With Flat Seat



With Aligning Seat



With Aligning Seat Washer

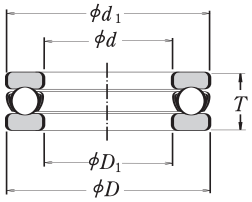
Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d	D_1	D	d_1	T	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
55	57	78	78	16	51111	35 000	93 000	2 800	4 300	0.227
	57	90	90	25	51211	70 000	159 000	2 200	3 200	0.599
	57	105	105	35	51311	115 000	244 000	1 600	2 400	1.31
	57	120	120	48	51411	181 000	350 000	1 300	1 900	2.58
60	62	85	85	17	51112	41 500	113 000	2 600	4 000	0.281
	62	95	95	26	51212	71 500	169 000	2 000	3 000	0.673
	62	110	110	35	51312	119 000	263 000	1 600	2 400	1.4
	62	130	130	51	51412	202 000	395 000	1 200	1 800	3.16
65	67	90	90	18	51113	42 000	117 000	2 400	3 800	0.324
	67	100	100	27	51213	75 500	189 000	1 900	2 800	0.756
	67	115	115	36	51313	123 000	282 000	1 500	2 400	1.54
	68	140	140	56	51413	234 000	495 000	1 100	1 700	4.1
70	72	95	95	18	51114	43 500	127 000	2 400	3 600	0.346
	72	105	105	27	51214	74 000	189 000	1 900	2 800	0.793
	72	125	125	40	51314	137 000	315 000	1 400	2 000	2.0
	73	150	150	60	51414	252 000	555 000	1 000	1 500	5.05
75	77	100	100	19	51115	43 500	131 000	2 200	3 400	0.389
	77	110	110	27	51215	78 000	209 000	1 800	2 800	0.845
	77	135	135	44	51315	159 000	365 000	1 300	1 900	2.6
	78	160	160	65	51415	254 000	560 000	950	1 400	6.15
80	82	105	105	19	51116	45 000	141 000	2 200	3 400	0.417
	82	115	115	28	51216	79 000	218 000	1 800	2 600	0.931
	82	140	140	44	51316	164 000	395 000	1 300	1 900	2.74
	83	170	170	68	51416	272 000	620 000	900	1 300	7.21
85	87	110	110	19	51117	46 500	150 000	2 200	3 200	0.44
	88	125	125	31	51217	96 000	264 000	1 600	2 400	1.22
	88	150	150	49	51317	207 000	490 000	1 100	1 700	3.57
	88	180	177	72	51417 X	310 000	755 000	850	1 300	8.51
90	92	120	120	22	51118	60 000	190 000	1 900	3 000	0.646
	93	135	135	35	51218	114 000	310 000	1 400	2 200	1.69
	93	155	155	50	51318	214 000	525 000	1 100	1 700	3.83
	93	190	187	77	51418 X	330 000	825 000	800	1 200	10.2
100	102	135	135	25	51120	86 000	268 000	1 700	2 600	0.96
	103	150	150	38	51220	135 000	375 000	1 300	2 000	2.25
	103	170	170	55	51320	239 000	595 000	1 000	1 500	4.98
	103	210	205	85	51420 X	370 000	985 000	710	1 100	14.8

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

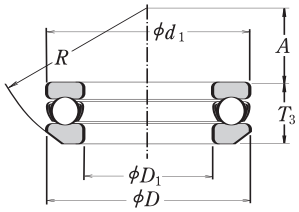
Thrust Bearings

SINGLE-DIRECTION THRUST BALL BEARINGS

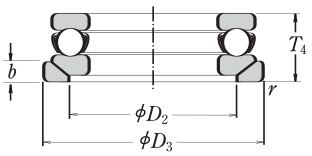
Bore Diameter 110 - 190 mm



With Flat Seat



With Aligning Seat



With Aligning Seat Washer

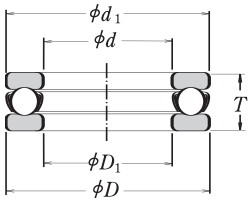
Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d	D_1	D	d_1	T	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
110	112	145	145	25	**51122**	88 000	288 000	1 700	2 400	1.04
	113	160	160	38	**51222**	136 000	395 000	1 300	1 900	2.42
	113	190	187	63	**51322 X**	282 000	755 000	900	1 300	7.19
	113	230	225	95	**51422 X**	415 000	1 150 000	630	950	20
120	122	155	155	25	**51124**	90 000	310 000	1 600	2 400	1.12
	123	170	170	39	**51224**	141 000	430 000	1 200	1 800	2.7
	123	210	205	70	**51324 X**	330 000	930 000	800	1 200	9.7
	123	250	245	102	**51424 X**	480 000	1 400 000	600	900	26.2
130	132	170	170	30	**51126**	105 000	350 000	1 400	2 000	1.68
	133	190	187	45	**51226 X**	183 000	550 000	1 100	1 600	3.95
	134	225	220	75	**51326 X**	350 000	1 030 000	750	1 100	12.1
	134	270	265	110	**51426 X**	525 000	1 590 000	530	800	32.3
140	142	180	178	31	**51128 X**	107 000	375 000	1 300	2 000	1.83
	143	200	197	46	**51228 X**	186 000	575 000	1 000	1 500	4.3
	144	240	235	80	**51328 X**	370 000	1 130 000	670	1 000	14.2
	144	280	275	112	**51428 X**	550 000	1 750 000	530	800	34.7
150	152	190	188	31	**51130 X**	110 000	400 000	1 300	1 900	1.95
	153	215	212	50	**51230 X**	238 000	735 000	950	1 400	5.52
	154	250	245	80	**51330 X**	380 000	1 200 000	670	1 000	15
	154	300	295	120	**51430 X**	620 000	2 010 000	480	710	43.5
160	162	200	198	31	**51132 X**	113 000	425 000	1 200	1 900	2.07
	163	225	222	51	**51232 X**	249 000	805 000	900	1 400	6.04
	164	270	265	87	**51332 X**	475 000	1 570 000	600	900	19.6
	164	320	315	130	**51432 X**	650 000	2 210 000	450	670	52.7
170	172	215	213	34	**51134 X**	135 000	510 000	1 100	1 700	2.72
	173	240	237	55	**51234 X**	280 000	915 000	850	1 300	7.41
	174	280	275	87	**51334 X**	465 000	1 570 000	600	900	20.3
	174	340	335	135	**51434 X**	715 000	2 480 000	430	630	61.2
180	183	225	222	34	**51136 X**	136 000	530 000	1 100	1 700	2.79
	183	250	247	56	**51236 X**	284 000	955 000	800	1 200	7.94
	184	300	295	95	**51336 X**	480 000	1 680 000	560	850	25.9
	184	360	355	140	**51436 X**	750 000	2 730 000	400	600	70.5
190	193	240	237	37	**51138 X**	172 000	655 000	1 000	1 600	3.6
	194	270	267	62	**51238 X**	320 000	1 110 000	750	1 100	11.8
	195	320	315	105	**51338 X**	550 000	1 960 000	500	750	36.5

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

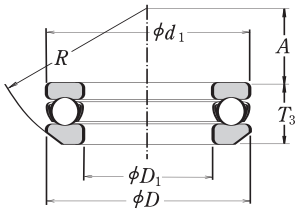
Thrust Bearings

SINGLE-DIRECTION THRUST BALL BEARINGS

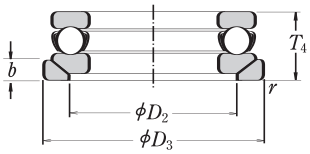
Bore Diameter 200 - 360 mm



With Flat Seat



With Aligning Seat



With Aligning Seat Washer

Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d	D_1	*D*	d_1	*T*	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
200	203	250	247	37	**51140 X**	173 000	675 000	1 000	1 500	3.75
	204	280	277	62	**51240 X**	315 000	1 110 000	710	1 100	12.3
	205	340	335	110	**51340 X**	600 000	2 220 000	480	710	43.6
220	223	270	267	37	**51144 X**	179 000	740 000	950	1 500	4.09
	224	300	297	63	**51244 X**	325 000	1 210 000	670	1 000	13.6
240	243	300	297	45	**51148 X**	229 000	935 000	850	1 200	6.55
	244	340	335	78	**51248 X**	420 000	1 650 000	560	850	23.7
260	263	320	317	45	**51152 X**	233 000	990 000	800	1 200	7.01
	264	360	355	79	**51252 X**	435 000	1 800 000	560	850	25.1
280	283	350	347	53	**51156 X**	315 000	1 310 000	710	1 000	12
	284	380	375	80	**51256 X**	450 000	1 950 000	530	800	27.1
300	304	380	376	62	**51160 X**	360 000	1 560 000	600	900	17.2
	304	420	415	95	**51260 X**	540 000	2 410 000	450	670	43.5
320	324	400	396	63	**51164 X**	365 000	1 660 000	600	900	18.6
	325	440	435	95	**51264 X**	585 000	2 680 000	450	670	45
340	344	420	416	64	**51168 X**	375 000	1 760 000	560	850	19.9
	345	460	455	96	**51268 X**	595 000	2 800 000	430	630	47.9
360	364	440	436	65	**51172 X**	385 000	1 860 000	560	800	21.5
	365	500	495	110	**51272 X**	705 000	3 500 000	380	560	68.8

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

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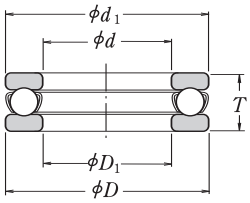
Thrust Bearings

INCH DESIGN

SINGLE-DIRECTION THRUST BALL BEARINGS

Bore Diameter 1/4 - 1.7/8 inch



With Flat Seat

Boundary Dimensions (inch)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d	D_1	*D*	d_1	*T*	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
1/4	9/32	13/16	25/32	3/8	**LT1/4B**	6 550	7 760	9 600	14 500	0.014
5/16	11/32	1	11/32	17/32	**LT5/16B**	8 900	11 200	7 900	12 000	0.043
3/8	13/32	1	31/32	17/32	**LT3/8B**	8 900	11 200	7 900	12 000	0.043
7/16	15/32	1.9/32	1.1/4	5/8	**LT7/16B**	14 900	19 900	6 400	9 600	0.078
1/2	17/32	1.9/32	1.1/4	5/8	**LT1/2B**	19 200	25 100	6 400	9 600	0.074
9/16	19/32	1.13/32	1.3/8	5/8	**LT9/16B**	20 000	28 300	5 700	8 700	0.085
5/8	21/32	1.13/32	1.3/8	5/8	**LT5/8B**	20 000	28 300	5 700	8 700	0.085
3/4	25/32	1.17/32	1.1/2	5/8	**LT3/4B**	18 200	29 800	5 200	7 900	0.099
7/8	29/32	1.21/32	1.5/8	5/8	**LT7/8B**	19 600	29 800	4 800	7 200	0.106
	15/16	1.13/16	1.3/4	3/4	**MT7/8**	24 800	38 800	4 700	7 100	0.156
1	1.1/32	1.25/32	1.3/4	5/8	**LT1B**	19 300	29 800	4 600	7 000	0.113
	1.1/8	2	1.7/8	3/4	**MT1**	27 300	46 600	4 300	6 600	0.17
1.1/8	1.5/32	1.29/32	1.7/8	5/8	**LT1.1/8B**	20 500	39 700	4 200	6 400	0.122
	1.1/4	2.1/4	2.1/8	7/8	**MT1.1/8**	34 100	55 900	3 900	5 900	0.248
1.1/4	1.1/4	2.1/16	2.1/16	23/32	**LT1.1/4B**	23 100	44 000	3 900	5 900	0.177
	1.3/8	2.1/2	2.3/8	1	**MT1.1/4**	45 600	76 100	3 500	5 300	0.354
1.3/8	1.13/32	2.7/32	2.3/16	23/32	**LT1.3/8B**	22 700	44 000	3 600	5 500	0.181
1.1/2	1.17/32	2.11/32	2.5/16	23/32	**LT1.1/2B**	24 300	50 300	3 400	5 200	0.2
	1.5/8	2.7/8	2.3/4	1.1/8	**MT1.1/2**	57 500	99 400	3 000	4 600	0.531
1.5/8	1.21/32	2.15/32	2.7/16	23/32	**LT1.5/8B**	23 900	50 300	3 200	4 900	0.213
1.3/4	1.25/32	2.11/16	2.21/32	3/4	**LT1.3/4B**	35 400	75 100	3 000	4 500	0.276
	1.7/8	3.5/16	3.3/16	1.1/4	**MT1.3/4**	84 500	154 000	2 600	4 000	0.744
1.7/8	1.29/32	2.13/16	2.25/32	3/4	**LT1.7/8B**	31 000	69 900	2 800	4 200	0.291

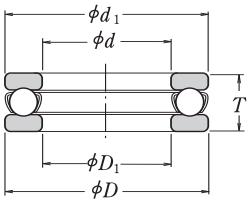
Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

Thrust Bearings

INCH DESIGN

SINGLE-DIRECTION THRUST BALL BEARINGS

Bore Diameter 2 - 3.3/8 inch



With Flat Seat

Boundary Dimensions (inch)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d	D_1	*D*	d_1	*T*	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
2	2.1/32	2.31/32	2.15/16	3/4	**LT2**	33 600	81 500	2 600	4 000	0.304
	2.1/32	3.1/16	3.1/32	11/16	**XLT2**	25 900	62 900	2 600	3 900	0.312
	2.1/8	3.11/16	3.9/16	1.3/8	**MT2**	96 000	186 000	2 300	3 500	1.06
2.1/8	2.5/32	3.3/16	3.5/32	11/16	**XLT2.1/8**	25 500	62 900	2 400	3 700	0.326
	2.5/32	3.7/32	3.3/16	7/8	**LT2.1/8**	43 700	101 000	2 500	3 800	0.404
2.1/4	2.9/32	3.5/16	3.9/32	11/16	**XLT2.1/4**	26 800	69 200	2 300	3 500	0.34
	2.9/32	3.11/32	3.5/16	7/8	**LT2.1/4**	43 100	101 000	2 400	3 600	0.454
	2.3/8	4.1/4	4.1/8	1.11/16	**MT2.1/4**	128 000	246 000	2 000	3 100	1.75
2.3/8	2.13/32	3.7/16	3.13/32	11/16	**XLT2.3/8**	26 500	69 200	2 200	3 400	0.354
	2.13/32	3.19/32	3.9/16	1	**LT2.3/8**	58 000	137 000	2 200	3 400	0.581
2.1/2	2.17/32	3.9/16	3.17/32	11/16	**XLT2.1/2**	27 700	75 400	2 100	3 300	0.368
	2.17/32	3.23/32	3.11/16	1	**LT2.1/2**	57 500	137 000	2 100	3 200	0.64
	2.5/8	4.3/4	4.5/8	2	**MT2.1/2**	160 000	304 000	1 800	2 800	2.78
2.5/8	2.21/32	3.3/4	3.23/32	3/4	**XLT2.5/8**	32 100	85 400	2 000	3 100	0.454
	2.21/32	3.27/32	3.13/16	1	**LT2.5/8**	57 000	137 000	2 000	3 100	0.64
2.3/4	2.25/32	3.7/8	3.27/32	3/4	**XLT2.3/4**	33 700	93 100	2 000	3 000	0.513
	2.25/32	4.1/32	4	1	**LT2.3/4**	56 500	137 000	2 000	3 000	0.68
	2.7/8	5	4.7/8	2	**MT2.3/4**	177 000	365 000	1 700	2 600	2.89
2.7/8	2.29/32	4	3.31/32	3/4	**XLT2.7/8**	35 100	101 000	1 900	2 900	0.513
	2.29/32	4.5/32	4.1/8	1	**LT2.7/8**	64 000	157 000	1 900	2 900	0.708
3	3.1/16	4.1/8	4.1/16	3/4	**XLT3**	34 800	101 000	1 800	2 800	0.513
	3.1/16	4.3/8	4.5/16	1.1/8	**LT3**	72 500	179 000	1 800	2 700	0.948
	3.1/8	5.5/8	5.1/2	2.1/4	**MT3**	226 000	477 000	1 500	2 300	4.14
3.1/8	3.3/16	4.1/2	4.7/16	1.1/8	**LT3.1/8**	87 000	224 000	1 700	2 600	0.953
3.1/4	3.5/16	4.3/8	4.5/16	3/4	**XLT3.1/4**	35 800	97 000	1 700	2 600	0.54
	3.5/16	4.13/16	4.3/4	1.1/4	**LT3.1/4**	90 500	226 000	1 600	2 400	1.29
3.3/8	3.7/16	4.15/16	4.7/8	1.1/4	**LT3.3/8**	89 500	226 000	1 600	2 400	1.23

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

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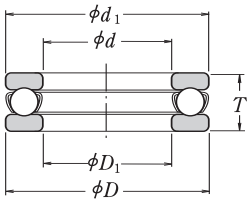
Thrust Bearings

INCH DESIGN

SINGLE-DIRECTION THRUST BALL BEARINGS

Bore Diameter 3.1/2 - 7 inch



With Flat Seat

Boundary Dimensions (inch)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d	D_1	*D*	d_1	*T*	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
3.1/2	3.9/16	4.5/8	4.9/16	3/4	**XLT3.1/2**	36 800	116 000	1 600	2 400	0.567
	3.9/16	5.1/16	5	1.1/4	**LT3.1/2**	88 500	226 000	1 500	2 300	1.39
	3.5/8	6.7/16	6.5/16	2.1/2	**MT3.1/2**	274 000	616 000	1 300	1 900	5.81
3.5/8	3.11/16	5.3/16	5.1/8	1.1/4	**LT3.5/8**	94 500	251 000	1 500	2 200	1.31
3.3/4	3.13/16	4.7/8	4.13/16	3/4	**XLT3.3/4**	37 700	124 000	1 500	2 200	0.594
	3.13/16	5.5/16	5.1/4	1.1/4	**LT3.3/4**	93 500	251 000	1 400	2 100	1.36
3.7/8	3.15/16	5.11/16	5.5/8	1.3/8	**LT3.7/8**	107 000	308 000	1 300	2 000	1.74
4	4.1/16	5.1/4	5.3/16	7/8	**XLT4**	49 500	156 000	1 400	2 100	0.866
	4.1/16	5.13/16	5.3/4	1.3/8	**LT4**	122 000	325 000	1 300	2 000	2
	4.1/8	7.1/4	7.1/8	2.13/16	**MT4**	305 000	745 000	1 100	1 700	7.98
4.1/4	4.5/16	6.5/16	6.1/4	1.3/4	**LT4.1/4**	153 000	403 000	1 200	1 800	2.89
4.1/2	4.9/16	5.3/4	5.11/16	1	**XLT4.1/2**	50 500	168 000	1 200	1 900	1.11
	4.9/16	6.9/16	6.1/2	1.3/4	**LT4.1/2**	150 000	402 000	1 100	1 700	3.13
	4.5/8	8.3/8	8.1/4	3.3/8	**MT4.1/2**	398 000	1 070 000	950	1 400	13.8
4.3/4	4.13/16	7.1/16	7	2	**LT4.3/4**	203 000	547 000	1 000	1 600	4.32
5	5.1/16	6.1/2	6.7/16	1.1/8	**XLT5**	67 000	228 000	1 100	1 600	1.67
	5.1/16	7.5/16	7.1/4	2	**LT5**	201 000	548 000	1 000	1 500	4.47
	5.1/8	9.1/2	9.3/8	4	**MT5**	473 000	1 340 000	850	1 300	21.2
5.1/2	5.9/16	7	6.15/16	1.1/8	**XLT5.1/2**	68 500	243 000	950	1 500	1.7
	5.9/16	8.1/16	8	2.3/16	**LT5.1/2**	258 000	715 000	900	1 300	5.99
	5.5/8	10.3/8	10.1/4	4.1/4	**MT5.1/2**	486 000	1 640 000	750	1 100	25.9
6	6.1/16	7.5/8	7.9/16	1.1/4	**XLT6**	88 000	318 000	900	1 300	2.21
	6.1/16	8.11/16	8.5/8	2.3/8	**LT6**	280 000	808 000	800	1 200	7.44
	6.1/8	11.1/8	11	4.1/2	**MT6**	564 000	1 750 000	650	1 000	31.3
6.1/2	6.5/8	8.1/8	8	1.1/4	**XLT6.1/2**	90 000	338 000	800	1 200	2.48
	6.5/8	9.13/32	9.9/32	2.1/2	**LT6.1/2**	312 000	956 000	750	1 100	9.3
7	7.1/8	8.3/4	8.5/8	1.3/8	**XLT7**	113 000	428 000	750	1 100	3.06
	7.1/8	10.1/8	10	2.5/8	**LT7**	346 000	1 120 000	650	1 000	10.7
	7.1/8	12.3/4	12.5/8	5	**MT7**	619 000	2 410 000	550	850	45.8

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

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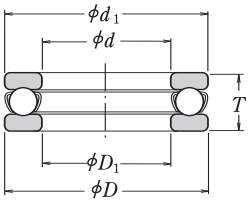
Thrust Bearings

INCH DESIGN

SINGLE-DIRECTION THRUST BALL BEARINGS

Bore Diameter 7.1/2 - 18 inch



With Flat Seat

Boundary Dimensions (inch)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d	D_1	*D*	d_1	*T*	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
7.1/2	7.5/8	9.1/4	9.1/8	1.3/8	**XLT7.1/2**	115 000	453 000	700	1 000	3.23
	7.5/8	10.7/8	10.3/4	2.3/4	**LT7.1/2**	310 000	1 030 000	600	950	13.4
8	8.1/8	10	9.7/8	1.1/2	**XLT8**	135 000	528 000	600	950	4.25
	8.1/8	11.5/8	11.1/2	3	**LT8**	339 000	1 120 000	550	850	16.3
	8.1/8	14.3/8	14.1/4	5.5/8	**MT8**	713 000	2 480 000	470	700	64.4
8.1/2	8.5/8	10.1/2	10.3/8	1.1/2	**XLT8.1/2**	138 000	559 000	600	900	4.72
9	9.1/8	11.1/4	11.1/8	1.7/8	**XLT9**	136 000	760 000	550	800	6.94
	9.1/8	13.1/8	13	3.1/2	**LT9**	476 000	1 790 000	480	750	25.9
9.1/2	9.5/8	11.3/4	11.5/8	1.7/8	**XLT9.1/2**	196 000	805 000	500	750	7.26
10	10.1/8	12.1/2	12.3/8	2.1/8	**XLT10**	246 000	974 000	470	700	9.93
	10.1/8	14.5/8	14.1/2	4	**LT10**	559 000	2 190 000	410	600	36.2
10.1/2	10.5/8	13	12.7/8	2.1/8	**XLT10.1/2**	253 000	1 030 000	440	650	9.98
11	11.1/8	13.3/4	13.5/8	2.3/8	**XLT11**	275 000	1 100 000	410	600	13.4
	11.1/8	15.7/8	15.3/4	4.1/4	**LT11**	583 000	2 430 000	370	550	43.9
11.1/2	11.5/8	14.1/2	14.1/8	2.3/8	**XLT11.1/2**	284 000	1 120 000	390	600	14
12	12.1/8	15	14.7/8	2.1/2	**XLT12**	308 000	1 270 000	360	550	15.9
12.1/2	12.5/8	15.1/2	15.3/8	2.5/8	**XLT12.1/2**	317 000	1 340 000	340	500	18.6
13	13.1/8	16.1/4	16.1/8	2.3/4	**XLT13**	332 000	1 420 000	320	490	21.9
13.1/2	13.5/8	16.3/4	16.5/8	2.7/8	**XLT13.1/2**	363 000	1 600 000	310	470	22.5
14	14.1/8	17.1/2	17.3/8	3	**XLT14**	375 000	1 670 000	290	440	16.3
14.1/2	14.5/8	18	17.7/8	3.1/8	**XLT14.1/2**	408 000	1 860 000	280	420	28.4
15	15.1/4	18.3/4	18.1/2	3.1/4	**XLT15**	420 000	1 990 000	260	400	33.1
15.1/2	15.3/4	19.1/4	19	3.3/8	**XLT15.1/2**	434 000	2 050 000	250	380	35.8
16	16.1/4	20	19.3/4	3.1/2	**XLT16**	465 000	2 250 000	240	360	39.2
16.1/2	16.3/4	20.1/2	20.1/4	3.5/8	**XLT16.1/2**	481 000	2 400 000	230	350	44.5
17	17.1/4	21.1/4	21	3.3/4	**XLT17**	513 000	2 610 000	220	330	49.9
17.1/2	17.3/4	21.3/4	21.1/2	3.7/8	**XLT17.1/2**	548 000	2 840 000	210	320	54
18	18.1/4	22.1/2	22.1/4	4	**XLT18**	543 000	2 860 000	200	310	59

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

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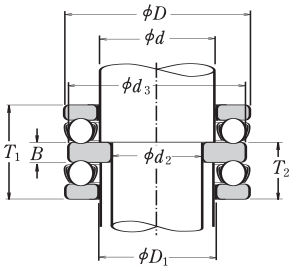
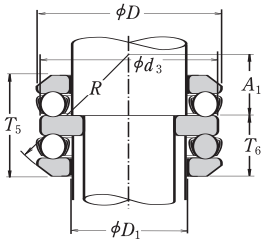
Thrust Bearings

DOUBLE-DIRECTION THRUST BALL BEARINGS

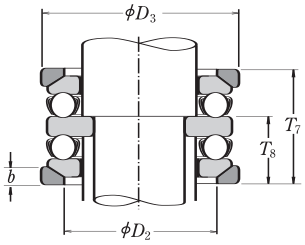
Bore Diameter 10 - 55 mm



With Flat Seat



With Aligning Seat



With Aligning Seat Washer

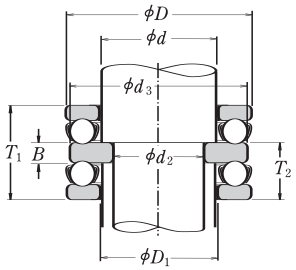
Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d_2	d	D_1	D	T_1	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
10	15	17	32	22	52202	16 700	24 800	4 800	7 100	0.081
15	20	22	40	26	52204	22 500	37 500	4 000	6 000	0.148
	25	27	60	45	52405	56 000	89 500	2 400	3 600	0.641
20	25	27	47	28	52205	28 000	50 500	3 400	5 300	0.213
	25	27	52	34	52305	36 000	61 500	3 000	4 500	0.324
	30	32	70	52	52406	73 000	126 000	2 200	3 200	0.978
25	30	32	52	29	52206	29 500	58 000	3 200	5 000	0.254
	30	32	60	38	52306	43 000	78 500	2 600	4 000	0.483
	35	37	80	59	52407	87 500	155 000	1 800	2 800	1.43
30	35	37	62	34	52207	39 500	78 000	2 800	4 300	0.406
	35	37	68	44	52307	56 000	105 000	2 400	3 600	0.71
	40	42	68	36	52208	47 500	98 500	2 600	3 800	0.543
	40	42	78	49	52308	70 000	135 000	2 000	3 000	1.04
	40	42	90	65	52408	103 000	188 000	1 700	2 400	1.98
35	45	47	73	37	52209	48 000	105 000	2 400	3 600	0.606
	45	47	85	52	52309	80 500	163 000	1 900	2 800	1.28
	45	47	100	72	52409	128 000	246 000	1 500	2 200	2.71
40	50	52	78	39	52210	49 000	111 000	2 400	3 400	0.697
	50	52	95	58	52310	97 500	202 000	1 700	2 600	1.78
	50	52	110	78	52410	147 000	288 000	1 400	2 000	3.51
45	55	57	90	45	52211	70 000	159 000	2 000	3 000	1.11
	55	57	105	64	52311	115 000	244 000	1 500	2 400	2.43
	55	57	120	87	52411	181 000	350 000	1 200	1 800	4.66
50	60	62	95	46	52212	71 500	169 000	1 900	3 000	1.22
	60	62	110	64	52312	119 000	263 000	1 500	2 200	2.59
	60	62	130	93	52412	202 000	395 000	1 100	1 700	5.74
	65	68	140	101	52413	234 000	495 000	1 000	1 600	7.41
55	65	67	100	47	52213	75 500	189 000	1 900	2 800	1.34
	65	67	115	65	52313	123 000	282 000	1 500	2 200	2.8
	70	72	105	47	52214	74 000	189 000	1 800	2 800	1.44
	70	72	125	72	52314	137 000	315 000	1 300	2 000	3.67
	70	73	150	107	52414	252 000	555 000	1 000	1 500	8.99

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

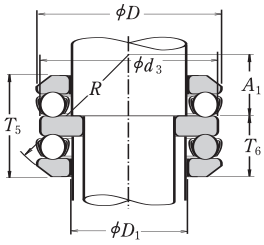
Thrust Bearings

DOUBLE-DIRECTION THRUST BALL BEARINGS

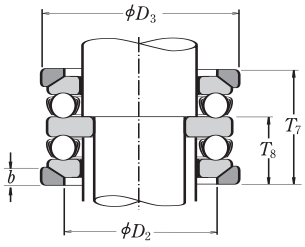
Bore Diameter 60 - 130 mm



With Flat Seat



With Aligning Seat



With Aligning Seat Washer

Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d_2	d	D_1	D	T_1	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
60	75	77	110	47	52215	78 000	209 000	1 800	2 600	1.54
	75	77	135	79	52315	159 000	365 000	1 200	1 800	4.74
	75	78	160	115	52415	254 000	560 000	900	1 400	10.8
65	80	82	115	48	52216	79 000	218 000	1 700	2 600	1.66
	80	82	140	79	52316	164 000	395 000	1 200	1 800	4.99
	80	83	170	120	52416	272 000	620 000	850	1 300	12.6
	85	88	180	128	52417 X	310 000	755 000	800	1 200	15.4
70	85	88	125	55	52217	96 000	264 000	1 500	2 200	2.26
	85	88	150	87	52317	207 000	490 000	1 100	1 600	6.38
	90	93	190	135	52418 X	330 000	825 000	750	1 100	17.5
75	90	93	135	62	52218	114 000	310 000	1 400	2 000	3.09
	90	93	155	88	52318	214 000	525 000	1 100	1 600	6.79
80	100	103	210	150	52420 X	370 000	985 000	670	1 000	26.8
85	100	103	150	67	52220	135 000	375 000	1 300	1 900	4.08
	100	103	170	97	52320	239 000	595 000	950	1 500	8.82
90	110	113	230	166	52422 X	415 000	1 150 000	600	900	35.6
95	110	113	160	67	52222	136 000	395 000	1 200	1 800	4.39
	110	113	190	110	52322 X	282 000	755 000	850	1 300	12.7
	120	123	250	177	52424 X	515 000	1 540 000	560	850	47.6
100	120	123	170	68	52224	141 000	430 000	1 200	1 800	4.92
	120	123	210	123	52324 X	330 000	930 000	750	1 100	17.6
	130	134	270	192	52426 X	525 000	1 590 000	530	800	57.8
110	130	133	190	80	52226 X	183 000	550 000	1 000	1 500	7.43
	130	134	225	130	52326 X	350 000	1 030 000	710	1 100	21.5
	140	144	280	196	52428 X	550 000	1 750 000	500	750	62.4
120	140	143	200	81	52228 X	186 000	575 000	1 000	1 500	8.01
	140	144	240	140	52328 X	370 000	1 130 000	670	1 000	24.8
	150	153	300	209	52430 X	620 000	2 010 000	480	710	77.8
130	150	153	215	89	52230 X	238 000	735 000	900	1 300	10.4
	150	154	250	140	52330 X	380 000	1 200 000	630	950	30.3
	160	164	320	226	52432 X	650 000	2 210 000	430	630	93.6

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

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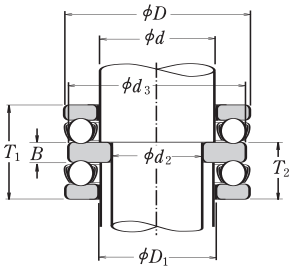
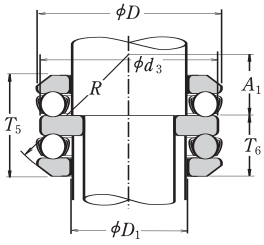
Thrust Bearings

DOUBLE-DIRECTION THRUST BALL BEARINGS

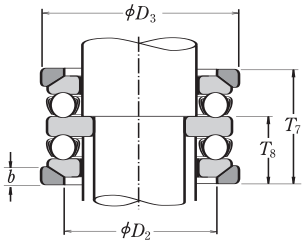
Bore Diameter 135 - 190 mm



With Flat Seat



With Aligning Seat



With Aligning Seat Washer

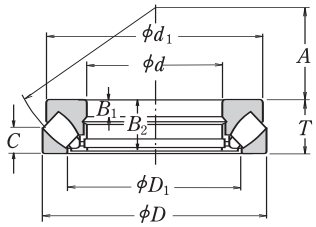
Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)		Mass (kg)
d_2	d	D_1	D	T_1	With Flat Seat	C_a	C_{0a}	Grease	Oil	approx
135	170	174	340	236	**52434 X**	715 000	2 480 000	400	600	110
140	160	163	225	90	**52232 X**	249 000	805 000	850	1 300	11.2
	160	164	270	153	**52332 X**	475 000	1 570 000	600	900	35.1
	180	184	360	245	**52436 X**	750 000	2 730 000	380	560	126
150	170	173	240	97	**52234 X**	280 000	915 000	800	1 200	13.6
	170	174	280	153	**52334 X**	465 000	1 570 000	560	850	40.8
	180	183	250	98	**52236 X**	284 000	955 000	800	1 200	14.8
	180	184	300	165	**52336 X**	480 000	1 680 000	530	800	46.3
160	190	194	270	109	**52238 X**	320 000	1 110 000	710	1 100	22.1
	190	195	320	183	**52338 X**	550 000	1 960 000	480	710	113
170	200	204	280	109	**52240 X**	315 000	1 110 000	710	1 000	23.1
	200	205	340	192	**52340 X**	600 000	2 220 000	450	670	78.4
190	220	224	300	110	**52244 X**	325 000	1 210 000	670	1 000	25.2

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

Thrust Bearings

SPHERICAL THRUST ROLLER BEARINGS

Bore Diameter 60 - 200 mm



Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)	Mass (kg)
d	D_1	*D*	d_1	*T*		C_a	C_{0a}	Oil	approx
60	89	130	114.5	42	**29412 E**	330 000	885 000	2 600	2.55
65	93	140	121.5	45	**29413 E**	405 000	1 100 000	2 400	3.2
70	102	150	131.5	48	**29414 E**	450 000	1 240 000	2 400	3.9
75	107	160	138	51	**29415 E**	515 000	1 430 000	2 200	4.65
80	114.5	170	148	54	**29416 E**	575 000	1 600 000	2 000	5.55
85	112	150	134.5	39	**29317 E**	330 000	1 040 000	2 400	2.7
	124	180	156.5	58	**29417 E**	630 000	1 760 000	1 900	6.55
90	118	155	139.5	39	**29318 E**	350 000	1 080 000	2 200	2.83
	129.5	190	165.5	60	**29418 E**	695 000	1 950 000	1 800	7.55
100	128	170	152	42	**29320 E**	410 000	1 280 000	2 000	3.6
	144	210	185	67	**29420 E**	840 000	2 400 000	1 600	10.3
110	142.5	190	169.5	48	**29322 E**	530 000	1 710 000	1 800	5.25
	157	230	200	73	**29422 E**	1 010 000	2 930 000	1 500	13.3
120	156.5	210	187.5	54	**29324 E**	645 000	2 100 000	1 600	7.3
	171	250	215	78	**29424 E**	1 160 000	3 400 000	1 400	16.6
130	168.5	225	203.5	58	**29326 E**	740 000	2 450 000	1 500	8.95
	185	270	235	85	**29426 E**	1 330 000	3 900 000	1 200	21.1
140	179	240	216.5	60	**29328 E**	840 000	2 810 000	1 400	10.4
	195.5	280	244.5	85	**29428 E**	1 370 000	4 200 000	1 200	22.2
150	190	250	224	60	**29330 E**	870 000	2 900 000	1 400	10.8
	209	300	266	90	**29430 E**	1 580 000	4 900 000	1 100	27.3
160	203	270	243	67	**29332 E**	1 010 000	3 400 000	1 300	14.3
	224.5	320	278	95	**29432 E**	1 740 000	5 400 000	1 100	32.1
170	214.5	280	252	67	**29334 E**	1 050 000	3 500 000	1 200	14.8
	243	340	310	103	**29434**	1 680 000	5 800 000	1 000	43.5
180	227	300	270	73	**29336 E**	1 230 000	4 200 000	1 100	19
	255	360	330	109	**29436**	1 870 000	6 500 000	900	52
190	244	320	288.5	78	**29338 E**	1 370 000	4 700 000	1 100	23
	271	380	345	115	**29438**	2 100 000	7 450 000	850	60
200	236	280	266	48	**29240**	540 000	2 310 000	1 500	8.55
	257	340	306.5	85	**29340 E**	1 570 000	5 450 000	1 000	28.5
	280	400	365	122	**29440**	2 290 000	8 150 000	800	69

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

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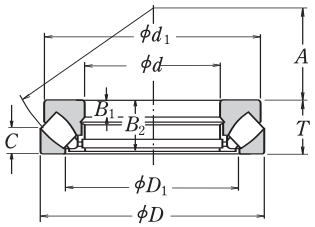
Thrust Bearings

SPHERICAL THRUST ROLLER BEARINGS

Bore Diameter 220 - 420 mm



Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)	Mass (kg)
d	D_1	*D*	d_1	*T*		C_a	C_{0a}	Oil	approx
220	254	300	285	48	29244	560 000	2 500 000	1 400	9.2
	280	360	335	85	29344	1 340 000	5 200 000	950	33
	308	420	385	122	29444	2 350 000	8 650 000	800	74
240	283	340	325	60	29248	800 000	3 450 000	1 200	16.5
	300	380	355	85	29348	1 360 000	5 400 000	950	35.5
	326	440	405	122	29448	2 420 000	9 100 000	750	79
260	302	360	345	60	29252	855 000	3 850 000	1 200	18
	329	420	390	95	29352	1 700 000	6 800 000	800	48.5
	357	480	445	132	29452	2 820 000	10 700 000	710	105
280	323	380	365	60	29256	885 000	4 100 000	1 100	19
	348	440	410	95	29356	1 830 000	7 650 000	800	52.5
	384	520	480	145	29456	3 400 000	13 100 000	630	132
300	353	420	400	73	29260	1 160 000	5 150 000	950	30
	379	480	450	109	29360	2 190 000	9 100 000	710	74
	402	540	500	145	29460	3 500 000	13 700 000	630	140
320	372	440	420	73	29264	1 190 000	5 450 000	950	32.5
	399	500	470	109	29364	2 230 000	9 400 000	670	77
	436	580	555	155	29464	3 650 000	14 600 000	560	175
340	395	460	440	73	29268	1 230 000	5 750 000	900	33.5
	428	540	510	122	29368	2 640 000	11 200 000	630	103
	462	620	590	170	29468	4 400 000	17 400 000	530	218
360	423	500	480	85	29272	1 550 000	7 300 000	800	51
	448	560	525	122	29372	2 670 000	11 500 000	600	107
	480	640	610	170	29472	4 200 000	17 200 000	500	228
380	441	520	496	85	29276	1 620 000	7 800 000	800	52
	477	600	568	132	29376	3 300 000	14 500 000	560	140
	504	670	640	175	29476	4 800 000	19 500 000	480	254
400	460	540	517	85	29280	1 640 000	8 000 000	750	55
	494	620	590	132	29380	3 250 000	14 500 000	530	150
	536	710	680	185	29480	5 400 000	22 100 000	450	306
420	489	580	553	95	29284	2 010 000	9 800 000	670	72
	520	650	620	140	29384	3 500 000	15 700 000	500	170
	556	730	700	185	29484	5 650 000	23 500 000	450	323

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

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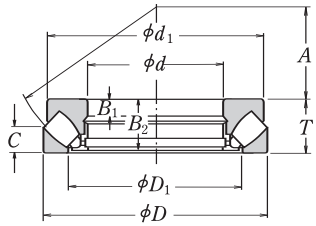
Thrust Bearings

SPHERICAL THRUST ROLLER BEARINGS

Bore Diameter 440 - 500 mm



Boundary Dimensions (mm)					Bearing Numbers	Basic Load Ratings (N)		Limiting Speeds (rpm)	Mass (kg)
d	D_1	*D*	d_1	*T*		C_a	C_{0a}	Oil	approx
440	508	600	575	95	**29288**	2 030 000	10 100 000	670	77
	548	680	645	145	**29388**	3 750 000	16 700 000	480	190
	588	780	745	206	**29488**	6 550 000	27 200 000	400	407
460	530	620	592	95	**29292**	2 060 000	10 300 000	670	80
	567	710	666	150	**29392**	4 100 000	18 400 000	450	210
	608	800	765	206	**29492**	6 750 000	28 600 000	380	420
480	556	650	624	103	**29296**	2 370 000	12 100 000	600	97
	590	730	690	150	**29396**	4 150 000	19 000 000	450	215
	638	850	810	224	**29496**	7 200 000	31 000 000	360	545
500	574	670	645	103	**292/500**	2 390 000	12 400 000	600	100
	611	750	715	150	**293/500**	4 350 000	20 400 000	450	220
	661	870	830	224	**294/500**	7 850 000	33 000 000	340	560

Remark: For all dimensions and specifications refer to CAT. E1102c from page B203 to B229.

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