



Luoyang Huigong Bearing Catalog

LUOYANG · CHINA

The bottom half of the cover features a close-up, artistic photograph of several bearing components, including a large outer ring and several smaller inner rings and balls, all rendered in a teal color scheme that matches the background.



Brief Introduction

The CHG Company is a professional supplier of large-size and extra large-size bearings in China. We specialize in designing, developing and manufacturing bearings, and also have strong technical strength with senior engineers and technicians taking up 29% of the whole staff.

CHG can design and manufacture various types of rolling bearings ranging from 150mm to 4500mm, either standard or nonstandard, and the accuracy can reach Class 4. Our products are widely used in the fields of metallurgy, mining, petroleum, machinery, wind energy, etc.

CHG is located in Science and Technology Industry Park of Luolong District, Luoyang City, Henan Province. We have been certifying by Quality Management System in accordance with ISO 9001:2000 since 2002, and also have been authorized to operate import and export. We are really developing the stable and friendly cooperation with worldwide customers as our good reputation and pragmatic attitude.

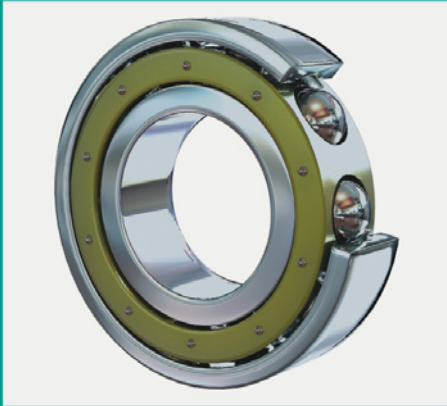
CHG was founded in 1998, and from the very beginning, we focused on the quality, technical development and marketing. We have been serving our customers for 10 years, and we are constantly devoting ourselves to become a manufacturing expert of large and extra large-size bearings in China.

Welcome to CHG!

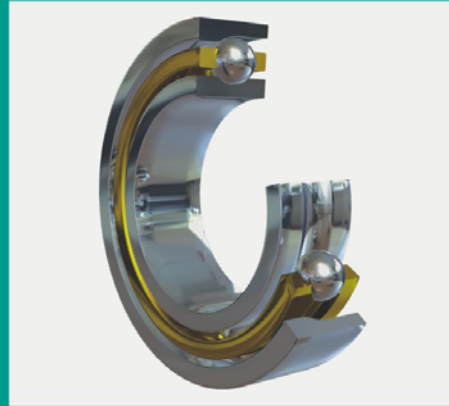
Our competitive products are following:

1. Thin-wall series deep groove ball bearings, four-point contact ball bearings and crossed cylindrical roller slewing bearings for robots;
2. Bearings for casting rolling mills, cold rolling mills, hot rolling mills and high precision foil rolling mills;
3. Large-size and extra large-size slewing bearings;
4. Large-size and extra large-size split bearings;
5. Bearings for wind turbines.

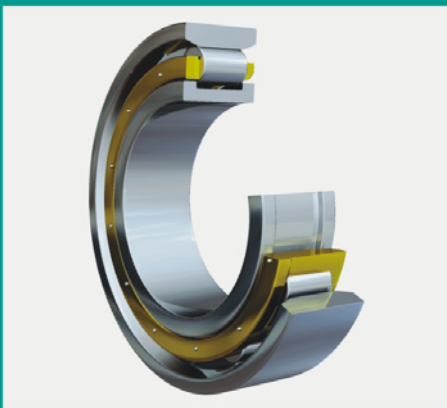
Models of CHG bearings



Deep groove ball bearing



Angular contact ball bearing



Cylindrical roller bearing



Tapered roller bearing

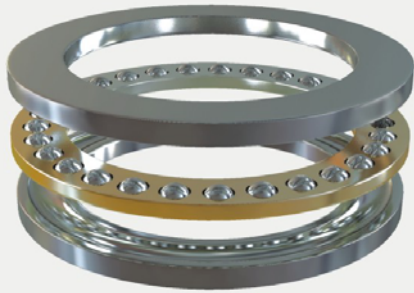


Spherical roller bearing

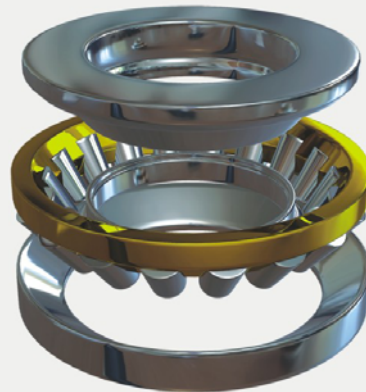


Self-aligning ball bearing

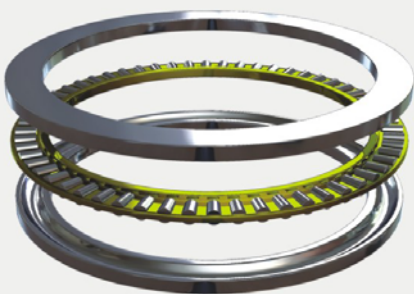
Models of CHG bearings



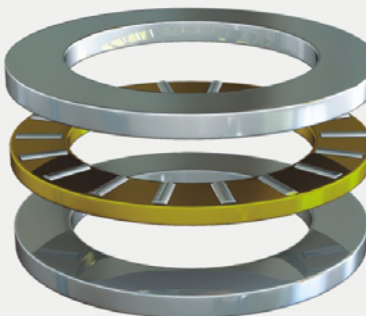
Thrust ball bearing



Spherical roller thrust bearing



Tapered roller thrust bearing



Cylindrical roller thrust bearing



Crossed cylindrical roller slewing bearing



Four-point contact ball slewing bearing

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Part I

Basic Knowledge of Bearings

Basic knowledge of bearings

1. Rolling bearing designations and main dimensions

1.1 Rolling bearing designations

Rolling bearing designations contain basic, prefix and suffix designation. They show bearing structures, main dimensions, running accuracy, internal clearance, etc.

Table 1.1 Arranging order of bearing designations

Bearing designations											
Prefix designation	Basic designations			Suffix designations							
Subunit of bearing	Type designation	Dimension series designation	Bore diameter designation	1	2	3	4	5	6	7	8
				Internal structure	Modification of seal and shield	Cage and its material	Bearing material	Tolerance class	Clearance	Arrangement	Others

Table 1.2 Type designations of bearings

Designation	Bearing type	Designation	Bearing type
0	Double-row angular contact ball bearing	7	Angular contact ball bearing
1	Self-aligning ball bearing	8	Cylindrical roller thrust bearing
2	Spherical roller and spherical roller thrust bearing	9	Tapered roller thrust bearing
3	Tapered roller bearing	N	Cylindrical roller bearing
4	Double-row deep groove ball bearing	NN	Double-row or multi-row cylindrical roller bearing
5	Thrust ball bearing	U	External aligning ball bearing
6	Deep groove ball bearing	QJ	Four-point contact ball bearing

Table 1.3 Common types and dimension series designations of bearings

Bearing type	Type designation	Dimension series designation	Bearing designation
Double-row angular contact ball bearing	(0)	32	3200
	(0)	33	3300
Self-aligning ball bearing	1	(0) 2	1200
	(1)	22	2200
	1	(0) 3	1300
	(1)	23	2300
Spherical roller bearing	2	13	21300C
	2	22	22200C
	2	23	22300C

Table 1.3 Common types and dimension series designations of bearings (continued)

Bearing type	Type designation	Dimension series designation	Bearing designation
Spherical roller bearing	2	30	23000C
	2	31	23100C
	2	32	23200C
	2	40	24000C
	2	41	24100C
Spherical roller thrust bearing	2	92	29200
	2	93	29300
	2	94	29400
Tapered roller bearing	3	02	30200
	3	03	30300
	3	13	31300
	3	20	32000
	3	22	32200
	3	23	32300
	3	29	32900
	3	30	33000
	3	31	33100
	3	32	33200
Double-row tapered roller bearing with double-cone	35	–	350000
Double-row tapered roller bearing with double-cup	37	–	370000
Four-row tapered roller bearing	38	–	380000
Double-row deep groove ball bearing	4	(2) 2	4200
	4	(2) 3	4300
Thrust ball bearing	5	11	51100
	5	12	51200
	5	13	51300
	5	14	51400
Double –direction thrust ball bearing	5	22	52200
	5	23	52300
	5	24	52400
Angular contact thrust ball bearing	56	–	560000
	76	–	760000
Double –direction angular contact thrust ball bearing	23	44	234400
	23	47	234700
	23	49	234900
Deep groove ball bearing	6	17	61700
	6	37	63700
	6	18	61800
	6	19	61900
	16	(0) 0	16000
	6	(1) 0	6000
	6	(0) 2	6200
	6	(0) 3	6300
	6	(0) 4	6400
Angular contact ball bearing	7	19	71900
	7	(1) 0	7000
	7	(0) 2	7200
	7	(0) 3	7300
	7	(0) 4	7400
Cylindrical roller thrust bearing	8	11	81100
	8	12	81200
Double-row or multi-row cylindrical roller thrust bearing	8	93	89300
	8	74	87400
	8	94	89400

Table 1.3 Common types and dimension series designations of bearings (continued)

Bearing type	Type designation	Dimension series designation	Bearing designation
Double-direction cylindrical roller thrust bearing	8	22	82200
	8	23	82300
Tapered roller thrust bearing	9	–	90000
Single-row cylindrical roller bearing with double ribbed outer rings	NU	10	NU1000
	NU	(0) 2	NU200
	NU	22	NU2200
	NU	(0) 3	NU300
	NU	23	NU2300
	NU	(0) 4	NU400
Single-row cylindrical roller bearing with double ribbed inner rings	N	10	N1000
	N	(0) 2	N200
	N	22	N2200
	N	(0) 3	N300
	N	23	N2300
	N	(0) 4	N400
Double-row cylindrical roller bearing	NN	30	NN3000
Double-row cylindrical roller bearing with double ribbed outer rings	NNU	49	NNU4900
Four-point contact ball bearing	QJ	(0) 2	QJ200
	QJ	(0) 3	QJ300
Four-point contact ball bearing with two-piece outer rings	QJF	–	QJF0000
Three-point contact ball bearing with two-piece outer rings	QJT	–	QJT0000
Three-point contact ball bearing with two-piece inner rings	QJS	–	QJS0000

Table 1.4 Common prefix and suffix designations of bearings

Prefix designation		Suffix designations					
Design -ation	Meaning	Internal structure designation		Seal, shield and external configuration change		Cage designation	
		Design -ation	Meaning	Design -ation	Meaning	Design -ation	Meaning
L	Separable inner or outer ring of separable bearing	A、B C、D E	(1)Internal structure change (2)Standard design, the meaning varies with different types and structures	K	Tapered bore bearing, the taper is 1 : 12 (except for external aligning ball bearing)	F	Steel, nodular cast iron or powder metallurgy solid cage
R	Bearing without separable inner or outer ring	AC	Angular contact ball bearing, nominal contact angle is $\alpha = 25^\circ$	K30	Tapered bore bearing, the taper is 1 : 30	Q	Bronze solid cage
WS	Shaft washer of cylindrical roller thrust bearing	D	Split bearing	–2K	Double-row tapered bore bearing, the taper is 1 : 12	M	Brass solid cage
GS	Housing washer of cylindrical roller thrust bearing			R	Bearing with flanged outer ring	L	Light alloy solid cage
KOW–	Thrust bearing without shaft washer			N	Bearing with snap ring groove	W	Welded cage
KIW–	Thrust bearing without housing washer			–RS	Bearing with one cased rubber seal (contact type)	R	Riveted cage (for large-size bearing)
				–2RS	Bearing with two cased rubber seals (contact type)	E	Phosphating cage
				–RZ	Bearing with one cased rubber seal (non-contact type)		
				–2RZ	Bearing with two cased rubber seals (non-contact type)		
				–Z	Bearing with one shield		

Table 1.4 Common prefix and suffix designations of bearings (continued)

Prefix designation		Suffix designations					
Design- ation	Meaning	Internal structure designation		Seal , shield and external configuration change		Cage designation	
		Design- ation	Meaning	Design- ation	Meaning	Design- ation	Meaning
				-2Z	Bearing with two shields		
				-FS	Bearing with one felt seal		
				-2FS	Bearing with two felt seals		
				-RSZ	Bearing with one cased rubber seal (contact type) and one shield		

Table 1.4 Common suffix designations of bearings (continued)

Suffix designations									
Bearing parts material		Tolerance class		Clearance		Arrangement		Other characteristics	
Designation	Meaning	Designation	Meaning	Designation	Meaning	Designation	Meaning	Designation	Meaning
/HE	Rings and rolling elements (and cages) are made of electroslag refined bearing steel ,ZGCr15	/P0	Class 0	/C1	Group 1	/DB	Back to back	/S0	Rings are through high tempering, working temperature is 150°C
/HV	Rings and rolling elements (and cages) are made of hardenable stainless bearing steel	/P6	Class 6	/C2	Group 2	/DF	Face to face	/S1	Rings are through high tempering, working temperature is 200°C
/HN	Rings and rolling elements are made of heat-resisting bearing steel	/P6X	Class 6X	/C3	Group 3	/DT	Paired mounting in tandem arrangement	/S2	Rings are through high tempering, working temperature is 250°C
/HC	Rings (and rolling elements) are made of carburized bearing steel	/P5	Class 5	/C4	Group 4	/TBT	3 bearings in tandem and back to back arrangement	/S3	Rings are through high tempering, working temperature is 300°C
/HQ	Rings and rolling elements are made of nonmetallic material	/P4	Class 4	/C5	Group 5	/TFT	3 bearings in tandem and face to face arrangement	/S4	Rings are through high tempering, working temperature is 350°C
/HG	Rings (and rolling elements) are made of other bearing steel	/P2	Class 2	/C9	Different from current standard	/TT	3 bearings in tandem arrangement	/W20	Outer ring with 3 oil holes
		/SP	Dimension accuracy is Class 5, running accuracy is Class 4					/W26	Inner ring with 6 oil holes
		/UP	Dimension accuracy is Class 4, running accuracy is higher than Class 4					/W33	Outer ring with oil groove and 3 oil holes
								/W33X	Outer ring with oil groove and 6 oil holes
								/W513	W26+W33
								/W518	W20+W26

1.2 Designations of nonstandard bearings

Nonstandard bearing designations are composed of basic, prefix and suffix designation. The type, prefix and suffix designation are the same as those mentioned above. The dimension series in basic designation is shown in table 1.5 and 1.6.

Table 1.5 Designations of nonstandard bearings

Letter	Meaning
X1	Nonstandard outside diameter
X2	Nonstandard width (height)
X3	Nonstandard outside diameter & width /height (standard bore diameter)

Table 1.6 Uncertain series designations

Bearing type	Uncertain series		Remarks
	Designation of width/height series	Designation of diameter series	
Radial bearing	0 (4)	6	1.46 is for double-row angular contact ball bearing 2. "0" should be omitted when uncertain series 06 combines with type designation (except for tapered roller bearings and double-row deep groove ball bearings.)
Thrust bearing	1 2	7	17 is for single-direction thrust bearings 27 is for double-direction thrust bearings

1.3 Designations of four-row cylindrical roller bearings for rolling mills

Designations of four-row cylindrical roller bearings are composed of type, dimension and suffix designation.

1.3.1 Type designations

Type designations, referred in table 1.7 are shown in capital Latin letters.

Table 1.7 Type designations of four-row cylindrical roller bearings

Type designation	Structure
FC	Four-row cylindrical roller bearing (one inner ring)
FCD	Four-row cylindrical roller bearing with double inner rings
FCDP	Four-row cylindrical roller bearing with loose ribbed outer ring and double inner rings

1.3.2 Dimension designations

Dimension designations referred in table 1.8 are shown in Arabic numbers.

Table 1.8 Dimension designations of four-row cylindrical roller bearings

Designation item	Representation
Designation of nominal bore diameter (d)	Nominal bore diameter(mm)/5
Designation of nominal outside diameter (D)	Nominal outside diameter(mm)/5
Designation of nominal width (B)	Nominal width(mm)

1.4 Comparisons of current type designations with original

The original designation consists of 7 numbers, the 4th number from the right is type designation. The differences are in table 1.9.

Table 1.9 Comparisons of current and original designations

Designation	Bearing type	
	Current	Original
0	Double-row angular contact ball bearing	Radial ball bearing
1	Self-aligning ball bearing	Self-aligning ball bearing
2	Spherical roller bearing and spherical roller thrust bearing	Cylindrical roller bearing
3	Tapered roller bearing	Spherical roller bearing
4	Double-row deep groove ball bearing	Long cylindrical roller bearing and needle roller bearing
5	Thrust Ball Bearing	Spiral roller bearing
6	Deep groove ball bearing	Angular contact ball bearing
7	Angular contact ball bearing	Tapered roller bearing
8	Cylindrical roller thrust bearing	Thrust ball bearing and angular contact thrust ball bearing
9	Tapered roller thrust bearing	Cylindrical roller thrust bearing
N	Cylindrical roller bearing	–
U	External aligning ball bearing	–
QJ	Four-point contact ball bearing	–

2. Rolling bearing accuracy

2.1 Rolling bearing accuracy and classes

Rolling bearing accuracy contains dimension tolerance and running accuracy. The tolerance classes have been standardized in 6 classes: class 0, class 6X, class 6, class 5, class 4, and class 2.

Tolerance classes go upwards from class 0, and class 0 is enough for general applications. But some applications require class 5 or higher.

Bearing tolerance classes and applicable standards are shown in table 2.1.

- Dimension tolerance (relating to the mounting of shafts and housings):
 - Allowable deviation of bore diameter, outside diameter, width and assemblage width.
 - Allowable deviation of under roller diameter and diameter over roller of roller set.
 - Allowable limiting of chamfer dimension.
 - Allowable variation of width.
 - Allowable deviation and variation of tapered bore.
- Running Accuracy:
 - Allowable axial and radial runout of inner and outer ring.
 - Allowable lateral runout of bore diameter.
 - Allowable variation of outside diameter surface obliquity.
 - Allowable variation of thickness of thrust bearing raceway.

Bearing dimension tolerance and running accuracy are shown in tables 2.2–2.15.

Limiting chamfer dimensions are referred in table 2.17.

Table 2.1 Bearing type and tolerance classes

Bearing type	Applicable tolerance classes						Applicable standard	Reference
Deep groove ball bearing	Class 0	–	Class 6	Class 5	Class 4	Class 2	GB/T307.1	Tables 2.2 & 2.3
Angular contact ball bearing	Class 0	–	Class 6	Class 5	Class 4	Class 2		
Self-aligning ball bearing	Class 0	–	–	–	–	–		
Cylindrical roller bearing	Class 0	–	Class 6	Class 5	Class 4	Class 2		
Spherical roller bearing	Class 0	–	Class 6	–	–	–	GB/T307.1	Tables 2.4 & 2.5
Metric series tapered roller bearing (single-row)	Class 0	Class 6X	Class 6	Class 4	Class 4	–		
Metric series tapered roller bearing (double-row&four-row)	Class 0	–	Class 6	Class 5	Class 4	–		
Inch series tapered roller bearing	Class 4	–	–	Class 3	Class 0	Class 00	–	Tables 2.11– 2.14
Thrust roller bearing	Class 0	–	Class 6	Class 5	Class 4	–	GB/T307.4	Table 2.6
Thrust ball bearing	Class 0	–	Class 6	Class 5	Class 4	–		
Spherical roller thrust bearing	Class 0	–	–	–	–	–		

Table2.2 Radial bearing tolerance (except for tapered roller bearings) (GB/T307.1-2005)
Outer ring
 μm

D mm	ΔD _{mp}					ΔD _s ²⁾			VD _{sp}												Sealed bearing VD _{sp}		VD _{mp}					
									Diameter series 9				Diameter series 0、1				Diameter series 2、3、4				All diameter series	Diameter series						
	2、3、4		0、1、2、3、4																									
	Class					Class			Class												Class		Class					
0	6	5	4	2	4	2	0	6	5	4	0	6	5	4	0	6	5	4	2	0	6	0	6	5	4	2		
Over To	High Low	High Low	High Low	High Low	High Low	High Low	High Low	Max				Max				Max				Max	Max		Max					
2.5 ¹⁾ 6	0-8	0-7	0-5	0-4	0-2.5	0-4	0-2.5	10	9	5	4	8	7	4	3	6	5	4	3	2.5	10	9	6	5	3	2	1.5	
6 18	0-8	0-7	0-5	0-4	0-2.5	0-4	0-2.5	10	9	5	4	8	7	4	3	6	5	4	3	2.5	10	9	6	5	3	2	1.5	
18 30	0-9	0-8	0-6	0-5	0-4	0-5	0-4	12	10	6	5	9	8	5	4	7	6	5	4	4	12	10	7	6	3	2.5	2	
30 50	0-11	0-9	0-7	0-6	0-4	0-6	0-4	14	11	7	6	11	9	5	5	8	7	5	5	4	16	13	8	7	4	3	2	
50 80	0-13	0-11	0-9	0-7	0-4	0-7	0-4	16	14	9	7	13	11	7	5	10	8	7	5	4	20	16	10	8	5	3.5	2	
80 120	0-15	0-13	0-10	0-8	0-5	0-8	0-5	19	16	10	8	19	16	8	6	11	10	8	6	5	26	20	11	10	5	4	2.5	
120 150	0-18	0-15	0-11	0-9	0-5	0-9	0-5	23	19	11	9	23	19	8	7	14	11	8	7	5	30	25	14	11	6	5	2.5	
150 180	0-25	0-18	0-13	0-10	0-7	0-10	0-7	31	23	13	10	31	23	10	8	19	14	10	8	7	38	30	19	14	7	5	3.5	
180 250	0-30	0-20	0-15	0-11	0-8	0-11	0-8	38	25	15	11	38	25	11	8	23	15	11	8	8	-	-	23	15	8	6	4	
250 315	0-35	0-25	0-18	0-13	0-8	0-13	0-8	44	31	18	13	44	31	14	10	26	19	14	10	8	-	-	26	19	9	7	4	
315 400	0-40	0-28	0-20	0-15	0-10	0-15	0-10	50	35	20	15	50	35	15	11	30	21	15	11	10	-	-	30	21	10	8	5	
400 500	0-45	0-33	0-23	-	-	-	-	56	41	23	-	56	41	17	-	34	25	17	-	-	-	-	34	25	12	-	-	
500 630	0-50	0-38	0-28	-	-	-	-	63	48	28	-	63	48	21	-	38	29	21	-	-	-	-	38	29	14	-	-	
630 800	0-75	0-45	0-35	-	-	-	-	94	56	35	-	94	56	26	-	55	34	26	-	-	-	-	55	34	18	-	-	
800 1000	0-100	0-60	-	-	-	-	-	125	75	-	-	125	75	-	-	75	45	-	-	-	-	-	75	45	-	-	-	
1000 1250	0-125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1250 1600	0-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1600 2000	0-200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2000 2500	0-250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Remarks: 1) This dimension range includes 2.5mm;

2) Class 4 is applicable to dimension series 0,1,2,3 and 4.

Outer Ring (continued) μm

D mm	$K_{\alpha\alpha}$								SD			$S_{\alpha\alpha}^{2)}$			ΔC_s		VC_s				
	Class								Class			Class			Class		Class				
	0	6	5	4	2	5	4	2	5	4	2	0,6,5,4,2	0, 6	5	4	2	0, 6	5	4	2	0, 6
Over To	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
2.5 ¹⁾ 6	15	8	5	3	1.5	8	4	1.5	8	5	1.5										
6 18	15	8	5	3	1.5	8	4	1.5	8	5	1.5										
18 30	15	9	6	4	2.5	8	4	1.5	8	5	2.5										
30 50	20	10	7	5	2.5	8	4	1.5	8	5	2.5										
50 80	25	13	8	5	4	8	4	1.5	10	5	4										
80 120	35	18	10	6	5	9	5	2.5	11	6	5										
120 150	40	20	11	7	5	10	5	2.5	13	7	5										
150 180	45	23	13	8	5	10	5	2.5	14	8	5										
180 250	50	25	15	10	7	11	7	4	15	10	7										
250 315	60	30	18	11	7	13	8	5	18	10	7										
315 400	70	35	20	13	8	13	10	7	20	13	8										
400 500	80	40	23	-	-	15	-	-	23	-	-										
500 630	100	50	25	-	-	18	-	-	25	-	-										
630 800	120	60	30	-	-	20	-	-	30	-	-										
800 1000	140	75	-	-	-	-	-	-	-	-	-										
1000 1250	160	-	-	-	-	-	-	-	-	-	-										
1250 1600	190	-	-	-	-	-	-	-	-	-	-										
1600 2000	220	-	-	-	-	-	-	-	-	-	-										
2000 2500	250	-	-	-	-	-	-	-	-	-	-										

Remarks: 1) This dimension range includes 2.5mm;

2) This is applicable to deep groove ball bearings and angular contact ball bearings.

Table 2.3 Radial bearing tolerance (except for tapered roller bearings) (GB/T307.1-2005)
Inner ring

μm

d mm		Δd_{mp}					$\Delta d_s^{2)}$		Vd _{sp}															Vd _{mp}				
		Class					Class		Diameter series 9				Diameter series 0、1				Diameter series 2、3、4				All diameter series							
									Class				Class				Class											
		0	6	5	4	2	4	2	0	6	5	4	0	6	5	4	0	6	5	4		2	0	6	5	4	2	
Over	To	High Low	High Low	High Low	High Low	High Low	High Low	High Low	Max				Max				Max				Max	Max						
0.6 ¹⁾	2.5	0-8	0-7	0-5	0-4	0-2.5	0-4	0-2.5	10	9	5	4	8	7	4	3	6	5	4	3	2.5	6	5	3	2	1.5		
2.5	10	0-8	0-7	0-5	0-4	0-2.5	0-4	0-2.5	10	9	5	4	8	7	4	3	6	5	4	3	2.5	6	5	3	2	1.5		
10	18	0-8	0-7	0-5	0-4	0-2.5	0-4	0-2.5	10	9	5	4	8	7	4	3	6	5	4	3	2.5	6	5	3	2	1.5		
18	30	0-10	0-8	0-6	0-5	0-2.5	0-5	0-2.5	13	10	6	5	10	8	5	4	8	6	5	4	2.5	8	6	3	2.5	1.5		
30	50	0-12	0-10	0-8	0-6	0-2.5	0-6	0-2.5	15	13	8	6	12	10	6	5	9	8	6	5	2.5	9	8	4	3	1.5		
50	80	0-15	0-12	0-9	0-7	0-4	0-7	0-4	19	15	9	7	19	15	7	5	11	9	7	5	4	11	9	5	3.5	2		
80	120	0-20	0-15	0-10	0-8	0-5	0-8	0-5	25	19	10	8	25	19	8	6	15	11	8	6	5	15	11	5	4	2.5		
120	150	0-25	0-18	0-13	0-10	0-7	0-10	0-7	31	23	13	10	31	23	10	8	19	14	10	8	7	19	14	7	5	3.5		
150	180	0-25	0-18	0-13	0-10	0-7	0-10	0-7	31	23	13	10	31	23	10	8	19	14	10	8	7	19	14	7	5	3.5		
180	250	0-30	0-22	0-15	0-12	0-8	0-12	0-8	38	28	15	12	38	28	12	9	23	17	12	9	8	23	17	8	6	4		
250	315	0-35	0-25	0-18	-	-	-	-	44	31	18	-	44	31	14	-	26	19	14	-	-	26	19	9	-	-		
315	400	0-40	0-30	0-23	-	-	-	-	50	38	23	-	50	38	18	-	30	23	18	-	-	30	23	12	-	-		
400	500	0-45	0-35	-	-	-	-	-	56	44	-	-	56	44	-	-	34	26	-	-	-	34	26	-	-	-		
500	630	0-50	0-40	-	-	-	-	-	63	50	-	-	63	50	-	-	38	30	-	-	-	38	30	-	-	-		
630	800	0-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
800	1000	0-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1000	1250	0-125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1250	1600	0-160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
1600	2000	0-200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

Remarks: 1) The dimension range includes 0.6mm;

2) Class 4 is applicable to dimension series 0, 1, 2, 3 and 4.

Inner ring (continued)

μm

d mm		K _{ia}					S _d			S _{ia} ²⁾			ΔB _s					VB _s				
		Class					Class			Class			Class					Class				
		0	6	5	4	2	5	4	2	5	4	2	0	6	5	4	2	0	6	5	4	2
Over	To	Max					Max			Max			High			Low		Max				
0.6 ¹⁾	2.5	10	5	4	2.5	1.5	7	3	1.5	7	3	1.5	0-40	0-40	0-40	0-40	0-40	12	12	5	2.5	1.5
2.5	10	10	6	4	2.5	1.5	7	3	1.5	7	3	1.5	0-120	0-120	0-40	0-40	0-40	15	15	5	2.5	1.5
10	18	10	7	4	2.5	1.5	7	3	1.5	7	3	1.5	0-120	0-120	0-80	0-80	0-80	20	20	5	2.5	1.5
18	30	13	8	4	3	2.5	8	4	1.5	8	4	2.5	0-120	0-120	0-120	0-120	0-120	20	20	5	2.5	1.5
30	50	15	10	5	4	2.5	8	4	1.5	8	4	2.5	0-120	0-120	0-120	0-120	0-120	20	20	5	3	1.5
50	80	20	10	5	4	2.5	8	5	1.5	8	5	2.5	0-150	0-150	0-150	0-150	0-150	25	25	6	4	1.5
80	120	25	13	6	5	2.5	9	5	2.5	9	5	2.5	0-200	0-200	0-200	0-200	0-200	25	25	7	4	2.5
120	150	30	18	8	6	2.5	10	6	2.5	10	7	2.5	0-250	0-250	0-250	0-250	0-250	30	30	8	5	2.5
150	180	30	18	8	6	5	10	6	4	10	7	5	0-250	0-250	0-250	0-250	0-250	30	30	8	5	4
180	250	40	20	10	8	5	11	7	5	13	8	5	0-300	0-300	0-300	0-300	0-300	30	30	10	6	5
250	315	50	25	13	-	-	13	-	-	15	-	-	0-350	0-350	0-350	-	-	35	35	13	-	-
315	400	60	30	15	-	-	15	-	-	20	-	-	0-400	0-400	0-400	-	-	40	40	15	-	-
400	500	65	35	-	-	-	-	-	-	-	-	-	0-450	0-450	-	-	-	50	45	-	-	-
500	630	70	40	-	-	-	-	-	-	-	-	-	0-500	0-500	-	-	-	60	50	-	-	-
630	800	80	-	-	-	-	-	-	-	-	-	-	0-750	-	-	-	-	70	-	-	-	-
800	1000	90	-	-	-	-	-	-	-	-	-	-	0-1000	-	-	-	-	80	-	-	-	-
1000	1250	100	-	-	-	-	-	-	-	-	-	-	0-1250	-	-	-	-	100	-	-	-	-
1250	1600	120	-	-	-	-	-	-	-	-	-	-	0-1600	-	-	-	-	120	-	-	-	-
1600	2000	140	-	-	-	-	-	-	-	-	-	-	0-2000	-	-	-	-	140	-	-	-	-

Remarks: 1) The dimension range includes 0.6mm;

2) This is applicable to deep groove ball bearings and angular contact ball bearings.

Table 2.4 Metric tapered roller bearing tolerance (GB/T307.1-2005)

(1) Outer ring

 μm

D mm		$\triangle D_{mp}$			$\triangle D_s$	VD_{sp}			VD_{mp}			K_{ea}			SD		S_{ea}	$\triangle C_s$	
		Class			Class	Class			Class			Class			Class		Class	Class	
		0,6X	5	4	4	0,6X	5	4	0,6X	5	4	0,6X	5	4	5	4	4	6X	0,5,4
Over	To	High Low	High Low	High Low	High Low	Max			Max			Max			Max		Max	High Low	High Low
18	30	0 –12	0 –8	0 –6	0 –6	12	6	5	9	5	4	18	6	4	8	4	5	0 –100	The same as the $\triangle B_s$ of the inner ring
30	50	0 –14	0 –9	0 –7	0 –7	14	7	5	11	5	5	20	7	5	8	4	5	0 –100	
50	80	0 –16	0 –11	0 –9	0 –9	16	8	7	12	6	5	25	8	5	8	4	5	0 –100	
80	120	0 –18	0 –13	0 –10	0 –10	18	10	8	14	7	5	35	10	6	9	5	6	0 –100	
120	150	0 –20	0 –15	0 –11	0 –11	20	11	8	15	8	6	40	11	7	10	5	7	0 –100	
150	180	0 –25	0 –18	0 –13	0 –13	25	14	10	19	9	7	45	13	8	10	5	8	0 –100	
180	250	0 –30	0 –20	0 –15	0 –15	30	15	11	23	10	8	50	15	10	11	7	10	0 –100	
250	315	0 –35	0 –25	0 –18	0 –18	35	19	14	26	13	9	60	18	11	13	8	10	0 –100	
315	400	0 –40	0 –28	0 –20	0 –20	40	22	15	30	14	10	70	20	13	13	10	13	0 –100	
400	500	0 –45	0 –33	– –	– –	45	26	–	34	17	–	80	24	–	17	–	–	0 –100	
500	630	0 –50	0 –38	– –	– –	60	30	–	38	20	–	100	30	–	20	–	–	– –	

The same as the ΔB_s of the inner ring

(2) Inner ring

 μm

d mm		△d _{mp}			△d _s	Vd _{sp}			Vd _{mp}			K _{ia}			Sd		S _{ia}	△B _s			
		Class			Class	Class			Class			Class			Class		Class	Class			
		0,6X	5	4	4	0,6X	5	4	0,6X	5	4	0,6X	5	4	5	4	4	0	6X	5	4
Over	To	High Low	High Low	High Low	High Low	Max			Max			Max			Max		Max	High Low	High Low	High Low	High Low
10	18	0 -12	0 -7	0 -5	0 -5	12	5	4	9	5	4	15	5	3	7	3	3	0 -120	0 -50	0 -200	0 -200
18	30	0 -12	0 -8	0 -6	0 -6	12	6	5	9	5	4	18	5	3	8	4	4	0 -120	0 -50	0 -200	0 -200
30	50	0 -12	0 -10	0 -8	0 -8	12	8	6	9	5	5	20	6	4	8	4	4	0 -120	0 -50	0 -240	0 -240
50	80	0 -15	0 -12	0 -9	0 -9	15	9	7	11	6	5	25	7	4	8	5	4	0 -150	0 -50	0 -300	0 -300
80	120	0 -20	0 -15	0 -10	0 -10	20	11	8	15	8	5	30	8	5	9	5	5	0 -200	0 -50	0 -400	0 -400
120	180	0 -25	0 -18	0 -13	0 -13	25	14	10	19	9	7	35	11	6	10	6	7	0 -250	0 -50	0 -500	0 -500
180	250	0 -30	0 -22	0 -15	0 -15	30	17	11	23	11	8	50	13	8	11	7	8	0 -300	0 -50	0 -600	0 -600
250	315	0 -35	0 -25	0 -18	0 -18	35	19	12	26	13	9	60	13	9	13	8	9	0 -350	0 -50	- -700	- -700
315	400	0 -40	0 -30	- -	- -	40	23	-	30	15	-	70	15	-	15	-	-	0 -400	0 -50	- -800	- -

Table 2.5 Metric tapered roller bearing tolerance (GB/T307.1-2005)

Assemblage width and effective width

 μm

d mm		ΔT _s				ΔT _{1s}				ΔT _{2s}			
		Class 0		Class 6X		Class 5		Class 4		Class 0		Class 6X	
Over	To	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
10	18	+200	0	+100	0	+200	-200	+200	-200	+100	0	+50	0
18	30	+200	0	+100	0	+200	-200	+200	-200	+100	0	+50	0
30	50	+200	0	+100	0	+200	-200	+200	-200	+100	0	+50	0
50	80	+200	0	+100	0	+200	-200	+200	-200	+100	0	+50	0
80	120	+200	-200	+100	0	+200	-200	+200	-200	+100	-100	+50	0
120	180	+350	-250	+150	0	+350	-250	+350	-250	+150	-150	+50	0
180	250	+350	-250	+150	0	+350	-250	+350	-250	+150	-150	+50	0
250	315	+350	-250	+200	0	+350	-250	+350	-250	+150	-150	+100	0
315	400	+400	-400	+200	0	+400	-400	-	-	+200	-200	+100	0

d: Nominal bore diameter

 T_1 : Nominal width of bearing consisted of inner ring with rollers and standard outer ring; T_2 : Nominal width of bearing consisted of outer ring and standard inner ring with rollers.

Table 2.6 Thrust bearing tolerance (GB/T307.4-2002)
(1) Shaft washer and center shaft washer μm

d or d ₂ mm		Δd_{mp} or Δd_{2mp}		Vd _p or Vd _{2p}		S _i ¹⁾			
		Class		Class		Class			
		0、6、5	4	0、6、5	4	0	6	5	4
Over	To	High Low	High Low	Max		Max			
-	18	0 -8	0 -7	6	5	10	5	3	2
18	30	0 -10	0 -8	8	6	10	5	3	2
30	50	0 -12	0 -10	9	8	10	6	3	2
50	80	0 -15	0 -12	11	9	10	7	4	3
80	120	0 -20	0 -15	15	11	15	8	4	3
120	180	0 -25	0 -18	19	14	15	9	5	4
180	250	0 -30	0 -22	23	17	20	10	5	4
250	315	0 -35	0 -25	26	19	25	13	7	5
315	400	0 -40	0 -30	30	23	30	15	7	5
400	500	0 -45	0 -35	34	26	30	18	9	6
500	630	0 -50	0 -40	38	30	35	21	11	7
630	800	0 -75	0 -50	55	40	40	25	13	8
800	1000	0 -100	- -	75	-	45	30	15	-
1000	1250	0 -125	- -	95	-	50	35	18	-

(2) Housing washer μm

D mm		ΔD_{mp}		VD _p		S _e ¹⁾			
		Class		Class		Class			
		0、6、5	4	0、6、5	4	0、6、5、4			
Over	To	High Low	High Low	Max		Max			
10	18	0 -11	0 -7	8	5	The same as the S _i of the shaft washer			
18	30	0 -13	0 -8	10	6				
30	50	0 -16	0 -9	12	7				
50	80	0 -19	0 -11	14	8				
80	120	0 -22	0 -13	17	10				
120	180	0 -25	0 -15	19	11				
180	250	0 -30	0 -20	23	15				
250	315	0 -35	0 -25	26	19				
315	400	0 -40	0 -28	30	21				
400	500	0 -45	0 -33	34	25				
500	630	0 -50	0 -38	38	29				
630	800	0 -75	0 -45	55	34				
800	1000	0 -100	- -60	75	45				
1000	1250	0 -125	- -	95	-				
1250	1600	0 -160	- -	120	-				

Remarks: The variation of thickness S_i and S_e of double-direction bearing is the same as single-direction bearing which has the same outer diameter dimension. The diameter of bore is in GB/T 273.2.
d: Nominal bore diameter
d₂: Nominal bore diameter of center shaft washer
D: Nominal outside diameter

Table 2.7 Tolerance of four-row cylindrical roller bearing outer rings

 μm

D mm		ΔD _{mp}				VD _p			VD _{mp}			D _{1mpmax} - D _{2mpmin}				K _{ea}			ΔC _s		VC _s		
		Tolerance class																					
		0、6、5	0	6	5	0	6	5	0	6	5	0	6	5	0	6	5	0、6、5		0	6	5	
Over	To	High	Low			Max													High	Low	Max		
80	120	0	-15	-13	-10	15	13	9	11	10	5	8	7	5	35	18	10	0	-200	The same as the VB _s of the inner ring	8		
120	150	0	-18	-15	-11	19	15	10	14	11	6	9	8	6	40	20	11	0	-250		8		
150	180	0	-25	-18	-13	25	18	12	19	14	7	13	9	7	45	23	13	0	-250		8		
180	250	0	-30	-20	-15	31	20	13	23	15	8	15	10	8	50	25	15	0	-300		10		
250	315	0	-35	-25	-18	35	25	16	26	19	9	18	13	9	60	30	18	0	-350		11		
315	400	0	-40	-28	-20	40	28	18	30	21	10	20	14	10	70	35	20	0	-400		13		
400	500	0	-45	-33	-23	45	34	20	34	25	12	23	17	12	80	40	23	0	-450		15		
500	630	0	-50	-38	-28	50	38	25	38	29	14	25	19	14	100	50	25	0	-500		18		
630	800	0	-75	-45	-35	75	45	31	55	34	18	38	23	18	120	60	30	0	-750		20		
800	1000	0	-100	-60	-40	100	60	35	75	45	20	50	30	20	140	75	30	0	-1000		25		
1000	1250	0	-125	-	-	125	-	-	-	-	-	63	-	-	160	-	-	0	-1250		-		
1250	1600	0	-160	-	-	160	-	-	-	-	-	80	-	-	190	-	-	0	-1600		-		

Table 2.8 Tolerance of four-row cylindrical roller bearing inner rings

 μm

d mm		Δ d _{mp}				Vd _p			Vd _{mp}			K _{ia}			d _{1mpmax} -d _{2mpmin}			Δ B _s		VB _s			
		Tolerance class																					
		0、6、5	0	6	5	0	6	5	0	6	5	0	6	5	0	6	5	0、6、5		0	6	5	
Over	To	High	Low			Max													High	Low	Max		
80	120	0	-20	-15	-10	20	15	9	15	11	5	25	13	6	10	8	5	0	-200	25	25	7	
120	180	0	-25	-18	-13	25	18	12	19	14	7	30	18	8	13	9	7	0	-250	30	30	8	
180	250	0	-30	-22	-15	30	23	14	23	17	8	40	20	10	15	11	8	0	-300	30	30	10	
250	315	0	-35	-25	-18	35	25	16	26	19	9	50	25	13	18	13	9	0	-350	35	35	13	
315	400	0	-40	-30	-23	40	31	21	30	23	12	60	30	15	20	15	12	0	-400	40	40	15	
400	500	0	-45	-35	-27	45	35	24	34	26	14	65	35	18	23	18	14	0	-450	50	45	17	
500	630	0	-50	-40	-30	50	40	27	38	30	15	70	40	20	25	20	15	0	-500	60	50	20	
630	800	0	-75	-	-	75	-	-	-	-	-	80	-	-	38	-	-	0	-750	70	-	-	
800	1000	0	-100	-	-	100	-	-	-	-	-	90	-	-	50	-	-	0	-1000	80	-	-	
1000	1250	0	-125	-	-	125	-	-	-	-	-	100	-	-	63	-	-	0	-1250	100	-	-	

Table 2.9 Tolerance of four-row tapered roller bearing inner rings and combination width

 μm

d mm		Δ d _{mp}			Vd _p			Vd _{mp}			K _{la}			d _{1mpmax} - d _{2mpmin}		Δ B _{4S} Δ C _{4S}	
		Tolerance class															
		0、6、5	0	6、5	0	6	5	0	6	5	0	6	5	0	6、5	0、6、5	
Over	To	High	Low			Max										High	Low
80	120	0	-20	-15	20	15	11	15	11	8	30	13	8	10	8	+400	-400
120	180	0	-25	-18	25	18	14	19	14	9	35	18	11	13	9	+500	-500
180	250	0	-30	-22	30	22	17	23	16	11	50	20	13	15	11	+600	-600
250	315	0	-35	-25	35	25	19	26	19	13	60	30	16	18	13	+700	-700
315	400	0	-40	-30	40	30	23	30	23	15	70	35	19	20	15	+800	-800
400	500	0	-45	-	45	-	-	34	-	-	70	-	-	23	-	+900	-900
500	630	0	-50	-	50	-	-	38	-	-	85	-	-	25	-	+1000	-1000
630	800	0	-75	-	75	-	-	56	-	-	100	-	-	38	-	+1200	-1200
800	1000	0	-100	-	100	-	-	75	-	-	120	-	-	50	-	+1500	-1500

Table 2.10 Tolerance of four-row tapered roller bearing outer rings
 μm

D mm		ΔD_{mp}			VD_p			VD_{mp}			$K_{\alpha\alpha}$			$D_{limpmax} - D_{limpmin}$	
		Tolerance class													
		0、6、5	0	6、5	0	6	5	0	6	5	0	6	5	0	6、5
Over	To	High	Low		Max										
80	120	0	-18	-13	18	13	10	14	10	7	35	18	10	9	7
120	150	0	-20	-15	20	15	11	15	11	8	40	20	11	10	8
150	180	0	-25	-18	25	18	14	19	14	9	45	23	13	13	9
180	250	0	-30	-20	30	20	15	23	15	10	50	25	15	15	10
250	315	0	-35	-25	35	25	19	26	19	13	60	30	18	18	13
315	400	0	-40	-28	40	28	22	30	22	14	70	35	20	20	14
400	500	0	-45	-33	45	33	25	34	25	17	80	40	23	23	17
500	630	0	-50	-38	50	38	29	38	29	19	100	50	25	25	19
630	800	0	-75	-	75	-	-	55	-	-	120	-	-	38	-
800	1000	0	-100	-	100	-	-	75	-	-	140	-	-	50	-
1000	1250	0	-125	-	125	-	-	84	-	-	165	-	-	65	-
1250	1600	0	-160	-	160	-	-	120	-	-	190	-	-	80	-

Table 2.11 Tolerance of inch series tapered roller bearing outer rings
 μm

Applicable type	D mm (1/25.4)		ΔD_s					
			Tolerance class					
	Over	To	4	2	3	0	00	
			High Low	High Low	High Low	High Low	High Low	
All types	-	266.7 (10.5)	+25 0	+25 0	+13 0	+13 0	+8 0	
	266.7 (10.5)	304.8 (12.0)	+25 0	+25 0	+13 0	+13 0	+8 0	
	304.8 (12.0)	609.6 (24.0)	+51 0	+51 0	+25 0	-	-	-
	609.6 (24.0)	914.4 (36.0)	+76 0	+76 0	+38 0	-	-	-
	914.4 (36.0)	1219.2 (48.0)	+102 0	-	+51 0	-	-	-
	1219.2 (48.0)	-	+127 0	-	+76 0	-	-	-

Table 2.12 Tolerance of inch series tapered roller bearing inner rings
 μm

Applicable type	d mm (1/25.4)		Δd_s					
			Tolerance class					
	Over	To	4	2	3	0	00	
			High Low	High Low	High Low	High Low	High Low	
All types	-	76.2 (3.0)	+13 0	+13 0	+13 0	+13 0	+8 0	
	76.2 (3.0)	266.7 (10.5)	+25 0	+25 0	+13 0	+13 0	+8 0	
	266.7 (10.5)	304.8 (12.0)	+25 0	+25 0	+13 0	+13 0	+8 0	
	304.8 (12.0)	609.6 (24.0)	-	+51 0	+25 0	-	-	-
	609.6 (24.0)	914.4 (36.0)	+76 0	-	+38 0	-	-	-
	914.4 (36.0)	1219.2 (48.0)	+102 0	-	+51 0	-	-	-
	1219.2 (48.0)	-	+127 0	-	+76 0	-	-	-

Table 2.13 Radial runout of inch series tapered roller bearings μm

Applicable type	D mm(1/25.4)		K _{1a} K _{2a}				
			Tolerance class				
	Over	To	4	2	3	0	00
			Max	Max	Max	Max	Max
All types	–	266.7 (10.5)	51	38	8	4	2
	266.7 (10.5)	304.8 (12.0)	51	38	8	4	2
	304.8 (12.0)	609.6 (24.0)	51	38	18	–	–
	609.6 (24.0)	914.4 (36.0)	76	51	51	–	–
	914.4 (36.0)	1219.2 (48.0)	76	–	76	–	–
	1219.2 (48.0)	–	76	–	76	–	–

Table 2.14 Tolerance of assemblage and combination width for inch series tapered roller bearings μm

Applicable type	d mm(1/25.4)		D mm(1/25.4)		Deviation					
					Class 4		Class 2		Class 3	
	Over	To	Over	To	High	Low	High	Low	High	Low
Single –row	–	101.6 (4.0)	–	–	+203	0	+203	0	+203	–203
	101.6 (4.0)	266.7 (10.5)	–	–	+356	–254	+203	0	+203	–203
	266.7 (10.5)	304.8 (12.0)	–	–	+356	–254	+203	0	+203	–203
	304.8 (12.0)	609.6 (24.0)	–	508.0 (20.0)	–	–	+381	–381	+203	–203
	304.8 (12.0)	609.6 (24.0)	508.0 (20.0)	–	–	–	+381	–381	+381	–381
	609.6 (24.0)	–	–	–	+381	–381	–	–	+381	–381
Double –row	–	101.6 (4.0)	–	–	+406	0	+406	0	+406	–406
	101.6 (4.0)	267.7 (10.5)	–	–	+711	–508	+406	–203	+406	–406
	267.7 (10.5)	304.8 (12.0)	–	–	+711	–508	+406	–203	+406	–406
	304.8 (12.0)	609.6 (24.0)	–	508.0 (20.0)	–	–	+762	–762	+406	–406
	304.8 (12.0)	609.6 (24.0)	508.0 (20.0)	–	–	–	+762	–762	+762	–762
	609.6 (24.0)	–	–	–	+762	–762	–	–	+762	–762
Double–row (Type TNA)	–	127.0 (5.0)	–	–	–	–	+254	0	+254	0
	127.0 (5.0)	–	–	–	–	–	+762	0	+762	0
Four–row	Full size range		–	–	+1524	–1524	+1524	–1524	+1524	–1524

Remark: This is applicable to Class 0.

Table 2.15 Tolerance of outer ring flange of radial bearings μm

D ₁		ΔD_{1s}			
		Locating flange		Non-locating flange	
Over	To	High	Low	High	Low
6	10	0	–36	+220	–36
10	18	0	–43	+270	–43
18	30	0	–52	+330	–52
30	50	0	–62	+390	–62
50	80	0	–74	+460	–74
80	120	0	–87	+540	–87
120	180	0	–100	+630	–100
180	250	0	–115	+720	–115
250	315	0	–130	+810	–130
315	400	0	–140	+890	–140
400	500	0	–155	+970	–155
500	630	0	–175	+1100	–175
630	800	0	–200	+1250	–200
800	1000	0	–230	+1400	–230
1000	1250	0	–260	+1650	–260
1250	1600	0	–310	+1950	–310
1600	2000	0	–370	+2300	–370
2000	2500	0	–440	+2800	–440

Table 2.16 Limiting chamfer dimensions (GB/T274-2000)
(1) Radial bearings (except for tapered roller bearings)

r (Min) or r _i (Min)	d		Radial	Axial
	Over	To	r (Max) or r _i (Max)	
0.05	—	—	0.1	0.2
0.08	—	—	0.16	0.3
0.1	—	—	0.2	0.4
0.15	—	—	0.3	0.6
0.2	—	—	0.5	0.8
0.3	—	40	0.6	1
	40	—	0.8	1
0.6	—	40	1	2
	40	—	1.3	2
1	—	50	1.5	3
	50	—	1.9	3
1.1	—	120	2	3.5
	120	—	2.5	4
1.5	—	120	2.3	4
	120	—	3	5
2	—	80	3	4.5
	80	220	3.5	5
	220	—	3.8	6
2.1	—	280	4	6.5
	280	—	4.5	7
2.5	—	100	3.8	6
	100	280	4.5	6
	280	—	5	7
3	—	280	5	8
	280	—	5.5	8
4	—	—	6.5	9
5	—	—	8	10
6	—	—	10	13
7.5	—	—	12.5	17
9.5	—	—	15	19
12	—	—	18	24
15	—	—	21	30
19	—	—	25	38

Remark: For bearings whose nominal width $\leq 2\text{mm}$, radial and axial values of r(max) or r_i(max) are same.

(2) Metric tapered roller bearings mm

r (Min) or r _i (Min)	d or D mm		Radial	Axial
	Over	To	r (Max) or r _i (Max)	
0.3	—	40	0.7	1.4
	40	—	0.9	1.6
0.6	—	40	1.1	1.7
	40	—	1.3	2
1	—	50	1.6	2.5
	50	—	1.9	3
1.5	—	120	2.3	3
	120	250	2.8	3.5
	250	—	3.5	4
2	—	120	2.8	4
	120	250	3.5	4.5
	250	—	4	5

(2) Metric tapered roller bearings (continued)

mm

r (Min) or r ₁ (Min)	d or D mm		Radial	Axial
	Over	To	r (Max) or r ₁ (Max)	
2.5	–	120	3.5	5
	120	250	4	5.5
	250	–	4.5	6
3	–	120	4	5.5
	120	250	4.5	6.5
	250	400	5	7
	400	–	5.5	7.5
4	–	120	5	7
	120	250	5.5	7.5
	250	400	6	8
	400	–	6.5	8.5
5	–	180	6.5	8
	180	–	7.5	9
6	–	180	7.5	10
	180	–	9	11

Remark: d is for inner rings, D is for outer rings.

(3) Thrust bearings

mm

r (Min) or r ₁ (Min)	Radial and axial r (Max) or r ₁ (Max)
0.05	0.1
0.08	0.16
0.1	0.2
0.15	0.3
0.2	0.5
0.3	0.8
0.6	1.5
1	2.2
1.1	2.7
1.5	3.5
2	4
2.1	4.5
3	5.5
4	6.5
5	8
6	10
7.5	12.5
9.5	15
12	18
15	21
19	25

Table 2.17 Basic tolerance

μm

Basic dimension mm		Basic tolerance classes									
Over	To	IT1	IT2	IT3	IT4	IT5	IT6	IT7	IT8	IT9	IT10
–	3	0.8	1.2	2	3	4	6	10	14	25	40
3	6	1	1.5	2.5	4	5	8	12	18	30	48
6	10	1	1.5	2.5	4	6	9	15	22	36	58
10	18	1.2	2	3	5	8	11	18	27	43	70
18	30	1.5	2.5	4	6	9	13	21	33	52	84
30	50	1.5	2.5	4	7	11	16	25	39	62	100
50	80	2	3	5	8	13	19	30	46	74	120

Table 2.17 Basic tolerance (continued) μm

Basic dimension mm		Basic tolerance classes									
Over	To	IT1	IT2	IT3	IT4	IT5	IT6	IT7	IT8	IT9	IT10
80	120	2.5	4	6	10	15	22	35	54	87	140
120	180	3.5	5	8	12	18	25	40	63	100	160
180	250	4.5	7	10	14	20	29	46	72	115	185
250	315	6	8	12	16	23	32	52	81	130	210
315	400	7	9	13	18	25	36	57	89	140	230
400	500	8	10	15	20	27	40	63	97	155	250
500	630	9	11	16	22	30	44	70	110	175	280
630	800	10	13	18	25	35	50	80	125	200	320
800	1000	11	15	21	29	40	56	90	140	230	360
1000	1250	13	18	24	34	46	66	105	165	260	420
1250	1600	15	21	29	40	54	78	125	195	310	500
1600	2000	18	25	35	48	65	92	150	230	370	600
2000	2500	22	30	41	57	77	110	175	280	440	700
2500	3150	26	36	50	69	93	135	210	330	540	860

3. Bearing clearance

Bearing clearance includes radial and axial clearance. Before mounting, keeping the inner or outer ring stationary then moving the unfixed ring, the moving distance is called bearing clearance.

The running clearance is also called working clearance. It has great effects on the load distribution, fatigue life, temperature rise, noise, vibration, etc.

According to National or Industry Standard, measuring loads should be added before measuring the clearance to get an accurate value.

For the reasons above, measuring value is bigger than original clearance (we call it theoretical clearance), namely, the measuring loads cause elastic deformation. However, for the roller bearings, the elastic deformation is little and can be neglected.

The internal clearance is the same as theoretical clearance before mounting.

Before mounting, the internal clearance is called original clearance (Δ_0); the clearance after mounting is called mounting clearance (Δ_t); effective clearance (Δ_u) means the clearance of bearing working without any loads. Due to the effects of temperature rising and heat elimination condition at work, inner ring temperature is usually 3–10 °C higher than outer ring, therefore, the swell increment of inner ring is larger than outer ring, the effective clearance (Δ_u) is smaller than mounting clearance (Δ_t). If bearing worked with loads, the elastic deformation will be formed in the contact area between rollers and raceway, the clearance will be bigger, and called operating clearance (Δ). The relationships of clearance above are following:

$$\Delta = \Delta_0 - (\delta_f + \delta_t) + \delta_w$$

$$\delta_{fi} = \Delta de \frac{de}{Di} \cdot \frac{1 - \left(\frac{d_0}{d}\right)^2}{1 - \left(\frac{d_0}{Di}\right)^2}$$

$$\delta_{fo} = \Delta De \frac{de}{D} \cdot \frac{1 - \left(\frac{D}{D_h}\right)^2}{1 - \left(\frac{de}{D_h}\right)^2}$$

$$\text{Therein, } \delta_f = \delta_{fi} + \delta_{fo}$$

$$\delta_t = a \Delta_t D_0$$

Δde : Magnitude of interference of inner ring and shaft fits (mm)

ΔDe : Magnitude of interference of outer ring and housing fits (mm)

d, D : Bore diameter and outside diameter of bearing (mm)

de, Di : Mean bore diameter of outer ring and mean outside diameter of inner ring (mm)

δ_f : Clearance variation caused by temperature difference between inner ring and outer ring

δ_{fi} : Clearance reduction caused by inner ring and shaft fits

δ_w : Clearance increase caused by radial deformation

δ_{fo} : Clearance reduction caused by outer ring and housing fits

**Table 3.1 Radial clearance of deep groove ball bearings
(cylindrical bore) (GB/T4604-2006) μm**

d mm		Radial clearance									
		Group 2		Group 0		Group 3		Group 4		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
2.5	6	0	7	2	13	8	23	—	—	—	—
6	10	0	7	2	13	8	23	14	29	20	37
10	18	0	9	3	18	11	25	18	33	25	45
18	24	0	10	5	20	13	28	20	36	28	48
24	30	1	11	5	20	13	28	23	41	30	53
30	40	1	11	6	20	15	33	28	46	40	64
40	50	1	11	6	23	18	36	30	51	45	73
50	65	1	15	8	28	23	43	38	61	55	90
65	80	1	15	10	30	25	51	46	71	65	105
80	100	1	18	12	36	30	58	53	84	75	120
100	120	2	20	15	41	36	66	61	97	90	140
120	140	2	23	18	48	41	81	71	114	105	160
140	160	2	23	18	53	46	91	81	130	120	180
160	180	2	25	20	61	53	102	91	147	135	200
180	200	2	30	25	71	63	117	107	163	150	230
200	225	2	35	25	85	75	140	125	195	175	265
225	250	2	40	30	95	85	160	145	225	205	300
250	280	2	45	35	105	90	170	155	245	225	340
280	315	2	55	40	115	100	190	175	270	245	370
315	355	3	60	45	125	110	210	195	300	275	410
355	400	3	70	55	145	130	240	225	340	315	460

Table 3.2 Radial clearance of self-aligning ball bearings (GB/T4604-2006) μm

d mm		Radial clearance of bearing with cylindrical bore										Radial clearance of bearing with tapered bore									
		Group 2		Group 0		Group 3		Group 4		Group 5		Group 2		Group 0		Group 4		Group 3		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
2.5	6	1	8	5	15	10	20	15	25	21	33	—	—	—	—	—	—	—	—	—	—
6	10	2	9	6	17	12	25	19	33	27	42	—	—	—	—	—	—	—	—	—	—
10	14	2	10	6	19	13	26	21	35	30	48	—	—	—	—	—	—	—	—	—	—
14	18	3	12	8	21	15	28	23	37	32	50	—	—	—	—	—	—	—	—	—	—
18	24	4	14	10	23	17	30	25	39	34	52	7	17	13	26	20	33	28	42	37	55
24	30	5	16	11	24	19	35	29	46	40	58	9	20	15	28	23	39	33	50	44	62
30	40	6	18	13	29	23	40	34	53	46	66	12	24	19	35	29	46	40	59	52	72
40	50	6	19	14	31	25	44	37	57	50	71	14	27	22	39	33	52	45	65	58	79

Table 3.2 Radial clearance of self-aligning ball bearings (GB/T4604-2006) (continued) μm

d mm		Radial clearance of bearing with cylindrical bore										Radial clearance of bearing with tapered bore									
		Group 2		Group 0		Group 3		Group 4		Group 5		Group 2		Group 0		Group 4		Group 3		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
50	65	7	21	16	36	30	50	45	69	62	88	18	32	27	47	41	61	56	80	73	99
65	80	8	24	18	40	35	60	54	83	76	108	23	39	35	57	50	75	69	98	91	123
80	100	9	27	22	48	42	70	64	96	89	124	29	47	42	68	62	90	84	116	109	144
100	120	10	31	25	56	50	83	75	114	105	145	35	56	50	81	75	108	100	139	130	170
120	140	10	38	30	68	60	100	90	135	125	175	40	68	60	98	90	130	120	165	155	205
140	160	15	44	35	80	70	120	110	161	150	210	45	74	65	110	100	150	140	191	180	240

Table 3.3 Recommended axial clearance of double-row angular contact ball bearings μm

d (mm)		Group 2		Normal group	
Over	To	Min	Max	Min	Max
100	140	70	140	120	180
140	180	80	160	140	200
180	220	100	180	160	220
220	260	120	200	180	240
260	300	140	220	200	280
300	355	160	240	220	300
355	400	180	270	250	330
400	450	200	290	270	360
450	500	220	310	290	390
500	560	240	330	310	420
560	630	260	360	340	450
630	710	280	390	370	490
710	800	300	420	400	540
800	900	330	420	440	590
900	1000	360	500	480	630

Table 3.4 Radial clearance of cylindrical roller bearings (cylindrical bore) (GB/T4604-2006) μm

d mm		Radial clearance									
		Group 2		Group 0		Group 3		Group 4		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
—	10	0	25	20	45	35	60	50	75	—	—
10	24	0	25	20	45	35	60	50	75	65	90
24	30	0	25	20	45	35	60	50	75	70	95
30	40	5	30	25	50	45	70	60	85	80	105
40	50	5	35	30	60	50	80	70	100	95	125
50	65	10	40	40	70	60	90	80	110	110	140
65	80	10	45	40	75	65	100	90	125	130	165
80	100	15	50	50	85	75	110	105	140	155	190
100	120	15	55	50	90	85	125	125	165	180	220
120	140	15	60	60	105	100	145	145	190	200	245
140	160	20	70	70	120	115	165	165	215	225	275
160	180	25	75	75	125	120	170	170	220	250	300
180	200	35	90	90	145	140	195	195	250	275	330
200	225	45	105	105	165	160	220	220	280	305	365
225	250	45	110	110	175	170	235	235	300	330	395
250	280	55	125	125	195	190	260	260	330	370	440
280	315	55	130	130	205	200	275	275	350	410	485
315	355	65	145	145	225	225	305	305	385	455	535
355	400	100	190	190	280	280	370	370	460	510	600
400	450	110	210	210	310	310	410	410	510	565	665
450	500	110	220	220	330	330	440	440	550	625	735

Table 3.5 Radial clearance of spherical roller bearings (GB/T4604-2006)
(1) Cylindrical bore μm

d mm		Radial clearance									
		Group 2		Group 0		Group 3		Group 4		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
14	18	10	20	20	35	35	45	45	60	60	75
18	24	10	20	20	35	35	45	45	60	60	75
24	30	15	25	25	40	40	55	55	75	75	95
30	40	15	30	30	45	45	60	60	80	80	100
40	50	20	35	35	55	55	75	75	100	100	125
50	65	20	40	40	65	65	90	90	120	120	150
65	80	30	50	50	80	80	110	110	145	145	180
80	100	35	60	60	100	100	135	135	180	180	225
100	120	40	75	75	120	120	160	160	210	210	260
120	140	50	95	95	145	145	190	190	240	240	300
140	160	60	110	110	170	170	220	220	280	280	350
160	180	65	120	120	180	180	240	240	310	310	390
180	200	70	130	130	200	200	260	260	340	340	430
200	225	80	140	140	220	220	290	290	380	380	470
225	250	90	150	150	240	240	320	320	420	420	520
250	280	100	170	170	260	260	350	350	460	460	570
280	315	110	190	190	280	280	370	370	500	500	630
315	355	120	200	200	310	310	410	410	550	550	690
355	400	130	220	220	340	340	450	450	600	600	750
400	450	140	240	240	370	370	500	500	660	660	820
450	500	140	260	260	410	410	550	550	720	720	900
500	560	150	280	280	440	440	600	600	780	780	1000
560	630	170	310	310	480	480	650	650	850	850	1100
630	710	190	350	350	530	530	700	700	920	920	1190
710	800	210	390	390	580	580	770	770	1010	1010	1300
800	900	230	430	430	650	650	860	860	1120	1120	1440
900	1000	260	480	480	710	710	930	930	1220	1220	1570

(2) Tapered bore μm

d mm		Radial clearance									
		Group 2		Group 0		Group 3		Group 4		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
18	24	15	25	25	35	35	45	45	60	60	75
24	30	20	30	30	40	40	55	55	75	75	95
30	40	25	35	35	50	50	65	65	85	85	105
40	50	30	45	45	60	60	80	80	100	100	130
50	65	40	55	55	75	75	95	95	120	120	160
65	80	50	70	70	95	95	120	120	150	150	200
80	100	55	80	80	110	110	140	140	180	180	230
100	120	65	100	100	135	135	170	170	220	220	280
120	140	80	120	120	160	160	200	200	260	260	330
140	160	90	130	130	180	180	230	230	300	300	380
160	180	100	140	140	200	200	260	260	340	340	430
180	200	110	160	160	220	220	290	290	370	370	470
200	225	120	180	180	250	250	320	320	410	410	520
225	250	140	200	200	270	270	350	350	450	450	570
250	280	150	220	220	300	300	390	390	490	490	620
280	315	170	240	240	330	330	430	430	540	540	680
315	355	190	270	270	360	360	470	470	590	590	740
355	400	210	300	300	400	400	520	520	650	650	820
400	450	230	330	330	440	440	570	570	720	720	910

(2) Tapered bore (continued)

μm

d mm		Radial clearance									
		Group 2		Group 0		Group 3		Group 4		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
450	500	260	370	370	490	490	630	630	790	790	1000
500	560	290	410	410	540	540	680	680	870	870	1100
560	630	320	460	460	600	600	760	760	980	980	1230
630	710	350	510	510	670	670	850	850	1090	1090	1360
710	800	390	570	570	750	750	960	960	1220	1220	1500
800	900	440	640	640	840	840	1070	1070	1370	1370	1690
900	1000	490	710	710	930	930	1190	1190	1520	1520	1860

Table 3.6 Radial clearance of four-row cylindrical roller bearings (JB/T5389.1-2005)

μm

d mm		Radial clearance									
		Group 2		Group 0		Group 3		Group 4		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
80	100	15	50	50	85	75	110	105	140	155	190
100	120	15	55	50	90	85	125	125	165	180	220
120	140	15	60	60	105	100	145	145	190	200	245
140	160	20	70	70	120	115	165	165	215	225	275
160	180	25	75	75	125	120	170	170	220	250	300
180	200	35	90	90	145	140	195	195	250	275	330
200	225	45	105	105	165	160	220	220	280	305	365
225	250	45	110	110	175	170	235	235	300	330	395
250	280	55	125	125	195	190	260	260	330	370	440
280	315	55	130	130	205	200	275	275	350	410	485
315	355	65	145	145	225	225	305	305	385	455	535
355	400	100	190	190	280	280	370	370	460	510	600
400	450	110	210	210	310	310	410	410	510	565	665
450	500	110	220	220	330	330	440	440	550	625	735
500	560	120	240	240	360	360	480	480	600	—	—
560	630	140	260	260	380	380	500	500	620	—	—
630	710	145	285	285	425	425	565	565	705	—	—
710	800	150	310	310	470	470	630	630	790	—	—
800	900	180	350	350	520	520	690	690	860	—	—
900	1000	200	390	390	580	580	770	770	960	—	—
1000	1120	220	430	430	640	640	850	850	1060	—	—
1120	1250	230	470	470	710	710	950	950	1190	—	—
1250	1400	270	530	530	790	790	1050	1050	1310	—	—

Table 3.7 Radial clearance of double-row and four-row tapered roller bearings (JB/T8236-1996)

μm

d mm		Group 1		Group 2		Group 0		Group 3		Group 4		Group 5	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
—	30	0	10	10	20	20	30	40	50	50	60	70	80
30	40	0	12	12	25	25	40	45	60	60	75	80	95
40	50	0	15	15	30	30	45	50	65	65	80	90	110
50	65	0	15	15	30	30	50	50	70	70	90	90	120
65	80	0	20	20	40	40	60	60	80	80	110	110	150
80	100	0	20	20	45	45	70	70	100	100	130	130	170
100	120	0	25	25	50	50	80	80	110	110	150	150	200
120	140	0	30	30	60	60	90	90	120	120	170	170	230
140	160	0	30	30	65	65	100	100	140	140	190	190	260

Table 3.7 Radial clearance of double-row and four-row tapered roller bearings (JB/T8236-1996) (continued) μm

d mm		Group 1		Group 2		Group 0		Group 3		Group 4		Group 5	
Over	To	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
160	180	0	35	35	70	70	110	110	150	150	210	210	280
180	200	0	40	40	80	80	120	120	170	170	230	230	310
200	225	0	40	40	90	90	140	140	190	190	260	260	340
225	250	0	50	50	100	100	150	150	210	210	290	290	380
250	280	0	50	50	110	110	170	170	230	230	320	320	420
280	315	0	60	60	120	120	180	180	250	250	350	350	460
315	355	0	70	70	140	140	210	210	280	280	390	390	510
355	400	0	70	70	150	150	230	230	310	310	440	440	580
400	450	0	80	80	170	170	260	260	350	350	490	490	650
450	500	0	90	90	190	190	290	290	390	390	540	540	720
500	560	0	100	100	210	210	320	320	430	430	590	590	790
560	630	0	110	110	230	230	350	350	480	480	660	660	880
630	710	0	130	130	260	260	400	400	540	540	740	740	910
710	800	0	140	140	290	290	450	450	610	610	830	830	1100
800	900	0	160	160	330	330	500	500	670	670	920	920	1240
900	1000	0	180	180	360	360	540	540	720	720	980	980	1300
1000	1120	0	200	200	400	400	600	600	820	—	—	—	—
1120	1250	0	220	220	450	450	670	670	900	—	—	—	—
1250	1400	0	250	250	500	500	750	750	980	—	—	—	—

Table 3.8 Recommended axial clearance of double-direction tapered roller thrust bearings μm

d/mm	Min	Max
160 ~ 200	50	100
200 ~ 300	60	120
300 ~ 400	80	150
400 ~ 500	90	160
>500	100	180



Part II

Catalog

Deep groove ball bearings

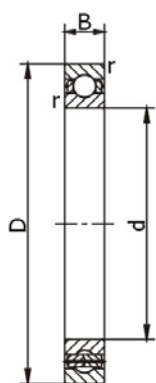
Deep groove ball bearings are commonly used in a number of applications as their simple structures and convenient using. They mainly carry radial loads, but also can carry combined loads as same as angular contact ball bearings when the radial clearance increases. They may carry pure axial loads when the speed is high and thrust ball bearings are not suitable. Comparing with other bearings, deep groove ball bearings have lower friction coefficient and higher limiting speed, but can't carry heavy loads.

After being mounted on the shaft, the bearing is able to limit axial displacement of shaft or housing in the range of axial clearance, therefore, it can be as axial locating in two directions. In addition, the bearing have certain aligning ability. While the slant angle is $2' \sim 10'$ relative to housing, it can work normally, but bearing life would be reduced.

These bearings commonly adopt ribbon steel pressed cages, and metal machined solid cages are often for large-size deep groove ball bearings.

Deep groove ball bearings are widely used in automotives, tractors, machine tools, generators, water-pumps, agriculture machinery, textile machinery, etc.

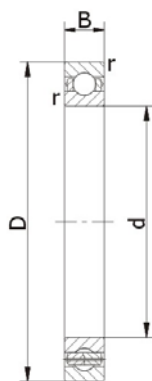
Deep groove ball bearings



Type 6000
(Type 0000)

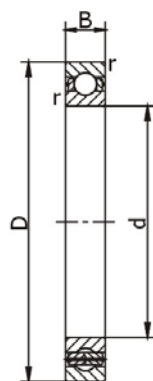
Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
150	190	20	1.1	49.1	58.5	61830	1000830	1.15	3000	3600
	200	24	1.5	73	79.5	62830X1	830	2.08	2900	3500
	210	28	2	85	90.5	61930M	1000930H	2.59	2800	3400
	225	24	1.1	91.9	98.5	16030	7000130	3.62	2600	3000
	225	35	2.1	132	125	6030	130	4.24	2600	3000
	270	45	3	203	199	6230	230	10	1900	2500
	320	65	4	288	295	6330	330	22.7	1800	2300

Deep groove ball bearings

Type 6000
(Type 0000)

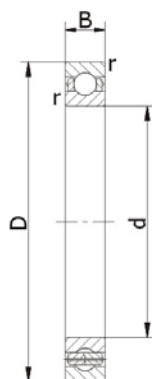
Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
160	200	20	1.1	48.5	61	61832	1000832	1.23	2800	3400
	220	28	2	87	96	61932M	1000932H	2.71	2600	3200
	240	25	1.5	99	108	16032	7000132	4.2	2400	3000
	240	38	2.1	145	138	6032	132	5.15	2400	3000
	290	48	3	215	218	6232M	232H	14.5	1900	2400
	340	68	4	313	340	6332	332	29	1800	2200
170	215	22	1.1	61.5	78	61834	1000834	1.9	2600	3200
	230	28	2	88.8	100	61934	1000934	2.85	2400	3000
	240	28	2	95	107	61934X1	834	4.11	2400	3000
	260	28	1.5	118	130	16034	7000134	5.71	2200	2800
	260	42	2.1	170	170	6034	134	6.89	2200	2800
	310	52	4	245	260	6234	234	15.8	1900	2400
180	225	22	1.1	62.3	78.5	61836	1000836	1.72	2400	3000
	250	33	2	119	133	61936M	1000936H	4.16	2200	2800
	260	34	2	140	147	61936X3	736	6.1	2100	2700
	280	31	2	145	157	16036	7000136	7.5	2000	2600
	280	46	2.1	188	198	6036	136	8.88	2000	2600
	290	42	4	198	205	60136X3	836	10.7	1900	2400
	320	52	4	262	285	6236	236	15.9	1800	2200
	380	75	4	355	405	6336	336	43.1	1600	2000
190	240	24	1.5	75.1	93.5	61838M	1000838H	2.53	2200	2800
	260	33	2	117	133	61938M	1000938H	5.18	2200	2800
	290	31	2	149	168	16038	7000138	7.78	2000	2600
	290	46	2.1	188	201	6038	138K1	9.39	2000	2600
	300	42	4	208	224	61038X3	838	11.2	2000	2600
	340	55	4	285	322	6238	238	22.3	1700	2000
	400	78	5	355	415	6338	338	49.7	1600	1900
200	250	24	1.5	74	98	61840M	1000840H	2.67	2200	2800
	280	38	2.1	149	168	61940M	1000940H	7.28	2000	2600
	290	38	2.1	143	158	61940X1	840	8.6	2000	2600
	310	34	2	167	191	16040	7000140	10	1900	2400
	310	51	2.1	207	226	6040	140	12	1900	2400
	360	58	4	288	332	6240	240	26.7	1700	2000
	420	80	5	380	445	6340	340	55.3	1500	1800
220	270	24	1.5	76.5	97.8	61844M	1000844H	2.9	1900	2400
	300	38	2.1	152	178	61944	1000944	7.88	1900	2400
	340	37	2.1	180	217	16044	7000144	13.1	1800	2200
	340	56	3	252	268	6044	144	18.6	1800	2200

Deep groove ball bearings

Type 6000
(Type 0000)

Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
220	400	65	4	355	365	6244	244	37.4	1500	1800
	460	88	5	410	520	6344	344	73.9	1300	1600
240	300	28	2	83.5	108	61848	1000848	4.48	1800	2200
	320	38	2.1	154	190	61948M	1000948H	8.49	1800	2200
	360	37	2.1	196	243	16048	7000148	13.9	1700	2000
	360	56	3	270	292	6048	148	19.9	1700	2000
	390	55	4	279	345	60148X3	748	27.2	1500	1800
	440	72	4	358	467	6248	248	50.5	1300	1600
	500	95	5	470	625	6348	348	94.4	1100	1400
250	305	20	1	62.5	103	60848X3	848	3.18	1800	2200
	330	30	1.5	142	185	60948X3	848	7.33	1800	2200
	340	35	2.1	158	201	60048X3	848	9.58	1700	2000
260	320	28	2	101	148	61852M	1000852H	4.84	1700	2000
	360	46	2.1	210	268	61952M	1000952H	14	1600	1900
	400	44	3	237	310	16052	7000152	21.1	1500	1800
	400	65	4	291	375	6052M	152H	29.4	1500	1800
	480	80	5	400	540	6252	252	67	1100	1400
	540	102	6	505	710	6352	352	118	1000	1300
280	350	33	2	133	191	61856	1000856	7.2	1600	1900
	380	46	2.1	209	272	61956M	1000956H	15.1	1500	1800
	380	60	2.1	227	298	62956	2956	20.6	1500	1800
	420	44	3	243	330	16056	7000156	22.7	1400	1700
	420	65	4	300	410	6056	156	31.2	1400	1700
	460	63	4	340	460	60156X2	856	44.5	1100	1300
	500	80	5	400	550	6256	256	70.4	1100	1400
	580	108	6	570	840	6356	356	144	950	1200
300	360	25	2	105	166	60860X1	760	5.05	1500	1800
	380	38	2.1	166	233	61860	1000860	10.3	1400	1700
	395	35	2.1	183	253	60860X3	860	12.1	1400	1700
	420	56	3	269	370	61960M	1000960H	23.9	1300	1600
	460	50	4	285	405	16060	7000160	31.5	1200	1500
	460	74	4	355	500	6060	160	44.2	1200	1500
	540	85	5	465	670	6260	260	87.8	1000	1300
320	400	38	2.1	168	244	61864	1000864	10.8	1300	1600
	440	56	3	275	392	61964	1000964	25.3	1200	1500
	480	50	4	293	430	16064	7000164	33.2	1100	1400
	480	74	4	390	570	6064	164	46.5	1100	1400
	580	92	5	530	805	6264	264	111	950	1200

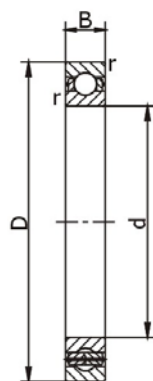
Deep groove ball bearings



Type 6000
(Type 0000)

Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
340	420	38	2.1	175	265	61868	1000868	11.5	1200	1500
	460	56	3	292	418	61968	1000968	26.6	1100	1400
	520	57	4	345	520	16068	7000168	45	1000	1300
	520	82	5	440	660	6068	168	62.3	1000	1300
	620	92	6	530	820	6268	268	129	900	1100
360	440	38	2.1	192	290	61872	1000872	11.8	1100	1400
	480	56	3	280	425	61972	1000972	27.9	1100	1400
	540	57	4	351	550	16072	7000172	49	1000	1300
	540	82	5	460	720	6072	172	65.3	1000	1300
	550	85	5	460	720	61072X3	872	72.6	1000	1300
380	480	46	2.1	238	375	61876	1000876	19.5	1000	1300
	520	44	3	256	390	16976	7000976	30.5	1000	1300
	520	65	4	325	510	61976	1000976	40	1000	1300
	560	57	4	377	620	16076	7000176	51	950	1200
	560	82	5	455	725	6076	176	68	950	1200
400	500	46	2.1	241	390	61880	1000880	20.5	1000	1300
	540	65	4	335	540	61980F3	1000980	42	950	1200
	600	90	5	510	825	6080	180	88.4	900	1100
420	520	46	2.1	245	410	61884	1000884	21.4	950	1200
	560	65	4	340	570	61984	1000984	43.6	900	1100
	620	90	5	530	895	6084	184	92.2	900	1100
440	540	46	2.1	249	425	61888	1000888	22.3	900	1100
	600	74	4	395	680	61988F3	1000988	60.2	900	1100
	650	94	6	550	965	6088	188	106	850	1000
460	580	56	3	310	550	61892	1000892	34.3	900	1100
	620	74	4	405	720	61992	1000992	62.6	850	1000
	680	100	6	605	1080	6092	192	123	800	950
480	600	56	3	315	575	61896	1000896	35.4	850	1000
	650	78	5	450	815	61996	1000996	73.5	800	950
	700	100	6	605	1090	6096	196	127	750	900
500	620	56	3	320	600	618/500	10008/500	37.2	800	950
	670	78	5	460	865	619/500	10009/500	82	750	900
	720	100	6	630	1170	60/500	1/500	131	750	900
530	650	56	3	325	625	618/530	10008/530	39.8	750	900
	710	82	5	455	870	619/530	10009/530	89.8	750	900
	780	112	6	680	1300	60/530	1/530	184	700	850
560	680	56	3	330	650	618/560	10008/560	41.5	700	850
	750	85	5	525	1040	619/560	10009/560	105	670	800

Deep groove ball bearings

Type 6000
(Type 0000)

Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
600	730	60	3	355	735	618/600	10008/600	50.9	670	800
	800	90	5	550	1160	619/600	10009/600	120	630	750
	870	118	6	790	1640	60/600	1/600	236	600	700
630	780	69	4	420	890	618/630	10008/630	71.3	630	750
	810	60	4	438	882	67/630	—	85.2	600	700
	850	100	6	625	1350	619/630	10009/630	163	600	700
	920	128	7.5	750	1620	60/630N1	1/630K	285	560	670
670	820	69	4	435	965	618/670	10008/670	75.4	560	670
	900	103	6	675	1460	619/670	10009/670	181	530	630
	980	136	7.5	765	1730	60/670	1/670	351	500	600
710	870	74	4	480	1100	618/710	10008/710	92.6	530	630
	950	106	6	715	1640	619/710	10009/710	220	500	600
	1030	140	7.5	1020	2310	60/710	1/710	386	480	560
750	920	78	5	525	1260	618/750	10008/750	110	500	600
	1000	112	6	785	1840	619/750	10009/750	245	480	560
	1090	150	7.5	995	2360	60/750	1/750	485	450	530
800	980	82	5	530	1310	618/800	10008/800	132	450	530
	1060	115	6	825	2050	619/800	10009/800	275	430	500
850	1030	82	5	559	1421	618/850	10008/850	140	430	500
900	1090	85	5	618	1532	618/900	10008/900	160	380	450
1000	1220	100	6	637	1250	618/1000	10008/1000	245	340	400
1060	1280	100	6	728	1500	618/1060	10008/1060	260	300	360
1120	1360	106	6	765	1960	618/1120	10008/1120	315	—	—
1140	1380	106	6	858	2390	618/1140	10008/1140	324	—	—
1180	1420	106	6	792	2210	618/1180	10008/1180	342	—	—
1320	1600	122	6	956	2350	618/1320	10008/1320	500	—	—
1400	1700	132	7.5	1120	2750	618/1400	10008/1400	615	—	—

Single-row angular contact ball bearings

Single-row angular contact ball bearings can only carry pure axial loads in one direction, and the capacity increases with contact angle. The nominal contact angles are 15° , 25° and 40° . When the bearings carry radial loads, the inner and outer rings will be separated because of additional axial force. They are normally mounted in pairs.

Single-row angular contact ball bearings have two structures: separable and nonseparable, because of more balls in bearings, high loading capacity and stiffness can be gained.

The basic type of separable angular contact ball bearings is type S70000. Type SN70000 has separable inner ring, and the inner and outer ring can be mounted respectively when the installation conditions are restricted.

There are several basic types of nonseparable angular contact ball bearings as follows:

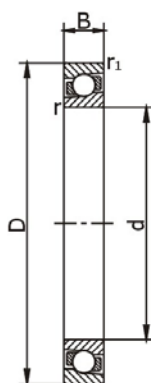
Type 70000C, in which, contact angle is 15° , and the counter bore is in outer ring.

Type 70000AC, in which, contact angle is 25° , and the counter bore is in outer ring.

Type 70000B, in which, contact angle is 40° , and the counter bore is in outer ring.

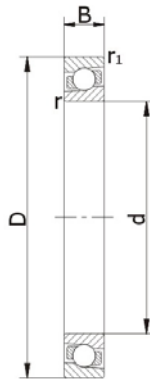
Metal solid cages are mainly used in single-row angular contact ball bearings. Phenolic cloth laminated tube solid cages are usually used for high speed applications, and the maximum temperature is 120°C .

Single-row angular contact ball bearings

Type 70000
(Type 6000)

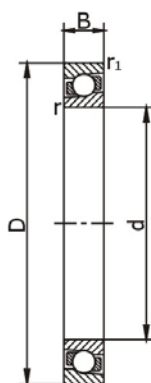
Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	D	B	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
150	190	20	1.1	0.6	53.5	74.5	71830AC	—	1.32	2400	3400
	210	28	2	1	90	120	71930AC	—	3	2400	3400
	225	35	2.1	1.1	153	130	7030AC	46130	4.83	2000	3000
	270	45	3	1.1	241	218	7230AC	46230	12.1	1800	2600
	320	65	4	1.5	360	375	7330AC	46330	25.8	1700	2400
	320	65	4	1.5	310	310	7330B	66330	25.8	1600	2200
160	240	38	2.1	1.1	161	139	7032AC	46132	5.81	2000	3000
	279	40	2.1	1.1	204	182	—	46932	11.6	2000	2800
	290	48	3	1.1	262	247	7232C	36232	14.5	1800	2600
	290	48	3	1.1	249	232	7232AC	46232	14.5	1700	2400
170	215	22	1.1	0.6	80	110	71834C	—	2	2000	2800
	230	28	2	1	110	140	71934C	—	3.3	2000	3000
	260	42	2.1	1.1	193	171	7034AC	46134	8.25	2000	2800
	310	52	4	1.5	282	275	7234AC	46234	17.4	1600	2200
	310	52	4	1.5	320	325	7234C	36234	17.2	1700	2400
180	280	46	2.1	1.1	194	230	7036AC	46136	9.8	1600	2200
	320	52	4	1.5	335	345	7236C	36236	18.1	1500	2000
	320	52	4	1.5	315	325	7236AC	46236	18.1	1500	2000
	380	75	4	1.5	405	445	7336B	66336	37	1300	1800
190	260	33	2	1	139	177	71938AC	1046938	4.45	1800	2200
	290	46	2.1	1.1	214	200	7038AC	46138	10.7	1600	2200
	340	55	4	1.5	280	370	7238B	—	23	1500	2000
200	250	24	1.5	1	90	130	71840C	—	2.5	1800	2200
	280	38	2.1	1.1	150	210	71940AC	—	7.1	1600	2200
	310	51	2.1	1.1	253	248	7040AC	46140	14	1500	2000
	360	58	4	1.5	375	410	7240C	36240	25.2	1400	1900
	360	58	4	1.5	355	385	7240AC	46240	25.2	1300	1800
	360	58	4	1.5	310	325	7240B	66240	25.8	1200	1700
210	240	15	1.1	1.1	30	50	70842X3	—	1	1800	2200
220	300	38	2.1	1.1	200	250	71944AC	—	7.2	1800	2200
	400	65	4	1.5	358	482	7244AC	46244	38.5	1100	1600
240	320	38	2.1	1.1	203	285	71948C	1036948	8.37	1200	1700
	320	38	2.1	1.1	181	260	71948AC	1046948	8.37	1100	1600
	320	38	2.1	1.1	161	233	71948B	1066948	8.43	1000	1500
	320	48	2.1	1.1	184	190	72948AC	2046948	10	1100	1600
	440	72	4	1.5	420	490	7248B	66248	50.9	1000	1500
260	320	28	2	1	127	190	71852AC	1046852	4.85	1400	1900
	360	46	2.1	1.1	242	345	71952AC	1046952	13.5	1300	1800

Single-row angular contact ball bearings

Type 70000
(Type 6000)

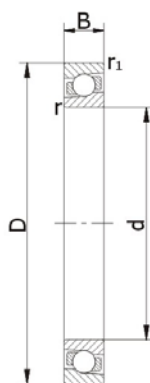
Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	D	B	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
260	320	28	2	1	127	190	71852AC	1046852	4.85	1400	1900
	360	46	2.1	1.1	242	345	71952AC	1046952	13.5	1300	1800
	400	65	4	1.5	291	431	7052B	66152	28.5	1000	1500
	480	80	5	2	456	702	7252B	66252	66	900	1300
270	330	30	2.1	1.1	90.8	144	7654B	66754	5.75	1300	1700
280	350	33	2	1	140	216	71856AC	1046856	7.2	1200	1700
	380	46	2.1	1.1	226	337	71956AC	1046956	15	1100	1600
	420	65	4	1.5	287	450	7056B	66156	30	900	1400
320	400	38	2.1	1.1	190	290	71864	—	10	800	1000
	440	56	3	1.1	350	550	71964	—	25.5	800	1000
340	460	56	3	1.1	292	510	71968B	1066968	27.5	800	1000
	520	82	5	2	410	700	7068B	66168	63	800	1000
360	480	56	3	1.1	350	600	71972	—	29	800	1000
	540	82	5	2	530	960	7072C	36172	62.4	800	1000
	540	82	5	2	468	855	7072AC	46172	62.5	850	1200
	650	95	6	3	585	1125	7272B	66272	145	700	950
380	440	25	3	1.1	110	178	7676B	66776	7.1	960	1200
	480	31	2	1	171	310.5	70876AC	7046876	13.5	850	1200
	480	46	2.1	1.1	261.9	450	71876AC	1046876	18	1700	2400
	520	65	4	1.5	369	661.5	71976AC	1046976	40.5	850	1200
	520	82	4	1.5	407	733	72976AC	2046976	48.9	700	900
	560	82	5	2	456	855	7076AC	46176	65.5	800	1100
	560	82	5	2	421	792	7076B	66176	65.5	750	1000
400	540	65	4	1.5	380.7	702	71980AC	1046980	42	800	1100
	600	90	5	2	544.5	1062	7080AC	46180	90.5	750	1000
	600	90	5	2	474	918	7080B	66180	90.5	700	950
	720	103	6	3	656.2	1350	7280B	66280	190	600	800
420	560	65	4	1.5	380.7	720	71984AC	1046984	44.5	750	1000
	560	65	4	1.5	327	603	71984B	1066984	44.5	700	950
	620	90	5	2	544.5	1062	7084AC	46184	95	750	1000
	620	90	5	2	486	954	7084B	66184	95	670	900
440	600	74	4	3	456.3	936	71988AC	1046988	61	750	1000
	650	94	6	3	585	1186	7088AC	46188	100	700	950
	650	94	6	3	514	1060	7088B	66188	100	630	850
460	540	35	2.1	1.5	280	520	S7692	6792	14	750	1000
	580	37	2.1	1	230	504	70892AC	7046892	24.5	750	1000
	580	56	3	3	334	689	71892AC	1046892	34.5	750	1000
	620	74	4	1.5	456	936	71992AC	1046992	58	850	1200
	680	100	6	3	620	1314	7092AC	46192	120	670	900
	680	100	6	3	556	1160	7092B	66192	120	600	800

Single-row angular contact ball bearings

Type 70000
(Type 6000)

Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	D	B	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
480	600	56	3	1.1	415	820	71896	—	35.5	850	1200
	700	100	6	3	632	1377	7096AC	46196	125	630	850
	700	100	6	3	561	1200	7096B	66196	125	560	750
500	620	37	2.1	1.1	248	558	708/500AC	70468/500	27	670	900
	620	56	3	1.1	351	765	718/500AC	10468/500	38	670	900
	670	78	5	2	498	1098	719/500AC	10469/500	78	630	850
	720	100	6	3	644	1440	70/500AC	461/500	130	600	800
	720	100	6	3	573	1260	70/500B	661/500	130	560	750
508	600	30	2.1	1.5	150	320	76/508	—	16.5	670	900
530	650	56	3	1.1	369	837	718/530AC	10468/530	39.5	1100	1600
	650	56	3	1.1	351	810	718/530B	10668/530	39.5	630	850
	710	82	5	2	556	1206	719/530AC	10469/530	92	1000	1500
	760	100	6	6	680	1500	307368B	—	150	560	750
	780	112	6	3	813	1944	70/530AC	461/530	175	560	750
	780	112	6	3	666	1530	70/530B	661/530	175	500	670
560	680	56	3	1.1	341	837	718/560AC	10468/560	41.5	600	800
	750	85	5	2	533	1161	719/560AC	10469/560	105	560	750
	820	115	6	3	814	1944	70/560AC	461/560	195	530	700
600	730	42	3	1.1	304	662	708/600AC	70468/600	38.5	560	750
	730	60	3	1.1	421	1044	718/600AC	10468/600	47	560	750
	800	90	5	2	644	1557	719/600AC	10469/600	125	900	1300
	870	118	6	3	796	1944	70/600AC	461/600	230	480	630
630	920	128	7.5	4	860	2205	70/630AC	461/630	270	430	560
670	820	69	4	1.5	498	1161	718/670AC	10468/670	77	850	1200
	980	136	7.5	4	1053	2790	70/670AC	461/670	340	430	560
710	870	74	4	1.5	546	1467	718/710AC	10468/710	93.5	800	1100
	950	106	6	3	767	1980	719/710AC	10469/710	195	800	1100
	1030	140	7.5	4	1071	2925	70/710AC	461/710	370	400	530
750	920	78	5	2	585	1620	718/750AC	10468/750	110	400	530
	1090	150	7.5	4	1170	3285	70/750AC	461/750	445	360	480
800	1150	155	7.5	4	1197	3420	70/800AC	461/800	500	340	450
850	1030	82	5	2	620	1674	718/850AC	10468/850	140	340	450
	1220	165	7.5	4	1377	4185	70/850AC	461/850	595	300	400
900	1180	122	6	3	940	2670	719/900	—	350	300	400
	1280	170	7.5	4	1404	4410	70/900AC	461/900	665	280	380
950	1360	180	7.5	4	1467	4680	70/950AC	461/950	805	240	340
980	1100	60	4	2	515	1450	719/980X1	—	65.6	240	340
1000	1220	100	6	3	831	2475	718/1000AC	10468/1000	245	260	360
	1420	185	7.5	4	1467	4860	70/1000AC	461/1000	890	220	320

Single-row angular contact ball bearings



Type 70000
(Type 6000)

Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	D	B	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
1060	1500	195	9.5	5	1512	5130	70/1060AC	461/1060	1050	200	300
1120	1360	106	6	3	954	3375	718/1120AC	10468/1120	320	200	300
	1580	200	9.5	5	1548	5265	70/1120AC	461/1120	1150	190	280
1140	1380	106	6	3	1180	3830	718/1140AC	10468/1140	318	190	280
1180	1660	212	9.5	5	1566	5580	70/1180AC	461/1180	1350	170	240
1250	1500	80	6	3	725	2430	708/1250AC	70468/1250	295	180	260
	1500	112	6	3	1026	3510	718/1250AC	10468/1250	390	180	260
	1750	218	9.5	5	1602	5895	70/1250AC	461/1250	1600	160	220

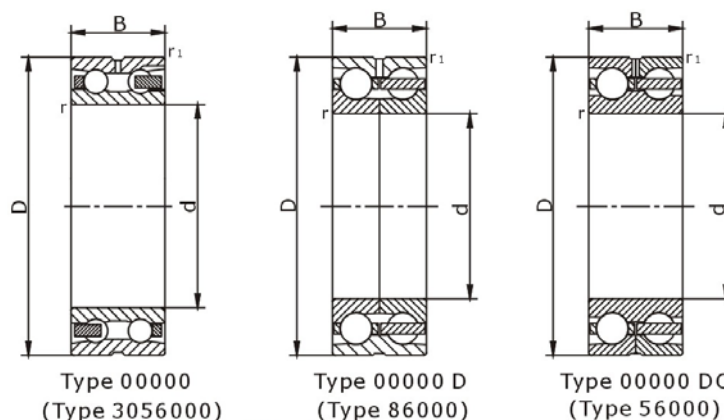
Double-row angular contact ball bearings

Double-row angular contact ball bearings are nonseparable. They can carry combined loads which is main in radial and moment loads, and limit axial displacement of shafts or housings in two directions, the nominal contact angle is 30° , they have higher stiffness comparing with single-row angular contact ball bearings. They correspond to a pair of single-row angular contact ball bearings mounted back to back, but the width is narrower. Therefore, they are especially suitable for applications required high stiffness.

Double-row angular contact ball bearings usually have fitting slot, the side of the raceway without fitting slot must carry main loads when bearings are in use.

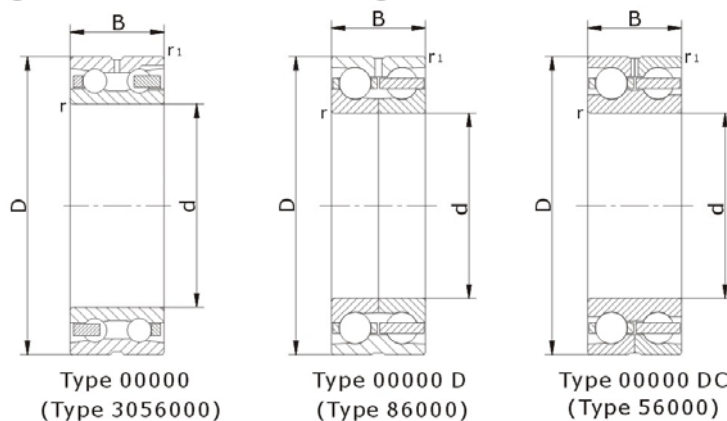
The obliquity is limited between inner and outer rings of double-row angular contact ball bearings, the permissible slant angles depend on the internal clearance, dimensions, internal design, the forces and the moments of the bearings. It must be ensured that higher additional stress can't be formed in bearings when the permissible slant angle is maximum. The bearing life will be shortened, the running accuracy will be reduced and the noise will be increased if there was slant angle between inner and outer rings. Nylon or brass solid cages are generally used in double-row angular contact ball bearings.

Double-row angular contact ball bearings



Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	D	B	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
100	180	60.3	2.1	2.1	142	220	3220	3056220	6.1	2000	3000
	215	82.6	3	3	230	355	3320	3056320	13.5	1800	2600
110	200	69.8	2.1	2.1	170	270	3222	3056222	8.8	1900	2800
	240	92.1	3	3	262	425	3322	3056322	19	1700	2400
140	210	69	2	2	178	237	4028D	4086128	8.2	1700	2400

Double-row angular contact ball bearings



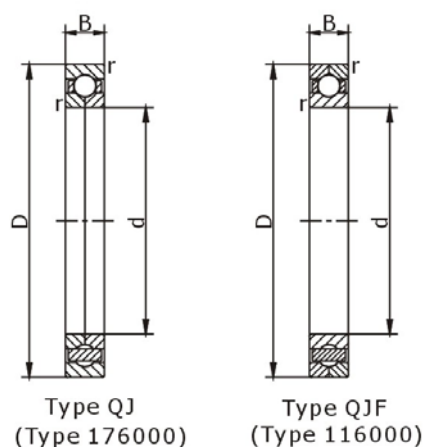
Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	D	B	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
150	209.5	55	2	2	160	250	—	86930	6	1700	2400
	225	73	2	2	180	255	4030X2D	86730	10.7	1600	2200
	230	70	2	2	212	325	4030X3D	86830	11.5	1600	2200
160	240	76	2.1	1.1	230	320	4032X2D	305183	10.6	1600	2200
	240	58	2.1	2.1	185	286	3032X2D	3086132	9.6	1600	2200
	240	80	2.1	2.1	224	306	4032D	4086132	12.6	1600	2200
170	230	56	2.1	2.1	165	255	4934X3D	86734	7.5	1600	2200
	260	90	2.1	2.1	228	385	4034X2D	4086134	18	1400	1900
180	280	92	2.1	2.1	290	440	4036X2D	4086136	22	1300	1800
	280	100	2.1	2.1	290	440	4036D	4086136	24	1400	1900
190	290	92	2.1	2.1	284	424	4038X2D	15638	22.4	1200	1700
	290	100	2.1	2.1	284	424	4038D	4086138	22.3	1300	1800
200	310	109	2.1	2.1	340	538	4040D	4086140	29.5	1200	1700
	310	96	2.1	2.1	340	538	4040X2DC	4056140	29.5	1300	1800
220	309.5	76	2.1	2.1	259	400	4944X3D	86744	17.2	1000	1500
	340	118	3	3	361	591	4044D	4086144	37.2	1000	1500
230	330	80	2.1	2.1	110	500	4946X1D	86746	11	1000	1500
240	360	118	3	3	383	661	4048D	4086148	43.5	950	1400
	440	144	4	4	576	1060	3248X2D	86748	101	800	1100
260	359.5	92	2.1	2.1	650	1100	4952X2D	86952	28	800	1100
	369.5	92	4	4	325	560	4952X3D	86752	32.9	850	1200
	400	140	3	3	410	720	4052D	4086152	69.9	950	1300
280	389.5	92	4	4	367	658	4956X3D	86756K	35.3	850	1200
	420	140	3	3	441	892	4056D	4086156	82.5	800	1100
300	460	160	3	3	475	1090	4060D	4086160	101	800	1100
320	459.5	140	4	4	504	1010	4064X3D	86764	73.9	750	1000
	480	160	3	3	496	1200	4064D	4086164	120	750	1000
340	520	180	3	3	525	1360	4068D	4086168	132	700	950

Four-point contact ball bearings

Four-point contact ball bearings are separable bearings, in which, type QJ0000 has two-piece inner ring, type QJF0000 has two-piece outer rings, their contact angle are both 35° . When carrying pure radial loads, each ball contacts with rings at four-point, and they are two-point contact under pure axial loads. The bearings can carry axial loads in two directions and certain moment loads, and have the features of single-row and double-row angular contact ball bearings. They only can work normally in high speed when two-point contact is formed.

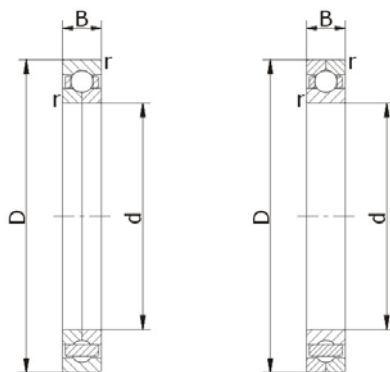
Brass or aluminium solid cages are exactly suitable for four-point contact ball bearings.

Four-point contact ball bearings



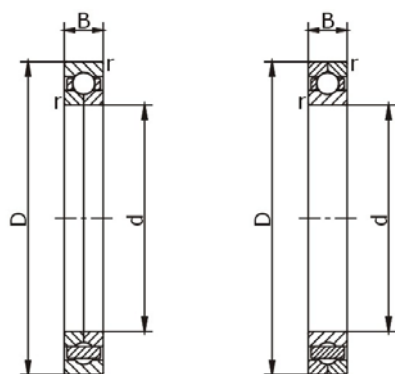
Boundary dimensions mm				Basic load ratings kN		Designations		Mass	Limiting speeds r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
150	225	35	2.1	225	275	QJ1030	176130	5.1	1900	2800
	225	35	2.1	225	275	QJF1030	116130	5.1	1900	2800
	270	45	3	302	372	QJ230	176230	12.5	1700	2400
	270	45	3	302	372	QJF230	116230	12.5	1700	2400
	320	65	4	494	710	QJ330	176330	29	1600	2200
	320	65	4	494	710	QJF330	116330	29	1600	2200
160	240	38	2.1	260	318	QJ1032	176132	6.3	1800	2600
	240	38	2.1	260	318	QJF1032	116132	6.3	1800	2600
	290	48	3	352	455	QJ232	176232	14.6	1600	2200
	290	48	3	352	455	QJF232	116232	14.6	1600	2200
	340	68	4	585	865	QJ332	176332	31	1500	2000
	340	68	4	585	865	QJF332	116332	31	1500	2000
170	260	42	2.1	226	350	QJ1034	176134	8.5	1700	2400
	260	42	2.1	226	350	QJF1034	116134	8.5	1700	2400
	265	42	2.1	226	350	QJF1034X1	176734X1	9	1300	1600
	310	52	4	358	480	QJ234	176234	19.5	1600	2200
	310	52	4	358	480	QJF234	116234	19.5	1600	2200
	360	72	4	618	965	QJ334	176334	41.5	1400	1900
	360	72	4	618	965	QJF334	116334	41.5	1400	1900

Four-point contact ball bearings

Type QJ
(Type 176000)Type QJF
(Type 116000)

Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
180	280	46	2.1	335	408	QJ1036	176136	11	1600	2200
	280	46	2.1	335	408	QJF1036	116136	11	1600	2200
	320	52	4	392	545	QJ236	176236	20.5	1500	2000
	320	52	4	392	545	QJF236	116236	20.5	1500	2000
190	290	46	2.1	348	430	QJ1038	176138	11.5	1600	2200
	290	46	2.1	348	430	QJF1038	116138	11.5	1600	2200
	340	55	4	455	735	QJ238	176238	39	1400	2200
	340	55	4	455	735	QJF238	116238	39	1400	2200
200	310	51	2.1	380	498	QJ1040	176140	14.9	1500	2000
	310	51	2.1	380	498	QJF1040	116140	14.9	1500	2000
	360	58	4	507	850	QJ240	176240	27	1300	1800
	360	58	4	507	850	QJF240	116240	27	1300	1800
	360	70	4	520	865	QJF1240	—	32.5	1300	1800
220	340	56	3	448	622	QJ1044	176144	19.6	1300	1800
	340	56	3	448	622	QJF1044	116144	19.6	1300	1800
240	360	56	3	458	655	QJ1048	176148	21	1200	1700
	360	56	3	458	655	QJF1048	116148	21	1200	1700
260	400	65	4	510	765	QJ1052	176152	31.3	1000	1500
	400	65	4	510	765	QJF1052	116152	31.3	1000	1500
280	420	65	4	540	835	QJ1056	176156	33.2	950	1400
	420	65	4	540	835	QJF1056	116156	33.2	950	1400
300	460	74	4	630	1040	QJF1060	116160	47	900	1300
320	480	74	4	650	1090	QJ1064	176164	49.5	850	1200
	480	74	4	650	1090	QJF1064	116164	49.5	850	1200
340	520	82	5	725	1270	QJ1068	176168	67.5	800	1100
	520	82	5	725	1270	QJF1068	116168	67.5	800	1100
360	540	82	5	768	1380	QJ1072	176172	69.2	800	1100
	540	82	5	768	1380	QJF1072	116172	69.2	800	1100
	650	122	6	999	2340	QJ1272	1176272	190	700	950
380	560	82	5	737	1710	QJ1076	176176	73.5	750	1000
	680	132	6	1053	2565	QJ1276	1176276	220	670	900
400	600	90	5	814	1944	QJ1080	176180	95.5	700	950
	720	140	6	1170	2925	QJ1280	1176280	265	600	800
420	560	65	4	573	1440	QJ1984	1176984	51	700	950
	620	90	5	831	2052	QJ1084	176184	99.5	670	900
	760	150	7.5	1287	3375	QJ1284	1176284	315	560	750
440	600	74	4	685	1710	QJ1988	1176988	65	670	900
	650	94	6	896	2250	QJ1088	176188	115	630	850
	790	155	7.5	1260	3375	QJ1288	1176288	350	560	750

Four-point contact ball bearings



Type QJ
(Type 176000)

Type QJF
(Type 116000)

Boundary dimensions mm				Basic load ratings kN		Designations		Mass	Limiting speeds r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
460	680	100	6	936	2385	QJ1092	176192	130	600	800
	830	165	7.5	1377	3825	QJ1292	1176292	415	530	700
480	700	100	6	954	2520	QJ1096	176196	135	560	750
	870	170	7.5	1512	4275	QJ1296	1176296	470	500	670

Single-row cylindrical roller bearings

Single-row cylindrical roller bearings usually carry radial loads, their rollers and raceways are line contact. To compare with radial ball bearings having the same dimensions, their radial loading capacity is 1.5–3 times higher. They can't carry axial loads, but they have impact resistance and better stiffness.

Single-row cylindrical roller bearings are separable bearings, the rollers are guided by the two ribs of bearing rings. The cage, rollers and guide ring are assembled to a unit, and can be separated from the other ring. These bearings are easy to be mounted and dismounted, especially inner and outer rings interference fit with shafts and housings.

The structures of cylindrical roller bearings are distinguished by ribs. Type N has inner ring with two ribs and outer ring without rib; type NU has outer ring with two ribs and inner ring without rib; type NJ has inner ring with one rib and outer ring with two ribs, and can carry certain axial loads in one direction; type NF has inner ring with two ribs and outer ring with one rib.

The machining accuracy of shafts and housings which is fitted with single-row cylindrical bearings is high, the obliquity is forbidden between inner and outer ring axes. If the inner and outer ring axes were oblique, the contact between rollers and rings will be asymmetric, and the stress will be intensive, then it will have serious effects on bearing loading capacity and life. The edge effect between rollers and raceways will be down, and bearing life will be prolonged if there was some convexity on inner and outer raceways or roller generatrix.

The axial displacement of shafts or housings can't be limited by cylindrical roller bearings. If it was needed, they are often used with other bearings, such as deep groove ball bearings.

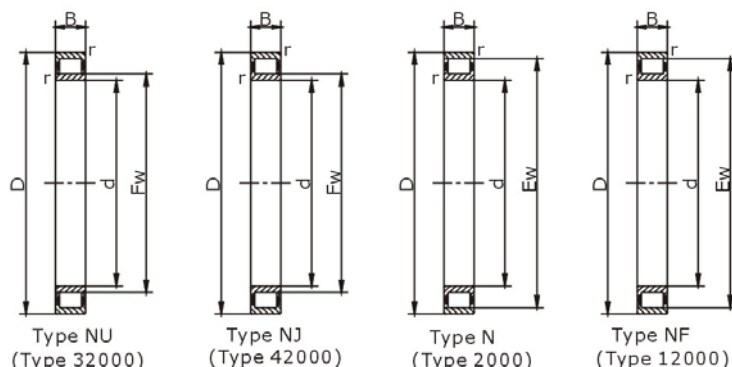
This type of bearings generally carry radial loads, but bearings with ribs on inner and outer rings can carry certain axial loads.

It is not permitted that the obliquity between shafts and housings, but $2'$ angular misalignment between inner and outer ring axes is permitted under lower loads. If the loads were higher, the more angular misalignment will be permitted, but the upper limit is $4'$.

When $D \leq 400\text{mm}$, steel pressed cages are commonly used, and steel or brass solid cages are adopted for $D > 400\text{mm}$.

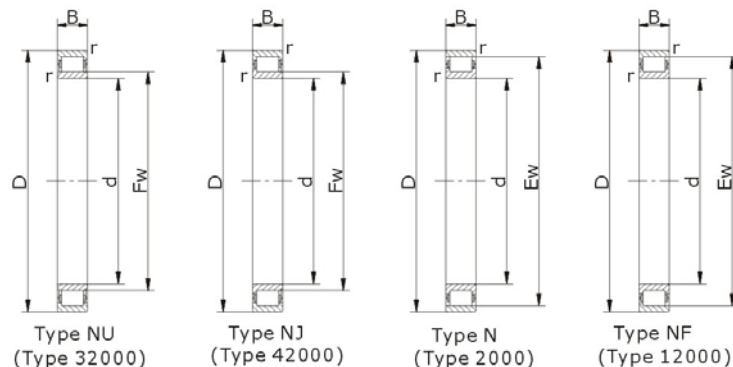
Single-row cylindrical roller bearings are mainly used in large-size generators, machine tool spindles, axle boxes, bent axles of diesel engines, gearboxes of automotives and tractors, and so on.

Single-row cylindrical roller bearings



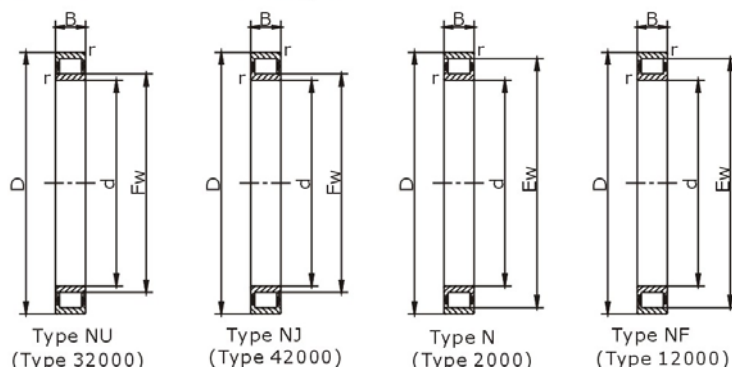
Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN		Current	Original	kg	r/min	
d	D	B	Fw	Ew	r _{min}	Cr	Cor				Grease	Oil
120	180	28	135	—	2	130	168	NU1024M	32124H	2.96	3400	4000
	180	28	135	—	2	130	168	NJ1024	42124	3.09	3400	4000
	215	40	—	191.5	2.1	250	211	N224E	2224H	6.2	2400	3000
	215	40	143.5	—	2.1	322	422	NU224E	32224H	6.2	2400	3000
	215	40	143.5	—	2.1	322	422	NJ224E	42224H	6.2	2400	3000
	240	80	150	—	3	477	408	NJ624	42724	17.8	2400	3200
	260	86	154	—	3	632	868	NU2324E	32624	23.8	1900	2400
	310	72	—	260	5	660	530	N424	2424	29	1900	2400
	310	72	170	—	5	642	772	NU424	32424	29.1	1900	2400
	310	72	170	—	5	642	772	NJ424	42424	29.1	1900	2400
130	200	33	148	—	2	152	212	NU1026	32126	3.84	3200	3800
	250	80	158	—	3	547	473	NJ626	42726	18.7	2200	3000
	280	58	—	243	4	515	410	N326E	2326	17.8	1800	2200
	280	58	167	—	4	492	620	NU326E	32326	17.9	1800	2200
	280	58	167	—	4	492	620	NJ326E	42326	18.2	1800	2200
	280	93	—	243	4	770	1060	N2326	2626	29	1800	2200
	280	93	167	—	4	748	1060	NU2326	32626	28.7	1800	2200
	280	93	167	—	4	748	1060	NJ2326	42626	29	1800	2200
	340	78	185	—	5	782	942	NU426	32426	41.5	1500	1900
	340	78	185	—	5	782	942	NJ426	42426	41.7	1500	1900
140	190	24	—	178	1.5	126	190	N1928	—	2	3200	3800
	190	24	154	—	1.5	126	190	NU1928	—	1.98	3200	3800
	210	33	158	—	1.1	190	270	NU1028	32128	3.87	2400	3000
	250	68	169	—	3	500	730	NU2228	32528	14.7	2000	2600
	250	68	169	—	3	438	700	NJ2228	42528	17	2000	2600
	300	62	—	260	4	545	690	NF328	12328	21.8	1800	2200
	300	62	—	260	4	545	690	N328	2328	21.9	1800	2200
	300	62	180	—	4	545	690	NU328	32328	22.2	1800	2200
	300	62	180	—	4	545	690	NJ328	42328	22.6	1800	2200
	300	102	—	260	4	825	1180	N2328	2628	34.6	1800	2200
	300	102	180	—	4	825	1180	NU2328E	32628	36	1800	2200
	360	82	—	304	5	845	1020	N428	2428	47	1400	1800
	360	82	196	—	5	845	1020	NU428	32428	48	1400	1800
	360	82	196	—	5	845	1020	NJ428	42428	48.8	1400	1800
150	210	28	—	195	2.1	135	205	N1930	—	2.88	2400	3200
	210	28	165	—	2.1	135	205	NU1930	—	2.96	2400	3200
	270	45	—	238	3	360	490	N230	2230	11.6	1900	2400
	270	45	182	—	3	360	490	NU230	32230	11.8	1900	2400
	270	45	182	—	3	360	490	NJ230	42230	12	1900	2400
	270	73	182	—	3	530	772	NJ2230	42530	18.1	1900	2400
	320	65	—	277	4	595	765	N330	2330	26.5	1700	2000
	320	65	193	—	4	595	765	NU330	32330	26.7	1700	2000
	320	65	193	—	4	595	765	NJ330	42330	26.9	1700	2000
	320	65	193	—	4	595	765	NJ330	42330	26.9	1700	2000

Single-row cylindrical roller bearings



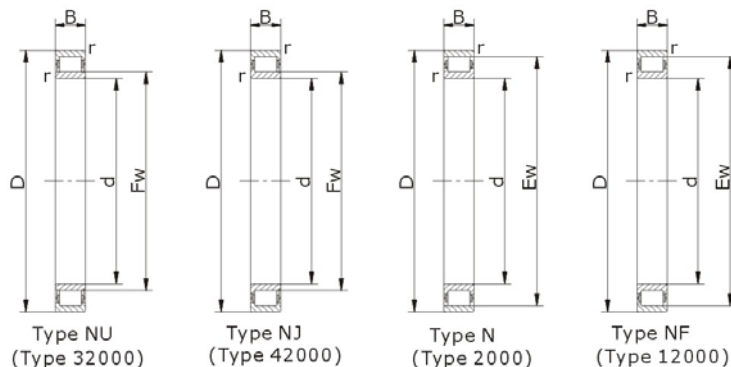
Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN				kg	r/min	
d	D	B	Fw	Ew	r _{min}	Cr	Cor	Current	Original		Grease	Oil
150	320	108	–	277	4	930	1340	NF2330	12630	43.6	1700	2000
	320	108	193	–	4	930	1340	NU2330	32630	45.7	1700	2000
	320	108	193	–	4	930	1340	NJ2330	42630	45.7	1700	2000
160	240	38	180	–	1.5	260	390	NU1032	32132	5.98	1900	2400
	290	48	–	255	3	405	552	N232	2232	14.3	1800	2200
	290	48	195	–	3	405	552	NU232	32232	14.4	1800	2200
	290	48	195	–	3	405	552	NJ232	42232	14.2	1800	2200
	290	80	193	–	3	590	898	NU2232	32532	24.5	1800	2200
	340	68	–	292	4	628	825	N332	2332	30.8	1500	1800
	340	68	208	–	4	628	825	NU332	32332	31	1500	1800
	340	68	208	–	4	628	825	NJ332	42332	31.5	1500	1800
	340	114	208	–	4	972	1430	NU2332	32632	54.5	1500	1800
170	260	42	193	–	2.1	255	365	NU1034	32134	8.3	2200	2800
	260	54	191	–	2.1	455	690	NU2034	–	10.4	2200	2800
	310	52	–	272	4	425	650	N234	2234	18.2	1800	2200
	310	52	208	–	4	425	650	NU234	32234	17.9	1800	2200
	310	52	208	–	4	425	650	NJ234	42234	19.2	1800	2200
	310	86	208	–	4	715	1080	NU2234	32534	30	1800	2200
	310	86	208	–	4	715	1080	NJ2234	42534	29.3	1800	2200
	360	72	–	310	4	715	952	N334	2334	38.1	1600	1900
	360	72	220	–	4	715	952	NU334	32334	37.7	1600	1900
	360	72	220	–	4	715	912	NJ334	42334	38.4	1600	1900
	360	120	220	–	4	1110	1650	NU2334	32634	62.3	1400	1700
	360	120	220	–	4	1110	1650	NJ2334	42634	63.6	1400	1700
180	280	46	205	–	2.1	385	560	NU1036	32136	10.5	1800	2200
	320	52	–	282	4	425	650	N236	2236	19.7	1700	2000
	320	52	217	–	4	425	650	NU236	32236	19.2	1700	2000
	320	52	218	–	4	425	650	NJ236	42236	19.3	1700	2000
	320	86	215	–	4	745	1140	NU2236	32536	30.8	1700	2000
	320	86	215	–	4	745	1140	NJ2236	42536	31.9	1700	2000
	380	75	–	328	4	860	710	N336	2336	39.6	1500	1800
	380	75	232	–	4	835	1100	NU336	32336	42.8	1500	1800
	380	75	232	–	4	835	1100	NJ336	42336	42.7	1500	1800
	380	126	232	–	4	1200	1780	NU2336	32636	77.9	1300	1600
	380	126	232	–	4	1200	1780	NJ2336	42636	77.9	1300	1600
190	260	42	208	–	2	239	216	NU2938	2032938	6.45	2000	2800
	290	46	215	–	2.1	395	595	NU1038	32138	11	2000	2800
	340	55	–	302	4	630	830	N238	2238	22.9	1600	1900
	340	55	231	–	4	512	745	NU238	32238	21.6	1600	1900
	340	55	231	–	4	512	745	NJ238	42238	22	1600	1900
	340	92	–	299	4	910	1400	N2238	2538	38.6	1600	1900
	340	92	231	–	4	975	1570	NU2238	32538	38.6	1600	1900
	400	78	–	345	5	882	1190	N338	2338	50.2	1200	1500
	400	78	245	–	5	882	1190	NU338	32338	48.5	1200	1500

Single-row cylindrical roller bearings



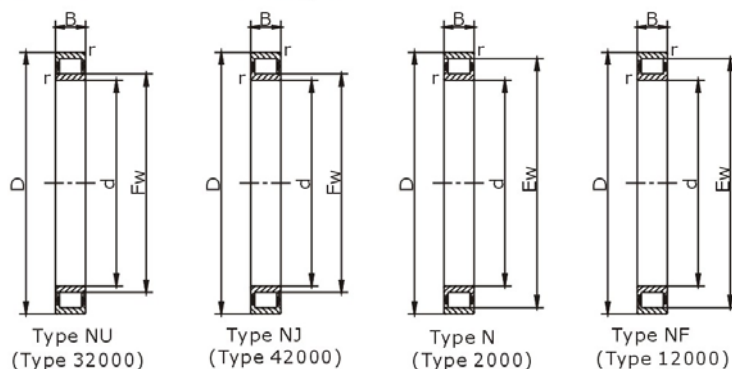
Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	D	B	Fw	Ew	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
200	310	51	–	281	2.1	408	408	N1040	42140	10.2	1900	2400
	310	51	229	–	2.1	408	615	NU1040	32140	14.3	1900	2400
	310	51	229	–	2.1	408	615	NJ1040	42140	14.7	1900	2400
	310	66	229	–	3	560	925	NU2040	–	18.5	1900	2400
	360	58	–	316	4	570	842	N240	2240	26.8	1500	1800
	360	58	244	–	4	570	842	NU240	32240	26.5	1500	1800
	360	58	244	–	4	570	842	NJ240	42240	27.1	1500	1800
	420	138	–	360	4	1510	2240	N2340	2640	94.5	1200	1500
420	165	260	–	5	1730	2660	NU3340	3032340	118	1200	1500	
220	340	56	250	–	3	448	685	NU1044	32144	19.3	1800	2200
	340	56	250	–	3	448	685	NJ1044	42144	19.6	1800	2200
	400	65	–	350	4	702	1050	N244	2244	36.7	1500	1800
	400	65	270	–	4	702	1050	NU244	32244	35	1500	1800
	400	65	270	–	4	702	1050	NJ244	42244	35.4	1500	1800
	400	108	259	–	4	1360	2330	NU2244	32544	62.2	1300	1600
	400	108	270	–	4	1360	2330	NJ2244	42544	62.2	1300	1600
	460	88	284	–	5	1080	1465	NU344	32344	75.6	1200	1500
460	145	284	–	5	1780	2620	NU2344	32644	114	1000	1300	
230	350	70	–	316	2.1	856	610	NF646	402746	26	1500	1900
	370	80	–	334	3	826	795	N646	2746	37	1400	1800
240	360	37	–	325	2.1	388	392	N0048	7002148	14.7	1000	1400
	360	56	270	–	3	470	745	NU1048	32148	20.4	1700	2000
	360	56	270	–	3	470	745	NJ1048	42148	21	1700	2000
	360	92	274	–	3	855	938	NU3048	3032148	35.5	1000	1300
	400	74	282	–	4	975	1500	NU1148	–	39.1	1300	1600
	440	72	–	395	4	1100	1550	N248	2248	50.3	1300	1600
	440	72	295	–	4	880	1345	NU248	32248	46.9	1300	1600
	440	72	295	–	4	880	1345	NJ248	42248	49.6	1300	1600
	440	120	295	–	4	1700	2500	NU2248E	–	84.1	1200	1500
	500	95	310	–	5	1290	1810	NU348	32348	97.7	1000	1300
	500	155	310	–	5	2000	2900	NU2348	–	150	1000	1300
	250	380	50	–	347	4	660	643	N650	2750	19.8	1300
260	400	44	–	360	3	552	603	N0052	7002152	22.7	1500	1800
	400	65	–	364	4	621	630	N1052	2152	30.8	1500	1800
	400	65	296	–	4	592	932	NU1052	32152	29.5	1500	1800
	440	144	298.5	–	4	2300	3500	NU3152E	–	92.9	1200	1500
	480	80	320	–	5	1100	1580	NU252	32252	67.2	1100	1400
280	350	33	299	–	2.1	210	440	NJ1856	–	7.31	1500	1800
	360	30	–	339	4	325	605	N1856X3	–	7.76	1400	1700
	380	46	–	354	2.1	495	875	N1956	–	15.3	1400	1700
	380	46	306	–	3	450	785	NU1956	–	14.5	1400	1700
	420	65	–	384	4	840	1500	N1056	2156	33	1400	1700
	420	82	316	–	4	1050	1900	NU2056	–	41.8	1400	1700
	420	65	316	–	4	600	965	NU1056	32156	33.4	1400	1700

Single-row cylindrical roller bearings



Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN				kg	r/min	
d	D	B	Fw	Ew	r _{min}	Cr	Cor	Current	Original		Grease	Oil
300	420	56	332	–	3	500	850	NU1960MA	–	23.4	1200	1500
	460	74	340	–	4	880	1470	NU1060	32160	44.4	1200	1500
	460	74	340	–	4	880	1470	NJ1060	42160	45.1	1200	1500
	460	118	340	–	4	1690	1340	NU3060	3032160	72	1060	1340
	500	160	358	–	5	2000	4000	NU3160	–	135	1000	1300
	540	85	364	–	5	1350	1290	NU260	32260	87.2	1000	1300
	620	109	385	–	7.5	2010	1840	NU360	32360	166	900	1100
320	400	38	–	380	2.1	340	680	N1864	–	10.7	1100	1400
	440	72	–	408	3	735	1520	N2964M	–	33.7	1200	1500
	480	74	360	–	4	890	1520	NU1064	32164	47	1100	1400
	480	74	360	–	4	890	1520	NJ1064	42164	47	1100	1400
	480	95	360	–	4	1540	2800	NU2064	–	61	1100	1400
340	520	57	–	470	4	810	1400	N0068	7002168	45.5	950	1200
	520	82	385	–	5	1200	2000	NU1068	32168	62.6	955	1200
	520	106	385	–	5	1950	3730	NU2068	–	84.6	955	1200
	530	133.5	–	476	4	1660	2600	N668	2768	117	880	1100
360	540	82	405	–	5	1200	2050	NU1072	32172	65.6	900	1100
	650	170	435	–	6	3500	6050	NU2272	32572	263	850	1000
	750	224	465	–	7.5	5010	8740	NU2372	32672	485	850	1000
380	480	60	–	455	2.1	800	1200	N2876	2002876	24.6	900	1100
	560	82	425	–	5	1250	2150	NU1076	32176	68.5	900	1100
	680	177	451	–	6	3860	6410	NU2276	–	282	700	900
400	540	65	438	–	4	785	988	NU1980	1032980	42.7	950	1150
	600	90	450	–	5	1420	2480	NU1080	32180	88.8	900	1100
	600	148	–	554	5	2400	4400	N3080	–	151	700	900
	600	148	458	–	5	2150	4450	NU3080	3032180	145	700	900
	650	145	–	585	6	2830	3030	N2180	2002780	190	700	900
420	620	90	470	–	5	1390	2380	NU1084	32184	91.7	700	900
440	546	46	468	–	2.5	413	760	NU688	32788	26.5	730	920
	650	94	493	–	6	1600	2850	NU1088	32188	106	700	900
	720	122	–	648	6	2320	2220	N1188	1002788	191	510	620
460	620	95	–	580	4	1340	2930	N2992	2002992	82.4	500	630
	620	95	504	–	4	1340	2060	NU2992	2032992	84	500	630
	760	240	529.3	–	7.5	5210	9690	NU3192	–	419	400	500
500	670	100	543	–	5	2000	2410	NU29/500	20329/500	99.5	560	710
	720	100	556	–	6	2050	3710	NU10/500	–	137	400	500
530	710	106	578	–	5	1770	3900	NU29/530	20329/530	123	400	500
560	820	115	625	–	6	2550	4700	NU10/560	–	205	380	460
600	730	60	635	–	3	830	1950	NU18/600	–	49.2	400	500
	800	90	–	750	5	1210	2140	N19/600	–	115	380	460
	800	90	649	–	5	1950	2650	NU19/600	–	122	380	460
	800	118	650	–	5	2430	5110	NUP29/600	–	173	380	460
630	850	100	688	–	6	1850	3900	NU19/630	10329/630	160	280	360
	850	128	685	–	6	3050	4260	NU29/630	20329/630	206	280	360

Single-row cylindrical roller bearings



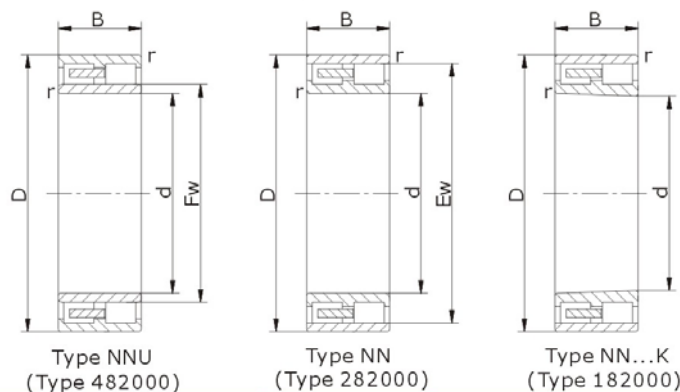
Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	D	B	Fw	Ew	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
670	820	69	708	–	4	1230	2830	NJ18/670	–	78.4	280	360
700	930	160	760	–	6	3200	4580	NU6/700	327/700	295	310	390
710	870	74	750	–	4	1300	3000	NJ18/710	–	94.5	310	390
	950	106	–	890	6	2300	5000	N19/710	10023/710	205	220	300
	950	106	775	–	6	2300	5000	NU19/710	10329/710	207	220	300
800	1060	115	870	–	6	2760	6150	NU19/800	10329/800	280	200	240
840	1040	125	–	985	3	2530	5290	N6/840	27/840	240	200	240
850	1120	118	925	–	6	2780	6350	NU19/850	10329/850	320	170	220
	1120	118	–	1059	6	3318	7156	NF19/850	–	282	170	220
	1120	155	917	–	6	4450	10500	NU29/850	20329/850	425	170	220
870	1050	90	912	–	5	2140	5280	NJ18/870	–	152	170	220
880	950	60	898	–	2.5	775	2900	NU18/880	–	36.8	200	240
	950	60	898	–	2.5	800	3000	NUP18/880	–	39.4	200	240
950	1250	175	1024	–	7.5	5270	9120	NU29/950	20329/950	563	140	170
	1250	224	–	1170	7.5	6780	10500	N39/950	30029/950	745	140	170
1000	1210	92	–	1155	5	1350	2760	N18/1000	–	206	120	150
	1220	100	1053	–	6	2376	5895	NU18/1000	10328/1000	265	120	150
	1220	128	1058	–	6	3200	8850	NU28/1000	–	319	120	150
	1220	128	–	1165	6	3680	10020	NF28/1000	–	350	120	150
	1220	128	1053	–	6	2376	5896	NUP18/1000	10928/1000	287	120	150
	1320	185	1082	–	7.5	6336	15570	NU29/1000	20329/1000	700	110	140
1060	1280	165	1120	–	6	3750	11300	NU38/1060	–	427	120	150
	1280	128	–	1225	6	3222	9360	N28/1060	20028/1060	360	110	140
	1400	150	1162	–	7.5	4500	10000	NU19/1060	10329/1060	683	120	150
	1400	195	1142	–	7.5	6489	15570	NU29/1060	20329/1060	870	120	150
	1400	250	1146	–	7.5	8217	21600	NU39/1060	30329/1060	1070	120	150
	1500	325	–	1390	9.5	11700	29250	N30/1060	30021/1060	1900	–	–
1120	1360	106	1182	–	6	3069	7785	NJ18/1120	10428/1120	335	–	–
	1360	180	1180	–	6	5700	17300	NU38/1120	–	547	–	–
	1580	345	1231	–	9.5	14130	35100	NU30/1120	30321/1120	2150	–	–
1180	1420	106	1245	–	6	3250	8500	NU18/1180	–	328	–	–
	1420	106	1245	–	6	2727	7020	NJ18/1180	10428/1180	350	–	–
	1540	206	1258	–	7.5	8073	19440	NU29/1180	20329/1180	1050	–	–
	1540	272	–	1466	7.5	10080	26100	N39/1180	30029/1180	1400	–	–
1250	1750	290	–	1635	9.5	11520	27450	N20/1250	20021/1250	2320	–	–
	1630	170	1350	–	7.5	6300	15400	NU19/1250	–	952	–	–
1320	1600	122	1395	–	6	4200	9000	NU18/1320	10328/1320	530	–	–
	1600	122	1385	–	6	4000	9000	NJ18/1320	–	525	–	–
	1720	230	1420	–	7.5	10260	27450	NU29/1320	20329/1320	1500	–	–
	1720	175	1424	–	7.5	7000	17100	NU19/1320	–	1100	–	–
	1720	300	–	1640	7.5	11880	30600	N39/1320	30029/1320	1900	–	–
	1850	400	–	1737	12	19440	49500	N30/1320	30021/1320	3550	–	–
1400	1700	175	–	1637	7.5	5940	16470	N28/1400	20028/1400	860	–	–
1900	2300	175	–	2204	9.5	7722	22500	N18/1900	10028/1900	1480	–	–

Double-row cylindrical roller bearings

Double-row cylindrical roller bearings have two structures of cylindrical and tapered bore. These bearings have compact structures, high stiffness, high loading capacity and little deformation, and are especially as main shaft bearings of machine tools. Type NN has inner ring with two ribs and outer ring with no ribs. Type NNU has outer ring with two ribs and inner ring with no ribs. The two types of bearings don't limit axial displacement of shafts or housings, so they are used as nonlocating bearings.

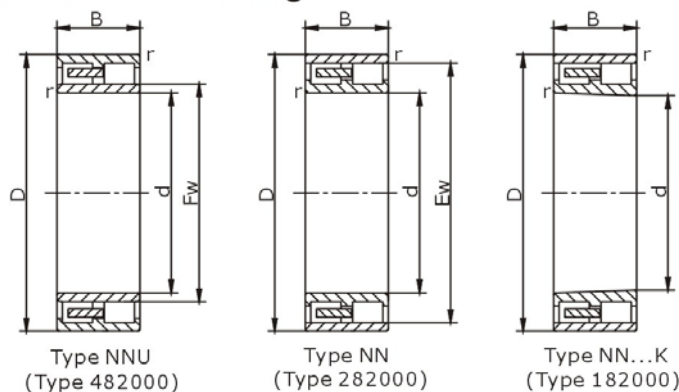
Machined solid cages are usually used in double-row cylindrical roller bearings.

Double-row cylindrical roller bearings



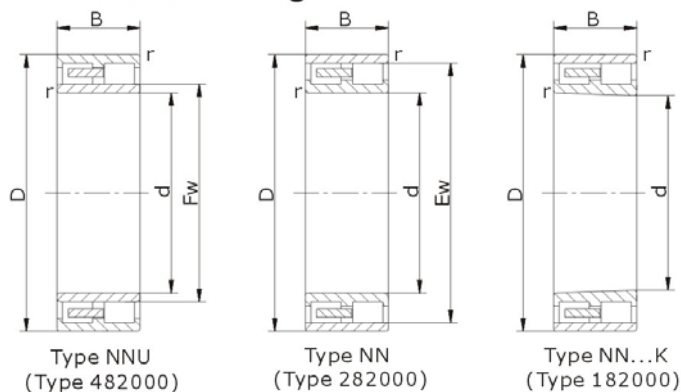
Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN		Current	Original	kg
d	D	B	r_{min}	Fw	Ew	Cr	Cor			
200	280	60	2.1	—	259	420	815	NN3940	3282940	10.6
	280	80	2.1	—	259	484	960	NN4940K/W20	4182940Y	14.1
	280	80	2.1	—	259	570	1220	NN4940	4282940	15.3
	280	80	2.1	225	—	570	1220	NNU4940	4482940	15.3
	310	82	2.1	—	282	655	1170	NN3040	3282140	22.7
	310	82	2.1	232	—	655	1170	NNU3040	3482140	22.7
	310	109	2.1	—	282	890	1730	NN4040	4282140	30.4
220	300	60	2.1	—	279	440	895	NN3944	3282944	11.4
	300	80	2.1	—	279	600	1330	NN4944	4282944	16.6
	300	80	2.1	245	—	600	1330	NNU4944	4482944	16.6
	340	90	3	—	310	815	1480	NN3044	3282144	29.6
	340	90	3	254	—	815	1480	NNU3044	3482144	30
	340	118	3	—	310	1190	2400	NN4044	4282144	39.8
	370	120	4	—	331	1050	1810	NN3144	3282744	51.9
	370	120	4	263	—	1050	1810	NNU3144	3482744	52.3
240	300	60	1.1	—	283	405	1030	NN4848	4282848	9.77
	300	60	1.1	259	—	358	930	NNU4848	—	9.9
	320	60	2.1	—	300	460	975	NN3948	3282948	12.2
	320	80	2.1	—	300	625	1450	NN4948	4282948	17.9
	320	80	2.1	263	—	625	1450	NNU4948	4482948	18
	360	92	3	—	330	855	1600	NN3048	3282148	32.7
	360	92	3	274	—	855	1600	NNU3048	3482148	32.7
	360	118	3	—	330	1240	2600	NN4048	4282148	39.3

Double-row cylindrical roller bearings



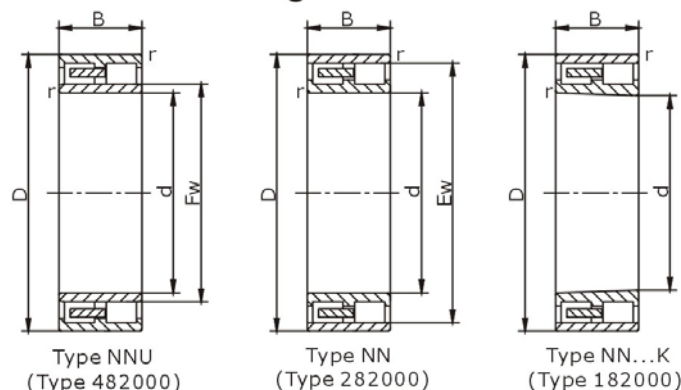
Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	r _{min}	Fw	Ew	Cr	Cor	Current	Original	kg
240	360	118	3	274	—	1240	2600	NNU4048	4482148	42.7
	400	128	4	—	358	1170	2040	NN3148	3282748	64.2
	400	160	4	282	—	1880	3530	NNU4148	4482748	85
260	360	75	2.1	—	335	670	1380	NN3952	3282952	21.4
	360	100	2.1	—	335	711	1540	NN4952K	4182952	29.2
	360	100	2.1	—	335	935	2100	NN4952	4282952	28.3
	360	100	2.1	292	—	935	2100	NNU4952	4482952	31.1
	400	104	4	—	364	969	1810	NN3052K	3182152	47.1
	400	104	4	—	364	969	1810	NN3052	3282152	48.5
	400	140	4	—	364	1550	3250	NN4052	4282152	59.7
	400	140	4	300	—	1550	3250	NNU4052	4482152	65
	440	144	4	—	393	1480	2660	NN3152	3282752	89.1
440	180	4	306	—	2200	4000	NNU4152	4482752	113	
280	350	69	1.1	—	329	445	1160	NN4856	4282856	15.3
	350	69	2	303	—	457	1200	NNU4856K	—	15.5
	380	75	2.1	—	355	695	1460	NN3956	3282956	22.7
	380	100	2.1	—	355	960	2230	NN4956	4284956	32.9
	380	100	2.1	312	—	960	2230	NNU4956	4482956	33
	420	106	4	—	384	1020	1950	NN3056K	3182156	49.1
	420	106	4	—	384	1020	1950	NN3056	3282156	49.9
	420	106	4	320	—	1080	2080	NNU3056	—	51.4
	460	146	5	—	413	1520	2790	NN3156	3282756	95.7
300	380	80	2.1	324	—	690	1760	NNU4860	4482860	21.7
	420	118	3	—	388	1230	2870	NN4960	4282960	51.6
	420	118	3	339	—	1230	2870	NNU4960	4482960	51.9
	460	118	4	—	418	1180	2250	NN3060	3282160	71.7
	460	118	4	—	418	1180	2250	NN3060K	3182160	69.6
	460	160	4	—	418	1920	4100	NN4060	—	97.6
	500	160	5	—	448	1760	3150	NN3160	3282760	125
	500	160	5	358	—	1760	3150	NNU3160	3482760	126
320	400	80	2.1	346	—	700	1840	NNU4864	4482864	22.8
	440	118	3	—	408	1260	3050	NN4964	4282964	50.2
	440	118	3	—	408	1260	3050	NN4964K	4182964	52
	440	118	3	359	—	1260	3050	NNU4964	4482964	54.9
	480	121	4	—	438	1350	2670	NN3064	3282164	76.6
	480	121	4	366	—	1350	2670	NNU3064	3482164	76.9
	480	160	4	367	—	1960	4300	NNU4064	4482164	103
	540	176	5	384	—	2090	3750	NNU3164	3482764	154
340	460	90	3	—	428	905	2020	NN3968	3282968	42.9
	460	118	3	—	428	1040	2450	NN4968K	4182968	53.8
	460	118	3	—	428	1350	3400	NN4968	4282968	52.1

Double-row cylindrical roller bearings



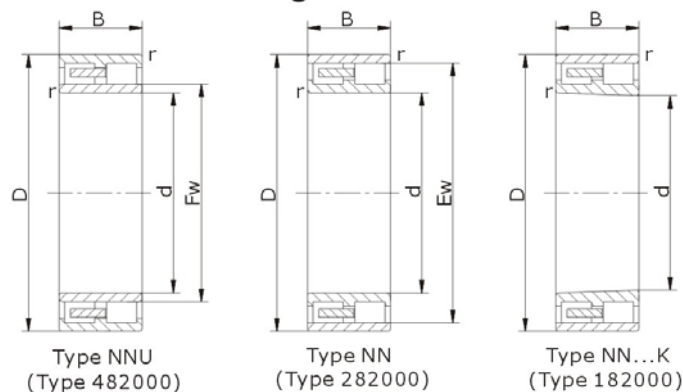
Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	r _{min}	Fw	Ew	Cr	Cor	Current	Original	kg
340	460	118	3	379	–	1350	3400	NNU4968	4482968	57.8
	520	133	5	–	473	1560	3020	NN3068K	3182168	101
	520	133	5	–	473	1560	3020	NN3068	3282168	104
	520	133	5	387	–	1560	3020	NNU3068	3482168	104
	520	180	5	385	–	2420	5350	NNU4068	4482168	141
360	480	90	3	–	448	930	2130	NN3972	3282972	44.9
	480	118	3	399	–	1390	3550	NNU4972	4482972	60.6
	540	134	5	–	493	1630	3240	NN3072	3282172	106
	540	134	5	–	493	1630	3240	NN3072K	3182172	106
	540	134	5	413	–	1630	3240	NNU3072	3482172	108
	540	180	5	–	496	2530	5450	NN4072	3282172	132
	600	243	5	422	–	4000	8000	NNU4172	4482772	282
380	520	140	4	–	485	1880	4600	NN4976	4282976	81.3
	520	140	4	426	–	1880	4600	NNU4976	4482976	88.8
	560	135	5	–	513	1590	3240	NN3076K	3182176	110
	560	135	5	–	513	1590	3240	NN3076	3282176	114
	620	194	5	–	559	2620	4950	NN3176	3282776	224
	620	194	5	449	–	2620	4950	NNU3176	3482776	228
400	500	100	2.1	430	–	905	2540	NNU4880	4482880	45.7
	540	106	4	–	504	1240	2400	NN3980K	318980	71.3
	600	148	5	–	549	1980	3660	NN3080K	3182180	143
	600	148	5	–	549	1980	3660	NN3080	3282180	147
	650	200	6	474	–	2770	5400	NNU3180	3482780	262
420	560	106	4	–	522	1280	2900	NN3984	3282984	71.2
	560	140	4	–	525	2000	5150	NN4984	4282984	87.9
	560	140	4	466	–	2000	5015	NNU4984	4482184	97.2
	620	150	5	–	568	2130	4450	NN3084	3282184	154
	620	150	5	478	–	2130	4450	NNU3084	3482184	155
	620	200	5	–	571	3150	7100	NN4084	4282184	189
	620	200	5	469	–	3400	7850	NNU4084	4482184	209
	700	224	6	501	–	3550	6800	NNU3184	3482784	347
440	540	100	2.1	470	–	950	2790	NNU4888	4482888	49.5
	650	157	6	–	596	2360	4900	NN3088	3282188	177
	650	157	6	500	–	2360	4900	NNU3088	3482188	178
	720	226	6	–	649	3500	6800	NN3188	3282788	357
460	580	118	3	497	–	1200	3600	NNU4892	4482892	76
	620	118	4	–	578	1610	3700	NN3992	3282992	94.5
	620	160	4	510	–	2400	6200	NNU4992	4482992	140
	680	163	6	–	624	2470	5070	NN3092K	3182192	204
	680	163	6	–	624	2470	5070	NN3092	3282192	204

Double-row cylindrical roller bearings



Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	r _{min}	Fw	Ew	Cr	Cor	Current	Original	kg
480	650	170	5	—	607	2690	7000	NN4996	4282996	164
	700	165	6	—	643	2600	5550	NN3096	3282196	211
	700	218	6	533	—	4300	8600	NNU4096	4482196	273
	790	248	7.5	—	708	4050	8100	NN3196	3282796	447
500	670	170	5	554	—	2720	7200	NNU49/500	44829/500	171
	720	167	6	—	664	2580	5600	NN30/500	32821/500	205
	720	167	6	563	—	2580	5600	NNU30/500	34821/500	220
530	710	136	5	—	663	2040	4900	NN39/530	32829/530	149
	710	180	5	588	—	2900	7050	NNU49/530	44829/530	202
	780	185	6	—	715	3200	6900	NN30/530	32821/530	296
560	750	140	5	—	705	2370	4860	NN39/560	32829/530	188
	750	190	5	623	—	3250	8700	NNU49/560	44829/560	239
	780	180	8	—	725	2400	6400	NN6/560	2872/560	266
	820	195	8	—	756	2460	6560	NN30/560K	31821/560	341
	820	258	6	—	745	4100	10600	NN40/560	42821/560	472
	820	258	6	626	—	5720	13100	NNU40/560	44821/560	420
	920	280	7.5	650	—	6850	13700	NNU31/560	34827/560	738
600	800	200	5	666	—	3850	10500	NNU49/600	44829/600	284
	800	200	5	—	755	3450	7180	NN49/600K	41829/600	257
	870	200	6	—	803	3420	7785	NN30/600	32821/600	355
	870	272	6	664	—	6138	14040	NNU40/600	44821/600	530
	980	375	7.5	699	—	8910	18990	NNU41/600	44827/600	1100
630	780	150	4	676	—	2290	7000	NNU48/630	44828/630	160
	850	218	6	—	793	4200	11400	NN49/630	42829/630	328
	850	218	6	704	—	4000	10800	NNU49/630	44829/630	356
	920	212	7.5	—	845	3860	8820	NN30/630	32821/630	430
	920	290	7.5	699	—	6885	15750	NNU40/630	44821/630	635
	1030	400	7.5	734	—	9900	21600	NNU41/630	44827/630	1330
670	900	230	6	—	838	4450	12330	NN49/670	42829/670	419
	900	230	6	738	—	4950	13100	NNU49/670	44829/670	430
	980	230	7.5	—	901	4620	10260	NN30/670K	31821/670	597
	980	308	7.5	744	—	7578	17640	NNU40/670	44821/670	765
	1090	412	7.5	774	—	10890	22950	NNU41/670	44827/670	1500
710	870	160	4	759	—	2640	8350	NNU48/710	44828/710	203
	950	243	6	782	—	4850	13770	NNU49/710	44829/710	480
	1030	236	7.5	—	951	5148	11880	NN30/710	32821/710	590
	1030	315	7.5	784	—	8415	19440	NNU40/710	44821/710	850
	1150	438	9.5	820	—	12060	25650	NNU41/710	44827/710	1790
750	920	170	5	—	879	3070	9180	NN48/750	42828/750	240
	1000	250	6	831	—	4950	14400	NNU49/750	44829/750	540

Double-row cylindrical roller bearings



Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	r _{min}	Fw	Ew	Cr	Cor	Current	Original	kg
750	1090	250	7.5	–	1007	6336	14400	NN30/750	32821/750	705
	1090	335	7.5	830	–	9180	21600	NNU40/750	44821/750	925
	1220	475	9.5	871	–	14490	31950	NNU41/750	44827/750	2230
800	1060	258	6	884	–	5247	15300	NNU49/800	44829/800	615
	1150	258	7.5	–	1065	7029	16200	NN30/800	32821/800	790
	1150	345	7.5	885	–	9720	23400	NNU40/800	44821/800	1140
	1280	475	9.5	921	–	14850	32850	NNU41/800	44827/800	2390
850	1030	180	5	905	–	3400	11400	NNU48/850	44828/850	310
	1120	272	6	939	–	5346	16200	NNU49/850	44829/850	715
	1220	272	7.5	–	1130	7128	16740	NN30/850	32821/850	940
	1220	365	7.5	940	–	10530	25650	NNU40/850	44821/850	1340
	1360	500	12	976	–	19080	40500	NNU41/850	44827/850	2900
900	1180	280	6	986	–	5940	18000	NNU49/900	44829/900	805
	1280	280	7.5	–	1185	7425	18000	NN30/900	32821/900	1050
	1280	375	7.5	990	–	11520	28350	NNU40/900	44821/900	1500
	1420	515	6	1032	–	19800	42750	NNU41/900	44827/900	3180
950	1250	300	7.5	1046	–	6633	20160	NNU49/950	44829/950	960
	1360	300	7.5	–	1255	8217	20160	NN30/950	32821/950	1300
	1360	412	7.5	1050	–	12780	31950	NNU40/950	44821/950	1900
	1500	545	12	1092	–	22950	51300	NNU41/950	44827/950	3830
1000	1320	315	7.5	1103	–	7722	23400	NNU49/1000	44829/1000	1250
	1320	315	7.5	–	1238	8580	25200	NN49/1000	42829/1000	1200
	1420	308	7.5	–	1316	9090	22050	NN30/1000	32821/1000	1400
	1420	412	7.5	1101	–	13860	34200	NNU40/1000	44821/1000	2000
	1580	580	12	1154	–	24750	55800	NNU41/1000	44827/1000	4270
1060	1400	335	7.5	1160	–	9450	27450	NNU49/1060	44829/1060	1350
	1500	325	9.5	–	1391	9900	24750	NN30/1060	32821/1060	1650
	1660	600	15	1214	–	27270	62550	NNU41/1060	44827/1060	5070
1120	1460	335	7.5	1220	–	9450	28350	NNU49/1120	44829/1120	1450
	1750	630	15	1279	–	30240	68850	NNU41/1120	44827/1120	5600
1180	1540	355	7.5	1285	–	10710	32400	NNU49/1180	44829/1180	1650
	1850	670	15	1350	–	33210	76500	NNU41/1180	44827/1180	7200
1250	1950	710	15	1426	–	37620	88200	NNU41/1250	44827/1250	8000
1320	1720	400	7.5	1440	–	12420	38250	NNU49/1320	44829/1320	3100
	1720	400	7.5	–	1620	13800	42500	NN49/1320	42829/1320	3060
	2060	750	15	1507	–	41130	95400	NNU41/1320	44827/1320	9400
1400	2180	775	19	1598	–	44550	104400	NNU41/1400	44827/1400	10700
1500	2300	800	19	1709	–	47520	118800	NNU41/1500	44827/1500	12300

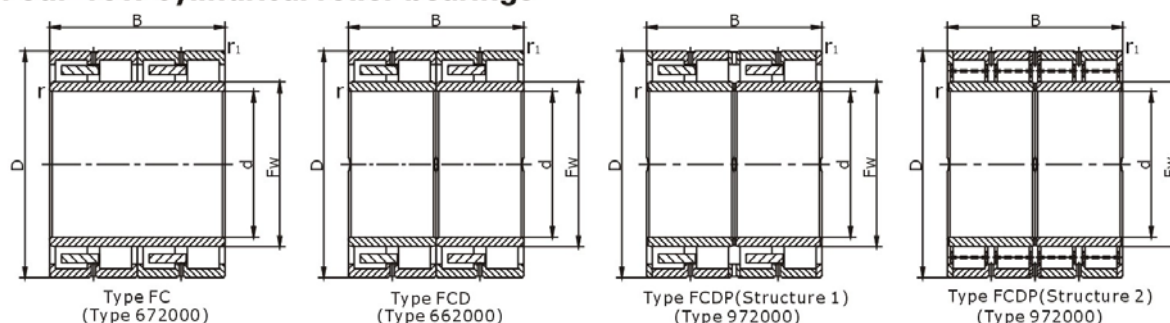
Four-row cylindrical roller bearings

Four-row cylindrical roller bearings are the one of the main bearings for rolling mills. They have compact structures and high stiffness, and can carry high radial loads but not axial loads. Because of inner rings with no ribs, inner and outer ring subassembly (with full set of rollers and cage) can be mounted respectively. Cleaning, inspecting and dismounting are very convenient.

Four-row cylindrical roller bearings are especially applied to rolling mills required high speed and precision, for example, wire mills, bar and shape mills, cold or hot sheet mills and cogging mills.

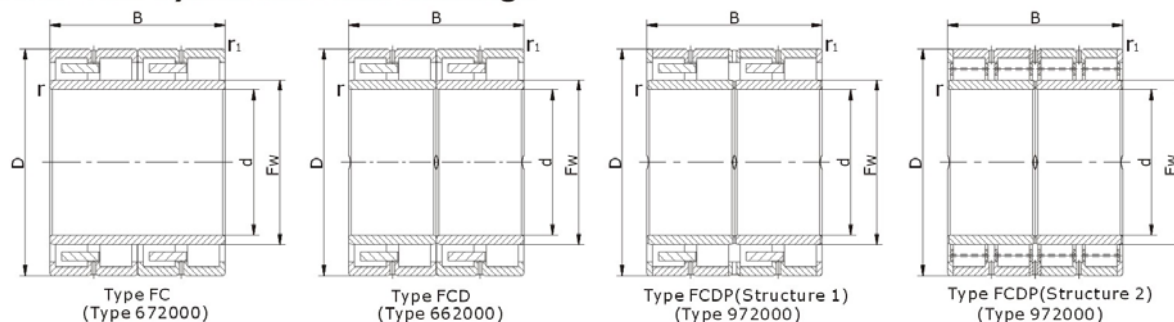
Brass solid cages or pin-type cages are mainly used in four-row cylindrical roller bearings.

Four-row cylindrical roller bearings



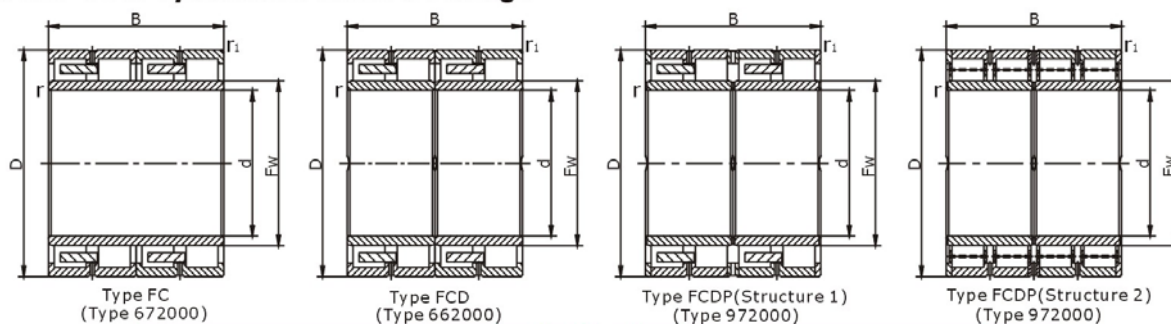
Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	Fw	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg
90	140	70	105	1.5	1.1	222	454	FC182870	672718	4.4
	140	74	105	1.5	1.1	222	454	FC182874	—	4.5
100	140	70	111	1.5	1.1	194	416	FC202870	672820	3.5
	140	90	111	1.5	1.1	290	616	FC202890	—	4.3
	140	104	111	1.5	1.1	335	730	FC2028104	672720	5.1
	145	70	113	1.5	1.1	219	457	FC202970	672720K	4.1
	150	106	113	1.5	1.1	347	736	FC2030106	—	6.8
110	150	80	122	1.5	1.1	241	602	FC223080	—	4.4
	170	90	127	2	2	358	754	FC223490	—	7.9
	170	120	127	2	2	605	1060	FC2234120	672722	10.6
	210	170	136.5	2	2	923	1610	FC2242170	—	27.3
120	180	92	137	2	2	375	820	FC243692	—	8.7
	180	105	135	2	2	612	927	FC2436105	672724	9.8
	180	120	136	2	2	477	1061	FC2436120	—	11.2
130	200	104	149	2	2	478	1006	FC2640104	—	12.5
	200	125	149	2	2	738	1220	FC2640125	672726	15
140	210	100	158	2	2	503	1096	FC2842100	—	12.8
	210	106	158	2	2	503	1096	FC2842106	—	13.6
	210	125	158	2	2	718	1365	FC2842125	672728	15.8
	210	155	158	2	2	756	1774	FC2842155	—	19.6

Four-row cylindrical roller bearings



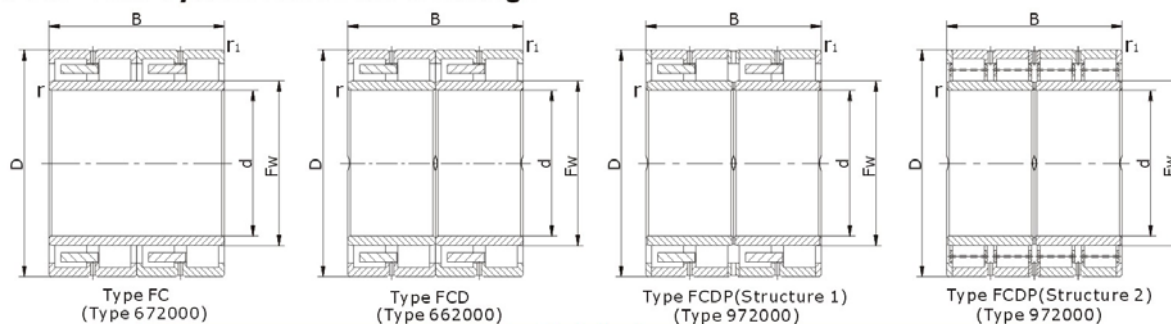
Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	Fw	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg
145	210	155	166	2	2	720	1560	FC2942155	—	24.4
	225	156	169	2	2	815	1660	FC2945156	672729	24.4
150	225	120	169	2	2	788	1586	FC3045120	—	17.5
	225	150	169	2	2	865	1770	FC3045150	—	21
	230	156	174	2	2	840	1760	FC3046156	672730	24.6
160	230	130	180	2	2	1040	1384	FC3246130	—	22.7
	230	168	179	3	2	818	2218	FC3246168	—	24.2
	240	124	183	2.1	2.1	690	1543	FC3248124	672732K	20.6
	240	168	183	2.1	2.1	947	2310	FC3248168	672732	28
	260	168	183	2.5	2.1	953	2326	FC3252168	—	38.2
170	230	130	188.5	2	2	680	1720	FC3446130	—	16.3
	230	152	186	2	2	765	1790	FC3446152	—	17.4
	230	180	186	2	2	707	2041	FC3446180	—	22.7
	240	130	190	2	2	830	1830	FC3448130	—	19
	250	170	192	2.1	2.1	1000	2400	FC3450170	672734H	29.9
	260	120	195	2.1	2.1	863	1730	FC3452120	672734Y	24.2
	260	150	195	2.1	2.1	860	1948	FC3452150	—	30.2
	260	170	196	2.1	2.1	1080	2460	FC3452170	—	34.9
	260	225	196	2.1	2.1	1270	3350	FC3452225	—	43.5
180	250	120	200	2.1	2.1	609	1583	FC3650120	—	19
	250	156	200	2	2	710	1527	FC3650156	672836	24.7
	260	120	202	2.5	2.1	693	860	FC3652120	—	20.2
	260	124	202	2.1	2.1	718	1668	FC3652124	672736K	22.6
	260	154	202	2.5	2.1	983	2200	FC3652154	—	28.2
	260	160	202	2.1	2.1	893	2206	FC3652160	—	29.2
	260	168	202	2.1	2.1	1060	2440	FC3652168	672736	30.7
	260	180	202	2.1	2.1	1150	2560	FC3652180	—	32.9
	280	180	207	2.1	2.1	1220	2580	FC3656180	—	43.4
190	260	168	212	2.1	2.1	1020	2600	FC3852168	—	27.9
	265	124	213	2.1	2.1	816	1926	FC3853124	672838K	22.1
	270	124	212	2.1	2.1	816	1925	FC3854124	—	24.2
	270	168	212	2.1	2.1	1062	2798	FC3854168	672738K	32
	270	200	212	2.1	2.1	1359	3350	FC3854200	672738	38.2
	280	200	214	2.1	2.1	1540	3350	FC3856200	—	41.5
200	270	120	222	2.1	2.1	615	1626	FC4054120	—	20.8
	270	170	222	2.1	2.1	985	2670	FC4054170	—	29.5
	280	170	222	2.1	2.1	1130	2730	FC4056170	—	33
	280	200	222	2.1	2.1	1359	2693	FC4056200	—	39.9
	290	130	226	2.5	2.1	840	1975	FC4058130	—	29.9
	290	192	226	2.1	2.1	1386	3250	FC4058192	672740	44.9
210	290	192	236	2.1	2.1	1300	3400	FC4258192	—	40.6
	300	170	234	2.1	2.1	1031	2814	FC4260170	—	41.4
	300	210	234	2.1	2.1	1300	3040	FC4260210	672742	50.3

Four-row cylindrical roller bearings



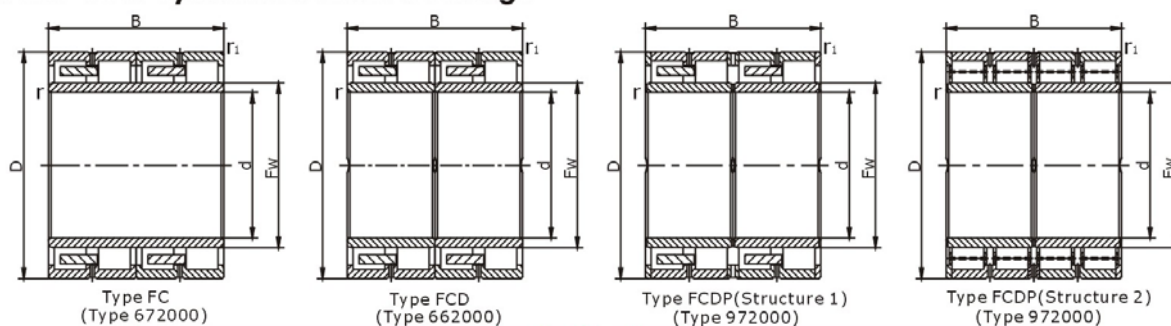
Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	Fw	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg
220	300	192	242	2.1	2.1	1085	3310	FC4460192	—	41.5
	310	157	246	2.1	2.1	1132	2627	FC4462157	—	39.7
	310	190	246	2.1	2.1	1283	3503	FC4462190	—	47.2
	310	192	246	2.1	2.1	1250	3070	FC4462192	672744	48.6
	320	210	248	2.1	2.1	1321	3534	FC4464210	—	59.8
	340	192	246	2.5	2.1	1599	3444	FC4468192	—	65.6
230	330	170	260	2.1	2.1	1142	2974	FC4666170	—	50.2
	330	206	260	2.1	2.1	1470	3760	FC4666206	672746	60.8
	365	250	266	3	3	2400	4900	FC4673250	—	100
240	330	220	264	2.1	2.1	1373	3789	FC4866220	672748	58.4
	340	192	268	2.1	2.1	1219	3161	FC4868192	—	58
	360	220	272	2.1	2.1	1600	4065	FC4872220	—	83
250	340	170	274	3	3	1141	3281	FC5068170	—	47.9
	350	220	278	3	3	1350	3804	FC5070220	672750	70.2
	360	160	282	3	3	1077	2781	FC5072160	—	57
	360	220	282	3	3	1486	4210	FC5072220	—	78.5
260	360	192	287	3	3	1274	3468	FC5272192	—	62.3
	360	200	288	3	3	1483	4217	FC5272200	—	64.9
	360	204	287	2.1	2.1	1620	3990	FC5272204	—	63.5
	370	200	292	3	3	1407	4057	FC5274200	—	74.2
	370	220	292	3	3	1964	4650	FC5274220	672752	73.7
	380	220	292	3	3	1516	4353	FC5276220	—	91.2
	380	280	295	3	3	2250	5680	FC5276280	—	110
	400	200	296	4	4	1795	4051	FC5280200	—	95.6
	400	290	296	4	4	2710	7100	FC5280290	—	135
270	380	230	298	3	3	1725	4598	FC5476230	672754	85.3
	400	220	305	3	3	1833	4570	FC5480220	—	100
280	375	200	307	3	3	1480	4311	FC5675200	672956	65.1
	380	290	308	3	3	1888	5835	FC5676290	—	100
	390	220	312	3	3	1600	4730	FC5678220	672756Q	86.2
	390	240	312	3	3	1763	5235	FC5678240	—	93.4
	390	275	308	3	1.1	2250	6500	FCD5678275	—	105.1
	420	280	318	4	4	2430	6350	FCD5684280	—	143.4
290	410	240	320	4	4	2070	5670	FC5882240	672758	105
300	420	240	332	4	4	2060	5695	FC6084240	672760	107.8
	420	240	332	4	4	2225	5750	FCD6084240	—	107
	420	300	332	3	3	2305	6565	FCD6084300	—	134.7
320	440	240	351	3	3	2120	6101	FC6488240	—	113.9
	440	300	352	3	3	2530	7660	FCD6488300	—	142.3
	450	240	355	4	4	2145	5860	FC6490240	672764	125.3
	450	240	355	4	4	2145	5860	FCD6490240	—	125.3
	460	280	357	3	3	2450	6534	FC6492280	—	159
	460	340	360	3	3	2895	8105	FCD6492340	—	193.1
	480	350	364	4	4	3790	10500	FCDP6496350	—	227
330	460	340	365	4	4	3760	8265	FCD6692340	—	175

Four-row cylindrical roller bearings



Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	Fw	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg
340	450	250	368	3	3	2299	6312	FC6890250	—	111.2
	450	250	368	3	3	2045	6134	FCD6890250	—	112.6
	460	260	370	4	4	2132	5977	FC6892260	—	128.2
	480	350	378	4	4	4270	9480	FCD6896350	—	207
350	500	380	389	5	5	4290	11700	FCD70100380	672770	242
	520	300	401	5	5	3860	9000	FCD70104300	—	220
360	500	250	394	3	3	2940	6740	FCD72100250	—	143
	510	370	399	4	4	4010	10700	FCD72102370	—	273
370	520	380	409	4	4	4900	10750	FCD74104380	672974	263
	520	380	409	4	4	4160	12312	FCDP74104380	—	261
	520	400	409	4	4	4140	11200	FCD74104400	—	267
	540	400	415	4	4	3970	11240	FCD74108400	672774	322.4
380	540	380	422	4	4	3766	10930	FCD76108380	—	290.9
	540	400	422	4	4	4800	12000	FCD76108400	672776	305
	540	400	422	4	4	5140	14000	FCDP76108400	—	305
390	540	320	431	10 × 20°	2	4750	12200	FCDP78108320	—	230
	550	310	430	11 × 20°	4	4600	11200	FCDP78110310	—	240
400	550	300	441	4	4	3510	9260	FCD80110300	—	214
	560	350	445	5	5	3840	10400	FCD80112350	—	271
	560	410	445	5	5	5790	15600	FCDP80112410	—	315
	590	440	450	5	5	6630	16600	FCD80118440	—	415
410	560	400	450	14 × 20°	2	5790	16000	FCDP82112400	—	290
	600	440	460	5	5	6880	17300	FCDP82120440	—	425
420	580	260	468	4	4	3960	9650	FCD84116260	—	210
	580	320	463	4	4	4200	10800	FCD84116320	—	250
	600	440	470	5	5	6270	18100	FCDP84120440	—	400
	620	400	473	4	4	6230	15600	FCD84124400	—	430
440	620	450	487	5	5	6490	19600	FCDP88124450	—	440
	650	355	494	12.5 × 20°	4	5162	14000	FCDP88130355	—	420
450	590	300	490	12 × 45°	4	3510	12000	FCDP90118300	—	247
460	650	424	510	12 × 20°	3	7000	18300	FCDP92130424	—	450
	650	470	509	5	5	7900	22400	FCDP92130470	—	510
480	650	450	525	6	6	7420	21200	FCDP96130450	—	440
	680	420	528	5	5	7500	19300	FCDP96136420	—	515
	680	500	532	5	5	7323	24000	FCDP96136500	—	605
500	670	450	540	5	5	5343	17490	FCDP100134450	6728/500Y	460
	680	405	550	6	6	5495	16570	FCD100136405	—	453
	680	450	550	5	5	7420	22000	FCDP100136450	—	500
	710	480	558	5	5	7920	21600	FCD100142480	—	610
	720	400	558	6	3	7120	17600	FCD100144400	—	530
	720	530	568	6	6	9720	19890	FCD100144530	—	755
510	680	500	560	7.5 × 20°	5	8070	26000	FCDP102136500	—	522
	730	520	569	6	6	8560	22000	FCD102146520	—	750
	760	550	570	16 × 20°	3	10800	26500	FCDP102152550	—	950

Four-row cylindrical roller bearings



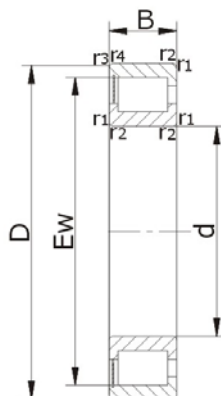
Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	D	B	Fw	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg
530	760	520	587	6	6	10530	28500	FCDP106152520	—	775
	780	500	591	6	6	8410	20400	FCD106156500	—	805
	780	570	595	6	6	11520	32500	FCDP106156570	—	960
550	740	510	600	6	6	7769	27000	FCDP110148510	—	615
	800	520	612	6	6	10530	26500	FCDP110160520	—	895
	800	560	610	6	6	10890	28000	FC110160560	—	930
570	750	530	622	5	5	6745	25200	FCD114150530	6727/570	662.5
600	820	575	660	6	6	11700	36000	FCDP120164575	—	910
	870	540	672	20 × 20°	4	11800	31500	FCDP120174540	—	1100
	870	640	682	6	6	13600	40000	FCDP120174640	—	1300
610	820	430	665	19 × 20°	3	8400	23600	FCDP122164430	—	650
650	900	650	704	7.5	7.5	15480	41500	FCDP130180650	—	1260
	920	670	723	7.5	7.5	15480	46500	FCDP130184670	—	1450
660	820	440	702	7.5	4	6730	22800	FCD132164440	—	530
	880	450	727	6	6	5546	23600	FCD132176450	—	785
680	940	600	743	4	4	16900	53400	FCDP136188600	—	1380
	980	640	760	20 × 20°	4	13230	41800	FCDP136196640	—	1590
690	980	715	767.5	7.5	7.5	17820	51300	FCDP138196715	—	1780
	980	750	766	7.5	7.5	17000	53000	FCDP138196750	—	1880
700	930	620	763	18 × 20°	7.5	11600	40850	FCDP140186620	—	1180
	980	700	774	6	6	17800	48200	FCDP140196700	—	1720
710	1000	715	787.5	7.5	7.5	15400	53200	FCDP142200715	—	1860
730	940	500	780	3	3	10150	42500	FCDP146188500	—	1000
	960	620	790	20 × 20°	7.5	11800	48750	FCDP146192620	—	1220
	1030	750	809	7.5	7.5	16000	55500	FCDP146206750	—	2040
750	1000	500	816	6	6	9460	32000	FCD150200500	—	1150
	1000	670	813	7.5	7.5	13500	47500	FCDP150200670	—	1480
780	1070	780	853	25 × 20°	7.5	17200	57900	FCDP156214780	—	2300
800	1080	700	878	7.5	7.5	15200	55500	FCDP160216700	—	1950
	1150	850	905	7.5	7.5	21000	76600	FCDP160230850	—	3150
820	1130	800	903	7.5	7.5	18600	64600	FCDP164226800	—	2540
850	1150	840	928	7.5	7.5	19600	72009	FCDP170230840	—	2570
	1180	850	940	7.5	7.5	20100	72700	FCDP170236850	—	2850
	1220	900	940	5	5	23000	84000	FCDP170244900	—	3720
900	1220	840	989	24 × 20°	7.5	20300	76000	FCDP180244840	—	3060
	1280	930	1000	25 × 20°	7.5	25300	88350	FCDP180256930	—	4080
950	1300	850	1044	5	5	22168	81318	FCDP190260850	6727/950Y	3505
	1360	975	1075	26 × 20°	7.5	26200	90000	FCDP190272975	—	4900
	1360	1000	1058	22 × 20°	7.5	29200	99000	FCDP1902721000	—	5020
980	1310	880	1061.7	20 × 20°	7.5	22000	82000	FCDP196262880	—	3310
1000	1360	800	1084	23 × 20°	7.5	22000	80000	FCDP200272800	—	3560
1040	1440	1000	—	27 × 20°	7.5	34200	51300	FCDP2082881000	—	5100
1200	1590	1050	1305	30 × 20°	7.5	37620	120600	FCDP2403181050	—	5970
1300	1655	880	1391	7.5	7.5	33660	109800	FCDP260331880	—	4800
1350	1765	1360	1457	42 × 20°	9	36180	109800	FCDP2703531360	—	9100
1400	1780	1200	1493	40 × 20°	9	47070	146700	FCDP2803561200	—	7400
	1900	1360	1521	40 × 20°	9	55440	164700	FCDP2803601360	—	11300

Full complement cylindrical roller bearings

Full complement cylindrical roller bearings include single-row full complement cylindrical roller bearings (type NCF) and double-row full complement cylindrical roller bearings (type NNCF) .

Full complement cylindrical roller bearings have no cage, full of rollers, the loading capacity is higher than bearings with cage, but the high speed performance is worse. Single and double rows open bearings are primarily used in general mechanical equipment required lower speed and heavy loads. Double-row closed bearings are generally used in wire rope pulleys of cranes.

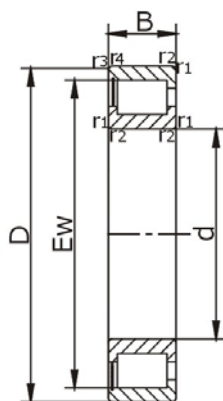
Single-row full complement cylindrical roller bearings (Type NCF)



Type NCF

Boundary dimensions						Basic load ratings		Designations	Mass	Limiting speeds	
mm						kN				r/min	
d	D	B	r ₁ , 2min	r ₃ , 4min	Ew	Cr	Cor		kg	Grease	Oil
150	210	36	2	1.1	195.5	289	505	NCF2930V	3.7	670	1400
	225	56	2.1	1.1	211.7	460	710	NCF3030V	7.1	630	1300
160	220	36	2	1.1	205.7	310	535	NCF2932V	3.8	630	1300
	240	60	2.1	1.1	225.1	520	810	NCF3032V	8.6	600	1200
170	215	22	1.5	1.1	203.5	149	272	NCF1834V	1.8	600	1200
	230	36	2	1.1	216	320	570	NCF2934V	4.1	600	1200
	260	67	2.1	1.1	243.2	675	1070	NCF3034V	11.9	560	1100
180	225	22	1.1	1	215.2	154	290	NCF1836V	1.8	600	1200
	250	42	2	1.1	232	390	695	NCF2936V	6.0	560	1100
	280	74	2.1	2.1	260.5	785	1260	NCF3036V	15.8	560	1100
190	240	24	1.5	1.1	229	178	335	NCF1838V	2.4	560	1100
	260	42	2	1.1	244	435	785	NCF2938V	6.5	560	1100
	290	75	2.1	2.1	270	805	1320	NCF3038V	16.7	530	1000
200	250	24	1.5	1.1	237.5	193	356	NCF1840V	2.5	560	1100
	280	48	2.1	1.5	262	530	955	NCF2940V	8.9	530	1000
	310	82	2.1	2.1	288.2	910	1510	NCF3040V	21.4	500	950
220	270	24	1.5	1.1	258	191	385	NCF1844V	2.7	530	1000
	300	48	2.1	1.5	283	555	1050	NCF2944V	9.6	480	900
	340	90	3	3	312.7	1100	1820	NCF3044V	28.2	450	850

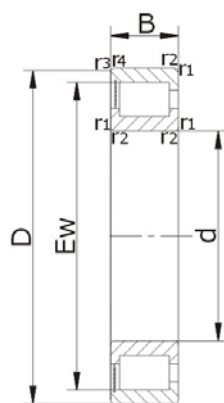
Single-row full complement cylindrical roller bearings (Type NCF)



Type NCF

Boundary dimensions						Basic load ratings		Designations	Mass	Limiting speeds	
mm						kN				r/min	
d	D	B	r ₁ , 2min	r ₃ , 4min	Ew	Cr	Cor		kg		Grease
240	300	28	2	1.1	287	236	470	NCF1848V	4.2	480	900
	320	48	2.1	1.5	303	580	1140	NCF2948V	10.4	450	850
	360	92	3	3	335.25	1350	2490	NCF3048V	31.2	430	800
260	320	28	2	1.1	307.2	247	510	NCF1852V	4.5	430	800
	360	60	2.1	1.5	333.7	750	1460	NCF2952V	18.1	400	750
	400	104	4	4	376.1	1740	2960	NCF3052V	45.3	380	700
280	350	33	2	1.1	334	330	675	NCF1856V	6.8	400	750
	380	60	2.1	1.5	358.8	814	1750	NCF2956V	19.5	380	700
	420	106	4	4	390.5	1740	3110	NCF3056V	49	360	670
300	380	38	2.1	1.5	363	445	870	NCF1860V	9.7	360	670
	420	72	3	3	385	805	1730	NCF2960V	30.7	340	630
	460	118	4	4	432	1980	3500	NCF3060V	67.6	320	600
320	400	38	2.1	1.5	383	460	925	NCF1864V	10.3	340	630
	440	72	3	3	411	1150	2340	NCF2964V	33	320	600
	480	121	4	4	447.3	2170	3900	NCF3064V	73	300	560
340	420	38	2.1	1.5	401	475	985	NCF1868V	10.7	320	600
	460	72	3	3	431	1190	2470	NCF2968V	34.1	300	560
	520	133	5	5	486	2480	4350	NCF3068V	97	280	530
360	440	38	2.1	1.5	423.2	562	1180	NCF1872V	11.5	300	560
	480	72	3	3	451.5	1220	2610	NCF2972V	36	280	530
	540	134	5	5	503.2	2550	4600	NCF3072V	102	260	500
380	480	46	2.1	1.5	458	575	1230	NCF1876V	18.6	280	530
	520	82	4	4	486.7	1480	3210	NCF2976V	52	260	500
	560	135	5	5	520.5	2610	4800	NCF3076V	108	240	480
400	500	46	2.1	1.5	475	590	1300	NCF1880V	19.5	260	500
	540	82	4	4	511	1650	3550	NCF2980V	53.4	240	480
	600	148	5	5	559.1	2940	5450	NCF3080V	139	220	450
420	520	46	2.1	1.5	499	600	1340	NCF1884V	20.5	240	480
	560	82	4	4	524	1740	3590	NCF2984V	55.7	220	450
	620	150	5	5	578.2	3000	5650	NCF3084V	147	200	430
440	540	46	2.1	1.5	516	615	1410	NCF1888V	21.3	220	450
	600	95	4	4	565.5	2100	4160	NCF2988V	78.2	200	430
460	580	56	3	3	553	920	1950	NCF1892V	32.5	200	430
	620	95	4	4	579	2130	4480	NCF2992V	81.2	190	400
480	600	56	3	3	573.5	940	2040	NCF1896V	33.8	190	400
	650	100	5	5	606	2380	5100	NCF2996V	95.1	180	380
500	620	56	3	3	594	1030	2200	NCF18/500V	35	180	380
	670	100	5	5	634.5	2420	5250	NCF29/500V	98.4	170	360

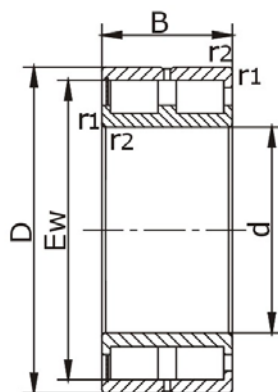
Single-row full complement cylindrical roller bearings (Type NCF)



Type NCF

Boundary dimensions						Basic load ratings		Designations	Mass	Limiting speeds	
mm						kN				r/min	
d	D	B	r ₁ , 2min	r ₃ , 4min	E _w	Cr	Cor		kg		Grease
530	650	56	3	3	624.5	990	2240	NCF18/530V	36.9	170	360
560	680	56	3	3	655	1020	2360	NCF18/560V	39.3	160	340
600	730	60	3	3	696	1140	2680	NCF18/600V	48.9	150	320
630	780	69	4	4	739	1470	3400	NCF18/630V	68.8	140	300
670	820	69	4	4	783	1520	3550	NCF18/670V	72.7	130	280
	820	88	4	4	783	2040	5340	NCF28/670V	90.8	130	280
710	870	74	4	4	831	1670	3900	NCF18/710V	79.7	120	260
750	920	78	5	5	880	1890	4430	NCF18/750V	94.6	110	240
	920	100	5	5	880	2630	6790	NCF28/750V	130	110	240
800	980	82	5	5	936	2070	4930	NCF18/800V	113	100	220
900	1090	85	5	5	1044	2390	5900	NCF18/900V	139	90	190
1000	1220	100	6	6	1165	3110	7640	NCF18/1000V	209	75	160

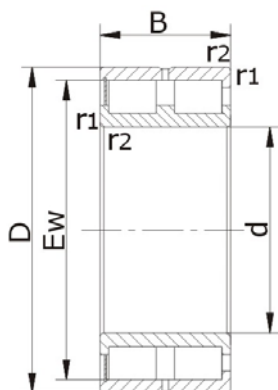
Double-row full complement cylindrical roller bearings (Type NNCF)



Type NNCF

Boundary dimensions					Basic load ratings		Designations	Mass	Limiting speeds	
mm					kN				r/min	
d	D	B	r _{1, 2min}	Ew	Cr	Cor		kg	Grease	Oil
150	210	60	2	192	390	865	NNCF4930V	6.6	670	1400
	225	100	2.1	209	785	1420	NNCF5030V	13	630	1300
160	220	60	2	203.9	410	930	NNCF4932V	7.0	630	1300
	240	109	2.1	225	895	1620	NNCF5032V	15.8	600	1200
170	230	60	2	212.2	415	975	NNCF4934V	7.3	600	1200
	260	122	2.1	243	1160	2140	NNCF5034V	22.1	560	1100
180	250	69	2	231.1	550	1230	NNCF4936V	10.7	560	1100
	280	136	2.1	260.5	1340	2510	NNCF5036V	29.4	560	1100
190	260	69	2	241.3	565	1290	NNCF4938V	11.1	560	1100
	290	136	2.1	270	1380	2630	NNCF5038V	30.8	530	1100
200	250	50	1.5	235.9	320	825	NNCF4840V	5.9	560	1100
	280	80	2.1	260	665	1500	NNCF4940V	15.7	530	1000
	310	150	2.1	288	1560	3000	NNCF5040V	39.7	500	950
220	270	50	1.5	256.9	340	905	NNCF4844V	6.4	530	1000
	300	80	2.1	277.2	695	1620	NNCF4944V	17	500	950
	340	160	3	308.5	1570	3080	NNCF5044V	50.7	450	850
240	300	60	2	282.4	495	1340	NNCF4848V	10.3	480	900
	320	80	2.1	300.1	725	1770	NNCF4948V	18.4	450	850
	360	160	3	335.6	1990	4000	NNCF5048V	54.3	430	800
260	320	60	2	304.7	515	1450	NNCF4852V	11	430	800
	360	100	2.1	331.5	1050	2530	NNCF4952V	32	400	750
	400	190	4	373.5	2690	5200	NNCF5052V	82.7	380	700
280	350	69	2	332.9	685	1860	NNCF4856V	16	400	750
	380	100	2.1	353.5	1090	2720	NNCF4956V	34	380	700
	420	190	4	389	2770	5450	NNCF5056V	87.7	360	670
300	380	80	2.1	357.4	805	2160	NNCF4860V	23	380	700
	420	118	3	390.2	1580	3800	NNCF4960V	52	340	630
	460	218	4	432	3400	7000	NNCF5060V	125	320	600
320	400	80	2.1	380.3	835	2310	NNCF4864V	24.3	340	630
	440	118	3	409	1620	4000	NNCF4964V	55	320	600
	480	218	4	447.5	3500	7350	NNCF5064V	131	300	600
340	420	80	2.1	397.4	855	2430	NNCF4868V	25.6	320	600
	460	118	3	427.1	1690	4300	NNCF4968V	58	300	560
	520	243	5	486	4250	8750	NNCF5068V	177	280	530
360	440	80	2.1	420.2	85	2580	NNCF4872V	27	300	560
	480	118	3	446	1730	4500	NNCF4972V	61	300	560
	540	243	5	503.6	4190	8850	NNCF5072V	186	260	500

Double-row full complement cylindrical roller bearings (Type NNCF)



Type NNCF

Boundary dimensions					Basic load ratings		Designations	Mass	Limiting speeds	
mm					kN				r/min	
d	D	B	r _{1, 2min}	Ew	Cr	Cor		kg	Grease	Oil
380	480	100	2.1	456	1260	3600	NNCF4876V	45.5	280	530
	520	140	4	481.5	2180	5650	NNCF4976V	90.5	260	500
	560	243	5	521.4	4280	9210	NNCF5076V	194	240	480
400	500	100	2.1	470.3	1290	3750	NNCF4880V	47.5	260	500
	540	140	4	502	2240	5900	NNCF4980V	94.5	240	480
	600	272	5	560	5050	10900	NNCF5080V	256	220	450
420	520	100	2.1	492.6	1320	3950	NNCF4884V	49.5	240	480
	560	140	4	522.5	2290	6200	NNCF4984V	98.5	220	450
	620	272	5	577.7	5150	11300	NNCF5084V	267	200	430
440	540	100	2.1	514.6	1350	4150	NNCF4888V	51.5	220	450
	600	160	4	563.5	3000	7850	NNCF4988V	136	200	430
460	580	118	3	543.3	1730	5150	NNCF4892V	77.5	200	430
	620	160	4	577	3050	8050	NNCF4992V	142	190	400
480	600	118	3	567.3	1760	5300	NNCF4896V	80.5	190	400
	650	170	5	605.5	3350	8900	NNCF4996V	167	180	380
500	620	118	3	583.5	1810	5600	NNCF48/500V	83.5	190	400
	670	170	5	631.5	3400	9350	NNCF49/500V	173	170	360

Spherical roller bearings

Spherical roller bearings, whose inner rings have two raceways, and outer raceways are spherical. The centers of curvature of outer raceways are also the bearing centers. The bearings possess self-aligning performance, the permissible misalignment angle is $1\sim 2.5^{\circ}$, and can be used in certain permanent deflection application.

These bearings are able to carry high radial loads, as well as axial loads at the same time, but not pure axial loads, the axial carrying bearing will be needed if axial loads were higher. The contact between rollers and raceways are so close, so the friction is higher than cylindrical roller bearings, and their limiting speed is lower.

The basic types of spherical roller bearings are type C and CA, according to different cages and whether inner rings are with ribs. Type C bearing has inner ring without rib, and use steel pressed cage; type CA bearing has inner ring with two ribs, and adopt machined solid cage.

Spherical roller bearings are especially suitable for applications required heavy or shock loads.

Type 20000C bearing has symmetrical spherical rollers and steel pressed cage. Its inner ring is without rib, rollers are long, loading capacity is high and self-aligning performance is good. The rollers are guided by floating guide ring.

Type 20000CC bearing is the modified type based on type 20000C, the friction between rollers and raceway is decreased, the loading capacity is enhanced.

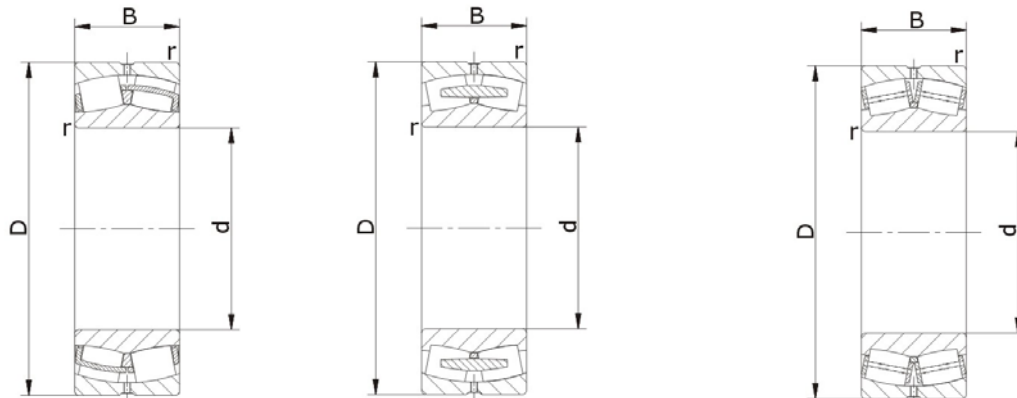
Type 20000CA bearing adopts symmetrical spherical rollers and solid cage, and has inner ring with one rib and floating guide ring. The main parameter, load ratings and limiting speeds of the bearing is the same as type 20000CC bearing which has corresponding type.

Type 20000TN1 bearing uses symmetrical spherical rollers and nylon cage, and has inner ring without rib and floating guide ring. The cage is guided by rollers.

Type 20000CC, 20000CA and 20000TN1 bearings, which should be given priority to use are developed and optimized in recent years.

Spherical roller bearings are primarily used in such applications as rolling mills, paper making machines, power-driven gears, shipping and so on.

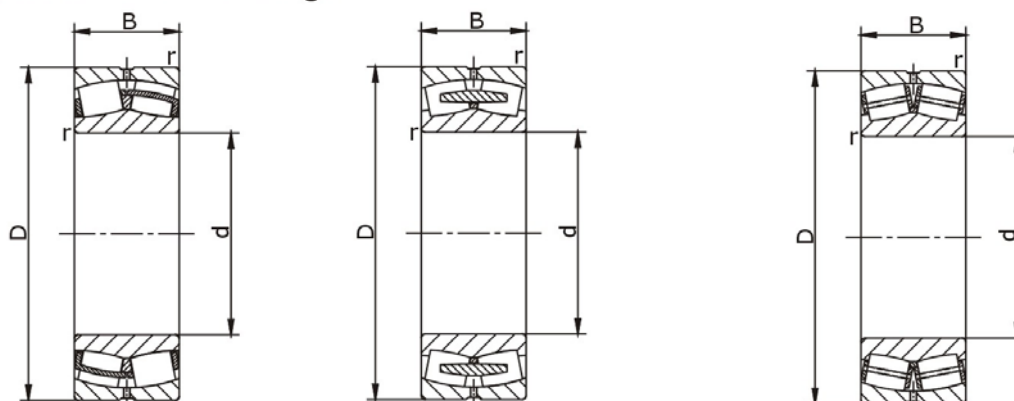
Spherical roller bearings



Type 20000C/W33 Type 20000CA/W33(Structure 1) Type 20000CA/W33(Structure 2)

Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
150	225	56	2.1	338	768	23030	3003130	8.91	1700	2200
	225	56	2.1	338	768	23030/W33	3003130Y	8.85	1700	2200
	225	75	2.1	564	1040	24030CC/W33	—	10.5	1300	1700
	250	100	2.1	890	1600	24130C	4053730	20.4	1000	1400
	250	100	2.1	890	1600	24130C/W33	4053730Y	20	1000	1400
	270	73	3	738	1100	22230C	53530	18.9	1600	2000
	270	96	3	935	1520	23230C/W33	3053230Y	24.3	1100	1500
	320	108	4	1270	1850	22330CA/W33	53630HY	41.7	1000	1400
160	240	60	2.1	376	825	23032	3003132	13.5	1700	2200
	240	60	2.1	376	825	23032/W33	3003132Y	13.4	1700	2200
	240	80	2.1	652	1230	24032C	4053132	12.9	1100	1500
	240	80	2.1	652	1230	24032C/W33	4053132Y	12.8	1100	1500
	270	109	2.1	1040	1880	24132C	4053732	25.4	950	1300
	270	109	2.1	1040	1880	24132C/W33	4053732Y	25	950	1300
	290	80	3	658	1140	22232	3532	22.2	1500	1900
	290	80	3	658	1140	22232/W33	3532Y	22.1	1500	1900
	340	114	4	1170	1730	22332/W33	3632Y	49.9	950	1300
170	260	67	2.1	450	1010	23034	3003134	14.7	1600	2000
	260	67	2.1	450	1010	23034/W33	3003134Y	14.6	1600	2000
	280	109	2.1	1070	1860	24134/W33	—	27	900	1200
	310	86	4	730	1300	22234	3534	27.6	1300	1700
	310	86	4	730	1300	22234/W33	3534Y	27.2	1300	1700
	310	110	4	1160	1835	23234CA	3053234H	37.1	950	1300
	360	120	4	1200	2060	22334	3634	59.8	950	1300
	360	120	4	1200	2060	22334/W33	3634Y	59.3	950	1300
180	280	100	2.1	930	1820	24036	4003136	22.5	950	1300
	280	100	2.1	930	1820	24036/W33	4003136Y	22.3	950	1300
	300	96	3	695	1480	23136	3003736	27.1	1100	1500
	300	96	3	695	1480	23136/W33	3003736Y	26.8	1100	1500
	300	96	3	695	1480	23136/C9	3003736U	27.1	1100	1500
	300	96	3	695	1480	23136/W33YA2	3003736KY	26.8	1100	1500
	300	96	3	695	1480	23136N	3203736	26.4	1100	1500
	320	86	4	750	1370	22236	3536	28.6	1300	1700
	320	86	4	750	1370	22236/W33	3536Y	28.3	1300	1700
	320	112	4	1280	2170	23236CA	3053236H	39.6	900	1200
	320	112	4	1280	2170	23236CA/W33	3053236HY	39.5	900	1200
	320	112	4	1280	2170	23236CA/W33YA2	3053236HKY	39.4	900	1200
	380	126	4	1430	2210	22336	3636	80.7	900	1200
	380	126	4	1430	2210	22336/W33	3636Y	79.9	900	1200

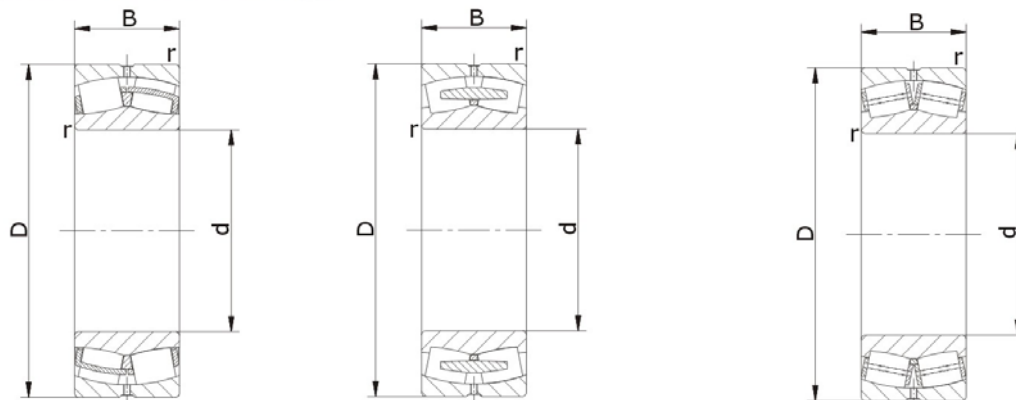
Spherical roller bearings



Type 20000C/W33 Type 20000CA/W33(Structure 1) Type 20000CA/W33(Structure 2)

Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
190	280	67	2.5	542	978	2638	3738	13.7	1000	1400
	290	75	2.1	626	1230	23038	3003138	20.5	1300	1700
	290	75	2.1	626	1230	23038/W33	3003138Y	20.3	1300	1700
	320	128	3	1200	2100	24138CA/W33	—	42	850	1100
	340	92	4	1070	1650	22238CA	53538H	36	1200	1600
	340	120	4	1410	2490	23238CA	3053238H	51	850	1100
	400	132	5	1400	2530	22338	3638	80.6	850	1100
	400	132	5	1400	2530	22338/W33	3638Y	79.7	850	1100
200	310	82	2.1	655	1310	23040	3003140	26.2	1200	1600
	310	82	2.1	655	1310	23040/W33	3003140Y	26	1200	1600
	310	109	2.1	1130	2120	24040CA/W33	—	30.5	900	1200
	340	112	3	930	2010	23140	3003740	50.9	950	1300
	340	112	3	930	2010	23140/W33	3003740Y	50.5	950	1300
	340	140	3	1530	2950	24140C	4053740	52	800	1000
	340	140	3	1530	2950	24140C/W33	4053740Y	51.9	800	1000
	360	98	4	940	1740	22240	3540	44.7	1100	1500
	360	98	4	940	1740	22240/W33	3540Y	44.2	1100	1500
	360	128	4	1610	2700	23240/W33	3003240Y	56.5	850	1100
	420	138	5	1530	2720	22340	3640	95.3	850	1100
	420	138	5	1530	2720	22340/W33	3640Y	95	850	1100
220	320	76	3	758	1280	2644	3844	21.6	1000	1400
	370	120	4	1050	2350	23144	3003744	54	900	1200
	370	120	4	1050	2350	23144/W33	3003744Y	53.5	900	1200
	400	108	4	1200	2220	22244	3544	57.6	950	1300
	400	108	4	1200	2220	22244/W33	3544Y	57.1	950	1300
	400	144	4	2070	3620	23244	3003244	94.6	750	950
	400	144	4	2070	3620	23244/W33	3003244Y	94.2	750	950
	460	145	5	1700	3200	22344	3644	130	750	950
	460	145	5	1700	3200	22344/W33	3644Y	129	750	950
230	420	114	4	1600	2600	22246	3546	69.5	750	950
240	360	92	3	820	2060	23048	3003148	37.6	1000	1400
	360	92	3	820	2060	23048/W33	3003148Y	37.4	1000	1400
	360	118	3	1380	2700	24048CA/W33	—	41.7	800	1000
	400	128	4	1200	2850	23148	3003748	77.2	850	1100
	400	128	4	1200	2850	23148/W33	3003748Y	75.2	850	1100
	400	160	4	2100	3980	24148/W33	4003748Y	81.6	670	850
	440	120	4	1870	2890	22248	3548	85	900	1200
	440	160	4	2490	4490	23248	3003248	128	670	850
	440	160	4	2490	4490	23248/W33	3003248Y	127	670	850
	500	155	5	1780	3250	22348	3648	154	670	850
	500	155	5	1780	3250	22348/W33	3648Y	153	670	850

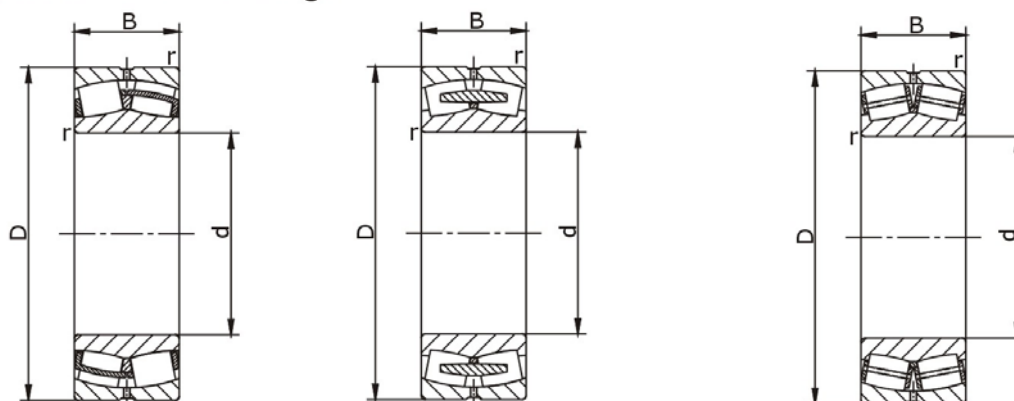
Spherical roller bearings



Type 20000C/W33 Type 20000CA/W33(Structure 1) Type 20000CA/W33(Structure 2)

Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
250	365	87	3	950	1650	2650	3750	32.2	880	1100
260	360	75	2.1	886	1700	23952CA/W33	—	22.5	1100	1500
	400	104	4	1000	2450	23052	3003152	51.5	900	1200
	400	104	4	1000	2450	23052/W33	3003152Y	51.2	900	1200
	400	140	4	1690	3260	24052CA/W33	—	64.4	700	900
	440	144	4	1450	3320	23152	3003752	96	800	1000
	440	180	4	2660	5180	24152C/W33	4053752Y	113	600	750
	480	130	5	2160	3400	22252CA	53552H	105	850	1100
	480	174	5	2800	4550	23252C/W33	3053252Y	140	630	800
	480	174	5	2800	4550	23252CA	3053252H	151	630	800
	480	174	5	2800	4550	23252CA/W33	3053252HY	151	630	800
	490	153	4	2070	3650	2652	3752	140	760	1050
	540	165	6	2250	4190	22352	3652	193	630	800
	540	165	6	2250	4190	22352/W33	3652Y	192	630	800
280	380	75	2.1	800	1500	23956CA/W33	3113956Y	24.5	900	1200
	420	106	4	1100	2680	23056	3003156	62	850	1100
	420	106	4	1100	2680	23056/W33	3003156Y	61.5	850	1100
	420	140	4	1200	2800	24056CA/W33	—	67.2	800	1000
	460	146	5	1590	3630	23156	3003756	95.5	750	950
	460	180	5	2000	4100	24156CA/W33	—	119	750	950
	500	130	5	1690	3380	22256	3556	126	800	1000
	500	130	5	1690	3380	22256/W33	3556Y	124	800	1000
	500	176	5	2880	4900	23256	3003256	153	600	750
	500	176	5	2880	4900	23256/W33	3003256Y	152	600	750
	580	175	6	3500	5150	22356	3656	238	600	750
	580	175	6	3500	5150	22356/W33	3656Y	238	600	750
300	460	118	4	1260	3070	23060	3003160	75.2	800	1000
	460	118	4	1260	3070	23060/W33	3003160Y	74.6	800	1000
	460	160	4	2360	5010	24060C/W33	4053160Y	101	600	750
	500	160	5	2670	4800	23160	3003760	134	670	850
	500	160	5	2670	4800	23160/W33	3003760Y	133	670	850
	500	200	5	3100	5800	24160C	4053760	160	530	670
	500	200	5	3100	580	24160C/W33	4053760Y	159	530	670
	540	140	5	2610	4250	22260	3560	143	750	950
320	440	90	3	1060	2390	23964K	3113964	45.1	900	1200
	480	121	4	1380	3260	23064	3003164	81.5	800	1000
	480	121	4	1380	3260	23064/W33	3003164Y	80.9	800	1000
	480	160	4	2440	5050	24064	4003164	103	560	700
	540	218	5	3550	6650	24164	4003764	252	480	600
	540	218	5	3550	6650	24164/W33	4003764Y	251	480	600

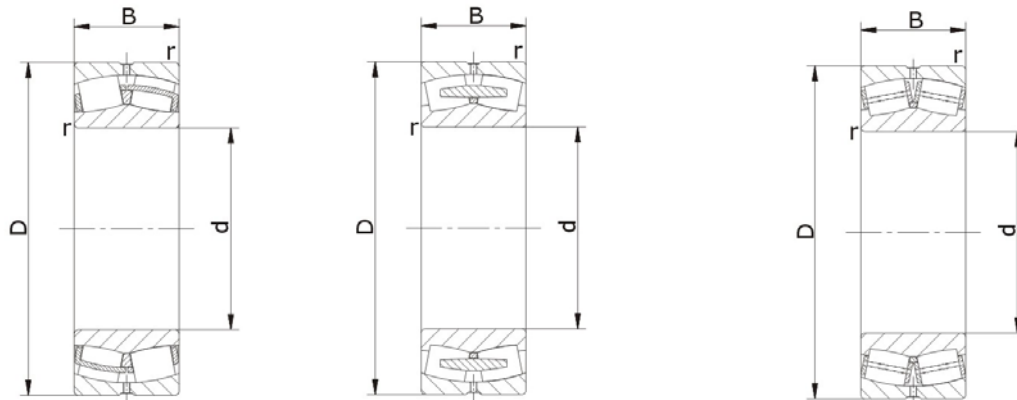
Spherical roller bearings



Type 20000C/W33 Type 20000CA/W33 (Structure 1) Type 20000CA/W33 (Structure 2)

Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
320	580	208	5	3900	6900	23264	3003264	260	500	630
	580	208	5	3900	6900	23264/W33	3003264Y	259	500	630
340	460	90	3	1330	2840	23968	3003968	50.5	900	1200
	520	133	5	1580	3810	23068	3003168	109	700	900
	520	133	5	1580	3810	23068/W33	3003168Y	109	700	900
	520	180	5	2920	6050	24068/W33	4003168Y	160	530	670
	580	190	5	3470	6240	23168/W33	3003768Y	207	500	630
360	480	90	3	1130	2710	23972	3003972	49.1	850	1100
	540	134	5	1750	4180	23072	3003172	114	670	850
	540	134	5	1750	4180	23072/W33	3003172Y	114	670	850
	540	180	5	2930	6100	24072C	4053172	149	500	630
	540	180	5	2930	6100	24072C/W33	4053172Y	148	500	630
	600	192	5	3800	7100	23172	3003772	222	560	700
	600	192	5	3800	7100	23172/W33	3003772Y	221	560	700
	600	243	5	4300	8000	24172	4003772	333	430	530
	600	243	5	4300	8000	24172CA/W33	4003772HY	338	430	530
	750	224	7.5	4180	7500	22372	3672	494	280	360
380	520	106	4	1870	4100	23976	3003976	73.5	800	1000
	560	135	5	2500	5100	23076	3003176	122	630	800
	620	194	5	2680	6240	23176	3003776	244	400	500
	620	194	5	2680	6240	23176/W33	3003776Y	243	400	500
400	590	142	6	2290	4420	2680	3880	145	340	530
	600	148	5	2970	5900	23080	3003180	165	600	750
	600	148	5	2970	5900	23080/W33	3003180Y	165	600	750
	650	200	6	4150	7900	23180	3003780	239	380	480
	650	200	6	4150	7900	23180/W33	3003780Y	238	380	480
	650	250	6	4700	9310	24180	—	326	320	400
	720	256	6	5800	10400	23280	3003280	530	340	430
	720	256	6	5800	10400	23280/W33	3003280Y	530	340	430
420	520	75	2.1	1000	2500	23884/W33	—	34.5	630	800
	560	106	4	1810	3750	23984/W33	3003984Y	70.6	700	900
	620	150	5	2740	5580	23084	3003184	159	450	560
	620	150	5	2740	5580	23084/W33	3003184Y	158	450	560
	700	224	6	5000	9400	23184/W33	3003784Y	402	360	450
	760	272	7.5	6450	11700	23284CA	3053284H	659	320	400
440	600	118	4	2150	4650	23988CA/W33	—	90.5	670	850
	650	157	6	2710	5600	23088	3003188	192	430	530
	650	157	6	2710	5600	23088/W33	3003188Y	191	430	530
	720	226	6	5300	10300	23188	3003788	420	340	430
	720	226	6	5300	10300	23188/W33	3003788Y	419	340	430

Spherical roller bearings



Type 20000C/W33 Type 20000CA/W33(Structure 1) Type 20000CA/W33(Structure 2)

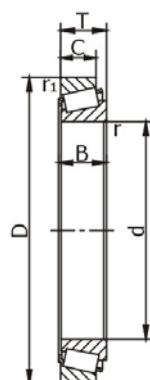
Boundary dimensions				Basic load ratings		Designations		Mass	Limiting speeds	
mm				kN					r/min	
d	D	B	r _{min}	Cr	Cor	Current	Original	kg	Grease	Oil
460	680	163	6	2460	6670	23092	3003192	223	400	500
	680	163	6	2460	6670	23092/W33	3003192Y	220	400	500
480	650	128	5	2060	5000	23996	3003996	162	400	500
	650	128	5	2060	5000	23996/W33	3003996Y	161	400	500
	700	165	6	2500	6440	23096	3003196	231	380	480
	790	248	7.5	5200	10700	23196/W33	3003796Y	486	300	380
	870	310	7.5	7850	14400	23296	3003296	837	260	340
500	670	128	5	2100	5250	239/500	30039/500	135	400	500
	720	167	6	2700	7180	230/500	30031/500	238	380	480
	720	167	6	2700	7180	230/500/W33	30031/500Y	238	380	480
	920	336	7.5	8430	15800	232/500/W33	30032/500Y	1020	240	320
530	780	185	6	3180	8310	230/530	30031/530	313	340	430
	780	185	6	3180	8310	230/530/W33	30031/530Y	312	340	430
560	820	195	6	3490	9950	230/560	30031/560	367	320	400
	820	195	6	3490	9950	230/560/W33	30031/560Y	365	320	400
	920	280	7.5	7100	14800	231/560/W33	30037/560Y	757	240	320
600	870	200	6	3760	10400	230/600	30031/600	417	300	380
	980	375	7.5	10200	21600	241/600	40037/600	1079	180	240
630	920	212	7.5	4170	11500	230/630	30031/630	511	260	340
	920	212	7.5	4170	11500	230/630/W33	30031/630Y	509	260	340
	1030	400	7.5	11600	24100	241/630/W33	—	1320	170	220
670	900	170	6	3700	9600	239/670/W33	30039/670Y	317	260	340
	980	230	7.5	6850	15000	230/670	30031/670	657	240	320
	980	230	7.5	6850	15000	230/670/W33	30031/670Y	655	240	320
710	950	180	6	3950	10500	239/710	30039/710	389	240	320
	950	180	6	3950	10500	239/710/W33	30039/710Y	387	240	320
	1030	236	7.5	6250	14900	230/710/W33	30031/710Y	742	220	300
	1150	438	9.5	13900	30500	241/710/W33	40037/710Y	1802	150	190
800	1060	258	6	6240	15200	249/800/W33	40039/800Y	638	180	240
	1150	258	7.5	8350	19100	230/800/W33	30031/800Y	986	190	260
	1150	345	7.5	10900	26300	240/800	40031/800	1246	170	220
850	1220	365	7.5	11600	28300	240/850	40031/850	1398	160	200
	1220	365	7.5	11600	28300	240/850/W33	40031/850Y	1395	160	200
	1220	365	7.5	11600	28300	240/850/YA1	40031/850Y1	1396	160	200
900	1280	375	7.5	12800	31500	240/900/W33	40031/900Y	1783	150	190
1000	1420	412	7.5	15300	38500	240/1000/W33	40031/1000	2117	100	140
1060	1400	250	7.5	9300	24400	239/1060CA/W33	—	1020	100	140

Single-row tapered roller bearings

Single-row tapered roller bearings primarily carry combined loads which is main in radial, and tapered roller bearings with large tapered angles (27° – 30°) primarily carry combined loads which is main in axial but not pure axial loads. These bearings can limit axial displacement of shafts or housings in one direction. The inner and outer rings can be mounted respectively as separable structure, the outer rings are interchangeable, and they are easy to be mounted and dismounted. The radial and axial clearance can be adjusted during mounting or working, and also can be interference mounted to increase stiffness. The clearance has great influence on bearing performance. If the clearance was too small, the temperature will be high; but if it was too much, the vibration will be increased and the running accuracy will be difficult to ensure. The bearings will be damaged in both cases above. Therefore, the clearance must be adjusted during mounting or working. In order to prevent stress concentration between rollers and raceway to lead to bearing damaged in early period, the obliquity between shafts and housings is not permitted while mounting.

Tapered roller bearings are widely used in rear axle hubs of automotives, large machine tool spindles, large power decelerators, roller wheels of feedways, etc.

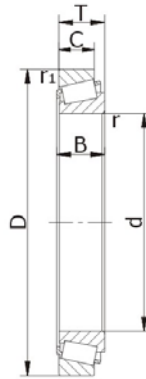
Single-row tapered roller bearings



Type 30000
(Type 7000)

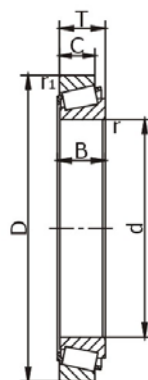
Boundary dimensions							Basic load ratings		Designations		Mass	Limiting speeds	
mm							kN					r/min	
d	D	T	B	C	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
150	270	77	73	60	4	3	718	1200	32230	7530E	18.2	1200	1700
	320	114	108	90	5	4	1110	1580	32330	7630	37.1	950	1400
160	240	51	51	38	3	2.5	420	735	32032	2007132E	7.7	1200	1700
	340	75	68	58	5	4	765	960	30332	7332E	28.4	1000	1500
	340	121	114	95	5	4	1210	1770	32332	7632	48.3	950	1400
170	230	32	30	23	3	3	200	400	70DB170	—	3	1200	1700
	310	91	86	71	5	4	835	1320	32234	7534E	27.6	1000	1500

Single-row tapered roller bearings

Type 30000
(Type 7000)

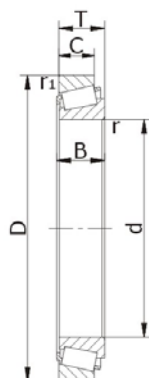
Boundary dimensions							Basic load ratings		Designations		Mass	Limiting speeds	
mm							kN					r/min	
d	D	T	B	C	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
170	360	80	72	62	5	4	950	1400	30334	7334E	35	950	1400
	360	127	120	100	5	4	975	1764	32334	7634	58.3	1000	1300
180	280	64	60	52	3	2.5	540	890	32036X2	2007136	13	1100	1600
	280	64	64	48	3	2.5	569	950	32036	2007136E	14	1100	1600
	320	57	52	43	5	4	610	912	30236	7236E	17.8	1000	1500
	320	91	86	71	5	4	998	1727	32236	7536E	29.8	950	1400
190	260	45	42	36	2.5	2	292	580	32938X2	2007938	6.52	1000	1400
	290	51	46	40	3	2.5	435	365	—	7138	10.5	1000	1500
	290	64	60	52	3	2.5	502	932	32038X2	2007138	14.2	950	1300
	290	64	64	48	3	2.5	520	950	32038	2007138E	15.6	950	1300
	340	97	92	75	5	4	1117	1919	32238	7538E	36.1	900	1300
200	280	51	48	41	3	2.5	345	710	32940X2	2007940	8.86	950	1300
	280	51	51	39	3	2.5	460	950	32940	2007940E	9.5	950	1300
	310	70	66	56	3	2.5	575	1120	32040X2	2007140	17.9	900	1200
	310	70	70	53	3	2.5	650	1300	32040	2007140E	18.9	900	1200
	360	64	58	48	5	4	765	1140	30240	7240E	25.4	900	1300
	360	104	98	82	5	4	1090	1750	32240	7540E	43.2	900	1300
205	485	117.5	100	75	4	4	1400	2020	30641	7841E	95	850	1200
210	420	90	81	67	6	5	1280	1910	—	7342X2	56	850	1200
220	300	51	48	41	3	2.5	425	855	32944X2	2007944	10.2	900	1200
	340	76	72	62	4	3	702	1330	32044X2	2007144	22.2	800	1000
	340	76	76	57	4	3	750	1350	32044	2007144E	24.4	800	1000
	400	72	65	54	4	3	810	1150	30244	7244E	35.4	850	1200
	400	114	108	90	4	3	1320	2210	32244	7544E	48.1	800	1100
240	320	51	48	41	3	2.5	390	860	32948X2	2007948	10.8	800	1000
	360	76	72	62	4	3	710	1420	32048X2	2007148	23.8	700	900
	360	76	76	57	4	3	850	1560	32048	2007148E	20.4	700	900
	440	127	120	100	4	4	1630	2730	32248	7548	81.3	750	1000
260	360	63.5	60	52	3	2.5	525	1150	32952X2	2007952	19.2	700	900
	360	63.5	63.5	48	3	2.5	550	1300	32952	2007952E	20	700	900
	400	87	82	71	5	4	902	1810	32052X2	2007152	36.9	670	850
	400	87	87	65	5	4	1010	1850	32052	2007152E	37	670	850
	540	114	102	85	6	6	2014	2898	30352X2	7352	111	670	900
270	420	87	87	65	5	4	1150	2060	32054X2	2007154	45	600	750
280	350	36	33	26	2	2	279	469	30656	1007856	6.33	870	1100
	380	63.5	63.5	48	3	2.5	635	1300	32956	2007956E	19.8	800	1100
	420	87	82	71	5	4	622	1940	32056X2	2007156	39.6	600	750
	420	87	87	65	5	4	1170	2230	32056	2007156E	40.4	600	750

Single-row tapered roller bearings

Type 30000
(Type 7000)

Boundary dimensions							Basic load ratings		Designations		Mass	Limiting speeds	
mm							kN					r/min	
d	D	T	B	C	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
300	420	76	76	57	4	3	998	2128	32960	2007960E	28.7	700	950
	440	73	70	55	4	3	959	2062	30660	7860	30.7	570	600
	460	100	95	82	5	4	1050	2190	32060X2	2007160	55.9	560	700
	500	95	90	70	4	4	1225	2207	31160X2	1007760	67.7	530	670
320	440	76	72	62	4	3	1040	2320	32964X2	2007964	44.7	560	700
	440	76	76	57	4	3	962	2040	32964	2007964E	33	560	700
	480	100	95	82	5	4	1050	2190	32064X2	2007164	59	530	670
	480	100	100	74	5	4	1649	3192	32064	2007164E	60	530	670
	580	110	105	80	6	6	2100	3100	–	7264	114	480	600
340	460	76	72	62	4	3	611	1428	32968X2	2007968	34.3	530	670
	520	86	82	64	4	4	807	1540	32068X2	7168	57	500	630
	520	112	106	92	6	6	1660	3370	32068	–	86.5	500	630
	580	106	102	87	6	5	1840	2970	–	7768	109	480	600
360	480	76	72	62	4	3	634	1526	32972X2	2007972	35.9	500	630
	540	86	82	64	4	4	919	1848	31072X2	7172	60.5	480	600
	650	170	155	140	5	6	3580	6000	32272X2	–	175	380	480
380	520	66.5	65	46.5	3	3	529	1138	31976X2	1007976	37.5	480	600
	520	87	82	71	5	4	800	1600	32976X2	2007976	42.7	480	600
	620	112	106	76	4	4	909	1708	31176X2	1007776	114	400	500
400	500	60	57	47	4	3	665	775	–	7880	45.7	450	530
	540	70	65	51	3	3	1000	2070	31980X2	1007980	43.2	450	530
	540	87	82	71	5	4	1130	2760	32980X2	2007980	57	450	530
	600	95	90	67	4	4	1040	2128	31080X2	7180	84	400	500
420	560	70	65	51	3	3	630	1383	31984X2	1007984	42.4	400	500
	560	87	82	72	5	4	1250	2870	32984X2	2007984	46	400	500
	560	87	87	67	5	4	1250	2870	R420–5	–	47	400	500
	620	95	90	70	4	4	1132	2422	31084X2	7184	88	380	480
	700	130	122	92	6	6	1620	2800	31184X2	1007784	183	310	420
440	650	96.4	94	67	6	4	1193	2422	31088X2	7188	99	360	450
460	620	80	74	58	3	3	836	1834	31992X2	1007992	59.8	380	480
	680	105	100	78	6	6	1680	3550	31092X2	7192	118	330	450
480	650	84.2	78	60	4	4	854	1918	31996X2	1007996	71	340	430
500	720	110	100	82	6	6	1459	3192	310/500X2	71/500	135	280	360
530	710	88	82	62	4	4	1001	2380	319/530X2	10079/530	94.8	280	360
560	750	92.5	85	64	4	4	1001	2576	319/560X2	10079/560	104	240	320
	820	121	115	84	6	6	1887	4046	310/560X2	71/560	191	220	300
600	870	124	118	89	6	6	2020	4438	310/600X2	71/600	235	180	240
630	920	135	128	94	7.5	7.5	2315	5222	310/630X2	71/630	278	170	220
710	950	114	106	80	6	6	1765	4494	319/710X2	10079/710	210	150	190

Single-row tapered roller bearings



Type 30000
(Type 7000)

Boundary dimensions							Basic load ratings		Designations		Mass	Limiting speeds	
mm							kN					r/min	
d	D	T	B	C	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
760	890	78	75	56	6	6	1510	1960	—	78/760	78.3	280	380
800	1060	122	115	89	6	6	2132	5530	319/800X2	10079/800	275	130	170
900	1180	124	122	87	6	6	2173	5782	319/900X2	10079/900	330	95	130
	1280	190	170	135	7.5	7.5	5615	13913	320/900X2	71/900	703	95	130
950	1250	140	132	100	7.5	7.5	3930	10427	319/950X2	10079/950	428	80	100

Double-row tapered roller bearings

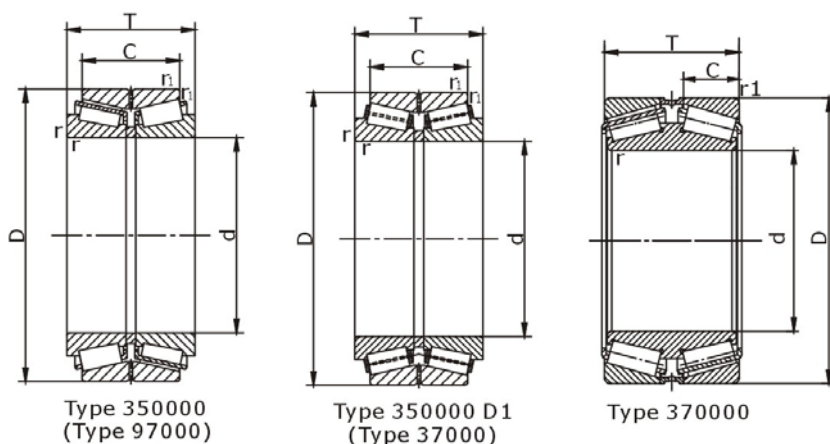
Because of more rows of rollers, the radial loading capacity of double-row tapered roller bearings is enhanced, and they also can carry heavy axial loads in two directions. They primarily carry combined loads which is main in radial, and limit axial displacement of shafts or housings in two directions, so they can be as locating bearings in two directions.

The performance of type TDO bearing is the same as two single-row tapered roller bearings in back to back mounted.

Double-row tapered roller bearings have a small number of parts and high stiffness, and are easy to be mounted and dismounted, therefore, they are usually used in the applications with changing loads, such as decelerators and coiling machines. The radial and axial clearance can be adjusted by changing the width of spacer between two inner rings.

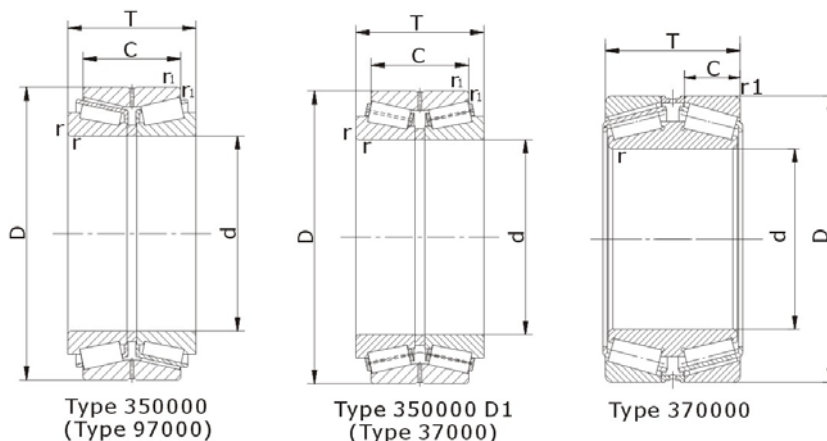
Type TDI bearing is mainly used in roll necks with medium loads. This type of bearings have a cup spacer, and the clearance is adjustable.

Double-row tapered roller bearings



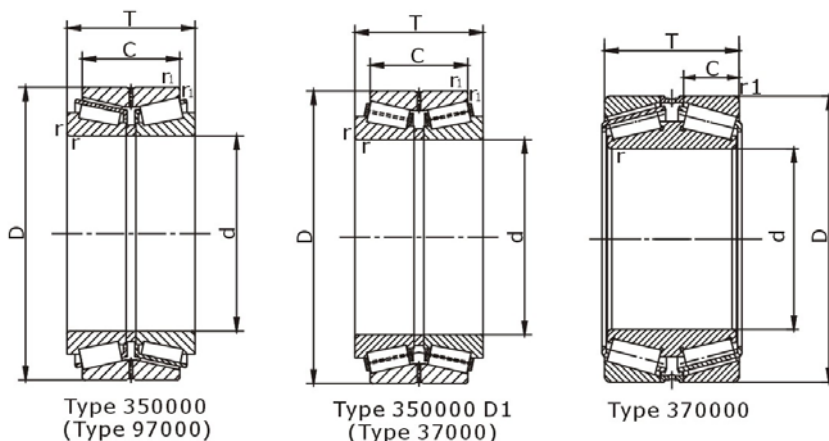
Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm											kN	
d	D	T	C	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
150	210	86	70	2.5	1	419	887	352930	2097930E	8.5	900	1300
	250	138	112	2.5	1	858	1620	352130	2097730	26	850	1100
	270	164	130	4	1	1250	2250	352230	97530E	38	800	1000
	270	172	138	4	1	1250	2250	352230X2	97530	38	800	1000
160	240	115	90	3	1	641	1400	352032X2	2097132	14.9	850	1100
	270	150	120	3	1	1050	2030	352132	2097732	32.5	800	1000
	290	178	144	4	1	1400	2730	352232	97532E	49	700	900
170	260	120	95	3	1	672	1460	352034X2	2097134	21	800	1000
180	280	134	108	3	1	952	1880	352036X2	2097136	29	670	850
	280	142	110	3	1	952	1880	352036	2097136E	28.5	800	1000

Double-row tapered roller bearings



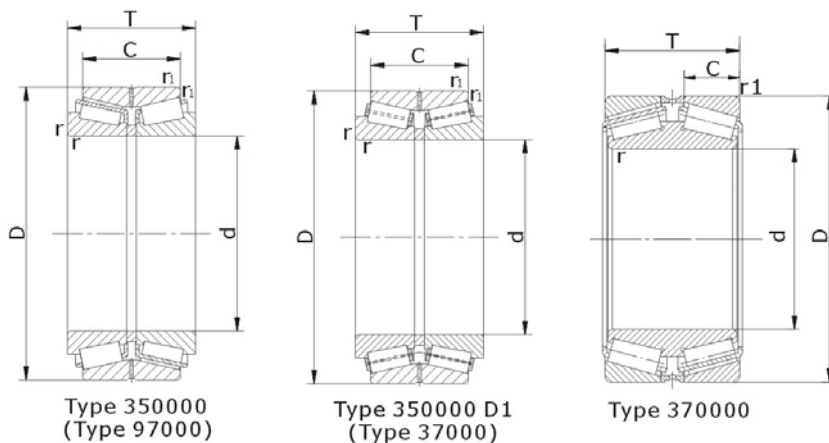
Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	D	T	C	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
180	300	164	134	3	1	1290	2540	352136	2097736	44	670	850
	320	192	152	5	1.1	1750	3350	352236	97536E	62.5	600	750
190	289.5	100	40	3	3	750	1500	372038	—	27	700	900
	320	170	130	3	1	1440	2800	352138	2097738	51	670	850
200	280	116	92	3	1	758	1423	352940X2/YA	2097940EK	14.8	700	900
	280	105	80	3	1	650	2660	352940X2	2097940	18.5	700	900
	310	152	120	2.5	1.1	1180	2720	352040X2	2097140	41	670	850
	340	184	150	3	1	1680	3340	352140	2097740	64	670	850
	360	218	174	5	1.1	2310	4250	352240	97540E	90.5	600	750
220	300	110	88	3	1.2	660	1710	352944X2	2097944	21.2	670	850
	340	165	130	4	1	1360	2790	352044X2	2097144	47.7	600	750
	370	195	150	4	1.1	1740	3450	352144	2097744	76.3	600	750
230	355	145	110	6	3	1060	2040	350646D1	37746	43.6	600	750
240	320	116	92	3	1	820	1910	352948	2097948E	22.3	600	750
	320	110	90	3	1.5	820	1910	352948X2	2097948	23	600	750
	360	165	130	4	1	1370	3180	352048X2	2097148	52.8	530	670
	360	166	128	4	1	1370	3180	352048	2097148E	55.6	530	670
260	360	134	52	3.5	2.5	1150	2300	372952K	—	43.5	530	670
	360	134	108	3	1	1263	2430	352952X2	2097952	36.8	530	670
	400	150	110	6	1.5	1240	2330	—	37852	60.3	530	670
	400	186	146	5	1.1	1780	3830	352052X2	2097152	76.8	500	630
	400	190	146	5	1.1	1780	3830	352052	2097152E	79.5	500	630
	430	180	130	10	3	2100	2800	350652D1	37752	87.9	500	630
	430	180	130	7.5	1.5	2237	3016	350652	97752	93.4	500	630
	440	225	180	4	1.1	2480	5050	352152	2097752	124	450	560
280	380	134	108	3	1.1	1080	2810	352956X2	2097956	41.3	480	600
	420	133	106	4	2	1270	1936	351056	97156	58.1	450	560
	420	186	146	5	1.1	1860	4000	352056X2	2097156	81.5	450	560
300	420	160	128	4	1.1	1470	3530	352960X2	2097960	64	450	560
	460	210	165	4	1.5	2200	4940	352060X2	2097160	118	430	530
	500	205	152	5	1.5	2200	4500	351160	1097760	144	400	500
320	440	160	128	4	1.5	1410	3830	352964X2	2097964	67	430	530
	480	210	84	5	4	2340	6130	372064X2	—	133	400	500
	480	210	160	5	1.1	1830	4390	352064X2	2097164	122	400	500
340	460	160	128	4	1	1575	4050	352968X2	2097968	71	400	500
	520	180	135	5	1.5	1904	4070	351068	97168	119	380	480
	580	242	170	5	1.5	2870	5970	351168	1097768	214	340	430
350	590	200	140	9.5	1.5	2800	5500	350670	97770	212	320	400

Double-row tapered roller bearings



Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	D	T	C	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
360	480	160	128	4	1	1490	4270	352972X2	2097972	74.3	380	480
	530	155	110	5	1.5	1690	3300	350672D1	37772	109	380	480
	530	155	110	5	1.5	1690	3300	350672	97772	107	380	480
	540	169	134	6	2	1980	3950	351072X2	97872	122	340	430
	540	185	140	5	1.5	2120	4910	351072	97172	127	360	450
	600	242	170	5	1.5	2950	6270	351172	1097772	235	320	400
379	681.5	307	118	2.5	6	5600	11700	3706/379	—	512	300	380
380	520	145	105	4	1.1	1210	3250	351976	1097976	80.3	360	450
	560	190	140	5	1.5	2150	5090	351076	97176	146	340	430
	620	242	170	5	1.5	3310	7430	351176	1097776	243	300	380
400	540	150	105	4	1.1	1210	3110	351980	1097980	86.9	320	400
	590	185	123	5	2	2710	5950	350180D	37780	166	320	400
	600	206	150	5	1.5	2620	6380	351080	97180	180	300	380
420	560	145	105	4	1.1	1450	3740	351984	1097984	88.7	300	380
	620	190	125	5	1	2450	5700	350184D	37784	171	280	360
	620	206	150	5	1.5	2650	6600	351084	97184	187	280	360
	700	275	200	6	2.5	4270	8810	351184	1097784	392	240	340
440	600	170	125	4	1.1	1890	4860	351988	1097988	114	280	360
	650	212	152	6	2.5	2750	7020	351088	97188	213	260	340
460	620	174	130	4	1.1	1910	4990	351992	1097992	130	260	340
	680	230	175	6	2.5	2680	5900	351092	97192	253	220	300
480	650	180	130	5	1.5	1950	5270	351996	1097996	151	240	320
	700	240	180	6	2.5	3330	8190	351096	97196	281	200	280
490	640	180	144	7.5	3	2290	6600	350698	97798	140	220	300
500	670	180	130	5	1.5	2150	6120	3519/500	10979/500	159	220	300
	720	236	180	6	2.5	3390	8450	3510/500	971/500	289	190	260
520	740	190	120	2.5	2.5	2780	6800	3506/520	977/520	231	190	260
530	710	190	136	5	1.5	2390	6800	3519/530	10979/530	190	190	260
	730	250	106	6	6	5350	14800	3706/530	—	354	160	200
560	750	213	156	5	1.5	2550	7060	3519/560	10979/560	235	170	220
	820	260	185	6	2.5	4340	10800	3510/560	971/560	409	160	200
600	800	205	156	5	1.5	3210	9460	3519/600	10979/600	266	150	190
	870	270	198	6	2.5	4880	12730	3510/600	971/600	500	130	170
630	850	242	182	6	2.5	3730	10390	3519/630	10979/630	368	130	170
670	900	240	180	6	2.5	5300	12300	3519/670	10979/670	416	120	160
710	950	240	175	6	2.5	4070	12400	3519/710X2	10979/710	444	100	140
	1030	236	208	7.5	4	5750	14300	3506/710	977/710	651	90	120
	1030	315	220	7.5	3	7830	18400	3510/710	971/710	774	90	120
720	915	190	140	3	6	3200	9650	3506/720	977/720	277	100	140

Double-row tapered roller bearings



Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	D	T	C	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
750	1000	264	194	6	2.5	5020	14480	3519/750	10979/750	499	90	120
800	1060	270	204	6	2.5	5020	15000	3519/800	10979/800	604	80	100
850	1120	268	188	6	2.5	5460	16860	3519/850	10979/850	636	75	95
950	1250	300	220	7.5	3	6790	21100	3519/950	10979/950	909	–	–
1120	1480	400	296	12	4	12060	34200	BT2B332756	–	1760	–	–
1160	1540	400	290	12	4	12780	34200	BT2B332780	–	1900	–	–
1250	1500	250	190	6	1.5	6633	20160	BT2B328339	–	795	–	–
1778	2159	393.7	266.7	12.7	3	13860	47700	BT2B332496	–	2750	–	–

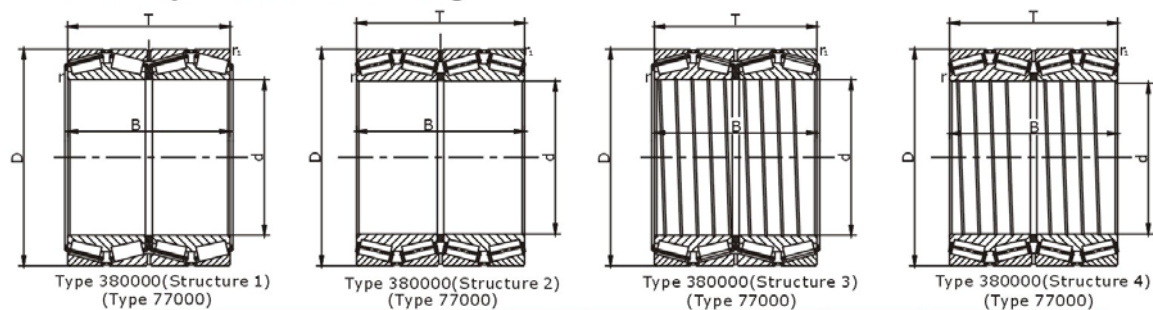
Four-row tapered roller bearings

Four-row tapered roller bearings are the one kind of roll neck bearings, their radial and axial loading capacity are high, can carry heavy axial loads in two directions, and their radial loading capacity is 3 times heavier than single-row tapered roller bearings, but limiting speed is lower. They can be used as axial locating bearings in two directions because they are able to limit axial displacement in two directions within axial clearance. The radial and axial clearance also can be adjusted by changing the width of spacer between inner and outer rings.

Four-row tapered roller bearings are mainly used in the working roll necks of hot or cold rolling mills, and roll neck of cogging mills. They usually clearance fit with roll necks to being mounted and dismounted conveniently.

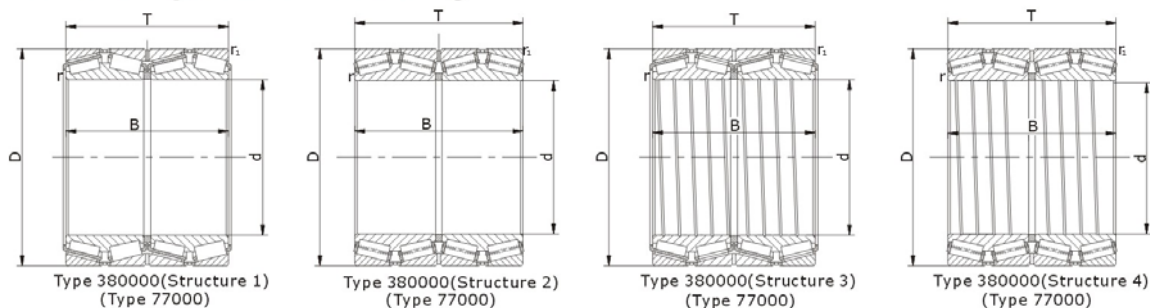
Steel pressed cages are usually used in four-row tapered roller bearings, and pin-type cages are for large-size ones.

Four-row tapered roller bearings



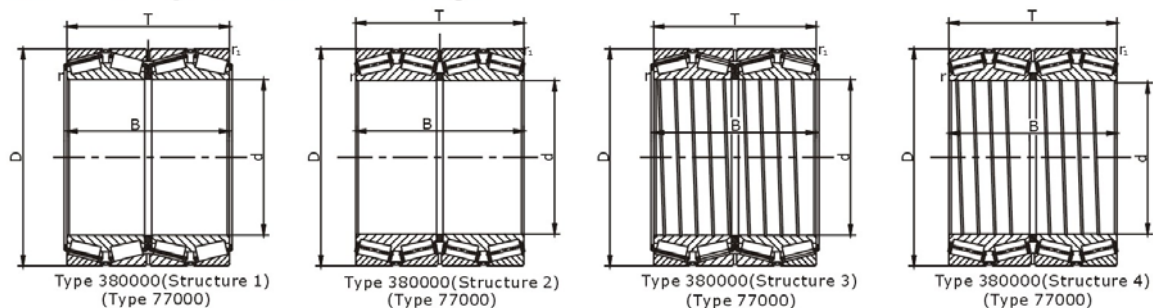
Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	D	T	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
150	210	165	2.5	2	700	1700	382930	2077930	16.5	670	850
160	220	165	2.5	2	795	2090	382932	2077932	18.5	670	850
170	260	230	3	2.5	907	1720	382034	2077134	39.5	670	850
200	310	200	3	2.5	1660	3100	382040X2	77740	55.6	560	700
	310	275	3	2.5	1760	4200	382040	2077140	75.1	560	700
205	320	205	3	3	1590	3260	380641	77741	57	500	630
220	340	305	4	3	2070	5430	382044	2077144	97.9	500	630
240	360	310	4	3	2110	5610	382048	2077148	90.5	450	560
250	460	270	5	4	3650	8250	380650	77750	192	380	480
260	360	265	3	2.5	1760	5220	382952	2077952	76.3	450	560
	400	255	4	7.5	2300	5000	380652	77752	114	490	600
	400	345	5	4	2960	7380	382052	2077152	153	430	530
	440	300	2	5	3550	8200	380152	777752	164	450	560
280	420	250	5	5	2780	5700	380656	77756	119	450	560
	460	324	5	4	2840	7290	381156	1077756	200	360	450

Four-row tapered roller bearings



Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN		Current	Original	kg	r/min	
d	D	T	r _{min}	r _{1min}	Cr	Cor				Grease	Oil
300	420	300	4	3	2330	7210	382960	2077960	130	380	480
	420	310	4	3	3250	8150	380660	77860	134	380	480
	460	390	5	4	3180	9330	382060	2077160	238	360	450
	500	350	5	4	2980	6950	381160X2	77760	286	340	430
	500	370	5	4	3390	8710	381160	1077760	285	340	430
320	460	338	4	4	2950	8200	380664	77764	180	360	450
	460	380	4	4	3100	8750	380664X2	77864	218	360	450
	480	380	5	4	3180	9330	382064	2077164	234	340	430
340	460	310	4	3	2480	8100	382968	2077968	145	340	430
	520	325	5	4	3100	8620	381068	77168	234	320	400
	580	425	5	4	4580	11700	381168	1077768	441	280	360
350	590	420	2	5	4700	9700	380670	77770	475	280	360
360	480	310	4	3	2760	8300	382972	2077972	149	340	430
	480	375	3	3	3010	7870	380672	77872	189	340	430
	540	325	5	4	3388	8840	381072	77172	248	300	380
	600	420	6	6	7900	14000	381172	1077772	388	280	360
380	550	350	5	5	5250	13100	380676	77776	273	280	360
	560	325	5	4	3360	8840	381076	77176	281	280	380
	620	388	6	6	4200	9500	381176X2	3077776	443	240	360
	620	420	5	4	4710	12300	381176	1077776	519	240	360
395	545	288.7	4	7.5	2610	7490	380679	77779	194	280	360
400	540	280	4	4	3100	8750	380680	77880	175	280	360
	600	356	5	4	4160	10400	381080	77180	317	240	320
420	620	356	5	4	4160	10400	381084	77184	358	220	300
	700	480	6	5	6780	18500	381184	1077784	760	190	260
	760	500	7.5	7.5	9350	20300	380684	77884	1039	180	240
440	620	454	6	6	3960	7880	380688	77888	440	200	280
	650	355	6	6	4290	12390	380088	77788	385	200	280
	650	376	6	5	4330	13700	381088	77188	401	200	280
460	620	310	4	3	3360	10200	381992	1077992	173	200	280
	650	474	6	6	7200	15240	380692	77892	495	180	240
	680	410	6	5	5130	14200	381092	77192	476	180	240
	730	440	4	7.5	6500	15100	380692X3	77792	694	170	220
480	700	420	6	5	5780	16900	381096	77196	547	170	220
500	720	420	6	5	6650	19400	3810/500	771/500	565	160	200
530	780	450	6	5	7520	21500	3810/530	771/530	744	140	180
	870	590	7.5	6	9300	26100	3811/530	10777/530	1422	120	160
	880	544	7.5	7.5	10500	25600	3806/530	30777/530	1350	120	160
540	690	400	5	5	4860	17300	–	779/540	375	160	200
560	730	410	4	6	5560	18900	3828/560X	–	441	140	180
	750	368	5	4	4370	13300	3819/560	10779/560	456	140	180
	920	620	7.5	6	11200	26100	3811/560	10777/560	1635	100	140

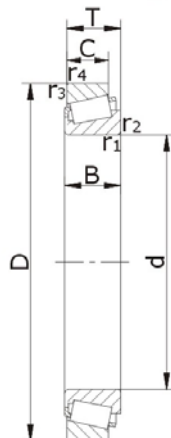
Four-row tapered roller bearings



Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	D	T	r _{min}	r _{1min}	Cr	Cor	Current	Original	kg	Grease	Oil
600	800	365	5	5	5000	17800	–	779/600	489	120	160
	800	380	5	4	5500	18900	3819/600	10779/600	536	120	160
	870	480	6	5	8370	25400	3810/600	771/600	995	100	140
	980	650	7.5	6	12700	36700	3811/600	10777/600	1970	90	120
630	850	418	6	5	6440	19800	3819/630	10779/630	720	100	140
	920	515	7.5	6	9170	26800	3810/630	771/630	1158	95	130
	1030	670	7.5	6	14400	39900	3811/630	10777/630	2170	85	110
650	1030	560	7.5	12	11460	22050	3806/650	777/650	1769	85	110
670	900	412	6	5	6940	22300	3819/670	10779/670	959	95	130
	1090	710	7.5	6	15700	39900	3811/670	10777/670	2665	75	95
710	1030	555	7.5	6	11200	35800	3810/710	771/710	1568	75	95
750	1090	605	7.5	6	13100	42400	3810/750	771/750	1874	70	90
	1220	840	9.5	8	21900	68000	3811/750	10777/750	3994	48	80
774	1130	690	4	7.5	16700	50100	–	777/774	2400	48	80
950	1360	880	7.5	6	23300	83600	3820/950	20771/950	4087	–	–
1060	1500	1000	9.5	8	29100	105000	3820/1060	20771/1060	5698	–	–
1070	1400	889.762	4	12	27270	90000	BT4B328100	–	3730	–	–
1080	1450	950	5	12	30240	97200	BT4B331559	–	4450	–	–
1250	1550	890	5	12	27270	102600	BT4B328819	–	3820	–	–
1260	1640	1000	5	12	35190	128700	BT4B332124	–	5800	–	–
1300	1720	1040	5	12	38610	126000	BT4B331950	–	7000	–	–
1500	1900	1080	4	12	42120	153000	BT4B332078	–	7700	–	–
1580	1960	1080	5	12	41130	158400	BT4B331934	–	7800	–	–

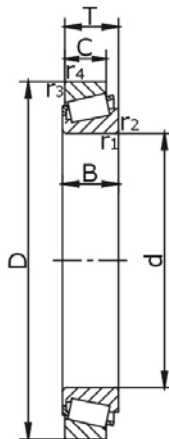
Inch series single-row tapered roller bearings

Inch series single-row tapered roller bearings



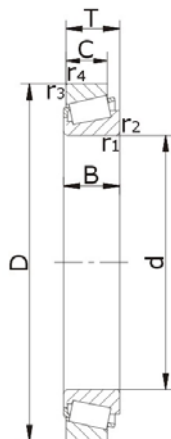
Boundary dimensions							Basic load ratings		Designations	Calculated constant	Load factors		Mass	Limiting speeds	
mm							kN				r/min				
d	D	T	B	C	r _{1, 2min}	r _{3, 4min}	Cr	Cor		e	Y	Y ₀	kg	Grease	Oil
152.400	222.250	46.830	46.83	34.925	3.5	1.5	330	630	M231649/M231610	0.33	1.8	1	5.80	1500	2000
	254.000	66.675	66.675	47.625	7.0	3.3	583	980	99600/99100	0.40	1.5	0.8	12.5	1300	1800
155.575	336.550	85.725	79.45	54.03	6.4	6.4	825	1200	BT1B328833	0.79	0.76	0.4	33.5	900	1300
158.750	205.583	23.812	23.812	18.258	4.8	1.5	138	280	L432348/L432310	0.37	1.6	0.9	1.90	1500	2000
	225.425	41.275	39.688	33.338	3.5	3.3	264	585	46780/46720	0.37	1.6	0.9	5.30	1400	1900
160	252.412	63.500	69.93	52.46	1.5	3.3	512	900	BT1B443924	0.26	2.3	1.3	11.7	1300	1800
165.100	225.425	41.275	39.688	33.338	3.5	3.3	264	585	46790/46720	0.37	1.6	0.9	4.75	1400	1900
	336.500	92.075	92.25	69.85	3.3	6.4	1120	1700	HH437549/HH437510	0.37	1.6	0.9	37.0	950	1400
177.800	227.012	30.162	30.162	23.02	1.5	1.5	187	425	36990/36920	0.44	1.35	–	2.95	1300	1800
	260.350	53.975	53.975	41.275	3.5	3.3	484	900	M236849/M236810	0.33	1.8	1	9.35	1200	1700
178.595	265.112	51.595	57.15	38.895	3.3	3.3	495	880	M336948/M336912	0.33	1.8	1	9.60	1200	1700
179.934	265.112	51.595	57.15	38.895	3.3	3.3	495	880	M336949/M336912	0.33	1.8	1	9.40	1200	1700
184.150	266.700	47.625	46.833	38.1	3.5	3.3	374	800	67883/67820	0.48	1.25	0.7	8.20	1100	1600
187.325	269.875	55.562	55.562	42.862	3.5	3.3	473	950	M238849/M238810	0.33	1.8	1	9.85	1100	1600
	282.575	50.800	47.625	36.512	3.5	3.3	402	695	87737/87111	0.43	1.4	0.8	9.80	1100	1600
189.738	279.400	52.388	57.15	41.275	3.3	3.3	523	980	M239447/M239410	0.33	1.8	1	11.0	1100	1600
190.475	279.400	52.388	57.15	41.275	3.3	3.3	523	980	M239449/M239410	0.33	1.8	1	11.0	1100	1600
190.500	266.700	47.625	46.833	38.1	3.5	3.3	374	800	67885/67820	0.48	1.25	0.7	8.20	1100	1600
	282.575	50.800	47.625	36.512	3.5	3.3	402	695	87750/87111	0.43	1.4	0.8	9.60	1100	1600
191.237	279.400	53.975	58.738	41.275	3.3	3.3	523	980	M239448A/M239410	0.33	1.8	1	10.5	1100	1600
196.850	257.175	39.688	39.688	30.162	3.5	3.3	275	655	LM739749/LM739710	0.44	1.35	0.8	5.40	1100	1600
200.025	276.225	42.862	46.038	34.133	3.5	3.3	391	780	LM241147/LM241110	0.31	1.9	1.1	7.70	1000	1500
203.200	261.142	28.575	27.783	21.433	1.5	1.5	216	440	LL641149/LL641110	0.40	1.5	0.8	3.75	1100	1600
	282.575	46.038	46.038	36.512	3.5	3.3	380	830	67983/67920	0.50	1.2	0.7	8.95	1000	1500
203.987	276.225	42.662	46.038	34.133	3.5	3.3	391	780	LM241148/LM241110	0.31	1.9	1.1	7.25	1000	1500
206.375	282.575	46.038	46.038	36.512	3.5	3.3	380	830	67985/67920	0.50	1.2	0.7	8.60	1000	1500
	336.550	98.425	100.012	77.788	3.3	3.3	1140	2160	H242649/H242610	0.33	1.8	1	34.0	900	1300
212.725	285.750	46.038	46.038	34.925	3.5	3.3	352	780	LM742745/LM742710	0.48	1.25	0.7	8.00	1000	1500
215.900	285.750	46.038	46.038	34.925	3.5	3.3	352	780	LM742749/LM742710	0.48	1.25	0.7	7.90	1000	1500
216.408	285.750	46.038	49.212	34.925	3.5	3.3	352	780	LM742747/LM742710	0.48	1.25	0.7	7.85	1000	1500
	285.750	46.038	49.29	35	3.5	3.3	330	695	BT1B443786AB	0.48	1.25	0.7	7.85	1000	1500
216.713	285.750	46.038	49.212	34.925	3.5	3.3	352	780	LM742747A/LM742710	0.48	1.25	0.7	7.80	1000	1500
220.116	317.500	47.625	52.338	36.512	3.3	3.3	523	980	LM245832/LM245810	0.31	1.9	1.1	12.5	900	1300
220.878	317.500	47.625	52.338	36.512	3.3	3.3	523	980	LM245833/LM245810	0.31	1.9	1.1	12.5	900	1300
230.188	317.500	47.625	52.338	36.512	3.3	3.3	523	980	LM245846/LM245810	0.31	1.9	1.1	11.0	900	1300
231.775	317.500	47.625	52.338	36.512	3.3	3.3	523	980	LM245848/LM245810	0.31	1.9	1.1	10.5	900	1300

Inch series single-row tapered roller bearings



Boundary dimensions							Basic load ratings		Designations	Calculated constant	Load factors		Mass	Limiting speeds	
mm							kN				Y			kg	r/min
d	D	T	B	C	r _{1, 2min}	r _{3, 4min}	Cr	Cor			e	Y	Y ₀		Grease
247.650	406.400	115.888	117.475	93.662	6.4	6.4	1610	3150	HH249949/HH249910	0.33	1.8	1	60.0	800	1100
255.625	342.945	57.150	62.08	44.5	6.4	3.3	660	1400	BT1B417708	0.35	1.7	0.9	14.0	850	1200
257.175	342.900	57.150	57.15	44.45	6.4	3.3	660	1400	M349549/M349510	0.35	1.7	0.9	14.0	850	1200
263.525	325.438	28.575	28.575	25.4	1.5	1.5	220	550	38880/38820	0.37	1.6	0.9	53.0	900	1300
266.560	325.438	29.500	33.47	25.48	1	1.5	209	475	BT1B446356A	0.37	1.6	0.9	5.10	900	1300
266.700	325.438	27.755	31.88	25.48	1.5	1.5	209	475	BT1B443884AE	0.37	1.6	0.9	5.10	900	1300
	355.600	57.150	57.15	44.45	3.5	3.3	644	1400	LM451349/LM451310	0.35	1.7	0.9	15.5	850	1200
292.100	374.650	47.625	47.625	34.925	3.5	3.3	501	1140	L555249/L555210	0.40	1.5	0.8	12.0	800	1100
300	495.300	141.288	141.288	114.3	6.4	6.4	2330	4550	HH258248/HH258210	0.33	1.8	1	107	630	850
304.800	546.100	171.053	171.13	140.17	8	8	3030	5600	BT1B617089B	0.35	1.7	0.9	170	600	800
330.2	415.925	47.625	47.625	34.925	3.5	3.5	402	965	BT1B440009	0.50	1.2	0.7	14.3	700	950
	482.600	85.725	80.167	60.325	6.4	3.3	1210	2500	EE526130/526190	0.40	1.5	0.8	48.5	630	850
333.375	469.900	90.488	90.488	71.438	6.4	3.3	1340	2850	HM261049/HM261010	0.33	1.8	1	47.0	630	850
343.154	450.850	66.675	66.675	52.388	8.5	3.5	935	2200	LM361649A/LM361610	0.35	1.7	0.9	28.0	670	900
346.075	488.950	95.250	95.25	74.612	6.4	3.3	1420	3150	HM262749/HM262710	0.33	1.8	1	55.0	630	850
355.600	482.600	60.320	55.56	38.1	7	7	572	1200	431884A	0.48	1.25	0.7	26.5	630	850
380.100	480	50	48.08	35.08	6	4	594	1500	BT1B380-332420	0.50	1.2	0.7	20.5	600	800
384.175	546.100	104.775	104.775	82.55	6.4	6.4	1870	4150	HM266449/HM266410	0.33	1.8	1	77.0	560	750
403.225	460.375	28.575	28.575	20.638	3.5	3.3	246	765	LL566848/LL566810	0.40	1.5	0.8	6.70	600	800
406.400	508.000	61.912	61.912	47.625	3.3	3.3	825	2120	L467549/L467510	0.37	1.6	0.9	26.5	560	750
	574.675	76.200	67.866	50.8	6.8	3.3	935	2040	EE285160/285226	0.50	1.2	0.7	53.5	530	700
	762.000	180.975	161.925	107.95	12.7	12.7	3690	6100	H969249/H969210	0.94	0.64	0.35	320	380	500
415.925	590.550	114.300	114.3	88.9	6.4	6.4	2120	4800	M268749/M268710	0.33	1.8	1	120	500	670
430.212	603.250	76.200	73.025	50.8	6.4	6.4	1100	2320	EE241693/242375	0.52	1.15	0.6	59.0	500	670
431.800	571.500	89.694	89.77	66.75	6.4	6.4	1450	3450	BT1B328284/HA1	0.44	1.35	0.8	60.0	500	670
431.902	685.698	177.800	177.88	142.95	6.4	6.4	3910	8650	BT1B332900	0.48	1.25	0.7	253	430	560
447.675	635.000	120.650	120.65	95.25	6.4	6.4	2380	5500	M270749/M270710	0.33	1.8	1	120	450	600
457.200	573.088	74.612	74.612	57.15	6.4	6.4	1120	3000	L570649/L570610	0.40	1.5	0.8	43.5	500	670
	603.250	85.725	84.138	60.325	6.4	3.3	1450	3400	LM770949/LM770910	0.46	1.3	0.7	61.5	480	630
	615.950	85.725	85.725	66.675	6.4	6.4	1470	3800	LM272235/LM272210	0.33	1.8	1	72.0	450	600
	660.400	91.280	85.725	62.705	10.5	6.4	1790	3650	EE737181/737260/VQ601	0.37	1.6	0.9	91.0	450	600
479.425	679.450	128.588	128.66	101.68	6.4	6.4	2750	6300	BT1B332529/HA1	0.33	1.8	1	145	430	560
482.600	634.873	80.962	80.962	63.5	6.4	3.3	1470	3650	EE243190/243250	0.35	1.7	0.9	67.5	450	600
498.399	634.873	80.962	80.962	63.5	6.4	3.3	1470	3650	EE243196AX/243250	0.35	1.7	0.9	60.0	450	600
498.475	634.873	80.962	80.962	63.5	6.4	3.3	1470	3650	EE243196/243250	0.35	1.7	0.9	60.0	450	600
498.653	634.873	80.962	80.962	63.5	6.4	3.3	1470	3650	EE243196AS/243250	0.35	1.7	0.9	59.5	450	600
520.700	736.600	88.900	81.758	53.975	6.4	3.3	1650	3350	EE982051/982900	0.48	1.25	0.7	100	400	530
536.575	761.873	146.050	146.05	114.3	6.4	6.4	3360	8000	M276449/M276410	0.33	1.8	1	208	380	500
539.750	635.000	50.800	50.8	38.1	6.4	6.4	781	2160	LL575349/LL575310	0.40	1.5	0.8	27.0	430	560
549.275	692.150	80.963	80.963	61.913	6.4	6.4	825	2120	L476549/L476510	0.37	1.6	0.9	67.0	560	750

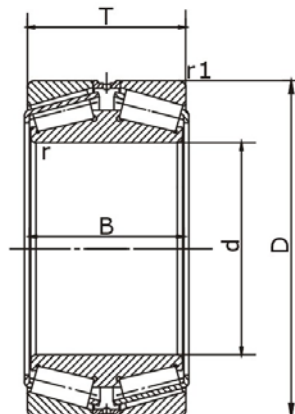
Inch series single-row tapered roller bearings



Boundary dimensions							Basic load ratings		Designations	Calculated constant	Load factors		Mass	Limiting speeds		
mm							kN				e	Y		Y ₀	kg	r/min
d	D	T	B	C	r ₁ , 2min	r ₃ , 4min	Cr	Cor								
558.800	736.600	88.108	88.108	63.5	6.4	6.4	1830	4150	EE843220/843290	0.35	1.7	0.9	92.5	380	500	
	736.600	104.775	104.775	80.962	6.4	6.4	2330	5700	LM377449/LM377410	0.35	1.7	0.9	115	380	500	
607.720	787.400	93.662	93.662	69.85	6.4	6.4	2160	5300	EE649239/649310	0.37	1.6	0.9	110	340	450	
609.600	787.400	93.662	93.662	69.85	6.4	6.4	2160	5300	EE649240/649310	0.37	1.6	0.9	110	340	450	
	787.400	93.662	93.662	69.85	6.4	6.4	2160	5300	EE649240AX/649310	0.37	1.6	0.9	110	340	450	
660.400	812.800	95.250	95.25	73.025	6.4	6.4	1940	5600	L281147/L281110	0.33	1.8	1	105	320	430	
	939.800	136.525	127.08	98.5	6.4	6.4	3740	8150	332383	0.40	1.5	0.8	287	280	380	
	1000	152.400	142.24	113.665	6.4	6.4	4400	9500	BT1B334140/HA4	0.43	1.4	0.8	410	260	360	
679.450	901.700	142.875	142.875	111.125	9.7	6.4	3580	9000	LM281849/LM281810	0.33	1.8	1	242	280	380	
682.625	965.200	185.738	185.81	142.95	6.4	6.4	5120	12500	332283	0.33	1.8	1	420	260	360	
685.800	876.300	93.662	92.075	69.85	6.4	6.4	2120	5500	EE655270/655345	0.43	1.4	0.8	130	300	400	
711.200	939.800	120.650	115.38	73.33	6.4	6.4	2640	6200	BT1B328068/HA4	0.75	0.80	0.45	206	240	340	
723.900	914.400	84.138	80.962	60.325	5.5	6.4	2050	4900	EE755285/755360	0.37	1.6	0.9	115	280	380	
736.600	825.500	31.750	31.75	25.4	3.5	3.3	429	1370	LL582949/LL582910B	0.40	1.5	0.8	22.5	300	400	
759.925	889.000	69.850	69.85	50.8	3.3	3.3	1230	3800	LL483448/LL483418	0.37	1.6	0.9	67.5	280	380	
	889.000	88.900	88.9	72	3.3	3.3	1940	6200	L183448/L183410	0.30	2	1.1	94.0	260	360	
774.700	965.200	93.662	80.962	66.675	6.4	3.3	1940	4900	EE752305/752380	0.40	1.5	0.8	131	240	340	
801.688	914.400	58.738	58.738	41.275	3.5	3.3	1100	3550	LL584449/LL584410	0.40	1.5	0.8	53.5	260	360	
838.200	1041.400	93.662	88.9	66.675	6.4	6.4	1900	4800	EE763330/763410	0.44	1.35	0.8	160	220	320	
857.250	1092.200	120.650	111.125	76.2	19	6.4	2810	7350	EE157337/157430	0.57	1.05	0.6	245	200	300	
977.900	1130.300	66.675	63.5	47.625	6.4	6.4	1450	4400	LL687949/LL687910	0.44	1.35	0.8	100	180	260	

Inch series double-row tapered roller bearings

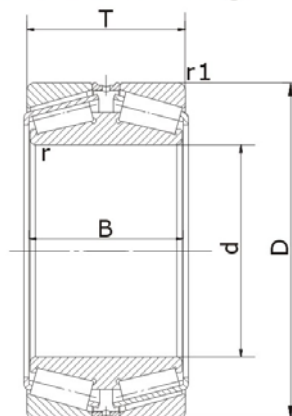
Inch series double-row tapered roller bearings



Boundary dimensions						Basic load ratings		Designations	Calculated constant	Factors of axial load			Mass	
mm						kN				e	Y ₂	Y ₃	Y ₀	kg
d	D	T	B	r	r ₁	Cr	Cor							
174.625	288.925	123.825	123.825	1.6	3.2	1080	1950	HM237542D/HM237510	0.32	2.12	3.15	2.07	31.6	
177.800	247.650	90.488	90.488	1.6	3.2	593	1400	67790D/67720	0.44	1.54	2.29	1.50	13.3	
	285.750	106.363	106.360	1.6	3.2	760	1430	EE91700D/91112	0.43	1.57	2.34	1.53	26.0	
	288.925	158.750	158.750	1.6	3.2	1080	1950	HM237546DD/HM237510	0.32	2.12	3.15	2.07	37.0	
	304.800	114.300	109.438	3.2	3.2	939	1600	EE280700D/281200	0.36	1.87	2.79	1.83	33.1	
187.325	269.875	101.600	101.600	1.6	3.2	704	1610	M238849D/M238810	0.33	2.03	3.02	1.98	19.0	
	319.964	161.925	168.275	3.2	4.8	1280	2450	EE222074D/222126	0.40	1.68	2.50	1.64	53.8	
	319.964	161.925	168.275	3.2	4.8	1460	2530	H239649D/H239610	0.32	2.12	3.15	2.07	51.4	
	320.675	161.925	168.275	3.2	4.8	1280	2450	EE222074D/222128	0.40	1.68	2.50	1.64	54.3	
	320.675	161.925	168.275	3.2	4.8	1460	2530	H239649D/H239612	0.32	2.12	3.15	2.07	51.9	
190.500	317.500	133.350	133.350	6.4	3.2	1040	2270	93751D/93125	0.52	1.29	1.92	1.26	43.1	
	317.500	133.350	142.875	6.4	3.2	1040	2270	93751D/93126	0.52	1.29	1.92	1.26	45.0	
	365.049	152.400	158.750	3.2	3.2	1610	2920	EE420750D/421437	0.40	1.68	2.50	1.64	77.2	
	368.300	152.400	158.750	3.2	3.2	1610	2920	EE420750D/421450	0.40	1.68	2.50	1.64	79.4	
199.975	317.500	133.350	133.350	6.4	3.2	1040	2270	93788D/93125	0.52	1.29	1.92	1.26	40.1	
	317.500	133.350	142.875	6.4	3.2	1040	2270	93788D/93126	0.52	1.29	1.92	1.26	42.0	
203.200	317.500	95.250	95.250	3.2	3.2	753	1450	EE132081D/132125	0.31	2.15	3.21	2.11	28.0	
	317.500	123.825	133.350	1.6	3.2	1040	2270	93800D/93126	0.52	1.29	1.92	1.26	38.8	
	317.500	133.350	133.350	6.4	3.2	1040	2270	93801D/93125	0.52	1.29	1.92	1.26	39.1	
	317.500	133.350	142.875	6.4	3.2	1040	2270	93801D/93126	0.52	1.29	1.92	1.26	41.0	
	319.088	95.250	95.250	3.2	3.2	753	1450	EE132081D/132127	0.31	2.15	3.21	2.11	28.6	
	365.049	152.400	158.750	3.2	3.2	1610	2920	EE420800D/421437	0.40	1.68	2.50	1.64	72.5	
	365.049	152.400	158.750	SP	SP	1570	2820	45T413716	0.40	1.68	2.50	1.64	71.0	
	365.049	158.750	158.750	3.2	3.2	1610	2920	EE420801D/421437	0.40	1.68	2.50	1.64	73.1	
	368.300	152.400	158.750	3.2	3.2	1610	2920	EE420800D/421450	0.40	1.68	2.50	1.64	74.8	
	368.300	158.750	158.750	3.2	3.2	1610	2920	EE420801D/421450	0.40	1.68	2.50	1.64	75.4	
206.375	279.400	87.313	87.313	0.8	3.2	598	1410	67985D/67919	0.51	1.33	1.97	1.30	15.2	
	282.575	87.313	87.313	0.8	3.2	598	1410	67895D/67920	0.51	1.33	1.97	1.30	16.1	
	336.550	184.150	180.975	1.6	3.2	1770	3800	H242649D/H242610	0.33	2.03	3.02	1.98	65.1	
215.900	285.750	85.725	85.725	0.8	3.2	611	1560	LM742749D/LM742710	0.48	1.40	2.09	1.37	14.9	
	288.925	85.725	85.750	0.8	3.2	611	1560	LM742749D/LM742714	0.48	1.40	2.09	1.37	15.8	
	355.600	120.650	120.650	1.6	1.6	1250	2610	EE130850D/131400	0.33	2.04	3.04	2.00	50.0	
216.103	330.200	127.000	130.175	1.6	3.2	1140	2360	9974D/9920	0.55	1.22	1.82	1.19	38.8	
	330.200	142.875	152.400	3.2	3.2	1140	2360	9977D/9920	0.55	1.22	1.82	1.19	43.3	
219.075	358.775	200.025	196.850	1.6	6.4	2120	4580	H244849D/H244810	0.33	2.03	3.02	1.98	80.9	

Remark: SP indicates particular chamfer angle.

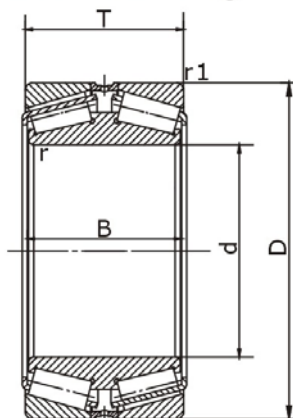
Inch series double-row tapered roller bearings



Boundary dimensions						Basic load ratings		Designations	Calculated constant	Factors of axial load			Mass
mm						kN				e	Y ₂	Y ₃	Y ₀
d	D	T	B	r	r ₁	Cr	Cor						
220.663	314.325	115.888	115.888	1.6	3.2	1050	2450	M244249D/M244210	0.33	2.03	3.02	1.98	29.0
225.425	355.600	120.650	120.650	5.6	1.6	1250	2610	EE130887D/131400	0.33	2.04	3.04	2.00	46.8
	355.600	165.100	158.750	7.9	1.6	1250	2610	EE130888D/131400	0.33	2.04	3.04	2.00	58.5
228.600	355.600	120.650	120.650	1.6	1.6	1250	2610	EE130900D/131400	0.33	2.04	3.04	2.00	45.8
	355.600	120.650	120.650	5.6	1.6	1250	2610	EE130901D/131400	0.33	2.04	3.04	2.00	45.8
	355.600	165.100	158.750	7.9	1.6	1250	2610	EE130903D/131400	0.33	2.04	3.04	2.00	57.04
	400.050	139.700	139.700	3.2	3.2	1560	2950	EE529091D/529157	0.31	2.19	3.25	2.14	76.3
	400.050	161.925	158.750	3.2	3.2	1690	3210	EE430901D/431575	0.44	1.54	2.29	1.50	84.5
	425.450	165.100	177.800	3.6	6.4	2010	3950	EE700090D/700167	0.33	2.03	3.02	1.98	115
234.950	327.025	93.663	93.663	1.6	3.2	802	1860	8576D/8520	0.41	1.66	2.47	1.62	24.2
	328.625	93.663	93.663	1.6	3.2	802	1860	8576D/8522	0.41	1.66	2.47	1.62	24.8
	384.175	209.550	209.550	1.6	6.4	2480	5370	H247549D/H247510	0.33	2.03	3.02	1.98	99.3
241.224	349.148	107.950	107.950	1.6	3.2	950	2050	EE127094D/127135	0.35	1.91	2.84	1.86	34.0
	350.838	107.950	107.950	1.6	3.2	950	2050	EE127094D/127137	0.35	1.91	2.84	1.86	34.8
	355.498	107.950	107.950	1.6	3.2	950	2050	EE127094D/127138	0.35	1.91	2.84	1.86	36.9
	355.600	107.950	107.950	1.6	3.2	950	2050	EE127094D/127140	0.35	1.91	2.84	1.86	37.0
241.300	355.524	109.525	109.525	SP	SP	950	2050	45T483611	0.35	1.91	2.84	1.86	37.0
	355.600	92.862	92.710	1.6	3.2	870	1850	EE170951D/171400	0.36	1.86	2.77	1.82	32.6
	365.049	92.862	92.710	1.6	3.2	870	1850	EE170951D/171436	0.36	1.86	2.77	1.82	36.5
	368.300	92.862	92.710	1.6	3.2	870	1850	EE170951D/171450	0.36	1.86	2.77	1.82	37.8
241.478	349.148	107.950	107.950	1.6	3.2	950	2050	EE127097D/127135	0.35	1.91	2.84	1.86	34.0
	350.838	107.950	107.950	1.6	3.2	950	2050	EE127097D/127137	0.35	1.91	2.84	1.86	34.7
	355.498	107.950	107.950	1.6	3.2	950	2050	EE127097D/127138	0.35	1.91	2.84	1.86	36.9
	355.600	107.950	107.950	1.6	3.2	950	2050	EE127097D/127140	0.35	1.91	2.84	1.86	36.9
244.475	327.025	92.075	92.075	1.6	3.2	787	1890	LM247748D/LM247710	0.32	2.10	3.13	2.06	21.5
	381.000	146.050	146.050	3.2	4.8	1350	2930	EE126096D/126150	0.52	1.31	1.95	1.28	62.2
247.650	400.050	114.300	119.060	1.6	6.4	1300	2570	EE220975D/221575	0.39	1.71	2.54	1.67	56.4
	406.400	219.075	215.900	3.2	6.4	2770	6250	HH249949D/HH249910	0.33	2.03	3.02	1.98	116
250.825	422.275	139.700	152.400	3.6	3.2	1730	3360	HM252340D/HM252310	0.33	2.03	3.02	1.98	83.0
	431.724	139.700	145.258	3.6	3.6	1730	3360	HM252340D/HM252315	0.33	2.03	3.02	1.98	88.5
254.000	355.600	92.862	92.710	1.6	3.2	870	1850	EE171000D/171400	0.36	1.86	2.77	1.82	29.1
	358.755	130.175	130.175	3.2	3.2	1330	3170	M249748D/M249710	0.33	2.03	3.02	1.98	42.1
	365.049	92.862	92.710	1.6	3.2	870	1850	EE171000D/171436	0.36	1.86	2.77	1.82	32.9
	368.300	92.862	92.710	1.6	3.2	870	1850	EE171000D/171450	0.36	1.86	2.77	1.82	34.2
	422.275	139.700	152.400	3.6	3.2	1730	3360	HM252343D/HM252310	0.33	2.03	3.02	1.98	81.6
	422.275	139.700	152.400	3.6	3.2	1730	3360	HM252344D/HM252310	0.33	2.03	3.02	1.98	81.6
	422.275	152.400	152.400	6.7	3.2	1730	3360	HM252342D/HM252310	0.33	2.03	3.02	1.98	83.7
	431.724	139.700	145.258	3.6	3.6	1730	3360	HM252343D/HM252315	0.33	2.03	3.02	1.98	87.1
	431.724	139.700	145.258	3.6	3.6	1730	3360	HM252344D/HM252315	0.33	2.03	3.02	1.98	87.1
	431.724	152.400	145.258	6.7	3.6	1730	3360	HM252342D/HM252315	0.33	2.03	3.02	1.98	89.2
	444.500	133.350	133.350	3.2	6.4	1470	2770	EE822101D/822175	0.42	1.62	2.42	1.59	86.9

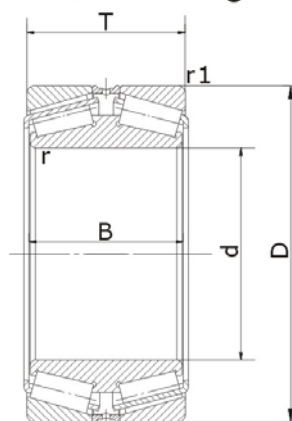
Remark: SP indicates particular chamfer angle.

Inch series double-row tapered roller bearings



Boundary dimensions						Basic load ratings		Designations	Calculated constant	Factors of axial load				Mass
mm						kN				e	Y ₂	Y ₃	Y ₀	kg
d	D	T	B	r	r ₁	Cr	Cor							
260.350	365.125	107.950	107.950	3.2	6.4	970	2150	EE134102D/134143	0.37	1.80	2.69	1.76	34.4	
	368.300	107.950	107.950	3.2	6.4	970	2150	EE134102D/134145	0.37	1.80	2.69	1.76	35.9	
	400.050	114.300	119.060	6.4	6.4	1300	2570	EE221025D/221575	0.39	1.71	2.54	1.67	51.8	
	422.275	139.700	152.400	3.6	3.2	1730	3360	HM252347D/HM252310	0.33	2.03	3.02	1.98	78.8	
	422.275	180.975	152.400	9.5	3.2	1730	3360	HM252348D/HM252310	0.33	2.03	3.02	1.98	84.5	
	422.275	152.400	155.575	6.4	3.2	1730	3360	HM252348D/HM252310	0.33	2.03	3.02	1.98	81.5	
	422.275	152.400	155.575	6.4	3.2	1730	3360	HM252349D/HM252310	0.33	2.03	3.02	1.98	81.5	
	431.724	139.700	145.258	3.6	3.6	1730	3360	HM252347D/HM252315	0.33	2.03	3.02	1.98	84.3	
	431.724	180.975	145.258	9.5	3.6	1730	3360	HM252348DD/HM252315	0.33	2.03	3.02	1.98	90.0	
	431.724	152.400	148.433	6.4	3.6	1730	3360	HM252348D/HM252315	0.33	2.03	3.02	1.98	87.1	
	431.724	152.400	148.433	6.4	3.6	1730	3360	HM252349D/HM252315	0.33	2.03	3.02	1.98	87.1	
444.500	196.850	196.850	6.4	3.2	2380	4530	823103D/823175	0.55	1.24	1.84	1.21	125		
266.700	355.600	109.538	107.950	1.6	3.2	1040	2550	LM451349D/LM451310	0.36	1.87	2.79	1.83	29.5	
	357.200	109.538	107.950	1.6	3.2	1040	2550	LM451349D/LM451312	0.36	1.87	2.79	1.83	30.2	
	393.700	130.175	130.175	3.2	6.4	1270	3090	EE275106D/275155	0.40	1.68	2.50	1.64	55.3	
	403.225	130.175	122.240	3.2	6.4	1270	3090	EE275106D/275158	0.40	1.68	2.50	1.64	59.4	
	406.400	130.175	122.240	3.2	6.4	1270	3090	EE275106D/275160	0.40	1.68	2.50	1.64	61.3	
269.875	381.000	136.525	136.525	3.2	3.2	1460	3350	M252349D/M252310	0.33	2.03	3.02	1.98	48.4	
276.225	393.700	130.175	130.175	1.6	6.4	1270	3090	EE275109D/275155	0.40	1.68	2.50	1.64	51.2	
	403.225	130.175	122.240	1.6	6.4	1270	3090	EE275109D/275158	0.40	1.68	2.50	1.64	55.3	
	406.400	130.175	122.240	1.6	6.4	1270	3090	EE275109D/275160	0.40	1.68	2.50	1.64	57.2	
279.400	393.700	127.000	127.000	1.6	6.4	1200	2780	EE135111D/135155	0.38	1.77	2.64	1.73	48.9	
	457.200	244.475	244.475	1.6	6.4	3300	7540	HH255149D/HH255110	0.33	2.03	3.02	1.98	166	
	469.900	166.688	169.863	6.4	3.2	2100	4370	EE722111D/722185	0.38	1.79	2.67	1.75	121	
	469.900	184.150	169.863	9.5	3.2	2100	4370	EE722112D/722185	0.38	1.79	2.67	1.75	123	
	495.300	134.938	137.952	1.6	3.2	1750	3220	EE941106D/941950	0.40	1.68	2.50	1.64	114	
279.578	380.898	117.475	117.475	1.6	3.2	1140	2820	LM654644D/LM654610	0.43	1.57	2.34	1.53	38.9	
280.000	406.400	206.375	206.375	3.2	3.2	1310	2950	EE128113D/128160	0.39	1.75	2.61	1.71	81.4	
	406.400	206.375	206.375	3.2	3.2	1310	2950	EE128114D/128160	0.39	1.75	2.61	1.71	81.4	
	409.981	206.375	206.375	3.2	3.2	1310	2950	EE128113D/128161	0.39	1.75	2.61	1.71	85.1	
	409.981	206.375	206.375	3.2	3.2	1310	2950	EE128114D/128161	0.39	1.75	2.61	1.71	85.1	
285.750	380.898	117.475	117.475	1.6	3.2	1140	2820	LM654648D/LM654610	0.43	1.57	2.34	1.53	36.4	
	469.900	142.875	138.928	1.6	3.2	1960	3460	EE921126D/921850	0.29	2.31	3.44	2.26	97.5	
	469.900	142.875	138.928	1.6	3.2	1960	3460	EE921150D/921850	0.29	2.31	3.44	2.26	97.5	
	476.250	142.875	138.928	1.6	3.2	1960	3460	EE921126D/921875	0.29	2.31	3.44	2.26	103	
	476.250	142.875	138.928	1.6	3.2	1960	3460	EE921150D/921875	0.29	2.31	3.44	2.26	103	
288.925	406.400	144.463	144.463	3.2	3.2	1720	4420	M255449D/M255410	0.34	2.00	2.97	1.95	61.4	
292.100	422.275	130.175	130.175	6.4	3.2	1580	3410	EE330116D/330166	0.32	2.11	3.14	2.06	59.9	
	558.800	285.750	285.750	3.2	6.4	4040	8000	EE790117D/790221	0.40	1.71	2.54	1.67	318	

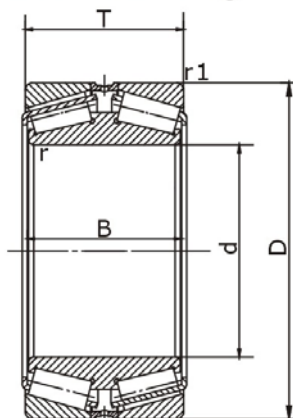
Inch series double-row tapered roller bearings



Boundary dimensions						Basic load ratings		Designations	Calculated constant	Factors of axial load			Mass
mm						kN				e	Y ₂	Y ₃	Y ₀
d	D	T	B	r	r ₁	Cr	Cor			Y ₂	Y ₃	Y ₀	kg
298.450	438.048	131.763	131.763	3.2	3.2	1510	3450	EE329118D/329172	0.33	2.04	3.04	2.00	68.9
	444.500	107.950	111.125	7.9	3.2	1240	2760	EE291176D/291749	0.38	1.79	2.66	1.75	61.1
	444.500	107.950	111.125	7.9	1.6	1240	2760	EE291176D/291750	0.38	1.79	2.66	1.75	61.2
299.974	438.048	134.938	133.350	3.2	4.8	1350	3230	EE129119D/129172	0.40	1.68	2.50	1.64	68.7
300.038	422.275	150.813	150.813	3.2	3.2	1700	4030	HM256849D/HM256810	0.34	2.00	2.98	1.96	66.2
	422.275	150.813	150.813	6.4	3.2	1700	4030	HM256849DA/HM256810	0.34	2.00	2.98	1.96	66.1
303.213	495.300	263.525	263.525	3.2	6.4	3990	9340	HH258249D/HH258210	0.33	2.03	3.02	1.98	207
304.648	438.048	131.763	131.763	3.2	3.2	1510	3450	EE329117D/329172	0.33	2.04	3.04	2.00	65.9
	438.048	131.763	131.763	3.2	3.2	1510	3450	EE329119D/329172	0.33	2.04	3.04	2.00	65.9
	438.048	134.938	133.350	3.2	4.8	1350	3230	EE129121D/129172	0.40	1.68	2.50	1.64	66.4
	438.048	128.588	138.113	3.2	4.8	1610	3490	M757447D/M757410	0.47	1.44	2.15	1.41	64.8
	438.048	134.938	138.113	3.2	4.8	1610	3490	M757447DE/M757410	0.47	1.44	2.15	1.41	65.5
304.800	419.100	130.175	130.175	1.6	6.4	1420	3480	M257149D/M257110	0.33	2.03	3.02	1.98	53.8
	431.800	98.425	120.650	3.2	3.2	1090	2360	EE111201D/111700	0.44	1.54	2.29	1.50	51.8
	438.150	98.425	120.650	3.2	3.2	1090	2360	EE111201D/111725	0.44	1.54	2.29	1.50	55.9
	444.500	107.950	111.125	7.9	3.2	1240	2760	EE291200D/291749	0.38	1.79	2.66	1.75	58.6
	444.500	107.950	111.125	7.9	1.6	1240	2760	EE291200D/291750	0.38	1.79	2.66	1.75	58.7
	495.300	134.938	137.952	1.6	3.2	1750	3220	EE941206D/941950	0.40	1.68	2.50	1.64	102
	495.300	165.100	171.450	3.2	6.4	2180	4680	EE724121D/724195	0.40	1.68	2.50	1.64	130
	558.800	285.750	285.750	3.2	6.4	4040	8000	EE790119D/790221	0.40	1.71	2.54	1.67	305
304.902	412.648	128.588	128.588	3.2	3.2	1370	3340	M257248D/M257210	0.32	2.12	3.15	2.07	48.8
	438.048	212.725	196.850	3.2	4.8	1350	3230	EE129124D/129172	0.40	1.68	2.50	1.64	93.5
305.003	438.048	134.938	133.350	3.2	4.8	1350	3230	EE129123D/129172	0.40	1.68	2.50	1.64	66.2
305.054	499.948	200.000	200.000	3.2	6.4	2810	5820	HM858548D/HM858511	0.49	1.36	2.03	1.33	157
317.500	447.675	158.750	158.750	3.2	3.2	2120	5100	HM259049D/HM259010	0.33	2.02	3.00	1.97	80.2
327.025	482.600	147.638	152.400	1.6	3.2	1850	4100	EE526129D/526190	0.39	1.73	2.57	1.69	94.3
330.200	482.600	147.638	152.400	1.6	3.2	1850	4100	EE526131D/526190	0.39	1.73	2.57	1.69	92.4
333.375	469.900	166.688	166.688	7.9	3.2	2320	5680	HM261048D/HM261010	0.33	2.02	3.00	1.97	92.6
	469.900	166.688	166.688	3.2	3.2	2320	5680	HM261049D/HM261010	0.33	2.02	3.00	1.97	92.8
342.900	533.400	146.050	139.690	3.2	3.2	1870	3580	EE971355D/972100	0.33	2.03	3.02	1.98	113
	571.500	163.513	163.513	3.2	6.4	2880	5340	EE536136D/536225	0.34	2.01	2.99	1.97	174
343.052	457.098	120.650	120.650	SP	SP	1420	3470	45T694612	0.47	1.43	2.12	1.40	40.0
346.075	469.900	95.250	104.775	1.6	6.4	1050	2500	EE161362D/161850	0.50	1.35	2.01	1.32	50.7
	482.600	95.250	104.775	1.6	6.4	1050	2500	EE161362D/161900	0.50	1.35	2.01	1.32	58.4
	488.950	95.250	104.775	1.6	6.4	1050	2500	EE161362D/161925	0.50	1.35	2.01	1.32	62.3
	488.950	174.625	174.625	3.2	3.2	2310	5800	HM262749D/HM262710	0.33	2.02	3.00	1.97	105
347.663	469.900	138.113	138.113	3.2	3.2	1800	4520	M262449D/M262410	0.33	2.03	3.02	1.98	70.0

Remark: SP indicates particular chamfer angle.

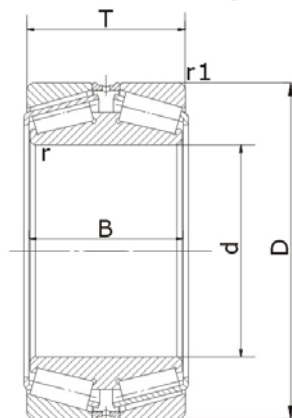
Inch series double-row tapered roller bearings



Boundary dimensions						Basic load ratings		Designations	Calculated constant	Factors of axial load			Mass
mm						kN				e	Y ₂	Y ₃	
d	D	T	B	r	r ₁	Cr	Cor						kg
355.600	444.500	114.300	112.713	1.6	3.2	1110	3450	L163149D/L163110	0.31	2.20	3.27	2.15	40.7
	482.600	128.588	133.350	1.6	3.2	1530	3510	LM763449D/LM763410	0.47	1.43	2.14	1.40	67.7
	501.650	111.125	127.000	3.2	3.2	1350	3280	EE231401D/231975	0.44	1.53	2.28	1.50	75.3
	514.350	111.125	127.000	3.2	3.2	1350	3280	EE231401D/232025	0.44	1.53	2.28	1.50	85.3
356.387	469.900	101.600	104.775	1.6	6.4	1050	2500	EE161403D/161850	0.50	1.35	2.01	1.32	47.3
	482.600	101.600	104.775	1.6	6.4	1050	2500	EE161403D/161900	0.50	1.35	2.01	1.32	55.0
	488.950	101.600	104.775	1.6	6.4	1050	2500	EE161403D/161925	0.50	1.35	2.01	1.32	58.9
368.300	523.875	185.738	185.738	3.2	6.4	2730	6780	HM265049D/HM265010	0.33	2.03	3.02	1.98	110
	596.900	158.750	165.100	6.4	6.4	2710	5410	EE181454D/182350	0.41	1.63	2.42	1.59	188
	609.600	279.400	254.000	3.2	6.4	4310	9060	EE321146D/321240	0.36	1.90	2.83	1.86	303
	622.300	279.400	254.000	3.2	6.4	4310	9060	EE321146D/321245	0.36	1.90	2.83	1.86	327
374.574	546.100	193.675	193.675	3.2	6.4	3260	8430	HM266445D/HM266410	0.33	2.03	3.02	1.98	163
374.650	501.650	117.475	127.000	1.6	3.2	1350	3280	EE231475D/231975	0.44	1.53	2.28	1.50	66.8
	514.350	117.475	127.000	1.6	3.2	1350	3280	EE231475D/232025	0.44	1.53	2.28	1.50	76.8
384.175	546.100	193.675	193.675	3.2	6.4	3260	8430	HM266449D/HM266410	0.33	2.03	3.02	1.98	155
393.700	546.100	138.113	138.113	1.6	6.4	1840	4700	LM767745D/LM767710	0.48	1.42	2.11	1.39	99.0
	546.100	120.650	141.288	3.2	6.4	1490	3810	EE234157D/234215	0.48	1.42	2.11	1.39	96.0
	558.800	120.650	119.063	3.2	6.4	1490	3810	EE234157D/234220	0.48	1.42	2.11	1.39	97.2
400.000	650.000	250.000	250.000	SP	SP	4660	9790	45T806525	0.39	1.74	2.59	1.70	328
400.050	609.600	142.875	157.163	3.6	6.4	2440	5280	EE911576D/912400	0.38	1.76	2.62	1.72	161
406.400	546.100	138.113	138.113	1.6	6.4	1840	4700	LM767749D/LM767710	0.48	1.42	2.11	1.39	90.5
	546.100	120.650	141.288	1.6	6.4	1490	3810	EE234161D/234215	0.48	1.42	2.11	1.39	88.6
	558.800	120.650	119.063	1.6	6.4	1490	3810	EE234161D/234220	0.48	1.42	2.11	1.39	89.8
	574.675	114.300	130.967	3.2	3.2	1630	3880	EE285161D/285226	0.50	1.35	2.01	1.32	105
	609.600	149.225	157.163	3.6	6.4	2440	5280	EE911603D/912400	0.38	1.76	2.62	1.72	158
	622.300	155.575	152.705	3.6	6.7	2480	5030	EE261602D/262450	0.38	1.76	2.62	1.72	169
	635.000	155.575	152.705	3.6	6.7	2480	5030	EE261602D/262500	0.38	1.76	2.62	1.72	184
415.925	590.550	209.550	209.550	3.2	6.4	3390	8930	M268749D/M268710	0.33	2.03	3.02	1.98	189
419.100	622.300	155.575	152.705	3.6	6.7	2480	5030	EE261650D/262450	0.38	1.76	2.62	1.72	159
	635.000	155.575	152.705	3.6	6.7	2480	5030	EE261650D/262500	0.38	1.76	2.62	1.72	174
419.227	736.448	406.400	406.400	6.4	6.4	8700	19000	EE323166D/323290	0.37	1.80	2.69	1.76	752
425.450	685.698	253.873	254.000	6.4	6.4	5010	11000	EE328167D/328269	0.40	1.68	2.50	1.64	367
431.800	571.500	130.175	133.350	1.6	3.2	1680	4300	EE239171D/239225	0.38	1.76	2.62	1.72	90.2
	571.500	130.175	133.350	1.6	3.2	1680	4300	EE239171D/239225A	0.38	1.76	2.62	1.72	90.1
	635.000	173.038	173.038	6.4	6.4	3150	6870	EE931170D/931250	0.32	2.10	3.13	2.06	189
431.902	685.698	253.873	254.000	6.4	6.4	5010	11000	EE328172D/328269	0.40	1.68	2.50	1.64	359
432.003	609.524	152.400	152.400	3.6	6.4	2600	6060	EE736173D/736238	0.35	1.95	2.90	1.91	135
	609.524	152.400	161.925	3.6	6.4	2600	6060	EE736173D/736237	0.35	1.95	2.90	1.91	139

Remark: SP indicates particular chamfer angle.

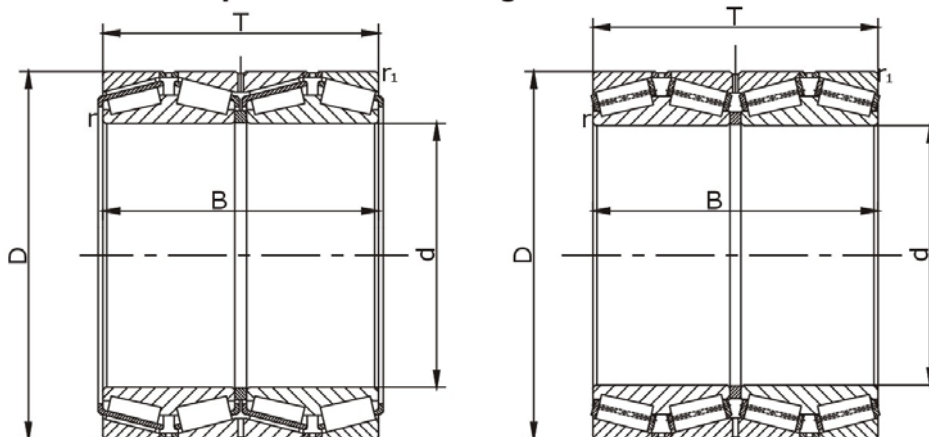
Inch series double-row tapered roller bearings



Boundary dimensions						Basic load ratings		Designations	Calculated constant	Factors of axial load			Mass
mm						kN				e	Y ₂	Y ₃	
d	D	T	B	r	r ₁	Cr	Cor			Y ₂	Y ₃	Y ₀	kg
447.675	635.000	223.838	223.838	3.2	6.4	3930	10500	M270748D/M270710	0.33	2.03	3.02	1.98	234
	635.000	223.838	223.838	3.2	6.4	3930	10500	M270749D/M270710	0.33	2.03	3.02	1.98	234
457.073	730.148	196.850	203.200	1.6	6.4	4150	8230	EE671798D/672873	0.39	1.72	2.57	1.69	315
457.200	596.900	130.175	133.350	1.6	3.2	1920	5230	EE244181D/244235	0.40	1.67	2.48	1.63	98.1
	596.900	133.350	136.525	1.6	3.2	1930	5110	L770849D/L770810	0.47	1.43	2.12	1.40	99.9
	660.400	155.575	155.572	3.2	6.4	2320	5260	EE737179D/737260	0.37	1.80	2.69	1.76	175
457.403	730.148	196.850	203.200	1.6	6.4	4150	8230	EE671802D/672873	0.39	1.72	2.57	1.69	315
479.425	679.450	238.125	238.125	3.2	6.4	4240	11100	M272749D/M272710	0.33	2.03	3.02	1.98	277
482.600	615.950	158.750	158.750	3.2	6.4	2420	7110	LM272249D/LM272210	0.33	2.03	3.02	1.98	117
489.026	634.873	152.400	152.400	3.2	3.2	2260	6590	EE243193D/243250	0.34	1.97	2.93	1.93	127
	634.873	153.988	153.988	3.2	3.2	2460	6840	LM772749D/LM772710	0.47	1.43	2.12	1.40	126
501.650	711.200	250.825	250.825	3.2	6.4	4810	12800	M274149D/M274110	0.33	2.03	3.02	1.98	323
505.181	838.200	266.700	266.700	6.4	9.5	5690	11700	EE426198D/426330	0.48	1.41	2.10	1.38	590
508.000	762.000	219.075	219.075	6.4	6.4	4530	9970	EE531201D/531300	0.38	1.78	2.65	1.74	354
	838.200	266.700	266.700	6.4	9.5	5690	11700	EE426201D/426330	0.48	1.41	2.10	1.38	585
509.588	838.200	266.700	266.700	6.4	9.5	5690	11700	EE426203D/426330	0.48	1.41	2.10	1.38	582
519.113	736.600	258.763	258.763	3.2	6.4	5290	13600	M275349D/M275310	0.33	2.03	3.02	1.98	361
536.575	761.873	269.875	269.875	3.2	6.4	5630	14400	M276448D/M276410	0.33	2.03	3.02	1.98	401
	761.873	269.875	269.875	3.2	6.4	5630	14400	M276449D/M276410	0.33	2.03	3.02	1.98	401
539.750	784.225	161.925	165.100	3.2	6.4	2880	6010	EE522126D/523087	0.48	1.42	2.11	1.39	261
558.800	736.600	196.850	196.850	3.2	6.4	3590	9870	LM377449D/LM377410	0.35	1.95	2.90	1.91	227
571.500	812.800	285.750	285.750	3.2	6.4	6510	17500	M278749D/M278710	0.33	2.03	3.02	1.98	497
595.313	844.550	296.863	296.863	3.2	6.4	6780	18500	M280049D/M280010	0.33	2.03	3.02	1.98	549
609.600	787.400	171.450	171.450	3.2	6.4	3390	9940	EE649241D/649310	0.37	1.82	2.70	1.78	223
	812.800	190.500	190.500	3.2	6.4	3280	8590	EE743241D/743320	0.33	2.06	3.06	2.01	271
635.000	901.700	317.500	317.500	3.2	6.4	7480	19900	M281049D/M281010	0.33	2.03	3.02	1.98	651
685.800	876.300	168.275	171.450	3.2	6.4	3510	10800	EE655271D/655345	0.42	1.62	2.42	1.59	261
711.200	914.400	149.225	149.225	3.2	6.4	3020	8930	EE755281D/755360	0.38	1.78	2.65	1.74	256
714.375	1016.000	339.725	339.725	3.2	6.4	9740	26100	M383240D/M383210	0.35	1.92	2.86	1.88	924
730.250	1035.050	365.125	365.125	3.2	6.4	9820	27100	M283449D/M283410	0.33	2.03	3.02	1.98	1000
749.300	990.600	293.000	293.000	3.2	6.4	7850	23900	LM283649D/LM283610	0.32	2.12	3.15	2.07	643
762.000	1079.500	381.000	381.000	4.8	12.7	11100	31300	M284249D/M284210	0.33	2.03	3.02	1.98	1140
825.500	1168.400	409.575	409.575	4.8	12.7	13000	36200	M285848D/M285810	0.33	2.03	3.02	1.98	1440

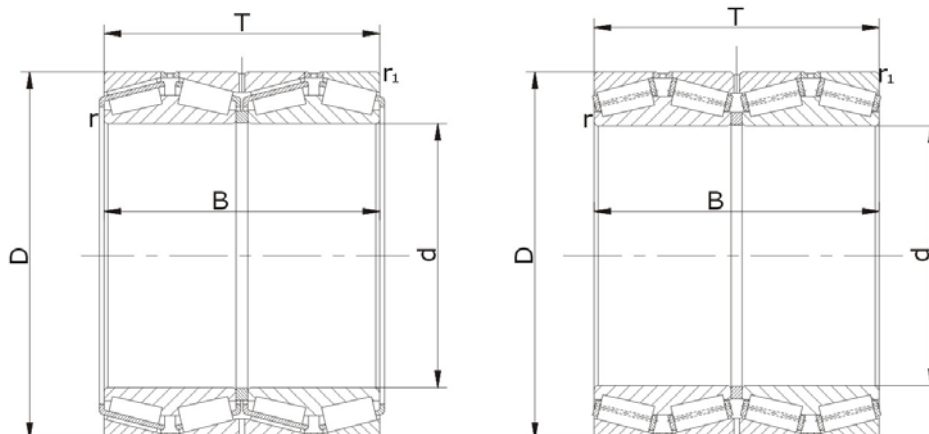
Inch series four-row tapered roller bearings

Inch series four-row tapered roller bearings



Boundary dimensions						Designations	Mass	K
mm							kg	
d	D	T	B	r	r ₁			
244.475	327.025	193.675	193.675	1.5	3.3	LM247748DW/LM247710/LM247710D	44.1	1.82
254.00	358.775	269.875	269.875	1.5	3.3	M249748DW/M249710/M249710D	90	1.76
266.7	355.6	228.6	230.188	1.5	3.3	LM451349DW/LM451310/LM451310D	65.3	1.62
269.875	381	282.575	282.575	3.3	3.3	M252349D/M252310/M252310D	104	1.76
276.225	393.700	269.878	269.878	1.5	6.4	EE275109DW/275155/275156D	110	1.45
279.400	393.700	269.875	269.875	1.5	6.4	EE135111DW/135155/135156D	99	1.54
279.578	380.898	244.475	244.475	1.5	3.3	LM654644DW/LM654610/LM654610D	86	1.35
285.750	380.898	244.475	244.475	1.5	3.3	LM654648DW/LM654610/LM654610D	80	1.35
288.925	406.400	298.450	298.450	3.3	3.3	M255449DW/M255410/M255410D	127	1.73
300.038	422.275	311.150	311.150	3.3	3.3	HM256849D/HM256810/HM256810D	141	1.73
304.648	438.048	279.400	280.990	3.3	4.8	M757448DW/M757410/M757410D	130	1.24
304.800	419.100	269.875	269.875	1.5	6.4	M257149DW/M257110/257110D	108	1.76
	501.650	336.545	336.550	3.3	6.4	HM258949D/HM258910/HM258910D	264	1.76
304.902	412.648	266.7	266.7	3.3	3.3	M257248DW/M257210/M257210D	109	1.83
305.000	438.048	279.400	280.990	3.3	4.8	M757449DW/M757410/M757410D	131	1.29
317.500	422.275	269.875	269.875	1.5	3.3	LM258648DW/LM258610/LM258610D	86	1.83
	447.675	327.025	327.025	3.3	3.3	HM259049D/HM259010/HM259010D	166	1.74
330.200	444.500	301.625	301.625	3.3	3.3	M260149DW/M260110/M260110D	132	1.76
333.375	469.900	342.9	342.9	3.3	3.3	HM261049DW/HM261010/HM261010D	196	1.73
341.312	457.098	254.000	254.000	1.5	3.3	LM761648D/LM761610/LM761610D	109	1.24
343.052	457.098	254.000	254.000	1.5	3.3	LM761649D/LM761610/LM761610D	109	1.24
346.075	457.098	254.00	254.00	1.5	3.3	EE133137D/133180/133181D	102	1.22
	488.950	358.775	358.775	3.3	3.3	HM262749D/HM262710/HM262710D	225	1.74
347.662	469.900	260.350	260.350	1.5	3.3	LM262449DW/LM262410/LM262410D	130	1.76
	469.900	292.100	292.100	3.3	3.3	M262449DW/M262410/M262410D	142	1.76
355.600	444.500	241.300	241.300	1.5	3.3	L163149D/L163110/L163110CD	88	1.90
	457.200	252.412	252.412	1.5	3.3	LM263149D/LM263110/LM263110D	107	1.83
	482.600	269.875	265.112	1.5	3.3	LM763449DW/LM763410/LM763410D	136	1.24
	488.950	317.500	317.500	1.5	3.3	M263349DW/LM263310/LM263310D	179	1.76
368.300	523.875	382.588	382.588	3.3	6.4	HM265049DW/HM265010/HM265010D	275	1.76
374.650	501.65	260.350	250.825	1.5	3.3	LM765149DW/LM765110/LM765110D	141	1.24
384.175	546.100	400.050	400.050	3.3	6.4	HM266449DW/HM266410/HM266410D	318	1.76
385.762	514.350	317.500	317.500	3.3	3.3	LM665949DW/LM665910/LM665910D	187	1.40
406.400	546.100	288.925	288.925	1.5	6.4	LM767749DW/LM767710/LM767710D	188	1.23
409.575	546.100	334.962	334.962	1.5	6.4	M667947D/M667910/M667910D	217	1.4
415.925	590.550	434.975	434.975	3.3	6.4	M268749DW/M268710/M268710D	396	1.76

Inch series four-row tapered roller bearings



Boundary dimensions						Designations	Mass	K
mm							kg	
d	D	T	B	r	r ₁			
431.800	571.500	279.400	279.400	1.5	3.3	LM869449DW/LM869410/LM869410D	188	1.07
	571.500	336.550	336.550	1.5	3.3	LM769349DW/LM769310/LM769310D	239	1.33
447.675	635.000	463.550	463.550	3.3	6.4	M270749DW/M270710/M270710D	485	1.76
457.200	596.900	279.400	276.225	1.5	3.3	L770847DW/L770810/L770810D	190	1.24
460	625.000	421.000	421.000	3.0	9.0	M271149D/M271110/M271110D	378	1.76
479.425	679.450	495.300	495.300	3.3	6.4	M272749DW/M272710/M272710D	604	1.76
482.600	615.950	330.200	330.200	6.4	6.4	LM272248DW/LM272210/LM272210D	235	1.76
	635.000	421.000	421.000	3.0	6.4	M272449D/M272410/M272410D	358	1.76
	647.700	417.512	417.512	3.3	6.4	M272647DW/M272610/M272610D	400	1.76
489.026	634.873	320.675	320.675	3.3	3.3	LM772749DW/LM772710/LM772710D	254	1.24
501.650	711.200	520.700	520.700	3.3	6.4	M274149DW/M274110/M274110D	691	1.76
508.00	762.000	463.550	463.550	6.4	6.4	EE531201D/531300/531301D	741	1.54
514.350	673.100	422.275	422.275	3.3	6.4	LM274449DW/LM274410/LM274410D	400	1.83
519.112	736.600	536.575	536.575	3.3	6.4	M275349D/M275310/M275310D	791	1.76
558.800	736.600	322.268	322.268	3.3	6.4	EE843221DW/843290/843291D	378	1.7
	736.600	409.575	409.575	3.3	6.4	LM377449DW/LM377410/LM377410D	482	1.69
571.5	812.8	593.725	593.725	3.3	6.4	M278749DW/M278710/M278710D	1007	1.76
584.200	762.000	401.638	396.875	3.3	6.4	LM778549DW/LM778510/LM778510D	468	1.24
585.788	771.525	479.425	479.425	3.3	6.4	LM278849D/LM278810/LM278810D	606	1.76
595.312	844.550	615.950	615.950	3.3	6.4	M280049D/M280010/M280010D	1155	1.76
609.600	787.400	361.950	361.950	3.3	6.4	EE649241DW/649310/649311D	467	1.58
	813.562	479.425	479.425	3.3	6.4	LM280249DW/LM280210/LM280210D	715	1.76
	863.600	660.400	660.400	3.3	6.4	M280349D/M280310/M280310D	1263	1.76
635.000	901.700	654.050	654.050	3.3	6.4	M281049DW/M281010/M281010D	1437	1.76
646.112	857.250	542.925	542.925	3.3	6.4	LM281049DW/LM281010/LM281010D	873	1.76
650.000	915.000	674.000	674.000	3.3	6.4	M281349D/M281310/M281310D	1437	1.76
657.225	933.450	676.275	676.275	3.3	6.4	M281649D/M281610/M281610D	1546	1.76
659.925	854.923	318.480	319.192	4.8	9.7	EE749259DW/749334/749335D	457	1.66
660.400	812.800	365.125	365.125	3.3	6.4	L281149D/L281110/L281110D	415	1.76
679.450	901.700	552.450	552.450	3.3	6.4	LM281849DW/LM281810/LM281810D	1005	1.76
682.625	965.200	701.675	701.675	3.3	6.4	M282249D/M282210/M282210D	1736	1.76
685.8	876.3	355.6	352.425	3.3	6.4	EE655271D/EE655345/EE655346D	579	1.4
708.025	930.275	565.150	565.150	3.3	6.4	LM282549D/LM282510/LM282510D	1061	1.70
710.000	900.000	410.000	410.000	3.3	6.4	L882449DW/L882410/L882410D	633	1.66
711.200	914.400	317.500	317.500	3.3	6.4	EE755281D/755360/755361D	537	1.54
717.550	946.150	565.150	565.150	3.3	6.4	LM282847DW/LM282810/LM282810D	1127	1.76
749.300	990.600	605.000	605.000	3.3	6.4	LM283649D/LM283610/LM283610D	1328	1.76

Single-direction thrust ball bearings

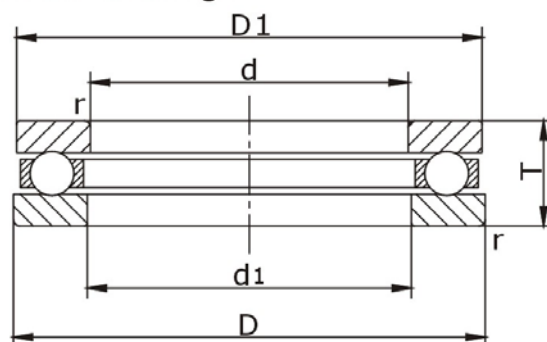
Single-direction thrust ball bearing consists of one row of balls (with cage) , a shaft washer (close fit with shaft) and a housing ring (loose fit with shaft and close fit with bore of bearing block) . They can't carry radial loads but axial loads in one direction,because the axial loads are well distributed on each ball, the loading capacity is higher, but the temperature is high while working,and their limiting speed is lower.

Thrust ball bearings can limit axial displacement of shafts or housings in one or two directions, but not radial displacement. Therefore, the bearings are usually used with deep groove ball bearings.

While mounting, the shaft and axis of housing bore must be concentric, otherwise bearing will be damaged in early period because of the stress concentration,and 0.5 ~ 1 mm radial clearance between outside diameter and bore of housing washer should be kept to avoid the influence.

Steel pressed cages are usually used in thrust ball bearings; machined solid cages should be used when outer diameter is over 250mm.

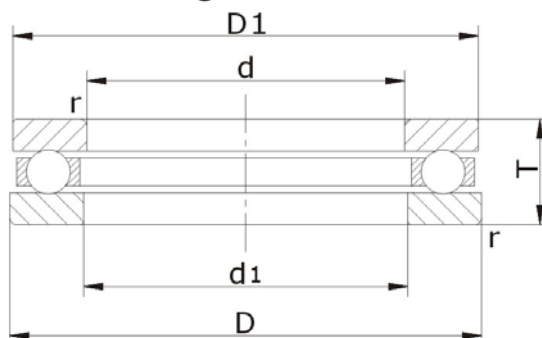
Single-direction thrust ball bearings



Type 50000
(Type 8000)

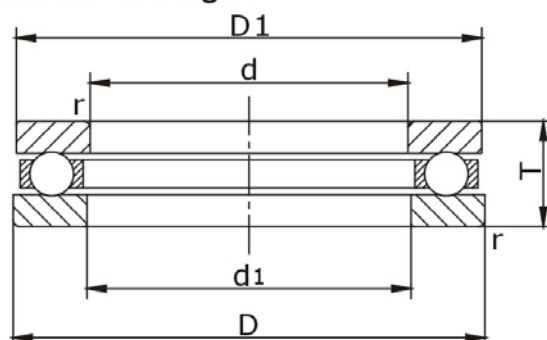
Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	d _{1min}	D	D _{1max}	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
160	162	200	198	31	1	112	428	51132	8132	2.3	1000	1600
	163	225	222	51	1.5	240	768	51232	8232	6.7	750	1100
	164	270	265	87	3	470	1570	51332	8332	21.5	500	700
170	172	215	213	34	1.1	133	528	51134	8134	3.3	950	1500
	173	240	237	55	1.5	280	915	51234	8234	8.3	700	1000
	174	280	275	87	3	470	1580	51334	8334	22.5	480	670
180	183	225	222	34	1.1	135	528	51136	8136	3.6	900	1400
	183	250	247	56	1.5	285	958	51236	8236	8.08	670	950
	184	300	295	95	3	518	1820	51336	8336	28.7	430	600

Single-direction thrust ball bearings

Type 50000
(Type 8000)

Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	d _{1min}	D	D _{1max}	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
190	193	240	237	37	1.1	172	678	51138	8138	4.2	850	1300
	194	270	267	62	2	328	1160	51238	8238	13	630	900
	195	320	315	105	4	608	2220	51338	8338	34.5	400	560
200	203	250	247	37	1.1	172	698	51140	8140	3.8	800	1200
	204	280	277	62	2	350	1210	51240	8240	11.9	600	850
	205	340	335	110	4	660	2220	51340	8340	31.8	360	500
220	223	270	267	37	1.1	188	782	51144	8144	4.6	750	1100
	224	300	297	63	2	365	1360	51244	8244	13.3	560	800
240	243	300	297	45	1.5	258	1040	51148	8148	7.5	700	1000
	244	340	335	78	2.1	468	1870	51248	8248	23.5	450	630
	245	380	375	112	4	695	2870	51348	8348	51	320	450
260	263	320	317	45	1.5	270	1140	51152	8152	8.1	670	950
	264	360	355	79	2.1	488	2050	51252	8252	25.5	430	600
280	283	350	347	53	1.5	338	1430	51156	8156	11.8	560	800
	284	380	375	80	2.1	490	2140	51256	8256	27.5	400	560
300	304	380	376	62	2	415	1860	51160	8160	17.5	500	700
	304	420	415	95	3	578	2670	51260	8260	42.5	360	560
320	324	400	396	63	2	418	1920	51164	8164	18.8	480	670
	325	440	435	95	3	612	2920	51264	8264	45.5	340	480
340	344	420	416	64	2	428	2050	51168	8168	19.8	450	630
	345	460	455	96	3	620	3040	51268	8268	45	320	450
	345	540	535	160	5	1120	5720	51368	8368	142	150	220
360	364	440	436	65	2	432	2110	51172	8172	21.1	430	600
	365	500	495	110	4	775	3940	51272	8272	69.2	260	380
380	384	460	456	65	2	440	2210	51176	8176	23	430	600
	385	520	515	112	4	788	4120	51276	8276	73	240	360
400	404	480	476	65	2	452	2320	51180	8180	23	400	560
	405	540	535	112	4	802	4310	51280	8280	74.5	220	340
420	424	500	495	65	2	462	2480	51184	8184	25.5	380	530
	422	550	550	80	5	463	2574	51784	8784	53.6	310	430
440	444	540	535	80	2.1	527	3000	51188	8188	42	360	500
	444	540	535	60	2.1	360	2112	59188/YB2	9008188	28.2	320	470
	445	600	595	130	5	808	4430	51288	8288	109	180	280
460	464	560	555	80	2.1	578	3310	51192	8192	41.7	320	450
	465	620	615	130	5	892	5230	51292	8292	114	170	260
480	484	580	575	80	2.1	592	3490	51196	8196	42.5	300	430
	485	730	725	195	6	1065	6886	51396	8396	308	230	330
500	504	600	595	80	2.1	595	3570	511/500	81/500	45.7	280	400
	505	670	665	135	5	1020	6200	512/500	82/500	137	150	220
	505	750	745	150	6	950	6320	593/500	90083/500	228	180	220

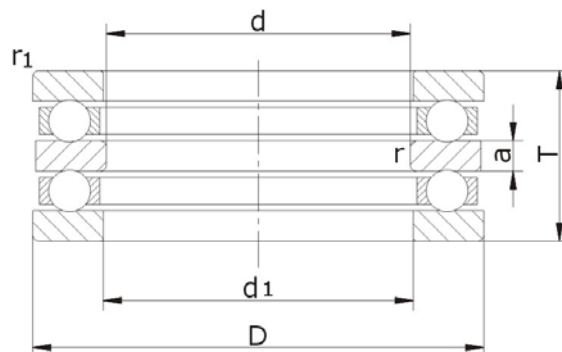
Single-direction thrust ball bearings

Type 50000
(Type 8000)

Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	d _{1min}	D	D _{1max}	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
530	534	640	635	85	3	708	4000	511/530	81/530	55.8	260	380
560	560.6	610	610	30	1.1	128	960	590/560	90089/560	9.55	560	800
600	604	710	705	67	3	690	4215	591/600	90081/600	50.1	380	500
630	635	850	845	175	6	1320	9300	512/630	82/630	252	100	160
670	672	730	730	45	1.5	284	2160	510/670	10089/670	20.5	530	700
	675	800	795	105	4	860	5020	511/670	81/670	92.2	160	240
710	715	850	845	85	4	478	846	591/710	90081/710	86	130	180
	715	950	945	109	6	787	980	572/710	70082/710	199	130	180
	715	950	945	145	6	1025	1296	592/710	90082/710	284	120	160
750	755	900	895	90	4	810	6210	591/750	90081/750	105	160	240
780	782	930	930	100	3.5	800	6069	517/780	87/780	129	150	200
800	802.5	870	867.5	53	1.5	334	2880	510/800	10089/800	32.5	430	560
	805	950	945	90	4	685	5895	591/800	90081/800	110	300	400
	805	950	945	120	4	909	8100	511/800	81/800	155	240	340
850	852.5	920	917.5	53	1.5	339	3105	510/850	10089/850	34.5	–	–
	855	1000	995	90	4	685	6120	591/850	90081/850	115	–	–
	855	1000	995	120	4	954	8550	511/850	81/850	165	–	–
900	903	980	977	63	2	474	4410	510/900	10089/900	49	–	–
	906	1060	1054	95	5	567	6885	591/900	90081/900	140	–	–
	906	1060	1054	130	5	1026	9720	511/900	81/900	205	–	–
950	953	1080	1074	63	2	486	4590	510/950	10089/950	52	–	–
	956	1120	1114	103	5	767	7335	591/950	90081/950	170	–	–
	956	1120	1114	135	5	1197	10800	511/950	81/950	235	–	–
1000	1003.5	1090	1086.5	70	2.1	514	4950	510/1000	10089/1000	68.5	–	–
	1006	1180	1174	109	5	831	8235	591/1000	90081/1000	210	–	–
	1006	1180	1174	140	5	1197	11880	511/1000	81/1000	275	–	–
1060	1063.5	1150	1146.5	70	2.1	677	5265	510/1060	10089/1060	72.5	–	–
	1066	1250	1244	115	5	909	9360	591/1060	90081/1060	240	–	–
	1066	1250	1244	150	5	1287	13500	511/1060	81/1060	330	–	–
1120	1126	1320	1314	160	5	1377	14670	511/1120	81/1120	395	–	–
1180	1188	1400	1392	175	6	1602	18000	511/1180	81/1180	495	–	–
1400	1408	1630	1622	180	8	1710	21240	511/1400	81/1400	665	–	–

Double-direction thrust ball bearings

Double-direction thrust ball bearings

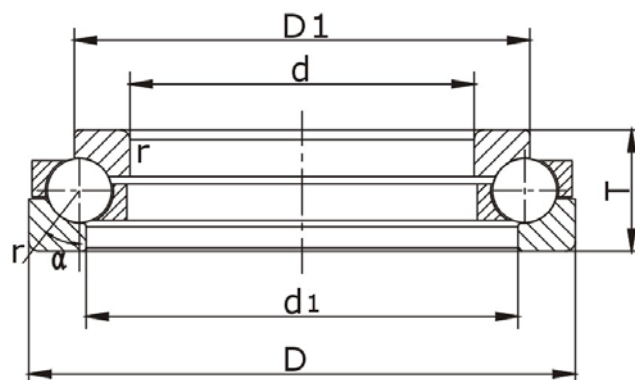


Type 52000
(Type 38000)

Boundary dimensions							Basic load ratings		Designations		Mass	Limiting speeds	
mm							kN					r/min	
d	d ₁	D	T	a	r _{min}	r _{1min}	Ca	Coa	Current	Original	kg	Grease	Oil
865	940	1030	110	28	2.1	1.1	796	4272	527/940	389/940	135	280	400
845	950.8	1030	120	28	2.1	1.1	796	4272	527/950.8	387/950	144	260	370
1070	1181	1280	145	35	2.5	1.1	1192	7680	527/1181	389/1181	243	150	220
1420	1520	1720	270	61	7.5	7.5	2616	20520	527/1520	387/1520	693	—	—

Single-direction angular contact thrust ball bearings

Single-direction angular contact thrust ball bearings



Boundary dimensions						Basic load ratings		Designations		Mass	Contact angle	Limiting speeds	
mm						kN						r/min	
d	d ₁	D	D ₁	T	r _{min}	Ca	Coa	Current	Original	kg	α	Grease	Oil
420	430	500	490	48	2	260	1440	569184	9168184	15.9	60°	830	1100
	462	580	538	73	5	330	2010	567284	7168284	51	45°	700	980
440	458	540	522	60	2.1	380	1980	569188	9168188	25.5	45°	660	950
500	530	600	570	60	2.1	322	1965	5691/500	91681/500	25.3	60°	660	950
530	590	710	650	109	5	695	4320	5692/530	91682/530	93.9	60°	350	500
600	635	710	675	67	3	380	2484	5691/600	91681/600	37.6	60°	510	720
620	665	780	735	102	3.5	776	3588	5617/620	1687/620	95.2	45°	340	490
650	720	880	800	140	6	1105	7692	5617/650	1687/650	194	60°	260	370
670	740	900	830	140	6	1260	6084	5692/670	91682/670	206	45°	250	360
750	780	900	870	90	4	587	4620	5691/750	91681/750	94.4	60°	340	480
800	840	950	910	120	4	850	6310	5611/800	1681/800	140	60°	200	240
	870	1060	990	155	7.5	1145	8868	5692/800	91682/800	293	60°	180	250
810	880	1030	960	110	7.5	780	4080	5617/810	1687/810	176	45°	280	400
950	1040	1250	1160	180	7.5	1500	9168	5691/950	91682/950	432	45°	120	170
1000	1040	1180	1140	109	5	1076	6516	5691/1000	91681/1000	177	45°	250	360
1120	1170	1320	1270	122	5	1018	10272	5691/1120	91681/1120	241	60°	180	260
1600	1660	1760	1700	90	6	682	8052	5617/1600	1687/1600	248	60°	210	300

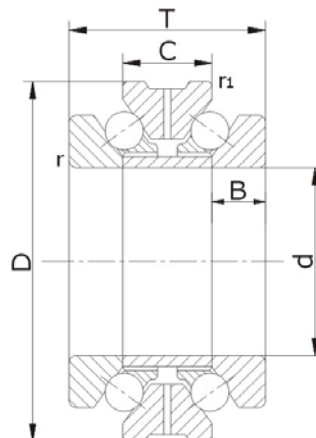
Double-direction angular contact thrust ball bearings

Double-direction angular contact thrust ball bearings are high precision bearings which are specially designed for spindles of machine tools. They are able to carry axial loads in two directions, and they have more balls with small diameters. The centrifugal influence can be reduced as their 60° contact angle, so more suitable for high speed application.

It can carry axial loads that dimension series 2344 and 2349 double-direction angular contact thrust ball bearings fit with dimension series NN30 and NU49 double-row cylindrical roller bearings.

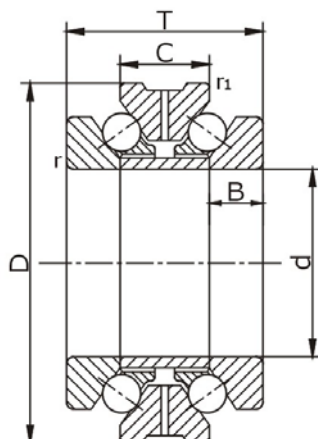
Double-direction angular contact thrust ball bearings with class SP whose running accuracy is P4 and dimension accuracy is P5 can produced by us.

Double-direction angular contact thrust ball bearings



Boundary dimensions							Basic load ratings		Designations	Contact angle	Limiting speeds	
mm							k N				r/min	
d	D	T	C	B	r _{min}	r _{1min}	Ca	Coa		kg	Grease	Oil
140	190	60	30	15	1.5	1	91.5	365	234928	4.2	2000	2800
	210	84	42	21	2.1	0.6	145	525	234428	8.75	1800	2600
150	210	72	36	18	2	1	116	465	234930	6.6	1800	2400
	225	90	45	22.5	2.1	0.6	172	620	234430	10.7	1700	2400
160	220	72	36	18	2	1	118	490	234932	7.0	1700	2400
	240	96	48	24	2.1	0.6	185	680	234432	13	1600	2200
170	230	72	36	18	2	1	120	520	234934	7.35	1600	2200
	260	108	54	27	2.1	0.6	218	810	234434	17.7	1500	2000
180	250	84	42	21	2	1	158	655	234936	10.7	1500	2000
	280	120	60	30	2.1	0.6	281	1020	234436	23.4	1400	1900
190	260	84	42	21	2	1	161	695	234938	11	1400	2000
	290	120	60	30	2.1	0.6	285	1060	234438	24.4	1300	1800
200	280	96	48	24	2	1	204	855	234940	15.7	1300	1800
	310	132	66	33	2.1	0.6	315	1180	234440	31.5	1200	1700
220	300	96	48	24	2	1	210	930	234944	17	1200	1700
	340	144	72	36	3	1	360	1390	234444	41	1100	1500
240	320	96	48	24	2	1	213	980	234948	18.3	1100	1500
	360	144	72	36	3	1	360	1450	234448	44	1000	1400

Double-direction angular contact thrust ball bearings



Boundary dimensions							Basic load ratings		Designations	Contact angle	Limiting speeds	
mm							kN				r/min	Grease
d	D	T	C	B	r _{min}	r _{1min}	Ca	Coa		kg		
260	360	120	60	30	2	1	315	1390	234952	30	1000	1400
	400	164	82	41	3	1.5	440	1890	234452	64.5	900	1300
280	380	120	60	30	2	1	320	1470	234956	33.5	900	1300
	420	164	82	41	3	1.5	440	1960	234456	68	850	1200
300	420	144	72	36	3	1	395	1810	234960	53	850	1200
320	440	144	72	36	3	1	405	1920	234964	55.5	800	1100
340	460	144	72	36	3	1.1	415	2020	234968	58.5	750	1000
360	480	144	72	36	3	1.1	420	2130	234972	61.5	710	950
380	520	164	82	41	4	1.5	485	2560	234976	87.5	630	900
400	540	164	82	41	4	1.5	495	2700	234980	91.5	600	850

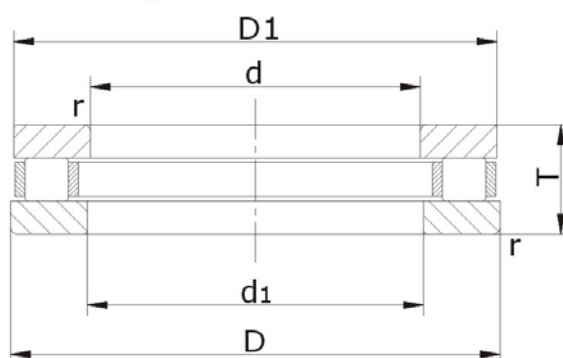
Cylindrical roller thrust bearings

Cylindrical roller thrust bearings are separable. They only carry axial loads in one direction and slight shock loads, but their loading capacity is much higher than thrust ball bearings with same dimensions. They can limit axial displacement of shafts or housings in one direction, so can be as axial locating bearings in one direction. The slippage will be formed on the raceways because of the linear velocity differences of two ends of rollers while rolling, so the limiting speed of these bearings is lower than thrust ball bearings, and they are usually applied to low speed applications.

Metal machined solid cages are used for cylindrical roller thrust bearings which are standard design, but other cages also can be provided according to customers.

Cylindrical roller thrust bearings mainly used in heavy machine tools, large power gear boxes for ships, oil rigs, vertical machines, etc.

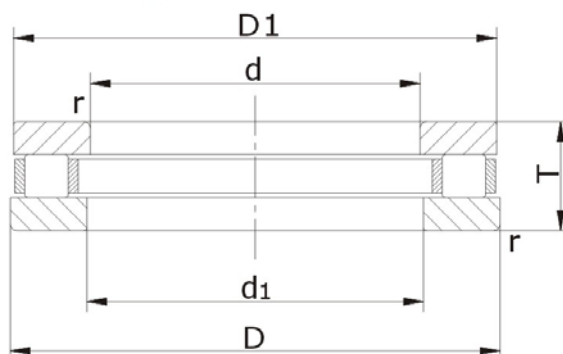
Cylindrical roller thrust bearings



Type 80000
(Type 9000)

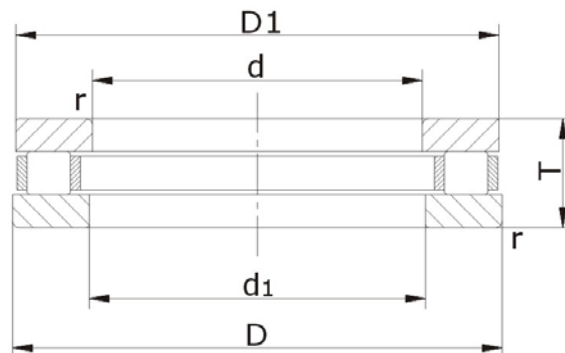
Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	d _{1min}	D	D _{1max}	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
180	184	280	275	54	3	803	3717	81836	9836	13.4	680	900
200	203	250	247	37	1.1	278	1326	81140	9140	4.82	530	700
220	223	270	267	37	1.1	300	1530	81144	9144	4.50	500	670
	224	300	297	63	2	675	3015	81244	9244	13	360	480
	225	420	420	112	6	208	10080	89444	9009444	82	240	340
240	243	300	297	45	1.5	427	2205	81148	9148	7.25	430	560
	244	340	335	78	2.1	990	4410	81248	9248	22	300	400
	245	440	435	122	6	2160	10800	89448	9009448	88	280	380
260	263	320	317	45	1.5	440	2340	81152	9152	7.85	400	530
	264	360	355	79	2.1	1026	4770	81252	9252	24	280	380
	265	480	480	132	6	2560	12870	89452	9009452	114	200	300
280	283	350	347	53	1.5	6120	3195	81156	9156	10.5	360	480
	284	380	375	80	2	1044	4950	81256	9256	26	260	360
	285	520	520	145	5	3015	15570	89456	9009456	142	240	340
300	304	380	376	62	2	7650	3960	81160	9160	16.5	320	430

Cylindrical roller thrust bearings

Type 80000
(Type 9000)

Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	d _{1min}	D	D _{1max}	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
300	304	420	415	95	3	1377	6480	81260	9260	40.5	220	320
	305	540	540	145	6	3105	16200	89460	9009460	153	200	320
320	324	400	396	63	2	792	4185	81164	9164	18	300	400
	325	440	435	95	3	1400	6750	81264	9264	42.5	200	300
340	344	420	416	64	2	810	4410	81168	9168	19.5	280	380
	345	460	455	96	3	1467	7200	81268	9268	47	200	300
360	363	440	437	48	2	612	3735	89172	9009172	15.5	300	400
	364	440	436	65	2	810	4410	81172	9172	19.5	280	380
	365	500	495	110	4	1940	93600	81272	9272	65.5	180	260
380	383	460	457	48	2	639	3960	89176	9009176	16.5	300	400
	384	460	456	65	2	837	4770	81176	9176	22	260	360
	385	520	515	112	4	1980	9720	81276	9276	70	180	260
400	403	480	477	48	2	661	4185	89180	9009180	17.5	300	400
	404	480	476	65	2	868	5040	81180	9180	23	260	360
	405	540	535	112	4	2010	10080	81280	9280	73	170	240
420	423	500	497	48	2	688	4410	89184	9009184	18	280	380
	424	500	495	65	2	882	5265	81184	9184	24	240	340
	425	580	575	130	5	2505	12600	81284	9284	95.5	160	220
440	443	540	537	60	2.1	936	5760	89188	9009188	30	220	320
	444	540	535	80	2.1	1430	8000	81188	9188	39.5	200	300
	445	600	595	130	5	2900	14600	81288	9288	110	160	220
460	463	560	557	60	2.1	972	6030	89192	9009192	31.5	220	320
	464	560	555	80	2.1	1314	7650	81192	9192	41	200	300
	465	620	615	130	5	2430	12060	81292	9292	118	150	200
480	483	580	577	60	2.1	990	6255	89196	9009196	32.5	220	320
	484	580	575	80	2.1	1310	7785	81196	9196	43	190	280
	485	650	645	135	5	3015	15300	81296	9296	128	150	200
500	503	600	597	60	2.1	1098	7335	891500	90091500	34	200	300
	505	600	595	80	2.1	1400	8370	811500	91500	44	190	280
	505	670	665	135	5	3400	17200	812500	92500	133	140	190
530	532	710	708	82	5	2280	17840	872/530	75492/530	96.6	220	290
	534	640	636	67	3	1233	7920	891/530	90091/530	44	190	280
	535	640	635	85	3	1557	9540	811/530	91/530	55.5	180	260
	535	710	705	140	5	3285	16740	812/530	92/530	154	130	180
560	564	670	666	67	3	1230	8235	891/560	90091/560	46.5	190	280
	565	670	665	85	3	1584	9990	811/560	91/560	58	180	260
	565	750	745	150	5	3900	20800	812/560	92/560	198	120	170

Cylindrical roller thrust bearings

Type 80000
(Type 9000)

Boundary dimensions						Basic load ratings		Designations		Mass	Limiting speeds	
mm						kN					r/min	
d	d _{1min}	D	D _{1max}	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
600	602	860	860	125	6	3870	12980	817/600	5497/600	264	110	160
	604	710	706	67	3	1280	8685	891/600	90091/600	49.5	180	260
	605	710	705	85	3	1620	10400	811/600	91/600	62	170	240
	605	800	795	160	5	3960	21600	812/600	92/600	240	110	160
630	634	750	746	73	3	1467	10080	891/630	90091/630	62	170	240
	634	750	746	95	3	2160	13700	811/630	91/630	80	160	220
	638	850	842	175	6	4320	23400	812/630	92/630	295	95	140
670	672	900	900	103	6	3530	26503	872/670	75492/670	198	160	200
	675	800	795	78	4	1800	12060	891/670	90091/670	75.5	160	220
	675	800	795	105	4	2550	16300	811/670	91/670	110	150	200
	678	900	892	180	6	5130	27450	812/670	92/670	335	95	140
710	714	850	848	63	4	1440	13657	871/710	75491/710	79	240	300
	715	850	845	112	4	2610	16470	811/710	91/710	155	140	190
	718	950	942	190	6	5265	28800	812/710	92/710	395	90	130
800	805	950	945	90	4	2250	16200	891/800	90091/800	120	140	190
	805	950	945	120	4	3105	19800	811/800	91/800	165	120	170
	810	1060	1050	205	7.5	6615	36450	812/800	92/800	515	80	110
850	855	1000	995	67	4	1864	17480	871/850	75491/850	97.5	200	260
900	902	1180	1180	125	7.5	5300	50459	872/900	75492/900	386	100	130
	905	1060	1055	95	5	2745	19800	891/900	90091/900	150	120	170
	910	1180	1170	220	7.5	7650	44100	812/900	92/900	665	75	100
1060	1065	1250	1245	115	5	3730	27900	891/1060	90091/1060	260	90	130
	1066	1250	1244	150	5	4770	32850	811/1060	91/1060	225	90	130
	1065	1400	1400	155	9.5	8950	79388	872/1060	75492/1060	689	87	110
	1072	1400	1388	265	9.5	1080	63900	812/1060	92/1060	1150	80	110
1120	1125	1320	1315	122	5	4410	32850	891/1120	90091/1120	305	–	–
	1126	1320	1314	160	5	5400	37350	811/1120	91/1120	410	–	–
1200	1205	1660	1655	300	6	18720	114300	BGSB358235	–	2140	–	–
1280	1284	1400	1396	60	2.5	1530	17100	BGSB634152A	–	102	–	–

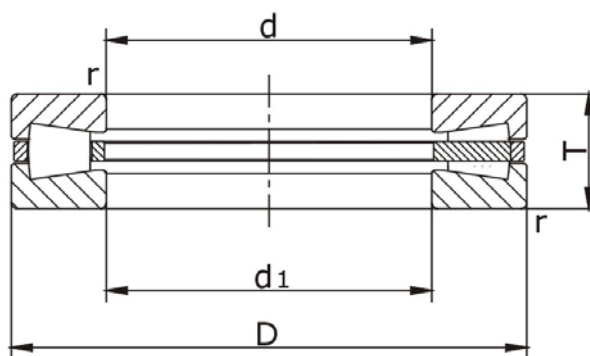
Tapered roller thrust bearings

Tapered roller thrust bearings can only carry axial loads and limit axial displacement in one direction, so they can be used as axial locating bearings in one direction. Comparing with cylindrical roller thrust bearings, their loading capacity is higher, relative slippage and limiting speed are lower.

Steel or brass solid cages are used in tapered roller thrust bearings.

Tapered roller thrust bearings are widely used in construction machinery, automobiles, generating equipment, etc.

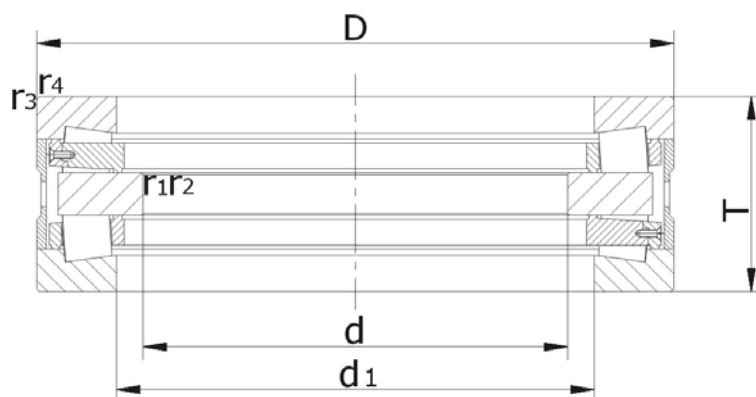
Single-direction tapered roller thrust bearings



Type 90000
(Type 19000)

Boundary dimensions					Basic load ratings		Designations		Mass	Limiting speeds	
mm					kN					r/min	
d	d _{1min}	D	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
200	200.3	400	122	5	1720	7226	99440	9019440	75	200	300
210	210.3	460	122	7.5	2870	14450	91742	19742	107	290	390
	210.3	460	150	7.5	2870	14450	91742DS	219742	134	290	390
240	240.3	440	122	6	2320	9480	99448	9019448	100	180	260
260	260.3	480	132	6	2558	11360	99452	9019452	111	160	220
270	270.3	550	130	6	4080	20940	91754	19954	164	240	330
280	280.3	520	145	6	2950	13350	99456	9019456	143	140	190
320	320.4	580	155	7.5	3740	17537	99464	9019464	185	110	160
380	380.4	670	175	7.5	4710	22870	99476	9019476	274	85	120

Double-direction tapered roller thrust bearings



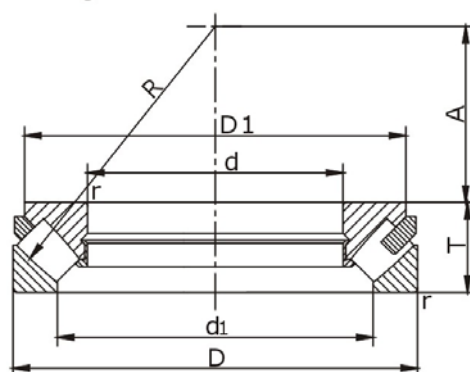
Boundary dimensions						Basic load ratings		Designations		Mass
mm						kN				
d	d _{1min}	D	T	r _{1, 2}	r _{3, 4}	Ca	Coa	Current	Original	kg
170	184	240	84	0.6	2	380	1390	350980C	419234	12.5
180	196	280	90	1	2	580	2900	353162	419736	21
220	236	300	96	0.6	2	450	1800	351019C	419244	19.5
250	275	380	100	0.6	2	982	4850	353005	419950	45
260	285	360	92	1	2	716	5600	350981C	419952	26.6
270	310	450	180	2	5	1870	6400	351164C	419954	111
320	355	440	108	1.1	3	990	4700	353102	419264	48
350	390	490	130	1.1	3	1220	5730	351100C	419970	73.5
440	490	645	167	3	4	1980	10800	353152	419788	190
450	490	645	155	4	4	1980	10800	350916D	419990	170
470	535	720	200	2	4	3450	1800	353151	419994	305
530	575	710	218	2	3	2540	11400	351475C	4199/530	245

Spherical roller thrust bearings

Spherical roller thrust bearings can carry combined loads which is main in axial and axial loads in one direction. Their loading capacity and limiting speed are high, and they can align by themselves when the precision of shafts or housings is not high or there is installation error.

Spherical roller thrust bearings usually adopt steel pressed cages or machined solid cages. They are mainly used in oil rigs, screw propeller shafts of sea-going freighters, helldrivers, gantry cranes, turnplates of large tower cranes, turnplates of sounding borers, etc.

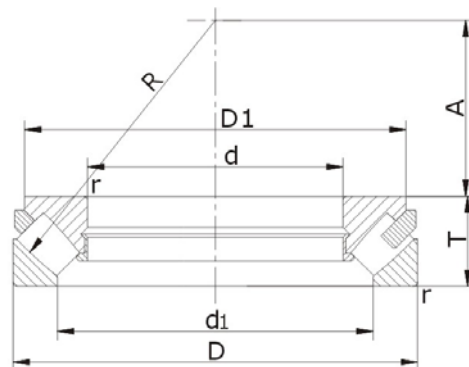
Spherical roller thrust bearings



Type 290000
(Type 390000)

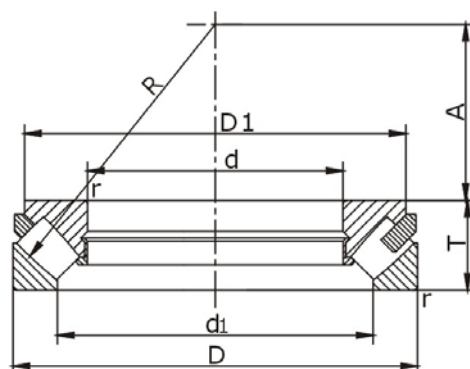
Boundary dimensions							Basic load ratings		Designations		Mass	Limiting speeds	
mm							kN					r/min	
d	d _{1min}	D	D _{1max}	A	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
150	178	215	208	82	39	1.5	367	1440	29230	9039230	4.7	—	1800
	194	250	240	87	60	2.1	777	2560	29330	9039330	11	950	1400
	214	300	285	92	90	4	1449	4590	29430	9039430	28	800	1100
160	208	270	260	92	67	3	910	3105	29332	9039332	14.5	850	1200
	229	320	306	99	95	5	1610	5040	29432	9039432	33.5	750	1000
170	216	280	270	96	67	3	945	3200	29334	9039334	15	850	1200
	243	340	324	104	103	5	1820	5900	29434	9039434	44.5	700	950
180	208	250	243	92	42	1.5	445	1830	29236	9039236	6.4	—	1600
	232	300	290	103	73	3	1116	3870	29336	9039336	19.5	800	1100
	255	360	342	110	109	5	2025	6600	29436	9039436	52.5	670	900
190	246	320	308	110	78	4	1260	4275	29338	9039338	23.5	750	1000
	271	380	360	117	115	5	2230	7200	29438	9039438	60.5	630	850
200	236	280	271	108	48	2	590	2385	29240	9039240	9.3	—	1400
	261	340	325	116	85	4	1450	4950	29340	9039340	29.5	700	950
	286	400	380	122	122	5	2485	8100	29440	9039440	72	600	800
220	254	300	292	117	48	2	6210	2700	29244	9039244	10	—	1300
	280	360	345	125	85	4	1560	5670	29344	9039344	33.5	700	950
	308	420	400	132	122	6	2590	8680	29444	9039444	75	560	750

Spherical roller thrust bearings

Type 290000
(Type 39000)

Boundary dimensions							Basic load ratings		Designations		Mass	Limiting speeds	
mm							kN					r/min	
d	d _{1min}	D	D _{1max}	A	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
240	283	340	330	130	60	2.1	720	3100	29248	9039248	16.5	–	1100
	300	380	365	135	85	4	1610	5890	29348	9039348	35.5	670	900
	326	440	420	142	122	6	2690	9180	29448	9039448	80	560	750
260	302	360	350	139	60	2.1	735	3280	29252	9039252	18.5	–	1100
	329	420	405	148	95	5	1990	7470	29352	9039352	49	600	800
	357	480	460	154	132	6	3160	11610	29452	9039452	105	500	670
280	323	380	370	150	60	2.1	776	3600	29256	9039256	19.5	–	1000
	348	440	423	158	95	5	1970	9780	29356	9039356	53	600	800
	387	520	495	166	145	6	3880	13220	29456	9039456	135	480	630
300	353	420	405	162	73	3	9630	4320	29260	9039260	30.5	–	900
	379	480	460	168	109	5	24030	9540	29360	9039360	75	530	700
	402	540	515	175	145	6	38800	14900	29460	9039460	140	450	600
320	372	440	430	172	73	3	9990	4590	29264	9039264	33	–	850
	399	500	482	180	109	5	25920	10080	29364	9039364	78	500	670
	435	580	555	191	155	7.5	44550	17100	29464	9039464	175	430	560
340	395	460	445	183	73	3	1010	4860	29268	9039268	33.5	–	850
	428	540	520	192	122	5	2440	9900	29368	9039368	105	–	600
	462	620	560	201	170	7.5	5170	20160	29468	9039468	220	380	500
360	423	500	485	194	85	4	1310	6120	29272	9039272	52	–	750
	448	560	540	202	122	5	2480	10400	29372	9039372	110	–	600
	480	640	610	210	170	7.5	4815	19080	29472	9039472	230	–	500
380	441	520	505	202	85	4	1420	6880	29276	9039276	53	–	700
	477	600	580	216	132	6	3000	12600	29376	9039376	140	–	530
	504	670	640	230	175	7.5	5280	21600	29476	9039476	260	–	480
400	460	540	526	212	85	4	1450	7200	29280	9039280	55.5	–	700
	494	620	596	225	132	6	3100	13100	29380	9039380	150	–	530
	534	710	680	236	185	7.5	5900	23850	29480	9039480	310	–	450
420	489	580	564	225	95	5	1790	8820	29284	9039284	75.5	–	630
	520	650	626	235	140	6	3360	14400	29384	9039384	170	–	500
	556	730	700	244	185	7.5	6060	24750	29484	9039484	325	–	430
440	508	600	585	235	95	5	1860	9360	29288	9039288	78	–	630
	548	680	655	245	145	6	4040	17370	29388	9039388	180	–	480
	588	780	745	260	206	9.5	7030	28800	29488	9039488	410	–	380
460	530	620	605	245	95	5	1860	9540	29292	9039292	81	–	600
	567	710	685	257	150	6	3880	17100	29392	9039392	215	–	450
	608	800	765	272	206	9.5	7190	30100	29492	9039492	425	–	380
480	556	650	635	259	103	5	2110	10600	29296	9039296	98	–	560
	590	730	705	270	150	6	3930	17600	29396	9039396	220	–	450
	638	850	810	280	224	9.5	8590	35100	29496	9039496	550	–	340

Spherical roller thrust bearings

Type 290000
(Type 390000)

Boundary dimensions							Basic load ratings		Designations		Mass	Limiting speeds	
mm							kN					r/min	
d	d _{1min}	D	D _{1max}	A	T	r _{min}	Ca	Coa	Current	Original	kg	Grease	Oil
500	574	670	654	268	103	5	2150	11250	292/500	90392/500	100	–	560
	611	750	725	280	150	6	4040	18360	293/500	90393/500	235	–	430
	661	870	830	290	224	9.5	8430	36000	294/500	90394/500	560	–	340
530	612	710	692	288	109	5	2800	13770	292/530	90392/530	115	–	530
	648	800	772	295	160	7.5	4700	21200	293/530	90393/530	270	–	400
	700	920	880	309	236	9.5	9450	39600	294/530	90394/530	650	–	320
560	644	750	732	302	115	5	2690	14400	292/560	90392/560	140	–	480
	740	980	940	328	250	12	10800	45900	294/560	90394/560	810	–	300
600	688	800	780	321	122	5	33120	16740	292/600	90392/600	170	–	450
	731	900	870	335	180	7.5	6770	31000	293/600	90393/600	405	–	340
	785	1030	990	347	258	12	1180	50400	294/600	90394/600	1100	–	280
630	728	850	830	338	132	6	4290	21240	292/630	90392/630	210	–	400
	767	950	920	345	190	9.5	7600	34200	293/630	90393/630	485	–	320
	830	1090	1040	365	280	12	12960	55800	294/630	90394/630	1100	–	260
670	773	900	880	364	140	6	3780	20520	292/670	90392/670	255	–	380
	880	1150	1105	387	290	15	13860	61200	294/670	90394/670	1260	–	240
710	864	1060	1028	394	212	9.5	8955	40950	293/710	90393/710	660	–	–
	925	1220	1165	415	308	15	15840	68850	294/710	90394/710	1500	–	–
750	861	1000	976	406	150	6	5490	27900	292/750	90392/750	325	–	–
	910	1120	1086	415	224	9.5	8433	40500	293/750	90393/750	770	–	–
	983	1280	1220	436	315	15	16830	76500	294/750	90394/750	1650	–	–
800	915	1060	1035	426	155	7.5	5900	31050	292/800	90392/800	380	–	–
	965	1180	1146	440	230	9.5	8950	44100	293/800	90393/800	865	–	–
	1040	1360	1310	462	335	15	18180	83700	294/800	90394/800	2025	–	–
850	966	1120	1095	453	160	7.5	6050	32400	292/850	90392/850	425	–	–
	1060	1440	1372	494	354	15	21510	97200	294/850	90394/850	2390	–	–
900	1168	1520	1460	518	372	15	19260	88200	294/900	90394/900	2700	–	–
950	1081	1250	1220	507	180	7.5	7450	40950	292/950	90392/950	600	–	–
	1209	1600	1470	546	390	15	25380	118800	294/950	90394/950	3065	–	–
1060	1208	1400	1370	566	206	9.5	9450	52650	292/1060	90392/1060	860	–	–
	1349	1770	1615	610	426	15	30060	14000	294/1060	90394/1060	4280	–	–
1180	1331	1520	1450	625	206	9.5	9810	57600	292/1180	90392/1180	950	–	–
1250	1474	1800	1685	698	330	12	22320	116100	293/1250	90393/1250	2770	–	–

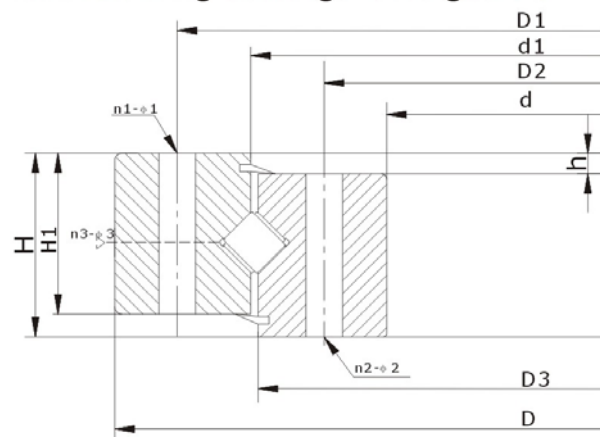
Slewing bearings

Slewing bearings are large-size bearings which can carry higher axial, radial loads and overturning moments at the same time. Slewing bearings generally have mounting holes, internal or external gears, lubricant holes and sealing equipment.

There are various structures of slewing bearings, such as four-point contact ball slewing bearings, double-row angular contact ball slewing bearings, crossed cylindrical roller slewing bearings, crossed tapered roller slewing bearings and three-row cylindrical roller slewing bearings, with gears or no gears. Four-point contact ball slewing bearings possess high static loading capacity; crossed cylindrical roller slewing bearings can carry high dynamic loads; crossed tapered roller slewing bearings have high stiffness and rotation accuracy by preloading.

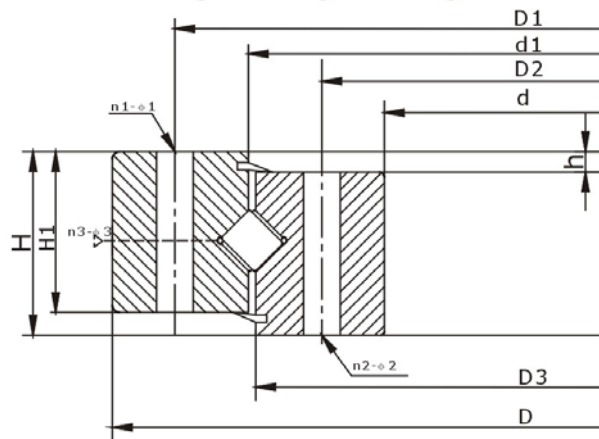
Slewing bearings are widely used in cranes, excavation machines, construction machinery, port cargo handling machinery, large turnplates of high precision radars and missile launchers, etc.

Crossed cylindrical roller slewing bearings (No gears)



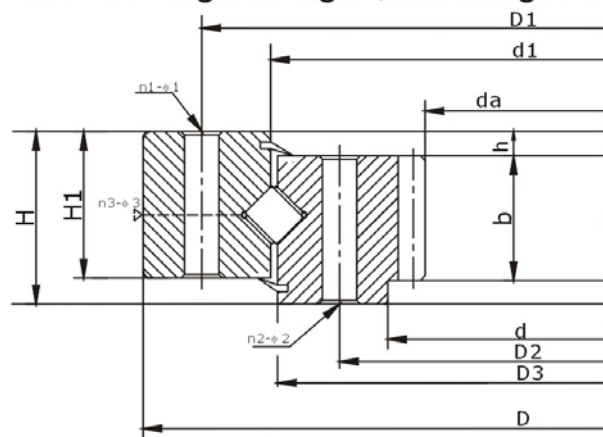
Boundary dimensions			Mount demensions						Structure demensions							Designations	Basic load ratings	Mass
			mm			n ₁	n ₂	mm		mm				n ₃	mm		kN	
d	D	H	D ₁	D ₂	φ 1			φ 2	D ₃	d ₁	H ₁	h	φ 3		Coa		kg	
320	550	85	515	365	12	8	17	18	438	442	75	10	—	—	79764	882	85.6	
600	900	125	848	690	30	29	26	M24	750	754	105	15	3	M10 × 1	797/600G2	2800	246	
700	1000	140	940	770	24	24	M20	22	879	882	130	20	4	M10 × 1	797/700G	2540	370	
845	1150	130	1100	895	24	24	22	22	1024	1030	105	10	6	M6	797/845G2	4010	393	
870	1180	115	1125	920	18	18	28	28	1023	1027	100	15	2	M8 × 1	797/870G	2920	355	
	1180	115	1125	920	18	18	28	28	1023	1027	100	15	2	M10 × 1	797/870K	2320	355	
	1180	115	1125	920	18	18	28	28	1023	1027	100	15	2	M10 × 1	797/870G2K1	3200	356	
1000	1270	100	1220	1050	36	36	19	19	1132	1138	85	15	4	M10 × 1	792/1000G2	3330	303	
	1270	100	1220	1050	36	36	19	19	1132	1138	85	15	3	9	792/1000G2K	3330	303	
1250	1608	148	1512	1297	16	16	25	25	1403	1407	128	26	4	M10 × 1	797/1250G2	5950	743	
	1608	148	1512	1297	16	16	25	25	1403	1407	128	26	4	M10 × 1	797/1250G2K	5950	717	
	1700	155	1650	1330	24	24	26	26	1446	1450	140	10	6	M10 × 1	792/1250G2	6020	1103	

Crossed cylindrical roller slewing bearings (No gears)



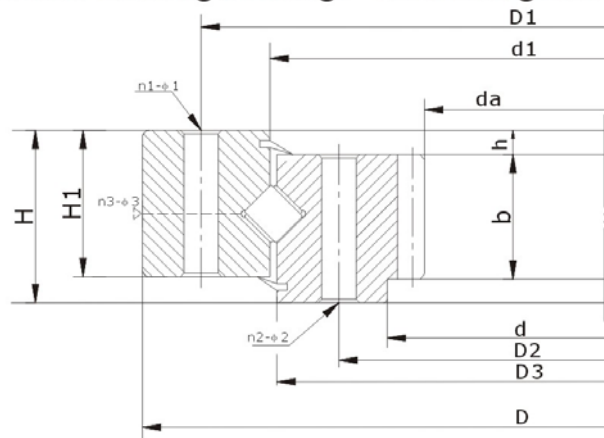
Boundary dimensions			Mount dimensions						Structure dimensions						Designations	Basic load ratings	Mass
			mm		n ₁	n ₂	mm		mm				n ₃	mm			
d	D	H					D ₁	D ₂	φ 1	φ 2	D ₃	d ₁		H ₁		h	
1278	1660	120	1535	1335	18	18	26	26	1428	1432	105	15	4	M10 × 1	797/1278G2K	4270	589
1370	1840	160	1770	1430	30	24	28	28	1598	1602	140	10	4	M10 × 1	797/1370G	9970	1213
1380	1700	145	1650	1440	24	24	27	27	1568	1574	140	5	6	M10 × 1	797/1380G2	4610	746
1600	2140	145	1940	1710	48	48	26	26	1828	1832	135	10	4	M10 × 1	797/1600G	8960	1357
1776	2210	150	2105	1840	36	36	26	26	1968	1972	135	15	4	M10 × 1	797/1776G2	11130	1244
1860	2320	151	2245	1980	42	42	33	33	2113	2117	150	10	6	M10 × 1	797/1860G2	8900	1772
2190	2860	300	2800	2270	36	36	32	32	2530	2550	260	40	12	8	797/2190G	30350	4797
2500	2980	180	2910	2590	48	48	33	33	2739	2743	170	10	6	M16 × 1.5	797/2500G2	17600	2913
2800	3310	190	3220	2890	60	60	39	39	3050	3060	165	25	2	M10 × 1	792/2800G	21170	2864
2922	3376	134	3286	3014	56	56	45	45	3147.5	3152.5	122	12	8	M10 × 1	110.50.3150.**	13800	2150
3322	3776	134	3686	3414	56	56	45	45	3547.5	3552.5	122	12	8	M10 × 1	110.50.3550.**	15700	2470
3772	4226	134	4136	3864	60	60	45	45	3997.5	4002.5	122	12	10	M10 × 1	110.50.4000.**	17600	2800
4272	4726	134	4636	4364	60	60	45	45	4497.5	4502.5	122	12	10	M10 × 1	110.50.4500.**	19800	3100

Crossed cylindrical roller slewing bearings (Internal gears)



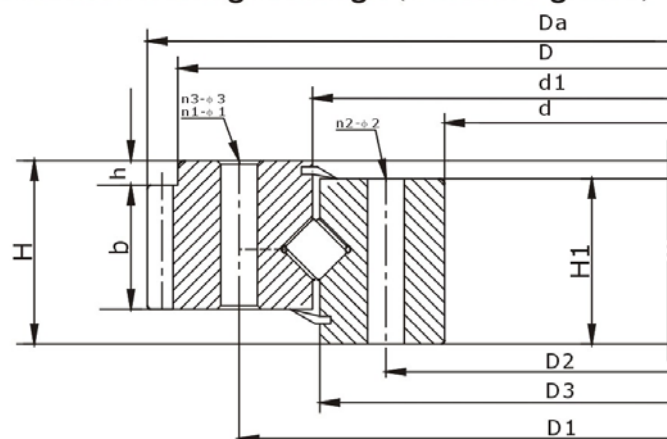
Boundary dimensions			Mount demensions						Structure dimensions							Gear constants					Designations	Basic load ratings	Mass
mm			mm		n ₁	n ₂	mm		mm				n ₃	mm	m	mm	Z	mm	x	kN			
d	D	H	D ₁	D ₂			φ 1	φ 2	D ₃	d ₁	H ₁	h		φ 3		da		b		Coa		kg	
398	602	75	566	434	20	20	18	18	499	501	65	10	4	M10×1	5	365	74	60	0.5	113.25.500.**		1040	
695	920	90	870	735	30	30	18	18	800	804	76	4	3	10	7	658	96	65	0	2797/695G2	1610	175	
760	1000	95	956	800	24	24	20	20	878	882	82	15	4	M10×1	8	718.18	91	70	0.35	2797/760G2	2370	206	
778	1022	82	978	822	30	30	22	22	898.5	901.5	72	10	6	M10×1	8	736	93	65	0.5	113.28.900.**	2090	190	
870	1180	115	1125	920	18	18	26	26	1023	1027	100	15	2	M8×1	8	828.8	105	90	0.3	2797/870G2	2920	374	
875	1170	95	1120	930	24	24	22	22	1018	1022	82	15	4	M10×1	8	830.1	105	70	0.35	2797/875G2	2760	297	

Crossed cylindrical roller slewing bearings (Internal gears)



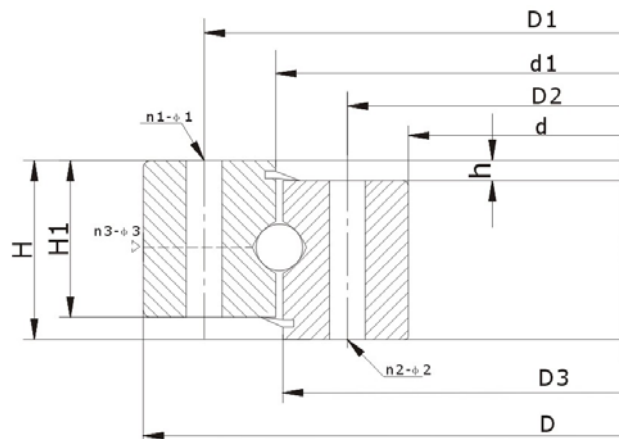
Boundary dimensions			Mount demensions						Structure dimensions							Gear constants						Designations	Basic load ratings	Mass
			mm		n ₁	n ₂	mm		mm				n ₃	mm	m	mm	Z	mm	x	kN				
d	D	H	D ₁	D ₂			φ 1	φ 2	D ₃	d ₁	H ₁	h		φ 3		da		b		Coa	kg			
955	1200	90	1160	1000	36	18	18	18	1088	1092	76	10	4	M8 x 1	8	908.8	115	72	0.3	2797/955G	2540	245		
	1200	90	1160	1000	36	18	18	18	1088	1092	76	10	4	M8 x 1	8	908.8	115	72	0.3	2797/955G2	2540	245		
1010	1200	90	1160	1041	36	20	22	M20	1088	1092	76	10	2	M8 x 1	10	962	97	72	0.6	2797/1010G2	2540	199		
	1200	90	1160	1041	36	20	22	M20	1088	1092	76	10	2	M8 x 1	10	962	97	72	0.6	2797/1010GK	2540	199		
1278	1595	120	1535	1335	36	36	26	26	1428	1432	106	14	6	M10 x 1	12	1221.14	103	90	0.35	2797/1278G2	3980	585		
1400	1715	110	1660	1460	40	40	26	M24	1558	1562	95	15	4	M10 x 1	10	1330	135	90	0	2792/1400G2K	5970	587		
2000	2420	160	2350	2070	48	48	33	M30	2207	2213	140	20	6	M10 x 1	14	1913.5	138	120	0.3	2792/2000G2	10840	1607		
2240	2670	160	2600	2320	54	54	35	M36	2457	2463	140	20	6	M12 x 1.25	16	2154.5	136	120	0.3	2792/2240G	14410	1798		
2300	2800	208	2710	2390	42	48	38	M36	2535	2545	180	18	6	M10 x 1	20	2162.75	110	175	0	3-940G	17430	2756		
2680	3325	300	3242	2754	32	32	33	33	2996	3000	270	30	4	M16 x 1.5	16	2592	164	180	0	2797/2680G	3587	6320		
	3325	300	3242	2754	48	48	33	33	2996	3000	270	30	4	M16 x 1.5	16	2592	164	180	0	2797/2680GY	3587	6320		
	3325	300	3247	2754	32	32	33	33	2996	3000	270	30	4	M16 x 1.5	16	2592	164	180	0	2797/2680GK	3035	6641		
2922	3376	134	3286	3014	56	56	45	45	3147.5	3152.5	122	12	8	M10 x 1	20	2820	142	110	0.5	113.50.3150.**	13800	2150		
	3376	134	3286	3014	56	56	45	45	3147.5	3152.5	122	12	8	M10 x 1	22	2816	129	110	0.5	114.50.3150.**	13800	2150		
3322	3776	134	3686	3414	56	56	45	45	3547.5	3552.5	122	12	8	M10 x 1	20	3220	162	110	0.5	113.50.3550.**	15700	2470		
	3776	134	3686	3414	56	56	45	45	3547.5	3552.5	122	12	8	M10 x 1	22	3212	147	110	0.5	114.50.3550.**	15700	2470		
	3850	200	3720	3420	60	60	45	45	3568	3572	180	20	12	Z1/4in	22	3208.388	147	158	0.35	3-943G2	18060	4520		
3772	4226	134	4136	3864	60	60	45	45	3997.5	4002.5	122	12	10	M10 x 1	22	3652	167	110	0.5	113.50.4000.**	17600	2800		
	4226	134	4136	3864	60	60	45	45	3997.5	4002.5	122	12	10	M10 x 1	25	3650	147	110	0.5	114.50.4000.**	17600	2800		
4272	4726	134	4636	4364	60	60	45	45	4497.5	4502.5	122	12	10	M10 x 1	22	4158	190	110	0.5	113.50.4500.**	19800	3100		
	4726	134	4636	4364	60	60	45	45	4497.5	4502.5	122	12	10	M10 x 1	25	4150	167	110	0.5	114.50.4500.**	19800	3100		

Crossed cylindrical roller slewing bearings (External gears)



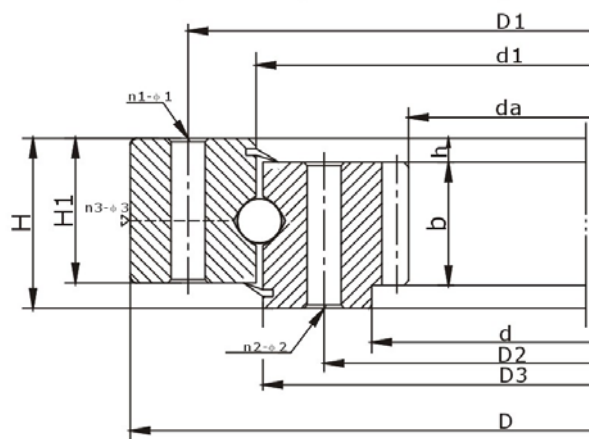
Boundary dimensions			Mount demensions						Structure dimensions							Gear constants						Designations	Basic load ratings		Mass
			mm			n ₁	n ₂	mm		mm				n ₃	mm	m	mm	Z	mm	x	kN				
d	D	H	D ₁	D ₂	φ 1			φ 2	D ₃	d ₁	H ₁	h	φ 3		D _a		b		Coa		kg				
398	602	75	566	434	20	20	18	18	499	501	65	10	4	M10×1	5	630	123	60	0.5	111.25.500.**	1040	80			
	602	75	566	434	20	20	18	18	499	501	65	10	4	M10×1	6	630	120	60	0.5	112.25.500.**	1040	80			
458	662	75	626	494	20	20	18	18	558.5	561.5	65	10	4	M10×1	5	690	135	60	0.5	111.25.560.**	1160	90			
	662	75	626	494	20	20	18	18	558.5	561.5	65	10	4	M10×1	6	690	112	60	0.5	112.25.560.**	1160	90			
528	732	75	696	564	24	24	18	18	628.5	631.5	65	10	4	M10×1	6	774	126	60	0.5	111.25.630.**	1300	100			
	732	75	696	564	24	24	18	18	628.5	631.5	65	10	4	M10×1	8	776	94	60	0.5	112.25.630.**	1300	100			
608	812	75	776	644	24	24	18	18	708.5	711.5	65	10	4	M10×1	6	852	139	60	0.5	111.25.710.**	1490	110			
	812	75	776	644	24	24	18	18	708.5	711.5	65	10	4	M10×1	8	856	104	60	0.5	112.25.710.**	1490	110			
678	922	82	878	722	30	30	22	22	798.5	801.5	72	10	6	M10×1	8	968	118	65	0.5	111.28.800.**	1850	170			
778	1022	82	978	822	30	30	22	22	898.5	901.5	72	10	6	M10×1	8	1064	130	65	0.5	111.28.900.**	2090	190			
878	1122	82	1078	922	36	36	22	22	998.5	1001.5	72	10	6	M10×1	10	1190	116	65	0.5	111.28.1000.**	2330	210			
998	1242	82	1198	1042	36	36	22	22	1118	1122	72	10	6	M10×1	10	1300	127	65	0.5	111.28.1120.**	2620	230			
1110	1390	91	1337	1163	40	40	26	26	1248	1252	81	10	6	M10×1	12	1452	118	75	0.5	111.32.1250.**	3210	350			
1260	1540	91	1487	1313	40	40	26	26	1398	1402	81	10	6	M10×1	12	1608	131	75	0.5	111.32.1400.**	3580	400			
1460	1740	91	1687	1513	45	45	26	26	1598	1602	81	10	8	M10×1	14	1820	127	75	0.5	111.32.1600.**	4120	440			
1660	1940	91	1887	1713	45	45	26	26	1798	1802	81	10	8	M10×1	14	2016	141	75	0.5	111.32.1800.**	4600	500			
1825	2178	112	2110	1891	48	48	33	33	1998	2002	100	12	8	M10×1	16	2272	139	90	0.5	111.40.2000.**	6860	900			
2065	2418	112	2350	2131	48	48	33	33	2237.5	2242.5	100	12	8	M10×1	16	2496	153	90	0.5	111.40.2240.**	7640	1000			
2325	2678	112	2610	2391	56	56	33	33	2497.5	2502.5	100	12	8	M10×1	18	2772	151	90	0.5	111.40.2500.**	7970	876			
2625	2978	112	2910	2691	56	56	33	33	2797.5	2802.5	100	12	8	M10×1	18	3078	168	90	0.5	111.40.2800.**	9600	1250			
2922	3376	134	3286	3014	56	56	45	45	3147.5	3152.5	122	12	8	M10×1	20	3480	171	110	0.5	111.50.3150.**	13800	2150			
	3376	134	3286	3014	56	56	45	45	3147.5	3152.5	122	12	8	M10×1	22	3476	155	110	0.5	112.50.3150.**	13800	2150			
3322	3776	134	3686	3414	56	56	45	45	3547.5	3552.5	122	12	8	M10×1	20	3880	191	110	0.5	111.50.3550.**	15700	2470			
	3776	134	3686	3414	56	56	45	45	3547.5	3552.5	122	12	8	M10×1	22	3894	174	110	0.5	112.50.3550.**	15700	2470			
	3776	134	3686	3414	56	56	45	45	3548	3552	122	12	8	M10×1	20	3880	191	110	0.5	111.52.3550.12	14750	2464			
3772	4226	134	4136	3864	60	60	45	45	3997.5	4002.5	122	12	10	M10×1	22	4334	194	110	0.5	111.50.4000.**	17600	2800			
	4226	134	4136	3864	60	60	45	45	3997.5	4002.5	122	12	10	M10×1	25	4350	171	110	0.5	112.50.4000.**	17600	2800			
4272	4726	134	4636	4364	60	60	45	45	4497.5	4502.5	122	12	10	M10×1	22	4940	217	110	0.5	111.50.4500.**	19800	3100			
	4726	134	4636	4364	60	60	45	45	4497.5	4502.5	122	12	10	M10×1	25	4850	191	110	0.5	112.50.4500.**	19800	3100			

Four-point contact ball slewing bearings (No gears)



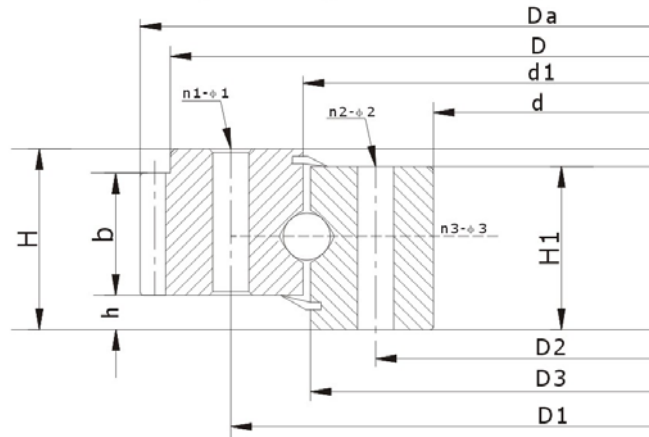
Boundary dimensions			Mount dimensions						Structure dimensions						Basic load ratings		Designations	Mass
			mm		n ₁	n ₂	mm		mm				n ₃	mm				
d	D	H	D ₁	D ₂			φ 1	φ 2	D ₃	d ₁	H ₁	h		φ 3	Coa	kg		
260	480	60	444	296	16	16	14	14	360	380	60	–	–	–	754	116752	55	
460	590	45	570	488	8	12	M10	10	518	542	45	–	–	–	626	176792	35.9	
	590	45	570	488	12	12	10	10	518	542	45	–	–	–	626	176792K	36	
	590	45	570	488	12	8	10	10	526	534	45	–	–	–	944	176792K2M	30.8	
530	780	60	740	560	20	20	17	13	645	665	35	–	–	–	1120	1167/530	103	
560	720	36	690	590	12	12	14	12	638.5	641.5	33	3	–	–	708	1167/560	40.3	
	720	36	690	590	12	32	M12	16	634	646	36	3	–	–	708	1167/560K	39.2	
	720	36	690	590	12	12	14	12	638.5	641.5	36	3	–	–	708	1167/560M	38.1	
700	900	36	860	740	12	12	M16	17	796	804	36	3	–	–	1790	1167/700	60	
760	950	80	915	795	24	24	18	M16	853.5	856.5	71	9	4	M10 × 1	2030	E787/760G2	138	
775	1000	64	948	802	24	12/12	M12	13/M12	878	882	49	15	2	M8 × 1	1960	3–640	112	
800	1050	90	1012	838	30	30	20	20	923	927	76	16	3	M10 × 1	2150	787/800G	192	
850	1120	85	1074	924	12	12	M20	22	995	1010	85	–	–	–	1510	71769/850Y	248	
932	1200	120	1148	984	40	40	26	M24	1064	1068	100	20	4	G1/4in	3490	787/932G2	328	
960	1165	90	1135	1040	36	36	18	M16	1073	1077	78	14	6	M10 × 1	2490	787/960G2	202	
1000	1250	100	1206	1044	12	12	18	M16	1123	1127	90	10	3	M10 × 1	5400	787/1000G2	283	
1260	1509	90	1465	1315	36	36	22	M20	1386	1389	70	14	2	ZG1/8in	3780	787/1260G2	274	
1400	1820	136	1750	1470	24	24	35	35	1608	1612	136	–	4	M10 × 1	6110	71169/1400Y	1114	
	1820	136	1750	1470	24	24	35	35	1608	1612	136	–	4	M10 × 1	10700	71169/1400Y1	1120	
	1780	100	1730	1494	48	48	22	M20	1618	1622	85	15	4	M12 × 1.25	5030	787/1440G2	533	
1628	1927	130	1875	1680	36	36	26	M24	1774	1778	115	15	6	G1/4in	6920	787/1628G2	732	
1700	2000	150	1950	1750	24	24	21	21	1842	1858	130	20	4	M10 × 1	6840	787/1700KM	826	
1825	2178	144	2110	1891	48	48	33	33	1998	2002	132	12	8	M10 × 1	12100	010.60.2000.**	1100	
2065	2418	144	2350	2131	48	48	33	33	2237.5	2242.5	132	12	8	M10 × 1	13500	010.60.2240.**	1250	
2325	2678	144	2610	2391	56	56	33	33	2497.5	2502.5	132	12	8	M10 × 1	15000	010.60.2500.**	1400	
2625	2978	144	2910	2691	56	56	33	33	2797.5	2802.5	132	12	8	M10 × 1	16800	010.60.2800.**	1600	
2922	3376	174	3286	3014	56	56	45	45	3147.5	3152.5	162	12	8	M10 × 1	23800	010.75.3150.**	2800	
3322	3776	174	3686	3414	56	56	45	45	3547.5	3552.5	162	12	8	M10 × 1	26900	010.75.3550.**	3200	
3772	4226	174	4136	3864	60	60	45	45	3997.5	4002.5	162	12	10	M10 × 1	30200	010.75.4000.**	3600	
4272	4726	174	4636	4364	60	60	45	45	4497.5	4502.5	162	12	10	M10 × 1	34100	010.75.4500.**	4000	

Four-point contact ball slewing bearings (Internal gears)



Boundary dimensions			Mount dimensions						Structure dimensions						Gear constants						Designations	Basic load ratings		Mass	
			mm			mm		mm		mm				n ₃	mm		m	mm		Z		mm			x
d	D	H	D ₁	D ₂	n ₁	n ₂	φ 1	φ 2	D ₃	d ₁	H ₁	h	φ 3		da	b									
458	662	80	626	494	20	20	18	18	558.5	561.5	70	10	4	M10×1	5	425	86	60	+0.5	013.30.560.**	1440	94			
528	732	80	696	564	24	24	18	18	628.5	631.5	70	10	4	M10×1	6	492	83	60	+0.5	013.30.630.**	1870	110			
608	812	80	776	644	24	24	18	18	708.5	711.5	70	10	4	M10×1	6	570	86	60	+0.5	013.30.710.**	2120	120			
678	922	100	878	722	30	30	22	22	798.5	801.5	90	10	6	M10×1	8	632	80	80	+0.5	013.40.800.12	3130	256			
778	1022	100	978	822	30	30	22	22	898.5	901.5	90	10	6	M10×1	8	736	93	80	+0.5	013.40.900.**	3550	240			
—	1200	56	1170	1044	16	24	17.5	10.5	1088	1092	46	12	4	M8×1	6	985	166	44	0	3-646G2	2100	84.1			
1210	1530	122	1480	1260	40	40	26	26	1368	1372	108	12	4	M10×1	10	1164	118	80	0	2787/1210G2	7130	540			
1400	1715	110	1660	1460	24	24	M20	M20	1558	1562	95	15	2	M12×1.25	6	1364.5	230	77	-0.35	2787/1400GK	3650	545			
	1715	110	1660	1460	24	24	23	23	1558	1562	95	15	2	M10×1	6	1364.5	230	77	-0.35	2787/1400GK1	3650	545			
1440	1780	100	1730	1494	48	48	22	M20	1618	1622	85	10	4	M12×1.25	8	1400	177	50	0	2787/1440	5030	554			
	1780	100	1730	1494	48	48	22	M20	1618	1622	85	10	4	M12×1.25	8	1400	177	50	0	2787/1440G	5780	554			
	1780	104	1730	1494	48	48	22	M20	1613	1627	87	10	6	M12×1.25	8	1400	177	52	0	2768/1440G	5780	555			
1525	1875	140	1815	1585	42	42	29	29	1698	1702	122	17	4	M12×1.25	16	1452.33	92	110	+0.35	2787/1525G	8730	1019			
1790	2050	112	2006	1847	36	72	22	22	1925	1926	92	12	18	M10×1	16	1712	108	100	-0.5	2788/1712	6040	663			
2230	2488	160	2445	2275	48	48	M20	M22	2337.5	2342.5	135	5	8	ZG1/4in	18	2144.25	121	145	0	2789/2230	12470	1114			
2240	2500	140	2454	2280	56	56	M24	M24	2357.5	2362.5	115	5	8	M14×1.5	18	2145.6	121	125	0	2789/2240G2	8560	1161			
2325	2678	144	2610	2391	56	56	33	33	2497.5	2502.5	132	12	8	M10×1	18	2232	125	120	+0.5	013.60.2500.**	15000	1400			
	2678	144	2610	2391	56	56	33	33	2497.5	2502.5	132	12	8	M10×1	20	2220	112	120	+0.5	014.60.2500.**	15000	1400			
2625	2978	144	2910	2691	56	56	33	33	2797.5	2802.5	132	12	8	M10×1	18	2520	141	120	+0.5	013.60.2800.**	16800	1600			
	2978	144	2910	2691	56	56	33	33	2797.5	2802.5	132	12	8	M10×1	18	2520	127	120	+0.5	014.60.2800.**	16800	1600			
2735	2990	160	2954	2770	48	48	M20	M24	2835	2845	135	5	8	ZG1/4in	22	2624.62	121	144	0	2789/2735	15590	1457			
2922	3376	174	3286	3014	56	56	45	45	3147.5	3152.5	162	12	8	M10×1	20	2820	142	150	+0.5	013.75.3150.**	23800	2800			
	3376	174	3286	3014	56	56	45	45	3147.5	3152.5	162	12	8	M10×1	22	2816	129	150	+0.5	014.75.3150.**	23800	2800			
3322	3776	174	3686	3414	56	56	45	45	3547.5	3552.5	162	12	8	M10×1	20	3220	162	150	+0.5	013.75.3550.**	26900	3200			
	3776	174	3686	3414	56	56	45	45	3547.5	3552.5	162	12	8	M10×1	22	3212	147	150	+0.5	014.75.3550.**	26900	3200			
3772	4226	174	4136	3864	60	60	45	45	3997.5	4002.5	162	12	10	M10×1	22	3652	167	150	+0.5	013.75.4000.**	30200	3600			
	4226	174	4136	3864	60	60	45	45	3997.5	4002.5	162	12	10	M10×1	25	3650	147	150	+0.5	014.75.4000.**	30200	3600			
4272	4726	174	4636	4364	60	60	45	45	4497.5	4502.5	162	12	10	M10×1	22	4158	190	150	+0.5	013.75.4500.**	34100	4000			
	4726	174	4636	4364	60	60	45	45	4497.5	4502.5	162	12	10	M10×1	25	4150	167	150	+0.5	014.75.4500.**	34100	4000			

Four-point contact ball slewing bearings (External gears)



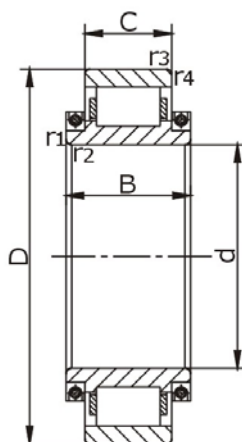
Boundary dimensions			Mount dimensions							Structure dimensions							Gear constants						Designations	Basic load ratings	Mass
			mm			mm		n ₁	n ₂	mm		mm				n ₃	mm		m	mm		Z			
d	D	H	D ₁	D ₂			φ 1			φ 2	D ₃	d ₁	H ₁	h			φ 3			Da			b		
470	694	77	630	500	18	18	M16	18	567.5	564.5	64	13	6	M10×1	6	696	114	60	0	D178794	1570	93.1			
674	853	70	825	709	34	23	20	M20	764	768	59	10	2	ZG1/8in	7	889	125	50	0	1787/674G2	1830	89			
	853	70	825	709	34	24	18	18	764	768	59	10	2	ZG1/8in	7	889	125	50	0	1787/674G2K	1830	88.6			
710	894	67	845	744	8	8	M10	M10	798	806	58	9	3	M10×1	6	924	152	55	0	1787/710G2	1790	107			
	894	67	875	760	8	12	M10	M12	798	806	58	9	3	M10×1	6	924	152	55	0	1787/710G2K	1790	107			
	894	67	865	744	20	20	13	13	798	806	58	9	4	M10×1	6	924	152	55	0	1787/710G2K1	1790	107			
800	1050	90	1012	838	30	30	20	20	923	927	76	16	3	M10×1	6	1092	180	60	0	1787/800G	2150	217			
	1050	90	1012	838	30	30	20	20	923	927	76	16	3	M10×1	6	1092	180	60	0	1787/800GK	2150	217			
1060	1335	109	1295	1105	24	24	M20	22	1198	1202	100	9	4	M8×1	10	1388	138	80	−0.6	1787/1060G	5010	407			
1075	1365	120	1310	1130	36	36	26	26	1218	1222	105	15	4	M8×1	8	1424	176	90	0	1787/1075	4630	463			
	1365	130	1310	1130	36	36	24	24	1218	1222	105	10	–	–	10	1420	140	120	0	1787/1075K	4630	550			
	1365	120	1310	1130	36	36	24	24	1218	1222	105	15	4	M10×1	10	1424.91	138	90	+1.4	1787/1075G2	4630	463			
	1365	120	1310	1130	36	36	M24	26	1218	1222	105	15	4	M8×1	8	1424	176	90	0	1787/1075G2K	4630	463			
1330	1475	82.4	1510	1362	24	24	18.5	18.5	1439	1445	70	12.4	6	M10×1	9	1584	174	70	0	1787/1330G2	3530	280			
1700	1945	120	1900	1750	24	24	M18	21	1825	1845	110	10	4	M10×1	5	1970	392	35	0	1787/1700	4050	516			
	2052	100	1980	1780	24	24	20	M18	1878	1882	90	10	4	M14×1.5	5	2080	414	50	0	1789/1700GM	5510	678			
2650	2885	100	2850	2700	48	48	M20	M20	2777	2781	80	10	6	ZG1/4in	12	2949.6	244	80	0	1787/2650G2	9130	751			
2922	3376	174	3286	3014	56	56	45	45	3147.5	3152.5	162	12	8	M10×1	20	3480	171	150	+0.5	011.75.3150.**	23800	2800			
	3376	174	3286	3014	56	56	45	45	3147.5	3152.5	162	12	8	M10×1	22	3476	155	150	+0.5	012.75.3150.**	23800	2800			
3322	3776	174	3686	3414	56	56	45	45	3547.5	3552.5	162	12	8	M10×1	20	3880	191	150	+0.5	011.75.3550.**	26900	3200			
	3776	174	3686	3414	56	56	45	45	3547.5	3552.5	162	12	8	M10×1	22	3894	174	150	+0.5	012.75.3550.**	26900	3200			
3772	4226	174	4136	3864	60	60	45	45	3997.5	4002.5	162	12	10	M10×1	22	4334	194	150	+0.5	011.75.4000.**	30200	3600			
	4226	174	4136	3864	60	60	45	45	3997.5	4002.5	162	12	10	M10×1	25	4350	171	150	+0.5	012.75.4000.*	30200	3600			
4272	4726	174	4636	4364	60	60	45	45	4497.5	4502.5	162	12	10	M10×1	22	4840	217	150	+0.5	011.75.4500.**	34100	4000			
	4726	174	4636	4364	60	60	45	45	4497.5	4502.5	162	12	10	M10×1	25	4850	191	150	+0.5	012.75.4500.*	34100	4000			

Split bearings

Split bearings can be mounted conveniently and quickly without removing other components of the shafts. So the service cycle and maintenance cost are shortened to half. They have little working resistance and can running smoothly for the special design, and the working temperature would reach 180°C. Thus, they are extremely suitable for the applications with low speed, heavy loads or severe conditions.

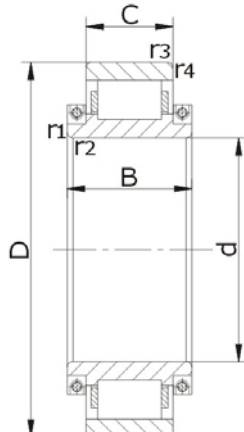
Split bearings are often used in such applications as converter supportings, roll neck supportings of coticasters; large transportation equipment where the dismounting conditions are limited and difficult to replace solid bearings.

Single-row cylindrical roller split bearings



Boundary dimensions						Basic load ratings		Designations	Mass
mm						kN			kg
d	D	B	C	r _{1、2}	r _{3、4}	Ca	Coa		
220	393.7	156	90.5	8×45°	2	1210	1800	NUP3044X2D	90
240	440	156	90.5	8×45°	3	1320	2040	NUP3048X2D	105
300	558.8	220	139.7	12×45°	5	2330	3250	NUP2260X2D	210
380	520.7	140	76.2	—	—	720	1220	N1961X2D	72.5
	520.7	140	76.2	—	—	720	1220	NUP1961X2D	72.5
400	600	220	148	5	5	2550	4900	NU3080D	200
580	750	160	90	4	5	1190	2280	N6/580D	135
630	794	190	88	5	2	1760	4300	N6/630D	160
750	940	210	128	—	—	1680	4050	8027/750D	190
1120	1360	210	106	2×30°	6	3140	7650	NUP6/1120D	475
	1360	210	106	2	6	3140	7650	N6/1120D	470
1200	1520	185	185	—	—	12900	39700	NU6/1200D	698

Double-row spherical roller split bearings



Boundary dimensions						Basic load ratings		Designations	Mass
mm						kN			kg
d	D	B	C	r _{1、2}	r _{3、4}	Ca	Coa		
120	200	142	80	11x45°	2	552	900	24124D/W33	17
140	230	102	53	2	2	368	600	23228D/W33	14
180	300	125	74	2.1	2.1	713	1200	23236D/W33	30
280	500	260	176	5	5	2710	4650	23256D/W33	175
300	500	240	160	5	5	2710	4900	23160D/W33	150
360	540	220	134	5	5	2250	4500	23072D/W33	155
400	600	240	148	5	5	2880	5850	23080D/W33	205
420	620	238	150	6	6	2880	5850	23084D/W33	215
530	780	288	185	6	6	3580	9110	230/530D	415
630	920	310	212	7.5	7.5	5640	12000	230/630D/W33	630
670	980	350	230	7.5	7.5	6440	14000	230/670D/W33	800
710	950	375	243	6	6	5750	15300	239/710X2D/W33	700
800	1060	370	258	6	6	6900	18600	249/800D/W33	810
850	1220	660	365	7.5	7.5	9320	27800	240/850D/W33	1944
900	1270	470	365	7.5	7.5	8170	22800	230/900D/W33	1100
950	1360	470	320	7.5	7.5	8970	25500	230/950D/W33	1300

Screw-down bearings

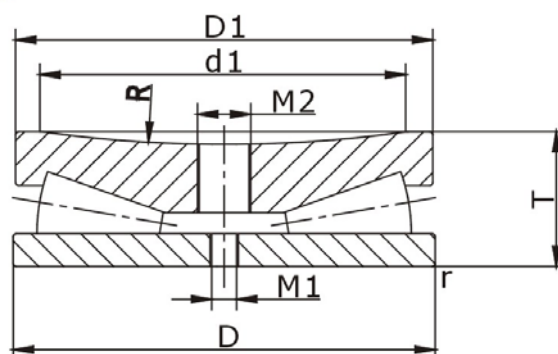
Screw-down bearings are usually used in the screw-down of rolling mills. This type of bearings has no cage, are full of tapered rollers, can carry high axial loads, and have low limiting speed. In order to improve the performance, the underside of the shaft washer is concave spherical surface (type TTSV00) or convex spherical surface (Type TT SX00), they cooperate with the spherical side face of housing screws which have the same radius of curvature and are through precise finish, and both of them are uniform contact, so ensuring uniform stress of bearings when housing screws have obliquity relative to axes of bearings.

The bores of housing washers are screwed. The inner bores of shaft washers are also screwed for large-size bearings. These screw threads are used to install the lifting eye bolts.

The lube with extreme pressure additive should be chosen to form the lubricant film under heavy loads.

On the spherical surface of shaft washer, dry film lubricant should be coated to be well lubricated and aligned easily.

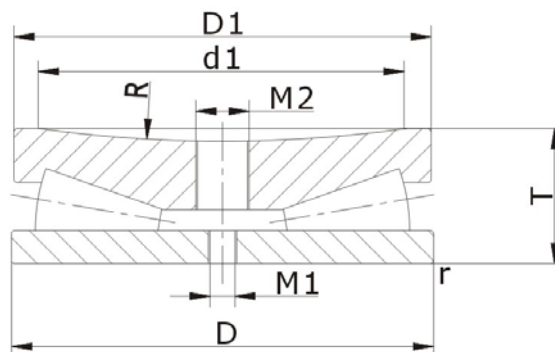
Screw-down bearings



Type TTSV
(Type 4297/000)

Boundary dimensions								Basic load ratings	Designations		Mass
mm											
D	D ₁	d ₁	T	R	M ₁	M ₂	r _{min}	Coa	Current	Original	kg
150	148	127	48	228.6	M12	–	1.5	1630	TTSV150	4297/150	5
175	173	152	53	228.6	M12	–	1.5	2180	TTSV175	4297/175	8
203	201	178	65	254	M12	–	1.5	2540	TTSV203	4297/203	11
205	203	178	65	254	M20	–	1.5	3370	TTSV205	4297/205	15
235	233	208	73	280	M20	–	1.5	3370	TTSV235	4297/235	18
265	263	229	81	304.8	M20	–	1.5	4130	TTSV265	4297/265	24
320	318	280	95	380	M24	–	1.5	7370	TTSV320	4297/320	42
377	375	330	112	457.2	M24	–	2.5	8230	TTSV377	4297/377	86
380	378	330	112	457.2	M24	M30	2.5	8220	TTSV380	4297/380	67

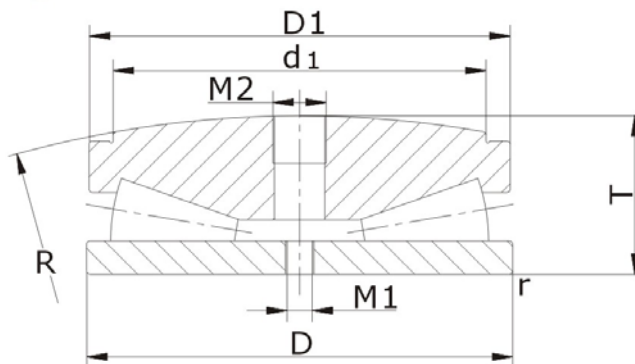
Screw-down bearings



Type TTSV
(Type 4297/000)

Boundary dimensions								Basic load ratings	Designations		Mass
mm											
D	D ₁	d ₁	T	R	M ₁	M ₂	r _{min}	Coa	Current	Original	kg
410	408	355	122	508	M24	M30	3	11300	TTSV410	4297/410	115
440	438	380	130	508	M24	M36	3	18500	TTSV440	4297/440	140
495	492	432	146	558.8	M24	M36	3	19100	TTSV495	4297/495	198
525	522	460	155	635	M24	M36	3	20380	TTSV525	4297/525	210
555	552	482	165	635	M24	M36	3	21380	TTSV555	4297/555	275
580	577	510	165	710	M24	M42	3	23540	TTSV580	4297/580	250
610	607	533	178	762	M30	M42	3	24170	TTSV610	4297/610	350
640	637	550	185	762	M30	M42	3	28670	TTSV640	4297/640	410

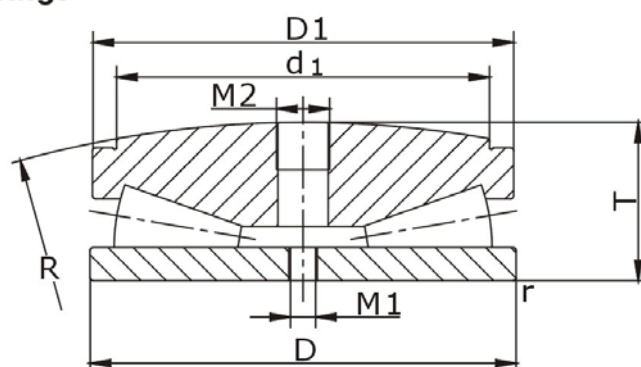
Screw-down bearings



Type TTSX
(Type 4397/000)

Boundary dimensions								Basic load ratings	Designations		Mass
mm											
D	D ₁	d ₁	T	R	M ₁	M ₂	r _{min}	Coa	Current	Original	kg
150	148	127	55	457.2	M12	–	1.5	1630	TTSX150	4379/150	7
175	173	152	62	457	M12	–	1.5	2180	TTSX175	4379/175	11
205	203	178	76	508	M20	–	1.5	2540	TTSX205	4379/205	18
235	233	208	85	560	M20	–	1.5	3370	TTSX235	4379/235	26
265	263	229	95	609.6	M20	–	1.5	4130	TTSX265	4379/265	37
320	318	280	112	762	M20	–	2.5	7370	TTSX320	4379/320	62
380	378	330	129	914.4	M24	M30	1.5	8550	TTSX380	4379/380	101
410	408	355	142	1016	M24	M30	3	11300	TTSX410	4379/410	130
440	438	380	152	1016	M24	M36	3	18500	TTSX440	4379/440	160
495	492	432	172	1066.8	M24	M36	3	19100	TTSX495	4379/495	210

Screw-down bearings



Type TTSX
(Type 4397/000)

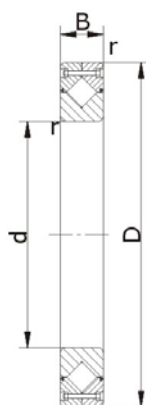
Boundary dimensions								Basic load ratings	Designations		Mass
mm											
D	D ₁	d ₁	T	R	M ₁	M ₂	r _{min}	Coa	Current	Original	kg
525	522	460	180	1270	M24	M36	3	20380	TTSX525	4379/525	250
555	552	482	192	1270	M24	M36	3	21380	TTSX555	4379/555	280
580	577	510	195	1422.4	M24	M36	3	21540	TTSX580	4379/580	310
610	607	533	205	1520	M30	M42	3	24170	TTSX610	4379/610	410
640	637	550	214.8	1740	M30	M42	3	28670	TTSX640	4379/640	450
710	705	610	250	1600	M30	M42	4	31540	TTSX710	4379/710	850
750	745	650	260	1600	M30	M48	4	38430	TTSX750	4379/750	750
800	795	700	270	1700	M30	M48	5	40150	TTSX800	4379/800	930

Crossed cylindrical roller bearings for robots

Crossed cylindrical roller bearings for robots have compact structures. The rollers are arranged in 90° crossing between inner and outer rings. They are able to carry radial, axial and moment loads at the same time.

As rollers and raceways are line contact, the elastic deformation is little when the bearings carry heavy loads. This type of bearings are widely used in applications required high stiffness, compact structures and high precision, such as industrial robots, construction machinery and armarium.

Crossed cylindrical roller bearings for robots



CRB 型

Boundary dimensions				Basic load ratings		Designations	Mass
mm				kN			kg
d	D	B	r _{min}	Ca	Coa		
30	55	10	0.5	9.25	6	CRB3010	0.13
40	65	10	0.5	10.41	8	CRB4010	0.16
50	80	15	0.5	21.08	15	CRB5015	0.25
60	90	15	1	22.85	18	CRB6015	0.40
70	100	15	1	24.48	20	CRB7015	0.45
80	130	20	1	39.39	34	CRB8020	1.25
90	140	20	1.5	41	37	CRB9020	1.37
100	150	20	1.5	43	39	CRB10020	1.48
110	160	20	1.5	45	43	CRB11020	1.61
120	180	25	2	91	75	CRB12025	2.68
130	190	25	2	95	79	CRB13025	2.86
140	200	25	2	98	85	CRB14025	2.86
150	210	25	2	101	89	CRB15025	3.22
	230	30	1.1	108	95	CRB15030	4.11
200	260	25	2.5	115	116	CRB20025	4.11
250	310	25	3	128	141	CRB25025	5.00
300	395	35	3	226	263	CRB30035	13.75
400	510	40	3.5	314	390	CRB40040	23.8
500	600	40	3.5	348	472	CRB50040	26.19
	625	50	3	405	536	CRB50050	41.7
600	700	40	3	410	550	CRB60040	29

Bearings for wind turbines

Our company can design and manufacture blade bearings, yaw bearings, main shaft bearings, gearbox bearings, and generator bearings.

Blade bearings are used to connect blades with hubs in MW wind turbines, and they also can adjust the windward direction of blades to ensure electricity production with power rating and the safe work of wind turbines. Usually, single or double rows four-point contact ball slewing bearings are used as blade bearings, which have preload, special designed seals, anticorrosion surfaces, etc.

Yaw bearings can adjust the windward angle of the cabins and rotors to keep them facing into the wind as the wind direction changes, so wind turbines can produce the maximal amount of electrical energy at all times. Generally, four-point contact ball slewing bearings or crossed cylindrical roller slewing bearings are adopted, whose clearances are close to 0 or preload. In addition, they have special designed seals, and their surfaces are anticorrosion.

There are many kinds of wind turbines. However, the horizontal axis wind turbines are most widely used, and 75%–80% of which have the structure of inner rings are installed on the rotary main shafts, namely main shaft bearing support structure. 240 or 241 series spherical roller bearings are almost suitable for the fixed and floating ends of main shafts in the structure according to the ratio of radial and axial forces. In other remaining HAWT, bearings' outer rings rotate with hubs, and inner rings are installed on the stationary main shafts, that means hub bearing support structure. This kind of main shaft bearing system commonly includes double-row tapered roller bearings that are preset axial clearance on fixed ends and cylindrical roller bearings on floating ends. Besides, three-row cylindrical roller combination slewing bearings are also used as main shaft bearings to carry radial loads, axial loads and loads moment.

There are many varieties of gearbox bearings. The main types are NU, NCF and NJ types cylindrical roller bearings and tapered roller bearings. The bearings can be lubricated with gear oil in gearboxes. However, there are many metal particles in that oil, so the bearing life will be shortened. Therefore, good filtration system must be adopted, and bearings should have special heat treatment to form compressive stress on the raceways, reduce the sensitivity of raceways and prolong the life. Furthermore, the surfaces of rollers can be superhard to resist abrasion by coating.

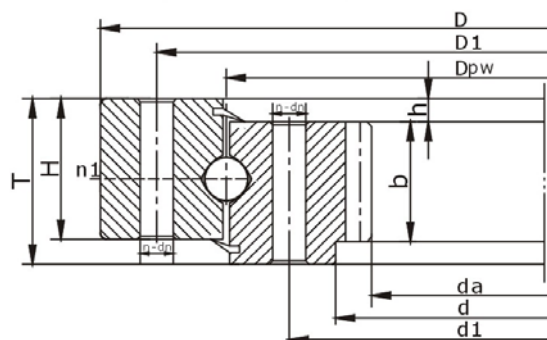
Generator bearings utilize cylindrical roller bearings or deep groove ball bearings, which have the good performance of low noise by improving design structures and processing technics.

Technical drawing of a shaft-hub assembly. The drawing shows a shaft with a hole and a hub with a corresponding hole. The dimensions are labeled as follows:

- D : Outer diameter of the hub.
- $D1$: Inner diameter of the hub.
- D_{pw} : Pitch diameter of the internal thread.
- $n1$: Number of threads per inch.
- d : Outer diameter of the shaft.
- $d1$: Inner diameter of the shaft.
- $\frac{D-d}{2}$: Radial clearance between the shaft and the hub.
- $\frac{D1-d1}{2}$: Radial clearance between the shaft and the hub.
- $\frac{D-d}{2}$: Radial clearance between the shaft and the hub.

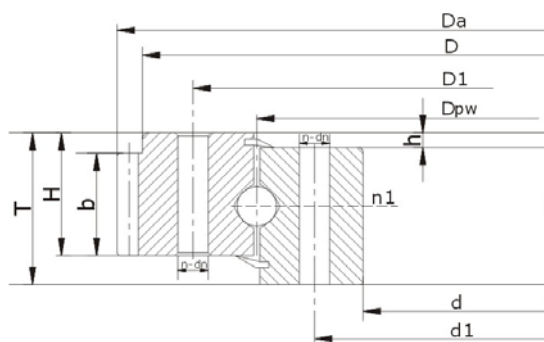
Boundary dimensions					Mount dimensions			Number of holes		Designation
mm					mm					
d	D	T	H	h	D ₁	d ₁	d _n	n	n ₁	
458	662	80	70	10	626	494	18	20	4	010.30.560
528	732	80	70	10	696	564	18	24	4	010.30.630
608	812	80	70	10	776	644	18	24	4	010.30.710
678	922	100	90	10	878	722	22	30	6	010.40.800
778	1022	100	90	10	978	822	22	30	6	010.40.900
878	1122	100	90	10	1078	922	22	36	6	010.40.1000
998	1242	100	90	10	1198	1042	22	36	6	010.40.1120
1110	1390	110	100	10	1337	1163	26	40	5	010.45.1250
1140	1480	126	113	13	1400	1200	26	60/40	5	010.50.1300
1260	1540	110	100	10	1487	1313	26	40	5	010.45.1400
1460	1740	110	100	10	1687	1513	26	45	5	010.45.1600
1660	1940	110	100	10	1877	1713	26	45	5	010.45.1800
1825	2178	144	132	12	2110	1891	33	48	8	010.60.2000
2065	2418	144	132	12	2350	2131	33	48	8	010.60.2240
2325	2678	144	132	12	2610	2391	33	56	8	010.60.2500
2625	2987	144	132	12	2910	2691	33	56	8	010.60.2800
2922	3376	174	162	12	3286	3014	45	56	8	010.75.3150
3322	3776	174	162	12	3686	3414	45	56	8	010.75.3550
3772	4226	174	162	12	4136	3864	45	60	10	010.75.4000

Yaw bearings and blade bearings (Internal gears)



Boundary dimensions					Mount dimensions			Number of holes		Gear parameters				Designation
mm					mm					m	mm da	z	mm b	
d	D	T	H	h	D ₁	d ₁	d _n	n	n ₁					
458	662	80	70	10	626	494	18	20	4	5	427	86	60	013.30.560
	662	80	70	10	626	494	18	20	4	6	428.4	72	60	014.30.560
528	732	80	70	10	696	564	18	24	4	6	494.4	83	60	013.30.630
	732	80	70	10	696	564	18	24	4	8	491.2	62	60	014.30.630
608	812	80	70	10	776	644	18	24	4	6	572.4	96	60	013.30.710
	812	80	70	10	776	644	18	24	4	8	571.2	72	60	014.30.710
678	922	100	90	10	878	722	22	30	6	8	635.2	80	80	013.40.800
	922	100	90	10	878	722	22	30	6	10	634	64	80	014.40.800
778	1022	100	90	10	978	822	22	30	6	8	739.2	93	80	013.40.900
	1022	100	90	10	978	822	22	30	6	10	734	74	80	014.40.900
878	1122	100	90	10	1078	922	22	36	6	10	824	83	80	013.40.1000
	1122	100	90	10	1078	922	22	36	6	12	820.8	69	80	014.40.1000
998	1242	100	90	10	1198	1042	22	36	6	10	944	95	80	013.40.1120
	1242	100	90	10	1198	1042	22	36	6	12	940.8	79	80	014.40.1120
1110	1390	110	100	10	1337	1163	26	40	5	12	1048.8	88	90	013.45.1250
	1390	110	100	10	1337	1163	26	40	5	14	1041.6	75	90	014.45.1250
1140	1480	126	113	13	1400	1200	26	60/40	5	10	–	–	100	013.50.1300
	1480	126	113	13	1400	1200	26	60/40	5	12	–	–	100	014.50.1300
1260	1540	110	100	10	1487	1313	26	40	5	12	1192.8	100	90	013.45.1400
	1540	110	100	10	1487	1313	26	40	5	14	1195.6	86	90	014.45.1400
1460	1740	110	100	10	1687	1513	26	45	5	14	1391.6	100	90	013.45.1600
	1740	110	100	10	1687	1513	26	45	5	16	1382.4	87	90	014.45.1600
1660	1940	110	100	10	1877	1713	26	45	5	14	1573.6	113	90	013.45.1800
	1940	110	100	10	1877	1713	26	45	5	16	1574.4	99	90	014.45.1800
1825	2178	144	132	12	2110	1891	33	48	8	16	1734.4	109	120	013.60.2000
	2178	144	132	12	2110	1891	33	48	8	18	1735.2	97	120	014.60.2000
2065	2418	144	132	12	2350	2131	33	48	8	16	1990.4	125	120	013.60.2240
	2418	144	132	12	2350	2131	33	48	8	18	1987.2	111	120	014.60.2240
2325	2678	144	132	12	2610	2391	33	56	8	18	2239.2	125	120	013.60.2500
	2678	144	132	12	2610	2391	33	56	8	20	2228	112	120	014.60.2500
2625	2987	144	132	12	2910	2691	33	56	8	18	2527.2	141	120	013.60.2800
	2987	144	132	12	2910	2691	33	56	8	20	2528	127	120	014.60.2800
2922	3376	174	162	12	3286	3014	45	56	8	20	2828	142	150	013.75.3150
	3376	174	162	12	3286	3014	45	56	8	22	2824.8	129	150	014.75.3150
3322	3776	174	162	12	3686	3414	45	56	8	20	3228	162	150	013.75.3550
	3776	174	162	12	3686	3414	45	56	8	22	3220.8	147	150	014.75.3550
3772	4226	174	162	12	4136	3864	45	60	10	22	3660.8	167	150	013.75.4000
	4226	174	162	12	4136	3864	45	60	10	25	3660	147	150	014.75.4000

Yaw bearings and blade bearings (External gears)



Boundary dimensions					Mount dimensions			Number of holes		Gear parameters				Designation
mm					mm					m	mm	z	mm	
d	D	T	H	h	D ₁	d ₁	d _n	n	n ₁		Da		b	
458	662	80	70	10	626	494	18	20	4	5	689	135	60	011.30.560
	662	80	70	10	626	494	18	20	4	6	688.8	112	60	012.30.560
528	732	80	70	10	696	564	18	24	4	6	772.8	126	60	011.30.630
	732	80	70	10	696	564	18	24	4	8	774.4	94	60	012.30.630
608	812	80	70	10	776	644	18	24	4	6	850.8	139	60	011.30.710
	812	80	70	10	776	644	18	24	4	8	854.4	104	60	012.30.710
678	922	100	90	10	878	722	22	30	6	8	966.4	118	80	011.40.800
	922	100	90	10	878	722	22	30	6	10	968	94	80	012.40.800
778	1022	100	90	10	978	822	22	30	6	8	1062.4	130	80	011.40.900
	1022	100	90	10	978	822	22	30	6	10	1068	104	80	012.40.900
878	1122	100	90	10	1078	922	22	36	6	10	1188	116	80	011.40.1000
	1122	100	90	10	1078	922	22	36	6	12	1185.6	96	80	012.40.1000
998	1242	100	90	10	1198	1042	22	36	6	10	1298	127	80	011.40.1120
	1242	100	90	10	1198	1042	22	36	6	12	1305.6	106	80	012.40.1120
1110	1390	110	100	10	1337	1163	26	40	5	12	1449.6	118	90	011.45.1250
	1390	110	100	10	1337	1163	26	40	5	14	1453.2	101	90	012.45.1250
1140	1480	126	113	13	1400	1200	26	60	5	10	–	–	100	011.50.1300
	1480	126	113	13	1400	1200	26	60	5	12	–	–	100	012.50.1300
1260	1540	110	100	10	1487	1313	26	40	5	12	1605.6	131	90	011.45.1400
	1540	110	100	10	1487	1313	26	40	5	14	1607.2	112	90	012.45.1400
1460	1740	110	100	10	1687	1513	26	45	5	14	1817.2	127	90	011.45.1600
	1740	110	100	10	1687	1513	26	45	5	16	1820.8	111	90	012.45.1600
1660	1940	110	100	10	1877	1713	26	45	5	14	2013.2	141	90	011.45.1800
	1940	110	100	10	1877	1713	26	45	5	16	2012.8	123	90	012.45.1800
1825	2178	144	132	12	2110	1891	33	48	8	16	2268.8	139	120	011.60.2000
	2178	144	132	12	2110	1891	33	48	8	18	2264.4	123	120	012.60.2000
2065	2418	144	132	12	2350	2131	33	48	8	16	2492.8	153	120	011.60.2240
	2418	144	132	12	2350	2131	33	48	8	18	2498.4	136	120	012.60.2240
2325	2678	144	132	12	2610	2391	33	56	8	18	2768.4	151	120	011.60.2500
	2678	144	132	12	2610	2391	33	56	8	20	2776	136	120	012.60.2500
2625	2987	144	132	12	2910	2691	33	56	8	18	3074.4	168	120	011.60.2800
	2987	144	132	12	2910	2691	33	56	8	20	3076	151	120	012.60.2800
2922	3376	174	162	12	3286	3014	45	56	8	20	3476	171	150	011.75.3150
	3376	174	162	12	3286	3014	45	56	8	22	3471.6	155	150	012.75.3150
3322	3776	174	162	12	3686	3414	45	56	8	20	3876	191	150	011.75.3550
	3776	174	162	12	3686	3414	45	56	8	22	3889.6	174	150	012.75.3550
3772	4226	174	162	12	4136	3864	45	60	10	22	4329.6	194	150	011.75.4000
	4226	174	162	12	4136	3864	45	60	10	25	4345	171	150	012.75.4000





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