



1) Materials for KBS Bearing's Outer ring, Inner ring & Rolling Elements

The most common through-hardening steel used for rolling bearing of KBS used is a carbon chromium steel containing approximately 1% carbon and 1.5% chromium. Below table 1.1 which shown G Cr15--the main material that KBS used for producing our ball bearings and its interchangeable material in other nations.

Table 1.1

Name	Standard	Chemical Composition (%)					
		C	Mn	Si	Cr	S ≤	P ≤
G Cr15	KBS	0,95~1,05	0,20~0,40	0,15~0,35	1,30~1,65	0,020	0,027
SUJ 2	JIS G 4805	0,95~1,10	0,50 ≤	0,15~0,35	1,30~1,60	0,025	0,025
100Cr6	DIN	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -
E52100	AISI	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -
ISO	683/XVII	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -
SKF	-	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -

Note: KBS supplies all general bearings with material of G Cr15 as normal products, unless otherwise specified by customer for special usage before ordering. i.e. Pure carbon or Stainless Steel etc.

2) Material for Bearing Retainers

The retainer is demanded to bear hitting load and have the lowest friction with the rolling elements when KBS bearing is working. So, low carbon steel is adopted. (Please refer to Table 2.1)

Table 2.1

Name	Standard	Chemical Composition (%)				
		C	Mn	Si	S ≤	P ≤
10F	Chinese GB	0,05~0,11	0,25~0,50	0,07 ≤	0,035	0,035
SPCC	JIS G 3141	0,12 ≤	0,50 ≤	-	0,045	0,040

Note: KBS supply bearings with retainer material of 10F as normal products, unless otherwise specified by customers for special usage before ordering. i.e. Corrosion proof, poor agricultural requirement and water resistant etc.

3) Precision Class for the taper roller bearings

3.1) The accuracy of a bearing are both dimensional and running accuracy of the bearing. It has been standardised internationally. Here we give out a interchangeable precision class standard table which is equal to KBS (Table 3.1 refers) for your reference.



Table 3.1

Selection	Classification standard				
	Class 0	Class 6X	Class 5	Class 4	
KBS	Class 0	Class 6X	Class 5	Class 4	
ISO	Class 4	-	Class 3	Class 0	Class 00
Japan Industrial (All series)	Class 0	Class 6	Class 5	Class 4	-
Germany (All series)	P0	P6	P5	P4	P2
United States (Metric series)	Class K	Class N	Class C	Class B	Class A
United States (Inch series)	Class 4	Class 2	Class 3	Class 0	Class 00

Note: **KBS** supply bearings with classification standard of Class 0 as normal products, unless otherwise specified by customers for higher grade useage before ordering.

3.2) Relatively, as specified value of accuracy, **KBS** gives out the normal tolerances for metric series taper roller bearings. (Tables 3.2.1; 3.2.2 and 3.2.3 refers)

Table 3.2.1 Normal Tolerances for taperoller Bearings of metric series

Inner ring (Unit: μm)

Nominal bore dimension d(mm)		Deviation of the mean bore diameter from the nominal Δdmp						Deviation of the bore diameter Vdp				Mean deviation of the bore diameter Vdmp			
		P0 P6X		P5 P6		P4		P0 P6X	P6	P5	P4	P0 P6X	P6	P5	P4
over	incl.	high	low	high	low	high	low	max.				max.			
10	18	0	-12	0	-7	0	-5	12	7	5	4	9	5	5	4
18	30	0	-12	0	-8	0	-6	12	8	6	5	9	6	5	4
30	50	0	-12	0	-10	0	-8	12	10	8	6	9	8	5	5
50	80	0	-15	0	-12	0	-9	15	12	9	7	11	9	6	5
80	120	0	-20	0	-15	0	-10	20	15	11	8	15	11	8	5
120	180	0	-25	0	-18	0	-13	25	18	14	10	19	14	9	7
180	250	0	-30	0	-22	0	-15	30	22	17	11	23	16	11	8
250	315	1	-35	—	—	—	—	35	—	—	—	26	—	—	—
315	400	0	-40	—	—	—	—	40	—	—	—	30	—	—	—



Radial run out				Side run out		Axial run out	Deviation of the width				Deviation of the fitting width for single row taper roller bearings								
Kia				Sd		Sia	△Bs				△Ts								
P0	P6X	P6	P5	P4	P5	P4	P4	P0,	P6	P6X	P5,	P4	P0,	P6	P6X	P5,	P4		
max.					max.	max.	max.	high	low	high	low	high	low	high	low	high	low		
15	7	5	3		7	3	3	0	-120	0	-50	0	-200	+200	0	+100	0	+200	-200
18	8	5	3		8	4	4	0	-120	0	-50	0	-200	+200	0	+100	0	+200	-200
20	10	6	4		8	4	4	0	-120	0	-50	0	-240	+200	0	+100	0	+200	-200
25	10	7	4		8	5	5	0	-150	0	-50	0	-300	+200	0	+100	0	+200	-200
30	13	8	5		9	5	7	0	-200	0	-50	0	-400	+200	0	+100	0	+200	-200
35	18	11	6		10	6	8	0	-250	0	-50	0	-500	+200	-200	+150	0	+350	-250
50	20	13	8		11	7		0	-300	0	-50	0	-600	+200	-200	+150	0	+350	-250
60	—	—	—		—	—	—	0	-350	0	-50	—	—	+350	-250	+200	0	—	—
70	—	—	—		—	—	—	0	-400	0	-50	—	—	+350	-250	+200	0	—	—

Table 3.2.2 Normal Tolerances for taper roller Bearings of metric series

Out ring (Unit: μm)

Nominal bore dimension		Deviation of the mean bore diameter from the nominal				Deviation of the outer ring diameter				Mean deviation of the bore diameter							
D		△dmp				Vdp				Vdmp							
over	incl.	P0	P6X	P5	P6	P4	P0	P6X	P6	P5	P4	P0	P6X	P6	P5	P4	
		high	low	high	low	high	low	high	low	high	low	high	low	high	low	high	low
18	30	0	-12	0	-8	0	-6	12	8	6	5	9	6	5	4		
30	50	0	-14	0	-9	0	-7	14	9	7	5	11	7	5	5		
50	80	0	-16	0	-11	0	-9	16	11	8	7	12	8	6	5		
80	120	0	-18	0	-13	0	-10	18	13	10	8	14	10	7	5		
120	150	0	-20	0	-15	0	-11	20	15	11	8	15	11	8	6		
150	180	0	-25	0	-18	0	-13	25	18	14	10	19	14	9	7		
180	250	0	-30	0	-20	0	-15	30	20	15	11	23	15	10	8		
250	315	0	-35	0	-25	0	-18	35	25	19	14	26	19	13	9		
315	400	1	-40	0	-28	0	-20	40	28	22	15	30	21	14	10		
400	500	0	-45	0	-33	0	-23	45	—	—	—	34	—	—	—		



Radial run out				Side run out		Axial run out	Deviation of the width	
Kea				SD		Sea	△Cs	
P0	P6	P5	P4	P5	P4	P4	P0, P6	P6X
P6X							P5, P4	
max.				max.		max.	high low	high low
18	9	6	4	8	4	5	With "d" of the same model bearing, and refer to the relative value of △Bs	0 -100
20	10	7	5	8	4	5		0 -100
25	13	8	5	8	4	5		0 -100
35	18	10	6	9	5	6		0 -100
40	20	11	7	10	5	7		0 -100
45	23	13	8	10	5	8		0 -100
50	25	15	10	11	7	10		0 -100
60	30	18	11	13	8	10		0 -100
70	35	20	13	13	10	13		0 -100
80	—	—	—	—	—	—		—

Table 3.2.3 Normal Tolerances for taper roller Bearings of metric series available width of Inner ring with rollers and

Out ring (Unit: μm)

Nominal bore dimension		Deviation of the available width of Inner ring with rollers		Deviation of the available width of outer ring	
d(mm)		△TIs		△TIs	
over	incl.	P0	P6	P5	P4
		high low	high low	high low	high low
10	18	+100 0	+50 0	+100 0	+50 0
18	30	+100 0	+50 0	+100 0	+50 0
30	50	+100 0	+50 0	+100 0	+50 0
50	80	+100 0	+50 0	+100 0	+50 0
80	120	+100 0	+50 0	+100 0	+50 0
120	150	+100 -100	+50 0	+100 -100	+50 0
150	180	+150 -150	+50 0	+200 -100	+100 0
180	250	+150 -150	+50 0	+200 -100	+100 0
250	315	+150 -150	+100 0	+200 -100	+100 0
315	400	+200 -200	+100 0	+200 -200	+100 0

Note: The accuracy of J Series(Metric series) taper roller bearings, please refer to Table 3.1 and Table 3.2.1; 3.2.2 & 3.2.3.



3.3) Relatively, as specified value of accuracy, KBS gives out the normal tolerances for Inch series taper roller bearings. (Tables 3.3.1; 3.3.2;3.3.3 and 3.3.4 refers)

Table 3.3.1 Normal Tolerances for taper roller Bearings of Inch series

Inner ring (Unit: μm)

Nominal bore dimension d(mm)		Deviation of the mean bore diameter from the nominal Δds									
		Class 4		Class 2		Class 3		Class 0		Class 00	
over	incl.	high	low	high	low	high	low	high	low	high	low
—	76,2	+13	0	+13	0	+13	0	+13	0	+8	0
76,2	304,8	+25	0	+25	0	+13	0	+13	0	+8	0
304,8	609,6	+51	0	+51	0	+25	0	—	—	—	—
609,6	914,4	+76	0	—	—	+38	0	—	—	—	—
914,4	1219,2	+102	0	—	—	+51	0	—	—	—	—
1219,2	—	+127	0	—	—	+76	0	—	—	—	—

Table 3.3.2 Normal Tolerances for taper roller Bearings of metric series

Out ring (Unit: μm)

Nominal bore dimension d(mm)		Deviation of the mean bore diameter from the nominal Δds									
		Class 4		Class 2		Class 3		Class 0		Class 00	
over	incl.	high	low	high	low	high	low	high	low	high	low
—	304,8	+25	0	+25	0	+13	0	+13	0	+8	0
304,8	609,6	+51	0	+51	0	+25	0	—	—	—	—
609,6	914,4	+76	0	—	—	+38	0	—	—	—	—
914,4	1219,2	+102	0	—	—	+51	0	—	—	—	—
1219,2	—	+127	0	—	—	+76	0	—	—	—	—

Table 3.3.3 Normal Tolerances for taper roller Bearings of Inch series a vailable width of Inner ring with rollers and



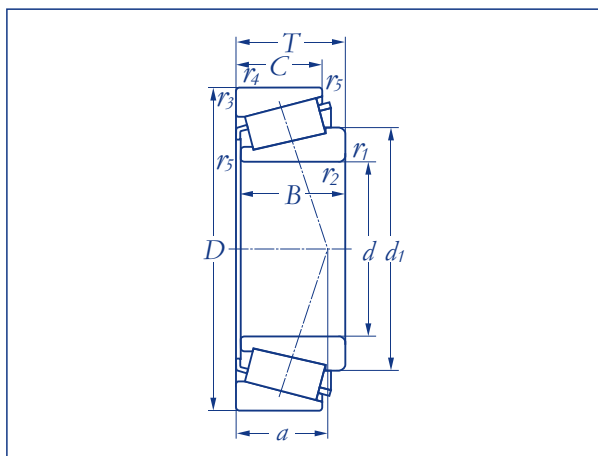
Out ring (Unit: μm)

Nominal bore dimension d(mm)		Nominal bore dimension D(mm)		Deviation of the mean bore diameter from the nominal Δds									
over	incl.	over	incl.	Class 4		Class 2		Class 3		Class 0		Class 00	
				high	low	high	low	high	low	high	low	high	low
—	101,6			+203	0	+203	0	+203	-203	+203	0	+203	0
101,6	304,8			+356	-254	+203	0	+203	-203	+203	0	+203	-203
304,8	609,6	—	508	+381	-381	+381	-381	+203	-203	—	—	—	—
304,8	609,6	508	—	+381	-381	+381	-381	+381	-381	—	—	—	—
609,4	—			+381	-381	—	—	+381	-381	—	—	—	—

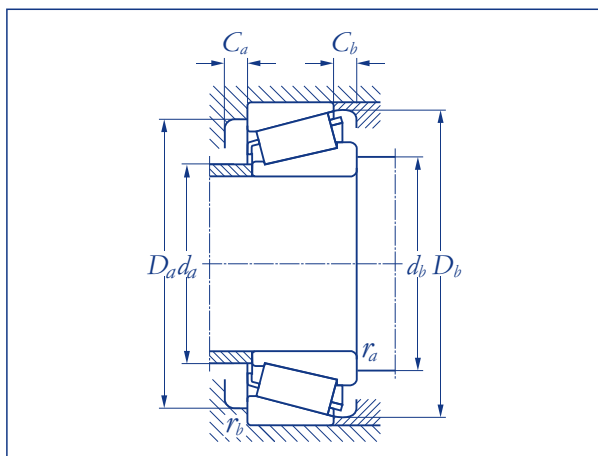
Deviation of the available width of Innerring with rollers ΔTIs						Deviation of the available width of outring ΔTIs					
Class 4		Class 2		Class 3		Class 4		Class 2		Class 3	
high	low	high	low	high	low	high	low	high	low	high	low
+102	0	+102	0	+102	-102	+102	0	+102	0	+102	-102
+152	-152	+102	0	+102	-102	+203	-102	+102	0	+102	-102
—	—	+178	-178	+102	-102	—	—	+203	-203	+102	-102
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

Table 3.3.4 Normal Tolerances for taper roller Bearings of Inch series Run-out for the inner ring and outer ring

Nominal bore dimension d(mm)		Inner ring run-out K_{ia} Outer ring run-out K_{ea}									
over	incl.	Class 4		Class 2		Class 3		Class 0		Class 00	
		High	low	High	low	High	low	High	low	High	low
—	304,8	51	38	8	4	2					
304,8	609,6	51	38	18	—	—					
609,6	914,4	76	51	51	—	—					
914,4	—	76	—	76	—	—					

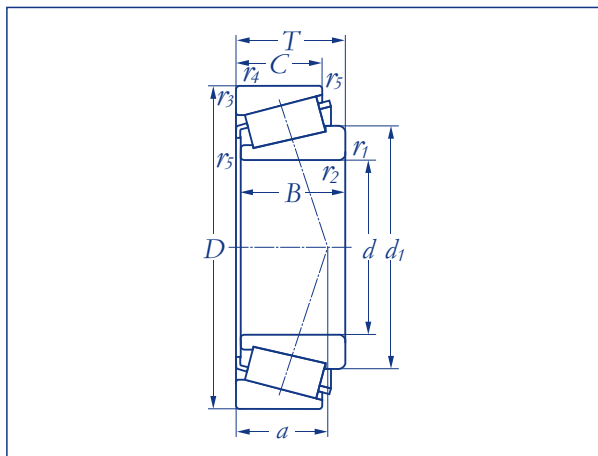
Taper roller bearings single row
 Series **302**

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Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
30203	75	17	40	13,25	15.200	14.800	6.300	9.100	2 DB
30204	120	20	47	15,25	22.000	22.400	5.600	7.700	2 DB
30205	150	25	52	16,25	24.600	26.800	5.200	7.000	3 CC
30206	230	30	62	17,25	32.100	35.200	4.400	5.900	3 DB
30207	320	35	72	18,25	40.900	44.800	3.700	4.900	3 DB
30208	420	40	80	19,75	49.200	54.400	3.300	4.400	3 DB
30209	480	45	85	20,75	52.800	61.200	3.100	4.200	3 DB
30210	540	50	90	21,75	61.200	73.200	3.000	3.900	3 DB
30211	700	55	100	22,75	71.700	84.800	2.600	3.500	3 DB
30212	880	60	110	23,75	79.200	91.200	2.300	3.100	2 EB
30213	1.150	65	120	24,75	91.200	107.200	2.100	2.800	3 EB
30214	1.250	70	125	26,25	100.000	124.800	2.100	2.800	3 EB
30215	1.400	75	130	27,25	112.000	140.800	1.900	2.600	4 DB
30216	1.600	80	140	28,25	120.800	146.400	1.600	2.300	3 EB
30217	2.050	85	150	30,50	140.800	176.000	1.500	2.200	3 EB
30218	2.550	90	160	32,50	155.200	196.000	1.400	2.100	3 FB
30219	3.000	95	170	34,50	172.800	220.000	1.300	1.900	3 FB
30220	3.650	100	180	37,00	196.800	256.000	1.300	1.900	2 FB
30221	4.250	105	190	39,00	216.000	284.000	1.200	1.800	3 FB
30222	5.100	110	200	41,00	246.400	324.000	1.100	1.600	3 FB
30224	6.150	120	215	43,50	272.800	372.000	1.100	1.500	4 FB
30226	7.600	130	230	43,75	295.200	392.000	1.000	1.400	4 FB
30228	8.650	140	250	45,75	334.400	456.000	900	1.300	4 FB
30230	11.000	150	270	49,00	343.200	448.000	900	1.200	2 GB
30232	13.000	160	290	52,00	422.400	588.000	700	1.100	4 GB
30234	19.000	170	310	57,00	492.800	692.000	700	1.000	4 GB

Taper roller bearings single row
 Series **302**


Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1.2}$	$r_{3.4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
	\approx			min	min	min		max	min	min	max	min	min	min	max	max			
30203	28,0	12	11	1,0	1,0	0,3	10	23	23	34	34	37	2	2,0	1,0	1,0	0,35	1,7	0,9
30204	33,2	14	12	1,0	1,0	0,3	11	27	26	40	41	43	2	3,0	1,0	1,0	0,35	1,7	0,9
30205	37,4	15	13	1,0	1,0	0,3	12	31	31	44	46	48	2	3,0	1,0	1,0	0,37	1,6	0,9
30206	44,6	16	14	1,0	1,0	0,3	14	38	36	53	56	57	2	3,0	1,0	1,0	0,37	1,6	0,9
30207	51,8	17	15	1,5	1,5	0,6	15	44	42	62	65	67	3	3,0	1,0	1,0	0,37	1,6	0,9
30208	57,5	18	16	1,5	1,5	0,6	16	49	47	69	73	74	3	3,5	1,0	1,0	0,37	1,6	0,9
30209	63,0	19	16	1,5	1,5	0,6	18	54	52	74	78	80	3	4,5	1,0	1,0	0,40	1,5	0,8
30210	67,9	20	17	1,5	1,5	0,6	19	58	57	79	83	85	3	4,5	1,0	1,0	0,43	1,4	0,8
30211	74,6	21	18	2,0	1,5	0,6	20	64	64	87	91	94	4	4,5	1,5	1,5	0,40	1,5	0,8
30212	81,5	22	19	2,0	1,5	0,6	22	70	69	96	101	103	4	4,5	1,5	1,5	0,40	1,5	0,8
30213	89,0	23	20	1,5	0,6	2,3	27	74	72	106	111	113	4	4,5	1,5	1,5	0,40	1,5	0,8
30214	93,9	24	21	2,0	1,5	0,6	25	82	79	110	116	118	4	5,0	1,5	1,5	0,43	1,4	0,8
30215	99,2	25	22	2,0	1,5	0,6	27	86	84	115	121	124	4	5,0	1,5	1,5	0,43	1,4	0,8
30216	105,0	26	22	2,5	2,0	0,6	28	92	90	124	130	132	4	6,0	2,0	2,0	0,43	1,4	0,8
30217	112,0	28	24	2,5	2,0	0,6	30	97	95	132	140	141	5	6,5	2,0	2,0	0,43	1,4	0,8
30218	118,0	30	26	2,5	2,0	0,6	31	104	100	140	150	150	5	6,5	2,0	2,0	0,43	1,4	0,8
30219	126,0	32	27	3,0	2,5	1,0	33	110	107	149	158	159	5	7,5	2,0	2,0	0,43	1,4	0,8
30220	133,0	34	29	3,0	2,5	1,0	35	116	112	157	168	168	5	8,0	2,0	2,0	0,43	1,4	0,8
30221	141,0	36	30	3,0	2,5	1,0	37	123	117	165	178	177	6	9,0	2,0	2,0	0,43	1,4	0,8
30222	148,0	38	32	3,0	2,5	1,0	39	129	122	174	188	187	6	9,0	2,0	2,0	0,43	1,4	0,8
30224	161,0	40	34	3,0	2,5	1,0	43	141	132	187	203	201	6	9,5	2,0	2,0	0,43	1,4	0,8
30226	173,0	40	34	4,0	3,0	1,0	45	152	144	203	216	217	7	9,5	2,5	2,5	0,43	1,4	0,8
30228	186,0	42	36	4,0	3,0	1,0	47	164	154	219	236	234	7	9,5	2,5	2,5	0,43	1,4	0,8
30230	200,0	45	38	4,0	3,0	1,0	50	175	164	234	256	250	9	11,0	2,5	2,5	0,43	1,4	0,8
30232	214,0	48	40	4,0	3,0	1,0	54	189	174	252	276	269	8	12,0	2,5	2,5	0,43	1,4	0,8
30234	230,0	52	43	5,0	4,0	1,5	58	203	188	268	292	288	8	14,0	3,0	3,0	0,43	1,4	0,8

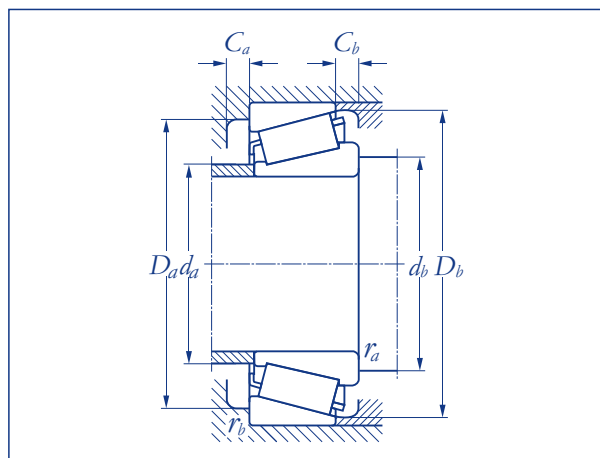
Taper roller bearings single row
Series **302**



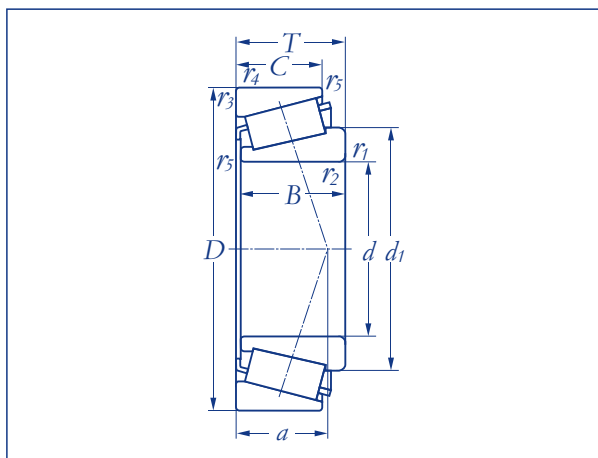
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Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
30236	20.000	180	320	57,00	466.400	652.000	700	1.000	4 GB
30238	24.000	190	340	60,00	576.800	800.000	600	900	4 GB
30240	25.000	200	360	64,00	633.600	896.000	600	900	4 GB
30244	40.000	220	400	72,00	792.000	1.120.000	500	800	

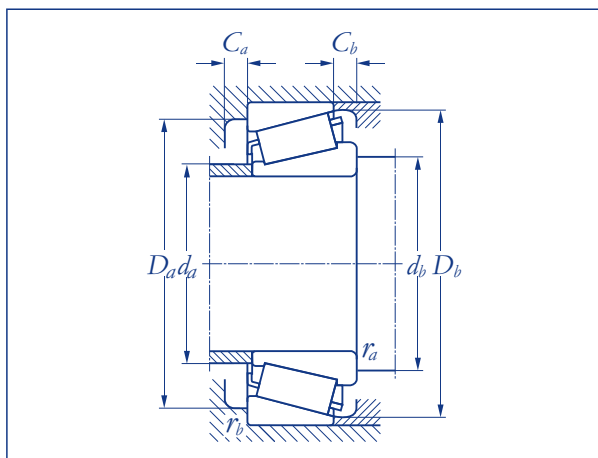
Taper roller bearings single row
Series **302**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1,2}$	$r_{3,4}$	r_5	a	d_a	d_b	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0	
	\approx			min	min	min		max	min	min	max	min	min	min	max	max			
30236	239	52	43	5	4	1,5	61	211	198	278	302	297	9	14	3	3	0,46	1,3	0,7
30238	254	55	46	5	4	1,5	63	224	208	298	322	318	9	14	3	3	0,43	1,4	0,8
30240	268	58	48	5	4	1,5	68	237	218	315	342	336	9	16	3	3	0,43	1,4	0,8
30244	294	65	54	5	4	1,5	74	259	238	348	382	371	10	18	3	3	0,43	1,4	0,8

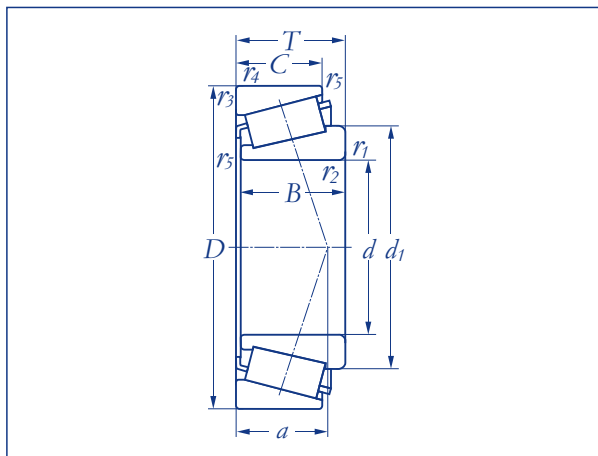
Taper roller bearings single row
 Series **303**

303..

Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
30302	95	15	42	14,25	17.900	16.000	6.300	9.100	2 FB
30303	130	17	47	15,25	22.400	20.000	5.900	8.400	2 FB
30304	170	20	52	16,25	27.200	26.000	5.600	7.700	2 FB
30305	260	25	62	18,25	35.600	34.400	4.600	6.300	2 FB
30306	390	30	72	20,75	44.800	44.800	3.900	5.200	2 FB
30307	520	35	80	22,75	57.600	58.800	3.500	4.600	2 FB
30308	720	40	90	25,25	68.600	76.000	3.100	4.200	2 FB
30309	970	45	100	27,25	86.400	96.000	2.800	3.700	2 FB
30310	1.250	50	110	29,25	100.000	112.000	2.500	3.300	2 FB
30311	1.550	55	120	31,50	113.600	130.400	2.200	3.000	2 FB
30312	1.950	60	130	33,50	134.400	156.800	2.100	2.800	2 FB
30313	2.400	65	140	36,00	155.200	182.400	1.800	2.500	2 GB
30314	2.900	70	150	38,00	176.000	208.000	1.600	2.300	2 GB
30315	3.450	75	160	40,00	196.800	232.000	1.500	2.200	2 GB
30316	4.100	80	170	42,50	216.000	256.000	1.400	2.100	2 GB
30317	4.850	85	180	44,50	242.400	292.000	1.300	1.900	2 GB
30318	5.650	90	190	46,50	264.000	320.000	1.200	1.800	2 GB
30319	6.700	95	200	49,50	264.000	312.000	1.200	1.800	2 GB
30320	8.050	100	215	51,50	321.600	392.000	1.100	1.600	2 GB
30321	9.150	105	225	53,50	343.200	424.000	1.100	1.500	2 GB
30322	11.000	110	240	54,50	378.400	468.000	4.600	1.500	2 GB
30324	14.000	120	260	59,50	448.800	568.000	1.000	1.400	2 GB
30326	17.000	130	280	63,75	501.600	640.000	900	1.200	2 GB
30328	21.000	140	300	67,75	589.600	760.000	800	1.100	2 GB
30330	28.500	150	320	72,00	660.000	848.000	700	1.100	2 GB
30332	29.000	160	340	75,00	730.400	944.000	700	1.000	2 GB

Taper roller bearings single row
 Series **303**


Designation	Dimensions(mm)																Calculation factors		
	d ₁	B	C	r _{1.2}	r _{3.4}	r ₅	a	d _a	d _b	D _a	D _a	D _b	C _a	C _b	r _a	r _b	e	Y	Y ₀
	≈			min	min	min		max	min	min	max	min	min	min	max	max			
30302	27,3	13,0	11	1,0	1,0	0,3	9	22	21	36	36	36	38	2	3,0	1,0	0,28	2,1	1,1
30303	30,4	14,0	12	1,0	1,0	0,3	10	25	23	41	40	41	42	2	3,0	1,0	0,28	2,1	1,1
30304	34,3	15,0	13	1,5	1,5	0,6	11	28	27	45	44	45	47	2	3,0	1,0	0,30	2,0	1,1
30305	41,5	17,0	15	1,5	1,5	0,6	13	34	32	55	54	55	57	2	3,0	1,0	0,30	2,0	1,1
30306	48,4	19,0	16	1,5	1,5	0,6	15	41	37	65	62	65	66	3	4,5	1,0	0,31	1,9	1,1
30307	54,5	21,0	18	2,0	1,5	0,6	16	46	44	71	70	71	74	3	4,5	1,5	0,31	1,9	1,1
30308	61,2	32,5	28	2,5	2,0	0,6	22	48	50	75	70	75	80	5	5,0	2,0	0,35	1,7	0,9
30309	70,1	25,0	22	2,0	1,5	0,6	21	59	54	91	86	91	92	3	5,0	1,5	0,35	1,7	0,9
30310	77,2	27,0	23	2,5	2,0	0,6	23	65	60	100	95	100	102	4	6,0	2,0	0,35	1,7	0,9
30311	84,0	29,0	25	2,5	2,0	0,6	24	71	65	110	104	110	111	4	6,5	2,0	0,35	1,7	0,9
30312	91,9	31,0	26	3,0	2,5	1,0	26	77	72	118	112	118	120	5	7,5	2,0	0,35	1,7	0,9
30313	98,6	33,0	28	3,0	2,5	1,0	28	84	77	128	122	128	130	5	8,0	2,0	0,35	1,7	0,9
30314	105,0	35,0	30	3,0	2,5	1,0	29	90	82	138	130	138	140	5	8,0	2,0	0,35	1,7	0,9
30315	112,0	37,0	31	3,0	2,5	1,0	31	96	87	148	139	148	149	5	9,0	2,0	0,35	1,7	0,9
30316	120,0	39,0	33	3,0	2,5	1,0	33	102	92	158	148	158	159	5	9,5	2,0	0,35	1,7	0,9
30317	126,0	41,0	34	4,0	3,0	1,0	35	107	99	166	156	166	167	6	10,5	2,5	0,35	1,7	0,9
30318	132,0	43,0	36	4,0	3,0	1,0	36	113	104	176	165	176	176	6	10,5	2,5	0,35	1,7	0,9
30319	139,0	45,0	38	4,0	3,0	1,0	39	118	109	186	172	186	184	6	11,5	2,5	0,35	1,7	0,9
30320	148,0	47,0	39	4,0	3,0	1,0	40	127	114	201	184	201	197	6	12,5	2,5	0,35	1,7	0,9
30321	155,0	49,0	41	4,0	3,0	1,0	41	133	119	211	193	211	206	7	12,5	2,5	0,35	1,7	0,9
30322	165,0	50,0	42	4,0	3,0	1,0	43	142	124	226	206	226	220	8	12,5	2,5	0,35	1,7	0,9
30324	178,0	55,0	46	4,0	3,0	1,0	47	153	134	246	221	246	237	7	13,5	2,5	0,35	1,7	0,9
30326	196,0	58,0	49	5,0	4,0	1,5	51	164	148	262	239	262	255	8	14,5	3,0	0,35	1,7	0,9
30328	205,0	62,0	53	5,0	4,0	1,5	54	176	158	282	255	282	273	8	14,5	3,0	0,35	1,7	0,9
30330	220,0	65,0	55	5,0	4,0	1,5	58	189	168	302	273	302	292	9	17,0	3,0	0,35	1,7	0,9
30332	233,0	68,0	58	5,0	4,0	1,5	61	201	178	322	290	322	310	9	17,0	3,0	0,35	1,7	0,9

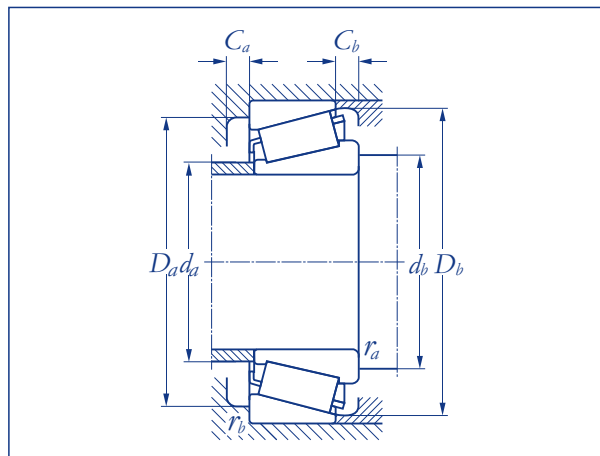
Taper roller bearings single row
Series **303**



303..

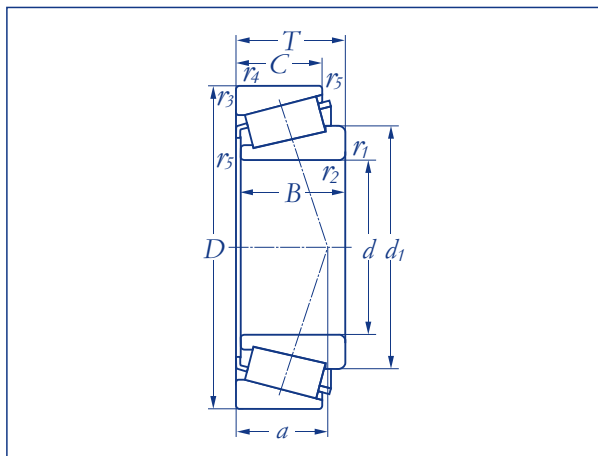
Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w	C _{ow}	F _{r perm}	F _{or perm}	
					(N)	(N)	(N)	(N)	
30334	35.000	170	360	80,00	816.000	1.072.000	600	900	2 GB
30352	110.000	260	540	113,00	1.696.000	2.440.000	400	600	

Taper roller bearings single row
Series **303**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1,2}$	$r_{3,4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
				min	min	min		max	min	min	max	min	min	min	max	max			
30334	248	72	62	5	4	1,5	66	213	188	342	307	342	329	9	18	3	0,35	1,7	0,9
30352	376	102	85	6	6	2,5	97	325	288	512	461	512	493	15	28	4	0,35	1,7	0,9

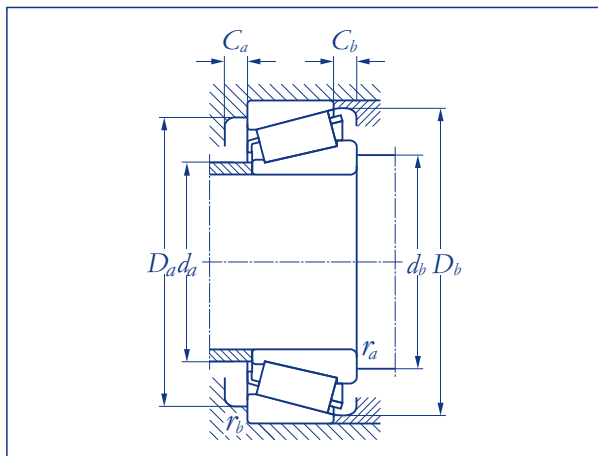
Taper roller bearings single row
Series **313**



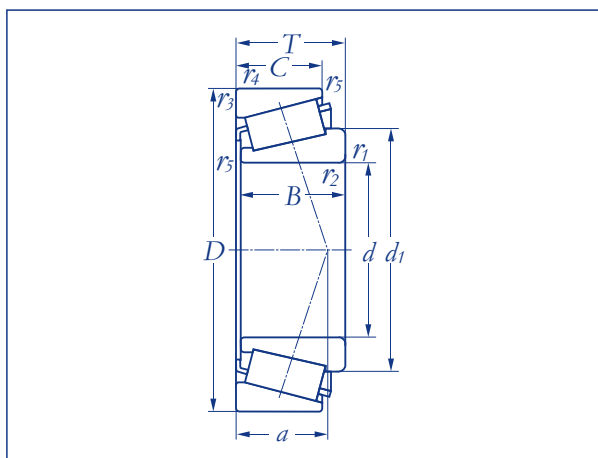
313..

Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
31305	260	25	62	18,25	30.400	32.000	3.900	5.200	7 FB
31306	390	30	72	20,75	37.800	40.000	3.500	4.600	7 FB
31307	520	35	80	22,75	49.200	53.600	3.100	4.200	7 FB
31308	720	40	90	25,25	58.900	65.200	2.800	3.700	7 FB
31309	950	45	100	27,25	73.000	81.600	2.300	3.100	7 FB
31310	1.200	50	110	29,25	84.800	96.000	2.200	3.000	7 FB
31311	1.550	55	120	31,50	96.800	109.600	1.900	2.600	7 FB
31312	1.900	60	130	33,50	116.000	132.800	1.800	2.500	7 FB
31313	2.350	65	140	36,00	132.000	154.400	1.500	2.200	7 GB
31314	2.950	70	150	38,00	149.600	176.000	1.400	2.100	7 GB
31315	3.500	75	160	40,00	167.200	196.000	1.300	1.900	7 GB
31316	4.050	80	170	42,50	179.200	212.000	1.300	1.900	7 GB
31317	4.600	85	180	44,50	193.600	228.000	1.200	1.800	7 GB
31318	5.900	90	190	46,50	211.200	252.000	1.100	1.600	7 GB
31319	6.950	95	200	49,50	233.600	284.000	1.100	1.600	7 GB
31320 X	8.600	100	215	56,50	299.200	372.000	1.100	1.500	7 GB
31321 X	9.650	105	225	58,00	321.600	400.000	1.000	1.400	7 GB
31322 X	12.000	110	240	63,00	365.600	468.000	900	1.300	7 GB
31324 X	15.500	120	260	68,00	431.200	556.000	800	1.100	7 GB
31326 X	18.500	130	280	72,00	484.000	624.000	700	1.100	7 GB
31328 X	24.500	140	300	77,00	554.400	720.000	700	1.000	7 GB
31330 X	29.500	150	320	82,00	624.800	816.000	600	900	7 GB

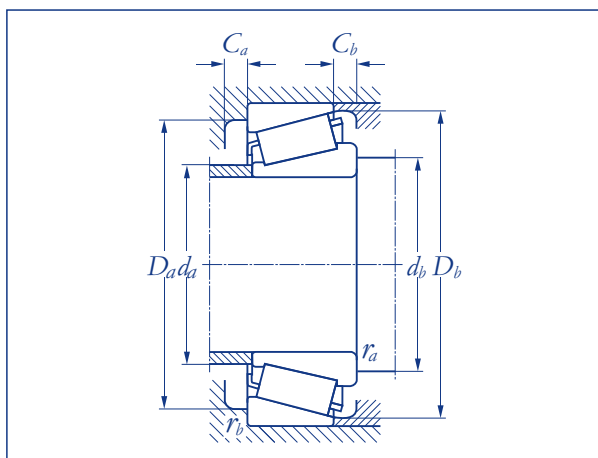
Taper roller bearings single row
Series **313**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1,2}$	$r_{3,4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
	\approx			min	min	min		max	min	min	max	min	min	min	max	max			
31305	45,8	17	13	1,5	1,5	0,6	20	34	32	47	55	59	3	5,0	1,0	1,0	0,83	0,72	0,4
31306	52,7	19	14	1,5	1,5	0,6	22	40	37	55	65	68	3	6,5	1,0	1,0	0,83	0,72	0,4
31307	59,6	21	15	2,0	1,5	0,6	25	45	44	62	71	76	3	7,5	1,5	1,5	0,83	0,72	0,4
31308	62,5	23	20	2,0	1,5	0,6	19	53	49	77	81	82	3	5,0	1,5	1,5	0,35	1,70	0,9
31309	74,7	25	18	2,0	1,5	0,6	31	57	54	79	91	95	4	9,0	1,5	1,5	0,83	0,72	0,4
31310	81,5	27	19	2,5	2,0	0,6	34	62	60	87	100	104	4	10,0	2,0	2,0	0,83	0,72	0,4
31311	88,4	29	21	2,5	2,0	0,6	37	68	65	94	110	113	4	10,5	2,0	2,0	0,83	0,72	0,4
31312	95,9	31	22	3,0	2,5	1,0	39	74	72	103	118	123	5	11,5	2,0	2,0	0,83	0,72	0,4
31313	103	33	23	3,0	2,5	1,0	42	80	77	111	128	132	5	13,0	2,0	2,0	0,83	0,72	0,4
31314	110,0	35	25	3,0	2,5	1,0	45	85	82	118	138	141	5	13,0	2,0	2,0	0,83	0,72	0,4
31315	116,0	37	26	3,0	2,5	1,0	48	91	87	127	148	151	6	14,0	2,0	2,0	0,83	0,72	0,4
31316	124,0	39	27	3,0	2,5	1,0	52	97	92	134	158	159	6	15,5	2,0	2,0	0,83	0,72	0,4
31317	131,0	41	28	4,0	3,0	1,0	55	103	99	143	166	169	6	16,5	2,5	2,5	0,83	0,72	0,4
31318	138,0	43	30	4,0	3,0	1,0	57	109	104	151	176	179	5	16,5	2,5	2,5	0,83	0,72	0,4
31319	145,0	45	32	4,0	3,0	1,0	60	114	109	157	186	187	5	17,5	2,5	2,5	0,83	0,72	0,4
31320 X	158,0	51	35	4,0	3,0	1,0	65	121	114	168	201	202	7	21,5	2,5	2,5	0,83	0,72	0,4
31321 X	165,0	53	36	4,0	3,0	1,0	68	127	119	176	211	211	7	22,0	2,5	2,5	0,83	0,72	0,4
31322 X	176,0	57	38	4,0	3,0	1,0	72	135	124	188	226	224	7	25,0	2,5	2,5	0,83	0,72	0,4
31324 X	190,0	62	42	4,0	3,0	1,0	78	145	134	203	246	244	9	26,0	2,5	2,5	0,83	0,72	0,4
31326 X	204,0	66	44	5,0	4,0	1,5	84	157	148	218	262	261	8	28,0	3,0	3,0	0,83	0,72	0,4
31328 X	219,0	70	47	5,0	4,0	1,5	90	169	158	235	282	280	9	30,0	3,0	3,0	0,83	0,72	0,4
31330 X	234,0	75	50	5,0	4,0	1,5	96	181	168	251	302	300	9	32,0	3,0	3,0	0,83	0,72	0,4

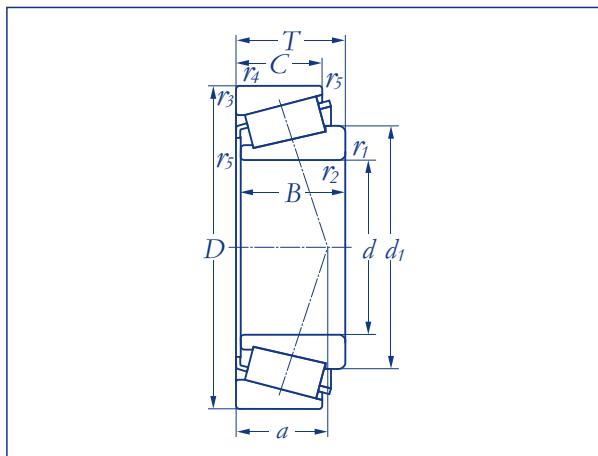
Taper roller bearings single row
 Series **320**

320..

Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
32004 X	97	20	42	15	19.300	21.600	5.900	8.400	3 CC
320/22 X	100	22	44	15	20.000	23.200	5.600	7.700	3 CC
32005 X	110	25	47	15	21.600	26.000	5.600	7.700	4 CC
320/28 X	150	28	52	16	25.500	30.400	4.900	6.600	4 CC
32006 X	170	30	55	17	28.600	35.200	4.600	6.300	4 CC
320/32 X	190	32	58	17	29.500	37.200	4.400	5.900	4 CC
32007 X	220	35	62	18	34.300	43.200	4.200	5.600	4 CC
32008 X	270	40	68	19	42.200	56.800	3.700	4.900	3 CD
32009 X	340	45	75	20	46.600	64.000	3.300	4.400	3 CC
32010 X	370	50	80	20	48.400	70.400	3.100	4.200	3 CC
32011 X	550	55	90	23	64.700	92.800	2.800	3.700	3 CC
32012 X	590	60	95	23	66.000	97.600	2.600	3.500	4 CC
32013 X	630	65	100	23	67.300	101.600	2.300	3.100	4 CC
32014 X	840	70	110	25	80.800	122.400	2.200	3.000	4 CC
32015 X	900	75	115	25	84.800	130.400	2.100	2.800	4 CC
32016 X	1.300	80	125	29	110.400	172.800	1.800	2.500	3 CC
32017 X	1.350	85	130	29	112.000	179.200	1.600	2.300	4 CC
32018 X	1.750	90	140	32	134.400	216.000	1.500	2.200	3 CC
32019 X	1.800	95	145	32	134.400	216.000	1.500	2.200	4 CC
32020 X	1.900	100	150	32	137.600	224.000	1.400	2.100	4 CC
32021 X	2.400	105	160	35	160.800	268.000	1.300	1.900	4 DC
32022 X	3.050	110	170	38	186.400	312.000	1.200	1.800	4 DC
32024 X	3.250	120	180	38	193.600	332.000	1.100	1.600	4 DC
32026 X	4.950	130	200	45	251.200	432.000	1.100	1.500	4 EC
32028 X	5.250	140	210	45	264.000	468.000	1.100	1.500	4 DC
32030 X	6.350	150	225	48	295.200	524.000	1.000	1.400	4 EC

Taper roller bearings single row
 Series **320**


Designation	Dimensions(mm)																Calculation factors		
	d ₁	B	C	r _{1.2}	r _{3.4}	r ₅	a	d _a	d _b	D _a	D _a	D _b	C _a	C _b	r _a	r _b	e	Y	Y ₀
	≈			min	min	min		max	min	min	max	min	min	min	max	max			
32004 X	31,1	15	12,0	0,6	0,6	0,3	10	25	25	36	37	39	2	3,0	0,6	0,6	0,37	1,60	0,9
320/22 X	33,4	15	11,5	0,6	0,6	0,3	11	27	27	38	39	41	3	3,5	0,6	0,6	0,40	1,50	0,8
32005 X	36,5	15	11,5	0,6	0,6	0,3	11	30	30	40	42	44	3	3,5	0,6	0,6	0,43	1,40	0,8
320/28 X	40,3	16	12,0	1,0	1,0	0,3	12	34	34	45	46	49	3	4,0	1,0	1,0	0,43	1,40	0,8
32006 X	43,0	17	13,0	1,0	1,0	0,3	13	35	36	48	49	52	3	4,0	1,0	1,0	0,43	1,40	0,8
320/32 X	45,6	17	13,0	1,0	1,0	0,3	14	38	38	50	52	55	3	4,0	1,0	1,0	0,46	1,30	0,7
32007 X	49,2	18	14,0	1,0	1,0	0,3	15	41	41	54	56	59	4	4,0	1,0	1,0	0,46	1,30	0,7
32008 X	54,2	19	14,5	1,0	1,0	0,3	15	46	46	60	62	65	4	4,5	1,0	1,0	0,37	1,60	0,9
32009 X	60,4	20	15,5	1,0	1,0	0,3	16	52	51	67	69	72	4	4,5	1,0	1,0	0,40	1,50	0,8
32010 X	65,6	20	15,5	1,0	1,0	0,3	18	57	56	72	74	77	4	4,5	1,0	1,0	0,43	1,40	0,8
32011 X	73,2	23	17,5	1,5	1,5	0,6	20	63	62	81	83	86	4	5,5	1,0	1,0	0,40	1,50	0,8
32012 X	77,8	23	17,5	1,5	1,5	0,6	21	67	67	85	88	91	4	5,0	1,0	1,0	0,43	1,40	0,8
32013 X	83,3	23	17,5	1,5	1,5	0,6	22	72	72	90	93	97	4	5,5	1,0	1,0	0,46	1,30	0,7
32014 X	89,8	25	19,0	1,5	1,5	0,6	23	78	77	98	103	105	5	6,0	1,0	1,0	0,43	1,40	0,8
32015 X	95,1	25	19,0	1,5	1,5	0,6	25	83	82	103	108	110	5	6,0	1,0	1,0	0,46	1,30	0,7
32016 X	103,0	29	22,0	1,5	1,5	0,6	27	90	87	112	118	120	6	7,0	1,0	1,0	0,43	1,40	0,8
32017 X	108,0	29	22,0	1,5	1,5	0,6	28	94	92	117	123	125	6	7,0	1,0	1,0	0,44	1,35	0,8
32018 X	115,0	32	24,0	2,0	1,5	0,6	30	100	99	125	131	134	6	8,0	1,5	1,5	0,43	1,40	0,8
32019 X	120,0	32	24,0	2,0	1,5	0,6	31	105	104	130	136	139	6	8,0	1,5	1,5	0,44	1,35	0,8
32020 X	125,0	32	24,0	2,0	1,5	0,6	32	110	109	134	141	144	6	8,0	1,5	1,5	0,46	1,30	0,7
32021 X	132,0	35	26,0	2,5	2,0	0,6	34	116	115	143	150	154	6	9,0	2,0	2,0	0,44	1,35	0,8
32022 X	140,0	38	29,0	2,5	2,0	0,6	36	123	120	152	160	163	7	9,0	2,0	2,0	0,43	1,40	0,8
32024 X	150,0	38	29,0	2,5	2,0	0,6	39	132	130	161	170	173	7	9,0	2,0	2,0	0,46	1,30	0,7
32026 X	165,0	45	34,0	2,5	2,0	0,6	42	144	140	178	190	192	7	11,0	2,0	2,0	0,43	1,40	0,8
32028 X	175,0	45	34,0	2,5	2,0	0,6	46	153	150	187	200	202	7	11,0	2,0	2,0	0,46	1,30	0,7
32030 X	187,0	48	36,0	3,0	2,5	1,0	49	164	162	200	213	216	8	12,0	2,5	2,5	0,46	1,30	0,7

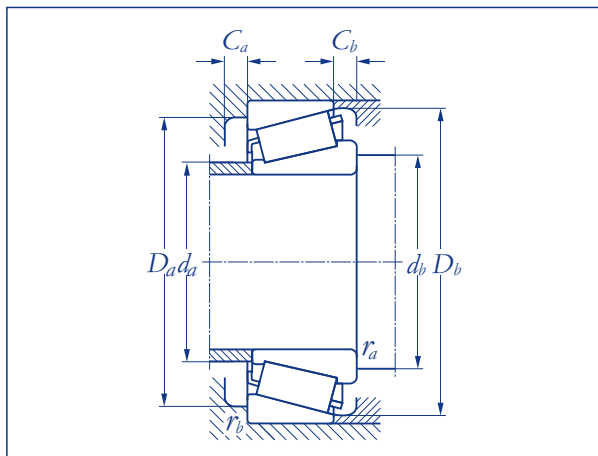
Taper roller bearings single row
Series **320**



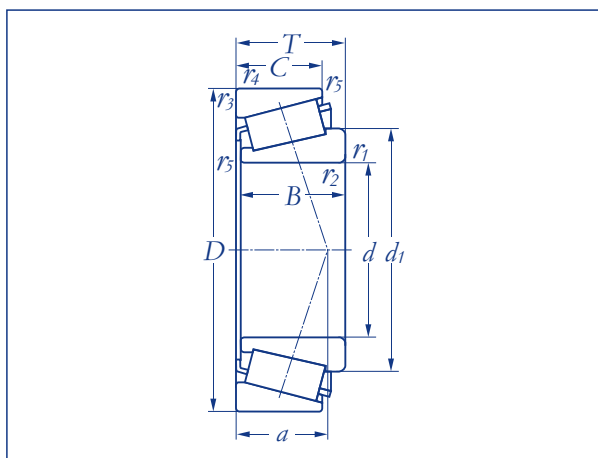
320..

Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
32032 X	7.750	160	240	51	343.200	624.000	900	1.200	4 EC
32034 X	10.500	170	260	57	409.600	732.000	800	1.100	4 EC
32036 X	14.500	180	280	64	515.200	928.000	700	1.100	3 FD
32038 X	15.000	190	290	64	528.000	960.000	700	1.000	4 FD
32040 X	19.500	200	310	70	598.400	1.096.000	600	900	4 FD
32044 X	25.500	220	340	76	717.600	1.328.000	600	900	4 FD
32048 X	27.500	240	360	76	748.000	1.440.000	500	800	4 FD
32052 X	40.000	260	400	87	936.000	1.760.000	500	700	4 FC
32056 X	40.500	280	420	87	968.000	1.888.000	500	700	4FC
32064 X	65.000	320	480	100	1.232.000	12.480.000	400	500	4GD

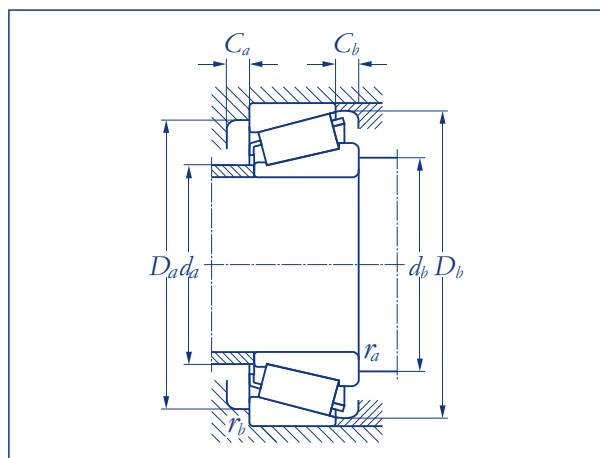
Taper roller bearings single row
Series **320**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1.2}$	$r_{3.4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
				min	min	min		max	min	min	min	max	min	min	min	max	max		
32032 X	200	51	38	3	2,5	1,0	52	175	172	213	228	231	8	13	2,0	2,0	0,46	1,30	0,7
32034 X	214	57	43	3	2,5	1,0	56	188	182	230	248	249	10	14	2,0	2,0	0,44	1,35	0,8
32036 X	229	64	48	3	2,5	1,0	59	199	192	247	268	267	10	16	2,0	2,0	0,43	1,40	0,8
32038 X	240	64	48	3	2,5	1,0	62	210	202	257	278	279	10	16	2,0	2,0	0,44	1,35	0,8
32040 X	254	70	53	3	2,5	1,0	66	222	212	273	298	297	11	17	2,5	2,0	0,43	1,40	0,8
32044 X	279	76	57	4	3,0	1,0	72	244	234	300	326	326	12	19	2,5	2,5	0,43	1,40	0,8
32048 X	299	76	57	4	3,0	1,0	78	262	254	318	346	346	12	19	2,5	2,5	0,46	1,30	0,7
32052 X	328	87	65	5	4,0	1,5	84	287	278	352	382	383	13	22	3,0	3,0	0,43	1,40	0,8
32056 X	348	87	65	5	4,0	1,5	89	305	298	370	402	402	14	22	3,0	3,0	0,46	1,30	0,7
32064 X	399	100	74	5	4,0	1,5	103	350	338	424	462	461	15	26	3,0	3,0	0,46	1,30	0,7

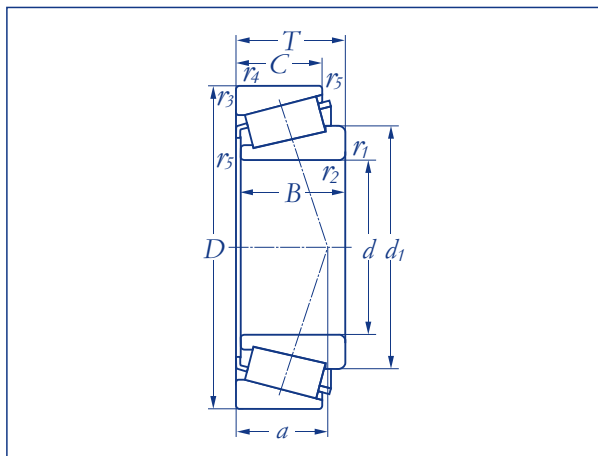
Taper roller bearings single row
 Series **322**

322..

Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
32205 B	190	25	52	19,25	28.600	35.200	4.900	6.600	5 CD
322/28 B	250	28	58	20,25	33.400	40.000	4.400	5.900	5 DD
32206 B	300	30	62	21,25	39.600	46.800	4.200	5.600	5 DC
32206	280	30	62	21,25	40.000	45.600	4.400	5.900	3 DC
32207 B	440	35	72	24,25	48.400	60.000	3.700	4.900	5 DC
32207	430	35	72	24,25	52.800	62.400	3.700	4.900	3 DC
32208	530	40	80	24,75	59.800	69.200	3.300	4.400	3 DC
32209 B	600	45	85	24,75	58.900	74.400	3.000	3.900	5 DC
32209	580	45	85	24,75	64.700	78.400	3.100	4.200	3 DC
32210 B	650	50	90	24,75	66.000	83.200	2.800	3.700	5 DC
32210	610	50	90	24,75	66.000	80.000	3.000	3.900	3 DC
32211 B	870	55	100	26,75	80.800	101.600	2.500	3.300	
32211	830	55	100	26,75	84.800	103.200	2.600	3.500	3 DC
32212	1.150	60	110	29,75	100.000	128.000	2.300	3.100	3 EC
32213	1.500	65	120	32,75	120.800	154.400	2.100	2.800	3 EC
32214	1.600	70	125	33,25	125.600	166.400	1.900	2.600	3 EC
32215	1.700	75	130	33,25	128.800	169.600	1.800	2.500	4 DC
32216	2.050	80	140	35,25	149.600	196.000	1.600	2.300	3 EC
32217	2.600	85	150	38,50	169.600	228.000	1.500	2.200	3 EC
32218	3.350	90	160	42,50	200.800	272.000	1.400	2.100	3 FC
32219	4.050	95	170	45,50	224.800	312.000	1.300	1.900	3 FC
32220	4.900	100	180	49,00	255.200	352.000	1.200	1.800	3 FC
32221	6.000	105	190	53,00	286.400	408.000	1.200	1.800	3 FC
32222	7.100	110	200	56,00	321.600	456.000	1.100	1.600	3 FC
32224	9.150	120	215	61,50	374.400	556.000	1.100	1.500	4 FD
32226	11.500	130	230	67,75	440.000	664.000	1.000	1.400	4 FD

Taper roller bearings single row
 Series **322**


Designation	Dimensions(mm)																Calculation factors		
	d ₁	B	C	r _{1.2}	r _{3.4}	r ₅	a	d _a	d _b	D _a	D _a	D _b	C _a	C _b	r _a	r _b	e	Y	Y ₀
	≈			min	min	min		max	min	min	max	min	min	min	max	max			
32205 B	40,2	18	15	1,0	1,0	0,3	16	30	31	41	46	50	3	4,0	1,0	1,0	0,57	1,05	0,6
322/28 B	43,9	19	16	1,0	1,0	0,3	17	33	34	46	52	55	3	4,0	1,0	1,0	0,57	1,05	0,6
32206 B	47,3	20	17	1,0	1,0	0,3	18	36	36	50	56	60	3	4,0	1,0	1,0	0,57	1,05	0,6
32206	45,2	20	17	1,0	1,0	0,3	15	37	36	52	56	58	3	4,0	1,0	1,0	0,37	1,60	0,9
32207 B	55,1	23	19	1,5	1,5	0,6	21	42	42	56	65	68	3	5,0	1,0	1,0	0,57	1,05	0,6
32207	52,4	23	19	1,5	1,5	0,6	17	43	42	61	65	67	3	5,0	1,0	1,0	0,37	1,60	0,9
32208	58,4	23	19	1,5	1,5	0,6	19	49	47	68	73	75	3	5,5	1,0	1,0	0,37	1,60	0,9
32209 B	66,7	23	19	1,5	1,5	0,6	23	53	52	70	78	80	4	5,5	1,0	1,0	0,60	1,00	0,6
32209	64,0	23	19	1,5	1,5	0,6	20	54	52	73	78	80	3	5,5	1,0	1,0	0,40	1,50	0,8
32210 B	70,8	23	18	1,5	1,5	0,6	24	57	57	76	83	87	4	6,5	1,0	1,0	0,60	1,00	0,6
32210	68,5	23	19	1,5	1,5	0,6	21	58	57	78	83	85	3	5,5	1,0	1,0	0,43	1,40	0,8
32211 B	78,0	25	19	2,0	1,5	0,6	26	63	64	85	91	96	5	7,5	1,5	1,5	0,57	1,05	0,6
32211	75,2	25	21	2,0	1,5	0,6	22	64	64	87	91	95	4	5,5	1,5	1,5	0,40	1,50	0,8
32212	81,9	28	24	2,0	1,5	0,6	24	69	69	95	101	104	4	5,5	1,5	1,5	0,40	1,50	0,8
32213	90,3	31	27	2,0	1,5	0,6	27	76	74	104	111	115	4	5,5	1,5	1,5	0,40	1,50	0,8
32214	95,0	31	27	2,0	1,5	0,6	28	80	79	108	116	119	4	6,0	1,5	1,5	0,43	1,40	0,8
32215	100,0	31	27	2,0	1,5	0,6	29	85	84	114	121	125	4	6,0	1,5	1,5	0,43	1,40	0,8
32216	106,0	33	28	2,5	2,0	0,6	30	91	90	122	130	134	5	7,0	2,0	2,0	0,43	1,40	0,8
32217	113,0	36	30	2,5	2,0	0,6	33	97	95	130	140	142	5	8,5	2,0	2,0	0,43	1,40	0,8
32218	121,0	40	34	2,5	2,0	0,6	36	102	100	138	150	152	5	8,5	2,0	2,0	0,43	1,40	0,8
32219	128,0	43	37	3,0	2,5	1,0	39	109	107	145	158	161	5	8,5	2,0	2,0	0,43	1,40	0,8
32220	135,0	46	39	3,0	2,5	1,0	41	115	112	154	168	171	5	10,0	2,0	2,0	0,43	1,40	0,8
32221	143,0	50	43	3,0	2,5	1,0	44	120	117	161	178	180	6	10,0	2,0	2,0	0,43	1,40	0,8
32222	151,0	53	46	3,0	2,5	1,0	46	127	122	170	188	190	6	10,0	2,0	2,0	0,43	1,40	0,8
32224	163,0	58	50	3,0	2,5	1,0	51	137	132	181	203	204	7	11,5	2,0	2,0	0,43	1,40	0,8
32226	176,0	64	54	4,0	3,0	1,0	56	146	144	193	216	219	7	13,5	2,5	2,5	0,43	1,40	0,8

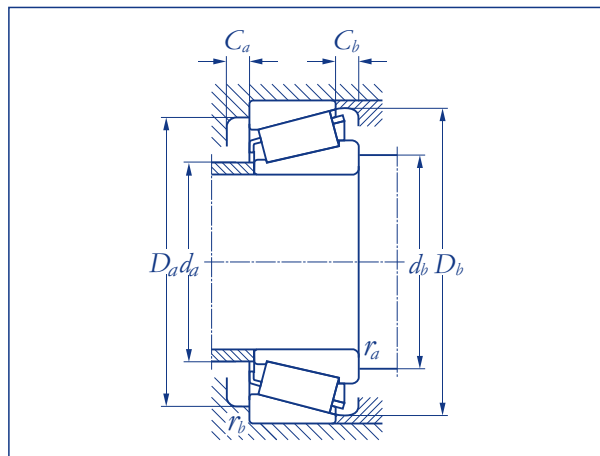
Taper roller bearings single row
Series **322**



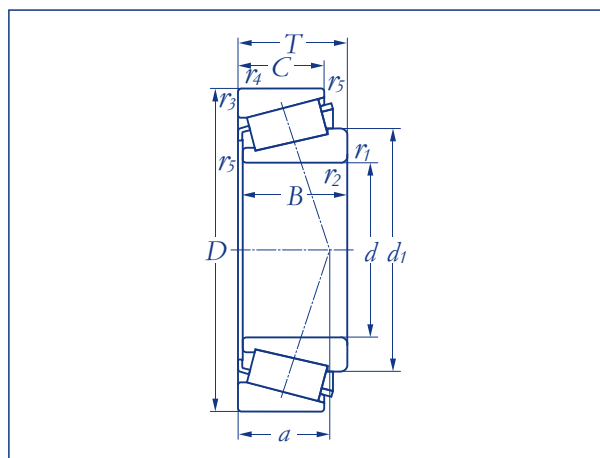
322..

Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
32226	11.500	130	230	67,75	440.000	664.000	1.000	1.400	4 FD
32228	14.500	140	250	71,75	515.200	800.000	900	1.300	4 FD
32230	17.500	150	270	77,00	589.600	912.000	800	1.100	4 GD
32232	25.500	160	290	84,00	704.000	1.120.000	700	1.100	4 GD
32234	28.500	170	310	91,00	808.000	1.304.000	700	1.000	4 GD
32236	29.500	180	320	91,00	808.000	1.304.000	600	900	4 GD
32238	36.000	190	340	97,00	952.000	1.544.000	600	900	4 GD
32240	42.500	200	360	104,00	968.000	1.600.000	600	900	3 GD
32244	60.000	220	400	114,00	1.288.000	2.160.000	500	700	
32248	81.500	240	440	127,00	1.552.000	2.680.000	500	700	
32252	105.000	260	480	137,00	1.760.000	2.920.000	400	600	

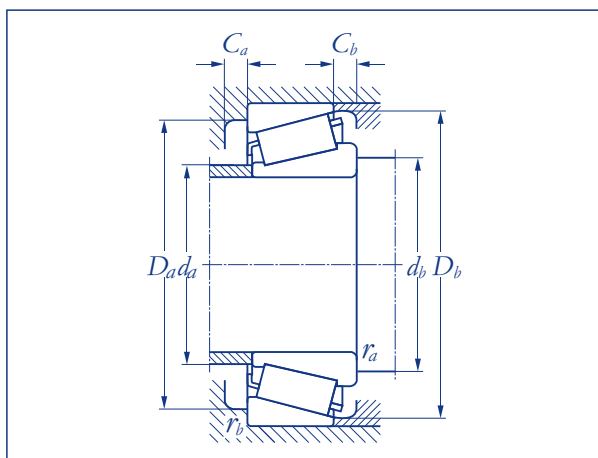
Taper roller bearings single row
Series **322**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1.2}$	$r_{3.4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
				min	min	min		max	min	min	max	min	min	min	max	max			
32228	191,0	68	58	4,0	3,0	1,0	60	159	154	210	236	238	8	13,5	2,5	2,5	0,43	1,40	0,8
32230	205,0	73	60	4,0	3,0	1,0	64	171	164	226	256	254	8	17,0	2,5	2,5	0,43	1,40	0,8
32232	221,0	80	67	4,0	3,0	1,0	70	183	174	242	276	274	10	17,0	2,5	2,5	0,43	1,40	0,8
32234	237,0	86	71	5,0	4,0	1,5	75	196	188	259	292	294	10	20,0	3,0	3,0	0,43	1,40	0,8
32236	247,0	86	71	5,0	4,0	1,5	78	204	198	267	302	303	10	20,0	3,0	3,0	0,46	1,30	0,7
32238	261,0	92	75	5,0	4,0	1,5	81	216	208	286	322	323	10	22,0	3,0	3,0	0,43	1,40	0,8
32240	274,0	98	82	5,0	4,0	1,5	83	231	218	302	342	340	11	22,0	3,0	3,0	0,40	1,50	0,8
32244	306,0	108	90	5,0	4,0	1,5	95	253	238	334	382	379	13	24,0	3,0	3,0	0,43	1,40	0,8
32248	335,0	120	100	5,0	4,0	1,5	105	276	258	365	422	415	14	27,0	4,0	3,0	0,43	1,40	0,8
32252	366,0	130	105	6,0	5,0	1,5	112	303	282	401	458	454	16	32,0	4,0	4,0	0,43	1,40	0,8

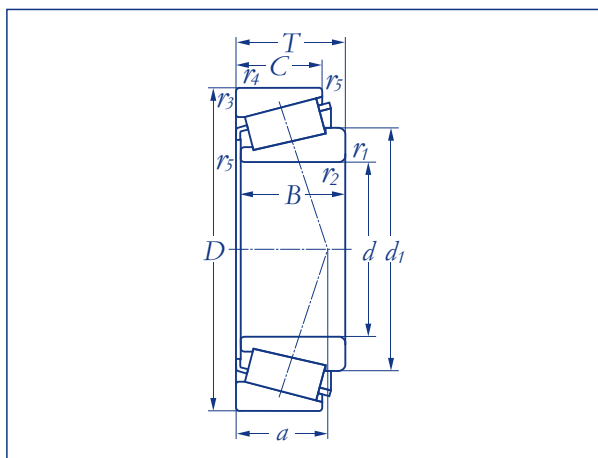
Taper roller bearings single row
 Series **323**

323..

Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
32303	170	17	47	20,25	27.700	26.800	5.600	7.700	2 FD
32304	230	20	52	22,50	35.200	36.400	5.200	7.000	2 FD
32305	360	25	62	25,25	48.400	50.400	4.200	5.600	2 FD
32306	550	30	72	28,75	61.200	68.000	3.700	4.900	2 FD
32307 B	800	35	80	32,75	74.800	91.200	3.100	4.200	5 FE
32307	730	35	80	32,75	76.100	84.800	3.300	4.400	2 FE
32308 B	1.100	40	90	35,25	86.400	112.000	2.800	3.700	5 FD
32308	1.000	40	90	35,25	93.600	112.000	2.800	3.700	2 FD
32309 B	1.450	45	100	38,25	107.200	140.800	2.500	3.300	5 FD
32309	1.350	45	100	38,25	112.000	136.000	2.500	3.300	2 FD
32310 B	1.850	50	110	42,25	128.800	172.800	2.200	3.000	5 FD
32310	1.800	50	110	42,25	137.600	169.600	2.200	3.000	2 FD
32311	2.300	55	120	45,50	158.400	200.000	2.100	2.800	2 FD
32311 B	2.500	55	120	45,50	152.000	208.000	1.900	2.600	5 FD
32312	2.850	60	130	48,50	183.200	232.000	1.800	2.500	2 FD
32312 B	2.800	60	130	48,50	176.000	244.000	1.800	2.500	5 FD
32313	3.450	65	140	51,00	211.200	268.000	1.600	2.300	2 GD
32313 B	3.350	65	140	51,00	196.800	276.000	1.500	2.200	5 GD
32314	4.300	70	150	54,00	237.600	304.000	1.500	2.200	2 GD
32314 B	4.250	70	150	54,00	224.800	320.000	1.400	2.100	5 GD
32315	5.200	75	160	58,00	268.800	352.000	1.400	2.100	2 GD
32315 B	5.550	75	160	58,00	268.800	380.000	1.300	1.900	5 GD
32316	6.200	80	170	61,50	304.000	400.000	1.300	1.900	2 GD
32316 B	5.700	80	170	61,50	286.400	416.000	1.200	1.800	5 GD
32317	6.850	85	180	63,50	321.600	424.000	1.200	1.800	2 GD
32317 B	7.500	85	180	63,50	312.800	448.000	1.200	1.800	5 GD

Taper roller bearings single row
 Series **323**


Designation	Dimensions(mm)																Calculation factors		
	d ₁	B	C	r _{1,2}	r _{3,4}	r ₅	a	d _a	d _b	D _a	D _a	D _b	C _a	C _b	r _a	r _b	e	Y	Y ₀
	≈			min	min	min		max	min	min	min	max	min	min	min	max			
32303	30,7	19	13	1,0	1,0	0,3	12	24	23	39	41	43	3	4,0	1,0	1,0	0,28	2,10	1,1
32304	34,5	21	18	1,5	1,5	0,6	14	27	27	43	45	47	3	4,0	1,0	1,0	0,30	2,00	1,1
32305	41,7	24	20	1,5	1,5	0,6	15	33	32	52	55	57	3	5,0	1,0	1,0	0,30	2,00	1,1
32306	48,7	27	23	1,5	1,5	0,6	18	39	37	59	65	66	3	5,5	1,0	1,0	0,31	1,90	1,1
32307 B	59,3	31	25	2,0	1,5	0,6	24	42	44	61	71	76	4	7,5	1,5	1,5	0,54	1,10	0,6
32307	54,8	31	25	2,0	1,5	0,6	20	44	44	66	71	74	4	7,5	1,5	1,5	0,31	1,90	1,1
32308 B	62,9	33	27	2,0	1,5	0,6	23	51	49	73	81	82	3	8,0	1,5	1,5	0,35	1,70	0,9
32308	67,1	23	17	2,0	1,5	0,6	28	51	49	71	81	86	3	8,0	1,5	1,5	0,83	0,72	0,4
32309 B	74,8	36	30	2,0	1,5	0,6	30	55	54	76	91	94	5	8,0	1,5	1,5	0,54	1,10	0,6
32309	70,4	36	30	2,0	1,5	0,6	25	57	54	82	91	93	4	8,0	1,5	1,5	0,35	1,70	0,9
32310 B	82,9	40	33	2,5	2,0	0,6	34	62	60	83	100	103	5	9,0	2,0	2,0	0,54	1,10	0,6
32310	77,7	40	33	2,5	2,0	0,6	27	63	60	90	100	102	5	9,0	2,0	2,0	0,35	1,70	0,9
32311	84,6	43	35	2,5	2,0	0,6	29	68	65	99	110	111	5	10,5	2,0	2,0	0,35	1,70	0,9
32311 B	90,5	43	35	2,5	2,0	0,6	36	67	65	91	110	112	5	10,5	2,0	2,0	0,54	1,10	0,6
32312	91,7	46	37	3,0	2,5	1,0	31	74	72	107	118	120	6	11,5	2,0	2,0	0,35	1,70	0,9
32312 B	98,1	46	37	3,0	2,5	1,0	38	73	72	99	118	122	6	11,5	2,0	2,0	0,54	1,10	0,6
32313	99,2	48	39	3,0	2,5	1,0	33	80	77	117	128	130	6	12,0	2,0	2,0	0,35	1,70	0,9
32313 B	105,0	48	39	3,0	2,5	1,0	41	79	77	107	128	131	6	12,0	2,0	2,0	0,54	1,10	0,6
32314	106,0	51	42	3,0	2,5	1,0	36	86	82	125	138	140	6	12,0	2,0	2,0	0,35	1,70	0,9
32314 B	113,0	51	42	3,0	2,5	1,0	44	85	82	115	138	141	7	12,0	2,0	2,0	0,54	1,10	0,6
32315	113,0	55	45	3,0	2,5	1,0	38	92	87	133	148	149	7	13,0	2,0	2,0	0,35	1,70	0,9
32315 B	120,0	55	45	3,0	2,5	1,0	46	90	87	124	148	151	7	13,0	2,0	2,0	0,54	1,10	0,6
32316	120,0	58	48	3,0	2,5	1,0	41	98	92	142	158	159	7	13,5	2,0	2,0	0,35	1,70	0,9
32316 B	128,0	58	48	3,0	2,5	1,0	50	96	92	130	158	160	7	13,5	2,0	2,0	0,54	1,10	0,6
32317	126,0	60	49	4,0	3,0	1,0	42	103	99	150	166	167	7	14,5	2,5	2,5	0,35	1,70	0,9
32317 B	135,0	60	49	4,0	3,0	1,0	52	102	99	138	166	169	7	14,5	2,5	2,5	0,54	1,10	0,6

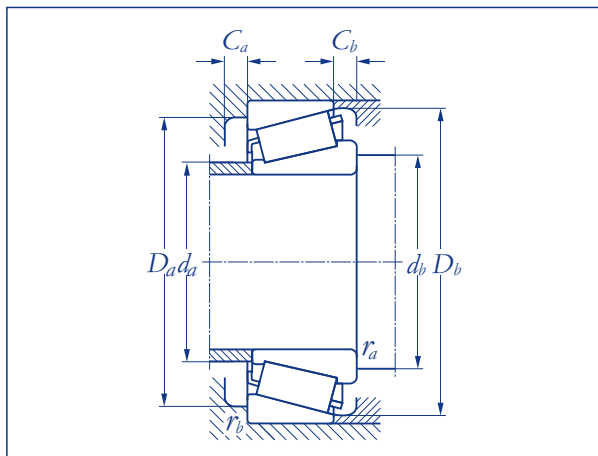
Taper roller bearings single row
Series **323**



323..

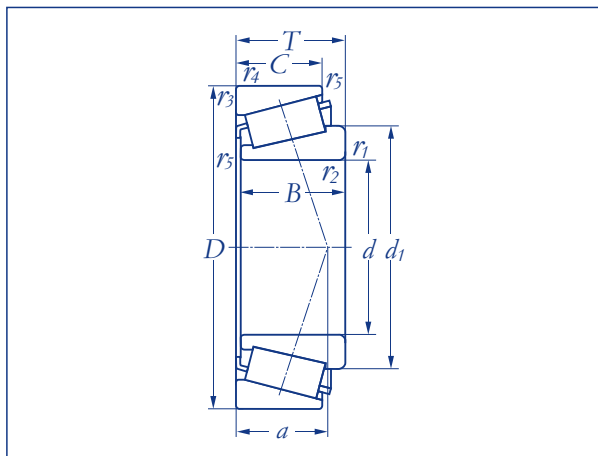
Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
32318	8.400	90	190	67,50	365.600	488.000	1.100	1.600	2 GD
32319	11.000	95	200	71,50	400.800	536.000	1.100	1.600	2 GD
32320	12.500	100	215	77,50	457.600	624.000	1.100	1.500	2 GD
32321	14.500	105	225	81,50	484.000	652.000	1.000	1.400	2 GD
32322	17.000	110	240	84,50	501.600	664.000	900	1.300	2 GD
32324	21.500	120	260	90,50	633.600	896.000	900	1.200	2 GD
32326	30.500	130	280	98,75	686.400	944.000	700	1.100	
32330	46.000	150	320	114,00	936.000	1.328.000	600	900	

Taper roller bearings single row
Series **323**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1.2}$	$r_{3.4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
				min	min	min		max	min	min	max	min	min	min	max	max			
32318	133,0	64	53	4,0	3,0	1,0	44	109	104	157	176	177	7	14,5	2,5	2,5	0,35	1,70	0,9
32319	141,0	67	55	4,0	3,0	1,0	47	115	109	166	186	186	8	16,5	2,5	2,5	0,35	1,70	0,9
32320	151,0	73	60	4,0	3,0	1,0	51	123	114	177	201	200	8	17,5	2,5	2,5	0,35	1,70	0,9
32321	158,0	77	63	4,0	3,0	1,0	53	129	119	185	211	209	9	18,5	2,5	2,5	0,35	1,70	0,9
32322	168,0	80	65	4,0	3,0	1,0	55	137	124	198	226	222	9	19,5	2,5	2,5	0,35	1,70	0,9
32324	181,0	86	69	4,0	3,0	1,0	60	148	134	213	246	239	9	21,5	2,5	2,5	0,35	1,70	0,9
32326	196,0	93	78	5,0	4,0	1,5	66	160	148	230	262	260	10	20,5	3,0	3,0	0,35	1,70	0,9
32330	226,0	108	90	5,0	4,0	1,5	76	183	168	264	302	299	12	24,0	3,0	3,0	0,35	1,70	0,8

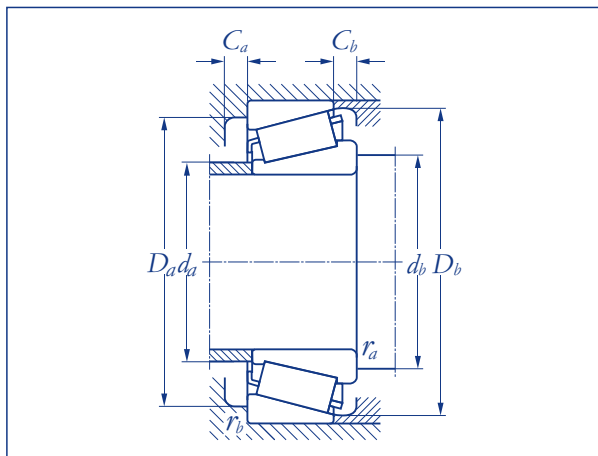
Taper roller bearings single row
Series **329**



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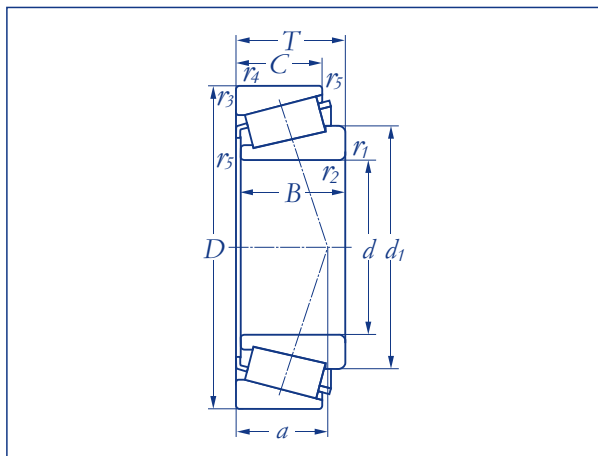
Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
32915	520	75	105	20,0	70.700	92.800	2.200	3.000	2 BC
32922	1.250	110	150	25,0	125.000	179.200	1.400	2.100	2 CC
32926	2.400	130	180	32,0	198.000	292.000	1.100	1.600	2 CC
32928	2.550	140	190	32,0	205.000	312.000	1.100	1.500	2 CC
32934	4.500	170	230	38,0	286.000	468.000	900	1.300	3 DC
32936	6.650	180	250	45,0	352.000	588.000	800	1.100	4 DC
32938	7.000	190	260	45,0	358.000	612.000	700	1.100	4 DC
32940	9.500	200	280	51,0	473.000	760.000	700	1.000	3 EC
32948	11.000	240	320	51,0	512.000	864.000	600	900	4 EC
32956	20.000	280	380	63,5	765.000	1.328.000	500	700	4 EC
32960	32.000	300	420	76,0	1.050.000	1.792.000	400	600	3 FD

Taper roller bearings single row
Series **329**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1.2}$	$r_{3.4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
	\approx			min	min	min		max	min	min	max	min	min	min	max	max			
32915	89,52	20,0	16	1,0	1,0	0,3	19	81	81	98	99	101	4	4,0	1,0	1,0	0,33	1,80	1,0
32922	129,00	25,0	20	1,5	1,5	0,6	26	118	117	140	143	145	5	5,0	1,0	1,0	0,35	1,70	0,9
32926	153,00	32,0	25	2,0	1,5	0,6	31	141	139	167	171	173	6	7,0	1,5	1,5	0,33	1,80	1,0
32928	163,00	32,0	25	2,0	1,5	0,6	33	150	149	177	181	184	6	7,0	1,5	1,5	0,35	1,70	0,9
32934	200,00	38,0	30	2,5	2,0	0,6	42	183	180	213	220	222	7	8,0	2,0	2,0	0,37	1,60	0,9
32936	216,00	45,0	34	2,5	2,0	0,6	53	194	190	225	240	241	8	11,0	2,0	2,0	0,48	1,25	0,7
32938	227,00	45,0	34	2,5	2,0	0,6	55	204	200	235	250	251	8	11,0	2,0	2,0	0,48	1,25	0,7
32940	239,00	51,0	39	3,0	2,5	1,0	53	217	212	257	268	271	9	12,0	2,5	2,0	0,40	1,50	0,8
32948	279,00	51,0	39	3,0	2,5	1,0	64	255	252	294	308	311	9	12,0	2,0	2,0	0,46	1,30	0,7
32956	329,00	63,5	48	3,0	2,5	1,0	74	298	292	348	368	368	11	15,5	2,0	2,0	0,43	1,40	0,8
32960	358,00	76,0	57	4,0	3,0	1,0	79	324	314	383	406	405	12	19,0	2,5	2,5	0,40	1,50	0,8

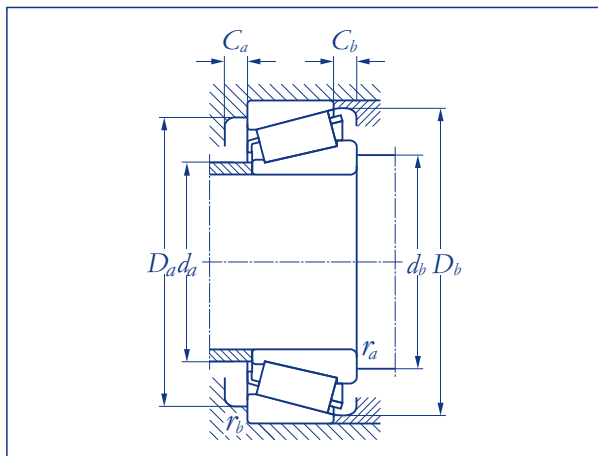
Taper roller bearings single row
Series **330**



330..

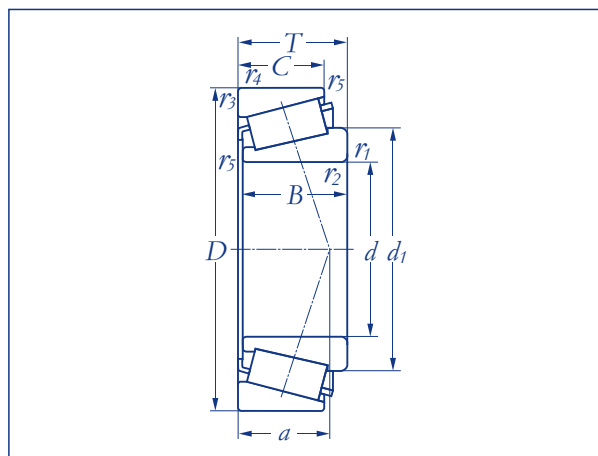
Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
33010	450	50	80	24	55.400	81.600	3.100	4.200	2 CE
33011	670	55	90	27	71.700	109.600	2.800	3.700	2 CE
33012	710	60	95	27	73.000	114.400	2.600	3.500	2 CE
33013	780	65	100	27	77.400	124.800	2.300	3.100	2 CE
33014	1.100	70	110	31	104.000	156.800	2.200	3.000	2 CE
33015	1.150	75	115	31	107.200	182.400	2.100	2.800	2 CE
33016	1.650	80	125	36	134.400	228.000	1.800	2.500	2 CE
33017	1.750	85	130	36	146.400	248.000	1.800	2.500	2 CE
33018	2.200	90	140	39	172.800	284.000	1.500	2.200	2 CE
33019	2.300	95	145	39	176.000	300.000	1.500	2.200	2 CE
33020	2.400	100	150	39	179.200	312.000	1.400	2.100	2 CE
33021	3.050	105	160	43	196.800	344.000	1.300	1.900	2 DE
33022	3.850	110	170	47	224.800	400.000	1.200	1.800	2 DE
33024	4.200	120	180	48	233.600	432.000	1.200	1.800	2 DE
33030	8.150	150	225	59	365.600	692.000	1.000	1.400	2 EE

Taper roller bearings single row
Series **330**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1.2}$	$r_{3.4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
	\approx			min	min	min		max	min	min	max	min	min	min	max	max			
33010	64,9	24	19,0	1,0	1,0	0,3	17	56	56	72	74	76	4	5,0	1,0	1,0	0,31	1,9	1,1
33011	72,9	27	21,0	1,5	1,5	0,6	19	63	62	83	83	86	5	6,0	1,0	1,0	0,31	1,9	1,1
33012	77,1	27	21,0	1,5	1,5	0,6	20	67	67	88	88	90	5	6,0	1,0	1,0	0,33	1,8	1,0
33013	82,5	27	21,0	1,5	1,5	0,6	21	72	72	89	93	96	5	6,0	1,0	1,0	0,46	1,3	0,7
33014	88,8	31	25,5	1,5	1,5	0,6	23	78	77	99	103	105	5	5,5	1,0	1,0	0,28	2,1	1,1
33015	95,0	31	25,5	1,5	1,5	0,6	23	84	82	104	108	110	6	5,5	1,0	1,0	0,30	2,0	1,1
33016	102,0	36	29,5	1,5	1,5	0,6	26	90	87	112	118	119	6	6,5	1,0	1,0	0,28	2,1	1,1
33017	107,0	36	29,5	1,5	1,5	0,6	26	94	92	118	123	125	6	6,5	1,0	1,0	0,30	2,0	1,1
33018	113,0	39	32,5	2,0	1,5	0,6	27	100	99	127	131	135	7	6,5	1,5	1,5	0,27	2,2	1,3
33019	118,0	39	32,5	2,0	1,5	0,6	28	104	104	131	136	139	7	6,5	1,5	1,5	0,28	2,1	1,1
33020	122,0	39	32,5	2,0	1,5	0,6	29	109	109	135	141	143	7	6,5	1,5	1,5	0,28	2,1	1,1
33021	131,0	43	34,0	2,5	2,0	0,6	31	117	115	145	150	153	7	9,0	2,0	2,0	0,28	2,1	1,1
33022	139,0	47	37,0	2,5	2,0	0,6	34	123	120	152	160	161	7	10,0	2,0	2,0	0,28	2,1	1,1
33024	149,0	48	38,0	2,5	2,0	0,6	36	132	130	160	170	171	6	10,0	2,0	2,0	0,30	2,0	1,1
33030	188,0	59	46,0	3,0	2,5	1,0	48	164	162	200	213	217	8	13,0	2,5	2,5	0,37	1,6	0,9

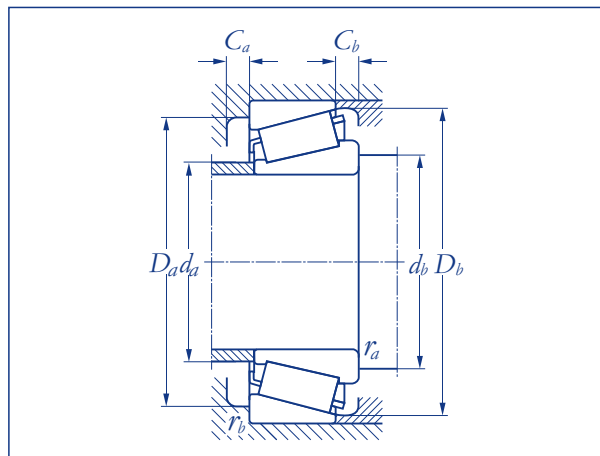
Taper roller bearings single row
Series **331**



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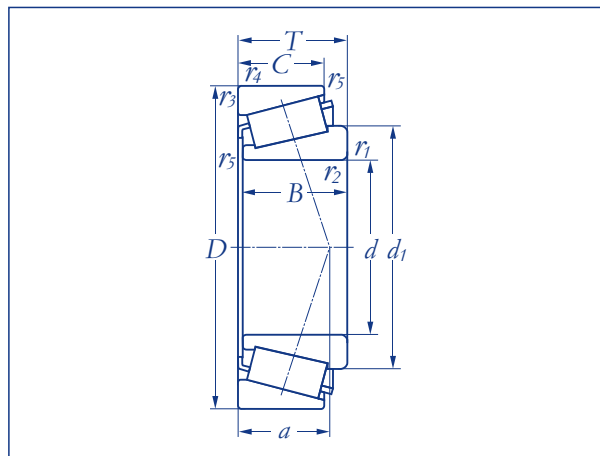
Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
33108	510	40	75	26	63.300	83.200	3.500	4.600	2 CE
33109	560	45	80	26	67.300	91.200	3.100	4.200	3 CE
33110	590	50	85	26	68.600	97.600	3.000	3.900	3 CE
33111	860	55	95	30	88.000	124.800	2.600	3.500	3 CE
33112	920	60	100	30	93.600	136.000	2.500	3.300	3 CE
33113	1.300	65	110	34	113.600	166.400	2.200	3.000	3 DE
33114	1.700	70	120	37	137.600	200.000	2.100	2.800	3 DE
33115	1.800	75	125	37	140.800	212.000	1.900	2.600	3 DE
33116	1.900	80	130	37	143.200	224.000	1.800	2.500	3 DE
33117	2.450	85	140	41	176.000	272.000	1.600	2.300	3 DE
33118	3.100	90	150	45	201.800	312.000	1.400	2.100	3 DE
33122	5.550	110	180	56	295.200	504.000	1.200	1.800	3 EE

Taper roller bearings single row
Series **331**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1.2}$	$r_{3.4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
				min	min	min		max	min	min	min	max	min	min	min	max	max		
33108	57,5	26	20,5	1,5	1,5	0,6	18	47	47	65	68	71	4	5,5	1,0	1,0	0,35	1,7	0,9
33109	62,7	26	20,5	1,5	1,5	0,6	19	52	52	69	73	77	4	5,5	1,0	1,0	0,37	1,6	0,9
33110	67,9	26	20,0	1,5	1,5	0,6	20	57	57	74	78	82	4	6,0	1,0	1,0	0,40	1,5	0,8
33111	75,1	30	23,0	1,5	1,5	0,6	22	63	62	88	88	91	5	7,0	1,0	1,0	0,37	1,6	0,9
33112	80,4	30	23,0	1,5	1,5	0,6	23	67	67	88	93	96	5	7,0	1,0	1,0	0,40	1,5	0,8
33113	87,9	34	26,5	1,5	1,5	0,6	26	74	72	96	103	106	6	7,5	1,0	1,0	0,40	1,5	0,8
33114	94,8	37	29,0	2,0	1,5	0,6	28	80	79	104	111	115	6	8,0	1,5	1,5	0,37	1,6	0,9
33115	100,0	37	29,0	2,0	1,5	0,6	29	84	84	109	116	120	6	8,0	1,5	1,5	0,40	1,5	0,8
33116	105,0	37	29,0	2,0	1,5	0,6	30	89	89	114	121	126	6	8,0	1,5	1,5	0,43	1,1	0,8
33117	112,0	41	32,0	2,5	2,0	0,6	32	95	95	122	130	135	7	9,0	2,0	2,0	0,40	1,5	0,8
33118	120,0	45	35,0	2,5	2,0	0,6	35	101	100	130	140	144	7	10,0	2,0	2,0	0,40	1,5	0,8
33122	146,0	56	43,0	2,5	2,0	0,6	44	121	120	155	170	174	9	13,0	2,0	2,0	0,43	1,4	0,8

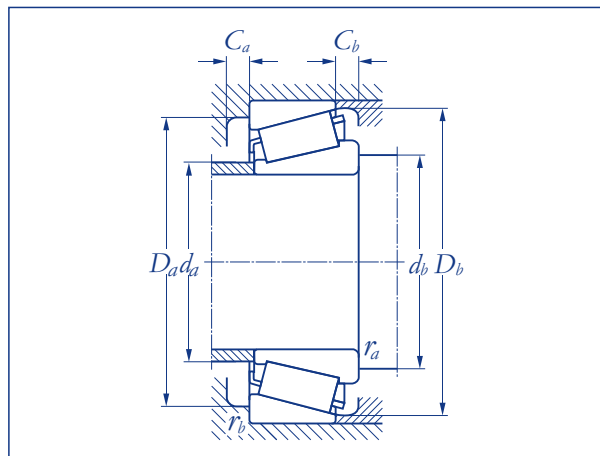
Taper roller bearings single row
Series **332**



332..

Designation	Weight (g)	Dimensions (mm)			Load ratings				Dimension series to ISO 355
		d	D	B	C _w (N)	C _{ow} (N)	F _{r perm} (N)	F _{or perm} (N)	
33205	230	25	52	22	37.800	44.800	4.600	6.300	5 DE
33206	370	30	62	25	51.500	61.200	3.900	5.200	2 DE
33207	560	35	72	28	67.300	84.800	3.300	4.400	2 DE
33208	770	40	80	32	84.000	105.600	3.000	3.900	2 DE
33209	820	45	85	32	86.400	114.400	2.800	3.700	3 DE
33210	900	50	90	32	91.200	128.000	2.600	3.500	3 DE
33211	1.200	55	100	35	110.400	152.000	2.300	3.100	3 DE
33212	1.600	60	110	38	134.400	188.800	2.100	2.800	3 EE
33213	2.050	65	120	41	155.200	216.000	1.900	2.600	3 EE
33214	2.100	70	125	41	160.800	228.000	1.800	2.500	3 EE
33215	2.250	75	130	41	167.200	240.000	1.600	2.300	3 EE
33216	2.900	80	140	46	200.800	300.000	1.500	2.200	3 EE
33217	3.700	85	150	49	228.800	344.000	1.400	2.100	3 EE
33220	6.950	100	180	63	343.200	524.000	1.100	1.600	3 FE

Taper roller bearings single row
Series **332**



Designation	Dimensions(mm)																Calculation factors		
	d_1	B	C	$r_{1.2}$	$r_{3.4}$	r_5	a	d_a	d_b	D_a	D_a	D_b	C_a	C_b	r_a	r_b	e	Y	Y_0
	\approx			min	min	min		max	min	min	max	min	min	min	max	max			
33205	38,6	22	18,0	1,0	1,0	0,3	14	30	31	43	46	49	4	4,0	1,0	1,0	0,35	1,7	0,9
33206	45,8	25	19,5	1,0	1,0	0,3	16	36	36	53	56	59	5	5,5	1,0	1,0	0,35	1,7	0,9
33207	53,4	28	22,0	1,5	1,5	0,6	18	42	42	61	65	68	5	6,0	1,0	1,0	0,35	1,7	0,9
33208	59,7	32	25,0	1,5	1,5	0,6	21	47	47	67	73	76	5	7,0	1,0	1,0	0,35	1,7	0,9
33209	65,2	32	25,0	1,5	1,5	0,6	22	52	52	72	78	81	5	7,0	1,0	1,0	0,40	1,5	0,8
33210	70,7	32	24,5	1,5	1,5	0,6	23	57	57	77	83	87	5	7,5	1,0	1,0	0,40	1,5	0,8
33211	77,6	35	27,0	2,0	1,5	0,6	25	63	64	104	91	96	6	8,0	1,5	1,5	0,40	1,5	0,8
33212	85,3	38	29,0	2,0	1,5	0,6	27	69	69	93	101	105	6	9,0	1,5	1,5	0,40	1,5	0,8
33213	92,1	41	32,0	2,0	1,5	0,6	29	75	74	102	111	115	6	9,0	1,5	1,5	0,40	1,5	0,8
33214	97,2	41	32,0	2,0	1,5	0,6	30	79	79	107	116	120	6	9,0	1,5	1,5	0,40	1,5	0,8
33215	102,0	41	31,0	2,0	1,5	0,6	32	84	84	111	121	125	6	10,0	1,5	1,5	0,43	1,4	0,8
33216	110,0	46	35,0	2,5	2,0	0,6	35	89	90	119	130	135	7	11,0	2,0	2,0	0,43	1,4	0,8
33217	117,0	49	37,0	2,5	2,0	0,6	37	96	95	128	140	144	7	12,0	2,0	2,0	0,43	1,4	0,8
33220	139,0	63	48,0	3,0	2,5	1,0	43	112	112	151	168	172	10	15,0	2,0	2,0	0,40	1,5	0,8



1. Materials for SLB Bearing's Outer ring, Inner ring & Rolling Elements

The most common through-hardening steel used for rolling bearing of **SLB** used is a carbon chromium steel containing approximately 1% carbon and 1.5% chromium. Below table 1.1 which shown G Cr15--the main material that **SLB** used for producing our ball bearings and its in interchangeable material in other nations.

Table 1.1

Name	Standard	Chemical Composition (%)					
		C	Mn	Si	Cr	S ≤	P ≤
G Cr15	SLB	0.95~1.05	0.20~0.40	0.15~0.35	1.30~1.65	0.020	0.027
SUJ 2	JIS G 4805	0.95~1.10	0.50 ≤	0.15~0.35	1.30~1.60	0.025	0.025
100Cr6	DIN	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -
E52100	AISI	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -
ISO	683/XVII	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -
SKF	-	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -	- ditto -

Note: **SLB** supplies all general bearings with material of G Cr15 as normal products, unless otherwise specified by customer for special usage before ordering . i.e. Pure carbon or Stainless Steel etc.

2. Material for Bearing Retainers

The retainer is demanded to bear hitting load and have the lowest friction with the rolling elements when **SLB** bearing is working. So, low carbon steel is adopted. (Please refer to Table2.1)

Table 2.1

Name	Standard	Chemical Composition (%)				
		C	Mn	Si	S ≤	P ≤
10F	Chinese GB	0.05~0.11	0.25~0.50	0.07 ≤	0.035	0.035
SPCC	JIS G 3141	0.12 ≤	0.50 ≤	-	0.045	0.040

Note: **SLB** supply bearings with retainer material of 10F as normal products, unless otherwise specified by customers for special usage before ordering.i.e Corrosion proof, poor agricultural requirement and water resistant etc.

3. Precision Class for the taper roller bearings

3.1) The accuracy of a bearing are both dimensional and running accuracy of the bearing It has been standardised internationally. Here we give out a interchangeable precision class standard table which is equal to **SLB** (Table 3,1 refers) for your reference.

Table 3.1

Selection	Classification standard				
SLB	Class 0	Class 6X	Class 5	Class 4	
ISO	Class 4	-	Class 3	Class 0	Class 00
Japan Industrial (All series)	Class 0	Class 6	Class 5	Class 4	-
Germany (All series)	P0	P6	P5	P4	P2
United States (Metric series)	Class K	Class N	Class C	Class B	Class A
United States (Inch series)	Class 4	Class 2	Class 3	Class 0	Class 00



Note: **SLB** supply bearings with classification standard of Class0 as normal products, unless otherwise specified by customers for higher grade useage before or dering.

3.2) Relatively, as specified value of accuracy, **SLB** gives out the normal tolerances for metric series taper roller bearings. (Tables 3.2.1; 3.2.2 and 3.2.3 refers)

Table 3.2.1 Normal Tolerances for taper roller Bearings of metric series

Inner ring (Unit: μ m)

Nominal bore dimension d(mm)		Deviation of the mean bore diameter from the nominal Δ dmp						Deviation of the bore diameter Vdp				Mean deviation of the bore diameter Vdmp			
		P0 P6X		P5 P6		P4		P0 P6X	P6	P5	P4	P0 P6X	P6	P5	P4
over	incl.	high	low	high	low	high	low	max.				max.			
10	18	0	-12	0	-7	0	-5	12	7	5	4	9	5	5	4
18	30	0	-12	0	-8	0	-6	12	8	6	5	9	6	5	4
30	50	0	-12	0	-10	0	-8	12	10	8	6	9	8	5	5
50	80	0	-15	0	-12	0	-9	15	12	9	7	11	9	6	5
80	120	0	-20	0	-15	0	-10	20	15	11	8	15	11	8	5
120	180	0	-25	0	-18	0	-13	25	18	14	10	19	14	9	7
180	250	0	-30	0	-22	0	-15	30	22	17	11	23	16	11	8
250	315	1	-35	—	—	—	—	35	—	—	—	26	—	—	—
315	400	0	-40	—	—	—	—	40	—	—	—	30	—	—	—

Radial run out				Side run out		Axial run out	Deviation of the width Δ Bs				Deviation of the fitting width for single row taper roller bearings Δ Ts							
Kia				Sd		Sia	Δ Bs				Δ Ts							
P0 P6X	P6	P5	P4	P5	P4	P4	P0, high	P6 low	P6X high	P5, high	P4 low	P0, high	P6 low	P6X high	P5, high	P4 low		
max.				max.		max.	max.				max.							
15	7	5	3	7	3	3	0	-120	0	-50	0	-200	+200	0	+100	0	+200	-200
18	8	5	3	8	4	4	0	-120	0	-50	0	-200	+200	0	+100	0	+200	-200
20	10	6	4	8	4	4	0	-120	0	-50	0	-240	+200	0	+100	0	+200	-200
25	10	7	4	8	5	5	0	-150	0	-50	0	-300	+200	0	+100	0	+200	-200
30	13	8	5	9	5	7	0	-200	0	-50	0	-400	+200	0	+100	0	+200	-200
35	18	11	6	10	6	8	0	-250	0	-50	0	-500	+200	-200	+150	0	+350	-250
50	20	13	8	11	7	—	0	-300	0	-50	0	-600	+200	-200	+150	0	+350	-250
60	—	—	—	—	—	—	0	-350	0	-50	—	—	+350	-250	+200	0	—	—
70	—	—	—	—	—	—	0	-400	0	-50	—	—	+350	-250	+200	0	—	—



Table 3.2.2 Normal Tolerances for taper roller Bearings of metric series

Out ring (Unit: μm)

Nominal bore dimension D		Deviation of the mean bore diameter from the nominal ΔDmp						Deviation of the outer ring diameter VDp				Mean deviation of the bore diameter VDmp			
		P0 P6X		P5 P6		P4		P0 P6X	P6	P5	P4	P0 P6X	P6	P5	P4
over	incl.	high	low	high	low	high	low	max.				max.			
18	30	0	-12	0	-8	0	-6	12	8	6	5	9	6	5	4
30	50	0	-14	0	-9	0	-7	14	9	7	5	11	7	5	5
50	80	0	-16	0	-11	0	-9	16	11	8	7	12	8	6	5
80	120	0	-18	0	-13	0	-10	18	13	10	8	14	10	7	5
120	150	0	-20	0	-15	0	-11	20	15	11	8	15	11	8	6
150	180	0	-25	0	-18	0	-13	25	18	14	10	19	14	9	7
180	250	0	-30	0	-20	0	-15	30	20	15	11	23	15	10	8
250	315	0	-35	0	-25	0	-18	35	25	19	14	26	19	13	9
315	400	1	-40	0	-28	0	-20	40	28	22	15	30	21	14	10
400	500	0	-45	0	-33	0	-23	45	—	—	—	34	—	—	—

Radial run out				Side run out		Axial run out	Deviation of the width		
Kea P0 P6X max.	P6	P5	P4	SD		Sea P4 max.	ΔCs		
				P5	P4		P0, P6 P5, P4 high low	P6X high low	
18	9	6	4	8	4	5	With "d" of the same model bearing, and refer to the relative value of ΔBs	0	-100
20	10	7	5	8	4	5		0	-100
25	13	8	5	8	4	5		0	-100
35	18	10	6	9	5	6		0	-100
40	20	11	7	10	5	7		0	-100
45	23	13	8	10	5	8		0	-100
50	25	15	10	11	7	10		0	-100
60	30	18	11	13	8	10		0	-100
70	35	20	13	13	10	13		0	-100
80	—	—	—	—	—	—		—	—



Table 3.2.3 Normal Tolerances for taper roller Bearings of metric series available width of Inner ring with rollers and Out ring (Unit:μ m)

Nominal bore dimension d(mm)		Deviation of the available width of Inner ring with rollers △T1s				Deviation of the available width of outer ring △T2s			
		P0		P6		P5		P4	
over	incl.	high	low	high	low	high	low	high	low
10	18	+100	0	+50	0	+100	0	+50	0
18	30	+100	0	+50	0	+100	0	+50	0
30	50	+100	0	+50	0	+100	0	+50	0
50	80	+100	0	+50	0	+100	0	+50	0
80	120	+100	0	+50	0	+100	0	+50	0
120	150	+100	-100	+50	0	+100	-100	+50	0
150	180	+150	-150	+50	0	+200	-100	+100	0
180	250	+150	-150	+50	0	+200	-100	+100	0
250	315	+150	-150	+100	0	+200	-100	+100	0
315	400	+200	-200	+100	0	+200	-200	+100	0



Note: The accuracy of JSeries (Metric series) taper rollerbearings, please refer to Table 3.1 and Table 3.2.1; 3.2.2& 3.2.3.

3.3) Relatively, as specified value of accuracy, SLB gives out the normal tolerances for Inch series taper rollerbearings. (Tables 3.3.1; 3.3.2; 3.3.3 and 3.3.4 refers)

Table 3.3.1 Normal Tolerances for taper roller Bearings of Inch series

Inner ring (Unit:μm)

Nominal bore dimension d(mm)		Deviation of the mean bore diameter from the nominal △ds									
		Class 4		Class 2		Class 3		Class 0		Class 00	
over	incl.	high	low	high	low	high	low	high	low	high	low
—	76.2	+13	0	+13	0	+13	0	+13	0	+8	0
76.2	304.8	+25	0	+25	0	+13	0	+13	0	+8	0
304.8	609.6	+51	0	+51	0	+25	0	—	—	—	—
609.6	914.4	+76	0	—	—	+38	0	—	—	—	—
914.4	1219.2	+102	0	—	—	+51	0	—	—	—	—
1219.2	—	+127	0	—	—	+76	0	—	—	—	—



Table 3.3.2 Normal Tolerances for taper roller Bearings of metric series

Out ring (Unit: μm)

Nominal bore dimension D(mm)		Deviation of the mean bore diameter from the nominal ΔD_s									
over	incl.	Class 4		Class 2		Class 3		Class 0		Class 00	
		high	low	high	low	high	low	high	low	high	low
—	304.8	+25	0	+25	0	+13	0	+13	0	+8	0
304.8	609.6	+51	0	+51	0	+25	0	—	—	—	—
609.6	914.4	+76	0	—	—	+38	0	—	—	—	—
914.4	1219.2	+102	0	—	—	+51	0	—	—	—	—
1219.2	—	+127	0	—	—	+76	0	—	—	—	—

Table 3.3.3 Normal Tolerances for taper roller Bearings of Inch series a available width of Inner ring with rollers and Out ring (Unit: μm)

Nominal bore dimension d(mm)		Nominal bore dimension D(mm)		Deviation of the mean bore diameter from the nominal ΔT_s									
over	incl.	over	incl.	Class 4		Class 2		Class 3		Class 0		Class 00	
				high	low	high	low	high	low	high	low	high	low
—	101.6	—	—	+203	0	+203	0	+203	-203	+203	0	+203	0
101.6	304.8	—	508	+356	-254	+203	0	+203	-203	+203	0	+203	-203
304.8	609.6	—	508	+381	-381	+381	-381	+203	-203	—	—	—	—
304.8	609.6	508	—	+381	-381	+381	-381	+381	-381	—	—	—	—
609.4	—	—	—	+381	-381	—	—	+381	-381	—	—	—	—

Deviation of the available width of Inner ring with rollers ΔT_{1s}						Deviation of the available width of outer ring ΔT_{2s}					
Class 4		Class 2		Class 3		Class 4		Class 2		Class 3	
high	low	high	low	high	low	high	low	high	low	high	low
+102	0	+102	0	+102	-102	+102	0	+102	0	+102	-102
+152	-152	+102	0	+102	-102	+203	-102	+102	0	+102	-102
—	—	+178	-178	+102	-102	—	—	+203	-203	+102	-102
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—

Table 3.3.4 Normal Tolerances for taper roller Bearings of Inch series Run-out for the inner ring and outer ring

Nominal bore dimension d(mm)		Inner ring run-out K_{ia} Outer ring run-out K_{ea}									
over	incl.	Class 4		Class 2		Class 3		Class 0		Class 00	
		high	low	high	low	high	low	high	low	high	low
—	304.8	51	—	38	—	8	—	4	—	2	—
304.8	609.6	51	—	38	—	18	—	—	—	—	—
609.6	914.4	76	—	51	—	51	—	—	—	—	—
914.4	—	76	—	—	—	76	—	—	—	—	—