



# 4. Boundary Dimensions and Bearing Numbers of Bearings

## 4.1 Boundary Dimensions

### 4.2 Radial Bearings(Except Tapered Roller Bearings)

#### Table 4.2.1

- Diameter series 7
- Diameter series 8
- Diameter series 9
- Diameter series 0

#### Table 4.2.2

- Diameter series 1
- Diameter series 2
- Diameter series 3
- Diameter series 4

### 4.3 Boundary Dimensions of Tapered Roller Bearings

#### Table 4.3.1

- Diameter series 9
- Diameter series 1

#### Table 4.3.2

- Diameter series 0
- Diameter series 2
- Diameter series 3

### 4.4 Boundary Dimensions of Thrust Bearings with Flat Back Face

#### Table 4.4.1

- Diameter series 0
- Diameter series 1

#### Table 4.4.2

- Diameter series 2

#### Table 4.4.3

- Diameter series 3

#### Table 4.4.4

- Diameter series 4
- Diameter series 5

### 4.5 Dimensions of Snap Ring Grooves and Snap Rings

- Table 4.5.1 Dimensions of Snap Ring Grooves for Bearing Dimension Series 18 and 19
- Table 4.5.2 Snap Ring Dimensions for Bearing Dimension Series 18 and 19
- Table 4.5.3 Dimensions of Snap Ring Grooves for Bearing Diameter Series 0, 2, 3 and 4
- Table 4.5.4 Snap Ring Dimensions for Bearing Diameter Series 0, 2, 3 and 4

## 4.6 NACHI Bearing Numbers

# 4. Boundary Dimensions and Bearing Numbers of Rolling Contact Bearings

## 4.1 Boundary Dimensions of Rolling Contact Bearings

Boundary dimensions have been established in a standard plan for metric rolling contact bearings to facilitate the selection process, improve availability, and to limit the necessity for use of high cost, non-standard parts.

Boundary dimensions standards include the bore diameter (d), outside diameter (D), width (B), assembly width (T) or height (H), and the chamfer dimension (r) of bearings.

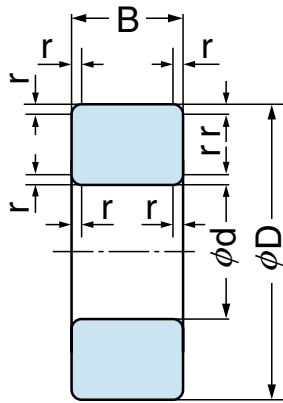
Boundary dimensions are standardized by the International Organization for Standardization (ISO 15) and also Japanese Industrial Standard (JIS B 1512).

NACHI has adopted the ISO boundary dimension standards. [Figures 4.6](#) and [4.7](#) show the relationship of the dimensions for radial and thrust rolling contact bearings (except for Tapered roller bearings).

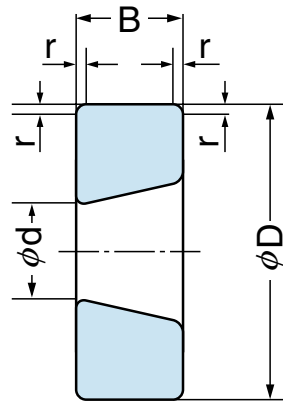
**Table 4.1 Boundary Dimensions Terminology**

Series	Definition	Remarks
Diameter series	The diameter series is a series of standard outside diameters with standard bore diameters. Several series of outside diameters are set in stages to the same bearing bore diameter. Diameter series are labeled by single digit numbers 7, 8, 9, 0, 1, 2, 3, and 4.	Diameter series is in ascending order by diameter size with number 7 the smallest and 4 the largest.
Width or Height series	Width or height series is a series of standard widths or heights with the same bore diameter within the same diameter series of bearings. These width or height series are labeled with single digit numbers. Width series 8, 0, 1, 2, 3, 4, 5, and 6 for radial bearings and height series 7, 9, 1, and 2 are for thrust bearings.	Each radial bearing diameter series has width series with numbers 8, 0, 1, 2, 3, 4, 5 and 6. Number 8 is the minimum width to the same bore and outside diameter. Number 6 is the maximum width
Dimension series	Dimension series = width or height series number + Diameter series. Dimension series are labeled with a two digit number by combining numbers for the width or height series to the numbers for the diameter series. The two digit number has the width or height series in the lead position.	Each thrust bearing diameter series has width series with number 7, 9, 1 and 2. Number 7 is the minimum width to the same bore and outside diameter. Number 2 is the maximum width

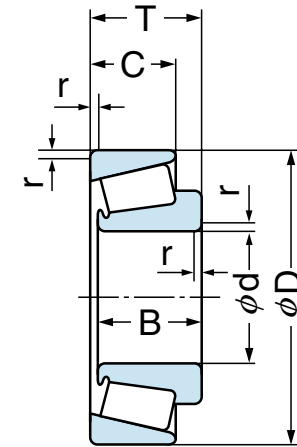




Cylindrical Bore

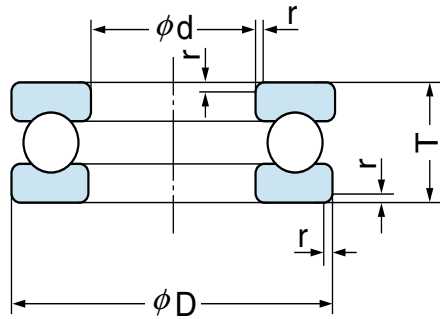


Tapered bore ( $\frac{1}{12}$  or  $\frac{1}{30}$  taper)

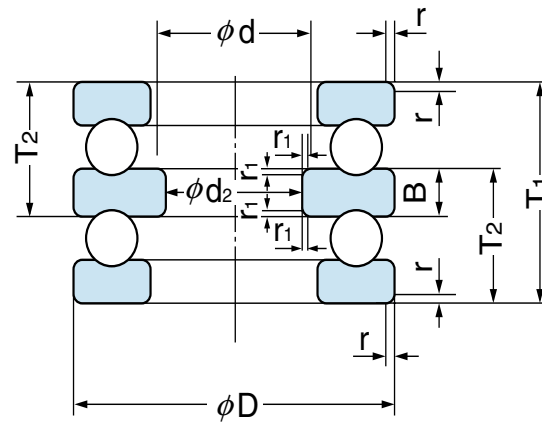


**Fig 4.1 Radial Bearings (except Tapered Roller Bearings)**

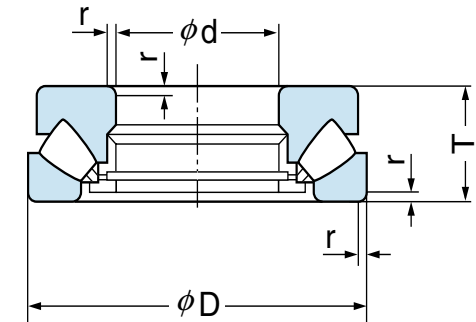
**Fig 4.2 Tapered Roller Bearings**



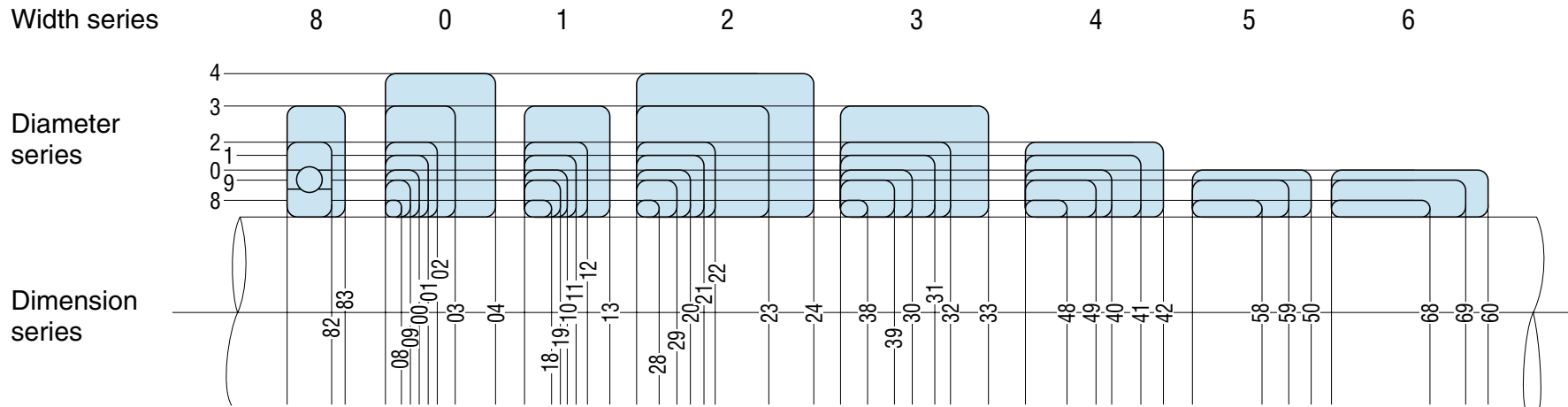
**Fig 4.3 Single-direction Thrust Ball Bearings**



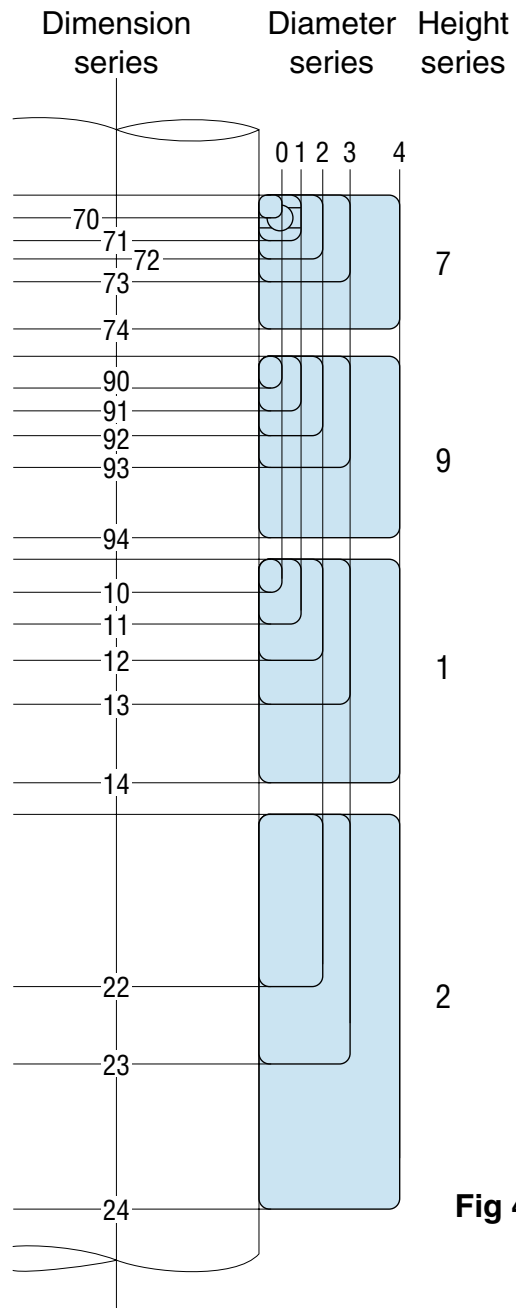
**Fig 4.4 Double-direction Thrust Ball Bearings**



**Fig 4.5 Spherical Roller Thrust Bearings**



**Fig 4.6 Graphical Representation of the Dimension series of Radial Bearings (except Tapered Roller Bearings)**



**Fig 4.7 Graphical Indication of Dimension Series of Thrust Bearings**

**Table 4.2.1 Boundary Dimensions of Diameter Series 7, 8**

(1/8)

Unit : mm

Single row, radial ball bearings		67						68							
Double row, radial ball bearings															
Cylindrical roller bearings															
Spherical roller bearings															
Bearing bore diameter Nominal	Diameter series 7					Diameter series 8									
	Bearing outside diameter D	Width series			Chamfer dimension	Bearing outside diameter D	Width series						Chamfer dimension		
		1	2	3			0	1	2	3	4	5		6	
		Dimension series					Dimension series								
Bore No. d	17	27	37	17 37	08	18	28	38	48	58	68	08	18 68		
	Width B			r <sub>min</sub>	Width B						r <sub>min</sub>				
/0.6	0.6	2	0.8	-	-	0.05	2.5	-	1	-	1.4	-	-	-	0.05
1	1	2.5	1	-	-	0.05	3	-	1	-	1.5	-	-	-	0.05
/1.5	1.5	3	1	-	1.8	0.05	4	-	1.2	-	2	-	-	-	0.05
2	2	4	1.2	-	2	0.05	5	-	1.5	-	2.3	-	-	-	0.08
/2.5	2.5	5	1.5	-	2.3	0.08	6	-	1.8	-	2.6	-	-	-	0.08
3	3	6	2	2.5	3	0.08	7	-	2	-	3	-	-	-	0.1
4	4	7	2	2.5	3	0.08	9	-	2.5	3.5	4	-	-	-	0.1
5	5	8	2	2.5	3	0.08	11	-	3	4	5	-	-	-	0.15
6	6	10	2.5	3	3.5	0.1	13	-	3.5	5	6	-	-	-	0.15
7	7	11	2.5	3	3.5	0.1	14	-	3.5	5	6	-	-	-	0.15
8	8	12	2.5	-	3.5	0.1	16	-	4	5	6	8	-	-	0.2
9	9	14	3	-	4.5	0.1	17	-	4	5	6	8	-	-	0.2

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore



**Table 4.2.1 Boundary Dimensions of Diameter Series 7, 8**

(2/8)

Unit : mm

Single row, radial ball bearings			67				68											
Double row, radial ball bearings																		
Cylindrical roller bearings																		
Spherical roller bearings																		
Bearing bore diameter Nominal			Diameter series 7					Diameter series 8										
			Bearing outside diameter D	Width series			Chamfer dimension	Bearing outside diameter D	Width series						Chamfer dimension			
				1	2	3			0	1	2	3	4	5		6		
				Dimension series					Dimension series									
Bore No. d			17	27	37	17 37	08	18	28	38	48	58	68	08	18 68			
			Width B		r <sub>min</sub>	Width B						r <sub>min</sub>						
00	10	15	3	–	4.5	0.1	19	–	5	6	7	9	–	–	–	0.3		
01	12	18	4	–	5	0.2	21	–	5	6	7	9	–	–	–	0.3		
02	15	21	4	–	5	0.2	24	–	5	6	7	9	–	–	–	0.3		
03	17	23	4	–	5	0.2	26	–	5	6	7	9	–	–	–	0.3		
04	20	27	4	–	5	0.2	32	4	7	8	10	12	16	22	0.3	0.3		
/22	22	–	–	–	–	–	34	4	7	–	10	–	16	22	0.3	0.3		
05	25	32	4	–	5	0.2	37	4	7	8	10	12	16	22	0.3	0.3		
/28	28	–	–	–	–	–	40	4	7	–	10	–	16	22	0.3	0.3		
06	30	37	4	–	5	0.2	42	4	7	8	10	12	16	22	0.3	0.3		
/32	32	–	–	–	–	–	44	4	7	–	10	–	16	22	0.3	0.3		
07	35	–	–	–	–	–	47	4	7	8	10	12	16	22	0.3	0.3		
08	40	–	–	–	–	–	52	4	7	8	10	12	16	22	0.3	0.3		

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.1 Boundary Dimensions of Diameter Series 7, 8**

**(3/8)**

Unit : mm

Single row, radial ball bearings		67						68								
Double row, radial ball bearings																
Cylindrical roller bearings																
Spherical roller bearings																
Bearing bore diameter Nominal	Diameter series 7					Diameter series 8										
	Bearing outside diameter D	Width series			Chamfer dimension	Bearing outside diameter D	Width series						Chamfer dimension			
		1	2	3			0	1	2	3	4	5			6	
		Dimension series					Dimension series									
		17	27	37	17 ~ 37		08	18	28	38	48	58	68	08	18 ~ 68	
Bore No. d	Width B			r <sub>min</sub>	Width B						r <sub>min</sub>					
09 45	-	-	-	-	58	4	7	8	10	13	18	23	0.3	0.3		
10 50	-	-	-	-	65	5	7	10	12	15	20	27	0.3	0.3		
11 55	-	-	-	-	72	7	9	11	13	17	23	30	0.3	0.3		
12 60	-	-	-	-	78	7	10	12	14	18	24	32	0.3	0.3		
13 65	-	-	-	-	85	7	10	13	15	20	27	36	0.3	0.6		
14 70	-	-	-	-	90	8	10	13	15	20	27	36	0.3	0.6		
15 75	-	-	-	-	95	8	10	13	15	20	27	36	0.3	0.6		
16 80	-	-	-	-	100	8	10	13	15	20	27	36	0.3	0.6		
17 85	-	-	-	-	110	9	13	16	19	25	34	45	0.3	1		
18 90	-	-	-	-	115	9	13	16	19	25	34	45	0.3	1		
19 95	-	-	-	-	120	9	13	16	19	25	34	45	0.3	1		
20 100	-	-	-	-	125	9	13	16	19	25	34	45	0.3	1		

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.1 Boundary Dimensions of Diameter Series 7, 8**

**(4/8)**

Unit : mm

Single row, radial ball bearings		67						68								
Double row, radial ball bearings																
Cylindrical roller bearings																
Spherical roller bearings																
Bearing bore diameter Nominal	Diameter series 7					Diameter series 8										
	Bearing outside diameter D	Width series			Chamfer dimension	Bearing outside diameter D	Width series						Chamfer dimension			
		1	2	3			0	1	2	3	4	5			6	
		Dimension series					Dimension series									
		17	27	37	17 ~ 37		08	18	28	38	48	58	68	08	18 ~ 68	
Bore No. d	Width B			r <sub>min</sub>	Width B						r <sub>min</sub>					
21 105	-	-	-	-	130	9	13	16	19	25	34	45	0.3	1		
22 110	-	-	-	-	140	10	16	19	23	30	40	54	0.6	1		
24 120	-	-	-	-	150	10	16	19	23	30	40	54	0.6	1		
26 130	-	-	-	-	165	11	18	22	26	35	46	63	0.6	1.1		
28 140	-	-	-	-	175	11	18	22	26	35	46	63	0.6	1.1		
30 150	-	-	-	-	190	13	20	24	30	40	54	71	0.6	1.1		
32 160	-	-	-	-	200	13	20	24	30	40	54	71	0.6	1.1		
34 170	-	-	-	-	215	14	22	27	34	45	60	80	0.6	1.1		
36 180	-	-	-	-	225	14	22	27	34	45	60	80	0.6	1.1		
38 190	-	-	-	-	240	16	24	30	37	50	67	90	1	1.5		
40 200	-	-	-	-	250	16	24	30	37	50	67	90	1	1.5		
44 220	-	-	-	-	270	16	24	30	37	50	67	90	1	1.5		

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.1 Boundary Dimensions of Diameter Series 7, 8**

(5/8)

Unit : mm

Single row, radial ball bearings		67						68								
Double row, radial ball bearings																
Cylindrical roller bearings																
Spherical roller bearings																
Bearing bore diameter Nominal	Diameter series 7					Diameter series 8										
	Bearing outside diameter D	Width series			Chamfer dimension	Bearing outside diameter D	Width series						Chamfer dimension			
		1	2	3			0	1	2	3	4	5			6	
		Dimension series					Dimension series									
		17	27	37	17 ~ 37		08	18	28	38	48	58	68	08	18 ~ 68	
Bore No. d	Width B			r <sub>min</sub>	Width B						r <sub>min</sub>					
48 240	-	-	-	-	300	19	28	36	45	60	80	109	1	2		
52 260	-	-	-	-	320	19	28	36	45	60	80	109	1	2		
56 280	-	-	-	-	350	22	33	42	52	69	95	125	1.1	2		
60 300	-	-	-	-	380	25	38	48	60	80	109	145	1.5	2.1		
64 320	-	-	-	-	400	25	38	48	60	80	109	145	1.5	2.1		
68 340	-	-	-	-	420	25	38	48	60	80	109	145	1.5	2.1		
72 360	-	-	-	-	440	25	38	48	60	80	109	145	1.5	2.1		
76 380	-	-	-	-	480	31	46	60	75	100	136	180	2	2.1		
80 400	-	-	-	-	500	31	46	60	75	100	136	180	2	2.1		
84 420	-	-	-	-	520	31	46	60	75	100	136	180	2	2.1		
88 440	-	-	-	-	540	31	46	60	75	100	136	180	2	2.1		
92 460	-	-	-	-	580	37	56	72	90	118	160	218	2.1	3		

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.1 Boundary Dimensions of Diameter Series 7, 8**

**(6/8)**

Unit : mm

Single row, radial ball bearings		67				68									
Double row, radial ball bearings															
Cylindrical roller bearings															
Spherical roller bearings															
Bearing bore diameter Nominal		Diameter series 7				Diameter series 8									
		Bearing outside diameter D	Width series			Chamfer dimension	Bearing outside diameter D	Width series						Chamfer dimension	
			1	2	3			0	1	2	3	4	5		6
			Dimension series					Dimension series							
Bore No. d		17	27	37	17 ~ 37	08	18	28	38	48	58	68	08	18 ~ 68	
		Width B			r <sub>min</sub>	Width B						r <sub>min</sub>			
96	480	-	-	-	-	600	37	56	72	90	118	160	218	2.1	3
/500	500	-	-	-	-	620	37	56	72	90	118	160	218	2.1	3
/530	530	-	-	-	-	650	37	56	72	90	118	160	218	2.1	3
/560	560	-	-	-	-	680	37	56	72	90	118	160	218	2.1	3
/600	600	-	-	-	-	730	42	60	78	98	128	175	236	3	3
/630	630	-	-	-	-	780	48	69	88	112	150	200	272	3	4
/670	670	-	-	-	-	820	48	69	88	112	150	200	272	3	4
/710	710	-	-	-	-	870	50	74	95	118	160	218	290	4	4
/750	750	-	-	-	-	920	54	78	100	128	170	230	308	4	5
/800	800	-	-	-	-	980	57	82	106	136	180	243	325	4	5
/850	850	-	-	-	-	1030	57	82	106	136	180	243	325	4	5
/900	900	-	-	-	-	1090	60	85	112	140	190	258	345	5	5

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.1 Boundary Dimensions of Diameter Series 7, 8**

(7/8)

Unit : mm

Single row, radial ball bearings		67						68								
Double row, radial ball bearings																
Cylindrical roller bearings																
Spherical roller bearings																
Bearing bore diameter Nominal	Diameter series 7					Diameter series 8										
	Bearing outside diameter D	Width series			Chamfer dimension	Bearing outside diameter D	Width series						Chamfer dimension			
		1	2	3			0	1	2	3	4	5		6		
		Dimension series					Dimension series									
		17	27	37	17 37		08	18	28	38	48	58	68	08	18 68	
Bore No. d	Width B			r <sub>min</sub>	Width B						r <sub>min</sub>					
/950 950	-	-	-	-	1150	63	90	118	150	200	272	355	5	5		
/1000 1000	-	-	-	-	1220	71	100	128	165	218	300	400	5	6		
/1060 1060	-	-	-	-	1280	71	100	128	165	218	300	400	5	6		
/1120 1120	-	-	-	-	1360	78	106	140	180	243	325	438	5	6		
/1180 1180	-	-	-	-	1420	78	106	140	180	243	325	438	5	6		
/1250 1250	-	-	-	-	1500	80	112	145	185	250	335	450	6	6		
/1320 1320	-	-	-	-	1600	88	122	165	206	280	375	500	6	6		
/1400 1400	-	-	-	-	1700	95	132	175	224	300	400	545	6	7.5		
/1500 1500	-	-	-	-	1820	-	140	185	243	315	-	-	-	7.5		

- Remarks:
1. r<sub>min</sub> is the smallest chamfer dimension.
  2. The chamfer dimensions given in this table do not necessarily apply to:
 

(1) the groove side of bearing rings with snap ring groove	(3) the front face side of angular contact bearing
(2) the flangeless side of thin cylindrical roller bearing rings	(4) inner rings of bearings with tapered bore

**Table 4.2.1 Boundary Dimensions of Diameter Series 7, 8**

**(8/8)**

Unit : mm



Single row, radial ball bearings		67						68								
Double row, radial ball bearings																
Cylindrical roller bearings																
Spherical roller bearings																
Bearing bore diameter Nominal	Diameter series 7					Diameter series 8										
	Bearing outside diameter D	Width series			Chamfer dimension	Bearing outside diameter D	Width series						Chamfer dimension			
		1	2	3			0	1	2	3	4	5		6		
		Dimension series					Dimension series									
		17	27	37	17 ∨ 37		08	18	28	38	48	58	68	08	18 ∨ 68	
Bore No. d	Width B			r <sub>min</sub>	Width B						r <sub>min</sub>					
/1600 1600	-	-	-	-	1950	-	155	200	265	345	-	-	-	7.5		
/1700 1700	-	-	-	-	2060	-	160	206	272	355	-	-	-	7.5		
/1800 1800	-	-	-	-	2180	-	165	218	290	375	-	-	-	9.5		
/1900 1900	-	-	-	-	2300	-	175	230	300	400	-	-	-	9.5		
/2000 2000	-	-	-	-	2430	-	190	250	325	425	-	-	-	9.5		

- Remarks:
1. r<sub>min</sub> is the smallest chamfer dimension.
  2. The chamfer dimensions given in this table do not necessarily apply to:
 

(1) the groove side of bearing rings with snap ring groove (2) the flangeless side of thin cylindrical roller bearing rings	(3) the front face side of angular contact bearing (4) inner rings of bearings with tapered bore
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**Table 4.2.1 Boundary Dimensions of Diameter Series 9, 0**

Single row, radial ball bearings			69											160	60													
Double row, radial ball bearings			79												70													
Cylindrical roller bearings															N10		NN30											
Spherical roller bearings							239										230	240										
Bearing bore diameter Nominal	Diameter series 9											Diameter series 0																
	Bearing outside diameter D	Width series								Chamfer dimension			Width series								Chamfer dimension							
		0	1	2	3	4	5	6	0				1	2	3	4	5	6										
		Dimension series											Dimension series															
Bore No. d	09	19	29	39	49	59	69	09	19	29	39	49	59	69	00	10	20	30	40	50	60	00	10	20	30	40	50	60
	Width B								r <sub>min</sub>			Width B								r <sub>min</sub>								
00 10	22	—	6	8	10	13	16	22	—	0.3	0.3	26	—	8	10	12	16	21	29	—	0.3							
01 12	24	—	6	8	10	13	16	22	—	0.3	0.3	28	7	8	10	12	16	21	29	0.3	0.3							
02 15	28	—	7	8.5	10	13	18	23	—	0.3	0.3	32	8	9	11	13	17	23	30	0.3	0.3							
03 17	30	—	7	8.5	10	13	18	23	—	0.3	0.3	35	8	10	12	14	18	24	32	0.3	0.3							
04 20	37	7	9	11	13	17	23	30	0.3	0.3	0.3	42	8	12	14	16	22	30	40	0.3	0.6							
/22 22	39	7	9	11	13	17	23	30	0.3	0.3	0.3	44	8	12	14	16	22	30	40	0.3	0.6							
05 25	42	7	9	11	13	17	23	30	0.3	0.3	0.3	47	8	12	14	16	22	30	40	0.3	0.6							
/28 28	45	7	9	11	13	17	23	30	0.3	0.3	0.3	52	8	12	15	18	24	32	43	0.3	0.6							
06 30	47	7	9	11	13	17	23	30	0.3	0.3	0.3	55	9	13	16	19	25	34	45	0.3	1							
/32 32	52	7	10	13	15	20	27	36	0.3	0.6	0.6	58	9	13	16	20	26	35	47	0.3	1							
07 35	55	7	10	13	15	20	27	36	0.3	0.6	0.6	62	9	14	17	20	27	36	48	0.3	1							
08 40	62	8	12	14	16	22	30	40	0.3	0.6	0.6	68	9	15	18	21	28	38	50	0.3	1							

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:  
 (1) the groove side of bearing rings with snap ring groove  
 (2) the flangeless side of thin cylindrical roller bearing rings  
 (3) the front face side of angular contact bearing  
 (4) inner rings of bearings with tapered bore









**Table 4.2.1 Boundary Dimensions of Diameter Series 9, 0**



Single row, radial ball bearings			69										160	60											
Double row, radial ball bearings			79											70											
Cylindrical roller bearings															N10		NN30								
Spherical roller bearings							239										230	240							
Bearing bore diameter Nominal	Diameter series 9											Diameter series 0													
	Bearing outside diameter D	Width series							Chamfer dimension				Width series							Chamfer dimension					
		0	1	2	3	4	5	6					0	1	2	3	4	5	6						
		Dimension series											Dimension series												
		09	19	29	39	49	59	69	09	19	29	39	49	00	10	20	30	40	50	60	00	10	20	30	40
Bore No. d	Width B							r <sub>min</sub>				Width B							r <sub>min</sub>						
/950 950	1250	95	132	175	224	300	400	545	6	7.5	7.5	1360	132	180	236	300	412	560	730	7.5	7.5				
/1000 1000	1320	103	140	185	236	315	438	580	6	7.5	7.5	1420	136	185	243	308	412	560	750	7.5	7.5				
/1060 1060	1400	109	150	195	250	335	462	615	7.5	7.5	7.5	1500	140	195	250	325	438	600	800	9.5	9.5				
/1120 1120	1460	109	150	195	250	335	462	615	7.5	7.5	7.5	1580	145	200	265	345	462	615	825	9.5	9.5				
/1180 1180	1540	115	160	206	272	355	488	650	7.5	7.5	7.5	1660	155	212	272	355	475	650	875	9.5	9.5				
/1250 1250	1630	122	170	218	280	375	515	690	7.5	7.5	7.5	1750	-	218	290	375	500	-	-	-	9.5				
/1320 1320	1720	128	175	230	300	400	545	710	7.5	7.5	7.5	1850	-	230	300	400	530	-	-	-	12				
/1400 1400	1820	-	185	243	315	425	-	-	-	9.5	9.5	1950	-	243	315	412	545	-	-	-	12				
/1500 1500	1950	-	195	258	335	450	-	-	-	9.5	9.5	2120	-	272	355	462	615	-	-	-	12				

- Remarks:
1. r<sub>min</sub> is the smallest chamfer dimension.
  2. The chamfer dimensions given in this table do not necessarily apply to:
 

(1) the groove side of bearing rings with snap ring groove	(3) the front face side of angular contact bearing
(2) the flangeless side of thin cylindrical roller bearing rings	(4) inner rings of bearings with tapered bore



**Table 4.2.1 Boundary Dimensions of Diameter Series 9, 0**



Single row, radial ball bearings			69 79										160	60 70								
Double row, radial ball bearings																						
Cylindrical roller bearings										NN49				N10		NN30						
Spherical roller bearings										239						230	240					
Bearing bore diameter Nominal	Diameter series 9											Diameter series 0										
	Bearing outside diameter D	Width series							Chamfer dimension				Width series							Chamfer dimension		
		0	1	2	3	4	5	6					0	1	2	3	4	5	6			
		Dimension series											Dimension series									
Bore No. d	09	19	29	39	49	59	69	09	19 39	49 69	Bearing outside diameter D	00	10	20	30	40	50	60	00	10 60		
	Width B							r <sub>min</sub>				Width B							r <sub>min</sub>			
/1600 1600	2060	-	200	265	345	462	-	-	-	9.5	9.5	2240	-	280	365	475	630	-	-	-	12	
/1700 1700	2180	-	212	280	355	475	-	-	-	9.5	9.5	2360	-	290	375	500	650	-	-	-	15	
/1800 1800	2300	-	218	290	375	500	-	-	-	12	12	2500	-	308	400	530	690	-	-	-	15	
/1900 1900	2430	-	230	308	400	530	-	-	-	12	12	-	-	-	-	-	-	-	-	-	-	
/2000 2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

- Remarks:
1. r<sub>min</sub> is the smallest chamfer dimension.
  2. The chamfer dimensions given in this table do not necessarily apply to:
 

(1) the groove side of bearing rings with snap ring groove	(3) the front face side of angular contact bearing
(2) the flangeless side of thin cylindrical roller bearing rings	(4) inner rings of bearings with tapered bore



**Table 4.2.2 Boundary Dimensions of Diameter Series 1, 2**

Single row, radial ball bearings											62								
Double row, radial ball bearings											72								
Cylindrical roller bearings											12						32		
Spherical roller bearings																	52		
							231	241									222	232	
Bearing bore diameter Nominal	Bearing outside diameter D	Diameter series 1								Diameter series 2									
		Width series					Chamfer dimension	Width series					Chamfer dimension						
		0	1	2	3	4		8	0	1	2	3		4					
		Dimension series								Dimension series									
Bore No. d	Bearing outside diameter D	01	11	21	31	41	01	11	Bearing outside diameter D	82	02	12	22	32	42	82	02		
								41									42		
		Width B					r <sub>min</sub>			Width B					r <sub>min</sub>				
00 10	-	-	-	-	-	-	-	-	30	7	9	-	14	14.3	-	0.3	0.6		
01 12	-	-	-	-	-	-	-	-	32	7	10	-	14	15.9	-	0.3	0.6		
02 15	-	-	-	-	-	-	-	-	35	8	11	-	14	15.9	20	0.3	0.6		
03 17	-	-	-	-	-	-	-	-	40	8	12	-	16	17.5	22	0.3	0.6		
04 20	-	-	-	-	-	-	-	-	47	9	14	-	18	20.6	27	0.3	1		
/22 22	-	-	-	-	-	-	-	-	50	9	14	-	18	20.6	27	0.3	1		
05 25	-	-	-	-	-	-	-	-	52	10	15	-	18	20.6	27	0.3	1		
/28 28	-	-	-	-	-	-	-	-	58	10	16	-	19	23	30	0.6	1		
06 30	-	-	-	-	-	-	-	-	62	10	16	-	20	23.8	32	0.6	1		
/32 32	-	-	-	-	-	-	-	-	65	11	17	-	21	25	33	0.6	1		
07 35	-	-	-	-	-	-	-	-	72	12	17	-	23	27	37	0.6	1.1		
08 40	-	-	-	-	-	-	-	-	80	13	18	-	23	30.2	40	0.6	1.1		

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:  
 (1) the groove side of bearing rings with snap ring groove  
 (2) the flangeless side of thin cylindrical roller bearing rings  
 (3) the front face side of angular contact bearing  
 (4) inner rings of bearings with tapered bore













**Table 4.2.2 Boundary Dimensions of Diameter Series 3, 4**

(1/8)

Unit : mm

Single row, radial ball bearings			63 73										
Double row, radial ball bearings			13				33 53						
Cylindrical roller bearings			N3		N23						N4		
Spherical roller bearings			213		223								
	Diameter series 3								Diameter series 4				
Bearing bore diameter Nominal	Bearing outside diameter D	Width series					Chamfer dimension		Bearing outside diameter D	Width series		Chamfer dimension	
		8	0	1	2	3				0	2		
Dimension series								Dimension series					
83		03	13	23	33	83	03 33	04	24	04 24			
Bore No. d		Width B					r <sub>min</sub>			Width B		r <sub>min</sub>	
/0.6 0.6	—	—	—	—	—	—	—	—	—	—	—	—	
1 1	—	—	—	—	—	—	—	—	—	—	—	—	
/1.5 1.5	—	—	—	—	—	—	—	—	—	—	—	—	
2 2	—	—	—	—	—	—	—	—	—	—	—	—	
/2.5 2.5	—	—	—	—	—	—	—	—	—	—	—	—	
3 3	13	—	5	—	—	7	—	0.2	—	—	—	—	
4 4	16	—	5	—	—	9	—	0.3	—	—	—	—	
5 5	19	—	6	—	—	10	—	0.3	—	—	—	—	
6 6	22	—	7	—	11	13	—	0.3	—	—	—	—	
7 7	26	—	9	—	13	15	—	0.3	—	—	—	—	
8 8	28	—	9	—	13	15	—	0.3	30	10	14	0.6	
9 9	30	—	10	—	14	16	—	0.6	32	11	15	0.6	

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore



**Table 4.2.2 Boundary Dimensions of Diameter Series 3, 4**

(2/8)

Unit : mm

Single row, radial ball bearings			63 73									
Double row, radial ball bearings			13				33 53					
Cylindrical roller bearings			N3		N23					N4		
Spherical roller bearings			213		223							
	Diameter series 3								Diameter series 4			
Bearing bore diameter Nominal	Bearing outside diameter D	Width series					Chamfer dimension		Bearing outside diameter D	Width series		Chamfer dimension
		8	0	1	2	3				0	2	
Dimension series								Dimension series				
83		03	13	23	33	83	03 33	04		24	04 24	
Bore No. d		Width B					r <sub>min</sub>			Width B		r <sub>min</sub>
00 10	35	9	11	–	17	19	0.3	0.6	37	12	16	0.6
01 12	37	9	12	–	17	19	0.3	1	42	13	19	1
02 15	42	9	13	–	17	19	0.3	1	52	15	24	1.1
03 17	47	10	14	–	19	22.2	0.6	1	62	17	29	1.1
04 20	52	10	15	–	21	22.2	0.6	1.1	72	19	33	1.1
/22 22	56	11	16	–	21	25	0.6	1.1	–	–	–	–
05 25	62	12	17	–	24	25.4	0.6	1.1	80	21	36	1.5
/28 28	68	13	18	–	24	30	0.6	1.1	–	–	–	–
06 30	72	13	19	–	27	30.2	0.6	1.1	90	23	40	1.5
/32 32	75	14	20	–	28	32	0.6	1.1	–	–	–	–
07 35	80	14	21	–	31	34.9	0.6	1.5	100	25	43	1.5
08 40	90	16	23	–	33	36.5	1	1.5	110	27	46	2

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.2 Boundary Dimensions of Diameter Series 3, 4**

(3/8)

Unit : mm

Single row, radial ball bearings			63 73										
Double row, radial ball bearings			13				33 53						
Cylindrical roller bearings			N3		N23					N4			
Spherical roller bearings			213		223								
	Diameter series 3								Diameter series 4				
Bearing bore diameter Nominal	Bearing outside diameter D	Width series					Chamfer dimension		Bearing outside diameter D	Width series		Chamfer dimension	
		8	0	1	2	3				0	2		
		Dimension series					Dimension series						
Bore No. d		83	03	13	23	33	83	03 33	04	24	04 24		
		Width B					r <sub>min</sub>		Width B		r <sub>min</sub>		
09	45	100	17	25	—	36	39.7	1	1.5	120	29	50	2
10	50	110	19	27	—	40	44.4	1	2	130	31	53	2.1
11	55	120	21	29	—	43	49.2	1.1	2	140	33	57	2.1
12	60	130	22	31	—	46	54	1.1	2.1	150	35	60	2.1
13	65	140	24	33	—	48	58.7	1.1	2.1	160	37	64	2.1
14	70	150	25	35	—	51	63.5	1.5	2.1	180	42	74	3
15	75	160	27	37	—	55	68.3	1.5	2.1	190	45	77	3
16	80	170	28	39	—	58	68.3	1.5	2.1	200	48	80	3
17	85	180	30	41	—	60	73	2	3	210	52	86	4
18	90	190	30	43	—	64	73	2	3	225	54	90	4
19	95	200	33	45	—	67	77.8	2	3	240	55	95	4
20	100	215	36	47	51	73	82.6	2.1	3	250	58	98	4

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.2 Boundary Dimensions of Diameter Series 3, 4**

(4/8)

Unit : mm

Single row, radial ball bearings			63 73										
Double row, radial ball bearings			13				33 53						
Cylindrical roller bearings			N3		N23						N4		
Spherical roller bearings			213		223								
	Diameter series 3								Diameter series 4				
Bearing bore diameter Nominal	Bearing outside diameter D	Width series					Chamfer dimension		Bearing outside diameter D	Width series		Chamfer dimension	
		8	0	1	2	3				0	2		
Dimension series								Dimension series					
83		03	13	23	33	83	03 33	04		24	04 24		
Bore No. d		Width B					r <sub>min</sub>			Width B		r <sub>min</sub>	
21 105	225	37	49	53	77	87.3	2.1	3	260	60	100	4	
22 110	240	42	50	57	80	92.1	3	3	280	65	108	4	
24 120	260	44	55	62	86	106	3	3	310	72	118	5	
26 130	280	48	58	66	93	112	3	4	340	78	128	5	
28 140	300	50	62	70	102	118	4	4	360	82	132	5	
30 150	320	—	65	75	108	128	—	4	380	85	138	5	
32 160	340	—	68	79	114	136	—	4	400	88	142	5	
34 170	360	—	72	84	120	140	—	4	420	92	145	5	
36 180	380	—	75	88	126	150	—	4	440	95	150	6	
38 190	400	—	78	92	132	155	—	5	460	98	155	6	
40 200	420	—	80	97	138	165	—	5	480	102	160	6	
44 220	460	—	88	106	145	180	—	5	540	115	180	6	

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.2 Boundary Dimensions of Diameter Series 3, 4**

(5/8)

Unit : mm

Single row, radial ball bearings			63 73									
Double row, radial ball bearings			13				33 53					
Cylindrical roller bearings			N3		N23					N4		
Spherical roller bearings			213		223							
	Diameter series 3							Diameter series 4				
Bearing bore diameter Nominal	Bearing outside diameter D	Width series					Chamfer dimension		Width series		Chamfer dimension	
		8	0	1	2	3			0	2		
Dimension series							Dimension series					
83		03	13	23	33	83	03 33	04	24	04 24		
Bore No. d		Width B					r <sub>min</sub>		Width B		r <sub>min</sub>	
48 240	500	–	95	114	155	195	–	5	580	122	190	6
52 260	540	–	102	123	165	206	–	6	620	132	206	7.5
56 280	580	–	108	132	175	224	–	6	670	140	224	7.5
60 300	620	–	109	140	185	236	–	7.5	710	150	236	7.5
64 320	670	–	112	155	200	258	–	7.5	750	155	250	9.5
68 340	710	–	118	165	212	272	–	7.5	800	165	265	9.5
72 360	750	–	125	170	224	290	–	7.5	850	180	280	9.5
76 380	780	–	128	175	230	300	–	7.5	900	190	300	9.5
80 400	820	–	136	185	243	308	–	7.5	950	200	315	12
84 420	850	–	136	190	250	315	–	9.5	980	206	325	12
88 440	900	–	145	200	265	345	–	9.5	1030	212	335	12
92 460	950	–	155	212	280	365	–	9.5	1060	218	345	12

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.2 Boundary Dimensions of Diameter Series 3, 4**

Single row, radial ball bearings			63 73									
Double row, radial ball bearings			13				33 53					
Cylindrical roller bearings			N3		N23					N4		
Spherical roller bearings			213		223							
	Diameter series 3							Diameter series 4				
Bearing bore diameter Nominal	Bearing outside diameter D	Width series					Chamfer dimension		Width series		Chamfer dimension	
		8	0	1	2	3			0	2		
Dimension series							Dimension series					
83		03	13	23	33	83	03 33	04	24	04 24		
Bore No. d		Width B					r <sub>min</sub>		Width B		r <sub>min</sub>	
96 480 /500 500 /530 530	980 1030 1090	-	160	218	290	375	-	9.5 12 12	1120 1150 1220	230 236 250	365 375 400	15 15 15
/560 560 /600 600 /630 630	1150 1220 1280	-	190	258	335	438	-	12 15 15	1280 1360 1420	258 272 280	412 438 450	15 15 15
/670 670 /710 710 /750 750	1360 1420 1500	-	218	300	400	515	-	15 15 15	1500 - -	290 - -	475 - -	15 - -
/800 800 /850 850 /900 900	1600 1700 1780	-	258	355	462	600	-	15 19 19	- - -	- - -	- - -	- - -

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. The chamfer dimensions given in this table do not necessarily apply to:

- (1) the groove side of bearing rings with snap ring groove
- (2) the flangeless side of thin cylindrical roller bearing rings
- (3) the front face side of angular contact bearing
- (4) inner rings of bearings with tapered bore

**Table 4.2.2 Boundary Dimensions of Diameter Series 3, 4**

(7/8)

Unit : mm

Single row, radial ball bearings			63 73									
Double row, radial ball bearings			13				33 53					
Cylindrical roller bearings			N3		N23					N4		
Spherical roller bearings			213		223							
	Diameter series 3							Diameter series 4				
Bearing bore diameter Nominal	Bearing outside diameter D	Width series					Chamfer dimension		Width series		Chamfer dimension	
		8	0	1	2	3			0	2		
		Dimension series					Dimension series					
Bore No. d	Bearing outside diameter D	83	03	13	23	33	83	03 33	04	24	04 24	
		Width B					r <sub>min</sub>		Width B		r <sub>min</sub>	
/950 950	1850	—	290	400	515	670	—	19	—	—	—	
/1000 1000	1950	—	300	412	545	710	—	19	—	—	—	
/1060 1060	—	—	—	—	—	—	—	—	—	—	—	
/1120 1120	—	—	—	—	—	—	—	—	—	—	—	
/1180 1180	—	—	—	—	—	—	—	—	—	—	—	
/1250 1250	—	—	—	—	—	—	—	—	—	—	—	
/1320 1320	—	—	—	—	—	—	—	—	—	—	—	
/1400 1400	—	—	—	—	—	—	—	—	—	—	—	
/1500 1500	—	—	—	—	—	—	—	—	—	—	—	

- Remarks:
1. r<sub>min</sub> is the smallest chamfer dimension.
  2. The chamfer dimensions given in this table do not necessarily apply to:
 

(1) the groove side of bearing rings with snap ring groove	(3) the front face side of angular contact bearing
(2) the flangeless side of thin cylindrical roller bearing rings	(4) inner rings of bearings with tapered bore

**Table 4.2.2 Boundary Dimensions of Diameter Series 3, 4**



Single row, radial ball bearings			63 73									
Double row, radial ball bearings			13				33 53					
Cylindrical roller bearings			N3		N23					N4		
Spherical roller bearings			213		223							
	Diameter series 3							Diameter series 4				
Bearing bore diameter Nominal	Bearing outside diameter D	Width series					Chamfer dimension		Width series		Chamfer dimension	
		8	0	1	2	3			0	2		
		Dimension series					Dimension series					
Bore No. d		83	03	13	23	33	83	03 33	Bearing outside diameter D	04	24	04 24
		Width B					r <sub>min</sub>			Width B		r <sub>min</sub>
/1600 1600	—	—	—	—	—	—	—	—	—	—	—	—
/1700 1700	—	—	—	—	—	—	—	—	—	—	—	—
/1800 1800	—	—	—	—	—	—	—	—	—	—	—	—
/1900 1900	—	—	—	—	—	—	—	—	—	—	—	—
/2000 2000	—	—	—	—	—	—	—	—	—	—	—	—

- Remarks:
1. r<sub>min</sub> is the smallest chamfer dimension.
  2. The chamfer dimensions given in this table do not necessarily apply to:
 

(1) the groove side of bearing rings with snap ring groove (2) the flangeless side of thin cylindrical roller bearing rings	(3) the front face side of angular contact bearing (4) inner rings of bearings with tapered bore
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**Table 4.3.1 Boundary Dimensions of Tapered Roller Bearings (1/3)**

Unit : mm

Tapered roller bearing		329						320						330						331					
Bearing bore diameter Nominal		Diameter series 9						Diameter series 0						Diameter series 1											
		Outside diameter	Width series 2			Chamfer dimension		Outside diameter	Width series 2			Width series 3			Chamfer dimension	Outside diameter	Width series 3			Chamfer dimension					
Bore No.	d	D	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring	D	B	C	T	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring	D	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring			
02	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
03	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
04	20	37	12	9	12	0.3	0.3	42	15	12	15	—	—	—	0.6	0.6	—	—	—	—	—	—			
/22	22	40	12	9	12	0.3	0.3	44	15	11.5	15	—	—	—	0.6	0.6	—	—	—	—	—	—			
05	25	42	12	9	12	0.3	0.3	47	15	11.5	15	17	14	17	0.6	0.6	—	—	—	—	—	—			
/28	28	45	12	9	12	0.3	0.3	52	16	12	16	—	—	—	1	1	—	—	—	—	—	—			
06	30	47	12	9	12	0.3	0.3	55	17	13	17	20	16	20	1	1	—	—	—	—	—	—			
/32	32	52	15	10	14	0.6	0.6	58	17	13	17	—	—	—	1	1	—	—	—	—	—	—			
07	35	55	14	11.5	14	0.6	0.6	62	18	14	18	21	17	21	1	1	—	—	—	—	—	—			
08	40	62	15	12	15	0.6	0.6	68	19	14.5	19	22	18	22	1	1	75	26	20.5	26	1.5	1.5			
09	45	68	15	12	15	0.6	0.6	75	20	15.5	20	24	19	24	1	1	80	26	20.5	26	1.5	1.5			
10	50	72	15	12	15	0.6	0.6	80	20	15.5	20	24	19	24	1	1	85	26	20	26	1.5	1.5			
11	55	80	17	14	17	1	1	90	23	17.5	23	27	21	27	1.5	1.5	95	30	23	30	1.5	1.5			
12	60	85	17	14	17	1	1	95	23	17.5	23	27	21	27	1.5	1.5	100	30	23	30	1.5	1.5			
13	65	90	17	14	17	1	1	100	23	17.5	23	27	21	27	1.5	1.5	110	34	26.5	34	1.5	1.5			

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. Dimensions B, C, T of 32000 and 32200 series bearings without prefix E and suffix J listed on the pages from D84 to D87 are differ from the above dimensions.

Note: (1) To be applied to 30300D series.



**Table 4.3.1 Boundary Dimensions of Tapered Roller Bearings (2/3)**

Unit : mm

Tapered roller bearing		329						320						330						331					
Bearing bore diameter Nominal		Diameter series 9						Diameter series 0						Diameter series 1											
		Outside diameter	Width series 2			Chamfer dimension		Outside diameter	Width series 2			Width series 3			Chamfer dimension	Outside diameter	Width series 3			Chamfer dimension					
Bore No.	d	D	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring	D	B	C	T	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring	D	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring			
14	70	100	20	16	20	1	1	110	25	19	25	31	25.5	31	1.5	1.5	120	37	29	37	2	1.5			
15	75	105	20	16	20	1	1	115	25	19	25	31	25.5	31	1.5	1.5	125	37	29	37	2	1.5			
16	80	110	20	16	20	1	1	125	29	22	29	36	29.5	36	1.5	1.5	130	37	29	37	2	1.5			
17	85	120	23	18	23	1.5	1.5	130	29	22	29	36	29.5	36	1.5	1.5	140	41	32	41	2.5	2			
18	90	125	23	18	23	1.5	1.5	140	32	24	32	39	32.5	39	2	1.5	150	45	35	45	2.5	2			
19	95	130	23	18	23	1.5	1.5	145	32	24	32	39	32.5	39	2	1.5	160	49	38	49	2.5	2			
20	100	140	25	20	25	1.5	1.5	150	32	24	32	39	32.5	39	2	1.5	165	52	40	52	2.5	2			
21	105	145	25	20	25	1.5	1.5	160	35	26	35	43	34	43	2.5	2	175	56	44	56	2.5	2			
22	110	150	25	20	25	1.5	1.5	170	38	29	38	47	37	47	2.5	2	180	56	43	56	2.5	2			
24	120	165	29	23	29	1.5	1.5	180	38	29	38	48	38	48	2.5	2	200	62	48	62	2.5	2			
26	130	180	32	25	32	2	1.5	200	45	34	45	55	43	55	2.5	2	—	—	—	—	—	—			
28	140	190	32	25	32	2	1.5	210	45	34	45	56	44	56	2.5	2	—	—	—	—	—	—			
30	150	210	38	30	38	2.5	2	225	48	36	48	59	46	59	3	2.5	—	—	—	—	—	—			
32	160	220	38	30	38	2.5	2	240	51	38	51	—	—	—	3	2.5	—	—	—	—	—	—			
34	170	230	38	30	38	2.5	2	260	57	43	57	—	—	—	3	2.5	—	—	—	—	—	—			

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. Dimensions B, C, T of 32000 and 32200 series bearings without prefix E and suffix J listed on the pages from D84 to D87 are differ from the above dimensions.

Note: (1) To be applied to 30300D series.

**Table 4.3.1 Boundary Dimensions of Tapered Roller Bearings (3/3)**

Unit : mm

Tapered roller bearing		329						320						330						331					
Bearing bore diameter Nominal		Diameter series 9						Diameter series 0						Diameter series 1											
		Outside diameter	Width series 2			Chamfer dimension		Outside diameter	Width series 2			Width series 3			Chamfer dimension		Outside diameter	Width series 3			Chamfer dimension				
Bore No.	d	D	B	C	T	r <sub>min</sub> Inner ring Outer ring		D	B	C	T	B	C	T	r <sub>min</sub> Inner ring Outer ring		D	B	C	T	r <sub>min</sub> Inner ring Outer ring				
36	180	250	45	34	45	2.5	2	280	64	48	64	-	-	-	3	2.5	-	-	-	-	-	-			
38	190	260	45	34	45	2.5	2	290	64	48	64	-	-	-	3	2.5	-	-	-	-	-	-			
40	200	280	51	39	51	3	2.5	310	70	53	70	-	-	-	3	2.5	-	-	-	-	-	-			
44	220	300	51	39	51	3	2.5	340	76	57	76	-	-	-	4	3	-	-	-	-	-	-			
48	240	320	51	39	51	3	2.5	360	76	57	76	-	-	-	4	3	-	-	-	-	-	-			
52	260	360	63.5	48	63.5	3	2.5	400	87	65	87	-	-	-	5	4	-	-	-	-	-	-			
56	280	380	63.5	48	63.5	3	2.5	420	87	65	87	-	-	-	5	4	-	-	-	-	-	-			
60	300	420	76	57	76	4	3	460	100	74	100	-	-	-	5	4	-	-	-	-	-	-			
64	320	440	76	57	76	4	3	480	100	74	100	-	-	-	5	4	-	-	-	-	-	-			
68	340	460	76	57	76	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
72	360	480	76	57	76	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. Dimensions B, C, T of 32000 and 32200 series bearings without prefix E and suffix J listed on the pages from D84 to D87 are differ from the above dimensions.

Note: (1) To be applied to 30300D series.

**Table 4.3.2 Boundary Dimensions of Tapered Roller Bearings (1/3)**

Unit : mm

Tapered roller bearing				302			322			332					303		303D		313			323				
Bearing bore diameter Nominal		Diameter series 2												Diameter series 3												
		Outside diameter	Width series 0			Width series 2			Width series 3			Chamfer dimension	Outside diameter	Width series 0			Width series 1			Width series 2			Chamfer dimension			
Bore No.	d	D	B	C	T	B	C	T	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring	D	B	C	C <sup>(1)</sup>	T	B	C	T	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring
02	15	—	—	—	—	—	—	—	—	—	—	—	—	42	13	11	—	14.25	—	—	—	—	—	—	1	1
03	17	40	12	11	13.25	16	14	17.25	—	—	—	1	1	47	14	12	—	15.25	—	—	—	19	16	20.25	1	1
04	20	47	14	12	15.25	18	15	19.25	—	—	—	1	1	52	15	13	—	16.25	—	—	—	21	18	22.25	1.5	1.5
/22	22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
05	25	52	15	13	16.25	18	16	19.25	22	18	22	1	1	62	17	15	13	18.25	—	—	—	24	20	25.25	1.5	1.5
/28	28	58	—	—	—	19	16	20.25	24	19	24	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
06	30	62	16	14	17.25	20	17	21.25	25	19.5	25	1	1	72	19	16	14	20.75	—	—	—	27	23	28.75	1.5	1.5
/32	32	65	17	15	18.25	26.5	17	22	26	20.5	26	1	1	75	—	—	—	—	—	—	—	28	23	29.75	1.5	1.5
07	35	72	17	15	18.25	23	19	24.25	28	22	28	1.5	1.5	80	21	18	15	22.75	—	—	—	31	25	32.75	2	1.5
08	40	80	18	16	19.75	23	19	24.75	32	25	32	1.5	1.5	90	23	20	17	25.25	—	—	—	33	27	35.25	2	1.5
09	45	85	19	16	20.75	23	19	24.75	32	25	32	1.5	1.5	100	25	22	18	27.25	—	—	—	36	30	38.25	2	1.5
10	50	90	20	17	21.75	23	19	24.75	32	24.5	32	1.5	1.5	110	27	23	19	29.25	—	—	—	40	33	42.25	2.5	2
11	55	100	21	18	22.75	25	21	26.75	35	27	35	2	1.5	120	29	25	21	31.5	—	—	—	43	35	45.5	2.5	2
12	60	110	22	19	23.75	28	24	29.75	38	29	38	2	1.5	130	31	26	22	33.5	—	—	—	46	37	48.5	3	2.5
13	65	120	23	20	24.75	31	27	32.75	41	32	41	2	1.5	140	33	28	23	36	—	—	—	48	39	51	3	2.5

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. Dimensions B, C, T of 32000 and 32200 series bearings without prefix E and suffix J listed on the pages from D84 to D87 are differ from the above dimensions.

Note: (1) To be applied to 30300D series.



**Table 4.3.2 Boundary Dimensions of Tapered Roller Bearings (2/3)**

Unit : mm

Tapered roller bearing		302			322			332						303			303D			313			323					
Bearing bore diameter Nominal		Diameter series 2												Diameter series 3														
		Outside diameter	Width series 0			Width series 2			Width series 3			Chamfer dimension		Outside diameter	Width series 0			Width series 1			Width series 2			Chamfer dimension				
Bore No.	d	D	B	C	T	B	C	T	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring	D	B	C	C <sup>(1)</sup>	T	B	C	T	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring		
14	70	125	24	21	26.25	31	27	33.25	41	32	41	2	1.5	150	35	30	25	38	-	-	-	51	42	54	3	2.5		
15	75	130	25	22	27.25	31	27	33.25	41	31	41	2	1.5	160	37	31	26	40	-	-	-	55	45	58	3	2.5		
16	80	140	26	22	28.25	33	28	35.25	46	35	46	2.5	2	170	39	33	27	42.5	-	-	-	58	48	61.5	3	2.5		
17	85	150	28	24	30.5	36	30	38.5	49	37	49	2.5	2	180	41	34	28	44.5	-	-	-	60	49	63.5	4	3		
18	90	160	30	26	32.5	40	34	42.5	55	42	55	2.5	2	190	43	36	30	46.5	-	-	-	64	53	67.5	4	3		
19	95	170	32	27	34.5	43	37	45.5	58	44	58	3	2.5	200	45	38	32	49.5	-	-	-	67	55	71.5	4	3		
20	100	180	34	29	37	46	39	49	63	48	63	3	2.5	215	47	39	-	51.5	51	35	56.5	73	60	77.5	4	3		
21	105	190	36	30	39	50	43	53	68	52	68	3	2.5	225	49	41	-	53.5	53	36	58	77	63	81.5	4	3		
22	110	200	38	32	41	53	46	56	-	-	-	3	2.5	240	50	42	-	54.5	57	38	63	80	65	84.5	4	3		
24	120	215	40	34	43.5	58	50	61.5	-	-	-	3	2.5	260	55	46	-	59.5	62	42	68	86	69	90.5	4	3		
26	130	230	40	34	43.75	64	54	67.75	-	-	-	4	3	280	58	49	-	63.75	66	44	72	-	-	-	5	4		
28	140	250	42	36	45.75	68	58	71.75	-	-	-	4	3	300	62	53	-	67.75	70	47	77	-	-	-	5	4		
30	150	270	45	38	49	73	60	77	-	-	-	4	3	320	65	55	-	72	75	50	82	-	-	-	5	4		
32	160	290	48	40	52	80	67	84	-	-	-	4	3	340	68	58	-	75	-	-	-	-	-	-	5	4		
34	170	310	52	43	57	86	71	91	-	-	-	5	4	360	72	62	-	80	-	-	-	-	-	-	5	4		

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. Dimensions B, C, T of 32000 and 32200 series bearings without prefix E and suffix J listed on the pages from D84 to D87 are differ from the above dimensions.

Note: (1) To be applied to 30300D series.

**Table 4.3.2 Boundary Dimensions of Tapered Roller Bearings (3/3)**

Unit : mm



Tapered roller bearing		302			322			332					303		303D		313			323							
Bearing bore diameter Nominal		Diameter series 2											Diameter series 3														
		Outside diameter	Width series 0			Width series 2			Width series 3			Chamfer dimension	Outside diameter	Width series 0			Width series 1			Width series 2			Chamfer dimension				
Bore No.	d	D	B	C	T	B	C	T	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring	D	B	C	C <sup>(1)</sup>	T	B	C	T	B	C	T	r <sub>min</sub> Inner ring	r <sub>min</sub> Outer ring	
36	180	320	52	43	57	86	71	91	-	-	-	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	190	340	55	46	60	92	75	97	-	-	-	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	200	360	58	48	64	98	82	104	-	-	-	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	240	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	280	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	320	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68	340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72	360	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks: 1. r<sub>min</sub> is the smallest chamfer dimension.  
 2. Dimensions B, C, T of 32000 and 32200 series bearings without prefix E and suffix J listed on the pages from D84 to D87 are differ from the above dimensions.

Note: (1) To be applied to 30300D series.

**Table 4.4.1 Boundary Dimensions of Thrust Bearings with Flat Back Face**

(1/4)

Unit : mm

Single direction thrust ball bearings											511	
Double direction thrust ball bearings												
Spherical roller thrust bearings												
Bearing bore diameter Nominal	Diameter series 0						Diameter series 1					
	Bearing outside diameter Nominal D	Dimension series			Chamfer dimension $r_{min}$	Bearing outside diameter Nominal D	Dimension series			Chamfer dimension $r_{min}$		
		70	90	10			71	91	11			
Bore No.	d	Height Nominal T				Height Nominal T						
4	4	12	4	—	6	0.3	—	—	—	—		
6	6	16	5	—	7	0.3	—	—	—	—		
8	8	18	5	—	7	0.3	—	—	—	—		
00	10	20	5	—	7	0.3	24	6	—	9	0.3	
01	12	22	5	—	7	0.3	26	6	—	9	0.3	
02	15	26	5	—	7	0.3	28	6	—	9	0.3	
03	17	28	5	—	7	0.3	30	6	—	9	0.3	
04	20	32	6	—	8	0.3	35	7	—	10	0.3	
05	25	37	6	—	8	0.3	42	8	—	11	0.6	
06	30	42	6	—	8	0.3	47	8	—	11	0.6	
07	35	47	6	—	8	0.3	52	8	—	12	0.6	
08	40	52	6	—	9	0.3	60	9	—	13	0.6	
09	45	60	7	—	10	0.3	65	9	—	14	0.6	
10	50	65	7	—	10	0.3	70	9	—	14	0.6	
11	55	70	7	—	10	0.3	78	10	—	16	0.6	
12	60	75	7	—	10	0.3	85	11	—	17	1	
13	65	80	7	—	10	0.3	90	11	—	18	1	
14	70	85	7	—	10	0.3	95	11	—	18	1	
15	75	90	7	—	10	0.3	100	11	—	19	1	
16	80	95	7	—	10	0.3	105	11	—	19	1	
17	85	100	7	—	10	0.3	110	11	—	19	1	

Remarks:  $r_{min}$  is the smallest chamfer dimension.



**Table 4.4.1 Boundary Dimensions of Thrust Bearings with Flat Back Face**

(2/4)

Unit : mm

Single direction thrust ball bearings											511	
Double direction thrust ball bearings												
Spherical roller thrust bearings												
Bearing bore diameter Nominal  Bore No.    d	Diameter series 0						Diameter series 1					
	Bearing outside diameter Nominal D	Dimension series			Chamfer dimension $r_{min}$	Bearing outside diameter Nominal D	Dimension series			Chamfer dimension $r_{min}$		
		70	90	10			71	91	11			
		Height Nominal T			Height Nominal T							
18    90	105	7	–	10	0.3	120	14	–	22	1		
20    100	120	9	–	14	0.6	135	16	21	25	1		
22    110	130	9	–	14	0.6	145	16	21	25	1		
24    120	140	9	–	14	0.6	155	16	21	25	1		
26    130	150	9	–	14	0.6	170	18	24	30	1		
28    140	160	9	–	14	0.6	180	18	24	31	1		
30    150	170	9	–	14	0.6	190	18	24	31	1		
32    160	180	9	–	14	0.6	200	18	24	31	1		
34    170	190	9	–	14	0.6	215	20	27	34	1.1		
36    180	200	9	–	14	0.6	225	20	27	34	1.1		
38    190	215	11	–	17	1	240	23	30	37	1.1		
40    200	225	11	–	17	1	250	23	30	37	1.1		
44    220	250	14	–	22	1	270	23	30	37	1.1		
48    240	270	14	–	22	1	300	27	36	45	1.5		
52    260	290	14	–	22	1	320	27	36	45	1.5		
56    280	310	14	–	22	1	350	32	42	53	1.5		
60    300	340	18	24	30	1	380	36	48	62	2		
64    320	360	18	24	30	1	400	36	48	63	2		
68    340	380	18	24	30	1	420	36	48	64	2		
72    360	400	18	24	30	1	440	36	48	65	2		
76    380	420	18	24	30	1	460	36	48	65	2		

Remarks:  $r_{min}$  is the smallest chamfer dimension.

**Table 4.4.1 Boundary Dimensions of Thrust Bearings with Flat Back Face**

(3/4)

Unit : mm

Single direction thrust ball bearings												511	
Double direction thrust ball bearings													
Spherical roller thrust bearings													
Bearing bore diameter Nominal  Bore No.      d	Diameter series 0						Diameter series 1						
	Bearing outside diameter Nominal D	Dimension series			Chamfer dimension  r <sub>min</sub>	Bearing outside diameter Nominal D	Dimension series			Chamfer dimension  r <sub>min</sub>			
		70	90	10			71	91	11				
		Height Nominal T					Height Nominal T						
80	400	440	18	24	30	1	480	36	48	65	2		
84	420	460	18	24	30	1	500	36	48	65	2		
88	440	480	18	24	30	1	540	45	60	80	2.1		
92	460	500	18	24	30	1	560	45	60	80	2.1		
96	480	520	18	24	30	1	580	45	60	80	2.1		
/500	500	540	18	24	30	1	600	45	60	80	2.1		
/530	530	580	23	30	38	1.1	640	50	67	85	3		
/560	560	610	23	30	38	1.1	670	50	67	85	3		
/600	600	650	23	30	38	1.1	710	50	67	85	3		
/630	630	680	23	30	38	1.1	750	54	73	95	3		
/670	670	730	27	36	45	1.5	800	58	78	105	4		
/710	710	780	32	42	53	1.5	850	63	85	112	4		
/750	750	820	32	42	53	1.5	900	67	90	120	4		
/800	800	870	32	42	53	1.5	950	67	90	120	4		
/850	850	920	32	42	53	1.5	1000	67	90	120	4		
/900	900	980	36	48	63	2	1060	73	95	130	5		
/950	950	1030	36	48	63	2	1120	78	103	135	5		
/1000	1000	1090	41	54	70	2.1	1180	82	109	140	5		
/1060	1060	1150	41	54	70	2.1	1250	85	115	150	5		
/1120	1120	1220	45	60	80	2.1	1320	90	122	160	5		
/1180	1180	1280	45	60	80	2.1	1400	100	132	175	6		

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.1 Boundary Dimensions of Thrust Bearings with Flat Back Face**

(4/4)

Unit : mm



Single direction thrust ball bearings										511	
Double direction thrust ball bearings											
Spherical roller thrust bearings											
Bearing bore diameter Nominal  Bore No.    d	Diameter series 0						Diameter series 1				
	Bearing outside diameter Nominal D	Dimension series			Chamfer dimension  r <sub>min</sub>	Bearing outside diameter Nominal D	Dimension series			Chamfer dimension  r <sub>min</sub>	
		70	90	10			71	91	11		
		Height Nominal T			Height Nominal T						
/1250	1250	1360	50	67	85	3	1460	—	—	175	6
/1320	1320	1440	—	—	95	3	1540	—	—	175	6
/1400	1400	1520	—	—	95	3	1630	—	—	180	6
/1500	1500	1630	—	—	105	4	1750	—	—	195	6
/1600	1600	1730	—	—	105	4	1850	—	—	195	6
/1700	1700	1840	—	—	112	4	1970	—	—	212	7.5
/1800	1800	1950	—	—	120	4	2080	—	—	220	7.5
/1900	1900	2060	—	—	130	5	2180	—	—	220	7.5
/2000	2000	2160	—	—	130	5	2300	—	—	236	7.5
/2120	2120	2300	—	—	140	5	2430	—	—	243	7.5
/2240	2240	2430	—	—	150	5	2570	—	—	258	9.5
/2360	2360	2550	—	—	150	5	2700	—	—	265	9.5
/2500	2500	2700	—	—	160	5	2850	—	—	272	9.5

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.2 Boundary Dimensions of Thrust Bearings with Flat Back Face (1/4)**

Unit : mm

Single direction thrust ball bearings					512						
Double direction thrust ball bearings						522					
Spherical roller thrust bearings				292							
Bearing bore diameter Nominal Bore No.      d		Diameter series 2									
		Bearing outside diameter Nominal D	Dimension series							Chamfer dimension	
			72	92	12	22	22		Center washer Bore d <sub>2</sub> Height a	r <sub>min</sub>	r <sub>1min</sub>
			Height Nominal T								
4	4	16	6	—	8	—	—	—	0.3	—	
6	6	20	6	—	9	—	—	—	0.3	—	
8	8	22	6	—	9	—	—	—	0.3	—	
00	10	26	7	—	11	—	—	—	0.6	—	
01	12	28	7	—	11	—	—	—	0.6	—	
02	15	32	8	—	12	22	10	5	0.6	0.3	
03	17	35	8	—	12	—	—	—	0.6	—	
04	20	40	9	—	14	26	15	6	0.6	0.3	
05	25	47	10	—	15	28	20	7	0.6	0.3	
06	30	52	10	—	16	29	25	7	0.6	0.3	
07	35	62	12	—	18	34	30	8	1	0.3	
08	40	68	13	—	19	36	30	9	1	0.6	
09	45	73	13	—	20	37	35	9	1	0.6	
10	50	78	13	—	22	39	40	9	1	0.6	
11	55	90	16	21	25	45	45	10	1	0.6	
12	60	95	16	21	26	46	50	10	1	0.6	
13	65	100	16	21	27	47	55	10	1	0.6	
14	70	105	16	21	27	47	55	10	1	1	
15	75	110	16	21	27	47	60	10	1	1	
16	80	115	16	21	28	48	65	10	1	1	
17	85	125	18	24	31	55	70	12	1	1	

Remarks: r<sub>min</sub> is the smallest chamfer dimension.



**Table 4.4.2 Boundary Dimensions of Thrust Bearings with Flat Back Face (2/4)**

Unit : mm

Single direction thrust ball bearings					512						
Double direction thrust ball bearings							522				
Spherical roller thrust bearings				292							
<b>Bearing bore diameter</b> <b>Nominal</b>  <b>Bore No.</b> <b>d</b>		<b>Diameter series 2</b>									
		<b>Bearing outside diameter</b> <b>Nominal</b> <b>D</b>	<b>Dimension series</b>							<b>Chamfer dimension</b>	
			72	92	12	22	22		Center washer Bore d <sub>2</sub> Height a	r <sub>min</sub>	r <sub>1min</sub>
			<b>Height Nominal T</b>								
18	90	135	20	27	35	62	75	14	1.1	1	
20	100	150	23	30	38	67	85	15	1.1	1	
22	110	160	23	30	38	67	95	15	1.1	1	
24	120	170	23	30	39	68	100	15	1.1	1.1	
26	130	190	27	36	45	80	110	18	1.5	1.1	
28	140	200	27	36	46	81	120	18	1.5	1.1	
30	150	215	29	39	50	89	130	20	1.5	1.1	
32	160	225	29	39	51	90	140	20	1.5	1.1	
34	170	240	32	42	55	97	150	21	1.5	1.1	
36	180	250	32	42	56	98	150	21	1.5	2	
38	190	270	36	48	62	109	160	24	2	2	
40	200	280	36	48	62	109	170	24	2	2	
44	220	300	36	48	63	110	190	24	2	2	
48	240	340	45	60	78	—	—	—	2.1	—	
52	260	360	45	60	79	—	—	—	2.1	—	
56	280	380	45	60	80	—	—	—	2.1	—	
60	300	420	54	73	95	—	—	—	3	—	
64	320	440	54	73	95	—	—	—	3	—	
68	340	460	54	73	96	—	—	—	3	—	
72	360	500	63	85	110	—	—	—	4	—	
76	380	520	63	85	112	—	—	—	4	—	

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.1 Boundary Dimensions of Thrust Bearings with Flat Back Face (3/4)**

Unit : mm

Single direction thrust ball bearings					512					
Double direction thrust ball bearings						522				
Spherical roller thrust bearings				292						
Bearing bore diameter Nominal Bore No.      d		Diameter series 2								
		Bearing outside diameter Nominal D	Dimension series						Chamfer dimension	
			72	92	12	22	22		r <sub>min</sub>	r <sub>1min</sub>
			Height Nominal T				Center washer			
				Bore d <sub>2</sub> Height a						
80	400	540	63	85	112	—	—	—	4	—
84	420	580	73	95	130	—	—	—	5	—
88	440	600	73	95	130	—	—	—	5	—
92	460	620	73	95	130	—	—	—	5	—
96	480	650	78	103	135	—	—	—	5	—
/500	500	670	78	103	135	—	—	—	5	—
/530	530	710	82	109	140	—	—	—	5	—
/560	560	750	85	115	150	—	—	—	5	—
/600	600	800	90	122	160	—	—	—	5	—
/630	630	850	100	132	175	—	—	—	6	—
/670	670	900	103	140	180	—	—	—	6	—
/710	710	950	109	145	190	—	—	—	6	—
/750	750	1000	112	150	195	—	—	—	6	—
/800	800	1060	118	155	205	—	—	—	7.5	—
/850	850	1120	122	160	212	—	—	—	7.5	—
/900	900	1180	125	170	220	—	—	—	7.5	—
/950	950	1250	136	180	236	—	—	—	7.5	—
/1000	1000	1320	145	190	250	—	—	—	9.5	—
/1060	1060	1400	155	206	265	—	—	—	9.5	—
/1120	1120	1460	—	206	—	—	—	—	9.5	—
/1180	1180	1520	—	206	—	—	—	—	9.5	—

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.2 Boundary Dimensions of Thrust Bearings with Flat Back Face (4/4)**

Unit : mm



Single direction thrust ball bearings					512					
Double direction thrust ball bearings							522			
Spherical roller thrust bearings				292						
<b>Bearing bore diameter</b> <b>Nominal</b>  <b>Bore No.</b> <b>d</b>		<b>Diameter series 2</b>								
		<b>Bearing outside diameter</b> <b>Nominal</b> <b>D</b>	<b>Dimension series</b>						<b>Chamfer dimension</b>	
			72	92	12	22	22		r <sub>min</sub>	r <sub>1min</sub>
			<b>Height Nominal T</b>				<b>Center washer</b>			
				<b>Bore d<sub>2</sub> Height a</b>						
/1250	1250	1610	—	216	—	—	—	—	9.5	—
/1320	1320	1700	—	228	—	—	—	—	9.5	—
/1400	1400	1760	—	234	—	—	—	—	12	—
/1500	1500	1920	—	252	—	—	—	—	12	—
/1600	1600	2040	—	264	—	—	—	—	15	—
/1700	1700	2160	—	276	—	—	—	—	15	—
/1800	1800	2280	—	280	—	—	—	—	15	—
/1900	1900	—	—	—	—	—	—	—	—	—
/2000	2000	—	—	—	—	—	—	—	—	—
/2120	2120	—	—	—	—	—	—	—	—	—
/2240	2240	—	—	—	—	—	—	—	—	—
/2360	2360	—	—	—	—	—	—	—	—	—
/2500	2500	—	—	—	—	—	—	—	—	—

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.3 Boundary Dimensions of Thrust Bearings with Flat Back Face (1/4)**

Unit : mm

Single direction thrust ball bearings					513					
Double direction thrust ball bearings						523				
Spherical roller thrust bearings			293							
Bearing bore diameter Nominal	Diameter series 3									
	Bearing outside diameter Nominal D	Dimension series							Chamfer dimension	
		73	93	13	23	23		Center washer Bore d <sub>2</sub> Height a	r <sub>min</sub>	r <sub>1min</sub>
Bore No.	d	Height Nominal T								
4	4	20	7	—	11	—	—	—	0.6	—
6	6	24	8	—	12	—	—	—	0.6	—
8	8	26	8	—	12	—	—	—	0.6	—
00	10	30	9	—	14	—	—	—	0.6	—
01	12	32	9	—	14	—	—	—	0.6	—
02	15	37	10	—	15	—	—	—	0.6	—
03	17	40	10	—	16	—	—	—	0.6	—
04	20	47	12	—	18	—	—	—	1	—
05	25	52	12	—	18	34	20	8	1	0.3
06	30	60	14	—	21	38	25	9	1	0.3
07	35	68	15	—	24	44	30	10	1	0.3
08	40	78	17	22	26	49	30	12	1	0.6
09	45	85	18	24	28	52	35	12	1	0.6
10	50	95	20	27	31	58	40	14	1.1	0.6
11	55	105	23	30	35	64	45	15	1.1	0.6
12	60	110	23	30	35	64	50	15	1.1	0.6
13	65	115	23	30	36	65	55	15	1.1	0.6
14	70	125	25	34	40	72	55	16	1.1	1
15	75	135	27	36	44	79	60	18	1.5	1
16	80	140	27	36	44	79	65	18	1.5	1
17	85	150	29	39	49	87	70	19	1.5	1

Remarks: r<sub>min</sub> is the smallest chamfer dimension.



**Table 4.4.3 Boundary Dimensions of Thrust Bearings with Flat Back Face (2/4)**

Unit : mm

Single direction thrust ball bearings					513					
Double direction thrust ball bearings							523			
Spherical roller thrust bearings				293						
Bearing bore diameter Nominal		Diameter series 3								
		Bearing outside diameter Nominal D	Dimension series						Chamfer dimension	
Bore No.      d	73		93	13	23	23		r <sub>min</sub> r <sub>1min</sub>		
	Height Nominal T				Center washer	Bore d <sub>2</sub> Height a				
18      90	155	29	39	50	88		75	19	1.5	1
20      100	170	32	42	55	97	85	21	1.5	1	
22      110	190	36	48	63	110	95	24	2	1	
24      120	210	41	54	70	123	100	27	2.1	1.1	
26      130	225	42	58	75	130	110	30	2.1	1.1	
28      140	240	45	60	80	140	120	31	2.1	1.1	
30      150	250	45	60	80	140	130	31	2.1	1.1	
32      160	270	50	67	87	153	140	33	3	1.1	
34      170	280	50	67	87	153	150	33	3	1.1	
36      180	300	54	73	95	165	150	37	3	2	
38      190	320	58	78	105	183	160	40	4	2	
40      200	340	63	85	110	192	170	42	4	2	
44      220	360	63	85	112	—	—	—	4	—	
48      240	380	63	85	112	—	—	—	4	—	
52      260	420	73	95	130	—	—	—	5	—	
56      280	440	73	95	130	—	—	—	5	—	
60      300	480	82	109	140	—	—	—	5	—	
64      320	500	82	109	140	—	—	—	5	—	
68      340	540	90	122	160	—	—	—	5	—	
72      360	560	90	122	160	—	—	—	5	—	
76      380	600	100	132	175	—	—	—	6	—	

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.3 Boundary Dimensions of Thrust Bearings with Flat Back Face (3/4)**

Unit : mm

Single direction thrust ball bearings					513					
Double direction thrust ball bearings						523				
Spherical roller thrust bearings				293						
Bearing bore diameter Nominal		Diameter series 3								
		Bearing outside diameter Nominal D	Dimension series						Chamfer dimension	
Bore No.    d	73		93	13	23	23		r <sub>min</sub>	r <sub>1min</sub>	
	Height Nominal T				Center washer					
					Bore d <sub>2</sub>	Height a				
80	400	620	100	132	175	—	—	—	6	—
84	420	650	103	140	180	—	—	—	6	—
88	440	680	109	145	190	—	—	—	6	—
92	460	710	112	150	195	—	—	—	6	—
96	480	730	112	150	195	—	—	—	6	—
/500	500	750	112	150	195	—	—	—	6	—
/530	530	800	122	160	212	—	—	—	7.5	—
/560	560	850	132	175	224	—	—	—	7.5	—
/600	600	900	136	180	236	—	—	—	7.5	—
/630	630	950	145	190	250	—	—	—	9.5	—
/670	670	1000	150	200	258	—	—	—	9.5	—
/710	710	1060	160	212	272	—	—	—	9.5	—
/750	750	1120	165	224	290	—	—	—	9.5	—
/800	800	1180	170	230	300	—	—	—	9.5	—
/850	850	1250	180	243	315	—	—	—	12	—
/900	900	1320	190	250	335	—	—	—	12	—
/950	950	1400	200	272	355	—	—	—	12	—
/1000	1000	1460	—	276	—	—	—	—	12	—
/1060	1060	1540	—	288	—	—	—	—	15	—
/1120	1120	1630	—	306	—	—	—	—	15	—
/1180	1180	1710	—	318	—	—	—	—	15	—

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.3 Boundary Dimensions of Thrust Bearings with Flat Back Face (4/4)**

Unit : mm



Single direction thrust ball bearings				513						
Double direction thrust ball bearings					523					
Spherical roller thrust bearings			293							
Bearing bore diameter Nominal	Diameter series 3									
	Bearing outside diameter Nominal D	Dimension series							Chamfer dimension	
Bore No.		d	73	93	13	23	23		r <sub>min</sub>	r <sub>1min</sub>
		Height Nominal T				Center washer Bore d <sub>2</sub> Height a				
/1250	1250	1800	—	330	—	—	—	—	15	—
/1320	1320	1900	—	348	—	—	—	—	19	—
/1400	1400	2000	—	360	—	—	—	—	19	—
/1500	1500	2140	—	384	—	—	—	—	19	—
/1600	1600	2270	—	402	—	—	—	—	19	—
/1700	1700	—	—	—	—	—	—	—	—	—
/1800	1800	—	—	—	—	—	—	—	—	—
/1900	1900	—	—	—	—	—	—	—	—	—
/2000	2000	—	—	—	—	—	—	—	—	—
/2120	2120	—	—	—	—	—	—	—	—	—
/2240	2240	—	—	—	—	—	—	—	—	—
/2360	2360	—	—	—	—	—	—	—	—	—
/2500	2500	—	—	—	—	—	—	—	—	—

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.4 Boundary Dimensions of Thrust Bearings with Flat Back Face (1/4)**

Unit : mm

Single direction thrust ball bearings				514									
Double direction thrust ball bearings					524								
Spherical roller thrust bearings			294										
Bearing bore diameter Nominal	Diameter series 4									Diameter series 5			
	Bearing outside diameter Nominal D	Dimension series							Chamfer dimension		Bearing outside diameter Nominal D	Dimension series	Chamfer dimension
		74	94	14	24	24		r <sub>min</sub>	r <sub>1min</sub>	95		r <sub>min</sub>	
	Height Nominal T				Center washer		Bore d <sub>2</sub>			Height a	Height Nominal T		
Bore No.	d												
4	4	—	—	—	—	—	—	—	—	—	—	—	—
6	6	—	—	—	—	—	—	—	—	—	—	—	—
8	8	—	—	—	—	—	—	—	—	—	—	—	—
00	10	—	—	—	—	—	—	—	—	—	—	—	—
01	12	—	—	—	—	—	—	—	—	—	—	—	—
02	15	—	—	—	—	—	—	—	—	—	—	—	—
03	17	—	—	—	—	—	—	—	—	—	52	21	1
04	20	—	—	—	—	—	—	—	—	—	60	24	1
05	25	60	16	21	24	45	15	11	1	0.6	73	29	1.1
06	30	70	18	24	28	52	20	12	1	0.6	85	34	1.1
07	35	80	20	27	32	59	25	14	1.1	0.6	100	39	1.1
08	40	90	23	30	36	65	30	15	1.1	0.6	110	42	1.5
09	45	100	25	34	39	72	35	17	1.1	0.6	120	45	2
10	50	110	27	36	43	78	40	18	1.5	0.6	135	51	2
11	55	120	29	39	48	87	45	20	1.5	0.6	150	58	2.1
12	60	130	32	42	51	93	50	21	1.5	0.6	160	60	2.1
13	65	140	34	45	56	101	50	23	2	1	170	63	2.1
14	70	150	36	48	60	107	55	24	2	1	180	67	3
15	75	160	38	51	65	115	60	26	2	1	190	69	3
16	80	170	41	54	68	120	65	27	2.1	1	200	73	3
17	85	180	42	58	72	128	65	29	2.1	1.1	215	78	4

Remarks: r<sub>min</sub> is the smallest chamfer dimension.



**Table 4.4.4 Boundary Dimensions of Thrust Bearings with Flat Back Face (2/4)**

Unit : mm

Single direction thrust ball bearings				514									
Double direction thrust ball bearings					524								
Spherical roller thrust bearings			294										
Bearing bore diameter Nominal	Diameter series 4									Diameter series 5			
	Bearing outside diameter Nominal D	Dimension series						Chamfer dimension		Bearing outside diameter Nominal D	Dimension series	Chamfer dimension	
		74	94	14	24	24		r <sub>min</sub>	r <sub>1min</sub>		95	r <sub>min</sub>	
Bore No.	d	Height Nominal T				Center washer Bore d <sub>2</sub> Height a		r <sub>min</sub>	r <sub>1min</sub>	Height Nominal T	r <sub>min</sub>		
18	90	190	45	60	77	135	70	30	2.1	1.1	225	82	4
20	100	210	50	67	85	150	80	33	3	1.1	250	90	4
22	110	230	54	73	95	166	90	37	3	1.1	270	95	5
24	120	250	58	78	102	177	95	40	4	1.5	300	109	5
26	130	270	63	85	110	192	100	42	4	2	320	115	5
28	140	280	63	85	112	196	110	44	4	2	340	122	5
30	150	300	67	90	120	209	120	46	4	2	360	125	6
32	160	320	73	95	130	226	130	50	5	2	380	132	6
34	170	340	78	103	135	236	135	50	5	2.1	400	140	6
36	180	360	82	109	140	245	140	52	5	3	420	145	6
38	190	380	85	115	150	—	—	—	5	—	440	150	6
40	200	400	90	122	155	—	—	—	5	—	460	155	7.5
44	220	420	90	122	160	—	—	—	6	—	500	170	7.5
48	240	440	90	122	160	—	—	—	6	—	540	180	7.5
52	260	480	100	132	175	—	—	—	6	—	580	190	9.5
56	280	520	109	145	190	—	—	—	6	—	620	206	9.5
60	300	540	109	145	190	—	—	—	6	—	670	224	9.5
64	320	580	118	155	205	—	—	—	7.5	—	710	236	9.5
68	340	620	125	170	220	—	—	—	7.5	—	750	243	12
72	360	640	125	170	220	—	—	—	7.5	—	780	250	12
76	380	670	132	175	224	—	—	—	7.5	—	820	265	12

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.4 Boundary Dimensions of Thrust Bearings with Flat Back Face (3/4)**

Unit : mm

Single direction thrust ball bearings				514									
Double direction thrust ball bearings					524								
Spherical roller thrust bearings			294										
Bearing bore diameter Nominal	Diameter series 4								Diameter series 5				
	Bearing outside diameter Nominal D	Dimension series						Chamfer dimension		Bearing outside diameter Nominal D	Dimension series	Chamfer dimension	
		74	94	14	24	24		r <sub>min</sub>	r <sub>1min</sub>		95	r <sub>min</sub>	
Bore No.	d	Height Nominal T				Center washer Bore d <sub>2</sub> Height a					Height Nominal T		
80	400	710	140	185	243	—	—	—	7.5	—	850	272	12
84	420	730	140	185	243	—	—	—	7.5	—	900	290	15
88	440	780	155	206	265	—	—	—	9.5	—	950	308	15
92	460	800	155	206	265	—	—	—	9.5	—	980	315	15
96	480	850	165	224	290	—	—	—	9.5	—	1000	315	15
/500	500	870	165	224	290	—	—	—	9.5	—	1060	335	15
/530	530	920	175	236	308	—	—	—	9.5	—	1090	335	15
/560	560	980	190	250	335	—	—	—	12	—	1150	355	15
/600	600	1030	195	258	335	—	—	—	12	—	1220	375	15
/630	630	1090	206	280	365	—	—	—	12	—	1280	388	15
/670	670	1150	218	290	375	—	—	—	15	—	1320	388	15
/710	710	1220	230	308	400	—	—	—	15	—	1400	412	15
/750	750	1280	236	315	412	—	—	—	15	—	—	—	—
/800	800	1360	250	335	438	—	—	—	15	—	—	—	—
/850	850	1440	—	354	—	—	—	—	15	—	—	—	—
/900	900	1520	—	372	—	—	—	—	15	—	—	—	—
/950	950	1600	—	390	—	—	—	—	15	—	—	—	—
/1000	1000	1670	—	402	—	—	—	—	15	—	—	—	—
/1060	1060	1770	—	426	—	—	—	—	15	—	—	—	—
/1120	1120	1860	—	444	—	—	—	—	15	—	—	—	—
/1180	1180	1950	—	462	—	—	—	—	19	—	—	—	—

Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.4.4 Boundary Dimensions of Thrust Bearings with Flat Back Face (4/4)**

Unit : mm



Single direction thrust ball bearings				514									
Double direction thrust ball bearings					524								
Spherical roller thrust bearings			294										
Bearing bore diameter Nominal	Diameter series 4										Diameter series 5		
	Bearing outside diameter Nominal D	Dimension series							Chamfer dimension		Bearing outside diameter Nominal D	Dimension series	Chamfer dimension
		74	94	14	24	24		r <sub>min</sub>	r <sub>1min</sub>	95		r <sub>min</sub>	
Bore No.	d	Height Nominal T				Center washer Bore d <sub>2</sub> Height a					Height Nominal T		
/1250	1250	2050	—	480	—	—	—	—	19	—	—	—	—
/1320	1320	2160	—	505	—	—	—	—	19	—	—	—	—
/1400	1400	2280	—	530	—	—	—	—	19	—	—	—	—
/1500	1500	—	—	—	—	—	—	—	—	—	—	—	—
/1600	1600	—	—	—	—	—	—	—	—	—	—	—	—
/1700	1700	—	—	—	—	—	—	—	—	—	—	—	—
/1800	1800	—	—	—	—	—	—	—	—	—	—	—	—
/1900	1900	—	—	—	—	—	—	—	—	—	—	—	—
/2000	2000	—	—	—	—	—	—	—	—	—	—	—	—
/2120	2120	—	—	—	—	—	—	—	—	—	—	—	—
/2240	2240	—	—	—	—	—	—	—	—	—	—	—	—
/2360	2360	—	—	—	—	—	—	—	—	—	—	—	—
/2500	2500	—	—	—	—	—	—	—	—	—	—	—	—

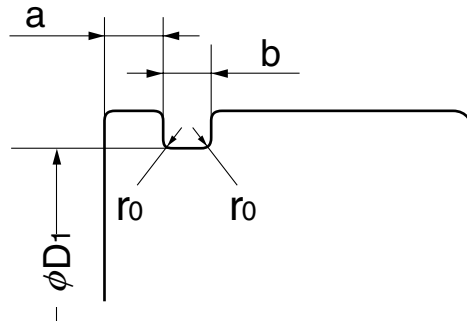
Remarks: r<sub>min</sub> is the smallest chamfer dimension.

**Table 4.5.1 Dimensions of Snap Ring Grooves for Bearing Dimension Series 18 and 19**

(1/3)

Unit: mm

Bearing outside diameter Nominal D	Snap ring groove diameter D <sub>1</sub>		Snap ring groove location a				Snap ring groove width b		Fillet radius at snap ring groove bottom r <sub>0</sub>	Applicable snap ring
			Dimension series 18		Dimension series 19					
	Max	Min	Max	Min	Max	Min	Max	Min	Max	
22	20.8	20.5	–	–	1.05	0.9	1.05	0.8	0.2	NR1022
24	22.8	22.5	–	–	1.05	0.9	1.05	0.8	0.2	NR1024
28	26.7	26.4	–	–	1.3	1.15	1.2	0.95	0.25	NR1028
30	28.7	28.4	–	–	1.3	1.15	1.2	0.95	0.25	NR1030
32	30.7	30.4	1.3	1.15	–	–	1.2	0.95	0.25	NR1032
34	32.7	32.4	1.3	1.15	–	–	1.2	0.95	0.25	NR1034
37	35.7	35.4	1.3	1.15	1.7	1.55	1.2	0.95	0.25	NR1037
39	37.7	37.4	–	–	1.7	1.55	1.2	0.95	0.25	NR1039
40	38.7	38.4	1.3	1.15	–	–	1.2	0.95	0.25	NR1040
42	40.7	40.4	1.3	1.15	1.7	1.55	1.2	0.95	0.25	NR1042
44	42.7	42.4	1.3	1.15	–	–	1.2	0.95	0.25	NR1044
45	43.7	43.4	–	–	1.7	1.55	1.2	0.95	0.25	NR1045
47	45.7	45.4	1.3	1.15	1.7	1.55	1.2	0.95	0.25	NR1047
52	50.7	50.4	1.3	1.15	1.7	1.55	1.2	0.95	0.25	NR1052
55	53.7	53.4	–	–	1.7	1.55	1.2	0.95	0.25	NR1055



**Remarks:**

Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in dimension series 18 up to and including D = 78 mm and  
 in dimension series 19 up to and including D = 47 mm;  
 0.5 mm in dimension series 18 over D = 78 mm and  
 in dimension series 19 over D = 47 mm

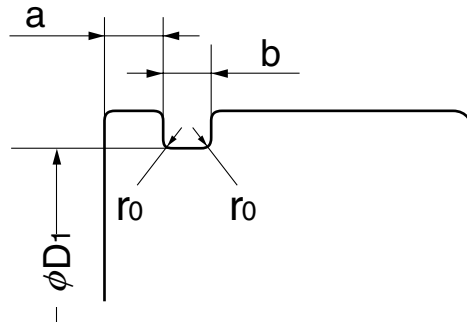


**Table 4.5.1 Dimensions of Snap Ring Grooves for Bearing Dimension Series 18 and 19**

(2/3)

Unit: mm ▲

Bearing outside diameter Nominal D	Snap ring groove diameter D <sub>1</sub>		Snap ring groove location a				Snap ring groove width b		Fillet radius at snap ring groove bottom r <sub>0</sub>	Applicable snap ring
			Dimension series 18		Dimension series 19					
	Max	Min	Max	Min	Max	Min	Max	Min	Max	
58	56.7	56.4	1.3	1.15	—	—	1.2	0.95	0.25	NR1058
62	60.7	60.3	—	—	1.7	1.55	1.2	0.95	0.25	NR1062
65	63.7	63.3	1.3	1.15	—	—	1.2	0.95	0.25	NR1065
68	66.7	66.3	—	—	1.7	1.55	1.2	0.95	0.25	NR1068
72	70.7	70.3	1.7	1.55	1.7	1.55	1.2	0.95	0.25	NR1072
78	76.2	75.8	1.7	1.55	—	—	1.6	1.3	0.4	NR1078
80	77.9	77.5	—	—	2.1	1.9	1.6	1.3	0.4	NR1080
85	82.9	82.5	1.7	1.55	2.1	1.9	1.6	1.3	0.4	NR1085
90	87.9	87.5	1.7	1.55	2.1	1.9	1.6	1.3	0.4	NR1090
95	92.9	92.5	1.7	1.55	—	—	1.6	1.3	0.4	NR1095
100	97.9	97.5	1.7	1.55	2.5	2.3	1.6	1.3	0.4	NR1100
105	102.6	102.1	—	—	2.5	2.3	1.6	1.3	0.4	NR1105



**Remarks:**

Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in dimension series 18 up to and including D = 78 mm and  
 in dimension series 19 up to and including D = 47 mm;  
 0.5 mm in dimension series 18 over D = 78 mm and  
 in dimension series 19 over D = 47 mm

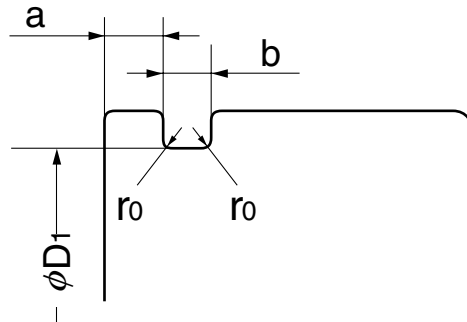


**Table 4.5.1 Dimensions of Snap Ring Grooves for Bearing Dimension Series 18 and 19**

**(3/3)**

Unit: mm 

Bearing outside diameter Nominal D	Snap ring groove diameter D <sub>1</sub>		Snap ring groove location a				Snap ring groove width b		Fillet radius at snap ring groove bottom r <sub>0</sub>	Applicable snap ring
			Dimension series 18		Dimension series 19					
	Max	Min	Max	Min	Max	Min	Max	Min	Max	
110	107.6	107.1	2.1	1.9	2.5	2.3	1.6	1.3	0.4	NR1110
115	112.6	112.1	2.1	1.9	—	—	1.6	1.3	0.4	NR1115
120	117.6	117.1	2.1	1.9	3.3	3.1	1.6	1.3	0.4	NR1120
125	122.6	122.1	2.1	1.9	3.3	3.1	1.6	1.3	0.4	NR1125
130	127.6	127.1	2.1	1.9	3.3	3.1	1.6	1.3	0.4	NR1130
140	137.6	137.1	2.5	2.3	3.3	3.1	2.2	1.9	0.6	NR1140
145	142.6	142.1	—	—	3.3	3.1	2.2	1.9	0.6	NR1145
150	147.6	147.1	2.5	2.3	3.3	3.1	2.2	1.9	0.6	NR1150
165	161.8	161.3	3.3	3.1	3.7	3.5	2.2	1.9	0.6	NR1165
175	171.8	171.3	3.3	3.1	—	—	2.2	1.9	0.6	NR1175
180	176.8	176.3	—	—	3.7	3.5	2.2	1.9	0.6	NR1180
190	186.8	186.3	3.3	3.1	3.7	3.5	2.2	1.9	0.6	NR1190
200	196.8	196.3	3.3	3.1	—	—	2.2	1.9	0.6	NR1200



**Remarks:**

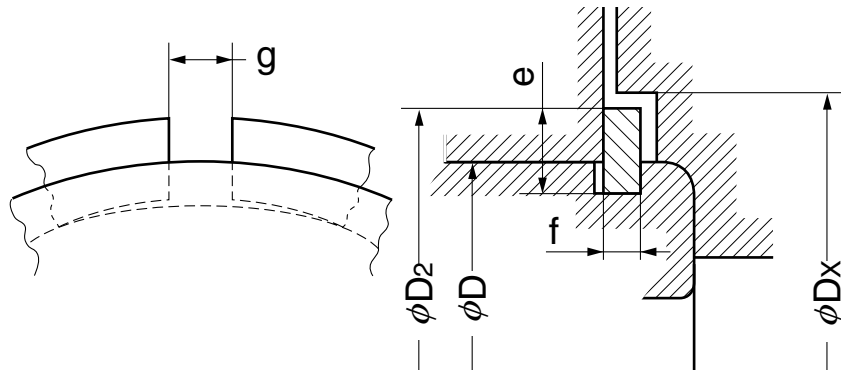
Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in dimension series 18 up to and including D = 78 mm and  
 in dimension series 19 up to and including D = 47 mm;  
 0.5 mm in dimension series 18 over D = 78 mm and  
 in dimension series 19 over D = 47 mm

**Table 4.5.2 Snap Ring Dimensions for Bearing Dimension Series 18 and 19**

(1/3)

Unit: mm

Snap ring No.	Snap ring dimensions				After snap ring mounting		Applicable bearing			Diameter of end cover bore $D_x$
	Section height $e$		Thickness $f$		Gap $g$	Outside diameter of snap ring $D_2$ (Max)	Bearing outside diameter Nominal $D$	Dimension series		
	Max	Min	Max	Min				18	19	
								Bearing bore diameter $d$		
NR1022	2.0	1.85	0.7	0.6	2	24.8	22	–	10	25.5
NR1024	2.0	1.85	0.7	0.6	2	26.8	24	–	12	27.5
NR1028	2.05	1.9	0.85	0.75	3	30.8	28	–	15	31.5
NR1030	2.05	1.9	0.85	0.75	3	32.8	30	–	17	33.5
NR1032	2.05	1.9	0.85	0.75	3	34.8	32	20	–	35.5
NR1034	2.05	1.9	0.85	0.75	3	36.8	34	22	–	37.5
NR1037	2.05	1.9	0.85	0.75	3	39.8	37	25	20	40.5
NR1039	2.05	1.9	0.85	0.75	3	41.8	39	–	22	42.5
NR1040	2.05	1.9	0.85	0.75	3	42.8	40	28	–	43.5
NR1042	2.05	1.9	0.85	0.75	3	44.8	42	30	25	45.5
NR1044	2.05	1.9	0.85	0.75	4	46.8	44	32	–	47.5
NR1045	2.05	1.9	0.85	0.75	4	47.8	45	–	28	48.5
NR1047	2.05	1.9	0.85	0.75	4	49.8	47	35	30	50.5
NR1052	2.05	1.9	0.85	0.75	4	54.8	52	40	32	55.5
NR1055	2.05	1.9	0.85	0.75	4	57.8	55	–	35	58.5



**Remarks:**

Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in dimension series 18 up to and including  $D = 78$  mm and  
 in dimension series 19 up to and including  $D = 47$  mm;  
 0.5 mm in dimension series 18 over  $D = 78$  mm and  
 in dimension series 19 over  $D = 47$  mm

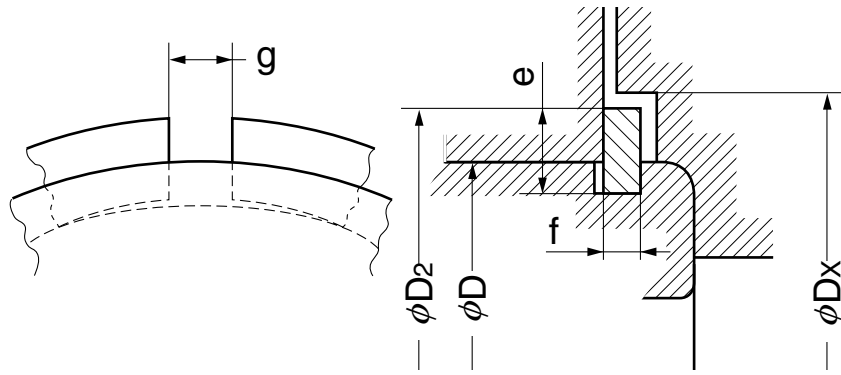


Table 4.5.2 Snap Ring Dimensions for Bearing Dimension Series 18 and 19

(2/3)

Unit: mm ▲

Snap ring No.	Snap ring dimensions				After snap ring mounting		Applicable bearing			Diameter of end cover bore $D_x$
	Section height $e$		Thickness $f$		Gap $g$	Outside diameter of snap ring $D_2$ (Max)	Bearing outside diameter Nominal $D$	Dimension series		
	Max	Min	Max	Min				18	19	
					Bearing bore diameter $d$					
NR1058	2.05	1.9	0.85	0.75	4	60.8	58	45	–	61.5
NR1062	2.05	1.9	0.85	0.75	4	64.8	62	–	40	65.5
NR1065	2.05	1.9	0.85	0.75	4	67.8	65	50	–	68.5
NR1068	2.05	1.9	0.85	0.75	5	70.8	68	–	45	72
NR1072	2.05	1.9	0.85	0.75	5	74.8	72	55	50	76
NR1078	3.25	3.1	1.12	1.02	5	82.7	78	60	–	84
NR1080	3.25	3.1	1.12	1.02	5	84.4	80	–	55	86
NR1085	3.25	3.1	1.12	1.02	5	89.4	85	65	60	91
NR1090	3.25	3.1	1.12	1.02	5	94.4	90	70	65	96
NR1095	3.25	3.1	1.12	1.02	5	99.4	95	75	–	101
NR1100	3.25	3.1	1.12	1.02	5	104.4	100	80	70	106
NR1105	4.04	3.89	1.12	1.02	5	110.7	105	–	75	112



Remarks:

Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in dimension series 18 up to and including  $D = 78$  mm and  
 in dimension series 19 up to and including  $D = 47$  mm;  
 0.5 mm in dimension series 18 over  $D = 78$  mm and  
 in dimension series 19 over  $D = 47$  mm

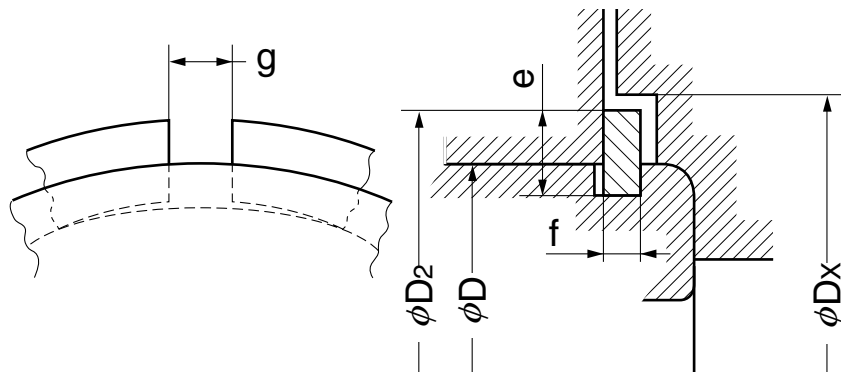


**Table 4.5.2 Snap Ring Dimensions for Bearing Dimension Series 18 and 19**

**(3/3)**

Unit: mm ▲

Snap ring No.	Snap ring dimensions				After snap ring mounting		Applicable bearing			Diameter of end cover bore $D_x$
	Section height $e$		Thickness $f$		Gap $g$	Outside diameter of snap ring $D_2$ (Max)	Bearing outside diameter Nominal $D$	Dimension series		
	Max	Min	Max	Min				18	19	
								Bearing bore diameter $d$		
NR1110	4.04	3.89	1.12	1.02	5	115.7	110	85	80	117
NR1115	4.04	3.89	1.12	1.02	5	120.7	115	90	–	122
NR1120	4.04	3.89	1.12	1.02	7	125.7	120	95	85	127
NR1125	4.04	3.89	1.12	1.02	7	130.7	125	100	90	132
NR1130	4.04	3.89	1.12	1.02	7	135.7	130	105	95	137
NR1140	4.04	3.89	1.7	1.6	7	145.7	140	110	100	147
NR1145	4.04	3.89	1.7	1.6	7	150.7	145	–	105	152
NR1150	4.04	3.89	1.7	1.6	7	155.7	150	120	110	157
NR1165	4.85	4.7	1.7	1.6	7	171.5	165	130	120	173
NR1175	4.85	4.7	1.7	1.6	10	181.5	175	140	–	183
NR1180	4.85	4.7	1.7	1.6	10	186.5	180	–	130	188
NR1190	4.85	4.7	1.7	1.6	10	196.5	190	150	140	198
NR1200	4.85	4.7	1.7	1.6	10	206.5	200	160	–	208



**Remarks:**

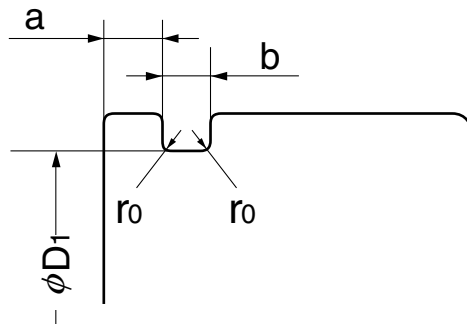
Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in dimension series 18 up to and including  $D = 78$  mm and  
 in dimension series 19 up to and including  $D = 47$  mm;  
 0.5 mm in dimension series 18 over  $D = 78$  mm and  
 in dimension series 19 over  $D = 47$  mm

**Table 4.5.3 Dimensions of Snap Ring Grooves for Bearing Diameter Series 0, 2, 3 and 4**

**(1/4)**

Unit: mm

Bearing outside diameter Nominal D	Snap ring groove diameter D <sub>1</sub>		Snap ring groove location a				Snap ring groove width b		Fillet radius at snap ring groove bottom r <sub>0</sub>	Applicable snap ring
			Diameter series 0		Diameter series 2, 3, 4					
	Max	Min	Max	Min	Max	Min	Max	Min	Max	
13	12.04	11.91	–	–	1.1	0.95	1.05	0.8	0.2	NR 13
16	15.16	15.04	–	–	1.2	1.05	1.05	0.8	0.2	NR 16
19	18.25	18.1	1.73	1.55	1.73	1.55	1.05	0.8	0.2	NR 19
22	21.11	20.95	1.73	1.55	1.73	1.55	1.05	0.8	0.2	NR 22
24	23	22.85	1.73	1.55	1.73	1.55	1.05	0.8	0.2	NR 24
26	25.15	25	1.73	1.55	1.73	1.55	1.05	0.8	0.2	NR 26
28	26.7	26.4	1.73	1.55	1.73	1.55	1.2	0.95	0.25	NR 28
30	28.17	27.91	–	–	2.06	1.9	1.65	1.35	0.4	NR 30
32	30.15	29.9	2.06	1.9	2.06	1.9	1.65	1.35	0.4	NR 32
35	33.17	32.92	2.06	1.9	2.06	1.9	1.65	1.35	0.4	NR 35
37	34.77	34.52	–	–	2.06	1.9	1.65	1.35	0.4	NR 37
40	38.1	37.85	–	–	2.06	1.9	1.65	1.35	0.4	NR 40
42	39.75	39.5	2.06	1.9	2.06	1.9	1.65	1.35	0.4	NR 42



**Remarks:**

1. These dimensions are not applied to dimension series 00, 82 and 83.
2. Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in diameter series 0 up to and including D = 35 mm,  
 0.5 mm in diameter series 0 over D = 35 mm and for all diameters in diameter series 2, 3, and 4

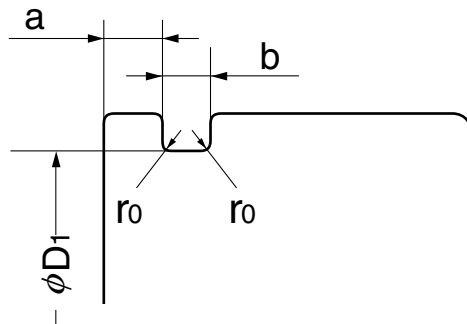


**Table 4.5.3 Dimensions of Snap Ring Grooves for Bearing Diameter Series 0, 2, 3 and 4**

(2/4)

Unit: mm 

Bearing outside diameter Nominal D	Snap ring groove diameter D <sub>1</sub>		Snap ring groove location a				Snap ring groove width b		Fillet radius at snap ring groove bottom r <sub>0</sub>	Applicable snap ring
			Diameter series 0		Diameter series 2, 3, 4					
	Max	Min	Max	Min	Max	Min	Max	Min	Max	
44	41.75	41.5	2.06	1.9	–	–	1.65	1.35	0.4	NR 44
47	44.6	44.35	2.06	1.9	2.46	2.31	1.65	1.35	0.4	NR 47
50	47.6	47.35	–	–	2.46	2.31	1.65	1.35	0.4	NR 50
52	49.73	49.48	2.06	1.9	2.46	2.31	1.65	1.35	0.4	NR 52
55	52.6	52.35	2.08	1.88	–	–	1.65	1.35	0.4	NR 55
56	53.6	53.35	–	–	2.46	2.31	1.65	1.35	0.4	NR 56
58	55.6	55.35	2.08	1.88	2.46	2.31	1.65	1.35	0.4	NR 58
62	59.61	59.11	2.08	1.88	3.28	3.07	2.2	1.9	0.6	NR 62
65	62.6	62.1	–	–	3.28	3.07	2.2	1.9	0.6	NR 65
68	64.82	64.31	2.49	2.29	3.28	3.07	2.2	1.9	0.6	NR 68
72	68.81	68.3	–	–	3.28	3.07	2.2	1.9	0.6	NR 72
75	71.83	71.32	2.49	2.29	3.28	3.07	2.2	1.9	0.6	NR 75



**Remarks:**

1. These dimensions are not applied to dimension series 00, 82 and 83.
2. Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in diameter series 0 up to and including D = 35 mm,  
 0.5 mm in diameter series 0 over D = 35 mm and for all diameters in diameter series 2, 3, and 4

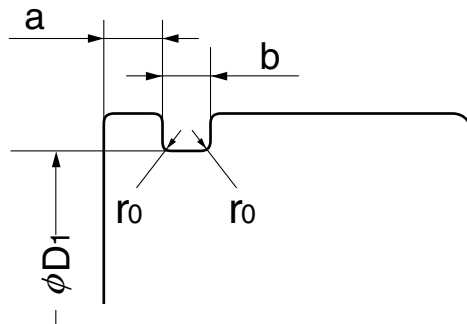


**Table 4.5.3 Dimensions of Snap Ring Grooves for Bearing Diameter Series 0, 2, 3 and 4**

**(3/4)**

Unit: mm 

Bearing outside diameter Nominal D	Snap ring groove diameter D <sub>1</sub>		Snap ring groove location a				Snap ring groove width b		Fillet radius at snap ring groove bottom r <sub>0</sub>	Applicable snap ring
			Diameter series 0		Diameter series 2, 3, 4					
	Max	Min	Max	Min	Max	Min	Max	Min	Max	
80	76.81	76.3	2.49	2.29	3.28	3.07	2.2	1.9	0.6	NR 80
85	81.81	81.31	–	–	3.28	3.07	2.2	1.9	0.6	NR 85
90	86.79	86.28	2.87	2.67	3.28	3.07	3	2.7	0.6	NR 90
95	91.82	91.31	2.87	2.67	–	–	3	2.7	0.6	NR 95
100	96.8	96.29	2.87	2.67	3.28	3.07	3	2.7	0.6	NR100
110	106.81	106.3	2.87	2.67	3.28	3.07	3	2.7	0.6	NR110
115	111.81	111.3	2.87	2.67	–	–	3	2.7	0.6	NR115
120	115.21	114.71	–	–	4.06	3.86	3.4	3.1	0.6	NR120
125	120.22	119.71	2.87	2.67	4.06	3.86	3.4	3.1	0.6	NR125
130	125.22	124.71	2.87	2.67	4.06	3.86	3.4	3.1	0.6	NR130
140	135.23	134.72	3.71	3.45	4.9	4.65	3.4	3.1	0.6	NR140
145	140.23	139.73	3.71	3.45	–	–	3.4	3.1	0.6	NR145



**Remarks:**

1. These dimensions are not applied to dimension series 00, 82 and 83.
2. Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in diameter series 0 up to and including D = 35 mm,  
 0.5 mm in diameter series 0 over D = 35 mm and for all diameters in diameter series 2, 3, and 4

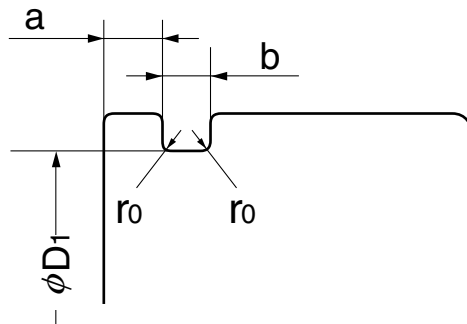


**Table 4.5.3 Dimensions of Snap Ring Grooves for Bearing Diameter Series 0, 2, 3 and 4**

**(4/4)**

Unit: mm 

Bearing outside diameter Nominal D	Snap ring groove diameter D <sub>1</sub>		Snap ring groove location a				Snap ring groove width b		Fillet radius at snap ring groove bottom r <sub>0</sub>	Applicable snap ring
			Diameter series 0		Diameter series 2, 3, 4					
	Max	Min	Max	Min	Max	Min	Max	Min	Max	
150	145.24	144.73	3.71	3.45	4.9	4.65	3.4	3.1	0.6	NR150
160	155.22	154.71	3.71	3.45	4.9	4.65	3.4	3.1	0.6	NR160
170	163.65	163.14	3.71	3.45	5.69	5.44	3.8	3.5	0.6	NR170
180	173.66	173.15	3.71	3.45	5.69	5.44	3.8	3.5	0.6	NR180
190	183.64	183.13	–	–	5.69	5.44	3.8	3.5	0.6	NR190
200	193.65	193.14	5.69	5.44	5.69	5.44	3.8	3.5	0.6	NR200
210	203.6	203.1	5.69	5.44	–	–	3.8	3.5	1	NR210
215	208.6	208.1	–	–	5.69	5.44	3.8	3.5	1	NR215
225	217	216.5	6.5	6.2	6.5	6.2	4.9	4.5	1	NR225
230	222	221.5	–	–	6.5	6.2	4.9	4.5	1	NR230
240	232	231.5	6.5	6.2	6.5	6.2	4.9	4.5	1	NR240
250	242	241.5	–	–	6.5	6.2	4.9	4.5	1	NR250



**Remarks:**

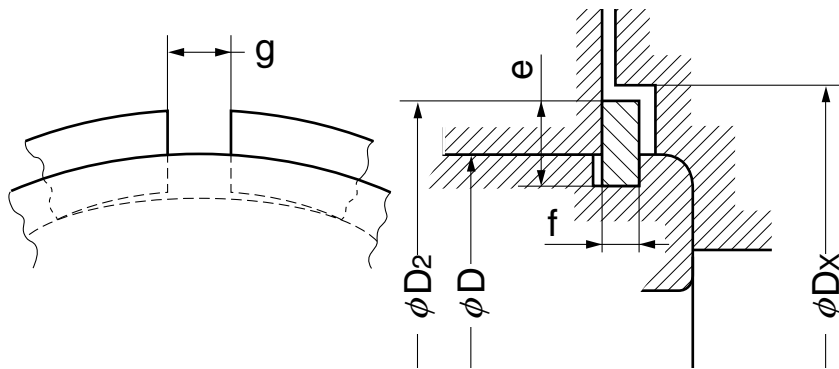
1. These dimensions are not applied to dimension series 00, 82 and 83.
2. Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in diameter series 0 up to and including D = 35 mm,  
 0.5 mm in diameter series 0 over D = 35 mm and for all diameters in diameter series 2, 3, and 4

**Table 4.5.4 Snap Ring Dimensions for Bearing Diameter Series 0, 2, 3 and 4**

(1/4)

Unit: mm

Snap ring No.	Snap ring dimensions				After snap ring mounting		Bearing outside diameter Nominal D	Applicable bearing				Diameter of end cover bore D <sub>x</sub> (Min)
	Section height e		Thickness f		Gap g	Outside diameter of snap ring D <sub>2</sub> (Max)		Dimension series				
	Max	Min	Max	Min			0	2	3	4		
									Bearing bore diameter d			
NR 13	1.15	1.0	0.7	0.6	3	14.3	13	–	4	3	–	14.5
NR 16	1.65	1.5	0.7	0.6	3	18.5	16	–	5	4	–	19
NR 19	1.65	1.5	0.7	0.6	3	21.5	19	7	6	5	–	22
NR 22	2.00	1.85	0.7	0.6	3	25.1	22	8	7	6	–	25.5
NR 24	2.00	1.85	0.7	0.6	3	27	24	9	8	–	–	27.5
NR 26	2.00	1.85	0.7	0.6	3	29.2	26	10	9	7	–	30
NR 28	2.05	1.90	0.85	0.75	3	30.8	28	12	–	8	–	31.5
NR 30	3.25	3.1	1.12	1.02	3	34.7	30	–	10	9	8	35.5
NR 32	3.25	3.1	1.12	1.02	3	36.7	32	15	12	–	9	37.5
NR 35	3.25	3.1	1.12	1.02	3	39.7	35	17	15	10	–	40.5
NR 37	3.25	3.1	1.12	1.02	3	41.3	37	–	–	12	10	42
NR 40	3.25	3.1	1.12	1.02	3	44.6	40	–	17	–	–	45.5
NR 42	3.25	3.1	1.12	1.02	3	46.3	42	20	–	15	12	47



**Remarks:**

1. These dimensions are not applied to dimension series 00, 82 and 83.
2. Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in diameter series 0 up to and including D = 35 mm,  
 0.5 mm in diameter series 0 over D = 35 mm and for all diameters in diameter series 2, 3, and 4

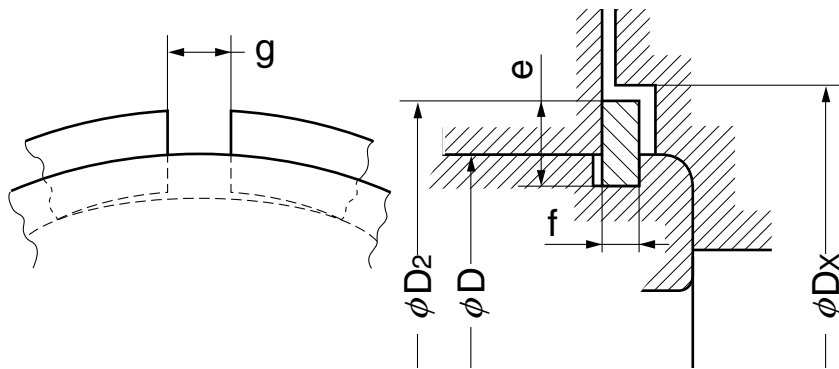


**Table 4.5.4 Snap Ring Dimensions for Bearing Diameter Series 0, 2, 3 and 4**

(2/4)

Unit: mm 

Snap ring No.	Snap ring dimensions				After snap ring mounting		Bearing outside diameter Nominal D	Applicable bearing				Diameter of end cover bore Dx (Min)
	Section height e		Thickness f		Gap g	Outside diameter of snap ring D <sub>2</sub> (Max)		Dimension series				
	Max	Min	Max	Min			0	2	3	4	Bearing bore diameter d	
NR 44	3.25	3.1	1.12	1.02	3	48.3	44	22	–	–	–	49
NR 47	4.04	3.89	1.12	1.02	4	52.7	47	25	20	17	–	53.5
NR 50	4.04	3.89	1.12	1.02	4	55.7	50	–	22	–	–	56.5
NR 52	4.04	3.89	1.12	1.02	4	57.9	52	28	25	20	15	58.5
NR 55	4.04	3.89	1.12	1.02	4	60.7	55	30	–	–	–	61.5
NR 56	4.04	3.89	1.12	1.02	4	61.7	56	–	–	22	–	62.5
NR 58	4.04	3.89	1.12	1.02	4	63.7	58	32	28	–	–	64.5
NR 62	4.04	3.89	1.7	1.6	4	67.7	62	35	30	25	17	68.5
NR 65	4.04	3.89	1.7	1.6	4	70.7	65	–	32	–	–	71.5
NR 68	4.85	4.7	1.7	1.6	5	74.6	68	40	–	28	–	76
NR 72	4.85	4.7	1.7	1.6	5	78.6	72	–	35	30	20	80
NR 75	4.85	4.7	1.7	1.6	5	81.6	75	45	–	32	–	83



**Remarks:**

1. These dimensions are not applied to dimension series 00, 82 and 83.
2. Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in diameter series 0 up to and including D = 35 mm,  
 0.5 mm in diameter series 0 over D = 35 mm and for all diameters in diameter series 2, 3, and 4

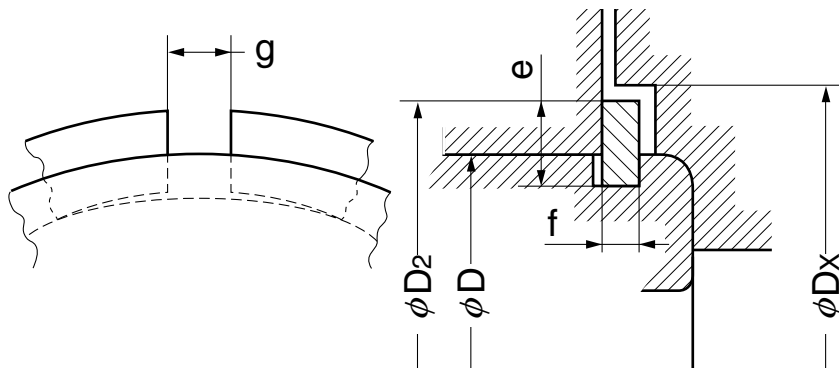


**Table 4.5.4 Snap Ring Dimensions for Bearing Diameter Series 0, 2, 3 and 4**

(3/4)

Unit: mm ▲

Snap ring No.	Snap ring dimensions				After snap ring mounting		Bearing outside diameter Nominal D	Applicable bearing				Diameter of end cover bore Dx (Min)
	Section height e		Thickness f		Gap g	Outside diameter of snap ring D <sub>2</sub> (Max)		Dimension series				
	Max	Min	Max	Min			0	2	3	4		
									Bearing bore diameter d			
NR 80	4.85	4.7	1.7	1.6	5	86.6	80	50	40	35	25	88
NR 85	4.85	4.7	1.7	1.6	5	91.6	85	—	45	—	—	93
NR 90	4.85	4.7	2.46	2.36	5	96.5	90	55	50	40	30	98
NR 95	4.85	4.7	2.46	2.36	5	101.6	95	60	—	—	—	103
NR100	4.85	4.7	2.46	2.36	5	106.5	100	65	55	45	35	108
NR110	4.85	4.7	2.46	2.36	5	116.6	110	70	60	50	40	118
NR115	4.85	4.7	2.46	2.36	5	121.6	115	75	—	—	—	123
NR120	7.21	7.06	2.82	2.72	7	129.7	120	—	65	55	45	131.5
NR125	7.21	7.06	2.82	2.72	7	134.7	125	80	70	—	—	136.5
NR130	7.21	7.06	2.82	2.72	7	139.7	130	85	75	60	50	141.5
NR140	7.21	7.06	2.82	2.72	7	149.7	140	90	80	65	55	152
NR145	7.21	7.06	2.82	2.72	7	154.7	145	95	—	—	—	157



**Remarks:**

1. These dimensions are not applied to dimension series 00, 82 and 83.
2. Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in diameter series 0 up to and including D = 35 mm,  
 0.5 mm in diameter series 0 over D = 35 mm and for all diameters in diameter series 2, 3, and 4

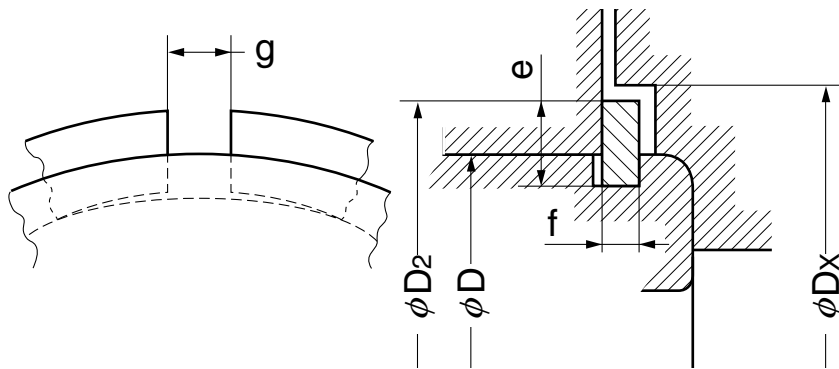


**Table 4.5.4 Snap Ring Dimensions for Bearing Diameter Series 0, 2, 3 and 4**

(4/4)

Unit: mm 

Snap ring No.	Snap ring dimensions				After snap ring mounting		Bearing outside diameter Nominal D	Applicable bearing				Diameter of end cover bore D <sub>x</sub> (Min)
	Section height e		Thickness f		Gap g	Outside diameter of snap ring D <sub>2</sub> (Max)		Dimension series				
	Max	Min	Max	Min			0	2	3	4		
									Bearing bore diameter d			
NR150	7.21	7.06	2.82	2.72	7	159.7	150	100	85	70	60	162
NR160	7.21	7.06	2.82	2.72	7	169.7	160	105	90	75	65	172
NR170	9.6	9.45	3.1	3	10	182.9	170	110	95	80	–	185
NR180	9.6	9.45	3.1	3	10	192.9	180	120	100	85	70	195
NR190	9.6	9.45	3.1	3	10	202.9	190	–	105	90	75	205
NR200	9.6	9.45	3.1	3	10	212.9	200	130	110	95	80	215
NR210	9.6	9.45	3.1	3	10	222.8	210	140	–	–	85	225
NR215	9.6	9.45	3.1	3	10	227.8	215	–	120	100	–	230
NR225	10	9.85	3.5	3.4	10	237	225	150	–	105	90	240
NR230	10	9.85	3.5	3.4	10	242	230	–	130	–	–	245
NR240	10	9.85	3.5	3.4	10	252	240	160	–	110	95	255
NR250	10	9.85	3.5	3.4	10	262	250	–	140	–	100	265

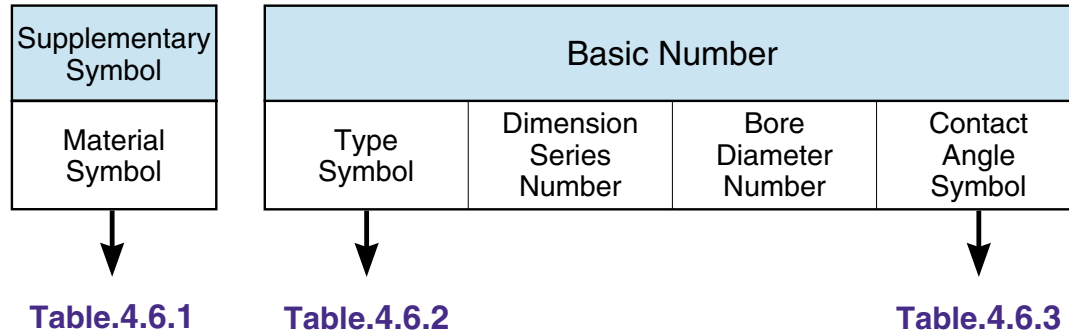


**Remarks:**

1. These dimensions are not applied to dimension series 00, 82 and 83.
2. Chamfer at groove side of outer ring clears a fillet radius of:  
 0.3 mm in diameter series 0 up to and including D = 35 mm,  
 0.5 mm in diameter series 0 over D = 35 mm and for all diameters in diameter series 2, 3, and 4

## 4.6 Nachi Bearing Numbers

Fig 4.8 NACHI Bearing Prefixes and Suffixes



Note 1:

Denotes polyamide cages for angular contact ball bearing of contact angle symbol C.

Remarks:

1. Symbol in parentheses can be omitted.
2. Code marked with "\*" is not marked on bearing.
3. Bearing modification symbol NR is marked without R on bearing.

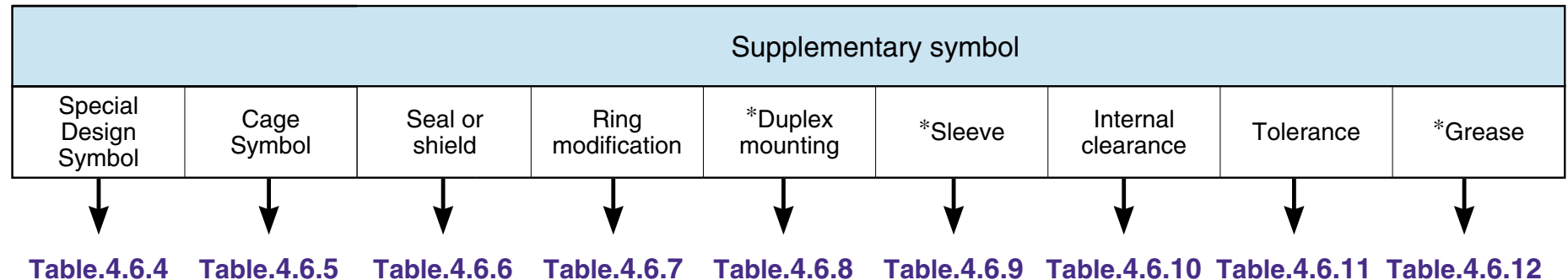


Table 4.6.1 Material Symbol

Prefix	Description
B-	Case hardened steel
C-	Case hardened steel
D-	Case hardened steel
H-	High speed steel
S-	Stainless steel

Table 4.6.2 Type Symbol

Prefix	Description
N	Cylindrical roller bearings
NU	
NF	
NJ	
NP	
NUP	
NH	
NNU	
NN	Cylindrical roller bearing roller assembly and outer or inner ring
R	

Table 4.6.8 \*Duplex mounting

Suffix	Description
DB	Back-to-back mounting
DF	Face-to-face mounting
DT	Tandem mounting
KB	DB mounting with spacer to outer ring
+ $\alpha$	Spacer ( $\alpha$ is nominal width in mm)
U	Flush ground angular contact ball bearing
DU	

Table 4.6.7 Ring modification

Suffix	Description
K	Tapered bore: 1/12 taper on bearing bore
K30	Tapered bore: 1/30 taper on bearing bore
N	Snap ring groove on outer ring without snap ring
NR	Snap ring on outer ring

Table 4.6.4 Special Design Symbol

Suffix	Description
A	Inner ring, bearing width variation for Tapered roller bearing
E	Roller bearing design change
J	Tapered roller bearing rings interchangeable
S26	Heat stabilized
S28	Heat stabilized
W20	Oil holes in outer ring
W33	Oil holes and groove in outer ring
E2	Spherical roller bearing with machined cage
EX	High capacity spherical roller bearing
A2X	High speed spherical roller bearing
AEX	High speed and high capacity spherical roller bearing
V	Special design for vibrating machine

Table 4.6.5 Cage Symbol

Suffix	Description
F	Machined mild steel cage
G	Non-metallic cage
L	Machined light alloy cage
MY	Machined bronze cage
V	No cage
Y	Pressed non-ferrous metal cage (Note 1)

Table 4.6.6 Seal or shield

Suffix		Description
ZE	Z	Shield one side
ZZE	ZZ	Shield both sides
NKE	NK	Labyrinth seal one side
-2NKE	-2NK	Labyrinth seal both sides
NSE	NSL	Contact seal one side
-2NSE	-2NSL	Contact seal both sides

Table 4.6.3 Contact Angle Symbol

Suffix	Description	
C	Single row Angular contact ball bearings	Nominal contact angle over 10° under 22° (standard 15°)
(A)		Nominal contact angle over 22° under 32° (standard 30°)
B		Nominal contact angle over 32° under 45° (standard 40°)
D	Tapered roller bearings	Nominal contact angle over 24° under 32°
C		Nominal contact angle over 17° under 24°

Table 4.6.10 Internal clearance

Suffix	Description
C1	Radial clearance C1
C2	Radial clearance C2
(CN)	Normal Radial clearance
C3	Radial clearance C3
C4	Radial clearance C4
C5	Radial clearance C5
C1P	Radial clearance C1P (Note 2)
C2P	Radial clearance C2P (Note 2)
:	:
C6P	Radial clearance C6P (Note 2)
C9na	Cylindrical roller bearing (C9) (Note 3)
C1na	Cylindrical roller bearing (C1) (Note 3)
C2na	Cylindrical roller bearing (C2) (Note 3)
Cna	Cylindrical roller bearing (Normal) (Note 3)
C3na	Cylindrical roller bearing (C3) (Note 3)
C4na	Cylindrical roller bearing (C4) (Note 3)
C5na	Cylindrical roller bearing (C5) (Note 3)
CM	Electric motor bearing radial clearance (of deep groove ball bearing and of non-interchangeable cylindrical roller bearing)
CT	Radial clearance for electric motor bearing (interchangeable cylindrical roller bearings)

Note 2: Extra small ball bearing and miniature ball bearing

Note 3: Non-interchangeable clearance

Table 4.6.9 \*Sleeve

Suffix	Description
+H	Adapter sleeve
+AH	Withdrawal sleeve

Table 4.6.11 Tolerance

Suffix	Description
(0)	JIS class 0 (ISO Normal class)
P6	JIS class 6 (ISO class 6)
P6X	JIS class 6X
P5	JIS class 5 (ISO class 5)
P4	JIS class 4 (ISO class 4)
P2	JIS class 2 (ISO class 2)
UP	NACHI class UP

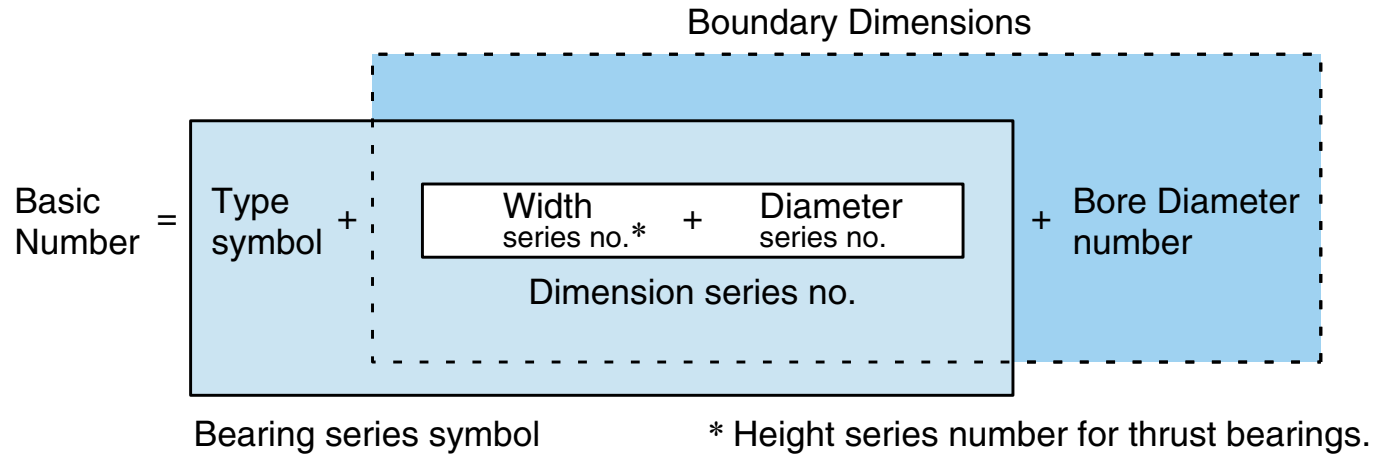
Table 4.6.12 \*Grease

Suffix	Description
ADC	Shell Andoc C
AV2	Shell Alvania grease No.2
BC325	Esso Beacon 325
MTSRL	Multemp SRL

## NACHI Rolling Contact Bearing Numbers ••• Examples

The NACHI part number for rolling contact bearings consists of the basic number and supplementary codes. The part number defines the bearing configuration, tolerance, general boundary dimensions, and other specifications.

NACHI uses supplemental prefix and suffix symbols as shown in Fig. 4.8. The NACHI basic number consists of the following:

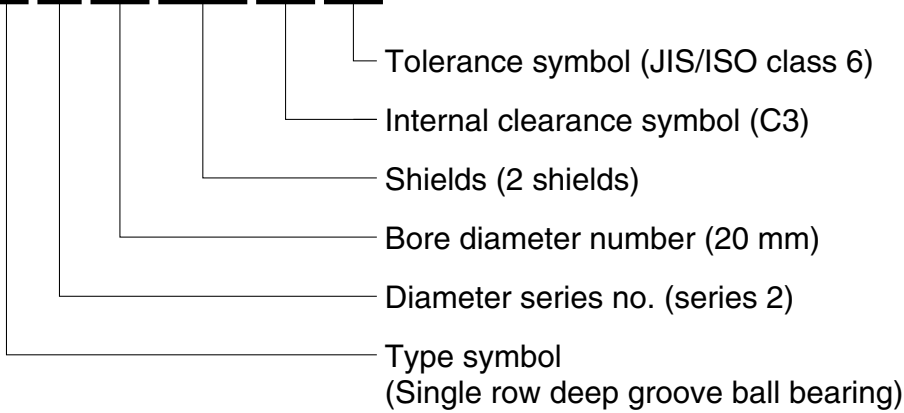


### Bore Diameter Number

Bore (mm)	4	5	6	7	8	9	10	12	15	17	20	25	....	480	500	530	....
Bore diameter number	4	5	6	7	8	9	00	01	02	03	04	05	....	96	/500	/530	....
Remarks	Bore Diameter						—			(bore dia.)/5				/bore diameter			

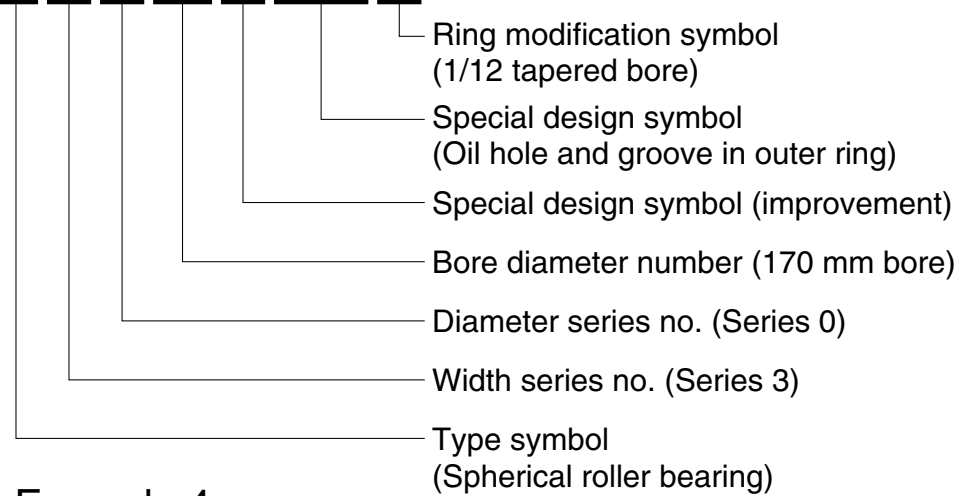
### Example 1

**6 2 04 ZZE C3 P6**



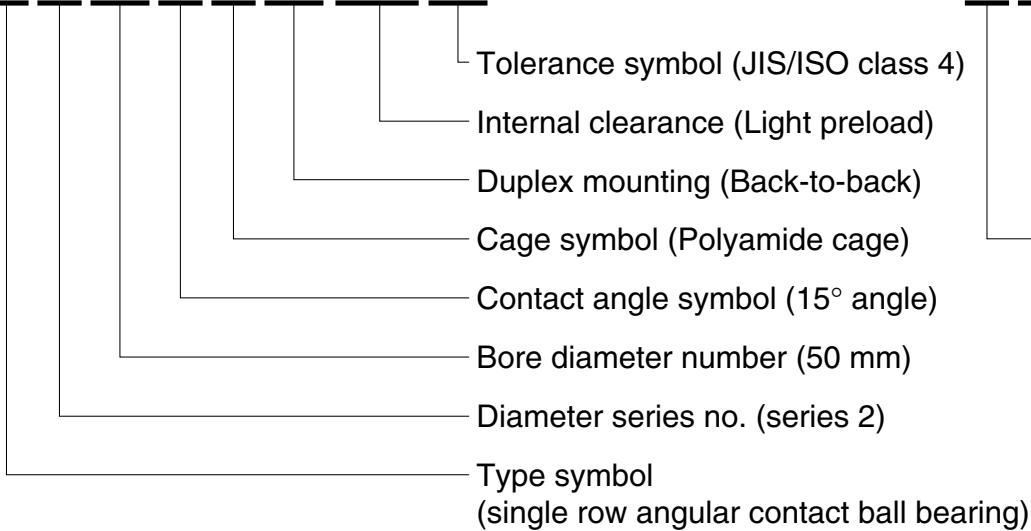
### Example 3

**2 3 0 34 E W33 K**



### Example 2

**7 2 10 C Y DB /GL P4**



### Example 4

**5 1 2 08**

