



# Bearings for Specific Application

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## Precision Machine Tool Bearings

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- High-speed Angular Contact Ball Bearings
- Combination Angular Contact Ball Bearings
- Combination Angular Contact Ball Bearings
- Double-direction Thrust Angular Contact Ball Bearings
- Flanged-cup Tapered Roller Bearings
- Flanged-cup Tapered Roller Bearings
- Cross Tapered Roller Bearings
- Ball Screw Support Bearings

Series BNH000

Series TAH10 Contact angle : 30°

Series TBH10 Contact angle : 40°

Series TAD20

Bore Diameter : 20 ~ 75mm

Bore Diameter : 80 ~ 150mm

Series XRN

Series TAB

## Automotive Bearings

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- Wheel Bearings
- Wheel Hub Units
- Self-aligning Clutch-release Bearings
- Double-row Angular Contact Ball Bearings for Car Air Conditioning Magnetic Clutch

## Bearings for Rolling Stocks

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- Journal Bearings (Cylindrical roller, No rib on inner ring)
- Journal Bearings (Ball bearing for axial load)
- Journal Bearings (Cylindrical roller, Rib on inner ring)
- Journal Bearings (Tapered roller)
- Bearings for Pinion
- Bearings for Gearwheel
- Ball Bearings for Traction Motor
- Cylindrical Roller Bearings for Traction Motor

## Sheave Bearings

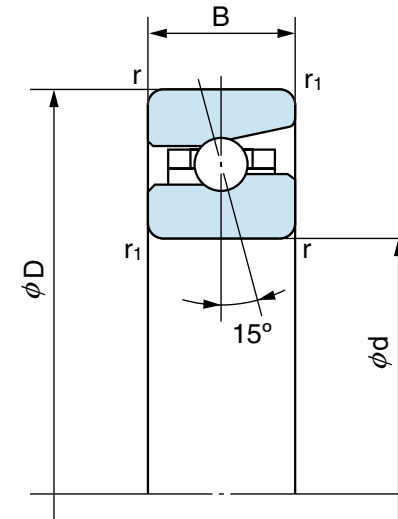
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- Sheave Bearings Series 5000

- Sheave Bearings Series 4800/4900

# High-speed Angular Contact Ball Bearings

Series BNH000



1N=0.102kgf

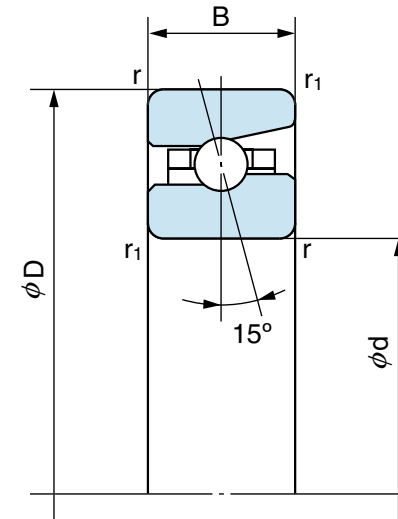
Bearing No.	Boundary dimensions (mm)					Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (rpm)	
	d	D	B	r (min)	r <sub>1</sub> (min)			Grease lubrication	Oil lubrication
BNH 007	35	62	14	1	0.6	11600	9950	25000	35000
BNH 008	40	68	15	1	0.6	14800	12900	22000	32000
BNH 009	45	75	16	1	0.6	15500	14500	20000	28000
BNH 010	50	80	16	1	0.6	16100	15900	19000	26000
BNH 011	55	90	18	1	0.6	20000	20100	17000	24000
BNH 012	60	95	18	1.1	0.6	20800	21900	16000	22000
BNH 013	65	100	18	1.1	0.6	21500	23400	15000	21000
BNH 014	70	110	20	1.1	0.6	29400	31500	13000	19000
BNH 015	75	115	20	1.1	0.6	29800	32500	13000	18000
BNH 016	80	125	22	1.1	0.6	35000	39000	12000	17000
BNH 017	85	130	22	1.1	0.6	35500	40000	11000	16000
BNH 018	90	140	24	1.5	1	46500	53000	10000	15000





# High-speed Angular Contact Ball Bearings

Series BNH000

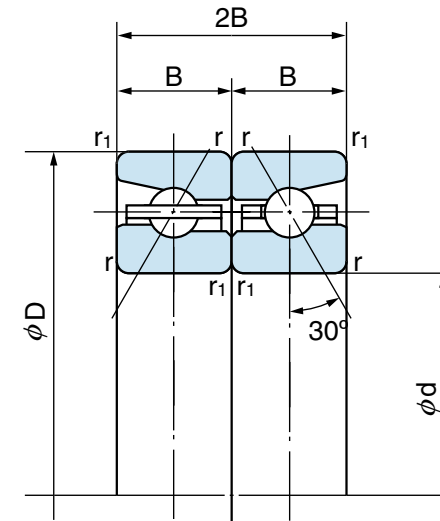


1N=0.102kgf

Bearing No.	Boundary dimensions (mm)					Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)	Limiting speed (rpm)	
	d	D	B	r (min)	r <sub>1</sub> (min)			Grease lubrication	Oil lubrication
BNH 019	95	145	24	1.5	1	47000	55000	10000	14000
BNH 020	100	150	24	1.5	1	48000	56500	9600	14000
BNH 021	105	160	26	2	1	54500	65000	9100	13000
BNH 022	110	170	28	2	1	61000	74000	8600	12000
BNH 024	120	180	28	2	1	63000	79000	8000	11000
BNH 026	130	200	33	2	1	83500	105000	7300	10000
BNH 028	140	210	33	2	1	86000	112000	6900	9700
BNH 030	150	225	35	2.1	1	102000	132000	6400	9100
BNH 032	160	240	38	2.1	1	110000	145000	6000	8500
BNH 034	170	260	42	2.1	1	129000	173000	5600	7900

# Combination Angular Contact Ball Bearings

Series TAH10 Contact angle : 30°



Type TAH

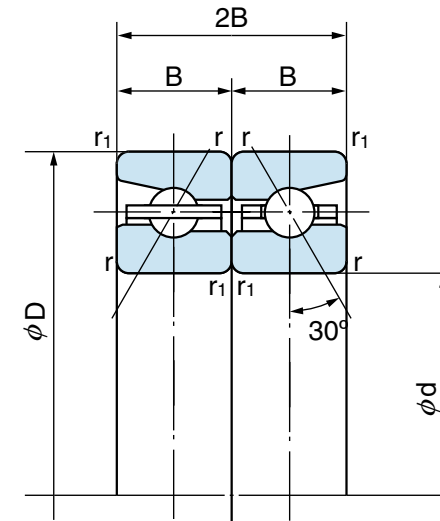
1N=0.102kgf

Bearing No.	Boundary dimensions (mm)					Basic dynamic load rating Ca (N)	Basic static load rating Coa (N)	Limiting speed (rpm)	
	d	D	2B	r (min)	r <sub>1</sub> (min)			Grease lubrication	Oil lubrication
50TAH10DB	50	80	28.5	1	0.6	19200	40500	9200	11000
55TAH10DB	55	90	33	1.1	0.6	23800	51000	8300	9700
60TAH10DB	60	95	33	1.1	0.6	24700	56000	7700	9000
65TAH10DB	65	100	33	1.1	0.6	25600	61000	7300	8500
70TAH10DB	70	110	36	1.1	0.6	35000	80000	6700	7800
75TAH10DB	75	115	36	1.1	0.6	35500	83500	6300	7400
80TAH10DB	80	125	40.5	1.1	0.6	41500	99500	5900	6800
85TAH10DB	85	130	40.5	1.1	0.6	42000	104000	5600	6500
90TAH10DB	90	140	45	1.5	1	55500	135000	5200	6100



# Combination Angular Contact Ball Bearings

Series TAH10 Contact angle : 30°



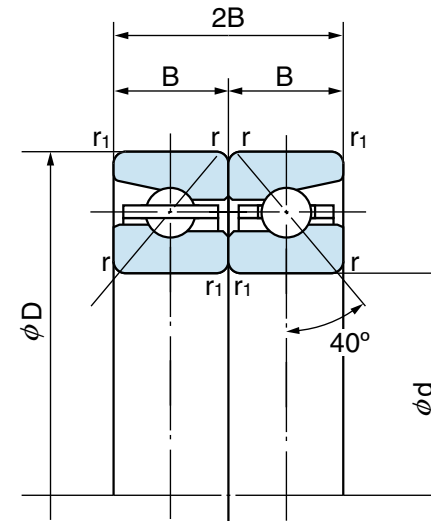
Type TAH

1N=0.102kgf

Bearing No.	Boundary dimensions (mm)					Basic dynamic load rating Ca (N)	Basic static load rating Coa (N)	Limiting speed (rpm)	
	d	D	2B	r (min)	r <sub>1</sub> (min)			Grease lubrication	Oil lubrication
95TAH10DB	95	145	45	1.5	1	56000	141000	5000	5800
100TAH10DB	100	150	45	1.5	1	57000	147000	4800	5600
105TAH10DB	105	160	49.5	2	1	64500	168000	4500	5300
110TAH10DB	110	170	54	2	1	73000	191000	4300	5000
120TAH10DB	120	180	54	2	1	75000	207000	4000	4700
130TAH10DB	130	200	63	2	1	99500	269000	3600	4200
140TAH10DB	140	210	63	2	1	103000	291000	3400	4000
150TAH10DB	150	225	67.5	2.1	1.1	121000	340000	3200	3700
160TAH10DB	160	240	72	2.1	1.1	131000	375000	3000	3500
170TAH10DB	170	260	61	2.1	1.1	154000	445000	2800	3300

# Combination Angular Contact Ball Bearings

Series TBH10 Contact angle : 40°



Type TBH

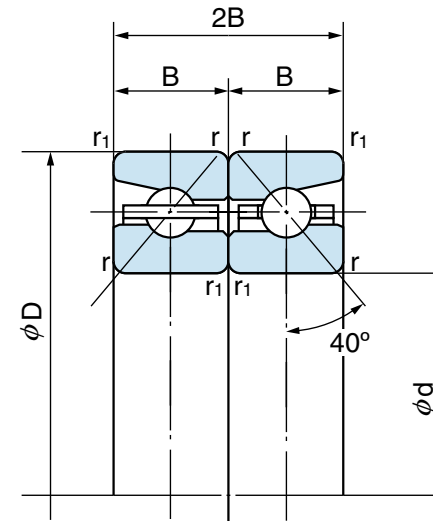
1N=0.102kgf

Bearing No.	Boundary dimensions (mm)					Basic dynamic load rating Ca (N)	Basic static load rating Coa (N)	Limiting speed (rpm)	
	d	D	2B	r (min)	r <sub>1</sub> (min)			Grease lubrication	Oil lubrication
50TBH10DB	50	80	28.5	1	0.6	22800	53000	7700	9200
55TBH10DB	55	90	33	1.1	0.6	28200	67000	6900	8300
60TBH10DB	60	95	33	1.1	0.6	29300	73000	6500	7700
65TBH10DB	65	100	33	1.1	0.6	30000	79500	6100	7300
70TBH10DB	70	110	36	1.1	0.6	41500	104000	5600	6700
75TBH10DB	75	115	36	1.1	0.6	42000	109000	5300	6300
80TBH10DB	80	125	40.5	1.1	0.6	49000	130000	4900	5900
85TBH10DB	85	130	40.5	1.1	0.6	50000	136000	4700	5600
90TBH10DB	90	140	45	1.5	1	65500	176000	4300	5200



# Combination Angular Contact Ball Bearings

Series TBH10 Contact angle : 40°



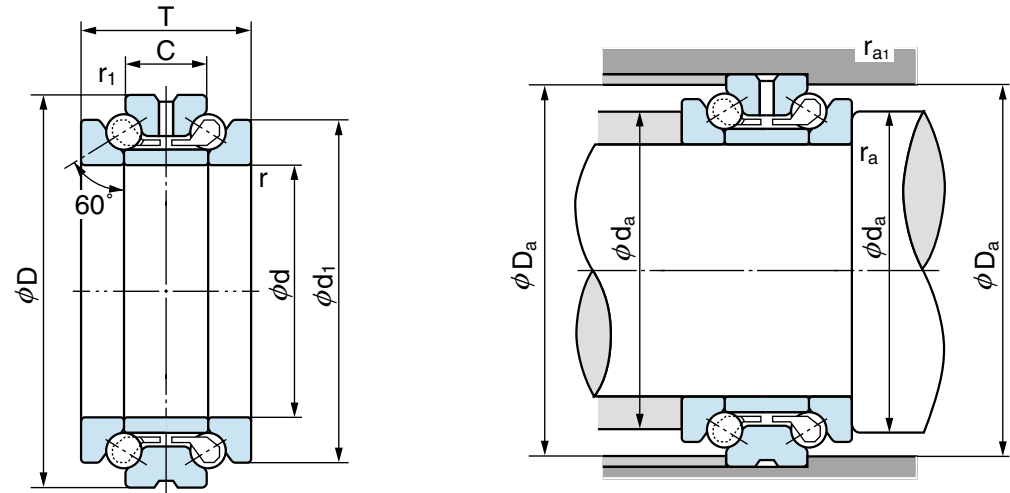
Type TBH

1N=0.102kgf

Bearing No.	Boundary dimensions (mm)					Basic dynamic load rating Ca (N)	Basic static load rating Coa (N)	Limiting speed (rpm)	
	d	D	2B	r (min)	r <sub>1</sub> (min)			Grease lubrication	Oil lubrication
95TBH10DB	95	145	45	1.5	1	66500	184000	4200	5000
100TBH10DB	100	150	45	1.5	1	67500	191000	4000	4800
105TBH10DB	105	160	49.5	2	1	76500	219000	3800	4500
110TBH10DB	110	170	54	2	1	86000	249000	3600	4300
120TBH10DB	120	180	54	2	1	88500	269000	3300	4000
130TBH10DB	130	200	63	2	1	118000	350000	3000	3600
140TBH10DB	140	210	63	2	1	121000	380000	2900	3400
150TBH10DB	150	225	67.5	2.1	1.1	143000	445000	2700	3200
160TBH10DB	160	240	72	2.1	1.1	155000	490000	2500	3000
170TBH10DB	170	260	61	2.1	1.1	182000	580000	2300	2800

# Double-direction Thrust Angular Contact Ball Bearings

Series TAD20



1N=0.102kgf

Bearing No.		Boundary dimensions (mm)								Basic dynamic load rating	Basic static load rating
Standard type	Large bore type <sup>(1)</sup>	Standard type	Large bore type	D	d <sub>1</sub>	T	C	r (min)	r <sub>1</sub> (min)	Ca (N)	Coa (N)
25TAD20	27TAD20	25	27	47	40	28	14	0.6	0.3	10700	19900
30	32	30	32	55	47	32	16	1	0.6	14000	27100
35	37	35	37	62	53	34	17	1	0.6	16200	33000
40TAD20	42TAD20	40	42	68	58.5	36	18	1	0.6	18600	39500
45	47	45	47	75	65	38	19	1	0.6	21200	47000
50	52	50	52	80	70	38	19	1	0.6	22000	52000
55TAD20	57TAD20	55	57	90	78	44	22	1.1	0.6	29900	71500
60	62	60	62	95	83	44	22	1.1	0.6	30500	75000
65	67	65	67	100	88	44	22	1.1	0.6	31500	81500

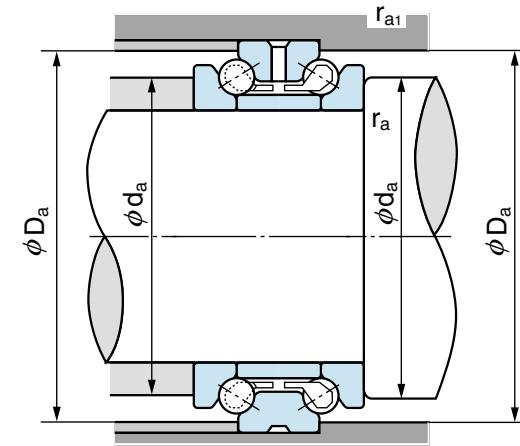
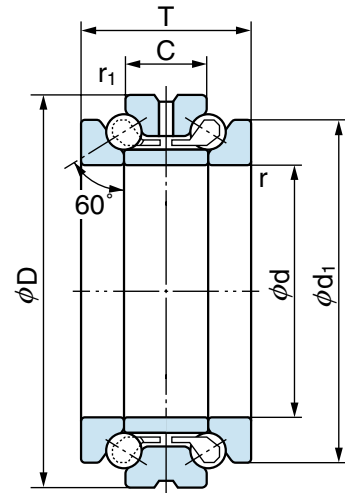
Note: (1) Large bore type bearings are used at large bore side of cylindrical roller bearings with tapered bore NN3000K type.





# Double-direction Thrust Angular Contact Ball Bearings

Series TAD20



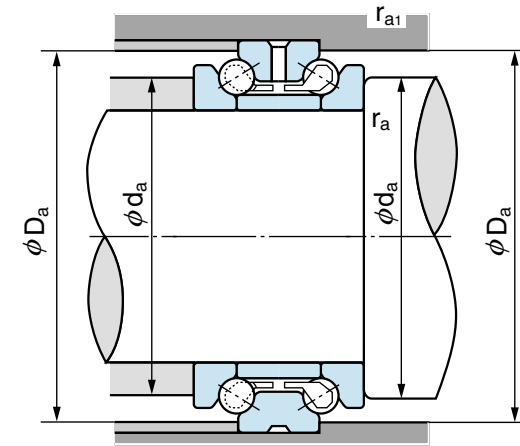
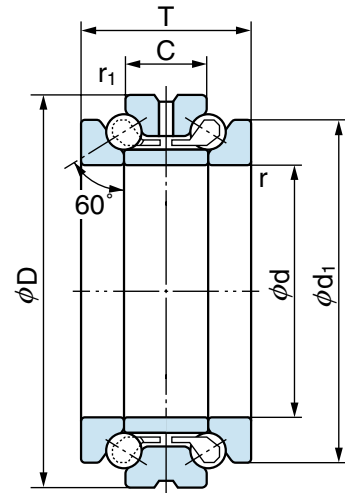
1N=0.102kgf

Bearing No.		Boundary dimensions (mm)								Basic dynamic load rating	Basic static load rating
Standard type	Large bore type <sup>(1)</sup>	Standard type	Large bore type	D	d <sub>1</sub>	T	C	r (min)	r <sub>1</sub> (min)	Ca (N)	Coa (N)
70TAD20	73TAD20	70	73	110	97	48	24	1.1	0.6	37500	99000
75	78	75	78	115	102	48	24	1.1	0.6	38500	107000
80	83	80	83	125	110	54	27	1.1	0.6	51000	138000
85TAD20	88TAD20	85	88	130	115	54	27	1.1	0.6	51500	144000
90	93	90	93	140	123	60	30	1.5	1	59000	166000
95	98	95	98	145	128	60	30	1.5	1	59500	173000
100TAD20	103TAD20	100	103	150	133	60	30	1.5	1	60500	180000
105	109	105	109	160	142	66	33	2	1	67000	199000
110	114	110	114	170	150	72	36	2	1	81500	236000

Note: (1) Large bore type bearings are used at large bore side of cylindrical roller bearings with tapered bore NN300K type.

# Double-direction Thrust Angular Contact Ball Bearings

Series TAD20



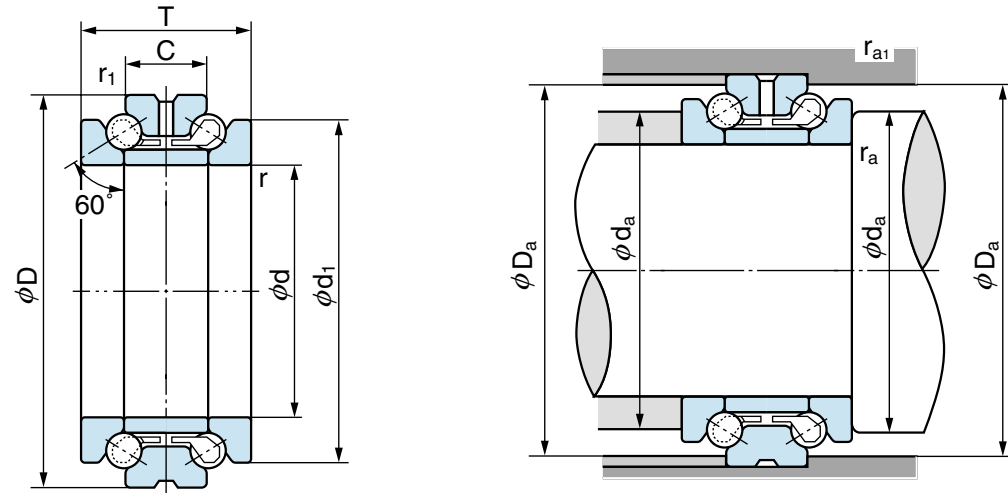
1N=0.102kgf

Bearing No.		Boundary dimensions (mm)								Basic dynamic load rating	Basic static load rating
Standard type	Large bore type <sup>(1)</sup>	Standard type	Large bore type	D	d <sub>1</sub>	T	C	r (min)	r <sub>1</sub> (min)	Ca (N)	Coa (N)
120TAD20	125TAD20	120	124	180	160	72	36	2	1	84000	256000
130	135	130	135	200	177	84	42	2	1	109000	325000
140	145	140	145	210	187	84	42	2	1	113000	355000
150TAD20	155TAD20	150	155	225	200	90	45	2.1	1.1	123000	390000
160	165	160	165	240	212	96	48	2.1	1.1	138000	435000
170	176	170	176	260	230	108	54	2.1	1.1	175000	550000
180TAD20	187TAD20	180	187	280	248	120	60	2.1	1.1	200000	640000
190	197	190	197	290	258	120	60	2.1	1.1	203000	665000
200	207	200	207	310	274	132	66	2.1	1.1	257000	835000

Note: (1) Large bore type bearings are used at large bore side of cylindrical roller bearings with tapered bore NN300K type.

# Double-direction Thrust Angular Contact Ball Bearings

Series TAD20

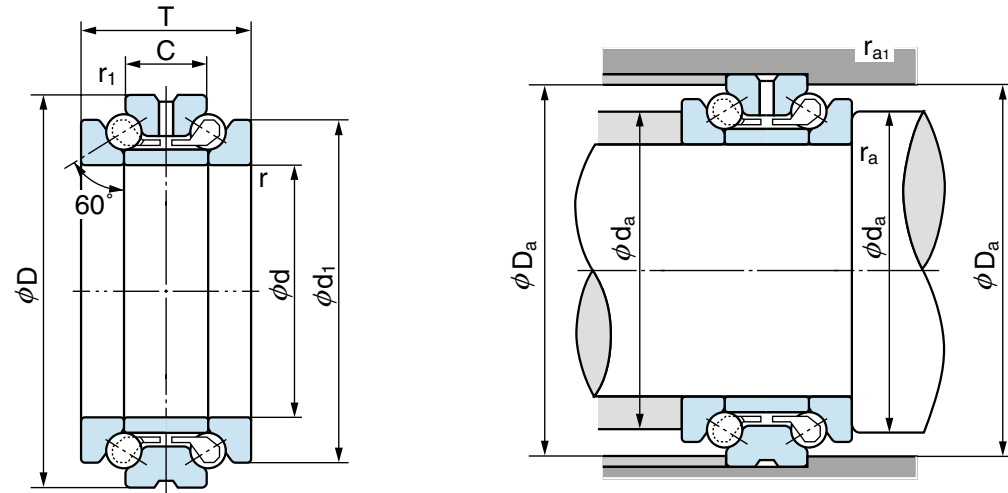


Bearing No.		Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Mass (kg)
Standard type	Large bore type <sup>(1)</sup>	Grease lubrication	Oil lubrication	da (min)	Da (max)	ra (max)	ra1 (max)	
25TAD20	27TAD20	8000	10000	33	43.5	0.6	0.3	0.197
30	32	7000	9000	39	51	1	0.6	0.301
35	37	6200	8200	45	58	1	0.6	0.394
40TAD20	42TAD20	5800	7800	50	64	1	0.6	0.482
45	47	5500	7300	56	71	1	0.6	0.605
50	52	5000	6700	61	76	1	0.6	0.656
55TAD20	57TAD20	4500	6200	68	85	1	0.6	0.988
60	62	4300	6000	73	90	1	0.6	1.06
65	67	4100	5500	78	95	1	0.6	1.12

Note: (1) Large bore type bearings are used at large bore side of cylindrical roller bearings with tapered bore NN3000K type.

# Double-direction Thrust Angular Contact Ball Bearings

Series TAD20



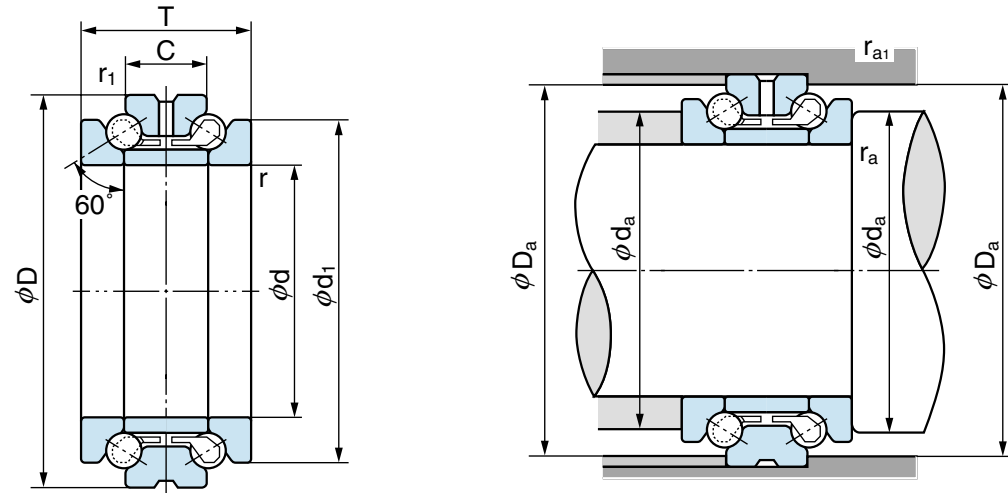
Bearing No.		Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Mass (kg)
Standard type	Large bore type <sup>(1)</sup>	Grease lubrication	Oil lubrication	da (min)	Da (max)	ra (max)	ra1 (max)	
70TAD20	73TAD20	3800	5200	85	105.5	1	0.6	1.53
75	78	3600	4900	90	110	1	0.6	1.16
80	83	3400	4500	97	119	1	0.6	2.20
85TAD20	88TAD20	3200	4300	102	124	1	0.6	2.31
90	93	3000	4000	109	132	1.5	1	3.05
95	98	2900	3900	114	137	1.5	1	3.18
100TAD20	103TAD20	2800	3700	119	142	1.5	1	3.32
105	109	2600	3500	125	151	2	1	4.19
110	114	2500	3300	132	161	2	1	5.35

Note: (1) Large bore type bearings are used at large bore side of cylindrical roller bearings with tapered bore NN3000K type.



# Double-direction Thrust Angular Contact Ball Bearings

Series TAD20

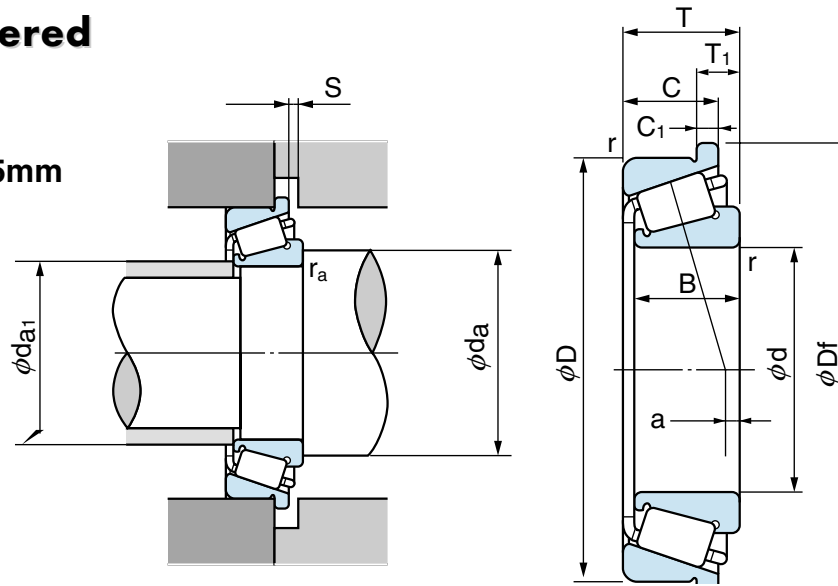


Bearing No.		Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Mass (kg)
Standard type	Large bore type <sup>(1)</sup>	Grease lubrication	Oil lubrication	da (min)	Da (max)	ra (max)	ra1 (max)	
120TAD20	125TAD20	2300	3100	142	171.5	2	1	5.73
130	135	2100	2800	156	190	2	1	8.58
140	145	2000	2600	166	200	2	1	9.10
150TAD20	155TAD20	1850	2500	178	213	2	1	11.2
160	165	1750	2350	190	227	2	1	13.6
170	176	1600	2150	204	246	2	1	18.5
180TAD20	187TAD20	1500	2000	220	264	2	1	24.7
190	197	1450	1950	230	274	2	1	25.5
200	207	1350	1800	244	292	2	1	32.7

Note: (1) Large bore type bearings are used at large bore side of cylindrical roller bearings with tapered bore NN3000K type.

# Flanged-cup Tapered Roller Bearings

Bore Diameter : 20 ~ 75mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

- Static equivalent radial load  
 Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values e,  $Y_1$ , and  $Y_0$  from table.

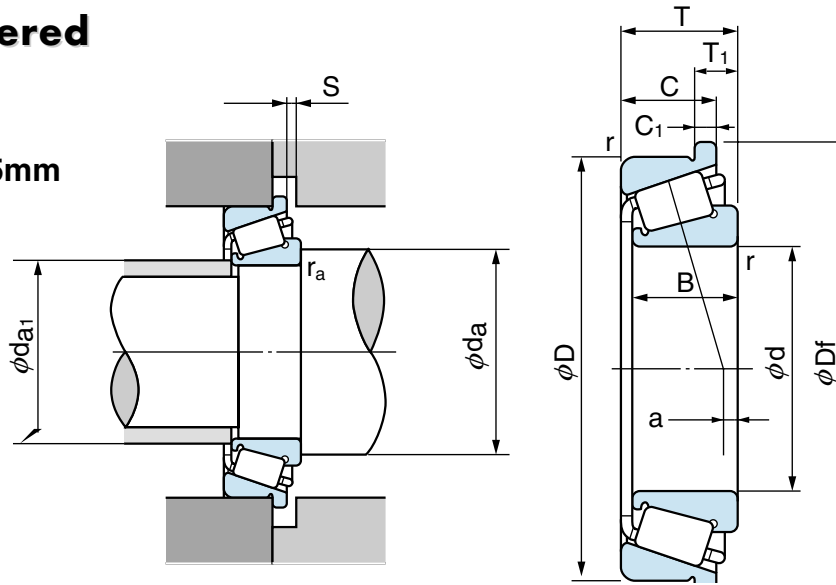
1N=0.102kgf

Bearing No.	Boundary dimensions (mm)								r (min)		Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)
	d	D	T <sub>1</sub>	Df	C <sub>1</sub>	T	B	C	Cone	Cup		
FE32004J FE30204J	20	42	6	46	3	15	15	12	0.6	0.6	25100	28200
		47	6.25	51	3	15.25	14	12	1	1	29500	30500
FE32005J FE30205J	25	47	6.5	51	3	15	15	11.5	0.6	0.6	28000	34000
		52	6.75	57	3.5	16.25	15	13	1	1	33000	36000
FE32006J FE30206J FE32206J	30	55	7	59	3	17	17	13	1	1	37500	46500
		62	6.75	67	3.5	17.25	16	14	1	1	43500	48000
		62	8.25	67	4	21.25	20	17	1	1	53000	61500
FE32007J FE30207J FE32207J	35	62	7	66	3	18	18	14	1	1	44500	57500
		72	7.25	77	4	18.25	17	15	1.5	1.5	54500	60500
		72	9.75	77	4.5	24.25	23	19	1.5	1.5	70000	83000

Note: (1) Minus value of load center indicates the center is outside cone back face.

# Flanged-cup Tapered Roller Bearings

Bore Diameter : 20 ~ 75mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

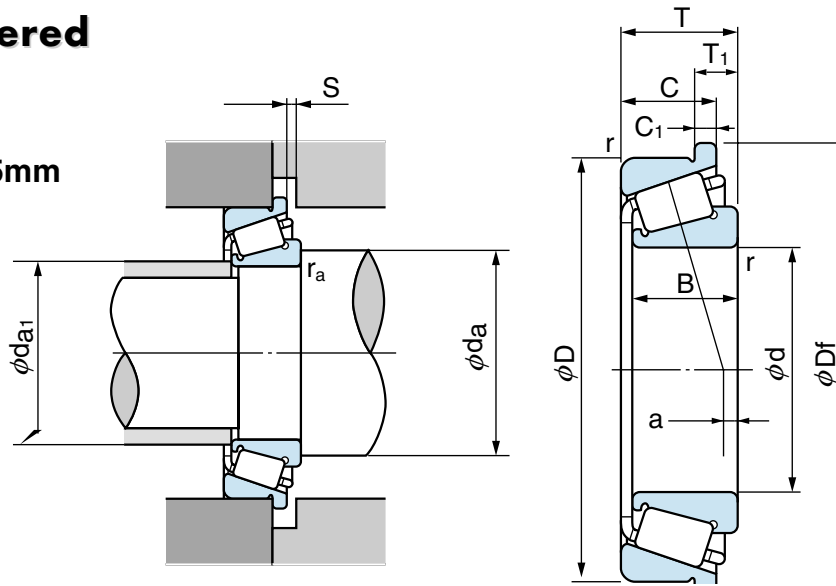
- Static equivalent radial load  
 Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values e,  $Y_1$ , and  $Y_0$  from table.

1N=0.102kgf

Bearing No.	Boundary dimensions (mm)								r (min)		Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)
	d	D	T <sub>1</sub>	Df	C <sub>1</sub>	T	B	C	Cone	Cup		
FE32008J	40	68	8	72	3.5	19	19	14.5	1	1	52500	71500
FE30208J		80	7.75	85	4	19.75	18	16	1.5	1.5	63500	70500
FE32208J		80	10.25	85	4.5	24.75	23	19	1.5	1.5	78000	91500
FE32009J	45	75	8	79	3.5	20	20	15.5	1	1	59500	83000
FE30209J		85	8.75	90	4	20.75	19	16	1.5	1.5	69500	81500
FE32209J		85	10.25	90	4.5	24.75	23	19	1.5	1.5	83500	102000
FE32010J	50	80	8	84	3.5	20	20	15.5	1	1	62000	90500
FE30210J		90	8.75	95	4	21.75	20	17	1.5	1.5	79000	96000
FE32210J		90	10.25	95	4.5	24.75	23	19	1.5	1.5	88500	111000
FE32011J	55	90	9.5	94	4	23	23	17.5	1.5	1.5	82500	122000
FE30211J		100	9.25	106	4.5	22.75	21	18	2	1.5	94500	113000
FE32211J		100	10.75	106	5	26.75	25	21	2	1.5	110000	137000

# Flanged-cup Tapered Roller Bearings

Bore Diameter : 20 ~ 75mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

- Static equivalent radial load  
 Larger value of following to be used:  
 $P_{or} = 0.5Fr + Y_0 Fa$   
 $P_{or} = Fr$
- Values e,  $Y_1$ , and  $Y_0$  from table.

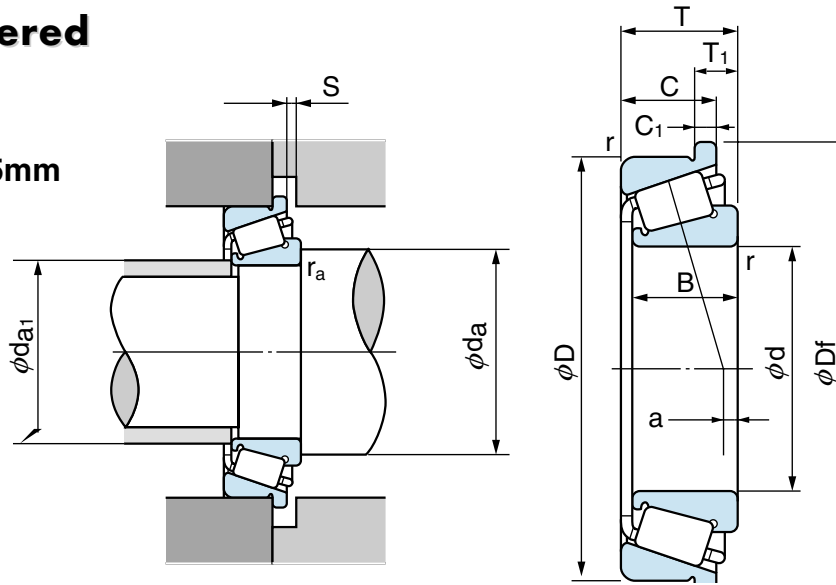
1N=0.102kgf

Bearing No.	Boundary dimensions (mm)								r (min)		Basic dynamic load rating Cr (N)	Basic static load rating Cor (N)
	d	D	T <sub>1</sub>	Df	C <sub>1</sub>	T	B	C	Cone	Cup		
FE32012J	60	95	9.5	99	4	23	23	17.5	1.5	1.5	85000	129000
FE30212J		110	9.25	116	4.5	23.75	22	19	2	1.5	104000	123000
FE32212J		110	10.75	116	5	29.75	28	24	2	1.5	131000	167000
FE32013J	65	100	9.5	104	4	23	23	17.5	1.5	1.5	87500	137000
FE30213J		120	9.25	127	4.5	24.75	23	20	2	1.5	123000	148000
FE32213J		120	11.75	127	6	32.75	31	27	2	1.5	156000	200000
FE32014J	70	110	10.5	116	4.5	25	25	19	1.5	1.5	103000	157000
FE30214J		125	10.25	132	5	26.25	24	21	2	1.5	133000	166000
FE32214J		125	12.25	132	6	33.25	31	27	2	1.5	157000	205000
FE32015J	75	115	10.5	121	4.5	25	25	29	1.5	1.5	104000	163000
FE30215J		130	10.25	137	5	27.25	25	22	2	1.5	143000	183000
FE32215J		130	12.25	137	6	33.25	31	27	2	1.5	165000	221000



# Flanged-cup Tapered Roller Bearings

Bore Diameter : 20 ~ 75mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

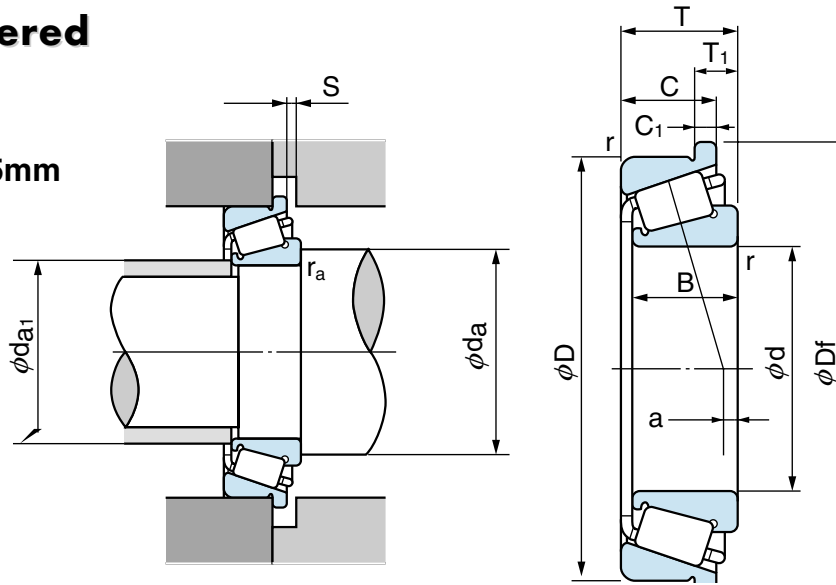
- Static equivalent radial load  
 Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values  $e$ ,  $Y_1$ , and  $Y_0$  from table.

Bearing No.	Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Load center (mm) $a^{(1)}$	Constant $e$	Axial load factor		Mass (kg)
	Grease lubrication	Oil lubrication	$d_a$ (min)	$d_{a1}$ (max)	S (min)	$r_a$ (max)			$Y_1$	$Y_0$	
FE32004J	9200	12000	25	24	3.5	0.6	4.6	0.37	1.60	0.88	0.103
FE30204J	8500	11500	26	26	3.5	1	3.9	0.35	1.74	0.96	0.127
FE32005J	8000	10700	30	28.5	3.5	0.6	3.3	0.43	1.39	0.77	0.117
FE30205J	7500	10000	31	30	3.5	1	3.3	0.38	1.60	0.88	0.161
FE32006J	6700	9100	36	34	4	1	3.5	0.43	1.39	0.77	0.178
FE30206J	6200	8400	36	36.5	3.5	1	3.2	0.38	1.60	0.88	0.233
FE32206J	6200	8400	36	35.6	5	1	5.5	0.38	1.60	0.88	0.295
FE32007J	6000	8000	41	39	4	1	2.8	0.45	1.32	0.73	0.230
FE30207J	5400	7200	42	42.5	3.5	1.5	2.8	0.38	1.60	0.88	0.338
FE32207J	5400	7200	42	41.5	5.5	1.5	6.4	0.38	1.60	0.88	0.450

Note: (1) Minus value of load center indicates the center is outside cone back face.

# Flanged-cup Tapered Roller Bearings

Bore Diameter : 20 ~ 75mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

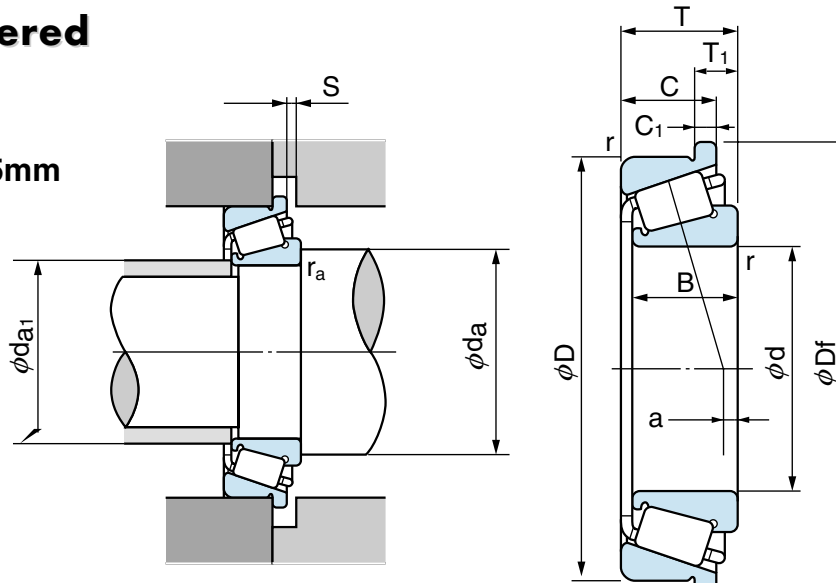
$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

- Static equivalent radial load  
 Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values  $e$ ,  $Y_1$ , and  $Y_0$  from table.

Bearing No.	Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Load center (mm) $a^{(1)}$	Constant $e$	Axial load factor		Mass (kg)
	Grease lubrication	Oil lubrication	$d_a$ (min)	$d_{a1}$ (max)	S (min)	$r_a$ (max)			$Y_1$	$Y_0$	
FE32008J	5300	7200	46	45	4.5	1	4.1	0.38	1.58	0.87	0.282
FE30208J	4800	6500	47	47.5	3.5	1.5	2.6	0.38	1.60	0.88	0.440
FE32208J	4800	6500	47	47	5.5	1.5	5.6	0.38	1.60	0.88	0.570
FE32009J	4800	6500	51	50.5	4.5	1	3.6	0.39	1.53	0.84	0.353
FE30209J	4400	6000	52	52.5	4.5	1.5	2.3	0.41	1.48	0.82	0.491
FE32209J	4400	6000	52	52	5.5	1.5	4.4	0.41	1.48	0.82	0.600
FE32010J	4400	6000	56	55	4.5	1	1.9	0.42	1.42	0.78	0.384
FE30210J	4100	5500	57	56.5	4.5	1.5	1.9	0.42	1.43	0.79	0.553
FE32210J	4100	5500	57	56	6	1.5	3.2	0.42	1.43	0.79	0.637
FE32011J	4000	5400	62	61.5	5.5	1.5	3.2	0.41	1.48	0.81	0.568
FE30211J	3700	4000	64	62.5	4.5	2	1.6	0.41	1.48	0.82	0.724
FE32211J	3700	4000	64	62	6	2	3.7	0.41	1.48	0.82	0.870

# Flanged-cup Tapered Roller Bearings

Bore Diameter : 20 ~ 75mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

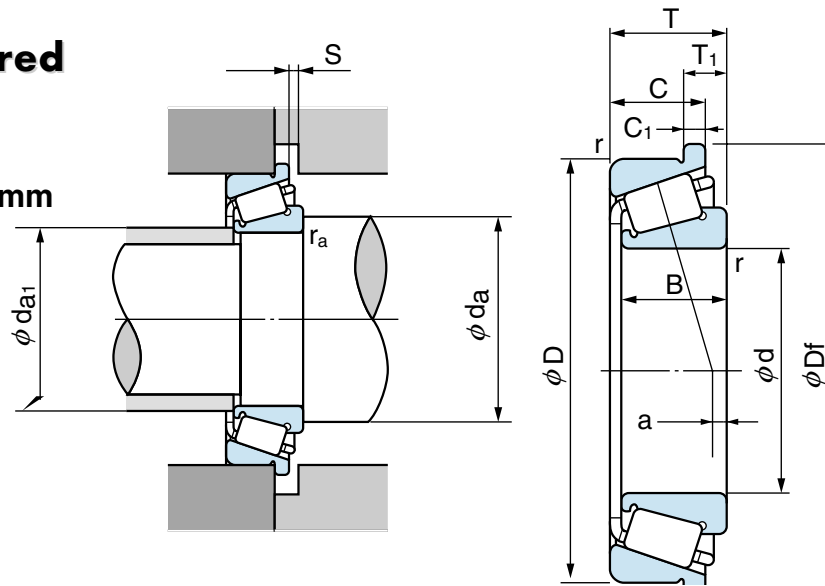
$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

- Static equivalent radial load  
 Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values  $e$ ,  $Y_1$ , and  $Y_0$  from table.

Bearing No.	Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Load center (mm) $a^{(1)}$	Constant $e$	Axial load factor		Mass (kg)
	Grease lubrication	Oil lubrication	$d_a$ (min)	$d_{a1}$ (max)	S (min)	$r_a$ (max)			$Y_1$	$Y_0$	
FE32012J	3700	5000	67	65.5	5.5	1.5	2.1	0.43	1.39	0.77	0.609
FE30212J	3400	4600	69	68.5	4.5	2	1.2	0.41	1.48	0.82	0.897
FE32212J	3400	4600	69	67	6	2	4.7	0.41	1.48	0.82	1.18
FE32013J	3500	4700	72	70.5	5.5	1.5	0.6	0.46	1.31	0.72	0.725
FE30213J	3100	4200	74	75	4.5	2	0.7	0.41	1.48	0.82	1.15
FE32213J	3100	4200	74	74	6	2	5.1	0.41	1.48	0.82	1.56
FE32014J	3200	4300	77	76.5	6	1.5	1.1	0.44	1.38	0.77	0.877
FE30214J	3000	4000	79	79.5	5	2	0.2	0.42	1.43	0.79	1.27
FE32214J	3000	4000	79	78	6	2	4.5	0.42	1.43	0.79	1.67
FE32015J	3000	4100	82	81	6	1.5	- 0.4	0.46	1.31	0.72	0.939
FE30215J	2800	3800	84	84	5	2	- 0.4	0.44	1.38	0.76	1.38
FE32215J	2800	3800	84	83	6	2	3.4	0.44	1.38	0.76	1.77

## Flanged-cup Tapered Roller Bearings

Bore Diameter : 80 ~ 150mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

- Static equivalent radial load  
Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values e,  $Y_1$ , and  $Y_0$  from table.

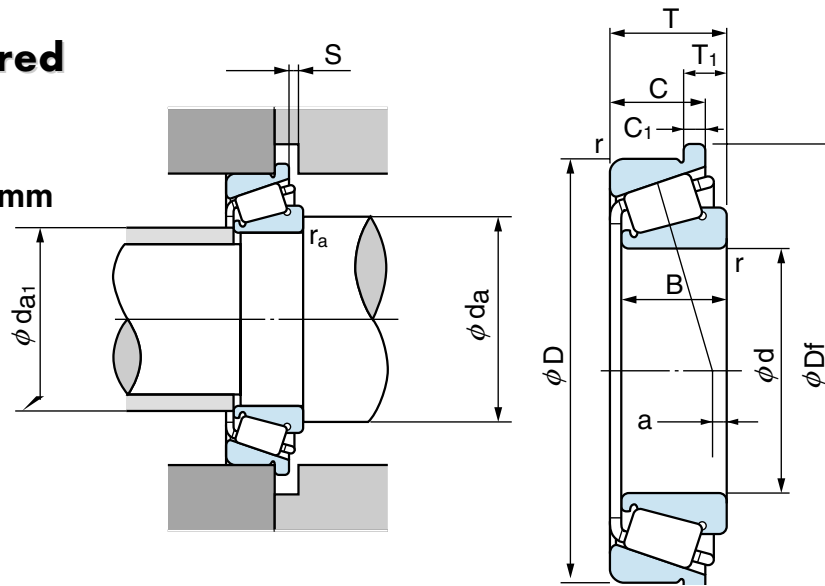
1N=0.102kgf

Bearing No.	Boundary dimensions (mm)										Basic dynamic load rating $C_r$ (N)	Basic static load rating $C_{or}$ (N)
	d	D	$T_1$	Df	$C_1$	T	B	C	r (min)			
									Cone	Cup		
FE32016J	80	125	12	131	5	29	29	22	1.5	1.5	140000	217000
FE30216J		140	11.25	147	5	28.25	26	22	2.5	2	157000	196000
FE32216J		140	13.25	147	6	35.25	33	28	2.5	2	192000	254000
FE32017J	85	130	12	136	5	29	29	22	1.5	1.5	143000	227000
FE30217J		150	11.5	158	5	30.5	28	24	2.5	2	183000	233000
FE32217J		150	15.5	158	7	38.5	36	30	2.5	2	212000	280000
FE32018J	90	140	13.5	146	5.5	32	32	24	2	1.5	169000	266000
FE30218J		160	12.5	168	6	32.5	30	26	2.5	2	201000	256000
FE32218J		160	16.5	168	8	42.5	40	34	2.5	2	255000	345000
FE32019J	95	145	13.5	151	5.5	32	32	24	2	1.5	172000	277000
FE30219J		170	14	179	6.5	34.5	32	27	3	2.5	223000	286000
FE32219J		170	16.5	179	8	45.5	43	37	3	2.5	285000	390000

Note: (1) Minus value of load center indicates the center is outside cone back face.

## Flanged-cup Tapered Roller Bearings

Bore Diameter : 80 ~ 150mm



- Dynamic equivalent radial load  
 $P_r = X F_r + Y F_a$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

- Static equivalent radial load  
Larger value of following to be used:  
 $P_{0r} = 0.5 F_r + Y_0 F_a$   
 $P_{0r} = F_r$
- Values  $e$ ,  $Y_1$ , and  $Y_0$  from table.

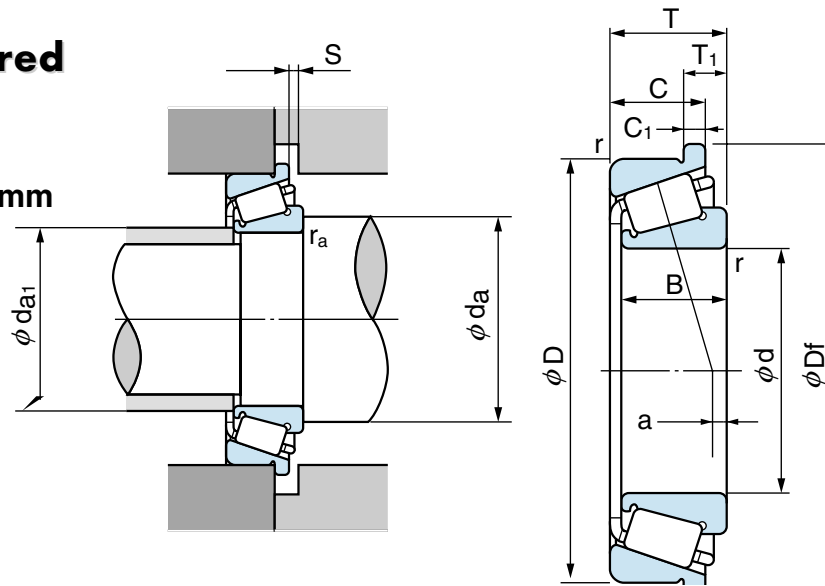
1N=0.102kgf

Bearing No.	Boundary dimensions (mm)										Basic dynamic load rating $C_r$ (N)	Basic static load rating $C_{0r}$ (N)
	d	D	$T_1$	Df	$C_1$	T	B	C	r (min)			
									Cone	Cup		
FE32020J	100	150	13.5	156	5.5	32	32	24	2	1.5	175000	287000
FE30220J		180	15	190	7	37	34	29	3	2.5	255000	330000
FE32220J		180	18	190	8	49	46	39	3	2.5	315000	465000
FE32021J	105	160	15.5	168	6.5	35	35	26	2.5	2	204000	330000
F30221		190	16	200	7	39	36	30	3	2.5	247000	310000
FE32221J		190	19	200	9	53	50	43	3	2.5	360000	510000
FE32022J	110	170	15.5	178	6.5	38	38	29	2.5	2	235000	360000
F30222		200	16	210	7	41	38	32	3	2.5	264000	330000
FE32222J		200	20	210	10	56	53	46	3	2.5	395000	470000
FE32024J	120	180	15.5	188	6.5	38	38	29	2.5	2	241000	400000
F30224		215	17.5	225	8	43.5	40	34	3	2.5	300000	390000
F32224		215	22.5	225	11	61.5	58	50	3	2.5	420000	600000

Note: (1) Minus value of load center indicates the center is outside cone back face.

## Flanged-cup Tapered Roller Bearings

Bore Diameter : 80 ~ 150mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

- Static equivalent radial load  
Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values e,  $Y_1$ , and  $Y_0$  from table.

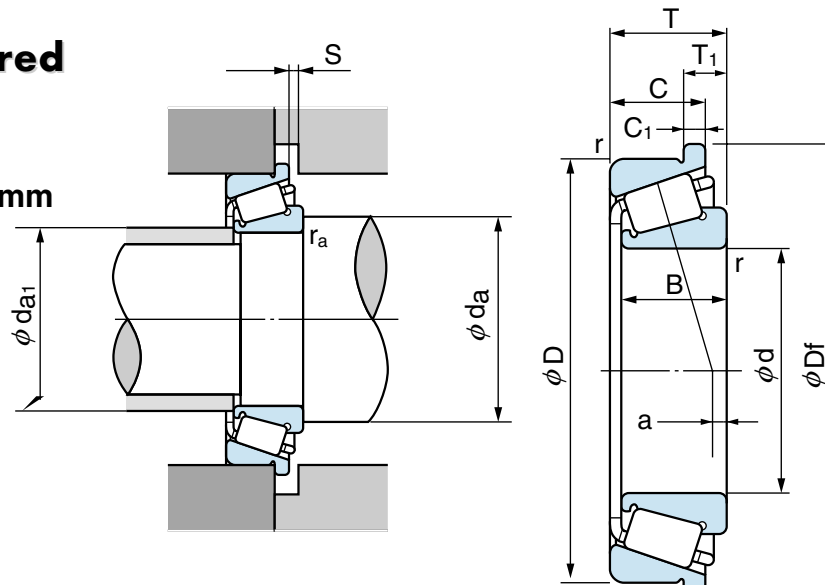
1N=0.102kgf

Bearing No.	Boundary dimensions (mm)									Basic dynamic load rating $C_r$ (N)	Basic static load rating $C_{0r}$ (N)	
	d	D	$T_1$	Df	$C_1$	T	B	C	r (min) Cone Cup			
FE32026J F30226 F32226	130	200	19	208	8	45	45	34	2.5	2	315000	530000
		230	17.75	241	8	43.75	40	34	4	3	325000	425000
		230	24.75	241	11	67.75	64	54	4	3	480000	690000
FE32028J F30228 F32228	140	210	19	218	8	45	45	34	2.5	2	320000	540000
		250	18.75	261	9	45.75	42	36	4	3	370000	490000
		250	25.75	261	12	71.75	68	58	4	3	560000	815000
FE32030J F30230 F32230	150	225	20.5	233	8.5	48	48	36	3	2.5	370000	645000
		270	20	282	9	49	45	38	4	3	430000	565000
		270	29	282	12	77	73	60	4	3	610000	900000

Note: (1) Minus value of load center indicates the center is outside cone back face.

## Flanged-cup Tapered Roller Bearings

Bore Diameter : 80 ~ 150mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

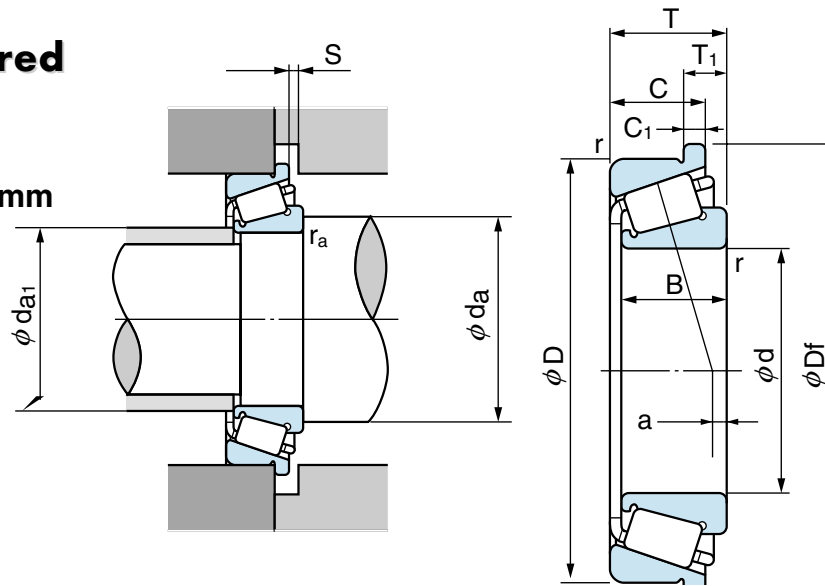
- Static equivalent radial load  
Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values  $e$ ,  $Y_1$ , and  $Y_0$  from table.

Bearing No.	Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Load center (mm) $a^{(1)}$	Constant $e$	Axial load factor		Mass (kg)
	Grease lubrication	Oil lubrication	$d_a$ (min)	$d_{a1}$ (max)	S (min)	$r_a$ (max)			$Y_1$	$Y_0$	
FE32016J	2800	3800	87	87	7	1.5	2	0.42	1.42	0.77	1.32
FE30216J	2600	3500	90	90	6	2	-0.3	0.42	1.43	0.79	1.65
FE32216J	2600	3500	90	88.5	8	2	3.8	0.42	1.43	0.79	2.11
FE32017J	2700	3600	92	91.5	7	1.5	0.7	0.44	1.36	0.76	1.40
FE30217J	2500	3300	95	95.5	6	2	-0.1	0.42	1.43	0.79	2.07
FE32217J	2500	3300	95	94	8	2	4.6	0.42	1.43	0.79	2.71
FE32018J	2500	3300	99	97	8	2	2.1	0.42	1.42	0.77	1.80
FE30218J	2300	3100	100	101	6	2	0.1	0.42	1.43	0.79	2.58
FE32218J	2300	3100	100	100	8	2	6	0.42	1.43	0.79	3.48
FE32019J	2300	3200	104	102	8	2	0.7	0.44	1.36	0.76	1.88
FE30219J	2100	2900	107	107	7	2.5	0.7	0.42	1.43	0.79	3.08
FE32219J	2100	2900	107	106	10	2.5	6.6	0.42	1.43	0.79	4.21

Note: (1) Minus value of load center indicates the center is outside cone back face.

## Flanged-cup Tapered Roller Bearings

Bore Diameter : 80 ~ 150mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

- Static equivalent radial load  
Larger value of following to be used:  
 $P_{or} = 0.5Fr + Y_0 Fa$   
 $P_{or} = Fr$
- Values  $e$ ,  $Y_1$ , and  $Y_0$  from table.

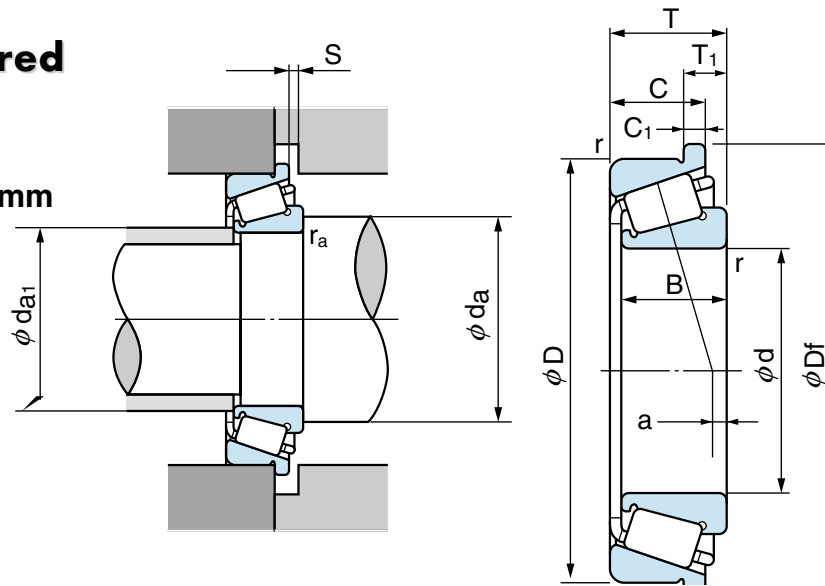
Bearing No.	Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Load center (mm) $a^{(1)}$	Constant $e$	Axial load factor		Mass (kg)
	Grease lubrication	Oil lubrication	$d_a$ (min)	$d_{a1}$ (max)	S (min)	$r_a$ (max)			$Y_1$	$Y_0$	
FE32020J	2200	3000	109	107	8	2	-0.7	0.46	1.31	0.72	1.95
FE30220J	2000	2700	112	114	8	2.5	0.7	0.42	1.43	0.79	3.70
FE32220J	2000	2700	112	112	10	2.5	7.2	0.42	1.43	0.79	5.17
FE32021J	2100	2900	115	113	9	2	0.8	0.44	1.35	0.76	2.52
F30221	1900	2600	117	120	9	2.5	0.8	0.42	1.44	0.79	4.42
FE32221J	1900	2600	117	118	10	2.5	7.7	0.42	1.43	0.79	6.11
FE32022J	2000	2700	120	119	9	2	1.5	0.43	1.39	0.77	3.17
F30222	1800	2400	122	125	10	2.5	0.6	0.42	1.44	0.79	5.17
FE32222J	1800	2400	122	124	10	2.5	8.5	0.42	1.43	0.79	7.15
FE32024J	1800	2500	130	128	9	2	-1.2	0.46	1.31	0.72	3.35
F30224	1600	2200	132	135	10	2.5	0.5	0.44	1.38	0.76	6.92
F32224	1600	2200	132	134	11	2.5	9.5	0.44	1.38	0.76	8.86

Note: (1) Minus value of load center indicates the center is outside cone back face.



## Flanged-cup Tapered Roller Bearings

Bore Diameter : 80 ~ 150mm



- Dynamic equivalent radial load  
 $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	$Y_1$	0.4	$Y_1$

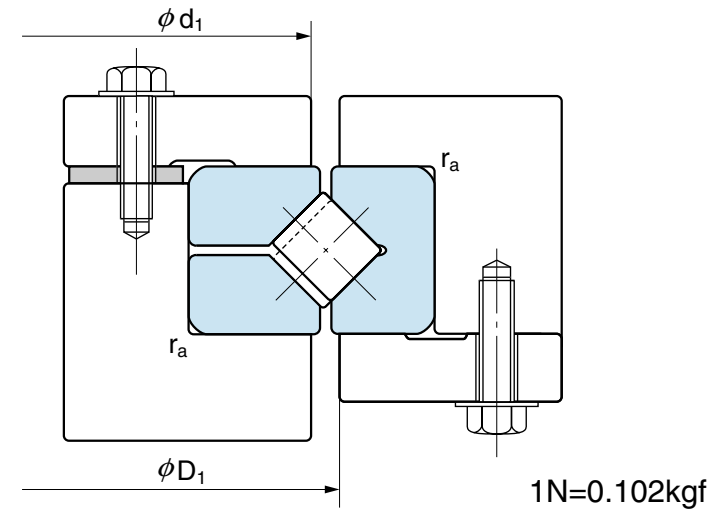
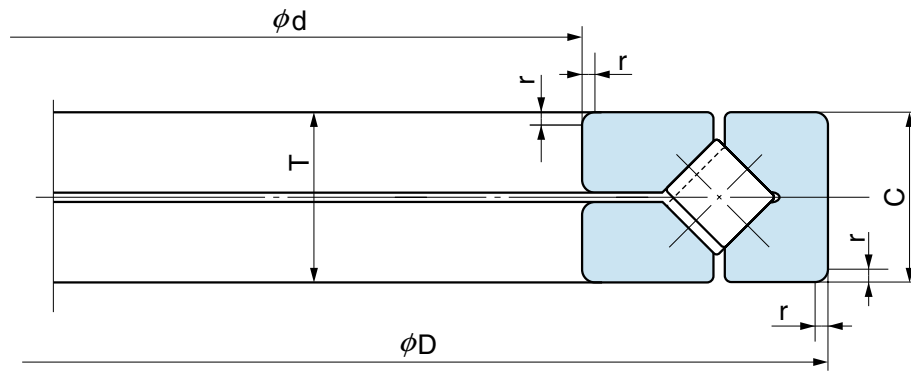
- Static equivalent radial load  
Larger value of following to be used:  
 $P_{0r} = 0.5Fr + Y_0 Fa$   
 $P_{0r} = Fr$
- Values  $e$ ,  $Y_1$ , and  $Y_0$  from table.

Bearing No.	Limiting speed (rpm)		Abutment and fillet dimensions (mm)				Load center (mm) $a^{(1)}$	Constant $e$	Axial load factor		Mass (kg)
	Grease lubrication	Oil lubrication	$d_a$ (min)	$d_{a1}$ (max)	S (min)	$r_a$ (max)			$Y_1$	$Y_0$	
FE32026J	1700	2300	140	140	11	2	1.8	0.44	1.38	0.77	3.54
F30226	1500	2100	144	144	10	3	-1.25	0.43	1.39	0.76	7.34
F32226	1500	2100	144	144	11	3	10.7	0.44	1.38	0.76	11.0
FE32028J	1600	2100	150	149	11	2	-0.8	0.46	1.31	0.72	5.39
F30228	1400	1900	154	157	12	3	-1.25	0.44	1.36	0.75	8.80
F32228	1400	1900	154	156	11	3	11.1	0.43	1.39	0.76	13.9
FE32030J	1500	2000	162	160	12	2.5	-0.4	0.46	1.31	0.72	6.54
F30230	1300	1800	164	168	11	3	2	0.43	1.39	0.76	11.0
F32230	1300	1800	164	168	14	3	13	0.43	1.38	0.76	17.5

Note: (1) Minus value of load center indicates the center is outside cone back face.

# Cross Tapered Roller Bearings

## Series XRN



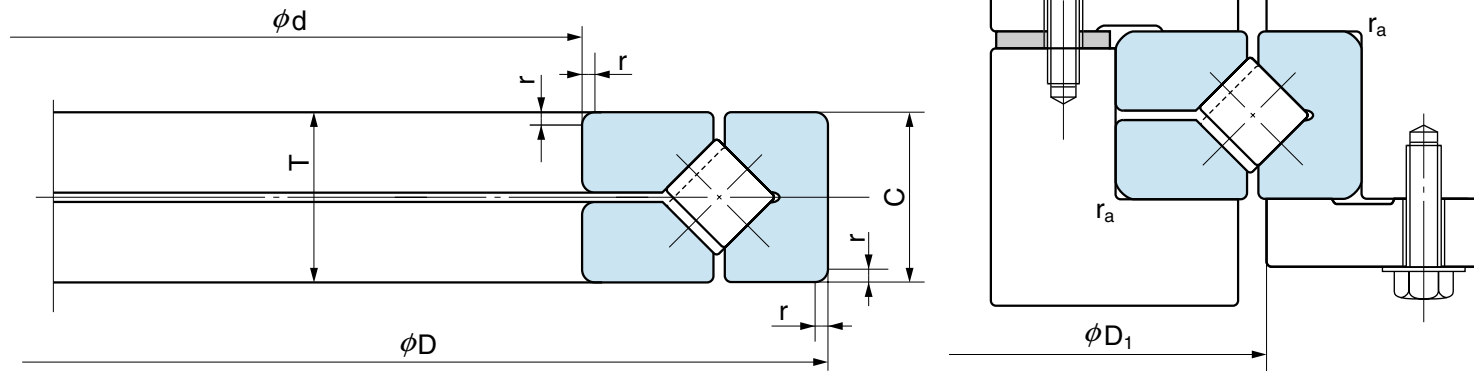
Bearing No. (1)	Boundary dimensions (mm)				Basic dynamic load rating Ca (N)	Basic static load rating Coa (N)
	d	D	T(C)	r		
*200XRN28	200	280	30	1.5	144000	520000
*250XRN35	250	350	40	3	170000	680000
*300XRN40	300	400	38	3	268000	985000
*350XRN47	350	470	50	3	284000	1230000
*400XRN55	400	550	60	3.5	365000	1900000
0457XRN060	457.2	609.6	63.5	3.3	370000	1670000
580XRN76	580	760	80	6.4	830000	3800000
600XRN83	600	830	80	3.3	1030000	4600000
0685XRN091	685.8	914.4	79.375	3.3	1090000	5000000
0901XRN112	901.7	1117.6	82.55	3.3	1090000	5650000
1028XRN132	1028.7	1327.15	114.3	3.3	1830000	9300000

Note: (1) Bearings marked with \* have special tolerance for bore and OD, dimensions (smaller than JIS (ISO) standard).



# Cross Tapered Roller Bearings

## Series XRN



Bearing No. (1)	Limiting speed (rpm)		Abutment and fillet dimensions (mm)		
	Grease lubrication	Oil lubrication	d <sub>1</sub> (min)	D <sub>1</sub> (max)	r <sub>a</sub> (max)
*200XRN28	480	950	235	249	1
*250XRN35	400	800	302	312	1.5
*300XRN40	330	650	345	369	2.5
*350XRN47	280	560	410	424	1.5
*400XRN55	250	500	475	492	1.5
0457XRN060	220	440	535	554	2
580XRN76	170	340	667	691	4
600XRN83	160	320	708	738	2
0685XRN091	140	280	807	834	2
0901XRN112	110	220	1013	1037	2
1028XRN132	90	180	1184	1221	2

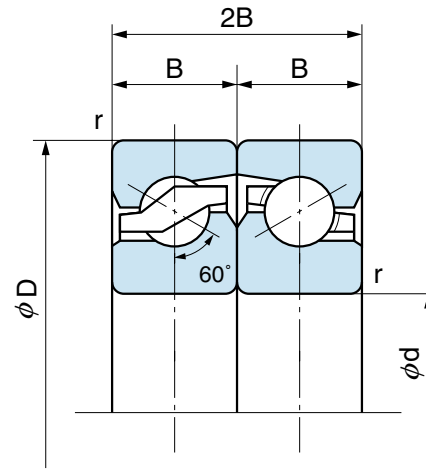
Note: (1) Bearings marked with \* have special tolerance for bore and OD, dimensions (smaller than JIS (ISO) standard).

## Ball Screw Support Bearings Series TAB

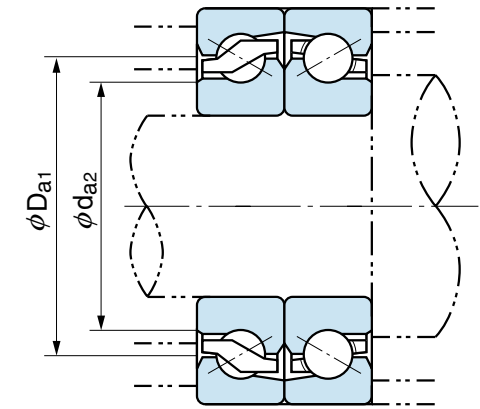
### Dynamic equivalent axial load

$$\bullet Pa = XFr + YFa$$

No. of Bearing in set	2		3			4				
Brgs loaded axial load	1	2	1	2	3	1	2	3	4	
$Fa/Fr \leq 2.17$	X	1.9	-	1.43	2.33	-	1.17	2.33	2.53	-
	Y	0.54	-	0.77	0.35	-	0.89	0.35	0.26	-
$Fa/Fr > 2.17$	X	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	Y	1	1	1	1	1	1	1	1	1



DF



1N=0.102kgf

Bearing No.	Boundary dimensions (mm)						Basic <sup>(2)</sup> dynamic load rating Ca (N)	Basic <sup>(3)</sup> static load rating Coa (N)
	d	D	B	2B	r (min)	r <sub>1</sub> (min)		
15TAB04DF(DB)	15	47	15	30	1 <sup>(1)</sup>	0.6	25900	30500
17TAB04DF(DB)	17	47	15	30	1	0.6	25900	30500
20TAB04DF(DB)	20	47	15	30	1	0.6	25900	30500
25TAB06DF(DB)	25	62	15	30	1	0.6	29900	43000
30TAB06DF(DB)	30	62	15	30	1	0.6	29900	43000
35TAB07DF(DB)	35	72	15	30	1	0.6	32500	52000
40TAB07DF(DB)	40	72	15	30	1	0.6	32500	52000
40TAB09DF(DB)	40	90	20	40	1	0.6	65000	96500
45TAB07DF(DB)	45	75	15	30	1	0.6	33500	56500

Note: (1)  $r$  (min) = 0.6 for inner ring

(2) When bearing sets carry axial load with two or three rows, the numbers should be multiplied by 1.64 or 2.16.

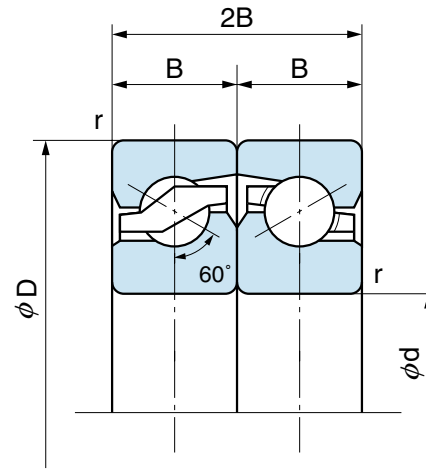
(3) When bearing sets carry axial load with two or three rows, the numbers should be multiplied by 2 or 3.

## Ball Screw Support Bearings Series TAB

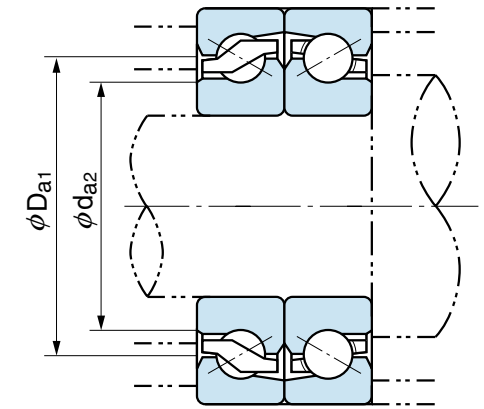
### Dynamic equivalent axial load

$$\bullet Pa = XFr + YFa$$

No. of Bearing in set	2		3			4				
Brgs loaded axial load	1	2	1	2	3	1	2	3	4	
$Fa/Fr \leq 2.17$	X	1.9	–	1.43	2.33	–	1.17	2.33	2.53	–
	Y	0.54	–	0.77	0.35	–	0.89	0.35	0.26	–
$Fa/Fr > 2.17$	X	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	Y	1	1	1	1	1	1	1	1	1



DF



1N=0.102kgf

Bearing No.	Boundary dimensions (mm)						Basic <sup>(2)</sup> dynamic load rating	Basic <sup>(3)</sup> static load rating
	d	D	B	2B	r (min)	r <sub>1</sub> (min)	Ca (N)	Coa (N)
45TAB10DF(DB)	45	100	20	40	1	0.6	68000	108000
50TAB10DF(DB)	50	100	20	40	1	0.6	69500	114000
55TAB10DF(DB)	55	100	20	40	1	0.6	69500	114000
55TAB12DF(DB)	55	120	20	40	1	0.6	73000	131000
60TAB12DF(DB)	60	120	20	40	1	0.6	73000	131000

Note: (1)  $r$  (min) = 0.6 for inner ring

(2) When bearing sets carry axial load with two or three rows, the numbers should be multiplied by 1.64 or 2.16.

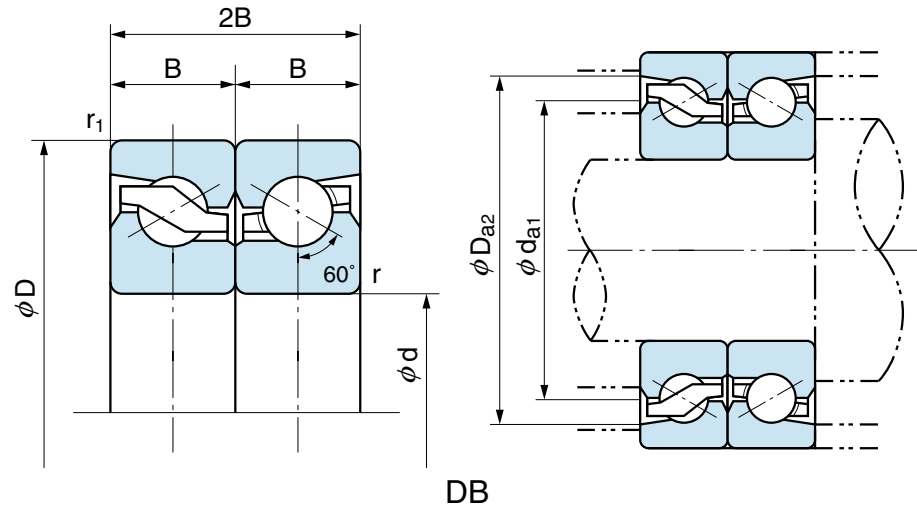
(3) When bearing sets carry axial load with two or three rows, the numbers should be multiplied by 2 or 3.

# Ball Screw Support Bearings Series TAB

## Dynamic equivalent axial load

$$\bullet Pa = XFr + YFa$$

No. of Bearing in set	2		3			4				
Brgs loaded axial load	1	2	1	2	3	1	2	3	4	
Fa/Fr ≤ 2.17	X	1.9	–	1.43	2.33	–	1.17	2.33	2.53	–
	Y	0.54	–	0.77	0.35	–	0.89	0.35	0.26	–
Fa/Fr > 2.17	X	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	Y	1	1	1	1	1	1	1	1	1



Bearing No.	Limiting speed	Starting torque	Abutment and fillet dimensions (mm)				Mass (kg) (1pc.) (Ref.)
	(rpm)	(N · cm)	da <sub>1</sub>	da <sub>2</sub>	Da <sub>1</sub>	Da <sub>2</sub>	
15TAB04DF(DB)	6300	15	33.7	26.8	33.5	41	0.14
17TAB04DF(DB)	6300	15	33.7	26.8	33.5	41	0.13
20TAB04DF(DB)	6300	15	33.7	26.8	33.5	41	0.12
25TAB06DF(DB)	4650	20	46.2	39.7	46	53.4	0.24
30TAB06DF(DB)	4650	20	46.2	39.7	46	53.4	0.21
35TAB07DF(DB)	3750	25	56.2	49.7	56	63.4	0.29
40TAB07DF(DB)	3750	25	56.2	49.7	56	63.4	0.26
40TAB09DF(DB)	3150	30	67.2	57.2	67	78.4	0.62
45TAB07DF(DB)	3400	50	61.7	55.2	61.5	68.9	0.25

Note: (1) r (min) = 0.6 for inner ring

(2) When bearing sets carry axial load with two or three rows, the numbers should be multiplied by 1.64 or 2.16.

(3) When bearing sets carry axial load with two or three rows, the numbers should be multiplied by 2 or 3.

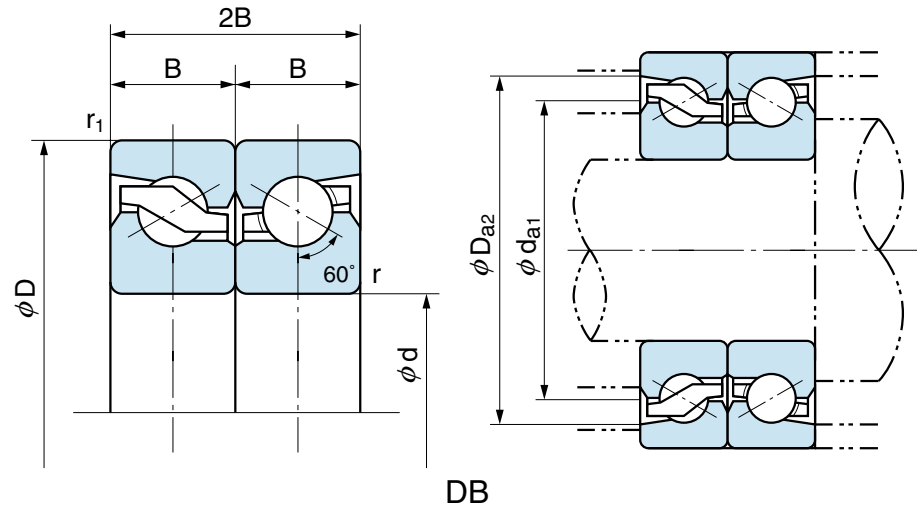


## Ball Screw Support Bearings Series TAB

### Dynamic equivalent axial load

$$\bullet Pa = XFr + YFa$$

No. of Bearing in set	2		3			4				
Brgs loaded axial load	1	2	1	2	3	1	2	3	4	
$Fa/Fr \leq 2.17$	X	1.9	–	1.43	2.33	–	1.17	2.33	2.53	–
	Y	0.54	–	0.77	0.35	–	0.89	0.35	0.26	–
$Fa/Fr > 2.17$	X	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
	Y	1	1	1	1	1	1	1	1	1



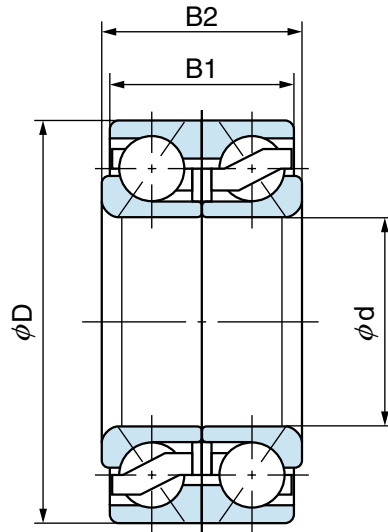
Bearing No.	Limiting speed	Starting torque	Abutment and fillet dimensions (mm)				Mass (kg) (1pc.) (Ref.)
	(rpm)	(N · cm)	$d_{a1}$	$d_{a2}$	$D_{a1}$	$D_{a2}$	
45TAB10DF(DB)	2850	60	74.2	64.2	74	85.4	0.79
50TAB10DF(DB)	2700	65	78.2	68.2	78	89.4	0.72
55TAB10DF(DB)	2700	65	78.2	68.2	78	89.4	0.65
55TAB12DF(DB)	2300	70	92.2	82.2	92	103.4	1.15
60TAB12DF(DB)	2300	70	92.2	82.2	92	103.4	1.08

Note: (1)  $r$  (min) = 0.6 for inner ring

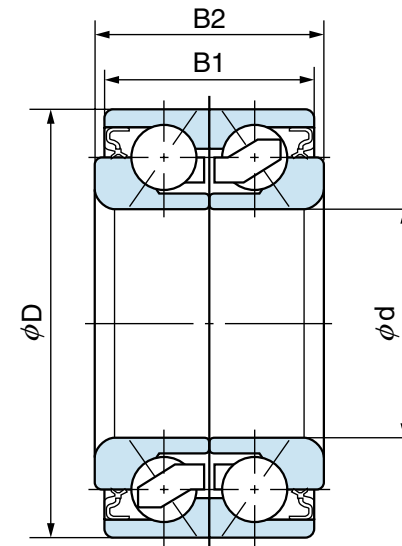
(2) When bearing sets carry axial load with two or three rows, the numbers should be multiplied by 1.64 or 2.16.

(3) When bearing sets carry axial load with two or three rows, the numbers should be multiplied by 2 or 3.

# Wheel Bearings



Type A (Open type)

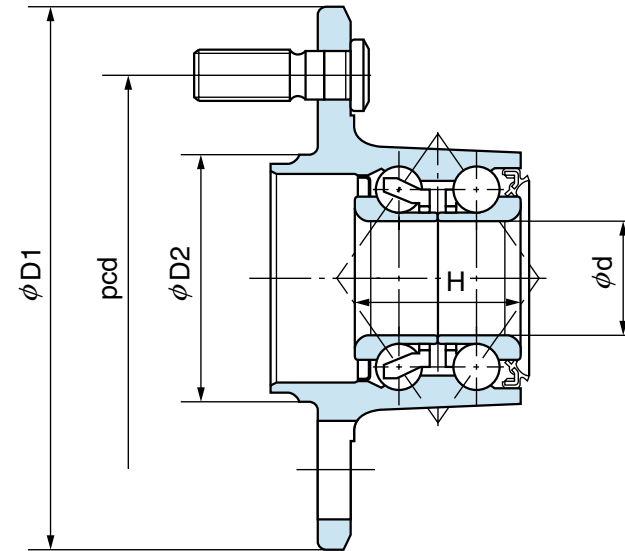


Type B (Contact sealed type)

Bearing No.	Boundary dimensions (mm)				Type
	d	D	B1	B2	
27BVV06-2G	27	60	50	50	B
30BVV06-2G	30	68	45	45	B
32BVV07-7G	32	72	45	45	A
32BVV07-8G	32	72	45	45	A
35BVV07-9G	35	77	42	42	A
38BVV07-10G	38	72	40	40	B
38BVV07-20G	38	73	40	40	B
V1-38BVV07-22G	38	74	40	40	B
38BVV07-26G	38	74	33	36	A
40BVVS6-2NSL	40	80	45	45	B
43BVV08-4G	43	82	45	45	B



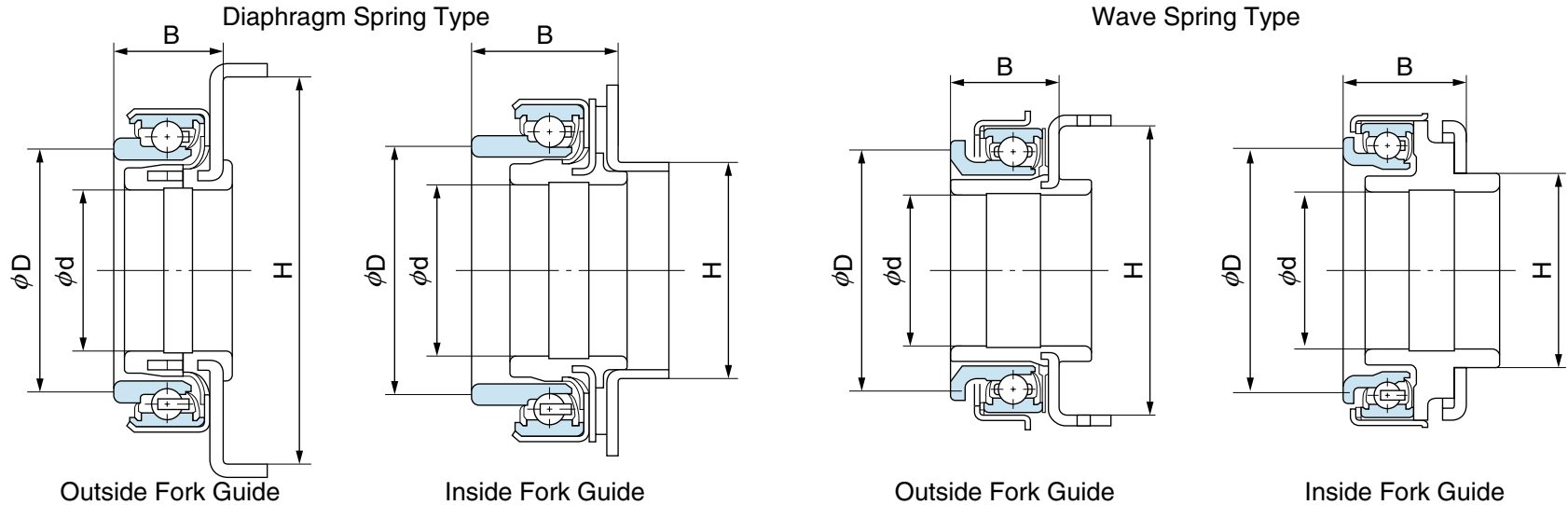
# Wheel Hub Units



Bearing No.	Boundary dimensions (mm)				
	d	D1	D2	pcd	H
F25BVV10-7	25	134	61	100	40
H28BVV10-2 <sup>(1)</sup>	28	134	61	100	40
H28BVV10-6	28	134	61	100	40
F28BVV10-M3	28	122	55	100	47
F28BVV10-M4A <sup>(1)</sup>	28	122	55	100	47
F30BVV09-3 <sup>(2)</sup>	30	R60.5	—	—	42
F36BVV11-5	36	140	72	114.3	62

Note: 1) For Anti-Lock Brake System  
 2) Without bolts (unnecessary)

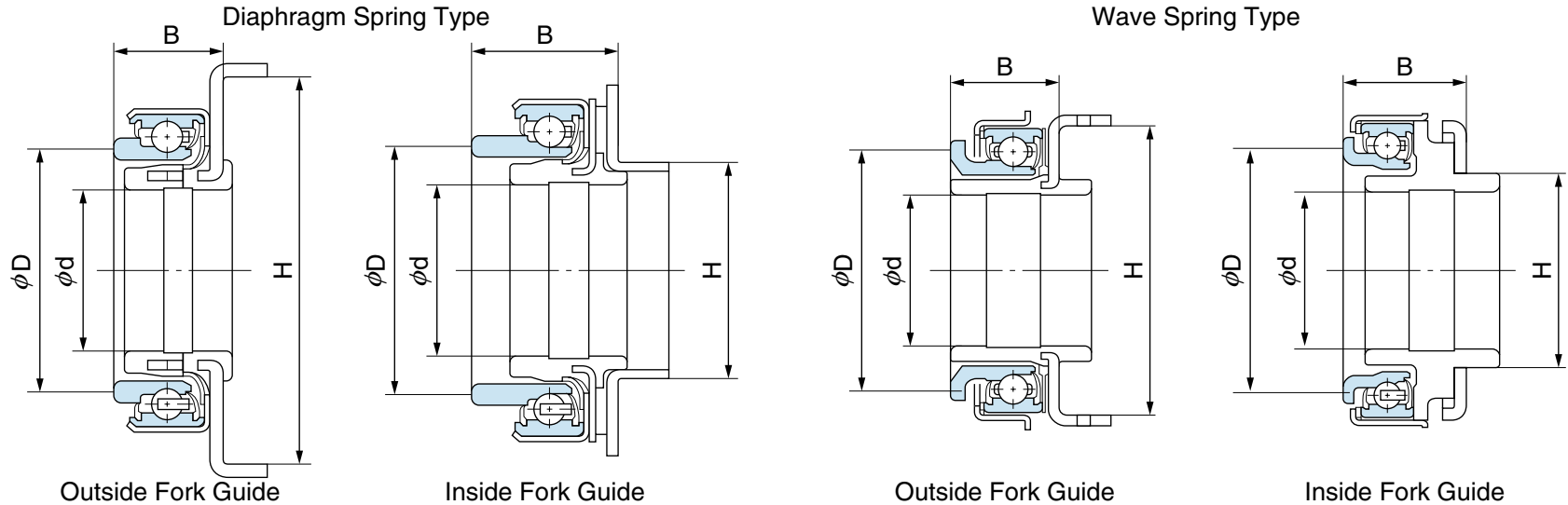
# Self-aligning Clutch-release Bearings



Bearing No.	Boundary dimensions (mm)				Type	
	d	D	B	H	Spring	Fork Guide
44SCRN28P-8	28.1	44	22	35	Wave	Inside
47SCRN31P-1	29	47	20.5	56	Wave	Outside
47SCRN34K-6	29	47	21	38	Diaphragm	Inside
47SCRN40P	31	47	23	68	Diaphragm	Outside
48SCRN32K	31.75	48	21	60	Diaphragm	Outside



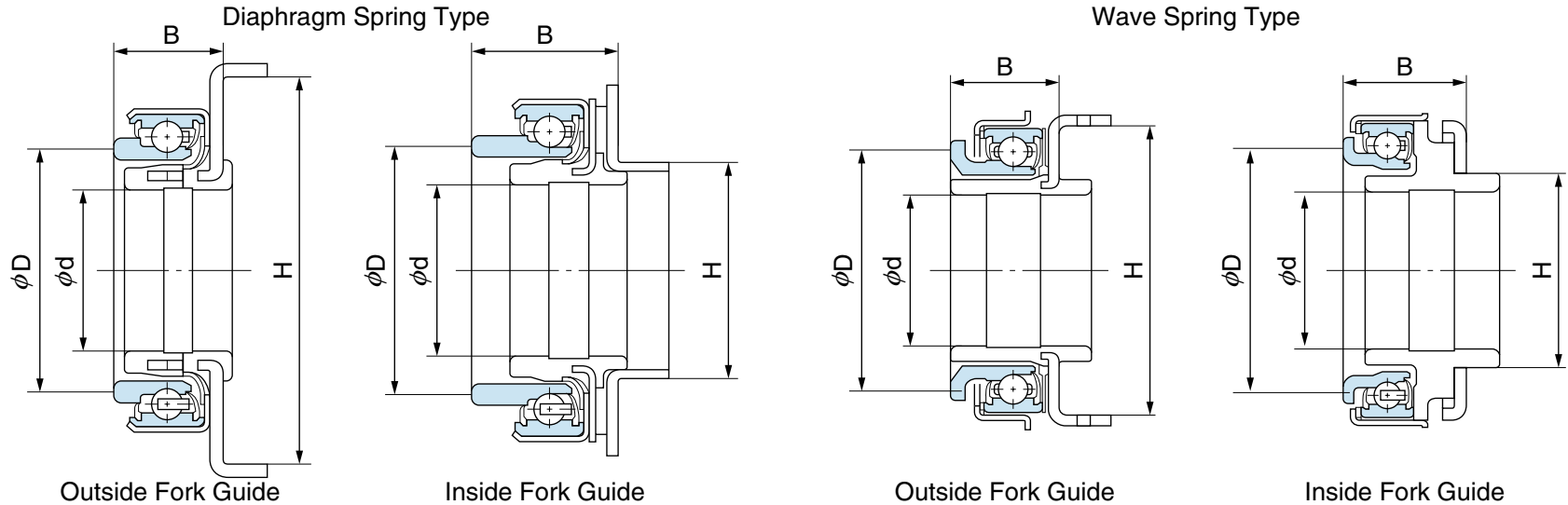
# Self-aligning Clutch-release Bearings



Bearing No.	Boundary dimensions (mm)				Type	
	d	D	B	H	Spring	Fork Guide
50SCRN31P	33	50	22	70.15	Diaphragm	Outside
50SCRN31P-1	33	50	22	79.2	Diaphragm	Outside
50SCRN34P-4	35	50	24	44	Diaphragm	Inside
50SCRN37P-4	35	50	26.9	44	Diaphragm	Inside
50SCRN40P-4	35	50	30	44	Diaphragm	Inside
54SCRN42P	36	54	27	77	Diaphragm	Outside
55SCRN41P	35	55.2	24	72	Diaphragm	Outside
55SCRN41P-1	35	55.2	24	72	Diaphragm	Outside
58SCRN37P	35	58	26.6	44	Diaphragm	Inside
58SCRN43A	35	58	33	44	Diaphragm	Inside

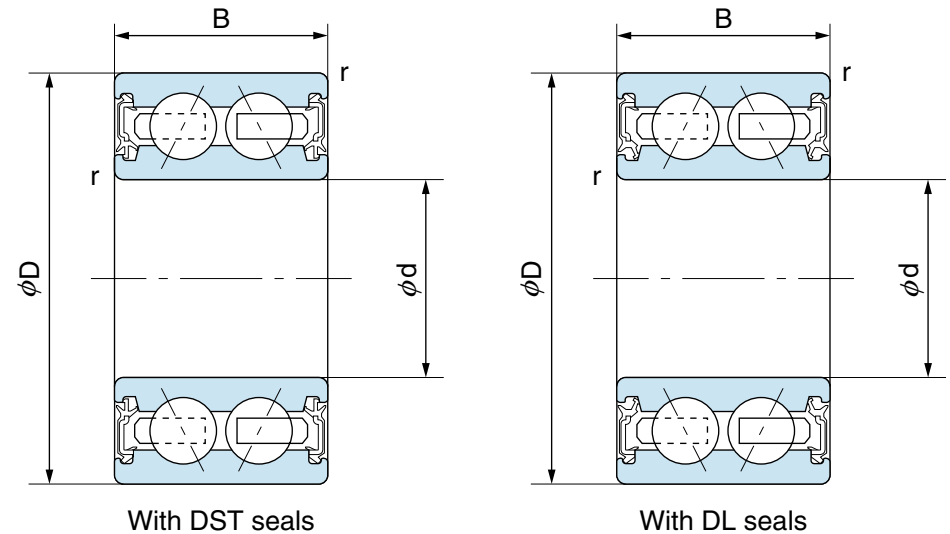


# Self-aligning Clutch-release Bearings



Bearing No.	Boundary dimensions (mm)				Type	
	d	D	B	H	Spring	Fork Guide
60SCRN31T	35	60	25	76	Diaphragm	Outside
60SCRN31P-6	35	60	25	79.2	Diaphragm	Outside
68SCRN43A	35	68	33	44	Diaphragm	Inside
68SCRN46P-2	38	68	34	48	Diaphragm	Inside
68SCRN48P	38	68	37.5	48	Diaphragm	Inside
68SCRN53P	38	68	42.5	48	Diaphragm	Inside
68SCRN58P-4	38	68	47.5	48	Diaphragm	Inside
68SCRN58P-5	38	68	47.5	48	Diaphragm	Inside
68SCRN62P	38	68	51.6	48	Diaphragm	Inside
68SCRN63P-2	35	68	53.3	48	Diaphragm	Inside

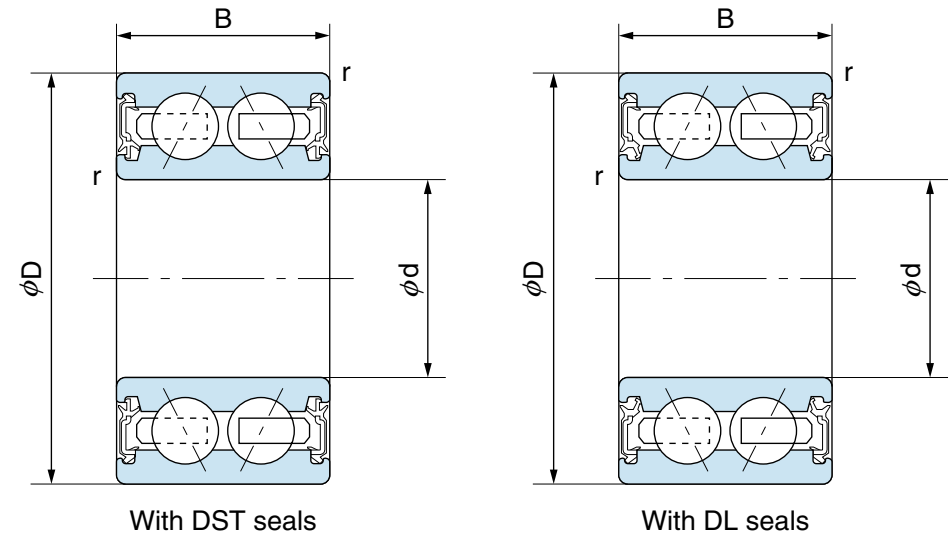
## Double-row Angular Contact Ball Bearings for Car Air Conditioning Magnetic Clutch



1N=0.102kgf

Bearing No.		Boundary dimensions (mm)				Basic dynamic load rating	Basic static load rating
DST seals	DL seals	d	D	B	r (max)	Cer (N)	Cor (N)
30BGS10G-2DST	30BGS10G-2DL	30	52	22	0.3	17900	13800
30BG05S5G-2DST	30BG05S5G-2DL	30	55	23	0.6	19900	15500
32BG05S1-2DST	—	32	55	23	0.6	19900	15500
35BG05S7G-2DST	35BG05S7G-2DL	35	50	20	0.3	11100	10100
35BG05S10G-2DST	30BG05S16G-2DL	35	55	20	0.6	15600	13200
38BG05S6G-2DST	38BG05S6G-2DL	38	54	17	0.3	11900	11500

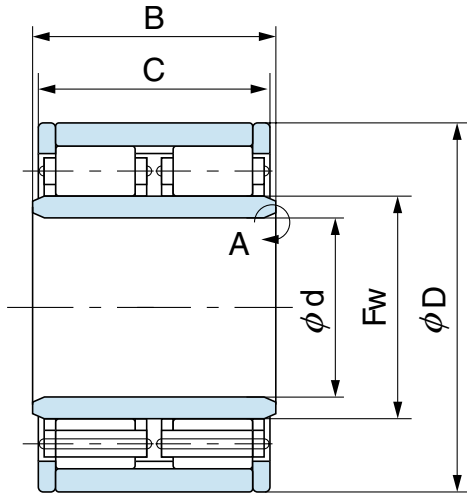
## Double-row Angular Contact Ball Bearings for Car Air Conditioning Magnetic Clutch



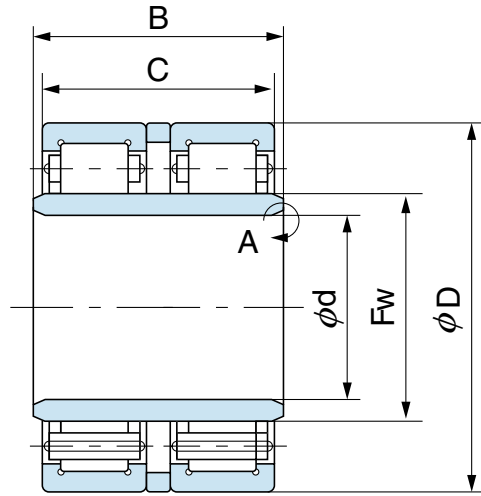
1N=0.102kgf

Bearing No.		Boundary dimensions (mm)				Basic dynamic load rating	Basic static load rating
DST seals	DL seals	d	D	B	r (max)	Cer (N)	Cor (N)
40BG05S2G-2DST	—	40	57	24	0.3	17900	13800
40BGS8G-2DST	40BGS8G-2DL	40	62	20.625	0.65	18100	16400
40BGS35G-2DST	40BGS35G-2DL	40	62	24	0.6	18100	16400
40BGS39G-2DST	40BGS39G-2DL	40	66	24	0.6	28500	23100
45BG07S5G-2DST	45BG07S5G-2DL	45	75	32	0.5	33500	27600
75BG02G-2DST	—	75	130	50	2.0	93500	83500

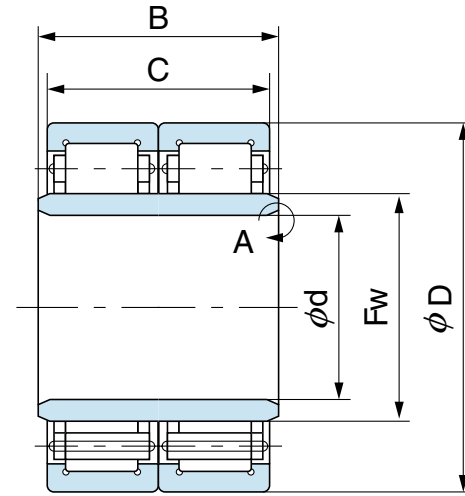
# Journal Bearings (Cylindrical roller, No rib on inner ring)



Design 1

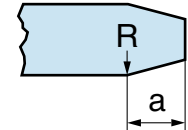


Design 2

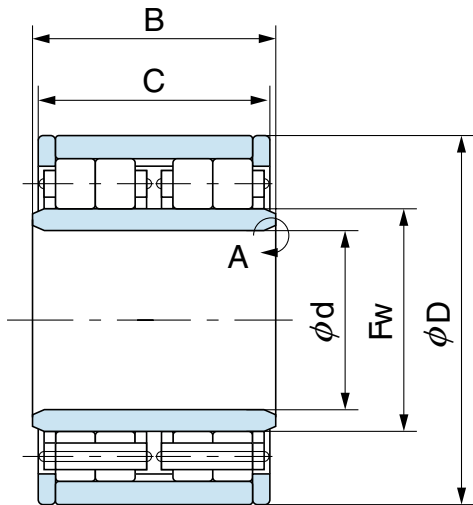


Design 3

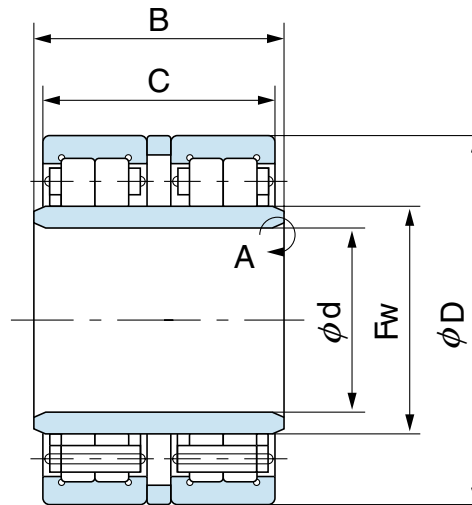
Detail of A



$$a=4 \cdot 5 \cdot 7 \cdot 10 \cdot 12 \cdot 15$$

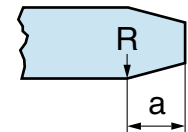


Design 4



Design 5

Detail of A



$$a=1 \cdot 7 \cdot 12$$

# Journal Bearings (Cylindrical roller, No rib on inner ring)

1N=0.102 kgf

Bearing No.	Design No.	Boundary dimensions (mm)						Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	C	B	Fw	r			
FCD75	1	75	155	90	100	95	1	287000	410000	7
FCD85S1	3	85	150	96	106	101.5	4	335000	590000	6
FCF85S	5	85	150	120	120	101.5	3	320000	560000	7
FCD85S	2	85	150	120	130	101.5	3	335000	590000	7
FCD85S2	2	85	180	130	130	108	4	425000	765000	14
FCD95	1	95	170	105	120	113.5	1	380000	645000	11
FCF100	4	100	180	140	160	120	2	565000	1040000	14
JC3	4	110	200	160	180	134	2	575000	1190000	19
FCF110	4	110	210	160	180	136	2	720000	1280000	22
FCF110S1	1	110	220	160	180	138	2	795000	1370000	28
FCD110S5	2	110	220	160	180	138	2	795000	1370000	28
JC1	1	110	225	140	150	138	2	750000	1430000	28
JC2	1	110	235	160	180	141	2	835000	1550000	36





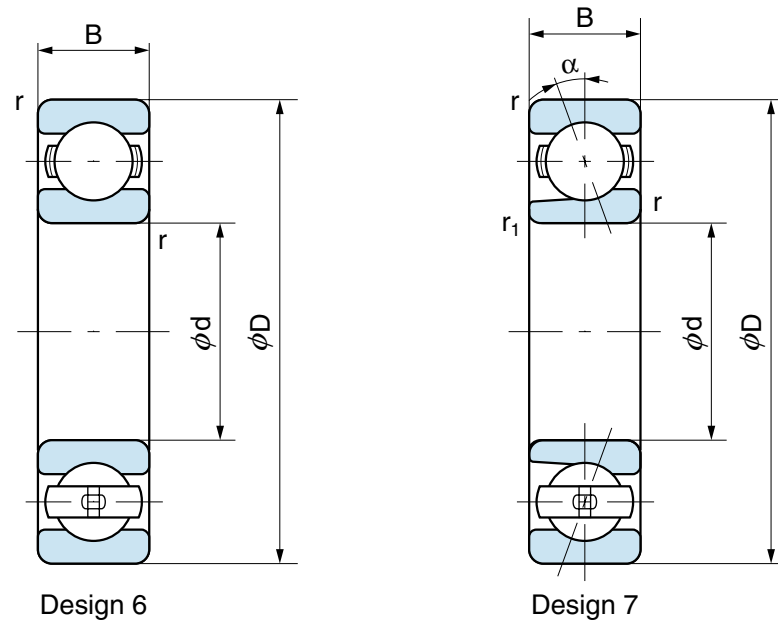


# Journal Bearings (Cylindrical roller, No rib on inner ring)

1N=0.102 kgf

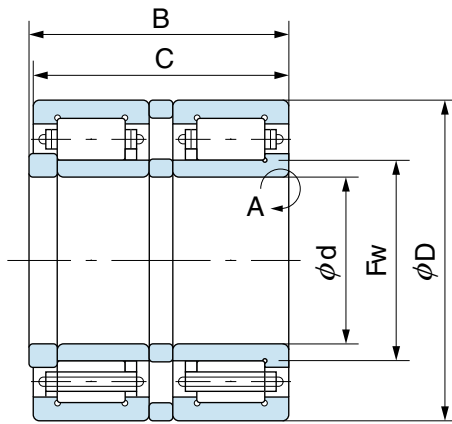
Bearing No.	Design No.	Boundary dimensions (mm)						Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	C	B	Fw	r			
FCF120S3	4	120	205	150	165	141	2	675000	1290000	18
FCF120S1	4	120	205	160	170	141	2	715000	1390000	19
FCF120S4	4	120	220	160	180	146	6	805000	1510000	23
FCD120S7	2	120	220	160	180	146	3	835000	1580000	23
JC11	1	120	240	160	180	150	2	810000	1580000	35
FCF120S2	4	120	240	160	180	150	2	960000	1700000	35
FCD120S1	2	120	260	190	195	154	4	1070000	1840000	50
FCF130S	4	130	220	160	180	152	2	785000	1550000	22
FCD130S	1	130	230	120	120	156	2	615000	1110000	19
FCF130S1	4	130	240	160	170	158	2	880000	1610000	35
JC5	1	130	260	160	180	163	2	875000	1710000	42
JC29	2	130	270	210	215	164	5	1170000	2000000	56
JC9	2	130	280	210	215	167	5	1070000	2090000	61
FCF130	5	130	280	210	215	167	5	1340000	2360000	61
FCD140B	2	140	300	225	230	180	5	1440000	2500000	76
FCD160S	1	160	270	130	140	187	2	850000	1600000	27
FCD160	1	160	280	150	180	190	2	970000	1820000	34

# Journal Bearings (Ball bearing for axial load)

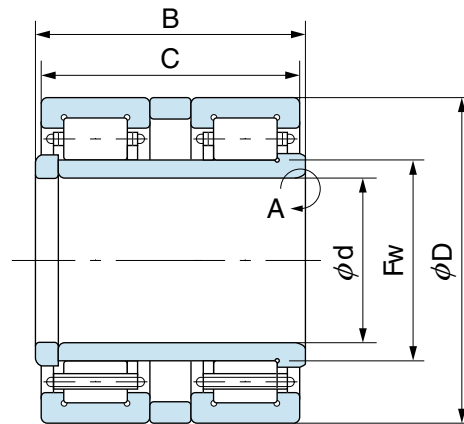


Bearing No.	Design No.	Boundary dimensions (mm)					Contact angle $\alpha^\circ$	Basic dynamic load rating $C_r(N)$	Basic static load rating $C_{or}(N)$	Mass (kg) Reference
		d	D	B	r	$r_1$				
JB8A	6	70	150	35	3.5	—	—	80000	153000	4
JB1D	7	85	180	41	4	2	20	98500	204000	5
JB1E	7	85	180	41	4	2	20	114000	255000	5
JB2	7	100	215	47	4	2	20	128000	292000	7
JB3	7	110	215	47	4	2	20	164000	355000	6
JB9	6	125	250	55	2	—	—	143000	350000	13
JB4	6	125	250	55	4	—	—	172000	395000	12

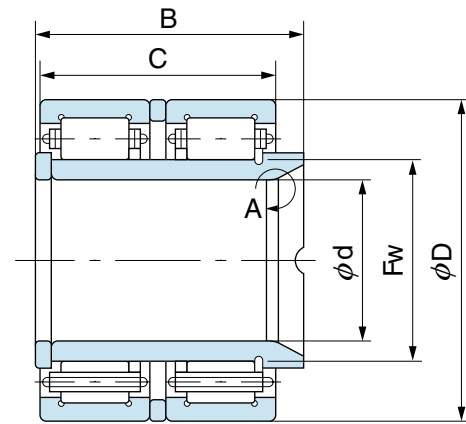
# Journal Bearings (Cylindrical roller, Rib on inner ring)



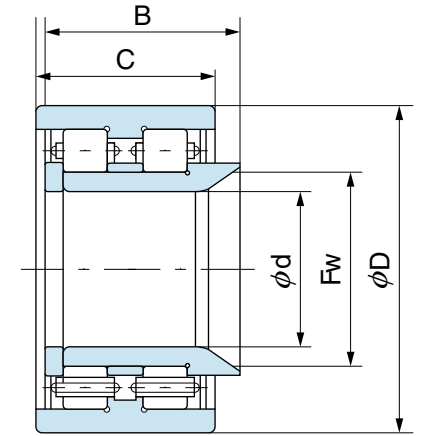
Design 1



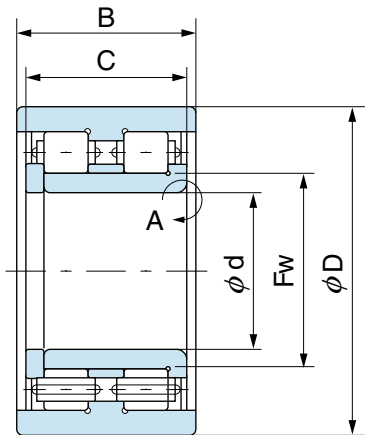
Design 2



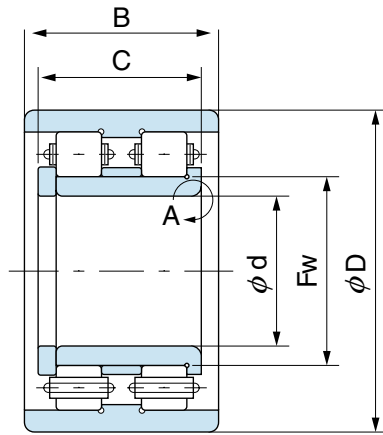
Design 3



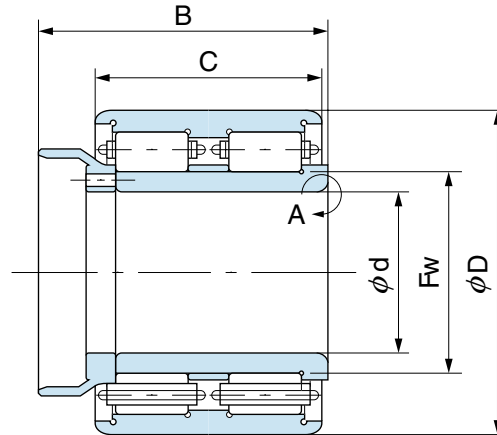
Design 4



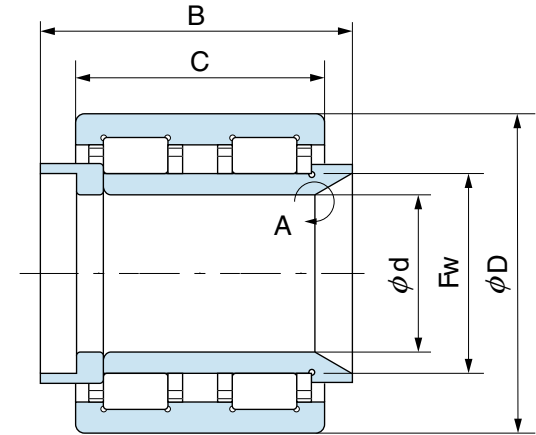
Design 5



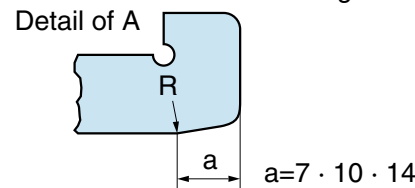
Design 6



Design 7



Design 8



## Journal Bearings (Cylindrical roller, Rib on inner ring)

1N=0.102 kgf

Bearing No.	Design No.	Boundary dimensions (mm)						Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	C	B	Fw	r			
FCD100S	1	100	200	170	170	125	4	650000	1100000	25
FCD110S3	1	110	220	160	180	138	3.5	795000	1370000	28
FCD110S7	2	110	220	175	180	138	3.5	715000	1190000	29
JC6	2	110	220	180	180	138	3.5	625000	1190000	30
FCD110S9	1	110	220	180	183	138	3.5	795000	1370000	30
FCD110S11	2	110	220	180	185	138	3.5	795000	1370000	31
JC36	7	120	220	145	171	146	1	700000	1120000	22
FCD120S20	7	120	220	160	229.5	146	1	755000	1230000	24
FCD120S21	5	120	220	160	185.5	146	1	815000	1320000	24
FCD120S22	8	120	220	160	242	144	1			
FCD120S9	1	120	220	180	183	142	3.5	835000	1580000	26
JC30 • 32	7	120	230	150	171	147	1	755000	1300000	30
JC34	2	120	230	165	170	150	3	935000	1440000	31
JC26	7	120	240	160	193	150	1	850000	1420000	35
JC12	2	120	240	176	180	150	4	805000	1580000	38
JC17	7	120	240	170	218	150	1	815000	1580000	40
FCD120S4	1	120	240	180	183	150	4	855000	1470000	35
FCD120S5	2	120	240	180	185	150	4	855000	1470000	35



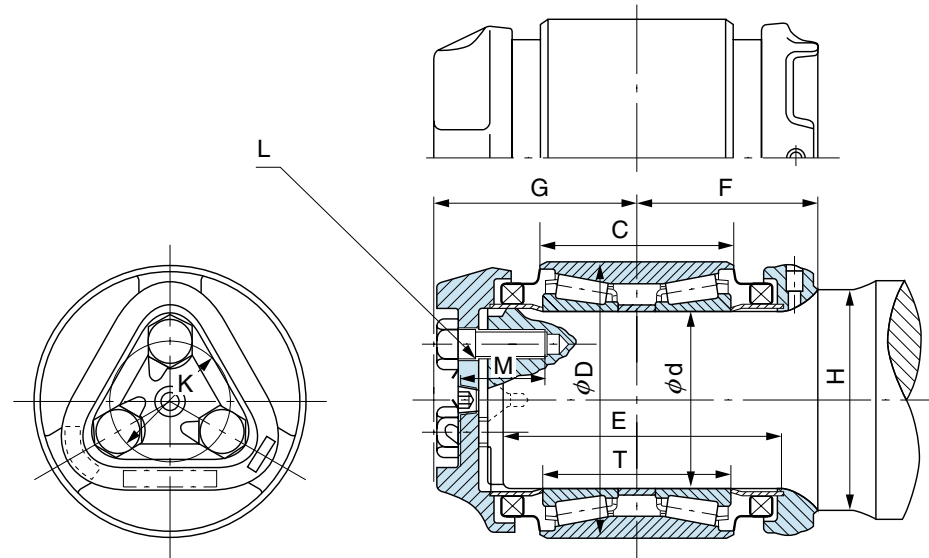


## Journal Bearings (Cylindrical roller, Rib on inner ring)

1N=0.102 kgf

Bearing No.	Design No.	Boundary dimensions (mm)						Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	C	B	Fw	r			
FCD120S6	6	120	260	158	135	154	0.5	740000	1100000	36
FCD120S3	2	120	260	190	195	154	4	1100000	1840000	50
JC38	2	125	235	165	170	150	3	940000	1460000	32
FCD130S8	7	130	240	160	229.5	158	1	855000	1350000	34
JC21	3	130	260	180	205.5	163	4	825000	1610000	46
FCD130S6	2	130	260	180	185	163	4	1030000	1610000	45
JC37	2	130	265	166	166	161.5	3	1140000	1710000	43
FCD130S3	4	130	270	153	165	160.5	3	715000	1110000	37
JC16	2	130	280	210	210	167	5	1070000	2090000	61

# Journal Bearings (Tapered roller)

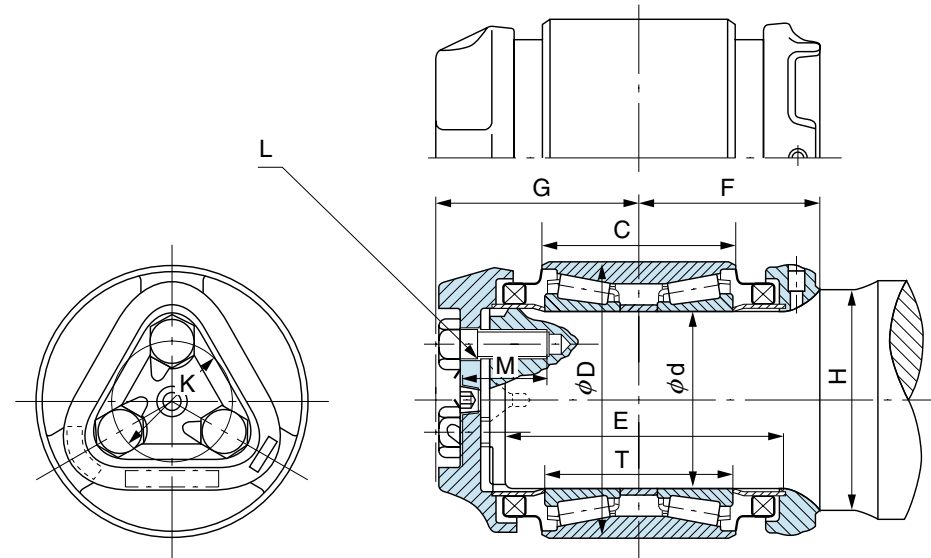


1N=0.102 kgf

Bearing No.	Axle class	Size of journal	Bearing No.	Boundary dimensions mm (inch)					
				d	D	C	T	E	F
JT 9	–	110	JT 9	110	175	130	125	206	130
JT14	–	110	JT14	110	190	150	145	–	150
JT10	–	120	JT10	120	195	142	136	217	142
JT12	–	120	JT12	120	220	155	155	–	155
JT11	–	130	JT11	130	208	152	146	227	152



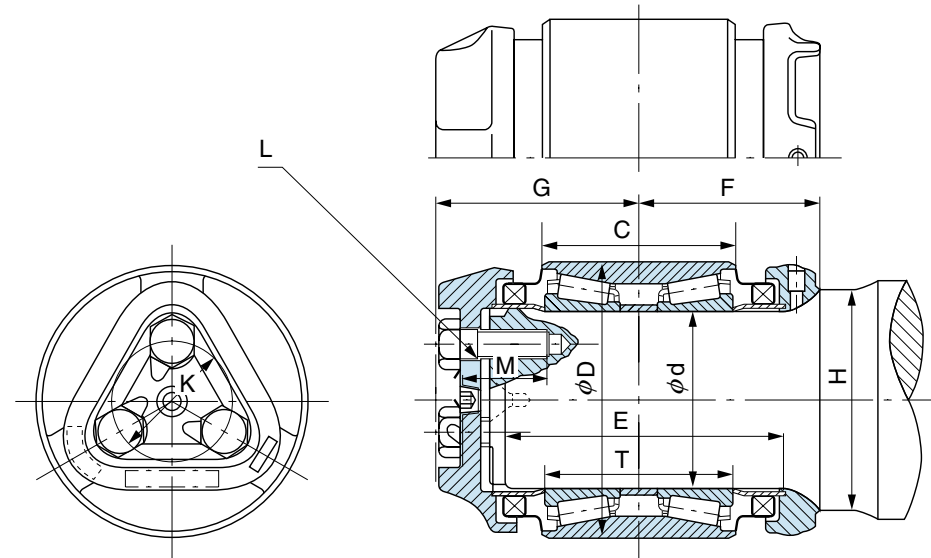
# Journal Bearings (Tapered roller)



1N=0.102 kgf

Bearing No.	Axle class	Size of journal	Bearing No.	Boundary dimensions mm (inch)					
				d	D	C	T	E	F
AP50B	B	4-1/4 × 8	HM120848N/ HM120817XDN	101.600 (4)	165.100 (6-1/2)	144.300 (4-1/12)	107.950 (4-1/4)	200.025 (7-5/8)	117.5 (4-5/8)
AP50C	C	5 × 9	HM124646N/ HM124618XDN	119.062 (4-11/160)	195.262 (7-11/16)	142.875 (5-5/8)	136.525 (5-3/8)	217.488 (8-9/16)	134.9 (5-5/16)
AP50D	D	5-1/2 × 10	HM127446N/ HM127415XDN	131.762 (5-3/16)	207.962 (8-3/16)	152.400 (6)	146.050 (5-3/4)	227.013 (8-15/16)	139.7 (5-1/2)

# Journal Bearings (Tapered roller)



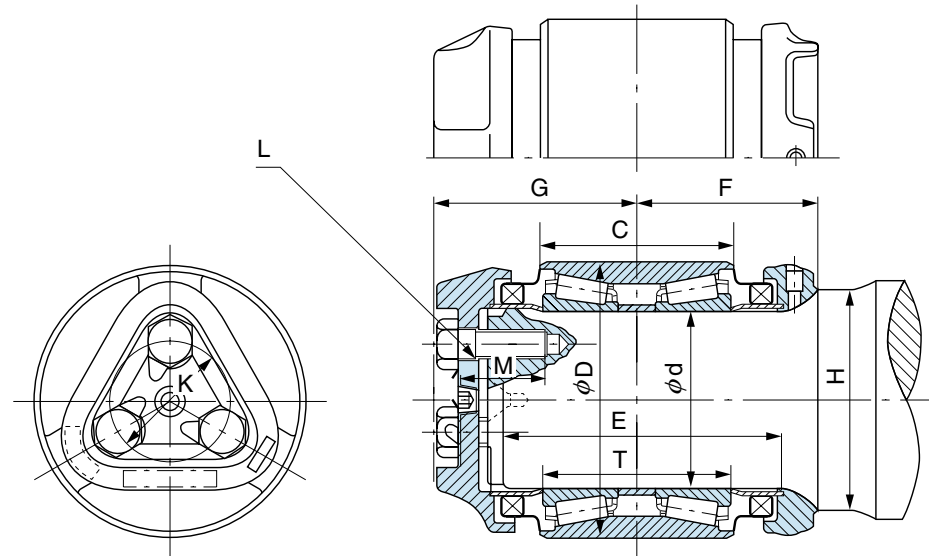
1N=0.102 kgf

Bearing No.	Axle class	Size of journal	Bearing No.	Boundary dimensions mm (inch)					
				d	D	C	T	E	F
AP50E	E	6 ×11	HM129848N/ HM129814XDN	144.462 (5-11/16)	220.662 (8-11/16)	163.512 (6-7/16)	155.575 (6-1/8)	241.300 (9-1/2)	150.8 (5-15/16)
AP50F	F	6-1/2 ×12	HM133444N/ HM133416XDN	157.162 (6-3/16)	252.412 (9-15/16)	184.150 (7-1/4)	177.800 (7)	266.700 (10-1/2)	163.5 (6-7/16)
AP50G	G	7 ×12	HM136948N/ HM136916XDN	177.800 (7)	276.225 (10-7/8)	185.739 (7-5/16)	180.975 (7-1/8)	254.000 (10)	150.8 (5-15/16)





## Journal Bearings (Tapered roller)

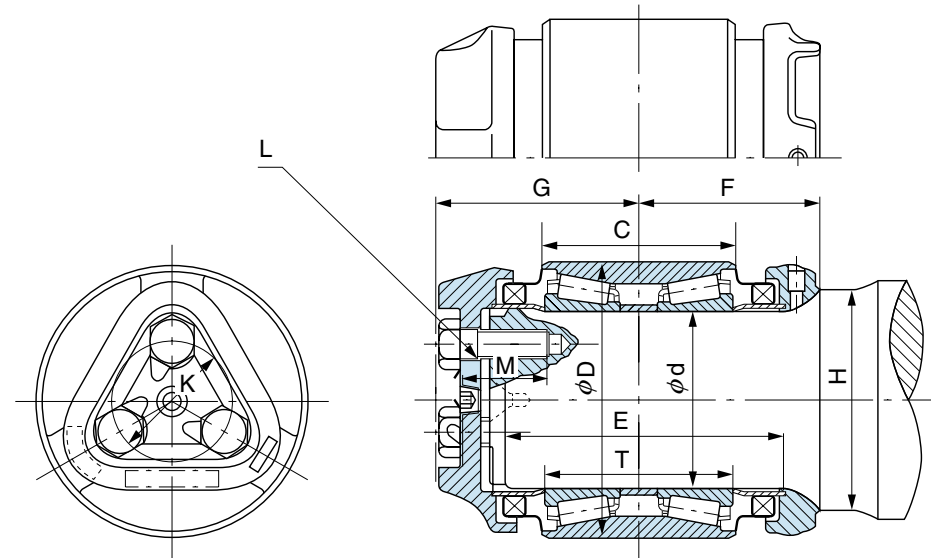


1N=0.102 kgf

Bearing No.	Boundary dimensions mm (inch)					Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
	G	H	K	L	M			
JT 9	140.5	155	75	M22	50	375000	935000	22
JT14	134.4	150	75	M22	60	600000	1110000	25
JT10	149	155	75	M22	50	495000	1250000	27
JT12	159.4	150	75	M22	60	840000	1540000	39
JT11	150.7	165	89	M22	50	510000	1250000	30



# Journal Bearings (Tapered roller)

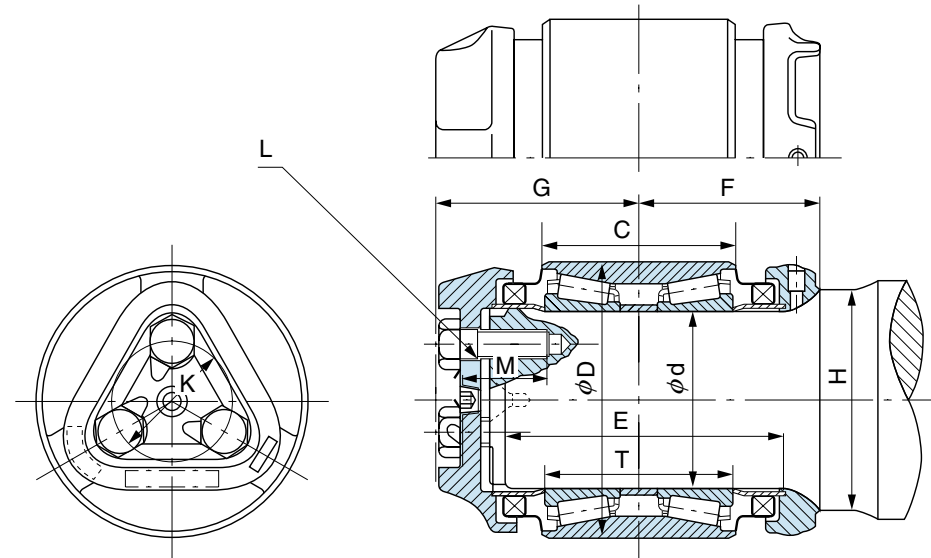


1N=0.102 kgf

Bearing No.	Boundary dimensions mm (inch)					Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
	G	H	K	L	M			
AP50B	130.2 (5-1/8)	127 (5)	61.9 (2-7/16)	3/4-10UNC-2A	44.45 (1-3/4)	390000	800000	20
AP50C	147.6 (5-13/16)	149.2 (5-7/8)	76.2 (3)	7/8-9UNC-2A	50.80 (2)	590000	1250000	33
AP50D	149.2 (5-7/8)	161.9 (6-3/8)	88.9 (3-1/2)	7/8-9UNC-2A	50.80 (2)	590000	1250000	37



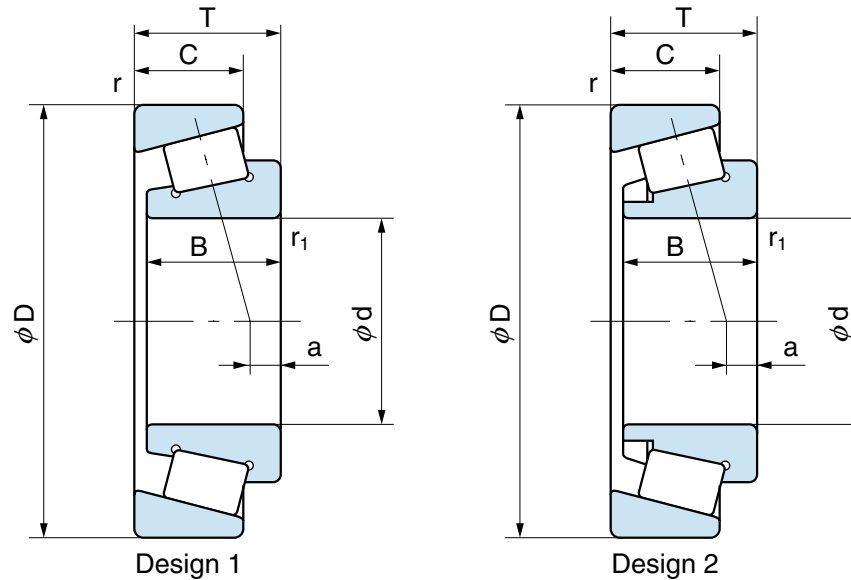
## Journal Bearings (Tapered roller)



1N=0.102 kgf

Bearing No.	Boundary dimensions mm (inch)					Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
	G	H	K	L	M			
AP50E	165.1 (6-1/2)	177.8 (7)	98.4 (3-7/8)	1-8UNC-2A	57.15 (2-1/4)	650000	1480000	47
AP50F	176.2 (6-15/16)	190.5 (7-1/2)	108.0 (4-1/4)	1-1/8-7UNC-2A	63.50 (2-1/2)	900000	1930000	66
AP50G	177.8 (7)	203.2 (8)	117.5 (4-5/8)	1-1/4-7UNC-2A	69.85 (2-3/4)	975000	2170000	86

# Bearings for Pinion

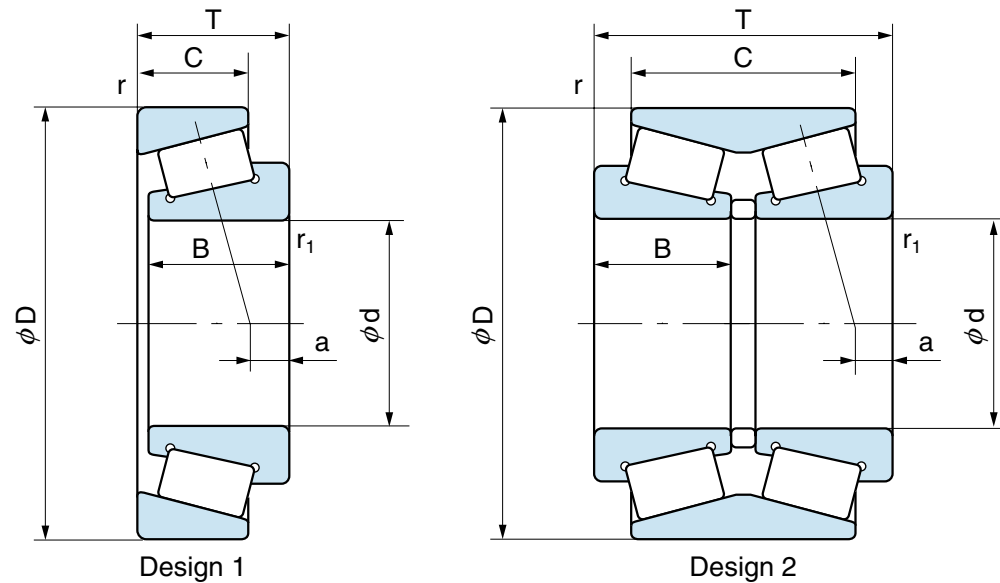


1N=0.102 kgf

Bearing No.	Design No.	Boundary dimensions (mm)							Load center (mm)		Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	T	C	B	r	r <sub>1</sub>	a <sup>(1)</sup>	e			
QT9	1	70	150	38	25	35	2.5	3	-8.2	0.81	165000	200000	3
QT9B-2	2	70	150	38	25	35	2.5	3	-8.2	0.81	165000	200000	3
QT31	2	70	150	40	27	37	2.5	3	-6.5	0.81	175000	205000	3
30315ED	1	75	160	40	27	37	2.5	3	7.6	0.35	212000	238000	3
QT7	1	75	160	40	27	37	2.5	3	-10.2	0.81	192000	218000	3
TSM15ED	2	75	175	52	40	50	3	3.5	8.1	0.46	282000	320000	6
QT4	1	80	170	42.5	28	39	3	3.5	-10.0	0.81	221000	256000	4
QT18	1	85	180	45.5	29	42	3	4	-9.5	0.81	244000	284000	5

Note: (1) Minus value of load center indicates center is outside cone backface.

# Bearings for Gearwheel

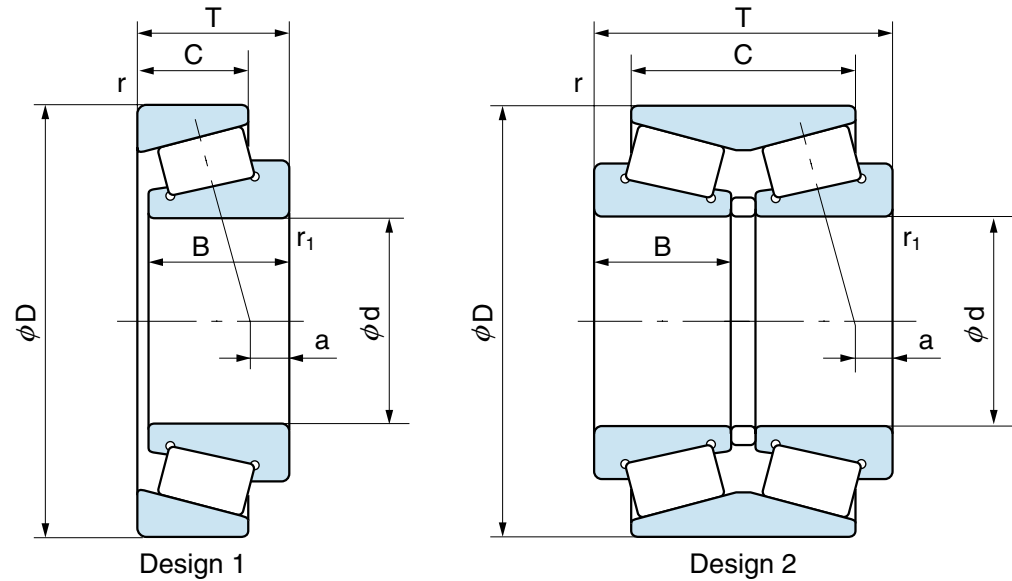


1N=0.102 kgf

Bearing No.	Design No.	Boundary dimensions (mm)							Load center (mm)		Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	T	C	B	r	r <sub>1</sub>	a <sup>(1)</sup>	e			
32936ED	1	180	250	45	34	45	2	2.5	-3.7	0.39	325000	620000	
QT1	2	190	280	110	85	46	1	4	-23.0	0.67	575000	1170000	23
32038ED	1	190	290	64	48	64	2.5	3	2.4	0.37	550000	955000	14
QT6	2	190	300	110	85	46	1	4	-26.5	0.67	670000	1260000	27
QT29	1	193.675	282.575	50.8	36.513	47.625	2.5	3	-4.3	0.42	345000	605000	11
QT26	1	195	280	58	41	60	3.5	3.5	4.4	0.37	410000	745000	11
QT25	1	200	280	51	41	48	2.5	3	-3.6	0.37	345000	680000	10
32940ED	1	200	280	51	41	48	2.5	3	-3.6	0.37	345000	680000	10
QT13	2	200	290	110	85	46	1	4	-26.5	0.67	605000	1280000	21

Note: (1) Minus value of load center indicates center is outside cone backface.

# Bearings for Gearwheel

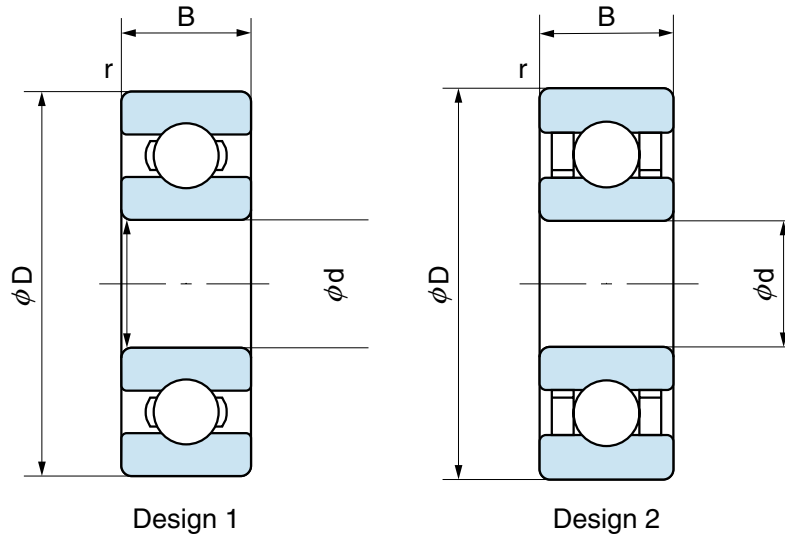


1N=0.102 kgf

Bearing No.	Design No.	Boundary dimensions (mm)							Load center (mm)		Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	T	C	B	r	r <sub>1</sub>	a <sup>(1)</sup>	e			
QT28	2	202.5	290	110	85	46	0.6	4	-27.3	0.67	605000	1270000	21
QT33	1	205	283	51	41	48	2.5	3	-3.6	0.37	355000	695000	10
QT5	1	210	320	70	56	66	3.5	3.5	2.5	0.40	630000	1110000	19
QT24	1	210	320	70	56	75	3.5	3.5	2.5	0.40	630000	1110000	20
QT19	1	214	330	70	56	70	3.5	3.5	1.5	0.40	670000	1190000	21
QT32	1	218	315	65	49	70	2.5	3	4.1	0.37	605000	1180000	16

Note: (1) Minus value of load center indicates center is outside cone backface.

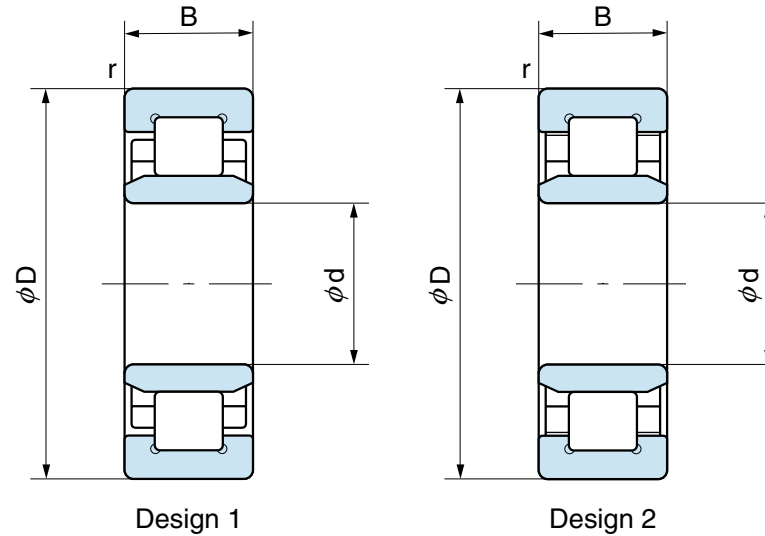
# Ball Bearings for Traction Motor



1N=0.102 kgf

Bearing No.	Design No.	Boundary dimensions (mm)					Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	C	B	r			
6311JT	1	55	120	29	29	2	71500	44500	1.4
6312JT	1	60	130	31	31	2.1	81500	52000	1.7
6314JT	1	70	150	35	35	2.1	104000	68000	2.5
6219JT	1	95	170	32	32	2.1	109000	815000	2.6
6219T	2	95	170	32	32	2.1	109000	815000	3.0

# Cylindrical Roller Bearings for Traction Motor

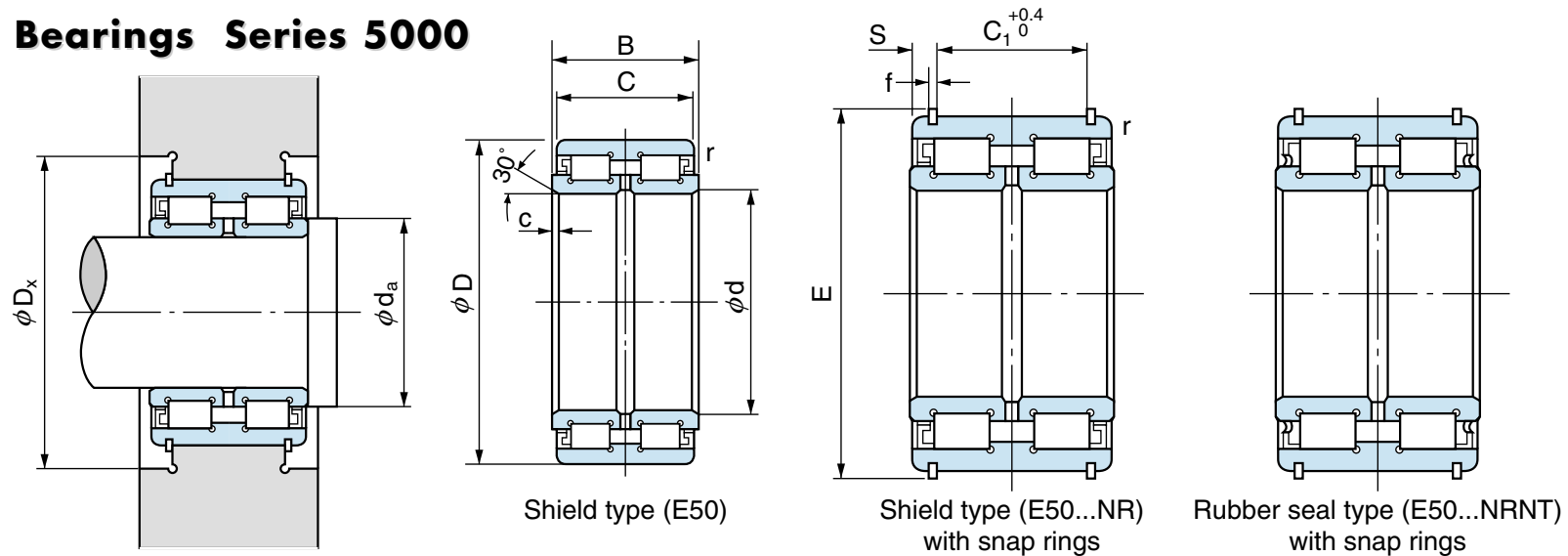


1N=0.102 kgf

Bearing No.	Design No.	Boundary dimensions (mm)				Basic dynamic load rating Cr(N)	Basic static load rating Cor(N)	Mass (kg) Reference
		d	D	B	r			
NU214T	1	70	125	24	1.5	83000	95000	1.5
NU314T	1	70	150	35	2.1	158000	220000	3.1
NU315T	1	75	160	37	2.1	190000	205000	4.0
NU316T	1	80	170	39	2.1	190000	207000	4.6
NU316TSL	2	80	170	39	2.1			
NU219T	1	95	170	32	2.1	165000	195000	3.5
NU219TS	2	95	170	32	2.1			
NU220T	1	100	180	34	2.1	183000	217000	4.3



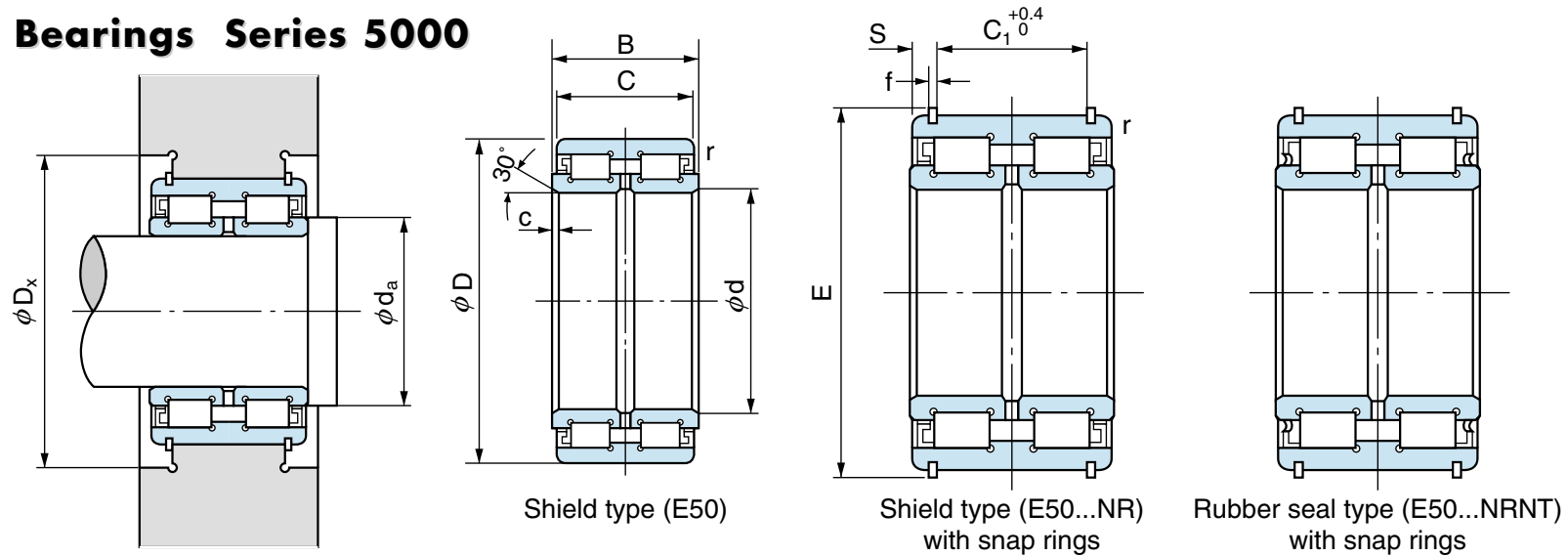
# Sheave Bearings Series 5000



Bearing No.			Boundary dimensions (mm)									
Without snap ring with shields	With snap rings with shields	With snap rings and rubber seals	d	D	B	C	r (min)	c	E	C <sub>1</sub>	S	f
E5008	E5008NR	E5008NRNT	40	68	38	37	0.6	1.5	71.8	28	4.5	2
E5009	E5009NR	E5009NRNT	45	75	40	39	0.6	1.5	78.8	30	4.5	2
E5010	E5010NR	E5010NRNT	50	80	40	39	0.6	1.5	83.8	30	4.5	2
E5011	E5011NR	E5011NRNT	55	90	46	45	0.6	2	94.8	34	5.5	2.5
E5012	E5012NR	E5012NRNT	60	95	46	45	0.6	2	99.8	34	5.5	2.5
E5013	E5013NR	E5013NRNT	65	100	46	45	0.6	2	104.8	34	5.5	2.5
E5014	E5014NR	E5014NRNT	70	110	54	53	0.6	2	117.4	42.18	5.41	2.41
E5015	E5015NR	E5015NRNT	75	115	54	53	0.6	2	127.1	42	5.5	2.5
E5016	E5016NR	E5016NRNT	80	125	60	59	0.6	2	137.1	48	5.5	2.5
E5017	E5017NR	E5017NRNT	85	130	60	59	0.6	2	142.1	48	5.5	2.5
E5018	E5018NR	E5018NRNT	90	140	67	66	0.6	2.5	151.8	54	6	2.5
E5019	E5019NR	E5019NRNT	95	145	67	66	0.6	2.5	156.8	54	6	2.5

Remark: The bearings must be mounted without a clearance between two separate inner rings.

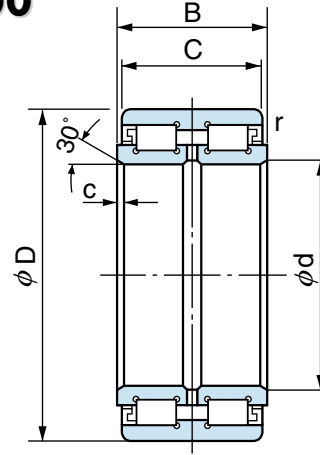
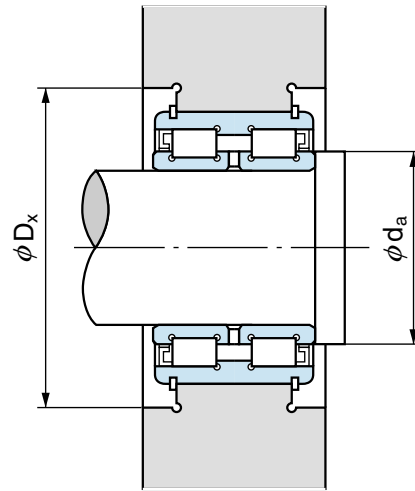
# Sheave Bearings Series 5000



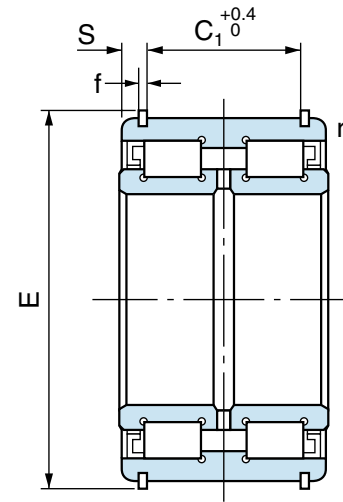
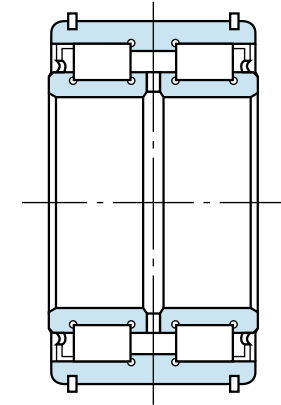
Bearing No.			Boundary dimensions (mm)									
Without snap ring with shields	With snap rings with shields	With snap rings and rubber seals	d	D	B	C	r (min)	c	E	C <sub>1</sub>	S	f
E5020	E5020NR	E5020NRNT	100	150	67	66	0.6	2.5	161.8	54	6	2.5
E5022	E5022NR	E5022NRNT	110	170	80	79	1	3	181.8	65	7	2.5
E5024	E5024NR	E5024NRNT	120	180	80	79	1	3	195.6	64.9	7.05	3.05
E5026	E5026NR	E5026NRNT	130	200	95	94	1	3	215.6	76.9	8.55	3.05
E5028	E5028NR	E5028NRNT	140	210	95	94	1	3	223.6	77	8.5	3
E5030	E5030NR	E5030NRNT	150	225	100	99	1	3.5	238.6	81	9	3
E5032	E5032NR	E5032NRNT	160	240	109	108	1.5	3.5	253.6	89	9.5	3
E5034	E5034NR	E5034NRNT	170	260	122	121	1.5	3.5	277.2	99	11	4
E5036	E5036NR	E5036NRNT	180	280	136	135	1.5	3.5	294	110	12.5	5
E5038	E5038NR	E5038NRNT	190	290	136	135	1.5	3.5	306	110	12.5	5
E5040	E5040NR	E5040NRNT	200	310	150	149	1.5	3.5	326	120	14.5	5
E5044	E5044NR	E5044NRNT	220	340	160	159	1.5	4	356	130	14.5	6

Remark: The bearings must be mounted without a clearance between two separate inner rings.

# Sheave Bearings Series 5000



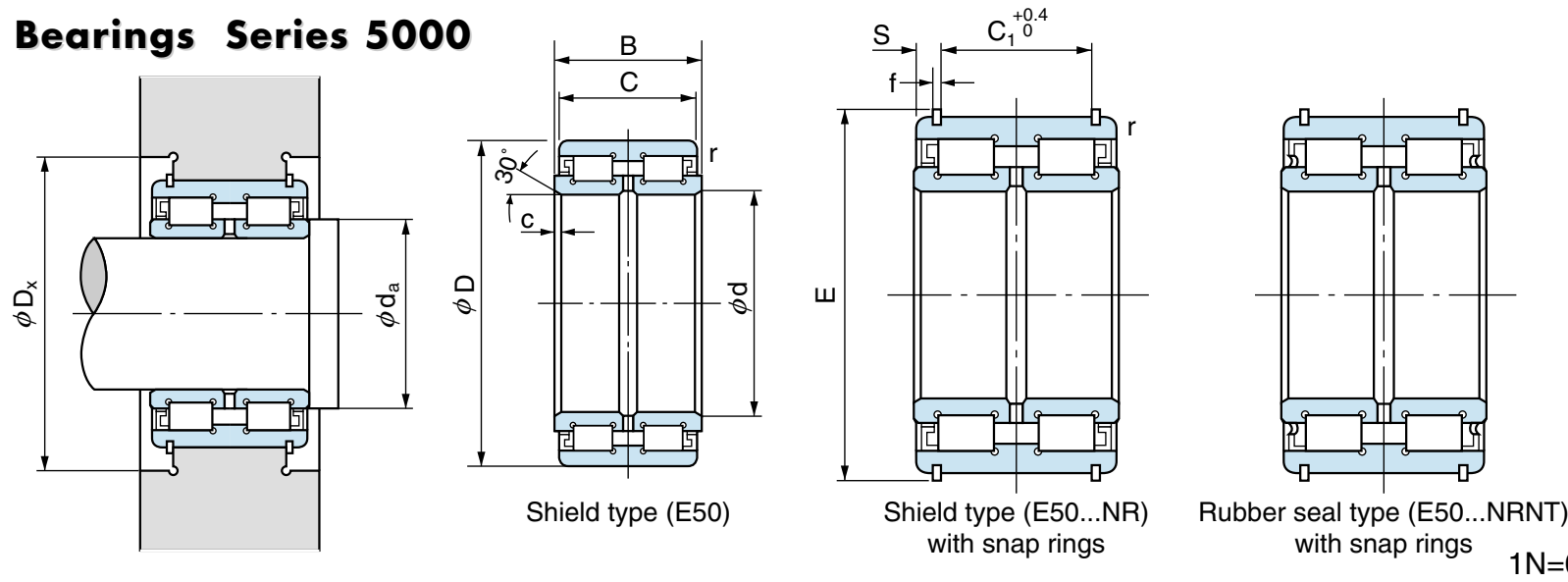
Shield type (E50)

Shield type (E50...NR)  
with snap ringsRubber seal type (E50...NRNT)  
with snap rings

Bearing No.			Boundary dimensions (mm)									
Without snap ring with shields	With snap rings with shields	With snap rings and rubber seals	d	D	B	C	r (min)	c	E	C <sub>1</sub>	S	f
E5048	E5048NR	E5048NRNT	240	360	160	159	1.5	4	376	130	14.5	6
E5052	E5052NR	E5052NRNT	260	400	190	189	2	5	416	154	17.5	7
E5056	E5056NR	E5056NRNT	280	420	190	189	2	5	440	154	17.5	7
E5060	—	—	300	460	218	216	2	5	480	176	20	8
E5064	—	—	320	480	218	216	2	5	500	176	20	8
E5068	—	—	340	520	243	241	2.5	6	544	194	23.5	8
E5072	—	—	360	540	243	241	2.5	6	564	194	23.5	10
E5076	—	—	380	560	243	241	2.5	6	584	194	23.5	10
E5080	—	—	400	600	272	270	2.5	6	630	210	30	12
E5084	—	—	420	620	272	270	2.5	6	650	210	30	12
E5088	—	—	440	650	280	278	3	8	680	210	34	12
E5092	—	—	460	680	300	298	3	8	710	230	34	12
E5096	—	—	480	700	300	298	3	8	730	230	34	12

Remark: The bearings must be mounted without a clearance between two separate inner rings.

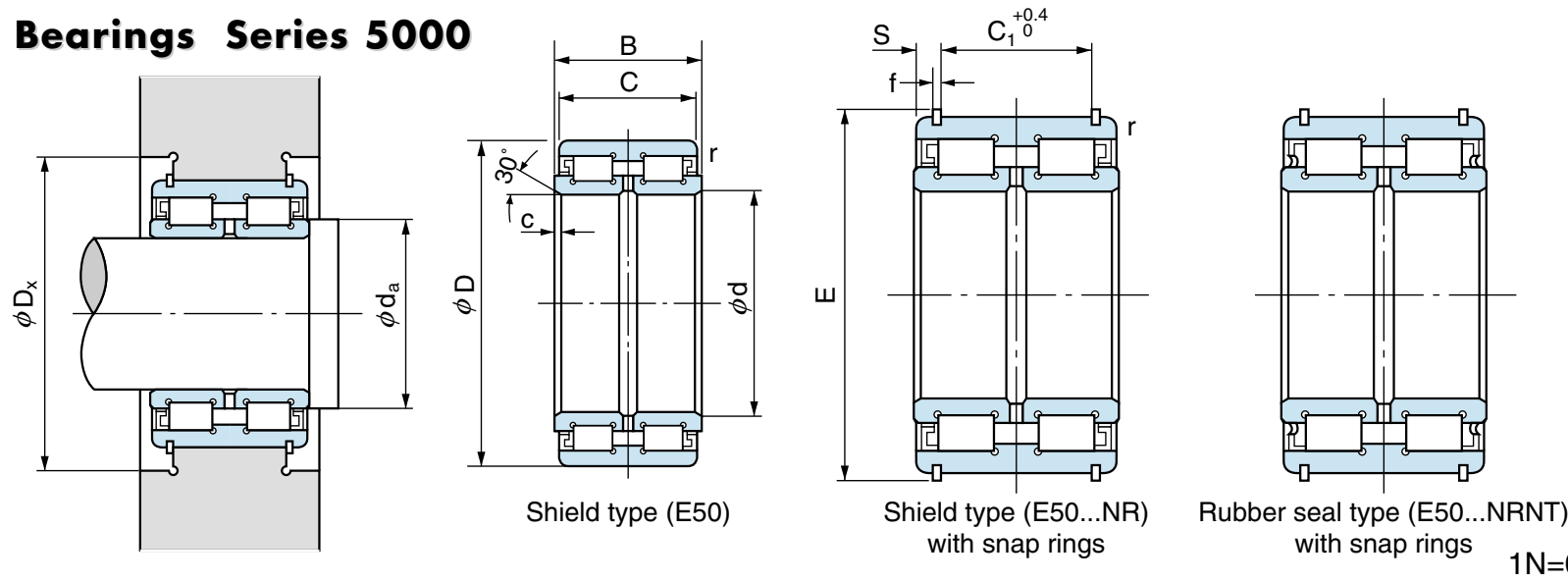
# Sheave Bearings Series 5000



Bearing No.			Basic load rating		Limiting speed	Abutment and fillet dimensions (mm)		Mass (kg)
Without snap ring with shields	With snap rings with shields	With snap rings and rubber seals	Cr (N)	Cor (N)	(rpm) Grease lubrication	da (min)	Dx (min)	
E5008	E5008NR	E5008NRNT	79000	125000	2500	46	80	0.55
E5009	E5009NR	E5009NRNT	95000	144000	2200	51	87	0.70
E5010	E5010NR	E5010NRNT	99500	158000	2000	56	92	0.75
E5011	E5011NR	E5011NRNT	117000	193000	1800	63	104	1.15
E5012	E5012NR	E5012NRNT	123000	208000	1650	68	109	1.20
E5013	E5013NR	E5013NRNT	128000	224000	1500	73	114	1.30
E5014	E5014NR	E5014NRNT	170000	285000	1400	78	127	1.90
E5015	E5015NR	E5015NRNT	177000	305000	1350	83	136	2.00
E5016	E5016NR	E5016NRNT	250000	430000	1250	88	146	2.65
E5017	E5017NR	E5017NRNT	255000	445000	1150	93	155	2.80
E5018	E5018NR	E5018NRNT	305000	540000	1100	100	165	3.70
E5019	E5019NR	E5019NRNT	310000	560000	1050	105	175	3.90

Remark: The bearings must be mounted without a clearance between two separate inner rings.

# Sheave Bearings Series 5000

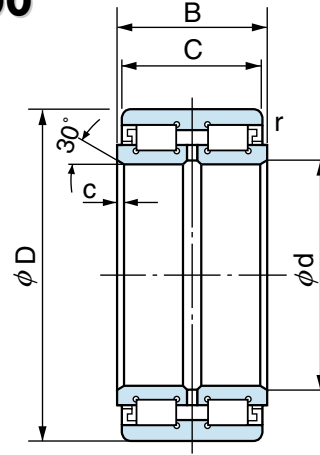
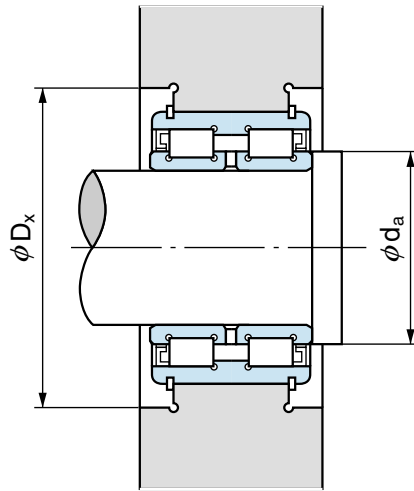


Bearing No.			Basic load rating		Limiting speed	Abutment and fillet dimensions (mm)		Mass (kg)
Without snap ring with shields	With snap rings with shields	With snap rings and rubber seals	Cr (N)	Cor (N)	(rpm) Grease lubrication	da (min)	Dx (min)	
E5020	E5020NR	E5020NRNT	315000	585000	1000	110	180	4.05
E5022	E5022NR	E5022NRNT	380000	695000	900	122	200	6.50
E5024	E5024NR	E5024NRNT	400000	750000	850	132	210	6.95
E5026	E5026NR	E5026NRNT	535000	1000000	750	142	230	10.5
E5028	E5028NR	E5028NRNT	540000	1070000	700	152	245	11.0
E5030	E5030NR	E5030NRNT	620000	1210000	650	164	260	13.5
E5032	E5032NR	E5032NRNT	715000	1390000	600	174	275	16.5
E5034	E5034NR	E5034NRNT	850000	1730000	600	184	300	22.5
E5036	E5036NR	E5036NRNT	1060000	2140000	550	194	311	30.0
E5038	E5038NR	E5038NRNT	1110000	2230000	500	204	323	31.5
E5040	E5040NR	E5040NRNT	1300000	2650000	500	214	343	40.5
E5044	E5044NR	E5044NRNT	1500000	3100000	450	236	378	52.0

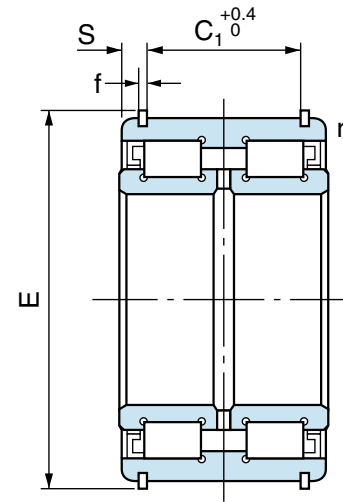
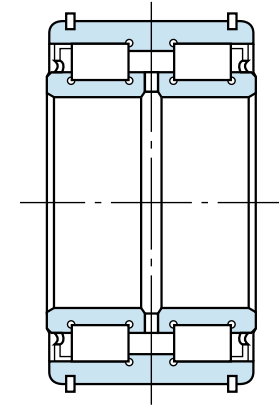
Remark: The bearings must be mounted without a clearance between two separate inner rings.



# Sheave Bearings Series 5000



Shield type (E50)

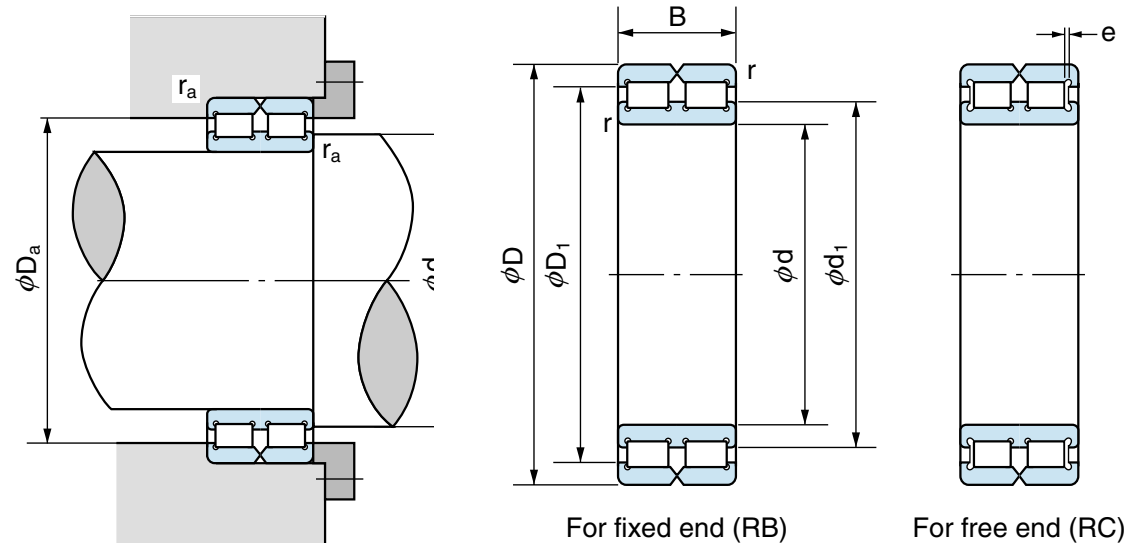
Shield type (E50...NR)  
with snap ringsRubber seal type (E50...NRNT)  
with snap rings

1N=0.102kgf

Bearing No.			Basic load rating		Limiting speed	Abutment and fillet dimensions (mm)		Mass (kg)
Without snap ring with shields	With snap rings with shields	With snap rings and rubber seals	Cr (N)	Cor (N)	(rpm) Grease lubrication	d <sub>a</sub> (min)	D <sub>x</sub> (min)	
E5048	E5048NR	E5048NRNT	1560000	3350000	400	256	398	55.5
E5052	E5052NR	E5052NRNT	2110000	4500000	350	280	438	85.0
E5056	E5056NR	E5056NRNT	2200000	4850000	350	300	462	90.9
E5060	—	—	2650000	5850000	350	320	508	130
E5064	—	—	2680000	6150000	300	340	528	135
E5068	—	—	3350000	7550000	300	362	577	180
E5072	—	—	3400000	7950000	250	382	597	190
E5076	—	—	3550000	8300000	250	402	617	200
E5080	—	—	4220000	1010000	250	422	666	265
E5084	—	—	4350000	1050000	230	442	686	275
E5088	—	—	4550000	1090000	220	464	719	310
E5092	—	—	5050000	1210000	200	484	749	365
E5096	—	—	5150000	1250000	200	504	769	380

Remark: The bearings must be mounted without a clearance between two separate inner rings.

## Sheave Bearings Series 4800/4900



1N=0.102kgf

Bearing No.		Boundary dimensions (mm)							Basic load rating	
For fixed end	For free end	d	D	B	d <sub>1</sub>	D <sub>1</sub>	r (min)	e <sup>(1)</sup>	Cr (N)	Cor (N)
RB4910	RC4910	50	72	22	58	63.5	0.6	1	49000	83000
RB4912	RC4912	60	85	25	69.5	76	1	1	68000	118000
RB4914	RC4914	70	100	30	81.5	88.5	1	1	105000	193000
RB4916	RC4916	80	110	30	92.5	99.5	1	1	113000	221000
RB4918	RC4918	90	125	35	103	111.5	1.1	1	150000	300000
RB4920	RC4920	100	140	40	116	125.5	1.1	1.5	194000	400000
RB4922	RC4922	110	150	40	124.5	134	1.1	1.5	202000	430000
RB4924	RC4924	120	165	45	138.5	148.5	1.1	2	226000	560000
RB4926	RC4926	130	180	50	148.5	160.5	1.5	2	262000	555000

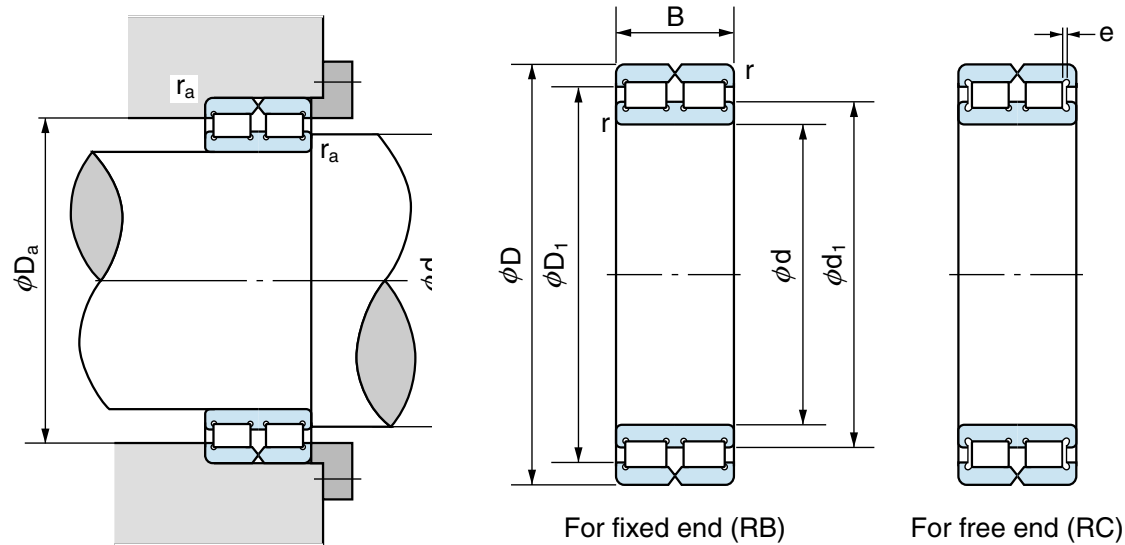
Note (1): Axial permissible movement for free end bearing.

Remark: The bearings must be mounted without a clearance between two separate inner rings.



# Sheave Bearings

## Series 4800/4900



For fixed end (RB)

For free end (RC)

1N=0.102kgf

Bearing No.		Boundary dimensions (mm)							Basic load rating	
For fixed end	For free end	d	D	B	d <sub>1</sub>	D <sub>1</sub>	r (min)	e <sup>(1)</sup>	Cr (N)	Cor (N)
RB4928	RC4928	140	190	50	159	171	1.5	2	271000	595000
RB4830	RC4830	150	190	40	164.5	173.5	1.1	1.5	233000	575000
RB4930	RC4930		210	60	171.5	186	2	2	405000	860000
RB4832	RC4832	160	200	40	176	185.5	1.1	1.5	242000	615000
RB4932	RC4932		220	60	184.5	199.5	2	2	425000	935000
RB4834	RC4834	170	215	45	186	196.5	1.1	2	264000	650000
RB4934	RC4934		230	60	193.5	208.5	2	2	435000	980000
RB4836	RC4836	180	225	46	199	209.5	1.1	2	273000	695000
RB4936	RC4936		250	69	205.5	223	2	2.5	550000	1230000

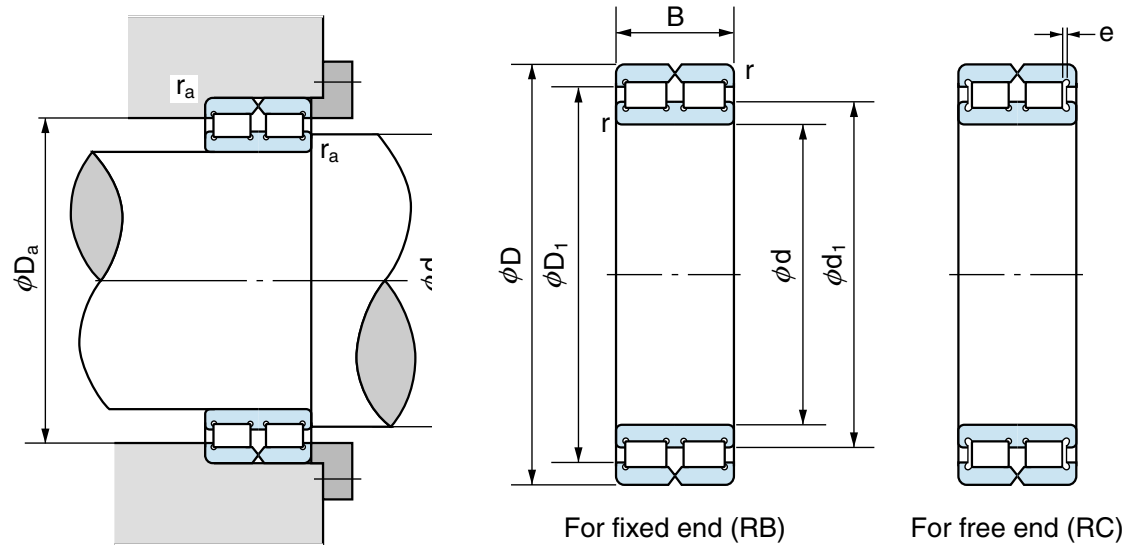
Note (1): Axial permissible movement for free end bearing.

Remark: The bearings must be mounted without a clearance between two separate inner rings.



# Sheave Bearings

## Series 4800/4900



For fixed end (RB)

For free end (RC)

1N=0.102kgf

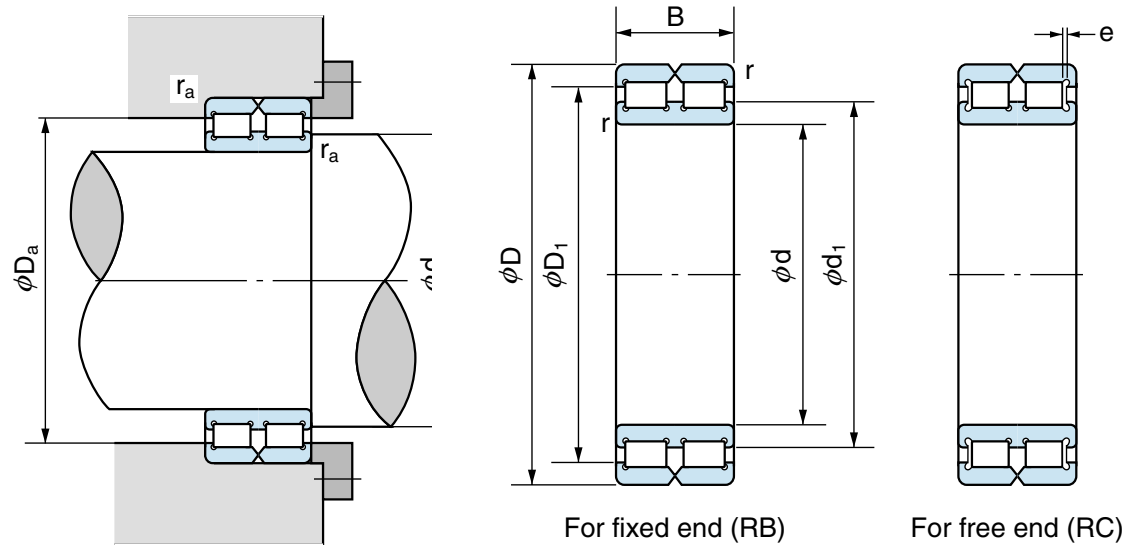
Bearing No.		Boundary dimensions (mm)							Basic load rating	
For fixed end	For free end	d	D	B	d <sub>1</sub>	D <sub>1</sub>	r (min)	e <sup>(1)</sup>	Cr (N)	Cor (N)
RB4838	RC4838	190	240	50	208	220	1.5	2	315000	785000
RB4938	RC4938		260	69	216	233	2	2.5	565000	1290000
RB4840	RC4840	200	250	50	218.5	230.5	1.5	2	320000	825000
RB4940	RC4940		280	80	231.5	251	2.1	3	665000	1500000
RB4844	RC4844	220	270	50	239.5	251.5	1.5	2	335000	905000
RB4944	RC4944		300	80	249	268	2.1	3	695000	1620000
RB4848	RC4848	240	300	60	260.5	275	2	2	510000	1330000
RB4948	RC4948		320	80	271.5	291	2.1	3	725000	1770000

Note (1): Axial permissible movement for free end bearing.

Remark: The bearings must be mounted without a clearance between two separate inner rings.

# Sheave Bearings

## Series 4800/4900



For fixed end (RB)

For free end (RC)

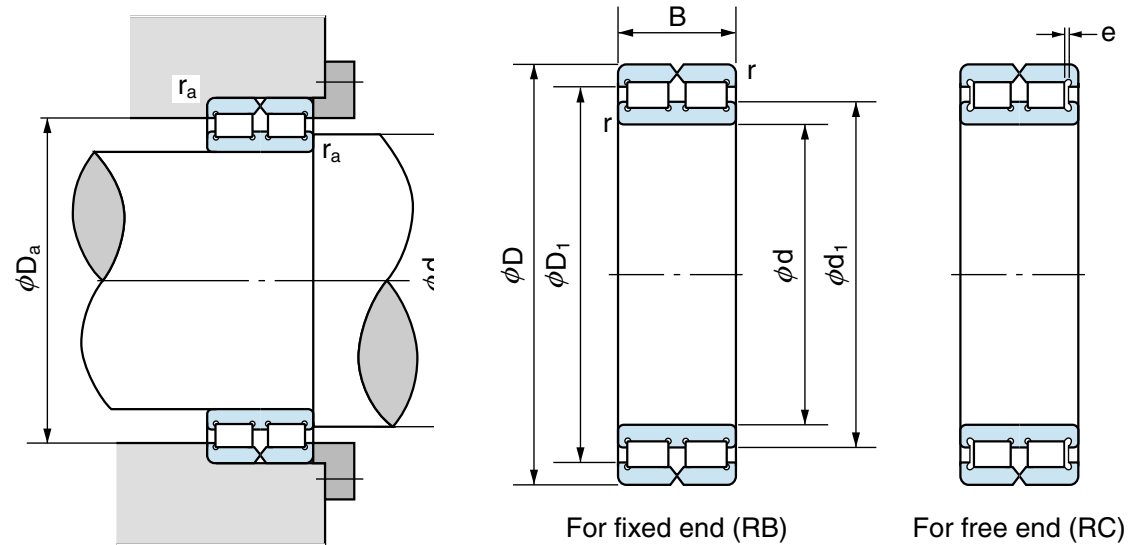
1N=0.102kgf

Bearing No.		Boundary dimensions (mm)							Basic load rating		
For fixed end	For free end	d	D	B	d <sub>1</sub>	D <sub>1</sub>	r (min)	e <sup>(1)</sup>	Cr (N)	Cor (N)	
RB4852	RC4852	260	320	60	283	297.5	2	2	530000	1450000	
RB4952	RC4952		360	100	296	321	2.1	3	1070000	2570000	
RB4856	RC4856	280	350	69	307.5	325	2	2.5	680000	1860000	
RB4956	RC4956		380	100	318	342.5	2.1	3	1110000	2780000	
RB4860	RC4860	300	380	80	329	348	2.1	3	800000	2160000	
RB4864	RC4864		320	400	80	352	371	2.1	3	830000	2310000
RB4868	RC4868	340	420	80	368	389	2.1	3	850000	2430000	
RB4872	RC4872		360	440	80	392	411.5	2.1	3	880000	2580000
RB4876	RC4876		380	480	100	419	446	2.1	3	1290000	3600000

Note (1): Axial permissible movement for free end bearing.

# Sheave Bearings

## Series 4800/4900

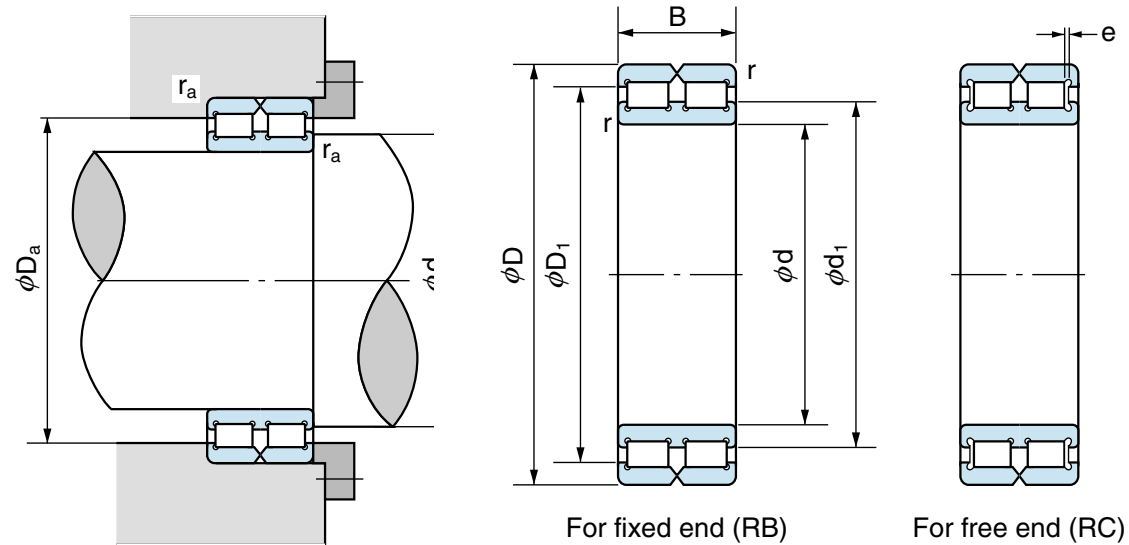


Bearing No.		Limiting speed (rpm)		Abutment and fillet dimensions (mm)			Mass (kg)	Basic No.
For fixed end	For free end	Grease lubrication	Oil lubrication	$d_a$ (min)	$D_a$ (max)	$r_a$ (max)		
RB4910	RC4910	2000	4000	56	66	0.6	0.30	4910
RB4912	RC4912	1700	3400	67	78	1	0.46	4912
RB4914	RC4914	1400	2800	77	93	1	0.78	4914
RB4916	RC4916	1250	2500	87	103	1	0.88	4916
RB4918	RC4918	1100	2200	98	117	1	1.35	4918
RB4920	RC4920	1000	2000	108	132	1	1.95	4920
RB4922	RC4922	900	1800	118	142	1	2.15	4922
RB4924	RC4924	850	1700	128	157	1	2.95	4924
RB4926	RC4926	750	1500	140	170	1.5	3.95	4926

Note (1): Axial permissible movement for free end bearing.

Remark: The bearings must be mounted without a clearance between two separate inner rings.

## Sheave Bearings Series 4800/4900



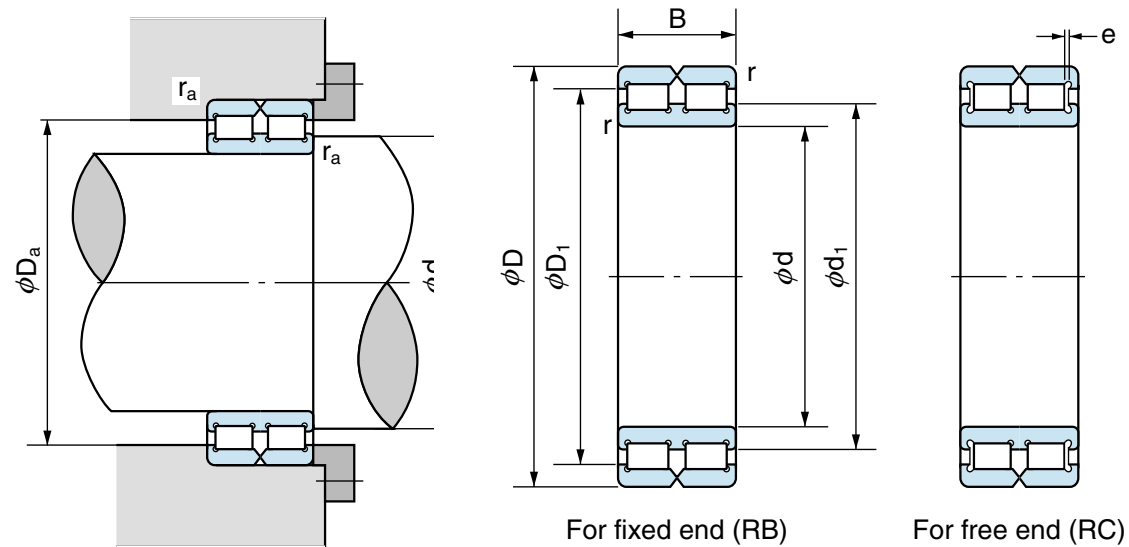
Bearing No.		Limiting speed (rpm)		Abutment and fillet dimensions (mm)			Mass (kg)	Basic No.
For fixed end	For free end	Grease lubrication	Oil lubrication	$d_a$ (min)	$D_a$ (max)	$r_a$ (max)		
RB4928	RC4928	700	1400	150	180	1.5	4.20	4928
RB4830	RC4830	650	1300	158	182	1	2.90	4830
RB4930	RC4930	650	1300	161	199	2	6.65	4930
RB4832	RC4832	650	1300	168	192	1	3.05	4832
RB4932	RC4932	600	1200	171	209	2	7.00	4932
RB4834	RC4834	600	1200	178	207	1	4.10	4834
RB4934	RC4934	600	1200	181	219	2	7.35	4934
RB4836	RC4836	550	1100	188	217	1	4.30	4836
RB4936	RC4936	550	1100	191	239	2	10.7	4936

Note (1): Axial permissible movement for free end bearing.

Remark: The bearings must be mounted without a clearance between two separate inner rings.

# Sheave Bearings

## Series 4800/4900



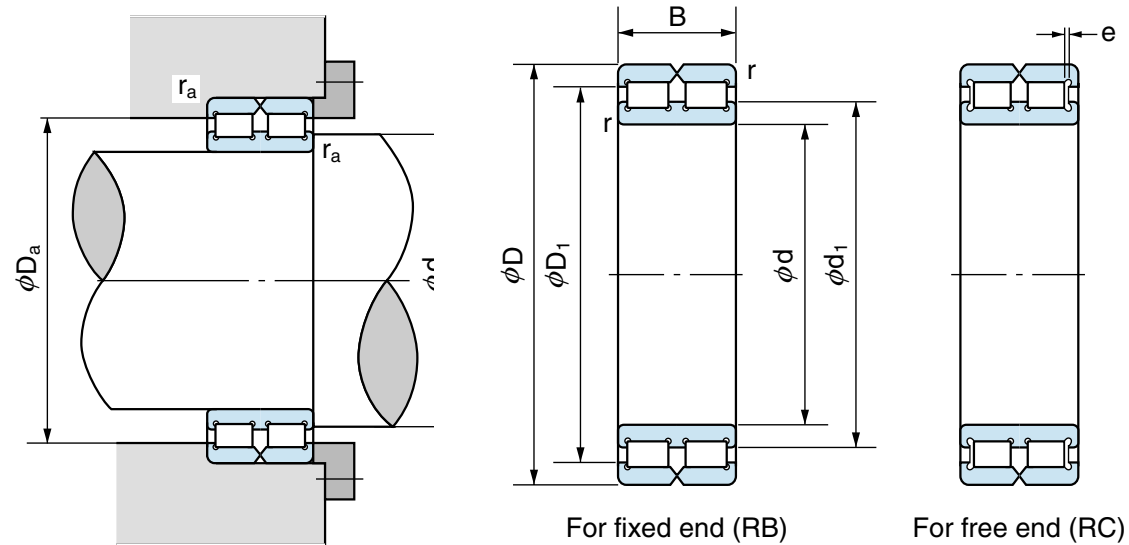
Bearing No.		Limiting speed (rpm)		Abutment and fillet dimensions (mm)			Mass (kg)	Basic No.
For fixed end	For free end	Grease lubrication	Oil lubrication	$d_a$ (min)	$D_a$ (max)	$r_a$ (max)		
RB4838	RC4838	550	1100	200	230	1.5	5.65	4838
RB4938	RC4938	500	1000	201	249	2	11.2	4938
RB4840	RC4840	500	1000	210	240	1.5	5.90	4840
RB4940	RC4940	500	1000	211	269	2	15.7	4940
RB4844	RC4844	450	900	230	260	1.5	6.40	4844
RB4944	RC4944	450	900	231	289	2	17.1	4944
RB4848	RC4848	400	800	251	289	2	10.2	4848
RB4948	RC4948	400	800	253	307	2	18.4	4948

Note (1): Axial permissible movement for free end bearing.

Remark: The bearings must be mounted without a clearance between two separate inner rings.

# Sheave Bearings

## Series 4800/4900



Bearing No.		Limiting speed (rpm)		Abutment and fillet dimensions (mm)			Mass (kg)	Basic No.
For fixed end	For free end	Grease lubrication	Oil lubrication	$d_a$ (min)	$D_a$ (max)	$r_a$ (max)		
RB4852	RC4852	400	800	271	309	2	11.0	4852
RB4952	RC4952	350	700	273	347	2	32.0	4952
RB4856	RC4856	350	700	291	339	2	16.0	4856
RB4956	RC4956	350	700	293	367	2	33.9	4956
RB4860	RC4860	350	700	313	367	2	23.0	4860
RB4864	RC4864	300	600	333	387	2	24.3	4864
RB4868	RC4868	300	600	353	407	2	25.6	4868
RB4872	RC4872	250	500	373	427	2	27.0	4872
RB4876	RC4876	250	500	393	467	2	45.3	4876

Note (1): Axial permissible movement for free end bearing.

Remark: The bearings must be mounted without a clearance between two separate inner rings.