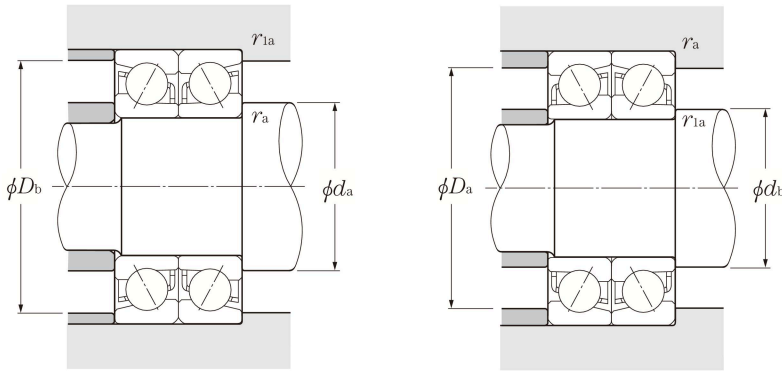


# Single and Duplex Angular Contact Ball Bearings



## Dynamic equivalent radial load

$$P_r = X F_r + Y F_a$$

Contact angle	e	Single, DT				DB, DF			
		$F_a/F_r \leq e$		$F_a/F_r > e$		$F_a/F_r \leq e$		$F_a/F_r > e$	
		X	Y	X	Y	X	Y	X	Y
30°	0.80	1	0	0.39	0.76	1	0.78	0.63	1.24
40°	1.14	1	0	0.35	0.57	1	0.55	0.57	0.93

## Static equivalent radial load

$$P_{or} = X_o F_r + Y_o F_a$$

Contact angle	Single, DT		DB, DF	
	$X_o$	$Y_o$	$X_o$	$Y_o$
30°	0.5	0.33	1	0.66
40°	0.5	0.26	1	0.52

For single and DT arrangement,  
When  $P_{or} < F_r$  use  $P_{or} = F_r$

Basic load ratings				Limiting speeds <sup>1)</sup>		Bearing numbers <sup>2)</sup>			Abutment and fillet dimensions					
dynamic (duplex) kN	static $C_{or}$	dynamic (duplex) kgf	static $C_{or}$	(duplex) $\text{min}^{-1}$		DB	DF	DT	mm					
$C_r$	$C_{or}$	$C_r$	$C_{or}$	grease	oil				$d_a$ min	$d_b$ min	$D_a$ max	$D_b$ max	$r_{as}$ max	$r_{1as}$ max
36.5	29.6	3 750	3 000	9 800	13 000	DB	DF	DT	35.5	34.5	56.5	57.5	1	0.6
33.5	27.1	3 400	2 760	8 600	11 000	DB	DF	DT	35.5	34.5	56.5	57.5	1	0.6
54.5	44.5	5 550	4 550	8 900	12 000	DB	DF	DT	37	34.5	65	67.5	1	0.6
50.0	41.0	5 100	4 200	7 700	10 000	DB	DF	DT	37	34.5	65	67.5	1	0.6
19.5	17.7	1 990	1 810	10 000	13 000	DB	DF	DT	39.5	39.5	50.5	52.5	0.6	0.3
28.5	25.1	2 900	2 560	9 400	13 000	DB	DF	DT	40.5	40.5	56.5	57.5	1	0.6
48.5	40.0	4 900	4 100	8 600	11 000	DB	DF	DT	42	39.5	65	67.5	1	0.6
44.0	36.5	4 500	3 750	7 500	10 000	DB	DF	DT	42	39.5	65	67.5	1	0.6
65.0	52.5	6 600	5 350	7 800	10 000	DB	DF	DT	43.5	40.5	71.5	74.5	1.5	1
59.5	48.5	6 100	4 950	6 800	9 000	DB	DF	DT	43.5	40.5	71.5	74.5	1.5	1
20.6	20.4	2 100	2 080	9 000	12 000	DB	DF	DT	44.5	44.5	57.5	59.5	0.6	0.3
30.5	29.2	3 100	2 970	8 300	11 000	DB	DF	DT	45.5	45.5	62.5	63.5	1	0.6
57.5	50.5	5 850	5 150	7 700	10 000	DB	DF	DT	47	44.5	73.0	75.5	1	0.6
52.0	46.0	5 300	4 700	6 700	8 900	DB	DF	DT	47	44.5	73	75.5	1	0.6
79.5	66.0	8 100	6 700	6 900	9 200	DB	DF	DT	48.5	45.5	81.5	84.5	1.5	1
73.0	60.5	7 400	6 200	6 000	8 000	DB	DF	DT	48.5	45.5	81.5	84.5	1.5	1
25.5	25.7	2 600	2 620	8 100	11 000	DB	DF	DT	49.5	49.5	63.5	65.5	0.6	0.3
36.0	35.5	3 700	3 600	7 500	10 000	DB	DF	DT	50.5	50.5	69.5	70.5	1	0.6
64.5	57.5	6 550	5 850	6 900	9 200	DB	DF	DT	52	49.5	78	80.5	1	0.6
58.5	52.5	5 950	5 350	6 000	8 000	DB	DF	DT	52	49.5	78	80.5	1	0.6
103	88.0	10 500	8 950	6 200	8 200	DB	DF	DT	53.5	50.5	91.5	94.5	1.5	1
95.0	80.5	9 650	8 250	5 400	7 200	DB	DF	DT	53.5	50.5	91.5	94.5	1.5	1
27.0	28.9	2 750	2 950	7 300	9 800	DB	DF	DT	54.5	54.5	67.5	69.5	0.6	0.3
38.5	40.0	3 900	4 100	6 800	9 100	DB	DF	DT	55.5	55.5	74.5	75.5	1	0.6
67.0	63.0	6 850	6 400	6 300	8 300	DB	DF	DT	57	54.5	83	85.5	1	0.6
60.5	57.0	6 200	5 850	5 500	7 300	DB	DF	DT	57	54.5	83	85.5	1	0.6
121	105	12 300	10 700	5 600	7 500	DB	DF	DT	60	55.5	100	104.5	2	1
111	96.0	11 300	9 850	4 900	6 500	DB	DF	DT	60	55.5	100	104.5	2	1
28.1	32.0	2 870	3 300	6 700	8 900	DB	DF	DT	60.5	60.5	74.5	75.5	1	0.6
50.5	52.5	5 150	5 350	6 300	8 400	DB	DF	DT	62	62	83	85.5	1	0.6
83.0	79.0	8 450	8 050	5 700	7 600	DB	DF	DT	63.5	60.5	91.5	94.5	1.5	1
75.0	72.0	7 650	7 350	5 000	6 600	DB	DF	DT	63.5	60.5	91.5	94.5	1.5	1
139	123	14 200	12 600	5 100	6 800	DB	DF	DT	65	60.5	110	114.5	2	1
128	113	13 000	11 600	4 500	5 900	DB	DF	DT	65	60.5	110	114.5	2	1

Note: For bearing series 79 and 70, inner rings are constructed with groove abutments on both sides. Therefore, the inner ring chamfer dimension  $r_1$  is identical to dimension  $r$ . Furthermore, the radius  $r_{1a}$  of the shaft corner roundness is likewise identical to  $r_{1a}$ .