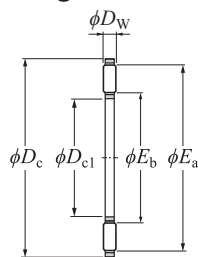


Needle Roller Bearings

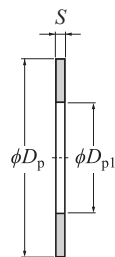
NTN

Thrust needle roller bearings

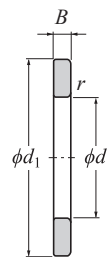
AXK11 type
AS11 type
WS811 type
GS811 type



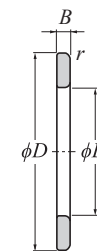
AXK type
(Thrust needle roller
and cage assembly)



AS type raceway
(Washer)



WS type raceway
(Inner ring)



GS type raceway
(Outer ring)

D_{cl} 10–140 mm

Boundary dimensions													Basic load rating		Fatigue load limit
D_{cl} E11	D_c c12	D_w 0 -0.010	D_p e13	D_{p1} E12	S^2 ± 0.05	mm d	d_1	D	D_1	B	r_s min ¹⁾		dynamic C_a	static C_{0a}	N C_u
10	24	2	24	10	1	10	24	24	10	2.75	0 -0.060	0.3	9 150	25 300	3 100
12	26	2	26	12	1	12	26	26	12	2.75	0 -0.060	0.3	9 850	28 900	3 500
15	28	2	28	15	1	15	28	28	16	2.75	0 -0.060	0.3	11 300	36 000	4 400
17	30	2	30	17	1	17	30	30	18	2.75	0 -0.060	0.3	11 900	39 500	4 800
20	35	2	35	20	1	20	35	35	21	2.75	0 -0.060	0.3	13 200	46 500	5 650
25	42	2	42	25	1	25	42	42	26	3	0 -0.060	0.6	14 600	58 000	7 050
30	47	2	47	30	1	30	47	47	32	3	0 -0.060	0.6	16 300	69 500	8 500
35	52	2	52	35	1	35	52	52	37	3.5	0 -0.075	0.6	17 800	81 500	9 900
40	60	3	60	40	1	40	60	60	42	3.5	0 -0.075	0.6	27 400	110 000	13 500
45	65	3	65	45	1	45	65	65	47	4	0 -0.075	0.6	29 800	128 000	15 600
50	70	3	70	50	1	50	70	70	52	4	0 -0.075	0.6	31 500	143 000	17 400
55	78	3	78	55	1	55	78	78	57	5	0 -0.075	0.6	38 000	186 000	22 700
60	85	3	85	60	1	60	85	85	62	4.75	0 -0.075	1	44 500	234 000	28 600
65	90	3	90	65	1	65	90	90	67	5.25	0 -0.075	1	46 500	254 000	31 000
70	95	4	95	70	1	70	95	95	72	5.25	0 -0.075	1	53 500	253 000	31 000
75	100	4	100	75	1	75	100	100	77	5.75	0 -0.075	1	55 000	266 000	32 500
80	105	4	105	80	1	80	105	105	82	5.75	0 -0.075	1	56 500	279 000	34 000
85	110	4	110	85	1	85	110	110	87	5.75	0 -0.075	1	57 500	291 000	35 500
90	120	4	120	90	1	90	120	120	92	6.5	0 -0.090	1	70 500	390 000	46 500
100	135	4	135	100	1	100	135	135	102	7	0 -0.090	1	90 000	550 000	64 000
110	145	4	145	110	1	110	145	145	112	7	0 -0.090	1	93 500	590 000	67 000
120	155	4	155	120	1	120	155	155	122	7	0 -0.090	1	99 000	650 000	72 000
130	170	5	170	130	1	130	170	170	132	9	0 -0.090	1	140 000	900 000	97 000
140	180	5	180	140	1	140	178	180	142	9.5	0 -0.090	1	145 000	960 000	102 000

1) Smallest allowable dimension for chamfer dimension r .
2) The measured load is 2.04 N or above.

Needle Roller Bearings

NTN

Allowable speed		Number				Approx. dimension		Mass			
min ⁻¹		Thrust needle roller and cage assembly				mm		kg (approx.)			
Grease lubrication	Oil lubrication	Washer	Inner ring	Outer ring		E_b	E_a	AXK11	AS11	WS811 WS812 WS893	GS811 GS812 GS893
3 500	14 000	AXK1100	AS1100	WS81100	GS81100	12.3	21.7	0.0028	0.0029	0.0081	0.0081
3 300	13 000	AXK1101	AS1101	WS81101	GS81101	14.3	23.7	0.0030	0.0033	0.0090	0.0090
2 800	11 000	AXK1102	AS1102	WS81102	GS81102	17.2	26.5	0.0035	0.0034	0.0095	0.0090
2 500	10 000	AXK1103	AS1103	WS81103	GS81103	19.2	28.5	0.0040	0.0038	0.010	0.010
2 100	8 500	AXK1104	AS1104	WS81104	GS81104	21.3	31.3	0.0050	0.0051	0.014	0.013
1 800	7 000	AXK1105	AS1105	WS81105	GS81105	29.5	39.4	0.0070	0.0070	0.021	0.020
1 500	6 000	AXK1106	AS1106	WS81106	GS81106	34.5	44.4	0.0080	0.0081	0.024	0.022
1 400	5 500	AXK1107	AS1107	WS81107	GS81107	39.5	49.4	0.010	0.0091	0.032	0.029
1 200	4 700	AXK1108	AS1108	WS81108	GS81108	44.2	56.2	0.019	0.012	0.043	0.040
1 100	4 300	AXK1109	AS1109	WS81109	GS81109	50.5	62.4	0.021	0.014	0.054	0.050
1 000	3 900	AXK1110	AS1110	WS81110	GS81110	55.5	67.4	0.024	0.015	0.059	0.054
900	3 500	AXK1111	AS1111	WS81111	GS81111	61.0	74.9	0.031	0.019	0.094	0.087
800	3 200	AXK1112	AS1112	WS81112	GS81112	66.0	81.9	0.039	0.022	0.106	0.099
750	3 000	AXK1113	AS1113	WS81113	GS81113	71.0	86.9	0.040	0.024	0.125	0.117
750	2 900	AXK1114	AS1114	WS81114	GS81114	75.5	91.4	0.060	0.025	0.134	0.124
700	2 700	AXK1115	AS1115	WS81115	GS81115	80.5	96.4	0.061	0.027	0.155	0.144
650	2 600	AXK1116	AS1116	WS81116	GS81116	84.4	100.3	0.063	0.029	0.164	0.152
600	2 400	AXK1117	AS1117	WS81117	GS81117	90.5	106.4	0.067	0.030	0.173	0.161
600	2 300	AXK1118	AS1118	WS81118	GS81118	96.5	116.4	0.086	0.039	0.252	0.238
500	2 000	AXK1120	AS1120	WS81120	GS81120	107.5	131.4	0.112	0.051	0.355	0.338
480	1 900	AXK1122	AS1122	WS81122	GS81122	115.5	139.4	0.122	0.055	0.385	0.366
430	1 700	AXK1124	AS1124	WS81124	GS81124	125.5	149.4	0.131	0.059	0.415	0.395
400	1 600	AXK1126	AS1126	WS81126	GS81126	136.0	164.0	0.205	0.074	0.666	0.637
380	1 500	AXK1128	AS1128	WS81128	GS81128	146.0	174.0	0.219	0.079	0.708	0.717