

**THRUST BEARINGS**

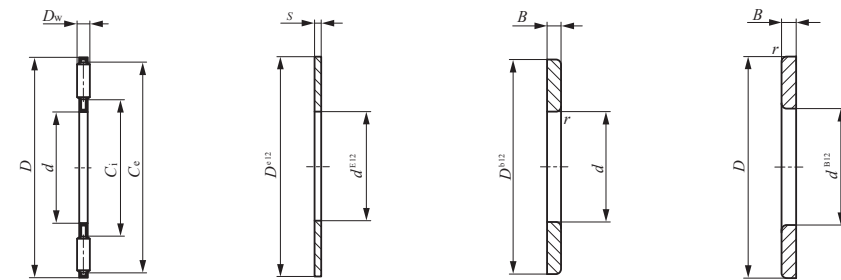
Thrust Needle Roller Bearings



Shaft dia. 10 – 85mm

Shaft dia. mm	Identification number						
	Thrust needle roller bearing	Mass (Ref.) g	Thrust washer	Mass (Ref.) g	Inner ring	Outer ring	Mass (Ref.) g
10	NTB 1024	3.3	AS 1024	2.9	WS 1024	GS 1024	8
12	NTB 1226	3.8	AS 1226	3.2	WS 1226	GS 1226	8.9
15	NTB 1528	4.1	AS 1528	3.4	WS 1528	GS 1528	9.3
16	NTB 1629	4.3	AS 1629	3.6	WS 1629	GS 1629	9.8
17	NTB 1730	4.5	AS 1730	3.7	WS 1730	GS 1730	10.2
18	NTB 1831	4.7	AS 1831	3.9	WS 1831	GS 1831	10.7
20	NTB 2035	6.1	AS 2035	5	WS 2035	GS 2035	13.8
25	NTB 2542	8.2	AS 2542	6.9	WS 2542	GS 2542	21
30	NTB 3047	9.4	AS 3047	7.9	WS 3047	GS 3047	24
35	NTB 3552	10.6	AS 3552	8.9	WS 3552	GS 3552	31.5
40	NTB 40603	22	AS 4060	12.1	WS 4060	GS 4060	42.5
45	NTB 4565	24.5	AS 4565	13.3	WS 4565	GS 4565	53.5
50	NTB 5070	26.5	AS 5070	14.5	WS 5070	GS 5070	58.5
55	NTB 5578	33.5	AS 5578	18.5	WS 5578	GS 5578	93
60	NTB 6085	38.5	AS 6085	22	WS 6085	GS 6085	105
65	NTB 6590	41.5	AS 6590	23.5	WS 6590	GS 6590	124
70	NTB 7095	61	AS 7095	25	WS 7095	GS 7095	132
75	NTB 75100	65	AS 75100	26.5	WS 75100	GS 75100	153
80	NTB 80105	68.5	AS 80105	28	WS 80105	GS 80105	162
85	NTB 85110	72	AS 85110	29.5	WS 85110	GS 85110	170

Notes<sup>(1)</sup> Minimum allowable value of chamfer dimension  $r$   
<sup>(2)</sup> Allowable rotational speed applies to oil lubrication. For grease lubrication, a maximum of 25% of this value is allowable.



NTB AS WS GS

d	Boundary dimensions mm							Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Allowable rotational speed <sup>(2)</sup> min <sup>-1</sup>
	D	D <sub>w</sub>	s	B	r <sub>s min</sub> <sup>(1)</sup>	C <sub>i</sub>	C <sub>e</sub>			
10	24	2	1	2.75	0.3	14	22	7 820	23 900	15 000
12	26	2	1	2.75	0.3	16	24	8 340	26 900	13 000
15	28	2	1	2.75	0.3	18	26	8 830	29 900	12 000
16	29	2	1	2.75	0.3	19	27	9 070	31 400	11 000
17	30	2	1	2.75	0.3	20	28	9 320	32 900	11 000
18	31	2	1	2.75	0.3	21	29	9 550	34 400	10 000
20	35	2	1	2.75	0.3	23	33	11 700	46 500	9 000
25	42	2	1	3	0.6	29	40	14 400	64 700	7 500
30	47	2	1	3	0.6	34	45	15 400	73 300	6 500
35	52	2	1	3.5	0.6	39	50	16 300	81 900	5 500
40	60	3	1	3.5	0.6	45	57	24 200	108 000	5 000
45	65	3	1	4	0.6	50	62	25 900	121 000	4 500
50	70	3	1	4	0.6	55	67	27 600	135 000	4 000
55	78	3	1	5	0.6	61	75	32 400	171 000	4 000
60	85	3	1	4.75	1	66	82	38 200	219 000	3 500
65	90	3	1	5.25	1	71	87	40 100	237 000	3 000
70	95	4	1	5.25	1	75	91	47 400	244 000	3 000
75	100	4	1	5.75	1	80	96	48 400	256 000	3 000
80	105	4	1	5.75	1	85	101	49 500	267 000	2 500
85	110	4	1	5.75	1	90	106	50 300	279 000	2 500

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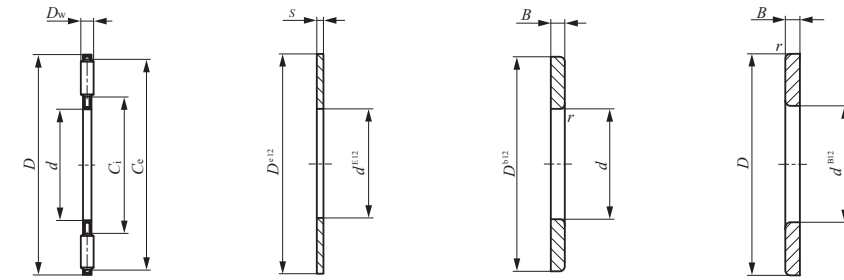
Thrust Needle Roller Bearings



Shaft dia. 90 – 130mm

Shaft dia. mm	Identification number						
	Thrust needle roller bearing	Mass (Ref.) g	Thrust washer	Mass (Ref.) g	Inner ring	Outer ring	Mass (Ref.) g
90	<b>NTB 90120</b>	92	<b>AS 90120</b>	38	<b>WS 90120</b>	<b>GS 90120</b>	250
100	<b>NTB 100135</b>	119	<b>AS 100135</b>	50	<b>WS 100135</b>	<b>GS 100135</b>	350
110	<b>NTB 110145</b>	129	—	—	<b>WS 110145</b>	<b>GS 110145</b>	380
120	<b>NTB 120155</b>	139	—	—	<b>WS 120155</b>	<b>GS 120155</b>	410
130	<b>NTB 130170</b>	225	—	—	<b>WS 130170</b>	<b>GS 130170</b>	660

Notes<sup>(1)</sup> Minimum allowable value of chamfer dimension  $r$   
<sup>(2)</sup> Allowable rotational speed applies to oil lubrication. For grease lubrication, a maximum of 25% of this value is allowable.



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$d$	$D$	Boundary dimensions mm						Basic dynamic load rating $C$ N	Basic static load rating $C_0$ N	Allowable rotational speed <sup>(2)</sup> min <sup>-1</sup>
		$D_w$	$s$	$B$	$r_{s \min}^{(1)}$	$C_i$	$C_e$			
90	120	4	1	6.5	1	96	116	64 500	394 000	2 500
100	135	4	1	7	1	107	131	80 300	541 000	2 000
110	145	4	—	7	1	117	141	83 200	578 000	2 000
120	155	4	—	7	1	127	151	87 900	634 000	1 800
130	170	5	—	9	1	137	165	120 000	839 000	1 700

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**THRUST BEARINGS**

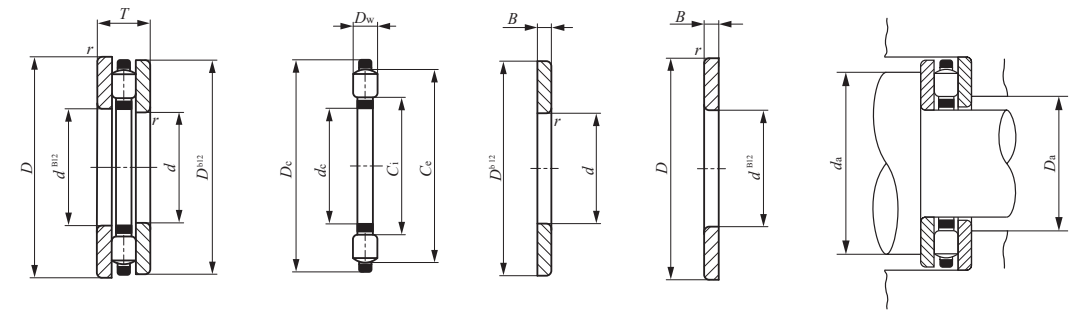
Thrust Roller Bearings



Shaft dia. 10 – 65mm

Shaft dia. mm	Identification number							
	Thrust roller bearing	Mass (Ref.) g	Thrust roller bearing	Mass (Ref.) g	Inner ring	Outer ring	Mass (Ref.) g	
10	AZ 10249	24.6	AZK 10243.5	8.6	WS 1024	GS 1024	8	
12	AZ 12269	26.5	AZK 12263.5	8.7	WS 1226	GS 1226	8.9	
15	AZ 15289	28	AZK 15283.5	9.4	WS 1528	GS 1528	9.3	
17	AZ 17309	30.5	AZK 17303.5	10.1	WS 1730	GS 1730	10.2	
20	AZ 203510	45.5	AZK 20354.5	17.9	WS 2035	GS 2035	13.8	
25	AZ 254211	70	AZK 25425	28	WS 2542	GS 2542	21	
30	AZ 304711	79	AZK 30475	31	WS 3047	GS 3047	24	
	AZ 305216	160	AZK 30527.5	70	WS 3052	GS 3052	45	
35	AZ 355212	99	AZK 35525	36	WS 3552	GS 3552	31.5	
	AZ 356218	260	AZK 35627.5	98	WS 3562	GS 3562	81	
40	AZ 406013	139	AZK 40606	54	WS 4060	GS 4060	42.5	
	AZ 406819	310	AZK 40689	132	WS 4068	GS 4068	89	
45	AZ 456514	169	AZK 45656	62	WS 4565	GS 4565	53.5	
	AZ 457320	360	AZK 45739	144	WS 4573	GS 4573	108	
50	AZ 507014	185	AZK 50706	68	WS 5070	GS 5070	58.5	
	AZ 507822	430	AZK 507811	194	WS 5078	GS 5078	118	
55	AZ 557816	275	AZK 55786	89	WS 5578	GS 5578	93	
	AZ 559025	725	AZK 559011	275	WS 5590	GS 5590	225	
60	AZ 608517	345	AZK 60857.5	135	WS 6085	GS 6085	105	
	AZ 609526	770	AZK 609511	290	WS 6095	GS 6095	240	
	AZ 6013026	2 090	AZK 6013010	790	WS 60130	GS 60130	650	
65	AZ 659018	380	AZK 65907.5	132	WS 6590	GS 6590	124	
	AZ 6510027	860	AZK 6510011	310	WS 65100	GS 65100	275	

Notes<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
<sup>(2)</sup> Allowable rotational speed applies to oil lubrication. For grease lubrication, a maximum of 25% of this value is allowable.



AZ AZK WS GS

Boundary dimensions mm											Standard mounting dimensions mm		Basic dynamic load rating C N	Basic static load rating C <sub>0</sub> N	Allowable rotational speed <sup>(2)</sup> min <sup>-1</sup>
<i>d</i>	<i>D</i>	<i>T</i>	<i>d<sub>c</sub></i>	<i>D<sub>c</sub></i>	<i>D<sub>w</sub></i>	<i>B</i>	<i>r<sub>s min</sub></i> <sup>(1)</sup>	<i>C<sub>1</sub></i>	<i>C<sub>e</sub></i>	<i>d<sub>a</sub> Min.</i>	<i>D<sub>a</sub> Max.</i>				
10	24	9	10.04	23.6	3.5	2.75	0.3	13	21	21	13	8 990	19 100	18 000	
12	26	9	12.04	25.6	3.5	2.75	0.3	15	23	23	16	10 400	23 900	16 000	
15	28	9	15.04	27.6	3.5	2.75	0.3	17	25	25	18	10 200	23 900	14 000	
17	30	9	17.04	29.6	3.5	2.75	0.3	19	27	27	20	11 400	28 600	13 000	
20	35	10	20.04	34.6	4.5	2.75	0.3	22	33	33	23	19 000	48 700	11 000	
25	42	11	25.05	41.6	5	3	0.6	28	39	39	28	22 700	60 700	9 000	
30	47	11	30.05	46.5	5	3	0.6	33	44	44	33	27 400	81 000	8 000	
	52	16	30.05	51.5	7.5	4.25	0.6	35	49	48	36	38 400	95 700	7 500	
35	52	12	35.05	51.5	5	3.5	0.6	38	49	49	39	29 100	91 100	7 000	
35	62	18	35.05	61.5	7.5	5.25	1	42	58	57	43	47 900	135 000	6 500	
40	60	13	40.05	59.5	6	3.5	0.6	44	57	57	44	41 700	133 000	6 000	
40	68	19	40.05	67.5	9	5	1	45	64	64	46	68 700	195 000	5 500	
45	65	14	45.05	64.5	6	4	0.6	49	62	62	49	40 800	133 000	5 500	
45	73	20	45.05	72.5	9	5.5	1	50	69	69	51	75 700	227 000	5 000	
50	70	14	50.05	69.5	6	4	0.6	54	67	67	54	43 300	148 000	5 000	
50	78	22	50.05	77.5	11	5.5	1	55	74	73	56	84 300	232 000	4 500	
55	78	16	55.05	77.5	6	5	0.6	59	75	75	60	51 700	192 000	4 500	
55	90	25	55.05	89.5	11	7	1	63	85	84	63	108 000	332 000	4 000	
60	85	17	60.05	84.5	7.5	4.75	1	65	81	81	66	64 600	224 000	4 000	
60	95	26	60.05	94.5	11	7.5	1	68	90	89	68	106 000	332 000	4 000	
60	130	26	60.05	129.5	10	8	1.5	79	119	119	80	158 000	634 000	3 000	
65	90	18	65.05	89.5	7.5	5.25	1	70	86	86	71	68 300	247 000	4 000	
65	100	27	65.05	99.5	11	8	1	73	95	94	73	116 000	379 000	3 500	

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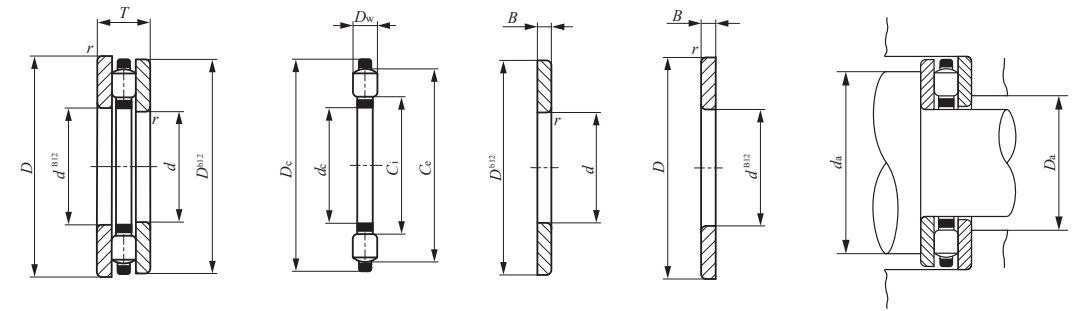
Thrust Roller Bearings



Shaft dia. 70 – 130mm

Shaft dia. mm	Identification number						
	Thrust roller bearing	Mass (Ref.) g	Thrust roller bearing	Mass (Ref.) g	Inner ring	Outer ring	Mass (Ref.) g
70	AZ 709518	420	AZK 70957.5	156	WS 7095	GS 7095	132
	AZ 7010527	905	AZK 7010511	325	WS 70105	GS 70105	290
	AZ 7014026	2 250	AZK 7014010	890	WS 70140	GS 70140	680
75	AZ 7510019	465	AZK 751007.5	159	WS 75100	GS 75100	153
	AZ 7511027	960	AZK 7511011	340	WS 75110	GS 75110	310
80	AZ 8010519	495	AZK 801057.5	171	WS 80105	GS 80105	162
	AZ 8011528	1 060	AZK 8011511	370	WS 80115	GS 80115	345
	AZ 8015026	2 500	AZK 8015010	920	WS 80150	GS 80150	790
85	AZ 8511019	530	AZK 851107.5	190	WS 85110	GS 85110	170
	AZ 8512531	1 460	AZK 8512512	510	WS 85125	GS 85125	475
90	AZ 9012022	790	AZK 901209	290	WS 90120	GS 90120	250
	AZ 9013535	2 040	AZK 9013514	750	WS 90135	GS 90135	645
	AZ 9016026	2 710	AZK 9016010	1 000	WS 90160	GS 90160	855
100	AZ 10013525	1 190	AZK 10013511	490	WS 100135	GS 100135	350
	AZ 10015038	2 720	AZK 10015015	980	WS 100150	GS 100150	870
	AZ 10019039	5 960	AZK 10019015	2 120	WS 100190	GS 100190	1 920
110	AZ 11014525	1 350	AZK 11014511	590	WS 110145	GS 110145	380
	AZ 11016040	3 220	AZK 11016017	1 320	WS 110160	GS 110160	950
	AZ 11020039	6 400	AZK 11020015	2 280	WS 110200	GS 110200	2 060
120	AZ 12015525	1 450	AZK 12015511	630	WS 120155	GS 120155	410
	AZ 12017542	4 020	AZK 12017518	1 640	WS 120175	GS 120175	1 190
	AZ 12022039	7 730	AZK 12022015	2 730	WS 120220	GS 120220	2 500
130	AZ 13017030	2 180	AZK 13017012	860	WS 130170	GS 130170	660
	AZ 13018542	4 300	AZK 13018518	1 760	WS 130185	GS 130185	1 270
	AZ 13023039	8 240	AZK 13023015	2 940	WS 130230	GS 130230	2 650

Notes<sup>(1)</sup> Minimum allowable value of chamfer dimension *r*  
<sup>(2)</sup> Allowable rotational speed applies to oil lubrication. For grease lubrication, a maximum of 25% of this value is allowable.



AZ AZK WS GS

Boundary dimensions mm											Standard mounting dimensions mm		Basic dynamic load rating	Basic static load rating	Allowable rotational speed <sup>(2)</sup>
<i>d</i>	<i>D</i>	<i>T</i>	<i>d<sub>c</sub></i>	<i>D<sub>c</sub></i>	<i>D<sub>w</sub></i>	<i>B</i>	<i>r<sub>s min</sub></i> <sup>(1)</sup>	<i>C<sub>i</sub></i>	<i>C<sub>e</sub></i>	<i>d<sub>a</sub></i> Min.	<i>D<sub>a</sub></i> Max.	<i>C</i> N	<i>C<sub>0</sub></i> N	min <sup>-1</sup>	
70	95	18	70.05	94.5	7.5	5.25	1	75	91	91	76	72 000	269 000	3 500	
70	105	27	70.05	104.5	11	8	1	78	100	99	78	114 000	379 000	3 500	
70	140	26	70.05	139.5	10	8	1.1	89	129	129	90	169 000	713 000	3 000	
75	100	19	75.05	99.5	7.5	5.75	1	80	96	96	81	71 100	269 000	3 500	
75	110	27	75.05	109.5	11	8	1	83	105	104	83	123 000	427 000	3 000	
80	105	19	80.05	104.5	7.5	5.75	1	85	101	101	86	74 500	292 000	3 000	
80	115	28	80.05	114.5	11	8.5	1	88	110	109	88	122 000	427 000	3 000	
80	150	26	80.05	149.5	10	8	1.5	99	139	139	100	180 000	792 000	2 500	
85	110	19	85.05	109.5	7.5	5.75	1	90	106	106	91	77 800	314 000	3 000	
85	125	31	85.05	124.5	12	9.5	1	95	119	118	95	145 000	513 000	3 000	
90	120	22	90.05	119.5	9	6.5	1	97	116	115	97	99 700	390 000	3 000	
90	135	35	90.05	134.5	14	10.5	1.1	100	129	128	101	181 000	626 000	2 500	
90	160	26	90.05	159.5	10	8	1.5	109	149	149	110	189 000	871 000	2 500	
100	135	25	100.05	134.5	11	7	1	108	130	129	108	136 000	522 000	2 500	
100	150	38	100.05	149.5	15	11.5	1.1	112	143	142	113	219 000	796 000	2 500	
100	190	39	100.1	189.3	15	12	1.5	119	179	177	120	333 000	1 420 000	2 000	
110	145	25	110.1	144.5	11	7	1	118	140	139	118	142 000	569 000	2 500	
110	160	40	110.1	159.5	17	11.5	1.1	120	154	153	121	282 000	1 030 000	2 000	
110	200	39	110.1	199.3	15	12	2	129	188	187	130	388 000	1 770 000	2 000	
120	155	25	120.1	154.5	11	7	1	128	150	149	128	149 000	617 000	2 000	
120	175	42	120.1	174.5	18	12	1.1	132	168	167	133	313 000	1 160 000	2 000	
120	220	39	120.1	219	15	12	2.1	141	207	206	142	415 000	1 980 000	1 800	
130	170	30	130.1	169.5	12	9	1	140	164	163	140	176 000	741 000	2 000	
130	185	42	130.1	184.5	18	12	1.5	142	178	177	143	333 000	1 290 000	1 900	
130	230	39	130.1	229	15	12	2.1	151	217	216	152	440 000	2 180 000	1 700	

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