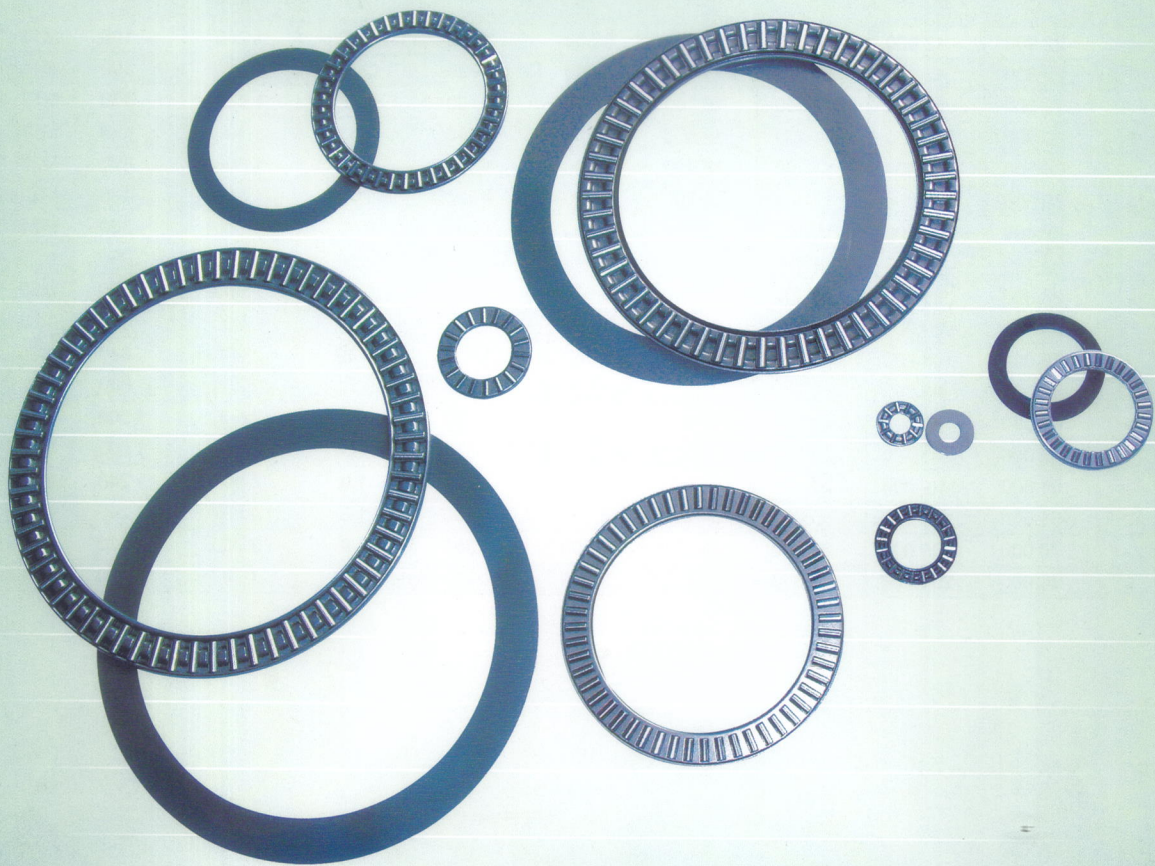
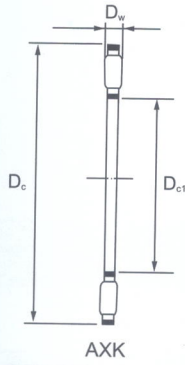


AXIAL BEARINGS AND BUSHES



Products range

Series	Structure description
AXK	Axial needle roller and cage assembly
AXW	Axial needle roller bearing comprising AXK and axial washer with centring spigot
K811	Axial needle roller and cage assembly, single row
K812	Axial needle roller and cage assembly, single row
K893	Axial needle roller and cage assembly, double row
K894	Axial needle roller and cage assembly, double row
AS	Axial bearing washer, 1 mm thick, for use as shaft or housing locating washer
LS	Bearing washer for use as shaft or housing locating washer

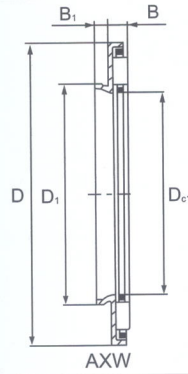


Shaft Diameter	Bearing Designation		Mass Approx	Boundary Dimensions			Basic Load Rating		Limiting Speed
				D _{c1}	D _c	D _w	C _r Dynamic	C _{0r} Static	Oil
mm	INA	Torrington	g	mm			N		rpm
4	AXK 0414TN	-	0.7	4	14	2	4 380	7 500	18 000
5	AXK 0515TN	-	0.8	5	15	2	4 680	9 100	17 000
6	AXK 0619TN	FNTA-0619	1	6	19	2	6 740	15 400	16 000
8	AXK 0821TN	FNTA-0821	2	8	21	2	7 750	19 000	15 000
10	AXK 1024	FNTA-1024	3	10	24	2	9 150	24 500	14 000
12	AXK 1226	FNTA-1226	3	12	26	2	9 860	28 600	13 000
15	AXK 1528	FNTA-1528	4	15	28	2	11 200	35 500	11 000
17	AXK 1730	FNTA-1730	4	17	30	2	11 800	38 600	10 000
20	AXK 2035	FNTA-2035	5	20	35	2	12 900	45 600	8 500
25	AXK 2542	FNTA-2542	7	25	42	2	13 800	57 800	7 000
30	AXK 3047	FNTA-3047	8	30	47	2	15 600	69 500	6 000
35	AXK 3552	FNTA-3552	10	35	52	2	16 900	80 100	5 500
40	AXK 4060	FNTA-4060	16	40	60	3	27 500	113 500	4 700
45	AXK 4565	FNTA-4565	18	45	65	3	29 050	127 600	4 300
50	AXK 5070	FNTA-5070	20	50	70	3	31 500	138 000	3 900
55	AXK 5578	FNTA-5578	28	55	78	3	37 400	185 000	3 500
60	AXK 6085	FNTA-6085	33	60	85	3	43 900	232 500	3 200
65	AXK 6590	FNTA-6590	35	65	90	3	45 800	254 600	3 000
70	AXK 7095	FNTA-7095	60	70	95	4	53 600	254 400	2 900
75	AXK 75100	FNTA-75100	61	75	100	4	54 500	264 600	2 700
80	AXK 80105	FNTA-80105	63	80	105	4	55 600	278 500	2 600
85	AXK 85110	FNTA-85110	67	85	110	4	57 500	288 000	2 400
90	AXK 90120	FNTA-90120	86	90	120	4	72 500	401 000	2 300
100	AXK 100135	FNTA-100135	104	100	135	4	90 500	559 500	2 000
110	AXK 110145	-	122	110	145	4	96 500	617 500	1 900
120	AXK 120155	-	131	120	155	4	101 500	679 600	1 700
130	AXK 130170	-	205	130	170	5	132 400	838 900	1 600
140	AXK 140180	-	219	140	180	5	137 200	899 600	1 500
150	AXK 150190	-	232	150	190	5	142 800	959 000	1 400
160	AXK 160200	-	246	160	200	5	147 600	1 015 000	1 300
inch									
7.92	NTA-512		2	7.92	19.5	1.984	4 600	4 100	7 000
22.22	NTA-1423		5	22.22	36.5	1.984	10 400	40 800	50 000
50.80	NTA-3244		18	50.80	69.85	1.984	19 500	115 130	5 600

TN = plastic cage, permissible operating temperature: 120°C (Continuous operation).

Limiting speed for oil lubrication.

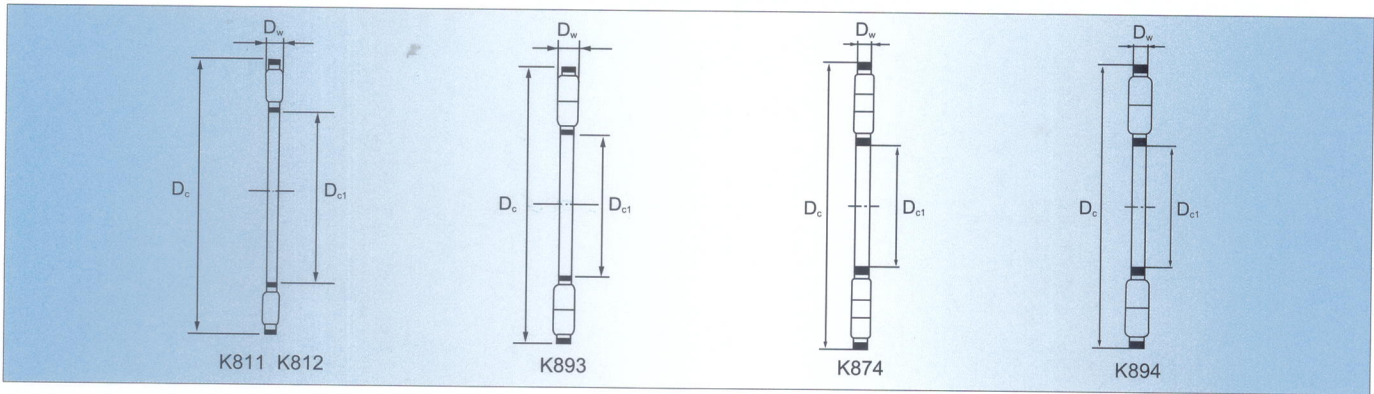
For grease lubrication, 25% of the values given in the table is permissible.



Shaft Diameter	Bearing Designation	Mass Approx	Boundary Dimensions					Basic Load Rating		Limiting Speed
			D _{c1}	D ₁	D	B	B ₁	C _r Dynamic	C _r Static	Oil
mm		g	mm					N		rpm
10	AXW 10	8.3	10	14	27	3.2	3	9 100	24 000	14 000
12	AXW 12	9.1	12	16	29	3.2	3	8 900	27 800	13 000
15	AXW 15	10.1	15	21	31	3.2	3.5	10 500	35 000	11 000
17	AXW 17	11	17	23	33	3.2	3.5	10 900	38 800	10 000
20	AXW 20	14	20	26	38	3.2	3.5	12 700	45 600	8 500
25	AXW 25	19.5	25	32	45	3.2	4	13 900	57 500	7 000
30	AXW 30	22	30	37	50	3.2	4	15 900	69 500	6 000
35	AXW 35	26.6	35	42	55	3.2	4	17 000	80 100	5 500
40	AXW 40	39.2	40	47	63	4.2	4	27 800	109 000	4 700
45	AXW 45	43.4	45	52	68	4.2	4	29 500	119 900	4 300
50	AXW 50	49.2	50	58	73	4.2	4.5	31 800	140 900	3 900

Limiting speed for oil lubrication.

For grease lubrication, 25% of the values given in the table is permissible.

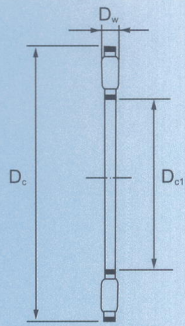


Shaft Diameter	Bearing Designation	Mass Approx	Boundary Dimensions			Basic Load Rating		Limiting Speed
			D _{c1}	D _c	D _w	C _r Dynamic	C _{st} Static	Oil
mm		g	mm			N		rpm
15	K 81102 TN	6	15	28	3.5	13 500	28 000	11 000
17	K 81103 TN	9	17	30	3.5	14 800	32 900	10 000
20	K 81104 TN	13	20	35	4.5	23 700	52 600	8 500
25	K 81105 TN	15	25	42	5	32 900	70 000	7 000
30	K 81106 TN	17	30	47	5	34 800	85 000	6 000
	K 81206 TN	33	30	52	7.5	63 500	139 000	6 000
35	K 89306 TN	40	30	60	5.5	67 900	188 500	5 000
	K 81107 TN	19	35	52	5	38 500	100 900	5 500
	K 81207 TN	43	35	62	7.5	79 800	198 100	4 900
	K 89307 TN	53	35	68	6	79 800	236 500	4 600
40	K 89407 TN	111	35	80	9	149 000	425 000	4 200
	K 81108 TN	31	40	60	6	55 000	147 500	4 800
	K 81208 TN	81	40	68	9	106 500	264 600	4 400
	K 89308 TN	98	40	78	7	119 000	384 500	4 000
	K 87408	127	40	90	6.5	127 000	478 000	3 600
45	K 89408 TN	200	40	90	10	199 000	579 500	3 700
	K 81109 TN	35	45	65	6	58 500	162 500	4 400
	K 81209 TN	85	45	73	9	104 500	264 100	4 000
	K 89309 TN	121	45	85	7.5	138 500	439 000	3 600
	K 87409	174	45	100	7	153 500	559 800	3 200
50	K 89409 TN	262	45	100	11	238 600	699 200	3 300
	K 81110 TN	38	50	70	6	60 700	167 000	4 000
	K 81210 TN	98	50	78	9	106 000	309 000	3 700
	K 89310 TN	175	50	95	8	166 500	557 900	3 200
	K 87410 TN	256	50	110	8	199 500	738 000	2 900
55	K 89410 TN	360	50	110	12	280 500	899 000	3 000
	K 81111 TN	45	55	78	6	87 900	298 700	3 600
	K 81211 TN	166	55	90	11	153 100	404 500	3 300
	K 89311 TN	195	55	105	9	183 200	599 800	2 900
	K 87411	303	55	120	8	221 500	868 600	2 600
60	K 89411 TN	473	55	120	13	339 500	1 049 050	2 700
	K 81112 TN	82	60	85	7.5	102 100	309 500	3 300
	K 81212 TN	176	60	95	11	171 100	478 000	3 100
	K 89312 TN	210	60	110	9	195 100	669 800	2 700
	K 87412	380	60	130	9	259 100	998 600	2 500
	K 89412 TN	538	60	130	14	388 000	1 219 500	2 500

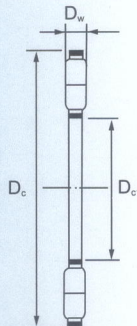
TN = plastic cage, permissible operating temperature: 120°C (Continuous operation).

Limiting speed for oil lubrication.

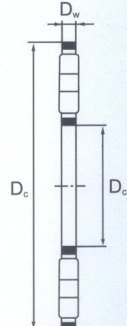
For grease lubrication, 25% of the values given in the table is permissible.



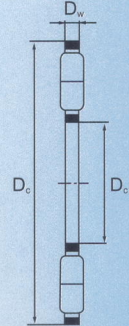
K811 K812



K893

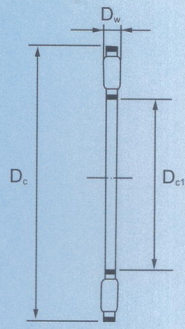


K874

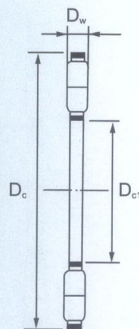


K894

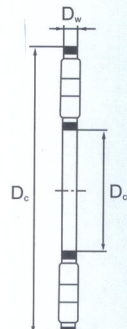
Shaft Diameter	Bearing Designation	Mass Approx	Boundary Dimensions			Basic Load Rating		Limiting Speed
			D _{c1}	D _c	D _w	C _r Dynamic	C _{or} Static	Oil
			mm			N		rpm
65	K 81113 TN	90	65	90	7.5	106 500	339 500	3 100
	K 81213 TN	185	65	100	11	176 800	499 500	2 900
	K 89313 TN	210	65	115	9	193 500	667 900	2 600
	K 87413	470	65	140	10	299 800	1 139 500	2 300
	K 89143 TN	720	65	140	15	444 000	1 396 000	2 300
70	K 81114 TN	92	70	95	7.5	110 800	364 500	2 900
	K 81214 TN	212	70	105	11	186 000	549 700	2 700
	K 89314 TN	290	70	125	10	238 500	829 600	2 400
	K 87414	650	70	150	11	359 000	1 376 900	2 200
	K 89414	920	70	150	16	449 800	1 389 500	2 100
75	K 81115 TN	96	75	100	7.5	104 500	339 600	2 700
	K 81215 TN	195	75	110	11	171 500	498 700	2 600
	K 89315 TN	375	75	135	11	284 800	1 009 000	2 200
	K 87415	800	75	160	12	429 500	1 658 900	2 000
	K 89415	1070	75	160	17	499 600	1 579 800	2 000
80	K 81116 TN	95	80	105	7.5	105 800	348 800	2 600
	K 81216 TN	234	80	115	11	200 600	629 600	2 400
	K 89316 TN	420	80	140	11	304 500	1 109 800	2 100
	K 87416	880	80	170	12	449 000	1 807 900	1 900
	K 89416	1410	80	170	18	559 600	1 769 500	1 900
85	K 81117 TN	118	85	110	7.5	111 900	3 849 600	2 500
	K 81217 TN	280	85	125	12	216 500	659 700	2 300
	K 89317	540	85	150	12	324 600	1 099 600	2 000
	K 87417	1030	85	180	13	484 600	19 191 000	1 800
	K 89417	1610	85	180	19	619 500	1 979 800	1 800
90	K 81118 TN	150	90	120	9	140 600	4 599 800	2 300
	K 81218 TN	542	90	135	14	288 900	886 900	2 100
	K 89318	620	90	155	12	329 500	1 199 400	1 900
	K 87418	1130	90	190	13	508 900	2 086 500	1 700
	K 89418	1870	90	190	20	678 900	2 199 600	1 700
100	K 81120 TN	250	100	135	11	197 000	649 800	2 000
	K 81220	600	100	150	15	279 800	839 600	1 900
	K 89320	810	100	170	13	379 500	1 399 500	1 700
	K 87420	1660	100	210	15	678 900	2 798 900	1 500
	K 89420	2400	100	210	22	849 000	2 847 900	1 500



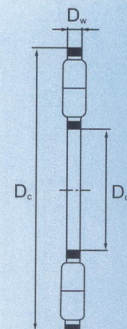
K811 K812



K893



K874



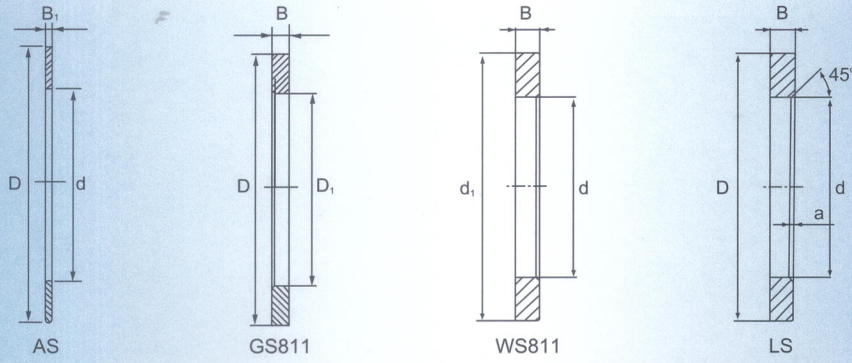
K894

Shaft Diameter	Bearing Designation	Mass Approx	Boundary Dimensions			Basic Load Rating		Limiting Speed
			D _{c1}	D _c	D _w	C _r Dynamic	C _{or} Static	Oil
			mm			N		rpm
110	K 81122	325	110	145	11	194 600	649 600	1 900
	K 81222	685	110	160	15	299 800	939 700	1 800
	K 89322	1 150	110	190	15	499 500	1 867 900	1 600
	K 87422	2 150	110	230	17	809 600	3 349 600	1 400
	K 89422	3 300	110	230	24	998 500	3 397 800	1 400
120	K 81124	340	120	155	11	202 700	698 900	1 700
	K 81224	730	120	170	15	309 600	979 600	1 700
	K 89324	1 720	120	210	17	639 500	2 417 600	1 400
	K 87424	2 920	120	250	18	959 600	4 097 900	1 300
	K 89424	4 300	120	250	26	1 159 500	3 987 900	1 300
130	K 81126	414	130	170	12	232 700	809 600	1 600
	K 81226	1 144	130	190	19	424 500	1 287 900	1 500
	K 89326	1 910	130	225	18	709 600	2 697 900	1 300
	K 87426	3 410	130	270	19	1 049 500	4 549 600	1 200
	K 89426	5 000	130	270	28	1 329 700	4 599 800	1 200
140	K 81128	448	140	180	12	241 800	865 900	1 500
	K 81228	1 197	140	200	19	444 500	1 449 700	1 400
	K 89328	2 390	140	240	19	819 700	3 198 900	1 200
	K 87428	3 680	140	280	19	1 109 800	4 749 800	1 100
	K 89428	6 000	140	280	28	1 379 600	4 949 800	1 100
150	K 81130	474	150	190	12	249 600	929 700	1 400
	K 81230	1 520	150	215	21	589 600	1 938 900	1 300
	K 89330	2 510	150	250	19	837 900	3 347 900	1 200
	K 87430	4 450	150	300	21	1 259 800	5 497 900	1 000
	K 89430	7 100	150	300	30	1 569 500	5 698 900	1 000
160	K 81132	505	160	200	12	259 600	989 600	1 300
	K 81232	1 603	160	225	21	599 500	2 028 900	1 200
	K 89332	3 150	160	270	21	969 600	3 898 800	1 100
	K 87432	5 330	160	320	22	1 447 800	6 598 800	1 000
	K 89432	8 600	160	320	32	1 778 600	6 498 800	950

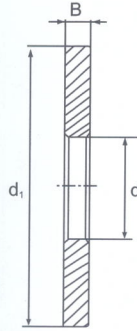
TN = plastic cage, permissible operating temperature: 120°C (Continuous operation).

Limiting speed for oil lubrication.

For grease lubrication, 25% of the values given in the table is permissible.



Shaft Diameter	Bearing Designation and Mass Approx							Boundary Dimensions					
	Bearing Washer	Mass	Housing Locating Washer	Mass	Shaft Locating Washer	Bearing Washer	Mass	d	D ₁	D	d ₁	B ₁	B
mm		g		g			g	mm					
4	AS 0414	1	-	-	-	-	-	4	-	14	-	1	-
5	AS 0515	1	-	-	-	-	-	5	-	15	-	1	-
6	AS 0614/08	1	-	-	-	-	-	6	-	14	-	0.8	-
6	AS 0619	2	-	-	-	LS 0619	4	6	-	19	-	1	2.75
8	AS 0821	2	-	-	-	LS 0821	4	8	-	21	-	1	2.75
10	AS 1024	3	-	-	-	LS 1024	7	10	-	24	-	1	2.75
12	AS 1226	3	-	-	-	LS 1226	8	12	-	26	-	1	2.75
15	AS 1528	3	GS 81102	8	WS 81102	LS 1528	9	15	16	28	28	1	2.75
17	AS 1722/05	3	-	-	-	-	-	17	-	22	-	0.5	-
17	AS 1730	4	GS 81103	9	WS 81103	LS 1730	9	17	18	30	30	1	2.75
20	AS 2035	5	GS 81104	12	WS 81104	LS 2035	13	20	21	35	35	1	2.75
25	AS 2542	7	GS 81105	19	WS 81105	LS 2542	19	25	26	42	42	1	3
30	AS 3047	8	GS 81106	20	WS 81106	LS 3047	22	30	32	47	47	1	3
35	AS 3552	9	GS 81107	27	WS 81107	LS 3552	29	35	37	52	52	1	3.5
40	AS 4060	12	GS 81108	37	WS 81108	LS 4060	40	40	42	60	60	1	3.5
45	AS 4565	13	GS 81109	47	WS 81109	LS 4565	50	45	47	65	65	1	4
50	AS 5070	14	GS 81110	51	WS 81110	LS 5070	55	50	52	70	70	1	4
55	AS 5578	18	GS 81111	82	WS 81111	LS 5578	88	55	57	78	78	1	5
60	AS 6085	22	GS 81112	92	WS 81112	LS 6085	97	60	62	85	85	1	4.75
65	AS 6590	24	GS 81113	110	WS 81113	LS 6590	115	65	67	90	90	1	5.25
70	AS 7095	25	GS 81114	120	WS 81114	LS 7097	123	70	72	95	95	1	5.25
75	AS 75100	27	GS 81115	136	WS 81115	LS 75100	142	75	77	100	100	1	5.75
80	AS 80105	28	GS 81116	144	WS 81116	LS 80105	151	80	82	105	105	1	5.75
85	AS 85110	29	GS 81117	151	WS 81117	LS 85110	159	85	87	110	110	1	5.75
90	AS 90120	39	GS 81118	225	WS 81118	LS 90120	234	90	92	120	120	1	6.5
100	AS 100135	50	GS 81120	350	WS 81120	LS 100135	350	100	102	135	135	1	7
110	AS 110145	55	GS 81122	385	WS 81122	LS 110145	385	110	112	145	145	1	7
120	AS 120155	59	GS 81124	415	WS 81124	LS 120155	415	120	122	155	155	1	7
130	AS 130170	65	GS 81126	643	WS 81126	LS 130170	663	130	132	170	170	1	9
140	AS 140180	79	GS 81128	749	WS 81128	LS 140180	749	140	142	180	178	1	9.5
150	AS 150190	84	GS 81130	796	WS 81130	LS 150190	796	150	152	190	188	1	9.5
160	AS 160200	89	GS 81132	842	WS 81132	LS 160200	842	160	162	200	198	1	9.5



ZS(Positioned axially,both directions)

Shaft Diameter	Designation of Center Washers	Mass Approx	Boundary Dimensions		
			d	D	B
mm		g	mm		
15	ZS 1127	21	11	27	5.5
17	ZS 1329	23	13	29	5.5
20	ZS 1634	31	16	34	5.5
25	ZS 2141	45	21	41	6
30	ZS 2646	60	26	46	7
35	ZS 3151	78	31	51	8
40	ZS 3159	125	31	59	8
45	ZS 3664	156	36	64	9
50	ZS 4169	191	41	69	10
55	ZS 4677	235	46	77	10
60	ZS 5184	316	51	84	11.5
65	ZS 5689	360	56	89	12
70	ZS 5694	440	56	94	12.5
75	ZS 6199	470	61	99	12.5
80	ZS 66104	500	66	104	12.5
85	ZS 71109	593	71	109	14.5
90	ZS 76119	806	76	119	16
100	ZS 86134	1180	86	134	18
110	ZS 96144	1430	96	144	20
120	ZS 101154	1830	101	154	22
130	ZS 111169	2210	111	169	22
140	ZS 121179	2460	121	179	23
150	ZS 131189	2740	131	189	24
160	ZS 141199	3030	141	199	25

Shaft Diameter	Designation of Center Washers	Mass Approx	Boundary Dimensions		
			d	D	B
mm		g	mm		
15	ZS 1634	31	16	34	5.5
20	ZS 2141	45	21	41	6
25	ZS 2646	60	26	46	7
30	ZS 3151	78	31	51	8
35	ZS 3664	156	36	64	9
40	ZS 4169	191	41	69	10
45	ZS 4677	235	46	77	10
50	ZS 5184	316	51	84	11.5
55	ZS 5689	360	56	89	12
60	ZS 6199	470	61	99	12.5
65	ZS 66104	500	66	104	12.5
70	ZS 71109	593	71	109	14.5
75	ZS 76119	806	76	119	16
85	ZS 86134	1180	86	134	18
100	ZS 101154	1830	101	154	22
110	ZS 111169	2210	111	169	22
120	ZS 121179	2460	121	179	23
130	ZS 131189	2740	131	189	24
140	ZS 141199	3030	141	199	25
150	ZS 151214	3830	151	214	27
160	ZS 161224	4350	161	224	29