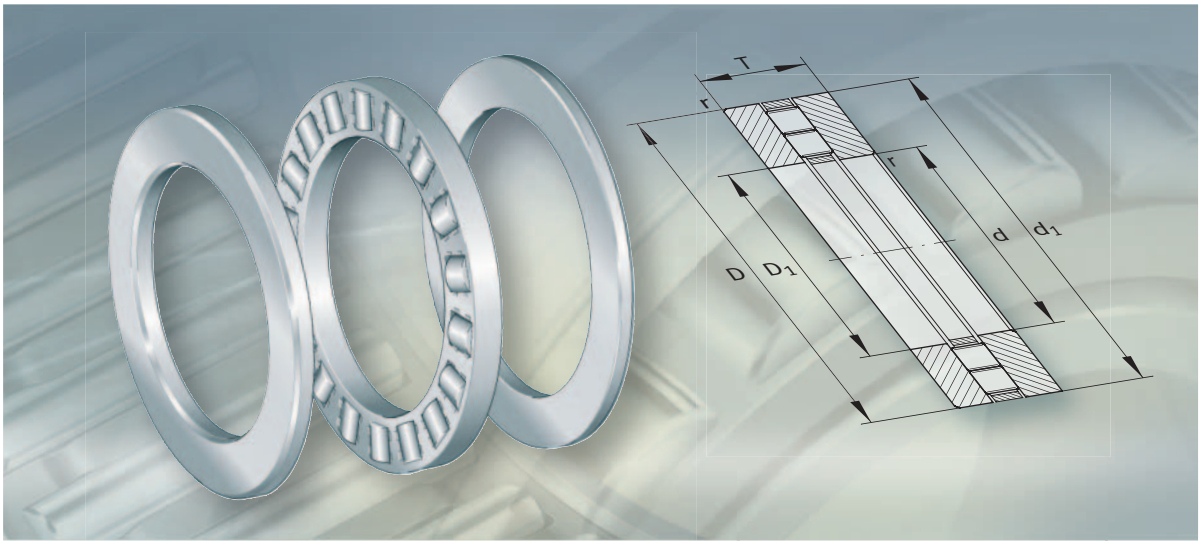

Axial cylindrical roller bearings
Axial cylindrical roller and cage assemblies
Axial bearing washers

Axial cylindrical roller bearings, roller and cage assemblies, bearing washers

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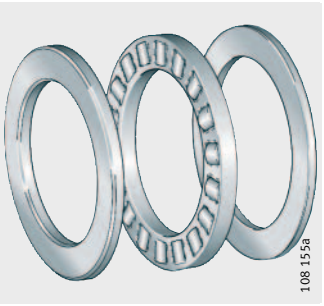
Axial cylindrical roller bearings, roller and cage assemblies, bearing washers

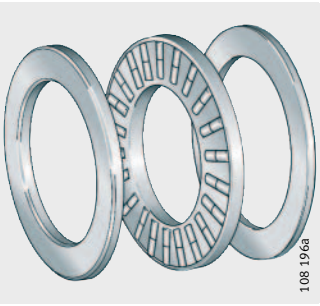
Axial cylindrical roller bearings

Single row and double row

811, 812



893, 894



Axial cylindrical roller and cage assemblies

Single row and double row

K811, K812

K893, K894

Housing locating washers
Shaft locating washers

GS811, GS812
GS893, GS894

WS811, WS812
WS893, WS894

Bearing washers

LS

Axial cylindrical roller bearings, roller and cage assemblies, bearing washers

Features

Axial cylindrical roller bearings

Axial cylindrical roller bearings comprise axial cylindrical roller and cage assemblies K, housing locating washers GS and shaft locating washers WS.

Bearings 811, 812 are single row bearings and correspond to DIN 722/ISO 104, bearings 893, 894 are double row bearings and correspond to DIN 616/ISO 104.

The cages are made from plastic or brass.
Plastic cages have the suffix TV, brass cages have the suffix M.

The bearings have very low axial section height, high load capacity, high rigidity and can support axial forces in one direction.

Axial cylindrical roller and cage assemblies

The cage assemblies comprise axial cages and one or two rows of cylindrical rollers. The diameter series 1, 2, 3, 4 correspond to DIN 616/ISO 104.

The cages are made from plastic or brass.

The cage assemblies have very low axial section height, high load capacity and high rigidity. They can support axial forces in one direction and act as a non-locating bearing in a radial direction.

Axial cage assemblies are combined with shaft or housing locating washers or are integrated directly in the adjacent construction.
If they are used without axial bearing washers, the raceway must be produced as a rolling bearing raceway.

Housing locating washers

Housing locating washers are produced by machining, the outside surface is ground and the running surface is precision machined. The diameter series 1, 2, 3, 4 correspond to DIN 616/ISO 104. They are centred on their outer edge and are combined with axial cage assemblies if the adjacent surface cannot be used as a raceway.

Shaft locating washers

Shaft locating washers are produced by machining, the bore is ground and the running surface is precision machined. The diameter series 1, 2, 3, 4 correspond to DIN 616/ISO 104. They are centred on their inner edge and are combined with axial cage assemblies if the adjacent surface cannot be used as a raceway.

Bearing washers

Bearing washers can be used as housing and shaft locating washers. The bore and outside surface are turned, the running surface is ground. Bearing washers can be used with axial cylindrical roller and cage assemblies K811 and axial needle roller bearings AXK.

Operating temperature

Axial cylindrical roller bearings and axial cylindrical roller and cage assemblies can be used at operating temperatures from –30 °C to +150 °C.

Caution! Bearings with plastic cages (suffix TV) are suitable up to +120 °C.

Suffixes

Suffixes for available designs: see table.

Available designs

Suffix	Description	Design
M[1)]	Brass cage	Standard
TV[1)]	Plastic cage made from glass fibre reinforced polyamide 66	Standard
P5	High dimensional and geometrical accuracy	Special design[2)]

1) Depending on series and size.

2) By agreement for axial bearing washers GS, WS.

Axial cylindrical roller bearings, roller and cage assemblies, bearing washers

Design and safety guidelines

Design of adjacent parts

Axial bearing washers must always be fully supported on their entire abutment surface. The abutting shoulders should be rigid, flat and perpendicular to the axis of rotation.

Radial cage running surfaces should be precision machined and resistant to wear (R_z4 ($R_a0{,}8$)).

Caution! If axial cylindrical roller and cage assemblies run directly on the adjacent construction, the running surfaces must be produced as rolling bearing raceways. The surface hardness of the raceway must be 670 HV +170 HV and the hardening depth CHD or Rht must be sufficiently large.

Tolerances for shaft and housing bore

The tolerances for the housing bore and shaft must be applied in accordance with the table.

Housing bore and shaft tolerances

Bearing component		Shaft tolerance	Bore tolerance
K811, K812, K893, K894	Guided on shaft	h8	–
GS811, GS812, GS893, GS894	–	–	H9
WS811, WS812, WS893, WS894	–	h8	–
LS	As housing locating washer	Clear of shaft	H9
	As shaft locating washer	h8	Clear of housing

Limiting speed

The limiting speeds n_G given in the dimension tables are for oil lubrication.

Caution! With grease lubrication, the permissible value is 25% of the value given in the table.

Minimum axial load

A minimum axial load $F_{a\,min}$ according to the formula must be applied.

$$F_{a\,min} = 0{,}0005 \cdot C_{0a} + k_a \left(\frac{C_{0a} \cdot n}{10^8} \right)^2$$

$F_{a\,min}$ N
Minimum axial load

k_a –
Factor for determining the minimum load: see table

C_{0a} N
Basic static load rating

n min^{-1}
Speed.

Factor k_a for determining the minimum load

Series	k_a
K811	1,4
K812	0,9
K893	0,7
K894	0,5

Orientation of washers

Caution! Axial washers should be fitted with the raceway facing towards the rolling elements.

Accuracy

The dimensional and geometrical tolerances of axial bearing washers GS and WS are in accordance with tolerance class PN to DIN 620.

The bore, external and height tolerances of the bearing components are shown in the table and *Figure 1*.

Tolerances for bearing components

Series	Tolerance					
	Bore		Outside diameter		Height	
K811, K812, K893, K894	D_{c1}	E11[1)]	D_c	a13[1)]	D_w	to DIN 5 402-1
GS811, GS812, GS893, GS894	D_1	–	D	to DIN 620	B	h11
WS811, WS812, WS893, WS894	d	to DIN 620	d_1	–	B	h11
LS	d	E12[1)]	D	a12[1)]	B	h11

1) Deviation from mean diameter.

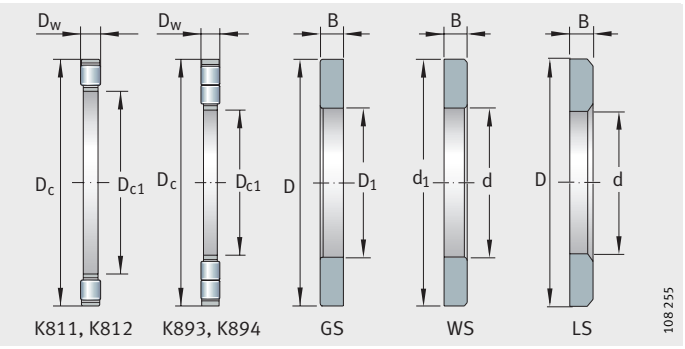
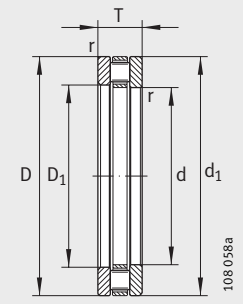
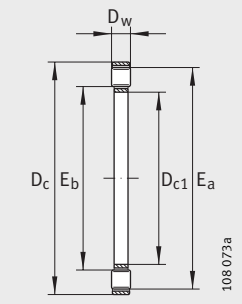


Figure 1
Axial bearing washers

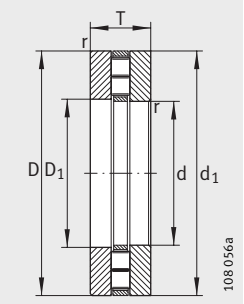
Axial cylindrical roller bearings



811, 812



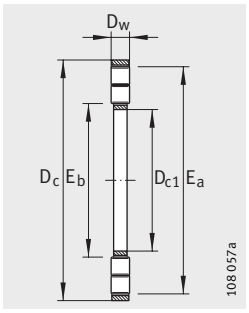
K811, K812



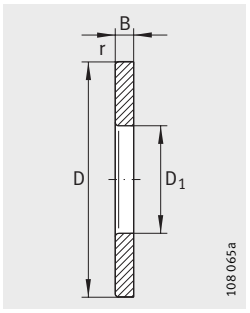
893, 894

Dimension table · Dimensions in mm

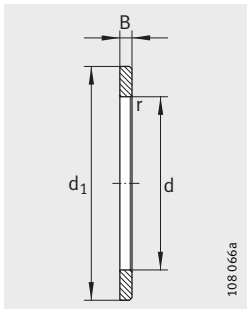
Axial cylindrical roller bearings					**Axial cylindrical roller bearing and cage assembly**		**Axial bearing washers**			
Complete bearings Designation				Mass m ≈kg	Desig-nation	Mass m ≈kg	Housing locating washer Desig-nation	Shaft locating washer Desig-nation	Bearing washer Desig-nation	Mass m ≈kg
81102-TV	–	–	–	0,024	**K81102-TV**	0,006	**GS81102**	**WS81102**	**LS1528**	0,008
81103-TV	–	–	–	0,027	**K81103-TV**	0,009	**GS81103**	**WS81103**	**LS1730**	0,009
81104-TV	–	–	–	0,037	**K81104-TV**	0,013	**GS81104**	**WS81104**	**LS2035**	0,012
81105-TV	–	–	–	0,053	**K81105-TV**	0,015	**GS81105**	**WS81105**	**LS2542**	0,019
81106-TV	–	–	–	0,057	**K81106-TV**	0,017	**GS81106**	**WS81106**	**LS3047**	0,02
–	**81206-TV**	–	–	0,123	**K81206-TV**	0,033	**GS81206**	**WS81206**	–	0,045
–	–	**89306-TV**	–	0,24	**K89306-TV**	0,04	**GS89306**	**WS89306**	–	0,095
81107-TV	–	–	–	0,073	**K81107-TV**	0,019	**GS81107**	**WS81107**	**LS3552**	0,027
–	**81207-TV**	–	–	0,195	**K81207-TV**	0,043	**GS81207**	**WS81207**	–	0,076
–	–	**89307-TV**	–	0,34	**K89307-TV**	0,053	**GS89307**	**WS89307**	–	0,134
81108-TV	–	–	–	0,105	**K81108-TV**	0,031	**GS81108**	**WS81108**	**LS4060**	0,037
–	**81208-TV**	–	–	0,249	**K81208-TV**	0,081	**GS81208**	**WS81208**	–	0,084
–	–	**89308-TV**	–	0,484	**K89308-TV**	0,098	**GS89308**	**WS89308**	–	0,193
81109-TV	–	–	–	0,13	**K81109-TV**	0,035	**GS81109**	**WS81109**	**LS4565**	0,047
–	**81209-TV**	–	–	0,287	**K81209-TV**	0,085	**GS81209**	**WS81209**	–	0,101
–	–	**89309-TV**	–	0,615	**K89309-TV**	0,121	**GS89309**	**WS89309**	–	0,247
81110-TV	–	–	–	0,14	**K81110-TV**	0,038	**GS81110**	**WS81110**	**LS5070**	0,051
–	**81210-TV**	–	–	0,356	**K81210-TV**	0,098	**GS81210**	**WS81210**	–	0,129
–	–	**89310-TV**	–	0,887	**K89310-TV**	0,175	**GS89310**	**WS89310**	–	0,356
81111-TV	–	–	–	0,218	**K81111-TV**	0,045	**GS81111**	**WS81111**	**LS5578**	0,082
–	**81211-TV**	–	–	0,568	**K81211-TV**	0,166	**GS81211**	**WS81211**	–	0,201
–	–	**89311-TV**	–	1,18	**K89311-TV**	0,195	**GS89311**	**WS89311**	–	0,485
81112-TV	–	–	–	0,266	**K81112-TV**	0,082	**GS81112**	**WS81112**	**LS6085**	0,092
–	**81212-TV**	–	–	0,642	**K81212-TV**	0,176	**GS81212**	**WS81212**	–	0,233
–	–	**89312-TV**	–	1,26	**K89312-TV**	0,21	**GS89312**	**WS89312**	–	0,517
–	–	–	**89412-TV**	2,818	**K89412-TV**	0,538	**GS89412**	**WS89412**	–	1,115



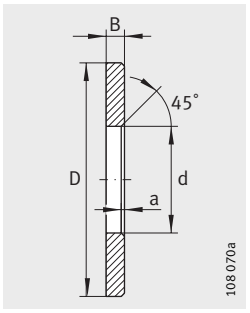
K893, K894



GS811, GS812,
GS893, GS894



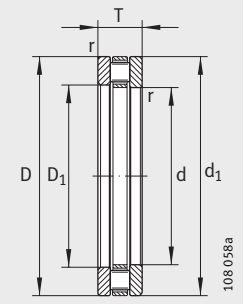
WS811, WS812,
WS893, WS894



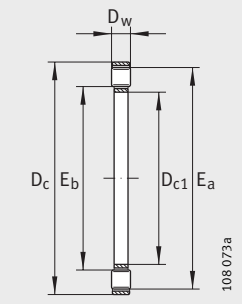
LS

Dimensions								Raceway dimensions		Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
D_{c1} d	D_1	D_c D	d_1	T	D_w	B	a r	E_b	E_a	dyn. C_a	stat. C_{0a}	C_{ua}	n_G	n_B
							min.			N	N	N	min^{-1}	min^{-1}
15	16	28	28	9	3,5	2,75	0,3	16	27	14 400	28 500	4 000	13 400	6 300
17	18	30	30	9	3,5	2,75	0,3	18	29	15 900	33 500	4 650	12 300	5 400
20	21	35	35	10	4,5	2,75	0,3	21	34	24 900	53 000	7 300	10 500	4 300
25	26	42	42	11	5	3	0,6	26	41	33 500	76 000	7 100	8 600	3 500
30	32	47	47	11	5	3	0,6	31	46	35 500	86 000	8 000	7 500	3 050
30	32	52	52	16	7,5	4,25	0,6	31	50	64 000	141 000	14 100	7 000	2 650
30	32	60	60	18	5,5	6,25	1	33	59	69 000	197 000	18 900	6 400	2 600
35	37	52	52	12	5	3,5	0,6	36	51	39 000	101 000	9 500	6 600	2 600
35	37	62	62	18	7,5	5,25	1	39	58	80 000	199 000	20 000	5 900	2 320
35	37	68	68	20	6	7	1	38	67	80 000	237 000	23 200	5 600	2 390
40	42	60	60	13	6	3,5	0,6	42	58	56 000	148 000	14 500	5 800	2 190
40	42	68	68	19	9	5	1	43	66	107 000	265 000	23 300	5 300	1 860
40	42	78	78	22	7	7,5	1	44	77	122 000	385 000	39 000	4 900	1 780
45	47	65	65	14	6	4	0,6	47	63	59 000	163 000	16 000	5 200	1 970
45	47	73	73	20	9	5,5	1	48	70	105 000	265 000	23 300	4 900	1 820
45	47	85	85	24	7,5	8,25	1	49	83	139 000	445 000	44 500	4 450	1 620
50	52	70	70	14	6	4	0,6	52	68	61 000	177 000	17 400	4 800	1 810
50	52	78	78	22	9	6,5	1	53	75	117 000	315 000	27 500	4 500	1 550
50	52	95	95	27	8	9,5	1,1	56	92	167 000	560 000	58 000	3 950	1 460
55	57	78	78	16	6	5	0,6	57	77	90 000	300 000	31 000	4 350	1 330
55	57	90	90	25	11	7	1	59	85	154 000	405 000	38 500	3 950	1 510
55	57	105	105	30	9	10,5	1,1	61	103	184 000	600 000	52 000	3 600	1 490
60	62	85	85	17	7,5	4,75	1	62	82	103 000	315 000	32 000	3 950	1 360
60	62	95	95	26	11	7,5	1	64	91	172 000	480 000	45 500	3 700	1 300
60	62	110	110	30	9	10,5	1,1	66	108	196 000	670 000	58 000	3 400	1 350
60	62	130	130	42	14	14	1,5	65	126	390 000	1 220 000	121 000	3 050	1 080

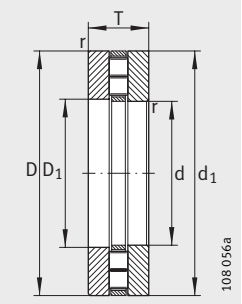
Axial cylindrical roller bearings



811, 812



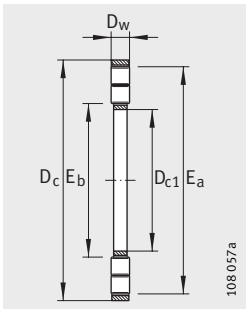
K811, K812



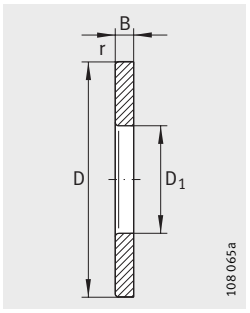
893, 894

Dimension table (continued) · Dimensions in mm

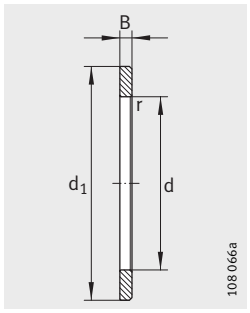
Axial cylindrical roller bearings					Axial cylindrical roller bearing and cage assembly		Axial bearing washers			
Complete bearings				Mass m	Designation	Mass m	Housing locating washer	Shaft locating washer	Bearing washer	Mass m
Designation				≈kg		≈kg	Designation	Designation	Designation	≈kg
81113-TV	–	–	–	0,31	**K81113-TV**	0,09	**GS81113**	**WS81113**	**LS6590**	0,11
–	**81213-TV**	–	–	0,721	**K81213-TV**	0,185	**GS81213**	**WS81213**	–	0,268
–	–	**89313-TV**	–	1,33	**K89313-TV**	0,21	**GS89313**	**WS89313**	–	0,535
–	–	–	**89413-TV**	3,52	**K89413-TV**	0,72	**GS89413**	**WS89413**	–	1,4
81114-TV	–	–	–	0,332	**K81114-TV**	0,092	**GS81114**	**WS81114**	**LS7095**	0,12
–	**81214-TV**	–	–	0,768	**K81214-TV**	0,212	**GS81214**	**WS81214**	–	0,278
–	–	**89314-TV**	–	1,82	**K89314-TV**	0,29	**GS89314**	**WS89314**	–	0,8
–	–	–	**89414-TV**	4,18	**K89414-TV**	0,76	**GS89414**	**WS89414**	–	1,73
81115-TV	–	–	–	0,393	**K81115-TV**	0,096	**GS81115**	**WS81115**	**LS75100**	0,136
–	**81215-TV**	–	–	0,8	**K81215-TV**	0,195	**GS81215**	**WS81215**	–	0,293
–	–	**89315-TV**	–	2,23	**K89315-TV**	0,375	**GS89315**	**WS89315**	–	0,97
–	–	–	**89415-M**	5,96	**K89415-M**	1,78	**GS89415**	**WS89415**	–	2,09
81116-TV	–	–	–	0,4	**K81116-TV**	0,095	**GS81116**	**WS81116**	**LS80105**	0,144
–	**81216-TV**	–	–	0,9	**K81216-TV**	0,234	**GS81216**	**WS81216**	–	0,333
–	–	**89316-TV**	–	2,37	**K89316-TV**	0,42	**GS89316**	**WS89316**	–	1,02
–	–	–	**89416-M**	7,04	**K89416-M**	2,04	**GS89416**	**WS89416**	–	2,5
81117-TV	–	–	–	0,42	**K81117-TV**	0,118	**GS81117**	**WS81117**	**LS85110**	0,151
–	**81217-TV**	–	–	1,26	**K81217-TV**	0,28	**GS81217**	**WS81217**	–	0,49
–	–	**89317-M**	–	3,39	**K89317-M**	0,93	**GS89317**	**WS89317**	–	1,23
–	–	–	**89417-M**	8,65	**K89417-M**	2,71	**GS89417**	**WS89417**	–	2,97
81118-TV	–	–	–	0,62	**K81118-TV**	0,15	**GS81118**	**WS81118**	**LS90120**	0,225
–	**81218-TV**	–	–	1,77	**K81218-TV**	0,54	**GS81218**	**WS81218**	–	0,614
–	–	**89318-M**	–	3,63	**K89318-M**	0,97	**GS89318**	**WS89318**	–	1,33
–	–	–	**89418-M**	9,94	**K89418-M**	3,04	**GS89418**	**WS89418**	–	3,45
81120-TV	–	–	–	0,95	**K81120-TV**	0,25	**GS81120**	**WS81120**	**LS100135**	0,35
–	**81220-TV**	–	–	2,2	**K81220-TV**	0,6	**GS81220**	**WS81220**	–	0,8
–	–	**89320-M**	–	4,56	**K89320-M**	1,18	**GS89320**	**WS89320**	–	1,69
–	–	–	**89420-M**	13,4	**K89420-M**	3,92	**GS89420**	**WS89420**	–	4,75



K893, K894



GS811, GS812,
GS893, GS894



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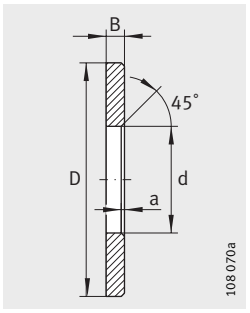
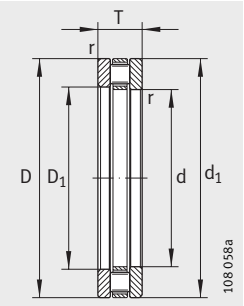
WS893, WS894



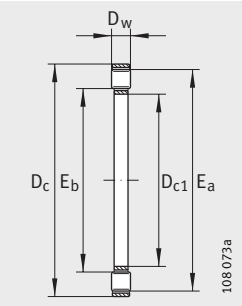
LS

Dimensions								Raceway dimensions		Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
D_{c1} d	D_1	D_c D	d_1	T	D_w	B	a r	E_b	E_a	dyn. C_a	stat. C_{0a}	C_{ua}	n_G	n_B
							min.			N	N	N	min^{-1}	min^{-1}
65	67	90	90	18	7,5	5,25	1	67	87	107 000	340 000	34 000	3 700	1 260
65	67	100	100	27	11	8	1	69	96	177 000	500 000	48 000	3 500	1 240
65	67	115	115	30	9	10,5	1,1	71	113	194 000	670 000	58 000	3 200	1 330
65	68	140	140	45	15	15	2	70	135	445 000	1 410 000	139 000	2 800	1 000
70	72	95	95	18	7,5	5,25	1	72	92	111 000	365 000	36 500	3 500	1 170
70	72	105	105	27	11	8	1	74	102	187 000	550 000	53 000	3 300	1 130
70	72	125	125	34	10	12	1,1	76	123	239 000	830 000	74 000	2 950	1 200
70	73	150	150	48	16	16	2	76	147	475 000	1 500 000	148 000	2 600	1 000
75	77	100	100	19	7,5	5,75	1	78	97	107 000	350 000	35 500	3 300	1 190
75	77	110	110	27	11	8	1	79	106	172 000	500 000	48 000	3 100	1 210
75	77	135	135	36	11	12,5	1,5	81	132	285 000	1 010 000	92 000	2 750	1 080
75	78	160	160	51	17	17	2	82	156	500 000	1 580 000	150 000	2 450	1 000
80	82	105	105	19	7,5	5,75	1	83	102	106 000	350 000	35 500	3 100	1 170
80	82	115	115	28	11	8,5	1	84	112	201 000	630 000	60 000	2 950	990
80	82	140	140	36	11	12,5	1,5	86	137	305 000	1 110 000	99 000	2 600	990
80	83	170	170	54	18	18	2,1	88	165	560 000	1 770 000	169 000	2 300	950
85	87	110	110	19	7,5	5,75	1	87	108	112 000	385 000	39 000	2 950	1 070
85	88	125	125	31	12	9,5	1	90	119	217 000	660 000	64 000	2 750	1 060
85	88	150	150	39	12	13,5	1,5	93	146	325 000	1 140 000	104 000	2 450	1 030
85	88	180	180	58	19	19,5	2,1	93	175	620 000	1 980 000	188 000	2 170	900
90	92	120	120	22	9	6,5	1	93	117	141 000	465 000	40 000	2 750	1 070
90	93	135	135	35	14	10,5	1,1	95	129	290 000	890 000	88 000	2 550	910
90	93	155	155	39	12	13,5	1,5	98	151	335 000	1 200 000	108 000	2 350	980
90	93	190	190	60	20	20	2,1	99	185	680 000	2 200 000	207 000	2 060	850
100	102	135	135	25	11	7	1	104	131	199 000	650 000	59 000	2 450	920
100	103	150	150	38	15	11,5	1,1	107	142	340 000	1 080 000	104 000	2 300	840
100	103	170	170	42	13	14,5	1,5	109	166	380 000	1 400 000	122 000	2 130	910
100	103	210	210	67	22	22,5	3	111	205	850 000	2 850 000	265 000	1 860	720

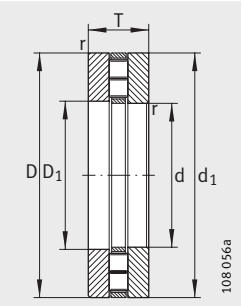
Axial cylindrical roller bearings



811, 812



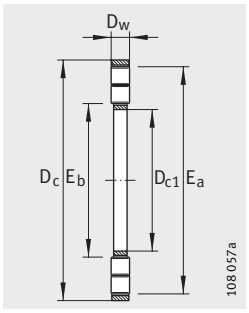
K811, K812



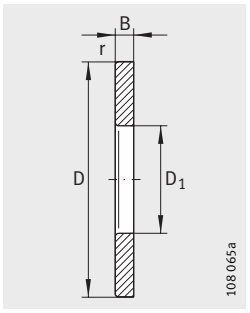
893, 894

Dimension table (continued) · Dimensions in mm

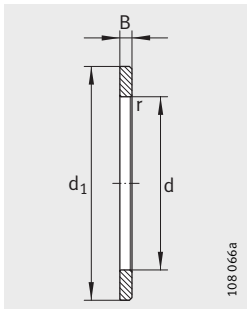
Axial cylindrical roller bearings					Axial cylindrical roller bearing and cage assembly		Axial bearing washers			
Complete bearings				Mass m	Designation	Mass m	Housing locating washer	Shaft locating washer	Bearing washer	Mass m
Designation				≈kg		≈kg	Designation	Designation	Designation	≈kg
81122-TV	–	–	–	1,04	**K81122-TV**	0,27	**GS81122**	**WS81122**	**LS110145**	0,385
–	**81222-TV**	–	–	2,29	**K81222-TV**	0,53	**GS81222**	**WS81222**	–	0,88
–	–	**89322-M**	–	6,7	**K89322-M**	1,83	**GS89322**	**WS89322**	–	2,44
–	–	–	**89422-M**	17,4	**K89422-M**	5,11	**GS89422**	**WS89422**	–	6,15
81124-TV	–	–	–	1,12	**K81124-TV**	0,29	**GS81124**	**WS81124**	**LS120155**	0,415
–	**81224-TV**	–	–	2,54	**K81224-TV**	0,58	**GS81224**	**WS81224**	–	0,98
–	–	**89324-M**	–	9,44	**K89324-M**	2,64	**GS89324**	**WS89324**	–	3,4
–	–	–	**89424-M**	21,9	**K89424-M**	6,37	**GS89424**	**WS89424**	–	7,7
81126-TV	–	–	–	1,67	**K81126-TV**	0,38	**GS81126**	**WS81126**	**LS130170**	0,643
–	**81226-TV**	–	–	3,98	**K81226-TV**	0,92	**GS81226**	**WS81226**	–	1,53
–	–	**89326-M**	–	11,2	**K89326-M**	2,09	**GS89326**	**WS89326**	–	4,045
–	–	–	**89426-M**	27,1	**K89426-M**	7,96	**GS89426**	**WS89426**	–	9,5
81128-TV	–	–	–	1,9	**K81128-TV**	0,4	**GS81128**	**WS81128**	**LS140180**	0,749
–	**81228-M**	–	–	5,07	**K81228-M**	1,8	**GS81228**	**WS81228**	–	1,635
–	–	**89328-M**	–	13,2	**K89328-M**	2,57	**GS89328**	**WS89328**	–	4,8
–	–	–	**89428-M**	29,8	**K89428-M**	8,53	**GS89428**	**WS89428**	–	10,6
81130-TV	–	–	–	2,2	**K81130-TV**	0,43	**GS81130**	**WS81130**	**LS150190**	0,796
–	**81230-M**	–	–	7,17	**K81230-M**	2,81	**GS81230**	**WS81230**	–	2,18
–	–	**89330-M**	–	13,9	**K89330-M**	3,75	**GS89330**	**WS89330**	–	5,06
–	–	–	**89430-M**	35,4	**K89430-M**	10,4	**GS89430**	**WS89430**	–	12,5
81132-TV	–	–	–	2,12	**K81132-TV**	0,44	**GS81132**	**WS81132**	**LS160200**	0,842
–	**81232-M**	–	–	7,6	**K81232-M**	3,01	**GS81232**	**WS81232**	–	2,3
–	–	–	**89432-M**	42	**K89432-M**	12,4	**GS89432**	**WS89432**	–	14,8
81134-TV	–	–	–	2,41	**K81134-TV**	0,66	**GS81134**	**WS81134**	–	1,1
–	**81234-M**	–	–	9,3	**K81234-M**	3,5	**GS81234**	**WS81234**	–	2,9
–	–	–	**89434-M**	51,9	**K89434-M**	14,9	**GS89434**	**WS89434**	–	18,5



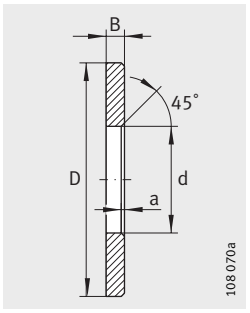
K893, K894



GS811, GS812,
GS893, GS894



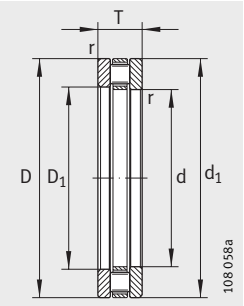
WS811, WS812,
WS893, WS894



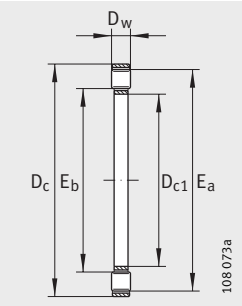
LS

Dimensions								Raceway dimensions		Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
D_{c1} d	D_1	D_c D	d_1	T	D_w	B	a r	E_b	E_a	dyn. C_a	stat. C_{0a}	C_{ua}	n_G	n_B
							min.			N	N	N	min^{-1}	min^{-1}
110	112	145	145	25	11	7	1	114	141	207 000	700 000	62 000	2 260	850
110	113	160	160	38	15	11,5	1,1	117	152	325 000	1 030 000	98 000	2 130	860
110	113	190	190	48	15	16,5	2	120	185	500 000	1 870 000	166 000	1 920	790
110	113	230	230	73	24	24,5	3	121	223	1 000 000	3 400 000	315 000	1 690	640
120	122	155	155	25	11	7	1	124	151	214 000	760 000	65 000	2 090	780
120	123	170	170	39	15	12	1,1	127	162	340 000	1 120 000	104 000	1 990	790
120	123	210	210	54	17	18,5	2,1	132	205	640 000	2 420 000	210 000	1 750	690
120	123	250	250	78	26	26	4	133	243	1 160 000	4 000 000	365 000	1 560	580
130	132	170	170	30	12	9	1	135	165	250 000	900 000	79 000	1 920	760
130	133	190	187	45	19	13	1,5	137	181	480 000	1 520 000	143 000	1 800	710
130	134	225	225	58	18	20	2,1	141	219	710 000	2 700 000	237 000	1 620	650
130	134	270	270	85	28	28,5	4	145	263	1 330 000	4 600 000	405 000	1 440	530
140	142	180	178	31	12	9,5	1	145	175	260 000	960 000	83 000	1 800	710
140	143	200	197	46	19	13,5	1,5	151	195	455 000	1 450 000	133 000	1 690	730
140	144	240	240	60	19	20,5	2,1	152	234	820 000	3 200 000	275 000	1 520	570
140	144	280	280	85	28	28,5	4	155	273	1 380 000	4 950 000	430 000	1 370	490
150	152	190	188	31	12	9,5	1	155	185	270 000	1 020 000	86 000	1 690	660
150	153	215	212	50	21	14,5	1,5	162	210	590 000	1 940 000	175 000	1 580	650
150	154	250	250	60	19	20,5	2,1	162	244	840 000	3 350 000	285 000	1 440	510
150	154	300	300	90	30	30	4	167	293	1 570 000	5 700 000	495 000	1 280	445
160	162	200	198	31	12	9,5	1	165	195	260 000	990 000	82 000	1 600	670
160	163	225	222	51	21	15	1,5	171	219	600 000	2 030 000	181 000	1 500	610
160	164	320	320	95	32	31,5	5	179	313	1 780 000	6 500 000	560 000	1 200	410
170	172	215	213	34	14	10	1,1	176	209	360 000	1 380 000	116 000	1 500	570
170	173	240	237	55	22	16,5	1,5	184	233	680 000	2 340 000	207 000	1 400	600
170	174	340	340	103	34	34,5	5	191	333	1 990 000	7 400 000	640 000	1 130	375

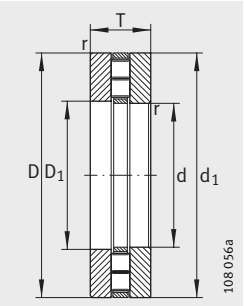
Axial cylindrical roller bearings



811, 812



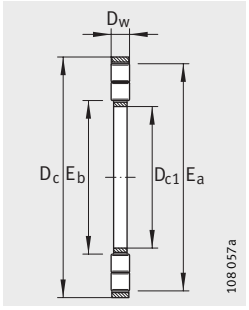
K811, K812



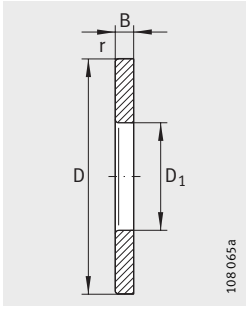
893, 894

Dimension table (continued) · Dimensions in mm

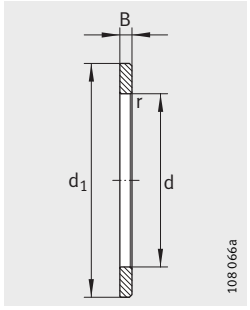
Axial cylindrical roller bearings				Axial cylindrical roller bearing and cage assembly		Axial bearing washers		
Complete bearings			Mass m	Designation	Mass m	Housing locating washer	Shaft locating washer	Mass m
Designation			≈kg		≈kg	Designation	Designation	≈kg
81136-M	–	–	3,3	**K81136-M**	1,46	**GS81136**	**WS81136**	1,12
–	**81236-M**	–	9,9	**K81236-M**	3,67	**GS81236**	**WS81236**	3,13
–	–	**89436-M**	60	**K89436-M**	17,6	**GS89436**	**WS89436**	21,3
81138-M	–	–	4,74	**K81138-M**	1,84	**GS81138**	**WS81138**	1,45
–	**81238-M**	–	12,8	**K81238-M**	5,17	**GS81238**	**WS81238**	3,835
–	–	**89438-M**	72,1	**K89438-M**	20,9	**GS89438**	**WS89438**	25,6
81140-M	–	–	4,95	**K81140-M**	1,93	**GS81140**	**WS81140**	1,51
–	**81240-M**	–	14,2	**K81240-M**	5,4	**GS81240**	**WS81240**	4,41
–	–	**89440-M**	82,6	**K89440-M**	24	**GS89440**	**WS89440**	29,3
81144-M	–	–	5,22	**K81144-M**	2,04	**GS81144**	**WS81144**	1,59
–	**81244-M**	–	15,3	**K81244-M**	5,8	**GS81244**	**WS81244**	4,75
–	–	**89444-M**	90,1	**K89444-M**	25,7	**GS89444**	**WS89444**	32,2
81148-M	–	–	8,45	**K81148-M**	3,32	**GS81148**	**WS81148**	2,57
–	**81248-M**	–	26,2	**K81248-M**	9,94	**GS81248**	**WS81248**	8,15
–	–	**89448-M**	95,9	**K89448-M**	27,3	**GS89448**	**WS89448**	34,3
81152-M	–	–	9,08	**K81152-M**	3,55	**GS81152**	**WS81152**	2,765
–	**81252-M**	–	28,6	**K81252-M**	10,8	**GS81252**	**WS81252**	8,9
–	–	**89452-M**	125	**K89452-M**	36,8	**GS89452**	**WS89452**	44,25
81156-M	–	–	12,6	**K81156-M**	5,31	**GS81156**	**WS81156**	3,65
–	**81256-M**	–	31	**K81256-M**	11,5	**GS81256**	**WS81256**	9,75
–	–	**89456-M**	159	**K89456-M**	47,5	**GS89456**	**WS89456**	55,6
81160-M	–	–	19,4	**K81160-M**	7,6	**GS81160**	**WS81160**	5,92
–	**81260-M**	–	48,25	**K81260-M**	17,8	**GS81260**	**WS81260**	15,2
–	–	**89460-M**	170	**K89460-M**	49,8	**GS89460**	**WS89460**	60,15
81164-M	–	–	20,7	**K81164-M**	8,04	**GS81164**	**WS81164**	6,35
–	–	**89464-M**	203	**K89464-M**	80,3	**GS89464**	**WS89464**	61,5



K893, K894



GS811, GS812,
GS893, GS894



WS811, WS812,
WS893, WS894

Dimensions								Raceway dimensions		Basic load ratings		Fatigue limit load	Limiting speed	Reference speed
D_{c1} d	D_1	D_c D	d_1	T	D_w	B	a r min.	E_b	E_a	dyn. C_a N	stat. C_{0a} N	C_{ua} N	n_G min^{-1}	n_B min^{-1}
180	183	225	222	34	14	10	1,1	186	220	340 000	1 300 000	107 000	1 420	590
180	183	250	247	56	22	17	1,5	194	243	690 000	2 440 000	213 000	1 340	580
180	184	360	360	109	36	36,5	5	200	351	2 210 000	8 200 000	690 000	1 070	360
190	193	240	237	37	15	11	1,1	198	234	385 000	1 500 000	123 000	1 340	570
190	194	270	267	62	26	18	2	205	263	880 000	3 000 000	270 000	1 250	530
190	195	380	380	115	38	38,5	5	212	371	2 450 000	9 200 000	770 000	1 100	330
200	203	250	247	37	15	11	1,1	208	244	390 000	1 550 000	125 000	1 280	530
200	204	280	277	62	26	18	2	215	273	900 000	3 150 000	280 000	1 200	485
200	205	400	400	122	40	41	5	224	391	2 700 000	10 200 000	840 000	960	315
220	223	270	267	37	15	11	1,1	228	264	420 000	1 730 000	137 000	1 180	470
220	224	300	297	63	26	18,5	2	236	294	940 000	3 450 000	295 000	1 110	435
220	225	420	420	122	40	41	6	244	411	2 900 000	11 500 000	940 000	900	270
240	243	300	297	45	18	13,5	1,5	253	294	600 000	2 500 000	199 000	1 070	440
240	244	340	335	78	32	23	2,1	263	333	1 370 000	5 000 000	425 000	990	395
240	245	440	440	122	40	41	6	264	431	3 000 000	12 200 000	980 000	850	250
260	263	320	317	45	18	13,5	1,5	272	314	620 000	2 650 000	205 000	990	390
260	264	360	355	79	32	23,5	2,1	281	351	1 440 000	5 400 000	455 000	930	355
260	265	480	480	132	44	44	6	286	468	3 600 000	14 700 000	1 160 000	780	224
280	283	350	347	53	22	15,5	1,5	294	344	860 000	3 650 000	285 000	910	345
280	284	380	375	80	32	24	2,1	301	371	1 460 000	5 600 000	465 000	870	335
280	285	520	520	145	48	48,5	6	309	508	4 200 000	17 600 000	1 360 000	720	199
300	304	380	376	62	25	18,5	2	316	372	1 060 000	4 500 000	355 000	850	330
300	304	420	415	95	38	28,5	3	329	412	1 930 000	7 300 000	600 000	800	305
300	305	540	540	145	48	48,5	6	329	528	4 350 000	18 500 000	1 420 000	690	188
320	324	400	396	63	25	19	2	336	392	1 100 000	4 750 000	370 000	800	290
320	325	580	575	155	68	43,5	7,5	343	566	5 500 000	19 900 000	1 430 000	640	185