



Radial - needle roller and cage assemblies Type series KKBF (plastic version)

Radial - needle roller and cage assembly KKBF



Description of construction

Radial needle roller and cage assemblies consist of plastic cage strips for needle rollers, produced as yardgoods and filled with rollers.

Seven types of needle roller sizes between 1,5 mm diam. to 12 mm diam. are available, and are either offered spooled as yardgoods or cut to required length ready for installation. The needle rollers (NRB) are contained and guided in the roller pockets and are in accordance with DIN 5402 / ISA 3096.

Cutting to the required diameter for use can be done according to the built-in length with normal cutting equipment, such as pliers, shears etc. The cage end play recommended by the manufacturer should be noted when deciding on the built-in length.

The joint produced in assembly remains open. There is no adverse effect on the operation of the radial needle roller ring and cage assembly due to the open joint. Radial needle roller rings are independent of the diameter, ie: they have no maximum limit, while observing the minimum area of use (see table of dimensions).

Installation

Shaft and housing openings should preferably be made as bearing tracks. The given load figures in the table of dimensions correspond to this bearing track and are based on the following preconditions:

- Hardness of running track 670 + 170 HV (58 + 7 HRC)
- Surface quality max. Ra 0,8
- Dimensions according to table of dimensions
- Tolerances (shaft) tolerance range f6
- Tolerances (opening) tolerance range H7

Accuracy

The needle and roller rings are equipped with rollers of sort G2 (0,002 mm). The diametral deviation is therefore a maximum of 0,002 mm. Only rollers of one sort are used per needle roller and cage assembly or roller ring.

Temperature:

The temperature limits of the radial needle roller and cage assembly rings in the standard version in continuous operation are -40°C and +100°C, in short-term operation the upper limit is +120°C.

Example of order:

Type KKBF 3020 for cutting by customer, delivered as yardgoods.

Designation : **KKBF 3020**

Quantity : **20 metres**

Type KKBF 3020 cut by the manufacturer ready for installation, delivered with a fixed length.

Designation : **KKBF 3020**

Straight length : **545 mm**

Quantity : **100 off.**

Radial needle roller and cage assembly

Type KKBF

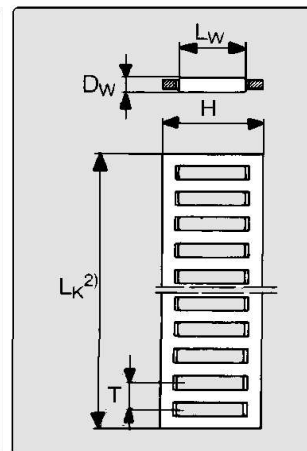
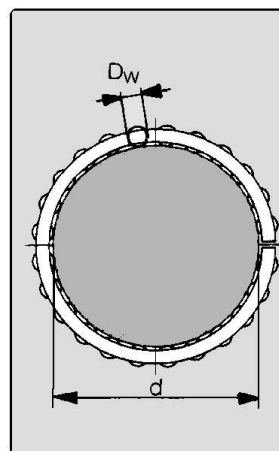
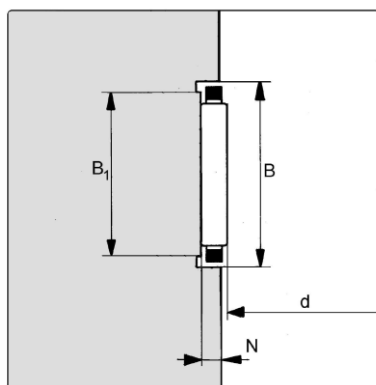


Table of dimensions [dimensions in mm]

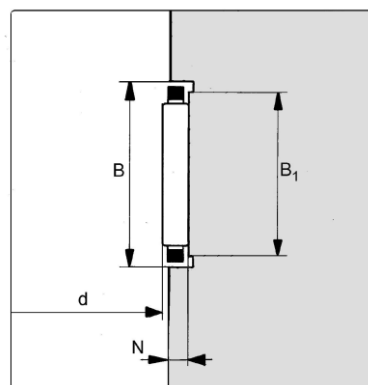
KMF-type	Needle roller		Range of use shaft diameter		Cage dimension		Load capacity		Fitted dimensions		
	D _w	L _w	d min.	d max.	H	T	dyn. C [kN]	stat. C ₀ [kN]	B	B ₁ min.	N
KKBF 1510	1,5	7,8	20	∞ 1)	10	2,9	$1,54 \cdot \sqrt{d}$	$0,50 \cdot d$	10,3+0,2	8,0	1,3-0,2
KKBF 2518	2,5	13,8	50	∞ 1)	18	4,8	$3,26 \cdot \sqrt{d}$	$0,94 \cdot d$	18,4+0,2	14,0	2,2-0,2
KKBF 3020	3,0	15,8	100	∞ 1)	20	5,2	$4,33 \cdot \sqrt{d}$	$1,20 \cdot d$	20,4+0,2	16,0	2,7-0,2
KKBF 4030	4,0	23,8	200	∞ 1)	30	7,0	$7,04 \cdot \sqrt{d}$	$1,81 \cdot d$	30,5+0,3	24,0	3,6-0,2
KKBF 5023	5,0	15,0	200	∞ 1)	23	8,0	$5,87 \cdot \sqrt{d}$	$1,24 \cdot d$	23,4+0,2	15,2	4,6-0,2
KKBF 5035	5,0	27,8	200	∞ 1)	35	9,0	$8,86 \cdot \sqrt{d}$	$2,07 \cdot d$	35,5+0,3	28,0	4,6-0,2
KKBF 12040	12,0	30,0	300	∞ 1)	40	16,0	$19,11 \cdot \sqrt{d}$	$3,00 \cdot d$	40,7+0,3	33,0	11,0-0,2

1) All types of cages can be supplied rolled in metre lengths

2) Installed length $L_k = (d + D_w) \cdot \pi$



Dimensions of housing



Dimensions of shaft

Radial roller and cage assembly KKBF



Description of construction

Radial roller and cage assemblies are produced in compound construction. Stable precision steel wire rings, so-called supports, are completed by a plastic roller cage strip to form a radial roller and cage assembly and are filled with cylindrical rollers.

The supports are made as a closed ring exactly to the running circle diameter (D_L). The supports can optionally be provided with a joint, so that the radial roller and cage assembly can also be fitted in a deep running track.

The cylindrical rollers (ZRB) according to DIN 5402 / ISO 3096 are contained and guided in the roller pockets.

5 types with roller sizes between 4 mm diam. and 18 mm diam. are available.

The area of use includes shaft diameters between 100 and about 1800 mm.

Installation

Shaft and housing openings should preferably be made as bearing tracks. The given load figures in the table of dimensions correspond to this bearing track and are based on the following preconditions:

- Hardness of running track 670 + 170 HV (58 + 7 HRC)
- Surface quality max. Ra 0,8
- Dimensions according to table of dimensions
- Tolerances (shaft) tolerance range f6
- Tolerances (opening) tolerance range H7

Accuracy

The needle and roller rings are equipped with rollers of sort G2 (0,002 mm). The diametral deviation is therefore a maximum of 0,002 mm

Only rollers of one sort are used per needle roller or roller and cage assembly.

Temperature:

The temperature limits of the radial needle rings in the standard version in continuous operation are between -40°C and $+100^{\circ}\text{C}$, in short-term operation the upper limit is $+120^{\circ}\text{C}$.

Example of order:

Type KKBF 7025 delivered state produced by the manufacturer ready to install on pitch diameter.

Designation : KKBF 7025

Pitch diameter D_L : 1.000 mm

Quantity : 10 off

Radial roller and cage assembly

Type KKBF

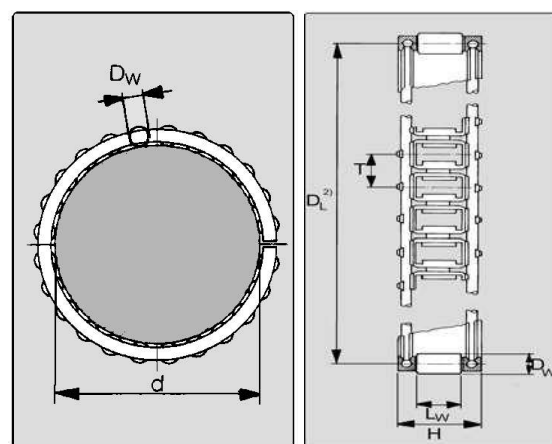
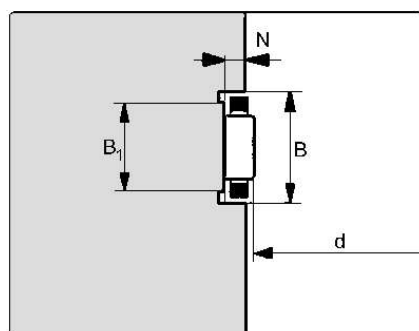


Table of dimensions [dimensions in mm]

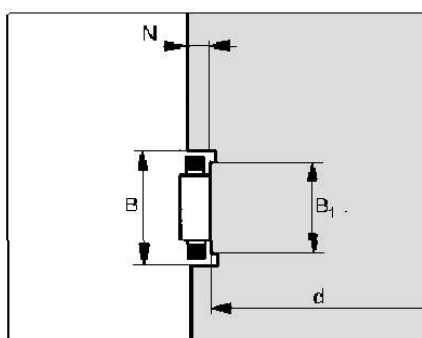
KMF-type	Cyl.-roller		Range of use shaft diameter		Cage dimension		Load capacity		Fitted dimensions		
	D_W	L_W	d min.	d max.	H	T	dyn. C [kN]	stat. C ₀ [kN]	B	B ₁ min.	N
KKBF 4015	4,0	8,0	100	~ 1000	15	7,5	$2,65 \cdot \sqrt{d}$	$0,53 \cdot d$	$15,4+0,2$	8,5	$3,6-0,2$
KKBF 5015	5,0	8,0	100	~ 1000	15	8,0	$3,30 \cdot \sqrt{d}$	$0,60 \cdot d$	$15,4+0,2$	8,5	$4,6-0,2$
KKBF 5020	5,0	15,0	120	~ 1000	20	8,0	$5,87 \cdot \sqrt{d}$	$1,24 \cdot d$	$20,4+0,2$	17,5	$4,6-0,2$
KKBF 7025	7,0	14,0	150	~ 1200	25	11,0	$6,70 \cdot \sqrt{d}$	$1,15 \cdot d$	$25,5+0,3$	15,0	$6,5-0,2$
KKBF 18036	18,0	18,0	200	~ 1800	36	23,0	$15,80 \cdot \sqrt{d}$	$1,75 \cdot d$	$36,5+0,3$	20,0	$17,0-0,2$

1) This series of cages can be supplied by the manufacturer as yardgoods.

2) Pitch diameter $D_L = d + D_W$



Dimensions of housing



Dimensions of shaft

Radial roller and cage assembly

Type KKBF 5015 (preferred series)

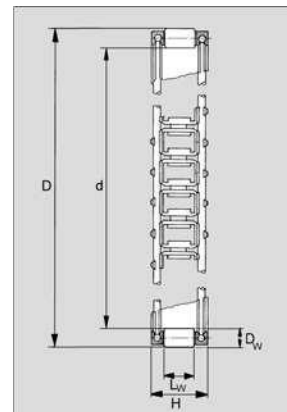


Table of dimensions [dimensions in mm]

KMF-type 1)	Cylindrical roller		Weight [kg]	No. of rollers Z [pcs.]	Cage dimension			Load capacity		Speed limit 2) n _G min. ⁻¹
	D _W	L _W			d	D	H	dyn. C [kN]	stat. C ₀ [kN]	
KKBF 5015 0125	5,0	8,0	0,083	49	120	130	15	36	72	990
KKBF 5015 0135	5,0	8,0	0,090	52	130	140	15	38	78	910
KKBF 5015 0145	5,0	8,0	0,096	56	140	150	15	39	84	850
KKBF 5015 0155	5,0	8,0	0,103	60	150	160	15	40	90	800
KKBF 5015 0165	5,0	8,0	0,110	64	160	170	15	42	96	750
KKBF 5015 0175	5,0	8,0	0,116	68	170	180	15	43	102	710
KKBF 5015 0185	5,0	8,0	0,123	72	180	190	15	44	108	670
KKBF 5015 0195	5,0	8,0	0,130	76	190	200	15	45	114	630
KKBF 5015 0205	5,0	8,0	0,136	80	200	210	15	47	120	600
KKBF 5015 0215	5,0	8,0	0,143	84	210	220	15	48	126	570
KKBF 5015 0225	5,0	8,0	0,149	88	220	230	15	49	132	550
KKBF 5015 0235	5,0	8,0	0,156	92	230	240	15	50	138	530
KKBF 5015 0245	5,0	8,0	0,163	96	240	250	15	51	144	500
KKBF 5015 0255	5,0	8,0	0,169	100	250	260	15	52	150	480
KKBF 5015 0265	5,0	8,0	0,176	104	260	270	15	53	156	460
KKBF 5015 0275	5,0	8,0	0,182	107	270	280	15	54	162	445
KKBF 5015 0285	5,0	8,0	0,189	111	280	290	15	55	168	430
KKBF 5015 0295	5,0	8,0	0,196	115	290	300	15	56	174	415

1) Other dimensions on request

2) Speed limit for grease lubrication

Example of order:

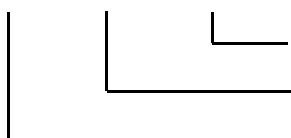
Type KKBF 5015 0195 delivered state produced by manufacturer ready to install for pitch diameter.

Designation:

KKBF 5015 0195

Quantity

50 off



pitch diam. D_L (195 mm)

cage size

type

Radial roller and cage assembly (two row)

Type KKBF 5015 (preferred series)

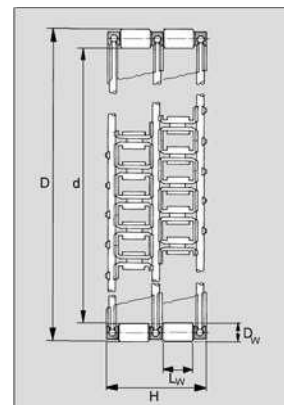


Table of dimensions [dimensions in mm]

KMF-type 1)	Cylindrical roller		Weight [kg]	No. of rollers Z [pcs.]	Cage dimension			Load figure		Speed limit 2) n _G min. ⁻¹
	D _w	L _w			d	D	H	dyn. C [kN]	stat. C ₀ [kN]	
KKBF 5015 0125 ZW	5,0	8,0	0,158	98	120	130	27	58	144	990
KKBF 5015 0135 ZW	5,0	8,0	0,170	104	130	140	27	62	156	910
KKBF 5015 0145 ZW	5,0	8,0	0,183	112	140	150	27	63	168	850
KKBF 5015 0155 ZW	5,0	8,0	0,195	120	150	160	27	65	180	800
KKBF 5015 0165 ZW	5,0	8,0	0,208	128	160	170	27	68	192	750
KKBF 5015 0175 ZW	5,0	8,0	0,221	136	170	180	27	70	204	710
KKBF 5015 0185 ZW	5,0	8,0	0,233	144	180	190	27	71	216	670
KKBF 5015 0195 ZW	5,0	8,0	0,246	152	190	200	27	73	228	630
KKBF 5015 0205 ZW	5,0	8,0	0,258	160	200	210	27	76	240	600
KKBF 5015 0215 ZW	5,0	8,0	0,271	168	210	220	27	78	252	570
KKBF 5015 0225 ZW	5,0	8,0	0,284	176	220	230	27	79	264	550
KKBF 5015 0235 ZW	5,0	8,0	0,296	184	230	240	27	81	276	530
KKBF 5015 0245 ZW	5,0	8,0	0,309	192	240	250	27	83	288	500
KKBF 5015 0255 ZW	5,0	8,0	0,321	200	250	260	27	84	300	480
KKBF 5015 0265 ZW	5,0	8,0	0,334	208	260	270	27	86	312	460
KKBF 5015 0275 ZW	5,0	8,0	0,346	214	270	280	27	88	324	445
KKBF 5015 0285 ZW	5,0	8,0	0,359	222	280	290	27	89	336	430
KKBF 5015 0295 ZW	5,0	8,0	0,371	230	290	300	27	91	348	415

1) Other dimensions on request

2) Speed limit with grease lubrication

Example of order:

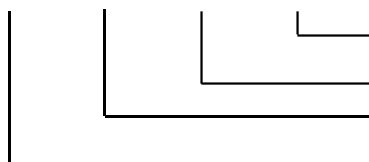
Type KKBF 5015 0195 delivered state produced by manufacturer ready to install for pitch diameter.

Designation:

KKBF 5015 0195 ZW

Quantity

50 off



two row

pitch diameter D_L (195 mm)

cage

type

Radial roller and cage assembly

Type KKBF 5020 (preferred series)

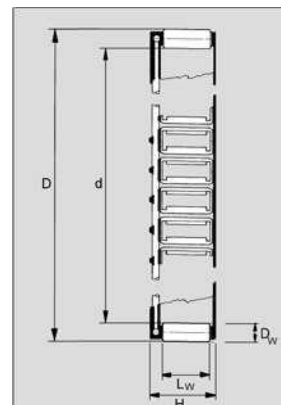


Table of dimensions [dimensions in mm]

KMF-type 1)	Cylindrical roller		Weight [kg]	No. of rollers Z [pcs.]	Cage dimension			Load figure		Speed limit 2) n _G min. ⁻¹
	D _w	L _w			d	D	H	dyn. C [kN]	stat. C ₀ [kN]	
KKBF 5020 0125	5,0	15,0	0,126	49	120	130	20	64	149	990
KKBF 5020 0135	5,0	15,0	0,136	52	130	140	20	67	161	910
KKBF 5020 0145	5,0	15,0	0,146	56	140	150	20	69	174	850
KKBF 5020 0155	5,0	15,0	0,157	60	150	160	20	72	186	800
KKBF 5020 0165	5,0	15,0	0,167	64	160	170	20	74	198	750
KKBF 5020 0175	5,0	15,0	0,177	68	170	180	20	77	211	710
KKBF 5020 0185	5,0	15,0	0,187	72	180	190	20	79	223	670
KKBF 5020 0195	5,0	15,0	0,197	76	190	200	20	81	236	630
KKBF 5020 0205	5,0	15,0	0,207	80	200	210	20	83	248	600
KKBF 5020 0215	5,0	15,0	0,217	84	210	220	20	85	260	570
KKBF 5020 0225	5,0	15,0	0,227	88	220	230	20	87	273	550
KKBF 5020 0235	5,0	15,0	0,237	92	230	240	20	89	285	530
KKBF 5020 0245	5,0	15,0	0,247	96	240	250	20	91	298	500
KKBF 5020 0255	5,0	15,0	0,258	100	250	260	20	93	310	480
KKBF 5020 0265	5,0	15,0	0,268	104	260	270	20	95	322	460
KKBF 5020 0275	5,0	15,0	0,278	107	270	280	20	97	335	445
KKBF 5020 0285	5,0	15,0	0,288	111	280	290	20	98	347	430
KKBF 5020 0295	5,0	15,0	0,299	115	290	300	20	100	360	415

1) Other dimensions on request

2) Speed limit for grease lubrication

Example of order:

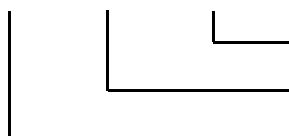
Type KKBF 5020 0205 delivered state produced by manufacturer ready to install for pitch diameter.

Designation :

KKBF 5020 0205

Quantity

100 off



pitch diameter D_L (205 mm)

cage size

type

Radial roller and cage assembly (two row)

Type KKBF 5020 (preferred series)

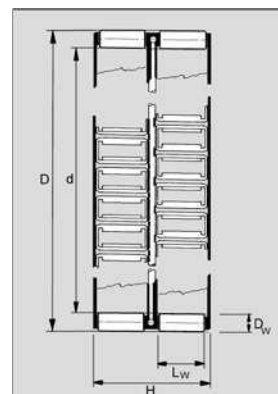


Table of dimensions [dimensions in mm]

KMF-type 1)	Cylindrical roller		Weight [kg]	No. of rollers Z [pcs.]	Cage dimension			Load figure		Speed limit 2) n _G min. ⁻¹
	D _w	L _w			d	D	H	dyn. C [kN]	stat. C ₀ [kN]	
KKBF 5020 0125 ZW	5,0	15,0	0,242	98	120	130	37	104	298	990
KKBF 5020 0135 ZW	5,0	15,0	0,262	104	130	140	37	109	322	910
KKBF 5020 0145 ZW	5,0	15,0	0,281	112	140	150	37	112	348	850
KKBF 5020 0155 ZW	5,0	15,0	0,300	120	150	160	37	117	372	800
KKBF 5020 0165 ZW	5,0	15,0	0,320	128	160	170	37	120	396	750
KKBF 5020 0175 ZW	5,0	15,0	0,339	136	170	180	37	125	422	710
KKBF 5020 0185 ZW	5,0	15,0	0,358	144	180	190	37	128	446	670
KKBF 5020 0195 ZW	5,0	15,0	0,378	152	190	200	37	131	472	630
KKBF 5020 0205 ZW	5,0	15,0	0,397	160	200	210	37	134	496	600
KKBF 5020 0215 ZW	5,0	15,0	0,417	168	210	220	37	138	520	570
KKBF 5020 0225 ZW	5,0	15,0	0,436	176	220	230	37	141	546	550
KKBF 5020 0235 ZW	5,0	15,0	0,455	184	230	240	37	144	570	530
KKBF 5020 0245 ZW	5,0	15,0	0,475	192	240	250	37	147	596	500
KKBF 5020 0255 ZW	5,0	15,0	0,494	200	250	260	37	151	620	480
KKBF 5020 0265 ZW	5,0	15,0	0,513	208	260	270	37	154	644	460
KKBF 5020 0275 ZW	5,0	15,0	0,533	214	270	280	37	158	670	445
KKBF 5020 0285 ZW	5,0	15,0	0,552	222	280	290	37	160	694	430
KKBF 5020 0295 ZW	5,0	15,0	0,572	230	290	300	37	163	720	415

1) Other dimensions on request

2) Speed limit for grease lubrication

Example of order:

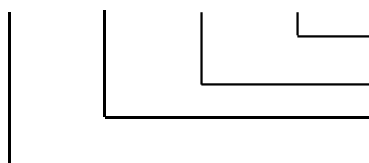
Type KKBF 5020 0205 delivered state produced by manufacturer ready to install on pitch.

Designation :

KKBF 5020 0205 ZW

Quantity

100 off



two row

pitch diameter D_L (205 mm)

cage size

type

Special roller and cage assembly



The special shape of the cage strips for the radial roller and cage assembly of type KKBF and the axial needle and cage assembly AXK (except for type KKBF 18 036) make it possible to produce a large number of special cages for cylindrical roller bearings.

With a constant cage width, any number of roller series can be added in the range over the wires, so that, for example, a radial roller and cage assembly with several rows is produced.

Table of dimensions [dimensions mm]

KMF-type	Height of cage		
	2-rows H_2	3-rows H_3	4-rows H_4
KKBF 4015	27,0	39,0	51,0
KKBF 5015	27,0	39,0	51,0
KKBF 5020	37,0	----	----
KKBF 7025	45,5	65,5	85,5



Mehrrerhiger - Rollenkrantz

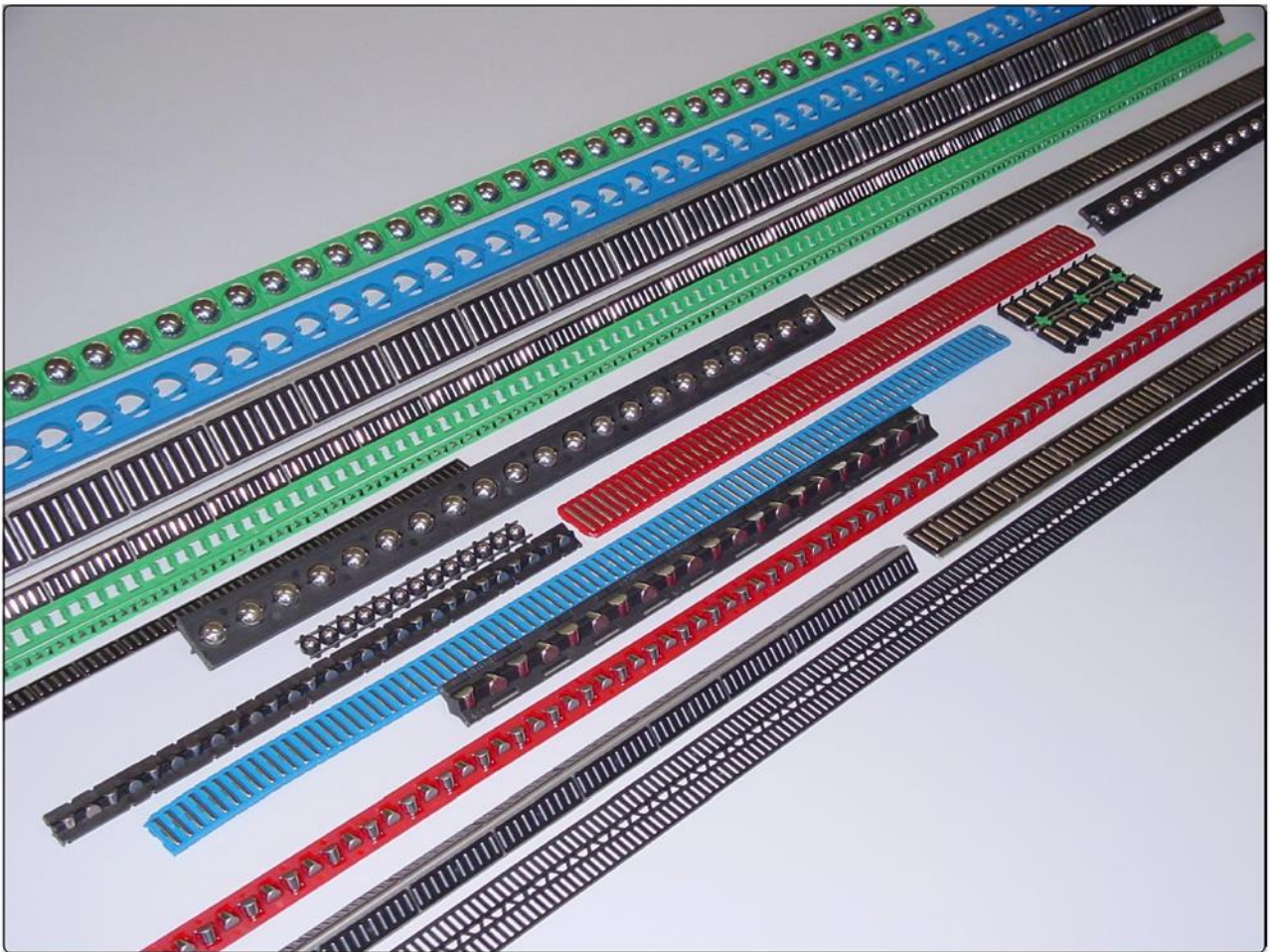


Schräg - Rollenkrantz

Simple bending parts (wire rings) made of circular wire, always adapted to the fitted situation, act as stable supports for the cage strip equipped with cylindrical rollers.

If, for example, one changes the diameter of one of the closed wire rings of the axial roller and cage assembly of type AXK, one obtains an angular roller cage with any desired angle of inclination.

Special roller and cage assembly can be produced for any pitch diameter.



Various KMF Linear Bearing Cages