



Needle roller bearing

Type KEBF

Radial roller bearing KEBF



Description of construction

Radial roller bearings of type KEBF consist of radial needle roller or radial roller and cage assembly of type KKBF, each in a hardened inner or outer running track.

Five preferred types with spaces for installation of 15 x 8,8 mm to 40,4 x 16 mm are available. By selecting the needle roller or roller and cage assemblies and the dimensions of the running rings, one obtains a needle roller bearing of very small bearing cross-section with high load capacities

Due to the manufacture, the joint of the running rings is inclined and guarantees smooth and quiet rolling of the rollers.

The running tracks of the running rings are polished. KEBF's with only one running ring (inner or outer running ring) can be supplied on request.

Installation

To make assembly easier, the running rings are made as shaft fits and housing fits. The material of the running rings is hardened CK 65 steel.

Hardness of running track	510 to 620 HV (50 to 56 HRC)
Fitted dimensions	according to table of dimensions

Temperature:

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

Example of order:

Type KEBF 3020 delivered state produced by the manufacturer ready to install.

Designation : KEBF 3020

Pitch D_L : 0853 mm

Quantity : 5 off

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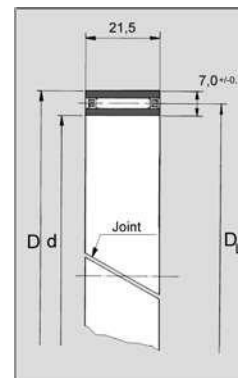


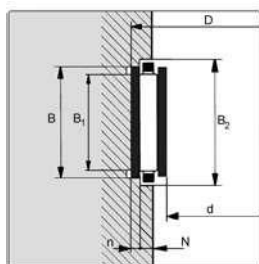
Table of dimensions [dimensions in mm]

KMF-type	Needle roller		Range of use shaft diameter		Bearing dimension			Load capacity 3)	
	D _w	L _w	d min.	d max.	D	H	S	dyn. C [kN]	stat. C ₀ [kN]
KEBF 4015	4,0	8,0	100	~ 1000	d + 17,6	15,0	8,8 ± 0,1	1,59 • √d	0,49 • d
KEBF 5015	5,0	8,0	100	~ 1000	d + 19,6	15,0	9,8 ± 0,1	1,98 • √d	0,55 • d
KEBF 3020	3,0	15,8	150	~ 1500	d + 14,0	21,5	7,0 ± 0,1	2,60 • √d	1,10 • d
KEBF 5023	5,0	15,0	200	~ 1800	d + 20,0	23,0	10,0 ± 0,15	3,52 • √d	1,14 • d
KEBF 12040	12,0	30,0	300	~ 2000	d + 32,0	40,4	16,0 ± 0,15	11,47 • √d	2,74 • d

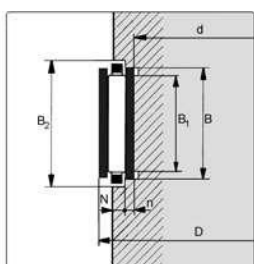
1) d = shaft diameter

2) Pitch diameter D_L = d + S

3) Reduced load capacities refer to the lower hardness of the running rings (hardness for calculations 540 HV)



Dimensions of housing



Dimensions of shaft

Table of dimensions [dimensions in mm]

KMF-type	Fitted dimensions / tolerances						
	D	d	B	B1 min.	B2	N	n
KEBF 4015	4) +0,09 +0,03	4) -0,10 -0,16	15,2 + 0,2	9,0	16,0+0,2	3,0	2,4
KEBF 5015			15,2 + 0,2	9,0	16,0+0,2	4,0	2,4
KEBF 3020			21,6 + 0,2	17,0	-----	2,0	2,0
KEBF 5023			20,4 + 0,2	16,0	23,4+0,2	4,0	2,5
KEBF 12040			40,7 + 0,3	33,0	-----	11,0	2,0

4) Tolerane recommendation for shaft and housing opening

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Type 3040



Type 4040

Table of dimensions [dimensions in mm]										
KMF-type	Needle rollers		Range of use shaft diameter		Bearing dimensions			Cage dimensions		
	D _w	L _w	d min.	d max.	D	H	S	K _H	K _S	R _T
KEBF 3040	3,0	2 x 15,8	200	~ 1500	d + 14,0	40,4	7,0 ± 0,10	40,0	2,5	5,2
KEBF 4040	4,0	3 x 8,0	200	~ 1500	d + 16,0		8,0 ± 0,10	39,0	3,0	7,5
KEBF 5040	5,0	3 x 8,0	200	~ 1500	d + 18,0		9,0 ± 0,10	39,0	3,5	8,0
KEBF 12040	12,0	1 x 30,0	200	~ 2000	d + 32,0		16,0 ± 0,15	40,0	6,0	16,0

1) d = shaft diameter

2) Pitch diameter D_L = d + s

R_T = roller division

The individual radial needle bearing insert elements program is rounded up with 4 additional preferred types.

This type series is defined by its extreme wide inner- and outer rings that are mostly equipt with multiple row needle or roller and cage assemblies.

Due to the usage of multiple row needle or roller cage assemblies, the wide running tracks can be used optimally for transmission of high radial loads.

By using the different preferred types KEBF 3040, KEBF 4040, KEBF 5040 or KEBF 12040 the insert room of the thickness (S) can be choosen with 7, 8 ,9 or 16 mm, having a constant raceway width of 40,4 mm.

Therefore a great freedom of construction is given with this type series for the complete diameter range starting from 200 up to approx. 2000 mm.

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Type 5040



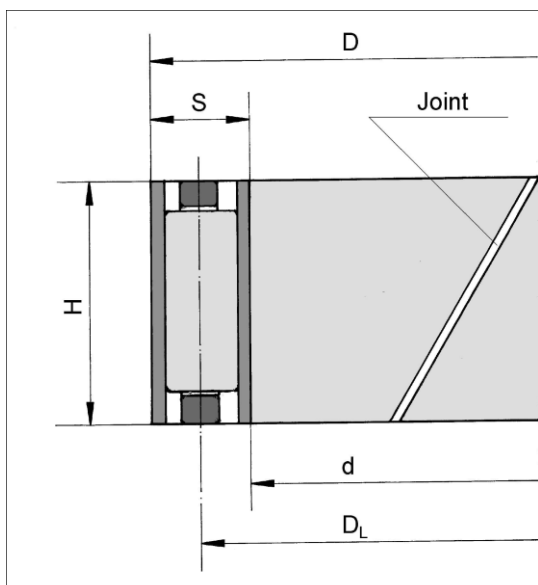
Type 12040

Table of dimensions [dimensions in mm]

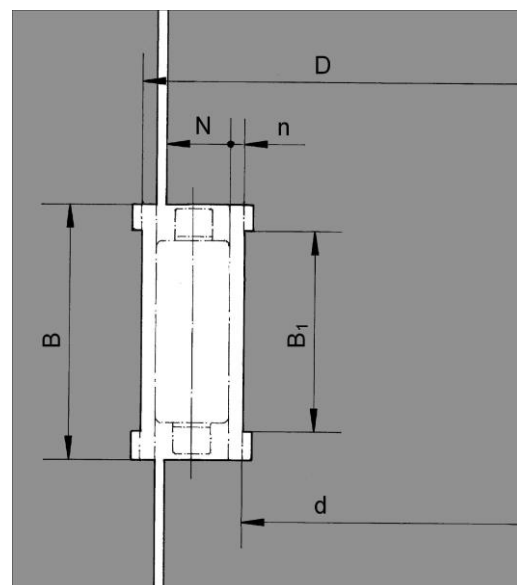
KMF-type	Load capacity 1)		Fitted dimensions / tolerances						Cage-type 2)
	dyn. C [kN]	stat. C ₀ [kN]	D	d	B	B ₁ min.	N	n	
KEBF 3040	$4,22 \cdot \sqrt{d}$	$2,21 \cdot d$	+ 0,09 + 0,03	- 0,10 - 0,16	40,7 + 0,3	36,0	2,0	2,0	KKBF 3020
KEBF 4040	$3,43 \cdot \sqrt{d}$	$1,46 \cdot d$					3,0		KKBF 4015
KEBF 5040	$4,28 \cdot \sqrt{d}$	$1,66 \cdot d$					4,0		KKBF 5015
KEBF 12040	$11,47 \cdot \sqrt{d}$	$2,74 \cdot d$					11,0		KKBF 12040

1) Reduced load capacities refer to the lower hardness of the running rings (hardness for calculations 540 HV)

2) see catalog WLK 100



dimensions



Fitted

Needle roller bearing

Type KEBF 3020 (preferred series)

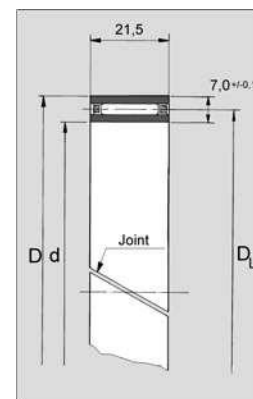
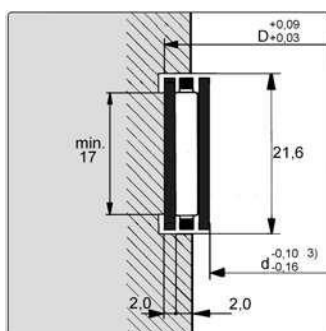


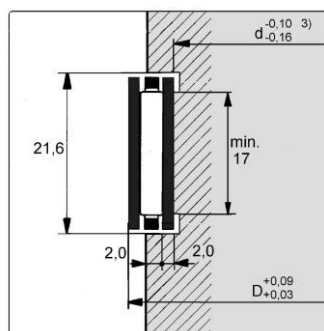
Table of dimensions [dimensions in mm]

KMF-type 1)	Weight [kg]	Bearing dimension			Load capacity 2)	
		d	D	DL	dyn. C [kN]	stat. C ₀ [kN]
KEBF 3020 0167	0,42	160	174	167	32,9	176,0
KEBF 3020 0190	0,48	183	197	190	35,2	201,3
KEBF 3020 0213	0,54	206	220	213	37,3	226,6
KEBF 3020 0217	0,55	210	224	217	37,7	231,0
KEBF 3020 0245	0,62	238	252	245	40,1	261,8
KEBF 3020 0315	0,80	308	322	315	45,6	338,8
KEBF 3020 0327	0,83	320	334	327	46,5	352,0
KEBF 3020 0497	1,26	490	504	497	57,6	539,0
KEBF 3020 0520	1,32	513	527	520	58,9	564,3
KEBF 3020 0653	1,66	646	660	653	66,1	710,6
KEBF 3020 0677	1,72	670	684	677	67,3	737,0
KEBF 3020 0723	1,83	716	730	723	69,6	787,6
KEBF 3020 0823	2,09	816	830	823	74,3	897,6
KEBF 3020 0853	2,16	846	860	853	75,6	930,6
KEBF 3020 0857	2,17	850	864	857	75,8	935,0
KEBF 3020 0923	2,34	916	930	923	78,7	1007,6
KEBF 3020 1023	2,59	1016	1030	1023	82,9	1117,6
KEBF 3020 1177	2,98	1170	1184	1177	88,9	1287,0

- 1) Other dimensions on request.
- 2) Reduced load capacities refer to the lower hardness of the running rings (hardness for calculations 540 HV).
- 3) d = shaft diameter



Dimensions of housing



Dimensions of shaft

Tolerance recommendation for shaft and housing opening