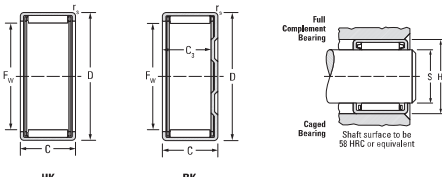


# NEEDLE ROLLER BEARINGS

## DRAWN CUP NEEDLE ROLLER BEARINGS CAGED, OPEN ENDS, CLOSED ONE END

### METRIC SERIES HK, BK SERIES



Shaft Dia.	F <sub>w</sub>	D	C		C <sub>3min.</sub>	r <sub>3max.</sub>	Bearing Designation	Load Ratings			Speed Ratings	Mounting Dimensions	Mounting inner ring (pages B-238 to B-239)			
			Dynamic	Static				Fatigue Load Limit C <sub>10</sub>	C <sub>0</sub>	C <sub>2</sub>				Grease	Oil	Approx. Wt.
mm	in	mm	mm	mm	mm	mm		kN	kN	mm <sup>2</sup>	kg	mm	mm	mm	mm	
3	0.1181	3	6.5	6	5.20	0.30	HK0306	1.20	0.78	1.30	0.001	3.000	2.996	6.493	6.484	Table B-2
3	0.1181	3	6.5	6	5.20	0.30	HK0306	1.20	0.78	1.30	0.001	3.000	2.996	6.493	6.484	Table B-2
4	0.1575	4	8	8	6.40	0.40	HK0408	1.88	1.38	1.70	0.002	4.000	3.995	7.295	7.284	Table B-2
4	0.1575	4	8	8	6.40	0.40	HK0408	1.88	1.38	1.70	0.002	4.000	3.995	7.295	7.284	Table B-2
5	0.1969	5	9	9	7.40	0.40	HK0509	2.52	2.07	2.30	0.002	5.000	4.995	8.293	8.284	Table B-2
5	0.1969	5	9	9	7.40	0.40	HK0509	2.52	2.07	2.30	0.002	5.000	4.995	8.293	8.284	Table B-2
6	0.2362	6	10	8	6.40	0.40	HK0608	2.34	1.35	1.40	0.002	6.000	5.995	8.293	8.284	Table B-2
6	0.2362	6	10	8	6.40	0.40	HK0608	2.34	1.35	1.40	0.002	6.000	5.995	8.293	8.284	Table B-2
6	0.2362	6	10	9	7.40	0.40	HK0609	3.14	2.85	2.90	0.003	6.000	5.995	8.293	8.284	Table B-2
6	0.2362	6	10	9	7.40	0.40	HK0609	3.14	2.85	2.90	0.003	6.000	5.995	8.293	8.284	Table B-2
7	0.2756	7	11	9	7.40	0.40	HK0709	3.23	3.05	3.10	0.003	7.000	6.994	10.991	10.980	Table B-2
7	0.2756	7	11	9	7.40	0.40	HK0709	3.23	3.05	3.10	0.003	7.000	6.994	10.991	10.980	Table B-2
8	0.3150	8	12	8	6.40	0.40	HK0808	2.90	2.73	2.80	0.003	8.000	7.994	11.991	11.980	Table B-2
8	0.3150	8	12	8	6.40	0.40	HK0808	2.90	2.73	2.80	0.003	8.000	7.994	11.991	11.980	Table B-2
8	0.3150	8	12	10	8.40	0.40	HK0810	3.95	4.07	4.10	0.004	8.000	7.994	11.991	11.980	Table B-2
8	0.3150	8	12	10	8.40	0.40	HK0810	3.95	4.07	4.10	0.004	8.000	7.994	11.991	11.980	Table B-2
9	0.3543	9	13	10	8.40	0.40	HK0910	4.57	5.07	5.10	0.004	9.000	8.994	12.991	12.980	Table B-2

(1) Drawn cup needle roller bearings with two needle roller and cage assemblies and one lubricating hole.

## B-2-14 NEEDLE ROLLER BEARINGS

## Drawn Cup Needle Roller Bearings

Shaft Dia.	F <sub>w</sub>	D	C		C <sub>3min.</sub>	r <sub>3max.</sub>	Bearing Designation	Load Ratings		Speed Ratings	Mounting Dimensions	Mounting inner ring (pages B-238 to B-239)				
			Dynamic	Static				Fatigue Load Limit C <sub>10</sub>	C <sub>0</sub>				C <sub>2</sub>	Grease	Oil	Approx. Wt.
mm	in	mm	mm	mm	mm	mm		kN	kN	mm <sup>2</sup>	kg	mm	mm	mm	mm	
9	0.3543	9	13	10	—	0.40	HK0910	4.57	5.07	5.10	0.004	9.000	8.994	12.991	12.980	Table B-2
9	0.3543	9	13	12	10.40	0.40	HK0912	5.65	6.65	6.70	0.005	9.000	8.994	12.991	12.980	Table B-2
9	0.3543	9	13	12	—	0.40	HK0912	5.65	6.65	6.70	0.005	9.000	8.994	12.991	12.980	Table B-2
10	0.3937	10	14	10	8.40	0.40	BK1010	4.78	5.51	5.60	0.004	10.000	9.994	13.991	13.980	Table B-2
10	0.3937	10	14	10	—	0.40	BK1010	4.78	5.51	5.60	0.004	10.000	9.994	13.991	13.980	Table B-2
10	0.3937	10	14	12	10.40	0.40	BK1012	5.90	7.23	7.30	0.006	10.000	9.994	13.991	13.980	Table B-2
10	0.3937	10	14	12	—	0.40	BK1012	5.90	7.23	7.30	0.006	10.000	9.994	13.991	13.980	Table B-2
10	0.3937	10	14	15	13.40	0.40	BK1015	7.49	9.81	9.90	0.006	10.000	9.994	13.991	13.980	Table B-2
10	0.3937	10	14	15	—	0.40	BK1015	7.49	9.81	9.90	0.006	10.000	9.994	13.991	13.980	Table B-2
12	0.4724	12	16	10	8.40	0.40	BK1210	5.24	6.55	6.60	0.005	12.000	11.992	15.991	15.980	Table B-2
12	0.4724	12	16	10	—	0.40	BK1210	5.24	6.55	6.60	0.005	12.000	11.992	15.991	15.980	Table B-2
12	0.4724	12	18	12	9.20	1	BK1212	6.61	7.29	7.40	0.012	12.000	11.992	17.991	17.980	Table B-2
12	0.4724	12	18	12	—	1	BK1212	6.61	7.29	7.40	0.012	12.000	11.992	17.991	17.980	Table B-2
13	0.5118	13	19	12	9.20	1	BK1312	6.92	7.89	8.00	0.012	13.000	12.992	18.991	18.975	Table B-2
13	0.5118	13	19	12	—	1	BK1312	6.92	7.89	8.00	0.012	13.000	12.992	18.991	18.975	Table B-2
14	0.5512	14	20	12	9.20	1	BK1412	7.21	8.50	8.60	0.014	14.000	13.992	19.991	19.975	Table B-2
14	0.5512	14	20	12	—	1	BK1412	7.21	8.50	8.60	0.014	14.000	13.992	19.991	19.975	Table B-2
15	0.5906	15	21	12	9.20	1	BK1512	7.49	9.11	9.20	0.015	15.000	14.992	20.991	20.975	Table B-2
15	0.5906	15	21	12	—	1	BK1512	7.49	9.11	9.20	0.015	15.000	14.992	20.991	20.975	Table B-2
15	0.5906	15	21	16	13.20	1	BK1516	10.7	14.4	14.6	0.019	15.000	14.992	22.991	22.975	Table B-2
15	0.5906	15	21	16	—	1	BK1516	10.7	14.4	14.6	0.019	15.000	14.992	22.991	22.975	Table B-2
15	0.5906	15	21	22	15.20	1	BK1522 <sup>(1)</sup>	13.5	19.4	19.6	0.022	15.000	14.992	24.991	24.975	Table B-2
15	0.5906	15	21	22	—	1	BK1522 <sup>(1)</sup>	13.5	19.4	19.6	0.022	15.000	14.992	24.991	24.975	Table B-2
16	0.6299	16	22	12	9.20	1	BK1612	7.76	9.72	9.80	0.016	16.000	15.992	21.991	21.975	Table B-2

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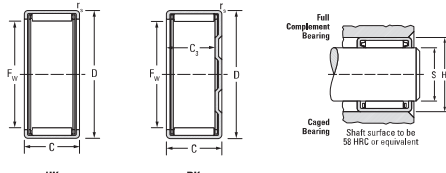
## NEEDLE ROLLER BEARINGS B-2-15



# NEEDLE ROLLER BEARINGS

## DRAWN CUP NEEDLE ROLLER BEARINGS CAGED, OPEN ENDS, CLOSED ONE END

### METRIC SERIES HK, BK SERIES



Shaft Dia.	F <sub>w</sub>	D	C		C <sub>3 min.</sub>	r <sub>s min.</sub>	Bearing Designation	Load Ratings			Speed Ratings	Mounting Dimensions			Mounting Inner ring (pages B-238 to B-239)										
			Open Ends	Closed One End				Dynamic	Static	Fatigue Load Limit C <sub>1</sub>		Sh	H	W											
mm	mm	mm	mm	mm	mm	mm		kN	kN	mm <sup>2</sup>	kg	mm	mm	mm											
30 1.1811	37 1.4567	16 0.630	13.20	0.524	1	0.029	HK3016	16.8	27.3	4.20	7000	11000	0.041	30.000	29.991	36.988	36.972	Table	B2-2	JR25x30x17					
			16.8	27.3				0.032	30.000												29.991	36.988	36.972	Table	JR25x30x17
			16.8	27.3				0.029	30.000												29.991	36.988	36.972	Table	
30 1.1811	1.4567	16 0.630	17.3	0.681	1	0.029	HK3020	22.4	36.6	6.35	7000	11000	0.053	30.000	29.991	36.988	36.972	Table	B2-2	JR25x30x23.5					
			22.4	36.6				0.117	30.000												29.991	36.988	36.972	Table	
			22.4	36.6				0.029	30.000												29.991	36.988	36.972	Table	
30 1.1811	1.4567	16 0.630	23.3	0.917	1	0.029	HK3026	27.4	51.2	7.95	7000	11000	0.067	30.000	29.991	36.988	36.972	Table	B2-2	JR25x30x26.5					
			27.4	51.2				0.146	30.000												29.991	36.988	36.972	Table	
			27.4	51.2				0.029	30.000												29.991	36.988	36.972	Table	
30 1.1811	1.4567	16 0.630	25.3	1.024	1	0.029	HK3026	27.4	51.2	7.95	7000	11000	0.054	30.000	29.991	36.988	36.972	Table	B2-2	JR25x30x26.5					
			27.4	51.2				0.119	30.000												29.991	36.988	36.972	Table	
			27.4	51.2				0.029	30.000												29.991	36.988	36.972	Table	
30 1.1811	1.4567	16 0.630	35.3	1.390	1	0.029	HK3038 <sup>(1)</sup>	38.4	79.2	12.5	7000	11000	0.093	30.000	29.991	36.988	36.972	Table	B2-2	JR25x30x31.5					
			38.4	79.2				0.206	30.000												29.991	36.988	36.972	Table	
			38.4	79.2				0.029	30.000												29.991	36.988	36.972	Table	
35 1.3780	42 1.6535	12 0.472	—	—	1	0.029	HK3512	12.3	19.2	2.50	5600	9100	0.028	35.000	34.989	41.988	41.972	Table	B2-2	JR50x35x17					
			18.7	33.0				0.037	35.000												34.989	41.988	41.972	Table	
			18.7	33.0				0.029	35.000												34.989	41.988	41.972	Table	
35 1.3780	1.6535	16 0.630	17.3	0.681	1	0.029	BK3320	24.5	46.8	7.40	5600	9100	0.065	35.000	34.989	41.988	41.972	Table	B2-2	JR50x35x23.5					
			24.5	46.8				0.143	35.000												34.989	41.988	41.972	Table	
			24.5	46.8				0.029	35.000												34.989	41.988	41.972	Table	
40 1.5748	47 1.8504	12 0.472	—	—	1	0.029	HK4012	13.4	22.4	3.40	5200	7900	0.033	40.000	39.989	46.988	46.972	Table	B2-2	JR50x40x17					
			18.8	34.8				0.073	40.000												39.989	46.988	46.972	Table	
			18.8	34.8				0.029	40.000												39.989	46.988	46.972	Table	
40 1.5748	1.8504	16 0.630	17.3	0.681	1	0.029	BK4020	25.1	50.4	8.00	5200	7900	0.070	40.000	39.989	46.988	46.972	Table	B2-2	JR50x40x23.5					
			25.1	50.4				0.154	40.000												39.989	46.988	46.972	Table	
			25.1	50.4				0.029	40.000												39.989	46.988	46.972	Table	
45 1.7717	52 2.0472	12 0.472	—	—	1	0.029	HK4512	14.1	24.8	3.75	4600	7000	0.026	45.000	44.989	51.988	51.967	Table	B2-2	JR50x45x17					
			14.1	24.8				0.076	45.000												44.989	51.988	51.967	Table	
			14.1	24.8				0.029	45.000												44.989	51.988	51.967	Table	

(1) Drawn cup needle roller bearings with two needle roller and cage assemblies and one lubricating hole.

# Drawn Cup Needle Roller Bearings

Shaft Dia.	F <sub>w</sub>	D	C		C <sub>3 min.</sub>	r <sub>s min.</sub>	Bearing Designation	Load Ratings			Speed Ratings	Mounting Dimensions			Mounting Inner ring (pages B-238 to B-239)									
			Open Ends	Closed One End				Dynamic	Static	Fatigue Load Limit C <sub>1</sub>		Sh	H	W										
mm	mm	mm	mm	mm	mm	mm		kN	kN	mm <sup>2</sup>	kg	mm	mm	mm										
45 1.7717	52 2.0472	16 0.630	13.20	0.524	1	0.029	HK4516	19.8	38.6	5.95	4600	7000	0.048	45.000	44.989	51.988	51.967	Table	B2-2	JR50x45x17				
			19.8	38.6				0.106	45.000												44.989	51.988	51.967	Table
			19.8	38.6				0.029	45.000												44.989	51.988	51.967	Table
45 1.7717	2.0472	20 0.787	17.3	0.681	1	0.029	BK4520	27.2	58.2	8.90	4600	7000	0.079	45.000	44.989	51.988	51.967	Table	B2-2	JR50x45x23.5				
			27.2	58.2				0.174	45.000												44.989	51.988	51.967	Table
			27.2	58.2				0.029	45.000												44.989	51.988	51.967	Table
45 1.7717	2.0472	20 0.787	17.3	0.681	1	0.029	HK4520	27.2	58.2	8.90	4600	7000	0.059	45.000	44.989	51.988	51.967	Table	B2-2	JR50x45x23.5				
			27.2	58.2				0.130	45.000												44.989	51.988	51.967	Table
			27.2	58.2				0.029	45.000												44.989	51.988	51.967	Table
50 1.9685	58 2.2835	12 0.472	—	—	1	0.029	HK5012	17.0	28.7	4.40	4100	6300	0.045	50.000	49.989	57.988	57.967	Table	B2-2	JR50x50x17				
			17.0	28.7				0.159	50.000												49.989	57.988	57.967	Table
			17.0	28.7				0.029	50.000												49.989	57.988	57.967	Table
50 1.9685	2.2835	16 0.630	17.3	0.681	1	0.029	HK5020	20.8	40.0	8.90	4100	6300	0.072	50.000	49.989	57.988	57.967	Table	B2-2	JR50x50x23.5				
			20.8	40.0				0.159	50.000												49.989	57.988	57.967	Table
			20.8	40.0				0.029	50.000												49.989	57.988	57.967	Table
50 1.9685	2.2835	25 0.984	—	—	1	0.029	HK5025	35.5	78.0	11.7	4100	6300	0.092	50.000	49.989	57.988	57.967	Table	B2-2	JR50x50x23.5				
			35.5	78.0				0.203	50.000												49.989	57.988	57.967	Table
			35.5	78.0				0.029	50.000												49.989	57.988	57.967	Table
55 2.1654	63 2.4803	12 0.472	—	—	1	0.029	HK5520	31.0	64.4	10.0	3700	5700	0.075	55.000	54.987	62.986	62.967	Table	B2-2	JR50x55x17				
			31.0	64.4				0.174	55.000												54.987	62.986	62.967	Table
			31.0	64.4				0.029	55.000												54.987	62.986	62.967	Table
60 2.3622	68 2.6772	12 0.472	—	—	1	0.029	HK6012	18.6	34.4	5.35	3400	5200	0.060	60.000	59.987	67.986	67.967	Table	B2-2	JR50x60x17				
			18.6	34.4				0.132	60.000												59.987	67.986	67.967	Table
			18.6	34.4				0.029	60.000												59.987	67.986	67.967	Table
60 2.3622	2.6772	20 0.787	—	—	1	0.029	HK6020	35.6	79.5	10.9	3400	5200	0.090	60.000	59.987	67.986	67.967	Table	B2-2	JR50x60x23.5				
			35.6	79.5				0.198	60.000												59.987	67.986	67.967	Table
			35.6	79.5				0.029	60.000												59.987	67.986	67.967	Table