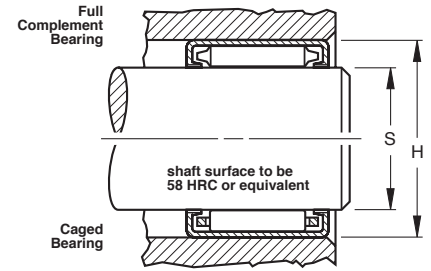
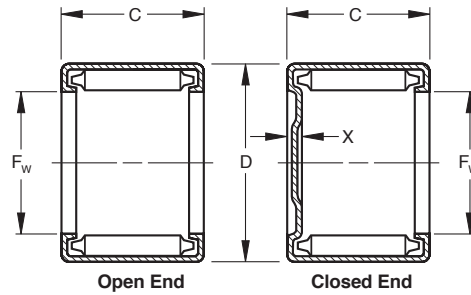


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Full Complement Bearings

Check for availability.

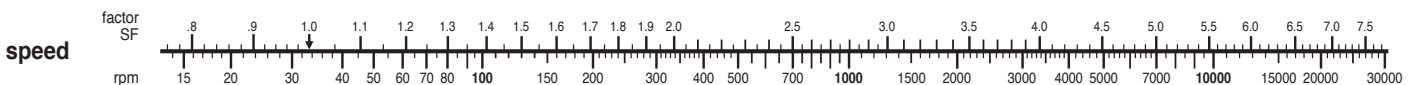
Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.



BEARING DIMENSIONS						MECHANICALLY RETAINED ROLLERS						BEARING MOUNTING					
F <sub>w</sub> Bore	D Outside Diameter		C Width		Bearing Designation		Load Ratings				Limiting Speed Full Complement Bearings	X End Thickness		Inch Mounting			
	(nom.)	(nom.)	+0.000 -0.010	+0.00 -0.25	open end	closed end	Basic Dynamic C <sub>r</sub>	Basic Static C <sub>0</sub>	Working Load			(max.)	(max.)	S Shaft Raceway Diameter		H Housing Bore	
inch mm	inch mm	inch mm	inch mm	inch mm			lbf lbf	lbf lbf	lbf lbf	rpm	inch mm	inch mm	max. min.	min. max.	max. min.		
0.118 3	0.256 6.50	0.236 6			—	—	—	—	—	—	—	—	0.1181 0.1178	0.2552 0.2557			
1/8 3.18	1/4 6.35	0.188 4.78			—	—	—	—	—	—	—	—	0.1250 0.1247	0.2500 0.2505			
1/8 3.18	1/4 6.35	0.250 6.35			<b>B-24</b>	—	243 374	349 229	—	13 000	—	—	0.1250 0.1247	0.2500 0.2505			
3/32 3.97	5/32 7.14	0.188 4.78			—	—	—	—	—	—	—	—	0.1563 0.1560	0.2812 0.2817			
3/32 3.97	5/32 7.14	0.250 6.35			<b>B-2 1/4</b>	—	286 439	437 274	—	11 000	—	—	0.1563 0.1560	0.2812 0.2817			
3/32 3.97	5/32 7.14	0.312 7.92			<b>B-2 1/5</b>	—	375 578	622 389	—	11 000	—	—	0.1563 0.1560	0.2812 0.2817			
.16 4	.31 8	0.315 8			—	—	—	—	—	—	—	—	0.1575 0.1572	0.3142 0.3148			
3/16 4.76	11/32 8.73	0.250 6.35			<b>B-34</b>	<b>M-341</b>	310 477	453 284	—	11 000	0.07 1.80	—	0.1875 0.1872	0.3432 0.3437			
3/16 4.76	11/32 8.73	0.375 9.52			<b>B-36</b>	—	538 828	922 577	—	11 000	—	—	0.1875 0.1872	0.3432 0.3437			
0.20 5	0.35 9	0.354 9			—	—	—	—	—	—	—	—	0.1969 0.1966	0.3536 0.3542			
—	—	0.315 8			—	—	—	—	—	—	—	—	0.2362 0.2359	0.3930 0.3936			
0.24 6	0.39 10	0.354 9			—	—	—	—	—	—	—	—	0.2362 0.2359	0.3930 0.3936			
1/4 6.35	7/16 11.11	0.250 6.35			<b>B-44</b>	<b>M-441</b>	368 566	531 326	—	10 000	0.08 2.0	—	0.2500 0.2495	0.4370 0.4380			
1/4 6.35	7/16 11.11	0.312 7.92			<b>B-45</b>	<b>M-451</b>	499 768	786 483	—	10 000	0.08 2.0	—	0.2500 0.2495	0.4370 0.4380			
1/4 6.35	7/16 11.11	0.438 11.13			<b>B-47</b>	<b>M-471</b>	788 1 210	1 410 868	—	10 000	0.08 2.0	—	0.2500 0.2495	0.4370 0.4380			
0.28 7	0.43 11	0.354 9			—	—	—	—	—	—	—	—	0.2756 0.2752	0.4322 0.4329			
3/16 7.94	1/2 12.70	0.312 7.92			<b>B-55</b>	<b>M-551</b>	574 883	985 580	—	8 300	0.08 2.0	—	0.3125 0.3120	0.4995 0.5005			
3/16 7.94	1/2 12.70	0.375 9.52			<b>B-56</b>	—	744 1 140	1 370 806	—	8 300	—	—	0.3125 0.3120	0.4995 0.5005			
3/16 7.94	1/2 12.70	0.438 11.13			<b>B-57</b>	<b>M-571</b>	905 1 390	1 770 1 040	—	8 300	0.08 2.0	—	0.3125 0.3120	0.4995 0.5005			
3/16 7.94	1/2 12.70	0.562 14.27			<b>B-59</b>	—	1 200 1 850	2 550 1 500	—	8 300	—	—	0.3125 0.3120	0.4995 0.5005			
3/16 7.94	5/16 14.29	0.438 11.13			<b>BH-57</b>	—	995 1 530	1 590 1 010	—	11 000	—	—	0.3125 0.3120	0.5620 0.5630			
3/16 7.94	5/16 14.29	0.562 14.27			<b>BH-59</b>	—	1 350 2 080	2 340 1 510	—	11 000	—	—	0.3125 0.3120	0.5620 0.5630			
0.31 8	0.47 12	0.315 8			—	—	—	—	—	—	—	—	0.3150 0.3146	0.4715 0.4722			
0.31 8	0.47 12	0.394 10			—	—	—	—	—	—	—	—	0.3150 0.3146	0.4715 0.4722			
0.35 9	0.51 13	0.394 10			—	—	—	—	—	—	—	—	0.3543 0.3539	0.5109 0.5116			
0.35 9	0.51 13	0.472 12			—	—	—	—	—	—	—	—	0.3543 0.3539	0.5109 0.5116			
3/8 9.52	5/16 14.29	0.312 7.92			<b>B-65</b>	<b>M-651</b>	640 984	1 180 676	—	7 100	0.08 2.0	—	0.3750 0.3745	0.5620 0.5630			
3/8 9.52	5/16 14.29	0.375 9.52			<b>B-66</b>	<b>M-661</b>	829 1 280	1 650 944	—	7 100	0.08 2.0	—	0.3750 0.3745	0.5620 0.5630			
3/8 9.52	5/16 14.29	0.438 11.13			<b>B-67</b>	—	1 010 1 550	2 120 1 220	—	7 100	—	—	0.3750 0.3745	0.5620 0.5630			
3/8 9.52	5/16 14.29	0.500 12.70			<b>B-68</b>	<b>M-681</b>	1 180 1 810	2 590 1 480	—	7 100	0.08 2.0	—	0.3750 0.3745	0.5620 0.5630			
3/8 9.52	5/16 14.29	0.562 14.27			<b>B-69</b>	—	1 340 2 070	3 070 1 750	—	7 100	—	—	0.3750 0.3745	0.5620 0.5630			
3/8 9.52	5/16 14.29	0.625 15.88			<b>B-610</b>	<b>M-6101</b>	1 500 2 310	3 530 2 020	—	7 100	0.08 2.0	—	0.3750 0.3745	0.5620 0.5630			
3/8 9.52	5/8 15.88	0.500 12.70			<b>BH-68</b>	—	1 330 2 050	2 380 1 460	—	9 400	—	—	0.3750 0.3745	0.6245 0.6255			
0.39 10	0.55 14	0.394 10			—	—	—	—	—	—	—	—	0.3937 0.3933	0.5503 0.5510			
0.39 10	0.55 14	0.472 12			—	—	—	—	—	—	—	—	0.3937 0.3933	0.5503 0.5510			
0.39 10	0.55 14	0.591 15			—	—	—	—	—	—	—	—	0.3937 0.3933	0.5503 0.5510			

Ⓣ Symbol denotes Basic Dynamic Load Rating to be used in load-life calculations taking into consideration the application guidelines and limitations given in this catalog.

Load Ratings are based on a minimum raceway hardness of 58 HRC or equivalent. Load ratings are given in pounds-force: 1 lbf = 0.454kgf = 4.448N. Required Basic Dynamic Load Rating (C<sub>r</sub>) = Applied Load • SF • LF • HF (see page E75).

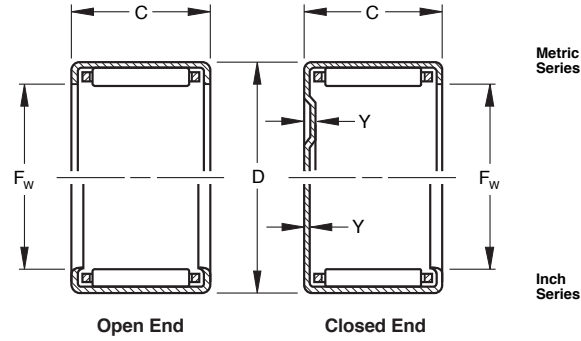


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Caged Bearings

Check for availability.

Inch - metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.

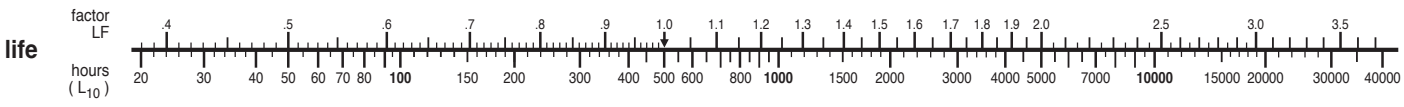


BEARING MOUNTING				CAGE RETAINED ROLLERS								
Metric Mounting				Bearing Designation	Load Ratings				Limiting Speed Caged Bearings	Y End Thickness		
S Shaft Raceway Diameter		H Housing Bore			Basic Dynamic Cr	Basic Static Co	Working Load	rpm		(max.)		
max.	min.	min.	max.							inch	mm	
3,000	2,992	6,481	6,496	HK-0306	—	239	327	257	86	13 000	—	—
3,175	3,167	6,350	6,363	JP-23-F	—	109	149	105	69	75 000	—	—
3,175	3,167	6,350	6,363	—	—	—	—	—	—	—	—	—
3,970	3,962	7,142	7,155	JP-2 1/2 3-F	—	111	152	110	69	75 000	—	—
3,970	3,962	7,142	7,155	—	—	—	—	—	—	—	—	—
3,970	3,962	7,142	7,155	—	—	—	—	—	—	—	—	—
4,000	3,992	7,981	7,996	HK-0408	—	280	384	310	103	75 000	—	—
4,762	4,754	8,717	8,730	—	—	—	—	—	—	—	—	—
4,762	4,754	8,717	8,730	J-36	MJ-361	257	352	336	202	75 000	0.04	1.0
5,000	4,992	8,981	8,996	HK-0509	—	376	515	466	155	74 000	—	—
6,000	5,992	9,981	9,996	HK-0608	—	350	479	438	146	60 000	—	—
6,000	5,992	9,981	9,996	HK-0609	BK-0609	496	679	641	214	60 000	0.06	1.6
—	—	—	—	—	—	—	—	—	—	—	—	—
6,350	6,337	11,100	11,125	J-45	MJ-451	290	397	331	203	57 000	0.04	1.0
6,350	6,337	11,100	11,125	J-47	MJ-471	473	648	617	379	57 000	0.04	1.0
7,000	6,991	10,977	10,995	HK-0709	—	482	660	686	229	50 000	—	—
7,938	7,925	12,687	12,712	J-55	—	315	431	383	226	44 000	—	—
7,938	7,925	12,687	12,712	—	—	—	—	—	—	—	—	—
7,938	7,925	12,687	12,712	J-57	MJ-571	560	767	805	474	44 000	0.04	1.0
7,938	7,925	12,687	12,712	—	—	—	—	—	—	—	—	—
7,938	7,925	14,275	14,300	JH-57	MJH-571	696	954	849	543	47 000	0.04	1.0
7,938	7,925	14,275	14,300	—	—	—	—	—	—	—	—	—
8,000	7,991	11,977	11,995	HK-0808	BK-0808	433	593	615	205	43 000	0.06	1.6
8,000	7,991	11,977	11,995	HK-0810	BK-0810	590	808	915	305	43 000	0.06	1.6
9,000	8,991	12,977	12,995	HK-0910	—	683	936	1 140	380	38 000	—	—
9,000	8,991	12,977	12,995	HK-0912	BK-0912	843	1 164	1 500	500	38 000	0.06	1.6
9,525	9,512	14,275	14,300	J-65	MJ-651	358	491	474	271	36 000	0.04	1.0
—	—	—	—	—	—	—	—	—	—	—	—	—
9,525	9,512	14,275	14,300	—	—	—	—	—	—	—	—	—
9,525	9,512	14,275	14,300	J-68	—	755	1 030	1 240	707	36 000	—	—
9,525	9,512	14,275	14,300	—	—	—	—	—	—	—	—	—
9,525	9,512	14,275	14,300	—	—	—	—	—	—	—	—	—
9,525	9,512	15,862	15,887	JH-68	—	987	1 350	1 370	843	38 000	—	—
10,000	9,991	13,977	13,995	HK-1010	—	713	982	1 240	413	34 000	—	—
10,000	9,991	13,977	13,995	HK-1012	—	881	1 210	1 630	543	34 000	—	—
10,000	9,991	13,977	13,995	HK-1015	—	1 120	1 530	2 210	737	34 000	—	—

Mounting dimensions are based on the inner ring rotating and the outer ring being stationary relative to the load. The housing should be of high strength material. See pages E77-78 for discussion of shaft and housing design.

Drawn cup bearings of nominal inch and metric dimensions with one closed end, which are not tabulated, may be made available upon request.

Caged drawn cup bearings of nominal inch and metric dimensions, with an engineered polymer cage, may be made available upon request.

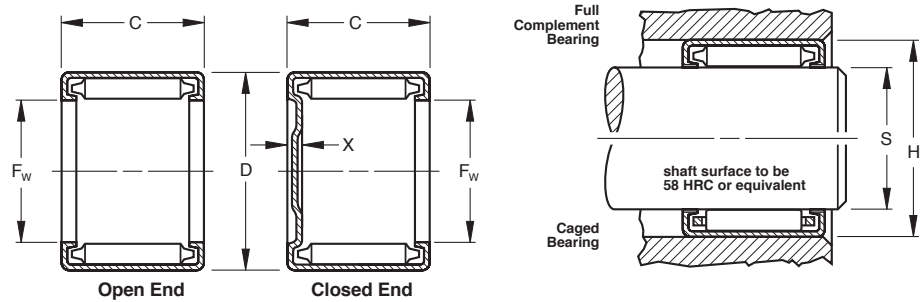


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Full Complement Bearings

Check for availability.

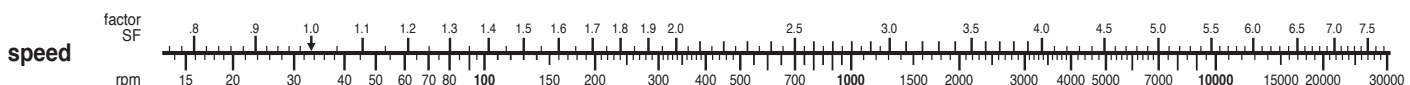
Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.



BEARING DIMENSIONS						MECHANICALLY RETAINED ROLLERS						BEARING MOUNTING						
F <sub>w</sub> Bore		D Outside Diameter		C Width		Bearing Designation		Load Ratings			Limiting Speed Full Complement Bearings	X End Thickness	Inch Mounting					
(nom.)		(nom.)		+0.000	+0.00	open end	closed end	Basic Dynamic C <sub>r</sub>	Basic Static C <sub>0</sub>	Working Load			S Shaft Raceway Diameter	H Housing Bore				
inch	mm	inch	mm	inch	mm			Ⓣ	ISO 281	ISO 76	(max.)	rpm	inch	mm	max.	min.	min.	max.
7/16	11,11	5/16	15,88	0.375	9,52	B-76	—	906	1 390	1 930	1 080	6 300	—	—	0.4375	0.4370	0.6245	0.6255
7/16	11,11	5/16	15,88	0.438	11,13	B-77	—	1 100	1 700	2 480	1 390	6 300	—	—	0.4375	0.4370	0.6245	0.6255
7/16	11,11	5/16	15,88	0.500	12,70	B-78	M-781	1 290	1 980	3 030	1 690	6 300	0.08	2.0	0.4375	0.4370	0.6245	0.6255
7/16	11,11	5/16	15,88	0.625	15,88	B-710	—	1 640	2 520	4 130	2 310	6 300	—	—	0.4375	0.4370	0.6245	0.6255
7/16	11,11	11/16	17,46	0.500	12,70	BH-78	—	1 470	2 260	2 780	1 660	8 300	—	—	0.4375	0.4370	0.6870	0.6880
0.47	12	0.63	16	0.394	10	—	—	—	—	—	—	—	—	—	0.4724	0.4720	0.6290	0.6297
0.47	12	0.71	18	0.472	12	—	—	—	—	—	—	—	—	—	0.4724	0.4720	0.7078	0.7085
1/2	12,70	11/16	17,46	0.312	7,92	B-85	—	754	1 160	1 580	870	5 500	—	—	0.5000	0.4995	0.6870	0.6880
1/2	12,70	11/16	17,46	0.375	9,52	B-86	M-861	976	1 500	2 200	1 210	5 500	0.08	2.0	0.5000	0.4995	0.6870	0.6880
1/2	12,70	11/16	17,46	0.438	11,13	B-87	M-871	1 190	1 830	2 840	1 560	5 500	0.08	2.0	0.5000	0.4995	0.6870	0.6880
1/2	12,70	11/16	17,46	0.500	12,70	B-88	M-881	1 390	2 130	3 460	1 910	5 500	0.08	2.0	0.5000	0.4995	0.6870	0.6880
1/2	12,70	11/16	17,46	0.625	15,88	B-810	M-8101	1 770	2 720	4 720	2 600	5 500	0.08	2.0	0.5000	0.4995	0.6870	0.6880
1/2	12,70	11/16	17,46	0.750	19,05	B-812	M-8121	2 120	3 260	5 980	3 290	5 500	0.08	2.0	0.5000	0.4995	0.6870	0.6880
1/2	12,70	3/4	19,05	0.438	11,13	BH-87	—	1 340	2 060	2 550	1 490	7 500	—	—	0.5000	0.4995	0.7495	0.7505
1/2	12,70	3/4	19,05	0.500	12,70	BH-88	—	1 590	2 450	3 180	1 850	7 500	—	—	0.5000	0.4995	0.7495	0.7505
1/2	12,70	3/4	19,05	0.625	15,88	BH-810	—	2 060	3 180	4 440	2 590	7 500	—	—	0.5000	0.4995	0.7495	0.7505
1/2	12,70	3/4	19,05	0.750	19,05	BH-812	—	2 510	3 850	5 690	3 290	7 500	—	—	0.5000	0.4995	0.7495	0.7505
0.51	13	0.75	19	0.472	12	—	—	—	—	—	—	—	—	—	0.5118	0.5114	0.7469	0.7477
0.55	14	0.79	20	0.472	12	—	—	—	—	—	—	—	—	—	0.5512	0.5508	0.7863	0.7871
5/16	14,29	3/4	19,05	0.312	7,92	B-95	M-951	804	1 240	1 780	966	5 000	0.08	2.0	0.5625	0.5620	0.7495	0.7505
5/16	14,29	3/4	19,05	0.375	9,52	B-96	—	1 040	1 600	2 480	1 350	5 000	—	—	0.5625	0.5620	0.7495	0.7505
5/16	14,29	3/4	19,05	0.438	11,13	B-97	—	1 270	1 950	3 190	1 740	5 000	—	—	0.5625	0.5620	0.7495	0.7505
5/16	14,29	3/4	19,05	0.500	12,70	B-98	—	1 480	2 280	3 900	2 120	5 000	—	—	0.5625	0.5620	0.7495	0.7505
5/16	14,29	3/4	19,05	0.625	15,88	B-910	—	1 880	2 900	5 310	2 890	5 000	—	—	0.5625	0.5620	0.7495	0.7505
5/16	14,29	3/4	19,05	0.750	19,05	B-912	M-9121	2 260	3 480	6 730	3 660	5 000	0.08	2.0	0.5625	0.5620	0.7495	0.7505
5/16	14,29	11/16	20,64	0.500	12,70	BH-98	—	1 710	2 630	3 580	2 050	6 800	—	—	0.5625	0.5620	0.8120	0.8130
5/16	14,29	11/16	20,64	0.625	15,88	BH-910	—	2 210	3 400	5 000	2 860	6 800	—	—	0.5625	0.5620	0.8120	0.8130
5/16	14,29	11/16	20,64	0.750	19,05	BH-912	—	2 690	4 130	6 410	3 670	6 800	—	—	0.5625	0.5620	0.8120	0.8130
0.59	15	0.83	21	0.472	12	—	—	—	—	—	—	—	—	—	0.5906	0.5902	0.8257	0.8265
0.59	15	0.83	21	0.630	16	—	—	—	—	—	—	—	—	—	0.5906	0.5902	0.8257	0.8265
5/8	15,88	11/16	20,64	0.312	7,92	B-105	—	851	1 310	1 980	1 060	4 500	—	—	0.6250	0.6245	0.8120	0.8130
5/8	15,88	11/16	20,64	0.438	11,13	B-107	M-1071	1 340	2 070	3 550	1 910	4 500	0.08	2.0	0.6250	0.6245	0.8120	0.8130
5/8	15,88	11/16	20,64	0.500	12,70	B-108	M-1081	1 570	2 410	4 330	2 330	4 500	0.08	2.0	0.6250	0.6245	0.8120	0.8130
5/8	15,88	11/16	20,64	0.625	15,88	B-1010	—	1 990	3 070	5 900	3 180	4 500	—	—	0.6250	0.6245	0.8120	0.8130
5/8	15,88	11/16	20,64	0.750	19,05	B-1012	M-10121	2 400	3 690	7 480	4 020	4 500	0.08	2.0	0.6250	0.6245	0.8120	0.8130

Ⓣ Symbol denotes Basic Dynamic Load Rating to be used in load-life calculations taking into consideration the application guidelines and limitations given in this catalog. Applications involving loads approaching this rating or the tabulated working load, whichever is the smaller, should be referred to the Torrington Engineering Sales Office before a final selection is made.

Load ratings are based on a minimum raceway hardness of 58 HRC or equivalent. Load ratings are given in pounds-force: 1 lbf = 0.454kgf = 4.448N. Required Basic Dynamic Load Rating (C<sub>r</sub>) = Applied Load • SF • LF • HF (see page E75).

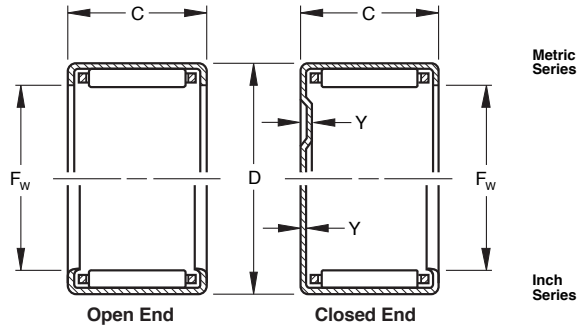


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Caged Bearings

Check for availability.

Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.

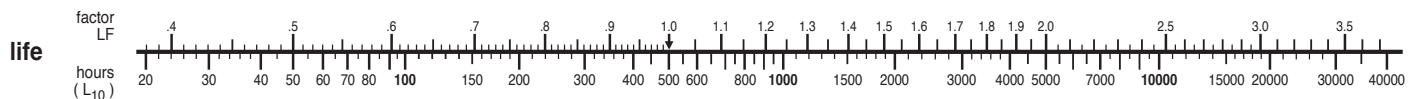


BEARING MOUNTING				CAGE RETAINED ROLLERS								
Metric Mounting				Bearing Designation	Load Ratings				Limiting Speed Caged Bearings	Y End Thickness		
S Shaft Raceway Diameter		H Housing Bore			open end	closed end	Basic Dynamic $C_r$	Basic Static $C_o$		Working Load	(max.)	
max.	min.	min.	max.				①	ISO 281		ISO 76	(max.)	inch
11,112	11,099	15,862	15,887	—	—	—	—	—	—	—	—	—
11,112	11,099	15,862	15,887	—	—	—	—	—	—	—	—	—
11,112	11,099	15,862	15,887	J-78	MJ-781	882	1 210	1 580	883	30 000	0.04	1.0
11,112	11,099	15,862	15,887	—	—	—	—	—	—	—	—	—
11,112	11,099	17,450	17,475	JH-78	—	1 060	1 450	1 510	928	38 000	—	—
12,000	11,989	15,977	15,995	HK-1210	BK-1210	740	1 110	1 370	460	28 000	0.06	1.6
12,000	11,989	17,977	17,995	HK-1212	BK-1212	986	1 350	1 640	547	28 000	0.11	2.7
12,700	12,687	17,450	17,475	J-85	MJ-851	454	621	697	384	26 000	0.04	1.0
12,700	12,687	17,450	17,475	J-86	MJ-861	661	906	1 130	598	26 000	0.04	1.0
12,700	12,687	17,450	17,475	—	—	—	—	—	—	—	—	—
12,700	12,687	17,450	17,475	J-88	MJ-881	914	1 250	1 710	942	26 000	0.04	1.0
12,700	12,687	17,450	17,475	—	—	—	—	—	—	—	—	—
12,700	12,687	17,450	17,475	J-812	—	1 500	2 060	3 240	1 790	26 000	—	—
12,700	12,687	19,037	19,062	JH-87	—	958	1 310	1 400	816	27 000	—	—
12,700	12,687	19,037	19,062	JH-88	MJH-881	1 160	1 590	1 800	1 050	27 000	0.04	1.0
12,700	12,687	19,037	19,062	—	—	—	—	—	—	—	—	—
12,700	12,687	19,037	19,062	JH-812	—	1 840	2 530	3 250	1 900	27 000	—	—
13,000	12,989	18,972	18,993	HK-1312	BK-1312	1 030	1 410	1 770	590	26 000	0.11	2.7
14,000	13,989	19,972	19,993	HK-1412	—	1 080	1 470	1 910	640	24 000	—	—
14,288	14,275	19,037	19,062	—	—	—	—	—	—	—	—	—
14,288	14,275	19,037	19,062	—	—	—	—	—	—	—	—	—
14,288	14,275	19,037	19,062	J-97	—	761	1 040	1 400	758	23 000	—	—
14,288	14,275	19,037	19,062	J-98	—	901	1 230	1 730	942	23 000	—	—
14,288	14,275	19,037	19,062	J-910	—	1 190	1 630	2 490	1 350	23 000	—	—
14,288	14,275	19,037	19,062	—	—	—	—	—	—	—	—	—
14,288	14,275	20,625	20,650	—	—	—	—	—	—	—	—	—
14,288	14,275	20,625	20,650	—	—	—	—	—	—	—	—	—
14,288	14,275	20,625	20,650	—	—	—	—	—	—	—	—	—
15,000	14,989	20,972	20,993	HK-1512	BK-1512	1 120	1 530	2 050	680	22 000	0.11	2.7
15,000	14,989	20,972	20,993	HK-1516	BK-1516	1 590	2 180	3 230	1 080	22 000	0.11	2.7
15,875	15,862	20,625	20,650	—	—	—	—	—	—	—	—	—
15,875	15,862	20,625	20,650	—	—	—	—	—	—	—	—	—
15,875	15,862	20,625	20,650	J-108	—	970	1 330	1 970	1 060	21 000	—	—
15,875	15,862	20,625	20,650	J-1010	MJ-10101	1 280	1 760	2 830	1 520	21 000	0.04	1.0
15,875	15,862	20,625	20,650	J-1012	MJ-10121	1 850	2 540	4 570	2 460	21 000	0.04	1.0

Mounting dimensions are based on the inner ring rotating and the outer ring being stationary relative to the load. The housing should be of high strength material. See pages E77-78 for discussion of shaft and housing design.

Drawn cup bearings of nominal inch and metric dimensions with one closed end, which are not tabulated, may be made available upon request.

Caged drawn cup bearings of nominal inch and metric dimensions, with an engineered polymer cage, may be made available upon request.

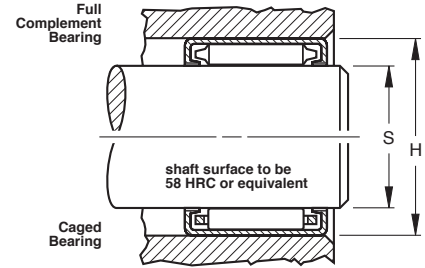
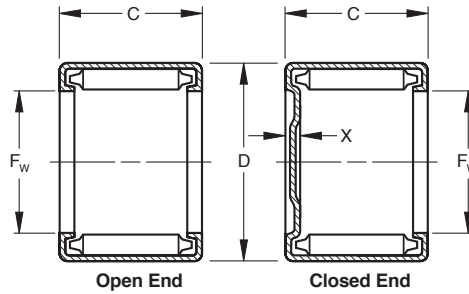


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Full Complement Bearings

Check for availability.

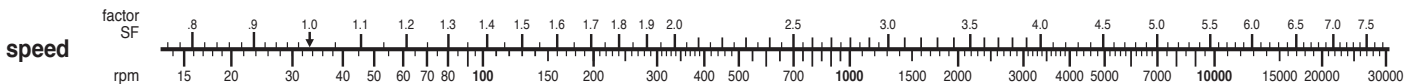
Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.



BEARING DIMENSIONS						MECHANICALLY RETAINED ROLLERS						BEARING MOUNTING						
F <sub>w</sub> Bore		D Outside Diameter		C Width		Bearing Designation		Load Ratings			Limiting Speed Full Complement Bearings	X End Thickness		Inch Mounting				
(nom.)	(nom.)	(nom.)	(nom.)	+0.000 -0.010	+0.00 -0.25	open end	closed end	Basic Dynamic C <sub>r</sub>	Basic Static C <sub>0</sub>	Working Load		(max.)	(max.)	S Shaft Raceway Diameter		H Housing Bore		
inch	mm	inch	mm	inch	mm			Ⓓ	ISO 281	ISO 76	(max.)	rpm	inch	mm	max.	min.	min.	max.
5/16	15.88	5/16	22.22	0.500	12.70	BH-108	MH-1081	1 810	2 790	3 980	2 240	6 200	0.09	2.3	0.6250	0.6245	0.8745	0.8755
5/16	15.88	5/16	22.22	0.625	15.88	BH-1010	—	2 350	3 620	5 530	3 130	6 200	—	—	0.6250	0.6245	0.8745	0.8755
5/16	15.88	5/16	22.22	0.750	19.05	BH-1012	—	2 850	4 390	7 130	4 010	6 200	—	—	0.6250	0.6245	0.8745	0.8755
5/16	15.88	5/16	22.22	1.000	25.40	BH-1016	—	3 790	5 830	10 300	5 780	6 200	—	—	0.6250	0.6245	0.8745	0.8755
0.63	16	0.87	22	0.472	12	—	—	—	—	—	—	—	—	—	0.6299	0.6295	0.8650	0.8658
0.63	16	0.87	22	0.630	16	—	—	—	—	—	—	—	—	—	0.6299	0.6295	0.8650	0.8658
0.67	17	0.91	23	0.472	12	—	—	—	—	—	—	—	—	—	0.6693	0.6689	0.9044	0.9052
11/16	17.46	5/16	22.22	0.375	9.52	B-116	—	1 160	1 790	3 030	1 620	4 200	—	—	0.6875	0.6870	0.8745	0.8755
11/16	17.46	5/16	22.22	0.500	12.70	B-118	—	1 650	2 540	4 770	2 540	4 200	—	—	0.6875	0.6870	0.8745	0.8755
11/16	17.46	5/16	22.22	0.625	15.88	B-1110	M-11101	2 100	3 230	6 500	3 460	4 200	0.08	2.0	0.6875	0.6870	0.8745	0.8755
11/16	17.46	5/16	22.22	0.750	19.05	B-1112	M-11121	2 520	3 880	8 230	4 390	4 200	0.08	2.0	0.6875	0.6870	0.8745	0.8755
11/16	17.46	19/16	23.81	0.438	11.13	BH-117	—	1 610	2 480	3 510	1 950	5 700	—	—	0.6875	0.6870	0.9370	0.9380
11/16	17.46	19/16	23.81	0.625	15.88	BH-1110	MH-11101	2 480	3 820	6 110	3 400	5 700	0.09	2.3	0.6875	0.6870	0.9370	0.9380
11/16	17.46	19/16	23.81	0.750	19.05	BH-1112	—	3 010	4 640	7 840	4 360	5 700	—	—	0.6875	0.6870	0.9370	0.9380
0.71	18	0.94	24	0.472	12	—	—	—	—	—	—	—	—	—	0.7087	0.7083	0.9438	0.9446
0.71	18	0.94	24	0.630	16	—	—	—	—	—	—	—	—	—	0.7087	0.7083	0.9438	0.9446
3/4	19.05	1	25.40	0.375	9.52	B-126	—	1 360	2 100	2 900	1 600	5 500	—	—	0.7500	0.7495	0.9995	1.0005
3/4	19.05	1	25.40	0.500	12.70	B-128	M-1281	2 010	3 100	4 790	2 630	5 500	0.09	2.3	0.7500	0.7495	0.9995	1.0005
3/4	19.05	1	25.40	0.625	15.88	B-1210	M-12101	2 610	4 010	6 670	3 670	5 500	0.09	2.3	0.7500	0.7495	0.9995	1.0005
3/4	19.05	1	25.40	0.750	19.05	B-1212	M-12121	3 160	4 870	8 560	4 710	5 500	0.09	2.3	0.7500	0.7495	0.9995	1.0005
0.79	20	1.02	26	0.472	12	—	—	—	—	—	—	—	—	—	0.7874	0.7869	1.0225	1.0233
0.79	20	1.02	26	0.630	16	—	—	—	—	—	—	—	—	—	0.7874	0.7869	1.0225	1.0233
0.79	20	1.02	26	0.787	20	—	—	—	—	—	—	—	—	—	0.7874	0.7869	1.0225	1.0233
19/16	20.64	1 1/16	26.99	0.375	9.52	B-136	—	1 420	2 190	3 140	1 710	5 200	—	—	0.8125	0.8120	1.0620	1.0630
19/16	20.64	1 1/16	26.99	0.500	12.70	B-138	M-1381	2 100	3 240	5 190	2 830	5 200	0.09	2.3	0.8125	0.8120	1.0620	1.0630
19/16	20.64	1 1/16	26.99	0.875	22.22	B-1314	—	3 860	5 940	11 300	6 180	5 200	—	—	0.8125	0.8120	1.0620	1.0630
19/16	20.64	1 1/16	26.99	1.000	25.40	B-1316	M-13161	4 390	6 760	13 400	7 290	5 200	0.09	2.3	0.8125	0.8120	1.0620	1.0630
19/16	20.64	1 1/8	28.58	0.625	15.88	BH-1310	—	2 810	4 320	6 510	3 640	6 200	—	—	0.8125	0.8120	1.1245	1.1255
19/16	20.64	1 1/8	28.58	0.750	19.05	BH-1312	—	3 470	5 340	8 550	4 790	6 200	—	—	0.8125	0.8120	1.1245	1.1255
0.87	22	1.1	28	0.472	12	—	—	—	—	—	—	—	—	—	0.8661	0.8656	1.1013	1.1021
0.87	22	1.1	28	0.630	16	—	—	—	—	—	—	—	—	—	0.8661	0.8656	1.1013	1.1021
0.87	22	1.1	28	0.787	20	—	—	—	—	—	—	—	—	—	0.8661	0.8656	1.1013	1.1021

Ⓓ Symbol denotes Basic Dynamic Load Rating to be used in load-life calculations taking into consideration the application guidelines and limitations given in this catalog. Applications involving loads approaching this rating or the tabulated working load, whichever is the smaller, should be referred to the Torrington Engineering Sales Office before a final selection is made.

Load Ratings are based on a minimum raceway hardness of 58 HRC or equivalent. Load ratings are given in pounds-force: 1 lbf = 0.454kgf = 4.448N  
Required Basic Dynamic Load Rating (Cr) = Applied Load • SF • LF • HF (see page E75).

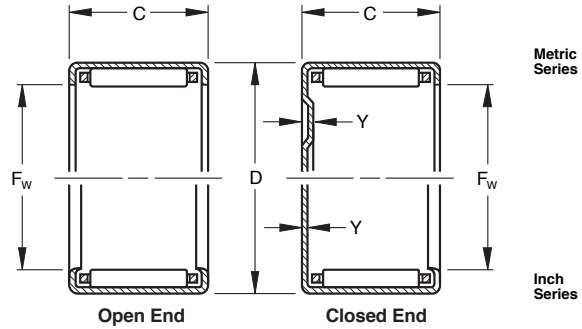


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Caged Bearings

Check for availability.

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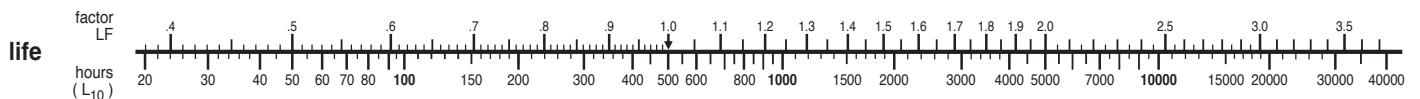


BEARING MOUNTING				CAGE RETAINED ROLLERS								
Metric Mounting				Bearing Designation	Load Ratings				Limiting Speed Caged Bearings	Y End Thickness		
S Shaft Raceway Diameter		H Housing Bore			Basic Dynamic $C_r$	Basic Static $C_o$	Working Load	Limiting Speed Caged Bearings		Y End Thickness		
millimeters		millimeters								open end	closed end	(max.)
max.	min.	min.	max.					rpm	inch	mm		
15,875	15,862	22,212	22,237	—	—	—	—	—	—	—		
15,875	15,862	22,212	22,237	JH-1010	—	1 730	2 370	3 180	1 790	21 000	—	—
15,875	15,862	22,212	22,237	—	—	—	—	—	—	—	—	—
15,875	15,862	22,212	22,237	JH-1016	—	2 960	4 050	6 330	3 560	21 000	—	—
16,000	15,989	21,972	21,993	HK-1612	—	1 160	1 590	2 180	730	21 000	—	—
16,000	15,989	21,972	21,993	HK-1616	—	1 650	2 260	3 450	1 150	21 000	—	—
17,000	16,989	22,972	22,993	HK-1712	—	1 210	1 660	2 350	780	20 000	—	—
17,462	17,449	22,212	22,237	—	—	—	—	—	—	—	—	—
17,462	17,449	22,212	22,237	—	—	—	—	—	—	—	—	—
17,462	17,449	22,212	22,237	—	—	—	—	—	—	—	—	—
17,462	17,449	22,212	22,237	J-1112	—	1 830	2 500	4 610	2 460	19 000	—	—
17,462	17,449	23,800	23,825	—	—	—	—	—	—	—	—	—
17,462	17,449	23,800	23,825	JH-1110	—	1 800	2 470	3 430	1 910	19 000	—	—
17,462	17,449	23,800	23,825	JH-1112	—	2 410	3 300	5 000	2 780	19 000	—	—
18,000	17,989	23,972	23,993	HK-1812	—	1 250	1 720	2 500	830	18 000	—	—
18,000	17,989	23,972	23,993	HK-1816	—	1 910	2 620	4 290	1 430	18 000	—	—
19,050	19,037	25,387	25,412	J-126	—	975	1 340	1 600	879	18 000	—	—
19,050	19,037	25,387	25,412	J-128	—	1 490	2 040	2 760	1 520	18 000	—	—
19,050	19,037	25,387	25,412	J-1210	—	1 870	2 560	3 690	2 030	18 000	0.04	1.0
19,050	19,037	25,387	25,412	J-1212	MJ-12101 MJ-12121	2 320	3 180	4 880	2 680	18 000	0.04	1.0
20,000	19,987	25,972	25,993	HK-2012	—	1 340	1 830	2 810	940	16 000	—	—
20,000	19,987	25,972	25,993	HK-2016	—	1 850	2 530	4 240	1 410	16 000	—	—
20,000	19,987	25,972	25,993	HK-2020	—	2 320	3 170	5 680	1 890	16 000	—	—
20,638	20,625	26,975	27,000	—	—	—	—	—	—	—	—	—
20,638	20,625	26,975	27,000	—	—	—	—	—	—	—	—	—
20,638	20,625	26,975	27,000	—	—	—	—	—	—	—	—	—
20,638	20,625	26,975	27,000	—	—	—	—	—	—	—	—	—
20,638	20,625	28,562	28,587	—	—	—	—	—	—	—	—	—
20,638	20,625	28,562	28,587	JH-1312	—	2 780	3 810	5 460	3 060	16 000	—	—
22,000	21,987	27,972	27,993	HK-2212	—	1 460	2 010	3 250	1 080	15 000	—	—
22,000	21,987	27,972	27,993	HK-2216	—	1 950	2 680	4 710	1 570	15 000	—	—
22,000	21,987	27,972	22,993	HK-2220	—	2 280	3 130	5 730	1 910	15 000	—	—

Mounting dimensions are based on the inner ring rotating and the outer ring being stationary relative to the load. The housing should be of high strength material. See pages E77-78 for discussion of shaft and housing design.

Drawn cup bearings of nominal inch and metric dimensions with one closed end, which are not tabulated, may be made available upon request.

Caged drawn cup bearings of nominal inch and metric dimensions, with engineered polymer cage, may be made available upon request.

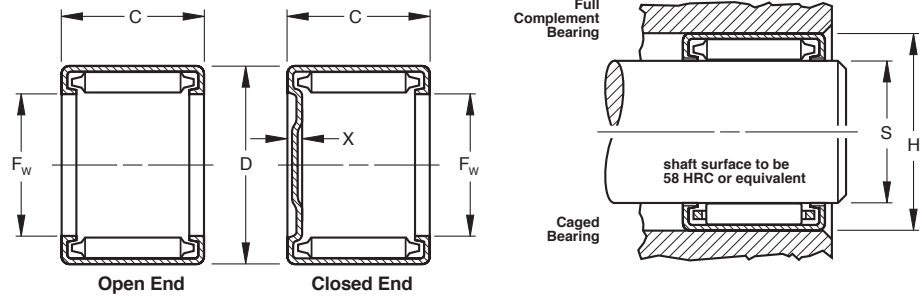


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Full Complement Bearings

Check for availability.

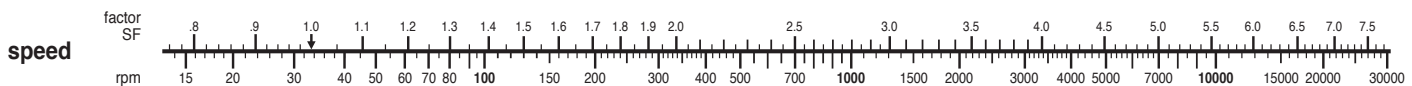
Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.



BEARING DIMENSIONS						MECHANICALLY RETAINED ROLLERS						BEARING MOUNTING						
F <sub>w</sub> Bore		D Outside Diameter		C Width		Bearing Designation		Load Ratings				Limiting Speed Full Complement Bearings	X End Thickness	Inch Mounting				
(nom.)		(nom.)		+0.000 -0.010	+0.00 -0.25	open end	closed end	Basic Dynamic C <sub>r</sub>	Basic Static C <sub>0</sub>	Working Load	rpm			(max.)	S Shaft Raceway Diameter		H Housing Bore	
inch	mm	inch	mm	inch	mm			Ⓣ ISO 281	ISO 76	(max.)					max.	min.	min.	max.
3/8	22.22	1 1/8	28.58	0.375	9.52	B-146	—	1 480	2 280	3 380	1 830	4 800	—	—	0.8750	0.8745	1.1245	1.1255
3/8	22.22	1 1/8	28.58	0.500	12.70	B-148	—	2 190	3 370	5 590	3 030	4 800	—	—	0.8750	0.8745	1.1245	1.1255
3/8	22.22	1 1/8	28.58	0.750	19.05	B-1412	M-14121	3 440	5 300	9 990	5 410	4 800	0.09	2.3	0.8750	0.8745	1.1245	1.1255
3/8	22.22	1 1/8	28.58	1.000	25.40	B-1416	M-14161	4 570	7 040	14 400	7 800	4 800	0.09	2.3	0.8750	0.8745	1.1245	1.1255
3/8	22.22	1 1/8	28.58	1.125	28.58	B-1418	—	5 110	7 860	16 600	8 990	4 800	—	—	0.8750	0.8745	1.1245	1.1255
3/8	22.22	1 3/16	30.16	0.625	15.88	BH-1410	—	2 910	4 470	7 030	3 890	5 880	—	—	0.8750	0.8745	1.1870	1.1880
3/8	22.22	1 3/16	30.16	0.750	19.05	BH-1412	—	3 590	5 530	9 230	5 110	5 880	—	—	0.8750	0.8745	1.1870	1.1880
3/8	22.22	1 3/16	30.16	1.000	25.40	BH-1416	—	4 860	7 480	13 600	7 550	5 880	—	—	0.8750	0.8745	1.1870	1.1880
1/2	23.81	1 3/16	30.16	0.500	12.70	B-158	—	2 270	3 500	5 990	3 220	4 500	—	—	0.9375	0.9370	1.1870	1.1880
1/2	23.81	1 3/16	30.16	1.000	25.40	B-1516	M-15161	4 750	7 300	15 400	8 300	4 500	0.09	2.3	0.9375	0.9370	1.1870	1.1880
0.98	25	1.26	32	0.472	12	—	—	—	—	—	—	—	—	—	0.9843	0.9838	1.2585	1.2595
0.98	25	1.26	32	0.630	16	—	—	—	—	—	—	—	—	—	0.9843	0.9838	1.2585	1.2595
0.98	25	1.26	32	0.787	20	—	—	—	—	—	—	—	—	—	0.9843	0.9838	1.2585	1.2595
0.98	25	1.26	32	1.024	26	—	—	—	—	—	—	—	—	—	0.9842	0.9837	1.2585	1.2595
1	25.40	1 1/4	31.75	0.375	9.52	B-166	—	1 590	2 450	3 870	2 070	4 300	—	—	1.0000	0.9995	1.2495	1.2505
1	25.40	1 1/4	31.75	0.438	11.13	B-167	—	1 980	3 050	5 120	2 740	4 300	—	—	1.0000	0.9995	1.2495	1.2505
1	25.40	1 1/4	31.75	0.500	12.70	B-168	—	2 350	3 620	6 390	3 420	4 300	—	—	1.0000	0.9995	1.2495	1.2505
1	25.40	1 1/4	31.75	0.625	15.88	B-1610	—	3 050	4 690	8 910	4 760	4 300	—	—	1.0000	0.9995	1.2495	1.2505
1	25.40	1 1/4	31.75	0.750	19.05	B-1612	M-16121	3 700	5 690	11 400	6 110	4 300	0.09	2.3	1.0000	0.9995	1.2495	1.2505
1	25.40	1 1/4	31.75	1.000	25.40	B-1616	M-16161	4 910	7 560	16 500	8 800	4 300	0.09	2.3	1.0000	0.9995	1.2495	1.2505
1	25.40	1 1/2	33.34	0.500	12.70	BH-168	MH-1681	2 340	3 600	5 500	3 000	5 200	0.11	2.8	1.0000	0.9995	1.3120	1.3130
1	25.40	1 1/2	33.34	0.625	15.88	BH-1610	—	3 140	4 830	8 020	4 370	5 200	—	—	1.0000	0.9995	1.3120	1.3130
1	25.40	1 1/2	33.34	0.750	19.05	BH-1612	MH-16121	3 880	5 970	10 500	5 750	5 200	0.11	2.8	1.0000	0.9995	1.3120	1.3130
1	25.40	1 1/2	33.34	1.000	25.40	BH-1616	MH-16161	5 260	8 090	15 600	8 500	5 200	0.11	2.8	1.0000	0.9995	1.3120	1.3130
1	25.40	1 3/8	33.34	1.250	31.75	BH-1620	—	6 540	10 100	20 600	11 200	5 200	—	—	1.0000	0.9995	1.3120	1.3130
1	25.40	1 3/8	33.34	1.500	38.10	BH-1624	—	7 750	11 900	25 600	14 000	5 200	—	—	1.0000	0.9995	1.3120	1.3130
1 1/16	26.99	1 3/16	33.34	0.625	15.88	B-1710	—	3 150	4 840	9 470	5 030	4 000	—	—	1.0625	1.0620	1.3120	1.3130
1.10	28	1.38	35	0.630	16	—	—	—	—	—	—	—	—	—	1.1024	1.1019	1.3767	1.3777
1.10	28	1.38	35	0.787	20	—	—	—	—	—	—	—	—	—	1.1024	1.1019	1.3767	1.3777
1 1/8	28.58	1 3/8	34.92	0.375	9.52	B-186	—	1 700	2 610	4 350	2 310	3 800	—	—	1.1250	1.1245	1.3745	1.3755
1 1/8	28.58	1 3/8	34.92	0.500	12.70	B-188	—	2 510	3 850	7 190	3 810	3 800	—	—	1.1250	1.1245	1.3745	1.3755
1 1/8	28.58	1 3/8	34.92	0.750	19.05	B-1812	—	3 940	6 060	12 900	6 810	3 800	—	—	1.1250	1.1245	1.3745	1.3755
1 1/8	28.58	1 3/8	34.92	1.000	25.40	B-1816	M-18161	5 230	8 050	18 500	9 810	3 800	0.09	2.3	1.1250	1.1245	1.3745	1.3755
1 1/8	28.58	1 1/2	38.10	0.750	19.05	BH-1812	—	4 500	6 920	11 500	6 350	5 500	—	—	1.1250	1.1245	1.4995	1.5005
1 1/8	28.58	1 1/2	38.10	1.000	25.40	BH-1816	—	6 120	9 420	17 100	9 430	5 500	—	—	1.1250	1.1245	1.4995	1.5005
1 1/8	28.58	1 1/2	38.10	1.125	28.58	—	—	—	—	—	—	—	—	—	1.1250	1.1245	1.4995	1.5005
1 1/8	28.58	1 1/2	38.10	1.250	31.75	BH-1820	—	7 660	11 800	22 900	12 600	5 500	—	—	1.1250	1.1245	1.4995	1.5005

Ⓣ Symbol denotes Basic Dynamic Load Rating to be used in load-life calculations taking into consideration the application guidelines and limitations given in this catalog.

Load Ratings are based on a minimum raceway hardness of 58 HRC or equivalent. Load ratings are given in pounds-force: 1 lbf = 0.454kgf = 4.448N. Required Basic Dynamic Load Rating (C<sub>r</sub>) = Applied Load • SF • LF • HF (see page E75).

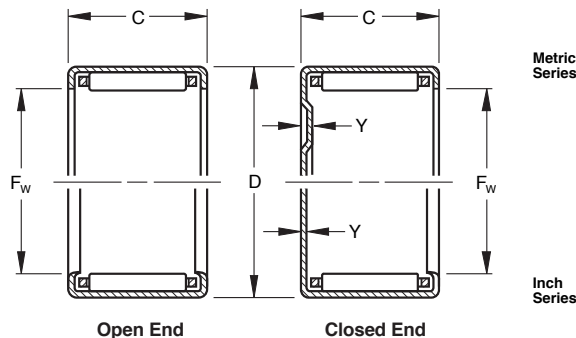


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Caged Bearings

Check for availability.

Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.

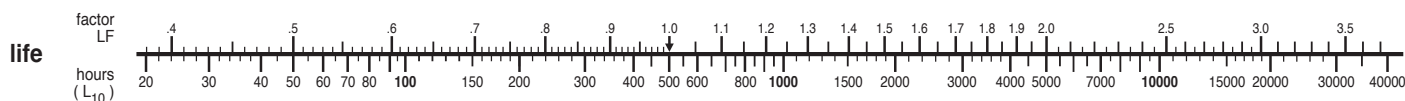


BEARING MOUNTING				CAGE RETAINED ROLLERS									
Metric Mounting				Bearing Designation	Load Ratings				Limiting Speed Caged Bearings	Y End Thickness			
S Shaft Raceway Diameter	H Housing Bore				open end	closed end	Basic Dynamic C <sub>r</sub>	Basic Static C <sub>0</sub>		Working Load	rpm	(max.)	
	millimeters	min.	max.				①	ISO 281		ISO 76		(max.)	inch
max.	min.	min.	max.			lbf	lbf	lbf					
22,225	22,212	28,562	28,587	J-146	—	1 080	1 480	1 910	1 030	15 000	—	—	
22,225	22,212	28,562	28,587	J-148	—	1 640	2 250	3 270	1 770	15 000	—	—	
22,225	22,212	28,562	28,587	J-1412	MJ-14121	2 570	3 530	5 830	3 160	15 000	0.04	1.0	
22,225	22,212	28,562	28,587	J-1416	MJ-14161	3 540	4 850	8 780	4 750	15 000	0.04	1.0	
22,225	22,212	28,562	28,587	—	—	—	—	—	—	—	—	—	
22,225	22,212	30,150	30,175	—	—	—	—	—	—	—	—	—	
22,225	22,212	30,150	30,175	JH-1412	—	2 710	3 710	5 450	3 020	15 000	—	—	
22,225	22,212	30,150	30,175	JH-1416	—	3 770	5 160	8 330	4 610	15 000	—	—	
23,812	23,799	30,150	30,175	—	—	—	—	—	—	—	—	—	
23,812	23,799	30,150	30,175	—	—	—	—	—	—	—	—	—	
25,000	24,987	31,967	31,992	HK-2512	—	1 660	2 270	3 410	1 140	13 000	—	—	
25,000	24,987	31,967	31,992	HK-2516	—	2 730	3 240	5 390	1 800	13 000	—	—	
25,000	24,987	31,967	31,992	HK-2520	—	3 100	4 250	7 620	2 540	13 000	—	—	
25,000	24,987	31,967	31,992	HK-2526	BK-2526	3 860	5 280	10 100	3 370	13 000	.11	2.7	
25,400	25,387	31,737	31,762	—	—	—	—	—	—	—	—	—	
25,400	25,387	31,737	31,762	—	—	—	—	—	—	—	—	—	
25,400	25,387	31,737	31,762	—	—	—	—	—	—	—	—	—	
25,400	25,387	31,737	31,762	—	—	—	—	—	—	—	—	—	
25,400	25,387	31,737	31,762	J-1612	—	2 710	3 720	6 500	3 470	13 000	—	—	
25,400	25,387	31,737	31,762	J-1616	—	3 730	5 110	9 780	5 230	13 000	—	—	
25,400	25,387	33,325	33,350	—	—	—	—	—	—	—	—	—	
25,400	25,387	33,325	33,350	—	—	—	—	—	—	—	—	—	
25,400	25,387	33,325	33,350	JH-1612	MJH-16121	3 060	4 190	6 570	3 590	13 000	0.05	1.3	
25,400	25,387	33,325	33,350	JH-1616	MJH-16161	4 090	5 610	9 570	5 220	13 000	0.05	1.3	
25,400	25,387	33,325	33,350	—	—	—	—	—	—	—	—	—	
25,400	25,387	33,325	33,350	—	—	—	—	—	—	—	—	—	
26,988	26,975	33,325	33,350	—	—	—	—	—	—	—	—	—	
28,000	27,987	34,967	34,992	HK-2816	—	2 410	3 300	5 690	1 900	12 000	—	—	
28,000	27,987	34,967	34,992	HK-2820	—	3 150	4 310	8 040	2 680	12 000	—	—	
28,575	28,562	34,912	34,937	—	—	—	—	—	—	—	—	—	
28,575	28,562	34,912	34,937	J-188	—	1 790	2 460	3 960	2 100	11 000	—	—	
28,575	28,562	34,912	34,937	J-1812	—	2 840	3 890	7 160	3 790	11 000	—	—	
28,575	28,562	34,912	34,937	J-1816	—	3 910	5 350	10 800	5 700	11 000	—	—	
28,575	28,562	38,087	38,112	JH-1812	—	3 510	4 810	7 120	3 920	12 000	—	—	
28,575	28,562	38,087	38,112	JH-1816	MJH-18161	4 970	6 810	11 100	6 140	12 000	0.05	1.3	
28,575	28,562	38,087	38,112	JH-1818	—	5 440	7 460	12 500	6 890	12 000	—	—	
28,575	28,562	38,087	38,112	—	—	—	—	—	—	—	—	—	

Mounting dimensions are based on the inner ring rotating and the outer ring being stationary relative to the load. The housing should be of high strength material. See pages E77-78 for discussion of shaft and housing design.

Drawn cup bearings of nominal inch and metric dimensions with one closed end, which are not tabulated, may be made available upon request.

Caged drawn cup bearings of nominal inch and metric dimensions, with engineered polymer cage, may be made available upon request.



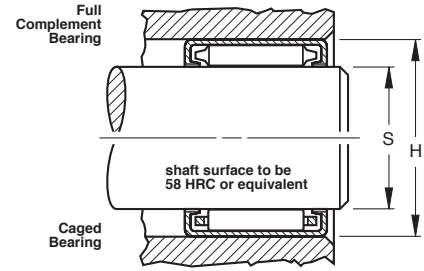
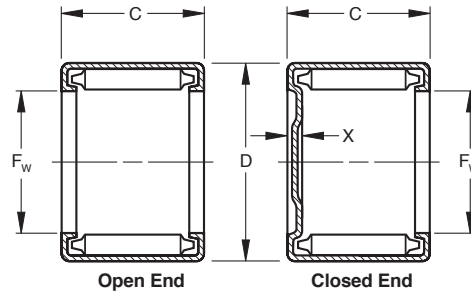


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Full Complement Bearings

Check for availability.

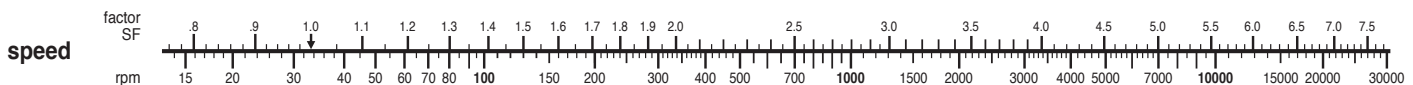
Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.



BEARING DIMENSIONS						MECHANICALLY RETAINED ROLLERS						BEARING MOUNTING						
F <sub>w</sub> Bore		D Outside Diameter		C Width		Bearing Designation		Load Ratings			Limiting Speed Full Complement Bearings	X End Thickness	Inch Mounting					
(nom.)	(nom.)	(nom.)	(nom.)	+0.000 -0.010	+0.00 -0.25	open end	closed end	Basic Dynamic C <sub>r</sub>	Basic Static C <sub>0</sub>	Working Load			rpm	inch	mm	S Shaft Raceway Diameter		H Housing Bore
inch	mm	inch	mm	inch	mm			Ⓣ	ISO 281	ISO 76	(max.)						max.	min.
1.18	30	1.46	37	0.472	12	—	—	—	—	—	—	—	—	1.1811	1.1806	1.4554	1.4564	
1.18	30	1.46	37	0.787	20	—	—	—	—	—	—	—	—	1.1811	1.1806	1.4554	1.4564	
1.18	30	1.46	37	1.024	26	—	—	—	—	—	—	—	—	1.1811	1.1806	1.4554	1.4564	
1 1/16	30.16	1 1/2	38.10	1.000	25.40	<b>B-1916</b>	—	5 760	8 860	18 500	9 920	4 400	—	—	—	—	—	
1 1/4	31.75	1 1/2	38.10	0.500	12.70	<b>B-208</b>	—	2 650	4 080	7 990	4 200	3 500	—	—	—	—	—	
1 1/4	31.75	1 1/2	38.10	0.625	15.88	<b>B-2010</b>	—	3 430	5 280	11 100	5 850	3 500	—	—	—	—	—	
1 1/4	31.75	1 1/2	38.10	0.750	19.05	<b>B-2012</b>	—	4 160	6 410	14 300	7 510	3 500	—	—	—	—	—	
1 1/4	31.75	1 1/2	38.10	1.000	25.40	<b>B-2016</b>	<b>M-20161</b>	5 530	8 510	20 600	10 800	3 500	0.09	2.3	1.2500	1.2495	1.4995	1.5005
1 1/4	31.75	1 1/2	38.10	1.250	31.75	<b>B-2020</b>	<b>M-20201</b>	6 810	10 500	26 900	14 100	3 500	0.09	2.3	1.2500	1.2495	1.4995	1.5005
1 1/4	31.75	1 5/8	41.28	0.500	12.70	<b>BH-208</b>	—	2 730	4 200	6 320	3 440	5 000	—	—	—	—	—	
1 1/4	31.75	1 5/8	41.28	0.750	19.05	<b>BH-2012</b>	—	4 720	7 250	12 700	6 930	5 000	—	—	—	—	—	
1 1/4	31.75	1 5/8	41.28	1.000	25.40	<b>BH-2016</b>	<b>MH-20161</b>	6 440	9 910	19 000	10 400	5 000	0.12	3.0	1.2500	1.2495	1.6245	1.6255
1 1/4	31.75	1 5/8	41.28	1.250	31.75	<b>BH-2020</b>	<b>MH-20201</b>	8 070	12 400	25 400	13 800	5 000	0.12	3.0	1.2500	1.2495	1.6245	1.6255
1 1/16	33.34	1 5/8	41.28	0.500	12.70	<b>B-218</b>	—	2 720	4 180	7 220	3 840	4 000	—	—	—	—	—	
1 1/16	33.34	1 5/8	41.28	0.625	15.88	<b>B-2110</b>	—	3 640	5 600	10 500	5 600	4 000	—	—	—	—	—	
1 1/16	33.34	1 5/8	41.28	1.250	31.75	<b>B-2120</b>	—	7 620	11 700	27 200	14 500	4 000	—	—	—	—	—	
1 3/8	34.92	1 5/8	41.28	0.500	12.70	<b>B-228</b>	—	2 780	4 280	8 790	4 590	3 200	—	—	—	—	—	
1 3/8	34.92	1 5/8	41.28	0.750	19.05	<b>B-2212</b>	—	4 380	6 730	15 700	8 200	3 200	—	—	—	—	—	
1 3/8	34.92	1 5/8	41.28	1.000	25.40	<b>B-2216</b>	—	5 820	8 950	22 700	11 800	3 200	—	—	—	—	—	
1 3/8	34.92	1 5/8	41.28	1.250	31.75	<b>B-2220</b>	—	7 160	11 000	29 600	15 400	3 200	—	—	—	—	—	
1 3/8	34.92	1 3/4	44.45	0.625	15.88	<b>BH-2210</b>	—	4 060	6 240	10 600	5 740	4 700	—	—	—	—	—	
1 3/8	34.92	1 3/4	44.45	0.750	19.05	<b>BH-2212</b>	—	5 050	7 770	14 100	7 610	4 700	—	—	—	—	—	
1 3/8	34.92	1 3/4	44.45	1.000	25.40	<b>BH-2216</b>	—	6 870	10 600	20 900	11 300	4 700	—	—	—	—	—	
1 3/8	34.92	1 3/4	44.45	1.250	31.75	<b>BH-2220</b>	—	8 600	13 200	28 000	15 100	4 700	—	—	—	—	—	
1.38	35	1.65	42	0.472	12	—	—	—	—	—	—	—	—	—	—	—	—	
1.38	35	1.65	42	0.630	16	—	—	—	—	—	—	—	—	—	—	—	—	
1.38	35	1.65	42	0.787	20	—	—	—	—	—	—	—	—	—	—	—	—	
1 1/2	38.10	1 5/8	47.62	0.500	12.70	<b>B-248</b>	—	3 110	4 780	7 830	4 190	4 300	—	—	—	—	—	
1 1/2	38.10	1 5/8	47.62	0.625	15.88	<b>B-2410</b>	—	4 220	6 500	11 600	6 200	4 300	—	—	—	—	—	
1 1/2	38.10	1 5/8	47.62	0.750	19.05	<b>B-2412</b>	—	5 260	8 090	15 400	8 220	4 300	—	—	—	—	—	
1 1/2	38.10	1 5/8	47.62	0.875	22.22	<b>B-2414</b>	—	6 240	9 590	19 200	10 200	4 300	—	—	—	—	—	
1 1/2	38.10	1 5/8	47.62	1.000	25.40	<b>B-2416</b>	<b>M-24161</b>	7 150	11 000	22 800	12 200	4 300	0.12	3.0	1.5000	1.4995	1.8745	1.8755
1 1/2	38.10	1 5/8	47.62	1.250	31.75	<b>B-2420</b>	<b>M-24201</b>	8 950	13 800	30 500	16 300	4 300	0.12	3.0	1.5000	1.4995	1.8745	1.8755
1.57	40	1.85	47	0.472	12	—	—	—	—	—	—	—	—	—	—	—	—	
1.57	40	1.85	47	0.630	16	—	—	—	—	—	—	—	—	—	—	—	—	
1.57	40	1.85	47	0.787	20	—	—	—	—	—	—	—	—	—	—	—	—	

Ⓣ Symbol denotes Torrington Basic Dynamic Load Rating to be used in load-life calculations taking into consideration the application guidelines and limitations given in this catalog. Applications involving loads approaching this rating or the tabulated working load, whichever is the smaller, should be referred to the Torrington Engineering Sales Office before a final selection is made.

Load Ratings are based on a minimum raceway hardness of 58 HRC or equivalent. Load ratings are given in pounds-force: 1 lbf = 0.454kgf = 4.448N. Required Basic Dynamic Load Rating (Cr) = Applied Load • SF • LF • HF (see page E75).

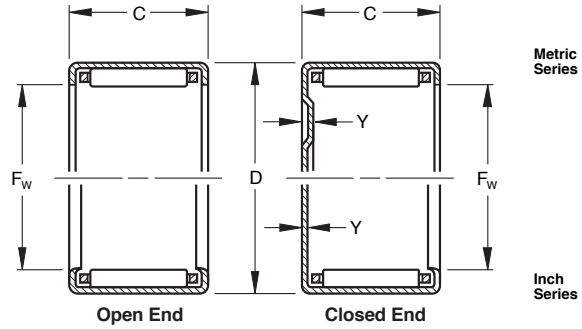


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Caged Bearings

Check for availability.

Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.

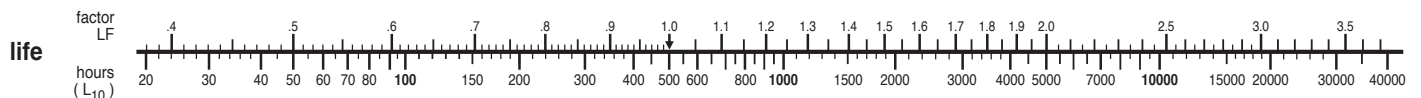


BEARING MOUNTING				CAGE RETAINED ROLLERS								
Metric Mounting				Bearing Designation	Load Ratings				Limiting Speed Caged Bearings	Y End Thickness		
S Shaft Raceway Diameter		H Housing Bore			Basic Dynamic $C_r$	Basic Static $C_o$	Working Load	Y End Thickness				
max.	min.	min.	max.					open end		closed end	inch	mm
30,000	29,987	36,967	36,992	HK-3012	—	1 830	2 500	4 100	1 370	11 000	—	—
30,000	29,987	36,967	36,992	HK-3020	—	3 410	4 680	9 140	3 050	11 000	—	—
30,000	29,987	36,967	36,992	HK-3026	—	4 120	5 640	11 600	3 870	11 000	—	—
30,162	30,149	38,087	38,112	—	—	—	—	—	—	—	—	—
31,750	31,737	38,087	38,112	—	—	—	—	—	—	—	—	—
31,750	31,737	38,087	38,112	—	—	—	—	—	—	—	—	—
31,750	31,737	38,087	38,112	—	—	—	—	—	—	—	—	—
31,750	31,737	38,087	38,112	J-2016	MJ-20161	4 310	5 900	12 700	6 650	10 000	—	—
31,750	31,737	38,087	38,112	—	—	—	—	—	—	—	—	—
31,750	31,737	41,262	41,287	—	—	—	—	—	—	—	—	—
31,750	31,737	41,262	41,287	JH-2012	—	3 620	4 960	7 710	4 190	10 000	—	—
31,750	31,737	41,262	41,287	JH-2016	—	5 090	6 970	11 900	6 490	10 000	—	—
31,750	31,737	41,262	41,287	JH-2020	—	6 370	8 730	15 900	8 660	10 000	—	—
33,338	33,325	41,262	41,287	—	—	—	—	—	—	—	—	—
33,338	33,325	41,262	41,287	—	—	—	—	—	—	—	—	—
33,338	33,325	41,262	41,287	—	—	—	—	—	—	—	—	—
34,925	34,912	41,262	41,287	J-228	—	2 090	2 870	5 170	2 700	9 200	—	—
34,925	34,912	41,262	41,287	J-2212	—	3 410	4 670	9 690	4 890	9 200	—	—
34,925	34,912	41,262	41,287	—	—	—	—	—	—	—	—	—
34,925	34,912	41,262	41,287	—	—	—	—	—	—	—	—	—
34,925	34,912	44,437	44,462	—	—	—	—	—	—	—	—	—
34,925	34,912	44,437	44,462	JH-2212	—	3 950	5 410	8 740	4 720	9 400	—	—
34,925	34,912	44,437	44,462	JH-2216	MJH-22161	5 480	7 510	13 300	7 190	9 400	0.05	1.3
34,925	34,912	44,437	44,462	—	—	—	—	—	—	—	—	—
35,000	34,987	41,967	41,992	HK-3512	—	2 040	2 790	4 950	1 650	9 100	—	—
35,000	34,987	41,967	41,992	HK-3516	—	2 630	3 600	6 840	2 280	9 100	—	—
35,000	34,987	41,967	41,992	HK-3520	—	3 700	5 070	10 700	3 570	9 100	—	—
38,100	38,087	47,612	47,637	—	—	—	—	—	—	—	—	—
38,100	38,087	47,612	47,637	—	—	—	—	—	—	—	—	—
38,100	38,087	47,612	47,637	J-2412	—	4 260	5 830	9 970	5 330	8 600	—	—
38,100	38,087	47,612	47,637	—	—	—	—	—	—	—	—	—
38,100	38,087	47,612	47,637	J-2416	—	5 890	8 080	15 100	8 100	8 600	—	—
38,100	38,087	47,612	47,637	J-2420	—	7 410	10 200	20 300	10 900	8 600	—	—
40,000	39,984	46,967	46,992	HK-4012	—	2 040	2 800	5 170	1 720	7 900	—	—
40,000	39,984	46,967	46,992	HK-4016	—	2 860	3 910	7 960	2 650	7 900	—	—
40,000	39,984	46,967	46,992	HK-4020	—	3 790	5 190	11 500	3 830	7 900	—	—

Mounting dimensions are based on the inner ring rotating and the outer ring being stationary relative to the load. The housing should be of high strength material. See pages E77-E78 for discussion of shaft and housing design.

Drawn cup bearings of nominal inch and metric dimensions with one closed end, which are not tabulated, may be made available upon request.

Caged drawn cup bearings of nominal inch and metric dimensions, with engineered polymer cage, may be made available upon request.

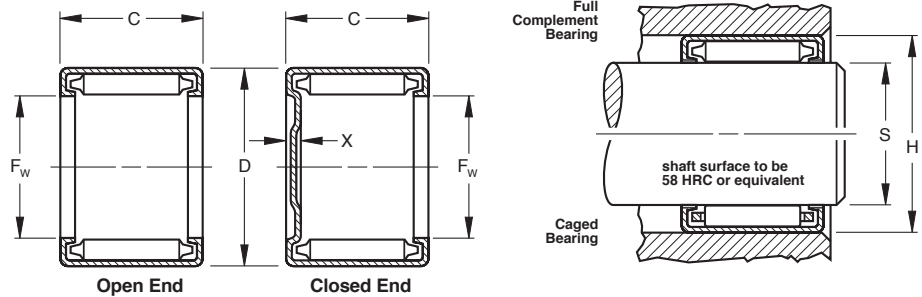


# DRAWN CUP NEEDLE ROLLER BEARINGS

## Full Complement Bearings

Check for availability.

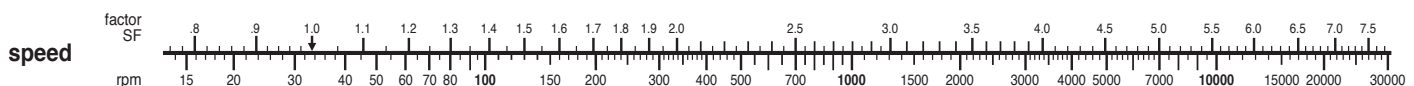
Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.



BEARING DIMENSIONS						MECHANICALLY RETAINED ROLLERS						BEARING MOUNTING						
F <sub>w</sub> Bore  (nom.)	D Outside Diameter  (nom.)		C Width  +0.000 -0.010 +0.00 -0.25		Bearing Designation  open end closed end	Load Ratings				Limiting Speed Full Complement Bearings rpm	X End Thickness  (max.)		Inch Mounting					
	inch	mm	inch	mm		Basic Dynamic C <sub>r</sub>  Ⓟ lbf	Basic Static C <sub>0</sub>  ISO 281 lbf	Working Load  ISO 76 lbf	(max.) lbf		inch	mm	S Shaft Raceway Diameter  inches		H Housing Bore  inches			
1 1/8	41.28	2	50.8	0.500	12.70	B-268	—	3 200	4 920	8 390	4 450	3 900	—	—	1.6250	1.6245	1.9995	2.0005
1 1/8	41.28	2	50.8	0.625	15.88	B-2610	—	4 360	6 710	12 500	6 630	3 900	—	—	1.6250	1.6245	1.9995	2.0005
1 1/8	41.28	2	50.80	1.000	25.40	B-2616	—	7 430	11 400	24 800	13 100	3 900	—	—	1.6250	1.6245	1.9995	2.0005
1 1/8	41.28	2	50.80	1.250	31.75	B-2620	—	9 280	14 300	33 000	17 500	3 900	—	—	1.6250	1.6245	1.9995	2.0005
1 3/8	44.45	2 1/2	53.98	0.750	19.05	B-2812	—	5 630	8 660	17 900	9 410	3 700	—	—	1.7500	1.7495	2.1245	2.1255
1 3/8	44.45	2 1/2	53.98	1.000	25.40	B-2816	M-28161	7 690	11 800	26 700	14 100	3 700	0.12	3.0	1.7500	1.7495	2.1245	2.1255
1 3/8	44.45	2 1/2	53.98	1.250	31.75	B-2820	—	9 600	14 800	35 500	18 700	3 700	—	—	1.7500	1.7495	2.1245	2.1255
1 3/8	44.45	2 1/2	53.98	1.500	38.10	B-2824	—	11 400	17 600	44 300	23 400	3 700	—	—	1.7500	1.7495	2.1245	2.1255
1.77	45	2.05	52	0.472	12	—	—	—	—	—	—	—	—	—	1.7717	1.7711	2.0457	2.0469
1.77	45	2.05	52	0.630	16	—	—	—	—	—	—	—	—	—	1.7717	1.7711	2.0457	2.0469
1.77	45	2.05	52	0.787	20	—	—	—	—	—	—	—	—	—	1.7717	1.7711	2.0457	2.0469
1 7/8	47.62	2 1/4	57.15	0.500	12.70	B-308	—	3 500	5 380	9 790	5 140	3 500	—	—	1.8750	1.8745	2.2495	2.2505
1 7/8	47.62	2 1/4	57.15	0.750	19.05	B-3012	—	5 920	9 100	19 200	10 100	3 500	—	—	1.8750	1.8745	2.2495	2.2505
1 7/8	47.62	2 1/4	57.15	1.000	25.40	B-3016	—	8 050	12 400	28 600	15 000	3 500	—	—	1.8750	1.8745	2.2495	2.2505
1.97	50	2.28	58	0.787	20	—	—	—	—	—	—	—	—	—	1.9685	1.9679	2.2819	2.2831
2	50.80	2 3/8	60.32	0.500	12.70	B-328	—	3 570	5 490	10 300	5 390	3 300	—	—	2.0000	1.9994	2.3745	2.3755
2	50.80	2 3/8	60.32	1.000	25.40	B-3216	M-32161	8 290	12 700	30 500	15 900	3 300	0.12	3.0	2.0000	1.9994	2.3745	2.3755
2	50.80	2 3/8	60.32	1.250	31.75	B-3220	—	10 300	15 900	40 600	21 200	3 300	—	—	2.0000	1.9994	2.3745	2.3755
2	50.80	2 3/8	60.32	1.750	44.45	B-3228	M-32281	14 200	21 800	60 700	31 700	3 300	0.12	3.0	2.0000	1.9994	2.3745	2.3755
2 1/16	52.39	2 1/2	64.29	0.750	19.05	BH-3312	—	6 590	10 100	19 000	10 100	4 000	—	—	2.0625	2.0619	2.5307	2.5317
2 1/16	52.39	2 1/2	64.29	1.000	25.40	BH-3316	—	9 250	14 200	29 400	15 600	4 000	—	—	2.0625	2.0619	2.5307	2.5317
2 1/8	53.98	2 1/2	63.50	0.500	12.70	B-348	—	3 670	5 650	11 000	5 710	3 100	—	—	2.1250	2.1244	2.4995	2.5005
2 1/8	53.98	2 1/2	63.50	1.000	25.40	B-3416	—	8 530	13 100	32 400	16 900	3 100	—	—	2.1250	2.1244	2.4995	2.5005
2 1/8	53.98	2 1/2	63.50	1.500	38.10	B-3424	—	12 700	19 500	53 900	28 000	3 100	—	—	2.1250	2.1244	2.4995	2.5005
2.17	55	2.48	63	0.787	20	—	—	—	—	—	—	—	—	—	2.1654	2.1647	2.4788	2.4800
2 1/4	57.15	2 5/8	66.68	0.750	19.05	B-3612	—	6 590	10 100	23 100	12 000	3 000	—	—	2.2500	2.2494	2.6245	2.6255
2 1/4	57.15	2 5/8	66.68	1.000	25.40	—	—	—	—	—	—	—	—	—	2.2500	2.2494	2.6245	2.6255
2 1/4	57.15	2 5/8	66.68	1.250	31.75	B-3620	—	11 200	17 300	45 800	23 800	3 000	—	—	2.2500	2.2494	2.6245	2.6255
2 1/4	57.15	2 5/8	66.68	1.500	38.10	B-3624	—	13 300	20 500	57 200	29 700	3 000	—	—	2.2500	2.2494	2.6245	2.6255
2.36	60	2.68	68	0.472	12	—	—	—	—	—	—	—	—	—	2.3622	2.3618	2.7150	2.7162
2 3/8	66.68	3	76.20	1.000	25.40	B-4216	M-42161	9 590	14 800	40 100	20 600	2 500	0.13	3.3	2.6250	2.6244	2.9995	3.0005
2 3/4	69.85	3 1/8	79.38	0.625	15.88	B-4410	—	5 840	8 980	21 300	10 900	2 500	—	—	2.7500	2.7494	3.1245	3.1255
2 3/4	69.85	3 1/8	79.38	0.750	19.05	—	—	—	—	—	—	—	—	—	2.7500	2.7494	3.1245	3.1255
2 3/4	69.85	3 1/8	79.38	1.000	25.40	B-4416	—	9 920	15 300	42 100	21 600	2 500	—	—	2.7500	2.7494	3.1245	3.1255
2 3/4	69.85	3 1/8	79.38	1.250	31.75	B-4420	—	12 400	19 000	56 000	28 700	2 500	—	—	2.7500	2.7494	3.1245	3.1255
3 1/2	88.90	4	101.60	0.750	19.05	B-5612	—	9 310	14 300	32 800	16 900	2 700	—	—	3.5000	3.4994	3.9995	4.0005
5 1/2	139.7	6	152.40	0.750	19.05	B-8812	—	10 900	16 700	49 900	25 100	1 600	—	—	5.5000	5.4993	5.9990	6.0010

Ⓟ Symbol denotes Basic Dynamic Load Rating to be used in load-life calculations taking into consideration the application guidelines and limitations given in this catalog.

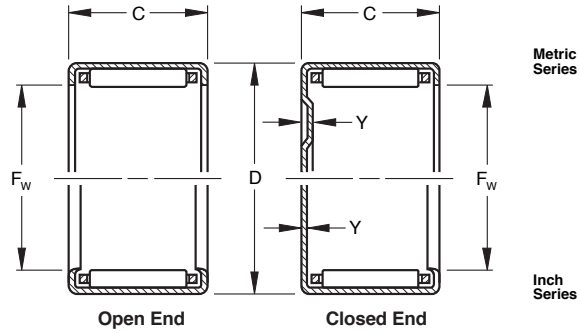
Load Ratings are based on a minimum raceway hardness of 58 HRC or equivalent. Load ratings are given in pounds-force: 1 lbf = 0.454kgf = 4.448N Required Basic Dynamic Load Rating (Cr) = Applied Load • SF • LF • HF (see page E75).



# DRAWN CUP NEEDLE ROLLER BEARINGS

## Caged Bearings

Inch-metric conversions given are for the convenience of the user. The controlling dimensions are in inches for nominal inch bearings and in millimeters for nominal metric bearings.



BEARING MOUNTING				CAGE RETAINED ROLLERS							
Metric Mounting				Bearing Designation	Load Ratings				Limiting Speed Caged Bearings	Y End Thickness	
S Shaft Raceway Diameter		H Housing Bore			Basic Dynamic $C_r$	Basic Static $C_o$	Working Load	rpm		mm	
max.	min.	min.	max.							inch	mm
41,275	41,262	50,787	50,812	—	—	—	—	—	—	—	
41,275	41,262	50,787	50,812	<b>J-2610</b>	3 930	5 390	9 620	4 930	7 900	—	
41,275	41,262	50,787	50,812	<b>J-2616</b>	5 890	8 060	15 600	8 280	7 900	—	
41,275	41,262	50,787	50,812	—	—	—	—	—	—	—	
44,450	44,437	53,962	53,987	<b>J-2812</b>	4 440	6 080	11 200	5 890	7 300	—	
44,450	44,437	53,962	53,987	<b>J-2816</b>	6 000	8 230	16 500	8 690	7 300	—	
44,450	44,437	53,962	53,987	—	—	—	—	—	—	—	
44,450	44,437	53,962	53,987	<b>J-2824</b>	8 940	12 200	27 500	14 500	7 300	—	
45,000	44,984	51,961	51,991	<b>HK-4512</b>	2 140	2 670	5 720	1 910	7 000	—	
45,000	44,984	51,961	51,991	<b>FJ-4516</b>	3 490	4 780	10 300	3 430	7 000	—	
45,000	44,984	51,961	51,991	<b>HK-4520</b>	3 960	5 430	12 600	4 200	7 000	—	
47,625	47,612	57,137	57,162	—	—	—	—	—	—	—	
47,625	47,612	57,137	57,162	—	—	—	—	—	—	—	
47,625	47,612	57,137	57,162	<b>J-3016</b>	6 160	8 440	17 200	9 040	6 800	—	
50,000	49,984	57,961	57,991	<b>FJ-5020</b>	4 760	6 520	14 100	4 700	6 300	—	
50,800	50,785	60,312	60,337	—	—	—	—	—	—	—	
50,800	50,785	60,312	60,337	<b>J-3216</b>	6 350	8 700	18 400	9 600	6 300	—	
50,800	50,785	60,312	60,337	—	—	—	—	—	—	—	
50,800	50,785	60,312	60,337	—	—	—	—	—	—	—	
52,388	52,373	64,280	64,305	—	—	—	—	—	—	—	
52,388	52,373	64,280	64,305	—	—	—	—	—	—	—	
53,975	53,960	63,487	63,512	—	—	—	—	—	—	—	
53,975	53,960	63,487	63,512	—	—	—	—	—	—	—	
53,975	53,960	63,487	63,512	—	—	—	—	—	—	—	
55,000	54,981	62,961	62,991	<b>FJ-5520</b>	5 000	6 850	15 500	8 040	5 700	—	
57,150	57,135	66,662	66,687	<b>J-3612</b>	5 110	7 000	14 200	7 360	5 600	—	
57,150	57,135	66,662	66,687	<b>J-3616</b>	6 930	9 490	20 900	10 900	5 600	—	
57,150	57,135	66,662	66,687	—	—	—	—	—	—	—	
57,150	57,135	66,662	66,687	—	—	—	—	—	—	—	
60,000	59,991	68,961	68,991	<b>HK-6012</b>	2 690	3 680	7 410	2 470	5 200	—	
66,675	66,660	76,187	76,212	—	—	—	—	—	—	—	
69,850	69,835	79,362	79,387	—	—	—	—	—	—	—	
69,850	69,835	79,362	79,387	<b>J-4412</b>	5 460	7 480	16 000	8 520	4 500	—	
69,850	69,835	79,362	79,387	—	—	—	—	—	—	—	
69,850	69,835	79,362	79,387	—	—	—	—	—	—	—	
88,900	88,885	101,587	101,612	—	—	—	—	—	—	—	
139,700	139,682	152,375	152,426	—	—	—	—	—	—	—	

Mounting dimensions are based on the inner ring rotating and the outer ring being stationary relative to the load. The housing should be of high strength material. See pages E77- E78 for discussion of shaft and housing design.

Drawn cup bearings of nominal inch and metric dimensions with one closed end, which are not tabulated, may be made available upon request.

Caged drawn cup bearings of nominal inch and metric dimensions, with engineered polymer cage, may be made available upon request.

