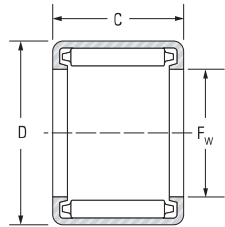




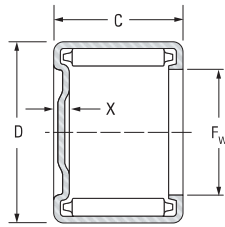
NEEDLE ROLLER BEARINGS

FULL COMPLEMENT BEARINGS, OPEN ENDS, CLOSED ONE END

INCH SERIES

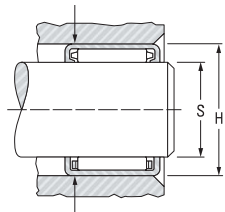


B, BH



M-1, MH-1

Full Complement Bearing



Caged Bearing

Shaft surface to be
58 HRC or equivalent

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

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 Engineering section
for discussion of shaft
and housing design.

Shaft Dia.	F _w	D	C +0 +0.000 -0.3 -0.010	X (max.)	Bearing Designation		Load Ratings		Speed Rating		C ₉
							Dynamic	Static			
							C	C ₀	Grease	Oil	
in.	mm in.	mm in.	mm in.	mm in.			kN lbf.		min ⁻¹		
1/8	3.175 0.1250	6.350 0.2500	6.35 0.250	—	B-24	—	1.73 390	1.65 370	8100	13000	0.0081
5/32	3.970 0.1563	7.142 0.2812	6.35 0.250	—	B-2 1/2 4	—	2.00 450	2.00 450	7000	11000	0.0093
	3.970 0.1563	7.142 0.2812	7.92 0.312	—	B-2 1/2 5	—	2.58 580	2.80 630	7000	11000	0.0101
3/16	4.763 0.1875	8.733 0.3438	6.35 0.250	1.78 0.070	B-34	M-341	2.22 500	2.14 480	7000	11000	0.0099
	4.763 0.1875	8.733 0.3438	9.53 0.375	1.78 0.070	B-36	M-361	3.78 850	4.23 950	7000	11000	0.0118
1/4	6.350 0.2500	11.113 0.4375	6.35 0.250	2.03 0.080	B-44	M-441	2.76 620	2.62 590	6500	10000	0.0115
	6.350 0.2500	11.113 0.4375	7.92 0.312	2.03 0.080	B-45	M-451	3.56 800	3.69 830	6500	10000	0.0125
	6.350 0.2500	11.113 0.4375	9.53 0.375	—	B-46	—	4.54 1020	5.03 1130	6500	10000	0.0135
	6.350 0.2500	11.113 0.4375	11.13 0.438	2.03 0.080	B-47	M-471	5.52 1240	6.45 1450	6500	10000	0.0143
5/16	7.938 0.3125	12.700 0.5000	7.92 0.312	2.03 0.080	B-55	M-551	4.09 920	4.58 1030	5400	8300	0.0144
	7.938 0.3125	12.700 0.5000	9.53 0.375	—	B-56	—	5.25 1180	6.32 1420	5400	8300	0.0156
	7.938 0.3125	12.700 0.5000	11.13 0.438	2.03 0.080	B-57	M-571	6.32 1420	8.10 1820	5400	8300	0.0165
	7.938 0.3125	12.700 0.5000	14.27 0.562	—	B-59	—	8.36 1880	11.6 2600	5400	8300	0.0181
	7.938 0.3125	14.288 0.5625	11.13 0.438	2.29 0.090	BH-57	MH-571	7.03 1580	7.34 1650	7500	12000	0.0156
	7.938 0.3125	14.288 0.5625	14.27 0.562	—	BH-59	—	9.47 2130	10.8 2420	7500	12000	0.0171
3/8	9.525 0.3750	14.288 0.5625	7.92 0.312	2.03 0.080	B-65	M-651	4.54 1020	5.52 1240	4600	7100	0.0162
	9.525 0.3750	14.288 0.5625	9.53 0.375	2.03 0.080	B-66	M-661	5.83 1310	7.61 1710	4600	7100	0.0175
	9.525 0.3750	14.288 0.5625	11.13 0.438	—	B-67	—	7.07 1590	9.70 2180	4600	7100	0.0186
	9.525 0.3750	14.288 0.5625	12.70 0.500	2.03 0.080	B-68	M-681	8.18 1840	11.8 2650	4600	7100	0.0195
	9.525 0.3750	14.288 0.5625	14.27 0.562	—	B-69	—	9.34 2100	13.9 3130	4600	7100	0.0203
	9.525 0.3750	14.288 0.5625	15.88 0.625	2.03 0.080	B-610	M-6101	10.4 2340	16.0 3590	4600	7100	0.0211
	9.525 0.3750	15.875 0.6250	12.70 0.500	—	BH-68	—	9.34 2100	10.9 2460	6500	10000	0.0184
7/16	11.113 0.4375	15.875 0.6250	9.53 0.375	—	B-76	—	6.36 1430	8.90 2000	4100	6300	0.0194
	11.113 0.4375	15.875 0.6250	11.13 0.438	—	B-77	—	7.70 1730	11.3 2550	4100	6300	0.0206
	11.113 0.4375	15.875 0.6250	12.70 0.500	2.03 0.080	B-78	M-781	8.99 2020	13.8 3100	4100	6300	0.0216

Approx. Wt.		S		H		Inspection			Mounting Inner Ring (pg B-122 to B-124)	Shaft Dia.
		Recommended Mounting Dimension				Ring Gage	Plug Gage			
Open Ends	Closed End	Max.	Min.	Max.	Min.		Go	No Go		
kg lbs.	kg lbs.	mm in.	mm in.	mm in.	mm in.					in.
0.001 0.002	—	3.175 0.1250	3.167 0.1247	6.363 0.2505	6.350 0.2500	6.363 0.2505	3.195 0.1258	3.221 0.1268		1/8
0.001 0.002	—	3.970 0.1563	3.962 0.1560	7.155 0.2817	7.142 0.2812	7.155 0.2817	3.990 0.1571	4.016 0.1581		5/32
0.001 0.003	—	3.970 0.1563	3.962 0.1560	7.155 0.2817	7.142 0.2812	7.155 0.2817	3.990 0.1571	4.016 0.1581		
0.001 0.003	0.002 0.004	4.763 0.1875	4.755 0.1872	8.730 0.3437	8.717 0.3432	8.730 0.3437	4.783 0.1883	4.808 0.1893		3/16
0.002 0.005	0.003 0.006	4.763 0.1875	4.755 0.1872	8.730 0.3437	8.717 0.3432	8.730 0.3437	4.783 0.1883	4.808 0.1893		
0.002 0.005	0.003 0.006	6.350 0.2500	6.337 0.2495	11.125 0.4380	11.100 0.4370	11.125 0.4380	6.388 0.2515	6.414 0.2525		1/4
0.003 0.007	0.004 0.008	6.350 0.2500	6.337 0.2495	11.125 0.4380	11.100 0.4370	11.125 0.4380	6.388 0.2515	6.414 0.2525		
0.004 0.008	—	6.350 0.2500	6.337 0.2495	11.125 0.4380	11.100 0.4370	11.125 0.4380	6.388 0.2515	6.414 0.2525		
0.004 0.009	0.005 0.011	6.350 0.2500	6.337 0.2495	11.125 0.4380	11.100 0.4370	11.125 0.4380	6.388 0.2515	6.414 0.2525		
0.004 0.008	0.004 0.009	7.938 0.3125	7.925 0.3120	12.713 0.5005	12.687 0.4995	12.713 0.5005	7.976 0.3140	8.001 0.3150		5/16
0.005 0.010	—	7.938 0.3125	7.925 0.3120	12.713 0.5005	12.687 0.4995	12.713 0.5005	7.976 0.3140	8.001 0.3150		
0.005 0.011	0.006 0.013	7.938 0.3125	7.925 0.3120	12.713 0.5005	12.687 0.4995	12.713 0.5005	7.976 0.3140	8.001 0.3150		
0.006 0.014	—	7.938 0.3125	7.925 0.3120	12.713 0.5005	12.687 0.4995	12.713 0.5005	7.976 0.3140	8.001 0.3150		
0.007 0.016	0.008 0.018	7.938 0.3125	7.925 0.3120	14.300 0.5630	14.275 0.5620	14.300 0.5630	7.976 0.3140	8.001 0.3150		
0.009 0.020	—	7.938 0.3125	7.925 0.3120	14.300 0.5630	14.275 0.5620	14.300 0.5630	7.976 0.3140	8.001 0.3150		
0.004 0.009	0.005 0.010	9.525 0.3750	9.512 0.3745	14.300 0.5630	14.275 0.5620	14.300 0.5630	9.563 0.3765	9.589 0.3775	IRA-3	3/8
0.005 0.011	0.005 0.012	9.525 0.3750	9.512 0.3745	14.300 0.5630	14.275 0.5620	14.300 0.5630	9.563 0.3765	9.589 0.3775	IRA-3	
0.006 0.013	—	9.525 0.3750	9.512 0.3745	14.300 0.5630	14.275 0.5620	14.300 0.5630	9.563 0.3765	9.589 0.3775	IRA-3	
0.007 0.015	0.008 0.017	9.525 0.3750	9.512 0.3745	14.300 0.5630	14.275 0.5620	14.300 0.5630	9.563 0.3765	9.589 0.3775	IRA-3	
0.007 0.016	—	9.525 0.3750	9.512 0.3745	14.300 0.5630	14.275 0.5620	14.300 0.5630	9.563 0.3765	9.589 0.3775		
0.008 0.018	0.010 0.021	9.525 0.3750	9.512 0.3745	14.300 0.5630	14.275 0.5620	14.300 0.5630	9.563 0.3765	9.589 0.3775		
0.010 0.021	—	9.525 0.3750	9.512 0.3745	15.888 0.6255	15.862 0.6245	15.888 0.6255	9.563 0.3765	9.589 0.3775	IRA-3	
0.005 0.012	—	11.113 0.4375	11.100 0.4370	15.888 0.6255	15.862 0.6245	15.888 0.6255	11.151 0.4390	11.176 0.4400	IRA-4	7/16
0.007 0.015	—	11.113 0.4375	11.100 0.4370	15.888 0.6255	15.862 0.6245	15.888 0.6255	11.151 0.4390	11.176 0.4400	IRA-4	
0.008 0.017	0.009 0.019	11.113 0.4375	11.100 0.4370	15.888 0.6255	15.862 0.6245	15.888 0.6255	11.151 0.4390	11.176 0.4400	IRA-4	

Continued on next page.

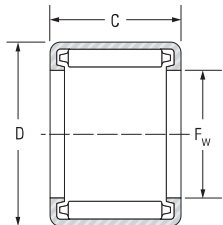




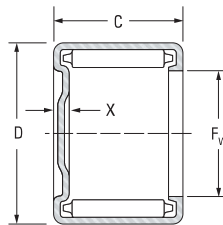
NEEDLE ROLLER BEARINGS

FULL COMPLEMENT BEARINGS, OPEN ENDS, CLOSED ONE END – continued

INCH SERIES

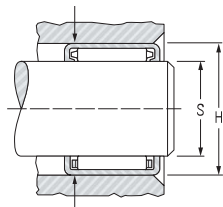


B, BH



M-1, MH-1

Full Complement Bearing



Caged Bearing

Shaft surface to be
58 HRC or equivalent

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

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 Engineering section
for discussion of shaft
and housing design.

Shaft Dia.	F _w	D	C	X (max.)	Bearing Designation		Load Ratings		Speed Rating		C ₉
			+0 +0.000 -0.3 -0.010				Dynamic	Static			
			mm in.				C	C ₀	Grease	Oil	
in.	mm in.	mm in.	mm in.	mm in.			kN lbf.		min ⁻¹		
	11.113 0.4375	15.875 0.6250	15.88 0.625	—	B-710	—	11.3 2550	18.7 4200	4100	6300	0.0233
	11.113 0.4375	17.463 0.6875	12.70 0.500	—	BH-78	—	10.3 2320	12.8 2870	5700	8800	0.0203
1/2	12.700 0.5000	17.463 0.6875	7.92 0.312	2.03 0.080	B-85	M-851	5.34 1200	7.38 1660	3600	5600	0.0196
	12.700 0.5000	17.463 0.6875	9.53 0.375	2.03 0.080	B-86	M-861	6.85 1540	10.1 2280	3600	5600	0.0212
	12.700 0.5000	17.463 0.6875	11.13 0.438	2.03 0.080	B-87	M-871	8.32 1870	13.0 2920	3600	5600	0.0225
	12.700 0.5000	17.463 0.6875	12.70 0.500	2.03 0.080	B-88	M-881	9.61 2160	15.7 3530	3600	5600	0.0236
	12.700 0.5000	17.463 0.6875	15.88 0.625	2.03 0.080	B-810	M-8101	12.2 2750	21.3 4800	3600	5600	0.0255
	12.700 0.5000	17.463 0.6875	19.05 0.750	2.03 0.080	B-812	M-8121	14.7 3300	27.0 6060	3600	5600	0.0270
	12.700 0.5000	19.050 0.7500	11.13 0.438	—	BH-87	—	9.47 2130	11.8 2650	5100	7900	0.0210
	12.700 0.5000	19.050 0.7500	12.70 0.500	—	BH-88	—	11.2 2510	14.6 3280	5100	7900	0.0221
	12.700 0.5000	19.050 0.7500	15.88 0.625	—	BH-810	—	14.4 3230	20.2 4540	5100	7900	0.0240
	12.700 0.5000	19.050 0.7500	19.05 0.750	2.29 0.090	BH-812	MH-8121	17.4 3910	25.8 5790	5100	7900	0.0255
9/16	14.288 0.5625	19.050 0.7500	7.92 0.312	2.03 0.080	B-95	M-951	5.74 1290	8.32 1870	3300	5000	0.0212
	14.288 0.5625	19.050 0.7500	9.53 0.375	2.03 0.080	B-96	M-961	7.34 1650	11.4 2570	3300	5000	0.0229
	14.288 0.5625	19.050 0.7500	11.13 0.438	2.03 0.080	B-97	M-971	8.85 1990	14.6 3280	3300	5000	0.0244
	14.288 0.5625	19.050 0.7500	12.70 0.500	2.03 0.080	B-98	M-981	10.3 2320	17.7 3990	3300	5000	0.0256
	14.288 0.5625	19.050 0.7500	15.88 0.625	2.03 0.080	B-910	M-9101	13.1 2940	24.0 5400	3300	5000	0.0276
	14.288 0.5625	19.050 0.7500	19.05 0.750	2.03 0.080	B-912	M-9121	15.7 3520	30.3 6820	3300	5000	0.0292
	14.288 0.5625	20.638 0.8125	12.70 0.500	—	BH-98	—	12.0 2690	16.5 3700	4600	7100	0.0239
	14.288 0.5625	20.638 0.8125	15.88 0.625	—	BH-910	—	15.4 3460	22.7 5110	4600	7100	0.0259
	14.288 0.5625	20.638 0.8125	19.05 0.750	—	BH-912	—	18.6 4190	29.0 6520	4600	7100	0.0275
5/8	15.875 0.6250	20.638 0.8125	7.92 0.312	2.03 0.080	B-105	M-1051	6.10 1360	9.25 2080	3000	4500	0.0227
	15.875 0.6250	20.638 0.8125	11.13 0.438	2.03 0.080	B-107	M-1071	9.39 2110	16.2 3650	3000	4500	0.0262
	15.875 0.6250	20.638 0.8125	12.70 0.500	2.03 0.080	B-108	M-1081	10.9 2450	19.7 4430	3000	4500	0.0275
	15.875 0.6250	20.638 0.8125	15.88 0.625	2.03 0.080	B-1010	M-10101	13.80 3110	26.7 6000	3000	4500	0.0296

Approx. Wt.		S		H		Inspection			Mounting Inner Ring (pg B-122 to B-124)	Shaft Dia.
		Recommended Mounting Dimension				Ring Gage	Plug Gage			
Open Ends	Closed End	Max.	Min.	Max.	Min.		Go	No Go		
kg lbs.	kg lbs.	mm in.	mm in.	mm in.	mm in.					in.
0.010 0.021	—	11.113 0.4375	11.100 0.4370	15.888 0.6255	15.862 0.6245	15.888 0.6255	11.151 0.4390	11.176 0.4400		
0.010 0.023	—	11.113 0.4375	11.100 0.4370	17.475 0.6880	17.450 0.6870	17.475 0.6880	11.151 0.4390	11.176 0.4400	IRA-4	
0.005 0.012	0.006 0.014	12.700 0.5000	12.687 0.4995	17.475 0.6880	17.450 0.6870	17.475 0.6880	12.738 0.5015	12.764 0.5025	IRA-5	1/2
0.006 0.014	0.007 0.016	12.700 0.5000	12.687 0.4995	17.475 0.6880	17.450 0.6870	17.475 0.6880	12.738 0.5015	12.764 0.5025	IRA-5	
0.007 0.016	0.008 0.018	12.700 0.5000	12.687 0.4995	17.475 0.6880	17.450 0.6870	17.475 0.6880	12.738 0.5015	12.764 0.5025	IRA-5	
0.009 0.019	0.010 0.021	12.700 0.5000	12.687 0.4995	17.475 0.6880	17.450 0.6870	17.475 0.6880	12.738 0.5015	12.764 0.5025	IRA-5	
0.010 0.023	0.012 0.026	12.700 0.5000	12.687 0.4995	17.475 0.6880	17.450 0.6870	17.475 0.6880	12.738 0.5015	12.764 0.5025		
0.013 0.028	0.014 0.031	12.700 0.5000	12.687 0.4995	17.475 0.6880	17.450 0.6870	17.475 0.6880	12.738 0.5015	12.764 0.5025		
0.010 0.023	—	12.700 0.5000	12.687 0.4995	19.063 0.7505	19.037 0.7495	19.063 0.7505	12.738 0.5015	12.764 0.5025	IRA-5	
0.012 0.026	—	12.700 0.5000	12.687 0.4995	19.063 0.7505	19.037 0.7495	19.063 0.7505	12.738 0.5015	12.764 0.5025	IRA-5	
0.015 0.033	—	12.700 0.5000	12.687 0.4995	19.063 0.7505	19.037 0.7495	19.063 0.7505	12.738 0.5015	12.764 0.5025		
0.018 0.039	0.020 0.044	12.700 0.5000	12.687 0.4995	19.063 0.7505	19.037 0.7495	19.063 0.7505	12.738 0.5015	12.764 0.5025		
0.006 0.013	0.006 0.014	14.288 0.5625	14.275 0.5620	19.063 0.7505	19.037 0.7495	19.063 0.7505	14.326 0.5640	14.351 0.5650	IR-68	9/16
0.007 0.015	0.008 0.018	14.288 0.5625	14.275 0.5620	19.063 0.7505	19.037 0.7495	19.063 0.7505	14.326 0.5640	14.351 0.5650	IR-68	
0.008 0.018	0.010 0.021	14.288 0.5625	14.275 0.5620	19.063 0.7505	19.037 0.7495	19.063 0.7505	14.326 0.5640	14.351 0.5650	IR-68	
0.009 0.020	0.010 0.023	14.288 0.5625	14.275 0.5620	19.063 0.7505	19.037 0.7495	19.063 0.7505	14.326 0.5640	14.351 0.5650	IR-68	
0.012 0.026	0.013 0.029	14.288 0.5625	14.275 0.5620	19.063 0.7505	19.037 0.7495	19.063 0.7505	14.326 0.5640	14.351 0.5650	IR-612 ⁽¹⁾	
0.014 0.031	0.015 0.034	14.288 0.5625	14.275 0.5620	19.063 0.7505	19.037 0.7495	19.063 0.7505	14.326 0.5640	14.351 0.5650	IR-612 ⁽¹⁾	
0.013 0.029	—	14.288 0.5625	14.275 0.5620	20.650 0.8130	20.625 0.8120	20.650 0.8130	14.326 0.5640	14.351 0.5650	IR-68	
0.016 0.036	—	14.288 0.5625	14.275 0.5620	20.650 0.8130	20.625 0.8120	20.650 0.8130	14.326 0.5640	14.351 0.5650	IR-612 ⁽¹⁾	
0.020 0.043	—	14.288 0.5625	14.275 0.5620	20.650 0.8130	20.625 0.8120	20.650 0.8130	14.326 0.5640	14.351 0.5650	IR-612 ⁽¹⁾	
0.006 0.014	0.007 0.016	15.875 0.6250	15.862 0.6245	20.650 0.8130	20.625 0.8120	20.650 0.8130	15.913 0.6265	15.939 0.6275	IR-68-1	5/8
0.009 0.020	0.010 0.022	15.875 0.6250	15.862 0.6245	20.650 0.8130	20.625 0.8120	20.650 0.8130	15.913 0.6265	15.939 0.6275	IR-68-1	
0.010 0.022	0.012 0.026	15.875 0.6250	15.862 0.6245	20.650 0.8130	20.625 0.8120	20.650 0.8130	15.913 0.6265	15.939 0.6275	IR-68-1	
0.013 0.028	0.015 0.032	15.875 0.6250	15.862 0.6245	20.650 0.8130	20.625 0.8120	20.650 0.8130	15.913 0.6265	15.939 0.6275	IR-612-1	

⁽¹⁾ IRA inner ring provides additional length if required.

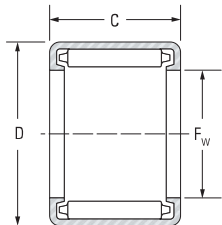
Continued on next page.



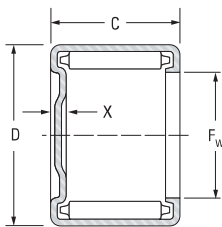
NEEDLE ROLLER BEARINGS

FULL COMPLEMENT BEARINGS, OPEN ENDS, CLOSED ONE END – continued

INCH SERIES

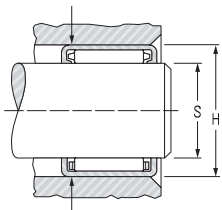


B, BH



M-1, MH-1

Full Complement Bearing



Caged Bearing

Shaft surface to be
58 HRC or equivalent

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

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 Engineering section
for discussion of shaft
and housing design.

Shaft Dia.	F _w	D	C	X (max.)	Bearing Designation		Load Ratings		Speed Rating		C ₉
							Dynamic	Static			
			+0 +0.000 -0.3 -0.010				C	C ₀	Grease	Oil	
in.	mm in.	mm in.	mm in.	mm in.			kN lbf.		min ⁻¹		
5/8	15.875 0.6250	20.638 0.8125	19.05 0.750	2.03 0.080	B-1012	M-10121	16.6 3720	33.7 7580	3000	4500	0.0314
	15.875 0.6250	22.212 0.8745	12.70 0.500	2.29 0.090	BH-108	MH-1081	12.7 2860	18.3 4110	4200	6500	0.0256
	15.875 0.6250	22.212 0.8745	15.88 0.625	—	BH-1010	—	16.4 3680	25.3 5680	4200	6500	0.0278
	15.875 0.6250	22.212 0.8745	19.05 0.750	—	BH-1012	—	19.8 4450	32.3 7250	4200	6500	0.0295
	15.875 0.6250	22.212 0.8745	25.40 1.000	—	BH-1016	—	26.2 5890	46.3 10400	4200	6500	0.0322
11/16	17.463 0.6875	22.212 0.8745	9.53 0.375	2.03 0.080	B-116	M-1161	8.18 1840	14.0 3140	2700	4200	0.0263
	17.463 0.6875	22.212 0.8745	12.70 0.500	2.03 0.080	B-118	M-1181	11.5 2580	21.7 4880	2700	4200	0.0293
	17.463 0.6875	22.212 0.8745	15.88 0.625	2.03 0.080	B-1110	M-11101	14.6 3270	29.4 6610	2700	4200	0.0316
	17.463 0.6875	22.212 0.8745	19.05 0.750	2.03 0.080	B-1112	M-11121	17.4 3920	37.1 8340	2700	4200	0.0335
	17.463 0.6875	23.813 0.9375	11.13 0.438	—	BH-117	—	11.4 2560	16.2 3650	3900	6000	0.0259
	17.463 0.6875	23.813 0.9375	15.88 0.625	2.29 0.090	BH-1110	MH-11101	17.3 3890	27.8 6250	3900	6000	0.0296
	17.463 0.6875	23.813 0.9375	19.05 0.750	—	BH-1112	—	20.9 4700	35.5 7980	3900	6000	0.0314
	19.050 0.7500	25.400 1.0000	9.53 0.375	2.29 0.090	B-126	M-1261	9.7 2180	13.6 3050	3600	5600	0.0256
3/4	19.050 0.7500	25.400 1.0000	12.70 0.500	2.29 0.090	B-128	M-1281	14.1 3170	22.0 4940	3600	5600	0.0289
	19.050 0.7500	25.400 1.0000	15.88 0.625	2.29 0.090	B-1210	M-12101	18.2 4080	30.3 6820	3600	5600	0.0313
	19.050 0.7500	25.400 1.0000	19.05 0.750	2.29 0.090	B-1212	M-12121	21.9 4930	38.7 8710	3600	5600	0.0333
	20.638 0.8125	26.988 1.0625	9.53 0.375	—	B-136	—	10.1 2280	14.7 3300	3400	5200	0.0271
	20.638 0.8125	26.988 1.0625	12.70 0.500	2.29 0.090	B-138	M-1381	14.8 3320	23.8 5350	3400	5200	0.0305
7/8	20.638 0.8125	26.988 1.0625	22.23 0.875	2.29 0.090	B-1314	M-13141	26.7 6010	51.2 11500	3400	5200	0.0369
	20.638 0.8125	26.988 1.0625	25.40 1.000	2.29 0.090	B-1316	M-13161	30.3 6820	60.1 13500	3400	5200	0.0384
	20.638 0.8125	26.988 1.0625	31.75 1.250	—	B-1320	—	37.3 8380	78.3 17600	3500	5200	0.0410
	20.643 0.8125	28.575 1.1250	12.70 0.500	2.79 0.110	BH-138	MH-1381	14.9 3340	20.8 4680	4100	6300	0.0287
	20.638 0.8125	28.575 1.1250	15.88 0.625	2.79 0.110	BH-1310	MH-13101	19.7 4430	29.9 6720	4100	6300	0.0314
7/8	20.638 0.8125	28.575 1.1250	19.05 0.750	2.79 0.110	BH-1312	MH-13121	24.2 5440	39.0 8760	4100	6300	0.0336
	22.225 0.8750	28.575 1.1250	9.53 0.375	2.29 0.090	B-146	M-1461	10.5 2370	15.8 3560	3100	4800	0.0285

Approx. Wt.		S		H		Inspection			Mounting Inner Ring (pg B-122 to B-124)	Shaft Dia.
		Recommended Mounting Dimension				Ring Gage	Plug Gage			
Open Ends	Closed End	Max.	Min.	Max.	Min.		Go	No Go		
kg lbs.	kg lbs.	mm in.	mm in.	mm in.	mm in.					in.
0.015 0.034	0.017 0.038	15.875 0.6250	15.862 0.6245	20.650 0.8130	20.625 0.8120	20.650 0.8130	15.913 0.6265	15.939 0.6275	IR-612-1	5/8
0.014 0.031	0.016 0.035	15.875 0.6250	15.862 0.6245	22.238 0.8755	22.212 0.8745	22.238 0.8755	15.913 0.6265	15.939 0.6275	IR-68-1	
0.018 0.039	—	15.875 0.6250	15.862 0.6245	22.238 0.8755	22.212 0.8745	22.238 0.8755	15.913 0.6265	15.939 0.6275	IR-612-1	
0.021 0.047	—	15.875 0.6250	15.862 0.6245	22.238 0.8755	22.212 0.8745	22.238 0.8755	15.913 0.6265	15.939 0.6275	IR-612-1	
0.028 0.062	—	15.875 0.6250	15.862 0.6245	22.238 0.8755	22.212 0.8745	22.238 0.8755	15.913 0.6265	15.939 0.6275		
0.008 0.018	0.009 0.020	17.463 0.6875	17.450 0.6870	22.238 0.8755	22.212 0.8745	22.238 0.8755	17.501 0.6890	17.526 0.6900		11/16
0.011 0.024	0.012 0.027	17.463 0.6875	17.450 0.6870	22.238 0.8755	22.212 0.8745	22.238 0.8755	17.501 0.6890	17.526 0.6900		
0.014 0.030	0.015 0.034	17.463 0.6875	17.450 0.6870	22.238 0.8755	22.212 0.8745	22.238 0.8755	17.501 0.6890	17.526 0.6900		
0.016 0.036	0.019 0.041	17.463 0.6875	17.450 0.6870	22.238 0.8755	22.212 0.8745	22.238 0.8755	17.501 0.6890	17.526 0.6900		
0.014 0.030	—	17.463 0.6875	17.450 0.6870	23.825 0.9380	23.800 0.9370	23.825 0.9380	17.501 0.6890	17.526 0.6900		
0.019 0.042	0.021 0.047	17.463 0.6875	17.450 0.6870	23.825 0.9380	23.800 0.9370	23.825 0.9380	17.501 0.6890	17.526 0.6900		
0.023 0.051	—	17.463 0.6875	17.450 0.6870	23.825 0.9380	23.800 0.9370	23.825 0.9380	17.501 0.6890	17.526 0.6900		
0.012 0.027	0.014 0.031	19.050 0.7500	19.037 0.7495	25.413 1.0005	25.387 0.9995	25.387 0.9995	19.063 0.7505	19.088 0.7515	IR-88	3/4
0.016 0.036	0.019 0.041	19.050 0.7500	19.037 0.7495	25.413 1.0005	25.387 0.9995	25.387 0.9995	19.063 0.7505	19.088 0.7515	IR-88	
0.020 0.045	0.024 0.052	19.050 0.7500	19.037 0.7495	25.413 1.0005	25.387 0.9995	25.387 0.9995	19.063 0.7505	19.088 0.7515	IR-812 ⁽¹⁾	
0.024 0.054	0.028 0.062	19.050 0.7500	19.037 0.7495	25.413 1.0005	25.387 0.9995	25.387 0.9995	19.063 0.7505	19.088 0.7515	IR-812 ⁽¹⁾	
0.013 0.029	—	20.638 0.8125	20.625 0.8120	27.000 1.0630	26.975 1.0620	26.975 1.0620	20.650 0.8130	20.676 0.8140		13/16
0.018 0.039	0.020 0.044	20.638 0.8125	20.625 0.8120	27.000 1.0630	26.975 1.0620	26.975 1.0620	20.650 0.8130	20.676 0.8140		
0.031 0.068	0.035 0.077	20.638 0.8125	20.625 0.8120	27.000 1.0630	26.975 1.0620	26.975 1.0620	20.650 0.8130	20.676 0.8140		
0.035 0.078	0.040 0.088	20.638 0.8125	20.625 0.8120	27.000 1.0630	26.975 1.0620	26.975 1.0620	20.650 0.8130	20.676 0.8140		
0.044 0.098	—	20.638 0.8125	29.625 0.8120	27.000 1.0630	26.975 1.0620	26.975 1.0620	20.650 0.8130	20.676 0.8140		
0.023 0.050	0.026 0.057	20.638 0.8125	20.625 0.8120	28.588 1.1255	28.562 1.1245	28.562 1.1245	20.650 0.8130	20.676 0.8140		
0.029 0.063	0.032 0.071	20.638 0.8125	20.625 0.8120	28.588 1.1255	28.562 1.1245	28.562 1.1245	20.650 0.8130	20.676 0.8140		
0.034 0.076	0.039 0.086	20.638 0.8125	20.625 0.8120	28.588 1.1255	28.562 1.1245	28.562 1.1245	20.650 0.8130	20.676 0.8140		
0.014 0.031	0.016 0.035	22.225 0.8750	22.212 0.8745	28.588 1.1255	28.562 1.1245	28.562 1.1245	22.238 0.8755	22.263 0.8765		7/8

⁽¹⁾ IRA inner ring provides additional length if required.

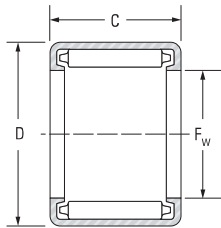
Continued on next page.



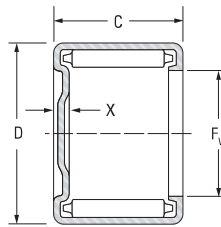
NEEDLE ROLLER BEARINGS

FULL COMPLEMENT BEARINGS, OPEN ENDS, CLOSED ONE END – continued

INCH SERIES

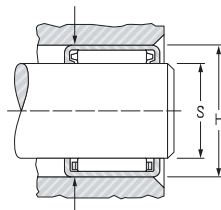


B, BH



M-1, MH-1

Full Complement Bearing



Caged Bearing

Shaft surface to be
58 HRC or equivalent

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

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 Engineering section
for discussion of shaft
and housing design.

Shaft Dia.	F _w	D	C	X (max.)	Bearing Designation		Load Ratings		Speed Rating		C _g
			Dynamic				Static				
			+0 +0.000 -0.3 -0.010				C	C ₀	Grease	Oil	
in.	mm in.	mm in.	mm in.	mm in.			kN lbf.		min ⁻¹		
	22.225 0.8750	28.575 1.1250	12.70 0.500	2.29 0.090	B-148	M-1481	15.4 3450	25.6 5760	3100	4800	0.0321
	22.225 0.8750	28.575 1.1250	19.05 0.750	2.29 0.090	B-1412	M-14121	23.9 5370	45.4 10200	3100	4800	0.0369
	22.225 0.8750	28.575 1.1250	25.40 1.000	2.29 0.090	B-1416	M-14161	31.6 7100	64.9 14600	3100	4800	0.0404
	22.225 0.8750	28.575 1.1250	28.58 1.125	—	B-1418	—	35.2 7920	74.7 16800	3100	4800	0.0418
	22.225 0.8750	30.163 1.1875	15.88 0.625	2.79 0.110	BH-1410	MH-14101	20.3 4570	32.2 7240	3800	5880	0.0331
	22.225 0.8750	30.163 1.1875	19.05 0.750	2.79 0.110	BH-1412	MH-14121	25.0 5620	42.0 9440	3800	5880	0.0354
	22.225 0.8750	30.163 1.1875	25.40 1.000	—	BH-1416	—	33.7 7570	61.4 13800	3800	5880	0.0389
15/16	23.813 0.9375	30.163 1.1875	12.70 0.500	—	B-158	—	15.9 3580	27.5 6180	3000	4500	0.0336
	23.813 0.9375	30.163 1.1875	25.40 1.000	2.29 0.090	B-1516	M-15161	32.8 7370	69.4 15600	3000	4500	0.0423
1	25.400 1.0000	31.750 1.2500	9.53 0.375	—	B-166	—	11.3 2550	18.1 4070	2800	4300	0.0312
	25.400 1.0000	31.750 1.2500	11.13 0.438	2.29 0.090	B-167	M-1671	14.0 3140	23.7 5320	2800	4300	0.0333
	25.400 1.0000	31.750 1.2500	12.70 0.500	2.29 0.090	B-168	M-1681	16.5 3710	29.3 6590	2800	4300	0.0351
	25.400 1.0000	31.750 1.2500	15.88 0.625	2.29 0.090	B-1610	M-16101	21.2 4770	40.5 9110	2800	4300	0.0381
	25.400 1.0000	31.750 1.2500	19.05 0.750	2.29 0.090	B-1612	M-16121	25.7 5770	51.6 11600	2800	4300	0.0404
	25.400 1.0000	31.750 1.2500	25.40 1.000	2.29 0.090	B-1616	M-16161	33.9 7630	74.3 16700	2800	4300	0.0442
	25.400 1.0000	33.338 1.3125	12.70 0.500	2.79 0.110	BH-168	MH-1681	16.6 3740	25.6 5760	3400	5200	0.0330
	25.400 1.0000	33.338 1.3125	15.88 0.625	—	BH-1610	—	22.0 4950	36.8 8280	3400	5200	0.0361
	25.400 1.0000	33.338 1.3125	19.05 0.750	2.79 0.110	BH-1612	MH-16121	27.1 6090	48.0 10800	3400	5200	0.0386
	25.400 1.0000	33.338 1.3125	22.23 0.875	—	BH-1614	—	31.9 7170	59.2 13300	3400	5200	0.0407
	25.400 1.0000	33.338 1.3125	25.40 1.000	2.79 0.110	BH-1616	MH-16161	36.5 8200	70.3 15800	3400	5200	0.0425
	25.400 1.0000	33.338 1.3125	31.75 1.250	—	BH-1620	—	45.4 10200	93.0 20900	3400	5200	0.0455
	25.400 1.0000	33.338 1.3125	38.10 1.500	2.79 0.110	BH-1624	MH-16241	53.4 12000	115.2 25900	3400	5200	0.0480
1 1/16	26.988 1.0625	33.338 1.3125	15.88 0.625	2.29 0.090	B-1710	M-17101	21.9 4930	43.1 9680	2600	4000	0.0397
	26.988 1.0625	34.925 1.3750	19.05 0.750	—	BH-1712	—	29.5 6630	52.5 11800	3400	5200	0.0402
1 1/8	28.575 1.1250	34.925 1.3750	9.53 0.375	2.29 0.090	B-186	M-1861	12.1 2720	20.4 4580	2500	3800	0.0338

Approx. Wt.		S		H		Inspection			Mounting Inner Ring (pg B-122 to B-124)	Shaft Dia.
		Recommended Mounting Dimension				Ring Gage	Plug Gage			
Open Ends	Closed End	Max.	Min.	Max.	Min.		Go	No Go		
kg lbs.	kg lbs.	mm in.	mm in.	mm in.	mm in.					in.
0.019 0.042	0.022 0.048	22.225 0.8750	22.212 0.8745	28.588 1.1255	28.562 1.1245	28.562 1.1245	22.238 0.8755	22.263 0.8765	IR-1012 ⁽¹⁾	
0.028 0.062	0.032 0.070	22.225 0.8750	22.212 0.8745	28.588 1.1255	28.562 1.1245	28.562 1.1245	22.238 0.8755	22.263 0.8765	IR-1012 ⁽¹⁾	
0.038 0.083	0.043 0.094	22.225 0.8750	22.212 0.8745	28.588 1.1255	28.562 1.1245	28.562 1.1245	22.238 0.8755	22.263 0.8765	IR-1016	
0.043 0.094	—	22.225 0.8750	22.212 0.8745	28.588 1.1255	28.562 1.1245	28.562 1.1245	22.238 0.8755	22.263 0.8765		
0.030 0.067	0.035 0.076	22.225 0.8750	22.212 0.8745	30.175 1.1880	30.150 1.1870	30.150 1.1870	22.238 0.8755	22.263 0.8765	IR-1012 ⁽¹⁾	
0.036 0.080	0.041 0.091	22.225 0.8750	22.212 0.8745	30.175 1.1880	30.150 1.1870	30.150 1.1870	22.238 0.8755	22.263 0.8765	IR-1012 ⁽¹⁾	
0.049 0.107	—	22.225 0.8750	22.212 0.8745	30.175 1.1880	30.150 1.1870	30.150 1.1870	22.238 0.8755	22.263 0.8765	IR-1016	
0.020 0.044	—	23.813 0.9375	23.800 0.9370	30.175 1.1880	30.150 1.1870	30.150 1.1870	23.825 0.9380	23.851 0.9390		15/16
0.040 0.088	0.045 0.100	23.813 0.9375	23.800 0.9370	30.175 1.1880	30.150 1.1870	30.150 1.1870	23.825 0.9380	23.851 0.9390		
0.016 0.035	—	25.400 1.0000	25.387 0.9995	31.763 1.2505	31.737 1.2495	31.737 1.2495	25.413 1.0005	25.438 1.0015	IR-128	1
0.019 0.041	0.021 0.046	25.400 1.0000	25.387 0.9995	31.763 1.2505	31.737 1.2495	31.737 1.2495	25.413 1.0005	25.438 1.0015	IR-128	
0.021 0.047	0.024 0.053	25.400 1.0000	25.387 0.9995	31.763 1.2505	31.737 1.2495	31.737 1.2495	25.413 1.0005	25.438 1.0015	IR-128	
0.026 0.058	0.030 0.066	25.400 1.0000	25.387 0.9995	31.763 1.2505	31.737 1.2495	31.737 1.2495	25.413 1.0005	25.438 1.0015	IR-1212	
0.032 0.070	0.036 0.080	25.400 1.0000	25.387 0.9995	31.763 1.2505	31.737 1.2495	31.737 1.2495	25.413 1.0005	25.438 1.0015	IR-1212	
0.043 0.094	0.048 0.106	25.400 1.0000	25.387 0.9995	31.763 1.2505	31.737 1.2495	31.737 1.2495	25.413 1.0005	25.438 1.0015	IR-1216 ⁽¹⁾	
0.027 0.060	0.031 0.068	25.400 1.0000	25.387 0.9995	33.350 1.3130	33.325 1.3120	33.325 1.3120	25.413 1.0005	25.438 1.0015	IR-128	
0.034 0.075	—	25.400 1.0000	25.387 0.9995	33.350 1.3130	33.325 1.3120	33.325 1.3120	25.413 1.0005	25.438 1.0015	IR-1212	
0.041 0.090	0.046 0.102	25.400 1.0000	25.387 0.9995	33.350 1.3130	33.325 1.3120	33.325 1.3120	25.413 1.0005	25.438 1.0015	IR-1212	
0.048 0.105	—	25.400 1.0000	25.387 0.9995	33.350 1.3130	33.325 1.3120	33.325 1.3120	25.413 1.0005	25.438 1.0015	IR-1216 ⁽¹⁾	
0.054 0.120	0.062 0.136	25.400 1.0000	25.387 0.9995	33.350 1.3130	33.325 1.3120	33.325 1.3120	25.413 1.0005	25.438 1.0015	IR-1216 ⁽¹⁾	
0.068 0.150	—	25.400 1.0000	25.387 0.9995	33.350 1.3130	33.325 1.3120	33.325 1.3120	25.413 1.0005	25.438 1.0015	IR-1220	
0.082 0.180	0.093 0.204	25.400 1.0000	25.387 0.9995	33.350 1.3130	33.325 1.3120	33.325 1.3120	25.413 1.0005	25.438 1.0015	IR-1224	
0.028 0.062	0.032 0.070	26.988 1.0625	26.975 1.0620	33.350 1.3130	33.325 1.3120	33.325 1.3120	27.000 1.0630	27.026 1.0640		1 1/16
0.035 0.078	—	26.988 1.0625	26.975 1.0620	34.938 1.3755	34.912 1.3745	34.912 1.3745	27.000 1.0630	27.026 1.0640		
0.018 0.039	0.020 0.044	28.575 1.1250	28.562 1.1245	34.938 1.3755	34.912 1.3745	34.912 1.3745	28.588 1.1255	28.613 1.1265	IR-1416 ⁽¹⁾	1 1/8

⁽¹⁾ IRA inner ring provides additional length if required.

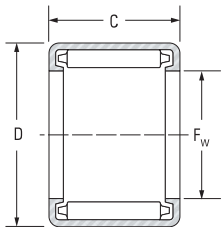
Continued on next page.



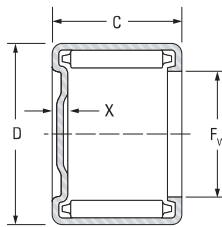
NEEDLE ROLLER BEARINGS

FULL COMPLEMENT BEARINGS, OPEN ENDS, CLOSED ONE END – continued

INCH SERIES

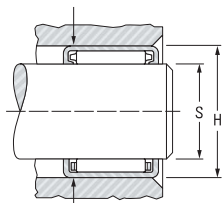


B, BH



M-1, MH-1

Full Complement Bearing



Caged Bearing

Shaft surface to be
58 HRC or equivalent

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

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 Engineering section
for discussion of shaft
and housing design.

Shaft Dia.	F _w	D	C	X (max.)	Bearing Designation		Load Ratings		Speed Rating		C ₉
			Dynamic				Static				
			+0 +0.000 -0.3 -0.010				C	C ₀	Grease	Oil	
in.	mm in.	mm in.	mm in.	mm in.			kN lbf.	min ⁻¹			
	28.575 1.1250	34.925 1.3750	12.70 0.500	2.29 0.090	B-188	M-1881	17.6 3950	33.0 7420	2500	3800	0.0381
	28.575 1.1250	34.925 1.3750	15.88 0.625	—	B-1810	—	22.6 5080	45.8 10300	2500	3800	0.0413
	28.575 1.1250	34.925 1.3750	19.05 0.750	2.29 0.090	B-1812	M-18121	27.3 6140	58.3 13100	2500	3800	0.0438
	28.575 1.1250	34.925 1.3750	25.40 1.000	2.29 0.090	B-1816	M-18161	36.2 8130	83.6 18800	2500	3800	0.0479
	28.575 1.1250	38.100 1.5000	19.05 0.750	3.05 0.120	BH-1812	MH-18121	31.5 7090	52.9 11900	3600	5600	0.0405
	28.575 1.1250	38.100 1.5000	25.40 1.000	3.05 0.120	BH-1816	MH-18161	42.5 9560	77.8 17500	3600	5600	0.0446
	28.575 1.1250	38.100 1.5000	31.75 1.250	3.05 0.120	BH-1820	MH-18201	52.9 11900	103.2 23200	3600	5600	0.0479
1 3/16	30.163 1.1875	38.100 1.5000	15.88 0.625	2.79 0.110	B-1910	M-19101	24.1 5420	43.8 9840	2900	4400	0.0406
	30.163 1.1875	38.100 1.5000	25.40 1.000	—	B-1916	—	40.0 8980	83.6 18800	2900	4400	0.0477
1 1/4	31.750 1.2500	38.100 1.5000	12.70 0.500	2.29 0.090	B-208	M-2081	18.6 4170	36.6 8240	2300	3500	0.0409
	31.750 1.2500	38.100 1.5000	15.88 0.625	2.29 0.090	B-2010	M-20101	23.9 5370	50.7 11400	2300	3500	0.0444
	31.750 1.2500	38.100 1.5000	19.05 0.750	2.29 0.090	B-2012	M-20121	28.9 6490	64.5 14500	2300	3500	0.0471
	31.750 1.2500	38.100 1.5000	25.40 1.000	2.29 0.090	B-2016	M-20161	38.2 8590	92.5 20800	2300	3500	0.0515
	31.750 1.2500	38.100 1.5000	31.75 1.250	2.29 0.090	B-2020	M-20201	47.2 10600	121.0 27200	2300	3500	0.0550
	31.750 1.2500	41.275 1.6250	12.70 0.500	3.05 0.120	BH-208	MH-2081	19.7 4420	30.0 6750	3300	5000	0.0369
	31.750 1.2500	41.275 1.6250	19.05 0.750	3.05 0.120	BH-2012	MH-20121	33.1 7440	58.7 13200	3300	5000	0.0435
	31.750 1.2500	41.275 1.6250	25.40 1.000	3.05 0.120	BH-2016	MH-20161	44.9 10100	86.7 19500	3300	5000	0.0480
	31.750 1.2500	41.275 1.6250	31.75 1.250	3.05 0.120	BH-2020	MH-20201	56.0 12600	115.0 25800	3300	5000	0.0515
1 5/16	33.338 1.3125	41.275 1.6250	12.70 0.500	2.79 0.110	B-218	M-2181	19.3 4330	33.7 7570	2600	4100	0.0397
	33.338 1.3125	41.275 1.6250	15.88 0.625	2.79 0.110	B-2110	M-21101	25.5 5740	48.5 10900	2600	4100	0.0435
	33.338 1.3125	41.275 1.6250	31.75 1.250	—	B-2120	—	52.5 11800	122.0 27500	2600	4100	0.0547
1 3/8	34.925 1.3750	41.275 1.6250	12.70 0.500	2.29 0.090	B-228	M-2281	19.5 4390	40.4 9070	2100	3200	0.0437
	34.925 1.3750	41.275 1.6250	19.05 0.750	2.29 0.090	B-2212	M-22121	30.4 6830	71.2 16000	2100	3200	0.0504
	34.925 1.3750	41.275 1.6250	25.40 1.000	2.29 0.090	B-2216	M-22161	40.2 9030	102.0 22900	2100	3200	0.0551
	34.925 1.3750	41.275 1.6250	31.75 1.250	2.29 0.090	B-2220	M-22201	49.4 11100	133.0 29900	2100	3200	0.0588

Approx. Wt.		S		H		Inspection			Mounting Inner Ring (pg B-122 to B-124)	Shaft Dia.
		Recommended Mounting Dimension				Ring Gage	Plug Gage			
Open Ends	Closed End	Max.	Min.	Max.	Min.		Go	No Go		
kg lbs.	kg lbs.	mm in.	mm in.	mm in.	mm in.					in.
0.024 0.052	0.027 0.059	28.575 1.1250	28.562 1.1245	34.938 1.3755	34.912 1.3745	34.912 1.3745	28.588 1.1255	28.613 1.1265	IR-1416 ⁽¹⁾	
0.029 0.065	—	28.575 1.1250	28.562 1.1245	34.938 1.3755	34.912 1.3745	34.912 1.3745	28.588 1.1255	28.613 1.1265	IR-1416 ⁽¹⁾	
0.035 0.078	0.040 0.088	28.575 1.1250	28.562 1.1245	34.938 1.3755	34.912 1.3745	34.912 1.3745	28.588 1.1255	28.613 1.1265	IR-1416 ⁽¹⁾	
0.047 0.104	0.054 0.118	28.575 1.1250	28.562 1.1245	34.938 1.3755	34.912 1.3745	34.912 1.3745	28.588 1.1255	28.613 1.1265	IR-1416 ⁽¹⁾	
0.056 0.123	0.063 0.138	28.575 1.1250	28.562 1.1245	38.113 1.5005	38.087 1.4995	38.087 1.4995	28.588 1.1255	28.613 1.1265	IR-1416 ⁽¹⁾	
0.074 0.164	0.084 0.186	28.575 1.1250	28.562 1.1245	38.113 1.5005	38.087 1.4995	38.087 1.4995	28.588 1.1255	28.613 1.1265	IR-1416 ⁽¹⁾	
0.093 0.205	0.105 0.232	28.575 1.1250	28.562 1.1245	38.113 1.5005	38.087 1.4995	38.087 1.4995	28.588 1.1255	28.613 1.1265		
0.040 0.088	0.045 0.099	30.163 1.1875	30.150 1.1870	38.113 1.5005	38.087 1.4995	38.087 1.4995	30.175 1.1880	30.201 1.1890		1 3⁄16
0.064 0.140	—	30.163 1.1875	30.150 1.1870	38.113 1.5005	38.087 1.4995	38.087 1.4995	30.175 1.1880	30.201 1.1890		
0.026 0.057	0.029 0.065	31.750 1.2500	31.737 1.2495	38.113 1.5005	38.087 1.4995	38.087 1.4995	31.763 1.2505	31.788 1.2515	IR-1612	1 1⁄4
0.032 0.071	0.044 0.097	31.750 1.2500	31.737 1.2495	38.113 1.5005	38.087 1.4995	38.087 1.4995	31.763 1.2505	31.788 1.2515	IR-1612	
0.039 0.086	0.045 0.099	31.750 1.2500	31.737 1.2495	38.113 1.5005	38.087 1.4995	38.087 1.4995	31.763 1.2505	31.788 1.2515	IR-1612	
0.052 0.114	0.059 0.130	31.750 1.2500	31.737 1.2495	38.113 1.5005	38.087 1.4995	38.087 1.4995	31.763 1.2505	31.788 1.2515	IR-1616 ⁽¹⁾	
0.065 0.143	0.073 0.162	31.750 1.2500	31.737 1.2495	38.113 1.5005	38.087 1.4995	38.087 1.4995	31.763 1.2505	31.788 1.2515		
0.041 0.090	0.046 0.102	31.750 1.2500	31.737 1.2495	41.288 1.6255	41.262 1.6245	41.262 1.6245	31.763 1.2505	31.788 1.2515	IR-1612	
0.061 0.135	0.069 0.153	31.750 1.2500	31.737 1.2495	41.288 1.6255	41.262 1.6245	41.262 1.6245	31.763 1.2505	31.788 1.2515	IR-1612	
0.081 0.179	0.092 0.203	31.750 1.2500	31.737 1.2495	41.288 1.6255	41.262 1.6245	41.262 1.6245	31.763 1.2505	31.788 1.2515	IR-1616 ⁽¹⁾	
0.102 0.224	0.115 0.254	31.750 1.2500	31.737 1.2495	41.288 1.6255	41.262 1.6245	41.262 1.6245	31.763 1.2505	31.788 1.2515		
0.034 0.076	0.039 0.086	33.338 1.3125	33.325 1.3120	41.288 1.6255	41.262 1.6245	41.262 1.6245	33.350 1.3130	33.378 1.3141		1 5⁄16
0.043 0.095	0.049 0.108	33.338 1.3125	33.325 1.3120	41.288 1.6255	41.262 1.6245	41.262 1.6245	33.350 1.3130	33.378 1.3141		
0.087 0.191	—	33.338 1.3125	33.325 1.3120	41.288 1.6255	41.262 1.6245	41.262 1.6245	33.350 1.3130	33.378 1.3141		
0.028 0.062	0.032 0.070	34.925 1.3750	34.912 1.3745	41.288 1.6255	41.262 1.6245	41.262 1.6245	34.938 1.3755	34.966 1.3766	IR-1812	1 3⁄8
0.043 0.094	0.049 0.107	34.925 1.3750	34.912 1.3745	41.288 1.6255	41.262 1.6245	41.262 1.6245	34.938 1.3755	34.966 1.3766	IR-1812	
0.057 0.125	0.064 0.142	34.925 1.3750	34.912 1.3745	41.288 1.6255	41.262 1.6245	41.262 1.6245	34.938 1.3755	34.966 1.3766	IR-1816	
0.071 0.156	0.080 0.177	34.925 1.3750	34.912 1.3745	41.288 1.6255	41.262 1.6245	41.262 1.6245	34.938 1.3755	34.966 1.3766	IR-1820	

⁽¹⁾ IRA inner ring provides additional length if required.

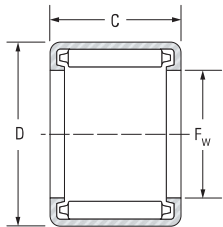
Continued on next page.



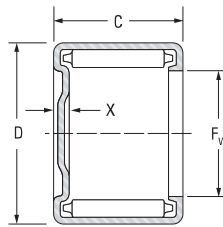
NEEDLE ROLLER BEARINGS

FULL COMPLEMENT BEARINGS, OPEN ENDS, CLOSED ONE END – continued

INCH SERIES

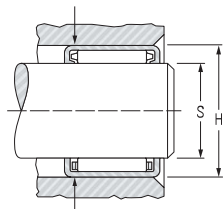


B, BH



M-1, MH-1

Full Complement Bearing



Caged Bearing

Shaft surface to be
58 HRC or equivalent

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

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 Engineering section
for discussion of shaft
and housing design.

Shaft Dia.	F _w	D	C	X (max.)	Bearing Designation		Load Ratings		Speed Rating		C ₉
			+0 +0.000 -0.3 -0.010				Dynamic	Static			
			mm in.				C	C ₀	Grease	Oil	
in.	mm in.	mm in.	mm in.	mm in.			kN lbf.		min ⁻¹		
	34.925 1.3750	44.450 1.7500	12.70 0.500	—	BH-228	—	21.2 4770	33.5 7540	3000	4700	0.0394
	34.925 1.3750	44.450 1.7500	15.88 0.625	—	BH-2210	—	28.5 6410	48.9 11000	3000	4700	0.0432
	34.925 1.3750	44.450 1.7500	19.05 0.750	3.05 0.120	BH-2212	MH-22121	35.3 7930	64.5 14500	3000	4700	0.0463
	34.925 1.3750	44.450 1.7500	25.40 1.000	3.05 0.120	BH-2216	MH-22161	47.6 10700	94.8 21300	3000	4700	0.0509
	34.925 1.3750	44.450 1.7500	31.75 1.250	—	BH-2220	—	59.6 13400	126.0 28300	3000	4700	0.0547
1 1/2	38.100 1.5000	47.625 1.8750	12.70 0.500	3.05 0.120	B-248	M-2481	22.3 5020	37.1 8340	2800	4300	0.0420
	38.100 1.5000	47.625 1.8750	15.88 0.625	3.05 0.120	B-2410	M-24101	29.8 6710	53.8 12100	2800	4300	0.0460
	38.100 1.5000	47.625 1.8750	19.05 0.750	3.05 0.120	B-2412	M-24121	36.9 8290	70.7 15900	2800	4300	0.0493
	38.100 1.5000	47.625 1.8750	22.23 0.875	3.05 0.120	B-2414	M-24141	43.5 9780	87.6 19700	2800	4300	0.0519
	38.100 1.5000	47.625 1.8750	25.40 1.000	3.05 0.120	B-2416	M-24161	49.8 11200	103.0 23300	2800	4300	0.0542
	38.100 1.5000	47.625 1.8750	31.75 1.250	3.05 0.120	B-2420	M-24201	61.8 13900	138.0 31000	2800	4300	0.0581
1 5/8	41.275 1.6250	50.800 2.0000	12.70 0.500	—	B-268	—	22.8 5120	39.2 8820	2600	3900	0.0441
	41.275 1.6250	50.800 2.0000	15.88 0.625	3.05 0.120	B-2610	M-26101	30.6 6890	57.4 12900	2600	3900	0.0485
	41.275 1.6250	50.800 2.0000	25.40 1.000	—	B-2616	—	51.6 11600	112.0 25200	2600	3900	0.0573
	41.275 1.6250	50.800 2.0000	31.75 1.250	3.05 0.120	B-2620	M-26201	64.0 14400	149.0 33400	2600	3900	0.0614
1 3/4	44.450 1.7500	53.975 2.1250	19.05 0.750	3.05 0.120	B-2812	M-28121	39.3 8830	81.4 18300	2400	3700	0.0547
	44.450 1.7500	53.975 2.1250	25.40 1.000	3.05 0.120	B-2816	M-28161	53.4 12000	121.0 27100	2400	3700	0.0603
	44.450 1.7500	53.975 2.1250	31.75 1.250	—	B-2820	—	66.3 14900	160.0 36000	2400	3700	0.0647
	44.450 1.7500	53.975 2.1250	38.10 1.500	3.05 0.120	B-2824	M-26241	78.7 17700	199.0 44800	2400	3700	0.0683
1 7/8	47.625 1.8750	57.150 2.2500	12.70 0.500	3.05 0.120	B-308	M-3081	25.1 5650	46.3 10400	2300	3500	0.0489
	47.625 1.8750	57.150 2.2500	15.888 0.625	—	B-3010	—	33.6 7550	67.6 15200	2300	3500	0.0537
	47.625 1.8750	57.150 2.2500	19.05 0.750	—	B-3012	—	41.5 9330	88.5 19900	2300	3500	0.0574
	47.625 1.8750	57.150 2.2500	25.40 1.000	3.05 0.120	B-3016	M-30161	56.0 12600	130.0 29200	2300	3500	0.0632
2	50.800 2.0000	60.325 2.3750	12.70 0.500	3.05 0.120	B-328	M-3281	25.4 5710	48.0 10800	2100	3300	0.0509
	50.800 2.0000	60.325 2.3750	15.88 0.625	—	B-3210	—	34.2 7680	70.7 15900	2100	3300	0.0560

Approx. Wt.		S		H		Inspection			Mounting Inner Ring (pg B-122 to B-124)	Shaft Dia.
		Recommended Mounting Dimension				Ring Gage	Plug Gage			
Open Ends	Closed End	Max.	Min.	Max.	Min.		Go	No Go		
kg lbs.	kg lbs.	mm in.	mm in.	mm in.	mm in.					in.
0.044 0.098	—	34.925 1.3750	34.912 1.3745	44.463 1.7505	44.437 1.7495	44.437 1.7495	34.938 1.3755	34.966 1.3766	IR-1812	
0.055 0.122	—	34.925 1.3750	34.912 1.3745	44.463 1.7505	44.437 1.7495	44.437 1.7495	34.938 1.3755	34.966 1.3766	IR-1812	
0.066 0.146	0.075 0.165	34.925 1.3750	34.912 1.3745	44.463 1.7505	44.437 1.7495	44.437 1.7495	34.938 1.3755	34.966 1.3766	IR-1812	
0.088 0.195	0.100 0.221	34.925 1.3750	34.912 1.3745	44.463 1.7505	44.437 1.7495	44.437 1.7495	34.938 1.3755	34.966 1.3766	IR-1816	
0.111 0.244	0.125 0.276	34.925 1.3750	34.912 1.3745	44.463 1.7505	44.437 1.7495	44.437 1.7495	34.938 1.3755	34.966 1.3766	IR-1820	
0.048 0.105	0.054 0.119	38.100 1.5000	38.087 1.4995	47.638 1.8755	47.612 1.8745	47.612 1.8745	38.113 1.5005	38.143 1.5017	IR-1916	1 1/2
0.060 0.132	0.068 0.150	38.100 1.5000	38.087 1.4995	47.638 1.8755	47.612 1.8745	47.612 1.8745	38.113 1.5005	38.143 1.5017	IR-1916	
0.072 0.158	0.081 0.179	38.100 1.5000	38.087 1.4995	47.638 1.8755	47.612 1.8745	47.612 1.8745	38.113 1.5005	38.143 1.5017	IR-1916	
0.083 0.184	0.095 0.209	38.100 1.5000	38.087 1.4995	47.638 1.8755	47.612 1.8745	47.612 1.8745	38.113 1.5005	38.143 1.5017	IR-1916	
0.096 0.211	0.108 0.239	38.100 1.5000	38.087 1.4995	47.638 1.8755	47.612 1.8745	47.612 1.8745	38.113 1.5005	38.143 1.5017	IR-1916	
0.119 0.263	0.135 0.298	38.100 1.5000	38.087 1.4995	47.638 1.8755	47.612 1.8745	47.612 1.8745	38.113 1.5005	38.143 1.5017	IR-1920	
0.051 0.113	—	41.275 1.6250	41.262 1.6245	50.813 2.0005	50.787 1.9995	50.787 1.9995	41.288 1.6255	41.318 1.6267	IR-2020 ⁽¹⁾	1 5/8
0.064 0.141	0.073 0.160	41.275 1.6250	41.262 1.6245	50.813 2.0005	50.787 1.9995	50.787 1.9995	41.288 1.6255	41.318 1.6267	IR-2020 ⁽¹⁾	
0.103 0.226	—	41.275 1.6250	41.262 1.6245	50.813 2.0005	50.787 1.9995	50.787 1.9995	41.288 1.6255	41.318 1.6267	IR-2020 ⁽¹⁾	
0.128 0.282	0.145 0.320	41.275 1.6250	41.262 1.6245	50.813 2.0005	50.787 1.9995	50.787 1.9995	41.288 1.6255	41.318 1.6267	IR-2220 ⁽¹⁾	
0.082 0.181	0.093 0.205	44.450 1.7500	44.437 1.7495	53.988 2.1255	53.962 2.1245	53.962 2.1245	44.463 1.7505	44.496 1.7518	IR-2316	1 3/4
0.110 0.242	0.124 0.274	44.450 1.7500	44.437 1.7495	53.988 2.1255	53.962 2.1245	53.962 2.1245	44.463 1.7505	44.496 1.7518	IR-2316	
0.137 0.302	—	44.450 1.7500	44.437 1.7495	53.988 2.1255	53.962 2.1245	53.962 2.1245	44.463 1.7505	44.496 1.7518	IR-2324	
0.165 0.363	0.186 0.411	44.450 1.7500	44.437 1.7495	53.988 2.1255	53.962 2.1245	53.962 2.1245	44.463 1.7505	44.496 1.7518	IR-2324	
0.059 0.129	0.066 0.146	47.625 1.8750	47.612 1.8745	57.163 2.2505	57.137 2.2495	57.137 2.2495	47.638 1.8755	47.671 1.8768		1 7/8
0.073 0.161	—	47.625 1.8750	47.612 1.8745	57.163 2.2505	57.137 2.2495	57.137 2.2495	47.638 1.8755	47.671 1.8768		
0.088 0.193	—	47.625 1.8750	47.612 1.8745	57.163 2.2505	57.137 2.2495	57.137 2.2495	47.638 1.8755	47.671 1.8768		
0.117 0.258	0.132 0.292	47.625 1.8750	47.612 1.8745	57.163 2.2505	57.137 2.2495	57.137 2.2495	47.638 1.8755	47.671 1.8768		
0.062 0.136	0.070 0.154	50.800 2.0000	50.785 1.9994	60.338 2.3755	60.312 2.3745	60.312 2.3745	50.815 2.0006	50.848 2.0019		2
0.078 0.171	—	50.800 2.0000	50.785 1.9994	60.335 2.3755	60.312 2.3745	60.312 2.3745	50.815 2.0006	50.848 2.0019		

⁽¹⁾ IRA inner ring provides additional length if required.

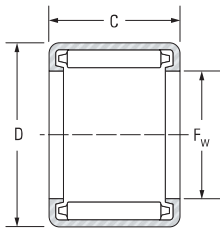
Continued on next page.



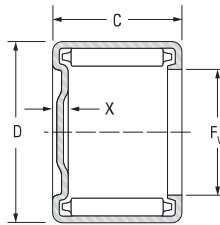
NEEDLE ROLLER BEARINGS

FULL COMPLEMENT BEARINGS, OPEN ENDS, CLOSED ONE END – continued

INCH SERIES

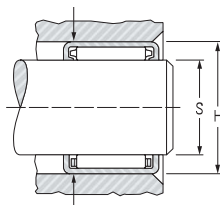


B, BH



M-1, MH-1

Full Complement Bearing



Caged Bearing

Shaft surface to be
58 HRC or equivalent

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

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 Engineering section
for discussion of shaft
and housing design.

Shaft Dia.	F _w	D	C	X (max.)	Bearing Designation		Load Ratings		Speed Rating		C _g
			+0 +0,000 -0.3 -0,010				Dynamic	Static			
			C				C ₀	Grease	Oil		
in.	mm in.	mm in.	mm in.	mm in.			kN lbf.	min ⁻¹			
	50.800 2.0000	60.325 2.3750	22.23 0.875	—	B-3214	—	54.3 11300	115.0 26000	2100	3300	0.0632
	50.800 2.0000	60.325 2.3750	25.40 1.000	3.05 0.120	B-3216	M-32161	57.4 12900	138.0 31000	2100	3300	0.0661
	50.800 2.0000	60.325 2.3750	31.75 1.250	3.05 0.120	B-3220	M-32201	71.6 16100	183.0 41100	2100	3300	0.0708
	50.800 2.0000	60.325 2.3750	38.10 1.500	3.05 0.120	B-3224	M-32241	85.0 19100	228.0 51200	2100	3300	0.0748
	50.800 2.0000	60.325 2.3750	44.45 1.750	3.05 0.120	B-3228	M-32281	97.4 21900	273.0 61300	2100	3300	0.0782
2 1/16	52.388 2.0625	64.292 2.5312	19.05 0.750	—	BH-3312	—	46.3 10400	86.7 19500	2600	4100	0.0574
	52.388 2.0625	64.292 2.5312	25.40 1.000	3.56 0.140	BH-3316	MH-33161	64.0 14400	133.0 29900	2600	4100	0.0639
	52.388 2.0625	64.292 2.5312	38.10 1.500	3.56 0.140	BH-3324	MH-33241	97.0 21800	226.0 50700	2600	4100	0.0728
2 1/8	53.975 2.1250	63.500 2.5000	12.70 0.500	—	B-348	—	26.1 5870	51.2 11500	2000	3100	0.0531
	53.975 2.1250	63.500 2.5000	19.05 0.750	—	B-3412	—	43.6 9790	99.2 22300	2000	3100	0.0626
	53.975 2.1250	63.500 2.5000	25.40 1.000	3.05 0.120	B-3416	M-34161	59.2 13300	147.0 33000	2000	3100	0.0690
	53.975 2.1250	63.500 2.5000	31.75 1.250	—	B-3420	—	73.4 16500	194.0 43700	2000	3100	0.0740
	53.975 2.1250	63.500 2.5000	38.10 1.500	3.05 0.120	B-3424	M-34241	87.2 19600	242.0 54400	2000	3100	0.0781
2 1/4	57.150 2.2500	66.675 2.6250	19.05 0.750	3.30 0.130	B-3612	M-36121	45.8 10300	105.0 23700	2000	3000	0.0648
	57.150 2.2500	66.675 2.6250	25.40 1.000	—	B-3616	—	62.2 14000	155.6 35000	2000	3000	0.0715
	57.150 2.2500	66.675 2.6250	31.75 1.250	—	B-3620	—	77.4 17400	206.0 46400	2000	3000	0.0766
	57.150 2.2500	66.675 2.6250	38.10 1.500	3.30 0.130	B-3624	M-36241	92.1 20700	257.0 57700	2000	3000	0.0809
2 5/8	66.675 2.6250	76.200 3.0000	25.40 1.000	3.30 0.130	B-4216	M-42161	66.7 15000	182.0 40900	1700	2500	0.0799
2 3/4	69.850 2.7500	79.375 3.1250	15.88 0.625	—	B-4410	—	41.0 9210	98.0 22000	1600	2500	0.0698
	69.850 2.7500	79.375 3.1250	19.050 0.7500	—	B-4412	—	50.7 11400	129.0 29000	1600	2500	0.0747
	69.850 2.7500	79.375 3.1250	25.40 1.000	—	B-4416	—	69.0 15500	190.0 42800	1600	2500	0.0824
	69.850 2.7500	79.375 3.1250	31.75 1.250	3.30 0.130	B-4420	M-44201	85.4 19200	252.0 56700	1600	2500	0.0883
3 1/2	88.900 3.5000	101.600 4.0000	19.05 0.750	—	B-5612	—	64.9 14600	150.0 33700	1800	2700	0.0819
5 1/2	139.700 5.5000	152.400 6.0000	19.05 0.750	—	B-8812	—	77.0 17300	231.0 52000	1000	1600	0.1140

Approx. Wt.		S		H		Inspection			Mounting Inner Ring (pg B-122 to B-124)	Shaft Dia.
		Recommended Mounting Dimension				Ring Gage	Plug Gage			
Open Ends	Closed End	Max.	Min.	Max.	Min.		Go	No Go		
kg lbs.	kg lbs.	mm in.	mm in.	mm in.	mm in.					in.
0.108 0.239	—	50.800 2.0000	50.785 1.9994	60.338 2.3755	60.312 2.3745	60.312 2.3745	50.815 2.0006	50.848 2.0019		
0.124 0.273	0.140 0.309	50.800 2.0000	50.785 1.9994	60.338 2.3755	60.312 2.3745	60.312 2.3745	50.815 2.0006	50.848 2.0019		
0.155 0.341	0.175 0.386	50.800 2.0000	50.785 1.9994	60.338 2.3755	60.312 2.3745	60.312 2.3745	50.815 2.0006	50.848 2.0019		
0.186 0.410	0.211 0.465	50.800 2.0000	50.785 1.9994	60.338 2.3755	60.312 2.3745	60.312 2.3745	50.815 2.0006	50.848 2.0019		
0.217 0.478	0.245 0.541	50.800 2.0000	50.785 1.9994	60.338 2.3755	60.312 2.3745	60.312 2.3745	50.815 2.0006	50.848 2.0019		
0.122 0.269	—	52.388 2.0625	52.372 2.0619	64.305 2.5317	64.280 2.5307	64.280 2.5307	52.413 2.0635	52.451 2.0650	IR-2916	2 1/16
0.162 0.358	0.184 0.406	52.388 2.0625	52.372 2.0619	64.305 2.5317	64.280 2.5307	64.280 2.5307	52.413 2.0635	52.451 2.0650	IR-2916	
0.244 0.537	0.276 0.609	52.388 2.0625	52.372 2.0619	64.305 2.5317	64.280 2.5307	64.280 2.5307	52.413 2.0635	52.451 2.0650	IR-2924	
0.065 0.144	—	53.975 2.1250	53.960 2.1244	63.513 2.5005	63.487 2.4995	63.487 2.4995	53.990 2.1256	54.028 2.1271	IR-3024	2 1/8
0.098 0.216	—	53.975 2.1250	53.960 2.1244	63.513 2.5005	63.487 2.4995	63.487 2.4995	53.990 2.1256	54.028 2.1271	IR-3024	
0.131 0.289	0.148 0.327	53.975 2.1250	53.960 2.1244	63.513 2.5005	63.487 2.4995	63.487 2.4995	53.990 2.1256	54.028 2.1271	IR-3024	
0.164 0.361	—	53.975 2.1250	53.960 2.1244	63.513 2.5005	63.487 2.4995	63.487 2.4995	53.990 2.1256	54.028 2.1271	IR-3024	
0.196 0.433	0.223 0.491	53.975 2.1250	53.960 2.1244	63.513 2.5005	63.487 2.4995	63.487 2.4995	53.990 2.1256	54.028 2.1271	IR-3024	
0.103 0.228	0.117 0.258	57.150 2.2500	57.135 2.2494	66.688 2.6255	66.662 2.6245	66.662 2.6245	57.165 2.2506	57.203 2.2521		2 1/4
0.138 0.304	—	57.150 2.2500	57.135 2.2494	66.688 2.6255	66.662 2.6245	66.662 2.6245	57.165 2.2506	57.203 2.2521		
0.172 0.380	—	57.150 2.2500	57.135 2.2494	66.688 2.6255	66.662 2.6245	66.662 2.6245	57.165 2.2506	57.203 2.2521		
0.207 0.456	0.235 0.517	57.150 2.2500	57.135 2.2494	66.688 2.6255	66.662 2.6245	66.662 2.6245	57.165 2.2506	57.203 2.2521		
0.159 0.351	0.181 0.398	66.675 2.6250	66.660 2.6244	76.213 3.0005	76.187 2.9995	76.187 2.9995	66.700 2.6260	66.739 2.6275		2 5/8
0.104 0.229	—	69.850 2.7500	69.835 2.7494	79.388 3.1255	79.362 3.1245	79.362 3.1245	69.875 2.7510	69.914 2.7525	IR-4016	2 3/4
0.124 0.274	—	69.850 2.7500	69.835 2.7494	79.388 3.1255	79.362 3.1245	79.362 3.1245	69.875 2.7510	69.914 2.7525	IR-4016	
0.166 0.366	—	69.850 2.7500	69.835 2.7494	79.388 3.1255	79.362 3.1245	79.362 3.1245	69.875 2.7510	69.914 2.7525	IR-4016	
0.208 0.458	0.235 0.519	69.850 2.7500	69.835 2.7494	79.388 3.1255	79.362 3.1245	79.362 3.1245	69.875 2.7510	69.914 2.7525		
0.212 0.468	—	88.900 3.5000	88.885 3.4994	101.613 4.0005	101.587 3.9995	101.587 3.9995	88.925 3.5010	88.964 3.5025		3 1/2
0.325 0.717	—	139.700 5.5000	139.682 5.4993	152.425 6.0010	152.375 5.9990	152.375 5.9990	139.725 5.5010	139.776 5.5030		5 1/2

B

