

ROULEMENTS À AIGUILLES ET GALETS DE CAME



450 632-3230
1 888 632-3230

sales@grbbearings.com

6200 boul Saint-Laurent
Sainte-Catherine
Québec J5C 1B2

CAM FOLLOWERS & NEEDLE BEARINGS

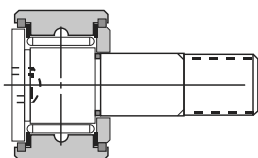
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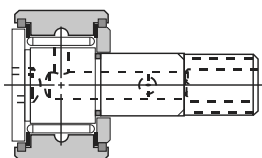
Needle Bearings

CAM Followers

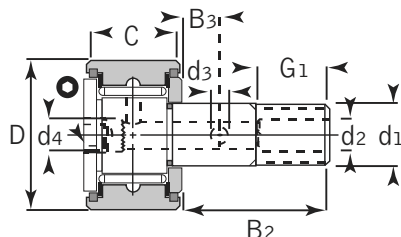
Hexagonal wrench mounting



CRSB 8 to 10-1



CRSB 24 to 44



CRSB 12 to 22
CRSB 48 to 64

CRSB Dim.

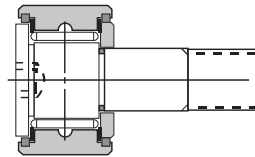
Bearing Designation	Outside Diameter	Dimensions (inch) d1	D	C	B2	B3	G1	d4	d2	d3	G UNF
CRSB 8 CRSB 8-1	1/2	0.19	0.5	0.344 0.375	0.5 0.625	None	0.25	None	None	None	10 - 32
CRSB 10 CRSB 10-1	5/8	0.25	0.625	0.406 0.438	0.625 0.75	None	0.312	None	None	None	1/4 - 28
CRSB 12	3/4	0.375	0.75	0.5	0.875	0.25	0.375	0.188	0.188	0.094	3/8 - 24
CRSB 14	7/8	0.375	0.875	0.5	0.875	0.25	0.375	0.188	0.188	0.094	3/8 - 24
CRSB 16	1	0.4375	1	0.625	1	0.25	0.5	0.25	0.188	0.125	7/16 - 20
CRSB 18	1-1/8	0.4375	1.125	0.625	1	0.25	0.5	0.25	0.188	0.125	7/16 - 20
CRSB 20	1-1/4	0.5	1.25	0.75	1.25	0.312	0.625	0.25	0.188	0.125	1/2 - 20
CRSB 22	1-3/8	0.5	1.375	0.75	1.25	0.312	0.625	0.25	0.188	0.125	1/2 - 20
CRSB 24	1-1/2	0.625	1.5	0.875	1.5	0.375	0.75	None	0.188	0.094	5/8 - 18
CRSB 26	1-5/8	0.625	1.625	0.875	1.5	0.375	0.75	None	0.188	0.094	5/8 - 18
CRSB 28	1-3/4	0.75	1.75	1	1.75	0.438	0.875	None	0.188	0.094	3/4 - 16
CRSB 30	1-7/8	0.75	1.875	1	1.75	0.438	0.875	None	0.188	0.094	3/4 - 16
CRSB 32	2	0.875	2	1.25	2	0.5	1	None	0.188	0.125	7/8 - 14
CRSB 36	2-1/4	0.875	2.25	1.25	2	0.5	1	None	0.188	0.125	7/8 - 14
CRSB 40	2-1/2	1	2.5	1.5	2.5	0.562	1.125	None	0.188	0.125	1 - 14
CRSB 44	2-3/4	1	2.75	1.5	2.5	0.562	1.125	None	0.188	0.125	1 - 14
CRSB 48	3	1.25	3	1.75	2.5	0.625	1.25	0.25	0.25	0.125	1-1/4 - 12
CRSB 52	3-1/4	1.25	3.25	1.75	2.5	0.625	1.25	0.25	0.25	0.125	1-1/4 - 12
CRSB 56	3-1/2	1.375	3.5	2	2.75	0.688	1.375	0.25	0.25	0.125	1-3/8 - 12
CRSB 64	4	1.5	4	2.25	3.5	0.75	1.5	0.25	0.25	0.125	1-1/2 - 12

Needle Bearings

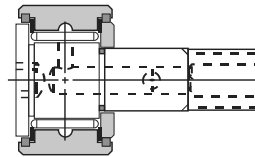
CAM Followers



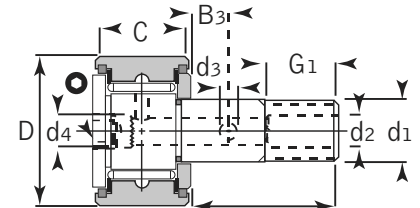
● Hexagonal wrench mounting



CRSB 8 to 10-1



CRSB 24 to 44



CRSB 12 to 22
CRSB 48 to 64

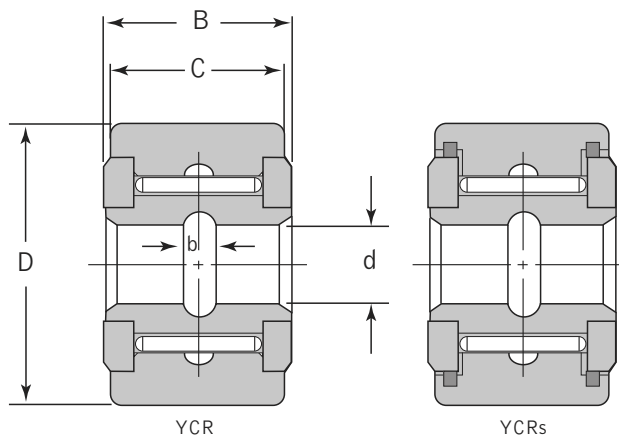
CRSB Mounting

Bearing Designation	Outside Diameter	Load Rating		Mounting Dimensions			Mounting Overhang Space		* Clamping Torque max. lbf / inch	Mass. Approx. Lbs
		Dynamic C lbf	Static C ₀	Limiting Speed Grease rpm	Bore Dia. for Stud db ra max.		Ka min.	da min.		
CRSB 8	1/2	999	1 110	7 000	0.19	0.01	0.41	0.297	8	0.02
CRSB 8-1		1 120	1 280	7 000	0.19	0.01	0.44	0.297	8	0.023
CRSB 10	5/8	1 360	1 770	5 500	0.25	0.015	0.5	0.359	20	0.41
CRSB 10-1		1 480	1 970	5 500	0.25	0.015	0.5	0.359	20	0.045
CRSB 12	3/4	2 330	3 410	3 900	0.375	0.015	0.56	0.5	55	0.076
CRSB 14	7/8	2 330	3 410	3 900	0.375	0.015	0.56	0.5	5	0.097
CRSB 16	1	2 980	5 010	3 000	0.4375	0.03	0.69	0.641	150	0.161
CRSB 18	1-1/8	2 980	5 010	3 000	0.4375	0.03	0.69	0.641	150	0.197
CRSB 20	1-1/4	4 840	7 460	2 600	0.5	0.03	0.81	0.766	205	0.301
CRSB 22	1-3/8	4 840	7 460	2 600	0.5	0.03	0.81	0.766	205	0.354
CRSB 24	1-1/2	6 380	9 160	2 300	0.625	0.03	0.94	0.891	390	0.528
CRSB 26	1-5/8	6 380	9 160	2 300	0.625	0.03	0.94	0.891	390	0.605
CRSB 28	1-3/4	8 040	12 800	1 900	0.75	0.04	1.06	1.047	750	0.848
CRSB 30	1-7/8	8 040	12 800	1 900	0.75	0.04	1.06	1.047	750	0.947
CRSB 32	2	9 770	17 100	1 700	0.875	0.05	1.33	1.203	900	1.37
CRSB 36	2-1/4	9 780	17 100	1 700	0.875	0.05	1.33	1.203	900	1.67
CRSB 40	2-1/2	13 200	26 600	1 400	1	0.09	1.58	1.313	1350	2.5
CRSB 44	2-3/4	13 200	26 600	1 400	1	0.09	1.58	1.313	1350	2.93
CRSB 48	3	16 800	40 200	990	1.25	0.09	1.83	1.75	2050	4.2
CRSB 52	3-1/4	16 800	40 200	990	1.25	0.09	1.83	1.75	2050	4.81
CRSB 56	3-1/2	24 900	51 000	950	1.375	0.09	2.08	1.922	2500	6.42
CRSB 64	4	31 100	72 200	780	1.5	0.09	2.33	2.281	3000	9.46

* Torque is based on lubricated threads. If threads are dry, the torque value listed above may be doubled.

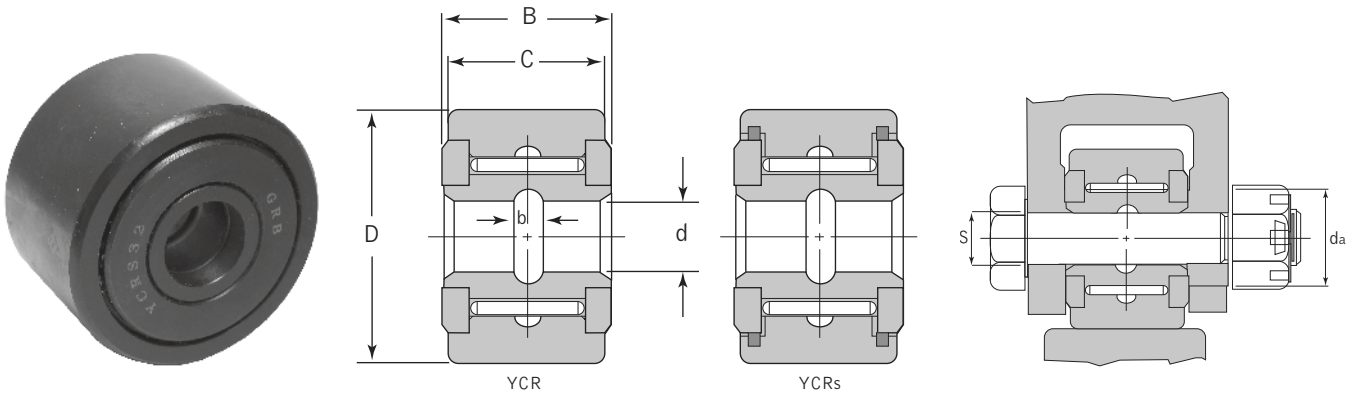


Track Roller



YCRS Dim.

Bearing Designation		Outside Diameter	Dimensions			B	C	b
			-0.001	max.	min.			
Without Seals	With Seals		D		d			
YCR 12	YCRS 12	3/4	0.75	0.2502	0.2496	0.5625	0.5	0.125
YCR 14	YCRS 14	7/8	0.875	0.2502	0.2496	0.5625	0.5	0.125
YCR 16	YCRS 16	1	1	0.3127	0.3121	0.6875	0.625	0.125
YCR 18	YCRS 18	1-1/8	1.125	0.3127	0.3121	0.6875	0.625	0.125
YCR 20	YCRS 20	1-1/4	1.25	0.3752	0.3746	0.8125	0.75	0.188
YCR 22	YCRS 22	1-3/8	1.375	0.3752	0.3746	0.8125	0.75	0.188
YCR 24	YCRS 24	1-1/2	1.5	0.4377	0.4371	0.9375	0.875	0.125
YCR 26	YCRS 26	1-5/8	1.625	0.4377	0.4371	0.9375	0.875	0.125
YCR 28	YCRS 28	1-3/4	1.75	0.5002	0.4996	1.0625	1	0.125
YCR 30	YCRS 30	1-7/8	1.875	0.5002	0.4996	1.0625	1	0.125
YCR 32	YCRS 32	2	2	0.6252	0.6246	1.3125	1.25	0.125
YCR 36	YCRS 36	2-1/4	2.25	0.6252	0.6246	1.3125	1.25	0.125
YCR 40	YCRS 40	2-1/2	2.5	0.7502	0.7496	1.5625	1.5	0.145
YCR 44	YCRS 44	2-3/4	2.75	0.7502	0.7496	1.5625	1.5	0.145
YCR 48	YCRS 48	3	3	1.0001	0.9995	1.8125	1.75	0.145
YCR 52	YCRS 52	3-1/4	3.25	1.0001	0.9995	1.8125	1.75	0.145
YCR 56	YCRS 56	3-1/2	3.5	1.1251	1.1245	2.0625	2	0.145
YCR 64	YCRS 64	4	4	1.2501	1.2495	2.3125	2.25	0.145
—	YCRS 80	5	5	1.7501	1.7495	2.875	2.75	0.375
—	YCRS 96	6	6	2.2501	2.2495	3.375	3.25	0.375



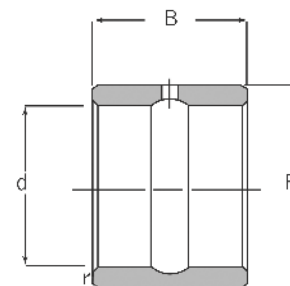
YCRS Mounting

Bearing Designation		Load Rating		Limit Speed Grease	Mounting Dimensions Shaft				Clamping Diameter min. da	Mass. Approx. lbs
					Transition Fit Loose		Transition Fit Tight			
Without seals	With seals	Dynamic C	Static C0		Max.	Min.	Max.	Min.		
					f7		h6			
YCR 12	YCRS 12	2 330	3 410	3 900	0.2497	0.2493	0.2505	0.2501	0.5	0.06
YCR 14	YCRS 14	2 330	3 410	3 900	0.2497	0.2493	0.2505	0.2501	0.5	0.08
YCR 16	YCRS 16	2 980	5 010	3 000	0.3122	0.3118	0.313	0.3126	0.641	0.15
YCR 18	YCRS 18	2 980	5 010	3 000	0.3122	0.3118	0.313	0.3126	0.641	0.17
YCR 20	YCRS 20	4 840	7 460	2 600	0.3747	0.3743	0.3755	0.3751	0.766	0.3
YCR 22	YCRS 22	4 840	7 460	2 600	0.3747	0.3743	0.3755	0.3751	0.766	0.5
YCR 24	YCRS 24	6 380	9 160	2 300	0.4372	0.4368	0.438	0.4376	0.891	0.41
YCR 26	YCRS 26	6 380	9 160	2 300	0.4372	0.4368	0.438	0.4376	0.891	0.5
YCR 28	YCRS 28	8 040	12 800	1 900	0.4997	0.4993	0.5007	0.5003	1.047	0.64
YCR 30	YCRS 30	8 040	12 800	1 900	0.4997	0.4993	0.5007	0.5003	1.047	0.8
YCR 32	YCRS 32	9 770	17 100	1 700	0.6247	0.6243	0.6257	0.6253	1.203	1.05
YCR 36	YCRS 36	9 770	17 100	1 700	0.6247	0.6243	0.6257	0.6253	1.203	1.32
YCR 40	YCRS 40	13 200	26 600	1 400	0.7497	0.7493	0.7507	0.7503	1.313	1.8
YCR 44	YCRS 44	13 200	26 600	1 400	0.7497	0.7493	0.7507	0.7503	1.313	2.25
YCR 48	YCRS 48	16 800	40 200	990	0.9996	0.9991	1.0008	1.003	1.75	3.1
YCR 52	YCRS 52	16 800	40 200	990	0.9996	0.9991	1.0008	1.003	1.75	3.62
YCR 56	YCRS 56	24 900	51 000	950	1.1246	1.1241	1.1258	1.1253	1.922	4.95
YCR 64	YCRS 64	31 100	72 200	780	1.2496	1.2491	1.2508	1.2503	2.281	7.05
—	YCRS 80	33 800	—	700	1.7496	1.7491	1.7508	1.7503	2.875	13.2
—	YCRS 96	48 300	—	580	2.2496	2.2491	2.2508	2.2503	3.375	23.2



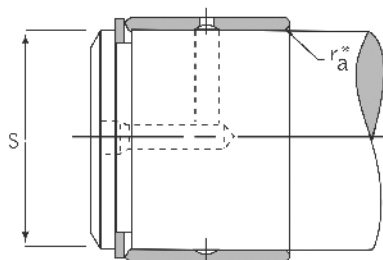
Needle Bearings

Inner Race



IR

Inner Ring Designation	Shaft Diameter	Dimensions				Mass Approx.	Used with Bearing No.
		d	F	B	rs min		
IR 061012	3/8	0.375	0.625	0.75	0.025	0.04	HJ 101812
IR 081212 IR 081216	1/2	0.5	0.75	0.75 1	0.04	0.05 0.07	HJ 122012 HJ 122016
IR 101412 IR 101416	5/8	0.625	0.875	0.75 1	0.04	0.06 0.08	HJ 142212 HJ 142216
IR 111412	11/16	0.6875	0.875	0.75	0.04	0.05	HJ 142212
IR 121612 IR 121616	3/4	0.75	1	0.75 1	0.04	0.07 0.09	HJ 162412 HJ 162416
IR 131616	13/16	0.8125	1	1	0.04	0.07	HJ 162416
IR 141816 IR 141820	7/8	0.875	1.125	1 1.25	0.04	0.11 0.13	HJ 182616 HJ 182620
IR 151816 IR 151820	15/16	0.9375	1.125	1 1.25	0.04	0.08 0.1	HJ 182616 HJ 182620
IR 162016 IR 162020	1	1	1.25	1 1.25	0.04	0.12 0.05	HJ 202816 HJ 202820
IR 182216 IR 182220	1-1/8	1.125	1.375	1 1.25	0.04	0.13 0.17	HJ 223016 HJ 223020
IR 192420	1-3/16	1.1875	1.5	1.25	0.06	0.22	HJ 243320
IR 202416 IR 202420	1-1/4	1.25	1.5	1 1.25	0.06	0.15 0.18	HJ 243316 HJ 243320
IR 212616 IR 212620	1-5/16	1.3125	1.625	1 1.25	0.06	0.19 0.24	HJ 263516 HJ 263520
IR 222620 IR 222820	1-3/8	1.375	1.625 1.75	1.25	0.06	0.2 0.31	HJ 263520 HJ 283720
IR 232816 IR 232820	1-7/16	1.4375	1.75	1 1.25	0.06	0.21 0.26	HJ 283716 HJ 283720
IR 242816 IR 242820 IR 243320	1-1/2	1.5	1.75 2	1 1.25	0.06	0.17 0.21 0.46	HJ 283716 HJ 283720 HJ 324120
IR 253020 IR 253220	1-9/16	1.5625	1.875 2	1.25	0.06	0.28 0.41	HJ 303920 HJ 324120
IR 263220	1-5/8	1.625	2	1.25	0.06	0.36	HJ 324120
IR 273216 IR 273220	1-11/16	1.6875	2	1 1.25	0.06	0.24 0.3	HJ 324116 HJ 324120
IR 283624 IR 283628	1-3/4	1.75	2.25	1.5 1.75	0.06	0.63 0.74	HJ 364824 HJ 364828
IR 314024 IR 314028	1-15/16	1.9375	2.5	1.5 1.75	0.08	0.79 0.92	HJ 405224 HJ 405228



IR with Shaft

Needle Bearings

Inner Race

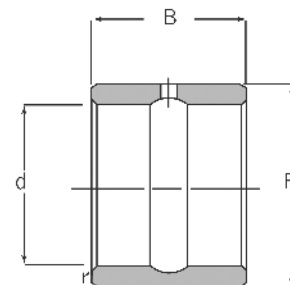


Shaft diameter	Dimensions				S - Loose Transition Fit Shaft Diameter		S - Interference Fit Shaft Diameter		Inner Ring Designation	Used with Bearing No.	Mass Approx.
	d	F	B	ra min	Max.	Min.	Max.	Min.			
3/8	0.3750	0.6250	0.750	0.025	0.3748	0.3744	0.3755	0.3752	IR 061012	HJ 101812	0.04
1/2	0.5000	0.7500	0.750	0.04	0.4997	0.4993	0.5006	0.5003	IR 081212	HJ 122012	0.05
	0.5000	0.7500	1.000	0.04	0.4997	0.4993	0.5006	0.5003	IR 081216	HJ 122016	0.07
5/8	0.6250	0.8750	0.750	0.04	0.6247	0.6243	0.6256	0.6253	IR 101412	HJ 142212	0.06
	0.6250	0.8750	1.000	0.04	0.6247	0.6243	0.6256	0.6253	IR 101416	HJ 142216	0.08
11/16	0.6875	0.8750	0.750	0.04	0.6872	0.6868	0.6881	0.6878	IR 111412	HJ 142212	0.05
3/4	0.7500	1.0000	0.750	0.04	0.7497	0.7492	0.7507	0.7503	IR 121612	HJ 162412	0.07
	0.7500	1.0000	1.000	0.04	0.7497	0.7492	0.7507	0.7503	IR 121616	HJ 162416	0.09
13/16	0.8125	1.0000	1.000	0.04	0.8122	0.8117	0.8132	0.8128	IR 131616	HJ 162416	0.07
7/8	0.8750	1.1250	1.000	0.04	0.8747	0.8742	0.8757	0.8753	IR 141816	HJ 182616	0.11
	0.8750	1.1250	1.250	0.04	0.8747	0.8742	0.8757	0.8753	IR 141820	HJ 182620	0.13
15/16	0.9375	1.1250	1.000	0.04	0.9372	0.9367	0.9882	0.9378	IR 151816	HJ 182616	0.08
	0.9375	1.1250	1.250	0.04	0.9372	0.9367	0.9882	0.9378	IR 151820	HJ 182620	0.10
1	1.0000	1.2500	1.000	0.04	0.9997	0.9992	1.0007	1.0003	IR 162016	HJ 202816	0.12
	1.0000	1.2500	1.250	0.04	0.9997	0.9992	1.0007	1.0003	IR 162020	HJ 202820	0.05
1-1/8	1.1250	1.3750	1.000	0.04	1.1247	1.1242	1.1257	1.1253	IR 182216	HJ 223016	0.13
	1.1250	1.3750	1.250	0.04	1.1247	1.1242	1.1257	1.1253	IR 182220	HJ 223020	0.17
1-3/16	1.1875	1.5000	1.250	0.06	1.1872	1.1867	1.1882	1.1878	IR 192420	H J 243320	0.22
1-1/4	1.2500	1.5000	1.000	0.06	1.2496	1.2490	1.2508	1.2504	IR 202416	HJ 243316	0.15
	1.2500	1.5000	1.250	0.06	1.2496	1.2490	1.2508	1.2504	IR 202420	HJ 243320	0.18
1-5/16	1.3125	1.6250	1.000	0.06	1.3121	1.3115	1.3133	1.3129	IR 212616	HJ 263516	0.19
	1.3125	1.6250	1.250	0.06	1.3121	1.3115	1.3133	1.3129	IR 212620	HJ 263520	0.24
1-3/8	1.3750	1.6250	1.250	0.06	1.3746	1.3740	1.3758	1.3754	IR 222620	HJ 263520	0.20
	1.3750	1.7500	1.250	0.06	1.3746	1.3740	1.3758	1.3754	IR 222820	HJ 283720	0.31
1-7/16	1.4375	1.7500	1.000	0.06	1.4371	1.4365	1.4383	1.4379	IR 232816	HJ 283716	0.21
	1.4375	1.7500	1.250	0.06	1.4371	1.4365	1.4383	1.4379	IR 232820	HJ 283720	0.26
1-1/2	1.5000	1.7500	1.000	0.06	1.4996	1.4990	1.5008	1.5004	IR 242816	HJ 283716	0.17
	1.5000	1.7500	1.250	0.06	1.4996	1.4990	1.5008	1.5004	IR 242820	HJ 283720	0.21
	1.5000	2.0000	1.250	0.06	1.4996	1.4990	1.5008	1.5004	IR 243320	HJ 324120	0.46
1-9/16	1.5625	1.8750	1.250	0.06	1.5621	1.5615	1.5633	1.5629	IR 253020	HJ 303920	0.28
	1.5625	2.0000	1.250	0.06	1.5621	1.5615	1.5633	1.5629	IR 253220	HJ 324120	0.41
1-5/8	1.6250	2.0000	1.250	0.06	1.6246	1.6240	1.6258	1.6254	IR 263220	HJ 324120	0.36
1-11/16	1.6875	2.0000	1.000	0.06	1.6871	1.6865	1.6883	1.6879	IR 273216	HJ 324116	0.24
	1.6875	2.0000	1.250	0.06	1.6871	1.6865	1.6883	1.6879	IR 273220	HJ 324120	0.30
1-3/4	1.7500	2.2500	1.500	0.06	1.7496	1.7490	1.7508	1.7504	IR 283624	HJ 364824	0.63
	1.7500	2.2500	1.750	0.06	1.7496	1.7490	1.7508	1.7504	IR 283628	HJ 364828	0.74
1-15/16	1.9375	2.5000	1.500	0.08	1.9371	1.9365	1.9383	1.9379	IR 314024	HJ 405224	0.79
	1.9375	2.5000	1.750	0.08	1.9371	1.9365	1.9383	1.9379	IR 314028	HJ 405228	0.92



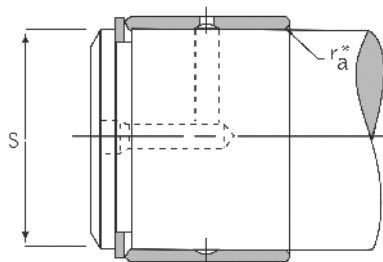
Needle Bearings

Inner Race



IR

Inner Ring Designation	Shaft Diameter	Dimensions				Mass Approx.	Used with Bearing No.
		d	F	Brs	Min		
IR 324024 IR 324028	2	2	2.5	1.5 1.75	0.08	0.71 0.83	HJ 405224 HJ 405228
IR 354428	2-3/16	2.1875	2.75	1.75	0.08	1.03	HJ 445628
IR 364424 IR 364428	2-1/4	2.25	2.75	1.5 1.75	0.08	0.79 0.92	HJ 445624 HJ 445628
IR 384828	2-3/8	2.375	3	1.75	0.08	1.24	HJ 486028
IR 404824 IR 404828	2-1/2	2.5 2.5	3 3	1.5 1.75	0.08 0.08	0.87 1.02	HJ 486024 HJ 486028
IR 445228 IR 445232	2-3/4	2.75 2.75	3.25 3.25	1.75 2	0.08 0.08	1.11 1.27	HJ 526828 HJ 526832
IR 475632	2-15/16	2.9375	3.5	2	0.08	1.53	HJ 567232
IR 485632	3	3	3.5	2	0.08	1.37	HJ 567232
IR 506032	3-1/8	3.125	3.75	2	0.1	*	HJ 607632
IR 526032 IR 526432	3-1/4	3.25	3.75 4	2 2	0.1 0.1	* *	HJ 607632 HJ 648032
IR 566432	3-3/8	3.375	4	2	0.1	*	HJ 648032
IR 566432 IR 566832	3-1/2	3.5	4 4.25	2	0.1	* *	HJ 648032 HJ 688432
IR 606832 IR 607236 IR 607240	3-3/4	3.75	4.25 4.5	2 2.25 2.5	0.1	* * *	HJ 688432 HJ 729636 HJ 729640
IR 648036 IR 648040	4	4	5	2.25 2.5	0.1	* *	HJ 8010436 HJ 8010440
IR 688036	4-1/4	4.25	5	2.25	0.1	*	HJ 8010436
IR 728840 IR 728848	4-1/2	4.5	5.5	2.5 3	0.1	* *	HJ 8811240 HJ 8811248
IR 799248	4-3/4	4.75	5.75	3	0.12	*	HJ 9211648
IR 809640 IR 809648	5	5	6	2.5 3	0.12	* *	HJ 9612040 HJ 9612048
IR 8810440 IR 8810448	5-1/2	5.5	6.5	2.5 3	0.12	* *	HJ 10412840 HJ 10412848
IR 9611648	6	6	7.25	3	0.12	*	HJ 11614648
IR 10412448	6-1/2	6.5	7.75	3	0.12	*	HJ 12415448
IR 11213248	7	7	8.25	3	0.12	*	HJ 13216248
IR 12014048	7-1/2	7.5	8.75	3	0.16	*	HJ 14017048
IR 12814848	8	8	9.25	3	0.16	*	HJ 14817848



IR with Shaft

Needle Bearings

Inner Race

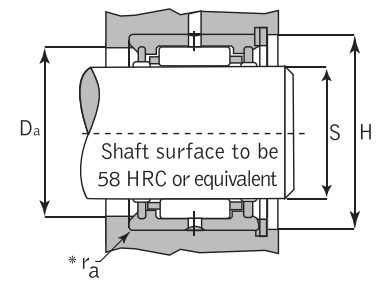


Shaft Diameter	Dimensions				S - Loose Transition Fit Shaft Diameter		S - Interference Fit Shaft Diameter		Inner Ring Designation	Used with Bearing No.	Mass Approx.
	d	F	B	ra min	Max.	Min.	Max.	Min.			
2	2.0000	2.5000	1.500	0.08	1.9996	1.9989	2.0009	2.0004	IR 324024	HJ 405224	0.71
	2.0000	2.5000	1.750	0.08	1.9996	1.9989	2.0009	2.0004	IR 324028	HJ 405228	0.83
2-3/16	2.1875	2.7500	1.750	0.08	2.1871	2.1964	2.1884	2.1879	IR 354428	HJ 445628	1.03
2-1/4	2.2500	2.7500	1.500	0.08	2.2496	2.2489	2.2509	2.2504	IR 364424	HJ 445624	0.79
	2.2500	2.7500	1.750	0.08	2.2496	2.2489	2.2509	2.2504	IR 364428	HJ 445628	0.92
2-3/8	2.3750	3.0000	1.750	0.08	2.3746	2.3739	2.3759	2.3754	IR 384828	HJ 486028	1.24
2-1/2	2.5000	3.0000	1.500	0.08	2.4996	2.4989	2.5009	2.5004	IR 404824	HJ 486024	0.87
	2.5000	3.0000	1.750	0.08	2.4996	2.4989	2.5009	2.5004	IR 404828	HJ 486028	1.02
2-3/4	2.7500	3.2500	1.750	0.08	2.7496	2.7489	2.7509	2.7504	IR 445228	HJ 526828	1.11
	2.7500	3.2500	2.000	0.08	2.7496	2.7489	2.7509	2.7504	IR 445232	HJ 526832	1.27
2-15/16	2.9375	3.5000	2.000	0.08	2.9371	2.9364	2.9384	2.9379	IR 475632	HJ 567232	1.53
3	3.0000	3.5000	2.000	0.08	2.9996	2.9989	3.0009	3.0004	IR 485632	HJ 567232	1.37
3-1/8	3.125	3.7500	2.000	0.10	3.1246	3.1239	3.1259	3.1254	IR 506032	HJ 607632	*
3-1/4	3.2500	3.7500	2.000	0.10	3.2495	3.2487	3.2511	3.2505	IR 526032	HJ 607632	*
		4.0000	2.000	0.10	3.2495	3.2487	3.2511	3.2505	IR 526432	HJ 648032	*
3-3/8	3.3750	4.0000	2.000	0.10	3.3745	3.3737	3.3761	3.3755	IR 566432	HJ 648032	*
3-1/2	3.5000	4.0000	2.000	0.10	3.4995	3.4987	3.5011	3.5005	IR 566432	HJ 648032	*
	3.5000	4.2500	2.000	0.10	3.4995	3.4987	3.5011	3.5005	IR 566832	HJ 688432	*
3-3/4	3.7500	4.2500	2.000	0.10	3.7495	3.7487	3.7511	3.7505	IR 606832	HJ 688432	*
	3.7500	4.5000	2.250	0.10	3.7495	3.7487	3.7511	3.7505	IR 607236	HJ 729636	*
	3.7500	4.5000	2.500	0.10	3.7495	3.7487	3.7511	3.7505	IR 607240	HJ 729640	*
4	4.0000	5.0000	2.250	0.10	3.9995	3.9987	4.0011	4.0005	IR 648036	HJ 8010436	*
			2.500	0.10	3.9995	3.9987	4.0011	4.0005	IR 648040	HJ 8010440	*
4-1/4	4.2500	5.0000	2.250	0.10	4.2495	4.2487	4.2511	4.2505	IR 688036	HJ 8010436	*
4-1/2	4.5000	5.5000	2.500	0.10	4.4995	4.4987	4.5011	4.5005	IR 728840	HJ 8811240	*
			3.000	0.10	4.4995	4.4987	4.5011	4.5005	IR 728848	HJ 8811248	*
4-3/4	4.7500	5.7500	3.000	0.12	4.7494	4.7485	4.7513	4.7506	IR 799248	HJ 9211648	*
5	5.0000	6.0000	2.500	0.12	4.9994	4.9985	5.0013	5.0006	IR 809640	HJ 9612040	*
			3.000	0.12	4.9994	4.9985	5.0013	5.0006	IR 809648	HJ 9612048	*
5-1/2	5.5000	6.5000	2.500	0.12	5.4994	5.4985	5.5013	5.5006	IR 8810440	HJ 10412840	*
		6.5000	3.000	0.12	5.4994	5.4985	5.5013	5.5006	IR 8810448	HJ 10412848	*
6	6.0000	7.2500	3.000	0.12	5.9994	5.9985	6.0013	6.0006	IR 9611648	HJ 11614648	*
6-1/2	6.5000	7.7500	3.000	0.12	6.4994	6.4985	6.5013	6.5006	IR 10412448	HJ 12415448	*
7	7.0000	8.2500	3.000	0.12	6.9994	6.9985	7.0013	7.0006	IR 11213248	HJ 13216248	*
7-1/2	7.5000	8.7500	3.000	0.16	7.4994	7.4982	7.5014	7.5006	IR 12014048	HJ 14017048	*
8	8.0000	9.2500	3.000	0.16	7.9994	7.9982	8.0014	8.0006	IR 12814848	HJ 14817848	*

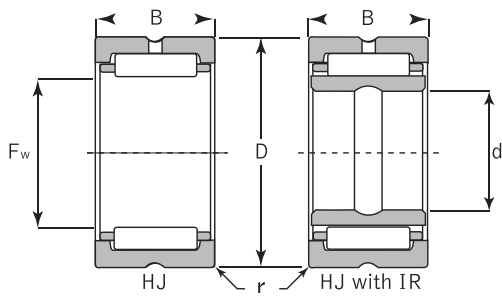


Needle Bearings

HJ/IR



Bearing Designation	Shaft dia.	Dimensions				Load Ratings		Limit Speed		Weight lbs	Used with Inner Ring Designation
		Fw	D	C/B	rs min	Basic Dynamic	Basic Static	Grease (rpm)	Oil (rpm)		
HJ 101812	5/8	0.6250	1.1250	0.750	0.025	4350	4650	20000	30000	0.11	IR 061012
HJ 122012 HJ 122016	3/4	0.7500 0.7500	1.2500 1.2500	0.750 1.000	0.040 0.040	4650 6190	5240 7580	16000 16000	25000 25000	0.13 0.17	IR 081212 IR 081216
HJ 142212 HJ 142216	7/8	0.8750 0.8750	1.3750 1.3750	0.750 1.000	0.040 0.040	5180 6910	6270 9070	13000 13000	21000 21000	0.14 0.19	IR 101412 IR 111412 IR 101416
HJ 142212	1	1.0000 1.0000	1.5000 1.5000	0.750 1.000	0.040 0.040	5180 7560	6270 10600	12000 12000	18000 18	0.16 0.21	IR 101412 IR 111412 IR 131616
HJ 182616 HJ 182620	1-1/8	1.1250 1.1250	1.6250 1.6250	1.000 1.125	0.040 0.040	8170 10100	12100 15800	1000 10000	1600 16000	0.23 0.29	IR 141816 IR 151816 IR 141820 IR 151820
HJ 202816 HJ 202820	1-1/4	1.2500 1.2500	1.7500 1.7500	1.000 1.250	0.040 0.040	8410 10400	12900 16900	9100 9100	14000 14000	0.25 0.32	IR 162016 IR 162020
HJ 223016 HJ 223020	1/38	1.3750 1.3750	1.8750 1.8750	1.000 1.250	0.040 0.040	8950 11100	14400 18900	8200 8200	13000 13000	0.28 0.35	IR 182216 IR 182220
HJ 243316 HJ 243320	1/1/2	1.5000 1.5000	2.0625 2.0625	1.000 1.250	0.060 0.060	10700 13200	16300 21400	7600 7600	12000 12000	0.34 0.43	IR 202416 IR 192420 IR 202420
HJ 263516 HJ 263520	1-5/8	1.6250 1.6250	2.1875 2.1875	1.000 1.250	0.060 0.060	10900 13500	17200 22600	7000 7000	11000 11000	0.36 0.46	IR 212616 IR 212620 IR 222620
HJ 283716 HJ 283720	1-3/4	1.7500 1.7500	2.3125 2.3150	1.000 1.250	0.060 0.060	11200 13900	18200 23900	6400 6400	9900 9900	0.39 0.49	IR 232816 IR 242816 IR 222820 IR 232820 IR 242820
HJ 303920	1-7/8	1.8750	2.4375	1.250	0.060	14700	26300	6000	9200	0.52	IR 253020



Needle Bearings

HJ/IR

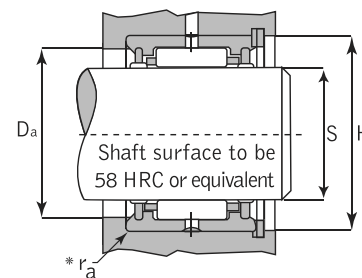


Shaft Dia.	Dimensions				Bearing Designation	Used with Inner Ring Designation	Load Ratings		Limit Speed		Weight lbs
	Fw	D	C/B	rs min			Basic Dynamic	Basic Static	Grease (rpm)	Oil (rpm)	
5/8	0.6250	1.1250	0.750	0.025	HJ 101812	IR 061012	4350	4650	20000	30000	0.11
3/4	0.7500	1.2500	0.750	0.040	HJ 122012	IR 081212	4650	5240	16000	25000	0.13
	0.7500	1.2500	1.000	0.040	HJ 122016	IR 081216	6190	7580	16000	25000	0.17
7/8	0.8750	1.3750	0.750	0.040	HJ 142212	IR 101412	5180	6270	13000	21000	0.14
	0.8750	1.3750	1.000	0.040	HJ 142216	IR 111412					
						IR 101416	6910	9070	13000	21000	0.19
1	1.0000	1.5000	0.750	0.040	HJ 142212	IR 101412	5180	6270	12000	18000	0.16
	1.0000	1.5000	1.000	0.040		IR 111412	7560	10600	12000	18	0.21
						IR 131616					
1-1/8	1.1250	1.6250	1.000	0.040	HJ 182616	IR 141816	8170	12100	1000	1600	0.23
						IR 151816					
	1.1250	1.6250	1.125	0.040	HJ 182620	IR 141820	10100	15800	10000	16000	0.29
						IR 151820					
1-1/4	1.2500	1.7500	1.000	0.040	HJ 202816	IR 162016	8410	12900	9100	14000	0.25
	1.2500	1.7500	1.250	0.040	HJ 202820	IR 162020	10400	16900	9100	14000	0.32
1-3/8	1.3750	1.8750	1.000	0.040	HJ 223016	IR 182216	8950	14400	8200	13000	0.28
	1.3750	1.8750	1.250	0.040	HJ 223020	IR 182220	11100	18900	8200	13000	0.35
1-1/2	1.5000	2.0625	1.000	0.060	HJ 243316	IR 202416	10700	16300	7600	12000	0.34
	1.5000	2.0625	1.250	0.060	HJ 243320	IR 192420	13200	21400	7600	12000	0.43
						IR 202420					
1-5/8	1.6250	2.1875	1.000	0.060	HJ 263516	IR 212616	10900	17200	7000	11000	0.36
	1.6250	2.1875	1.250	0.060	HJ 263520	IR 212620	13500	22600	7000	11000	0.46
						IR 222620					
1-3/4	1.7500	2.3125	1.000	0.060	HJ 283716	IR 232816	11200	18200	6400	9900	0.39
						IR 242816					
	1.7500	2.3150	1.250	0.060	HJ 283720	IR 222820	13900	23900	6400	9900	0.49
						IR 232820					
						IR 242820					
1-7/8	1.8750	2.4375	1.250	0.060	HJ 303920	IR 253020	14700	26300	6000	9200	0.52

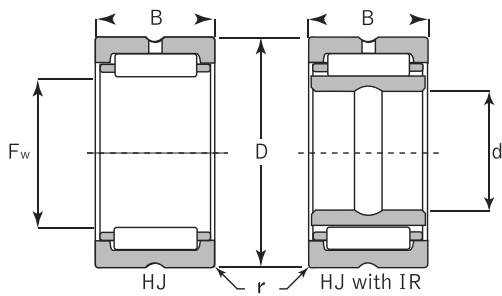


Needle Bearings

HJ/IR



Bearing Designation	Shaft Dia.	Dimensions				Load Ratings		Limit Speed		Weight lbs	Used with Inner Ring Designation
		Fw	D	C/B	rs min	Basic Dynamic	Basic Static	Grease (rpm)	Oil (rpm)		
HJ 324116 HJ 324120	2	2.0000 2.0000	2.5625 2.5625	1.000 1.250	0.060 0.060	12100 15000	20900 27500	5600 5600	8600 8600	0.44 0.55	IR 273216 IR 243220 IR 253220 IR 263220 IR 273220
HJ 364824 HJ 364828	2-1/4	2.2500 2.2500	3.0000 3.0000	1.500 1.750	0.060 0.060	20200 23400	36900 44500	5000 5000	7600 7600	1.01 1.17	IR 283624 IR 283628
HJ 405224 HJ 405228	2-1/2	2.5000 2.5000	3.2500 3.2500	1.500 1.750	0.080 0.080	21800 25200	42100 50800	4400 4400	6800 6800	1.10 1.29	IR 314024 IR 324024 IR 314028 IR 324028
HJ 445616 HJ 445624 HJ 445628	2-3/4	2.7500 2.7500 2.7500	3.5000 3.5000 3.5000	1.000 1.500 1.750	0.080 0.080 0.080	15100 22700 26300	27000 45700 55100	4000 4000 4000	6200 6200 6200	0.80 1.20 1.40	IR 364424 IR 354428 IR 364428
HJ 486024 HJ 486028	3	3.0000 3.0000	3.7500 3.7500	1.500 1.750	0.080 0.080	24100 43900	50900 86000	3700 3700	5600 5600	1.29 1.51	IR 404824 IR 384828 IR 404828
HJ 526828 HJ 526832	3-1/4	3.2500 3.2500	4.2500 4.2500	1.750 2.000	0.080 0.080	36400 41300	68600 80500	3400 3400	5300 5300	2.24 2.56	IR 445228 IR 445232
HJ 567232	3-1/2	3.5000	4.5000	2.000	0.080	42000	84300	3200	4900	2.73	IR 475632 IR 485632
HJ 607632	3-3/4	3.7500	4.7500	2.000	0.100	44200	91000	4540	4375	3.208	IR 506032 IR 526032
HJ 648032	4	4.0000	5.0000	2.000	0.100	46000	98000	4230	4625	3.397	IR 526432 IR 546432 IR 566432
HJ 688432	4-1/4	4.2500	5.2500	2.000	0.100	46500	102000	3970	4875	3.586	IR 566832 IR 606832
HJ 729636 HJ 729640	4-1/2	4.5000 4.5000	6.0000 6.0000	2.250 2.500	0.100 0.100	64400 71700	116000 134000	3850 3850	5438 5438	6.691 7.434	IR 607236 IR 607240



Needle Bearings

HJ/IR



Shaft Dia.	Dimensions				Bearing Designation	Used with Inner Ring Designation	Load Ratings		Limit Speed		Weight lbs
	Fw	D	C/B	rs min			Basic Dynamic	Basic Static	Grease (rpm)	Oil (rpm)	
2	2.0000	2.5625	1.000	0.060	HJ 324116	IR 273216	12100	20900	5600	8600	0.44
	2.0000	2.5625	1.250	0.060	HJ 324120	IR 243220	15000	27500	5600	8600	0.55
						IR 253220					
						IR 263220					
						IR 273220					
2-1/4	2.2500	3.0000	1.500	0.060	HJ 364824	IR 283624	20200	36900	5000	7600	1.01
	2.2500	3.0000	1.750	0.060	HJ 364828	IR 283628	23400	44500	5000	7600	1.17
2-1/2	2.5000	3.2500	1.500	0.080	HJ 405224	IR 314024	21800	42100	4400	6800	1.10
						IR 324024					
	2.5000	3.2500	1.750	0.080	HJ 405228	IR 314028	25200	50800	4400	6800	1.29
						IR 324028					
2-3/4	2.7500	3.5000	1.000	0.080	HJ 445616		15100	27000	4000	6200	0.80
	2.7500	3.5000	1.500	0.080	HJ 445624	IR 364424	22700	45700	4000	6200	1.20
	2.7500	3.5000	1.750	0.080	HJ 445628	IR 354428	26300	55100	4000	6200	1.40
						IR 364428					
3	3.0000	3.7500	1.500	0.080	HJ 486024	IR 404824	24100	50900	3700	5600	1.29
	3.0000	3.7500	1.750	0.080	HJ 486028	IR 384828	43900	86000	3700	5600	1.51
						IR 404828					
3-1/4	3.2500	4.2500	1.750	0.080	HJ 526828	IR 445228	36400	68600	3400	5300	2.24
	3.2500	4.2500	2.000	0.080	HJ 526832	IR 445232	41300	80500	3400	5300	2.56
3-1/2	3.5000	4.5000	2.000	0.080	HJ 567232	IR 475632	42000	84300	3200	4900	2.73
						IR 485632					
3-3/4	3.7500	4.7500	2.000	0.100	HJ 607632	IR 506032	44200	91000	4540	4375	3.38
						IR 526032					
4	4.0000	5.0000	2.000	0.100	HJ 648032	IR 526432	46000	98000	4230	4625	3.56
						IR 546432					
						IR 566432					
4-1/4	4.2500	5.2500	2.000	0.100	HJ 688432	IR 566832	46500	102000	3970	4875	3.74
						IR 606832					
4-1/2	4.5000	6.0000	2.250	0.100	HJ 729636	IR 607236	64400	116000	3850	5438	6.02
	4.5000	6.0000	2.500	0.100	HJ 729640	IR 607240	71700	134000	3850	5438	6.71



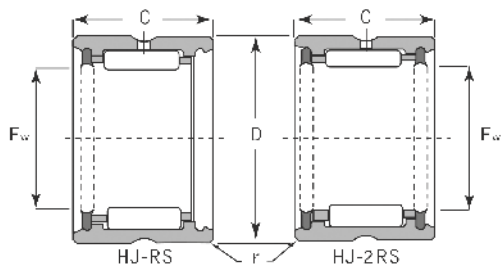
Needle Bearings

HJ-RS / HJ-2RS



Bearing Designation		Dimensions					Load Ratings				Used with Inner Ring No.
One Seal	Two Seals	Shaft Diameter	Fw	D	C/B	rs min	Basic Dynamic C	Basic Static C0	Limiting Speed RPM	Mass Approx. lbs	
							lbf				
HJ 101816 RS	HJ 101816 2RS	5/8	0.625	1.125	1	0.025	4 350	4 650	6 100	0.15	
HJ 122016 RS	HJ 122016 2RS	3/4	0.75	1.25	1	0.04	4 650	5 240	5 100	0.17	IR 081216
HJ 142216 RS	HJ 142216 2RS	7/8	0.875	1.375	1	0.04	5 180	6 270	4 400	0.19	IR 101416
HJ 162416 RS	HJ 162416 2RS	1	1	1.5	1	0.04	5 680	7 300	3 800	0.21	IR 121616 IR 131616
HJ 182620 RS	HJ 182620 2RS	1-1/8	1.125	1.625	1.25	0.04	8 170	12 100	3 400	0.29	IR 141820 IR 151820
HJ 202820 RS	HJ 202820 2RS	1-1/4	1.25	1.75	1.25	0.04	8 410	12 900	3 100	0.32	IR 162020
HJ 223020 RS	HJ 223020 2RS	1-3/8	1.375	1.875	1.25	0.04	8 950	14 400	2 800	0.35	IR 182220
HJ 243320 RS	HJ 243320 2RS	1-1/2	1.5	2.0625	1.25	0.06	10 700	16 300	2 500	0.43	IR 192420 IR 202420
HJ 263520 RS	HJ 263520 2RS	1-5/8	1.625	2.1875	1.25	0.06	10 900	17 200	2 400	0.46	IR 212620
HJ 283720 RS	HJ 283720 2RS	1-3/4	1.75	2.3125	1.25	0.06	11 200	18 200	2 200	0.49	IR 222820 IR 232820 IR 242820
HJ 324120 RS	HJ 324120 2RS	2	2	2.5625	1.25	0.06	12 100	20 900	1 900	0.55	IR 243320 IR 253220 IR 263220 IR 273220
HJ 364828 RS	HJ 364828 2RS	2-1/4	2.25	3	1.75	0.06	20 200	36 900	1 700	1.17	IR 283628
HJ 405228 RS	HJ 405228 2RS	2-1/2	2.5	3.25	1.75	0.08	21 800	42 100	1 500	1.29	IR 222620 IR 314028 IR 324028
HJ 445628 RS	HJ 445628 2RS	2-3/4	2.75	3.5	1.75	0.08	22 700	45 700	1 400	1.4	IR 354428 IR 364428
HJ 486028 RS	HJ 486028 2RS	3	3	3.75	1.75	0.08	24 100	50 900	1 300	1.51	IR 384828 IR 404828

† See pages XXX for inch series inner ring. Inner rings must be ordered separately



Needle Bearings

HJ/IR



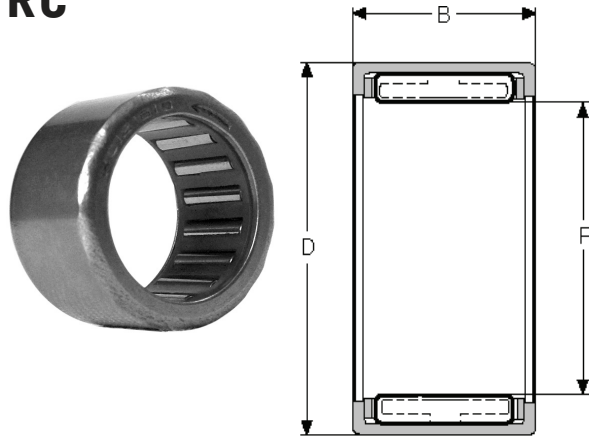
Dimensions					Bearing Designation		Used with Inner Ring No.†	Load Ratings			
Shaft Diameter	Fw (inch)	D	C/B	rs min				Basic Dynamic C	Basic Dynamic C0	Limiting Speed RPM	Mass Approx. lbs
5/8	0.6250	1.1250	1.000	0.025	HJ 101816 RS	HJ 101816 2RS		4 350	4 650	6 100	0.15
3/4	0.7500	1.2500	1.000	0.04	HJ 122016 RS	HJ 122016 2RS	IR 081216	4 650	5 240	5 100	0.17
7/8	0.8750	1.3750	1.000	0.04	HJ 142216 RS	HJ 142216 2RS	IR 101416	5 180	6 270	4 400	0.19
1	1.0000	1.5000	1.000	0.04	HJ 162416 RS	HJ 162416 2RS	IR 121616	5 680	7 300	3 800	0.21
							IR 131616				
1-1/8	1.1250	1.6250	1.250	0.04	HJ 182620 RS	HJ 182620 2RS	IR 141820	8 170	12 100	3 400	0.29
							IR 151820				
1-1/4	1.2500	1.7500	1.250	0.04	HJ 202820 RS	HJ 202820 2RS	IR 162020	8 410	12 900	3 100	0.32
1-3/8	1.3750	1.8750	1.250	0.04	HJ 223020 RS	HJ 223020 2RS	IR 182220	8 950	14 400	2 800	0.35
1-1/2	1.5000	2.0625	1.250	0.06	HJ 243320 RS	HJ 243320 2RS	IR 192420	10 700	16 300	2 500	0.43
							IR 202420				
1-5/8	1.6250	2.1875	1.250	0.06	HJ 263520 RS	HJ 263520 2RS	IR 212620	10 900	17 200	2 400	0.46
1-3/4	1.7500	2.3125	1.250	0.06	HJ 283720 RS	HJ 283720 2RS	IR 222820	11 200	18 200	2 200	0.49
							IR 232820				
							IR 242820				
2	2.0000	2.5625	1.250	0.06	HJ 324120 RS	HJ 324120 2RS	IR 243320	12 100	20 900	1 900	0.55
							IR 253220				
							IR 263220				
							IR 273220				
2-1/4	2.2500	3.0000	1.750	0.06	HJ 364828 RS	HJ 364828 2RS	IR 283628	20 200	36 900	1 700	1.17
2-1/2	2.5000	3.2500	1.750	0.08	HJ 405228 RS	HJ 405228 2RS	IR 222620	21 800	42 100	1 500	1.29
							IR 314028				
							IR 324028				
2-3/4	2.7500	3.5000	1.750	0.08	HJ 445628 RS	HJ 445628 2RS	IR 354428	22 700	45 700	1 400	1.40
							IR 364428				
3	3.0000	3.7500	1.750	0.08	HJ 486028 RS	HJ 486028 2RS	IR 384828	24 100	50 900	1 300	1.51
							IR 404828				

† See pages XXX for inch series inner ring. Inner rings must be ordered separately

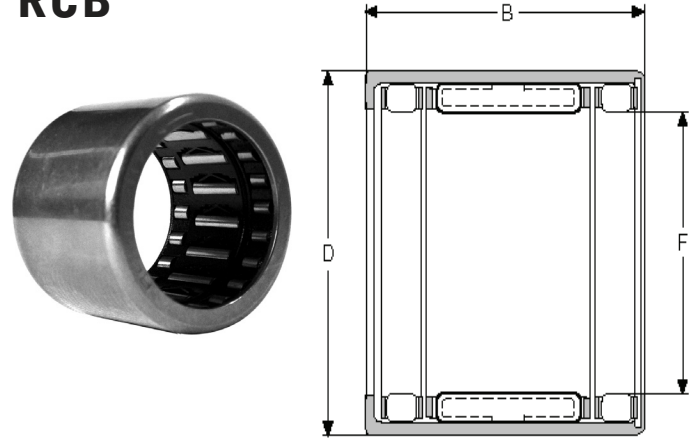


Drawn Cup Clutch Bearings

RC



RCB



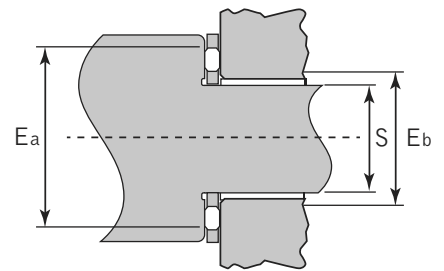
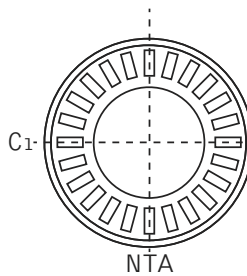
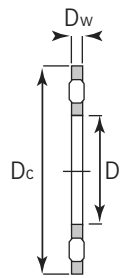
RC

Unit No.		Shaft Diameter	Bore (inch)	Outer Diameter (inch)	Width (inch)	Torque Rating (in-lbf)	Minimum O.D. of Steel Housing for rated torque	Overrun Limiting Speed for Rotating Shaft	Suitable Drawn Cup Bearing	Weight
Stainless Spring	Integral Spring		F	D	B					
-	RC 02	1/8	0.125	0.281	0.250	2.86	0.44	34,000	-	0.002
-	RC 040708	1/4	0.250	0.438	0.500	17.9	0.62	20,000	J 45	0.008
RC 061008 FS	RC 061008	3/8	0.375	0.625	0.500	48	0.88	18,000	JH 68	0.017
RC 081208 FS	RC 081208	1/2	0.500	0.750	0.500	78	1.10	17,000	JH 87	0.020
RC 101410 FS	RC 101410	5/8	0.625	0.875	0.625	149	1.20	14,000	JH 1010	0.030
RC 121610 FS	RC 121610	3/4	0.750	1.000	0.625	206	1.40	12,000	J 126	0.034
RC 162110 FS	RC 162110	1	1.000	1.313	0.625	439	1.90	8,700	JH 1612	0.058

RCB

Unit No.		Shaft Diameter	Bore (inch)	Outer Diameter (inch)	Width (inch)	Torque Rating (in-lbf)	Static Load Rating	Dynamic Load Rating	Overrun Limiting Speed for Rotating Shaft	Weight
Stainless Spring	Integral Spring		F	D	B					
RCB 061014 FS	RCB 061014	3/8	0.375	0.625	0.875	48.2	1,100	1,350	18,000	0.030
RCB 081214 FS	RCB 081214	1/2	0.500	0.750	0.875	78.3	1,460	1,600	17,000	0.036
RCB 101416 FS	RCB 101416	5/8	0.625	0.875	1.000	149.0	1,830	1,810	14,000	0.050
RCB 121616 FS	RCB 121616	3/4	0.750	1.000	1.000	206.0	2,200	2,000	12,000	0.057
RCB 162117 FS	RCB 162117	1	1.000	1.313	1.063	439.0	3,960	3,460	8,700	0.100

Thrust Needle Bearing



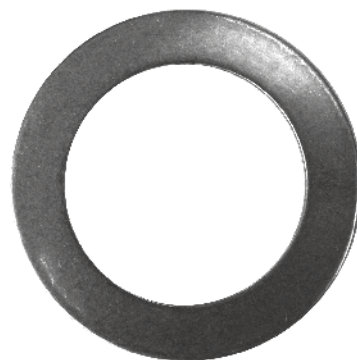
Minimum hardness of raceway must be 58 HRC

NTA

Bearing Designation	Shaft Diameter	Dimensions Dc1 (inch)	Dc	Dw	Eb	Ea	Load Ratings Basic lbf		Limiting Speed Oil	Mass Approx. lbs
							Dynamic C	Static C0		
NTA 411	1/4	0.25	0.687	0.0781	0.34	0.58	1 150	2 420	26 000	0.003
NTA 512	5/16	0.312	0.75	0.0781	0.4	0.64	1 310	2 960	24 000	0.004
NTA 613	3/8	0.375	0.812	0.0781	0.46	0.71	1 360	3 220	22 000	0.004
NTA 815	1/2	0.5	0.937	0.0781	0.59	0.83	1 610	4 300	19 000	0.005
NTA 916	9/16	0.562	1	0.0781	0.65	0.89	1 730	4 840	18 000	0.006
NTA 1018	5/8	0.625	1.125	0.0781	0.71	1.02	2 200	6 830	15 000	0.007
NTA 1220	3/4	0.75	1.25	0.0781	0.84	1.14	2 450	8 200	14 000	0.009
NTA 1423	7/8	0.875	1.437	0.0781	0.96	1.33	3 020	11 200	12 000	0.011
NTA 1427	7/8	0.875	1.687	0.0781	1.02	1.57	4 150	17 600	9 800	0.017
NTA 1625	1	1	1.562	0.0781	1.09	1.45	3 110	12 100	11 000	0.013
NTA 1828	1-1/8	1.125	1.75	0.0781	1.21	1.64	3 750	16 000	6 900	0.019
NTA 2031	1-1/4	1.25	1.937	0.0781	1.34	1.82	4 530	21 000	8 600	0.021
NTA 2233	1-3/8	1.375	2.062	0.0781	1.46	1.95	4 800	23 200	8 000	0.023
NTA 2435	1-1/2	1.5	2.187	0.0781	1.59	2.07	5 220	26 500	7 600	0.025
NTA 2840	1-3/4	1.75	2.5	0.0781	1.84	2.32	5 690	30 900	6 800	0.031
NTA 3244	2	2	2.75	0.0781	2.09	2.57	5 400	29 800	6 100	0.033
NTA 3446	2-1/8	2.125	2.875	0.0781	2.22	2.7	5 490	30 900	5 800	0.036
NTA 3648	2-1/4	2.25	3	0.0781	2.34	2.82	5 570	32 000	5 600	0.038
NTA 3650	2-1/4	2.25	3.125	0.125	2.36	2.96	8 470	39 800	5 300	0.064
NTA 4052	2-1/2	2.5	3.25	0.0781	2.59	3.07	5 740	34 200	5 100	0.041
NTA 4458	2-3/4	2.75	3.625	0.125	2.86	3.46	10 700	57 500	4 600	0.082
NTA 4860	3	3	3.75	0.0781	3.09	3.57	6 060	38 700	4 400	0.048
NTA 5266	3-1/4	3.25	4.125	0.125	3.36	3.96	11 600	66 300	4 000	0.092
NTA 6074	3-3/4	3.75	4.625	0.125	3.86	4.46	12 600	77 400	3 500	0.11
NTA 6681	4-1/8	4.125	5.062	0.125	4.23	4.9	14 300	93 200	3 200	0.136

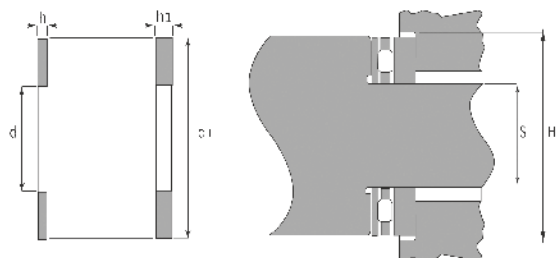


Thrust Needle Bearing



Thrust Washers

Washer Designation	Matching Bearing	Shaft Diameter	Thrust Washer Dimensions				Piloting Dimensions Shaft Pilot Diameter		Diameter to Clear Washer O.D. min.	Mass Approx. (lbs)
			(inch) d	(inch) d1	min.	max.	min. inch	max. inch		
					h		S		H	
TRA 411	NTA 411	1/4	0.25	0.687	0.03	0.032	0.247	0.25	0.719	0.003
TRB 411	NTA 411		0.25	0.687	0.06	0.063	0.247	0.25	0.719	0.005
TRC 411	NTA 411		0.25	0.687	0.092	0.095	0.247	0.25	0.719	0.008
TRA 512	NTA 512	5/16	0.312	0.75	0.03	0.032	0.309	0.312	0.781	0.003
TRB 512	NTA 512		0.312	0.75	0.06	0.063	0.309	0.312	0.781	0.006
TRA 613	NTA 613	3/8	0.375	0.812	0.03	0.032	0.372	0.375	0.844	0.003
TRB 613	NTA 613		0.375	0.812	0.06	0.063	0.372	0.375	0.844	0.006
TRC 613	NTA 613		0.375	0.812	0.092	0.095	0.372	0.375	0.844	0.009
TRA 815	NTA 815	1/2	0.5	0.937	0.03	0.032	0.497	0.5	0.969	0.004
TRB 815	NTA 815		0.5	0.937	0.06	0.063	0.497	0.5	0.969	0.008
TRC 815	NTA 815		0.5	0.937	0.092	0.095	0.497	0.5	0.969	0.012
TRA 916	NTA 916	9/16	0.562	1	0.03	0.032	0.559	0.562	1.031	0.005
TRB 916	NTA 916		0.562	1	0.06	0.063	0.559	0.562	1.031	0.008
TRC 916	NTA 916		0.562	1	0.092	0.095	0.559	0.562	1.031	0.013
TRA 1018	NTA 1018	5/8	0.625	1.125	0.03	0.032	0.622	0.625	1.156	0.006
TRB 1018	NTA 1018		0.625	1.125	0.06	0.063	0.622	0.625	1.156	0.012
TRC 1018	NTA 1018		0.625	1.125	0.092	0.095	0.622	0.625	1.156	0.018
TRD 1018	NTA 1018		0.625	1.125	0.123	0.126	0.622	0.625	1.156	0.024
TRA 1220	NTA 1220	3/4	0.75	1.25	0.03	0.032	0.747	0.75	1.281	0.007
TRB 1220	NTA 1220		0.75	1.25	0.06	0.063	0.747	0.75	1.281	0.013
TRC 1220	NTA 1220		0.75	1.25	0.092	0.095	0.747	0.75	1.281	0.021
TRD 1220	NTA 1220		0.75	1.25	0.123	0.126	0.747	0.75	1.281	0.026
TRA 1423	NTA 1423	7/8	0.875	1.437	0.03	0.032	0.872	0.875	1.469	0.009
TRB 1423	NTA 1423		0.875	1.437	0.06	0.063	0.872	0.875	1.469	0.017
TRC 1423	NTA 1423		0.875	1.437	0.092	0.095	0.872	0.875	1.469	0.026
TRD 1423	NTA 1423		0.875	1.437	0.123	0.126	0.872	0.875	1.469	0.034
TRB 1427	NTC 1427		0.875	1.687	0.06	0.063	0.872	0.875	1.719	0.029
TRC 1427	NTC 1427		0.875	1.687	0.092	0.095	0.872	0.875	1.719	0.044
TRD 1427	NTC 1427		0.875	1.687	0.123	0.126	0.872	0.875	1.719	0.057
TRA 1625	NTA 1625	1	1	1.562	0.03	0.032	0.997	1	1.594	0.01
TRB 1625	NTA 1625		1	1.562	0.06	0.063	0.997	1	1.594	0.019
TRD 1625	NTA 1625		1	1.562	0.123	0.126	0.997	1	1.594	0.038
TRA 1828	NTA 1828	1-1/8	1.125	1.75	0.03	0.032	1.122	1.125	1.781	0.013
TRB 1828	NTA 1828		1.125	1.75	0.06	0.063	1.122	1.125	1.781	0.024
TRC 1828	NTA 1828		1.125	1.75	0.092	0.095	1.122	1.125	1.781	0.037
TRD 1828	NTA 1828		1.125	1.75	0.123	0.126	1.122	1.125	1.781	0.048
TRA 2031	NTA 2031	1-1/4	1.25	1.937	0.03	0.032	1.247	1.25	1.781	0.015
TRB 2031	NTA 2031		1.25	1.937	0.06	0.063	1.247	1.25	1.781	0.03
TRC 2031	NTA 2031		1.25	1.937	0.092	0.095	1.247	1.25	1.781	0.044
TRD 2031	NTA 2031		1.25	1.937	0.123	0.126	1.247	1.25	1.781	0.058



Thrust Needle Bearing



Thrust Washers

Washer Designation	Matching Bearing	Shaft Diameter	Thrust Washer Dimensions				Piloting Dimensions Shaft Pilot Diameter		Diameter to Clear Washer O.D. min.	Mass Approx. (lbs)
			(inch) d	(inch) d1	min.	max.	min. inch	max. inch		
					h		S		H	
TRA 2233	NTA 2233	1-3/8	1.375	2.062	0.03	0.032	1.372	1.375	2.094	0.016
TRB 2233	NTA 2233		1.25	2.062	0.06	0.063	1.372	1.375	2.094	0.033
TRC 2233	NTA 2233		1.25	2.062	0.092	0.095	1.372	1.375	2.094	0.040
TRD 2233	NTA 2233		1.25	2.062	0.123	0.126	1.372	1.375	2.094	0.065
TRA 2435	NTA 2435	1-1/2	1.5	2.187	0.03	0.032	1.497	1.5	2.219	0.017
TRB 2435	NTA 2435		1.5	2.187	0.06	0.063	1.497	1.5	2.219	0.034
TRC 2435	NTA 2435		1.5	2.187	0.092	0.095	1.497	1.5	2.219	0.050
TRD 2435	NTA 2435		1.5	2.187	0.123	0.126	1.497	1.5	2.219	0.067
TRA 2840	NTA 2840	1-3/4	1.75	2.5	0.03	0.032	1.747	1.75	2.531	0.021
TRB 2840	NTA 2840		1.75	2.5	0.06	0.063	1.747	1.75	2.531	0.044
TRC 2840	NTA 2840		1.75	2.5	0.092	0.095	1.747	1.75	2.531	0.063
TRD 2840	NTA 2840		1.75	2.5	0.123	0.126	1.747	1.75	2.531	0.084
TRA 3244	NTA 3244	2	2	2.75	0.03	0.032	1.997	2	2.781	0.024
TRB 3244	NTA 3244		2	2.75	0.06	0.063	1.997	2	2.781	0.048
TRC 3244	NTA 3244		2	2.75	0.092	0.095	1.997	2	2.781	0.072
TRD 3244	NTA 3244		2	2.75	0.123	0.126	1.997	2	2.781	0.096
TRA 3446	NTA 3446	2-1/8	2.125	2.875	0.06	0.063	2.122	2.125	2.906	0.052
TRB 3446	NTA 3446		2.125	2.875	0.092	0.095	2.122	2.125	2.906	0.078
TRC 3446	NTA 3446		2.125	2.875	0.123	0.126	2.122	2.125	2.906	0.103
TRA 3648	NTA 3648	2-1/4	2.25	3	0.03	0.032	2.247	2.25	3.031	0.026
TRB 3648	NTA 3648		2.25	3	0.06	0.063	2.247	2.25	3.031	0.048
TRC 3648	NTA 3648		2.25	3	0.092	0.095	2.247	2.25	3.031	0.081
TRD 3648	NTA 3648		2.25	3	0.123	0.126	2.247	2.25	3.031	0.105
TRA 4052	NTA 4052	2-1/2	2.5	3.25	0.03	0.032	2.497	2.5	3.281	0.029
TRB 4052	NTA 4052		2.5	3.25	0.06	0.063	2.497	2.5	3.281	0.059
TRC 4052	NTA 4052		2.5	3.25	0.092	0.095	2.497	2.5	3.281	0.09
TRD 4052	NTA 4052		2.5	3.25	0.123	0.126	2.497	2.5	3.281	0.119
TRA 4458	NTA 4458	3-3/4	2.75	3.625	0.03	0.032	2.747	2.75	3.656	0.039
TRB 4458	NTA 4458		2.75	3.625	0.06	0.063	2.747	2.75	3.656	0.077
TRC 4458	NTA 4458		2.75	3.625	0.092	0.095	2.747	2.75	3.656	0.113
TRD 5548	NTA 4458		2.75	3.625	0.123	0.126	2.747	2.75	3.656	0.152
TRA 4860	NTA 4860	3	3	3.75	0.03	0.032	2.997	3	3.781	0.034
TRB 4860	NTA 4860		3	3.75	0.06	0.063	2.997	3	3.781	0.07
TRC 4860	NTA 4860		3	3.75	0.123	0.126	2.997	3	3.781	0.135
TRA 5266	NTA 5266	3-1/4	3.25	4.125	0.03	0.032	3.247	3.25	4.156	0.044
TRB 5266	NTA 5266		3.25	4.125	0.123	0.126	3.247	3.25	4.156	0.176
TRA 6074	NTA 6074	3-3/4	3.75	4.625	0.03	0.032	3.747	3.75	4.656	0.05
TRB 6074	NTA 6074		3.75	4.625	0.06	0.063	3.747	3.75	4.656	0.101
TRC 6074	NTA 6074		3.75	4.625	0.092	0.095	3.747	3.75	4.656	0.152
TRD 6074	NTA 6074		3.75	4.625	0.123	0.126	3.747	3.75	4.656	0.202
TRA 6681	NTA 6681	4-1/8	4.125	5.062	0.03	0.032	4.122	4.125	5.094	0.059
TRB 6681	NTA 6681		4.125	5.062	0.092	0.095	4.122	4.125	5.094	0.178
TRC 6681	NTA 6681		4.125	5.062	0.123	0.126	4.122	4.125	5.094	0.24
TRD 6681	NTA 6681		4.125	5.062	0.123	0.126	4.122	4.125	5.094	0.24