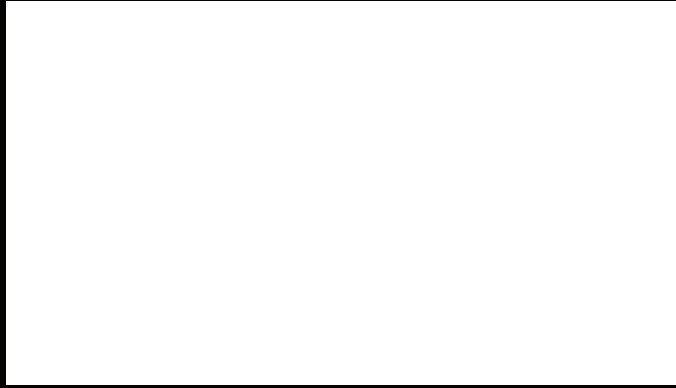


Distributed by:



# Radial Ball Bearings



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PEER Bearing Company Radial Ball Bearings Catalog 630

## Radial Ball Bearings

PEER Bearing Company Radial Ball Bearings Catalog 630





## Our Commitment

**Our commitment to the future of PEER is built on fulfilling your needs. Your satisfaction as a customer is the foundation of PEER and is supported by...**

- First class customer service
- On-time scheduled delivery
- Continuous product innovation
- Production to customized specifications
- In-depth inventory
- Technical and engineering support
- In-house and independent test facilities
- Strong complimentary bearing & chain products
- QS9000 / ISO/TS 16949 : 2002 certified manufacturing plants
- Superior quality in features and appearance



## PEER's World-Wide Manufacturing Facilities



PEER Ball Bearing Factory, Xinchang, Zhejiang, China



PEER Tapered Bearing Factory, Changshan, Zhejiang, China



PEER Small Bore Bearing Factory, Cixi, Zhejiang, China



PEER Bearing S.A. Cordoba, Argentina

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## Mission Statement

In order to be the most reliable supplier to our customers, PEER intends to meet all of their quality and delivery requirements. We realize that a quality product provides the critical foundation for our relationship with our valued customers. PEER will expect the same level of cooperation from our suppliers.

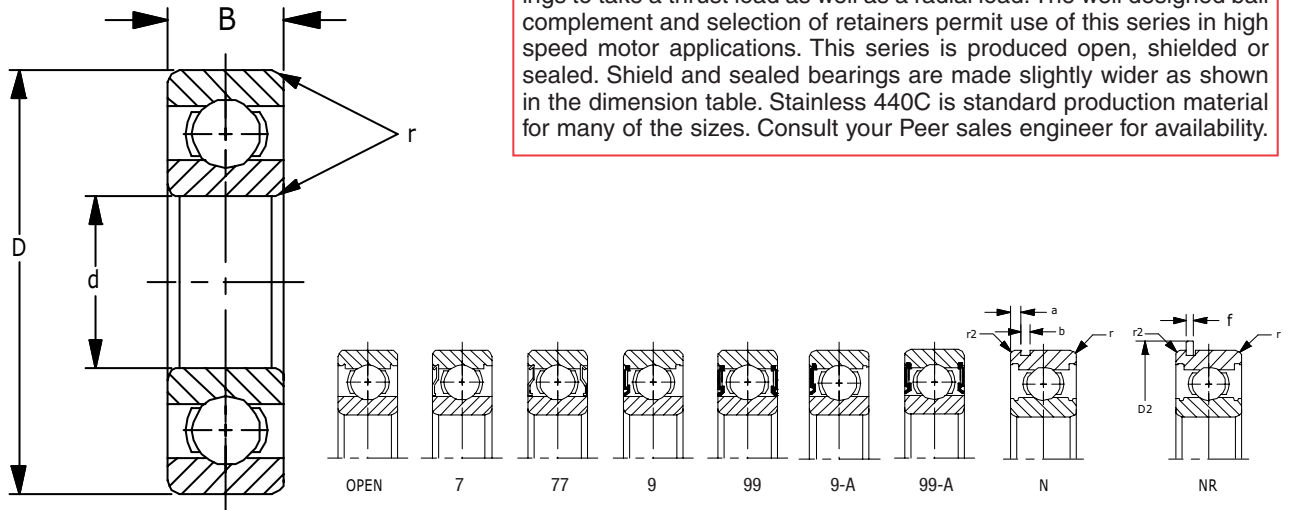


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The Peer R series, starting with the 1/4 inch bore, is available up to 1 1/2 inches. The Conrad construction of the R series enables these bearings to take a thrust load as well as a radial load. The well designed ball complement and selection of retainers permit use of this series in high speed motor applications. This series is produced open, shielded or sealed. Shield and sealed bearings are made slightly wider as shown in the dimension table. Stainless 440C is standard production material for many of the sizes. Consult your Peer sales engineer for availability.



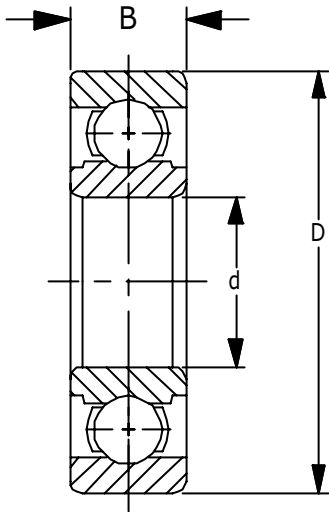
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width - B			* fillet radius r	Basic Load Ratings lbf N		Weight lb Kg	Limiting speed (rpm)	
					Open inch	Sealed/ Shielded inch	Tolerance +.0000 to minus		Dynamic Cr	Static Cor		oil	grease
R2	1/8	.0003	3/8	.00030	.1562	.1562	.0050	.005	144	50	0.003	58,000	49,000
	.1250		.3750					.12	641	222	0.001		
R2A	1/8	.0003	1/2	.00030	.1719	.1719	.0050	.005	258	89	0.001	51,000	42,000
	.1250		.5000					.12	1,148	396	0.003		
R3	3/16	.0003	1/2	.00030	.1562	.1960	.0050	.005	295	110	0.006	48,000	41,000
	.1875		.5000					.12	1,312	492	0.003		
R3A	3/16	.0003	1/2	.00030	.1960	.1960	.0050	.005	295	110	0.005	48,000	41,000
	.1875		.5000					.12	1,312	489	0.002		
R4	1/4	.0003	5/8	.00030	.1960	.1960	.0050	.005	362	150	0.010	43,000	36,000
	.2500		.6250					.12	1,601	667	0.002		
R4A	1/4	.0003	3/4	.00035	.2188	.2812	.0050	.006	527	199	0.020	40,000	34,000
	.2500		.7500					.16	2,340	885	0.009		
R6	3/8	.0003	7/8	.00035	.2188	.2812	.0050	.006	754	317	0.024	37,000	31,000
	.3750		.8750					.16	3,350	1,410	0.011		
R8	1/2	.0003	1 1/8	.00035	.2500	.3125	.0050	.006	1150	540	0.039	30,000	26,000
	.5000		1.1250					.16	5,116	2,402	0.018		
R10	5/8	.0003	1 3/8	.00045	.2812	.3438	.0050	.012	1340	728	0.081	24,000	20,000
	.6250		1.3750					.31	5,961	3,238	0.037		
R12	3/4	.0004	1 5/8	.00045	.3125	.4375	.0050	.012	2110	1120	0.104	21,000	18,000
	.7500		1.6250					.31	9,386	4,982	0.047		
R14	7/8	.0004	1 7/8	.00045	.3750	.5000	.0050	.012	2270	1310	0.157	18,000	15,000
	.8750		1.8750					.31	10,098	5,827	0.071		
R16	1	.0004	2	.00050	.3750	.5000	.0050	.012	2270	1310	0.187	16,000	14,000
	1.0000		2.0000					.31	10,098	5,827	0.085		
R18	1 1/8	.0004	2 1/8	.00050	.3750	.5000	.0050	.012	2980	1860	0.198	15,000	13,000
	1.1250		2.1250					.31	13,256	8,274	0.090		
R20	1 1/4	.0005	2 1/4	.00050	.3750	.5000	.0050	.012	2980	1860	0.209	14,000	12,000
	1.2500		2.2500					.31	13,256	8,274	0.095		
R22	1 3/8	.0005	2 1/2	.00050	.4375	.5625	.0050	.012	3590	2320	0.232	12,500	11,000
	1.3750		2.5000					.31	15,970	10,320	0.105		
R24	1 1/2	.0005	2 5/8	.00050	.4375	.5625	.0050	.012	3770	2590	0.309	11,500	10,000
	1.5000		2.6250					.31	16,770	11,521	0.140		

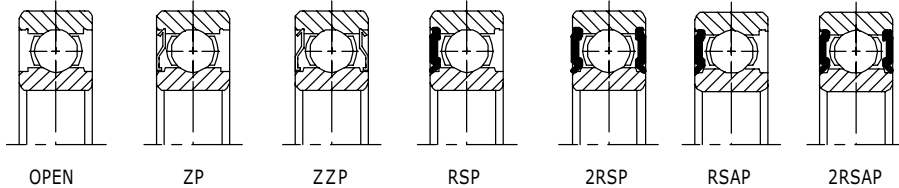
\*Maximum fillet which corner radius of bearing will clear.



# 600 SERIES



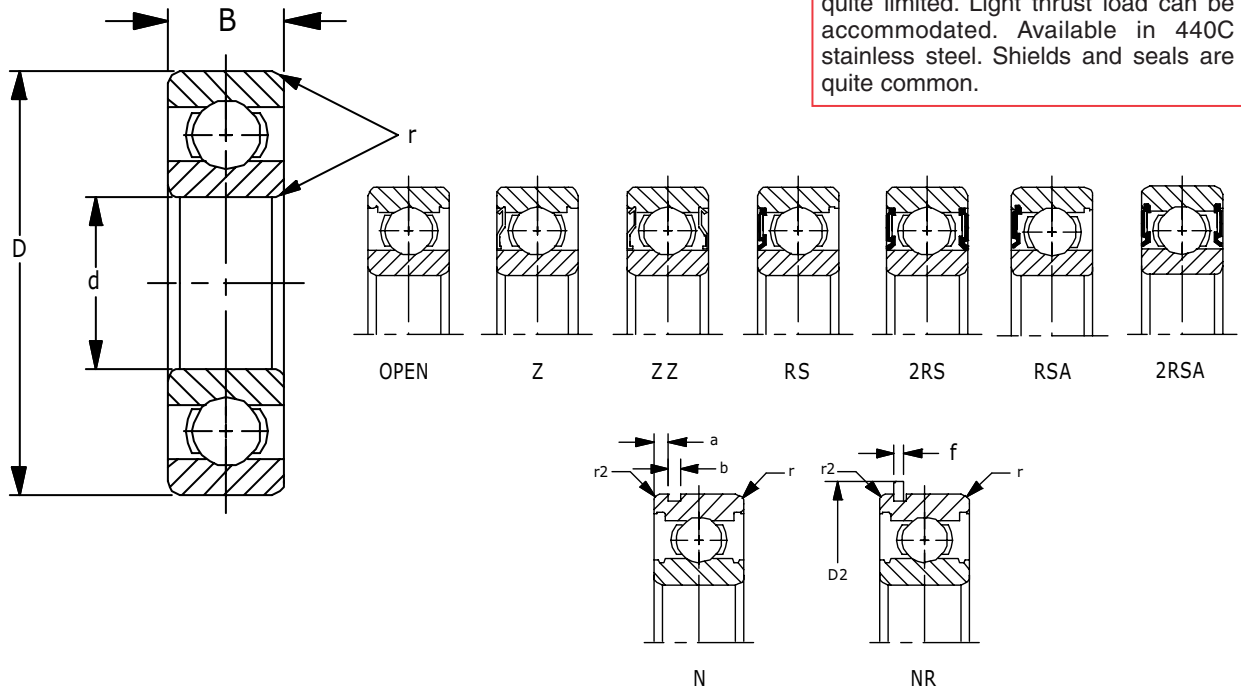
The 600 extra small metric series is produced in bore sizes ranging from 4mm to 9mm. These bearings are designed to take adequate radial and thrust loads in proportion to small shaft sizes. This series may be ordered open, shielded, with contact seals, or non-contact seals. Stainless steel 440C, 600 Series bearings are available upon request.



Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii r	Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
								Dynamic Cr	Static Cor		oil	grease
624	.1575	.0003	.5118	.0003	.1969	.0047	.012	295	110	.007	49,000	42,000
	4	.008	13	.008	5	.120	.3	1,312	489	.003		
634	.1575	.0003	.6299	.0003	.1969	.0047	.012	395	153	.011	44,000	37,000
	4	.008	16	.008	5	.120	.3	1,757	681	.005		
625	.1969	.0003	.6299	.0003	.1969	.0047	.012	395	153	.010	44,000	37,000
	5	.008	16	.008	5	.120	.3	1,757	681	.005		
635	.1969	.0003	.7480	.0003	.2362	.0047	.012	527	199	.018	40,000	34,000
	5	.008	19	.009	6	.120	.3	2,390	885	.008		
606	.2362	.0003	.6693	.0003	.2362	.0047	.012	509	195	.013	42,000	35,000
	6	.008	17	.009	6	.120	.3	2,260	867	.006		
626	.2362	.0003	.7480	.0003	.2362	.0047	.012	527	200	.018	40,000	34,000
	6	.008	19	.009	6	.120	.3	2,310	890	.008		
626-4	.2500	.0003	.7480	.0003	.2362	.0047	.012	525	200	.022	40,000	34,000
	6.35	.008	19	.009	6	.120	.3	2,335	890	.010		
607	.2756	.0003	.7480	.0003	.2362	.0047	.012	505	205	.018	40,000	34,000
	7	.008	19	.009	6	.120	.3	2,246	912	.008		
627	.2756	.0003	.8661	.0003	.2756	.0047	.012	750	315	.029	37,000	32,000
	7	.008	22	.009	7	.120	.3	3,336	1,401	.013		
627-4	.2500	.0003	.8661	.0003	.2756	.0047	.012	750	315	.031	36,000	30,000
	6.35	.008	22	.009	7	.120	.3	3,336	1,401	.014		
608	.3150	.0003	.8661	.0003	.2756	.0047	.012	750	315	.026	40,000	34,000
	8	.008	22	.009	7	.120	.3	3,336	1,401	.012		
608-3123	.3123	.0003	.8661	.0003	.2756	.0047	.012	750	315	.031	40,000	34,000
	7.932	.008	22	.009	7	.120	.3	3,336	1,401	.014		
608-3125	.3125	.0003	.8661	.0003	.2756	.0047	.012	750	315	.031	40,000	34,000
	7.9375	.008	22	.009	7	.120	.3	3,336	1,401	.014		
608-3126	.3126	.0003	.8661	.0003	.2756	.0047	.012	750	315	.031	40,000	34,000
	7.940	.008	22	.009	7	.120	.3	3,336	1,401	.014		
609	.3543	.0003	.9449	.0003	.2756	.0047	.012	765	325	.033	36,000	31,000
	9	.008	24	.009	7	.120	.3	3,402	1,445	.015		
629	.3543	.0003	1.0236	.0003	.3150	.0047	.012	1,030	440	.044	35,000	30,000
	9	.008	26	.009	8	.120	.3	4,582	1,970	.020		

The 6800 series is made with very thin cross sections. Where space limitations are severe this series is very useful. Due to the thin races, loads are quite limited. Light thrust load can be accommodated. Available in 440C stainless steel. Shields and seals are quite common.



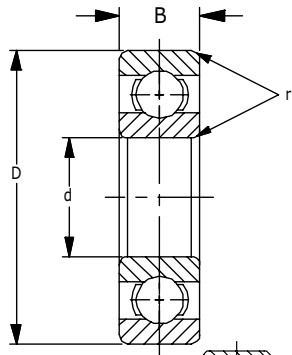
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6800	.3937	.0003	.7480	.0004	.1969	.0047	.012						410	208	.011	38,000	32,000
	10	.008	19	.009	5	.120	.3						1,830	925	.005		
6801	.4724	.0003	.8268	.0004	.1969	.0047	.012						432	233	.011	35,000	29,000
	12	.008	21	.009	5	.120	.3						1,920	1,040	.005		
6802	.5906	.0003	.9449	.0004	.1969	.0047	.012						466	282	.020	31,000	26,000
	15	.008	24	.009	5	.120	.3						2,080	1,254	.009		
6803	.6693	.0003	1.0236	.0004	.1969	.0047	.012						591	353	.020	28,000	24,000
	17	.008	26	.009	5	.120	.3						2,630	1,570	.009		
6804	.7874	.0004	1.2598	.0005	.2756	.0047	.012	.012	1.370	.033	.051	.037	900	554	.040	25,000	21,000
	20	.010	32	.011	7	.120	.3	.3	34.8	.85	1.3	.95	4,000	2,464	.018		
6805	.9843	.0004	1.4567	.0005	.2756	.0047	.012	.012	1.567	.033	.051	.037	1012	708	.051	21,000	18,000
	25	.010	37	.011	7	.120	.3	.3	39.8	.85	1.3	.95	4,500	3,150	.023		
6806	1.1811	.0004	1.6535	.0005	.2756	.0047	.012	.012	1.764	.033	.051	.037	1,060	821	.051	18,000	15,000
	30	.010	42	.011	7	.120	.3	.3	44.8	.85	1.3	.95	4,700	3,650	.023		
6807	1.3780	.0005	1.8504	.0005	.2756	.0047	.012	.012	1.961	.033	.051	.037	1,100	922	.060	16,000	13,000
	35	.012	47	.011	7	.120	.3	.3	49.8	.85	1.3	.95	4,900	4,100	.027		
6808	1.5748	.0005	2.0472	.0005	.2756	.0047	.012	.012	2.157	.033	.051	.037	1,140	990	.071	14,000	12,000
	40	.012	52	.013	7	.120	.3	.3	54.8	.85	1.3	.95	5,100	4,400	.032		
6809	1.7717	.0005	2.2835	.0005	.2756	.0047	.012	.012	2.394	.033	.051	.037	1,203	1,181	.079	12,000	11,000
	45	.012	58	.013	7	.120	.3	.3	60.8	.85	1.3	.95	5,400	5,300	.036		
6810	1.9685	.0005	2.5591	.0005	.2756	.0047	.012	.012	2.669	.033	.051	.037	1,480	1,400	.110	11,000	9,600
	50	.012	65	.013	7	.120	.3	.3	67.8	.85	1.3	.95	6,600	6,200	.050		

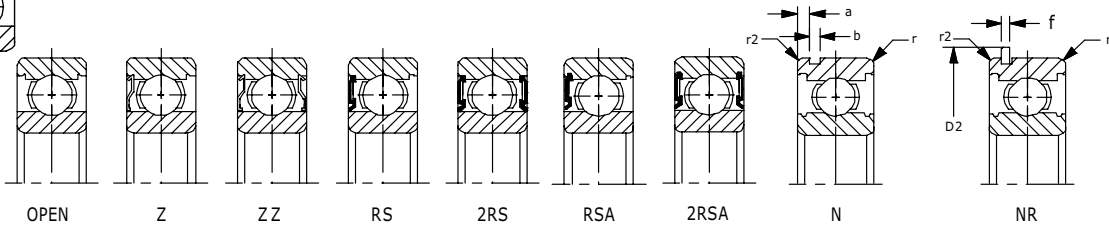
\*Maximum fillet which corner radius of bearing will clear.



# 6800 SERIES (continued)



The 6800 series is made with very thin cross sections. Where space limitations are severe this series is very useful. Due to the thin races, loads are quite limited. Light thrust load can be accommodated. Available in 440C stainless steel. Shields and seals are quite common.

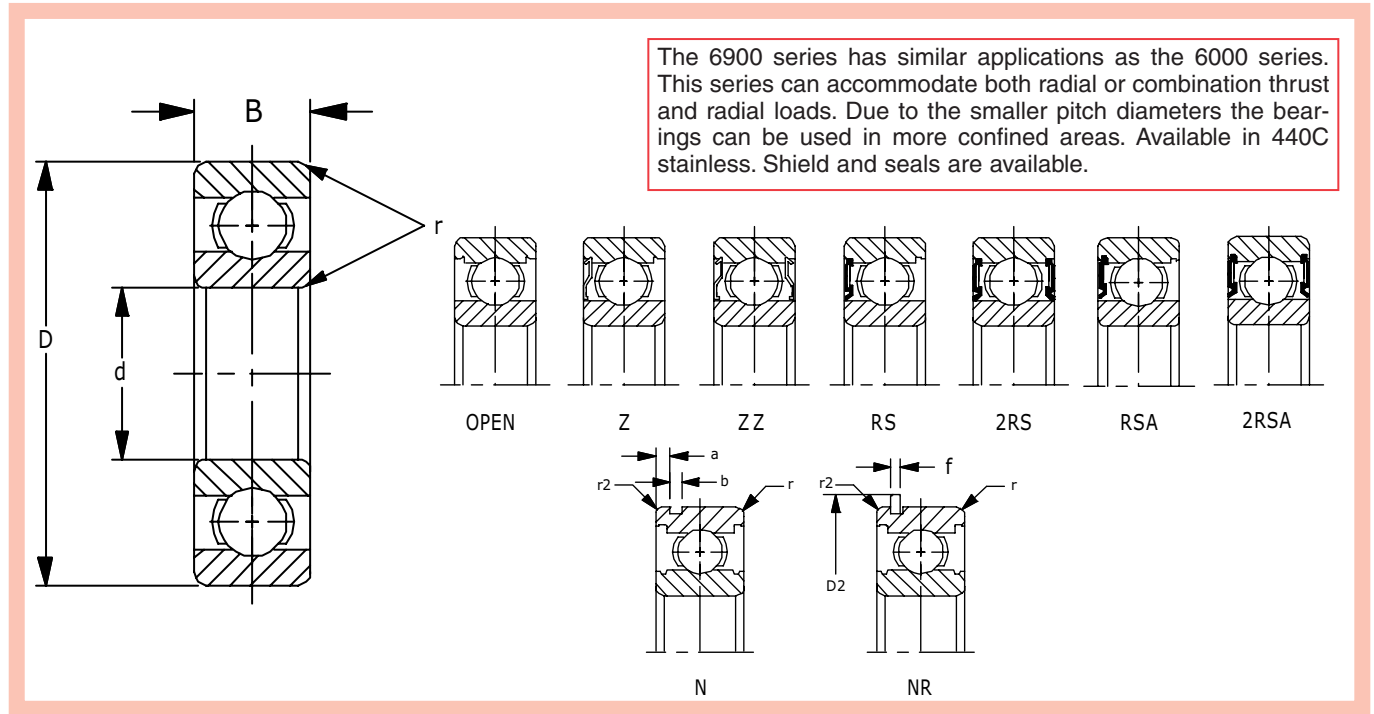


Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings		Weight lb	Limiting speed of Open Bearing (rpm)	
							r	r <sub>2</sub>	D <sub>2</sub> Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6811	2.1654	.0006	2.8346	.0005	.3543	.0059	.012	.012	2.945	.033	.067	.037	1,980	1,902	.181	10,000	8,700
	.55	.015	.72	.013	.9	.150	.3	.3	74.8	.85	1.7	.95	8,800	8,500	.082		
6812	2.3622	.0006	3.0709	.0005	.3937	.0059	.012	.012	3.256	.044	.067	.051	2,587	2,460	.220	9,400	8,000
	.60	.015	.78	.013	1.0	.150	.3	.3	82.7	1.12	1.7	1.3	11,500	10,900	.100		
6813	2.5591	.0006	3.3465	.0006	.3937	.0059	.024	.020	3.520	.044	.067	.051	2,680	2,722	.280	8,700	7,400
	.65	.015	.85	.015	1.0	.150	.6	.5	89.4	1.12	1.7	1.3	12,000	12,100	.127		
6814	2.7559	.0006	3.5433	.0006	.3937	.0059	.024	.020	3.717	.044	.067	.051	2,710	2,860	.291	8,100	6,900
	.70	.015	.90	.015	1.0	.150	.6	.5	94.4	1.12	1.7	1.3	12,100	12,700	.132		
6815	2.9528	.0006	3.7402	.0006	.3937	.0059	.024	.020	3.913	.044	.067	.051	2,820	3,127	.320	7,600	6,400
	.75	.015	.95	.015	1.0	.150	.6	.5	99.4	1.12	1.7	1.3	12,500	13,900	.145		
6816	3.1496	.0006	3.9370	.0006	.3937	.0059	.024	.020	4.110	.044	.067	.051	2,857	3,262	.340	7,100	6,000
	.80	.015	1.00	.015	1.0	.150	.6	.5	104.4	1.12	1.7	1.3	12,700	14,500	.154		
6817	3.3465	.0008	4.3307	.0006	.5118	.0079	.039	.020	4.555	.044	.083	.051	4,200	4,500	.560	6,700	5,700
	.85	.020	1.10	.015	1.3	.200	1.0	.5	115.7	1.12	2.1	1.3	18,700	20,000	.254		
6818	3.5433	.0008	4.5276	.0006	.5118	.0079	.039	.020	4.752	.044	.083	.051	4,270	4,725	.591	6,300	5,400
	.90	.020	1.15	.015	1.3	.200	1.0	.5	120.7	1.12	2.1	1.3	19,000	21,000	.268		
6819	3.7402	.0008	4.7244	.0006	.5118	.0079	.039	.020	4.949	.044	.083	.051	4,330	4,950	.631	5,900	5,000
	.95	.020	1.20	.015	1.3	.200	1.0	.5	125.7	1.12	2.1	1.3	19,200	22,000	.286		
6820	3.9370	.0008	4.9213	.0007	.5118	.0079	.039	.020	5.146	.044	.083	.051	4,400	5,175	.659	5,600	4,800
	1.00	.020	1.25	.018	1.3	.200	1.0	.5	130.7	1.12	2.1	1.3	19,500	23,000	.299		
6822	4.3307	.0008	5.5118	.0007	.6299	.0079	.039	.020	5.736	.067	.098	.075	6,322	7,312	1.096	5,100	4,300
	1.10	.020	1.40	.018	1.6	.200	1.0	.5	145.7	1.7	2.5	1.9	28,100	32,500	.497		
6824	4.7244	.0008	5.9055	.0007	.6299	.0079	.039	.020	6.130	.067	.098	.075	6,502	7,987	1.184	4,700	4,000
	1.20	.020	1.50	.018	1.6	.200	1.0	.5	155.7	1.7	2.5	1.9	28,900	35,500	.537		
6826	5.1181	.0010	6.4961	.0010	.7087	.0098	.043	.020	6.752	.067	.130	.075	8,325	9,900	1.671	4,300	3,700
	1.30	.025	1.65	.025	1.8	.250	1.1	.5	171.5	1.7	3.3	1.9	37,000	44,000	.758		
6828	5.5118	.0010	6.8898	.0010	.7087	.0098	.043	.020	7.146	.067	.130	.075	8,662	10,800	1.834	4,000	3,400
	1.40	.025	1.75	.025	1.8	.250	1.1	.5	181.5	1.7	3.3	1.9	38,500	48,000	.832		
6830	5.9055	.0010	7.4803	.0012	.7874	.0098	.043	.020	7.736	.067	.130	.075	10,700	13,162	2.535	3,700	3,100
	1.50	.025	1.90	.030	2.0	.250	1.1	.5	196.5	1.7	3.3	1.9	47,500	58,500	1.150		
6832	6.2992	.0010	7.8740	.0012	.7874	.0098	.043	.020	8.130	.067	.130	.075	10,900	13,725	2.712	3,400	2,900
	1.60	.025	2.00	.030	2.0	.250	1.1	.5	206.5	1.7	3.3	1.9	48,500	61,000	1.230		
6834	6.6929	.0010	8.4646	.0012	.8661	.0098	.043						13,500	16,875	4.109	3,200	2,700
	1.70	.025	2.15	.030	2.2	.250	1.1						60,500	75,000	1.864		
6836	7.0866	.0010	8.8583	.0012	.8661	.0098	.043						13,600	17,662	4.381	3,000	2,600
	1.80	.025	2.25	.030	2.2	.250	1.1						60,498	78,500	1.987		

\*Maximum fillet which corner radius of bearing will clear.





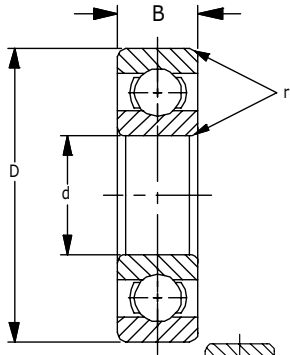
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6900	.3937	.0003	.8651	.0004	.2362	.0047	.012	.012	.976	.028	.041	.031	607	285	.020	36,000	30,000
	10	.008	22	.009	6	.120	.3	.3	24.8	.7	1.05	.8	2,700	1,270	.009		
6901	.4724	.0003	.9449	.0004	.2362	.0047	.012	.012	1.055	.028	.041	.031	650	330	.022	32,000	27,000
	12	.008	24	.009	6	.120	.3	.3	26.8	.7	1.05	.8	2,891	1,468	.010		
6902	.5906	.0003	1.1024	.0004	.2756	.0047	.012	.012	1.213	.033	.051	.037	970	979	.031	28,000	24,000
	15	.008	28	.009	7	.120	.3	.3	30.8	.85	1.3	.95	4,315	4,350	.014		
6903	.6693	.0003	1.1811	.0004	.2756	.0047	.012	.012	1.291	.033	.051	.037	1,050	580	.040	26,000	22,000
	17	.008	30	.009	7	.120	.3	.3	32.8	.85	1.3	.95	4,671	2,579	.018		
6904	.7874	.0004	1.4567	.0005	.3543	.0047	.012	.012	1.567	.033	.067	.037	1,440	832	.079	23,000	19,000
	20	.010	37	.011	9	.120	.3	.3	39.8	.85	1.7	.95	6,400	3,700	.036		
6905	.9843	.0004	1.6535	.0005	.3543	.0047	.012	.012	1.764	.033	.067	.037	1,586	1,023	.090	19,000	16,000
	25	.010	42	.011	9	.120	.3	.3	44.8	.85	1.7	.95	7,050	4,550	.041		
6906	1.1811	.0004	1.8504	.0005	.3543	.0047	.012	.012	1.961	.033	.067	.037	1,631	1,130	.115	17,000	14,000
	30	.010	47	.011	9	.120	.3	.3	49.8	.85	1.7	.95	7,250	5,026	.052		
6907	1.3780	.0005	2.1654	.0005	.3937	.0047	.024	.020	2.276	.033	.067	.037	2,511	1,670	.165	15,000	12,000
	35	.012	55	.013	10	.120	.6	.5	57.8	.85	1.7	.95	11,165	7,429	.075		
6908	1.5748	.0005	2.4409	.0005	.4724	.0047	.024	.020	2.551	.033	.067	.037	3,252	2,300	.247	13,000	11,000
	40	.012	62	.013	12	.120	.6	.5	64.8	.85	1.7	.95	14,457	10,231	.112		
6909	1.7717	.0005	2.6772	.0005	.4724	.0047	.024	.020	2.787	.033	.067	.037	3,403	2,532	.278	12,000	9,800
	45	.012	68	.013	12	.120	.6	.5	70.8	.85	1.7	.95	15,125	11,254	.126		
6910	1.9685	.0005	2.8346	.0005	.4724	.0047	.024	.020	2.945	.033	.067	.037	3,500	2,750	.290	11,000	8,900
	50	.012	72	.013	12	.120	.6	.5	74.8	.85	1.7	.95	15,569	12,233	.132		
6911	2.1654	.0006	3.1496	.0005	.5118	.0059	.039	.020	3.323	.044	.083	.051	3,602	2,992	.417	9,600	8,200
	55	.015	80	.013	13	.150	1.0	.5	84.4	1.12	2.1	1.3	16,012	13,300	.189		
6912	2.3622	.0006	3.3465	.0006	.5118	.0059	.039	.020	3.520	.044	.083	.051	4,360	3,650	.423	8,900	7,600
	60	.015	85	.015	13	.150	1.0	.5	89.4	1.12	2.1	1.3	19,395	16,300	.192		
6913	2.5591	.0006	3.5433	.0006	.5118	.0059	.039	.020	3.717	.044	.083	.051	3,915	3,622	.481	8,200	7,000
	65	.015	90	.015	13	.150	1.0	.5	94.4	1.12	2.1	1.3	17,400	16,100	.218		

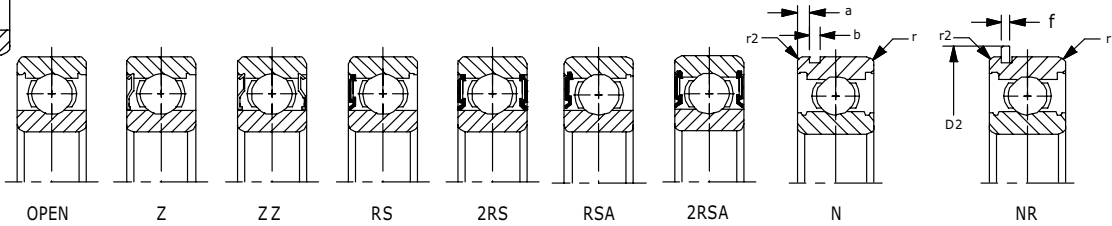
\*Maximum fillet which corner radius of bearing will clear.



# 6900 SERIES (continued)



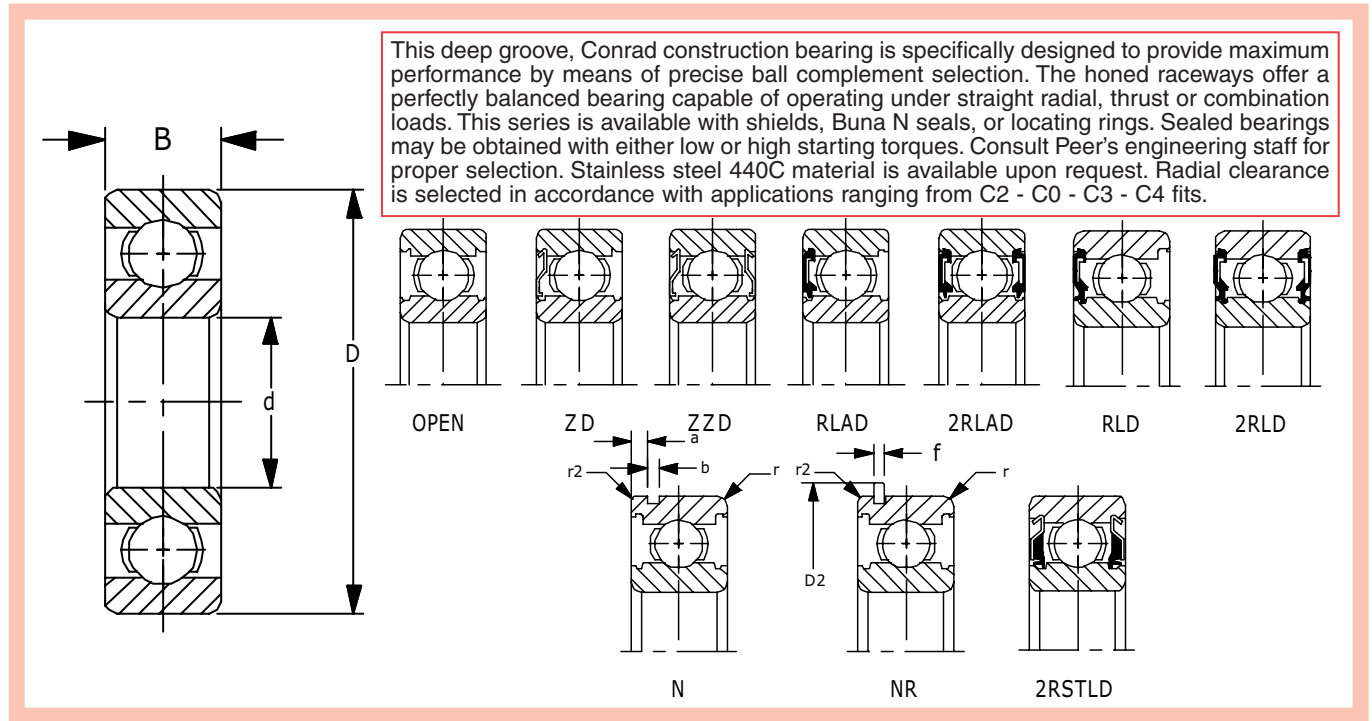
The 6900 series has similar applications as the 6000 series. This series can accommodate both radial or combination thrust and radial loads. Due to the smaller pitch diameters the bearings can be used in more confined areas. Shield and seals are available.



Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6914	2.7559	.0006	3.9370	.0006	.6299	.0059	.039	.020	4.110	.044	.098	.051	5,354	4,770	.769	7,700	6,500
	70	.015	100	.015	16	.150	1.0	.5	104.4	1.12	2.5	1.3	23,796	21,200	.349		
6915	2.9528	.0006	4.1339	.0006	.6299	.0059	.039	.020	4.358	.044	.098	.051	5,504	5,060	.789	7,400	6,100
	75	.015	105	.015	16	.150	1.0	.5	110.7	1.12	2.5	1.3	24,464	22,509	.358		
6916	3.1496	.0006	4.3307	.0006	.6299	.0059	.039	.020	4.555	.044	.098	.051	5,625	5,390	.862	6,700	5,700
	80	.015	110	.015	16	.150	1.0	.5	115.7	1.12	2.5	1.3	25,000	23,977	.391		
6917	3.3465	.0008	4.7244	.0006	.7087	.0079	.043	.020	4.949	.044	.130	.051	7,200	6,660	1.213	6,300	5,400
	85	.020	120	.015	18	.200	1.1	.5	125.7	1.12	3.3	1.3	32,000	29,600	.550		
6918	3.5433	.0008	4.9213	.0007	.7087	.0079	.043	.020	5.146	.044	.130	.051	7,425	7,105	1.290	6,000	5,100
	90	.020	125	.018	18	.200	1.1	.5	130.71	1.12	3.3	1.3	33,000	31,580	.585		
6919	3.7402	.0008	5.1181	.0007	.7087	.0079	.043	.020	5.343	.044	.130	.051	7,555	7,555	1.325	5,700	4,800
	95	.020	130	.018	18	.200	1.1	.5	135.7	1.12	3.3	1.3	33,582	33,582	.601		
6920	3.9370	.0008	5.5118	.0007	.7874	.0079	.043	.020	5.736	.067	.130	.075	9,675	9,450	1.825	5,300	4,500
	100	.020	140	.018	20	.200	1.1	.5	145.7	1.7	3.3	1.9	43,000	42,000	.828		
6921	4.1339	.0008	5.7087	.0007	.7874	.0079	.043	.020	5.933	.067	.130	.075	9,562	9,460	1.887	5,300	4,300
	105	.020	145	.018	20	.200	1.1	.5	150.7	1.7	3.3	1.9	42,500	42,082	.856		
6922	4.3307	.0008	5.9055	.0007	.7874	.0079	.043	.020	6.130	.067	.130	.075	9,807	10,000	1.969	5,000	4,300
	110	.020	150	.018	20	.200	1.1	.5	155.7	1.7	3.3	1.9	43,590	44,500	.893		
6924	4.7244	.0008	6.4961	.0010	.8661	.0079	.043	.020	6.752	.067	.146	.075	11,925	12,209	2.619	4,400	3,800
	120	.020	165	.025	22	.200	1.1	.5	171.5	1.7	3.7	1.9	53,000	54,265	1.188		
6926	5.1181	.0010	7.0866	.0010	.9449	.0098	.059	.020	7.342	.067	.146	.075	14,625	15,187	3.461	4,100	3,500
	130	.025	180	.025	24	.250	1.5	.5	186.5	1.7	3.7	1.9	65,000	67,500	1.570		
6928	5.5118	.0010	7.4803	.0012	.9449	.0098	.059	.020	7.736	.067	.146	.075	14,962	16,100	3.682	3,800	3,200
	140	.025	190	.030	24	.250	1.5	.5	196.5	1.7	3.7	1.9	66,500	72,000	1.670		
6930	5.9055	.0010	8.2677	.0012	1.1024	.0098	.079						19,000	20,362	6.636	3,500	3,000
	150	.025	210	.030	28	.250	2.0						85,000	90,500	3.010		
6932	6.2992	.0010	8.6614	.0012	1.1024	.0098	.079						19,575	21,600	5.975	3,300	2,800
	160	.025	220	.030	28	.250	2.0						87,000	96,000	2.710		
6934	6.6929	.0010	9.0551	.0012	1.1024	.0098	.079						19,350	21,825	7.275	3,100	2,600
	170	.025	230	.030	28	.250	2.0						86,000	97,000	3.300		
6936	7.0866	.0010	9.8425	.0012	1.2992	.0098	.079						26,752	28,800	9.171	2,900	2,400
	180	.025	250	.030	33	.250	2.0						119,000	128,114	4.160		
6938	7.4803	.0012	1.2362	.0014	1.2992	.0118	.079						25,425	28,575	11.420	2,700	2,300
	190	.030	260	.035	33	.300	2.0						113,000	127,000	5.180		
6940	7.8740	.0012	11.0236	.0014	1.4961	.0118	.083						32,100	37,800	16.050	2,600	2,200
	200	.030	280	.035	38	.300	2.10						157,000	168,000	7.280		

\*Maximum fillet which corner radius of bearing will clear.



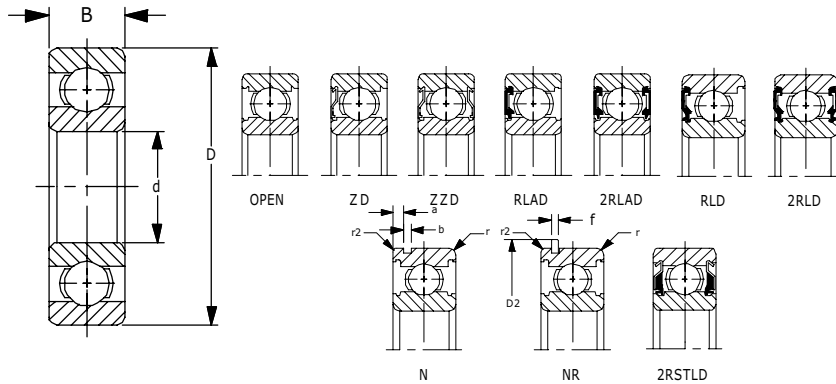
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm) oil grease	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor			
6000	.3937	.0003	1.0236	.0004	.3150	.0047	.012	.012	1.130	.028	.068	.031	1,030	440	.042	34,000	29,000
	10	.008	26	.009	8	.120	.3	.3	28.7	.7	1.73	.8	4,550	1,970	.019		
6001	.4724	.0003	1.1024	.0004	.3150	.0047	.012	.012	1.209	.033	.068	.037	1,150	540	.046	30,000	26,000
	12	.008	28	.009	8	.120	.3	.3	30.7	.85	1.73	.95	5,116	2,390	.021		
6002	.5906	.0003	1.2598	.0004	.3543	.0047	.012	.012	1.445	.044	.081	.053	1,260	635	.066	26,000	22,000
	15	.008	32	.011	9	.120	.3	.3	36.7	1.12	2.06	1.35	5,605	2,825	.030		
6003	.6693	.0003	1.3780	.0004	.3937	.0047	.012	.012	1.563	.044	.081	.053	1,530	755	.086	24,000	20,000
	17	.008	35	.011	10	.120	.3	.3	39.7	1.12	2.06	1.35	6,806	3,359	.039		
6004	.7874	.0004	1.6535	.0004	.4724	.0047	.024	.020	1.823	.044	.081	.053	2,110	1,136	.152	21,000	18,000
	20	.010	42	.011	12	.120	.6	.5	46.3	1.12	2.06	1.35	9,400	5,050	.069		
60/22	.8661	.0004	1.7323	.0004	.4724	.0047	.024	.020	1.902	.044	.081	.053	2,110	1,136	.163	20,000	17,000
	22	.010	44	.011	12	.120	.6	.5	48.3	1.12	2.06	1.35	9,400	5,050	.074		
6005	.9843	.0004	1.8504	.0004	.4724	.0047	.024	.020	2.075	.044	.081	.053	2,272	1,320	.176	18,000	15,000
	25	.010	47	.011	12	.120	.6	.5	52.7	1.12	2.06	1.35	10,100	5,850	.080		
60/28	1.1024	.0004	2.2835	.0005	.6299	.0047	.024	.020	2.280	.044	.081	.053	2,800	1,660	.216	16,000	14,000
	28	.010	52	.013	12	.120	.6	.5	57.9	1.12	2.06	1.35	12,500	7,400	.098		
6006	1.1811	.0004	2.1654	.0005	.5118	.0047	.039	.020	2.390	.044	.082	.053	2,970	1,860	.256	15,000	13,000
	30	.010	55	.013	13	.120	1.0	.5	60.7	1.12	2.08	1.35	13,212	8,300	.116		
60/32	1.2598	.0005	2.2835	.0005	.5118	.0047	.039	.020	2.508	.044	.082	.053	3,400	2,050	.284	15,000	12,000
	32	.012	58	.013	13	.120	1.0	.5	63.7	1.12	2.08	1.35	15,100	9,150	.129		
6007	1.3780	.0005	2.4409	.0005	.5512	.0047	.039	.020	2.665	.067	.082	.075	3,600	2,315	.342	14,000	12,000
	35	.012	62	.013	14	.120	1.0	.5	67.7	1.7	2.08	1.9	16,014	10,298	.155		
6008	1.5748	.0005	2.6772	.0005	.5906	.0047	.039	.020	2.937	.067	.098	.075	3,750	2,600	.419	12,000	10,000
	40	.012	68	.013	15	.120	1.0	.5	74.6	1.7	2.49	1.9	16,800	11,500	.190		
6009	1.7717	.0005	2.9528	.0005	.6299	.0047	.039	.020	3.213	.067	.098	.075	4,725	3,420	.522	11,000	9,200
	45	.012	75	.013	16	.120	1.0	.5	81.6	1.7	2.49	1.9	21,000	15,200	.237		
6010	1.9685	.0005	3.1496	.0005	.6299	.0047	.039	.020	3.409	.067	.098	.075	4,900	3,735	.575	9,800	8,400
	50	.012	80	.013	16	.120	1.0	.5	86.6	1.7	2.49	1.9	21,797	16,600	.261		

\*Maximum fillet which corner radius of bearing will clear.



# 6000 SERIES (continued)



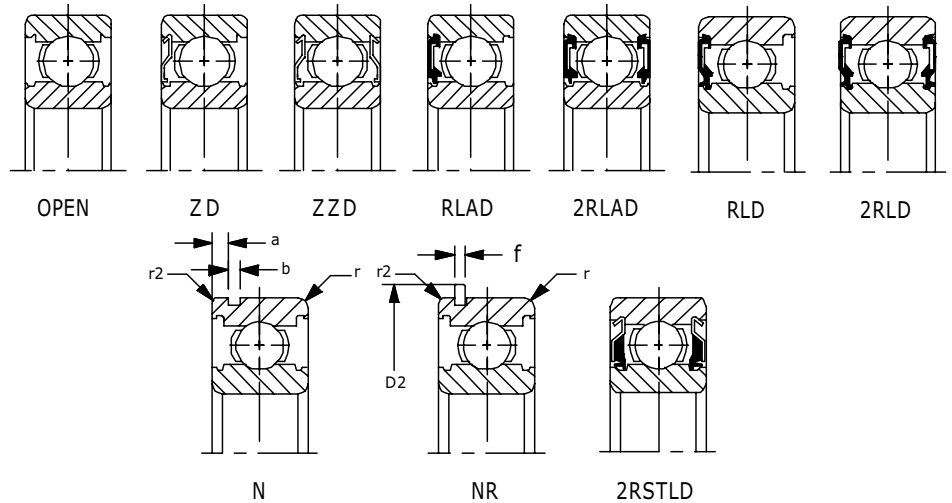
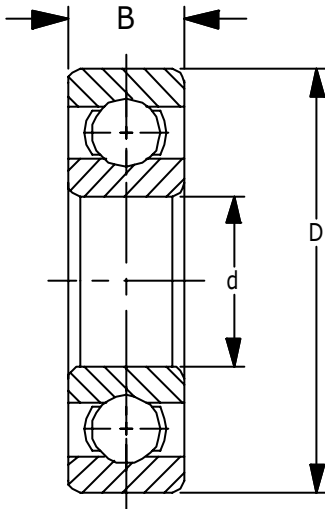
This deep groove, Conrad construction bearing is specifically designed to provide maximum performance by means of precise ball complement selection. The honed raceways offer a perfectly balanced bearing capable of operating under straight radial, thrust or combination loads. This series is available with shields, Buna N seals, or locating rings. Sealed bearings may be obtained with either low or high starting torques. Consult Peer's engineering staff for proper selection. Stainless steel 440C material is available upon request. Radial clearance is selected in accordance with applications ranging from C2 - C0 - C3 - C4 fits.

Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r <sub>2</sub>	D <sub>2</sub> Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6011	2.1654	.0006	3.5433	.0006	.7087	.0059	.043	.020	3.799	.097	.113	.106	6,350	4,770	.855	9,000	7,700
	.55	.015	.90	.015	.18	.150	1.1	.5	96.5	2.46	2.87	2.7	28,300	21,200	.388		
6012	2.3622	.0006	3.7402	.0006	.7087	.0059	.043	.020	4.000	.097	.113	.106	6,637	5,220	.913	8,300	7,000
	.60	.015	.95	.015	.18	.150	1.1	.5	101.6	2.46	2.87	2.7	29,500	23,200	.414		
6013	2.5591	.0006	3.9370	.0006	.7087	.0059	.043	.020	4.193	.097	.113	.106	6,850	5,670	.968	7,700	6,500
	.65	.015	1.00	.015	.18	.150	1.1	.5	106.5	2.46	2.87	2.7	30,500	25,200	.439		
6014	2.7559	.0006	4.3307	.0006	.7874	.0059	.043	.020	4.591	.097	.113	.106	8,550	6,975	1.340	7,100	6,100
	.70	.015	1.10	.015	.20	.150	1.1	.5	116.6	2.46	2.87	2.7	38,000	31,000	.608		
6015	2.9528	.0006	4.5276	.0006	.7874	.0059	.043	.020	4.787	.097	.113	.106	8,890	7,537	1.431	6,700	5,700
	.75	.015	1.15	.015	.20	.150	1.1	.5	121.6	2.46	2.87	2.7	39,500	33,500	.649		
6016	3.1496	.0005	4.9213	.0007	.8661	.0059	.043	.020	5.303	.111	.113	.122	10,700	9,000	1.922	6,200	5,300
	.80	.015	1.25	.018	.22	.150	1.1	.5	134.7	2.82	2.87	3.1	47,500	40,000	.872		
6017	3.3465	.0008	5.1181	.0007	.8661	.0079	.043	.020	5.500	.111	.113	.122	11,137	9,675	2.024	5,900	5,000
	.85	.020	1.30	.018	.22	.200	1.1	.5	139.7	2.82	2.87	3.1	49,500	43,000	.918		
6018	3.5433	.0008	5.5118	.0007	.9449	.0079	.059	.020	5.894	.111	.146	.122	13,050	11,250	2.624	5,600	4,700
	.90	.020	1.40	.018	.24	.200	1.5	.5	149.7	2.82	3.71	3.1	58,000	50,000	1.190		
6019	3.7402	.0008	5.7087	.0007	.9449	.0079	.059	.020	6.091	.111	.146	.122	13,600	12,150	2.712	5,300	4,500
	.95	.020	1.45	.018	.24	.200	1.5	.5	154.7	2.82	3.71	3.1	60,500	54,000	1.230		
6020	3.9370	.0008	5.9055	.0007	.9449	.0079	.059	.020	6.287	.111	.146	.122	13,500	12,150	2.844	5,000	4,200
	1.00	.020	1.50	.018	.24	.200	1.5	.5	159.7	2.82	3.71	3.1	60,000	54,000	1.290		
6021	4.1339	.0008	6.2992	.0010	1.0236	.0079	.079	.020	6.681	.111	.146	.122	16,300	14,8050	3.510	4,700	4,000
	1.05	.020	1.60	.025	.26	.200	2.0	.5	169.7	2.82	3.71	3.1	72,500	66,000	1.592		
6022	4.3307	.0008	6.6929	.0010	1.1024	.0079	.079	.020	7.201	.122	.146	.138	19,125	16,400	4.321	4,500	3,800
	1.10	.020	1.70	.025	.28	.200	2.0	.5	182.9	3.1	3.71	3.5	85,000	73,000	1.960		
6024	4.7244	.0008	7.0866	.0010	1.1024	.0079	.079	.020	7.594	.122	.146	.138	19,800	18,000	4.586	4,100	3,500
	1.20	.020	1.80	.025	.28	.200	2.0	.5	192.9	3.1	3.71	3.5	88,000	80,000	2.080		
6026	5.1181	.0010	7.8740	.0012	1.2992	.0098	.079	.020	8.382	.122	.224	.138	23,850	22,700	7.187	3,800	3,200
	1.30	.025	2.00	.030	.33	.250	2.0	.5	212.9	3.1	5.69	3.5	106,000	101,000	3.260		
6028	5.5118	.0010	8.2677	.0012	1.2992	.0098	.079	.020	8.776	.122	.224	.138	24,750	24,525	7.672	3,500	3,000
	1.40	.025	2.10	.030	.33	.250	2.0	.5	222.9	3.1	5.69	3.5	110,000	109,000	3.480		
6030	5.9055	.0010	8.8583	.0012	1.3780	.0098	.083	.020	9.362	.122	.224	.138	28,350	28,350	9.348	3,200	2,800
	1.50	.025	2.25	.030	.35	.250	2.1	.5	237.8	3.1	5.69	3.5	126,000	126,000	4.240		
6032	6.2992	.0010	9.4488	.0012	1.4961	.0098	.083	.020	9.957	.122	.224	.138	32,175	32,400	11.354	3,000	2,600
	1.60	.025	2.40	.030	.38	.250	2.1	.5	252.9	3.1	5.69	3.5	143,000	144,000	5.150		
6034	6.6929	.0010	10.2362	.0014	1.6535	.0098	.083						37,800	38,700	15.190	2,800	2,400
	1.70	.025	2.60	.035	.42	.250	2.1						168,000	172,000	6.890		
6036	7.0866	.0010	11.0236	.0014	1.8110	.0098	.083						42,500	44,775	19.400	2,700	2,300
	1.80	.025	2.80	.035	.46	.250	2.1						189,000	199,000	8.800		
6038	7.4803	.0012	11.4173	.0014	1.8110	.0118	.083						44,325	48,375	20.701	2,500	2,100
	1.90	.030	2.90	.035	.46	.300	2.1						197,000	215,000	9.390		
6040	7.8740	.0012	12.2047	.0014	2.0079	.0118	.083						49,050	54,675	26.455	2,400	2,000
	2.00	.030	3.10	.035	.51	.300	2.1						218,000	243,000	12.000		

\*Maximum fillet which corner radius of bearing will clear.

This deep groove, Conrad construction bearing is specifically designed to provide maximum performance by means of precise ball complement selection. The honed raceways offer a perfectly balanced bearing capable of operating under straight radial, thrust or combination loads. This series is available with shields, Buna N seals, or locating rings. Sealed bearings may be obtained with either low or high starting torques. Consult Peer's engineering staff for proper selection. Stainless steel 440C material is available upon request. Radial clearance is selected in accordance with applications ranging from C2 - C0 - C3 - C4 fits.

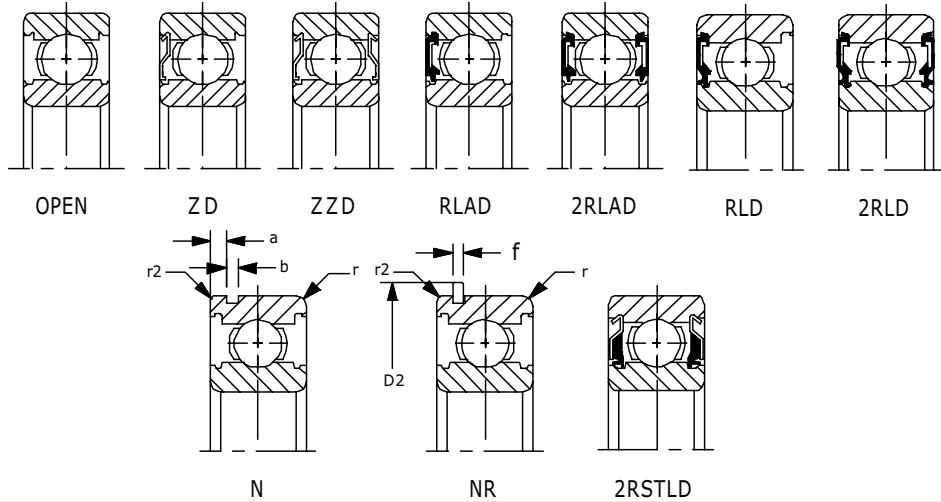
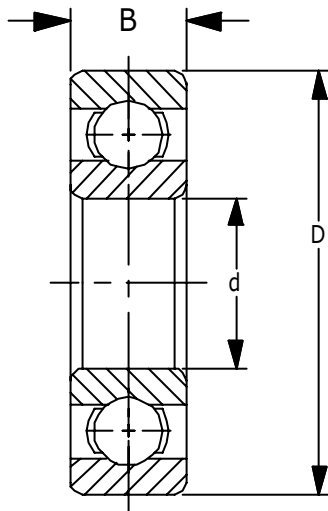


Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm) oil grease	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6200	.3937	.0003	1.1811	.0004	.3543	.0047	.024	.020	1.366	.044	.081	.053	1,150	540	.071	30,000	25,000
	10	.008	30	.009	9	.120	.6	.5	34.7	1.12	2.06	1.35	5,100	2,390	.032		
6201	.4724	.0003	1.2598	.0005	.3937	.0047	.024	.020	1.445	.044	.081	.053	1,530	680	.082	26,000	22,000
	12	.008	32	.011	10	.120	.6	.5	36.7	1.12	2.06	1.35	6,800	3,050	.037		
6201-8	.5000	.0003	1.2598	.0005	.3937	.0047	.024	.020	1.445	.044	.081	.053	1,530	680	.082	26,000	22,000
	12.7	.008	32	.011	10	.120	.6	.5	36.7	1.12	2.06	1.35	6,800	3,050	.037		
6201-13mm	.5118	.0003	1.2598	.0005	.3937	.0047	.024	.020	1.445	.044	.081	.053	1,530	680	.090	26,000	22,000
	13	.008	32	.011	10	.120	.6	.5	36.7	1.12	2.06	1.35	6,800	3,050	.041		
6202	.5906	.0003	1.3780	.0005	.4331	.0047	.024	.020	1.563	.044	.081	.053	1,740	839	.110	26,000	20,000
	15	.008	35	.011	11	.120	.6	.5	39.7	1.12	2.06	1.35	7,740	3,732	.050		
6202-10	.6250	.0003	1.3780	.0005	.4331	.0047	.024	.020	1.563	.044	.081	.053	1,740	839	.110	26,000	20,000
	15.875	.008	35	.011	11	.120	.6	.5	39.7	1.12	2.06	1.35	7,740	3,732	.050		
99502H	.6250	.0003	1.375	.0005	.4331	.0047	.024	.020	1.563	.044	.081	.053	1,740	839	.110	26,000	20,000
	15.875	.008	34.93	.011	11	.120	.6	.5	39.7	1.12	2.06	1.35	7,740	3,732	.050		
499502H	.6250	.0003	1.375	.0005	.4331	.0047	.024	.020	1.563	.044	.081	.053	1,740	839	.110	26,000	20,000
	15.875	.008	34.93	.011	11	.120	.6	.5	39.7	1.12	2.06	1.35	7,740	3,732	.050		
6202-16mm	.6299	.0003	1.3780	.0005	.4331	.0047	.024	.020	1.563	.044	.081	.053	1,740	839	.110	26,000	20,000
	16	.008	35	.011	11	.120	.6	.5	39.7	1.12	2.06	1.35	7,740	3,732	.050		
6203	.6693	.0003	1.5748	.0005	.4724	.0047	.024	.020	1.756	.044	.081	.053	2,160	1,080	.150	21,000	18,000
	17	.008	40	.011	12	.120	.6	.5	44.6	1.12	2.06	1.35	9,600	4,800	.068		
6203-6	.3750	.0003	1.5748	.0005	.4724	.0047	.024	.020	1.756	.044	.081	.053	2,160	1,080	.150	21,000	18,000
	9.525	.008	40	.011	12	.120	.6	.5	44.6	1.12	2.06	1.35	9,600	4,800	.068		
6203-8	.5000	.0003	1.5748	.0005	.4724	.0047	.024	.020	1.756	.044	.081	.053	2,150	1,080	.150	21,000	18,000
	12.7	.008	40	.011	12	.120	.6	.5	44.6	1.12	2.06	1.35	9,600	4,800	.068		
6203-10	.6250	.0003	1.5748	.0005	.4724	.0047	.024	.020	1.756	.044	.081	.053	2,150	1,080	.150	21,000	18,000
	15.875	.008	40	.011	12	.120	.6	.5	44.6	1.12	2.06	1.35	9,600	4,800	.068		
6203-16mm	.6299	.0003	1.5748	.0005	.4724	.0047	.024	.020	1.756	.044	.081	.053	2,150	1,080	.150	21,000	18,000
	16	.008	40	.011	12	.120	.6	.5	44.6	1.12	2.06	1.35	9,600	4,800	.068		

\*Maximum fillet which corner radius of bearing will clear.

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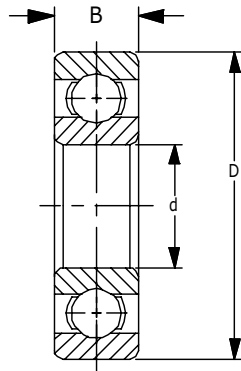


Units: Inches Metric

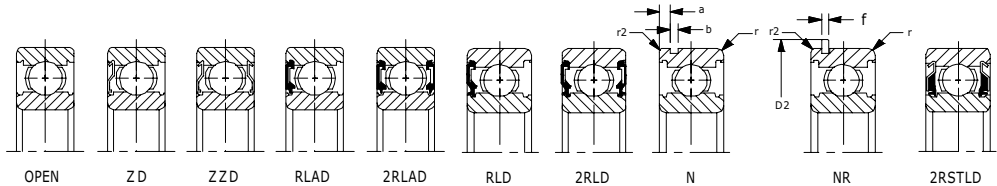
Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm) oil grease	
							r	r <sub>2</sub>	D <sub>2</sub> Max	f Max	a Max	b Min	Dynamic Cr	Static Cor			
6203-12	.7500	.0003	1.5748	.0005	.4724	.0047	.024	.020	1.756	.044	.081	.053	2,150	1,080	.150	21,000	18,000
	19.05	.008	40	.011	12	.120	.6	.5	44.6	1.12	2.06	1.35	9,600	4,800	.068		
6204	.7874	.0004	1.8504	.0005	.5512	.0047	.039	.020	2.075	.044	.097	.053	2,880	1,480	.236	18,000	16,000
	20	.010	47	.011	14	.120	1.0	.5	52.7	1.12	2.46	1.35	12,811	6,580	.107		
6204-12	.7500	.0004	1.8504	.0005	.5512	.0047	.039	.020	2.075	.044	.097	.053	2,880	1,480	.236	18,000	16,000
	19.05	.010	47	.011	14	.120	1.0	.5	52.7	1.12	2.46	1.35	12,811	6,580	.107		
6204-14	.8750	.0004	1.8504	.0005	.5512	.0047	.039	.020	2.075	.044	.097	.053	2,880	1,480	.236	18,000	16,000
	22.225	.010	47	.011	14	.120	1.0	.5	52.7	1.12	2.46	1.35	12,811	6,580	.107		
Z9504-2RST	.7504	.0004	1.7805	.0005	.6100	.0047	.039	.020					2,880	1,480	.249	18,000	16,000
	19.016	.010	45.22	.011	15.49	.120	1.0	.5					12,811	6,580	.113		
62/22	.8661	.0004	1.9685	.0005	.5512	.0047	.059	.020	2.193	.044	.097	.053	2,900	1,530	.262	17,000	14,000
	22	.010	50	.011	14	.120	1.0	.5	55.7	1.12	2.46	1.35	12,900	6,806	.119		
6205	.9743	.0004	2.0472	.0005	.5906	.0047	.039	.020	2.280	.044	.097	.053	3,150	1,770	.284	15,000	13,000
	25	.010	52	.013	15	.120	1.0	.5	57.9	1.12	2.46	1.35	14,000	7,850	.129		
6205-14	.8750	.0004	2.0472	.0005	.5906	.0047	.039	.020	2.280	.044	.097	.053	3,150	1,770	.284	15,000	13,000
	22.225	.010	52	.013	15	.120	1.0	.5	57.9	1.12	2.46	1.35	14,000	7,850	.129		
6205-16	1.0000	.0004	2.0472	.0005	.5906	.0047	.039	.020	2.280	.044	.097	.053	3,150	1,770	.291	15,000	13,000
	25.4	.010	52	.013	15	.120	1.0	.5	57.9	1.12	2.46	1.35	14,000	7,850	.132		
62/28	1.1024	.0004	2.2835	.0005	.6299	.0047	.059	.020	2.508	.044	.097	.053	4,027	2,190	.386	14,000	12,000
	28	.010	58	.013	16	.120	1.5	.5	63.7	1.12	2.46	1.35	17,900	9,750	.175		
6206	1.1811	.0004	2.4409	.0005	.6299	.0047	.039	.020	2.665	.067	.129	.075	4,400	2,540	.262	13,000	11,000
	30	.010	62	.013	16	.120	1.0	.5	67.7	1.7	3.28	1.9	19,500	11,300	.119		
62/32	1.2598	.0005	2.5591	.0005	.6693	.0047	.059	.020	2.783	.067	.129	.075	4,657	2,600	.498	12,000	11,000
	32	.012	65	.013	17	.120	1.5	.5	70.7	1.7	3.28	1.9	20,700	11,600	.226		
6207	1.3780	.0005	2.8346	.0005	.6693	.0047	.043	.020	3.094	.067	.129	.075	5,782	3,442	.626	11,000	9,300
	35	.012	72	.013	17	.120	1.1	.5	78.6	1.7	3.28	1.9	25,700	15,300	.284		
6208	1.5748	.0005	3.1496	.0005	.7087	.0047	.043	.020	3.409	.067	.129	.075	6,550	4,000	.807	10,000	8,700
	40	.012	80	.013	18	.120	1.1	.5	86.6	1.7	3.28	1.9	29,100	17,900	.366		
6209	1.7717	.0005	3.3465	.0006	.7480	.0047	.043	.020	3.606	.067	.129	.075	7,350	4,580	.939	9,200	7,800
	45	.012	85	.015	19	.120	1.1	.5	91.6	1.7	3.28	1.9	32,700	20,400	.426		

\*Maximum fillet which corner radius of bearing will clear.

# 6200 SERIES (continued)



This deep groove, Conrad construction bearing is specifically designed to provide maximum performance by means of precise ball complement selection. The honed raceways offer a perfectly balanced bearing capable of operating under straight radial, thrust or combination loads. This series is available with shields, Buna N seals, or locating rings. Sealed bearings may be obtained with either low or high starting torques. Consult Peer's engineering staff for proper selection. Stainless steel 440C material is available upon request. Radial clearance is selected in accordance with applications ranging from C2 - C0 - C3 - C4 fits.

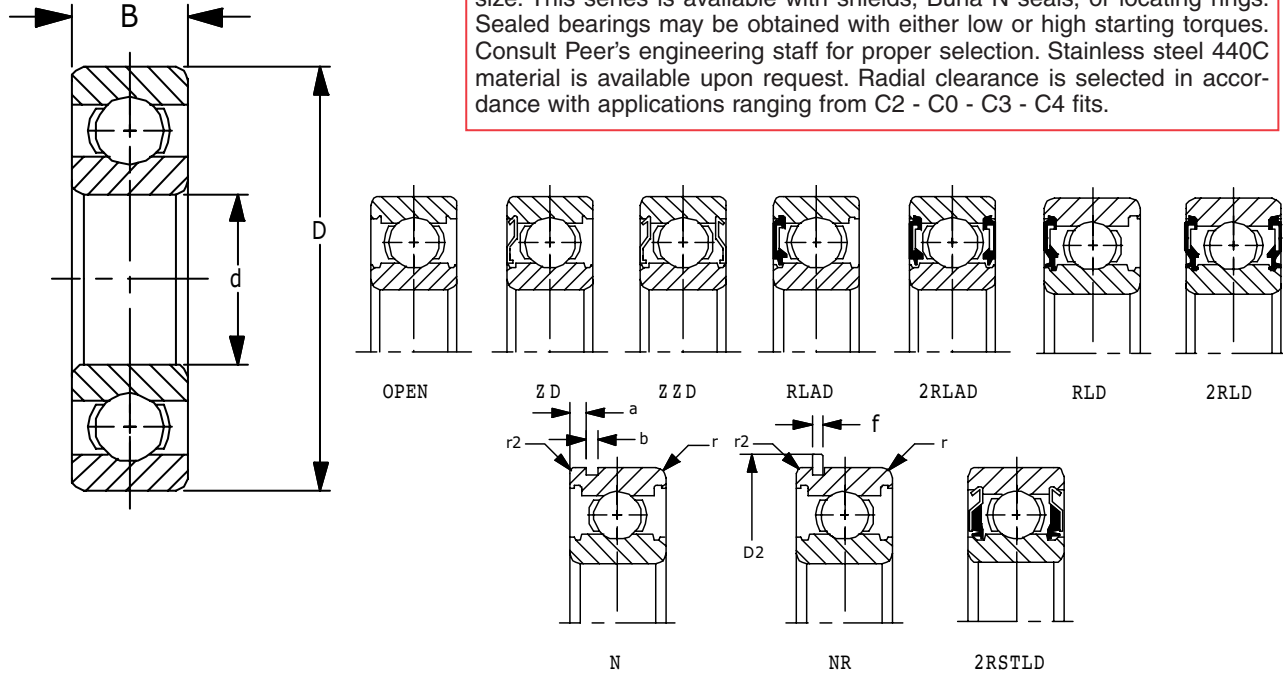


Units: Inches Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6210	1.9685 50	.0005 .012	3.5433 90	.0006 .015	.7874 20	.0047 .120	.043 1.1	.020 .5	3.799 96.5	.097 2.46	.129 3.28	.106 2.7	7,875 35,000	5,220 23,200	1.012 .459	8,300 7,600	7,100 6,400
6211	2.1654 55	.0006 .015	3.9370 100	.0006 .015	.8268 21	.0059 .150	.059 1.5	.020 .5	4.193 106.5	.097 2.46	.129 3.28	.106 2.7	9,800 43,500	6,580 29,300	1.365 .619	7,600 7,000	6,400 6,000
6212	2.3622 60	.0006 .015	4.3307 110	.0006 .015	.8661 22	.0059 .150	.059 1.5	.020 .5	4.591 116.6	.097 2.46	.129 3.28	.106 2.7	11,800 52,500	8,100 36,000	1.720 .780	7,000 6,500	6,000 5,500
6213	2.5591 65	.0006 .015	4.7244 120	.0006 .015	.9055 23	.0059 .150	.059 1.5	.020 .5	5.106 129.7	.111 2.82	.160 4.06	.122 3.1	12,937 57,500	9,037 40,000	2.220 1.007	6,500 6,000	5,500 5,100
6214	2.7559 70	.0006 .015	4.9213 125	.0007 .018	.9449 24	.0059 .150	.059 1.5	.020 .5	5.303 134.7	.111 2.82	.160 4.06	.122 3.1	13,950 62,000	9,900 44,000	2.410 1.093	6,000 5,600	5,100 4,800
6215	2.9528 75	.0006 .015	4.1181 130	.0007 .018	.9843 25	.0059 .150	.059 1.5	.020 .5	5.500 139.7	.111 2.82	.160 4.06	.122 3.1	14,900 66,000	11,100 49,500	2.620 1.190	5,600 5,300	4,800 4,500
6216	3.1496 80	.0006 .015	4.5118 140	.0007 .018	1.0236 26	.0059 .150	.079 2.0	.020 .5	5.894 149.7	.111 2.82	.193 4.9	.122 3.1	16,300 72,500	11,925 53,000	3.130 1.420	5,300 5,000	4,500 4,200
6217	3.3465 85	.0008 .020	5.9055 150	.0007 .018	1.1024 28	.0079 .200	.079 2.0	.020 .5	6.287 159.7	.111 2.82	.193 4.9	.122 3.1	18,787 83,500	14,400 64,000	3.880 1.760	5,000 4,700	4,200 4,000
6218	3.5433 90	.0008 .020	6.2992 160	.0010 .025	1.1811 30	.0079 .200	.079 2.0	.020 .5	6.681 167.7	.111 2.82	.193 4.9	.122 3.1	21,000 96,000	16,100 71,500	4.800 2.180	4,700 4,400	4,000 3,700
6219	3.7402 95	.0008 .020	6.6929 170	.0010 .025	1.2598 32	.0079 .200	.083 2.1	.020 .5	7.201 182.9	.122 3.1	.224 5.69	.138 3.5	24,525 109,000	18,450 82,000	5.820 2.640	4,400 4,200	3,700 3,500
6220	3.9370 100	.0008 .020	7.0866 180	.0010 .025	1.3386 4	.0079 .200	.083 2.1	.020 .5	7.594 192.9	.122 3.1	.224 5.69	.138 3.5	27,500 122,000	20,900 93,000	7.200 3.266	4,200 4,000	3,500 3,400
6221	4.1339 105	.0008 .020	7.4803 190	.0012 .030	1.4173 36	.0079 .200	.083 2.1	.020 .5	7.988 202.9	.122 3.1	.224 5.69	.138 3.5	29,900 133,000	23,500 105,000	8.350 3.790	4,000 3,800	3,400 3,200
6222	4.3307 110	.0008 .020	7.8740 200	.0012 .030	1.4961 38	.0079 .200	.083 2.1	.020 .5	8.382 212.9	.122 3.1	.224 5.69	.138 3.5	32,400 144,500	26,325 117,000	9.810 4.450	3,800 3,400	3,200 2,900
6224	4.7244 120	.0008 .020	7.4646 215	.0012 .030	1.5748 40	.0079 .200	.083 2.1						34,875 155,000	29,475 131,000	11.660 5.290	3,400 3,100	2,900 2,700
6226	5.1181 130	.0010 .025	9.0551 230	.0012 .030	1.5748 40	.0098 .250	.118 3.0						37,575 167,000	32,850 146,000	13.140 5.960	3,100 2,900	2,700 2,500
6228	5.5118 140	.0010 .025	9.8425 250	.0012 .030	1.6535 42	.0098 .250	.118 3.0						37,350 166,000	33,500 149,750	16.900 7.566	2,900 2,700	2,500 2,300
6230	5.9055 150	.0010 .025	1.6299 270	.0014 .035	1.7717 45	.0098 .250	.118 3.0						39,600 175,600	37,500 150,000	22.050 10.002	2,700 2,500	2,300 2,100
6232	6.2992 160	.0010 .025	11.4173 290	.0014 .035	1.8898 48	.0098 .250	.118 3.0						41,625 185,000	42,800 186,000	28.200 12.800	2,500 2,400	2,100 2,000
6234	6.6929 170	.0010 .025	12.2047 310	.0014 .035	2.0472 52	.0098 .250	.157 4.0						47,700 212,000	50,400 224,000	34.800 15.785	2,400 2,200	2,000 1,900
6236	7.0866 180	.0010 .025	12.5984 320	.0016 .040	2.0472 52	.0098 .250	.157 4.0						51,075 227,000	54,225 241,000	34.800 15.785	2,200 2,100	1,900 1,800
6238	7.4803 190	.0012 .030	13.3858 340	.0016 .040	2.1654 55	.0118 .300	.157 4.0						57,335 255,000	63,450 282,000	49.170 22.303	2,100 2,000	1,800 1,700

\*Maximum fillet which corner radius of bearing will clear.

Similar in function to the 6200 series. Produced with larger ball complement enabling the bearing to withstand greater radial and thrust for a given bore size. This series is available with shields, Buna N seals, or locating rings. Sealed bearings may be obtained with either low or high starting torques. Consult Peer's engineering staff for proper selection. Stainless steel 440C material is available upon request. Radial clearance is selected in accordance with applications ranging from C2 - C0 - C3 - C4 fits.



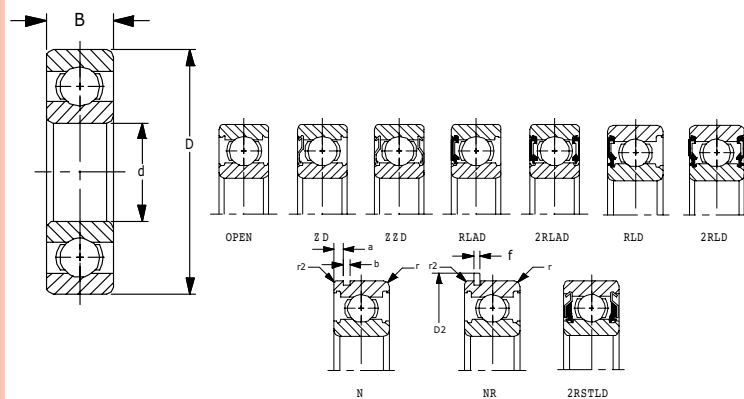
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6300	.3937	.0003	1.3780	.0005	.4331	.0047	.024	.020	1.563	.044	.081	.053	1,845	785	.110	27,000	23,000
	10	.008	35	.011	11	.120	.6	.5	39.7	1.12	2.06	1.35	8,200	3,500	.050		
6301	.4724	.0003	1.4567	.0005	.4724	.0047	.039	.020	1.626	.044	.081	.053	2,180	940	.132	24,000	20,000
	12	.008	37	.011	12	.120	1.0	.5	41.3	1.12	2.06	1.35	9,700	4,200	.056		
6302	.5906	.0003	1.6535	.0005	.5118	.0047	.039	.020	1.823	.044	.081	.053	2,570	1,220	.150	21,000	17,000
	15	.008	42	.011	13	.120	1.0	.5	46.3	1.12	2.06	1.35	11,400	5,450	.068		
6303	.6693	.0003	1.8504	.0005	.5512	.0047	.039	.020	2.075	.044	.097	.053	3,060	1,470	.249	19,000	16,000
	17	.008	47	.011	14	.120	1.0	.5	52.7	1.12	2.46	1.35	13,600	6,650	.113		
6304	.7874	.0004	1.0472	.0005	.5906	.0047	.043	.020	2.280	.044	.097	.053	3,600	1,770	.319	17,000	14,000
	20	.010	52	.013	15	.120	1.1	.5	57.9	1.12	2.46	1.35	15,900	7,900	.145		
63/22	.8661	.0004	2.2047	.0005	.6299	.0047	.043	.020	2.429	.044	.097	.053	4,140	2,080	.394	15,000	13,000
	22	.010	56	.013	16	.120	1.1	.5	61.7	1.12	2.46	1.35	18,400	9,250	.179		
6305	.9843	.0004	2.4409	.0005	.6693	.0047	.043	.020	2.665	.067	.129	.075	4,750	2,460	.518	14,000	12,000
	25	.010	62	.013	17	.120	1.1	.5	67.7	1.7	3.28	1.9	21,200	11,200	.235		
63/28	1.1024	.0004	2.6772	.0005	.7087	.0047	.043	.020	2.937	.067	.129	.075	6,000	3,150	.633	13,000	11,000
	28	.010	68	.013	18	.120	1.1	.5	74.6	1.7	3.28	1.9	26,700	14,000	.287		
6306	1.1811	.0004	2.8346	.0005	.7480	.0047	.043	.020	3.094	.067	.129	.075	6,000	3,375	.760	12,000	10,000
	30	.010	72	.013	19	.120	1.1	.5	78.6	1.7	3.28	1.9	26,700	15,000	.345		
63/32	1.2598	.0005	2.9528	.0005	.7874	.0047	.043	.020	3.213	.067	.129	.075	6,727	3,825	.857	11,000	9,500
	32	.012	75	.013	20	.120	1.1	.5	81.6	1.7	3.28	1.9	29,900	17,000	.389		
6307	1.3780	.0005	3.1496	.0005	.8268	.0047	.059	.020	3.409	.067	.129	.075	7,537	4,320	1.030	10,000	8,800
	35	.012	80	.013	21	.120	1.5	.5	86.6	1.7	3.28	1.9	33,500	19,200	.464		
6308	1.5748	.0005	3.5433	.0006	.9055	.0047	.059	.020	3.799	.097	.129	.106	9,112	5,400	1.410	9,200	7,800
	40	.012	90	.015	23	.120	1.5	.5	96.5	2.46	3.28	2.7	40,500	24,000	.640		
6309	1.7717	.0005	3.9370	.0006	.9843	.0047	.059	.020	4.193	.097	.129	.106	11,925	7,200	1.82	8,200	7,000
	45	.012	100	.015	25	.120	1.5	.5	106.5	2.46	3.28	2.7	53,000	32,000	.829		

\*Maximum fillet which corner radius of bearing will clear.



# 6300 SERIES (continued)



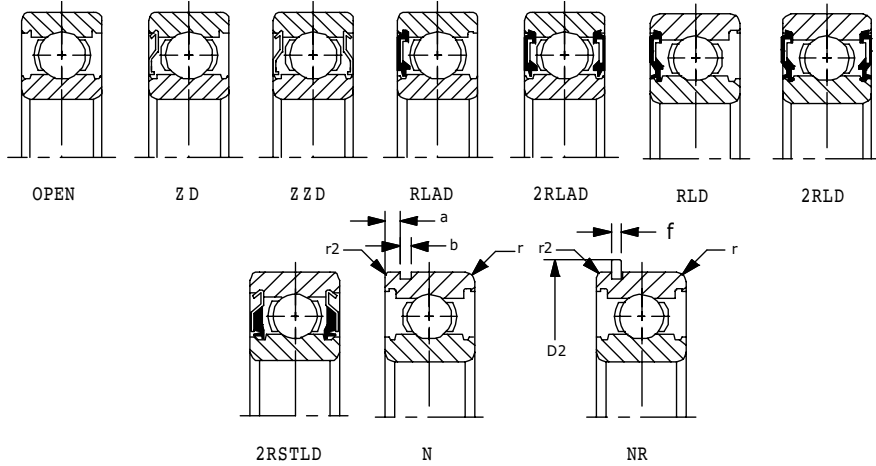
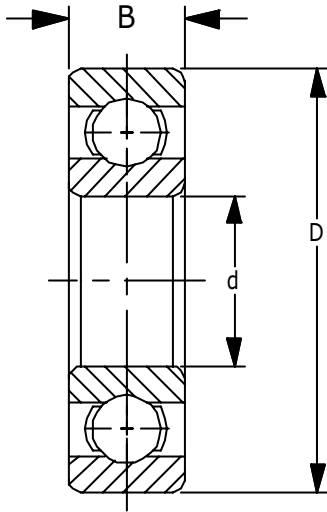
Similar in function to the 6200 series. Produced with larger ball complement enabling the bearing to withstand greater radial and thrust for a given bore size. This series is available with shields, Buna N seals, or locating rings. Sealed bearings may be obtained with either low or high starting torques. Consult Peer's engineering staff for proper selection. Stainless steel 440C material is available upon request. Radial clearance is selected in accordance with applications ranging from C2 - C0 - C3 - C4 fits.

Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6310	1.9685 50	.0005 .012	4.3307 110	.0006 .015	1.0630 27	.0047 .120	.079 2.0	.020 .5	4.591 116.6	.097 2.46	.129 3.28	.106 2.7	13,950 62,000	8,600 38,500	2.470 1.120	7,500 6,800	6,400 5,800
6311	2.1654 55	.0006 .015	4.7244 120	.0006 .015	1.1417 29	.0059 .150	.079 2.0	.020 .5	5.106 129.7	.111 2.82	.160 4.06	.122 3.1	16,100 71,500	10,125 45,000	3.070 1.393	6,800 6,300	5,800 5,400
6312	2.3622 60	.0006 .015	5.1181 130	.0007 .018	1.2205 31	.0059 .150	.079 2.1	.020 .5	5.500 139.7	.111 2.82	.160 4.06	.122 3.1	18,450 82,000	11,700 52,000	3.810 1.728	6,300 5,800	5,400 4,900
6313	2.5591 65	.0006 .015	5.5118 140	.0007 .018	1.2992 33	.0059 .150	.079 2.1	.020 .5	5.894 149.7	.111 2.82	.193 4.9	.122 3.1	20,800 92,500	13,500 60,000	4.700 2.110	5,800 5,400	4,900 4,600
6314	2.7559 70	.0006 .015	5.9055 150	.0007 .018	1.3780 35	.0059 .150	.079 2.1	.020 .5	6.287 159.7	.111 2.82	.193 4.9	.122 3.1	23,400 104,000	15,300 68,000	5.720 2.595	5,400 5,000	4,600 4,300
6315	2.9528 75	.0006 .015	6.2992 160	.0010 .025	1.4567 37	.0059 .150	.079 2.1	.020 .5	6.681 169.7	.111 2.82	.193 4.9	.122 3.1	25,425 113,000	17,325 77,000	8.37 3.80	5,000 4,700	4,300 4,000
6316	3.1496 80	.0006 .015	6.6929 170	.0010 .025	1.5354 39	.0059 .150	.079 2.1	.020 .5	7.201 182.9	.122 3.1	.224 5.69	.138 3.5	27,675 123,000	19,460 86,500	8.130 3.688	4,700 4,500	4,000 3,800
6317	3.3465 85	.0008 .020	7.0866 180	.0012 .025	1.6142 41	.0079 .200	.118 3.0	.020 .5	7.594 192.9	.122 3.1	.224 5.69	.138 3.5	29,925 133,000	21,825 97,000	9.73 4.28	4,500 4,200	3,800 3,600
6318	3.5433 90	.0008 .020	7.4803 190	.0012 .030	1.6929 43	.0079 .200	.118 3.0	.020 .5	7.988 202.9	.122 3.1	.224 5.69	.138 3.5	32,175 143,000	24,075 107,000	11.000 4.990	4,200 3,900	3,600 3,300
6319	3.7402 95	.0008 .020	7.8740 200	.0012 .030	1.7717 45	.0079 .200	.118 3.0	.020 .5	8.382 212.9	.122 3.1	.224 5.69	.138 3.5	34,425 153,000	26,775 119,000	12.800 5.806	3,900 3,600	3,300 3,000
6320	3.9370 100	.0008 .020	8.4646 215	.0012 .030	1.8504 47	.0079 .200	.118 3.0	.020 .5					38,925 173,000	31,725 141,000	15.52 7.04	3,700 3,600	3,200 3,000
6321	4.1339 105	.0008 .020	8.8583 225	.0012 .030	1.9291 49	.0079 .200	.118 3.0	.020 .5					41,400 184,000	34,650 154,000	18.300 8.09	3,600 3,400	3,000 2,900
6322	4.3307 110	.0008 .020	9.4488 240	.0012 .030	1.9685 50	.0079 .200	.118 3.0	.020 .5					46,125 205,000	40,275 180,160	20.9 9.51	3,400 3,100	2,900 2,600
6324	4.7244 120	.0008 .020	10.2362 260	.0014 .035	2.1654 55	.0079 .200	.118 3.0	.020 .5					46,575 207,000	41,625 185,000	27.56 12.53	3,100 2,800	2,600 2,400
6326	5.1181 130	.0010 .025	11.0236 280	.0014 .035	2.2835 58	.0098 .250	.157 4.0	.020 .5					51,525 229,000	48,150 214,000	33.700 15.286	2,800 2,600	2,400 2,200
6328	5.5118 140	.0010 .025	11.8110 300	.0014 .035	2.4409 62	.0098 .250	.157 4.0	.020 .5					56,925 253,000	55,350 246,000	40.800 18.507	2,600 2,400	2,200 2,100
6330	5.9055 150	.0010 .025	12.5984 320	.0016 .040	2.5591 65	.0098 .120	.157 4.0	.020 .5					61,500 274,000	63,900 284,000	50.05 22.70	2,400 2,300	2,100 1,900
6332	6.2992 160	.0010 .025	13.3858 340	.0016 .040	2.6772 68	.0098 .120	.157 4.0	.020 .5					62,550 278,000	64,575 287,000	57.77 26.2	2,300 2,100	1,900 1,800
6334	6.6929 170	.0010 .025	14.1732 360	.0016 .040	2.8346 72	.0098 .120	.157 4.0	.020 .5					73,125 325,000	79,875 355,000	80.7 36.6	2,100 2,000	1,800 1,700
6336	7.0866 180	.0012 .025	14.9606 380	.0016 .040	2.9528 75	.0098 .120	.157 4.0	.020 .5					79,875 355,000	91,150 407,000	95.63 8.10	2,000 1,800	1,700 1,600
6338	7.4803 190	.0012 .030	15.7480 400	.0016 .040	3.0709 78	.0118 .300	.197 5.0	.020 .5					79,875 355,000	93,375 415,000	109.6 49.7	1,900 1,800	1,600 1,500
6340	7.8740 200	.0012 .030	16.5354 420	.0018 .045	3.1496 80	.0118 .300	.197 5.0	.020 .5					92,250 410,000	112,500 500,000	122.000 55.339	1,800 1,600	1,500 1,400

\*Maximum fillet which corner radius of bearing will clear.

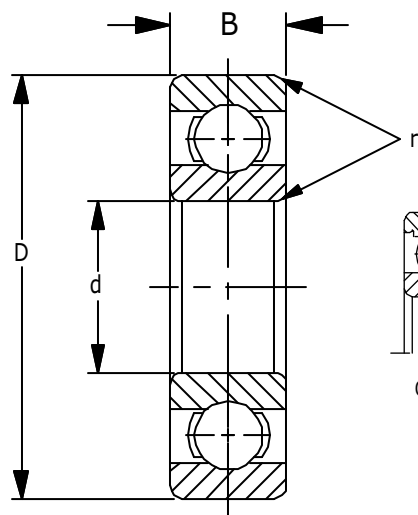
Similar to the 6200 and 6300 series offering various options such as shields, seals and locating rings. Manufactured with a larger ball size enabling the user to significantly increase the load using basically the same shaft parameters.



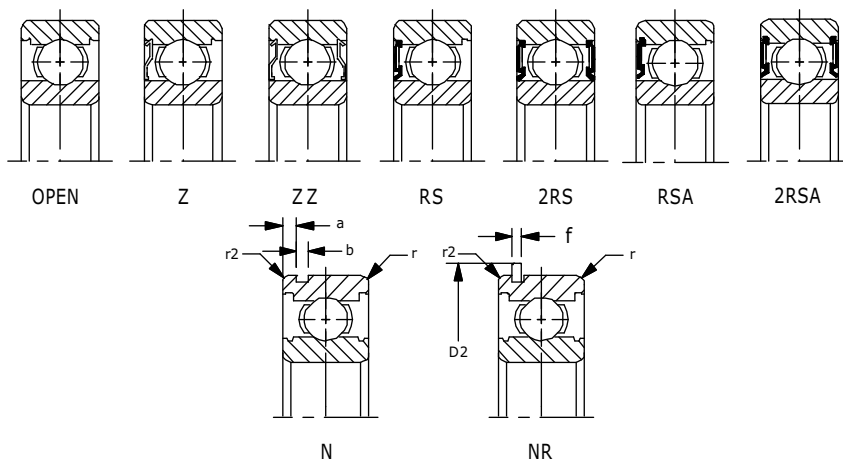
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r <sub>2</sub>	D <sub>2</sub> Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
6403	.6693	.0003	2.4409	.0005	.6693	.0047	.043	.020	2.665	.067	.129	.075	5,300	2,500	.600	16,000	14,000
	17	.008	62	.013	17	.120	1.1	.5	67.7	1.7	3.28	1.9	23,574	11,120	.272		
6404	.7874	.0004	2.8346	.0005	.7480	.0047	.043	.020	3.091	.067	.129	.075	6,950	3,350	.900	14,000	12,000
	20	.010	72	.013	19	.120	1.1	.5	78.5	1.7	3.28	1.9	30,913	14,902	.408		
6405	.9843	.0004	3.1496	.0005	.8268	.0047	.059	.020	3.406	.067	.129	.075	8,150	4,300	1.220	12,000	10,000
	25	.010	80	.013	21	.120	1.5	.5	86.5	1.7	3.28	1.9	36,251	19,128	.553		
6406	1.1811	.0004	3.5433	.0006	.9055	.0047	.059	.020	3.800	.097	.129	.106	9,750	5,350	1.640	10,000	8,800
	30	.010	90	.015	23	.120	1.5	.5	96.5	2.46	3.28	2.7	43,368	23,796	.744		
6407	1.3780	.0005	3.9370	.0006	.9842	.0047	.059	.020	4.1933	.097	.129	.106	12,200	6,950	2.160	9,100	7,800
	35	.012	100	.015	25	.120	1.5	.5	106.5	2.46	3.28	2.7	54,270	30,913	.980		
6408	1.5748	.0005	4.3307	.0006	1.0630	.0047	.079	.020	4.57	.097	.129	.106	14,300	8,200	2.800	8,200	7,000
	40	.012	110	.015	27	.120	2.0	.5	116.5	2.46	3.28	2.7	63,612	36,477	1.270		
6409	1.7717	.0005	4.7244	.0006	1.1417	.0047	.079	.020	5.102	.111	.160	.122	17,300	10,200	3.480	7,400	6,300
	45	.012	120	.015	29	.120	2.0	.5	129.6	2.82	4.06	3.1	79,950	45,369	1.579		
6410	1.9685	.0005	5.1181	.0007	1.2205	.0047	.083	.020	5.496	.111	.160	.122	19,600	11,600	4.340	6,700	5,700
	50	.012	130	.018	31	.120	2.1	.5	139.6	2.82	4.06	3.1	87,180	51,596	1.970		
6411	2.1654	.0006	5.5118	.0007	1.2992	.0059	.083	.020	5.894	.111	.193	.122	22,400	14,000	5.250	6,100	5,200
	55	.015	140	.018	33	.150	2.1	.5	149.7	2.82	4.9	3.1	99,635	62,272	2.381		
6412	2.3622	.0006	5.9055	.0007	1.3780	.0059	.083	.020	6.287	.111	.193	.122	24,500	15,600	6.370	5,700	4,800
	60	.015	150	.018	35	.150	2.1	.5	159.7	2.82	4.9	3.1	108,976	69,388	2.890		
6413	2.5591	.0006	6.2992	.0010	1.4567	.0059	.083	.020	6.677	.122	.193	.122	26,500	17,600	7.580	5,200	4,400
	65	.015	160	.020	37	.150	2.1	.5	169.6	2.82	4.9	3.1	117,872	78,284	3.440		
6414	2.7559	.0006	7.0866	.0010	1.6535	.0059	.118	.020	7.594	.122	.224	.138	32,000	23,200	10.300	4,800	4,100
	70	.015	180	.020	42	.150	3.0	.5	192.9	3.1	5.69	3.5	142,349	103,193	4.672		
6415	2.9528	.0006	7.4803	.0012	1.7717	.0059	.118	.020	7.984	.122	.224	.138	34,500	25,500	15.000	4,500	3,800
	75	.015	190	.030	45	.150	3.0	.5	202.8	3.1	5.69	3.5	153,456	113,434	6.804		
6416	3.1496	.0006	7.8740	.0012	1.8898	.0059	.118	.020	8.382	.122	.224	.138	36,500	28,000	17.800	4,200	3,500
	80	.015	200	.030	48	.150	3.0	.5	212.9	3.1	5.69	3.5	162,367	124,544	8.074		
6417	3.3465	.0008	8.2677	.0012	2.0472	.0079	.157	.020	8.776	.122	.224	.138	39,000	30,500	21.000	4,000	3,400
	85	.020	210	.030	52	.200	4.0	.5	222.9	3.1	5.69	3.5	173,472	135,664	9.526		
6418	3.5433	.0008	8.8583	.0012	2.1260	.0079	.157	.020	9.362	.122	.224	.138	44,000	36,500	25.000	3,800	3,200
	90	.020	225	.030	54	.200	4.0	.5	237.8	3.1	5.69	3.5	195,712	162,352	11.340		

\*Maximum fillet which corner radius of bearing will clear.



Designed to be dimensionally interchangeable with standard domestic inch series bearings. By using 52100 steel and holding dimensions to ABEC 1 tolerances, this series offers economy with electric motor quality. Close tolerance and improved ball complement allow an increased load capacity. This series is available with shields and seals. Consult the Peer sales engineer for availability.



Units: Inches  
Metric

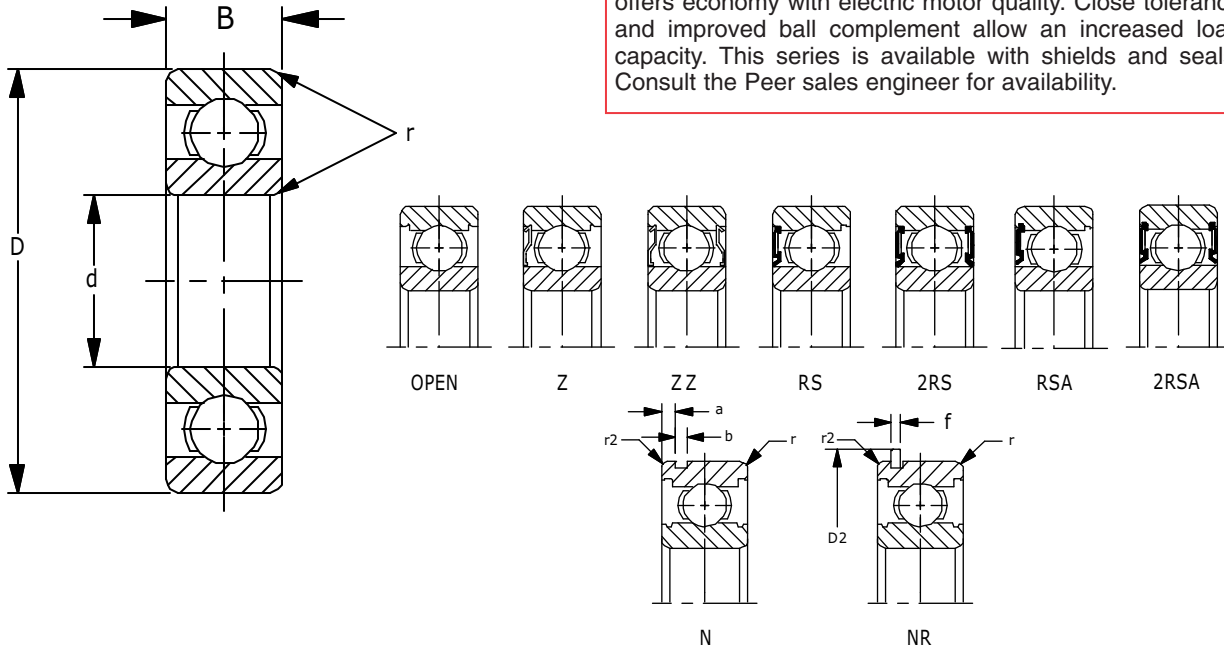
Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width (inch) (B)	Tolerance +.0000 to minus	* fillet radii r	Basic Load Ratings lbf N	
								Dynamic Cr	Static Cor
1601	$\frac{3}{16}$	.0010	$1\frac{1}{16}$	.0005	$\frac{1}{4}$	.0050	.012	490	168
1602	.1875	.0005	.6875	.0005	$\dagger.2500$	.0050	.012	2,180	748
	$\frac{1}{4}$		$\dagger.2500$		545			196	
1603	$\frac{3}{16}$	.0005	$\frac{7}{8}$	.0005	$\frac{9}{32}$	.0050	.012	825	317
	.3125		$\ddagger.2812$		3,670			1,411	
1604	$\frac{3}{8}$	.0005	$\frac{7}{8}$	.0005	$\frac{9}{32}$	.0050	.015	825	317
	.3750		$\ddagger.2812$		3,670			1,411	
1605	$\frac{3}{16}$	.0005	$\frac{29}{32}$	.0005	$\frac{5}{16}$	.0050	.012	835	326
	.3125		.9062		.3125			3,714	1,449
1606	$\frac{3}{8}$	.0005	$\frac{29}{32}$	.0005	$\frac{5}{16}$	.0050	.015	835	326
	.3750		.9062		.3125			3,714	1,449
1607	$\frac{7}{16}$	.0008	$\frac{29}{32}$	.0005	$\frac{5}{16}$	.0050	.015	835	326
	.4375		.9062		.3125			3,714	1,449
1614	$\frac{3}{8}$	.0005	$1\frac{1}{8}$	.0005	$\frac{3}{8}$	.0050	.025	1265	538
	.3750		1.1250		.3750			5,627	2,392
1615	$\frac{7}{16}$	.0005	$1\frac{1}{8}$	.0005	$\frac{3}{8}$	.0050	.025	1265	538
	.4375		1.1250		.3750			5,627	2,392
1616	$\frac{1}{2}$	.0005	$1\frac{1}{8}$	.0005	$\frac{3}{8}$	.0050	.025	1265	538
	.5000		1.1250		.3750			5,627	2,392
1620	$\frac{7}{16}$	.0005	$1\frac{3}{8}$	.0005	$\frac{7}{16}$	.0050	.025	1890	836
	.4375		1.3750		.4375			8,407	3,716
1621	$\frac{1}{2}$	.0005	$1\frac{3}{8}$	.0005	$\frac{7}{16}$	.0050	.025	1890	836
	.5000		1.3750		.4375			8,407	3,716

\*Maximum fillet which corner radius of bearing will clear. †Width 5/16 for RS and 2RS types. ‡Width 11/32 for RS and 2RS types.



# 1600 SERIES (continued)

Designed to be dimensionally interchangeable with standard domestic inch series bearings. By using 52100 steel and holding dimensions to ABEC 1 tolerances, this series offers economy with electric motor quality. Close tolerance and improved ball complement allow an increased load capacity. This series is available with shields and seals. Consult the Peer sales engineer for availability.

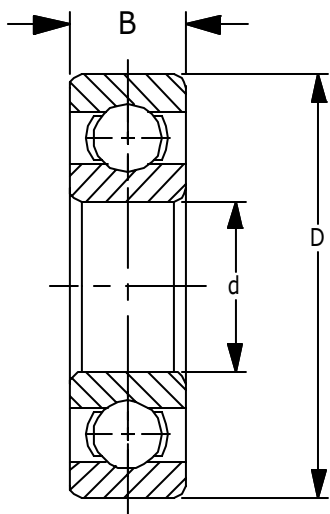


Units: Inches  
Metric

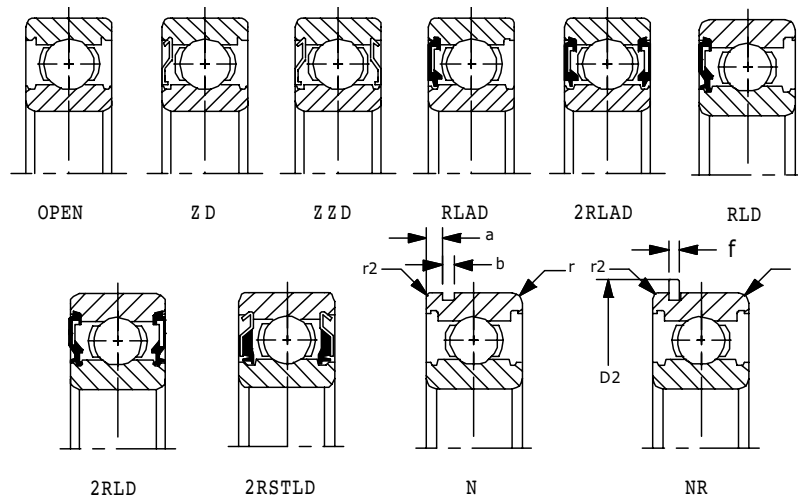
Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width (inch)	Tolerance +.0000 to minus	* fillet radii r	Basic Load Ratings	
								Dynamic Cr	Static Cor
1622	9/16	.0005	1 3/8	.0005	7/16	.0050	.025	1890	836
	.5625		1.3750		.4375			8,407	3,716
1623	5/8	.0005	1 3/8	.0005	7/16	.0050	.025	1890	836
	.6250		1.3750		.4375			8,407	3,716
1628	5/8	.0005	1 5/8	.0005	1/2	.0050	.025	2600	1010
	.6250		1.6250		.5000			11,564	4,492
1630	3/4	.0005	1 5/8	.0005	1/2	.0050	.025	2320	1117
	.7500		1.6250		.5000			10,320	4,966
1633	5/8	.0005	1 3/4	.0005	1/2	.0050	.025	2325	1142
	.6250		1.7500		.5000			10,343	5,079
1635	3/4	.0005	1 3/4	.0005	1/2	.0050	.025	2325	1142
	.7500		1.7500		.5000			10,343	5,079
1638	3/4	.0005	2	.0006	9/16	.0047	.035	2485	1338
	.7500		2.0000		.5625			11,054	5,952
1640	7/8	.0005	2	.0006	9/16	.0047	.035	2485	1338
	.8750		2.0000		.5625			11,054	5,952
1641	1	.0005	2	.0006	9/16	.0047	.035	3465	1752
	1.0000		2.0000		.5625			15,414	7,794
1652	1 1/8	.0005	2 1/2	.0006	5/8	.0047	.035	3955	2300
	1.1250		2.5000		.6250			17,593	10,231
1654	1 1/4	.0005	2 1/2	.0006	5/8	.0047	.035	3955	2300
	1.2500		2.5000		.6250			17,593	10,231
1657	1 1/4	.0005	2 9/16	.0006	1 1/16	.0047	.035	3950	2317
	1.2500		2.5625		.6875			17,571	10,305
1658	1 5/16	.0005	2 9/16	.0006	1 1/16	.0047	.035	3950	2317
	1.3125		2.5625		.6875			17,571	10,305

\*Maximum fillet which corner radius of bearing will clear.

# W6200 CARTRIDGE SERIES



A basic 6200 bearing ball complement with wider widths. Used primarily in electric motors when extra grease storage is necessary. Will offer more shaft stability due to the extra width.



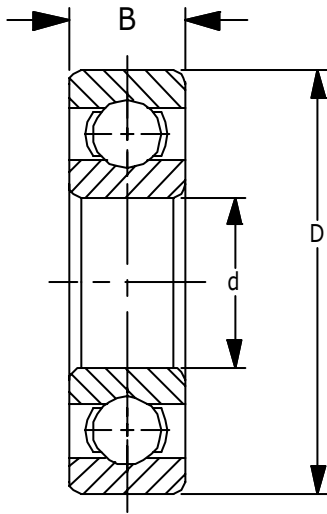
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r2	D2 Max	f Max	a Max	b Min	Dynamic Cr	Static Cor		oil	grease
W6200	.3937	.0003	1.1811	.0004	.562	.0047	.024	.020	1.366	.044	.081	.053	1,150	540	.100	30,000	25,000
	10	.008	30	.009	14.27	.120	.6	.5	34.7	1.12	2.06	1.35	5,100	2,390	.045		
W6201	.4724	.0003	1.2598	.0005	.625	.0047	.024	.020	1.445	.044	.081	.053	1,530	680	.120	26,000	22,000
	12	.008	32	.011	15.58	.120	.6	.5	36.7	1.12	2.06	1.35	6,800	3,050	.054		
W6202	.5906	.0003	1.3780	.0005	.625	.0047	.024	.020	1.563	.044	.081	.053	1,740	839	.150	26,000	20,000
	15	.008	35	.011	15.58	.120	.6	.5	39.7	1.12	2.06	1.35	7,740	3,732	.068		
W6203	.6693	.0003	1.5748	.0005	.688	.0047	.024	.020	1.756	.044	.081	.053	2,160	1,080	.220	21,000	18,000
	17	.008	40	.011	17.48	.120	.6	.5	44.6	1.12	2.06	1.35	9,600	4,800	.100		
W6204	.7874	.0004	1.8504	.0005	.812	.0047	.039	.020	2.075	.044	.097	.053	2,880	1,480	.340	18,000	16,000
	20	.010	47	.011	20.62	.120	1.0	.5	52.7	1.12	2.46	1.35	12,811	6,580	.154		
W6205	.9743	.0004	2.0472	.0005	.812	.0047	.039	.020	2.280	.044	.097	.053	3,150	1,770	.390	15,000	13,000
	25	.010	52	.013	20.62	.120	1.0	.5	57.9	1.12	2.46	1.35	14,000	7,850	.177		
W6206	1.1811	.0004	2.4409	.0005	.938	.0047	.039	.020	2.665	.067	.129	.075	4,400	2,540	.630	13,000	11,000
	30	.010	62	.013	23.83	.120	1.0	.5	67.7	1.7	3.28	1.9	19,500	11,300	.286		
W6207	1.3780	.0005	2.8346	.0005	1.062	.0047	.043	.020	3.094	.067	.129	.075	5,782	3,442	.960	11,000	9,300
	35	.012	72	.013	26.97	.120	1.1	.5	78.6	1.7	3.28	1.9	25,700	15,300	.435		
W6208	1.5748	.0005	3.1496	.0005	1.188	.0047	.043	.020	3.409	.067	.129	.075	6,550	4,000	1.280	10,000	8,700
	40	.012	80	.013	30.18	.120	1.1	.5	86.6	1.7	3.28	1.9	29,100	17,900	.581		
W6209	1.7717	.0005	3.3465	.0006	1.188	.0047	.043	.020	3.606	.067	.129	.075	7,350	4,580	1.370	9,200	7,800
	45	.012	85	.015	30.1	.120	1.1	.5	91.6	1.7	3.28	1.9	32,700	20,400	.621		
W6210	1.9685	.0005	3.5433	.0006	1.188	.0047	.043	.020	3.799	.097	.129	.106	7,875	5,220	1.450	8,300	7,100
	50	.012	90	.015	30.18	.120	1.1	.5	96.5	2.46	3.28	2.7	35,000	23,200	.658		
W6211	2.1654	.0006	3.9370	.0006	1.311	.0059	.059	.020	4.193	.097	.129	.106	9,800	6,580	2.040	7,600	6,400
	55	.015	100	.015	33.30	.150	1.5	.5	106.5	2.46	3.28	2.7	43,500	29,300	.925		
W6212	2.3622	.0006	4.3307	.0006	1.437	.0059	.098	.020	4.591	.097	.129	.106	11,800	8,100	2.800	7,000	6,000
	60	.015	110	.015	36.50	.150	2.5	.5	116.6	2.46	3.28	2.7	52,500	36,000	1.270		

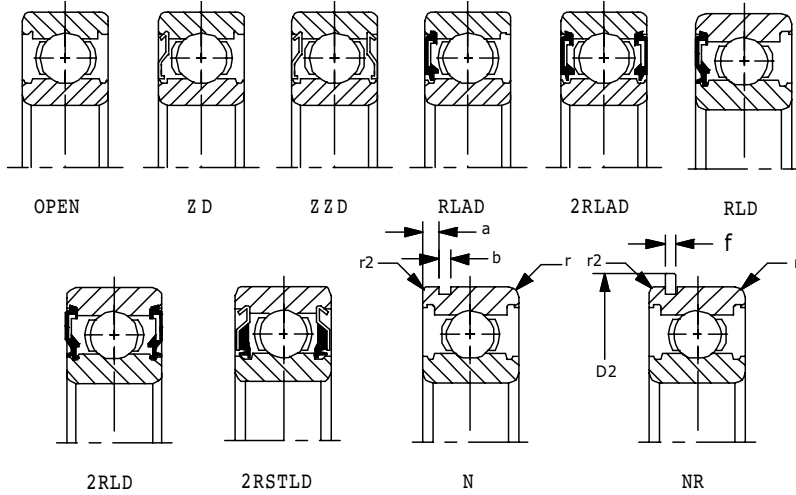
\*Maximum fillet which corner radius of bearing will clear.



# W6300 CARTRIDGE SERIES



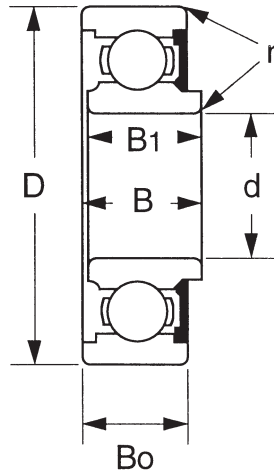
A basic 6300 bearing ball complement with wider widths. Having the same application as the W6200 series bearing.



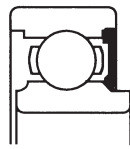
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
							r	r2	D2	f	a	b	Dynamic Cr	Static Cor		oil	grease
W6302	.5906	.0003	1.6535	.0005	.748	.0047	.039	.020	1.823	.044	.081	.053	2,570	1,220	.280	21,000	17,000
	15	.008	42	.011	19.00	.120	1.0	.5	46.3	1.12	2.06	1.35	11,400	5,450	.127		
W6303	.6693	.0003	1.8504	.0005	.875	.0047	.039	.020	2.075	.044	.097	.053	3,060	1,470	.320	19,000	16,000
	17	.008	47	.011	22.22	.120	1.0	.5	52.7	1.12	2.46	1.35	13,600	6,650	.145		
W6304	.7874	.0004	1.0472	.0005	.8750	.0047	.043	.020	2.280	.044	.097	.053	3,600	1,770	.480	17,000	14,000
	20	.010	52	.013	22.22	.120	1.1	.5	57.9	1.12	2.46	1.35	15,900	7,900	.218		
W6305	.9843	.0004	2.4409	.0005	1.000	.0047	.043	.020	2.665	.067	.129	.075	4,750	2,460	.780	14,000	12,000
	25	.010	62	.013	25.40	.120	1.1	.5	67.7	1.7	3.28	1.9	21,200	11,200	.354		
W6306	1.1811	.0004	2.8346	.0005	1.188	.0047	.043	.020	3.094	.067	.129	.075	6,000	3,375	1.130	12,000	10,000
	30	.010	72	.013	30.18	.120	1.1	.5	78.6	1.7	3.28	1.9	26,700	15,000	.513		
W6307	1.3780	.0005	3.1496	.0005	1.375	.0047	.059	.020	3.409	.067	.129	.075	7,537	4,320	1.640	10,000	8,800
	35	.012	80	.013	34.92	.120	1.5	.5	86.6	1.7	3.28	1.9	33,500	19,200	.744		
W6308	1.5748	.0005	3.5433	.0006	1.438	.0047	.059	.020	3.799	.097	.129	.106	9,112	5,400	2.060	9,200	7,800
	40	.012	90	.015	36.53	.120	1.5	.5	96.5	2.46	3.28	2.7	40,500	24,000	.937		
W6309	1.7717	.0005	3.9370	.0006	1.562	.0047	.059	.020	4.193	.097	.129	.106	11,925	7,200	3.000	8,200	7,000
	45	.012	100	.015	39.67	.120	1.5	.5	106.5	2.46	3.28	2.7	53,000	32,000	1.361		
W6310	1.9685	.0005	4.3307	.0006	1.750	.0047	.079	.020	4.591	.097	.129	.106	13,950	8,600	3.750	7,500	6,400
	50	.012	110	.015	44.45	.120	2.0	.5	116.6	2.46	3.28	2.7	62,000	38,500	1.701		
W6311	2.1654	.0006	4.7244	.0006	1.938	.0059	.079	.020	5.106	.111	.160	.122	16,100	10,125	5.120	6,800	5,800
	55	.015	120	.015	49.23	.150	2.0	.5	129.7	2.82	4.06	3.1	71,500	45,000	2.322		
W6312	2.3622	.0006	5.1181	.0007	2.125	.0059	.079	.020	5.500	.111	.160	.122	18,450	11,700	6.500	6,300	5,400
	60	.015	130	.018	53.98	.150	2.1	.5	139.7	2.82	4.06	3.1	82,000	52,000	2.948		
W6313	2.5591	.0006	5.5118	.0007	2.312	.0059	.079	.020	5.894	.111	.193	.122	20,800	13,500	8.170	5,800	4,900
	65	.015	140	.018	58.72	.150	2.1	.5	149.7	2.82	4.9	3.1	92,500	60,000	3.706		
W6314	2.7559	.0006	5.9055	.0007	2.500	.0059	.079	.020	6.287	.111	.193	.122	23,400	15,300	10.500	5,400	4,600
	70	.015	150	.018	63.50	.150	2.1	.5	159.7	2.82	4.9	3.1	104,000	68,000	4.763		
W6315	2.9528	.0006	6.2992	.0010	2.688	.0059	.079	.020	6.681	.111	.193	.122	25,425	17,325	12.800	5,000	4,300
	75	.015	160	.025	68.28	.150	2.1	.5	169.7	2.82	4.9	3.1	113,000	77,000	5.806		

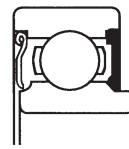
\*Maximum fillet which corner radius of bearing will clear.



For applications where dirt exclusion and lubrication retention are primary considerations. This series is designed with an extended inner race to meet the exact dimension of the felt series. Varying the contact pressure of the lip seal allows these bearings to be used for extremely high speed as well as for normal applications.



8000  
SEAL



87000  
SEAL AND SHIELD

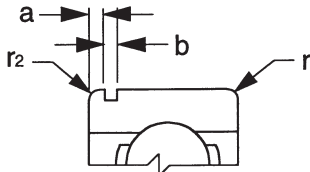
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width			Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm) grease
					Outer B <sub>0</sub> inch	Inner B <sub>1</sub> inch	Overall B inch		r	r <sub>2</sub>	D <sub>2</sub>	f	a	b	Dynamic Cr	Static Cor		
8035 87035	.1969 5	.0003	.7480 19	.0004	.315	.386	.406	.0050	.012 .31					525 2,335	200 890	.023 .010	23,000	
8036 87036	.2362 6	.0003	.7480 19	.0004	.315	.386	.406	.0050	.012 .31					525 2,335	200 890	.025 .011	23,000	
8006 87006	.2362 6	.0003	.9449 24	.0004	.315	.386	.406	.0050	.012 .31					750 3,336	325 1,446	.048 .022	23,000	
8037 87037	.2756 7	.0003	.8661 22	.0004	.315	.386	.406	.0050	.012 .31					750 3,336	300 1,335	.039 .018	23,000	
8007 8707	.2756 7	.0003	.9449 24	.0004	.315	.386	.406	.0050	.012 .31					900 4,004	355 1,579	.047 .021	23,000	
8038 87038	.3150 8	.0003	.8661 22	.0004	.315	.386	.406	.0050	.012 .31					750 3,336	315 1,401	.038 .017	23,000	
8008 87008	.3150 8	.0003	.9449 24	.0004	.315	.386	.406	.0050	.012 .31					900 4,004	355 1,579	.044 .020	23,000	
8039 87039	.3543 9	.0003	1.0236 26	.0004	.315	.386	.406	.0050	.012 .31					900 4,004	355 1,579	.063 .029	17,000	
8009 87009	.3543 9	.0003	1.1811 30	.0004	.354	.480	.500	.0050	.012 .31	.010 .25	1.366 34.70	.044 1.12	.081 2.06	.053 1.25	1,150 5,116	540 2,402	.095 .043	17,000
8500 87500	.3937 10	.0003	1.1811 30	.0004	.354	.480	.500	.0050	.024 .60	.020 .51	1.366 34.70	.044 1.12	.081 2.06	.053 1.25	1,150 5,116	540 2,402	.077 .035	17,000
8011 87011	.4331 11	.0003	1.2598 32	.0005	.394	.480	.500	.0050	.024 .60	.020 .51	1.445 36.7	.044 1.12	.081 2.06	.053 1.25	1,530 6,806	680 3,025	.101 .046	15,000
8501 87501	.4724 12	.0003	1.2598 32	.0005	.394	.480	.500	.0050	.024 .60	.020 .51	1.445 36.7	.044 1.12	.081 2.06	.053 1.25	1,530 6,806	680 3,025	.097 .044	15,000

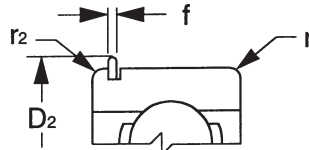
\*Maximum fillet which corner radius of bearing will clear.



# 8000 & 87000 SERIES (continued)



**SNAP RING GROOVE DIMENSIONS SUFFIX N**



**SNAP RING DIMENSIONS SUFFIX NR**

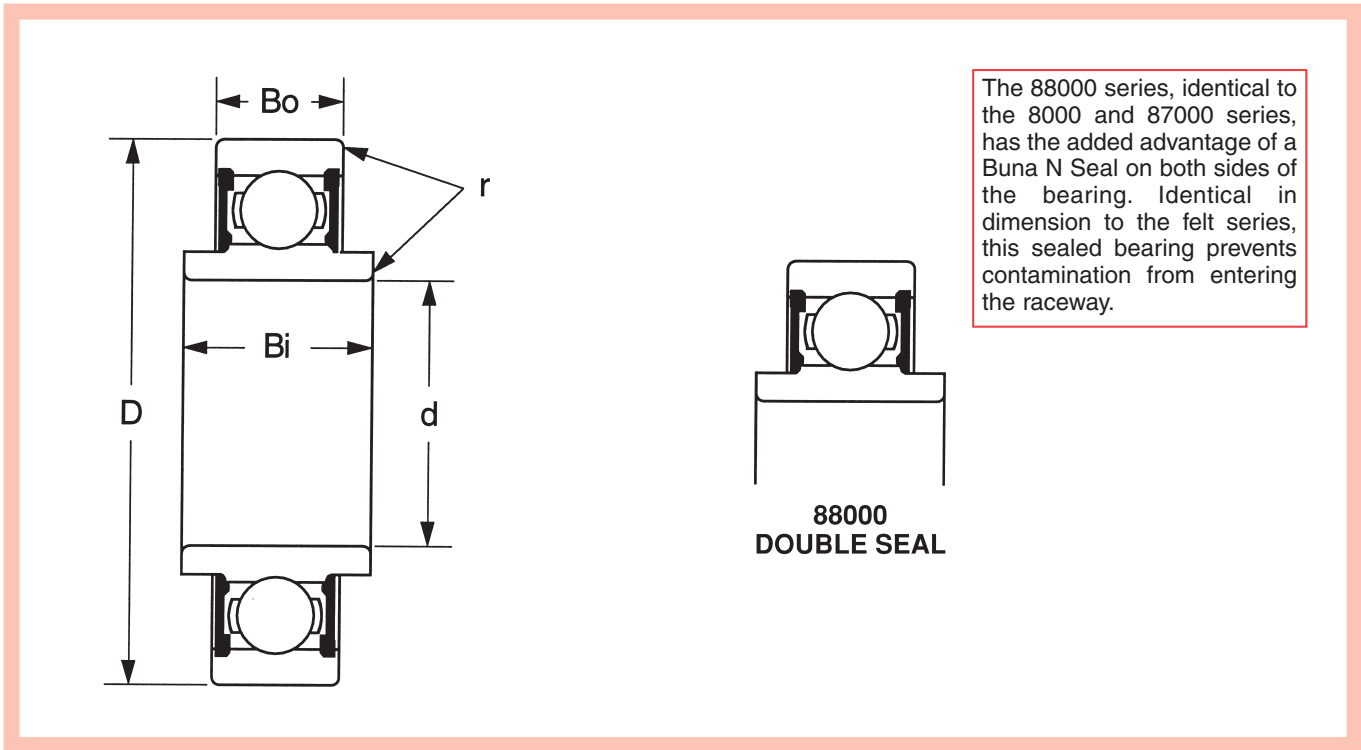
For applications where dirt exclusion and lubrication retention are primary considerations. This series is designed with an extended inner race to meet the exact dimension of the felt series. Varying the contact pressure of the lip seal allows these bearings to be used for extremely high speed as well as for normal applications.

Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width			Tolerance +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings		Weight lb Kg	Limiting speed of Open Bearing (rpm) grease
					Outer B <sub>0</sub> inch	Inner B <sub>1</sub> inch	Overall B inch		r	r <sub>2</sub>	D <sub>2</sub>	f	a	b	Dynamic C <sub>r</sub>	Static C <sub>or</sub>		
8013 87013	.5118 13	.0003	1.2598 32	.0005	.394	.480	.500	.0050	.024 .60		1.445 36.7	.044 1.12	.081 2.06	.053 1.35	1,530 6,806	680 3,025	.093 .042	15,000
8014 87014	.5512 14	.0003	1.3780 35	.0005	.433	.480	.500	.0050	.024 .60		1.563 39.7	.044 1.12	.081 2.06	.053 1.35	1,740 7,740	839 3,732	.115 .052	13,000
8502 87502	.5906 15	.0003	1.3780 35	.0005	.433	.480	.500	.0050	.024 .60		1.563 39.7	.044 1.12	.081 2.06	.053 1.35	1,740 7,740	839 3,732	.108 .049	13,000
8016 87016	.6299 16	.0003	1.3780 35	.0005	.433	.480	.500	.0050	.024 .60		1.563 39.7	.044 1.12	.081 2.06	.053 1.35	1,740 7,740	839 3,732	.105 .048	13,000
8503 87503	.6693 17	.0003	1.5748 40	.0005	.472	.538	.563	.0050	.024 .60		1.756 44.6	.044 1.12	.081 2.06	.053 1.35	2,150 9,564	1,080 4,804	.154 .070	12,000
8504 87504	.7874 20	.0004	1.8504 47	.0005	.551	.600	.625	.0050	.039 1.00		2.075 52.7	.044 1.12	.097 2.46	.053 1.35	2,880 12,811	1,480 6,584	.237 .108	10,000
8505 87505	.9843 25	.0004	2.0472 52	.0005	.591	.600	.625	.0050	.039 1.00		2.280 57.9	.044 1.12	.097 2.46	.053 1.35	3,150 14,012	1,770 7,874	.292 .132	8,900
8026 87026	1.0236 26	.0004	2.0472 52	.0005	.591	.600	.625	.0050	.040 1.01		2.280 57.9	.044 1.12	.097 2.46	.053 1.35	3,150 14,012	1,770 7,874	.282 .128	8,900
8506 87506	1.1811 30	.0004	2.4409 62	.0005	.630	.748	.787	.0050	.040 1.01		2.665 67.7	0.67 1.70	.129 3.28	.075 1.90	4,400 19,573	2,540 11,299	.506 .230	7,300
8507 87507	1.3780 35	.0005	2.8346 72	.0005	.669	.787	.827	.0050	.041 1.02		3.094 78.6	0.67 1.70	.129 3.28	.075 1.90	5,770 25,667	3,450 15,347	.708 .321	6,300
8508 87508	1.5748 40	.0005	3.1496 80	.0005	.827	.945	.945	.0050	.041 1.02		3.409 86.6	0.67 1.70	.129 3.28	.075 1.90	6,550 29,137	4,000 17,794	1.182 .536	5,600
8509 87509	1.7717 45	.0005	3.3465 85	.0006	.827	.945	.945	.0050	.042 1.03		3.606 91.6	0.67 1.70	.129 3.28	.075 1.90	7,200 32,028	4,580 20,374	1.200 .544	5,200
8510 87510	1.9685 50	.0005	3.5433 90	.0006	.866	1.024	1.024	.0050	.042 1.03		3.799 96.5	0.97 2.46	.129 3.28	.106 2.69	7,900 35,142	5,200 23,132	1.300 .590	4,700
8511 87511	2.1654 55	.0006	3.9370 100	.0006	.906	1.063	1.063	.0050	.059 1.50		4.193 106.5	0.97 2.46	.129 3.28	.106 2.69	9,800 43,594	6,580 29,270	1.640 .744	4,300
8512 87512	2.3622 60	.0006	4.3307 110	.0006	.984	1.142	1.142	.0060	.059 1.50		4.591 116.6	0.97 2.46	.129 3.28	.106 2.69	11,800 52,491	8,140 36,210	2.110 .957	4,000
8513 87513	2.591 65	.0006	4.7244 120	.0006	1.024	1.221	1.221	.0060	.059 1.50		5.106 129.7	.111 2.82	.160 4.06	.122 3.10	12,900 57,384	9,000 40,036	2.800 1.270	3,600
8514 87514	2.7559 70	.0006	4.9213 125	.0006	1.102	1.299	1.299	.0060	.059 1.50		5.303 137.4	.111 2.82	.160 4.06	.122 3.10	14,000 62,278	9,900 44,039	3.000 1.361	3,400

\*Maximum fillet which corner radius of bearing will clear.





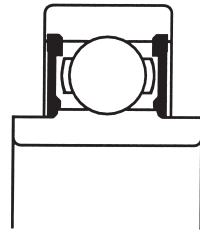
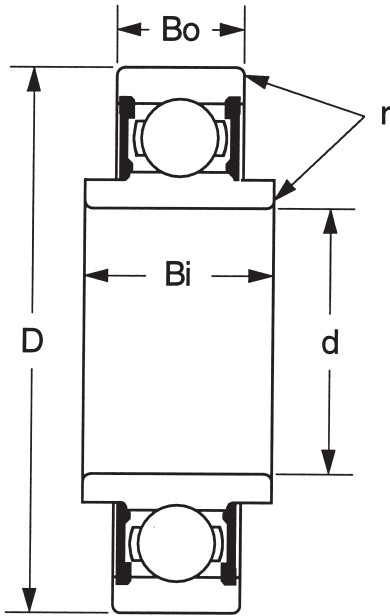
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B		Tolerance +.0000 to minus	* fillet radius r	Basic Load Ratings lb f N		Weight lb Kg	Limiting speed of Open Bearing (rpm)
					Outer Bo inch	Inner B1 inch			Dynamic Cr	Static Cor		
88035	.1969	.0003	.7480	.0004	.3150	.4970	.0050	.012	525	199	.026	30,000
	5		19					.30	2,335	885	.012	
88036	.2362	.0003	.7480	.0004	.3150	.4970	.0050	.012	525	199	.027	30,000
	6		19					.30	2,335	885	.012	
88006	.2362	.0003	.9449	.0004	.3150	.4970	.0050	.012	750	315	.055	24,000
	6		24					.30	3,336	1,401	.025	
88037	.2756	.0003	.8661	.0004	.3150	.4970	.0050	.012	750	315	.043	23,000
	7		22					.30	3,336	1,401	.020	
88007	.2756	.0003	.9449	.0004	.3150	.4970	.0050	.012	900	355	.051	24,000
	7		24					.30	4,004	1,579	.023	
88038	.3150	.0003	.8661	.0004	.3150	.4970	.0050	.012	750	315	.040	23,000
	8		22					.30	3,336	1,401	.018	
88008	.3150	.0003	.9449	.0004	.3150	.4970	.0050	.012	900	355	.048	24,000
	8		24					.30	4,004	1,579	.022	
88039	.3543	.0003	1.0236	.0004	.3150	.4970	.0050	.012	1,030	440	.057	21,000
	9		26					.30	4,582	1,957	.026	
88009	.3543	.0003	1.1811	.0004	.3543	.6457	.0050	.012	1,150	540	.105	18,000
	9		30					.30	5,116	2,402	.048	
88500	.3937	.0003	1.1811	.0004	.3543	.6457	.0050	.024	1,150	540	.091	18,000
	10		30					.60	5,116	2,402	.041	
88011	.4331	.0003	1.2598	.0005	.3937	.6063	.0050	.024	1,370	615	.104	16,000
	11		32					.60	6,094	2,736	.047	
88501	.4724	.0003	1.2598	.0005	.3937	.6063	.0050	.024	1,530	680	.099	16,000
	12		32					.60	6,806	3,025	.045	
88013	.5118	.0003	1.2598	.0005	.3937	.6063	.0050	.024	1,530	680	.095	16,000
	13		32					.60	6,806	3,025	.043	
88014	.5512	.0003	1.3780	.0005	.4331	.5669	.0050	.024	1,530	839	.125	15,000
	14		35					.60	6,806	3,732	.057	

\*Maximum fillet which corner radius of bearing will clear.



# 88000 SERIES (continued)



**88000  
DOUBLE SEAL**

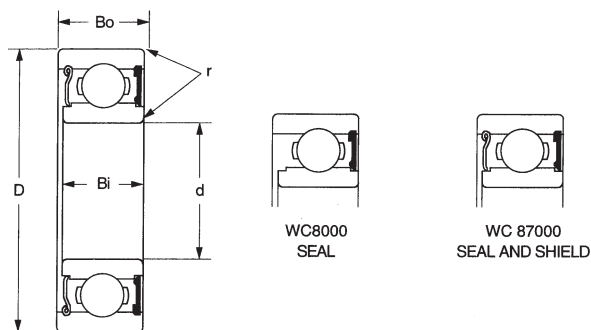
The 88000 series, identical to the 8000 and 87000 series, has the added advantage of a Buna N Seal on both sides of the bearing. Identical in dimension to the felt series, this sealed bearing prevents contamination from entering the raceway.

Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B		Tolerance +.0000 to minus	* fillet radius r	Basic Load Ratings lb <sub>f</sub> N		Weight lb Kg	Limiting speed of Open Bearing (rpm)
					Outer B <sub>0</sub> inch	Inner B <sub>1</sub> inch			Dynamic C <sub>r</sub>	Static C <sub>or</sub>		
88502	.5906	.0003	1.3780	.0005	.4331	.5669	.0050	.024	1,530	839	.119	15,000
	15		35					.60	6,806	3,732		
88016	.6299	.0003	1.3780	.0005	.4331	.5669	.0050	.024	1,530	839	.114	15,000
	16		35					.60	6,806	3,732		
88503	.6693	.0003	1.5748	.0005	.4620	.6536	.0050	.024	2,150	1,080	.166	12,000
	17		40					.60	9,564	4,804		
88504	.7874	.0004	1.8504	.0005	.5512	.6988	.0050	.039	2,880	1,480	.259	10,000
	20		47					1.00	12,811	6,584		
88505	.9843	.0004	2.0472	.0005	.5906	.6594	.0050	.039	3,150	1,770	.304	8,900
	25		52					1.00	14,012	7,874		
88026	1.0236	.0004	2.0472	.0005	.5906	.6594	.0050	.039	3,150	1,770	.294	8,900
	26		52					1.00	14,012	7,874		
88506	1.1811	.0004	2.4409	.0005	.6299	.9449	.0050	.039	4,400	2,540	.571	7,300
	30		62					1.00	19,573	11,299		
88507	1.3780	.0005	2.8346	.0005	.6693	.9843	.0050	.039	5,750	3,450	.765	6,300
	35		72					1.00	25,578	15,347		
88508	1.5748	.0005	3.1496	.0005	.8268	1.0630	.0050	.039	6,550	4,000	1.18	5,600
	40		80					1.00	29,137	17,794		
88509	1.7717	.0005	3.3465	.0006	.8268	1.0630	.0050	.039	7,200	4,580	1.22	5,200
	45		85					1.00	32,028	20,374		
88510	1.9685	.0005	3.5433	.0006	.8661	1.1811	.0050	.039	7,900	5,200	1.40	4,700
	50		90					1.00	35,142	23,132		
88511	2.1654	.0005	3.9370	.0006	.9055	1.2205	.0060	.059	9,800	6,580	1.78	4,300
	55		100					1.50	43,594	29,270		
88512	2.3622	.0005	1.3307	.0006	.9843	1.2992	.0060	.059	11,800	8,140	2.34	3,800
	60		110					1.50	52,491	36,210		
88513	2.5591	.0005	4.7244	.0006	1.0236	1.4173	.0060	.059	12,900	9,000	3.05	3,600
	65		120					1.50	57,384	40,036		

\*Maximum fillet which corner radius of bearing will clear.

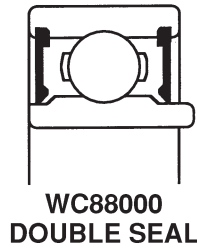
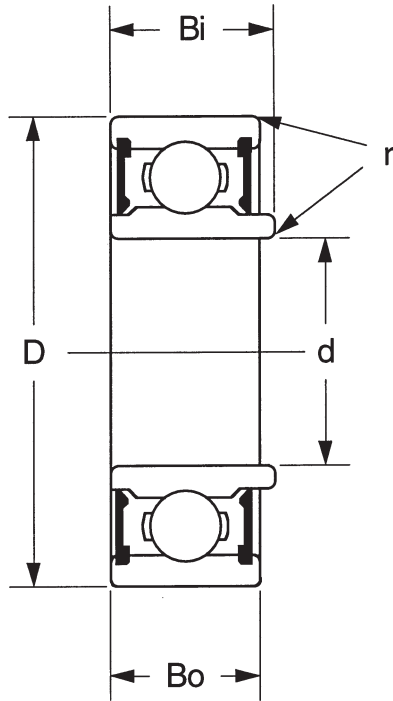
# WC8000 & WC87000 SERIES



This series is made with contact Buna N Seals to meet the exact dimensions of the side cup WC felt series. The wider outer race offers greater contact with the housing, helping to reduce creeping and distortion of the housing bore. The Buna N Seal makes possible the advantage of variable lip pressures, used in higher speed applications. Specially designed for use in soft metal housings such as aluminum and magnesium.

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width		Tolerance +.0000 to minus	* fillet radius r	Basic Load Ratings		Weight lb Kg	Limiting speed of Open Bearing (rpm) grease
					(Bo) Outer Inch	Bi Inner Inch			Dynamic Cr	Static Cor		
WC8035/WC87035	.1969 5	.0003	.7480 19	.0004	.406	.386	.0050	.012 .300	405 1,802	199 885	.026 .012	23,000
WC8036/WC87036	.2362 6	.0003	.7480 19	.0004	.406	.386	.0050	.012 .300	405 1,802	199 885	.027 .012	23,000
WC8006/WC87006	.2362 6	.0003	.9449 24	.0004	.406	.386	.0050	.012 .300	690 3,069	315 1,401	.055 .025	23,000
WC8037/WC87037	.2756 7	.0003	.8661 22	.0004	.406	.386	.0050	.012 .300	580 2,580	315 1,401	.043 .020	23,000
WC8007/WC87007	.2756 7	.0003	.9449 24	.0004	.406	.386	.0050	.012 .300	690 3,069	355 1,579	.051 .023	23,000
WC8038/WC87038	.3150 8	.0003	.8661 22	.0004	.406	.386	.0050	.012 .300	580 2,580	315 1,401	.040 .018	23,000
WC8008/WC87008	.3150 8	.0003	.9449 24	.0004	.406	.386	.0050	.012 .300	690 3,069	355 1,579	.048 .022	23,000
WC8039/WC87039	.3543 9	.0003	1.0236 26	.0004	.406	.386	.0050	.012 .300	790 3,514	440 1,957	.057 .026	17,000
WC8009/WC87009	.3543 9	.0003	1.1811 30	.0004	.500	.480	.0050	.012 .300	882 3,923	540 2,402	.105 .048	17,000
WC8500/WC87500	.3937 10	.0003	1.1811 30	.0004	.500	.480	.0050	.024 .600	882 3,923	540 2,402	.091 .041	17,000
WC8011/WC87011	.4331 11	.0003	1.2598 32	.0005	.500	.480	.0050	.024 .600	1,186 5,276	615 2,736	.104 .047	15,000
WC8501/WC87501	.4724 12	.0003	1.2598 32	.0005	.500	.480	.0050	.024 .600	1,186 5,276	680 3,025	.099 .045	15,000
WC8013/WC87013	.5118 13	.0003	1.2598 32	.0005	.500	.480	.0050	.024 .600	1,186 5,276	680 3,025	.095 .043	15,000
WC8014/WC87014	.5512 14	.0003	1.3780 35	.0005	.500	.480	.0050	.024 .600	1,323 5,885	839 3,732	.125 .057	13,000
WC8502/WC87502	.5906 15	.0003	1.3780 35	.0005	.500	.480	.0050	.024 .600	1,323 5,885	839 3,732	.119 .054	13,000
WC8016/WC87016	.6299 16	.0003	1.3780 35	.0005	.500	.480	.0050	.024 .600	1,323 5,885	839 3,732	.114 .052	13,000
WC8503/WC87503	.6693 17	.0003	1.5748 40	.0005	.563	.538	.0050	.024 .600	1,656 7,367	1,080 4,804	.166 .075	12,000
WC8504/WC87504	.7874 20	.0004	1.8504 47	.0005	.625	.600	.0050	.039 1.000	2,216 9,858	1,480 6,584	.259 .117	10,000
WC8505/WC87505	.9843 25	.0004	2.0472 52	.0005	.625	.600	.0050	.039 1.000	2,426 10,792	1,770 7,874	.304 .138	8,900
WC8026/WC87026	1.0236 26	.0004	2.0472 52	.0005	.625	.600	.0050	.039 1.000	2,426 10,792	1,770 7,874	.294 .133	8,900
WC8506/WC87506	1.1811 30	.0004	2.4409 62	.0005	.787	.748	.0050	.039 1.000	3,363 14,960	2,540 11,299	.571 .259	8,900
WC8507/WC87507	1.3780 35	.0005	2.8346 72	.0005	.827	.787	.0050	.039 1.000	4,030 17,927	3,450 15,347	.765 .347	8,000
WC8508/WC87508	1.5748 40	.0005	3.1496 80	.0005	.945	.945	.0050	.039 1.000	5,036 22,402	4,000 17,794	1.180 .535	7,500
WC8509/WC87509	1.7717 45	.0005	3.3465 85	.0005	.945	.945	.0050	.039 1.000	5,650 25,133	4,580 20,374	1.220 .553	6,600
WC8510/WC87510	1.9685 50	.0005	3.5433 90	.0005	1.024	1.024	.0050	.039 1.000	6,050 26,913	5,200 23,132	1.400 .635	6,000

\*Maximum fillet which corner radius of bearing will clear.

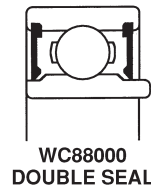
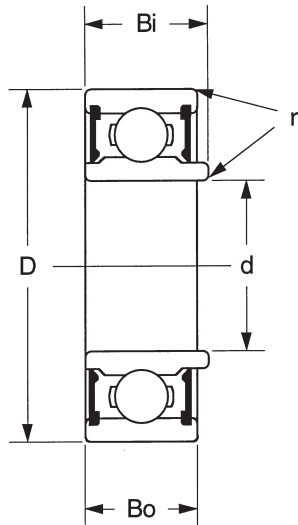


This wide outer ring series, with Buna N seals on both sides, excludes dirt effectively under even the dirtiest conditions. In addition, the wide outer ring makes this series operable in a softer metal housing. Dirt exclusion is well controlled by the contact pressure of the Buna N seal.

Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B		* fillet radius r	Basic Load Ratings lbf N		Weight lb Kg	Limiting speed (rpm)
					Outer (Bo)	Inner (Bi)		Dynamic Cr	Static Cor		
WC88035	.1969	.0003	.7480	.0004	.406	.4970	.012	525	199	.026	23,000
	5		19				.300	2,335	885	.012	
WC88036	.2362	.0003	.7480	.0004	.406	.4970	.012	525	199	.027	23,000
	6		19				.300	2,335	885	.012	
WC88006	.2362	.0003	.9449	.0004	.406	.4970	.012	750	315	.055	23,000
	6		24				.300	3,336	1,401	.025	
WC88037	.2756	.0003	.8661	.0004	.406	.4970	.012	750	315	.043	23,000
	7		22				.300	3,336	1,401	.020	
WC88007	.2756	.0003	.9449	.0004	.406	.4970	.012	900	355	.051	23,000
	7		24				.300	4,004	1,579	.023	
WC88038	.3150	.0003	.8661	.0004	.406	.4970	.012	750	315	.040	23,000
	8		22				.300	3,336	1,401	.018	
WC88008	.3150	.0003	.9449	.0004	.406	.4970	.012	900	355	.048	23,000
	8		24				.300	4,004	1,579	.022	
WC88039	.3543	.0003	1.0236	.0004	.406	.4970	.012	1,030	440	.057	17,000
	9		26				.300	4,582	1,957	.026	
WC88009	.3543	.0003	1.1811	.0004	.500	.6457	.012	1,150	540	.105	17,000
	9		30				.300	5,116	2,402	.048	
WC88500	.3937	.0003	1.1811	.0004	.500	.6457	.024	1,150	540	.091	17,000
	10		30				.600	5,116	2,402	.041	
WC88011	.4331	.0003	1.2598	.0005	.500	.6457	.024	1,370	615	.104	15,000
	11		32				.600	6,094	2,736	.047	
WC88501	.4724	.0003	1.2598	.0005	.500	.6457	.024	1,370	615	.099	15,000
	12		32				.600	6,094	2,736	.045	

\*Maximum fillet which corner radius of bearing will clear.



This wide outer ring series, with Buna N seals on both sides, excludes dirt effectively under even the dirtiest conditions. In addition, the wide outer ring makes this series operable in a softer metal housing. Dirt exclusion is well controlled by the contact pressure of the Buna N seal.

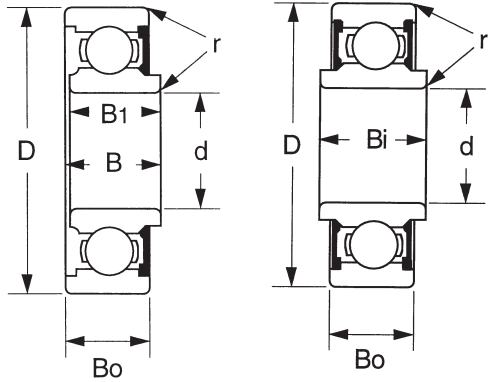
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B		* fillet radius r	Basic Load Ratings lbf N		Weight lb Kg	Limiting speed (rpm)
					Outer (Bo)	Inner (Bi)		Dynamic Cr	Static Cor		
WC88013	.5118	.0003	1.2598	.0005	.500	.6457	.024	1,370	615	.095	15,000
	13							32	6,094		
WC88014	.5512	.0003	1.3780	.0005	.500	.6457	.024	1,740	805	.125	13,000
	14							35	7,740		
WC88502	.5906	.0003	1.3780	.0005	.500	.6457	.024	1,740	805	.119	13,000
	15							35	7,740		
WC88016	.6299	.0003	1.3780	.0005	.500	.6457	.024	1,740	805	.114	13,000
	16							35	7,740		
WC88503	.6693	.0003	1.5748	.0005	.563	.6536	.024	2,160	1,030	.166	12,000
WC88504	.7874	.0004	1.8504	.0005	.625	.6988	.039	9,609	4,582	.075	10,000
	17							40	2,890		
WC88505	.9843	.0004	2.0472	.0005	.625	.6988	.039	12,856	6,673	.117	8,900
	20							47	3,150		
WC88026	1.0236	.0004	2.0472	.0005	.625	.6988	.039	14,012	7,874	.138	8,900
	25							52	3,150		
WC88506	1.0236	.0004	2.0472	.0005	.625	.6988	.039	14,012	7,874	.133	8,900
	26							52	3,150		
WC88506	1.1811	.0004	2.4409	.0005	.787	.9449	.039	4,400	2,540	.571	7,300
WC88507	1.3780	.0005	2.8346	.0005	.827	.9843	.039	19,573	11,299	.259	6,300
	30							62	5,750		
WC88508	1.5748	.0005	3.1496	.0005	.945	1.0630	.039	25,578	15,347	.347	5,600
	35							72	6,550		
WC88509	1.7717	.0005	3.3465	.0005	.945	1.0630	.039	29,137	17,794	.535	5,200
	40							80	7,350		
WC88510	1.7717	.0005	3.3465	.0005	.945	1.0630	.039	32,696	20,463	.553	5,200
	45							85	7,900		
WC88510	1.9685	.0005	3.5433	.0005	1.024	1.1811	.039	35,142	23,132	.635	4,700
	50							90	7,900		

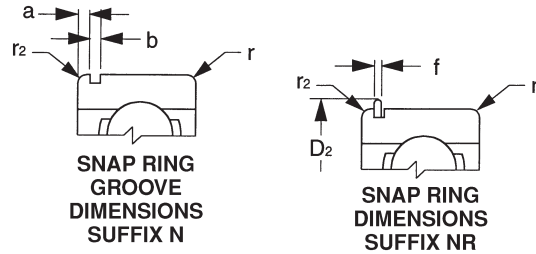
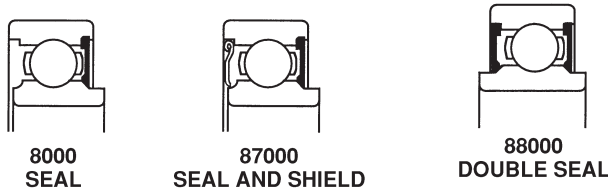
\*Maximum fillet which corner radius of bearing will clear.



# 8600, 87600, 88600 SERIES



The basic 6300 series ball complement with two Buna N seals. Extended inner rings make this series perfectly interchangeable with the standard 8600, 87600 and 88600 felt series. By increasing contact pressure, the 6300 series can be used for rugged farm applications as well as for electric motors. Consult the Peer sales engineer for your specific requirements.



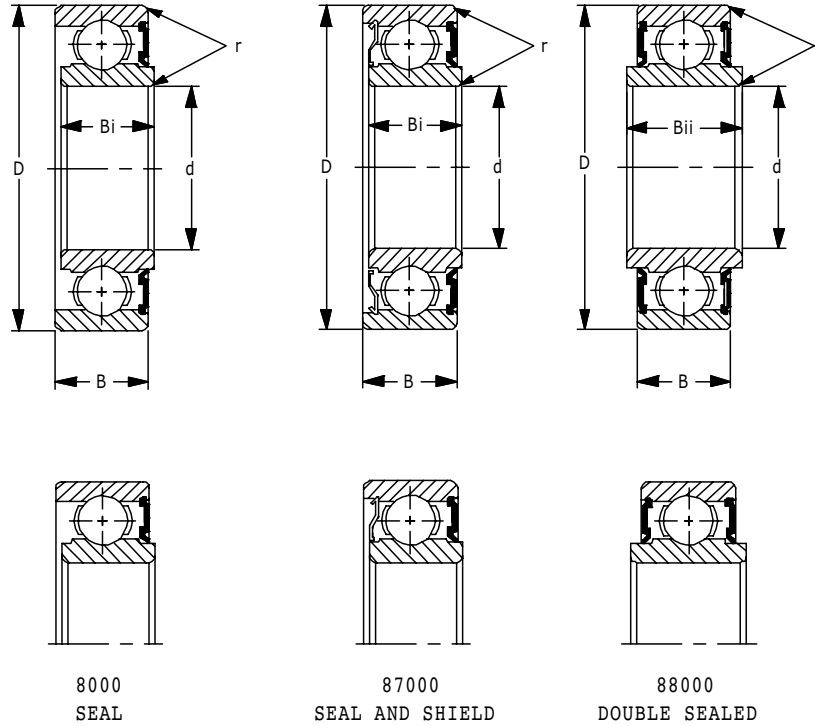
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width			Tolerance +.0000 to minus	* fillet radius r	Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm) grease
					Outer Bo inch	Inner Bi inch	Overall B inch			Dynamic Cr	Static Cor		
8602/87602	.906	.0003	1.6535	.0005	.512	.551	.591	.0050	.039	2,570	1,220	.220	12,000
	15		42						1.00	11,432	5,427	.100	
8603/87603	.6693	.0003	1.8504	.0005	.551	.591	.630	.0050	.039	3,050	1,470	.254	11,000
	17		47						1.00	13,568	6,539	.115	
8604/87604	.7874	.0004	2.0472	.0005	.591	.709	.748	.0050	.039	3,600	1,770	.345	10,000
	20		52						1.00	16,014	7,874	.156	
8605/87605	.9843	.0004	2.4409	.0005	.669	.827	.827	.0050	.039	4,750	2,460	.590	8,100
	25		62						1.00	21,130	10,943	.268	
8606/87606	1.1811	.0004	2.8346	.0005	.748	.906	.906	.0050	.039	6,000	3,400	.860	5,800
	30		72						1.00	26,690	15,125	.390	
8607/87607	1.3780	.0005	3.1496	.0005	.827	.984	.984	.0050	.039	7,500	4,300	1.100	6,000
	35		80						1.00	33,363	19,128	.499	
8608/87608	1.5748	.0005	3.5433	.0006	.906	1.063	1.063	.0050	.039	9,150	5,400	1.650	5,300
	40		90						1.00	40,703	24,021	.748	
8609/87609	1.7717	.0005	3.9370	.0006	.984	1.181	1.181	.0050	.039	11,900	7,200	2.190	4,700
	45		100						1.00	52,936	32,028	.993	

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	(Bo) Outer inch	Width (Bi) Inner inch	Tol. +.0000 to minus	* fillet radii		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbf N		Weight lb Kg	Limiting speed (rpm)
								r	r2	D2	f	a	b	Dynamic Cr	Static Cor		
88602	.5906	.0003	1.6535	.0005	.512	.6693	.0050	.039	.020	1.823	.044	.081	.053	2,570	1,220	.21	12,000
	15		42					1.000	.50		1.12	2.06	1.35	11,432	5,427	.095	
88603	.6693	.0003	1.8504	.0005	.551	.7087	.0050	.039	.020	2.075	.044	.097	.053	3,050	1,470	.279	11,000
	17		47					1.000	.50		1.12	2.46	1.35	13,568	6,539	.127	
88604	.7874	.0004	2.0472	.0005	.591	.9055	.0050	.043	.020	2.280	.044	.097	.053	2,600	1,770	.398	10,000
	20		52					1.100	.50		1.12	2.46	1.35	16,014	7,874	.181	
88605	.9843	.0004	2.4409	.0005	.669	.9843	.0050	.043	.020	2.665	.067	.129	.053	4,750	2,460	.65	8,100
	25		62					1.100	.50		1.70	3.28	1.35	21,130	10,943	.295	
88606	1.1811	.0004	2.8346	.0005	.748	1.0630	.0050	.043	.020	3.094	.067	.129	.075	6,000	2,400	.97	6,600
	30		72					1.100	.50		1.70	3.28	1.91	26,690	10,676	.44	

\*Maximum fillet which corner radius of bearing will clear.

# 8000, 87000, & 88000 SERIES



Units: Inches  
Metric

Part Number	Bore d	OD D	Outer Ring Width B	Inner Ring Width		Overall Width	Fillet Radius		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbs N		Weight lbs Kg		
				B <sub>i</sub>	B <sub>ii</sub>		r	r <sub>2</sub>	D <sub>2</sub> Max	f Max	a Max	b Min	Dynamic C	Static C <sub>0</sub>	8000	87000	88000
8035 87035 88035	.1969	.7480	.3150	.3860	.4970	.4063	.012						525	199	.022	.023	.026
	5	19	8	9.804	12.624	10.319	.3						2,335	885	.010	.010	.012
8036 87036 88036	.2362	.7480	.3150	.3860	.4970	.4063	.012	.008	.878	.028	.068	.031	525	199	.024	.025	.027
	6	19	8	9.804	12.624	10.319	.3	.2	22.3	.7	1.73	.8	2,335	885	.011	.011	.012
8006 87006 88006	.2362	.9449	.3150	.3860	.4970	.4063	.012	.012	1.102	.028	.068	.031	750	315	.046	.048	.055
	6	24	8	9.804	12.624	10.319	.3	.3	28	.7	1.73	.8	3,336	1,401	.021	.022	.025
8037 87037 88037	.2756	.8661	.3150	.3860	.4970	.4063	.012	.012	1.024	.028	.068	.031	750	315	.037	.039	.043
	7	22	8	9.804	12.624	10.319	.3	.3	26	.7	1.73	.8	3,336	1,401	.017	.018	.020
8007 87007 88007	.2756	.9449	.3150	.3860	.4970	.4063	.012	.012	1.102	.028	.068	.031	900	355	.045	.047	.051
	7	24	8	9.804	12.624	10.319	.3	.3	28	.7	1.73	.8	4,003	1,579	.020	.021	.023
8038 87038 88038	.3150	.8661	.3150	.3860	.4970	.4063	.012	.012	1.024	.028	.068	.031	750	315	.036	.038	.040
	8	22	8	9.804	12.624	10.319	.3	.3	26	.7	1.73	.8	3,336	1,401	.016	.017	.018
8008 87008 88008	.3150	.9449	.3150	.3860	.4970	.4063	.012	.012	1.102	.028	.068	.031	900	355	.043	.044	.048
	8	24	8	9.804	12.624	10.319	.3	.3	28	.7	1.73	.8	4,003	1,579	.022	.020	.022
8039 87039 88039	.3543	1.0236	.3150	.3860	.4970	.4063	.025	.012	1.181	.028	.068	.031	1,030	440	.051	.053	.057
	9	26	8	9.804	12.624	10.319	.6	.3	30	.7	1.73	.8	4,581	1,957	.023	.024	.026
8009 87009 88009	.3543	1.1811	.3543	.4800	.6457	.5000	.025	.020	1.437	.044	.081	.053	1,150	540	.078	.095	.105
	9	30	9	12.192	16.401	12.700	.6	.5	36.5	1.12	2.06	1.35	5,115	2,402	.035	.043	.048
8500 87500 88500	.3937	1.1811	.3543	.4800	.6457	.5000	.025	.020	1.366	.044	.081	.053	1,150	540	.075	.077	.091
	10	30	9	12.192	16.401	12.700	.6	.5	34.7	1.12	2.06	1.35	5,115	2,402	.034	.035	.041
8011 87011 88011	.4331	1.2598	.3937	.4800	.6063	.5000	.025	.020	1.445	.044	.081	.053	1,370	615	.099	.101	.104
	11	32	10	12.192	15.400	12.700	.6	.5	36.7	1.12	2.06	1.35	6,094	2,736	.045	.046	.047
8501 87501 88501	.4724	1.2598	.3937	.4800	.6063	.5000	.025	.020	1.445	.044	.081	.053	1,370	615	.095	.097	.099
	12	32	10	12.192	15.400	12.700	.6	.5	36.7	1.12	2.06	1.35	6,094	2,736	.043	.044	.045

\*Maximum fillet which corner radius of bearing will clear.



# 8000, 87000, & 88000 SERIES (continued)

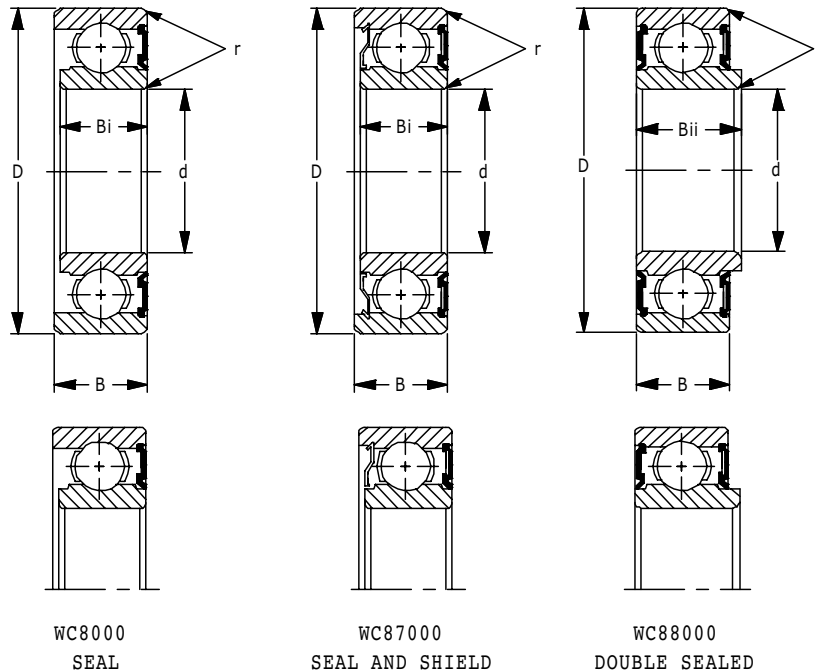
Units: Inches  
Metric

Part Number	Bore d	OD D	Outer Ring Width B	Inner Ring Width		Overall Width	Fillet Radius		snap ring dimensions		snap ring groove dimensions		Basic Load Ratings lbs N		Weight lbs Kg		
				B <sub>i</sub>	B <sub>ii</sub>		r	r <sub>2</sub>	D <sub>2</sub> Max	f Max	a Max	b Min	Dynamic C	Static Co	8000	87000	88000
8013 87013 88013	.5118	1.2598	.3937	.4800	.6063	.5000	.025	.020	1.445	.044	.081	.053	1,370	615	.091	.093	.095
13	32	10	12.624	15.400	12.700	.6	.50	36.7	1.12	2.06	1.35	6,094	2,736	.041	.042	.043	
8014 87014 88014	.5512	1.3780	.4331	.4800	.5669	.5000	.025	.020	1.563	.044	.081	.053	1,740	805	.111	.115	.125
14	35	11	12.624	14.399	12.700	.6	.50	39.7	1.12	2.06	1.35	7,740	3,581	.050	.052	.057	
8502 87502 88502	.5906	1.3780	.4331	.4800	.5669	.5000	.025	.020	1.563	.044	.081	.053	1,740	805	.106	.108	.119
15	35	11	12.624	14.399	12.700	.6	.50	39.7	1.12	2.06	1.35	7,740	3,581	.048	.049	.054	
8016 87016 88016	.6299	1.3780	.4331	.4800	.5669	.5000	.025	.020	1.563	.044	.081	.053	1,740	805	.101	.105	.114
16	35	11	12.624	14.399	12.700	.6	.50	39.7	1.12	2.06	1.35	7,740	3,581	.046	.048	.052	
8602 87602 88602	.5906	1.6535	.5118	.5512	.6693	.5906	.040	.020	1.823	.044	.081	.053	2,570	1,220	.188	.193	.210
15	42	13	14.000	17.000	15.000	1.0	.50	46.3	.112	2.06	1.35	11,451	5,427	.085	.088	.095	
8503 87503 88503	.6693	1.5748	.4724	.5380	.6536	.5625	.025	.020	1.756	.044	.081	.053	2,160	1,030	.150	.154	.166
17	40	12	13.665	16.601	14.288	.6	.50	44.6	1.12	2.06	1.35	9,608	4,581	.068	.070	.075	
8603 87603 88603	.6693	1.8504	.5512	.5906	.7087	.6299	.040	.020	2.075	.044	.097	.053	3,050	1,470	.254	.257	.279
17	47	14	15.000	18.000	16.000	1.0	.50	52.7	1.12	2.46	1.35	13,566	6,539	.115	.117	.127	
8504 87504 88504	.7874	1.8504	.5512	.6000	.6988	.6250	.040	.020	2.075	.044	.097	.053	2,890	1,500	.232	.237	.259
20	47	14	15.240	17.750	15.875	1.0	.50	52.7	1.12	2.46	1.35	12,855	6,672	.105	.108	.118	
8604 87604 88604	.7874	2.0472	.5906	.7087	.9055	.7480	.040	.020	2.280	.044	.097	.053	3,600	1,770	.345	.352	.398
20	52	15	18.000	23.000	19.000	1.0	.50	52.7	1.12	2.46	1.35	16,013	7,873	.157	.160	.181	
8505 87505 88505	.9843	2.0472	.5906	.6000	.6594	.6250	.040	.020	2.280	.044	.097	.053	3,150	1,770	.287	.292	.304
25	52	15	15.240	16.749	15.875	1.0	.50	57.9	1.12	2.46	1.35	14,011	7,873	.130	.133	.138	
8605 87605 88605	.9843	2.4409	.6693	.8268	.9843	.8268	.040	.020	2.665	.067	.129	.075	4,750	2,460	.590	.600	.650
25	62	17	21.000	25.000	21.000	1.0	.50	67.7	1.7	3.28	1.39	21,128	10,942	.268	.272	.295	
8026 87026 88026	1.0236	2.0472	.5906	.6000	.6594	.6250	.040	.020	2.280	.044	.097	.053	3,150	1,770	.277	.282	.294
26	52	15	15.240	16.749	15.875	1.0	.50	57.9	1.12	2.46	1.35	14,011	7,873	.126	.128	.133	
8506 87506 88506	1.1811	2.4409	.6299	.7480	.9449	.7874	.040	.020	2.665	.067	.129	.075	4,400	2,540	.495	.506	.571
30	62	16	19.000	24.000	20.000	1.0	.50	67.7	1.7	3.28	1.9	19,571	11,298	.225	.230	.259	
8606 87606 88606	1.1811	2.8346	.7480	.9055	1.0630	.9055	.040	.020	3.094	.067	.129	.075	6,000	3,400	.860	.890	.970
30	72	19	23.000	27.000	23.000	1.0	.50	78.5	1.7	3.28	1.9	26,688	15,123	.390	.404	.440	
8507 87507 88070	1.3780	2.8346	.6993	.7874	.9843	.8268	.040	.020	3.094	.067	.129	.075	5,750	3,450	.695	.708	.765
35	72	17	20.000	25.000	21.000	1.0	.50	78.6	1.7	3.28	1.9	25,576	15,346	.316	.321	.347	
8607 87607 88607	1.3780	3.1496	.8268	.9843	1.1417	.9843	.060	.020	3.409	.067	.129	.075	7,500	4,300	1.10	1.12	1.20
35	80	21	25.000	29.000	25.000	1.5	.50	86.6	1.7	3.28	1.9	33,360	19,126	.499	.508	.545	
8508 87508 88508	1.5748	3.1496	.8268	.9449	1.0630	.9449	.040	.020	3.409	.067	.129	.075	6,550	4,000	1.03	1.07	1.18
40	80	21	24.000	27.000	24.000	1.0	.50	86.6	1.7	3.28	1.9	29,134	17,792	.468	.486	.536	
8608 87608 88608	1.5748	3.5433	.9055	1.0630	1.2205	1.0630	.060	.020	3.799	.097	.129	.106	9,150	5,400	1.53	1.56	1.65
40	90	23	27.000	31.000	27.000	1.5	.50	96.5	2.46	3.28	2.7	40,699	24,019	.695	.708	.749	
8509 87509 88509	1.7717	3.3465	.8268	.9449	1.0630	.9449	.040	.020	3.606	.067	.129	.075	7,350	4,600	1.19	1.20	1.22
45	85	21	24.000	27.000	24.000	1.0	.50	91.6	1.70	3.28	1.90	32,693	20,461	.540	.545	.554	
8609 87609 88609	1.7717	3.9370	.9843	1.1811	1.3780	1.1811	.060	.020	4.193	.097	.129	.106	11,900	7,200	1.96	2.01	2.19
45	100	25	30.000	35.000	30.000	1.5	.50	106.5	2.46	3.28	2.7	52,931	32,026	.890	.913	.994	
8510 87510 88510	1.9685	3.5433	.8661	1.0236	1.1811	1.0236	.040	.020	3.799	.097	.129	.106	7,900	5,200	1.27	1.30	1.40
50	90	22	26.000	30.000	26.000	1.0	.50	96.5	2.46	3.28	2.7	35,139	23,130	.577	.590	.636	
8511 87511 88511	2.1654	3.9370	.9055	1.0630	1.2205	1.0630	.060	.020	4.193	.097	.129	.106	9,750	6,550	1.60	1.64	1.78
55	100	23	27.000	31.000	27.000	1.5	.50	106.5	2.46	3.28	2.7	43,368	29,134	.726	.745	.808	
8512 87512 88512	2.3622	4.3307	.9843	1.1417	1.2992	1.1417	.060	.020	4.591	.097	.129	.106	11,800	8,150	2.11	2.10	2.34
60	110	25	29.000	33.000	29.000	1.5	.50	116.6	2.46	3.28	2.7	52,486	36,251	.958	.953	1.062	
8513 87513 88513	2.5591	4.7244	1.0236	1.2205	1.4173	1.2205	.060	.020	5.106	.111	.160	.122	12,900	9,000	2.79	2.80	3.05
65	120	26	31.000	36.000	31.000	1.5	.50	129.7	2.82	4.06	3.1	57,379	40,032	1.267	.013	1.385	
8514 87514	2.7559	4.9213	1.1024	1.2992	1.4961	1.2992	.060	.020	5.303	.111	.160	.122	14,000	9,400	3.00	3.08	
70	125	28	33.000	38.000	33.000	1.5	.50	134.7	2.82	4.06	3.1	62,272	44,035	1.362	1.398		

\*Maximum fillet which corner radius of bearing will clear.



# WC8000, WC87000 & WC88000 SERIES



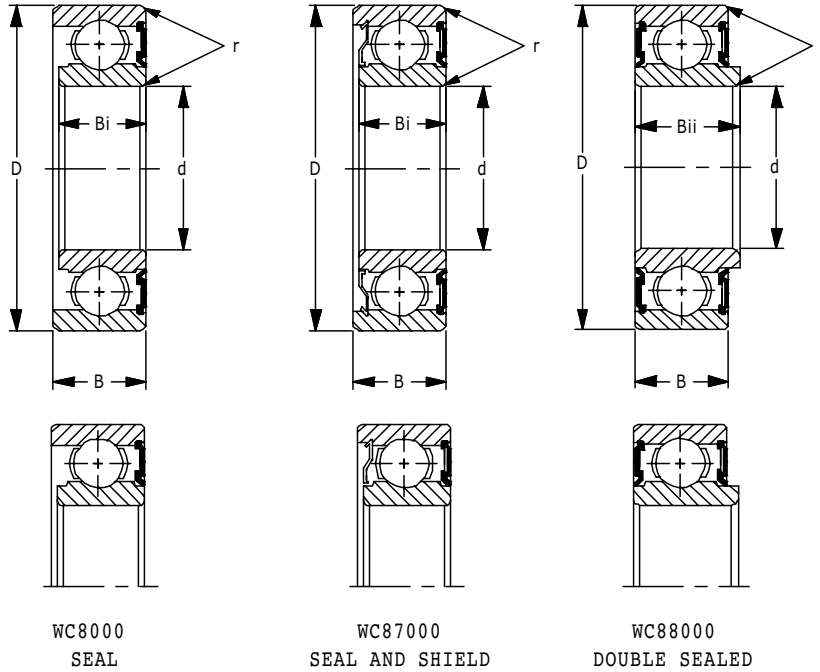
Units: Inches Metric

Part Number	Bore d	OD D	Outer Ring Width B	Inner Ring Width		Fillet radius r (min)	Basic Load Ratings lbf N		Weight lbs WC8000	Weight lbs Kg WC87000	Weight lbs WC88000
				Bi	Bii		Dynamic Cr	Static Cor			
WC8006 WC87006 WC88006	.2362 6	.9499 24	.4063 10.319	.3860 9.804	.4970 12.624	.012 .3	750 3,336	315 1,401	.060 .027	.060 .027	.060 .027
WC8007 WC87007 WC88007	.2756 7	.9449 24	.4063 10.319	.3860 9.804	.4970 12.624	.012 .3	900 4,003	355 1,579	.051 .023	.051 .023	.051 .023
WC8008 WC87008 WC88008	.3150 8	.9449 24	.4063 10.319	.3860 9.804	.4970 12.624	.012 .3	900 4,003	355 1,579	.050 .023	.050 .023	.050 .023
WC8009 WC87009 WC88009	.3543 9	1.1811 30	.5000 12.700	.4800 12.192	.6457 16.401	.025 .6	1150 5,115	540 2,402	.105 .048	.105 .048	.110 .050
WC8011 WC87011 WC88011	.4331 11	1.2598 32	.5000 12.700	.4800 12.192	.6063 15.400	.025 .6	1370 6,094	615 1,401	.110 .050	.110 .050	.100 .045
WC8013 WC87013 WC88013	.5118 13	1.2598 32	.5000 12.700	.4800 12.192	.6063 15.400	.025 .6	1370 6,094	615 1,401	.100 .045	.100 .045	.100 .045
WC8014 WC87014 WC88014	.5512 14	1.3780 35	.5000 12.700	.4800 12.192	.5669 14.399	.025 .6	1740 7,740	805 3,581	.110 .050	.110 .050	.125 .057
WC8016 WC87016 WC88016	.6299 16	1.3780 35	.5000 12.700	.4800 12.192	.5669 14.399	.025 .6	1740 7,740	805 3,581	.114 .052	.114 .052	.120 .054
WC8026 WC87026 WC88026	1.0236 26	2.0472 52	.6250 15.875	.6000 15.240	.6594 16.749	.040 1.0	3150 14,011	1770 7,873	.289 .131	.289 .131	.289 .131
WC8035 WC87035 WC88035	.1969 5	.7480 19	.4063 10.319	.3860 9.804	.4970 12.624	.012 .3	525 2,335	199 885	.026 .012	.026 .012	.030 .014
WC8036 WC87036 WC88036	.2362 6	.7480 19	.4063 10.319	.3860 9.804	.4970 12.624	.012 .3	525 2,335	199 885	.027 .013	.027 .013	.030 .014
WC8037 WC87037 WC88037	.2756 7	.8661 22	.4063 10.319	.3860 9.804	.4970 12.624	.012 .3	750 3,336	315 1,401	.043 .020	.043 .020	.043 .028
WC8038 WC87038 WC88038	.3150 8	.8661 22	.4063 10.319	.3860 9.804	.4970 12.624	.012 .3	750 3,336	315 1,401	.040 .018	.040 .018	.040 .018
WC8039 WC87039 WC88039	.3543 9	1.0236 26	.4063 10.319	.3860 9.804	.4970 12.624	.025 .6	1030 4,581	440 1,959	.06 .027	.06 .027	.06 .027
WC8500 WC87500 WC88500	.3937 10	1.1811 30	.5000 12.700	.4800 12.192	.6457 16.401	.025 .6	1150 5,150	540 2,402	.09 .041	.09 .041	.09 .041

\*Maximum fillet which corner radius of bearing will clear.



# WC8000, WC87000 & WC88000 SERIES (continued)

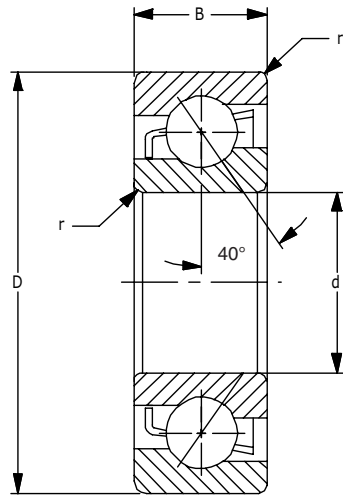


Units: Inches Metric

Part Number	Bore d	OD D	Outer Ring Width B	Inner Ring Width		Fillet radius r (min)	Basic Load Ratings lbf N		Weight lbs WC8000	Weight lbs kg WC87000	Weight lbs kg WC88000
				Bi	Bii		Dynamic Cr	Static Cor			
WC8501 WC87501 WC88501	.4724 12	1.2598 32	.5000 12.700	.4800 12.192	.6063 15.400	.025 .6	1370 6,094	615 2,736	.100 .045	.100 .045	.100 .045
WC8502 WC87502 WC88502	.5906 15	1.3780 35	.5000 12.700	.4800 12.192	.5669 14.399	.025 .6	1740 7,740	805 3,581	.120 .054	.120 .054	.119 .054
WC8503 WC87503 WC88503	.6693 17	1.5748 40	.5625 14.288	.5380 13.665	.6536 16.601	.025 .6	2160 9,608	1030 4,851	.170 .077	.170 .077	.170 .077
WC8504 WC87504 WC88504	.7874 20	1.8504 47	.6250 15.875	.6000 15.240	.6988 17.750	.040 1.0	2890 12,855	1500 6,672	.260 .118	.260 .118	.259 .117
WC8505 WC87505 WC88505	.9843 25	2.0472 52	.6250 15.875	.6000 15.240	.6594 16.749	.040 1.0	3150 14,011	1770 7,873	.304 .138	.304 .138	.304 .138
WC8506 WC87506 WC88506	1.1811 30	2.4409 62	.7874 20.000	.7480 19.000	.9449 24.000	.040 1.0	4400 19,571	2540 11,298	.543 .246	.543 .246	.523 .237
WC8507 WC87507 WC88507	1.3780 35	2.8346 72	.8268 21.000	.7874 20.000	.9843 25.000	.040 1.0	5750 25,576	3450 15,346	.765 .347	.765 .347	.749 .340
WC8508 WC87508 WC88508	1.5748 40	3.1496 80	.9449 24.000	.9449 24.000	1.0630 27.000	.040 1.0	6550 29,134	4000 17,792	1.18 .535	1.18 .535	1.180 .535
WC8509 WC87509 WC88509	1.7717 45	3.3465 85	.9449 24.000	.9449 24.000	1.0630 27.000	.040 1.0	7350 32,693	4600 20,461	1.260 .572	1.260 .572	1.220 .553
WC8510 WC87510 WC88510	1.9685 50	3.5433 90	1.0236 26.000	1.0236 26.000	1.1811 30.000	.040 1.0	7900 35,139	5200 23,130	1.630 .739	1.630 .739	1.300 .590
WC8511 WC87511 WC88511	2.1654 55	3.9370 100	1.0630 27.000	1.0630 27.000	1.2205 31.000	.060 1.5	9750 43,358	6550 29,134	1.630 .739	1.630 .739	1.660 .753

\*Maximum fillet which corner radius of bearing will clear.

# 7200 ANGULAR CONTACT SERIES



40°  
CONTACT ANGLE

The 7200 series is a light duty series used in applications that call for thrust or combination thrust and radial loads. Standard production is made with 40° contact angle. This series is available with various contact angles. Consult your Peer sales engineer to discuss your exact requirements. Retainers can be made of various materials: bronze, brass or non-metallic. Duplex pairing is available upon request.

A=30° Contact Angle  
B=40° Contact Angle  
C=15° Contact Angle

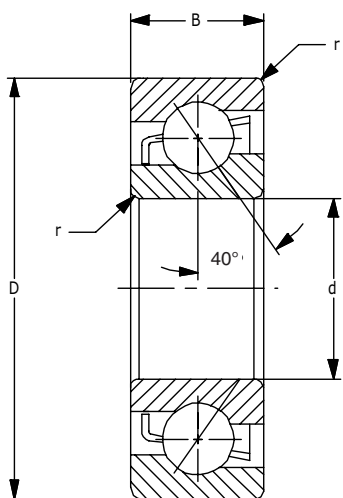
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii r	Basic Load Ratings		Weight lb Kg
								Dynamic Cr	Static Cor	
7200	.3937	.0003	1.1811	.0005	.3543	.0047	.024	1,220	615	.064
	10	.008	30	.011	9	.120	.6	5,426	2,735	.029
7201	.4724	.0003	1.2598	.0005	.3937	.0047	.024	1,676	843	.077
	12	.008	32	.011	10	.120	.6	7,450	3,750	.034
7202	.5906	.0003	1.3780	.0005	.4331	.0047	.024	2,040	1,060	.110
	15	.008	35	.011	11	.120	.6	9,073	4,714	.050
7203	.6693	.0003	1.5748	.0005	.4724	.0047	.024	2,690	1,690	.140
	17	.008	40	.011	12	.120	.6	11,965	6,627	.064
7204	.7874	.0004	1.8504	.0005	.5512	.0047	.039	3,250	1,890	.250
	20	.010	47	.011	14	.120	1.0	14,456	8,406	.113
7205	.9843	.0004	2.0472	.0005	.5906	.0047	.039	3,650	2,320	.290
	25	.010	52	.011	15	.120	1.0	16,235	10,319	.132
7206	1.1811	.0004	2.4409	.0005	.6299	.0047	.039	5,050	3,350	.425
	30	.010	62	.011	16	.120	1.0	22,462	14,900	.193
7207	1.3780	.0005	2.8346	.0005	.6693	.0047	.039	6,700	4,500	.660
	35	.012	72	.011	17	.120	1.0	29,800	20,016	.299
7208	1.5748	.0005	3.1496	.0005	.7087	.0047	.039	7,950	5,650	.783
	40	.012	80	.011	18	.120	1.0	35,361	25,130	.355
7209	1.7717	.0005	3.3465	.0006	.7480	.0047	.039	8,900	6,450	.940
	45	.012	85	.015	19	.120	1.0	39,587	28,689	.426
7210	1.9685	.0005	3.5433	.0006	.7874	.0047	.039	9,300	7,050	1.000
	50	.012	90	.015	20	.120	1.0	41,366	31,358	.454
7211	2.1654	.0006	3.9370	.0006	.8268	.0059	.059	11,500	8,900	1.340
	55	.015	100	.015	21	.150	1.5	51,152	39,587	.608
7212	2.3622	.0006	4.3307	.0006	.8661	.0059	.059	13,900	11,000	1.79
	60	.015	110	.015	22	.150	1.5	61,827	48,928	.815
7213	2.5591	.0006	4.7244	.0006	.9055	.00659	.059	15,800	13,000	2.220
	65	.015	120	.015	23	.150	1.5	70,278	57,824	1.007
7214	2.7559	.0006	4.9213	.0007	.9449	.0059	.059	17,200	14,300	2.410
	70	.015	125	.018	24	.150	1.5	76,505	63,606	1.093

\*Maximum fillet which corner radius of bearing will clear.



# 7200 ANGULAR CONTACT SERIES (continued)



The 7200 series is a light duty series used in applications that call for thrust or combination thrust and radial loads. Standard production is made with 40° contact angle. This series is available with various contact angles. Consult your Peer sales engineer to discuss your exact requirements. Retainers can be made of various materials: bronze, brass or non-metallic. Duplex pairing is available upon request.

- A=30° Contact Angle
- B=40° Contact Angle
- C=15° Contact Angle

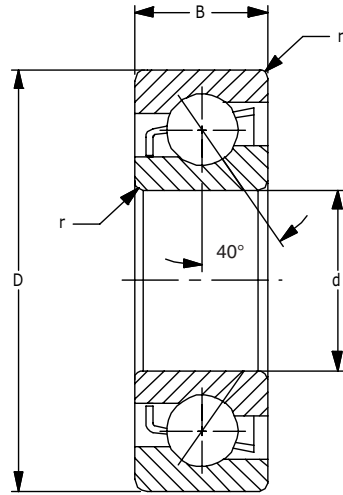
40°  
CONTACT ANGLE

Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii r	Basic Load Ratings lbft N		Weight lb Kg
								Dynamic Cr	Static Cor	
7215	2.9528	.0006	4.1181	.0007	.9843	.0059	.059	17,800	15,400	2.590
	.75	.015	130	.018	25	.150	1.5	79,174	68,499	1.175
7216	3.1496	.0006	5.5118	.0007	1.0236	.0059	.079	20,000	17,100	3.130
	.80	.015	140	.018	26	.150	2.0	88,960	76,060	1.420
7217	3.3465	.0008	5.9055	.0007	1.1024	.0079	.079	22,400	19,900	3.940
	.85	.020	150	.018	28	.200	2.0	99,635	88,515	1.787
7218	3.5433	.0008	6.2992	.0010	1.1811	.0079	.079	26,500	23,200	5.000
	.90	.020	160	.025	30	.200	2.0	117,872	103,193	2.268
7219	3.7402	.0008	6.6929	.0010	1.2598	.0079	.079	30,000	26,500	5.900
	.95	.020	170	.025	32	.200	2.0	133,440	117,872	2.676
7220	3.9370	.0008	7.0866	.0010	1.3386	.0079	.079	32,500	28,200	7.200
	1.00	.020	180	.025	34	.200	2.0	144,560	125,433	3.266
7221	4.1339	.0008	7.4803	.0012	1.4173	.0079	.079	35,000	32,000	8.470
	1.05	.020	190	.030	36	.200	2.0	155,680	142,336	3.842
7222	4.3307	.0008	7.8740	.0012	1.4961	.0079	.079	38,000	35,500	1.200
	1.10	.020	200	.030	38	.200	2.0	169,024	157,904	4.627
7224	4.7244	.0008	7.4646	.0012	1.5748	.0079	.079	41,000	40,000	13.8
	1.20	.020	215	.030	40	.200	2.0	182,368	177,920	6.26
7226	5.1181	.0010	9.0551	.0012	1.5748	.0098	.098	44,000	44,500	15.65
	1.30	.025	230	.030	40	.250	2.5	195,712	197,936	7.10
7228	5.5118	.0010	9.8425	.0012	1.6535	.0098	.098	45,500	48,500	19.71
	1.40	.025	250	.030	42	.250	2.5	202,384	215,728	8.94
7230	5.9055	.0010	1.6299	.0014	1.7717	.0098	.098	52,000	58,000	24.69
	1.50	.025	270	.035	45	.250	2.5	231,296	257,984	11.2
7232	6.2992	.0010	11.4173	.0014	1.8898	.0098	.098	59,175	69,000	31.500
	1.60	.025	290	.035	48	.250	2.5	263,000	306,912	14.288
7234	6.6929	.0010	12.2047	.0014	2.0472	.0098	.118	66,375	81,000	38.600
	1.70	.025	310	.035	52	.250	3.0	295,000	360,000	17.509
7236	7.0866	.0012	12.5984	.0016	2.0472	.0098	.118	68,625	86,625	4.300
	1.80	.030	320	.040	52	.250	3.0	305,000	385,000	18.280
7238	7.4803	.0012	13.3858	.0016	2.1654	.0118	.118	70,875	92,250	5.700
	1.90	.030	340	.040	55	.300	3.0	315,000	410,000	22.998

\*Maximum fillet which corner radius of bearing will clear.

# 7300 ANGULAR CONTACT SERIES



40°  
CONTACT ANGLE

The 7300 series is a light duty series used in applications that call for thrust or combination thrust and radial loads. Standard production is made with 40° contact angle. This series is available with various contact angles. Consult your Peer sales engineer to discuss your exact requirements. Retainers can be made of various materials: bronze, brass or non-metallic. Duplex pairing is available upon request.

A=30° Contact Angle  
B=40° Contact Angle  
C=15° Contact Angle

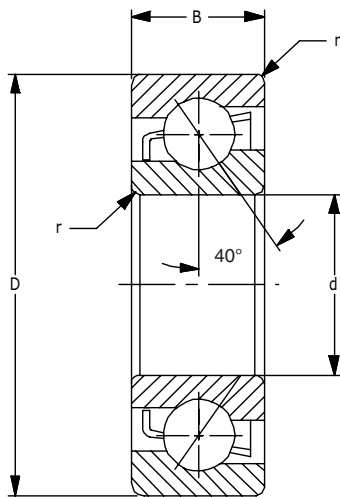
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radius r	Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
								Dynamic Cr	Static Cor		oil	grease
7300	.3937 10	.0003 .008	1.3780 35	.0005 .011	.4331 11	.0047 .120	.039 1.0	2,280 10,141	1,100 4,892	.120 .054	24,000	18,000
7301	.4724 12	.0003 .008	1.4567 37	.0005 .011	.4724 12	.0047 .120	.039 1.0	2,510 11,164	1,180 5,248	.136 .062	21,000	15,000
7302	.5906 15	.0003 .008	1.6535 42	.0005 .011	.5118 13	.0047 .120	.039 1.0	3,000 13,344	1,620 7,205	.189 .086	18,000	14,000
7303	.6693 17	.0003 .008	1.8504 47	.0005 .011	.5512 14	.0047 .120	.039 1.0	3,600 16,000	1,940 8,629	.260 .118	16,000	12,000
7304	.7874 20	.0004 .010	2.0472 52	.0005 .011	.5906 15	.0047 .120	.039 1.0	4,200 18,683	2,340 10,4008	.340 .154	15,000	10,500
7305	.9843 25	.0004 .010	2.4409 62	.0005 .011	.6693 17	.0047 .120	.039 1.0	5,950 26,465	3,550 15,790	.550 .249	12,000	9,000
7306	1.1811 30	.0004 .010	2.8346 72	.0005 .011	.7480 19	.0047 .120	.039 1.0	7,550 33,582	5,000 22,240	.800 .363	10,500	8,000
7307	1.3780 35	.0005 .012	3.1496 80	.0005 .011	.8268 21	.0047 .120	.059 1.5	9,000 40,036	5,900 26,243	1.030 .467	9,000	6,900
7308	1.5748 40	.0005 .012	3.5433 90	.0005 .011	.9055 23	.0047 .120	.059 1.5	11,000 48,928	7,400 32,915	1.410 .640	8,000	6,000
7309	1.7717 45	.0005 .012	3.9370 100	.0005 .011	.9843 25	.0047 .120	.059 1.5	14,300 63,606	9,800 43,590	1.880 .853	7,300	5,500
7310	1.9685 50	.0005 .012	4.3307 110	.0006 .015	1.0630 27	.0047 .120	.079 2.0	16,700 74,281	11,700 52,046	2.470 1.120	6,500	5,000
7311	2.1654 55	.0006 .015	4.7244 120	.0006 .015	1.1417 29	.0059 .150	.079 2.0	19,300 85,846	13,900 61,827	3.100 1.45	5,900	4,500
7312	2.3622 60	.0006 .015	5.1181 130	.0007 .018	1.2205 31	.0059 .150	.079 2.0	22,000 97,856	16,100 71,612	3.810 1.728	5,500	4,000
7313	2.5591 65	.0006 .015	5.5118 140	.0007 .018	1.2992 33	.0059 .150	.079 2.0	25,000 111,000	18,400 81,843	4.700 2.132	5,000	3,800
7314	2.7559 70	.0006 .015	5.9055 150	.0007 .018	1.3780 35	.0059 .150	.079 2.0	28,000 124,544	21,000 93,416	5.720 2.595	4,700	3,500

\*Maximum fillet which corner radius of bearing will clear.



# 7300 ANGULAR CONTACT SERIES (continued)



The 7300 series is a light duty series used in applications that call for thrust or combination thrust and radial loads. Standard production is made with 40° contact angle. This series is available with various contact angles. Consult your Peer sales engineer to discuss your exact requirements. Retainers can be made of various materials: bronze, brass or non-metallic. Duplex pairing is available upon request.

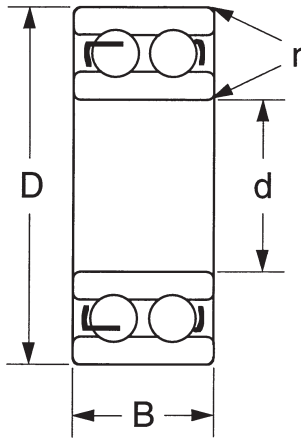
A=30° Contact Angle  
B=40° Contact Angle  
C=15° Contact Angle

40°  
CONTACT ANGLE

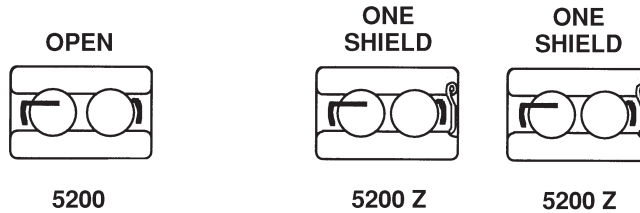
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radius r	Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
								Dynamic Cr	Static Cor		oil	grease
7315	2.9528	.0006	6.2992	.0010	1.4567	.0059	.079	30,500	23,800	6.840	4,300	3,300
	.75	.015	160	.025	37	.150	2.0	134,664	105,862	3.103		
7316	3.1496	.0006	6.6929	.0010	1.5354	.0059	.079	33,000	26,700	8.130	4,100	3,000
	.80	.015	170	.025	39	.150	2.0	146,784	118,761	3.688		
7317	3.3465	.0008	7.0866	.0012	1.6142	.0079	.098	35,500	29,800	9.530	3,800	2,900
	.85	.020	180	.030	41	.200	2.5	157,904	132,550	4.323		
7318	3.5433	.0008	7.4803	.0012	1.6929	.0079	.098	38,500	33,000	11.39	3,600	2,700
	.90	.020	190	.030	43	.200	2.5	171,248	146,784	5.17		
7319	3.7402	.0008	7.8740	.0012	1.7717	.0079	.098	41,000	36,500	13.18	3,350	2,600
	.95	.020	200	.030	45	.200	2.5	182,368	162,352	5.98		
7320	3.9370	.0008	8.4646	.0012	1.8504	.0079	.098	46,400	43,500	15.900	3,200	2,400
	1.00	.020	215	.030	47	.200	2.5	206,832	193,488	7.212		
7321	4.1339	.0008	8.8583	.0012	1.9291	.0079	.098	49,500	47,500	20.79	3,000	2,300
	1.05	.020	225	.030	49	.200	2.5	220,176	211,280	9.43		
7322	4.3307	.0008	9.4488	.0012	1.9685	.0079	.098	52,000	50,500	24.69	2,900	2,200
	1.10	.020	240	.030	50	.200	2.5	231,296	224,624	11.2		
7324	4.7244	.0008	1.2362	.0014	2.1654	.0079	.098	55,500	56,500	31.75	2,650	2,000
	1.20	.020	260	.035	55	.200	2.5	246,864	251,312	14.4		
7326	5.1181	.0010	11.0236	.0014	2.2835	.0098	.118	61,500	66,000	33.8	2,500	1,850
	1.30	.025	280	.035	58	.250	3.0	273,552	293,568	17.6		
7328	5.5118	.0010	11.8110	.0016	2.4409	.0098	.118	67,500	75,500	47.6	2,250	1,700
	1.40	.025	300	.040	62	.250	3.0	300,240	355,824	21.6		
7330	5.9055	.0010	1.5984	.0016	2.5591	.0098	.119	74,000	86,000	57.10	2,100	1,600
	1.50	.025	320	.040	65	.250	3.0	329,152	382,528	25.9		
7332	6.2992	.0010	13.3858	.0016	2.6772	.0098	.119	78,000	95,000	67.9	1,920	1,450
	1.60	.025	340	.040	68	.250	3.0	346,975	422,560	30.8		
7334	6.6929	.0010	14.1732	.0016	2.8/346	.0098	.120	87,500	109,000	77.00	1,850	1,350
	1.70	.025	360	.040	72	.250	3.0	389,200	484,832	35.000		
7336	7.0866	.0012	14.9606	.0016	2.9528	.0098	.120	92,000	120,000	93.9	1,700	1,300
	1.80	.030	380	.040	75	.250	3.0	409,216	533,8760	42.6		
7338	7.4803	.0012	15.7480	.0016	3.0709	.0098	.157	96,500	131,000	104.07	1,600	1,200
	1.90	.030	400	.040	78	.250	4.0	429,232	582,688	47.2		
7340	7.8740	.0012	16.5354	.0016	3.1496	.0098	.157	101,000	137,000	121.9	1,500	1,100
	2.00	.030	420	.040	80	.250	4.0	449,248	609,376	55.3		

\*Maximum fillet which corner radius of bearing will clear.



This series is used in instances of heavy radial loads, combined radial and thrust loads, and two directional loads. The non-filling slot allows high RPM. In addition, the angle of contact converges outside the bearing, offering increased resistance to overturning moments. Loading groove construction types are available upon request. Consult Peer sales engineer for availability.



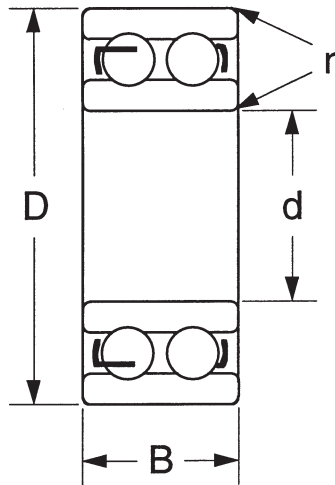
Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii r	Basic Load Ratings		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
								Dynamic Cr	Static Cor		oil	grease
5200	.3937	.0003	1.1811	.0004	.5625	.0047	.024	1,608	877	.12	19,000	14,000
	10	.008	30	.009	14.287	.120	.6	7,150	3,900	.054		
5201	.4724	.0003	1.2598	.0005	.6250	.0047	.024	2,430	1,305	.125	17,000	13,000
	12	.008	32	.011	15.875	.120	.6	10,500	5,800	.057		
5202	.5906	.0003	1.3780	.0005	.6250	.0047	.024	2,632	1,586	.141	15,000	11,000
	15	.008	35	.011	15.875	.120	.6	11,700	7,050	.064		
5203	.6693	.0003	1.5748	.0005	.6875	.0047	.024	3,285	2,0306	.211	13,000	9,900
	17	.008	40	.011	17.463	.120	.6	14,600	9,050	.096		
5204	.7874	.0004	1.8504	.0005	.8125	.0047	.039	4,410	2,790	.337	12,000	8,800
	20	.010	47	.011	20.638	.120	1.0	19,600	12,400	.153		
5205	.9843	.0004	2.0472	.0005	.8125	.0047	.039	4,792	3,307	.385	9,800	7,300
	25	.010	52	.011	20.638	.120	1.0	21,300	14,700	.175		
5206	1.1811	.0004	2.4409	.0005	.9375	.0047	.039	6,660	4,747	.629	8,400	6,300
	30	.010	62	.011	23.813	.120	1.0	29,600	21,100	.285		
5207	1.3780	.0005	2.8346	.0005	1.0625	.0047	.039	8,775	6,457	.959	7,400	5,500
	35	.012	72	.011	26.988	.120	1.0	39,000	28,700	.435		
5208	1.5748	.0005	3.1496	.0005	1.1875	.0047	.039	9,900	7,537	1.298	6,600	4,900
	40	.012	80	.011	30.163	.120	1.0	44,000	33,500	.589		
5209	1.7717	.0005	3.3465	.0006	1.1875	.0047	.039	11,137	8,550	1.408	5,900	4,400
	45	.012	85	.015	30.163	.120	1.0	49,500	38,000	.639		
5210	1.9685	.0005	3.5433	.0006	1.1875	.0047	.039	11,925	9,787	1.515	5,300	4,000
	50	.012	90	.015	30.163	.120	1.0	53,000	43,500	.687		
5211	2.1654	.0006	3.9370	.0006	1.3125	.0047	.059	12,600	11,025	2.169	4,900	3,600
	55	.015	100	.015	33.338	.120	1.5	56,000	49,000	.984		
5212	2.3622	.0006	4.3307	.0006	1.4375	.0047	.059	15,505	13,950	2.794	4,500	3,400
	60	.015	110	.015	36.513	.120	1.5	69,000	62,000	1.267		
5213	2.5591	.0006	4.7244	.0006	1.5000	.0047	.059	17,202	15,525	3.454	4,200	3,100
	65	.015	120	.015	38.100	.120	1.5	76,500	69,000	1.567		
5214	2.7559	.0006	4.9213	.0007	1.5625	.0047	.059	21,150	18,450	3.960	3,900	2,900
	70	.015	125	.018	39.688	.120	1.5	94,000	82,000	1.796		
5215	2.9528	.0006	5.1181	.0007	1.6250	.0047	.059	21,037	18,675	1.180	3,600	2,700
	75	.015	130	.018	41.275	.120	1.5	93,500	83,000	1.896		
5216	3.1496	.0006	5.5118	.0007	1.7500	.0047	.079	22,275	20,925	5.258	3,400	2,500
	80	.015	140	.018	44.45	.120	2.0	99,000	93,000	2.385		
5217	3.3465	.0006	5.9055	.0007	1.9375	.0059	.079	26,100	24,750	6.732	3,200	2,400
	85	.015	150	.018	49.213	.015	2.0	116,000	110,000	3.054		

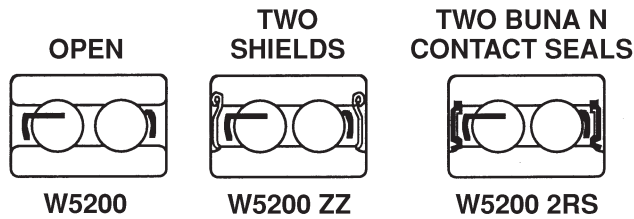
\*Maximum fillet which corner radius of bearing will clear.



# W5200 SERIES/W5300



The same construction and ball compliment as the 5200 series. Made with a slightly larger width as a replacement for other manufacturers.

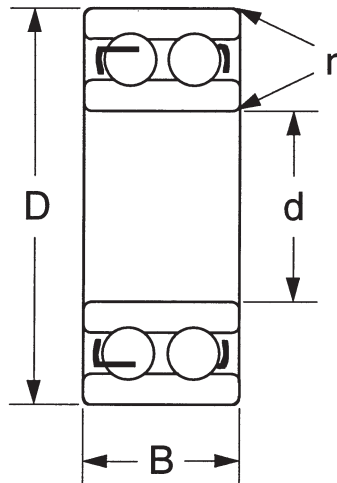


Units: Inches  
Metric

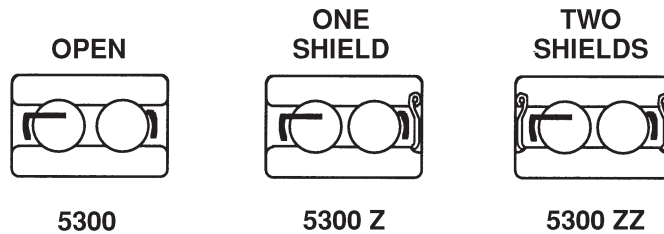
Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii r	Basic Load Ratings lbf N		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
								Dynamic Cr	Static Cor		oil	grease
W5201	.4724	.0003	1.2598	.0005	.6875	.0050	.024	2,430	1,305	.162	16,150	12,350
	12	.008	32	.011	17.463		.6	10,500	5,800	.073		
W5202	.5906	.0003	1.378	.0005	.7500	.0050	.024	2,632	1,586	.171	14,250	10,450
	15	.008	35	.011	19.050		.6	11,700	7,050	.077		
W5203	.6693	.0003	1.5748	.0005	.8125	.0050	.024	3,285	2,036	.242	12,350	9,405
	17	.008	40	.011	20.638		.6	14,600	9,050	.110		
W5204	.7874	.0004	1.8504	.0005	.9375	.0050	.039	4,410	2,790	.401	11,400	8,400
	20	.010	47	.011	23.813		1.0	19,600	12,400	.182		
W5205	.9843	.0004	2.0472	.0005	.9375	.0050	.039	4,792	3,307	.441	9,310	7,000
	25	.010	52	.011	23.813		1.0	21,300	14,700	.200		
W5206	1.1811	.0004	2.4409	.0005	1.0625	.0050	.039	6,660	4,747	.711	8,400	6,000
	30	.010	62	.011	27.780		1.0	29,600	21,100	.323		
W5207	1.13780	.0005	2.8346	.0005	1.1890	.0050	.079	8,500	6,250	1.21	7,400	5,500
	20	.011	72	.011	30.2		2.0	37,812	27,803	.549		
W5304	.7874	.0004	2.0472	.0005	1.000	.0050	.079	4,650	2,850	.54	12,000	9,000
	20	.010	52	.011	25.4		2.0	20,685	12,678	.245		
W5305	.9843	.0004	2.4409	.0005	1.1250	.0050	.079	6,850	4,600	.89	10,000	8,000
	25	.010	62	.011	29.6		2.0	30,472	20,463	.404		
W5306	1.1811	.0004	2.8346	.0005	1.3125	.0050	.079	8,900	6,200	1.41	8,000	6,000
	30	.010	72	.011	33.3		2.0	39,591	27,580	.640		
W5307	1.3780	.0005	3.14796	.0005	1.500	.0050	.098	11,100	7,850	1.89	6,000	5,000
	35	.011	80	.011	38.1		2.5	49,378	34,920	.858		

\*Maximum fillet which corner radius of bearing will clear.





This series is manufactured with the same ID and OD as the 6300 bearings. By utilizing double row construction, the 5300 series is used with heavy radial, combined radial and thrust, or where there are two directional loads. The non-filling slot allows these bearings to be used at high RPM. They are available with shields and seals. Loading groove maximum construction types are manufactured upon request. Consult Peer sales engineer for availability.



Units: Inches  
Metric

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	* fillet radii r	Basic Load Ratings		Weight lb Kg	Limiting speed of Open Bearing (rpm)	
								Dynamic Cr	Static Cor		oil	grease
5302	.5906	.0003	1.6535	.0005	.7500	.0047	.039	3,960	2,295	.250	15,000	10,000
	15	.008	42	.011	19.050	.120	1.0	17,600	10,200	.113		
5303	.6693	.0003	1.8504	.0005	.8750	.0047	.039	4,725	2,835	.330	14,000	10,000
	17	.008	47	.011	22.225	.120	1.0	21,000	12,600	.150		
5304	.7874	.0004	2.0472	.0005	.8750	.0047	.039	5,530	3,370	.500	12,000	9,000
	20	.010	52	.011	22.225	.120	1.0	24,600	15,000	.227		
5305	.9843	.0004	2.4409	.0005	1.0000	.0047	.039	7,320	4,650	.750	10,000	8,000
	25	.010	62	.011	25.400	.120	1.0	32,500	20,700	.340		
5306	1.1811	.0004	2.8346	.0005	1.1875	.0047	.039	9,112	6,322	1.100	8,000	6,000
	30	.010	72	.011	30.163	.120	1.0	40,500	28,100	.499		
5307	1.3780	.0005	3.1496	.0005	1.3750	.0047	.059	11,475	8,100	1.700	6,000	5,000
	35	.012	80	.011	34.925	.120	1.5	51,000	36,000	.771		
5308	1.5748	.0005	3.5433	.0006	1.4375	.0047	.059	12,712	9,225	2.200	6,000	5,000
	40	.012	90	.015	36.513	.120	1.5	56,500	41,000	.998		
5309	1.7717	.0005	3.937	.0006	1.5625	.0047	.059	15,412	11,475	3.120	6,000	5,000
	45	.012	100	.015	39.688	.120	1.5	68,500	51,000	1.415		
5310	1.9685	.0005	4.3309	.0006	1.7500	.0047	.079	18,337	13,837	4.250	5,000	4,000
	50	.012	110	.015	44.450	.120	2.0	81,500	61,500	1.928		
5311	2.1654	.0006	4.7244	.0006	1.9375	.0059	.079	21,375	16,425	5.110	5,000	4,000
	55	.015	120	.015	49.213	.150	2.0	95,000	73,000	2.318		
5312	2.3622	.0006	4.1181	.0007	2.1250	.0059	.079	28,100	22,162	7.000	4,000	3,000
	60	.015	130	.018	53.975	.150	2.0	125,000	98,500	3.175		
5313	2.5591	.0006	5.5118	.0007	2.3125	.0059	.079	31,950	25,425	8.500	4,000	3,000
	65	.015	140	.018	58.738	.150	2.0	142,000	113,000	3.856		
5314	2.7559	.0006	5.9066	.0007	2.5000	.0059	.079	35,775	28,800	1.500	3,800	2,800
	70	.015	150	.018	63.500	.150	2.0	159,000	128,000	4.763		
5315	2.9528	.0006	6.2992	.0010	2.6875	.0059	.079	37,800	31,500	11.000	3,600	2,600
	75	.015	160	.025	68.263	.150	2.0	168,149	140,125	4.990		
5316	3.1496	.0006	6.6929	.0010	2.6875	.0059	.079	45,200	53,100	14.500	3,500	2,400
	80	.015	170	.025	68.263	.150	2.0	201,068	236,210	6.577		

\*Maximum fillet which corner radius of bearing will clear.

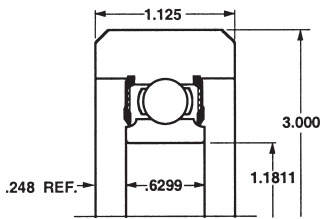


# MAST GUIDE SERIES

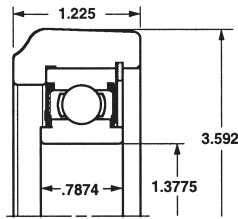
Specially designed bearings to handle mast movements of industrial trucks. This series will handle heavy radial and shock loads. Thick outer rings permit heavy OD loading. Specially designed seals allow the bearings to operate in adverse environments.

PEER Bearing No.	MRC Interchange	BCA Interchange	Hoover/NSK Interchange	
MG206-FFA	206-SZZ-16	MG206FFA		
MG206-SZZ16				
MG207-FFJ			MG207FFJ	
MG207-FFJA			MG207FFJA	
MG207FFWA			MG207FFWA	
MG208-FFA			MG208FFA	
MG208-SZZ15	208-SZZ-15	MG207FFH		
MG209-MZZ1	209-MZZ1	MG209-MZZ1		
MG305-SZZ3	305-SZZ-3	MG305DD	X421RS	
MG305-SZZ6	305-SZZ-6	MG305DDA		
MG305-SZZ7	305-SZZ-7			
MG306-SZZ5	306-SZZ-5	MG306DD	X555	
MG307-SZZ4	307-SZZ-4	MG307FFA		
MG307-SZZ9	307-SZZ-9	MG307FFK	X549RS	
MG307-SZZ10	307-SZZ-10	MG307FF(FFH)	X376RS	
MG307-SZZ14	307-SZZ-14			
MG307-SZZ18	307-SZZ-18	MG307FFP		
MG308-SZZ5	308-SZZ-5	MG308FFA		
MG309-SZZ1	309-SZZ-1		X469	
MG309-SZZ4	309-SZZ-4	MG309DDA	X501RS	
MG309-SZZ5	309-SZZ-5			
MG311-SZZ1	311-SZZ-1			

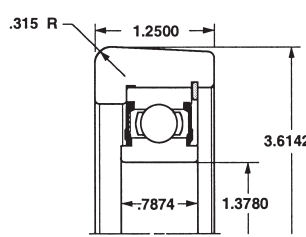
\*Special sizes available upon request



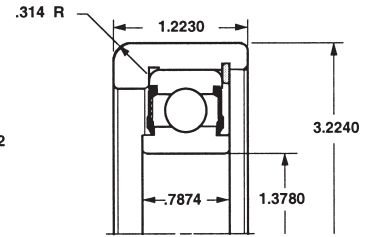
MG206SZZ-16



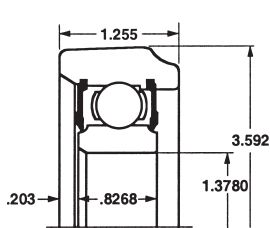
MG207FFJ



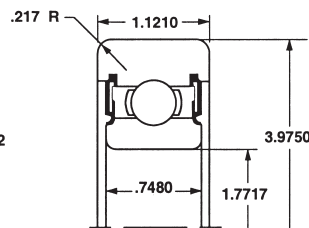
MG207FFJA



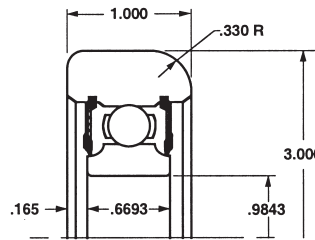
MG207FFWA



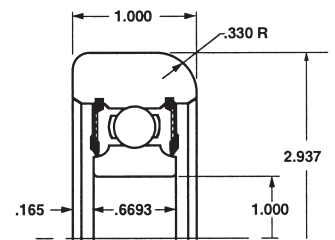
MG208SZZ-15



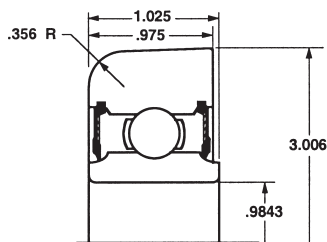
MG209MMZ-1



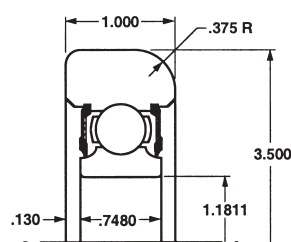
MG305SZZ-3



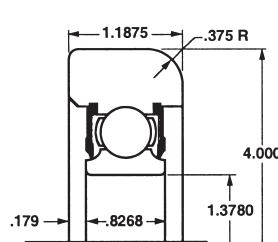
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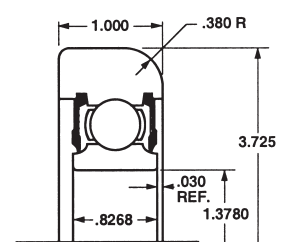
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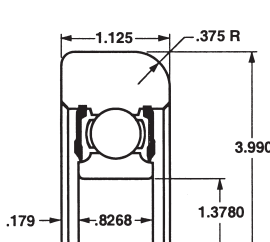
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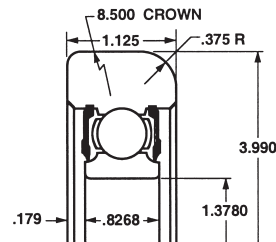
MG307SZZ-4



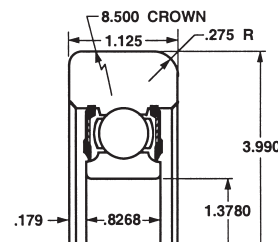
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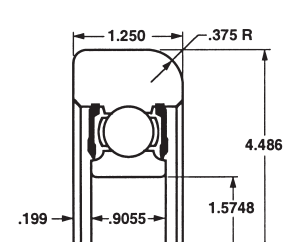
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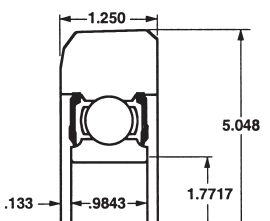
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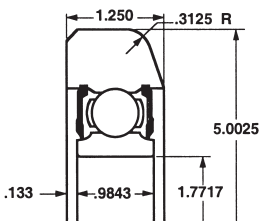
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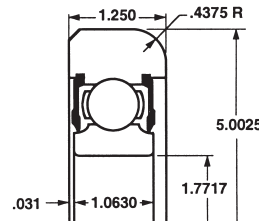
MG308SZZ-5



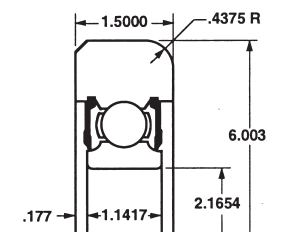
MG309SZZ-1



MG309SZZ-4



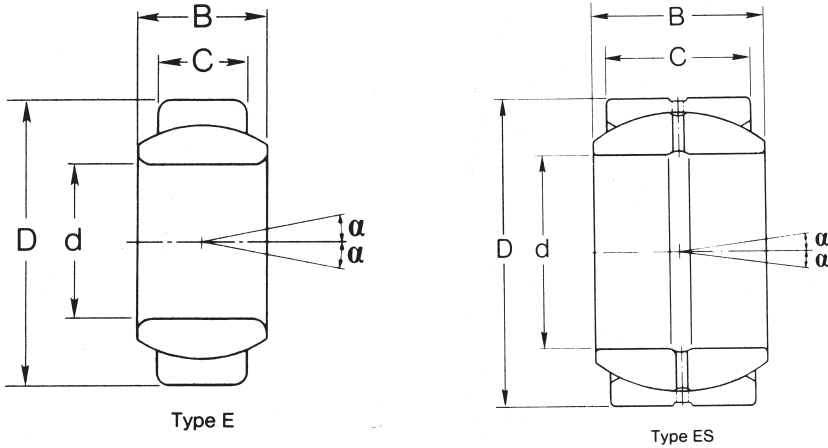
MG309SZZ-5



MG311SZZ-1



# SPHERICAL PLAIN BEARINGS GE SERIES



Spherical plain bearings are designed as open bearings or with seals to aid in dirt exclusion. Spherical plain bearings are used in severe misalignment conditions. Additional applications include oscillation, tilting and similar conditions where high rotation speeds are not required. Made in inch and metric dimensions.

## INCH SERIES

Units: Inches  
Metric

Designation Without Seals	Designation With Seals	d	D	B	B <sub>1</sub>	Tilt Angle Degrees	Designation Without Seals	Designation With Seals	d	D	B	B <sub>1</sub>	Tilt Angle Degrees
		in.	in.	in.	in.				in.	in.	in.	in.	
GEZ 008 ES	—	.5	.875	.437	.375	6	GEZ 208 ES	GEZ 208 ES-2RS	2.5	3.9375	2.187	1.875	6
GEZ 010 ES	—	.625	1.0625	.547	.469	6	GEZ 212 ES	GEZ 212 ES-2RS	2.75	4.375	2.406	2.062	6
GEZ 012 ES	—	.75	1.25	.656	.562	6	GEZ 300 ES	GEZ 300 ES-2RS	3	4.75	2.625	2.25	6
GEZ 014 ES	—	.875	1.4375	.756	.656	6	GEZ 304 ES	GEZ 304 ES-2RS	3.25	5.125	2.844	2.437	6
GEZ 100 ES	GEZ 100 ES02RS	1	1.625	.875	.75	6	GEZ 308 ES	GEZ 308 ES-2RS	3.5	.5	3.062	2.625	6
GEZ 104 ES	—	1.25	2	1.093	.937	6	GEZ 312 ES	GEZ 312 ES-2RS	3.75	5.875	3.281	2.812	6
GEZ 106 ES	—	1.375	2.1875	1.187	1.031	6	GEZ 400 ES	GEZ 400 ES-2RS	4	6.25	3.5	3	6
GEZ 108 ES	GEZ 108 ES-2RS	1.5	2.4375	1.312	1.125	6	GEZ 408 ES	GEZ 408 ES-2RS	4.5	7	3.937	3.375	6
GEZ 112 ES	GEZ 112 ES-2RS	1.75	2.8125	1.531	1.312	6	GEZ 500 ES	GEZ 500 ES-2RS	5	7.75	4.375	3.75	6
GEZ 200 ES	GEZ 200 ES-2RS	2	3.1875	1.751	1.5	6	GEZ 600 ES	GEZ 600 ES-2RS	6	8.75	4.75	4.125	5
GEZ 204 ES	GEZ 204 ES-2RS	2.25	3.5625	1.969	1.687	6			152.400	222.250	120.650	104.775	

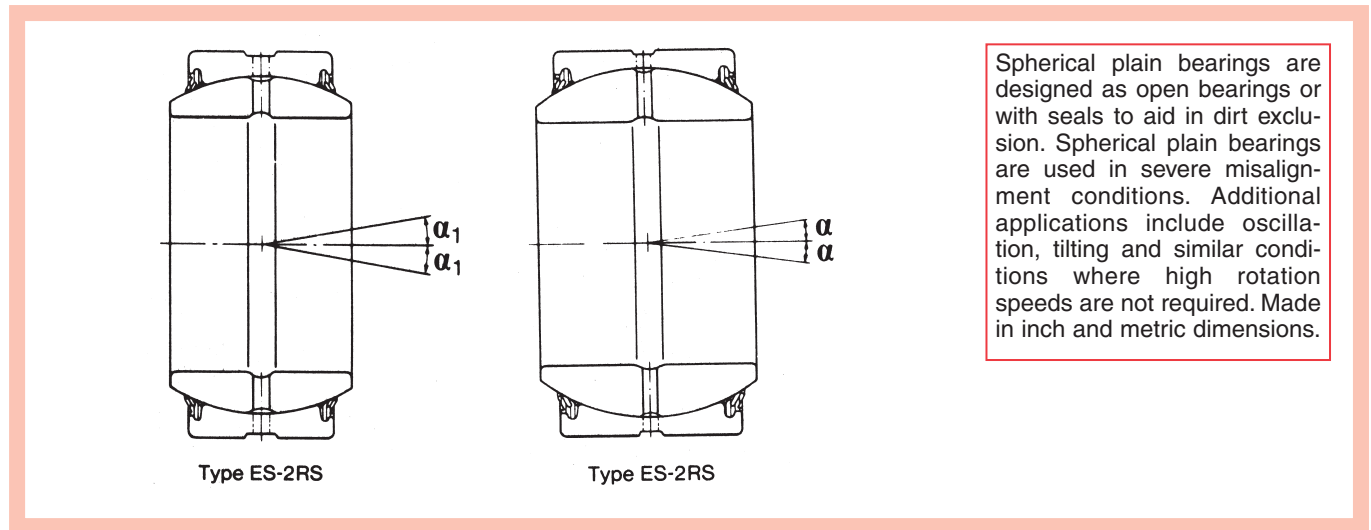
## METRIC SERIES

Designation Without Seals	Designation With Seals	d	D	B	B <sub>1</sub>	Tilt Angle Degrees	Designation Without Seals	Designation With Seals	d	D	B	B <sub>1</sub>	Tilt Angle Degrees
		mm	mm	mm	mm				mm	mm	mm	mm	
GE 4 E	—	4	12	5	3	16	GE 12 E	—	12	22	10	7	11
GE 5 E	—	5	14	6	4	13	GE 15 ES	GE 15 ES-2RS	15	26	12	9	8/5
GE 6 E	—	6	14	6	4	13	GE 17 ES	GE 17 ES-2RS	17	30	14	10	10/7
GE 8 E	—	8	16	8	5	15	GE 20 ES	GE 20 ES-2RS	20	35	16	12	9/6
GE 10 E	—	10	19	9	6	12	—	GEH 20 ES-2RS	42	25	16	15	

\*Maximum fillet which corner radius of bearing will clear.

# SPHERICAL PLAIN BEARINGS

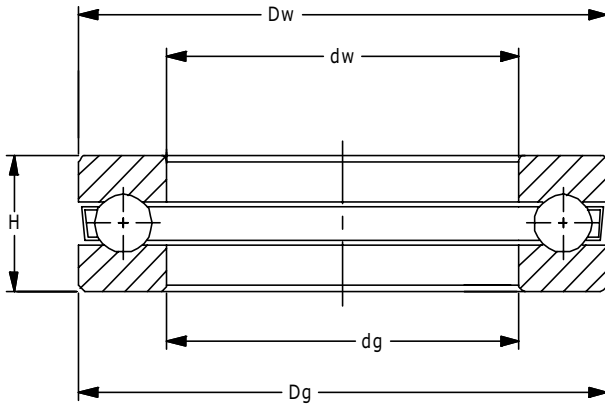
## GE SERIES (continued)



Spherical plain bearings are designed as open bearings or with seals to aid in dirt exclusion. Spherical plain bearings are used in severe misalignment conditions. Additional applications include oscillation, tilting and similar conditions where high rotation speeds are not required. Made in inch and metric dimensions.

Designation		Units:					Designation		Units:					
Without Seals	With Seals	d mm in.	D mm in.	B mm in.	B <sub>1</sub> mm in.	Tilt Angle Degrees	Without Seals	With Seals	d mm in.	D mm in.	B mm in.	B <sub>1</sub> mm in.	Tilt Angle Degrees	
GE 25 ES	GE 25 ES-2RS	25 .9843	42 1.6535	20 .7874	16 .6299	7/4	GE 90 ES	GE 90 ES-2RS	90 3.5436	130 5.1182	60 2.3625	50 1.9688	5/3	
—	GEH 25 ES-2RS		47 1.8504	28 1.1024	18 .7087	14	GEH 90 ES	GEH 90 ES-2RS		150 5.9056	85 3.3464	55 2.1654	15/14	
GE 30 ES	GE 30 ES-2RS	30 1.1812	47 1.8504	22 8.6614	18 .7087	6/4	GE 100 ES	GE 100 ES-2RS	100 3.9373	150 5.9056	70 2.7562	55 2.1654	7/5	
—	GEH 30 ES-2RS		55 2.1653	32 1.2598	20 .7874	16	—	GEH 100 ES-2RS		160 6.2993	85 3.3464	55 2.1654	12	
GE 35 ES	GE 35 ES-2RS	35 1.3781	55 2.1653	25 .9843	20 .7874	6/4	GE 110 ES	GE 100 ES-2RS	110 4.3310	160 6.2993	70 2.7562	55 2.1654	6/4	
—	GEH 35 ES-2RS		62 2.4409	35 1.3781	22 .8661	15	—	GEH 100 ES-2RS		180 7.0867	100 3.9373	70 2.7562	11	
GE 40 ES	GE 40 ES-2RS	40 1.5750	62 2.4409	28 1.1024	22 .8661	7/4	GE 120 ES	GE 120 ES-2RS	120 4.7247	180 7.0867	85 3.3464	70 2.7562	6/4	
—	GEH 40 ES-2RS		68 2.6772	40 1.5750	25 .9843	14	GEH 120 ES	—		210 8.2678	115 4.5276	70 2.7562	16	
GE 45 ES	GE 45 ES-2RS	45 1.7719	68 2.6772	32 1.2398	25 .9843	7/4	GE 140 ES	GE 140 ES-2RS	140 5.5121	210 8.2678	90 3.5436	70 2.7562	7/5	
—	GEH 45 ES-2RS		75 2.9528	43 1.6929	28 1.1024	13	GE 160 ES	GE 160 ES-2RS	160 6.2935	230 9.0552	105 4.1339	80 3.1499	8/6	
GE 50 ES	GE 50 ES-2RS	50 1.9688	75 2.9528	35 1.3781	28 1.1024	6/4	GE 180 ES	GE 180 ES-2RS	180 7.0869	260 10.2363	105 4.1339	80 3.1499	6/4	
—	GEH 50 ES-2RS		90 3.5433	56 2.2047	36 1.4173	16	GE 200 ES	—		200 7.8743	290 11.4174	130 5.1182	100 3.9373	7
GE 60 ES	GE 60 ES-2RS	60 2.3625	90 3.5433	44 1.7323	36 1.4173	6/3	GE 220 ES	—		220 8.6617	320 12.5985	135 5.3151	100 3.9373	8
—	GEH 60 ES-2RS		105 4.1339	63 2.4803	40 1.5750	15	GE 240 ES	—		240 9.4491	340 13.3859	140 5.5121	100 3.9373	8
GE 70 ES	GE 70 ES-2RS	70 2.7562	105 4.1339	49 1.9291	40 1.5750	6/4	GE 260 ES	—		260 10.2365	370 14.5670	150 6.1025	110 4.3310	7
GEH 70 ES	GEH 70 ES-2RS		120 4.7245	70 2.7562	45 1.7719	16/14	GE 280 ES	—		280 11.0239	400 15.7481	155 6.2994	120 4.7247	6
GE 80 ES	GE 80 ES-2RS	80 3.1499	120 4.7245	55 2.1654	45 1.7719	6/4	GE 300 ES	—		300 11.8113	430 16.9292	165 6.6931	120 4.7247	7
—	GEH 80 ES-2RS		130 5.1182	75 2.9528	50 1.9688	13								

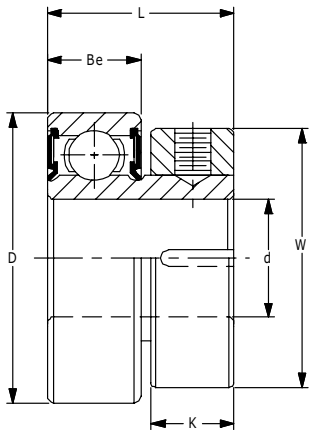
\*Maximum fillet which corner radius of bearing will clear.



Thrust ball bearings single direction. Thrust ball bearings are available in both the single and double direction designs. Either one can take high axial load but no radial load. Besides the conventional design with flat supporting surfaces, the standard includes thrust ball bearings made with spherical housing washers and seating rings.

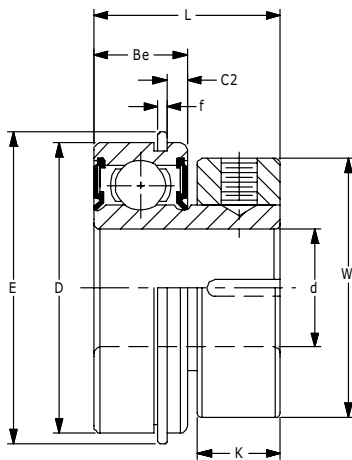
Part Number	Dimensions (Metric)					Approx. Wgt. (lbs.)	Interchange			
	dw	dg	Dw	Dg	H		FAG SKF (Eur.)	RHP SNR	RIV	
51100	10	11	24	24	9	0.05	51100	51100	ELP	10
51101	12	13	26	26	9	0.05	51101	51101	ELP	12
51102	15	16	28	28	9	0.06	51102	51102	ELP	15
51103	17	18	30	30	9	0.07	51103	51103	ELP	17
51104	20	21	35	35	10	0.09	51104	51104	ELP	20
51105	25	26	42	42	11	0.13	51105	51105	ELP	25
51106	30	32	47	47	11	0.14	51106	51106	ELP	30
51107 X	35	37	52	52	12	0.20	51107 X	51107 X	ELPn	35
51107	35	37	53	53	12	0.22	51107	51107	ELP	35
51108	40	42	60	60	13	0.26	51108	51108	ELP	40
51109	45	47	65	65	14	0.31	51109	51109	ELP	45
51110	50	52	70	70	14	0.34	51110	51110	ELP	50
51111	55	57	78	78	16	0.48	51111	51111	ELP	55
51112	60	62	85	85	17	0.62	51112	51112	ELP	60
51113	65	67	90	90	18	0.71	51113	51113	ELP	65
51114	70	72	95	95	18	0.77	51114	51114	ELP	70
51115	75	77	100	100	19	0.86	51115	51115	ELP	75
51116	80	82	105	105	19	0.90	51116	-	ELP	80
51117	85	87	110	110	19	0.93	51117	-	ELP	85
51118	90	92	120	120	22	1.41	51118	-	ELP	90
51120	100	102	135	135	25	2.06	51120	-	ELP	100
51122	110	112	145	145	25	2.25	51122	-	ELP	110
51124	120	122	155	155	25	2.43	51124	-	ELP	120
51126	130	132	170	170	30	3.62	51126	-	ELP	130
51128	140	142	178	180	31	4.56	51128	-	ELP	140
51130	150	152	188	190	31	4.81	51130	-	ELP	150
51132	160	162	198	200	31	4.92	51132	-	ELP	160
51134	170	172	213	215	34	6.53	51134	-	ELP	170
51136	180	183	222	225	34	7.67	51136	-	ELP	180
51138	190	193	237	240	37	8.95	51138	-	ELP	190
51140	200	203	247	250	37	9.35	51140	-	ELP	200
51144	220	223	267	270	37	10.20	51144	-	ELP	220
51148	240	243	297	300	45	16.60	51148	-	ELP	240
51152	260	263	317	320	45	17.90	51152	-	ELP	260
51156	280	283	347	350	53	26.90	51156	-	ELP	280
51160	300	304	376	380	62	38.60	51160	-	ELP	300
51164	320	324	396	400	63	41.70	51164	-	ELP	320
51168	340	344	416	420	64	44.80	51168	-	ELP	340
51172	360	364	436	440	65	48.10	51172	-	ELP	360
51176	380	384	456	460	65	50.71	51176	-	-	-
51180	400	404	476	480	65	52.91	51180	-	-	-
51184	420	424	495	500	65	55.70	51184	-	-	-
51188	440	444	535	540	80	90.60	51188	-	-	-
51192	460	464	555	560	80	94.00	51192	-	-	-
51196	480	484	575	580	80	97.90	51196	-	-	-
511/500	500	505	595	600	80	101.70	511/500	-	-	-

# COLLAR BEARINGS/FLANGETTE SERIES



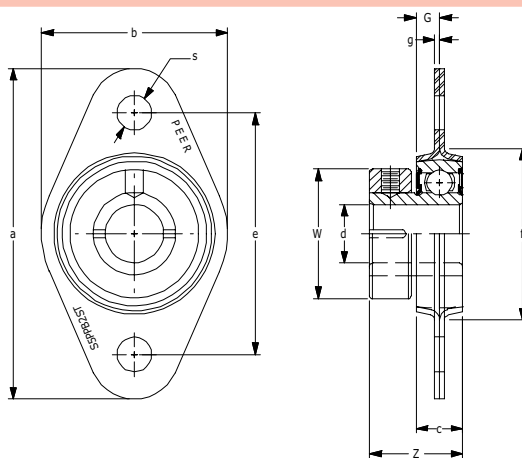
Collar Bearings Clamp Type Standard Type

Part Number	d +.0005 - .0000	D +.0000 - .0004	Be +.000 - .005	L +.000 - .005	K	W
S1PP7-4	.1875	.6250	.1960	.4219	3/16"	9/16"
S1PP7-3	.2500	.6250	.1960	.4219	3/16"	9/16"
S3PP16	.3125	.8750	.2812	.5625	1/4"	25/32"
S3PP4	.3750	.8750	.2812	.5625	1/4"	25/32"
S5PP2	.5000	1.1250	.3125	.6250	9/32"	29/32"



"G" Type: Snap Ring Mounted on Outer Diameter

Part Number	d +.0005 - .0000	D +.0000 - .0004	Be +.000 - .005	L +.000 - .005	K	W	C <sub>2</sub>	f
S1PPG7-4	.1875	.6250	.1960	.4219	3/16"	9/16"	.070	.026
S1PPG7-3	.2500	.6250	.1960	.4219	3/16"	9/16"	.070	.026
S3PPG16	.3125	.8750	.2812	.5625	1/4"	25/32"	.090	.026
S3PPG4	.3750	.8750	.2812	.5625	1/4"	25/32"	.090	.026
S5PPG2	.5000	1.1250	.3125	.6250	9/32"	29/32"	.090	.031



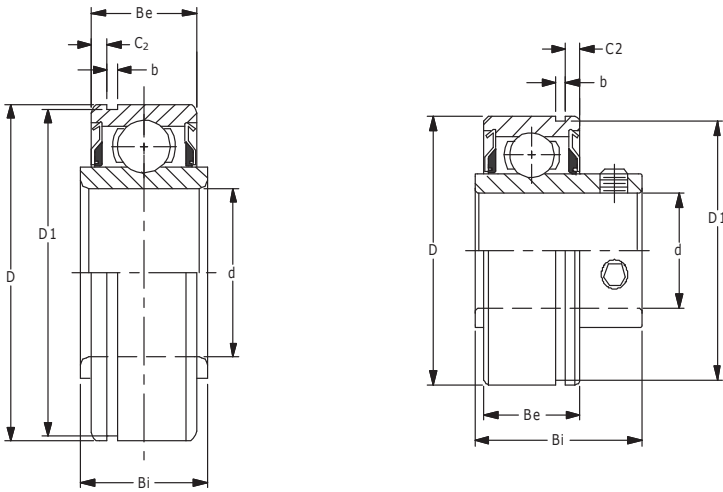
## Flangette Series

1. Bearing material 52100 Chrome steel
2. House material pressed steel
3. Bearings meet ABEC 1 tolerances except bore
4. Bearing double sealed

Part Number	d +.0005 - .0000	L	J	N	M	G	d <sub>1</sub>	A	H <sub>2</sub>	M
S1PPB73ST	.2500	7/8"	1 7/32"	7/32"	.43	.079	9/16"	7/23"	25/32"	1.78125
S3PPB15ST	.3125	1 3/16	1 17/32	7/32	.562	.107	25/32	9/32	1 3/32	2 3/32
S3PPB5ST	.3750	1 3/16	1 17/32	7/32	.562	.107	25/32	9/32	1 3/32	2 3/32
S5PPB2ST	.5000	1 7/16	1 25/32	7/32	.625	.120	29/32	5/16	1 9/32	2 11/32



# 7500 & 7600 SERIES



Seal type two single lip "shroud" style staked in full cover Buna-N rubber lip seals.  
 Snap rings installed on DLG types snap ring groove on DL type (no ring).  
 Grease filled 25-30% general purpose lubricant.

Part Number	d 7500 SERIES +.0000 - .0005	D		Be +.000 -.005	Bi +.000 -.005	W	C <sub>2</sub> +.005 -.005	f	D <sub>1</sub>	G	O Radius R In.
		Inches	Tolerance +.0000 To Minus								
7508	1/2	1 3/4	-.0005	5/8	3/4	.993	.136	.042	1 59/64	.233	.035
7510	5/8	1 3/4	-.0005	5/8	3/4	.993	.136	.042	1 59/64	.233	.035
7512	3/4	1 3/4	-.0005	5/8	3/4	.93	.136	.042	1 59/64	.233	.035
7514	7/8	2	-.0006	5/8	3/4	1.290	.136	.042	2 5/32	.261	.035
7516	1	2	-.0006	5/8	3/4	1.290	.136	.042	2 5/32	.261	.035
7518	1 1/8	2 9/16	-.0006	3/4	7/8	1.631	.190	.065	2 49/64	.261	.035
7520	1 1/4	2 9/16	-.0006	3/4	7/8	1.631	.190	.065	2 49/64	.261	.035

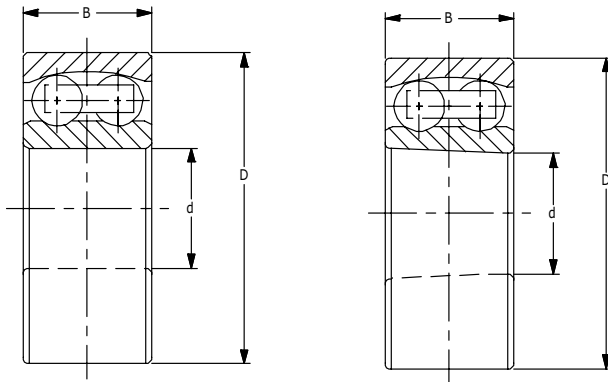
Part Number	d 7600 SERIES +.0008 - .0000	D		Be +.000 -.005	Bi +.000 -.005	W	C <sub>2</sub> +.005 -.005	f	D <sub>1</sub>	G	O Radius R In.
		Inches	Tolerance +.0000 To Minus								
7608	1/2	1 3/4	-.0005	5/8	1.092	.993	.136	.042	1 59/64	.233	.035
7610	5/8	1 3/4	-.0005	5/8	1.092	.993	.136	.042	1 59/64	.233	.035
7612	3/4	1 3/4	-.0005	5/8	1.092	.993	.136	.042	1 59/64	.233	.035
7614	7/8	2	-.0006	5/8	1.179	1.290	.136	.042	2 5/32	.261	.035
7615	15/16	2	-.0006	5/8	1.179	1.290	.136	.042	2 5/32	.261	.035
7616	1	2	-.0006	5/8	1.179	1.290	.136	.042	2 5/32	.261	.035
7617	1 1/16	2 9/16	-.0006	3/4	1.417	1.631	.190	.065	2 49/64	.261	.035
7618	1 1/8	2 9/16	-.0006	3/4	1.417	1.631	.190	.065	2 49/64	.261	.035
7620	1 1/4	2 9/16	-.0006	3/4	1.417	1.631	.190	.065	2 49/64	.261	.035

Part Number	Basic Load Rating lbs.	
	Dynamic Cr	Static Cor
7508	2110	1130
7510	2110	1130
7512	2110	1130
7516	3150	1770
7520	4375	2543

Part Number	Basic Load Rating lbs.	
	Dynamic Cr	Static Cor
7608	2110	1130
7610	2110	1130
7612	2110	1130
7616	3150	1770
7620	4375	2543

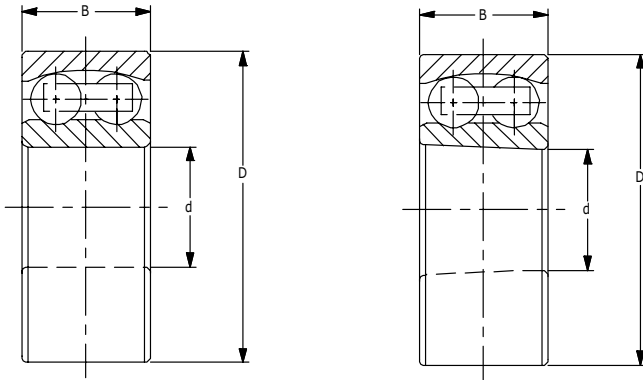


# 1200, 1200K, 1300 & 1300K SERIES



The self-aligning ball bearing is one of the double row type with a spherical raceway in the outer ring. This gives the bearing self-aligning properties and allows it to compensate for misalignment, shaft deflections and housing deformation. Self-aligning ball bearings are available with cylindrical or tapered bore. 1:12

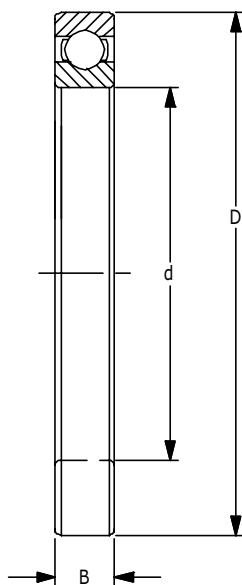
Part Number	Bore		Outer Diameter		Width		Radius		Basic Load Rating lbs.		Weight lbs.	
	d		D		B		r		Dynamic C	Static Co		
	mm	in.	mm	in.	mm	in.	mm	in.				
1200	1200K	10	.3937	30	1.1811	9	.3543	1	.039	1230	268	0.075
1201	1201K	12	.4724	32	1.2598	10	.3937	1	.039	1260	286	0.088
1202	1202K	15	.5906	35	1.3780	11	.4331	1	.039	1680	395	0.108
1203	1203K	17	.6693	40	1.5748	12	.4724	1	.039	1770	450	0.161
1204	1204K	20	.7874	47	1.8504	14	.5512	1.5	.059	2230	585	0.265
1205	1205K	25	.9843	52	2.0472	15	.5906	1.5	.059	2720	740	0.311
1206	1206K	30	1.1811	62	2.4409	16	.6299	1.5	.059	3500	1050	0.485
1207	1207K	35	1.3780	72	2.8346	17	.6693	2	.079	3550	1150	0.712
1208	1208K	40	1.5748	80	3.1496	18	.7087	2	.079	4350	1470	0.919
1209	1209K	45	1.7717	85	3.3565	19	.7480	2	.079	4900	1650	1.03
1210	1210K	50	1.9685	90	3.5433	20	.7874	2	.079	5100	1820	1.16
1211	1211K	55	2.1654	100	3.9370	21	.8268	2.5	.098	6000	2250	1.55
1212	1212K	60	2.3622	110	4.3307	22	.8661	2.5	.098	6800	2590	1.98
1213	1213K	65	2.5591	120	4.7244	23	.9055	2.5	.098	6950	2820	2.54
1214	1214K	70	2.7559	125	4.9213	24	.9449	2.5	.098	7800	3100	2.78
1215	1215K	75	2.9528	130	4.1181	25	.9843	2.5	.098	8750	3550	3.00
1216	1216K	80	3.1496	140	5.5118	26	1.0236	3	.118	8950	3800	3.68
1217	1217K	85	3.3465	150	5.9055	28	1.1024	3	.118	11000	4650	4.56
1218	1218K	90	3.5433	160	6.2992	30	1.1811	3	.118	12800	5300	5.56
1219	1219K	95	3.7402	170	6.6929	32	1.2598	3.5	.138	14300	6100	6.83
1220	1220K	100	3.9370	180	7.0866	34	1.3386	3.5	.138	15500	6700	8.16
1300	1300K	10	.3937	35	1.3780	11	.4331	0.6	.024	1630	365	0.128
1301	1301K	12	.4724	37	1.4567	12	.4724	1	.039	2130	485	0.148
1302	1302K	15	.5906	42	1.6535	13	.5118	1.5	.059	2150	515	0.207
1303	1303K	17	.6693	47	1.8504	14	.5512	1.5	.059	2820	715	0.287
1304	1304K	20	.7874	52	2.0472	15	.5906	2	.079	2790	750	0.359
1305	1305K	25	.9843	62	2.4409	17	.6693	2	.079	4050	1130	0.567
1306	1306K	30	1.1811	72	2.8346	19	.7480	2	.079	4800	1420	0.853
1307	1307K	35	1.3780	80	3.1496	21	.8268	2.5	.098	5650	1770	1.12
1308	1308K	40	1.5748	90	3.5433	23	.9055	2.5	.098	6650	2180	1.58
1309	1309K	45	1.7717	100	3.9370	25	.9843	2.5	.098	8550	2860	2.11
1310	1310K	50	1.9685	110	4.3307	27	1.0630	3	.118	9750	3150	2.67
1311	1311K	55	2.1654	120	4.7244	29	1.1417	3	.118	11600	4000	3.48
1312	1312K	60	2.3622	130	5.1181	31	1.2205	3.5	.138	12900	4700	4.32
1313	1313K	65	2.5591	140	5.5118	33	1.2992	3.5	.138	13900	5150	5.40
1314	1314K	70	2.7559	150	5.9055	35	1.3780	3.5	.138	16700	6250	6.60
1315	1315K	75	2.9528	160	6.2992	37	1.4567	3.5	.138	17800	6750	7.85
1316	1316K	80	3.1496	170	6.6929	39	1.5354	3.5	.138	19900	7450	9.22
1317	1317K	85	3.3465	180	7.0866	41	1.6142	4	.157	22000	8500	11.00
1318	1318K	90	3.5433	190	7.4803	43	1.6929	4	.157	26100	10000	12.80
1319	1319K	95	3.7402	200	7.8740	45	1.7717	4	.157	29600	11400	14.70
1320	1320K	100	3.9370	215	8.4646	47	1.8504	4	.157	32000	12900	18.30



The self-aligning ball bearing is one of the double row type with a spherical raceway in the outer ring. This gives the bearing self-aligning properties and allows it to compensate for misalignment, shaft deflections and housing deformation. Self-aligning ball bearings are available with cylindrical or tapered bore. 1:12

SST Part Number	Bore d		Outer Diameter D		Width B		Radius r		Basic Load Rating lbs.		Weight lbs.		
	mm	in.	mm	in.	mm	in.	mm	in.	Dynamic C	Static Co	2200	2200K	
											2300	2300K	
2200	2200K	10	.3937	30	1.1811	14	.5512	1	.039	1640	360	0.104	0.098
2201	2201K	12	.4724	32	1.2598	14	.5512	1	.039	1710	390	0.117	0.113
2202	2202K	15	.5906	35	1.3780	14	.5512	1	.039	1780	415	0.132	0.127
2203	2203K	17	.6693	40	1.5748	16	.6299	1	.039	2200	545	0.194	0.118
2204	2204K	20	.7874	47	1.8504	18	.7087	1.5	.059	2830	745	0.309	0.300
2205	2205K	25	.9843	52	2.0472	18	.7087	1.5	.059	2760	775	0.359	0.348
2206	2206K	30	1.1811	62	2.4409	20	.7874	1.5	.059	3400	1020	0.573	0.560
2207	2207K	35	1.3780	72	2.8346	23	.9055	2	.079	4850	1480	0.888	0.873
2208	2208K	40	1.5748	80	3.1496	23	.9055	2	.079	5000	1650	1.11	1.09
2209	2209K	45	1.7717	85	3.3565	23	.9055	2	.079	5200	1830	1.20	1.18
2210	2210K	50	1.9685	90	3.5433	23	.9055	2	.079	5200	1900	1.30	1.27
2211	2211K	55	2.1654	100	3.9370	25	.9843	2.5	.098	5920	2220	1.79	1.75
2212	2212K	60	2.3622	110	4.3307	28	1.1024	2.5	.098	7650	2840	2.40	2.36
2213	2213K	65	2.5591	120	4.7244	31	1.2205	2.5	.098	9750	3700	3.22	3.15
2214	2214K	70	2.7559	125	4.9213	31	1.2205	2.5	.098	9850	3850	3.35	-
2215	2215K	75	2.9528	130	4.1181	31	1.2205	2.5	.098	9950	4000	3.57	3.48
2216	2216K	80	3.1496	140	5.5118	33	1.2992	3	.118	10900	4450	4.43	4.34
2217	2217K	85	3.3465	150	5.9055	36	1.4173	3	.118	13100	4300	5.56	5.42
2218	2218K	90	3.5433	160	6.2992	40	1.5748	3	.118	15800	6450	7.50	7.34
2219	2219K	95	3.7402	170	6.6929	43	1.6929	3.5	.138	18700	7750	9.04	8.82
2220	2220K	100	3.9370	180	7.0866	46	1.8110	3.5	.138	21100	8650	11.0	10.70
2300	2300K	10	.3937	35	1.3780	17	.6693	1	.039	2270	485	0.183	0.180
2301	2301K	12	.4724	37	1.4567	17	.6693	1.5	.059	2640	610	0.201	0.195
2302	2302K	15	.5906	42	1.6535	17	.6693	1.5	.059	2700	650	0.251	0.245
2303	2303K	17	.6693	47	1.8504	19	.7480	1.5	.059	3250	800	0.348	0.340
2304	2304K	20	.7874	52	2.0472	21	.8268	2	.079	4050	1060	0.461	0.452
2305	2305K	25	.9843	62	2.4409	24	.9449	2	.079	5500	1480	0.739	0.721
2306	2306K	30	1.1811	72	2.8346	27	1.0630	2	.079	7050	1970	1.10	1.08
2307	2307K	35	1.3780	80	3.1496	31	1.2205	2.5	.098	8850	2530	1.49	1.45
2308	2308K	40	1.5748	90	3.5433	33	1.2992	2.5	.098	10100	3050	2.04	1.99
2309	2309K	45	1.7717	100	3.9370	36	1.4173	2.5	.098	12200	3750	2.71	2.65
2310	2310K	50	1.9685	110	4.3307	40	1.5748	3	.118	14500	4550	3.62	3.53
2311	2311K	55	2.1654	120	4.7244	43	1.6929	3	.118	16900	5400	4.63	4.52
2312	2312K	60	2.3622	130	5.1181	46	1.8110	3.5	.138	19600	6350	5.73	5.58
2313	2313K	65	2.5591	140	5.5118	48	1.8898	3.5	.138	21600	7300	7.12	6.94
2314	2314K	70	2.7559	150	5.9055	51	2.0079	3.5	.138	24600	8450	8.60	-
2315	2315K	75	2.9528	160	6.2992	55	2.1654	3.5	.138	27700	9650	10.4	10.20
2316	2316K	80	3.1496	170	6.6929	58	2.2835	3.5	.138	28800	10200	13.4	13.10
2317	2317K	85	3.3465	180	7.0866	60	2.3622	4	.157	31500	11500	15.4	15.20
2318	2318K	90	3.5433	190	7.4803	64	2.5197	4	.157	34000	12900	18.6	18.20
2319	2319K	95	3.7402	200	7.8740	67	2.6378	4	.157	37000	14500	21.6	21.10
2320	2320K	100	3.9370	215	8.4646	73	2.8740	4	.157	43000	17800	27.3	26.70

# 16000 SERIES DEEP GROOVE BALL

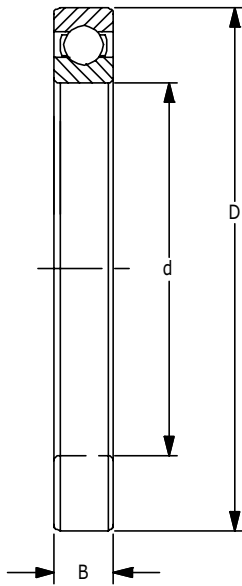


This deep groove, Conrad construction bearing is specifically designed to provide maximum performance by means of precise ball complement selection. The honed raceways offer a perfectly balanced bearing capable of operating under straight radial, thrust or combination loads. Consult PEER's engineering staff for proper selection. Stainless steel 440C material is available upon request. Radial clearance is selected in accordance to applications ranging from C2-C0-C3-C4 fits

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	Basic Load Ratings		Weight lbs	Limiting Speed of Open Bearing (rpm)	
							Dynamic Cr	Static Cor		Oil	Grease
16100	.3937 10	0.0003	1.1024 28	0.0005	.3150 8	0.0050	1,030 4582	440 1957	0.03 0.0136	34,000	29,000
16001	.4724 12	0.0003	1.1024 28	0.0005	.3150 7	0.0050	1168 5099	548 2392	0.03 0.019	30000	26000
16101	.4724 12	0.0003	1.1811 30	0.0005	.3150 8	0.0050	1150 5116	540 2402	0.03 0.0136	30000	26000
16002	.5906 15	0.0003	.3150 32	0.0005	.3150 8	0.0050	1260 5605	635 2825	0.06 0.0272	26000	22000
16003	.6693 17	0.0003	.3150 35	0.0005	.3150 8	0.0050	1530 6806	755 3359	0.07 0.0317	24000	20000
16004	.7874 20	0.0004	.3150 42	0.0005	.3150 8	0.0050	2110 9386	1140 5071	0.11 0.0498	21000	18000
16005	.9843 25	0.0004	.3150 47	0.0005	.3150 8	0.0050	2660 10053	1320 5872	0.14 0.0635	18000	15000
16006	1.1811 30	0.0004	.3543 55	0.0005	.3543 9	0.0050	2970 13212	1860 8274	0.19 0.0861	15000	13000
16007	1.3780 35	0.0005	.3543 62	0.0005	.3543 9	0.0050	3600 16014	2315 10298	0.25 0.1134	14000	12000
16008	1.5748 40	0.0005	.3543 68	0.0005	.3543 9	0.0050	3750 16681	2600 11566	0.28 0.1270	12000	10000
16009	1.7717 45	0.0005	.3937 75	0.0005	.3937 10	0.0050	4700 20907	3400 15125	0.38 0.1723	11000	9200
16010	1.9685 50	0.0005	.3937 80	0.0005	.3937 10	0.0050	4900 21797	3750 16681	0.40 0.1814	9800	8400
16011	2.1654 55	0.0006	.4331 90	0.0006	.4331 11	0.0060	6350 28247	4800 21352	0.58 0.2630	9000	7700
16012	2.3622 60	0.0006	.4331 95	0.0006	.4331 11	0.0060	6610 29404	5200 23132	0.62 0.2812	8300	7000
16013	2.7559 65	0.0006	.4331 100	0.0006	.4331 11	0.0060	6850 30472	5650 25133	0.66 0.2993	7700	6500
16014	2.7559 70	0.0006	.5118 110	0.0006	.5118 13	0.0060	8550 38034	6950 30916	0.96 0.4354	7100	6100



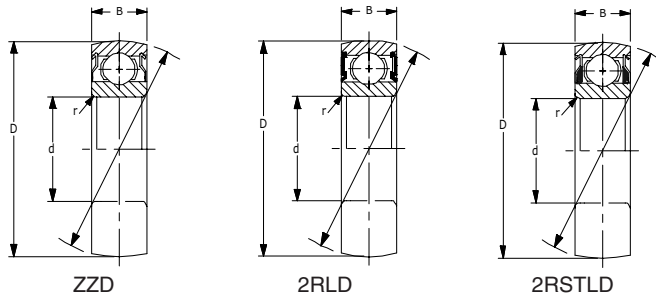
# 16000 SERIES DEEP GROOVE BALL



This deep groove, Conrad construction bearing is specifically designed to provide maximum performance by means of precise ball complement selection. The honed raceways offer a perfectly balanced bearing capable of operating under straight radial, thrust or combination loads. Consult PEER's engineering staff for proper selection. Stainless steel 440C material is available upon request. Radial clearance is selected in accordance to applications ranging from C2-C0-C3-C4 fits

Part Number	Bore d	Tolerance +.0000 to minus	OD D	Tolerance +.0000 to minus	Width B	Tolerance +.0000 to minus	Basic Load Ratings		Weight lbs	Limiting Speed of Open Bearing (rpm)	
							Dynamic Cr	Static Cor		Oil	Grease
16015	2.9528 75	0.0006	115	0.0006	.5118 13	0.0060	8890 39456	7550 33585	1.01 0.4581	6700	5700
16016	3.1496 80	0.0006	125	0.0007	.5512 14	0.0060	10700 47598	8950 39813	1.31 0.5942	6200	5300
16017	3.3465 85	0.0006	130	0.0007	.5512 14	0.0080	11100 49377	9700 43149	1.38 0.6259	5900	5000
16018	3.5433 90	0.0006	140	0.0007	.6299 16	0.0080	13100 58274	11200 49822	1.87 0.8482	5600	4700
16019	3.7402 95	0.0006	145	0.0007	.6299 16	0.0080	13600 60498	12100 53826	1.95 0.8845	5300	4500
16020	3.9370 100	0.0006	150	0.0007	.6299 16	0.0080	13500 60053	12200 54270	2 0.9072	5000	4200
16021	4.1339 105	0.0006	160	0.0010	.7087 18	0.0080	16300 72509	14800 65836	2.64 1.1975	4700	4000
16022	4.3307 110	0.0006	170	0.0010	.7480 19	0.0080	18400 81851	16400 72954	3.21 1.4560	4500	3800
16024	4.7244 120	0.0006	180	0.0010	.7480 19	0.0080	19100 84964	17800 79181	3.96 1.7962	4100	3500
16026	5.1181 130	0.0009	200	0.0012	.8661 22	0.0100	23800 105872	22700 100979	5.92 2.6853	3800	3200
16028	5.5118 140	0.0009	210	0.0012	.8661 22	0.0100	24700 109875	24400 108541	6.29 2.8531	3500	3000
16030	5.9055 150	0.0009	225	0.0012	.9449 24	0.0100	28200 125445	28200 125445	7.88 3.5743	3200	2800
16032	6.2992 160	0.0009	240	0.0012	.9843 25	0.0100	3200 142349	32500 144573	9.5 4.3092	3000	2600
16034	6.6929 170	0.0009	260	0.0014	1.1024 28	0.0100	3800 169039	38500 171263	12.7 5.7607	2800	2400
16036	7.0866 180	0.0009	280	0.0014	1.2205 31	0.0100	42500 189057	44500 197954	16.7 7.5751	2700	2300
16038	7.4803 190	0.0010	290	0.0014	1.2205 31	0.0120	44000 195730	48500 215747	17.4 7.8926	2500	2100
16040	7.8740 200	0.0010	310	0.0014	1.3386 34	0.0120	49000 217972	54500 242438	22.2 10.0699	2400	2000

# SPHERICAL O.D. "22" SERIES



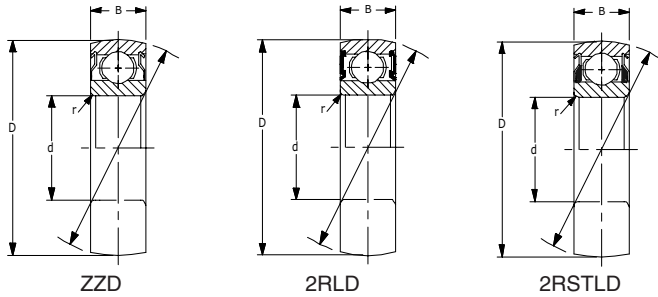
Standard Conrad series with spherical (rounded) O.D. to allow for self-aligning.

Units: Inches  
Metric

Part Number	Bore d		Outer Diameter D		Width B		Radius r			Basic Load Rating		Weight lbs.
	TOL. +0/±0		TOL. +0/±0		TOL. +0/±0		rs min	max radial	max axial	lbf Dynamic C	N. Static Co	
	Nominal	Minus Shown	Nominal	Minus Shown	Nominal	Minus Shown						
6202-ZZ-22	0.5906	.0003	1.3780	.0050	.4331	.0050	.0236	.0394	.0787	1730	850	.10
	15.000	.0008	35.000	.013	11.000	.127	.600	1.000	2.000	7695	3780	
6202-2RS-22	0.5906	.0003	1.3780	.0050	.4331	.0050	.0236	.0394	.0787	1730	850	.10
	15.000	.0008	35.000	.013	11.000	.127	.600	1.000	2.000	7695	3780	
6202-2RST-22	0.5906	.0003	1.3780	.0050	.4331	.0050	.0236	.0394	.0787	1730	850	.10
	15.000	.0008	35.000	.013	11.000	.127	.600	1.000	2.000	7695	3780	
6203-ZZ-22	.6693	.0003	1.5748	.0050	.4724	.0050	.0236	.0394	.0787	2160	1000	.14
	17.000	.0008	40.000	.013	12.000	.127	.600	1.000	2.000	9608	4448	
6203-2RS-22	.6693	.0003	1.5748	.0050	.4724	.0050	.0236	.0394	.0787	2160	1000	.14
	17.000	.0008	40.000	.013	12.000	.127	.600	1.000	2.000	9608	4448	
6203-2RST-22	.6693	.0003	1.5748	.0050	.4724	.0050	.0236	.0394	.0787	2160	1000	.14
	17.000	.0008	40.000	.013	12.000	.127	.600	1.000	2.000	9608	4448	
6204-ZZ-22	.7874	.0004	1.8504	.0050	.5512	.0050	.0394	.0591	.1181	2900	1410	.23
	20.000	.010	47.000	.013	14.000	.127	1.000	1.500	3.000	12899	6271	
6204-2RS-22	.7874	.0004	1.8504	.0050	.5512	.0050	.0394	.0591	.1181	2900	1410	.23
	20.000	.010	47.000	.013	14.000	.127	1.000	1.500	3.000	12899	6271	
6204-2RST-22	.7874	.0004	1.8504	.0050	.5512	.0050	.0394	.0591	.1181	2900	1410	.23
	20.000	.010	47.000	.013	14.000	.127	1.000	1.500	3.000	12899	6271	
6205-ZZ-22	.9843	.0004	2.0472	.0050	.5906	.0050	.0394	.0591	.1181	3150	1610	.28
	25.000	.010	52.000	.013	15.000	.127	1.000	1.500	3.000	14011	7161	
6205-2RS-22	.9843	.0004	2.0472	.0050	.5906	.0050	.0394	.0591	.1181	3150	1610	.28
	25.000	.010	52.000	.013	15.000	.127	1.000	1.500	3.000	14011	7161	
6205-2RST-22	.9843	.0004	2.0472	.0050	.5906	.0050	.0394	.0591	.1181	3150	1610	.28
	25.000	.010	52.000	.013	15.000	.127	1.000	1.500	3.000	14011	7161	
6206-ZZ-22	1.1811	.0004	2.4409	.0050	.6299	.0050	.0394	.0591	.1181	4370	2320	.43
	30.000	.010	62.000	.013	16.000	.127	1.000	1.500	3.000	19438	10319	
6206-2RS-22	1.1811	.0004	2.4409	.0050	.6299	.0050	.0394	.0591	.1181	4370	2320	.43
	30.000	.010	62.000	.013	16.000	.127	1.000	1.500	3.000	19438	10319	
6206-2RST-22	1.1811	.0004	2.4409	.0050	.6299	.0050	.0394	.0591	.1181	4370	2320	.43
	30.000	.010	62.000	.013	16.000	.127	1.000	1.500	3.000	19438	10319	
6207-ZZ-22	1.378	.0050	2.8346	.0050	.6693	.0050	.0433	.0787	.1378	5770	3150	.64
	35.000	.013	72.000	.013	17.000	.127	1.100	2.000	3.500	25666	14011	
6207-2RS-22	1.378	.0050	2.8346	.0050	.6693	.0050	.0433	.0787	.1378	5770	3150	.64
	35.000	.013	72.000	.013	17.000	.127	1.100	2.000	3.500	25666	14011	
6207-2RST-22	1.378	.0050	2.8346	.0050	.6693	.0050	.0433	.0787	.1378	5770	3150	.64
	35.000	.013	72.000	.013	17.000	.127	1.100	2.000	3.500	25666	14011	
6208-ZZ-22	1.5748	.0050	3.1496	.0050	.7087	.0050	.0433	.0787	.1378	7340	3650	.82
	40.000	.013	80.000	.013	18.000	.127	1.100	2.000	3.500	32649	16236	
6208-2RS-22	1.5748	.0050	3.1496	.0050	.7087	.0050	.0433	.0787	.1378	7340	3650	.82
	40.000	.013	80.000	.013	18.000	.127	1.100	2.000	3.500	32649	16236	
6208-2RST-22	1.5748	.0050	3.1496	.0050	.7087	.0050	.0433	.0787	.1378	7340	3650	.82
	40.000	.013	80.000	.013	18.000	.127	1.100	2.000	3.500	32649	16236	
6209-ZZ-22	1.7717	.0050	3.3465	.0060	.7480	.0050	.0433	.0787	.1378	7350	4150	.90
	45.000	.013	85.000	.015	19.000	.127	1.100	2.000	3.500	32694	18460	
6209-2RS-22	1.7717	.0050	3.3465	.0060	.7480	.0050	.0433	.0787	.1378	7350	4150	.90
	45.000	.013	85.000	.015	19.000	.127	1.100	2.000	3.500	32694	18460	
6209-2RST-22	1.7717	.0050	3.3465	.0060	.7480	.0050	.0433	.0787	.1378	7350	4150	.90
	45.000	.013	85.000	.015	19.000	.127	1.100	2.000	3.500	32694	18460	



# SPHERICAL O.D. "22" SERIES (continued)



Standard Conrad series with spherical (rounded) O.D. to allow for self-aligning.

Units: Inches  
Metric

Part Number	Bore d		Outer Diameter D		Width B		Radius r			Basic Load Rating		Weight lbs.
	TOL. +0/to		TOL. +0/to		TOL. +0/to		rs min	max radial	max axial	lbf	N.	
	Nominal	Minus Shown	Nominal	Minus Shown	Nominal	Minus Shown				Dynamic C	Static Co	
6210-ZZ-22	1.9685	.0050	3.5433	.0060	.7874	.0050	.0433	.0787	.1378	7880	4650	1.01
	50.000	.013	90.000	.015	20.000	.127	1.100	2.00	3.500	35051	20684	
6210-2RS-22	1.9685	.0050	3.5433	.0060	.7874	.0050	.0433	.0787	.1378	7880	4650	1.01
	50.000	.013	90.000	.015	20.000	.127	1.100	2.00	3.500	35051	20684	
6210-2RST-22	1.9685	.0050	3.5433	.0060	.7874	.0050	.0433	.0787	.1378	7880	4650	1.01
	50.000	.013	90.000	.015	20.000	.127	1.100	2.00	3.500	35051	20684	
6305-ZZ-22	.9843	.0004	2.4409	.0050	.6693	.0050	.0433	.0787	.1378	5000	2600	.52
	25.000	.010	62.000	.013	17.000	.127	1.100	2.00	3.500	22241	11565	
6305-2RS-22	.9843	.0004	2.4409	.0050	.6693	.0050	.0433	.0787	.1378	5000	2600	.52
	25.000	.010	62.000	.013	17.000	.127	1.100	2.00	3.500	22241	11565	
6305-2RST-22	.9843	.0004	2.4409	.0050	.6693	.0050	.0433	.0787	.1378	5000	2600	.52
	25.000	.010	62.000	.013	17.000	.127	1.100	2.00	3.500	22241	11565	
6306-ZZ-22	1.1811	.0004	2.8346	.0050	.7480	.0050	.0433	.0787	.1378	6550	3650	.78
	30.000	.010	72.000	.013	19.000	.127	1.100	2.00	3.500	29135	16236	
6306-2RS-22	1.1811	.0004	2.8346	.0050	.7480	.0050	.0433	.0787	.1378	6550	3650	.78
	30.000	.010	72.000	.013	19.000	.127	1.100	2.00	3.500	29135	16236	
6306-2RST-22	1.1811	.0004	2.8346	.0050	.7480	.0050	.0433	.0787	.1378	6550	3650	.78
	30.000	.010	72.000	.013	19.000	.127	1.100	2.00	3.500	29135	16236	
6307-ZZ-22	1.3780	.0005	3.1496	.0050	.8268	.0050	.0591	.0906	.1575	7500	4300	1.02
	35.000	.013	80.000	.013	21.000	.127	1.500	2.30	4.000	33361	19127	
6307-2RS-22	1.3780	.0005	3.1496	.0050	.8268	.0050	.0591	.0906	.1575	7500	4300	1.02
	35.000	.013	80.000	.013	21.000	.127	1.500	2.30	4.000	33361	19127	
6307-2RST-22	1.3780	.0005	3.1496	.0050	.8268	.0050	.0591	.0906	.1575	7500	4300	1.02
	35.000	.013	80.000	.013	21.000	.127	1.500	2.30	4.000	33361	19127	
6308-ZZ-22	1.5748	.0005	3.5433	.0060	.9055	.0050	.0591	.0906	.1575	9650	5600	1.41
	40.000	.013	90.000	.015	23.000	.127	1.500	2.30	4.000	42925	24910	
6308-2RS-22	1.5748	.0005	3.5433	.0060	.9055	.0050	.0591	.0906	.1575	9650	5600	1.41
	40.000	.013	90.000	.015	23.000	.127	1.500	2.30	4.000	42925	24910	
6308-2RST-22	1.5748	.0005	3.5433	.0060	.9055	.0050	.0591	.0906	.1575	9650	5600	1.41
	40.000	.013	90.000	.015	23.000	.127	1.500	2.30	4.000	42925	24910	
6309-ZZ-22	1.7717	.0005	3.9370	.0060	.9843	.0050	.0591	40.0906	.1575	12000	7100	1.89
	45.000	.013	100.000	.015	25.000	.127	1.500	2.30	4.000	53378	31582	
6309-2RS-22	1.7717	.0005	3.9370	.0060	.9843	.0050	.0591	.0906	.1575	12000	7100	1.89
	45.000	.013	100.000	.015	25.000	.127	1.500	2.30	4.000	53378	31582	
6309-2RST-22	1.7717	.0005	3.9370	.0060	.9843	.0050	.0591	.0906	.1575	12000	7100	1.89
	45.000	.013	100.000	.015	25.000	.127	1.500	2.30	4.000	53378	31582	
6310-ZZ-22	1.9685	.0005	4.3307	.0060	1.0630	.0050	.0787	.1181	.1772	14000	8500	2.45
	50.000	.013	110.000	.015	27.000	.127	2.00	3.000	4.500	62275	37809	
6310-2RS-22	1.9685	.0005	4.3307	.0060	1.0630	.0050	.0787	.1181	.1772	14000	8500	2.45
	50.000	.013	110.000	.015	27.000	.127	2.00	3.000	4.500	62275	37809	
6310-2RST-22	1.9685	.0005	4.3307	.0060	1.0630	.0050	.0787	.1181	.1772	14000	8500	2.45
	50.000	.013	110.000	.015	27.000	.127	2.00	3.000	4.500	62275	37809	

## ***PRECISION RADIAL BALL BEARINGS***

The most popular type of bearing in use today is the single row deep groove radial ball bearing. The basic function of a radial ball bearing is to transmit rotational motion without the loss of energy. To accomplish this, anti-friction bearings are generally composed of two SAE 52100 hardened steel rings separated by the balls and spaced by a retainer. The deep superfinished raceways make these bearings suitable for radial loads or a combination of radial and moderate thrust loads in either direction. This type of design combines high operating speeds and super precision tolerances.

### ***RETAINER***

The retainer used in this type of bearing evenly spaces the balls around the bearing circumference and allows them to rotate properly within the assembly. It is typically manufactured with pressed crimped steel, pressed riveted steel, molded nylon, or phenolic materials. Based on the application requirements, the appropriate retainer material can be chosen.

### ***CLOSURES***

In an effort to eliminate contaminants from entering the rotating parts, the basic bearing can be enclosed with either metal shields or steel reinforced rubber type seals. A combination of either is available and various seal materials can be used depending upon the application. Table 1 describes the seal and shield nomenclature for the most commonly used closures.

### ***LUBRICATION***

Lubrication is used in bearings to eliminate metal to metal contact and prevent premature wear of bearing components. Bearings are filled with either a lubricating grease or oil and assembled with closures. Table 22 lists commonly used greases.

## ***RADIAL INTERNAL CLEARANCE***

Radial internal clearance is defined as the internal space between the balls and rings of radial deep groove ball bearings. It is determined by design applications depending upon the temperature situations present, the amount of press fit, the bearing misalignment, noise level and speeds required.

## ***TOLERANCE CLASS***

The various tolerances and formulae used by the bearing industry today (through the efforts of the American Bearing Manufacturers Association, ABMA, and the International Standards Organization, ISO) have become nearly standard practice in bearing production. Therefore, except in isolated instances, bearing boundary dimensions and tolerances are interchangeable throughout the world.

## ***MATERIAL***

Precision anti-friction bearings are most commonly made of SAE 52100 chromium steel. This reference is to a carbon alloy steel containing approximately 1% carbon, 1.5% chromium and lesser amounts of manganese, silicon and in some instances, molybdenum. Modern methods of steel manufacturing combined with up to date heat treatment technology have greatly reduced the non-metallic inclusions. Materials are constantly being checked against Standard ASTM A295 in accordance to the Jernkontoret chart. Quenching temperatures are closely monitored to maintain a martensitic structure with the minimum amount of retained austenite. Stainless steel materials are available for many sizes. Contact your PEER Sales Engineer for availability.

## ***LIFE AND LOAD RATINGS***

The life of a bearing is determined by the number of bearing revolutions (or hours at some given constant speed) counted until there is evidence of fatigue in one of the rings or in any of the rolling elements. However, individual bearings which seem identical and operate in a group under identical conditions may not last the same length of time. In this case, rating life is determined by the number of revolutions (or hours at a given constant speed) that 90% of the group of bearings complete or exceed before the first evidence of fatigue.



**TABLE 1 – SYMBOL IDENTIFICATION FOR CLOSURE DESIGN**

Consult PEER sales engineering to determine the exact torque and design requirements for your specific application.

Material	PEER Symbol	Type of Lip	PEER Symbol	Torque	PEER Symbol	Type of Landing Groove	PEER Symbol
BUNA (nitrile)	R	Single	S	None	A	Notch	D
HYCAR (polyacrylic)	HR	Double	L	Low	B	UG	None
VITON (fluorelastomer)	VR	Triple	T	Standard	None	W/L	W
METAL PROTECTED SEAL	RST			High	C	Step UG	P
METAL SHIELD	Z						

## BEARING TOLERANCES AND PRECISION

To ensure dimensional accuracy in measurable forms, all PEER bearings are manufactured according to the ABMA established classes. These are currently listed as ABEC-1, 3, 5 and 7 for ball bearings. All standard production PEER bearings are manufactured to a minimum of ABEC-1 tolerances. The higher the ABEC number, the higher the precision class.

ABEC-1 and 3 specify inner ring tolerances for  $\Delta d_{mp}$ ,  $V_{dp}$ ,  $V_{dmp}$ ,  $K_{ia}$ ,  $\Delta B_s$ ,  $V_{BS}$ . And outer ring tolerances of  $\Delta D_{mp}$ ,  $V_{Dp}$ ,  $V_{Dmp}$ ,  $K_{ea}$ ,  $\Delta C_s$ ,  $V_{Cs}$ . See Tables 2 through 5.

ABEC-5 specifies tolerances for the same characteristics as classes 1 and 3 with the addition of  $S_d$  and  $S_{ia}$  for the inner ring and  $S_D$  and  $S_{ea}$  for the outer ring.

See "Tolerance Definitions" for an explanation of these symbols.

### TOLERANCE DEFINITIONS

ABMA Std. 20-1996

#### Bore Diameter

$d$	Nominal bore diameter
$d_s$	Single bore diameter
$\Delta d_s$	$=d_s - d$ Deviation of a single bore diameter from nominal dimension
$d_{psmax}$	Single plane maximum
$d_{psmin}$	Single plane minimum bore diameter
$d_{mp}$	$= \frac{d_{psmax} + d_{psmin}}{2}$ Single plane mean bore diameter
$\Delta d_{mp}$	$=d_{mp} - d$ Single plane mean bore diameter deviation
$V_{dp}$	$=d_{psmax} - d_{mpmin}$ Bore diameter variation in a single radial plane
$V_{dmp}$	$=d_{mpmax} - d_{mpmin}$ Means bore diameter variation; difference between maximum and minimum mean diameter

#### Outside Diameter

$D$	Nominal outside diameter
-----	--------------------------

$D_s$	Single outside diameter
$\Delta D_s$	$=D_s - D$ Deviation of a single outside diameter from nominal dimensions
$D_{psmax}$	Single plane maximum outside diameter
$D_{psmin}$	Single plane minimum diameter
$D_{mp}$	$= \frac{D_{psmax} + D_{psmin}}{2}$ Single plane means outside diameter
$\Delta D_{mp}$	$=D_{mp} - D$ Single plane means outside diameter deviation
$V_{Dp}$	$=D_{psmax} - D_{psmin}$ Outside diameter variation in a single radial plane
$V_{Dmp}$	$=D_{mpmax} - D_{mpmin}$ Means outside diameter variation; difference between maximum and minimum mean outside diameter

#### Width

$B$	Nominal inner ring width
$C$	Nominal outer ring width
$B_s, C_s$	Single ring width (inner, outer ring)
$\Delta B_s, \Delta C_s$	$=B_s - B, C_s - C$ Deviation of a single ring width (inner, outer ring) from nominal
$V_{B_s}, V_{C_s}$	$=B_{smax} - B_{smin}, C_{smax} - C_{smin}$ Variation of inner and outer ring width

#### Running Accuracy

$K_{ia}$	Inner ring radial runout of assembled bearing
$K_{ea}$	Outer ring radial runout of assembled bearing
$S_d$	Inner ring face runout to bore
$S_D$	Outer ring outside diameter surface runout to face
$S_{ia}$	Inner ring face runout to raceway of assembled bearing
$S_{ea}$	Outer ring face runout to raceway of assembled bearing

## TOLERANCES OF RADIAL BALL BEARINGS

**TABLE 2**  
**PRECISION CLASS ABEC-1 — Metric**

Inner Ring

Unit  $\mu\text{m}$  (.001 mm)

d mm		$\Delta_{dmp}$		$V_{dp}$			$V_{dmp}$	$K_{ia}$	$\Delta_{Bs}$		$V_{Bs}$
				diameter series							
over	incl.	high	low	7,8,9 max	0,1 max	2,3,4 max	max	max	high	low	max
0.6	2.5	0	-8	10	8	6	6	10	0	-40	12
2.5	10	0	-8	10	8	6	6	10	0	-120	15
10	18	0	-8	10	8	6	6	10	0	-120	20
18	30	0	-10	13	10	8	8	13	0	-120	20
30	50	0	-12	15	12	9	9	15	0	-120	20
50	80	0	-15	19	19	11	11	20	0	-150	25
80	120	0	-20	25	25	15	15	25	0	-200	25
120	180	0	-25	31	31	19	19	30	0	-250	30
180	250	0	-30	38	38	23	23	40	0	-300	30
250	315	0	-35	44	44	26	26	50	0	-350	35
315	400	0	-40	50	50	30	30	60	0	-400	40
400	500	0	-45	56	56	34	34	65	0	-450	50

Outer Ring

Unit  $\mu\text{m}$  (.001 mm)

D mm		$\Delta_{Dmp}$		$V_{Dp}$				$V_{Dmp}$	$K_{ea}$	$\Delta_{Cs}$		$V_{Cs}$
				Open Bearings			Capped Bearings					
				diameter series								
over	incl.	high	low	7,8,9 max	0,1 max	2,3,4 max	max	max	high	low	max	
2.5	6	0	-8	10	8	6	10	6	15	Identical to $\Delta_{Bs}$ and $V_{Bs}$ of inner ring of the same bearing		
6	18	0	-8	10	8	6	10	6	15			
18	30	0	-9	12	9	7	12	7	15			
30	50	0	-11	14	11	8	16	8	20			
50	80	0	-13	16	13	10	20	10	25			
80	120	0	-15	19	19	11	26	11	35			
120	150	0	-18	23	23	14	30	14	40			
150	180	0	-25	31	31	19	38	19	45			
180	250	0	-30	38	38	23	23	23	50			
250	315	0	-35	44	44	26		26	60			
315	400	0	-40	50	50	30		30	70			
400	500	0	-45	56	56	34		34	80			

## TOLERANCES OF RADIAL BALL BEARINGS

**TABLE 3**  
PRECISION CLASS ABEC-1 — Inch

Inner Ring

Unit .0001"

d mm		$\Delta_{dmp}$		$V_{dp}$			$V_{dmp}$	$K_{ia}$	$\Delta_{Bs}$		$V_{Bs}$
				diameter series							
over	incl.	high	low	7,8,9 max	0,1 max	2,3,4 max	max	max	high	low	max
0.6	2.5	0	-3	4	3	2.5	2.5	4	0	-16	4.5
2.5	10	0	-3	4	3	2.5	2.5	4	0	-47	6
10	18	0	-3	4	3	2.5	2.5	4	0	-47	8
18	30	0	-4	5	4	3	3	5	0	-47	8
30	50	0	-4.5	6	4.5	3.5	3.5	6	0	-47	8
50	80	0	-6	7.5	7.5	4.5	4.5	8	0	-59	10
80	120	0	-8	10	10	6	6	10	0	-79	10
120	180	0	-10	12	12	7.5	7.5	12	0	-98	12
180	250	0	-12	15	15	9	9	16	0	-118	12
250	315	0	-14	17	17	10	10	20	0	-138	14
315	400	0	-16	20	20	12	12	24	0	-157	16
400	500	0	-18	22	22	13	13	26	0	-177	20

Outer Ring

Unit .0001"

D mm		$\Delta_{Dmp}$		$V_{Dp}$				$V_{Dmp}$	$K_{ea}$	$\Delta_{Cs}$		$V_{Cs}$
				Open Bearings diameter series			Capped Bearings					
over	incl.	high	low	7,8,9 max	0,1 max	2,3,4 max	2,3,4 max	max	max	high	low	max
2.5	6	0	-3	4	3	2.5	4	2.5	6	Identical to $\Delta_{Bs}$ and $V_{Bs}$ of inner ring of the same bearing		
6	18	0	-3	4	3	2.5	4	2.5	6			
18	30	0	-3.5	4.5	3.5	3	4.5	3	6			
30	50	0	-4.5	5.5	4.5	3	6.5	3	8			
50	80	0	-5	6.5	5	4	8	4	10			
80	120	0	-6	7.5	7.5	4.5	10	4.5	14			
120	150	0	-7	9	9	5.5	12	5.5	16			
150	180	0	-10	12	12	7.5	15	7.5	18			
180	250	0	-12	15	15	9	—	9	20			
250	315	0	-14	17	17	10	—	10	24			
315	400	0	-16	20	20	12	—	12	28			
400	500	0	-18	22	22	13	—	13	31			

## TOLERANCES OF RADIAL BALL BEARINGS

**TABLE 4**  
PRECISION CLASS ABEC-3 — Metric

Inner Ring

unit  $\mu\text{m}$  (.001 mm)

d mm		$\Delta_{dmp}$		$V_{dp}$			$V_{dmp}$	$K_{ia}$	$\Delta_{Bs}$		$V_{Bs}$
				diameter series							
over	incl.	high	low	7,8,9 max	0,1 max	2,3,4 max	max	max	high	low	max
0.6	2.5	0	-7	9	7	5	5	5	0	-40	12
2.5	10	0	-7	9	7	5	5	6	0	-120	15
10	18	0	-7	9	7	5	5	7	0	-120	20
18	30	0	-8	10	8	6	6	8	0	-120	20
30	50	0	-10	13	10	8	8	10	0	-120	20
50	80	0	-12	15	15	9	9	10	0	-150	25
80	120	0	-15	19	19	11	11	13	0	-200	25
120	180	0	-18	23	23	14	14	18	0	-250	30
180	250	0	-22	28	28	17	17	20	0	-300	30
250	315	0	-25	31	31	19	19	25	0	-350	35
315	400	0	-30	38	38	23	23	30	0	-400	40
400	500	0	-35	44	44	26	26	35	0	-450	45

Outer Ring

unit  $\mu\text{m}$  (.001 mm)

D mm		$\Delta_{Dmp}$		$V_{Dp}$				$V_{Dmp}$	$K_{ea}$	$\Delta_{Cs}$		$V_{Cs}$
				Open Bearings			Capped Bearings					
				diameter series								
over	incl.	high	low	7,8,9 max	0,1 max	2,3,4 max	0,1,2,3,4 max	max	max	high	low	max
2.5	6	0	-7	9	7	5	9	5	8	Identical to $\Delta_{Bs}$ and $V_{Bs}$ of inner ring of the same bearing		
6	18	0	-7	9	7	5	9	5	8			
18	30	0	-8	10	8	6	10	6	9			
30	50	0	-9	11	9	7	13	7	10			
50	80	0	-11	14	11	8	16	8	13			
80	120	0	-13	16	16	10	20	10	18			
120	150	0	-15	19	19	11	25	11	20			
150	180	0	-18	23	23	14	30	14	23			
180	250	0	-20	25	25	15	—	15	25			
250	315	0	-25	31	31	19	—	19	30			
315	400	0	-28	35	35	21	—	21	35			
400	500	0	-33	41	41	25	—	25	40			

## TOLERANCES OF RADIAL BALL BEARINGS

**TABLE 5**  
**PRECISION CLASS ABEC-3 — Inch**

Inner Ring

Unit .0001"

d mm		$\Delta_{dmp}$		$V_{dp}$			$V_{dmp}$	$K_{ia}$	$\Delta_{Bs}$		$V_{Bs}$
				diameter series							
over	incl.	high	low	7,8,9 max	0,1 max	2,3,4 max	max	max	high	low	max
0.6	2.5	0	-3	3.5	3	2	2	2	0	-16	4.5
2.5	10	0	-3	3.5	3	2	2	2.5	0	-47	6
10	18	0	-3	3.5	3	2	2	3	0	-47	8
18	30	0	-3	4	3	2.5	2.5	3	0	-47	8
30	50	0	-4	5	4	3	3	4	0	-47	8
50	80	0	-4.5	6	6	3.5	3.5	4	0	-59	10
80	120	0	-6	7.5	7.5	4.5	4.5	5	0	-79	10
120	180	0	-7	9	9	5.5	5.5	7	0	-98	12
180	250	0	-8.5	11	11	6.5	6.5	8	0	-118	12
250	315	0	-10	12	12	7.5	7.5	10	0	-138	14
315	400	0	-12	15	15	9	9	12	0	-157	16
400	500	0	-14	17	17	10	10	14	0	-177	18

Outer Ring

Unit .0001"

D mm		$\Delta_{Dmp}$		$V_{Dp}$				$V_{Dmp}$	$K_{ea}$	$\Delta_{Cs}$		$V_{Cs}$
				Open Bearings			Capped Bearings					
				diameter series								
over	incl.	high	low	7,8,9 max	0,1 max	2,3,4 max	max	max	high	low	max	
2.5	6	0	-3	3.5	3	2	3.5	2	3	Identical to $\Delta_{Bs}$ and $V_{Bs}$ of inner ring of the same bearing		
6	18	0	-3	3.5	3	2	3.5	2	3			
18	30	0	-3	4	3	2.5	4	2.5	3.5			
30	50	0	-3.5	4.5	3.5	3	5	3	4			
50	80	0	-4.5	5.5	4.5	3	6.5	3	5			
80	120	0	-5	6.5	6.5	4	8	4	7			
120	150	0	-6	7.5	7.5	4.5	10	4.5	8			
150	180	0	-7	9	9	5.5	12	5.5	9			
180	250	0	-8	10	10	6		6	10			
250	315	0	-10	12	12	7.5		7.5	12			
315	400	0	-11	14	14	8.5		8.5	14			
400	500	0	-13	16	16	10		10	16			

## TOLERANCES OF RADIAL BALL BEARINGS

**TABLE 6**  
PRECISION CLASS ABEC-5 — Metric

Inner Ring

Unit um (.001 mm)

d mm		$\Delta_{dmp}$		$V_{dp}$		$V_{dmp}$	$K_{ia}$	$S_d$	$S_{ia}$	$\Delta_{Bs}$		$V_{Bs}$
				diameter series								
over	incl.	high	low	7,8,9 max	0,1,2,3,4 max	max	max	max	max	high	low	max
0.6	2.5	0	-5	5	4	3	4	7	7	0	-40	5
2.5	10	0	-5	5	4	3	4	7	7	0	-40	5
10	18	0	-5	5	4	3	4	7	7	0	-80	5
18	30	0	-6	6	5	3	4	8	8	0	-120	5
30	50	0	-8	8	6	4	5	8	8	0	-120	5
50	80	0	-9	9	7	5	5	8	8	0	-150	6
80	120	0	-10	10	8	5	6	9	9	0	-200	7
120	180	0	-13	13	10	7	8	10	10	0	-250	8
180	250	0	-15	15	12	8	10	11	13	0	-300	10
250	315	0	-18	18	14	9	13	13	15	0	-350	13
315	400	0	-23	23	18	12	15	15	20	0	-400	15

Outer Ring

Unit um (.001 mm)

D mm		$\Delta_{Dmp}$		$V_{Dp}$		$V_{Dmp}$	$K_{ea}$	$S_D$	$S_{ea}$	$\Delta_{Cs}$		$V_{Cs}$
				diameter series								
over	incl.	high	low	7,8,9 max	0,1,2,3,4 max	max	max	max	max	high	low	max
2.5	6	0	-5	5	4	3	5	8	8	Identical to $\Delta_{Bs}$ of inner ring of the same bearing		5
6	18	0	-5	5	4	3	5	8	8			5
18	30	0	-6	6	5	3	6	8	8			5
30	50	0	-7	7	5	4	7	8	8			5
50	80	0	-9	9	7	5	8	8	10			6
80	120	0	-10	10	8	5	10	9	11			8
120	150	0	-11	11	8	6	11	10	13			8
150	180	0	-13	13	10	7	13	10	14			8
180	250	0	-15	15	11	8	15	11	15			10
250	315	0	-18	18	14	9	18	13	18			11
315	400	0	-20	20	15	10	20	13	20		13	
400	500	0	-23	23	17	12	23	15	23		15	

## TOLERANCES OF RADIAL BALL BEARINGS

**TABLE 7**  
**PRECISION CLASS ABEC-5 — Inch**

Inner Ring

Unit .0001"

d mm		$\Delta_{dmp}$		$V_{dp}$		$V_{dmp}$	$K_{ia}$	$S_d$	$S_{ia}$	$\Delta_{Bs}$		$V_{Bs}$
				diameter series								
over	incl.	high	low	7,8,9 max	0,1,2,3,4 max	max	max	max	max	high	low	max
0.6	2.5	0	-2	2	1.5	1	1.5	3	3	0	-16	2
2.5	10	0	-2	2	1.5	1	1.5	3	3	0	-16	2
10	18	0	-2	2	1.5	1	1.5	3	3	0	-31	2
18	30	0	-2.5	2.5	2	1	1.5	3	3	0	-47	2
30	50	0	-3	3	2.5	1.5	2	3	3	0	-47	2
50	80	0	-3.5	3.5	3	2	2	3	3	0	-59	2.5
80	120	0	-4	4	3	2	2.5	3.5	3.5	0	-79	3
120	180	0	-5	5	4	3	3	4	4	0	-98	3
180	250	0	-6	6	4.5	3	4	4.5	5	0	-118	4
250	315	0	-7	7	5.5	3.5	5	5	6	0	-138	5
315	400	0	-9	9	7	4.5	6	6	8	0	-157	6

Outer Ring

Unit .0001"

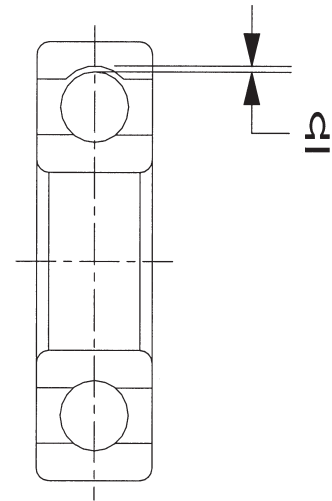
D mm		$\Delta_{Dmp}$		$V_{Dp}$		$V_{Dmp}$	$K_{ea}$	$S_D$	$S_{ea}$	$\Delta_{Cs}$		$V_{Cs}$
				diameter series								
over	incl.	high	low	7,8,9 max	0,1,2,3,4 max	max	max	max	max	high	low	max
2.5	6	0	-2	2	1.5	1	2	3	3	Identical to $\Delta_{Bs}$ of inner ring of the same bearing		2
6	18	0	-2	2	1.5	1	2	3	3			2
18	30	0	-2.5	2.5	2	1	2.5	3	3			2
30	50	0	-3	3	2	1.5	3	3	3			2
50	80	0	-3.5	3.5	3	2	3	3	4			2.5
80	120	0	-4	4	3	2	4	3.5	4.5			3
120	150	0	-4.5	4.5	3	2.5	4.5	4	5			3
150	180	0	-5	5	4	3	5	4	5.5			3
180	250	0	-6	6	4.5	3	6	4.5	6			4
250	315	0	-7	7	5.5	3.5	7	5	7			4.5
315	400	0	-8	8	6	4	8	5	8			5
400	500	0	-9	9	6.5	4.5	9	6	9			6



## INTERNAL RADIAL CLEARANCE

Internal clearance between balls and raceways in ball bearings permits interference fits on the bearing rings without causing radial preload, allows unequal thermal expansion of inner and outer rings to occur without unduly affecting bearing operation, and accommodates slight misalignment of the bearing mounting. Proper internal clearance is particularly important for bearings operating at high speeds.

Radial clearance may be defined as the average diameter of the outer ring raceway, minus the average diameter of the inner ring raceway, minus twice the ball diameter. Generally, radial clearance is measured on assembled bearings by displacing the outer ring radially with respect to the inner ring under a reversing light gauge load.



Radial Internal Clearance =  $\Delta$

**TABLE 8**  
**RADIAL INTERNAL CLEARANCE VALUES FOR SINGLE ROW RADIAL DEEP GROOVE BALL BEARINGS**  
 Clearance values in  $\mu\text{m}$  (.001 mm)

d mm		C2		C0 (Normal)		C3		C4	
over	incl.	min.	max.	min.	max.	min.	max.	min.	max.
2.5	6	0	7	2	13	8	23	—	—
6	10	0	7	2	13	8	23	14	29
10	18	0	9	3	18	11	25	18	33
18	24	0	10	5	20	13	28	20	36
24	30	1	11	5	20	13	28	23	41
30	40	1	11	6	20	15	33	28	46
40	50	1	11	6	23	18	36	30	51
50	65	1	15	8	28	23	43	38	61
65	80	1	15	10	30	25	51	46	71
80	100	1	18	12	36	30	58	53	84
100	120	2	20	15	41	36	66	61	97
120	140	2	23	18	48	41	81	71	114
140	160	2	23	18	53	46	91	81	130
160	180	2	25	20	61	53	102	91	147
180	200	2	30	25	71	63	117	107	163

Clearance values in .0001 inch

d mm		C2		C0 (Normal)		C3		C4	
over	incl.	min.	max.	min.	max.	min.	max.	min.	max.
2.5	6	0	3	1	5	3	9	—	—
6	10	0	3	1	5	3	9	6	11
10	18	0	3.5	1	7	5	10	7	13
18	24	0	4	2	8	5	11	8	14
24	30	0.5	4.5	2	8	5	11	9	16
30	40	0.5	4.5	2.5	8	6	13	11	18
40	50	0.5	4.5	2.5	9	7	14	12	20
50	65	0.5	6	3	11	9	17	15	24
65	80	0.5	6	4	12	10	20	18	28
80	100	0.5	7	4.5	14	12	23	21	33
100	120	1	8	6	16	14	26	24	38
120	140	1	9	7	19	16	32	28	45
140	160	1	9	7	21	18	36	32	51
160	180	1	10	8	24	21	40	36	58
180	200	1	12	10	28	25	46	42	64

## AXIAL INTERNAL CLEARANCE VALUES FOR DOUBLE ROW ANGULAR CONTACT BALL BEARINGS

TABLE 9

Clearance values in  $\mu\text{m}$  (.001 mm)

d mm		C2		C0 (Normal)		C3		C4	
over	incl.	min.	max.	min.	max.	min.	max.	min.	max
6	10	1	11	5	21	12	28	25	45
10	18	1	12	6	23	13	31	27	47
18	24	2	14	7	25	16	34	28	48
24	30	2	15	8	27	18	37	30	50
30	40	2	16	9	29	21	40	33	54
40	50	2	18	11	33	23	44	36	58
50	65	3	22	13	36	26	48	40	63
65	80	3	24	15	40	30	54	46	71
80	100	3	26	18	46	35	63	55	83
100	120	4	30	22	53	42	73	65	96
120	140	4	34	25	59	48	82	74	108

Clearance values in .0001 inch

d mm		C2		C0 (Normal)		C3		C4	
over	incl.	min.	max.	min.	max.	min.	max.	min.	max
6	10	0	4	2	8	5	11	10	18
10	18	0	5	2	9	5	12	11	19
18	24	1	6	3	10	6	13	11	19
24	30	1	6	3	11	7	15	12	20
30	40	1	6	4	11	8	16	13	21
40	50	1	7	4	13	9	17	14	23
50	65	1	9	5	14	10	19	16	25
65	80	1	9	6	16	12	21	18	28
80	100	1	10	7	18	14	25	22	33
100	120	2	12	9	21	17	29	26	38
120	140	2	13	10	23	19	32	29	43

**TABLE 10  
SELECTION OF SHAFT FIT**

Metric

Part I – DESIGN & OPERATING CONDITIONS			BALL BEARINGS		
Rotational Conditions	Inner Ring Axial Displaceability	Radial Loading	Bore d mm		Shaft Fit
			Over	Inc.	
Inner Ring Rotating (relative to load direction)  or  Indeterminate Load Direction		Light	0 18	18 All	h5 j6
		Normal	0 18	18 All	j5 k5
		Heavy	18 100	100 All	k5 m5
Inner Ring Stationary (relative to load direction)	Inner Ring must be easily axially displaceable	Light	All Sizes		g6
		Normal			
		Heavy			
	Inner Ring need not be easily axially displaceable	Light	All Sizes		h6
		Normal			
		Heavy			
Pure Thrust (Axial) Load			All Sizes		j6

**TABLE 11**

Inch

Part II – DESIGN & OPERATING CONDITIONS			BALL BEARINGS		
Rotational Conditions	Inner Ring Axial Displaceability	Radial Loading	Bore d inches		Shaft Fit
			Over	Inc.	
Inner Ring Rotating (relative to load direction)  or  Indeterminate Load Direction		Light	0 0.71	0.71 All	h5 j6
		Normal	0 0.71	0.71 All	j5 k5
		Heavy	0.71 3.94	3.94 All	k5 m5
Inner Ring Stationary (relative to load direction)	Inner Ring must be easily axially displaceable	Light	All Sizes		g6
		Normal			
		Heavy			
	Inner Ring need not be easily axially displaceable	Light	All Sizes		h6
		Normal			
		Heavy			
Pure Thrust (Axial) Load			All Sizes		j6

**TABLE 12 — SHAFT FITS (Metric)**

Dimensions in Millimeters  
Deviations and Fits in um (.001 mm)

d			TOLERANCE CLASSIFICATIONS													
			g6		h6		h5		j5		j6		k5		k6	
over	incl.	Deviation	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit
3	6	0 -8	-4 -12	12L 4T	0 -8	8L 8T	0 -5	5L 8T	+3 -2	2L 11T	+6 -2	2L 14T	+6 +1	1T 14T		
6	10	0 -8	-5 -14	14L 3T	0 -9	9L 8T	0 -6	6L 8T	+4 -2	2L 12T	+7 -2	2L 15T	+7 +1	1T 15T		
10	18	0 -8	-6 -17	17L 2T	0 -11	11L 8T	0 -8	8L 8T	+5 -3	3L 13T	+8 -3	3L 16T	+9 +1	1T 17T		
18	30	0 -10	-7 -20	20L 3T	0 -13	13L 10T			+5 -4	4L 15T	+9 -4	4L 19T	+11 +2	2T 21T		
30	50	0 -12	-9 -25	25L 3T	0 -16	16L 12T			+6 -5	5L 18T	+11 -5	5L 23T	+13 +2	2T 25T	+18 +2	2T 30T
50	80	0 -15	-10 -29	29L 5T	0 -19	19L 15T			+6 -7	7L 21T	+12 -7	7L 27T	+15 +2	2T 30T	+21 +2	2T 36T
80	120	0 -20	-12 -34	34L 8T	0 -22	22L 20T			+6 -9	9L 26T	+13 -9	9L 33T	+18 +3	3T 38T	+25 +3	3T 45T
120	180	0 -25	-14 -39	39L 11T	0 -25	25L 25T			+7 -11	11L 32T	+14 -11	11L 39T	+21 +3	3T 46T	+28 +3	3T 53T
180	200	0 -30	-15 -44	44L 15T	0 -29	29L 30T			+7 -13	13L 37T	+16 -13	13L 46T	+24 +4	4T 54T		
200	225	0 -30	-15 -44	44L 15T	0 -29	29L 30T			+7 -13	13L 37T	+16 -13	13L 46T	+24 +4	4T 54T		
225	250	0 -30	-15 -44	44L 15T	0 -29	29L 30T			+7 -13	13L 37T	+16 -13	13L 46T	+24 +4	4T 54T		
250	280	0 -35	-17 -49	49L 18T	0 -32	32L 35T			+7 -16	16L 42T	+16 -16	16L 51T	+27 +4	4T 62T		
280	315	0 -35	-17 -49	49L 18T	0 -32	32L 35T			+7 -16	16L 42T	+16 -16	16L 51T	+27 +4	4T 62T		
315	355	0 -40	-18 -54	54L 22T	0 -36	36L 40T			+7 -18	18L 47T	+18 -18	18L 58T	+29 +4	4T 69T		
355	400	0 -40	-18 -54	54L 22T	0 -36	36L 40T			+7 -18	18L 47T	+18 -18	18L 58T	+29 +4	4T 69T		
400	450	0 -45	-20 -60	60L 25T	0 -40	40L 45T			+7 -20	20L 52T	+20 -20	20L 65T	+32 +5	5T 77T		
450	500	0 -45	-20 -60	60L 25T	0 -40	40L 45T			+7 -20	20L 52T	+20 -20	20L 65T	+32 +5	5T 77T		

L=loose, T=tight

Dimensions in Millimeters  
Deviations and Fits in um (.001 mm)

d			TOLERANCE CLASSIFICATIONS											
			m5		m6		n6		p6		r6		r7	
over	incl.	Deviation	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit
3	6	0 -8	+9 +4	4T 17T										
6	10	0 -8	+12 +6	6T 20T										
10	18	0 -8	+15 +7	7T 23T										
18	30	0 -10	+17 +8	8T 27T										
30	50	0 -12	+20 +9	9T 32T	+25 +9	9T 37T								
50	80	0 -15	+24 +11	11T 39T	+30 +11	11T 45T	+39 +20	20T 54T						
80	120	0 -20	+28 +13	13T 48T	+35 +13	13T 55T	+45 +23	23T 65T	+59 +37	37T 79T				
120	180	0 -25	+33 +15	15T 58T	+40 +15	15T 65T	+52 +27	27T 77T	+68 +43	43T 93T	+90 +65	65T 115T		
180	200	0 -30	+37 +17	17T 67T	+46 +17	17T 76T	+60 +31	31T 90T	+79 +50	50T 109T	+106 +77	77T 136T		
200	225	0 -30	+37 +17	17T 67T	+46 +17	17T 76T	+60 +31	31T 90T	+79 +50	50T 109T	+109 +80	80T 139T	+126 +80	80T 156T
225	250	0 -30	+37 +17	17T 67T	+46 +17	17T 76T	+60 +31	31T 90T	+79 +50	50T 109T	+113 +84	84T 143T	+130 +84	84T 160T
250	280	0 -35	+43 +20	20T 78T	+52 +20	20T 87T	+66 +34	34T 101T	+88 +56	56T 123T	+126 +94	94T 161T	+146 +94	94T 181T
280	315	0 -35	+43 +20	20T 78T	+52 +20	20T 87T	+66 +34	34T 101T	+88 +56	56T 123T	+130 +98	98T 165T	+150 +98	98T 185T
315	355	0 -40	+46 +21	21T 86T	+57 +21	21T 97T	+73 +37	37T 113T	+98 +62	62T 138T	+144 +108	108T 184T	+165 +108	108T 205T
355	400	0 -40	+46 +21	21T 86T			+73 +37	37T 113T	+98 +62	62T 138T	+150 +114	114T 190T	+171 +114	114T 211T
400	450	0 -45	+50 +23	23T 95T			+80 +40	40T 125T	+108 +68	68T 153T	+166 +126	126T 211T	+189 +126	126T 234T
450	500	0 -45	+50 +23	23T 95T			+80 +40	40T 125T	+108 +68	68T 153T	+172 +132	132T 217T	+195 +132	132T 240T

**TABLE 13 — SHAFT FITS (INCH)**

 Dimensions in inches  
 Deviations and Fits in .0001 inches

d			TOLERANCE CLASSIFICATIONS													
			g6		h6		h5		j5		j6		k5		k6	
over	incl.	Deviation	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit
0.1181	0.2362	0 -3	-2 -5	5L 1T	0 -3	3L 3T	0 -2	2L 3T	+1 -1	1L 4T	+2 -1	1L 5T	+2 0	0T 5T		
0.2362	0.3937	0 -3	-2 -6	6L 1T	0 -4	4L 3T	0 -2	2L 3T	+2 -1	1L 5T	+3 -1	1L 6T	+3 0	0T 6T		
0.3937	0.7087	0 -3	-2 -7	7L 1T	0 -4	4L 3T	0 -3	3L 3T	+2 -1	1L 5T	+3 -1	1L 6T	+4 0	0T 7T		
0.7087	1.1811	0 -4	-3 -8	8L 1T	0 -5	5L 4T			+2 -2	2L 6T	+4 -2	2L 8T	+4 +1	1T 8T		
1.1811	1.9685	0 -4.5	-4 -10	10L 0.5T	0 -6	6L 4.5T			+2 -2	2L 6.5T	+4 -2	2L 8.5T	+5 +1	1T 9.5T	+7 +1	1T 11.5T
1.9685	3.1496	0 -6	-4 -11	11L 2T	0 -7	7L 6T			+2 -3	3L 8T	+5 -3	3L 11T	+6 +1	1T 12T	+8 +1	1T 14T
3.1496	4.7244	0 -8	-5 -13	13L 3T	0 -9	9L 8T			+2 -4	4L 10T	+5 -4	4L 13T	+7 +1	1T 15T	+10 +1	1T 18T
4.7244	7.0866	0 -10	-6 -15	15L 4T	0 -10	10L 10T			+3 -4	4L 13T	+6 -4	4L 16T	+8 +1	1T 18T	+11 +1	1T 21T
7.0866	7.8740	0 -12	-6 -17	17L 6T	0 -11	11L 12T			+3 -5	5L 15T	+6 -5	5L 18T	+9 +2	2T 21T		
7.8740	8.8583	0 -12	-6 -17	17L 6T	0 -11	11L 12T			+3 -5	5L 15T	+6 -5	5L 18T	+9 +2	2T 21T		
8.8583	9.8425	0 -12	-6 -17	17L 6T	0 -11	11L 12T			+3 -5	5L 15T	+6 -5	5L 18T	+9 +2	2T 21T		
9.8425	11.0236	0 -14	-7 -19	19L 7T	0 -13	13L 14T			+3 -6	6L 17T	+6 -6	6L 20T	+11 +2	2T 25T		
11.0236	12.4015	0 -14	-7 -19	19L 7T	0 -13	13L 14T			+3 -6	6L 17T	+6 -6	6L 20T	+11 +2	2T 25T		
12.4015	13.9763	0 -16	-7 -21	21L 9T	0 -14	14L 16T			+3 -7	7L 19T	+7 -6	7L 23T	+11 +2	2T 27T		
13.9763	15.7480	0 -16	-7 -21	21L 9T	0 -14	14L 16T			+3 -7	7L 19T	+7 -7	7L 23T	+11 +2	2T 27T		
15.7480	17.7165	0 -18	-8 -24	24L 10T	0 -16	16L 18T			+3 -8	8L 21T	+8 -8	8L 26T	+13 +2	2T 31T		
17.7165	19.6850	0 -18	-8 -24	24L 10T	0 -16	16L 18T			+3 -8	8L 21T	+8 -8	8L 26T	+13 +2	2T 31T		

L=loose, T=tight



# ENGINEERING DATA

**TABLE 13 (Inch continued)**

Dimensions in Inches  
Deviations and Fits in .0001 Inches

d			TOLERANCE CLASSIFICATIONS											
			m5		m6		n6		p6		r6		r7	
over	incl.	Deviation	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit	Shaft Deviation	Resultant Fit
0.1181		0	+4	2T										
	0.2362	-3	+2	7T										
0.2362		0	+5	2T										
	0.3937	-3	+2	8T										
0.3937		0	+6	3T										
	0.7087	-3	+3	9T										
0.7087		0	+7	3T										
	1.1811	-4	+3	11T										
1.1811		0	+8	4T	+10	4T								
	1.9685	-4.5	+4	12.5T	+4	14.5T								
1.9685		0	+9	4T	+12	4T	+15	8T						
	3.1496	-6	+4	15T	+4	18T	+8	21T						
3.1496		0	+11	5T	+14	5T	+18	9T	+23	15T				
	4.7244	-8	+5	19T	+5	22T	+9	26T	+15	31T				
4.7244		0	+13	6T	+16	6T	+20	11T	+27	17T	+35	26T		
	7.0866	-10	+6	23t	+6	26T	+11	20T	+17	37T	+26	45T		
7.0866		0	+15	7T	+18	7T	+24	12T	+31	20T	+42	30T		
	7.8740	-12	+7	27T	+7	30T	+12	36T	+20	43T	+30	54T		
7.8740		0	+15	7T	+18	7T	+24	12T	+31	20T	+43	31T	+50	31T
	8.8583	-12	+7	27T	+7	30T	+12	36T	+20	43T	+31	55T	+31	62T
8.8583		0	+15	7T	+18	7T	+24	12T	+31	20T	+44	33T	+51	33T
	9.8425	-12	+7	27T	+7	30T	+12	36T	+20	43T	+33	56T	+33	63T
9.8425		0	+17	8T	+20	8T	+26	13T	+35	22T	+50	37T	+57	37T
	11.0236	-14	+8	31T	+8	34T	+13	40T	+22	49T	+37	64T	+37	71T
11.0236		0	+17	8T	+20	8T	+26	13T	+35	22T	+51	39T	+59	39T
	12.4015	-14	+8	31T	+8	34T	+13	40T	+22	49T	+39	65T	+39	73T
12.4015		0	+18	8T	+22	8T	+29	15T	+39	24T	+57	43T	+65	43T
	13.9763	-16	+8	34T	+8	38T	+15	45T	+24	55T	+43	73T	+43	81T
13.9763		0	+18	8T			+29	15T	+39	24T	+59	45T	+67	45T
	15.7480	-16	+8	34T			+15	45T	+24	55T	+45	75T	+45	83T
15.7480		0	+20	9T			+31	16T	+43	27T	+65	50T	+74	50T
	17.7165	-18	+9	38T			+16	49T	+27	61T	+50	83T	+50	92T
17.7165		0	+20	9T			+31	16T	+43	27T	+68	52T	+77	52T
	19.6850	-18	+9	38T			+16	49T	+27	61T	+52	86T	+52	95T

L=loose, T=tight

**TABLE 14 — SELECTION OF HOUSING FIT**

DESIGN & OPERATING CONDITIONS			Outer Ring Axial Displaceability	HOUSING FIT
Rotational Conditions	Loading	Other Conditions		
Outer Ring Stationary (relative to load direction)	Light	Heat input through shaft	Outer ring easily axially displaceable	G7
	Normal or Heavy	Housing split axially		H7
		Housing not split axially		H6
	Shock with temporary complete unloading		Transitional Range	J6
Light		K6		
Indeterminate Load Direction	Normal or Heavy	Split Housing not recommended		M6
	Heavy shock			N6
Outer Ring Rotating (relative to load direction)	Light Normal or Heavy		Outer ring not easily axially displaceable	
	Heavy	Thin wall housing not split		P6

**TABLE 15 — HOUSING FITS (Metric)**

Dimensions in Millimeters  
Deviations and Fits in um (.001 mm)

D			PART 1 – TOLERANCE CLASSIFICATIONS															
			F7		G7		H8		H7		H6		J6		J7		K6	
over	incl.	Deviation	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit
10	18	0 -8	+16 +34	42L 16L	+6 +24	32L 6L	0 +27	35L 0	0 +18	26L 0	0 +11	19L 0	-5 +6	14L 5T	-8 +10	18L 8T	-9 +2	10L 9T
18	30	0 -9	+20 +41	50L 20L	+7 +28	37L 7L	0 +33	42L 0	0 +21	30L 0	0 +13	22L 0	-5 +8	17L 5T	-9 +12	21L 9T	-11 +2	11L 11T
30	50	0 -11	+25 +50	61L 25L	+9 +34	45L 9L	0 +39	50L 0	0 +25	36L 0	0 +16	27L 0	-6 +10	21L 6T	-11 +14	25L 11T	-13 +3	14L 13T
50	80	0 -13	+30 +60	73L 30L	+10 +40	53L 10L	0 +46	59L 0	0 +30	43L 0	0 +19	32L 0	-6 +13	26L 6T	-12 +18	31L 12T	-15 +4	17L 15T
80	120	0 -15	+36 +71	86L 36L	+12 +47	62L 12L	0 +54	69L 0	0 +35	50L 0	0 +22	37L 0	-6 +16	31L 6T	-13 +22	37L 13T	-18 +4	19L 18T
120	150	0 -18	+43 +83	101L 43L	+14 +54	72L 14L	0 +63	81L 0	0 +40	58L 0	0 +25	43L 0	-7 +18	36L 7T	-14 +26	44L 14T	-21 +4	22L 21T
150	180	0 -25	+43 +83	108L 43L	+14 +54	79L 14L	0 +63	88L 0	0 +40	65L 0	0 +25	50L 0	-7 +18	43L 7T	-14 +26	51L 14T	-24 +4	29L 21T
180	250	0 -30	+50 +96	126L 50L	+15 +61	91L 15L	0 +72	102L 0	0 +46	76L 0	0 +29	59L 0	-7 +22	52L 7T	-16 +30	60L 16T	-24 +5	35L 24T
250	315	0 -35	+56 +108	143L 56L	+17 +69	104L 17L	0 +81	116L 0	0 +52	87L 0	0 +32	67L 0	-7 +25	60L 7T	-16 +36	71L 16T	-27 +5	40L 27T
315	400	0 -40	+62 +119	159L 62L	+18 +75	115L 18L	0 +89	129L 0	0 +57	97L 0	0 +36	76L 0	-7 +29	69L 7T	-18 +39	79L 18T	-29 +7	47L 29T
400	500	0 -45	+68 +131	176L 68L	+20 +83	128L 20L	0 +97	142L 0	0 +63	108L 0	0 +40	85L 0	-7 +33	78L 7T	-20 +43	88L 20T	-30 +8	53L 32T

L=loose, T=tight

Dimensions in Millimeters  
Deviations and Fits in um (.001 mm)

D			TOLERANCE CLASSIFICATIONS													
			K7		M6		M7		N6		N7		P6		P7	
over	incl.	Deviation	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit
10	18	0 -8	-12 +6	14L 12T	-15 -4	4L 15T	-18 0	8L 18T	-20 -9	1T 20T	-23 -5	3L 23T	-26 -15	7T 26T	-29 -11	3T 29T
18	30	0 -9	-15 +6	15L 15T	-17 -4	5L 17T	-21 0	9L 21T	-24 -11	2T 24T	-28 -7	2L 28T	-31 -18	9T 31T	-35 -14	5T 35T
30	50	0 -11	-18 +7	18L 18T	-20 -4	7L 20T	-25 0	11L 25T	-28 -12	1T 28T	-33 -8	3L 33T	-37 -21	10T 37T	-42 -17	6T 42T
50	80	0 -13	-21 +9	22L 21T	-24 -5	8L 24T	-30 0	13L 30T	-33 -14	1T 33T	-39 -9	4L 39T	-45 -26	13T 45T	-51 -21	8T 51T
80	120	0 -15	-25 +10	25L 25T	-28 -6	9L 28T	-35 0	15L 35T	-38 -16	1T 38T	-45 -10	5L 45T	-52 -30	15T 52T	-59 -24	9T 59T
120	150	0 -18	-28 +12	30L 28T	-33 -8	10L 33T	-40 0	18L 40T	-45 -20	2T 45T	-52 -12	6L 52T	-61 -36	18T 61T	-68 -28	10T 68T
150	180	0 -25	-28 +12	37L 28T	-33 -8	17L 33T	-40 0	25L 40T	-45 -20	5L 45T	-52 -12	13L 52T	-61 -36	11T 61T	-68 -28	3T 68T
180	250	0 -30	-33 +13	43L 33T	-37 -8	22L 37T	-46 0	30L 46T	-51 -22	8L 51T	-60 -14	16L 60T	-70 -41	11T 70T	-79 -33	3T 79T
250	315	0 -35	-36 +16	51L 36T	-41 -9	26L 41T	-52 0	35L 52T	-57 -25	10L 57T	-66 -14	21L 66T	-79 -47	12T 79T	-88 -36	1T 88T
315	400	0 -40	-40 +17	57L 40T	-46 -10	30L 46T	-57 0	40L 57T	-62 -26	14L 62T	-73 -16	24L 73T	-87 -51	11T 87T	-98 -41	1T 98T
400	500	0 -45	-45 +18	63L 45T	-50 -10	35L 50T	-63 0	45L 63T	-67 -27	18L 67T	-80 -17	27L 80T	-95 -55	10T 95T	-108 -45	0 108T

L=loose, T=tight



**TABLE 16 — HOUSING FITS (Inch)**

Dimensions in Inches  
Deviations and Fits in .0001 Inches

D			PART 2 – TOLERANCE CLASSIFICATIONS															
			F7		G7		H8		H7		H6		J6		J7		K6	
over	incl.	Deviation	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit
0.3937	0.7087	0	+6	16L	+2	12L	0	14L	0	10L	0	7L	-2	5L	-3	7L	-4	4L
		-3	+13	6L	+9	2L	+11	0	+7	0	+4	0	+2	2T	+4	3T	+1	4T
0.7087	1.1811	0	+8	19.5L	+3	14.5L	0	16.5L	0	11.5L	0	8.5L	-2	6.5L	-4	8.5L	-4	4.5L
		-3.5	+16	8L	+11	3L	+13	0	+8	0	+5	0	+3	2T	+5	4T	+1	4T
1.1811	1.9685	0	+10	24.5L	+4	17.5L	0	19.5L	0	14.5L	0	10.5L	-2	8.5L	-4	10.5L	-5	5.5L
		-4.5	+20	10L	+13	4L	+15	0	+10	0	+6	0	+4	2T	+6	4T	+1	5T
1.9685	3.1496	0	+12	29L	+4	21L	0	23L	0	17L	0	12L	-2	10L	-5	12L	-6	7L
		-5	+24	12L	+16	4L	+18	0	+12	0	+7	0	+5	2T	+7	5T	+2	6T
3.1496	4.7244	0	+14	34L	+5	25L	0	27L	0	20L	0	15L	-2	12L	-5	15L	-7	8L
		-6	+28	14L	+19	5L	+21	0	+14	0	+9	0	+6	2T	+9	5T	+2	7T
4.7244	5.9055	0	+17	40L	+6	28L	0	32L	0	23L	0	17L	-3	14L	-6	17L	-8	9L
		-7	+33	17L	+21	6L	+25	0	+16	0	+10	0	+7	3T	+10	6T	+2	8T
5.9055	7.0866	0	+17	43L	+6	31L	0	35L	0	26L	0	20L	-3	17L	-6	20L	-8	12L
		-10	+33	17L	+21	6L	+25	0	+16	0	+10	0	+7	3T	+10	6T	+2	8T
7.0866	9.8425	0	+20	50L	+6	36L	0	40L	0	30L	0	23L	-3	21L	-6	24L	-9	14L
		-12	+38	20L	+24	6L	+28	0	+18	0	+11	0	+9	3T	+12	6T	+2	9T
9.8425	12.4016	0	+22	57L	+7	41L	0	46L	0	34L	0	27L	-3	24L	-6	28L	-11	16L
		-14	+43	22L	+27	7L	+32	0	+20	0	+13	0	+10	3T	+14	6T	+2	11T
12.4016	15.7480	0	+24	63L	+7	46L	0	51L	0	38L	0	30L	-3	27L	-7	31L	-11	19L
		-16	+47	24L	+30	7L	+35	0	+22	0	+14	0	+11	3T	+15	7T	+2	11T
15.7480	19.6850	0	+27	70L	+8	51L	0	56L	0	43L	0	34L	-3	31L	-8	35L	-13	21L
		-18	+52	27L	+33	8L	+38	0	+25	0	+16	0	+13	3T	+17	8T	+3	13T

L=loose, T=tight

Dimensions in Inches  
Deviations and Fits in .0001 Inches

D			TOLERANCE CLASSIFICATIONS													
			K7		M6		M7		N6		N7		P6		P7	
over	incl.	Deviation	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit	Housing Deviation	Resultant Fit
0.3937	0.7087	0	-5	5L	-6	1L	-7	3L	-8	1T	-9	1L	-10	3T	-11	1T
		-3	+2	5T	-2	6T	0	7T	-4	9T	-2	9T	-6	10T	-4	11T
0.7087	1.1811	0	-6	5L	-7	1.5L	-8	3.5L	-9	.05T	-11	0.5L	-12	3.5T	-14	2.5T
		-3.5	+2	6T	-2	7T	0	8T	-4	9T	-3	11T	-7	12T	-6	14T
1.1811	1.9685	0	-7	7.5L	-8	2.5L	-10	4.5L	-11	0.5T	-13	1.5L	-15	3.5T	-17	2.5T
		-4.5	+3	7T	-2	8T	0	10T	-5	11T	-3	13T	-8	15T	-7	17T
1.9685	3.1496	0	-8	9L	-9	3L	-12	5L	-13	1T	-15	1L	-18	5T	-20	3T
		-5	+4	8T	-2	9T	0	12T	-6	13T	-4	15T	-10	18T	-28	20T
3.1496	4.7244	0	-10	10L	-11	4L	-14	6L	-15	0	-18	2L	-20	6T	-23	3T
		-6	+4	10T	-2	11T	0	14T	-6	15T	-4	18T	-12	20T	-9	23T
4.7244	5.9055	0	-11	12L	-13	4L	-16	7L	-18	1T	-20	2L	-24	7T	-27	4T
		-7	+5	11T	-3	13T	0	16T	-8	18T	-5	20T	-14	24T	-11	27T
5.9055	7.0866	0	-11	15L	-13	7L	-16	10L	-18	2L	-20	5L	-24	4T	-27	1T
		-10	+5	11T	-3	13T	0	16T	-8	18T	-5	20T	-14	24T	-11	27T
7.0866	9.8425	0	-13	17L	-15	9L	-19	12L	-20	3L	-24	6L	-28	4T	-31	1T
		-12	+5	13T	-3	15T	0	18T	-9	20T	-6	24T	-16	28T	-13	31T
9.8425	12.4016	0	-14	20L	-16	10L	-20	14L	-22	4L	-26	8L	-31	5T	-35	0
		-14	+6	14T	-4	16T	0	20T	-10	22T	-6	26T	-19	31T	-14	35T
12.4016	15.7480	0	-16	23L	-18	12L	-22	16L	-24	6L	-29	10L	-34	4T	-39	0
		-16	+7	16T	-4	18T	0	22T	-10	24T	-6	29T	-20	34T	-16	39T
15.7480	19.6850	0	-18	25L	-20	14L	-25	18L	-26	7L	-31	11L	-37	4T	-43	0
		-18	+7	18T	-4	20T	0	25T	-11	26T	-7	31T	-22	37T	-18	43T

L=loose, T=tight

## LOAD CAPACITY AND LIFE

Choose a PEER bearing to be used for an application on the basis of its load carrying capacity in relation to the loads to be carried, its operation speed and the requirements regarding life and reliability. A numerical value termed BASIC LOAD RATING is used in the calculations to express the load carrying capacity. Values for the dynamic radial load rating ( $C_r$ ) are shown on the bearing pages.

### 1) Basic Load Rating

The basic load rating ( $C_r$ ) is used for calculations involving dynamically stressed bearings, when selecting a bearing which is to rotate under load. It expresses the bearing radial load which will give a basic rating life of 1,000,000 revolutions (33-1/3 R.P.M. for 500 hours).

### 2) Life

The life of an individual bearing is defined as the number of revolutions which the bearing is capable of enduring before fatigue occurs on one of its raceways or balls.

Dynamic load ratings are based on the life that 90% of a group of identical bearings can be expected to reach or exceed. The majority of PEER bearings attain much longer life than this. The average life is approximately five times the calculated life rating.

#### 2.1) The Life Calculation under Radial Load

The relationship between the basic rating life, the basic dynamic load rating and the bearing load is expressed by the equation:

$$L_{10} = \left(\frac{C_r}{P}\right)^p$$

Where

$L_{10}$  = basic rating life in millions of revolutions

$C_r$  = Basic dynamic radial load rating, Lbf.

$P$  = equivalent dynamic radial bearing load, Lbf.

$p = 3$  for ball bearings

For bearings operating at constant speed a basic catalog life expressed in operating hours uses the equation:

$$L_{10h} = \left(\frac{C_r}{P}\right)^3 \frac{16,667}{n}$$

Where

$L_{10h}$  = basic life in operating hours

$n$  = rotational speed, rpm.

The basic rating life  $L_{10}$  or  $L_{10h}$  should be used when selecting a bearing size. If the load is constant in magnitude and direction and acts radially on a bearing, then  $P=Fr$  and the load may be inserted directly in the life equation.

**Example 1: Determining  $L_{10h}$  Life:**

A 6205 bearing is operating at 700 RPM with a radial load ( $F_r$ ) of 350 lbf. What is the life ( $L_{10}$ )?

From page 10 we know that a 6205 bearing has a dynamic load rating ( $C_r$ ) of 3150 lbf.

Therefore:

$$L_{10} = \left(\frac{C_r}{P}\right)^3 \frac{16,667}{n} = \left(\frac{3150}{350}\right)^3 \frac{16,667}{700} = (729) \frac{16,667}{700} = 17,000 \text{ hours}$$

**Example 2: Selecting a bearing**

A bearing is required to run at a speed of  $N = 2000$  RPM under a constant radial load ( $F_r$ ) of 674 Lbf and to achieve a basic rating life  $L_{10h}$  of 15,000 operating hours. What  $C_r$  is required?

$$C_r = P \sqrt[3]{\frac{L_{10} \times n}{16,667}} = 674 \sqrt[3]{\frac{15,000 \times 2,000}{16,667}} = 8,200 \text{ Lbf.}$$

**Example 3: Finding Maximum Load:**

A 6204 bearing must achieve a  $L_{10h}$  of 10,000 hours while operating at 15000 RPM. What is the maximum load ( $P$ ) this bearing can be subjected to?

$$P = \sqrt[3]{\frac{C_r}{L_{10} \times n}} = \sqrt[3]{\frac{2900}{10,000 \times 1,500}} = \sqrt[3]{\frac{2900}{900}} = \frac{2900}{9.65} = 300 \text{ Lbf.}$$

**2.2) The Life Calculation under combined Axial and Radial Load**

In cases of combined radial and axial loading, it is necessary to calculate the equivalent dynamic radial bearing load ( $P$ ). This is defined as a hypothetical load, constant in magnitude and direction, acting radially on the radial bearing, which would have the same influence on the bearing life as the actual loads which the bearing is to be subjected. Assuming constant load, it is  $P = xF_r + YF_a$  where  $F_r$  and  $F_a$  are the radial and axial loads, respectively. The factors  $x$  and  $y$  vary depending on the  $\frac{F_a}{C_{or}}$  and  $\frac{F_a}{F_r}$  ratios.

**Table 17: Radial and Thrust Factors X and Y for Determining the Equivalent Dynamic Radial Load for ball bearings**

$\frac{F_a}{C_{or}}$	e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.014	0.19				2.30
0.028	0.22				1.99
0.056	0.26				1.71
0.084	0.28				1.55
0.11	0.30	1	0	0.56	1.45
0.17	0.34				1.31
0.28	0.38				1.15
0.42	0.42				1.04
0.56	0.44				1.00

Equivalent Dynamic Radial Load =  $P = XF_r + YF_a$

$P_o = .6F_r + .5F_a$  when  $F_a/F_r > .8$ .

$P_o = F_r$  when  $F_a/F_r \leq .8$ .

#### Example 4: Determining Equivalent Dynamic Radial Load Based on Combined Axial and Radial Load

A 6206 bearing is operating at 1000 rpm with a radial load ( $F_r$ ) of 500 lbs and an axial load ( $F_a$ ) of 279 lbs. What is the life ( $L_{10h}$ )?

Step 1: Determine thrust factors X and Y:

$$\frac{F_a}{C_{or}} = \frac{279 \text{ lbs}}{2540 \text{ lbs}} = .11 \text{ (using table 16, } e = .30)$$

$$\frac{F_a}{F_r} = \frac{279 \text{ lbs}}{500 \text{ lbs}} = .558$$

$$\frac{F_a}{F_r} > e$$

Therefore, (using table 16,  $X = .56$   $Y = 1.45$ )

Step 2: Calculate Equivalent Dynamic Radial Load (P)

$$P = XF_r + YF_a = (.56) 500 \text{ lbs} + (1.45) 279 \text{ lbs} = 685 \text{ lbs}$$

Step 3: Calculate  $L_{10h}$

$$L_{10h} = \left(\frac{C_r}{P}\right)^3 \frac{16,667}{n} = \left(\frac{4400}{685}\right)^3 \frac{16,667}{1000} = 4417 \text{ hrs}$$

### 2.3 Determining Equivalent Dynamic Load Based on Load Conditions

In applications with a constant speed, where the load grows linearly from a minimum value ( $P_{min.}$ ) to a maximum ( $P_{max.}$ ), then drops back to the minimum value, the average load is:

$$P = \frac{P_{min} + 2P_{max}}{3}$$

Where  $P$  = Equivalent dynamic bearing load in lbs.

When a bearing is subjected to variable load and speed conditions, the equivalent constant load  $P$  can be calculated by:

$$P = \sqrt[3]{\frac{(P_1^3 \times n_1 \times t_1) + (P_2^3 \times n_2 \times t_2) + \dots + (P_n^3 \times n_n \times t_n)}{(n_1 \times t_1) + (n_2 \times t_2) + \dots + (n_n \times t_n)}}$$

Where  $P_1$  = constant load at  $n_1$  RPM for  $t_1$  minutes

$P_2$  = constant load at  $n_2$  RPM for  $t_2$  minutes

$P_n$  = constant load at  $n_n$  RPM for  $t_n$  minutes

When a bearing is subjected to variable load but constant speed, the equivalent constant load  $P$  can be calculated by:

$$P = \sqrt[3]{\frac{(P_1^3 \times t_1) + (P_2^3 \times t_2) + \dots + (P_n^3 \times t_n)}{100}}$$

Where  $P_1$  = constant load for  $t_1$  minutes  
 $P_2$  = constant load for  $t_2$  minutes  
 $P_n$  = constant load for  $t_n$  minutes

## 2.4 Static Load Rating

In cases when the bearings are to rotate at relatively slow speeds, have slow oscillating movements, or are exposed to shock, the basic static load rating ( $C_{or}$ ) must be taken into consideration.

## 3. Adjusted Rating Life Calculations

Bearing fatigue life can be adjusted for reliability, material and operating conditions through the following formula:

$$L_{hna} = a_1 \times a_2 \times a_3 \times L_h \text{ (hours)}$$

—  $a_1$ , Life adjustment Factor for Reliability

$L_{10}$  is the life based upon 90% survival of a group of bearings. When the application requires a higher reliability, the  $a_1$ , life adjustment factor can be selected from table 18.

Table 18

Reliability %	$L_n$	Factor $a_1$
90	$L_{10}$	1
95	$L_5$	0.62
96	$L_4$	0.53
97	$L_3$	0.44
98	$L_2$	0.33
99	$L_1$	0.21

—  $a_2$ , Life adjustment Factor for Bearing Materials

The  $a_2$  life adjustment factor depends upon the properties and heat treatment of the bearing steel. PEER uses an  $a_2 = 1$  for its high quality, vacuum degassed, SAE 52100 steel used in the rings and balls of the bearings.

—  $a_3$ , Life adjustment Factor for Operating Conditions

The  $a_3$  factor is a result of any number of operating factors the end user wishes to consider in the life analysis, including cleanliness of environment, temperature, lubrication and shaft alignment. These factors taken together reflect the  $a_3$  factor.

## ***LUBRICANT TYPES***

Oil is the basic lubricant for ball bearings. Previously most lubricating oil was refined from petroleum. Today, however, synthetic oils such as diesters, silicone and fluorocarbon compounds have found acceptance because of improvements in properties. Compared to petroleum base oils, diesters in general give better low temperature properties, lower volatility, and better temperature/viscosity characteristics. Silicones and fluorocarbon compounds possess an even lower volatility and wider temperature/viscosity properties. Virtually all oils contain additives that limit chemical changes, protect the metal from corrosion, and improve physical properties (antifoam, etc.).

### ***Grease***

Grease is an oil to which a thickener has been added to prevent oil migration from the lubrication site. It is used in situations where frequent replenishment of the lubricant is undesirable or impossible. All of the oil types mentioned in the next section can be used as grease bases to which are added metallic soaps, synthetic fillers and thickeners. The operative properties of grease depend almost wholly on the base oil. Other factors being equal, the use of grease rather than oil results in higher starting and running torques and can limit the bearing to lower speeds.

## ***OILS AND BASE FLUIDS***

### ***Petroleum Lubricants***

Petroleum lubricants have excellent load carrying abilities, but are useable only at moderate temperature ranges (-25° to 250° F). Greases that use petroleum oils for bases have a high dN capability. Greases of this type would be recommended for use at moderate temperatures, light to heavy loads, and moderate to high speeds.

### ***Super-Refined Petroleum Lubricants***

While these lubricants are usable at higher temperatures than petroleum oils (-65° to 350° F), they still exhibit the same excellent load carrying capacity. This further refinement eliminates unwanted properties, leaving only the desired chemical chains. Additives are introduced to increase the oxidation resistance, etc.

### ***Synthetic Lubricants***

The diesters are probably the most common synthetic lubricants. They do not have the film strength capacity of a petroleum product, but do have a wide temperature range (-65° to 350° F) and are oxidation resistant. Synthetic hydrocarbons are finding a greater use in the miniature and instrument ball bearing industry because they have proven to be a superior general purpose lubricant.

### ***Silicone Lubricants***

Silicone products are useful over a wide temperature range (-100° to 400° F) but do not have the film strength of petroleum types and other synthetics. It has become customary in the instrument and miniature bearing industry, in recent years to derate the dynamic load rating (Cr) of a bearing to 1/3 of the value shown in this catalog if a silicone product is used. Some silicones have a very low vapor pressure ( $10^{-6}$  Torr) and can be used for bearing vacuum applications above this pressure.

### ***Perflourinated Polyether***

Oils and greases of this type have found wide use where high temperature stability, chemical inertness, or low vapor pressure ( $10^{-9}$  Torr), are required. This specialty lubricant does not have the film strength of a petroleum or diester product. However, it does have better film strength than silicone lubricants.

## ***LUBRICATION METHODS***

Grease *packing* to approximately 25% of a ball bearing's free volume is PEER's most common method of lubrication. In some instances, customers have requested that bearings be lubricated 100% full of grease. It causes shearing, heat buildup and deterioration through constant churning which can ultimately result in bearing failure.

## ***OPERATION SPEED***

When petroleum or synthetic ester oils are used, the limiting speed is dictated by the ball cage material and design or the centrifugal ball loads rather than by the lubricant.

### ***Lubricant for Commercial and Military Specifications***

Lubricants can be designated by the customer to meet a particular specification. We have included a table of widely used greases and some of their most important characteristics. All commercial oil and grease lubricants applicable to ball bearings are readily available at PEER.

## LUBRICANT SELECTION

Through years of experience, PEER has simplified the potentially confusing task of selecting the proper lubricant for your ball bearing applications. Although there are hundreds of lubricants available, PEER can assist you in selecting an oil or grease appropriate for any ball bearing's operating parameters. PEER successfully uses the selection method below.

### Step 1

Determine the speed of the bearing and calculate the dN value ( $dN = \text{bore in mm} \times \text{RPM}$ ). Select the oil type that will operate within the dN value, refer to table 19.

### Step 2

Determine the required minimum operating viscosity  $V_1$  of the lubricating oil, or the base oil of the grease.  $V_1$  is a function of the bearing's pitch diameter  $D_{pw}$  ( $D_{pw} = \frac{d+D}{2}$  in mm) and its operating speed in RPM, see table 20.

### Step 3

Define the temperature range of the application, taking into consideration any factors that will influence the application's temperature, such as environment, adjacent machinery, etc. Determine the minimum viscosity of the lubricating oil, or the base oil of the grease, at 40°C using table 21. The viscosity of the oil at 40°C is a function of  $V_1$  and the maximum temperature of the bearing application.

### Step 4

Once you have determined these factors, the lubricant selection has been narrowed to the type of base oil, the operating temperature range, and the minimum oil viscosity at 40°C. Next, determine whether a grease or oil is needed for the application. Then, individual lubricants should be examined to determine their suitability for the application. Refer to the grease table for individual characteristics of the various entries.

## SPEED FACTOR

The maximum usable operating speed of a grease lubricant is dependent on the type of oil. The speed factor is a function of the bore of the bearing (d) in millimeters (mm) and the speed of the bearing (N) in revolutions per minute (RPM) where:  $dN = d (\text{bearing bore, mm}) \times N (\text{RPM})$ .

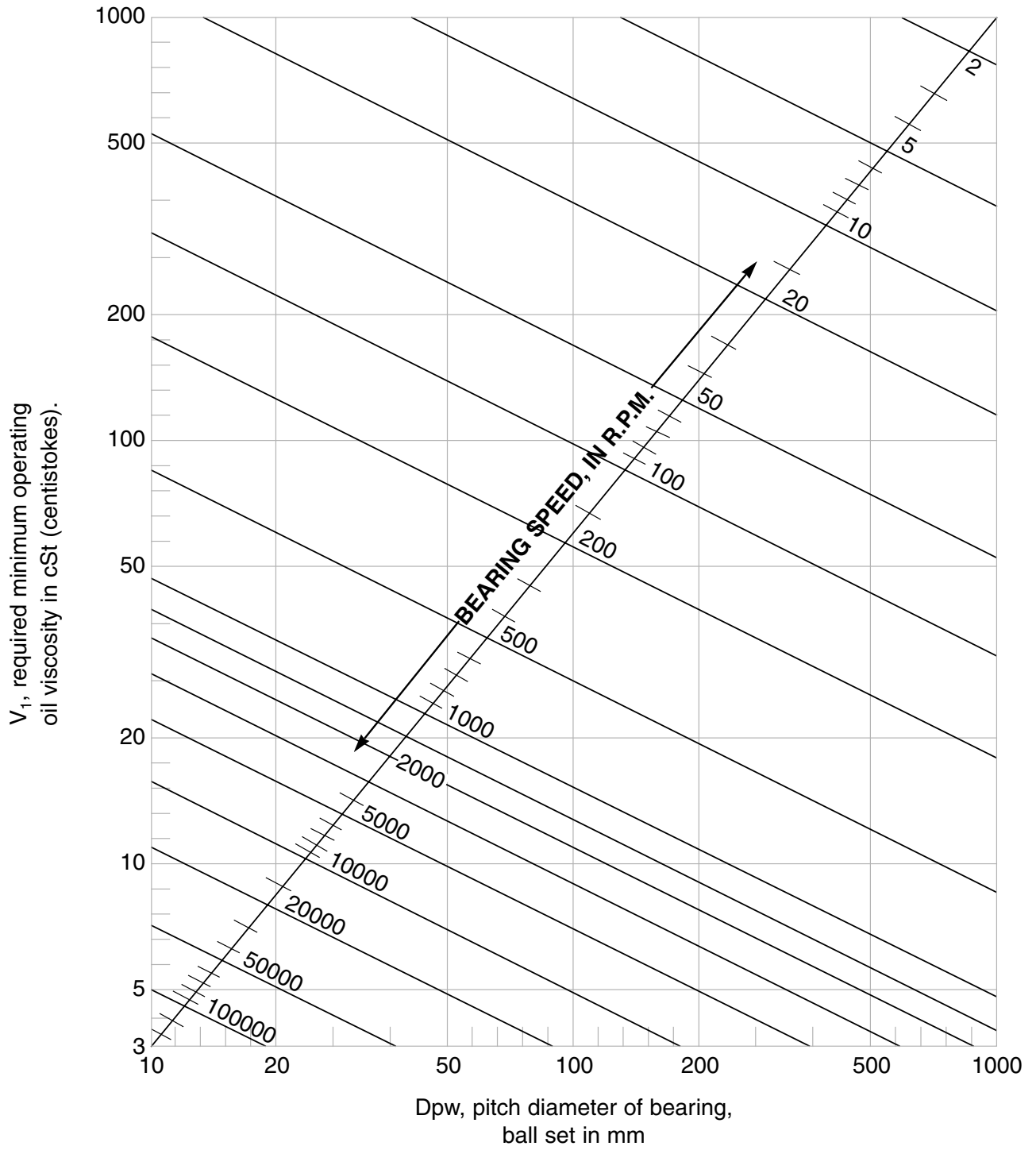
Table 19. Relationship between lubricants and dN values.

TYPE	dN
Silicone	200,000
Diester	400,000
Petroleum	600,000

Note: Spray mist oil lubricated bearings can operate in excess of these values but proper care and selection is essential.

The preceding selection process encompasses nearly all rotating ball bearing applications. It will eliminate those oils or greases which may be inappropriate. Special environmental conditions (vacuum, radiation, etc.) should be considered separately because they will determine the use of special lubricants.





**Table 20**

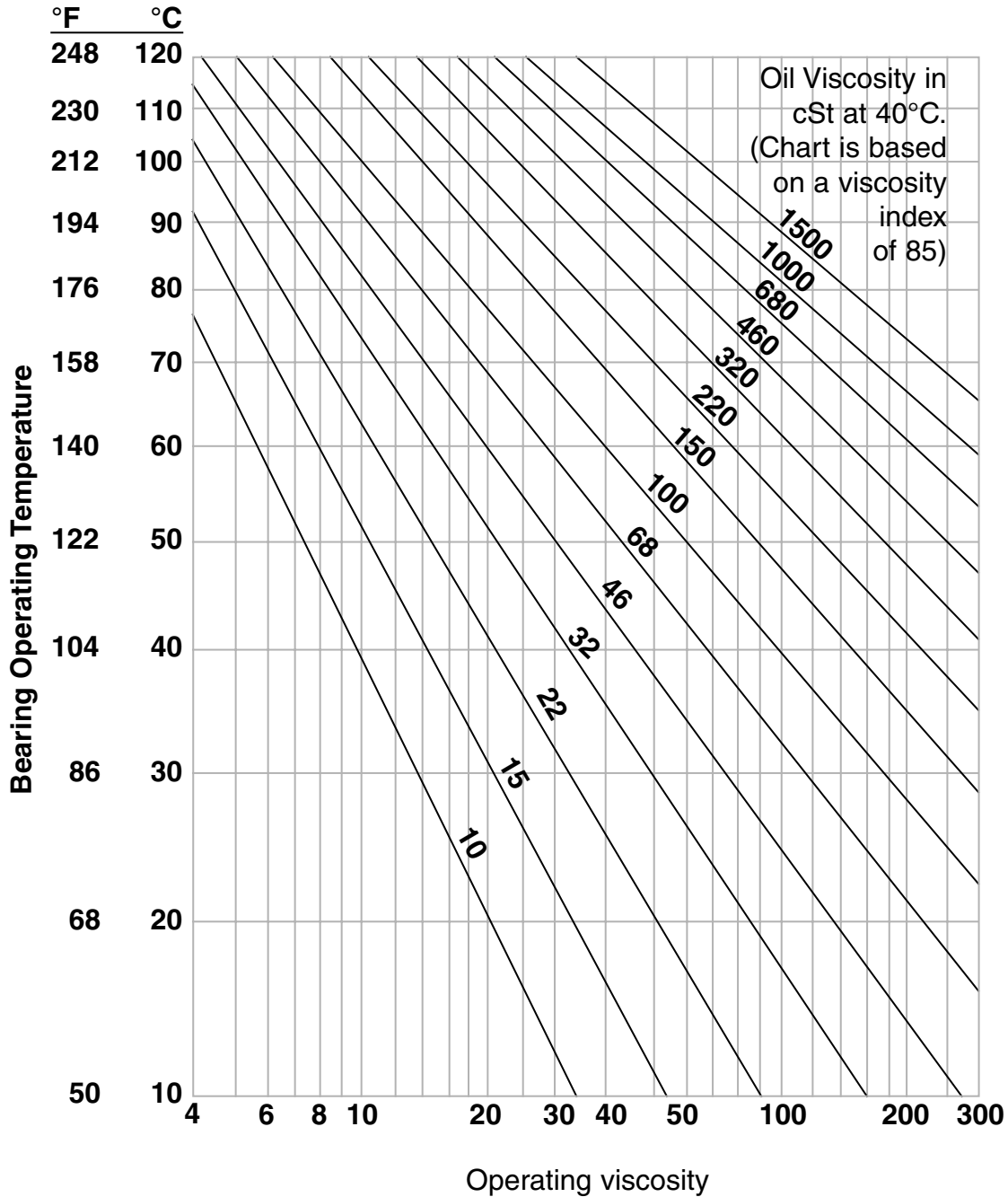


Table 21

## TABLE 22 - GREASE COMPARISON

<b>Manufacturer</b>	Chevron	Chevron	Chevron	Chevron	Dow Corning	Dow Corning
<b>Product Name</b>	Black Pearl EP #2	FM #2	Ultra-Duty EP #2	SRI #2	41	44 Med.Consistency
<b>Color</b>	Black	Crème/Apricot or white	Red	Green	Black	Brown/Amber
<b>Thickener Type</b>	Polyurea Complex	Polyurea FDA Approved	Lithium-12 Hydroxy-stearate	Polyurea	Carbon Black	Lithium
<b>Oil type</b>	Mineral	Mineral	Mineral	Mineral	Silicone	Silicone
<b>NLGI No.</b>	2	2	2	2	2	2
<b>Base Oil viscosity in cSt @40°C cSt @100°C</b>	154 14	202 19	400 24	116 12	150 28	88 22
<b>Recommended op. Temp. range</b>	-40° / 320°F	-40° / 320°F	23° / 290°F	-20° / 350°F	0° / 550°F	-40° / 400°F
<b>Dropping Point</b>	473°F	550°F	374°F	470°F	+500°F	400°F
<b>PEER Grease Code</b>	L107	L67	L114	L19	L128	L27

<b>Manufacturer</b>	DuPont	Exxon	Exxon	Exxon	Kyodo Yushi	Kyodo Yushi
<b>Product Name</b>	Krytox 240AC	Unirex N2	Unirex N3	Beacon 325	Multemp SB-M	Multemp ET-K
<b>Color</b>	White	Green	Green	Light Tan	Light Brown	Light Brown
<b>Thickener Type</b>	Synthetic	Lithium Complex	Lithium Complex	Lithium	Diurea	Diurea
<b>Oil type</b>	Synthetic	Mineral	Mineral	Synthetic	Synthetic Hydrocarbon	Synthetic
<b>NLGI No.</b>	2	2	3	2	3	1.5
<b>Base Oil viscosity in cSt @40°C cSt @100°C</b>	270 26	115 12.2	115 12.2	12 3	47.6 7.9	95.1 12.8
<b>Recommended op. Temp. range</b>	-30° / 550°F	-40° / 250°F	-40° / 250°F	-65° / 250°F	-40° / 390°F	-40° / 390°F
<b>Dropping Point</b>	617°F	437°F	448°F	356°F	+500°F	450°F
<b>PEER Grease Code</b>	L76	L05	L131	L06	L157	L68

## GREASE COMPARISON (continued)

<b>Manufacturer</b>	Kyodo Yushi	Mobil	Mobil	Mobil	Mobil	Nye
<b>Product Name</b>	Multemp SRL	Polyrex EM	Mobilgrease 28	Mobiltemp 1	Mobilith SHC100	Nyogel 670 #3
<b>Color</b>	Light Brown	Blue	Dark Red	Amber	Red	Clear
<b>Thickener Type</b>	Lithium	Polyurea	Clay	Clay	Lithium Complex	Silica
<b>Oil type</b>	Synthetic Ester	Mineral	Synthetic Hydrocarbon/P.A.O.	Mineral	Synthetic P.A.O.	Synthetic Hydrocarbon
<b>NLGI No.</b>	3	2	2	1	2	3
<b>Base Oil viscosity in cSt @40°C cSt @100°C</b>	26.0 5.1	115 12.2	31.8 @38°F 5.9@99°C	460 32	100 14.5	194 22.8
<b>Recommended op. Temp. range</b>	-40° / 390°F	-40° / 350°F	-65° / 350°F	0/ 335°F	-60° / 350°F	-13° / 250°F
<b>Dropping Point</b>	376°F	550°F	+500°F	+500°F	500°F	None
<b>PEER Grease Code</b>	L21	L151	L60	L11	L150	L228

<b>Manufacturer</b>	Nye	Shell	Shell	Shell	Shell	Shell
<b>Product Name</b>	Nyogel 753SC	Aeroshell 5	Aeroshell 7	Aeroshell 17	Alvania RL2	Alvania RL3
<b>Color</b>	Black	Amber	Amber	Light Brown	Amber	Amber
<b>Thickener Type</b>	Carbon Black	Microgel	Microgel	Microgel	Lithium	Lithium
<b>Oil type</b>	Synthetic Ester	Mineral	Synthetic Diester	Mineral/Synthetic Polyester	Mineral	Mineral
<b>NLGI No.</b>	3	2	2	2	2	3
<b>Base Oil viscosity in cSt @40°C cSt @100°C</b>	54 9	520 32	10 3	23 6	98 9.40	98 9.40
<b>Recommended op. Temp. range</b>	-40° / 300°F	-10° / 350°F	-100° / 300°F	-65° / 400°F	-20° / 250°F	-20° / 250°F
<b>Dropping Point</b>	+500°F	+500°F	+500°F	+500°F	385°F	385°F
<b>PEER Grease Code</b>	L169	L40	L42	L79	L15	L16

\*Many more greases available consult with your PEER Representative.

## CONVERSION TABLE

Inch - Millimeter  
1 inch = 25.400mm

Inches		0	1	2	3	4	5	6	7	8	9	10	11	12
Fraction	Decimal													
			25.400	50.800	76.200	101.600	127.000	152.400	177.800	203.200	228.600	254.000	279.400	304.800
1/64	0.015625	0.397	25.797	51.197	76.597	101.997	127.397	152.797	178.197	203.597	228.997	254.397	279.797	305.197
1/32	0.031250	0.794	26.194	51.594	76.994	102.394	127.794	153.194	178.594	203.994	229.394	254.794	280.194	305.594
3/64	0.046875	1.191	26.591	51.991	77.391	102.791	128.191	153.591	178.991	204.391	229.791	255.191	280.591	305.991
1/16	0.062500	1.588	26.988	52.388	77.788	103.188	128.588	153.988	179.388	204.788	230.188	255.588	280.988	306.388
5/64	0.078125	1.984	27.384	52.784	78.184	103.584	128.984	154.384	179.784	205.184	230.584	255.984	281.384	306.784
3/32	0.093750	2.381	27.781	53.181	78.581	103.981	129.381	154.781	180.181	205.581	230.981	256.381	281.781	307.181
7/64	0.109375	2.778	28.178	53.578	78.978	104.378	129.778	155.178	180.578	205.978	231.378	256.778	282.178	307.578
1/8	0.125000	3.175	28.575	53.975	79.375	104.775	130.175	155.575	180.975	206.375	231.775	257.175	282.575	307.975
9/64	0.140625	3.572	28.972	54.372	79.772	105.172	130.572	155.972	181.372	206.772	232.172	257.572	282.972	308.372
5/32	0.156250	3.969	29.369	54.769	80.169	105.569	130.969	156.369	181.769	207.169	232.569	257.969	283.369	308.769
11/64	0.171875	4.366	29.766	55.166	80.566	105.966	131.366	156.766	182.166	207.566	232.966	258.366	283.766	309.166
3/16	0.187500	4.762	30.162	55.562	80.963	106.362	131.762	157.162	182.562	207.962	233.362	258.763	284.163	309.563
13/64	0.203125	5.159	30.559	55.959	81.359	106.759	132.159	157.559	182.959	208.359	233.759	259.159	284.559	309.959
7/32	0.218750	5.556	30.956	56.356	81.756	107.156	132.556	157.956	183.356	208.756	234.156	259.556	284.956	310.356
15/64	0.234375	5.953	31.353	56.753	82.153	107.553	132.953	158.353	183.753	209.153	234.553	259.953	285.353	310.753
1/4	0.250000	6.350	31.750	57.150	82.550	107.950	133.350	158.750	184.150	209.550	234.950	260.350	285.750	311.150
17/64	0.265625	6.747	32.147	57.547	82.947	108.347	133.747	159.147	184.547	209.947	235.347	260.747	286.147	311.547
9/32	0.281250	7.144	32.544	57.944	83.344	108.744	134.144	159.544	184.944	210.344	235.744	261.144	286.544	311.944
19/64	0.296875	7.541	32.941	58.341	83.741	109.141	134.541	159.941	185.341	210.741	236.141	261.541	286.941	312.341
5/16	0.312500	7.938	33.338	58.738	84.138	109.538	134.938	160.338	185.738	211.138	236.538	261.938	287.338	312.738
21/64	0.328125	8.334	33.734	59.134	84.534	109.934	135.334	160.734	186.134	211.534	236.934	262.334	287.734	313.134
11/32	0.343750	8.731	34.131	59.531	84.931	110.331	135.731	161.131	186.531	211.931	237.331	262.731	288.131	313.531
23/64	0.359375	9.128	34.528	59.928	85.328	110.728	136.128	161.528	186.928	212.328	237.728	263.128	288.528	313.928
3/8	0.375000	9.525	34.925	60.325	85.725	111.125	136.525	161.925	187.325	212.725	238.125	263.525	288.925	314.325
25/64	0.390625	9.922	35.322	60.722	86.122	111.522	136.922	162.322	187.722	213.122	238.522	263.922	289.322	314.722
13/32	0.406250	10.319	35.719	61.119	86.519	111.919	137.319	162.719	188.119	213.519	238.919	264.319	289.719	315.119
27/64	0.421875	10.716	36.116	61.516	86.916	112.316	137.716	163.116	188.516	213.916	239.316	264.716	290.116	315.516
7/16	0.437500	11.112	36.513	61.912	87.312	112.712	138.112	163.512	188.913	214.312	239.713	265.113	290.513	315.913
29/64	0.453125	11.509	36.909	62.309	87.709	113.109	138.509	163.909	189.309	214.709	240.109	265.509	290.909	316.309
15/32	0.468750	11.906	37.306	62.706	88.106	113.506	138.906	164.306	189.706	215.106	240.506	265.906	291.306	316.706
31/64	0.484375	12.303	37.703	63.103	88.503	113.903	139.303	164.703	190.103	215.503	240.903	266.303	291.703	317.103
1/2	0.500000	12.700	38.100	63.500	88.900	114.300	139.700	165.100	190.500	215.900	241.300	266.700	292.100	317.500
33/64	0.515625	13.097	38.497	63.897	89.297	114.697	140.097	165.497	190.897	216.297	241.697	267.097	292.497	317.897
17/32	0.531250	13.494	38.894	64.294	89.694	115.094	140.494	165.894	191.294	216.694	242.094	267.494	292.894	318.294
35/64	0.546875	13.891	39.291	64.691	90.091	115.491	140.891	166.291	191.691	217.091	242.491	267.891	293.291	318.691
9/16	0.562500	14.288	39.688	65.088	90.488	115.888	141.283	166.688	192.088	217.488	242.888	268.288	293.688	319.088
37/64	0.578125	14.684	40.084	65.484	90.884	116.284	141.684	167.084	192.484	217.884	243.284	268.684	294.084	319.484
19/32	0.593750	15.081	40.481	65.881	91.281	116.681	142.081	167.481	192.881	218.281	243.681	269.081	294.481	319.881
39/64	0.609375	15.478	40.878	66.278	91.678	117.078	142.478	167.878	193.278	218.678	244.078	269.478	294.878	320.278
5/8	0.625000	15.875	41.275	66.675	92.075	117.475	142.875	168.275	193.675	219.075	244.475	269.875	295.275	320.675
41/64	0.640625	16.272	41.672	67.072	92.472	117.872	143.272	168.672	194.072	219.472	244.872	270.272	295.672	321.072
21/32	0.656250	16.669	42.069	67.469	92.869	118.269	143.669	169.069	194.469	219.869	245.269	270.669	296.069	321.469
43/64	0.671875	17.066	42.466	67.866	93.266	118.666	144.066	169.466	194.866	220.266	245.666	271.066	296.466	321.866
11/16	0.687500	17.462	42.862	68.263	93.662	119.062	144.462	169.862	195.262	220.662	246.062	271.463	296.863	322.263
45/64	0.703125	17.859	43.259	68.659	94.059	119.459	144.859	170.259	195.659	221.059	246.459	271.859	297.259	322.659
23/32	0.718750	18.256	43.656	69.056	94.456	119.856	145.256	170.656	196.056	221.456	246.856	272.256	297.656	323.056
47/64	0.734375	18.653	44.053	69.453	94.853	120.253	145.653	171.053	196.453	221.853	247.253	272.653	298.053	323.453
3/4	0.750000	19.050	44.450	69.850	95.250	120.650	146.050	171.450	196.850	222.250	247.650	273.050	298.450	323.850
49/64	0.765625	19.447	44.847	70.247	95.647	121.047	146.447	171.847	197.247	222.647	248.047	273.447	298.847	324.247
25/32	0.781250	19.844	45.244	70.644	96.044	121.444	146.844	172.244	197.644	223.044	248.444	273.844	299.244	324.644
51/64	0.796875	20.241	45.641	71.041	96.441	121.841	147.241	172.641	198.041	223.441	248.841	274.241	299.641	325.041
13/16	0.812500	20.638	46.038	71.438	96.838	122.238	147.638	173.038	198.438	223.838	249.238	274.638	300.038	325.438
53/64	0.828125	21.034	46.434	71.834	97.234	122.634	148.034	173.434	198.834	224.234	249.634	275.034	300.434	325.834
27/32	0.843750	21.431	46.831	72.231	97.631	123.031	148.431	173.831	199.231	224.631	250.031	275.431	300.831	326.231
55/64	0.859375	21.828	47.228	72.628	98.028	123.428	148.828	174.228	199.628	225.028	250.428	275.828	301.228	326.628
7/8	0.875000	22.225	47.625	73.025	98.425	123.825	149.225	174.625	200.025	225.425	250.825	276.225	301.625	327.025
57/64	0.890625	22.622	48.022	73.422	98.822	124.222	149.622	175.022	200.422	225.822	251.222	276.622	302.022	327.422
29/32	0.906250	23.019	48.419	73.819	99.219	124.619	150.019	175.419	200.819	226.219	251.619	277.019	302.419	327.819
59/64	0.921875	23.416	48.816	74.216	99.616	125.016	150.416	175.816	201.216	226.616	252.016	277.416	302.816	328.216
15/16	0.937500	23.812	49.212	74.612	100.012	125.413	150.812	176.212	201.612	227.012	252.412	277.813	303.213	328.613
61/64	0.953125	24.209	49.609	75.009	100.409	125.809	151.209	176.609	202.009	227.409	252.809	278.209	303.609	329.009
31/32	0.968750	24.606	50.006	75.406	100.806	126.206	151.606	177.006	202.406	227.806	253.206	278.606	304.006	329.406
63/64	0.984375	25.003	50.403	75.803	101.203	126.603	152.003	177.403	202.803	228.203	253.603	279.003	304.403	329.803



# Metric Conversion Table

Fraction	Inch	mm	Fraction	Inch	mm	Fraction	Inch	mm
1/64	0.0156	0.3969		0.2883	7.3228	11/16	0.6875	17.4625
	0.0250	0.6350	19/64	0.2969	7.5406	45/64	0.7031	17.8594
1/32	0.0312	0.7937	5/16	0.3125	7.9375		0.7087	<b>18.0000</b>
	0.0394	<b>1.0000</b>		0.3150	<b>8.0000</b>	23/32	0.7187	18.2562
	0.0400	1.0160	21/64	0.3281	8.3344	47/64	0.7344	18.6532
3/64	0.0469	1.1906	11/32	0.3437	8.7312		0.7435	18.8849
	0.0472	1.2000		0.3543	<b>9.0000</b>		0.7480	<b>19.0000</b>
	0.0550	1.3970	23/64	0.3594	9.1281	<b>3/4</b>	0.7500	19.0500
	0.0591	<b>1.5000</b>	<b>3/8</b>	0.3750	9.5250	49/64	0.7656	19.4469
1/16	0.0625	1.5875	25/64	0.3906	9.9213		0.7717	19.6012
	0.0709	1.8000		0.3937	<b>10.0000</b>	25/32	0.7812	19.8433
5/64	0.0781	1.9844	13/32	0.4062	10.3187		0.7874	<b>20.0000</b>
	0.0787	<b>2.0000</b>		0.4100	10.4140	51/64	0.7969	20.2402
	0.0906	2.3012	27/64	0.4219	10.7156	13/16	0.8125	20.6375
3/32	0.0937	2.3812		0.4250	10.7950		0.8268	<b>21.0000</b>
	0.0984	<b>2.5000</b>		0.4331	<b>11.0000</b>	53/64	0.8281	21.0344
	0.1000	2.5400	7/16	0.4375	11.1125	27/32	0.8437	21.4312
	0.1024	2.6000	29/64	0.4531	11.5094	55/64	0.8594	21.8281
7/64	0.1094	2.7781		0.4600	11.6840		0.8661	<b>22.0000</b>
	0.1100	2.7940	15/32	0.4687	11.9062	<b>7/8</b>	0.8750	22.2250
	0.1102	2.8000		0.4724	<b>12.0000</b>	57/64	0.8906	22.6219
	0.1181	<b>3.0000</b>	31/64	0.4844	12.3031		0.9055	<b>23.0000</b>
<b>1/8</b>	0.1250	3.1750	<b>1/2</b>	0.5000	12.7000	29/32	0.9062	23.0187
	0.1256	3.1902		0.5118	<b>13.0000</b>	59/64	0.9219	23.4156
	0.1378	<b>3.5000</b>	33/64	0.5156	13.0968	15/16	0.9375	23.8125
9/64	0.1406	3.5719	17/32	0.5312	13.4937		0.9449	<b>24.0000</b>
5/32	0.1562	3.9687	35/64	0.5469	13.8906	61/64	0.9531	24.2094
	0.1575	<b>4.0000</b>		0.5512	<b>14.0000</b>	31/32	0.9687	24.6062
11/64	0.1719	4.3656	9/16	0.5625	14.2875		0.9843	<b>25.0000</b>
3/16	0.1875	4.7625	37/64	0.5781	14.6844	63/64	0.9844	25.0031
	0.1892	4.8057		0.5906	<b>15.0000</b>		<b>1.0000</b>	25.4000
	0.1969	<b>5.0000</b>	19/32	0.5937	15.0812		1.0236	<b>26.0000</b>
13/64	0.2031	5.1594	39/64	0.6094	15.4781		1.0415	26.4541
	0.2165	5.4991	<b>5/8</b>	0.6250	15.8750		1.0480	26.6192
7/32	0.2187	5.5562		0.6299	<b>16.0000</b>	1-1/16	1.0625	26.9875
15/64	0.2344	5.9531	41/64	0.6406	16.2719		1.0630	<b>27.0000</b>
	0.2362	<b>6.0000</b>		0.6500	16.5100		1.1025	<b>28.0000</b>
<b>1/4</b>	0.2500	6.3500	21/32	0.6562	16.6687	<b>1-1/8</b>	1.1250	28.5750
17/64	0.2656	6.7469		0.6620	16.8148		1.1417	<b>29.0000</b>
	0.2756	<b>7.0000</b>		0.6693	<b>17.0000</b>		1.1812	<b>30.0000</b>
9/32	0.2812	7.1437	43/64	0.6719	17.0656	1-3/16	1.1875	30.1625
						<b>1-1/4</b>	1.2500	31.7500
						<b>1-1/2</b>	1.5000	38.1000

# Temperature Conversion Table



°C	°C/°F	°F	°C	°C/°F	°F	°C	°C/°F	°F	°C	°C/°F	°F
-79	<b>-110</b>	-166	37.7	<b>100</b>	212	204	<b>400</b>	752	371	<b>700</b>	1292
-73	<b>-100</b>	-148	43	<b>110</b>	230	210	<b>410</b>	770	376	<b>710</b>	1310
-68	<b>- 90</b>	-130	49	<b>120</b>	248	215	<b>420</b>	788	382	<b>720</b>	1328
-62	<b>- 80</b>	-112	54	<b>130</b>	266	221	<b>430</b>	806	387	<b>730</b>	1346
-57	<b>- 70</b>	- 94	60	<b>140</b>	284	226	<b>440</b>	824	393	<b>740</b>	1364
-51	<b>- 60</b>	- 76	65	<b>150</b>	302	232	<b>450</b>	842	565	<b>1050</b>	1922
-46	<b>- 50</b>	- 58	71	<b>160</b>	320	238	<b>460</b>	860	571	<b>1060</b>	1940
-40	<b>- 40</b>	- 40	76	<b>170</b>	338	243	<b>470</b>	878	576	<b>1070</b>	1958
-34	<b>- 30</b>	- 22	83	<b>180</b>	356	249	<b>480</b>	896	582	<b>1080</b>	1976
-29	<b>- 20</b>	- 4	88	<b>190</b>	374	254	<b>490</b>	914	587	<b>1090</b>	1994
-23	<b>- 10</b>	14	93	<b>200</b>	392	260	<b>500</b>	932	593	<b>1100</b>	2012
-17.7	<b>0</b>	32	99	<b>210</b>	410	265	<b>510</b>	950	598	<b>1110</b>	2030
-17.2	<b>1</b>	33.8	104	<b>220</b>	428	271	<b>520</b>	968	604	<b>1120</b>	2048
-16.6	<b>2</b>	35.6	110	<b>230</b>	446	276	<b>530</b>	986	609	<b>1130</b>	2066
-16.1	<b>3</b>	37.4	115	<b>240</b>	464	282	<b>540</b>	1004	615	<b>1140</b>	2084
-15.5	<b>4</b>	39.2	121	<b>250</b>	482	288	<b>550</b>	1022	620	<b>1150</b>	2102
-15.0	<b>5</b>	41.0	127	<b>260</b>	500	293	<b>560</b>	1040	626	<b>1160</b>	2120
-14.4	<b>6</b>	42.8	132	<b>270</b>	518	299	<b>570</b>	1058	631	<b>1170</b>	2138
-13.9	<b>7</b>	44.6	138	<b>280</b>	536	304	<b>580</b>	1076	637	<b>1180</b>	2156
-13.3	<b>8</b>	46.4	143	<b>290</b>	554	310	<b>590</b>	1094	642	<b>1190</b>	2174
-12.7	<b>9</b>	48.2	149	<b>300</b>	572	315	<b>600</b>	1112	648	<b>1200</b>	2192
-12.2	<b>10</b>	50.0	154	<b>310</b>	590	321	<b>610</b>	1130	653	<b>1210</b>	2210
- 6.6	<b>20</b>	68.0	160	<b>320</b>	608	326	<b>620</b>	1148	659	<b>1220</b>	2228
- 1.1	<b>30</b>	86.0	165	<b>330</b>	626	332	<b>630</b>	1166	664	<b>1230</b>	2246
4.4	<b>40</b>	104.0	171	<b>340</b>	644	338	<b>640</b>	1184	670	<b>1240</b>	2264
9.9	<b>50</b>	122.0	177	<b>350</b>	662	343	<b>650</b>	1202	675	<b>1250</b>	2282
15.6	<b>60</b>	140.0	182	<b>360</b>	680	349	<b>660</b>	1220	681	<b>1260</b>	2300
21.0	<b>70</b>	158.0	188	<b>370</b>	698	354	<b>670</b>	1238	686	<b>1270</b>	2318
26.8	<b>80</b>	176.0	193	<b>380</b>	716	360	<b>680</b>	1256	692	<b>1280</b>	2336
32.1	<b>90</b>	194.0	199	<b>390</b>	734	365	<b>690</b>	1274	697	<b>1290</b>	2354



# Metric Conversions

MULTIPLY	BY	TO OBTAIN
Celsius Temperature (t <sub>c</sub> )	$9/5(t_c)+32=t_f$	Fahrenheit Temperature (t <sub>f</sub> )
Centimeter (cm)	.3937	Inch (in)
Centimeter (cm)	10	Millimeter (mm)
Dyne	.00001	Newton (N)
Dyne-Centimeter	.0000001	Newton-meter (N-m)
Fahrenheit Temperature (t <sub>f</sub> )	$5/9(t_f)-32=t_c$	Celsius Temperature (t <sub>c</sub> )
Foot (ft)	30.48	Centimeter (cm)
Foot (ft)	.3048	Meter (m)
Gallon, U.S. liquid (gal)	3.785412	Liter (l)
Gram (g)	.03527397	Ounce (oz)
Horsepower (hp)	.7456999	Kilowatt (kW)
Horsepower (hp)	745.6999	Watt (W)
Inch (in)	2.540	Centimeter (cm)
Inch (in)	.0254	Meter (m)
Inch (in)	25.4	Millimeter (mm)
Joule (J)	.0009478170	British thermal unit (Btu)
Kilogram (kg)	2.20	Pound (lb)
Kilogram-force (kgf)	9.80665	Newton (N)
Kilometer (km)	.6213712	Mile
Liter (l)	.03531466	Cubic foot (ft <sup>3</sup> )
Liter (l)	.001	Cubic meter (m <sup>3</sup> )
Liter (l)	.2641720	Gallon, U.S. liquid
Meter (m)	39.37008	Inch (in)
Meter (m)	3.280840	Foot (ft)
Meter (m)	1.0936	Yard (yd)
Micron (μm)	1000	Millimeter (mm)
Micron (μm)	10 <sup>6</sup>	Meter (m)
Mile	1.609344	Kilometer (km)
Millimeter (mm)	.03937008	Inch (in)
Millimeter (mm)	.003280840	Foot (ft)
Newton (N)	.2248	Pound-force (lbf)
Ounce (oz)	28.3495	Gram (g)
Pound (lb)	.453592	Kilogram (kg)
Pound-force (lbf)	4.448	Newton (N)
Yard (yd)	.9144	Meter (m)





## **USA**

California: Cerritos  
Florida: Clearmont, Tampa  
Georgia: Atlanta  
Illinois: Moline, Waukegan, Cary  
Indiana: Fishers  
Kansas: Olathe  
Kentucky: Louisville, Taylor Mills  
Louisiana: Natchitoches, Alabaster  
Michigan: Plymouth  
Missouri: Columbia  
New Hampshire: Manchester  
New York: Burnt Hills, Schoharie  
North Carolina: Charlotte  
Ohio: Pickerington, Chagrin Falls  
Oregon: Gresham  
Texas: Spring, Deer Park, Brownsville, Harlingen  
Virginia: Glen Allen, Vinton  
Wisconsin: St.Croix Falls

## **International**

### ***Argentina***

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### ***Canada***

Calgary, Alberta  
Montreal, Quebec

### ***Mexico***

Guadalupe

### ***Brazil***

Porto Alegre

### ***Japan***

Chiba

### ***United Kingdom***

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