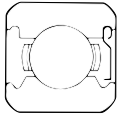
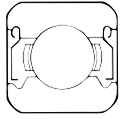
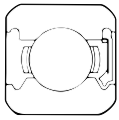
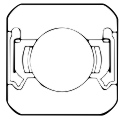
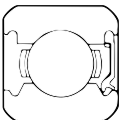
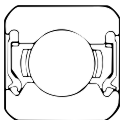
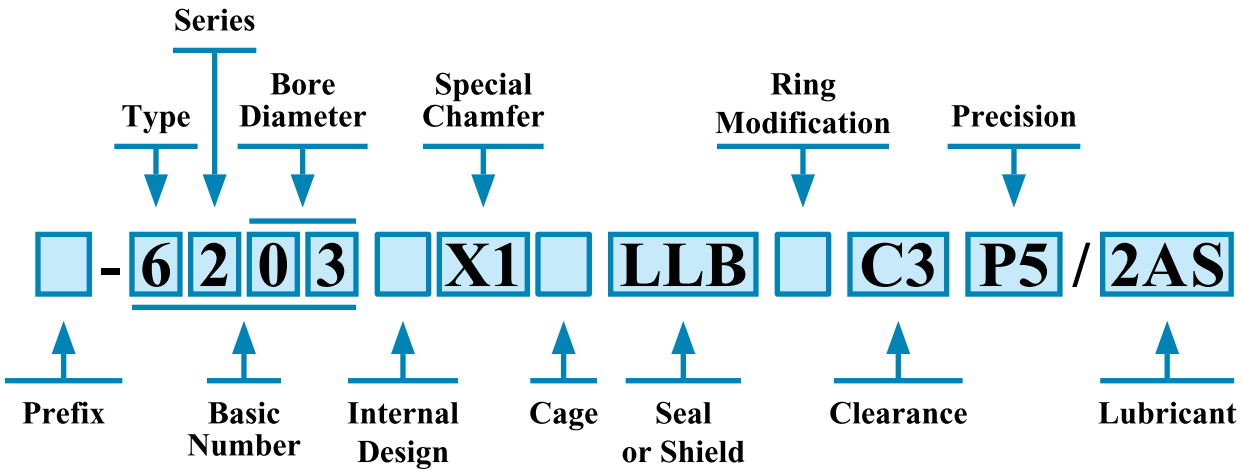


SEAL STRUCTURE AND TYPE DESIGNATION	FEATURES
  Z ZZ	<p>The sealed V-slot around the inner ring creates an air and/or grease pocket which increases the labyrinth effect.</p> <p>This is a non-contact, low-friction torque type bearing assembly, which can be used effectively for general protection.</p>
  LB LLB	<p>Both sides of the seal edge have a circular concaved surface which creates several narrow wide gaps along the V-shaped groove of the inner ring's sealed surface. The unique design ensures a perfect labyrinth effect.</p> <p>This non-contact, low friction bearing assembly requires very little torque and is highly resistant to dust build-up.</p>
  LU LLU	<p>The seal edge forms a double-lip. The inner lip touches the V-slot side of the inner ring's seal surface. There is a slight gap between the inner ring and the outer lip which produces the labyrinth effect. Even if friction causes the inner lip to wear, the outer lip constricts around the inner ring to compensate, and thus constantly preserving the perfect sealing effect.</p> <p>Due to the fact that it is a contact type seal bearing, the torque will be a little greater but the seal will provide the optimum protection from dust penetration.</p>



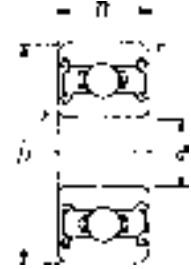
- | | |
|---|---|
| <p>1. PREFIX</p> <p>TS2: Heat stabilization for up to 320° F (160° C)</p> <p>TS3: Heat stabilization for up to 390° F (200° C)</p> <p>TS4: Heat stabilization for up to 480° F (250° C)</p> <p>2. TYPE</p> <p>6: Single row deep groove ball bearings</p> <p>8, WC8: Single row deep groove ball bearings</p> <p>BL: Maximum capacity</p> <p>DE & DF: Special double row ball bearings</p> <p>SC & SX: Special single row ball bearings</p> <p>R: Inch series</p> <p>TMB: Thermal mechanical bearing</p> <p>3. INTERNAL DESIGN</p> <p>A: Internal redesign, from A onward</p> <p>U: Universal seal groove for open bearings</p> <p>4. CHAMFER</p> <p>Xn: Special chamfer, from 1 onward (X1, X2 ...)</p> <p>5. CAGE</p> <p>No Symbol: Pressed steel cage</p> <p>J: Pressed steel cage</p> <p>T1: Phenolic cage</p> <p>T2: Nylon cage</p> <p>L1: Machined brass cage</p> <p>6. SEAL OR SHIELD</p> <p>No Symbol: Open Type</p> <p>LB, LLB: Non-contact rubber seal</p> <p>LU, LLU: Double-lip contact rubber seal</p> <p>LH, LLH: Light contact rubber seal</p> <p>LUA, LLUA: Polyacrylic rubber seal</p> <p>LUA1, LLUA1: Fluorocarbon rubber seal</p> <p>Z, ZZ: Shield</p> <p>Z1, ZZ1: Stainless steel shield</p> <p>ZA, ZZA: Removable shield</p> | <p>7. RING MODIFICATION</p> <p>N: Snap ring groove on outer ring, but without snap ring</p> <p>NR: Snap ring groove on outer ring, snap ring included</p> <p>/X.XX: Special bore, XX.XX in mm; Ex. 5/16" bore, /7.938</p> <p>/XX.X: Special O.D., size XX.X in mm</p> <p>8. INTERNAL CLEARANCE</p> <p>C1: Radial clearance less than C2</p> <p>C2: Radial clearance less than normal</p> <p>C3: Radial clearance greater than normal</p> <p>C4: Radial clearance greater than C3</p> <p>C5: Radial clearance greater than C4</p> <p>CSXX: Special radial clearance; XX is mean value in 0.001 mm units</p> <p>9. TOLERANCE</p> <p>P6: ISO class 6 (equivalent to ABEC 3)</p> <p>P5: ISO class 5 (equivalent to ABEC 5)</p> <p>P4: ISO class 4 (equivalent to ABEC 7)</p> <p>PXn: Special tolerance, from 1 onward (PX1, PX2 ...)</p> <p>Vn: Special requirement, from 1 onward (V1, V2 ...)</p> <p>10. PRELUBRICANT (Typical)</p> <p>1E: Exxon Andok C grease</p> <p>1W: Anderson Oil Winsor Lube L-245X, MIL-L-6085A</p> <p>2AS: Shell Alvania #2 grease, MIL-G-18709A</p> <p>2E: Exxon Unirex N3</p> <p>3AS: Shell Oil Alvania #3 grease</p> <p>5C: Chevron SRI #2 grease, MIL-G-3545C</p> <p>5K: Kyodo Yushi Multemp SRL</p> <p>5S: Shell Aeroshell #7 grease, MIL-G-23827A</p> <p>9B: Mobil 28, MIL-G-81322</p> <p>L627: Exxon Polyrex EM</p> |
|---|---|

SINGLE ROW RADIAL BALL BEARINGS

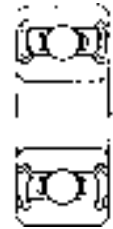
Units: INCHES



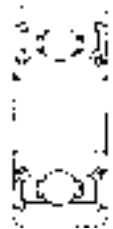
Bearing No.	Bore	O.D.	Width	Fillet Radius	Basic Load Ratings (lbs)		Weight (lbs)	Limiting Speed (rpm)	
	d	D	B	(min.) r	Dynamic C	Static C ₀	Open Type	Grease	Oil
RA3	.1875	.5000	.1960	0.012	295	110	.006	41,000	48,000
R4	.2500	.6250	.1960	0.012	335	139	.010	36,000	43,000
RA4	.2500	.7500	.2812	0.016	525	199	.017	34,000	40,000
R6	.3750	.8750	.2812	0.016	745	315	.029	31,000	37,000
R8	.5000	1.1250	.3125	0.016	1,150	540	.040	26,000	30,000
R10	.6250	1.3750	.3437	0.031	1,350	735	.067	20,000	24,000
R12	.7500	1.6250	.4375	0.031	1,780	1,000	.100	18,000	21,000
R14	.8750	1.8750	.5000	0.031	2,270	1,300	.159	15,000	18,000
R16	1.0000	2.0000	.5000	0.031	2,260	1,340	.178	14,000	16,000
R18	1.1250	2.1250	.5000	0.031	2,970	1,860	.194	13,000	15,000
R20	1.2500	2.2500	.5000	0.031	2,650	1,810	.200	12,000	14,000



Double Shielded
ZZ



Double Sealed
LLB
(Non-contact Type)



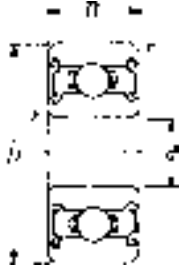
Double Sealed
LLU
(Contact Type)



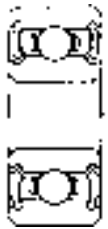
Units: INCHES
Millimeters

SINGLE ROW RADIAL BALL BEARINGS

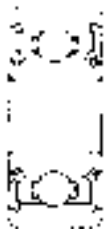
Bearing No.	Bore d	O.D. D	Width B	Fillet Radius r	Basic Load Ratings (lbs)		Weight (lbs)	Limiting Speed		
					Dynamic C	Static C ₀		Grease	Oil	LLU
605	.1969 5	.5512 14	.1969 5	.008 .2	299	114	.008	39,000	46,000	—
606	.2362 6	.6693 17	.2362 6	.012 .3	495	195	.013	35,000	42,000	—
607	.2756 7	.7480 19	.2362 6	.012 .3	505	205	.018	34,000	40,000	28,000
608	.3150 8	.8661 22	.2756 7	.012 .3	750	315	.026	32,000	37,000	23,000
609	.3543 9	.9449 24	.2756 7	.012 .3	765	325	.031	31,000	36,000	22,000
623	.1181 3	.3937 10	.1575 4	.006 .15	144	50	.004	50,000	58,000	—
624	.1575 4	.5118 13	.1969 5	.008 .2	295	110	.007	42,000	49,000	—
625	.1969 5	.6299 16	.1969 5	.012 .3	395	153	.011	37,000	44,000	—
626	.2362 6	.7480 19	.2362 6	.012 .3	525	199	.018	34,000	40,000	30,000
627	.2756 7	.8661 22	.2756 7	.012 .3	750	315	.029	32,000	37,000	23,000
628	.3150 8	.9449 24	.3150 8	.012 .6	900	355	.037	31,000	36,000	24,000
629	.3543 9	1.0236 26	.3150 8	.024 .6	1,030	440	.044	30,000	35,000	21,000
634	.1575 4	.6299 16	.1969 5	.012 .3	395	153	.011	37,000	44,000	—
635	.1969 5	.7480 19	.2362 6	.012 .3	525	199	.018	34,000	40,000	30,000



Double Shielded
ZZ



Double Sealed
LLB
(Non-contact Type)



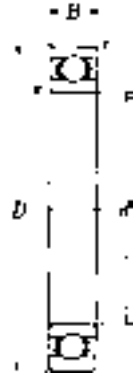
Double Sealed
LLU
(Contact Type)

SINGLE ROW RADIAL BALL BEARINGS

Units: **INCHES**
Millimeters

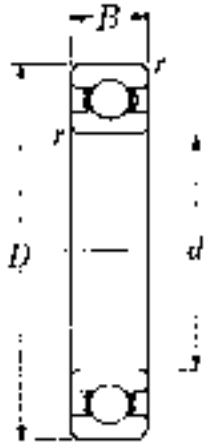


Bearing No.	Bore	O.D.	Width	Fillet Radius	Basic Load Ratings (lbs)		Weight (lbs)	Limiting Speed (RPM)	
	d	D	B	r	Dynamic C	Static C ₀		Grease	Oil
6900	.3937 10	.8661 22	.2362 6	.012 .3	605	285	.020	30,000	36,000
6901	.4724 12	.9449 24	.2362 6	.012 .3	650	330	.024	27,000	32,000
6902B	.5906 15	1.1024 28	.2756 7	.012 .3	920	460	.035	24,000	28,000
6903	.6693 17	1.1811 30	.2756 7	.012 .3	1,050	580	.040	22,000	26,000
6904	.7874 20	1.4567 37	.3543 9	.012 .3	1,430	825	.079	19,000	23,000
6905	.9843 25	1.6535 42	.3543 9	.012 .3	1,580	1,020	.093	16,000	19,000
6906	1.1811 30	1.8504 47	.3543 9	.012 .3	1,630	1,130	.106	14,000	17,000
6907A	1.3780 35	2.1654 55	.3937 10	.024 .6	2,510	1,670	.163	12,000	15,000
6908A	1.5748 40	2.4409 62	.4724 12	.024 .6	3,250	2,300	.243	11,000	13,000
6909A	1.7717 45	2.6772 68	.4724 12	.024 .6	3,400	2,530	.282	9,800	12,000
6910B	1.9685 50	2.8346 72	.4724 12	.024 .6	3,500	2,750	.291	8,900	11,000
6911	2.1654 55	3.1496 80	.5118 13	.039 1.0	3,600	2,980	.397	8,200	9,600
6912	2.3622 60	3.3465 85	.5118 13	.039 1.0	3,700	3,200	.425	7,600	8,900
6913	2.5591 65	3.5433 90	.5118 13	.039 1.0	3,900	3,600	.454	7,000	8,200
6914	2.7559 70	3.9370 100	.6299 16	.039 1.0	5,350	4,750	.736	6,500	7,700
6915	2.9528 75	4.1339 105	.6299 16	.039 1.0	5,500	5,100	.778	6,100	7,200
6916	3.1496 80	4.3307 110	.6299 16	.039 1.0	5,600	5,400	.822	5,700	6,700
6917	3.3465 85	4.7244 120	.7087 18	.043 1.1	7,200	6,650	1.18	5,400	6,300
6918	3.5433 90	4.9213 125	.7087 18	.043 1.1	7,400	7,100	1.22	5,100	6,000
6919	3.7402 95	5.1181 130	.7087 18	.043 1.1	7,550	7,550	1.28	4,800	5,700
6920	3.9370 100	5.5118 140	.7874 20	.043 1.1	9,250	8,900	1.73	4,500	5,300
6921	4.1339 105	5.7087 145	.7874 20	.043 1.1	9,550	9,450	1.80	4,300	5,100
6922	4.3307 110	5.9055 150	.7874 20	.043 1.1	9,800	10,000	1.87	4,100	4,800
6924	4.7244 120	6.4961 165	.8661 22	.043 1.1	11,900	12,200	2.54	3,800	4,400





Units: INCHES
Millimeters



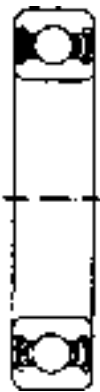
Open Type
60



Single
Shielded
60Z

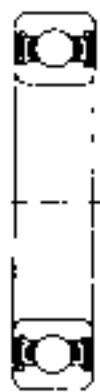


Double
Shielded
60ZZ



Double
Sealed
60LLU

(Contact Type)



Double
Sealed
60LLB

(Non-Contact Type)

SINGLE ROW RADIAL BALL BEARINGS

Bearing No.	Bore d	O.D. D	Width B	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
				r	r ₁	Dynamic C	Static C ₀	
6000	.3937 10	1.0236 26	.3150 8	.012 .3	— —	1,030	440	.042
6001	.4724 12	1.1024 28	.3150 8	.012 .3	— —	1,150	540	.049
6002	.5906 15	1.2598 32	.3543 9	.012 .3	— —	1,260	635	.066
6003	.6693 17	1.3780 35	.3937 10	.012 .3	— —	1,530	755	.086
6004	.7874 20	1.6535 42	.4724 12	.024 .6	.020 .5	2,110	1,140	.152
60/22	.8661 22	1.7323 44	.4724 12	.024 .6	.020 .5	2,110	1,150	.163
6005	.9843 25	1.8504 47	.4724 12	.024 .6	.020 .5	2,260	1,320	.176
60/28	1.1024 28	2.0472 52	.4724 12	.024 .6	.020 .5	2,800	1,660	.216
6006	1.1811 30	2.1654 55	.5118 13	.039 1.0	.020 .5	2,970	1,860	.256
60/32A	1.2598 32	2.2835 58	.5118 13	.039 1.0	.020 .5	3,400	2,060	.284
6007	1.3780 35	2.4409 62	.5512 14	.039 1.0	.020 .5	3,600	2,310	.342
6008	1.5748 40	2.6772 68	.5906 15	.039 1.0	.020 .5	3,150	2,590	.423
6009	1.7717 45	2.9528 75	.6299 16	.039 1.0	.020 .5	4,700	3,400	.540
6010	1.9685 50	3.1496 80	.6299 16	.039 1.0	.020 .5	4,900	3,750	.575
6011	2.1654 55	3.5433 90	.7087 18	.043 1.1	.020 .5	6,350	4,800	.849
6012	2.3622 60	3.7402 95	.7087 18	.043 1.1	.020 .5	6,600	5,200	.915
6013	2.5591 65	3.9370 100	.7087 18	.043 1.1	.020 .5	6,850	5,650	.959
6014	2.7559 70	4.3307 110	.7874 20	.043 1.1	.020 .5	8,550	6,950	1.33
6015	2.9528 75	4.5276 115	.7874 20	.043 1.1	.020 .5	8,900	7,550	1.41
6016	3.1496 80	4.9213 125	.8661 22	.043 1.1	.020 .5	10,700	8,950	1.87
6017	3.3465 85	5.1181 130	.8661 22	.043 1.1	.020 .5	11,100	9,700	1.96
6018	3.5433 90	5.5118 140	.9449 24	.059 1.5	.020 .5	13,100	11,200	2.56
6019	3.7402 95	5.7087 145	.9449 24	.059 1.5	.020 .5	13,600	12,100	2.67
6020	3.9370 100	5.9055 150	.9449 24	.059 1.5	.020 .5	13,500	12,200	2.76
6021	4.1339 105	6.2992 160	1.0236 26	.079 2.0	.020 .5	16,300	14,800	3.51
6022	4.3307 110	6.6929 170	1.1024 28	.079 2.0	.020 .5	18,400	16,400	4.32
6024	4.7244 120	7.0866 180	1.1024 28	.079 2.0	— —	19,100	17,800	4.56
6026	5.1181 130	7.8740 200	1.2992 33	.079 2.0	— —	23,900	22,700	6.97
6028	5.5118 140	8.2677 210	1.2992 33	.079 2.0	— —	24,700	24,400	7.39
6030	5.9055 150	8.8583 225	1.3780 35	.083 2.1	— —	28,300	28,300	8.99
6032	6.2992 160	9.4488 240	1.4961 38	.083 2.1	— —	32,000	32,500	11.1
6034	6.6929 170	10.2362 260	1.6535 42	.083 2.1	— —	38,000	38,500	17.5
6036	7.0866 180	11.0236 280	1.8110 46	.083 2.1	— —	42,500	44,500	22.7
6038	7.4803 190	11.4173 290	1.8110 46	.083 2.1	— —	44,000	48,500	23.8
6040	7.8740 200	12.2047 310	2.0079 51	.083 2.1	— —	49,000	54,500	30.6

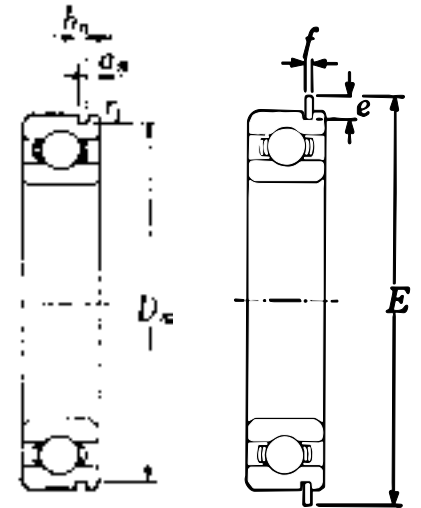
Continued on Page 22

SINGLE ROW RADIAL BALL BEARINGS

Units: **INCHES**
Millimeters



Snap Ring Groove Dimensions			Snap Ring Dimensions			Limiting Speed (RPM)			Bore Diameter No.
D_n (max)	a_n (max)	b_n (min)	E (max)	f (max)	e	Grease	Oil	LU, LLU	
—	—	—	—	—	—	29,000	34,000	21,000	00
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	26,000	30,000	18,000	01
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	22,000	26,000	15,000	02
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	20,000	24,000	14,000	03
—	—	—	—	—	—	—	—	—	—
1.565	.081	.065	1.82	.042	.125	18,000	21,000	11,000	04
39.75	2.06	1.65	46.3	1.07	3.17	—	—	—	—
1.644	.081	.053	1.90	.044	.129	17,000	20,000	10,000	/22
41.75	2.06	1.35	48.3	1.12	3.28	—	—	—	—
1.756	.081	.065	2.07	.042	.156	15,000	18,000	9,400	05
44.60	2.06	1.65	52.7	1.07	3.96	—	—	—	—
1.958	.081	.053	2.28	.044	.161	14,000	16,000	8,400	/28
49.73	2.06	1.35	57.9	1.12	4.09	—	—	—	—
—	—	—	—	—	—	—	—	—	—
2.071	.082	.065	2.39	.042	.156	13,000	15,000	7,700	06
52.60	2.08	1.65	60.7	1.07	3.96	—	—	—	—
2.189	.082	.053	2.51	.044	.159	12,000	15,000	7,200	/32
55.60	2.08	1.35	63.7	1.12	4.05	—	—	—	—
2.347	.082	.087	2.67	.065	.156	12,000	14,000	6,800	07
59.61	2.08	2.21	67.7	1.65	3.96	—	—	—	—
2.552	.098	.087	2.94	.065	.188	10,000	12,000	6,100	08
64.82	2.49	2.21	74.6	1.65	4.78	—	—	—	—
—	—	—	—	—	—	—	—	—	—
2.828	.098	.087	3.21	.065	.188	9,200	11,000	5,400	09
71.83	2.49	2.21	81.6	1.65	4.78	—	—	—	—
3.024	.098	.087	3.41	.065	.188	8,400	9,800	5,000	10
76.81	2.49	2.21	86.6	1.65	4.78	—	—	—	—
3.417	.113	.118	3.80	.095	.188	7,700	9,000	4,500	11
86.79	2.87	3.00	96.5	2.41	4.78	—	—	—	—
—	—	—	—	—	—	—	—	—	—
3.615	.113	.118	4.00	.095	.188	7,000	8,300	4,100	12
91.82	2.87	3.00	101.6	2.41	4.78	—	—	—	—
3.811	.113	.118	4.19	.095	.188	6,500	7,700	3,900	13
96.80	2.87	3.00	106.5	2.41	4.78	—	—	—	—
4.205	.113	.118	4.59	.095	.188	6,100	7,100	3,600	14
106.81	2.87	3.00	116.6	2.41	4.78	—	—	—	—
—	—	—	—	—	—	—	—	—	—
4.402	.113	.118	4.79	.095	.188	5,700	6,700	3,300	15
111.81	2.87	3.00	121.6	2.41	4.78	—	—	—	—
4.733	.113	.134	5.30	.109	.281	5,300	6,200	3,100	16
120.22	2.87	3.40	134.7	2.77	7.14	—	—	—	—
4.930	.113	.134	5.50	.109	.281	5,000	5,900	2,900	17
125.22	2.87	3.40	139.7	2.77	7.14	—	—	—	—
—	—	—	—	—	—	—	—	—	—
5.324	.146	.134	5.89	.109	.281	4,700	5,600	2,800	18
135.23	3.71	3.40	149.7	2.77	7.14	—	—	—	—
5.521	.146	.134	6.09	.109	.281	4,500	5,300	2,600	19
140.23	3.71	3.40	154.7	2.77	7.1	—	—	—	—
5.718	.146	.134	6.29	.109	.281	4,200	5,000	2,600	20
145.24	3.71	3.40	159.7	2.77	7.14	—	—	—	—
—	—	—	—	—	—	—	—	—	—
6.111	.146	.134	6.68	.109	.281	4,000	4,700	2,400	21
155.22	3.71	3.40	169.7	2.77	7.14	—	—	—	—
6.443	.146	.150	7.20	.120	.375	3,800	4,500	2,300	22
163.65	3.71	3.81	182.9	3.05	9.53	—	—	—	—
—	—	—	—	—	—	3,500	4,100	2,100	24
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	3,200	3,800	1,900	26
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	3,000	3,500	1,800	28
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	2,800	3,200	1,700	30
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	2,600	3,000	1,600	32
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	2,400	2,800	—	34
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	2,300	2,700	—	36
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	2,100	2,500	—	38
—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	2,000	2,400	—	40



With Snap Ring Groove
60N

With Snap Ring
60NR

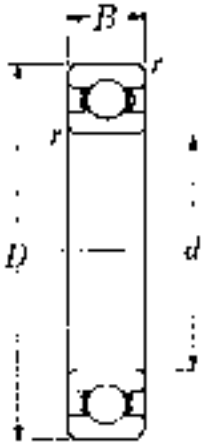


Single Shielded With Snap Ring
60ZNR

Continued on Page 23



Units: **INCHES**
Millimeters



Open Type
60

SINGLE ROW RADIAL BALL BEARINGS

Bearing No.	Bore		O.D.	Width	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
	<i>d</i>	<i>D</i>			<i>r</i>	<i>r₁</i>	Dynamic <i>C</i>	Static <i>C₀</i>	
6044	8.66 220	13.39 340	2.205 56	.118 3.0	—	54,500	65,000	34.6	
6048	9.45 240	14.17 360	1.102 28	.118 3.0	—	56,000	70,000	37.0	
6052	10.24 260	15.75 400	2.559 65	.157 4.0	—	65,500	84,500	55.1	
6056	11.02 280	16.54 420	2.559 65	.157 4.0	—	73,000	95,000	68.3	
6060	11.81 300	18.11 460	2.913 74	.157 4.0	—	80,000	108,000	96.6	
6064	12.60 320	18.90 480	2.913 74	.157 4.0	—	83,500	119,000	102	
6068	13.39 340	20.47 520	3.228 82	.197 5.0	—	94,000	137,000	136	
6072	14.17 360	21.26 540	3.228 82	.197 5.0	—	98,500	150,000	143	
6076	14.96 380	22.05 560	3.228 82	.197 5.0	—	103,000	163,000	149	
6080	15.75 400	23.62 600	3.543 90	.197 5.0	—	114,000	185,000	193	
6084	16.54 420	24.41 620	3.543 90	.197 5.0	—	119,000	201,000	201	

SINGLE ROW RADIAL BALL BEARINGS

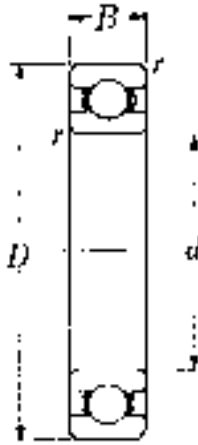
Units: **INCHES**
Millimeters



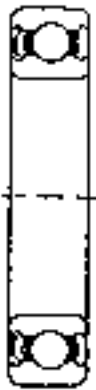
Snap Ring Groove Dimensions			Snap Ring Dimensions			Limiting Speed (RPM)			Bore Diameter No.
$D_n (max)$	$a_n (max)$	$b_n (min)$	$E (max)$	$f (max)$	e	Grease	Oil	LU, LLU	
—	—	—	—	—	—	1,800	2,200	—	44
—	—	—	—	—	—	1,700	2,000	—	48
—	—	—	—	—	—	1,500	1,800	—	52
—	—	—	—	—	—	1,400	1,600	—	56
—	—	—	—	—	—	1,300	1,500	—	60
—	—	—	—	—	—	1,200	1,400	—	64
—	—	—	—	—	—	1,100	1,300	—	68
—	—	—	—	—	—	1,100	1,200	—	72
—	—	—	—	—	—	990	1,200	—	76
—	—	—	—	—	—	930	1,100	—	80
—	—	—	—	—	—	880	1,000	—	84



Units: INCHES
Millimeters



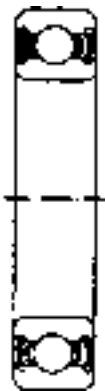
Open Type
62



Single
Shielded
62Z

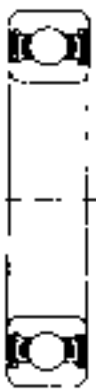


Double
Shielded
62ZZ



Double
Sealed
62LLU

(Contact Type)



Double
Sealed
62LLB

(Non-Contact Type)

SINGLE ROW RADIAL BALL BEARINGS

Bearing No.	Bore d	O.D. D	Width B	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
				r	r ₁	Dynamic C	Static C ₀	
6200	.3937 10	1.1811 30	.3543 9	.024 .6	.020 .5	1,150	540	.071
6201	.4724 12	1.2598 32	.3937 10	.024 .6	.020 .5	1,370	615	.082
6201/12.69	.4996 12.69	1.2598 32	.3937 10	.024 .6	.020 .5	1,370	615	.082
6201/12.695	.4998 12.695	1.2598 32	.3937 10	.024 .6	.020 .5	1,370	615	.082
6201/12.7	.5000 12.7	1.2598 32	.3937 10	.024 .6	.020 .5	1,370	615	.082
6201/13	.5118 13	1.2598 32	.3937 10	.024 .6	.020 .5	1,370	615	.082
6202	.5906 15	1.3780 35	.4331 11	.024 .6	—	1,740	805	.099
6202/12.71	.5004 12.71	1.3780 35	.4331 11	.024 .6	—	1,740	805	.099
6202/15.875	.6250 15.875	1.3780 35	.4331 11	.024 .6	—	1,740	805	.099
6202/16	.6299 16	1.3780 35	.4331 11	.024 .6	—	1,740	805	.099
6203	.6693 17	1.5748 40	.4724 12	.024 .6	.020 .5	2,160	1,030	.143
6203/12.7	.5000 12.7	1.5748 40	.4724 12	.024 .6	.020 .5	2,160	1,030	.143
6203/15.875	.6250 15.875	1.5748 40	.4724 12	.024 .6	.020 .5	2,160	1,030	.143
6203/16	.6299 16	1.5748 40	.4724 12	.024 .6	.020 .5	2,160	1,030	.143
6203/19.05	.7500 19.05	1.5748 40	.4724 12	.024 .6	.020 .5	2,160	1,030	.143
6204	.7874 20	1.8504 47	.5512 14	.039 1	.020 .5	2,890	1,500	.234
62/22	.8661 22	1.9685 50	.5512 14	.039 1	.020 .5	2,900	1,530	.258
6205	.9843 25	2.0472 52	.5906 15	.039 1	.020 .5	3,150	1,770	.282
6205/25.4	1.0000 25.4	2.0472 52	.5906 15	.039 1	.020 .5	3,150	1,770	.282
62/28	1.1024 28	2.2835 58	.6299 16	.039 1	.020 .5	4,000	2,190	.377
6206	1.1811 30	2.4409 62	.6299 16	.039 1	.020 .5	4,400	2,540	.439
62/32	1.2598 32	2.5591 65	.6693 17	.039 1	.020 .5	4,650	2,610	.498
6207	1.3780 35	2.8346 72	.6693 17	.043 1.1	.020 .5	5,750	3,450	.635
6208	1.5748 40	3.1496 80	.7087 18	.043 1.1	.020 .5	6,550	4,000	.807
6209	1.7717 45	3.3465 85	.7480 19	.043 1.1	.020 .5	7,350	4,600	.897
6210	1.9685 50	3.5433 90	.7874 20	.043 1.1	.020 .5	7,900	5,200	1.02
6211	2.1654 55	3.9370 100	.8268 21	.059 1.5	.020 .5	9,750	6,550	1.34
6212	2.3622 60	4.3307 110	.8661 22	.059 1.5	.020 .5	11,800	8,150	1.73
6213	2.5591 65	4.7244 120	.9055 23	.059 1.5	.020 .5	12,900	9,000	2.18
6214	2.7559 70	4.9213 125	.9449 24	.059 1.5	.020 .5	14,000	9,900	2.36
6215	2.9528 75	5.1181 130	.9843 25	.059 1.5	.020 .5	14,900	11,100	2.60
6216	3.1496 80	5.5118 140	1.0236 26	.079 2.0	.020 .5	16,500	11,900	3.09
6217	3.3465 85	5.9055 150	1.1024 28	.079 2.0	.020 .5	18,700	14,300	3.95
6218	3.5433 90	6.2992 160	1.1811 30	.079 2.0	.020 .5	21,600	16,100	4.74
6219	3.7402 95	6.6929 170	1.2598 32	.083 2.1	.020 .5	24,500	18,400	5.78
6220	3.9370 100	7.0866 180	1.3386 34	.083 2.1	.012 .5	27,500	20,900	6.92

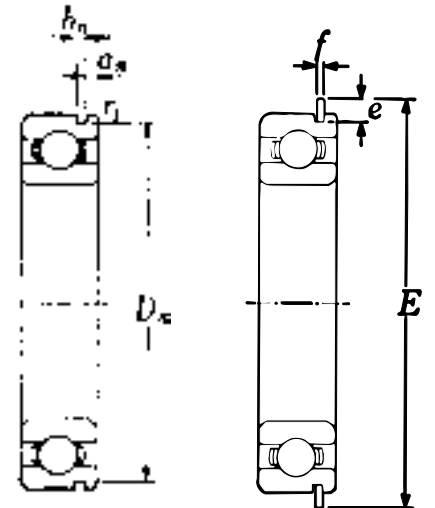
Continued on Page 26

SINGLE ROW RADIAL BALL BEARINGS

Units: INCHES
Millimeters



Snap Ring Groove Dimensions			Snap Ring Dimensions			Limiting Speed (RPM)			Bore Diameter No.
D _n (max)	a _n (max)	b _n (min)	E (max)	f	e	Grease	Oil	LLU	
1.109	.081	.065	1.37	.042	.125	25,000	30,000	18,000	00
28.17	2.06	1.65	34.7	1.07	3.17				
1.187	.081	.065	1.44	.042	.125	22,000	26,000	16,000	01
30.15	2.06	1.65	36.7	1.07	3.17				
1.187	.081	.065	1.44	.042	.125	22,000	26,000	16,000	01
30.15	2.06	1.65	36.7	1.07	3.17				
1.187	.081	.065	1.44	.042	.125	22,000	26,000	16,000	01
30.15	2.06	1.65	36.7	1.07	3.17				
1.187	.081	.065	1.44	.042	.125	22,000	26,000	16,000	01
30.15	2.06	1.65	36.7	1.07	3.17				
1.306	.081	.065	1.56	.042	.125	19,000	23,000	15,000	02
33.17	2.06	1.65	39.7	1.07	3.17				
1.306	.081	.065	1.56	.042	.125	19,000	23,000	15,000	02
33.17	2.06	1.65	39.7	1.07	3.17				
1.306	.081	.065	1.56	.042	.125	19,000	23,000	15,000	02
33.17	2.06	1.65	39.7	1.07	3.17				
1.306	.081	.065	1.56	.042	.125	19,000	23,000	15,000	02
33.17	2.06	1.65	39.7	1.07	3.17				
1.500	.081	.065	1.76	.042	.125	18,000	21,000	12,000	03
38.10	2.06	1.65	44.6	1.07	3.17				
1.500	.081	.065	1.76	.042	.125	18,000	21,000	12,000	03
38.10	2.06	1.65	44.6	1.07	3.17				
1.500	.081	.065	1.76	.042	.125	18,000	21,000	12,000	03
38.10	2.06	1.65	44.6	1.07	3.17				
1.500	.081	.065	1.76	.042	.125	18,000	21,000	12,000	03
38.10	2.06	1.65	44.6	1.07	3.17				
1.500	.081	.065	1.76	.042	.125	18,000	21,000	12,000	03
38.10	2.06	1.65	44.6	1.07	3.17				
1.756	.097	.065	2.07	.042	.156	16,000	18,000	10,000	04
44.60	2.46	1.65	52.7	1.07	3.96				
1.874	.097	.065	2.19	.042	.156	14,000	17,000	9,700	/22
47.60	2.46	1.65	55.7	1.07	3.96				
1.958	.097	.065	2.28	.042	.156	13,000	15,000	8,900	05
49.73	2.46	1.65	57.9	1.07	3.96				
1.958	.097	.065	2.28	.042	.156	13,000	15,000	8,900	05
49.73	2.46	1.65	57.9	1.07	3.96				
2.189	.097	.065	2.51	.042	.156	12,000	14,000	8,100	/28
55.60	2.46	1.65	63.7	1.07	3.96				
2.347	.129	.087	2.67	.065	.156	11,000	13,000	7,300	06
59.61	3.28	2.21	67.7	1.65	3.96				
2.465	.129	.087	2.78	.065	.156	11,000	12,000	7,100	/32
62.61	3.28	2.21	70.7	1.65	3.96				
2.709	.129	.087	3.09	.065	.188	9,800	11,000	6,300	07
68.81	3.28	2.21	78.6	1.65	4.77				
3.024	.129	.087	3.41	.065	.188	8,700	10,000	5,600	08
76.81	3.28	2.21	86.6	1.65	4.77				
3.221	.129	.087	3.61	.065	.188	7,800	9,200	5,200	09
81.81	3.28	2.21	91.6	1.65	4.77				
3.417	.129	.118	3.80	.095	.188	7,100	8,300	4,700	10
86.79	3.28	3.00	96.5	2.41	4.77				
3.811	.129	.118	4.19	.095	.188	6,400	7,600	4,300	11
96.80	3.28	3.00	106.5	2.41	4.77				
4.205	.129	.118	4.59	.095	.188	6,000	7,000	3,800	12
106.81	3.28	3.00	116.6	2.41	4.77				
4.536	.160	.134	5.11	.109	.281	5,500	6,500	3,600	13
115.21	4.06	3.40	129.7	2.77	7.13				
4.733	.160	.134	5.30	.109	.281	5,100	6,000	3,400	14
120.22	4.06	3.40	134.7	2.77	7.13				
4.930	.160	.134	5.50	.109	.281	4,800	5,600	3,200	15
125.22	4.06	3.40	139.7	2.77	7.13				
5.324	.193	.134	5.89	.109	.281	4,500	5,300	3,000	16
135.23	4.90	3.40	149.7	2.77	7.13				
5.718	.193	.134	6.29	.109	.281	4,200	5,000	2,800	17
145.24	4.90	3.40	159.7	2.77	7.13				
6.111	.193	.134	6.68	.109	.281	4,000	4,700	2,600	18
155.22	4.90	3.40	169.7	2.77	7.13				
6.443	.224	.150	7.20	.120	.375	3,700	4,400	2,500	19
163.65	5.69	3.81	182.9	3.05	9.52				
6.837	.224	.150	7.59	.120	.375	3,500	4,200	2,300	20
173.66	5.69	3.81	192.9	3.05	9.52				



With Snap Ring Groove 62N

With Snap Ring 62NR

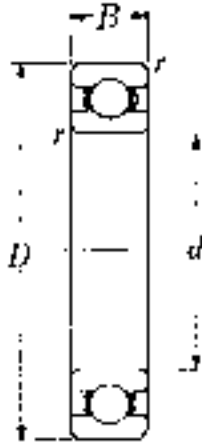


Single Shielded With Snap Ring 62ZNR

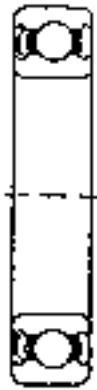
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Units: **INCHES**
Millimeters



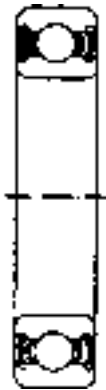
Open Type
62



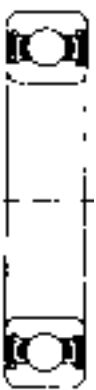
Single
Shielded
62Z



Double
Shielded
62ZZ



Double
Sealed
62LLU
(Contact Type)



Double
Sealed
62LLB
(Non-Contact Type)

SINGLE ROW RADIAL BALL BEARINGS

Bearing No.	Bore	O.D.	Width	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
	d	D	B	r	r ₁	Dynamic C	Static C ₀	
6221	4.1339 105	7.4803 190	1.4173 36	.083 2.1	.020 .5	29,900	23,500	8.16
6222	4.3307 110	7.8740 200	1.4961 38	.083 2.1	.020 .5	32,500	26,300	9.61
6224	4.7244 120	8.4646 215	1.5748 40	.083 2.1	—	35,000	29,500	11.4
6226	5.1181 130	9.0551 230	1.5748 40	.118 3.0	—	37,500	33,000	12.8
6228	5.5118 140	9.8425 250	1.6535 42	.118 3.0	—	37,500	33,500	16.5
6230	5.9055 150	10.6299 270	1.7717 45	.118 3.0	—	39,500	37,500	20.7
6232	6.2992 160	11.4173 290	1.8898 48	.118 3.0	—	41,500	42,000	31.5
6234	6.6929 170	12.2047 310	2.0472 52	.157 4.0	—	47,500	50,000	38.6
6236	7.0866 180	12.5984 320	2.0472 52	.157 4.0	—	51,000	54,000	40.3
6238	7.4803 190	13.3858 340	2.1654 55	.157 4.0	—	57,500	63,500	50.7
6240	7.8740 200	14.1732 360	2.2835 58	.157 4.0	—	60,800	70,000	62.2
6244	8.6614 220	15.7480 400	2.5590 65	.157 4.0	—	67,000	81,500	66.6

SINGLE ROW RADIAL BALL BEARINGS

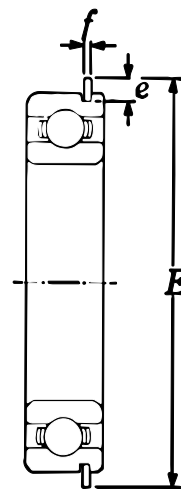
Units: INCHES
Millimeters



Snap Ring Groove Dimensions			Snap Ring Dimensions			Limiting Speed (RPM)			Bore Diameter No.
D_n (max)	a_n (max)	b_n (min)	E (max)	f (max)	e	Grease	Oil	LU, LLU	
7.230	.224	.150	7.99	.120	.375	3,400	4,000	2,300	21
183.64	5.69	3.81	202.9	3.05	9.52				
7.624	.224	.150	8.38	.120	.375	3,200	3,800	2,200	22
193.65	5.69	3.81	212.9	3.05	9.52				
—	—	—	—	—	—	2,900	3,400	2,000	24
—	—	—	—	—	—	2,300	2,700	—	26
—	—	—	—	—	—	2,100	2,500	—	28
—	—	—	—	—	—	2,000	2,400	—	30
—	—	—	—	—	—	1,900	2,200	—	32
—	—	—	—	—	—	1,800	2,100	—	34
—	—	—	—	—	—	1,700	1,800	—	36
—	—	—	—	—	—	1,800	2,100	—	38
—	—	—	—	—	—	1,700	2,000	—	40
—	—	—	—	—	—	1,500	1,800	—	44



With Snap Ring Groove
62N



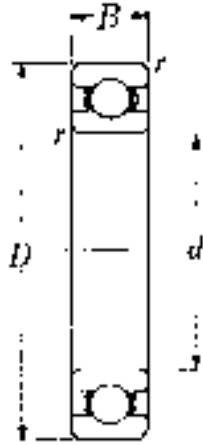
With Snap Ring
62NR



Single Shielded With Snap Ring
62ZNR



Units: INCHES
Millimeters



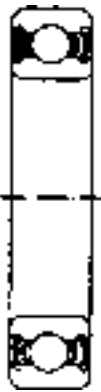
Open Type
63



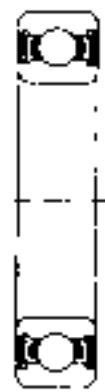
Single
Shielded
63Z



Double
Shielded
63ZZ



Double
Sealed
63LLU



Double
Sealed
63LLB

(Contact Type) (Non-Contact Type)

SINGLE ROW RADIAL BALL BEARINGS

Bearing No.	Bore	O.D.	Width	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
	d	D		r	r ₁	Dynamic C	Static C ₀	
6300	.3937 10	1.3780 35	.4331 11	.024 .6	.020 .5	1,840	785	.117
6301	.4724 12	1.4567 37	.4724 12	.039 1.0	.020 .5	2,180	940	.132
6302	.5906 15	1.6535 42	.5118 13	.039 1.0	.020 .5	2,570	1,220	.181
6303	.6693 17	1.8504 47	.5512 14	.039 1.0	.020 .5	3,050	1,470	.254
6304	.7874 20	2.0472 52	.5906 15	.043 1.1	.020 .5	3,600	1,770	.317
63/22	.8661 22	2.2047 56	.6299 16	.043 1.1	.020 .5	4,150	2,080	.388
6305	.9843 25	2.4409 62	.6693 17	.043 1.1	.020 .5	4,750	2,460	.511
63/28	1.1024 28	2.6772 68	.7087 18	.043 1.1	.020 .5	6,000	3,150	.633
6306	1.1811 30	2.8346 72	.7480 19	.043 1.1	.020 .5	6,000	3,400	.763
63/32	1.2598 32	2.9528 75	.7874 20	.043 1.1	.020 .5	6,700	3,800	.842
6307	1.3780 35	3.1496 80	.8268 21	.059 1.5	.020 .5	7,500	4,300	1.01
6308	1.5748 40	3.5433 90	.9055 23	.059 1.5	.020 .5	9,150	5,400	1.40
6309	1.7717 45	3.9370 100	.9843 25	.059 1.5	.020 .5	11,900	7,200	1.84
6310	1.9685 50	4.3307 110	1.0630 27	.079 2.0	.020 .5	13,900	8,600	2.36
6311	2.1654 55	4.7244 120	1.1417 29	.079 2.0	.020 .5	16,100	10,100	3.02
6312	2.3622 60	5.1181 130	1.2205 31	.083 2.1	.020 .5	18,400	11,700	3.75
6313	2.5591 65	5.5118 140	1.2992 33	.083 2.1	.020 .5	20,800	13,400	4.59
6314	2.7559 70	5.9055 150	1.3780 35	.083 2.1	.020 .5	23,400	15,300	5.56
6315	2.9528 75	6.2992 160	1.4567 37	.083 2.1	.020 .5	25,500	17,400	6.66
6316	3.1496 80	6.6929 170	1.5354 39	.083 2.1	.020 .5	27,600	19,500	7.91
6317	3.3465 85	7.0866 180	1.6142 41	.118 3.0	.020 .5	29,800	21,800	9.33
6318	3.5433 90	7.4803 190	1.6929 43	.118 3.0	.020 .5	32,000	24,100	10.8
6319	3.7402 95	7.8740 200	1.7717 45	.118 3.0	.020 .5	34,500	26,600	12.5
6320	3.9370 100	8.4646 215	1.8504 47	.118 3.0	—	39,000	31,500	15.4
6321	4.1339 105	8.8583 225	1.9291 49	.118 3.0	—	41,500	34,500	17.7
6322	4.3307 110	9.4488 240	1.9685 50	.118 3.0	—	46,000	40,500	21.0
6324	4.7244 120	10.2362 260	2.1654 55	.118 3.0	—	46,500	41,500	27.3
6326	5.1181 130	11.0236 280	2.2835 58	.157 4.0	—	51,500	48,000	33.3
6328	5.5118 140	11.8110 300	2.4409 62	.157 4.0	—	57,000	55,500	40.8
6330	5.9055 150	12.5984 320	2.5591 65	.157 4.0	—	61,500	63,500	57.8
6332	6.2992 160	13.3858 340	2.6772 68	.157 4.0	—	62,500	64,500	63.9
6334	6.6929 170	14.1732 360	2.8346 72	.157 4.0	—	73,500	80,000	76.1
6336	7.0866 180	14.9606 380	2.9528 75	.157 4.0	—	79,500	91,500	93.5
6338	7.4803 190	15.7480 400	3.0709 78	.197 5.0	—	79,500	93,000	108
6340	7.8740 200	16.5354 420	3.1496 80	.197 5.0	—	92,000	113,000	122
6344	8.6614 220	18.1102 460	3.4650 88	.157 4.0	—	92,500	116,000	134

SINGLE ROW RADIAL BALL BEARINGS

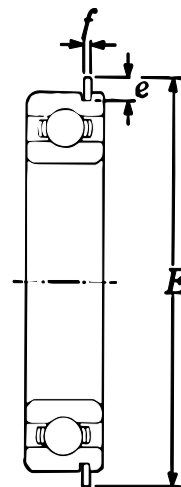
Units: **INCHES**
Millimeters



Snap Ring Groove Dimensions			Snap Ring Dimensions			Limiting Speed (RPM)			Bore Diameter No.
D_n (max)	a_n (max)	b_n (min)	E (max)	f (max)	e	Grease	Oil	LU, LLU	
1.306	.081	.065	1.56	.042	.125	23,000	27,000	16,000	00
33.17	2.06	1.65	39.7	1.07	3.18				
1.369	.081	.065	1.63	.042	.125	20,000	24,000	15,000	01
34.77	2.06	1.65	41.3	1.07	3.18				
1.565	.081	.065	1.82	.042	.125	17,000	21,000	12,000	02
39.75	2.06	1.65	46.3	1.07	3.18				
1.756	.097	.065	2.07	.042	.156	16,000	19,000	11,000	03
44.60	2.46	1.65	52.7	1.07	3.96				
1.958	.097	.065	2.28	.042	.156	14,000	17,000	10,000	04
49.73	2.46	1.65	57.9	1.07	3.96				
2.110	.097	.065	2.43	.042	.156	13,000	15,000	9,200	/22
53.59	2.46	1.65	61.7	1.07	3.96				
2.347	.129	.087	2.67	.065	.156	12,000	14,000	8,100	05
59.61	3.28	2.20	67.7	1.65	3.96				
2.552	.129	.087	2.94	.065	.188	11,000	13,000	7,400	/28
64.82	3.28	2.20	74.6	1.65	4.77				
2.709	.129	.087	3.09	.065	.188	10,000	12,000	6,600	06
68.81	3.28	2.20	78.6	1.65	4.77				
2.828	.129	.087	3.21	.065	.188	9,500	11,000	6,500	/32
71.83	3.28	2.20	81.6	1.65	4.77				
3.024	.129	.087	3.41	.065	.188	8,800	10,000	6,000	07
76.81	3.28	2.20	86.6	1.65	4.77				
3.417	.129	.118	3.80	.095	.188	7,800	9,200	5,300	08
86.79	3.28	3.00	96.5	2.41	4.77				
3.811	.129	.118	4.19	.095	.188	7,000	8,200	4,700	09
96.80	3.28	3.00	106.5	2.41	4.77				
4.205	.129	.118	4.59	.095	.188	6,400	7,500	4,200	10
106.81	3.28	3.00	116.6	2.41	4.77				
4.536	.160	.134	5.11	.109	.281	5,800	6,800	3,900	11
115.21	4.06	3.40	129.7	2.77	7.13				
4.930	.160	.134	5.50	.109	.281	5,400	6,300	3,600	12
125.22	4.06	3.40	139.7	2.77	7.13				
5.324	.193	.134	5.89	.109	.281	4,900	5,800	3,300	13
135.23	4.90	3.40	149.7	2.77	7.13				
5.718	.193	.134	6.29	.109	.281	4,600	5,400	3,100	14
145.24	4.90	3.40	159.7	2.77	7.13				
6.111	.193	.134	6.68	.109	.281	4,300	5,000	2,900	15
155.22	4.90	3.40	169.7	2.77	7.13				
6.443	.224	.150	7.20	.120	.375	4,000	4,700	2,700	16
163.65	5.69	3.80	182.9	3.05	9.52				
6.837	.224	.150	7.59	.120	.375	3,800	4,500	2,600	17
173.66	5.69	3.80	192.9	3.05	9.52				
7.230	.224	.150	7.99	.120	.375	3,600	4,200	2,400	18
183.64	5.69	3.80	202.9	3.05	9.52				
7.624	.224	.150	8.38	.120	.375	3,300	3,900	2,300	19
193.65	5.69	3.80	212.9	3.05	9.52				
—	—	—	—	—	—	3,200	3,700	2,200	20
—	—	—	—	—	—	3,000	3,600	2,100	21
—	—	—	—	—	—	2,900	3,400	1,900	22
—	—	—	—	—	—	2,600	3,100	—	24
—	—	—	—	—	—	2,400	2,800	—	26
—	—	—	—	—	—	2,200	2,600	—	28
—	—	—	—	—	—	2,100	2,400	—	30
—	—	—	—	—	—	1,900	2,300	—	32
—	—	—	—	—	—	1,800	2,100	—	34
—	—	—	—	—	—	1,700	2,000	—	36
—	—	—	—	—	—	1,600	1,900	—	38
—	—	—	—	—	—	1,500	1,800	—	40
—	—	—	—	—	—	1,400	1,600	—	44



With Snap Ring Groove 63N



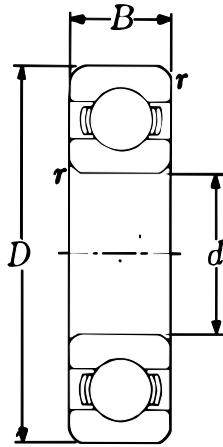
With Snap Ring 63NR



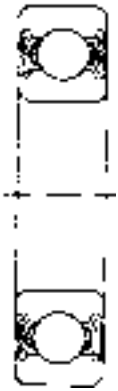
Single Shielded With Snap Ring 63ZNR



Units: INCHES
Millimeters



Open Type
64



Double Sealed
64LLB
(Contact Type)



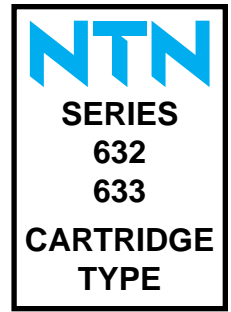
Double
Shielded
64ZZ

SINGLE ROW RADIAL BALL BEARINGS

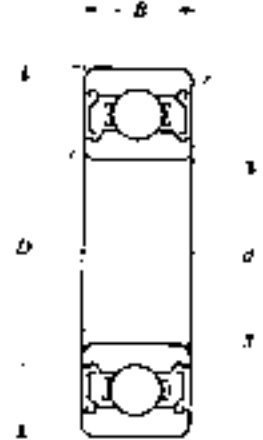
Bearing Number	Bore		Width B	Fillet Radius r	Basic Load Ratings (lbs)		Weight (lbs)	Limiting Speed (RPM)			Bore Dia. No.
	d	D			Dynamic C	Static C ₀		Grease	Oil	LU,LLU	
6403	.6693 17	2.4409 62	.6693 17	.043 1.1	5,100	2,420	.595	14,000	16,000	9,500	03
6404	.7874 20	2.8346 72	.7480 19	.043 1.1	6,400	3,150	.882	12,000	14,000	8,000	04
6405	.9843 25	3.1496 80	.8268 21	.059 1.5	7,800	3,950	1.17	10,000	12,000	6,900	05
6406	1.1811 30	3.5433 90	.9055 23	.059 1.5	9,750	5,350	1.62	8,800	10,000	5,800	06
6407	1.3780 35	3.9370 100	.9843 25	.059 1.5	12,400	7,000	2.10	7,800	9,100	5,100	07
6408	1.5748 40	4.3307 110	1.0630 27	.079 2.0	14,300	8,200	2.71	7,000	8,200	4,700	08
6409	1.7717 45	4.7244 120	1.1417 29	.079 2.0	17,300	10,100	3.37	6,300	7,400	4,300	09
6410	1.9685 50	5.1181 130	1.2205 31	.083 2.1	18,700	11,100	4.14	5,700	6,700	—	10
6411	2.1654 55	5.5118 140	1.2992 33	.083 2.1	20,000	12,100	5.05	5,200	6,100	—	11
6412	2.3622 60	5.9055 150	1.3780 35	.083 2.1	22,900	14,400	6.11	4,800	5,700	—	12
6413	2.5591 65	6.2992 160	1.4567 37	.083 2.1	24,900	16,200	7.28	4,400	5,200	—	13
6414	2.7559 70	7.0866 180	1.6535 42	.118 3.0	28,800	20,100	10.6	4,100	4,800	—	14
6415	2.9528 75	7.4803 190	1.7717 45	.118 3.0	31,000	22,300	12.6	3,800	4,500	—	15
6416	3.1496 80	7.8740 200	1.8898 48	.118 3.0	37,000	28,200	14.9	3,600	4,200	—	16
6417	3.3465 85	8.2677 210	2.0472 52	.157 4.0	37,000	28,700	17.5	3,400	4,000	—	17
6418	3.5433 90	8.8583 225	2.1260 54	.157 4.0	41,500	33,500	25.1	3,200	3,800	—	18
6419	3.7402 95	9.4488 240	2.1654 55	.157 4.0	42,000	34,500	29.5	3,000	3,500	—	19
6420	3.9370 100	9.8425 250	2.2835 58	.157 4.0	46,000	39,500	33.1	2,900	3,400	—	20
6421	4.1339 105	10.2362 260	2.3622 60	.157 4.0	46,500	40,000	37.0	2,700	3,200	—	21
6422	4.3307 110	11.0236 280	2.5591 65	.157 4.0	55,500	51,000	47.0	2,600	3,000	—	22
6424	4.7244 120	12.2047 310	2.8346 72	.197 5.0	65,500	64,500	63.9	2,300	2,800	—	24
6426	5.1181 130	13.3858 340	3.0709 78	.197 5.0	68,000	67,000	83.8	2,200	2,500	—	26

SINGLE ROW RADIAL BALL BEARINGS

Units: INCHES
Millimeters



Bearing No.	Bore	O.D.	Width	Fillet Radius	Basic Load Ratings (lbs)		Weight (lbs)
	d	D	B	r	Dynamic C	Static C ₀	
63204ZZ	.7874 20	1.8504 47	.8110 20.6	.039 1.0	2,870	1,500	.34
63205ZZ	.9843 25	2.0472 52	.8110 20.6	.039 1.0	3,150	1,770	.39
63206ZZ	1.1811 30	2.4409 62	.9370 23.8	.039 1.0	4,400	2,540	.63
63207ZZ	1.3780 35	2.8346 72	1.0630 27.0	.043 1.1	5,750	3,450	.96
63208ZZ	1.5748 40	3.1496 80	1.1890 30.2	.043 1.1	6,550	4,000	1.28
63209ZZ	1.7717 45	3.3465 85	1.1890 30.2	.043 1.1	7,350	4,600	1.37
63210ZZ	1.9685 50	3.5433 90	1.1890 30.2	.043 1.1	7,900	5,200	1.45
63211ZZ	2.1654 55	3.9370 100	1.3110 33.3	.059 1.5	9,750	6,550	2.04
63212ZZ	2.3622 60	4.3307 110	1.4370 36.5	.059 1.5	11,800	8,150	2.80
63304ZZ	.7874 20	2.0472 52	.8740 22.2	.043 1.1	3,600	1,770	.48
63305ZZ	.9843 25	2.4409 62	1.0000 25.4	.043 1.1	4,750	2,460	.78
63306ZZ	1.1811 30	2.8346 72	1.1890 30.2	.043 1.1	6,000	3,400	1.13
63307ZZ	1.3780 35	3.1496 80	1.3740 34.9	.059 1.5	7,500	4,300	1.64
63308ZZ	1.5748 40	3.5433 90	1.4370 36.5	.059 1.5	9,150	5,400	2.06
63309ZZ	1.7717 45	3.9370 100	1.5630 39.7	.059 1.5	11,900	7,200	3.00
63310ZZ	1.9685 50	4.3307 110	1.7480 44.4	.079 2.0	13,900	8,600	3.75
63311ZZ	2.1654 55	4.7244 120	1.9370 49.2	.079 2.0	16,100	10,100	5.12
63312ZZ	2.3622 60	5.1181 130	2.1260 54.0	.083 2.1	18,400	11,700	6.50
63313ZZ	2.5591 65	5.5118 140	2.3110 58.7	.083 2.1	20,800	13,400	8.17
63314ZZ	2.7559 70	5.9055 150	2.5000 63.5	.083 2.1	23,400	15,300	10.5
63315ZZ	2.9528 75	6.2992 160	2.6890 68.3	.083 2.1	25,500	17,400	12.5
63316ZZ	3.1496 80	6.6929 170	2.6890 68.3	.083 2.1	27,600	19,500	14.1
63317ZZ	3.3465 85	7.0866 180	2.8740 73.0	.118 3.0	29,800	21,800	16.9
63318ZZ	3.5433 90	7.4803 190	2.8740 73.0	.118 3.0	32,000	24,100	18.7
63320ZZ	3.9370 100	8.4646 215	3.2500 82.55	.118 3.0	39,000	31,500	26.72

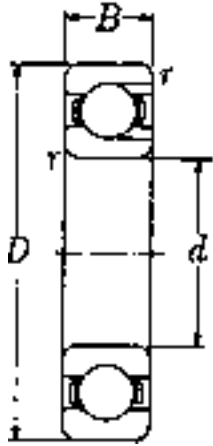


NTN
SERIES
BL2

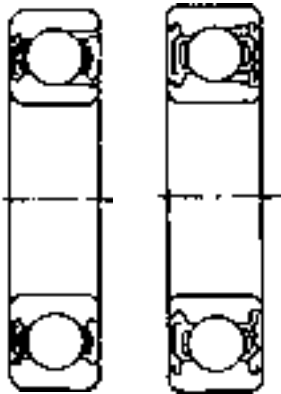
Maximum
Type

Units: INCHES
Millimeters

SINGLE ROW RADIAL BALL BEARINGS



Open Type



Single
Shielded
Z

Double
Shielded
ZZ

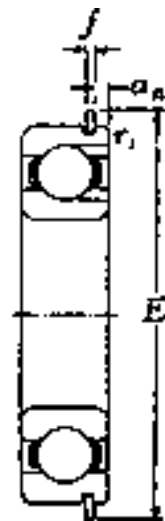
Bearing No.	Bore		Width	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
	d	D		B	r	r ₁	Dynamic C	
BL205	.9843 25	2.0472 52	.5906 15	.039 1	.020 .5	3,800	2,360	.312
BL2/28	1.1024 28	2.2835 58	.6299 16	.039 1	.020 .5	5,250	3,300	.420
BL206	1.1811 30	2.4409 62	.6299 16	.039 1	.020 .5	5,600	3,650	.471
BL2/32	1.2598 32	2.5591 65	.6693 17	.039 1	.020 .5	6,100	3,900	.540
BL207	1.3780 35	2.8346 72	.6693 17	.043 1.1	.020 .5	7,400	4,950	.700
BL208	1.5748 40	3.1496 80	.7087 18	.043 1.1	.020 .5	8,800	6,250	.880
BL209	1.7717 45	3.3465 85	.7480 19	.043 1.1	.020 .5	9,900	7,150	1.00
BL210	1.9685 50	3.5433 90	.7874 20	.043 1.1	.020 .5	10,300	7,850	1.10
BL211	2.1654 55	3.9370 100	.8268 21	.059 1.5	.020 .5	12,800	9,850	1.50
BL212	2.3622 60	4.3307 110	.8661 22	.059 1.5	.020 .5	15,500	12,200	1.90
BL213	2.5591 65	4.7244 120	.9055 23	.059 1.5	.020 .5	16,900	13,500	2.40
BL214	2.7559 70	4.9213 125	.9449 24	.059 1.5	.020 .5	18,300	14,900	2.60
BL215	2.9528 75	5.1181 130	.9843 25	.059 1.5	.020 .5	19,100	16,100	2.79
BL216	3.1496 80	5.5118 140	1.0236 26	.079 2.0	.020 .5	22,400	19,100	3.50
BL217	3.3465 85	5.9055 150	1.1024 28	.079 2.0	.020 .5	24,000	20,800	4.49
BL218	3.5433 90	6.2992 160	1.1811 30	.079 2.0	.020 .5	29,500	25,700	5.50
BL219	3.7402 95	6.6929 170	1.2598 32	.079 2.0	.020 .5	32,000	27,600	6.82
BL220	3.9370 100	7.0866 180	1.3386 34	.079 2.0	.020 .5	36,000	31,500	8.03
BL221	4.1339 105	7.4803 190	1.4173 36	.079 2.0	.020 .5	39,000	35,500	9.72
BL222	4.3307 110	7.8740 200	1.4961 38	.079 2.0	.020 .5	42,500	39,500	11.3

SINGLE ROW RADIAL BALL BEARINGS

Units: **INCHES**
Millimeters



Snap Ring Dimensions		f	Limiting Speed (RPM)		Bore Diameter No.
a _n (max)	E (max)		Grease	Oil	
.097	2.28	.042	12,000	14,000	05
2.46	57.9	1.07			
.097	2.51	.042	11,000	13,000	/28
2.46	63.7	1.07			
.129	2.67	.065	10,000	12,000	06
3.28	67.7	1.65			
.129	2.78	.065	9,500	11,000	/32
3.28	70.7	1.65			
.129	3.09	.065	8,800	10,000	07
3.28	78.6	1.65			
.129	3.41	.065	7,800	9,200	08
3.28	86.6	1.65			
.129	3.61	.065	7,000	8,200	09
3.28	91.6	1.65			
.129	3.80	.095	6,400	7,500	10
3.28	96.5	2.41			
.129	4.19	.095	5,800	6,800	11
3.28	106.5	2.41			
.129	4.59	.095	5,400	6,300	12
3.28	116.6	2.41			
.160	5.11	.109	4,900	5,800	13
4.06	129.7	2.77			
.160	5.30	.109	4,600	5,400	14
4.06	134.7	2.77			
.160	5.50	.109	4,300	5,000	15
4.06	139.7	2.77			
.193	5.89	.109	4,000	4,700	16
4.90	149.7	2.77			
.193	6.29	.109	3,800	4,400	17
4.90	159.7	2.77			
.193	6.68	.109	3,600	4,200	18
4.90	169.7	2.77			
.224	7.20	.120	3,400	3,900	18
5.69	182.9	3.05			
.224	7.59	.120	3,200	3,700	20
5.69	192.9	3.05			
.224	7.99	.120	3,000	3,600	21
5.69	202.9	3.05			
.224	8.38	.120	2,900	3,400	22
5.69	212.9	3.05			



With Snap Ring
NR



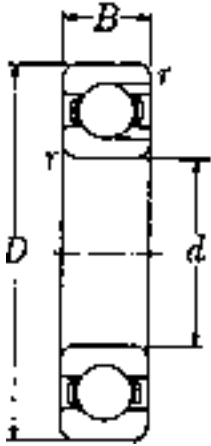
Single Shielded
With Snap Ring
ZNR



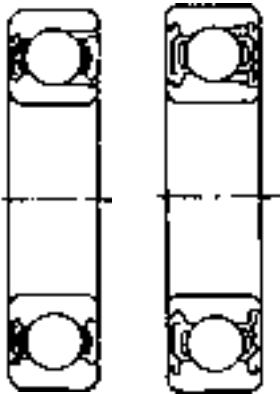
Units: INCHES
Millimeters

SINGLE ROW RADIAL BALL BEARINGS

Bearing No.	Bore	O.D.	Width B	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
	d	D		r	r ₁	Dynamic C	Static C ₀	
BL304	.7874 20	2.0472 52	.5906 15	.043 1.1	.020 .5	4,550	2,530	.359
BL3/22	.8661 22	2.2047 56	.6299 16	.043 1.1	.020 .5	5,250	2,980	.440
BL305	.9843 25	2.4409 62	.6693 17	.043 1.1	.020 .5	6,050	3,500	.568
BL3/28	1.1024 28	2.6772 68	.7087 18	.043 1.1	.020 .5	7,600	4,500	.720
BL306	1.1811 30	2.8346 72	.7480 19	.043 1.1	.020 .5	7,400	4,650	.858
BL3/32	1.2598 32	2.9528 75	.7874 20	.043 1.1	.020 .5	8,300	5,250	.960
BL307	1.3780 35	3.1496 80	.8268 21	.059 1.5	.020 .5	9,800	6,450	1.10
BL308	1.5748 40	3.5433 90	.9055 23	.059 1.5	.020 .5	12,300	8,050	1.50
BL309	1.7717 45	3.9370 100	.9843 25	.059 1.5	.020 .5	14,700	9,900	2.10
BL310	1.9685 50	4.3307 110	1.0630 27	.079 2.0	.020 .5	17,200	11,800	2.68
BL311	2.1654 55	4.7244 120	1.1417 29	.079 2.0	.020 .5	21,100	15,200	3.41
BL312	2.3622 60	5.1181 130	1.2205 31	.079 2.0	.020 .5	24,100	17,600	4.22
BL313	2.5591 65	5.5118 140	1.2992 33	.079 2.0	.020 .5	27,300	20,200	5.19
BL314	2.7559 70	5.9055 150	1.3780 35	.079 2.0	.020 .5	30,500	23,000	6.49
BL315	2.9528 75	6.2992 160	1.4567 37	.079 2.0	.020 .5	33,500	26,000	7.92
BL316	3.1496 80	6.6929 170	1.5354 39	.079 2.0	.020 .5	36,000	29,200	8.69
BL317	3.3465 85	7.0866 180	1.6142 41	.118 3.0	.020 .5	39,000	32,500	10.3
BL318	3.5433 90	7.4803 190	1.6929 43	.118 3.0	.020 .5	42,000	36,000	13.0
BL319	3.7402 95	7.8740 200	1.7717 45	.118 3.0	.020 .5	45,000	40,000	15.0
BL320	3.9370 100	8.4646 215	1.8504 47	.118 3.0	—	51,000	47,500	18.3
BL321	4.1339 105	8.8583 225	1.9291 49	.118 3.0	—	54,000	52,000	20.8
BL322	4.3307 110	9.4488 240	1.9685 50	.118 3.0	—	60,500	60,500	24.3



Open Type



Single Shielded
Z

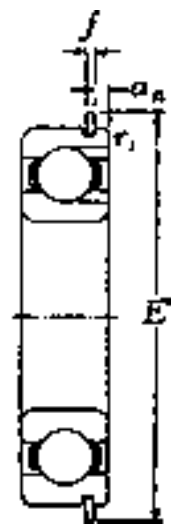
Double Shielded
ZZ

SINGLE ROW RADIAL BALL BEARINGS

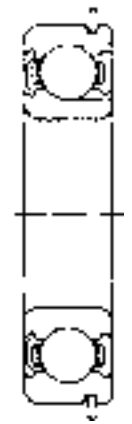
Units: **INCHES**
Millimeters



Snap Ring Dimensions		f	Limiting Speed (RPM)		Bore Diameter No.
a _n (max)	E (max)		Grease	Oil	
.097	2.28	.042	13,000	15,000	04
2.46	57.9	1.07			
.097	2.43	.042	12,000	14,000	/22
2.46	61.7	1.07			
.129	2.67	.065	11,000	12,000	05
3.28	67.7	1.65			
.129	2.94	.065	9,600	11,000	/28
3.28	74.6	1.65			
.129	3.09	.065	9,000	11,000	06
3.28	78.6	1.65			
.129	3.21	.065	8,600	10,000	/32
3.28	81.6	1.65			
.129	3.41	.065	7,900	9,300	07
3.28	86.6	1.65			
.129	3.80	.095	7,000	8,200	08
3.28	96.5	2.41			
.129	4.19	.095	6,300	7,400	09
3.28	106.5	2.41			
.129	4.59	.095	5,700	6,700	10
3.28	116.6	2.41			
.160	5.11	.109	5,200	6,100	11
4.06	129.7	2.77			
.160	5.50	.109	4,800	5,700	12
4.06	139.7	2.77			
.193	5.89	.109	4,400	5,200	13
4.90	149.7	2.77			
.193	6.29	.109	4,100	4,800	14
4.90	159.7	2.77			
.193	6.68	.109	3,800	4,500	15
4.90	169.7	2.77			
.224	7.20	.120	3,600	4,200	16
5.69	182.9	3.05			
.224	7.59	.120	3,400	4,000	17
5.69	192.9	3.05			
.224	7.99	.120	3,200	3,800	18
5.69	202.9	3.05			
.224	8.38	.120	3,000	3,500	19
5.69	212.9	3.05			
—	—	—	2,900	3,400	20
—	—	—	2,700	3,200	21
—	—	—	2,600	3,100	22



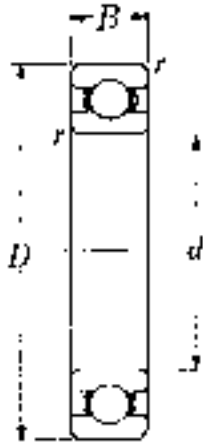
With Snap Ring
NR



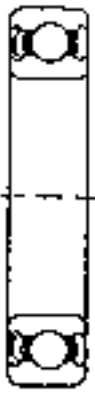
Single Shielded
With Snap Ring
ZNR



Units: INCHES
Millimeters



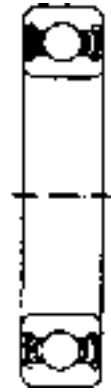
Open Type
TMB2



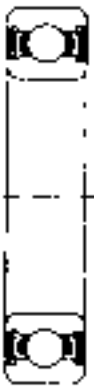
Single
Shielded
TMB2Z



Double
Shielded
TMB2ZZ



Double
Sealed
TMB2LLU
(Contact Type)



Double
Sealed
TMB2LLB
(Non-Contact Type)

SINGLE ROW RADIAL BALL BEARINGS

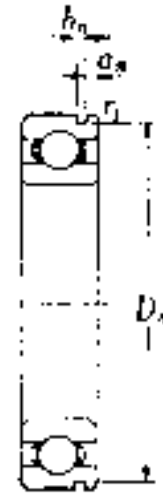
Bearing No.	Bore d	O.D. D	Width B	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
				r	r ₁	Dynamic C	Static C ₀	
TMB200	.3937 10	1.1811 30	.3543 9	.024 .6	.020 .5	1,150	540	.071
TMB204	.7874 20	1.8504 47	.5512 14	.039 1	.020 .5	2,890	1,500	.234
TMB2/22	.8661 22	1.9685 50	.5512 14	.039 1	.020 .5	2,900	1,530	.258
TMB2/28	1.1024 28	2.2835 58	.6299 16	.039 1	.020 .5	4,000	2,190	.377
TMB206	1.1811 30	2.4409 62	.6299 16	.039 1	.020 .5	4,400	2,540	.439
TMB2/32	1.2598 32	2.5591 65	.6693 17	.039 1	.020 .5	4,650	2,610	.498
TMB207	1.3780 35	2.8346 72	.6693 17	.043 1.1	.020 .5	5,750	3,450	.635
TMB208	1.5748 40	3.1496 80	.7087 18	.043 1.1	.020 .5	6,550	4,000	.807
TMB209	1.7717 45	3.3465 85	.7480 19	.043 1.1	.020 .5	7,350	4,600	.897
TMB210	1.9685 50	3.5433 90	.7874 20	.043 1.1	.020 .5	7,900	5,200	1.02
TMB211	2.1654 55	3.9370 100	.8268 21	.059 1.5	.020 .5	9,750	6,550	1.34
TMB212	2.3622 60	4.3307 110	.8661 22	.059 1.5	.020 .5	11,800	8,150	1.73
TMB213	2.5591 65	4.7244 120	.9055 23	.059 1.5	.020 .5	12,900	9,000	2.18
TMB214	2.7559 70	4.9213 125	.9449 24	.059 1.5	.020 .5	14,000	9,900	2.36
TMB215	2.9528 75	5.1181 130	.9843 25	.059 1.5	.020 .5	14,900	11,100	2.60
TMB216	3.1496 80	5.5118 140	1.0236 26	.079 2.0	.020 .5	16,500	11,900	3.09
TMB217	3.3465 85	5.9055 150	1.1024 28	.079 2.0	.020 .5	18,700	14,300	3.95
TMB218	3.5433 90	6.2992 160	1.1811 30	.079 2.0	.020 .5	21,600	16,100	4.74
TMB219	3.7402 95	6.6929 170	1.2598 32	.079 2.0	.020 .5	24,500	18,400	5.78
TMB220	3.9370 100	7.0866 180	1.3386 34	.079 2.0	.020 .5	27,500	20,900	6.92

SINGLE ROW RADIAL BALL BEARINGS

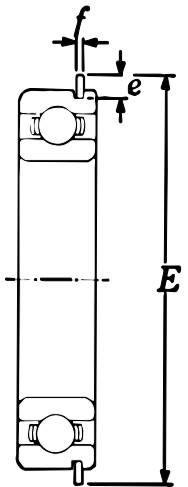
Units: **INCHES**
Millimeters



Snap Ring Groove Dimensions			Snap Ring Dimensions			Limiting Speed (RPM)			Bore Diameter No.
D _n (max)	a _n (max)	b _n (min)	E (max)	f	e	Grease	Oil	LLU	
1.109	.081	.065	1.37	.042	.125	25,000	30,000	18,000	00
28.17	2.06	1.65	34.7	1.07	3.17				
1.756	.097	.065	2.07	.042	.156	16,000	18,000	10,000	04
44.60	2.46	1.65	52.7	1.07	3.96				
1.874	.097	.065	2.19	.042	.156	14,000	17,000	9,700	/22
47.60	2.46	1.65	55.7	1.07	3.96				
2.189	.097	.065	2.51	.042	.156	12,000	14,000	8,100	/28
55.60	2.46	1.65	63.7	1.07	3.96				
2.347	.129	.087	2.67	.065	.156	11,000	13,000	7,300	06
59.61	3.28	2.21	67.7	1.65	3.96				
2.465	.129	.087	2.78	.065	.156	11,000	12,000	7,100	/32
62.61	3.28	2.21	70.7	1.65	3.96				
2.709	.129	.087	3.09	.065	.188	9,800	11,000	6,300	07
68.81	3.28	2.21	78.6	1.65	4.77				
3.024	.129	.087	3.41	.065	.188	8,700	10,000	5,600	08
76.81	3.28	2.21	86.6	1.65	4.77				
3.221	.129	.087	3.61	.065	.188	7,800	9,200	5,200	09
81.81	3.28	2.21	91.6	1.65	4.77				
3.417	.129	.118	3.80	.095	.188	7,100	8,300	4,700	10
86.79	3.28	3.00	96.5	2.41	4.77				
3.811	.129	.118	4.19	.095	.188	6,400	7,600	4,300	11
96.80	3.28	3.00	106.5	2.41	4.77				
4.205	.129	.118	4.59	.095	.188	6,000	7,000	3,800	12
106.81	3.28	3.00	116.6	2.41	4.77				
4.536	.160	.134	5.11	.109	.281	5,500	6,500	3,600	13
115.21	4.06	3.40	129.7	2.77	7.13				
4.733	.160	.134	5.30	.109	.281	5,100	6,000	3,400	14
120.22	4.06	3.40	134.7	2.77	7.13				
4.930	.160	.134	5.50	.109	.281	4,800	5,600	3,200	15
125.22	4.06	3.40	139.7	2.77	7.13				
5.324	.193	.134	5.89	.109	.281	4,500	5,300	3,000	16
135.23	4.90	3.40	149.7	2.77	7.13				
5.718	.193	.134	6.29	.109	.281	4,200	5,000	2,800	17
145.24	4.90	3.40	159.7	2.77	7.13				
6.111	.193	.134	6.68	.109	.281	4,000	4,700	2,600	18
155.22	4.90	3.40	169.7	2.77	7.13				
6.443	.224	.150	7.20	.120	.375	3,700	4,400	2,500	19
163.65	5.69	3.81	182.9	3.05	9.52				
6.837	.224	.150	7.59	.120	.375	3,500	4,200	2,300	20
173.66	5.69	3.81	192.9	3.05	9.52				



With Snap Ring Groove TMB2N



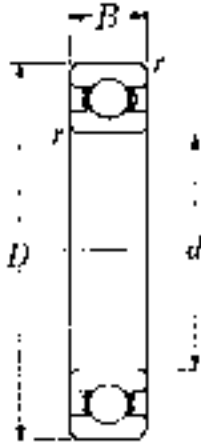
With Snap Ring TMB2NR



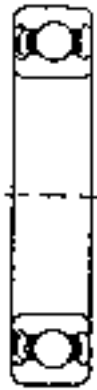
Single Shielded With Snap Ring TMB2ZNR



Units: INCHES
Millimeters



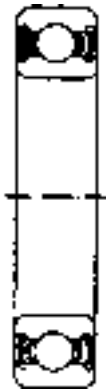
Open Type
TMB2



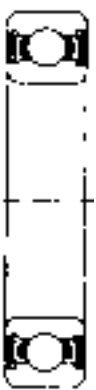
Single
Shielded
TMB2Z



Double
Shielded
TMB2ZZ



Double
Sealed
TMB2LLU
(Contact Type)



Double
Sealed
TMB2LLB
(Non-Contact Type)

SINGLE ROW RADIAL BALL BEARINGS

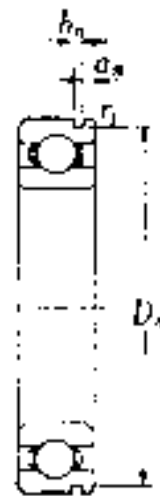
Bearing No.	Bore	O.D.	Width	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
	d	D	B	r	r ₁	Dynamic C	Static C ₀	
TMB221	4.1339 105	7.4803 190	1.4173 36	.083 2.1	.020 .5	29,900	23,500	8.16
TMB222	4.3307 110	7.8740 200	1.4961 38	.083 2.1	.020 .5	32,500	26,300	9.61
TMB224	4.7244 120	8.4646 215	1.5748 40	.083 2.1	—	35,000	29,500	11.4
TMB226	5.1181 130	9.0551 230	1.5748 40	.118 3.0	—	37,500	33,000	12.8
TMB228	5.5118 140	9.8425 250	1.6535 42	.118 3.0	—	37,500	33,500	16.5
TMB230	5.9055 150	10.6299 270	1.7717 45	.118 —	—	39,500	37,500	20.7
TMB232	6.2992 160	11.4173 290	1.8898 48	.118 —	—	41,500	42,000	31.5
TMB234	6.6929 170	12.2047 310	2.0472 52	.197 4.0	—	47,500	50,000	38.6
TMB236	7.0866 180	12.5984 320	2.0472 52	.197 4.0	—	51,000	54,000	40.3
TMB238	7.4803 190	13.3858 340	2.1654 55	.197 4.0	—	57,500	63,500	50.7
TMB240	7.8740 200	14.1732 360	2.2835 58	.197 4.0	—	60,800	70,000	62.2
TMB244	8.6614 220	15.7480 400	2.5590 65	.197 4.0	—	67,000	81,500	66.6

SINGLE ROW RADIAL BALL BEARINGS

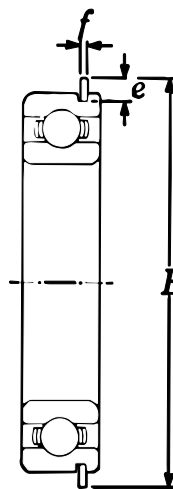
Units: **INCHES**
Millimeters



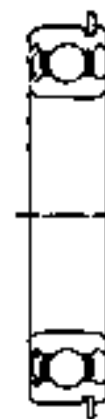
Snap Ring Groove Dimensions			Snap Ring Dimensions			Limiting Speed (RPM)			Bore Diameter No.
D_n (max)	a_n (max)	b_n (min)	E (max)	f (max)	e	Grease	Oil	LU, LLU	
7.230	.224	.150	7.99	.120	.375	3,400	4,000	2,300	21
183.64	5.69	3.81	202.9	3.05	9.52				
7.624	.224	.150	8.38	.120	.375	3,200	3,800	2,200	22
193.65	5.69	3.81	212.9	3.05	9.52				
—	—	—	—	—	—	2,900	3,400	2,000	24
—	—	—	—	—	—	2,300	2,700	—	26
—	—	—	—	—	—	2,100	2,500	—	28
—	—	—	—	—	—	2,000	2,400	—	30
—	—	—	—	—	—	1,900	2,200	—	32
—	—	—	—	—	—	1,800	2,100	—	34
—	—	—	—	—	—	1,700	1,800	—	36
—	—	—	—	—	—	1,800	2,100	—	38
—	—	—	—	—	—	1,700	2,000	—	40
—	—	—	—	—	—	1,500	1,800	—	44



With Snap Ring Groove
TMB2N



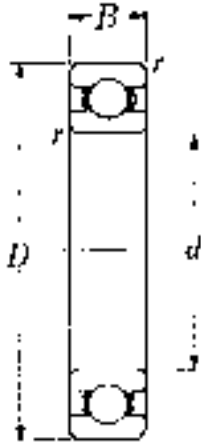
With Snap Ring
TMB2NR



Single Shielded With Snap Ring
TMB2ZNR



Units: INCHES
Millimeters



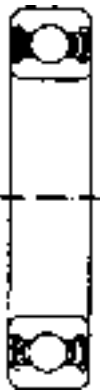
Open Type
TMB3



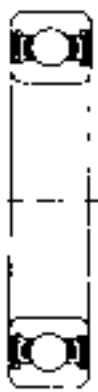
Single
Shielded
TMB3Z



Double
Shielded
TMB3ZZ



Double
Sealed
TMB3LLU
(Contact Type)



Double
Sealed
TMB3LLB
(Non-Contact Type)

SINGLE ROW RADIAL BALL BEARINGS

Bearing No.	Bore	O.D.	Width	Fillet Radii		Basic Load Ratings (lbs)		Weight (lbs)
	d	D		r	r ₁	Dynamic C	Static C ₀	
TMB300	.3937 10	1.3780 35	.4331 11	.024 .6	.020 .5	1,840	785	.117
TMB301	.4724 12	1.4567 37	.4724 12	.039 1.0	.020 .5	2,180	940	.132
TMB302	.5906 15	1.6535 42	.5118 13	.039 1.0	.020 .5	2,570	1,220	.181
TMB303	.6693 17	1.8504 47	.5512 14	.039 1.0	.020 .5	3,050	1,470	.254
TMB304	.7874 20	2.0472 52	.5906 15	.043 1.1	.020 .5	3,600	1,770	.317
TMB3/22	.8661 22	2.2047 56	.6299 16	—	.020 .5	4,150	2,080	.388
TMB305	.9843 25	2.4409 62	.6693 17	.043 1.1	.020 .5	4,750	2,460	.511
TMB3/28	1.1024 28	2.6772 68	.7087 18	.043 1.1	.020 .5	6,000	3,150	.633
TMB306	1.1811 30	2.8346 72	.7480 19	.043 1.1	.020 .5	6,000	3,400	.763
TMB3/32	1.2598 32	2.9528 75	.7874 20	.043 1.1	.020 .5	6,700	3,800	.842
TMB307	1.3780 35	3.1496 80	.8268 21	.059 1.5	.020 .5	7,500	4,300	1.01
TMB308	1.5748 40	3.5433 90	.9055 23	.059 1.5	.020 .5	9,150	5,400	1.40
TMB309	1.7717 45	3.9370 100	.9843 25	.059 1.5	.020 .5	11,900	7,200	1.84
TMB310	1.9685 50	4.3307 110	1.0630 27	.079 2.0	.020 .5	13,900	8,600	2.36
TMB311	2.1654 55	4.7244 120	1.1417 29	.079 2.0	.020 .5	16,100	10,100	3.02
TMB312	2.3622 60	5.1181 130	1.2205 31	.083 2.1	.020 .5	18,400	11,700	3.75
TMB313	2.5591 65	5.5118 140	1.2992 33	.089 2.1	.020 .5	20,800	13,400	4.59
TMB314	2.7559 70	5.9055 150	1.3780 35	.083 2.1	.020 .5	23,400	15,300	5.56
TMB315	2.9528 75	6.2992 160	1.4567 37	.083 2.1	.020 .5	25,500	17,400	6.66
TMB316	3.1496 80	6.6929 170	1.5354 39	.083 2.1	.020 .5	27,600	19,500	7.91
TMB317	3.3465 85	7.0866 180	1.6142 41	.118 3.0	.020 .5	29,800	21,800	9.33
TMB318	3.5433 90	7.4803 190	1.6929 43	.118 3.0	.020 .5	32,000	24,100	10.8
TMB319	3.7402 95	7.8740 200	1.7717 45	.118 3.0	.020 .5	34,500	26,600	12.5
TMB320	3.9370 100	8.4646 215	1.8504 47	.118 3.0	—	39,000	31,500	15.4
TMB321	4.1339 105	8.8583 225	1.9291 49	.118 3.0	—	41,500	34,500	17.7
TMB322	4.3307 110	9.4488 240	1.9685 50	.118 3.0	—	46,000	40,500	21.0
TMB324	4.7244 120	10.2362 260	2.1654 55	.118 3.0	—	46,500	41,500	27.3
TMB326	5.1181 130	11.0236 280	2.2835 58	.157 4.0	—	51,500	48,000	33.3
TMB328	5.5118 140	11.8110 300	2.4409 62	.157 4.0	—	57,000	55,500	40.8
TMB330	5.9055 150	12.5984 320	2.5591 65	.157 4.0	—	61,500	63,500	57.8
TMB332	6.2992 160	13.3858 340	2.6772 68	.157 4.0	—	62,500	64,500	63.9
TMB334	6.6929 170	14.1732 360	2.8346 72	.157 4.0	—	73,500	80,000	76.1
TMB336	7.0866 180	14.9606 380	2.9528 75	.157 4.0	—	79,500	91,500	93.5
TMB338	7.4803 190	15.7480 400	3.0709 78	.197 5.0	—	79,500	93,000	108
TMB340	7.8740 200	16.5354 420	3.1496 80	.197 5.0	—	92,000	113,000	122
TMB344	8.6614 220	18.1102 460	3.4650 88	.197 5.0	—	92,500	116,000	134

SINGLE ROW RADIAL BALL BEARINGS

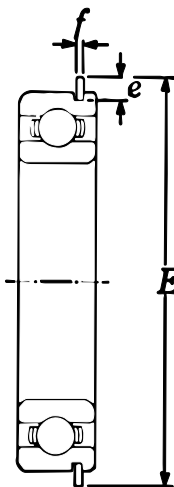
Units: **INCHES**
Millimeters



Snap Ring Groove Dimensions			Snap Ring Dimensions			Limiting Speed (RPM)			Bore Diameter No.
D_n (max)	a_n (max)	b_n (min)	E (max)	f (max)	e	Grease	Oil	LU, LLU	
1.306	.081	.065	1.56	.042	.125	23,000	27,000	16,000	00
33.17	2.06	1.65	39.7	1.07	3.18				
1.369	.081	.065	1.63	.042	.125	20,000	24,000	15,000	01
34.77	2.06	1.65	41.3	1.07	3.18				
1.565	.081	.065	1.82	.042	.125	17,000	21,000	12,000	02
39.75	2.06	1.65	46.3	1.07	3.18				
1.756	.097	.065	2.07	.042	.156	16,000	19,000	11,000	03
44.60	2.46	1.65	52.7	1.07	3.96				
1.958	.097	.065	2.28	.042	.156	14,000	17,000	10,000	04
49.73	2.46	1.65	57.9	1.07	3.96				
2.110	.097	.065	2.43	.042	.156	13,000	15,000	9,200	/22
53.59	2.46	1.65	61.7	1.07	3.96				
2.347	.129	.087	2.67	.065	.156	12,000	14,000	8,100	05
59.61	3.28	2.20	67.7	1.65	3.96				
2.552	.129	.087	2.94	.065	.188	11,000	13,000	7,400	/28
64.82	3.28	2.20	74.6	1.65	4.77				
2.709	.129	.087	3.09	.065	.188	10,000	12,000	6,600	06
68.81	3.28	2.20	78.6	1.65	4.77				
2.828	.129	.087	3.21	.065	.188	9,500	11,000	6,500	/32
71.83	3.28	2.20	81.6	1.65	4.77				
3.024	.129	.087	3.41	.065	.188	8,800	10,000	6,000	07
76.81	3.28	2.20	86.6	1.65	4.77				
3.417	.129	.118	3.80	.095	.188	7,800	9,200	5,300	08
86.79	3.28	3.00	96.5	2.41	4.77				
3.811	.129	.118	4.19	.095	.188	7,000	8,200	4,700	09
96.80	3.28	3.00	106.5	2.41	4.77				
4.205	.129	.118	4.59	.095	.188	6,400	7,500	4,200	10
106.81	3.28	3.00	116.6	2.41	4.77				
4.536	.160	.134	5.11	.109	.281	5,800	6,800	3,900	11
115.21	4.06	3.40	129.7	2.77	7.13				
4.930	.160	.134	5.50	.109	.281	5,400	6,300	3,600	12
125.22	4.06	3.40	139.7	2.77	7.13				
5.324	.193	.134	5.89	.109	.281	4,900	5,800	3,300	13
135.23	4.90	3.40	149.7	2.77	7.13				
5.718	.193	.134	6.29	.109	.281	4,600	5,400	3,100	14
145.24	4.90	3.40	159.7	2.77	7.13				
6.111	.193	.134	6.68	.109	.281	4,300	5,000	2,900	15
155.22	4.90	3.40	169.7	2.77	7.13				
6.443	.224	.150	7.20	.120	.375	4,000	4,700	2,700	16
163.65	5.69	3.80	182.9	3.05	9.52				
6.837	.224	.150	7.59	.120	.375	3,800	4,500	2,600	17
173.66	5.69	3.80	192.9	3.05	9.52				
7.230	.224	.150	7.99	.120	.375	3,600	4,200	2,400	18
183.64	5.69	3.80	202.9	3.05	9.52				
7.624	.224	.150	8.38	.120	.375	3,300	3,900	2,300	19
193.65	5.69	3.80	212.9	3.05	9.52				
—	—	—	—	—	—	3,200	3,700	2,200	20
—	—	—	—	—	—	3,000	3,600	2,100	21
—	—	—	—	—	—	2,900	3,400	1,900	22
—	—	—	—	—	—	2,600	3,100	—	24
—	—	—	—	—	—	2,400	2,800	—	26
—	—	—	—	—	—	2,200	2,600	—	28
—	—	—	—	—	—	2,100	2,400	—	30
—	—	—	—	—	—	1,900	2,300	—	32
—	—	—	—	—	—	1,800	2,100	—	34
—	—	—	—	—	—	1,700	2,000	—	36
—	—	—	—	—	—	1,600	1,900	—	38
—	—	—	—	—	—	1,500	1,800	—	40
—	—	—	—	—	—	1,400	1,600	—	44



With Snap Ring Groove TMB3N

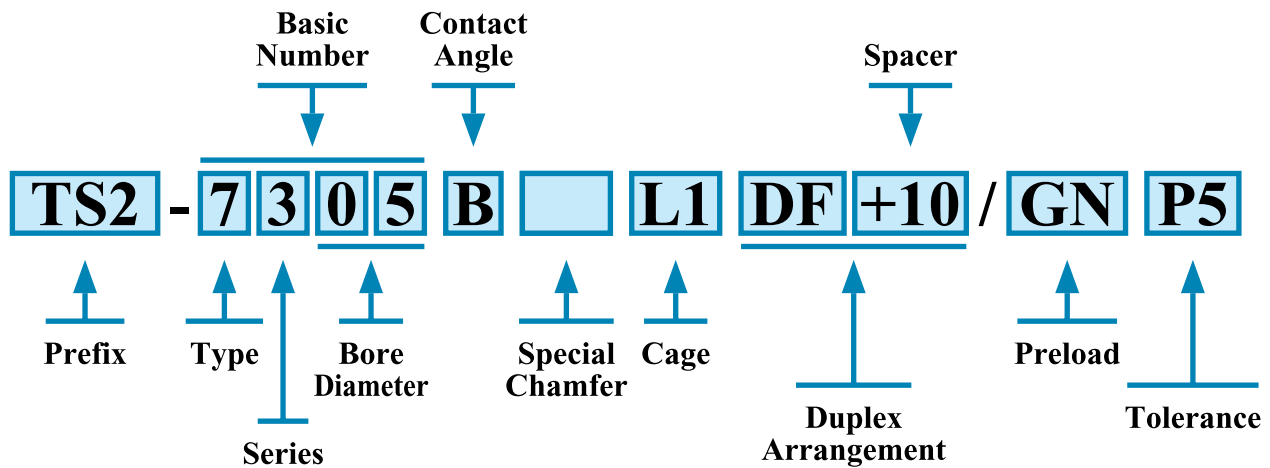


With Snap Ring TMB3NR



Single Shielded With Snap Ring TMB3ZNR

Notes



1. PREFIX

TS2:	Heat stabilization for up to 320°F (160°C)
TS3:	Heat stabilization for up to 390°F (200°C)
TS4:	Heat stabilization for up to 480°F (250°C)
5S:	Ceramic Rolling Elements

2. TYPE

32,33:	Double row angular contact ball bearings with filling slot
52,53:	Double row angular contact ball bearings without filling slot
70,72,73:	Angular contact ball bearings
BNT:	High speed angular contact ball bearings
HSB:	High speed angular contact ball bearings
SF:	Special single row angular contact ball bearings
DE & DF:	Special double row angular contact ball bearings

3. CONTACT ANGLE

No Symbol:	Contact Angle 30°
B:	Contact angle 40°
C:	Contact angle 15°

4. CHAMFER

Xn:	Special chamfer, from 1 onward (X1, X2 ...)
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5. CAGE

No Symbol:	Standard cage
J:	Pressed steel cage
L1:	Machined brass cage
T1:	Phenolic cage
T2:	Plastic cage, nylon or teflon

6. DUPLEX ARRANGEMENT

DB:	Duplex pair, back to back mounting
DF:	Duplex pair, face to face mounting
DT:	Duplex pair, tandem mounting
G:	Single bearings, flush ground universal mount for DB, DF and DT arrangement
GD2:	Pair of universally mountable bearings
+A:	Spacer (A is nominal width of spacer in mm)

7. PRELOAD

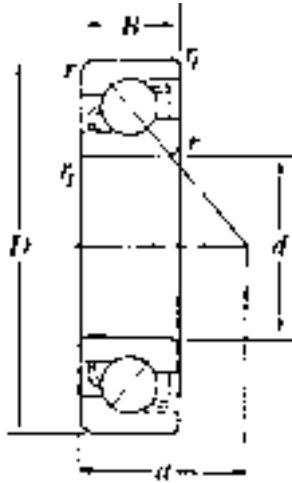
GL:	Light preload
GN:	Normal preload
GM:	Medium preload
GH:	Heavy preload
Gn:	Special preload

8. TOLERANCE

P6:	ISO class 6 (equivalent to ABEC 3)
P5:	ISO class 5 (equivalent to ABEC 5)
P4:	ISO class 4 (equivalent to ABEC 7)
PXn:	Special Tolerance, from 1 onward (PX1, PX2 ...)



Units: INCHES
Millimeters



40°
Contact Angle
72B

SINGLE ROW ANGULAR CONTACT BALL BEARINGS

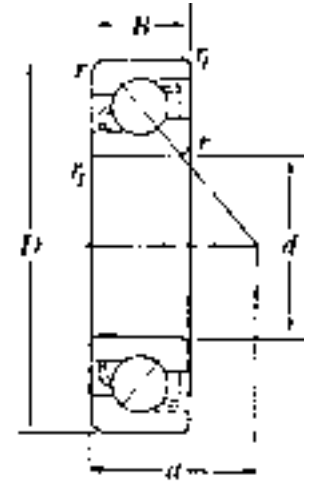
Bearing No.	Bore <i>d</i>	O.D. <i>D</i>	Width <i>B</i>	Fillet Radius		Load Center <i>a</i>	Basic Load Ratings (lbs)		Limiting Speeds (rpm)		Weight (lbs)	Limiting Speeds (rpm)		
				<i>r</i>	<i>r1</i>		Dynamic <i>C</i>	Static <i>Co</i>	Grease	Oil		Grease	Oil	
													Duplex: DB, DF, DT	
7200B	0.3937 10	1.1811 30	0.3543 9	0.024 0.6	0.012 0.3	0.51 13	1,120	565	24,000	32,000	0.064	19,000	26,000	
7201B	0.4724 12	1.2598 32	0.3937 10	0.024 0.6	0.012 0.3	0.55 14	1,480	750	21,000	28,000	0.079	17,000	23,000	
7202B	0.5906 15	1.3780 35	0.4331 11	0.024 0.6	0.012 0.3	0.63 16	1,880	980	18,000	25,000	0.101	15,000	20,000	
7203B	0.6693 17	1.5748 40	0.4724 12	0.024 0.6	0.012 0.3	0.72 18	2,480	1,370	17,000	22,000	0.146	13,000	18,000	
7204B	0.7874 20	1.8504 47	0.5512 14	0.039 1.0	0.024 0.6	0.85 21.5	2,990	1,730	15,000	20,000	0.225	12,000	16,000	
7205B	0.9843 25	2.0472 52	0.5906 15	0.039 1.0	0.024 0.6	0.94 24	3,300	2,120	12,000	16,000	0.284	10,000	13,000	
7206B	1.1811 30	2.4409 62	0.6299 16	0.039 1.0	0.024 0.6	1.08 27.5	4,600	3,050	11,000	14,000	0.434	8,600	11,000	
7207B	1.3780 35	2.8346 72	0.6693 17	0.043 1.1	0.024 0.6	1.22 31	6,100	4,150	9,300	12,000	0.633	7,500	10,000	
7208B	1.5748 40	3.1496 80	0.7087 18	0.043 1.1	0.024 0.6	1.34 34	7,200	5,150	8,300	11,000	0.827	6,700	8,900	
7209B	1.7717 45	3.3465 85	0.7480 19	0.043 1.1	0.024 0.6	1.46 37	8,100	5,900	7,400	9,900	0.904	6,000	8,000	
7210B	1.9685 50	3.5433 90	0.7874 20	0.043 1.1	0.024 0.6	1.56 39.5	8,400	6,450	6,700	9,000	1.03	5,500	7,300	
7211B	2.1654 55	3.9370 100	0.8268 21	0.059 1.5	0.039 1.0	1.69 43	10,400	8,100	6,100	8,200	1.35	5,000	6,600	
7212B	2.3622 60	4.3307 110	0.8661 22	0.059 1.5	0.039 1.0	1.87 47.5	12,600	10,000	5,700	7,600	1.72	4,600	6,100	
7213B	2.5591 65	4.7244 120	0.9055 23	0.059 1.5	0.039 1.0	1.99 50.5	14,300	11,800	5,200	7,000	2.16	4,200	5,600	
7214B	2.7559 70	4.9213 125	0.9449 24	0.059 1.5	0.039 1.0	2.09 53	15,500	13,000	4,900	6,500	2.45	3,900	5,200	
7215B	2.9528 75	5.1181 130	0.9843 25	0.059 1.5	0.039 1.0	2.20 56	16,000	14,000	4,500	6,000	2.62	3,700	4,900	
7216B	3.1496 80	5.5118 140	1.0236 26	0.079 2	0.039 1.0	2.32 59	18,100	15,600	4,300	5,700	3.13	3,400	4,600	
7217B	3.3465 85	5.9055 150	1.1024 28	0.079 2	0.039 1.0	2.50 63.5	20,200	18,100	4,000	5,300	4.01	3,200	4,300	
7218B	3.5433 90	6.2992 160	1.1811 30	0.098 2.5	0.039 1.0	2.66 67.5	24,000	21,100	3,800	5,000	4.89	3,100	4,100	
7219B	3.7402 95	6.6929 170	1.2598 32	0.083 2.1	0.059 1.5	2.81 71.5	27,200	24,200	3,500	4,700	6.00	2,900	3,800	
7220B	3.9370 100	7.0866 180	1.3386 34	0.083 2.1	0.059 1.5	2.99 76	29,300	25,700	3,400	4,500	7.19	2,700	3,600	
7221B	4.1339 105	7.4803 190	1.4173 36	0.083 2.1	0.059 1.5	3.15 80	32,000	29,000	3,200	4,300	8.53	2,600	3,500	
7222B	4.3307 110	7.8740 200	1.4961 38	0.083 2.1	0.059 1.5	3.31 84	34,500	32,500	3,000	4,000	10.0	2,500	3,300	
7224B	4.7244 120	8.4646 215	1.5748 40	0.083 2.1	0.059 1.5	3.56 90.5	37,000	36,500	2,800	3,700	13.8	2,300	3,000	
7226B	5.1181 130	9.0551 230	1.5748 40	0.118 3	0.059 1.5	3.76 95.5	40,000	40,500	2,500	3,400	15.8	2,100	2,700	
7228B	5.5118 140	9.8425 250	1.6535 42	0.118 3	0.059 1.5	4.06 103	41,000	44,000	2,300	3,100	19.4	1,900	2,500	
7230B	5.9055 150	10.6299 270	1.7717 45	0.118 3	0.059 1.5	4.37 111	47,000	53,000	2,200	2,900	24.3	1,800	2,400	
7232B	6.2992 160	11.4173 290	1.8898 48	0.118 3	0.059 1.5	4.65 118	53,500	62,500	2,000	2,700	30.2	1,600	2,200	
7234B	6.6929 170	12.2047 310	2.0472 52	0.157 4	0.059 1.5	5.00 127	60,000	73,500	1,900	2,500	37.5	1,500	2,100	
7236B	7.0866 180	12.5984 320	2.0472 52	0.157 4	0.059 1.5	5.16 131	62,000	78,500	1,800	2,400	39.0	1,400	1,900	
7238B	7.4803 190	13.3858 340	2.1654 55	0.157 4	0.059 1.5	5.47 139	61,500	79,500	1,700	2,200	47.0	1,400	1,800	
7240B	7.8740 200	14.1732 360	2.2835 58	0.157 4	0.059 1.5	5.75 146	68,500	91,500	1,600	2,100	55.8	1,300	1,700	

SINGLE ROW ANGULAR CONTACT BALL BEARINGS

Units: INCHES
Millimeters



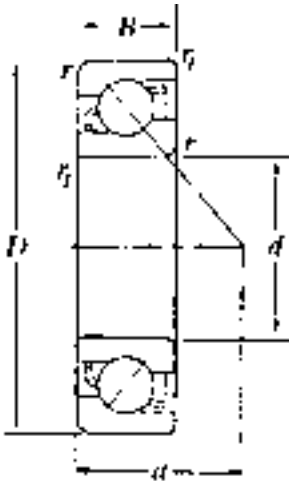
Bearing No.	Bore <i>d</i>	O.D. <i>D</i>	Width <i>B</i>	Fillet Radius		Load Center <i>a</i>	Basic Load Ratings (lbs)		Limiting Speeds (rpm)		Weight (lbs)	Limiting Speeds (rpm)	
				<i>r</i>	<i>r1</i>		Dynamic <i>C</i>	Static <i>Co</i>	Grease	Oil		Grease	Oil
7300B	0.3937 10	1.3780 35	0.4331 11	0.024 0.6	0.020 0.3	0.59 15	2,140	1,040	22,000	29,000	0.090	18,000	24,000
7301B	0.4724 12	1.4567 37	0.4724 12	0.039 1	0.024 0.6	0.6496 16.5	2,370	1,110	19,000	26,000	0.099	16,000	21,000
7302B	0.5906 15	1.6535 42	0.5118 13	0.039 1	0.024 0.6	0.7480 19	2,810	1,500	17,000	22,000	0.126	13,000	18,000
7303B	0.6693 17	1.8504 47	0.5512 14	0.039 1	0.024 0.6	0.81 20.5	3,350	1,800	15,000	20,000	0.240	12,000	16,000
7304B	0.7874 20	2.0472 52	0.5906 15	0.043 1.1	0.024 0.6	0.89 22.5	3,900	2,170	13,000	18,000	0.311	11,000	14,000
7305B	0.9843 25	2.4409 62	0.6693 17	0.043 1.1	0.024 0.6	1.06 27	5,500	3,300	11,000	15,000	0.516	9,100	12,000
7306B	1.1811 30	2.8346 72	0.7480 19	0.043 1.1	0.024 0.6	1.24 31.5	6,950	4,600	9,600	13,000	0.776	7,700	10,000
7307B	1.3780 35	3.1496 80	0.8268 21	0.059 1.5	0.039 1	1.36 34.5	8,250	5,450	8,400	11,000	1.03	6,800	9,000
7308B	1.5748 40	3.5433 90	0.9055 23	0.059 1.5	0.039 1	1.54 39	10,100	6,800	7,400	9,900	1.40	6,000	8,000
7309B	1.7717 45	3.9370 100	0.9843 25	0.059 1.5	0.039 1	1.69 43	13,100	9,050	6,600	8,900	1.88	5,400	7,200
7310B	1.9685 50	4.3307 110	1.0630 27	0.079 2	0.039 1	1.85 47	15,300	10,800	6,000	8,100	2.45	4,900	6,500
7311B	2.1654 55	4.7244 120	1.1417 29	0.079 2	0.039 1	2.05 52	17,700	12,800	5,500	7,300	3.13	4,500	5,900
7312B	2.3622 60	5.1181 130	1.2205 31	0.083 2.1	0.043 1.1	2.20 56	20,200	14,800	5,100	6,800	3.90	4,100	5,500
7313B	2.5591 65	5.5118 140	1.2992 33	0.083 2.1	0.043 1.1	2.34 59.5	22,900	17,000	4,700	6,300	4.72	3,800	5,100
7314B	2.7559 70	5.9055 150	1.3780 35	0.083 2.1	0.043 1.1	2.50 63.5	25,700	19,300	4,400	5,800	5.75	3,500	4,700
7315B	2.9528 75	6.2992 160	1.4567 37	0.083 2.1	0.043 1.1	2.68 68	28,000	21,900	4,100	5,400	6.90	3,300	4,400
7316B	3.1496 80	6.6929 170	1.5354 39	0.083 2.1	0.043 1.1	2.83 72	30,500	24,600	3,800	5,100	8.20	3,100	4,100
7317B	3.3465 85	7.0866 180	1.6142 41	0.118 3	0.043 1.1	2.99 76	32,500	27,400	3,600	4,800	9.77	2,900	3,900
7318B	3.5433 90	7.4803 190	1.6929 43	0.118 3	0.043 1.1	3.17 80.5	35,000	30,500	3,400	4,500	11.4	2,700	3,700
7319B	3.7402 95	7.8740 200	1.7717 45	0.118 3	0.043 1.1	3.33 84.5	37,500	33,500	3,200	4,200	13.2	2,600	3,400
7320B	3.9370 100	8.4646 215	1.8504 47	0.118 3	0.043 1.1	3.52 89.5	43,000	40,000	3,000	4,000	16.1	2,400	3,300
7321B	4.1339 105	8.8583 225	1.9291 49	0.118 3	0.043 1.1	3.68 93.5	45,500	43,500	2,900	3,800	18.4	2,300	3,100
7322B	4.3307 110	9.4488 240	1.9685 50	0.118 3	0.043 1.1	3.90 99	51,000	51,000	2,700	3,700	21.6	2,200	3,000
7324B	4.7244 120	10.2362 260	2.1654 55	0.157 4	0.043 1.1	4.21 107	50,500	52,000	2,500	3,300	32.4	2,000	2,700
7326B	5.1181 130	11.0236 280	2.2835 58	0.157 4	0.059 1.5	4.53 115	56,000	60,500	2,300	3,100	38.8	1,900	2,500
7328B	5.5118 140	11.8110 300	2.4409 62	0.157 4	0.059 1.5	4.84 123	62,000	69,500	2,100	2,800	47.4	1,700	2,300
7330B	5.9055 150	12.5984 320	2.5591 65	0.157 4	0.059 1.5	5.16 131	67,500	79,000	2,000	2,600	55.3	1,600	2,100
7332B	6.2992 160	13.3858 340	2.6772 68	0.157 4	0.059 1.5	5.47 139	71,000	87,000	1,800	2,400	65.7	1,500	2,000
7334B	6.6929 170	14.1732 360	2.8346 72	0.157 4	0.059 1.5	5.79 147	80,000	100,000	1,700	2,300	77.8	1,400	1,800
7336B	7.0866 180	14.9606 380	2.9528 75	0.157 4	0.059 1.5	6.10 155	84,000	110,000	1,600	2,100	90.2	1,300	1,700
7338B	7.4803 190	15.7480 400	3.0709 78	0.197 5	0.079 2	6.42 163	87,500	120,000	1,500	2,000	104	1,200	1,600
7340B	7.8740 200	16.5354 420	3.1496 80	0.197 5	0.079 2	6.69 170	92,000	125,000	1,400	1,900	117	1,200	1,500



40°
Contact Angle
73B



Units: **INCHES**
Millimeters



40°
Contact Angle
74B

Bearing No.	Bore	O.D.	Width	Fillet Radius		Load Center a	Basic Load Ratings (lbs)		Weight (lbs)
	d	D	B	r	r ₁		Dynamic C	Static C ₀	
7404B	.7874 20	2.8346 72	.7480 19	.043 1.1	.024 .6	1.14 29	6,850	3,650	1.00
7406B	1.1811 30	3.5433 90	.9843 25	.039 1	.024 .6	1.46 37	9,100	5,450	1.83
7407B	1.3780 35	3.9370 100	.9843 25	.039 1	.024 .6	1.61 41	11,600	7,350	2.45
7408B	1.5748 40	4.3307 110	1.0630 27	.059 1.5	.024 .6	1.77 45	13,600	8,500	3.09
7409B	1.7717 45	4.7244 120	1.1417 29	.059 1.5	.024 .6	1.95 49.5	16,800	11,100	3.94
7410B	1.9685 50	5.1181 130	1.2205 31	.083 2.1	.043 1.1	2.11 53.5	19,100	12,800	4.87
7411B	2.1654 55	5.5118 140	1.2992 33	.083 2.1	.043 1.1	2.26 57.5	20,300	13,900	6.02
7412B	2.3622 60	5.9055 150	1.3780 35	.083 2.1	.043 1.1	2.44 62	22,800	15,900	7.25
7413B	2.5591 65	6.2992 160	1.4567 37	.083 2.1	.043 1.1	2.60 66	26,500	19,800	8.77
7414B	2.7559 70	7.0866 180	1.6535 42	.098 2.5	.043 1.1	2.89 73.5	31,000	24,900	12.7
7415B	2.9528 75	7.4803 190	1.7717 45	.098 2.5	.043 1.1	3.09 78.5	33,500	27,000	15.0
7416B	3.1496 80	7.8740 200	1.8898 48	.098 2.5	.043 1.1	3.27 83	35,500	29,800	17.5
7417B	3.3465 85	8.2677 210	2.0472 52	.118 3	.039 1	3.46 88	39,500	33,500	20.4
7418B	3.5433 90	8.8583 225	2.1260 54	.118 3	.039 1	3.68 93.5	45,000	44,000	24.9