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Introduction

ABOUT NSK BALL BEARINGS

- Radial Ball Bearings
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- Double Row Bearings
- Self-Aligning Ball Bearings
- Maximum Capacity Bearings
- Mast Guide Bearings
- Integral Shaft Bearings
- Special Bearings

NSK ball bearings can be categorized as Deep Groove Bearings or Angular Contact Bearings. Deep groove bearings are further identified as single or double row, and Conrad type or filling slot type. Specific characteristics of each type are identified by the bearing number.

Radial ball bearings will accommodate moderate to heavy radial loads and low to moderate thrust loads in either direction.

Deep groove radial bearings are manufactured as open type bearings for oil or grease lubrication. They are also available with metal shields and/or seals for use where moderate contamination is present in the operation.

Angular contact bearings are single row types used where radial and thrust loads are combined in the same application. They provide sufficient internal clearances to assume a specific contact angle under thrust loading and are available with angles of 15°, 30° and 40°.

Double row bearings are manufactured both as filling slot and Conrad types, in light and medium series. The filling slot type has higher load capacity but the Conrad type provides a quieter operation and should be used when noise is a consideration.

Self-Aligning bearings are manufactured with two rows of balls and one continuous spherical raceway in the outer ring. This allows for limited misalignment of the shaft and housing.

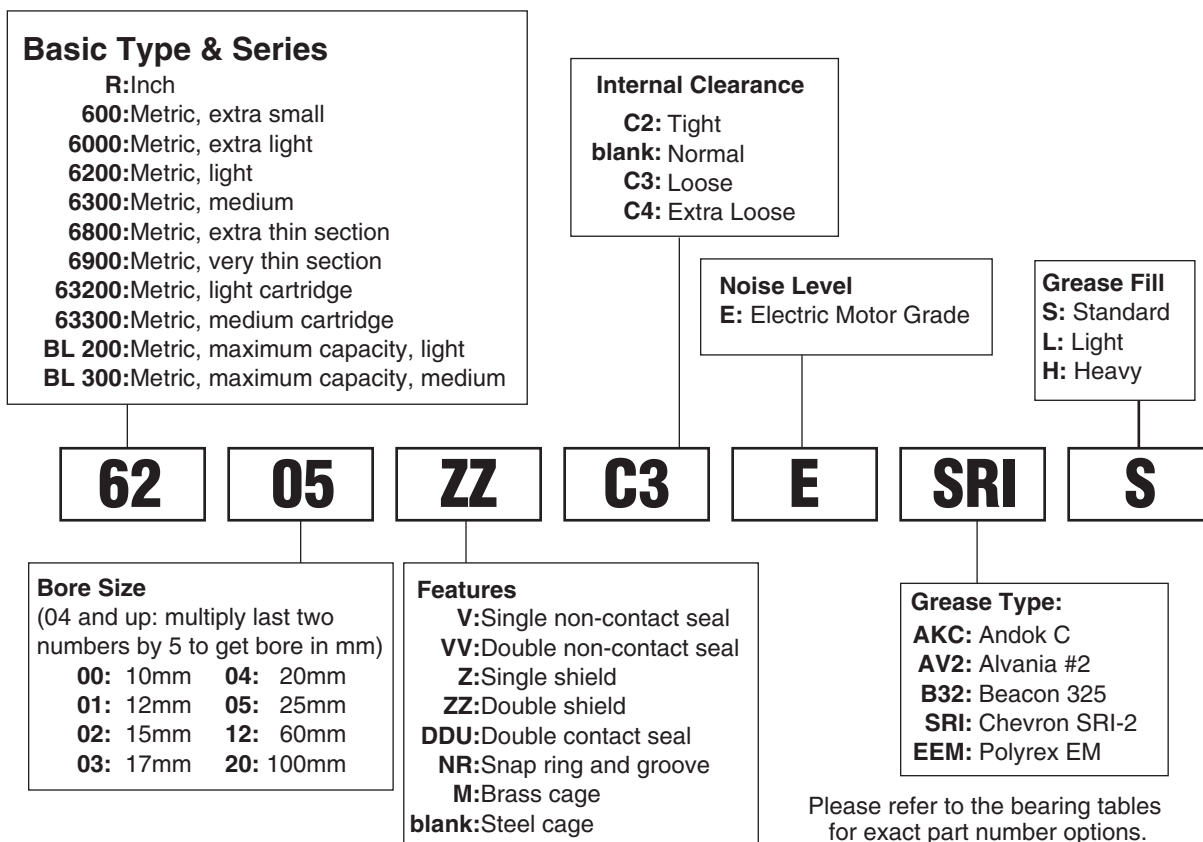
Maximum capacity bearings are filling slot type bearings used in applications involving heavy radial loads and low speeds where thrust loads are comparatively low. They incorporate filling slots in the inner and outer rings so they can be loaded with additional balls for greater capacity.

Mast Guide bearings are bearings with a high load capacity, specially designed for use in fork lift trucks. These bearings are similar to single row or double row deep groove bearings but the outer race has a very thick cross-section which performs as a wheel or tire. Mast guide bearings can withstand heavy radial loads and occasional thrust loads. Mounted on the fork carriage they provide smooth action as the forks are raised and lowered.

Integral shaft bearings include a shaft with bearing races machined on its O.D. The outer bearing ring, cage and rolling elements are mounted directly on the shaft and an inner ring is not required. These are commonly referred to as water pump bearings since that is a major application for them.

Special bearings include Inch Series bearings, bearings made specifically for automotive air compressor applications and bearings made with special bore, width, or O.D.

Nomenclature — Single Row Deep Groove Ball Bearings

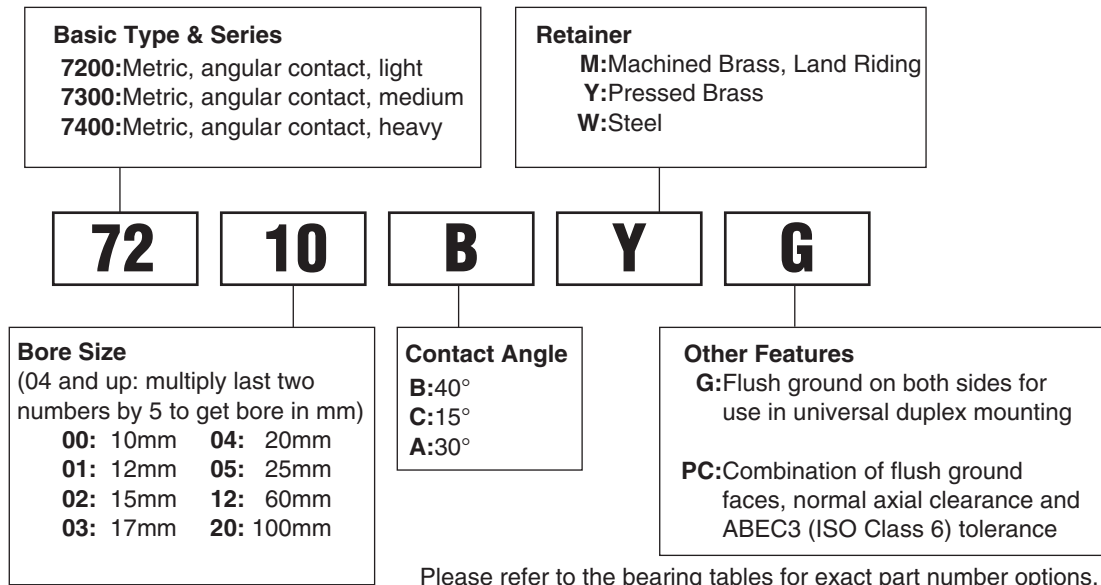


Interchange — Single Row Deep Groove Ball Bearings

DESCRIPTION		INTERCHANGE				
		NSK	SKF	TORR/FAF	FAG	MRC
Part Number	INCH	Rxx	Rxx	Sxx	Rxx	Rxx
	EXTRA SMALL	6xx	6xx	3x	6xx	3x
	EXTRA LIGHT	60xx	60xx	91xxK	60xx	1xxK
	LIGHT	62xx	62xx	2xx	62xx	2xxS
	MEDIUM	63xx	63xx	3xx	63xx	3xxS
	EXTRA THIN SECTION	68xx	618xx	--	618xx	--
	VERY THIN SECTION	69xx	619xx	93xxK	619xx	--
	THIN SECTION	16xxx	16xxx	--	16xxx	--
	MAXIMUM CAPACITY, LIGHT	BL2xx	2xx	2xxW	2xx	2xxM
	MAXIMUM CAPACITY, MEDIUM	BL3xx	3xx	3xxW	3xx	3xxM
Part Number Suffix	TWO SEALS (NON CONTACT)	VV	--	--	--	--
	TWO SEALS (CONTACT)	DDU	2RS	PP	2RSR	ZZ
	ONE SEAL (CONTACT)	DU	RS	P	RSR	Z
	TWO SHIELDS	ZZ	2Z	DD	2ZR	FF
	ONE SHIELD	Z	Z	D	ZR	F
	SNAP RING	NR	NR	G	NR	G
	STEEL CAGE	BLANK	J	BLANK	BLANK	BLANK
	BRASS CAGE	M	M	MBR	M	BRZ
	HEAT STABILIZED 200C	X28	S1	--	S1	--
	TIGHT CLEARANCE	C2	C2	H	C2	Tight
	NORMAL CLEARANCE	BLANK	BLANK	R	BLANK	Normal
	LOOSE CLEARANCE	C3	EM(C3)	P	C3	Loose
	EXTRA LOOSE CLEARANCE	C4	C4	J	C4	Extra Loose
ELECTRIC MOTOR GRADE	E	QE6	--	--	--	

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please consult NSK Engineering. NSK assumes no liability with respect to errors or omissions.

Nomenclature — Angular Contact Ball Bearings (ABEC 1&3)



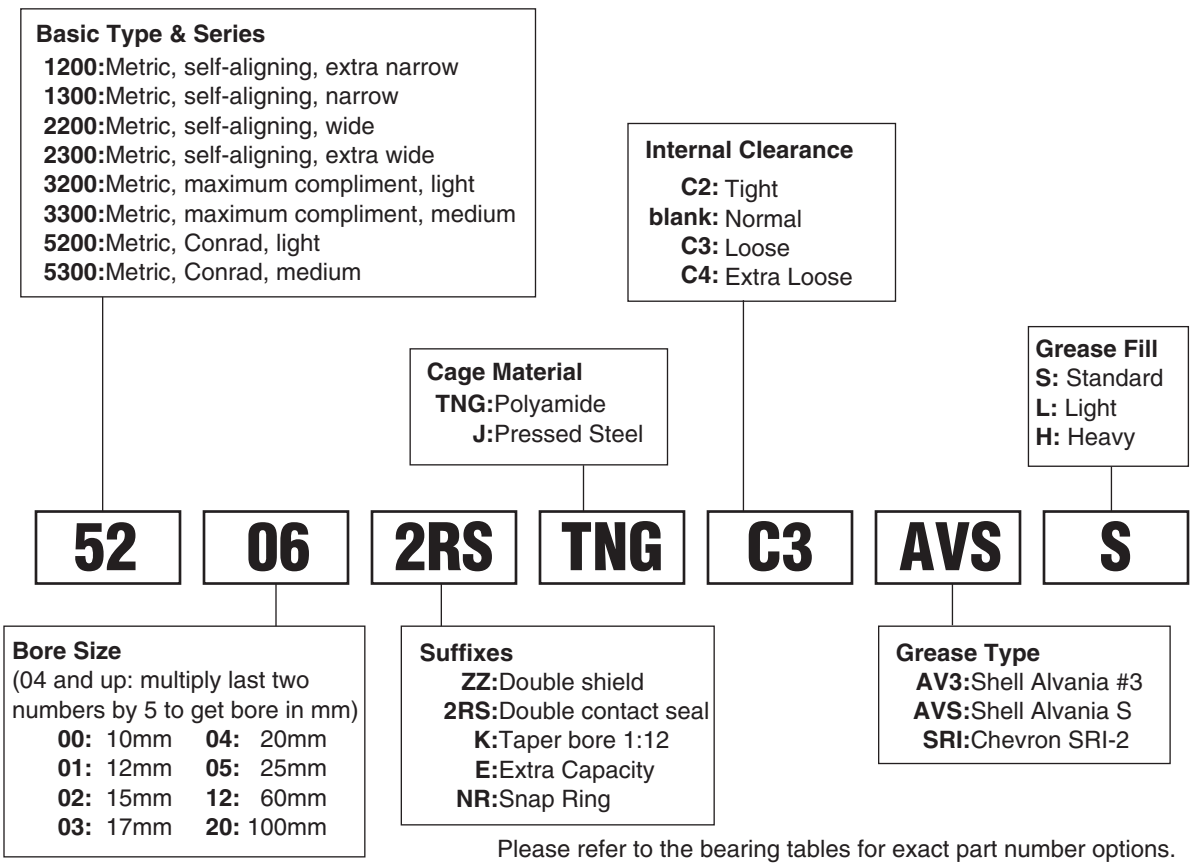
Interchange — Angular Contact Ball Bearings (ABEC 1&3)

DESCRIPTION		INTERCHANGE				
		NSK	SKF	TORR/FAF	FAG	MRC
Part No.	LIGHT	72xx	72xx	72xx	72xx	72xx
	MEDIUM	73xx	73xx	73xx	73xx	73xx
	HEAVY	74xx	74xx	74xx	74xx	74xx
Part No. Suffix	40 deg. CONTACT	B	B	WN	B	PJ
	30 deg. CONTACT	A	--	--	--	BLANK
	25 deg. CONTACT	A5	ACD	--	E	--
	15 deg. CONTACT	C	CD	--	C	R
	MACHINED BRASS CAGE	M	M	MBR	MP	BRZ
	PRESSED BRASS CAGE	Y	Y	BLANK	YP	--
	POLYAMIDE CAGE	TY	P	PRC	TVP	BKE
	STEEL CAGE	W	J	--	JP	BLANK
	FLUSH GROUND FACES	G	G	BLANK	UO,UA	DU
PETROCHEMICAL	BMPC	BECBM	--	--	PumpPac*	

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Nomenclature — Double Row Ball Bearings

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Split Pillow Blocks
Super Precision Bearings
Linear Motion
Rolling Mill Bearings
Engineering Section



Interchange — Double Row Ball Bearings

DESCRIPTION		INTERCHANGE			
		NSK	SKF	TORR/FAF	MRC
Part Number	SELF-ALIGNING, EXTRA NARROW	12xx	12xx	--	--
	SELF-ALIGNING, NARROW	13xx	13xx	--	--
	SELF-ALIGNING, WIDE	22xx	22xx	--	--
	SELF-ALIGNING, EXTRA WIDE	23xx	23xx	--	--
	DOUBLE ROW, MAXIMUM CAPACITY, LIGHT	32xx	52xxE	52xxW	52xxM (K)
	DOUBLE ROW, MAXIMUM CAPACITY, MEDIUM	33xx	53xxE	53xxW	53xxM (K)
	DOUBLE ROW, CONRAD, LIGHT	52xx	52xxA	52xxK	52xxC (SBK)
DOUBLE ROW, CONRAD, MEDIUM	53xx	53xxA	53xxK	53xxC (SB)	
Part Number Suffix	TWO SEALS	2RS	2RS1	--	--
	TWO SHIELDS	ZZ	2Z	--	FF
	SNAP RING	NR	NR	G	G
	POLYAMIDE CAGE	TNG	TN9	PRB	--
	STEEL CAGE	J	BLANK	BLANK	BLANK
	TAPERED BORE	K	K	--	--
	EXTRA CAPACITY	E	E	--	--
	TIGHT CLEARANCE	C2	C2	H	C2
	NORMAL CLEARANCE	BLANK	BLANK	R	BLANK
	LOOSE CLEARANCE	C3	C3	P	C3
	EXTRA LOOSE CLEARANCE	C4	C4	J	C4

The competitive manufacturers are provided for a convenient source of unit substitution. They can be considered interchangeable in most instances, but for special applications, please consult NSK Engineering. NSK assumes no liability with respect to errors or omissions.

Ball Bearing Applications

General ball bearing applications are listed below. The size and style of the bearing is dependent on the loads applied and the speeds that the application requires. When appropriate, the bearing style will be indicated in parenthesis for an exclusive application, but for most applications listed, a variety of ball bearing styles may be used.

Deep Groove Ball Bearings

- *Transmissions*
- *Electric Motors & Generators*
- *Electrical Appliances*
- *Pumps & Compressors*
- *Blowers & Fans*
- *Speed Changers*
- *Gear Boxes & Drives*
- *Woodworking Machinery*
- *Lawn & Garden Equipment*
- *Turbines*
- *Farm Machinery*
- *Construction Machinery*
- *Oil Field Machinery*
- *Elevators*
- *Conveying Equipment*
- *Hoists & Cranes*
- *Power Hand Tools*
- *Industrial Valves*
- *Rolling Mill Machinery*
- *Textile Machinery*
- *Paper Machinery*
- *Printing Machinery*
- *Food Products Machinery*
- *Packaging Machinery*
- *Medical & Dental Equipment*
(Extra Small)
- *Robotics Equipment (Thin)*
- *Industrial Clutches*
- *Slip Joints*
- *Skate Boards (608ZZ)*
- *Inline Skates (608ZZ)*

Angular Contact (Standard)

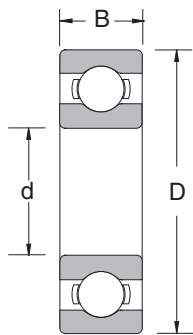
- *Metal Rolling Mills*
- *Oil Field Equipment*
- *Gear Boxes & Drives*
- *Deep Well Pumps*
- *Centrifugal Pumps*
- *Electric Motors & Generators*
- *Blowers and Fans*
- *Gear Reducers*

Double Row

- *Petrochemical Equipment*
- *Centrifugal Pumps (Conrad)*
- *Electric Motors (Conrad)*
- *Transmissions*
- *Worm Drives*
- *Blowers & Fans*
- *Film Processing Equipment*
(Self-Aligning)
- *Vertical Spinning Equipment*
(Self-Aligning)
- *Vertical Weaving Equipment*
(Self-Aligning)
- *Paper Making – Fourdrinier*
(Self-Aligning)
- *Industrial Countershafts*
(Self-Aligning)

Ball Bearings

R Series
Single Row, Inch Dimension



Common Options	
V	: One Non-Contact Seal
VV	: Two Non-Contact Seals
Z	: One Shield
ZZ	: Two Shields
NR	: Snap Ring
CO†	: Normal Clearance
C3	: Looser than Normal
E	: Electric Motor Quality
† Not shown in part number	

Bearing Number	Nominal Bearing Dimensions			Preferred Shoulder Diameters			Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)	Bearing Weight (Approx.)
	<i>d</i>	<i>D</i>	<i>B</i>	<i>r</i> *	Shaft	Housing	<i>C_r</i>	<i>C_{or}</i>	Grease	lbs
	inch	inch	inch	inch	inch	inch				
R2	0.1250	0.3750	0.1562	0.012	0.188	0.313	141	49	56	0.003
R2A	0.1250	0.5000	0.1719	0.012	0.188	0.438	143	51	56	0.006
R3	0.1875	0.5000	0.1562	0.012	0.250	0.438	293	108	53	0.005
R3ZZ	0.1875	0.5000	0.1960	0.012	0.250	0.438	293	108	53	0.006
R4B	0.2500	0.6250	0.1960	0.012	0.313	0.563	362	150	38	0.010
R4AA	0.2500	0.7500	0.2188	0.016	0.344	0.656	589	238	36	0.015
R4AAZZ	0.2500	0.7500	0.2812	0.016	0.344	0.656	589	238	36	0.018
R6	0.3750	0.8750	0.2188	0.016	0.469	0.781	750	317	38	0.020
R6ZZVV	0.3750	0.8750	0.2812	0.016	0.469	0.781	750	317	38	0.026
R8	0.5000	1.1250	0.2500	0.016	0.594	1.031	1150	538	30	0.040
R8ZZVV	0.5000	1.1250	0.3125	0.016	0.594	1.031	1150	538	30	0.050
R10	0.6250	1.3750	0.2812	0.031	0.750	1.250	1340	728	24	0.060
R10ZZVV	0.6250	1.3750	0.3438	0.031	0.750	1.250	1340	728	24	0.070
R12	0.7500	1.6250	0.3125	0.031	0.906	1.469	2110	1120	20	0.100
R12ZZVV	0.7500	1.6250	0.4375	0.031	0.906	1.469	2110	1120	20	0.120
R14	0.8750	1.8750	0.3750	0.031	1.031	1.719	2270	1310	18	0.160
R14ZZ	0.8750	1.8750	0.5000	0.031	1.031	1.719	2270	1310	18	0.180
R16	1.0000	2.0000	0.3750	0.031	1.156	1.844	2270	1310	18	0.170
R16ZZ	1.0000	2.0000	0.5000	0.031	1.156	1.844	2270	1310	18	0.190
R18	1.1250	2.1250	0.3750	0.031	1.281	1.969	2980	1860	15	0.190
R18ZZ	1.1250	2.1250	0.5000	0.031	1.281	1.969	2980	1860	15	0.210
R20	1.2500	2.2500	0.3750	0.031	1.406	2.094	2980	1860	15	0.210
R20ZZ	1.2500	2.2500	0.5000	0.031	1.406	2.094	2980	1860	15	0.230
R22	1.3750	2.5000	0.4375	0.031	1.531	2.344	3590	2320	13	0.270
R22ZZ	1.3750	2.5000	0.5625	0.031	1.531	2.344	3590	2320	13	0.290
R24	1.5000	2.6250	0.4375	0.031	1.656	2.469	3770	2600	12	0.300

*Maximum fillet which corner radius of bearing will clear.

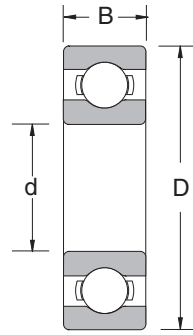
C_r = Dynamic Radial Load Rating
C_{or} = Static Radial Load Rating

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data	
Radial Internal Clearance	— Table 10.35 page 330
Bearing Tolerances	— Table 10.12 thru Table 10.16 pages 314-17
Snap Ring Dimensions	— Table 10.9 page 310
Shaft & Housing Fits	— Table 10.31 and Table 10.33 pages 328-29

Ball Bearings

600 Series
Single Row, Extra Small



V	: One Non-Contact Seal
VV	: Two Non-Contact Seals
Z	: One Shield
ZZ	: Two Shields
MC3	: Normal Clearance
MC5	: Equivalent to ISO C3
E	: Electric Motor Quality

Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters			Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		lbs
	d		D		B		r*	Shaft	Housing	C _r	C _{or}	Grease	Oil	
	mm	inch	mm	inch	mm	inch	inch	inch	inch					
693	3.00	0.1181	8	0.3150	3.00	0.1181	0.006	0.169	0.287	126	40	60.0	67.0	0.001
693ZZVV	3.00	0.1181	8	0.3150	4.00	0.1575	0.006	0.165	0.268	126	40	60.0	67.0	0.002
623	3.00	0.1181	10	0.3937	4.00	0.1575	0.006	0.165	0.346	141	49	50.0	60.0	0.003
684	4.00	0.1575	9	0.3543	2.50	0.0984	0.004	0.205	0.319	143	51	53.0	63.0	0.001
684ZZVV	4.00	0.1575	9	0.3543	4.00	0.1575	0.004	0.189	0.323	143	51	53.0	63.0	0.002
694	4.00	0.1575	11	0.4331	4.00	0.1575	0.006	0.205	0.386	216	77	48.0	56.0	0.003
604	4.00	0.1575	12	0.4724	4.00	0.1575	0.008	0.220	0.409	216	77	48.0	56.0	0.004
624	4.00	0.1575	13	0.5118	5.00	0.1969	0.008	0.220	0.449	293	108	40.0	48.0	0.006
634	4.00	0.1575	16	0.6299	5.00	0.1969	0.012	0.236	0.551	390	151	36.0	43.0	0.015
685	5.00	0.1969	11	0.4331	3.00	0.1181	0.006	0.244	0.390	161	64	45.0	53.0	0.002
685ZZVV	5.00	0.1969	11	0.4331	5.00	0.1969	0.006	0.244	0.386	161	64	45.0	53.0	0.004
695	5.00	0.1969	13	0.5118	4.00	0.1575	0.008	0.260	0.449	243	97	43.0	50.0	0.005
605	5.00	0.1969	14	0.5512	5.00	0.1969	0.008	0.260	0.488	298	115	40.0	50.0	0.007
625	5.00	0.1969	16	0.6299	5.00	0.1969	0.012	0.276	0.551	390	150	36.0	43.0	0.010
635	5.00	0.1969	19	0.7480	6.00	0.2362	0.012	0.276	0.669	526	199	32.0	40.0	0.022
686	6.00	0.2362	13	0.5118	3.50	0.1378	0.006	0.291	0.461	243	99	40.0	50.0	0.004
686ZZVV	6.00	0.2362	13	0.5118	5.00	0.1969	0.006	0.283	0.465	243	99	40.0	50.0	0.005
696	6.00	0.2362	15	0.5906	5.00	0.1969	0.008	0.299	0.528	390	150	40.0	45.0	0.008
606	6.00	0.2362	17	0.6693	6.00	0.2362	0.012	0.315	0.591	509	187	38.0	45.0	0.012
626	6.00	0.2362	19	0.7480	6.00	0.2362	0.012	0.315	0.669	526	199	32.0	40.0	0.021
687	7.00	0.2756	14	0.5512	3.50	0.1378	0.006	0.335	0.500	265	115	40.0	45.0	0.004
687ZZVV	7.00	0.2756	14	0.5512	5.00	0.1969	0.006	0.323	0.504	265	115	40.0	45.0	0.006
697	7.00	0.2756	17	0.6693	5.00	0.1969	0.012	0.354	0.591	362	161	36.0	43.0	0.011
607	7.00	0.2756	19	0.7480	6.00	0.2362	0.012	0.354	0.669	525	198	36.0	43.0	0.015
627	7.00	0.2756	22	0.8661	7.00	0.2756	0.012	0.354	0.787	741	308	30.0	36.0	0.031
608-5	7.90	0.3123	22	0.8661	7.00	0.2756	0.012	0.394	0.787	741	308	34.0	40.0	0.030
698	8.00	0.3150	19	0.7480	6.00	0.2362	0.012	0.394	0.650	503	205	36.0	43.0	0.014
608	8.00	0.3150	22	0.8661	7.00	0.2756	0.012	0.394	0.787	741	308	34.0	40.0	0.030
628	8.00	0.3150	24	0.9449	8.00	0.3150	0.012	0.394	0.669	750	322	28.0	34.0	0.034
638	8.00	0.3150	28	1.1024	9.00	0.3543	0.012	0.394	1.024	1030	443	28.0	34.0	0.057
689	9.00	0.3543	17	0.6693	4.00	0.1575	0.008	0.421	0.598	300	150	36.0	43.0	0.007
689ZZVV	9.00	0.3543	17	0.6693	5.00	0.1969	0.008	0.417	0.606	300	150	36.0	43.0	0.009
609	9.00	0.3543	24	0.9449	7.00	0.2756	0.012	0.433	0.866	750	322	32.0	38.0	0.029
629	9.00	0.3543	26	1.0236	8.00	0.3150	0.024	0.453	0.945	1030	444	28.0	34.0	0.044

*Maximum fillet which corner radius of bearing will clear.

C_r = Dynamic Radial Load Rating
C_{or} = Static Radial Load Rating

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data	
Radial Internal Clearance	— Table 10.35 on page 330
Bearing Tolerances	— Table 10.12 thru Table 10.16 on pages 314-17
Shaft & Housing Fits	— Table 10.31 and Table 10.33 on pages 328-29

Introduction

Ball Bearings

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Super Precision Bearings

Linear Motion

Rolling Mill Bearings

Engineering Section



Ball Bearings

6000 Series
Single Row, Deep Groove, Conrad Type

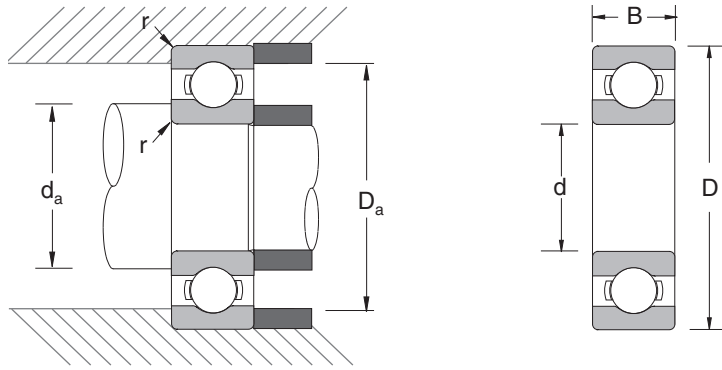
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters			
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)		<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max	max
6000	10	0.3937	26	1.0236	8	0.3150	0.012	0.472	0.512	0.949
6001	12	0.4724	28	1.1024	8	0.3150	0.012	0.551	0.611	1.024
6002	15	0.5906	32	1.2598	9	0.3543	0.012	0.669	0.749	1.181
6003	17	0.6693	35	1.3780	10	0.3937	0.012	0.748	0.847	1.299
6004	20	0.7874	42	1.6535	12	0.4724	0.024	0.945	1.005	1.496
6005	25	0.9843	47	1.8504	12	0.4724	0.024	1.142	1.182	1.693
6006	30	1.1811	55	2.1654	13	0.5118	0.039	1.378	1.438	1.969
6007	35	1.3780	62	2.4409	14	0.5512	0.039	1.575	1.635	2.244
6008	40	1.5748	68	2.6772	15	0.5906	0.039	1.772	1.872	2.480
6009	45	1.7717	75	2.9528	16	0.6299	0.039	1.969	2.108	2.756
6010	50	1.9685	80	3.1496	16	0.6299	0.039	2.165	2.305	2.953
6011	55	2.1654	90	3.5433	18	0.7087	0.039	2.421	2.528	3.287
6012	60	2.3622	95	3.7402	18	0.7087	0.039	2.618	2.719	3.484
6013	65	2.5591	100	3.9370	18	0.7087	0.039	2.815	2.876	3.681
6014	70	2.7559	110	4.3307	20	0.7874	0.039	3.012	3.172	4.075
6015	75	2.9528	115	4.5276	20	0.7874	0.039	3.209	3.369	4.272
6016	80	3.1496	125	4.9213	22	0.8661	0.039	3.406	3.585	4.665
6017	85	3.3465	130	5.1181	22	0.8661	0.039	3.602	3.782	4.862
6018	90	3.5433	140	5.5118	24	0.9449	0.059	3.858	4.058	5.197
6019	95	3.7402	145	5.7087	24	0.9449	0.059	4.055	4.275	5.394
6020	100	3.9370	150	5.9055	24	0.9449	0.059	4.252	4.452	5.591
6021	105	4.1339	160	6.2992	26	1.0236	0.079	4.528	4.728	5.906
6022	110	4.3307	170	6.6929	28	1.1024	0.079	4.724	4.905	6.299
6024	120	4.7244	180	7.0866	28	1.1024	0.079	5.118	5.299	6.693
6026	130	5.1181	200	7.8740	33	1.2992	0.079	5.512	5.851	7.480
6028	140	5.5118	210	8.2677	33	1.2992	0.079	5.906	6.245	7.874
6030	150	5.9055	225	8.8583	35	1.3780	0.079	6.339	6.698	8.425
6032	160	6.2992	240	9.4488	38	1.4961	0.079	6.732	7.131	9.016
6034	170	6.6929	260	10.2362	42	1.6535	0.079	7.126	7.663	9.803
6036	180	7.0866	280	11.0236	46	1.8110	0.079	7.520	8.195	10.591
6038	190	7.4803	290	11.4173	46	1.8110	0.079	7.913	8.589	10.984
6040	200	7.8740	310	12.2047	51	2.0079	0.079	8.307	9.121	11.772

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Radial Internal Clearance — Table 10.35 page 330
 Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
V	: One Non-Contact Seal
VV	: Two Non-Contact Seals
Z	: One Shield
ZZ	: Two Shields
DU	: One Contact Seal
DDU	: Two Contact Seals
NR	: Snap Ring
M††	: Brass Cage
CO†	: Normal Internal Clearance
C3	: Greater Than Normal
E	: Electric Motor Quality

† Not shown in part number
 †† Not available on small sizes,
 Consult NSK for availability.

Bearing Number	Basic Load Ratings (lbs)		Factor f_o	Limiting Speeds (1000 RPM)		Bearing Weight (Approx.) lbs
	C_r	C_{or}		Grease	Oil	
6000	1030	443	12.4	30.0	36.0	0.04
6001	1150	531	13.0	28.0	32.0	0.05
6002	1260	637	13.9	24.0	28.0	0.07
6003	1350	732	14.4	22.0	26.0	0.09
6004	2110	1130	13.8	18.0	20.0	0.16
6005	2270	1310	14.5	15.0	18.0	0.18
6006	2980	1860	14.7	13.0	15.0	0.26
6007	3590	2315	14.8	11.0	13.0	0.35
6008	3770	2600	15.3	10.0	12.0	0.43
6009	4720	3420	15.3	9.0	11.0	0.54
6010	4900	3750	15.6	8.5	10.0	0.58
6011	6350	4780	15.3	7.5	9.0	0.85
6012	6610	5230	15.6	7.1	8.5	0.92
6013	6880	5670	15.8	6.7	8.0	0.96
6014	8550	6970	15.6	6.0	7.1	1.33
6015	8890	7540	15.8	5.6	6.7	1.41
6016	11000	8950	15.6	5.3	6.3	1.87
6017	11100	9680	15.8	5.0	6.0	1.96
6018	13100	11200	15.6	4.8	5.6	2.56
6019	13600	12100	15.8	4.5	5.3	2.67
6020	13500	12200	15.9	4.3	5.3	2.76
6021	16300	14800	15.8	4.0	4.8	3.51
6022	19000	16400	15.5	3.8	4.5	4.32
6024	19900	18000	15.7	3.6	4.3	5.34
6026	23800	22700	15.8	3.0	3.6	8.16
6028	24700	24300	16.0	2.8	3.4	8.62
6030	28200	28200	15.9	2.6	3.0	10.60
6032	30600	30400	15.9	2.4	2.8	13.00
6034	36200	36200	15.8	2.2	2.6	17.50
6036	40600	41500	15.6	2.0	2.4	23.00
6038	42300	45200	15.8	2.0	2.4	24.50
6040	46500	50700	15.6	1.9	2.2	31.00

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

6200 Series
Single Row, Deep Groove, Conrad Type

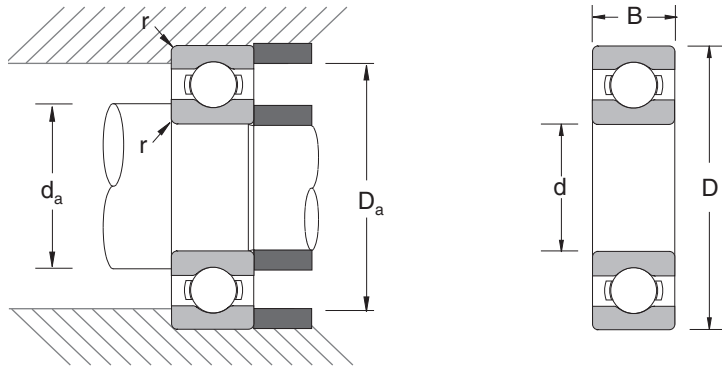
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters			
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)		<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max	max
6200	10	0.3937	30	1.1811	9	0.3543	0.024	0.500	0.630	0.984
6201	12	0.4724	32	1.2598	10	0.3937	0.024	0.578	0.670	1.063
6201-08	12.7	0.5000	32	1.2598	10	0.3937	0.024	0.595	0.670	1.063
6201-13 M	13	0.5118	32	1.2598	10	0.3937	0.024	0.610	0.670	1.063
6202	15	0.5906	35	1.3780	11	0.4331	0.024	0.703	0.749	1.181
6202-10	15.87	0.6250	35	1.3780	11	0.4331	0.024	0.730	0.749	1.181
6202-16 M	16	0.6299	35	1.3780	11	0.4331	0.024	0.740	0.749	1.181
6203	17	0.6693	40	1.5748	12	0.4724	0.024	0.787	0.926	1.380
6203-625	15.9	0.6250	40	1.5748	12	0.4724	0.024	0.750	0.926	1.380
6204	20	0.7874	47	1.8504	14	0.5512	0.039	0.969	1.044	1.614
6205	25	0.9843	52	2.0472	15	0.5906	0.039	1.172	1.261	1.811
6206	30	1.1811	62	2.4409	16	0.6299	0.039	1.406	1.517	2.205
6207	35	1.3780	72	2.8346	17	0.6693	0.039	1.614	1.753	2.559
6208	40	1.5748	80	3.1496	18	0.7087	0.039	1.811	1.990	2.874
6209	45	1.7717	85	3.3465	19	0.7480	0.039	2.008	2.187	3.071
6210	50	1.9685	90	3.5433	20	0.7874	0.039	2.205	2.364	3.268
6211	55	2.1654	100	3.9370	21	0.8268	0.059	2.441	2.620	3.602
6212	60	2.3622	110	4.3307	22	0.8661	0.059	2.717	2.935	3.996
6213	65	2.5591	120	4.7244	23	0.9055	0.059	2.913	3.152	4.390
6214	70	2.7559	125	4.9213	24	0.9449	0.059	3.110	3.310	4.587
6215	75	2.9528	130	5.1181	25	0.9843	0.059	3.307	3.546	4.783
6216	80	3.1496	140	5.5118	26	1.0236	0.079	3.504	3.763	5.118
6217	85	3.3465	150	5.9055	28	1.1024	0.079	3.740	4.019	5.512
6218	90	3.5433	160	6.2992	30	1.1811	0.079	3.937	4.236	5.906
6219	95	3.7402	170	6.6929	32	1.2598	0.079	4.213	4.492	6.220
6220	100	3.9370	180	7.0866	34	1.3386	0.079	4.409	4.787	6.614
6221	105	4.1339	190	7.4803	36	1.4173	0.079	4.606	5.024	7.008
6222	110	4.3307	200	7.8740	38	1.4961	0.079	4.803	5.280	7.402
6224	120	4.7244	215	8.4646	40	1.5748	0.079	5.197	5.752	7.992
6226	130	5.1181	230	9.0551	40	1.5748	0.098	5.669	6.206	8.504
6228	140	5.5118	250	9.8425	42	1.6535	0.098	6.063	6.757	9.291
6230	150	5.9055	270	10.6299	45	1.7717	0.098	6.457	7.328	10.079
6232	160	6.2992	290	11.4173	48	1.8898	0.098	6.850	7.959	10.886
6234	170	6.6929	310	12.2047	52	2.0472	0.118	7.362	8.471	11.535
6236	180	7.0866	320	12.5984	52	2.0472	0.118	7.758	8.786	11.929
6238	190	7.4803	340	13.3858	55	2.1654	0.118	8.150	9.298	12.717

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
V	: One Non-Contact Seal
VV	: Two Non-Contact Seals
Z	: One Shield
ZZ	: Two Shields
DU	: One Contact Seal
DDU	: Two Contact Seals
NR	: Snap Ring
M††	: Brass Cage
CO†	: Normal Internal Clearance
C3	: Greater Than Normal
E	: Electric Motor Quality

† Not shown in part number
 †† Not available on small sizes,
 Consult NSK for availability.

Bearing Number	Basic Load Ratings (lbs)		Factor f_o	Limiting Speeds (1000 RPM)		Bearing Weight (Approx.) lbs
	C_r	C_{or}		Grease	Oil	
6200	1150	538	13.2	24.0	30.0	0.07
6201	1530	685	12.3	22.0	28.0	0.08
6201-08	1530	685	12.3	22.0	28.0	0.08
6201-13 M	1530	685	12.3	22.0	28.0	0.08
6202	1720	839	13.2	20.0	24.0	0.10
6202-10	1720	839	13.2	20.0	24.0	0.10
6202-16 M	1720	839	13.2	20.0	24.0	0.10
6203	2150	1080	13.2	17.0	20.0	0.14
6203-625	2150	1080	13.2	17.0	20.0	0.14
6204	2880	1480	13.1	15.0	18.0	0.23
6205	3150	1770	13.9	13.0	15.0	0.29
6206	4380	2540	13.8	11.0	13.0	0.44
6207	5770	3440	13.8	9.5	11.0	0.64
6208	6550	4010	14.0	8.5	10.0	0.82
6209	7030	4580	14.4	7.5	9.0	0.89
6210	7890	5220	14.4	7.1	8.5	1.02
6211	9760	6580	14.3	6.3	7.5	1.36
6212	11800	8130	14.3	5.6	7.1	1.73
6213	12900	9010	14.4	5.3	6.3	2.18
6214	14000	9910	14.5	5.0	6.3	2.31
6215	14900	11100	14.7	4.8	5.6	2.64
6216	16300	11900	14.6	4.5	5.3	3.09
6217	18900	13900	14.5	4.3	5.0	3.97
6218	21600	16100	14.5	4.0	4.8	4.74
6219	24500	18400	14.4	3.8	4.5	5.73
6220	27500	20900	14.4	3.6	4.3	6.94
6221	29900	23500	14.4	3.4	4.0	8.15
6222	32400	26300	14.3	2.8	3.4	9.59
6224	34900	29500	14.4	2.6	3.2	11.40
6226	37500	32900	14.5	2.4	3.0	12.70
6228	37400	33700	14.9	2.2	2.8	19.60
6230	39600	37700	15.1	2.0	2.6	25.30
6232	41600	41800	15.4	1.9	2.4	28.16
6234	47700	50300	15.3	1.8	2.2	34.32
6236	51100	55000	15.1	1.7	2.0	34.76
6238	57300	63300	15.0	1.6	2.0	48.84

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

6300 Series

Single Row, Deep Groove, Conrad Type

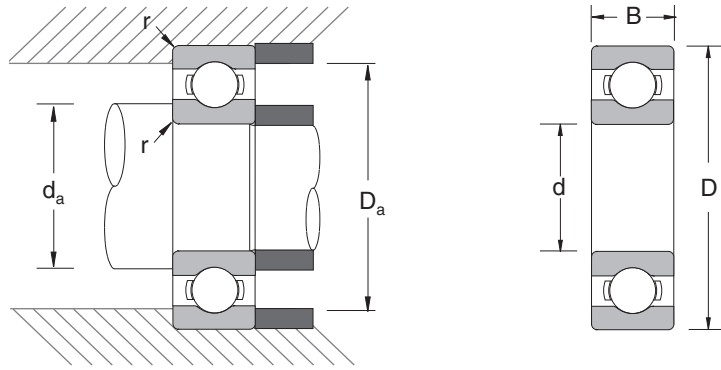
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters			
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)		<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max	max
6300	10	0.3937	35	1.3780	11	0.4331	0.024	0.563	0.650	1.181
6301	12	0.4724	37	1.4567	12	0.4724	0.039	0.656	0.709	1.220
6302	15	0.5906	42	1.6535	13	0.5118	0.039	0.781	0.887	1.417
6303	17	0.6693	47	1.8504	14	0.5512	0.039	0.875	1.005	1.614
6304	20	0.7874	52	2.0472	15	0.5906	0.039	1.016	1.103	1.772
6305	25	0.9843	62	2.4409	17	0.6693	0.039	1.220	1.418	2.165
6306	30	1.1811	72	2.8346	19	0.7480	0.039	1.469	1.675	2.559
6307	35	1.3780	80	3.1496	21	0.8268	0.059	1.688	1.852	2.795
6308	40	1.5748	90	3.5433	23	0.9055	0.059	1.929	2.088	3.189
6309	45	1.7717	100	3.9370	25	0.9843	0.059	2.126	2.423	3.583
6310	50	1.9685	110	4.3307	27	1.0630	0.079	2.362	2.679	3.937
6311	55	2.1654	120	4.7244	29	1.1417	0.079	2.559	2.857	4.331
6312	60	2.3622	130	5.1181	31	1.2205	0.079	2.835	3.113	4.646
6313	65	2.5591	140	5.5118	33	1.2992	0.079	3.031	3.369	5.039
6314	70	2.7559	150	5.9055	35	1.3780	0.079	3.228	3.625	5.433
6315	75	2.9528	160	6.2992	37	1.4567	0.079	3.425	3.881	5.827
6316	80	3.1496	170	6.6929	39	1.5354	0.079	3.622	4.117	6.220
6317	85	3.3465	180	7.0866	41	1.6142	0.098	3.898	4.354	6.535
6318	90	3.5433	190	7.4803	43	1.6929	0.098	4.094	4.610	6.929
6319	95	3.7402	200	7.8740	45	1.7717	0.098	4.291	4.866	7.323
6320	100	3.9370	215	8.4646	47	1.8504	0.098	4.488	5.240	7.913
6321	105	4.1339	225	8.8583	49	1.9291	0.098	4.685	5.437	8.307
6322	110	4.3307	240	9.4488	50	1.9685	0.098	4.882	5.851	8.898
6324	120	4.7244	260	10.2362	55	2.1654	0.098	5.276	6.343	9.685
6326	130	5.1181	280	11.0236	58	2.2835	0.118	5.827	6.895	10.315
6328	140	5.5118	300	11.8110	62	2.4409	0.118	6.220	7.368	11.102
6330	150	5.9055	320	12.5984	65	2.5591	0.118	6.614	7.998	11.890
6332	160	6.2992	340	13.3858	68	2.6772	0.118	7.008	-	12.677
6334	170	6.6929	360	14.1732	72	2.8346	0.118	7.402	-	13.465
6336	180	7.0866	380	14.9606	75	2.9528	0.118	7.795	-	14.252
6338	190	7.4803	400	15.7480	78	3.0709	0.157	8.346	-	14.882
6340	200	7.8740	420	16.5354	80	3.1496	0.157	8.740	-	15.669

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Radial Internal Clearance — Table 10.35 page 330
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Common Options	
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C3	: Greater Than Normal
E	: Electric Motor Quality

† Not shown in part number
 †† Not available on small sizes,
 Consult NSK for availability.

Bearing Number	Basic Load Ratings (lbs)		Factor f_o	Limiting Speeds (1000 RPM)		Bearing Weight (Approx.) lbs
	C_r	C_{or}		Grease	Oil	
6300	1820	772	11.2	22.0	26.0	0.12
6301	2180	941	11.1	20.0	24.0	0.13
6302	2570	1220	12.3	17.0	20.0	0.18
6303	3060	1490	12.4	15.0	18.0	0.25
6304	3580	1770	12.4	14.0	17.0	0.32
6305	4630	2530	13.2	11.0	13.0	0.52
6306	5990	3380	13.3	9.5	12.0	0.76
6307	7490	4320	13.2	8.5	10.0	1.01
6308	9160	5400	13.2	7.5	9.0	1.40
6309	11900	7210	13.1	6.7	8.0	1.84
6310	13900	8610	13.2	6.0	7.5	2.42
6311	16100	10040	13.1	5.6	6.7	2.98
6312	18400	11680	13.1	5.3	6.3	3.75
6313	20800	13450	13.2	4.8	6.0	4.63
6314	23400	15300	13.2	4.5	5.3	5.51
6315	25500	17400	13.2	4.3	5.0	6.61
6316	27600	19500	13.3	4.0	4.8	7.93
6317	29800	21800	13.3	3.8	4.5	9.37
6318	32100	24100	13.3	3.6	4.3	10.80
6319	34400	26700	13.3	3.0	3.6	12.50
6320	38900	31800	13.2	2.8	3.4	15.30
6321	41300	34500	13.2	2.6	3.2	17.90
6322	46200	40300	13.2	2.4	3.0	21.00
6324	46500	41500	13.5	2.2	2.8	27.60
6326	51600	48200	13.6	2.2	2.6	40.80
6328	56800	55300	13.6	2.0	2.4	48.50
6330	61700	63800	13.9	1.8	2.2	57.30
6332	62400	64400	13.9	1.7	2.0	58.00
6334	73400	79800	13.6	1.6	2.0	84.00
6336	79600	91600	13.9	1.5	1.8	98.00
6338	79700	93200	14.1	1.4	1.7	112.00
6340	85300	100400	13.8	1.3	1.6	127.00

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load RatingEngineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

6800 Series

Single Row, Deep Groove, Conrad Type

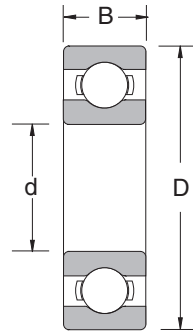
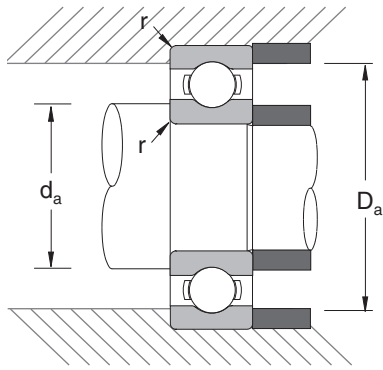
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters			
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)		<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max	max
6800	10	0.3937	19	0.7480	5	0.1969	0.012	0.551	0.551	0.700
6801	12	0.4724	21	0.8268	5	0.1969	0.012	0.551	0.551	0.748
6802	15	0.5906	24	0.9449	5	0.1969	0.012	0.669	0.669	0.866
6803	17	0.6693	26	1.0236	5	0.1969	0.012	0.748	0.748	0.945
6804	20	0.7874	32	1.2598	7	0.2756	0.012	0.866	0.866	1.181
6805	25	0.9843	37	1.4567	7	0.2756	0.012	1.063	1.063	1.378
6806	30	1.1811	42	1.6535	7	0.2756	0.012	1.260	1.260	1.575
6807	35	1.3780	47	1.8504	7	0.2756	0.012	1.457	1.457	1.772
6808	40	1.5748	52	2.0472	7	0.2756	0.012	1.654	1.654	1.969
6809	45	1.7717	58	2.2835	7	0.2756	0.012	1.850	1.870	2.205
6810	50	1.9685	65	2.5591	7	0.2756	0.012	2.047	2.067	2.480
6811	55	2.1654	72	2.8346	9	0.3543	0.012	2.244	2.323	2.756
6812	60	2.3622	78	3.0709	10	0.3937	0.012	2.441	2.520	2.992
6813	65	2.5591	85	3.3465	10	0.3937	0.024	2.717	2.717	3.189
6814	70	2.7559	90	3.5433	10	0.3937	0.024	2.913	2.933	3.386
6815	75	2.9528	95	3.7402	10	0.3937	0.024	3.110	3.130	3.583
6816	80	3.1496	100	3.9370	10	0.3937	0.024	3.307	3.327	3.780
6817	85	3.3465	110	4.3307	13	0.5118	0.039	3.543	3.563	4.134
6818	90	3.5433	115	4.5276	13	0.5118	0.039	3.740	3.760	4.331
6819	95	3.7402	120	4.7244	13	0.5118	0.039	3.937	3.957	4.528
6820	100	3.9370	125	4.9213	13	0.5118	0.039	4.134	4.154	4.724
6821	105	4.1339	130	5.1181	13	0.5118	0.039	4.331	4.350	4.921
6822	110	4.3307	140	5.5118	16	0.6299	0.039	4.528	4.606	5.315
6824	120	4.7244	150	5.9055	16	0.6299	0.039	4.921	5.000	5.709
6826	130	5.1181	165	6.4961	18	0.7087	0.039	5.374	5.433	6.240
6828	140	5.5118	175	6.8898	18	0.7087	0.039	5.768	-	6.634
6830	150	5.9055	190	7.4803	20	0.7874	0.039	6.161	-	7.224
6832	160	6.2992	200	7.8740	20	0.7874	0.039	6.555	6.713	7.618
6834	170	6.6929	215	8.4646	22	0.8661	0.039	6.949	7.165	8.209
6836	180	7.0866	225	8.8583	22	0.8661	0.039	7.343	-	8.602
6838	190	7.4803	240	9.4488	24	0.9449	0.059	7.795	7.972	9.134
6840	200	7.8740	250	9.8425	24	0.9449	0.059	8.189	-	9.528

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Radial Internal Clearance — Table 10.35 page 330
 Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
V	: One Non-Contact Seal
VV	: Two Non-Contact Seals
Z	: One Shield
ZZ	: Two Shields
DU	: One Contact Seal
DDU	: Two Contact Seals
NR	: Snap Ring
M††	: Brass Cage
CO†	: Normal Internal Clearance
C3	: Greater Than Normal
E	: Electric Motor Quality

† Not shown in part number
 †† Not available on small sizes,
 Consult NSK for availability.

Bearing Number	Basic Load Ratings (lbs)		Factor f_o	Limiting Speeds (1000 RPM)		Bearing Weight (Approx.) lbs
	C_r	C_{or}		Grease	Oil	
6800	385	189	14.8	34.0	40.0	0.01
6801	429	233	15.3	32.0	38.0	0.01
6802	466	282	15.8	28.0	34.0	0.02
6803	590	352	15.7	26.0	30.0	0.02
6804	902	554	15.5	22.0	26.0	0.04
6805	968	660	16.1	18.0	22.0	0.05
6806	1010	770	16.4	15.0	18.0	0.05
6807	1070	880	16.7	13.0	16.0	0.06
6808	1100	979	17.0	12.0	14.0	0.07
6809	1210	1180	17.2	11.0	13.0	0.08
6810	1440	1400	17.2	9.5	11.0	0.11
6811	1980	1900	17.0	8.5	10.0	0.18
6812	2570	2460	16.9	8.0	9.5	0.22
6813	2680	2710	17.0	7.5	8.5	0.28
6814	2710	2860	17.2	6.7	8.0	0.29
6815	2820	3100	17.3	6.3	7.5	0.32
6816	2840	3230	17.4	6.0	7.4	0.32
6817	4200	4490	17.1	5.6	6.7	0.56
6818	4270	4710	17.2	5.3	6.3	0.59
6819	4330	4930	17.2	5.0	6.0	0.63
6820	4400	5150	17.3	4.8	5.6	0.66
6821	4440	5370	17.4	4.8	5.6	0.69
6822	6290	7370	17.1	4.3	5.3	1.07
6824	6490	8030	17.3	4.0	4.8	1.16
6826	8250	9790	17.1	3.6	4.3	1.63
6828	8580	10700	17.3	3.4	4.0	1.79
6830	10700	10900	17.1	3.2	3.8	2.49
6832	10900	13800	17.2	2.6	3.2	3.08
6834	13400	16800	17.1	2.6	3.0	4.11
6836	13600	17600	17.2	2.4	2.8	4.36
6838	16400	21000	17.1	2.2	2.6	5.57
6840	16600	22000	17.2	2.2	2.6	5.85

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

6900 Series

Single Row, Deep Groove, Conrad Type

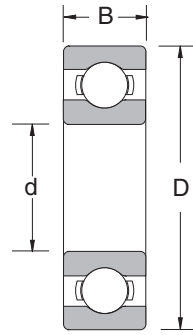
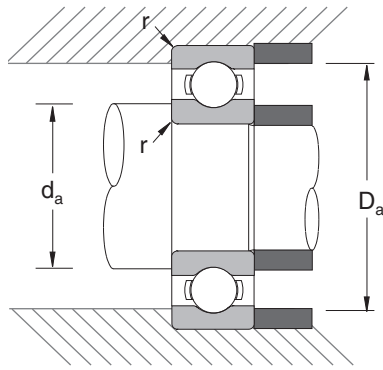
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters			
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)		<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max	max
6900	10	0.3937	22	0.8661	6	0.2362	0.012	0.472	0.492	0.787
6901	12	0.4724	24	0.9449	6	0.2362	0.012	0.551	0.571	0.866
6902	15	0.5906	28	1.1024	7	0.2756	0.012	0.669	0.669	1.024
6903	17	0.6693	30	1.1811	7	0.2756	0.012	0.748	0.768	1.102
6904	20	0.7874	37	1.4567	9	0.3543	0.012	0.866	0.945	1.378
6905	25	0.9843	42	1.6535	9	0.3543	0.012	1.063	1.122	1.575
6906	30	1.1811	47	1.8504	9	0.3543	0.012	1.260	1.339	1.772
6907	35	1.3780	55	2.1654	10	0.3937	0.024	1.535	1.535	2.008
6908	40	1.5748	62	2.4409	12	0.4724	0.024	1.732	1.811	2.283
6909	45	1.7717	68	2.6772	12	0.4724	0.024	1.929	1.969	2.520
6910	50	1.9685	72	2.8346	12	0.4724	0.024	2.126	2.165	2.677
6911	55	2.1654	80	3.1496	13	0.5118	0.039	2.362	2.421	2.953
6912	60	2.3622	85	3.3465	13	0.5118	0.039	2.559	2.598	3.150
6913	65	2.5591	90	3.5433	13	0.5118	0.039	2.756	2.815	3.346
6914	70	2.7559	100	3.9370	16	0.6299	0.039	2.953	3.051	3.740
6915	75	2.9528	105	4.1339	16	0.6299	0.039	3.150	3.228	3.937
6916	80	3.1496	110	4.3307	16	0.6299	0.039	3.346	3.445	4.134
6917	85	3.3465	120	4.7244	18	0.7087	0.039	3.602	3.720	4.469
6918	90	3.5433	125	4.9213	18	0.7087	0.039	3.799	3.878	4.665
6919	95	3.7402	130	5.1181	18	0.7087	0.039	3.996	4.075	4.862
6920	100	3.9370	140	5.5118	20	0.7874	0.039	4.193	4.370	5.256
6921	105	4.1339	145	5.7087	20	0.7874	0.039	4.390	4.567	5.453
6922	110	4.3307	150	5.9055	20	0.7874	0.039	4.587	4.764	5.650
6924	120	4.7244	165	6.4961	22	0.8661	0.039	4.980	5.197	6.240
6926	130	5.1181	180	7.0866	24	0.9449	0.059	5.433	5.669	6.772
6928	140	5.5118	190	7.4803	24	0.9449	0.059	5.827	6.043	7.165
6930	150	5.9055	210	8.2677	28	1.1024	0.079	6.260	6.535	7.913
6932	160	6.2992	220	8.6614	28	1.1024	0.079	6.654	6.929	8.307
6934	170	6.6929	230	9.0551	28	1.1024	0.079	7.047	7.323	8.701
6936	180	7.0866	250	9.8425	33	1.2992	0.079	7.441	7.815	9.488
6938	190	7.4803	260	10.2362	33	1.2992	0.079	7.835	-	9.882
6940	200	7.8740	280	11.0236	38	1.4961	0.079	8.307	8.740	10.591

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Radial Internal Clearance — Table 10.35 page 330
 Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
V	: One Non-Contact Seal
VV	: Two Non-Contact Seals
Z	: One Shield
ZZ	: Two Shields
DU	: One Contact Seal
DDU	: Two Contact Seals
NR	: Snap Ring
M††	: Brass Cage
CO†	: Normal Internal Clearance
C3	: Greater Than Normal
E	: Electric Motor Quality

† Not shown in part number
 †† Not available on small sizes,
 Consult NSK for availability.

Bearing Number	Basic Load Ratings (lbs)		Factor f_o	Limiting Speeds (1000 RPM)		Bearing Weight (Approx.) lbs
	C_r	C_{or}		Grease	Oil	
6900	605	284	14.0	32.0	38.0	0.02
6901	649	328	14.5	30.0	36.0	0.02
6902	968	506	14.3	26.0	30.0	0.03
6903	1030	572	14.7	24.0	28.0	0.04
6904	1430	825	14.7	19.0	22.0	0.08
6905	1570	1010	15.4	16.0	19.0	0.09
6906	1630	1120	15.8	14.0	17.0	0.11
6907	2380	1630	15.5	12.0	15.0	0.16
6908	3060	2240	15.7	11.0	13.0	0.24
6909	3170	2440	15.9	9.5	12.0	0.27
6910	3260	2640	16.1	9.0	11.0	0.29
6911	3590	2970	16.2	8.0	9.5	0.40
6912	4360	3650	16.2	7.5	9.0	0.41
6913	3890	3610	16.6	7.1	8.5	0.47
6914	5320	4750	16.3	6.3	7.5	0.75
6915	5460	5060	16.5	6.0	7.4	0.79
6916	5590	5390	16.6	5.6	6.7	0.84
6917	7150	6600	16.4	5.3	6.3	1.19
6918	7370	7040	16.5	5.0	6.0	1.25
6919	7590	7480	16.6	4.8	5.6	1.28
6920	9570	9350	16.4	4.5	5.3	1.78
6921	9460	9460	16.5	4.3	5.3	1.84
6922	9790	10000	16.6	4.3	5.0	1.91
6924	11900	12100	16.5	3.8	4.5	2.62
6926	14600	15100	16.5	3.4	4.0	3.41
6928	15000	16100	16.6	3.2	3.8	3.61
6930	19000	20200	16.5	2.6	3.2	6.56
6932	19500	21600	16.6	2.6	3.0	6.89
6934	19300	21700	16.7	2.4	2.8	7.28
6936	26600	28800	16.4	2.2	2.6	10.76
6938	25300	28600	16.6	2.2	2.6	11.31
6940	32100	35400	16.4	2.0	2.4	15.82

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Ball Bearings

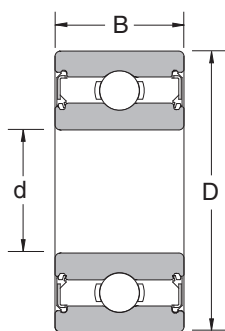
63200 Series
Single Row, Deep Groove, Cartridge

Bearing Number	Nominal Bearing Dimensions					Preferred Shoulder Diameters			Basic Load Ratings (lbs)		Bearing Weight (Approx.) lbs
	<i>d</i>		<i>D</i>		<i>B</i>	<i>r*</i>	Shaft	Housing	<i>C_r</i>	<i>C_{or}</i>	
	mm	inch	mm	inch	inch	inch	inch	inch			
63204 DDU	20	0.7874	47	1.8504	0.8125	0.039	0.969	1.614	2870	1480	0.34
63205 DDU	25	0.9843	52	2.0472	0.8125	0.039	1.172	1.811	3150	1760	0.39
63206 DDU	30	1.1811	62	2.4409	0.9375	0.039	1.406	2.205	4370	2540	0.96
63207 DDU	35	1.3780	72	2.8346	1.0625	0.039	1.614	2.559	5780	3440	0.96
63208 DDU	40	1.5748	80	3.1496	1.1875	0.039	1.811	2.874	6550	4010	1.28
63209 DDU	45	1.7717	85	3.3465	1.1875	0.039	2.008	3.071	7050	4590	1.37

*Maximum fillet which corner radius of bearing will clear.

C_r = Dynamic Radial Load Rating
C_{or} = Static Radial Load

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

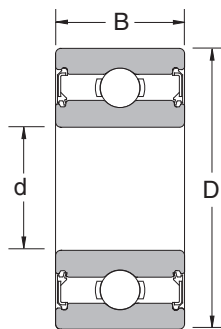
63300 Series
Single Row, Deep Groove, Cartridge

Bearing Number	Nominal Bearing Dimensions					Preferred Shoulder Diameters			Basic Load Ratings (lbs)		Bearing Weight (Approx.)
	<i>d</i>		<i>D</i>		<i>B</i>	<i>r</i> *	Shaft	Housing	<i>C_r</i>	<i>C_{or}</i>	
	mm	inch	mm	inch	inch	inch	inch	inch			lbs
63304 DDU	20	0.7874	52	2.0472	0.8750	0.039	1.016	1.772	3580	1770	0.44
63305 DDU	25	0.9843	62	2.4409	1.0000	0.039	1.220	2.165	4630	2530	0.78
63306 DDU	30	1.1811	72	2.8346	1.1875	0.039	1.469	2.559	5990	3380	1.13
63307 DDU	35	1.3780	80	3.1496	1.3750	0.059	1.688	2.795	7490	4320	1.64
63308 DDU	40	1.5748	90	3.5433	1.4375	0.059	1.929	3.189	9160	5400	2.06
63309 DDU	45	1.7717	100	3.9370	1.5625	0.059	2.126	3.583	11910	7210	3.00
63310 DDU	50	1.9685	110	4.3307	1.7500	0.079	2.362	3.937	13940	8610	3.75
63311 DDU	55	2.1654	120	4.7244	1.9375	0.079	2.559	4.331	16070	10040	5.12
63312 DDU	60	2.3622	130	5.1181	2.1250	0.079	2.835	4.646	18400	11700	6.50

*Maximum fillet which corner radius of bearing will clear.

C_r = Dynamic Radial Load Rating
C_{or} = Static Radial Load

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.





Ball Bearings

1200/1300 Series
Double Row, Self-Aligning

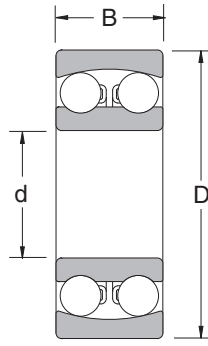
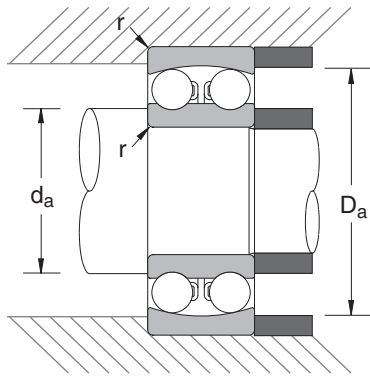
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters		
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)	<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max
1200	10	0.3937	30	1.1811	9	0.3543	0.024	0.552	1.024
1201	12	0.4724	32	1.2598	10	0.3937	0.024	0.630	1.103
1301	12	0.4724	37	1.4567	12	0.4724	0.039	0.670	1.261
1202	15	0.5906	35	1.3780	11	0.4331	0.024	0.749	1.221
1302	15	0.5906	42	1.6535	13	0.5118	0.039	0.788	1.458
1203	17	0.6693	40	1.5748	12	0.4724	0.024	0.827	1.418
1303	17	0.6693	47	1.8504	14	0.5512	0.039	0.867	1.655
1204	20	0.7874	47	1.8504	14	0.5512	0.039	0.985	1.655
1304	20	0.7874	52	2.0472	15	0.5906	0.039	1.044	1.793
1205	25	0.9843	52	2.0472	15	0.5906	0.039	1.182	1.852
1305	25	0.9843	62	2.4409	17	0.6693	0.039	1.241	2.187
1206	30	1.1811	62	2.4409	16	0.6299	0.039	1.379	2.246
1306	30	1.1811	72	2.8346	19	0.7480	0.039	1.438	2.581
1207	35	1.3780	72	2.8346	17	0.6693	0.039	1.635	2.581
1307	35	1.3780	80	3.1496	21	0.8268	0.059	1.694	2.837
1208	40	1.5748	80	0.3150	18	0.7087	0.039	1.832	2.896
1308	40	1.5748	90	3.5433	23	0.9055	0.059	1.891	3.231
1209	45	1.7717	85	3.3465	19	0.7480	0.039	2.029	3.093
1309	45	1.7717	100	3.9370	25	0.9843	0.059	2.088	3.625
1210	50	1.9685	90	3.5433	20	0.7874	0.039	2.226	3.290
1310	50	1.9685	110	4.3307	27	1.0630	0.079	2.325	3.979
1211	55	2.1654	100	3.9370	21	0.8268	0.059	2.482	3.625
1311	55	2.1654	120	4.7244	29	1.1417	0.079	2.522	4.373
1212	60	2.3622	110	4.3307	22	0.8661	0.059	2.679	4.019
1312	60	2.3622	130	5.1181	31	1.2205	0.079	2.797	4.689
1213	65	2.5591	120	4.7244	23	0.9055	0.059	2.876	4.413
1313	65	2.5591	140	5.5118	33	1.2992	0.079	2.994	5.083
1214	70	2.7559	125	4.9213	24	0.9449	0.059	3.073	4.610
1314	70	2.7559	150	5.9055	35	1.3780	0.079	3.191	5.477
1215	75	2.9528	130	5.1181	25	0.9843	0.059	3.270	4.807
1315	75	2.9528	160	6.2992	37	1.4567	0.079	3.388	5.871

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
E	: Extra Capacity
K	: Tapered Bore
CO†	: Normal Internal Clearance
C3	: Looser than Normal
† Not shown in part number	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.)
	C_r	C_{or}	Grease	Oil	lbs
1200	1240	344	24.0	30.0	0.07
1201	1260	373	24.0	30.0	0.09
1301	2140	629	18.0	22.0	0.15
1202	1690	513	20.0	36.0	0.11
1302	2140	674	17.0	20.0	0.21
1203	1800	596	18.0	22.0	0.16
1303	2810	933	15.0	17.0	0.30
1204	2250	776	15.0	18.0	0.26
1304	2810	989	13.0	15.0	0.38
1205	2740	989	13.0	16.0	0.30
1305	4050	1510	11.0	13.0	0.61
1206	3510	1390	11.0	14.0	0.49
1306	4770	1910	9.0	11.0	0.90
1207	3600	1560	9.5	12.0	0.73
1307	5620	2380	8.0	9.5	1.18
1208	4340	1980	8.5	10.0	0.92
1308	6520	2900	7.0	8.5	1.64
1209	4950	2250	7.5	9.0	1.02
1309	8540	3820	6.3	7.5	2.19
1210	5130	2470	7.0	8.5	1.17
1310	9330	4340	5.6	6.7	2.84
1211	6070	3080	6.3	7.5	1.53
1311	11500	5400	5.0	6.0	3.62
1212	6740	3600	5.6	6.7	1.98
1312	12800	6290	4.5	5.3	4.48
1213	6970	3890	5.3	6.3	2.54
1313	13900	6970	4.3	5.0	5.56
1214	7760	4270	5.0	6.0	2.84
1314	16900	8430	4.0	4.8	6.79
1215	8770	3530	4.3	5.3	2.98
1315	18000	6740	3.8	4.5	7.83

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

2200/2300 Series
Double Row, Self-Aligning

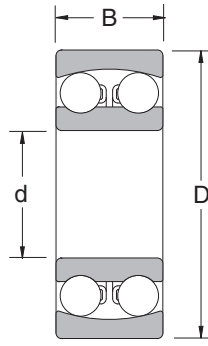
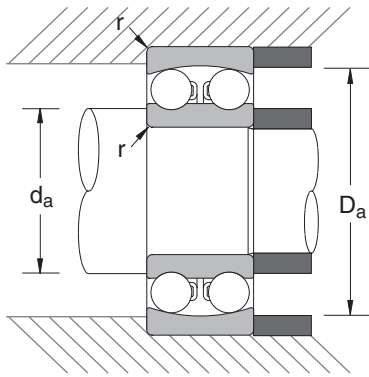
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters		
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)	<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max
2200	10	0.3937	30	1.1811	14	0.5512	0.024	0.552	1.024
2201	12	0.4724	32	1.2598	14	0.5512	0.024	0.630	1.103
2202	15	0.5906	35	1.3780	14	0.5512	0.024	0.749	1.221
2302	15	0.5906	42	1.6535	17	0.6693	0.039	0.788	1.458
2203	17	0.6693	40	1.5748	16	0.6299	0.024	0.827	1.418
2303	17	0.6693	47	1.8504	19	0.7480	0.039	0.867	1.655
2204	20	0.7874	47	1.8504	18	0.7087	0.039	0.985	1.655
2304	20	0.7874	52	2.0472	21	0.8268	0.043	1.044	1.793
2205	25	0.9843	52	2.0472	18	0.7087	0.039	1.182	1.852
2305	25	0.9843	62	2.4409	24	0.9449	0.043	1.241	2.187
2206	30	1.1811	62	2.4409	20	0.7874	0.039	1.379	2.246
2306	30	1.1811	72	2.8346	27	1.0630	0.043	1.438	2.581
2207	35	1.3780	72	2.8346	23	0.9055	0.043	1.635	2.581
2307	35	1.3780	80	3.1496	31	1.2205	0.059	1.694	2.837
2208	40	1.5748	80	3.1496	23	0.9055	0.043	1.832	2.896
2308	40	1.5748	90	3.5433	33	1.2992	0.059	1.891	3.231
2209	45	1.7717	85	3.3465	23	0.9055	0.043	2.029	3.093
2309	45	1.7717	100	3.9370	36	1.4173	0.059	2.088	3.625
2210	50	1.9685	90	3.5433	23	0.9055	0.043	2.226	3.290
2310	50	1.9685	110	4.3307	40	1.5748	0.079	2.325	3.979
2211	55	2.1654	100	3.9370	25	0.9843	0.059	2.482	3.625
2311	55	2.1654	120	4.7244	43	1.6929	0.079	2.522	4.373
2212	60	2.3622	110	4.3307	28	1.1024	0.059	2.679	4.019
2312	60	2.3622	130	5.1181	46	1.8110	0.079	2.797	4.689
2213	65	2.5591	120	4.7244	31	1.2205	0.059	2.876	4.413
2313	65	2.5591	140	5.5118	48	1.8898	0.079	2.994	5.083
2214	70	2.7559	125	4.9213	31	1.2205	0.059	3.073	4.610
2314	70	2.7559	150	5.9055	51	2.0079	0.079	3.191	5.477
2215	75	2.9528	130	5.1181	31	1.2205	0.059	3.270	4.807
2315	75	2.9528	160	6.2992	55	2.1654	0.079	3.388	5.871
2216	80	3.1496	140	5.5118	33	1.2992	0.079	3.507	5.161
2316	80	3.1496	170	6.6929	58	2.2835	0.079	3.585	6.265

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
E	: Extra Capacity
K	: Tapered Bore
CO†	: Normal Internal Clearance
C3	: Looser than Normal
† Not shown in part number	
‡ Load ratings are lower, please consult NSK	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.) lbs
	C_r	C_{or}	Grease	Oil	
2200	1620	459	24.0	30.0	0.10
2201	1690	504	24.0	30.0	0.12
2202	1720	540	22.0	26.0	0.13
2302	2290	843	16.0	19.0	0.24
2203	2200	708	17.0	20.0	0.19
2303	3210	1020	14.0	17.0	0.39
2204	3210	1050	14.0	17.0	0.31
2304	4050	1370	13.0	16.0	0.52
2205	3820	1320	12.0	15.0	0.35
2305	5510	1910	10.0	13.0	0.82
2206	5730	2020	9.5	12.0	0.55
2306	7080	2560	8.5	10.0	1.22
2207	7190	2650	8.0	9.5	0.88
2307	8770	3280	7.5	9.0	1.64
2208	7080	2810	7.5	9.0	1.08
2308	10100	3960	6.7	8.0	2.20
2209	6290	2700	7.1	8.5	1.17
2309	12100	4950	6.0	7.1	2.91
2210	6290	2900	6.7	8.0	1.26
2310	14400	5960	5.3	6.3	3.92
2211	5960	3010	6.3	7.5	1.83
2311	16900	7080	4.8	5.6	5.05
2212	7640	3890	5.6	6.7	2.54
2312	19400	8430	4.3	5.0	6.24
2213	9890	5040	5.0	6.0	3.35
2313	21400	9670	4.0	4.8	7.56
2214	9890	5220	4.8	5.6	3.51
2314	24700	11200	3.6	4.5	9.19
2215	10000	4000	4.3	5.3	3.40
2315	28100	9670	3.4	4.3	10.30
2216	11000	4470	4.0	5.0	4.19
2316	29200	10100	3.2	4.0	11.99

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

3200/3300 Series
Double Row, Maximum Capacity

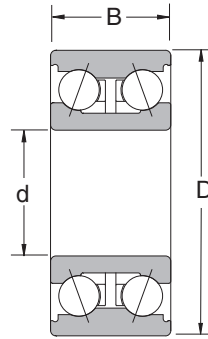
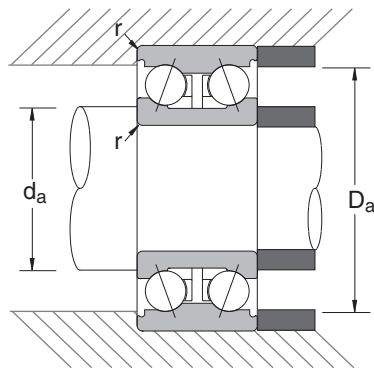
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters		
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)	<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max
3200 J	10	0.3937	30	1.1811	14.0	0.5512	0.023	0.546	1.014
3201 J	12	0.4724	32	1.2598	15.9	0.6260	0.023	0.624	1.092
3202 J	15	0.5906	35	1.3780	15.9	0.6260	0.023	0.741	1.209
3302 J	15	0.5906	42	1.6535	19.0	0.7480	0.039	0.819	1.404
3203 J	17	0.6693	40	1.5748	17.5	0.6890	0.023	0.819	1.404
3303 J	17	0.6693	47	1.8504	22.2	0.8740	0.039	0.897	1.599
3204 J	20	0.7874	47	1.8504	20.6	0.8110	0.039	1.014	1.599
3304 J	20	0.7874	52	2.0472	22.2	0.8740	0.039	1.053	1.755
3205 J	25	0.9843	52	2.0472	20.6	0.8110	0.039	1.209	1.794
3305 J	25	0.9843	62	2.4409	25.4	1.0000	0.039	1.209	2.145
3206 J	30	1.1811	62	2.4409	23.8	0.9370	0.039	1.404	2.184
3306 J	30	1.1811	72	2.8346	30.2	1.1890	0.039	1.443	2.535
3207 J	35	1.3780	72	2.8346	27.0	1.0630	0.039	1.638	2.535
3307 J	35	1.3780	80	3.1496	34.9	1.3740	0.059	1.716	2.769
3208 J	40	1.5748	80	3.1496	30.2	1.1890	0.039	1.833	2.847
3308 J	40	1.5748	90	3.5433	36.5	1.4370	0.059	1.911	3.159
3209 J	45	1.7717	85	3.3465	30.2	1.1890	0.039	2.028	3.042
3309 J	45	1.7717	100	3.9370	39.7	1.5630	0.059	2.106	3.549
3210 J	50	1.9685	90	3.5433	30.2	1.1890	0.039	2.223	3.237
3310 J	50	1.9685	110	4.3307	44.4	1.7480	0.078	2.340	3.900
3211 J	55	2.1654	100	3.9370	33.3	1.3110	0.059	2.496	3.549
3311 J	55	2.1654	120	4.7244	49.2	1.9370	0.078	2.535	4.290
3212 J	60	2.3622	110	4.3307	36.5	1.4370	0.059	2.691	3.939
3312 J	60	2.3622	130	5.1181	54.0	2.1260	0.078	2.808	4.602
3213 J	65	2.5591	120	4.7244	38.1	1.5000	0.059	2.886	4.329
3313 J	65	2.5591	140	5.5118	58.7	2.3110	0.078	3.003	4.992
3214 J	70	2.7559	125	4.9213	39.7	1.5630	0.059	3.081	4.524
3314 J	70	2.7559	150	5.9055	63.5	2.5000	0.078	3.198	5.382

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
NR	: Snap Ring
CO†	: Normal Internal Clearance
C3	: Greater than Normal
† Not shown in part number	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.)
	C_r	C_{or}	Grease	Oil	lbs
3200 J	1820	1330	17.0	24.0	0.11
3201 J	2180	1620	15.0	20.0	0.14
3202 J	2470	1890	13.0	18.0	0.16
3302 J	3190	2380	12.0	17.0	0.29
3203 J	2880	2290	12.0	17.0	0.23
3303 J	4520	3420	10.0	15.0	0.42
3204 J	3960	3240	10.0	15.0	0.37
3304 J	4610	3570	9.5	14.0	0.51
3205 J	4360	3840	8.5	12.0	0.43
3305 J	6320	5150	7.5	10.0	0.81
3206 J	5940	5440	7.0	9.5	0.70
3306 J	8410	7010	6.3	8.5	1.29
3207 J	8410	7940	6.3	8.5	1.06
3307 J	10600	9130	5.6	7.5	1.80
3208 J	9290	8680	5.6	7.5	1.44
3308 J	13100	11900	4.8	6.3	2.35
3209 J	9890	10100	5.0	6.7	1.56
3309 J	16000	15100	4.3	5.6	3.08
3210 J	11100	11300	4.8	6.3	1.68
3310 J	19100	18300	4.0	5.3	4.29
3211 J	13200	12100	4.3	5.6	2.31
3311 J	22000	21400	3.6	4.8	5.61
3212 J	15600	16200	3.8	5.0	3.08
3312 J	25600	25200	3.4	4.5	7.15
3213 J	16500	18700	3.6	4.8	3.85
3313 J	29000	29000	3.2	4.3	9.02
3214 J	18300	20600	3.2	4.3	4.18
3314 J	32100	32800	2.8	3.8	11.11

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Introduction

Ball Bearings

Cylindrical Roller Bearings

Spherical Roller Bearings

Tapered Roller Bearings

Thrust Bearings

Split Pillow Blocks

Super Precision Bearings

Linear Motion

Rolling Mill Bearings

Engineering Section



Ball Bearings

5200/5300 Series
Double Row, Conrad Type

Bore Sizes: 10mm to 40mm

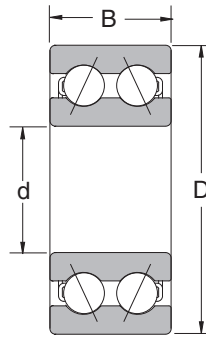
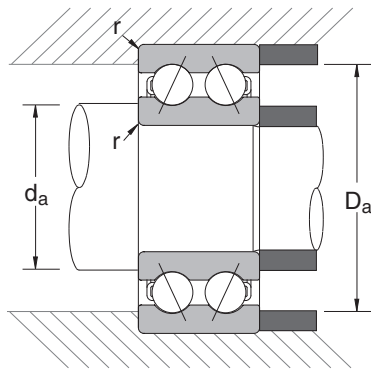
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters		
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)	<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max
5200 TNG	10	0.3937	30	1.1811	14.0	0.5512	0.023	0.585	0.984
5200 J	10	0.3937	30	1.1811	14.0	0.5512	0.023	0.585	0.984
5201 TNG	12	0.4724	32	1.2598	15.9	0.6260	0.023	0.663	1.063
5201 J	12	0.4724	32	1.2598	15.9	0.6260	0.023	0.663	1.063
5202 TNG	15	0.5906	35	1.3780	15.9	0.6260	0.023	0.787	1.170
5202 J	15	0.5906	35	1.3780	15.9	0.6260	0.023	0.787	1.404
5302 TNG	15	0.5906	42	1.6535	19.0	0.7480	0.039	0.819	1.404
5203 TNG	17	0.6693	40	1.5748	17.5	0.6890	0.023	0.866	1.380
5203 J	17	0.6693	40	1.5748	17.5	0.6890	0.023	0.866	1.380
5303 TNG	17	0.6693	47	1.8504	22.2	0.8740	0.039	0.906	1.615
5303 J	17	0.6693	47	1.8504	22.2	0.8740	0.039	0.906	1.615
5204 TNG	20	0.7874	47	1.8504	20.6	0.8110	0.039	1.014	1.614
5204 J	20	0.7874	47	1.8504	20.6	0.8110	0.039	1.014	1.614
5304 TNG	20	0.7874	52	2.0472	22.2	0.8740	0.039	1.053	1.772
5304 J	20	0.7874	52	2.0472	22.2	0.8740	0.039	1.053	1.772
5205 TNG	25	0.9843	52	2.0472	20.6	0.8110	0.039	1.220	1.811
5205 J	25	0.9843	52	2.0472	20.6	0.8110	0.039	1.220	1.811
5305 TNG	25	0.9843	62	2.4409	25.4	1.0000	0.039	1.260	2.165
5305 J	25	0.9843	62	2.4409	25.4	1.0000	0.039	1.260	2.165
5206 TNG	30	1.1811	62	2.4409	23.8	0.9370	0.039	1.404	2.205
5206 J	30	1.1811	62	2.4409	23.8	0.9370	0.039	1.404	2.205
5306 TNG	30	1.1811	72	2.8346	30.2	1.1890	0.039	1.457	2.559
5306 J	30	1.1811	72	2.8346	30.2	1.1890	0.039	1.457	2.559
5207 TNG	35	1.3780	72	2.8346	27.0	1.0630	0.039	1.638	2.559
5207 J	35	1.3780	72	2.8346	27.0	1.0630	0.039	1.638	2.559
5307 TNG	35	1.3780	80	3.1496	34.9	1.3740	0.059	1.716	2.795
5307 J	35	1.3780	80	3.1496	34.9	1.3740	0.059	1.716	2.795
5208 TNG	40	1.5748	80	3.1496	30.2	1.1890	0.039	1.833	2.874
5208 J	40	1.5748	80	3.1496	30.2	1.1890	0.039	1.833	2.874
5308 TNG	40	1.5748	90	3.5433	36.5	1.4370	0.059	1.911	3.189
5308 J	40	1.5748	90	3.5433	36.5	1.4370	0.059	1.911	3.189

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
2RS††	: Two Seals
ZZ	: Two Shields
NR	: Snap Ring
J	: Steel Cage
TNG	: Polyamide Cage
CO†	: Normal Internal Clearance
C3	: Looser Than Normal
† Not shown in part number	
†† Available with TNG only	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.)
	C_r	C_{or}	Grease	Oil	lbs
5200 TNG	1750	877	16.0	22.0	0.09
5200 J	1610	878	17.0	22.0	0.10
5201 TNG	2380	1150	15.0	20.0	0.11
5201 J	2360	1300	15.0	20.0	0.12
5202 TNG	2650	1370	13.0	18.0	0.13
5202 J	2630	1580	13.0	17.0	0.14
5302 TNG	3660	1940	10.0	15.0	0.25
5203 TNG	3280	1750	10.0	15.0	0.19
5203 J	3290	2030	11.0	15.0	0.20
5303 TNG	4680	2380	9.5	14.0	0.35
5303 J	4730	2830	10.0	13.0	0.31
5204 TNG	4410	2430	9.0	13.0	0.31
5204 J	4410	2790	10.0	13.0	0.26
5304 TNG	5220	2900	8.5	12.0	0.43
5304 J	5530	3370	9.0	12.0	0.51
5205 TNG	4770	2860	8.0	11.0	0.35
5205 J	4790	3310	8.5	11.0	0.42
5305 TNG	6740	3890	7.5	10.0	0.70
5305 J	7330	4650	7.5	10.0	0.75
5206 TNG	6740	4110	7.1	9.0	0.58
5206 J	6650	4740	7.1	9.5	0.64
5306 TNG	9330	5510	6.2	7.9	1.09
5306 J	9150	6320	6.3	8.5	1.12
5207 TNG	8770	5620	5.6	7.1	0.91
5207 J	8770	6450	6.3	8.0	0.95
5307 TNG	11500	6740	5.1	6.5	1.46
5307 J	11500	8100	5.6	7.5	1.74
5208 TNG	10800	7080	5.0	6.3	1.21
5208 J	9930	7510	5.3	7.1	1.26
5308 TNG	13900	8770	4.7	5.8	1.99
5308 J	12700	9250	5.3	6.7	2.30

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load RatingEngineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

5200/5300 Series (Continued)

Double row, Conrad Type

Bore Sizes: 45mm to 85mm

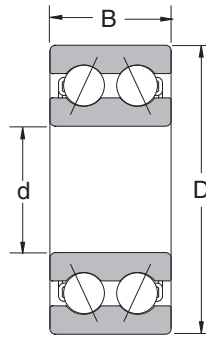
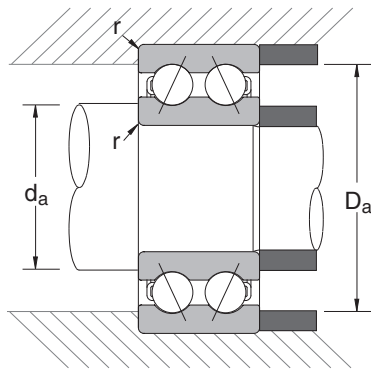
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters		
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)	<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max
5209 TNG	45	1.7717	85	3.3465	30.2	1.1890	0.039	2.047	3.071
5209 J	45	1.7717	85	3.3465	30.2	1.1890	0.039	2.047	3.071
5309 TNG	45	1.7717	100	3.9370	39.7	1.5630	0.059	2.126	3.583
5309 J	45	1.7717	100	3.9370	39.7	1.5630	0.059	2.126	3.583
5210 TNG	50	1.9685	90	3.5433	30.2	1.1890	0.039	2.224	3.268
5210 J	50	1.9685	90	3.5433	30.2	1.1890	0.039	2.224	3.268
5310 TNG	50	1.9685	110	4.3307	44.4	1.7480	0.078	2.362	3.937
5310 J	50	1.9685	110	4.3307	44.4	1.7480	0.078	2.362	3.937
5211 TNG	55	2.1654	100	3.9370	33.3	1.3110	0.059	2.520	3.602
5211 J	55	2.1654	100	3.9370	33.3	1.3110	0.059	2.520	3.602
5311 TNG	55	2.1654	120	4.7244	49.2	1.9370	0.078	2.559	4.331
5311 J	55	2.1654	120	4.7244	49.2	1.9370	0.078	2.559	4.331
5212 TNG	60	2.3622	110	4.3307	36.5	1.4370	0.059	2.717	3.996
5212 J	60	2.3622	110	4.3307	36.5	1.4370	0.059	2.717	3.996
5312 TNG	60	2.3622	130	5.1181	54.0	2.1260	0.078	2.835	4.646
5312 J	60	2.3622	130	5.1181	54.0	2.1260	0.078	2.835	4.646
5213 TNG	65	2.5591	120	4.7244	38.1	1.5000	0.059	2.913	4.370
5213 J	65	2.5591	120	4.7244	38.1	1.5000	0.059	2.913	4.370
5313 TNG	65	2.5591	140	5.5118	58.7	2.3110	0.078	3.034	5.039
5313 J	65	2.5591	140	5.5118	58.7	2.3110	0.078	3.034	5.039
5214 TNG	70	2.7559	125	4.9213	39.7	1.5630	0.059	3.110	4.567
5214 J	70	2.7559	125	4.9213	39.7	1.5630	0.059	3.110	4.567
5314 J	70	2.7559	150	5.9055	63.5	2.5000	0.078	3.228	5.433
5215 J	75	2.9528	130	5.1181	41.3	1.6260	0.059	3.307	4.764
5216 J	80	3.1496	140	5.5118	44.4	1.7480	0.078	3.543	5.118
5217 J	85	3.3465	150	5.9055	49.2	1.9370	0.078	3.740	5.512

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
2RS††	: Two Seals
ZZ	: Two Shields
NR	: Snap Ring
J	: Steel Cage
TNG	: Polyamide Cage
CO†	: Normal Internal Clearance
C3	: Looser Than Normal
† Not shown in part number	
†† Available with TNG only	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.)
	C_r	C_{or}	Grease	Oil	lbs
5209 TNG	10800	7190	4.5	5.4	1.28
5209 J	11100	8580	5.0	6.7	1.37
5309 TNG	15300	9780	4.3	5.0	2.66
5309 J	15400	11400	4.5	6.0	3.10
5210 TNG	11500	8210	4.0	4.6	1.39
5210 J	11900	9740	4.8	6.0	1.48
5310 TNG	18200	11900	3.6	4.2	3.52
5310 J	18300	13800	4.3	5.6	4.30
5211 TNG	13200	9670	4.3	5.6	1.93
5211 J	12600	11000	4.3	5.6	2.12
5311 TNG	22900	15300	3.8	5.0	4.64
5311 J	21400	16400	3.8	5.0	5.10
5212 TNG	16200	11900	3.8	5.0	2.60
5212 J	15600	13900	3.8	5.0	2.98
5312 TNG	28100	19100	3.4	4.5	5.94
5312 J	28200	22100	3.4	4.5	7.00
5213 TNG	18000	14200	3.4	4.5	3.34
5213 J	17100	15500	3.6	4.5	3.64
5313 TNG	33700	22900	3.2	4.3	7.46
5313 J	25400	32000	3.2	4.3	8.49
5214 TNG	18700	15100	3.4	4.5	3.61
5214 J	21100	18500	3.4	4.5	4.00
5314 J	35700	28900	3.0	3.8	10.80
5215 J	21100	18700	3.2	4.3	4.19
5216 J	22300	20900	3.0	3.8	5.51
5217 J	26000	24700	2.8	3.6	7.50

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

7200 Series
Angular Contact, 40° Contact Angle

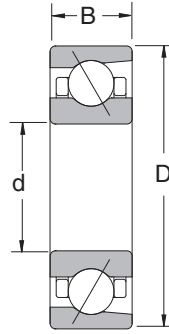
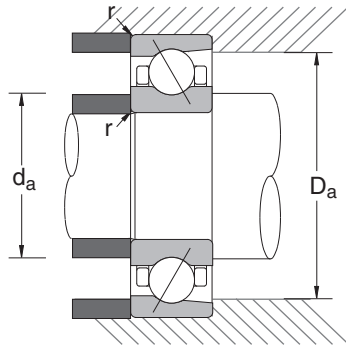
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters		
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)	<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max
7200B	10	0.3937	30	1.1811	9	0.3543	0.024	0.591	0.984
7201B	12	0.4724	32	1.2598	10	0.3937	0.024	0.669	1.063
7202B	15	0.5906	35	1.3780	11	0.5331	0.024	0.787	1.181
7203B	17	0.6693	40	1.5748	12	0.4724	0.024	0.866	1.378
7204B	20	0.7874	47	1.8504	14	0.5512	0.039	1.024	1.614
7205B	25	0.9843	52	2.0472	15	0.5906	0.039	1.220	1.911
7206B	30	1.1811	62	2.4409	16	0.6299	0.039	1.417	2.205
7207B	35	1.3780	72	2.8346	17	0.6693	0.039	1.654	2.559
7208B	40	1.5748	80	3.1496	18	0.7087	0.039	1.850	2.874
7209B	45	1.7717	85	3.3465	19	0.7480	0.039	2.047	3.071
7210B	50	1.9685	90	3.5433	20	0.7874	0.039	2.244	3.268
7211B	55	2.1654	100	3.9370	21	0.8268	0.059	2.500	3.602
7212B	60	2.3622	110	4.3307	22	0.8661	0.059	2.697	3.996
7213B	65	2.5591	120	4.7244	23	0.9005	0.059	2.894	4.390
7214B	70	2.7559	125	4.9213	24	0.9449	0.059	3.091	4.587
7215B	75	2.9528	130	5.1181	25	0.9843	0.059	3.287	4.783
7216B	80	3.1496	140	5.5118	26	1.0236	0.079	3.543	5.118
7217B	85	3.3465	150	5.9055	28	1.1024	0.079	3.740	5.512
7218B	90	3.5433	160	6.2992	30	1.1811	0.079	3.937	5.906
7219B	95	3.7402	170	6.6929	32	1.2598	0.079	4.213	6.220
7220B	100	3.9370	180	7.0866	34	1.3386	0.079	4.409	6.614
7221B	105	4.1339	190	7.4803	36	1.4173	0.079	4.606	7.008
7222B	110	4.3307	200	7.8740	38	1.4961	0.079	4.803	7.402
7224B	120	4.7244	215	8.4646	40	1.5748	0.079	5.197	7.992
7226B	130	5.1181	230	9.0551	40	1.5748	0.098	5.669	8.504
7228B	140	5.5118	250	9.8425	42	1.6535	0.098	6.063	9.291
7230B	150	5.9055	270	10.6299	45	1.7717	0.098	6.457	10.079
7232B	160	6.2992	290	11.4173	48	1.8898	0.098	6.850	10.866
7234B	170	6.6929	310	12.2047	52	2.0472	0.118	7.402	11.496
7236B	180	7.0866	320	12.5984	52	2.0472	0.118	7.795	11.890
7238B	190	7.4803	340	13.3858	55	2.1654	0.118	8.190	12.677
7240B	200	7.8740	360	14.1732	58	2.2835	0.118	8.583	13.465

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
B	: 40° Contact Angle
C††	: 15° Contact Angle
TY	: Polyamide Cage
Y	: Pressed Brass Cage
M	: Machined Brass Cage
W	: Pressed Steel Cage
G	: Flush Ground Faces
PC	: Flush Ground Faces Normal Axial Clearance and ABEC6.
†† Load and speed ratings are not shown in the table below	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.)
	C_r	C_{or}	Grease	Oil	lbs
7200B	1050	505	20.0	28.0	0.07
7201B	1550	761	18.0	26.0	0.08
7202B	1680	882	16.0	22.0	0.11
7203B	2090	1120	14.0	19.0	0.15
7204B	2800	1570	12.0	16.0	0.24
7205B	3150	1950	10.0	14.0	0.30
7206B	4370	2800	8.5	12.0	0.46
7207B	5780	3810	7.5	10.0	0.65
7208B	6830	4810	6.7	9.0	0.84
7209B	7720	5470	6.3	8.5	0.95
7210B	8050	6000	5.6	8.0	1.07
7211B	9920	7610	5.3	7.1	1.40
7212B	12000	9370	4.8	6.3	1.81
7213B	13700	11100	4.3	6.0	2.20
7214B	14900	12200	4.0	5.6	2.42
7215B	15400	13100	3.8	5.3	3.02
7216B	17300	14700	3.6	5.0	3.68
7217B	20100	17100	3.4	4.8	4.58
7218B	22900	19700	3.2	4.3	5.62
7219B	24900	21200	3.0	4.0	6.83
7220B	28000	24000	2.8	3.8	8.15
7221B	30400	27100	2.6	3.6	9.70
7222B	33100	30200	2.6	3.4	11.40
7224B	37300	36400	2.4	3.2	13.70
7226B	38400	39200	2.2	3.0	15.40
7228B	44300	47800	2.0	2.8	19.40
7230B	50500	57100	1.8	2.6	24.20
7232B	53400	62600	1.7	2.4	30.20
7234B	60000	72800	1.6	2.2	37.50
7236B	62000	78300	1.5	2.0	39.00
7238B	63700	83800	1.4	2.0	47.00
7240B	68300	91500	1.3	1.8	55.80

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

7300 Series
Angular Contact, 40° Contact Angle

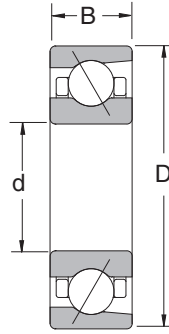
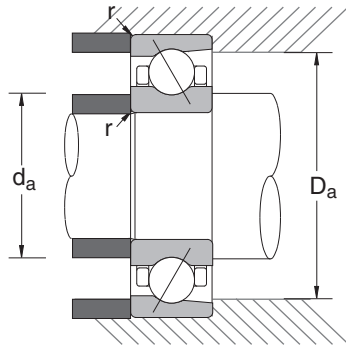
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters		
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)	<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max
7300B	10	0.3937	35	1.3780	11	0.4331	0.024	0.591	1.181
7301B	12	0.4724	37	1.4567	12	0.4724	0.039	0.709	1.221
7302B	15	0.5906	42	1.6535	13	0.5118	0.039	0.827	1.418
7303B	17	0.6693	47	1.8504	14	0.5512	0.039	0.906	1.614
7304B	20	0.7874	52	2.0472	15	0.5906	0.039	1.063	1.772
7305B	25	0.9843	62	2.4409	17	0.6693	0.039	1.260	2.165
7306B	30	1.1811	72	2.8346	19	0.7480	0.039	1.457	2.559
7307B	35	1.3780	80	3.1496	21	0.8268	0.059	1.712	2.815
7308B	40	1.5748	90	3.5433	23	0.9055	0.059	1.909	3.209
7309B	45	1.7717	100	3.9370	25	0.9843	0.059	2.106	3.602
7310B	50	1.9685	110	4.3307	27	1.0630	0.079	2.362	3.937
7311B	55	2.1654	120	4.7244	29	1.1417	0.079	2.559	4.331
7312B	60	2.3622	130	5.1181	31	1.2205	0.079	2.835	4.646
7313B	65	2.5591	140	5.5118	33	1.2992	0.079	3.031	5.039
7314B	70	2.7559	150	5.9055	35	1.3780	0.079	3.228	5.433
7315B	75	2.9528	160	6.2992	37	1.4567	0.079	3.425	5.827
7316B	80	3.1496	170	6.6929	39	1.5354	0.079	3.622	6.220
7317B	85	3.3465	180	7.0866	41	1.6142	0.098	3.898	6.535
7318B	90	3.5433	190	7.4803	43	1.6929	0.098	4.094	6.929
7319B	95	3.7402	200	7.8740	45	1.7717	0.098	4.291	7.323
7320B	100	3.9370	215	8.4646	47	1.8504	0.098	4.488	7.913
7321B	105	4.1339	225	8.8583	49	1.9291	0.098	4.685	8.307
7322B	110	4.3307	240	9.4488	50	1.9685	0.098	4.882	8.898
7324B	120	4.7244	260	10.2362	55	2.1654	0.098	5.276	9.685
7326B	130	5.1181	280	11.0236	58	2.2835	0.118	5.827	10.315
7328B	140	5.5118	300	11.8110	62	2.4409	0.118	6.220	11.102
7330B	150	5.9055	320	12.5984	65	2.5591	0.118	6.614	11.890
7332B	160	6.2992	340	13.3858	68	2.6772	0.118	7.008	12.677
7334B	170	6.6929	360	14.1732	72	2.8346	0.118	7.402	13.465
7336B	180	7.0866	380	14.9606	75	2.9528	0.118	7.795	14.252
7338B	190	7.4803	400	15.7480	78	3.0709	0.157	8.346	14.882
7340B	200	7.8740	420	16.5354	80	3.1496	0.157	8.740	15.669

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
B	: 40° Contact Angle
C††	: 15° Contact Angle
TY	: Polyamide Cage
Y	: Pressed Brass Cage
M	: Machined Brass Cage
W	: Pressed Steel Cage
G	: Flush Ground Faces
PC	: Flush Ground Faces
	Normal Axial Clearance and ABEC6.
†† Load and speed ratings are not shown in the table below	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.)
	C_r	C_{or}	Grease	Oil	lbs
7300B	1960	904	18.0	24.0	0.12
7301B	1980	940	16.0	22.0	0.14
7302B	2600	1330	14.0	19.0	0.19
7303B	3110	1620	13.0	17.0	0.26
7304B	3640	1950	11.0	15.0	0.33
7305B	5160	3000	9.0	13.0	0.54
7306B	6550	3950	8.0	11.0	0.79
7307B	7830	4980	7.1	9.5	1.05
7308B	9480	6240	6.3	8.5	1.45
7309B	12300	8270	5.6	7.5	1.93
7310B	14400	9920	5.0	6.7	2.53
7311B	16800	11700	4.5	6.3	3.35
7312B	19100	13600	4.3	5.6	4.41
7313B	21600	15500	3.8	5.3	5.44
7314B	24300	17700	3.6	5.0	6.61
7315B	26500	20100	3.4	4.8	7.93
7316B	28700	22500	3.2	4.3	9.37
7317B	30900	25100	3.0	4.0	11.10
7318B	33100	27800	2.8	3.8	12.90
7319B	35500	30600	2.6	3.6	14.90
7320B	42800	39900	2.4	3.4	18.30
7321B	42800	39900	2.4	3.2	20.70
7322B	45200	44300	2.2	3.0	24.50
7324B	50700	52000	2.0	2.8	31.50
7326B	56200	60400	1.9	2.6	38.30
7328B	62000	69500	1.7	2.4	46.90
7330B	64800	76100	1.6	2.2	55.80
7332B	70600	87100	1.5	2.0	65.70
7334B	79400	100100	1.4	2.0	78.20
7336B	83800	110000	1.3	1.8	90.40
7338B	92600	123200	1.3	1.7	104.00
7340B	97000	135300	1.2	1.6	117.00

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Ball Bearings

7400 Series
Angular Contact, 40° Contact Angle

Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters		
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)	<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max
7405B	25	0.9843	80	3.1496	21	0.8268	0.059	1.319	2.815
7406B	30	1.1811	90	3.5433	23	0.9055	0.059	1.516	3.209
7407B	35	1.3780	100	3.9370	25	0.9843	0.059	1.713	3.602
7408B	40	1.5748	110	4.3307	27	1.0630	0.079	1.969	3.937
7409B	45	1.7717	120	4.7244	29	1.1417	0.079	2.165	4.331
7410B	50	1.9685	130	5.1181	31	1.2205	0.079	2.441	4.646
7411B	55	2.1654	140	5.5118	33	1.2992	0.079	2.638	5.039
7412B	60	2.3622	150	5.9055	35	1.3780	0.079	2.835	5.433
7413B	65	2.5591	160	6.2992	37	1.4567	0.079	3.031	5.827
7414B	70	2.7559	180	7.0866	42	1.6535	0.098	3.307	6.535
7415B	75	2.9528	190	7.4803	45	1.7717	0.098	3.504	6.929
7416B	80	3.1496	200	7.8740	48	1.8898	0.098	3.701	7.323
7420B ¹	100	3.9370	250	9.8425	58	2.2835	0.118	4.646	9.134
A7420B ¹	100	3.9370	265	10.4331	60	2.3622	0.118	4.646	9.125

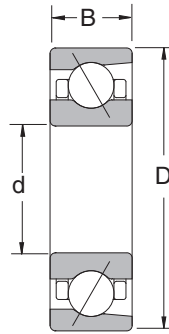
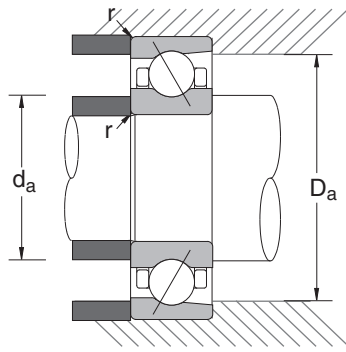
*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

¹NSK part number 7420 conforms to ISO and ABMA standards. Part number 7420 of other manufacturers may be equivalent to NSK A7420.

Application Data

Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
B	: 40° Contact Angle
C††	: 15° Contact Angle
TY	: Polyamide Cage
Y	: Pressed Brass Cage
M	: Machined Brass Cage
W	: Pressed Steel Cage
G	: Flush Ground Faces
PC	: Flush Ground Faces Normal Axial Clearance and ABEC6.
†† Load and speed ratings are not shown in the table below	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.)
	C_r	C_{or}	Grease	Oil	lbs
7405B	9700	5310	7.6	10.5	1.4
7406B	10700	6330	6.7	9.2	2.9
7407B	12600	7600	5.9	8.2	3.0
7408B	14600	9000	5.3	7.3	3.1
7409B	16600	10600	4.9	6.7	3.9
7410B	18900	12200	4.5	6.0	4.8
7411B	23200	15400	4.1	5.6	5.8
7412B	24900	17400	3.8	5.2	7.0
7413B	26900	19500	3.5	4.9	8.4
7414B	33300	26500	3.2	4.4	10.4
7415B	37700	31500	3.0	4.1	12.6
7416B	37900	32000	2.8	3.9	16.7
7420B ¹	49800	47800	2.2	3.1	33.0
A7420B ¹	53100	53400	2.1	2.9	40.1

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

¹NSK part number 7420 conforms to ISO and ABMA standards. Part number 7420 of other manufacturers may be equivalent to NSK A7420.

Ball Bearings

BL200/300 Series
Maximum Capacity Type

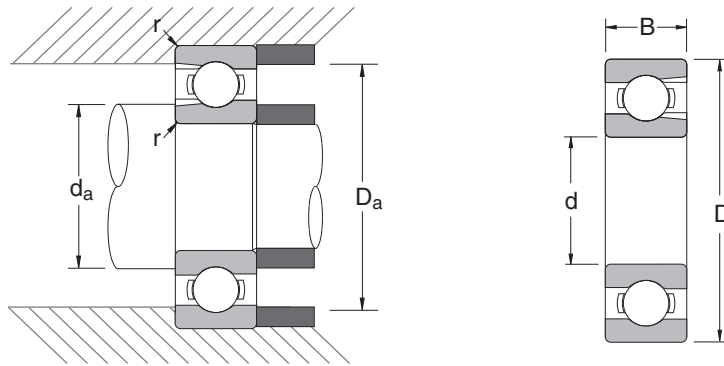
Bearing Number	Nominal Bearing Dimensions						Preferred Shoulder Diameters			
	<i>d</i>		<i>D</i>		<i>B</i>		<i>r</i> *	<i>da</i> (in)		<i>Da</i> (in)
	mm	inch	mm	inch	mm	inch	inch	min	max	max
BL205	25	0.9843	52	2.0472	15	0.5906	0.039	1.182	1.261	1.852
BL305	25	0.9843	62	2.4409	17	0.6693	0.039	1.241	1.418	2.187
BL206	30	1.1811	62	2.4409	16	0.6299	0.039	1.379	1.517	2.246
BL306	30	1.1811	72	2.8346	19	0.7480	0.039	1.438	1.655	2.581
BL207	35	1.3780	72	2.8346	17	0.6693	0.039	1.635	1.753	2.581
BL307	35	1.3780	80	3.1496	21	0.8268	0.059	1.694	1.753	2.837
BL208	40	1.5748	80	3.1496	18	0.7087	0.039	1.832	1.970	2.896
BL308	40	1.5748	90	3.5433	23	0.9055	0.059	1.891	2.069	3.231
BL209	45	1.7717	85	3.3465	19	0.7480	0.039	2.029	2.187	3.093
BL309	45	1.7717	100	3.9370	25	0.9843	0.059	2.088	2.423	3.625
BL210	50	1.9685	90	3.5433	20	0.7874	0.039	2.226	2.364	3.290
BL310	50	1.9685	110	4.3307	27	1.0630	0.079	2.325	2.679	3.979
BL211	55	2.1654	100	3.9370	21	0.8268	0.059	2.482	2.620	3.625
BL311	55	2.1654	120	4.7244	29	1.1417	0.079	2.522	2.857	4.373
BL212	60	2.3622	110	4.3307	22	0.8661	0.059	2.679	2.935	4.019
BL312	60	2.3622	130	5.1181	31	1.2205	0.079	2.797	3.113	4.689
BL213	65	2.5591	120	4.7244	23	0.9055	0.059	2.876	3.152	4.413
BL313	65	2.5591	140	5.5118	33	1.2992	0.079	2.994	3.369	5.083
BL214	70	2.7559	125	4.9213	24	0.9449	0.059	3.073	3.310	4.610
BL314	70	2.7559	150	5.9055	35	1.3780	0.079	3.191	3.625	5.477
BL215	75	2.9528	130	5.1181	25	0.9843	0.059	3.270	3.546	4.807
BL315	75	2.9528	160	6.2992	37	1.4567	0.079	3.388	3.881	5.871
BL216	80	3.1496	140	5.5118	26	1.0236	0.079	3.507	3.763	5.161
BL316	80	3.1496	170	6.6929	39	1.5354	0.079	3.585	4.117	6.265
BL217	85	3.3465	150	5.9055	28	1.1024	0.079	3.704	4.019	5.555
BL317	85	3.3465	180	7.0866	41	1.6142	0.099	3.861	4.354	6.580
BL218	90	3.5433	160	6.2992	30	1.1811	0.079	3.901	4.236	5.949
BL318	90	3.5433	190	7.4803	43	1.6929	0.099	4.058	4.610	6.974
BL219	95	3.7402	170	6.6929	32	1.2598	0.079	4.176	4.492	6.265
BL319	95	3.7402	200	7.8740	45	1.7717	0.099	4.255	4.886	7.368
BL220	100	3.9370	180	7.0866	34	1.3386	0.079	4.373	4.787	6.659
BL221	105	4.1339	190	7.4803	36	1.4173	0.079	4.570	5.024	7.053

*Maximum fillet which corner radius of bearing will clear.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Application Data

Radial Internal Clearance — Table 10.35 page 330
 Bearing Tolerances — Table 10.12 thru Table 10.16 pages 314-17
 Snap Ring Dimensions — Table 10.9 page 310
 Shaft & Housing Fits — Table 10.31 and Table 10.33 pages 328-29



Common Options	
Z	: One Shield
ZZ	: Two Shields
NR	: Snap Ring
CO†	: Normal Internal Clearance
C3	: Greater Than Normal
† Not shown in part number	

Bearing Number	Basic Load Ratings (lbs)		Limiting Speeds (1000 RPM)		Bearing Weight (Approx.)
	C_r	C_{or}	Grease	Oil	lbs
BL205	3820	2360	13.0	15.0	0.29
BL305	5720	3470	11.0	13.0	0.54
BL206	5590	3670	11.0	13.0	0.47
BL306	7410	4650	9.5	12.0	0.80
BL207	7380	4970	9.5	11.0	0.68
BL307	9850	6540	8.5	10.0	1.07
BL208	9380	6480	8.0	10.0	0.87
BL308	12300	8040	7.5	9.0	1.47
BL209	9900	7140	7.5	9.0	0.99
BL309	14700	9910	6.7	8.0	1.94
BL210	10300	7830	7.1	8.5	1.11
BL310	17200	11800	6.0	7.5	2.51
BL211	12800	9880	6.3	7.5	1.46
BL311	19900	13800	5.6	6.7	3.23
BL212	15500	12200	5.6	7.1	1.88
BL312	22700	16100	5.3	6.3	4.07
BL213	16900	13500	5.3	6.3	2.40
BL313	27300	20200	4.8	6.0	5.10
BL214	18300	14900	5.0	6.3	2.62
BL314	30700	23000	4.5	5.3	6.23
BL215	19100	16100	4.8	5.6	2.84
BL315	33400	26000	4.3	5.0	7.44
BL216	22400	19100	4.5	5.3	3.48
BL316	36200	29200	4.0	4.8	8.89
BL217	24800	20900	4.3	5.0	4.29
BL317	39100	32600	3.8	4.5	10.36
BL218	28300	24100	4.0	4.8	5.30
BL318	42000	36200	3.6	4.3	11.84
BL219	32000	27600	3.8	4.5	6.38
BL319	45000	40000	3.0	3.6	14.08
BL220	36000	31400	3.6	4.3	7.68
BL221	39200	35300	3.4	4.0	9.20

C_r = Dynamic Radial Load Rating
 C_{or} = Static Radial Load Rating Engineering.

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.



Special Ball Bearings

Bearing Number	Bore (Inch)	O.D. (Inch)	Width (Inch)		Description
			<i>IR</i>	<i>OR</i>	
X428	0.9843	2.0472	0.354	0.472	Automotive air compressor bearing
X540XL	0.9843	2.4409	0.445	0.445	Automotive air compressor bearing
40BD49VV	1.5748	2.4409	0.812	0.812	Automotive air compressor bearing (double row)
A99202-08A	0.5000	1.3750	0.438	0.438	Inch series-6202
Z9504B	0.7505	1.7805	0.615	0.615	Special bore, O.D., width-2 seals

Note: Limiting speeds are lower with contact seals. For more information, contact NSK Engineering.

Introduction

Ball Bearings

Cylindrical Roller Bearings

Spherical Roller Bearings

Tapered Roller Bearings

Thrust Bearings

Split Pillow Blocks

Super Precision Bearings

Linear Motion

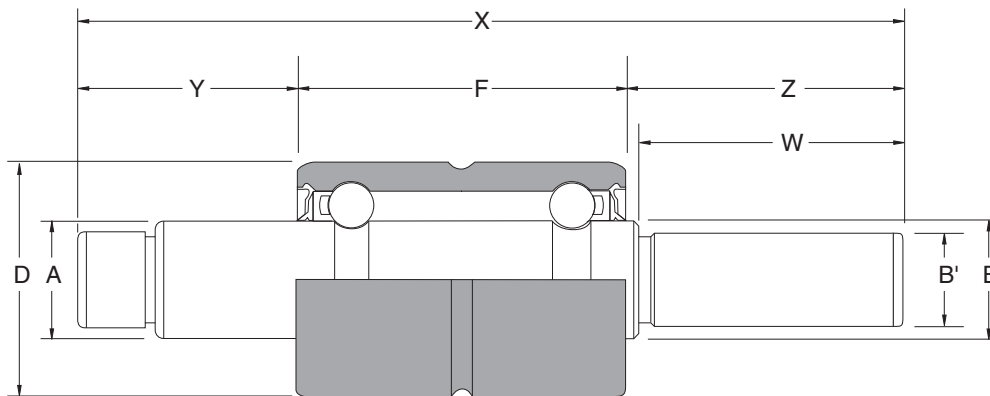
Rolling Mill Bearings

Engineering Section



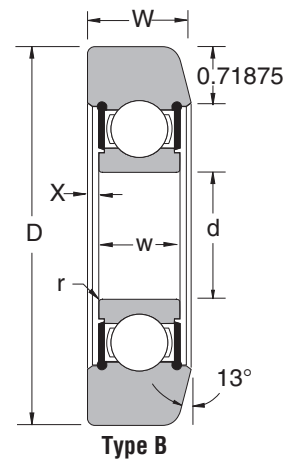
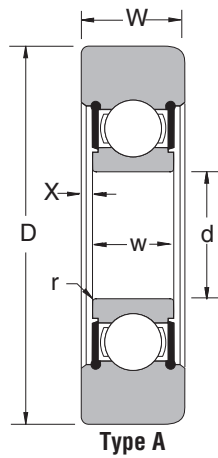
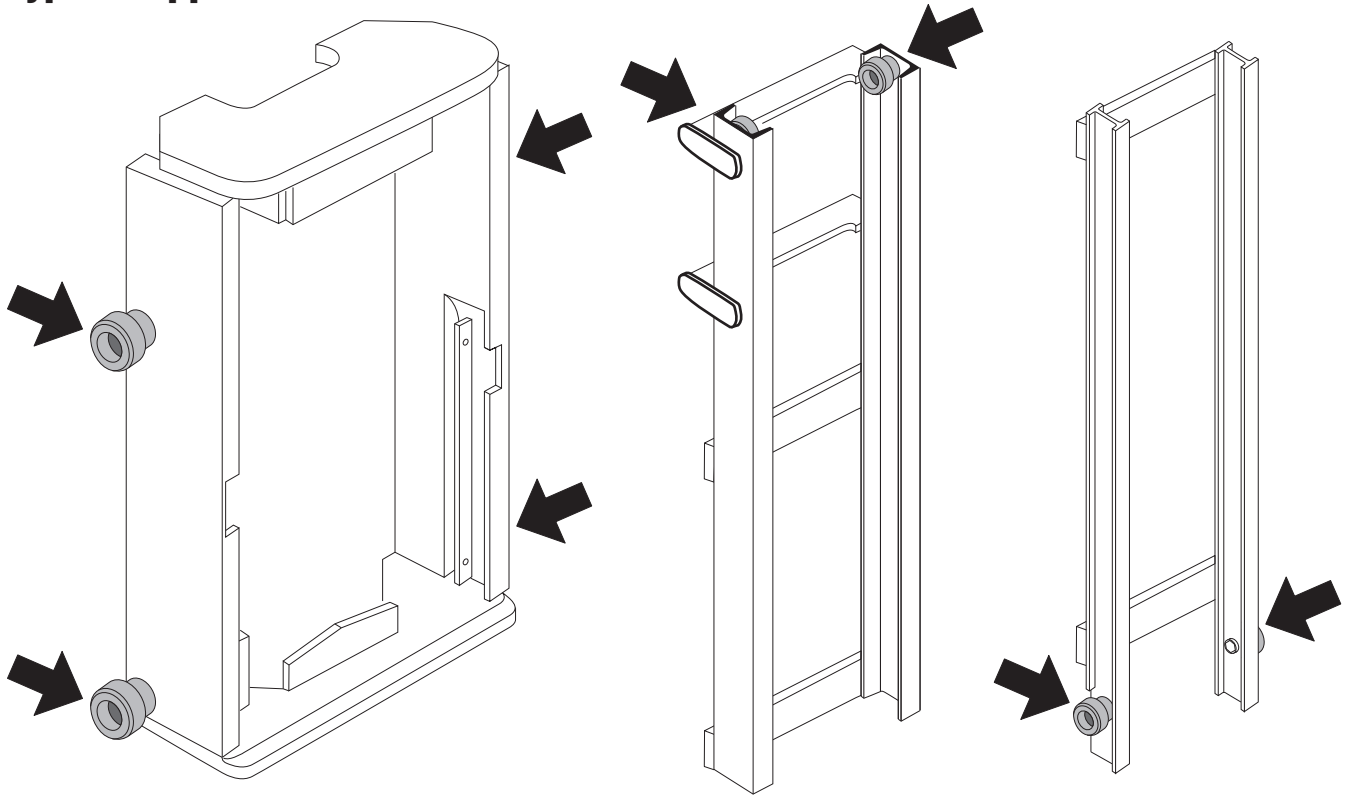
Integral Shaft Bearing

Bearing Number	Shaft O.D. (Inch)			D	F	X	Y	Z	H	W
	Standard		Step							
	A	B	B'							
885117	0.6267	0.6267	—	1.1811	1.531	6.375	2.297	2.547	2.328	—
885118	0.6267	0.6267	—	1.1811	1.531	4.688	1.469	1.688	1.438	—
	0.6267	0.6267	—	1.1811	1.531	5.625	1.578	2.516	—	—
885801	0.7465	0.7465	0.6267	1.5000	2.125	5.870	2.105	1.640	—	1.50
	0.7465	0.7465	—	1.5000	2.125	5.870	2.105	1.640	—	1.50
885807C	0.7465	0.7465	0.6267	1.5000	2.125	6.040	1.800	2.115	—	1.99
885586	0.6267	0.6267	—	1.1811	1.531	6.281	1.747	3.003	—	—
885801SE	0.7465	0.7465	0.6267	1.5000	2.125	5.870	2.104	1.641	—	1.50
885820	0.7465	0.7465	—	1.5000	2.125	6.625	2.000	2.500	—	—



Mast Guide Bearings

Typical Applications



Mast Guide Bearings

Dimensions

Bearing Number	Type	Bore (d)		O.D (D) inches	Outer Width (W) inches	Fillet Radius (r) inches	Ref. (X) inches
		mm	inches				
X421RS	A	25	0.9843	3.0000	1.000	1.000	0.040
X555	A	30	1.1811	3.5000	1.000	1.000	0.040
X549RS	A	35	1.3780	3.7250	1.000	1.000	0.060
X376RS	A	35	1.3780	3.9930	1.125	1.125	0.060
X501	B	45	1.7717	5.0025	1.250	1.250	0.060

Specifications

Bearing Number	Type	Dynamic Capacity (lbs)	Static Capacity (lbs)	Number of Balls	Diameter of Balls inches
X421RS	A	4630	2540	8	13/32
X555	A	6000	3370	8	15/32
X549RS	A	7500	4320	8	17/32
X376RS	A	7500	4320	8	17/32
X501	B	11900	7170	8	11/16

Interchange Table

NSK	MRC	BCA
X421RS	305SZZ3	MG305DD
X555	306SZZ5	MG306DD
X549RS	307SZZ9	MG307FFK
X376RS	307SZZ10	MG307FFH
X501	309SZZ4	MGA309DD