

## Radial Ball Bearings Intro

### Conrad or Deep Groove Ball Bearings

The Conrad type bearings contain the maximum number of balls that can be introduced between the raceways by eccentrically displacing the inner and outer rings. They are made with deep, uninterrupted, precision ground raceways conforming as closely to the ball curvature as sound practice dictates. Ball size is selected to give the optimum ratio of ball diameter to bearing section for maximum performance. Generally, two-piece pressed steel retainers, accurately formed and firmly riveted together, are used.

Conrad type bearings have the most universal use of all anti-friction bearings because of their ability to carry any combination of radial and thrust loads in a single row width.

Depending on the internal clearance, there is a slight radial and axial freedom between the balls and the inner and outer rings. This freedom is advantageous because it allows the bearing to rapidly assume the angle of contact which best supports any combination of radial and thrust loads. The ability to assume an angle of contact, along with high shoulders on the rings and uninterrupted raceways makes Conrad bearings ideal for either combined radial and thrust loads, or thrust loads alone.

#### Extra Light — 100 Series

NTN-BCA<sup>®</sup> 100 Extra Light series bearings are single row, deep groove, Conrad or non-filling slot type bearings. Bore, outside diameters and widths of these bearings are made to standard metric dimensions.

#### Light — 200 Series

NTN-BCA<sup>®</sup> 200 Light series bearings are single row, deep groove, Conrad or non-filling slot type bearings. Bore, outside diameters and widths of these bearings are made to standard metric dimensions.

#### Medium — 300 Series

NTN-BCA<sup>®</sup> 300 Medium series bearings are single row, deep groove, Conrad or non-filling slot type bearings. Bore, outside diameters and widths of these bearings are made to standard metric dimensions.

#### Heavy — 400 Series

NTN-BCA<sup>®</sup> 400 Heavy series bearings are single row, deep groove, Conrad or non-filling slot type bearings. Bore, outside diameters and widths of these bearings are made to standard metric dimensions.

#### Cartridge Type — W200 and W300 Series

“Cartridge” type bearings are single row, deep groove Conrad bearings made to standard double row widths to provide for larger grease capacity. They are capable of sustaining combined radial and thrust loads in any direction with the width supplying greater support area for the shaft and increased housing contact. They are supplied with metal or rubber seals.

### 8000 and 87000 Series

Bearings in this series are of the non-loading groove type and the load ratings are identical with those for the Light — 200 and Medium — 300 series.

The inner ring is extended on one side to form a smooth contacting surface for the seal. Grease leakage in one direction is prevented through the use of an effective composition or rubber seal for the 8000 Series. The 87000 Series has the same seal on one side and adds a shield on the opposite side to retain grease and exclude contaminants.

#### Double Seal — 88000 Series

Bearing in this series are of the non-loading groove type and the load ratings are identical with those for the Light — 200 and Medium — 300 series.

Two composition seals prevent grease leakage in either direction and also exclude dirt and other foreign matter. Bearings are lubricated for life.

#### Maximum Capacity or Filling Slot Type

The maximum capacity type bearings differ from the Conrad type in that additional balls are introduced between raceways through filling slots or loading grooves. These additional balls increase the radial load carrying capacity of single row radial bearings to a maximum. Furthermore, the filling slots are accurately located so that there is no possibility of objectionable interference as long as the thrust component of the load does not exceed approximately 60% of the radial component. Thrust loads can be carried by maximum type bearings only if they are in combination with radial loads of sufficient magnitude.

#### Light — 1200 Series

NTN-BCA<sup>®</sup> 1200 Light series bearings are single row, radial maximum capacity or filling slot type bearings. They are made to the same standard metric boundary dimensions as corresponding NTN-BCA<sup>®</sup> 200 Light series Conrad type bearings, and to the same high standard of material and workmanship.

#### Medium — 1300 Series

NTN-BCA<sup>®</sup> 1300 Medium series bearings are single row, radial maximum capacity or filling slot type bearings. They are made to the same standard metric boundary dimensions as corresponding NTN-BCA<sup>®</sup> 300 Medium series Conrad type bearings, and to the same high standard of material and workmanship.

#### Heavy — 1400 Series

NTN-BCA<sup>®</sup> 1400 Heavy series bearings are single row, radial maximum capacity or filling slot type bearings. They are made to the same standard metric boundary dimensions as corresponding NTN-BCA<sup>®</sup> 400 Heavy series Conrad type bearings, and to the same high standard of material and workmanship.

## Radial Ball Bearings Intro

### **XLS Series**

NTN-BCA® manufactures Extra Light series bearings (XLS Series) as deep groove, Conrad type, single row radial ball bearings. All bearings in this series are made to inch dimensions in bore, outside diameter, and width. These bearings have a lighter cross section than comparable Conrad bearings in the 200 or 300 series.

XLS series bearings are suitable for any combination of radial and thrust loads. Because of their smaller cross section for a given shaft diameter, XLS bearings are especially useful for applications where space is limited and weight must be held to a minimum.

XLS series ball bearings contain the maximum number of balls that can be introduced between the raceways by eccentrically displacing the inner and outer rings. They are made with deep, uninterrupted, precision-finished raceways conforming as closely to the ball curvature as sound practice dictates. Two-piece pressed steel retainers, accurately formed and firmly riveted together, are used to separate the balls of many of these bearings. The remainder have a two piece riveted nylon cage. These nylon cages are precision molded for accurate ball guidance. For specific details, please contact your NTN sales representative.

## Ball Bearing Numbering System

### Basic Bearing Series

100	Single Row—Extra Light Metric Series—Conrad
200	Single Row—Light Metric Series—Conrad
300	Single Row—Medium Metric Series—Conrad
400	Single Row—Heavy Metric Series—Conrad
W200	Single Row—Light Metric Series—Cartridge Width
W300	Single Row—Medium Metric Series—Cartridge Width
1200	Single Row—Light Metric Series—Maximum Capacity
1300	Single Row—Medium Metric Series—Maximum Capacity
1400	Single Row—Heavy Metric Series—Maximum Capacity
5200	Double Row—Light Metric Series
5300	Double Row—Medium Metric Series
5900	Front Wheel
XLS	Single Row—Extra Light Inch Series—Conrad
7100	Single Row—Extra Light Metric Series—Angular Contact
7200	Single Row—Light Metric Series—Angular Contact
9000	Single Row—Metric Series Split Inner Ring—Angular Contact

### Bearing Bore Size

00	10mm
01	12mm
02	15mm
03	17mm
04	20mm
05	25mm
10	50mm
15	75mm
20	100mm

The last two digits of a metric bearing number indicates the bearing bore. The bearing bore in millimeters for sizes 04 and up can be determined by multiplying the last two digits by five (5).

### NTN-BCA® Bearing Prefix and Suffix Explanations

**A, B, E, H, J, K, Q, U, W and Numerical Suffix Represent Specialty Bearings with Non-Standard Dimensions/Features**

Prefix	Suffix	Explanation
A—		Idler pulley bearing, shell style—attachment.
	—A	25° angle of contact with angular contact series.
	—AC	Locking collar plus aligning ring for heavy series adapters.
	—AR	Special inner and outer ring corners, locking collar supplied with rear wheel types.
	—B	35° angle of contact with angular contact series.
	—BBAR	Two narrow single lip “non-removable” land riding seals, special dimensions.
C,CA,CC—		Variation in carrier on clutch release types.
CB—		Conveyor bearing, hex bore.
	—C	Eccentric locking collar on adapter types.
	—C	Rubber seal lip bonded to sheet metal insert.
	—CC1	Two piece “non-removable” wiping seal on both sides of bearing, special 5/8" bore.
	—CC16	Two piece “non-removable” wiping seal on both sides of bearing, special 16mm bore.
CF—		Cam follower bearing.
CG—		Chain guide bearing.
	—CCRA	Two piece “non-removable” wiping seal on both sides of bearing, wedding ring supplied with read wheel types.
D,DA,DB,DC,DD,DT—		Variation in carrier on clutch release types.
DC—		Disc harrow type, cylindrical O.D.
	—D	Double lip “non-removable” molded seal.

Prefix	Suffix	Explanation
DS—		Disc harrow type, spherical O.D.
E—		Magneto bearing.
	—E	Carburized race for adapter types.
F—		Idler pulley shell style—flat.
	—F	Molded single lip removable seal.
	—F	Special feature on clutch release types.
F,FA,FB,FC,FD,FE—		Variation in carrier on clutch release types.
FD—		Flanged disc bearing assembly.
	—FFA	Single lip “snap-in” seal on both sides, special 3/4" bore.
	—FFLB	Special bearing, two single lip “snap-in” seals, snap ring supplied.
	—FGB	Wide single lip seal on extended inner ring, single lip “snap-in” seal on opposite side, special bearing.
FPB—		Flanged, stamped steel pillow block.
	—FVB	Single lip “snap-in” seal, wide double lip “non-removable” land riding seal with special bearing dimensions.
FW4H—		Front Wheel Hub Assembly
FW5H—		Front Wheel Hub Assembly
FWG—		Four bolt cast iron flange, wide adapter bearing, wide single lip “non-removable” land riding seals with eccentric locking collar.
FWRH—		Four bolt cast iron flange, wide inner ring with PTFE seals, heavy series with eccentric locking collar.

## Ball Bearing Numbering System

### NTN-BCA® Bearing Prefix and Suffix Explanations – Continued

A, B, E, H, J, K, Q, U, W and Numerical Suffix Represent Specialty Bearings with Non-Standard Dimensions/Features

Prefix	Suffix	Explanation	Prefix	Suffix	Explanation
FWT—		Four bolt cast iron flange, wide adapter bearing, triple lip “non-removable” land riding seals with eccentric locking collar.		—LOE	Snap ring groove on standard side, special features, snap ring not supplied.
FWV—		Four bolt cast iron flange, wide adapter bearing, wide double lip “non-removable” land riding seals with eccentric locking collar.		—LV	Snap ring groove on opposite side from standard. Snap ring supplied.
F2L—		Flat idler pulley, narrow width, pre-lubricated.		—LX	Special bronze retainer.
F5L—		Flat idler pulley, high speed series “5”, pre-lubricated.		—M	Machined bronze retainer.
G—		Re-lubricatable stamped flange.	MC—		Master cylinder.
	—G	Keyway on inner or outer ring.	MG—		Mast guide bearing.
	—G	Wide single lip “non-removable” land riding seal.		—MS	Stamped metal flange.
G-GM—		Variation in carrier on clutch release types.		—MSA	Metal stamping combined with re-lubricatable flange.
	—GGB	Two wide single lip “non-removable” land riding seals, spherical O.D., 1 1/8" bore.		—MST	Metal stamping two hole flange.
	—GGH	Two wide single lip “non-removable” land riding seals, 3/4" bore.		—MSTR	Metal stamping three hole triangular flange.
	—GP2C	Wide single lip “non-removable” land riding seals, pre-lubricated, special bore, with eccentric locking collar.	N,NH—		Variation in carrier on clutch release types.
	—GR2C	Wide single lip “non-removable” land riding seal, re-lubricatable, special bore, with eccentric locking collar.	N—		Bearing inner and outer ring narrower than standard.
	—H	Special snap ring on radial bearings.		—N	Glass fiber reinforced nylon retainer.
	—H	Idler pulley shell style-hard.		—N	15° angle of contact with angular contact series.
HB—		Hanger bearing.	NIR—		Narrow inner ring.
HBD—		Hanger bearing, special feature.	NOR—		Narrow outer ring.
HC—		Hydraulic clutch bearing assembly.	P—		Idler pulley.
HCP—		Hydraulic clutch bearing and piston assembly.	P—		Precision ground.
HEC—		Hex bore, economy, cylindrical O.D. adapter.		—P	Pre-lubricated.
HPC—		Hex bore, precision ground cylindrical O.D. adapter.	PA—		Idler pulley-attachment type.
HPS—		Hex bore, precision ground spherical O.D. adapter.	PG—		Idler pulley-general purpose.
I,IA,IC—		Variation in carrier on clutch release types.	PHV—		Cast iron pillow block, hex bore bearing, with wide double lip “non-removable” land riding seals with eccentric locking collar.
	—J	40° angle of contact with angular contact types.	PNR—		Cast iron pillow block, narrow adapter bearing, with narrow single lip “non-removable” land rising seals with eccentric locking collar.
	—K	Wheel bearing kit consisting of axle nut, washer, and seal.	PR—		Plunger roller bearing.
	—K	“Gothic arch” on 9000 series.	PS—		Idler pulley – sprocket type.
	—KE	Double row bearing with vertex of contact angles outside the bearings, steel retainer, Conrad type.	PV—		Idler pulley – for “Vee” belt.
	—KM	Gothic arch angular contact with snap ring and bronze retainer.	PWG—		Cast iron pillow block, wide adapter bearing, with wide single lip “non-removable” land riding seals with eccentric locking collar.
L—		Idler pulley, pre-lubricated.	PWOL—		Ductile iron pillow block, wide adapter bearing, oil lubricated, heavy series.
	—L	Snap ring grooved outer, snap ring supplied.	PWRH—		Ductile pillow block, wide adapter bearing, PTFE seal, heavy series with eccentric locking collar.
	—LA	Snap ring groove on opposite side from standard. Snap ring not supplied.	PWT—		Cast iron pillow block, wide adapter bearing, with wide triple lip “non-removable” land riding seals with eccentric locking collar.
	—LH	Left hand thread.	PWV—		Cast iron pillow block, wide adapter bearing with wide double lip “non-removable” land riding seals with eccentric locking collar.
	—LO	Snap ring groove on standard side. Snap ring not supplied.		—R	Narrow single lip “non-removable” land riding seal.
				—R	Re-lubricatable. Adapter and pillow block types.

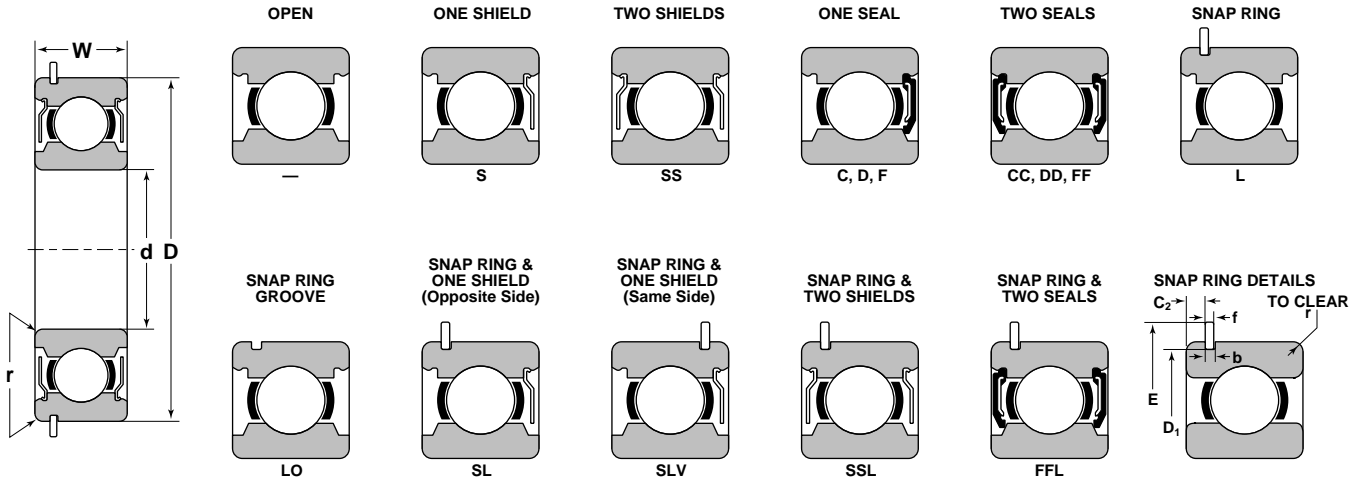
## Ball Bearing Numbering System

### NTN-BCA<sup>®</sup> Bearing Prefix and Suffix Explanations – Continued A, B, E, H, J, K, Q, U, W and Numerical Suffix Represent Specialty Bearings with Non-Standard Dimensions/Features

Prefix	Suffix	Explanation
	—R	Locking collar supplied with rear wheel types.
	—RH	Right hand thread.
	—RM	Re-lubricatable
	—RPC	Narrow single lip “non-removable” land riding seal, pre-lubricated, with eccentric locking collar.
	—RP2C	Narrow single lip “non-removable” land riding seal, pre-lubricated, special I.D. with eccentric locking collar.
	—RS	High center-line on pillow block types.
	—RUAN	Narrow single lip “non-removable” land riding seal and double lip “non-removable” land riding seal, special bearing dimensions.
RW—	—AR-GR	Rear wheel bearing with variation of basic design.
RWC,RWF,RWP—		Rear wheel bearing with variation of basic design.
S—		Idler pulley shell style – sprocket type.
S—		Bearing outer ring with spherical O.D.
	—S	Steel shield on one side of bearing (with max. type bearings, shield opposite loading slot).
	—S	Idler pulley – soft shell.
	—SL	Snap ring groove on side of bearing opposite shield. Snap ring supplied.
	—SLA	Snap ring groove on same side of bearing as shield. Snap ring not supplied.
	—SLB	Snap ring groove on side of bearing opposite shield. Snap ring supplied. Shield mounted on O.D. of inner ring.
	—SLO	Snap ring groove on side of bearing opposite shield. Snap ring not included.
	—SLV	Snap ring groove on same side of bearing as shield. Snap ring supplied.
	—SLVB	Snap ring groove on side of bearing opposite shield. Snap ring supplied, shield mounted on O.D. of inner ring.
SPB—		Stamped steel pillow block.
	—SV	Steel shield on opposite side from standard.
SWP—		Swashplate Bearing
SWPS—		Wide set screw adapter bearing.
S2L—		Sprocket idler pulley, narrow width, pre-lubricated.
S6L—		Sprocket idler pulley, high speed series, pre-lubricated.
	—T	30° angle of contact with angular contact types.
	—T	Wide triple lip “non-removable” land riding seal on adapter type.
TB—		Tine bar bearing.
TM—		Specially treated long-life bearings ( $a_2$ life factor = 2.2; load rating same as standard bearing).
	—TNJ	Extended inner ring, triple lip seal, nylon retainer.
TNR—		Two-hole cast iron flange, narrow adapter bearing, narrow single lip “non-removable” land riding seal with eccentric locking collar.

Prefix	Suffix	Explanation
TWG—		Two-hole cast iron flange, wide adapter bearing, with wide single lip “non removable” land riding seal with eccentric locking collar.
TWT—		Two-hole cast iron flange, wide adapter bearing, with triple lip “non-removable” land riding seal with eccentric locking collar.
TWV—		Two-hole cast iron flange, wide adapter bearing, with double lip “non-removable” land riding seal with eccentric locking collar.
V—		Idler pulley “Vee” type.
	—V	Wide double lip “non-removable” land riding seal.
	—VV	High temperature seal on both sides with clutch pilot types.
V2L—		“V” type idler pulley, narrow width, pre-lubricated.
V5L—		“V” type idler pulley, high speed series, pre-lubricated.
W—		Bearing inner and outer ring wider than standard.
W—		Variation in carrier on clutch release types.
	—W	Double row bearing with vertex of contact angles inside the bearing. Maximum capacity type.
WIR—		Wide inner ring bearing.
WOR—		Wide outer ring bearing.
WPC—		Wide inner ring bearing, cylindrical O.D. adapter bearing, with eccentric locking collar.
WPCH—		Wide inner ring, cylindrical O.D. heavy series adapter bearing, with eccentric locking collar.
WPS—		Wide inner ring bearing, spherical O.D. adapter bearing, with eccentric locking collar.
WPSH—		Wide inner ring, spherical O.D. heavy series adapter bearing, with eccentric locking collar.
	—WS	Double row bearing with vertex of contact angles inside the bearing. Maximum capacity type. Shield on one side of bearing opposite loading slot.
	—WSL	Double row bearing with vertex of contact angles inside the bearing. Maximum capacity type. Snap ring groove on side of bearing opposite shield. Snap ring supplied.
	—X	Class O (Standard) fit for double row bearings.
	—X	Is used to separate the basic bearing number from a numeric suffix.
XLS—		Extra light inch series.
	—Y	Single lip “non-removable” molded seal.
	—1	Modification of original design.
	—2	Less internal clearance than standard.
	—2	Special I.D.
	—3	Greater internal clearance than standard.
	—4	Greater internal clearance than class 3 loose.

## Extra Light — 100 Series

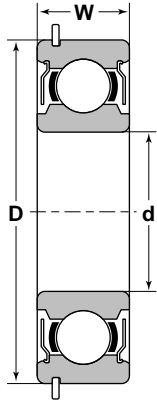


Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Snap Ring Groove Dimensions			Snap Ring Dimensions		Limiting Speed	
	d	D	W	r <sup>Ⓛ</sup>	Dynamic C	Static C <sub>0</sub>	D <sub>1</sub> (max)	C <sub>2</sub> (max)	b (min)	E	f	Grease	Oil
	Inch/mm				lbs/N		Inch/mm					RPM	
107	1.3780 35	2.4409 62	.5512 14	.040	3590 15970	2310 10280	2.347	.082	.075	2 2 <sup>1</sup> / <sub>32</sub>	.065	7,700	9,300
108	1.5748 40	2.6772 68	.5906 15	.040	3980 17700	2810 12500	2.552	.098	.075	2 5 <sup>9</sup> / <sub>64</sub>	.065	6,800	8,100
109	1.7717 45	2.9528 75	.6299 16	.040	4720 20990	3410 15150	2.828	.098	.075	3 1 <sup>3</sup> / <sub>64</sub>	.065	6,000	7,200
110	1.9685 50	3.1496 80	.6299 16	.040	4910 21820	3720 16560	3.024	.098	.075	3 1 <sup>3</sup> / <sub>32</sub>	.065	5,400	6,500
111	2.1654 55	3.5433 90	.7087 18	.040	6360 28270	4780 21250	3.417	.113	.106	3 5 <sup>1</sup> / <sub>64</sub>	.095	4,900	6,000
112	2.3622 60	3.7402 95	.7087 18	.040	6620 29440	5210 23160	3.615	.113	.106	3 6 <sup>3</sup> / <sub>64</sub>	.095	4,500	5,400
113	2.5591 65	3.9370 100	.7087 18	.040	7570 33690	6030 26810	3.811	.113	.106	4 3 <sup>1</sup> / <sub>16</sub>	.095	4,100	5,000
114	2.7559 70	4.3307 110	.7874 20	.040	8550 38050	6940 30870	4.205	.113	.106	4 3 <sup>7</sup> / <sub>64</sub>	.095	3,900	4,600
115	2.9528 75	4.5276 115	.7874 20	.040	8890 39520	7530 33470	4.402	.113	.106	4 2 <sup>5</sup> / <sub>32</sub>	.095	3,600	4,300
116	3.1496 80	4.9213 125	.8661 22	.040	10710 47630	8920 39690	4.733	.113	.122	5 1 <sup>9</sup> / <sub>64</sub>	.109	3,300	4,100
§ 117	3.3465 85	5.1181 130	.8661 22	.040	11130 49520	9660 42980	4.930	.113	.122	5 1 <sup>1</sup> / <sub>2</sub>	.109	3,100	3,800
118	3.5433 90	5.5118 140	.9449 24	.060	13080 58160	11150 49600	5.324	.146	.122	5 5 <sup>7</sup> / <sub>64</sub>	.109	3,000	3,700
119	3.7402 95	5.7087 145	.9449 24	.060	13600 60520	12060 53660	5.521	.146	.122	6 5 <sup>5</sup> / <sub>64</sub>	.109	2,800	3,500
122	4.3307 110	6.6929 170	1.1024 28	.080	18430 81970	16360 72750	6.443	.146	.138	7 3 <sup>1</sup> / <sub>16</sub>	.120	2,500	2,900
124	4.7244 120	7.0866 180	1.1024 28	.040	18970 84380	17940 79800	6.837	.146	.138	7 1 <sup>9</sup> / <sub>32</sub>	.120		

Ⓛ BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.

§ NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

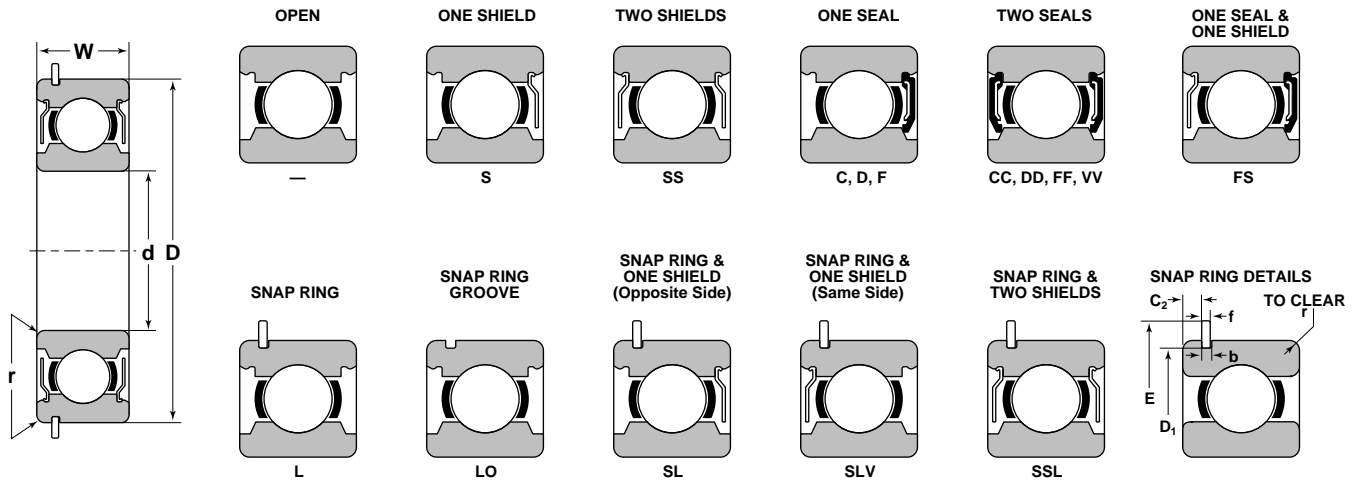
**100 Series—Bearing Specials**



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
105SS1	.9843 25	1.8504 47	.7087 18	Extended I.R. Clutch Pilot Bearing.
§ 107G	1.3780 35	2.4409 62	.5512 14	Basic 107 with a .81 X .181 Inner Ring Notch.
108A	1.1024 28	2.6772 68	.7087 18	Special 28mm bore and 18mm Width.
§ 108FFM	.3280 —	2.6772 68	.9250 —	Special Tensioner Assembly.
§ 108H	1.5000 —	2.7535 —	1.2500 —	Extended inner Ring with Set Screw, Special Bore, O.D. and Width.
§ 108K	1.4200 —	2.7535 —	.6350 —	Special Bore, O.D. and Width.
§ 108KA	1.4200 —	3.0000 —	.6350 —	Special Bore, O.D. and Width.
§ 108KSS	1.4200 —	2.7535 —	.6350 —	Special Bore, O.D. and Width.
108SSA	1.4370 —	2.6772 68	.5906 15	Special Bore.
§ 110B	1.5050 —	3.1625 —	.6500 —	Hex Bore.
§ 110BFF	1.5050 —	3.1625 —	.6500 —	Basic 110-B with two seals.
§ 110BFFE	1.5050 —	3.1625 —	1.8750 —	Basic 110-B with 3-holes, extended inner ring.
§ 110BSS	1.5100 —	3.1625 —	.6500 —	Basic 110-B with two shields.
§ 110JSS	1.5050 —	3.1625 —	.6500 —	Basic 110-B with a .008-.010 clearance.
§ 110K	1.7600 —	3.1670 —	.6500 —	Special Bore, O.D. and Width, Special Bore shape, Nylon Retainer.
§ 110KFF	1.7600 —	3.1670 —	.6500 —	Basic 110-K with a Special D Bore, two F seals.
111G	2.1654 55	3.5433 90	.7087 18	Basic 111 with a .095 X .211 Inner Ring Notch.
§ 112G	2.3622 60	3.7402 95	.7087 18	Basic 112 with a .095 X .211 Inner Ring Notch.
§ 112SSLOBG	2.4409 62	3.7402 95	.7087 18	Basic 112 with a .095 X .211 Inner Ring Notch, 62mm bore.
§ 113AFFB	2.5591 65	3.9370 100	.7087 18	Two High Temp. Polyacrylic Seals.
§ 113AG	2.5591 65	3.9370 100	.7087 18	Basic 113 with .095 X .211 Inner Ring Notch.
113ASG	2.5591 65	3.9370 100	.7087 18	Basic 113 with .095 X .211 Inner Ring Notch.
§ 113ASLBG	2.5591 65	3.9370 100	.7087 18	Basic 113 with .095 X .211 Inner Ring Notch.
§ 113ASLVG	2.5591 65	3.9370 100	.7087 18	Basic 113 with .095 X .211 Inner Ring Notch.
§ 113ASXS	2.5591 65	3.9370 100	.8125 —	Special Beveled Shield, Overall Width .8125.
114LBG	2.7559 70	4.3307 110	.7874 20	Basic 114 with .095 X .211 Inner Ring Notch, Special 4 61/64 O.D. Snap Ring.
114SXS	2.7559 70	4.3307 110	.8750 —	Special Beveled/Bowed Shield on One Side.
115A	2.9528 75	4.5276 115	.7874 20	Special Radial Clearance.
115G	2.9528 75	4.5276 115	.7874 20	Basic 115 with a .095 X .211 Inner Ring Notch.
115SXS	2.9528 75	4.5276 115	.7874 20	Special Beveled/Bowed Shield on One Side.
§ 122LG	4.3307 110	6.6929 170	1.1024 28	Basic 122-L with a .160 X .337 Inner Ring Notch.
124AL	4.7244 120	7.0866 180	1.1024 28	Angular Contact Bearing with Bronze Retainer. O-ring on O.D.

CONTACT YOUR NTN SALES REPRESENTATIVE FOR FURTHER INFORMATION ON SPECIALS.  
 § NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

## Light — 200 Series

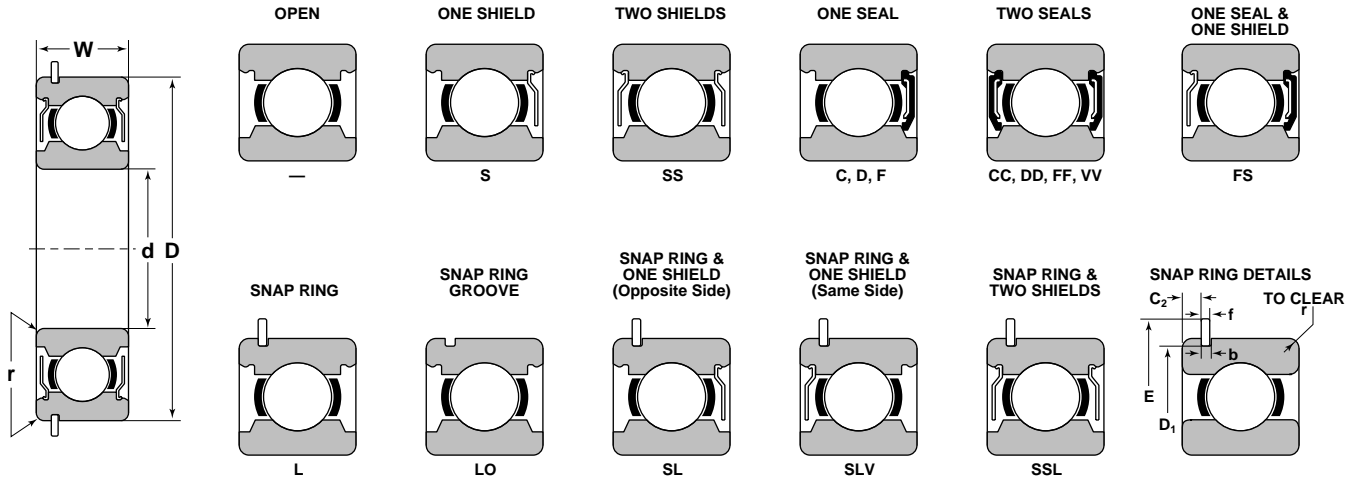


Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Snap Ring Groove Dimensions			Snap Ring Dimensions		Limiting Speed	
	d	D	W	r <sup>①</sup>	Dynamic C	Static C <sub>0</sub>	D <sub>1</sub> (max)	C <sub>2</sub> (max)	b (min)	E	f	Grease	Oil
	Inch/mm				lbs/N		Inch/mm					RPM	
204	.7874 20	1.5748 40	.5512 14	.040	2880 12790	1480 6580	1.756	.081	.053	2 1/16	.042	12,500	15,000
205	.9843 25	2.0472 52	.5906 15	.040	3150 14010	1760 7830	1.958	.081	.053	2 17/64	.042	10,000	12,000
206	1.1811 30	2.4409 62	.6299 16	.040	4370 19450	2530 11260	2.347	.082	.075	2 21/32	.065	8,300	10,000
207	1.3780 35	2.8346 72	.6693 17	.040	5770 25670	3440 15300	2.709	—	.075	3 5/64	.065	7,100	8,600
208	1.5748 40	3.1496 80	.7087 18	.040	6540 29110	4020 17900	3.024	.098	.075	3 13/32	.065	6,300	7,500
209	1.7717 45	3.3465 85	.7480 19	.040	7020 31240	4570 20320	3.221	—	.075	3 19/32	.065	5,600	6,700
210	1.9685 50	3.5433 90	.7874 20	.040	7890 35070	5210 23180	3.417	.113	1.06	3 51/64	.095	5,000	6,000
211	2.1654 55	3.9370 100	.8268 21	.060	9750 43380	6570 29220	3.811	.113	.106	4 3/16	.095	4,500	5,500
212	2.3622 60	4.3307 110	.8661 22	.060	11800 52400	8100 36000	4.205	.113	.106	4 37/64	.095	4,200	5,000
213	2.5591 65	4.7244 120	.9055 23	.060	12860 57210	8990 40000	4.536	—	.122	5 3/32	.109	3,800	4,600
214	2.7559 70	4.9213 125	.9449 24	.060	13980 62200	9890 43990	4.733	.113	.122	5 19/64	.109	3,600	4,300
215	2.9528 75	5.1181 130	.9843 25	.060	14880 66180	11080 49270	4.930	.113	.122	5 57/64	.109	3,300	4,000
216	3.1496 80	5.5118 140	1.0236 26	.080	16340 72670	11920 53000	5.324	.146	.122	5 57/64	.109	3,100	3,800
217	3.3465 85	5.9055 150	1.1024 28	.080	18720 83270	14340 63770	5.718	.146	.122	6 9/32	.109	2,900	3,500
218	3.5433 90	6.2992 160	1.1811 30	.080	21580 95980	16060 71460	6.111	.146	.122	6 43/64	.109	2,800	3,400
§ 219	3.7402 95	6.6929 170	1.2598 32	.080	24440 108710	18370 81700	6.443	.146	.138	—	—	2,600	3,200

① BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.

§ NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

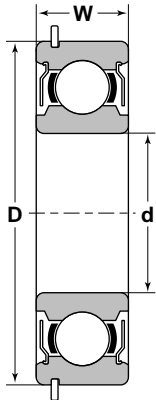
**Light — 200 Series Continued**



Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Snap Ring Groove Dimensions			Snap Ring Dimensions		Limiting Speed	
	d	D	W	r ①	C	C <sub>0</sub>	D <sub>1</sub> (max)	C <sub>2</sub> (max)	b (min)	E	f	Grease	Oil
	Inch/mm				lbs/N		Inch/mm					RPM	
220	3.9370 100	7.0866 180	1.3386 34	.080	27460 122140	20850 92720	6.837	.146	.138	7 19/32	.120	2,500	3,000
§ 221	4.1339 105	7.4803 190	1.4173 36	.080	29900 132990	23480 104440	7.230	—	.138	7 63/64	.120	2,400	2,900
§ 222	4.3307 110	7.8740 200	1.4961 38	.080	31810 141500	26250 116790	7.624	.224	.138	8 3/8	.120	2,300	2,700

① BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.  
 § NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

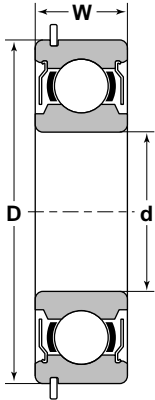
## 200 Series—Bearing Specials



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
§ 202A	.5000	1.5000	.4331	Basic 202FF with 1/2 Bore and 1 1/2 O.D.
202CC1	.6250	1.3780	.4331	Basic 202FF with 5/8 Bore.
202CC16	.6299	1.3780	.4331	Basic 202FF with 16mm Bore.
202FFAN	.6250	1.3780	.4331	Basic 202FF with Special Bore, Nylon Retainer.
202FFBN	.6250	1.3750	.5000	Basic 202FF with 5/8 Bore, 1 3/8 O.D., 1/2 Width.
202FFH8	.5000	1.5290	.4331	Special 202FF with 1/2 Bore and 1.5290 Spherical O.D.
202FFLBN	.6250	1.3750	.4331	Special 5/8 Bore and 1 3/8 O.D. with Snap Ring.
§ 202FFLOBN	.6250	1.3750	.4331	Special 5/8 Bore and 1 3/8 O.D. with Snap Ring Groove.
§ 202FFLOJN	.5000	1.3750	.4331	Special Bore, O.D. and Width, Nylon Retainer.
202RRE	.5906	1.3780	.8780	Basic 202 Double sealed with .8780 Extended I.R. and Y Seals.
202RRH	.5050	1.5748	.4331	Special Bore, O.D., and Width, Nylon Retainer.
§ 203FAN	.7500	1.7500	.5000	Basic 203F with Inch Dimensions.
203FFAN	.7500	1.7500	.5000	Basic 203FF with Inch Dimensions.
§ 203FFN10	.6250	1.5748	.4724	See 8980DD
203FFN12	.7500	1.5748	.4724	Basic 203-FF with Special Bore, Nylon Retainer.
203FFUN	.6693	1.7500	.5000	Special O.D. and Width of O.R., Nylon Retainer.
203FLAN	.6693	1.5748	.4724	Basic 203-FLA with Nylon Retainer.
203FFLAN	.6693	1.5748	.4724	Basic 203-FLAN with two F Seals.
§ 203K	.6693	1.5748	.7187	Basic 203 with Extended I.R. .7187 and Special Seal on One Side.
§ 203M	.6299	1.6580	.8600	Special Extended I.R. .8600
§ 203Q	.6693	1.5748	.4724	Basic 203 with Special O.D. Corners .010
203RRAR8N	.5150	1.5748	.7200	Special Bore and Width.
203RRAR10N	.6350	1.5748	.7200	Special Bore and Width.
203RRAR10N2	.6400	1.5748	.7200	Special Bore and Width with Class 2 Internal Clearance.
§ 203RRAR10N4	.6400	1.5748	.7200	Special Bore and Width with Class 4 Internal Clearance.
§ 203RRAR10N5	.6350	1.5748	.7200	Special Bore and Width with Class 5 Internal Clearance.
§ 203RRE10N	.6400	1.7500	1.1252	Special Idler Pulley Bearing.
203RRE8N	.5220	1.7500	.5500	Special Bore, O.D. and Width, Nylon Retainer.
203RRH10N	.6350	1.8504	.7200	Special Bore, O.D. and Width.
203SSB	.6250	1.5748	.4724	Basic 203SS with 5/8 Bore.
203VVAR10N	.6350	1.5748	.7200	Same as 203RRAR10 with V Seals.
S203FFN	.6693	1.5748	.4724	Basic 203FF with Spherical O.D.
§ 204ARN	.7505	1.7805	.6100	Special Inch Dimension Bore, O.D. and Width.

CONTACT YOUR NTN SALES REPRESENTATIVE FOR FURTHER INFORMATION ON SPECIALS.  
 § NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

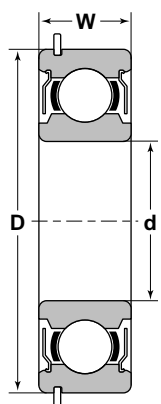
**200 Series—Bearing Specials Continued**



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
204BARN	.7505	1.7805	.6100	Basic 204AR with Seal on One Side.
204BBA4	.7500	1.7805	.6100	Special 3/4 Bore with Seal on One Side.
204BBARN	.7500	1.7805	.6100	Special 3/4 Bore, Double Sealed with Special Seal.
§ 204BBCR	.7500	1.7805	.6100	Special 3/4 Bore, Double Sealed with Special Seal.
204BBEN	.6260	1.7805	.6100	Special .6260 Bore, Double Sealed.
§ 204BBUN	.6260	1.7805	.6100	Special GOTHIC Disc Bearing.
204FGBN	.6260	1.8504 47	.6860	Special .6260 Bore with Wide I.R., Double Sealed.
204FREN	.6310	1.7805	.7350	Special 204 with Wide I.R., Double Sealed.
204FFW	.7874 20	1.8504 47	.5512	Special Seals, Sold to Caterpillar only.
§ 204FRHN	.6260	1.8504 47	1.1250	Special .6260 Bore, with Wide I.R. and one F and K Seal.
204FRKN	.6260	1.8504 47	.6890	Special Wide I.R. and Internal Clearance, Double Sealed.
§ 204FVB	.6260	1.8504 47	.6860	Special Wide I.R. with Double Lip V Seal on One Side.
§ 204FVMAN	.6260	1.7805	.7400	Special GOTHIC Disc Bearing.
204FVMN	.6310	1.7805	.6150	Special Bore, O.D. and Width, Nylon Retainer.
204GGBN	.7500	1.8504 47	1.3440	Special Self Aligning Adapter Bearing.
204RRUN	.7874 20	1.8504	.5512	Special Width of I.R.
§ 204GVQN	.7500	1.8504 47	1.5000	Special Adapter Bearing with one G and one Double Lip V Seal.
204TJN	.6260	1.8504 47	1.1252	Special Disc Bearing with one Triple Lip Seal.
204TTM	.7500	1.8504 47	1.2030	Special Adapter Bearing with 2-Set Screws for; TNT-3/4-RA.
S204FFN	.7874 20	1.8504 47	.5512 14	Basic 204FF with Spherical O.D.
§ 205FFE	.9843 25	2.0472 52	.5906 15	Basic 205FF with .81 X .181 Notch on one Side of O.R.
§ 205FFNB	1.0000	2.2500	1.0000	Special with Spherical O.D.
205FFWN	.9843 25	2.0472 52	.5906 15	Special Seals, Nylon Retainer.
§ 205K	.9843 25	2.0472 52	.5906 15	Basic 205 with Special O.D. Corners .020 X .055.
205N14	.8750	2.0472 52	.5906 15	Basic 205 with 7/8 Bore.
205RHN	.7500	2.0472 52	.7000	Special 3/4 Bore with R Type Seal.
205RRAN	.7500	2.0472 52	.8280	Special 3/4 Bore with Extended I.R.
205RRAN10	.6260	2.0472 52	.8280	205RRAN with 5/8 Bore.
205RRBN	.5100	2.0472 52	1.3750	Special Bore with Wide I.R.
205RRWN	.7500	2.0472 52	.5906 15	Special Bore and Width of I.R., Nylon Retainer.
205RRUN	.5100	2.0472 52	1.5000	Special Bore with Wide I.R.
§ 205RTAN	.7510	2.0472 52	.8280	Special Bore with Wide I.R., T Seal on One Side.

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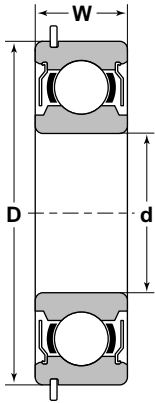
## 200 Series—Bearing Specials Continued



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
205RVAN	.7510 —	2.0472 52	.8280 —	Special Bore with Wide I.R., Double Lip V Seal on One side.
§ 205RVAN10	.6260 —	2.0472 52	.8280 —	Special Bore with Wide I.R., Double Lip V Seal on One side.
§ 205RVB	.6260 —	2.0472 52	.7030 —	Special Bore with Wide I.R., Double Lip V Seal on One side.
205RVBAN	.6260 —	2.0472 52	.7030 —	Special Bore with Wide I.R., Double Lip V Seal on One side.
205TNJ	.7510 —	2.0472 52	.9790 —	Special Bore with Wide I.R., T Seal on One Side.
205TNK	.7510 —	2.0472 52	.7730 —	Special Bore with Wide I.R., T Seal on One Side.
205TTHR	.9425 —	2.0472 —	.5906 —	Special Bore and Width of I.R., Nylon Retainer.
205TTB	.7510 —	2.0472 52	1.3750 —	Special Bore with Wide I.R., Two T Seals.
205TTHN	.9375 —	2.0472 52	1.3750 —	Special Bore with Wide I.R., Two T Seals.
§ 205TTM	.6260 —	2.0472 52	1.3750 —	Special Bore with Wide I.R., Two T Seals.
§ 205TTMA	.6260 —	2.0472 52	1.3750 —	Special Bore with Wide I.R., Two T Seals and Special Clearances.
205VVEN	.7560 —	2.5000 —	1.0000 —	Special Bore, O.D. and Width, Nylon Retainer.
205TTPN	.6300 —	2.0472 52	1.5000 —	Special Bore with Wide I.R., Two T Seals.
205VVHN	.6310 —	2.0900 —	.7200 —	Special Bore, O.D. and Width, Nylon Retainer.
CB205GGRA	.7000 —	2.2650 —	1.5000 —	Special Hex Bore Conveyor Bearing with R Seals.
CB205GG	.704 —	2.2650 —	.9380 —	Special Hex Bore Conveyor Bearing, Nylon Retainer.
CB205GGR	.704 —	2.2650 —	.9380 —	Basic CB205GG with through Hole for relubrication.
S205FFN	.9843 25	2.0472 52	.5906 —	Basic 205FF with Spherical O.D.
206FFA	1.1250 —	2.4409 62	.6299 16	Basic 206FF with 1 1/8 Bore.
206FFBN	1.1811 30	2.4409 62	.6299 16	Special Seals, Nylon Retainer.
§ 206FFHN	1.1811 30	2.4409 62	.6299 16	Basic 206FF with Unhoned Raceways.
206FFJ	1.1811 30	2.4409 62	.6299 16	Basic 206FF with "O" Ring.
§ 206G	1.1811 30	2.4409 62	.6299 16	Basic 206 with .081 X .181 I.R. Notch.
§ 206GGAN	1.0100 —	2.4409 62	.9449 24	Special Bore with Wide I.R. and Spherical O.D., Two G Seals.
206GGBN	1.1258 —	2.4409 62	.9449 24	Special Bore with Wide I.R. and Spherical O.D., Two G Seals.
§ 206GGBCN	1.1258 —	2.4409 62	.9449 24	Special Bore with Wide I.R. and Cylindrical O.D., Two G Seals.
206GGCE	1.1258 —	2.6772 68	.9449 24	Basic 206GGB with 2.6772 O.D. Steel Tire.
206GGHN	.7560 —	2.4409 62	.9449 24	Special .7560 Bore with Two G Seals.
§ 206HAN	1.2509 —	2.4409 62	.9449 24	Special 1.2509 Bore with Two G Seals.
§ 206J	1.0000 —	2.4409 62	2.0625 —	Special 1 Bore with Wide I.R.
§ 206K	1.1250 —	2.4409 62	2.0625 —	Basic 206J with 1 1/8 Bore.
§ 206LN1X3	1.2305 —	2.4409 62	.6299 16	Basic 206L with 1.2305 Bore.
§ 206N20	1.2500 —	2.4409 62	.6299 16	Basic 206 with 1 1/4 Bore

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200 Series—Bearing Specials Continued



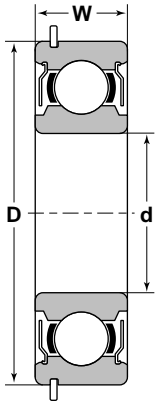
Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
206RRMN	.7580 —	2.4409 62	.9449 24	Special .7580 Bore and Two R Seals
§ 206RRWN	1.2600 32	2.3820 —	1.1875 —	Special Adapter Bearing with (2) Holes in I.R. and Two R Seals.
206RRZN	1.1811 30	2.4409 62	.6299 16	Special Width of I.R., Nylon Retainer
206RTQN	.9900 —	2.4409 62	.8750 —	Special Bore and Width with One R and T Seal.
206TTAN	1.0100 —	2.4409 62	.9449 24	Special 1.0100 Bore with Wide I.R. and Spherical O.D., Two T Seals.
§ 206TTBN	1.1258 —	2.4409 62	.9449 24	Special 1.1258 Bore with Wide I.R., Spherical O.D., Two T Seals.
§ 206TTHN	.7560 —	2.4409 62	.9449 24	Special .7560 Bore with Wide I.R., Cylindrical O.D., Two T Seals.
206TTUN	1.0100 —	2.4409 62	.9449 24	Basic 206TTA, with Re-lube feature.
S206FFN	1.1811 30	2.4409 62	.6299 16	Basic 206FF with Spherical O.D.
207FFWA ①	1.3780 35	2.8346 72	.7874 20	Basic MG-207FF with .7874 I.R. Width and Fractured O.R.
§ 207FLJ	1.1811 30	2.8346 72	.6693 17	Basic 207FLV with 1.1811 Bore.
207FFU	1.3780 35	2.8346 72	.6693 17	Special Width of I.R., "Fractured" O.R.
207FLAN	1.3780 35	2.8346 72	.6693 17	Basic 207-FLA with Nylon Retainer.
207HN3	1.3780 35	2.8346 72	.6693 17	Special Clearance with High I.R. Shoulders.
§ 207LOE	1.1811 30	3.1496 80	.6693 17	Basic 207LO with 30mm Bore and 80mm O.D.
§ 207RGAN	1.2501 —	2.8346 72	1.0000 —	Special 1 ¼ Bore with Spherical O.D. and One R and G Seal.
207SLBN3	1.3780 35	2.8346 72	.6693 17	Basic 207SL with Flinger Style Shield.
§ 207SLEN	1.3780 35	2.8346 72	.6693 17	Basic 207SL with Special 2 3/32 O.D. Snap Ring.
§ 207XLON3	1.3780 35	2.8346 72	.6693 17	Basic 207LO with Special Bore Corner .025 X 45°.
§ CB207GG	1.0850 —	3.0730 —	1.6880 —	Special Hex Bore Conveyor Bearing with Two G Seals.
§ CB207GGB	1.0850 —	3.0730 —	1.6880 —	Special Hex Bore Conveyor Bearing with Two G Seals.
§ CB207GGR	1.0850 —	3.0730 —	1.6880 —	Special Hex Bore Conveyor Bearing with Two G Seals, Re-lube
CB207GGRA	1.0850 —	3.0730 —	1.6880 —	Special Hex Bore Conveyor Bearing with Two G Seals, Re-lube
S207FFN	1.3780 35	2.8346 72	.6693 17	Basic 207FF with Spherical O.D.
§ S207FFK	1.3780 35	3.2410 —	.6693 17	Basic 207FF with 3.2410 Spherical O.D.
§ X207LO	1.3780 35	2.8346 72	.6693 17	Non-Standard Ball Complement and Solid Ring with no Seal or Shield Grooves.
§ 208FFB	1.5000 —	3.2500 —	.7500 —	Basic 208FF with Inch Dimensions.
§ 208SB	1.5000 —	3.2500 —	.7500 —	Special 208S with Inch Dimensions.
208TEN	1.5005 —	3.1496 80	.7087 18	Special Bore and Width of I.R., Nylon Retainer.
§ 208TBN	1.5005 —	3.1496 80	1.0625 —	1 ½ Bore with Wide I.R. and One T Seal.
S208FF	1.5748 40	3.1496 80	.7087 18	Basic 208FF with Spherical O.D.
§ S208RRAN	1.4375 —	3.1496 80	.8661 22	Special Bore and Width.
S208TTBN	1.5748 40	3.1496 80	1.0600 —	Basic S208FF with 1.0600 Width, .035 X 45° Bore Corners and Two T Seals.

CONTACT YOUR NTN SALES REPRESENTATIVE FOR FURTHER INFORMATION ON SPECIALS.

① FRACTURED OUTER RING MUST BE USED WITH A M.G. TIRE.

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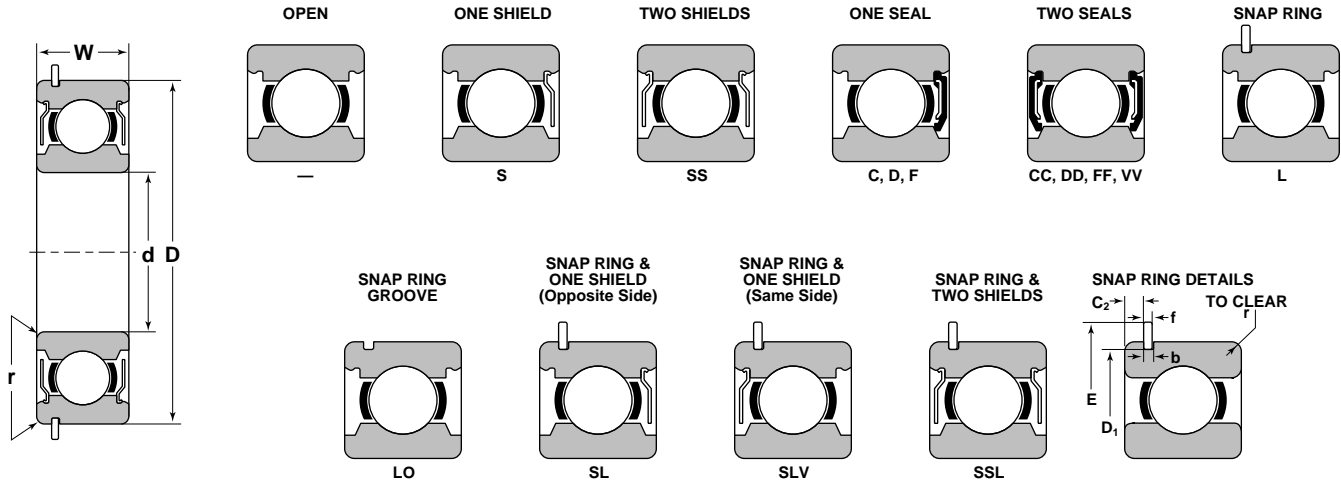
## 200 Series—Bearing Specials Continued



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
S209DD	1.7717 45	3.3465 85	.7480 19	Basic 209DD with Spherical O.D.
§ 210E	2.0060 —	3.5433 90	.7874 20	Basic 210 with 2.0060 Bore, .062 X 45° I.R. Corner, .030 O.R. Corners.
§ 210ES	1.9685 50	3.5433 90	.7874 20	Basic 210E with One Shield.
211B	2.1654 55	3.9370 100	.8268 21	Basic 211 with Solid Rings.
211FFLE	2.1654 55	3.9370 100	.8268 21	Basic 211FFL with Special 4 3/32 O.D. Snap Ring.
§ 211G	2.1654 55	3.9370 100	.8268 21	Basic 211 with .95 X .211 I.R. Notch.
211SSB	2.2560 —	3.9370 100	.9530 —	Special Bore and Width with A Slot of I.R.
§ 211SSK	2.2560 —	3.9370 100	1.0800 —	Special Bore and Width, Sealed Shields.
211SSLH	2.1654 55	3.9370 100	.8268 21	Zinc Plated Snap Ring.
212ASLB	2.3622 60	4.3307 110	.8661 22	Basic 212SL with Special Beveled Snap Ring 4.459 O.D.
S212	2.3622 60	4.3307 110	.8661 22	Basic 212 with Spherical O.D.
W212A3	2.3622 60	4.3307 110	1.4375 —	Basic 212 with 1.4375 Width.
213A	2.6772 68	4.7244 120	.9055 23	Basic 213 with 2.6772 Bore.
214LB3	2.5000 —	4.9213 125	.9449 24	Basic 214L with 2 1/2 Bore.
214LE	2.7559 70	4.9213 125	.9449 24	Basic 214L with Special Bore Corners.
214LH	2.7559 70	4.9213 125	.9449 24	Basic 214L with Solid Rings.
214LOB	2.5000 —	4.9213 125	.9449 24	Basic 214LB Without Snap Ring.
215SSH	3.0006 —	5.1181 130	2.3430 —	3 Bore, Wide I.R. with Removable Sealed Shields.
215SSJ	3.0006 —	5.1181 130	1.7500 —	3 Bore, Wide I.R. with Slot and Removable Sealed Shields.
215SSK	3.0006 —	5.1181 130	1.3120 —	3 Bore, Wide I.R. with Slot and Removable Sealed Shields.
215SSKA	3.0056 —	5.1181 130	.9843 25	Special Bore.
215SSE	3.0006 —	5.1181 130	1.187 —	Special Bore, Wide I.R. with slot and Removable Sealed Shields.
217SLE	3.3465 85	5.9055 150	1.1024 28	Basic 217SL with Special Angled Snap Ring.

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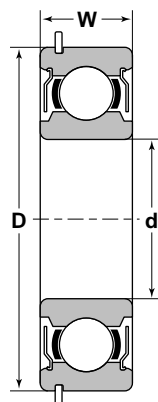
Medium — 300 Series



Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Snap Ring Groove Dimensions			Snap Ring Dimensions		Limiting Speed	
	d	D	W	r ①	C	C <sub>0</sub>	D <sub>1</sub> (max)	C <sub>2</sub> (max)	b (min)	E	f	Grease	Oil
	Inch/mm				lbs/N		Inch/mm			RPM			
304	.7874 20	2.0472 52	.5906 15	.040	3580 15940	1770 7880	1.958	.081	.053	2 17/64	.042	11,000	13,200
305	.9843 25	2.4409 62	.6693 17	.040	4610 20510	2500 11120	2.347	.082	.075	2 21/32	.065	8,800	10,600
306	1.1811 30	2.8346 72	.7480 19	.040	5980 26590	3350 14890	2.709	—	.075	3 5/64	.065	7,300	8,800
307	1.3780 35	3.1496 80	.8268 21	.060	7480 33290	4290 19090	3.024	.098	.075	3 13/32	.065	6,200	7,600
308	1.5748 40	3.5433 90	.9055 23	.060	9150 40720	5380 23950	3.417	.113	.106	3 51/64	.095	5,500	6,600
309	1.7717 45	3.9370 100	.9843 25	.060	11860 52770	7120 31670	3.811	.113	.106	4 3/16	.095	4,900	5,900
310	1.9685 50	4.3307 110	1.0630 27	.080	13900 61810	8510 37850	4.205	.113	.106	4 37/64	.095	4,400	5,300
311	2.1654 55	4.7244 120	1.1417 29	.080	16070 71470	10020 44570	4.536	—	.122	5 3/32	.109	4,000	4,800
312	2.3622 60	5.1181 130	1.2205 31	.080	18380 81750	11660 51850	4.930	.113	.122	5 1/2	.109	3,700	4,400
313	2.5591 65	5.5118 140	1.2992 33	.080	20830 92640	13410 59670	5.324	.146	.122	5 57/64	.109	3,300	4,000
314	2.7559 70	5.9055 150	1.3780 35	.080	23410 104130	15300 68040	5.718	.146	.122	6 9/32	.109	3,200	3,800
315	2.9528 75	6.2992 160	1.4567 37	.080	25500 113420	17300 76960	6.111	.146	.122	6 43/64	.109	2,900	3,500
§ 316	3.1496 80	6.6929 170	1.5354 39	.080	27640 12940	19450 86500	6.443	.146	.138	7 3/16	.120	2,700	3,300
§ 317	3.3465 85	7.0866 180	1.6142 41	.100	29830 132670	21720 96600	6.837	.146	.138	7 19/32	.120	2,600	3,100
§ 318	3.5433 90	7.4803 190	1.6929 43	.100	32060 142610	24110 107230	7.230	—	.138	7 63/64	.120	2,500	3,000
§ 319	3.7402 95	7.8740 200	1.7717 45	.100	34340 152750	26620 118430	7.624	.224	.138	—	—	2,300	2,800

① BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.  
 § NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

## 300 Series—Bearing Specials



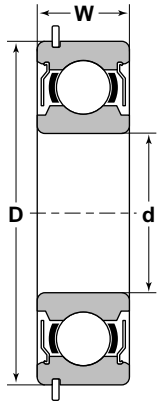
Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
§ 304DDK				Special Chain Guide Bearing with stud.
§ 305DDE3	.9843 25	2.4409 62	.6693 17	Basic 305DD with Special Grease 40% fill Chevron SRI #2
§ 305DE	.9843 25	2.4409 62	.6693 17	Basic 305D with Special Grease 40% fill Chevron SRI #2
306FFA	1.1811 30	2.8346 72	.7480 19	High Temperature Bearing.
306FFH	.9843 25	2.8346 72	.7480 19	Basic 306 with 305 Bore.
306FFLA	1.1811 30	2.8346 72	.7480 19	High Temperature Grease.
306FFLE	1.1811 30	2.8346 72	.7480 19	Basic 306FFI with Grease Molykote 44, C5 Internal Clearance.
306SLVB	1.1811 30	2.8346 72	.7480 19	Basic 306SLV with I.R. Mounted Shield.
§ 307DEA	1.3795 —	3.1496 80	1.3752 —	Special 307D with $\frac{3}{8} \times \frac{17}{64}$ I.R. Notch and Special Width
307DEN	1.3780 35	3.1496 80	.8268 21	Notched Inner Ring.
307FFB	1.3780 35	3.2190 —	.8268 21	Full Compliment Bearing with Cracked Outer Ring (Dif. O.D.)
307FFJ	1.3780 35	3.1496 80	.8268 21	Different "F" Seal.
§ 307G	1.3780 35	3.1496 80	.8268 21	Basic 307 with I.R. Notch.
§ 307GA	1.3780 35	3.1496 80	.8268 21	Basic 307 with .095 x .211 I.R. Notch.
307GE	1.3780 35	3.1496 80	.8268 21	Notched Inner Ring with Special Markings – Sold to Caterpillar Only.
§ 307H	1.3780 35	3.1496 80	.8268 21	Basic 307 with Snap Ring Groove Opposite Side From Standard.
307LO1	1.3780 35	3.1496 80	.8268 21	Basic 307LO with .040 Bore Corners, .117 Wide Snap Ring Groove.
307L1	1.3780 35	3.1496 80	.8268 21	Basic 307L with $3 \frac{11}{32}$ O.D. Snap Ring.
§ 307M	1.3780 35	3.1496 80	.8268 21	Basic 307 with .013 x 45° Chamfer on Bore Corners.
§ 307SG	1.3780 35	3.1496 80	.8268 21	Basic 307S with .020 Bore Corner Opposite Shield and .095 x .211 Notch in I.R., Shield Side.
307XD	1.1870 —	3.1496 80	.8268 21	Basic 307D with 1.1870 Bore.
§ N307	1.3780 35	3.1496 80	.7040 —	Basic 307 with .7040 Width.
N307LOE	1.3780 35	3.1496 80	.6693 17	Basic 307LO with Offset Races and .6693 Width.
308FFAN	1.5005 —	3.5433 90	.9055 —	Wide – Offset Inner Ring (Dif. I.D.) with Notch, O.R. Width .9055.
308FFU				—See Mast and Chain Guide Section.
308LH	1.5748 40	3.5433 90	.9055 23	Basic 308L with Special Snap Ring 4.14 O.D.
308L1	1.5748 40	3.5433 90	.9055 23	Basic 308L with Special $3 \frac{23}{32}$ O.D. Snap Ring, .030 Bore Corners.
N308LOB	1.5748 40	3.5433 90	.7874 20	Basic 308LO with .7874 Width and High I.R. Shoulders.
N308LOE	1.3780 35	3.5433 90	.7874 20	Dif. Width and Dif. I.D.
S308FFN	1.5748 40	3.5433 90	.9055 23	Basic 308 Bearing with Spherical O.D.
308FFU ①	1.5748 40	3.5433 90	.8500 —	Full Compliment, Fractured Outer Ring.
309DE	1.6882 —	3.9370 100	.9843 25	Extended I.R. with Notch and "D" Seal, Dif. I.D., I.R. Width 1.484.

CONTACT YOUR NTN SALES REPRESENTATIVE FOR FURTHER INFORMATION ON SPECIALS.

① FRACTURED OUTER RING MUST BE USED WITH A M.G. TIRE.

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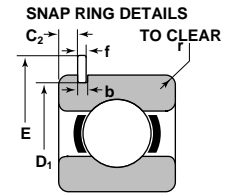
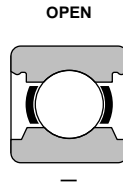
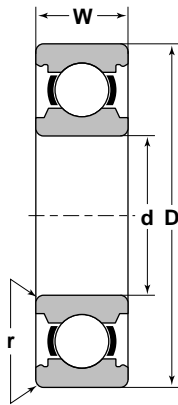
**300 Series—Bearing Specials**



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
309XD	1.4370 —	3.9370 100	.9843 25	Special Bore and One D Seal.
N309L	1.7717 45	3.9370 100	.8268 21	Basic 309L with .8268 Width.
§ N309LO	1.7717 45	3.9370 100	.8268 21	N309L without Snap Ring.
§ S309	1.7717 45	3.9370 100	.9843 25	Basic 309 with Spherical O.D.
§ 310A	1.9685 50	4.3307 110	1.0630 27	Basic 310 with .180 Bore Corners.
310B	1.9685 50	4.3307 110	1.0630 27	Basic 310 with .220 Bore Corners.
N310L	1.9685 50	4.3307 110	.9055 23	Basic 310L with .9055 Width
§ 311G	2.1654 55	4.7244 120	1.1417 29	Basic 311 with .155 x .322 I.R. Notch.
§ S311	2.1654 55	4.7244 120	1.1417 29	Basic 311 with Spherical O.D.
§ 312G	2.3662 60	5.1181 130	1.2205 31	Basic 312 with .155 x .331 I.R. Notch.
312LE	2.3662 60	5.1181 130	1.2205 31	Basic 312L with Beveled Snap Ring.
312L1	2.3662 60	5.1181 130	1.2205 31	Basic 312L with High Bore Shoulders.
§ 312SAH	2.3617 —	5.1181 130	1.2205 31	Basic 312S with 2.3617 Bore and .255 x .425 Slot on O.R. Opposite Shield.
§ S312	2.3662 60	5.1181 130	1.2205 31	Basic 312 with Spherical O.D.
§ WIR312L	2.2505 —	5.1181 130	1.8895 —	Basic 312L with 2 ¼ Bore and Wide I.R.
313A	2.3622 60	5.5118 140	1.2992 33	Basic 313 with 60mm Bore.
313G	2.5591 65	5.5118 140	1.2992 33	Basic 313 with .155 x .331 I.R. Notch.
§ S313	2.5591 65	5.5118 140	1.2992 33	Basic 313 with Spherical O.D.
S314	2.7559 70	5.9005 150	1.3780 35	Basic 314 with Spherical O.D.
S315	2.9528 75	6.2992 160	1.4567 37	Basic 315 with Spherical O.D.
§ S316	3.1496 80	6.6929 170	1.5354 39	Basic 316 with Spherical O.D.
§ 318SS5	3.5433 90	7.4803 190	1.6929 43	Basic 318SS with Special Clearances for Mining Equipment.

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 § NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

## Heavy — 400 Series

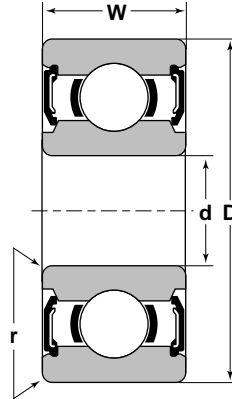


Bearing Number	Bore	Outside Diameter	Overall Width	Fillet Radius	Basic Load Ratings		Snap Ring Groove Dimensions			Snap Ring Dimensions	
	d	D	W	r $\text{\textcircled{1}}$	Dynamic C	Dynamic C <sub>O</sub>	D <sub>1</sub> (max)	C <sub>2</sub> (max)	b (min)	E	F
	Inch/mm				lbs/N		Inch/mm				
405	.9843 25	3.1496 80	.8268 21	.060	8030 35720	4250 18900	3.024	.098	.075	—	—
406	1.1811 30	3.5433 90	.9055 23	.060	9550 42480	5230 23260	3.417	.113	.106	—	—
408	1.5748 40	4.3307 110	1.0630 27	.080	14280 63520	8170 36340	4.205	.113	.106	—	—
§ 408L	1.5748 40	4.3307 110	1.0630 27	.080	14280 63520	8170 36340	4.205	.113	.106	4 <sup>13</sup> / <sub>16</sub>	.097
409	1.7717 45	4.7244 120	1.1417 29	.080	17310 76990	10100 44920	4.536	—	.122	—	—
§ 409L	1.7717 45	4.7244 120	1.1417 29	.080	17310 76990	10100 44920	4.536	—	.122	5 <sup>7</sup> / <sub>64</sub>	.111
410	1.9685 50	5.1181 130	1.2205 31	.080	19630 87310	11650 51820	4.930	.113	.122	—	—
§ 410L	1.9685 50	5.1181 130	1.2205 31	.080	19630 87310	11650 51820	4.930	.113	.122	5 <sup>1</sup> / <sub>2</sub>	.111
§ 412	2.3622 60	5.9055 150	1.3780 35	.080	25730 114450	15750 70060	5.718	.146	.122	—	—

- $\text{\textcircled{1}}$  BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.
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## Cartridge Type

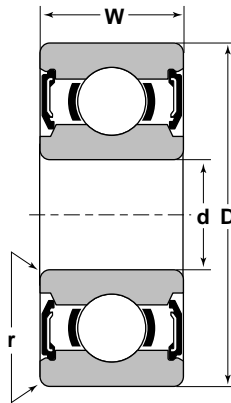
### Light—W200 Series



Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Limiting Speed	
	d	D	W	r ❶	Dynamic C	Static C <sub>0</sub>	Grease	Oil
	Inch/mm				lbs/N		RPM	
§ W204FF	.7874 20	1.8504 47	.8125 21	.040	2880 12790	1480 6580	12,500	15,000
W206FF	1.1811 30	2.4409 62	.9375 24	.040	4370 19450	2530 11260	8,300	10,000
§ W206FFA	1.1811 30	2.4409 62	.9370 24	.040	4370 19450	2530 11260	8,300	10,000
§ W206SS	1.1811 30	2.4409 62	.9375 24	.040	4370 19450	2530 11260	8,300	10,000
§ W212A	2.3622 60	4.3307 110	1.4375 37	.060	10740 47760	7400 32930	4,200	5,000

❶ BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.  
 § NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

## Medium—W300 Series



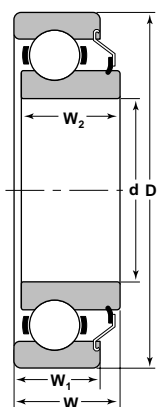
Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Limiting Speed	
	d	D	W	r <sup>①</sup>	Dynamic C	Static C <sub>0</sub>	Grease	Oil
	Inch/mm				lbs/N		RPM	
W305DD	.9843 25	2.4409 62	1.0000 25	.040	4610 20510	2500 11120	8,800	10,600
§ W305DDA	.9843 25	2.4409 62	1.0000 25	.040	4610 20510	2500 11120	8,800	10,600
§ W306FF	1.1811 30	2.8346 72	1.1875 30	.040	5980 26590	3350 14890	7,300	8,800
W306FFA	1.1811 30	2.8346 72	1.1875 30	.040	5980 26590	3350 14890	7,300	8,800
W306FFLN	1.1811 30	2.8346 72	1.1875 30	.040	5980 26590	3350 14890	7,300	8,800
§ W306SS	1.1811 30	2.8346 72	1.1875 30	.040	5980 26590	3350 14890	7,300	8,800
§ W307FF	1.3780 35	3.1496 80	1.3750 35	.060	7480 33290	4290 19090	6,200	7,600
W307FFA	1.3780 35	3.1496 80	1.3750 35	.060	7480 33290	4290 19090	6,200	7,600
§ W307SS	1.3780 35	3.1496 80	1.3750 35	.060	7480 33290	4290 19090	6,200	7,600
§ W308FF	1.5748 40	3.5433 90	1.4375 37	.060	9150 40720	5380 23950	5,500	6,600
W308SS	1.5748 40	3.5433 90	1.4375 37	.060	9150 40720	5380 23950	5,500	6,600
§ W309FF	1.7717 45	3.9370 100	1.5625 40	.060	11860 52770	7120 31670	4,900	5,900
W309FFA	1.7717 45	3.9370 100	1.5625 40	.060	11860 52770	7120 31670	4,900	5,900
§ W309SS	1.7717 45	3.9370 100	1.5625 40	.060	11860 52770	7120 31670	4,900	5,900
§ W313SSB	2.5591 65	5.5118 140	2.3120 59	.080	20830 92640	13410 59670	3,300	4,000
§ W315FF	2.9528 75	6.2992 160	2.6875 68	.080	25500 113420	17300 76960	2,900	3,500
§ W315SS	2.9528 75	6.2992 160	2.6875 68	.080	25500 113420	17300 76960	2,900	3,500

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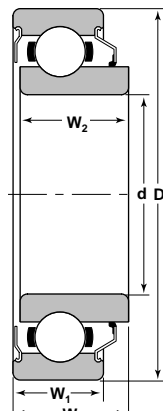
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NOTE: LOAD RATINGS ARE IDENTICAL WITH THOSE OF CORRESPONDING SINGLE ROW RADIAL BEARINGS.

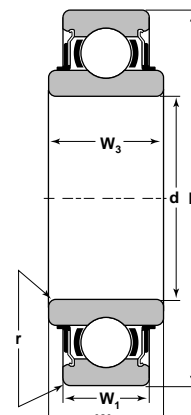
**Single Seal—8000 Series**  
**Seal and Shield—87000 Series**  
**Double Seal—88000 Series**



**8000 SERIES**



**87000 SERIES**



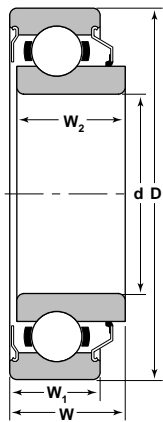
**88000 SERIES**

Bearing Number			Bore	Outside Diameter	Inner Ring Width		Outer Ring Width	Overall Width	Fillet Radius	Basic Load Ratings		
8000	87000	88000	d	D	W <sub>2</sub>	W <sub>3</sub>	W <sub>1</sub>	W	r <sup>①</sup>	C	C <sub>0</sub>	
			Inch/mm								lbs/N	
		88502	.5906 15	1.3780 35	.4800 12.192	.5669 14.399	.4331 11	.5000 12.700	.025 .6	1530 6780	750 3320	
8503	87503	88503	.6693 17	1.5748 40	.5375 13.665	.6536 16.601	.4724 12	.5625 14.288	.025 .6	2150 9550	1070 4760	
		88503L <sup>②</sup>	.6693 17	1.5748 40		.6536 16.601	.4724 .4724		.025 .6	2150 9550	1070 4760	
		88504	.7874 20	1.8504 47	.6000 15.240	.6988 17.750	.5512 14	.6250 15.875	.040 1.0	2880 12790	1480 6580	
8505	87505	88505	.9843 25	2.0472 52	.6000 15.240	.6594 16.749	.5906 15	.6250 15.875	.040 1.0	3150 14010	1760 7830	
8506	87506	88506	1.1811 30	2.4409 62	.7470	.9449 24.000	.6299 16	.7870	.040 1.0	4370 19450	2530 11260	
8507			1.3780 35	2.8346 72	.7874 20.000		.6693 17	.8268 21.000	.040 1.0	5770 25670	3440 15300	
		88508	1.5748 40	3.1496 80		1.0630 27.000	.8268 21		.040 1.0	6540 29110	4020 17900	
		88509	1.7717 45	3.3465 85		1.0630 27.000	.8268 21		.040 1.0	7020 31240	4570 20320	
8605	87605	88605	.9843 25	2.4409 62	.8270 21.006	.9843 25.000	.6693 17	.8270	.040 1.0	4610 20510	2500 11120	
8445			2.1875 —	4.7244 120	—	2.1870 55.550	1.1417 29	—	.025 .6	16100 71500	10000 44500	

① BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.

② SNAP RING OUTER DIAMETER OF 1.7500

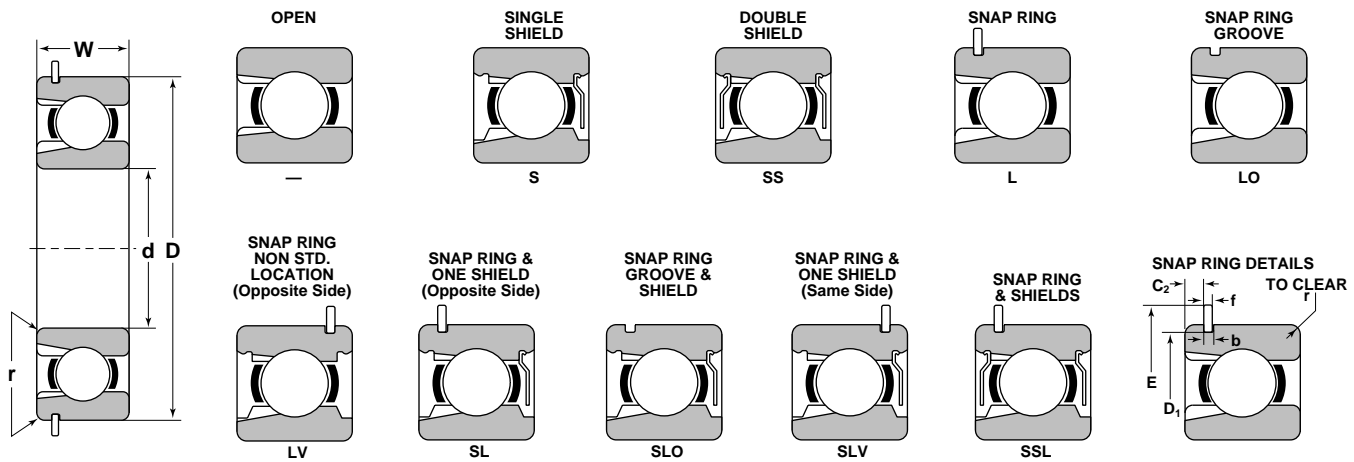
## 88000 Series—Special Bearings



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
§ 88107A	1.3780 35	2.8346 72	.9843 25	Basic 88107 with Special Bore Corners .090 See 88107AR.
§ 88107ARR	1.3780 35	2.8346 72	.9843 25	Basic 88107A with "R" Seals.
§ 88107AYY	1.3780 35	2.8346 72	.9843 25	Basic 88107A with "Y" Seals.
88107BGG	1.2525 —	2.8346 72	.9843 25	Basic 88107 with 1.2525 Bore and "G" Seals.
88107BVV	1.3780 35	2.8346 72	.9843 25	Basic 88107 with Double Lip "V" Seals.
§ 88107BY	1.3780 35	2.8346 72	.9843 25	Basic 88107 with One Side Open.
88107BYY	1.3780 35	2.8346 72	.9843 25	Different "Y" Seals and .6693 Outer Ring Width.
§ 88107GGJ	1.3780 35	2.8346 72	.9843 25	Basic 88107 with "G" Seals and .0015-.0025 Radial Play.
88107GJN	1.3780 35	2.8346 72	.9843 25	Basic 88107 with One "G" Seal and .6693 Outer Ring Width.
88107HYNNR	1.3780 35	2.8346 72	1.0236 —	Wide Inner Ring and .6693 Outer Ring Width.
§ 88107JYY	1.3780 35	2.8346 72	.9843 25	Insert Bearing for HB88107A Hanger Bearings.
§ 88108	1.4990 —	3.1496 80	1.0630 27	Basic 88508 with 1.4990 Bore.
§ 88128A	1.5307 —	3.1496 80	1.0831 —	Basic 88508 with 1.5307 Bore and 1.0831 I.R. Width.
§ 88128E	1.5312 —	3.1496 80	1.0831 —	Basic 88128A with 1.5312 Bore.
§ 88128G	1.5307 —	3.1496 80	1.0831 —	Basic 88128A with One "G" Seal.
88128GG	1.5307 —	3.1496 80	1.0831 —	Basic 88128A with Two "G" Seals.
88128YYN	1.5313 —	3.1496 80	1.0831 —	Basic 88128 with 1.5312 Bore and "Y" Seal, .8268 Outer Ring Width.
88128YYNR	1.5312 —	3.1496 80	1.0831 —	Basic 88128 with 1.5312 Bore and "Y" Seal with locking collar, .8268 Outer Ring Width.
§ 88131	1.5307 —	3.2500 —	1.0260 —	Basic 88128A with 3.2500 O.D., 1.0260 I.R. Width and .8500 O.R. Width, .090 Bore Corners.
§ 88208A	1.5748 40	3.1496 80	.9449 24	Basic 88508 with .9449 I.R. Width and .7087 O.R. Width.
§ 88208AL	1.5748 40	3.1496 80	.9449 24	Basic 88208A with 3 13/32 O.D. Snap Ring.
§ 88208WW	1.5748 40	3.1496 80	1.0600 —	Basic 88208A with 1.0600 O.R. Width and Heavy Duty Double Lip Seals.
§ 88210GG	1.9685 50	3.5433 90	1.1843 —	Basic 88510 with .8661 Outer Ring Width and "G" Seals.
88210GGB	1.5312 —	3.5433 90	1.1810 —	Basic 88210 with .7874 Outer Ring Width and "G" Seals.
§ 88210GSA	1.9685 50	3.5433 90	1.0236 26	Basic 88210GG with 1.0236 I.R. Width, One "G" Seal and One Shield on Flush Side.
88210YY	1.9685 50	3.5433 90	1.1810 46	Basic 88510 with "Y" Seals.
§ 88212AYY	2.3622 60	4.3317 110	1.4173 36	Basic 88512 with "Y" Seals.
88502A	.5512 14	1.3780 35	.5569 —	Basic 88502 with .5512 Bore and .035 Bore Corners.
§ 88505AB	.9843 25	2.0472 52	.6594 —	Basic 88505 with Special 50% Fill Andok 260 Grease.
§ 88506A	1.1811 30	2.4409 62	.9449 24	Basic 88506 with .090 Bore Corners.
88506AR	1.1811 30	2.4409 62	.9449 24	Larger Inner Ring "To Clear" Radii and .6299 Outer Ring Width.
88506BR	1.1811 30	2.4409 62	.6299 24	Basic 88506 with "F" Seals and 0.090 Inner Ring Radius.
§ 88508B	1.5748 40	3.1496 80	1.0600 —	Basic 88508 with 1.0600 I.R. Width.
88509YYN	1.7717 —	3.3465 —	.8268 —	Basic 88509 with "Y" Seals.

§ NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

### Maximum Capacity or Filling Slot Type Light—1200 Series

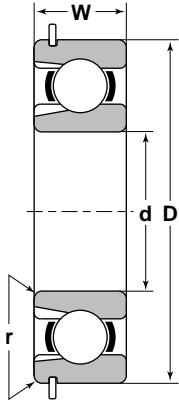


Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Snap Ring Groove Dimensions			Snap Ring Dimensions		Limiting Speed	
	d	D	W	r $\Phi$	C	C <sub>0</sub>	D <sub>1</sub> (max)	C <sub>2</sub> (max)	b (min)	E	f	Grease	Oil
	Inch/mm				lbs/N		Inch/mm					RPM	
1205	.9843 25	2.0472 52	.5906 15	.040	3590 15970	2510 11150	1.958	.081	.053	2 17/64	.042	10,000	12,000
1206	1.1811 30	2.4409 62	6.299 16	.040	4860 21600	3520 15660	2.347	.082	.075	2 21/32	.065	8,300	10,000
1207	1.3780 35	2.8346 72	.6693 17	.040	6290 27970	4710 20930	2.709	—	.075	3 5/64	.065	7,100	8,600
1208	1.5748 40	3.1496 80	.7087 18	.040	6570 29220	5560 24720	3.024	.098	.075	3 13/32	.065	6,300	7,500
1209	1.7717 45	3.3465 85	.7480 19	.060	6860 30530	6110 27170	3.221	—	.075	3 19/32	.065	5,600	6,700
1210	1.9685 50	3.5433 90	.7874 20	.040	7140 31740	6640 29520	3.417	.113	.106	3 51/64	.095	5,000	6,000
1211	2.1654 55	3.9370 100	.8268 21	.060	10810 48100	9850 43820	3.811	.113	.106	4 3/16	.095	4,500	5,500
1212	2.3622 60	4.3307 110	.8661 22	.060	12490 55550	11310 50330	4.205	.113	.106	4 37/64	.095	4,200	5,000
1213	2.5591 65	4.7244 120	.9055 23	.060	14260 63430	13490 60000	4.536	—	.122	5 3/32	.109	3,800	4,600
1214	2.7559 70	4.9213 125	.9449 24	.060	15500 68690	14840 65990	4.733	.113	.122	5 19/64	.109	3,600	4,300
1215	2.9528 75	5.1181 130	.9843 25	.060	16160 71890	16110 71660	4.930	.113	.122	5 1/2	.109	3,300	4,000
1216	3.1496 80	5.5118 140	1.0236 26	.080	18910 84120	19060 84800	5.324	.146	.122	5 57/64	.109	3,100	3,800
1217	3.3465 85	5.9055 150	1.1024 28	.080	20930 93100	20870 92840	5.718	.146	.122	6 9/32	.109	2,900	3,500
1218	3.5433 90	6.2992 160	1.1811 30	.080	23930 106420	24100 107180	6.111	.146	.122	6 43/64	.109	2,800	3,400
§ 1219	3.7402 95	6.6929 170	1.2598 32	.080	27100 120530	27550 122650	6.443	.146	.138	7 3/16	.120	2,600	3,200
1220	3.9370 100	7.0866 180	1.3386 34	.080	30440 135420	31270 139080	6.837	.146	.138	7 19/32	.120	2,500	3,000
1224	4.7244 120	8.4646 215	1.5748 40	.080	44250 196900	43100 191800	8.215	—	.138	—	—	2,100	—

⊙ BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.

§ NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

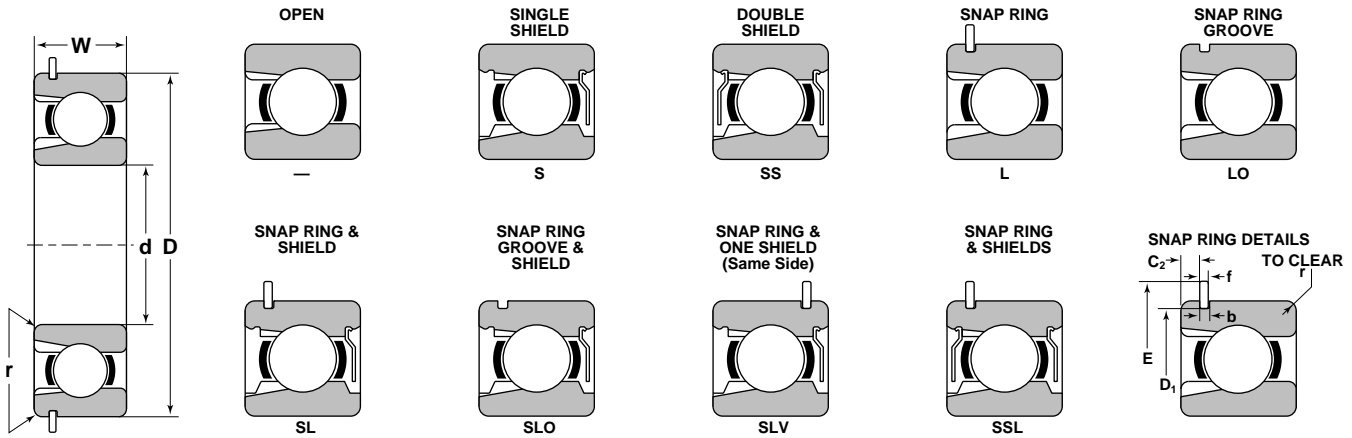
## Maximum Capacity or Filling Slot Type 1200 Series—Bearing Specials



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
§ 1207K	1.3750 —	2.8346 72	.6693 17	Special 1 <sup>3</sup> / <sub>8</sub> Bore and 11 - <sup>15</sup> / <sub>32</sub> Balls.
§ 1207LAJ	1.3780 35	2.8346 72	.6693 17	Special High Shoulders on I.R.
1207LOE	1.1811 30	3.1496 80	.6693 17	Special 30mm Bore and 80mm O.D.
§ 1207LVJ	1.3780 35	2.8346 72	.6693 17	Snap Ring Groove on Opposite Side from Standard. Special Snap Ring Supplied but not Assembled.
1207SLB	1.3780 35	2.8346 72	.6693 17	Special Flinger Type Shield; Snap Ring O.D. 3.012.
§ 1207SLVB	1.3780 35	2.8346 72	.6693 17	Special Flinger Type Shield Opposite Side from Standard; Snap Ring O.D. 3.012.
§ 1211SA	2.1654 55	3.9370 100	.8268 21	Special Internal Clearance.
N1211L	2.1654 55	3.9370 100	.6800 —	Basic 1211L with 4 <sup>3</sup> / <sub>32</sub> Snap Ring O.D. and Narrow Width.
§ 1212A	2.3622 60	4.3307 110	.8661 22	Basic 1212 with 14 - <sup>5</sup> / <sub>8</sub> Balls.
§ 1212AL	2.3622 60	4.3307 110	.8661 22	Basic 1212L with 14 - <sup>5</sup> / <sub>8</sub> Balls
§ 1212AS	2.3622 60	4.3307 110	.8661 22	Basic 1212A with One Shield.
§ 1212ASL	2.3622 60	4.3307 110	.8661 22	Basic 1212AS with Snap Ring.
§ 1212E	2.7559 70	4.3307 110	1.0240 26	Basic 1212 with .025 Extended I.R. on One Side, 70mm Bore.
§ 1213B	2.5591 65	4.8107 —	.9055 23	Basic 1213 with Special O.D.
§ 1213SLOE	2.5591 65	4.7244 120	.9055 23	Basic 1213SLO with Special Notch in O.R.
§ 1214A	2.7559 70	4.9222 —	.9449 24	Basic 1214 with Special Oversized O.D.
§ 1215A	2.7953 71	5.1181 130	.9843 25	Basic 1215 with 71mm Bore.
N1215LB	2.9528 75	5.1181 130	.8661 22	Special High Shoulders on Inner and Outer Rings; Snap Ring O.D. of 5.296 and Narrow Width.
N1215LOB	2.9528 75	5.1181 130	.8661 22	Basic N1215LB without Snap Ring.
N1215LOE	2.9528 75	5.1281 —	.8661 22	Basic N1215LOB with Narrow Width and Oversized O.D. with High Shoulders.

CONTACT YOUR NTN SALES REPRESENTATIVE FOR FURTHER INFORMATION ON SPECIALS.  
§ NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

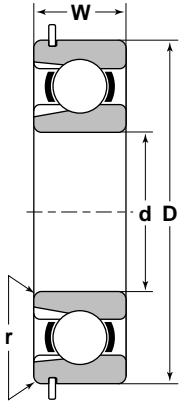
Medium—1300 Series



Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Snap Ring Groove Dimensions			Snap Ring Dimensions		Limiting Speed	
	d	D	W	r	C	C <sub>0</sub>	D <sub>1</sub> (max)	C <sub>2</sub> (max)	b (min)	E	f	Grease	Oil
	Inch/mm				lbs/N		Inch/mm			RPM			
1304	.7874 20	2.0472 52	.5906 15	.040	3850 17110	2530 11260	1.958	.081	.053	2 17/64	.042	11,000	13,200
1305	.9843 25	2.4409 62	.6693 17	.040	5110 22740	3510 15600	2.347	.082	.075	2 21/32	.065	8,800	10,600
1306	1.1811 30	2.8346 72	.7480 19	.040	6530 29050	4650 20680	2.709	—	.075	3 5/64	.065	7,300	8,800
1307	1.3780 35	3.1496 80	.8268 21	.060	8080 35920	5890 26190	3.024	.098	.075	3 13/32	.065	6,200	7,600
1308	1.5748 40	3.5433 90	.9055 23	.060	10430 46400	8050 35810	3.417	.113	.106	3 51/64	.095	5,500	6,600
1309	1.7717 45	3.9370 100	.9843 25	.060	12410 55210	9790 43550	3.811	.113	.106	3 19/32	.095	4,900	5,900
1310	1.9685 50	4.3307 110	1.0630 27	.080	14340 63800	11920 53010	4.205	.113	.106	4 37/64	.095	4,400	5,300
1311	2.1654 55	4.7244 120	1.1417 29	.080	16680 74190	14120 62830	4.536	—	.122	5 3/32	.109	4,000	4,800
1312	2.3622 60	5.1181 130	1.2205 31	.080	20380 90650	17490 77780	4.930	.113	.122	5 1/2	.109	3,700	4,400
1313	2.5591 65	5.5118 140	1.2992 33	.080	23090 102720	20120 89510	5.324	.146	.122	5 57/64	.109	3,300	4,000
1314	2.7559 70	5.9055 150	1.3780 35	.080	25960 115450	22940 102050	5.718	.146	.122	6 9/32	.109	3,200	3,800
1315	2.9528 75	6.2992 160	1.4567 37	.080	28270 125760	25950 115450	6.111	.146	.122	6 43/64	.109	2,900	3,500
§ 1316	3.1496 80	6.6929 170	1.5354 39	.080	30640 136310	29170 129750	6.443	.146	.138	7 3/16	.120	2,700	3,300
§ 1318	3.5433 90	7.4803 190	1.6929 43	.100	32610 145030	33120 147300	7.230	—	.138	7 63/64	.120	2,500	3,000

Ⓢ BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.  
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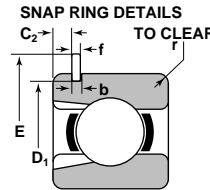
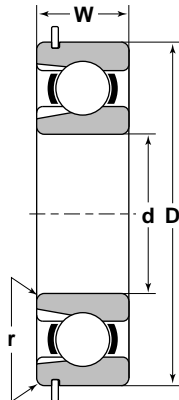
## 1300 Series—Bearing Specials



Bearing Number	Bore	Outside Diameter	Width	Special Features
	d	D	W	
Inch/mm				
§ 1306A	1.1811 30	2.9528 75	.7480 19	Basic 1306 with Oversized 75mm O.D.
§ 1306LAE	1.0002 —	2.8346 72	.7480 19	Basic 1306LA with Special 1.0002 Bore.
1306SLVB	1.1811 30	2.8346 72	.7480 19	Snap Ring O.D. 3 1/64; Flinger Type Shield.
§ 1307SL1	1.3780 35	3.1496 80	.8268 21	Special Snap Ring O.D. of 3 11/32.
N1307L	1.3780 35	3.1496 80	.6693 17	Basic 1307L with .6693 Width.
§ N1307LO	1.3780 35	3.1496 80	.6693 17	Basic N1307L with Snap Ring Groove.
§ 1308LOH	1.5748 40	3.5433 90	.9055 23	Basic 1308LO with Solid Inner and Outer Rings.
§ N1308LB	1.5748 40	3.5433 90	.7874 20	Basic 1308L with Special Bore Corners .020 and Width .7874.
N1308LOB	1.5748 40	3.5433 90	.7874 20	Basic N1308LB with Snap Ring Groove.
1310L1	1.7717 45	4.3307 110	1.0630 27	Basic 1310 with Special Bore 1.7717.
§ 1312L1	2.3622 60	5.1181 130	1.2205 31	High Shoulders on Inner and Outer Rings, No Shield Groove.
§ 1313L1	2.5591 65	5.5118 140	1.2992 33	High Shoulders on Inner and Outer Rings.
1313SLB	2.5591 65	5.5118 140	1.2992 33	Basic 1313SL with Special Snap Ring and Loading Slot.

CONTACT YOUR NTN SALES REPRESENTATIVE FOR FURTHER INFORMATION ON SPECIALS.  
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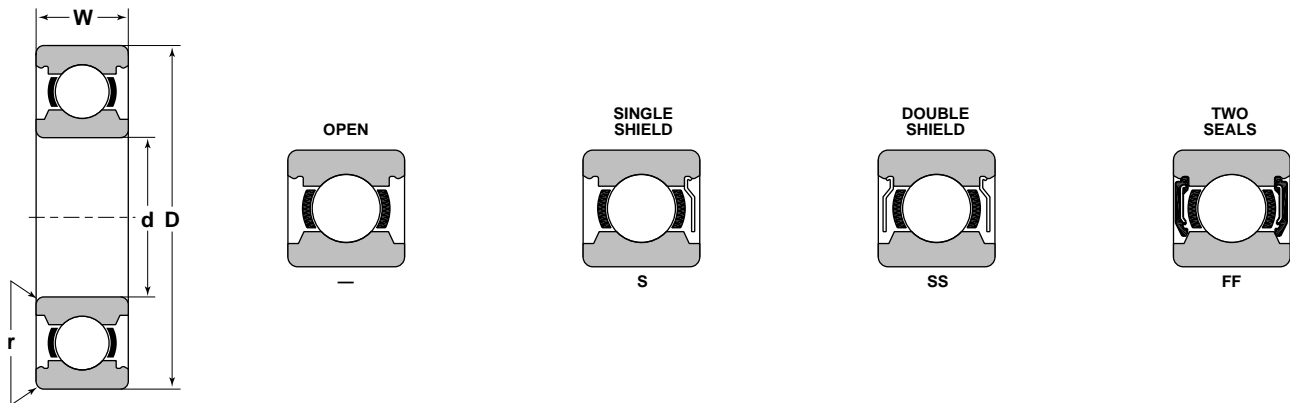
## Heavy—1400 Series



Bearing Number	Bore	Outside Diameter	Overall Width	Fillet Radius	Basic Load Ratings		Snap Ring Groove Dimensions			Snap Ring Dimensions	
	d	D	W	r $\text{\textcircled{I}}$	Dynamic C	Dynamic C <sub>O</sub>	D <sub>1</sub> (max)	C <sub>2</sub> (max)	b (min)	E	f
Inch/mm					lbs/N		Inch/mm				
1412-L	2.3622 60	5.9055 150	1.3780 35	.080	25730 114450	15750 70060	5.718	.193	.122	6 9/32	.109

$\text{\textcircled{I}}$  BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.

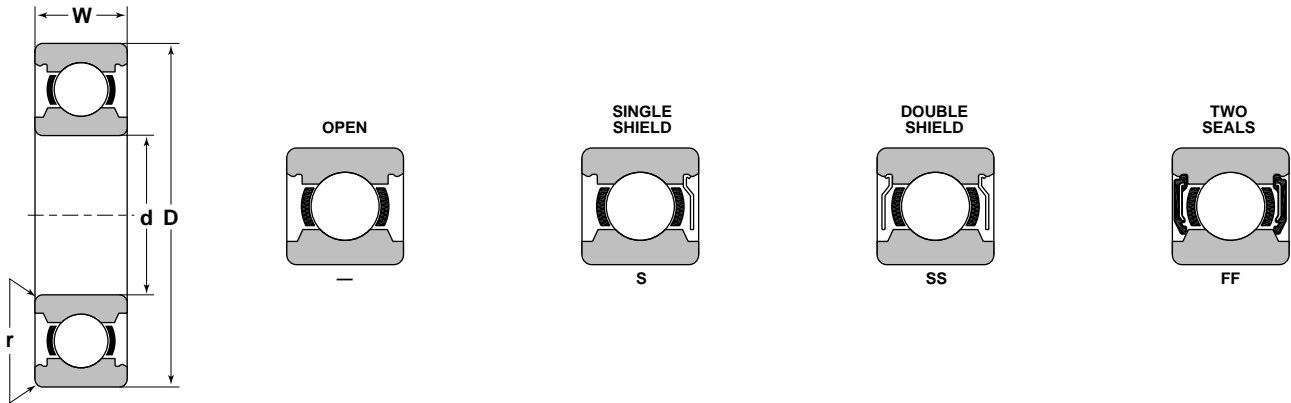
**XLS Series**



Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Limiting Speed	
	d	D	W	r ❶	Dynamic C	Static C <sub>0</sub>	Grease	Oil
	Inch/mm				lbs/N		RPM	
XLS-1 <sup>1</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>8</sub>	<sup>3</sup> / <sub>8</sub>	.030	2394 10651	1504 6690	9,000	11,350
XLS-1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	<sup>3</sup> / <sub>8</sub>	.030	2517 11198	1668 7422	8,500	10,200
XLS-1 <sup>3</sup> / <sub>4</sub>	1 <sup>3</sup> / <sub>4</sub>	3	<sup>9</sup> / <sub>16</sub>	.047	4472 19895	3147 13999	6,100	7,300
XLS-1 <sup>7</sup> / <sub>8</sub>	1 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>16</sub>	<sup>5</sup> / <sub>8</sub>	.060	6433 28617	4632 20606	5,600	6,800
§ XLS-2	2	3 <sup>5</sup> / <sub>16</sub>	<sup>5</sup> / <sub>8</sub>	.047			5,400	6,400
XLS-2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>9</sup> / <sub>16</sub>	<sup>5</sup> / <sub>8</sub>	.047	5708 25392	4462 19848	4,700	5,700
XLS-2 <sup>1</sup> / <sub>4</sub> -SS	2 <sup>1</sup> / <sub>4</sub>	3 <sup>9</sup> / <sub>16</sub>	<sup>5</sup> / <sub>8</sub>	.047	5708 25392	4462 19848	4,700	5,700
XLS-2 <sup>3</sup> / <sub>8</sub>	2 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	<sup>11</sup> / <sub>16</sub>	.047	4770 21217	3851 17130	4,500	5,400
XLS-2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	<sup>11</sup> / <sub>16</sub>	.060	4950 22030	4150 18470	4,300	5,100
§ XLS-2 <sup>1</sup> / <sub>2</sub> -SS	2 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	<sup>11</sup> / <sub>16</sub>	.060	4950 22030	4150 18470	4,300	5,100
§ XLS-2 <sup>5</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	<sup>11</sup> / <sub>16</sub>	.047	6086 27073	5245 23334	3,900	4,600
XLS-2 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	4 <sup>1</sup> / <sub>8</sub>	<sup>11</sup> / <sub>16</sub>	.047	6086 27073	5245 23334	3,900	4,600
XLS-2 <sup>7</sup> / <sub>8</sub> -A	2 <sup>7</sup> / <sub>8</sub>	4 <sup>3</sup> / <sub>16</sub>	<sup>33</sup> / <sub>64</sub>	.040	6029 26820	5291 23536	3,600	4,300
XLS-3	3	4 <sup>1</sup> / <sub>2</sub>	<sup>3</sup> / <sub>4</sub>	.047	5957 26499	5351 23801	3,600	4,300
XLS-3 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	<sup>3</sup> / <sub>4</sub>	.047	6120 27223	5706 25384	3,300	3,900
§ XLS-3 <sup>1</sup> / <sub>4</sub> -S	3 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	<sup>3</sup> / <sub>4</sub>	.047	6120 27223	5706 25384	3,300	3,900
XLS-3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	5	<sup>3</sup> / <sub>4</sub>	.063	9457 42070	8717 38776	3,000	3,600
XLS-3 <sup>1</sup> / <sub>2</sub> -S	3 <sup>1</sup> / <sub>2</sub>	5	<sup>3</sup> / <sub>4</sub>	.063	9457 42070	8717 38776	3,000	3,600
§ XLS-3 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>	<sup>3</sup> / <sub>4</sub>	.063	9709 43189	9333 41517	2,800	3,400
XLS-4	4	5 <sup>5</sup> / <sub>8</sub>	<sup>7</sup> / <sub>8</sub>	.094	8338 37089	8238 36648	2,600	3,200
XLS-4 <sup>1</sup> / <sub>8</sub>	4 <sup>1</sup> / <sub>8</sub>	6	<sup>7</sup> / <sub>8</sub>	.094	8500 37813	8645 38456	2,500	3,000

❶ BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.  
 ❷ OUTSIDE DIAMETER .001 UNDERSIZED  
 § NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

## XLS Series



Bearing Number	Bore	Outside Diameter	Width	Fillet Radius	Basic Load Ratings		Limiting Speed	
	d	D	W	r ❶	Dynamic C	Static C <sub>0</sub>	Grease	Oil
	Inch/mm				lbs/N		RPM	
XLS-4¼	4 ¼	6	7/8	.094	8500 37813	8645 38456		
XLS-4½	4 ½	6 ¼ ❷	7/8	.094	8715 38767	9063 40317	2,400	2,800
XLS-4½-S	4 ½	6 ¼ ❷	7/8	.094	8715 38767	9063 40317	2,400	2,800
XLS-4½-SS	4 ½	6 ¼	7/8	.094	8715 38767	9063 40317	2,400	2,800
XLS-4¾	4 ¾	6 ½ ❷	7/8	.094	8904 39607	9475 42146	2,200	2,700
XLS-5	5	7 ❸	1	.094	11142 49564	11865 52782	2,100	2,600
XLS-5⅙-A	130	180	24	.094	16209 72102	16674 74175	2,000	2,400
XLS-5½	5 ½	7 ½	1	.094	11645 51804	12950 57606	1,900	2,300
XLS-5½-SS	5 ½	7 ½	1	.094	11645 51804	12950 57606	1,900	2,300
§ XLS-6	6	8	1	.094			1,800	2,100
§ XLS-6¼	6 ¼	8 ½	1 ⅛	.094	14368 63913	16377 72854	1,700	2,000
§ XLS-6¼-SS	6 ¼	8 ½	1 ⅛	.094	14368 63913	16377 72854	1,700	2,000
XLS-6¾	6 ¾	9	1 ⅛	.094	14997 66714	17765 79026	1,550	1,900
§ XLS-7	7	9 ½	1 ¼	.094	16810 74778	19288 85801	1,500	1,800

❶ BEARING CORNER RADII WILL CLEAR MAXIMUM FILLET RADIUS SHOWN.

❷ OUTSIDE DIAMETER .001 UNDERSIZED

§ NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.

## XLS Series—Bearing Specials

Bearing Number	Special Features
§ XLS-2 ¼-S1	Same as XLS-2 ¼-S Except O.D. .0007 Undersized.
§ XLS-2 ¼-1	Same as XLS-2 ¼ Except O.D. .0007 Undersized.
§ XLS-2 ⅝-L1	Same as XLS-2 ⅝ Except O.D. .0007 Undersized and 4 1½ O.D. Snap Ring
§ XLS-2 ¾-1	Same as XLS-2 ¾ Except O.D. .0007 Undersized.
§ XLS-3-G	Same as XLS-3 with .095 X .211 Slot in I.R.
§ XLS-3-1	Same as XLS-3 Except O.D. .0007 Undersized.
§ XLS-3 ¼-ASG3	Same as XLS-3 ¼-S Except .090 X .196 Slot in I.R. and O.D. Opposite Side.
XLS-3 ¼-FFA	Same as XLS-3 ¼-FF Except 1.000 I.R. Width.
XLS-3 ¼-G	Same as XLS-3 ¼ Except .095 X .211 Slot in I.R.
§ XLS-3 ¼-SS1	Same as XLS-3 ¼-SS Except O.D. .0007 Undersized.
§ XLS-3 ¼-S1	Same as XLS-3 ¼-SS1 Except One Shield.
§ XLS-3 ¼-1	Same as XLS-3 ¼ Except O.D. .0007 Undersized.
§ XLS-3 ½-A	Same as XLS-3 ½ Except .065 Corners.
XLS-3 ½-AG	Same as XLS-3 ½-A with .090 X.213 Slot in I.R.
§ XLS-3 ½-G	Same as XLS-3 ½-AG with .063 Corners.
XLS-3 ¾-G	Same as XLS-3 ¾ with .128 X .276 Slot in I.R.
§ XLS-3 ¾-SLAG	Same as XLS-3 ¾-SLA with .123 X .260 Slot in I.R.
§ XLS-3 ¾-SLVG	Same as XLS-3 ¾-SLAG with 5.61 O.D. Snap Ring.
§ XLS-4-A1G	Same as XLS-4 with .080 Corners, .001 Undersized O.D., .128 X .276 Slot in I.R.
§ XLS-4-ESS	Same as XLS-4-SS with .062 X 45° Chamfer On I.R. Corners.
§ XLS-4-G	Same as XLS-4 with .128 X .276 Slot in I.R.
§ XLS-4-H1X4	Same as XLS-4 Except O.D. .001 Undersized, 4 Fit and Heat Stabilized Rings.
§ XLS-4-1	Same as XLS-4 Except O.D. .001 Undersized.
§ XLS-4 ⅛-A	Same as XLS-4 ⅛ Except .075 Corners.
§ XLS-4 ¼-A	Same as XLS-4 ¼ Except 2.282 I.R. Width, 4.381 Bore, 5.8125 O.D., 1.125 O.R. Width.
§ XLS-4 ¼-E	Same as XLS-4 ¼ Except 1.250 I.R. Width, 4.381 Bore, 5.8125 O.D., 1.125 O.R. Width. .093 X .510 Slot On Extended Side of I.R.
§ XLS-4 ¼-SSJ	Same as XLS-4 ¼-E Except 2 Seals.
§ XLS-4 ¼-SSK	Same as XLS-4 ¼-SSJ Except Special Grease and Outer Race Rotation.
§ XLS-4 ¼-SSM	Same as XLS-4 ¼-SSK Except 2.282 I.R. Width with .406 Hole in I.R., .115 X .175 Slot.
§ XLS-4 ¼-SSMA	Same as XLS-4 ¼-SSM with Special Finish On O.D. of I.R.
§ XLS-4 ¼-SSQ	Same as XLS-4 ¼-SSM with 1.8125 I.R. Width 1.125 O.R. Width.
XLS-4 ½-G	Same as XLS-4 ½-SS Except O.D. .001 Undersized .131 X .276 Slot in I.R., .020 Bore Corners 1 Side.
§ XLS-4 ½-SS1	Same as XLS-4 ½-SS Except O.D. .001 Undersized.
§ XLS-4 ½-S1	See XLS-4 ½-S
§ XLS-4 ½-S1G	Same as XLS-4 ½-S Except .128 X .275 Slot in I.R.
§ XLS-4 ½-1	See XLS-4 ½
XLS-4 ¾-A	See XLS-4 ¾
§ XLS-4 ¾-ESS	Same as XLS-4 ¾-SS with .094 X 45° Bore Corners, Special Shields.
§ XLS-4 ¾-1	Same as XLS-4 ¾ Except O.D. .001 Undersized.
§ XLS-5-1	See XLS-5
§ XLS-5-1G	Same as XLS-5-1 with .128 X .275 Slot in I.R.
§ XLS-5 ½-A	See XLS-5 ½
§ XLS-5 ½-G	Same as XLS-5 ½ with .155 X .337 Slot in I.R.
§ XLS-5 ½-SG3	Same as XLS-5 ½-G with 1 Shield On Side with Slot.
XLS-6 ¼-G	Same as XLS-6 ¼ with .160 X .337 Slot in I.R.
§ XLS-6 ¾-SSG	Same as XLS-6 ¾-SS with .065 X .525 Slot in I.R.
§ XLS-6 ¾-SSH	Same as XLS-6 ¾-SSG with 6.786 Bore.
§ XLS-6 ¾-1	Same as XLS-6 ¾ with .001 Undersized O.D.
§ XLS-7-BSS	Same as XLS-7-SS with Special Shields.
§ XLS-8 ¾-E	8.805 Bore, 11 ¾ O.D., 1.500 Wide, Narrow I.R. 1.373 with .525 Notch in I.R.
§ XLS-8 ¾-SSK	Same as XLS-8 ¾-E with 2 Sealed Shields.
§ XLS-8 ¾-SSM	Same as XLS-8 ¾-E with 2 Shields.
§ XLS-8 ¾-SSMA	Same as XLS-8 ¾-SSM with 12.687 O.D.
XLS-7350-AG	Same as XLS-3 ½ Except Angular Contact 25°
§ XLS-7350-BG	Same as XLS-7350-AG Except Slot On Opposite Side.
§ XLS-7800-M	8 X 10 ¾ X 1 ⅜ with 15° Angle of Contact and Machined Bronze Cage.

CONTACT YOUR NTN SALES REPRESENTATIVE FOR FURTHER INFORMATION ON SPECIALS.  
 § NOT NECESSARILY A STOCK ITEM – CHECK FOR AVAILABILITY.