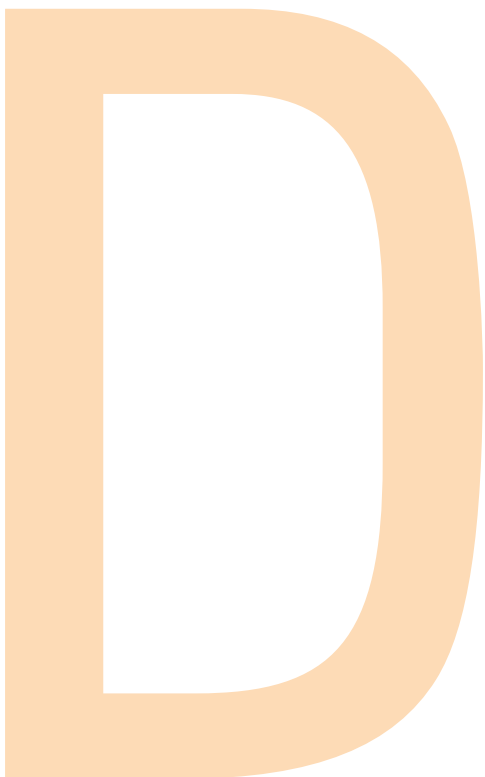


BALL BEARINGS



D BALL BEARINGS

<i>Radial and Angular Contact</i>	D1
<i>Wide Inner Ring</i>	D47
<i>Housed Units</i>	D75
<i>Super Precision</i>	D143

BALL BEARINGS

D



D

RADIAL AND ANGULAR CONTACT BEARINGS

Overview: Timken is a premier manufacturer of ball bearings. We produce a broad range of precision ball bearings, wide inner ring ball bearings and housed units for standard industrial applications and specialized uses. From standard single-row deep groove radial ball bearings to advanced integral designs, Timken has your solution.

- **Sizes:** 3 mm - 600 mm bore.
- **Markets:** Aircraft, construction, agriculture, machine tool and general industry.
- **Features:** Special coatings for corrosion resistance, special seal designs.
- **Benefits:** Radial: Better life in contaminated environments.

Angular: Single-row angular contact ball bearing - suited to work in lower operating temperature and high speed with a heavy thrust load. Can be mounted in a duplex arrangement. The refined bore tolerance give a higher life.

Double-row angular contact ball bearing - excellent axial and radial rigidity in confined space.





Radial and Angular Contact Ball Bearings

Prefixes:

A	stainless steel
F	flanged outer ring
H	snug fit
J	extra loose internal fit
JJ	extra extra loose internal fit
L	internal self-aligning
M	precision ABEC 3
P	loose fit
R	normal fit
S	extra small inch-dimension type
T	tight fit
V	precision ABEC 5
W	wide-type single-row (same width inner and outer)
WIR	single-row, wide inner only

Bore Size: (04 and up: multiply last two numbers by five to get bore in millimeters)

00	10 mm
01	12 mm
02	15 mm
03	17 mm
04	20 mm
05	25 mm
12	60 mm
20	100 mm

Suffixes:

C1, C2, C3, etc.	(manufacturing code - Timken® use only)
FT	full ball complement
K	Conrad, non-filling slot type
W	maximum capacity, filling slot type
WI	angular contact, low-shoulder outer
WO	angular contact, low-shoulder inner
WN	angular contact, low-shoulder, inner and outer

W

3

05

K

LL

Numbers: Basic Type Series:

S1	3, 5, 7, etc. , single-row inch, extra small
30	single-row metric, extra small
100	single-row, extra large
200	single-row, light
300	single-row, medium
5200	double-row, light
5300	double-row, medium
7200	single-row, angular contact, light
7300	single-row, angular contact, medium
7400	single-row, angular contact, heavy
9100	single-row, extra-light
9300	single-row, ultra-light
XLS	inch-dimension, Conrad type

Additional Features:

B	spherical outside diameter
BR	cast bronze retainer
D	one shield
DD	two shields
G	Wireloc (snap ring)
L	one Mechani-Seal
LL	two Mechani-Seals
MBR	machined bronze retainer
P	one seal
PP	two seals
PP2, 3, 4, etc.	Tri-Ply Seals if prefix letter is W (example: W208PPB5)
R	one land-riding rubber seal
RR	two land-riding rubber seals
S	external self-aligning
SMBR	iron silicon bronze retainer
T	one felt seal
TT	two felt seals

Radial and Angular Contact Ball Bearings

RADIAL BALL BEARINGS

Page

Introduction	D4
Extra Small 30 Metric Series	D6
Extra Small 33 Series and S Inch Series	D8
F Flanged Series, Cylindrical and Tapered O.D.	D9
ST Flangette Unit	D10
RTF-Rubber Tire Flanged Housed Unit	D10
Special Bearings	D11
Ultra-Light 9300K Series	D12
Extra-Light 9100K Series	D12
Light 200K Series	D14
Light 200W Series	D16
Light 200 Series, Extra Width Inner Ring	D18
Light 200 Series, Felt Seal Type	D20
Light, Wide Type, W200PP, W200KLL Series	D21
Medium 300K Series	D22
Medium 300W Series	D24
Medium, Wide Type, W300PP, W300KLL Series	D26
Tri-Ply Seal Series, Non-Relubricatable Type Cylindrical O.D.	D27

Page

Tri-Ply Seal Series, Non-Relubricatable Type Spherical O.D.	D28
Tri-Ply Seal Series, Relubricatable Type	D29
Tri-Ply Seal Series, Disk Harrow Units	D30
Hex Bore Bearings	D31
Light 200 Series, R-Seal Type	D32
Farm Radial Specials	D33
XLS Series, Conrad and Maximum Capacity Types	D36
Extra Large 100 Series	D38

SINGLE-ROW ANGULAR CONTACT BEARINGS

Introduction	D39
Light 7200WN Series	D40
Medium 7300WN Series	D41
Heavy 7400 Series	D42

DOUBLE-ROW ANGULAR CONTACT BEARINGS

Light 5200 Series	D43
Medium 5300 Series	D44
Shield and Snap Ring Combinations, 5200, 5300 Series ...	D45

D





INTRODUCTION

EXTRA SMALL SERIES

Extra small bearings are available in the 30 Metric Series, the 33 and S Inch Series and the F Flanged Series. These bearings can sustain radial, thrust and combined loads proportionate to the capacities of the small shafts for which they are designed. They are appropriate for use in fractional horsepower motors, precision instruments, domestic appliances, film projectors and similar devices.

The F flanged series has external shoulders with the bearing for mounting in through-bored housings. This series is used where compactness is essential or where it is not feasible to machine housing shoulders.

All series in the extra small family include shielded versions. The 30 Metric Series is also available with felt seals, Mechani-Seals and rubber seals, while the 33 and S Inch Series is available with rubber seals.

Some sizes in the Extra Small Series are manufactured from stainless steel.

EXTRA SMALL 33 AND S SERIES BUSINESS MACHINE BEARINGS

Standard and special extra small bearings are available and often used in business machine applications. They include clamp-type collar bearings for slip-fit mounting on shafts, bearings with Wireloc in the outer ring, and rubber cushioned "O" series with special housed units.

EXTRA LIGHT 9300 AND 9100 SERIES

Bearings in the Extra Light 9300 and 9100 Series are ideally suited for applications where housing diameters are restricted and it is desirable to maintain relatively large shaft diameters. Both series are made in the Conrad or non-filling slot construction with the 9300 Series having a somewhat thinner section.

The 9100 Series is generally available with shields, rubber seals and snap ring combinations. The 9300 Series is selectively available with two rubber seals. Machine tools, textile machinery and jet engine gear boxes are some of the end products in which these series have found wide use.

LIGHT 200 SERIES

Bearings in the 200 Series have a greater section height than the Extra Light 9300 and 9100 Series bearings and feature a close dimensional balance between bore, outside diameter and width. These characteristics make them well-suited for a broad range of applications involving light to medium loads combined with relatively high speeds.

Their versatility has made them a popular design choice of designers and has resulted in many variations in the series. They are available in either the Conrad or maximum capacity type and with shields, rubber seals, Mechani-Seals, felt seals or a combination of shield and seal. Snap ring combinations are also included.

Wide-type 200 Series rubber seal (W200PP) and Mechani-Seal (W200KLL) bearings are made with standard bores and outside diameters, but in widths equal to the corresponding sizes of double-row bearings. This series offers a larger support area for shaft and housing contact and extra space for lubricant.

MEDIUM 300 SERIES

The 300 Series radial ball bearings are similar in construction to the 200 Series, but have considerably heavier cross sections throughout. They provide greater radial and thrust capacity and are able to withstand heavier shock loads.

Because of their rugged construction, these bearings are particularly suited for heavy-duty applications like those found in large electric motors, woodworking machinery and gear boxes. This series includes both Conrad and maximum capacity designs as well as shielded, sealed and snap ring variations.

In the 300 Series wide-type, rubber seal (W300PP) and Mechani-Seal (W300KLL) bearings are made with standard bores and outside diameters, but in width equal to the corresponding sizes of double-row bearings.



Extra Small Series



Extra Light 9300 and 9100 Series



Light 200 Series



Medium 300 Series

XLS AND EXTRA LARGE 100 SERIES

Bearings in the inch-dimension XLS Series and metric-dimension Extra Large 100 Series have extra large diameters and a compact cross section. XLS bearings are made in the Conrad and maximum capacity filling slot designs. The Extra Large 100 Series offers the maximum capacity, filling slot and counterbore types.



XLS and Extra Large 100 Series

TRI-PLY SEAL DISK HARROW BEARINGS

Bearings with Tri-Ply Seals are designed for service involving severe contamination, such as disk harrows, disk tillers and other seed preparation equipment and certain conveyor applications. Tri-Ply sealed units come in two designs – one consisting of three Timken rubber seals separated by steel spacers and retained by steel caps in the outer ring and the other, a highly effective one-piece, molded seal design. Both designs have an exterior shroud cap to protect the seals and reinforce the exceptional sealing action of the complete unit. A patented notched seal groove design, provided on selected sizes, is one of the most positive seal retention methods ever developed.



Tri-Ply Seal Disk Harrow Bearings

HEX BORE BEARINGS

These bearings are designed for either outer or inner ring rotation in low speed, moderately loaded applications such as farm machinery and conveyors. Their chief advantage is ease of mounting. Except for axial positioning by adjacent parts, no collars, setscrews or other external parts are required to lock the inner ring to the hex shaft.



Hex Bore Bearings

R-SEAL DISK HARROW BEARINGS

R-Seal bearings are designed for a wide variety of farm machinery applications where single-lip positive contact seals are required. Each sealing element has a Timken Fafnir rubber seal that effectively seals the bearing with a heavy flare on the cylindrically ground O.D. (inner ring). A steel back-up plate supports the seal rubber and prevents the seal lip from inverting. An outside metal shroud cap gives maximum abrasion protection to the rubber element and completes the assembly that is rolled into the outer ring seal groove for positive retention.

R-Seal radial ball bearings are used in positions in planting, cultivating and harvesting machinery. They are available in various configurations including round bores in metric and inch dimensions and cylindrical and spherical outside diameters.



R-Seal Agricultural Bearings

ANGULAR CONTACT – SINGLE-ROW 7000 PRODUCT FAMILY

Timken offers a 7200WN Light, 7300WN Medium and 7400WN Heavy Series single-row, angular contact bearings, which are designed for combination loading with high-thrust capacity in one direction.

The 7000WN bearings are manufactured with better than ABEC 1 inner ring bore tolerances and ABEC 3 running accuracy. These bearings, when mounted in a duplex arrangement, provide axial and/or radial rigidity in applications where control of shaft displacement is essential.

These bearings are available with various cage designs as defined in the dimension tables. The external dimensions of all 7000WN bearings interchange with corresponding sizes in the 200, 300 and 400 single-row radial series.



Single-Row Angular Contact Bearings 7000 Product Family

ANGULAR CONTACT – DOUBLE-ROW

Double-row Angular Contact Bearings are available in the Light 5200 and Medium 5300 Series. These bearings have the same bores and outside diameters as the corresponding sizes in the 200 and 300 Series, single-row, radial type.

Chief advantages of the double-row type are rigidity, compactness and high capacity. The two rows of balls provide for bearings large radial capacity combined with moderate thrust capacity in either direction.

Double-row bearings are available in both the Conrad (K) construction with uninterrupted race shoulders and the maximum capacity type. The latter has a filling slot in the shoulder of both rings and a maximum ball complement.

Sizes with the W suffix have the filling slot on one side only. In these cases, thrust should be applied on the side opposite the filling slot.

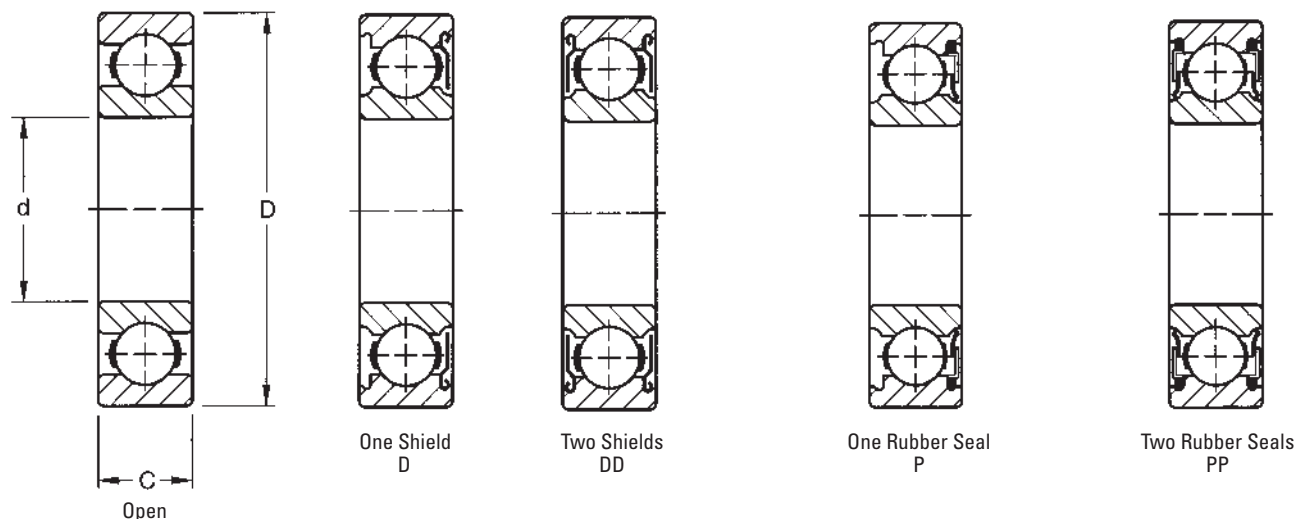


Double-Row Angular Contact



EXTRA SMALL 30 METRIC SERIES

- Designed for small shafts.
- Can sustain radial, thrust and combined load proportionate to capacities of small shafts.
- Suitable for use in fractional horsepower motors, domestic appliances, precision instruments and similar devices.
- Offer various combinations of shields and seals, as listed below.
- Electric motor quality for applications where quietness is required.
- Stainless steel series, denoted by a prefix A before the bearing number. (Example: A38K)



OPEN AND SHIELDED TYPES DIMENSIONS – TOLERANCES

Bearing Number			Bore d		Outside Diameter D				Width C		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C_0		Extended Dynamic Load Rating $C_E^{(2)}$	
open	one shield D	two shield DD	+0.000 mm, -0.008 mm +0.0000", -0.0003"		tolerance +0.000 mm +0.0000" to minus				+0.00 mm, -0.12 mm +0.000", -0.005"									
			mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
34K	34KD	34KDD	4	0.1575	16	0.6299	0.008	0.0003	5	0.197	0.3	0.012	0.005	0.01	560	125	1630	365
35K	35KD	35KDD	5	0.1969	19	0.7480	0.009	0.00035	6	0.236	0.3	0.012	0.009	0.02	865	195	2450	560
36K	36KD	36KDD	6	0.2362	19	0.7480	0.009	0.00035	6	0.236	0.3	0.012	0.009	0.02	865	195	2450	560
37K	37KD	37KDD	7	0.2756	22	0.8661	0.009	0.00035	7	0.276	0.3	0.012	0.009	0.02	1400	312	3650	830
38K	38KD	38KDD	8	0.3150	22	0.8661	0.009	0.00035	7	0.276	0.3	0.012	0.009	0.02	1400	312	3650	830
38KV	—	—	8	0.3150	24	0.9449	0.009	0.00035	7	0.276	0.3	0.012	0.018	0.04	1370	305	3650	830
39K	39KD	39KDD	9	0.3543	26	1.0236	0.009	0.00035	8	0.315	0.3	0.012	0.018	0.04	1960	440	5000	1120

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Based on 10^6 revolutions of calculated fatigue life.

SEALED TYPES DIMENSIONS – TOLERANCES

Bearing Number		Bore d		Outside Diameter D		Width C		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C_0		Extended Dynamic Load Rating $C_E^{(2)}$	
one seal P	two seals PP	+0.000 mm, -0.008 mm +0.0000", -0.0003"		+0.000 mm, -0.009 mm +0.0000", -0.00035"		+0.00 mm, -0.12 mm +0.000", -0.005"									
		mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
36P	36PP	6	0.2362	19	0.7480	10	0.394	0.3	0.012	0.014	0.03	865	195	2450	560
36P2	36PP2	6	0.2362	19	0.7480	6	0.236	0.3	0.012	0.014	0.03	865	195	2450	560
37P	37PP	7	0.2756	22	0.8661	10	0.394	0.3	0.012	0.018	0.04	1370	305	3650	830
37P2	37PP2	7	0.2756	22	0.8661	7	0.276	0.3	0.012	0.018	0.04	1400	312	3650	830
38P	38PP	8	0.3150	22	0.8661	10	0.394	0.3	0.012	0.018	0.04	1370	305	3650	830
38P2	38PP2	8	0.3150	22	0.8661	7	0.276	0.3	0.012	0.018	0.04	1400	312	3650	830
39P	39PP	9	0.3543	26	1.0236	8	0.315	0.6	0.024	0.023	0.05	1960	440	5000	1120

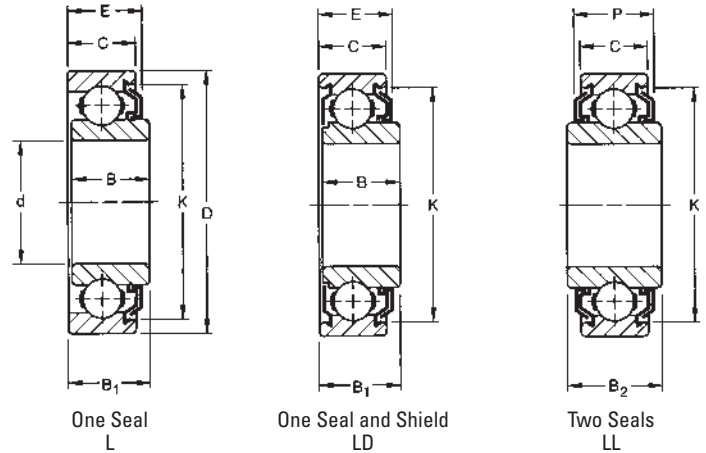
⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Based on 10^6 revolutions of calculated fatigue life.

EXTRA SMALL 30 METRIC SERIES

MECHANI-SEALS

- Developed by The Timken® Company.
- Adapted to the 30 metric series for effective grease retention and exclusion of foreign matter.
- Can be operated at speeds comparable to open-type bearings.
- Available with:
 - One Mechani-Seal (suffix L).
 - One Mechani-Seal and one shield (suffix LD).
 - Two Mechani-Seals (suffix LL).



DIMENSIONS – TOLERANCES

Bearing Number			Bore d +0.000 mm -0.008 mm +0.0000" -0.0003"	Outside Diameter D +0.000 mm -0.009 mm +0.0000" -0.00035"	Width B ₁	Ring Width +0.00 mm, -.12 mm +0.000" -.005"			Fillet Radius ⁽¹⁾	Seal Protection			Inner Ring Offset ⁽²⁾	Wt.	Static Load Rating C ₀	Extended Dynamic Load Rating C _E ⁽⁴⁾
one seal L	one seal and shield LD	two seals LL				inner		outer		width		O.D. K				
			mm in.	mm in.	mm in.	B	B ₂ ⁽³⁾	C		E	P	mm in.	mm in.	kg lbs.	N lbs.	N lbs.
36KL 36KLD 36KLL			6 0.2362	19 0.7480	10.31 0.406	9.80 0.386	14.27 0.562	8.00 0.315	0.3 0.012	9.60 0.378	10.87 0.428	16.7 ²¹ / ₃₂	0.50 0.020	0.014 0.03	865 195	2450 560
36KVL — —			6 0.2362	24 0.9449	10.31 0.406	9.80 0.386	— —	8.00 0.315	0.3 0.012	9.60 0.378	— —	19.0 ³ / ₄	0.50 0.020	0.022 0.05	865 195	2450 560
37KL 37KLD 37KLL			7 0.2756	22 0.8661	10.31 0.406	9.80 0.386	14.27 0.562	8.00 0.315	0.3 0.012	9.60 0.378	11.18 0.440	18.7 ⁴⁷ / ₆₄	0.50 0.020	0.018 0.04	1400 312	3650 830
37KVL 37KVLD —			7 0.2756	24 0.9449	10.31 0.406	9.80 0.386	— —	8.00 0.315	0.3 0.012	9.60 0.378	— —	19.0 ³ / ₄	0.50 0.020	0.022 0.05	1400 312	3650 830
38KL 38KLD 38KLL			8 0.3150	22 0.8661	10.31 0.406	9.80 0.386	14.27 0.562	8.00 0.315	0.3 0.012	9.60 0.378	11.18 0.440	18.7 ⁴⁷ / ₆₄	0.50 0.020	0.018 0.04	1400 312	3650 830
38KVL 38KVLD 38KVLL			8 0.3150	24 0.9449	10.31 0.406	9.80 0.386	14.27 0.562	8.00 0.315	0.3 0.012	9.60 0.378	11.13 0.438	19.0 ³ / ₄	0.50 0.020	0.022 0.05	1370 305	3650 830
— — 38KLL2			8 0.3150	22 0.8661	— —	— —	12.62 0.497	8.00 0.315	0.3 0.012	— —	11.18 0.440	18.7 ⁴⁷ / ₆₄	— —	0.022 0.05	1370 305	3650 830
— — 38KVLL2			8 0.3150	24 0.9449	— —	— —	12.62 0.497	8.00 0.315	0.3 0.012	— —	11.13 0.438	19.0 ³ / ₄	— —	0.022 0.05	1370 305	3650 830
39KL2 39KLD2 —			9 0.3543	26 1.0236	10.31 0.406	9.80 0.386	— —	8.00 0.315	0.6 0.024	9.60 0.378	— —	21.4 ²⁷ / ₃₂	0.50 0.020	0.022 0.05	1960 440	5000 1120
— 39KVLD 39KVLL2			9 0.3543	30 1.1811	— —	— —	16.41 0.646	9.00 0.354	0.6 0.024	— —	15.98 0.629	25.4 1	0.50 0.020	0.041 0.09	2650 595	6550 1500

(1) Maximum shaft or housing fillet radius that bearing corners will clear.

(2) Does not apply to bearings with two seals.

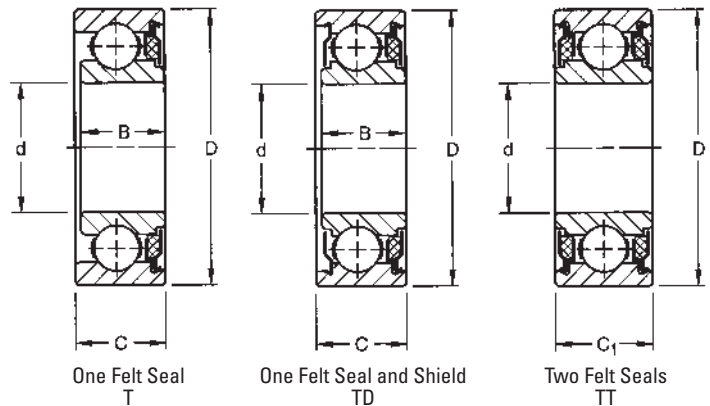
Note: Inner ring offset is .51 mm (.020 inches) for the L, LD, and VLD versions.

(3) Two seals (suffix LL) type only.

(4) Based on 10⁶ revolutions of calculated fatigue life.

FELT-SEALS

- Provide effective barrier against the entrance of foreign matter and the escape of lubricant.
- Contact seal with the felt riding on the ground surface of inner ring O.D.
- Can be operated at moderate speeds without excessive heating because the felt washer absorbs some lubricant.
- Electric motor quality where quietness is required.
- Available with:
 - One felt seal (suffix T).
 - One felt seal and one shield (suffix TD).
 - Two felt seals (suffix TT).



DIMENSIONS – TOLERANCES

Bearing Number			Bore d +0.000 mm -0.008 mm +0.0000" -0.0003"	Outside Diameter D +0.000 mm -0.009 mm +0.0000" -0.00035"	Ring Width +0.00 mm, -.12 mm +0.000" -.005"			Inner Ring Offset ⁽²⁾	Fillet Radius ⁽¹⁾	Wt.	Static Load Rating C ₀	Extended Dynamic Load Rating C _E ⁽³⁾
one seal T	one seal and shield TD	two seals TT			inner B	outer C	C ₁					
			mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.	N lbs.	N lbs.
36KT 36KTD 36KTT			6 0.2362	19 0.7480	9.80 0.386	10.31 0.406	14.27 0.562	0.50 0.020	0.3 0.012	0.014 0.03	865 195	2450 560
36KVT 36KVTD —			6 0.2362	24 0.9449	9.80 0.386	10.31 0.406	— —	0.50 0.020	0.3 0.012	0.027 0.06	1370 305	3650 830
37KT 37KTD —			7 0.2756	22 0.8661	9.80 0.386	10.31 0.406	— —	0.50 0.020	0.3 0.012	0.018 0.04	1370 305	3650 830
37KVT 37KVTD —			7 0.2756	24 0.9449	9.80 0.386	10.31 0.406	— —	0.50 0.020	0.3 0.012	0.022 0.05	1370 305	3650 830
38KT 38KTD 38KTT			8 0.3150	22 0.8661	9.80 0.386	10.31 0.406	14.27 0.562	0.50 0.020	0.3 0.012	0.018 0.04	1370 305	3650 830
38KVT 38KVTD 38KVTT			8 0.3150	24 0.9449	9.80 0.386	10.31 0.406	14.27 0.562	0.50 0.020	0.3 0.012	0.022 0.05	1370 305	3650 830
39KT 39KTD 39KTT			9 0.3543	26 1.0236	11.10 0.437	11.51 0.453	14.27 0.562	0.40 0.016	0.6 0.024	0.027 0.06	1960 440	5000 1120
39KVT 39KVTD —			9 0.3543	30 1.1811	12.19 0.480	12.70 0.500	— —	0.50 0.020	0.6 0.024	0.041 0.09	2650 595	6550 1500

(1) Maximum shaft or housing fillet radius that bearing corners will clear.

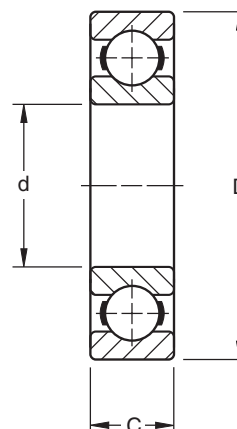
(2) Does not apply to bearings with two seals.

(3) Based on 10⁶ revolutions of calculated fatigue life.



EXTRA SMALL 33 AND S INCH SERIES

- Designed for small shafts.
- Can sustain radial, thrust and combined loads, proportionate to capacities of small shafts.
- Suitable for use in fractional horsepower motors, domestic appliances, precision instruments and similar devices.
- Include combinations of shields and seals, as listed below.
- Electric motor quality for applications where quietness is required.
- Several sizes are manufactured both in standard bearing-quality steel and stainless steel, as indicated in the tables.



DIMENSIONS – TOLERANCES

Bearing Number		Bore d				Outside Diameter D				Width C		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
standard	stainless	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
33K3	A33K3	3.175	0.1250	0.008	0.0003	9.525	0.3750	0.010	0.0004	3.96	0.156	0.3	0.012	0.005	0.01	212	48	710	160
33K4	A33K4	3.175	0.1250	0.008	0.0003	12.700	0.5000	0.010	0.0004	4.37	0.172	0.3	0.012	0.005	0.01	490	110	1430	325
33K5	A33K5	4.762	0.1875	0.008	0.0003	12.700	0.5000	0.010	0.0004	3.96	0.156	0.3	0.012	0.005	0.01	490	110	1430	325
S1K7	AS1K7	6.350	0.2500	0.008	0.0003	15.875	0.6250	0.010	0.0004	4.98	0.196	0.3	0.012	0.005	0.01	560	125	1630	365
S1K	AS1K	6.350	0.2500	0.008	0.0003	19.050	0.7500	0.010	0.0004	5.56	0.219	0.4	0.016	0.009	0.02	1160	260	3100	695
S3K	AS3K	9.525	0.3750	0.008	0.0003	22.225	0.8750	0.010	0.0004	5.56	0.219	0.4	0.016	0.009	0.02	1400	312	3650	830
S5K	AS5K	12.700	0.5000	0.008	0.0003	28.575	1.1250	0.010	0.0004	6.35	0.250	0.4	0.016	0.018	0.04	2240	500	5600	1270
S7K	AS7K	15.875	0.6250	0.008	0.0003	34.925	1.3750	0.013	0.0005	7.14	0.281	0.8	0.031	0.032	0.07	3050	682	7500	1700
S8K	—	19.050	0.7500	0.010	0.0004	41.275	1.6250	0.013	0.0005	7.92	0.312	0.8	0.031	0.050	0.11	4400	1000	10400	2320
S9K	—	22.225	0.8750	0.010	0.0004	47.625	1.8750	0.013	0.0005	9.52	0.375	0.8	0.031	0.064	0.14	4900	1120	11000	2500
S10K	—	25.400	1.0000	0.010	0.0004	50.800	2.0000	0.013	0.0005	9.52	0.375	0.8	0.031	0.082	0.18	4900	1120	11000	2500
S11K	—	28.575	1.1250	0.010	0.0004	53.975	2.1250	0.013	0.0005	9.52	0.375	0.8	0.031	0.091	0.20	5400	1220	11800	2650
S12K	—	31.750	1.2500	0.013	0.0005	57.150	2.2500	0.013	0.0005	9.52	0.375	0.8	0.031	0.100	0.22	6000	1340	12200	2750

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

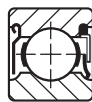
SHIELD AND SEAL COMBINATIONS



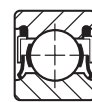
One Shield
D



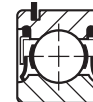
Two Shields
DD



One Shield
And Seal
PD



Two Seals
PP



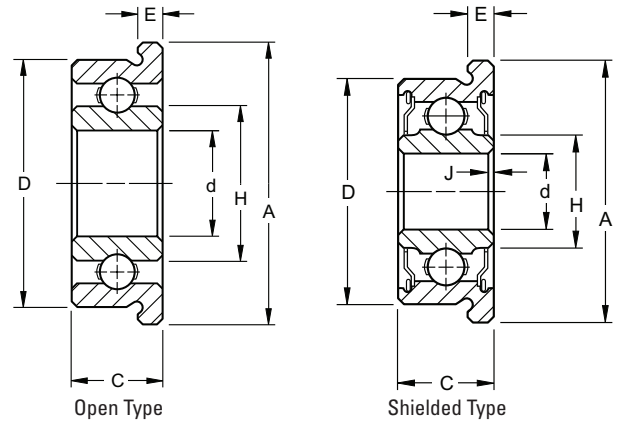
Two Seals
Wireloc
PPG

Standard		Stainless		Width			One Shield And Seal PD		Two Seals PP		Two Seals (Wireloc) PPG		Width		
One Shield D	Two Shields DD	One Shield D	Two Shields DD	mm	in.	in.							mm	in.	in.
33KD3	33KDD3	A33KD3	A33KDD3	3.96	0.156	⁵ / ₃₂	—		33PP3		—		3.96	0.156	⁵ / ₃₂
33KD4	33KDD4	—	—	4.37	0.172	¹¹ / ₆₄	—		—		—		—	—	—
33KD5	33KDD5	A33KD5	A33KDD5	4.98	0.196	—	—		33PP5		33PPG5		4.98	0.196	—
S1KD7	S1KDD7	AS1KD7	AS1KDD7	4.98	0.196	—	—		S1PP7		S1PPG7		4.98	0.196	—
S1KD	S1KDD	AS1KD	AS1KDD	7.14	0.281	⁹ / ₃₂	—		S1PP		S1PPG		7.14	0.281	⁹ / ₃₂
S3KD	S3KDD	AS3KD	AS3KDD	7.14	0.281	⁹ / ₃₂	—		S3PP		S3PPG		7.14	0.281	⁹ / ₃₂
S5KD	S5KDD	AS5KD	AS5KDD	7.92	0.312	⁵ / ₁₆	S5PD		S5PP		S5PPG		7.92	0.312	⁵ / ₁₆
S7KD	S7KDD	—	—	8.74	0.344	¹¹ / ₃₂	—		S7PP		—		8.74	0.344	¹¹ / ₃₂
S8KD	S8KDD	—	AS8KDD	11.13	0.438	⁷ / ₁₆	S8PD		S8PP		—		11.13	0.438	⁷ / ₁₆
S9KD	S9KDD	—	—	12.70	0.500	¹ / ₂	—		—		—		—	—	—
S10KD	S10KDD	—	—	12.70	0.500	¹ / ₂	—		S10PP2		—		12.70	0.500	¹ / ₂
—	—	—	—	—	—	—	—		S12NPP		—		12.70	0.500	—

FLANGED SERIES

CYLINDRICAL O.D.

- Four sizes offered in flanged construction.
- Integral shoulders for mounting in through-bored housings.
- Straight outside diameters.
- Interchangeable with corresponding unflanged sizes.
- Available with double shields.
- Electric motor quality for applications where quietness is required.



DIMENSIONS – TOLERANCES

Bearing Number		Bore d		Outside Diameter D	Width C	Inner Ring Shoulder	Flange		Shielded Type		Wt.	Static Load Rating Co	Extended Dynamic Load Rating C _E ⁽²⁾
open	shielded*	chamfer J x 45°					Overall Width	H Min.					
		+0.000 mm	+0.25 mm						A	E			
		-0.008 mm	-0.00 mm										
		+0.0000"	+0.010"	+0.000"	+0.000"	H	+0.005"	±0.05 mm	+0.000"	H			
		-0.0003"	-0.000"	-0.0004"	-0.005"	Min.	-0.002"	±0.002"	-0.005"	Min.			
		mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kg lbs.	N lbs.	N lbs.
F3K3	F3KDD3	3.175 0.1250	0.30 0.012	9.525 0.3750	3.96 0.156	5.13 0.202	11.18 0.440	0.76 0.030	3.96 0.156	4.65 0.183	0.005 0.01	212 48	710 160
F3K5	F3KDD5	4.762 0.1875	0.30 0.012	12.700 0.5000	3.96 0.156	6.86 0.270	14.35 0.565	1.07 0.042	4.98 0.196	6.30 0.248	0.005 0.01	490 110	1430 325
FS1K7	FS1KDD7 ⁽¹⁾	6.350 0.2500	0.30 0.012	15.875 0.6250	4.98 0.196	8.86 0.349	17.53 0.690	1.07 0.042	4.98 0.196	8.43 0.332	0.005 0.01	560 125	1630 365
FS3K	FS3KDD ⁽¹⁾	9.525 0.3750	0.41 0.016	22.225 0.8750	5.56 0.219	13.13 0.517	24.61 0.969	1.57 0.062	7.14 0.281	12.06 0.475	0.009 0.02	1400 310	3650 830

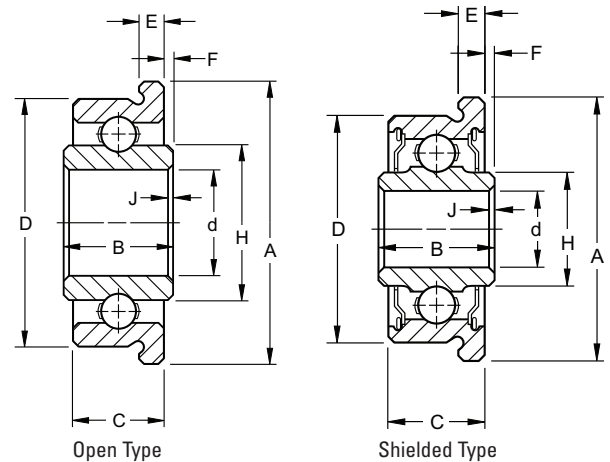
⁽¹⁾ Also available in stainless steel. To specify, add prefix "A" before bearing number.

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

* Also available with two contact seals. To specify, replace "KDD" in part number with "PP".

TAPERED O.D.

- F Flanged series has shoulders integral with the bearings for mounting in through-bored housings.
- Used where compactness is essential or where it is not desirable to machine housing shoulders.
- All sizes in series have tapered outside diameters and are available with double shields.
- Suitable applications include precision instruments, packaging machinery and motion picture projectors.
- Several sizes in the series are manufactured in both standard bearing-quality, chromium-alloy, high-carbon steel and stainless steel (stainless steel specified by suffix "A").
- Electric motor quality where quietness is required.



DIMENSIONS – TOLERANCES

Bearing Number		Bore d chamfer J x 45°		Outside Diameter D	Inner		Ring Widths			Flange		Wt.		Static Load Rating C ₀		Extended Dynamic Load C _E ⁽⁴⁾											
							Outer Width																				
open	shielded	+0.008 mm -0.00 mm +0.0003"	+0.025 mm -0.00 mm +0.010" -0.000"	+0.000 mm -0.10 mm +0.000" -0.0004"	Inner Width B	Project F	H ⁽³⁾	C	Taper Per Foot	A	E	kg	lbs.	N	lbs.	N	lbs.										
		±0.03 mm ±0.010"	±0.13 mm -0.005"	Min.	-0.00 mm -0.10 mm +0.000" -0.004"	+0.13 mm -0.05 mm +0.005" -0.002"	±0.05 mm ±0.002"																				
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.																
F2 ⁽¹⁾	—	4.762	0.1875	0.25	0.010	11.130	0.4382	4.80	0.189	0.41	0.016	6.93	0.273	4.14	0.163	2.03	0.080	12.70	0.500	1.07	0.042	0.005	0.01	465	106	1160	260
—	F2DD-2	3.175	0.1250	0.25	0.010	9.534	0.3757	4.77	0.188	0.38	0.015	4.60	0.181	4.14	0.163	1.90	0.075	11.13	0.438	0.94	0.037	0.005	0.01	212	48	710	160
F3	—	4.762	0.1875	0.25	0.010	14.305	0.5632	5.54	0.218	0.38	0.015	6.93	0.273	4.95	0.195	2.03	0.080	15.88	0.625	1.07	0.042	0.005	0.01	490	110	1430	325
—	F3DD	4.762	0.1875	0.25	0.010	14.305	0.5632	6.35	0.250	0.38	0.015	6.22	0.245	5.74	0.226	1.73	0.068	15.88	0.625	1.07	0.042	0.005	0.01	490	110	1430	325
F4	F4DD	6.350	0.2500	0.25	0.010	15.893	0.6257	6.35	0.250	0.38	0.015	8.41	0.331	5.74	0.226	1.73	0.068	17.45	0.687	1.07	0.042	0.005	0.01	560	125	1630	365
F5	F5DD ⁽²⁾	7.938	0.3125	0.25	0.010	17.480	0.6882	6.35	0.250	0.38	0.015	10.41	0.410 ⁽²⁾	5.74	0.226	1.73	0.068	19.05	0.750	1.07	0.042	0.005	0.01	865	196	2400	540

⁽¹⁾ Full type, no retainer. Not suggested for speeds over 500 RPM.

⁽²⁾ H dimension is 9.68 mm (.381") for F5DD.

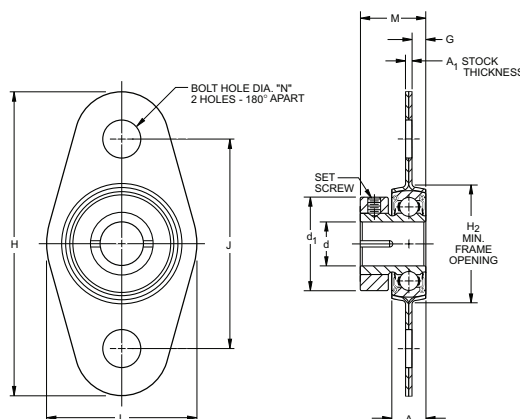
⁽³⁾ Land dimension of the inner ring.

⁽⁴⁾ Based on 10⁶ revolutions of calculated fatigue life.



ST FLANGETTE UNIT

- Pressed steel housed units designed for light-duty applications.
- Available in shaft sizes from 6.35 mm - 12.7 mm ($\frac{1}{4}$ to $\frac{1}{2}$ inch).
- Designed to simplify mounting on side plate or frame-type housings.
- Two identical steel stampings house a clamp-type bearing with a spherical O.D. outer ring.
- Spherical inside surface of each stamping mates with the spherical O.D. of the bearing, providing initial self-alignment at mounting.
- Offers features of basic clamp-type bearing.
- Available with sealed or shielded construction.
- Radial load capacity is 25 percent of basic bearing's dynamic load rating at 33.3 RPM.
- Inspected to ABEC-1 tolerances, except bore.
- Suggested shaft tolerance: Nominal bore size to $-.0005$ in. resulting in $.000$ in. to $.001$ in. loose-shaft fit.



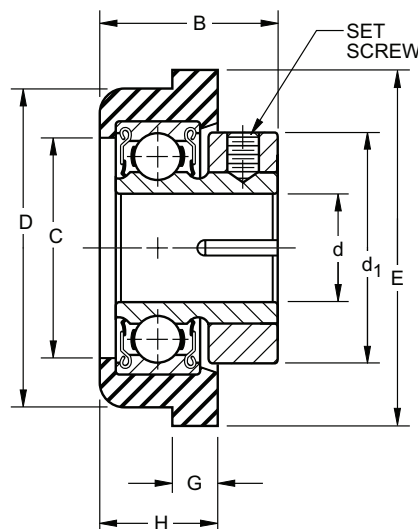
Unit Number	Bore** d +0.13 mm -0.000 mm +0.0005" -0.0000"	A	d ₁	H ₂	M	G	A ₁	H	L	J	N	Set-screw Thread*	Max. Radial Unit Load
	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.		N lbs.
S1PPB7-3 ST	6.350 0.2500	5.556 $\frac{7}{32}$	14.287 $\frac{9}{16}$	19.844 $\frac{25}{32}$	10.922 0.430	2.007 0.079	0.683 0.0269	45.244 $1\frac{25}{32}$	22.225 $\frac{7}{8}$	30.956 $1\frac{7}{32}$	0.219 $\frac{7}{32}$	4-40	312 70
S3PPB15 ST	7.937 0.3125	7.144 $\frac{9}{32}$	19.844 $\frac{25}{32}$	27.781 $\frac{13}{32}$	14.275 0.562	2.718 0.107	0.836 0.0329	53.181 $2\frac{3}{32}$	30.163 $1\frac{13}{16}$	38.894 $1\frac{17}{32}$	0.219 $\frac{7}{32}$	8-36	668 150
S3PPB5 ST	9.525 0.3750	7.144 $\frac{9}{32}$	19.844 $\frac{25}{32}$	27.781 $\frac{13}{32}$	14.275 0.562	2.718 0.107	0.836 0.0329	53.181 $2\frac{3}{32}$	30.163 $1\frac{13}{16}$	38.894 $1\frac{17}{32}$	0.219 $\frac{7}{32}$	8-36	668 150
S5PPB2 ST	12.700 0.5000	7.937 $\frac{5}{16}$	23.019 $\frac{29}{32}$	32.544 $\frac{19}{32}$	15.875 0.625	3.048 0.120	0.912 0.0359	59.531 $2\frac{11}{32}$	36.512 $1\frac{17}{16}$	45.244 $1\frac{25}{32}$	0.219 $\frac{7}{32}$	8-36	980 220

* All setscrews are hex socket oval point, six fluted socket setscrews available upon request. Setscrews with fused plastic patch available at added cost.

**Bore tolerance applies prior to collar assembly.

RTF-RUBBER TIRE FLANGE HOUSED UNIT

- Synthetic, conductive elastomer of Durometer hardness 80-85 facilitates mounting of standard cylindrical O.D. bearings in side plate of frame-type housings.
- Generous taper on entrance corner of rubber cartridge simplifies insertion of unit into side panel, assuring reasonable squareness of bearings when fully mounted.
- Bearing is positioned by integral flange of the rubber cartridge.
- Resiliency of elastomer accommodates wider than the standard suggested housing bore tolerance.
- Greater flexibility in adjusting to minor shaft and/or housing alignment.
- Helps reduce airborne noise and structural vibration.
- Additional advantages are similar to features of basic clamp-type bearing design.
- Due to deflection characteristics of the elastomer, radial and thrust ratings for the RTF Series are 10 percent of the basic bearing's dynamic load rating at 33.3 RPM.



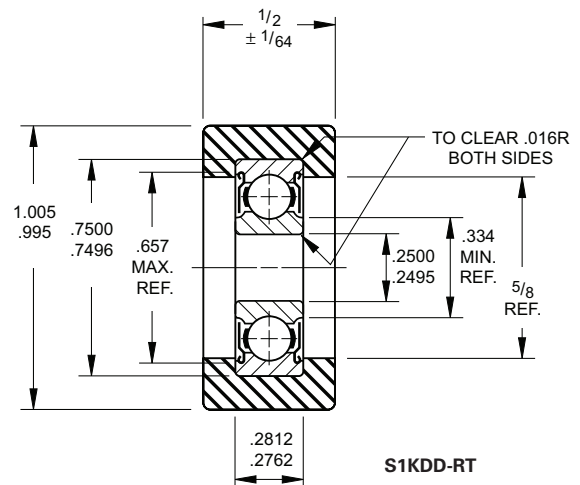
Unit Number	Bore** d +0.13 mm -0.000 mm +0.0005" -0.0000"	D RTF O.D.	HSG Bore	C	d ₁	E	B	G	H	Set-screw Thread*	Max. Radial Unit Load
	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.		N lbs.
S1PP73RTF	6.350 0.2500	19.355 0.762	19.050 0.750	13.494 $\frac{17}{32}$	14.287 $\frac{9}{16}$	22.225 $\frac{7}{8}$	11.906 $\frac{15}{32}$	1.984 $\frac{5}{64}$	7.541 $\frac{19}{64}$	4-40	116 26
S3PP16RTF	7.937 0.3125	27.280 1.074	26.975 1.062	19.050 $\frac{3}{4}$	19.844 $\frac{25}{32}$	30.956 $\frac{17}{32}$	15.875 $\frac{5}{8}$	3.969 $\frac{5}{32}$	10.319 $\frac{13}{32}$	8-36	258 58
S3PP4RTF	9.525 0.3750	27.280 1.074	26.975 1.062	19.050 $\frac{3}{4}$	19.844 $\frac{25}{32}$	30.956 $\frac{17}{32}$	15.875 $\frac{5}{8}$	3.969 $\frac{5}{32}$	10.319 $\frac{13}{32}$	8-36	258 58
S5PP2RTF	12.700 0.5000	35.255 1.388	34.925 1.375	25.400 1	23.019 $\frac{29}{32}$	38.894 $\frac{17}{32}$	17.859 $\frac{45}{64}$	3.969 $\frac{5}{32}$	11.906 $\frac{15}{32}$	8-36	392 88

* All setscrews are hex socket oval point, six fluted socket setscrews available upon request. Setscrews with fused plastic patch available at added cost.

**Bore tolerance applies prior to collar assembly.

SPECIAL BEARINGS

- Pulley, guide roller and pinch roll bearings:
 - Available in several bore sizes.
 - Lightweight, low inertia, low torque and accurate running characteristics with minimum runout and wobble.
 - Many units feature outer ring assemblies with integral molded tires.
 - Most common tire materials are aluminum, steel and a variety of engineered plastics such as nylon, polycarbonate, acetal resin or polyurethane.
 - Tire material and configuration are determined by application requirements.
 - Standard materials and shapes can be made in many sizes.
 - Timken engineering may assist in testing materials you feel are suitable for your applications.
- Timken universal ring design:
 - Sealed or shielded versions readily available in the most basic bearing sizes.
 - Varying degrees of seal drag, to suit the sealing torque requirements dictated by the environmental conditions of the application.
- Integral assembly design concept:
 - Complete package of bearings, housings, shafts, etc.
 - Assembled and ready to mount.
 - Custom designed to solve customer assembly problems and minimize inventory of multiple components.
 - Overall cost savings.
 - Bearing units shown have been developed especially for business machine applications.



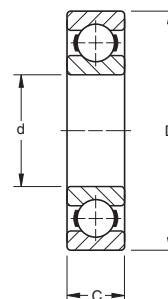
D





ULTRA LIGHT 9300K SERIES

- Designed for applications where housing diameters are restricted and it is desirable to maintain relatively large shaft diameters.
- Resembles the 9100K Series, except corresponding sizes of the 9300K Series have a somewhat thinner section.
- Used extensively in machine tools, textile machinery and jet engine gearbox applications.



DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C				Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽⁴⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
9301K	12	0.4724	0.008	0.0003	24	0.9449	0.009	0.00035	6	0.236	0.12	0.005	0.3	0.012	0.014	0.03	1600	360	3650	830
9302K	15	0.5906	0.008	0.0003	28	1.1024	0.009	0.00035	7	0.276	0.12	0.005	0.3	0.012	0.018	0.04	2270	510	4890	1100
9303K ⁽²⁾	17	0.6693	0.008	0.0003	30	1.1811	0.009	0.00035	7	0.276	0.12	0.005	0.3	0.012	0.027	0.06	2540	570	5250	1180
9305K ⁽²⁾	25	0.9843	0.010	0.0004	42	1.6535	0.011	0.00045	9	0.354	0.12	0.005	0.3	0.012	0.045	0.10	4540	1020	8010	1800
9306K ⁽²⁾⁽³⁾	30	1.1811	0.010	0.0004	47	1.8504	0.011	0.00045	9	0.354	0.12	0.005	0.3	0.012	0.075	0.16	4980	1120	8270	1860
9307K	35	1.3780	0.012	0.00045	55	2.1654	0.013	0.0005	10	0.394	0.12	0.005	0.6	0.024	0.095	0.21	8010	1800	13300	3000
9308K	40	1.5748	0.012	0.00045	62	2.4409	0.013	0.0005	12	0.472	0.12	0.005	0.6	0.024	0.141	0.31	8900	2000	13800	3100
9310K	50	1.9685	0.012	0.00045	72	2.8346	0.013	0.0005	12	0.472	0.12	0.005	0.6	0.024	0.168	0.37	11560	2600	16700	3750
9311K	55	2.1654	0.015	0.0006	80	3.1496	0.013	0.0005	13	0.512*	0.15	0.006	1.0	0.039	0.209	0.46	14010	3150	18900	4250
9313K	65	2.5591	0.015	0.0006	90	3.5433	0.015	0.0006	13	0.512*	0.15	0.006	1.0	0.039	0.250	0.55	16010	3600	19600	4400
9316K	80	3.1496	0.015	0.0006	110	4.3307	0.015	0.0006	16	0.630*	0.15	0.006	1.0	0.039	0.363	0.80	24020	5400	28500	6400

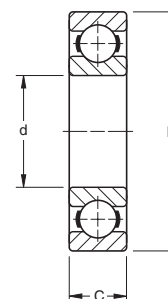
(1) Maximum shaft or housing fillet radius that bearing corners will clear.

(2) Also available with rubber seals, e.g., 9303PP.

(3) Also available with two shields, e.g., 9306KDD.

(4) Based on 10⁶ revolutions of calculated fatigue life.

* Width tolerance is +.00 mm to -.15 mm (+.000" to -.006").



EXTRA LIGHT 9100K SERIES

- For applications where housing diameters are restricted and it is desirable to maintain relatively large shaft diameters.
- Electric motor quality for applications where quietness is a requirement.

DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C				Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
9100K	10	0.3937	0.008	0.0003	26	1.0236	0.009	0.00035	8	0.3150	0.12	0.005	0.3	0.012	0.018	0.04	1960	440	5160	1160
9101K	12	0.4724	0.008	0.0003	28	1.1024	0.009	0.00035	8	0.3150	0.12	0.005	0.3	0.012	0.018	0.04	2360	530	5870	1320
9102K	15	0.5906	0.008	0.0003	32	1.2598	0.011	0.00045	9	0.3543	0.12	0.005	0.3	0.012	0.027	0.06	2800	630	6360	1430
9103K	17	0.6693	0.008	0.0003	35	1.3780	0.011	0.00045	10	0.3937	0.12	0.005	0.3	0.012	0.041	0.09	3200	720	6800	1530
9104K	20	0.7874	0.010	0.0004	42	1.6535	0.011	0.00045	12	0.4724	0.12	0.005	0.6	0.024	0.073	0.16	5000	1120	10700	2400
9105K	25	0.9843	0.010	0.0004	47	1.8504	0.011	0.00045	12	0.4724	0.12	0.005	0.6	0.024	0.077	0.17	5740	1290	11300	2550
9106K	30	1.1811	0.010	0.0004	55	2.1654	0.013	0.0005	13	0.5118	0.12	0.005	1.0	0.039	0.118	0.26	8010	1800	14600	3350
9107K	35	1.3780	0.012	0.00045	62	2.4409	0.013	0.0005	14	0.5512	0.12	0.005	1.0	0.039	0.145	0.32	9960	2240	18000	4050
9108K	40	1.5748	0.012	0.00045	68	2.6772	0.013	0.0005	15	0.5906	0.12	0.005	1.0	0.039	0.195	0.43	12200	2750	20000	4500
9109K	45	1.7717	0.012	0.00045	75	2.9528	0.013	0.0005	16	0.6299	0.12	0.005	1.0	0.039	0.249	0.55	14900	3350	24000	5400
9110K	50	1.9685	0.012	0.00045	80	3.1496	0.013	0.0005	16	0.6299	0.12	0.005	1.0	0.039	0.272	0.60	16000	3600	24900	5600
9111K	55	2.1654	0.015	0.0006	90	3.5433	0.015	0.0006	18	0.7087	0.15	0.006	1.0	0.039	0.390	0.86	20700	4650	32000	7200
9112K	60	2.3622	0.015	0.0006	95	3.7402	0.015	0.0006	18	0.7087	0.15	0.006	1.0	0.039	0.417	0.92	22600	5100	33400	7500
9113K	65	2.5591	0.015	0.0006	100	3.9370	0.015	0.0006	18	0.7087	0.15	0.006	1.0	0.039	0.445	0.98	24500	5500	34700	7800
9114K	70	2.7559	0.015	0.0006	110	4.3307	0.015	0.0006	20	0.7874	0.15	0.006	1.0	0.039	0.630	1.39	29800	6700	43200	9720
9115K	75	2.9528	0.015	0.0006	115	4.5276	0.015	0.0006	20	0.7874	0.15	0.006	1.0	0.039	0.680	1.50	32700	7350	44500	10000
9116K	80	3.1496	0.015	0.0006	125	4.9213	0.018	0.0007	22	0.8661	0.15	0.006	1.0	0.039	0.885	1.95	35600	8000	54300	12200
9117K	85	3.3465	0.020	0.0008	130	5.1181	0.018	0.0007	22	0.8661	0.20	0.008	1.0	0.039	0.966	2.13	35600	8000	56500	12700
9118K	90	3.5433	0.020	0.0008	140	5.5118	0.018	0.0007	24	0.9449	0.20	0.008	1.5	0.059	1.157	2.55	48000	10800	66700	15000
9119K	95	3.7402	0.020	0.0008	145	5.7087	0.018	0.0007	24	0.9449	0.20	0.008	1.5	0.059	1.188	2.62	52500	11800	68100	15300
9120K	100	3.9370	0.020	0.0008	150	5.9055	0.018	0.0007	24	0.9449	0.20	0.008	1.5	0.059	1.315	2.90	52500	11800	68100	15300

(1) Maximum shaft or housing fillet radius that bearing corners will clear.

(2) Based on 10⁶ revolutions of calculated fatigue life.

Continued on the next page.

EXTRA LIGHT 9100K SERIES (continued)

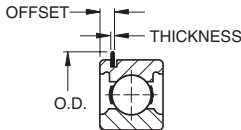
DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C				Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
9121K	105	4.1339	0.020	0.0008	160	6.2992	0.025	0.0010	26	1.0236	0.20	0.008	2.0	0.079	1.6	3.6	59600	13400	76900	17600
9122K	110	4.3307	0.020	0.0008	170	6.6929	0.025	0.0010	28	1.1024	0.20	0.008	2.0	0.080	—	—	71100	16000	92500	20800
9124K	120	4.7244	0.020	0.0008	180	7.0866	0.025	0.0010	28	1.1024	0.20	0.008	2.0	0.079	2.2	4.9	71100	16000	88900	20000
9126K	130	5.1181	0.025	0.0010	200	7.8740	0.030	0.0012	33	1.2992	0.25	0.010	2.0	0.079	3.4	7.4	90700	20400	115600	26000
9128K	140	5.5118	0.025	0.0010	210	8.2677	0.030	0.0012	33	1.2992	0.25	0.010	2.0	0.080	3.6	8.0	105000	23600	124500	28000
9130K	150	5.9055	0.025	0.0010	225	8.8583	0.030	0.0012	35	1.3780	0.25	0.010	2.0	0.080	5.5	12.0	92500	20800	113400	25500
9132K	160	6.2992	0.025	0.0010	240	9.4488	0.030	0.0012	38	1.4961	0.25	0.010	2.0	0.080	6.7	14.8	138000	31000	166800	37500
9134K	170	6.6929	0.025	0.0010	260	10.2362	0.035	0.0014	42	1.6535	0.25	0.010	2.0	0.080	9.0	19.8	160000	36000	189000	42500
9136K	180	7.0866	0.025	0.0010	280	11.0236	0.035	0.0014	44	1.8110	0.25	0.010	2.0	0.080	11.0	24.3	195700	44000	222000	50000
9138K	190	7.4803	0.030	0.0012	290	11.4173	0.035	0.0014	46	1.8110	0.30	0.012	2.0	0.080	12.0	26.5	204000	45500	216000	48000
9140K	200	7.8740	0.030	0.0012	310	12.2047	0.035	0.0014	51	2.0079	0.30	0.012	2.0	0.080	15.4	34.0	245000	55000	245000	55000
9144K	220	8.6614	0.030	0.0012	340	13.3858	0.040	0.0016	56	2.2047	0.30	0.012	2.5	0.100	20.0	44.2	290000	65500	280000	63000
9146K	240	9.4488	0.030	0.0012	360	14.1732	0.040	0.0016	56	2.2047	0.30	0.012	2.5	0.100	21.5	47.3	320000	72000	290000	65500
9152K	260	10.2362	0.035	0.0014	400	15.7480	0.040	0.0016	65	2.5591	0.35	0.014	3.0	0.120	31.6	69.6	400000	90000	345000	78000
9156K	280	11.0236	0.035	0.0014	420	16.5354	0.045	0.0018	65	2.5591	0.35	0.014	3.0	0.120	33.5	73.8	355000	80000	360000	80000
9160K	300	11.8110	0.035	0.0014	460	18.1102	0.045	0.0018	74	2.9134	0.35	0.014	3.0	0.120	46.6	102.9	520000	118000	415000	93000
9164K	320	12.5984	0.040	0.0016	480	18.8976	0.045	0.0018	74	2.9134	0.40	0.016	3.0	0.120	49.1	108.3	570000	127000	430000	98000
9180K	400	15.7480	0.040	0.0016	600	23.6220	0.050	0.0020	90	3.5433	0.40	0.016	4.0	0.160	—	—	815000	180000	550000	122000

(1) Maximum shaft or housing fillet radius that bearing corners will clear.

(2) Based on 10⁶ revolutions of calculated fatigue life.

SHIELDS, SEALS AND SNAP RING COMBINATIONS

Shields and Seals					Snap Ring (Wireloc) ⁽¹⁾								
One Shield D	Two Shields DD	One Seal P	Two Seals PP	One Shield And Seal PD	Open Type G	Two Shields DDG	Two Seals PPG	O.D.		Thickness		Offset	
								mm	in.	mm	in.	mm	in.
9100KD	9100KDD	9100P	9100PP	9100PD	—	—	—	—	—	—	—	—	—
9101KD	9101KDD	9101P	9101PP	9101PD	—	—	—	—	—	—	—	—	—
9102KD	9102KDD	9102P	9102PP	—	9102KG	9102KDDG	9102PPG	36.5	1 7/16	1.07	0.042	3.05	0.120
9103KD	9103KDD	9103P	9103PP	9103PD ⁽²⁾	9103KG	9103KDDG	9103PPG	39.3	1 35/64	1.07	0.042	3.05	0.120
9104KD	9104KDD	9104P	9104PP	—	9104KG	9104KDDG	9104PPG	46.0	1 13/16	1.07	0.042	3.05	0.120
9105KD	9105KDD	9105P	9105PP	—	—	—	—	52.4	2 1/16	1.07	0.042	3.05	0.120
9106KD	9106KDD	9106P	9106PP	9106PD	9106KG	9106KDDG	9106PPG	60.3	2 3/8	1.07	0.042	3.05	0.120
9107KD	9107KDD	9107P	9107PP	—	9107KG	9107KDDG	9107PPG	67.5	2 21/32	1.65	0.065	3.63	0.143
9108KD	9108KDD	9108P	9108PP	—	9108KG	9108KDDG	9108PPG	74.2	2 59/64	1.65	0.065	4.04	0.159
9109KD	9109KDD	9109P	9109PP	9109PD	9109KG	9109KDDG	9109PPG	81.4	3 13/64	1.65	0.065	4.04	0.159
9110KD	9110KDD	9110P	9110PP	—	9110KG	—	—	86.5	3 13/32	1.65	0.065	4.04	0.159
9111KD	9111KDD	9111P	9111PP	—	9111KG	—	9111PPG	96.4	3 51/64	2.41	0.095	5.18	0.204
9112KD	9112KDD	9112P	9112PP	—	9112KG	—	—	101.2	3 63/64	2.41	0.095	5.18	0.204
9113KD	9113KDD	9113P	9113PP	9113PD	9113KG	—	9113PPG	106.4	4 3/16	2.41	0.095	5.18	0.204
9114KD	9114KDD	9114P	9114PP	—	9114KG	—	—	116.3	4 37/64	2.41	0.095	5.18	0.204
9115KD	9115KDD	9115P	9115PP	—	—	—	—	121.4	4 25/32	2.41	0.095	5.18	0.204
9117KD	—	—	—	—	9117KG	9117KDDG	—	139.7	5 1/2	2.77	0.109	5.54	0.218
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—
9120KD	—	—	9120NPP	—	—	—	—	159.5	6 9/32	2.77	0.109	6.35	0.250
9121KD	—	—	—	—	—	—	—	169.5	6 43/64	2.77	0.109	6.35	0.250
—	—	—	—	—	—	—	—	—	—	—	—	—	—
9124KD	—	9124P	9124PP	—	9124KG	—	—	192.9	7 19/32	3.05	0.120	6.63	0.261
—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—

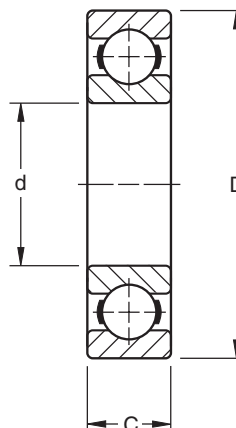
(1) The snap ring is normally packaged separately in the box with bearing.

(2) Width of bearing is 12.700 mm (.5000").



LIGHT 200K SERIES

- Conrad-type bearing is well-balanced, with deep races and uninterrupted race shoulders. Excellent, general-purpose bearing.
- Capacity to carry radial and thrust in either direction or combined loads.
- Electric motor quality for applications where quietness is a requirement.



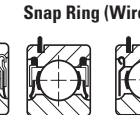
DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
200K	10	0.3937	0.008	0.0003	30	1.1811	0.009	0.00035	9	0.3543	0.6	0.024	0.027	0.06	2600	585	6800	1530
201K	12	0.4724	0.008	0.0003	32	1.2598	0.011	0.00043	10	0.3937	0.6	0.024	0.036	0.08	3000	680	7600	1730
202K	15	0.5906	0.008	0.0003	35	1.3780	0.011	0.00043	11	0.4331	0.6	0.024	0.041	0.09	3470	830	8650	1930
203K	17	0.6693	0.008	0.0003	40	1.5748	0.011	0.00043	12	0.4724	0.6	0.024	0.064	0.14	4700	1060	10900	2450
204K	20	0.7874	0.010	0.0004	47	1.8504	0.011	0.00043	14	0.5512	1.0	0.039	0.104	0.23	6500	1460	14400	3250
205K	25	0.9843	0.010	0.0004	52	2.0472	0.013	0.0005	15	0.5906	1.0	0.039	0.127	0.28	7800	1760	16000	3600
206K	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	16	0.6299	1.0	0.039	0.195	0.43	11300	2550	22200	5000
207K	35	1.3780	0.012	0.00047	72	2.8346	0.013	0.0005	17	0.6693	1.0	0.039	0.290	0.64	15300	3450	29100	6550
208K	40	1.5748	0.012	0.00047	80	3.1496	0.013	0.0005	18	0.7087	1.0	0.039	0.376	0.83	19800	4460	36200	8130
209K	45	1.7717	0.012	0.00047	85	3.3465	0.015	0.0006	19	0.7480	1.0	0.039	0.426	0.94	20500	4600	36300	8160
210K	50	1.9685	0.012	0.00047	90	3.5433	0.015	0.0006	20	0.7874	1.0	0.039	0.476	1.05	23100	5200	40000	9000
211K	55	2.1654	0.015	0.0006	100	3.9370	0.015	0.0006	21	0.8268	1.5	0.059	0.635	1.40	29100	6550	49000	11000
212K	60	2.3622	0.015	0.0006	110	4.3307	0.015	0.0006	22	0.8661	1.5	0.059	0.807	1.78	35500	8000	62100	13400
213K	65	2.5591	0.015	0.0006	120	4.7244	0.015	0.0006	23	0.9055	1.5	0.059	1.016	2.24	39900	9000	62100	14600
214K	70	2.7559	0.015	0.0006	125	4.9213	0.018	0.0007	24	0.9449	1.5	0.059	1.107	2.44	44000	9890	69000	15500
215K	75	2.9528	0.015	0.0006	130	5.1181	0.018	0.0007	25	0.9843	1.5	0.059	1.198	2.64	44800	10100	68900	15500
216K	80	3.1496	0.015	0.0006	140	5.5118	0.018	0.0007	26	1.0236	2.0	0.079	1.483	3.27	54200	12200	81300	18300
217K	85	3.3465	0.020	0.0008	150	5.9055	0.018	0.0007	28	1.1024	2.0	0.079	1.860	4.10	62200	14000	95900	21600
218K	90	3.5433	0.020	0.0008	160	6.2992	0.025	0.0010	30	1.1811	2.0	0.079	2.209	4.87	71100	16000	109000	24500
220K	100	3.9370	0.020	0.0008	180	7.0866	0.025	0.0010	34	1.3386	2.0	0.080	4.077	8.98	93000	20800	134000	30500
221K	105	4.1339	0.020	0.0008	190	7.4803	0.030	0.0012	36	1.4173	2.0	0.080	3.777	8.32	93000	20800	127000	28500
222K	110	4.3307	0.020	0.0008	200	7.8740	0.030	0.0012	38	1.4961	2.0	0.080	4.300	9.47	104900	23600	153000	34500
224K	120	4.7244	0.020	0.0008	215	8.4646	0.030	0.0012	40	1.5748	2.0	0.080	7.064	15.56	133000	30000	173000	39000
226K	130	5.1181	0.020	0.0010	230	9.0551	0.030	0.0012	40	1.5748	3.0	0.120	6.642	14.63	149000	33500	189000	42500
228K	140	5.5118	0.025	0.0010	250	9.8425	0.030	0.0012	42	1.6535	3.0	0.120	11.196	24.66	162000	36500	200000	45000
230K	150	5.9055	0.025	0.0010	270	10.6299	0.035	0.0014	45	1.7717	3.0	0.120	12.17	26.8	180000	40500	218000	49000
232K	160	6.2992	0.025	0.0010	290	11.4173	0.035	0.0014	48	1.8898	3.0	0.120	15.03	33.1	235000	53000	260000	58500
234K	170	6.6929	0.025	0.0010	310	12.2047	0.035	0.0014	52	2.0472	4.0	0.160	18.66	41.1	276000	62000	291000	65500
236K	180	7.0866	0.025	0.0010	320	12.5984	0.040	0.0016	52	2.0472	4.0	0.160	19.39	42.7	298000	67000	309000	69500
238K	190	7.4803	0.030	0.0012	340	13.3858	0.040	0.0016	55	2.1654	4.0	0.160	23.02	50.7	290000	65000	300000	67000
240K	200	7.8740	0.030	0.0012	360	14.1732	0.040	0.0016	58	2.2835	4.0	0.160	26.42	58.2	375000	83000	355000	80000
242K	210	8.2677	0.030	0.0012	380	14.9606	0.040	0.0016	61	2.4016	4.0	0.160	32.42	71.4	335000	76500	325000	73500
244K	220	8.6614	0.030	0.0012	400	15.7480	0.040	0.0016	65	2.5591	4.0	0.160	36.96	81.4	380000	86500	355000	80000
246K	230	9.0551	0.030	0.0012	420	16.5354	0.045	0.0018	68	2.6772	4.0	0.160	42.36	93.3	425000	95000	380000	85000
248K	240	9.4488	0.030	0.0012	440	17.3228	0.045	0.0018	72	2.8346	4.0	0.160	46.81	103.1	520000	116000	455000	102000
250K	250	9.8425	0.035	0.0014	460	18.1102	0.045	0.0018	76	2.9921	4.0	0.160	55.57	122.4	585000	129000	490000	110000
252K	260	10.2362	0.035	0.0014	480	18.8976	0.045	0.0018	80	3.1496	5.0	0.200	63.11	139.0	640000	143000	520000	118000
256K	280	11.0236	0.035	0.0014	500	19.6850	0.045	0.0018	80	3.1496	5.0	0.200	64.20	141.4	710000	160000	560000	125000
260K	300	11.8110	0.035	0.0014	540	21.2598	0.050	0.0020	85	3.3465	5.0	0.200	87.49	192.7	670000	150000	520000	116000
264K	320	12.5984	0.040	0.0016	580	22.8346	0.050	0.0020	92	3.6220	5.0	0.200	94.66	208.5	980000	220000	710000	160000

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

SHIELDS, SEALS AND SNAP RING COMBINATIONS

Shields and Seals					Snap Ring (Wireloc) ⁽¹⁾							O.D. Snap Ring					
																	
One Shield D	Two Shields DD	One Seal (N) P	One Seal One Shield PD	Two ⁽³⁾ Seals (N) PP	Open Type G	One Shield DG	One Shield GD	Two Shields DDG	One Seal PG	Two Seals PPG	One Seal One Shield PDG	O.D. Snap Ring		Thickness		Offset	
												mm	in.	mm	in.	mm	in.
200KD	200KDD	200P	200PD ⁽²⁾	200PP	—	—	—	200KDDG	—	200PPG	—	34.5	1 23/64	1.07	0.042	3.05	0.120
201KD	201KDD	201P	201PD	201PP	201KG	201KDG	—	201KDDG	—	201PPG	—	36.5	1 7/16	1.07	0.042	3.05	0.120
202KD	202KDD	202P	202PD	202PP	202KG	202KDG	—	202KDDG	—	202PPG	—	39.3	1 35/64	1.07	0.042	3.05	0.120
203KD	203KDD	203P	203PD	203PP	203KG	203KDG	—	203KDDG	—	203PPG	—	44.4	1 3/4	1.07	0.042	3.05	0.120
204KD	204KDD	204P	204PD	204PP	204KG	204KDG	—	204KDDG	—	204PPG	—	52.4	2 1/16	1.07	0.042	3.45	0.136
205KD	205KDD	205P	205PD	205PP	205KG	205KDG	—	205KDDG	—	205PPG	—	57.5	2 17/64	1.07	0.042	3.45	0.136
206KD	206KDD	206P	206PD	206PP	206KG	206KDG	—	206KDDG	—	206PPG	—	67.6	2 21/32	1.65	0.065	4.83	0.190
207KD	207KDD	207P	207PD	207PP	207KG	207KDG	—	207KDDG	—	207PPG	—	78.2	3 5/64	1.65	0.065	4.83	0.190
208KD	208KDD	208P	—	208PP	208KG	208KDG	—	208KDDG	—	208PPG	—	86.5	3 13/32	1.65	0.065	4.83	0.190
209KD	209KDD	209P	—	209PP	209KG	209KDG	—	209KDDG	—	—	—	91.3	3 19/32	1.65	0.065	4.83	0.190
210KD	210KDD	210P	—	210PP	210KG	210KDG	—	210KDDG	—	210NPPG	—	96.4	3 51/64	2.41	0.095	5.59	0.220
211KD	211KDD	211NP	211NPD	211NPP	211KG	211KDG	211KGD	211KDDG	—	211NPPG	211NPDG	106.3	4 3/16	2.41	0.095	5.59	0.220
212KD	212KDD	212NP	212NPD	212NPP	212KG	212KDG	—	—	—	212NPPG	212NPDG	116.3	4 37/64	2.41	0.095	5.59	0.220
213KD	213KDD	213NP	—	213NPP	213KG	—	—	213KDDG	—	213NPPG	213NPDG	129.4	5 3/32	2.77	0.109	6.73	0.265
214KD	214KDD	214P	—	214NPP	214KG	214KDG	—	—	—	—	—	134.5	5 19/64	2.77	0.109	6.73	0.265
215KD	215KDD	215P	—	215NPP	—	—	—	—	—	—	—	—	—	—	—	—	—
216KD	216KDD	—	—	216NPP	—	—	—	—	—	—	—	—	—	—	—	—	—
217KD	217KDD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
218KD	218KDD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
222KD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

⁽¹⁾ The snap ring is normally packaged separately in the box with the bearing.

⁽²⁾ Available with snap ring as 200PDG.

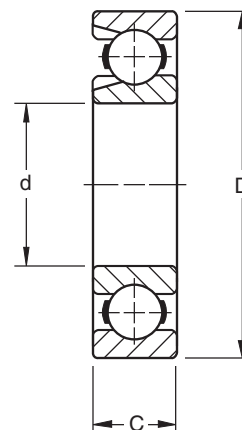
⁽³⁾ Also available in "VV" sealed design. Check for availability.

Note: "N" prefix for NP(P) seals indicate non-removable seal.



LIGHT 200W SERIES

- 200W Series, maximum capacity type, is dimensionally interchangeable with the 200K type, but has greater capacity for supporting heavier radial loads and light thrust loads in either direction.
- Maximum capacity bearings feature a filling slot in shoulder of each raceway to assemble an extra-large complement of balls.
- Consult your Timken representative for the availability of sizes other than those listed here.



DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating* C _e ⁽³⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
202W	15	0.5906	0.008	0.0003	35	1.3780	0.011	0.00045	11	0.4331	0.6	0.024	0.054	0.12	5060	1140	11000	2450
204W ⁽²⁾	20	0.7874	0.010	0.0004	47	1.8504	0.011	0.00045	14	0.5512	1.0	0.039	0.113	0.25	9300	2120	19500	4400
205W ⁽²⁾	25	0.9843	0.010	0.0004	52	2.0472	0.013	0.0005	15	0.5906	1.0	0.039	0.141	0.31	12200	2750	22600	5100
206W	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	16	0.6299	1.0	0.039	0.213	0.47	16900	3800	31000	6950
207W	35	1.3780	0.012	0.00047	72	2.8346	0.013	0.0005	17	0.6693	1.0	0.039	0.313	0.69	22600	5100	40000	9000
208W	40	1.5748	0.012	0.00047	80	3.1496	0.013	0.0005	18	0.7087	1.0	0.039	0.413	0.91	28400	6400	47000	10600
209W	45	1.7717	0.012	0.00047	85	3.3465	0.015	0.0006	19	0.7480	1.0	0.039	0.463	1.02	31500	7100	50000	11200
210W	50	1.9685	0.012	0.00047	90	3.5433	0.015	0.0006	20	0.7874	1.0	0.039	0.522	1.15	34600	7800	52000	11800
211W	55	2.1654	0.015	0.0006	100	3.9370	0.015	0.0006	21	0.8268	1.5	0.059	0.681	1.50	40600	9150	61000	13700
212W	60	2.3622	0.015	0.0006	110	4.3307	0.015	0.0006	22	0.8661	1.5	0.059	0.885	1.95	54200	12200	78000	17600
213W	65	2.5591	0.015	0.0006	120	4.7244	0.015	0.0006	23	0.9055	1.5	0.059	1.207	2.66	64800	14600	92000	20800
214W	70	2.7559	0.015	0.0006	125	4.9213	0.018	0.0007	24	0.9449	1.5	0.059	1.225	2.70	71100	16000	96000	21600
215W	75	2.9528	0.015	0.0006	130	5.1181	0.018	0.0007	25	0.9843	1.5	0.059	1.334	2.94	75500	17000	99000	22400
216W	80	3.1496	0.015	0.0006	140	5.5118	0.018	0.0007	26	1.0236	2.0	0.079	1.633	3.60	90600	20400	114000	26000
217W	85	3.3465	0.020	0.0008	150	5.9055	0.018	0.0007	28	1.1024	2.0	0.079	2.019	4.45	96000	22400	129000	29000
218W	90	3.5433	0.020	0.0008	160	6.2992	0.025	0.0010	30	1.1811	2.0	0.079	2.493	5.49	96500	25500	149000	33500
219W	95	3.7402	0.020	0.0008	170	6.6929	0.025	0.0010	32	1.2598	2.0	0.079	3.039	6.70	112000	29000	169000	38000
220W	100	3.9370	0.020	0.0008	180	7.0866	0.025	0.0010	34	1.3386	2.0	0.080	3.673	8.09	127000	33500	188000	42500
221W	105	4.1339	0.020	0.0008	190	7.4803	0.030	0.0012	36	1.4173	2.0	0.080	4.277	9.43	134000	35500	195000	44000
222W	110	4.3307	0.020	0.0008	200	7.8740	0.030	0.0012	38	1.4961	2.0	0.080	5.144	11.34	160000	42500	222000	50000
224W3	120	4.7244	0.020	0.0008	215	8.4646	0.030	0.0012	40	1.5748	2.0	0.080	6.586	14.52	156000	41500	222000	50000
226W3	130	5.1181	0.020	0.0010	230	9.0551	0.030	0.0012	40	1.5748	3.0	0.120	7.627	16.80	196000	53000	260000	58500
228W3	140	5.5118	0.025	0.0010	250	9.8425	0.030	0.0012	42	1.6535	3.0	0.120	9.307	20.50	260000	58500	270000	61000
230W	150	5.9055	0.025	0.0010	270	10.6299	0.035	0.0014	45	1.7717	3.0	0.120	12.485	27.50	290000	65500	300000	67000
232W	160	6.2992	0.025	0.0010	290	11.4173	0.035	0.0014	48	1.8898	3.0	0.120	15.436	34.00	340000	76500	325000	73500
234W	170	6.6929	0.025	0.0010	310	12.2047	0.035	0.0014	52	2.0472	4.0	0.160	19.068	42.00	375000	85000	345000	78000
236W	180	7.0866	0.025	0.0010	320	12.5984	0.040	0.0016	52	2.0472	4.0	0.160	19.886	43.80	405000	90000	365000	81500
238W	190	7.4803	0.030	0.0012	340	13.3858	0.040	0.0016	55	2.1654	4.0	0.160	23.608	52.00	465000	104000	405000	91500
240W	200	7.8740	0.030	0.0012	360	14.1732	0.040	0.0016	58	2.2835	4.0	0.160	27.150	59.80	560000	125000	465000	106000
242W	210	8.2677	0.030	0.0012	380	14.9606	0.040	0.0016	61	2.4016	4.0	0.160	33.279	73.30	570000	129000	465000	104000
244W	220	8.6614	0.030	0.0012	400	15.7480	0.040	0.0016	65	2.5591	4.0	0.160	38.091	83.90	680000	153000	530000	120000
246W	230	9.0551	0.030	0.0012	420	16.5354	0.045	0.0018	68	2.6772	4.0	0.160	45.719	100.70	695000	156000	530000	118000
248W	240	9.4488	0.030	0.0012	440	17.3228	0.045	0.0018	72	2.8346	4.0	0.160	48.761	107.40	865000	193000	640000	143000
250W	250	9.8425	0.030	0.0012	460	18.1102	0.045	0.0018	76	2.9921	4.0	0.160	57.568	126.80	930000	208000	670000	150000
252W	260	10.2362	0.035	0.0014	480	18.8976	0.045	0.0018	80	3.1496	5.0	0.200	65.468	144.20	1020000	232000	720000	160000
256W	280	11.0236	0.035	0.0014	500	19.6850	0.045	0.0018	80	3.1496	5.0	0.200	66.921	147.40	1120000	255000	765000	170000
260W	300	11.8110	0.035	0.0014	540	21.2598	0.050	0.0020	85	3.3465	5.0	0.200	89.894	198.00	1100000	245000	720000	160000
264W	320	12.5984	0.040	0.0016	580	22.8346	0.050	0.0020	92	3.6220	5.0	0.200	99.473	219.10	1560000	355000	965000	216000

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ These sizes have molded nylon cages.

⁽³⁾ Based on 10⁶ revolutions of calculated fatigue life.

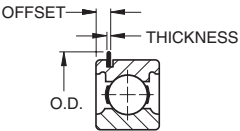
* For applications where thrust load exceeds 60% of radial load, consult your Timken representative.

Listed in the table below are Timken maximum capacity type bearings (200W Series) with shields, seals and snap ring combinations.

The suffixes of the bearing numbers denote the following:

- **WD** - Filling slot opposite single shield
- **WNP** - Filling slot opposite single seal
- **WG** - Filling slot opposite snap ring
- **WDD** - Two shields
- **WNPP** - Two seals
- **WDG** - Filling slot and snap ring opposite shield
- **WDDG** - Two shields with filling slot opposite snap ring

SHIELDS, SEALS AND SNAP RING COMBINATIONS

Shields and Seals				Snap Ring (Wireloc) ⁽¹⁾								
One Shield D	Two Shields DD	One Seal P	Two Seals PP	Open Type G	One Shield DG	Two Shields DDG	O.D.		Thickness		Offset	
							mm	in.	mm	in.	mm	in.
204VD	—	—	—	204WG	—	—	52.4	2 1/16	1.07	0.042	3.45	0.136
205VD	—	—	—	205WG	—	—	57.5	2 17/64	1.07	0.042	3.45	0.136
206VD	—	—	—	206WG	206WDG	—	67.5	2 21/32	1.65	0.065	4.83	0.190
207VD	—	—	—	207WG	207WDG	—	78.2	3 5/64	1.65	0.065	4.83	0.190
208VD	208WDD	—	—	208WG	208WDG	208WDDG	86.5	3 13/32	1.65	0.065	4.83	0.190
209VD	209WDD	—	—	209WG	209WDG	—	91.3	3 19/32	1.65	0.065	4.83	0.190
210VD	210WDD	—	—	210WG	210WDG ⁽²⁾	—	96.4	3 51/64	2.41	0.095	5.59	0.220
211VD	211WDD	—	—	211WG ⁽³⁾	211WDG	—	106.4	4 3/16	2.41	0.095	5.59	0.220
212VD	212WDD	—	—	212WG	212WDG	212WDDG	116.3	4 37/64	2.41	0.095	5.59	0.220
213VD	213WDD	213WNP	213WNPP	213WG	213WDG	213WDDG	129.4	5 3/32	2.77	0.109	6.73	0.265
214VD	214WDD	—	—	214WG	214WDG	—	134.5	5 19/64	2.77	0.109	6.73	0.265
215VD	215WDD	215WNP	215WNPP	215WG	215WDG	215WDDG	139.7	5 1/2	2.77	0.109	6.73	0.265
216VD	216WDD	—	—	216WG	216WDG	—	149.6	5 57/64	2.77	0.109	7.54	0.297
217VD	217WDD	—	—	217WG	217WDG	—	159.5	6 9/32	2.77	0.109	7.54	0.297
218VD	218WDD	218WNP	—	218WG	—	—	169.5	6 43/64	2.77	0.109	7.54	0.297
219VD	219WDD	—	—	—	—	—	—	—	—	—	—	—
220VD	220WDD	—	—	220WG	—	—	192.9	7 19/32	3.05	0.12	8.61	0.339
221VD	—	—	—	—	—	—	—	—	—	—	—	—
222VD	—	—	—	—	—	—	—	—	—	—	—	—
224WD ⁽⁴⁾	—	—	—	—	—	—	—	—	—	—	—	—

⁽¹⁾ The snap ring is normally packaged separately in the box with the bearing.

⁽²⁾ Also available as a GWD-type filling slot opposite the shield and snap ring.

⁽³⁾ Also available as 211GW with filling slot on same side as snap ring.

⁽⁴⁾ Width is 1.6535" for the 224WD bearing.



LIGHT 200 SERIES EXTRA WIDTH INNER RING

- Sizes available in rubber seal (P) and Mechani-Seal (L) design.
- Extra width inner ring provides greater shaft support.
- P seal version uses a Buna N rubber contact seal.
- L seal employs a frictionless metallic member to form a labyrinth.
- Used extensively in high-speed pneumatic tools, small pumps, electric motors, domestic appliances, etc.
- Electric motor quality for applications where quietness is a requirement.

DIMENSIONS – TOLERANCES

Bearing Number		Bore d		Outside Diameter D		Width B ₁		Inner Ring Offset		Ring Widths 0.00, -.12 mm +0.000", -.005"		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽¹⁾	
one seal L	one seal and shield LD	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
200KL	200KLD	10	0.3937	0.008	0.0003	30	1.1811	0.009	0.00035	12.19	0.480	8.99	0.354	0.036	0.08	2650	585	6550	1530
201KL	201KLD	12	0.4724	0.008	0.0003	32	1.2598	0.011	0.00045	12.19	0.480	10.01	0.394	0.041	0.09	3000	680	7500	1730
—	201KLD2	13	0.5118	0.008	0.0003	32	1.2598	0.011	0.00045	12.19	0.480	10.01	0.394	0.041	0.09	3000	680	7500	1730
201KL3	—	11.07	0.4358	0.008	0.0003	32	1.2598	0.011	0.00045	12.19	0.480	10.01	0.394	0.041	0.09	3000	680	7500	1730
202KL4	202KLD4	14	0.5512	0.008	0.0003	35	1.3780	0.011	0.00045	12.19	0.480	11.00	0.433	0.045	0.10	3690	830	8650	1930
202KL	202KLD	15	0.5906	0.008	0.0003	35	1.3780	0.011	0.00045	12.19	0.480	11.00	0.433	0.045	0.10	3450	830	8650	1930
202KL3	202KLD3	16	0.6299	0.008	0.0003	35	1.3780	0.011	0.00045	12.19	0.480	11.00	0.433	0.045	0.10	3450	830	8650	1930
203KL	203KLD	17	0.6693	0.008	0.0003	40	1.5748	0.011	0.00045	13.67	0.538	11.99	0.472	0.073	0.16	4700	1060	10800	2450
204KL	204KLD	20	0.7874	0.010	0.0004	47	1.8504	0.011	0.00045	15.24	0.600	14.00	0.551	0.113	0.25	6200	1460	14300	3200
205KL	205KLD	25	0.9843	0.010	0.0004	52	2.0472	0.013	0.0005	15.24	0.600	15.01	0.591	0.132	0.29	7800	1760	16000	3600
206KL	206KLD	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	19.00	0.748	16.00	0.630	0.231	0.51	10000	2550	22200	5000
207KL	207KLD	35	1.3780	0.012	0.00045	72	2.8346	0.013	0.0005	20.00	0.787	17.00	0.669	0.322	0.71	13700	3450	29000	6550
209KL	209KLD	45	1.7717	0.012	0.00045	85	3.3465	0.015	0.0006	26.00	1.024	19.00	0.748	0.508	1.12	17600	4550	37000	8300
211KL	211KLD	55	2.1654	0.015	0.0006	100	3.9370	0.015	0.0006	27.00	1.063	21.01	0.827	0.748	1.65	29100	6550	49000	11000

⁽¹⁾ Based on 10⁶ revolutions of calculated fatigue life.

DIMENSIONS – TOLERANCES

Bearing Number		Bore d				Outside Diameter D				Ring Widths 0.00, -.12 mm +0.000", -.005"				Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽⁵⁾	
two seals LL	two seals NPP			tolerance +0.000 mm +0.0000" to minus				tolerance +0.000 mm +0.0000" to minus		Inner B ₂		Outer C									
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
200KLL2	200KRR3 ⁽⁴⁾	10	0.3937	0.008	0.0003	30	1.1811	0.009	0.00035	16.40	0.646	8.99	0.354	0.6	0.024	0.036	0.08	2650	585	6800	1530
201KLL2	—	12	0.4724	0.008	0.0003	32	1.2598	0.011	0.00045	15.40	0.606	10.01	0.394	0.6	0.024	0.041	0.09	3000	680	7500	1700
201KLL3	—	13	0.5118	0.008	0.0003	32	1.2598	0.011	0.00045	15.40	0.606	10.01	0.394	0.6	0.024	0.041	0.09	3000	680	7500	1700
202KLL2	—	15	0.5906	0.008	0.0003	35	1.3780	0.011	0.00045	14.40	0.567	11.00	0.433	0.6	0.024	0.045	0.10	3690	830	8650	1930
202KLL3	202NPP11	16	0.6299	0.008	0.0003	35	1.3780	0.011	0.00045	14.40	0.567	11.00	0.433	0.6	0.024	0.045	0.10	3690	830	8650	1930
203KLL2 ⁽²⁾	203NPP8	17	0.6693	0.008	0.0003	40	1.5748	0.011	0.00045	16.60	0.654	11.99	0.472	0.6	0.024	0.073	0.16	4700	1060	10800	2450
204KLL2	204NPP7	20	0.7874	0.010	0.0004	47	1.8504	0.011	0.00045	17.75	0.699	14.00	0.551	1.0	0.039	0.113	0.25	6200	1460	14300	3200
205KLL2 ⁽³⁾	205NPP2	25	0.9843	0.010	0.0004	52	2.0472	0.013	0.0005	16.75	0.659	15.01	0.591	1.0	0.039	0.132	0.29	7800	1760	16000	3600
206KLL	206NPP2	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	24.00	0.945	16.00	0.630	1.0	0.039	0.231	0.51	11300	2550	22200	5000
207KLL	—	35	1.3780	0.012	0.00045	72	2.8346	0.013	0.0005	25.00	0.984	17.00	0.669	1.0	0.039	0.322	0.71	15300	3450	29000	6550
208KLL	—	40	1.5748	0.012	0.00045	80	3.1496	0.013	0.0005	30.18	1.188	18.01	0.709	1.0	0.039	0.463	1.02	20200	4550	36000	8150
209KLL	—	45	1.7717	0.012	0.00045	85	3.3465	0.015	0.0006	30.00	1.181	19.00	0.748	1.0	0.039	0.508	1.12	20200	4550	37000	8300

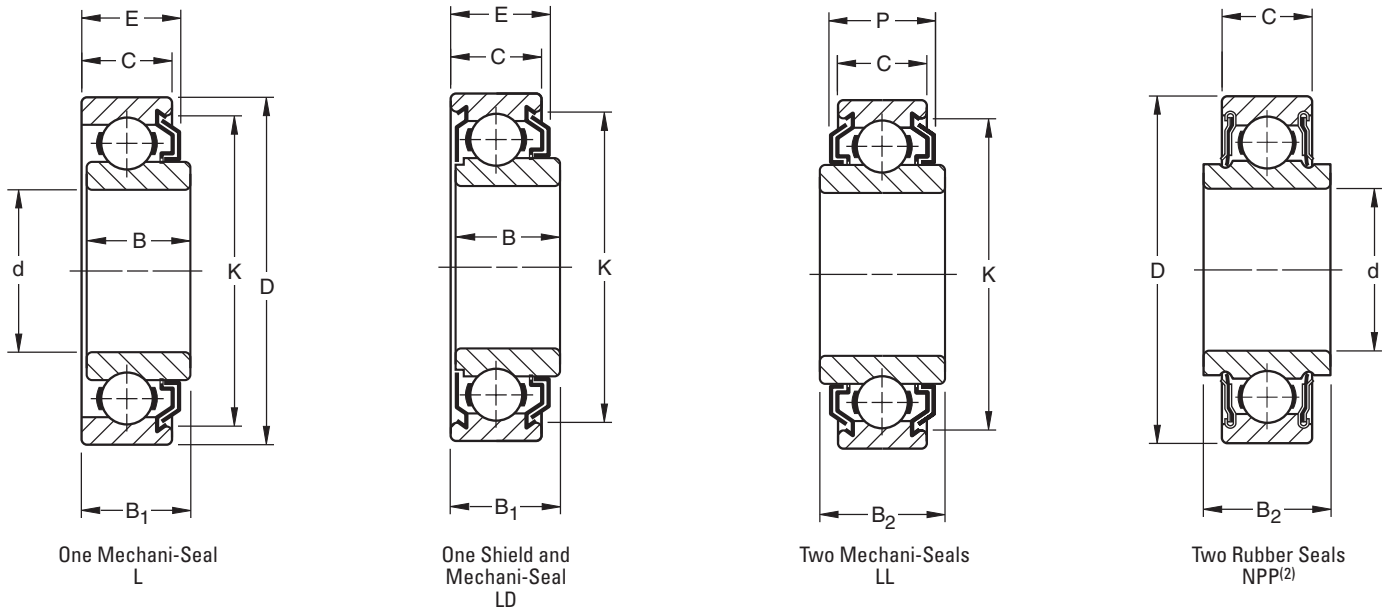
⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Also available as 203KLL with 18.24 mm (.718") inner ring width.

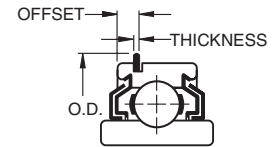
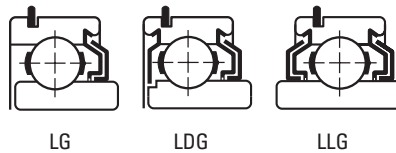
⁽³⁾ Also available as 205KLL with 20.64 mm (.812") inner ring width.

⁽⁴⁾ Equipped with R-Seal.

⁽⁵⁾ Based on 10⁶ revolutions of calculated fatigue life.



MECHANI-SEAL SNAP RING COMBINATIONS



(Seal Projection) (L, LD, LL Types Only)						One Mechani-Seal		One Mechani-Seal and Shield		Two Mechani-Seals		Snap Ring ⁽¹⁾					
Width		P		O.D. K		LG		LDG		LLG		O.D.		Thickness		Offset	
mm	in.	mm	in.	mm	in.							mm	in.	mm	in.	mm	in.
12.22	0.481	15.57	0.613	25.4	1	—		—		200KLLG2		34.5	1 ²³ / ₆₄	1.07	0.042	3.05	0.120
12.19	0.480	14.40	0.567	27.0	1 ¹ / ₁₆	—		—		201KLLG2		36.5	1 ⁷ / ₁₆	1.07	0.042	3.05	0.120
12.19	0.480	14.40	0.567	27.0	1 ¹ / ₁₆	—		201KLDG3		—		36.5	1 ⁷ / ₁₆	1.07	0.042	3.05	0.120
12.37	0.487	13.79	0.543	30.2	1 ³ / ₁₆	—		202KLDG		202KLLG2		39.3	1 ³⁵ / ₆₄	1.07	0.042	3.05	0.120
12.37	0.487	13.79	0.543	30.2	1 ³ / ₁₆	—		—		202KLLG3		39.3	1 ³⁵ / ₆₄	1.07	0.042	3.05	0.120
14.00	0.551	16.00	0.630	34.9	1 ³ / ₈	203KLG		—		203KLLG2		44.4	1 ³ / ₄	1.07	0.042	3.05	0.120
15.57	0.613	17.14	0.675	40.1	1 ³⁷ / ₆₄	204KLG2		—		204KLLG2		52.4	2 ¹ / ₁₆	1.07	0.042	3.45	0.136
15.57	0.613	16.13	0.635	45.6	1 ⁵¹ / ₆₄	205KLG2		—		205KLLG2		57.5	2 ¹⁷ / ₆₄	1.07	0.042	3.45	0.136
19.48	0.767	22.99	0.905	54.4	2 ⁹ / ₆₄	—		—		206KLLG		67.5	2 ²¹ / ₃₂	1.65	0.065	4.83	0.190
20.50	0.807	23.98	0.944	62.7	2 ¹⁵ / ₃₂	—		—		207KLLG		78.2	3 ⁵ / ₆₄	1.65	0.065	4.83	0.190
23.32	0.918	28.63	1.127	69.8	2 ³ / ₄	—		—		—		86.5	3 ¹³ / ₃₂	1.65	0.065	4.83	0.190
24.23	0.954	29.46	1.160	75.4	2 ³¹ / ₃₂	—		—		209KLLG		91.3	3 ¹⁹ / ₃₂	1.65	0.065	4.83	0.190

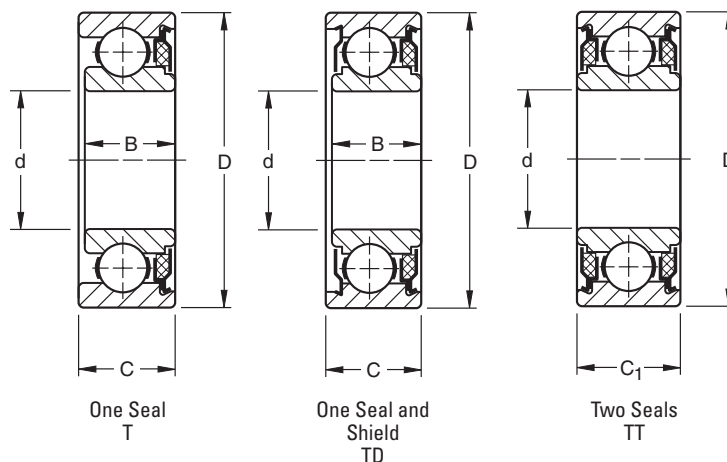
⁽¹⁾ The snap ring is normally packaged separately in the box with the bearing.

NOTE: "N" prefix indicates a non-removable seal.



LIGHT 200 SERIES FELT SEAL TYPE

- Permits certain design economies, but cannot be assumed to be suitable for all conditions of service.
- In many cases, they are supplemented by adjacent parts in the application for adequate bearing protection in small equipment such as fractional horsepower motors, electric vacuum cleaners, small gear units, electric and pneumatic tools, etc.
- Suggested for effective grease retention and exclusion of foreign matter.
- Electric motor quality for applications where quietness is a requirement.



DIMENSIONS – TOLERANCES

Bearing Number		Bore d		Outside Diameter D		Ring Widths +0.00 mm, -0.12 mm 0.000, -0.005"		Inner Ring Offset		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽³⁾	
one seals T	one seal and shield TD			tolerance +0.000 mm +0.0000" to minus		tolerance +0.000 mm +0.0000" to minus											
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.
200KT	200KTD	10	0.3937	0.008 0.0003	30	1.1811	0.009 0.00035	12.19 0.480	12.70 0.500	0.51 0.020	0.6 0.024	0.045 0.10	2600 585	6790 1530			
—	200KTD2	12	0.4724	0.008 0.0003	30	1.1811	0.009 0.00035	12.19 0.480	12.70 0.500	0.51 0.020	0.6 0.024	0.045 0.10	2600 585	6790 1530			
201KT	201KTD	12	0.4724	0.008 0.0003	32	1.2598	0.011 0.00045	12.19 0.480	12.70 0.500	0.51 0.020	0.6 0.024	0.045 0.10	3000 680	7680 1730			
201KT2	201KTD2	13	0.5118	0.008 0.0003	32	1.2598	0.011 0.00045	12.19 0.480	12.70 0.500	0.51 0.020	0.6 0.024	0.045 0.10	3000 680	7680 1730			
202KT	202KTD	15	0.5906	0.008 0.0003	35	1.3780	0.011 0.00045	12.19 0.480	12.70 0.500	0.51 0.020	0.6 0.024	0.050 0.11	3600 830	8650 1930			
202KT3 ⁽²⁾	202KTD3 ⁽²⁾	16	0.6299	0.008 0.0003	35	1.3780	0.011 0.00045	12.19 0.480	12.70 0.500	0.51 0.020	0.6 0.024	0.050 0.11	3600 830	8650 1930			
203KT	203KTD	17	0.6693	0.008 0.0003	40	1.5748	0.011 0.00045	13.67 0.538	14.30 0.563	0.64 0.025	0.6 0.024	0.077 0.17	4700 1060	10900 2450			
204KT	204KTD	20	0.7874	0.010 0.0004	47	1.8504	0.011 0.00045	15.24 0.600	15.88 0.625	0.64 0.025	1.0 0.039	0.118 0.26	6500 1460	14400 3250			
205KT	205KTD	25	0.9843	0.010 0.0004	52	2.0472	0.013 0.00050	15.24 0.600	15.88 0.625	0.64 0.025	1.0 0.039	0.132 0.29	7800 1760	16000 3600			
206KT	206KTD	30	1.1811	0.010 0.0004	62	2.4409	0.013 0.00050	19.00 0.748	19.99 0.788	0.99 0.039	1.0 0.039	0.245 0.54	11300 2550	22200 5000			
207KT	207KTD	35	1.3780	0.012 0.00045	72	2.8346	0.013 0.00050	19.99 0.787	21.01 0.827	0.99 0.039	1.0 0.039	0.358 0.79	15300 3450	29000 6550			

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ 202KT3 has 12.29 mm (.484") inner ring width.

⁽³⁾ Based on 10⁶ revolutions of calculated fatigue life.

DIMENSIONS – TOLERANCES

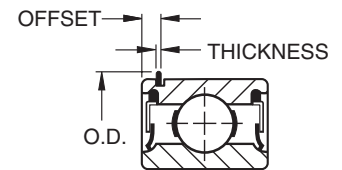
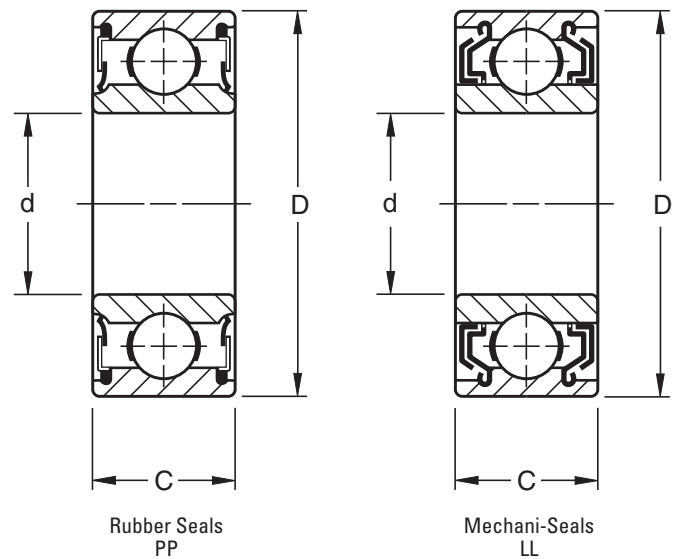
Bearing Number	Bore d				Outside Diameter D				Ring Width C ₁		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
two seals TT			tolerance +0.000 mm +0.0000" to minus				tolerance +0.000 mm +0.0000" to minus		+0.00 mm -0.12 mm +0.000 -0.005"									
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
200KTT	10	0.3937	0.008	0.0003	30	1.1811	0.009	0.00035	16.66	0.656	0.6	0.024	0.045	0.10	2600	585	6790	1530
201KTT	12	0.4724	0.008	0.0003	32	1.2598	0.011	0.00043	16.66	0.656	0.6	0.024	0.045	0.10	3000	680	7680	1730
201KTT3	13	0.5118	0.008	0.0003	32	1.2598	0.011	0.00043	16.66	0.656	0.6	0.024	0.045	0.10	3000	680	7680	1730
202KTT	15	0.5906	0.008	0.0003	35	1.3780	0.011	0.00043	16.66	0.656	0.6	0.024	0.050	0.11	3600	830	8650	1930
203KTT	17	0.6693	0.008	0.0003	40	1.5748	0.011	0.00043	18.24	0.718	0.6	0.024	0.077	0.17	4700	1060	10900	2450
204KTT	20	0.7874	0.010	0.0004	47	1.8504	0.011	0.00043	20.62	0.812	1.0	0.039	0.118	0.26	6500	1460	14400	3250
205KTT	25	0.9843	0.010	0.0004	52	2.0472	0.013	0.00051	20.62	0.812	1.0	0.039	0.132	0.29	7800	1760	16000	3600
206KTT	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.00051	24.00	0.945	1.0	0.039	0.245	0.54	11300	2550	22200	5000
207KTT	35	1.3780	0.012	0.00045	72	2.8346	0.013	0.00051	25.00	0.984	1.0	0.039	0.358	0.79	15300	3450	29000	6550

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

LIGHT, WIDE TYPE W200PP SERIES W200KLL SERIES

- Rubber seal (W200PP) and Mechani-Seal (W200KLL) types.
- Made with standard bores, standard outside diameters and a single row of balls.
- Same widths as double-row bearings of corresponding size.
- Extra width offers a larger support area for shaft and housing contact and added space for prepacked lubricant.
- Wide-type rubber seal bearings are particularly suited for use in electric motors, where they simplify housing design by eliminating auxiliary seals.
- Wide-type Mechani-Seal ball bearings are designed for applications where frictionless sealing and large grease capacity are required.
- Extremely effective grease retention and exclusion of foreign matter are assured by close running clearance between the seal members and slinger action of the outer member.



DIMENSIONS – TOLERANCES

Bearing Number		Bore d				Outside Diameter D				Width C		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load C _E ⁽⁴⁾		Snap Ring PPG ⁽³⁾					
Contact Seal PP	Mechani-seal LL	tolerance +0.000 mm +0.0000" to minus				tolerance +0.000 mm +0.0000" to minus				+0.00 mm -0.12 mm +0.0000" -0.005"										O.D.		thickness		offset	
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.	mm	in.	mm	in.	mm	in.
W200PP	—	10	0.3937	0.008	0.0003	30	1.1811	0.009	0.00035	14.27	0.562	0.6	0.024	0.045	0.10	2650	600	6550	1500	—	—	—	—	—	—
W201PP	—	12	0.4724	0.008	0.0003	32	1.2598	0.011	0.00045	15.88	0.625	0.6	0.024	0.054	0.12	3000	695	7500	1700	—	—	—	—	—	—
W202PP	—	15	0.5906	0.008	0.0003	35	1.3780	0.011	0.00045	15.88	0.625	0.6	0.024	0.064	0.14	3450	780	8650	1930	—	—	—	—	—	—
W203PP ⁽²⁾	—	17	0.6693	0.008	0.0003	40	1.5748	0.011	0.00045	17.48	0.688	0.6	0.024	0.091	0.20	4400	1000	10600	2360	44.4	1 3/4	1.07	0.042	4.7	0.185
W204PP	W204KLL	20	0.7874	0.010	0.0004	47	1.8504	0.011	0.00045	20.62	0.812	1.0	0.039	0.150	0.33	6200	1400	14300	3200	—	—	—	—	—	—
W205PP ⁽²⁾	W205KLL	25	0.9843	0.010	0.0004	52	2.0472	0.013	0.0005	20.62	0.812	1.0	0.039	0.177	0.39	6950	1560	15600	3450	57.5	2 17/64	1.07	0.042	5.72	0.225
W206PP ⁽²⁾	W206KLL	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	23.83	0.938	1.0	0.039	0.295	0.65	10000	2280	21600	4800	67.5	2 21/32	1.65	0.065	6.15	0.242
W207PP	W207KLL	35	1.3780	0.012	0.00045	72	2.8346	0.013	0.0005	26.97	1.062	1.0	0.039	0.458	1.01	13700	3050	28500	6400	—	—	—	—	—	—
W208PP	W208KLL	40	1.5748	0.012	0.00045	80	3.1496	0.013	0.0005	30.18	1.188	1.0	0.039	0.630	1.39	17600	4000	36000	8150	—	—	—	—	—	—
W209PP	W209KLL	45	1.7717	0.012	0.00045	85	3.3465	0.015	0.0006	30.18	1.188	1.0	0.039	0.668	1.47	17600	4000	36000	8150	—	—	—	—	—	—
W210PP	—	50	1.9685	0.012	0.00045	90	3.5433	0.015	0.0006	30.18	1.188	1.0	0.039	0.767	1.69	19600	4500	39000	8800	—	—	—	—	—	—
W214PP	—	70	2.7559	0.015	0.0006	125	4.9213	0.018	0.0007	39.67	1.562	1.5	0.059	1.810	3.99	37500	8500	69500	15600	—	—	—	—	—	—

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Also available with snap ring. To order, add suffix "G" to bearing number. Example: W205PPG.

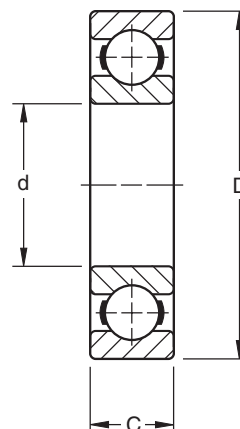
⁽³⁾ The snap ring is normally packaged separately in the box with the bearing.

⁽⁴⁾ Based on 10⁶ revolutions of calculated fatigue life.



MEDIUM 300K SERIES

- A heavier cross section than the 200 Series.
- Capable of carrying considerably heavier radial, thrust and combined loads for a given bore size.
- Capable of withstanding heavy shock loads. A ball bearing of heavier cross section is rarely required.
- Uses Conrad-type bearing that is well-balanced, with deep races and uninterrupted race shoulders.
- Electric motor quality where quietness is a requirement.



DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C				Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
300K	10	0.3937	0.008	0.0003	35	1.3780	0.011	0.00043	11	0.433	0.12	0.005	0.6	0.024	0.054	0.12	3460	780	9200	2080
301K	12	0.4724	0.008	0.0003	37	1.4567	0.011	0.00043	12	0.472	0.12	0.005	1.0	0.039	0.064	0.14	3620	815	9400	2120
302K	15	0.5906	0.008	0.0003	42	1.6535	0.011	0.00043	13	0.512	0.12	0.005	1.0	0.039	0.082	0.18	5240	1180	13300	3000
303K	17	0.6693	0.008	0.0003	47	1.8504	0.011	0.00043	14	0.551	0.12	0.005	1.0	0.039	0.109	0.24	6550	1460	15300	3450
304K	20	0.7874	0.010	0.0004	52	2.0472	0.013	0.0005	15	0.591	0.12	0.005	1.0	0.039	0.141	0.31	7800	1760	17900	4050
305K	25	0.9843	0.010	0.0004	62	2.4409	0.013	0.0005	17	0.669	0.12	0.005	1.0	0.039	0.236	0.52	12200	2750	26600	6000
306K	30	1.1811	0.010	0.0004	72	2.8346	0.013	0.0005	19	0.748	0.12	0.005	1.0	0.039	0.354	0.78	15600	3550	33900	7650
307K	35	1.3780	0.012	0.00047	80	3.1496	0.013	0.0005	21	0.827	0.12	0.005	1.5	0.059	0.472	1.04	18400	4150	37700	8500
308K	40	1.5748	0.012	0.00047	90	3.5433	0.015	0.0006	23	0.906	0.12	0.005	1.5	0.059	0.644	1.42	25900	5850	50600	11400
309K	45	1.7717	0.012	0.00047	100	3.9370	0.015	0.0006	25	0.984	0.12	0.005	1.5	0.059	0.862	1.90	31500	7100	59500	13400
310K	50	1.9685	0.012	0.00047	110	4.3307	0.015	0.0006	27	1.063	0.12	0.005	2.0	0.079	1.125	2.48	37700	8500	69300	15600
311K	55	2.1654	0.015	0.0006	120	4.7244	0.015	0.0006	29	1.142	0.15	0.006	2.0	0.079	1.424	3.14	44400	10000	81200	18300
312K	60	2.3622	0.015	0.0006	130	5.1181	0.018	0.0007	31	1.220	0.15	0.006	2.0	0.079	1.765	3.89	51500	11600	92300	20800
313K	65	2.5591	0.015	0.0006	140	5.5118	0.018	0.0007	33	1.299	0.15	0.006	2.0	0.079	2.168	4.78	59500	13400	104000	23600
314K	70	2.7559	0.015	0.0006	150	5.9055	0.025	0.0010	35	1.378	0.15	0.006	2.0	0.079	2.617	5.77	67900	15300	116000	26000
315K	75	2.9528	0.015	0.0006	160	6.2992	0.018	0.0007	37	1.457	0.15	0.006	2.0	0.079	3.175	7.00	76800	17300	128000	29000
316K	80	3.1496	0.015	0.0006	170	6.6929	0.025	0.0010	39	1.535	0.15	0.006	2.0	0.079	3.756	8.28	85700	19300	139000	31500
317K	85	3.3465	0.020	0.0008	180	7.0866	0.025	0.0010	41	1.614	0.20	0.008	2.5	0.098	5.008	11.04	95900	21600	151000	34000
318K	90	3.5433	0.020	0.0008	190	7.4803	0.030	0.0012	43	1.693	0.20	0.008	2.5	0.098	5.121	11.29	106000	24000	162000	36500
320K	100	3.9370	0.020	0.0008	215	8.4646	0.030	0.0012	47	1.850	0.20	0.008	2.5	0.098	7.085	15.62	139000	31500	195000	41500
321K	105	4.1339	0.020	0.0008	225	8.8583	0.030	0.0012	49	1.929	0.20	0.008	2.5	0.098	10.21	22.52	163000	36500	126000	48000
322K	110	4.3307	0.020	0.0008	240	9.4488	0.030	0.0012	50	1.969	0.20	0.008	2.5	0.098	12.17	26.82	166000	37500	220000	49000
326K	130	5.1181	0.020	0.0010	280	11.0236	0.035	0.0014	58	2.323	0.25	0.010	2.5	0.098	18.90	41.60	240000	54000	280000	63000
330K	150	5.9055	0.025	0.0010	320	12.5984	0.040	0.0016	65	2.559	0.25	0.010	2.5	0.098	27.10	59.70	310000	69500	335000	75000
332K	160	6.2992	0.025	0.0010	340	13.3858	0.040	0.0016	68	2.677	0.25	0.010	2.5	0.098	31.51	69.40	310000	69500	335000	75000
334K	170	6.6929	0.025	0.0010	360	14.1732	0.040	0.0016	72	2.835	0.25	0.010	2.5	0.098	36.82	81.10	355000	80000	360000	81500
336K	180	7.0866	0.025	0.0010	380	14.9606	0.040	0.0016	75	2.953	0.25	0.010	2.5	0.098	42.04	92.60	390000	88000	390000	88000
338K	190	7.4803	0.030	0.0012	400	15.7480	0.040	0.0016	78	3.071	0.30	0.012	4.0	0.16	47.6	105.0	440000	98000	425000	95000
340K	200	7.8740	0.030	0.0012	420	16.5354	0.045	0.0018	80	3.150	0.30	0.012	4.0	0.16	56.1	123.6	465000	104000	425000	95000
342K	210	8.2677	0.030	0.0012	440	17.3228	0.045	0.0018	84	3.307	0.30	0.012	4.0	0.16	58.1	128.2	570000	129000	510000	114000
344K	220	8.6614	0.030	0.0012	460	18.1102	0.045	0.0018	88	3.465	0.30	0.012	4.0	0.16	69.8	154.0	610000	137000	520000	116000
348K	240	9.4488	0.030	0.0012	500	19.6850	0.045	0.0018	95	3.740	0.30	0.012	4.0	0.16	81.1	178.9	735000	163000	600000	134000
352K	260	10.2362	0.035	0.0014	540	21.2598	0.050	0.0020	102	4.016	0.35	0.014	4.0	0.16	98.4	217.0	850000	190000	670000	150000
356K	280	11.0236	0.035	0.0014	580	22.8346	0.050	0.0020	108	4.252	0.35	0.014	4.0	0.16	142.8	315.0	780000	176000	585000	134000

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

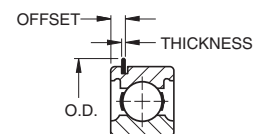
⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

SHIELDS, SEALS AND SNAP RING COMBINATIONS

Shields and Seals					Snap Ring (Wireloc) ⁽¹⁾									
One Shield D	Two Shields DD	One Seal P	One Seal One Shield PD	Two Seals PP	Open Type G	One Shield PG	One Shield DG	Two Shields DDG	O.D.		Thickness		Offset	
									mm	in.	mm	in.	mm	in.
300KD	300KDD	300P	—	—	—	—	—	—	39.3	1 ³⁵ / ₆₄	1.07	0.042	3.05	0.120
301KD	301KDD	—	—	—	—	—	—	—	40.9	1 ³⁹ / ₆₄	1.07	0.042	3.05	0.120
302KD	302KDD	—	—	—	—	—	—	—	46.0	1 ¹³ / ₁₆	1.07	0.042	3.05	0.120
303KD	303KDD	303P	—	303PP	303KG	—	—	—	52.4	2 ¹ / ₁₆	1.07	0.042	3.45	0.136
304KD	304KDD	304P	—	304PP	304KG	—	304KDG	304KDDG	57.5	2 ¹⁷ / ₆₄	1.07	0.042	3.45	0.136
305KD	305KDD	305P	—	305PP	305KG	—	305KDG	305KDDG	67.5	2 ²¹ / ₃₂	1.65	0.065	4.83	0.190
306KD	306KDD	306P	—	306PP	306KG	—	306KDG	306KDDG	78.2	3 ⁵ / ₆₄	1.65	0.065	4.83	0.190
307KD	307KDD	307P	—	307PP	307KG	—	307KDG	307KDDG	86.5	3 ¹³ / ₃₂	1.65	0.065	4.83	0.190
308KD	308KDD	308P	—	308PP	308KG	—	308KDG	308KDDG	96.4	3 ⁵¹ / ₆₄	2.41	0.095	5.59	0.220
309KD	309KDD	309P	—	309PP	309KG	—	309KDG	309KDDG	106.4	4 ³ / ₁₆	2.41	0.095	5.59	0.220
310KD	310KDD	310P	—	310PP	310KG	—	310KDG	310KDDG	116.3	4 ³⁷ / ₆₄	2.41	0.095	5.59	0.220
311KD	311KDD	311NP	311NPD	311NPP	311KG	311NPG	—	311KDDG	129.4	5 ³ / ₃₂	2.77	0.109	6.73	0.265
312KD	312KDD	—	—	312NPP	312KG	—	—	312KDDG	139.7	5 ¹ / ₂	2.77	0.109	6.73	0.265
313KD	313KDD	—	—	—	—	—	—	313KDDG	149.6	5 ⁵⁷ / ₆₄	2.77	0.109	7.54	0.297
314KD	314KDD	—	—	—	—	—	—	—	—	—	—	—	—	—
315KD	315KDD	—	—	—	—	—	—	—	—	—	—	—	—	—
316KD	316KDD	—	—	—	—	—	—	—	—	—	—	—	—	—
317KD	317KDD	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
320KD	320KDD	—	—	—	—	—	—	—	—	—	—	—	—	—

⁽¹⁾ The snap ring is normally packaged separately in the box with the bearing.

Note: "N" prefix indicates a non-removable seal in NP (P) designs.



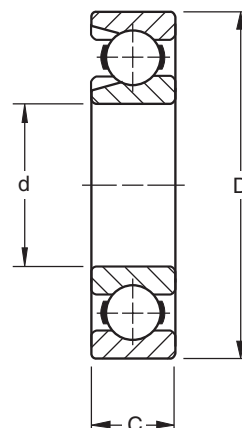
D





MEDIUM 300W SERIES

- A heavier cross section than the 200 Series.
- Capable of carrying considerably heavier radial, thrust and combined loads for a given bore size.
- Capable of withstanding heavy shock loads. A ball bearing of heavier cross section is rarely required.
- 300W Series bearings are dimensionally interchangeable with the 300K Series. However, bearings within the 300W Series are capable of carrying heavier radial loads, due to their larger ball complements.



DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C				Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
	mm	in.	tolerance +0.000 mm to minus		mm	in.	tolerance +0.000 mm to minus		mm	in.	tolerance +0.000 mm to minus		mm	in.	kg	lbs.	N	lbs.	N	lbs.
303W	17	0.6693	0.008	0.0003	47	1.8504	0.011	0.00045	14	0.551	0.12	0.005	1.0	0.039	0.118	0.26	9400	2120	20600	4650
304W	20	0.7874	0.010	0.0004	52	2.0472	0.013	0.0005	15	0.591	0.12	0.005	1.0	0.039	0.154	0.34	11300	2550	23900	5400
305W	25	0.9843	0.010	0.0004	62	2.4409	0.013	0.0005	17	0.669	0.12	0.005	1.0	0.039	0.259	0.57	17300	3900	33900	7650
306W	30	1.1811	0.010	0.0004	72	2.8346	0.013	0.0005	19	0.748	0.12	0.005	1.0	0.039	0.386	0.85	22600	5100	42800	9650
307W	35	1.3780	0.012	0.00047	80	3.1496	0.013	0.0005	21	0.827	0.12	0.005	1.5	0.059	0.513	1.13	29000	6550	51500	11600
308W	40	1.5748	0.012	0.00047	90	3.5433	0.015	0.0006	23	0.906	0.12	0.005	1.5	0.059	0.844	1.86	39000	8000	66000	15000
309W	45	1.7717	0.012	0.00047	100	3.9370	0.015	0.0006	25	0.984	0.12	0.005	1.5	0.059	0.934	2.06	47000	10600	78100	17600
310W	50	1.9685	0.012	0.00047	110	4.3307	0.015	0.0006	27	1.063	0.12	0.005	2.0	0.079	1.207	2.66	56000	12700	92000	20800
311W	55	2.1654	0.015	0.0006	120	4.7244	0.015	0.0006	29	1.142	0.15	0.006	2.0	0.079	1.542	3.40	66000	15000	106000	24000
312W	60	2.3622	0.015	0.0006	130	5.1181	0.018	0.0007	31	1.220	0.15	0.006	2.0	0.079	1.923	4.24	78000	17600	122000	27500
313W	65	2.5591	0.015	0.0006	140	5.5118	0.018	0.0007	33	1.299	0.15	0.006	2.0	0.079	2.413	5.32	96000	21600	144000	32500
314W	70	2.7559	0.015	0.0006	150	5.9055	0.018	0.0007	35	1.378	0.15	0.006	2.0	0.079	2.885	6.36	101000	22800	153000	34500
315W	75	2.9528	0.015	0.0006	160	6.2992	0.025	0.0010	37	1.457	0.15	0.006	2.0	0.079	3.497	7.71	127000	28500	180000	40500
316W	80	3.1496	0.015	0.0006	170	6.6929	0.025	0.0010	39	1.535	0.15	0.006	2.0	0.079	4.154	9.15	142000	32000	195000	44000
317W	85	3.3465	0.020	0.0008	180	7.0866	0.025	0.0010	41	1.614	0.20	0.008	2.5	0.098	4.872	10.74	157000	35500	211000	47500
318W	90	3.5433	0.020	0.0008	190	7.4803	0.030	0.0012	43	1.693	0.20	0.008	2.5	0.098	5.625	12.39	173000	39000	226000	51000
319W	95	3.7402	0.020	0.0008	200	7.8740	0.030	0.0012	45	1.772	0.20	0.008	2.5	0.098	6.514	14.36	191000	43000	239000	54000
320W	100	3.9370	0.020	0.0008	215	8.4646	0.030	0.0012	47	1.850	0.20	0.008	2.5	0.098	7.992	17.62	226000	51000	270000	61000
321W	105	4.1339	0.020	0.0008	225	8.8583	0.030	0.0012	49	1.929	0.20	0.008	2.5	0.098	9.117	20.10	244000	55000	284000	64000
322W	110	4.3307	0.020	0.0008	240	9.4488	0.030	0.0012	50	1.968	0.20	0.008	2.5	0.098	10.81	23.84	266000	60000	302000	68000
324W	120	4.7244	0.020	0.0008	260	10.2362	0.035	0.0014	55	2.165	0.20	0.008	2.5	0.098	15.01	33.10	284000	64000	319000	72000
326W	130	5.1181	0.025	0.0010	280	11.0236	0.035	0.0014	58	2.323	0.25	0.010	2.5	0.098	19.56	43.12	326000	73500	355000	80000
328W	140	5.5118	0.025	0.0010	300	11.8110	0.035	0.0014	62	2.441	0.25	0.010	2.5	0.098	23.06	50.80	410000	91500	400000	90000
330W	150	5.9055	0.025	0.0010	320	12.5984	0.040	0.0016	65	2.559	0.25	0.010	2.5	0.098	26.81	59.10	422000	95000	422000	95000
336W	180	7.0866	0.025	0.0010	380	14.9606	0.040	0.0016	79	3.110	0.25	0.010	2.5	0.098	47.66	105.10	600000	132000	524000	118000
338W	190	7.4803	0.030	0.0012	400	15.7480	0.040	0.0016	78	3.071	0.30	0.012	4.0	0.160	49.21	108.40	720000	160000	580000	129000
340W	200	7.8740	0.030	0.0012	420	16.5354	0.045	0.0018	80	3.150	0.30	0.012	4.0	0.160	57.48	126.60	730000	163000	570000	127000
342W	210	8.2677	0.030	0.0012	440	17.3228	0.045	0.0018	84	3.307	0.30	0.012	4.0	0.160	60.70	133.70	935000	208000	720000	160000
344W	220	8.6614	0.030	0.0012	460	18.1102	0.045	0.0018	88	3.465	0.30	0.012	4.0	0.160	72.10	158.80	880000	196000	700000	150000
348W	240	9.4488	0.030	0.0012	500	19.6850	0.045	0.0018	95	3.740	0.30	0.012	4.0	0.160	84.99	187.20	1200000	260000	850000	186000
352W	260	10.2362	0.035	0.0014	540	21.2598	0.050	0.0020	102	4.016	0.35	0.014	4.0	0.160	103.38	227.70	1400000	310000	950000	208000
356W	280	11.0236	0.035	0.0014	580	22.8346	0.050	0.0020	108	4.252	0.35	0.014	4.0	0.160	146.78	323.30	1350000	300000	855000	190000

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

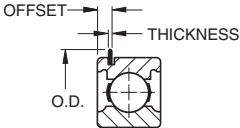
For applications where thrust load exceeds 60% Radial Load, consult your Timken representative.

Listed in the table below are Timken maximum capacity type bearings (300W Series) with shields, seals and snap ring combinations.

The bearing number suffixes denote the following:

- **WD** - filling slot opposite single shield
- **WG** - filling slot opposite snap ring
- **WDD** - two shields
- **WDG** - filling slot and snap ring opposite shield

SHIELDS, SEALS AND SNAP RING COMBINATIONS

Shields and Seals		Snap Ring (Wireloc) ⁽¹⁾								
One Shield D	Two Shields DD	Open Type G	Open Shield DG	Two Shields DDG	O.D.		Thickness		Offset	
					mm	in.	mm	in.	mm	in.
—	—	—	—	—	—	—	—	—	—	—
—	—	304WG	—	—	57.5	2 17/64	1.07	0.042	3.45	0.136
305WD	—	305WG	—	—	67.5	2 21/32	1.65	0.065	4.83	0.190
306WD	306WDD	306WG	306WDG	—	78.2	3 5/64	1.65	0.065	4.83	0.190
307WD	307WDD	307WG	307WDG	—	86.5	3 13/32	1.65	0.065	4.83	0.190
308WD	308WDD	308WG ⁽²⁾	308WDG	—	96.4	3 51/64	2.41	0.095	5.59	0.220
309WD	309WDD	309WG	309WDG	—	106.4	4 3/16	2.41	0.095	5.59	0.220
310WD	310WDD	310WG	310WDG	310WDDG	116.3	4 37/64	2.41	0.095	5.59	0.220
311WD	311WDD	311WG	311WDG	—	129.4	5 3/32	2.77	0.109	6.73	0.265
312WD	312WDD	312WG ⁽³⁾	312WDG	312WDDG	139.7	5 1/2	2.77	0.109	6.73	0.265
313WD	313WDD	313WG	313WDG	313WDDG	149.6	5 57/64	2.77	0.109	7.54	0.297
314WD	314WDD	—	—	—	—	—	—	—	—	—
315WD	315WDD	—	—	—	—	—	—	—	—	—
316WD	316WDD	316WG	—	—	182.6	7 3/16	3.05	0.120	8.61	0.339
317WD	317WDD	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
320WD	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—
—	—	322WG	—	—	252.8	9 61/64	3.05	0.120	8.61	0.339

⁽¹⁾ The snap ring is normally packaged separately in the box with the bearing.

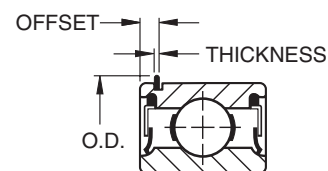
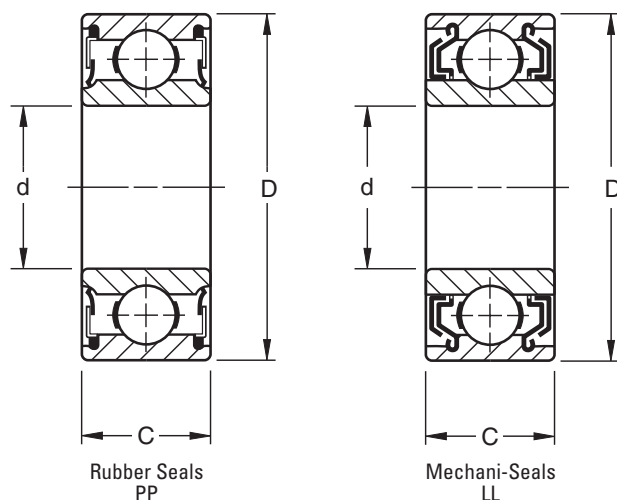
⁽²⁾ Also available as a GW-Type filling slot and snap ring on same side. Also available 308GW2 with 20 mm width.

⁽³⁾ Also available as 312WG-3 with filling slot on same side as snap ring.



MEDIUM, WIDE TYPE W300PP SERIES AND W300KLL SERIES

- The W300PP (rubber seal) Series and the W300KLL (Mechani-Seal) Series have the same bores and outside diameters as standard 300 Series ball bearings.
- Widths are equal to 5300 Series double-row ball bearings.
- Added width provides extra support on shafts and in housings and eliminates the need for locknuts and lockwashers on applications such as electric motors.
- Prepacked with the right amount of long-life, factory-filtered grease.
- These series incorporate the same advantages as the standard width Mechani-Seal and rubber seal bearings.
- Electric motor quality for applications where quietness is a requirement.



DIMENSIONS – TOLERANCES

Bearing Number		Bore d				Outside Diameter D				Width C		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load C _e ⁽⁴⁾		Snap Ring PPG					
Contact Seal PP	Mechani-Seal LL	tolerance +0.000 mm +0.0000" to minus				tolerance +0.000 mm +0.0000" to minus				+0.00 mm -12 mm +0.000" -0.005"										O.D.		Thickness		Offset	
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.	mm	in.	mm	in.	mm	in.
W304PP	—	20	0.7874	0.010	0.0004	52	2.0472	0.013	0.0005	22.22	0.875	1.0	0.039	0.213	0.47	7800	1760	17900	4050	—	—	—	—	—	—
W305PP ⁽²⁾	—	25	0.9843	0.010	0.0004	62	2.4409	0.013	0.0005	25.40	1.000	1.0	0.039	0.354	0.78	12200	2750	26600	6000	67.5	2 ²¹ / ₃₅	1.65	0.065	4.82	0.190
W306PP	—	30	1.1811	0.010	0.0004	72	2.8346	0.013	0.0005	30.18	1.188	1.0	0.039	0.558	1.23	15600	3550	33900	7650	—	—	—	—	—	—
W307PP	W307KLL	35	1.3780	0.012	0.00047	80	3.1496	0.013	0.0005	34.92	1.375	1.5	0.059	0.780	1.72	18400	4150	37700	8500	—	—	—	—	—	—
W308PP ⁽²⁾	W308KLL ⁽²⁾	40	1.5748	0.012	0.00047	90	3.5433	0.015	0.0006	36.53	1.438	1.5	0.059	1.021	2.25	25900	5850	50600	11400	96.4	3 ⁵¹ / ₆₄	2.41	0.095	5.59	0.220
W309PP	W309KLL	45	1.7717	0.012	0.00047	100	3.9370	0.015	0.0006	39.67	1.562	1.5	0.059	1.370	3.02	31500	7100	59000	13400	—	—	—	—	—	—
W310PP	—	50	1.9685	0.012	0.00047	110	4.3307	0.015	0.0006	44.45	1.750	2.0	0.079	1.828	4.03	37700	8500	69000	15600	—	—	—	—	—	—
W311PP ⁽²⁾	W311KLL	55	2.1654	0.015	0.0006	120	4.7244	0.015	0.0006	49.23	1.938 ⁽³⁾	2.0	0.079	2.386	5.26	44400	10000	81000	18300	129.4	5 ³ / ₃₂	2.77	0.109	0.73	0.265
W312PP ⁽²⁾	W312KLL	60	2.3622	0.015	0.0006	130	5.1181	0.018	0.0007	53.98	2.125 ⁽³⁾	2.0	0.079	3.053	6.73	51500	11600	92000	20800	139.7	5 ¹ / ₂	2.77	0.109	0.73	0.265
W313PP	—	65	2.5591	0.015	0.0006	140	5.5118	0.018	0.0007	58.72	2.312 ⁽³⁾	2.0	0.079	3.883	8.56	59500	13400	104000	23600	—	—	—	—	—	—
W314PP	—	70	2.7559	0.015	0.0006	150	5.9055	0.018	0.0007	63.50	2.500 ⁽³⁾	2.0	0.079	4.731	10.43	67000	15300	116000	26000	—	—	—	—	—	—
W315PP	—	75	2.9528	0.015	0.0006	160	6.2992	0.025	0.0010	68.28	2.688 ⁽³⁾	2.0	0.079	5.811	12.81	76000	17300	128000	29000	—	—	—	—	—	—

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Also available with snap ring. To order, add suffix "G" to bearing number. Example: W305PPG.

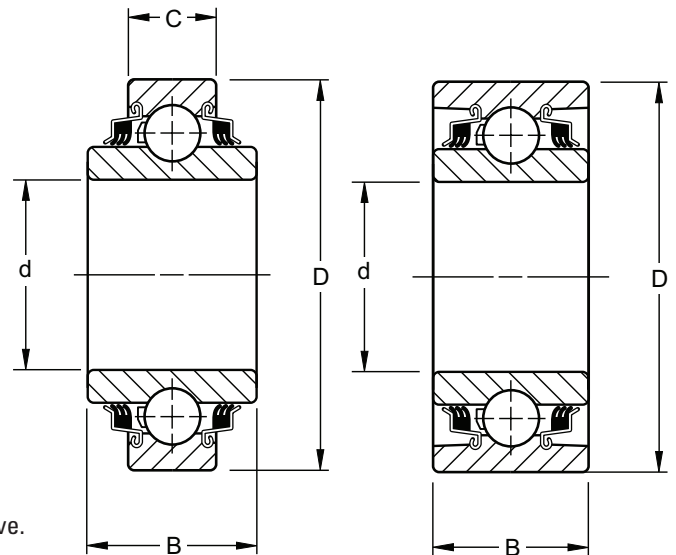
The snap ring is normally packaged separately in the box with the bearing.

⁽³⁾ Width tolerance is .00 mm to -.15 mm (.000" to -.006").

⁽⁴⁾ Based on 10⁶ revolutions of calculated fatigue life.

TRI-PLY SEAL SERIES NON-RELUBRICATABLE TYPE CYLINDRICAL O.D.

- Designed for environments where severe contamination is present, such as agricultural tillage equipment.
- One-piece Tri-Ply seals:
 - Incorporate a highly effective design molded to an exterior shroud cap.
 - Provide exceptionally effective protection against loss of lubricant and entrance of wet or abrasive contaminants.
- Seven-piece Tri-Ply construction:
 - Standard on certain sizes.
 - Shroud cap nests closely with the outside seal.
 - Helps protect the rubber seal members from fiber wrap warpage and abrasion.
 - Balanced design, identified by deep races, large balls and extra-wide or heavy, shock-resistant inner and outer rings.
- Use of Tri-Ply Seal bearings simplifies housing designs and their extra inner ring width provides greater support on the shaft.
- For speeds in excess of 500 RPM, consult your Timken representative.



Type 1

Type 2

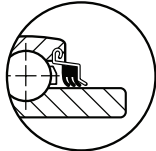


Figure 1

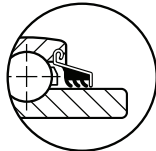


Figure 2

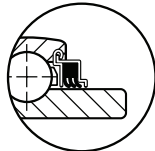


Figure 3

ROUND BORE

Bearing Number	Type-Fig.	Bore d				Outside Diameter D				Ring Widths 0.00, -.12 mm +0.000", -.005"				Balls		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
		mm	in.	mm	in.	mm	in.	mm	in.	B Inner	C Outer	mm	in.	No.	Size	kg	lbs.	N	lbs.	N	lbs.
W208PP10	1-1	38.113	1.5005	0.013	0.0005	80	3.1496	0.013	0.0005	42.87	1.688	21.00	0.827	9	1/2	0.681	1.50	19900	4500	36800	8300
W210PP8	2-	38.860	1.5300	0.250	0.0100	90	3.5433	0.015	0.0006	30.18	1.188	30.18	1.188	10	1/2	0.894	1.97	23000	5200	39900	9000
W210PP2	2-	49.230	1.9380	0.013	0.0005	90	3.5433	0.015	0.0006	30.18	1.188	30.18	1.188	10	1/2	0.767	1.69	23000	5200	39900	9000
W211PP2	2-2	55.580	2.1880	0.015	0.0006	100	3.9370	0.015	0.0006	33.34 ⁽¹⁾	1.312	33.34	1.312	10	9/16	1.056	2.33	29000	6550	48800	11000
W214PP2	2-	70.000	2.7559	0.015	0.0006	125	4.9213	0.020	0.0008	39.69 ⁽¹⁾	1.562	39.69	1.562	10	1 1/16	1.901	4.19	43500	9800	71000	16000
W315PP2	2-	76.342	3.0056	0.015	0.0006	160	6.2992	0.025	0.0010	68.26 ⁽¹⁾	2.688	68.26	2.688	8	1 1/16	5.956	13.13	76800	17300	128000	29000

⁽¹⁾ Inner and outer width tolerance is .00 mm to -.15 mm (.000" to .006").

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

SQUARE BORE

Bearing Number	Type-Fig.	Shaft Size d		Outside Diameter D				Ring Widths 0.00, -.12 mm +0.000", -.005"				Balls		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
		mm	in.	mm	in.	mm	in.	mm	in.	B Inner	C Outer	mm	in.	kg	lbs.	N	lbs.	N	lbs.
W208PP6	1-1	25.4	1	80	3.1496	0.013	0.0005	36.51	1.438	18	0.709	9	1/2	0.73	1.62	19900	4500	36800	8300
W208PP5	1-1	28.6	1 1/8	80	3.1496	0.013	0.0005	36.51	1.438	18	0.709	9	1/2	0.68	1.50	19900	4500	36800	8300
W208PP8	1-1	28.6	1 1/8	80	3.1496	0.013	0.0005	36.51	1.438	30.18	1.188	9	1/2	0.75	1.66	19900	4500	36800	8300
W211PP3	2-2	38.1	1 1/2	100	3.9370	0.015	0.0006	33.34 ⁽¹⁾	1.312	33.34	1.312	10	9/16	1.27	2.79	29000	6550	48800	11000
W211PP5	1-2	38.1	1 1/2	101.6	4.0000	0.015	0.0006	44.45 ⁽¹⁾	1.750	36.52	1.438	10	7/16	1.58	3.48	29000	6550	48800	11000

⁽¹⁾ Inner and outer width tolerance is .00 mm to -.15 mm (.000" to .006").

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.



TRI-PLY SEAL SERIES NON-RELUBRICATABLE TYPE SPHERICAL O.D.

- Similar in design and features to bearings shown on D27, except for a spherical O.D.

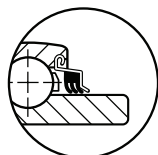


Figure 1

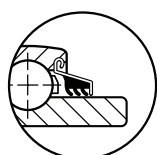


Figure 2

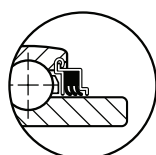
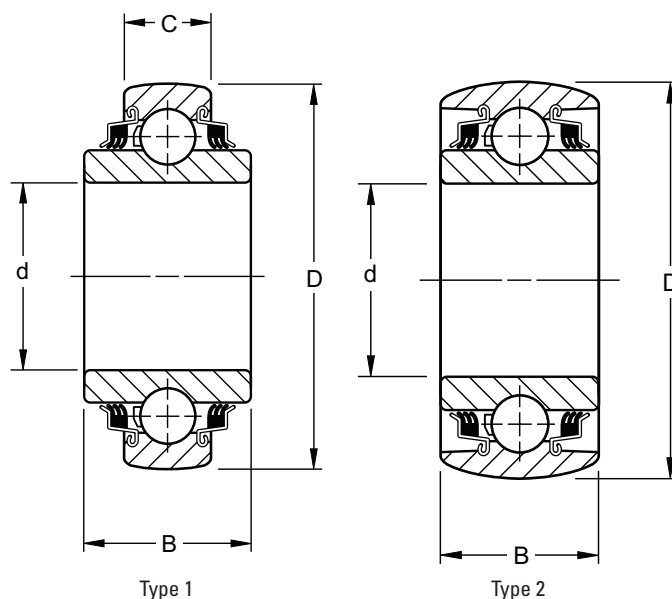


Figure 3



Type 1

Type 2

ROUND BORE

Bearing Number	Type-Fig.	Bore d		tolerance +0.000 mm +0.0000" to minus		Outside Diameter D		tolerance +0.000 mm +0.0000" to minus		Ring Widths +0.00, -.12 mm +0.000", -.005"		Balls Stamping Size		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
		mm	in.	mm	in.	mm	in.	mm	in.	B Inner	C Outer	No.	Size	kg	lbs.	N	lbs.	N	lbs.
W208PPB7	1-1	30.170	1.1880	0.013	0.0005	80	3.150	0.013	0.0005	30.18	1.188	9	1/2 80MS	0.640	1.41	19900	4500	36800	8300
W208PPB2	1-	38.113	1.5005	0.013	0.0005	80	3.150	0.013	0.0005	42.96	1.688	9	1/2 80MS	0.721	1.59	19900	4500	36800	8300
W208PPB23	1-1	38.113	1.5005	0.013	0.0005	80	3.150	0.013	0.0005	42.96	1.688	9	15/32 80MS	0.681	1.50	15600	3550	32000	7200
W209PPB2	2-2	45.000	1.7717	0.013	0.0005	85	3.346	0.015	0.0006	30.18	1.188	9	1/2 85MS	0.653	1.44	20200	4550	36800	8300
W209PPB4	2-2	39.000	1.5350	0.250	0.0100	85	3.346	0.015	0.0006	30.18	1.188	9	1/2 85MS	0.748	1.65	20200	4550	36800	8300
W210PPB2	2-	49.230	1.9380	0.013	0.0005	90	3.543	0.015	0.0006	30.18	1.188	10	1/2 90MS	0.708	1.56	23000	5200	39900	9000
W210PPB5	2-	45.340	1.7850	0.250	0.0100	90	3.543	0.015	0.0006	30.18	1.188	10	1/2 90MS	0.794	1.75	23000	5200	39900	9000
W211PPB2	2-2	55.580	2.1880	0.015	0.0006	100	3.937	0.015	0.0006	33.34 ⁽¹⁾	1.312	10	9/16 100MS	0.966	3.63	29000	6550	48800	11000
W214PPB2	2-	70.000	2.7559	0.015	0.0006	125	4.921	0.02	0.0008	39.69 ⁽¹⁾	1.562	10	11/16 —	1.796	3.96	43500	9800	71000	16000
W214PPB9	1-	70.260	2.7660	0.025	0.0010	125	4.921	0.02	0.0008	44.45 ⁽¹⁾	1.750	10	11/16 —	1.796	3.96	43500	9800	71000	16000

⁽¹⁾ Inner and outer width tolerance is .00 mm to -.15 mm (.000" to -.006").

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

SQUARE BORE

Bearing Number	Type-Fig.	Shaft Size		tolerance +0.000 mm +0.0000" to minus		Outside Diameter D		tolerance +0.000 mm +0.0000" to minus		Ring Widths +0.00, -.12 mm +0.000", -.005"		Balls Stamping Size		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
		mm	in.	mm	in.	mm	in.	mm	in.	B Inner	C Outer	No.	Size	mm	in.	kg	lbs.	N	lbs.
W208PPB13	1-1	22.2	7/8			80	3.1496	0.013	0.0005	36.53	1.438	9	1/2 80MS	0.735	1.62	19900	4500	36800	8300
W208PPB6	1-1	25.4	1			80	3.1496	0.013	0.0005	36.53	1.438	9	1/2 80MS	0.721	1.59	19900	4500	36800	8300
W208PPB5	1-1	28.6	1 1/8			80	3.1496	0.013	0.0005	36.53	1.438	9	1/2 80MS	0.667	1.47	19900	4500	36800	8300
W209PPB5	1-2	31.8	1 1/4			85	3.3465	0.015	0.0006	36.53	1.438	9	1/2 85MS	0.794	1.75	20200	4550	36800	8300
W210PPB4	2-	28.6	1 1/8			90	3.5433	0.015	0.0006	30.18	1.188	10	1/2 90MS	0.957	2.11	23000	5200	39900	9000
W210PPB6	1-	28.6	1 1/8			90	3.5433	0.015	0.0006	36.53	1.438	10	1/2 90MS	1.021	2.25	23000	5200	39900	9000
W211PPB3	2-2	38.1	1 1/2			100	3.9370	0.015	0.0006	33.34 ⁽¹⁾	1.312	10	9/16 100MS	1.207	2.66	29000	6550	48800	11000

⁽¹⁾ Inner and outer width tolerance is .00 mm to -.15 mm (.000" to -.006").

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

TRI-PLY SEAL SERIES RELUBRICATABLE TYPE

- Similar in design and features to those shown on the preceding two pages.
- Includes a provision for relubrication.

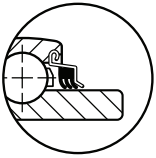


Figure 1

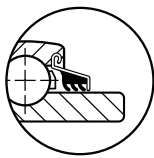


Figure 2

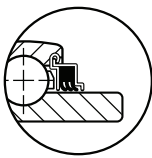
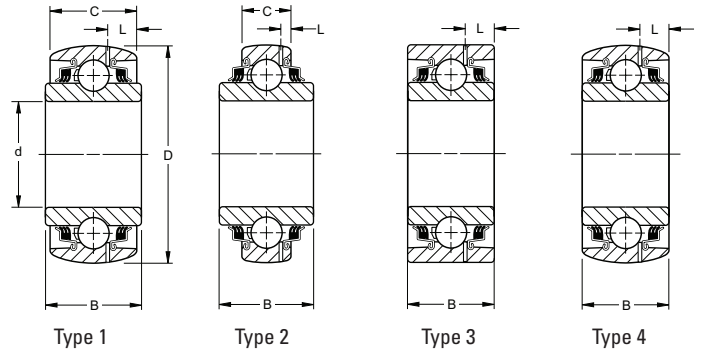


Figure 3



ROUND BORE

Bearing Number	Type-Fig.	Bore d				Outside Diameter D				Ring Width +0.00 mm, -0.12 mm +0.000", -.005"				Balls			L		Wt.		Static Load Rating C ₀	Extended Dynamic Load C _E ⁽³⁾			
		tolerance +0.000 mm +0.0000" to minus		tolerance +0.000 mm +0.0000" to minus		B Inner		C Outer		No.	Size	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.					
ROUND BORE		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.												
GW209PPB4	4-2	39.00	1.5350	0.250	0.0100	85	3.3465	0.015	0.0006	30.18	1.188	30.18	1.188	9	1/2	8.79	0.346	0.748	1.65	20200	4550	36800	8300		
GW209PPB2	4-2	45.00	1.7717	0.013	0.0005	85	3.3465	0.015	0.0006	30.18	1.188	30.18	1.188	9	1/2	8.79	0.346	0.653	1.44	20200	4550	36800	8300		
GW209PPB11	2-2	45.24	1.7810	0.250	0.0100	85	3.3465	0.015	0.0006	36.53	1.438	22.00	0.866	9	1/2	4.55	0.179	0.621	1.37	20200	4550	36800	8300		
GW210PP3	3-	37.53	1.4065	0.013	0.0005	90	3.5433	0.015	0.0006	30.18	1.188	30.18	1.188	10	1/2	9.02	0.355	1.021	2.25	23000	5200	39900	9000		
GW210PPB5	4-	45.34	1.7850	0.250	0.0100	90	3.5433	0.015	0.0006	30.18	1.188	30.18	1.188	10	1/2	9.02	0.355	0.794	1.75	23000	5200	39900	9000		
GW210PPB2	4-	49.23	1.9380	0.013	0.0005	90	3.5433	0.015	0.0006	30.18	1.188	30.18	1.188	10	1/2	9.02	0.355	0.681	1.50	23000	5200	39900	9000		
GW210PP9 ⁽¹⁾	2-	49.40	1.9450	0.180	0.0070	90	3.5433	0.015	0.0006	36.53	1.438	23.00	0.906	10	1/2	4.70	0.185	0.794	1.75	23000	5200	39900	9000		
GW211PPB13	2-2	45.34	1.7850	0.250	0.0100	100	3.9370	0.015	0.0006	33.34	1.312	25.00	0.984	10	9/16	5.82	0.299	0.916	2.02	29000	6550	48800	11000		
GW211PPB10	4-2	49.23	1.9380	0.015	0.0006	100	3.9370	0.015	0.0006	33.34 ⁽²⁾	1.312	33.34	1.312	10	9/16	9.96	0.392	1.025	2.26	29000	6550	48800	11000		
GW211PPB14	2-2	51.18	2.0150	0.250	0.0100	100	3.9370	0.015	0.0006	33.34 ⁽²⁾	1.312	25.00	0.984	10	9/16	5.82	0.229	0.907	2.00	29000	6550	48800	11000		
GW211PP2	3-2	55.58	2.1880	0.015	0.0006	100	3.9370	0.015	0.0006	33.34 ⁽²⁾	1.312	33.34	1.312	10	9/16	9.96	0.392	1.361	3.00	29000	6550	48800	11000		
GW211PPB2	4-2	55.58	2.1880	0.015	0.0006	100	3.9370	0.015	0.0006	33.34 ⁽²⁾	1.312	33.34	1.312	10	9/16	9.96	0.392	1.188	2.62	29000	6550	48800	11000		
GW211PPB8	2-2	55.58	2.1880	0.015	0.0006	100	3.9370	0.015	0.0006	33.34 ⁽²⁾	1.312	25.00	0.984	10	9/16	5.82	0.229	0.839	1.85	29000	6550	48800	11000		
GW211PPB9	2-2	55.75	2.1950	0.180	0.0070	100	3.9370	0.015	0.0006	39.69 ⁽²⁾	1.562	25.00	0.984	10	9/16	5.41	0.213	0.916	2.02	29000	6550	48800	11000		
GW214PPB6	2-	68.28	2.6881	0.015	0.0006	125	4.9213	0.020	0.0008	68.26 ⁽²⁾	2.688	28.00	1.102	10	1 1/16	5.54	0.218	2.155	4.75	43500	9800	71000	16000		
GW214PP2	3-	70.00	2.7559	0.015	0.0006	125	4.9213	0.020	0.0008	39.69 ⁽²⁾	1.562	39.69	1.562	10	1 1/16	10.52	0.414	1.901	4.19	43500	9800	71000	16000		
GW214PPB2	4-	70.00	2.7559	0.015	0.0006	125	4.9213	0.020	0.0008	39.69 ⁽²⁾	1.562	39.69	1.562	10	1 1/16	10.52	0.414	1.796	3.96	43500	9800	71000	16000		
GW214PPB5	1-	70.00	2.7559	0.015	0.0006	125	4.9213	0.020	0.0008	61.90 ⁽²⁾	2.438	39.69	1.562	10	1 1/16	10.52	0.414	2.155	4.75	43500	9800	71000	16000		
GW216PPB3	2-3	76.45	3.0100	0.250	0.0100	140	5.5118	0.020	0.0008	63.50 ⁽²⁾	2.500	30.00	1.181	11	23/32	6.10	0.240	—	—	54000	12200	81000	18300		
GW216PP5	3-3	63.88	2.5150	0.250	0.0100	140	5.5118	0.020	0.0008	63.50 ⁽²⁾	2.500	30.00	1.181	11	23/32	6.10	0.240	—	—	54000	12200	81000	18300		

SQUARE BORE

		Shaft Size																			
SQUARE BORE		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.	
GW208PPB6	2-1	25.4	1	80	3.1496	0.013	0.0005	36.53	1.438	21.00	0.827	9	1/2	5.66	0.223	0.794	1.75	19900	4500	36800	8300
GW208PPB5	2-1	28.6	1 1/8	80	3.1496	0.013	0.0005	36.53	1.438	21.00	0.827	9	1/2	5.66	0.223	0.667	1.47	19900	4500	36800	8300
GW208PPB8	1-1	28.6	1 1/8	80	3.1496	0.013	0.0005	36.53	1.438	30.18	1.188	9	1/2	8.36	0.329	0.794	1.75	19900	4500	36800	8300
GW208PPB17	3-1	28.6	1 1/8	80	3.3755	0.013	0.0005	36.53	1.438	30.18	1.188	9	1/2	8.28	0.326	0.925	2.04	19900	4500	36800	8300
GW209PPB5	1-2	31.8	1 1/4	85	3.3456	0.015	0.0006	36.53	1.438	30.18	1.188	9	1/2	8.79	0.346	0.794	1.75	20200	4550	36800	8300
GW209PPB8	2-2	31.8	1 1/4	85	3.3456	0.015	0.0006	36.53	1.438	22.00	0.866	9	1/2	4.55	0.179	0.748	1.65	20200	4550	36800	8300
GW210PP4	3-	28.6	1 1/8	90	3.5433	0.015	0.0006	30.18	1.188	30.18	1.188	10	1/2	9.02	0.355	1.048	2.31	23000	5200	39900	9000
GW210PPB4	4-	28.6	1 1/8	90	3.5433	0.015	0.0006	30.18	1.188	30.18	1.188	10	1/2	9.02	0.355	0.794	1.75	23000	5200	39900	9000
GW211PP3	3-2	38.1	1 1/2	100	3.9370	0.015	0.0006	33.34 ⁽²⁾	1.312	33.34	1.312	10	9/16	9.96	0.392	1.266	2.79	29000	6550	48800	11000
GW211PPB3	4-2	38.1	1 1/2	100	3.9370	0.015	0.0006	33.34 ⁽²⁾	1.312	33.34	1.312	10	9/16	9.96	0.392	1.207	2.66	29000	6550	48800	11000
GW211PP17	3-2	38.1	1 1/2	100	3.9370	0.015	0.0006	44.45 ⁽²⁾	1.750	33.34	1.312	10	9/16	9.96	0.392	1.188	2.62	29000	6550	48800	11000
GW214PPB4	4-	50.8	2	125	4.9213	0.020	0.0008	39.69 ⁽²⁾	1.562	39.69	1.562	10	1 1/16	10.52	0.414	2.155	4.75	43500	9800	71000	16000
GW216PPB4	2-3	44.4	1 3/4	140	5.5118	0.020	0.0008	63.50 ⁽²⁾	2.500	30.00	1.181	11	23/32	6.10	0.240	—	—	54000	12200	81000	18300
GW216PP2 ⁽¹⁾	2-3	57.2	2 1/4	140	5.5118	0.020	0.0008	63.50 ⁽²⁾	2.500	30.00	1.181	11	23/32	6.10	0.240	—	—	54000	12200	81000	18300
GW226PPB2	2-3	57.2	2 1/4	140	5.5118	0.020	0.0008	63.50 ⁽²⁾	2.500	30.00	1.181	11	23/32	6.10	0.240	—	—	54000	12200	81000	18300

⁽¹⁾ Cylindrical O.D.

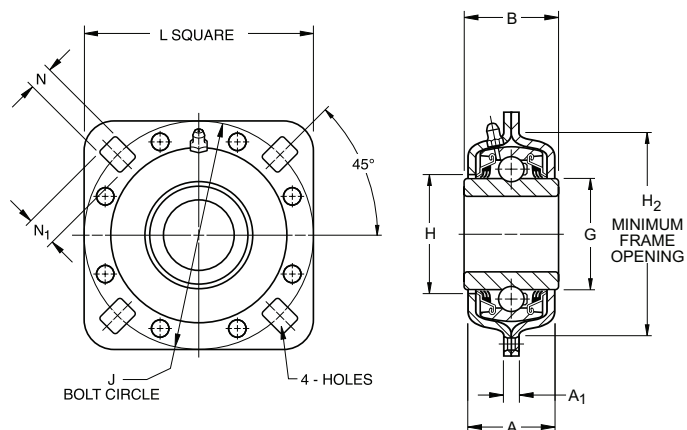
⁽²⁾ Inner and outer width tolerance is .00 mm to -.15 mm (.000" to -.006").

⁽³⁾ Based on 10⁶ revolutions of calculated fatigue life.



TRI-PLY SERIES DISK HARROW UNITS

- The answer to versatility in design.
- For extra-special design needs, this unit incorporates a Tri-Ply bearing mounted in two stampings, riveted together with two o-rings.
- Available in two basic size groups, one incorporating a 209 and the other a 211 bearing.
- Both size groups offer these features:
 - Dynamic alignment capability ($\pm 3^\circ$).
 - Shroud effect from close clearance of stamping to inner ring.
 - Relubrication.
 - One unit piece for ease of handling and assembly.
 - Fitting flange mates with outer ring milled recess, preventing possibility of outer ring circumferential movement.
 - Stampings are case hardened to minimize wear.
 - Units are equipped with nylon retainer, molded one-piece seals and patented notched outer ring seal grooves.



209 METRIC SERIES

Unit Number	Shaft Diameter	B	H ₂	J	N ₁	N	L	G Ref.	H	A	A ₁	Static Load Rating C ₀	Extended Dynamic Load Rating C _E ⁽¹⁾
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	N	N
DHU 30S-209	30 SQ.	43	101.6	127.0	16.7	13.5	127.0	57.9	59.9	42.5	6.7	18000	36500
DHU 40R-209	40 SQ.	43	101.6	127.0	16.7	13.5	127.0	57.9	59.9	42.5	6.7	18000	36500
DHU 45R-209	45 RD.	43	101.6	127.0	16.7	13.5	127.0	57.9	59.9	42.5	6.7	18000	36500

211 METRIC SERIES

DHU 40S-211	40 SQ.	51	113.5	139.7	15.1	13.5	139.7	69.7	73.0	49.2	7.5	25000	48000
DHU 50R-211	50 RD.	51	113.5	139.7	15.1	13.5	139.7	69.7	73.0	49.2	7.5	25000	48000
DHU 55R-211	55 RD.	51	113.5	139.7	15.1	13.5	139.7	69.7	73.0	49.2	7.5	25000	48000

209 SERIES

Unit Number	Shaft Diameter	B	H ₂	J	N ₁	N	L	G Ref.	H	A	A ₁	Static Load Rating C ₀	Extended Dynamic Load Rating C _E ⁽¹⁾
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	lbs.	lbs.
DHU 1½ R-209	1 ½ RD.	1 11/16	4	5	21/32	17/32	5	2.279	2 23/64	1 43/64	17/64	4000	8150
DHU 1½ S-209	1 ½ SQ.	1 11/16	4	5	21/32	17/32	5	2.279	2 23/64	1 43/64	17/64	4000	8150
DHU 1¾ R-209	1 ¾ RD.	1 11/16	4	5	21/32	17/32	5	2.279	2 23/64	1 43/64	17/64	4000	8150
DHU 1¼ S-209	1 ¼ SQ.	1 ¾	4	5	21/32	17/32	5	2.279	2 23/64	1 43/64	17/64	4000	8150
DHU 491 A	1 ¾ RD.	1 ¾	4	5	21/32	17/32	5	2.279	2 23/64	1 43/64	17/64	4000	8150

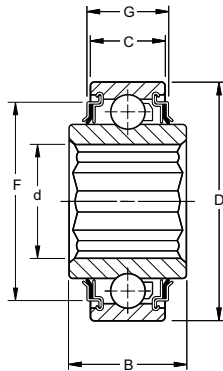
211 SERIES

DHU 1½ S-211	1 ½ SQ.	2	4	5 ½	19/32	17/32	5 ½	2.746	2 7/8	1 15/16	19/64	5600	10800
DHU 1¾ R-211	1 ¾ RD.	2 1/8	4	5 ½	19/32	17/32	5 ½	2.746	2 7/8	1 15/16	19/64	5600	10800
DHU 2¾ R-211	2 ¾ RD.	2 3/16	4	5 ½	19/32	17/32	5 ½	2.746	2 7/8	1 15/16	19/64	5600	10800

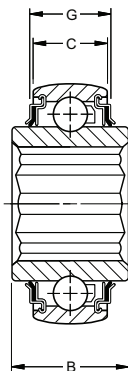
⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

HEX BORE BEARINGS

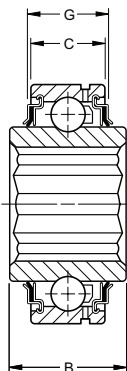
- Designed to be used for outer or inner ring rotation in low-speed, moderately-loaded applications, primarily in agricultural implements and conveyors.
- Tolerances of the hex bore are suitable for mounting on cold rolled hex shafting.
- Main advantage is ease of mounting. Except for axial positioning by adjacent parts, no collars, setscrews or other locking devices are required to lock the inner ring to the hex shaft.
- Utilize the R-Type shroud seal.



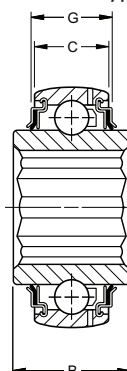
Type 1



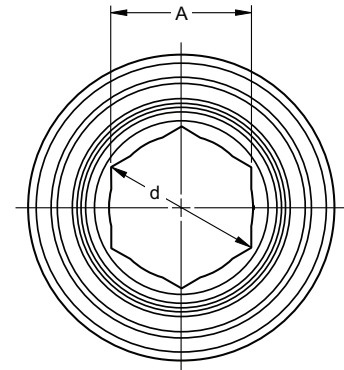
Type 2



Type 3



Type 4



Bearing Number	Type	Hex Shaft Size	A		Hex Bore		Outside Diameter		Width		F		G		Balls		Wt.		Static Load Rating C ₀	Extended Dynamic Load Rating C _e ⁽³⁾		
			Across Flats	in.	mm	in.	mm	in.	+0.000 mm +0.0000" to minus	mm	in.	+0.000 mm +0.0000" to minus	mm	in.	mm	in.	No.	Size			kg	lbs.
			mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	in.	kg	lbs.	N	lbs.	

NON-RELUBRICATABLE TYPE

202KRR3	1	9/16	14.30	0.563	0.13	0.005	16.46	0.648	35	1.3780	0.013	0.0005	11	0.433	13.00	0.512	—	—	—	—	8	7/32	0.054	0.12	4400	1000	10600	2360
204KRR2	1	11/16	17.65	0.695	0.13	0.005	20.22	0.796	47	1.8504	0.013	0.0005	14	0.551	20.96	0.825	—	—	—	—	8	5/16	0.145	0.32	6200	1400	14300	3200
205KRR2	1	7/8	22.25	0.876	0.13	0.005	25.65	1.010	52	2.0472	0.013	0.0005	15	0.591	25.40	1.000	—	—	—	—	9	5/16	0.200	0.44	6950	1560	15600	3450
205KRRB2	2	7/8	22.25	0.876	0.13	0.005	25.65	1.010	52	2.0472	0.013	0.0005	15	0.591	25.40	1.000	—	—	—	—	9	5/16	0.200	0.44	6950	1560	15600	3450
205PPB13 ⁽¹⁾	2	7/8	22.25	0.876	0.13	0.005	25.65	1.010	52	2.0472	0.013	0.0005	15	0.591	25.40	1.000	42.67	1.680	20.19	0.795	9	5/16	0.200	0.44	6950	1560	15600	3450
206KPP3 ⁽¹⁾	1	1	25.43	1.001	0.13	0.005	29.31	1.154	62	2.4409	0.013	0.0005	16	0.630	24.00	0.945	52.07	2.050	19.56	0.770	9	3/8	0.345	0.76	10000	2280	21600	4800
206KPPB3 ⁽¹⁾	2	1	25.43	1.001	0.13	0.005	29.31	1.154	62	2.4409	0.013	0.0005	16	0.630	24.00	0.945	52.07	2.050	19.56	0.770	9	3/8	0.345	0.76	10000	2280	21600	4800
206KRR6	1	1	25.43	1.001	0.13	0.005	29.31	1.154	62	2.4409	0.013	0.0005	16	0.630	24.00	0.945	52.07	2.050	19.56	0.770	9	3/8	0.341	0.75	10000	2280	21600	4800
206KRRB6	2	1	25.43	1.001	0.13	0.005	29.31	1.154	62	2.4409	0.013	0.0005	16	0.630	24.00	0.945	52.07	2.050	19.56	0.770	9	3/8	0.341	0.75	10000	2280	21600	4800
207KPP3	1	1 1/4	31.77	1.251	0.13	0.005	36.40	1.433	72	2.8346	0.013	0.0005	17	0.669	37.70	1.484	60.35	2.376	19.68	0.775	9	7/16	0.454	1.00	13700	3050	28500	6400
207KPPB3	2	1 1/4	31.77	1.251	0.13	0.005	36.40	1.433	72	2.8346	0.013	0.0005	17	0.669	37.70	1.484	60.35	2.376	19.68	0.775	9	7/16	0.395	0.87	13700	3050	28500	6400
207KRRB9	2	1 1/8	28.60	1.126	0.13	0.005	32.97	1.298	72	2.8346	0.013	0.0005	17	0.669	37.70	1.484	60.35	2.376	19.68	0.775	9	7/16	0.454	1.00	13700	3050	28500	6400
207KRRB12	2	1 1/8	28.60	1.126	0.13	0.005	32.97	1.298	72	2.8346	0.013	0.0005	17	0.669	37.70	1.484	60.35	2.376	19.68	0.775	9	7/16	0.395	0.87	13700	3050	28500	6400
207KRR17	1	1 1/4	31.77	1.251	0.13	0.005	36.65	1.443	72	2.8346	0.013	0.0005	17	0.669	37.70	1.484	60.35	2.376	19.68	0.775	9	7/16	0.395	0.87	13700	3050	28500	6400
207KRRB17	2	1 1/4	31.77	1.251	0.13	0.005	36.65	1.443	72	2.8346	0.013	0.0005	17	0.669	37.70	1.484	60.35	2.376	19.68	0.775	9	7/16	0.395	0.87	13700	3050	28500	6400
W208PPB16 ⁽¹⁾	2	1 1/4	31.77	1.251	0.13	0.005	36.65	1.443	80	3.1496	0.013	0.0005	18	0.709	36.53	1.438	68.43	2.694	25.27	0.995	9	1/2	0.658	1.45	17600	4000	36000	8150
W208KRRB6	2	1 3/8	34.95	1.376	0.13	0.005	40.30	1.587	80	3.1496	0.013	0.0005	21	0.827	36.53	1.438	68.43	2.694	23.54	0.927	9	1/2	—	—	17600	4000	36000	8150
W208KRR8	1	1 1/4	31.77	1.251	0.13	0.005	36.65	1.443	80	3.1496	0.013	0.0005	18	0.709	36.53	1.438	68.43	2.694	20.45	0.805	9	1/2	0.658	1.45	17600	4000	36000	8150
209KRRB2	2	1 1/2	38.12	1.501	0.13	0.005	43.99	1.732	85	3.3456	0.015	0.0006	19	0.748	30.00	1.181	73.86	2.908	23.27	0.916	9	1/2	0.576	1.27	17600	4000	36000	8150
W210PPB7 ⁽¹⁾	2	1 5/8	41.30	1.626	0.13	0.005	47.65	1.876	90	3.5433	0.015	0.0006	30.18	1.188	30.18	1.188	—	—	—	—	10	1/2	0.794	1.75	19600	4500	39000	8800

RELUBRICATABLE TYPE

G206KPP4 ⁽¹⁾	3	1	25.43	1.001	0.13	0.005	29.26	1.152	62	2.4409	0.013	0.005	18	0.709	24.00	0.945	—	—	—	—	9	3/8	0.281	0.62	10000	2280	21600	4800
G206KPPB4 ⁽¹⁾	4	1	25.43	1.001	0.13	0.005	29.26	1.152	62	2.4409	0.013	0.005	18	0.709	24.00	0.945	52.07	2.050	19.56	0.770	9	3/8	0.277	0.61	10000	2280	21600	4800
G206KRRB6	4	1	25.43	1.001	0.13	0.005	29.26	1.152	62	2.4409	0.013	0.005	18	0.709	24.00	0.945	52.07	2.050	19.56	0.770	9	3/8	0.268	0.59	10000	2280	21600	4800
G207KPPB2 ⁽¹⁾	4	1 1/8	28.60	1.126	0.13	0.005	32.97	1.298	72	2.8346	0.013	0.005	19	0.748	37.70	1.484	60.32	2.375	25.40	1.000	9	7/16	0.454	1.00	13700	3050	28500	6400
GW208KRRB5	4	1 1/4	31.77	1.251	0.13	0.005	36.65	1.443	80	3.1496	0.013	0.005	21	0.827	36.51	1.438	60.35	2.694	22.43	0.883	9	1/2	0.635	1.40	17600	4000	36000	8150
GW208PPB22 ⁽¹⁾	2	1 1/4	31.88	1.255	0.13	0.005	36.75	1.447	80	3.1496	0.013	0.005	21	0.827	36.51	1.438	52.07	2.050	28.32	1.115	9	1/2	0.681	1.50	17600	4000	36000	8150
GC1200KPPB2 ⁽¹⁾	1	3/4	44.48	1.751	0.13	0.005	51.31	2.020	100	3.9370	0.015	0.0006	25 ⁽²⁾	0.984	57.15	2.250	86.11	3.390	29.01	1.142	10	9/16	1.521	3.35	19600	4500	39000	8800

⁽¹⁾ Tri-Ply Seal bearing.

⁽²⁾ Inner and outer ring tolerance is .00 mm to -.15 mm (.000" to -.006").

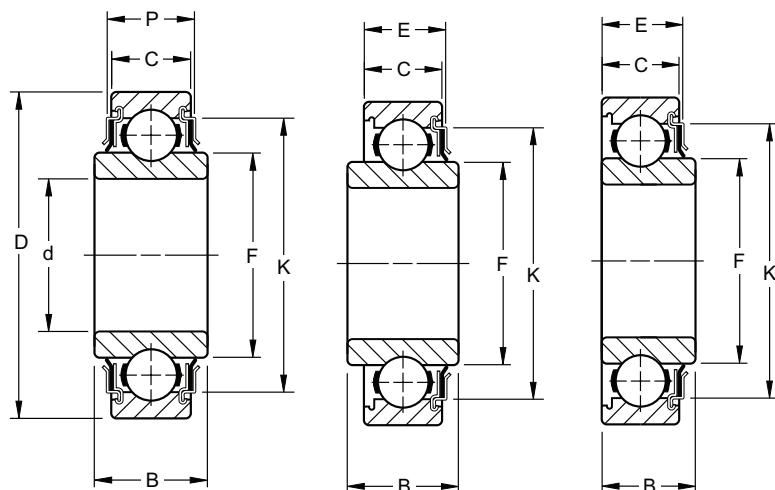
⁽³⁾ Based on 10⁶ revolutions of calculated fatigue life.



BALL BEARINGS

LIGHT 200 SERIES R-SEAL TYPE

- Consists of deep groove, Conrad-type bearings.
- Incorporates a flare-out, contact R-Seal.
- Synthetic rubber impregnated washer is enclosed between two metal shields, providing excellent protection against contaminants.
- Because of the heavy contact seal, this series is normally employed in moderate-speed service.



Type 1

Type 2

Type 3

DIMENSIONS – TOLERANCES

Bearing Type Number		Bore d				Outside Diameter D				Width				E		P		K		Fillet Radius ⁽¹⁾		F		Static Load Rating C_0		Extended Dynamic Load Rating C_E ⁽³⁾	
		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	N	lbs.	N	lbs.
203KR2	3	15.883	0.6253	0.008	0.0003	40	1.5748	0.013	0.0005	14.00	0.551	12	0.472	—	—	—	—	—	—	0.6	0.024	24.44	0.962	4700	1060	10900	2450
203KRR2	1	16.256	0.6400	0.130	0.0005	40	1.5748	0.013	0.0005	18.29	0.720	12	0.472	—	—	—	—	—	—	0.6	0.024	24.44	0.962	4700	1060	10900	2450
203KRR5	1	13.081	0.5150	0.130	0.0005	40	1.5748	0.013	0.0005	18.29	0.720	12	0.472	—	—	—	—	—	—	0.6	0.024	24.44	0.962	4700	1060	10900	2450
203KRR7	1	17	0.6693	0.008	0.0003	40	1.5748	0.013	0.0005	16.61	0.654	12	0.472	—	—	—	—	—	—	0.6	0.024	24.44	0.962	4700	1060	10900	2450
204KR2	3	19.063	0.7505	0.013	0.0005	45.225	1.7805	0.013	0.0005	15.49	0.610	15.49	0.610	—	—	—	—	—	—	1	0.039	28.73	1.131	6500	1460	14400	3250
204KRR3	1	20	0.7874	0.010	0.0004	47	1.8504	0.013	0.0005	17.75	0.699	14	0.551	—	—	—	—	—	—	1	0.039	28.73	1.131	6500	1460	14400	3250
205KR4	2	25.413	1.0005	0.013	0.0005	52	2.0472	0.013	0.0005	25.40	1.000	15	0.591	15.875	0.625	—	—	42.67	1.68	1	0.039	33.81	1.331	7800	1760	16000	3600
206KR7	2	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	24.00	0.945	16	0.630	17.780	0.700	—	—	52.07	2.05	1	0.039	40.28	1.586	11300	2550	21800	4900
206KRR8	1	30	1.1811	0.013	0.0004	62	2.4409	0.013	0.0005	24.00	0.945	16	0.630	—	—	19.56	0.77	52.07	2.05	1	0.039	39.09	1.539	11300	2250	21800	4900
207KRR	1	35	1.3780	0.013	0.0005	72	2.8346	0.013	0.0005	25.00	0.984	17	0.669	—	—	19.68	0.775	60.35	2.376	1	0.039	46.94	1.848	15000	3450	29000	6550
208KRR2	1	40	1.5748	0.013	0.0005	80	3.1496	0.013	0.0005	27.00	1.063	21	0.827	—	—	21.31	0.839	68.45	2.695	1	0.039	52.25	2.057	19800	4460	36200	8130
209KRR3	1	45	1.7717	0.013	0.0005	85	3.3465	0.013	0.0005	27.00	1.063	21	0.827	—	—	24.18	0.952	72.42	2.851	1	0.039	57.89	2.279	20500	4600	36300	8160
210KRR	1	50	1.9685	0.013	0.0005	90	3.5433	0.015	0.0006	30.00	1.181	20	0.787	—	—	24.03	0.946	77.60	3.055	1	0.039	62.81	2.473	23100	5200	40000	9000
212KRR	1	60	2.3622	0.015	0.0006	110	4.3307	0.015	0.0006	36.00 ⁽²⁾	1.417	22	0.886	—	—	30.02	1.182	99.87	3.932	1	0.039	76.45	3.010	35500	8000	58600	13200

⁽¹⁾ Maximum shaft or housing fillet radius which bearing corners will clear.

⁽²⁾ Inner and outer width tolerance is .00 mm to -.15 mm (.000" to .0006").

⁽³⁾ Based on 10⁶ revolutions of calculated fatigue life.

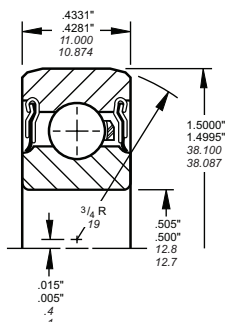
FARM RADIAL SPECIALS

BEARING NUMBER 202NPP9

SPECIAL FEATURES

- 1/2 in. Bore
- O.D. corner turned to a 3/4 in. radius
- Special heavy stiff seals of Buna-N rubber
- Crimped-in seal

TYPICAL APPLICATIONS Cam Follower

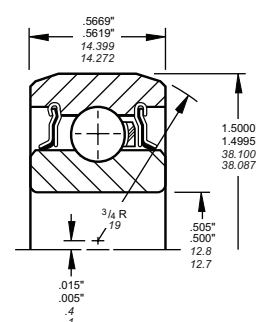


BEARING NUMBER 202KRR7

SPECIAL FEATURES

- 1/2 in. Bore
- 1 1/2 in. O.D.
- Thick outer ring

TYPICAL APPLICATIONS Cam Follower



Continued on the next page.

FARM RADIAL SPECIALS (continued)

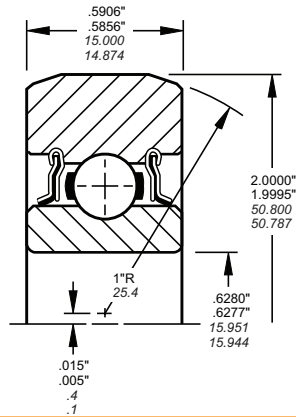
BEARING NUMBER 203KRR3

SPECIAL FEATURES

- $\frac{5}{8}$ in. Bore
- 2 in. O.D.
- Thick outer ring

TYPICAL APPLICATIONS

Cam Follower
Guide Rolls for Baler Plunger



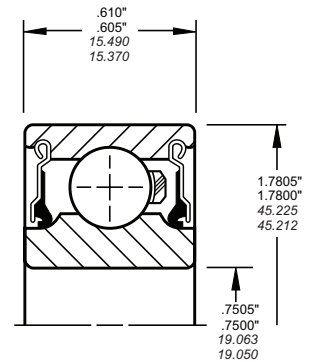
BEARING NUMBER P204RR6

SPECIAL FEATURES

- $\frac{3}{4}$ in. Bore
- 1.7805 in. O.D.
- Replaces 204KRNP2

TYPICAL APPLICATIONS

Mower Spindle



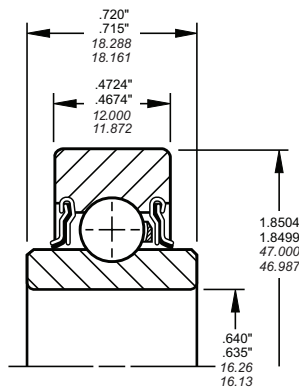
BEARING NUMBER 203KRR6

SPECIAL FEATURES

- $\frac{5}{8}$ in. Bore
- 47 mm O.D.
- Thick outer ring

TYPICAL APPLICATIONS

Idler Pulley
Idler Sprocket



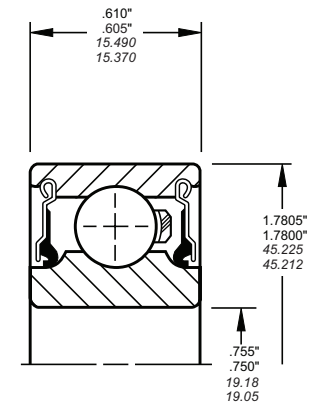
BEARING NUMBER 204RR7

SPECIAL FEATURES

- $\frac{3}{4}$ in. Bore
- 1.7805 in. O.D.
- Replaces 204KRNP3

TYPICAL APPLICATIONS

Rolling Cultivator
Disk



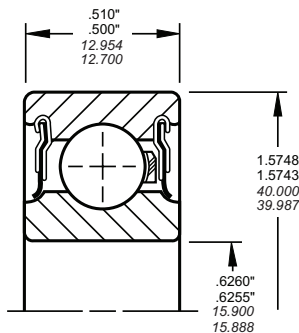
BEARING NUMBER 203NPP9

SPECIAL FEATURES

- $\frac{5}{8}$ in. Bore
- Width .500"

TYPICAL APPLICATIONS

Disk Grain Drill



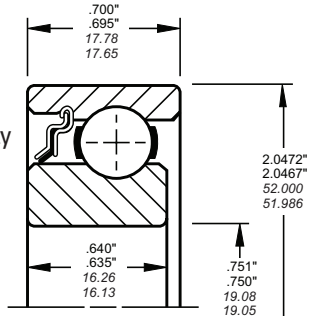
BEARING NUMBER 205KR3

SPECIAL FEATURES

- $\frac{3}{4}$ in. Bore
- Excellent moment load capacity available from special internal geometry of races
- Heavy contact flare-out type R-Seal with shroud cap

TYPICAL APPLICATIONS

Disk Hiller, Planter



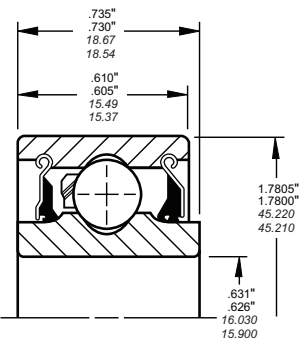
BEARING NUMBER 204RY2

SPECIAL FEATURES

- $\frac{5}{8}$ in. Bore
- Gothic Arch Race

TYPICAL APPLICATIONS

Planter
Double Disk Opener



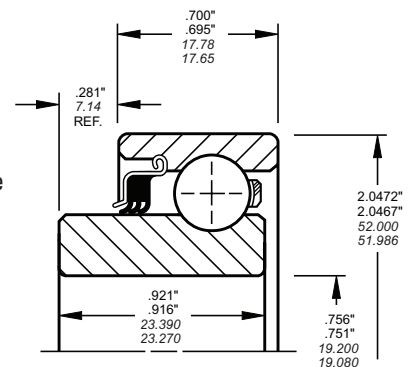
BEARING NUMBER 205KP6

SPECIAL FEATURES

- $\frac{3}{4}$ in. Bore
- Tri-Ply Seal on one side with shroud cap

TYPICAL APPLICATIONS

Rolling Cultivator



Continued on the next page.



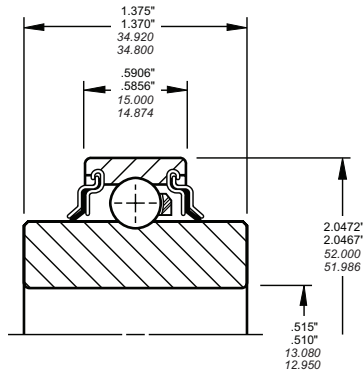
FARM RADIAL SPECIALS (continued)

BEARING NUMBER 205KRR6

SPECIAL FEATURES

- 1/2 in. Bore
- Extended inner ring

TYPICAL APPLICATIONS
Potato Harvester

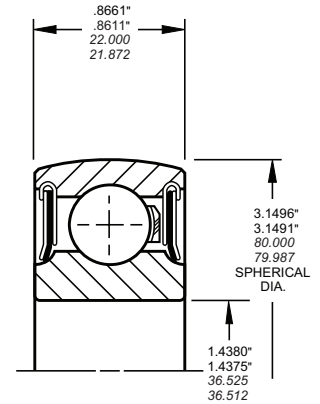


BEARING NUMBER 208NPPB5

SPECIAL FEATURES

- 1 7/16 in. Bore
- PP Seals with shroud cap

TYPICAL APPLICATIONS
Baler Crank Pin

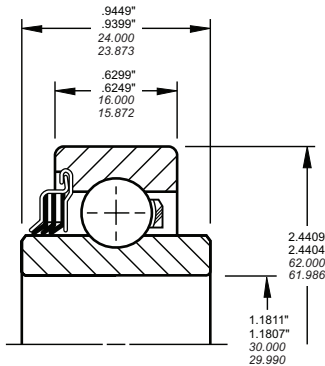


BEARING NUMBER 206KP2

SPECIAL FEATURES

- Tri-Ply Seal on one side with shroud cap

TYPICAL APPLICATIONS
Combine

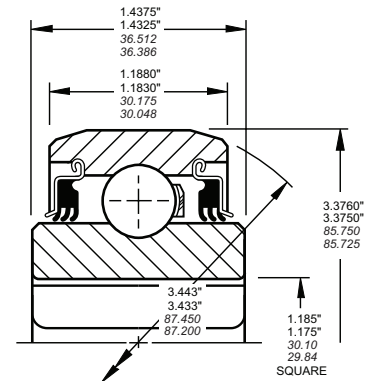


BEARING NUMBER 208PPB12

SPECIAL FEATURES

- 1 1/8 in. Square Bore
- Molded Tri-Ply seal
- Heavy outer ring

TYPICAL APPLICATIONS
Disk Harrow

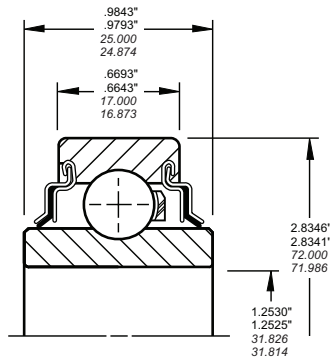


BEARING NUMBER 207KRR14

SPECIAL FEATURES

- 1 1/4 in. Bore

TYPICAL APPLICATIONS
Disk Harrow
Transport Wheel

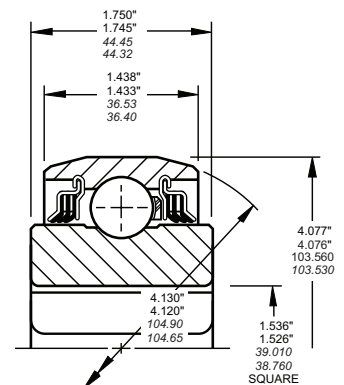


BEARING NUMBER W211PPB6

SPECIAL FEATURES

- 1 1/2 in. Square Bore
- Tri-Ply seal with shroud cap
- Heavy outer ring

TYPICAL APPLICATIONS
Disk Harrow

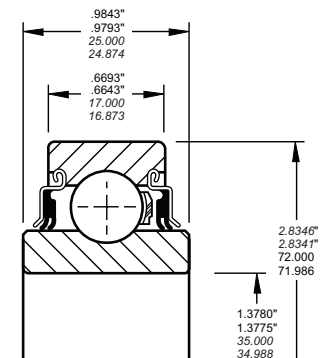


BEARING NUMBER 207KYY

SPECIAL FEATURES

- Molded double lip seal

TYPICAL APPLICATIONS
Disk Harrow
Transport Wheel

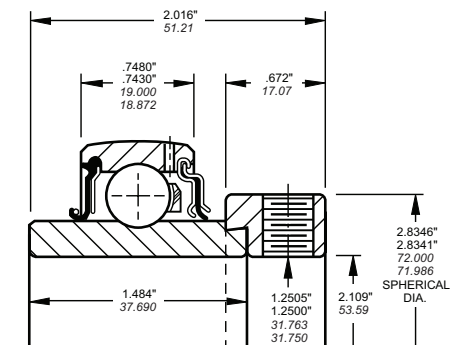


BEARING NUMBER G1104KRXB2

SPECIAL FEATURES

- Oil Seal on one side

TYPICAL APPLICATIONS
Chain Case



SPECIAL BEARINGS

Size	Special Features	Typical Application
200KRR3	Inner Ring Width .6457/.6407 One piece molded seals	Windrower
J202KRR8	Extended Inner Width .880/.875	Tobacco Harvester
202NPP9	1/2" Bore-O.D. corner turned to 3/4" radius	Baler Cam Foller
P202NPP11	Extra Wide Inner .5669/.5619 Bore 16mm .6299/.6296	Cam Follower
P203KRR3	5/8" Bore 2" O.D. Heavy section outer ring	Cam Follower Guide Rolls for Baler Plunger
203KRR6	5/8" Bore 47mm O.D. Heavy section outer ring	Baler Pick-up
203NPP9	5/8" Bore .500" width	Disk Grain Drill Opener
P203PP10	.6255/.6260" Bore	Light Duty Disk Applications
BB203KRR2 A2139	Wide Inner .720/.715 Bore .6400/.6350 Gothic arch races	Rotary Hoe
P204KR2	Bore .7505/.7500 Width .610/.605 O.D. 1.7805/1.7800	Rotary Lawn Tractor Blade Spindle Bearing
204KRD4	5/8" Bore extended inner R-Seal side .689/.685	Disk Opener Seed Drill
204KRN5	Bore .631/.626 Extended Inner Width 1.125/1.120	Planter Opener Wheels
P204KRRB5	Bore .793/.788 Inner Width .6988/.6938	Row Crop Machine
204RR6 E8728	Ground Bore .7505/.7500 Width .610 O.D. 1.7805 Extra loose radial play. Replaces 204KRN5 E8728	Planter Gage Wheels
P204RR6	Same as above except standard radial play. Replaces 204KRN5	Garden Tractor Mower Spindle
H204KRN6	Bore, O.D., Width same as P204KR2	Planter
204RR7 E8728	3/4" Bore 1.7805 O.D. .610 Width Extra loose radial play. Replaces 204KRN5 E8728	Rolling Cultivator Disk Sprockets, Pulleys and Disk Opener
205NPP2	Inner Width .6594/.6544	Miscellaneous
205KR3	3/4" Bore , Special Races, Heavy R-Seal with Shroud Cap	Disk Hiller Planter and Cotton Picker
205KP6	3/4" Bore Tri-Ply seal on one side with shroud cap	Rolling Cultivator Coulter Bearing
205KRR6	1/2" Bore extended inner ring	Windrow Digger
205KRR7	1/2" Bore 1.500/1.495 Extended Inner Ring with Offset race	Cone Roller Beet and Potato Harvester
205PPB7 FS544	15/16" Bore Tri-Ply Seals 1.375/1.3760 Inner Width	Rolling Cultivator
G205KPRB11	7/8" Hex Bore, One R-Seal and one Tri-Ply Seal Inner Width 1.000/.975	Corn Head Mechanism
205PP9 FS544	3/4" Bore Inner Width 1.3750/1.3700 Tri-Ply Seals	Cultivator
205PP10	5/8" Bore Inner Width 1.375/1.370 Tri-Ply Seals	Potato Harvester
205PP11	1" Bore Inner Width 1.187/1.185 Tri-Ply Seals	Marker Wheel

Size	Special Features	Typical Application
205PP12	5/8" Bore Inner Width 1.500/1.495 Tri-Ply Seals	Cone Roller, Beet and Potato Harvester
205PP13	7/8" Hex Bore Inner Width 1.000/.995 Tri-Ply Seals	Corn Head Mechanism
206KRD	Offset Rings Inner Width .748/.743 Outer Width .6299/.6249 R-Seal on extended inner side	Combine
206KP2	Tri-Ply Seal one side Wide Inner Ring .9449/.9399	Combine
206KPP2	Tri-Ply Seals Wide Inner Ring .9449/.9399	Forage Harvester
H206KRP2 A1391	3/4" Bore Wide Inner Ring .9449/ .9399 Extended on R-Seal side	Disk Hiller and Bedders
206KPPB3	1" Hex Bore Tri-Ply Seals Inner Ring Width .9449/.9399	Disk Harrow
206KRR4	Large Inner Ring Bore Corner to clear .090 R Shaft Fillet	Drive Shaft Bearing
206KRRB3	1 1/8" Bore Flare out type R-Seal with Shroud Cap	Corn Picker Snapping Rolls
206KRRB9	1" Bore Inner Width .9450/.9400	Planter
206KRR13	3/4" Bore	Idler Sprocket Bearing for round Baler
207KRR3	Large Inner Ring Bore Corner to clear .090 R Shaft Fillet	Trencher
207KRR8	Large Inner Ring Bore Corner to clear .090 R Shaft Fillet Narrow Inner .8499/.8399"	Baler
P207KRRB10	1 1/4" Bore Flare out type R-Seal with Shroud Cap	Corn Picker Snapping Rolls
207KRR12	1 1/8" Hex Bore	Forage Harvester
P207KRN5B13	Bore 1.2505/1.2500 Extended Inner 1.000/.945 on R-Seal Side	Corn Picker Gathering Chain
207KRR14	Bore 1.2530/1.2525	Disk Harrow Transport Wheel
207KYY	Double Lip Seal	Disk Harrow Transport Wheel
P208KRR4 A1849	Bore 1.5312/1.5307 Large Inner Ring Bore Corner to clear .090R Shaft Fillet	Clutch Shaft
208NPPB5	Bore 1.4380/1.4375 Plya Seals with Shroud Cap	Crank Pin for Square Baler
209KRRB2	1" Hex Bore	Round Baler
304KR2	Offset Inner Ring with .7087/ .7037 Width	Tractor Water Pump
BB9105KRR2	1" Bore Inner Extended on one side with 1.000/.995 Width Two 17/64 dia. holes in Inner Ring 180° apart	Hay Rake
9113KDD3 FS264C	Cap Extends Past Inner Face on one side	PTO Drive
9114KDD3 FS264C	Cap Extends Past Inner Face on one side	PTO Drive
9117K3	Bore 3.2500/3.2492 O.D. 5.000/4.9992	PTO Drive

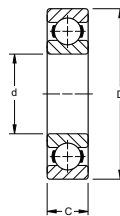
D





XLS/BIC SERIES – CONRAD TYPE

- An inch-dimension series with extra large diameters.
- Conrad or non-filling slot design.
- Compact sections for adaptability in applications where space is restricted.

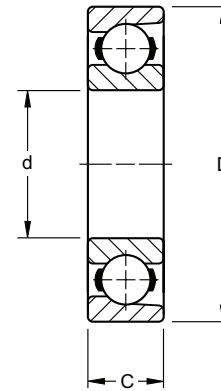


DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C				Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
	tolerance +0.000 mm +0.0000" to minus				tolerance +0.000 mm +0.0000" to minus				tolerance +0.000 mm +0.0000" to minus											
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
XLS44K	69.850	2.7500	0.015	0.0006	104.775	4.1250	0.015	0.0006	17.460	0.6875	0.13	0.005	1.2	0.047	0.449	0.99	22000	4900	28500	6400
XLS48K2	76.200	3.0000	0.015	0.0006	114.300	4.5000	0.015	0.0006	19.050	0.7500	0.13	0.005	1.2	0.047	0.567	1.25	33500	7500	44000	9800
XLS52K	82.550	3.2500	0.020	0.0008	120.650	4.7500	0.020	0.0008	19.050	0.7500	0.13	0.005	1.2	0.047	0.626	1.38	30000	6700	35500	8000
XLS56K	88.900	3.5000	0.020	0.0008	127.000	5.0000	0.020	0.0008	19.050	0.7500	0.13	0.005	1.7	0.065	0.671	1.48	31500	7100	36500	8150
XLS60K2	95.250	3.7500	0.020	0.0008	133.350	5.2500	0.020	0.0008	19.050	0.7500	0.13	0.005	1.6	0.063	0.712	1.57	34500	7800	39000	8650
XLS64K2	101.600	4.0000	0.020	0.0008	142.849	5.6240	0.025	0.0010	22.230	0.8750	0.13	0.005	2.0	0.080	0.794	1.75	41500	9500	47500	10600
41BIC196	104.648	4.1250	0.020	0.0008	152.400	6.0000	0.025	0.0010	22.230	0.8750	0.20	0.008	2.5	0.100	1.471	3.24	47500	10600	55000	12500
42BIC196	107.950	4.2500	0.020	0.0008	152.400	6.0000	0.025	0.0010	22.230	0.8750	0.20	0.008	2.5	0.100	1.374	3.03	47500	10600	55000	12500
43BIC206	111.125	4.3750	0.020	0.0008	158.750	6.2500	0.025	0.0010	22.230	0.8750	0.20	0.008	2.5	0.100	1.542	3.40	51000	11400	57000	12900
XLS72KD2	114.300	4.5000	0.020	0.0008	158.730	6.2490	0.025	0.0010	22.230	0.8750	0.20	0.008	2.0	0.080	1.121	2.47	54000	12000	60000	13400
45BIC206	114.300	4.5000	0.020	0.0008	158.750	6.2500	0.025	0.0010	22.230	0.8750	0.20	0.008	2.5	0.100	1.442	3.18	51000	11400	57000	12900
46BIC216	117.475	4.6250	0.020	0.0008	165.100	6.5000	0.025	0.0010	22.230	0.8750	0.20	0.008	2.5	0.100	1.615	3.56	54000	12000	58500	13200
47BIC216	120.650	4.7500	0.025	0.0010	165.100	6.5000	0.025	0.0010	22.230	0.8750	0.25	0.010	2.5	0.100	1.512	3.33	57000	12700	61000	13700
48BIC225	123.825	4.8750	0.025	0.0010	177.800	7.0000	0.025	0.0010	25.400	1.0000	0.25	0.010	2.5	0.100	2.254	4.97	65500	15000	75000	16600
XLS76K2	120.650	4.7500	0.025	0.0010	165.100	6.5000	0.025	0.0010	22.230	0.8750	0.25	0.010	1.7	0.065	1.157	2.55	57000	12700	61000	13700
XLS80K2	127.000	5.0000	0.025	0.0010	177.775	6.9990	0.025	0.0010	25.400	1.0000	0.25	0.010	2.0	0.080	1.611	3.55	67000	15000	72000	16300
50BIC225	127.000	5.0000	0.025	0.0010	177.800	7.0000	0.025	0.0010	25.400	1.0000	0.25	0.010	2.5	0.100	2.3	5.0	65500	15000	75000	16600
51BIC240	130.175	5.1250	0.025	0.0010	184.150	7.2500	0.030	0.0012	25.400	1.0000	0.25	0.010	2.5	0.100	2.5	5.5	69500	15600	76500	17300
52BIC240	133.350	5.2500	0.025	0.0010	184.150	7.2500	0.030	0.0012	25.400	1.0000	0.25	0.010	2.5	0.100	2.4	5.2	69500	15600	76500	17300
53BIC247	136.525	5.3750	0.025	0.0010	190.500	7.5000	0.030	0.0012	25.400	1.0000	0.25	0.010	2.5	0.100	2.6	5.7	75000	16600	80000	17600
55BIC247	139.700	5.5000	0.025	0.0010	190.500	7.5000	0.030	0.0012	25.400	1.0000	0.25	0.010	2.5	0.100	2.5	5.4	75000	16600	80000	17600
56BIC251	142.875	5.6250	0.025	0.0010	196.850	7.7500	0.030	0.0012	25.400	1.0000	0.25	0.010	2.5	0.100	2.7	5.9	75000	16600	80000	17600
57BIC251	146.050	5.7500	0.025	0.0010	196.850	7.7500	0.030	0.0012	25.400	1.0000	0.25	0.010	2.5	0.100	2.5	5.6	75000	16600	80000	17600
58BIC258	149.225	5.8750	0.025	0.0010	203.200	8.0000	0.030	0.0012	25.400	1.0000	0.25	0.010	2.5	0.100	2.8	6.1	78000	17300	81500	18000
60BIC258	152.400	6.0000	0.025	0.0010	203.200	8.0000	0.030	0.0012	25.400	1.0000	0.25	0.010	2.5	0.100	2.6	5.8	78000	17300	81500	18000
62BIC290	158.750	6.2500	0.025	0.0010	215.900	8.5000	0.030	0.0012	28.575	1.1250	0.25	0.010	3.0	0.120	3.5	7.7	104000	23200	106000	23600
65BIC298	165.100	6.5000	0.025	0.0010	222.250	8.7500	0.030	0.0012	28.575	1.1250	0.25	0.010	3.0	0.120	3.6	7.9	98000	22000	102000	22800
67BIC301	171.450	6.7500	0.025	0.0010	228.600	9.0000	0.030	0.0012	28.575	1.1250	0.25	0.010	3.0	0.120	3.7	8.2	104000	23200	104000	23600
70BIC309	177.800	7.0000	0.025	0.0010	241.300	9.5000	0.030	0.0012	31.750	1.2500	0.25	0.010	3.0	0.120	4.8	10.6	116000	26000	118000	26500
72BIC340	184.150	7.2500	0.030	0.0012	247.650	9.7500	0.030	0.0012	31.750	1.2500	0.31	0.012	3.0	0.120	4.9	10.8	122000	27500	122000	27000
75BIC348	190.500	7.5000	0.030	0.0012	254.000	10.0000	0.036	0.0014	31.750	1.2500	0.31	0.012	3.0	0.120	5.0	11.1	122000	27500	122000	27000
77BIC351	196.850	7.7500	0.030	0.0012	266.700	10.5000	0.036	0.0014	34.925	1.3750	0.31	0.012	3.0	0.120	6.3	13.9	146000	32500	143000	32500
80BIC359	203.200	8.0000	0.030	0.0012	273.050	10.7500	0.036	0.0014	34.925	1.3750	0.31	0.012	3.0	0.120	6.5	14.2	146000	32500	143000	32500
82BIC390	209.550	8.2500	0.030	0.0012	279.400	11.0000	0.036	0.0014	34.925	1.3750	0.31	0.012	3.0	0.120	6.6	14.6	153000	34500	150000	33500
85BIC391	215.900	8.5000	0.030	0.0012	292.100	11.5000	0.036	0.0014	38.100	1.5000	0.31	0.012	3.0	0.120	8.2	18.0	166000	37500	163000	36500
87BIC393	222.250	8.7500	0.030	0.0012	298.450	11.7500	0.036	0.0014	38.100	1.5000	0.31	0.012	3.0	0.120	8.4	18.5	176000	40000	170000	38000
90BIC401	228.600	9.0000	0.030	0.0012	304.800	12.0000	0.036	0.0014	38.100	1.5000	0.31	0.012	3.0	0.120	8.6	18.9	176000	40000	166000	37500
95BIC430	241.300	9.5000	0.030	0.0012	323.850	12.7500	0.041	0.0016	41.275	1.6250	0.36	0.014	4.0	0.160	10.6	23.4	200000	45000	190000	42500
100BIC439	254.000	10.0000	0.036	0.0014	336.550	13.2500	0.041	0.0016	41.275	1.6250	0.36	0.014	4.0	0.160	11.1	24.4	212000	47500	193000	43000
105BIC470	266.700	10.5000	0.036	0.0014	355.600	14.0000	0.041	0.0016	44.450	1.7500	0.36	0.014	4.0	0.160	13.5	29.8	255000	57000	224000	50000
110BIC479	279.400	11.0000	0.036	0.0014	368.300	14.5000	0.041	0.0016	44.450	1.7500	0.36	0.014	4.0	0.160	14.1	31.0	255000	57000	220000	50000
115BIC510	292.100	11.5000	0.036	0.0014	387.350	15.2500	0.041	0.0016	47.625	1.8750	0.36	0.014	5.0	0.200	16.9	37.2	280000	64000	240000	54000
120BIC519	304.800	12.0000	0.036	0.0014	406.400	16.0000	0.046	0.0018	50.800	2.0000	0.36	0.014	5.0	0.200	20.0	44.1	315000	71000	255000	58500
125BIC550	317.500	12.5000	0.041	0.0016	419.100	16.5000	0.046	0.0018	50.800	2.0000	0.41	0.016	5.0	0.200	20.7	45.7	325000	73500	265000	60000
135BIC580	342.900	13.5000	0.041	0.0016	457.200	18.0000	0.046	0.0018	57.150	2.2500	0.41	0.016	5.0	0.200	27.9	61.6	415000	93000	315000	71000
140BIC588	355.600	14.0000	0.041	0.0016	469.900	18.5000	0.046	0.0018	57.150</											

BIH SERIES – MAXIMUM CAPACITY TYPE

- An inch-dimension series with extra large diameters.
- Maximum capacity design.
- Feature a counterbored outer ring to permit increased number of balls.
- Can carry thrust in one direction only, against the full shouldered side of the outer race.
- Compact sections for adaptability to applications where space is restricted.



DIMENSIONS – TOLERANCES BIH SERIES

Bearing Number	Bore d		tolerance +0.000 mm +0.0000" to minus		Outside Diameter D		tolerance +0.000 mm +0.0000" to minus		Width C		tolerance +0.000 mm +0.0000" to minus		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
41BIH196	104.775	4.1250	0.020	0.0008	152.400	6.0000	0.025	0.0010	22.23	0.8750	0.20	0.008	2.5	0.10	1.411	3.11	63000	14000	65500	14600
42BIH196	107.950	4.2500	0.020	0.0008	152.400	6.0000	0.025	0.0010	22.23	0.8750	0.20	0.008	2.5	0.10	1.321	2.91	71000	16000	72000	16300
43BIH206	111.125	4.3750	0.020	0.0008	158.750	6.2500	0.025	0.0010	22.23	0.8750	0.20	0.008	2.5	0.10	1.483	3.27	51000	11400	57000	12900
45BIH206	114.300	4.5000	0.020	0.0008	158.750	6.2500	0.025	0.0010	22.23	0.8750	0.20	0.008	2.5	0.10	1.383	3.05	75000	16600	73500	16600
46BIH216	117.475	4.6250	0.020	0.0008	165.100	6.5000	0.025	0.0010	22.23	0.8750	0.20	0.008	2.5	0.10	1.561	3.44	80000	18000	76500	17300
48BIH225	123.825	4.8750	0.025	0.0010	177.800	7.0000	0.025	0.0010	25.40	1.0000	0.25	0.010	2.5	0.10	2.209	4.87	104000	23200	100000	22400
50BIH225	127.000	5.0000	0.025	0.0010	177.800	7.0000	0.025	0.0010	25.40	1.0000	0.25	0.010	2.5	0.10	2.3	5.0	104000	23200	100000	22400
51BIH240	130.175	5.1250	0.025	0.0010	184.150	7.2500	0.030	0.0012	25.40	1.0000	0.25	0.010	2.5	0.10	2.5	5.5	108000	24000	102000	22800
52BIH240	133.350	5.2500	0.025	0.0010	184.150	7.2500	0.030	0.0012	25.40	1.0000	0.25	0.010	2.5	0.10	2.4	5.2	104000	23200	100000	22400
53BIH247	136.525	5.3750	0.025	0.0010	190.500	7.5000	0.030	0.0012	25.40	1.0000	0.25	0.010	2.5	0.10	2.6	5.7	112000	25000	104000	23200
55BIH247	139.700	5.5000	0.025	0.0010	190.500	7.5000	0.030	0.0012	25.40	1.0000	0.25	0.010	2.5	0.10	2.5	5.4	112000	25000	104000	23200
56BIH251	142.875	5.6250	0.025	0.0010	196.850	7.7500	0.030	0.0012	25.40	1.0000	0.25	0.010	2.5	0.10	2.7	5.9	116000	26000	106000	23600
57BIH251	146.050	5.7500	0.025	0.0010	196.850	7.7500	0.030	0.0012	25.40	1.0000	0.25	0.010	2.5	0.10	2.5	5.6	116000	26000	106000	23600
58BIH258	149.225	5.8750	0.025	0.0010	203.200	8.0000	0.030	0.0012	25.40	1.0000	0.25	0.010	2.5	0.10	2.8	6.1	118000	26500	108000	24000
60BIH258	152.400	6.0000	0.025	0.0010	203.200	8.0000	0.030	0.0012	25.40	1.0000	0.25	0.010	2.5	0.10	2.6	5.8	118000	26500	108000	24000
62BIH290	158.750	6.2500	0.025	0.0010	215.900	8.5000	0.030	0.0012	28.575	1.1250	0.25	0.010	3.0	0.12	3.5	7.7	146000	33500	134000	30000
65BIH298	165.100	6.5000	0.025	0.0010	222.250	8.7500	0.030	0.0012	28.575	1.1250	0.25	0.010	3.0	0.12	3.6	7.9	153000	34500	137000	30500
67BIH301	171.450	6.7500	0.025	0.0010	228.600	9.0000	0.030	0.0012	28.575	1.1250	0.25	0.010	3.0	0.12	3.7	8.2	160000	35500	137000	31000
70BIH309	177.800	7.0000	0.025	0.0010	241.300	9.5000	0.030	0.0012	31.750	1.2500	0.25	0.010	3.0	0.12	4.8	10.6	180000	40500	160000	35500
72BIH340	184.150	7.2500	0.030	0.0012	247.650	9.7500	0.030	0.0012	31.750	1.2500	0.31	0.012	3.0	0.12	4.9	10.8	186000	42500	160000	36000
75BIH348	190.500	7.5000	0.030	0.0012	254.000	10.0000	0.036	0.0014	31.750	1.2500	0.31	0.012	3.0	0.12	5.0	11.1	193000	43000	163000	36500
77BIH351	196.850	7.7500	0.030	0.0012	266.700	10.5000	0.036	0.0014	34.925	1.3750	0.31	0.012	3.0	0.12	6.3	13.9	228000	51000	193000	44000
80BIH359	203.200	8.0000	0.030	0.0012	273.050	10.7500	0.036	0.0014	34.925	1.3750	0.31	0.012	3.0	0.12	6.5	14.2	236000	53000	200000	45000
82BIH390	209.550	8.2500	0.030	0.0012	279.400	11.0000	0.036	0.0014	34.925	1.3750	0.31	0.012	3.0	0.12	6.6	10.6	245000	55000	200000	45500
85BIH391	215.900	8.5000	0.030	0.0012	292.100	11.5000	0.036	0.0014	38.100	1.5000	0.31	0.012	3.0	0.12	8.2	18.0	270000	61000	224000	50000
87BIH393	222.250	8.7500	0.030	0.0012	298.450	11.7500	0.036	0.0014	38.100	1.5000	0.31	0.012	3.0	0.12	8.4	18.5	270000	61000	224000	50000
90BIH401	228.600	9.0000	0.030	0.0012	304.800	12.0000	0.036	0.0014	38.100	1.5000	0.31	0.012	3.0	0.12	8.6	18.9	280000	63000	228000	51000
95BIH430	241.300	9.5000	0.030	0.0012	323.850	12.7500	0.036	0.0014	41.275	1.6250	0.36	0.014	4.0	0.16	10.6	23.4	315000	71000	255000	57000
100BIH439	254.00	10.0000	0.036	0.0014	336.550	13.2500	0.041	0.0016	41.275	1.6250	0.36	0.014	4.0	0.16	11.1	24.4	325000	73500	260000	58500
105BIH470	266.700	10.5000	0.036	0.0014	355.600	14.0000	0.041	0.0016	44.450	1.7500	0.36	0.014	4.0	0.16	13.5	29.8	400000	90000	300000	68000
110BIH479	279.400	11.0000	0.036	0.0014	368.300	14.5000	0.041	0.0016	44.450	1.7500	0.36	0.014	4.0	0.16	14.1	31.0	415000	93000	305000	69500
115BIH510	292.100	11.5000	0.036	0.0014	387.350	15.2500	0.041	0.0016	47.625	1.8750	0.36	0.014	5.0	0.20	16.9	37.2	465000	104000	335000	75000
120BIH519	304.800	12.0000	0.036	0.0014	406.400	16.0000	0.046	0.0018	50.800	2.0000	0.36	0.014	5.0	0.20	20.0	44.1	510000	116000	355000	80000
135BIH580	342.900	13.5000	0.041	0.0016	457.200	18.0000	0.046	0.0018	57.150	2.2500	0.41	0.016	5.0	0.20	27.9	61.6	655000	146000	425000	95000
140BIH588	355.600	14.0000	0.041	0.0016	469.900	18.5000	0.046	0.0018	57.150	2.2500	0.41	0.016	5.0	0.20	28.8	63.4	680000	150000	430000	96500

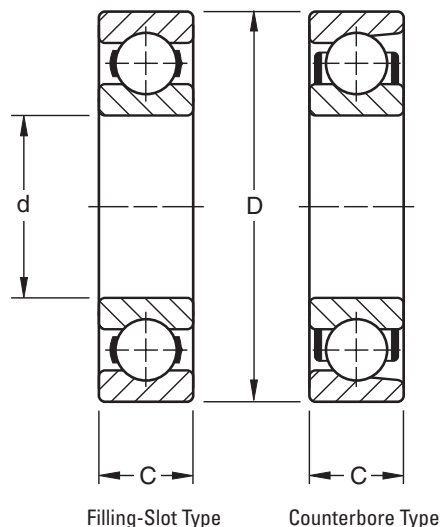
(1) Maximum shaft or housing fillet radius that bearing corners will clear.

(2) Based on 10⁶ revolutions of calculated fatigue life.



EXTRA LARGE 100 SERIES

- Dimensions originally established to meet specific design requirements, before standard dimensions were established by the American Bearing Manufacturers Association (ABMA).
- A metric series.
- Available in the 100 Series (extra light).
- Available in a radially-fitted counterbore type, having a maximum complement of balls.
- Identified by the suffix "WI," these are designed to take thrust in one direction only.



DIMENSIONS – TOLERANCES

Bearing Number			Bore d				Outside Diameter D				Width C		Fillet Radius ⁽¹⁾		Wt.						Static Load Rating C ₀		Extended Dynamic Load C _E ⁽⁵⁾	
Filling-slot Type	Counter-bore Type	One Shield D	tolerance +0.000 mm +0.0000" to minus				tolerance +0.000 mm +0.0000" to minus				+0.00 mm -0.25 mm +0.000" -0.010"				Filling-slot Type		Counter-bore Type		Shielded Type		N	lbs.	N	lbs.
			mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	kg	lbs.	kg	lbs.				
120W2	—	120WD2N	100	3.9370	0.020	0.0008	160	6.2992	0.025	0.0010	28	1.102 ⁽⁴⁾	2.01	0.079	2.041	4.50	—	—	2.041	4.50	75000	17000	106000	24000
122W	122WI	122WD2N ⁽³⁾	110	4.3307	0.020	0.0008	175	6.8898	0.025	0.0010	30	1.181 ⁽⁴⁾	2.01	0.079	2.762	6.09	2.835	6.25	3.157	6.96	80000	18000	116000	26000
124W	124WI	124WD	120	4.7244	0.020	0.0008	190	7.4803	0.030	0.0012	32	1.260 ⁽⁴⁾	2.01	0.079	3.475	7.66	3.538	7.80	3.466	7.64	98000	22400	140000	31500
126W	126WI	126WD	130	5.1181	0.025	0.0010	205	8.0709	0.030	0.0012	34	1.339	2.01	0.079	4.336	9.56	4.318	9.52	4.332	9.55	110000	24500	146000	33500
128W	128WI	128WD	140	5.5118	0.025	0.0010	220	8.6614	0.030	0.0012	36	1.417	2.01	0.079	5.239	11.55	5.244	11.56	5.294	11.67	122000	27000	163000	36500
130W	—	130WD	150	5.9055	0.025	0.0010	235	9.2520	0.030	0.0012	38	1.496	2.01	0.079	6.278	13.84	—	—	6.437	14.19	140000	31500	183000	41500
132W	—	132WD	160	6.2992	0.025	0.0010	250	9.8425	0.030	0.0012	40	1.575	2.49	0.098	7.394	16.30	—	—	7.484	16.50	160000	35500	208000	46500
134W	—	—	170	6.6929	0.025	0.0010	265	10.4331	0.035	0.0014	42	1.654	2.49	0.098	9.049	19.95	—	—	—	—	180000	40000	224000	51000
—	—	136WD2N	180	7.0866	0.025	0.0010	280	11.0236	0.035	0.0014	49	1.929	2.49	0.098	—	—	—	—	11.004	24.26	200000	45000	245000	55000
138W	—	—	190	7.4803	0.03	0.0120	300	11.8110	0.035	0.0014	46	1.811 ⁽²⁾	2.49	0.098	12.928	28.50	—	—	—	—	245000	56000	285000	64000

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ +.00 mm, -.25 mm (+.000", -.010").

⁽³⁾ 35 mm width.

⁽⁴⁾ Width tolerance is +.00 mm, -.20 mm (+.000", -.008").

⁽⁵⁾ Based on 10⁶ revolutions of calculated fatigue life.

7000WN PRODUCT FAMILY

INTRODUCTION

The high performance 7000WN Angular Contact Product Family is specifically designed to support heavy thrust loads at lower operating temperatures at high speeds. Included in the angular contact series are the following design features:

- Refined bore diameter tolerance
- Increased thrust capacity
- Extended load capacity
- Lower operating temperatures
- Better than ABEC 1 bore diameter tolerances
- High operating contact angle
- Improved ball section ratio
- Low shoulder inner and outer rings improve oil flow

A feature of this series is the refined bore diameter tolerance. The closer bore tolerance in the WN product family reduces the broad range of interference and thus prevents the development of undesirable high preload in mounted duplex pairs. As a result, longer bearing life is achieved and high operating temperatures are avoided.

This product family can support heavy thrust loads by combining high shoulders on the thrust side of both rings with a high operating angle. In addition, uniformity of load per ball under combined loads is more favorable with a high contact angle and results in longer bearing life.

Maximum clearance between the one-piece brass or bronze cage and the land diameters of both rings is achieved in the WN construction. Utilizing low shoulder diameters on the non-thrust sides of inner and outer rings promotes efficient oil passage through the bearing resulting in lower operating temperatures and longer bearing life.

The 7000WN Product Family is divided into several designs. Sizes 7207-7218WN and 7304-7318WN have a 40 degree contact angle and a one-piece, ball-piloted, pressed brass cage. Sizes 7219-7230WN and 7319-7330WN have a 40 degree contact angle and a one-piece, outer ring-piloted, high-strength machined bronze cage. The 7412WN and 7415WN both have a 40 degree contact angle and a one-piece conical, high-strength machined bronze cage.

The 7000WN Product Family is available as single bearings and duplex sets. A single with the suffix "SU" is flush ground on both faces for universal mounting. Such bearings can be used as singles or duplex mounted back-to-back (DB), face-to-face (DF) or tandem (DT), depending on the functional requirements of the design. The mounting of duplex "SU" bearings will result in a preload range of minimum internal clearance to a solid preload.

Bearings without the "SU" designation are not flush ground and are intended to be used as singles. These bearings are used to support thrust from one direction and are often accompanied by a preload spring.

Bearings with the suffix "DU" are flush ground on both faces for universal mounting. A duplex pair of "DU" bearings can be mounted (DB, DF, or DT), depending on the functional requirements of the design. These bearings, after mounting, will result in a range of positive light preload.

APPLICATIONS

These design features are advantageous in applications such as oil refining pump systems where higher productivity and longer system life is important. Other applications where these features are equally suited are deep well pump motors, vertical and horizontal pumps, worm gear and right angle drives, spindles, live centers and gearboxes. For applications requiring a high degree of axial and radial rigidity, these bearings are suggested in preloaded duplex mountings.

MOUNTING

Although each 7000WN Product Family bearing is a self-contained unit, the construction is such that they are frequently mounted as two bearings opposed, so that thrust can be carried in either direction.

Unlike the radial type, the angular contact bearing, when mounted alone, requires adjustment and must be installed with care. As the bearing is relatively loose axially before mounting, it is important that the design incorporate some means to move the outer ring axially into its correct position relative to the inner ring. This adjustment should be made when the bearing is mounted. A common method is to place a preload spring or shims at one bearing location.

The correct adjustment of the single bearing is obtained when the initial axial looseness of the assembly is removed. This eliminates the possibility of premature bearing damage due to excessive preloading or looseness through improper adjustment.

Bearings designated "SU" are ground on both surfaces to permit universal mounting. These duplex sets are ideally suited for applications which involve a combination of radial loads from either direction. "SU" bearings are flush ground so that under a specific axial gage load the inner ring will protrude beyond the face of the outer ring. This design results in an internal axial clearance within the bearing pair that helps to minimize build-up of excessive preload within the bearings when mounted on a shaft with maximum interference.

To assure correct mounting of bearings in the 7000WN Product Family, the word THRUST is marked on the thrust face of both the inner and outer rings. This face should abut against the housing shoulder or the end cover, depending on the required direction of "thrust".

ORDERING INFORMATION

"SU" Suffix: All bearings are packaged singly.
To obtain a pair of SU flush ground bearings for duplex mounting, specify two bearings.
Example: (2) 7210WN SU bearings.

"DU" Suffix: All bearings are packaged as a pair in a single box.
To obtain a pair of DU flush ground bearings for duplex mounting, specify one pair.
Example: one pair-7219WN MBR-DU.

No Suffix: All bearings are packaged singly.
No other designation is required to obtain

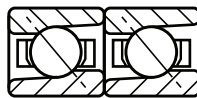
MOUNTING ARRANGEMENTS



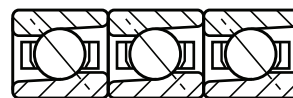
Duplex- DB
Back-to-Back



Duplex- DF
Face-to-Face



Duplex- DT Tandem



Three Bearings in Tandem

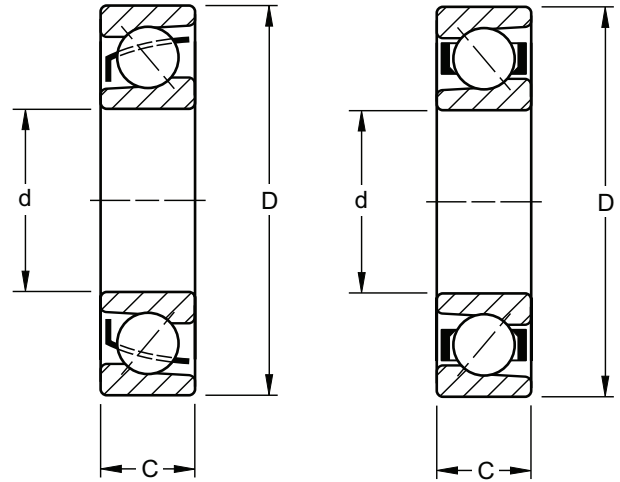


Two in Tandem Opposed
with a Single Bearing



LIGHT 7200WN SERIES

- Dimensionally interchangeable with the radial 200 Series.
- 7000WN Product Family includes a refined bore diameter.
- A single bearing is suggested for applications in which the thrust load is in one direction or, in the case of combined loads, the thrust load is high in relation to the radial load.
- A duplex pair is suggested for applications where thrust is present in both directions or where axial displacement of the shaft must be restricted.
- For exceptionally high thrust loads in one direction, a tandem pair can be used, opposed by a third bearing.
- Sizes 7201K through 7203WN have a 20 degree contact angle and a nylon cage.
- Sizes 7204WN through 7218WN have a 40 degree contact angle and a one-piece, ball-piloted, pressed brass cage.
- Larger sizes 7219WN through 7230WN have a 40 degree contact angle and a one-piece, outer ring piloted high-strength machined bronze cage.



7207-7218WN
40° Contact Angle

7219-7230WN MBR
40° Contact Angle

DIMENSIONS – TOLERANCES

Bearing Number	Bore d		tolerance +0.000 mm +0.0000" to minus		Outside Diameter D		tolerance +0.000 mm +0.0000" to minus		Width C		tolerance +0.000 mm +0.0000" to minus		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _e ⁽⁴⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
7201K	12	0.4724	0.008	0.0003	32	1.2598	0.011	0.00043	10	0.3937	0.12	0.005	0.6	0.024	0.036	0.08	2790	630	7100	1600
7202W	15	0.5906	0.008	0.0003	35	1.3780	0.011	0.00043	11	0.4331	0.12	0.005	0.6	0.024	0.045	0.10	4700	1060	10300	2320
7203W	17	0.6693	0.008	0.0003	40	1.5748	0.011	0.00043	12	0.4727	0.12	0.005	0.6	0.024	0.068	0.15	6930	1560	14200	3200
7204WN ⁽²⁾⁽³⁾	20	0.7874	0.010	0.0004	47	1.8504	0.011	0.00043	14	0.5512	0.12	0.005	1.0	0.039	0.104	0.23	8100	1830	16800	3800
7205WN ⁽³⁾	25	0.9843	0.010	0.0004	52	2.0472	0.013	0.0005	15	0.5906	0.12	0.005	1.0	0.039	0.132	0.29	9400	2120	16600	3750
7206WN	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	16	0.6299	0.12	0.005	1.0	0.039	0.209	0.46	13500	3050	23000	5200
7207WN	35	1.3780	0.010	0.0004	72	2.8346	0.013	0.0005	17	0.6693	0.12	0.005	1.0	0.039	0.286	0.63	18000	4150	30800	6950
7208WN	40	1.5748	0.010	0.0004	80	3.1496	0.013	0.0005	18	0.7087	0.12	0.005	1.0	0.039	0.331	0.73	23000	5200	36000	8150
7209WN	45	1.7717	0.010	0.0004	85	3.3465	0.015	0.0006	19	0.7480	0.12	0.005	1.0	0.039	0.435	0.96	25900	5850	40500	9150
7210WN	50	1.9685	0.010	0.0004	90	3.5433	0.015	0.0006	20	0.7874	0.12	0.005	1.0	0.039	0.508	1.12	28400	6400	42500	9500
7211WN	55	2.1654	0.010	0.0004	100	3.9370	0.015	0.0006	21	0.8268	0.15	0.006	1.5	0.059	0.635	1.40	36200	8150	52000	11800
7212WN	60	2.3622	0.010	0.0004	110	4.3307	0.015	0.0006	22	0.8661	0.15	0.006	1.5	0.059	0.835	1.84	44000	10000	63000	14300
7213WN	65	2.5591	0.010	0.0004	120	4.7244	0.015	0.0006	23	0.9055	0.15	0.006	1.5	0.059	1.061	2.34	52400	11800	72400	16300
7214WN	70	2.7559	0.010	0.0004	125	4.9213	0.018	0.0007	24	0.9449	0.15	0.006	1.5	0.059	1.171	2.58	57300	12900	78000	17600
7215WN	75	2.9528	0.010	0.0004	130	5.1181	0.018	0.0007	25	0.9843	0.15	0.006	1.5	0.059	1.271	2.80	58000	13200	78000	17600
7216WN	80	3.1496	0.010	0.0004	140	5.5118	0.018	0.0007	26	1.0236	0.15	0.006	2.0	0.079	1.483	3.27	65500	15600	91500	20400
7217WN	85	3.3465	0.013	0.0005	150	5.9055	0.018	0.0007	28	1.1024	0.20	0.008	2.0	0.079	2.096	4.62	76500	18300	106000	23600
7218WN	90	3.5433	0.013	0.0005	160	6.2992	0.025	0.0010	30	1.1811	0.20	0.008	2.0	0.079	2.567	5.66	88000	21200	119000	27000
7219WN MBR	95	3.7402	0.013	0.0005	170	6.6929	0.025	0.0010	32	1.2600	0.20	0.008	2.0	0.079	3.025	6.67	93000	22800	133000	30000
7220WN MBR	100	3.9370	0.013	0.0005	180	7.0866	0.025	0.0010	34	1.3390	0.20	0.008	2.0	0.079	3.460	7.62	106000	25500	146000	33500
7222WN MBR	110	4.3307	0.013	0.0005	200	7.8740	0.030	0.0012	38	1.4960	0.20	0.008	2.0	0.079	5.162	11.38	134000	32500	173000	39000
7224WN MBR	120	4.7244	0.013	0.0005	215	8.4646	0.030	0.0012	40	1.5750	0.20	0.008	2.0	0.079	6.354	14.01	160000	36500	188000	42500
7226WN MBR	130	5.1181	0.018	0.0007	230	9.0551	0.030	0.0012	40	1.5750	0.25	0.010	2.5	0.098	7.543	16.63	176000	43000	211000	47500
7228WN MBR	140	5.5118	0.018	0.0007	250	9.8425	0.030	0.0012	42	1.6540	0.25	0.010	2.5	0.098	9.634	21.24	200000	47500	224000	50000
7230WN MBR	150	5.9055	0.018	0.0007	270	10.6299	0.035	0.0014	45	1.7720	0.25	0.010	2.5	0.098	11.731	25.84	240000	56000	248000	56000

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Also available as W design.

⁽³⁾ Also available with 20° contact angle and nylon cage.

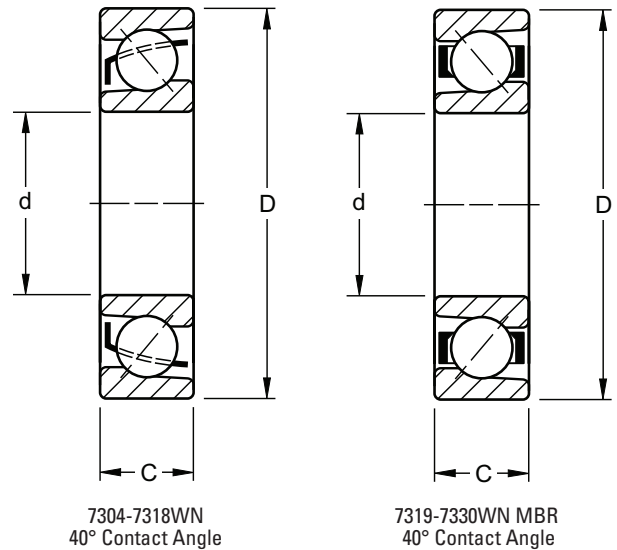
⁽⁴⁾ Based on 10⁶ revolutions of calculated fatigue life.

Note: 7208WN-7212WN also available with a one-piece, high-strength machined bronze retainer (MBR).

This cage can be quoted on the other sizes by request.

MEDIUM 7300WN SERIES

- Dimensionally interchangeable with the radial 300 Series.
- The 7000WN Product Family includes a refined bore diameter. The 7300WN Series can sustain heavier thrust and combined loads than the 7200WN Series.
- A single bearing is suggested for applications in which the thrust load is in one direction or, in the case of combined loads, the thrust load is high in relation to the radial load.
- A duplex pair is suggested for applications where thrust is present in both directions or where axial displacement of the shaft must be restricted.
- For exceptionally high thrust loads in one direction, a tandem pair can be used, opposed by a third bearing.
- Size 7303W has a 20 degree contact angle and a steel cage.
- Sizes 7304WN through 7318WN have a 40 degree contact angle and a one-piece, ball-piloted, pressed brass cage.
- Larger sizes 7319WN through 7330WN have a 40 degree contact angle and a one-piece, outer ring piloted high-strength machined bronze cage.
- Sizes 7306WN to 7318WN also available with a one-piece, high-strength, machined bronze retainer.



DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C				Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _e ⁽²⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
7303W	17	0.6693	0.008	0.0003	47	1.8504	0.011	0.00045	14	0.5512	0.12	0.005	1.0	0.039	0.118	0.26	9200	2080	20200	4550
7304WN	20	0.7874	0.010	0.0004	52	2.0472	0.013	0.0005	15	0.5906	0.12	0.005	1.0	0.039	0.150	0.33	9590	2160	19500	4400
7305WN	25	0.9843	0.010	0.0004	62	2.4409	0.013	0.0005	17	0.6693	0.12	0.005	1.0	0.039	0.241	0.53	13300	3000	26500	5850
7306WN	30	1.1811	0.010	0.0004	72	2.8346	0.013	0.0005	19	0.7480	0.12	0.005	1.0	0.039	0.363	0.80	20800	4650	34600	7800
7307WN	35	1.3780	0.010	0.0004	80	3.1496	0.013	0.0005	21	0.8268	0.12	0.005	1.5	0.059	0.408	0.90	23900	5400	41300	9300
7308WN	40	1.5748	0.010	0.0004	90	3.5433	0.015	0.0006	23	0.9055	0.12	0.005	1.5	0.059	0.667	1.47	30200	6800	50600	11400
7309WN	45	1.7717	0.010	0.0004	100	3.9370	0.015	0.0006	25	0.9843	0.12	0.005	1.5	0.059	0.885	1.95	39900	9000	66600	15000
7310WN	50	1.9685	0.010	0.0004	110	4.3307	0.015	0.0006	27	1.0630	0.12	0.005	2.0	0.079	1.139	2.51	47900	10800	76800	17300
7311WN	55	2.1654	0.010	0.0004	120	4.7244	0.015	0.0006	29	1.1417	0.15	0.006	2.0	0.079	1.592	3.51	56400	12700	88800	20000
7312WN	60	2.3622	0.010	0.0004	130	5.1181	0.018	0.0007	31	1.2205	0.15	0.006	2.0	0.079	1.969	4.34	64800	14600	101000	22800
7313WN	65	2.5591	0.010	0.0004	140	5.5118	0.018	0.0007	33	1.2992	0.15	0.006	2.0	0.079	2.477	5.46	75500	17000	115000	26000
7314WN	70	2.7559	0.010	0.0004	150	5.9055	0.018	0.0007	35	1.3780	0.15	0.006	2.0	0.079	2.676	5.90	85700	19300	128000	29000
7315WN	75	2.9528	0.010	0.0004	160	6.2992	0.025	0.0010	37	1.4567	0.15	0.006	2.0	0.079	3.452	7.61	98000	22000	142000	32000
7316WN	80	3.1496	0.010	0.0004	170	6.6929	0.025	0.0010	39	1.5354	0.15	0.006	2.0	0.079	4.504	9.92	108000	24500	153000	34500
7317WN	85	3.3465	0.013	0.0005	180	7.0866	0.025	0.0010	41	1.6124	0.20	0.008	2.5	0.098	4.940	10.88	122000	27500	166000	37500
7318WN	90	3.5433	0.013	0.0005	190	7.4803	0.030	0.0012	43	1.6929	0.20	0.008	2.5	0.098	6.247	13.76	135000	30500	177000	40000
7319WN MBR	95	3.7402	0.013	0.0005	200	7.8740	0.030	0.0012	45	1.7717	0.20	0.008	2.5	0.098	6.706	14.77	148000	33500	191000	43000
7320WN MBR	100	3.9370	0.013	0.0005	215	8.4646	0.030	0.0012	47	1.8504	0.20	0.008	2.5	0.098	8.227	18.12	177000	40000	217000	49000
7321WN MBR	105	4.1339	0.013	0.0005	225	8.8583	0.030	0.0012	49	1.9291	0.20	0.008	2.5	0.098	9.498	20.92	191000	43000	226000	51000
7322WN MBR	110	4.3307	0.013	0.0005	240	9.4488	0.030	0.0012	50	1.9685	0.20	0.008	2.5	0.098	10.892	23.99	226000	51000	253000	57000
7324WN MBR	120	4.7244	0.013	0.0005	260	10.2362	0.035	0.0014	55	2.1654	0.20	0.008	2.5	0.098	14.356	31.62	259000	58500	284000	64000
7326WN MBR	130	5.1181	0.018	0.0007	280	11.0236	0.035	0.0014	58	2.2835	0.25	0.010	3.0	0.118	17.339	38.19	302000	68000	315000	71000
7328WN MBR	140	5.5118	0.018	0.0007	300	11.8110	0.035	0.0014	62	2.4409	0.25	0.010	3.0	0.118	20.294	44.70	346000	78000	339000	76500
7330WN MBR	150	5.9055	0.018	0.0007	320	12.5984	0.040	0.0016	65	2.5591	0.25	0.010	3.0	0.118	24.907	54.86	390000	88000	368000	83000

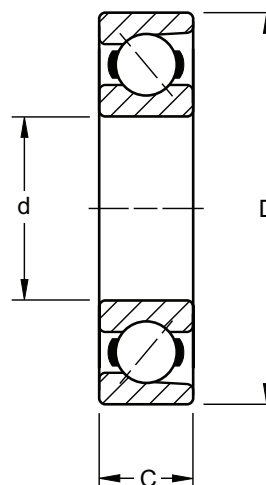
⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

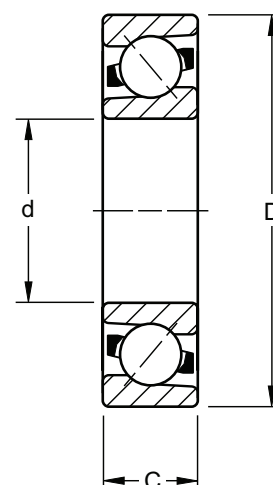


HEAVY 7400 SERIES

- Dimensionally interchangeable with the radial 400 Series.
- Sizes with a "WN" suffix include a refined bore diameter tolerance.
- Can sustain heavier thrust and combined loads than the 7300WN Series.
- A single bearing is suggested for applications in which the thrust load is in one direction or, in the case of combined loads, the thrust load is high in relation to the radial load.
- A duplex pair is suggested for applications where thrust is present in both directions or where axial displacement of the shaft must be restricted.
- For exceptionally high thrust loads in one direction, a tandem pair can be used, opposed by a third bearing.
- Sizes with a suffix "W" have a 20 degree contact angle and a steel retainer.
- Sizes with a suffix "PW" have a 35 degree contact angle and a steel retainer.
- Sizes with a "WN" suffix have a 40 degree contact angle and a one-piece, high-strength machined bronze cage.



7405W-7409W
20° Contact Angle
7410PW-7420PW
35° Contact Angle



7412WN and 7415WN MBR
40° Contact Angle

DIMENSIONS – TOLERANCES

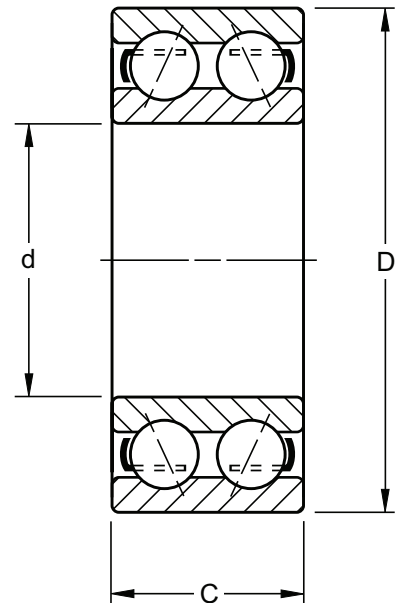
Bearing Number	Bore d		tolerance +0.000 mm +0.0000" to minus		Outside Diameter D		tolerance +0.000 mm +0.0000" to minus		Width C		tolerance +0.000 mm +0.0000" to minus		Fillet Radius ⁽¹⁾		Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽²⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs.	N	lbs.	N	lbs.
7405W	25	0.9843	0.010	0.0004	80	3.1496	0.013	0.0005	21	0.8268	0.12	0.005	1.5	0.060	0.925	2.04	25900	5850	53300	12000
7406W	30	1.1811	0.010	0.0004	90	3.5433	0.015	0.0006	23	0.9055	0.12	0.005	1.5	0.060	0.957	2.11	35500	8000	69000	15600
7407W	35	1.3780	0.012	0.00045	100	3.9370	0.015	0.0006	25	0.9843	0.12	0.005	1.5	0.060	1.002	2.21	42800	9650	79900	18000
7408W	40	1.5748	0.012	0.00045	110	4.3307	0.015	0.0006	27	1.0630	0.12	0.005	2.0	0.080	1.311	2.89	56400	12700	99500	22400
7409W	45	1.7717	0.012	0.00045	120	4.7244	0.015	0.0006	29	1.1417	0.12	0.005	2.0	0.080	1.647	3.63	62000	14000	106000	24000
7410WN	50	1.9685	0.012	0.00045	130	5.1181	0.018	0.0007	31	1.2205	0.12	0.005	2.0	0.080	2.195	4.84	66600	15000	115000	26000
7411PW	55	2.1654	0.015	0.0006	140	5.5118	0.018	0.0007	33	1.2992	0.15	0.006	2.0	0.080	2.681	5.91	71000	16000	122000	27500
7412WN	60	2.3622	0.010	0.0004	150	5.9055	0.018	0.0007	35	1.3780	0.15	0.006	2.0	0.080	3.257	7.18	85700	19300	135000	30500
7413WN	65	2.5591	0.015	0.0006	160	6.2992	0.025	0.0010	37	1.4567	0.15	0.006	2.0	0.080	3.896	8.59	91500	20400	142000	32000
7414WN	70	2.7559	0.015	0.0006	180	7.0866	0.025	0.0010	42	1.6535	0.15	0.006	2.5	0.100	5.688	12.54	115500	26000	173000	39000
7415WN	75	2.9528	0.010	0.0004	190	7.4803	0.030	0.0012	45	1.7717	0.15	0.006	2.5	0.100	6.745	14.87	148000	33500	202000	45500
7416WN	80	3.1496	0.015	0.0006	200	7.8740	0.030	0.0012	48	1.8898	0.15	0.006	2.5	0.100	7.747	17.08	153000	34500	206000	46500
7418PW	90	3.5433	0.020	0.0008	225	8.8583	0.030	0.0012	54	2.1268	0.20	0.008	3.0	0.120	11.159	24.60	200000	45000	236000	53000
7420PW	100	3.9370	0.020	0.0008	265	10.4331	0.036	0.0014	60	2.3622	0.20	0.008	3.0	0.120	18.643	41.10	279000	63000	315000	71000

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Based on 10⁶ revolutions of calculated fatigue life.

LIGHT 5200 SERIES

- Features the same bores and outside diameters as the corresponding bearings in the 200 Series single-row radial type.
- Double-row angular contact ball bearings meet the demand for increased axial and radial rigidity in applications where the design limits space.
- Available in both Conrad and maximum capacity types.
- Suffix "K" denotes Conrad (example: 5203K).
- Suffix "W" or no suffix denotes maximum capacity type (example: 5212W, 5213).
- Please note: these double-row series bearings are not prelubricated.



DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C			Fillet Radius ⁽¹⁾		Contact Angle	Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _e ⁽⁶⁾	
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	in.	mm	in.		kg	lbs.	N	lbs.	N	lbs.
5200K ⁽²⁾	10	0.3937	0.008	0.0003	30	1.1811	0.009	0.00035	14.27	0.562	9/16	0.6	0.024	20°	0.054	0.12	5060	1140	10600	2400
5201K ⁽²⁾	12	0.4724	0.008	0.0003	32	1.2598	0.012	0.00045	15.88	0.625	5/8	0.6	0.024	20°	0.068	0.15	4700	1060	9060	2040
5202K ⁽²⁾	15	0.5906	0.008	0.0003	35	1.3780	0.012	0.00045	15.88	0.625	5/8	0.6	0.024	20°	0.073	0.16	7100	1600	13500	3050
5203K ⁽²⁾	17	0.6693	0.008	0.0003	40	1.5748	0.012	0.00045	17.48	0.688	11/16	0.6	0.024	20°	0.104	0.23	9200	2080	16800	3800
5204K ⁽²⁾	20	0.7874	0.010	0.0004	47	1.8504	0.012	0.00045	20.62	0.812	13/16	1.0	0.039	20°	0.163	0.36	12600	2850	22600	5100
5205K ⁽²⁾	25	0.9843	0.010	0.0004	52	2.0472	0.013	0.0005	20.62	0.812	13/16	1.0	0.039	20°	0.186	0.41	15100	3400	24800	5600
5206K	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	23.83	0.938	15/16	1.0	0.039	20°	0.295	0.65	21700	4900	34600	7800
5206W	30	1.1811	0.010	0.0004	62	2.4409	0.013	0.0005	23.83	0.938	15/16	1.0	0.039	30°	0.295	0.65	27000	6100	39000	8800
5207K	35	1.3780	0.012	0.00047	72	2.8346	0.013	0.0005	26.97	1.062	1 1/16	1.0	0.039	20°	0.481	1.06	29000	6550	45000	10200
5207W	35	1.3780	0.012	0.00047	72	2.8346	0.013	0.0005	26.97	1.062	1 1/16	1.0	0.039	30°	0.481	1.06	36800	8300	51500	11600
5208K	40	1.5748	0.012	0.00047	80	3.1496	0.013	0.0005	30.17	1.188	1 3/16	1.0	0.039	20°	0.566	1.32	33900	7650	51500	11600
5208W	40	1.5748	0.012	0.00047	80	3.1496	0.013	0.0005	30.17	1.188	1 3/16	1.0	0.039	30°	0.599	1.32	47000	10600	62000	14000
5209K	45	1.7717	0.012	0.00047	85	3.3456	0.015	0.0006	30.17	1.188	1 3/16	1.0	0.039	20°	0.699	1.54	39000	8800	57000	12900
5209W	45	1.7717	0.012	0.00047	85	3.3456	0.015	0.0006	30.17	1.188	1 3/16	1.0	0.039	30°	0.699	1.54	51500	11600	64800	14600
5210K	50	1.9685	0.012	0.00047	90	3.5433	0.015	0.0006	30.17	1.188	1 3/16	1.0	0.039	20°	0.753	1.66	44400	10000	62000	14000
5210W	50	1.9685	0.012	0.00047	90	3.5433	0.015	0.0006	30.17	1.188	1 3/16	1.0	0.039	30°	0.753	1.66	56000	12700	66600	15000
5211K	55	2.1654	0.015	0.0006	100	3.9370	0.015	0.0006	33.32	1.312 ⁽⁴⁾	1 5/16	1.5	0.059	20°	1.039	2.29	71000	12700	76000	17300
5211W	55	2.1654	0.015	0.0006	100	3.9370	0.015	0.0006	33.32	1.312 ⁽⁴⁾	1 5/16	1.5	0.059	30°	1.039	2.29	62000	16000	84000	19000
5212K	60	2.3622	0.015	0.0006	110	4.3307	0.015	0.0006	36.53	1.438 ⁽⁴⁾	1 7/16	1.5	0.059	20°	1.388	3.06	88800	14000	85000	19300
5212W	60	2.3622	0.015	0.0006	110	4.3307	0.015	0.0006	36.53	1.438 ⁽⁴⁾	1 7/16	1.5	0.059	30°	1.388	3.06	72000	20000	103000	23800
5213K	65	2.5591	0.015	0.0006	120	4.7244	0.015	0.0006	38.10	1.500 ⁽⁴⁾	1 1/2	1.5	0.059	20°	1.923	4.24	76800	17300	101000	22800
5213 ⁽³⁾	65	2.5591	0.015	0.0006	120	4.7244	0.015	0.0006	38.10	1.500 ⁽⁴⁾	1 1/2	1.5	0.059	30°	1.923	4.24	92000	20800	99500	22400
5214K	70	2.7559	0.015	0.0006	125	4.9213	0.018	0.0007	39.67	1.562 ⁽⁴⁾	1 9/16	1.5	0.059	20°	2.096	4.62	84000	19000	108000	24500
5214 ⁽³⁾	70	2.7559	0.015	0.0006	125	4.9213	0.018	0.0007	39.67	1.562 ⁽⁴⁾	1 9/16	1.5	0.059	30°	2.096	4.62	126000	28500	139000	31500
5215K	75	2.9528	0.015	0.0006	130	5.1181	0.018	0.0007	41.28	1.625 ⁽⁴⁾	1 5/8	1.5	0.059	20°	2.336	5.15	85700	19300	108000	24500
5215 ⁽³⁾	75	2.9528	0.015	0.0006	130	5.1181	0.018	0.0007	41.28	1.625 ⁽⁴⁾	1 5/8	1.5	0.059	30°	2.336	5.15	137000	31000	144000	32500
5216 ⁽³⁾	80	3.1496	0.015	0.0006	140	5.5118	0.018	0.0007	44.45	1.750 ⁽⁴⁾	1 3/4	2.0	0.079	30°	2.867	6.32	162000	36500	168000	38000
5217 ⁽³⁾	85	3.3465	0.020	0.0008	150	5.9055	0.018	0.0007	49.23	1.938 ⁽⁵⁾	1 15/16	2.0	0.079	30°	3.629	8.00	177000	40000	188000	42500
5218W	90	3.5433	0.020	0.0008	160	6.2992	0.025	0.0010	52.37	2.062 ⁽⁵⁾	2 1/16	2.0	0.079	20°	4.518	9.96	191000	43000	202000	45500
5219 ⁽³⁾	95	3.7402	0.020	0.0008	170	6.6929	0.025	0.0010	55.58	2.188 ⁽⁵⁾	2 3/16	2.0	0.079	30°	5.411	11.93	235000	53000	244000	55000
5220W	100	3.9370	0.020	0.0008	180	7.0866	0.025	0.0010	60.32	2.375 ⁽⁵⁾	2 3/8	2.0	0.079	20°	6.541	14.42	253000	57000	259000	58500
5221W	105	4.1339	0.020	0.0008	190	7.4803	0.030	0.0012	65.10	2.563 ⁽⁵⁾	2 3/4	2.0	0.079	20°	7.537	16.60	301000	67600	300000	67500
5222 ⁽³⁾	110	4.3307	0.020	0.0008	200	7.8740	0.030	0.0012	69.85	2.750 ⁽⁵⁾	2 3/4	2.0	0.079	30°	9.503	20.95	339000	76500	326000	73500

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Sizes have PRB molded nylon retainers.

⁽³⁾ These sizes have contact angle converging inside the bearing.

⁽⁴⁾ Width tolerance is ± 0.00 mm to -0.15 mm (± 0.000 to -0.006 ”).

⁽⁵⁾ Width tolerance is ± 0.00 mm to -0.20 mm (± 0.000 to -0.008 ”).

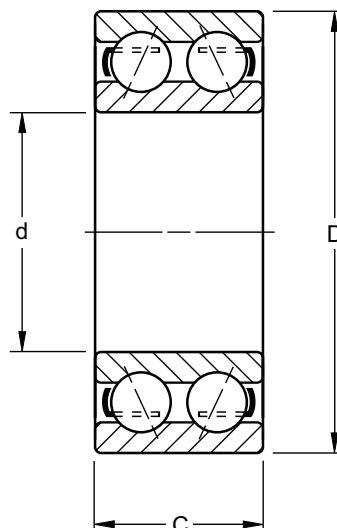
⁽⁶⁾ Based on 10⁶ revolutions of calculated fatigue life.

Note: See page D45 for Shield and Snap Ring Combinations.



MEDIUM 5300 SERIES

- Features the same bores and outside diameters as corresponding bearings in the 300 Series single-row radial type.
- Double-row angular contact ball bearings meet the demand for increased axial and radial rigidity in applications where design limits space.
- Available in Conrad and maximum capacity types.
- Suffix "K" denotes Conrad type (example: 5303K).
- Suffix "W" or no suffix denotes maximum capacity type (examples: 5312W, 5319).
- Please note that these double-row series bearings are not prelubricated.



DIMENSIONS – TOLERANCES

Bearing Number	Bore d				Outside Diameter D				Width C				Fillet Radius ⁽¹⁾	Contact Angle	Wt.		Static Load Rating C ₀		Extended Dynamic Load Rating C _E ⁽⁶⁾	
			tolerance +0.000 mm +0.0000" to minus				tolerance +0.000 mm +0.0000" to minus				+0.00 mm, -0.12 mm +0.000", -0.005"									
	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.			kg	lbs.	N	lbs.	N	lbs.
5302	15	0.5906	0.008	0.0003	42	1.6535	0.012	0.00045	19.05	0.75	¾	1.0	0.039	20°	0.141	0.31	9200	2080	16800	3800
5303K	17	0.6693	0.008	0.0003	47	1.8504	0.012	0.00045	22.22	0.875	7/8	1.0	0.039	20°	0.191	0.42	12600	2850	22600	5100
5304K ⁽²⁾	20	0.7874	0.010	0.0004	52	2.0472	0.013	0.0005	22.22	0.875	7/8	1.0	0.039	20°	0.222	0.49	15300	3450	28400	6400
5305K ⁽²⁾	25	0.9843	0.010	0.0004	62	2.4409	0.013	0.0005	25.4	1.000	1	1.0	0.039	20°	0.367	0.81	21100	4750	37700	8500
5306K	30	1.1811	0.010	0.0004	72	2.8346	0.013	0.0005	30.17	1.188	1⅜	1.0	0.039	20°	0.612	1.35	29000	6550	47000	10600
5306W	30	1.1811	0.010	0.0004	72	2.8346	0.013	0.0005	30.17	1.188	1⅜	1.0	0.039	30°	0.612	1.35	41000	9300	62000	14000
5307K	35	1.3780	0.012	0.00047	80	3.1496	0.013	0.0005	34.93	1.375	1⅜	1.5	0.059	20°	0.871	1.92	36000	8300	59500	13400
5307W	35	1.3780	0.012	0.00047	80	3.1496	0.013	0.0005	34.93	1.375	1⅜	1.5	0.059	30°	0.871	1.92	47900	10800	69200	15600
5308K	40	1.5748	0.012	0.00047	90	3.5433	0.015	0.0006	36.53	1.438	1⅞	1.5	0.059	20°	1.139	2.51	46000	10400	72400	16300
5308W	40	1.5748	0.012	0.00047	90	3.5433	0.015	0.0006	36.53	1.438	1⅞	1.5	0.059	30°	1.139	2.51	66600	15000	90600	20400
5309K	45	1.7717	0.012	0.00047	100	3.9370	0.015	0.0006	39.67	1.562	1⅞	1.5	0.059	20°	1.433	3.16	56400	12700	87000	19600
5309W	45	1.7717	0.012	0.00047	100	3.9370	0.015	0.0006	39.67	1.562	1⅞	1.5	0.059	30°	1.433	3.16	81000	18300	106000	24000
5310K	50	1.9685	0.012	0.00047	110	4.3307	0.015	0.0006	44.45	1.750	1¾	2.0	0.079	20°	2.091	4.61	73000	16600	111000	25000
5310W	50	1.9685	0.012	0.00047	110	4.3307	0.015	0.0006	44.45	1.750	1¾	2.0	0.079	30°	2.091	4.61	97000	22000	126000	28500
5311K	55	2.1654	0.015	0.0006	120	4.7244	0.015	0.0006	49.22	1.938 ⁽³⁾	1⅝	2.0	0.079	20°	2.722	6.00	86700	19500	124400	28000
5311W	55	2.1654	0.015	0.0006	120	4.7244	0.015	0.0006	49.22	1.938 ⁽³⁾	1⅝	2.0	0.079	20°	2.722	6.00	113000	25500	144000	32500
5312W	60	2.3622	0.015	0.0006	130	5.1181	0.018	0.0007	53.98	2.125 ⁽³⁾	2⅛	2.0	0.079	20°	3.423	7.54	151000	34000	191000	43000
5313W	65	2.5591	0.015	0.0006	140	5.5118	0.018	0.0007	58.72	2.312 ⁽³⁾	2⅝	2.0	0.079	20°	4.163	9.17	173000	39000	213000	48000
5314W	70	2.7559	0.015	0.0006	150	5.9055	0.018	0.0007	63.50	2.500 ⁽³⁾	2½	2.0	0.079	20°	5.362	11.82	195000	44000	239000	54000
5315W	75	2.9528	0.015	0.0006	160	6.2992	0.025	0.0010	68.30	2.689 ⁽³⁾	2⅞	2.0	0.079	20°	6.428	14.17	222000	50000	266000	60000
5316W	80	3.1496	0.015	0.0006	170	6.6929	0.025	0.0010	68.28	2.688 ⁽³⁾	2⅞	2.0	0.079	20°	7.366	16.24	248000	56000	284000	64000
5317W	85	3.3465	0.020	0.0008	180	7.0866	0.025	0.0010	73.02	2.875 ⁽⁴⁾	2⅞	2.5	0.098	20°	8.827	19.46	279000	63000	308000	69500
5318W	90	3.5433	0.020	0.0008	190	7.4803	0.030	0.0012	73.02	2.875 ⁽⁴⁾	2⅞	2.5	0.098	20°	9.616	21.20	308000	69500	333000	75000
5319W	95	3.7402	0.020	0.0008	200	7.8740	0.030	0.0012	77.77	3.062 ⁽⁴⁾	3⅜	2.5	0.098	30°	11.562	25.49	319000	72000	333000	75000
5320W	100	3.9370	0.020	0.0008	215	8.4646	0.030	0.0012	82.55	3.250 ⁽⁴⁾	3¼	2.5	0.098	20°	14.333	31.57	377000	85000	377000	85000
5322W	110	4.3307	0.020	0.0008	240	9.4488	0.030	0.0012	92.08	3.625 ⁽⁴⁾	3⅝	2.5	0.098	20°	20.153	44.43	479000	108000	453000	102000
5324W	120	4.7244	0.020	0.0008	260	10.2362	0.035	0.0014	104.78	4.125 ⁽⁴⁾	4⅛	2.5	0.098	20°	28.291	62.37	555000	125000	497000	112000
5328W	140	5.5118	0.025	0.0010	300	11.8110	0.035	0.0014	114.30	4.500 ⁽⁵⁾	4½	3.0	0.118	20°	38.102	84.00	630000	140000	570000	129000

⁽¹⁾ Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾ Sizes have PRB molded nylon retainers.

⁽³⁾ Width tolerance is +.00 mm to -.15 mm (+.000 to -.006").

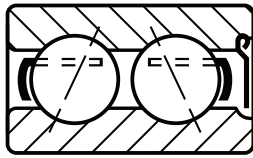
⁽⁴⁾ Width tolerance is +.00 mm to -.20 mm (+.000 to -.008").

⁽⁵⁾ Width tolerance is +.00 mm to -.25 mm (+.000 to -.010").

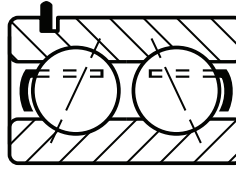
⁽⁶⁾ Based on 10⁶ revolutions of calculated fatigue life.

Note: See opposite page for shield and snap ring combinations.

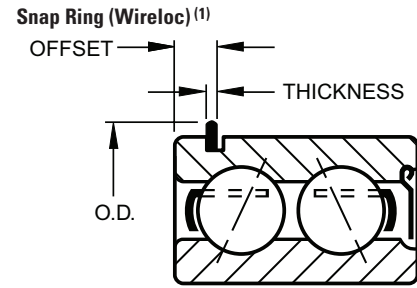
SHIELD AND SNAP RING COMBINATIONS



One Shield D



Open Type G



One Shield DG

5200 SERIES

Bearing Number	Width +0.00 mm, -.12 mm +0.000", -.005"			Wt.		Bearing Number	Snap Ring ⁽¹⁾			Wt.	
	mm	in.	in.	kg	lbs.		O.D.	Thickness	Offset	kg	lbs.
5200KDD2	15.88	0.625 ⁽³⁾	5/8	0.054	0.12	—	34.5	1.07	3.05	—	—
5201KD(DD)	15.88	0.625	5/8	0.064	0.14	—	36.5	1.07	3.05	—	—
—	—	—	—	—	—	—	39.3	1.07	3.05	—	—
5203KD(KDD3)	17.48	0.688	1 1/16	0.159	0.35	5203KDG	44.4	1.07	3.05	0.127	0.28
5204KD	20.62	0.812	1 3/16	0.118	0.26	5204KG	52.4	1.07	3.45	0.150	0.33
5205KD	22.22	0.875	7/8	0.204	0.45	5205KG	57.5	1.07	3.45	0.200	0.44
5206WD	26.97	1.062	1 1/16	0.336	0.74	5206WG(KG)	67.5	1.65	4.83	0.331	0.73
5207WD	30.17	1.188	1 3/16	0.546	1.21	5207KG	78.2	1.65	4.83	—	—
5208WD	30.17	1.188	1 3/16	0.662	1.46	—	86.5	1.65	4.83	—	—
5209WD	30.17	1.188	1 3/16	0.712	1.57	5209WG(KG)	91.3	1.65	4.83	0.721	1.59
5210WD	33.32	1.312	1 5/16	0.816	1.80	5210WG(KG)	96.4	2.41	5.59	0.771	1.70
5211WD	33.32	1.312	1 5/16	1.043	2.30	5211WG(KG)	106.4	2.41	5.59	1.066	2.35
5212WD	39.67	1.562	1 9/16	1.497	3.30	5212WG(KG)	116.3	2.41	5.59	1.424	3.14
5213WD	—	—	—	—	—	—	129.4	2.77	6.73	—	—
5214WD ⁽²⁾	39.67	1.562	1 9/16	2.137	4.71	—	134.5	2.77	6.73	—	—
—	—	—	—	—	—	5215G ⁽²⁾	139.7	2.77	6.73	2.327	5.13
5216DD ⁽²⁾	47.62	1.875	1 7/8	3.062	6.75	5216G ⁽²⁾	149.6	2.77	7.54	2.962	6.53
—	—	—	—	—	—	5217G ⁽²⁾	159.5	2.77	7.54	3.724	8.21
5218WD	52.37	2.062	2 1/16	4.504	9.93	—	169.5	2.77	7.54	—	—
—	—	—	—	—	—	5219G ⁽²⁾	182.6	3.05	8.61	5.498	12.12

5300 SERIES

Bearing Number	Width +0.00 mm, -.12 mm +0.000", -.005"			Wt.		Bearing ⁽⁴⁾ Number	Snap Ring ⁽¹⁾			Wt.	
	mm	in.	in.	kg	lbs.		O.D.	Thickness	Offset	kg	lbs.
5303KDD	22.25	0.875	7/8	—	—	5303KG	52.4	1.07	3.45	0.227	0.50
5304KDD	22.25	0.875	7/8	—	—	5304KG	57.6	1.07	3.45	0.231	0.51
5305KDD2	25.4	1.000	1	—	—	5305KG	67.5	1.65	4.83	0.376	0.83
5306WD	33.32	1.312	1 5/16	0.640	1.41	5306WG(KG)	78.2	1.65	4.83	0.608	1.34
5307WD	38.10	1.500	1 1/2	0.857	1.89	5307WG(KG)	86.5	1.65	4.83	0.807	1.78
5308WD	39.67	1.562	1 9/16	1.143	2.52	5308WG(KG)	96.4	2.41	5.59	1.102	2.43
5309WD	42.88	1.688	1 11/16	1.665	3.67	5309WG(KG)	106.4	2.41	5.59	1.461	3.22
5310WD	47.62	1.875	1 7/8	2.019	4.45	5310WG(KG)	116.3	2.41	5.59	1.932	4.26
5311D ⁽⁴⁾	52.37	2.062	2 1/16	2.826	6.23	5311WG(KG)	129.4	2.77	6.73	2.789	6.15
5312D ⁽⁴⁾	57.15	2.250	2 1/4	3.423	7.54	5312WG(KG)	139.7	2.77	6.73	3.493	7.70
5313D ⁽⁴⁾	61.72	2.438	2 7/16	4.663	10.28	5313WG(KG)	149.6	2.77	7.54	4.291	9.46
—	—	—	—	—	—	5314WG(KG)	159.5	2.77	7.54	5.466	12.05
—	—	—	—	—	—	5315KG	169.6	2.77	7.54	—	—

⁽¹⁾ The snap ring is normally packaged separately in the box with the bearing.

⁽²⁾ These sizes have contact angle converging inside bearing (30°).

⁽³⁾ Inner ring width is 19.05 mm (.7500").

⁽⁴⁾ Ring widths are different for these parts. Contact a Timken sales engineer to validate size.