

Specialty Ball Bearings

NICE[®]

Providing custom-engineered bearing solutions
to industry for over 100 years



RBC[®]
BEARINGS

ISO 9001:2000

www.rbcbearings.com
800.390.3300



RBC Bearings Incorporated (RBC Bearings, RBC) has had a long tradition of innovation, commitment, and quality since the company was founded in 1919. Today, RBC Bearings has grown into a world-class manufacturer of standard and custom-engineered bearings and related products, with a product focus on research, testing, and development of the best product for specific applications.

What We Manufacture

RBC Bearings, with facilities throughout North America and Europe, provides bearings and precision products for applications in the construction, mining, material handling, transportation and off-highway equipment, robotics and automation, farming, machine tool, and semiconductor equipment industries. Through RBC Aerospace Bearings, the company is a major manufacturer of highly-engineered bearings and precision products for military, defense, and commercial aerospace applications.

RBC's high-quality bearings include:

- **Heavy Duty Needle Roller Bearings** - Pitchlign[®] caged heavy duty needle roller bearings, inner rings, type TJ TandemRoller[®] bearings for long life.
- **Spherical Plain Bearings** - Radial, angular, contact, high misalignment, extended inner ring, DuraLube[™] maintenance-free spherical plain bearings, QuadLube[®] long life bearings, ImpactTuff[®] case carburized bearings, ShimPack[®] double-acting angular contact bearings, CrossLube[®] lubrication groove systems, and SpreadLock[®] Seal.
- **Cam Followers and Yoke Rollers** - Standard stud, heavy stud, yoke type, caged roller followers, RBC Roller[®] long life cam followers, HexLube[®] universal cam followers, airframe track rollers. Mastguide rollers and carriage rollers, chain sheaves (for leaf chain), toothless sprockets (for roller chain), and heavy-duty roller bearing construction.
- **Rod Ends** - Commercial and aerospace, precision, Mil-Spec series, self-lubricating, inch and metric. Heim[®], Unibal[®], and Spherco[®] brands.
- **Self-Lubricating Bearings** - Radial, thrust, rod ends, spherical plain bearings, high temperature, high loads, inch and metric. Fiberglide[®].
- **Thin Section Ball Bearings** - Standard cross sections to one inch. Sizes to 40 inches. Stainless steel and other materials available. Seals available on all sizes and standard cross sections.
- **Airframe Control Bearings** - Ball bearing types, self-lubricating types, needle roller track rollers.
- **Ground, Semiground, and Unground Ball Bearings** - Full complement, utilizes design and burnished races for higher loads, long life, and smooth operation.
- **Dowel Pins, Loose Needle Rollers, Shafts**
- **Tapered Roller Bearings** - Case-hardened and through-hardened in a variety of sizes, used in Class 8 heavy truck and trailer wheel bearings, final drive transmissions and gear boxes.
- **Tapered Roller Thrust Bearings** - Case-hardened. Sealed and unsealed for truck, tractor, and construction equipment steer axles, and Class 8 trailer landing gear.
- **Custom Designed Bearings** - RBC produces a wide range of custom bearings in various materials for specific applications.

Nice Precision Ground Product

In 1902, William Nice founded one of the first "anti-friction" bearing manufacturing plants. Starting with unground ball types and developing into the ground field, Nice today produces a complete line of precision ground, semi-ground, and unground bearings and bearing assemblies. They are made in easy-to-use inch dimensions and are recommended for medium loads with speeds up to 5000 rpm. They are available with nylon retainers as standard with steel and stainless steel retainers optional. They are also available with a variety of seal and shield combinations. Metric ball bearings are also made for customers with special requirements. Focus industries for Nice Ball Bearings include the automotive, agricultural, lawn equipment, semiconductor, medical and material handling markets.

Nice Unground Industrial Product

Nice Ball Bearings produces a complete line of unground radial, thrust, and combination radial and thrust ball bearings for applications where the speeds are low and the precision of a ground bearing is not cost effective. These are available with full ball complements, no retainer, and unitized assembly for ease of installation.

How We Can Serve You

RBC has implemented a total quality control system that uses statistical quality control at all facilities, and manufactures in high volume to a just-in-time program.

To serve the ongoing needs of customers, RBC has a network of over 2,400 distributors and sales engineers throughout North and South America and Europe, with authorized agents worldwide. For assistance with your bearing application, contact:

Customer Service - 800.390.3300

Warranty

RBC products are warranted for material and workmanship for a period not to exceed 90 days from shipment and for a value not to exceed purchase price. No other warranty is in effect.

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PRODUCT Selection Guide

Nice® Ball Bearings, Inc., produces a full line of ground, semi-ground, and unground bearing assemblies. To choose the exact bearing you need, start with the Nice® line of standard inch-dimension, radial, angular contact and thrust ball bearings. Standard series bearings can be customized to include many features that can satisfy the demands of many special applications. They are available with special bores, modified outer ring shapes, extended inner rings, locking devices, and flanged housings. Standards can be ordered sealed, shielded, or open, and are offered in ground and semi-ground grades to deliver the most cost effective solution for your application.

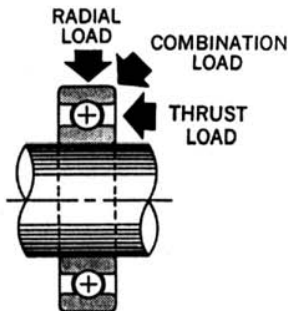
If you are now designing with only ABEC-1 level or higher bearings, chances are there may be a more economical solution to your application. A Nice® application engineer can help you determine the exact precision your design requires, and show you how to take advantage of the savings, selection and special features available in our standard series. Even when a standard isn't the answer, our engineers can deliver an economical, modified standard design that is "fit for purpose."

Nice® Standard Product Line

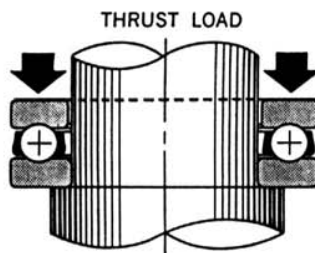
Class	Series	Type	Ground Surfaces	Bore Range
Ground	1600™	(Retainer) Radial	Raceways Bore, O.D., Faces	3/16"-1 5/16" 4.76-49.21
	7500™	Radial		1/2"-1 1/4" 12.70-31.75
	7600™	Radial Extended Inner		1/2"-1 1/4" 12.70-31.75
	ER	Radial Extended Inner Metric O.D.		5/8"-1 15/16" 15.86-49.21
Semi-Ground	6900™	Radial Flanged Extended Inner	Raceways, O.D., Faces	3/8"-1" 9.53-25.40
	3000™	(Retainer) Radial	Outer Raceways, O.D., Faces	3/16"-1" 4.76-25.40
Unground	400™/5000™	(Full Complement) Radial	None	3/16"-2" 4.76-50.80
	500™	Radial/Thrust		1/4"-2 1/4" 6.35-57.15
	600™	Thrust		1/4"-1 1/2" 6.35-38.10
Modified Standards and Specials	All	Radial Retainer and Full Types Thrust Radial/Thrust	Any Combination	3/16"-2" 4.76-50.80

DESIGN

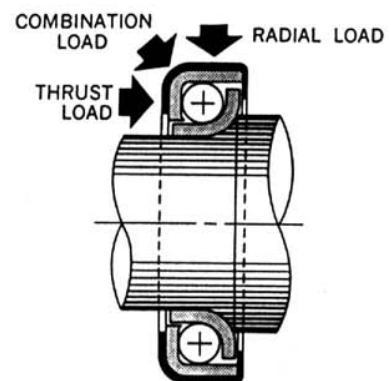
Three basic ball bearing types are illustrated to assist in proper design selection



1. Radial bearings are designed primarily to carry loads perpendicular to the axis of the bearing bore. They will also accommodate limited thrust loading or a combination radial and thrust load.



2. Thrust bearings carry loads applied parallel to the axis of the bearing bore. They are not designed to accommodate radial loads.



3. Combination radial and thrust bearings are designed for simultaneously applied thrust and radial loads. Combination assemblies will also carry pure thrust loading; however, they are not recommended for straight radial loads unless provisions are made to keep the inner rings and outer rings in proper contact with the balls.

Many sizes and types of the three basic designs illustrated are available for selection from this catalog. However, if you have an unusual application problem, Nice® field and factory engineers will be glad to give you the benefit of their specialized training and broad practical experience.

PRODUCT Features

Modified Standards

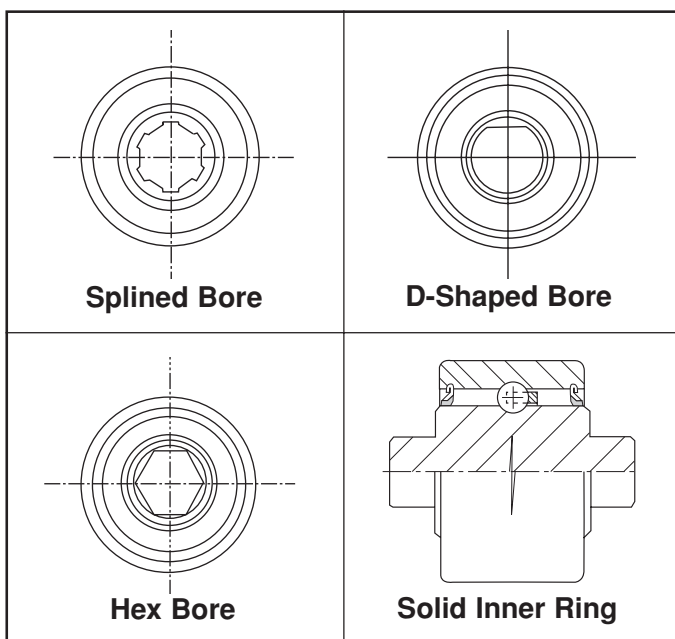
Modified standard bearings feature a standard cage and ball complement or a full ball complement, with custom engineered modifications to the other bearing components. The exact inner and outer ring dimensions and designs can be combined with a wide range of seals, shields, special greases, special materials and special finishes.

Modification instead of full customizing gives the user the benefits of a fully custom bearing with lower costs and faster delivery times. Prototype lots are readily affordable and available for testing and evaluation.

Modified standard bearings offer the greatest value for your bearing dollar by offering custom bearings at standard prices. Here are some of the many ways we can modify standard ball bearings to fit any application.

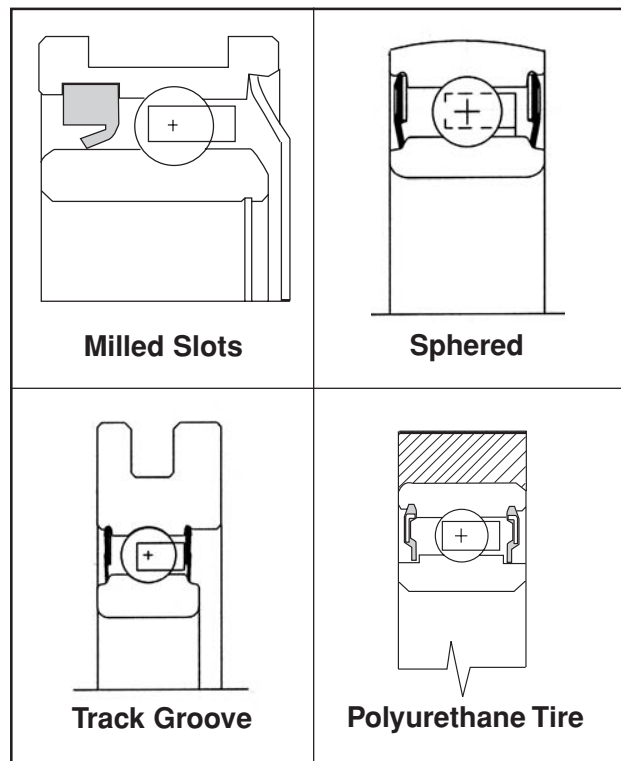
Inner Rings

A variety of bore shapes and sizes can be custom engineered to simplify mounting procedures, reduce assembly costs, and allow misalignment.



Outer Rings

Outer rings can be custom engineered to include milled slots, snap rings, track grooves, or even a variety of plastic tires. Add to this flanges or pulley units and a variety of custom solutions are readily available.



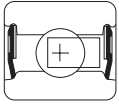
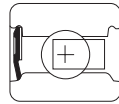
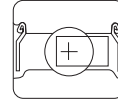
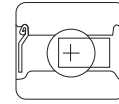
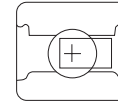
Materials and Finishes

Nice® has extensive experience with a variety of special materials and finishes developed to stand up to various contaminants or to take unusually hard wear. Nice® bearings are made from steels of various chemical compositions. Carburizing grades are case hardened to desired depths and hardness values for wear and breakdown resistance. High carbon chrome alloy steels are through hardened for high wear and fatigue resistance. Stainless steels are available for corrosion resistance and food service applications. Special platings and finishes such as zinc, black oxide, and thin dense chrome are available for special applications. Nice® application engineers can assist in bearing selection for special material applications.

1600 Series™ Precision Ground Radial Bearings

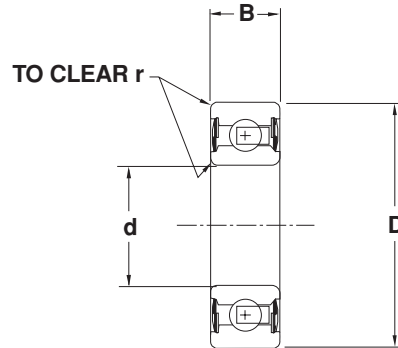
Precision ground 1600 Series™ bearings are specially designed to provide a line of low cost yet high quality bearings for adaptation to a majority of precision bearing applications. They are made in easy to use inch dimensions and are recommended for medium loads and for maximum speeds in the range of 5000 rpm.

The 1600 Series™ bearings are precision ground on all surfaces with exceptional care given to the ball grooves. Careful heat treatment provides a uniform and exact degree of hardness for maximum life. A ball retainer, or separator, is used to increase the range of allowable speeds by reducing ball-to-ball contact friction. The 1600 Series™ radial bearings are available open, single or doubled shielded, or single or double sealed. Double sealed and double shielded bearings are supplied grease packed as standard. Open and single closure bearings can be supplied greased on request.

BEARING NUMBER					PRINCIPLE DIMENSIONS		
					BORE d (in) (mm) +.0000 +.000 -.0005 -.013	O.D. D (in) (mm) +.0000 +.000 -.0005 -.013	
DOUBLE SEAL	SINGLE SEAL	DOUBLE SHIELD	SINGLE SHIELD	OPEN			
1602DC ⁵	1602SC ⁵	1602DS	1602SS	1602NS	0.2500 6.350	0.6875 17.463	
1603DC	1603SC	1603DS	1603SS	1603NS	0.3125 7.938	0.8750 22.225	
1604DC	1604SC	1604DS	1604SS	1604NS	0.3750 9.525	0.8750 22.225	
1605DC	1605SC	1605DS	1605SS	1605NS	0.3125 7.938	0.9063 23.020	
1606DC	1606SC	1606DS	1606SS	1606NS	0.3750 9.525	0.9063 23.020	
1607DC	1607SC	1607DS	1607SS	1607NS	0.4375 11.113	0.9063 23.020	
1614DC	1614SC	1614DS	1614SS	1614NS	0.3750 9.525	1.1250 28.575	
1615DC	1615SC	1615DS	1615SS	1615NS	0.4375 11.113	1.1250 28.575	
1616DC	1616SC	1616DS	1616SS	1616NS	0.5000 12.700	1.1250 28.575	
1620DC	1620SC	1620DS	1620SS	1620NS	0.4375 11.113	1.3750 34.925	
1621DC	1621SC	1621DS	1621SS	1621NS	0.5000 12.700	1.3750 34.925	

- ① Width for sealed versions = 0.3125 (7.938)
- ② Width for sealed versions = 0.3438 (8.733)
- ③ Weights given are for greased and sealed versions
- ④ 1638 and larger +.0000/-.0006 (+.000/-.15)
- ⑤ Multi-part seal see page 42

1600 Series™ Precision Ground Radial Bearings

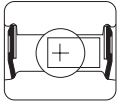
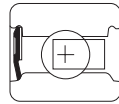
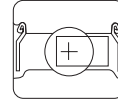
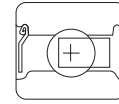
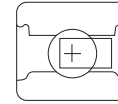


		BASIC LOAD RATINGS		WEIGHT	ABUTMENT AND FILLET DIMENSIONS		
WIDTH B (in) (mm) +.000 +.000 -.005 -.13	DYNAMIC C (lbs) (N)	STATIC Co (lbs) (N)	W ³ (lbs) (kg)	da min (in) (mm)	Da max (in) (mm)	r max (in) (mm)	
0.2500 ¹ 6.350	511 2274	170 757	0.02 0.01	0.330 8.38	0.614 15.60	0.012 0.30	
0.2813 ² 7.150	644 2866	255 1135	0.03 0.01	0.474 12.04	0.778 19.76	0.012 0.30	
0.2813 ² 7.150	644 2866	255 1135	0.03 0.01	0.474 12.04	0.778 19.76	0.015 0.38	
0.3125 7.938	698 3106	300 1335	0.04 0.02	0.503 12.78	0.778 19.76	0.012 0.30	
0.3125 7.938	698 3106	300 1335	0.04 0.02	0.517 13.13	0.778 19.76	0.015 0.38	
0.3125 7.938	698 3106	300 1335	0.03 0.01	0.517 13.13	0.778 19.76	0.015 0.38	
0.3750 9.525	1200 5340	475 2114	0.06 0.03	0.595 15.11	1.014 25.76	0.025 0.64	
0.3750 9.525	1200 5340	475 2114	0.06 0.03	0.622 15.80	1.014 25.76	0.025 0.64	
0.3750 9.525	1200 5340	475 2114	0.06 0.03	0.622 15.80	1.014 25.76	0.025 0.64	
0.4375 11.113	1878 8357	850 3783	0.12 0.05	0.658 16.71	1.203 30.56	0.025 0.64	
0.4375 11.113	1878 8357	850 3783	0.11 0.05	0.720 18.29	1.203 30.56	0.025 0.64	

1600 Series™ Precision Ground Radial Bearings (con't)

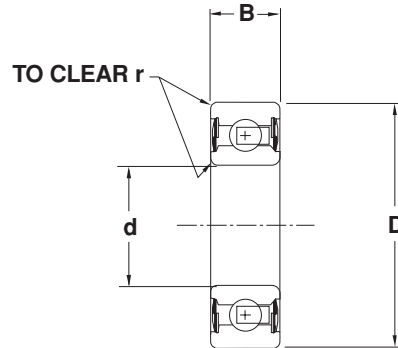
Precision ground 1600 Series™ bearings are specially designed to provide a line of low cost yet high quality bearings for adaptation to a majority of precision bearing applications. They are made in easy to use inch dimensions and are recommended for medium loads and for maximum speeds in the range of 5000 rpm.

The 1600 Series™ bearings are precision ground on all surfaces with exceptional care given to the ball grooves. Careful heat treatment provides a uniform and exact degree of hardness for maximum life. A ball retainer, or separator, is used to increase the range of allowable speeds by reducing ball-to-ball contact friction. The 1600 Series™ radial bearings are available open, single or doubled shielded, or single or double sealed. Double sealed and double shielded bearings are supplied grease packed as standard. Open and single closure bearings can be supplied greased on request.

BEARING NUMBER					PRINCIPLE DIMENSIONS		
 DOUBLE SEAL	 SINGLE SEAL	 DOUBLE SHIELD	 SINGLE SHIELD	 OPEN	BORE d (in) (mm) +.0000 +.000 -.0005 -.013	O.D. D (in) (mm) +.0000 +.000 -.0005 -.013	
1623DC	1623SC	1623DS	1623SS	1623NS	0.6250 15.875	1.3750 34.925	
1628DC	1628SC	1628DS	1628SS	1628NS	0.6250 15.875	1.6250 41.275	
1630DC	1630SC	1630DS	1630SS	1630NS	0.7500 19.050	1.6250 41.275	
1633DC	1633SC	1633DSD	1633SS	1633NS	0.6250 15.875	1.7500 44.450	
1635DC	1635SC	1635DS	1635SS	1635NS	0.7500 19.050	1.7500 44.450	
1638DC ^④	1638SC	1638DS	1638SS	1638NS	0.7500 19.050	2.0000 50.800	
1640DC ^④	1640SC	1640DS	1640SS	1640NS	0.8750 22.225	2.0000 50.800	
1641DC ^④	1641SC	1641DS	1641SS	1641NS	1.0000 25.400	2.0000 50.800	
1652DC ^{④ ⑤}	1652SC	1652DS	1652SS	1652NS	1.1250 28.575	2.5000 63.500	
1654DC ^{④ ⑤}	1654SC	1654DS	1654SS	1654NS	1.2500 31.750	2.5000 63.500	
1657DC ^{④ ⑤}	1657SC	1657DS	1657SS	1657NS	1.2500 31.750	2.5625 65.088	

- ① Width for sealed versions = 0.3125 (7.938)
- ② Width for sealed versions = 0.3438 (8.733)
- ③ Weights given are for greased and sealed versions
- ④ 1638 and larger +.0000/-.0006 (+.000/-.15)
- ⑤ Multi-part seal see page 42

1600 Series™ Precision Ground Radial Bearings (con't)

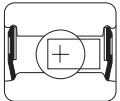
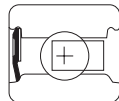
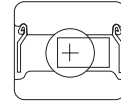
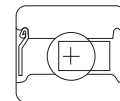
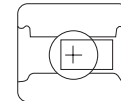


		BASIC LOAD RATINGS		WEIGHT	ABUTMENT AND FILLET DIMENSIONS		
WIDTH B (in) (mm) +.000 +.000 -.005 -.13	DYNAMIC C (lbs) (N)	STATIC Co (lbs) (N)	W ³ (lbs) (kg)	da min (in) (mm)	Da max (in) (mm)	r max (in) (mm)	
0.4375 11.113	1878 8357	850 3783	0.10 0.05	0.753 19.13	1.203 30.56	0.025 0.64	
0.5000 12.700	2595 11548	1010 4495	0.18 0.08	0.845 21.46	1.446 36.73	0.025 0.64	
0.5000 12.700	2595 11548	1010 4495	0.16 0.07	0.965 24.51	1.446 36.73	0.025 0.64	
0.5000 12.700	2593 11539	1025 4561	0.22 0.10	0.845 21.46	1.530 38.86	0.025 0.64	
0.5000 12.700	2593 11539	1025 4561	0.20 0.09	0.965 24.51	1.530 38.86	0.025 0.64	
0.5625 14.288	2967 13203	1350 6008	0.32 0.15	0.988 25.10	1.760 44.70	0.035 0.89	
0.5625 14.288	2967 13203	1350 6008	0.29 0.13	1.113 28.27	1.760 44.70	0.035 0.89	
0.5625 14.288	2967 13203	1350 6008	0.26 0.12	1.197 30.40	1.760 44.70	0.035 0.89	
0.6250 15.875	3864 17195	2120 9434	0.38 0.17	1.375 34.93	2.244 57.00	0.035 0.89	
0.6250 15.875	3864 17195	2120 9434	0.46 0.21	1.500 38.10	2.244 57.00	0.035 0.89	
0.6875 17.463	5360 23852	2620 11659	0.51 0.23	1.500 38.10	2.314 58.78	0.035 0.89	

3000 Series™ Semi-Ground Radial Bearings

- **PRECISION GROUND ON ALL CONTACT SURFACES EXCEPT BORE**
- **EASY TO USE INCH DIMENSIONS**
- **ECONOMICAL BEARING FOR LIGHTER LOADS THAN THE 1600 SERIES™**
- **MAX SPEED RANGE - 2500 - 3000 RPM**
- **HARDENED BEARING STEEL**
- **NYLON RETAINER STANDARD**
- **GREASED, DOUBLE SEALED OR DOUBLE SHIELDED STANDARD**
- **AVAILABLE SINGLE SEALED OR SINGLE SHIELDED, OPEN, AND WITH OR WITHOUT GREASE**



BEARING NUMBER					PRINCIPLE DIMENSIONS		
					BORE d (in) (mm)	O.D. D (in) (mm)	
DOUBLE SEAL	SINGLE SEAL	DOUBLE SHIELD	SINGLE SHIELD	OPEN	+0.005 +0.13 -0.000 -0.00	+0.0000 +0.00 -0.0005 ⁴ -0.013	
3002DC	3002SC	3002DS	3002SS	3002NS	0.2500 6.350	0.6875 17.463	
3003DC	3003SC	3003DS	3003SS	3003NS	0.3125 7.938	0.8750 22.225	
3004DC	3004SC	3004DS	3004SS	3004NS	0.3750 9.525	0.8750 22.225	
3005DC	3005SC	3005DS	3005SS	3005NS	0.3125 7.938	0.9063 23.020	
3006DC	3006SC	3006DS	3006SS	3006NS	0.3750 9.525	0.9063 23.020	
3007DC	3007SC	3007DS	3007SS	3007NS	0.4375 11.113	0.9063 23.020	
3014DC	3014SC	3014DS	3014SS	3014NS	0.3750 9.525	1.1250 28.575	
3015DC	3015SC	3015DS	3015SS	3015NS	0.4375 11.113	1.1250 28.575	
3016DC	3016SC	3016DS	3016SS	3016NS	0.5000 12.700	1.1250 28.575	

¹ Width for sealed versions = 0.3125 (7.938)

² Width for sealed versions = 0.3438 (8.733)

³ Weights given are for greased and sealed versions

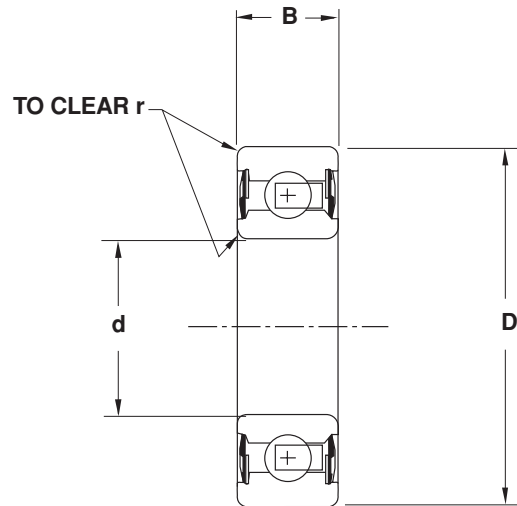
⁴ 3038 and larger +.0000/-0.0006 (+.000/-0.015)

All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

3000 Series™ Semi-Ground Radial Bearings

Semi-ground 3000 Series™ bearings are specially designed to provide a line of economical bearings for lighter loads than the 1600 Series™ and speeds to approximately 2500 rpm. The 3000 Series™ bearings are dimensionally the same as the 1600 Series™ bearings, except for the precision of the inner ring (as machined tolerances). Careful heat treatment provides a uniform and exact degree of hardness for maximum life.

The 3000 Series™ bearings are precision ground to the same close tolerances on the O.D. as the 1600 Series™ with exceptional care given to the ball grooves. A ball retainer, or separator, is employed to increase the range of allowable speeds by reducing ball contact friction. The 3000 Series™ radial bearing is available open, single or doubled shielded, or single or double sealed. The double shielded and double sealed versions are grease packed as standard. Open and single closure bearings can be furnished with or without grease as desired.

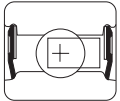
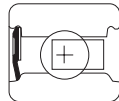
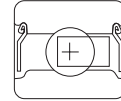
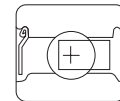
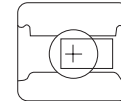


WIDTH B (in) (mm) +0.000 +.13 -.005 -.13	BASIC LOAD RATINGS		WEIGHT W ³ (lbs) (kg)	ABUTMENT AND FILLET DIMENSIONS		
	DYNAMIC C (lbs) (N)	STATIC C₀ (lbs) (N)		d_a min (in) (mm)	D_a max (in) (mm)	r max (in) (mm)
0.2500 ¹ 6.350	255 1135	170 757	0.02 0.01	0.330 8.38	0.614 15.60	0.012 0.30
0.2813 ² 7.1450	325 1446	255 1135	0.03 0.01	0.474 12.04	0.778 19.76	0.012 0.30
0.2813 ² 7.1450	325 1446	255 1135	0.03 0.01	0.474 12.04	0.778 19.76	0.015 0.38
0.3125 7.938	350 1558	300 1335	0.04 0.02	0.503 12.78	0.778 19.76	0.012 0.30
0.3125 7.938	350 1558	300 1335	0.04 0.02	0.517 13.13	0.778 19.76	0.015 0.38
0.3125 7.938	350 1558	300 1335	0.03 0.01	0.517 13.13	0.778 19.76	0.015 0.38
0.3750 9.525	600 2670	475 2114	0.06 0.03	0.595 15.11	1.014 25.76	0.025 0.64
0.3750 9.525	600 2670	475 2114	0.06 0.03	0.622 15.80	1.014 25.76	0.025 0.64
0.3750 9.525	600 2670	475 2114	0.06 0.03	0.622 15.80	1.014 25.76	0.025 0.64

3000 Series™ Semi-Ground Radial Bearings (con't)

- **PRECISION GROUND ON ALL CONTACT SURFACES EXCEPT BORE**
- **EASY TO USE INCH DIMENSIONS**
- **ECONOMICAL BEARING FOR LIGHTER LOADS THAN THE 1600 SERIES™**
- **MAX SPEED RANGE - 2500 - 3000 RPM**
- **HARDENED BEARING STEEL**
- **NYLON RETAINER STANDARD**
- **GREASED, DOUBLE SEALED OR DOUBLE SHIELDED STANDARD**
- **AVAILABLE SINGLE SEALED OR SINGLE SHIELDED, OPEN, AND WITH OR WITHOUT GREASE**



BEARING NUMBER					PRINCIPLE DIMENSIONS		
					BORE d (in) (mm)	O.D. D (in) (mm)	
DOUBLE SEAL	SINGLE SEAL	DOUBLE SHIELD	SINGLE SHIELD	OPEN	+0.005 +0.13 -0.000 -0.00	+0.0000 +0.00 -0.0005 ⁴ -0.013	
3020DC	3020SC	3020DS	3020SS	3020NS	0.4375 11.113	1.3750 34.925	
3021DC	3021SC	3021DS	3021SS	3021NS	0.5000 12.700	1.3750 34.925	
3023DC	3023SC	3023DS	3023SS	3023NS	0.6250 15.875	1.3750 34.925	
3028DC	3028SC	3028DS	3028SS	3028NS	0.6250 15.875	1.6250 41.275	
3030DC	3030SC	3030DS	3030SS	3030NS	0.7500 19.050	1.6250 41.275	
3033DC	3033SC	3033DS	3033SS	3033NS	0.6250 15.875	1.7500 44.450	
3035DC	3035SC	3035DS	3035SS	3035NS	0.7500 19.050	1.7500 44.450	
3038DC ⁴	3038SC	3038DS	3038SS	3038NS	0.7500 19.050	2.0000 50.800	
3040DC ⁴	3040SC	3040DS	3040SS	3040NS	0.8750 22.225	2.0000 50.800	
3041DC ⁴	3041SC	3041DS	3041SS	3041NS	1.0000 25.400	2.0000 50.800	

¹ Width for sealed versions = 0.3125 (7.938)

³ Weights given are for greased and sealed versions

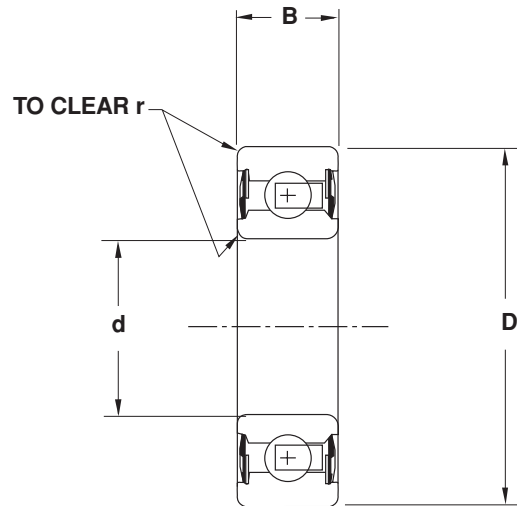
² Width for sealed versions = 0.3438 (8.733)

⁴ 3038 and larger +.0000/-.0006 (+.000/-.015)

3000 Series™ Semi-Ground Radial Bearings (con't)

Semi-ground 3000 Series™ bearings are specially designed to provide a line of economical bearings for lighter loads than the 1600 Series™ and speeds to approximately 2500 rpm. The 3000 Series™ bearings are dimensionally the same as the 1600 Series™ bearings, except for the precision of the inner ring (as machined tolerances). Careful heat treatment provides a uniform and exact degree of hardness for maximum life.

The 3000 Series™ bearings are precision ground to the same close tolerances on the O.D. as the 1600 Series™ with exceptional care given to the ball grooves. A ball retainer, or separator, is employed to increase the range of allowable speeds by reducing ball contact friction. The 3000 Series™ radial bearing is available open, single or doubled shielded, or single or double sealed. The double shielded and double sealed versions are grease packed as standard. Open and single closure bearings can be furnished with or without grease as desired.



WIDTH B (in) (mm) +0.000 +.13 -.005 -.13	BASIC LOAD RATINGS		WEIGHT W ³ (lbs) (kg)	ABUTMENT AND FILLET DIMENSIONS		
	DYNAMIC C (lbs) (N)	STATIC C₀ (lbs) (N)		d_a min (in) (mm)	D_a max (in) (mm)	r max (in) (mm)
0.4375 11.113	940 4183	850 3783	0.12 0.05	0.658 16.71	1.203 30.56	0.025 0.64
0.4375 11.113	940 4183	850 3783	0.11 0.05	0.720 18.29	1.203 30.56	0.025 0.64
0.4375 11.113	940 4183	850 3783	0.10 0.05	0.753 19.13	1.203 30.56	0.025 0.64
0.5000 12.700	1300 5785	1010 4495	0.18 0.08	0.845 21.46	1.446 36.73	0.025 0.64
0.5000 12.700	1300 5785	1010 4495	0.16 0.07	0.965 24.51	1.446 36.73	0.025 0.64
0.5000 12.700	1300 5785	1025 4561	0.22 0.10	0.845 21.46	1.530 38.86	0.025 0.64
0.5000 12.700	1300 5785	1025 4561	0.20 0.09	0.965 24.51	1.530 38.86	0.025 0.64
0.5625 14.288	1480 6586	1350 6008	0.32 0.15	0.988 25.10	1.760 44.70	0.035 0.89
0.5625 14.288	1480 6586	1350 6008	0.29 0.13	1.113 28.27	1.760 44.70	0.035 0.89
0.5625 14.288	1480 6586	1350 6008	0.26 0.12	1.197 30.40	1.760 44.70	0.035 0.89

6900

Series™ Semi-Ground Radial Bearings, Extended Inner with Flanged Housing

- EASY TO USE INCH DIMENSIONS
- MEDIUM LOADS
- MAX SPEED RANGE - 2500 - 3000 RPM
- THROUGH HARDENED
- RETAINER DESIGN
- NYLON RETAINER STANDARD
- DOUBLE SEALED STANDARD
- EXTENDED INNER RING WITH TWO SET SCREWS
- BEARINGS ARE AVAILABLE WITH OR WITHOUT FLANGE



ASSEMBLY NUMBER ①		PRINCIPLE DIMENSIONS							
		Bore d (in) (mm)	O.D. D (in) (mm)	Width B (in) (mm)	Width C (in) (mm)	E (in) (mm)	F (in) (mm)	G (in) (mm) Bolt Centers	H (in) (mm)
FLANGED UNIT	BEARING ONLY	+0.005 +.13 -0.000 -.00	+0.000 +.00 -0.0005 ② -.013	+0.000 +.00 -0.005 -.13					
6906	6906 - B	0.375 9.53	0.9063 23.020	0.313 7.94	0.688 17.46	0.555 14.10	0.375 9.53	1.875 47.63	2.500 63.50
6908	6908 - B	0.500 12.70	1.6250 41.28	0.500 12.70	1.000 25.40	0.955 24.26	0.500 12.70	2.875 73.03	3.750 95.25
6910	6910 - B	0.625 15.875	1.6250 41.28	0.500 12.70	1.000 25.40	0.955 24.26	0.500 12.70	2.875 73.03	3.750 95.25
6912 ②	6912 - B ②	.750 19.05	2.0000 50.80	0.563 14.29	1.063 26.99	1.293 32.84	0.500 12.70	3.250 82.55	4.125 104.78
6916 ②	6916 - B ②	1.000 25.40	2.0000 50.80	0.563 14.29	1.063 26.99	1.293 32.84	0.500 12.70	3.250 82.55	4.125 104.78

① When Ordering specify whether assembly or bearing only is required. Bearings are stamped with part number and suffix B; for example 6904B. Housings no longer carry part numbers.

② Tolerance for 6912 and larger is +.0000/-0.0006 (+000/-0.015)

③ Weights given are for greased and sealed version with flange mount.

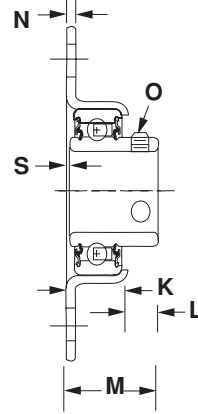
6900

Series™ Semi-Ground Radial Bearings, Extended Inner with Flanged Housing

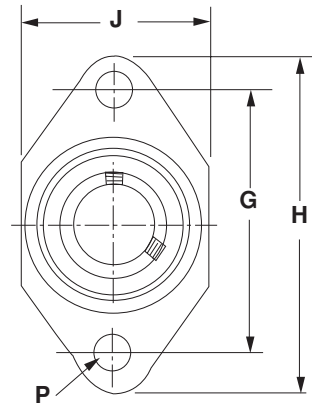
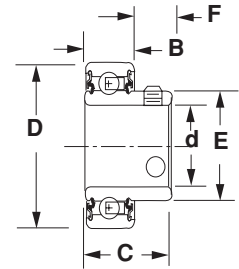
The 6900 Series™ consists of a double sealed, semi-ground bearing with an extended inner ring. It is provided with two set screws and a flanged housing designed for flush mounting. Bearings are supplied assembled in the housing. Flanged and non-flanged units are available from stock.

The pressed steel flanged housing provides a secure yet inexpensive means for holding the bearing in place. Although these units are not of the self-aligning type, they will accommodate a limited amount of angular misalignment.

FLANGED UNIT



BEARING ONLY



PRINCIPLE DIMENSIONS									BASIC LOAD RATINGS		WEIGHT
J (in) (mm) Overall Width	K (in) (mm)	L (in) (mm)	M (in) (mm)	N (in) (mm)	O 2-Set Screws	P (in) (mm) Hole Dia.	S (in) (mm)	C (lbs) (N)	C ₀ (lbs) (N)	W ^③ (lbs) (kg)	
1.125 28.58	0.344 8.73	0.344 8.73	0.688 17.46	0.035 0.89	8-32	0.3125 7.94	0.000 0.00	580 2581	300 1335	0.07 0.03	
1.875 47.63	0.438 11.11	0.688 17.46	1.000 25.40	0.062 1.57	1/4-28	0.4375 11.11	0.010 0.25	1610 7165	1010 4495	0.35 0.16	
1.875 47.63	0.438 11.11	0.688 17.46	1.000 25.40	0.062 1.57	1/4-28	0.4375 11.11	0.010 0.25	1610 7165	1010 4495	0.32 0.15	
2.250 57.15	0.438 11.11	0.688 17.46	1.125 28.58	0.062 1.57	1/4-28	0.4375 11.11	0.062 1.57	1870 8322	1350 6008	0.55 0.25	
2.250 57.15	0.438 11.11	0.688 17.46	1.125 28.58	0.062 1.57	10-32	0.4375 11.11	0.062 1.57	1870 8322	1350 6008	0.33 0.15	

7500 Series™ Heavy Duty Precision Ground Radial Bearings

- PRECISION GROUND ON ALL CONTACT SURFACES, SIMILAR TO THE 1600 SERIES™
- EASY TO USE INCH DIMENSIONS
- MEDIUM LOADS
- MAX SPEED RANGE - 5000 - 6000 RPM
- THROUGH HARDENED BEARING STEEL
- RETAINER DESIGN
- NYLON RETAINER STANDARD
- DOUBLE SEALED STANDARD
- HIGHLY EFFECTIVE SINGLE LIP CONTACT SEAL WITH TRASH GUARD
- AVAILABLE SINGLE SEALED OR OPEN
- ALL BEARINGS HAVE A SNAP RING GROOVE (SNAP RING ASSEMBLED AS AN OPTION)
- RECOMMENDED FOR APPLICATIONS WHERE ACCURATE, QUIET PERFORMANCE AND SUPERIOR SEALING ARE REQUIRED



BASIC BEARING NUMBER ¹	PRINCIPLE DIMENSIONS					
	BORE d (in) (mm)	O.D. D (in) (mm)	WIDTH B (in) (mm)	A (in) (mm)	INNER WIDTH C (in) (mm)	F (in) (mm)
	+0.0000 +0.000 -0.0005 -0.013	+0.0000 +0.000 -0.0005 ² -0.013	+0.000 +0.00 -0.005 -0.13		+0.000/-0.005 +0.00/-0.13	
7508	.5000 12.70	1.7500 44.45	0.6250 15.88	0.0625 1.59	.7500 19.05	1.009 25.63
7510	0.6250 15.88	1.7500 44.45	0.6250 15.88	0.0625 1.59	.7500 19.05	1.009 25.63
7512	.7500 19.05	1.7500 44.45	0.6250 15.88	0.0625 1.59	.7500 19.05	1.009 25.63
7514 ²	0.8750 22.23	2.0000 50.80	0.6250 15.88	0.0625 1.59	.7500 19.05	1.306 33.17
7516 ²	1.0000 25.40	2.0000 50.80	0.6250 15.88	0.0625 1.59	.7500 19.05	1.306 33.17
7518 ²	1.1250 28.58	2.5625 65.09	.7500 19.05	0.0625 1.59	0.8750 22.23	1.672 42.47
7520 ²	1.2500 31.75	2.5625 65.09	.7500 19.05	0.0625 1.59	0.8750 22.23	1.672 42.47

¹ When ordering please indicate basic number and style letters of bearing desired (i.e. DL or DLG)

² Tolerance for 7514 and larger is +0.0000/-0.0006 (+0.000/-0.015)

³ Radius R indicates the maximum fillet radius in housing or shaft which bearing will clear

⁴ Weights given are for greased and sealed versions

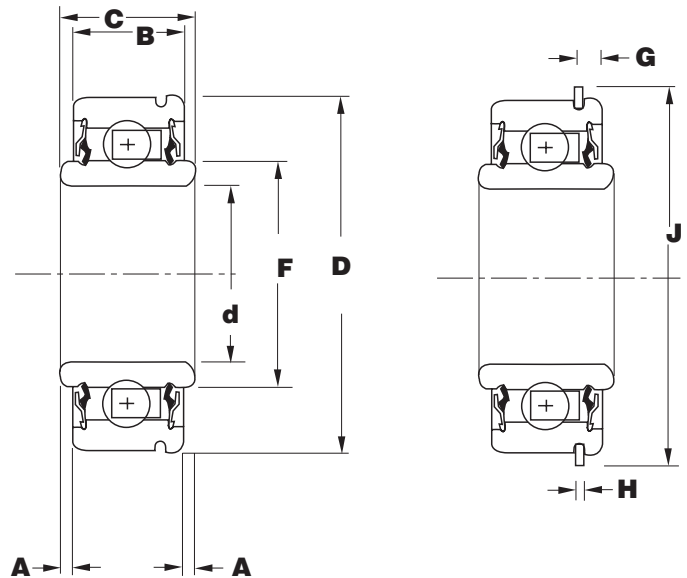
All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

7500 Series™ Heavy Duty Precision Ground Radial Bearings

The 7500 Series™ bearings are single row retainer type radial bearings, similar in construction to the 1600 Series™. They incorporate a highly effective single lip contact seal, with metal guard. The inner and outer rings are turned from chrome steel and after careful heat treatment the through hardened rings are accurately ground to close tolerances.

The 7500 Series™ bearings are recommended for applications requiring the accuracy of rotation and quiet performance of close tolerance precision grade bearings, and where a superior seal is required to retain lubricant and keep the bearing free from dust and dirt.

Normally double sealed (type DL), the 7500 Series™ bearings can be produced to order with seals on one side only (type SL) or without seals (type NL). Double sealed bearings are grease packed as standard; however, all types can be furnished with or without grease packing as desired. All types are provided with a snap ring groove, with the snap ring assembled on the bearing as an option.



PRINCIPLE DIMENSIONS				BASIC LOAD RATINGS		WEIGHT	ABUTMENT AND FILLET DIMENSIONS		
G (in) (mm) +.000 -.005 +.00/- .13	H (in) (mm)	J (in) (mm)	R (in) (mm) Radius ³	Dynamic C (lbs) (N)	Static C ₀ (lbs) (N)	W ⁴ (lbs) (kg)	da min (in) (mm)	Da max (in) (mm)	r max (in) (mm)
0.136 3.45	0.042 1.07	1.9219 48.82	0.035 0.89	2595 11548	1025 4561	0.33 0.15	0.750 19.05	1.500 38.10	0.035 0.89
0.136 3.45	0.042 1.07	1.9219 48.82	0.035 0.89	2595 11548	1025 4561	0.29 0.13	0.875 22.23	1.500 38.10	0.035 0.89
0.136 3.45	0.042 1.07	1.9219 48.82	0.035 0.89	2595 11548	1025 4561	0.31 0.14	1.000 25.40	1.500 38.10	0.035 0.89
0.136 3.45	0.042 1.07	2.1563 54.77	0.035 0.89	2970 13217	1350 6008	0.36 0.16	1.125 28.58	1.750 44.45	0.035 0.89
0.136 3.45	0.042 1.07	2.1563 54.77	0.035 0.89	2970 13217	1350 6008	0.33 0.15	1.250 31.75	1.750 44.45	0.035 0.89
0.190 4.83	0.065 1.65	2.7656 70.25	0.035 0.89	5360 23852	2620 11659	0.80 0.36	1.375 34.93	2.312 58.72	0.035 0.89
0.190 4.83	0.065 1.65	2.7656 70.25	0.035 0.89	5360 23852	2620 11659	0.57 0.26	1.500 38.10	2.312 58.72	0.035 0.89

7600

Series™ Heavy Duty Precision Ground Radial Bearings with Extended Inner Ring

- **PRECISION GROUND ON ALL CONTACT SURFACES, SIMILAR TO THE 1600 SERIES™**
- **EASY TO USE INCH DIMENSIONS**
- **MEDIUM LOADS**
- **MAX SPEED RANGE - 5000 - 6000 RPM**
- **THROUGH HARDENED**
- **CAGED DESIGN**
- **NYLON CAGE STANDARD**
- **DOUBLE SEALED STANDARD**
- **HIGHLY EFFICIENT SINGLE LIP CONTACT SEAL**
- **AVAILABLE SINGLE SEALED OR OPEN**
- **EXTENDED INNER RING WITH SET SCREWS**
- **ALL BEARINGS HAVE A SNAP RING GROOVE, SNAP RING ASSEMBLED AS AN OPTION**
- **RECOMMENDED FOR APPLICATIONS WHERE ACCURATE, QUIET PERFORMANCE AND SUPERIOR SEALING ARE REQUIRED**



BASIC BEARING NUMBER ①	PRINCIPLE DIMENSIONS					
	BORE d (in) (mm)	O.D. D (in) (mm)	WIDTH B (in) (mm)	A (in) (mm)	F (in) (mm)	G (in) (mm)
	+ .0000 +.000 - .0005 -.013	+ .0000 +.000 - .0005 ② -.013	+ .000 +.00 - .005 -.13			+ .005 +.13 - .005 -.13
7608	.5000 12.70	1.7500 44.45	0.6250 15.88	0.0625 1.59	1.009 25.63	0.136 3.45
7609	.5625 14.29	1.7500 44.45	0.6250 15.88	0.0625 1.59	1.009 25.63	0.136 3.45
7610	.6250 15.88	1.7500 44.45	0.6250 15.88	0.0625 1.59	1.009 25.63	0.136 3.45
7611	.6875 17.46	1.7500 44.45	0.6250 15.88	0.0625 1.59	1.009 25.63	0.136 3.45
7612	.7500 19.05	1.7500 44.45	0.6250 15.88	0.0625 1.59	1.009 25.63	0.136 3.45
7613 ②	.8125 20.64	2.0000 50.80	0.6250 15.88	0.0625 1.59	1.306 33.17	0.136 3.45

① When ordering please indicate basic number and style letters of bearing desired (i.e. DL or DLG)

② Tolerance for 7613 and larger is +.0000/-0.0006 (**+.000/-0.015**)

③ Radius R indicates the maximum fillet radius in housing or shaft which bearing will clear

④ Weights given are for greased and sealed versions

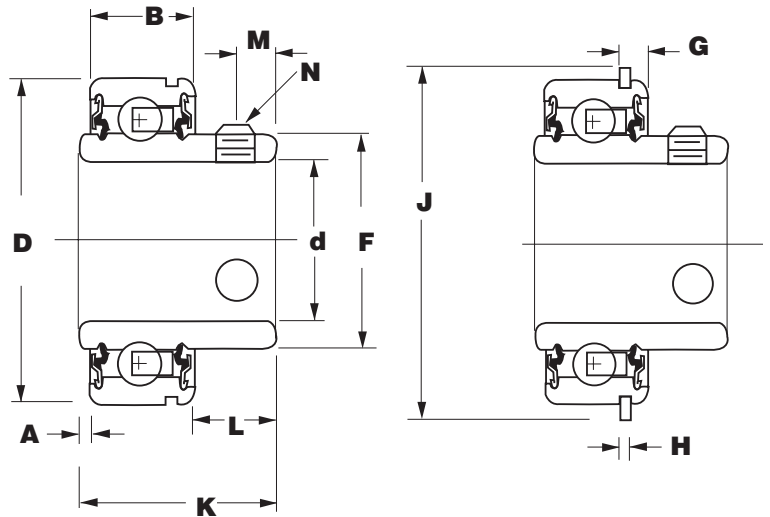
All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

7600 Series™ Heavy Duty Precision Ground Radial Bearings with Extended Inner Ring

The 7600 Series™ bearings are single row retainer type radial bearings similar in construction to the 1600 Series™. They incorporate a highly efficient single lip contact seal with metal guard. The inner and outer rings are turned from chrome steel and after careful heat treatment the through hardened rings are accurately ground to close tolerances. The inner ring is extended and contains set screws whereas the 7500 Series™ bearing does not.

The 7600 Series™ bearings are recommended for applications requiring the accuracy of rotation and quiet performance of close limit precision grade bearings, and where a superior seal is required to retain lubricant and keep the bearing free from dust and dirt.

Normally double sealed (type DL), the 7600 Series™ bearings can be produced to order with seals on one side only (type SL) or without seals (type NL). Double sealed bearings are grease packed as standard; however, all types can be furnished with or without grease packing as desired. All types are provided with a snap ring groove, with the snap ring assembled on the bearing as an option.



PRINCIPLE DIMENSIONS							BASIC LOAD RATINGS		WEIGHT
H (in) (mm)	J (in) (mm)	K (in) (mm) +0.00 +.00 -.005 -.13	L (in) (mm)	M (in) (mm)	N 2 set screws	Radius ³ R (in) (mm)	Dynamic C (lbs) (N)	Static C ₀ (lbs) (N)	W ⁴ (lbs) (kg)
0.042 1.07	1.922 48.82	1.092 27.74	0.405 10.29	0.233 5.92	10-32	0.035 0.89	2595 11548	1025 4561	0.36 0.16
0.042 1.07	1.922 48.82	1.092 27.74	0.405 10.29	0.233 5.92	10-32	0.035 0.89	2595 11548	1025 4561	0.34 0.15
0.042 1.07	1.922 48.82	1.092 27.74	0.405 10.29	0.233 5.92	10-32	0.035 0.89	2595 11548	1025 4561	0.32 0.15
0.042 1.07	1.922 48.82	1.092 27.74	0.405 10.29	0.233 5.92	10-32	0.035 0.89	2595 11548	1025 4561	0.30 0.14
0.042 1.07	1.922 48.82	1.092 27.74	0.405 10.29	0.233 5.92	10-32	0.035 0.89	2595 11548	1025 4561	0.28 0.13
0.042 1.07	2.156 54.77	1.179 29.95	0.492 12.50	0.261 6.63	1/4-28	0.035 0.89	2970 13217	1350 6008	0.45 0.20

7600

Series™ Heavy Duty Precision Ground Radial Bearings with Extended Inner Ring (con't)

- PRECISION GROUND ON ALL CONTACT SURFACES, SIMILAR TO THE 1600 SERIES™
- EASY TO USE INCH DIMENSIONS
- MEDIUM LOADS
- MAX SPEED RANGE - 5000 - 6000 RPM
- THROUGH HARDENED
- CAGED DESIGN
- NYLON CAGE STANDARD
- DOUBLE SEALED STANDARD
- HIGHLY EFFICIENT SINGLE LIP CONTACT SEAL
- AVAILABLE SINGLE SEALED OR OPEN
- EXTENDED INNER RING WITH SET SCREWS
- ALL BEARINGS HAVE A SNAP RING GROOVE, SNAP RING ASSEMBLED AS AN OPTION
- RECOMMENDED FOR APPLICATIONS WHERE ACCURATE, QUIET PERFORMANCE AND SUPERIOR SEALING ARE REQUIRED



BASIC BEARING NUMBER ①	PRINCIPLE DIMENSIONS					
	BORE d (in) (mm)	O.D. D (in) (mm)	WIDTH B (in) (mm)	A (in) (mm)	F (in) (mm)	G (in) (mm)
	+0.0000 +.000 -0.0005 -.013	+0.0000 +.000 -0.0005 ② -.013	+0.000 +.00 -0.005 -.13			+0.005 +.13 -0.005 -.13
7614 ②	.8750 22.23	2.0000 50.80	0.6250 15.88	0.0625 1.59	1.306 33.17	0.136 3.45
7615 ②	.9375 23.81	2.0000 50.80	0.6250 15.88	0.0625 1.59	1.306 33.17	0.136 3.45
7616 ②	1.0000 25.40	2.0000 50.80	0.6250 15.88	0.0625 1.59	1.306 33.17	0.136 3.45
7617 ②	1.0625 26.99	2.5625 65.09	.7500 19.05	0.0625 1.59	1.672 42.47	0.190 4.83
7618 ②	1.1250 28.58	2.5625 65.09	.7500 19.05	0.0625 1.59	1.672 42.47	0.190 4.83
7620 ②	1.2500 31.75	2.5625 65.09	.7500 19.05	0.0625 1.59	1.672 42.47	0.190 4.83

① When ordering please indicate basic number and style letters of bearing desired (i.e. DL or DLG)

② Tolerance for 7613 and larger is +.0000/-0.0006 (+.000/-0.015)

③ Radius R indicates the maximum fillet radius in housing or shaft which bearing will clear

④ Weights given are for greased and sealed versions

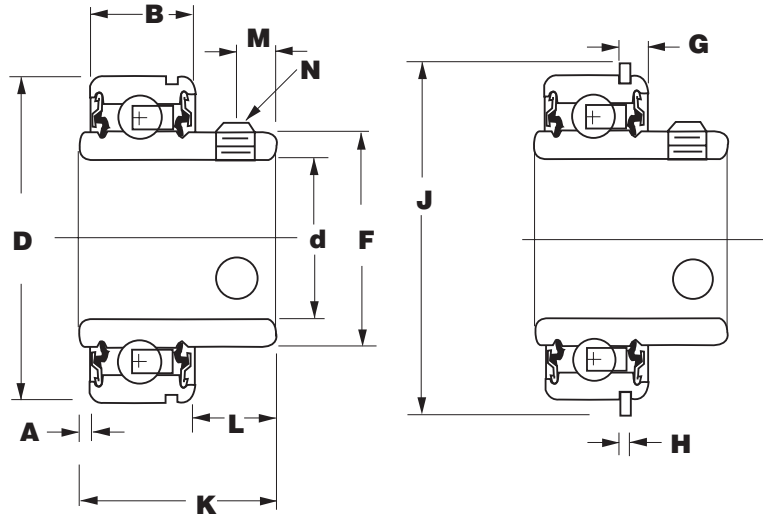
All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

7600 Series™ Heavy Duty Precision Ground Radial Bearings with Extended Inner Ring (con't)

The 7600 Series™ bearings are single row retainer type radial bearings similar in construction to the 1600 Series™. They incorporate a highly efficient single lip contact seal with metal guard. The inner and outer rings are turned from chrome steel and after careful heat treatment the through hardened rings are accurately ground to close tolerances. The inner ring is extended and contains set screws whereas the 7500 Series™ bearing does not.

The 7600 Series™ bearings are recommended for applications requiring the accuracy of rotation and quiet performance of close limit precision grade bearings, and where a superior seal is required to retain lubricant and keep the bearing free from dust and dirt.

Normally double sealed (type DL), the 7600 Series™ bearings can be produced to order with seals on one side only (type SL) or without seals (type NL). Double sealed bearings are grease packed as standard; however, all types can be furnished with or without grease packing as desired. All types are provided with a snap ring groove, with the snap ring assembled on the bearing as an option.

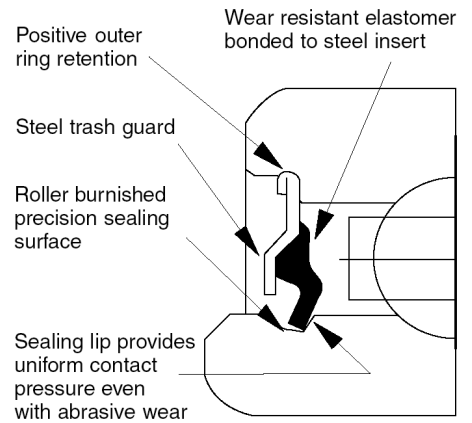


PRINCIPLE DIMENSIONS							BASIC LOAD RATINGS		WEIGHT
H (in) (mm)	J (in) (mm)	K (in) (mm) +0.00 +.00 -.005 -.13	L (in) (mm)	M (in) (mm)	N 2 set screws	Radius ³ R (in) (mm)	Dynamic C (lbs) (N)	Static C ₀ (lbs) (N)	W ⁴ (lbs) (kg)
0.042 1.07	2.156 54.77	1.179 29.95	0.492 12.50	0.261 6.63	1/4-28	0.035 0.89	2970 13217	1350 6008	0.43 0.20
0.042 1.07	2.156 54.77	1.179 29.95	0.492 12.50	0.261 6.63	1/4-28	0.035 0.89	2970 13217	1350 6008	0.40 0.18
0.042 1.07	2.156 54.77	1.179 29.95	0.492 12.50	0.261 6.63	10-32	0.035 0.89	2970 13217	1350 6008	0.36 0.16
0.065 1.65	2.766 70.25	1.417 35.99	0.605 15.37	0.261 6.63	1/4-28	0.035 0.89	5360 23852	2620 11659	0.84 0.38
0.065 1.65	2.766 70.25	1.417 35.99	0.605 15.37	0.261 6.63	1/4-28	0.035 0.89	5360 23852	2620 11659	0.80 0.36
0.065 1.65	2.766 70.25	1.417 35.99	0.605 15.37	0.261 6.63	1/4-28	0.035 0.89	5360 23852	2620 11659	0.71 0.32

ER Series Precision Ground Radial Bearings with Extended Inner Ring and Metric Outside Diameter

- **EXCLUSIVE, HEAVY DUTY “DL” SEALS**
 - **PERMANENTLY SEALED AND PRELUBRICATED FOR LONG LIFE**
 - **STEEL TRASH GUARD AND INNER RING LABYRINTH GROOVE PROVIDE SUPERIOR PROTECTION**
 - **BETTER PROTECTION IN WET/MOIST ENVIRONMENTS**
 - **OPTIONAL LOW-TORQUE SEAL IS AVAILABLE**
- **TWO LUBRICATION HOLES ALLOW FOR RE-GREASING**
- **TWO KNURLED CUP POINT SET SCREWS OFFER EXCELLENT RESISTANCE TO LOOSENING UNDER VIBRATORY CONDITIONS**
- **FULLY GROUND, SAE 52100 CHROME ALLOY STEEL RACES**
- **BLACK OXIDE FINISH PROVIDES ADDED CORROSION RESISTANCE**

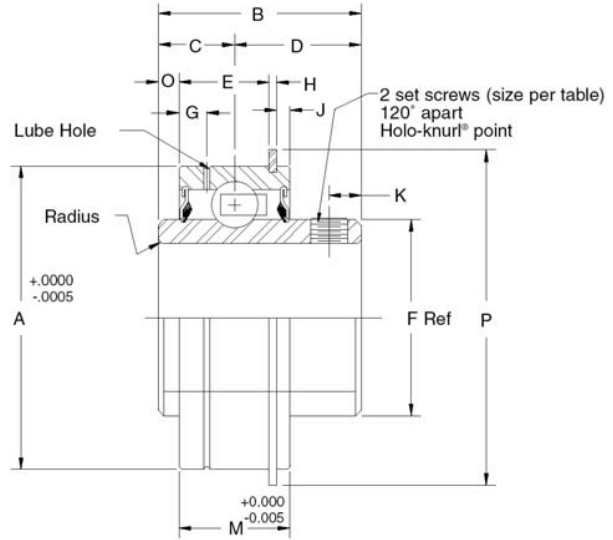
DL Seal



BASIC BEARING NUMBER	PRINCIPLE DIMENSIONS												
	SHAFT 1 DIAMETER	OD A	WIDTH B	C	D	E	F	G	H	K	J	WIDTH M	RADIUS
	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)
ER10 2	5/8 15.88	1.8504 47	1 7/32 30.96	13/32 10.32	13/36 9.17	31/64 12.30	1 7/64 28.18	9/64 3.57	3/64 1.19	3/32 2.38	3/16 4.76	5/8 15.88	0.040 1.02
ER12 2	3/4 19.05	1.8504 47	1 7/32 30.96	13/32 10.32	13/36 9.17	31/64 12.30	1 7/64 28.18	9/64 3.57	3/64 1.19	3/32 2.38	3/16 4.76	5/8 15.88	0.040 1.02
ER16 2	1 25.40	2.0472 52	1 3/8 34.93	33/64 13.10	55/64 21.83	39/64 15.48	1 21/64 33.73	3/16 4.76	3/64 1.19	3/32 2.38	7/32 5.56	3/4 19.05	0.040 1.02
ER19 2	1 3/16 30.16	2.4409 62	1 1/2 38.10	5/8 15.88	7/8 22.23	11/16 17.46	1 9/16 39.69	7/32 5.56	1/16 1.59	1/8 3.18	7/32 5.56	7/8 22.23	0.040 1.02
ER20 2	1 1/4 31.75	2.8346 72	1 11/16 42.86	11/16 17.46	1 25.40	3/4 19.05	1 13/16 46.04	7/32 5.56	1/16 1.59	1/8 3.18	1/4 6.35	15/16 23.81	0.040 1.02
ER23 2	1 7/16 36.51	2.8346 72	1 11/16 42.86	11/16 17.46	1 25.40	3/4 19.05	1 13/16 46.04	7/32 5.56	1/16 1.59	1/8 3.18	1/4 6.35	15/16 23.81	0.040 1.02
ER24 2	1 1/2 38.10	3.1496 80	1 15/16 49.21	3/4 19.05	1 3/16 30.16	29/32 23.02	2 3/64 51.99	1/4 6.35	1/16 1.59	1/8 3.18	5/16 7.94	1 3/32 27.78	0.062 1.57
ER31 2	1 15/16 49.21	3.5433 90	2 1/32 51.59	3/4 19.05	1 9/32 32.54	29/32 23.02	2 15/32 62.71	19/64 7.54	3/32 2.38	1/8 3.18	3/8 9.53	1 1/8 28.58	0.062 1.57

1 Shaft tolerance $+.0000/-0.0005$ ($+.000/-0.013$)
For low torque version add suffix “SFR”

ER Series Precision Ground Radial Bearings with Extended Inner Ring and Metric Outside Diameter



						RADIAL CAPACITY								WEIGHT
O (in) (mm)	P (in) (mm)	2-SET SCREWS	BASIC LOAD RATING C (lbs) (N)	STATIC LOAD RATING Co (lbs) (N)	REVOLUTIONS PER MINUTE								W (lbs) (kg)	
					50 (lbs) (N)	150 (lbs) (N)	300 (lbs) (N)	500 (lbs) (N)	1200 (lbs) (N)	1800 (lbs) (N)	2500 (lbs) (N)	5000 (lbs) (N)		
0.094 2.39	2 1/16 52.39	10-32	2860 12727	1480 6586	921 4098	638 2839	506 2252	427 1900	319 1420	278 1237	250 1113	198 881	0.36 0.16	
0.094 2.39	2 1/16 52.39	10-32	2860 12727	1480 6586	921 4098	638 2839	506 2252	427 1900	319 1420	278 1237	250 1113	198 881	0.34 0.15	
0.141 3.58	2 17/64 57.55	1/4-28	3145 13995	1770 7877	1012 4503	702 3124	557 2479	469 2087	351 1562	306 1362	274 1219	218 970	0.32 0.15	
0.188 4.78	2 21/32 67.47	1/4-28	4360 19402	2535 11281	1403 6243	973 4330	772 3435	651 2897	486 2163	425 1891	381 1695	302 1344	0.30 0.14	
0.219 5.56	3 5/64 78.18	1/4-28	5755 25610	3450 15353	1852 8241	1284 5714	1019 4535	859 3823	642 2857	561 2496	502 2234	399 1776	0.28 0.13	
0.219 5.56	3 5/64 78.18	1/4-28	5755 25610	3450 15353	1852 8241	1284 5714	1019 4535	859 3823	642 2857	561 2496	502 2234	399 1776	0.45 0.20	
0.203 5.16	3 13/32 86.52	5/16-24	6535 29081	4025 17911	2103 9358	1458 6488	1157 5149	976 4343	729 3244	637 2835	571 2541	453 2016	0.43 0.20	
0.187 4.75	3 25/32 96.04	3/8-24	7900 35155	5250 23363	2542 11312	1762 7841	1399 6226	1180 5251	881 3920	770 3427	690 3071	547 2434	0.40 0.18	

400 Series™ Single Row Unground Radial Bearings

- **RADIAL UNGROUND BEARING**
- **EASY TO USE INCH DIMENSIONS**
- **MODERATE LOADS**
- **MAX SPEED RANGE - 1000 - 1200 RPM**
- **HARDENED RINGS**
- **FULL COMPLEMENT OF BALLS**
- **FULLY UNITIZED ASSEMBLY**
- **BEARING SUPPLIED PRE-GREASED STANDARD**



BASIC BEARING NUMBER	BEARING DIMENSIONAL DATA					
	A BORE (in) (mm) +0.005/-0.000 +.13/-.00	B O.D. (in) (mm) +0.005/-0.000 +.13/-.00	C WIDTH (in) (mm) +0.010/-0.010 +.25/-.25	D WIDTH (in) (mm) Reference	BALLS (in) (mm)	
	No.	Size				
402-2V	0.250 6.35	0.687 17.45	0.250 6.35	0.250 6.35	10	1/8 3.18
400-4V	0.250 6.35	0.875 22.23	0.250 6.35	0.250 6.35	14	1/8 3.18
400-5V	0.312 7.92	0.875 22.23	0.250 6.35	0.250 6.35	14	1/8 3.18
400-6V	0.375 9.53	0.875 22.23	0.250 6.35	0.250 6.35	14	1/8 3.18
400-12V	0.375 9.53	0.937 23.80	0.312 7.92	0.312 7.92	15	1/8 3.18
400-14V	0.250 6.35	1.062 26.97	0.250 6.35	0.250 6.35	16	1/8 3.18
404-16V	0.375 9.53	1.062 26.97	0.250 6.35	0.250 6.35	16	1/8 3.18
400-18V	0.375 9.53	1.062 26.97	0.375 9.53	0.375 9.53	16	1/8 3.18
400-20V	0.375 9.53	1.125 28.58	0.375 9.53	0.375 9.53	18	1/8 3.18
400-21V	0.437 11.10	1.125 28.58	0.375 9.53	0.375 9.53	18	1/8 3.18
407-22V	0.500 12.70	1.125 28.58	0.370 9.40	0.406 10.31	15	5/32 3.97
400-23V	0.312 7.92	1.281 32.54	0.312 7.92	0.312 7.92	16	5/32 3.97
400-24V	0.375 9.53	1.281 32.54	0.312 7.92	0.312 7.92	16	5/32 3.97

Notes

Balls - Carbon Steel Grade 200

Bands - 1010 Carbon Steel, Soft

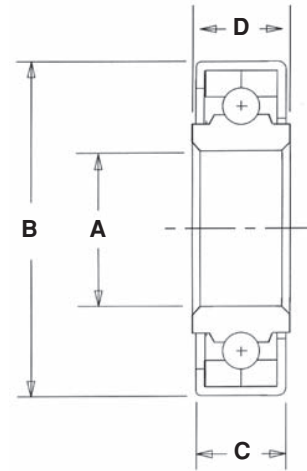
Rings - Carbon Steel, Case Hardened

Bearings supplied prelubricated with grease

24 All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

400 Series™ Single Row Unground Radial Bearings

The 400 Series™ of unground radial ball bearings are designed for moderate loads and speeds where running accuracy and noise level requirements do not warrant the more expensive precision ground bearings. This series of bearings feature a full ball complement without a retainer and a soft steel band on the outer ring. This permits the bearing to be pressed into a housing without the necessity of close housing tolerances. The bearings are designed for use in applications with speeds not exceeding 1200 rpm.



		RADIAL CAPACITY					
WEIGHT W (lbs) (kg)		REVOLUTIONS PER MINUTE					
		50 (lbs) (N)	100 (lbs) (N)	200 (lbs) (N)	300 (lbs) (N)	600 (lbs) (N)	1200 (lbs) (N)
0.02	0.01	110	77	53	43	30	21
		490	343	236	191	134	93
0.03	0.01	156	108	75	60	42	30
		694	481	334	267	187	134
0.03	0.01	156	108	75	60	42	30
		694	481	334	267	187	134
0.03	0.01	156	108	75	60	42	30
		694	481	334	267	187	134
0.04	0.02	167	116	80	65	45	32
		743	516	356	289	200	142
0.05	0.02	178	124	85	69	48	34
		792	552	378	307	214	151
0.04	0.02	178	124	85	69	48	34
		792	552	378	307	214	151
0.05	0.02	178	124	85	69	48	34
		792	552	378	307	214	151
0.08	0.04	200	139	96	78	54	38
		890	619	427	347	240	169
0.07	0.03	200	139	96	78	54	38
		890	619	427	347	240	169
0.07	0.03	200	139	96	78	54	38
		890	619	427	347	240	169
0.09	0.04	275	193	133	107	75	52
		1224	859	592	476	334	231
0.09	0.04	275	193	133	107	75	52
		1224	859	592	476	334	231

400 Series™ Single Row Unground Radial Bearings (con't)

- **RADIAL UNGROUND BEARING**
- **EASY TO USE INCH DIMENSIONS**
- **MODERATE LOADS**
- **MAX SPEED RANGE - 1000 - 1200 RPM**
- **HARDENED RINGS**
- **FULL COMPLEMENT OF BALLS**
- **FULLY UNITIZED ASSEMBLY**
- **BEARING SUPPLIED PRE-GREASED STANDARD**



BASIC BEARING NUMBER	BEARING DIMENSIONAL DATA					
	A BORE (in) (mm) +0.005/-0.000 +.13/-.00	B O.D. (in) (mm) +0.005/-0.000 +.13/-.00	C WIDTH (in) (mm) +0.010/-0.010 +.25/-.25	D WIDTH (in) (mm) Reference	BALLS (in) (mm)	
	No.	Size				
400-26V	0.500 12.70	1.281 32.54	0.312 7.92	0.312 7.92	16	5/32 3.97
408-28V	0.500 12.70	1.375 34.93	0.470 11.94	0.500 12.70	16	3/16 4.76
410-30V	0.625 15.88	1.375 34.93	0.470 11.94	0.500 12.70	16	3/16 4.76
400-31V	0.500 12.70	1.500 38.10	0.437 11.10	0.500 12.70	17	3/16 4.76
400-33V	0.625 15.88	1.500 38.10	0.437 11.10	0.500 12.70	17	3/16 4.76
412-35V	0.750 19.05	1.625 41.28	0.375 9.53	0.375 9.53	18	3/16 4.76
400-36V	0.750 19.05	1.750 44.45	0.562 14.27	0.562 14.27	14	1/4 6.35
416-41V	1.000 25.40	2.000 50.80	0.572 14.53	0.625 15.88	17	1/4 6.35
400-47V	1.250 31.75	2.625 66.68	0.687 17.45	0.687 17.45	23	1/4 6.35
424-51V	1.500 38.10	2.750 69.85	0.750 19.05	0.750 19.05	20	5/16 7.94
400-55V	1.750 44.45	3.093 78.56	0.875 22.23	0.875 22.23	21	11/32 8.73
400-59V	2.000 50.80	3.375 85.73	0.937 23.80	0.937 23.80	21	3/8 9.53

Notes

Balls - Carbon Steel Grade 200

Bands - 1010 Carbon Steel, Soft

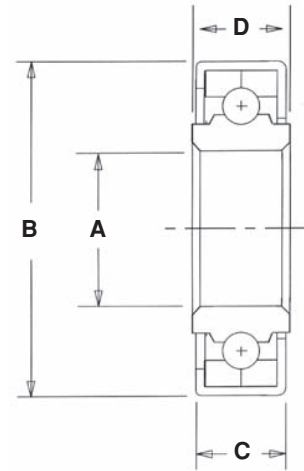
Rings - Carbon Steel, Case Hardened

Bearings supplied prelubricated with grease

All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

400 Series™ Single Row Unground Radial Bearings (con't)

The 400 Series™ of unground radial ball bearings are designed for moderate loads and speeds where running accuracy and noise level requirements do not warrant the more expensive precision ground bearings. This series of bearings feature a full ball complement without a retainer and a soft steel band on the outer ring. This permits the bearing to be pressed into a housing without the necessity of close housing tolerances. The bearings are designed for use in applications with speeds not exceeding 1200 rpm.



		RADIAL CAPACITY					
WEIGHT W (lbs) (kg)		REVOLUTIONS PER MINUTE					
		50 (lbs) (N)	100 (lbs) (N)	200 (lbs) (N)	300 (lbs) (N)	600 (lbs) (N)	1200 (lbs) (N)
0.09 0.04	275 1224	193 859	133 592	107 476	75 334	52 231	
0.12 0.05	375 1669	261 1161	180 801	145 645	101 449	71 316	
0.10 0.05	375 1669	261 1161	180 801	145 645	101 449	71 316	
0.16 0.07	400 1780	279 1242	192 854	155 690	108 481	76 338	
0.14 0.06	400 1780	279 1242	192 854	155 690	108 481	76 338	
0.14 0.06	450 2003	313 1393	216 961	174 774	121 538	85 378	
0.22 0.10	625 2781	430 1914	300 1335	240 1068	168 748	117 521	
0.30 0.14	757 3369	525 2336	362 1611	293 1304	204 908	142 632	
0.75 0.34	1020 4539	710 3160	490 2181	395 1758	275 1224	193 859	
0.80 0.36	1390 6186	967 4303	670 2982	540 2403	376 1673	264 1175	
1.10 0.50	1770 7877	1225 5451	847 3769	683 3039	477 2123	332 1477	
1.35 0.61	2100 9345	1458 6488	1010 4495	817 3636	567 2523	396 1762	

5000 Series™ Single Row Unground Flanged Radial Bearings

- **RADIAL UNGROUND BEARING**
- **EASY TO USE INCH DIMENSIONS**
- **MODERATE LOADS**
- **MAX SPEED RANGE - 1000 - 1200 RPM**
- **HARDENED RINGS**
- **FULL COMPLEMENT OF BALLS**
- **FULLY UNITIZED ASSEMBLY**
- **FLANGE ON O.D. LOCATES BEARING IN TUBE OR HOUSING**
- **BEARING SUPPLIED PRE-GREASED STANDARD**



BASIC BEARING NUMBER	BEARING DIMENSIONAL DATA							
	BORE A (in) (mm)	O.D. B (in) (mm)	WIDTH C (in) (mm)	D (in) (mm)	E (in) (mm)	F (in) (mm)	G (in) (mm)	
	+0.005/-0.000 +.13/-.00	+0.005/-0.000 +.13/-.00	+0.010/-0.010 +.25/-.25				+0.010/-0.010 +.25/-.25	
5561-V	0.250 6.35	0.687 17.45	0.250 6.35	0.050 1.27	0.750 19.05	0.050 1.27	0.250 6.35	
5543-V	0.375 9.53	0.906 23.01	0.315 8.00	0.040 1.02	1.000 25.40	0.088 2.24	0.350 8.89	
5507-V	0.312 7.92	1.125 28.58	0.385 9.78	0.062 1.57	1.250 31.75	0.125 3.18	0.437 11.10	
5368-V	0.375 9.53	1.125 28.58	0.385 9.78	0.062 1.57	1.250 31.75	0.125 3.18	0.437 11.10	
5491-V	0.500 12.70	1.125 28.58	0.385 9.78	0.062 1.57	1.250 31.75	0.125 3.18	0.437 11.10	
5881-V	0.500 12.70	1.375 34.93	0.463 11.76	0.062 1.57	1.500 38.10	0.125 3.18	0.546 13.87	

Notes

Balls - Carbon Steel Grade 200

Rings - Carbon Steel, Case Hardened

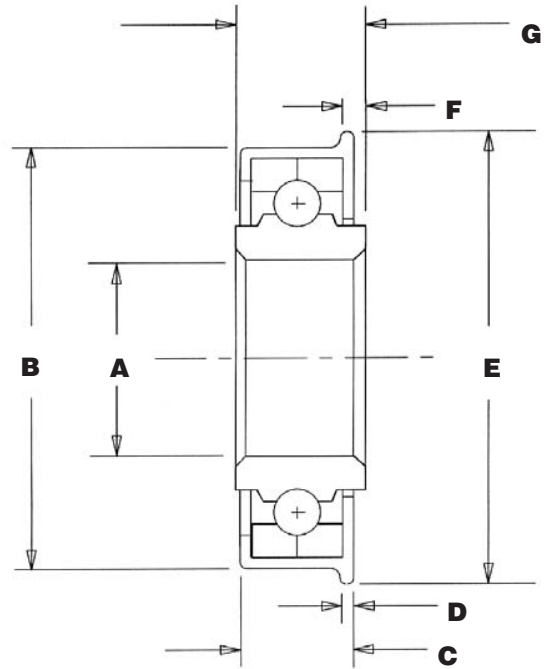
Bands - 1010 Carbon Steel, Soft

Bearings supplied prelubricated with grease

All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

5000 Series™ Single Row Unground Flanged Radial Bearings

The 5000 Series™ of bearings is similar in construction to the 400 Series™ except it has a flange on the outer ring to locate the bearing when pressed into a tube or housing, thus eliminating the need for an external mounting device. The bearings are designed for moderate loads and speeds where running accuracy and noise level requirements do not warrant the more expensive precision ground bearings. This series of bearings feature a full ball complement without a retainer. The rings are case hardened and the soft steel band on the outer ring of the unitized assembly allows the bearing to be pressed into a housing without the necessity of close housing tolerances. The bearings are supplied pre-greased as a standard. The bearings are designed for use in applications with speeds not exceeding 1200 rpm.



		WEIGHT	RADIAL CAPACITY							
BALLS			W (lbs) (kg)	REVOLUTIONS PER MINUTE						
NO.	SIZE			50 (lbs) (N)	100 (lbs) (N)	200 (lbs) (N)	300 (lbs) (N)	600 (lbs) (N)	1200 (lbs) (N)	
10	1/8	0.02	110	77	53	43	30	21		
	3.18	0.01	490	343	236	191	134	93		
15	1/8	0.04	167	116	80	65	45	32		
	3.18	0.02	743	516	356	289	200	142		
15	5/32	0.08	200	139	96	78	54	38		
	3.97	0.04	890	619	427	347	240	169		
15	5/32	0.07	200	139	96	78	54	38		
	3.97	0.03	890	619	427	347	240	169		
15	5/32	0.07	200	139	96	78	54	38		
	3.97	0.03	890	619	427	347	240	169		
16	3/16	0.12	375	261	180	145	101	71		
	4.76	0.05	1669	1161	801	645	449	316		

Series™ Single Row Unground Flanged Radial Bearings (con't)

- **RADIAL UNGROUND BEARING**
- **EASY TO USE INCH DIMENSIONS**
- **MODERATE LOADS**
- **MAX SPEED RANGE - 1000 - 1200 RPM**
- **HARDENED RINGS**
- **FULL COMPLEMENT OF BALLS**
- **FULLY UNITIZED ASSEMBLY**
- **FLANGE ON O.D. LOCATES BEARING IN TUBE OR HOUSING**
- **BEARING SUPPLIED PRE-GREASED STANDARD**



BASIC BEARING NUMBER	BEARING DIMENSIONAL DATA							
	BORE A	O.D. B	WIDTH C	D	E	F	G	
	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)
	+0.005/-0.000 +.13/-.00	+0.005/-0.000 +.13/-.00	+0.010/-0.010 +.25/-.25					+0.010/-0.010 +.25/-.25
5273-V	0.625 15.88	1.375 34.93	0.463 11.76	0.062 1.57	1.500 38.10	0.125 3.18	0.546 13.87	
5327-V	0.500 12.70	1.500 38.10	0.447 11.35	0.062 1.57	1.656 42.06	0.125 3.18	0.531 13.49	
5281-V	0.500 12.70	1.578 40.08	0.515 13.08	0.140 3.56	1.687 42.85	0.234 5.94	0.609 15.47	
5891-V	0.750 19.05	1.750 44.45	0.595 15.11	0.093 2.36	1.875 47.63	0.156 3.96	0.687 17.45	
5875-V	0.750 19.05	2.000 50.80	0.572 14.53	0.093 2.36	2.125 53.98	0.218 5.54	0.718 18.24	
5418-V	1.000 25.40	2.000 50.80	0.572 14.53	0.093 2.36	2.125 53.98	0.218 5.54	0.718 18.24	

Notes

Balls - Carbon Steel Grade 200

Rings - Carbon Steel, Case Hardened

Bands - 1010 Carbon Steel, Soft

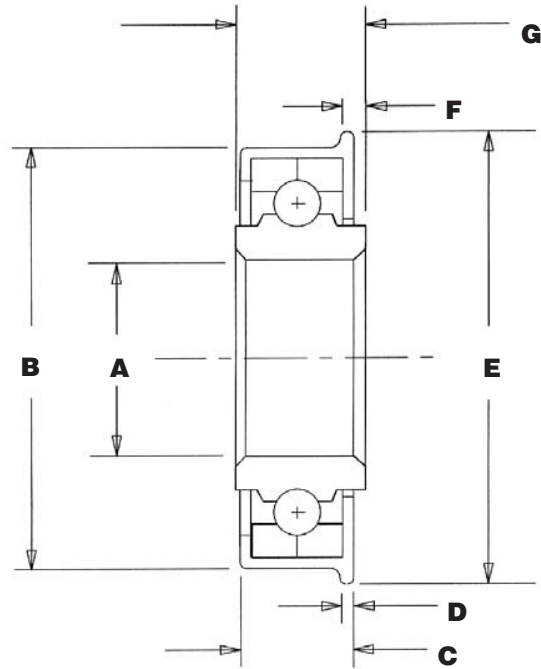
Bearings supplied prelubricated with grease

All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

5000

Series™ Single Row Unground Flanged Radial Bearings (con't)

The 5000 Series™ of bearings is similar in construction to the 400 Series™ except it has a flange on the outer ring to locate the bearing when pressed into a tube or housing, thus eliminating the need for an external mounting device. The bearings are designed for moderate loads and speeds where running accuracy and noise level requirements do not warrant the more expensive precision ground bearings. This series of bearings feature a full ball complement without a retainer. The rings are case hardened and the soft steel band on the outer ring of the unitized assembly allows the bearing to be pressed into a housing without the necessity of close housing tolerances. The bearings are supplied pre-greased as a standard. The bearings are designed for use in applications with speeds not exceeding 1200 rpm.



		WEIGHT	RADIAL CAPACITY						
BALLS (in) (mm)		W (lbs) (kg)	REVOLUTIONS PER MINUTE						
NO.	SIZE		50 (lbs) (N)	100 (lbs) (N)	200 (lbs) (N)	300 (lbs) (N)	600 (lbs) (N)	1200 (lbs) (N)	
16	3/16 4.76	0.10 0.05	375 1669	261 1161	180 801	145 645	101 449	71 316	
17	3/16 4.76	0.16 0.07	492 2189	342 1522	236 1050	190 846	132 587	92 409	
12	1/4 6.35	0.23 0.10	535 2381	367 1633	258 1148	206 917	144 641	100 445	
15	1/4 6.35	0.28 0.13	625 2781	430 1914	300 1335	240 1068	168 748	117 521	
17	1/4 6.35	0.32 0.15	757 3369	525 2336	362 1611	293 1304	204 908	142 632	
17	1/4 6.35	0.30 0.14	757 3369	525 2336	362 1611	293 1304	204 908	142 632	

500 Series™ Single Row Unground Combination Radial and Thrust Bearings

- ANGULAR CONTACT UNGROUND BEARING
- EASY TO USE INCH DIMENSIONS
- MODERATE LOADS
- MAX SPEED RANGE - 1000 - 1200 RPM
- HARDENED RINGS
- FULL COMPLEMENT OF BALLS
- FULLY UNITIZED ASSEMBLY



BASIC BEARING NUMBER	BEARING DIMENSIONAL DATA									COMBINED RADIAL			
	A	B	C	D	E	R ①	BALLS		WEIGHT (lbs) (kg)	REVOLUTIONS PER MINUTE			
	BORE (in) (mm)	O.D. (in) (mm)	WIDTH (in) (mm)	D (in) (mm)	E (in) (mm)	RADIUS (in) (mm)	No.	Size		10		50	
	+0.005 +0.13 -0.000 -.00	+0.005 +0.13 -0.000 -.00	+0.010 +.25 -0.010 -.25	+0.015 +.38 -0.015 -.38						R (lbs) (N)	T (lbs) (N)	R (lbs) (N)	T (lbs) (N)
501	0.250 6.35	0.687 17.45	0.250 6.35	0.219 5.56	0.500 12.70	0.094 2.38	11	1/8 3.18	0.01 0.00	72 320	48 214	50 223	33 147
503	0.375 9.53	1.062 26.97	0.406 10.31	0.344 8.73	0.719 18.26	0.172 4.37	11	3/16 4.76	0.06 0.03	162 721	108 481	115 512	77 343
504	0.437 11.10	0.812 20.62	0.219 5.56	0.187 4.75	0.625 15.88	0.078 1.98	20	3/32 2.38	0.01 0.01	73 325	49 218	52 231	35 156
505	0.437 11.10	0.906 23.01	0.281 7.14	0.250 6.35	0.688 17.46	0.094 2.38	16	1/8 3.18	0.04 0.02	105 467	70 312	73 325	49 218
507	0.437 11.10	1.047 26.59	0.359 9.13	0.312 7.92	0.750 19.05	0.172 4.37	11	3/16 4.76	0.04 0.02	177 788	118 525	125 556	83 369
508	0.500 12.70	1.125 28.58	0.344 8.74	0.312 7.92	0.875 22.23	0.141 3.57	13	3/16 4.76	0.06 0.03	190 846	127 565	136 605	91 405
511	0.625 15.88	1.359 34.52	0.422 10.72	0.375 9.53	1.047 26.59	0.172 4.37	16	3/16 4.76	0.08 0.03	235 1046	157 699	167 743	111 494

① Maximum fillet radius on shaft which the bearing will clear

② SPECIAL TOLERANCES

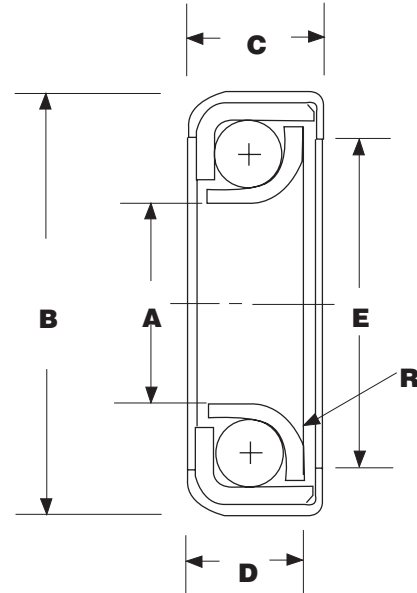
T8 = +.008/-0.000 (+.20/-0.00)

T10 = +.010/-0.000 (+.25/-0.00)

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500 Series™ Single Row Unground Combination Radial and Thrust Bearings

The 500 Series™ of unground combination radial and thrust bearings are designed for applications where a pure radial bearing or a pure thrust bearing would be unsuitable. The 500 Series™ is an angular contact bearing designed for applications where thrust and/or radial load carrying capability is required.



RADIAL AND THRUST CAPACITY									THRUST CAPACITY					
REVOLUTIONS PER MINUTE									REVOLUTIONS PER MINUTE					
100		250		500		1000		10	50	100	250	500	1000	
R (lbs) (N)	T (lbs) (N)	R (lbs) (N)	T (lbs) (N)	R (lbs) (N)	T (lbs) (N)	R (lbs) (N)	T (lbs) (N)	(lbs) (N)	(lbs) (N)	(lbs) (N)	(lbs) (N)	(lbs) (N)	(lbs) (N)	
35 156	23 102	23 102	15 67	16 71	11 49	10 45	7 31	71 316	58 258	43 191	25 111	18 80	15 67	
80 356	53 236	51 227	34 151	35 156	23 102	25 111	17 76	161 716	130 579	96 427	56 249	40 178	34 151	
25 111	17 76	23 102	15 67	16 71	11 49	10 45	7 31	73 325	59 263	44 196	25 111	18 80	15 67	
52 231	35 156	33 147	22 98	22 98	15 67	16 71	11 49	104 463	84 374	62 276	36 160	26 116	22 98	
88 392	59 263	56 249	37 165	40 178	27 120	27 120	18 80	176 783	142 632	105 467	61 271	44 196	37 165	
98 436	65 289	61 271	40 178	42 187	28 125	31 138	21 93	190 846	154 685	113 503	66 294	48 214	40 178	
117 521	78 347	74 329	50 223	52 231	35 156	37 165	25 111	234 1041	189 841	140 623	81 360	59 263	49 218	

Notes

- Balls - Carbon Steel Grade 200
- Rings - Carbon Steel, Case Hardened
- Bands - 1010 Carbon Steel, Soft
- Bearings supplied prelubricated with grease

500

Series™ Single Row Unground Combination Radial and Thrust Bearings (con't)

- ANGULAR CONTACT UNGROUND BEARING
- EASY TO USE INCH DIMENSIONS
- MODERATE LOADS
- MAX SPEED RANGE - 1000 - 1200 RPM
- HARDENED RINGS
- FULL COMPLEMENT OF BALLS
- FULLY UNITIZED ASSEMBLY



BASIC BEARING NUMBER	BEARING DIMENSIONAL DATA									COMBINED RADIAL				
	A BORE	B O.D.	C WIDTH	D	E	R ① RADIUS	BALLS		WEIGHT	REVOLUTIONS PER MINUTE				
	(in)	(in)	(in)	(in)	(in)	(in)	(in)	No.		Size	10		50	
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)		(lbs)		(kg)	R (lbs)	T (lbs)	R (lbs)
512	0.750 19.05	1.594 40.49	0.500 12.70	0.422 10.72	1.250 31.75	0.203 5.16	14	1/4 6.35	0.14 0.06	366 1629	244 1086	260 1157	173 770	
513	0.875 22.23	1.687 42.85	0.469 11.91	0.422 10.72	1.281 32.54	0.188 4.76	15	1/4 6.35	0.08 0.04	393 1749	262 1166	273 1215	182 810	
515 ②	1.000 T8 25.40 T8	2.047 51.99	0.609 15.48	0.547 13.89	1.625 41.28	0.219 5.56	14	5/16 7.94	0.25 0.11	573 2550	382 1700	400 1780	267 1188	
516 ②	1.125 T10 28.56 T10	2.812 71.42	0.422 10.72	0.344 8.73	1.438 36.53	0.141 3.57	24	3/16 4.76	0.10 0.05	354 1575	236 1050	250 1113	167 743	
517 ②	1.250 T10 31.75 T10	2.3075 T10 58.611 T10	0.594 15.08	0.547 13.89	1.844 46.84	0.250 6.35	17	5/16 7.94	0.28 0.13	696 3097	464 2065	490 2181	327 1455	
518 ②	1.312 T10 33.33 T10	2.3075 T10 58.611 T10	0.609 15.48	0.531 13.49	1.844 46.84	0.234 5.95	19	9/32 7.14	0.30 0.14	630 2804	420 1869	442 1967	295 1313	

① Maximum fillet radius on shaft which the bearing will clear

② SPECIAL TOLERANCES

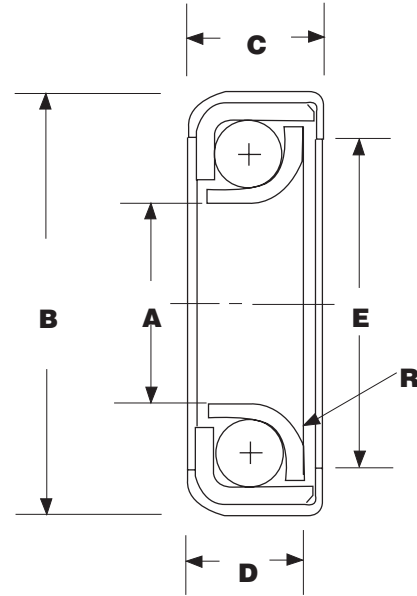
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The 500 Series™ of unground combination radial and thrust bearings are designed for applications where a pure radial bearing or a pure thrust bearing would be unsuitable. The 500 Series™ is an angular contact bearing designed for applications where thrust and/or radial load carrying capability is required.



RADIAL AND THRUST CAPACITY									THRUST CAPACITY					
REVOLUTIONS PER MINUTE									REVOLUTIONS PER MINUTE					
100		250		500		1000		10	50	100	250	500	1000	
R (lbs) (N)	T (lbs) (N)	R (lbs) (N)	T (lbs) (N)	R (lbs) (N)	T (lbs) (N)	R (lbs) (N)	T (lbs) (N)	(lbs) (N)	(lbs) (N)	(lbs) (N)	(lbs) (N)	(lbs) (N)	(lbs) (N)	
182	121	116	77	82	55	58	39	364	294	217	126	91	76	
810	538	516	343	365	245	258	174	1620	1308	966	561	405	338	
196	131	124	83	85	57	60	40	390	315	233	135	98	81	
872	583	552	369	378	254	267	178	1736	1402	1037	601	436	360	
284	189	181	121	127	85	90	60	569	459	339	197	142	118	
1264	841	805	538	565	378	401	267	2532	2043	1509	877	632	525	
177	118	112	74	79	53	57	38	351	284	209	122	88	73	
788	525	498	329	352	236	254	169	1562	1264	930	543	392	325	
345	230	220	147	156	104	109	73	691	558	412	239	173	144	
1535	1024	979	654	694	463	485	325	3075	2483	1833	1064	770	641	
312	208	199	133	139	93	99	66	625	505	373	217	156	130	
1388	926	886	592	619	414	441	294	2781	2247	1660	966	694	579	

Notes

- Balls - Carbon Steel Grade 200
- Rings - Carbon Steel, Case Hardened
- Bands - 1010 Carbon Steel, Soft
- Bearings supplied prelubricated with grease

600 Series™ Unground Thrust Bearings

- **UNGROUND THRUST BEARING**
- **EASY TO USE INCH DIMENSIONS**
- **MODERATE LOADS**
- **MAX SPEED RANGE - 1000 - 1200 RPM**
- **HARDENED RINGS**
- **FULL COMPLEMENT OF BALLS**
- **SOFT STEEL BAND OFFERS EASE OF INSTALLATION**
- **UPPER RING IS FREE TO ROTATE AND HAS CLOSE FIT FOR SHAFTS**
- **LOWER RING IS FIXED AND HAS SHAFT CLEARANCE IN THE BORE**



BEARING DIMENSIONAL DATA

BASIC BEARING NUMBER	A BORE (in) (mm) +.010/-0.000 +.25/-0.00	A1 BORE (in) (mm) +/- .010 +/- .25	B O.D. (in) (mm) +/- 1/32 +/- .79	C HEIGHT (in) (mm) +/- .010 +/- .25	BALLS (in) (mm)		WEIGHT (lbs) (kg)
					No.	Size	
601 -V	.250 6.35	.275 6.99	27/32 21.43	.333 8.46	10	5/32 3.97	0.03 0.01
602 -V	.375 9.53	.400 10.16	1 3/64 21.43	.359 9.12	14	5/32 3.97	0.06 0.03
602 3/4 -V	.453 11.51	.478 12.14	55/64 21.43	.281 7.14	15	1/8 45.72	0.03 0.01
603 -V	.500 12.70	.525 13.34	1 17/64 21.43	.437 11.10	10	1/4 35.56	0.09 0.04
603 1/4 -V	.500 12.70	.525 13.34	1 21.43	.344 8.74	12	3/16 4.76	0.04 0.02
605 -V	.625 15.88	.656 16.66	1 1/8 21.43	.344 8.74	16	5/32 3.97	0.04 0.02
606 -V	.625 15.88	.656 16.66	1 27/64 21.43	.453 11.51	12	1/4 6.35	0.12 0.05
607 -V	.750 19.05	.775 19.69	1 21/32 21.43	.545 13.84	15	1/4 6.35	0.19 0.09
608 -V	.875 22.23	.900 22.86	1 57/64 21.43	.594 15.09	17	1/4 6.35	0.28 0.13

Notes

Balls - Carbon Steel Grade 200

Washers - Carbon Steel Case Hard

Bands - Carbon Steel Soft

Bearings Oiled with a Rust Preventative

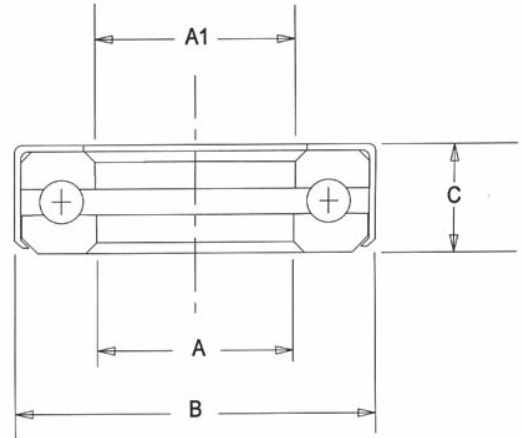
All Bearings Marked on Band with "P/N Nice USA" as Shown"

All part numbers listed herein are considered to be trademarks of RBC Bearings Incorporated.

600 Series™ Unground Thrust Bearings

The 600 Series™ is designed for moderate speeds and medium thrust loads. These bearings utilize a full ball complement. Rings are cold forged from hardenable strip steel and are carefully heat treated. These bearings may be plated or manufactured from stainless steel upon request.

The entire assembly is housed in a soft steel band which lends itself to an easy press fit into a housing. The band also serves as a dust shield and helps retain the bearing lubricant. The upper ring is free to rotate in the band and has a close fit in the bore for the shaft. The lower ring is fixed in the band and has a shaft clearance in the bore.



RADIAL CAPACITY

	REVOLUTIONS PER MINUTE					
	10 (lbs) (N)	50 (lbs) (N)	100 (lbs) (N)	250 (lbs) (N)	500 (lbs) (N)	1000 (lbs) (N)
	304 1353	246 1095	182 810	98 436	71 316	51 227
	426 1896	344 1531	254 1130	138 614	100 445	71 316
	292 1299	236 1050	174 774	94 418	68 303	48 214
	780 3471	630 2804	465 2069	252 1121	182 810	129 574
	526 2341	425 1891	314 1397	170 757	123 547	87 387
	858 3818	693 3084	511 2274	277 1233	200 890	143 636
	936 4165	750 3338	558 2483	302 1344	218 970	155 690
	1170 5207	945 4205	698 3106	378 1682	273 1215	194 863
	1326 5901	1071 4766	791 3520	428 1905	309 1375	220 979

600 Series™ Unground Thrust Bearings (con't)

- **UNGROUND THRUST BEARING**
- **EASY TO USE INCH DIMENSIONS**
- **MODERATE LOADS**
- **MAX SPEED RANGE - 1000 - 1200 RPM**
- **HARDENED RINGS**
- **FULL COMPLEMENT OF BALLS**
- **SOFT STEEL BAND OFFERS EASE OF INSTALLATION**
- **UPPER RING IS FREE TO ROTATE AND HAS CLOSE FIT FOR SHAFTS**
- **LOWER RING IS FIXED AND HAS SHAFT CLEARANCE IN THE BORE**



BEARING DIMENSIONAL DATA

BASIC BEARING NUMBER	A BORE (in) (mm) +.010/-0.000 +.25/-0.00	A1 BORE (in) (mm) +/- .010 +/- .25	B O.D. (in) (mm) +/- 1/32 +/- .79	C HEIGHT (in) (mm) +/- .010 +/- .25	BALLS		WEIGHT (lbs) (kg)
					(in) (mm)		
					No.	Size	
609 -V	1.000 25.40	1.075 27.31	2 21.43	.630 16.00	12	3/8 9.53	0.30 0.14
610 -V	1.000 25.40	1.031 26.19	1 31/32 21.43	.625 15.88	18	1/4 6.35	0.29 0.13
610 1/4 -V	1.016 25.81	1.031 26.19	1 3/4 21.43	.625 15.88	16	1/4 6.35	0.21 0.10
611 -V	1.063 27.00	1.094 27.79	1 31/32 21.43	.625 15.88	18	1/4 6.35	0.26 0.12
613 -V	1.125 28.58	1.150 29.21	2 3/32 21.43	.625 15.88	19	1/4 6.35	0.31 0.14
616-V	1.25 31.75	1.275 32.39	2 11/32 21.43	.625 15.88	23	1/4 6.35	0.4 0.18
619 -V	1.437 36.50	1.462 37.13	2 15/32 21.43	.625 15.88	23	1/4 6.35	0.43 0.20
621 -V	1.500 38.10	1.525 38.74	2 19/32 21.43	.625 15.88	25	1/4 6.35	0.45 0.20

Notes

Balls - Carbon Steel Grade 200

Washers - Carbon Steel Case Hard

Bands - Carbon Steel Soft

Bearings Oiled with a Rust Preventative

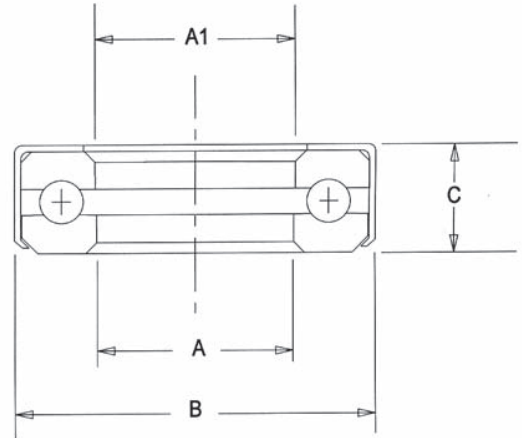
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The entire assembly is housed in a soft steel band which lends itself to an easy press fit into a housing. The band also serves as a dust shield and helps retain the bearing lubricant. The upper ring is free to rotate in the band and has a close fit in the bore for the shaft. The lower ring is fixed in the band and has a shaft clearance in the bore.



RADIAL CAPACITY

	REVOLUTIONS PER MINUTE					
	10 (lbs) (N)	50 (lbs) (N)	100 (lbs) (N)	250 (lbs) (N)	500 (lbs) (N)	1000 (lbs) (N)
	1706 7592	1378 6132	1017 4526	551 2452	398 1771	284 1264
	1404 6248	1134 5046	837 3725	454 2020	328 1460	233 1037
	1248 5554	1008 4486	744 3311	403 1793	291 1295	207 921
	1404 6248	1134 5046	837 3725	454 2020	328 1460	233 1037
	1482 6595	1197 5327	883 3929	479 2132	346 1540	246 1095
	1794 7983	1449 6448	1069 4757	579 2577	419 1865	298 1326
	1794 7983	1449 6448	1069 4757	579 2577	419 1865	298 1326
	1950 8678	1575 7009	1162 5171	630 2804	455 2025	324 1442

BEARING Engineering Data

The methods, equations, and technical data presented in this section allow the user to select the correct bearings and estimate their performance for a wide range of applications. These calculations apply to the Nice® selection of ground and semi-ground product lines, namely the 1600™, 3000™, 6900™, 7500™, and 7600 Series™. For applications with unusual operating conditions, Nice® can provide engineering assistance and recommend the most suitable bearing design.

Where standard bearings cannot be used, Nice® can meet the application requirements with a special bearing design specifically tailored for optimum performance. Contact your RBC sales engineer for special sizes, materials, application requirements, dimensions, and tolerances.

Capacity and Fatigue Life of Ball Bearings

The BASIC DYNAMIC LOAD RATING, C , or "dynamic capacity," for a ball bearing is that calculated, constant radial load at which a group of apparently identical bearings with a stationary outer ring can statistically endure one million revolutions of the inner ring.

The BASIC STATIC LOAD RATING, C_0 , or "static capacity," is that uniformly distributed load, which produces a maximum theoretical contact stress on the most heavily loaded ball of 609,000 psi. At this contact stress, a permanent deformation of ball and raceway occurs. This deformation is approximately 0.01% of the ball diameter in inches.

The RATING LIFE L_{10} , is a statistical measure of the life which 90% of a group of apparently identical ball bearings will achieve or exceed. For a single bearing L_{10} also refers to the life associated with 90% reliability. Median Life, L_{50} , is the life which 50% of the group of ball bearings will achieve or exceed. Median life is usually not greater than five times the rating life.

The relationship between rating life, load rating and load is:

$$L_{10} = (C/P)^3$$

with L_{10} = rating life (10^6 rev)
 C = basic load rating (lb)
 P = equivalent radial load (lb)

To obtain the rating life in hours, use:

$$L_{10} \text{ hrs} = 16667/N * (C/P)^3$$

with N = speed (rpm)

The Equivalent Radial Load is defined as:

$$P = XF_r + YF_a$$

with F_r = radial load (lb)
 F_a = axial load (lb)
 X = see table below
 Y = see table below

For radial contact ball bearings calculate P with $X = 1.0$ and $Y = 1.0$. Then recalculate P with $X = 0.56$ and Y from the chart below. Use the larger value of P to determine L_{10} life.

$\frac{F_a}{nd^2}$	Y
25	2.30
50	1.99
100	1.71
150	1.55
200	1.45
300	1.31
500	1.15
750	1.04
1000	1.00

with n = number of balls
 d = diameter of balls

BEARING Engineering Data

Operating Temperature

Maximum recommended operating temperatures for Nice® ball bearings is a function of the bearing cage, seal, and grease materials used in the final assembly. For the Nice® standard precision product series (1600™, 3000™, 7500™, 7600™, ER, and 6900™) the maximum recommended operating temperature is 250°F (121°C). Operation at temperatures as high as 300°F (149°C) can be tolerated intermittently. When operating at the extremes of allowable temperatures, grease may purge out between the seal lip and the bearing inner ring. If this is unacceptable for a particular application, other design arrangements might be necessary.

Nice® full complement unground series (400™, 5000™, 500™, and 600™) can operate at higher temperatures than above, and will be limited only by choice of lubricant. However, Nice® engineering should be consulted for application verification.

Limiting Speeds

Limiting operating speed is dependent upon the materials used in construction and the internal design and finishing of the bearing. For the Nice® standard selection of ball bearings the recommended speed limits are as follows:

Bearing Series	Limiting Speed (rpm)
1600™	5000
3000™	2500
7500™	5000
7600™	5000
6900™	2500-3000
ER	5000
400™	1200
5000™	1200
500™	1000
600™	1000

Lubrication

All Nice® double sealed and double shielded precision ground bearings (1600™, 3000™, 7500™, 7600™, 6900™, and ER series) are supplied pre-greased 33% full with Shell Alvania #2 grease.

Shell Alvania #2 is a general purpose lithium soap grease with a useful temperature range of -40°F (-40°C) to +280°F (138°C). Single closure and open bearings are supplied slushed with a rust preservative. Nice® can supply bearings with a wide variety of greases by special order, some of which are listed below. Contact Nice® engineering for details.

GREASES

Manufacturer	Product Trade Name	Temperature Range °F (°C)
Chemtool	Duralube EP 2	-20 to +250 (-29 to +121)
Chevron	Ultra Duty#1	-20 to +350 (-29 to +177)
Chevron	SRI-2	-22 to +347 (-30 to +175)
Dupont	Krytox 240 AC	-30 to +550 (-34 to +288)
Exxon	Unirex #2	-40 to +400 (-40 to +204)
Exxon	Nebula EP2	-20 to +250 (-29 to +121)
Exxon	Polyrex EM	-40 to +300 (-40 to +149)
Mobil	Mobilgrease 28	-65 to +250 (-54 to +121)
Shell	Alvania #2	-40 to +284 (-40 to +140)
Shell	Alvania #3	-40 to +284 (-40 to +140)
Shell	Darina EP2	-40 to +320 (-40 to +160)
Shell	Aeroshell 14	-65 to +250 (-54 to +121)

Retainers/Cages

Nice® precision ground ball bearings of standard production are fitted with snap-in ball riding retaining cages made from heat stabilized polyamide 6/6. For special applications or design requirements cages made of special materials can be supplied. These include pressed steel or stainless steel, glass reinforced polyamide 6/6, and brass. Availability of bearings fitted with non-standard cages should be checked before ordering.

Axial Load Capacity

Deep groove ball bearings by nature of their design can carry axial loads either alone or in combination with radial loads. Axial load capacity of standard bearings is 0.5 times the Basic Static Load Rating, C_0 of that bearing. Smaller bearings should not be subject to a load greater than 0.25 times C_0 . Excessive axial loads can lead to serious reduction of bearing service life.

BEARING Engineering Data

Misalignment

Radial deep groove ball bearings do have the ability to accommodate a limited amount of angular misalignment. The amount of angular misalignment that can be tolerated before adversely affecting bearing performance is a function of a variety of parameters. Internal radial clearance, internal design, applied loads, and the size of the bearing all play a role in determining the bearing's misalignment capability. Because of this, exact values for allowable misalignment are not provided. Under normal operating conditions, a safe estimate of permissible angular misalignment is usually between .0005 in/in (.013 mm/mm) and .003 in/in (.08 mm/mm). Noise levels may increase when the bearing is operating misaligned.

Finish and Accuracy

Nice® ball bearings are available in several different finish and accuracy grades that may be selected to suit the functionality of a particular application.

Nice® fully ground precision bearings are available in single row radial configurations. Boundary dimensions and internal fit-up are held to exacting tolerances by precision grinding of all external surfaces and both ball grooves. These bearings are recommended for applications requiring quiet running, higher speeds, and applied loads. Normal tolerances for series 1600™, 7500™, 7600™, and ER bearings range from .0005" (.013 mm) to .001" (.03 mm). See product tables for exact tolerances.

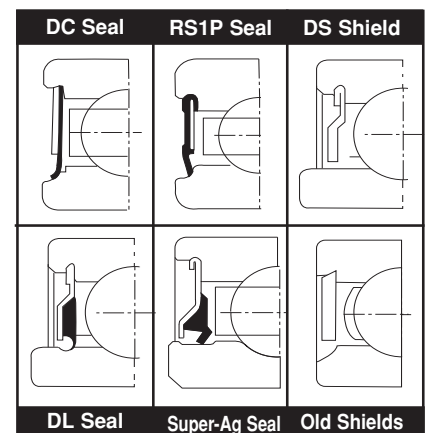
Nice® functional precision and unground bearings are designed for those applications where speeds and loads are moderate, and running accuracy and noise requirements do not warrant a fully ground precision bearing. Single row radial, single row angular contact, and thrust ball bearings can be supplied in semi-ground or unground accuracy. Series 3000™, 6900™, 400™, 5000™, 500™, and 600™ bearings are available with functional tolerances that range from .005" (.13 mm) to .010" (.25 mm). See product tables for exact tolerances.

Seals and Shields

Contact seals are used on bearings to prevent solid contaminants and moisture from entering the bearing while retaining the lubricant in the bearing. Nice® design and field experience has resulted in a variety of heavy duty and effective sealing designs.

The Nice® RS1P seal, which is standard on the 1600™, 3000™, and 6900™ Series Bearings, is made of oil and wear resistant synthetic rubber with a steel reinforcement. The sealing action is accomplished via interference (deflection) of the seal lip against a recess in the inner ring shoulder. The outside diameter of the seal is retained in a recess groove cut into the outer ring. The DC seal is an old style multi-part assembly consisting of a nylon seal insert held in place with a metal shield. It is a cost effective seal used only on a few sizes and specials. The Nice® DL and Super Ag seals are special high efficiency contact seals for heavy duty applications. They are constructed of synthetic rubber molded to the back of a metal shroud or guard. The seal lip rides in a labyrinth groove for reduced seal drag and lower torque against the inner ring land surface.

Bearings fitted with non-contacting metal shields are primarily intended for applications where the inner ring rotates and low drag torque is a requirement. They retain the grease at normal operating speeds and temperatures while protecting the bearing from contamination. Metal shields are also utilized in applications where contaminants may pose a threat to the seal materials.



BEARING Engineering Data

Radial Internal Clearance

All Nice® single row deep groove ball bearings are designed and produced with radial internal clearance to provide for optimum performance. Nice® ball bearings are supplied with "normal" radial clearance as standard, but can be ordered with radial clearance tighter than normal or looser than normal as a special item. The values listed in the table below apply to bearings before mounting and under no load and are supplied as a design guide. Consult Nice® engineering when ordering other than normal radial clearance.

RADIAL INTERNAL CLEARANCE (.0001) INCH (.001) mm				
PRECISION LEVEL SERIES / TYPE	NORMAL MIN.-MAX.	TIGHT MIN.-MAX.	LOOSE MIN.-MAX.	EXTRA LOOSE MIN.-MAX.
1600™/GROUND	2 - 12	2 - 6	7 - 22	10 - 25
	5 - 30	5 - 15	18 - 56	25 - 64
7500™/GROUND	2 - 12	2 - 6	7 - 22	10 - 25
	5 - 30	5 - 15	2 - 56	25 - 64
7600™/GROUND	2 - 12	2 - 6	7 - 22	10 - 25
	5 - 30	5 - 15	2 - 56	25 - 64
ER/GROUND	8 - 18	2 - 6	7 - 22	10 - 25
	20 - 46	5 - 15	2 - 56	25 - 64
3000™/SEMI-GROUND	10 - 50	10 - 40	10 - 60	10 - 70
	25 - 127	25 - 102	25 - 152	25 - 178
6900™/SEMI-GROUND	10 - 30	10 - 20	10 - 40	10 - 25
	25 - 76	25 - 51	25 - 102	25 - 64
400™/5000™ UNGROUND	10 - 70	---	---	---
	25 - 178	---	---	---
500™/SEMI-GROUND	10 - 70	---	---	---
	25 - 178	---	---	---

Recommended Housing Fits - ER Series

Basic Bearing Number	Outside Diameter of Bearing		Rotating Housing				Stationary Housing			
	Min. (in)	Max. (in)	Diameter		Resultant Fit		Diameter		Resultant Fit	
			Min. (in)	Max. (in)	Loose (in)	Tight (in)	Min. (in)	Max. (in)	Loose (in)	Tight (in)
ER10	1.8499	1.8504	1.8494	1.8504	0.0005	0.0006	1.8503	1.8509	0.0010	0.0001
	46.987	47.000	46.975	47.000	0.013	0.015	46.998	47.013	0.025	0.003
ER12	1.8499	1.8504	1.8494	1.8504	0.0005	0.0006	1.8503	1.8509	0.0010	0.0001
	46.987	47.000	46.975	47.000	0.013	0.015	46.998	47.013	0.025	0.003
ER16	2.0466	2.0472	2.0466	2.0471	0.0005	0.0006	2.0471	2.0476	0.0010	0.0001
	51.984	51.999	51.984	51.996	0.013	0.015	51.996	52.009	0.025	0.003
ER19	2.4403	2.4409	2.4403	2.4408	0.0005	0.0006	2.4408	2.4413	0.0010	0.0001
	61.984	61.999	61.984	61.996	0.013	0.015	61.996	62.009	0.025	0.003
ER20	2.8340	2.8346	2.8340	2.8345	0.0005	0.0006	2.8345	2.8350	0.0010	0.0001
	71.984	71.999	71.984	71.996	0.013	0.015	71.996	72.009	0.025	0.003
ER23	2.8340	2.8346	2.8340	2.8345	0.0005	0.0006	2.8345	2.8350	0.0010	0.0001
	71.984	71.999	71.984	71.996	0.013	0.015	71.996	72.009	0.025	0.003
ER24	3.1490	3.1496	3.1490	3.1495	0.0005	0.0006	3.1495	3.1500	0.0010	0.0001
	79.985	80.000	79.985	79.997	0.013	0.015	79.997	80.010	0.025	0.003
ER31	3.5425	3.5433	3.5426	3.5432	0.0007	0.0007	3.5432	3.5438	0.0013	0.0001
	89.980	90.000	89.982	89.997	0.018	0.018	89.997	90.013	0.033	0.003

BEARING Engineering Data

Recommended Shaft and Housing Fits

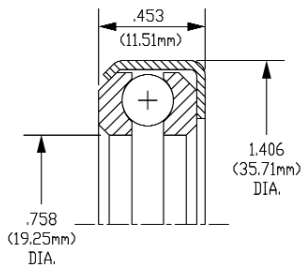
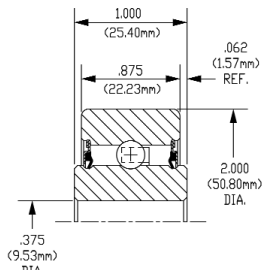
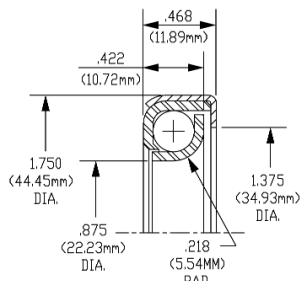
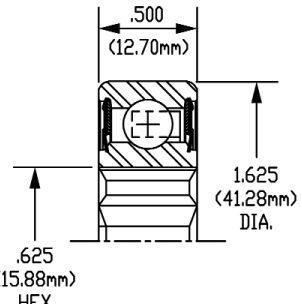
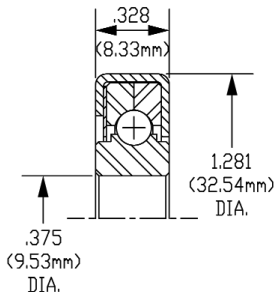
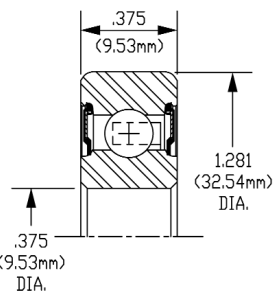
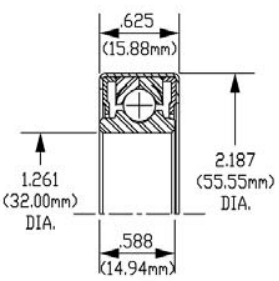
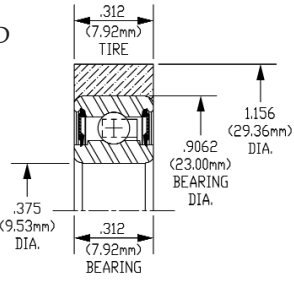
Proper mounting fits of ball bearings to shafts and in housings are critical to their performance. Excessively tight or excessively loose fits can result in premature bearing failures. Recommended fit values have been established which will facilitate optimum bearing performance.

The shaft and housing fits listed below apply to the 1600 Series™ and 7500 Series™ bearings. They may also be used for the housing fits only on the 3000 Series™, 7600 Series™, and 6900 Series™ bearings.

HOUSING FITS									
Bearing Outside Diameter		Housing Rotating				Housing Stationary			
		Housing Inside Dia		Theoretical Fit		Housing Inside Dia		Theoretical Fit	
MAX	MIN	MAX	MIN	TIGHT	LOOSE	MAX	MIN	TIGHT	LOOSE
0.6250	0.6245	0.6252	0.6245	0.0005	0.0007	0.6255	0.6250	0.0000	0.0010
15.875	15.862	15.880	15.862	0.013	0.018	15.888	15.875	0.000	0.025
0.6875	0.6870	0.6887	0.6870	0.0005	0.0007	0.6880	0.6875	0.0000	0.0010
17.463	17.450	17.493	17.450	0.013	0.018	17.475	17.463	0.000	0.025
0.7500	0.7495	0.7502	0.7495	0.0005	0.0007	0.7505	0.7500	0.0000	0.0010
19.050	19.037	19.055	19.037	0.013	0.018	19.063	19.050	0.000	0.025
0.8750	0.8745	0.8752	0.8745	0.0005	0.0007	0.8755	0.8750	0.0000	0.0010
22.225	22.212	22.230	22.212	0.013	0.018	22.238	22.225	0.000	0.025
0.9063	0.9058	0.9065	0.9058	0.0005	0.0007	0.9068	0.9063	0.0000	0.0010
23.020	23.007	23.025	23.007	0.013	0.018	23.033	23.020	0.000	0.025
1.1250	1.1245	1.1252	1.1242	0.0008	0.0007	1.1255	1.1250	0.0000	0.0010
28.575	28.562	28.580	28.555	0.020	0.018	28.588	28.575	0.000	0.025
1.3750	1.3745	1.3752	1.3742	0.0008	0.0007	1.3755	1.3750	0.0000	0.0010
34.925	34.912	34.930	34.905	0.020	0.018	34.938	34.925	0.000	0.025
1.6250	1.6245	1.6252	1.6242	0.0008	0.0007	1.6255	1.6250	0.0000	0.0013
41.275	41.262	41.280	41.255	0.020	0.018	41.295	41.275	0.000	0.033
1.7500	1.7495	1.7502	1.7492	0.0008	0.0007	1.7505	1.7500	0.0000	0.0013
44.450	44.437	44.455	44.430	0.020	0.018	44.470	44.450	0.000	0.033
1.8750	1.8745	1.8752	1.8742	0.0008	0.0008	1.8755	1.8750	0.0000	0.0013
47.625	47.612	47.630	47.605	0.020	0.020	47.645	47.625	0.000	0.033
2.0000	1.9994	2.0002	1.9990	0.0010	0.0008	2.0010	2.0000	0.0000	0.0016
50.800	50.785	50.805	50.775	0.025	0.020	50.825	50.800	0.000	0.041
2.1250	2.1244	2.1252	2.1240	0.0010	0.0008	2.1260	2.1250	0.0000	0.0016
53.975	53.960	53.980	53.950	0.025	0.020	54.000	53.975	0.000	0.041
2.2500	2.2494	2.2502	2.2490	0.0010	0.0008	2.2510	2.2500	0.0000	0.0016
57.150	57.135	57.155	57.125	0.025	0.020	64.033	57.150	0.000	0.041
2.5000	2.4994	2.5002	2.4990	0.0010	0.0008	2.5010	2.5000	0.0000	0.0016
63.500	63.485	63.505	63.475	0.025	0.020	63.525	63.500	0.000	0.041
2.5625	2.5619	2.5627	2.5615	0.0010	0.0008	2.5635	2.5625	0.0000	0.0016
65.088	65.072	65.093	65.062	0.025	0.020	65.113	65.088	0.000	0.041

SHAFT FITS									
Bearing Bore Diameter		Shaft Rotating				Shaft Stationary			
		Shaft Dia		Theoretical Fit		Shaft Dia		Theoretical Fit	
MAX	MIN	MAX	MIN	TIGHT	LOOSE	MAX	MIN	TIGHT	LOOSE
0.1875	0.1865	0.1870	0.1865	0.0005	0.0010	0.1870	0.1865	0.0005	0.0010
4.763	4.737	4.750	4.737	0.013	0.025	4.750	4.737	0.013	0.025
0.2500	0.2495	0.2500	0.2495	0.0005	0.0005	0.2495	0.2490	0.0000	0.0010
6.350	6.337	6.350	6.337	0.013	0.013	6.337	6.325	0.000	0.025
0.3125	0.3120	0.3125	0.3120	0.0005	0.0005	0.3120	0.3115	0.0000	0.0010
7.938	7.925	7.938	7.925	0.013	0.013	7.925	7.912	0.000	0.025
0.3750	0.3745	0.3750	0.3745	0.0005	0.0005	0.3745	0.3740	0.0000	0.0010
9.525	9.512	9.525	9.512	0.013	0.013	9.512	9.500	0.000	0.025
0.4375	0.4370	0.4375	0.4370	0.0005	0.0005	0.4370	0.4365	0.0000	0.0010
11.113	11.100	11.113	11.100	0.013	0.013	11.100	11.087	0.000	0.025
0.5000	0.4995	0.5000	0.4995	0.0005	0.0005	0.4995	0.4990	0.0000	0.0010
12.700	12.687	12.700	12.687	0.013	0.013	12.687	12.675	0.000	0.025
0.5625	0.5620	0.5625	0.5620	0.0005	0.0000	0.5620	0.5615	0.0000	0.0010
14.288	14.275	14.288	14.275	0.013	0.000	14.275	14.262	0.000	0.025
0.6250	0.6245	0.6250	0.6245	0.0005	0.0005	0.6245	0.6240	0.0000	0.0010
15.875	15.862	15.875	15.862	0.013	0.013	15.862	15.850	0.000	0.025
0.7500	0.7495	0.7500	0.7495	0.0005	0.0005	0.7495	0.7490	0.0000	0.0010
19.050	19.037	19.050	19.037	0.013	0.013	19.037	19.025	0.000	0.025
0.8750	0.8745	0.8752	0.8742	0.0007	0.0003	0.8745	0.8740	0.0000	0.0010
22.225	22.212	22.230	22.217	0.018	0.008	22.212	22.200	0.000	0.025
1.0000	0.9995	1.0002	0.9997	0.0007	0.0003	0.9995	0.9990	0.0000	0.0010
25.400	25.387	25.405	25.392	0.018	0.008	25.387	25.375	0.000	0.025
1.1250	1.1245	1.1252	1.1242	0.0007	0.0003	1.1245	1.1240	0.0000	0.0010
28.575	28.562	28.580	28.567	0.018	0.008	28.562	28.550	0.000	0.025
1.2500	1.2495	1.2502	1.2492	0.0007	0.0003	1.2495	1.2490	0.0000	0.0010
31.750	31.737	31.755	31.742	0.018	0.008	31.737	31.725	0.000	0.025
1.3125	1.3120	1.3127	1.3122	0.0007	0.0003	1.3120	1.3115	0.0000	0.0010
33.338	33.325	33.343	33.330	0.018	0.008	33.325	33.312	0.000	0.025
1.3750	1.3740	1.3752	1.3742	0.0007	0.0003	1.3740	1.3740	0.0000	0.0010
34.925	34.900	34.930	34.917	0.018	0.008	34.900	34.900	0.000	0.025

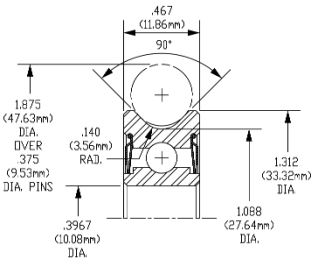
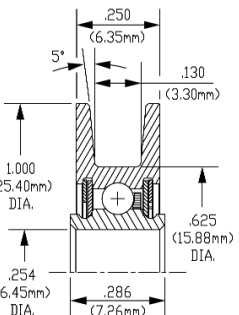
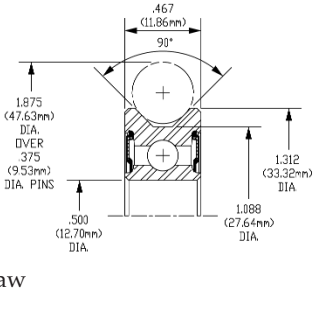
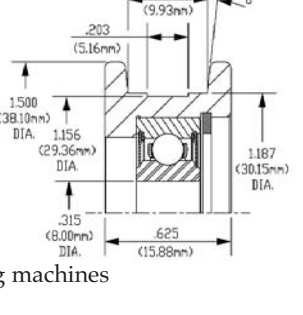
NICE[®] Special Ball Bearings

<p>P/N: 6359VBF18 Special Features: Ball Thrust Bearing Zinc Plated Band</p> <p>Grease: Rust Preservative</p> <p>Typical Applications: Crane hook swivel</p>	<p>P/N: 6990TNTG18 Special Features: Heavy section High capacity</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Chain Bearing</p>  
<p>P/N: 7401VHA00</p> <p>Grease: Exxon Polyrex EM</p> <p>Typical Applications: Commercial washing machine brake solenoid</p>	<p>P/N: 7436TNTG18 Special Features: 5/8" Hex Bore</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Commercial mower drives</p>  
<p>P/N: 8070VTE00 Special Features: Radial Ball Bearing Zinc Plated</p> <p>Grease: Shell Alvania Grease 2 - 1/3 Full</p> <p>Typical Applications: Moveable carriage sections for meat saws</p>	<p>P/N: 8220TNBF18 Special Features: Stainless steel</p> <p>Grease: Rust Preservative</p> <p>Typical Applications: Moveable carriage sections for meat saws</p>  
<p>P/N: 8025VTE18 Special Features: Full complement radial ball brg</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Lawn mower</p>	<p>P/N: 8317TNTG00 Special Features: Polyurethane molded tire on OD</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Bottle inspection machinery</p>  

<p>P/N: 84061TNPS18 Special Features: Stainless steel races Heavy duty seals</p> <p>Grease: Exxon Nebula #2 Grease</p> <p>Typical Applications: Compacter roll for textile machinery</p> <p>Interchanges: Fafnir® P/N: A201NPP5 A1116</p>	<p>P/N: 8435VBF00 Special Features: Single row unground Combination Radial & Thrust Bearing Machined inner ring</p> <p>Grease: Rust Preservative</p> <p>Typical Applications: Mechanical door closers</p>
<p>P/N: 8425TNRLDBF00 Special Features: Special internal clearance</p> <p>Grease: Rust preservative</p>	<p>P/N: 8426TNRLCBF00 Special Features: Special internal clearance</p> <p>Grease: Rust Preservative</p>
<p>P/N: 8457JUE00 Special Features: Steel retainer</p> <p>Grease: Chevron SRI</p> <p>Typical Applications: Locomotive fuel solenoid</p>	<p>P/N: 8458TNUE00</p> <p>Grease: Chevron SRI</p> <p>Typical Applications: Locomotive fuel solenoid</p>
<p>P/N: 8736AXX71 Special Features: Urethane tire Zinc plated</p> <p>Typical Applications: Packing machine</p>	<p>P/N: 8755ADCXX00</p> <p>Grease: Chevron SRI</p> <p>Typical Applications: Drawer guides</p>

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NICE® Ball Bearings With Special OD Configurations

<p>P/N: 8224TNTT00 Special Features: Track wheel configuration on the OD. 4 point angular contact</p> <p>Grease: Chevron Dura-Lith EP2</p> <p>Typical Applications: Guide bearing for radial arm saw</p>	<p>P/N: 84332TNTG00 Special Features: Low torque Teflon™ seals</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Wire guide</p> 
<p>P/N: 84382TNTG00 Special Features: Low torque Teflon™ seals</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Wire guide</p>	<p>P/N: 8459DSTNHA00 Special Features: Low torque Teflon™ seals</p> <p>Grease: Exxon Polyrex EM</p> <p>Typical Applications: Track roller for automatic sliding doors</p> 
<p>P/N: 8490TNTT00 Special Features: Track wheel configuration on the OD. 4 point angular contact</p> <p>Grease: Chevron Dura-Lith EP2</p> <p>Typical Applications: Guide bearing for radial arm saw</p>	<p>P/N: 8727DCJN20XX24 Special Features: Steel retainer</p> <p>Grease: Solid polymer lubrication</p> <p>Typical Applications: TIG welder wire guide</p> 
<p>P/N: 8741ADSUD24 Special Features: Harden outer</p> <p>Grease: Mobilgrease 28</p> <p>Typical Applications: Wire pulley for medical imaging machines</p>	<p>P/N: 8752ADCN65XX24 Special Features: Hard chrome plating</p> <p>Typical Applications: Wire guide</p> 

<p>P/N: CB142TNTG18 Special Features: .456" Hex Bore</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Warehouse Conveyor Rolls</p> <p>Interchanges: Kilian® P/N: CB14-2</p>	<p>P/N: CB504TNTTE93 Special Features: .719" hexagonal bore Self Aligning Black Oxide Finish</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Bulk Handling Belt Conveyors</p> <p>Interchanges: MRC® P/N: CONV5043 Schatz P/N: CS3574X5</p>
<p>P/N: CONV3Y4TNTTE70 Special Features: Milled slot in OD for easy installation Fully enclosed dust shield Sealed for life High Load rating Zinc Plated Outer Ring</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Material handling applications</p>	<p>P/N: 74888TNTTE18 Special Features: Low torque seals 75% grease fill</p> <p>Grease: Shell Alvania 2 - 3/4 Full</p> <p>Typical Applications: Conveying equipment 3/4" Sprocket Idler Bearing</p> <p>Interchanges: MRC® P/N: CONV4SZZ2 NDH® P/N: Z9504B Schatz P/N: CS3564X3 Fafnir® P/N: 204RR6</p>
<p>P/N: 6939VBF00 Special Features: Stainless steel band & dust shield Full complement 3/32" x 45 threaded stud 1/4" pipe tap in stud end</p> <p>Grease: Rust Preservative</p> <p>Typical Applications: Bulk material knife gate valve</p>	<p>P/N: 7213VBF00 Special Features: Stainless steel band & dust shield Full complement 3/32" x 45 threaded stud 1/4" pipe tap in stud end</p> <p>Grease: Rust Preservative</p> <p>Typical Applications: Bulk material knife gate valve</p>

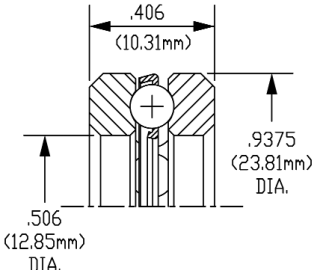
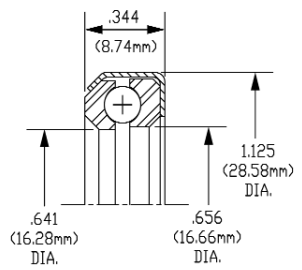
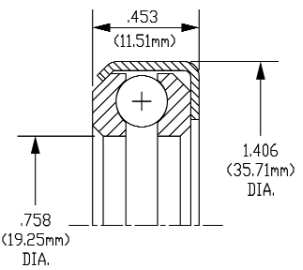
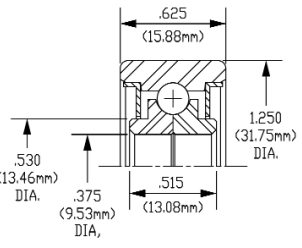
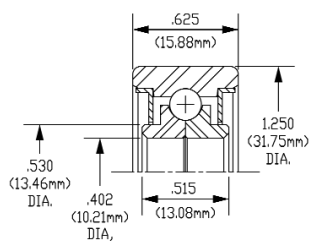
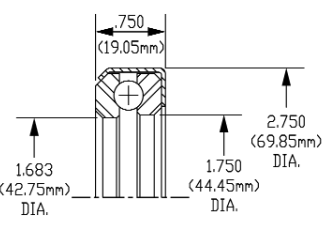
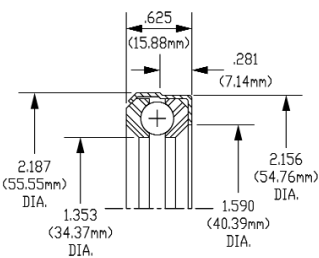
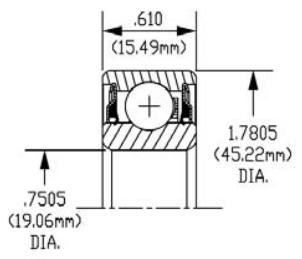
P/N: 8749VN35BF73
Special Features:
1 piece cup made of bearing quality steel
Increased cross section
Stainless steel balls
Corrosion resistant coating

Grease:
Rust Preservative

Typical Applications:
Ball transfer decks for cargo handling

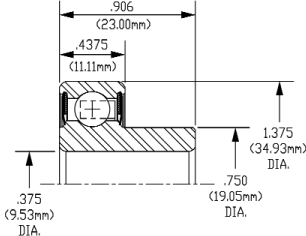
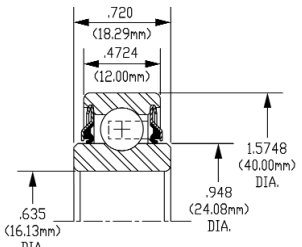
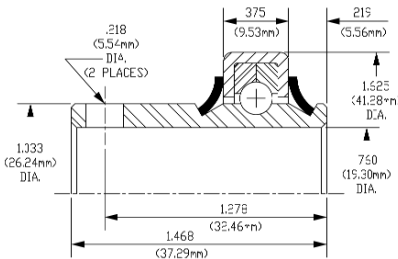
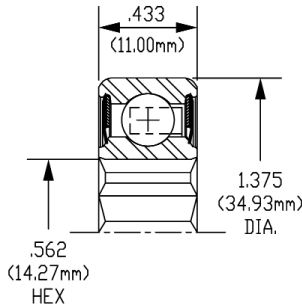
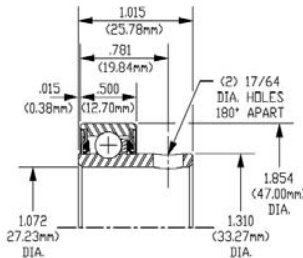
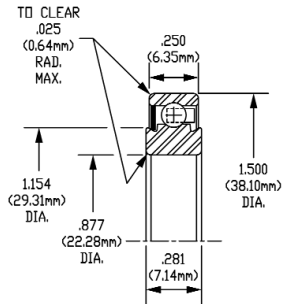
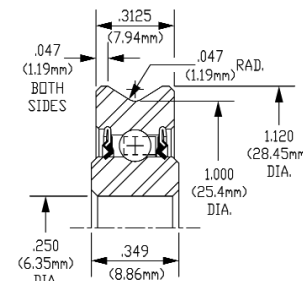
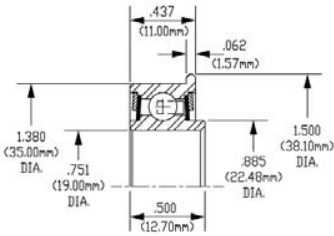
Kilian is a registered trademark of Altra Industrial Motion. MRC is a registered trademark of SKF. NDH is a registered trademark of General Motors.

NICE® Special Agricultural Bearings

<p>P/N: 5971JBF03 Special Features: Ball Thrust Bearing Retainer version</p> <p>Grease: Rust Preservative</p> 	<p>P/N: 6051VBF53 Special Features: Ball Thrust Bearing</p> <p>Grease: Rust Preservative</p> 
<p>P/N: 6359V4L4L00 Special Features: Ball Thrust Bearing Zinc Plated Band</p> <p>Grease: Shell Alvania 2</p> 	<p>P/N: 70319VPS18</p> <p>Grease: Exxon Nebula #2</p> <p>Typical Applications: Hay baler</p> 
<p>P/N: 703110VPS18 Special Features: Black oxide coated inner ring</p> <p>Grease: Exxon Nebula #2</p> <p>Typical Applications: Hay baler</p> 	<p>P/N: 71144VMJ18 Special Features: Ball thrust bearing Full complement</p> <p>Grease: Shell Alvania 3</p> <p>Typical Applications: Hay baler</p> 
<p>P/N: 7484VBF00 Special Features: Ball thrust bearing Full complement</p> <p>Typical Applications: Hay baler</p> 	<p>P/N: 74888TNNRLDMJ18 Special Features: 3/4" ground bore Single lip seal with steel shield Radial play .0014"- .0018</p> <p>Grease: Shell Alvania 2 - 3/4 Full</p> <p>Typical Applications: Mower spindle</p> <p>Interchanges: Fafnir® P/N: P204RR6 BCA® P/N: 204BBAR</p> 

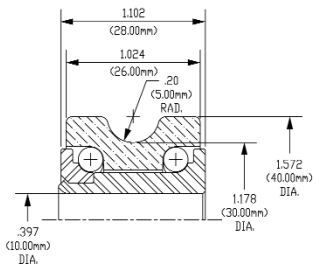
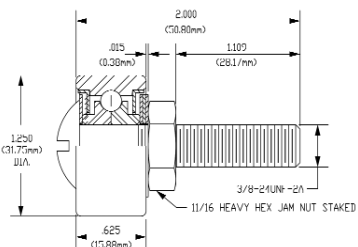
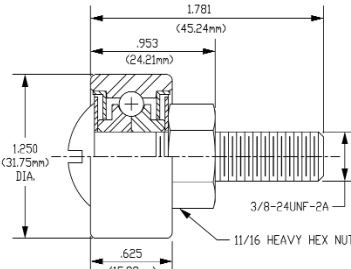
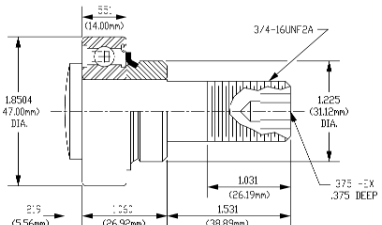
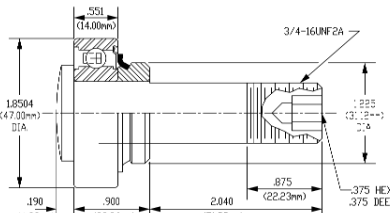
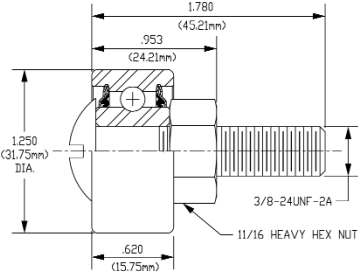
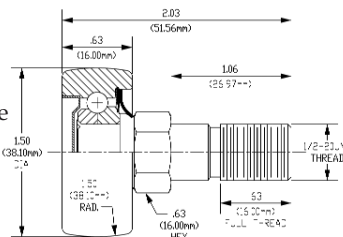
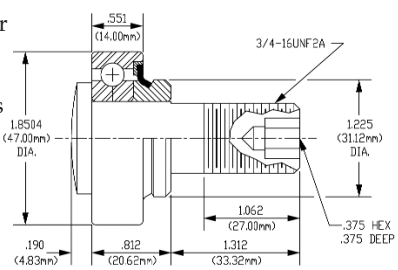
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NICE® Special Agricultural Bearings - Continued

<p>P/N: 78427TNHB18 Special Features: Extended inner ring version Carburized steel inner ring</p> <p>Grease: Exxon Polyrex EM</p> <p>Typical Applications: Hay baler</p> 	<p>P/N: 78685TNHR53 Special Features: Extended inner ring version Contact seals with steel shield</p> <p>Grease: Exxon Unirex N2</p> <p>Typical Applications: 5/8" Sprocket idler bearing</p>  <p>Interchanges: Fafnir® P/N: 203KRR2 BCA® P/N: 203RRAR10</p>
<p>P/N: 7997VTG00 Special Features: Extended inner ring Pin holes for installation</p> <p>Grease: Shell Alvania 2</p> 	<p>P/N: 8191TNTE18 Special Features: 9/16" Hex Bore</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Mowing Equipment</p> 
<p>P/N: 82121TNMJ00 Special Features: Extend inner ring 2 11/16" dia holes 180° apart</p> <p>Grease: Shell Alvania 3</p> <p>Typical Applications: Hay baler rake tine bar shaft support</p> <p>Interchanges: Fafnir® P/N: BB9105KRR2</p> 	<p>P/N: 8280TNMR00 Special Features:</p> <p>Grease: Eastern Oils - Ford M1C233A</p> <p>Typical Applications: Steering</p> 
<p>P/N: 8386TNGMBMJ00 Special Features: Grooved outer ring Zinc plated</p> <p>Grease: Shell Alvania 3</p> <p>Typical Applications: Hay baler wire guide</p> 	<p>P/N: 8418TNMJ18 Special Features: Flanged radial ball bearing</p> <p>Grease: Shell Alvania 3</p> <p>Typical Applications: Lawn mower drives</p> 

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NICE® Special Agricultural Bearings - Continued

<p>P/N: 8738VBF00 Special Features: Acetyl 500 outer ring Stainless steel inner ring</p> <p>Grease: Rust Preservative</p> <p>Typical Applications: Carriage assembly chicken processing equipment</p> 	<p>P/N: 70313VPS18 Special Features: 3/8" -24 UNF 2 Threads Straight OD</p> <p>Grease: Exxon Nebula #2</p> <p>Typical Applications: Hay baler</p>  <p>Interchanges: BCA® P/N: CF6032</p>
<p>P/N: 70316VPS18 Special Features: Ball bearing cam follower 3/8" -24 UNF 2A Threads Straight OD</p> <p>Grease: Exxon Nebula #2</p> <p>Typical Applications: Hay baler</p>  <p>Interchanges: BCA® P/N: CF6672</p>	<p>P/N: 72275TNTE86 Special Features: Ball bearing cam follower 3/4" -16 UNF 2A Threads Internal 3/8" hex slot in stud</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Hay rake tine bar</p>  <p>Interchanges: Replaces Nice® P/N 72274VTE86 BCA® P/N: TB7623</p>
<p>P/N: 8237TNTE86 Special Features: Ball bearing cam follower Internal 3/8" hex slot in stud 3/4" -16 UNF 2A Threads</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Hay baler</p>  <p>Interchanges: Replaces Nice® P/N 8237VTE86 BCA® P/N: TB7624</p>	<p>P/N: 8389ATNPS00 Special Features: Ball bearing cam follower 3/8" -24 UNF 2A Threads Straight OD</p> <p>Grease: Exxon Nebula #2</p> <p>Typical Applications: Hay rake tine bar</p> 
<p>P/N: 84031VPS00 Special Features: Ball bearing cam follower 1/2" -20 UNF 2A Threads Crowned OD to accommodate misalignment</p> <p>Grease: Exxon Nebula #2</p> <p>Typical Applications: Hay rake tine bar</p>  <p>Interchanges: BCA® P/N: CF7811</p>	<p>P/N: 8469VTE00 Special Features: Ball bearing cam follower Internal 3/8" hex slot in stud 3/4" -16 UNF 2A Threads</p> <p>Grease: Shell Alvania 2</p> <p>Typical Applications: Hay rake tine bar</p> 

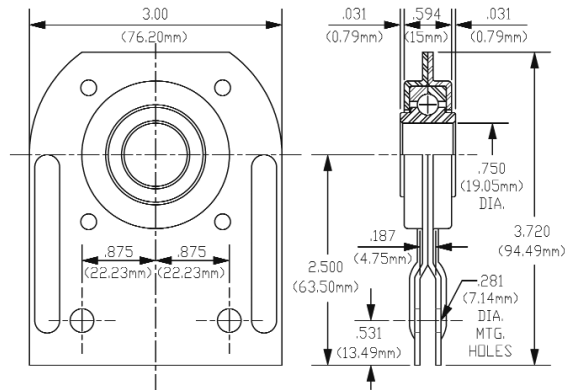
BCA is a registered trademark of NTN.

NICE® Ball Bearing Sheaves

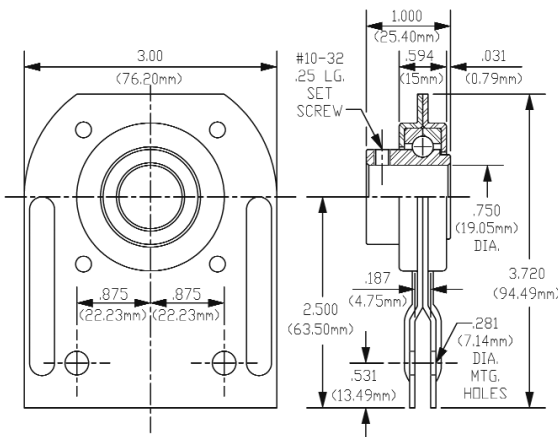
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NICE® Hanger Bearing

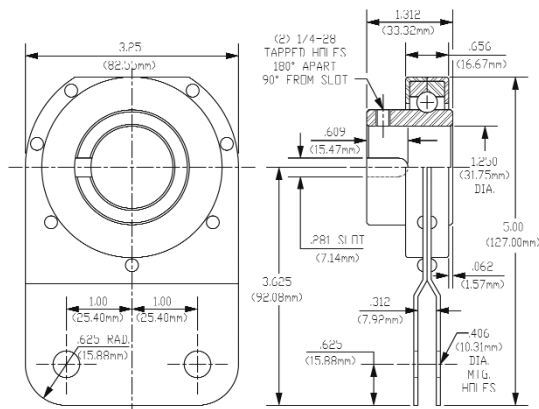
P/N: 6530VBF00



P/N: 8320VBF00



P/N: 8400VBF00





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Radial, angular contact, extended inner ring, high misalignment. QuadLube®, ImpactTuff®, SpreadLock® Seal, CrossLube®, DuraLube™, and self-lubricating bearings. Available in inch and metric sizes.



Thin Section Ball Bearings

Standard cross sections to one inch. Sizes to 40 inches. Stainless steel and other materials are available. Seals are available on all sizes and standard cross sections. Super duplex configurations.



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Tapered Roller Thrust Bearings

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Precision ground, rolled, ball splines. Long life, low wear, high accuracy. QuickTurn® Ball Screw Repair Service.



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Standard stud, heavy stud, yoke type, caged roller followers. Patented RBC Roller® cylindrical roller cam followers, HexLube® universal cam followers, airframe track rollers.



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Radial, thrust, rod ends, spherical bearings, high temperature, high loads. Available in inch and metric sizes. Fiberglide® self-lubricating bearings.



Airframe Control Bearings

Ball bearing types, self-lubricating types, needle roller track rollers.



Dowel Pins, Loose Needle Rollers, Shafts

Precision Products dowel pins, loose needle rollers, and shafts.



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Precision ground, semi-ground, unground. High loads, long life, smooth operation. Nice® ball bearings are offered in caged and full complement configurations.



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