

NICE®

Precision Products and Solutions



RBC®
BEARINGS

Smoother. Faster. Longer.
Because That's How We Roll.



RBC Bearings® 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 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 product, **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.

Exclusive Designations of Nice® Bearing Products

Over the last several decades the **NICE®** bearing designations (for example **1621®**, **1630®**, **1635®** and **1641®**) and Series designations (for example **Series 1600®** and **Series 500®**) have acquired distinctiveness to the **NICE®** ball bearing business and the only unique identifier of genuine high quality **NICE®** ball bearings. These trademarks originally acquired their fame prior to 1960 through the original owner of the **NICE®** ball bearing business.

These trademarks guarantee that you are getting the unique source of bearing products, namely the original high quality **NICE®** bearing product.

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 Bearings® 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 Bearings®** 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 Bearings® 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.

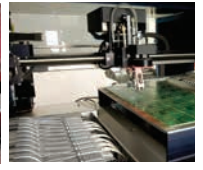
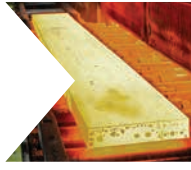
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RBC Bearings® provides global industrial, aerospace, and defense customers with unique design solutions to complex problems and an unparalleled level of service, quality, and support.

RBC manufactures highly engineered precision plain, roller and ball bearings, shaft collars, rigid couplings and keyless locking devices. While RBC designs and manufactures products in these major product categories, RBC excels at solving the most demanding and difficult applications with solutions that improve customers' products and process performance and deliver the lowest total cost of ownership. This has been achieved by providing products such as maintenance free bearings, components, and bearings designed

to withstand environments with extreme temperature, high speed, contamination, corrosion, and severe shock loading.

RBC Bearings® has been providing engineered solutions to customers since 1919. RBC has significantly broadened our end markets, products, customer base and geographic reach through organic growth and acquisitions. These acquisitions fit well with our philosophy of providing high-quality products and solutions to our customer base. They have enhanced our customer solutions and experience, further diversifying our offering to our target markets.

RBC currently has 64 facilities in 11 countries, with manufacturing capabilities in 42 locations.



Smoother. Faster. Longer.

Because That's How We Roll.

Product Overview

- ✓ Ball Bearings
- ✓ Cam Followers
- ✓ Cylindrical Roller Bearings
- ✓ Dowel Pins
- ✓ Heavy Duty Needle Roller Bearings
- ✓ Integrated Assemblies
- ✓ Keyless Locking Assemblies
- ✓ Keyless Rigid Couplings
- ✓ Loose Needle Rollers and Shafts
- ✓ Maintenance-Free Bearings
- ✓ Rigid Couplings
- ✓ Rod Ends
- ✓ Self-Lubricating/Lined Bearings
- ✓ Shaft Collars
- ✓ Shrink Discs
- ✓ Spherical Plain Bearings
- ✓ Tapered Roller Bearings
- ✓ Tapered Roller Thrust Bearings
- ✓ Thin Section Ball Bearings

Industrial Markets Served

- ✓ Automation
- ✓ Construction
- ✓ Food & Beverage
- ✓ Material Handling
- ✓ Mining
- ✓ Oil & Gas
- ✓ Packaging Machinery
- ✓ Refuse & Recycling
- ✓ Renewable Energy
- ✓ Military & Defense
- ✓ Power Generation
- ✓ Robotics
- ✓ Semiconductor
- ✓ Transportation
- ✓ Hydropower & Dams

Custom Engineered Solutions

- ✓ Maintenance-Free Bearings
- ✓ Bearings & Components
for Harsh Environments
 - ♦ Extreme Temperatures
 - ♦ High Speed
 - ♦ Contamination
 - ♦ Corrosion
 - ♦ Shock Loading
- ✓ Advanced Sub-Assemblies



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Product Selection Guide

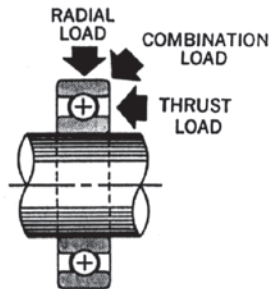
RBC Nice® Bearings, Inc., produces a full line of ground, semi-ground, and unground bearing assemblies. To choose the exact bearing you need, start with the **Nice®** line of standard inch-dimension, radial, angular contact and thrust ball bearings. Standard series bearings can be customized to include 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®** ball bearings 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 meets your needs.

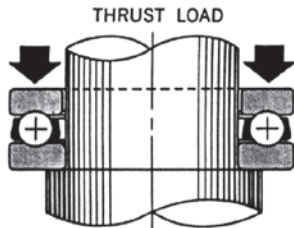
DESIGN

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

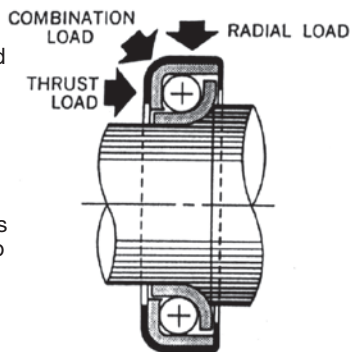
1. Radial bearings are designed primarily to carry loads perpendicular to the axis of the bearing bore. They will also accommodate limited thrust loading or a combination radial and thrust load.



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.



Nice® Standard Product Line				
Class	Series	Type	Ground Surfaces	Bore Range
Ground	1600®	(Retainer) Radial	Raceways Bore, O.D., Faces	1/4" - 1 15/16" 6.35-49.21
	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® / SRM / FSRM / RF	(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	Any

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® Ball Bearings** field and factory engineers will be glad to give you the benefit of their specialized training and broad practical experience.

Product Selection Guide

MODIFIED STANDARDS

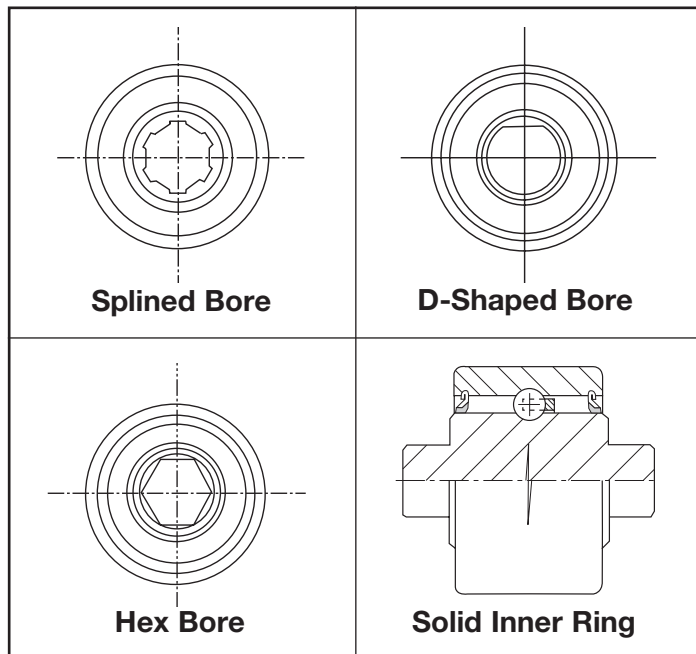
Modified standard bearings feature a standard cage and ball complement or a full ball complement, with custom engineered modifications to the other bearing components. The exact inner and outer ring dimensions and designs can be combined with a wide range of seals, shields, special greases, special materials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

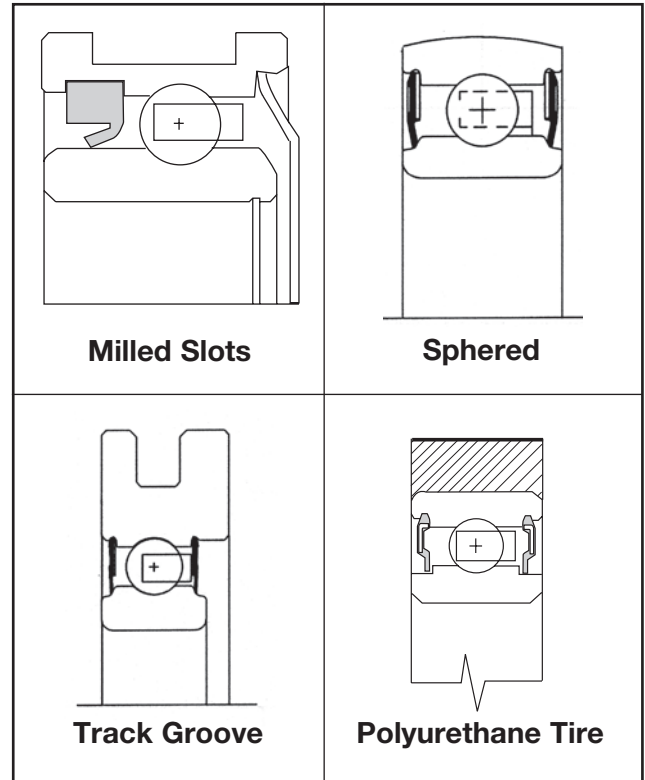
INNER RINGS

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



OUTER RINGS

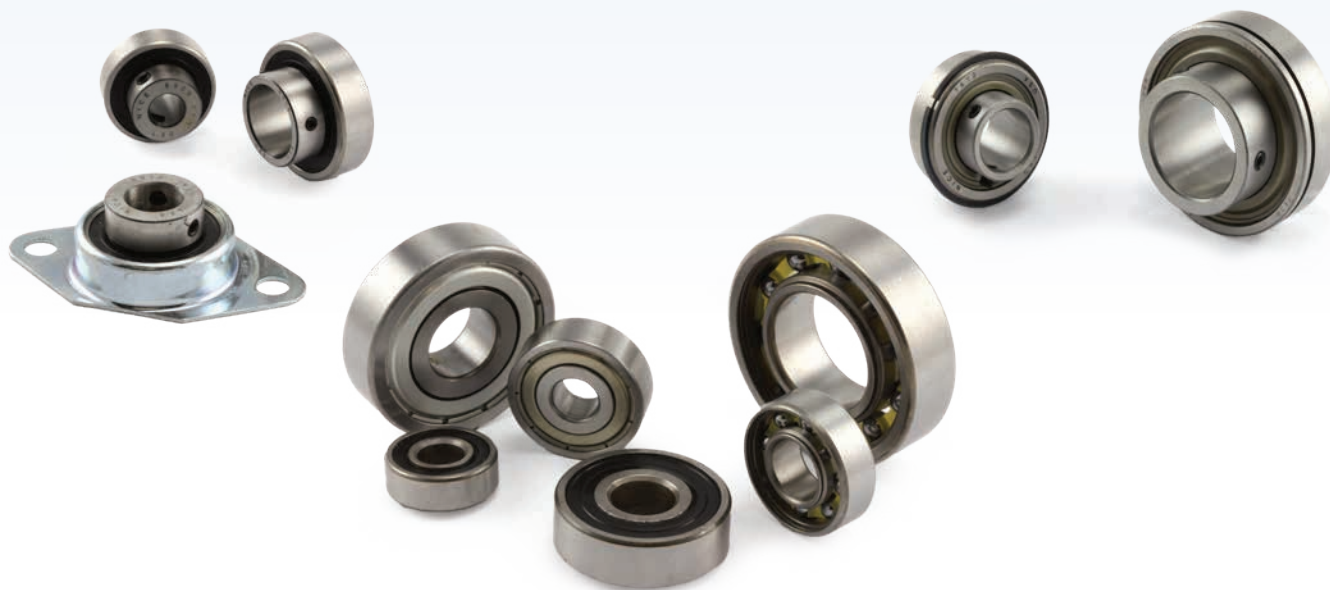
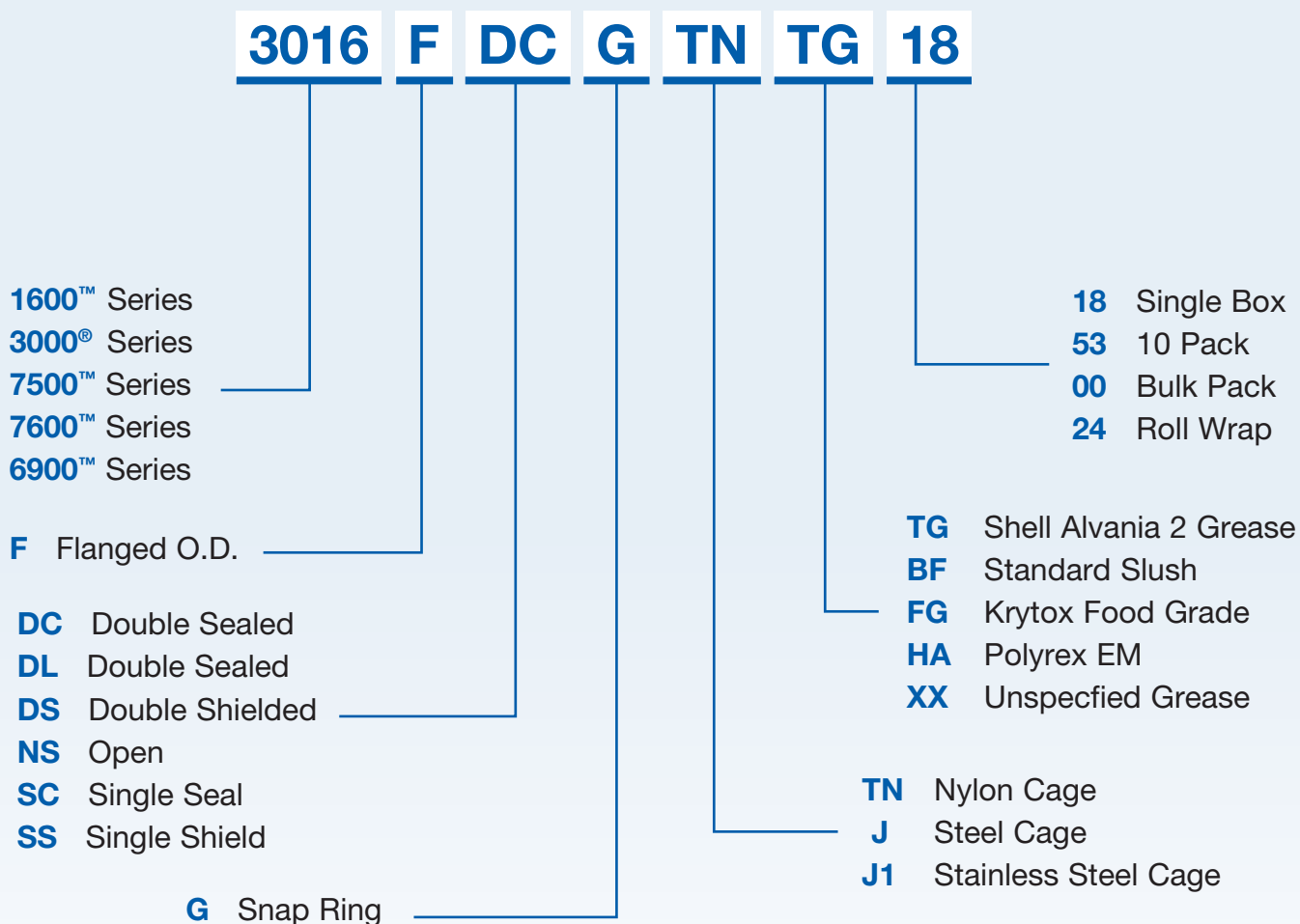
Outer rings can be custom engineered to include milled slots, snap rings, track grooves, or even a variety of engineered polymer tires. Add to this flanges or pulley units and a variety of custom solutions are readily available.



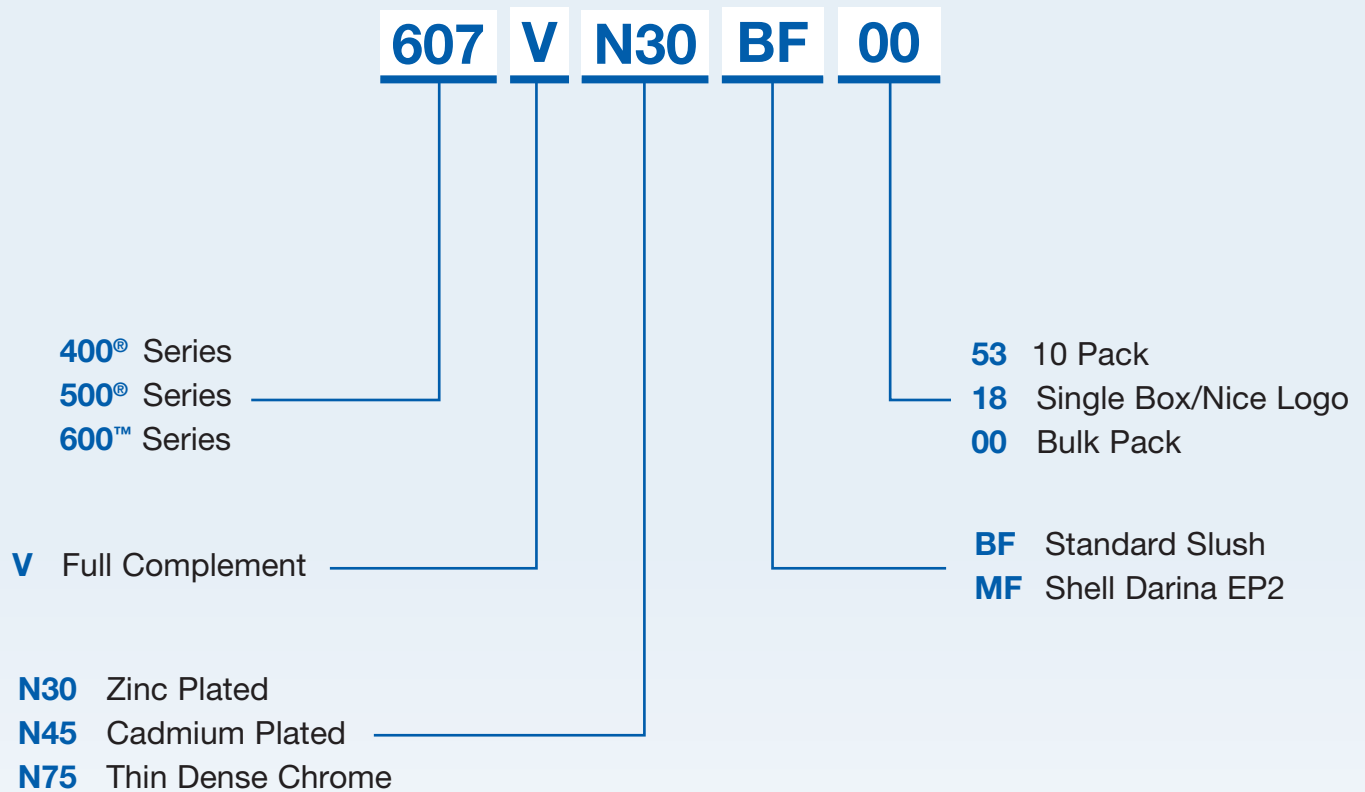
MATERIALS AND FINISHES

Nice® Bearings 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® Bearing** application engineers can assist in bearing selection for special material applications.

Nomenclature – Ground Bearings



Nomenclature – Unground Bearings

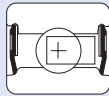
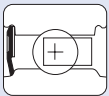
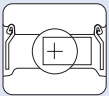
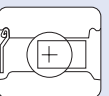
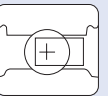


NICE® 1600 Series®

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.

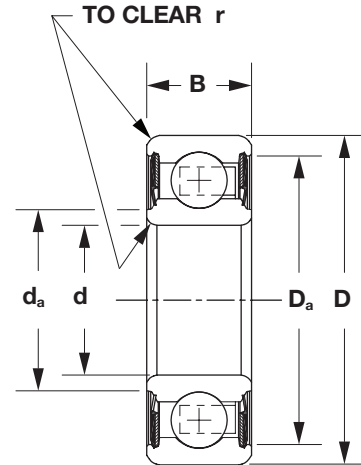
NICE® PART NUMBER	SUFFIX					PRINCIPLE DIMENSIONS					
	DOUBLE SEAL	SINGLE SEAL	DOUBLE SHIELD	SINGLE SHIELD	OPEN	BORE		O.D.		WIDTH	
						in +.0000 -.0005	mm +.000 -.013	in +.0000 -.0005	mm +.000 -.013	in +.000 -.005	mm +.00 -.13
						d		D		B	
1602™	DC ⁵	SC ⁵	DS	SS	NS	0.2500 6.350		0.6875 17.463		0.2500 6.350	¹
1603™	DC	SC	DS	SS	NS	0.3125 7.938		0.8750 22.225		0.2813 7.150	²
1604™	DC	SC	DS	SS	NS	0.3750 9.525		0.8750 22.225		0.2813 7.150	²
1605™	DC	SC	DS	SS	NS	0.3125 7.938		0.9063 23.020		0.3125 7.938	
1606™	DC	SC	DS	SS	NS	0.3750 9.525		0.9063 23.020		0.3125 7.938	
1607™	DC	SC	DS	SS	NS	0.4375 11.113		0.9063 23.020		0.3125 7.938	
1614™	DC	SC	DS	SS	NS	0.3750 9.525		1.1250 28.575		0.3750 9.525	
1615™	DC	SC	DS	SS	NS	0.4375 11.113		1.1250 28.575		0.3750 9.525	
1616™	DC	SC	DS	SS	NS	0.5000 12.700		1.1250 28.575		0.3750 9.525	
1620™	DC	SC	DS	SS	NS	0.4375 11.113		1.3750 34.925		0.4375 11.113	
1621®	DC	SC	DS	SS	NS	0.5000 12.700		1.3750 34.925		0.4375 11.113	

¹ Width for sealed versions = 0.3125 (7.938) ³ Weights given are for greased and sealed versions ⁵ Multi-part seal see page 58
² Width for sealed versions = 0.3438 (8.733) ⁴ 1638™ and larger +.0000/- .0006 (+.000/- .015)

All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 1600 Series®

Precision Ground Radial Bearings



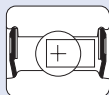
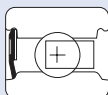
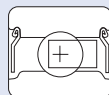
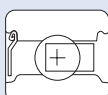
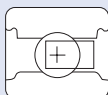
BASIC LOAD RATINGS		WEIGHT	ABUTMENT AND FILLET DIMENSIONS			NICE® PART NUMBER
DYNAMIC	STATIC					
lbs. N	lbs. N	lbs. kg	in mm	in mm	in mm	
C	C ₀	W ^③	d _a min	D _a max	r max	
511	170	0.02	0.330	0.614	0.012	1602™
2274	757	0.01	8.38	15.60	0.30	
644	255	0.03	0.474	0.778	0.012	1603™
2866	1135	0.01	12.04	19.76	0.30	
644	255	0.03	0.474	0.778	0.015	1604™
2866	1135	0.01	12.04	19.76	0.38	
698	300	0.04	0.503	0.778	0.012	1605™
3106	1335	0.02	12.78	19.76	0.30	
698	300	0.04	0.517	0.778	0.015	1606™
3106	1335	0.02	13.13	19.76	0.38	
698	300	0.03	0.517	0.778	0.015	1607™
3106	1335	0.01	13.13	19.76	0.38	
1200	475	0.06	0.595	1.014	0.025	1614™
5340	2114	0.03	15.11	25.76	0.64	
1200	475	0.06	0.622	1.014	0.025	1615™
5340	2114	0.03	15.80	25.76	0.64	
1200	475	0.06	0.622	1.014	0.025	1616™
5340	2114	0.03	15.80	25.76	0.64	
1878	850	0.12	0.658	1.203	0.025	1620™
8357	3783	0.05	16.71	30.56	0.64	
1878	850	0.11	0.720	1.203	0.025	1621®
8357	3783	0.05	18.29	30.56	0.64	

NICE® 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.

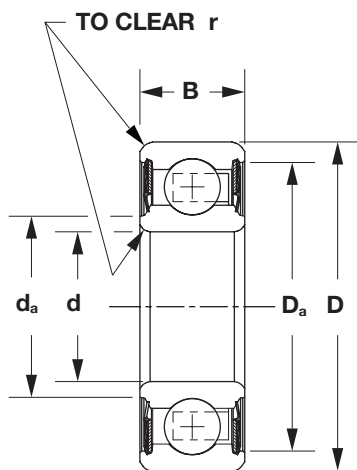
NICE® PART NUMBER	SUFFIX					PRINCIPLE DIMENSIONS					
	DOUBLE SEAL	SINGLE SEAL	DOUBLE SHIELD	SINGLE SHIELD	OPEN	BORE		O.D.		WIDTH	
						in +.0000 -.0005	mm +.000 -.013	in +.0000 -.0005	mm +.000 -.013	in +.000 -.005	mm +.00 -.13
						d		D		B	
1623™	DC	SC	DS	SS	NS	0.6250 15.875		1.3750 34.925		0.4375 11.113	
1628™	DC	SC	DS	SS	NS	0.6250 15.875		1.6250 41.275		0.5000 12.700	
1630®	DC	SC	DS	SS	NS	0.7500 19.050		1.6250 41.275		0.5000 12.700	
1633™	DC	SC	DS	SS	NS	0.6250 15.875		1.7500 44.450		0.5000 12.700	
1635®	DC	SC	DS	SS	NS	0.7500 19.050		1.7500 44.450		0.5000 12.700	
1638™	DC ^④	SC	DS	SS	NS	0.7500 19.050		2.0000 50.800		0.5625 14.288	
1640™	DC ^④	SC	DS	SS	NS	0.8750 22.225		2.0000 50.800		0.5625 14.288	
1641®	DC ^④	SC	DS	SS	NS	1.0000 25.400		2.0000 50.800		0.5625 14.288	
1652™	DC ^{④ ⑤}	SC	DS	SS	NS	1.1250 28.575		2.5000 63.500		0.6250 15.875	
1654™	DC ^{④ ⑤}	SC	DS	SS	NS	1.2500 31.750		2.5000 63.500		0.6250 15.875	
1657™	DC ^{④ ⑤}	SC	DS	SS	NS	1.2500 31.750		2.5625 65.088		0.6875 17.463	
1660	DC ^{④ ⑤}	SC	DS	SS	NS	1.5000 38.10		3.3125 84.14		0.8125 20.64	
1662	DC ^{④ ⑤}	SC	DS	SS	NS	1.7500 44.45		3.3125 84.14		0.8125 20.64	

① Width for sealed versions = 0.3125 (7.938) ③ Weights given are for greased and sealed versions ⑤ Multi-part seal see page 58
 ② Width for sealed versions = 0.3438 (8.733) ④ 1638™ and larger +.0000/-0.0006 (+.000/-0.015)

All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 1600 Series®

Precision Ground Radial Bearings



BASIC LOAD RATINGS							NICE [®] PART NUMBER
DYNAMIC		STATIC	WEIGHT	ABUTMENT AND FILLET DIMENSIONS			
	lbs. N	lbs. N	lbs. kg	in mm	in mm	in mm	
	C	Co	W ^③	d _a min	D _a max	r max	
	1878	850	0.10	0.753	1.203	0.025	1623™
	8357	3783	0.05	19.13	30.56	0.64	
	2595	1010	0.18	0.845	1.446	0.025	1628™
	11548	4495	0.08	21.46	36.73	0.64	
	2595	1010	0.16	0.965	1.446	0.025	1630®
	11548	4495	0.07	24.51	36.73	0.64	
	2593	1025	0.22	0.845	1.530	0.025	1633™
	11539	4561	0.10	21.46	38.86	0.64	
	2593	1025	0.20	0.965	1.530	0.025	1635®
	11539	4561	0.09	24.51	38.86	0.64	
	2967	1350	0.32	0.988	1.760	0.035	1638™
	13203	6008	0.15	25.10	44.70	0.89	
	2967	1350	0.29	1.113	1.760	0.035	1640™
	13203	6008	0.13	28.27	44.70	0.89	
	2967	1350	0.26	1.197	1.760	0.035	1641®
	13203	6008	0.12	30.40	44.70	0.89	
	3864	2120	0.38	1.375	2.244	0.035	1652™
	17195	9434	0.17	34.93	57.00	0.89	
	3864	2120	0.46	1.500	2.244	0.035	1654™
	17195	9434	0.21	38.10	57.00	0.89	
	5360	2620	0.51	1.500	2.314	0.035	1657™
	23852	11659	0.23	38.10	58.78	0.89	
	6189	4073	1.08	2.1550	2.9590	0.06	1660
	27530	18118	0.49	54.74	75.16	1.52	
	6189	4073	0.93	2.155	2.959	0.06	1662
	27530	18118	0.42	54.74	75.16	1.52	

NICE® 3000 Series®

Semi-Ground Radial Bearings

Features:

- Precision Ground On All Contact Surfaces Except Bore
- Easy To Use Inch Dimensions
- Economical Bearing for Lighter Loads than the 1600 Series® Bearings
- 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



NICE® PART NUMBER	SUFFIX					PRINCIPLE DIMENSIONS					
	DOUBLE SEAL	SINGLE SEAL	DOUBLE SHIELD	SINGLE SHIELD	OPEN	BORE		O.D.		WIDTH	
						in +.005 -.000	mm +.13 -.00	in +.0000 -.0005	mm +.000 -.013	in +.005 -.005	mm +.13 -.13
						d		D		B	
3002™	DC	SC	DS	SS	NS	0.2500 6.350		0.6875 17.463		0.2500 6.350	①
3003™	DC ②	SC ②	DS	SS	NS	0.3125 7.938		0.8750 22.225		0.2813 7.145	②
3004™	DC ②	SC ②	DS	SS	NS	0.3750 9.525		0.8750 22.225		0.2813 7.145	②
3005™	DC	SC	DS	SS	NS	0.3125 7.938		0.9063 23.020		0.3125 7.938	
3006™	DC	SC	DS	SS	NS	0.3750 9.525		0.9063 23.020		0.3125 7.938	
3007™	DC	SC	DS	SS	NS	0.4375 11.113		0.9063 23.020		0.3125 7.938	
3014™	DC	SC	DS	SS	NS	0.3750 9.525		1.1250 28.575		0.3750 9.525	
3015™	DC	SC	DS	SS	NS	0.4375 11.113		1.1250 28.575		0.3750 9.525	
3016™	DC	SC	DS	SS	NS	0.5000 12.700		1.1250 28.575		0.3750 9.525	

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)

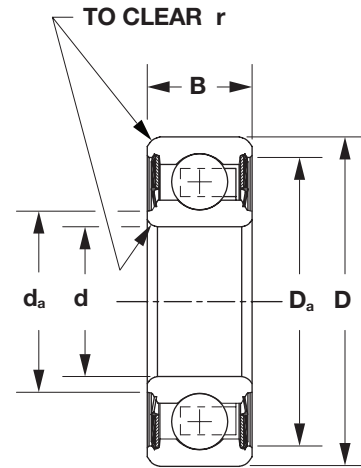
All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 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®** bearings 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®** bearings 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.



BASIC LOAD RATINGS		WEIGHT	ABUTMENT AND FILLET DIMENSIONS				NICE® PART NUMBER
DYNAMIC	STATIC						
	lbs. N	lbs. N	lbs. kg	in mm	in mm	in mm	
	C	C _o	W ^③	d _a min	D _a max	r max	
	255	170	0.02	0.330	0.614	0.012	3002™
	1135	757	0.01	8.38	15.60	0.30	
	325	255	0.03	0.474	0.778	0.012	3003™
	1446	1135	0.01	12.04	19.76	0.30	
	325	255	0.03	0.474	0.778	0.015	3004™
	1446	1135	0.01	12.04	19.76	0.38	
	350	300	0.04	0.503	0.778	0.012	3005™
	1558	1335	0.02	12.78	19.76	0.30	
	350	300	0.04	0.517	0.778	0.015	3006™
	1558	1335	0.02	13.13	19.76	0.38	
	350	300	0.03	0.517	0.778	0.015	3007™
	1558	1335	0.01	13.13	19.76	0.38	
	600	475	0.06	0.595	1.014	0.025	3014™
	2670	2114	0.03	15.11	25.76	0.64	
	600	475	0.06	0.622	1.014	0.025	3015™
	2670	2114	0.03	15.80	25.76	0.64	
	600	475	0.06	0.622	1.014	0.025	3016™
	2670	2114	0.03	15.80	25.76	0.64	

NICE® 3000 Series®

Semi-Ground Radial Bearings

Features:

- Precision Ground On All Contact Surfaces Except Bore
- Easy To Use Inch Dimensions
- Economical Bearing for Lighter Loads than the 1600 Series® Bearings
- 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



NICE® PART NUMBER	SUFFIX					PRINCIPLE DIMENSIONS					
	DOUBLE SEAL	SINGLE SEAL	DOUBLE SHIELD	SINGLE SHIELD	OPEN	BORE		O.D.		WIDTH	
						in +.005 -.000	mm +.13 -.00	in +.0000 -.0005	mm +.000 -.013	in +.005 -.005	mm +.13 -.13
						d		D		B	
3020™	DC	SC	DS	SS	NS	0.4375 11.113		1.3750 34.925		0.4375 11.113	
3021™	DC	SC	DS	SS	NS	0.5000 12.700		1.3750 34.925		0.4375 11.113	
3023™	DC	SC	DS	SS	NS	0.6250 15.875		1.3750 34.925		0.4375 11.113	
3028™	DC	SC	DS	SS	NS	0.6250 15.875		1.6250 41.275		0.5000 12.700	
3030™	DC	SC	DS	SS	NS	0.7500 19.050		1.6250 41.275		0.5000 12.700	
3033™	DC	SC	DS	SS	NS	0.6250 15.875		1.7500 44.450		0.5000 12.700	
3035™	DC	SC	DS	SS	NS	0.7500 19.050		1.7500 44.450		0.5000 12.700	
3038™	DC ^④	SC	DS	SS	NS	0.7500 19.050		2.0000 50.800		0.5625 14.288	
3040™	DC ^④	SC	DS	SS	NS	0.8750 22.225		2.0000 50.800		0.5625 14.288	
3041™	DC ^④	SC	DS	SS	NZ	1.0000 25.400		2.0000 50.800		0.5625 14.288	

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) on the O.D.

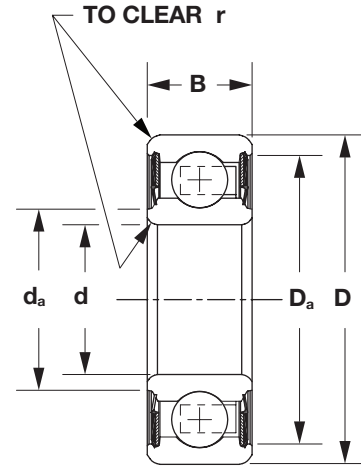
All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 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®** bearings 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®** bearings 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.



BASIC LOAD RATINGS		WEIGHT	ABUTMENT AND FILLET DIMENSIONS				NICE® PART NUMBER
DYNAMIC	STATIC						
	lbs. N	lbs. N	lbs. kg	in mm	in mm	in mm	
	C	C _o	W	d _a min	D _a max	r max	
	940	850	0.12	0.658	1.203	0.025	3020™
	4183	3783	0.05	16.71	30.56	0.64	
	940	850	0.11	0.720	1.203	0.025	3021™
	4183	3783	0.05	18.29	30.56	0.64	
	940	850	0.10	0.753	1.203	0.025	3023™
	4183	3783	0.05	19.13	30.56	0.64	
	1300	1010	0.18	0.845	1.446	0.025	3028™
	5785	4495	0.08	21.46	36.73	0.64	
	1300	1010	0.16	0.965	1.446	0.025	3030™
	5785	4495	0.07	24.51	36.73	0.64	
	1300	1025	0.22	0.845	1.530	0.025	3033™
	5785	4561	0.10	21.46	38.86	0.64	
	1300	1025	0.20	0.965	1.530	0.025	3035™
	5785	4561	0.09	24.51	38.86	0.64	
	1480	1350	0.32	0.988	1.760	0.035	3038™
	6586	6008	0.15	25.10	44.70	0.89	
	1480	1350	0.29	1.113	1.760	0.035	3040™
	6586	6008	0.13	28.27	44.70	0.89	
	1480	1350	0.26	1.197	1.760	0.035	3041™
	6586	6008	0.12	30.40	44.70	0.89	

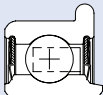
NICE® 3000F Series®

Semi-Ground Radial Flanged Bearings

Features:

- Precision Machined On All Contact Surfaces
- Easy To Use Inch Dimensions
- Economical Bearing for Lighter Loads than the 1600 Series® Bearings
- Max Speed Range: 2500 - 3000 RPM
- Hardened Bearing Steel
- Nylon Retainer Standard
- Greased, Double Sealed Standard



NICE® PART NUMBER	SUFFIX	PRINCIPLE DIMENSIONS							
	DOUBLE SEAL	BORE		O.D.		INNER WIDTH		OUTER WIDTH	
		in +.005 -.000	mm +.13 -.00	in +.005 -.000	mm +.13 -.00	in +.010 -.010	mm +.25 -.25	in +.005 -.005	mm +.13 -.03
		d		D		B		C	
3002F™	DC ¹	0.250		0.687		0.375		0.312	
		6.350		17.463		9.525		7.925	
3003F™	DC	0.313		0.875		0.406		0.343	
		7.938		22.225		10.312		8.712	
3004F™	DC	0.375		0.875		0.406		0.343	
		9.525		22.225		10.312		8.712	
3006F™	DC	0.375		0.906		0.406		0.343	
		9.525		23.012		10.312		8.712	
3014F™	DC	0.375		1.125		0.437		0.375	
		9.525		28.575		11.100		9.525	
3030F™	DC	0.750		1.625		0.562		0.500	
		19.050		41.275		14.275		12.700	
3035F™	DC	0.750		1.750		0.562		0.500	
		19.050		44.450		14.275		12.700	
3038F™	DC	0.750		2.000		0.625		0.562	
		19.050		50.800		15.875		14.275	

¹ Multi-part seal see page 58

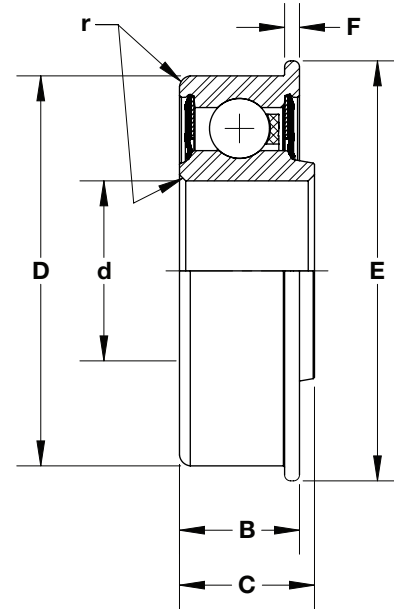
All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 3000F Series®

Semi-Ground Radial Flanged Bearings

Semi-ground **3000F Series®** is the flanged version of the **3000 Series®** bearings specifically designed to provide a line of economical bearings for lighter loads than the **1600 Series®** bearings and speeds to approximately 2500 rpms. The **3000F 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 **3000F Series®** raceways have close tolerances on the O.D. as the **1600 Series®** bearings 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 **3000F Series®** radial bearing is available open, single or double shielded, or single or double (upon request) sealed. The double sealed versions are grease packed as standard.



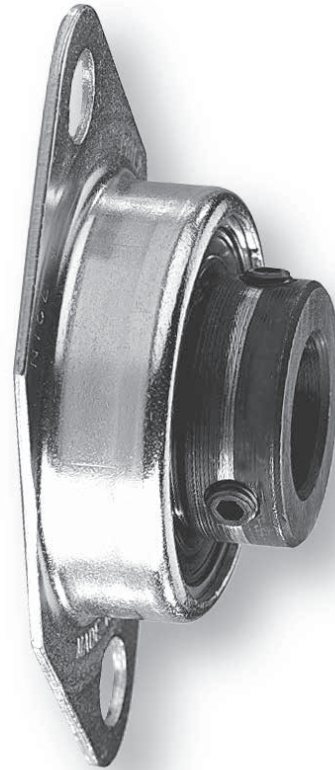
FLANGE DIAMETER		FLANGE WIDTH		Radius	BASIC LOAD RATINGS		WEIGHT	NICE® PART NUMBER
					DYNAMIC	STATIC		
in. +.005 -.005	mm +.13 -.13	in. +.005 -.005	mm +.13 -.13	in. mm	lbs. N	lbs. N	lbs. kg	
E	F			r max	C	Co	W	
0.812	0.062			0.012	255	170	0.02	3002F™
20.625	1.575			0.30	1134	756	0.01	
1.000	0.062			0.012	325	255	0.03	3003F™
25.400	1.575			0.30	1446	1134	0.01	
1.000	0.062			0.015	325	255	0.03	3004F™
25.400	1.575			0.38	1446	1134	0.01	
1.000	0.062			0.015	350	300	0.04	3006F™
25.400	1.575			0.38	1557	1334	0.02	
1.250	0.062			0.025	600	475	0.06	
31.750	1.575			0.64	2669	2113	0.03	3014F™
1.750	0.062			0.025	1300	1010	0.16	
44.450	1.575			0.64	5783	4493	0.07	3030F™
1.875	0.062			0.025	1300	1025	0.2	
47.625	1.575			0.64	5783	4559	0.09	3035F™
2.125	0.062			0.035	1480	1350	0.33	
53.975	1.575			0.89	6583	6005	0.15	3038F™

NICE® 6900 Series®

Semi-Ground Radial Bearings, Extended Inner with Flanged Housing

Features:

- Easy-To-Use Inch Dimensions
- Medium Loads
- Max Speed Range: 2500 - 3000 RPM
- Through Hardened Bearing Steel
- Nylon Retainer Standard
- Double Sealed Standard
- Extended Inner Ring with Two Set Screws
- Bearings are Available With or Without Flange



NICE® PART NUMBER ①		PRINCIPLE DIMENSIONS							BOLT CENTERS		
FLANGED UNIT	BEARING ONLY	BORE		O.D.		WIDTH		WIDTH			
		in +.005 -.000	mm +.13 -.00	in +.0000 -.0005	mm +.000 -.013	in +.000 -.005	mm +.00 -.13	in mm	in mm	in mm	in mm
	SUFFIX	d	D	B	C	E	G	H			
N6906™	B	0.375	0.9063	0.313	0.688	0.555	1.875	2.500			
		9.53	23.020	7.94	17.46	14.10	47.63	63.50			
N6908™	B	0.500	1.6250	0.500	1.000	0.955	2.875	3.750			
		12.70	41.28	12.70	25.40	24.26	73.03	95.25			
N6910™	B	0.625	1.6250	0.500	1.000	0.955	2.875	3.750			
		15.875	41.28	12.70	25.40	24.26	73.03	95.25			
N6912™	B	.750	2.0000	0.563	1.063	1.293	3.250	4.125			
		19.05	50.80	14.29	26.99	32.84	82.55	104.78			
N6916™	B	1.000	2.0000	0.563	1.063	1.293	3.250	4.125			
		25.40	50.80	14.29	26.99	32.84	82.55	104.78			

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

② Tolerance for 6912™ and larger is +.0000/-.0006 (+.000/-0.015) for O.D. dimension.

All bearing designations listed herein are trademarks of RBC Nice® bearings.

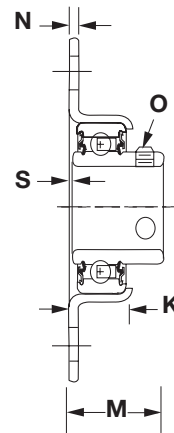
③ Weights given are for greased and sealed versions

Semi-Ground Radial Bearings, Extended Inner with Flanged Housing

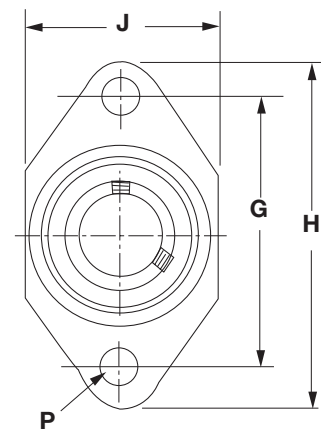
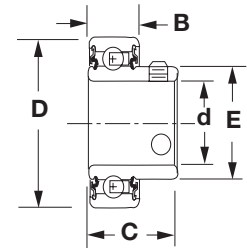
The **6900 Series®** bearing consists of a double sealed, semi-ground bearing with an extended inner ring. It is provided with two set screws and a flanged housing designed for flush mounting. Bearings are supplied assembled in the housing. Flanged and non-flanged units are available from stock.

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



OVERALL WIDTH		PRINCIPLE DIMENSIONS					BASIC LOAD RATINGS		WEIGHT	NICE® PART NUMBER ❶			
							DYNAMIC	STATIC		FLANGED UNIT	BEARING ONLY		
		in mm	in mm	in mm	in mm		in mm	in mm	lbs. N	lbs. N	lbs. kg		
		J	K	M	N	O	P	S	C	Co	W ❸	SUFFIX	
	1.125 28.58	0.344 8.73	0.688 17.46	0.035 0.89	8-32		0.3125 7.94	0 0	580 2581	300 1335	0.07 0.03	N6906™	B
	1.875 47.63	0.563 14.29	1.000 25.40	0.062 1.57	1/4-28		0.4375 11.11	0.01 0.25	1610 7165	1010 4495	0.35 0.16	N6908™	B
	1.875 47.63	0.563 14.29	1.000 25.40	0.062 1.57	1/4-28		0.4375 11.11	0.01 0.25	1610 7165	1010 4495	0.55 0.25	N6910™	B
	2.250 57.15	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	N6912™	B
	2.250 57.15	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	0.46 0.20	N6916™	B

NICE® 7500 Series®

Heavy Duty Precision Ground Radial Bearings

Features:

- Precision Ground On All Contact Surfaces, Similar to the 1600 Series® Bearings
- Easy to Use Inch Dimensions
- Medium Loads
- Max Speed Range: 5000 - 6000 RPM
- Through Hardened Bearing Steel
- 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



NICE® PART NUMBER	PRINCIPLE DIMENSIONS						INNER WIDTH			
	BORE		O.D.		WIDTH					
	in +.0000 -.0005	mm +.000 -.013	in +.0000 -.0005	mm +.000 -.013	in +.000 -.005	mm +.00 -.13	in mm	in +.000 -.005	mm +.00 -.13	in mm
	d		D		B		A	C		F
7508™	.5000		1.7500		0.6250		0.0625	.7500		1.009
	12.70		44.45		15.88		1.59	19.05		25.63
7510™	0.6250		1.7500		0.6250		0.0625	.7500		1.009
	15.88		44.45		15.88		1.59	19.05		25.63
7512™	.7500		1.7500		0.6250		0.0625	.7500		1.009
	19.05		44.45		15.88		1.59	19.05		25.63
7514™	0.8750		2.0000		0.6250		0.0625	.7500		1.306
	22.23		50.80		15.88		1.59	19.05		33.17
7516™	1.0000		2.0000		0.6250		0.0625	.7500		1.306
	25.40		50.80		15.88		1.59	19.05		33.17
7520™	1.2500		2.5625		.7500		0.0625	0.8750		1.672
	31.75		65.09		19.05		1.59	22.23		42.47

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

② Tolerance for 7514™ and larger is +.0000/- .0006 (+.000/- .015)

All bearing designations listed herein are trademarks of RBC Nice® bearings.

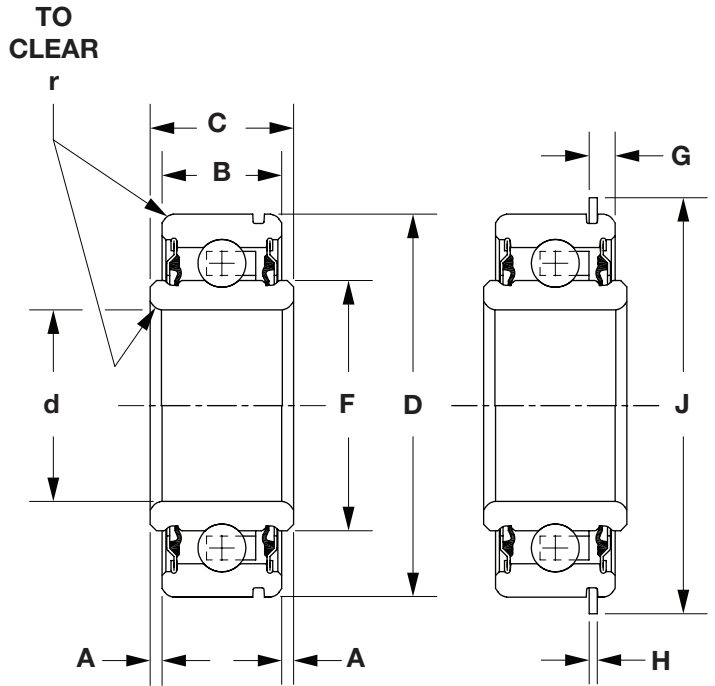
NICE® 7500 Series®

Heavy Duty Precision Ground Radial Bearings

The **7500 Series®** bearings are single row retainer type radial bearings, similar in construction to the **1600 Series®** bearings. 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.



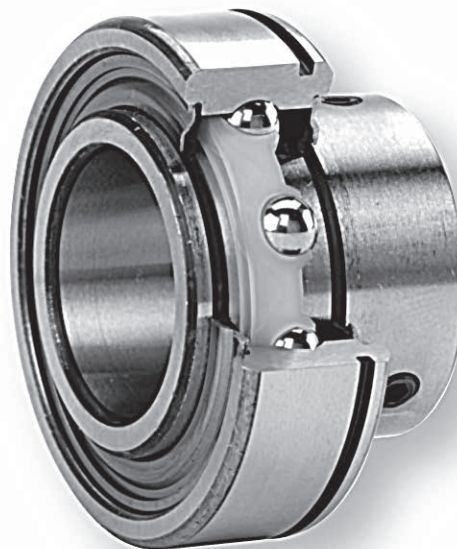
PRINCIPLE DIMENSIONS				RADIUS	BASIC LOAD RATINGS		WEIGHT	ABUTMENT AND FILLET DIMENSIONS			NICE® PART NUMBER
					DYNAMIC	STATIC					
in +.000 -.005	mm +.00 -.13	in mm	in mm	in mm	lbs. N	lbs. N	lbs. kg	in mm	in mm	in mm	
G	H	J	r	C	Co		W	d _a min	D _a max	r max	
0.136	0.042	1.9219	0.035	2595	1025		0.33	0.750	1.500	0.035	7508™
3.45	1.07	48.82	0.89	11548	4561		0.15	19.05	38.10	0.89	
0.136	0.042	1.9219	0.035	2595	1025		0.29	0.875	1.500	0.035	7510™
3.45	1.07	48.82	0.89	11548	4561		0.13	22.23	38.10	0.89	
0.136	0.042	1.9219	0.035	2595	1025		0.31	1.000	1.500	0.035	7512™
3.45	1.07	48.82	0.89	11548	4561		0.14	25.40	38.10	0.89	
0.136	0.042	2.1563	0.035	2970	1350		0.36	1.125	1.750	0.035	7514™
3.45	1.07	54.77	0.89	13217	6008		0.16	28.58	44.45	0.89	
0.136	0.042	2.1563	0.035	2970	1350		0.33	1.250	1.750	0.035	7516™
3.45	1.07	54.77	0.89	13217	6008		0.15	31.75	44.45	0.89	
0.190	0.065	2.7656	0.035	5360	2620		0.57	1.500	2.312	0.035	7520™
4.83	1.65	70.25	0.89	23852	11659		0.26	38.10	58.72	0.89	

NICE® 7600 Series®

Heavy Duty Precision Ground Radial Bearings with Extended Inner Ring

Features:

- Precision Ground On All Contact Surfaces, Similar to The 1600 Series™ Bearings
- Easy to Use Inch Dimensions
- Medium Loads
- Max Speed Range: 5000 - 6000 RPM
- Through Hardened
- Nylon Retainer 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



NICE® PART NUMBER ❶	PRINCIPLE DIMENSIONS						INNER WIDTH	
	BORE		O.D.		WIDTH			
	in +.0008 -.0000	mm +.020 -.000	in +.0000 -.0005	mm +.000 -.013	in +.000 -.005	mm +.00 -.13	in mm	in mm
	d		D		B		A	F
7608™	.5000		1.7500		0.6250		0.0625	1.009
	12.70		44.45		15.88		1.59	25.63
7609™	.5625		1.7500		0.6250		0.0625	1.009
	14.29		44.45		15.88		1.59	25.63
7610™	.6250		1.7500		0.6250		0.0625	1.009
	15.88		44.45		15.88		1.59	25.63
7611™	.6875		1.7500		0.6250		0.0625	1.009
	17.46		44.45		15.88		1.59	25.63
7612™	.7500		1.7500		0.6250		0.0625	1.009
	19.05		44.45		15.88		1.59	25.63

❶ When ordering please indicate designation and style letters of bearing desired (i.e. DL or DLG)

❷ Weights given are for greased and sealed versions

❸ Radius r indicates the maximum fillet radius in housing or shaft which bearing will clear

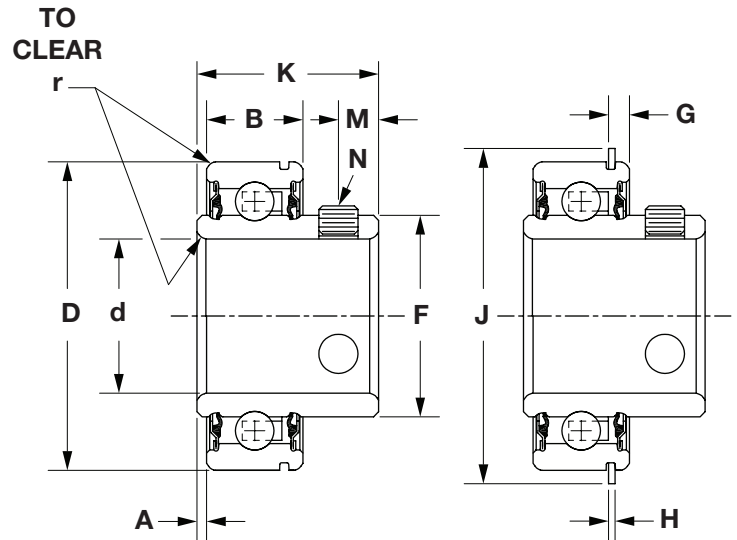
All bearing designations listed herein are trademarks of RBC Nice® bearings.

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®** bearings. 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.



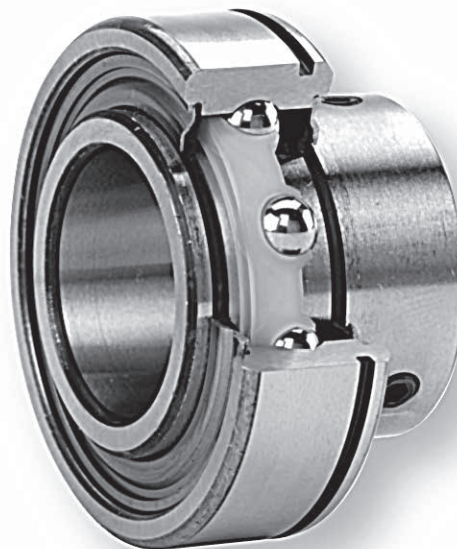
PRINCIPLE DIMENSIONS					2 SET SCREWS	RADIUS	BASIC LOAD RATINGS		WEIGHT	NICE® PART NUMBER ①
							DYNAMIC	STATIC		
in mm	in mm	in +0.000 -0.005	mm +0.00 -0.13			in mm	lbs. N	lbs. N	lbs. kg	
H	J	K	M	N		r ②	C	Co	W ③	
0.042	1.922	1.092	0.233	10-32		0.035	2595	1025	0.36	7608™
1.07	48.82	27.74	5.92	10-32		0.89	11548	4561	0.16	
0.042	1.922	1.092	0.233	10-32		0.035	2595	1025	0.34	7609™
1.07	48.82	27.74	5.92	10-32		0.89	11548	4561	0.15	
0.042	1.922	1.092	0.233	10-32		0.035	2595	1025	0.32	7610™
1.07	48.82	27.74	5.92	10-32		0.89	11548	4561	0.15	
0.042	1.922	1.092	0.233	10-32		0.035	2595	1025	0.30	7611™
1.07	48.82	27.74	5.92	10-32		0.89	11548	4561	0.14	
0.042	1.922	1.092	0.233	10-32		0.035	2595	1025	0.28	7612™
1.07	48.82	27.74	5.92	10-32		0.89	11548	4561	0.13	

NICE® 7600 Series®

Heavy Duty Precision Ground Radial Bearings with Extended Inner Ring

Features:

- Precision Ground On All Contact Surfaces, Similar to The 1600 Series™ Bearings
- Easy to Use Inch Dimensions
- Medium Loads
- Max Speed Range: 5000 - 6000 RPM
- Through Hardened
- Nylon Retainer Standard
- Double Sealed Standard
- Highly Efficient Single Lip Contact Seal
- Available Single Sealed or Open
- Extended Inner Ring with Set Screws (Snap Ring Assembled as an Option)
- Recommended for Applications Where Accurate, Quiet Performance and Superior Sealing are Required



NICE® PART NUMBER	PRINCIPLE DIMENSIONS						INNER WIDTH	
	BORE		O.D.		WIDTH			
	in +.0008 -.0000	mm +.020 -.000	in +.000 -.015	mm +.000 -.013	in +.000 -.005	mm +.00 -.13	in mm	in mm
	d		D		B		A	F
7613™	.8125		2.0000		0.6250		0.0625	1.306
	20.64		50.80		15.88		1.59	33.17
7614™	.8750		2.0000		0.6250		0.0625	1.306
	22.23		50.80		15.88		1.59	33.17
7615™	.9375		2.0000		0.6250		0.0625	1.306
	23.81		50.80		15.88		1.59	33.17
7616™	1.0000		2.0000		0.6250		0.0625	1.306
	25.40		50.80		15.88		1.59	33.17
7617™	1.0625		2.5625		.7500		0.0625	1.672
	26.99		65.09		19.05		1.59	42.47
7618™	1.1250		2.5625		.7500		0.0625	1.672
	28.58		65.09		19.05		1.59	42.47
7620™	1.2500		2.5625		.7500		0.0625	1.672
	31.75		65.09		19.05		1.59	42.47

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

② Tolerance for 7613™ and larger is +.0000/- .0006 (+.000/- .015) for O.D. dimension.

All bearing designations listed herein are trademarks of RBC Nice® bearings.

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

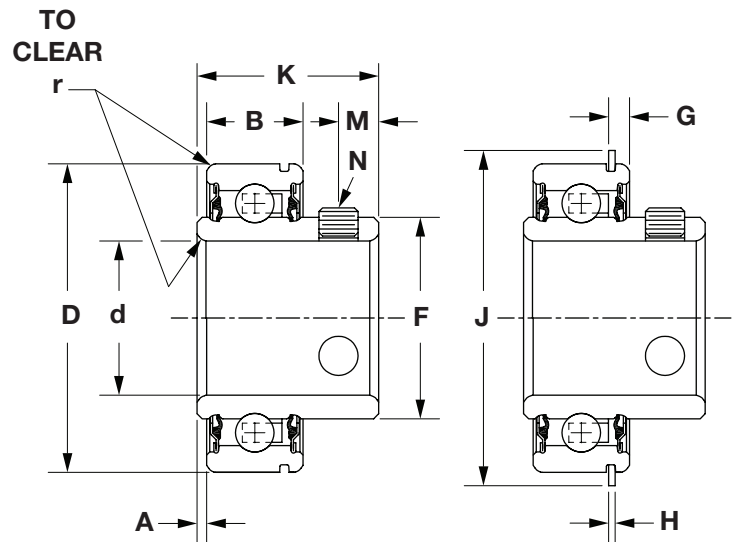
④ Weights given are for greased and sealed versions

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®** bearings. 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				2 SET SCREWS	RADIUS	BASIC LOAD RATINGS		WEIGHT	NICE® PART NUMBER
						DYNAMIC	STATIC		
in mm	in mm	in +0.000 -0.005	mm +0.00 -0.13		in mm	lbs. N	lbs. N	lbs. kg	
H	J	K	M	N	r ③	C	Co	W ④	
0.042	2.156	1.179	0.261	1/4-28	0.035	2970	1350	0.45	7613™
1.07	54.77	29.95	6.63		0.89	13217	6008	0.20	
0.042	2.156	1.179	0.261	1/4-28	0.035	2970	1350	0.43	7614™
1.07	54.77	29.95	6.63		0.89	13217	6008	0.20	
0.042	2.156	1.179	0.261	1/4-28	0.035	2970	1350	0.40	7615™
1.07	54.77	29.95	6.63		0.89	13217	6008	0.18	
0.042	2.156	1.179	0.261	1/4-28	0.035	2970	1350	0.36	7616™
1.07	54.77	29.95	6.63		0.89	13217	6008	0.16	
0.065	2.766	1.417	0.261	1/4-28	0.035	5360	2620	0.84	7617™
1.65	70.25	35.99	6.63		0.89	23852	11659	0.38	
0.065	2.766	1.417	0.261	1/4-28	0.035	5360	2620	0.80	7618™
1.65	70.25	35.99	6.63		0.89	23852	11659	0.36	
0.065	2.766	1.417	0.261	1/4-28	0.035	5360	2620	0.71	7620™
1.65	70.25	35.99	6.63		0.89	23852	11659	0.32	

NICE® ER Series

Precision Ground Radial Bearings with Extended Inner Ring and Metric Outside Diameter with Black Oxide Coating

Features:

- Exclusive, Heavy Duty “DL” Seal
- Two Lubrication holes allow for regreasing
- 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



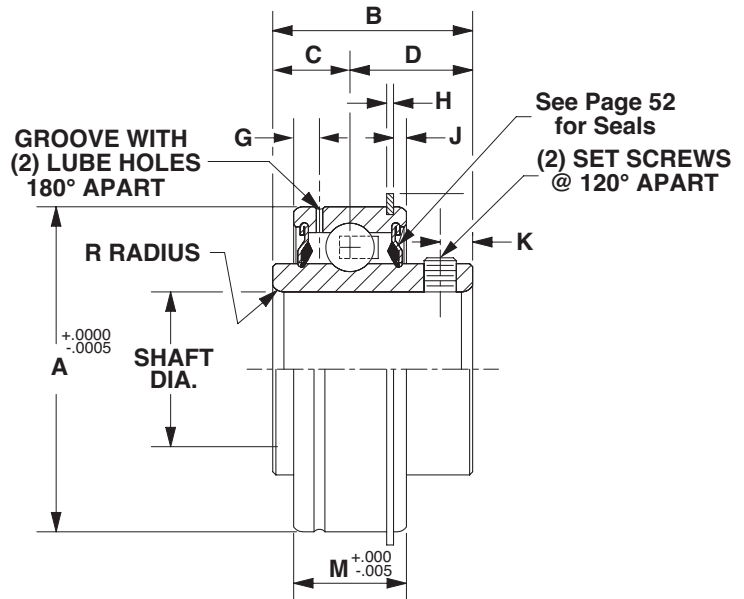
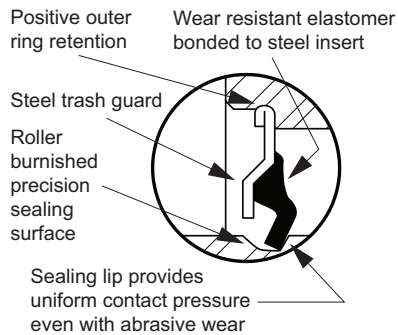
NICE® PART NUMBER	SHAFT DIAMETER	PRINCIPLE DIMENSIONS								
		O.D.				WIDTH				
	in mm	in +.0000 -.0005	mm +.000 -.013	in +.005 -.005	mm +.13 -.13	in mm	in mm	in mm	in +.005 -.005	mm +.13 -.13
	A	B	C	D	G	H				
ER10 ER10SFR ①	5/8	1.850	1.219	0.406	0.813	0.141	0.047			
		47	30.96	10.32	20.65	3.57	1.19			
ER12 ER12SFR ①	3/4	1.850	1.219	0.406	0.813	0.141	0.047			
		47	30.96	10.32	20.65	3.57	1.19			
ER16 ER16SFR ①	1	2.047	1.375	0.516	0.859	0.188	0.047			
		52	34.93	13.1	21.83	4.76	1.19			
ER19 ER19SFR ①	1 3/16	2.441	1.5	0.625	0.875	0.219	0.063			
		62	38.1	15.88	22.23	5.56	1.59			
ER20 ER20SFR ①	1 1/4	2.835	1.688	0.688	1	0.219	0.063			
		72	42.86	17.46	25.4	5.56	1.59			
ER23 ER23SFR ①	1 7/16	2.835	1.688	0.688	1	0.219	0.063			
		72	42.86	17.46	25.4	5.56	1.59			
ER24 ER24SFR ①	1 1/2	3.150	1.938	0.75	1.188	0.25	0.063			
		80	49.21	19.05	30.16	6.35	1.59			
ER31 ER31SFR ①	1 15/16	3.543	2.031	0.75	1.281	0.294	0.094			
		90	51.59	19.05	32.54	7.47	2.38			

① SFR “Low Torque” coated.

Precision Ground Radial Bearings with Extended Inner Ring and Metric Outside Diameter with Black Oxide Coating

The dependable **ER-Style** ball bearings feature an inner ring that provides extra shaft support. These versatile bearings are locked to shaft with setscrews.

ER-Style ball bearings are manufactured to meet common general-duty applications. All units assembled with careful attention to tolerance and specifications in order to ensure reliable service and superior value in economy-priced ball bearings.



PRINCIPLE DIMENSIONS				RADIUS	2 SET SCREWS	BASIC LOAD RATINGS		WEIGHT	NICE® PART NUMBER
WIDTH						DYNAMIC	STATIC		
	in mm	in mm	in +0.000 -0.005	mm +0.00 -0.13	in mm	lbs. N	lbs. N	lbs. kg	
	J	K	M		R	C	Co	W	
	0.094	3/16	0.625		0.040	2860	1480	0.56	
	2.38	4.76	15.88		1.02	12727	6586	0.25	
	0.094	3/16	0.625		0.040	2860	1480	0.56	
	2.38	4.76	15.88		1.02	12727	6586	0.25	
	0.094	7/32	0.75		0.040	3145	1770	0.68	
	2.38	5.56	19.05		1.02	13995	7877	0.31	
	0.125	7/32	0.875		0.040	4360	2535	0.93	
	3.18	5.56	22.23		1.02	19402	11281	0.42	
	0.125	1/4	0.938		0.040	5755	3450	0.93	
	3.18	6.35	23.81		1.02	25610	15353	0.42	
	0.125	1/4	0.938		0.040	5755	3450	1.37	
	3.18	6.35	23.81		1.02	25610	15353	0.62	
	0.125	5/16	1.094		0.062	6535	4025	2.00	
	3.18	7.94	27.78		1.57	29081	17911	0.91	
	0.125	3/8	1.125		0.062	7900	5250	2.43	
	3.18	9.53	28.58		1.57	35155	23363	1.10	

NICE® 400 Series®

Single Row Unground Radial Bearings

Features:

- 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
- Available with Light Oil Upon Request



BEARING	SUFFIX	PRINCIPLE DIMENSIONS						BALLS	
		BORE		O.D.		WIDTH		No.	in mm
		in	mm	in	mm	in	mm		
		+.005 -.000	+.13 -.00	+.005 -.000	+.13 -.00	+.010 -.010	+.25 -.25		
		A	B	C	D	Reference			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™	14V	0.250 6.35	1.062 26.97	0.250 6.35	0.250 6.35			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
407™	22V	0.500 12.70	1.125 28.58	0.370 9.40	0.406 10.31			15	5/32 3.97
410™	30V	0.625 15.88	1.375 34.93	0.470 11.94	0.500 12.70			16	3/16 4.76

NOTES:

Balls - Carbon Steel Grade 200 Bearings supplied pre-lubricated with grease.

Rings - Carbon Steel, Case Hardened

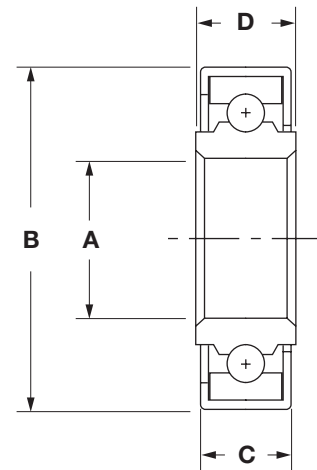
Bands - 1010 Carbon Steel, Soft

All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 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.



WEIGHT		RADIAL CAPACITY							
		REVOLUTIONS PER MINUTE							
	lbs. kg	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	BEARING	SUFFIX
	W	50	100	200	300	600	1200		
	0.02	110	77	53	43	30	21	402™	2V
	0.01	490	343	236	191	134	93		
	0.03	156	108	75	60	42	30	400™	4V
	0.01	694	481	334	267	187	134		
	0.05	178	124	85	69	48	34	400™	14V
	0.02	792	552	378	307	214	151		
	0.08	200	139	96	78	54	38	400™	20V
	0.04	890	619	427	347	240	169		
	0.07	200	139	96	78	54	38	407™	22V
	0.03	890	619	427	347	240	169		
	0.10	375	261	180	145	101	71	410™	30V
	0.05	1669	1161	801	645	449	316		

NICE® 5000 Series®

Single Row Unground Flanged Radial Bearings

Features:

- 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
- Available with Light Oil Upon Request



BEARING	SUFFIX	PRINCIPLE DIMENSIONS							
		BORE		O.D.		WIDTH		D	E
		in	mm	in	mm	in	mm		
		+0.005 -0.000	+0.13 -0.00	+0.005 -0.000	+0.13 -0.00	+0.010 -0.010	+0.25 -0.25		
		A		B		C			F
5368™	V	0.375		1.125		0.385	0.062	1.250	0.125
		9.53		28.58		9.78	1.57	31.75	3.18
5491™	V	0.500		1.125		0.385	0.062	1.250	0.125
		12.70		28.58		9.78	1.57	31.75	3.18
5881™	V	0.500		1.375		0.463	0.062	1.500	0.125
		12.70		34.93		11.76	1.57	38.10	3.18
5273™	V	0.625		1.375		0.463	0.062	1.500	0.125
		15.88		34.93		11.76	1.57	38.10	3.18
5327™	V	0.500		1.500		0.447	0.062	1.656	0.125
		12.70		38.10		11.35	1.57	42.06	3.18
5891™	V	0.750		1.750		0.595	0.093	1.875	0.156
		19.05		44.45		15.11	2.36	47.63	3.96
5875™	V	0.750		2.000		0.572	0.093	2.125	0.218
		19.05		50.80		14.53	2.36	53.98	5.54
5418™	V	1.000		2.000		0.572	0.093	2.125	0.218
		25.40		50.80		14.53	2.36	53.98	5.54

NOTES:

Balls - Carbon Steel Grade 200

Bearings supplied pre-lubricated with grease.

Rings - Carbon Steel, Case Hardened

Bands - 1010 Carbon Steel, Soft

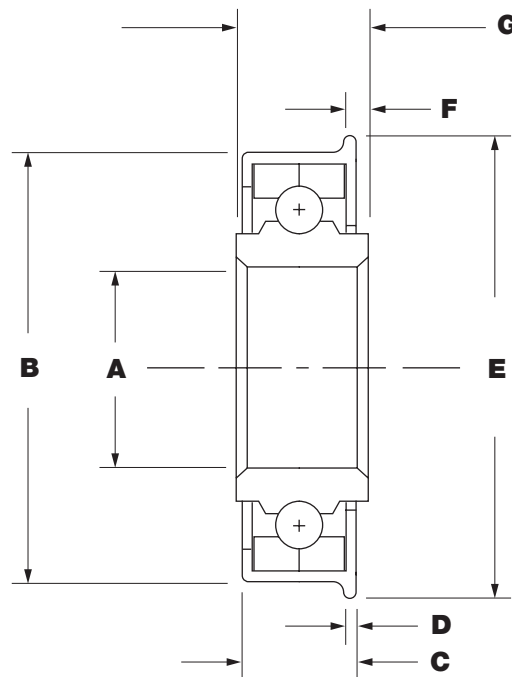
All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 5000 Series®

Single Row Unground Flanged Radial Bearings

The **5000 Series®** of bearings is similar in construction to the **400 Series®** bearing 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.



BALLS		WEIGHT	RADIAL CAPACITY							BEARING	SUFFIX
			REVOLUTIONS PER MINUTE								
No.	in mm	lbs. kg	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N			
	Size	W	50	100	200	300	600	1200			
15	5/32	0.07	200	139	96	78	54	38	5368™	V	
	3.97	0.03	890	619	427	347	240	169			
15	5/32	0.07	200	139	96	78	54	38	5491™	V	
	3.97	0.03	890	619	427	347	240	169			
16	3/16	0.12	375	261	180	145	101	71	5881™	V	
	4.76	0.05	1669	1161	801	645	449	316			
16	3/16	0.10	375	261	180	145	101	71	5273™	V	
	4.76	0.05	1669	1161	801	645	449	316			
17	3/16	0.16	492	342	236	190	132	92	5327™	V	
	4.76	0.07	2189	1522	1050	846	587	409			
15	1/4	0.28	625	430	300	240	168	117	5891™	V	
	6.35	0.13	2781	1914	1335	1068	748	521			
17	1/4	0.32	757	525	362	293	204	142	5875™	V	
	6.35	0.15	3369	2336	1611	1304	908	632			
17	1/4	0.30	757	525	362	293	204	142	5418™	V	
	6.35	0.14	3369	2336	1611	1304	908	632			

NICE® 500 Series®

Single Row Unground Combination Radial and Thrust Bearings

Features:

- 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



BEARING	PRINCIPLE DIMENSIONS								RADIUS	BALLS	WEIGHT	COMBINED RADIAL (R)					
	BORE		O.D.		WIDTH		REVOLUTIONS PER MINUTE										
	in	mm	in	mm	in	mm	in	mm				in	mm	lbs.	lbs.	lbs.	lbs.
	+0.005	+0.013	+0.005	+0.013	+0.010	+0.25	+0.015	+0.38									
	-0.000	-0.00	-0.000	-0.00	-0.010	-0.25	-0.015	-0.38									
	A	B	C	D	E	R	No.	Size	W	10	50						
501™	0.250	0.687	0.250	0.219	0.500	0.094	11	1/8	0.01	72	48	50	33				
	6.35	17.45	6.35	5.56	12.70	2.38		3.18	0.00	320	214	223	147				
503™	0.375	1.062	0.406	0.344	0.719	0.172	11	3/16	0.06	162	108	115	77				
	9.53	26.97	10.31	8.73	18.26	4.37		4.76	0.03	721	481	512	343				
504™	0.437	0.812	0.219	0.187	0.625	0.078	20	3/32	0.01	73	49	52	35				
	11.10	20.62	5.56	4.75	15.88	1.98		2.38	0.01	325	218	231	156				
507™	0.437	1.047	0.359	0.312	0.750	0.172	11	3/16	0.04	177	118	125	83				
	11.10	26.59	9.13	7.92	19.05	4.37		4.76	0.02	788	525	556	369				
508™	0.500	1.125	0.344	0.312	0.875	0.141	13	3/16	0.06	190	127	136	91				
	12.70	28.58	8.74	7.92	22.23	3.57		4.76	0.03	846	565	605	405				
512™	0.750	1.594	0.500	0.422	1.250	0.203	14	1/4	0.14	366	244	260	173				
	19.05	40.49	12.70	10.72	31.75	5.16		6.35	0.06	1629	1086	1157	770				
515™	1.000 T8	2.047	0.609	0.547	1.625	0.219	14	5/16	0.25	573	382	400	267				
	25.40 T8	51.99	15.48	13.89	41.28	5.56		7.94	0.11	2550	1700	1780	1188				
518™	1.312 T10	2.3075 T10	0.609	0.531	1.844	0.234	19	9/32	0.30	630	420	442	295				
	33.33 T10	58.611 T10	15.48	13.49	46.84	5.95		7.14	0.14	2804	1869	1967	1313				

① Maximum fillet radius on shaft which the bearing will clear

② SPECIAL TOLERANCES

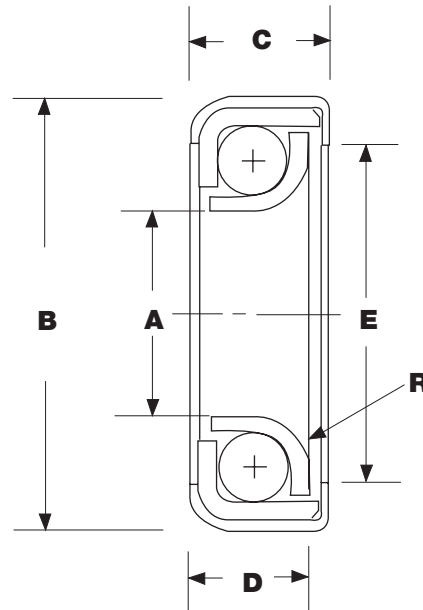
T8 = +.008/-0.000 (+.20/-0.00)

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

All bearing designations listed herein are trademarks of RBC Nice® bearings.

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.



AND THRUST CAPACITY (T)									THRUST CAPACITY						BEARING				
REVOLUTIONS PER MINUTE									REVOLUTIONS PER MINUTE										
lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N					
R	T	R	T	R	T	R	T	R	T	R	T	R	T	R		T			
100		250		500		1000		10		50		100		250		500		1000	
	35	23	23	15	16	11	10	7	71	58	43	25	18	15	501™				
	156	102	102	67	71	49	45	31	316	258	191	111	80	67					
	80	53	51	34	35	23	25	17	161	130	96	56	40	34	503™				
	356	236	227	151	156	102	111	76	716	579	427	249	178	151					
	25	17	23	15	16	11	10	7	73	59	44	25	18	15	504™				
	111	76	102	67	71	49	45	31	325	263	196	111	80	67					
	88	59	56	37	40	27	27	18	176	142	105	61	44	37	507™				
	392	263	249	165	178	120	120	80	783	632	467	271	196	165					
	98	65	61	40	42	28	31	21	190	154	113	66	48	40	508™				
	436	289	271	178	187	125	138	93	846	685	503	294	214	178					
	182	121	116	77	82	55	58	39	364	294	217	126	91	76	512™				
	810	538	516	343	365	245	258	174	1620	1308	966	561	405	338					
	284	189	181	121	127	85	90	60	569	459	339	197	142	118	515™				
	1264	841	805	538	565	378	401	267	2532	2043	1509	877	632	525					
	312	208	199	133	139	93	99	66	625	505	373	217	156	130	518™				
	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 provided dipped in light oil

NICE® RF Series™

Precision Machined Flanged Ball Bearings

NICE® ball bearings offer many of the performance advantages of precision ground bearings at unground bearing prices. The **NICE®** unique, full complement, deep groove design makes this bearing an ideal replacement for costly precision ground bearings in light load, low speed applications. Three piece races provide smooth operation. **NICE®** ball bearings may be used as an economical upgrade from conventional ground ball bearings without sacrificing performance.



Long Life and Moderate Loads

Three piece races uninterrupted by splits or loading slots, a full complement of large diameter balls, and through hardened raceways give the **NICE®** ball bearing superior ability to handle high loads and provide longer service life.

Thrust Loads

NICE® unique design and assembly method provides deep ball grooves in all races and no loading slots, yielding greater ability to accommodate thrust loads.

Smooth Operation

The three piece races of the **NICE®** ball bearings provide far smoother operation than other unground ball bearings. This feature may allow our design to be used in place of precision ground bearings in many applications.

Easy Mounting

The flanged O.D.s help simplify housing design and mounting. **NICE®** ball bearings are also available with extended inner rings to allow clevis mounting.

Sealing

Seals are available as options to retain lubricant and exclude contamination.

Do you require a special design for either the inner or outer race? Please contact your local RBC Sales Engineer or Customer Service (800.390.3300) to tap into over 30 years of design and manufacturing experience.

Sample Applications:

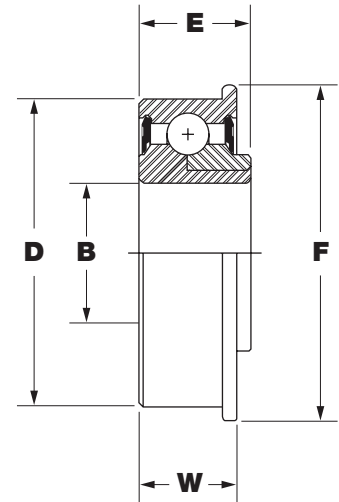
- Wheels
- Casters
- Drawer Guide
- Textile Machines
- Door Closers
- Power Tools
- Conveyors
- Wheelchairs
- Pulleys
- Lift Mechanism

NICE® RF Series

Precision Machined Flanged Ball Bearings

Features:

- Nominal Inch Dimensioned
- Flanged for Ease of Mounting
- Precision Machined and Heat Treated
- Zinc Plated for Corrosion Protection
- Full Complement Construction
- For Light Loads and Speeds up to 1,200 RPM
- Available Open, Single Sealed or Double Sealed



BEARING	PRINCIPLE DIMENSIONS					BALLS		LOAD CAPACITY				
	BORE	O.D.	WIDTH	Flange Diameter	Overall Width			REVOLUTIONS PER MINUTE				
	in +0.004 +0.001	in +0.002 -0.002	in +0.005 -0.005	in +0.005 -0.005	in +0.010 -0.010	in		lbs.	lbs.	lbs.	lbs.	lbs.
	B	D	W	F	E	No.	Size	50	100	300	600	1000
RF81812	0.500	1.125	0.375	1.250	0.438	17	5/32	390	310	165	120	70
RF81812PP	0.500	1.125	0.375	1.250	0.438	17	5/32	390	310	165	120	70
RF82214	0.500	1.375	0.438	1.500	0.500	17	3/16	560	450	230	170	100
RF82214PP	0.500	1.375	0.438	1.500	0.500	17	3/16	560	450	230	170	100
RF102214	0.625	1.375	0.438	1.500	0.500	17	3/16	560	450	230	170	100
RF102214PP	0.625	1.375	0.438	1.500	0.500	17	3/16	560	450	230	170	100
RF122214	0.750	1.375	0.438	1.500	0.500	22	5/32	470	380	195	140	85
RF122214P	0.750	1.375	0.438	1.500	0.500	22	5/32	470	380	195	140	85
RF122214PP	0.750	1.375	0.438	1.500	0.500	22	5/32	470	380	195	140	85
RF163216	1.000	2.000	0.500	2.125	0.563	19	1/4	1050	820	430	310	190
RF163216PP	1.000	2.000	0.500	2.125	0.563	19	1/4	1050	820	430	310	190

- 1 No letter indicates open version, no seals
- 2 Add letter "P" to suffix to indicate one seal.
Example: RF102214P
- 3 Add letters "PP" to suffix to indicate two seals and greased packed. Example: RF102214PP

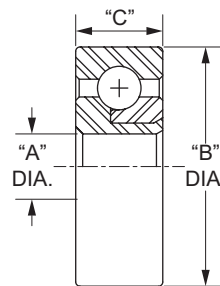
NOTES:
Outer Ring - Carbon steel, case hardened
Inner Ring - Carbon steel, case hardened
Balls - Carbon steel, case hardened
Seals - Synthetic rubber, if required

NICE® SRM Series™

Precision Machined Single Row Ball Bearings

Features:

- Nominal Inch Dimensioned
- Precision Machined and Heat Treated for Long Life
- Zinc Plated for Corrosion Protection
- Full Complement Construction
- Designed for Light Loads and Speeds up to 1,200 RPM



NICE® PART NUMBER	BASIC DIMENSIONS						LOAD RATING	WEIGHT
			BORE	DIAMETER	WIDTH			
			+0.005 -0.000	+0.000 -0.005	+0.010 -0.010	lbs.		
	Kilian®	The General®	A	B	C			
SRM032204	SR-253	21100-01	0.188	0.687	0.250	330	0.019	
SRM042804	SR-267	21404-01	0.250	0.875	0.250	403	0.031	
SRM052804	SR-268	21482-01	0.312	0.875	0.250	425	0.029	
SRM062804	SR-269	21481-01	0.375	0.875	0.250	445	0.028	
SRM072804	-	21485-01	0.437	0.875	0.250	445	0.025	
SRM063005	SR-281	21517-01	0.375	0.937	0.312	445	0.041	
SRM043205	SR-290	21603-01	0.250	1.000	0.312	531	0.052	
SRM063205	-	21604-01	0.375	1.000	0.312	553	0.047	
SRM043404	SR-311	21710-01	0.250	1.062	0.250	568	0.047	
SRM053406	SR-314	21737-01	0.312	1.062	0.375	602	0.068	
SRM063406	SR-315	21715-01	0.375	1.062	0.375	635	0.065	
SRM054105	-	22107-01	0.313	1.281	0.312	788	0.085	
SRM084105	SR-347	22108-01	0.500	1.281	0.312	880	0.076	
SRM084807	SR-500	22405-01	0.500	1.500	0.437	1328	0.154	
SRM104807	SR-503	22407-01	0.625	1.500	0.437	1328	0.143	
SRM125208	SR-620	22603-01	0.750	1.625	0.375	1478	0.143	
SRM085609	-	22801-01	0.500	1.750	0.563	1400	0.279	
SRM125609	-	22807-01	0.750	1.750	0.563	1550	0.248	
SRM166408	-	23210-01	1.000	2.000	0.500	1737	0.264	

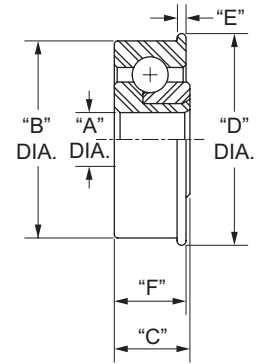
Common Applications:

- ✓ Packaging Equipment
- ✓ Appliances/Consumer Products
- ✓ Light Duty Gear Drives
- ✓ Lawn and Garden Equipment
- ✓ Industrial Machinery

Precision Machined Flanged Single Row Ball Bearings

Features:

- Nominal Inch Dimensioned
- Flanged for Ease of Mounting
- Precision Machined and Heat Treated for Durability
- Zinc Plated for Corrosion Protection
- Full Complement Construction
- Designed for Light Loads and Speeds up to 1,200 RPM



BASIC DIMENSIONS										
NICE® PART NUMBER			BORE	OUTSIDE DIA.	INNER RING WIDTH	FLANGE OUTSIDE DIA.	FLANGE THICKNESS	OUTER RING WIDTH	LOAD RATING	WEIGHT
			+0.005 -0.000	+0.005 -0.000	+0.010 -0.010	+0.005 -0.005	+0.005 -0.005	+0.005 -0.005	lbs.	lbs.
	Kilian®	The General®	A	B	C	D	E	F		
FSRM042205	F-150	31206-01	0.250	0.687	0.312	0.807	0.046	0.250	330	0.023
FSRM042805	-	31622-01	0.250	0.875	0.312	0.995	0.046	0.250	403	0.038
FSRM052805	F-165	31623-01	0.313	0.875	0.312	0.995	0.046	0.250	425	0.036
FSRM063608	F-300-19	32004-01	0.375	1.125	0.500	1.245	0.062	0.375	635	0.086
FSRM063407	F250-2	-	0.375	1.062	0.437	1.182	0.062	0.375	635	0.076
FSRM073407	F-250	-	0.437	1.062	0.437	1.182	0.062	0.375	635	0.072
FSRM084811	-	32703-01	0.500	1.495	0.687	1.620	0.062	0.625	1328	0.242
FSRM104807/1	-	32704-01	0.625	1.500	0.484	1.620	0.062	0.437	1328	0.158
FSRM085610	-	33006-01	0.500	1.750	0.625	1.870	0.062	0.562	1400	0.309
FSRM125609/1	F-750	33103-01	0.750	1.750	0.625	1.870	0.062	0.562	1550	0.254

Common Applications:

- ✓ Material Handling/Conveyors
- ✓ Packaging Equipment
- ✓ Appliances
- ✓ Printing/Labeling Equipment
- ✓ Lawn and Garden Equipment
- ✓ Industrial Machinery

NICE® 600 Series®

Unground Thrust Bearings

Features:

- 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	SUFFIX	PRINCIPLE DIMENSIONS								BALLS		WEIGHT	
		BORE		BORE		O.D.		HEIGHT		No.	in mm	lbs. kg	W
		in +/.010 -/.000	mm +/.25 -/.00	in +/- .010	mm +/- .25	in +/- .010	mm +/.79	in +/- .010	mm +/- .25				
		A		A1		B		C					
601™	V	.250 6.35		.275 6.99		27/32 21.43		.328 8.33		10	5/32 3.97	0.03 0.01	
602™	V	.375 9.53		.400 10.16		1 3/64 26.59		.359 9.12		14	5/32 3.97	0.06 0.03	
602™	3/4 - V	.453 11.51		.478 12.14		55/64 21.83		.281 7.14		15	1/8 3.195	0.03 0.01	
603™	V	.500 12.70		.525 13.34		1 17/64 32.15		.437 11.10		10	1/4 6.35	0.09 0.04	
603™	1/4 - V	.500 12.70		.525 13.34		1 25.40		.344 8.74		12	3/16 4.76	0.04 0.02	
605™	V	.625 15.88		.656 16.66		1 1/8 28.58		.344 8.74		16	5/32 3.97	0.04 0.02	
606™	V	.625 15.88		.656 16.66		1 27/64 36.12		.453 11.51		12	1/4 6.35	0.12 0.05	
607™	V	.750 19.05		.775 19.69		1 21/32 42.07		.545 13.84		15	1/4 6.35	0.19 0.09	
608™	V	.875 22.23		.900 22.86		1 57/64 48.02		.594 15.09		17	1/4 6.35	0.28 0.13	

NOTES:

Balls - Carbon Steel Grade 200
Washers - Carbon Steel Case Hard

Bands - 1010 Carbon Steel, Soft
Bearings oiled with a rust preventative

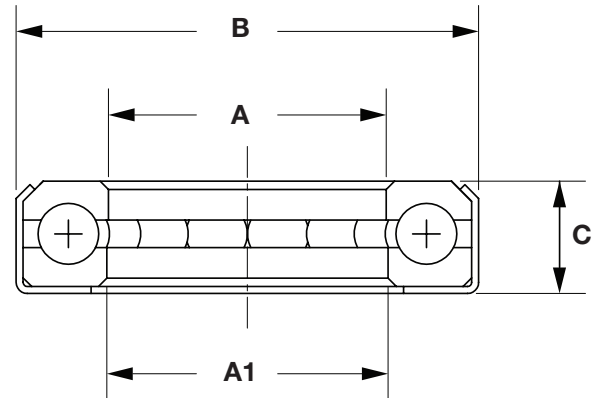
All Bearings Marked on Band with "Designation Nice USA" as Shown". All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 600 Series®

Unground Thrust Bearings

The **600 Series®** bearing 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.



THRUST CAPACITY							BEARING	SUFFIX
REVOLUTIONS PER MINUTE								
lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N			
10	50	100	250	500	1000			
304	246	182	98	71	51	601™	V	
1353	1095	810	436	316	227			
426	344	254	138	100	71	602™	V	
1896	1531	1130	614	445	316			
292	236	174	94	68	48	602™	3/4 - V	
1299	1050	774	418	303	214			
780	630	465	252	182	129	603™	V	
3471	2804	2069	1121	810	574			
526	425	314	170	123	87	603™	1/4 - V	
2341	1891	1397	757	547	387			
487	394	291	158	114	81	605™	V	
2167	1753	1295	703	507	360			
936	750	558	302	218	155	606™	V	
4165	3338	2483	1344	970	690			
1170	945	698	378	273	194	607™	V	
5207	4205	3106	1682	1215	863			
1326	1071	791	428	309	220	608™	V	
5901	4766	3520	1905	1375	979			

NICE® 600 Series®

Unground Thrust Bearings

Features:

- 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	SUFFIX	PRINCIPLE DIMENSIONS								BALLS		WEIGHT	
		BORE		BORE		O.D.		HEIGHT		No.	in mm	lbs. kg	W
		in +0.010 -0.000	mm +0.25 -0.00	in +/-0.010	mm +/-0.25	in +/-0.010	mm +0.79	in +/-0.010	mm +/-0.25				
		A		A1		B		C			Size		
609™	V	1.000		1.025		2 1/64		.630		14	5/16	0.30	
		25.40		20.64		51.18		16.00			7.94	0.14	
610™	V	1.000		1.031		1 31/32		.625		18	1/4	0.29	
		25.40		26.19		50.01		15.88			6.35	0.13	
610™	1/4 - V	1.016		1.031		1 3/4		.625		16	1/4	0.21	
		25.81		26.19		44.45		15.88			6.35	0.10	
611™	V	1.063		1.094		1 31/32		.625		18	1/4	0.26	
		27.00		27.79		50.01		15.88			6.35	0.12	
613™	V	1.125		1.150		2 3/32		.625		19	1/4	0.31	
		28.58		29.21		53.18		15.88			6.35	0.14	
614™	V	1.187		1.212		2 3/32		.625		19	1/4	0.32	
		30.15		30.78		53.18		15.88			6.35	0.15	
616™	V	1.25		1.275		2 11/32		.625		23	1/4	0.4	
		31.75		32.39		59.53		15.88			6.35	0.18	
618™	V	1.375		1.400		2 15/32		.625		23	1/4	0.45	
		34.92		35.56		62.71		15.88			6.35	0.20	
619™	V	1.437		1.462		2 15/32		.625		23	1/4	0.43	
		36.50		37.13		62.71		15.88			6.35	0.20	
621™	V	1.500		1.525		2 19/32		.625		25	1/4	0.45	
		38.10		38.74		65.88		15.88			6.35	0.20	

NOTES:

Balls - Carbon Steel Grade 200
Washers - Carbon Steel Case Hard

Bands - 1010 Carbon Steel, Soft
 Bearings oiled with a rust preventative

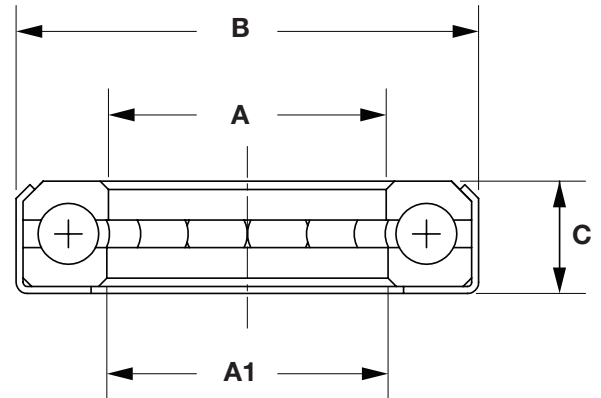
All Bearings Marked on Band with "Designation Nice USA" as Shown". All bearing designations listed herein are trademarks of RBC Nice® bearings.

NICE® 600 Series®

Unground Thrust Bearings

The **600 Series®** bearing 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.

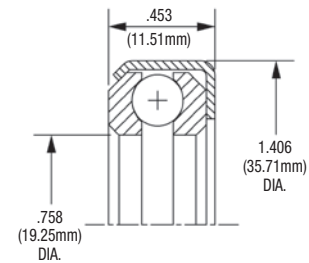
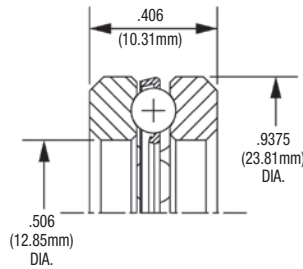


THRUST CAPACITY							BEARING	SUFFIX
REVOLUTIONS PER MINUTE								
	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N	lbs. N		
	10	50	100	250	500	1000		
	1706	1378	1017	551	398	284	609™	V
	7592	6132	4526	2452	1771	1264		
	1404	1134	837	454	328	233	610™	V
	6248	5046	3725	2020	1460	1037		
	1248	1008	744	403	291	207	610™	1/4 - V
	5554	4486	3311	1793	1295	921		
	1404	1134	837	454	328	233	611™	V
	6248	5046	3725	2020	1460	1037		
	1482	1197	883	479	346	246	613™	V
	6595	5327	3929	2132	1540	1095		
	1482	1197	883	479	346	246	614™	V
	6595	5327	3929	2132	1540	1095		
	1794	1449	1069	579	419	298	616™	V
	7983	6448	4757	2577	1865	1326		
	1794	1449	1069	579	419	298	618™	V
	7983	6448	4757	2577	1865	1326		
	1794	1449	1069	579	419	298	619™	V
	7983	6448	4757	2577	1865	1326		
	1950	1575	1162	630	455	324	621™	V
	8678	7009	5171	2804	2025	1442		

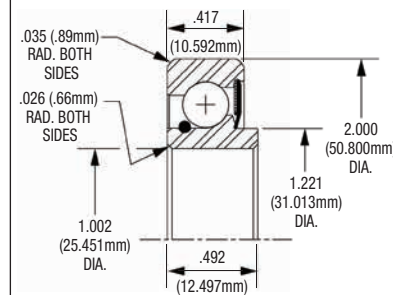
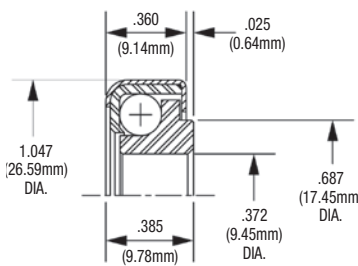
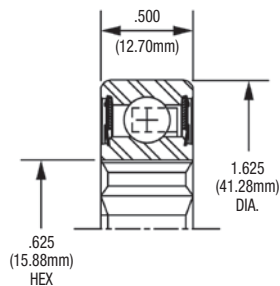
NICE® Special Ball Bearings



	AGRICULTURE	AGRICULTURE
DESIGNATION:	5971JBF03	6359V4L4L00
APPLICATIONS:	Ball Thrust Bearing Retainer Version	Hay Baler
SPECIAL FEATURES:		
GREASE:	Rust Preservative	Shell Gadus 2



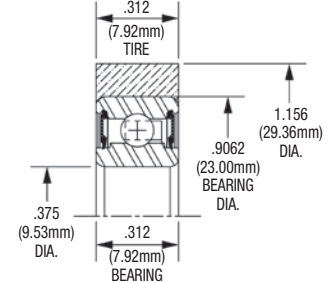
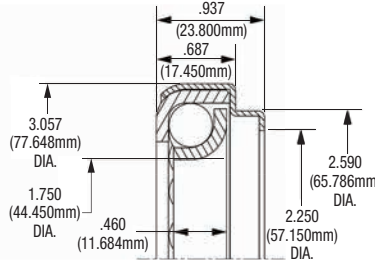
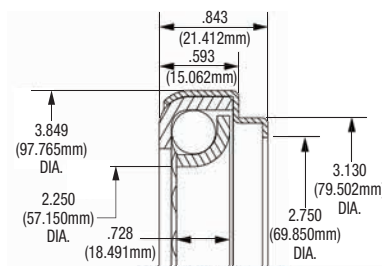
	COMMERCIAL	COMMERCIAL	ELECTRICAL
DESIGNATION:	7436TNTG18	8435VBF00	9157-1SCV
APPLICATIONS:	Commercial Mower Drive	Bottle Inspection Machinery	Circuit Breaker Gear Crank
SPECIAL FEATURES:	5/8" Hex Bore	Single Row Unground Combination Radial & Thrust Bearing Machined Inner Ring	300 Series Stainless Steel
GREASE:	Shell Gadus 2	Rust Preservative	



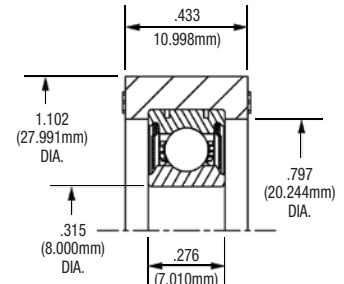
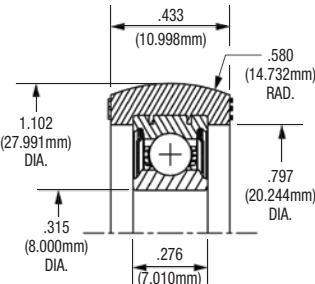
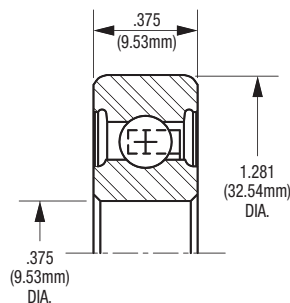
NICE® Special Ball Bearings



	ELECTRICAL	ELECTRICAL	FOOD & BEVERAGE
DESIGNATION:	8066V	7952V	8317TNTG00
APPLICATIONS:	Circuit Breaker Gear Crank	Circuit Breaker Gear Crank	Bottle Inspection Machinery
SPECIAL FEATURES:	Stainless Steel Components	Stainless Steel Components	Polyurethane Molded Tire on O.D.
GREASE:			Shell Gadus 2



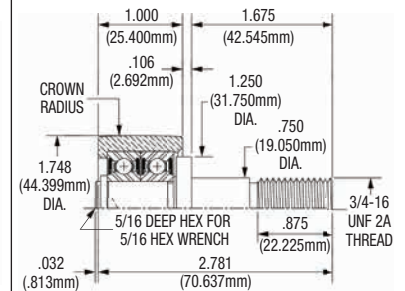
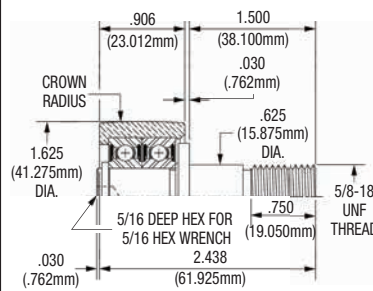
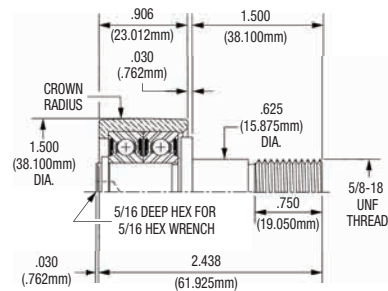
	FOOD & BEVERAGE	FOOD & BEVERAGE	FOOD & BEVERAGE
DESIGNATION:	8220TNBF18	8757-1DS	8757-2DS
APPLICATIONS:	Moveable Carriage Sections Meat Saw	Bottle Inspection Machinery	Bottle Inspection Machinery
SPECIAL FEATURES:	Stainless Steel	Precision, Lubed for Life, Urethane Tire, Spherical O.D.	Lubed for Life, Urethane Tire
GREASE:	Rust Preservative	Chevron SRI 2	Chevron SRI 2



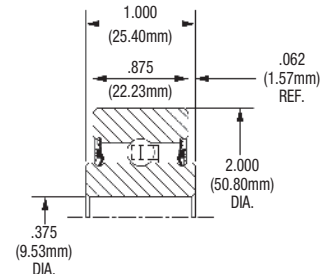
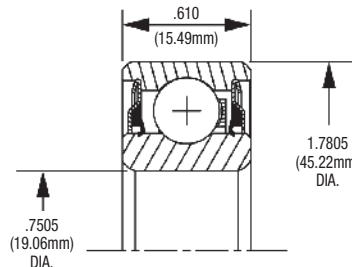
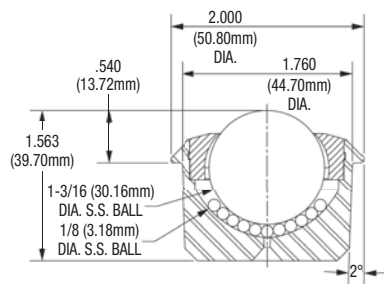
NICE® Special Ball Bearings



	FOOD & BEVERAGE	FOOD & BEVERAGE	FOOD & BEVERAGE
DESIGNATION:	BCF1 1/2 10CT™	BCF1 5/8 14CT™	BCF1 3/4 10CT™
APPLICATIONS:	Neckers, Maintenance Free Canning Bearing	Neckers, Maintenance Free Canning Bearing	Neckers, Maintenance Free Canning Bearing
SPECIAL FEATURES:	Precision, Lubed for Life, Engineered Thermoplastic Outer Ring	Precision, Lubed for Life, Engineered Thermoplastic Outer Ring	Precision, Lubed for Life, Engineered Thermoplastic Outer Ring
GREASE:	NLGI 2	NLGI 2	NLGI 2



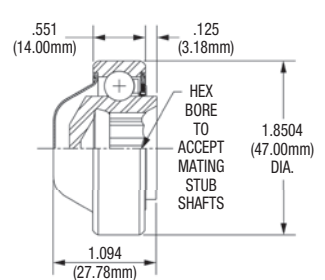
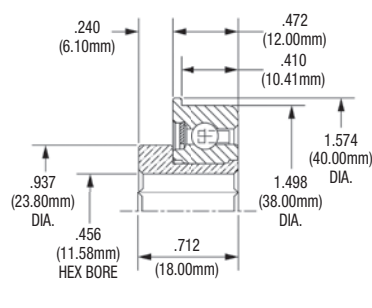
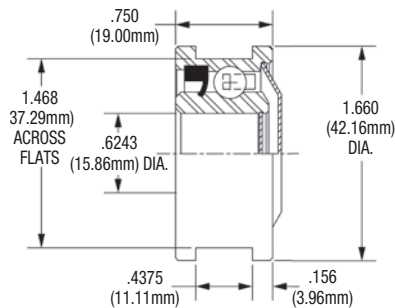
	MATERIAL HANDLING	MATERIAL HANDLING	MATERIAL HANDLING
DESIGNATION:	8749VN35BF73	74888TNMJ18	6990™ TNTG18
APPLICATIONS:	Ball Transfer Decks for Cargo Handling	Conveying Equipment 3/4" Sprocket Idler Bearing	Hoist Chain Bearing
SPECIAL FEATURES:	1 Piece Cup Made of Bearing Quality Steel, Increased Cross Section Stainless Steel Balls, Corrosion Resistant Coating	Low Torque Seals	Heavy Section, High Capacity
GREASE:	Rust Preservative	Shell Gadus 3 - 3/4 Full	Shell Gadus 2



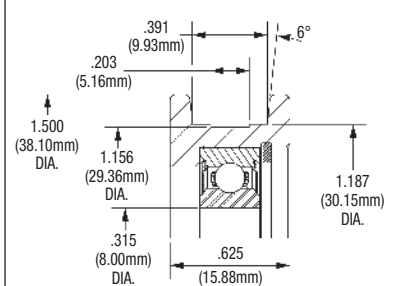
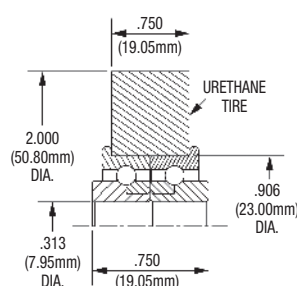
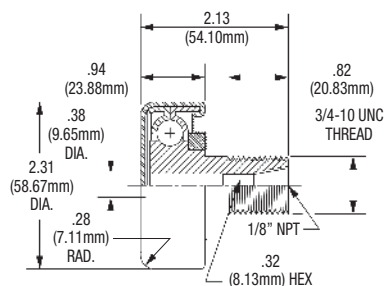
NICE® Special Ball Bearings



	MATERIAL HANDLING	MATERIAL HANDLING	MATERIAL HANDLING
DESIGNATION:	CONV34TNT70	CB142TNTG18	CB504TN4E18
APPLICATIONS:	Conveyor Rolls	Conveyor Rolls	Conveyor Rolls
SPECIAL FEATURES:	Milled Slot in O.D. for Easy Installation, Fully Enclosed Dust Shield, High Load Rating Zinc Plated Outer Ring	.456" Hex Bore, Self Aligning, Black Oxide Finish	.719" Hexagonal Bore
GREASE:	Shell Gadus 2 - 3/4 Full	Shell Gadus 2	



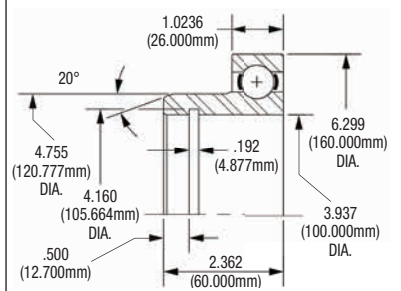
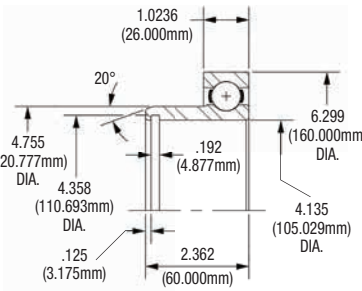
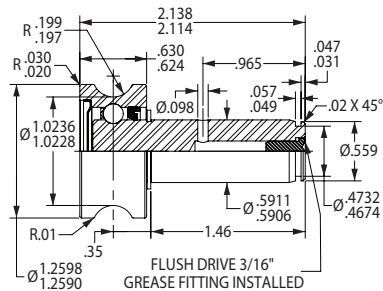
	MATERIAL HANDLING	MATERIAL HANDLING	MEDICAL EQUIPMENT
DESIGNATION:	6939VBF00	8736AXX71	8741ADSUD24
APPLICATIONS:	Bulk Material Knife Gate Valve	Packaging Machinery	Wire Pulley for Medical Imaging Machines
SPECIAL FEATURES:	Stainless Steel Band & Dust Shield, Full Complement 3/32" x 45 Threaded Stud, 1/4" Pipe Tap in Stud End	Low Torque Seals	Harden Outer
GREASE:	Rust Preservative	Shell Gadus 3 - 3/4 Full	Mobilgrease 28



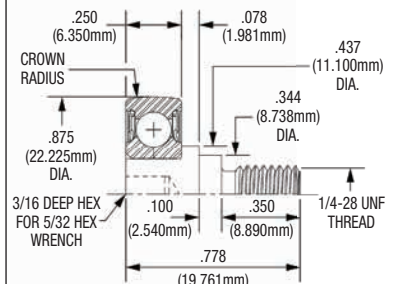
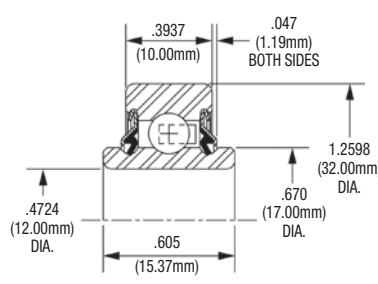
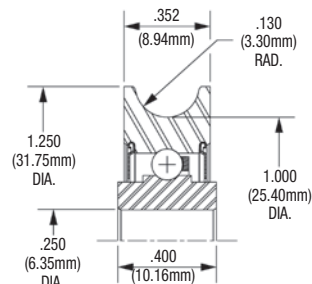
NICE® Special Ball Bearings



	PROCESS INDUSTRY	PROCESS INDUSTRY	PROCESS INDUSTRY
DESIGNATION:	9440ATNTG18	9203NSJ	9205NSJ
APPLICATIONS:	Chain Pin Guide	Power Swivel Motor Bearing	Power Swivel Motor Bearing
SPECIAL FEATURES:	Ball Bearing Cam Follower with a Radiused O.D.		
GREASE:	Shell Gadus 2		



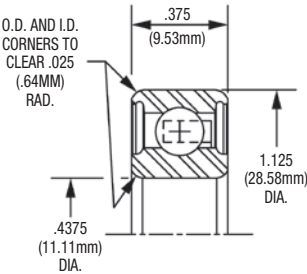
	PROCESS INDUSTRY	PROCESS INDUSTRY	TRANSPORTATION
DESIGNATION:	8459TN (DSTNHA00)	84061TNPS18	9241-4DCV
APPLICATIONS:	Track Roller for Automatic Sliding Doors	Compacter Roll for Textile Machinery	Airline Seat Cam Follower
SPECIAL FEATURES:	Radius OD	Stainless Steel Races, Heavy Duty Seals	Ball Bearing Cam Follower
GREASE:	Exxon Polyrex EM	Exxon Nebula #2 Grease	Mobil 28



NICE® Special Ball Bearings



	TRANSPORTATION
DESIGNATION:	8425TNRLDBF00
APPLICATIONS:	Transmission
SPECIAL FEATURES:	Special Internal Clearance
GREASE:	Rust Preservative



NICE® 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** bearings. For applications with unusual operating conditions, **Nice®** can provide engineering assistance and recommend the most suitable bearing design.

Where standard bearings cannot be used, **RBC®** 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_o , 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. 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

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 bearings (**400®**, **5000®**, **500®** and **600®**) can operate at higher temperatures than above, and will be limited only by choice of lubricant. However, **RBC®** engineering should be consulted for application verification.



NICE® Bearing Engineering Data

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
SRM	1200
FSRM	1200
RF	1200

Lubrication

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

Shell Gadus #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. **RBC®** can supply bearings with a wide variety of greases by special order, some of which are listed below. Contact **RBC®** engineering for details.

Greases

Manufacturer	Trade Name	Temp. Range °F (°C)
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	Gadus #2	-40 to +284 (-40 to +140)
Shell	Gadus #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, Co of that bearing.

Smaller bearings should not be subject to a load greater than 0.25 times Co. Excessive axial loads can lead to serious reduction of bearing service life.



NICE® 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 effecting 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.

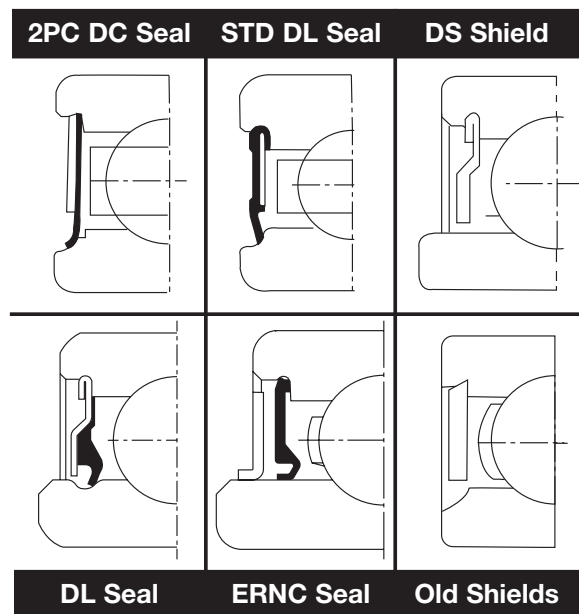
Nice® functional precision and unground bearings are designed for those applications where speeds and loads are moderate, and running accuracy and noise requirements do not warrant a fully ground precision bearing. Single row radial, single row angular contact, and thrust ball bearings can be supplied in semi-ground or unground accuracy. Series **3000®**, **6900®**, **400®**, **5000®**, **500®**, **600® SRM**, **F SRM** and **RF** 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®** 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.



NICE® 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 RBC® 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	18 - 56	25 - 64
7600®/GROUND	2 - 12	2 - 6	7 - 22	10 - 25
	5 - 30	5 - 15	18 - 56	25 - 64
ER/GROUND	8 - 18	2 - 6	7 - 22	10 - 25
	20 - 46	5 - 15	18 - 56 ①	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	---	---	---
SRM/FSRM	10 - 50	---	---	---
	25 - 127	---	---	---
RF	40-110	---	---	---
	102-179	---	---	---

① ERNCRLC 9-16

Recommended Housing Fits - ER Series

Bearing	BEARING O.D.		ROTATING HOUSING				STATIONARY HOUSING			
			DIAMETER		RESULTANT FIT		DIAMETER		RESULTANT FIT	
	Min.	Max.	Min.	Max.	Loose	Tight	Min.	Max.	Loose	Tight
	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)	(in) (mm)
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

NICE® 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®** bearings.

HOUSING FITS										SHAFT FITS									
HOUSING ROTATING						HOUSING STATIONARY				Shaft Rotating						Shaft Stationary			
Bearing O. D.		Housing Inside Dia		Theoretical Fit		Housing Inside Dia		Theoretical Fit		Bearing I. D.		Housing Inside Dia		Theoretical Fit		Housing Inside Dia		Theoretical Fit	
Max	Min	Max	Min	Tight	Loose	Max	Min	Tight	Loose	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	0.1875	0.1865	0.1870	0.1865	0.0005	0.0010	0.1870	0.1865	0.0005	0.0010
15.875	15.862	15.880	15.862	0.013	0.018	15.888	15.875	0.000	0.025	4.763	4.737	4.750	4.737	0.013	0.025	4.750	4.737	0.013	0.025
0.6875	0.6870	0.6887	0.6870	0.0005	0.0007	0.6880	0.6875	0.0000	0.0010	0.2500	0.2495	0.2500	0.2495	0.0005	0.0005	0.2495	0.2490	0.0000	0.0010
17.463	17.450	17.493	17.450	0.013	0.018	17.475	17.463	0.000	0.025	6.350	6.337	6.350	6.337	0.013	0.013	6.337	6.325	0.000	0.025
0.7500	0.7495	0.7502	0.7495	0.0005	0.0007	0.7505	0.7500	0.0000	0.0010	0.3125	0.3120	0.3125	0.3120	0.0005	0.0005	0.3120	0.3115	0.0000	0.0010
19.050	19.037	19.055	19.037	0.013	0.018	19.063	19.050	0.000	0.025	7.938	7.925	7.938	7.925	0.013	0.013	7.925	7.912	0.000	0.025
0.8750	0.8745	0.8752	0.8745	0.0005	0.0007	0.8755	0.8750	0.0000	0.0010	0.3750	0.3745	0.3750	0.3745	0.0005	0.0005	0.3745	0.3740	0.0000	0.0010
22.225	22.212	22.230	22.212	0.013	0.018	22.238	22.225	0.000	0.025	9.525	9.512	9.525	9.512	0.013	0.013	9.512	9.500	0.000	0.025
0.9063	0.9058	0.9065	0.9058	0.0005	0.0007	0.9068	0.9063	0.0000	0.0010	0.4375	0.4370	0.4375	0.4370	0.0005	0.0005	0.4370	0.4365	0.0000	0.0010
23.020	23.007	23.025	23.007	0.013	0.018	23.033	23.020	0.000	0.025	11.113	11.100	11.113	11.100	0.013	0.013	11.100	11.087	0.000	0.025
1.1250	1.1245	1.1252	1.1242	0.0008	0.0007	1.1255	1.1250	0.0000	0.0010	0.5000	0.4995	0.5000	0.4995	0.0005	0.0005	0.4995	0.4990	0.0000	0.0010
28.575	28.562	28.580	28.555	0.020	0.018	28.588	28.575	0.000	0.025	12.700	12.687	12.700	12.687	0.013	0.013	12.687	12.675	0.000	0.025
1.3750	1.3745	1.3752	1.3742	0.0008	0.0007	1.3755	1.3750	0.0000	0.0010	0.5625	0.5620	0.5625	0.5620	0.0005	0.0000	0.5620	0.5615	0.0000	0.0010
34.925	34.912	34.930	34.905	0.020	0.018	34.938	34.925	0.000	0.025	14.288	14.275	14.288	14.275	0.013	0.000	14.275	14.262	0.000	0.025
1.6250	1.6245	1.6252	1.6242	0.0008	0.0007	1.6258	1.6250	0.0000	0.0013	0.6250	0.6245	0.6250	0.6245	0.0005	0.0005	0.6245	0.6240	0.0000	0.0010
41.275	41.262	41.280	41.255	0.020	0.018	41.295	41.275	0.000	0.033	15.875	15.862	15.875	15.862	0.013	0.013	15.862	15.850	0.000	0.025
1.7500	1.7495	1.7502	1.7492	0.0008	0.0007	1.7508	1.7500	0.0000	0.0013	0.7500	0.7495	0.7500	0.7495	0.0005	0.0005	0.7495	0.7490	0.0000	0.0010
44.450	44.437	44.455	44.430	0.020	0.018	44.470	44.450	0.000	0.033	19.050	19.037	19.050	19.037	0.013	0.013	19.037	19.025	0.000	0.025
1.8750	1.8745	1.8752	1.8742	0.0008	0.0008	1.8758	1.8750	0.0000	0.0013	0.8750	0.8745	0.8752	0.8747	0.0007	0.0003	0.8745	0.8740	0.0000	0.0010
47.625	47.612	47.630	47.605	0.020	0.020	47.645	47.625	0.000	0.033	22.225	22.212	22.230	22.217	0.018	0.008	22.212	22.200	0.000	0.025
2.0000	1.9994	2.0002	1.9990	0.0010	0.0008	2.0010	2.0000	0.0000	0.0016	1.0000	0.9995	1.0002	0.9997	0.0007	0.0003	0.9995	0.9990	0.0000	0.0010
50.800	50.785	50.805	50.775	0.025	0.020	50.825	50.800	0.000	0.041	25.400	25.387	25.405	25.392	0.018	0.008	25.387	25.375	0.000	0.025
2.1250	2.1244	2.1252	2.1240	0.0010	0.0008	2.1260	2.1250	0.0000	0.0016	1.1250	1.1245	1.1252	1.1247	0.0007	0.0003	1.1245	1.1240	0.0000	0.0010
53.975	53.960	53.980	53.950	0.025	0.020	54.000	53.975	0.000	0.041	28.575	28.562	28.580	28.567	0.018	0.008	28.562	28.550	0.000	0.025
2.2500	2.2494	2.2502	2.2490	0.0010	0.0008	2.2510	2.2500	0.0000	0.0016	1.2500	1.2495	1.2502	1.2497	0.0007	0.0003	1.2495	1.2490	0.0000	0.0010
57.150	57.135	57.155	57.125	0.025	0.020	64.033	57.150	0.000	0.041	31.750	31.737	31.755	31.742	0.018	0.008	31.737	31.725	0.000	0.025
2.5000	2.4994	2.5002	2.4990	0.0010	0.0008	2.5010	2.5000	0.0000	0.0016	1.3125	1.3120	1.3127	1.3122	0.0007	0.0003	1.3120	1.3115	0.0000	0.0010
63.500	63.485	63.505	63.475	0.025	0.020	63.525	63.500	0.000	0.041	33.338	33.325	33.343	33.330	0.018	0.008	33.325	33.312	0.000	0.025
2.5625	2.5619	2.5627	2.5615	0.0010	0.0008	2.5635	2.5625	0.0000	0.0016	1.3750	1.3740	1.3752	1.3747	0.0007	0.0003	1.3740	1.3740	0.0000	0.0010
65.088	65.072	65.093	65.062	0.025	0.020	65.113	65.088	0.000	0.041	34.925	34.900	34.930	34.917	0.018	0.008	34.900	34.900	0.000	0.025

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RBC Bearings® has been producing bearings in the USA since 1919. In addition to unique custom bearings, RBC Bearings® offers a full line of standard industrial and aerospace bearings, including:

Specialty Cam Followers and Bearings:



Ball Transfer Unit for Transfer Decks on Terminals

Unique one-piece cup & hardened bearing-quality steel ensures unrivaled performance & wear. Increased cross section places more mass in load zone & improves load-carrying capability.



ER Series for Conveyor Pulleys

Metric OD, radial extended inner ID & OD bore range: 5/8" to 1-15/16". Also available non-coded.



Necker Bearing for Can Making Neckers

Extends life 2x of standard Necker Cam Followers. Eliminates the need to lubricate the bearing and saves the plant on maintenance, grease and energy.



Ball Bearing Track Runner for Guard Rail Systems

Full complement Track Runner recommended for moderate loads. Full complement of balls with zinc plating for corrosion protection and hex head for ease of mounting.



1600™ Ball Bearing with Polyurethane Tire for Bottle Inspection Machinery

Ground precision ball bearing with molded polyurethane tire, greased for life. High speeds—up to 5,000 rpm. Easy-to-use inch dimension.



U Shape Ball Bearing for Braiding Machines

Ground precision ball bearing with u-shape pulley design. Recommended for up to 5,000 rpm and low friction PTFE Seals.



Keyless Locking Devices

Mechanical bushings used to connect power transmission components onto rotating shafts. Without the use of keyways, KLDs eliminate the problems associated with backlash including fretting, corroding, and wallowing.



Needle Roller Bearings

Pitchlign® caged heavy duty needle roller bearings ideal for cross head bearings applications. These double row bearings are available in single row and **TandemRoller®** versions.



Self-Lubricating Bearings

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



Spherical Plain Bearings

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



Tapered Roller Bearings

Single, double, & multi row versions available for main bearing positions in mud pumps, gear boxes, etc. Bearings are constructed of case hardened steel washers and rollers with bore size of 11" or greater.



Commercial Rod Ends

Commercial and industrial, precision, Mil-Spec series, self-lubricating, and aircraft. Sold under the **Heim®**, **Unibal®**, and **Spherco®** names. Available in inch and metric sizes.



Thin Section Ball Bearings

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



Ball Bearings

Precision ground, semiground, unground. High loads, long life, smooth operation. **Nice®** branded products are offered in caged and full complement configurations.



Cylindrical Roller Bearings

Cylindrical roller bearings designed for mud pump pinion and eccentric positions. Fully interchangeable to industry standards.



Cam Followers

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



Specials

RBC Bearings® manufactures many specialty bearings for the aerospace, oil and energy, semiconductor equipment, packaging, transportation, and other industries.

