

RBC Roller® Cam Followers

The Superior Alternative



The Patented Cylindrical RBC Roller® Cam Follower
A Clear Winner with Competitive Prices

Patented Cylindrical Roller Cam Followers

RBC invented the RBC Roller® to solve a host of problems associated with old-style needle roller cam followers.

RBC Roller® Cam Follower

The Superior Alternative

- ✓ RBC Roller® Cam Followers are available in sizes from 1" in roller diameter — an industry exclusive.
- ✓ Invented by RBC to solve some of the toughest machine and product control guidance challenges.
- ✓ Double row of cylindrical rollers delivers tremendous operating advantages in an economical package.
- ✓ Repair and replace cycle is greatly reduced — due to higher Dynamic Capacity RBC Roller® Cam Follower offers greater theoretical L10 bearing life.
- ✓ “Lubricated for Life” — No more need for periodic relubrication or expensive automatic lubrication systems.
- ✓ RBC Roller® Cam Follower operates at higher rotary speeds (see product tables on Pages 6 and 7).
- ✓ Increase load carrying capacity without increasing cam follower size — Up to double the dynamic load rating.
- ✓ Unique contacting lip seals provide positive protection against contamination while keeping grease inside.
- ✓ Specialty configurations (i.e., double outer ring) and corrosion resistance (thin, dense chrome plating) available.



Needle Roller Cam Follower

Old Generation Technology

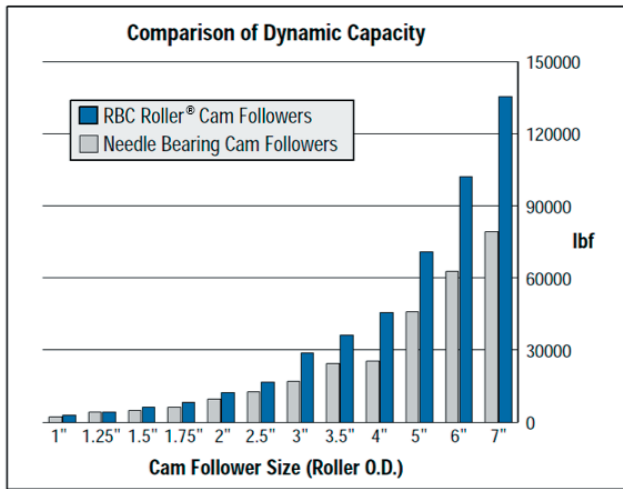
- ⊗ Performance capability limited by old design.
- ⊗ Must be relubricated to prevent early failure.
- ⊗ Roller skewing raises operating temperature.
- ⊗ Needle rollers limit load carrying capacity.
- ⊗ Gap seals allow intrusion of contamination.
- ⊗ Inaccurate roller guidance limits operating speed.
- ⊗ Minimal resistance to thrust loads.



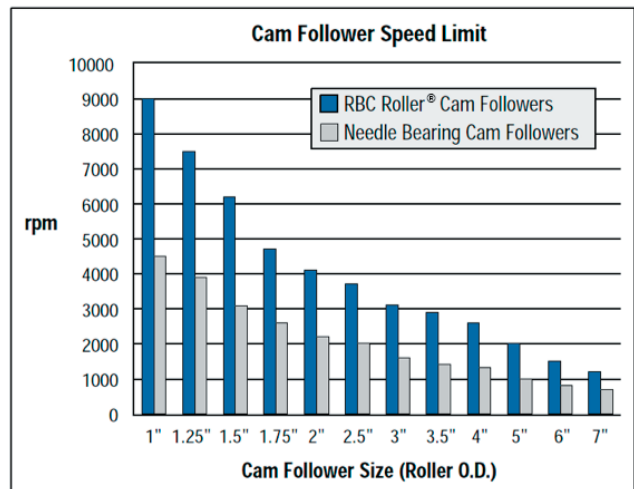
Patented Cylindrical Roller Cam Followers

Precisely Guided Cylindrical Rollers

The use of precisely guided rollers dramatically improves all aspects of cylindrical roller cam follower performance. The dynamic load capacity, maximum running speed, and fatigue life are greatly enhanced. See the charts below for specific data regarding these improvements. Lower performance needle roller cam followers rely on rolling elements that have reduced load capacity. They are also subject to more rolling resistance, and generate higher operating temperatures. These unfavorable operating characteristics are the result of comparatively small roller diameter (reduced load capacity) and poor roller guidance, resulting in skewing (excessive frictional heat and reduced fatigue life).



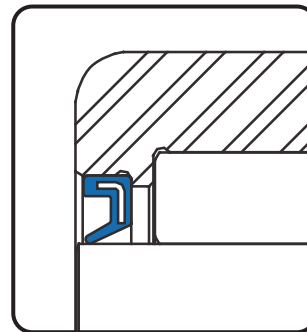
This chart shows the superior load capacity of the RBC Roller® cam follower.



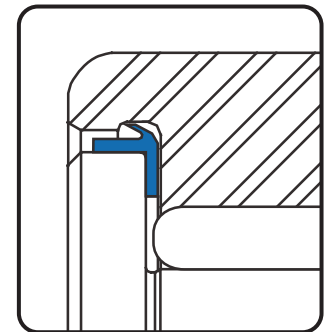
RBC Roller® cam followers operate at speeds up to 2 times higher than needle roller cam followers.

The Best Seals in the Business

Advanced RBC Roller® sealing technology provides long-term protection for the rolling element system. Without effective sealing, even the performance of RBC's precision roller guidance and cylindrical roller technology would be diminished. The contact lip seals provide sealing effectiveness for the cam follower's full operating life. By keeping grease inside the cam follower and contaminants away from the rolling elements, RBC Roller® contact lip seals provide a "lubed for life" product.



Latest RBC Roller® seal design.



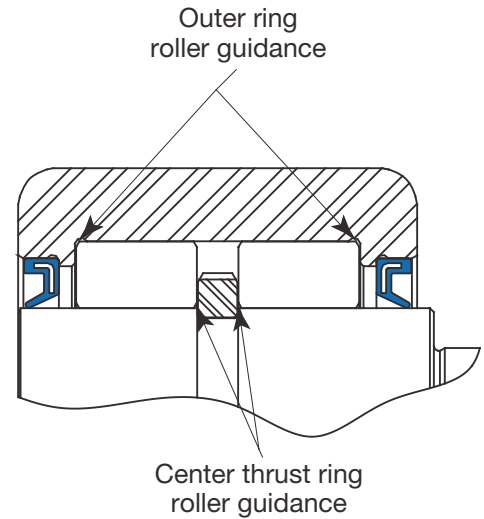
Old style needle roller cam follower gap seal.

The RBC Roller® Cam Follower Advantage

RBC Roller® Cam Follower

The Latest Design and Technology Innovations

Patented RBC Roller® double row cylindrical roller cam followers represent the most effective cam follower technology available. They are superior to needle roller cam followers in every way—“lubed for life,” higher load capacity, higher speed rating, and longer service life.



Contacting Lip Seals

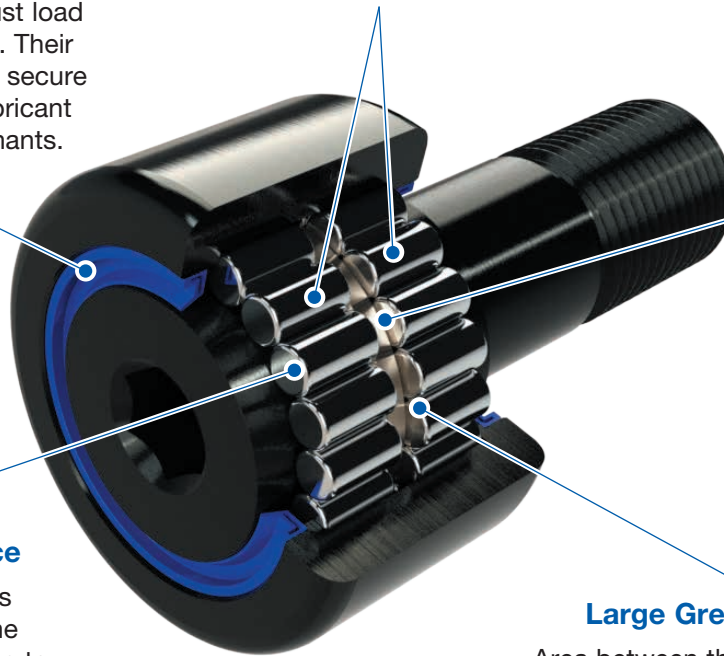
These seals make contact only with the stud ground diameter, therefore maximizing seal life. They are not subject to thrust load against unground surfaces. Their sole function is to provide a secure seal for the retention of lubricant and exclusion of contaminants.

Dual Row Cylindrical Rollers

Large diameter rollers carry high loads. Higher dynamic capacity results in greater fatigue life—greatly prolonging cam follower service life.

Center Thrust Ring

A unique element of the RBC Roller® design, the center thrust ring aids in roller guidance and sustains thrust loads generated by cam follower misalignment. Available only in RBC's patented design.



Precise Roller Guidance

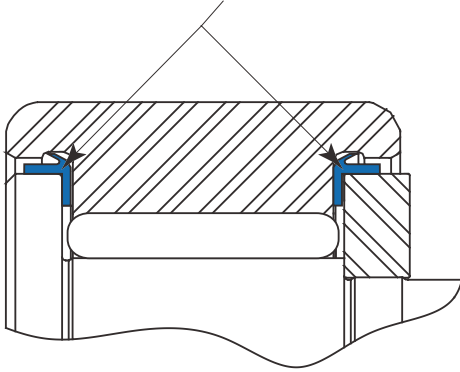
RBC Roller® cam followers typically run cooler than the needle roller cam follower due to accurate roller travel. Cylindrical rollers are guided by both the center thrust ring and internal shoulders of the outer ring.

Large Grease Reservoir

Area between the roller paths is fully charged with up to 4 times more grease than like-sized needle roller cam followers. This additional grease helps to ensure lubed for life performance. Eliminates the need for periodic relubrication.

The RBC Roller® Cam Follower Advantage

The seals act as thrust washers and provide outer ring guidance



Needle Roller Cam Follower

Previous Generation Design and Performance

Long, small diameter needle rollers mean lower load capacity, limited speed, and higher operating temperatures. The combination of minimal grease charge volume and more rapid lubricant degradation mean that relubrication is required for even moderate service life.

Gap Seals

These seals are designed to fill the gap between outer ring shoulder and the end ring (see above illustration). This results in substantial frictional and thrust loads on seal surfaces that can lead to rapid wear.

Single Row Needle Rollers

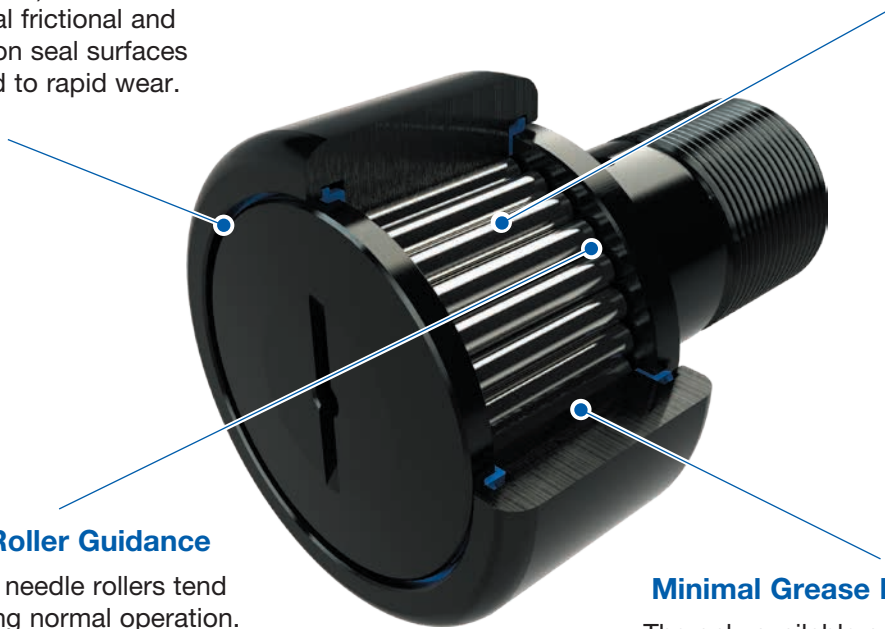
Larger number of small diameter rollers results in lower load rating and reduced fatigue life.

Limited Roller Guidance

End-guided needle rollers tend to skew during normal operation. This can result in excessive heat generation, which can lead to deterioration of the already limited grease supply.

Minimal Grease Retention Volume

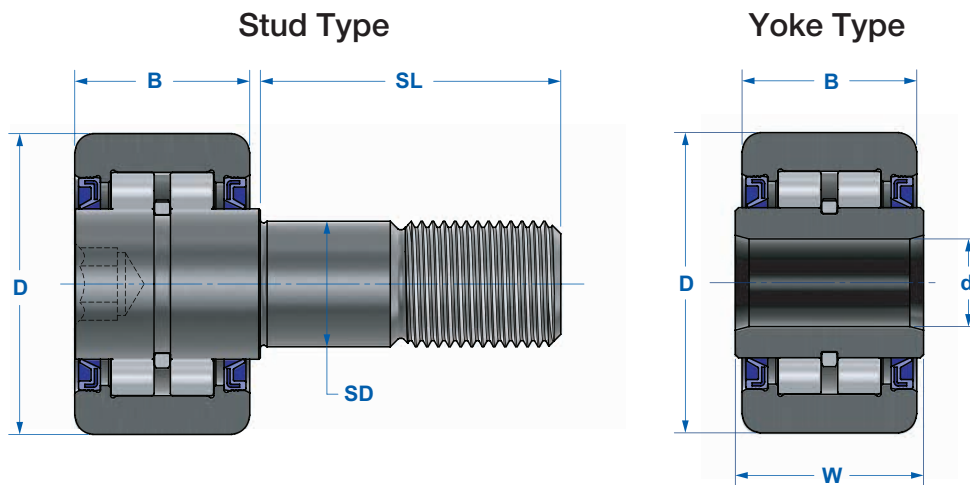
The only available area for grease charge is between the rollers. Cam follower life is directly related to effective lubrication. Relubrication of needle roller cam followers is required to maximize life.



RBC Stud Type and Yoke Roller Type Cam Follower

Dimensions and Performance Data

RBC Roller®



PART NUMBERS		STUD TYPE ONLY				YOKE TYPE ONLY			
		D	B	SD	SL	d		W	
		Outside Diameter	Roller Width	Stud Diameter	Stud Length	Inside Diameter	Overall Width		
STUD TYPE	YOKE TYPE	+ .000 - .001	+ .000 - .005	+ .001 - .000		Nom.	Min.	Max.	+ .005 - .010
RBC 1*	RBV 1	1.000	0.625	0.4375	1.000	5/16	0.3121	0.3127	0.6925
RBC 1 1/8*	RBV 1 1/8	1.125	0.625	0.4375	1.000	5/16	0.3121	0.3127	0.6925
RBC 1 1/4	RBV 1 1/4	1.250	0.750	0.5000	1.250	3/8	0.3746	0.3752	0.8125
RBC 1 3/8	RBV 1 3/8	1.375	0.750	0.5000	1.250	3/8	0.3746	0.3752	0.8125
RBC 1 1/2	RBV 1 1/2	1.500	0.875	0.6250	1.500	7/16	0.4371	0.4377	0.9375
RBC 1 5/8	RBV 1 5/8	1.625	0.875	0.6250	1.500	7/16	0.4371	0.4377	0.9375
RBC 1 3/4	RBV 1 3/4	1.750	1.000	0.7500	1.750	1/2	0.4996	0.5002	1.0625
RBC 1 7/8	RBV 1 7/8	1.875	1.000	0.7500	1.750	1/2	0.4996	0.5002	1.0625
RBC 2	RBV 2	2.000	1.250	0.8750	2.000	5/8	0.6246	0.6252	1.3125
RBC 2 1/4	RBV 2 1/4	2.250	1.250	0.8750	2.000	5/8	0.6246	0.6252	1.3125
RBC 2 1/2	RBV 2 1/2	2.500	1.500	1.0000	2.250	3/4	0.7496	0.7502	1.5625
RBC 2 3/4	RBV 2 3/4	2.750	1.500	1.0000	2.250	3/4	0.7496	0.7502	1.5625
RBC 3	RBV 3	3.000	1.750	1.2500	2.500	1	0.9995	1.0001	1.8125
RBC 3 1/4	RBV 3 1/4	3.250	1.750	1.2500	2.500	1	0.9995	1.0001	1.8125
RBC 3 1/2	RBV 3 1/2	3.500	2.000	1.3750	2.750	1 1/8	1.1245	1.1251	2.0625
RBC 4	RBV 4	4.000	2.250	1.5000	3.500	1 1/4	1.2495	1.2501	2.3125
RBC 5	RBV 5	5.000	2.750	2.0000	5.062	1 3/4	1.7495	1.7501	2.8750
RBC 6	RBV 6	6.000	3.250	2.5000	6.000	2 1/4	2.2495	2.2501	3.3750
RBC 7	RBV 7	7.000	3.750	3.0000	7.688	2 3/4	2.7495	2.7501	3.8750
RBC 8	RBV 8	8.000	4.250	3.2500	8.500	3 1/4	3.2550	3.2560	4.5000
RBC 9	RBV 9	9.000	4.750	3.7500	9.500	3 3/4	3.7550	3.7560	5.0000
RBC 10	RBV 10	10.000	5.250	4.2500	10.000	4 1/4	4.2550	4.2560	5.5000

All dimensions are in inches.

*1" and 1 1/8" are industry-exclusive sizes.

- All sizes are available in crowned and oil hole versions
- Heavy stud style available in some sizes
- Contact Customer Service at 800.390.3300 with questions

RBC Stud Type and Yoke Roller Type Cam Follower

Dimensions and Performance Data

RBC Roller®



Needle Roller



Speed Limit	C		PART NUMBERS	
	[rpm]	Dynamic Capacity [lbf]	STUD TYPE	YOKE TYPE
9,400	3,000	RBC 1*	RBY 1	
9,400	3,000	RBC 1 1/8*	RBY 1 1/8	
7,500	4,100	RBC 1 1/4	RBY 1 1/4	
7,500	4,100	RBC 1 3/8	RBY 1 3/8	
6,200	6,200	RBC 1 1/2	RBY 1 1/2	
6,200	6,200	RBC 1 5/8	RBY 1 5/8	
4,700	8,200	RBC 1 3/4	RBY 1 3/4	
4,700	8,200	RBC 1 7/8	RBY 1 7/8	
4,100	12,400	RBC 2	RBY 2	
4,100	12,400	RBC 2 1/4	RBY 2 1/4	
3,700	16,800	RBC 2 1/2	RBY 2 1/2	
3,700	16,800	RBC 2 3/4	RBY 2 3/4	
3,100	28,900	RBC 3	RBY 3	
3,100	28,900	RBC 3 1/4	RBY 3 1/4	
2,900	36,100	RBC 3 1/2	RBY 3 1/2	
2,600	45,600	RBC 4	RBY 4	
2,000	71,000	RBC 5	RBY 5	
1,500	102,000	RBC 6	RBY 6	
1,200	135,000	RBC 7	RBY 7	
1,100	175,000	RBC 8	RBY 8	
1,000	221,000	RBC 9	RBY 9	
900	272,000	RBC 10	RBY 10	

NEEDLE ROLLER CAM FOLLOWERS			
Nominal Size	Part Number	C	
		Speed Limit [rpm]	Dynamic Capacity [lbf]
1	S 32	4,500	2,300
1 1/8	S 36	4,500	2,300
1 1/4	S 40	3,900	4,200
1 3/8	S 44	3,900	4,200
1 1/2	S 48	3,100	5,000
1 5/8	S 52	3,100	5,000
1 3/4	S 56	2,600	6,400
1 7/8	S 60	2,600	6,400
2	S 64	2,200	9,600
2 1/4	S 72	2,200	9,600
2 1/2	S 80	2,000	12,800
2 3/4	S 88	2,000	12,800
3	S 96	1,600	17,000
3 1/4	S 104	1,600	17,000
3 1/2	S 112	1,400	24,300
4	S 128	1,300	30,000
5	S 160	1,000	47,200
6	S 192	800	62,900
7	S 224	700	79,400

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:



Tapered Roller Thrust Bearings

Case-hardened tapered roller thrust bearings for oilfield top divid swivels. Available in full complement, maximum capacity versions.



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.



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.



Cylindrical Roller Bearings

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



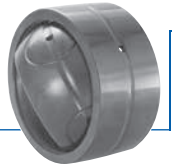
Needle Roller Bearings

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



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.



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.



TP Series Bearings

RBC Bearings® TP Series cylindrical roller thrust bearings ideal for crane hooks, oil well swivels, winch systems, and gear boxes. Fully interchangeable with industry standard offering.



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.



Lubron® Bearings

Lubron® self-lubricating bearings designed and custom manufactured in most any size, material and bearing configuration. Applications include hydro power and water control, nuclear power generation, infrastructure, architecture, offshore marine, industrial, machinery and heavy equipment.



Shaft Collars

Used to position or locate a component on a shaft. Made from mild steel, type 303 or 316 stainless steel, aluminum, or acetal. Available in inch and metric sizes.



Self-Lubricating Bearings

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



Rigid Couplings

Shaft couplings serve as components to time, join, or align shafts at lower speeds and torque, especially when zero backlash is desired. Made from mild steel with a black oxide finish type 303 stainless steel, or aluminum. Available in inch and metric sizes.



Specials

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



Ball Bearings

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



PIC Design

Complete line of precision gears, precision hardware, timing belts, pulleys, and linear motion systems. Industries served include industrial, aerospace, defense, medical, robotics and automation, material handling, and assembly. Custom design support for unique applications.

