

SMITH BEARING®

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Needle Rollers, Bushings, Track Rollers and Special Assemblies for Aerospace & Industrial Applications

Cam Followers (Needle Rollers) Yoke Type & Stud Type

Inch Sizes or Metric Sizes • High Quality Bearing Steel or Corrosion Resistant Stainless Steel

Manufactured from High Quality Bearing Grade Steel or optional Corrosion Resistant Stainless Steel; Needle Roller Bearings are the preferred choice for applications that exhibit radial loads. Needle Roller Bearings are not intended for applications with axial or thrust loads. For extremely high load or high impact applications, the Heavy Stud version is available (HR Series). Selection of the optional Crowned Outer Race allows for angular misalignment between the bearing and track surface. Sealed and pre-greased versions are the most common but are also available in non-sealed for running in oil. Standard sizes range from ½" to 6". We specialize in Custom Engineered Cam Followers to fit specific applications.



SMITH-TRAX® Track Rollers and Smith Rail

Inch Sizes or Metric Sizes • High Quality Bearing Steel or Corrosion Resistant Stainless Steel

Manufactured from High Carbon Steel or Corrosion Resistant Stainless Steel; the Internal Tapered Roller or Angular Contact Ball Bearing design allows our SMITH-TRAX® Track Rollers to be used on applications that have both high radial and high axial loads. The Outer Race design is available in a Plain Straight, Flanged, or V-Shaped style. The SMITH-TRAX® Series are available in either a Stud or Yoke style to support virtually all applications. Standard sizes range from 1" to 11½". Special configurations for high temperature applications, or manufactured from Corrosion Resistant Stainless Steel are available upon request. Hardened and Precision Ground Smith Guide Rails are available in multiple lengths and configurations.



Aerospace Bearings

AS21438 • AS24461 • AS21439 • AS21432 • AS24465 • AS21447 • AS24466 • AS5927 • AS5928 • AS5929




(MS21438) (MS24461) (MS21439) (MS21432) (MS24465) (MS21447) (MS24466)



We are approved to manufacture bearings to Military and Aerospace specifications. The bearings we produce meet the standards of AS-39901. Our engine bearings are currently used in thrust reversers, after burners and divergent nozzles. Our airframe bearings are used in flap-tracks, canopies and landing gear.



Section 1: CAM FOLLOWERS **STUD Type & YOKE Type (Needle Rollers)**



The **CR, HR & YR** Series Needle Roller Bearings are an excellent choice for any applications that have radial loads. Standard sizes range from 1/2" to 6"

Inch Sizes	Stud Type	Non-Crowned Outer Race		Crowned Outer Race	
	Screwdriver Slot • Unsealed	CR	12	CR-C	20
	Screwdriver Slot • Sealed	CR-X	12	CR-XC	20
	Hex-Drive • Unsealed	CR-B	13	CR-BC	21
	Hex-Drive • Sealed	CR-XB	13	CR-XBC	21
	Hex-Drive with Eccentric Bushing	CR-XBE	14	CR-XBEC	15

Inch Sizes	Heavy Stud Type	Non-Crowned Outer Race		Crowned Outer Race	
	Screwdriver Slot • Unsealed	HR	16	HR-C	22
	Screwdriver Slot • Sealed	HR-X	16	HR-XC	22
	Hex-Drive • Unsealed	HR-B	17	HR-BC	23
	Hex-Drive • Sealed	HR-XB	17	HR-XBC	23

Inch Sizes	Yoke Type	Non-Crowned Outer Race		Crowned Outer Race	
	Unsealed	YR	18	YR-C	24
	Sealed	YR-X	18	YR-XC	24



The **DCR & DYR** Series use two rows of Heavy Rollers to handle more extreme radial loads.

Inch Sizes	Double Row • Heavy Roller	Non-Crowned Outer Race		Crowned Outer Race	
	Stud Type	DCR	26	DCR-C	26
	Yoke Type	DYR	27	DYR-C	27

STAINLESS STEEL

Corrosion Resistant




The **CR-XB-SS** & **YR-XB-SS** Series are ideal for applications in harsh environments.

Inch Sizes	Stud Type		
	Hex-Drive • Sealed	CR-XB-SS	30
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With

NON-METALLIC BUSHING

In the **BCR** & **BYR** Series, the rolling elements are replaced with a Self-lubricating Non-metallic Bushing

Inch Sizes	Stud Type		
	Screwdriver Slot • Unsealed	BCR	33
	Screwdriver Slot • Sealed	BCR-X	33
	Hex-Drive • Unsealed	BCR-B	34
	Hex-Drive • Sealed	BCR-XB	34
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METRIC

The **MCR** & **MYR** Series are standard duty Metric size Cam Followers & Yoke Rollers

The **NUKR** & **MUTD** are for heavy duty applications











Stud Type	(Available with Cylindrical or Crowned Outer Race, Hex-Drive & Eccentric)		
	Caged • Unsealed	MCR	37-38
	Caged • Sealed	MCR-S	37-38
	Full Compliment • Unsealed	MCRV	37-38
	Full Compliment • Sealed	MCRV-S	37-38
Yoke Type	(Available with Cylindrical or Crowned Outer Race)		
	Caged • Unsealed	MYR	39
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	Full Compliment • Unsealed	MYRV	39
	Full Compliment • Sealed	MYRV-S	39
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(with Deep Groove Ball Bearings or Tapered Roller Bearings)




Heavy Duty Track Rollers with Internal Tapered Roller Bearings or Deep Groove Ball Bearings handle Extreme radial & axial loads.

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	Plain • Stud Type	PCR	44	MPCR	52
	Flanged • Stud Type	FCR	45	MFCR	53
	V-Groove • Stud Type	VCR	46	MVCR	54
	Plain • Yoke Type	PYR	47	MPYR	55
	Flange • Yoke Type	FYR	48	MFYR	56
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These Airframe Bearings meet the standards of AS-39901 and are use in Flap-Track, Canopies and Landing Gear.

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Inch Size Cam Followers (Needle Rollers)



CR & YR Series

Stud & Yoke Type Cam Followers

The CR & YR Series Needle Roller Bearings are recommended where running loads and shock loads are moderate. Bearing capacity of the CR Stud Type Series is limited by the moderately sized stud. Manufactured from High-Alloy Bearing quality steel.

- Hex Drive or Screwdriver Slot (for the CR Stud Type)
- Choice of Non-Crowned or Crowned Outer Race
- Eccentric Bushing option for added positional alignment on Stud versions
- Sealed or Unsealed



HR Series

Heavy Stud Type Cam Followers

The HR Series have a larger diameter stud and are recommended for applications with high running loads and/or heavy shocks where deflection should be held to a minimum. Rollers and outer races are identical to the standard CR Series. Manufactured from High-Alloy bearing quality steel.

- Sealed or Unsealed
- Hex Drive or Screwdriver Slot
- Choice of Non-Crowned or Crowned Outer Race

Corrosion Resistant



CR-XB-SS & YR-X-SS

Stainless Steel Cam Followers

Manufactured from 440 Stainless Steel. These bearings are intended for applications in harsh environments that require increased corrosion resistance. Excellent choice for outdoor use or for applications such as food production facilities that require frequent wash-down and cleaning. Food grade grease is available.

- Hex Drive (for the CR Stud Type)
- Eccentric Bushing option for added positional alignment on Stud versions
- Choice of Non-Crowned or Crowned Outer Race



DCR & DYR Series

Double Row Heavy Duty Cam Followers

The DCR & DYR Series are designed with a Double Row of Heavy Duty Rollers, thicker Outer Rings and special Full-contact Seals for improved grease retention.

- Choice of Non-Crowned or Crowned Outer Race



BCR & BYR Series

Non-Metallic Bushing

Our Standard Needle Rollers are replaced with a Non-Metallic engineered Plastic Bushing which eliminates or reduces the need for bearing lubrication. These bearings are intended for self-lubricated applications. Continuous feed oil lubrication can be used in order to reduce wear.

- Sealed or Unsealed
- Hex Drive or Screwdriver Slot (for the BCR Stud Type)
- Eccentric Bushing option for added positional alignment on Stud versions
- Choice of Non-Crowned or Crowned Outer Race

Metric Size Cam Followers (Needle Rollers)

MCR & MYR Series

Stud & Yoke Type Cam Followers

The MCR & MYR Metric Needle Roller Bearings are recommended where running loads and shock loads are moderate. Bearing capacity of the MCR Stud Type Series is limited by the moderately sized stud. Manufactured from High-Alloy Bearing quality steel.

- Hex Drive or Screwdriver Slot for the MCR Stud Type
- Choice of Crowned or Cylindrical Outer Race
- Eccentric Bushing option for added positional alignment on Stud versions
- Sealed or Unsealed
- Caged or Full Complement



MUTD & NUKR Series

Double Row Heavy Duty Cam Followers

The MUTD & NUKR are made with a Double Row of Heavy Rollers for extremely high load applications. These Heavy Duty Bearings are assembled with Metallic side shields helping to retain grease and keep out contaminants.

- NUKR
 - ◆ Hex Drive or Screwdriver Slot for the Stud Type
 - ◆ Eccentric Bushing option for added positional alignment on Stud versions
- MUTD
 - ◆ Choice of Crowned or Cylindrical Outer Race



SMITH-Trax® Bearings

Bearing shown riding on a **SMITH-RAIL**
(Also available in Metric sizes)

Smith-Trax® come in various styles and sizes such as Plain Straight, Flanged and V-Groove. **Smith-Trax®** are designed to handle increased axial and radial loads by using Tapered Roller Bearings and Deep-Groove Ball Bearings.

