SEALMASTER

PERFORMANCE WITHOUT COMPROMISE™

CRXTREME

Mounted Ball Bearing

the power of EPT

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Industrial Automation

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CRX-TREME overview

design

produce

apply

Emerson Power Transmission creates the finest mounted bearings by paying attention to detail throughout the entire product creation life-cycle.

From initial design to production to installation, we strive to provide the very best service and support to our customers.

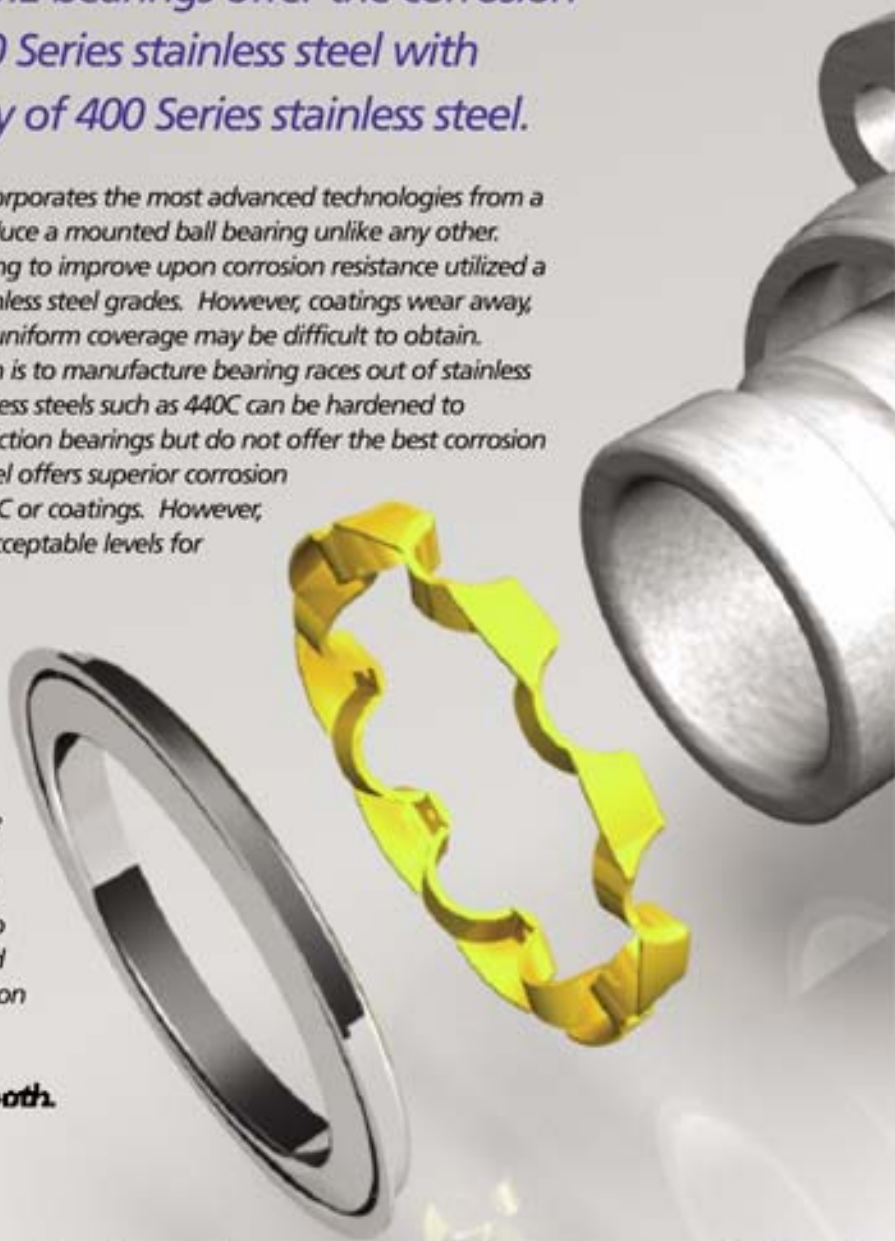
The new CRX-TREME bearing is yet another example of the high level of quality you have come to expect from Emerson Power Transmission.

Utilizing the patented CRX-TREME Bi-Metal Insert, CRX-TREME bearings offer the corrosion resistance of 300 Series stainless steel with the load capacity of 400 Series stainless steel.

The CRX-TREME design incorporates the most advanced technologies from a variety of industries to produce a mounted ball bearing unlike any other. Previously, engineers working to improve upon corrosion resistance utilized a variety of coatings and stainless steel grades. However, coatings wear away, chip or peel and complete uniform coverage may be difficult to obtain. Another common approach is to manufacture bearing races out of stainless steel materials. Some stainless steels such as 440C can be hardened to acceptable levels for anti-friction bearings but do not offer the best corrosion resistance. 316 stainless steel offers superior corrosion resistance compared to 440C or coatings. However, it cannot be hardened to acceptable levels for anti-friction bearing races.

The patented CRX-TREME bearing insert combines the hardenability and load carrying capability of 440C stainless steel with the corrosion resistance of 300 Series stainless steel. With a CRX-TREME solution you no longer have to sacrifice load carrying capacity for corrosion resistance.

Now you can have both.



"With CRX-TREME we found a product that can withstand our corrosive environments and run longer, freeing up my staff to focus on other responsibilities."
--Plant Supervisor, Chemical Processing Plant

"With over ten times the life of the competitive unit, CRX-TREME also saved us over 40 hours of downtime during the year."
--Aluminum Finishing Plant Manager

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the ultimate in corrosion resistant technology

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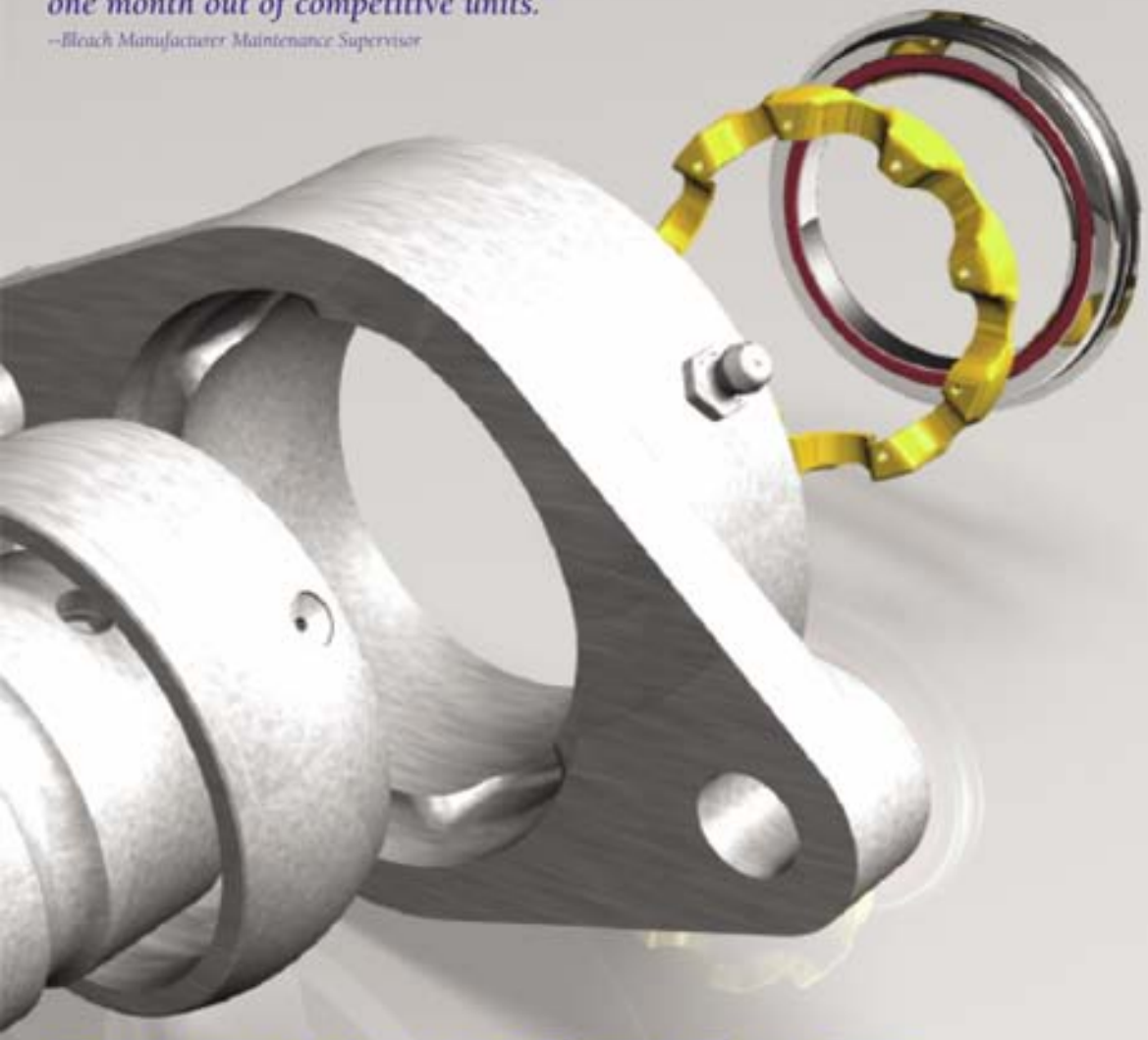
"Sealmaster® CRX-TREME bearings ran for 18 months in my application, where I was getting one month out of competitive units."
--Bleach Manufacturer Maintenance Supervisor



Testimonials and Case Studies

Bleach Manufacturing

Problem: High bleach run-out seeped into mounted bearings that support the filler line. The plant supervisor tried every type of corrosion resistant and stainless steel mounted bearing available and was still only getting three to four weeks of bearing life.

Solution: CRX-TREME bearings were installed and continue to run after a period of 18 months. The maintenance supervisor noted that the overall plant efficiency was drastically improved and that the CRX-TREME product had performed where others failed.

Beverage Processing

Problem: High pressure wash down on the filler equipment was contaminating bearings and causing early failure and unscheduled downtime.

Solution: The plant manager agreed to try the CRX-TREME bearings and is pleased that the product is still running after two years. The plant has now specified Sealmaster bearings - no substitute.

Metal Finishing

Problem: Aluminum coil lines underwent a wash that contained caustic acids. The acid ate away at competitor bearings and seals, failing the units within six weeks.

Solution: CRX-TREME bearings were installed and are still running over a year later. The customer saved over 40 hours of unscheduled downtime during the year. The plant manager will continue to specify Sealmaster corrosion resistant solutions for the entire plant.

Chemical Processing

Problem: Highly corrosive chemicals on a processing line were eating away competitive bearing units. Bearing replacement was wasting valuable maintenance time and increasing labor costs.

Solution: The CRX-TREME bearing withstood the corrosive environment and the insert materials were free of corrosion. The bearing allowed the maintenance staff to focus on other responsibilities.

the power of EPT™

Choosing your Configuration

1 EPT Select your Bearing Housing

Choose from one of four housing configurations including:

- Pillow Block
- 2 Bolt Flange
- 4 Bolt Flange
- Flange Bracket

2 EPT Select your Shaft Size

Select the model based on shaft sizes ranging from 1" to 1 1/2".

Suggested Applications

- Acid Processing
- Metal Finishing
- Bleach Processing
- Beef
- Poultry
- Seafood
- Dairy
- Fruit and Vegetable
- Chemical
- Pharmaceutical
- Beer
- Soda
- Water (Commercial/Industrial)
- Corrosive (Fertilizer/Salt Spreader)

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CRX TREME features & benefits

Insert Specifications

316/440C Stainless Steel Patented Bi-Metal Races

(U.S. Patent Number 5,716,147)

- 316 Stainless Steel Rings with 440C Stainless Ball Paths
- 440C Ball Paths are Protected by the Sealmaster High Performance Seal (HPS) and Sealmaster Specialized GoldPlex™-FG Grease
- 316 and 440C Materials Joined with an Aerospace Brazing Process
- Hardened 440C Ball Path to Maintain Standard Bearing Loads
- Passivated Races (an acid wash that removes ferrous material from the stainless steel and helps improve the material's corrosion resistance)

Braze Process

Commonly used in aerospace applications, the brazing process joins the 316 grade and 440C grade stainless steels by melting a high strength, corrosion resistant filler material to metallurgically bond the components together. This strong, structural bond approximates the base material strength. To validate the strength of the braze joint the CRX-TREME insert was subject to thrust load replication tests. The braze joint consistently exceeded the bearing's thrust load capacity *by almost 40 times.*

CRX-TREME vs. 440C Stainless Steel Insert

SALT SPRAY TEST

Many of today's corrosion resistant, mounted bearings are constructed utilizing 400 Series stainless steel material. While this material allows for proper ball path hardening, it is not as corrosion resistant as 300 Series stainless steel. The revolutionary CRX-TREME design utilizes both 440C and 316 stainless steel materials. This design provides corrosion resistance and ball path hardenability.

Competitor design - 90 hours

CRX-TREME design - 1000+ hours

TEST METHOD:

The following salt spray test ASTM-117 (American Society for Testing and Materials) demonstrates the corrosion resistance capabilities of the CRX-TREME bearing. Each bearing was run in a salt fog chamber until the bearing reached a five percent surface corrosion.

CRX-TREME vs. Coated Inserts

SCRATCH TEST

As corrosion resistant coatings peel or chip away, the bare steel substructure can quickly begin to corrode. This corrosion will then spread to adjacent sections effectively negating the corrosion resistant properties of the coating.

Since all exposed CRX-TREME race materials are constructed of 316 stainless steel, natural abrasion and/or deep penetrating gashes will have little effect on its corrosion resistant qualities.

TEST METHOD:

Utilizing a standard shop lathe, a scratch approximately .03" of an inch wide (common thickness of a human fingernail) was applied to the inner race. The insert was then placed in a salt fog test chamber for 48 hours. The results demonstrate that the highly corrosion resistant CRX-TREME design is not affected by wear, unlike competitive coatings.


Dodge Insert


Zinc Insert


CRX-TREME Insert

IT'S A FACT!

The CRX-TREME bearing inserts dramatically outperformed the competition in both the salt and scratch tests.

CRX TREME Mounted Ball Bearing

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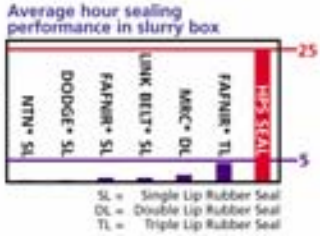
High Performance Seal - HPS

- High Performance Triple Lip Design Incorporating Two Radial Lips and One Axial Lip for Multi-Directional Sealing
- 304 Stainless Steel Shell and Rotating Flinger Designed to Direct Contaminants Away from the Bearing
- Black FKM Seal Lip Material per ASTM D-1418. FKM has Favorable Wear Properties, Excellent Chemical Resistance and High Temperature Capabilities (Shown in Red)
- Testing has Proven Ten Times the Sealing Effectiveness of Single Lip Contact Seals
- Enhanced Field Life in Extreme Environments

HPS Seal Cutaway

TEST METHOD:
This graph illustrates the relative performance of rubber contact seals in a slurry contamination test. The seals are installed on one side of a bearing and the bearing is submerged halfway into a sand, salt and water mixture. The bearings operate at 300 RPM while a separate motor stirs the mixture at 500 RPM. The test is stopped when the slurry mixture leaks past the seal.



IT'S A FACT!

The Sealmaster high performance seals lasted more than 5 times longer than the best competitive seal.

Set Screws

- 17-4 PH Material, a Stainless Steel Commonly Used in Aerospace Applications
- CRX-TREME Set Screws are Hardened to 40 HRc Minimum, while Common 316 Stainless Steel Set Screws can only be Hardened to 20-30 HRc and Standard Non-Corrosion Resistant Set Screws are Hardened to 45-50 HRc. The 17-4 PH Offers an Excellent Compromise of Hardness and Corrosion Resistance
- Cold Formed Hex Pocket, Not Broached for Better Pocket Integrity
- Incorporates Sealmaster Diamond Faceted Cup Point Design

Render of CRX-TREME Set Screw

Lubrication - Sealmaster® GoldPlex™ - FG Grease

- Superior Corrosion Resistance (ASTM D 1743)
- Excellent Water Washout Properties (ASTM D 1264)
- Compatible with Major Thickeners
  - Aluminum Complex
  - Calcium Complex
  - Polyurea
- Superior Dropping Point 572°F (300°C) (ASTM D 2265)
- Nonsustaining and Nontoxic
- USDA H1 Category Approved
- Food Processing Approved Lubricant
- NSF Registered
- Factory Filled

GoldPlex™ - FG Grease Tube

Housing Specifications

- **CF-8M Material per ASTM A743**
  - Offers improved corrosion resistance over the industry standard CF-8 (a casting grade of 304) stainless steel casting, especially with regard to pitting corrosion
  - 75,000 psi ultimate tensile strength, three times stronger than grade 25 gray cast iron
- **Investment Cast**
  - Offers better dimensional stability over traditional sand casting processes, resulting in more consistent housing dimensions
  - Improved surface finish over traditional sand casting processes, which allows for easier cleaning
- **Grease Fitting**
  - Corrosion resistant 300 Series stainless steel
- **Advanced Marking System**
  - Part number is permanently marked on housing, not an entrapment point for bacteria

Advanced Marking System

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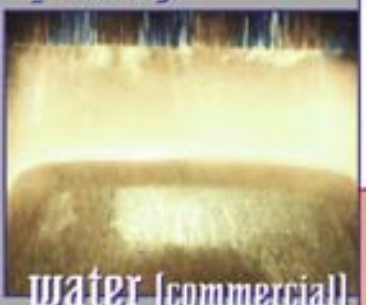
CRXTREME product line



Suggested Applications:
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- Metal Finishing
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- Beef
- Poultry
- Seafood
- Dairy
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- Pharmaceutical
- Beer
- Soda
- Water (Commercial/Industrial)
- Corrosive (Fertilizer/Salt Spreader)

CRX-TREME Product Selection

Load Rating and Maximum Speed - CRX-TREME Ball Bearing

SHAFT SIZE	BASIC DYNAMIC RADIAL RATING (LBS)	STATIC RADIAL RATING (LBS)	RELATIVE AXIAL LOAD FACTOR ND*	THRUST RATING (LBS)	MAXIMUM SPEED (RPM)
1	2801	1651	0.7840	490	2740
1 3/16	4381	2567	1.2996	1177	2330
1 1/4R	4381	2567	1.2996	1177	2330
1 1/4	5782	3493	1.7424	1709	2000
1 7/16	5782	3493	1.7424	1709	2000
1 1/2	7340	4467	2.2500	2254	1790

* Reference to Sealmaster catalog BP-97 engineering section for life calculation
Use a2 = 0.88 material factor for 440C stainless steel
For loads or speeds outside the rating chart, consult EPT Engineering

PILLOW block

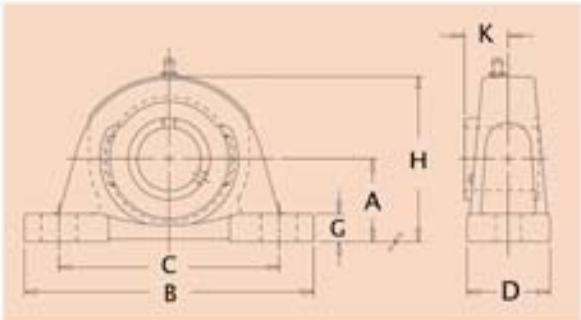

BACK VIEW


SIDE VIEW


TOP VIEW

CRXPS Specifications

For additional information, downloads and support, visit us online at www.emerson-ept.com



DESCRIPTION	SHAFT SIZE	A	B	C MAX	C MIN	D	G	H	K	BOLT SIZE
CRXPS-16	1	1 7/16	5 1/2	4 3/8	3 7/8	1 1/2	1/2	2 13/16	13/16	3/8
CRXPS-19	1 3/16	1 11/16	6 1/2	5 1/16	4 7/16	1 7/8	9/16	3 3/8	7/8	1/2
CRXPS-20R	1 1/4R	1 11/16	6 1/2	5 1/16	4 7/16	1 7/8	9/16	3 3/8	7/8	1/2
CRXPS-20	1 1/4	1 7/8	6 9/16	5 5/16	4 11/16	1 7/8	5/8	3 3/4	1	1/2
CRXPS-23	1 7/16	1 7/8	6 9/16	5 5/16	4 11/16	1 7/8	5/8	3 3/4	1	1/2
CRXPS-24	1 1/2	1 15/16	7 1/4	5 7/8	4 7/8	2 1/8	11/16	3 15/16	1 3/16	1/2

CRX TREME Mounted Ball Bearing

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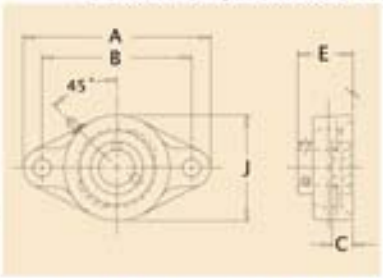
2 BOLT flange

CRXFTS Specifications




FRONT VIEW

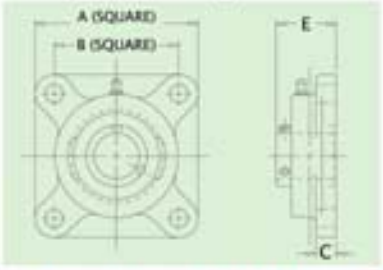

SIDE VIEW


BACK VIEW

DESCRIPTION	SHAFT SIZE	A	B	C	E	J	BOLT SIZE
CRXFTS-16	1	4 7/8	3 57/64	17/32	1 7/16	2 3/4	7/16
CRXFTS-19	1 3/16	5 9/16	4 19/32	17/32	1 9/16	3 1/4	7/16
CRXFTS-20R	1 1/4R	5 9/16	4 19/32	17/32	1 9/16	3 1/4	7/16
CRXFTS-20	1 1/4	6 1/8	5 1/8	9/16	1 3/4	3 3/4	1/2
CRXFTS-23	1 7/16	6 1/8	5 1/8	9/16	1 3/4	3 3/4	1/2
CRXFTS-24	1 1/2	6 3/4	5 21/32	9/16	2 1/64	4 1/8	1/2

4 BOLT flange

CRXFS Specifications




FRONT VIEW

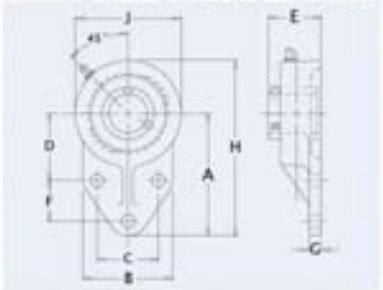

SIDE VIEW


BACK VIEW

DESCRIPTION	SHAFT SIZE	A	B	C	E	BOLT SIZE
CRXFS-16	1	3 3/4	2 3/4	17/32	1 7/16	7/16
CRXFS-19	1 3/16	4 1/4	3 1/4	17/32	1 9/16	7/16
CRXFS-20R	1 1/4R	4 1/4	3 1/4	17/32	1 9/16	7/16
CRXFS-20	1 1/4	4 5/8	3 5/8	9/16	1 3/4	1/2
CRXFS-23	1 7/16	4 5/8	3 5/8	9/16	1 3/4	1/2
CRXFS-24	1 1/2	5 1/8	4	9/16	2 1/64	1/2

FLANGE bracket

CRXFBS Specifications




FRONT VIEW


SIDE VIEW


BACK VIEW

DESCRIPTION	SHAFT SIZE	A	B	C	D	E	F	G	H	J	BOLT SIZE
CRXFBS-16	1	3 3/8	2 1/2	1 5/8	1 13/16	1 1/2	1 1/8	3/8	4 3/4	2 3/4	3/8
CRXFBS-19	1 3/16	3 3/4	2 3/4	1 7/8	2 1/16	1 5/8	1 1/4	3/8	5 3/8	3 1/4	3/8
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CRXFBS-23	1 7/16	4 1/4	3 1/4	2	2 3/8	1 7/8	1 1/4	1/2	6 1/8	3 3/4	1/2

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CRX TREME
Mounted Ball Bearing

The Ultimate In Corrosion Resistant Technology

CRX-TREME bearings provide both strength and corrosion resistance for a variety of industrial and commercial applications.

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Check out the complete line of **CRES Mounted Bearings**

The CRX-TREME mounted bearings are the latest addition to a complete line of CRES corrosion resistant, engineered products. Visit us online to learn more at **www.emerson-ept.com.**

APPLICATION CONSIDERATIONS

The proper selection and application of power transmission products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, lubrication requirements, loading supports, and other factors can materially affect the application and operating results of the products and components and the customer should carefully review its requirements. Any technical advice or review furnished by Emerson Power Transmission Corporation and its divisions with respect to the use of products and components is given in good faith and without charge, and Emerson assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.

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