AMERICAN NATIONAL STANDARD

ANSI/AFBMA
Std 23.2-1988

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AFBMA STANDARD

THRUST BEARINGS OF TAPERED ROLLER TYPE - INCH DESIGN

Sponsor
The Anti-Friction Bearing Manufacturers Association, Inc.

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American National Standards Institute, Inc.

American National Standard

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FOREWORD

(This foreword is not a part of ANSI/AFBMA Standard 23.2—1988, Thrust Bearings of Tapered Roller Type, Inch Design.)

This American National Standard consolidates the boundary dimensions, tolerance limits and fitting and mounting practices for inch design tapered roller thrust bearings which have been in general use in the USA in recent years. Many of the boundary dimensions are formerly found in ANSI/AFBMA Standard 21.2—1977.

The dimensions, tolerances and clearances stated in this standard are based on U.S. customary (inch-pound) units and are found in Part II of the various tables. A soft conversion to metric units is provided in Part I of the various tables for the convenience of the user.

Suggestions for the improvement of this standard gained through experience with its use will be welcomed. These should be sent to the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.

The officers of Sectional Committee B3 of the American National Standards Institute and the organizations represented at the time this standard was submitted are as follows:

S.R. Ahlman, Chairman G. T. Satterfield, Secretary

American Society of Agricultural Engineers
Anti-Friction Bearings Manufacturers Association
Hydraulic Institute
National Machine Tool Builders Association
Society of Automotive Engineers
Society of Tribologists and Lubrication Engineers
U.S. Department of Defense, DISC
U.S. Department of the Navy

Other related AFBMA Standards
for
Ball and Roller Bearings
and Balls

1 —Terminology

4 —Tolerance Definitions and Gaging Practices

7 —Shaft and Housing Fits for Metric Radial Ball and Roller Bearings (Except Tapered Roller Bearings) Conforming to Basic Boundary Plans

8.1 —Ball and Roller Bearings Mounting Accessories, Metric Design

8.2 —Ball and Roller Bearings Mounting Accessories, Inch Design

9 —Load Ratings and Fatigue Life for Ball Bearings

10 —Metal Balls

11 —Load Ratings and Fatigue Life for Ball Bearings

12.1 —Instrument Ball Bearings, Metric Design

12.2 —Instrument Ball Bearings, Inch Design

13 —Rolling Bearing Vibration and Noise

14 —Housing for Bearings With Spherical Outside Surfaces

15 —Ball Bearings With Spherical Outside Surfaces and Extended Inner Ring Width (Includes Eccentric Locking Collars)

16.1 —Airframe Ball, Roller and Needle Roller Bearings, Metric Design

16.2 —Airframe Ball, Roller and Needle Roller Bearings, Inch Design

17 —Needle Rollers, Metric Design

18.1 —Needle Roller Bearings—Radial, Metric Design

18.2 —Needle Roller Bearings—Radial, Inch Design

19 —Tapered Roller Bearings, Radial, Inch Design

19.1 —Tapered Roller Bearings, Radial, Metric Design

20 —Radial Bearings of Ball Cylindrical Roller and Spherical Roller Types, Metric Design

21.1 —Thrust Needle Roller and Cage Assemblies and Thrust Washers, Metric Design

21.2 —Thrust Needle Roller and Cage Assemblies and Thrust Washers, Inch Design

22.2 —Spherical Plain Bearings, Joint Type, Inch Design

24.1 —Thrust Bearings of Ball, Cylindrical Roller & Spherical Roller Types, Metric Design

24.2 —Thrust Bearings of Ball & Cylindrical Roller Types, Inch Design

An AFBMA Standard is intended as a guide to aid the manufacturer, the consumer and the general public. The existence of an AFBMA Standard does not in any respect preclude anyone, whether he has approved the Standard or not from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. AFBMA Standards are subject to revision or withdrawal at any time and users who refer to an AFBMA Standard should satisfy themselves that they have the latest information from the Association.

Thrust Bearings of Tapered Roller Type - Inch Design

CONTENTS

LIST OF TABLES & FIGURES

Thrust Bearings of Tapered Roller Type - Inch Design

1. SCOPE

This standard for thrust bearings of the tapered roller type of inch design covers:

Bearing Number and Type Identity
Symbols and Nomenclature
Boundary Dimensions
Tolerances
Mounting Dimensions

All bearings and components in this standard are not necessarily available. For availability, consult bearing manufacturers.

The following standards should be consulted for tolerance definitions, gaging practices and methods of evaluating load ratings:

ANSI/AFBMA Standard 1	Terminology for Anti-Friction Ball and Roller Bearings and Parts
ANSI/AFBMA Standard 4	Tolerance Definitions and Gaging Practices for Ball and Roller Bearings
ANSI/AFBMA Standard 11	Load Ratings and Fatigue Life for Roller Bearings

This standard only covers external dimensions. Functional interchangeability between different makes of standard bearings or components of the same size may depend on bearing features which are not standardized. Hence, the substitution of one make of standard bearing for another should only be made after careful comparison of their characteristics and consideration of the requirements of the particular application.

2. BEARING NUMBER and TYPE IDENTITY

The bearing number identifies each tapered roller thrust bearing on the basis of complete dimensional interchangeability. This bearing number establishes a universal language for identifying tapered roller thrust bearings of inch design in order to facilitate communications between the user and the manufacturer. These bearing numbers apply only to those tapered roller thrust bearings of inch design whose boundary dimensions and tolerances form this standard.

TABLE 1
BASIC BEARING NUMBER

Type	Bore
T T = Thrust Bearing	NNNNN Up to 5 numerical digits stating the approximate bore size in inches

The type identity is used in the bearing title and defines the particular type of tapered roller thrust bearing. This establishes a universal language for identifying the type or configuration of tapered roller thrust bearings of inch design to facilitate communications between the user and the manufacturer.

TABLE 2
TYPE IDENTITY

1st & 2nd Letters		3rd & 4th Letters	
Letters	**Definition**	**Letters**	**Definition**
TT	Tapered Roller Thrust Bearing	C	Cageless with cup form retainer band
		CS	Cageless with sleeve form retainer band
		HD	Heavy Duty
		SP	Steering Pivot

3. BOUNDARY DIMENSIONS

3.1 Symbols and Nomenclature

d = basic bore diameter of a shaft ring (or washer)

D = basic outside diameter of a housing ring (or washer)

T = bearing height (thrust bearing)

R_{smin} = smallest permissible shaft ring (or washer) chamfer dimension

r_{smin} = smallest permissible housing ring (or washer) chamfer dimension

The exact shape of a chamfer is not controlled by the chamfer dimensions R_{smin} and r_{smin}.