

ANSI/ABMA 23.2

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ANSI/AFBMA
Std 23.2-1988

AMERICAN NATIONAL STANDARD
AFBMA STANDARD
THRUST BEARINGS OF TAPERED ROLLER TYPE -
INCH DESIGN

Sponsor
**The Anti-Friction Bearing
Manufacturers Association, Inc.**

Approved November 4, 1988
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:

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 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

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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	NNNN 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)

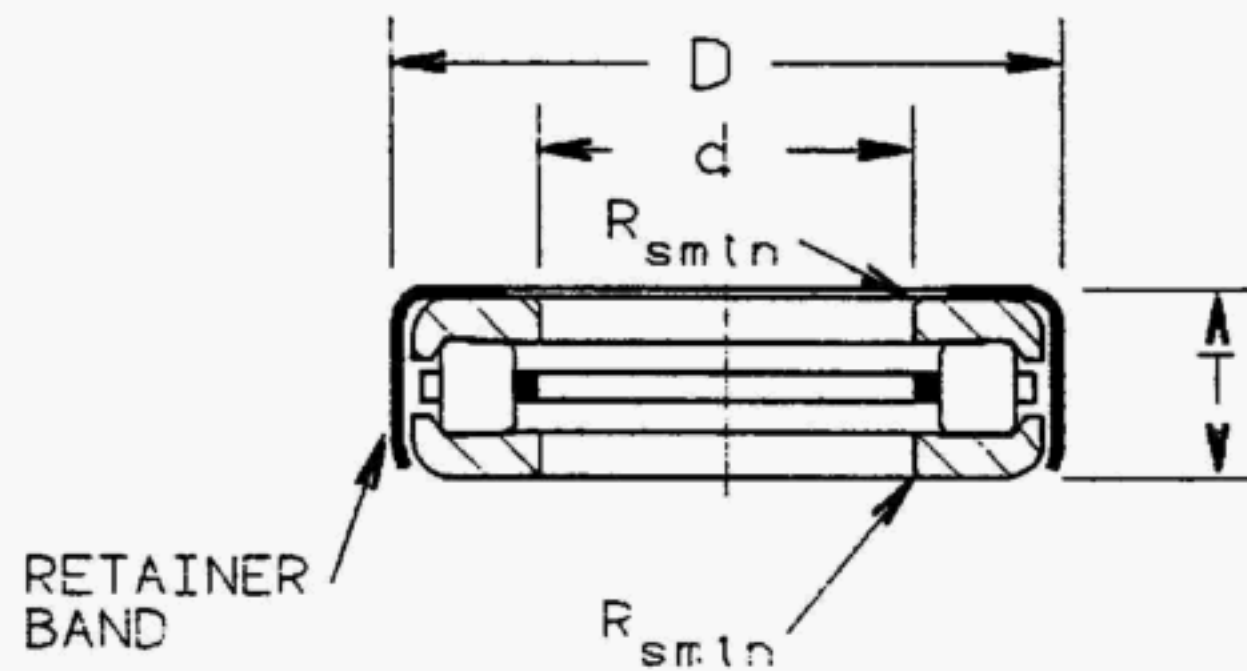
T = bearing height (thrust bearing)

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

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

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

TABLE 3
BOUNDARY DIMENSIONS
TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
STEERING PIVOT WITH RETAINER BAND, TYPE TTSP

**Part I**

Dimensions in millimetres

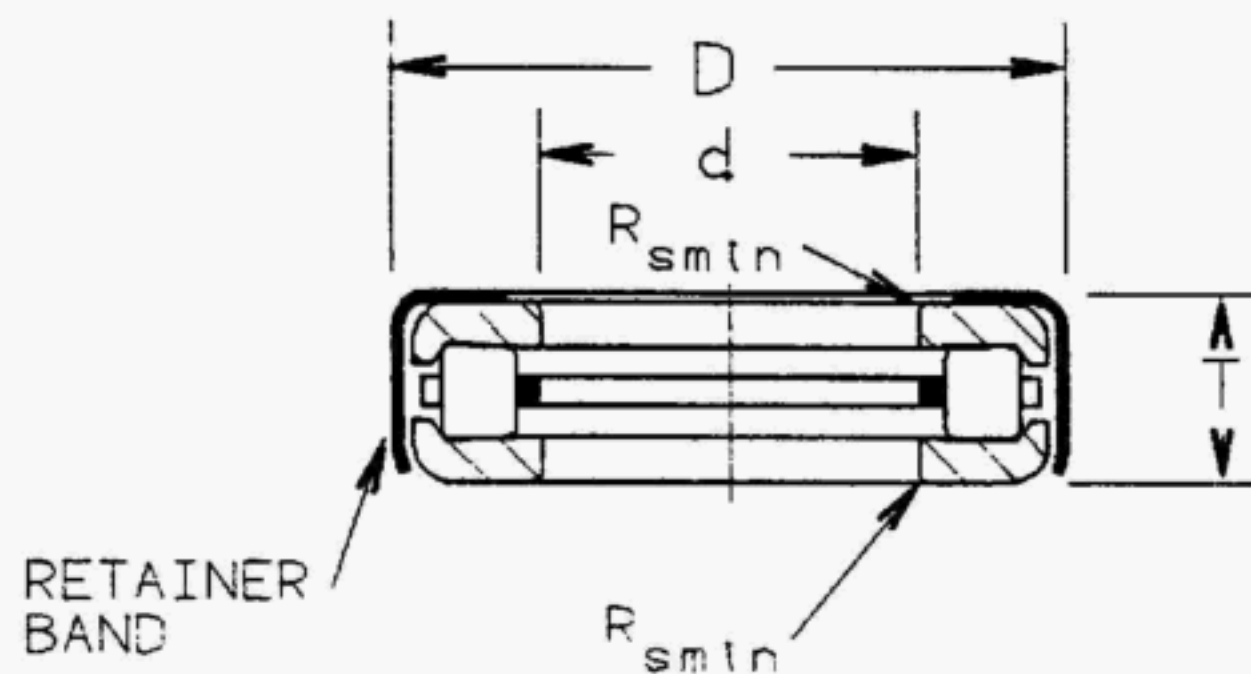
BEARING NUMBER ⁽²⁾	d	D	T	R_{smt n} ⁽¹⁾
T63	16.129	41.275	12.700	0.8
T77	19.304	41.275	12.700	0.8
T76	19.304	41.275	13.487	0.8
T86	20.256	39.688	14.288	1.3
T82	20.879	41.275	13.487	0.8
*T83	20.879	42.164	13.487	0.8
T88	22.479	48.021	15.088	0.8
T94	24.054	48.021	15.088	0.8
T95	24.130	50.800	15.875	0.8
T101	25.654	50.800	15.875	0.8
T104	26.289	50.800	15.875	0.8
T107	27.229	50.800	15.875	0.8
T110	28.829	53.188	15.875	0.8
T113	28.829	55.562	15.875	0.8
*T120	30.416	54.745	11.430	0.8
T119	30.416	55.562	15.875	0.8
T126	32.004	55.562	15.875	0.8
T139	35.179	58.738	15.875	0.8
T142	35.179	62.708	19.431	0.8
T149	38.303	65.883	19.431	0.8
T158	40.234	65.883	19.431	0.8
T199	51.054	74.612	15.875	0.8
T309	78.583	102.395	15.875	0.8
T387	98.425	127.000	17.462	0.8
T484	123.012	152.400	17.462	0.8
T581	147.638	177.800	17.462	0.8

(1) The largest single shaft and housing radius must not exceed the smallest single chamfer dimension (shaft ring or housing ring).

(2) These bearings can be supplied with oil holes in the retainer band in which case the suffix W is added to the bearing number.

*Bearings T83 and T120 are normally supplied with a different style cage than that shown. Consult the manufacturer's catalog.

TABLE 3
BOUNDARY DIMENSIONS
TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
STEERING PIVOT WITH RETAINER BAND, TYPE TTSP

**Part II**

Dimensions in inches

BEARING NUMBER ⁽²⁾	d	D	T	R _{smtn} ⁽¹⁾
T63	0.6350	1.6250	0.5000	0.03
T77	0.7600	1.6250	0.5000	0.03
T76	0.7600	1.6250	0.5310	0.03
T86	0.7975	1.5625	0.5625	0.05
T82	0.8220	1.6250	0.5310	0.03
*T83	0.8220	1.6600	0.5310	0.03
T88	0.8850	1.8906	0.5940	0.03
T94	0.9470	1.8906	0.5940	0.03
T95	0.9500	2.0000	0.6250	0.03
T101	1.0100	2.0000	0.6250	0.03
T104	1.0350	2.0000	0.6250	0.03
T107	1.0720	2.0000	0.6250	0.03
T110	1.1350	2.0940	0.6250	0.03
T113	1.1350	2.1875	0.6250	0.03
*T120	1.1975	2.1553	0.4500	0.03
T119	1.1975	2.1875	0.6250	0.03
T126	1.2600	2.1875	0.6250	0.03
T139	1.3850	2.3125	0.6250	0.03
T142	1.3850	2.4688	0.7650	0.03
T149	1.5080	2.5938	0.7650	0.03
T158	1.5840	2.5938	0.7650	0.03
T199	2.0100	2.9375	0.6250	0.03
T309	3.0938	4.0313	0.6250	0.03
T387	3.8750	5.0000	0.6875	0.03
T484	4.8430	6.0000	0.6875	0.03
T581	5.8125	7.0000	0.6875	0.03

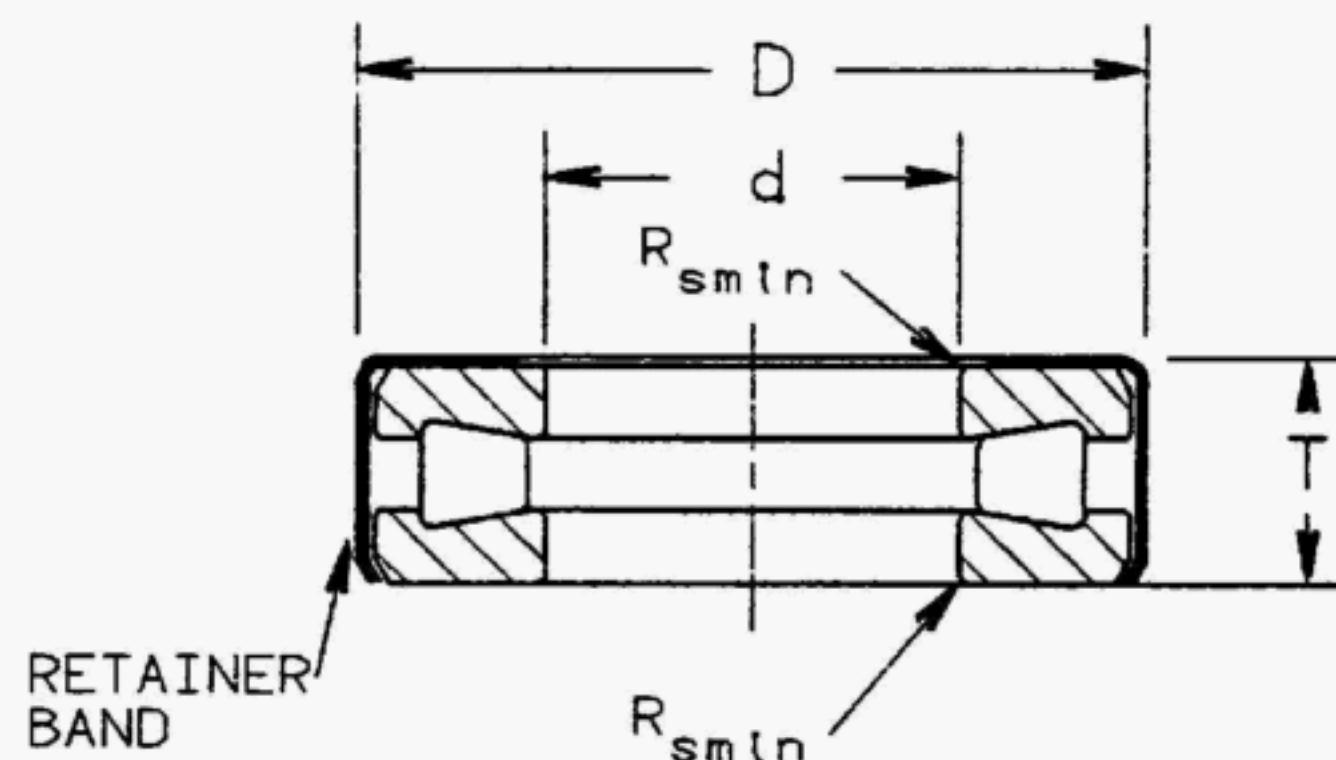
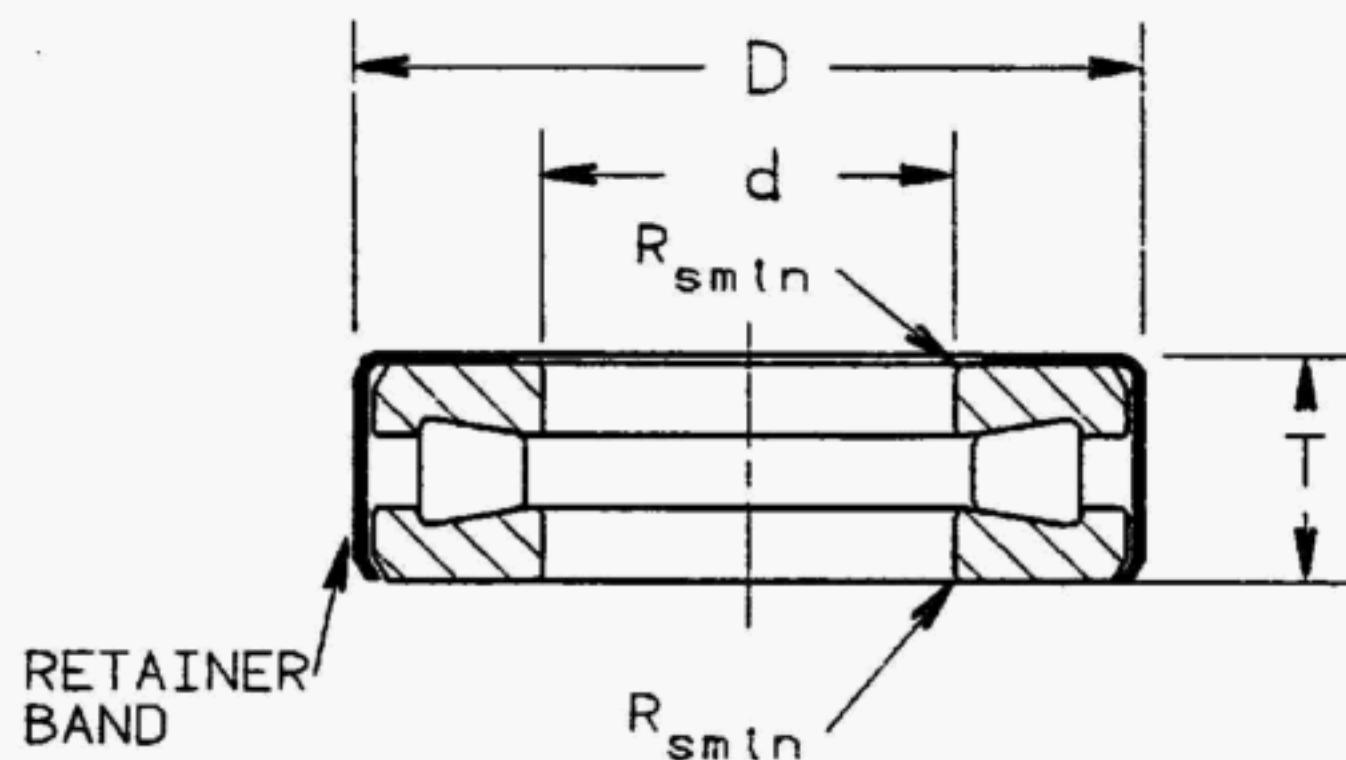
(1) The largest single shaft and housing radius must not exceed the smallest single chamfer dimension (shaft ring or housing ring).

(2) These bearings can be supplied with oil holes in the retainer band in which case the suffix W is added to the bearing number.

*Bearings T83 and T120 are normally supplied with a different style cage than that shown. Consult the Manufacturer's catalog.

TABLE 4
BOUNDARY DIMENSIONS

TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
CAGELESS - WITH RETAINER BAND, TYPES TTC & TTCS



Part I

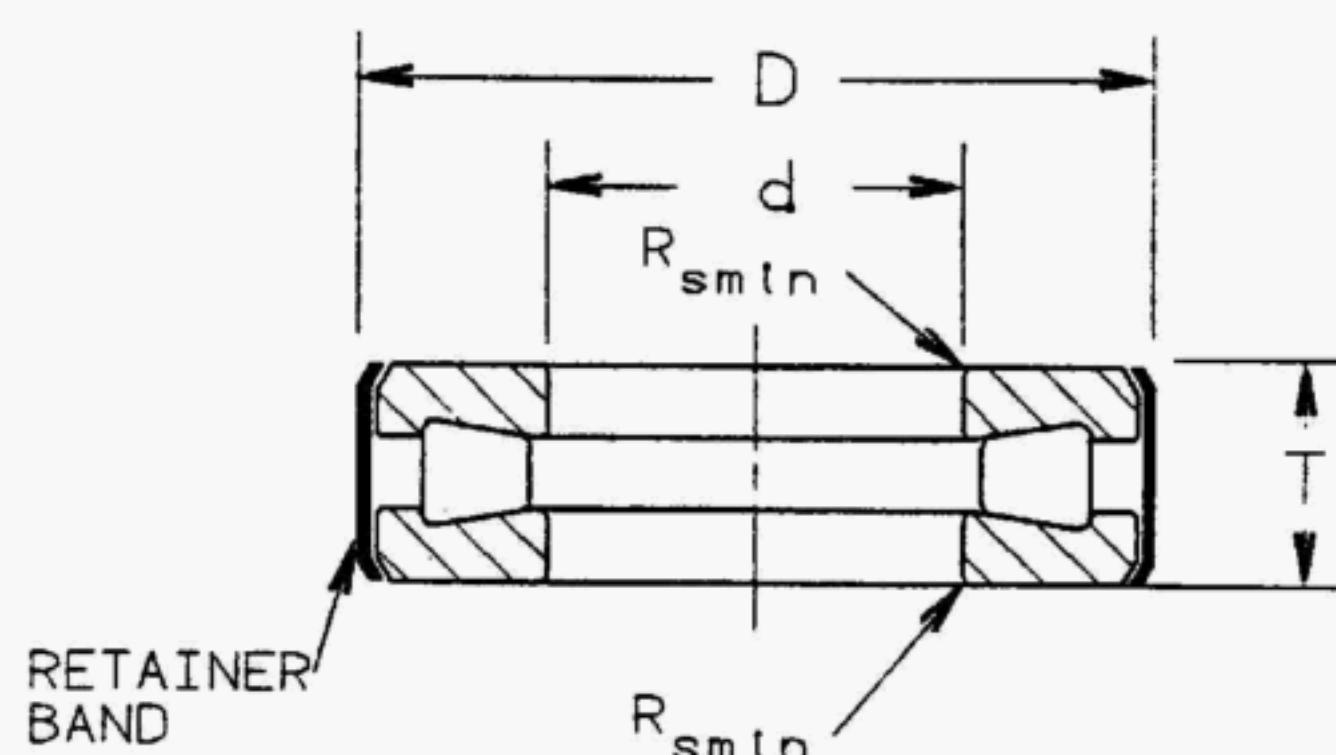
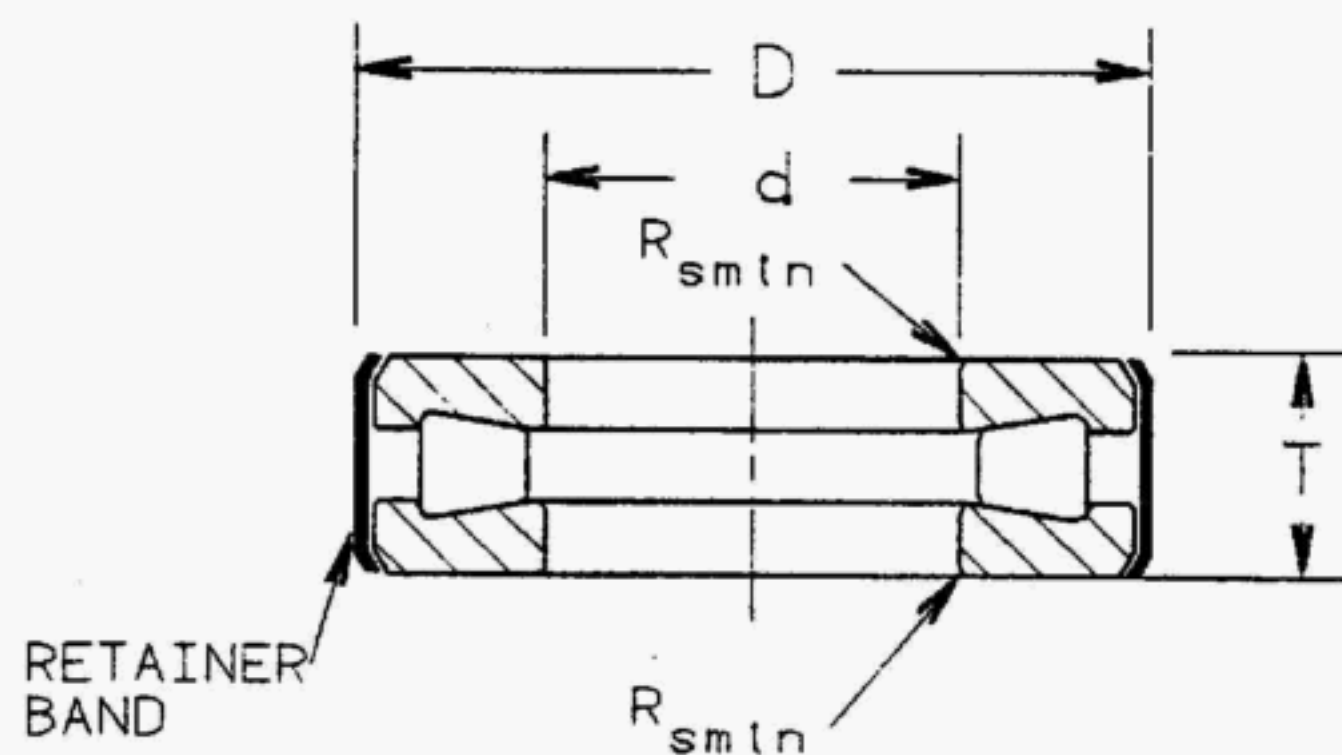
Dimensions in millimetres

BEARING NUMBER ⁽²⁾	d	D	T	R _{smln} ⁽¹⁾
T126	32.004	55.562	15.875	0.8
T127	32.004	66.675	19.446	0.8
T138	35.179	66.675	19.446	0.8
T144	36.754	66.675	19.446	1.5
T152	38.354	72.619	20.638	0.8
T151	38.354	72.619	21.433	0.8
T157	39.954	72.619	21.433	0.8
T163	41.529	72.619	21.433	0.8
T169	43.104	82.956	23.812	0.8
T176	44.704	82.956	23.812	0.8
T177	45.000	73.000	20.000	0.8
T182	46.279	82.956	23.812	0.8
T189	47.879	82.956	23.020	0.8
T188	47.879	82.956	23.812	0.8
T193	49.454	93.269	26.187	0.8
T194	49.454	93.269	26.975	0.8
T201	51.054	93.269	26.187	3.3
T202	51.054	93.269	26.975	3.3
T209	52.629	93.269	26.187	0.8
T208	52.629	93.269	26.975	0.8
T252	63.754	111.125	25.796	0.8
T251	63.754	111.125	26.988	0.8
T301	76.454	133.350	33.338	2.3
T302	76.454	133.350	34.925	2.3
T350	88.900	133.350	33.335	2.8
T402	102.108	179.619	44.450	1.5

(1) The largest single shaft and housing radius must not exceed the smallest single chamfer dimension (shaft ring or housing ring).

(2) These bearings can be supplied with oil holes in the retainer band in which case the suffix W is added to the bearing number

TABLE 4
BOUNDARY DIMENSIONS
TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
CAGELESS - WITH RETAINER BAND, TYPES TTC & TTCS

**Part II**

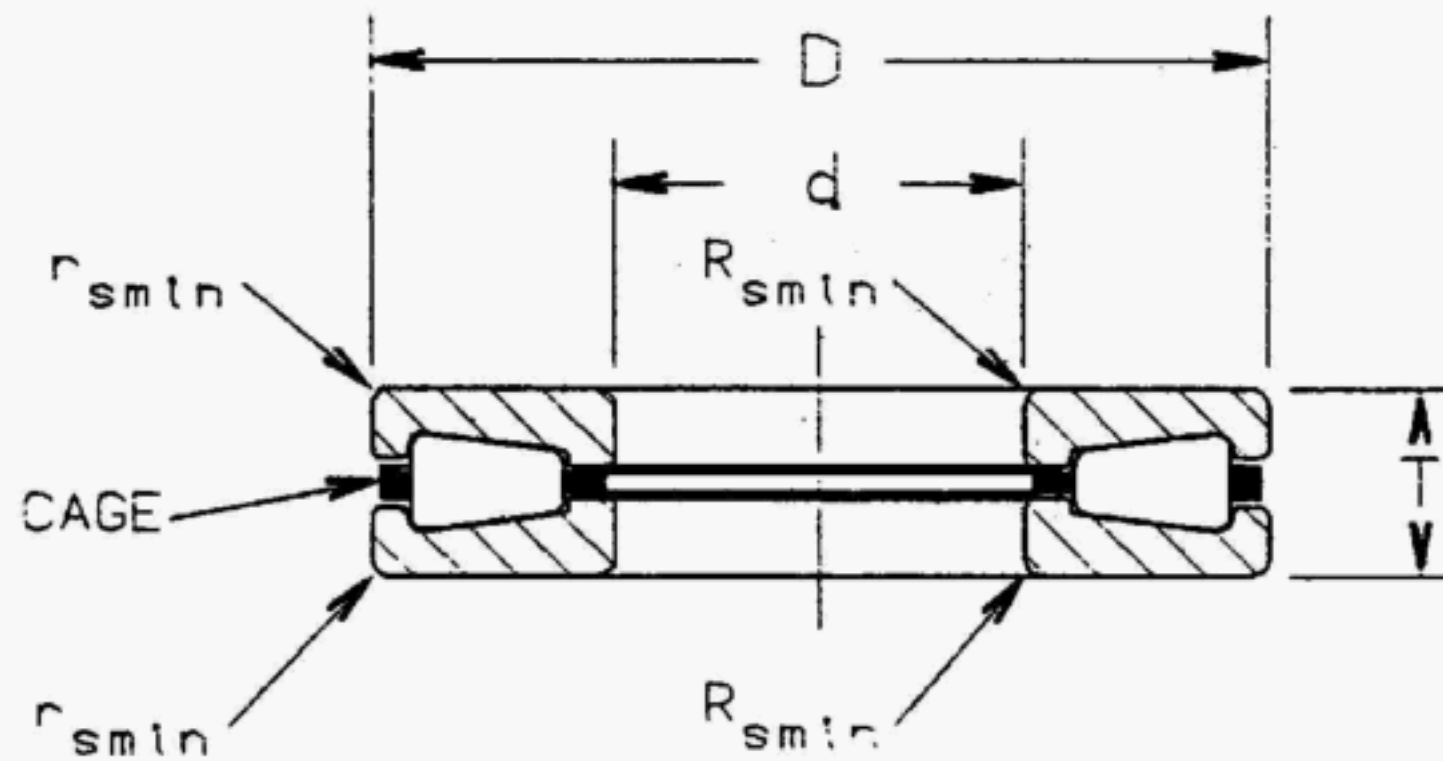
Dimensions in inches

BEARING NUMBER ⁽²⁾	d	D	T	R _{smln} ⁽¹⁾
T126	1.2600	2.1875	0.6250	0.03
T127	1.2600	2.6250	0.7656	0.03
T138	1.3850	2.6250	0.7656	0.03
T144	1.4470	2.6250	0.7656	0.06
T152	1.5100	2.8590	0.8125	0.03
T151	1.5100	2.8590	0.8438	0.03
T157	1.5730	2.8590	0.8438	0.03
T163	1.6350	2.8590	0.8438	0.03
T169	1.6970	3.2660	0.9375	0.03
T176	1.7600	3.2660	0.9375	0.03
T177	1.7717	2.8740	0.7874	0.03
T182	1.8220	3.2660	0.9375	0.03
T189	1.8850	3.2660	0.9063	0.03
T188	1.8850	3.2660	0.9375	0.03
T193	1.9470	3.6720	1.0310	0.03
T194	1.9470	3.6720	1.0620	0.03
T201	2.0100	3.6720	1.0310	0.13
T202	2.0100	3.6720	1.0620	0.13
T209	2.0720	3.6720	1.0310	0.03
T208	2.0720	3.6720	1.0620	0.03
T252	2.5100	4.3750	1.0156	0.03
T251	2.5100	4.3750	1.0625	0.03
T301	3.0100	5.2500	1.3125	0.09
T302	3.0100	5.2500	1.3750	0.09
T350	3.5000	5.2500	1.3124	0.11
T402	4.0200	7.0716	1.7500	0.06

(1) The largest single shaft and housing radius must not exceed the smallest single chamfer dimension (shaft ring or housing ring).

(2) These bearings can be supplied with oil holes in the retainer band in which case the suffix W is added to the bearing number.

TABLE 5
BOUNDARY DIMENSIONS
TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
HEAVY DUTY, TYPE TTHD

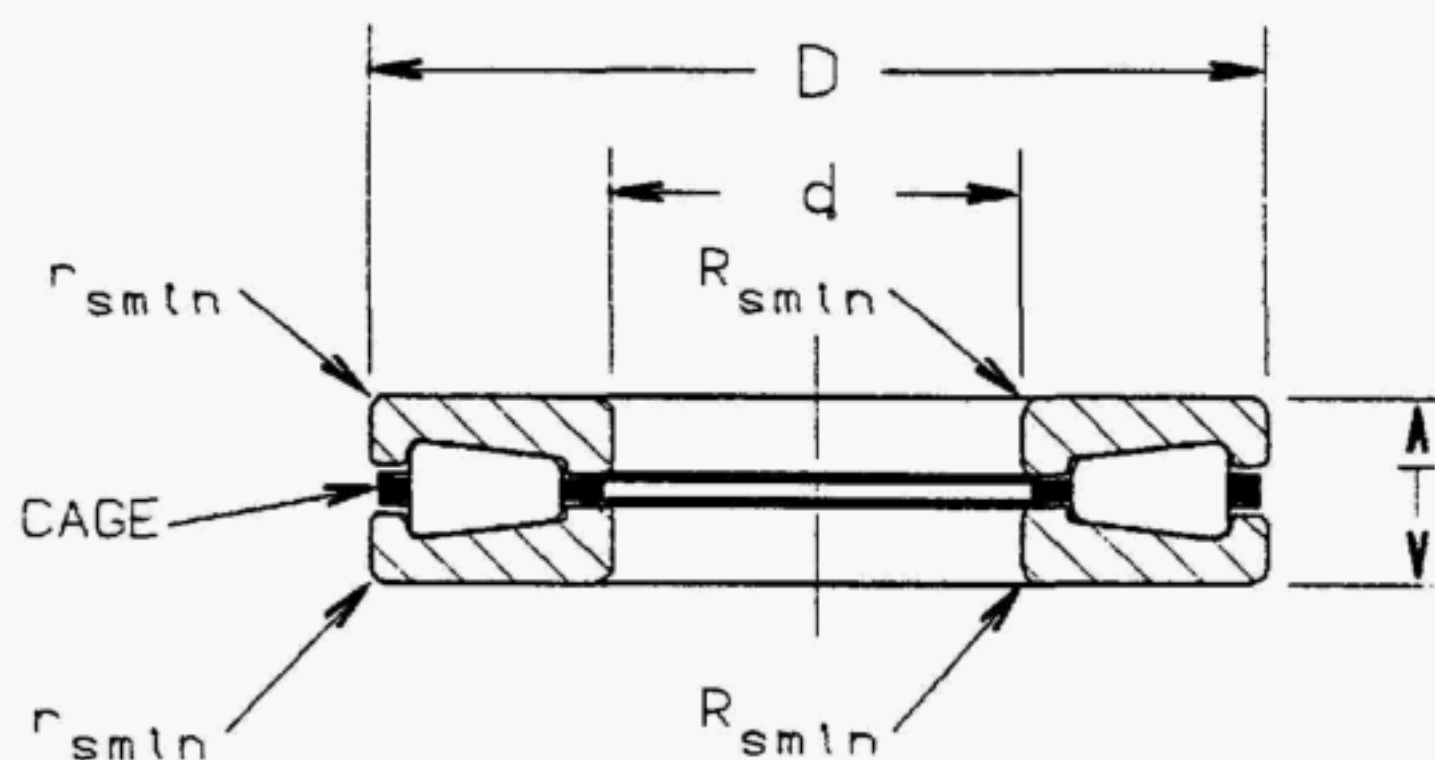
**Part I**

Dimensions in millimetres

BEARING NUMBER	d	D	T	$R_{smin}^{(1)}$	$r_{smin}^{(1)}$
T135	34.925	76.200	15.875	1.5	1.5
T1750	44.450	84.734	18.258	2.3	2.3
T200A	50.800	109.538	22.225	2.3	2.3
T2520	63.500	117.475	25.400	2.3	2.3
T311	76.200	161.925	33.338	3.3	3.3
T411	101.600	215.900	46.038	3.3	3.3
T441	111.760	223.520	55.880	3.3	3.3
T451	114.300	250.825	53.975	4.0	4.0
T520	127.000	250.825	55.562	4.8	4.8
T511	127.000	266.700	58.738	4.8	4.8
T511A	128.588	266.700	58.738	4.8	4.8
T611	152.400	317.500	69.850	6.4	6.4
T651	165.100	311.150	88.900	6.4	6.4
T661	168.275	304.800	69.850	6.4	6.4
T691	174.625	358.775	82.550	6.4	6.4
T711	177.800	368.300	82.550	8.0	8.0
T7519	190.000	355.600	74.219	6.4	6.4
T811	203.200	419.100	92.075	9.7	9.7
T811X	203.200	419.100	120.650	9.7	9.7
T9020	228.600	431.800	88.773	9.7	9.7
T911	228.600	482.600	104.775	11.2	11.2
T911A	234.950	482.600	104.775	11.2	11.2
T921	234.950	546.100	127.000	16.0	16.0
T1011	254.000	539.750	117.475	11.2	11.2
T1120	279.400	603.250	136.525	11.2	11.2
T14520	368.300	603.250	120.650	9.7	9.7
T16021	406.400	711.200	146.050	9.7	9.7
T16050	406.400	838.200	177.800	12.7	12.7
T20020	508.000	990.600	196.850	12.7	12.7
T48000	1219.200	1524.000	136.525	9.7	9.7

(1) The largest single shaft and housing radius must not exceed the smallest single chamfer dimension (shaft ring or housing ring).

TABLE 5
BOUNDARY DIMENSIONS
TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
HEAVY DUTY, TYPE TTHD

**Part II**

Dimensions in inches

BEARING NUMBER	d	D	T	$R_{smln}^{(1)}$	$r_{smln}^{(1)}$
T135	1.3750	3.0000	0.6250	0.06	0.06
T1750	1.7500	3.3360	0.7188	0.09	0.09
T200A	2.0000	4.3125	0.8750	0.09	0.09
T2520	2.5000	4.6250	1.0000	0.09	0.09
T311	3.0000	6.3750	1.3125	0.13	0.13
T411	4.0000	8.5000	1.8125	0.13	0.13
T441	4.4000	8.8000	2.2000	0.13	0.13
T451	4.5000	9.8750	2.1250	0.16	0.16
T520	5.0000	9.8750	2.1875	0.19	0.19
T511	5.0000	10.5000	2.3125	0.19	0.19
T511A	5.0625	10.5000	2.3125	0.19	0.19
T611	6.0000	12.5000	2.7500	0.25	0.25
T651	6.5000	12.2500	3.5000	0.25	0.25
T661	6.6250	12.0000	2.7500	0.25	0.25
T691	6.8750	14.1250	3.2500	0.25	0.25
T711	7.0000	14.5000	3.2500	0.31	0.31
T7519	7.4803	14.0000	2.9220	0.25	0.25
T811	8.0000	16.5000	3.6250	0.38	0.38
T811X	8.0000	16.5000	4.7500	0.38	0.38
T9020	9.0000	17.0000	3.4950	0.38	0.38
T911	9.0000	19.0000	4.1250	0.44	0.44
T911A	9.2500	19.0000	4.1250	0.44	0.44
T921	9.2500	21.5000	5.0000	0.63	0.63
T1011	10.0000	21.2500	4.6250	0.44	0.44
T1120	11.0000	23.7500	5.3750	0.44	0.44
T14520	14.5000	23.7500	4.7500	0.38	0.38
T16021	16.0000	28.0000	5.7500	0.38	0.38
T16050	16.0000	33.0000	7.0000	0.50	0.50
T20020	20.0000	39.0000	7.7500	0.50	0.50
T48000	48.0000	60.0000	5.3750	0.38	0.38

(1) The largest single shaft and housing radius must not exceed the smallest single chamfer dimension (shaft ring or housing ring).

4. TOLERANCES

4.1 Symbols and Nomenclature

Δ_{dmp} = single plane mean bore diameter deviation

Δ_{Dmp} = single plane mean outside diameter deviation

Δ_{Ts} = thrust bearing height deviation

TABLE 6
TOLERANCES

TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
STEERING PIVOT WITH RETAINER BAND AND CAGELESS WITH RETAINER BAND,
TYPES TTSP, TTC, TTCS

PART I

Dimensions in millimetres
Deviations in micrometres

d		Δ_{dmp}	
OVER	INCL.	HIGH	LOW
0	25.400	+76	-76
25.400	76.200	+102	-102
76.200	—	+127	-127

D		Δ_{Dmp}	
OVER	INCL.	HIGH	LOW
0	127.000	+254	-0
127.000	203.200	+381	-0
203.200	—	+508	-0

d		Δ_{Ts}	
OVER	INCL.	HIGH	LOW
0	76.200	+254	-254
76.200	127.000	+381	-381
127.000	—	+508	-508

PART II

Dimensions in inches
Deviations in .0001 inches

d		Δ_{dmp}	
OVER	INCL.	HIGH	LOW
0	1.0000	+30	-30
1.0000	3.0000	+40	-40
3.0000	—	+50	-50

D		Δ_{Dmp}	
OVER	INCL.	HIGH	LOW
0	5.0000	+100	-0
5.0000	8.0000	+150	-0
8.0000	—	+200	-0

d		Δ_{Ts}	
OVER	INCL.	HIGH	LOW
0	3.0000	+100	-100
3.0000	5.0000	+150	-150
5.0000	—	+200	-200

TABLE 7
TOLERANCES
TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
HEAVY DUTY, TYPE TTHD

PART I

Dimensions in millimetres
 Deviations in micrometres

d		Δ_{dmp}	
OVER	INCL.	HIGH	LOW
0	304.800	+25	-0
304.800	609.600	+51	-0
609.600	914.400	+76	-0
914.400	1219.200	+102	-0

D		Δ_{Dmp}	
OVER	INCL.	HIGH	LOW
0	304.800	+25	-0
304.800	609.600	+51	-0
609.600	914.400	+76	-0
914.400	1219.400	+102	-0
1219.200	—	+127	-0

d		Δ_{Ts}	
OVER	INCL.	HIGH	LOW
ALL SIZES		+381	-381

PART II

Dimensions in inches
 Deviations in .001 inches

d		Δ_{dmp}	
OVER	INCL.	HIGH	LOW
0	12.0000	+10	-0
12.0000	24.0000	+20	-0
24.0000	36.0000	+30	-0
36.0000	48.0000	+40	-0

D		Δ_{Dmp}	
OVER	INCL.	HIGH	LOW
0	12.0000	+10	-0
12.0000	24.0000	+20	-0
24.0000	36.0000	+30	-0
36.0000	48.0000	+40	-0
48.0000	—	+50	-0

d		Δ_{Ts}	
OVER	INCL.	HIGH	LOW
ALL SIZES		+150	-150

5. MOUNTING DIMENSIONS

TABLE 8
MOUNTING DIMENSIONS

TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
STEERING PIVOT WITH RETAINER BAND AND CAGELESS WITH RETAINER BAND,
TYPES TTSP, TTC, TTCS

PART I

Dimensions in millimetres
Deviations in micrometres

d		Shaft Diameter Deviation from d	
Over	Incl.	High	Low
0	25.400	-203	-356
25.400	76.200	-229	-432
76.200	147.638	-254	-508

D		Housing Diameter Deviation from D	
Over	Incl.	High	Low
0	127.000	SEE NOTE BELOW	+1041
127.000	177.800		+1168

Note: May be completely unhoused

PART II

Dimensions in inches
Deviations in .0001 inches

d		Shaft Diameter Deviation from d	
Over	Incl.	High	Low
0	1.0000	-80	-140
1.0000	3.0000	-90	-170
3.0000	5.8125	-100	-200

D		Housing Diameter Deviation from D	
Over	Incl.	High	Low
0	5.0000	SEE NOTE BELOW	+410
5.0000	7.0000		+460

Note: May be completely unhoused

TABLE 9
MOUNTING DIMENSIONS
TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
HEAVY DUTY, TYPE TTHD

PART I

Dimensions in millimetres
 Deviations in micrometres

Bore Diameter d		General Continuous Rotation		Spring Loaded		Rolling Mill Screw Down & Piercing Mill Thrust Blocks	
		Shaft Dia. Deviation from d		Shaft Dia. Deviation from d		Shaft Dia. Deviation from d	
Over	Incl.	High	Low	High	Low	High	Low
0	174.625	+ 76	+ 51	-0	-25	+76	+ 51
174.625	203.197	+ 76	+ 51	-0	-25	+102	+ 76
203.197	304.800	+ 76	+ 51	-0	-38	+127	+102
304.800	609.600	+127	+ 76	-0	-51	+178	+127
609.600	914.400	+178	+102				
914.400	1219.200	+229	+127				

		General Rolling Mill Screw Down & Piercing Mill Thrust Block	Spring Loaded	
Outside Diameter D		Housing Diameter Deviation from D	Housing Diameter Deviation from D	
Over	Incl.		High	Low
0	266.697	Provide Clearance	+ 64	+25
266.697	355.597		+ 76	+25
355.597	507.997		+102	+51
507.997	634.997		+114	+51
634.997	761.997		+127	+76
761.997	—		+178	+76

These mounting dimensions are intended as a general guide. Users are directed to consult individual manufacturers for recommendations on specific applications.

TABLE 9
MOUNTING DIMENSIONS
TAPERED ROLLER THRUST BEARINGS - INCH DESIGN
HEAVY DUTY, TYPE TTHD

PART II

Dimensions in inches
 Deviations in .0001 inches

Bore Diameter d		General Continuous Rotation		Spring Loaded		Rolling Mill Screw Down & Piercing Mill Thrust Blocks	
		Shaft Dia. Deviation from d		Shaft Dia. Deviation from d		Shaft Dia. Deviation from d	
Over	Incl.	High	Low	High	Low	High	Low
0	6.8750	+30	+20	-0	-10	+30	+20
6.8750	7.9999	+30	+20	-0	-10	+40	+30
7.9999	12.0000	+30	+20	-0	-15	+50	+40
12.0000	24.0000	+50	+30	-0	-20	+70	+50
24.0000	36.0000	+70	+40				
36.0000	48.0000	+90	+50				

		General Rolling Mill Screw Down & Piercing Mill Thrust Block	Spring Loaded	
Outside Diameter D		Housing Diameter Deviation from D	Housing Diameter Deviation from D	
Over	Incl.		High	Low
0	10.4999	Provide Clearance	+25	+10
10.4999	13.9999		+30	+10
13.9999	19.9999		+40	+20
19.9999	24.9999		+45	+20
24.9999	29.9999		+50	+30
29.9999	—		+70	+30

These mounting dimensions are intended as a general guide. Users are directed to consult individual manufacturers for recommendations on specific applications.

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The standard in this booklet is one of more than 10,000 standards approved to date by the American National Standards Institute.

The Standards Institute provides the machinery for creating voluntary standards. It serves to eliminate duplication of standards activities and to weld conflicting standards into single, nationally accepted standards under the designation "American National Standards."

Each standard represents general agreement among maker, seller, and user groups as to the best current practice with regard to some specific problem. Thus the completed standards cut across the whole fabric of production, distribution, and consumption of goods and services. American National Standards, by reason of Institute procedures, reflect a national consensus of manufacturers, consumers, and scientific, technical, and professional organizations, and governmental agencies. The completed standards are used widely by industry and commerce and often by municipal, state, and federal governments.

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**American National Standards Institute, Inc
1430 Broadway
New York, N.Y. 10018**