



Radial

Unmounted bearing assembly consisting of through hardened inner and outer raceways with cylindrical rolling elements separated by steel, brass or cast iron retainers (cage). The retainer can be land or roller riding depending on the type of inner and outer raceway flange configuration. Radial roller bearings provide an antifriction solution when supporting rotating shafts with radial loads.

Bearing Configurations

Separable Or Non-Separable Inner/Outer Raceway

Flange Styles

Single, Double, Loose Flange

Bore Diameter Size Range

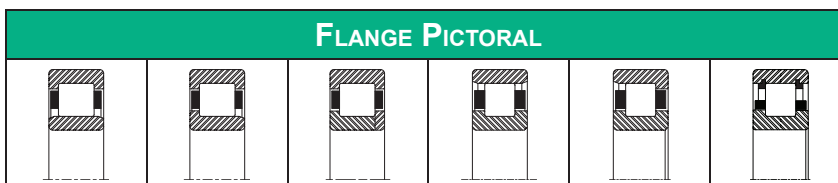
30 mm to 440 mm (1.181" to 17.323")

Materials

Bearing Quality Steel



Radial Selection Guide



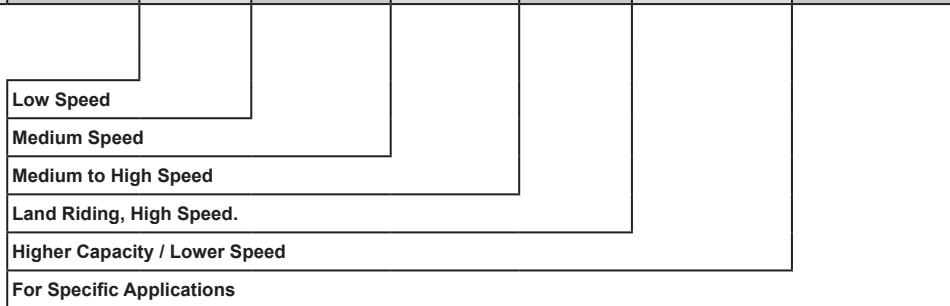
		Description	Inner Race Separable, both Directions	Inner race separable, one direction	Two piece inner race, four flange design	Outer race separable in both directions	Outer race separable, one direction	Non separable	Size Range
	ISO	NU-xxxx-E	X						35mm - 140mm
	Tru-Rol	E-xxxx-U	X						30mm - 280mm
	Tru-Rol	E-xxxx-B	X						30mm - 160mm
	Max	MUC-xxx	X						140mm - 440mm
	ISO	NJ-xxxx-E		X					35mm - 140mm
	Tru-Rol	L-xxxx-U		X					30mm - 300mm
	Max	MUL-xxxx		X					140mm - 440mm
	Tru-Rol	U-xxxx-B						X	30mm - 150mm

*For estimating purpose only, individually sizes may vary and are subject to change without notification





DESIGN CHARACTERISTICS				Features						Page No.
Radial Load	Thrust Load	High Speed	Relative Base Cost *	Stamped Steel Retainer	Segmented Steel Retainer	Two Piece Brass Retainer	One Piece Brass Retainer	Full complement of Rollers / no retainer	Radial Clearances Greater/less than standard	Page No.
●	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-16
●	○	●	\$	Opt	S	Opt	Opt	N/A	Opt	E-16
●	○	●	\$	Opt	S	Opt	Opt	N/A	Opt	E-16
●	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-28
●	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-16
●	○	●	\$	Opt	S	Opt	Opt	N/A	Opt	E-16
●	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-28
●	○	●	\$	Opt	S	Opt	N/A	N/A	Opt	E-16



Opt = Optional
S = Standard
○ = Not Recommended
 ○ ● ● ● ●
Poor ← → Best



Radial Selection Guide

		FLANGE PICTORAL							
	Description	Inner Race Separable, both Directions	Inner race separable, one direction	Two piece inner race, four flange design	Outer race separable in both directions	Outer race separable, one direction	Non separable	Size Range	
	ISO N-xxxx-E				X			35mm - 140mm	
	Tru-Rol U-xxxx-E				X			30mm - 300mm	
	Max MCS-xxxx				X			140mm - 440mm	
	Tru-Rol U-xxxx-L					X		30mm - 300mm	
	Max ML-xxxx					X		140mm - 440mm	
	ISO NUP-xxx-E			X				35mm - 140mm	
	Tru-Rol LP-xxxx-U			X				30mm - 300mm	
	Max MU-xxxx			X				140mm - 440mm	

*For estimating purpose only, individually sizes may vary and are subject to change without notification





DESIGN CHARACTERISTICS				Features						
Radial Load	Thrust Load	High Speed	Relative Base Cost *	Stamped Steel Retainer	Segmented Steel Retainer	Two Piece Brass Retainer	One Piece Brass Retainer	Full complement of Rollers / no retainer	Radial Clearances Greater/less than standard	Page No.
○	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-16
●	○	○	\$	Opt	S	Opt	Opt	N/A	Opt	E-16
○	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-28
●	○	○	\$	Opt	S	Opt	Opt	N/A	Opt	E-16
○	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-28
○	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-16
●	○	○	\$	Opt	S	Opt	Opt	N/A	Opt	E-16
○	○	●	\$\$	Opt	Opt	S	Opt	N/A	Opt	E-28

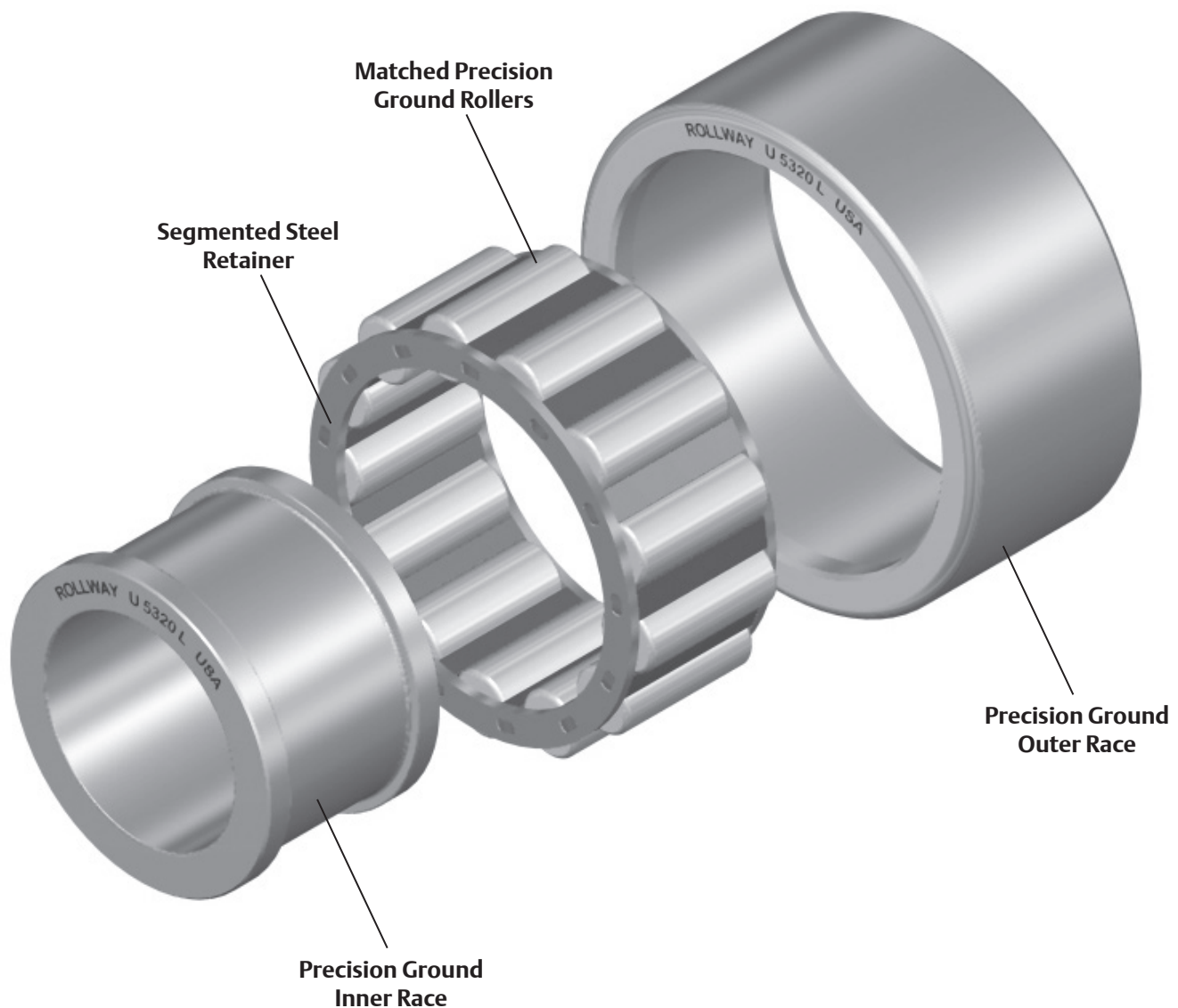
Low Speed	Stamp	Seg	Two Piece	One Piece	Full complement	Radial Clearances
Medium Speed	Stamp	Seg	Two Piece	One Piece	Full complement	Radial Clearances
Medium to High Speed	Stamp	Seg	Two Piece	One Piece	Full complement	Radial Clearances
Land Riding, High Speed.	Stamp	Seg	Two Piece	One Piece	Full complement	Radial Clearances
Higher Capacity / Lower Speed	Stamp	Seg	Two Piece	One Piece	Full complement	Radial Clearances
For Specific Applications	Stamp	Seg	Two Piece	One Piece	Full complement	Radial Clearances

Opt = Optional
S = Standard
○ = Not Recommended
 ○ ○ ○ ○ ●
Poor ← → Best



Rollway Radial Roller Bearings

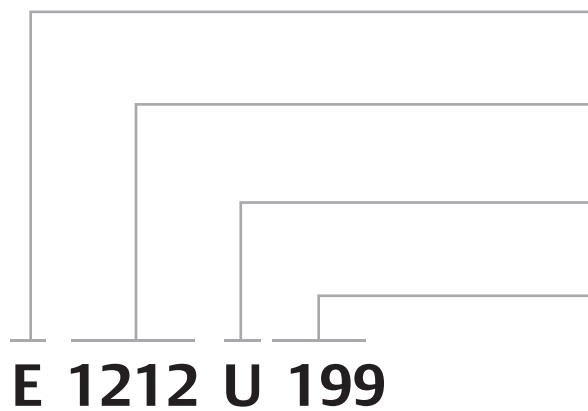
Rollway Radial bearings utilize crowned cylindrical rollers for more dynamic capacity and longer life than comparable ball bearings. These bearings also feature through hardened bearing quality steel raceways and a variety of retainer (cage) options depending on the load/speed requirements of the application (Rollway radial roller bearings are available with standard clearance, as well as clearance ranges greater and less than standard, in order to accommodate application requirements). Depending on your preference, these bearings are available in a wide variety of sizes and options as illustrated on the pages to follow.





Rollway Radial Roller Nomenclature

TRU-ROL Numbering



Prefix

Inner Race Description

Size Designator

Available Series

Suffix

Outer Race Description

Variation Code

Variation Codes Are Divided Into Two Categories; Special And Standard.

E 1212 U 199

Prefix

E - Inner Race Separable Both Directions.

L - Inner Race Separable One Direction.

LP - Two-Piece Inner Race, One Part Is Separable One Direction, The Other Is A Thrust Plate To Form A Channeled Race Assembly.

U - Inner Race With Two Flanges, Non-Separable.

UM - Inner Race With Two Flanges, Non-Separable, Full Complement Of Rollers.

None - No Inner Race Supplied.

Separable.

Variation Codes

Special variation codes

101 to 129 - are numerically assigned codes that designate the variation from standard (example 101 = 1st variation, 102 = 2nd variation, etc.). These bearing code numbers do not in any way reference the modification from standard. Application Engineering must be contacted for information concerning a particular modification.

Size Designator

Available Series; 1000, 1200, 1300, 5200, 5300 And 6200.

Standard variation codes

001 to 099 and 130 to 199 - are code numbers representing standard modifications. The most popular are listed below:

Suffix

E (EMR) - Outer Race Separable Both Directions.

L (LMR) - Outer Race Separable One Direction.

LP (LPMR) - Two-Piece Outer Race, One Part Is Separable One Direction, The Other A Thrust Plate To Form A Channeled Race Assembly.

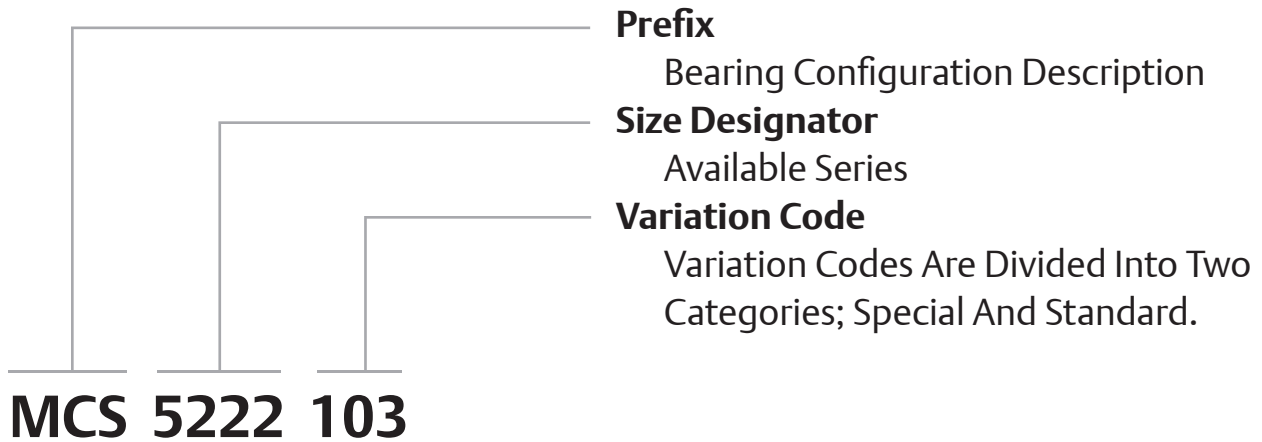
U (UMR) - Outer Race With Two Flanges, Non Separable.

B - Outer Race With Two Snap Rings To Retain The Roller Set, Non-Separable.

J - Outer Race With One Snap Ring And One Flange To Retain The Roller Set, Non

- **K** - Over sized OD.
- **003** - Rollway internal clearance Class 3.
- **005** - Rollway internal clearance Class 5.
- **007** - Rollway internal clearance Class 7.
- **019** - Outer race with SAE ring groove around OD.
- **027** - Outer race with blind hole or locating slot in outer race.
- **191** - Broached retainer.
- **199** - Bearing with SAE ring groove on OD and snap ring furnished.

Rollway Radial Roller Nomenclature MAX Numbering



Prefix

Bearing Configuration Description

Size Designator

Available Series

Variation Code

Variation Codes Are Divided Into Two Categories; Special And Standard.

Prefix

ML - Bearing assembly with roller assembly retained in inner race, outer race separable one direction.

MCS - Bearing assembly with roller assembly retained in inner race, outer race separable both directions.

MN - Bearing assembly with roller assembly retained in inner race. Two-piece outer race, one part is separable one direction, the other is a thrust plate to form a channel race.

MS - Bearing assembly with roller assembly retained in inner race. Outer race with two snap rings to retain the roller set, non-separable.

M - Bearing assembly with roller assembly retained in inner race. Outer race with two snap rings to retain the roller set, non-separable with a full complement of rollers.

MUC - Bearing assembly with inner race separable both directions. Roller assembly retained in outer race.

MUL - Bearing assembly with inner race separable one direction. Roller assembly retained in outer race.

MU - Bearing with a two-piece inner race, one part is separable one direction, the other is a thrust plate to form a channeled race. Outer race retains the roller assembly.

MR - Bearing with a two-piece inner race, one part is separable one direction, the other is an HJ ring to form a channel race. Outer race retains the roller assembly.

Size Designator

Available series; 100, 200, 300, 5000 and 5100.

Variation Codes

Special variation codes

101 to 199 - are numerically assigned codes that designate the numerical variation from standard (example 101 = 1st variation, 102 = 2nd variation, etc.). These bearing code numbers do not in any way reference the modification from standard. Application Engineering must be contacted for information concerning a particular modification.

Standard variation codes

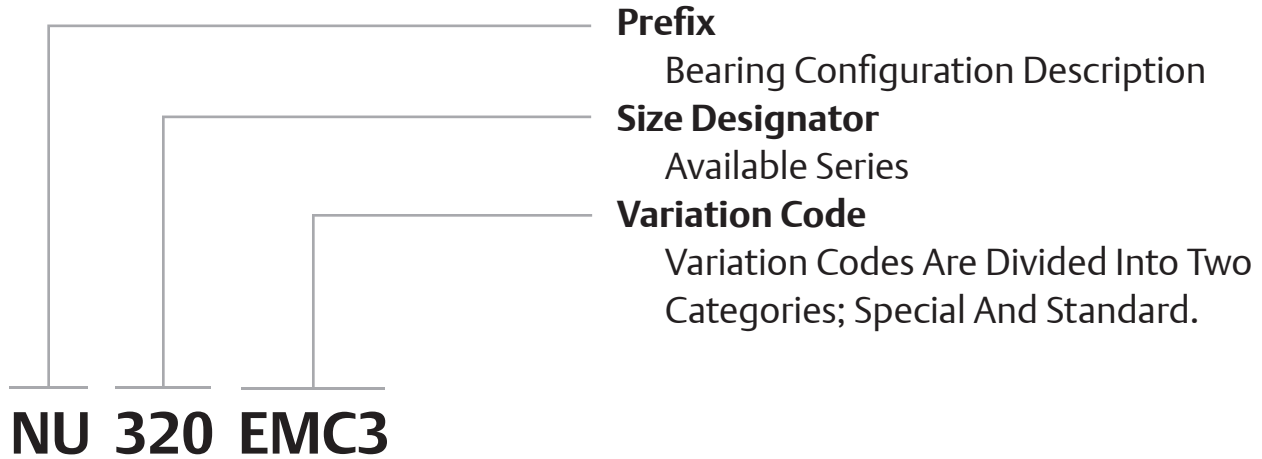
001 to 099 - are code numbers representing standard modifications. The most popular are listed below:

- **003** - Rollway internal clearance Class 3.
- **005** - Rollway internal clearance Class 5.
- **007** - Rollway internal clearance Class 7.



Rollway Radial Roller Nomenclature

ISO Numbering



Prefix

NU - Bearing assembly with inner race separable both directions. Roller assembly retained in outer race.

NUP - Bearing with a two piece inner race, one part is separable one direction, the other is a thrust plate to form a channeled race. Outer race retains the roller assembly.

NJ - Bearing assembly with inner race separable one direction. Roller assembly retained in outer race.

N - Bearing assembly with roller assembly retained in inner race. Outer race separable both directions.

Standard variation codes

Are code numbers representing standard modifications. The most popular are listed below:

- **E** - Extra capacity design
- **M** - Machined brass retainer
- **C2** - ABMA internal clearance symbol 2
- **C3** - ABMA internal clearance symbol 3
- **C4** - ABMA internal clearance symbol 4
- **S1** - Bearing is stabilized for operation at 390°F

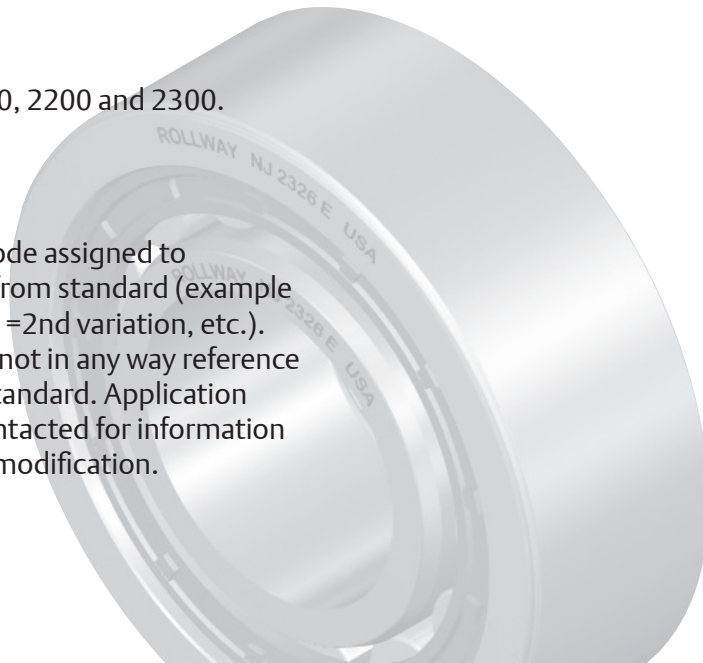
Size Designator

Available series; 200, 300, 2200 and 2300.

Variation Codes

Special variation codes

VAA - begins an alpha code assigned to designate the variation from standard (example VAA = 1st variation, VAB = 2nd variation, etc.). These bearing codes do not in any way reference the modification from standard. Application Engineering must be contacted for information concerning a particular modification.

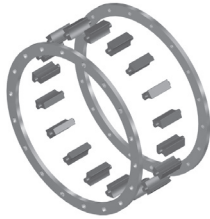




Features and Benefits

Unmounted Internal Clearances

Rollway's standard is C3, though other unmounted internal clearances are readily available.



Retainers

Standard retainer options include segmented steel or machined brass, which are detailed on the following pages.



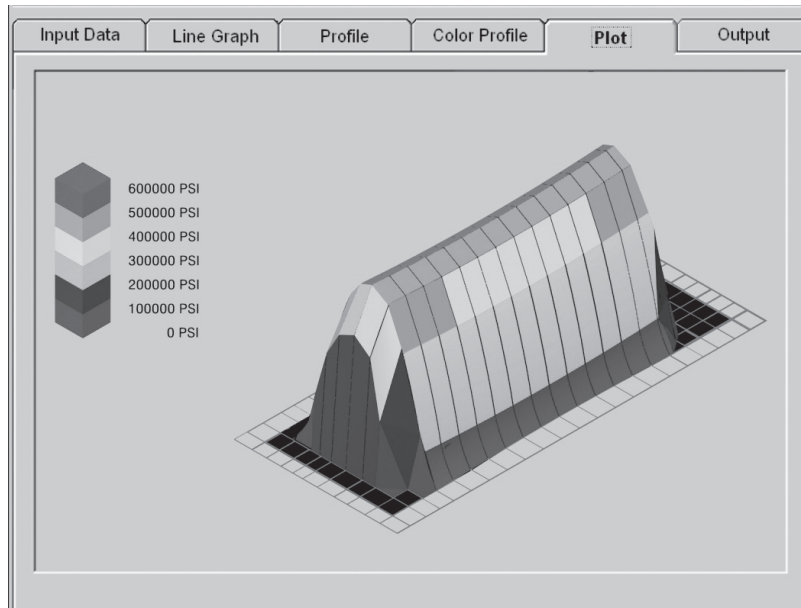
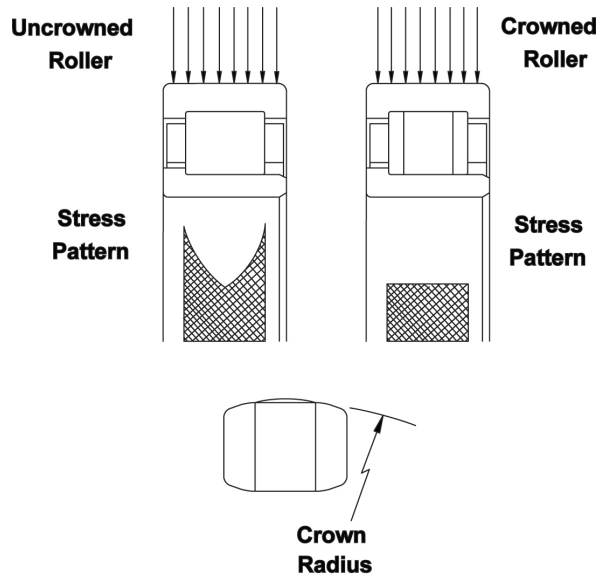
Precision Ground Inner and Outer Races

Races are manufactured from through hardened bearing grade steel. Surfaces are precision ground to RBEC 1 and stabilized to 335°F.

Features and Benefits

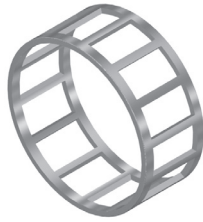
Matched Precision Crowned Rollers

All radial rollers are crowned. Extra capacity bearing designs have larger rollers, maximizing the load carrying potential of the bearing's cross sectional area. Crowned rollers yield a more evenly distributed load pattern on the races, resulting in longer life. All Rollway cylindrical and tapered bearings feature crowned rollers.





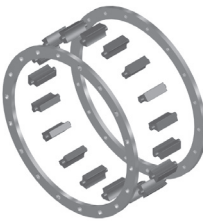
Options



Stamped Steel Retainer

A one-piece, steel stamping. Supplied on some bearings with snap ring retention. (TRU-ROL numbering suffix of “R”) Recommended for low speed operations.

- Stamped Steel
- Rides below pitch circle
- Low Speed
- Used only with Outer Race or Retaining rings
- Rollers guided by raceway flanges
- Well suited for volume production
- Inexpensive in comparison to other retainers



Segmented Steel Retainer

A built-up type of retainer utilizing steel segments rigidly held between stamped, steel end plates. This is the standard retainer supplied with commercial bearings identified with the TRU-ROL numbering system. Recommended for moderate speed applications.

- Formed steel segments held between two steel end plates
- Good roller guidance with minimizing friction
- Flexible – accommodates different widths
- This retainer design is well adapted for volume production



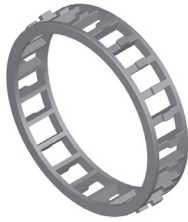
Two-Piece Retainer

This type of retainer is fabricated from brass. This is the standard retainer supplied with Rollway bearings identified with the MAX numbering system, ISO numbering system, TRU-ROL numbering system when the “MR” suffix is used, and any bearing with bore size over 180mm. Recommended for moderate to high speed applications.

- Accurate roller guidance
- Machined Pockets to minimize skewing
- Typically made of brass, cast iron is available for applications where brass cannot be used
- Higher speed applications
- Recommended when torsional loading on retainer is severe.
- Available with most radial roller



Options continued



One-Piece Retainer

This land piloting retainer is fabricated from brass or steel with radial retention of the rollers provided by closing the roller “pocket” with small projections formed by mechanically upsetting the retainer material. This retainer design is typically made to order for high speed applications, though it is applicable for other applications. It should be noted that retainers may be designed for specific applications to enhance bearing performance. Please contact Application Engineering for more information.

- High speed applications
- Made of brass or silver plated steel
- Land riding, minimizing friction between the rollers and the retainer
- Special order only

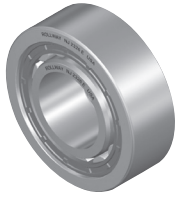
Race and Roller Material

The races and rollers in standard Rollway bearings are made of high alloy, through-hardened and/or case carburized steels that are stabilized for operation up to 250°F for case carburized steel and 335°F for through-hardened steels. For operating temperatures in excess of 335°F, special materials and/or stabilization procedures are necessary.

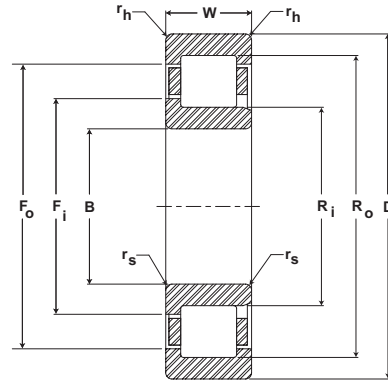
Vacuum-degassed steels are used in standard bearings; however, consumable-electrode remelted steels (from either air CEVM or vacuum-melted electrodes VIMVAR) are available in all alloys and will be supplied upon request.

We also manufacture low quantities of bearing designs with M-50 tool steel for applications requiring high temperature hardness and average operating temperatures over 400°F but less than 800°F.

ROLLWAY® Radial Bearings



- Basic Construction Type:** Cylindrical Roller Bearing
- Rolling Elements:** Crowned Cylindrical Rollers
- Bearing Material:** Through Hardened Bearing Grade Steel
- Retainer Type:** Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight	
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race		
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch		kg lb
30 1.1811	62 2.4409	16 .6299	1.0 .039	1.0 .039	31,942 7,130	31,002 6,920	41.3 1.626	38.0 1.490	51.2 2.030	54.0 2.126	0.2 0.4	
		23.8 .9375	1.0 .039	1.0 .039	47,533 10,610	51,654 11,530	41.3 1.626	38.0 1.498	51.2 2.016	54.0 2.126	0.4 0.9	
		19 .7480	1.5 .059	1.0 .039	44,486 9,930	42,605 9,510	44.6 1.756	40.7 1.602	56.9 2.239	60.4 2.378	0.5 1.1	
	72 2.8346	30.2 1.1875	1.5 .059	1.0 .039	70,918 15,830	77,683 17,340	44.6 1.756	40.7 1.602	56.9 2.239	60.4 2.378	0.6 1.3	
		72 2.8346	17 .6693	1.0 .039	1.0 .039	38,304 8,550	37,094 8,280	48.0 1.890	44.0 1.732	59.4 2.340	62.4 2.457	0.3 0.7
			27 1.0625	1.0 .039	1.0 .039	62,541 13,960	69,754 15,570	48.0 1.890	44.0 1.732	59.4 2.340	62.4 2.457	0.5 1.1
35 1.3780	72 2.8346	54 2.1250	1.0 .039	1.0 .039	107,206 23,930	139,462 31,130	48.0 1.890	44.0 1.732	59.4 2.340	62.4 2.457	1.0 2.2	
		80 3.1496	21 .8268	1.5 .059	1.0 .039	67,155 14,990	66,394 14,820	51.2 2.016	46.2 1.819	65.4 2.575	70.2 2.764	0.5 1.1
			34.9 1.3750	1.5 .059	1.5 .059	87,898 19,620	101,427 22,640	51.1 2.012	46.8 1.844	64.2 2.526	67.9 2.673	0.9 2.0
	80 3.1496	18 .7087	1.5 .059	1.0 .039	46,234 10,320	46,906 10,470	53.4 2.102	49.9 1.966	66.1 2.602	69.6 2.740	0.5 1.1	
		30 1.1875	1.5 .059	1.0 .039	79,296 17,700	93,856 20,950	53.4 2.102	49.9 1.966	66.1 2.602	69.6 2.740	0.7 1.5	
		90 3.5433	23 .9055	1.5 .059	1.5 .059	82,880 18,500	81,581 18,210	57.7 2.272	52.0 2.047	74.4 2.929	80.0 3.150	0.7 1.5
36.5 1.4375	1.5 .059		1.5 .059	110,522 24,670	124,992 27,900	57.4 2.260	52.6 2.059	73.1 2.878	77.9 3.067	1.3 2.9		
40 1.5748	80 3.1496	19 .7480	1.5 .059	1.0 .039	63,571 14,190	67,469 15,060	59.1 2.327	54.5 2.146	72.1 2.839	76.5 3.012	0.6 1.3	
		30.2 1.1875	1.5 .059	1.0 .039	82,029 18,310	101,248 22,600	59.4 2.339	55.5 2.186	71.5 2.815	74.9 2.949	0.8 1.8	
		49.7 1.9625	2.0 .079	1.5 .059	136,998 30,580	163,878 36,580	64.8 2.551	59.4 2.337	81.3 3.201	86.1 3.390	1.7 3.7	
	100 3.9370	25 .9843	1.5 .059	1.5 .059	100,262 22,380	102,592 22,900	64.6 2.543	58.5 2.303	82.5 3.248	88.5 3.484	1.0 2.2	
		85 3.3465	19 .7480	1.5 .059	1.0 .039	51,430 11,480	55,552 12,400	59.4 2.339	55.5 2.186	71.5 2.815	74.9 2.949	0.5 1.1
			30.2 1.1875	1.5 .059	1.0 .039	82,029 18,310	101,248 22,600	59.4 2.339	55.5 2.186	71.5 2.815	74.9 2.949	0.8 1.8
		100 3.9370	25 .9843	2.0 .079	1.5 .059	88,301 19,710	93,184 20,800	64.8 2.551	59.4 2.337	81.3 3.201	86.1 3.390	1.0 2.2
			49.7 1.9625	2.0 .079	1.5 .059	136,998 30,580	163,878 36,580	64.8 2.551	59.4 2.337	81.3 3.201	86.1 3.390	1.7 3.7

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

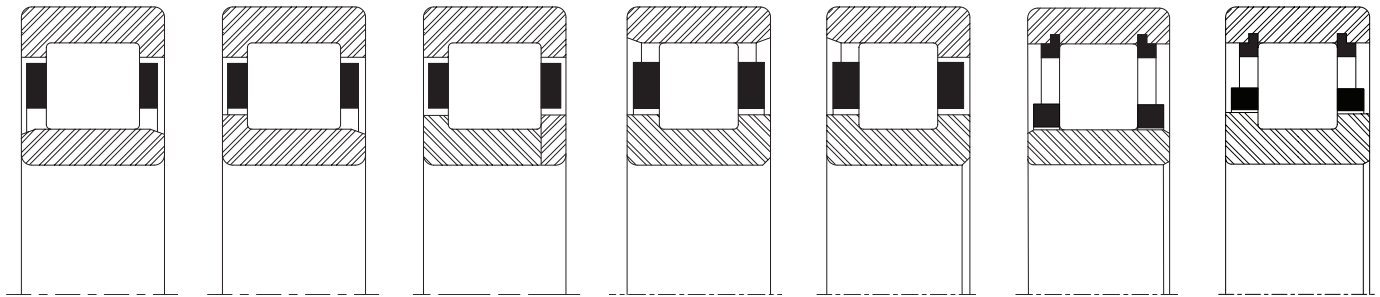
Unless otherwise specified all Rollway radial roller bearings are manufactured to ABMA's RBEC-1 precision class.

*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

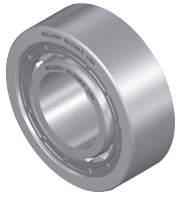
For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



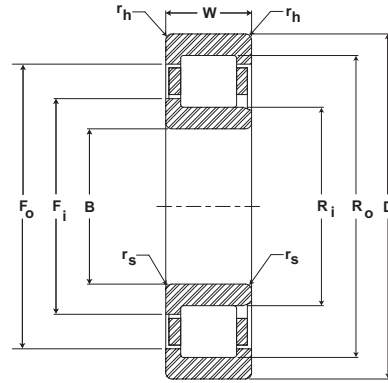
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
E 1206 U	L 1206 U	LP 1206 U	U 1206 E	U 1206 L	E 1206 B	U 1206 B
E 5206 U	L 5206 U	LP 5206 U	U 5206 E	U 5206 L	E 5206 B	U 5206 B
E 1306 U	L 1306 U	LP 1306 U	U 1306 E	U 1306 L	E 1306 B	U 1306 B
E 5306 U	L 5306 U	LP 5306 U	U 5306 E	U 5306 L	E 5306 B	U 5306 B
E 1207 U	L 1207 U	LP 1207 U	U 1207 E	U 1207 L	E 1207 B	U 1207 B
E 5207 U	L 5207 U	LP 5207 U	U 5207 E	U 5207 L	E 5207 B	U 5207 B
E 6207 U	L 6207 U	LP 6207 U	U 6207 E	U 6207 L	E 6207 B	U 6207 B
NU 307 U	NJ 307 E	NUP 307 E	N 307 E	-	-	-
E 1307 U	L 1307 U	LP 1307 U	U 1307 E	U 1307 L	E 1307 B	U 1307 B
E 5307 U	L 5307 U	LP 5307 U	U 5307 E	U 5307 L	E 5307 B	U 5307 B
E 1208 U	L1208 U	LP1208 U	U 1208 E	U 1208 L	E1208 B	U 1208 B
E 5208 U	L 5208 U	LP 5208 U	U 5208 E	U 5208 L	E 5208 B	U 5208 B
NU 308 U	NJ 308 E	NUP 308 E	N 308 E	-	-	-
E 1308 U	L 1308 U	LP 1308 U	U 1308 E	U 1308 L	E 1308 B	U 1308 B
E 5308 U	L 5308 U	LP 5308 U	U 5308 E	U 5308 L	E 5308 B	U 5308 B
NU 209 E	NJ 209 E	NUP 209 E	N 209 E	-	-	-
E 1209 U	L 1209 U	LP 1209 U	U 1209 E	U 1209 L	E 1209 B	U 1209 B
E 5209 U	L 2509 U	LP 2509 U	U 2509 E	U 2509 L	E 2509 B	U 2509 B
E 5309 U	L 5309 U	LP 5309 U	U 5309 E	U 5309 L	E 5309 B	U 5309 B
NU 309 E	NJ 309 E	NUP 309 E	N 309 E	-	-	-
E 1309 U	L 1309 U	LP 1309 U	U 1309 E	U 1309 L	E 1309 B	U 1309 B

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight	
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race		
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb	
50 1.9685	90 3.5433	20 .7874	1.0 .039	1.0 .039	66,528 14,850	73,024 16,300	64.1 2.524	59.5 2.343	77.1 3.035	81.5 3.209	0.6 1.3	
			1.5 .059	1.0 .039	52,416 11,700	58,957 13,160	64.4 2.535	60.5 2.382	76.6 3.015	79.5 3.130	0.6 1.3	
		30.2 1.1875	1.5 .059	1.0 .039	83,597 18,660	107,430 23,980	64.4 2.535	60.5 2.382	76.7 3.018	79.5 3.130	0.9 2.0	
		60.3 2.3750	1.5 .059	1.0 .039	143,360 32,000	214,861 47,960	64.4 2.535	60.5 2.382	76.7 3.018	79.5 3.130	1.7 3.7	
	110 4.3307	27 1.0630	2.0 .079	2.0 .079	113,210 25,270	117,779 26,290	71.4 2.811	65.0 2.559	90.6 3.567	97.0 3.819	1.3 2.9	
			1.5 .059	1.5 .059	102,816 22,950	109,357 24,410	71.0 2.795	65.2 2.565	89.2 3.512	94.5 3.720	1.3 2.9	
		40 1.5748	1.5 .059	1.5 .059	165,760 37,000	192,326 42,930	71.4 2.811	65.2 2.565	89.2 3.512	97.0 3.819	1.9 4.2	
		44.5 1.7475	1.5 .059	1.5 .059	161,683 36,090	195,731 43,690	71.0 2.795	65.0 2.559	89.2 3.512	94.5 3.720	2.3 5.1	
		100 3.9370	21 .8268	2.0 .079	1.5 .059	86,957 19,410	100,262 22,380	70.9 2.791	66.0 2.598	85.2 3.354	90.0 3.543	0.7 1.5
				2.0 .079	1.5 .059	65,318 14,580	75,443 16,840	71.1 2.799	66.9 2.634	84.2 3.316	88.0 3.465	1.0 2.2
33.3 1.3125	2.0 .079		2.0 .079	105,862 23,630	140,358 31,330	71.1 2.799	66.9 2.634	84.2 3.316	88.0 3.465	0.5 1.1		
120 4.7244	29 1.1417		2.0 .079	2.0 .079	139,552 31,150	146,496 32,700	77.6 3.055	70.5 2.776	99.3 3.909	106.5 4.193	1.6 3.5	
		2.0 .079	2.0 .079	116,301 25,960	123,738 27,620	77.9 3.067	71.4 2.812	97.8 3.851	103.6 4.079	1.6 3.5		
	43 1.6929	2.0 .079	2.0 .079	203,571 45,440	238,067 53,140	77.6 3.055	70.5 2.812	99.3 4.228	106.5 4.193	2.4 5.3		
	49.2 1.9375	2.0 .079	2.0 .079	199,405 44,510	247,027 55,140	77.9 3.067	71.4 2.812	97.8 3.850	103.6 4.079	2.8 6.2		
60 2.3622	110 4.3307	22 .8661	1.5 .059	1.5 .059	97,126 21,680	107,251 23,940	77.7 3.059	72.0 2.835	94.4 3.717	100.0 3.937	1.0 2.2	
			2.0 .079	1.5 .059	80,819 18,040	89,958 20,080	76.9 3.028	72.4 2.850	93.2 3.670	97.7 3.846	1.0 2.2	
		36.5 1.4375	2.0 .079	1.5 .059	136,192 30,400	176,019 39,290	76.9 3.028	72.4 2.850	93.2 3.670	97.7 3.846	1.6 3.5	
		73 2.8750	2.0 .079	1.5 .059	233,498 52,120	351,994 78,570	76.9 3.028	72.4 2.850	93.2 3.670	97.7 3.846	3.1 6.8	
	130 5.1181	31 1.2205	2.0 .079	2.0 .079	154,560 34,500	164,550 36,730	84.5 3.327	77.0 3.031	107.4 4.228	115.0 4.528	2.0 4.4	
			2.5 .098	2.0 .079	135,475 30,240	145,914 32,570	84.6 3.331	77.5 3.053	106.3 4.187	112.4 4.425	2.0 4.4	
		46 1.8110	2.0 .079	2.0 .079	227,629 50,810	270,682 60,420	84.5 3.327	77.0 3.031	107.4 4.228	115.0 4.528	2.5 5.5	
		54 2.1250	2.5 .098	2.0 .079	239,411 53,440	303,341 67,710	84.6 3.331	77.5 3.053	106.3 4.190	112.4 4.425	3.9 8.6	

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

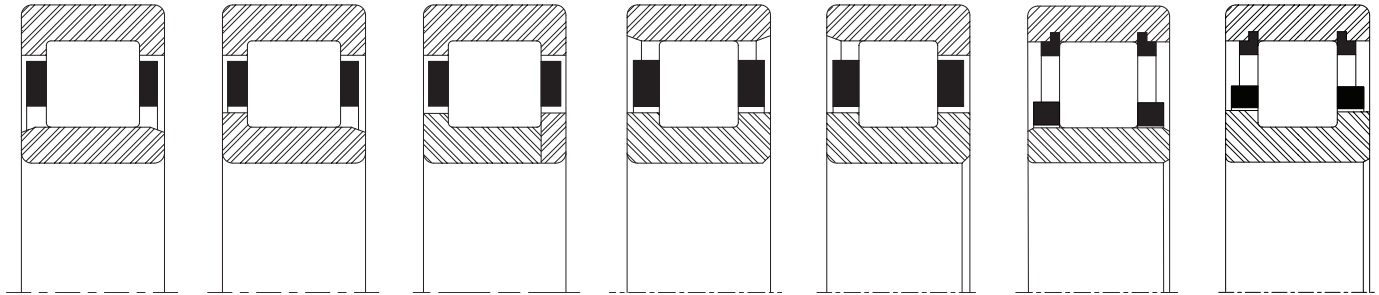
Unless otherwise specified all Rollway radial roller bearings are manufactured to ABMA's RBEC-1 precision class.

*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

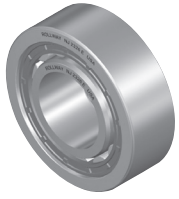
For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



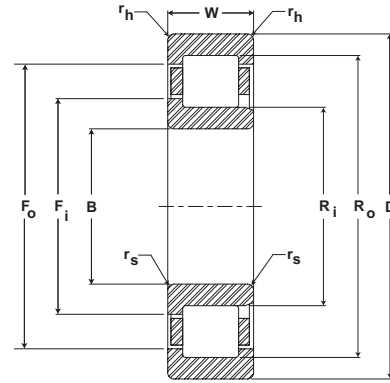
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
NU 210 E	NJ 201 E	NUP 201 E	N 201 E	-	-	-
E 1210 U	L 1210 U	LP 1210 U	U 1210 E	U 1210 L	E 1210 B	U 1210 B
E 5210 U	L 5210 U	LP 5210 U	U 5210 E	U 5210 L	E 5210 B	U 5210 B
E 6210 U	L 6210 U	LP 6210 U	U 6210 E	U 6210 L	E 6210 B	U 6210 B
NU 310 E	NJ 310 E	NUP 310 E	N 310 E	-	-	-
E 1310 U	L 1310 U	LP 1310 U	U 1310 E	U 1310 L	E 1310 B	U 1310 B
NU 2310 E	NJ 2310 E	NUP 2310 E	N 2310 E	-	-	-
E 5310 U	L 5310 U	LP 5310 U	U 5310 E	U 5310 L	E 5310 B	U 5310 B
NU 211 E	NJ 211 E	NUP 211 E	N 211 E	-	-	-
E 1211 U	L 1211 U	LP 1211 U	U 1211 E	U 1211 L	E 1211 B	U 1211 B
E 5211 U	L 5211 U	LP 5211 U	U 5211 E	U 5211 L	E 5211 B	U 5211 B
NU 311 E	NJ 311 E	NUP 311 E	N 311 E	-	-	-
E 1311 U	L 1311 U	LP 1311 U	U 1311 E	U 1311 L	E 1311 B	U 1311 B
NU 2311 E	NJ 2311 E	NUP 2311 E	N 2311 E	-	-	-
E 5311 U	L 5311 U	LP 5311 U	U 5311 E	U 5311 L	E 5311 B	U 5311 B
NU 212 E	NJ 212 E	NUP 212 E	N 212 E	-	-	-
E 1212 U	L 1212 U	LP 1212 U	U 1212 E	U 1212 L	E 1212 B	U 1212 B
E 5212 U	L 5212 U	LP 5212 U	U 5212 E	U 5212 L	E 5212 B	U 5212 B
E 6212 U	L 6212 U	LP 6212 U	U 6212 E	U 6212 L	E 6212 B	U 6212 B
NU 312 E	NJ 312 E	NUP 312 E	N 312 E	-	-	-
E 1312 U	L 1312 U	LP 1312 U	U 1312 E	U 1312 L	E 1312 B	U 1312 B
NU 2312 E	NJ 2312 E	NUP 2312 E	N 2312 E	-	-	-
E 5312 U	L 5312 U	LP 5312 U	U 5312 E	U 5312 L	E 5312 B	U 5312 B

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight			
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race				
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb			
65 2.5591	120 4.7244	23 .9055	1.5	1.5	110,790	124,186	84.6	78.5	102.5	108.5	1.2			
			.059	.059	24,730	27,720	3.331	3.090	4.035	4.272	2.6			
		38.1 1.5000	2.5 .098	1.5	1.5	93,453	111,642	85.3	80.4	101.2	105.7	1.2		
				.059	.059	20,860	24,920	3.358	3.166	3.986	4.161	2.6		
		140 5.5118	33 1.2992	2.0 .079	2.0	2.0	184,710	198,195	90.7	82.5	116.1	124.5	2.5	
					.079	.079	41,230	44,240	3.571	3.248	4.571	4.902	5.5	
	48 1.8898		2.5 .098	2.0	2.0	160,026	175,078	90.7	83.7	114.7	120.2	2.5		
				.079	.079	35,720	39,080	3.571	3.294	4.515	4.732	5.5		
	58.7 2.3125		2.0 .079	2.0	2.0	251,910	295,366	90.7	82.5	116.1	124.5	3.6		
				.079	.079	56,230	65,930	3.571	3.248	4.571	4.902	7.9		
	70 2.7559	125 4.9213	24 .9449	2.0	2.0	111,194	126,067	89.4	83.5	107.2	113.5	1.3		
				.079	.079	24,820	28,140	3.520	3.287	4.291	4.469	2.9		
31 1.2205			2.5 .098	1.5	1.5	105,011	127,142	89.7	84.8	107.2	111.5	1.3		
				.059	.059	23,440	28,380	3.531	3.339	4.213	4.390	2.9		
39.7 1.5625			2.0 .079	1.5	1.5	111,194	126,067	89.4	83.5	107.2	113.5	1.5		
				.059	.059	24,820	28,140	3.520	3.287	4.213	4.469	3.3		
79.4 3.1250			2.5 .098	1.5	1.5	172,211	240,128	89.7	84.8	106.7	111.5	2.2		
				.059	.059	38,440	53,600	3.531	3.339	4.201	4.390	4.8		
150 5.9055			35 1.3780	2.0 .079	2.5	2.5	295,232	480,211	89.7	84.8	106.7	111.5	4.4	
					.098	.059	65,900	107,190	3.531	3.339	4.201	4.390	9.7	
				51 2.0079	3.2 .126	2.0	2.0	208,992	229,331	97.5	89.0	124.2	133.0	3.0
						.079	.079	46,650	51,190	3.839	3.504	4.890	5.236	6.6
		63.5 2.5000		2.0 .126	2.0	2.0	193,760	219,699	97.3	89.2	122.2	129.3	3.0	
					.079	.079	43,250	49,040	3.831	3.511	4.811	5.091	6.6	
		160 6.2992	37 1.4567	2.0 .079	2.0	2.0	278,522	331,699	97.5	89.0	124.2	133.0	4.9	
					.079	.079	62,170	74,040	3.839	3.504	4.890	5.236	10.8	
			55 2.1654	3.2 .126	2.0	2.0	316,064	412,160	97.3	89.2	122.2	129.3	5.9	
					.079	.079	70,550	92,000	3.831	3.511	4.811	5.091	13.0	
			75 2.9528	115 4.5276	20 0.7874	2.0	1.0	61,958	79,117	89.2	85.2	101.0	104.9	0.8
						.079	.039	13,830	17,660	3.512	3.355	3.977	4.130	1.8
130 5.1181		25 .9843			1.5 .059	1.5	1.5	133,683	162,938	94.5	88.5	112.3	118.5	1.4
				.059		.059	29,840	36,370	3.720	3.484	4.420	4.665	3.1	
		41.3 1.6250		2.5 .098	1.5 .059	1.5	1.5	104,608	127,949	94.4	89.0	111.0	115.7	1.4
.059						.059	23,350	28,560	3.717	3.504	4.369	4.555	3.1	
55 2.1654	2.0 .079		1.5 .059	1.5	1.5	165,536	214,458	94.5	88.5	112.3	118.5	1.8		
		.059		.059	36,950	47,870	3.720	3.484	4.421	4.665	4.0			
	68.3 2.6875	2.5 .098	1.5 .059	1.5	1.5	179,334	255,898	94.4	88.9	111.0	115.7	2.7		
.059				.059	40,030	57,120	3.717	3.500	4.270	4.555	5.9			
160 6.2992		37 1.4567	2.0 .079	2.0	2.0	245,146	271,354	104.2	95.0	133.4	143.0	3.6		
	.079			.079	54,720	60,570	4.102	3.740	5.252	5.630	7.9			
	55 2.1654	2.0 .079	2.0 .079	2.0	2.0	192,685	211,635	104.5	95.9	131.4	139.1	3.6		
.126				.079	43,010	47,240	4.114	3.776	5.172	5.476	7.9			
68.3 2.6875	2.0 .079	2.0 .079	2.0	2.0	245,146	271,354	104.2	95.0	133.4	143.0	5.5			
			.079	.079	54,720	60,570	4.102	3.740	5.252	5.630	12.1			
	68.3 2.6875	3.2 .126	2.0 .079	2.0	2.0	369,914	489,485	104.5	95.9	131.4	139.1	7.3		
.126				.079	82,570	109,260	4.114	3.776	5.180	5.476	16.1			

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

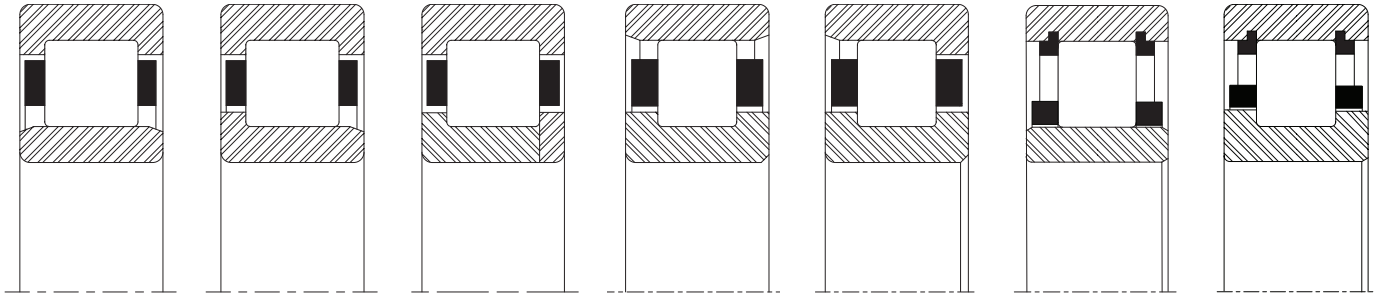
Unless otherwise specified all Rollway radial roller bearings are manufactured to ABMA's RBEC-1 precision class.

*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



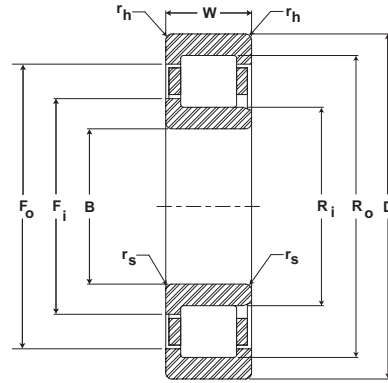
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
NU 213 E	NJ 213 E	NUP 213 E	N 213 E	-	-	-
E 1213 U	L 1213 U	LP 1213 U	U 1213 E	U 1213 L	E 1213 B	U 1213 B
E 5213 U	L 5213 U	LP 5213 U	U 5213 E	U 5213 L	E 5213 B	U 5213 B
NU 313 E	NJ 313 E	NUP 313 E	N 313 E	-	-	-
E 1313 U	L 1313 U	LP 1313 U	U 1313 E	U 1313 L	E 1313 B	U 1313 B
NU 2313 E	NJ 2313 E	NUP 2313 E	N 2313 E	-	-	-
E 5313 U	L 5313 U	LP 5313 U	U 5313 E	U 5313 L	E 5313 B	U 5313 B
NU 214 E	NJ 214 E	NUP 214 E	N 214 E	-	-	-
E 1214 U	L 1214 U	LP 1214 U	U 1214 E	U 1214 L	E 1214 B	U 1214 B
NU 2214 E	NJ 2214 E	NUP 2214 E	N 2214 E	-	-	-
E 5214 U	L 5214 U	LP 5214 U	U 5214 E	U 5214 L	E 5214 B	U 5214 B
E 6214 U	L 6214 U	LP 6214 U	U 6214 E	U 6214 L	E 6214 B	U 6214 B
NU 314 E	NJ 314 E	NUP 314 E	N 314 E	-	-	-
E 1314 U	L 1314 U	LP 1314 U	U 1314 E	U 1314 L	E 1314 B	U 1314 B
NU 2314 E	NJ 2314 E	NUP 2314 E	N 2314 E	-	-	-
E 5314 U	L 5314 U	LP 5314 U	U 5314 E	U 5314 L	E 5314 B	U 5314 B
E 1015 U	L 1015 U	LP 1015 U	U 1015 E	U 1015 L	E 1015 B	U 1015 B
NU 215 E	NJ 215 E	NUP 215 E	N 215 E	-	-	-
E 1215 U	L 1215 U	LP 1215 U	U 1215 E	U 1215 L	E 1215 B	U 1215 B
NU 2215 E	NJ 2215 E	NUP 2215 E	N 2215 E	-	-	-
E 5215 U	L 5215 U	LP 5215 U	U 5215 E	U 5215 L	E 5215 B	U 5215 B
NU 315 E	NJ 315 E	NUP 315 E	N 315 E	-	-	-
E 1315 U	L 1315 U	LP 1315 U	U 1315 E	U 1315 L	E 1315 B	U 1315 B
NU 2315 E	NJ 2315 E	NUP 2315 E	N 2315 E	-	-	-
E 5315 U	L 5315 U	LP 5315 U	U 5315 E	U 5315 L	E 5315 B	U 5315 B

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race	
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb
80 3.1496	140 5.5118	26 1.0236	2.0	2.0	143,136	174,048	101.7	95.3	121.4	127.3	1.7
			.079	.079	31,950	38,850	4.004	3.752	4.780	5.012	3.7
		33 1.2992	2.5	2.0	114,150	137,402	101.7	95.3	119.4	124.6	1.7
			.098	.079	25,480	30,670	4.004	3.752	4.700	4.906	3.7
		44.5 1.7500	2.0	2.0	190,355	251,104	101.7	95.3	121.4	127.3	2.3
			.079	.079	42,490	56,050	4.004	3.752	4.842	5.012	5.1
	170 6.6929	44.5 1.7500	2.5	2.0	202,899	287,750	101.1	95.3	119.4	124.6	3.2
			.098	.079	45,290	64,230	3.980	3.752	4.700	4.906	7.0
		88.9 3.5000	2.5	2.0	202,899	287,750	101.1	95.3	119.4	124.6	0.6
			.098	.079	45,290	64,230	3.980	3.752	4.701	4.906	1.3
		39 1.5354	2.0	2.0	264,410	295,456	110.6	101.0	141.0	151.0	4.3
			.079	.079	59,020	65,950	4.354	3.976	5.551	5.945	9.5
85 3.3465	130 5.1181	22 .8661	2.0	1.5	90,138	122,259	100.8	96.3	113.9	118.7	1.1
			.079	.059	20,120	27,290	3.969	3.792	4.501	4.673	2.4
	28 1.1024	1.5	2.0	169,926	203,974	107.6	100.5	129.3	136.5	2.1	
		.059	.079	37,930	45,530	4.236	3.957	5.091	5.374	4.6	
	36 1.4173	3.2	2.0	139,059	169,971	108.5	102.0	128.4	134.1	2.1	
		.126	.079	31,040	37,940	4.272	4.016	5.056	5.280	4.6	
180 7.0866	41 1.6142	2.5 .098	2.0	2.0	220,506	285,107	107.6	100.5	129.3	136.5	2.9
			.079	.079	49,220	63,640	4.236	3.957	5.091	5.374	6.4
	60 2.3622	3.2	2.0	250,701	362,611	108.5	102.0	128.4	134.1	4.0	
		.126	.079	55,960	80,940	4.272	4.016	5.056	5.280	8.8	
	73 2.8750	2.5	2.5	284,346	321,126	118.0	108.0	149.6	160.0	5.1	
		.098	.098	63,470	71,680	4.646	4.252	5.890	6.299	11.2	
90 3.5433	160 6.2992	30 1.1811	2.0	2.0	187,936	227,808	114.5	107.0	137.4	145.0	2.6
			.079	.079	41,950	50,850	4.508	4.213	5.409	5.709	5.7
		40 1.5748	3.2	2.0	163,072	200,570	114.2	107.2	135.9	142.1	2.7
			.126	.079	36,400	44,770	4.496	4.220	5.350	5.594	5.9
		52.4 2.0625	2.0	2.0	248,237	325,830	114.2	107.0	137.4	145.0	3.4
			.079	.079	55,410	72,730	4.496	4.213	5.409	5.709	7.5
	190 7.4803	43 1.6929	2.0	2.0	290,304	421,075	114.2	107.2	135.9	142.1	5.0
			.079	.079	64,800	93,990	4.496	4.220	5.350	5.594	11.0
		64 2.5197	2.5	2.5	322,112	364,941	124.2	113.5	158.3	169.5	5.9
			.098	.098	71,900	81,460	4.890	4.469	6.232	6.673	13.0
		73 2.8750	4.0	2.5	295,366	344,064	123.4	114.0	156.2	165.3	5.9
			.157	.098	65,930	76,800	4.858	4.488	6.150	6.508	13.0
73 2.8750	2.5	2.5	441,594	547,501	124.2	113.5	158.3	169.5	8.7		
	.098	.098	98,570	122,210	4.890	4.469	6.232	6.673	19.1		
73 2.8750	2.5	2.5	490,202	659,859	123.4	114.0	156.2	165.3	10.0		
	.098	.098	109,420	147,290	4.858	4.488	6.232	6.508	22.0		

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

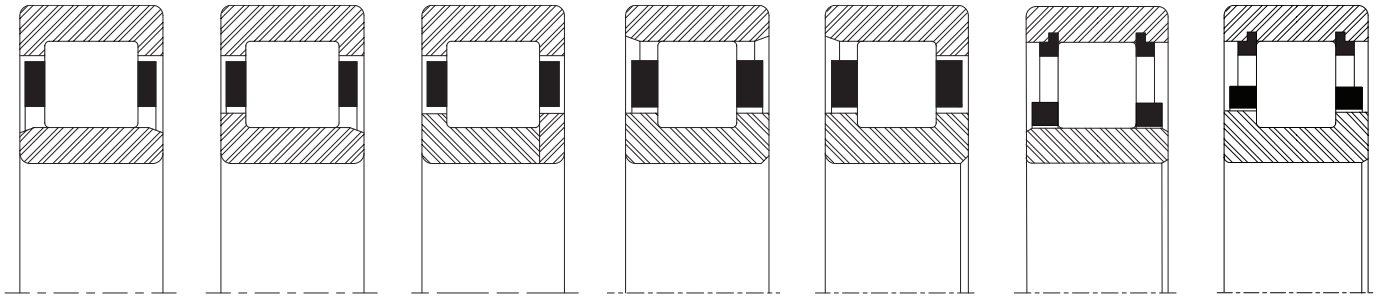
Unless otherwise specified all Rollway radial roller bearings are manufactured to ABMA's RBEC-1 precision class.

*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

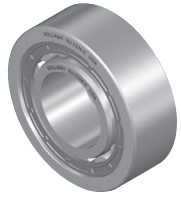
For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



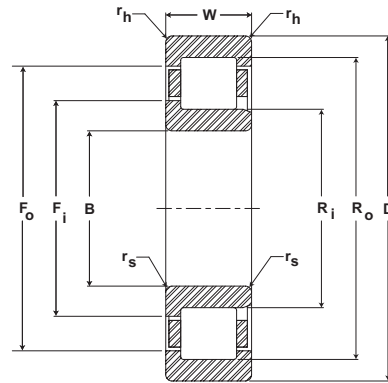
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
NU 216 E	NJ 216 E	NUP 216 E	N 216 E	-	-	-
E 1216 U	L 1216 U	LP 1216 U	U 1216 E	U 1216 L	E 1216 B	U 1216 B
NU 2216 E	NJ 2216 E	NUP 2216 E	N 2216 E	-	-	-
E 5216 U	L 5216 U	LP 5216 U	U 5216 E	U 5216 L	E 5216 B	U 5216 B
E 6216 U	L 6216 U	LP 6216 U	U 6216 E	U 6216 L	E 6216 B	U 6216 B
NU 316 E	NJ 316 E	NUP 316 E	N 316 E	-	-	-
E 1316 U	L 1316 U	LP 1316 U	U 1316 E	U 1316 L	E 1316 B	U 1316 B
NU 2316 E	NJ 2316 E	NUP 2316 E	N 2316 E	-	-	-
E 5316 U	L 5316 U	LP 5316 U	U 5316 E	U 5316 L	E 5316 B	U 5316 B
E 1017 U	L 1017 U	LP 1017 U	U 1017 E	U 1017 L	E 1017 B	U 1017 B
NU 217 E	NJ 217 E	NUP 217 E	N 217 E	-	-	-
E 1217 U	L 1217 U	LP 1217 U	U 1217 E	U 1217 L	E 1217 B	U 1217 B
NU 2217 E	NJ 2217 E	NUP 2217 E	N 2217 E	-	-	-
E 5217 U	L 5217 U	LP 5217 U	U 5217 E	U 5217 L	E 5217 B	U 5217 B
NU 317 E	NJ 317 E	NUP 317 E	N 317 E	-	-	-
E 1317 U	L 1317 U	LP 1317 U	U 1317 E	U 1317 L	E 1317 B	U 1317 B
NU 2317 E	NJ 2317 E	NUP 2317 E	N 2317 E	-	-	-
E 5317 U	L 5317 U	LP 5317 U	U 5317 E	U 5317 L	E 5317 B	U 5317 B
NU 218 E	NJ 218 E	NUP 218 E	N 218 E	-	-	-
E 1218 U	L 1218 U	LP 1218 U	U 1218 E	U 1218 L	E 1218 B	U 1218 B
NU 2218 E	NJ 2218 E	NUP 2218 E	N 2218 E	-	-	-
E 5218 U	L 5218 U	LP 5218 U	U 5218 E	U 5218 L	E 5218 B	U 5218 B
NU 318 E	NJ 318 E	NUP 318 E	N 318 E	-	-	-
E 1318 U	L 1318 U	LP 1318 U	U 1318 E	U 1318 L	E 1318 B	U 1318 B
NU 2318 E	NJ 2318 E	NUP 2318 E	N 2318 E	-	-	-
E 5318 U	L 5318 U	LP 5318 U	U 5318 E	U 5318 L	E 5318 B	U 5318 B

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight	
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race		
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb	
95 3.7402	170 6.6929	32 1.2598	2.0	2.0	215,309	257,914	120.7	112.5	146.1	154.5	3.1	
			.079	.079	48,060	57,570	4.752	4.429	5.752	6.083	6.8	
		43 1.6929	3.2	2.0	191,744	238,918	121.0	113.5	144.5	151.2	151.2	3.2
			.126	.079	42,800	53,330	4.764	4.469	5.689	5.953	5.953	7.0
		55.6 2.1875	3.2	2.0	334,880	489,350	121.0	113.5	144.5	151.2	151.2	6.4
			.126	.079	74,750	109,230	4.764	4.469	5.689	5.953	5.953	14.1
	111.1 4.3750	3.2	2.0	574,157	978,701	121.0	113.5	144.5	151.2	151.2	10.9	
		.126	.079	128,160	218,460	4.764	4.469	5.689	5.953	5.953	24.0	
	200 7.8740	45 1.7717	3.0	2.5	340,883	398,182	132.2	121.5	166.3	177.5	177.5	6.9
				.118	.098	76,090	88,880	5.205	4.783	6.547	6.988	15.2
		67 2.6378	4.0	2.5	279,194	323,456	132.5	122.1	164.3	173.4	173.4	6.8
				.157	.098	62,320	72,200	5.217	4.807	6.468	6.827	15.0
		77.8 3.0625	3.0	2.5	467,264	597,363	132.2	121.5	166.3	177.5	177.5	11.2
				.118	.098	104,300	133,340	5.205	4.783	6.547	6.988	24.6
100 3.9370	180 7.0866	34 1.3386	2.0	2.0	243,309	297,114	127.5	119.0	154.2	163.0	4.9	
			.079	.079	54,310	66,320	5.020	4.685	6.070	6.417	10.8	
		46 1.8110	4.0	2.0	209,754	261,722	129.0	121.0	154.2	161.1	161.1	3.8
				.157	.079	46,820	58,420	5.079	4.764	6.070	6.343	8.4
		60.3 2.3750	4.0	2.0	324,218	429,766	127.5	119.0	154.2	163.0	163.0	5.5
				.079	.079	72,370	95,930	5.020	4.685	6.070	6.417	12.1
	120.7 4.7500	4.0	2.0	377,306	556,774	129.0	121.0	154.2	161.1	161.1	7.3	
			.157	.079	84,220	124,280	5.079	4.764	6.070	6.343	16.1	
	215 8.4646	47 1.8504	2.5	2.5	646,912	1,113,594	129.0	121.0	154.2	161.1	161.1	10.9
				.157	.079	144,400	248,570	5.079	4.764	6.070	6.343	24.0
		73 2.8740	4.7	2.5	392,090	445,312	139.6	127.5	178.7	191.5	191.5	8.4
				.098	.098	87,520	99,400	5.496	5.020	7.035	7.539	18.5
		82.6 3.2500	4.7	2.5	305,626	354,637	141.1	130.2	175.1	184.8	184.8	8.6
				.185	.098	68,220	79,160	5.555	5.126	6.894	7.276	18.9
105 4.1339	160 6.2992	26 1.0236	2.5	2.0	132,742	189,504	124.5	119.2	140.6	145.8	1.9	
			.098	.079	29,630	42,300	4.902	4.693	5.535	5.740	4.2	
	36 1.4173	4.0	2.0	236,275	300,474	134.9	126.5	161.0	168.5	168.5	4.5	
			.157	.079	52,740	67,070	5.311	4.980	6.339	6.634	9.9	
	65.1 2.5625	4.0	2.0	442,221	672,672	134.9	126.5	161.0	168.5	168.5	9.1	
			.157	.079	98,710	150,150	5.311	4.980	6.339	6.634	20.0	
	225 8.8583	49 1.9291	4.7	3.0	439,757	502,790	146.6	132.9	187.4	200.9	200.9	9.5
				.185	.118	98,160	112,230	5.772	5.232	7.378	7.909	20.9
		87.3 3.4375	4.7	2.5	362,253	433,754	147.2	136.2	183.2	193.4	193.4	9.5
				.185	.098	80,860	96,820	5.795	5.362	7.213	7.614	20.9
		87.3 3.4375	4.7	2.5	586,880	806,579	147.2	136.2	183.2	193.4	193.4	16.8
				.185	.098	131,000	180,040	5.795	5.362	7.213	7.614	37.0

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

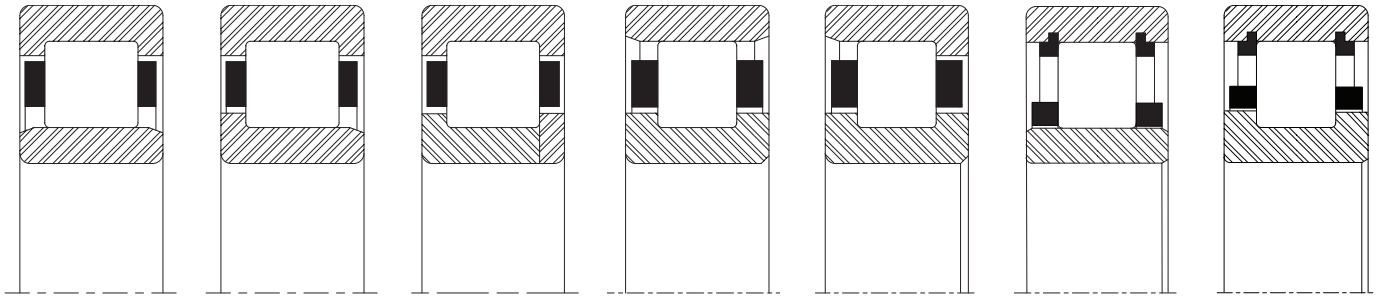
Unless otherwise specified all Rollway radial roller bearings are manufactured to ABMA's RBEC-1 precision class.

*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

Metric dimensions for reference only.

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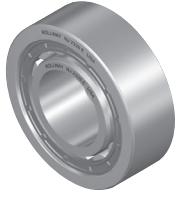
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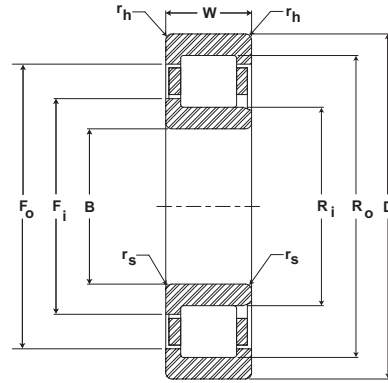
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
NU 219 E	NJ 219 E	NUP 219 E	N 219 E	-	-	-
E 1219 U	L 1219 U	LP 1219 U	U 1219 E	U 1219 L	E 1219 B	U 1219 B
NU 2219 E	NJ 2219 E	NUP 2219 E	N 2219 E	-	-	-
E 5219 U	L 5219 U	LP 5219 U	U 5219 E	U 5219 L	E 5219 B	U 5219 B
E 6219 U	L 6219 U	LP 6219 U	U 6219 E	U 6219 L	E 6219 B	U 6219 B
NU 319 E	NJ 319 E	NUP 319 E	N 319 E	-	-	-
E 1319 U	L 1319 U	LP 1319 U	U 1319 E	U 1319 L	E 1319 B	U 1319 B
NU 2319 E	NJ 2319 E	NUP 2319 E	N 2319 E	-	-	-
E 5319 U	L 5319 U	LP 5319 U	U 5319 E	U 5319 L	E 5319 B	U 5319 B
NU 220 E	NJ 220 E	NUP 220 E	N 220 E	-	-	-
E 1220 U	L 1220 U	LP 1220 U	U 1220 E	U 1220 L	E 1220 B	U 1220 B
NU 2220 E	NJ 2220 E	NUP 2220 E	N 2220 E	-	-	-
E 5220 U	L 5220 U	LP 5220 U	U 5220 E	U 5220 L	E 5220 B	U 5220 B
E 6220 U	L 6220 U	LP 6220 U	U 6220 E	U 6220 L	E 6220 B	U 6220 B
NU 320 E	NJ 320 E	NUP 320 E	N 320 E	-	-	-
E 1320 U	L 1320 U	LP 1320 U	U 1320 E	U 1320 L	E 1320 B	U 1320 B
NU 2320 E	NJ 2320 E	NUP 2320 E	N 2320 E	-	-	-
E 5320 U	L 5320 U	LP 5320 U	U 5320 E	U 5320 L	E 5320 B	U 5320 B
E 1021 U	L 1021 U	LP 1021 U	U 1021 E	U 1021 L	E 1021 B	U 1021 B
E 1221 U	L 1221 U	LP 1221 U	U 1221 E	U 1221 L	E 1221 B	U 1221 B
E 5221 U	L 5221 U	LP 5221 U	U 5221 E	U 5221 L	E 5221 B	U 5221 B
NU 321 E	NJ 321 E	NUP 321 E	N 321 E	-	-	-
E 1321 U	L 1321 U	LP 1321 U	U 1321 E	U 1321 L	E 1321 B	E 1321 B
E 5321 U	L 5321 U	LP 5321 U	U 5321 E	U 5321 L	E 5321 B	E 5321 B

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight	
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race		
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb	
110 4.3307	170 6.6929	28 1.1024	2.5	2.0	160,115	230,586	130.8	125.3	149.0	154.7	2.3	
			.098	.079	35,740	51,470	5.150	4.933	5.866	6.091	5.1	
	200 7.8740	38 1.4961	2.0866	2.0	2.0	298,547	376,320	141.7	132.5	170.9	180.5	5.1
				.079	.079	66,640	84,000	5.579	5.217	6.728	7.106	11.2
				4.0	2.0	242,816	308,851	141.6	132.9	168.4	176.1	5.5
				.157	.079	54,200	68,940	5.575	5.232	6.630	6.933	12.1
				2.0	2.0	389,984	530,566	141.7	132.5	170.9	180.5	7.0
				.079	.079	87,050	118,430	5.579	5.217	6.728	7.106	15.4
	240 9.4488	50 1.9685	2.7500	4.0	2.0	440,966	665,011	141.6	132.9	168.4	176.1	10.5
				.157	.079	98,430	148,440	5.575	5.232	6.636	6.933	23.1
				2.5	2.5	440,563	510,138	155.8	143.0	197.4	211.0	11.2
				.098	.098	98,340	113,870	6.134	5.630	7.772	8.307	24.6
4.7				2.5	410,502	499,565	157.5	145.3	195.4	206.3	11.4	
.185				.098	91,630	111,510	6.201	5.720	7.693	8.122	25.1	
115 4.5275	250 9.8425	2.0866	2.5	2.5	440,563	510,138	155.8	143.0	197.4	211.0	17.9	
			.098	.098	145,610	188,610	6.134	5.630	7.772	8.307	39.4	
			4.7	2.5	435,635	515,782	162.3	149.6	202.7	215.5	12.7	
			.185	.098	97,240	115,130	6.390	5.890	7.980	8.484	20.5	
			4.7	2.5	435,635	515,782	162.3	149.6	202.7	215.5	12.7	
			.185	.098	97,240	115,130	6.390	5.890	7.980	8.484	27.9	
120 4.7244	180 7.0866	1.1024	3.2	2.0	153,798	223,059	141.2	135.2	158.9	164.5	2.5	
			.126	.079	34,330	49,790	5.559	5.323	6.256	6.476	5.5	
			4.6	2.0	241,875	399,347	141.2	135.3	158.9	164.5	4.2	
	215 8.4646	40 1.5748	1.8110	3.2	2.0	241,875	399,347	141.2	135.3	158.9	164.5	4.2
				.126	.079	53,990	89,140	5.559	5.328	6.256	6.476	9.2
				2.0	2.0	345,901	441,101	153.4	143.5	185.1	195.5	6.4
				.079	.079	77,210	98,460	6.039	5.650	7.287	7.697	14.1
				4.7	2.0	286,227	376,634	154.3	145.1	182.7	190.9	6.4
				.185	.079	63,890	84,070	6.075	5.713	7.193	7.516	14.1
				2.0	2.0	481,555	674,957	153.4	143.5	185.1	195.5	18.6
				.079	.079	107,490	150,660	6.039	5.650	7.287	7.697	40.9
				76.2	4.7	2.0	557,357	887,309	154.3	145.1	182.7	190.9
	3.0000	.185	.079	124,410	198,060	6.075	5.713	7.194	7.516	26.0		
	260 10.2362	55 2.1654	2.0866	2.5	2.5	539,258	630,067	168.7	154.0	214.8	230.0	14.4
				.098	.098	120,370	140,640	6.642	6.063	8.457	9.055	31.7
				6.4	2.5	435,277	520,262	170.2	157.0	211.2	223.0	14.5
				.252	.098	97,160	116,130	6.701	6.181	8.315	8.780	31.9
				2.5	2.5	804,966	1,054,637	168.7	154.0	214.8	230.0	22.3
.098				.098	179,680	235,410	6.642	6.063	8.457	9.055	49.1	
260 10.2362	86 3.3858	4.1250	6.4	2.5	852,858	1,235,315	170.2	157.0	211.2	223.0	29.3	
			.252	.098	190,370	275,740	6.701	6.181	8.256	8.780	64.5	

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

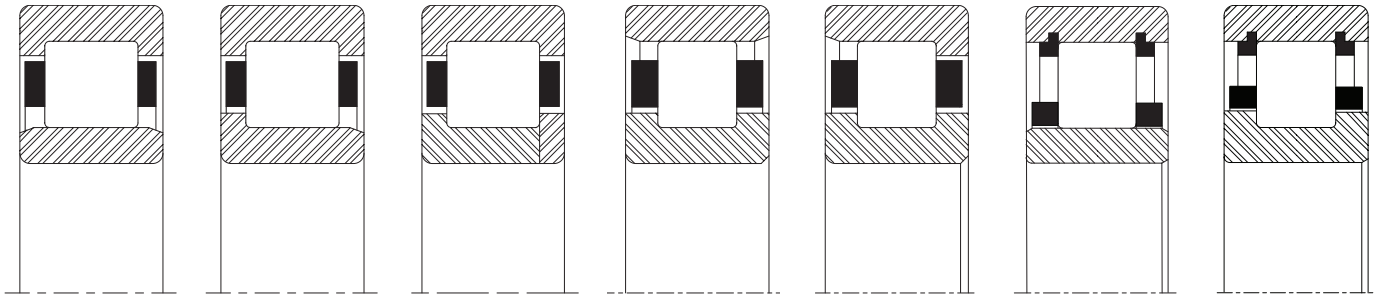
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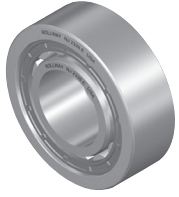
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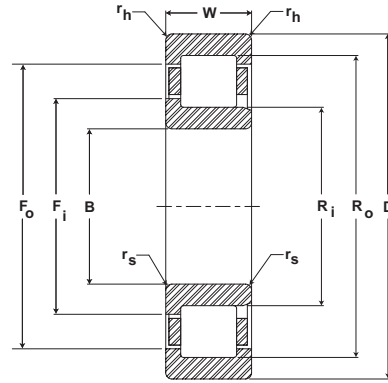
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
E 1022 U	L 1022 U	LP 1022 U	U 1022 E	U 1022 L	E 1022 B	U 1022 B
NU 222 E	NJ 222 E	NUP 222 E	N 222 E	-	-	-
E 1222 U	L 1222 U	LP 1222 U	U 1222 E	U 1222 L	E 1222 B	E 1222 B
NU 2222 E	NJ 2222 E	NUP 2222 E	N 2222 E	-	-	-
E 5222 U	L 5222 U	LP 5222 U	U 5222 E	U 5222 L	E 5222 B	E 5222 B
NU 322 E	NJ 322 E	NUP 322 E	N 322 E	-	-	-
E 1322 U	L 1322 U	LP 1322 U	U 1322 E	U 1322 L	E 1322 B	E 1322 B
NU 2322 E	NJ 2322 E	NUP 2322 E	N 2322 E	-	-	-
E 5322 U	L 5322 U	LP 5322 U	U 5322 E	U 5322 L	E 5322 B	E 5322 B
NU 323	NJ 323	NUP 323	N 323	-	-	-
E 1323 U	L 1323 U	LP 1323 U	U 1323 E	U 1323 L	E 1323 B	E 1323 B
E 1024 U	L 1024 U	LP 1024 U	U 1024 E	U 1024 L	E 1024 B	U 1014 B
E 5024 U	L 5024 U	LP 5024 U	U 5024 E	U 5024 L	E 5024 B	E 5024 B
NU 224 E	NJ 224 E	NUP 224 E	N 224 E	-	-	-
E 1224 U	L 1224 U	LP 1224 U	U 1224 E	U 1224 L	E 1224 B	E 1224 B
NU 2224 E	NJ 2224 E	NUP 2224 E	N 2224 E	-	-	-
E 5224 U	L 5224 U	LP 5224 U	U 5224 E	U 5224 L	E 5224 B	E 5224 B
NU 324 E	NJ 324 E	NUP 324 E	N 324 E	-	-	-
E 1324 U	L 1324 U	LP 1324 U	U 1324 E	U 1324 L	E 1324 B	E 1324 B
NU 2324 E	NJ 2324 E	NUP 2324 E	N 2324 E	-	-	-
E 5324 U	L 5324 U	LP 5324 U	U 5324 E	U 5324 L	E 5324 B	E 5324 B

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight	
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race		
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb	
130 5.1181	200 7.8740	33	3.2	2.0	204,960	295,098	154.2	147.6	175.5	182.5	3.9	
		52	.126	.079	45,750	65,870	6.071	5.811	6.909	7.185	8.6	
		2.0472	3.2	2.0	348,454	583,789	154.2	147.6	175.5	182.5	5.9	
		40	.126	.079	77,780	130,310	6.071	5.811	6.909	7.185	13.0	
	230 9.0551	40	1.5748	4.7	2.5	307,104	402,125	164.7	155.0	195.2	203.8	7.3
			79	.185	.098	68,550	89,760	6.484	6.102	7.685	8.024	16.1
		3.1250	4.7	2.5	659,635	1,074,662	164.7	155.0	195.2	203.8	11.4	
			79	.185	.098	147,240	239,880	6.484	6.102	7.685	8.024	25.1
	280 11.0236	58	2.2835	4.0	3.2	594,854	704,525	183.0	167.0	231.0	247.0	17.6
			111.1	.157	.126	132,780	157,260	7.205	6.575	9.094	9.724	38.7
			4.3750	6.4	3.2	500,730	601,216	184.9	170.5	229.8	242.7	17.7
		3.6615	2.52	.126	111,770	134,200	7.280	6.713	9.047	9.555	38.9	
93			4.0	3.2	884,218	1,172,819	183.0	167.0	231.0	247.0	29.2	
111.1			.157	.126	197,370	261,790	7.205	6.575	9.094	9.724	64.2	
140 5.5118	210 8.2677	33	4.0	2.0	196,941	284,704	164.3	157.6	185.6	192.4	4.1	
		53	.157	.079	43,960	63,550	6.469	6.205	7.307	7.575	9.0	
		2.0866	4.0	2.0	334,835	563,226	164.3	157.6	185.6	192.4	9.5	
	220 8.6614	36	1.4173	2.0	0.79	199,046	274,310	169.4	161.9	192.9	200.0	7.7
			63.5	.079	.079	44,430	61,230	6.669	6.374	7.594	7.874	16.9
		2.5000	2.0	2.0	412,339	699,552	169.4	161.9	192.0	200.0	10.0	
	250 9.8425	42	1.6535	4.7	2.5	344,646	451,898	179.1	168.5	211.8	221.5	9.1
			82.6	.185	.098	76,930	100,870	7.051	6.634	8.339	8.720	20.0
		3.2500	4.7	2.5	674,419	1,069,152	179.1	168.5	211.8	221.5	19.1	
	300 11.8110	62	2.4409	4.0	4.0	629,082	769,485	196.0	180.0	247.2	260.0	21.6
			4.0157	.157	.157	140,420	171,760	7.717	7.087	9.732	10.236	47.5
			114.3	7.9	3.2	558,880	678,630	197.0	181.7	244.3	258.0	21.8
4.5000		3.11	.126	124,750	151,480	7.756	7.154	9.618	10.157	48.0		
		102	4.0	4.0	935,110	1,280,922	196.0	180.0	247.2	260.0	39.7	
		4.0157	.157	.157	208,730	285,920	7.717	7.087	9.732	10.236	87.3	
150 5.9055	225 8.8583	56	2.2047	4.0	2.0	390,387	667,206	176.2	168.7	198.9	206.3	7.7
			38	.157	.079	87,140	148,930	6.937	6.642	7.831	8.122	16.9
		2.2047	2.0	2.0	203,840	288,960	182.4	174.6	205.6	212.7	7.0	
	235 9.2520	66.7	1.4961	2.0	0.79	45,500	64,500	7.181	6.875	8.095	8.374	15.4
			2.6250	2.0	0.79	434,650	765,005	182.4	174.6	205.6	212.7	12.3
		88.9	.079	.079	97,020	170,760	7.181	6.875	8.095	8.374	27.1	
	270 10.6299	45	1.7717	2.5	2.5	407,814	523,936	191.6	179.4	228.5	239.7	12.3
			3.5000	.098	.098	91,030	116,950	7.543	7.063	8.996	9.437	27.1
			177.8	6.4	2.5	402,842	519,053	193.0	181.6	231.1	241.7	11.8
		7.0000	2.52	.098	89,920	115,860	7.598	7.150	9.100	9.516	26.0	
			88.9	6.4	2.5	878,797	1,414,829	193.0	181.6	231.1	241.7	24.1
			3.5000	.252	.098	196,160	315,810	7.598	7.150	9.100	9.516	53.0
320 12.5984	65	2.5591	6.4	2.5	1,506,669	2,829,658	193.0	181.6	231.1	241.7	44.5	
		123.8	.252	.098	336,310	631,620	7.598	7.150	9.100	9.516	97.9	
	4.8750	3.0	3.0	791,034	976,147	192.8	190.0	264.4	280.0	27.3		
12.5984	2.5591	.118	.118	176,570	217,890	7.591	7.480	10.410	11.024	60.1		
	4.8750	7.9	3.2	1,355,110	1,969,542	208.5	190.9	263.3	279.1	52.7		
			.311	.126	302,480	439,630	8.209	7.516	10.366	10.988	115.9	

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

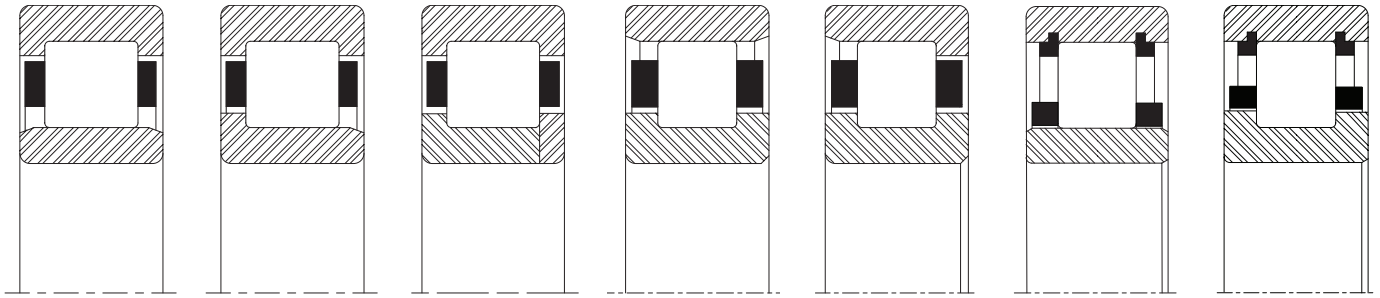
Unless otherwise specified all Rollway radial roller bearings are manufactured to ABMA's RBEC-1 precision class.

*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

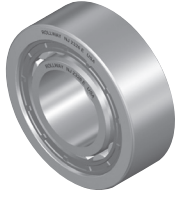
For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



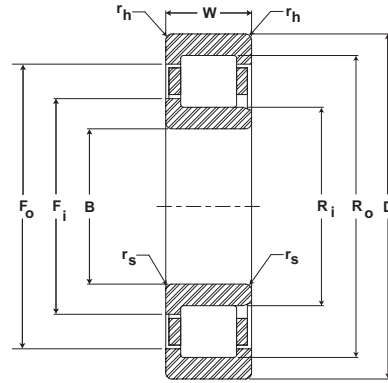
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
E 1026 U	L 1026 U	LP 1026 U	U 1026 E	U 1026 L	E 1026 B	U 1026 B
E 5026 U	L 5026 U	LP 5026 U	U 5026 E	U 5026 L	E 5026 B	U 5026 B
E 1226 U	L 1226 U	LP 1226 U	U 1226 E	U 1226 L	E 1226 B	E 1226 B
E 5226 U	L 5226 U	LP 5226 U	U 5226 E	U 5226 L	E 5226 B	E 5226 B
NU 326 E	NJ 326 E	NUP 326 E	N 326 E	-	-	-
E 1326 U	L 1326 U	LP 1326 U	U 1326 E	U 1326 L	E 1326 B	U 1326 B
NU 2326 E	NJ 2326 E	NUP 2326 E	N 2326 E	-	-	-
E 5326 U	L 5326 U	LP 5326 U	U 5326 E	U 5326 L	E 5326 B	U 5326 B
E 1028 U	L 1028 U	LP 1028 U	U 1028 E	U 1028 L	E 1028 B	U 1028 B
E 5028 U	L 5028 U	LP 5028 U	U 5028 E	U 5028 L	E 5028 B	U 5028 B
MUC 128	MUL 128	MU 128	MCS 128	ML 128	-	-
MUC 5128	MUL 5128	MU 5128	MCS 5128	ML 5128	-	-
E 1228 U	L 1228 U	LP 1228 U	U 1228 E	U 1228 L	E 1228 B	E 1228 B
E 5228 U	L 5228 U	LP 5228 U	U 5228 E	U 5228 L	E 5228 B	E 5228 B
NU 328 E	NJ 328 E	NUP 328 E	N 328 E	-	-	-
E 1328 U	L 1328 U	LP 1328 U	U 1328 E	U 1328 L	E 1328 B	U 1328 B
NU 2328 E	NJ 2328 E	NUP 2328 E	N 2328 E	-	-	-
E 5328 U	L 5328 U	LP 5328 U	U 5328 E	U 5328 L	E 5328 B	U 5328 B
E 5030 U	L 5030 U	LP 5030 U	U 5030 E	U 5030 L	E 5030 B	U 5030 B
MUC 130	MUL 130	MU 130	MCS 130	ML 130	-	-
MUC 5130	MUL 5130	MU 5130	MCS 5130	ML 5130	-	-
MUC 230	MUL 230	MU 230	MCS 230	ML 230	-	-
E 1230 U	L 1230 U	LP 1230 U	U 1230 E	U 1230 L	E 1230 B	U 1230 B
E 5230 U	L 5230 U	LP 5230 U	U 5230 E	U 5230 L	E 5230 B	U 5230 B
E 6230 U	L 6230 U	LP 6230 U	U 6230 E	U 6230 L	E 6230 B	U 6230 B
MUC 330	MUL 330	MU 330	MCS 330	ML 330	-	-
E 5330 U	L 5330 U	LP 5330 U	U 5330 E	U 5330 L	E 5330 B	U 5330 B

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight	
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race		
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb	
160 6.2992	240 9.4488	38	4.0	2.0	258,272	396,480	188.8	181.2	212.7	219.3	5.9	
		60	4.0	2.0	433,619	771,814	188.8	181.2	212.7	219.3	10.0	
		2.3622	.157	.079	96,790	172,280	7.433	7.134	8.374	8.634	22.0	
		40	2.0	2.0	231,750	327,578	192.3	184.2	218.3	225.4	8.2	
	250 9.8425	73	2.0	2.0	498,669	877,408	192.3	184.2	218.3	225.4	14.5	
		2.8750	.079	.079	111,310	195,850	7.571	7.250	8.594	8.874	31.9	
		2.5	2.5	2.5	449,882	586,387	206.0	193.7	245.2	257.2	15.5	
		48	.098	.098	100,420	130,890	8.110	7.626	9.654	10.126	34.1	
	290 11.4173	6.4	2.5	2.5	434,067	560,179	205.9	193.9	243.8	257.4	14.1	
		2.52	.098	.098	96,890	125,040	8.106	7.634	9.598	10.134	31.0	
		98.4	6.4	2.5	932,154	1,496,454	205.9	193.9	243.8	257.4	30.9	
		3.8750	.252	.098	208,070	334,030	8.106	7.634	9.598	10.134	68.0	
	340 13.3858	196.9	6.4	2.5	1,598,150	2,992,864	205.9	193.9	243.8	257.4	57.3	
		7.7500	.252	.098	356,730	668,050	8.106	7.634	9.598	10.134	126.1	
		68	3.2	3.0	719,622	887,846	223.5	205.9	278.3	294.1	30.9	
		2.6772	.126	.118	160,630	198,180	8.799	8.106	10.957	11.579	68.0	
170 6.6929	260 10.2362	42	4.7	2.0	348,230	547,232	202.1	194.9	227.1	238.1	8.6	
		67	4.7	2.0	555,117	996,621	202.1	194.9	227.1	238.1	12.3	
		2.6378	.185	.079	123,910	222,460	7.957	7.673	8.941	9.374	27.1	
		76.2	2.5	2.5	296,755	415,386	203.2	193.7	231.8	241.3	16.8	
	265 10.4331	3.0000	.098	.098	66,240	92,720	8.000	7.626	9.125	9.500	37.0	
		42	2.5	2.5	594,630	1,015,123	203.2	193.7	231.8	241.3	9.5	
		1.6535	.098	.098	132,730	226,590	8.000	7.626	9.125	9.500	20.9	
		52	6.4	3.2	515,827	678,899	219.1	205.5	261.5	273.6	17.7	
	310 12.2047	2.0472	.252	.126	115,140	151,540	8.626	8.091	10.295	10.772	38.9	
		104.8	6.4	3.2	1,058,131	1,709,882	219.1	205.5	261.5	273.6	37.7	
		4.1250	.252	.126	236,190	381,670	8.626	8.091	10.295	10.772	82.9	
		72	3.0	3.0	815,494	1,009,344	235.0	219.1	298.5	314.3	37.7	
	360 14.1732	2.8346	.118	.118	182,030	225,300	9.252	8.626	11.752	12.374	82.9	
		139.7	9.5	3.2	1,653,568	2,473,811	236.0	216.7	295.7	313.3	75.0	
		5.5000	.374	.126	369,100	552,190	9.291	8.531	11.642	12.335	165.0	
		46	4.7	2.0	430,886	674,061	215.3	205.6	244.6	254.4	10.9	
180 7.0866	280 11.0236	1.8110	.185	.079	96,180	150,460	8.476	8.094	9.630	10.016	24.0	
		74	4.7	2.0	681,139	1,214,483	215.3	205.6	244.6	254.4	12.3	
		2.9134	.185	.079	152,040	271,090	8.476	8.094	9.630	10.016	27.1	
		44	2.5	2.5	337,075	476,269	214.4	204.8	245.9	255.6	11.0	
	320 12.5984	1.7323	.098	.098	75,240	106,310	8.441	8.062	9.680	10.063	24.2	
		82.6	2.5	2.5	698,925	1,229,715	214.4	204.8	245.9	255.6	20.5	
		3.2500	.098	.098	156,010	274,490	8.441	8.062	9.680	10.063	45.1	
		52	3.0	3.0	483,482	667,475	235.0	222.3	274.1	285.8	17.7	
	75	2.0472	.118	.118	107,920	148,990	9.252	8.752	10.791	11.252	38.9	
		6.4	3.2	3.2	513,811	683,738	229.9	216.3	272.3	284.4	19.3	
		2.52	.126	.126	114,690	152,620	9.051	8.516	10.720	11.197	42.5	
		108	6.4	3.2	1,053,965	1,722,112	229.9	216.3	272.3	284.4	40.5	
	75	4.2500	.252	.126	235,260	384,400	9.051	8.516	10.720	11.197	89.1	
		2.9528	.118	.118	857,920	1,092,134	250.8	231.6	309.9	327.0	43.6	
												95.9

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

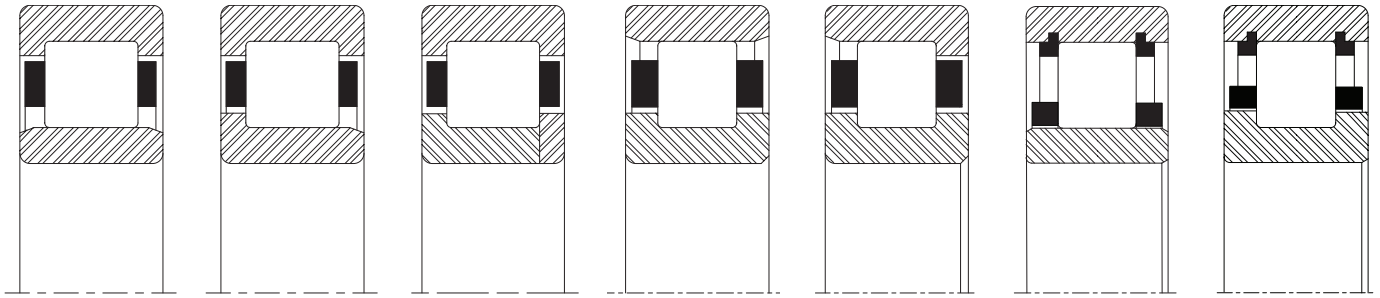
Unless otherwise specified all Rollway radial roller bearings are manufactured to ABMA's RBEC-1 precision class.

*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

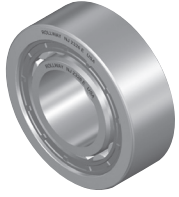
For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



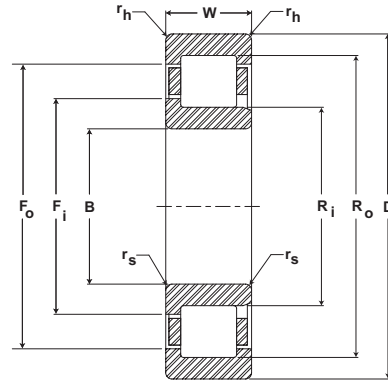
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
E 1032 U	L 1032 U	LP 1032 U	U 1032 E	U 1032 L	E 1032 B	U 1032 B
E 5032 U	L 5032 U	LP 5032 U	U 5032 E	U 5032 L	E 5332 B	U 5332 B
MUC 132	MUL 132	MU 132	MCS 132	ML 132	-	-
MUC 5132	MUL 5132	MU 5132	MCS 5132	ML 5132	-	-
MUC 232	MUL 232	MU 232	MCS 232	ML 232	-	-
E 1232 U	L 1232 U	LP 1232 U	U 1232 E	U 1232 L	E 1232 B	U 1232 B
E 5232 U	L 5232 U	LP 5232 U	U 5232 E	U 5232 L	E 5232 B	U 5330 B
E 6232 U	L 6232 U	LP 6232 U	U 6232 E	U 6232 L	E 6232 B	U 6232 B
E 1332 U	L 1332 U	LP 1332 U	U 1332 E	U 1332 L	E 1332 B	U 1332 B
MUC 332	MUL 332	MU 332	MCS 332	ML 332	-	-
E 1034 U	L 1034 U	LP 1034 U	U 1034 E	U 1034 L	E 1034 B	U 1034 B
E 5034 U	L 5034 U	LP 5034 U	U 5034 E	U 5034 L	E 5034 B	U 5034 B
MUC 5134	MUL 5134	MU 5134	MCS 5134	ML 5134	-	-
MUC 134	MUL 134	MU 134	MCS 134	ML 134	-	-
E 1234 U	L 1234 U	LP 1234 U	U 1234 E	U 1234 L	E 1234 B	U 1234 B
E 5234 U	L 5234 U	LP 5234 U	U 5234 E	U 5234 L	E 5234 B	U 5234 B
MUC 334	MUL 334	MU 334	MCS 334	ML 334	-	-
E 5334 U	L 5334 U	LP 5334 U	U 5334 E	U 5334 L	E 5334 B	U 5334 B
E 1036 U	L 1036 U	LP 1036 U	U 1036 E	U 1036 L	E 1036 B	U 1036 B
E 5036 U	L 5036 U	LP 5036 U	U 5036 E	U 5036 L	E 5036 B	U 5036 B
MUC 136	MUL 136	MU 136	MCS 136	ML 136	-	-
MUC 5136	MUL 5136	MU 5136	MCS 5136	ML 5136	-	-
MUC 236	MUL 236	MU 236	MCS 236	ML 236	-	-
E 1236 U	L 1236 U	LP 1236 U	U 1236 E	U 1236 L	E 1236 B	U 1236 B
E 5236 U	L 5236 U	LP 5236 U	U 5236 E	U 5236 L	E 5236 B	U 5236 B
MUC 336	MUL 336	MU 336	MCS 336	ML 336	-	-

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight		
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race			
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb		
190 7.4803	290 11.4173	46	4.7	2.5	428,422	677,376	226.9	215.6	26.3	264.4	10.9		
		75	.185	.098	95,630	151,200	8.933	8.488	1.035	10.409	24.0		
	300 11.8110	2.9528	4.7	2.5	677,197	1,220,486	226.9	215.6	26.3	264.4	19.1		
		85.7	.185	.098	151,160	272,430	8.933	8.488	1.035	10.409	42.0		
	300 11.8110	3.3750	2.5	2.5	742,022	1,341,805	229.2	219.0	259.7	269.9	23.6		
		46	.098	.098	165,630	299,510	9.024	8.623	10.225	10.626	51.9		
	340 13.3858	300 11.8110	2.5	2.5	357,907	525,414	229.2	219.0	259.7	269.9	14.1		
			.098	.098	79,890	117,280	9.024	8.623	10.225	10.626	31.0		
114.3		7.9	3.2	1,253,862	2,111,245	243.3	228.9	288.2	301.0	45.0			
4.5000		.311	.126	279,880	471,260	9.579	9.012	11.346	11.850	99.0			
200 7.8740	400 15.7480	78	4.0	4.0	925,120	1,168,653	262.9	244.5	303.4	346.1	50.0		
		3.0709	.157	.157	206,500	260,860	10.350	9.626	11.945	13.626	110.0		
	310 12.2047	82	4.7	2.0	783,731	1,384,947	238.6	227.7	271.6	282.3	23.2		
		3.2283	.185	.079	174,940	309,140	9.394	8.965	10.693	11.114	51.0		
	320 12.5984	48	2.5	2.5	431,917	628,365	243.5	231.8	278.9	288.9	17.5		
		1.8898	.098	.098	96,410	140,260	9.587	9.126	10.980	11.374	38.5		
	360 14.1732	320 12.5984	88.9	2.5	2.5	850,214	1,501,069	243.5	231.8	278.9	288.9	30.5	
			3.5000	.098	.098	189,780	335,060	9.587	9.126	10.980	11.374	67.1	
58		7.9	3.2	622,810	838,701	257.4	242.2	304.9	318.5	25.9			
2.2835		.311	.126	139,020	187,210	10.134	9.535	12.004	12.539	57.0			
420 16.5354	360 14.1732	120.7	7.9	3.2	1,344,358	2,255,546	257.4	242.2	304.9	318.5	55.9		
		4.7500	.311	.126	300,080	503,470	10.134	9.535	12.004	12.539	123.0		
	165.1	4.0	4.0	2,114,336	3,434,726	280.5	260.4	346.1	362.0	121.8			
	6.5000	.157	.157	471,950	766,680	11.043	10.252	13.626	14.252	268.0			
210 8.2677	340 13.3858	50	2.5	2.5	515,738	746,234	257.0	244.5	295.1	308.0	20.9		
		1.9685	.098	.098	115,120	166,570	10.118	9.626	11.618	12.126	46.0		
	380 14.9606	95.3	2.5	2.5	963,379	1,666,426	257.0	244.5	295.1	308.0	37.7		
		3.7500	.098	.098	215,040	371,970	10.118	9.626	11.618	12.126	82.9		
	440 17.3228	380 14.9606	62	3.0	3.0	672,000	945,370	276.5	260.4	323.9	336.6	31.4	
			2.4409	.118	.118	150,000	211,020	10.886	10.252	12.752	13.252	69.1	
		127	9.5	3.2	1,573,107	2,663,091	270.1	253.6	320.2	336.2	72.5		
		5.0000	.374	.126	351,140	594,440	10.634	9.984	12.606	13.236	159.5		
220 8.6614	340 13.3858	84	4.0	4.0	1,095,987	1,434,675	287.8	269.9	359.9	377.8	66.8		
		3.3071	.157	.157	244,640	320,240	11.331	10.626	14.169	14.874	147.0		
	350 13.7796	340 13.3858	75	6.4	2.5	940,352	1,750,470	262.8	251.4	297.3	308.6	30.9	
			2.9578	.252	.098	209,900	390,730	10.346	9.898	11.705	12.150	68.0	
	400 15.7480	350 13.7796	98	2.5	2.5	1,031,296	1,841,370	265.4	254.0	307.0	317.5	37.7	
			3.8750	.098	.098	230,200	411,020	10.449	10.000	12.085	12.500	82.9	
		400 15.7480	350 13.7796	65	3.0	3.0	749,190	1,041,421	286.5	269.9	336.6	352.4	36.4
				2.5591	.118	.118	167,230	232,460	11.280	10.626	13.252	13.874	80.1
230 9.0551	370 14.5669	133.4	9.5	3.2	835,565	1,137,830	283.2	265.5	342.4	354.4	37.7		
		5.2500	.374	.126	186,510	253,980	11.150	10.453	13.480	13.953	82.9		
	420 16.5354	370 14.5669	101.6	2.5	2.5	1,095,002	1,890,157	280.2	266.7	323.9	336.6	44.1	
			4.0000	.098	.098	244,420	421,910	11.031	10.500	12.752	13.252	97.0	
420 16.5354	370 14.5669	69	3.0	3.0	831,578	1,147,776	299.6	282.6	354.5	371.5	43.2		
		2.7165	.118	.118	185,620	256,200	11.795	11.126	13.957	14.626	95.0		

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

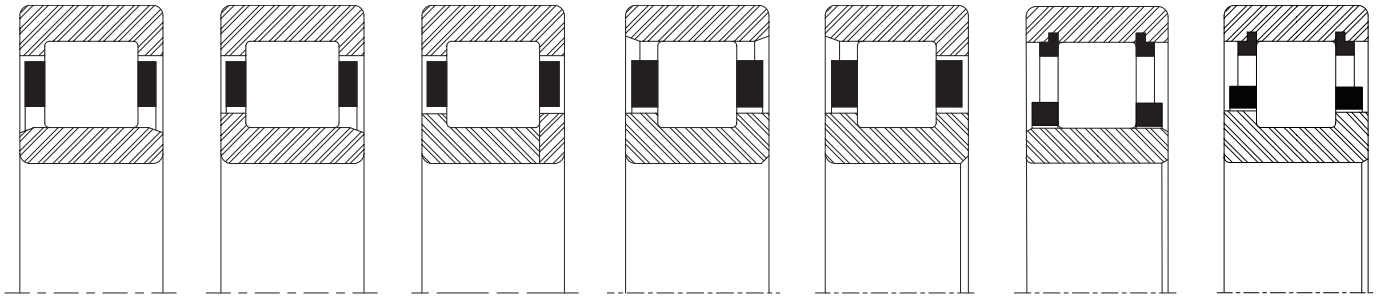
Unless otherwise specified all Rollway radial roller bearings are manufactured to ABMA's RBEC-1 precision class.

*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

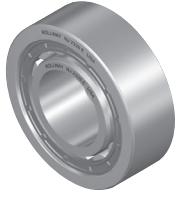
For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



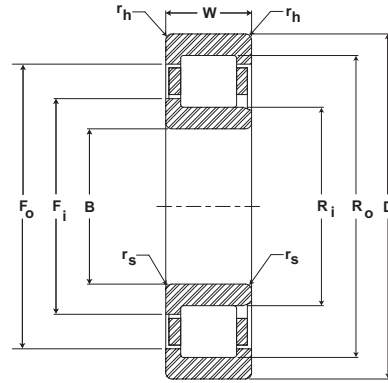
Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
E 1038 U	L 1038 U	LP 1038 U	U 1038 E	U 1038 L	E 1038 B	U 1038 B
E 5038 U	L 5038 U	LP 5038 U	U 5038 E	U 5038 L	E 5038 B	U 5038 B
MUC 5138	MUL 5138	MU 5138	MCS 5138	ML 5138	-	-
MUC 138	MUL 138	MU 138	MCS 138	ML 138	-	-
E 5238 U	L 5238 U	LP 5238 U	U 5238 E	U 5238 L	E 5238 B	U 5238 B
MUC 338	MUL 338	MU 338	MCS 338	ML 338	-	-
E 5040 U	L 5040 U	LP 5040 U	U 5040 E	U 5040 L	E 5040 B	U 5040 B
MUC 140	MUL 140	MU 140	MCS 140	ML 140	-	-
MUC 5140	MUL 5140	MU 5140	MCS 5140	ML 5140	-	-
E 1240 U	L 1240 U	LP 1240 U	U 1240 E	U 1240 L	E 1240 B	U 1240 B
E 5240 U	L 5240 U	LP 5240 U	U 5240 E	U 5240 L	E 5240 B	U 5240 B
E 5340 U	L 5340 U	LP 5340 U	U 5340 E	U 5340 L	E 5340 B	U 5340 B
MUC 142	MUL 142	MU 142	MCS 142	ML 142	-	-
MUC 5142	MUL 5142	MU 5142	MCS 5142	ML 5142	-	-
MUC 242	MUL 242	MU 242	MCS 242	ML 242	-	-
E 5242 U	L 5242 U	LP 5242 U	U 5242 E	U 5242 L	E 5242 B	U 5242 B
MUC 342	MUL 342	MU 342	MCS 342	ML 342	-	-
E 5044 U	L 5044 U	LP 5044 U	U 5044 E	U 5044 L	E 5044 B	U 5044 B
MUC 5144	MUL 5144	MU 5144	MCS 5144	ML 5144	-	-
MUC 244	MUL 244	MU 244	MCS 244	ML 244	-	-
E 1244 U	L 1244 U	LP 1244 U	U 1244 E	U 1244 L	E 1244 B	U 1244 B
E 5244 U	L 5244 U	LP 5244 U	U 5244 E	U 5244 L	E 5244 B	U 5244 B
MUC 146	MUL 146	MU 146	MCS 146	ML 146	-	-
MUC 5146	MUL 5146	MU 5146	MCS 5146	ML 5146	-	-
MUC 246	MUL 246	MU 246	MCS 246	ML 246	-	-

ROLLWAY® Radial Bearings



Basic Construction Type: Cylindrical Roller Bearing
Rolling Elements: Crowned Cylindrical Rollers
Bearing Material: Through Hardened Bearing Grade Steel
Retainer Type: Stamped Steel, Segmented Steel, Two Piece Brass, One Piece Land Riding Brass



Cylindrical Roller Bearings

B	D	W	Rs	Rh	C	Co	Fi	Ri	Fo	Ro	Bearing Weight
Bore	Outside Diameter	Width	Corner*		Basic Dynamic Rating	Basic Static Rating	Flange O.D. Inner Race	O.D. Inner Race	Flange I.D. Outer Race	I.D. Outer Race	
mm inch	mm inch	mm inch	mm inch	mm inch	N/lb	N/lb	mm inch	mm inch	mm inch	mm inch	kg lb
240 9.4488	390 15.3545	55	2.5	2.5	694,355	1,003,162	291.6	277.8	342.4	354.0	30.7
		108	2.5	2.5	1,209,734	2,048,122	291.6	277.8	342.4	354.0	52.7
		4.2500	.098	.098	270,030	457,170	11.480	10.937	13.480	13.937	115.9
		72	3.0	3.0	931,347	1,283,878	309.1	293.7	373.6	388.9	50.0
	440 17.3228	2.8346	.118	.118	207,890	286,580	12.169	11.563	14.709	15.311	110.0
		146.1	9.5	3.2	2,192,243	3,694,746	311.6	291.2	374.9	393.1	103.0
		5.7500	.374	.126	489,340	824,720	12.268	11.465	14.760	15.476	226.6
		95	4.0	4.0	1,335,488	1,780,621	328.4	308.0	408.3	428.6	95.0
250 9.8425	410 16.1419	3.7402	.157	.157	298,100	397,460	12.929	12.126	16.075	16.874	209.0
		57	3.0	3.0	715,187	1,060,237	308.7	293.7	354.1	369.9	32.3
	4.3750	.118	.118	159,640	236,660	12.154	11.563	13.942	14.563	71.1	
	111.1	3.0	3.0	1,290,733	2,264,998	308.7	293.7	354.1	369.9	60.9	
	4.3750	.118	.118	288,110	505,580	12.154	11.563	13.942	14.563	134.0	
	520	4.0	4.0	2,748,973	4,581,472	354.3	330.2	431.8	450.9	224.8	
260 10.2362	430 16.9291	7.7500	.157	.157	613,610	1,022,650	13.949	13.000	17.000	17.752	494.6
		59	3.0	3.0	736,109	1,116,685	322.8	308.0	372.4	384.2	38.2
	2.3228	.118	.118	164,310	249,260	12.709	12.126	14.661	15.126	84.0	
	114.3	3.0	3.0	1,374,061	2,491,328	322.8	308.0	372.4	384.2	69.5	
	4.5000	.118	.118	306,710	556,100	12.709	12.126	14.661	15.126	152.9	
	480	4.0	4.0	2,104,480	3,593,274	336.7	320.7	406.1	422.3	136.0	
	18.8976	6.2500	.157	.157	469,750	802,070	13.256	12.626	15.988	16.626	299.2
	540	5.0	5.0	1,546,810	2,138,886	365.3	342.9	445.8	469.9	130.5	
280 11.0236	460 18.1102	4.0157	.197	.197	345,270	477,430	14.382	13.500	17.551	18.500	287.1
		123.8	3.0	3.0	1,589,683	2,906,400	346.6	330.2	398.8	412.8	82.3
	4.8750	.118	.118	354,840	648,750	13.646	13.000	15.701	16.252	181.1	
	500	9.5	4.0	2,845,696	4,978,714	355.6	333.0	427.2	447.3	146.8	
	6.5000	.374	.157	635,200	1,111,320	14.000	13.110	16.819	17.610	323.0	
	580	12.7	5.0	4,261,197	6,441,344	368.0	339.9	487.4	517.7	278.1	
300 11.8110	480 18.8970	8.5000	.500	.197	951,160	1,437,800	14.488	13.382	19.189	20.382	611.8
		127	8.0	3.2	1,720,006	3,094,246	360.7	344.5	419.0	433.4	65.5
	5.0000	.315	.126	383,930	690,680	14.201	13.563	16.496	17.063	144.1	
	540	12.7	4.0	1,710,240	2,178,758	366.6	343.8	470.3	496.2	86.3	
320 12.5984	500 19.6850	3.3465	.500	.157	381,750	486,330	14.433	13.535	18.516	19.535	189.9
		71	3.0	3.0	982,778	1,531,712	381.3	363.5	437.1	452.4	64.5
	2.7953	.118	.118	219,370	341,900	15.012	14.311	17.209	17.811	141.9	
	130.2	4.0	3.0	1,768,928	3,261,082	381.3	363.5	437.1	452.4	99.5	
340 13.3850	530 20.8661	5.1250	.157	.118	394,850	727,920	15.012	14.311	17.209	17.811	218.9
		133.4	-	-	1,452,819	2,892,198	415.4	399.3	462.6	475.5	110.0
425 16.7480	610 24.0157	5.2500	-	-	324,290	645,580	16.354	15.720	18.213	18.720	242.0
		146.1	-	-	2,086,560	4,106,054	469.9	453.7	532.8	549.0	154.5
		5.7500	-	-	465,750	916,530	18.500	17.862	20.976	21.614	339.9
440 17.3228	660 25.9843	158.8	-	-	2,180,819	4,490,528	520.8	503.7	582.8	599.0	191.8
		6.2500	-	-	486,790	1,002,350	20.504	19.831	22.945	23.583	422.0

Radial Roller bearings and manufactured to the ABMA RBEC-1 tolerance class. Bearing manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.

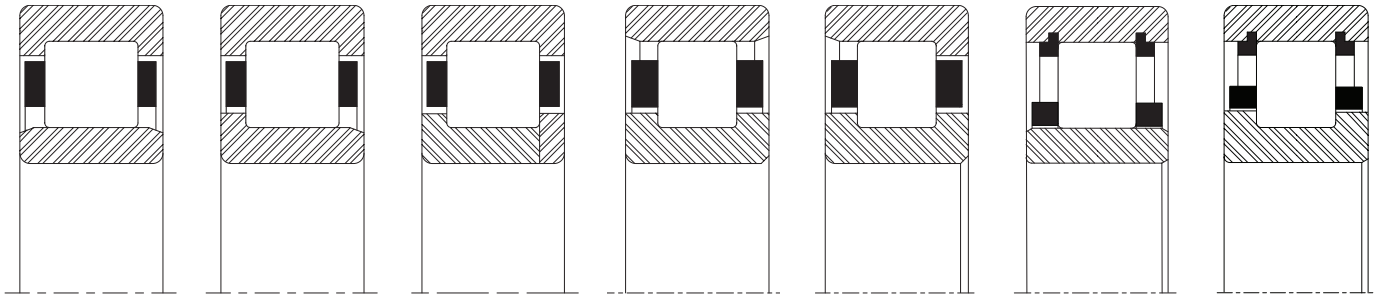
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*rs and rh are the maximum shaft and housing fillet radius that can be cleared.

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For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.



Cylindrical Roller Bearings

Inner Race Separable Both Directions	Inner Race Separable One Direction	Two Piece Inner Race Four-Flange Design	Outer Race Separable Both Directions	Outer Race Separable One Direction	Inner Race Separable Both Directions	Non-Separable
MUC 148	MUL 148	MU 148	MCS 148	ML 148	-	-
MUC 5148	MUL 5148	MU 5148	MCS 5148	ML 5148	-	-
MUC 248	MUL 248	MU 248	MCS 248	ML 248	-	-
E 5248 U	L 5248 U	LP 5248 U	U 5248 E	U 5248 L	E 5248 B	U 5248 B
MUC 348	MUL 348	MU 348	MCS 348	ML 348	-	-
MUC 150	MUL 150	MU 150	MCS 150	ML 150	-	-
MUC 5150	MUL 5150	MU 5150	MCS 5150	ML 5150	-	-
E 5350 U	L 5350 U	LP 5350 U	U 5350 E	U 5350 L	E 5350 B	U 5350 B
MUC 152	MUL 152	MU 152	MCS 152	ML 152	-	-
MUC 5152	MUL 5152	MU 5152	MCS 5152	ML 5152	-	-
E 5252 U	L 5252 U	LP 5252 U	U 5252 E	U 5252 L	E 5252 B	U 5252 B
MUC 352	MUL 352	MU 352	MCS 352	ML 352	-	-
MUC 5156	MUL 5156	MU 5156	MCS 5156	ML 5156	-	-
E 5256 U	L 5256 U	LP 5256 U	U 5256 E	U 5256 L	E 5256 B	U 5256 B
E 5356 U	L 5356 U	LP 5356 U	U 5356 E	U 5356 L	E 5356 B	U 5356 B
MUC 5160	MUL 5160	MU 5160	MCS 5160	ML 5160	-	-
E 1260 U	L 1260 U	LP 1260 U	U 1260 E	U 1260 L	E 1260 B	U 1260 B
MUC 164	MUL 164	MU 164	MCS 164	ML 164	-	-
MUC 5164	MUL 5164	MU 5164	MCS 5164	ML 5164	-	-
MUC 5168	MUL 5168	MU 5168	MCS 5168	ML 5168	-	-
MUC 5180	MUL 5180	MU 5180	MCS 5180	ML 5180	-	-
MUC 5188	MUL 5188	MU 5188	MCS 5188	ML 5188	-	-



Load Ratings and Life

Life Calculations

The L₁₀ (rating) life for any given application and bearing selection can be calculated in terms of millions of revolutions by using the bearing Basic Dynamic Rating and applied radial load (or, equivalent radial load in the case of radial bearing applications having combined radial and thrust loads). The L₁₀ life for any given application can be calculated in terms of hours, using the bearing Basic Dynamic Rating, applied load (or equivalent radial load) and suitable speed factors, by the following equation:

$$L_{10} = \left(\frac{C}{P}\right)^{10/3} \times \frac{1,000,000}{60 \times n} = \left(\frac{C}{P}\right)^{10/3} \times \frac{16667}{n}$$

Where:

L₁₀ = The # of hours that 90% of identical bearings under ideal conditions will operate at a specific speed and condition before fatigue is expected to occur.

C = Basic Dynamic Rating (lbs)
1,000,000 Revolutions

P = Constant Equivalent Radial Load (lbs)

n = Speed (RPM)

Additionally, the ABMA provides application factors for all types of bearings which need to be considered to determine an adjusted Rated Life (L_{na}). L₁₀ life rating is based on laboratory conditions yet other factors are encountered in actual bearing application that will reduce bearing life. L_{na} life rating takes into account reliability factors, material type, and operating conditions.

$$L_{na} = a_1 \times a_2 \times a_3 \times L_{10}$$

Where:

L_{na} = Adjusted Rated Life.

a₁ = Reliability Factor. Adjustment factor applied where estimated fatigue life is based on reliability other than 90% (See Table No 1).

Table No. 1 Life Adjustment Factor for Reliability

Reliability %	L _{na}	a ₁
90	L ₁₀	1
95	L ₅	0.62
96	L ₄	0.53
97	L ₃	0.44
98	L ₂	0.33
99	L ₁	0.21
50	L ₅₀	5

a₂ = Material Factor. Life adjustment for bearing race material. Regal Power Transmission Solutions bearing races are manufactured from bearing quality steel. Therefore the a₂ factor is 1.0.

a₃ = Life Adjustment Factor for Operating Conditions. This factor should take into account the adequacy of lubricant, presence of foreign matter, conditions causing changes in material properties, and unusual loading or mounting conditions. Assuming a properly selected and mounted bearing having adequate seals and lubricant operating below 250°F and tight fitted to the shaft, the a₃ factor should be 1.0.

Load Ratings and Life Continued

Vibration and shock loading can act as an additional loading to the steady expected applied load. When shock or vibration is present, an a3 Life Adjustment Factor can be applied. Shock loading has many variables which often are not easily determined. Typically, it is best to rely on one’s experience with the particular application. Consult Application Engineering for assistance with applications involving shock or vibration loading.

The a3 factor takes into account a wide range of application and mounting conditions as well as bearing features and design. Accurate determination of this factor is normally achieved through testing and in-field experience. Regal Power Transmission Solutions offers a wide range of options which can maximize bearing performance. Consult Application Engineering for more information.

Operating Conditions Factor

The life of a bearing is dependent on the operating conditions of the application. Lubrication, effects of the external environment, shaft and housing geometry and mounting, all have an affect on the actual bearing life. To determine a more realistic life calculation, the Operating Conditions Factor (F) can be included into the L₁₀ life equation. The actual values determination will be based on experience of the designer and the expected operating conditions.

Using the Operating Conditions Factor (F) in the life equation, L₁₀ life in hours now becomes:

$$L_{10} = F \times \left[\left(\frac{C}{P} \right)^{3.33} \times \frac{16667}{n} \right]$$

Proper selection of the F factor demands intimate knowledge of the application. Where little is known of the application, it is recommended that F = 1 be selected. As a guide in selecting a realistic value for F, Rollway suggests use of the following, cumulative, individual sub-factors, f, to arrive at the over-all factor, F, thus:

$$F = f_1 \times f_2 \times f_3 \times f_4 \dots$$

The table below defines the application parameters and values recommended for derivation of the individual sub-factors.

Radial Bearing Factors

Factor	Application Condition	Factor Estimates	
		Poor	Excellent
f ₁	Lubricant viscosity suitability @ bearing operating temperature (see Lubrication)	.5	1.0
f ₂	External environment and provisions for isolation	.5	1.0
f ₃	Operational conditions of shaft and housing squareness & rigidity	.5	1.0
f ₄	Machine usage; conventional rotating machinery = 1.0 reciprocating machinery = .55 impact-inducing machinery = .25	.25	1.0
f ₅	Thrust load accompanying radial load; below permissible thrust load = 1.0 at or near permissible thrust load = .8 exceeding permissible thrust load by 25% = .5	.5	1.0

Thrust Bearing Factors

Factor	Application Condition	Factor Estimates	
		Poor	Excellent
f ₁	Lubricant viscosity suitability @ bearing operating temperature (see Lubrication)	.5	1.0
f ₂	External environment and provisions for isolation	.5	1.0
f ₃	Operational conditions of shaft and housing squareness & rigidity	.5	1.0
f ₄	Bearing thrust plate backing system full backing vs partial backing	.5	1.0



Load Ratings and Life Continued

Variable Load Formula

Root mean load (RML) is to be used when a number of varying loads are applied to a bearing for varying time limits. Maximum loading still must be considered for bearing size selection.

$$RML^* = \sqrt[10/3]{\frac{(L_1^{10/3} N_1) + (L_2^{10/3} N_2) + (L_3^{10/3} N_3)}{100}}$$

Where:

RML = Root Mean Load (lbs.)

$L_1, L_2, \text{ etc.}$ = Load in pounds

$N_1, N_2, \text{ etc.}$ = Percent of total time operated at loads $L_1, L_2, \text{ etc.}$

* Apply RML to rating at mean speed to determine resultant life.

Mean Speed Formula

The following formula is to be used when operating speed varies over time.

$$\text{Mean Speed} = \frac{S_1 N_1 + S_2 N_2 + S_3 N_3}{100}$$

$S_1, S_2, \text{ etc.}$ = Speeds in RPM

$N_1, N_2, \text{ etc.}$ = Percentage of total time operated at speeds $S_1, S_2, \text{ etc.}$

Bearing Life In Oscillating Applications

The equivalent rotative speed (ERS) is used in life calculations when the bearing does not make complete revolutions during operation. The ERS is then used as the bearing operating speed in the calculation of the L10 (Rating) Life. The formula is based on sufficient angular rotation to have roller paths overlap.

ERS = Equivalent Rotative Speed

N = Total number of degrees per minute through which the bearing will rotate.

$$ERS = \frac{N}{360}$$

In the above formula, allowance is made for the total number of stress applications on the weakest race per unit time, which, in turn, determines fatigue life and the speed factors. The theory behind fretting corrosion is best explained by the fact that the rolling elements in small angles of oscillation retrace a path over an unchanging area of the inner or outer races where the lubricant is prevented by inertia from flowing in behind the roller as the bearing oscillates in one direction. Upon reversal, this small area of rolling contact is traversed by the same roller in the dry state. The friction of the two unlubricated surfaces causes fretting corrosion and produces failures which are unpredictable from a normal life standpoint.

Load Ratings and Life Continued

With a given bearing selected for an oscillating application, the best lubrication means is a light mineral oil under positive flow conditions. With a light oil, there is a tendency for all areas in the bearing load zone to be immersed in lubricant at all times. The full flow lubrication dictates that any oxidized material which may form is immediately carried away by the lubricant, and since these oxides are abrasive, further wear tends to be avoided. If grease lubrication must be used, it is best to consult with either the bearing manufacturer or the lubricant manufacturer to determine the best possible type of lubricant. Greases have been compounded to resist the detrimental effect of fretting corrosion for such applications.

Static Load Rating

The “static load rating” for rolling element bearings is that uniformly distributed static radial load acting on a non-rotating bearing, which produces a contact stress of 580,000 psi (roller bearings) or 607,000 psi (ball bearings) at the center of the most heavily loaded rolling element. At this stress level, plastic deformation begins to be significant. Experience has shown that the plastic deformation at this stress level can be tolerated in most bearing applications without impairment of subsequent bearing operation. In certain applications where subsequent rotation of the bearing is slow and where smoothness and friction requirements are not too exacting, a higher static load limit can be tolerated. Where extreme smoothness is required or friction requirements are critical, a lower static load limit may be necessary.

Minimum Bearing Load

Skidding, or sliding, of the rolling elements on the raceway instead of a true rolling motion can cause excessive wear. Applications with high speeds and light loading are particularly prone to skidding. As a general guideline, rolling element bearings should be radially loaded at least 2% of Basic Dynamic Rating. For applications where load is light relative to the bearings dynamic load rating, consult Application Engineering for assistance.

High Steady Loads and Shock Loads

Bearing basic dynamic capacity and basic static capacity are determined through a consideration of entirely different factors. The prime consideration for dynamic capacity is the magnitude of the stressed volume of metal and the probability that it will endure a given number of loading cycles. For static capacity, the prime consideration is the influence of the elastic limit and rupture limit as manifested by the extent of the permanent deformations that occur. In view of the seemingly great difference in bases for consideration of dynamic and static capacities, it might be concluded that they bear no relation to one another. Such is not always the case when considering very high steady loads or shock loads present in a rotating bearing. The extent to which these loads approach (or exceed) the basic static capacity will determine the validity of the use of the life formula. More explicitly, when the following relationship exists, ordinary means may be used in determining bearing life.

$$\frac{C_0}{f_s P_0} \geq \left(\frac{C/P}{33 \ 1/3} \right)^{0.30}$$

Where: C_0 = Bearing basic static capacity-lbs

P_0 = Value of the radial load or maximum shock load-lbs

f_s = Safety factor for high radial or shock loads (dependent on duration of peak load and type of bearing service demanded throughout life of bearing in given application)

$f_s = 0.5$ for occasional high steady load but no shock

$f_s = 1.0$ for continuous high steady load but no shock

$f_s = 2.0$ for maximum shock loads and/or where very smooth subsequent bearing operation is required

C, P = As previously defined

n = Rotational speed - rpm

A warning note on use of the above relation: even when the solution indicates that conventional means may be used in estimating bearing life, such a fatigue life forecast becomes invalid where less-than-optimum lubrication permits shock loads to induce fretting wear (false brinelling).

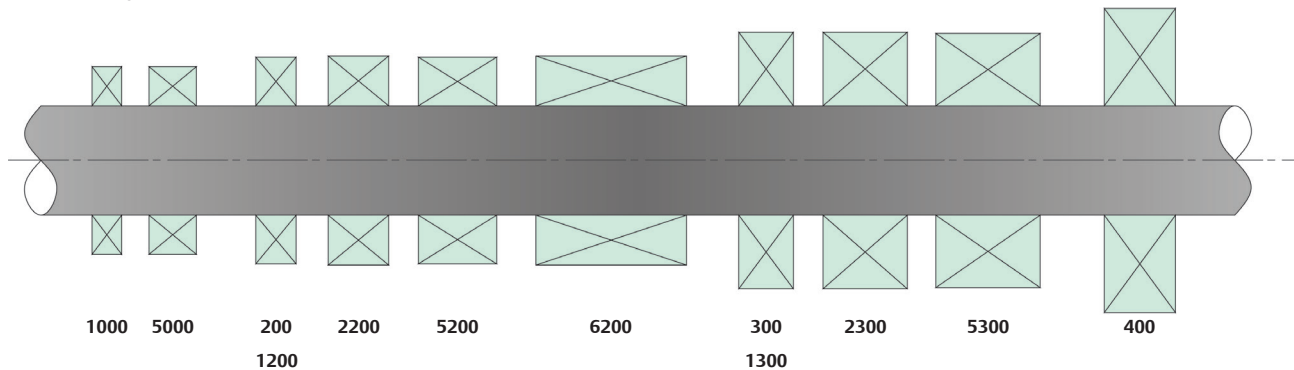


Radial Engineering Section

Rollway cylindrical radial roller bearings are available in a vast variety of sizes and configurations ranging from standard cataloged, 45mm ID bearings to 1,016 mm outside diameter, special engineered bearings.

The ABMA has established standard design criteria for radial roller bearings. It has defined standard series for the roller bearings by identifying the outside diameter and width for a given bore diameter. The illustration below demonstrates the differences in cross section for the given series.

Rollway Series Codes



The races and rollers in standard Rollway bearings are made of vacuum-degassed, high alloy, through-hardened and/or case carburized steels that are stabilized for operation up to 250°F for case carburized steel and 335°F for through-hardened steels. For operating temperatures in excess of 335°F, special materials and/or stabilization procedures are necessary.

All Rollway bearings are made with crowned rollers, which satisfy the general requirements for modified-line contact, in accordance with ABMA definitions. The Rollway crowning technique is a highly developed technology including analytical, experimental, processing and quality control techniques to ensure the following:

1. A minimization of end effects and stress concentrations under design load conditions.
2. Detailed understanding and the necessary controls for demanding applications where reliability and higher theoretical capacities are essential.

Vacuum-degassed steels are used in standard bearings; however, consumable-electrode remelted steels (from either air CEVM or vacuum-melted electrodes VIMVAR) are available in all alloys and will be supplied upon request. We also manufacture low quantities of bearing designs with M-50 tool steel for applications requiring high temperature hardness and average operating temperatures over 400°F but less than 800°F.

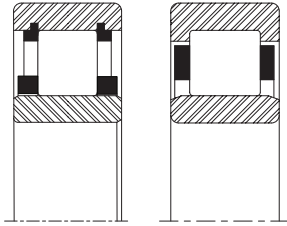
Designs

Rollway cylindrical radial roller bearings are available in a vast variety of sizes and configurations. The different bearing configurations are described on page E-5 and listed in the bearing product table starting on page E-15. Over the years, the Rollway product offering has increased. Each new product line has its own numbering system, resulting in the current offering of multiple nomenclatures. The three basic numbering systems are Tru-Rol, MAX, and ISO. These three nomenclature systems are defined on the following charts:

Rollway cylindrical radial roller bearings are available in a vast variety of sizes and configurations ranging from standard cataloged, 45mm ID bearings to 1,016 mm outside diameter, special engineered bearings. This section of the catalog covers Rollway cylindrical radial roller bearing configurations, part numbering, material, retainer design and limiting speeds.



Radial Engineering Section continued



Configuration and Numbering System Inner Race Separable, Both Directions

Number Systems

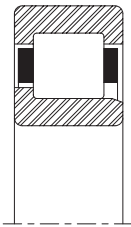
E-####-U

E-####-B

MUC-####

NU-###

Two-flange (or retaining rings) outer race, straight inner race, separable bearing. For applications where axial float in both directions is desired. Roller assembly remains with the outer race.



Inner Race Separable, One Direction

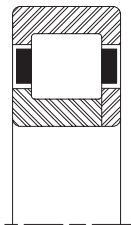
Number Systems

L-####-U

MUL-####

NJ-###

Two-flange outer race, one-flange inner race, separable bearing. For applications where axial float in one direction and axial retention in the other direction is desired. Roller assembly remains with the outer race. Will carry light thrust loads in one axial direction.



Two Piece Inner Race, Four-Flange Design

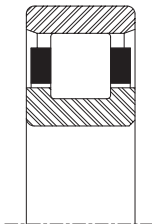
Number Systems

LP-####-U

MU-####

NUP-###

Two-flange outer race, two-flange inner race with one flange plate, separable bearing. For applications where axial retention in both directions is desired. Roller assembly remains with the outer race. Will carry light thrust loads in both axial directions.



Outer Race Separable Both Directions

Number Systems

U-####-E

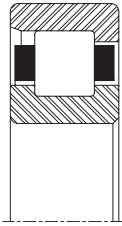
MCS-####

N-###

Straight outer race, two-flange inner race, separable bearing. For applications where axial float is desired. Roller assembly remains with the inner race.



Radial Engineering Section continued



Outer Race Separable One Direction

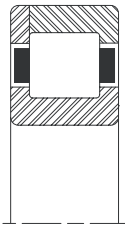
Number Systems

U-####-L

ML-####

One-flange outer race, two-flange inner race, separable bearing. For applications where axial float in one direction and axial retention in the other directions is desired. Roller assembly remains with the inner race.

Will carry light thrust loads in one direction.



Two-Piece Outer Race Four-Flange Design

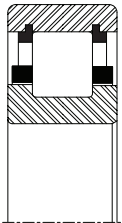
Number Systems

U-####-LP

MN-####

Two-flange outer race with one flange plate, two-flange inner race, separable bearing. For applications where axial retention in both directions is desired.

Roller assembly remains with the inner race. Will carry light thrust loads in both axial directions.



Non-Separable

Number Systems

U-####-B

MS-####

Or when supplied with a full complement of rollers.

Number Systems

UM-####-B

M-####

Two snap-ring flange outer race, two-flange inner race, non-separable bearing.

No axial retainer of outer race is required when inner race is properly mounted on shaft. Will not carry thrust loads.

Precision and Tolerance

Standard catalog, radial roller bearings are manufactured to the ABMA RBEC-1 tolerance class. Many applications may require greater precision than standard because of high rotational speeds or other exacting requirements. Bearings manufactured to either RBEC-3, RBEC-5 or special tolerance classes are also available upon request.”



Radial Engineering Section continued

Standard Tolerances RBEC-1

Bore Diameter		Bore Tolerance		Width Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0	1.1810 30	0.0000 0.0000	0.0004 0.0102	0.0000 0.0000	0.0047 0.1194
1.1810 30	1.9685 50	0.0000 0.0000	0.0005 0.0127	0.0000 0.0000	0.0047 0.1194
1.9685 50	3.1496 80	0.0000 0.0000	0.0006 0.0152	0.0000 0.0000	0.0059 0.1499
3.1496 80	4.7244 120	0.0000 0.0000	0.0008 0.0203	0.0000 0.0000	0.0079 0.2007
4.7244 120	7.0866 180	0.0000 0.0000	0.0010 0.0254	0.0000 0.0000	0.0098 0.2489
7.0866 180	9.8425 250	0.0000 0.0000	0.0012 0.0305	0.0000 0.0000	0.0118 0.2997
9.8425 250	12.4016 315	0.0000 0.0000	0.0014 0.0356	0.0000 0.0000	0.0138 0.3505
12.4016 315	15.7480 400	0.0000 0.0000	0.0016 0.0406	0.0000 0.0000	0.0157 0.3988
15.7480 400	19.6850 500	0.0000 0.0000	0.0018 0.0457	0.0000 0.0000	0.0177 0.4496
19.6850 500	24.8031 630	0.0000 0.0000	0.0020 0.0508	0.0000 0.0000	0.0197 0.5004
24.8031 630	31.4961 800	0.0000 0.0000	0.0030 0.0762	0.0000 0.0000	0.0295 0.7493

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
1.1810 30	1.9685 50	0.0000 0.0000	0.0005 0.0127
1.9685 50	3.1496 80	0.0000 0.0000	0.0005 0.0127
3.1496 80	4.7244 120	0.0000 0.0000	0.0006 0.0152
4.7244 120	5.9055 150	0.0000 0.0000	0.0007 0.0178
5.9055 150	7.0866 180	0.0000 0.0000	0.0010 0.0254
7.0866 180	9.8425 250	0.0000 0.0000	0.0012 0.0305
9.8425 250	12.4016 315	0.0000 0.0000	0.0014 0.0356
12.4016 315	15.7480 400	0.0000 0.0000	0.0016 0.0406
15.7480 400	19.6850 500	0.0000 0.0000	0.0018 0.0457
19.6850 500	24.8031 630	0.0000 0.0000	0.0020 0.0508
24.8031 630	31.4961 800	0.0000 0.0000	0.0030 0.0762
31.4961 800	39.3701 1,000	0.0000 0.0000	0.0039 0.0991
39.3701 1,000	49.2126 1,250	0.0000 0.0000	0.0049 0.1245

Standard Tolerances RBEC-3

Bore Diameter		Bore Tolerance		Width Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0	1.1810 30	0.0000 0.0000	0.00030 0.00762	0.0000 0.0000	0.0047 0.1194
1.1810 30	1.9685 50	0.0000 0.0000	0.00040 0.01016	0.0000 0.0000	0.0047 0.1194
1.9685 50	3.1496 80	0.0000 0.0000	0.00045 0.01143	0.0000 0.0000	0.0059 0.1499
3.1496 80	4.7244 120	0.0000 0.0000	0.00060 0.01524	0.0000 0.0000	0.0079 0.2007
4.7244 120	7.0866 180	0.0000 0.0000	0.00070 0.01778	0.0000 0.0000	0.0098 0.2489
7.0866 180	9.8425 250	0.0000 0.0000	0.00085 0.02159	0.0000 0.0000	0.0118 0.2997
9.8425 250	12.4016 315	0.0000 0.0000	0.00100 0.02540	0.0000 0.0000	0.0138 0.3505
12.4016 315	15.7480 400	0.0000 0.0000	0.00120 0.03048	0.0000 0.0000	0.0157 0.3988
15.7480 400	19.6850 500	0.0000 0.0000	0.00140 0.03556	0.0000 0.0000	0.0177 0.4496
19.6850 500	24.8031 630	0.0000 0.0000	0.00600 0.15240	0.0000 0.0000	0.0197 0.5004

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
1.1811 30	1.9685 50	0.0000 0.0000	0.00035 0.00889
1.9685 50	3.1496 80	0.0000 0.0000	0.00045 0.01143
3.1496 80	4.7244 120	0.0000 0.0000	0.00050 0.01270
4.7244 120	5.9055 150	0.0000 0.0000	0.00060 0.01524
5.9055 150	7.0866 180	0.0000 0.0000	0.00070 0.01778
7.0866 180	9.8425 250	0.0000 0.0000	0.00080 0.02032
9.8425 250	12.4016 315	0.0000 0.0000	0.00100 0.02540
12.4016 315	15.7480 400	0.0000 0.0000	0.00110 0.02794
15.7480 400	19.6850 500	0.0000 0.0000	0.00130 0.03302
19.6850 500	24.8031 630	0.0000 0.0000	0.00150 0.03810
24.8031 630	31.4961 800	0.0000 0.0000	0.00180 0.04572



Radial Engineering Section continued

Standard Tolerances RBEC-5

Bore Diameter		Bore Tolerance		Width Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0	1.1810 30	0.0000 0.0000	0.00025 0.00635	0.0000 0.0000	0.0047 0.1194
1.1810 30	1.9685 50	0.0000 0.0000	0.00030 0.00762	0.0000 0.0000	0.0047 0.1194
1.9685 50	3.1496 80	0.0000 0.0000	0.00035 0.00889	0.0000 0.0000	0.0059 0.1499
3.1496 80	4.7244 120	0.0000 0.0000	0.00040 0.01016	0.0000 0.0000	0.0079 0.2007
4.7244 120	7.0866 180	0.0000 0.0000	0.00050 0.01270	0.0000 0.0000	0.0098 0.2489
7.0866 180	9.8425 250	0.0000 0.0000	0.00065 0.01651	0.0000 0.0000	0.0118 0.2997
9.8425 250	12.4016 315	0.0000 0.0000	0.00070 0.01778	0.0000 0.0000	0.0138 0.3505
12.4016 315	15.7480 400	0.0000 0.0000	0.00090 0.02286	0.0000 0.0000	0.0157 0.3988

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
1.1811 30	1.9685 50	0.0000 0.0000	0.00030 0.00762
1.9685 50	3.1496 80	0.0000 0.0000	0.00035 0.00889
3.1496 80	4.7244 120	0.0000 0.0000	0.00040 0.01016
4.7244 120	5.9055 150	0.0000 0.0000	0.00045 0.01143
5.9055 150	7.0866 180	0.0000 0.0000	0.00050 0.01270
7.0866 180	9.8425 250	0.0000 0.0000	0.00060 0.01524
9.8425 250	12.4016 315	0.0000 0.0000	0.00070 0.01778
12.4016 315	15.7480 400	0.0000 0.0000	0.00080 0.02032
15.7480 400	19.6850 500	0.0000 0.0000	0.00090 0.02286
19.6850 500	24.8031 630	0.0000 0.0000	0.00110 0.02794

Internal Clearance

Unmounted internal radial clearance may be determined by two methods:

1. Dimensionally from the geometry of the bearing
2. By an inspection gaging procedure prescribed in the ABMA Standards handbook

Dimensionally, internal radial clearance is equal to the bore of the outer race minus the sum of the inner race OD and two roller diameters. The gaging procedure specifies that one of the bearing races be fixed horizontally on a flat plate. A specified radial load is then applied to the unsupported race, alternately, in diametrically opposing directions. The internal radial clearance is the total displacement of the unsupported race.

The sole reason for manufacturing bearings with differing internal radial clearance is to give the designer a means to achieve predetermined clearance in the mounted revolving bearing. In determining this final running clearance it is necessary to take into consideration, in addition to the effects of shaft, housing interference fits and surface finish, the desire to meet one or more of the following conditions:

1. Optimum load distribution through the rollers to result in maximum life
2. Minimum bearing operating temperature
3. Minimum bearing torque
4. Minimum bearing noise level

The group classification of unmounted radial internal clearance should be specified only after a complete analysis of the resultant clearance of the mounted and operating bearing. The commonly available unmounted internal clearances of Rollway bearings are shown in the following tables. In general, Rollway standard internal clearances for the Tru-Rol and Max numbering systems are equivalent to the ISO C3 clearance.



Radial Engineering Section continued

Radial Bearing Unmounted Internal Clearance

Clearance Codes

Used on Bearings With ISO Numbering Systems

Bearing Bore Dia		C2		C0 Standard		C3		C4		C5	
Over	Up to & include	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0	0.3937 10	0.0000 0.0000	0.0012 0.0305	0.0004 0.0102	0.0016 0.0406	0.0010 0.0254	0.0022 0.0559	0.0014 0.0356	0.0026 0.0660	0.0022 0.0559	0.0033 0.0838
0.3937 10	0.7087 18	0.0000 0.0000	0.0012 0.0305	0.0004 0.0102	0.0016 0.0406	0.0010 0.0254	0.0022 0.0559	0.0014 0.0356	0.0026 0.0660	0.0022 0.0559	0.0033 0.0838
0.7087 18	0.9449 24	0.0000 0.0000	0.0012 0.0305	0.0004 0.0102	0.0016 0.0406	0.0010 0.0254	0.0022 0.0559	0.0014 0.0356	0.0026 0.0660	0.0022 0.0559	0.0033 0.0838
0.9449 24	1.1811 30	0.0000 0.0000	0.0012 0.0305	0.0004 0.0102	0.0018 0.0457	0.0012 0.0305	0.0026 0.0660	0.0016 0.0406	0.0028 0.0711	0.0024 0.0610	0.0037 0.0940
1.1811 30	1.5748 40	0.0000 0.0000	0.0014 0.0356	0.0006 0.0152	0.0020 0.0508	0.0014 0.0356	0.0028 0.0711	0.0018 0.0457	0.0032 0.0813	0.0028 0.0711	0.0041 0.1041
1.5748 40	1.9685 50	0.0002 0.0051	0.0016 0.0406	0.0008 0.0203	0.0022 0.0559	0.0016 0.0406	0.0030 0.0762	0.0022 0.0559	0.0035 0.0889	0.0033 0.0838	0.0047 0.1194
1.9685 50	2.5591 65	0.0002 0.0051	0.0018 0.0457	0.0008 0.0203	0.0026 0.0660	0.0018 0.0457	0.0035 0.0889	0.0026 0.0660	0.0041 0.1041	0.0039 0.0991	0.0055 0.1397
2.5591 65	3.1496 80	0.0002 0.0051	0.0022 0.0559	0.0010 0.0254	0.0030 0.0762	0.0022 0.0559	0.0041 0.1041	0.0030 0.0762	0.0049 0.1245	0.0045 0.1143	0.0065 0.1651
3.1496 80	3.9370 100	0.0004 0.0102	0.0024 0.0610	0.0012 0.0305	0.0032 0.0813	0.0026 0.0660	0.0045 0.1143	0.0035 0.0889	0.0055 0.1397	0.0057 0.1448	0.0077 0.1956
3.9370 100	4.7244 120	0.0004 0.0102	0.0026 0.0660	0.0014 0.0356	0.0035 0.0889	0.0032 0.0813	0.0053 0.1346	0.0041 0.1041	0.0063 0.1600	0.0065 0.1651	0.0087 0.2210
4.7244 120	5.5118 140	0.0004 0.0102	0.0030 0.0762	0.0016 0.0406	0.0041 0.1041	0.0035 0.0889	0.0061 0.1549	0.0045 0.1143	0.0071 0.1803	0.0073 0.1854	0.0098 0.2489
5.5118 140	6.2992 160	0.0006 0.0152	0.0032 0.0813	0.0020 0.0508	0.0045 0.1143	0.0039 0.0991	0.0065 0.1651	0.0051 0.1295	0.0077 0.1956	0.0083 0.2108	0.0108 0.2743
6.2992 160	7.0866 180	0.0008 0.0203	0.0034 0.0864	0.0024 0.0610	0.0049 0.1245	0.0043 0.1092	0.0069 0.1753	0.0059 0.1499	0.0085 0.2159	0.0093 0.2362	0.0118 0.2997
7.0866 180	7.8740 200	0.0010 0.0254	0.0037 0.0940	0.0026 0.0660	0.0053 0.1346	0.0049 0.1245	0.0077 0.1956	0.0065 0.1651	0.0092 0.2337	0.0102 0.2591	0.0123 0.3124
7.8740 200	8.8583 225	0.0012 0.0305	0.0041 0.1041	0.0030 0.0762	0.0059 0.1499	0.0055 0.1397	0.0085 0.2159	0.0071 0.1803	0.0100 0.2540	0.0014 0.0356	0.0144 0.3658
8.8583 225	9.8425 250	0.0016 0.0406	0.0045 0.1143	0.0035 0.0889	0.0065 0.1651	0.0061 0.1549	0.0090 0.2286	0.0081 0.2057	0.0110 0.2794	0.0126 0.3200	0.0156 0.3962
9.8425 250	11.0236 280	0.0018 0.0457	0.0049 0.1245	0.0039 0.0991	0.0071 0.1803	0.0069 0.1753	0.0100 0.2540	0.0090 0.2286	0.0122 0.3099	0.0140 0.3556	0.0171 0.4343
11.0236 280	12.4016 315	0.0020 0.0508	0.0052 0.1321	0.0043 0.1092	0.0077 0.1956	0.0077 0.1956	0.0110 0.2794	0.0100 0.2540	0.0134 0.3404	0.0157 0.3988	0.0191 0.4851
12.4016 315	13.9764 355	0.0022 0.0559	0.0057 0.1448	0.0049 0.1245	0.0085 0.2159	0.0085 0.2159	0.0120 0.3048	0.0110 0.2794	0.0146 0.3708	0.0173 0.4394	0.0209 0.5309
13.9764 355	15.7480 400	0.0026 0.0660	0.0063 0.1600	0.0055 0.1397	0.0093 0.2362	0.0096 0.2438	0.0134 0.3404	0.0126 0.3200	0.0163 0.4140	0.0197 0.5004	0.0234 0.5944
15.7480 400	17.7165 450	0.0028 0.0711	0.0075 0.1905	0.0061 0.1549	0.0108 0.2743	0.0106 0.2692	0.0153 0.3886	0.0140 0.3556	0.0179 0.4547	0.0219 0.5563	0.0266 0.6756
17.7165 450	19.6850 500	0.0033 0.0838	0.0081 0.2057	0.0071 0.1803	0.0118 0.2997	0.0118 0.2997	0.0165 0.4191	0.0155 0.3937	0.0202 0.5131	0.0244 0.6198	0.0291 0.7391

Radial Engineering Section continued

The resultant bearing internal radial clearance after mounting and with the bearing in operation will differ from the unmounted clearance due to:

1. The press fit between the shaft and inner race and/or a press fit between the housing and outer race, each resulting in an internal clearance reduction.
2. An increase in the temperature of the inner race over that of the outer race, which will result in a reduction of internal clearance. Conversely, an increase in temperature of the outer race over that of the inner race may result in increased internal clearance.

The formula for the resultant internal clearance of the bearing after mounting and in operation is:

$$S_r = [S_0 - (S_1 \pm S_2 - S_3 \pm S_x)] \geq 0$$

Where:

S_r = Resultant clearance - .0001 in.

S_0 = Initial (unmounted) clearance

S_1 = Clearance reduction due to interference fits

S_2 = Clearance reduction, or increase, due to race temperature differential

S_3 = Clearance increase due to load

S_x = Clearance reduction, or increase, due to high rotational speed or any other effects

Determination of terms S_1 through S_x is described in the following paragraphs.

The clearance reduction due to fit is the sum of the effective inner race expansion, a , and the effective outer race contraction, b , under given press fit conditions (shaft and housing fits).

$$S_1 = a + b (.0001")$$

Where a and b are as follows:

- a. a = expansion of the inner race is estimated; (interference fit) X .75
- b. b = contraction of the outer race is estimated; (interference fit) X .85

And assumes the application has

1. solid shaft
2. rigid housing

In the case of a hollow shaft, and/or flexible housing, Application Engineering should be consulted for resultant fits.

Operating conditions normally will not be so unusual that other clearance effects (S_x) must be considered. However, unusual cases do occur. It is suggested that Application Engineering be consulted when conditions may exist which warrant consideration of clearance changes (S_x) that are not covered by terms S_1 , S_2 , and S_3 .



Radial Engineering Section continued

Limiting Speed

The limiting speed of a roller bearing is the rotational speed at which it may be operated based on geometry, retainer construction, lubricant and lubrication method without incurring a temperature rise within the bearing which would cause lubricant breakdown, softening of components, or seizure. The criterion used is the dn value where d equals the bearing pitch diameter (mm) and n equals the bearing rotation speed (rpm). The dn numbers applying to specific retainers are provided in the table below. To calculate the bearing limiting speed, one can divide the dn number by the bearing pitch diameter in mm to obtain the bearing limiting speed in rpm. This dn number provides the suggested safe limiting speeds for cylindrical radial roller bearings with various types of retainer construction based on recirculating oil lubrication with a lubricant of adequate viscosity.

Rollway Limiting Speed Factors

Retainer Type	dn Factor
Full roller complement	240000
Stamped Steel	380000
Segmented Steel	700000
Two-Piece Brass	700000
One-Piece Land Riding	1400000

In the selection of a retainer design for obtaining the highest practical roller bearing operating speed, it is often necessary to consider other factors than speed alone. For example, a two-piece drilled retainer might be selected over a segmented retainer where the torsional loading on the retainer is severe even though the segmented type appears adequate with respect to speed. It should be noted that suggested limiting speeds are provided for the standard roller-riding retainers (segmented, two-piece drilled and window-type stamped steel) and one-piece land riding retainers. Special retainer designs for each of these types permit higher operating speeds and are available upon request.

When using the table above, the following guidelines should be followed:

- For grease lubricant applications, use 80% of the calculated limiting speed.
- For air-oil mist lubricant applications, use 150% of the calculated limiting speed.
- For fixed volume of non-recirculated oil, use 85% of the calculated limiting speed.
- For double width and multi-row designs, use 67% of the calculated limiting speed.



Radial Engineering Section continued

Radial Bearing Axial Load Capacity

Cylindrical roller bearings that contain flanges on both the inner and outer rings are able to support axial loads in addition to radial loads. The axial load capability is determined through a consideration of the sliding friction and resultant wear taking place between the roller ends and flange faces. The factors having the greatest effect on this sliding friction are the bearing lubrication, operating temperature, and heat dissipation from the bearing.

Radial dynamic capacity is determined through a consideration of the fatigue strength of the bearing material. Thrust capacity is determined through a consideration of the sliding friction and resultant wear taking place between the roller ends and flange faces. Heat generated by the sliding friction must be effectively dissipated throughout the bearing components and by the lubricant in order to maintain thermal equilibrium at a reasonable temperature. The advantage of the cylindrical roller bearing under combined radial and thrust loads is apparent when it is observed that the radial load and the thrust load are taken by two different surfaces. In view of this, there should be no reduction in expected life, which is determined solely by the existing radial load, when thrust load are taken by the bearing.

Thrust capacity is dependent upon bearing design and application characteristics. Bearing design characteristics include:

- a. Apparent contact area between rollers ends and mating flange surfaces.
- b. Surface finish of the mating surfaces.
- c. Geometry of the mating surfaces.
- d. Internal radial clearance and axial clearance of the roller in the roller track.

Application characteristics are a function of:

- a. Sliding velocity at the contact surfaces (rpm and bearing size)
- b. Quality and quantity of the lubricant and effectiveness of the lubrication system.
- c. Type and duration of thrust loads.
- d. Influence of the shaft and housing in heat dissipation
- e. Operating temperatures.

A radial bearing should not be used in applications where there are essentially large thrust loads with no significant radial loads. In most applications, machine masses are of sufficient magnitude to apply a substantial radial load on the bearing without external radial forces. In these cases there will be sufficient radial load to allow satisfactory operation under substantial thrust loads. As a general rule, Rollway radial bearing thrust capacity is 10% of the published radial bearing dynamic rating.

Lubrication

In general, the required viscosity for the lubricant on cylindrical radial bearings is 110 SSU at operating temperature. For further information in regards to bearing lubrication, please refer to page A-17 of this catalog.





Thrust

Unmounted bearing assembly consisting of through hardened housing and shaft plate (raceways) with cylindrical or tapered rolling elements separated by a centrifugally cast brass retainer (cage). Thrust bearings are ideal for applications with loads parallel to the shaft.

Bearing Configurations

Single Or Multistage

Rolling Element Styles

Cylindrical Or Tapered

Bore Diameter Size Range

1" To 18" (25.4 mm To 457 mm)

Materials

Bearing Quality Steel

Thrust Selection Guide



	Type	Description	Size Range
	Txxx	Cylindrical Roller Thrust	6" - 34"
	Atxxx	Aligning Cylindrical Roller Thrust	6" - 35"
	T-xxx	Tapered Roller Thrust	8" - 33"
	T-xxxx-F	T-flat Tapered Roller Thrust	10.5" - 34"
	T-xxxx-FS	Aligning T-Flat Tapered Roller Thrust	19" - 34"
	CTxxx	Crane Hook Thrust	3" - 18.5"
	WCTxxx	Crane Hook Thrust w/ Fitting	3" - 18.5"

* For estimating purpose only, individually sizes may vary and are subject to change without notification



Thrust Bearings **ROLLWAY**®



DESIGN CHARACTERISTICS						FEATURES		Page No.
Static Load	Dynamic Load	Reversing Load	Higher Speed	Horizontal Installation	Relative Base Cost *	Self Aligning	Grease Fitting	
●	●	○	●	●	\$			F-13
●	●	○	●	●	\$\$	S		F-17
●	●	○	●	●	\$\$			F-27
●	●	○	●	●	\$\$			F-29
●	●	○	●	●	\$\$	S		F-30
●	●	○	●	●	\$\$		S	F-21
●	●	○	●	●	\$\$			F-21

Misalignment Capability

External Greasing

O = Optional

S = Standard

○ = Not Recommended



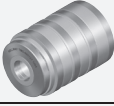




Poor ← → **Best**

Thrust Selection Guide

Thrust Bearings



	Type	Description	Size Range
	TAB-xxxx	2 Stage Tandem Thrust	4.3" - 34"
	TAC-xxxx	3 Stage Tandem Thrust	3.5" - 34"
	TAD/TMD-xxxx	4 Stage Tandem Thrust	3.9" - 12"
	TAF/TFM-xxxx	6 Stage Tandem Thrust	3.5" - 6"
	TMH-xxxx	8 Stage Tandem Thrust	3.5" - 14"

* For estimating purpose only, individually sizes may vary and are subject to change without notification





DESIGN CHARACTERISTICS						FEATURES			Page No.
Static Load	Dynamic Load	Reversing Load	Higher Speed	Horizontal Installation	Relative Base Cost *	Self Aligning	Grease Fitting	Oil Holes / Pathway	
●	●	○	◐	●	\$\$\$			S	F-35
●	●	○	◐	●	\$\$\$			S	F-36
●	●	○	◐	●	\$\$\$			S	F-37
●	●	○	◐	●	\$\$\$			S	F-38
●	●	○	◐	●	\$\$\$			S	F-39

Misalignment Capability

External Greasing

Relubrication and Long Bearing Life

○ = Optional

● = Standard

○ = Not Recommended

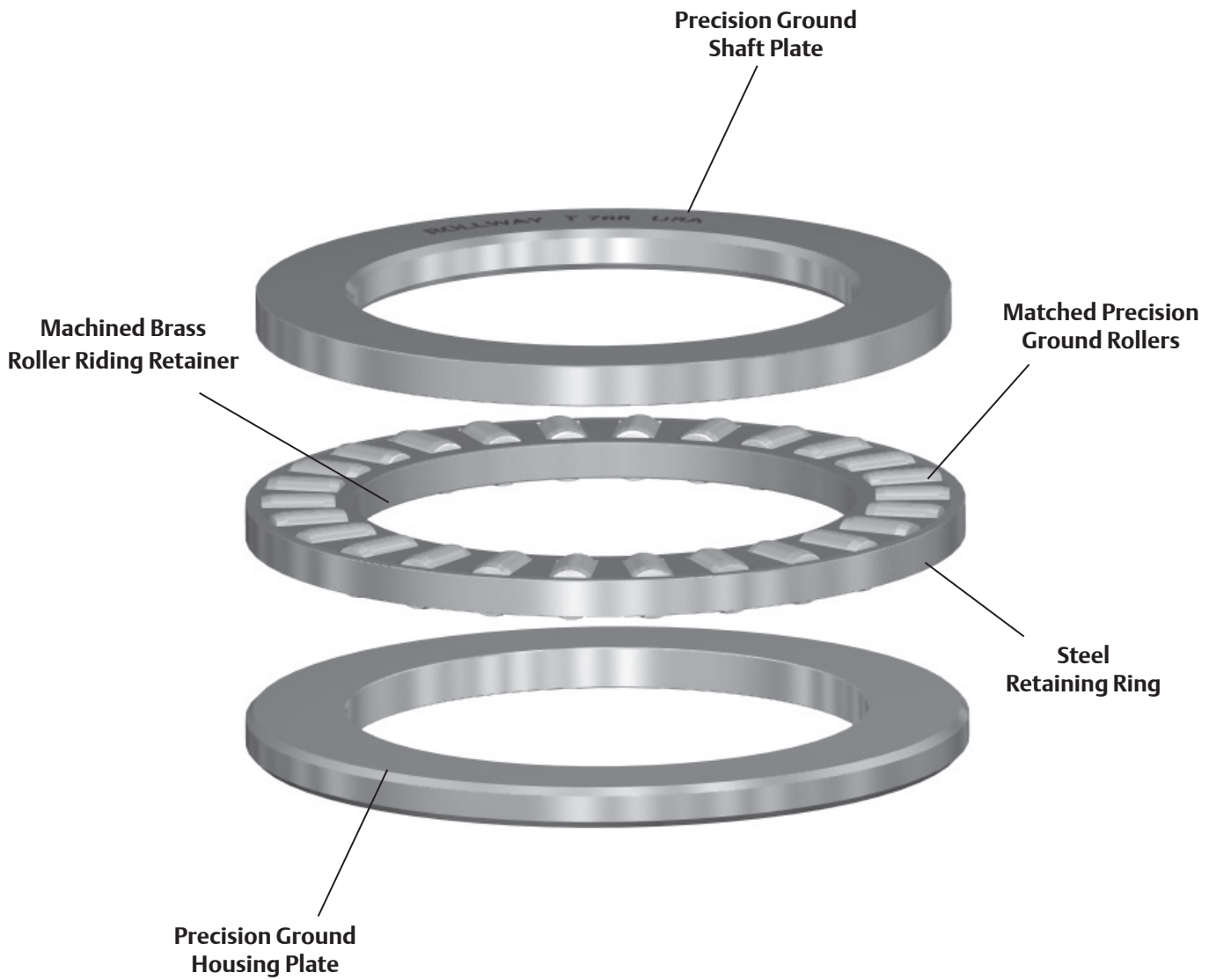


Poor ← → **Best**

Rollway Cylindrical Thrust Bearings

Rollway Cylindrical Thrust bearings utilize crowned cylindrical rolling elements separated by a machined brass roller riding retainer (cage) contained within precision ground shaft and housing plates. These bearings are intended for axial loads (load parallel to the axis of rotation) and are designed as medium or heavy duty series. Either series is available in three configuration types including double acting, self aligning and the most widely used “single acting” variety. Depending on your preference, these bearings are available in a wide variety of sizes and options as illustrated on the pages to follow.

Cylindrical roller thrust Inch series bearings are divided into two basic classes: medium (600 series) and heavy (700 series). The medium series has a smaller cross section and the retainer typically has only one roller per roller pocket. The heavy series has a larger cross section and the retainer typically has more than one roller per roller pocket.



Cylindrical Thrust Nomenclature



Type Designator

Bearing Configuration Description

Size Designator

Reference Catalog For Sizes.

Variation Code

Variation Codes Are Divided Into Two Categories: Special And Standard.



Type Designator

- T - Single acting thrust
- AT - Single acting thrust - aligning type.
- DT - Double acting thrust
- DAT - Double acting thrust - aligning type.
- BSDT - Double acting thrust - simplified design
- CT - Single acting thrust - special design for crane hook applications with weathershed
- WCT - Single acting thrust - special design for crane hook applications with weathershed and grease fitting

Size Designator

Reference catalog for sizes.

Variation Codes

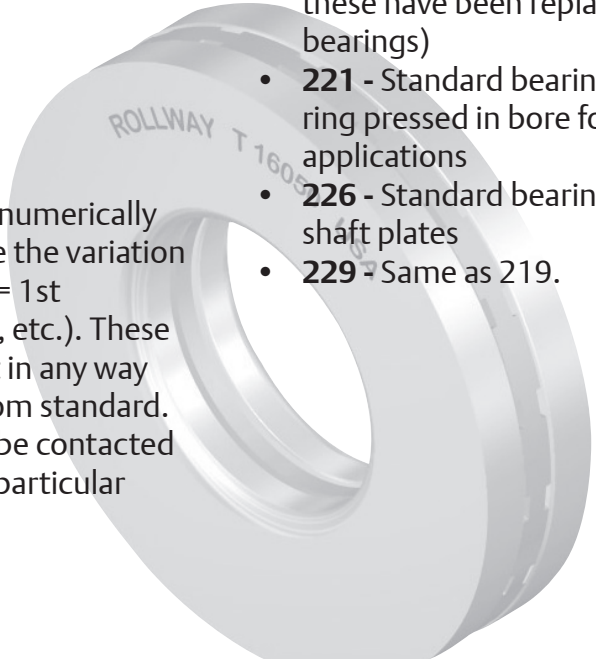
Special variation codes

201 to 215 and 240 to 254 - are numerically assigned codes that designate the variation from standard (example 201 = 1st variation, 202 = 2nd variation, etc.). These bearing code numbers do not in any way reference the modification from standard. Application Engineering must be contacted for information concerning a particular modification.

Standard variation codes

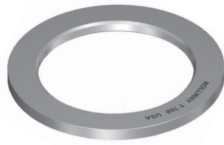
216 to 239 and 255 to 299 - 216 to 239 and 255 to 299 are code numbers representing standard modifications with the most popular listed below:

- **059** - Brass retainer - this code is obsolete, all standard thrust bearings are supplied with centrifugally cast brass retainers
- **210** - Roller assembly supplied with hardened steel outer ring
- **216** - Standard bearing supplied without shaft plate
- **219** - Tandem bearing design (typically these have been replaced with TAB to TAC bearings)
- **221** - Standard bearing with a brass ring pressed in bore for horizontal shaft applications
- **226** - Standard bearing supplied with two shaft plates
- **229** - Same as 219.





Features and Benefits



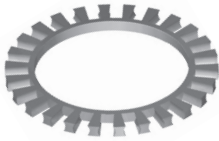
Precision Ground Shaft Plate

Bore is precision ground for a line to loose fit on shaft. The O.D. has a turned finish and is smaller than the housing plate's O.D. Shaft Plates are manufactured to conform to ABMA size and tolerance specifications.



Matched Precision Ground Rollers

Rollers are manufactured from Through Hardened Bearing Grade Steel. The surfaces are ground, superfinished, and matched to .0001". The ends of the rollers have a large machined radius designed to reduce friction between the roller and the retaining ring. The larger diameter bearings use multiple rollers per pocket to minimize slippage. All rolling elements are precision ground to provide even distribution of load over the contact surfaces. The rollers are all crowned thus permitting unmodified use of the ABMA's capacity formula. Roller crowning reduces the edge stresses between the roller and the thrust plates.



Machined Brass Roller Riding Retainer

Rollway thrust bearing retainers are machined from centrifugally cast brass. The retainers for all cylindrical roller thrust bearings are designed to be roller riding. The contoured roller pockets are accurately machined at right angles to the thrust force, which will be applied to the bearing. The rollers are retained in the assembly by a steel ring pinned to the outside diameter of the retainer.



Precision Ground Housing Plate

O.D. is precision ground for a line to loose fit in housing bore. The I.D. has a turned finish and is larger than the shaft plate's I.D. Housing Plates are manufactured to conform to ABMA size and tolerance specifications. All thrust plates are accurately ground for flatness and parallelism of the roller riding and backing surfaces. The contact surfaces of the plates are super-finished to provide for long life. Locating diameters are ground to obtain an accurate fit on the shaft or in the housing.



Options

Materials

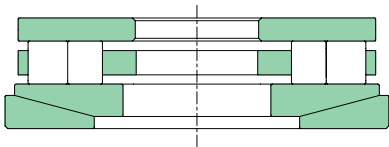
The plates and rollers are made from either through-hardened or carburizing grade steel with hardness to Rockwell (Rc) 58-63. Upon request we can manufacture these components from CEVM or VIMVAR grades of material and M- 50 tool steel for high temperature applications.

Types and Styles



Inch Series — Single Acting

The single acting bearing is the most popular thrust bearing of the inch series. The bearing is often referred to as a “three piece thrust bearing”. One of the thrust plates is stationary with respect to the shaft and is ground in the bore for an accurate fit on the shaft. The roller assembly is located by the shaft and its inside diameter is machined to provide the correct operating clearance. The second thrust plate is stationary with the housing and is ground on the outside diameter for an accurate fit in the housing. The non-locating diameters of both thrust plates are specially designed to allow lubricant flow. The sizes range from 1 to 22 inches I.D. and 2.125 to 34 inches O.D. with dynamic capacities from 10,000 lbs to 1,620,000 lbs. These bearings are used in a variety of applications such as extruder gear drives, pumps, crane hook swivels and machine tools.



“AT” Aligning Type

The aligning style design replaces the housing plate with aligning plates. The aligning plates are matched plates, one convex and one concave, that will correct for 3° initial static misalignment. These aligning plates are not designed for applications requiring dynamic aligning capabilities. They are designed to correct an initial misalignment prior to full loading. The concave plate (housing plate) is precision ground but not hardened.

The standard “AT” type is recommended for vertical shaft applications. Where the alignment feature is required in some horizontal shaft applications, the convex aligning plate may ride on the shaft and the plate should be modified to provide a satisfactory bearing surface in the bore. This is usually achieved by the installation of a brass bushing into the bore of the plate.

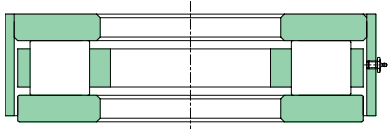


Types and Styles continued



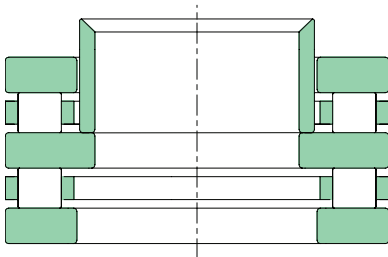
Crane Hook Thrust Bearings

Crane hook bearings are similar to the single acting inch series but are specifically designed for crane hooks or similar applications where heavy thrust loads and low speeds of rotation are encountered. Crane hook bearings are simply single acting thrust bearings supplied with a weathershed. The weathershed is a steel band pressed on to the rotating plate extending to the middle of the stationary plate forming a shield to help protect the roller assembly.



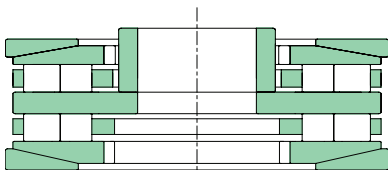
The weathersheds are supplied with or without grease fittings.

This type of bearing undergoes static loading in normal applications. Our static capacities are based on a total permanent deformation of .0002 inch per inch of roller diameter and are not the ABMA basic capacity.



“DT” Double Acting Thrust

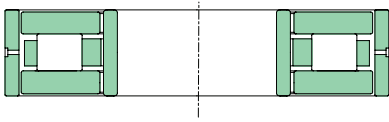
The “DT” type thrust bearing is a double acting thrust bearing that will withstand reversal in the direction of the load at normal speeds of rotation. The center thrust plate and sleeve must be keyed to the shaft or clamped tightly between the shaft shoulders to prevent rotation of the center plate relative to the shaft. The two outer thrust plates are stationary with respect to the housing. There are two roller assemblies on either side of the center thrust plate. The center plate drives the roller assembly corresponding to the direction of the thrust load.



“DAT” Aligning, Double Acting Thrust

This bearing is basically a combination of the “DT” type and the “AT” type. The bearing is designed to take reversals in thrust load and correct for initial static misalignment up to 3°.

Types and Styles continued



“SDT” Simplified Double Acting Thrust

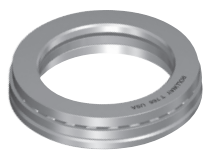
This bearing is similar in concept to the “DT” double acting type except the design has been simplified to only one roller assembly and two thrust plates. With the load in one direction, one of the thrust plates is stationary with respect to the housing and the other thrust plate rotates. When the direction of the load is reversed, the stationary plate rotates and the rotating plate becomes the stationary plate.

To provide necessary clearance for this action, the inner and outer spacer sleeves are made wider than the combined thickness of the thrust plates and roller assembly. This bearing is recommended for applications where the direction of the thrust load changes when the bearing is stationary or rotating at slow speed.

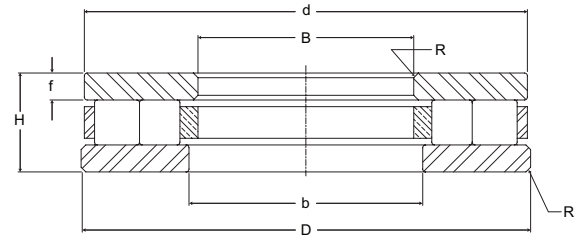


ROLLWAY® Cylindrical Thrust Bearings

Thrust Bearings



- Basic Construction Type:** Standard Cylindrical Roller Thrust Or Aligning Type Bearing
- Rolling Elements:** Crowned Cylindrical Rollers With Sphered Ends
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** Medium Duty (600), Heavy Duty (700), Or Metric
- Retainer Types:** Machined Brass With Steel Retaining Ring

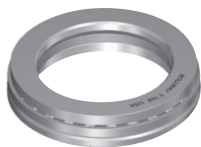


Cylindrical Roller Thrust Bearings

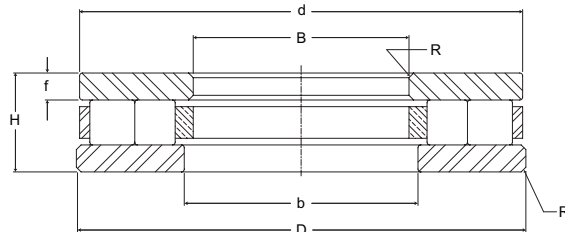
Part No.	B	D	H	b	d	f	R	Bearing Weight	C	Co
	Bore	Outside Diameter	Height	Internal Dimensions			Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm		lb kg	lb/N
T601	1.000 25.40	2.125 53.98	0.812 20.62	1.130 28.70	2.000 50.80	.220 5.59	.031 .79	.5 .2	10,550 47,260	18,760 84,040
T602	1.062 26.97	2.125 53.98	0.812 20.62	1.130 28.70	2.000 50.80	.220 5.59	.031 .79	.5 .2	10,550 47,260	18,760 84,040
T603	1.125 28.58	2.250 57.15	0.812 20.62	1.250 31.75	2.150 54.61	.220 5.59	.031 .79	.6 .3	12,140 54,390	25,540 114,420
T604	1.187 30.15	2.250 57.15	0.812 20.62	1.250 31.75	2.150 54.61	.220 5.59	.031 .79	.6 .3	12,140 54,390	25,540 114,420
T605	1.250 31.75	2.375 60.33	0.812 20.62	1.430 36.32	2.310 58.67	.220 5.59	.031 .79	.6 .3	13,280 59,490	28,380 127,140
T606	1.312 33.32	2.375 60.33	0.812 20.62	1.430 36.32	2.310 58.67	.220 5.59	.031 .79	.6 .3	13,280 59,490	28,380 127,140
T607	1.375 34.93	2.875 73.03	0.812 20.62	1.630 41.40	2.790 70.87	.220 5.59	.031 .79	1.0 .4	17,470 78,270	47,800 214,140
T608	1.437 36.50	2.875 73.03	0.812 20.62	1.630 41.40	2.790 70.87	.220 5.59	.031 .79	1.0 .4	17,470 78,270	47,800 214,140
T609	1.500 38.10	3.000 76.20	0.812 20.62	1.750 44.45	2.900 73.66	.220 5.59	.031 .79	1.0 .4	18,730 83,910	52,140 233,590
T610	1.562 39.67	3.000 76.20	0.812 20.62	1.750 44.45	2.900 73.66	.220 5.59	.031 .79	1.0 .4	18,730 83,910	52,140 233,590
T611	1.625 41.28	3.250 82.55	1.000 25.40	1.880 47.75	3.150 80.01	.250 6.35	.062 1.57	1.5 .7	25,620 114,780	67,380 301,860
T612	1.687 42.85	3.250 82.55	1.000 25.40	1.880 47.75	3.150 80.01	.250 6.35	.062 1.57	1.5 .7	25,620 114,780	67,380 301,860
T613	1.750 44.45	3.375 85.73	1.000 25.40	2.030 51.56	3.300 83.82	.250 6.35	.062 1.57	1.6 .7	27,670 123,960	74,120 332,060
T614	1.812 46.02	3.375 85.73	1.000 25.40	2.030 51.56	3.300 83.82	.250 6.35	.062 1.57	1.6 .7	27,670 123,960	74,120 332,060
T615	1.875 47.63	3.500 88.90	1.000 25.40	2.130 54.10	3.410 86.61	.250 6.35	.062 1.57	1.7 .8	27,760 124,360	74,120 332,060
T616	1.937 49.20	3.500 88.90	1.000 25.40	2.130 54.10	3.410 86.61	.250 6.35	.062 1.57	1.6 .7	27,760 124,360	74,120 332,060
T617	2.000 50.80	3.625 92.08	1.000 25.40	2.190 55.63	3.500 88.90	.250 6.35	.062 1.57	1.7 .8	27,870 124,860	74,120 332,060
T618	2.125 53.98	3.750 95.25	1.000 25.40	2.380 60.45	3.650 92.71	.250 6.35	.062 1.57	1.8 .8	28,740 128,760	80,850 362,210
T619	2.250 57.15	3.875 98.43	1.000 25.40	2.440 61.98	3.750 95.25	.250 6.35	.062 1.57	1.9 .9	32,030 143,490	87,590 392,400

Metric dimensions for reference only.
 For tolerances see pages F-41 to F-42.
 Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.
 For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Cylindrical Thrust Bearings **ROLLWAY®**



- Basic Construction Type:** Standard Cylindrical Roller Thrust Or Aligning Type Bearing
- Rolling Elements:** Crowned Cylindrical Rollers With Sphered Ends
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** Medium Duty (600), Heavy Duty (700), Or Metric
- Retainer Types:** Machined Brass With Steel Retaining Ring



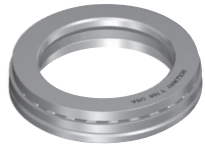
Thrust Bearings

Cylindrical Roller Thrust Bearings

Part No.	B	D	H	b	d	f	R	Bearing Weight	C	Co
	Bore	Outside Diameter	Height	Internal Dimensions			Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm		lb kg	lb/N
T620	2.375 60.33	4.000 101.60	1.000 25.40	2.630 66.80	3.900 99.06	.250 6.35	.062 1.57	2.0 .9	32,250 144,480	87,590 392,400
T621	2.500 63.50	4.125 104.78	1.000 25.40	2.670 67.82	4.000 101.60	.250 6.35	.062 1.57	2.1 1.0	34,180 153,130	94,330 422,600
T622	2.625 66.68	4.343 110.31	1.000 25.40	2.880 73.15	4.220 107.19	.250 6.35	.062 1.57	2.3 1.0	36,150 161,950	101,070 452,790
T623	2.750 69.85	4.468 113.49	1.000 25.40	3.060 77.72	4.340 110.24	.250 6.35	.062 1.57	2.4 1.1	38,350 171,810	107,800 482,940
T624	3.000 76.20	4.718 119.84	1.000 25.40	3.250 82.55	4.590 116.59	.250 6.35	.062 1.57	2.6 1.2	40,510 181,480	114,540 513,140
T625	3.250 82.55	4.968 126.19	1.000 25.40	3.500 88.90	4.840 122.94	.250 6.35	.062 1.57	2.7 1.2	40,770 182,650	114,540 513,140
T626	3.500 88.90	5.218 132.54	1.000 25.40	3.750 95.25	5.090 129.29	.250 6.35	.062 1.57	2.9 1.3	44,350 198,690	128,020 573,530
T727	2.000 50.80	6.000 152.40	1.375 34.93	2.250 57.15	5.880 149.35	.380 9.65	.062 1.57	8.6 3.9	77,500 347,200	295,900 1,325,630
T728	2.000 50.80	7.000 177.80	1.375 34.93	2.250 57.15	6.880 174.75	.380 9.65	.062 1.57	11.7 5.3	105,600 473,090	363,600 1,628,930
T729	2.000 50.80	8.000 203.20	1.375 34.93	2.250 57.15	7.880 200.15	.380 9.65	.062 1.57	16.0 7.3	111,900 501,310	460,200 2,061,700
T730	3.000 76.20	6.000 152.40	1.375 34.93	3.250 82.55	5.880 149.35	.380 9.65	.062 1.57	7.3 3.3	82,200 368,260	268,000 1,200,640
T731	3.000 76.20	7.000 177.80	1.375 34.93	3.250 82.55	6.880 174.75	.380 9.65	.062 1.57	10.8 4.9	98,800 442,620	365,800 1,638,780
T732	3.000 76.20	8.000 203.20	1.375 34.93	3.250 82.55	7.880 200.15	.380 9.65	.062 1.57	14.7 6.7	126,200 565,380	494,500 2,215,360
T733	3.000 76.20	9.000 228.60	1.375 34.93	3.250 82.55	8.880 225.55	.380 9.65	.062 1.57	19.2 8.7	147,500 660,800	642,800 2,879,740
T734	4.000 101.60	7.000 177.80	1.750 44.45	4.250 107.95	6.880 174.75	.500 12.70	.062 1.57	11.4 5.2	111,100 497,730	320,500 1,435,840
T735	4.000 101.60	8.000 203.20	1.750 44.45	4.250 107.95	7.880 200.15	.500 12.70	.062 1.57	16.6 7.6	132,200 592,260	454,200 2,034,820
T736	4.000 101.60	9.000 228.60	1.750 44.45	4.250 107.95	8.880 225.55	.500 12.70	.062 1.57	22.4 10.2	158,400 709,630	658,100 2,948,290
T737	4.000 101.60	10.000 254.00	1.750 44.45	4.250 107.95	9.880 250.95	.500 12.70	.062 1.57	29.0 13.2	192,200 861,060	777,800 3,484,540

ROLLWAY® Cylindrical Thrust Bearings

Thrust Bearings



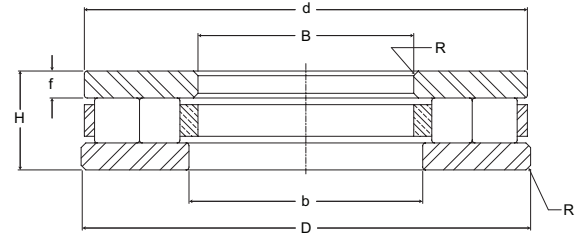
Basic Construction Type: Standard Cylindrical Roller Thrust Or Aligning Type Bearing

Rolling Elements: Crowned Cylindrical Rollers With Sphered Ends

Bearing Material: Through Hardened Or Case Carburized Bearing Grade Steel

Series: Medium Duty (600), Heavy Duty (700), Or Metric

Retainer Types: Machined Brass With Steel Retaining Ring



Cylindrical Roller Thrust Bearings (continued)

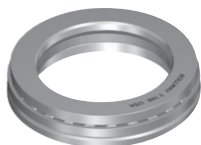
Part No.	B	D	H	b	d	f	R	Bearing Weight lb kg	C	Co
	Bore	Outside Diameter	Height	Internal Dimensions			Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm		lb/N	lb/N
T738	5.000 127.00	8.000 203.20	1.750 44.45	5.250 133.35	7.880 200.15	.500 12.70	.062 1.57	13.5 6.1	111,000 497,280	419,400 1,878,910
T739	5.000 127.00	9.000 228.60	1.750 44.45	5.250 133.35	8.880 225.55	.500 12.70	.062 1.57	19.5 8.8	162,000 725,760	631,800 2,830,460
T740	5.000 127.00	10.000 254.00	2.000 50.80	5.250 133.35	9.880 250.95	.560 14.22	.125 3.18	30.0 13.6	205,100 918,850	703,300 3,150,780
T741	5.000 127.00	11.000 279.40	2.000 50.80	5.250 133.35	10.880 276.35	.560 14.22	.125 3.18	38.0 17.2	231,200 1,035,780	870,900 3,901,630
T742	5.000 127.00	12.000 304.80	2.000 50.80	5.250 133.35	11.880 301.75	.560 14.22	.125 3.18	47.0 21.3	276,100 1,236,930	1,144,000 5,125,120
T743	6.000 152.40	9.000 228.60	2.000 50.80	6.380 162.05	8.750 222.25	.560 14.22	.125 3.18	18.0 8.1	130,600 585,090	450,100 2,016,450
T744	6.000 152.40	10.000 254.00	2.000 50.80	6.380 162.05	9.750 247.65	.560 14.22	.125 3.18	25.0 11.3	190,300 852,540	648,600 2,905,730
T745	6.000 152.40	11.000 279.40	2.000 50.80	6.380 162.05	10.750 273.05	.560 14.22	.125 3.18	34.0 15.4	233,400 1,045,630	929,900 4,165,950
T746	6.000 152.40	12.000 304.80	2.000 50.80	6.380 162.05	11.750 298.45	.560 14.22	.125 3.18	42.0 19.1	267,000 1,196,160	1,097,100 4,915,010
T747	7.000 177.80	10.000 254.00	2.000 50.80	7.380 187.45	9.750 247.65	.560 14.22	.125 3.18	20.0 4.1	154,500 692,160	550,100 2,464,450
T748	7.000 177.80	11.000 279.40	2.000 50.80	7.380 187.45	10.750 273.05	.560 14.22	.125 3.18	28.0 12.7	213,600 956,930	790,800 3,542,780
T749	7.000 177.80	12.000 304.80	2.000 50.80	7.380 187.45	11.750 298.45	.560 14.22	.125 3.18	40.0 18.1	251,600 1,127,170	1,022,900 4,582,590
T750	7.000 177.80	14.000 355.60	3.000 76.20	7.380 187.45	13.750 349.25	.880 22.35	.250 6.35	88.0 39.9	436,200 1,954,180	1,598,200 7,159,940
T751	8.000 203.20	12.000 304.80	3.000 76.20	8.380 212.85	11.750 298.45	.880 22.35	.250 6.35	48.0 21.7	258,000 1,155,840	945,400 4,235,390
T752	7.000 177.80	14.000 355.60	3.000 76.20	8.380 212.85	13.750 349.25	.880 22.35	.250 6.35	78.0 35.4	397,500 1,780,800	1,487,900 6,665,790
T753	7.000 177.80	16.000 406.40	3.000 76.20	8.380 212.85	15.750 400.05	.880 22.35	.250 6.35	114.0 51.7	516,400 2,313,470	2,072,500 9,284,800
T754	10.000 254.00	16.000 406.40	3.000 76.20	10.380 263.65	15.750 400.05	.880 22.35	.250 6.35	88.0 39.9	437,800 1,961,340	1,747,200 7,827,460
T755	10.000 254.00	18.000 457.20	3.750 95.25	10.380 263.65	17.750 450.85	1.130 28.70	.250 6.35	168.0 76.2	614,200 2,751,620	2,697,600 12,085,250
T756	10.000 254.00	20.000 508.00	3.750 95.25	10.380 263.65	19.750 501.65	1.130 28.70	.250 6.35	225.0 102.1	766,000 3,431,680	3,250,900 14,564,030

Metric dimensions for reference only.

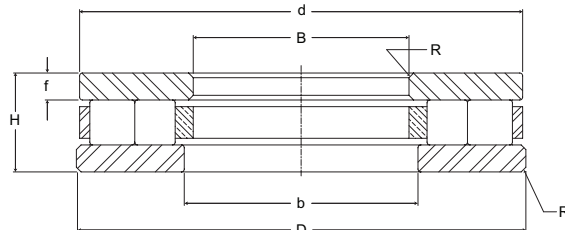
Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Cylindrical Thrust Bearings **ROLLWAY**[®]



- Basic Construction Type:** Standard Cylindrical Roller Thrust Or Aligning Type Bearing
- Rolling Elements:** Crowned Cylindrical Rollers With Sphered Ends
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** Medium Duty (600), Heavy Duty (700), Or Metric
- Retainer Types:** Centrifugally Cast Brass

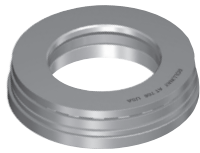


Cylindrical Roller Thrust Bearings (continued)

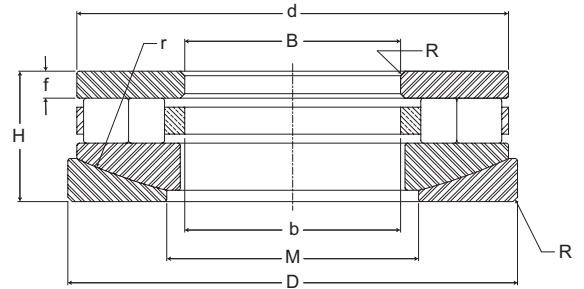
Part No.	B	D	H	b	d	f	R	Bearing Weight	C	Co
	Bore	Outside Diameter	Height	Internal Dimensions			Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	lb kg	lb/N	lb/N
T757	12.000 304.80	18.000 457.20	3.750 95.25	12.500 317.50	17.750 450.85	1.130 28.70	.250 6.35	134.0 60.8	469,200 2,102,020	2,031,900 9,102,910
T758	12.000 304.80	20.000 508.00	4.500 114.30	12.500 317.50	19.750 501.65	1.380 35.05	.250 6.35	222.0 100.0	724,600 3,246,210	2,937,800 13,161,340
T759	12.000 304.80	24.000 609.60	4.500 114.30	12.500 317.50	23.750 603.25	1.380 35.05	.250 6.35	372.0 168.7	1,045,900 4,685,630	4,688,000 21,002,240
T760	14.000 355.60	20.000 508.00	3.750 95.25	14.500 368.30	19.750 501.65	1.130 28.70	.250 6.35	152.0 68.9	540,000 2,419,200	2,385,200 10,685,700
T761	14.000 355.60	22.000 558.80	3.750 95.25	14.500 368.30	21.750 552.45	1.130 28.70	.250 6.35	215.0 97.5	732,000 3,279,360	3,339,900 14,962,750
T762	14.000 355.60	24.000 609.60	3.750 95.25	14.500 368.30	23.750 603.25	1.130 28.70	.250 6.35	285.0 129.2	858,100 3,844,290	4,280,300 19,175,740
T763	16.000 406.40	22.000 558.80	4.500 114.30	16.500 419.10	21.500 546.10	1.380 35.05	.250 6.35	205.0 92.9	609,800 2,731,900	2,362,800 10,585,340
T764	16.000 406.40	24.000 609.60	4.500 114.30	16.500 419.10	23.500 596.90	1.380 35.05	.250 6.35	290.0 131.5	878,700 3,936,580	3,819,100 17,109,570
T765	16.000 406.40	26.000 660.40	4.500 114.30	16.500 419.10	25.500 647.70	1.380 35.05	.250 6.35	238.0 107.9	1,041,500 4,665,920	4,916,300 22,025,020
T766	18.000 457.20	26.000 660.40	5.000 127.00	18.750 476.25	25.500 647.70	1.500 38.10	.250 6.35	350.0 158.7	945,500 4,235,840	3,937,500 17,640,000
T767	18.000 457.20	28.000 711.20	5.000 127.00	18.750 476.25	27.500 698.50	1.500 38.10	.250 6.35	460.0 208.6	1,571,600 7,040,770	5,393,500 24,162,880
T768	18.000 457.20	30.000 762.00	5.500 139.70	18.750 476.25	29.500 749.30	1.500 38.10	.250 6.35	630.0 285.7	1,571,600 7,040,770	6,753,800 30,257,020
T769	20.000 508.00	28.000 711.20	5.500 139.70	21.250 539.75	27.500 698.50	1.500 38.10	.250 6.35	420.0 190.5	1,091,700 4,890,820	4,407,200 19,744,260
T770	20.000 508.00	30.000 762.00	5.500 139.70	21.250 539.75	29.500 749.30	1.500 38.10	.250 6.35	550.0 249.5	1,544,800 6,920,700	6,885,500 30,847,040
T771	20.000 508.00	32.000 812.80	6.000 152.40	21.250 539.75	31.500 800.10	1.750 44.45	.250 6.35	750.0 340.2	1,712,000 7,669,760	7,850,000 35,168,000
T772	22.000 558.80	30.000 762.00	5.500 139.70	23.250 590.55	29.500 749.30	1.500 38.10	.250 6.35	450.0 204.1	1,161,900 5,205,310	4,774,500 21,389,760
T773	22.000 558.80	32.000 812.80	5.500 139.70	23.250 590.55	31.500 800.10	1.500 38.10	.250 6.35	590.0 267.6	1,431,000 6,410,880	6,153,200 27,566,340
T744	22.000 558.80	34.000 863.60	6.000 152.40	23.250 590.55	33.500 850.90	1.750 44.45	.250 6.35	800.0 362.8	1,742,200 7,805,060	7,981,700 35,758,020

ROLLWAY® Cylindrical Thrust Bearings

Thrust Bearings



- Basic Construction Type:** Standard Cylindrical Roller Thrust Or Aligning Type Bearing
- Rolling Elements:** Crowned Cylindrical Rollers With Sphered Ends
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** Medium Duty (600), Heavy Duty (700), Or Metric
- Retainer Types:** Machined Brass With Steel Retaining Ring

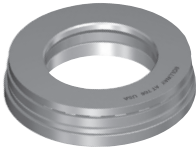


Self Aligning Cylindrical Roller Thrust Bearings

Part No.	B	D	H	b	d	f	m	f	R	Bearing Weight lb kg	C	Co	
	Bore	Outside Diameter	Height	Internal Dimensions							Housing & Shaft Fillet	Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm		lb/N	lb/N	
AT601	1.000 25.40	2.250 57.15	1.062 26.97	1.130 28.70	2.000 50.80	.220 5.59	1.310 33.27	1.500 38.10	.031 .79	.7 .3	10,550 47,260	18,760 84,040	
AT602	1.062 26.97	2.250 57.15	1.062 26.97	1.130 28.70	2.000 50.80	.220 5.59	1.310 33.27	1.500 38.10	.031 .79	.7 .3	10,550 47,260	18,760 84,040	
AT603	1.125 28.58	2.375 60.33	1.062 26.97	1.250 31.75	2.150 54.61	.220 5.59	1.440 36.58	1.750 44.45	.031 .79	.8 .4	12,140 54,390	25,540 114,420	
AT604	1.187 30.15	2.375 60.33	1.062 26.97	1.250 31.75	2.150 54.61	.220 5.59	1.440 36.58	1.750 44.45	.031 .79	.70 .3	12,140 54,390	25,540 114,420	
AT605	1.250 31.75	2.500 63.50	1.062 26.97	1.380 35.05	2.310 58.67	.220 5.59	1.500 38.10	1.875 47.63	.031 .79	.8 .4	13,280 59,490	28,380 127,140	
AT606	1.312 33.32	2.500 63.50	1.062 26.97	1.380 35.05	2.310 58.67	.220 5.59	1.630 41.40	1.875 47.63	.031 .79	.8 .4	13,280 59,490	28,380 127,140	
AT607	1.375 34.93	3.000 76.20	1.062 26.97	1.500 38.10	2.790 70.87	.220 5.59	1.810 45.97	2.750 69.85	.031 .79	1.3 .6	17,470 78,270	47,800 214,140	
AT608	1.437 36.50	3.000 76.20	1.062 26.97	1.500 38.10	2.790 70.87	.220 5.59	1.810 45.97	2.750 69.85	.031 .79	1.3 .6	17,470 78,270	47,800 214,140	
AT609	1.500 38.10	3.125 79.38	1.062 26.97	1.630 41.40	2.900 73.66	.220 5.59	1.880 47.75	3.000 76.20	.031 .79	1.4 .6	18,730 83,910	52,140 233,590	
AT610	1.562 39.67	3.125 79.38	1.062 26.97	1.630 41.40	2.900 73.66	.220 5.59	1.880 47.75	3.000 76.20	.031 .79	1.4 .6	18,730 83,910	52,140 233,590	
AT611	1.625 41.28	3.375 85.73	1.312 33.32	1.750 44.45	3.150 80.01	.250 6.35	2.000 50.80	3.000 76.20	.062 1.57	2 .9	25,620 114,780	67,380 301,860	
AT612	1.687 42.85	3.375 85.73	1.312 33.32	1.750 44.45	3.150 80.01	.250 6.35	2.000 50.80	3.000 76.20	.062 1.57	2 .9	25,620 114,780	67,380 301,860	
AT613	1.750 44.45	3.500 88.90	1.312 33.32	1.880 47.75	3.300 83.82	.250 6.35	2.060 52.32	3.250 82.55	.062 1.57	2 .9	27,670 123,960	74,120 332,060	
AT614	1.812 46.02	3.500 88.90	1.312 33.32	1.880 47.75	3.300 83.82	.250 6.35	2.060 52.32	3.250 82.55	.062 1.57	2 .9	27,670 123,960	74,120 332,060	
AT615	1.875 47.63	3.625 92.08	1.312 33.32	2.000 50.80	3.410 86.61	.250 6.35	2.250 57.15	3.250 82.55	.062 1.57	2.2 1.0	27,760 124,360	74,120 332,060	
AT616	1.937 49.20	3.625 92.08	1.312 33.32	2.000 50.80	3.410 86.61	.250 6.35	2.250 57.15	3.250 82.55	.062 1.57	2.2 1.0	27,760 124,360	74,120 332,060	
AT617	2.000 50.80	3.750 95.25	1.312 33.32	2.060 52.32	3.500 88.90	.250 6.35	2.480 62.99	3.250 82.55	.062 1.57	2.3 1.0	27,870 124,860	74,120 332,060	
AT618	2.125 53.98	3.875 98.43	1.312 33.32	2.190 55.63	3.650 92.71	.250 6.35	2.500 63.50	3.500 88.90	.062 1.57	2.3 1.0	28,740 128,760	80,850 362,210	
AT619	2.250 57.15	4.000 101.60	1.312 33.32	2.310 58.67	3.750 95.25	.250 6.35	2.690 68.33	3.500 88.90	.062 1.57	2.5 1.1	32,030 143,490	87,590 392,400	

Metric dimensions for reference only.
 Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.
 For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Cylindrical Thrust Bearings **ROLLWAY®**



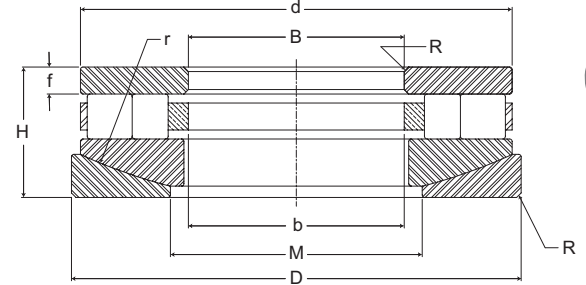
Basic Construction Type: Standard Cylindrical Roller Thrust Or Aligning Type Bearing

Rolling Elements: Crowned Cylindrical Rollers With Sphered Ends

Bearing Material: Through Hardened Or Case Carburized Bearing Grade Steel

Series: Medium Duty (600), Heavy Duty (700), Or Metric

Retainer Types: Machined Brass With Steel Retaining Ring



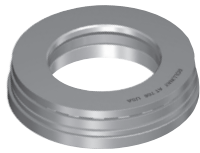
Thrust Bearings

Self Aligning Cylindrical Roller Thrust Bearings

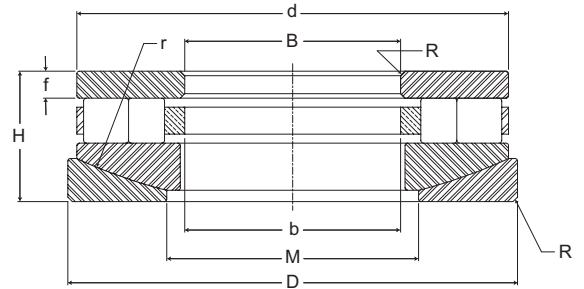
Part No.	B	D	H	b	d	f	m	f	R	Bearing Weight lb kg	C	Co	
	Bore	Outside Diameter	Height	Internal Dimensions							Housing & Shaft Fillet	Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm		lb/N	lb/N	
AT620	2.375 60.33	4.125 104.78	1.312 33.32	2.440 61.98	3.900 99.06	.250 6.35	2.880 73.15	3.500 88.90	.062 1.57	2.6 1.2	32,250 144,480	87,590 392,400	
AT621	2.500 63.50	4.250 107.95	1.312 33.32	2.560 65.02	4.000 101.60	.250 6.35	2.880 73.15	4.000 101.60	.062 1.57	2.7 1.2	34,180 153,130	94,330 422,600	
AT622	2.625 66.68	4.530 115.06	1.312 33.32	2.690 68.33	4.220 107.19	.250 6.35	3.130 79.50	3.750 95.25	.062 1.57	3 1.4	36,150 161,950	101,070 452,790	
AT623	2.750 69.85	4.655 118.24	1.312 33.32	2.810 71.37	4.340 110.24	.250 6.35	3.130 79.50	4.250 107.95	.062 1.57	3.2 1.5	38,350 171,810	107,800 482,940	
AT624	3.000 76.20	4.968 126.19	1.312 33.32	3.060 77.72	4.590 116.59	.250 6.35	3.500 88.90	4.500 114.30	.062 1.57	3.4 1.5	40,510 181,480	114,540 513,140	
AT625	3.250 82.55	5.218 132.54	1.312 33.32	3.340 84.84	4.840 122.94	.250 6.35	3.810 96.77	4.750 120.65	.062 1.57	3.6 1.6	40,770 182,650	114,540 513,140	
AT626	3.500 88.90	5.468 138.89	1.312 33.32	3.590 91.19	5.090 129.29	.250 6.35	4.060 103.12	5.000 127.00	.062 1.57	3.8 1.7	44,350 198,690	128,020 573,530	
AT727	2.000 50.80	6.312 160.32	1.182 30.02	2.060 52.32	5.880 149.35	.380 9.65	3.380 85.85	7.500 190.50	.062 1.57	11.5 5.2	77,500 347,200	295,900 1,325,630	
AT728	2.000 50.80	7.312 185.72	1.182 30.02	2.060 52.32	6.880 174.75	.380 9.65	4.250 107.95	9.500 241.30	.062 1.57	15.8 7.2	105,600 473,090	363,600 1,628,930	
AT729	2.000 50.80	8.312 211.12	1.182 30.02	2.060 52.32	7.880 200.15	.380 9.65	5.000 127.00	12.000 304.80	.062 1.57	21.5 9.7	111,900 501,310	460,200 2,061,700	
AT730	3.000 76.20	6.312 160.32	1.182 30.02	3.060 77.72	5.880 149.35	.380 9.65	4.000 101.60	6.000 152.40	.062 1.57	9 4.1	82,200 368,260	268,000 1,200,640	
AT731	3.000 76.20	7.312 185.72	1.182 30.02	3.060 77.72	6.880 174.75	.380 9.65	4.380 111.25	9.500 241.30	.062 1.57	14 6.4	98,800 442,620	365,800 1,638,780	
AT732	3.000 76.20	8.312 211.12	1.182 30.02	3.060 77.72	7.880 200.15	.380 9.65	5.250 133.35	12.000 304.80	.062 1.57	20 9.1	126,200 565,380	494,500 2,215,360	
AT733	3.000 76.20	9.312 236.52	1.182 30.02	3.060 77.72	8.880 225.55	.380 9.65	6.250 158.75	14.000 355.60	.062 1.57	26 11.8	147,500 660,800	642,800 2,879,740	
AT734	4.000 101.60	7.375 187.33	2.312 58.72	4.090 103.89	6.880 174.75	.500 12.70	5.000 127.00	6.375 161.93	.062 1.57	15 6.8	111,100 497,730	320,500 1,435,840	
AT735	4.000 101.60	8.375 212.73	2.312 58.72	4.090 103.89	7.880 200.15	.500 12.70	5.250 133.35	8.500 215.90	.062 1.57	22 9.9	132,200 592,260	454,200 2,034,820	
AT736	4.000 101.60	9.375 238.13	2.312 58.72	4.090 103.89	8.880 225.55	.500 12.70	5.880 149.35	10.000 254.00	.062 1.57	30 13.6	158,400 709,630	658,100 2,948,290	
AT737	4.000 101.60	10.500 266.70	2.312 58.72	4.090 103.89	9.880 250.95	.500 12.70	6.500 165.10	14.000 355.60	.062 1.57	39 17.7	192,200 861,060	777,800 3,484,540	

ROLLWAY® Cylindrical Thrust Bearings

Thrust Bearings



- Basic Construction Type:** Standard Cylindrical Roller Thrust Or Aligning Type Bearing
- Rolling Elements:** Crowned Cylindrical Rollers With Sphered Ends
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** Medium Duty (600), Heavy Duty (700), Or Metric
- Retainer Types:** Machined Brass With Steel Retaining Ring

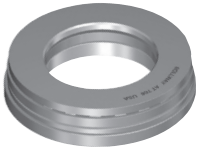


Self Aligning Cylindrical Roller Thrust Bearings (continued)

Part No.	B	D	H	b	d	f	m	f	R	Bearing Weight lb kg	C Basic Dynamic Rating lb/N	Co Basic Static Rating lb/N	
	Bore	Outside Diameter	Height	Internal Dimensions									Housing & Shaft Fillet
	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm				
AT738	5.000 127.00	8.500 215.90	2.312 58.72	5.130 130.30	7.880 200.15	.500 12.70	6.000 152.40	7.375 187.33	.062 1.57	18 8.1	111,000 497,280	419,400 1,878,910	
AT739	5.000 127.00	9.500 241.30	2.312 58.72	5.130 130.30	8.880 225.55	.500 12.70	6.130 155.70	10.500 266.70	.062 1.57	26 11.8	162,000 725,760	631,800 2,830,460	
AT740	5.000 127.00	10.500 266.70	2.625 66.68	5.130 130.30	9.880 250.95	.560 14.22	6.250 158.75	12.750 323.85	.125 3.18	39 17.6	205,100 918,850	703,300 3,150,780	
AT741	5.000 127.00	11.500 292.10	2.625 66.68	5.130 130.30	10.880 276.35	.560 14.22	7.000 177.80	16.000 406.40	.125 3.18	50 22.7	231,200 1,035,780	870,900 3,901,630	
AT742	5.000 127.00	12.500 317.50	2.625 66.68	5.130 130.30	11.880 301.75	.560 14.22	7.250 184.15	19.750 501.65	.125 3.18	63 28.6	276,100 1,236,930	1,144,000 5,125,120	
AT743	6.000 152.40	9.500 241.30	2.625 66.68	6.130 155.70	8.750 222.25	.560 14.22	7.250 184.15	6.750 171.45	.125 3.18	23 10.4	130,600 585,090	450,100 2,016,450	
AT744	6.000 152.40	10.500 266.70	2.625 66.68	6.130 155.70	9.750 247.65	.560 14.22	7.380 187.45	9.500 241.30	.125 3.18	33 14.9	190,300 852,540	648,600 2,905,730	
AT745	6.000 152.40	11.500 292.10	2.625 66.68	6.130 155.70	10.750 273.05	.560 14.22	7.380 187.45	13.500 342.90	.125 3.18	44 19.9	233,400 1,045,630	929,900 4,165,950	
AT746	6.000 152.40	12.500 317.50	2.625 66.68	6.130 155.70	11.750 298.45	.560 14.22	7.500 190.50	17.000 431.80	.125 3.18	57 25.8	267,000 1,196,160	1,097,100 4,915,010	
AT747	7.000 177.80	10.500 266.70	2.625 66.68	7.130 181.10	9.750 247.65	.560 14.22	8.130 206.50	8.125 206.38	.125 3.18	26 11.7	154,500 692,160	550,100 2,464,450	
AT748	7.000 177.80	11.500 292.10	2.625 66.68	7.130 181.10	10.750 273.05	.560 14.22	8.250 209.55	11.500 292.10	.125 3.18	37 16.7	213,600 956,930	790,800 3,542,780	
AT749	7.000 177.80	12.500 317.50	2.625 66.68	7.130 181.10	11.750 298.45	.560 14.22	8.250 209.55	15.375 390.53	.125 3.18	50 22.7	251,600 1,127,170	1,022,900 4,582,590	
AT750	7.000 177.80	14.750 374.65	4.000 101.60	7.190 182.63	13.750 349.25	.880 22.35	9.000 228.60	15.375 390.53	.250 6.35	118 53.5	436,200 1,954,180	1,598,200 7,159,940	
AT751	8.000 203.20	12.750 323.85	4.000 101.60	8.190 208.03	11.750 298.45	.880 22.35	9.380 238.25	8.500 215.90	.250 6.35	63 28.6	258,000 1,155,840	945,400 4,235,390	
AT752	8.000 203.20	14.750 374.65	4.000 101.60	8.190 208.03	13.750 349.25	.880 22.35	10.380 263.65	12.000 304.80	.250 6.35	106 48.1	397,500 1,780,800	1,487,900 6,665,790	
AT753	8.000 203.20	16.875 428.63	4.000 101.60	8.250 209.55	15.750 400.05	.880 22.35	10.500 266.70	19.500 495.30	.250 6.35	154 69.6	516,400 2,313,470	2,072,500 9,284,800	
AT754	10.000 254.00	16.875 428.63	4.000 101.60	10.250 260.35	17.750 450.85	.880 22.35	11.500 292.10	16.750 425.45	.250 6.35	120 54.4	437,800 1,961,340	1,747,200 7,827,460	
AT755	10.000 254.00	18.875 479.43	5.000 127.00	10.250 260.35	17.750 450.85	1.130 28.70	12.000 304.80	20.000 508.00	.250 6.35	225 102.1	614,200 2,751,620	2,697,600 12,085,250	
AT756	10.000 254.00	20.875 530.23	5.000 127.00	10.250 260.35	19.750 501.65	1.130 28.70	13.250 336.55	24.000 609.60	.250 6.35	300 136.1	766,000 3,431,680	3,250,900 14,564,030	

Metric dimensions for reference only.
 Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.
 For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Cylindrical Thrust Bearings **ROLLWAY**[®]



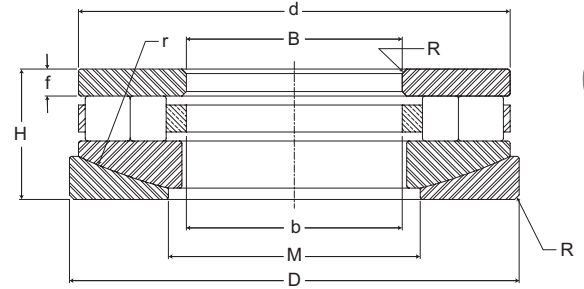
Basic Construction Type: Standard Cylindrical Roller Thrust Or Aligning Type Bearing

Rolling Elements: Crowned Cylindrical Rollers With Sphered Ends

Bearing Material: Through Hardened Or Case Carburized Bearing Grade Steel

Series: Medium Duty (600), Heavy Duty (700), Or Metric

Retainer Types: Machined Brass With Steel Retaining Ring



Thrust Bearings

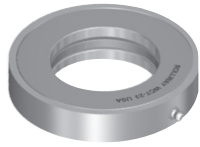


Self Aligning Cylindrical Roller Thrust Bearings (continued)

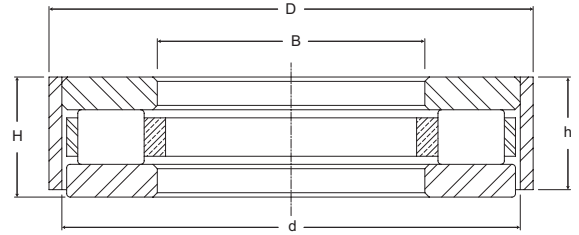
Part No.	B	D	H	b	d	f	m	f	R	Bearing Weight lb kg	C	Co
	Bore	Outside Diameter	Height	Internal Dimensions					Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm		lb/N	lb/N
AT757	12.000 304.80	18.875 479.43	5.000 127.00	12.250 311.15	17.750 450.85	1.130 28.70	13.630 346.20	15.375 390.53	.250 6.35	180 81.6	469,200 2,102,020	2,031,900 9,102,910
AT758	12.000 304.80	20.875 530.23	6.000 152.40	12.250 311.15	19.750 501.65	1.380 35.05	13.880 352.55	20.000 508.00	.250 6.35	300 136.1	724,600 3,246,210	2,937,800 13,161,340
AT759	12.000 304.80	24.875 631.83	6.000 152.40	12.250 311.15	23.750 603.25	1.380 35.05	16.000 406.40	28.500 723.90	.250 6.35	510 231.3	1,045,900 4,685,630	4,688,000 21,002,240
AT760	14.000 355.60	20.875 530.23	4.875 123.83	14.250 361.95	19.750 501.65	1.130 28.70	15.500 393.70	19.500 495.30	.250 6.35	200 90.7	540,000 2,419,200	2,385,200 10,685,700
AT761	14.000 355.60	22.875 581.03	4.875 123.83	14.250 361.95	21.750 552.45	1.130 28.70	15.500 393.70	28.500 723.90	.250 6.35	280 127.0	732,000 3,279,360	3,339,900 14,962,750
AT762	14.000 355.60	24.875 631.83	4.875 123.83	14.250 361.95	23.750 603.25	1.130 28.70	16.380 416.05	36.125 917.58	.250 6.35	370 167.8	858,100 3,844,290	4,280,300 19,175,740
AT763	16.000 406.40	22.855 580.52	6.000 152.40	16.250 412.75	21.500 546.10	1.380 35.05	17.500 444.50	17.500 444.50	.250 6.35	270 122.5	609,800 2,731,900	2,362,800 10,585,340
AT764	16.000 406.40	25.000 635.00	6.000 152.40	16.250 412.75	23.500 596.90	1.380 35.05	18.000 457.20	23.500 596.90	.250 6.35	385 174.6	878,700 3,936,580	3,819,100 17,109,570
AT765	16.000 406.40	27.000 685.80	6.000 152.40	16.250 412.75	25.500 647.70	1.380 35.05	18.500 469.90	29.625 752.48	.250 6.35	510 231.3	1,041,500 4,665,920	4,916,300 22,025,020
AT766	18.000 457.20	27.000 685.80	6.750 171.45	18.380 466.85	25.500 647.70	1.500 38.10	19.500 495.30	23.500 596.90	.250 6.35	470 213.2	945,500 4,235,840	3,937,500 17,640,000
AT767	18.000 457.20	29.000 736.60	6.750 171.45	18.380 466.85	27.500 698.50	1.500 38.10	20.000 508.00	29.625 752.48	.250 6.35	620 281.2	1,185,800 5,312,380	5,393,500 24,162,880
AT768	18.000 457.20	31.000 787.40	7.250 184.15	18.380 466.85	29.500 749.30	1.500 38.10	20.630 524.00	36.125 917.58	.250 6.35	840 381.0	1,571,600 7,040,770	6,753,800 30,257,020
AT769	20.000 508.00	29.000 736.60	7.500 190.50	20.380 517.65	27.500 698.50	1.500 38.10	21.500 546.10	27.500 698.50	.250 6.35	787 356.9	1,091,700 4,890,820	4,407,200 19,744,260
AT770	20.000 508.00	31.000 787.40	7.500 190.50	20.380 517.65	27.500 698.50	1.500 38.10	21.500 546.10	27.500 698.50	.250 6.35	550 249.5	1,544,800 6,920,700	6,885,500 30,847,040
AT771	20.000 508.00	33.000 838.20	8.000 203.20	20.380 517.65	31.500 800.10	1.750 44.45	23.000 584.20	33.000 838.20	.250 6.35	940 426.4	1,714,000 7,678,720	7,850,000 35,168,000
AT772	22.000 558.80	31.000 787.40	7.500 190.50	22.380 568.45	29.500 749.30	1.500 38.10	23.000 584.20	24.625 625.48	.250 6.35	450 204.1	1,162,000 5,205,760	4,774,500 21,389,760
AT773	22.000 558.80	33.000 838.20	7.500 190.50	22.380 568.45	31.500 800.10	1.500 38.10	13.620 345.95	37.000 939.80	.250 6.35	621 281.7	1,431,000 6,410,880	6,153,200 27,566,340
AT774	22.000 558.80	35.000 889.00	8.000 203.20	22.380 568.45	33.500 850.90	1.750 44.45	24.880 631.95	37.000 939.80	.250 6.35	792 359.2	1,742,000 7,804,160	7,982,000 35,759,360

ROLLWAY® Cylindrical Thrust Bearings

Thrust Bearings



- Basic Construction Type:** Standard Cylindrical Roller Thrust Bearing
- Rolling Elements:** Crowned Cylindrical Rollers With Sphered Ends
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** With Or Without Grease Fitting
- Retainer Types:** Machined Brass With Steel Retaining Ring



Crane Hook Thrust Bearings

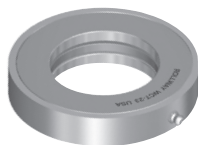
Part No.		Designed Hook Shank	B	D		H	d	h	Bearing Weight	Basic Static Rating
			Bore	Outside Diameter		Height	Internal Dimensions			
Grease Fitting		inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	lb kg	lb/N
None	Installed			CT	WCT					
CT-11	WCT-11	1.625 41.28	1.640 41.66	3.093 78.56	3.343 84.91	.812 20.62	2.95 74.9	.69 17.5	1.4 .6	36,890 165,270
CT-16	WCT-16	1.938 49.21	1.952 49.58	3.468 88.09	3.593 91.26	.812 20.62	3.22 81.8	.69 17.5	1.4 .6	65,310 292,590
CT-17	WCT-17	2.000 50.80	2.015 51.18	3.937 100.00	4.000 101.60	1.000 25.40	3.60 91.4	.88 22.4	2.6 1.2	73,210 327,980
CT-19	WCT-19	2.250 57.15	2.265 57.53	4.000 101.60	4.250 107.95	1.000 25.40	3.86 98.0	.88 22.4	2.3 1.0	72,970 326,910
CT-20-C	WCT-20-C	2.250 57.15	2.265 57.53	4.250 107.95	4.375 111.13	1.000 25.40	3.98 101.1	.88 22.4	2.7 1.2	88,600 396,930
CT-23	WCT-23	2.750 69.85	2.765 70.23	4.750 120.65	4.843 123.01	1.000 25.40	4.45 113.0	.88 22.4	3.1 1.4	93,820 420,310
CT-24-A	WCT-24-A	2.750 69.85	2.765 70.23	4.875 123.83	5.156 130.96	1.250 31.75	4.76 120.9	1.13 28.7	4.3 1.9	121,300 543,420
CT-27-A	WCT-27-A	3.250 82.55	3.265 82.93	6.125 155.58	6.250 158.75	1.500 38.10	5.85 148.6	1.38 35.1	8.2 3.7	180,810 810,030
CT-27-C	WCT-27-C	3.250 82.55	3.265 82.93	6.187 157.15	6.375 161.93	1.750 44.45	5.97 151.6	1.63 41.4	9.0 4.1	212,960 954,060
CT-27-B	WCT-27-B	3.500 88.90	3.515 89.28	6.156 156.36	6.375 161.93	1.625 41.28	5.97 151.6	1.50 38.1	8.5 3.8	203,410 911,280
CT-28-A	WCT-28-A	3.500 88.90	3.515 89.28	6.750 171.45	6.937 176.20	1.625 41.28	6.54 166.1	1.50 38.1	11 4.9	245,110 1,098,090
CT-30-B	WCT-30-B	3.563 90.49	3.577 90.86	6.375 161.93	6.375 161.93	1.375 34.93	5.97 151.6	1.25 31.8	8.2 3.7	207,000 927,360
CT-34-A	WCT-34-A	3.750 95.25	3.765 95.63	7.125 180.98	7.250 184.15	1.875 47.63	6.86 174.2	1.75 44.5	15 6.8	288,080 1,290,600
CT-35-A	WCT-35-A	4.250 107.95	4.265 108.33	8.171 207.54	8.375 212.73	2.000 50.80	7.97 202.4	1.88 47.8	20 9.1	369,200 1,654,020

Metric dimensions for reference only.

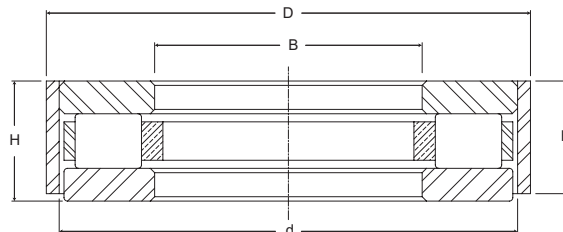
Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Cylindrical Thrust Bearings **ROLLWAY**[®]



- Basic Construction Type:** Standard Cylindrical Roller Thrust Bearing
- Rolling Elements:** Crowned Cylindrical Rollers With Sphered Ends
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** With Or Without Grease Fitting
- Retainer Types:** Machined Brass With Steel Retaining Ring



Crane Hook Thrust Bearings

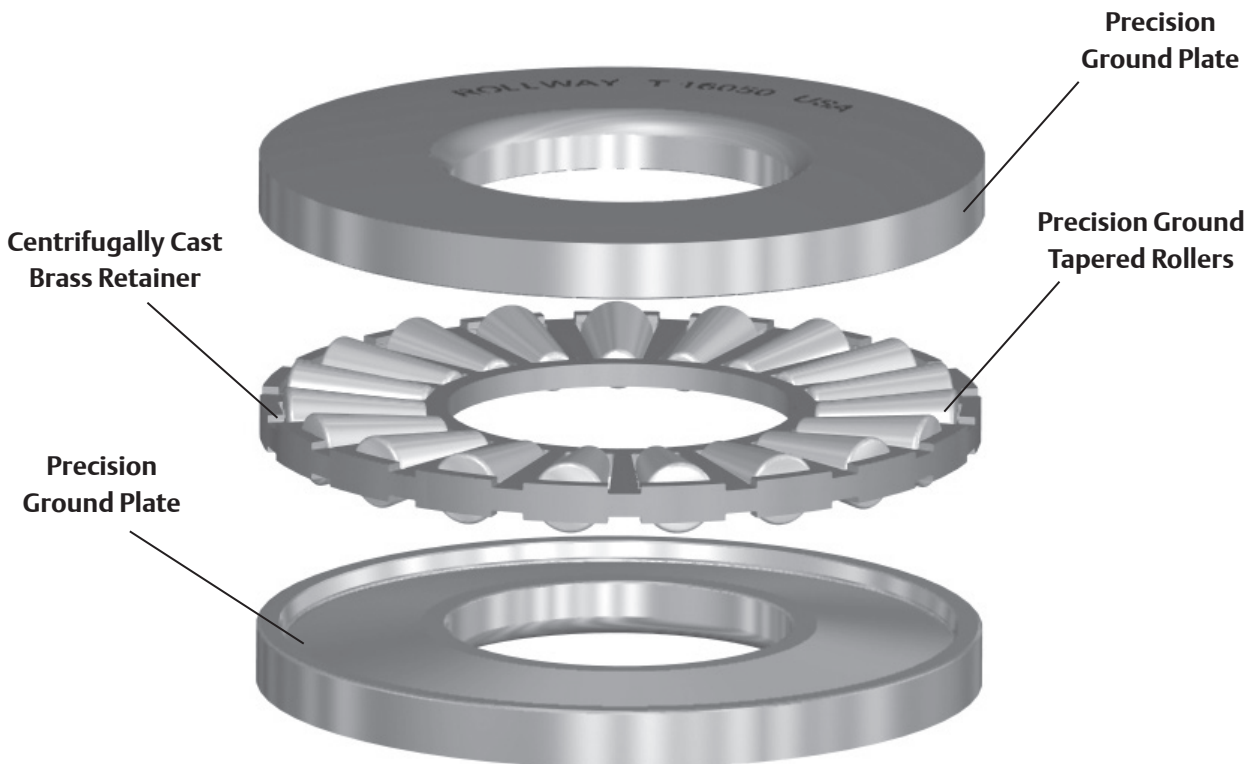
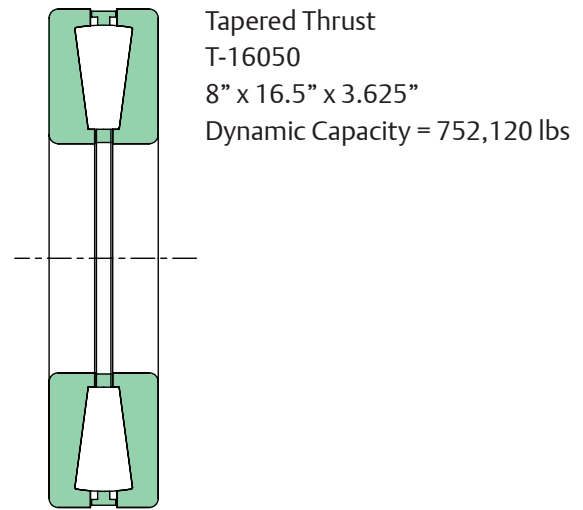
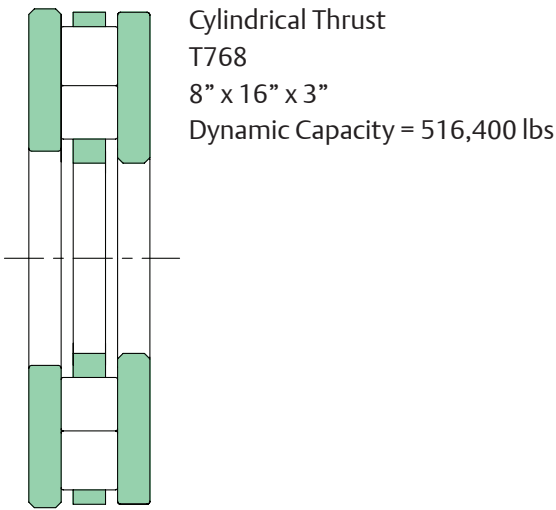
Part No.		Designed Hook Shank	B	D		H	d	h	Bearing Weight	Basic Static Rating
			Bore	Outside Diameter		Height	Internal Dimensions			
Grease Fitting		inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	inch mm	lb kg	lb/N
None	Installed			CT	WCT					
CT-38-A	WCT-38-A	4.500 114.30	4.515 114.68	8.125 206.38	8.312 211.12	2.000 50.80	7.91 200.9	1.88 47.8	20 9.1	390,910 1,751,280
CT-39-A	WCT-39-A	5.000 127.00	5.015 127.38	9.156 232.56	9.375 238.13	2.250 57.15	8.97 227.8	2.13 54.1	28 12.7	628,470 2,815,550
CT-44-A	WCT-44-A	5.500 139.70	5.515 140.08	10.500 266.70	10.500 266.70	2.500 63.50	10.10 256.5	2.38 60.5	41 18.6	633,000 2,835,840
CT-45-A	WCT-45-A	6.000 152.40	6.015 152.78	11.156 283.36	11.375 288.93	3.000 76.20	10.97 278.6	2.75 69.9	55 24.9	923,160 4,135,760
CT-45-B	WCT-45-B	5.563 141.29	5.577 141.66	11.500 292.10	11.500 292.10	2.000 50.80	10.97 278.6	1.88 47.6	42 19.1	858,000 3,843,840
CT-48	WCT-48	7.000 177.80	7.015 178.18	11.500 292.10	11.500 292.10	2.000 50.80	10.97 278.6	1.75 44.5	58 26.3	699,000 3,131,520
CT-49-A	WCT-49-A	6.813 173.04	6.827 173.41	12.750 323.85	12.750 323.85	2.500 63.50	12.34 313.4	2.38 60.5	61 27.7	1,004,880 4,501,860
CT-51	WCT-51	7.875 200.03	7.890 200.41	12.375 314.33	12.375 314.33	3.000 76.20	11.91 302.4	2.75 69.9	73 33.1	904,500 4,052,160
CT-52	WCT-52	8.438 214.31	8.454 214.73	14.500 368.30	14.500 368.30	3.000 76.20	13.91 353.2	2.75 69.9	80 36.3	1,170,000 5,241,600
CT-53	WCT-53	8.875 225.43	8.890 225.81	16.500 419.10	16.500 419.10	3.000 76.20	15.90 403.9	2.75 69.9	111 50.3	2,075,000 9,296,000
CT-54	WCT-54	9.313 236.54	9.327 236.91	16.500 419.10	16.500 419.10	3.000 76.20	15.91 404.1	2.75 69.9	106 48.1	1,812,000 8,117,760
CT-55	WCT-55	9.625 244.48	9.640 244.86	18.500 469.90	18.500 469.90	3.750 95.25	17.91 454.9	3.38 85.7	210 95.3	2,269,000 10,165,120



Rollway Tapered Thrust Bearings

Rollway Tapered Thrust bearings utilize crowned tapered rolling elements separated by a machined brass roller riding retainer (cage) contained within precision ground shaft and housing plates. Inherent to the design, the self centering action of the tapered rollers provide “true rolling motion”. These attributes counteract the natural gravitational forces on the roller assembly when subjected to horizontal applications. Tapered thrust bearings are intended for high axial loads (load parallel to the axis of rotation). There are 3 types of Tapered Thrust bearings available, TTHD, TTVF, and Self Aligning TTVF. Depending on your preference, these bearings are available in a wide variety of sizes and options as illustrated on the pages to follow.

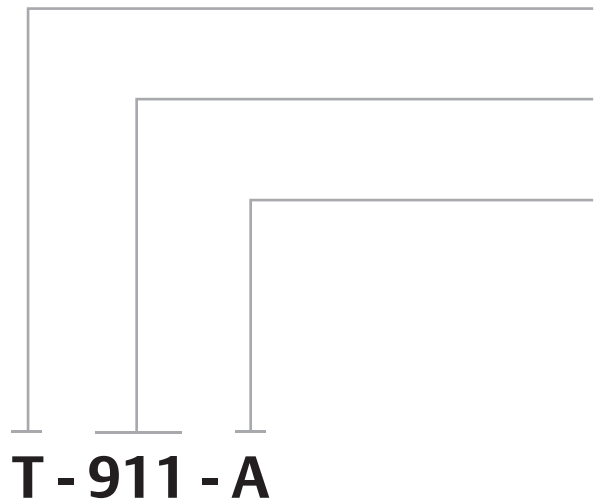
For a given shaft size and approximate envelope, the tapered thrust bearing’s dynamic capacity is considerably greater than a cylindrical roller bearing.





Tapered Thrust Nomenclature

Standard Thrust Nomenclature



Type Designator

T - TTHD Style Thrust

Size Designator

Reference Catalog For Sizes.

Variation Code

- A - Variation From Standard - Consult Catalog Or Application Engineering
- F - Full Complement Of Rollers
- V - Bearing Plates And Rollers Made From VIMVAR Or CEVM Steel

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T-Flat Nomenclature



Type Designator

T-F - TTVF Style

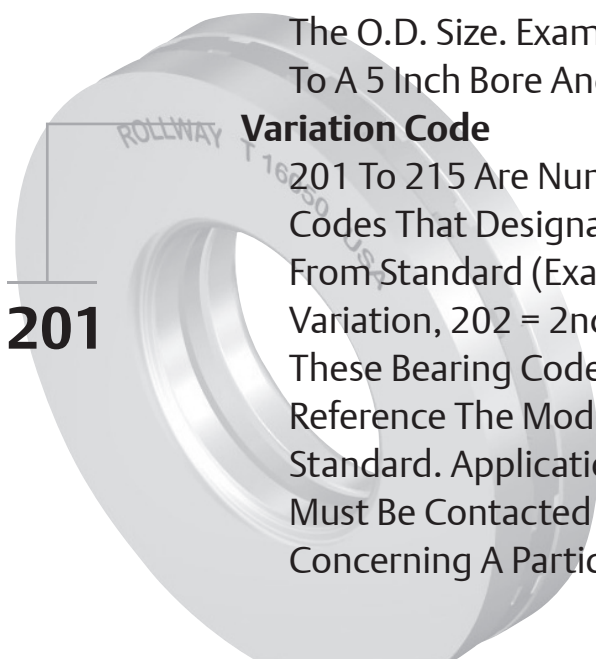
T-FS - TTVF Style With 2 Piece Aligning Plate

Size Designator

Bearing Bore And Outside Diameter Size. The First Three Digits Are The Bore Size And The Second Three Digits Are The O.D. Size. Example: 050105 Refers To A 5 Inch Bore And 10.5 Inch O.D.

Variation Code

201 To 215 Are Numerically Assigned Codes That Designate The Variation From Standard (Example 201 = 1st Variation, 202 = 2nd Variation, Etc.). These Bearing Code Numbers Do Not Reference The Modification From Standard. Application Engineering Must Be Contacted For Information Concerning A Particular Modification.



Features and Benefits

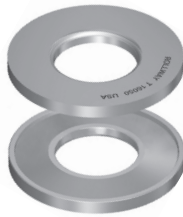


Superior Performance in Horizontal Shaft Applications

Tapered thrust bearings have been found to have superior performance in horizontal shaft applications. The self centering action of the rollers helps counteract the gravitational effect of the roller assembly, thus reducing the possibility of the roller assembly contacting the shaft.

Steel

The plates and rollers are made from case hardened carburizing bearing grade steel. Upon request we can manufacture the components from CEVM or VIMVAR grades of material.



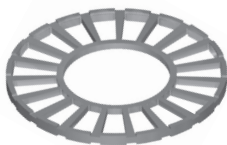
Precision Ground Inner and Outer Plates

All thrust plates are accurately ground for flatness and parallelism of roller riding and backing surfaces. Locating diameters are ground to obtain an accurate fit on the shaft or in the housing. The surfaces of the plates are ground to provide a long operating life. The guide rib on the tapered plates is spherically ground to match the roller and reduce friction. All tapered thrust plates are designed to be used with a full complement of rollers, which makes it possible to supply this version for any size. Rollway tapered thrust plates are manufactured from Carburizing Bearing Grade Steel. The surfaces are precision ground to ABMA standards. Unlike the cylindrical thrust, these plates can be used as either the shaft or housing plate.



Precision Ground Tapered Rollers

All rolling elements are precision ground and graded to provide an even distribution of load over the contact surfaces. Rollers are crowned for optimum contact stress patterns by reducing the end stress between the roller and the thrust plates. The large ends of the rollers are spherically ground. This provides controlled contact between the rollers and the guide rib, thus enhancing the flow of lubricant. These rollers are manufactured from Carburizing Bearing Grade Steel.



Machined Brass Retainer

The TTHD taper thrust bearing retainers are machined from a single piece of centrifugally cast brass. The retainer is designed to pilot on the thrust plates' flanges. The roller pockets are accurately machined at right angles to the thrust force which will be applied to the bearing. By virtue of their design, tapered thrust bearings provide true rolling motion when compared to cylindrical thrust bearings whose rollers tend to have a minimal amount of slippage due to the fundamental design.



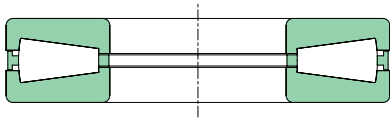
Features and Benefits continued



Pin through Steel Type Retainer – T-Flat Type

The T-Flat retainers are “pin through” style (pins extend through the center of the roller). The retainer consists of two steel rings through which the hardened steel pins are secured. An alternate design is a retainer machined from a single piece of centrifugally cast brass with each roller retained by two pins.

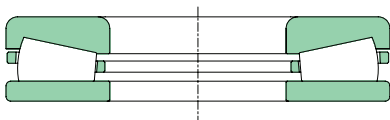
Types and Styles



Standard Tapered Thrust Style

Rollway tapered thrust bearings (TTHD Style) are engineered for applications that are under the harshest industrial conditions. These bearings feature tapered rollers positioned between two plates with tapered raceways.

The tapered thrust differs significantly from the cylindrical roller thrust as there is true rolling motion with the vertex of the conical sections intersecting the bearing axis. When the bearing is loaded, the rollers exhibit an outward force that is countered by the plate's outer guide rib. The large spherical end of the roller is counter bored to help improve lubrication between the roller and guide rib. By virtue of the additional contact surface these bearings will have a higher dynamic capacity than a similar sized, cylindrical roller thrust bearing.

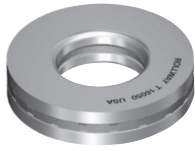


T-Flat Style

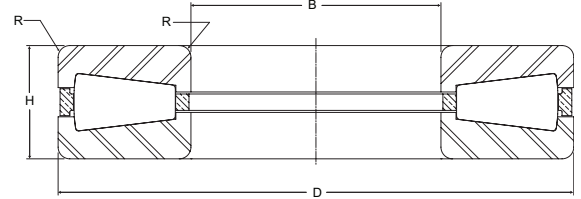
The T-Flat is similar to the TTHD style except one plate is flat. The guide rib on the one tapered raceway resists the induced radial force component caused by the inclined plane while the flat plate allows radial displacement without adversely affecting bearing operation. Maximum capacity is achieved through close spacing of rollers through the use of a steel, pin type retainer.

ROLLWAY® Thrust Bearings

Thrust Bearings



- Basic Construction Type:** Standard Tapered Roller (TTHD Style)
- Rolling Elements:** Crowned Tapered Rollers With Sphered Ends
- Bearing Material:** Case Carburized Bearing Grade Steel
- Retainer Types:** Machined Brass Or Pin Through Steel Type



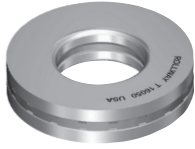
Tapered Thrust Bearings

Part No.	B	D	H	R	Bearing Weight	C	Co
	Bore	Outside Diameter	Height	Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm		lb kg	lb/N
T-411	4.000 101.60	8.500 215.90	1.813 46.05	.13 3.3	20 9.1	219,100 981,570	762,700 3,416,900
T-411F	4.000 101.60	8.500 215.90	1.813 46.05	.13 3.3	20 9.1	268,000 1,200,640	988,000 4,426,240
T-441	4.400 111.76	8.800 223.52	2.200 55.88	.13 3.3	25 11.3	234,000 1,048,320	822,000 3,682,560
T-451	4.500 114.30	9.875 250.83	2.125 53.98	.16 4.1	31 14.1	305,000 1,366,400	1,096,000 4,910,080
T-520	5.000 127.00	9.875 250.83	2.188 55.56	.19 4.8	31 14.1	328,000 1,469,440	1,094,000 4,901,120
T-511	5.000 127.00	10.500 266.70	2.313 58.75	.19 4.8	37 16.7	322,500 1,444,800	1,232,570 5,521,910
T-511A	5.063 128.60	10.500 266.70	2.313 58.75	.19 4.8	37 16.7	322,500 1,444,800	1,232,570 5,521,910
T-511F	5.063 128.60	10.500 266.70	2.313 58.75	.19 4.8	37 16.7	408,000 1,827,840	1,687,000 7,557,760
T-611	6.000 152.40	12.500 317.50	2.750 69.85	.25 6.4	66 29.9	455,125 2,038,960	1,672,410 7,492,400
T-651	6.500 165.10	12.250 311.15	3.500 88.90	.25 6.4	71 32.2	375,000 1,680,000	1,472,000 6,594,560
T-661	6.625 168.28	12.000 304.80	2.750 69.85	.25 6.4	56 25.4	382,620 1,714,140	1,323,000 5,927,040
T-691	6.875 174.63	14.125 358.78	2.313 58.75	.25 6.4	93 42.2	539,980 2,419,110	2,023,000 9,063,040
T-711	7.000 177.80	14.500 368.30	2.313 58.75	.31 7.9	109 49.4	601,700 2,695,620	2,101,000 9,412,480
T-711F	7.000 177.80	14.500 368.30	2.313 58.75	.31 7.9	96 43.5	611,000 2,737,280	2,936,000 13,153,280
T-709	7.000 177.80	17.000 431.80	4.000 101.60	.13 3.3	241 109.3	229,000 1,025,920	3,245,000 14,537,600

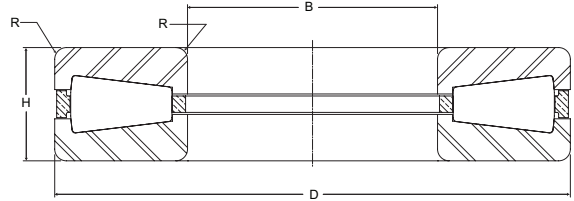
Metric dimensions for reference only.
 Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.
 For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Thrust Bearings **ROLLWAY**[®]

Thrust Bearings



- Basic Construction Type:** Standard Tapered Roller (TTHD Style)
- Rolling Elements:** Crowned Tapered Rollers With Sphered Ends
- Bearing Material:** Case Carburized Bearing Grade Steel
- Retainer Types:** Machined Brass Or Pin Through Steel Type



Tapered Thrust Bearings

Part No.	B	D	H	R	Bearing Weight	C	Co
	Bore	Outside Diameter	Height	Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm		lb kg	lb/N
T-7519	7.480 190.00	14.000 355.60	2.922 74.22	.25 6.4	76 34.5	490,000 2,195,200	1,893,000 8,480,640
T-811	8.000 203.20	16.500 419.10	3.625 92.08	.38 9.7	132 59.8	752,120 3,369,500	2,879,160 12,898,640
T-9020	9.000 228.60	17.000 431.80	3.495 88.77	.38 9.7	136 61.7	744,400 3,334,910	2,883,000 12,915,840
T-911	9.000 228.60	19.000 482.60	4.125 104.78	.44 11.2	237 107.5	991,250 4,440,800	3,796,762 17,009,490
T-911A	9.250 234.95	19.000 482.60	4.125 104.78	.44 11.2	232 105.2	991,250 4,440,800	3,796,762 17,009,490
T-921	9.250 234.95	21.500 546.10	5.000 127.00	.44 11.2	351 159.2	1,361,600 6,099,970	5,346,100 23,950,530
T-537504	9.500 241.30	19.500 495.30	5.000 127.00	.44 11.2	287 130.2	1,050,000 4,704,000	3,900,000 17,472,000
T-1011	10.000 254.00	21.125 536.58	4.625 117.48	.44 11.2	320 145.1	1,230,400 5,512,190	4,874,000 21,835,520
T-539210	10.750 273.05	21.750 552.45	5.250 133.35	.44 11.2	364 165.1	1,257,000 5,631,360	4,800,000 21,504,000
T-539211	10.750 273.05	23.750 603.25	5.750 146.05	.44 11.2	496 224.9	1,522,000 6,818,560	6,003,000 26,893,440
T-1120	11.000 279.40	23.750 603.25	5.375 136.53	.44 11.2	490 222.2	1,573,660 7,050,000	6,286,210 28,162,220
T-16021	16.000 406.40	28.000 711.20	5.750 146.05	.38 9.7	575 260.8	1,746,000 7,822,080	6,726,000 30,132,480
T-16050	16.000 406.40	33.000 838.20	7.000 177.80	.50 12.7	1,165 528.4	2,877,500 12,891,200	11,295,180 50,602,410

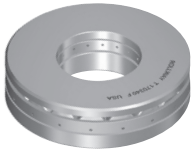
Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

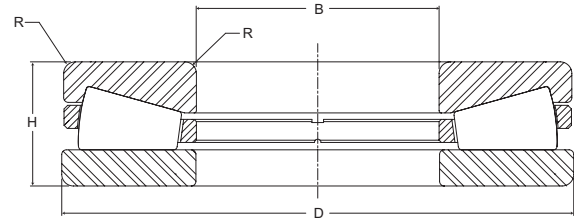
For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

ROLLWAY® Thrust Bearings

Thrust Bearings



- Basic Construction Type:** T-Flat (TTVF Style)
- Rolling Elements:** Crowned Tapered Rollers With Sphered Ends
- Bearing Material:** Case Carburized Bearing Grade Steel
- Retainer Types:** Machined Brass Or Pin Through Steel Type

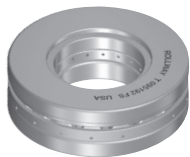


T-Flat Tapered Thrust Bearings

Part No.	B	D	H	R	Bearing Weight	C	Co
	Bore	Outside Diameter	Height	Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm		lb kg	lb/N
T-050105-F	5.000 127.00	10.500 266.70	2.313 58.74	.14 3.6	41 18.6	292,000 1,308,160	594,000 2,661,120
T-059118-F	5.904 149.95	11.800 299.72	3.531 89.69	.12 3.0	79 35.8	487,000 2,181,760	1,833,000 8,211,840
T-070145-F	7.000 177.80	14.000 355.60	3.250 82.55	.24 6.1	109 49.4	612,000 2,741,760	2,764,000 12,382,720
T-090190-F	9.000 228.60	19.000 482.60	5.750 146.05	.25 6.4	300 136.1	1,326,800 5,944,060	2,473,000 11,079,040
T-095230-F	9.500 241.30	23.000 584.20	6.000 152.40	.25 6.4	488 221.3	1,887,600 8,456,450	8,504,000 38,097,920
T-100200-F	10.000 254.00	20.000 508.00	4.250 107.95	.19 4.8	218 98.8	1,332,000 5,967,360	5,070,000 22,713,600
T-101215-F	10.000 254.00	21.500 546.10	6.500 165.10	.25 6.4	501 227.2	1,777,000 7,960,960	3,352,000 15,016,960
T-110237-F	11.000 279.40	23.750 603.25	5.375 136.53	.19 4.8	508 230.4	1,760,000 7,884,800	4,000,000 17,920,000
T-120240-F	12.000 304.80	24.000 609.60	4.500 114.30	.25 6.4	421 190.9	1,660,000 7,436,800	3,994,000 17,893,120
T-120265-F	12.000 304.80	26.500 673.10	6.750 171.45	.30 7.6	767 347.9	2,470,000 11,065,600	10,100,000 45,248,000
T-140260-F	14.000 355.60	26.000 660.40	9.125 231.78	.31 7.9	790 358.3	2,219,000 9,941,120	4,467,000 20,012,160
T-170340-F	17.000 431.80	34.000 863.60	9.000 228.60	.38 9.7	1,708 774.7	4,010,000 17,964,800	8,500,000 38,080,000

Metric dimensions for reference only.
 Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.
 For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Thrust Bearings **ROLLWAY**[®]

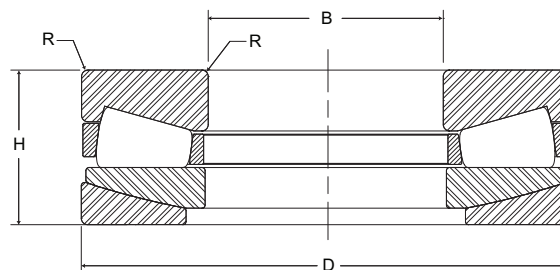


Basic Construction Type: T-Flat Aligning Type Bearing (TTVF Style), 3 Degrees Static Misalignment

Rolling Elements: Crowned Tapered Rollers With Sphered Ends

Bearing Material: Case Carburized Bearing Grade Steel

Retainer Types: Machined Brass Or Pin Through Steel Type



T-Flat Self Aligning Thrust Bearings

Part No.	B	D	H	R	Bearing Weight	C	Co
	Bore	Outside Diameter	Height	Housing & Shaft Fillet		Basic Dynamic Rating	Basic Static Rating
	inch mm	inch mm	inch mm	inch mm		lb kg	lb/N
T-095192-FS	9.500 241.30	19.250 488.95	6.000 152.40	.36 9.1	315 142.8	1,120,000 5,017,600	2,240,000 10,035,200
T-120240-FS	12.000 304.80	24.000 609.60	8.500 215.90	.25 6.4	690 312.9	2,250,000 10,080,000	4,010,000 17,964,800
T-140260-FS	14.000 355.60	26.000 660.40	10.000 254.00	.40 10.2	900 408.2	2,490,000 11,155,200	4,180,000 18,726,400

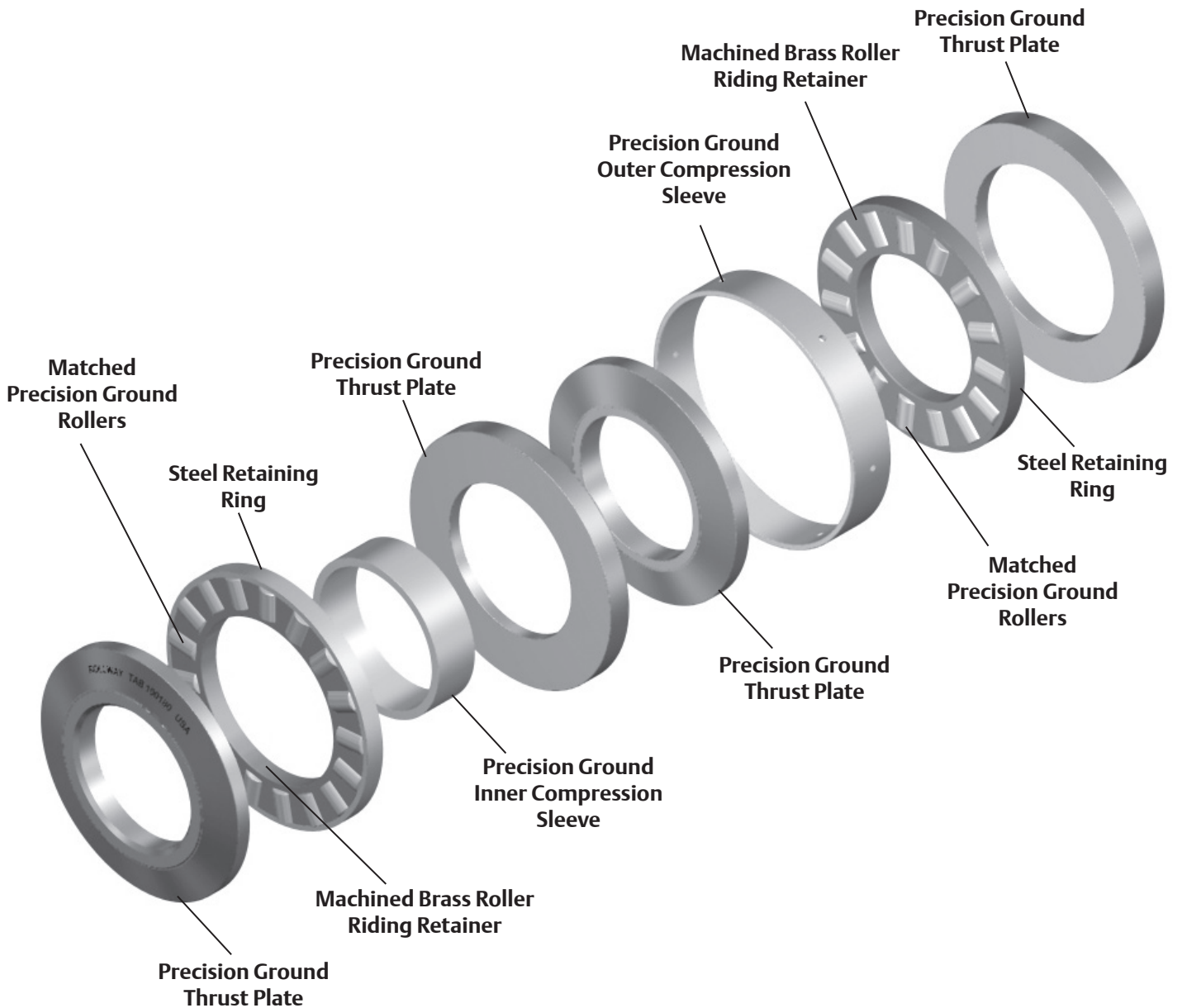
Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Rollway Tandem Thrust Bearings

Rollway Tandem Thrust bearings are also known as “multi-stage thrust” bearings. Tandem Thrust bearings are comprised of “stages” which include precision ground and matched thrust plates and compression sleeves separated by cylindrical roller assemblies. This design enables the Tandem Thrust bearings to provide a solution in a radial restricted envelope. The bearings are available in multiple stages, 2-8 to accommodate your design requirements. Depending on your preference, these bearings are available in a wide variety of sizes and options as illustrated on the pages to follow.





Features and Benefits

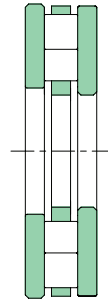
Minimal Backing Support Requirements

The tandem thrust design permits the use of minimal shaft and housing shoulders required by some applications. The cantilevering action of the thrust plates and use of compression sleeves enable these bearings to be used effectively where only minimal shaft and housing shoulder exist.

Space Saving Design

The use of a tandem thrust bearing enables the designer to create a gearbox with high thrust capacity within a small space. The end result is a gearbox with a smaller footprint. The drawings below are a comparison of three different thrust bearings with similar dynamic capacity. This illustrates the dramatic reduction in outside diameter associated with the tandem thrust bearings.

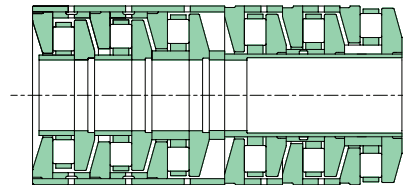
T752 Cylindrical Thrust
Dynamic Capacity=375,500 lbs
O.D.=14"



T-511 Tapered Thrust
Dynamic Capacity=322,500 lbs
O.D.=10.5"



TMF-030127-201
6-Stage Tandem Thrust
Dynamic Capacity=329,900 lbs
O.D.=5"

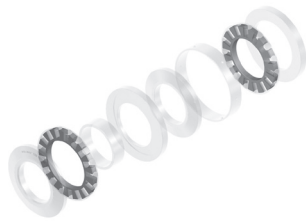


Features and Benefits continued



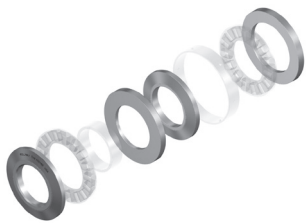
Matched Precision Ground Rollers

Rollers are manufactured from Carburized Bearing Grade Steel. The surfaces are ground and superfinished. The outside diameters are heavily crowned. The ends have a large machined radius designed to reduce friction between the roller and the retaining ring. The larger bearings use multiple rollers per pocket to minimize slippage.



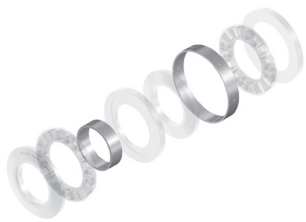
Machined Brass Roller Riding Retainer

Retainers are manufactured from brass. The roller slots are accurately machined to provide smooth operation of the roller assembly. The rollers are retained by a steel band placed over the outside diameter of the retainer.



Precision Ground Inner and Plates

Plates are manufactured from Carburizing Bearing Grade Steel. The surfaces are precision ground and superfinished.



Precision Ground Inner and Outer Compression Sleeves

Compression Sleeves are manufactured from various materials designed to provide controlled deflection. These components are match ground with the plates.

Custom Capabilities

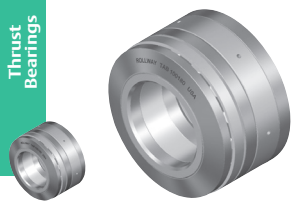
Detailed Drawings are available on the listed Tandem Thrust bearing designs. Upon request for a specific part number, a drawing will be sent containing the information in the following drawing along with the rated dynamic capacity. Shaft and housing fits are also available upon request.

New designs can be engineered and produced in small volumes for example combination radial and thrust bearings, concave and convex designs, screw down thrust, etc.. Contact Application Engineering for assistance in developing a tandem bearing design that will satisfy your application requirements. Based on your design envelope, loads, speeds and desired life, our engineers will design a tandem thrust bearing for your application. Let our Application Engineering Staff help you.



ROLLWAY® Tandem Thrust Bearings

Thrust Bearings



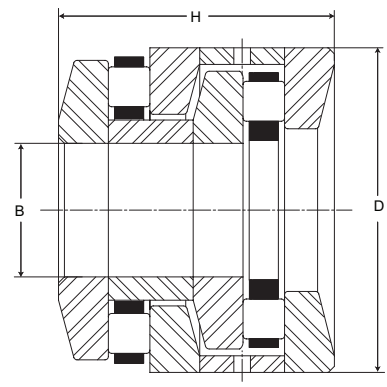
Basic Construction Type: Multi Stage Cylindrical Roller Thrust Bearing

Rolling Elements: Crowned Cylindrical Rollers

Bearing Material: Through Hardened Or Case Carburized Bearing Grade Steel

Series: 2, 3, 4, 6, Or 8 Stages

Retainer Types: Machined Brass



2 Stage

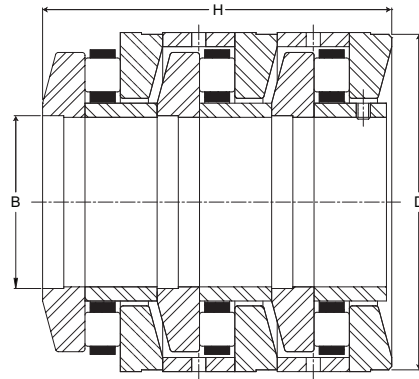
Part No.	B		D		H		Basic Dynamic Rating	Bearing Weight
	Bore		O.D.		Height			
	inch	mm	inch	mm	inch	mm	lb N	lb kg
TAB-017043-201	1.7500	44.450	4.3765	111.163	3.8750	98.425	79,000 353,920	11.0 4.9
TAB-027047-203	2.7570	70.028	4.7035	119.469	2.6250	66.675	75,100 336,450	6.8 3.1
TAB-030066-201	3.0000	76.200	6.6265	168.313	3.6250	92.075	141,000 631,680	22.0 9.9
TAB-040082-201	4.0000	101.600	8.2515	209.588	7.0620	179.375	236,000 1,057,280	44 19.9
TAB-040100	4.0000	101.600	10.0000	254.000	5.5620	141.275	376,000 1,684,480	84 38.1
TAB-050090-202	5.0000	127.000	9.0000	228.600	5.3120	134.925	272,000 1,218,560	52 23.6
TAB-060110-280	6.0000	152.400	11.0000	279.400	7.2500	184.150	427,000 1,912,960	109 49.4
TAB-060120-201	6.0000	152.400	12.0000	304.800	6.2500	158.750	454,700 2,037,060	118 53.5
TAB-060140-201	6.0000	152.400	14.0000	355.600	6.8120	173.025	619,000 2,773,120	192 87.1
TAB-062120-201	6.2500	158.750	12.0000	304.800	5.0000	127.000	440,000 1,971,200	93 42.2
TAB-070140-204	7.0000	177.800	14.0000	355.600	7.1250	180.975	605,000 2,710,400	184 83.4
TAB-070140-205	7.0000	177.800	14.0000	355.600	7.7500	196.850	713,000 3,194,240	200 90.7
TAB-070160-201	7.0000	177.800	16.0000	406.400	9.0000	228.600	925,000 4,144,000	328 148.8
TAB-072160-202	7.2500	184.150	16.0000	406.400	9.0000	228.600	897,500 4,020,800	202 91.6
TAB-080160-201	8.0000	203.200	16.0000	406.400	7.5000	190.500	775,000 3,472,000	254 115.2
TAB-080172-201	8.0000	203.200	17.2460	438.048	9.7500	247.650	1,009,000 4,520,320	332 150.6
TAB-090190-202	9.0000	228.600	19.0000	482.600	9.5000	241.300	1,240,000 5,555,200	468 212.3
TAB-092169-203	9.2500	234.950	16.9390	430.251	7.7500	196.850	970,000 4,345,600	261 118.4
TAB-100180	10.0000	254.000	18.0000	457.200	10.5000	266.700	1,078,000 4,829,440	425 192.7
TAB-100200-202	10.0000	254.000	20.0000	508.000	8.5000	215.900	1,120,000 5,017,600	449 203.6
TAB-100200-204	10.0000	254.000	20.0000	508.000	11.7500	298.450	1,458,000 6,531,840	621 281.7
TAB-101215-204	10.1000	256.540	21.5025	546.164	12.8750	327.025	1,987,000 8,901,760	817 370.7
TAB-120240-209	12.0000	304.800	24.0000	609.600	12.5000	317.500	2,320,000 10,393,600	1,050 476.3
TAB-140260-201	14.0000	355.600	26.0000	660.400	13.6870	347.650	2,565,000 11,491,200	1,150 521.6
TAB-140280-201	14.0000	355.600	28.0000	711.200	13.2500	336.550	2,469,000 11,061,120	1,370 621.4
TAB-170340-201	17.0000	431.800	34.0000	863.600	17.6880	449.275	3,800,000 17,024,000	2,800 1,270.1
TAB-220420-201	22.0000	558.800	42.0000	1,066.800	18.8750	479.425	4,810,000 21,548,800	4,920 2,231.7

Metric dimensions for reference only.
 Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.
 For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Tandem Thrust Bearings **ROLLWAY**[®]



- Basic Construction Type:** Multi Stage Cylindrical Roller Thrust Bearing
- Rolling Elements:** Crowned Cylindrical Rollers
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** 2, 3, 4, 6, Or 8 Stages
- Retainer Types:** Machined Brass



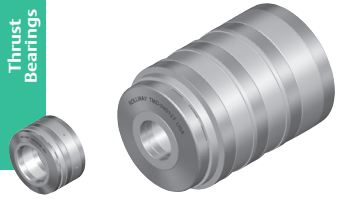
3 Stage

Part No.	B	D	H	Basic Dynamic Rating	Bearing Weight
	Bore	O.D.	Height		
	inch mm	inch mm	inch mm	lb N	lb kg
TAC-014035-202	1.3775 34.989	3.5433 90.000	4.3750 111.125	93,600 419,330	7.9 3.6
TAC-022094-201	2.1654 55.001	9.4488 240.000	9.4488 240.000	66,700 298,820	113 51.3
TAC-030053-210	3.0000 76.200	5.3880 136.855	4.2500 107.950	155,000 694,400	10 4.5
TAC-030066-204	3.0000 76.200	6.6265 168.313	5.6000 142.240	160,800 720,380	33 14.9
TAC-040100-202	4.0000 101.600	10.0000 254.000	8.1250 206.375	458,000 2,051,840	120 54.4
TAC-101215-203	10.1000 256.540	21.5025 546.164	19.2500 488.950	2,572,000 11,522,560	1,050 476.2
TAC-120240-207	12.0000 304.800	24.0000 609.600	21.2500 539.750	3,460,000 15,500,800	1,800 816.5
TAC-170340-204	17.0000 431.800	34.0000 863.600	25.5200 648.208	5,220,000 23,385,600	3,399 1,541.7

Metric dimensions for reference only.
 Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.
 For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

ROLLWAY® Tandem Thrust Bearings

Thrust Bearings



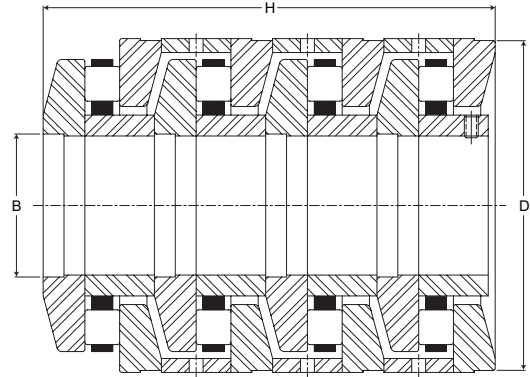
Basic Construction Type: Multi Stage Cylindrical Roller Thrust Bearing

Rolling Elements: Crowned Cylindrical Rollers

Bearing Material: Through Hardened Or Case Carburized Bearing Grade Steel

Series: 2, 3, 4, 6, Or 8 Stages

Retainer Types: Machined Brass



4 Stage

Part No.	B	D	H	Basic Dynamic Rating	Bearing Weight
	Bore	O.D.	Height		
	inch mm	inch mm	inch mm	lb N	lb kg
TAD-012033-204	1.1830 30.048	3.3465 85.001	4.7750 121.285	69,400 310,910	8.5 3.8
TMD-040127	1.5748 40.000	5.0000 127.000	6.9685 177.000	201,500 902,720	27 12.2
TAD-017047-202	1.7712 44.988	4.7235 119.977	5.9060 150.012	191,000 855,680	20 9.1
TAD-030082	3.0000 76.200	8.2500 209.550	10.0000 254.000	496,000 2,222,080	35 15.8
TAD-059120-201	5.9055 150.000	12.0079 305.001	12.2047 309.999	852,000 3,816,960	290 131.5

Metric dimensions for reference only.

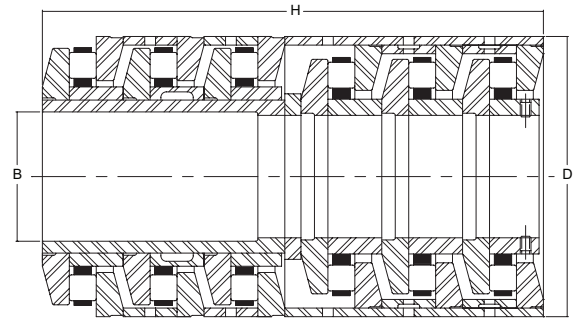
Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Tandem Thrust Bearings **ROLLWAY**[®]



- Basic Construction Type:** Multi Stage Cylindrical Roller Thrust Bearing
- Rolling Elements:** Crowned Cylindrical Rollers
- Bearing Material:** Through Hardened Or Case Carburized Bearing Grade Steel
- Series:** 2, 3, 4, 6, Or 8 Stages
- Retainer Types:** Machined Brass



6 Stage

Part No.	B	D	H	Basic Dynamic Rating	Bearing Weight
	Bore	O.D.	Height		
	inch mm	inch mm	inch mm		
TMF-023090	0.9055 23.000	3.5433 90.000	8.2677 210.000	160,650 719,710	16 7.3
TAF-011028	1.1024 28.001	2.7559 70.000	5.5118 140.000	89,700 401,860	6 2.7
TMF-030127-201	1.1811 30.000	5.0000 127.000	11.1024 282.001	329,900 1,477,950	44 19.9
TAF-017063	1.7000 43.180	6.2500 158.750	10.9750 278.765	413,200 1,851,140	72 32.6
TAF-019060	1.8940 48.108	6.0480 153.619	9.2500 234.950	366,000 1,639,680	52 23.5

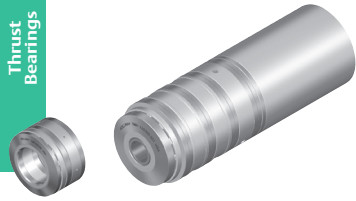
Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

ROLLWAY® Tandem Thrust Bearings

Thrust Bearings



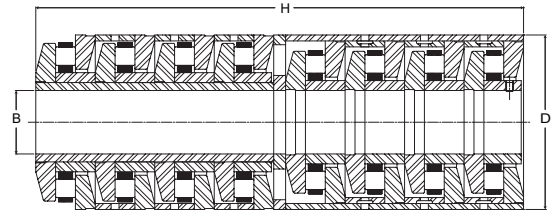
Basic Construction Type: Multi Stage Cylindrical Roller Thrust Bearing

Rolling Elements: Crowned Cylindrical Rollers

Bearing Material: Through Hardened Or Case Carburized Bearing Grade Steel

Series: 2, 3, 4, 6, Or 8 Stages

Retainer Types: Machined Brass



8 Stage

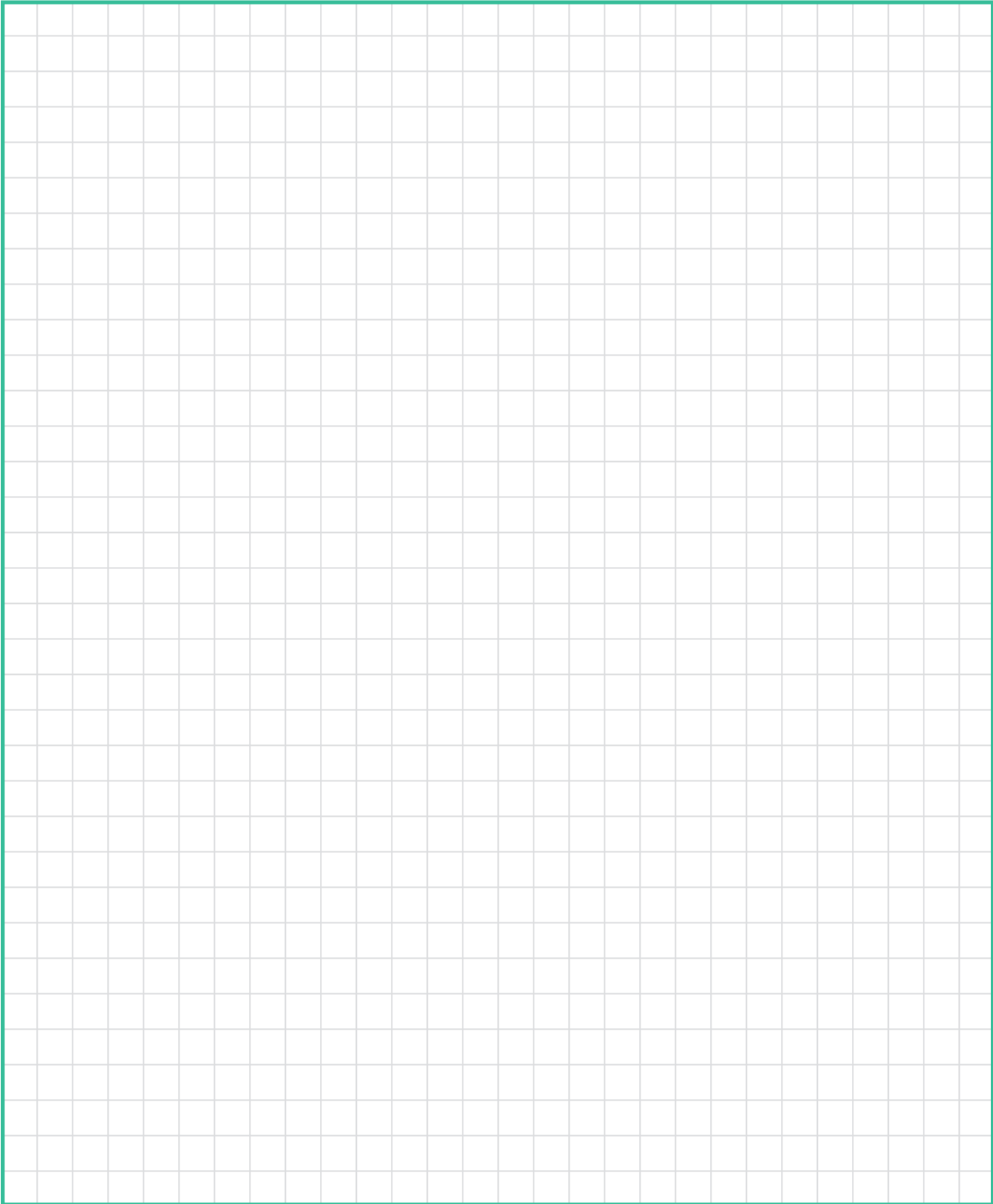
Part No.	B	D	H	Basic Dynamic Rating	Bearing Weight
	Bore	O.D.	Height		
	inch mm	inch mm	inch mm	lb N	lb kg
TMH-023090-201	0.9055 23.000	3.5433 90.000	10.6772 271.201	214,200 959,620	30 13.6
TMH-023092	0.9055 23.000	3.6220 91.999	12.0079 305.001	246,000 1,102,080	27 12.2
TMH-030127	1.1811 30.000	5.0000 127.000	14.6575 372.301	434,100 1,944,770	52 23.6
TMH-040170	1.5748 40.000	6.6929 170.000	19.2910 489.991	661,800 2,964,860	123 55.8

Metric dimensions for reference only.

Not all parts are available from stock. Please contact customer service for availability (800) 626-2120.

For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Thrust Bearing Engineering see page F-44.



For more information on bearing capabilities outside of our standard offering, please contact Application Engineering (800) 626-2093.

Load Ratings and Life

Life Calculations

The L10 (rating) life for any given application and bearing selection can be calculated in terms of millions of revolutions by using the bearing Basic Dynamic Rating and applied thrust load. The L10 life for any given application can be calculated in terms of hours, using the bearing Basic Dynamic Rating, applied load and suitable speed factors, by the following equation:

For thrust cylindrical roller and thrust tapered roller bearings:

$$L_{10} = \left(\frac{C}{P}\right)^{10/3} \times \frac{1,000,000}{60 \times n} = \left(\frac{C}{P}\right)^{10/3} \times \frac{16667}{n}$$

Where:

L_{10} = The # of hours that 90% of identical bearings under ideal conditions will operate at a specific speed and condition before fatigue is expected to occur.

C = Basic Dynamic Rating (lbs)
1,000,000 Revolutions

P = Constant Equivalent Load (lbs)

n = Speed (RPM)

Additionally, the ABMA provides application factors for all types of bearings which need to be considered to determine an adjusted Rated Life (L_{na}). L10 life rating is based on laboratory conditions yet other factors are encountered in actual bearing application that will reduce bearing life. L_{na} life rating takes into account reliability factors, material type, and operating conditions.

$$L_{na} = a_1 \times a_2 \times a_3 \times L_{10}$$

Where:

L_{na} = Adjusted Rated Life.

a_1 = Reliability Factor. Adjustment factor applied where estimated fatigue life is based on reliability other than 90% (See Table No 1).

a_2 = Material Factor. Life adjustment for bearing race material. Regal Power Transmission Solutions bearing races

Table No. 1 Life Adjustment Factor for Reliability

Reliability %	L_{na}	a_1
90	L10	1
95	L5	0.62
96	L4	0.53
97	L3	0.44
98	L2	0.33
99	L1	0.21
50	L50	5

are manufactured from bearing quality steel. Therefore the a_2 factor is 1.0.

a_3 = Life Adjustment Factor for Operating Conditions. This factor should take into account the adequacy of lubricant, presence of foreign matter, conditions causing changes in material properties, and unusual loading or mounting conditions. Assuming a properly selected and mounted bearing having adequate seals and lubricant operating below 250°F and tight fitted to the shaft, the a_3 factor should be 1.0.



Load Ratings and Life Continued

Vibration and shock loading can act as an additional loading to the steady expected applied load. When shock or vibration is present, an a3 Life Adjustment Factor can be applied. Shock loading has many variables which often are not easily determined. Typically, it is best to rely on one's experience with the particular application. Consult Application Engineering for assistance with applications involving shock or vibration loading.

The a3 factor takes into account a wide range of application and mounting conditions as well as bearing features and design. Accurate determination of this factor is normally achieved through testing and in-field experience. Regal Power Transmission Solutions offers a wide range of options which can maximize bearing performance. Consult Application Engineering for more information.

Variable Load Formula

Root mean load (RML) is to be used when a number of varying loads are applied to a bearing for varying time limits. Maximum loading still must be considered for bearing size selection.

$$RML^* = \sqrt[10/3]{\frac{(L_1^{10/3} N_1) + (L_2^{10/3} N_2) + (L_3^{10/3} N_3)}{100}}$$

Where:

RML = Root Mean Load (lbs.)

L₁, L₂, etc. = Load in pounds

N₁, N₂, etc. = Percent of total time operated at loads L₁, L₂, etc.

* Apply RML to rating at mean speed to determine resultant life.

Mean Speed Formula

The following formula is to be used when operating speed varies over time.

$$\text{Mean Speed} = \frac{S_1 N_1 + S_2 N_2 + S_3 N_3}{100}$$

S₁, S₂, etc = Speeds in RPM

N₁, N₂, etc = Percentage of total time operated at speeds S₁, S₂, etc

Load Ratings and Life Continued

Bearing Life In Oscillating Applications

The equivalent rotative speed (ERS) is used in life calculations when the bearing does not make complete revolutions during operation. The ERS is then used as the bearing operating speed in the calculation of the L10 (Rating) Life. The formula is based on sufficient angular rotation to have roller paths overlap.

$$\begin{aligned} \text{ERS} &= \text{Equivalent Rotative Speed} \\ \text{N} &= \text{Total number of degrees per minute through} \\ &\quad \text{which the bearing will rotate.} \\ \text{ERS} &= \frac{\text{N}}{360} \end{aligned}$$

In the above formula, allowance is made for the total number of stress applications on the weakest race per unit time, which, in turn, determines fatigue life and the speed factors. The theory behind fretting corrosion is best explained by the fact that the rolling elements in small angles of oscillation retrace a path over an unchanging area of the inner or outer races where the lubricant is prevented by inertia from flowing in behind the roller as the bearing oscillates in one direction. Upon reversal, this small area of rolling contact is traversed by the same roller in the dry state. The friction of the two unlubricated surfaces causes fretting corrosion and produces failures which are unpredictable from a normal life standpoint.

With a given bearing selected for an oscillating application, the best lubrication means is a light mineral oil under positive flow conditions. With a light oil, there is a tendency for all areas in the bearing load zone to be immersed in lubricant at all times. The full flow lubrication dictates that any oxidized material which may form is immediately carried away by the lubricant, and since these oxides are abrasive, further wear tends to be avoided. If grease lubrication must be used, it is best to consult with either the bearing manufacturer or the lubricant manufacturer to determine the best possible type of lubricant. Greases have been compounded to resist the detrimental effect of fretting corrosion for such applications.

Static Load Rating

The “static load rating” for rolling element bearings is that uniformly distributed static radial load acting on a non-rotating bearing, which produces a contact stress of 580,000 psi (roller bearings) or 630,000 psi (ball bearings) at the center of the most heavily loaded rolling element. At this stress level, plastic deformation begins to be significant. Experience has shown that the plastic deformation at this stress level can be tolerated in most bearing applications without impairment of subsequent bearing operation. In certain applications where subsequent rotation of the bearing is slow and where smoothness and friction requirements are not too exacting, a higher static load limit can be tolerated. Where extreme smoothness is required or friction requirements are critical, a lower static load limit may be necessary.

Minimum Bearing Load

Skidding, or sliding, of the rolling elements on the raceway instead of a true rolling motion can cause excessive wear. Applications with high speeds and light loading are particularly prone to skidding. As a general guideline, rolling element bearings should be radially loaded at least 2% of Basic Dynamic Rating. For applications where load is light relative to the bearings dynamic load rating, consult Application Engineering for assistance.



Thrust Engineering Section

Rollway cylindrical roller thrust bearings are designed to support thrust loads (loads parallel to the axis of rotation) at relatively high speeds. Cylindrical roller thrust bearings are relatively stiff, require a minimum amount of axial space, and handle shock loading relatively well. Rollway manufactures four different styles of cylindrical roller thrust bearings:

1. Single Acting – Supports thrust or axial load in one direction.
2. Aligning – Accepts an initial static misalignment of not more than 3 degrees.
3. Double Acting – Supports thrust or axial load in two directions.
4. Crane Hook Thrust – A shielded cylindrical roller thrust bearing that supports thrust or axial load in one direction.

Rollway tapered thrust bearings (TTHD and TTVF) are engineered for applications that contain high thrust loads and heavy shock loads. These bearings feature tapered or conical rollers positioned between two plates with tapered raceways. The tapered thrust bearing allows for true rolling motion with the vertex of the conical sections intersecting the bearing axis. The large end of each tapered roller is spherically ground. When the bearing is under load, this curvature guides the rollers accurately. The large spherical end of the roller is counterbored to improve lubrication between the roller and guide rib. By virtue of the additional contact surface, these bearings will have a higher dynamic rating than a similar sized cylindrical roller thrust bearing. Furthermore, they have superior performance in horizontal shaft applications. The self-centering action of the rollers counteract the gravitational effect of the roller assembly reducing the effects of the roller assembly contacting the shaft.

The tapered thrust bearings of the TTVF style are similar to the TTHD tapered thrust style except one thrust plate is flat. The guide rib on the one tapered raceway resists the induced radial force component caused by the inclined plane while the flat plate allows radial displacement without adversely affecting bearing operation. Maximum capacity is achieved through close spacing of the rollers through the use of a steel, hardened pin type retainer.

Rollway tandem thrust bearings, also referred to as multi-stage thrust bearings, were originally designed and patented by Rollway. The bearing consists of a series of thrust plates and roller assemblies with compression sleeves separating the stages. The design of the bearing sleeves and precision match grinding of the components allow the load to be equally applied through the stages of the bearing.

The tandem design allows the use of a high capacity bearing in a small area. Popular applications for this bearing type are rotary swivels, single screw extruders, and twin screw extruders. The tandem bearing allows for the increased output of machines without increasing the size of the gearbox. Rollway manufactures tandem bearings in two, three, four, six, and eight stages. Both inch and metric series sizes are available. Bore sizes range from about 1 to 22 inches with corresponding outside diameter ranging from 3.5 to 42 inches. Rollway tandem thrust bearings are supplied to original equipment manufacturers and the aftermarket.

Operating Conditions Factor

The life of a bearing is dependent on the operating conditions of the application. Lubrication, effects of the external environment, shaft and housing geometry and mounting, all have an effect on the actual bearing life. To determine a more realistic life calculation, the Operating Conditions Factor (F) can be included into the L_{10} life equation. The actual values determination will be based on experience of the designer and the expected operating conditions.

Using the Operating Conditions Factor (F) in the life equation, L_{10} life in hours now becomes:

$$L_{10} = F \times \left[\left(\frac{C}{P} \right)^{3.33} \times \frac{16667}{n} \right]$$

Thrust Engineering Section continued

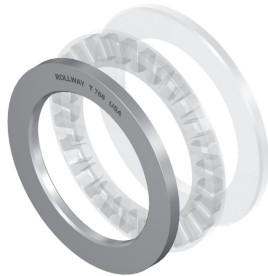
Proper selection of the F factor demands intimate knowledge of the application. Where little is known of the application, it is recommended that $F = 1$ be selected. As a guide in selecting a realistic value for F, Rollway suggests use of the following, cumulative, individual sub-factors, f , to arrive at the over-all factor, F, thus:

$$F = f_1 \times f_2 \times f_3 \times f_4 \dots$$

The table below defines the application parameters and values recommended for derivation of the individual sub-factors.

Thrust Bearing Factors

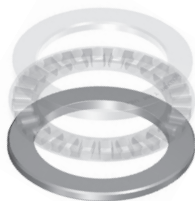
Factor	Application Condition	Factor Estimates	
		Poor	Excellent
f_1	Lubricant viscosity suitability @ bearing operating temperature (see Lubrication)	.5	1.0
f_2	External environment and provisions for isolation	.5	1.0
f_3	Operational conditions of shaft and housing squareness & rigidity	.5	1.0
f_4	Bearing thrust plate backing system full backing vs partial backing	.5	1.0



Cylindrical Roller Thrust Shaft Plate

The bore of the shaft plate is precision ground for a line to loose fit on in relation to the shaft outside diameter. The shaft plate outside diameter has a turned finish and is smaller than the housing plate's outside diameter. The plate is made from either through-hardened or carburizing grade steel with hardness to Rockwell (Rc) 58-63. Upon request we can manufacture these components from either CEVM or VIMVAR grades of material or M- 50 tool steel for high temperature applications.

All thrust plates are accurately ground for flatness and parallelism of the roller riding and backing surfaces. The roller contacting surfaces of the plates are superfinished to provide for long life. Locating diameters are ground to obtain an accurate fit on the shaft.

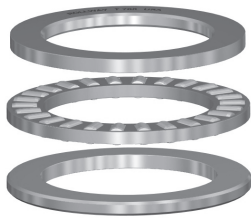


Cylindrical Roller Thrust Housing Plate

The outside diameter of the housing plate is precision ground for a line to loose fit in housing bore. The inside diameter has a turned finish and is larger than the shaft plate's inside diameter. The plate is made from either through-hardened or carburizing grade steel with hardness to Rockwell (Rc) 58-63. Upon request we can manufacture these components from either CEVM or VIMVAR grades of material or M- 50 tool steel for high temperature applications.

All thrust plates are accurately ground for flatness and parallelism of the roller riding and backing surfaces. The roller contacting surfaces of the plates are superfinished to provide for long life. Locating diameters are ground to obtain an accurate fit in the housing.

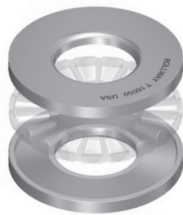
Thrust Engineering Section continued



Cylindrical Roller Thrust Roller Assembly

The roller assembly contains a machined brass roller-riding cage. Rollway thrust bearing retainers are machined from centrifugally cast brass. The retainers for all cylindrical roller thrust bearings are designed to be roller riding. The contoured roller pockets are accurately machined at right angles to the thrust force, which will be applied to the bearing. The rollers are retained in the assembly by a steel ring pinned to the outside diameter of the retainer.

The rollers in the roller assembly are matched to have outside diameters within .0001 inches. It should be noted that the Rollway design has a sphered roller end, which rides against the steel retaining ring for reduced wear. (The center of the contact point has zero velocity vs. the higher velocity that results from a flat ended roller contacting the ring.) The rollers used in cylindrical thrust roller bearings are also crowned. For the benefits of crowning please refer to page F-9.



Tapered Thrust Bearing Plates

The tapered thrust plates and rollers are made from carburizing grade steel surface hardened to HRc 58 minimum. Other material grades such as CEVM or VIMVAR are available upon request. All thrust plates are accurately ground for flatness and parallelism of the roller riding and backing surfaces. Locating plate diameters are surface ground to obtain an accurate fit on the shaft or in the housing. The tapered roller contacting surfaces are ground to ensure satisfactory bearing operating life.



Tapered Thrust Bearing Rollers

The tapered rolling elements are precision ground to provide an even load over the contact surfaces. The rollers are crowned for optimum stress patterns. The large end of the rollers are spherically ground providing controlled contact between the rollers and the guide rib.



Tapered Thrust Bearing Retainer

The tapered thrust bearing retainers are of two designs. The first design is a machined retainer from a single piece of centrifugally cast brass. The second design is a two-piece retainer made from hardened steel rings.

Tolerances

Rollway thrust bearings are produced to standard tolerances as listed in the following tables. Thrust bearings are available to increased accuracy upon request. Cylindrical roller thrust bearings contain rollers having a diameter variation of .0001 inches maximum per bearing.



Thrust Engineering Section continued

600 Series, Single Direction, Flat Seats

Bore Diameter		Bore Tolerance		Height Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	1.1870 30.1498	0.0000 0.0000	0.0005 0.0127	0.0000 0.0000	0.0060 0.1524
1.1870 30.1498	1.3750 34.9250	0.0000 0.0000	0.0006 0.0152	0.0000 0.0000	0.0060 0.1524
1.3750 34.9250	1.5620 39.6748	0.0000 0.0000	0.0007 0.0178	0.0000 0.0000	0.0060 0.1524
1.5620 39.6748	1.7500 44.4500	0.0000 0.0000	0.0008 0.0203	0.0000 0.0000	0.0060 0.1524
1.7500 44.4500	1.9370 49.1998	0.0000 0.0000	0.0009 0.0229	0.0000 0.0000	0.0060 0.1524
1.9370 49.1998	2.0000 50.8000	0.0000 0.0000	0.0010 0.0254	0.0000 0.0000	0.0060 0.1524
2.0000 50.8000	2.1250 53.9750	0.0000 0.0000	0.0010 0.0254	0.0000 0.0000	0.0080 0.2032
2.1250 53.9750	2.5000 63.5000	0.0000 0.0000	0.0011 0.0279	0.0000 0.0000	0.0080 0.2032
2.5000 63.5000	3.0000 76.2000	0.0000 0.0000	0.0012 0.0305	0.0000 0.0000	0.0080 0.2032
3.0000 76.2000	3.5000 88.9000	0.0000 0.0000	0.0013 0.0330	0.0000 0.0000	0.0100 0.2540

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	2.8750 73.0250	0.0005 0.0127	0.0000 0.0000
2.8750 73.0250	3.3750 85.7250	0.0007 0.0178	0.0000 0.0000
3.3750 85.7250	3.7500 95.2500	0.0009 0.0229	0.0000 0.0000
3.7500 95.2500	4.1250 104.7750	0.0011 0.0279	0.0000 0.0000
4.1250 104.7750	4.7180 119.8372	0.0013 0.0330	0.0000 0.0000
4.7180 119.8372	5.0000 127.0000	0.0015 0.0381	0.0000 0.0000

Thrust Engineering Section continued

600 Series, Single Direction, Aligning Seat With Aligning Washers

Thrust Bearings



Bore Diameter		Bore Tolerance		Height Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	1.1870 30.1498	0.0000 0.0000	0.0005 0.0127	0.0000 0.0000	0.0060 0.1524
1.1870 30.1498	1.3750 34.9250	0.0000 0.0000	0.0006 0.0152	0.0000 0.0000	0.0060 0.1524
1.3750 34.9250	1.5620 39.6748	0.0000 0.0000	0.0007 0.0178	0.0000 0.0000	0.0060 0.1524
1.5620 39.6748	1.7500 44.4500	0.0000 0.0000	0.0008 0.0203	0.0000 0.0000	0.0060 0.1524
1.7500 44.4500	1.9370 49.1998	0.0000 0.0000	0.0009 0.0229	0.0000 0.0000	0.0060 0.1524
1.9370 49.1998	2.0000 50.8000	0.0000 0.0000	0.0010 0.0254	0.0000 0.0000	0.0060 0.1524
2.0000 50.8000	2.1250 53.9750	0.0000 0.0000	0.0010 0.0254	0.0000 0.0000	0.0080 0.2032
2.1250 53.9750	2.5000 63.5000	0.0000 0.0000	0.0011 0.0279	0.0000 0.0000	0.0080 0.2032
2.5000 63.5000	3.0000 76.2000	0.0000 0.0000	0.0012 0.0305	0.0000 0.0000	0.0080 0.2032
3.0000 76.2000	3.5000 88.9000	0.0000 0.0000	0.0013 0.0330	0.0000 0.0000	0.0100 0.2540

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	3.0000 76.2000	0.0007 0.0178	0.0000 0.0000
3.0000 76.2000	3.3750 85.7250	0.0009 0.0229	0.0000 0.0000
3.3750 85.7250	3.6250 92.0750	0.0011 0.0279	0.0000 0.0000
3.6250 92.0750	3.8750 98.4250	0.0013 0.0330	0.0000 0.0000
3.8750 98.4250	4.5312 115.0925	0.0015 0.0381	0.0000 0.0000
4.5312 115.0925	5.0000 127.0000	0.0017 0.0432	0.0000 0.0000

Thrust Engineering Section continued

700 Series, Single Direction, Flat Seats

Bore Diameter		Bore Tolerance		Height Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
2.0000 50.8000	3.0000 76.2000	0.0000 0.0000	0.0010 0.0254	0.0000 0.0000	0.0080 0.2032
3.0000 76.2000	3.5000 88.9000	0.0000 0.0000	0.0012 0.0305	0.0000 0.0000	0.0100 0.2540
3.5000 88.9000	6.0000 152.4000	0.0000 0.0000	0.0015 0.0381	0.0000 0.0000	0.0100 0.2540
6.0000 152.4000	9.0000 228.6000	0.0000 0.0000	0.0015 0.0381	0.0000 0.0000	0.0150 0.3810
9.0000 228.6000	10.0000 254.0000	0.0000 0.0000	0.0018 0.0457	0.0000 0.0000	0.0150 0.3810
10.0000 254.0000	12.0000 304.8000	0.0000 0.0000	0.0018 0.0457	0.0000 0.0000	0.0200 0.5080
12.0000 304.8000	18.0000 457.2000	0.0000 0.0000	0.0020 0.0508	0.0000 0.0000	0.0200 0.5080
18.0000 457.2000	22.0000 558.8000	0.0000 0.0000	0.0025 0.0635	0.0000 0.0000	0.0250 0.6350
22.0000 558.8000	30.0000 762.0000	0.0000 0.0000	0.0030 0.0762	0.0000 0.0000	0.0250 0.6350

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
5.0000 127.0000	10.0000 254.0000	0.0015 0.0381	0.0000 0.0000
10.0000 254.0000	18.0000 457.2000	0.0020 0.0508	0.0000 0.0000
18.0000 457.2000	26.0000 660.4000	0.0025 0.0635	0.0000 0.0000
26.0000 660.4000	34.0000 863.6000	0.0030 0.0762	0.0000 0.0000
34.0000 863.6000	44.0000 1,117.6000	0.0040 0.1016	0.0000 0.0000

Thrust Engineering Section continued

700 Series, Single Direction, Aligning Seat With Aligning Washers



Bore Diameter		Bore Tolerance		Height Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
2.0000 50.8000	3.0000 76.2000	0.0000 0.0000	0.0010 0.0254	0.0000 0.0000	0.0100 0.2540
3.0000 76.2000	3.5000 88.9000	0.0000 0.0000	0.0012 0.0305	0.0000 0.0000	0.0150 0.3810
3.5000 88.9000	6.0000 152.4000	0.0000 0.0000	0.0015 0.0381	0.0000 0.0000	0.0150 0.3810
6.0000 152.4000	9.0000 228.6000	0.0000 0.0000	0.0015 0.0381	0.0000 0.0000	0.0200 0.5080
9.0000 228.6000	10.0000 254.0000	0.0000 0.0000	0.0018 0.0457	0.0000 0.0000	0.0200 0.5080
10.0000 254.0000	12.0000 304.8000	0.0000 0.0000	0.0018 0.0457	0.0000 0.0000	0.0250 0.6350
12.0000 304.8000	18.0000 457.2000	0.0000 0.0000	0.0020 0.0508	0.0000 0.0000	0.0250 0.6350
18.0000 457.2000	22.0000 558.8000	0.0000 0.0000	0.0025 0.0635	0.0000 0.0000	0.0300 0.7620

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
5.0000 127.0000	10.0000 254.0000	0.0019 0.0483	0.0000 0.0000
10.0000 254.0000	18.0000 457.2000	0.0021 0.0533	0.0000 0.0000
18.0000 457.2000	26.0000 660.4000	0.0023 0.0584	0.0000 0.0000
26.0000 660.4000	34.0000 863.6000	0.0025 0.0635	0.0000 0.0000
34.0000 863.6000	44.0000 1,117.6000	0.0030 0.0762	0.0000 0.0000

Thrust Engineering Section continued

Crane Hook

Bore Diameter		Bore Tolerance		Height Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	2.0156 51.1962	0.0100 0.2540	0.0000 0.0000	0.0000 0.0000	0.0080 0.2032
2.0156 51.1962	3.0156 76.5962	0.0100 0.2540	0.0020 0.0508	0.0000 0.0000	0.0100 0.2540
3.0156 76.5962	6.0156 152.7962	0.0150 0.3810	0.0020 0.0508	0.0000 0.0000	0.0150 0.3810
6.0156 152.7962	10.1560 257.9624	0.0150 0.3810	0.0050 0.1270	0.0000 0.0000	0.0200 0.5080

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
2.5000 63.5000	4.0000 101.6000	0.0050 0.1270	0.0050 0.1270
4.0000 101.6000	6.0000 152.4000	0.0060 0.1524	0.0060 0.1524
6.0000 152.4000	10.0000 254.0000	0.0100 0.2540	0.0100 0.2540
10.0000 254.0000	34.0000 863.6000	0.0120 0.3048	0.0120 0.3048

Thrust Engineering Section continued



Tapered Roller Thrust

Bore Diameter		Bore Tolerance		Height Tolerance	
over	incl	high (+)	low (-)	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	12.0000 304.8000	0.0010 0.0254	0.0000 0.0000	0.0150 0.3810	0.0150 0.3810
12.0000 304.8000	24.0000 609.6000	0.0020 0.0508	0.0000 0.0000	0.0150 0.3810	0.0150 0.3810
24.0000 609.6000	36.0000 914.4000	0.0030 0.0762	0.0000 0.0000	0.0150 0.3810	0.0150 0.3810
36.0000 914.4000	48.0000 1,219.2000	0.0040 0.1016	0.0000 0.0000	0.0150 0.3810	0.0150 0.3810

Outside Diameter		Outside Diameter Tolerance	
over	incl	high (+)	low (-)
inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	12.0000 304.8000	0.0010 0.0254	0.0000 0.0000
12.0000 304.8000	24.0000 609.6000	0.0020 0.0508	0.0000 0.0000
24.0000 609.6000	36.0000 914.4000	0.0030 0.0762	0.0000 0.0000
36.0000 914.4000	48.0000 1,219.2000	0.0040 0.1016	0.0000 0.0000

Thrust Engineering Section continued

Thrust Bearing Mounting

Suitable tolerances for the shaft and housings of the 600 and 700 series thrust bearings and the tapered thrust bearings are listed in the following tables. These tolerances will provide satisfactory radial guidance for the cylindrical and/or tapered thrust bearings. For further information on bearing mounting and installation, refer to page F-56 of this catalog

Cylindrical Thrust Thrust Bearing Mounting Practice – Shaft and Housing Fits

Bearing		Shaft Diameter Deviation			
Bore Diameter		from Bore Diameter (-)			
over	incl	high		low	
inch mm	inch mm	inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	1.1250 28.5750	0.0005 0.0127		0.0015 0.0381	
1.1250 28.5750	1.3125 33.3375	0.0006 0.0152		0.0016 0.0406	
1.3125 33.3375	1.5000 38.1000	0.0007 0.0178		0.0017 0.0432	
1.5000 38.1000	1.6875 42.8625	0.0008 0.0203		0.0018 0.0457	
1.6875 42.8625	1.8750 47.6250	0.0009 0.0229		0.0019 0.0483	
1.8750 47.6250	2.1250 53.9750	0.0010 0.0254		0.0020 0.0508	
2.1250 53.9750	2.5000 63.5000	0.0011 0.0279		0.0021 0.0533	
2.5000 63.5000	3.0000 76.2000	0.0012 0.0305		0.0022 0.0559	
3.0000 76.2000	3.5000 88.9000	0.0013 0.0330		0.0023 0.0584	
3.5000 88.9000	7.0000 177.8000	0.0015 0.0381		0.0025 0.0635	
7.0000 177.8000	9.0000 228.6000	0.0015 0.0381		0.0030 0.0762	
9.0000 228.6000	12.0000 304.8000	0.0018 0.0457		0.0033 0.0838	
12.0000 304.8000	15.0000 381.0000	0.0020 0.0508		0.0035 0.0889	
15.0000 381.0000	19.0000 482.6000	0.0020 0.0508		0.0040 0.1016	
19.0000 482.6000	23.0000 584.2000	0.0025 0.0635		0.0045 0.1143	
23.0000 584.2000	30.0000 762.0000	0.0030 0.0762		0.0055 0.1397	

Thrust Engineering Section continued

Cylindrical Thrust

Thrust Bearing Mounting Practice – Shaft and Housing Fits continued



Bearing		Housing Diameter Deviation	
Outside Diameter		from Outside Diameter (+)	
over	incl	high	low
inch mm	inch mm	inch mm	inch mm
2.0000 50.8000	2.3750 60.3250	0.0015 0.0381	0.0005 0.0127
2.3750 60.3250	3.2500 82.5500	0.0017 0.0432	0.0007 0.0178
3.2500 82.5500	3.6875 93.6625	0.0019 0.0483	0.0009 0.0229
3.6875 93.6625	4.0000 101.6000	0.0021 0.0533	0.0011 0.0279
4.0000 101.6000	4.5312 115.0925	0.0028 0.0711	0.0013 0.0330
4.5312 115.0925	10.0000 254.0000	0.0030 0.0762	0.0015 0.0381
10.0000 254.0000	18.0000 457.2000	0.0040 0.1016	0.0020 0.0508
18.0000 457.2000	22.0000 558.8000	0.0050 0.1270	0.0025 0.0635
22.0000 558.8000	26.0000 660.4000	0.0055 0.1397	0.0025 0.0635
26.0000 660.4000	28.0000 711.2000	0.0060 0.1524	0.0030 0.0762
28.0000 711.2000	34.0000 863.6000	0.0070 0.1778	0.0030 0.0762
34.0000 863.6000	38.0000 965.2000	0.0080 0.2032	0.0035 0.0889
38.0000 965.2000	44.0000 1,117.6000	0.0090 0.2286	0.0040 0.1016

Thrust Engineering Section continued

Tapered Thrust

Thrust Bearing Mounting Practice – Shaft and Housing Fits

Thrust Bearings



Bearing		Spring Loaded Shaft Diameter Deviation	
Bore Diameter		from Bore Diameter (-)	
over	incl	high	low
inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	6.8750 174.6250	0.0000 0.0000	0.0010 0.0254
6.8750 174.6250	7.9999 203.1975	0.0000 0.0000	0.0010 0.0254
7.9999 203.1975	12.0000 304.8000	0.0000 0.0000	0.0015 0.0381
12.0000 304.8000	24.0000 609.6000	0.0000 0.0000	0.0020 0.0508
24.0000 609.6000	36.0000 914.4000	0.0000 0.0000	0.0025 0.0635
36.0000 914.4000	48.0000 1,219.2000	0.0000 0.0000	0.0030 0.0762

Bearing		Housing Diameter Deviation	
Outside Diameter		from Outside Diameter (+)	
over	incl	high	low
inch mm	inch mm	inch mm	inch mm
0.0000 0.0000	10.5000 266.7000	0.0025 0.0635	0.0010 0.0254
10.5000 266.7000	13.0000 330.2000	0.0030 0.0762	0.0010 0.0254
13.0000 330.2000	20.0000 508.0000	0.0040 0.1016	0.0020 0.0508
20.0000 508.0000	25.0000 635.0000	0.0045 0.1143	0.0020 0.0508
25.0000 635.0000	30.0000 762.0000	0.0060 0.1524	0.0030 0.0762
30.0000 762.0000	35.0000 889.0000	0.0070 0.1778	0.0030 0.0762

Thrust Engineering Section continued

When mounting thrust bearings, there exists the possibility of a slight press fit due to the acceptable tolerances of the bearing bore and outside diameters. Under no circumstances should a press fit exceeding the limits shown be used with the thrust plates, as any expansion or contraction in the plates due to fit could result in a misalignment in the plates and subsequent limited bearing life.

Cylindrical and tapered roller thrust bearings require the support surfaces in the housing and the shaft to be at right angles to the shaft axis within .0005 inch per inch of diameter. For example, a four inch diameter shaft should be square to the shaft shoulder within .002 inches. The support surfaces should also provide for continuous support for the bearing thrust plates across the extent of the raceways. As a general rule, the minimum shaft shoulder and maximum housing shoulder should be as follows:

- Shaft shoulder at a minimum should be equal to the outside diameter of the shaft plate.
- Housing shoulder must have a maximum diameter to not exceed the inside diameter of the housing plate.

The tapered thrust bearing plates are manufactured with the same inside diameter and outside diameter on both plates. Applications using these bearings must be designed with ample clearance between the outside diameter of the shaft plate and the housing. Clearance must also be designed between the inside diameter of the housing plate and the shaft. It is recommended to provide for clearances of approximately .030 inches.

Tandem thrust bearings are designed to allow for the use of minimal shaft and housing shoulders. The cantilevering action of the thrust plates use of compression sleeves enable these bearings to be used effectively where only minimal shaft and housing shoulders exist.

Tandem Thrust Bearing Minimum Load

Tandem thrust bearings are designed to be used in horizontal shaft applications such as an extruder gear drive, and it is essential that a sufficient thrust load is applied to prevent roller skid. The minimum load required for tandem thrust bearings is expressed as a ratio of the bearing's dynamic rating (C) to the applied load (P). For ideal bearing operation, the C/P ratio should be less than 8. Bearing loads creating a C/P ratio greater than 12 must be avoided.

Lubrication

The required viscosity for the lubricant on cylindrical thrust bearings is 125 SSU at operating temperature. The required viscosity for the lubricant on tapered thrust bearings is 160 SSU at operating temperature. The required viscosity for the lubricant on tandem thrust bearings is 160 SSU at operating temperature. For further information in regards to thrust bearing lubrication please refer to page A-17 of this catalog.