Only from Kaydon: Reali-Slim TT Series Small-scale, Thin Section Turntable Bearings

To save weight, reduce product envelope sizes and increase design flexibility — without compromising bearing performance and life — customers told us they'd welcome a more compact turntable bearing design.

We responded by designing the first small-scale, thin section turntable bearings, for such demanding applications as robotics, radar antennae, and factory positioning and inspection tables… the Reali-Slim TT Series. The advantages of this series vs. conventional turntable bearings include:

Significantly smaller size for greater design versatility and reduced weight;

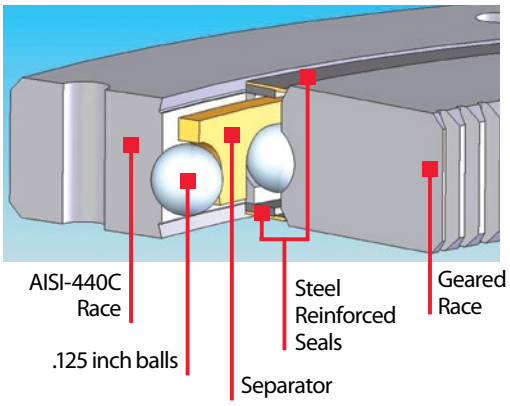
Greater accuracy — extended radial bearing section increases rigidity, with optional preload or clearances to meet application torque or deflection requirements;

Easier to use — fast installation and changeout;

Custom configurations to meet your application's specific needs — many drive options, gearing/timing belt, mounting hole types; and

Designed to **withstand harsh operating environments** — AISI-440C steel races, steel reinforced seals.

Figure 2-10



The configurations and specifications you need for more compact, more precise turntable designs

Example of part number breakdown

T 01 - 00225 E A C

T = 4-point contact radial ball bearing
01 = Ball size in (1/8) inch
00225 = Ball pitch diameter in inches x 100

Gearing
E = External Gear
N = Internal Gear
P = Plain - no gear

Inner Hole
A = Inner Hole Style of through holes
B = Tapped mounting holes
C = Countersunk mounting holes

Outer Hole
A = Outer Hole Style of through holes
B = Tapped mounting holes
C = Countersunk mounting holes

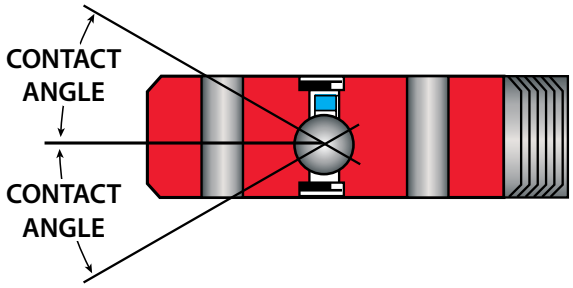
Holes sized for #4-40 screws, tapped, countersunk, or through gears set at full depth involute, 64 DP., 20° pressure angle

Four-Point Contact Bearing (Reali-Slim TT Series)

Bearings are most often designed to handle either radial or axial load conditions. But the Reali-Slim TT Series four-point contact bearings have a unique inner and outer race geometry that enables a single bearing to carry three types of loading (radial, axial and moment) simultaneously. This makes it the bearing of choice for many applications since a single four-point contact bearing can often replace two bearings, providing a simplified design.

Reali-Slim TT Series bearings may also be furnished with an internal diametral preload for those applications requiring greater stiffness or zero free play. This is accomplished by using balls that are larger than the space provided in the raceways. The balls and raceways, therefore, have some elastic deformation in the absence of an external load.

Figure 2-11



Reali-Slim TT Series Turntable Bearings (continued)

Four-Point Contact Bearing (Reali-Slim TT Series)

Basic Part Number	Dynamic			Static			Static Torque (in . - lbs.)	Approx. Weight (lbs.)
	Radial (lbs.)	Thrust (lbs.)	Moment (in. - lbs.)	Radial (lbs.)	Thrust (lbs.)	Moment (in. - lbs.)		
T01-00225	520	790	440	680	1,710	770	3.4	0.35
T01-00275	580	910	600	830	2,090	1,150	4.4	0.43
T01-00325	640	1,010	780	990	2,470	1,600	5.5	0.50
T01-00375	700	1,110	980	1,140	2,850	2,130	6.5	0.59
T01-00425	750	1,210	1,200	1,290	3,220	2,740	7.4	0.67
T01-00450	780	1,260	1,320	1,370	3,410	3,070	7.9	0.70
T01-00475	810	1,310	1,440	1,440	3,600	3,420	8.5	0.74
T01-00500	830	1,350	1,560	1,520	3,790	3,790	9.0	0.78
T01-00525	860	1,400	1,690	1,590	3,980	4,180	9.5	0.82
T01-00575	910	1,480	1,950	1,750	4,360	5,020	10.4	0.89
T01-00625	950	1,570	2,230	1,900	4,740	5,930	11.3	0.98
T01-00675	1,000	1,650	2,530	2,050	5,120	6,910	12.2	1.05

Torque based on seal drag in addition to a light preload

Note: Reali-Slim TT Series turntable bearings are custom designed to meet your application's needs. Contact Kaydon for lead time.

Non-geared Bearings – All dimensions in inches

Part Number with Through Holes	Bore	O.D.	Inner Land	Outer Land	Inner Bolt Circle	Number of holes	Outer Bolt Circle	Number of holes
T01-00225PAA	1.500	3.000	2.148	2.356	1.813	6	2.688	8
T01-00275PAA	2.000	3.500	2.648	2.856	2.313	8	3.188	10
T01-00325PAA	2.500	4.000	3.148	3.356	2.813	9	3.688	12
T01-00375PAA	3.000	4.500	3.648	3.856	3.313	10	4.188	14
T01-00425PAA	3.500	5.000	4.148	4.356	3.813	12	4.688	15
T01-00450PAA	3.750	5.250	4.398	4.606	4.063	12	4.938	16
T01-00475PAA	4.000	5.500	4.648	4.856	4.313	14	5.188	16
T01-00500PAA	4.250	5.750	4.898	5.106	4.563	14	5.438	18
T01-00525PAA	4.500	6.000	5.148	5.356	4.813	15	5.688	18
T01-00575PAA	5.000	6.500	5.648	5.856	5.313	16	6.188	20
T01-00625PAA	5.500	7.000	6.148	6.356	5.813	18	6.688	22
T01-00675PAA	6.000	7.500	6.648	6.856	6.313	20	7.188	22

Externally Geared Bearings – All dimensions in inches

Part Number with Through Holes	Bore	Gear O.D.	Inner Land	Outer Land	Inner Bolt Circle	Number of holes	Outer Bolt Circle	Number of holes	Gear Pitch Dia.	Number of teeth
T01-00225EAA	1.500	3.078	2.148	2.356	1.813	6	2.688	8	3.047	195
T01-00275EAA	2.000	3.578	2.648	2.856	2.313	8	3.188	10	3.547	227
T01-00325EAA	2.500	4.078	3.148	3.356	2.813	9	3.688	12	4.047	259
T01-00375EAA	3.000	4.578	3.648	3.856	3.313	10	4.188	14	4.547	291
T01-00425EAA	3.500	5.078	4.148	4.356	3.813	12	4.688	15	5.047	323
T01-00450EAA	3.750	5.328	4.398	4.606	4.063	12	4.938	16	5.297	339
T01-00475EAA	4.000	5.578	4.648	4.856	4.313	14	5.188	16	5.547	355
T01-00500EAA	4.250	5.828	4.898	5.106	4.563	14	5.438	18	5.797	371
T01-00525EAA	4.500	6.078	5.148	5.356	4.813	15	5.688	18	6.047	387
T01-00575EAA	5.000	6.578	5.648	5.856	5.313	16	6.188	20	6.547	419
T01-00625EAA	5.500	7.078	6.148	6.356	5.813	18	6.688	22	7.047	451
T01-00675EAA	6.000	7.578	6.648	6.856	6.313	20	7.188	22	7.547	483

Reali-Slim TT Series Turntable Bearings (continued)

Internally Geared Bearings – All dimensions in inches

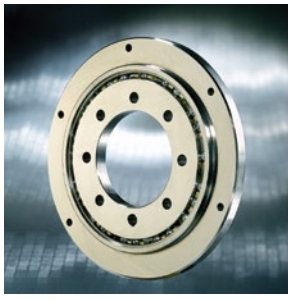
Part Number with Through Holes	Gear I.D.	O.D.	Inner Land	Outer Land	Inner Bolt Circle	Number of holes	Outer Bolt Circle	Number of holes	Gear Pitch Dia.	Number of teeth
T01-00225NAA	1.422	3.000	2.148	2.356	1.813	6	2.688	8	1.453	93
T01-00275NAA	1.922	3.500	2.648	2.856	2.313	8	3.188	10	1.953	125
T01-00325NAA	2.422	4.000	3.148	3.356	2.813	9	3.688	12	2.453	157
T01-00375NAA	2.922	4.500	3.648	3.856	3.313	10	4.188	14	2.953	189
T01-00425NAA	3.422	5.000	4.148	4.356	3.813	12	4.688	15	3.453	221
T01-00450NAA	3.672	5.250	4.398	4.606	4.063	12	4.938	16	3.703	237
T01-00475NAA	3.922	5.500	4.648	4.856	4.313	14	5.188	16	3.953	253
T01-00500NAA	4.172	5.750	4.898	5.106	4.563	14	5.438	18	4.203	269
T01-00525NAA	4.422	6.000	5.148	5.356	4.813	15	5.688	18	4.453	285
T01-00575NAA	4.922	6.500	5.648	5.856	5.313	16	6.188	20	4.953	317
T01-00625NAA	5.422	7.000	6.148	6.356	5.813	18	6.688	22	5.453	349
T01-00675NAA	5.922	7.500	6.648	6.856	6.313	20	7.188	22	5.953	381

The design features and options you asked for

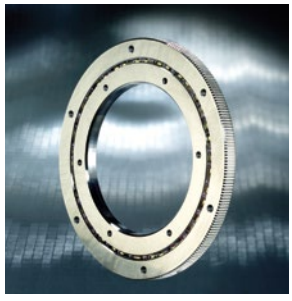
Custom Reali-Slim TT Series thin section bearings have a proven, four-point contact ball radial design, featuring a single row of balls with a unique gothic arch raceway and brass separators for low frictional torque. Radial, axial and moment load-capable, the bearings are prelubricated and ready for use; simply position the bearings on the mounting face and tighten the mounting screws! They are available with optional internal or external spur gear for ease of drive setup, or with non-geared designs.

Geared options are 64 diametral pitch with 20° pressure angle and provide low-backlash service. Built-in seals are a low-torque design, and made of rugged, reliable, steel-reinforced nitrile rubber.

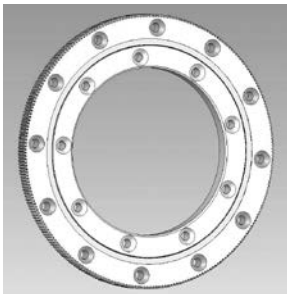
Mounting holes are sized for #4-40 UNC fasteners with optional styles — .136 through holes and countersunk holes, and tapped through. Non-geared races have mounting piloting diameters controlled to .0008 inches.



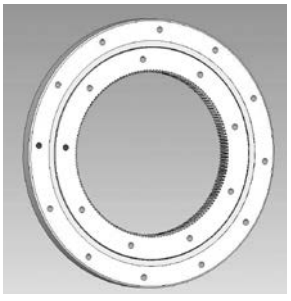
No gear with through holes



External gear with tapped holes



Externally geared bearing with countersunk holes



Internal gear with tapped holes