

Easy, Step-By-Step Instructions...

# How To Install an AN Style Tolerance Ring

The AN style ring is open in the free state so that when installed inside a bore, the ring will conform to that bore and be self-retaining. The ring sits in the housing with waves on the inside to be compressed by the outer diameter of the mating part.

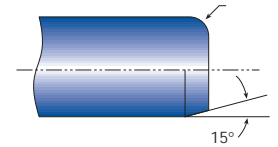
## Design of Mating Parts

### Assembly Procedure Considerations

The tops of the corrugations (the ID on AN rings, or the OD on BN rings) are formed with a rounded contour, which assists as a lead-in edge during assembly. It is very important that the lead-in edge of the mating part is contoured with a generous radius or a shallow (15°) chamfer. Sharp corners on the lead-in edge could dig in and mar the Tolerance Ring, sacrificing performance. It is also important that the housing bore should allow for a minimum .080" (2mm) wall thickness remaining after machining steel housing or at least .120" (3mm) for an aluminum zinc or magnesium housing. It should also be considered that when using low strength materials, such as aluminum, zinc, magnesium, plastics, etc., the housing bore should be reduced to provide more of an interference fit.

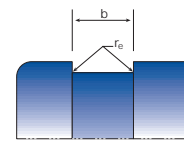
Best results of assembling mating parts are achieved by using an arbor press and fixturing the parts to hold them squarely in place during assembly. Except for very light duty rings, aligning the parts by hand and/or hammering the assembly together jeopardizes alignment and performance. If misalignment occurs during assembly, there is a tendency for the lead-in edge of the mating part to flatten corrugations in one area of the Tolerance Ring, resulting in reducing of ring integrity.

Radius or chamfer are options for part which slides on corrugations during assembly.

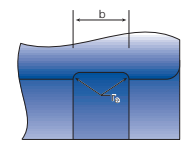


When using the centered arrangement, a small radius and adequate groove width should be used to ensure that the Tolerance Ring may be properly seated on the cylindrical surface.

$$r_e = .010 \text{ max for dia} < 2" \\ = .020 \text{ max for dia} > 2" \\ b_{\text{min}} = (3 \times r_e) + \text{ring width}$$

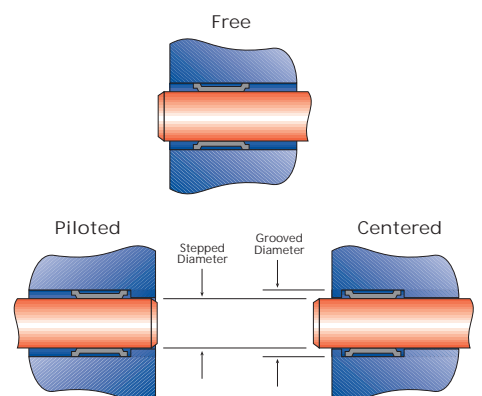


Groove in shaft O.D.



Groove in housing bore

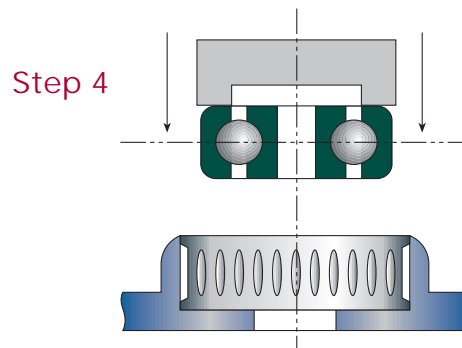
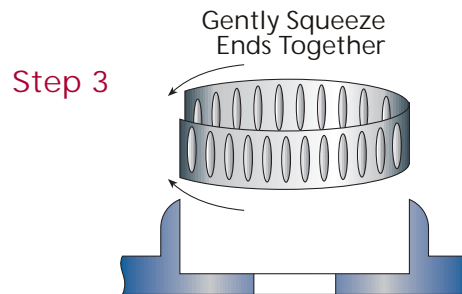
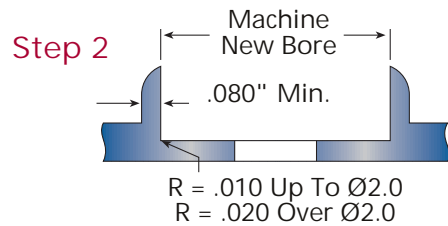
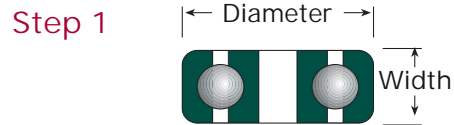
## Mounting Arrangements



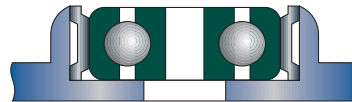
## AN Style Rings:

1. Using the bearing part number, select the matching Tolerance Ring part number from the application chart. Note the bearing bore should allow for a minimum .080" (2mm) wall thickness remaining after machining steel housing or at least .120" (3mm) for an aluminum zinc or magnesium housing.
2. Machine to the recommended housing bore size.
3. Insert the Tolerance Ring: Carefully squeeze the free ends together and place the Tolerance Ring into the bore. Care should be taken to ensure that the housing tolerance ring nests squarely in the housing bore. If there is no shoulder in the housing bore, it will be necessary to use a backing behind the Tolerance Ring to prevent it from sliding out of position when the bearing is inserted.
4. Press bearing into the Tolerance Ring and housing. Using an arbor press or air cylinder, apply uniform pressure only on the outer bearing race. Be sure the housing and pressing tool are securely fixed and held squarely to make sure that the bearing is inserted into the housing bore on center and perpendicular to the housing bore axis. Apply a uniform and consistent force using an arbor press or hydraulic cylinder to fully seat the bearing.

1,2,3,4. . . A Perfect Fit.



1,2,3,4 . . . A Perfect Fit.



Refer to your USA Tolerance Ring catalog for further application and design information.

Questions?

Contact our engineering department at  
877-865-7464 (toll free) or fax 609-745-5012

Visit us at [www.usatolerancerings.com](http://www.usatolerancerings.com)

