

Ways to Increase Bearing Performance

Action	Result
Submersion in any liquid cooler than the normal operating temperature of the bearing	Helps to dissipate heat away from the polymer bearing
Lubrication (look under Special Application Conditions, pages U-18 thru U-21)	Lowers coefficient of friction and abrasion; reduces heat generation
Seal out solid contaminants (dirt, dust, chemicals, food processing powders, etc.)	Lowers coefficient of friction and abrasion; reduces heat generation
Improve shaft surface finish or install EDT locking sleeve (optimize at 10–12 RMS)	Lowers coefficient of friction and abrasion; reduces heat generation
Eliminate plastic locking collar; replace with stainless steel locking collar	Helps to dissipate heat from the polymer bearing
Upgrade polymer bearing material	Increases PV operating range; increases material's high temperature capacity; reduces chemical attack
Isolate from heat source by relocating or insulating bearing	Increases margin of PV available for application
Design power transmission drive so bearings evenly carry the load rather than the load being cantilevered	Better load distribution lowers PV and reduces heat generation
Check that locking sleeve is fully installed in bearing	Better load distribution lowers PV and reduces heat generation

Installation difficulties

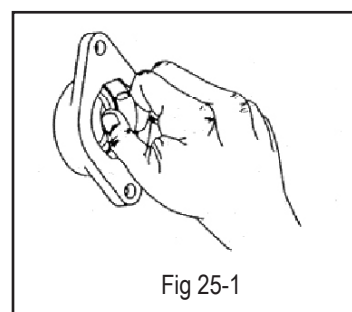
If you have difficulty assembling spherical bearings into housings, or flange polymer bearings into ALL-ROUND® inserts, call the factory or your EDT representative for assistance. Polymer parts should be well chilled prior to installation for easiest assembly. Do not force units together if the installation does not go smoothly. In this respect EDT bearing installations are no different than radial ball bearing installations.

Test the mating parts prior to full installation by performing the following procedure:


1. Install the spherical insert into the installation slots in the spherical housing.
2. Using both hands, hold the bearing between your fingers like a key and turn the bearing in the housing like a key in a lock. (Do not use a separate tool to assist.) A bearing that fits properly will turn around in the housing until it reaches the original starting point (Fig 25-1). If it does not, check the following conditions:

- Out-of-round housing
- Out-of-round bearing
- Tolerance mismatched of housing and bearing
- Burr on I.D. of housing
- Burr on O.D. of bearing
- Loading slots not extended to centerline of spherical I.D. of housing.

Note: EDT self-aligning bearings should fit snugly but do not need to fit tight into the housing when they are swiveled into the final working position. They must be tight enough to prevent rotation of the bearing in the housing. A setscrew into the anti-rotation slot on the bearing O.D. insures that no rotation can occur.



Maintenance and Lubrication of EDT Bearings

EDT Bearing Style	Lubrication	Start-up and General Maintenance
Poly-Round® bearings	None required	<ul style="list-style-type: none"> ▪ Should free-wheel on initial installation ▪ Should never get too hot to touch, but will run warmer than a ball bearing (outside of oven) ▪ Locking sleeve must be flush against bearing (with paper-thick gap), and all setscrews must have threadlocker ▪ When bearing wall is worn too far in one direction, remove and reinstall insert at 180° 
Polymer block bearings	None required	<ul style="list-style-type: none"> ▪ Should free-wheel on initial installation ▪ Should never get too hot to touch, but will run warmer than a ball bearing ▪ Locking sleeve must be flush against bearing (with paper-thick gap), and all setscrews must have threadlocker
ALL-ROUND® bearing (spherical and ER-style)	None required	<ul style="list-style-type: none"> ▪ Should free-wheel on initial installation ▪ Should never get too hot to touch, but will run warmer than a ball bearing (outside of oven) ▪ Locking sleeve must be flush against the polymer flange of the bearing “liner” (with paper-thick gap), and all setscrews must have threadlocker ▪ Replace bearing when polymer bearing “liner” wall has been reduced by 3/4 or when shaft centerline is a problem
Radial Poly-Round®	None required	<ul style="list-style-type: none"> ▪ Should free-wheel on initial installation ▪ Should never get too hot to touch but will run warmer than a ball bearing (outside of oven) ▪ Replace bearing when shaft centerline is a problem
Solid lubricated ball bearing	None required	<ul style="list-style-type: none"> ▪ Should free-wheel on initial installation ▪ Use threadlocker with all setscrews ▪ Should never get too hot to touch ▪ Replace bearing when temperature gets too hot or when bearing makes unusual noise or chatter
Re-grease-able stainless ball bearing	As application conditions require	<ul style="list-style-type: none"> ▪ Grease and seals prevent free-wheeling ▪ Use threadlocker with all setscrews ▪ Should never get too hot to touch (outside of oven) ▪ Replace bearing when temperature gets too hot or when bearing makes unusual noise or chatter

Troubleshooting EDT Bearings

Problem	Cause
Cracked or broken flange on ALL-ROUND® polymer bearing	<ul style="list-style-type: none"> ▪ Anti-rotation setscrew locked and not allowing spherical insert to self-align ▪ High impact in radial or thrust direction ▪ Locking sleeves positioned and locked too close to the polymer flanges in high heat applications – when heat is removed and shaft shrinks, the locking sleeves pinch the bearing ▪ Centerline of bearing not lined up with shaft centerline (edge loading)
Excessive heat accumulating in ALL-ROUND® bearing	<ul style="list-style-type: none"> ▪ Polymer bearing material not suited for application ▪ Centerline of bearing not lined up with shaft centerline (edge loading) ▪ Locking sleeve flange mounted too close to polymer bearing ▪ Locking sleeve mounted on wrong side of polymer flange and making metal-to-metal contact with stainless steel insert ▪ Excessive buildup of contaminants in bearing ▪ Chemical deterioration ▪ Locking sleeve flange is improperly making contact with a fixed object
Excessive heat accumulating in Poly-Round® insert or block bearing	<ul style="list-style-type: none"> ▪ Anti-rotation setscrew locked and not allowing spherical insert to self-align ▪ Locking sleeve flange mounted too close to polymer bearing ▪ Polymer bearing material not suited for application ▪ Improper bore clearances ▪ Chemical deterioration ▪ Excessive buildup of contaminants in bearing ▪ Centerline of bearing is not in line with shaft centerline (edge-loading) ▪ Locking sleeve flange is improperly making contact with a non-rotating machine part
Locking sleeve moving out of position	<ul style="list-style-type: none"> ▪ Excessive thrust loading on bearing ▪ Loctite® or other thread locker not used ▪ Back-up split set collar not installed behind locking sleeve flange
Ball bearing with excessive noise, vibration, or heat	<ul style="list-style-type: none"> ▪ Bearing is not aligned properly with shaft ▪ Too much grease packed in bearing ▪ Too little grease in bearing ▪ Races or balls damaged during installation ▪ Brinelling, spalling, surface contamination, corrosion, fit too loose or too tight. (See Google search for “ball bearing failure.”)

Questions or concerns about EDT products? Please call the factory at:

360-574-7294

Monday - Friday 7:00 a.m. to 5:00 p.m. Pacific Time (Vancouver, Washington USA)