

# Installation and General Information about EDT Bearings

## General Installation

Plane bearings and ball bearings must be set up properly in order to get the maximum design life out of each. One installation advantage of a plane bearing over a ball bearing is that, with a plane bearing, there is greater opportunity to detect an out-of-alignment condition before the equipment is put into operation. For each style of bearing, this is addressed in the Installation Instructions of this manual (pages 8 thru 17). Always apply threadlocker to locking sleeve setscrews to insure that the locking sleeve will remain SECURELY in place.

## New installations

Check new installations at start-up and periodically for next couple hours.

***There is a problem if there is noise or if bearing is too hot to touch***

➔ See page 26

Troubleshooting  
Guide

Then check monthly or quarterly that:

- locking sleeve stays in place
- polymer is wearing evenly

## Dusty environments

In dusty and abrasive environments Forsheda V-ring seals work well to increase bearing life by reducing the exposure to contaminants. Your local EDT bearing distributor will be able to supply you with Forsheda seals. EDT's Bearing Glove® offers 360E protection around 3 kinds of mounted bearings. Refer to catalog or website section I-Misc Products and see page U-16 and 17 in this manual. Lubrication is never recommended for installations in dusty or abrasive environments because the lubricant will attract the dust and create an abrasive paste that will be more detrimental to the operation of the bearing.

## Bearing failure is caused by heat

Plane bearings fail because heat is generated faster than it can be dissipated and exceeds the long term temperature tolerance of the material. Maximum bearing life and cost effectiveness can be achieved by keeping plane bearings cool (artificial means such as water, other processing fluid, cooler air, metal housing) OR upgrade the bearing material. Bearing failure due to heat can occur from any number of conditions, including:

- Use of plastic set collar to control thrust loads
- High loads
- High speeds
- High ambient temperature
- Out of round or bent shafting
- Poor shaft surface finish
- Edge loading caused by misalignment
- Poor bearing design for application
- Inappropriate material selection for application
- Some Special Application Conditions exist (see pages U-18 - 22) that may not be sufficiently addressed

A secondary reason for plane bearing failure could be a chemical attack on the material that deteriorated the physical properties of the bearing. This will manifest itself primarily in three ways.

- Discoloration in areas of chemical attack
- Softening of the material surface
- Swelling of material or other slight changes in shape or configuration.

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## Installation and general information about EDT Bearings (continued)

### Ways to increase bearing performance

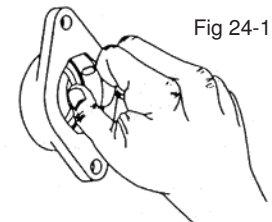
| Action  | Result   |
|---|--|
| Submersion in any liquid cooler than the normal operating temperature of the bearing                      | Helps to dissipate heat away from the polymer bearing  |
| Lubrication   | Lowers coefficient of friction and abrasion; reduces heat generation   |
| Seal out solids contamination (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  | 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   |
| Keep locking sleeve securely in place   | Use threadlocker on all setscrews; if problems continue use split locking collars behind flange of locking sleeves |

### Installation Difficulties

If you have difficulty assembling spherical bearings into housings, or flanged 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. 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 24-1). 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.