

**GLOSSARY & DEFINITIONS**

**EZZE-MOUNT™**

EZZE-MOUNT™ bearing blocks contain precision anti-friction bearings and are designed to be used with both ball screws and acme screws. Single and double bearing base mount and flange mount versions of EZZE-MOUNT™ bearing blocks are available.

**STANDARD ENDS**

For each screw size, Nook Industries has designed a family of standard machined ends applicable to a variety of bearing arrangements.

The use of standard machined end designs offer quick deliveries. See page 212-213 for details.

**LAND DIAMETER**

The land diameter is the outside diameter of the screw. The difference between the land diameter and the bearing journal is the resulting bearing shoulder.

**ROOT DIAMETER**

The diameter of the screw measured at the bottom of the thread. This diameter is used for determining journal sizes. If the bearing journal diameter is larger than the root diameter, thread tracings may be visible. Generally, these tracings do not have an effect on bearing performance.

**JOURNAL**

A smooth diameter machined on the end of screw used as a mounting surface for bearings, couplings, pulleys, gears, etc.

**STRAIGHTNESS**

Although Nook Industries PowerAc™ and PowerTrac™ screws are manufactured from straight, cylindrical material, internal stresses may cause the material to bend. When ordering random lengths or cut material without end machining, straightening is recommended. Handling or machining of screws can also cause the material to bend. Before, during and after machining, additional straightening is required.

**ANNEALING**

Annealing is a process which softens the steel to allow for easier end machining. Annealing is usually required to machine the ends of ball screws. Due to its effect on the precision lead accuracies of XPR and SGT ball screws, annealing is not recommended for these products. Acme screws typically do not require annealing before end machining.

**END FIXITY**

End fixity refers to the method by which the ends of the screw are supported. The degree of end fixity is related to the amount of restraint of the ends of the screw.

The three basic types of end fixity are:

- Free** - No support
- Simple** - Shaft restrained against radial loads
- Fixed** - Shaft rigidly restrained against radial, axial and moment loads

See pages 6-7 and 86-87 for a more detailed definition of end fixity.

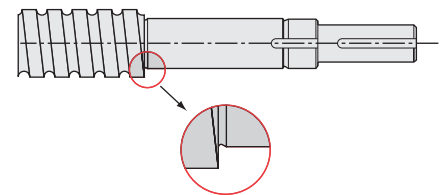
**LOCKNUT THREADS**

Locknut threads are machined to allow the bearing retention on the screw shaft by means of a locknut.

The thread used on standard machined ends follows American National Form NS Class 3.

**UNDERCUTS AND RADII**

Whenever a shaft changes diameter, an undercut or a radius is machined into the transition to minimize stress concentration. Undercuts are preferred for bearing shoulders because they allow clearance for the corner of the bearing. (SEE FIG. 1)



**FIG. 1**

**CONCENTRICITY**

Concentricity refers to multiple diameters sharing the same center. For end machining, close concentricity allows all components to rotate around the same axis resulting in smooth operation and long operating life.

**APPROVAL DRAWINGS**

If custom ends or special dimensions are desired, an approval drawing can be developed after the order is entered. These drawings will show all the critical dimensions with tolerances.