

## Characteristics and Advantages of Frelon® Lined Linear Bearings

### BEARING LOAD:

- Frelon lined bearings can tolerate up to 1500 psi over the portion of the bearing that is carrying the load.
- These bearings carry 4 to 8 times the load of ball bearings.
- A 1/2" I.D. Frelon bearing will carry as much load as a 1" I.D. ball bearing.

### WEAR RATE:

- Although wear rates are affected by surface finish, shaft hardness, length of travel, contamination and lubrication, these bearings last on average 4 to 8 times longer than ball bearings.

### BEARING PV:

- P = Pressure in psi on the projected area.
- V = Velocity of the wear surface in ft/min
- The maximum PV is 10,000 psi x ft/min

### BEARING SPEED:

- The maximum average linear speed without lubrication is:
  - 140 ft./min. - continuous
  - 400 ft./min. - intermittent
- When lubricated, the maximum continuous speed exceeds 400 ft./min.

### CANTILEVERED LOADS:

- The distance between the bearings and the drive source or load should not exceed a maximum ratio of 2:1.

### SHAFT FINISH AND HARDNESS:

- A shaft with a finish of 8-12  $\mu\text{in } R_a$  and a hardness of Rc 60 is recommended for best results. Acceptable performance can be attained with a finish of 8-16  $\mu\text{in } R_a$  and a hardness of Rc 35.

- Softer shafting will cause an accelerated wear to both the shaft and the bearings.
- Optional liners are available for both nonhardened shafting and for use in food applications.

### RUNNING CLEARANCES:

- Precision Series - approximately .001". High precision, similar to a preloaded ball bearing.
- Standard Series - approximately .002". Excellent for parallel shaft applications, similar to a typical ball bearing.

### LUBRICATION:

- Frelon lined bearings are self-lubricating.
- Additional lubrication reduces friction 50%, minimizes wear, reduces heat, allows greater speed, and extends wear life.
- Acceptable lubrication includes SAE 10 to 40W, way lube oils, petroleum-based greases and even water.
- DO NOT USE PTFE FLUOROCARBON AND/OR SILICONE OILS, GREASE, SPRAY, OR WD40.

### NO CATASTROPHIC FAILURE:

- No shaft scoring or shock load damage. Liner dampens shock loads and vibration. These bearings provide more surface contact area than ball bearings.
- No corrosion or rust.
- No temperature induced bearing seizure. Temperature range of -400°F to +500°F. Operates with consistent friction and load bearing characteristics throughout temperature range. Liner allows heat to dissipate through the shell.