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 μin Rₐ and a hardness of Rc 60 is recommended for best results. Acceptable performance can be attained with a finish of 8-16 μin Rₐ 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.