

Bearing Selection Guide

Factors to consider include unit costs, desired life, load ratings, operating environment, maintenance, and mounting configurations. Testing in the actual operating environment is recommended to determine if a particular bearing unit is suitable for a given application.

Load Ratings For Ball Bearing Units

Dynamic load capacity is the max. constant radial load that a bearing can support for 1 million revolutions (at $33\frac{1}{3}$ RPM for 500 hrs.).

Static load capacity is the max. static load

(nonrotating shaft) that a bearing can support without causing permanent deformation. **Max. speed ratings** are based on light loads and expressed by bore size: 1/2" = 6000 RPM, 5/8" = 5000 RPM, 3/4" = 4500 RPM, 1" = 3500 RPM.

Load Ratings For Bronze and UHMW-PE Bearing Units

Bronze and UHMW-PE bearings do not have moving parts and allow for smooth, low friction motion between 2 solid surfaces. Their load

capacities are expressed as a **PV factor**, which is calculated by multiplying P, the max. pressure in psi on the bearing surface, by V, the max. sliding velocity in surface ft. per min. on the shaft. Actual PV factor should not exceed rated max. PV. P and V are calculated using the following formulas:

$$P = \frac{\text{Bearing Load}}{\text{Bearing Diameter} \times \text{Bearing Length}}$$

$$V = \text{Shaft Diameter} \times \text{Shaft RPM} \times 0.262^*$$

(*) 0.262 is the constant used for sleeve bearings (dimensions in inches).