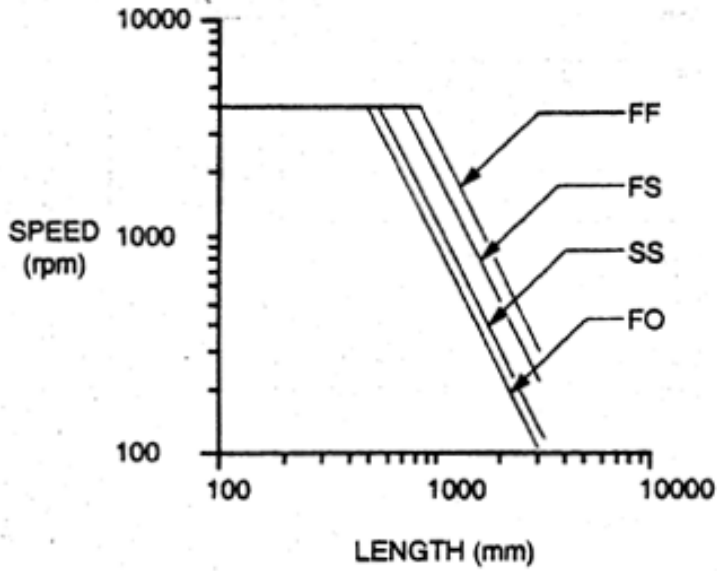


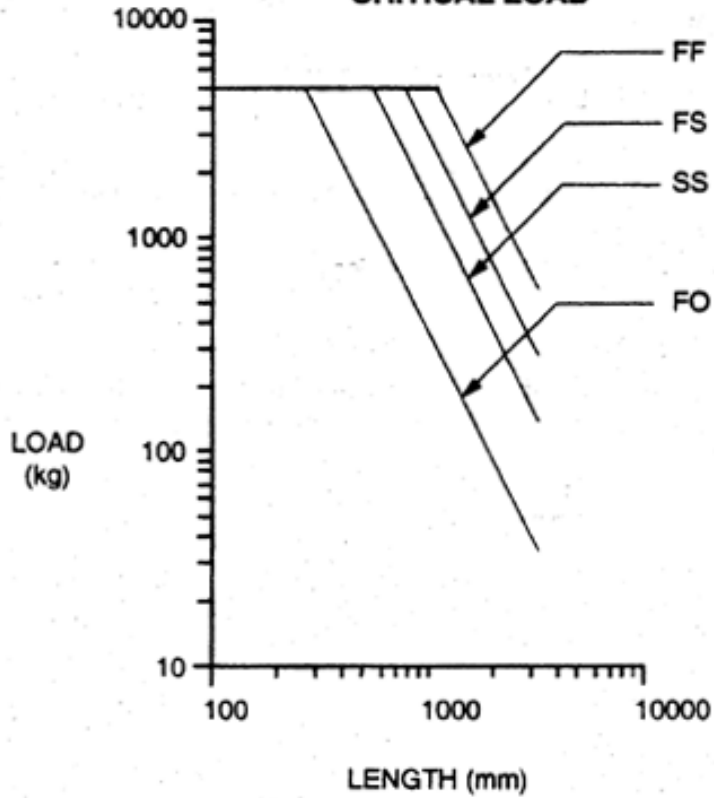
16mm Ball Screws

Life Expectancy Specifications

CRITICAL SPEED

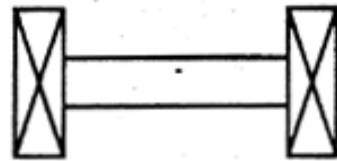


CRITICAL LOAD

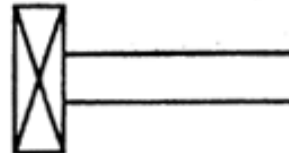


BEARING SUPPORT TYPES

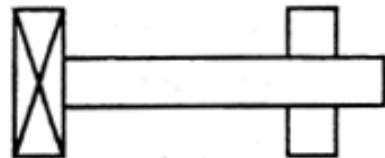
FF – Fixed, Fixed



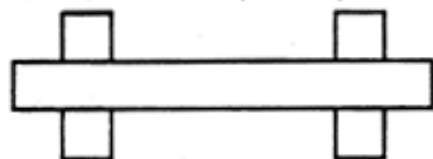
FO – Fixed, Open



FS – Fixed, Simple

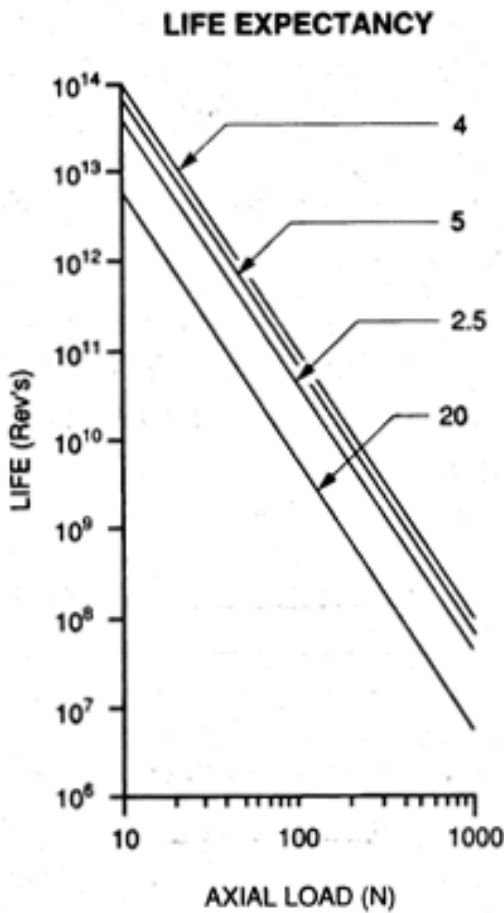


SS – Simple, Simple



16mm Ball Screws

Life Expectancy Specifications



SPECIFICATIONS

Pitch	Diameter	Number of Ball Circuits	Axial Load (N)	
			Dynamic (C_a)	Static
2.5	2	4	3500	5500
4	2.5	2	2600	4200
5	3.5	2	4600	7200
10	3.5	2	4200	6500
20	3.5	2	1900	2500

$$L = \left[\frac{C_a}{F_m} \right]^3 \times 10^6$$

L = life expectancy expressed in number of revolutions

C_a = dynamic load rating (N), see specifications table

F_m = average axial load (N)

Example: For 10 mm pitch screw, $C_a = 4200$ N carrying an average axial load, $F_m = 200$ N (45 lbs.) the expected life is:

$$L = \left[\frac{4200}{200} \right]^3 \times 10^6 = 9.261 \times 10^9 \text{ revolutions.}$$

At an average of 1000 rpm this will result in:

$$\frac{9.261 \times 10^9 \text{ revolutions}}{1000 \text{ rpm}} \times \frac{1 \text{ hour}}{60 \text{ minutes}} = 154,000 \text{ hours}$$

of expected operational life. Note that the nature of the motion (jerky, smooth, etc.) will affect the life expectancy.

FORCE / TORQUE

$$M = \frac{F \times p}{2000 \times \pi \times 0.9}$$

M = torque applied to screw (Nm)

p = screw pitch (mm)

F = resulting linear force (N)

Example: For a force of 200 N (45 lbs.) with a 10 mm pitch screw, the required torque is:

$$M = \frac{200 \times 10}{2000 \times \pi \times 0.9} = 0.35 \text{ Nm} = 50 \text{ oz. in.}$$