

# BALL SCREW CAPABILITIES

## HARDNESS SPECIFICATIONS

**Stainless Steel:** Precipitation hardened 17-4 PH to Rc40 minimum.

**Alloy Steel:** Induction hardened to Rc56 minimum.

## EFFICIENCY

B Style lead screw systems are 90% efficient. Because of their high efficiency, they will back drive and will require a brake to hold the load.

## STRAIGHTNESS

B Style straightness is rated at 0.010 inches per foot TIR and will not exceed 0.025 inches over the entire length of the screw.

## TORQUE

The amount of torque required to move the load is measured in inch-pounds.

The formulas are as follows:

### Rotary to Linear (Drive Torque):

Torque = 0.177 x Load x Lead of Screw

### Linear to Rotary (Backdriving Torque):

Torque = 0.143 x Load x Lead of Screw

### Preload Torque (Additional Torque Due to Preload Only):

Preload Torque = 0.034 x Preload Setting (lbs.) x Lead of Screw

### Torque – H. P.

Torque =  $\frac{63,000 \times \text{HP}}{\text{RPM (speed)}}$

### Angular Velocity Formula

RPM =  $\frac{\text{Velocity (inches/min.)}}{\text{Lead (inches/rev.)}}$