

BEVEL BALL ACTUATORS SPECIFICATIONS AND DESIGN TIPS

Model	Dynamic Capacity	Static Capacity (Lbs)		Screw Dia./ Lead	Bevel Gear Ratio	Pinion Turns for 1" Travel	Pinion Torque (Raising)	Pinion Torque (Holding)	Screw Torque	Actuator Efficiency	Base Weight (Lbs)	Add for each inch of travel
		Upright Assembly Screw in Tension	Upright Assembly Screw in Compression									
BB150	Please use JAX® V2 software or contact Joyce/Dayton	15,000	15,000	1.50/.25	2.69:1	10.77	.022W*	.018W*	.044W*	72.2%	52	0.7
BB225		30,000	30,000	2.25/.50	2.15:1	4.31	.054W*	.044W*	.089W*		200	2.6 wt
BB300		42,500	70,000	3.75/.66	3.52:1	5.34	.044W*	.035W*	.117W*		360	3.2
BB400		200,000	200,000	4.00/1.00	3:1	3.00	.078W*	.063W*	.117W*		740	4.8 wt
		Inverted Assembly Screw in Tension	Inverted Assembly Screw in Compression									
BB150		15,000	15,000	1.50/.25	2.69:1	10.77	.022W*	.018W*	.044W*	72.2%	52	0.7
BB225		30,000	30,000	2.25/.50	2.15:1	4.31	.054W*	.044W*	.089W*		200	2.6 wt
BB300		70,000	42,500	3.75/.66	3.52:1	5.34	.044W*	.035W*	.117W*		360	3.2
BB400	200,000	200,000	4.50/1.00	3:1	3.00	.078W*	.063W*	.117W*	740		4.8 wt	

Important Note: Bevel Ball Actuators are not self-locking. Brake motors or external locking systems are required.

*W: Load in Pounds.

Pinion Torque (raising): The torque required to continuously raise a given load.

Pinion Torque (holding): The torque required to hold a given static load in position.

Screw Torque: The torque required to resist screw rotation (translating design) and traveling nut rotation (KFTN design).

Lead: The distance traveled axially in one rotation of the lifting screw.

Pitch: The distance from a point on the screw thread to a corresponding point on the next thread, measured axially.

Design Tips

- Determine the load to each actuator.
- Determine the orientation and type of load; for instance, from the chart above it may be an upright compression load or an inverted compression load.
- Jax® software can be used to determine the following:
 - The allowable static compression load for a given rise (or use Column Loading Chart on page 162)
 - The allowable dynamic load for a given rise
 - Ball nut life (or use Life Expectancy of the ball screw chart on page 163)
 - System horsepower and torque – also see item #4
- When a direct motor drive is used in a system, consideration must be given to the input starting torque requirements and the motor horsepower will need to be increased accordingly (JAX® software will not do this). Contact Joyce/Dayton for assistance.
- When selecting bevel ball actuators for an interconnected row or system (p. 195), careful attention must be given to the input and output shaft rotations. For example, if the input shaft rotation on the first actuator is clockwise, the output shaft(s) on that same actuator will rotate counter-clockwise. To insure all actuators raise and lower in unison, alternating actuators must be specified with right and left hand acme screw threads. For example, if you need five actuators interconnected in a straight line and the first actuator is right hand, the third and fifth actuator will also need to be ordered as right hand and the second and fourth actuator will need to be ordered as left hand. Bevel ball actuators are supplied standard with right hand ball screws. To order the left hand ball screw option, add an "L" to the end of your bevel ball actuator part number as shown on page 160.
- Bevel ball actuators are not self-locking. They will lower under load. A brake motor or other external locking system is required.
- Bevel ball actuators are furnished with one input shaft (pinion) in position #2. Actuators may be ordered with up to three input shafts located at any combination of positions # 1, 2, or 3.
- Translating bevel ball actuators are designed for grease lubrication. The upper bearing is grease lubricated through a fitting on top of the jack. Light oil must be applied directly to the lifting screw.
- Typically actuators are mounted upright with the jack base plate parallel to the horizon. If the base plate is oriented any other way, contact Joyce/Dayton for lubrication and other instructions.