

BALL SCREW BRAKE & COUPLING SELECTION

DRIVING TORQUE

$$\text{Driving Torque (T)} = \frac{LP}{2000 (\pi) e}$$

where: T = Torque in inch-pounds
L = Screw lead in inches per turn
P = Load in pounds
e = mechanical efficiency of 0.9

BACKDRIVE TORQUE

$$\text{Determine Back Drive Torque (in-lbs)} = \frac{PL e}{2 (\pi)}$$

where: L = Screw lead in Inches
P = Load in Pounds,
e = mechanical efficiency of 0.9

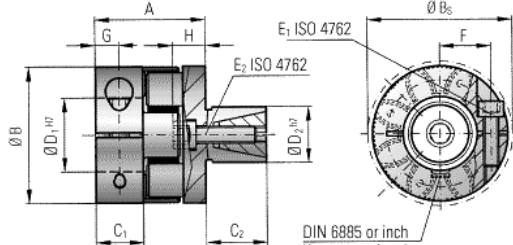
$$\text{Determine back-drive torque (Nm)} = \frac{LPe}{2000 (\pi)}$$

where: L = Screw lead in millimeters,
P = Load in Newtons
e = mechanical efficiency of 0.9,

2. Select a Ball Screw Brake with holding torque that exceeds the back-drive torque by 20-30%

Brake Model	Holding Torque	Product Number
BSB 2	20 in-lbs	964640
BSB 3	70 in-lbs	964740
BSB 4	200 in-lbs	964840
BSB 5	400 in-lbs	964940
BSB 7	1100 in-lbs	965040

3. Select a Coupling with a bore (D1) matching the machined end of the ball screw. Custom bores available on request; see Bore Range. Keyed bores optional



Coupling	Bore (D ₁)	A	B	C ₁	G	H	Bore Range (match ball screw machined end)
BSB 2		22	25	8	4	7	4–12,5 [0.156 – 0.500 in.]
BSB 3	REFER	28	32	10	5	7	5– 16 [0.197 – 0.625 in.]
BSB 3	TO	28	32	10	5	7	5– 16 [0.197 – 0.625 in.]
BSB 4	TECH.	46	56	20	10	11	12–32 [0.500 – 1.250 in.]
BSB 4	DATA	46	56	20	10	11	12–32 [0.500 – 1.250 in.]
BSB 5	SHEET	46	56	20	10	11	12–32 [0.500 – 1.250 in.]
BSB 5		46	56	20	10	11	12–32 [0.500 – 1.250 in.]
BSB 5		46	56	20	10	11	12–32 [0.500 – 1.250 in.]
BSB 7		51	66	21	11	16	19–35 [0.750 – 1.375 in.]
BSB 7		51	66	21	11	16	19–35 [0.750 – 1.375 in.]

All dimensions in millimeters unless otherwise specified

4. Connecting the Ball Screw Brake to the machined end of a ball screw

