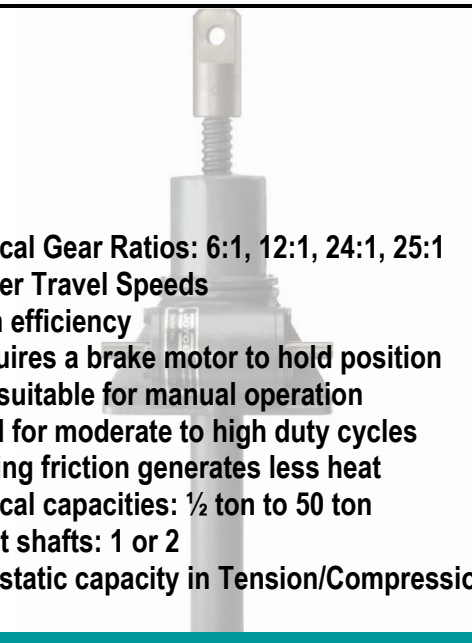
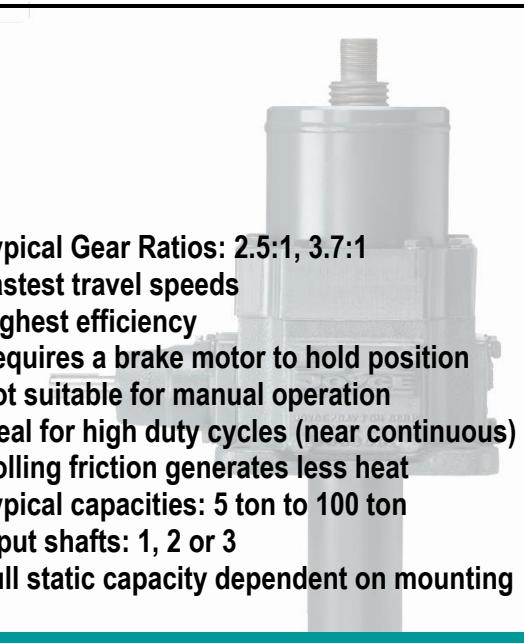
Screw Jack Technology Comparison

Screw Jacks provide a proven and reliable method of actuation. They convert rotary motion into linear motion and are used to lift and position loads of all sizes. Each screw jack includes a gear box with rotational input, thrust bearings, and an output lifting screw. The chart below compares fundamental differences and similarities in the four most common types of screw jacks.

	Worm Gear Set	Bevel Gear Set
Machine Screw	 **Typical Gear Ratios: 6:1, 12:1, 24:1, 25:1** **Slower travel speeds** **Lower Efficiency** **Usually holds position without a brake** **Smaller jacks may be operated manually** **Ideal for low to moderate duty cycles** **Sliding friction generates more heat** **Typical capacities: 1/8 ton to 150 ton** **Input shafts: 1 or 2** **Full static capacity in Tension/Compression**	 **Typical Gear Ratios: 2.5:1, 3.7:1** **Moderate travel speeds** **Moderate efficiency** **Usually holds position without a brake** **Smaller jacks may be operated manually** **Ideal for moderate duty cycles** **Sliding friction generates more heat** **Typical capacities: 5 ton to 100 ton** **Input shafts: 1.2 or 3** **Full Static capacity dependent on mounting**
Ball Screw	 **Typical Gear Ratios: 6:1, 12:1, 24:1, 25:1** **Faster Travel Speeds** **High efficiency** **Requires a brake motor to hold position** **Not suitable for manual operation** **Ideal for moderate to high duty cycles** **Rolling friction generates less heat** **Typical capacities: ½ ton to 50 ton** **Input shafts: 1 or 2** **Full static capacity in Tension/Compression**	 **Typical Gear Ratios: 2.5:1, 3.7:1** **Fastest travel speeds** **Highest efficiency** **Requires a brake motor to hold position** **Not suitable for manual operation** **Ideal for high duty cycles (near continuous)** **Rolling friction generates less heat** **Typical capacities: 5 ton to 100 ton** **Input shafts: 1, 2 or 3** **Full static capacity dependent on mounting**

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