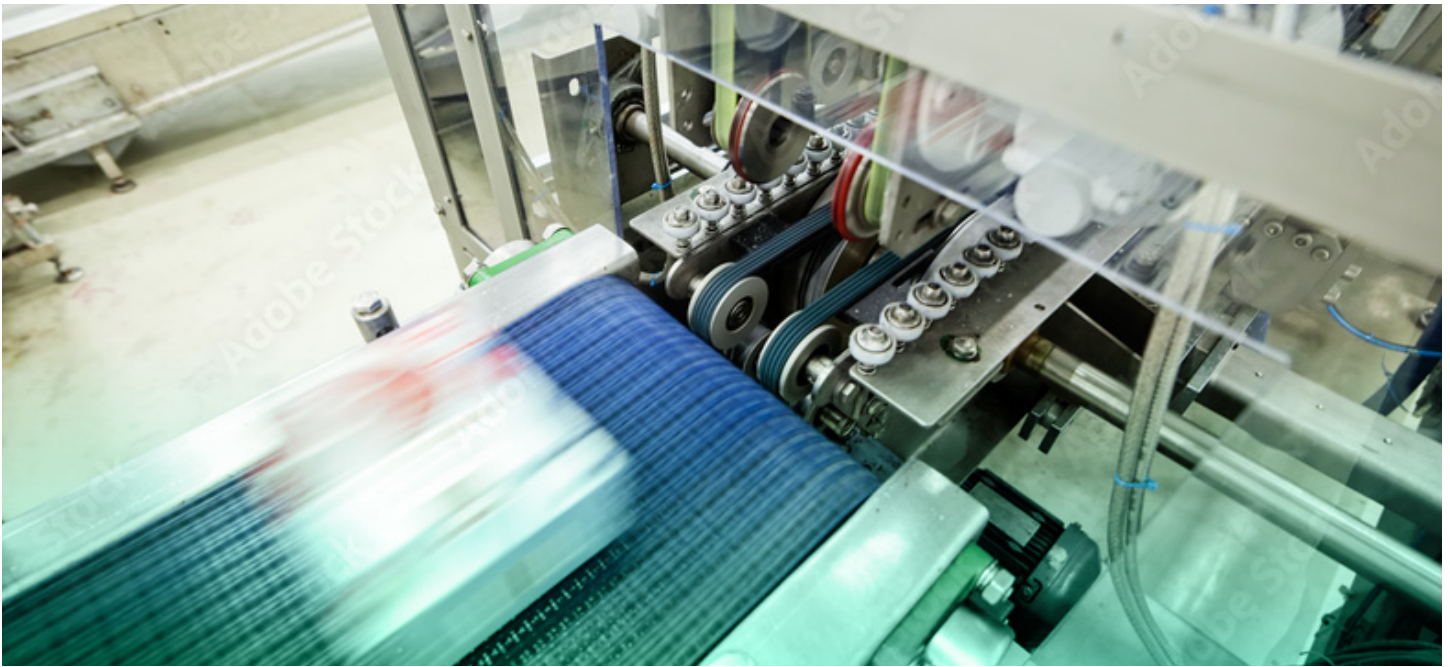




THE PRECISION PLAYBOOK: ACHIEVING FLAWLESS PACKAGING WITH LINEAR MOTION SOLUTIONS





THE DEMANDING WORLD OF PACKAGING

Packaging operations depend on precision and speed. From sealing and filling to boxing and palletizing, every step must be executed with consistent accuracy to meet rising demand. Even minor variations can result in wasted product, production bottlenecks, or costly downtime.

As material handling and distribution become more complex, automation has emerged as the clear path forward. Automated packaging systems rely on precise motion to move products quickly and reliably from one stage to the next.

These environments, however, are rarely simple. Equipment must endure harsh wash-down procedures, exposure to corrosive agents, and continuous high-cycle use. To perform under these conditions, components must be engineered with exceptional strength and durability.

Linear motion solutions, including screw jacks and electric actuators, are designed for this purpose. They deliver the power, repeatability, and reliability required to support high-speed automated systems, making them essential for achieving flawless packaging results.

JOYCE/DAYTON SCREW JACKS: THE FOUNDATION OF STRENGTH AND STABILITY

Screw jacks are fundamental to packaging systems that require heavy loads to be lifted, positioned, or held securely. Their reliability, strength, and repeatability make them indispensable wherever stable, precise motion is critical.

KEY PRODUCTS

- **Machine Screw Jacks:** Handle capacities from 250 pounds to 250 tons, offering precise positioning in both upright and inverted configurations. They operate at full capacity in compression or tension.



- **Stainless Steel Screw Jacks:** Built for wet, corrosive, and sanitary environments. Their metallurgical properties allow them to retain ductility, even at extremely low temperatures.



- **Complete Systems (ComDRIVE):** Compact systems that combine machine screw jacks, motors, controls, and gear reducers in a single unit.



COMMON APPLICATIONS

- Conveyor height and width adjustments
- Leveling and positioning of machinery, such as bottling systems or platens
- Case packing and box-making systems (height/width adjustments, stacking functions, etc.)



KEY BENEFITS

- Wide capacity range, from light loads to 250 tons
- Self-locking designs for safe and secure position holding
- Convenience of complete systems sourced from a single provider



EDRIVE ELECTRIC ACTUATORS: FOR DYNAMIC, PRECISE, AND CLEAN AUTOMATION

While screw jacks provide stability and strength, [EDrive electric actuators](#) bring dynamic, high-speed motion to packaging lines. Their performance makes them ideal for applications where precision and responsiveness are essential.

PERFORMANCE FEATURES

EDrive electric actuators are engineered for demanding packaging environments that require speed, accuracy, and durability. Their design offers:

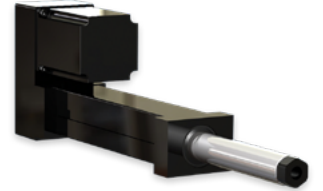
- Precise motion control for complex operations
- Leak-free, clean operation suitable for sanitary applications
- Higher energy efficiency
- Lead accuracy up to 0.0005 inches per foot

Their fully enclosed, rugged designs make them suitable for harsh environments, while their speed and precision enable them to excel in demanding, high-cycle applications.



KEY PRODUCTS

- **Tac LS™:** A compact, versatile actuator that provides thrust up to 2,000 lbf. It's ideal for long stroke applications and adapts to standard unit mounting styles.



- **Tac VT™:** Designed for higher velocities and thrust loads up to 2,000 lbf. It features a sealed chamber with purge provisions, IP54 protection, and speeds up to 40 inches per second.



- **IP69K-Rated Stainless Steel Actuators:** Specifically engineered for wash-down and sterile environments, including food, beverage, and pharmaceutical packaging.



COMMON APPLICATIONS

- High-speed automation tasks such as picking, conveying, sorting, wrapping, and packaging
- Precision operations, including clamping and positioning
- Replacements for hydraulic or pneumatic systems in automated production lines



KEY BENEFITS

- Flexible motor options for integration with existing systems
- Rugged, low-maintenance construction
- High precision and repeatability for sensitive tasks
- Optional internal load cell for real-time force monitoring



WHY CHOOSE JOYCE/DAYTON FOR LINEAR MOTION SOLUTIONS

Joyce/Dayton has been a trusted name in linear motion since 1873, combining a legacy of expertise with a commitment to quality and customized support. Customers benefit from the convenience of a one-stop shop, where complete systems can be sourced from a single provider to ensure compatibility and simplify procurement. Our engineering team works directly with customers to create tailored solutions, offering both application-specific guidance and access to advanced design tools.

WHAT SETS JOYCE/DAYTON APART

- **Legacy of Expertise.** Joyce/Dayton has more than 150 years of innovation and proven results.
- **Customization.** We create tailored solutions developed by experienced application engineers.
- **Design Tools.** We use advanced JAX® Online and 2D/3D modeling software to simplify product specification and integration.
- **Durability.** Our products are built to withstand wash-downs, corrosive environments, and nonstop high-cycle operation.
- **Precision and Repeatability.** Our solutions deliver consistent, flawless motion for critical packaging processes like forming, filling, and sealing.
- **High Load Capacity.** Our products are designed to manage significant weights while ensuring secure, stable positioning.
- **Efficiency and Cost Savings.** Electric actuators reduce maintenance requirements and eliminate the challenges of hydraulic or pneumatic systems.
- **Safety.** Self-locking mechanisms on screw jacks hold positions securely without power, protecting both operators and equipment.



MARKET INSIGHTS AND INDUSTRY TOOLS

The packaging industry's demand for linear motion solutions continues to rise, fueled by e-commerce growth, smart manufacturing adoption, and the shift to electromechanical systems.

Key insights and takeaways:

- The global linear motion system market was valued between USD 3.5 and 12.5 billion in 2024, with projections reaching as high as USD 22.4 billion by 2032.
- In the U.S. market, values are expected to increase from USD 1.4 billion in 2022 to USD 2.6 billion by 2032.
- The global packaging automation market is projected to surpass USD 160 billion by 2034, nearly doubling its 2024 valuation.
- Electric linear actuators represent the fastest-growing segment of the actuator market due to their precision, sustainability, and ease of integration.

These trends highlight the importance of investing in durable, high-performance systems that can support rapid, reliable packaging operations well into the future.

PARTNERING FOR FLAWLESS PACKAGING

Joyce/Dayton provides the linear motion solutions that packaging facilities depend on for speed, precision, and long-term reliability. From screw jacks that deliver secure, repeatable positioning to electric actuators that drive high-speed automation, our products form the foundation of modern packaging performance.

When flawless packaging is the goal, Joyce/Dayton is the partner to trust. [Contact us](#) or [request a quote](#) today to learn how our solutions can help meet the exact requirements of your next project.





ABOUT US

For over 150 years, Joyce/Dayton Corp. has been the premier North American manufacturer of screw jacks, actuators, and lifting systems. From our founding in 1873 to today, we've set the industry standard for product quality, custom engineering, and reliable customer service.

A premier manufacturer of robust Screw Jacks, high-performance EDrive Electric Linear Actuators, and complete linear motion solutions in North America, our long history of designing and manufacturing high-quality products is unparalleled. By integrating the specialized precision and dynamic performance of EDrive actuators with the trusted power of Joyce jacks, we offer an unmatched spectrum of linear motion solutions. Our tenured engineers possess the expertise to develop innovative solutions for today's diverse customer challenges.

For EDrive actuator selection and advanced application support, our expert engineers are ready to assist you directly.

CONTACT US



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