

Ameridrives

Bauer Gear Motor

Bibby Turboflex

Boston Gear

Delroyd Worm Gear

Formsprag Clutch

Guardian Couplings

Huco

Industrial Clutch

Inertia Dynamics

Kilian

Lamiflex Couplings

Marland Clutch

Matrix

Nuttall Gear

Stieber

Stromag

Svendborg Brakes

TB Wood's

Twiflex

Warner Electric

Warner Linear

Wichita Clutch

# OEMs Appreciate Benefits of Lean Manufacturing for Linear Actuators



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# OEMs Appreciate Benefits of Lean Manufacturing for Linear Actuators

Across the world, linear actuators perform lifting and positioning roles on a whole host of equipment. Designed to perform where hydraulic and pneumatic cylinders cannot operate, these vital actuators now fulfill a wide variety of tasks, often in hostile environmental conditions. As part of the Altra Industrial Motion Corporation, Warner Linear, a leading manufacturer in this sector, has implemented lean manufacturing practices to reduce lead times for all orders, including custom solutions.

Linear actuators are well-suited for the most demanding applications where an alternative to hydraulic or air cylinders is needed, or where hydraulic power sources are not available. Warner Linear actuators are found in a broad spectrum of applications such as agricultural vehicles, aircraft, construction machines, medical equipment, military vehicles, packaging machines and offshore vessels, in addition to an increasing market for emerging technologies such as wind turbines.

The actuators offer extremely efficient operation, with a high-performance electric motor combined with a high-efficiency gear train (hardened as standard) and a high-quality ball screw and ball nut drive. The products are designed to be extremely durable and require very little maintenance which, ultimately reduces their long-term costs and improves productivity.

The standard designs provide load capacities from 200 – 20,000 Newtons and are usually specified for heavy-duty applications. The overall construction of the actuators is designed to minimize any maintenance requirements and to provide a reliable component that is capable of performing in harsh operating conditions.

This is achieved by creating seal designs that have enabled all of Warner Linear's actuators to have an ingress protection rating of IP69K when static and IP66 when dynamic. The lesser-known IP69K rating ensures that equipment is suitable for wash down with high-pressure, high-temperature water.



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Increasingly, many industries are coming to appreciate the benefits that electric actuators bring to a wide range of applications. Without the need for a hydraulic or pneumatic supply, both installation and maintenance are much simpler. Furthermore, additional controls can be easily added to provide wireless operation or increased automation with limit switches and position feedback.

The growing popularity of linear actuators is reflected in Altra's decision to increase the support for these products by providing new production equipment and the development of manufacturing processes, which have helped to further improve efficiency and product reliability. This support has also enabled the implementation of a lean manufacturing process, which has benefitted the entire company and its customers.

Batch production has been replaced with one-piece flow, with a manufacturing stream being created for each product line. Each stream is staffed by a dedicated team and team leader, and the single-piece flow means that any delays or issues in production can be immediately identified and addressed. If issues do occur, great emphasis is placed not just on fixing the problem, but also on preventing its reoccurrence.

The teams working on the line have been trained in root-cause problem-solving techniques, and daily meetings are used to review the production performance and the progress of ongoing improvement activities. The emphasis is on continual improvements in cost, quality and flexibility and the relentless elimination of waste.

The introduction of the lean manufacturing approach has already transformed the efficiency of the production process. Products can now be manufactured and shipped in as little as four hours. Even the lead time for custom products, which have a more complex manufacturing process, has been cut in half from 30 to 15 days.

Furthermore, the adoption of lean management principles has brought additional improvements in quality and reliability. With ever-increasing pressures in all industries to keep costs low and improve efficiency, the reduced lead times that Altra's investment has produced should further cement Warner Linear's reputation as the brand of choice for value and quality.



**Linear actuators are well-suited for the most demanding applications where an alternative to hydraulic or air cylinders is needed.**

## About Altra Industrial Motion

Altra is a leading global designer and manufacturer of quality power transmission and motion control products utilized on a wide variety of industrial drivetrain applications. Altra clutches and brakes, couplings, gearing and PT component product lines are marketed under the industries' most well known manufacturing brands. Each brand is committed to the guiding principles of operational excellence, continuous improvement and customer satisfaction. Highly engineered Altra solutions are sold in over 70 countries and utilized in a variety of major industrial markets, including food processing, material handling, packaging machinery, mining, energy, automotive, primary metals, turf and garden and many others.

Altra's leading brands include Ameridrives, Bauer Gear Motor, Bibby Turboflex, Boston Gear, Delroyd Worm Gear, Formsprag Clutch, Guardian Couplings, Huco, Industrial Clutch, Inertia Dynamics, Kilian, Lamiflex Couplings, Marland Clutch, Matrix, Nuttall Gear, Stieber, Stromag, Svendborg Brakes, TB Wood's, Twiflex, Warner Electric, Warner Linear and Wichita Clutch.



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