



TECHNICAL ARTICLE

Long-stroke ball screws drive optimisation of 5G fibre optic filament production

Although the fundamentals of a ball screw assembly remain the same, ball screw technology continues to advance in flexibility and applicability. The realisation of 5G communications is boosting the demand for high-bandwidth fibre optic cable, which requires continuous improvement in the fibre optic manufacturing process. Thomson long-stroke ball screws are meeting the required features of moving heavy loads smoothly and precisely, which is a key factor within the production of fibre optic filaments.

Click below to read the full *DPA magazine* article and learn how Thomson long-stroke ball screws are driving the optimisation of 5G fibre optic filament production and which three important factors must be taken into account.



Automated production of fibre optic cable is just one way that Thomson ball screws are enabling a new generation of communications technology.

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[SELECT THE OPTIMAL BALL SCREW](#)

Are you tired of the complexities, hazards and expense of traditional hydraulic systems?

Access our new white paper and discover a better actuator solution suitable for many applications

One of the most costly phrases that can be heard at a place of business is "We've always done it that way."

Sticking to traditional methods such as using hydraulic systems in your machines can lead to a number of issues.

A cleaner, simpler and more environmentally friendly solution exists in the form of electric linear actuators. With our new white paper, **learn more about the hydraulic drawbacks and how electric actuators have been replacing them as a viable solution** for many applications.

THOMSON
Linear Motion Optimized

White Paper

Why Electric Actuators are Increasingly Replacing Hydraulic Systems

Executive Summary

Hydraulics have traditionally provided much of the muscle for the industrial revolution, but that functionality has come with a cost. Hydraulic systems are complicated and messy, labor and space-consuming, and expensive to operate and maintain. For many years, these systems have been the only option for several applications. Today, however, advanced electric linear actuators offer a high-power, zero-maintenance solution that is simpler, cleaner and more controllable than its hydraulic counterparts. If you typically specify hydraulic cylinders for your machine designs, here are some good reasons to consider electric alternatives.



Hydraulic Systems Can Be Complicated

In a hydraulic system, tanks compressible hydraulic fluid amplifies electrical energy to move a load. In a typical dual action system, an electric motor drives a pump, which delivers the incompressible hydraulic oil to a cylinder containing a tightly sealed, but easily movable piston attached to a piston rod. As the visible fluid flows from the reservoir, it exerts pressure on the piston rod, which moves the load movement. As the piston moves, it forces fluid out the other end of the cylinder to the reservoir for eventual return to the chamber.

Supporting this complex process requires an external system of hoses, connectors, filters, switches, valves and pumps that route the fluid to and from the cylinder, enabling movement. This is required for every axis of motion. Even the smallest system would require at least eight separate moving components, which introduces a higher than average risk of system failure. Maintaining consistent pressure is critical, and that depends on proper valve settings, connections and switching. As oil is pumped through the system, filters may clog, oil levels may drop, bearings, seals and gaskets may deteriorate, all of which can contribute to leakage, noise and other problems. Numerous other problems in hydraulic systems, such as valves not opening or closing properly, changes in oil viscosity, and air-entrainment, are present and subsistent but jeopardize reliability. In addition to the effort spent to synchronize and maximize performance of so many moving parts, hydraulic cylinders consume valuable space, which is increasingly important as systems – both mobile and stationary – are becoming smaller and smaller. Noise is an issue as well. Even with the system operating at peak performance, motors, pumps and other components provide a steady barrage of distracting noise. To reduce the noise, some users are resorting to noise mitigation products and services, which add even more design challenges and costs.

In addition to noise, the requirement to have



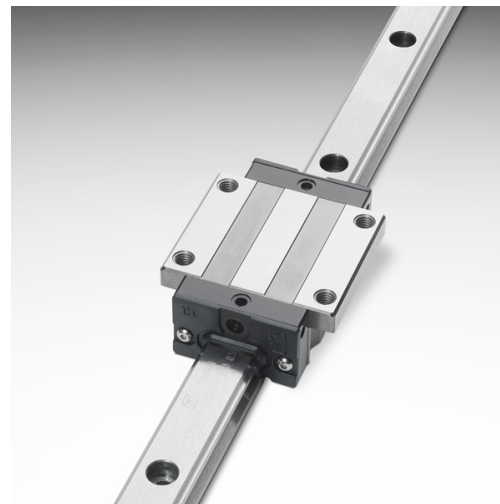
In contrast to electric actuators, hydraulic systems are complicated due to the requirement of hoses, connectors, filters, valves and switches to operate.

ACCESS THE WHITE PAPER

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