

## Lifting columns increase efficiency as well as patient and doctor comfort

***New lifting columns from Thomson are designed for easy installation and superior performance in medical applications***

By Kyle Thompson  
Product Line Manager for Linear Systems  
[www.thomsonlinear.com](http://www.thomsonlinear.com) [thomson@thomsonlinear.com](mailto:thomson@thomsonlinear.com)

---

Vertical lift is required in a wide range of medical equipment where accessibility and comfort can improve care and patient outcomes. Applications such as wheelchair lifts, examination tables and dentist's chairs, or adjustable nurses' stations and optician instruments such as non-contact tonometer's all require vertical lift to provide appropriate care and an optimal patient experience. The latest Lifting Columns from Thomson, experts in linear motion engineering, come in a broad range of models with unique features to match these application needs. Whatever the combination of speed, range of movement or capacity loading is required; Thomson can deliver a solution that helps improve equipment performance, cost and design for doctor and patient benefit.

### ***Maximum extension-to-retraction ratio with exceptional speed of operation***

The new LC Series offers a marketing-leading combination of speed and performance. For example, the LC2000 can significantly improve machine performance by providing high load capacity and stroke length, which easily meets ADA (Americans with Disability Act) legal height requirements with exceptional speed to maintain efficiency of operation. The column uses a telescopic lead screw with a nesting three-piece extrusion to enable a surprisingly small minimum retracted length and great extension-to-retraction ratio. Ideal for use in machines such as wheelchairs or examination tables as well as ergonomic workstations, this series provides up to 2000 N loading and, as standard, can operate at between 15 and 19 mm/s. Custom designed units can also be manufactured for higher speeds, and have been proven up to 25 mm/s.

### ***Very high load capacity models***

The new LC3000 is designed for bariatric, chiropractic and other applications where high load capacity is of utmost importance. LC3000 uses a ball screw with a three-piece extrusion, which has additional extrusion overlap to allow for extended-length bushings. This design provides a load capacity of up to 3000 N with high moment loading in a compact frame size. The column also has a very short retracted length and the smooth, quiet operation required for medical or home environments.

### ***Powerfully quiet***

As experts in precision engineering, all components within Thomson lifting columns are designed for low, consistent noise and smooth operation to foster a pleasant working environment and help keep patients relaxed and calm. The units use high performance linear actuators with a noise-deafening cover, making them ideal for use in medical applications without the need for any additional noise attenuation being added to the machinery. Each column uses a single motor and screw ensuring smooth operation and patient comfort, while also allowing for lower amp draw and longer life.

***Best for ergonomics***

Thomson Lifting Columns are telescopic to maximize the extension to retraction ratio and give the flexibility in range of movement required to improve patient, doctor and operator ergonomics. For example, powered wheelchairs built with these new lifting columns will feature a minimal retracted height making it easy for patients to get into the chair and also offer high extension enabling users to reach high objects, such as wall cabinets. Equally, equipment such as examination tables or dentistry chairs can be adjusted to allow patients to get on easily and then quickly and smoothly be moved to the optimum height to ensure doctor /dentist comfort and reduced risk of back injuries. The rapid movement further ensures comfort and safety without compromise to the efficiency of patient throughput.

***Bearing the load***

Thomson Lifting Columns are stand-alone actuators that provide lifting force while also handling potential moment loads of up to 400 Nm. The robust design across the range uses engineered polymer slide bushings to provide column moment loading capability. These bushings slide along the extrusion as the column telescopes and are keyed to enable up to 40% more moment load than alternate designs. A loading brake also ensures the load is held even on power failure, to provide complete safety for the user.

In applications where there is too much side load for a single column, two or even four units may be easily synchronized together either using a combination of the Thomson encoder and DCG control or any suitable third-party controller. The resulting system will offer more stability, more load capacity and more moment load capacity as required, while still being easy to install and integrate into the overall *machine*.

***Reducing overall machine and lifetime costs***

The outsides of the columns are made with an aesthetically pleasing aluminum extrusion, which is designed to be visible. The attractive exterior means that no additional covers or shrouds are required, simplifying the machine design and reducing manufacturing costs. Pre-drilled mounting holes and an end of stroke limits, which require no external limit switches and ensure an easy to mount, cost effective solution.

The fully enclosed columns use high viscosity grease to prolong life and they provide 10,000 cycles at full load, giving reliable lifetime performance with no ongoing maintenance or greasing requirements.

***Getting the best for your application and budget***

There are three models of Thomson Lifting Columns, each with unique features and benefits to provide the right balance between extension-to-retraction ratio, load capacity, speed and cost for any given application. All columns have quiet, smooth operation; are easy to install; are maintenance free, and provide a self-supporting, compact vertical lifting solution.

***Lightweight, quiet operation for cost-sensitive applications***

For applications such as baby incubators, optician testing machines and mobile carts where the extension-to-retraction ratio is not as critical, the LC1600 uses a two-piece extrusion to provide stroke lengths of up to 400mm. With a loading capacity of up to 1600 N, it has exceptionally quiet operation and is very competitively priced.

### ***Readily available and customizable***

Thomson has production facilities in Europe and USA. Regional operations and precision manufacturing produces lifting columns, which are readily available at competitive prices.

As with most of their components, Thomson lifting columns can be readily customized to meet precise application requirements where necessary. Provision for higher retracted lengths, mounting plates with customer specific mounting arrangements, special cable lengths and double or extended bushings to provide greater moment load can all be produced with good lead times.

### ***Summary***

Thomson Lifting Columns are self-supporting, surprisingly compact and produce a smooth, quiet lifting motion for patient peace of mind. They are designed to give the flexibility in height required to avoid back injuries as well as meeting high load and extension requirements. All units come as a complete system with an attractive housing, making installation and machine design simpler. In addition, the columns provide rapid movement for the amount of loads they can lift to give required performance without compromise to productivity. Innovative design further means that a single, central column can handle significant moment loads or, if required, multiple columns can be easily synchronized into an overall machine design.

New Thomson Lifting Columns ensure that machine builders can get the features they need for their particular application in a solution which is cost-effective and easy to install, while providing a better overall machine performance and user experience.

### Image Captions:

- **Image 1:** The Thomson LC 2000 lifting columns are self-supporting and height adjustable lifting solutions in a compact, pre-aligned package, perfect for applications requiring telescopic motion.
- **Image 2:** The LC 2000 is an easy to install, low-cost ergonomic solution that increased can increase operator and patient comfort.
- **Image 3:** The Thomson lifting column product family has three different models, which are all made of self-supporting extruded aluminum profiles that require no additional cover for protection.
- **Image 4:** Thomson lifting columns are designed for smooth, quiet and fast operation.
- **Image 5:** Annotated diagram.