



## Materials in Motion

Innovative Linear Motion Solutions for Stronger and Smarter  
Material Handling Equipment

[www.thomsonlinear.com](http://www.thomsonlinear.com)

** THOMSON<sup>®</sup>**

*Linear Motion. Optimized.<sup>™</sup>*

A REGAL REYNOLD BRAND



# Thomson Has the Products and Know-How to Help you Design Equipment That is Better, Faster and Smarter

In a modern production environment, moving material quickly, accurately and efficiently is a big challenge. Using the optimal motion control products can enable you to help your customers save time and money, giving you a competitive edge.

## Superior Products

Thomson designs and manufactures the broadest selection of linear motion components, including:

- Electric and precision linear actuators
- Linear Ball Bushing® Bearings
- Round and square rail linear guides
- Ball, lead and acme screws
- Ball splines
- Stepper motor linear actuators
- Linear units
- Lifting columns
- Screw jacks

## Superior Technology

Thomson successfully supplies components and solutions for handling applications to companies in automotive, aerospace, food, medical and many other industries. All are built with the same quality and performance that has made Thomson a world leader in motion.

## Unbiased Design Solutions

Our unmatched breadth of products and commitment to fully agnostic solutions encourage designs that don't compromise on innovation or quality.

Plus, we have the ability to test application load and movement profiles to develop optimal solutions based on your particular needs.

Thomson offers more than 75 years of experience in optimal, standard, modified-standard and fully customized designs. We also specialize in:

- Zero-setup products for speed-to-market and cost effectiveness.
- Electric actuator conversion from hydraulic, pneumatic or manual.

**Complete your engineering projects by talking with Thomson about optimized motion solutions for your specific needs.**



## Integrate our Expertise into Your Design Process

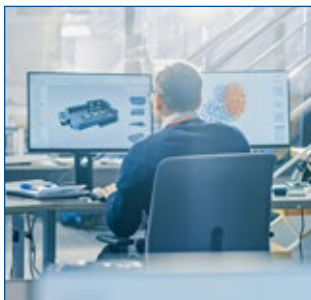
When experienced Thomson engineers contribute early in your design process, you optimize machine performance, life and cost. Leverage our capacity for analysis, modifications and white sheet solutions. Take advantage of smart standardization that gives you more freedom and improved speed to market. And then relax, knowing that the results will be predictably excellent. Here are some of the key reasons why:

**WE DEVELOP** standard platforms that make any design easily customizable.

**WE PRODUCE** zero-setup products to get our clients to market faster and more cost effectively.

**WE TEST** extensively on your equipment to enable evaluation of our products in your application.

Couple these process advancements with our well-proven, highly engineered components and pre-assembled systems, and you've optimized your motion process.



Our skill in thorough analysis delivers predictable, successful results.



Trust Thomson product depth and application experience to help optimize your product application decisions.



Reach market faster with our zero-setup products.

## Thomson is Ready to Serve You with State-of-the-Art Material Handling Technology and a Global Support Network

Through world-class components and systems, decades of hands-on, motion control experience and a global footprint, we have expertise in a wide array of handling applications.

AGVs

Airport baggage handling equipment

Automatic storage equipment

Conveyor systems

Elevators

Ergonomic improvements

Extraction equipment

Feeding equipment

Fork lifts

Lifting aids

Manipulators

Overhead crane systems

Patient lifts

Palletizers

Pick and place

Robots

Safety improvements

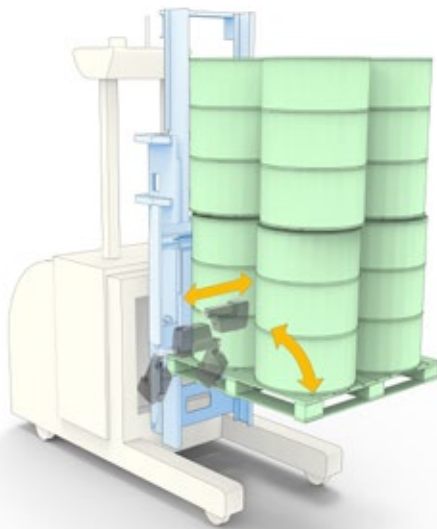
Storage equipment

Transportation equipment



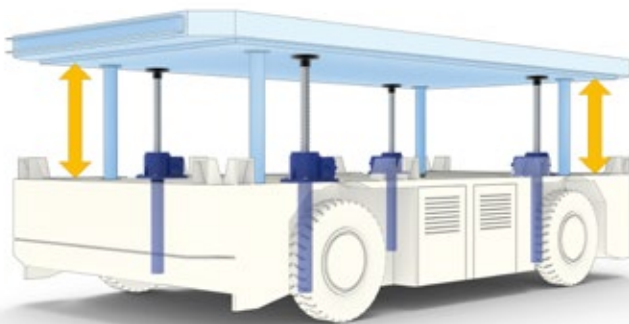
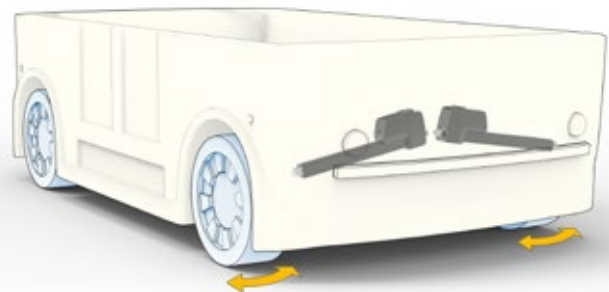
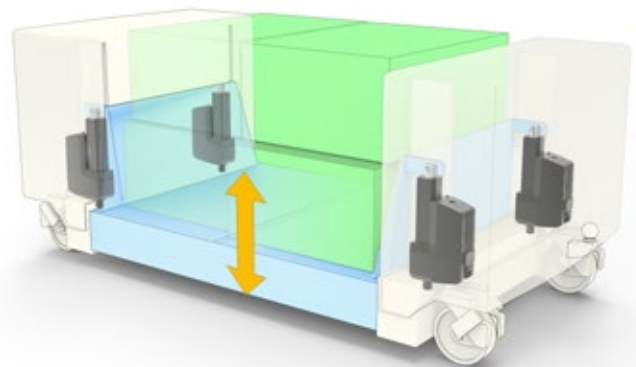
## Autonomous Vehicles

These vehicles perform a large percentage of material handling in modern factories. The applications shown here are just a few examples that showcase the products and solutions Thomson has to offer. Let us know your specific needs, and we can tell you more about our products and services, and the many advantages of using Thomson as your supplier.



### Automated Guided Vehicle (AGV)

Utilized in various capacities across factory floors, AGVs and forklifts benefit from **Thomson electric linear actuators'** strength and smarts. Integrated onboard electronics allow for enhanced controllability, including real-time feedback and diagnostics. Further, these actuators' sturdy designs reduce maintenance and environmental concerns.



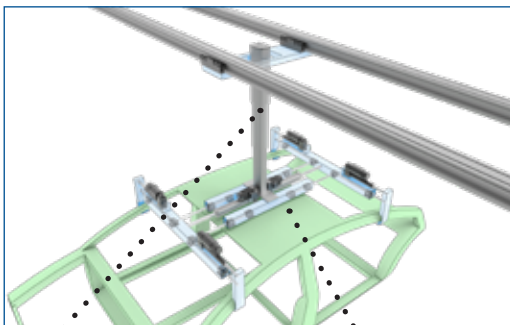
### Logistics Trains

Using bus communications such as CANopen® and SAE J1939 CAN bus, **Thomson electric linear actuators** work with a central computer and other smart components for improved logistics flow. This capability also directly impacts waste reduction, and time and energy savings. Thomson **screw jacks** (left) are capable of handling higher loads and speeds as well as longer strokes than an actuator. Screw jacks are also available with multiple mounting options for space-constrained applications.



## Transportation of Car Chassis

Material handling solutions sometimes involve bringing together production cells that can't be placed adjacent to each other. Moving goods, parts or components between these cells means covering distances with speed without getting in the way of other processes. Overhead transportation is one way to achieve this goal as goods will not interfere with walkways or truck routes, keeping valuable floor space free for other production equipment.



### Adjustable Picking Tool

The use of Thomson linear actuators, precision linear actuators and round rail Ball Bushing® bearings makes this tool adjustable, allowing different types of chassis to be handled in a mixed production line.

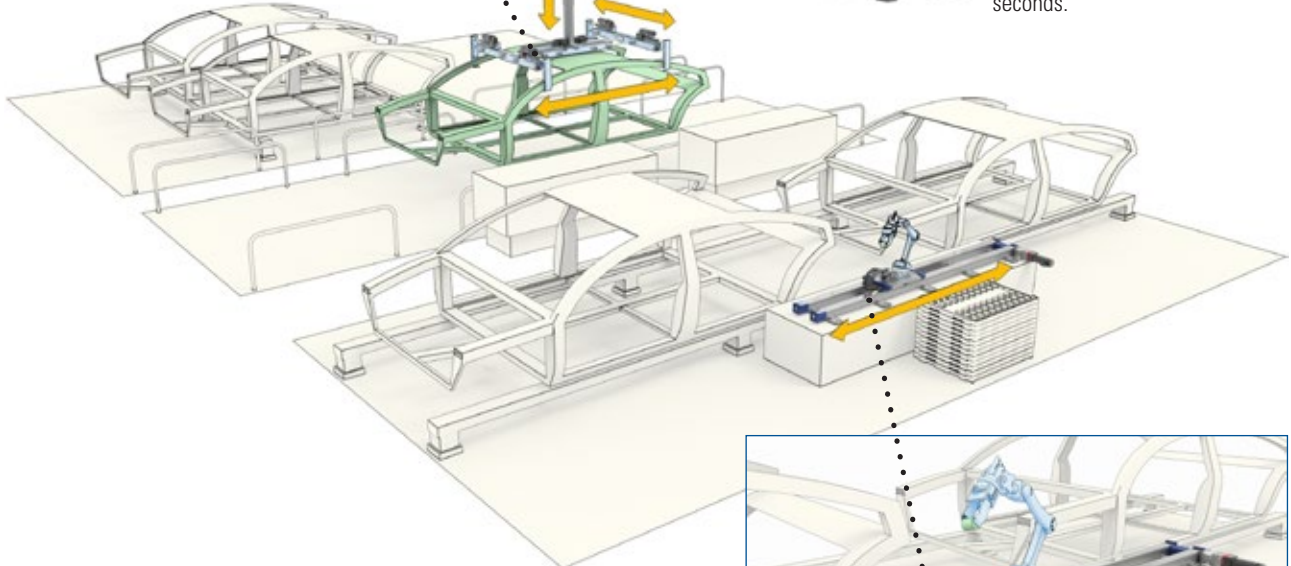
### Lifting Unit

A Thomson lifting column allows the system to be mounted close to the ceiling since it can reach down and lift the chassis high enough to clear any objects beneath the transportation path.



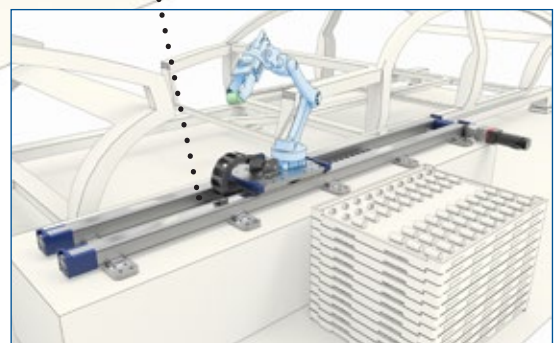
### Long Transport System

- Thomson has a variety of linear units with the capacity to move objects long distances with high speed. In this application, an entire car chassis is moved 12 meters in only a couple of seconds.



### Workspace Expansion

For adjacent workspaces, the Thomson Movotrak CTU collaborative 7<sup>th</sup> axis adds a horizontal operating range up to 10 meters to significantly boost productivity and output, and keep processes moving quickly. Collision detection settings help deliver groundbreaking programming and control benefits.





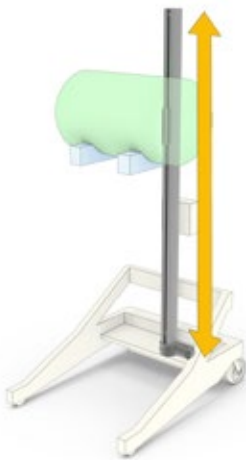
## Packaging

Most factories place high demands on material handling equipment. Harsh conditions found in places such as dairies, bakeries and breweries means equipment is often exposed to extreme temperatures as well as water, moisture, dirt and cleaning agents. Plus, equipment must be fast and accurate to keep up with high speed production lines, yet must also be easy to clean and maintain so it won't contaminate the environment. Whatever your particular handling challenge may be, Thomson has the products and know-how to get the job done.

### Lifting Trolley

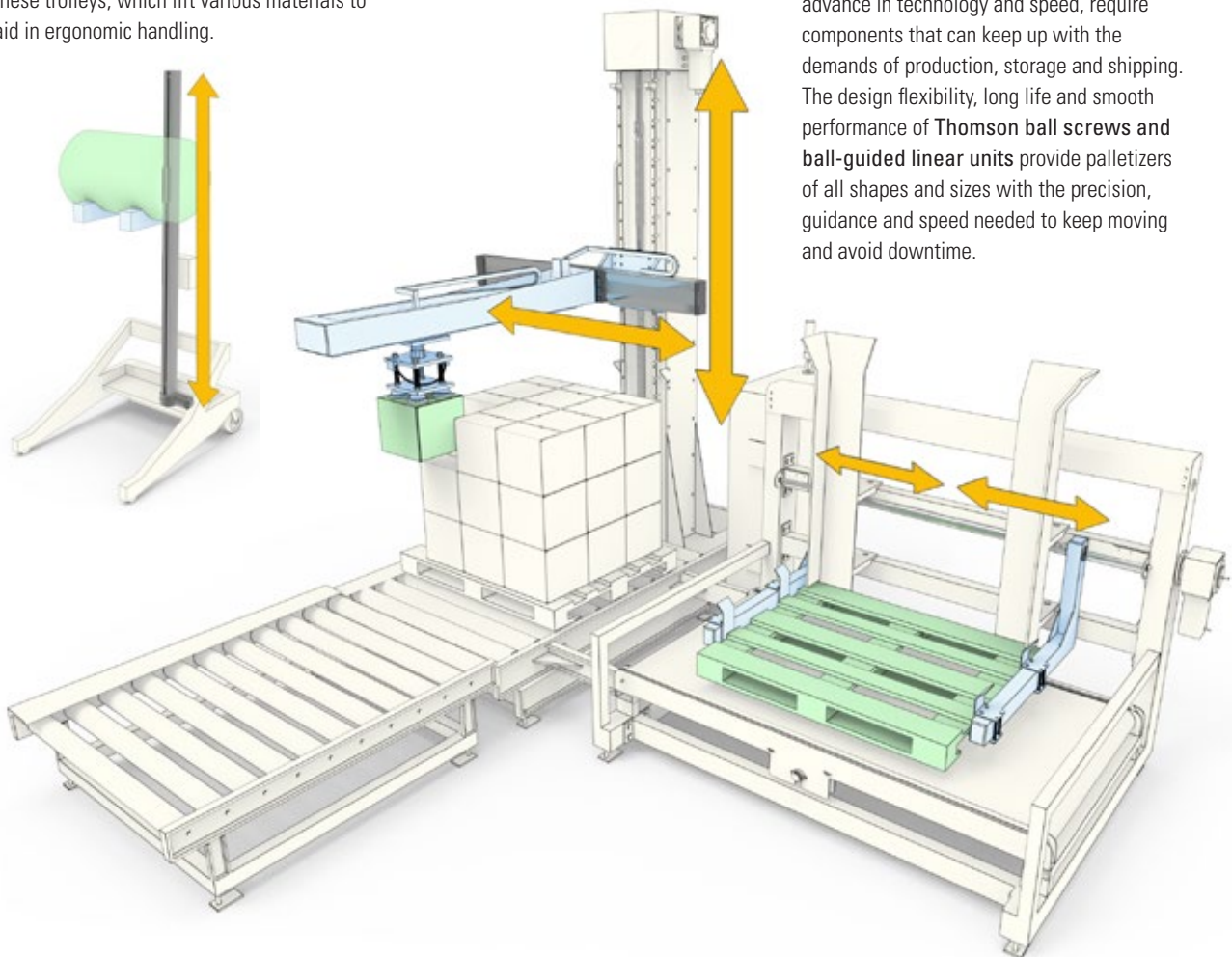
Reducing manual handling is key to maintaining safety across the factory floor.

**Thomson rodless linear actuators**, which drive heavy loads using a DC motor, gearbox assembly and either a ball or lead screw, lend themselves well to applications such as these trolleys, which lift various materials to aid in ergonomic handling.



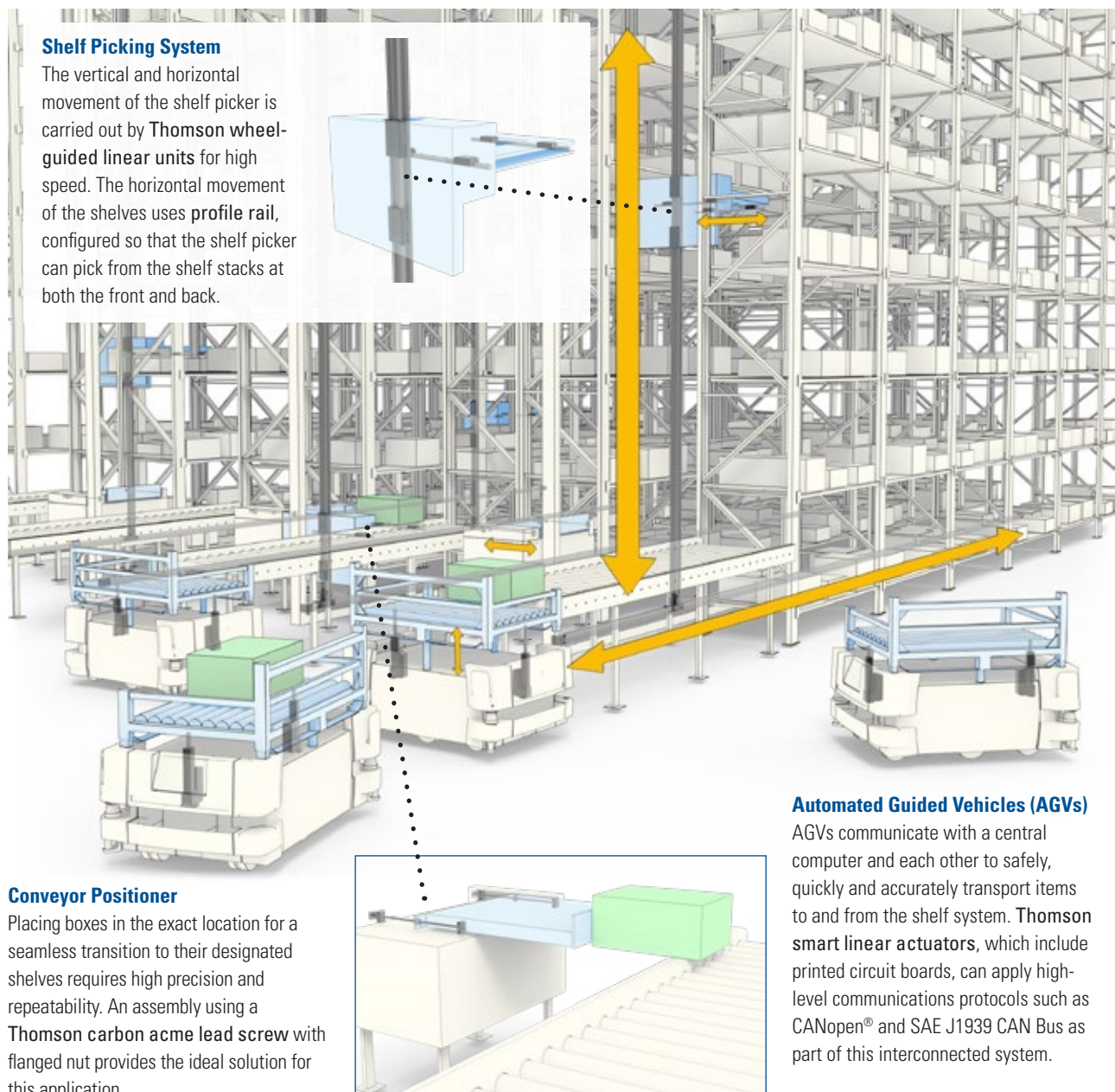
### Palletizer

These automated machines, which continually advance in technology and speed, require components that can keep up with the demands of production, storage and shipping. The design flexibility, long life and smooth performance of **Thomson ball screws and ball-guided linear units** provide palletizers of all shapes and sizes with the precision, guidance and speed needed to keep moving and avoid downtime.



## Vertical Lift Module/Automatic Storage

Moving materials in and out of storage can often create major logistical challenges. In fact, simply finding the right item at the right time can be the biggest hurdle. An automatic storage system, such as a vertical lift module (VLM) shown here, can be a solution. This type of automated storage system features a computer-controlled mechanism that stores and keeps track of items. The challenge for such a system is to be able to handle items quickly while maximizing the storage area. Thomson has several standard products that are well-suited to this type of application, as well as the ability to design a customized solution if needed.



### Shelf Picking System

The vertical and horizontal movement of the shelf picker is carried out by Thomson wheel-guided linear units for high speed. The horizontal movement of the shelves uses profile rail, configured so that the shelf picker can pick from the shelf stacks at both the front and back.

### Conveyor Positioner

Placing boxes in the exact location for a seamless transition to their designated shelves requires high precision and repeatability. An assembly using a Thomson carbon acme lead screw with flanged nut provides the ideal solution for this application.

### Automated Guided Vehicles (AGVs)

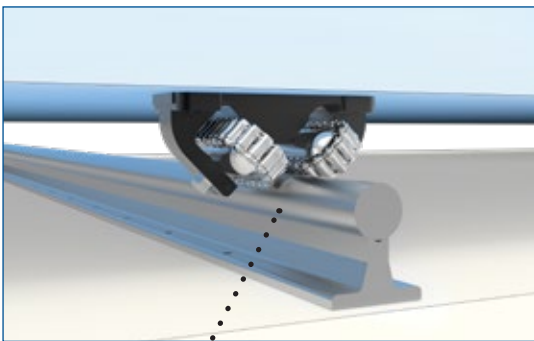
AGVs communicate with a central computer and each other to safely, quickly and accurately transport items to and from the shelf system. Thomson smart linear actuators, which include printed circuit boards, can apply high-level communications protocols such as CANopen® and SAE J1939 CAN Bus as part of this interconnected system.





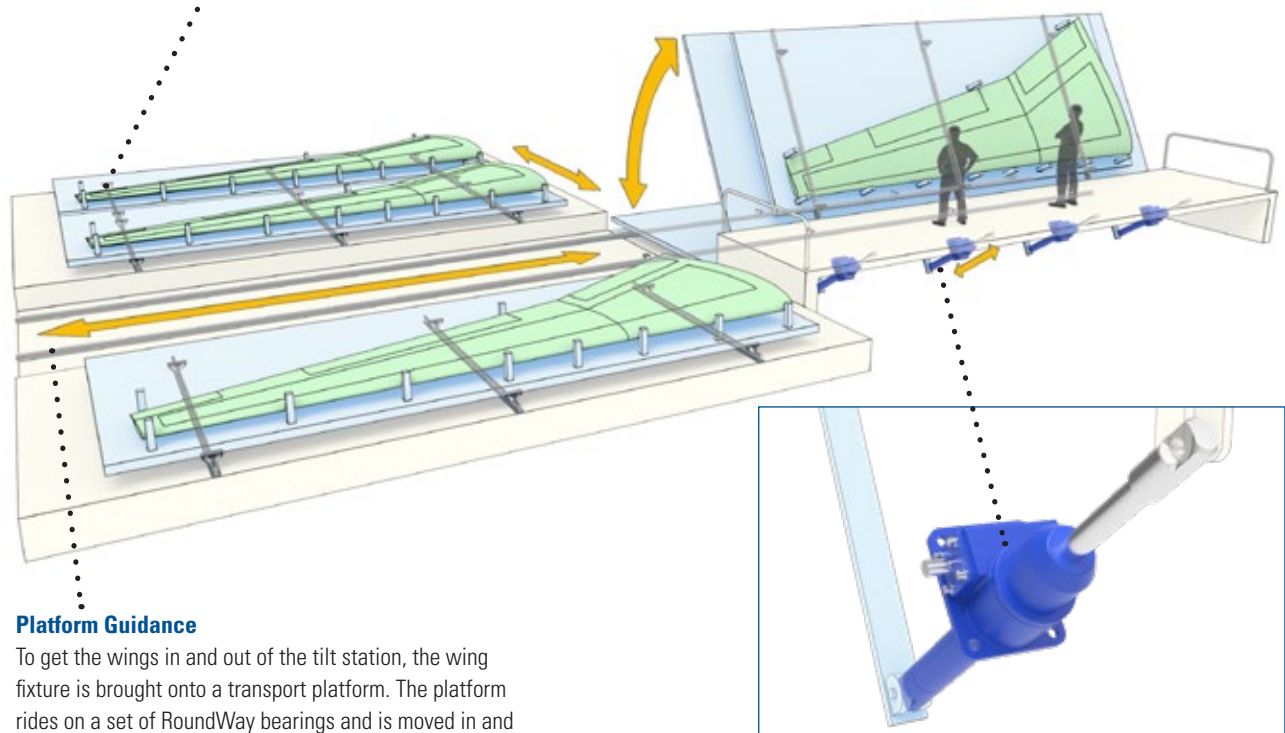
## Aircraft Wing Handling

Few industries place as much demand on a handling system as aircraft construction. The handling of large and heavy objects, the need for extreme accuracy and unyielding quality standards make for a difficult challenge. At Thomson, we have both the unique experience and the products to meet the precise needs of the most demanding material handling applications.



### Wing Transport Platform

Thomson RoundWay® roller bearings have the strength and accuracy to be able to transport an entire wing along the line. Unlike most linear bearings, RoundWays are very forgiving. For instance, the bearings can pass from one shaft to another without losing accuracy, even if they are not perfectly aligned. This makes it possible to build large systems quickly and easily.



### Platform Guidance

To get the wings in and out of the tilt station, the wing fixture is brought onto a transport platform. The platform rides on a set of RoundWay bearings and is moved in and out of the tilt station by a parallel set of Thomson 60 Case® LinearRace® shafts. This combination allows the wing to be correctly positioned with accuracy high enough to allow for machining.

### Tilt Station

Once the tilt station transport platform is correctly positioned in the tilt station, Thomson screw jacks tilt the wing and the platform 90 degrees. In this position, machining and assembly work can be carried out on the wing. The screw jacks are easy to synchronize, have high accuracy and efficiency, and have proven to be quite rugged and reliable.



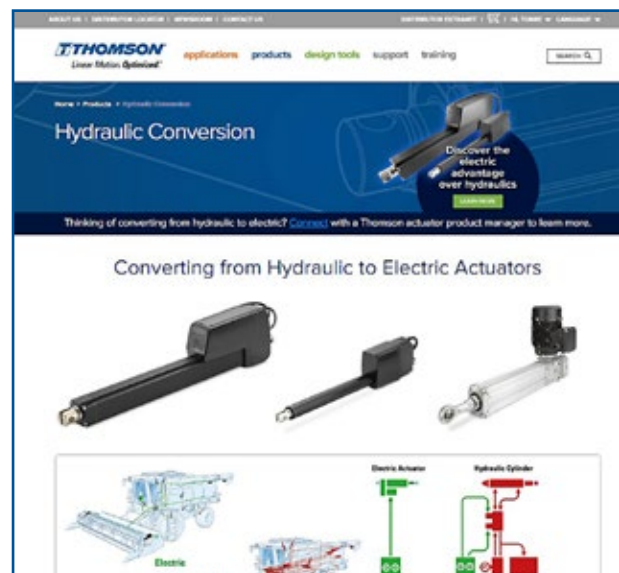
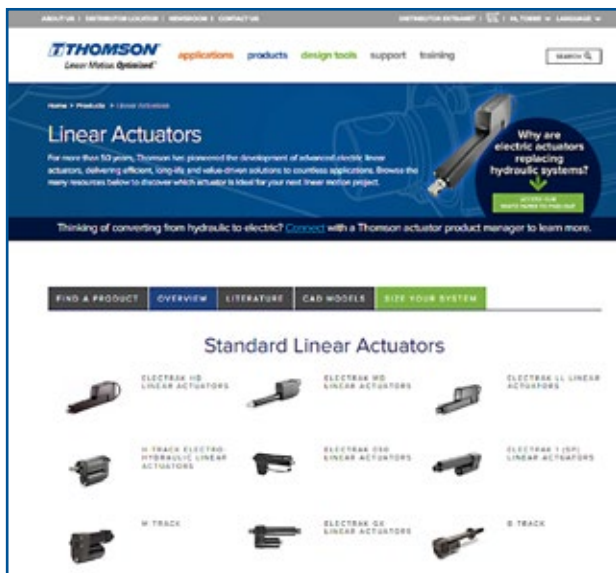
## Online Resources

Thomson offers a wide variety of online application, selection and training tools to help you. An experienced team of application engineers is also available to help size and select a linear motion component to best fit your needs. To explore additional technical resources and options, contact Thomson customer support at [www.thomsonlinear.com/contact](http://www.thomsonlinear.com/contact).

### Linear Motion Components on the Web

Find additional information and learn more about our products on this content-rich website.

[www.thomsonlinear.com](http://www.thomsonlinear.com)



### Selector Tools

These tools greatly simplify the tasks of searching and selecting with a visual selection process that immediately narrows down your linear motion component options. [www.thomsonlinear.com/selectors](http://www.thomsonlinear.com/selectors)



### Interactive 3D CAD Models

Download free interactive 3D models in the most common CAD formats.

[www.thomsonlinear.com/cad](http://www.thomsonlinear.com/cad)





## Employ Superior Thomson Technology

Leading-edge material handling technology is built on leading-edge motion technology, starting with minute engineering details we've mastered over decades of intense work. From integrated, on-board controls for linear actuators to patented anti-backlash technology for lead nuts to proprietary processing for roll-forming, our components are built to deliver time and time again.



### ELECTRIC LINEAR ACTUATORS

For more than 50 years and in various applications such as agricultural machines, material handling, medical devices, factory automation among others, powerful Thomson electric linear actuators have set the standard for long-life, heavy duty performance. Built from rugged, high-quality components, these actuators require zero maintenance, don't leak fluids and are simple to integrate into existing automation processes. Our smart linear actuators have been integrated with a printed circuit board to provide advanced control options and enhanced performance.



### LINEAR BEARINGS & GUIDES

Whether round or square, our linear guide rail is manufactured to the highest of quality and precision standards. Thomson 60 Case® LinearRace® round rail shafting provides industry leading surface finish, roundness, straightness and cylindricity. A complete offering of square (or profile) rail and carriages in a broad range of styles, sizes and unique features allows for easy retrofitting into existing applications or designing into new ones.

With the world's largest selection of Linear Ball Bushing® Bearings, you can choose from several families of inch or metric to meet your specific needs. When used with 60 Case LinearRace shafting, our bearings last up to 50% longer than conventional models.



### LEAD, ACME, BALL & GLIDE SCREWS

Thomson lead screws are the "just right" solution for many applications, and the patented zero-backlash nut technology provides excellent repeatability with high stiffness and extremely low drag torque.

For more demanding applications, we offer the most complete line of industrial ball screws in the industry. Our broad product offering and years of application expertise allow us to provide the right solution to meet your unique application requirements.

Part linear bearing, part lead screw, the unique Glide Screw™ combines the best features of these products into an easy-to-install, one-part solution. In addition, the Glide Screw eliminates alignment issues and comes standard with Thomson's patented Lube-for-Life technology for zero maintenance.

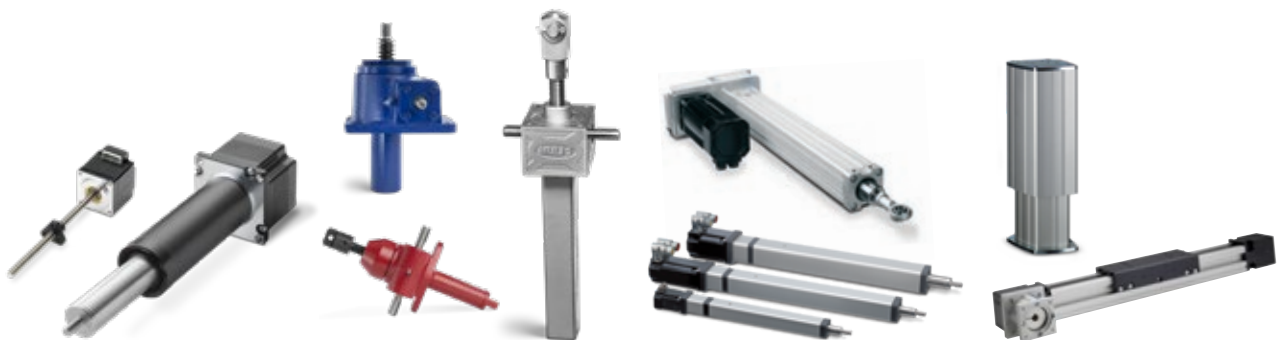


### BALL SPLINES

Our ball splines, which enable rotary and linear motion on a single shaft, deliver high reliability and life expectancy under varying operating conditions. Ball splines are optimal for applications that require high speed, vibration, shock loading, precise positioning requirements and high torsional loads.

## Leverage Our Ability To Modify or Customize

Our application expertise is deep, and our product portfolio is broad. The result: we can modify our standard products to any degree in a short timeframe. Similarly, we have the design and engineering expertise and technical knowledge to deliver white sheet solutions for virtually any need – quickly. From standard products to modified standard or custom products, we can deliver what you envision.



### STEPPER MOTOR LINEAR ACTUATORS

Our SMLAs combine a hybrid stepper motor and a precision lead screw in one compact envelope. Patent-pending Taper-Lock technology allows quick decoupling and secure, properly aligned connections. The result is a smaller, simpler and more precise overall design.

### SCREW JACKS

Ruggedly designed and produced with load-handling capacities up to 100 tons, Thomson screw jacks can be employed individually or easily configured into a multitude of synchronized, motorized arrangements. These precise, highly efficient and long-life components are built to your exact specifications, making them ideal for industrial, automation, military and defense, and many other demanding applications.

### PRECISION LINEAR ACTUATORS

The compact design and the high load, accuracy and speed capacities of our precision linear actuators make them ideal for flexible integration in tight areas. These high-performance actuators come in several models and sizes with a broad range of options and accessories to meet the requirements of your application.

### LINEAR UNITS & LIFTING COLUMNS

Our linear units can be used virtually anywhere. They can support and move a range of loads, and provide high precision and tight tolerances. Pre-engineered, pre-assembled and ready-to-install, these units support loads with ball guides, slide guides or wheel guides and actuation with either ball screw, lead screw or belt drive.

Thomson lifting columns provide modern design, high performance and safe operation. Along with maintenance-free life, easy installation and light weight, these lifting columns are a first choice for domestic, medical and workplace applications.

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