



Materials in Motion:

Innovative motion solutions for better, faster and smarter material handling equipment.

www.thomsonlinear.com

THOMSON[®]

Linear Motion. Optimized.

Better. Faster. Smarter.

Thomson has the products and know-how to help you design equipment that is better, faster, 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. We have the broadest selection, and can readily provide standard, modified standard or full custom solutions. Thomson designs, manufactures and optimizes:

- Rod-style and rodless actuators
- Linear guides and bearings (round and square rail)
- Ball and lead screws
- Linear slides and systems
- Micron® planetary gearheads
- Deltran wrap spring and friction clutches, spring set brakes and resolvers

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. Enjoy peace of mind throughout the production life of your machine with Thomson components.

Unbiased design solutions. Our unmatched breadth of line 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 70 years of experience in optimal, standard, modified-standard and full custom designs. We also specialize in:

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

Complete your engineering process 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 set-up 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.

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 motion-control expertise and a global footprint that includes over 200 distributors, we have expertise in a wide array of handling applications:

AGV trucks

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

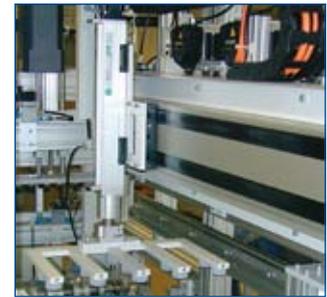
Safety improvements

Storage equipment

Transportation equipment



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-set-up products.

TRUCKS AND MOBILE LIFTING AIDS

Trucks and mobile lifting aids perform a large percentage of material handling in modern workshops. The applications shown here are just a few examples of what 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 of the many advantages of using Thomson as your supplier.

Rodless Actuator

Thomson rodless actuators are self-supporting and lightweight, so they're easy to move. And because there's no need for covers or any load-supporting framework, you'll find assembly to be simple and quick.

Custom System Solution

Thomson can design, build and deliver custom systems that can be fitted directly into your machine. This AGV gripping and lifting tool is designed with Thomson profile rail linear guides, ball screws and Micron gearheads.

Torque Feedback Device

Thomson offers a unique torque feedback device. Shown here as part of a power steering system.

Electromechanical Brake

A fail-safe Deltran electromechanical brake is used as a parking brake.

Precision Linear Actuators

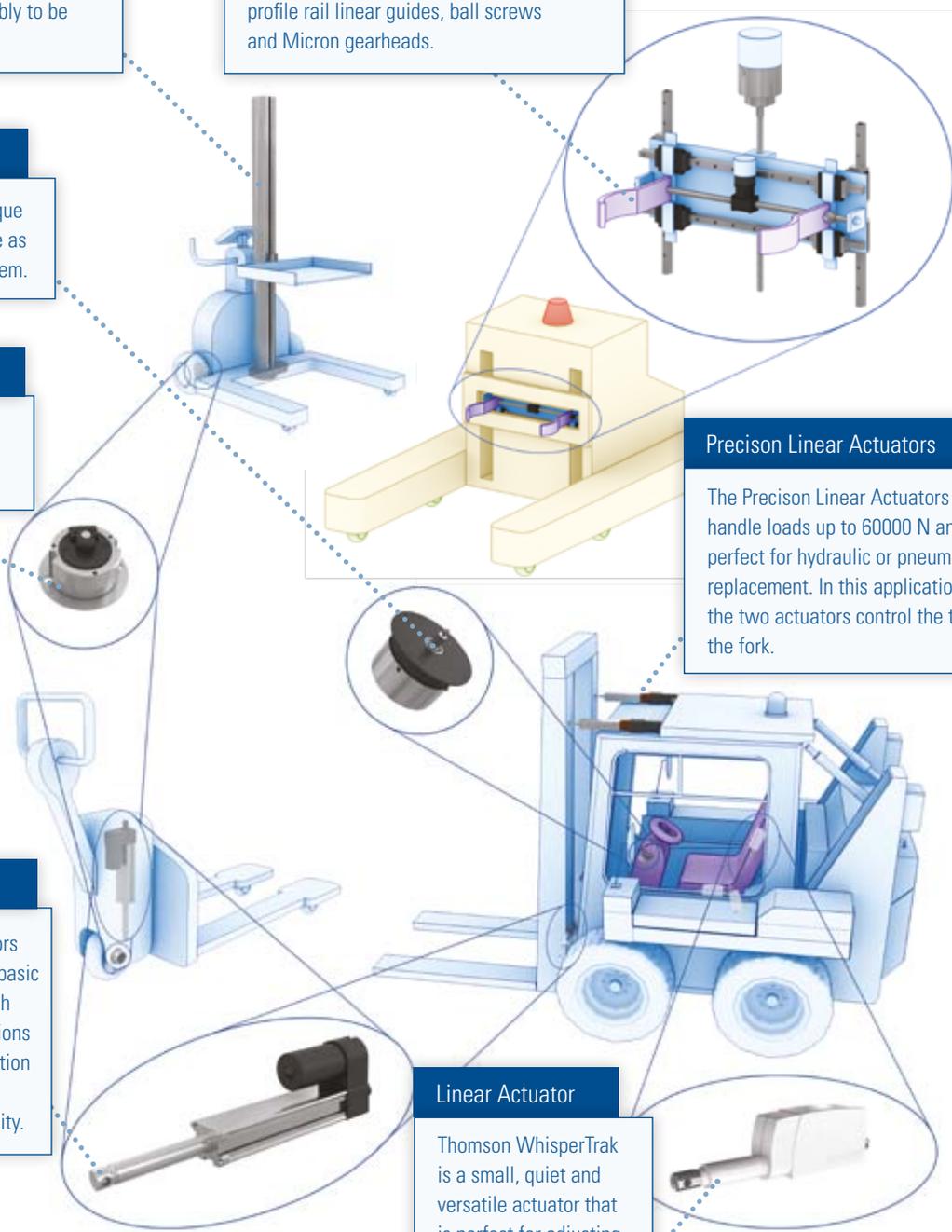
The Precision Linear Actuators can handle loads up to 60000 N and are perfect for hydraulic or pneumatic replacement. In this application the two actuators control the tilt of the fork.

Electric Linear Actuator

Our heavy duty linear actuators are rugged for the toughest, basic jobs and also available in high precision configurations. Options and accessories such as position feedback, limit switches and controls provide great flexibility.

Linear Actuator

Thomson WhisperTrak is a small, quiet and versatile actuator that is perfect for adjusting seats and performing similar tasks.



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, but

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.

Long Transport Systems

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

Adjustable Picking Tool

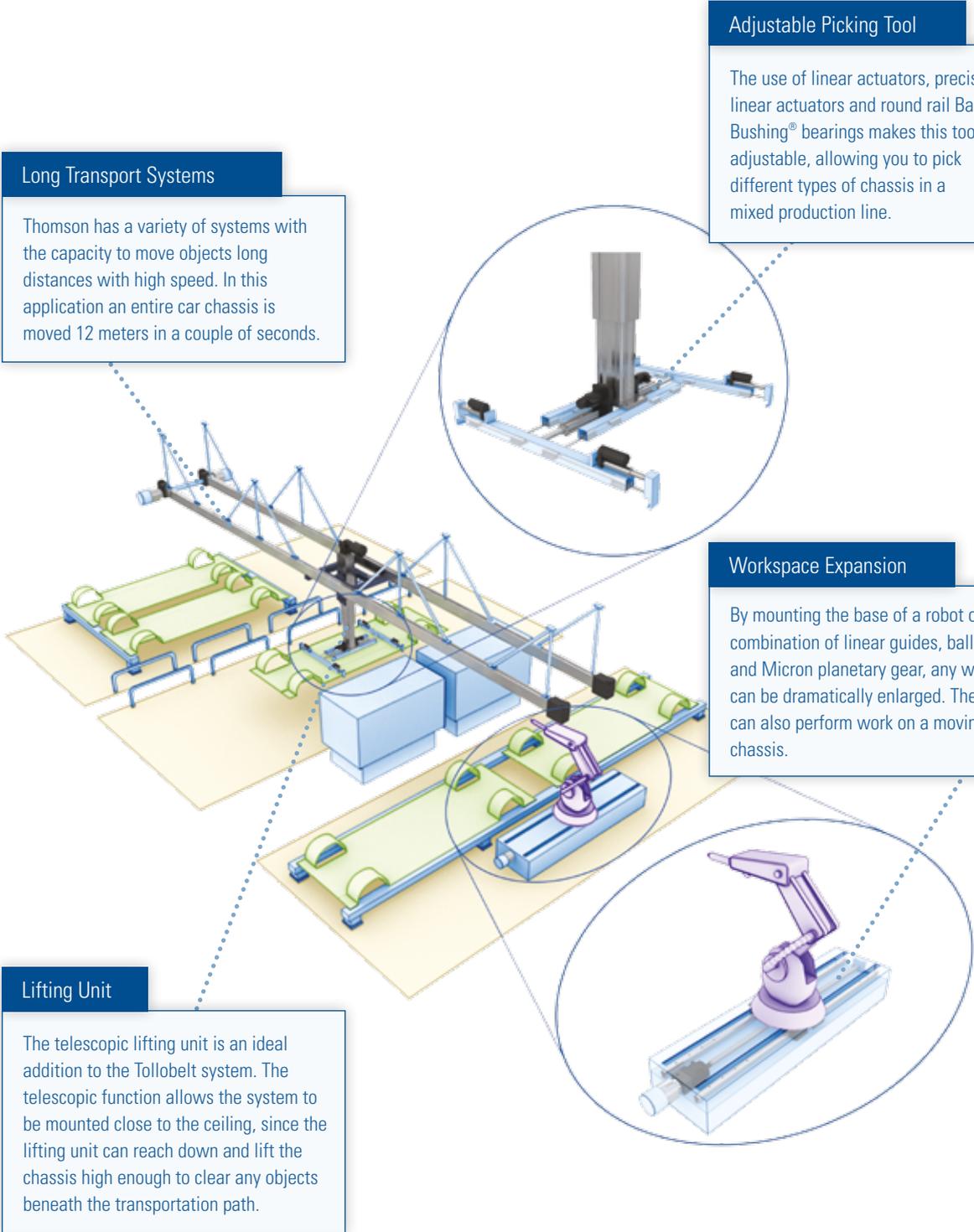
The use of linear actuators, precision linear actuators and round rail Ball Bushing® bearings makes this tool adjustable, allowing you to pick different types of chassis in a mixed production line.

Workspace Expansion

By mounting the base of a robot onto a combination of linear guides, ball screw and Micron planetary gear, any workspace can be dramatically enlarged. The robot can also perform work on a moving chassis.

Lifting Unit

The telescopic lifting unit is an ideal addition to the Tollobelt system. The telescopic function allows the system to be mounted close to the ceiling, since the lifting unit can reach down and lift the chassis high enough to clear any objects beneath the transportation path.



PALLETIZING OF FOOD CONTAINERS

The food industry places 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

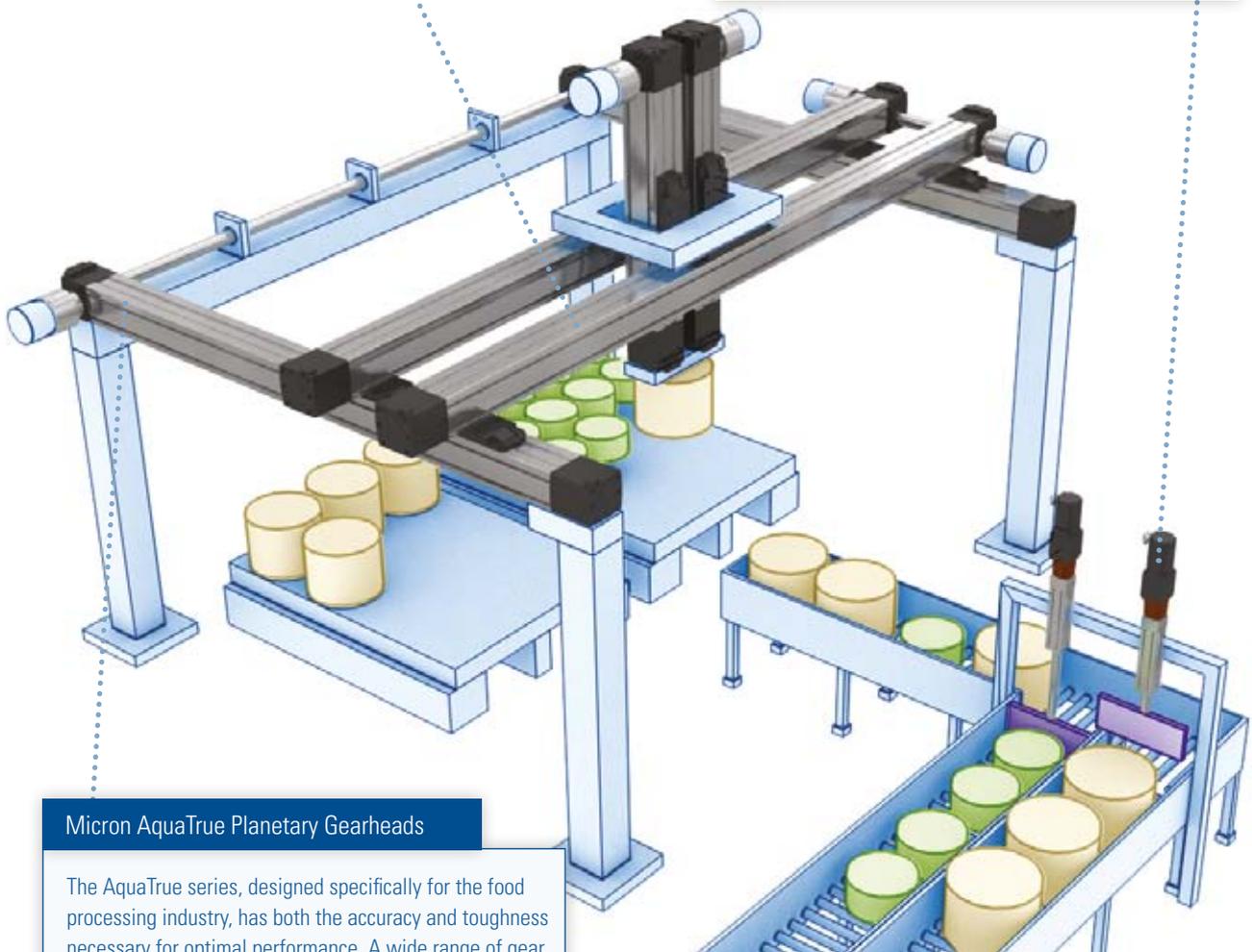
accurate to keep up with high speed production lines, yet must also be easy to clean and maintain so it won't contaminate the environment or the food. Whatever your particular food handling challenge may be, Thomson has the products and know-how to get the job done.

Linear Unit Systems

Few linear unit systems offer the variety of sizes and technologies as Thomson. We create systems specifically designed and built to deliver the kind of performance, durability and safety needed for your specific application.

Precision Linear Actuators

Replacing hydraulic and pneumatic solutions with electric Precision Linear Actuators provides higher speed, better accuracy, improved controllability, lower noise and reduced energy consumption.



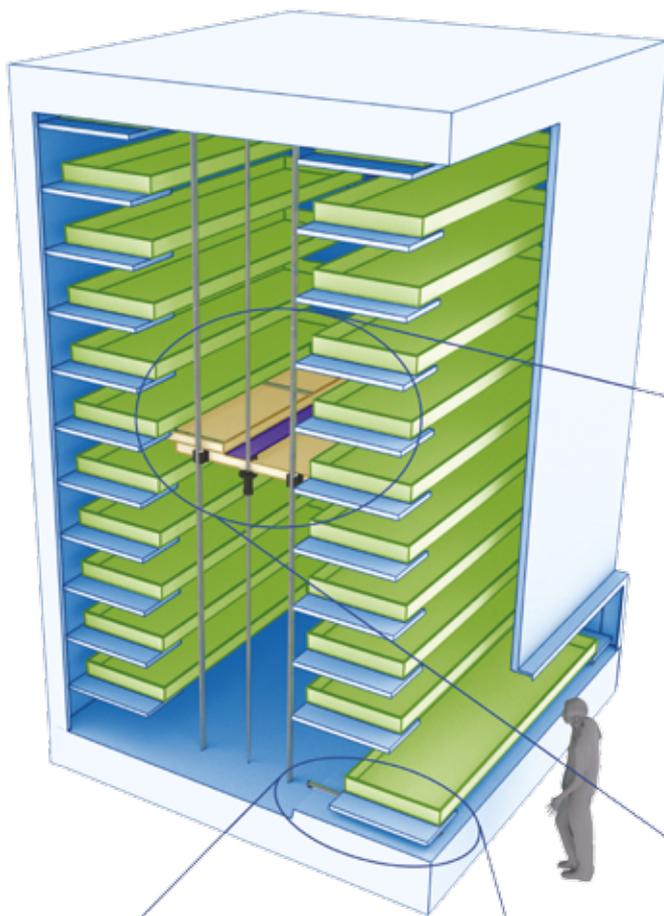
Micron AquaTrue Planetary Gearheads

The AquaTrue series, designed specifically for the food processing industry, has both the accuracy and toughness necessary for optimal performance. A wide range of gear ratios and frame sizes make AquaTrue easy to implement in most types of machines.

VERTICAL LIFT MODULE/AUTOMATIC STORAGE

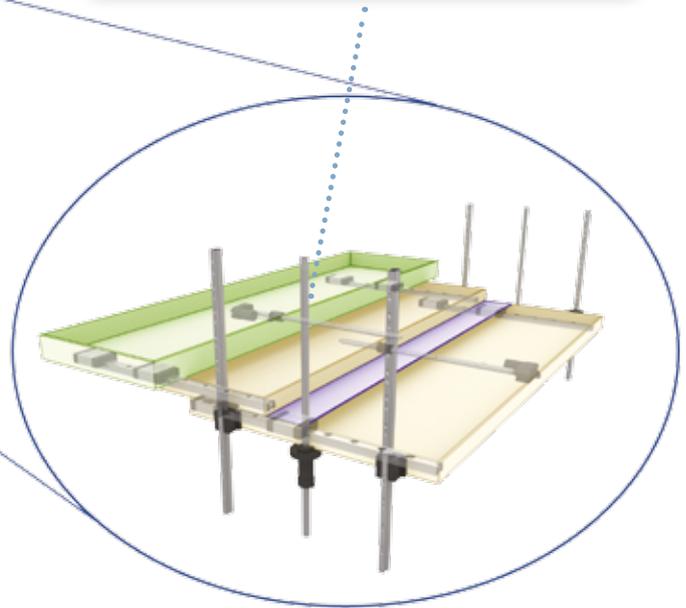
Moving materials in and out of storage can often create major logistical challenges. In fact, simply finding the right item at the right time can be the biggest hurdle. An automatic storage system, such as a vertical lift module (VLM) shown here, can be a solution. This type of automated storage system 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 movement of the shelf picker is carried out by two lead screws, guided by four profile rail linear guides. The horizontal movement also uses two lead screws and four profile rails, configured so that the shelf picker can pick from the shelf stacks at both the front and the back.



Shelf Positioner

Here, two linear motion systems work parallel to each other moving shelves in and out of the VLM. Their small size, minimal maintenance requirements and high resistance to dirt and dust makes them a good choice for this exposed location.

ASSEMBLY LINE ENGINE HANDLING

An assembly line requires a steady flow of materials to specific assembly points along the line. An overhead conveyor system is a convenient solution, in that it does not occupy any floor space, yet can still transport materials a great distance. Such a system can also be used when its necessary to position assembly tools and equipment. The

main challenge is that the quick pace normally found on an assembly line requires such systems to be lightweight, to make it possible for operators to move the equipment quickly and accurately and lower the risk of fatigue and injuries. Thomson has pioneered a family of products and services to meet the challenge.

The Movorail System

The Movorail system has been a mainstay of the automotive industry for more than twenty years. Movorail is a lightweight, maintenance-free, modular crane rail system that comes in four sizes for loads up to 600 kg per rail. Due to its modularity and broad range of accessories, it is possible to build just about any imaginable type of conveyor or crane rail system. All you need to mount it is a few common tools, making the system easy to reconfigure or move to another location if necessary.

Movorail with Telescopic Crane Rail

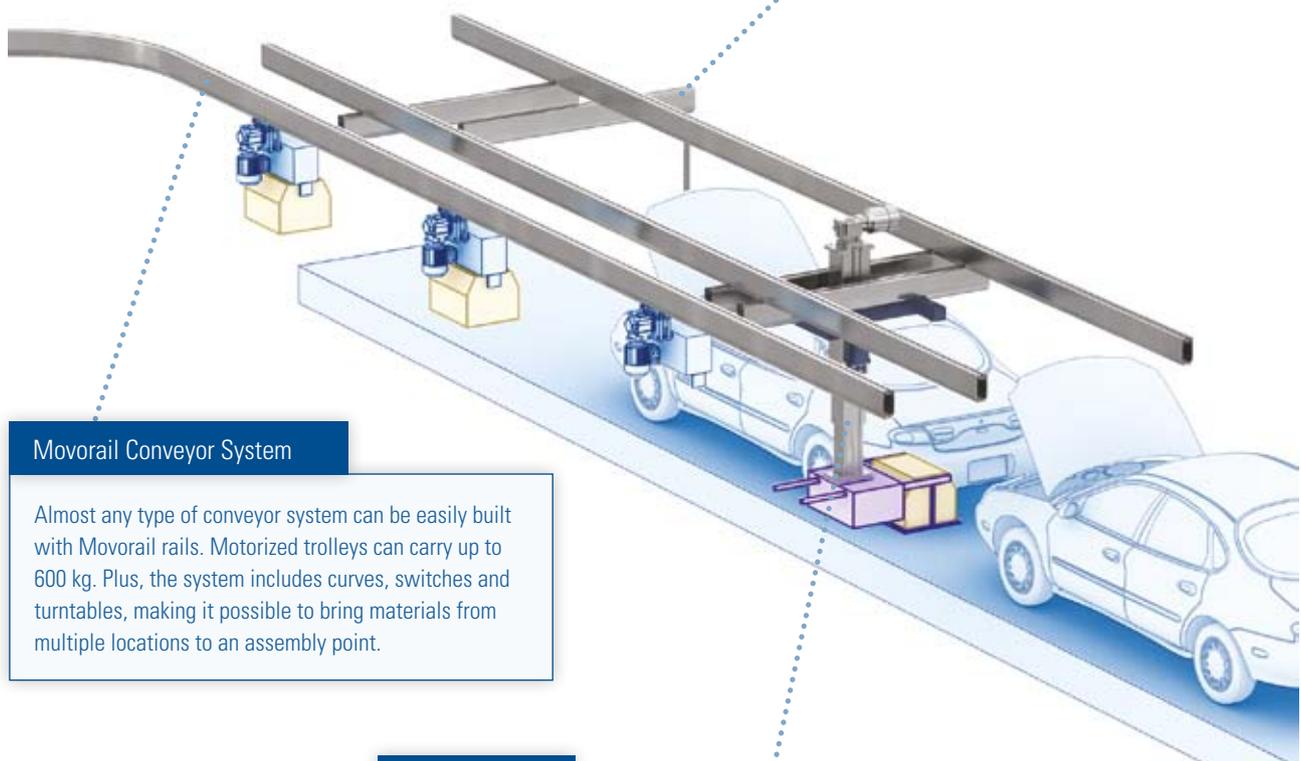
In this Movorail system, a telescopic crane rail is mounted so that it can move a power tool over the hood of a car. When the work is done it can be pushed back to a neutral position allowing the car to pass.

Movorail Conveyor System

Almost any type of conveyor system can be easily built with Movorail rails. Motorized trolleys can carry up to 600 kg. Plus, the system includes curves, switches and turntables, making it possible to bring materials from multiple locations to an assembly point.

Lifting Devices

Thomson has several units designed for lifting operations. In this case the telescopic lifting unit Movoz Z3 is suspended in a Movorail system. The lifting movement is motorized while the X and Y movements can be manual or motorized. In this application, the operator picks an engine from the conveyor system with a custom made tool attached to the bottom of the lifting unit, rotates it 180 degrees and then positions it in the engine compartment of the chassis, all while the car on the conveyor keeps moving forward.

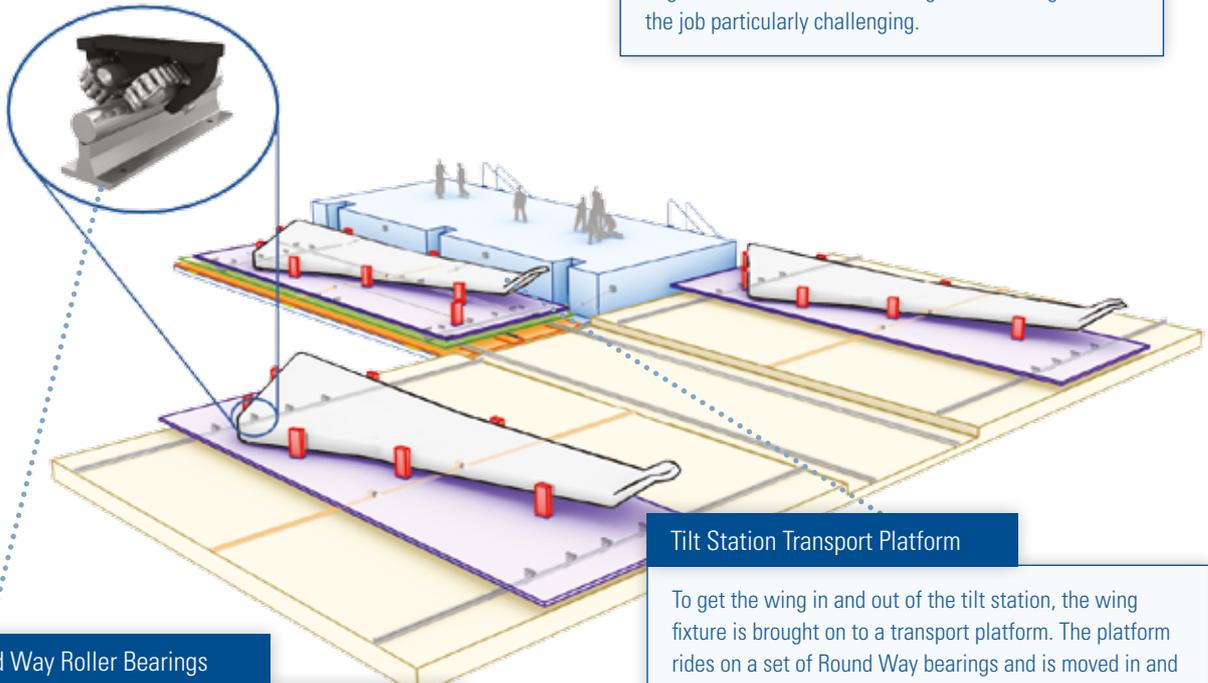


AIRCRAFT WING HANDLING

Few industries place as much demand on a handling system as aircraft construction. The handling of very 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.

Aircraft Wing Handling

In this instance, a wing is transported along a line. At a machining assembly station, the oversized and immensely heavy wing is brought in and tilted 90 degrees. The sheer size and weight of the wing makes the job particularly challenging.

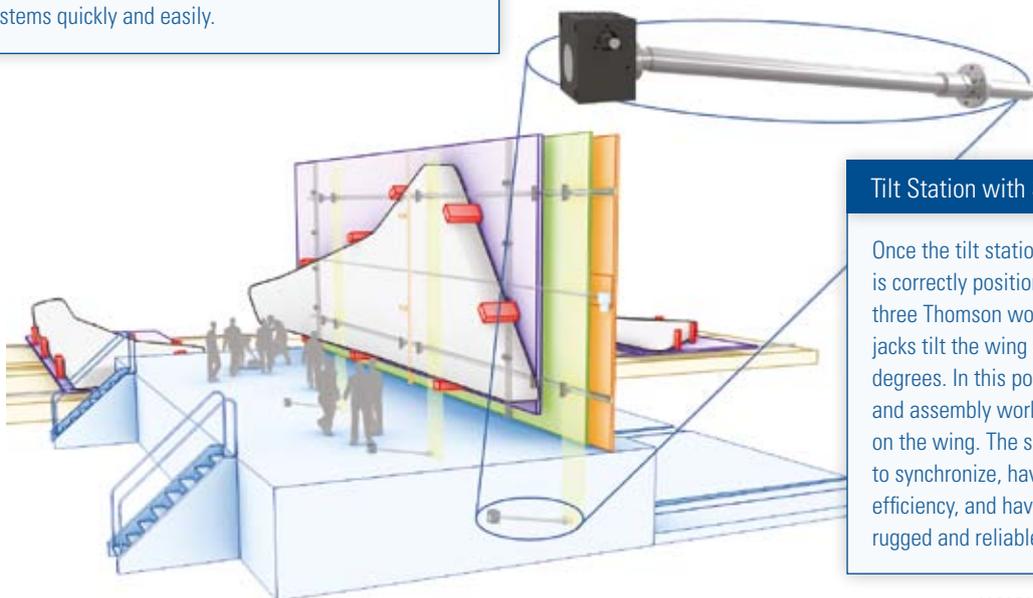


Round Way Roller Bearings

Round Way Roller Bearings have the strength and accuracy to be able to transport an entire wing along the line. Unlike most linear bearings, Round Way 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.

Tilt Station Transport Platform

To get the wing in and out of the tilt station, the wing fixture is brought on to a transport platform. The platform rides on a set of Round Way bearings and is moved in and out of the tilt station by a ball screw assembly that includes a Micron planetary gearhead. This combination allows the wing to be correctly positioned with accuracy high enough to allow for machining.



Tilt Station with Screw Jacks

Once the tilt station transport platform is correctly positioned in the tilt station, three Thomson worm gear 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.

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 patented anti-backlash technology for lead nuts to proprietary processing for roll-forming, and the Lube-for-Life™ technology we invented, our components are built to over-deliver.

Leverage Our Ability To Modify or Customize.

Our application expertise is very deep and our product portfolio is very broad. The result: we can modify our standard products to any degree in a very short time frame. 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.



ROUNDRAIL LINEAR GUIDES & COMPONENTS

Thomson invented the Ball Bushing Bearing over 60 years ago and has since been the recognized leader in this field. Our linear products provide low friction, smooth, accurate straight line motion. Offering the widest range of bearings and accessories, we easily satisfy the widest range of requirements for your application.

PROFILE RAIL

Thomson is the one-stop source for all your profile rail needs. We feature sizes ranging from our ultra-compact 5 mm MicroGuide™ to the robust 55 mm 500 Series roller, as well as compliance ranging from our 400 Series transport profile rail to the extremely rigid, machine tool-grade roller profile rail.

LEAD AND BALL SCREWS

Thomson lead screws offer smooth, precise, cost-effective positioning for your linear motion requirements. We offer the widest range of ball screw products in the industry – including rolled and ground thread screws in both imperial and metric sizes. Both include our patented zero-backlash nut technology for excellent repeatability with high stiffness and extremely low drag torque.

CLUTCHES AND BRAKES

Our wrap-spring and friction clutch and brake products work in a wide range of applications specific to the food processing industry. These products set a solid foundation for the broad range of standard and custom products currently available to our customers.



Pictured above: Thomson RoundWay® Bearings and 60 Case® Shafting used to position the James Webb Space Telescope during testing. Image: NASA/MSFC/D Higginbotham



GEARHEADS

Thomson Micron® planetary gearheads are used on high-precision motion control applications that require a high torque-to-volume ratio, high torsional stiffness and low backlash. Thomson offers these precision planetary gearheads for all duty cycles, and all with RediMount compliant mounting systems. Web-based sizing, selection, pricing and 3D models of Micron gearheads are available online.

PRECISION LINEAR ACTUATORS

The compact design and higher load capacities of our precision linear actuators make them ideal for flexible integration in tight areas. These programmable precision linear actuators are available in a wide range of voltage, thrust, stroke and mounting configurations. They are designed for high-speed, high-load, continuous operation.

LINEAR ACTUATORS

Our linear actuators are designed for rugged, reliable linear motion applications. Numerous choices in stroke, load, motor type, feedback, limits and control options make these linear actuators very versatile. Talk to us about the many advantages of using electric linear actuators in place of hydraulics or pneumatics.

LINEAR MOTION SYSTEMS

Our linear motion systems can be used virtually anywhere. They can support and move a range of loads and provide high precision and tight tolerances. They are available pre-engineered, pre-assembled or ready-to-install. The load can be supported with ball guides, slide guides or wheel guides. Actuation can be through ball screw, lead screw or belt drive.

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