



Linear Motion Solutions for Medical Innovation
Design with Confidence, Engineer with Precision, Launch with Purpose



Empowering Medical Innovation

From diagnostics to patient care, Thomson has dedicated more than 80 years to delivering solutions that meet the highest expectations for reliability, precision and repeatability. Partner with Thomson to bring your innovation to market that is precise, quiet, clean and dependable for critical medical, life science and healthcare applications.

Whether you're developing next-generation lab automation, surgical robotics or patient handling systems, Thomson provides the proven performance, technical collaboration and global support needed to bring your ideas to life with confidence.

Precision Linear Motion Solutions

Our linear motion portfolio enables smooth, accurate and durable movement across a wide range of medical devices and systems, including:



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



From Linear Motion Components to Complete Motion Control

As one of Regal Rexnord's premier medical brands, we're part of an industry leading group of motion solution providers. Together with brands like Portescap, Kollmorgen and Warner Electric, our ability to meet the needs of your medical innovations is unmatched. Whether you need motors, clutches, brakes, couplings, linear components or bundled and integration-ready subsystems, Regal Rexnord medical brands have the ability to create tailored and optimized solutions to accelerate your design with fewer suppliers.



Why Medical Innovators Choose Thomson

Collaborate with our team early in the design process to optimize motion, reduce development time and ensure dependable performance. Together, we'll move healthcare forward with precision, confidence and purpose.

Clean, Quiet and Reliable Performance

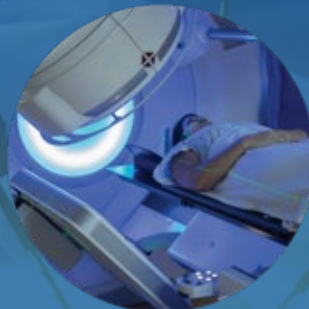
- Low noise and vibration for sensitive environments
- Medical-grade materials and cleanability options
- High repeatability and long life under continuous use

Faster Design Cycles, Fewer Risks

- Expert engineering support from concept to validation and beyond
- Standard, modified and custom configurations
- Zero-setup solutions for accelerated speed-to-market and cost effectiveness

Proven Quality and Compliance

- Designed and manufactured to meet rigorous standards
- Extensive in-house testing for load, life and performance
- AS9100 and ISO 9001 certified facilities backed by Regal Rexnord's global quality network





Collaborative Design and Engineering Partnership

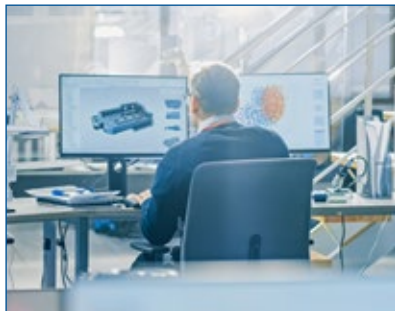
Accelerate your development cycle by bringing Thomson engineers into your design process early. Our team partners with you to optimize motion system performance, lifecycle and total cost of ownership to help you reduce risk while improving speed to market.

We combine deep motion control expertise with analytical tools, design flexibility and rapid prototyping to help you achieve predictable, validated results the first time. Pair the advantages below with our proven precision linear motion solutions, and you have a trusted motion partner ready to help bring your medical innovation to life.

WE DEVELOP tailored custom or standard solutions that meet your requirements, balancing flexibility with design efficiency.

WE PRODUCE pre-configured zero-setup options to reduce complexity for accelerated testing, validation, and launch.

WE TEST your solutions for load, life, and performance to meet the most rigorous medical equipment standards.



Collaborate early to analyze, modify and optimize your design



Trust our testing and validation processes to optimize your product application decisions



Reach market faster with rapid prototyping or zero-setup, pre-configured solutions

Market-Leading Technology. Global Network. Local Collaboration.

With decades of experience in motion control and a global support network, Thomson delivers state-of-the-art technology and in-region production and collaboration for applications across diagnostics, lab automation, surgical robotics, rehabilitation equipment and patient handling.

Diagnostics/Treatment

- Oncology
- Nuclear medicine
- CT/MRI/imaging
- Dental injectors
- Portable respirators
- Surgical robotics
- Positioning of screens & keyboards

Lab Automation

- Fluid pumps/handling
- Pick & place
- Blood handling/sampling
- Dispensing
- Test tube Handling/DNA sampling

Patient Handling

- Patient beds & couches
- Dental chairs
- Ambulance gurneys
- Patient lifts & tables
- Stair lifts
- Wheelchairs
- Mobility vehicles
- Ergonomic devices

Surgical/OR

- Surgical imaging systems
- Da Vinci surgical systems
- Organ transplant preservers

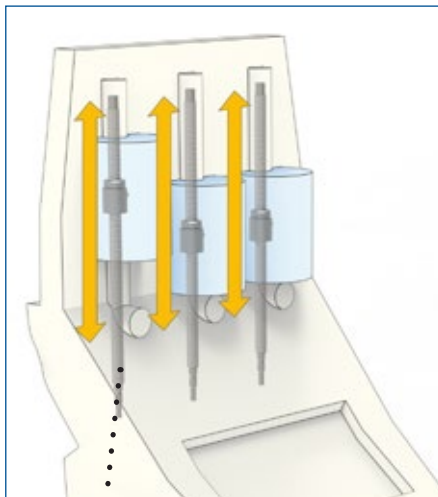
Rehab Equipment

- Extension/flexion
- Carpal tunnel
- Spinal decompression

Diagnostics

In diagnostic imaging and treatment systems, precision and reliability are non-negotiable. Whether it's patient positioning, fluid injection control or scanner motion, Thomson solutions help you achieve the smooth, quiet and repeatable movement required for accurate imaging and patient comfort.

Our linear motion solutions are engineered for long life, low noise and repeatability, providing you the advantages needed for safety, uptime and consistent performance in clinical environments.

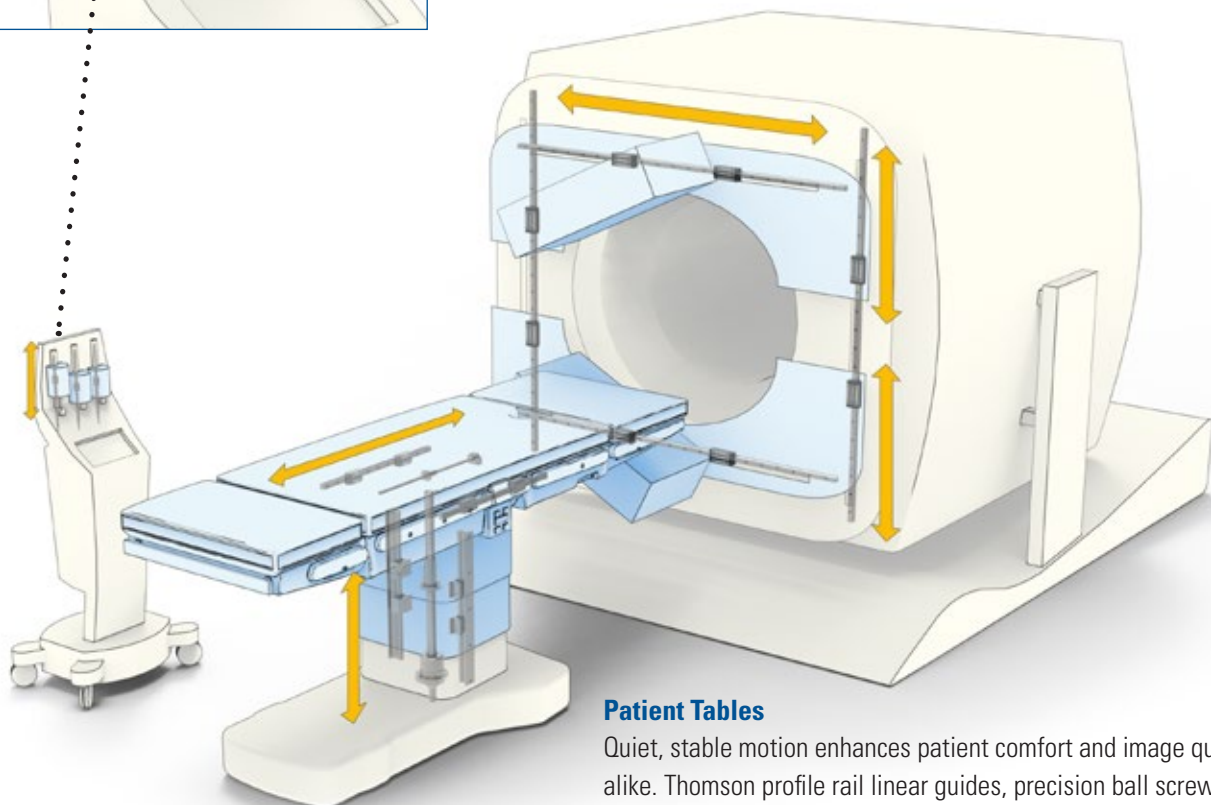


CT Injectors

Precise dosage control depends on motion systems that perform flawlessly under continuous use. Thomson precision ball screws deliver exceptional repeatability, smooth operation and maximum uptime to ensure reliable injection performance.

CAT Scan Heads

For the complex motion paths inside scan head assemblies, Thomson Linear Ball Bushing® Bearings provide the rigidity and smoothness needed for vibration-free operation. Our engineers collaborate on white-sheet custom mechanisms and pre-assembled motion systems that simplify your design and reduce integration time.



Patient Tables

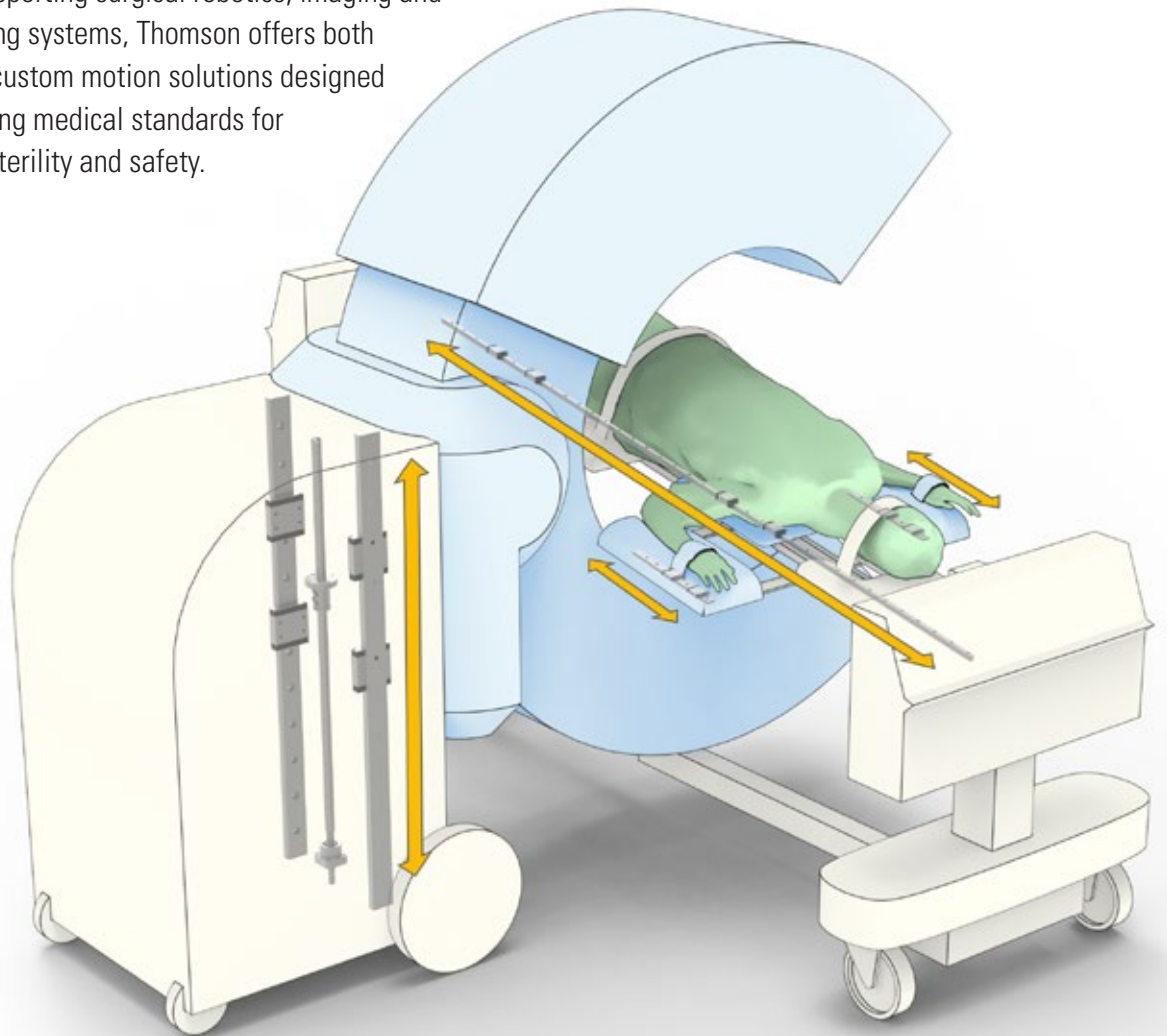
Quiet, stable motion enhances patient comfort and image quality alike. Thomson profile rail linear guides, precision ball screws and Linear Ball Bushing Bearings deliver precise positioning and increased load capacity for smooth, effortless patient handling.



Operating Room

In the operating room, precision isn't optional, it's life-critical. Our collaborative design process helps you in your mission to deliver motion systems that perform flawlessly every time, supporting healthcare professionals during the most demanding procedures.

Thomson linear motion solutions provide the accuracy, stability and reliability that surgical environments require, enabling quiet, controlled movement within compact, high-performance systems. With decades of experience supporting surgical robotics, imaging and patient handling systems, Thomson offers both standard and custom motion solutions designed to meet exacting medical standards for smoothness, sterility and safety.



Surgical Imaging Systems

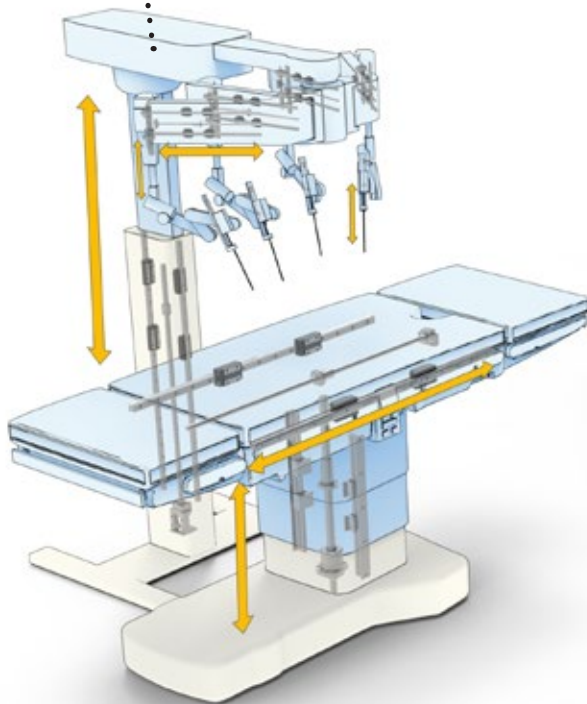
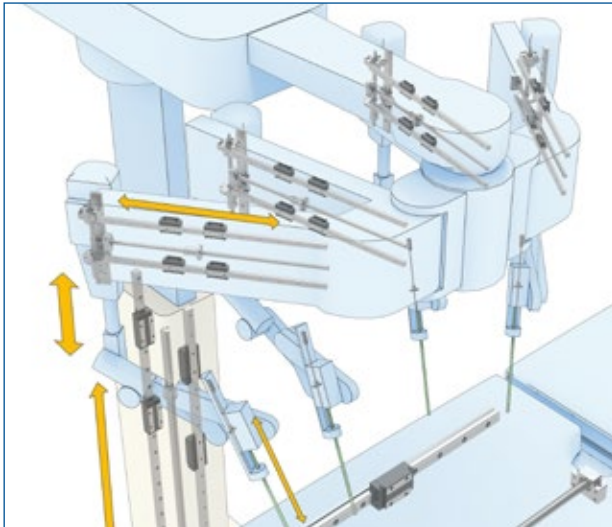
To enable smooth vertical and rotational adjustments in tight operating spaces, Thomson profile rail linear guides and precision ball screws deliver stable, low-vibration movement to enhance imaging accuracy and workflow efficiency.

Surgical Tables

For patient positioning systems that require both strength and precision, Thomson profile rail guides and ball screws provide compact, high moment-load capacity and reliable performance, even during rapid or uneven weight shifts.

Robotic Surgical Systems

Robotic-assisted platforms such as Da Vinci-type systems rely on precision across multiple axes. Thomson's miniature lead screws, linear units and profile rail guides ensure exact, repeatable positioning for smooth, responsive motion.

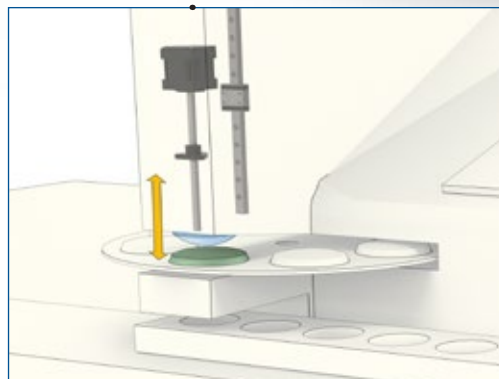
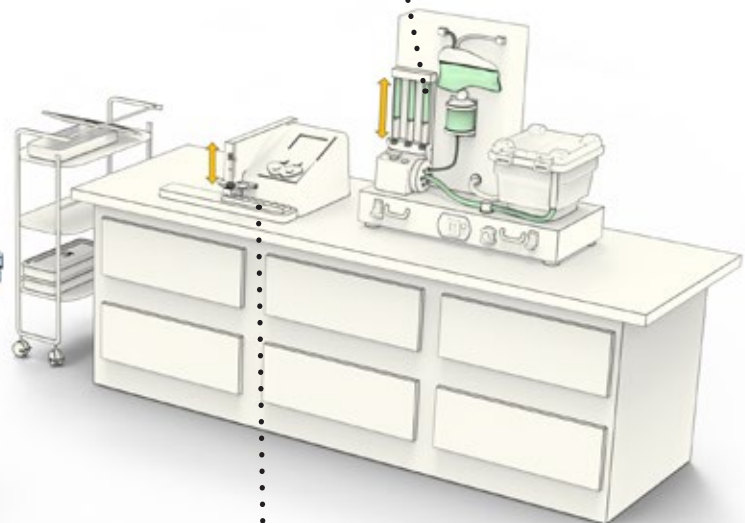
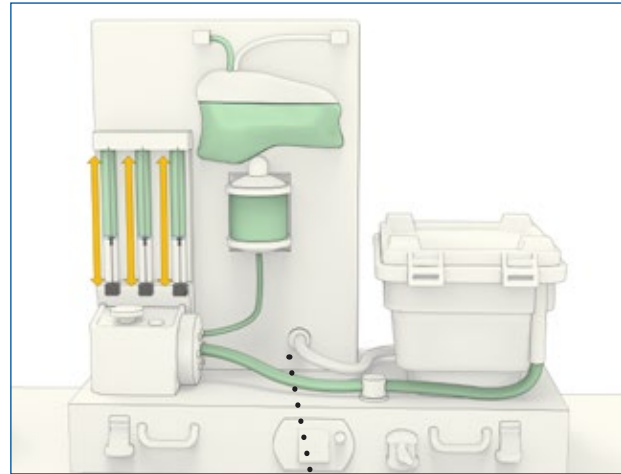


Reagent Dispenser

Even the smallest dose matters. Thomson stepper motor linear actuators and profile rail guides ensure accurate, repeatable dispensing for critical reagent and fluid management tasks in the surgical lab environment.

Organ Transplant Mobility

In transplant applications, Thomson stepper motor linear actuators help maintain precise fluid handling and mechanical motion to keep organs viable during preparation and transport to support the highest standards of surgical readiness.





Laboratory and Life Science

As medical testing and analysis move toward smaller, faster and more automated systems, our innovations and engineering processes help you meet the growing demands for compact motion solutions that maintain accuracy and reliability.

Thomson miniature linear motion components enable your design process to deliver precise, repeatable movement in limited spaces without compromising load capacity or smoothness. Whether supporting next-generation analyzers, fluid-handling systems or automated test platforms, Thomson collaborates with you to design equipment that's cleaner, quieter and more efficient to drive productivity in modern laboratory environments.

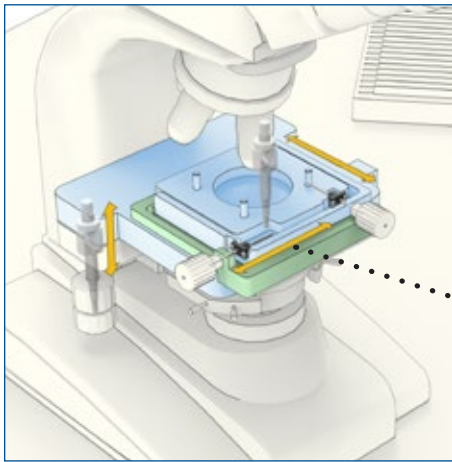
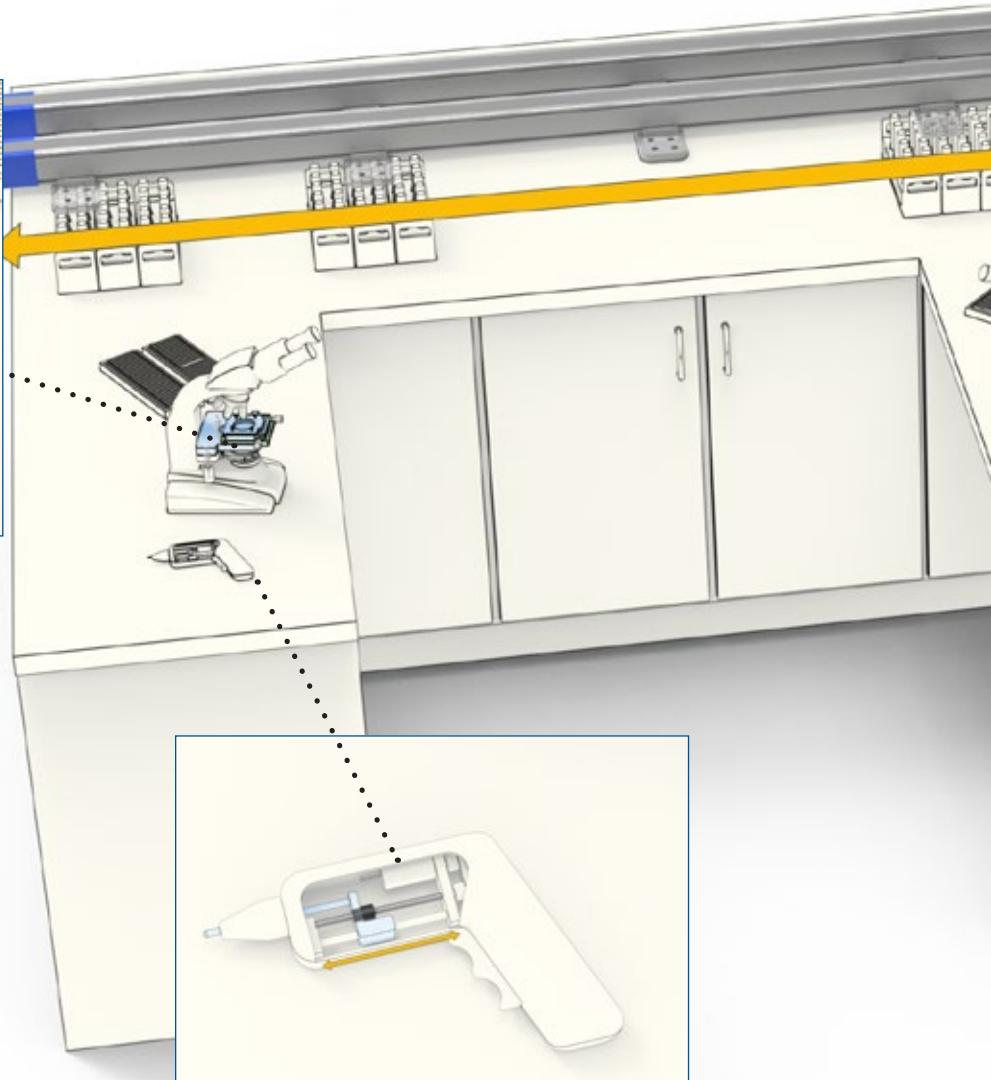


Plate Positioning and Leveling Systems

For sample trays or plate-handling stages, Thomson miniature lead screws provide smooth, accurate vertical adjustment under light radial or moment loads, helping maintain consistent sample alignment and throughput.

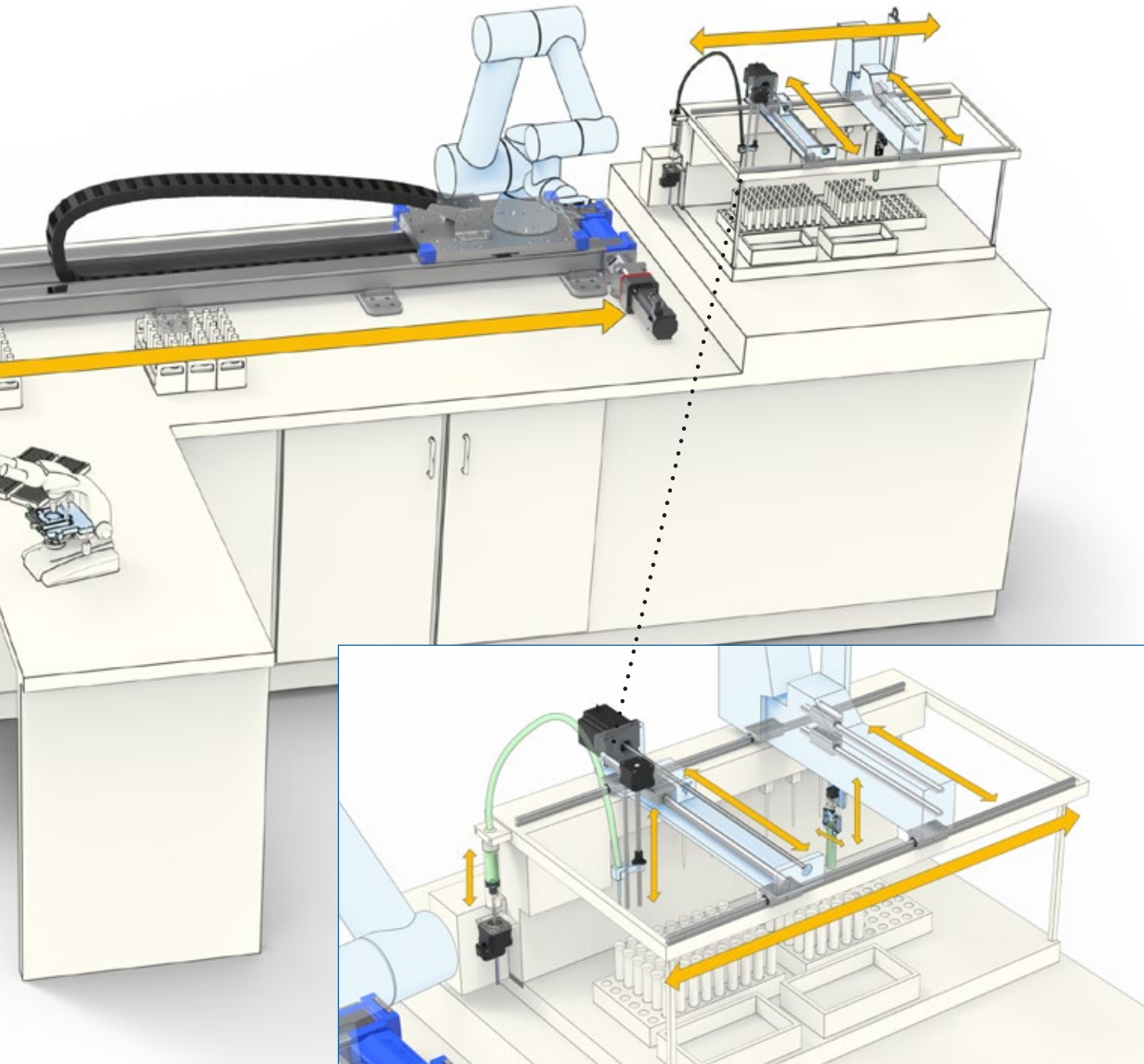


Handheld Examination Devices

Miniaturization is laboratory processes. Thomson miniature lead screws enable compact, lightweight designs for handheld devices such as otoscopes and portable scanners to deliver precise linear motion in a small footprint for reliable, ergonomic use.

Pick & Place

In automated testing or lab material handling, Thomson Movotrak™ collaborative transfer units extend cobot range by up to 10 meters, adding a 7th axis for improved flexibility and workflow efficiency. Integrated collision detection and plug-and-play configuration accelerate programming and setup.



Fluid Handling and Dispensing Systems

For pipetting, reagent dosing and microfluidic automation, Thomson stepper motor linear actuators, profile rail guides, Linear Ball Bushing® Bearings and round rail shafting ensure fast, yet gentle, motion to maintain sample integrity while improving accuracy and process speed.



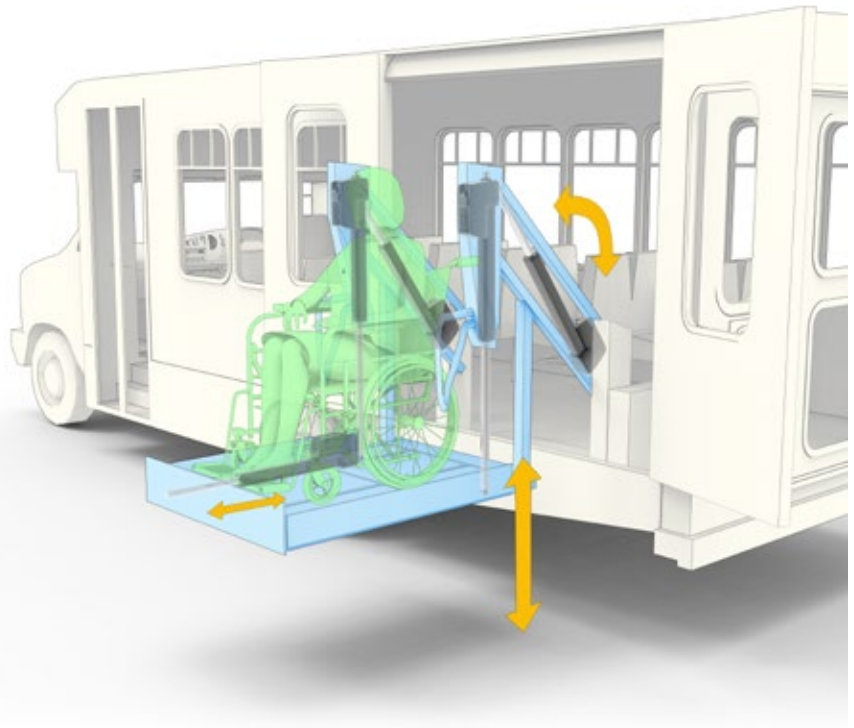
Patient Mobility

When it comes to patient mobility and handling, our engineers work with you to develop the best equipment that performs seamlessly, helping people move with safety, comfort and confidence.

Thomson motion components and smart electric linear actuators provide the smooth, precise control that you rely on to create assistive systems that operate quietly, efficiently and dependably. Engineered for compact integration and long, maintenance-free life, Thomson actuators combine controllability, efficiency and power to support your design of advanced mobility and accessibility solutions for every environment.

Vehicle Ramps and Lifts

Accessible vehicle design demands compact, energy-efficient motion systems that deliver dependable performance under real-world conditions. Thomson electric linear actuators provide high load capacity in a small footprint, with low energy consumption and zero-maintenance operation. Their integrated control options, including CAN bus compatibility, make it easy to achieve precise, safe motion for wheelchair access systems.



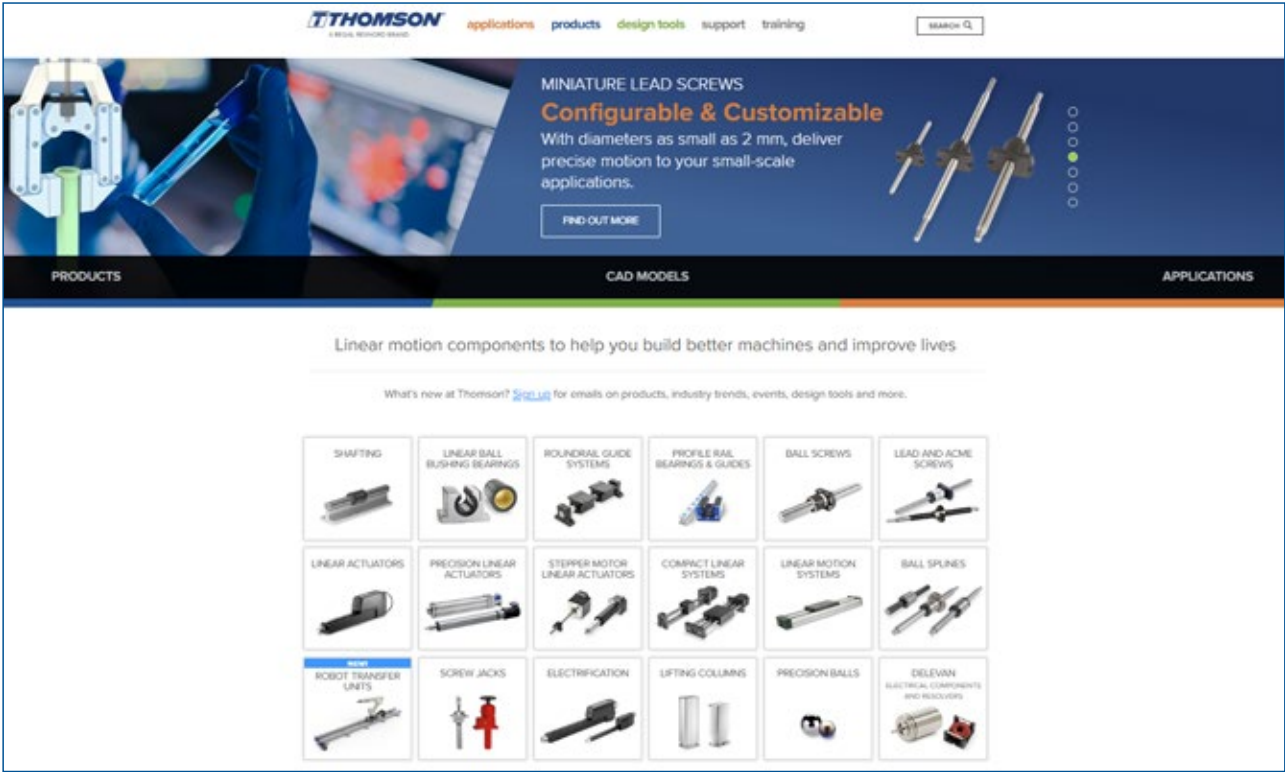
Staircase Lifts

For personal and residential mobility, Thomson electric linear actuators ensure smooth, controlled movement in seat leveling, tilting and rail extension mechanisms. Their quiet operation, compact design and consistent performance make them ideal for safe, user-friendly accessibility solutions.

Online Resources

Thomson offers a wide variety of online application, selection and training tools, as well as an experienced team of application engineers to help you find a solution to best fit your needs. For more information, contact Thomson customer support at www.thomsonlinear.com/contact.

Find additional information and learn more about our products on our content-rich website. www.thomsonlinear.com



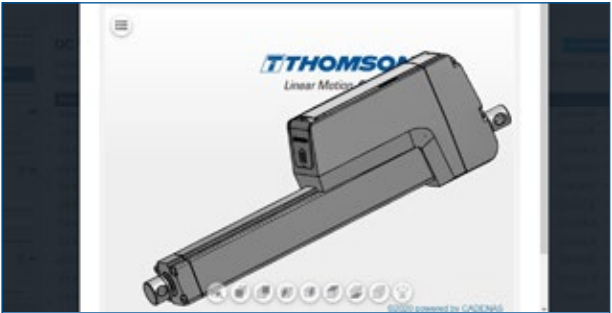
Selector Tools

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



Interactive 3D CAD Models

Download free interactive 3D models in the most common CAD formats. www.thomsonlinear.com/cad





Your Medical Innovation Partner: Design with Confidence, Engineer with Precision and Launch with Purpose

In medical equipment design, every detail matters, above all the performance of your device and the safety of the people who depend on it. So, start with a medical motion solution partner you can trust.

Thomson linear motion technologies deliver the precision, durability and repeatability required for life-critical applications, while helping you design and launch innovations that position you as a leader in the marketplace. Refined over decades of collaboration with medical OEMs, our motion solutions incorporate proprietary engineering technology – from patented anti-backlash lead nuts to advanced roll-forming processes – to ensure consistent performance, long life and dependable accuracy in critical environments.

Accelerate Innovation with Customization and Expertise

No two medical applications are exactly alike. That's why Thomson offers unmatched flexibility – whether you need standard components, modified designs or fully customized motion assemblies. Our engineers collaborate closely with your team to optimize form, fit and function, accelerating development cycles and reducing risk. With deep application experience, broad product coverage and rapid modification capabilities, Thomson helps you transform your vision into reality, quickly and confidently.



LINEAR BALL BUSHING® BEARINGS & ROUND RAIL GUIDES

Round rail linear bearings and guides are pre-assembled with ready-to-install stages that provide low friction and smooth, accurate motion for a wide range of moment or normal load configurations. Slide tables are available as customizable round rail linear guides or as multi-axis, turnkey systems complete with motors, drives, controls and electromechanical accessories.



PROFILE RAIL LINEAR GUIDES

With sizes as small as the ultra-compact 5 mm MicroGuide™, Thomson profile rail linear guides and carriages are ideal for retrofitting into existing systems or designing into new ones. These square-rail components, which can be customized to your exact specifications, deliver precise linear motion to medical applications big and small.



BALL, LEAD & ACME SCREWS

Thomson offers 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. Our lead screws, available with diameters as small as 2 mm, offer smooth, precise and cost-effective positioning for your linear motion requirements.



STEPPER MOTOR LINEAR ACTUATORS

Available in two configurations – rotating screw (MLS) and rotating nut (MLN) – open architecture SMLAs combine cutting-edge motor and lead screw technologies, and suit applications where external guidance is present or a high level of design flexibility is required.



COMPACT LINEAR SYSTEMS

Taking the guesswork out of specifying multiple components for a linear motion system design, these systems allow you to choose from one of our three standard architectures or work with us on a completely “from scratch” solution. Either way, a virtual design consultation with our experts will focus on getting your system right the first time, keeping your design projects on track.



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 actuators are available in a wide range of voltage, thrust, stroke and mounting configurations. They are designed for high-speed, high-load, continuous operation.



ELECTRIC 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 actuators very versatile. Talk to us about the many advantages of using electric linear actuators in place of hydraulics or pneumatics.



LINEAR UNITS

Our linear units 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.



Notes

Notes

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