



DIAGNOSTIC IMAGING:
MOTION FOR EVERY MODALITY

KOLLMORGEN

Diagnostic Imaging: Motion for Every Modality.

An aging population, a growing burden of disease, continuous development of new clinical applications, and global advancements in the standards of disease prevention, early detection, diagnosis and treatment.

For all these reasons and more, manufacturers of diagnostic imaging equipment are under extraordinary pressure to produce more innovative machines, capable of more precise imaging, delivered to healthcare institutions of every size, kind and location.

From research hospitals to diagnostic imaging centers, from ambulatory imaging clinics to rural health and mobile medical units—healthcare providers need advanced imaging tools designed to improve workflow efficiency and enhance the quality of care.



Kollmorgen provides accurate, precise, proven motion for both fixed and mobile equipment, spanning X-ray, CT, MRI, mammography and nuclear imaging modalities. With Kollmorgen, your imaging machines can be:

**More
ambitious**



Kollmorgen solutions provide the most precise, high-speed motion control and coordination, so your machine can deliver artifact-free images of the highest resolution.

**More
capable**



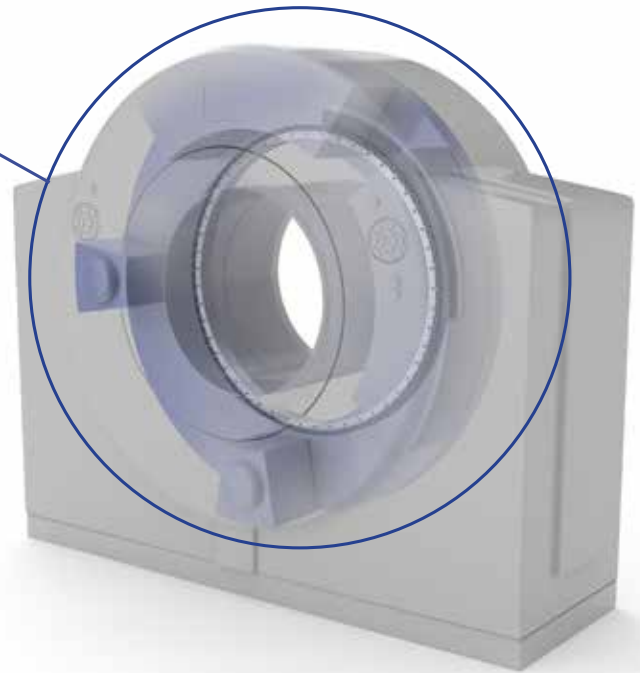
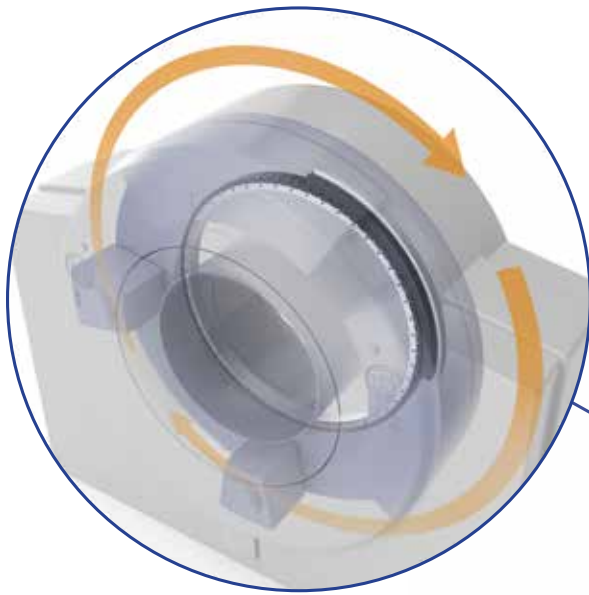
Kollmorgen's advanced design tools, engineer-to-engineer collaboration, and local training and support help ensure that you deliver your imaging machine exactly as envisioned.

**More
confident**



Kollmorgen works with you to co-engineer the optimum solution, delivering in-region and for-region to meet the needs of customers virtually anywhere in the world.

Next-generation motion is the key to designing and building next-generation imaging devices. Kollmorgen provides the advanced motion technologies, medical device expertise, engineering support and global footprint you need to make a difference for your healthcare customers and the well being of their patients. Confident, capable, ambitious: engineer the exceptional with Kollmorgen.



CT and MR Imagers

Image resolution depends on the ability to take a high number of thin slices with minimal unwanted motion, either of the machine or the patient. More slices per rotation also enables complete capture of the region of interest faster and at a significantly lower radiation dose—important concerns for the comfort and safety of every patient. The most advanced CT machines are capable of 640 or more slices, requiring precise control and positioning of both the imager gantry and patient table at extremely high speeds.

Kollmorgen's industry-leading servo loops ensure the most precise possible positioning, while our unique software filters ensure acceleration to the correct velocity with no overshoot or settling time. So your machine can capture more slices, faster, at the highest resolution, with no compromise to image quality.

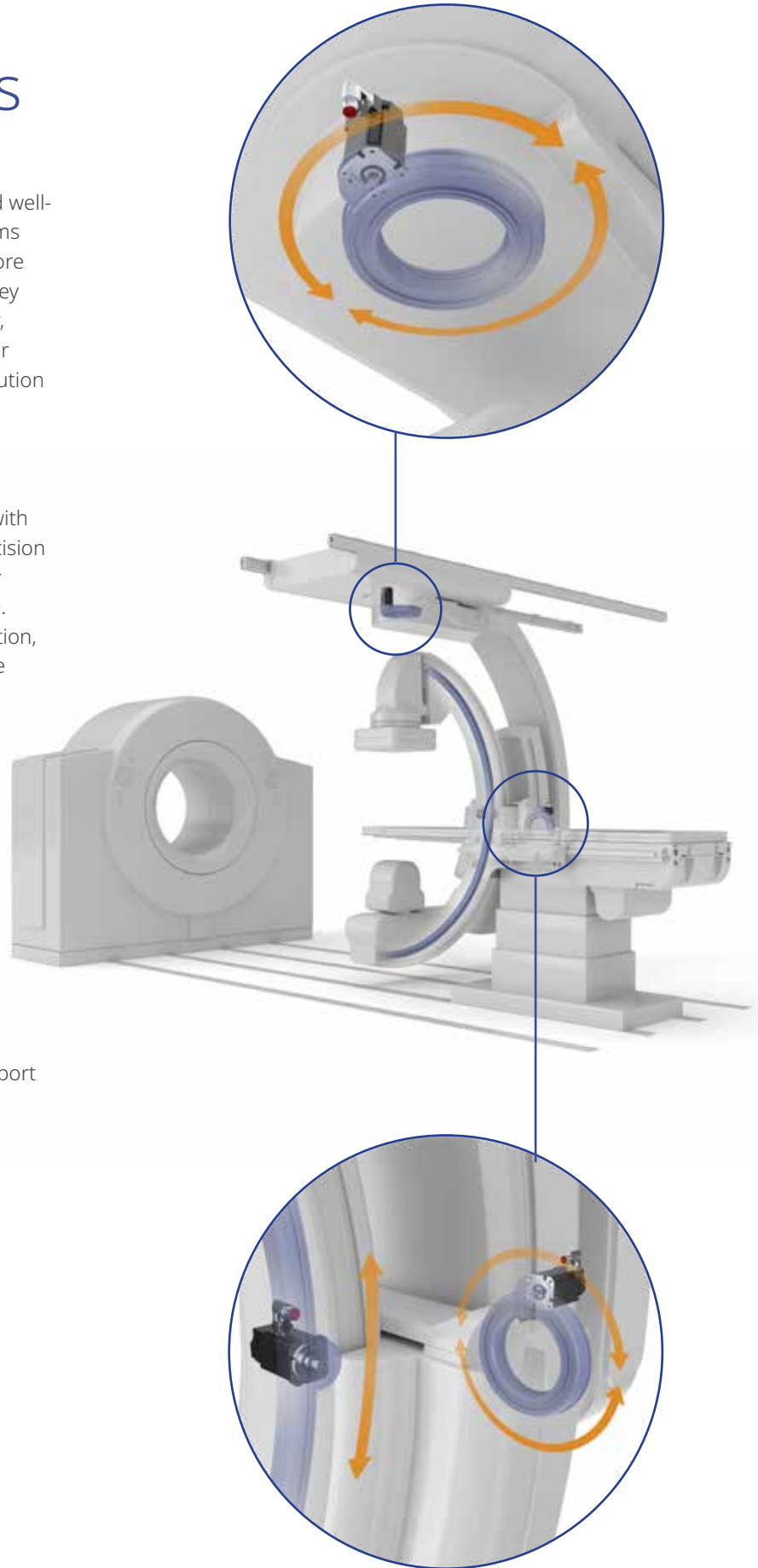
- Servo motors with the power, torque and speed to move massive CT and MR gantries
- Direct drive motors that eliminate transmission complexity, compliance and backlash
- Servo drives perfectly matched to the motor, with servo loops closed in as little as 62 microseconds
- Single-cable designs to carry both power and data, simplifying the design and build of your machine
- Customized designs and co-engineering support to ensure your success

Hybrid Scanners

Once confined to only the most specialized and well-funded nuclear medicine centers, hybrid systems such as SPECT/CT and PET/CT have become more sophisticated over the past 15 years even as they have come into widespread use. For cardiology, oncology, endocrinology, orthopedics and other specializations, the ability to acquire high-resolution 3D images faster and at a lower radiation dose contributes to procedural efficiency, diagnostic certainty and patient well being.

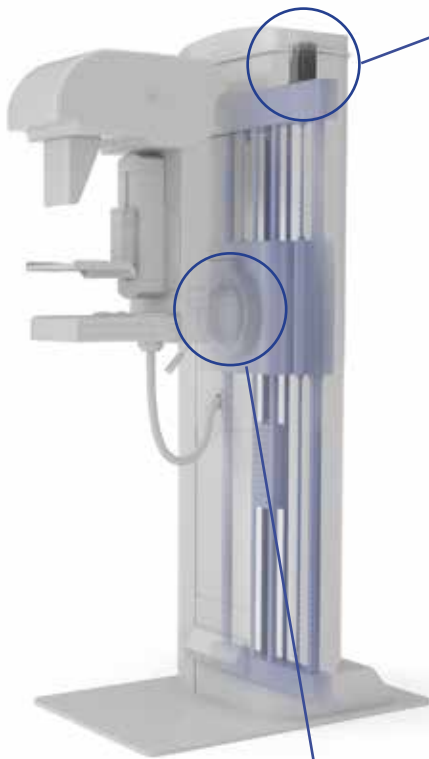
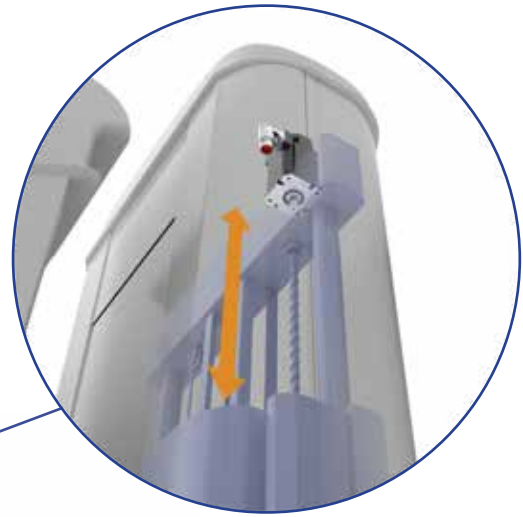
Kollmorgen helps maximize all these benefits with systems that enable the highest degree of precision and coordination in the motion of the SPECT or PET gantry, the CT gantry, and the patient table. We can help your machine achieve high-resolution, artifact-free images in a shorter scan time while maximizing comfort and safety.

- The industry's fastest, most precise servo drives, with positioning loops as fast as 62 microseconds
- Servo motors designed specifically for the speed, torque and reliability requirements of medical imaging
- The potential to incorporate direct drive motor solutions to achieve even higher standards of mechanical performance
- Customized designs and co-engineering support to help achieve any functionality



Digital Mammography

Tomosynthesis provides a multilayered, 3D image of the breast that is far more effective than traditional mammograms at detecting cancer early and minimizing false positives. Because this technology is so beneficial, it's experiencing rapid growth worldwide. Manufacturers who can provide the highest-resolution image capture at the lowest radiation dose stand to capture a significant share of the potential market.



Quality of motion matters, whether moving the X-ray tube continuously or in a stop-and-shoot motion. The latter method minimizes blurriness, but requires the gantry to quickly move and then come to a complete stop, with no vibration or settling time. In both methods, the goal is to optimize the range of angles for the breast and the number of exposures, while minimizing scan time and the risk of patient motion. Kollmorgen can help you achieve the highest resolutions at the lowest dose while minimizing procedure time and patient discomfort.

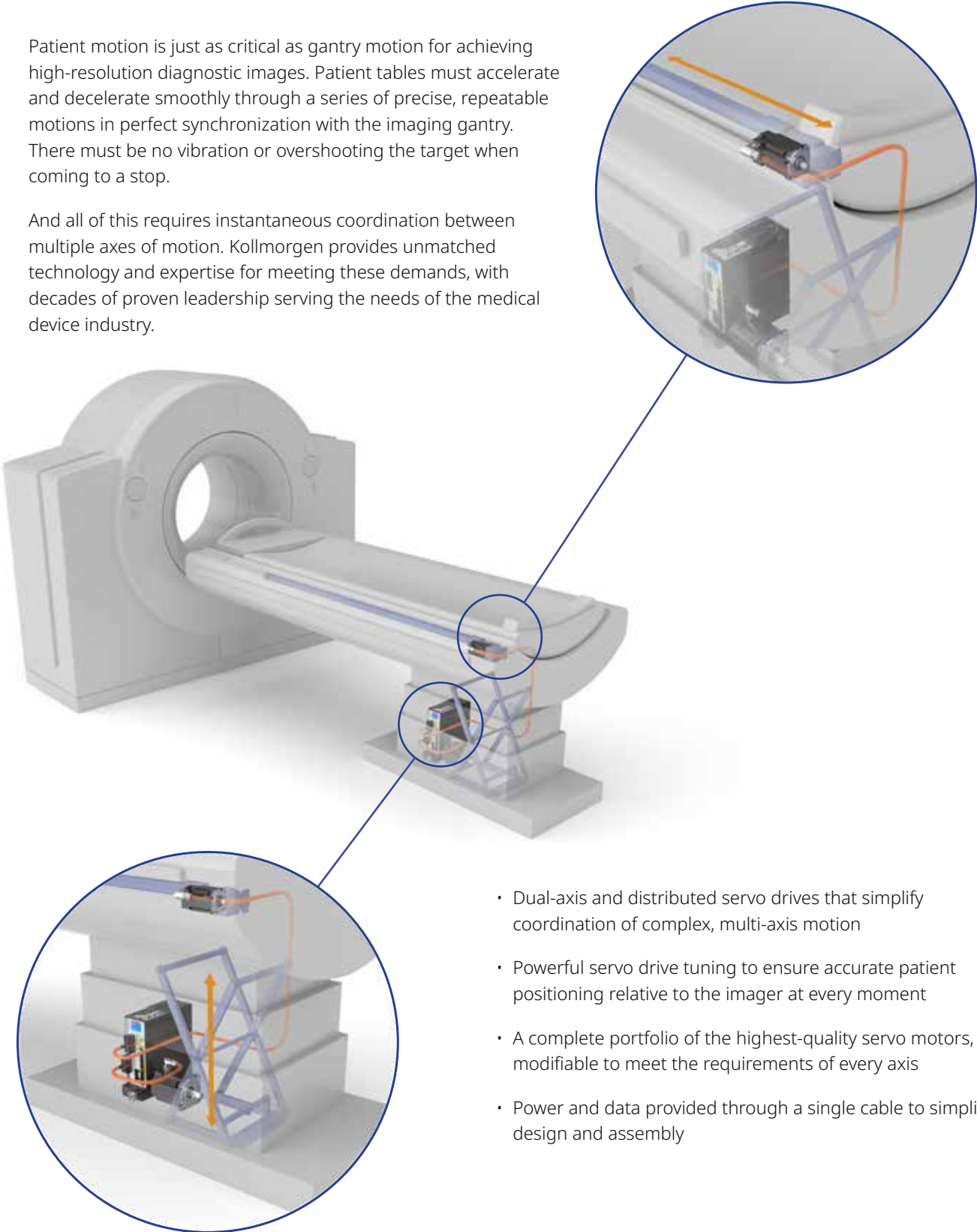
- Servo drives that provide superior positioning accuracy and responsiveness
- Unique software filters that virtually eliminate unwanted motion
- The industry's highest-quality servo motors in a wide range of standard models and modifications to meet any design requirement
- The ability to deliver power and data through a single cable for a simpler, more compact machine design



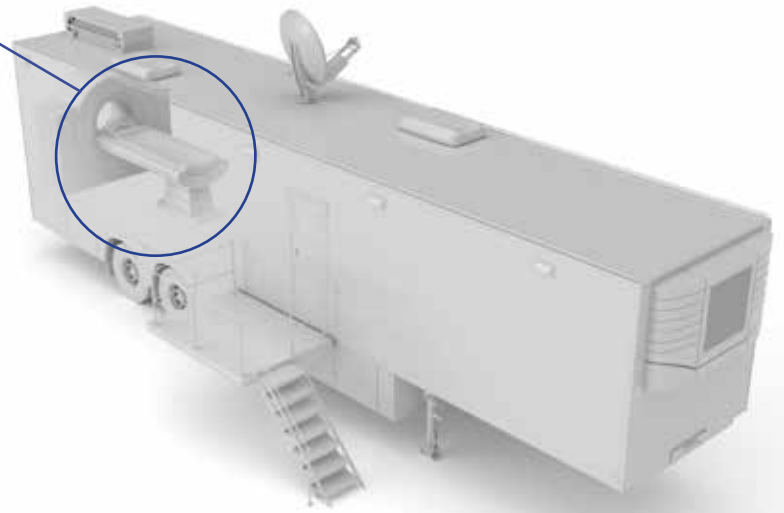
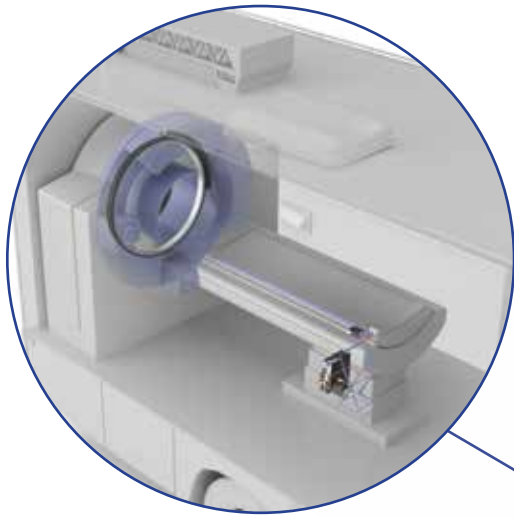
Patient Tables

Patient motion is just as critical as gantry motion for achieving high-resolution diagnostic images. Patient tables must accelerate and decelerate smoothly through a series of precise, repeatable motions in perfect synchronization with the imaging gantry. There must be no vibration or overshooting the target when coming to a stop.

And all of this requires instantaneous coordination between multiple axes of motion. Kollmorgen provides unmatched technology and expertise for meeting these demands, with decades of proven leadership serving the needs of the medical device industry.



- Dual-axis and distributed servo drives that simplify coordination of complex, multi-axis motion
- Powerful servo drive tuning to ensure accurate patient positioning relative to the imager at every moment
- A complete portfolio of the highest-quality servo motors, modifiable to meet the requirements of every axis
- Power and data provided through a single cable to simplify design and assembly



Ambulatory Imaging Centers

The geriatric population that is homebound or living in care facilities is rapidly growing. Healthcare organizations are looking for effective ways to extend diagnostic services to underserved populations and rural communities. Outcomes in trauma, stroke and cardiac cases can be significantly improved through on-location imaging.

These trends are driving robust growth in the need for mobile imaging services, including devices that can be mounted in an ambulance or van, or easily moved from room to room. Kollmorgen provides compact, rugged, energy-efficient motion systems with the speed and precision needed to minimize scan time and maximize slices for mobile scanning at the point of care—wherever that may be.

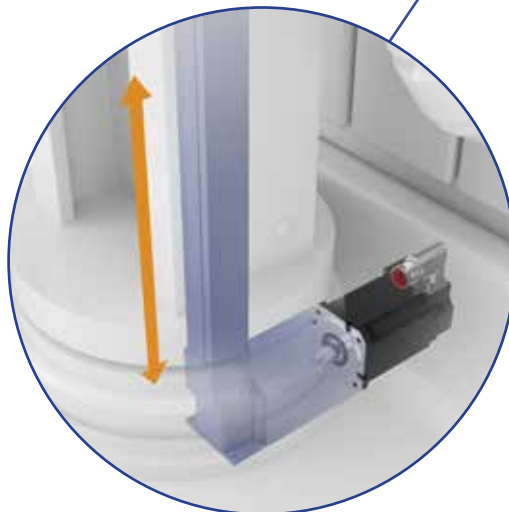
- Ruggedized servo drives that isolate circuitry from vibration and shock
- Compact, powerful servo motors, including low-voltage DC options for battery-operated devices
- Direct drive motors that eliminate the space requirements and coupling compliance of transmission components
- Rugged cables and connectors, including single-cable power/data options to reduce machine size and complexity

Mobile X-Ray

Imaging systems on wheels bring the X-ray to the patient, not the other way around. They must be compact and maneuverable to negotiate cramped hallways, patient rooms and operating theaters. But they must never compromise on image quality or patient safety.

Kollmorgen offers motion systems that are perfectly matched to optimize performance and efficiency in the most compact footprint. For battery-operated devices, our low-voltage DC servo motors provide the same dynamic performance as our standard motors. And throughout our product lines, we deliver rugged solutions and custom capabilities to suit the most demanding mobile application requirements, with no compromise to torque, power, speed or precision.

- Direct drive motors, including frameless designs, that couple directly to the load for the ultimate in compact precision
- Low-voltage DC options for fully battery-operated systems
- AKD2G drives, including dual-axis models, for unrivaled power density and control plus on-drive SafeMotion™ functions
- Single-cable options for a more compact and rugged machine that's easier to build and maintain



KOLLMORGEN IS YOUR GLOBAL PARTNER

With Kollmorgen, medical imaging OEMs can count on one proven partner with a global manufacturing, supply and support footprint. We can deliver in-region, for-region, helping you achieve the certifications you need and reliably supplying standard, modified and customized products for any application—with full co-engineering support from experts with decades of experience in motion for medical imaging.

We're the one partner you can count on to help you create and sustain excellence across your multi-region, multi-site enterprise. So let's get started. Engineer the exceptional with Kollmorgen.

Visit [Kollmorgen.com/imaging](https://www.kollmorgen.com/imaging) to learn more.

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