



Surgical Imaging Machine – Multiple Axis Coordinated Motion

Description:

Read how Kyntronics helped an OEM of Surgical Medical Imaging equipment improve the functionality of their next generation Imaging machine.



Challenge:

An OEM manufacturer of Surgical Imaging equipment was developing a next generation technology platform for their Surgical Imaging machine. Key design requirements included use of lighter weight yet stiffer structures and much smaller packaging envelopes to house the actuators. In addition, they wanted multiple elements of the machine to move simultaneously together in a coordinated manner to arrive at pre-set points in a smooth robotic fashion and needed to do this in a very cost-effective way.

Specific challenges included:

- Mechanical Packaging – The OEM needed robust rotary and linear actuators that could be installed in very small space envelopes on their machine.
- Coordinated motion - Surgical Centers are constantly looking for productivity improvements particularly in the OR where significant investments are made. As part of their new product offering, this OEM customer wanted to reduce machine movement time by having all elements move simultaneously to pre-set positions or desired locations by medical personnel. In addition, the OEM wanted to offer increased positional accuracy with minimal “jogging” of individual machine elements despite having nine axis of actuators required for each machine.
- Cost Effective - The medical industry is constantly pushing equipment manufacturers for lower acquisition and operating costs. This OEM wanted to offer a new machine with advanced capabilities and lower costs.

Solution:

Kyntronics worked closely with this OEM during the design phase to mechanically package and adapt the Kyntronics R155 and R2400 Electro-Mechanical SMART Actuators to fit in the confined spaces needed. Certain mechanical changes were required to allow the actuators to fit in tight locations while assuring the necessary torque or force was provided.

Two-wire Power Line Communications was used between the actuators which reduced wiring costs and reduced the space needed for wire harnesses. Software that synchronized multiple actuators together was included that allowed pre-set machine moves to be implemented saving time for technicians.



Kyntronics 2400 Electro-Mechanical SMART Actuator

Application:

Medical Imaging Equipment

Products:

R155, R2400 Rotary Actuators, R05 Linear Actuator

Results:

The Kyntronics Electro-Mechanical SMART Actuator platform enabled this OEM to achieve their goals for their next generation Surgical Imaging Machine.

Kyntronics works closely with our customers to adapt products in the most cost-effective manner while meeting or exceeding application requirements.

[Click to view a short video on this system:](#)

Find out more about Kyntronics Electro-Mechanical SMART Actuators and how they can improve your company's machines and processes.

<https://www.kyntronics.com/products/electro-mechanical-smart-actuators>

Interested in how Kyntronics can help solve your actuation challenges, [contact our Engineering team.](#)

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