



ADVANCED ACTUATORS

Medical Imaging Machine – Patient Couch

Description:

Read how Kyntronics helped an OEM of Medical Imaging equipment with an actuation system for their next generation Patient Couch



Solution:

Due to its high force density, a Kyntronics [SMART Hydraulic Actuator \(SHA\) model S08C15-02](#) rated for up to 5,300 lbf (23.6kN) with 8-inch (204 mm) stroke was selected to meet the force requirements of the application.



Challenge:

An OEM of Medical Imaging Equipment required a high force linear actuation solution for a new patient couch in development.

Key objectives of the project included:

- **High Force – Compact Mechanical Packaging;** the application required a linear actuator that could exert 4,000 lbs. of force and the actuator needed to fit into a very compact and irregular space. The new couch actuator needed to utilize existing mounting bracketry and able to be field retrofit on older couches.
- **Low Noise while operating;** with the increased demand for quiet-operation in Imaging Labs, actuators are often the noisiest part of the system. The customer desired as part of their new product matrix, to have a lift system that met a certain low dB noise level.

The OEM considered using Electro-Mechanical actuators for the new couch but learned that they were too large to fit into their scissor lift mechanism at the required force needed. In addition, Electro-Mechanical actuation solutions were too noisy and would not achieve the desired dB target.

Using standard SHA actuator modules, a modified actuator was configured for this application. Kyntronics was able to make mechanical changes to the actuator package so that it did not interfere with the structural elements of the Couch mechanism.

The SHA included customized mounting attachments to accommodate the existing bracketry in the couch and facilitate integration into the available space envelope. Due to its high efficiency, the SHA operates at lower dB noise levels than comparably sized Electro-Mechanical actuators and provided a significant reduction in noise while operating.

Results:

The Kyntronics SMART Hydraulic Actuator (SHA) combines the power of hydraulics with the precision of servo control resulting in an actuation system that exceeded the Couch OEM's force requirements while fitting into the constrained space available in the Couch mechanism. The SHAs quiet operation and compact packaging allowed the new Couch design to be used in field retrofits increasing the market opportunity for this OEM customer.

Find out more about how the [advantages of Kyntronics SMART Hydraulic Actuators](#) can improve your company's machine designs and processes.

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

Application:

Medical Imaging Machine-Patient Couch

Products:

SMART Hydraulic Actuator; S-Model, S08C15-02



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