

LINEAR RAILS BEAR THE WEIGHT OF NEW X-RAY TABLE APPLICATIONS

Arcoma, one of the world's leading providers of automatic x-ray equipment, faced the challenge of redesigning one of its flagship products, the Arcoma mobile imaging table, because new applications had been developed for the top selling mobile imaging table.

Originating in Sweden, Arcoma's original design philosophy was to create a flexible system, easy to operate - keeping the ergonomics of the hospital staff in mind. With a minimum table height of only 55.5 cm the patients can easily sit down on the tabletop, which increases their feeling of security while hospital staff avoid heavy lifting. Most importantly, the table is designed to allow radiographs on a trauma patient without having to reposition the patient.

The redesign was taken on by the company's California-based tech support and service center with one of the major new requirements being that the table can support a weight of up to 500lbs.



According to Brian Gogan, Executive Vice President of Arcoma North America, the new applications for the table within pain management and orthopedic studies meant that the redesign would have to be able to support obese patients to comply with FDA requirements. The FDA views the mobile tables as medical devices and therefore they have to meet regulations.

Says Gogan, "The increased load capacity would have been too great a strain on our existing tables so the key was to find a linear motion system that could not only hold weight, but also had a long enough stroke for the applications. Because the tables move around the imaging equipment, rather than moving the patients themselves, there is a huge extended load on the bearings and the stress on the parts can be tremendous."



"In addition to the extra load capacity, we also needed a highly reliable linear bearing system. It's simply not an option for our products to fail in the field because of

patient safety. Our philosophy is to send a product out into the field in the hope that we never see it again."





Gogan adds, “Arcoma investigated several linear motion options but only ROLLON’s Telescopic Rail provided the combination of load capacity and extended stroke. The Telescopic Rails act like industrial drawer slides so they are able to telescope beyond the mounting structure.”

“In testing, even with extremely high loading, the slides showed zero deflection and with reach strokes of over 200cm, they provided the flexibility required for mobile imaging. They also have hardened 60HR raceways to ensure a smooth movement which is critical for patient safety and comfort.”

ROLLON’s Rick Wood, reports, “Before ROLLON attacked the problem, drawer slides were simple, bent steel products suited for desk drawers, filing cabinets, keyboard trays and other light duty applications. In fields where high load capacities, reliability, low deflection, and smoothness of movement are important for a drawer slide-type extension, there was no solution.”

“In most cases, engineers were forced to use homemade solutions or to double up on thicker gauge bent steel drawer slides. Drawer slides existed and linear bearings, of course, but drawer slides that could be used 24/7 with high loads and good precision had not been developed. By creating the Telescopic Rail family, ROLLON’s engineers succeeded in creating a telescopic linear bearing – similar in movement to a drawer slide but in function closer to a linear bearing.”

Gogan adds, “Arcoma’s new mobile imaging table was launched to the marketplace in January 2007 and so far we have a total of 53 units in use across the USA, without any failures at all.”

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