

Drive & Control profile

Rexroth structural framing forms the backbone of medical device manufacturing excellence



Acumed uses Rexroth framing for a wide range of applications specific to medical device manufacturing.

Extruded aluminum framing lends strength and structure for the development of specialized orthopedic and medical products

Orthopedic and medical device technology is constantly changing, and Acumed® (www.acumed.net)—a global leader and pioneer of innovative orthopedic and medical solutions—is often in the forefront of those changes. When Acumed's

manufacturing processes change and evolve, Bosch Rexroth extruded aluminum framing helps make it possible, with versatile, bolt-together products that are easy to expand, modify or reconfigure at any time. It's a perfect fit: An organization

Challenge

Create efficient workspaces that support lean manufacturing principles and can easily be reconfigured, expanded, disassembled and reused to meet constantly shifting medical marketplace needs.

Rexroth Solution

- High-strength anodized structural aluminum framing
- EcoSafe perimeter guarding elements
- T-slot channel and cover strips

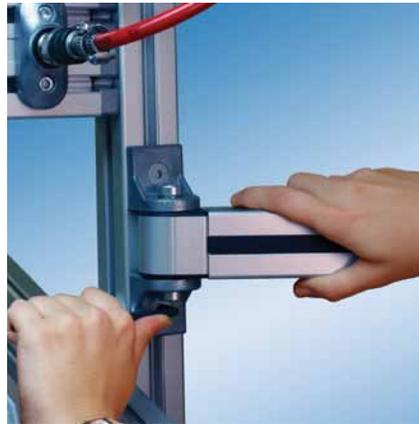
Results

- Enhanced ability to create specialized, efficient workstations
- Increased flexibility to expand or alter assembly/manufacturing processes
- Faster, more efficient response to changing marketplace needs
- Support for lean manufacturing initiatives (reusable materials, reduced scrap and clutter)
- Support for innovative new process flow ideas, due to ease of reconfiguration and assembly
- Enhanced workplace safety

specializing in skeletal support and repair technology that relies on a strong, flexible framing system that supports a complete range of manufacturing, assembly and handling activities.

Pacific Integrated Handling (www.pacificintegrated.com), a distributor with a strong background in aluminum framing solutions, has been Acumed's partner since 2001, a decade and counting of solid support. The Acumed-Pacific Integrated Handling (PIH) relationship got its start when PIH introduced Acumed to Rexroth's aluminum structural framing (including their online shop, www.boschrexroth-us.com/framing) and its capabilities. Rexroth framing consists of dozens of high-strength, anodized extruded aluminum profile types and hundreds of accessories. With easy-to-assemble connectors for nearly any load or application, Rexroth framing saves considerable time and expense. No special tools are required, and there's no welding, machining, grinding or painting.

Acumed discovered that the Rexroth framing offered a light, clean, strong material for a wide range of applications specific to medical device manufacturing: workstations, work cells and laminar flow hoods for ensuring sterile orthopedic products. The Rexroth T-slot channel and cover strips make it easy to disassemble and reconfigure framing elements into new alignments, and they can be reused or repurposed into different structures throughout the Acumed facility—for nimble responses to the changing medical world. Throughout Acumed's facility, Rexroth framing was soon at work in shelving, cleanroom benches, support framing, dividers and even information boards to help Acumed



Rexroth structural framing is lightweight, easy to configure in a wide range of ways and requires no special tools to assemble.

track specialized materials as they were assembled into medical devices. Changes to this internal “backbone” involve minimal downtime or impact on production.

PIH also provided consultation and design services, including CAD drawings, to develop items such as specialized custom workstations for Acumed, based on the sleek

and reliable aluminum framing. Throughout their relationship, PIH has collaborated with Acumed to develop structural products tailored to its new and emerging manufacturing processes, as a way to help streamline manufacturing process development. These new framing structures were assembled by PIH and shipped to Acumed, as well as assembled by PIH at the Acumed facility.

Support for a culture of new ideas

In 2006, Acumed began to take over design and development responsibilities itself. “We wanted to use the capabilities of Rexroth framing to fit in with our development of a lean culture where we experiment with new ideas and initiatives. The Rexroth materials allow us to reconfigure work areas quickly, using our own in-house resources,” says Loren Blanchard, manufacturing manager, Acumed. “The design and quality of Rexroth aluminum materials made it easy for us to adapt the materials to test new ideas.”



After a series of workstations were completed, remaining Rexroth structural framing was put to work in a message board that helps Acumed track projects.

The ability to use Rexroth framing to build nearly any custom structure helped Acumed achieve unique workstation and assembly area capabilities. From framing designed for workbenches, Acumed created a mini-cleanroom, permitting sterile assembly in a confined space. When laminar flow clean inspection stations were needed for sensitive medical devices such as fracture management instrumentation, staff simply added a HEPA filter atop a standard workstation, at an estimated savings of \$2,000, compared with purchasing a prebuilt laminar flow station. To change workflow to meet new needs, workstations could be reworked to form a new work cell configuration. And while most of these new structures were assembled on the Acumed floor, customization decreased as Acumed began to rely on “tweaking” a proven configuration to meet specific needs. “Acumed

keeps our Rexroth materials on hand at their facilities and their own specialists build it to conform to their processes,” says Pacific Integrated Handling Technical Sales Specialist Deanna Peterson. “But they don’t have to carry a large inventory because so much of Rexroth’s framing can be reused.”

The reusable, recyclable properties of Rexroth framing materials allow considerable design flexibility. For example, Acumed uses Rexroth EcoSafe frame profiles, guarding components and mounting components to create protected areas to safeguard sensitive medical devices or the users of ergonomic workstations. When a structure is no longer needed, it is simply dismantled and stored for future use, since Acumed staff know they’ll be able to repurpose the materials for other needs later.



Flexibility and convenience are important advantages of Rexroth framing in creating workstations, like this unique laminar flow hood configuration.

The benefits and flexibility of Rexroth’s aluminum framing products support key Acumed organizational initiatives, which are based on lean manufacturing principles. Acumed’s 5S workplace organization program received a real boost from Rexroth framing attributes, which, in Blanchard’s words, “allows us to make changes exactly the way we want.” (5S = sorting, straightening, systematic cleaning, standardizing and sustaining.) Some framing elements, for example, are dedicated to creating visual and physical barriers to promote workplace safety, organization and cleanliness, while their compact size and design permits ongoing employee communication. Reusable framing also minimizes scrap and clutter, another 5S focus. As a result, Acumed operations stay lean and clean, even as products and procedures evolve.



Rexroth structural framing plays many roles in various Acumed employee work areas, as part of benches, dividers, shelving and more.

Another lean-based organizational initiative, the Acumed Process Improvement (PI) Program, also relies on Rexroth framing to help make the concept work. The PI program is based on the presentation of three new workplace efficiency concepts per month from the engineers, machinists and finishers at each of Acumed's work cells. (A typical idea might involve changing the location of a specialized workstation, such as a mini-cleanroom, to improve process flow.) With Rexroth framing, new ideas come to life rapidly, giving PI participants a quick payoff on their suggestions and enhancing the perception of Acumed as a company that empowers people to try new approaches and techniques.

Workplace appearance sends a message

The benefits of a clean and well-organized manufacturing area have been many. Visitors, including physicians and other medical professionals, are impressed with the way Acumed divides clean and sterile workplace areas from more utilitarian ones by using Rexroth dividers.

The overall impression is of one of productivity, flexibility, responsiveness and thoughtful organization. A visitor on a recent plant tour remarked, "This is the cleanest, most organized facility I've ever seen." Employees, meanwhile, appreciate the fact that Acumed work spaces facilitate communication and teamwork.

Some of the messages sent by dividers and miniwalls can be quite subtle. For example, Acumed has used Rexroth extruded aluminum, combined with plastic, to create a "Blue Wall" as a boundary for empty space. The wall is situated in such a way that only certain sized items can be taken to the space behind it and stored. This supports Acumed's commitment to a well-ordered workspace by helping define which items are appropriate for storage in this area. Ultimately, after Acumed's needs change, the material from the wall will be taken down and reused somewhere else as a divider, a workstation or shelving.

Looking ahead

Rexroth aluminum framing is an integral part of Acumed's future as

well as the present. A new facility, which opened in June 2010 a few miles from Acumed's main location, is undergoing steady expansion thanks to the company's continuing sales growth. As this new facility reaches full production, Rexroth framing will continue to support Acumed growth by helping to meet the ongoing demand for flexible and innovative manufacturing methods.

Rexroth structural aluminum framing is ideally suited to Acumed's business in a number of ways. The most important benefit is the flexibility it provides for expansion and reconfiguration as the world of healthcare and medical technology changes. New advances in skeletal and orthopedic devices are sure to result in changes to Acumed's manufacturing processes and, at the same time, its physical space. But it's also true that, like a skeleton, Rexroth framing provides Acumed with a strong, reliable and resilient framework that enables remarkable capabilities and brings powerful potential to life.

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