Accuride Provided an Integrated, Energy-Efficient and Secure Access Control Solution for Next-Gen Medical Carts

**Challenge**

A world-class medical cart manufacturer sought an easy-to-integrate, reliable, and industry-compliant access control solution for securing its next-generation line of computer-controlled mobile medical carts.

The solution was required to comply with United States, European Union, and Health Level-7 (HL7) medical standards. Governmental standards included Conformité Européene (CE), US Health Insurance Portability and Accountability Act (HIPAA), and National Electric Code (NEC). Additionally, the manufacturer was required to comply with various state laws that mandate multiple locks when securing C-II drugs.

**Solution**

An integrated movement and secure access solution for pharmaceutical and medical supply carts in healthcare facilities.

**Advantages**

- Integrated slides and electronic locks provide:
  - Reduced assembly and alignment time
  - Lower SKU and improved inventory control
- Prevents loss and deviation of supplies

**Benefits**

- Fully secured E-lock for custom applications
- Built-in subversion protection for security validation
- Discrete access control

“...we tell our customers we use ‘Accuride’ because it’s a company we can trust in.”

Lead Mechanical Engineer, OEM

38EL Slide Lock
Background

The new medical carts were designed with an innovative removable drawer to make it easier to restock the drawer with medications, such as Schedule II narcotics, stored inside. The manufacturer’s engineers desired a drawer locking solution that addressed multiple challenges.

First, the prior cart design used separate drawer slides and electronic locks. The drawer slides were a challenge from a quality standpoint. Upon reinsertion of the drawers, the poor quality of the prior slides meant ball bearings would frequently come loose inside the drawer, resulting in malfunction. This caused the carts to be removed from service, which in turn prompted customer complaints and costly warranty and service issues for the manufacturer.

Second, due to assembly methods, the locks would also frequently misalign. This also caused the drawers to not lock properly again, forcing the carts to be taken out of service until they were repaired – a costly process for the manufacturer.

Third, the manufacturing process was costly because of the need to install the drawers and lock separately.

Finally, because the drawers contained narcotics, the manufacturer had to design and add separate drawer-monitoring devices to the carts. These devices verified that the drawers were closed and locked. This was to prevent bad actors from overcoming them and gaining unauthorized access to the drugs. In addition, the company sought an energy-efficient access solution because the new medical carts were to be powered with lithium ion and SLA batteries.

Solution

Accuride Integrated Access Solutions’ commercial-grade 38EL integrated electronic lock and full-extension, side-mounted drawer slide addresses all the manufacturer’s needs.

The 38EL is a patented low-voltage, secure, and reliable electronic lock integrated right into the drawer slide. The 38EL addresses all of the manufacturer’s fundamental requirements: a reliable, quality movement solution and an access control solution to secure the medical cart’s drugs. Additionally, the 38EL has built-in drawer status-monitoring to ensure that the drugs stored in the cart are actually safe and secure.

The 38EL electronic lock is a lean and compact solution. It is very quiet and patient-friendly; it consumes minimal power (critical for mobile battery-powered applications); and can be adapted to an existing onboard access control system and software. It is a versatile solution, available in even lengths from 12 through 28 inches with Standard, Auto-Open, and electronic Touch Release variants.
Advantage

The 38EL offers several advantages for the medical cart manufacturer.

A combined electronic lock and slide—a single unit from a single source—reduced the time, cost, and effort of alignment and assembly. The manufacturer’s alternative was extended development time for an in-house locking mechanism, which would have needed additional labor with an externally sourced electronic lock. A higher production budget would have been required to adapt and ensure compatibility of separate movement and access control solutions. The 38EL’s combination eliminated compatibility issues that could have risen from using multi-sourced solutions.

A single source of both solutions also meant improved inventory control for the manufacturer. The medical cart manufacturer was able to allocate less warehousing space for storing work-in-process sub-components. This advantage allowed them to downsize, reduce cost of storage, reduce its Stock Keeping Units (SKUs), and streamline its supply chain.

Results

The manufacturer cut its installation time by half, reducing costly variable manufacturing costs. Moreover, field repairs, issues caused by poor drawer slide quality, and misalignment of the e-locks and drawer slides were virtually eliminated.

As a result of these improvements, Accuride also assisted the manufacturer in improving customer satisfaction levels, which increased the medical carts’ market share by 7% in a course of a year.

By controlling fewer SKUs, the manufacturer reduced work-in-progress inventory. As a result of this, the manufacturer saved 33% on its inventory management costs annually.

Incorporating Accuride’s 38EL integrated slides and locks into the new medical carts allowed the manufacturer to focus its engineering effort on other design challenges, accelerating its product development process and shortening its time-to-market.

As a result of these improvements, Accuride impressed the cart manufacturer with the ease of installation, configurability in access, and low-profile design of the 38EL integrated electronic lock and slide. As stated by its lead engineer: “We like this product in particular because it is integrated... It takes out a whole lot of ‘tolerancing’ problems in the assembly, which is really a big deal for us!” The engineer also noted how assured their company’s customers feel knowing its cart’s access control system comes from a large, well-established, and reputable brand—Accuride.