

Underground Hardware: WHAT YOU don't see IS WHAT YOU GET

By Jim Stanley, CSI, CDT



IN TODAY'S "NEW" ECONOMY, WHERE THE competition seems larger than ever and the margins are razor-thin, everyone is looking for an angle or fresh way of providing products and services to add additional value and impact for their respective customer base.

Glass and storefront distributors have long augmented their core business by offering hardware solutions for many of the specialized products, applications and services they provide. Panics,

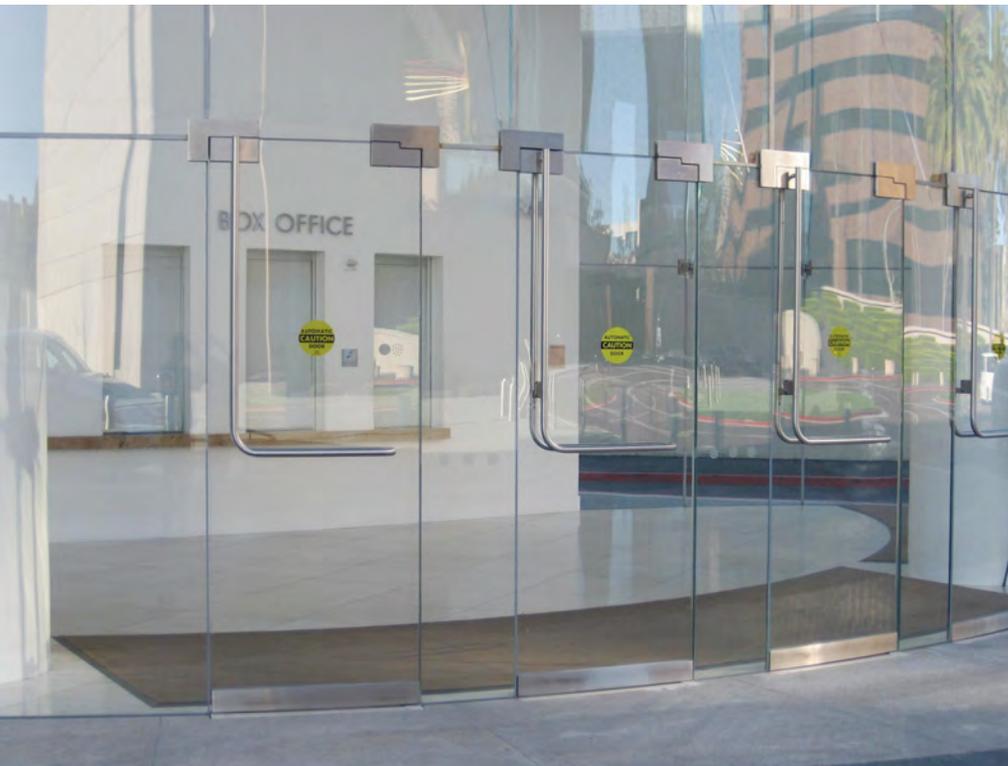
closers and threshold/seal packages are part of the staple of products routinely offered.

In addition, a growing and profitable business area of the glass industry has been the automatic operator market. Low-energy (ANSI A156.19) and full-energy (ANSI A156.10) applications are already utilized with great success by many distributors and have helped these businesses maintain a diversified and profitable position in the market.

However, are these businesses capturing all the market they can within this product/service group? To find out, one needs to first go back and review some product history.

Early automatic swing door operators were only available as underground/under-floor apparatus, but they were bulky, dirty and space-consuming systems. The early underground/under-floor swing door operators were driven by hydraulically controlling fluid flow from a large, remotely located sump and motor "pumping" system, delivering varying amounts of fluid to a modified floor closer. This complex, costly and inefficient system led to an evolution within the industry, and a migration

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every manufacturer in the highly competitive automatic door industry. By providing an in-floor “converter” system, every type of automatic door operator could be converted to in-floor/underground use.

So what makes this underground system different from the dinosaurs the industry knew from its past? It was designed and engineered as a system to mount typical overhead-mounted automatic door operators to a standardized chassis that transfers the torque of the operator to a pivot system while utilizing standard door mounting hardware to engage the bottom of a door panel. The entire chassis-mounted drive system is placed within a watertight

toward installation of swing door operators utilizing an overhead, aboveground application became prominent.

The last of these “sump and pump” automatic door operators were discontinued in the 1990s. The abandonment of the underground/under-floor system by manufacturers created an opportunity to penetrate a niche segment of the industry. The need still existed for some type of floor-mounted door operator unit to automate specialty doors that could not accept an overhead mounted unit. These specialty doors include arched top doors, historic preservation entry systems, and other fenestrations that are constrained by architectural features or that require preserving the historic significance of a building—while meeting current mandated accessibility requirements.

Additionally, the direction of the architectural community in recent decades has been to specify

frameless doors (with “headerless” transoms), utilizing patch fittings, spider clamps, or other designs that will not accommodate a typical overhead-mounted system. The “all-glass” entry system with finite “clean lines” dominates modern architectural design.

All of this culminated in a need to automate doors that could not be installed in the overhead-mounted manner that had evolved in the industry. However, the automatic door operator industry was becoming more “crowded” domestically, due mostly to the implementation of the Americans with Disabilities Act of 1990 (ADA-90). In addition, foreign manufacturers and new product lines were springing up in this fast-growing market environment, adding more variety and choices to an already healthy field.

Rather than enter the industry with another automatic operator product line, the decision was made by one company to provide an in-floor/underground solution to





in-floor/underground enclosure. The converter system does not compromise the operator design or safety criteria, and it uses the manufacturer's standard operator components for ease of maintenance and feature selection specific to a particular manufacturer. The entire system fits under standard-sized thresholds or stone pans and is "visually invisible."

The system was patented in 2001, but enhancements have been added and additional systems have evolved from the original swing door converter design. An additional patent was awarded in 2012 for the "Adjustable Spindle Apparatus" that permits the door engagement spindle to move vertically, laterally or transversely for proper door alignment and installation—all without removing the door panel. The chassis/operator enclosure earned the UL compliance label as a watertight enclosure to accept UL-rated electronic components. Another patent is pending on

the seal system that was developed for the watertight enclosure that permits maintenance service without removing the door panel.

An entirely new concept was designed in 2011 to convert automatic sliding and folding door systems to in-floor/underground applications. That system is patent-pending.

Door systems that were previously unavailable as automatic doors can now be automated. Examples include "patch fitting" or "full shoe" type frameless doors, frameless doors, balanced doors, Dade County Hurricane-rated doors, historic preservation doors, arched top doors, doors with limited overhead space, industrial doors, and any entry that would be aesthetically or functionally compromised with an overhead-mounted door operator.

Since its introduction, the architectural community and the door industry (glaziers, hardware, security integrators, and automat-

ics) have embraced the converter system, and in-floor/underground mounted systems for standard automatic door operators are available for most major manufacturer brands.

Hardware trends are born on the back of years of field experience and product history. The in-floor automatic operator solution is one that has evolved out of necessity and innovation and provides a streamlined solution—not just for the architectural community and commercial construction trades, but it can also be successfully used to augment and grow core business segments by many industry professionals. 

About the Author: *Jim Stanley, CSI, CDT is Business Development Manager for Opcon USA, LP and brings more than 17 years of experience to the architectural openings industry. Opcon USA converts automatic door operators by all major manufacturers from overhead surface-mounted to concealed in-floor application, and its products are proudly made in the USA. For more details, visit www.opconusa.com.*