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# glass

## magazine

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## Continuous hinges best choice for high-traffic doors

By Bob Cronk

Contract glaziers and glass-shop owners are often called to repair or replace worn-out hinges on high-traffic doors. Building or store owners struggle with the hassle and expense of these repeated repairs, a continuing source of dissatisfaction.

Continuous hinges attach from top to bottom of the frame and the door using a number of fasteners. They distribute the door's weight better and reduce the long-term expense and hassle of entrance maintenance. They remain an ideal solution for security or high-traffic aluminum or wood



Stainless steel continuous pin-and-barrel hinges in a variety of finishes match, contrast or accent your building's design.

doors with steel frames or secure openings in retail storefronts, schools, convention centers, sports facilities, airports and public buildings.

These hinges also offer a way to salvage expensive doors and frames. Full-length hinge leaves cover up cutouts, screw holes and door or frame damage.

There are two types of continuous hinges—geared and pin-and-barrel—offered by several manufacturers, including Select Products Ltd. of Portage, Mich.; Markar Architectural Products Inc. of Lancaster, N.Y., a subsidiary of Adams Rite Manufacturing Co. of Pomona, Calif.; and Hager Cos. of St. Louis. The U.S. Department of State has approved one of Select's geared hinges for use in its embassies overseas.

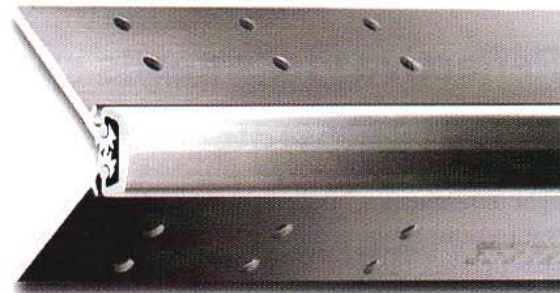
### Geared continuous hinges

Geared continuous hinges offer unmatched durability and longevity for high-traffic entrances. Hinge leaves mesh together under a cap that runs the length of the hinge. They are made of extruded architectural aluminum, usually in lengths from 83-to-120 inches with custom lengths available.

Several key features give geared hinges an unbeatable durability. Look for pair-matched hinge leaves, manufactured and machined together to fit doors better and last longer. Lifetime lubrication helps reduce wear, quiets performance and eliminates periodic maintenance. Look for anodizing after machining to deliver superior wear, durability and corrosion protection.

In addition, you can often match any custom paint color on the gear cap or the entire hinge, with white commonly in stock. Anodized finishes also are available in custom colors.

To meet building fire codes, geared hinges are available with up to a three-hour fire rating.



Geared continuous hinges offer unmatched durability and have been proven to last more than 20 million open-close cycles in independent testing—more than most high-traffic entrances see in a lifetime.

Geared continuous hinges are initially more expensive—around \$60 to \$90 versus \$50 for three-ball-bearing butt hinges—but last many times longer. Durability and U.S. Department of State testing back that up.

### Tested for 20 million cycles

A Select geared hinge has recently surpassed 20 million open-close cycles in laboratory testing—equivalent to 50 years on the average high-traffic entrance. The American National Standards Institute's physical endurance test, conducted at Architectural Testing Inc. in St. Paul, Minn., mounted a full-mortise geared continuous hinge on a standard fiberglass reinforced polyester door to simulate a real-world situation. The hinge being tested is still functioning with no loss in performance.

The U.S. DOS recently approved a Select geared hinge for use in its embassies overseas to protect workers from an angry mob or terrorist attack. The tests were conducted at H.P. White Laboratory Inc. in Street, Md.

In the first test, attackers fired eight shots from high-powered military rifles directly at the hinge from 20 feet away. All bullets were stopped, so the entrance was classified as "no penetration."

Next, attackers used every means at their disposal—10- and 12-pound sledgehammers, a 9-by-2½-inch wood-splitting wedge, 1-inch and ¾-inch cold chisels, pry bars and other tools—to gain entry. After separate attacks lasting one hour, none had penetrated.

As a result, the Select geared hinge earned 60-minute BR, or ballistic resis-

tance, and FE, or forced entry, certification. This model of hinge is now approved for use on all DOS doors.

### Pin-and-barrel continuous hinges

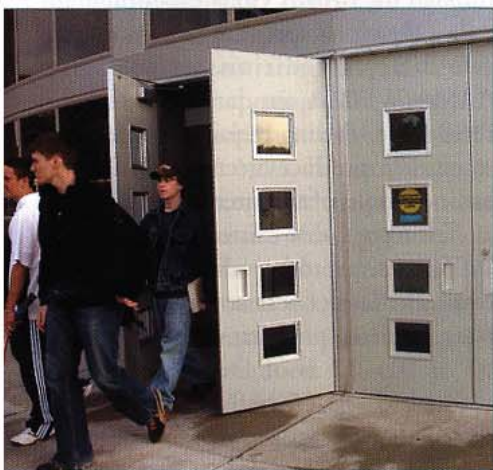
Pin-and-barrel continuous hinges use a steel rod that runs the length of the hinge through a series of knuckles. They are generally stainless steel and typically manufactured in lengths from 79-to-119 inches, with custom lengths available.

Stainless steel pin-and-barrel continuous hinges resist corrosion and deterioration, making them a good choice for caustic environments. The stainless steel rod stays flexible and strong in abused openings. Nylon bearings, especially double bearings, create a strong, free-moving assembly. Tamper-resistant covers guard against vandalism and reduce the hassle of frequent repairs.

As with geared hinges, pin-and-barrel hinges also are available with up to a three-hour fire rating to meet building fire codes. They allow the flexibility to match, contrast or accent your building's design with a variety of finishes, including satin on stainless steel and polished, brushed and custom paint on carbon steel hinges.

Pin-and-barrel and geared continuous hinges provide a strong solution to high-traffic entrances, with geared hinges offering the longest life and best option for high-security buildings. Continuous hinges stand the test of time, with geared hinges standing the test of cycles, sledgehammers and high-powered gunfire. **S**

In the U.S. Department of State's forced-entry test on an entrance equipped with geared continuous hinges, six attackers tried unsuccessfully for 60 minutes to break through using 10- and 12-pound sledgehammers, wedges, chisels, crowbars and more.




Continuous hinges are ideal for high-traffic entrances such as schools.

A photograph showing the interior of a shower enclosure. The walls are covered in light-colored, square tiles. A clear acrylic towel bar is mounted on the wall, and a showerhead is visible on the left. The overall design is modern and frameless.

# CRYSTALLINE

## FRAMELESS BY-PASS

Combining a contemporary, open look with quality engineering, the frameless Crystalline By-Pass provides an innovative alternative to traditional framed enclosures. The graceful curves of the clear acrylic towel bar; smooth, quiet operation; and easy installation make the Crystalline By-Pass one of our most popular units. For more information about the *Crystalline By-Pass* and our entire product line, please visit us online at [www.southeasternaluminum.com](http://www.southeasternaluminum.com).

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