Colorado Lock Manufacturer Equates Quality With Security

In response to consumer demands for high-quality, long-lasting products, the Schlage Lock Company's Security, CO, facility recently installed a powder coating line to accommodate the company's new durable finish process for brass door hardware. This environmentally safe, clear powder coat carries a 10-year guarantee in residential applications, and reflects a breakthrough in finishing technology, as well as a continuation of the company's on-going commitment to superior quality.

In 1925, German immigrant and engineer Walter Schlage invented a new kind of lock that simplified installation and revolutionized the industry—the key-in-knob lock. Seventy years later, another revolution is taking place: The "consumerization" of lock marketing and retailing. The company that Schlage founded—Schlage Lock Company—is well-known worldwide, and is committed to maintaining its leadership in the rapidly-changing arena of today's marketplace.

Meeting the Challenges Of a Changing Industry

Schlage Lock, with headquarters in San Francisco, CA, employs 2,700 people worldwide and, in addition to the Colorado plant, maintains manufacturing facilities in Tecate, MX, and San Francisco. In 1974, the company became part of Ingersoll-Rand, a diversified New Jersey-based manufacturer of industrial, mining and construction equipment and components.

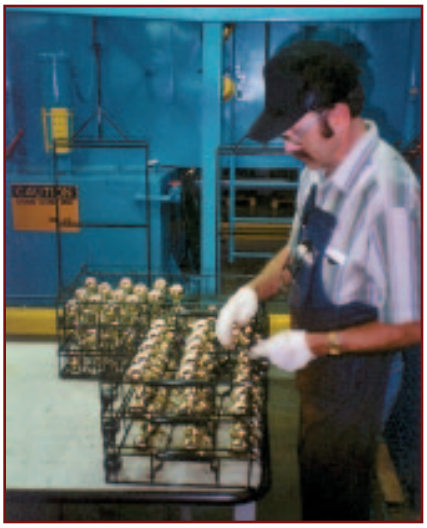
Schlage is part of the corporation's Door Hardware group, and is organized into the following primary business units:

- Retail
- Residential
- Commercial
- International

The domestic lock industry is now a $1-billion-a-year "dogfight," and the company has aggressively positioned itself as the "Doberman" in that fight. There is an increased consumer demand for designer locks that are decorative, yet highly secure, and that offer superior durability. High-end hardware, designer hardware, and a shift from knobs to levers are also areas of high growth for the company.

A state-of-the-art conveyor system for transporting parts has been installed at Schlage Lock Company's Security, CO, facility.

The Arthritis Foundation recently presented a 1995 Design Award to Schlage for the engineering of its non-handed residential door levers. The awards were established in 1993 to recognize those "whose forward-thinking solutions enhance the quality of life for the nearly 40 million people with arthritis." Lever-type handles are preferred by many people because they are easiest to use—a wrist, elbow, or even a knee can be used to open a door. Another design option is the "turnback" feature, which positions the lever so that it turns in toward the door at the outer end. This return to the door helps keep loose clothing or other items from getting hooked by the lever handle. Schlage's series of door levers also meets accessibility codes established by the Americans with Disabilities Act (ADA), and the company's production of these levers has increased in response to the demand for ADA-approved door hardware.



Dee Fullerton, an associate on the powder coating line, racks powder parts that are ready to be loaded onto the conveyor system.

Durable Finish Achieved Through Powder Coating

This past year, the company introduced a new durable finish for residential brass door hardware. "This is a high-quality preservative finish that reflects the latest in breakthroughs for finishing technology," said John Swedeen, vice president of marketing. "The clear powder coat finish is environmentally safe, is guaranteed for 10 years, and is designed to protect against sun, salt air, humidity, chemicals and perspiration," continued Swedeen.

The finish is coated with an acrylic powder, which produces a beautiful, long-lasting luster. This is accomplished at Security's recently installed powder coating line, which includes a fully automated conveyor system. In this operation, parts enter the line on a conveyor that carries them through an ultrasonic cleaner, followed by a spray wash and drying system. The parts are then conveyed directly to the powder coating room (a semi-clean room), and on to the powder coating chamber. This state-of-the-art system then carries the parts into the facility's curing area, prior to reaching the final destination: The racking/unracking station. The rack manufacturer* has designed its products to be ergonomically beneficial for the workers, who are relieved of some of the difficulties that usually accompany such repetitive tasks. Design improvements, for example, have eliminated the need to pinch or squeeze the ends of the racks, as required with traditional racks.

Above: The loading/unloading area for the powder coat line, where parts are racked onto a conveyor system that carries them through all necessary stations—from ultrasonic cleaning and spray washing to the powder coating chamber. Right: Parts enter the powder coating chamber via the conveyor.

Another proprietary finish offered is the company's environmentally clean, non-tarnishing, protective coating for select brass hardware products.** The coating is bonded to the hardware with a state-of-the-art physical vapor deposition (PVD) process, and is designed to combat the harshest elements and corrosives, such as salt, sun, humidity, perspiration, cleaning products and pool chemicals. The newly enhanced coating offers a lustrous finish and proven wear-resistance, and is backed by a lifetime warranty in residential applications.

Other processes at the plant, in addition to the PVD and clear powder coat, include decorative nickel-chromium and an oxidized finish. Approximately 750 workers are employed in a variety of functions at the Security location.

One of the keys to success in metal finishing is the dedication of the solutions lab associates, who ensure that the chemistry is at its optimum concentration. One day of plating downtime can result in customer orders being delinquent, which equates to worker overtime and increased costs per lock set. Continued monitoring and control is essential in a manufacturing setting where millions of decorative pieces are produced each month.

Environmental Concerns

In an age when protecting the environment is a primary concern, Schlage's Colorado operation has taken positive steps to alleviate waste problems. A method has been developed to separate and reclaim polishing baghouse waste at the facility. On the line, parts are polished with a cotton buffing wheel, using rouge or other such compounds. During the process, little pieces of cotton "fly off" as waste. Because the parts being polished contain lead in the alloy, the waste is considered hazardous. The company is perfecting a method to separate the cotton fibers and the rouge from the metals. The fibers can then be recycled, while the remaining sludge is sent to a refinery for reclamation. This system has proven to be both environmentally friendly and economically beneficial.

Managing Total Quality Is a Continuous Process

All the associates at the various facilities are committed to the company's quality processes and procedures. This commitment to producing the "very best" has resulted in the term *durable* being redefined by Schlage. Both the PVD and powder coat finishes meet or greatly exceed the minimum standards established by the Builders Hardware Manufacturers Association.

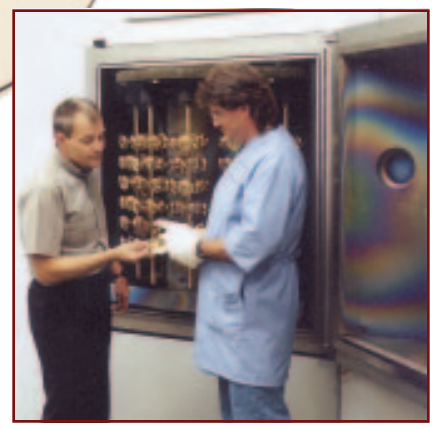
The company's dedication to quality over the past 70 years has resulted in a successful line of new and exciting products and finishes for residential, light commercial, and commercial-grade hardware. And the powder coating and PVD lines at the Security facility are significant contributors to that success.

In the domestic lock industry dogfight, Schlage Lock Company is determined that the "Doberman" of locks is leading the pack. ❑

* Racks and baskets provided by Associated Rack Corporation, Chicago, IL

** Ultima™ Finish, Schlage Lock Company, San Francisco, CA

Roosevelt Gelsey, PVD technician, at the racking/unracking station. After inspection, completed parts are unloaded and racked for the PVD chamber.



Donald Bauer, process analyst, and Kevin Lewis, PVD technician, inspect a load of parts that just completed a cycle in the PVD chamber. From here, the parts will move on to assembly.