

# SDC Quiet Duo™ UL Listed Electric Latch Retraction & Dogging Kit

The SDC LR100VDK Electric Latch Retraction Retrofit Kit is installed in a Von Duprin 98 exit device without disassembly or removal from the door.

BY JERRY LEVINE

As part of any electromechanical access control system or handicapped access, electrification of door hardware is required. Electrifying an exit device provides different options including controlling access, limiting access, and providing access and egress when used in conjunction with a power door operator.

There are two ways to electrically configure an exit device - electrifying the exterior trim and equipping an exit device with electric latch retraction (ELR). Each method has its advantages and can be used to operate rim mount, mortise, concealed vertical rod, surface vertical rod and Less Bottom Rod (LBR) exit devices.

Electrifying the exterior trim provides the ability to remotely unlock the lock mechanism. This permits the lever or knob to be rotated, retracting the latch mechanism and then opening the door. Electrified trim requires a secondary action in order to open the door.

Installing electric latch retraction within the exit device retracts the pushpad and the latch mechanism, permitting the door to be opened. No secondary action is required. When installing a power door operator on an exit device-equipped door, the device must be equipped with electric latch retraction or an electric strike must be installed into the jamb.



*Drillin out rivets*



*ELR non-fire rated & Fire Rated*



*Side view locked*



*Side view latch retracted*

Electric latch retraction has been installed into exit devices for many years. **Applications.** Early methods incorporated a powerful solenoid that would retract the latch mechanism. After a period of time, motorized latch retraction was introduced. Motorized electric latch retraction offers the end user several advantages including quieter operation, the ability to use an inexpensive power supply, and have a longer wire run between the device and the power supply using smaller gauge wire.

Electrically retracting the latch mechanism for longer than momentary operation has its advantages. A company can incorporate a timer mechanism, permitting access through an employee door that automatically unlocks the door, placing the device in passage mode on workdays at 7:45 a.m. and relocks the door the same day at 5 p.m.

This method limits access into the building during non-working hours. There is no need to install an access control system or provide employees with credentials. From 5p.m. until 7:45 a.m., the door remains locked and no employee can gain access.

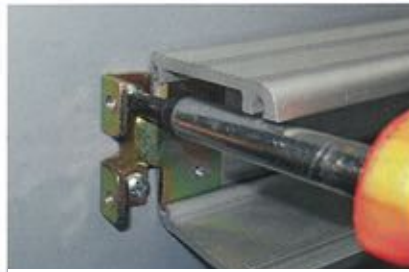
Using electric latch retraction is very similar to dogging an exit device. The act of dogging an exit device is to retract the latch mechanism and locking it in the retracted position. The action of retracting the



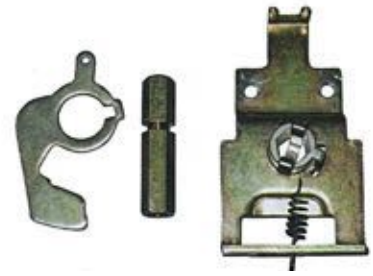
*Exit Device*



*Mechanical dogging mechanism*



*Remove mounting bracket*



*Dogging mechanism removed*



*Remove end cap*



*Install power transfer hinge*



*Run wires*



*Rivets visible*



*Insert ELR assembly*



*Install mounting bracket*

latch mechanism places the door in passage mode.

Security Door Controls (SDC) has developed electric latch retraction kits for a number of bar/rail style non-fire rated panic/exit devices and fire rated devices.

*Note: Before installing electrification onto a surface or concealed vertical rod exit device, be certain the device is in adjustment and operates smoothly.*

**Installation.** For the purpose of this article, I was invited to observe the installation of the SDC LR100VDK Electric Latch Retraction Kit into a Von Duprin 98 exit device. The door is an employee entrance that leads into the warehouse. The door was equipped with a Von Duprin 98 rim exit device with mechanical dogging and lever trim.

The Von Duprin 98 rim exit device's mechanical dogging mechanism rotates to capture the latch retraction rod when the pushpad is depressed, placing the exit device in the dogged or passage mode. The Quiet Duo Kit replaces the mechanical dogging assembly.

To install the Quiet Duo Kit, the two rivets securing the mechanical dogging assembly must be drilled out and the dogging assembly removed for those exit devices shipped after August 1997. Two screws secure

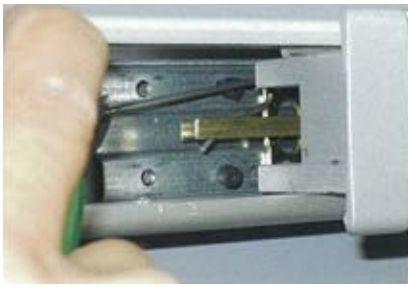
the dogging assembly on previous models.

To begin the removal of the dogging assembly, remove the end cap, the cover plate and mounting bracket to gain access to the mechanical dogging assembly. Remove the dogging shaft and the dogging hook in order to expose both of the rivets securing the assembly. Once the rivets are drilled out, remove the dogging assembly from the case. Use a brush to remove any metal debris.

Slide the LR100VDK onto the case. Connect the supplied LR100 linkage onto the device's latch retraction rod and the latch retraction clevis. Be sure to remove any slack in the linkage before tightening the two setscrews using a 5/64" hex wrench.

At this time, make the electrical connections in order to test the operation before reassembling. Use wire connectors (beans) to ensure a good connection. Finish assembling the exit device components. Test the manual operation of the exit device.

Test the electrical operation. The stepper motor should retract the pushpad and the Pullman latch. When power is removed, the pushpad and latch will extend.



*Connect linkage to retraction rod*



*Mounted assembly*



*Exterior side of door*



*Install power supplier, timer & batteries*



*Attach wire connectors*



*Remove play to secure ELR assembly*



*Power supply installed above door*

**Operation.** The Quiet Duo provides retrofit electric latch retraction and dogging for rim mount and vertical

Once the stepper motor completes its operation of retracting the pushpad and Pullman latch, an electromagnet keeps the latch and pushpad retracted. Once the exit device is in the passage mode, it will remain in that mode until power is withdrawn.

***SDC Electric Latch Retraction Kits are compatible with:***

- Adams Rite 8800 & 8100 Series
- Corbin ED5200 & ED5800 Series
- Dor-O-Matic 1590 & 1490 Series
- Hager 4500 Series
- K2 QED300 Series
- SDC Spectra® S6000 Series
- Von Duprin 98/99, XP98/XP99, 33/35 and 22 Series
- Yale 7100 & 7110
- Precision Hardware (PHI) Apex 2000 Series
- Components needed for this installation include:
- SDC Quiet Duo™, Part #LR100VDK
- SDC One Amp Power Supply, Part #602RF
- SDC Power Transfer Hinge four-wire, Part # PTH-4
- SDC Seven Day, Skip-A-Day Timer 24VAC/DC, Part # 14-2
- Two SDC 12 Volt 4Amp Rechargeable Batteries, Part # RB12V4
- 18 Gauge 2 lead stranded wire

rod Von Duprin exit devices. A maximum inrush of 450mA @24VDC powers the stepper motor, retracting the latch mechanism and the pushpad into the depressed position. Once retracted, a magnet is energized to keep the exit device in dogged (passage mode). A constant 180mA @ 24VDC is required to keep the latch mechanism retracted, enabling push and pull operation of the door. This kit is UL Approved.

**Power Supply.** The UL Class 2, 602RF Access Control Power Supply and Charger has field-selectable 12 or 24VDC of filtered and regulated power contained within a 12" x 12" x 4" cabinet. Auto resetting output circuit protection and an isolated 13.5/27 VDC battery charger are built in. Optional features for this power supply included the six-foot power cord, rechargeable batteries and a Seven Day, Skip-A-Day Programmable Timer.

**Power Transfer Device.** The PTH-4 four wire power transfer hinge (PTH) is a 4.5" x 4.5" standard weight, steel hinge. This UL 10B Listed hinge is designed for fire door applications and has a five foot cable. The four-wire, 28-gauge power transfer hinge can be used with loads up to one Amp.

**7 Day Skip & Day Timer.** The Seven Day Timer



*Seven Day Timer*

run the positive and negative wires.

Because of the LR100's low power requirements, 18 gauge two lead stranded wire was used from the power supply to the power transfer hinge. The four-wire power transfer hinge comes with a five-foot cable, more than sufficient to wire the electric latch retraction.

SDC has received a UL Listing for installing the Quiet Duo retrofit kits onto fire rated exit devices.

**UL Listing.** The SDC Quiet Duo LR100 Series electric latch retraction can be field installed on non fire-rated exit/panic devices. An installation video is available online at [www.sdcsecurity.com/lr100\\_retrofitkit.aspx](http://www.sdcsecurity.com/lr100_retrofitkit.aspx)

For more information, contact your local locksmith distributor or SDC

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Telephone: 800-413-8783.

Web Site: [www.sdcsecurity.com](http://www.sdcsecurity.com)



*Completing installation*

is a compact, field programmable, timer module designed for automatic timed locking and unlocking of one door or more doors on the same circuit. Programming each day individually permits skipping unlocking on selected days.

The power supply was installed onto the wall directly above the door using the optional six-foot power cord to be plugged into an existing duplex outlet. The timer was installed in the power supply cabinet.

A power transfer hinge was installed in the center position providing electrical power from the jamb into the hollow metal door. Holes were drilled through the center hinge position and the mounting plate to



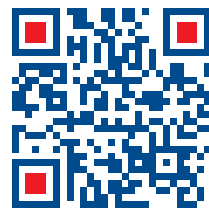
*Power supply*



*Testing operation*



*Finished installation, interior*



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