

# Model 2890PDL High Security Pedestrian Door Lock



SARGENT AND GREENLEAF®

## Installation Instructions

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### Mounting Considerations:

- **This lock requires adjustment with the use of a setup module after installation. The installation cannot be completed without the use of a setup module.**
- The 2740 accommodates right-hand and left-hand, in-swing and out-swing doors, as well as the active leaf of a double door. A single model can be used for any of these applications.
- For secure applications, the 2890PDL must be mounted with either a standard dial ring mounting plate (Class N installations) or a drill resistant dial ring mounting plate (Class D installations). One or the other of these plates may be included with your 2890PDL kit, or it may be necessary to purchase one separately.
- The 2890PDL is equipped with a Sargent & Greenleaf model 2740 high security lock. It cannot be used with any other manufacturers' locks.
- The lock requires one CR2450 coin cell battery and one CR123A lithium camera-type battery. Any time one battery is replaced, the other should be replaced. Fresh batteries should be included with your lock. If not, be careful to avoid using partially drained batteries.
- Modifications to the device are not recommended and will void the manufacturer's warranty.
- Be sure to change the combination from the factory setting 50-25-50 to one of your own choosing. Personal information that can be directly related to a combination holder, such as a birth date, street number, or phone number, should not be used in creating a lock code. Avoid combinations that could be easily guessed.
- The S&G 2890PDL is warranted against defects in materials and workmanship for one year from date of shipment from Sargent & Greenleaf.



### Sargent & Greenleaf, Inc.

A Wholly Owned Subsidiary of Stanley Security Solutions, Inc.  
PO Box 930, Nicholasville, Kentucky 40340-0930 USA  
Phone (859) 885-9411  
Phone (800) 826-7652  
FAX (859) 887-2057  
FAX (800) 634-4843

### Sargent & Greenleaf S.A.

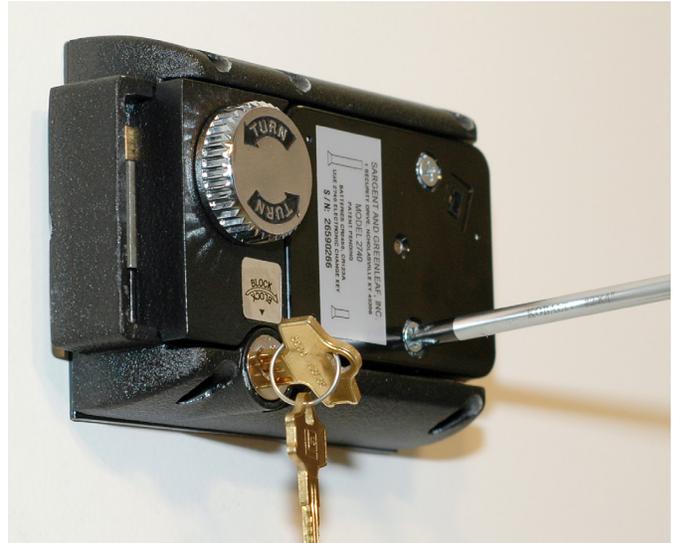
9, chemin du Croset  
1024 Ecublens, Switzerland  
Phone +41-21 694 34 00  
FAX +41-21 694 34 09

## Things to Know Before Starting Your 2890PDL Installation

The Sargent & Greenleaf model 2890PDL (pedestrian door lock) was designed to secure doors leading to SCIFs (secure compartmentalized information facilities) and other types of secure areas.

**IMPORTANT:** Until your installation is complete, it is possible to lock yourself outside the room being secured. Whenever you are outside the room, **block the door open**.

The 2890PDL contains a Model 2740 combination lock. During the installation, it will be necessary to remove only the cover of the 2740 lock. All other 2740 lock body parts should remain in place as received from the manufacturer. When the cover is off of the lock, handle it carefully. The cover contains the microprocessor and related circuitry. Do not touch the circuit board attached to the underside of the cover. Wear the included static discharge wrist strap whenever you are about to remove the lock cover, or whenever you are handling the detached cover. The strap should be grounded to bare metal of the door to which the 2890 is attached. This should greatly reduce the possibility of static discharge.

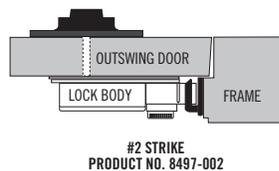


The 2890PDL, as shipped, is suitable for pedestrian doors at least 1 3/4" thick.

Most doors will not be prepped for lock installation. The 2890PDL is a surface mounted automatic door deadbolt. It has tight mounting tolerances, and is best fitted to doors already installed and properly adjusted in the area where they will be used.

Make sure the door to which the 2890PDL will be mounted is level, plumb, square in its frame, and that all existing hardware has been installed and is functioning properly. Any uncorrected door and/or hardware problems will likely complicate the 2890PDL installation and result in unsatisfactory operation.

**Strikes:** Use the illustration below to select the proper strike for your application. Strikes may or may not be included in your 2890PDL kit. They are available separately, and can be ordered by the S&G part number listed with each strike below.

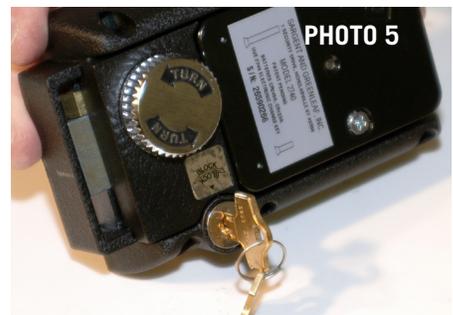
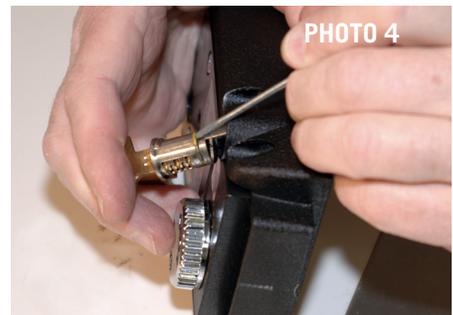
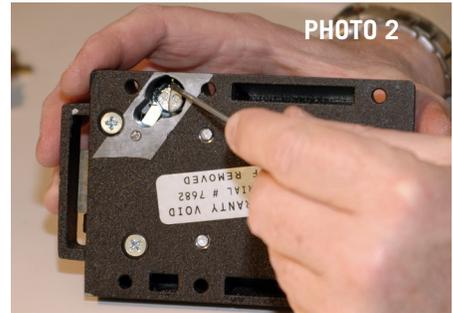
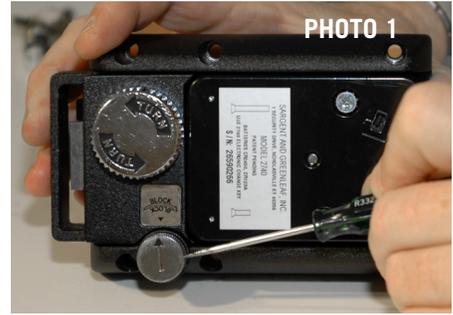


*(continued next page)*

**Blocking Function:** The 2890PDL is equipped with a blocking knob. To enter the secure area you would dial the combination, then turn the dial to the right (clockwise) to retract the lock bolt. If you leave the combination lock dial in the bolt retracted position, open the door, then turn the blocking knob so that its arrow lines up with the arrow on the “BLOCK” label (photo 1), the combination lock dial cannot be moved from the bolt retracted position, and the 2890PDL cannot be locked. This feature is used to make a secured area easier to exit in the event of an emergency, or to leave a normally secure area unlocked when occupied.

The blocking knob can be replaced with a keyed cylinder to provide greater control over who can activate the blocking function. This is most easily accomplished prior to 2890PDL installation and is a simple matter of removing the knob and installing the included keyed cylinder as follows:

- A. Locate the back of the blocking knob (photo 2) on the side of the 2890 lock body that will be mounted against the door. If you look carefully, you will see a small spring-loaded brass pin protruding from the edge of the knob (photo 2).
- B. While depressing the pin, pull the blocking knob out of the lock body from the opposite end (photo 3).
- C. Note that there is a spring-loaded, brass, half-moon retainer at the rear of the keyed cylinder that is included in the lock kit. Leave a key in the cylinder. As you place the keyed cylinder into the cavity from which you removed the knob, depress this retainer so that the cylinder will slide into the cavity. Use the key to rotate the cylinder until it seats in place. It can only seat when rotated to the correct position. Now its retainer will hold it in the lock body. It should look like photo 5.



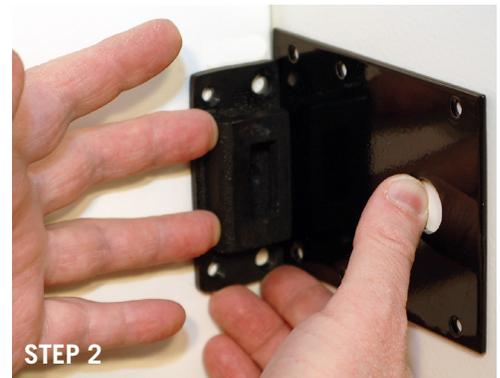
## 2890PDL Installation

The ADA (Americans with Disabilities Act) and the UFAS (Uniform Federal Accessibility Standard) both state that locking hardware should not be mounted more than 48 inches (122 cm) above the finished floor. However, your mounting location will be limited by the presence of pre-existing hardware. If you find it necessary to mount the 2890PDL above 48 inches, obtain authorization beforehand from the person in charge of the secured area.

Step 1: Measure and mark the height above the finished floor where you will mount the lock strike on the frame. It's advisable to place masking tape on the frame first, as the marks you make will be easier to see. Also, it's easy to peel off the tape and replace it with a fresh piece if a mark is placed incorrectly.



Step 2: Close the door fully. Place the flat lock mounting plate against the door, and butt it up against the frame. Place the strike at your marked height location and up against the mounting plate. This will correctly space the strike from the door so that its opening will line up correctly with the 2890PDL lock bolt later in the installation process. Once the strike is in position, mark the center hole location.



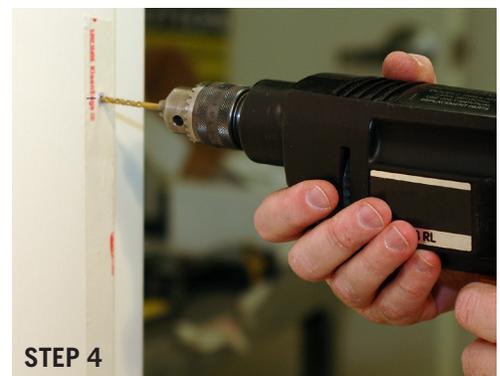
*Note that our example is an out-swing door application, and that we are using a #2 strike.*

Step 3: Remove the strike and the mounting plate. Use a pin punch to indent the center hole location you just marked.



Step 4: Drill a 1/8" diameter hole into the frame. If it's a concrete or mortar filled frame, use a high speed bit to penetrate the steel skin, then switch to a 1/8" masonry bit to clear out 1" of material inside the frame for the screw. If it's a wooden frame, use your 1/8" high speed bit to drill the hole to a depth of 1".

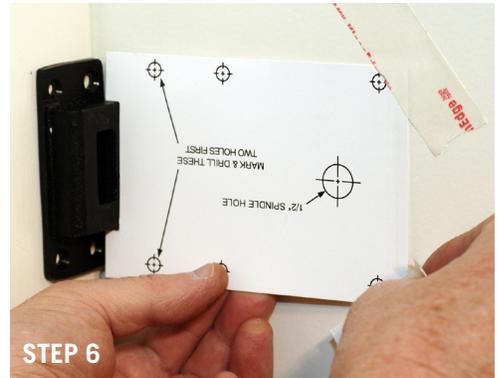
Remove the masking tape from the frame after drilling.



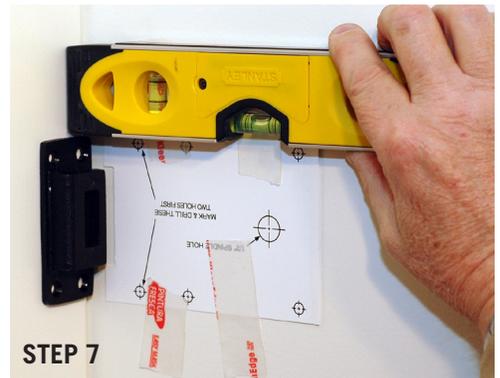
Step 5: Using one of the five strike screws provided, mount the strike to the frame using only the center hole position that you just marked and drilled.



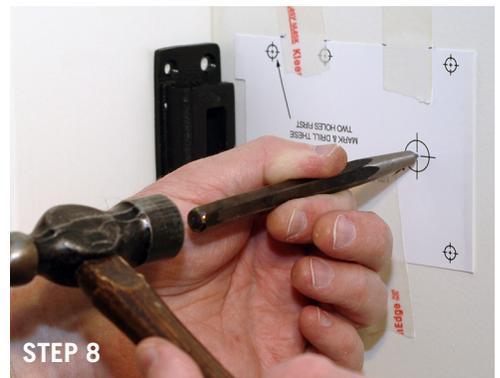
Step 6: Close the door. Place the template that's included in the 2890PDL kit flat against the door so the cutout in the end is against the lip of the strike (shown at the right). Tape the template to the door in this position.



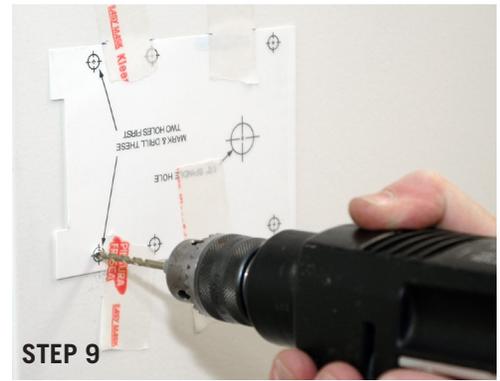
Step 7: Make sure the template is level on the door.



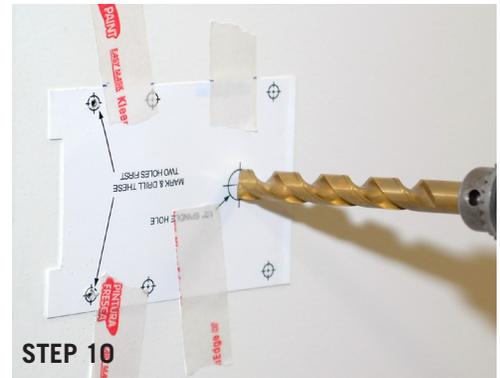
Step 8: Using a pin punch, mark through the template at the spindle hole location (shown at right), and at the two hole locations closest to the strike. The other four holes do not need to be punched.



Step 9: Use a 1/8" bit to drill the two mounting holes closest to the strike location. If the door has a solid core, drill the holes to a depth of 1".



Step 10: Use a 1/8" bit to drill a pilot hole through the door at the spindle hole location. Then use a 1/2" drill to enlarge this hole from each side of the door.



Step 11: Mount the 2890PDL lock body and mounting plate to the door. Use the screws provided to fasten the lock body only at the two hole locations you drilled closest to the strike. With the lock attached to the door, it's a good time to close the door and make sure the lock engages the strike smoothly. If not, this is the best time to make the necessary adjustments in the lock location.



Step 12: Once you are satisfied that the lock is engaging the strike correctly, insert the included drill guide into one of the four unused lock body mounting holes. Use a 6" long 13/64" drill bit in the guide to drill through the drill guide and completely through the door. Do this on all four lock body mounting holes farthest away from the strike.

*Recommendation: If using a key operated blocking cylinder, you may want to remove the keys before drilling.*



Step 13: On the outside of the door only, enlarge the four 13/64" holes you just drilled to 7/16". If the door has a solid core, the holes will need to be drilled to a depth slightly greater than the length of the studs on the underside of the plate.



*Note: There are two options for a dial ring mounting plate. A dial ring mounting plate may or may not be included in your 2890PDL kit. If not included in your kit, the plate must be ordered separately. S&G recommends using the Class D plate for increased security. You must use one or the other of these dial ring mounting plates with the 2890PDL.*

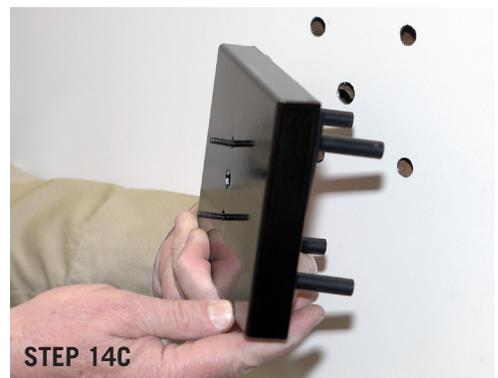
Step 14: You can use a plate that offers minimal drill resistance for Class N installations (pictured at right—14A). There is a formed metal cover that goes over the top of the plate. When the Class N plate is used, the combination lock's dial ring will attach to it using the standard 8-32 dial ring screws. Dial ring mounting is addressed later in the installation.



A thicker, heavier plate that incorporates drill resistant material is used for Class D installations (pictured at right—14B). It also has a formed metal cover. This is the plate recommended by S&G.



The photo at right (14C) shows the formed metal cover over the Class D plate. When this plate is used, the combination lock's dial ring will be placed over the two front mounting studs, then secured using a supplied lock washer and 8-32 nut on each stud. Dial ring mounting comes later in the installation.



Step 15: Use the four hex drive screws provided in the 2890PDL kit to through-bolt the lock body to the dial ring mounting plate. Be especially careful when working with hollow metal doors to avoid overtightening the screws and deforming the door.



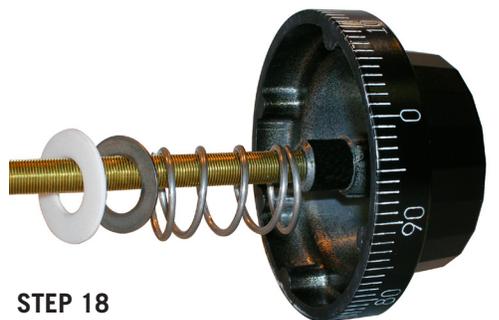
Step 16: This installation uses the recommended Class D dial ring mounting plate. With the plate cover over the plate, this is what your hardware should look like at this point in the installation process.



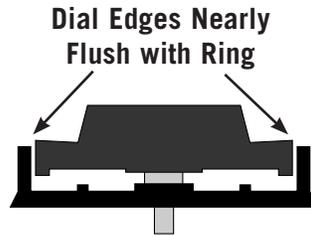
Step 17: Slide the 2740 lock's dial ring over the Class D plate dial ring studs. Install a lock washer and 8-32 nut on each stud. Do not fasten tightly. At this point in the installation, the dial ring should still be movable, with just enough friction from the mounting nuts to hold it in whatever position we move it to. The same would be true if attaching the dial ring to a Class N plate using 8-32 pan-head machine screws.



Step 18: Place the dial spring, flat metal washer, and plastic washer over the dial spindle in the order shown here.



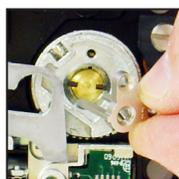
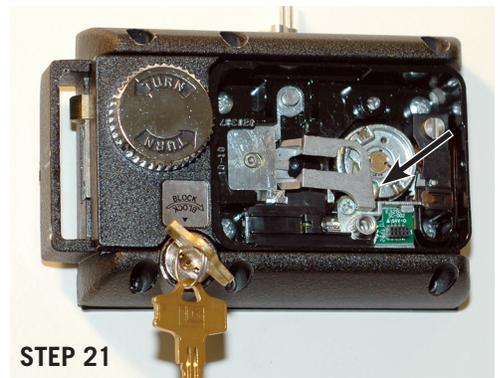
Step 19: Put on a grounding wrist strap and attach it to bare metal on the door. Remove the cover from the 2740 lock body and set it aside for now. Place the dial spindle through the dial ring's spindle hole. While holding the lock's drive cam from inside, thread the dial and spindle through the cam, until the top edge of the dial's number band is almost flush with the raised surface of the ring.



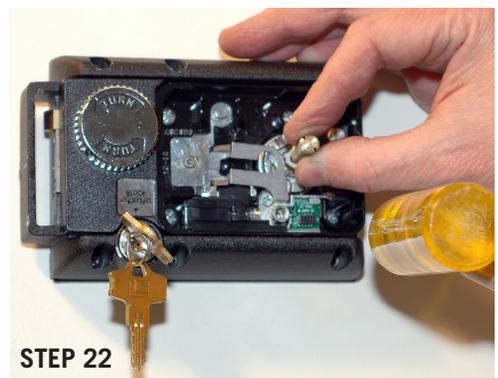
Step 20: Mark where the spindle emerges from the drive cam. This is also a good time to make adjustments in the position of the dial ring so that it aligns well with the dial. Then carefully remove the dial and spindle so that you can tighten the dial ring mounting nuts (or screws if you are using the Class N plate). Cut the dial spindle at the mark you just made. Be sure to bevel the end of the cut spindle so that it will easily thread back into the cam.



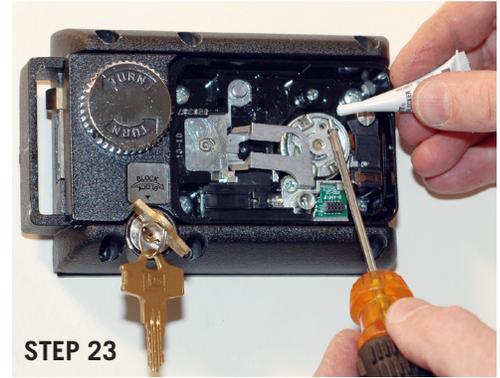
Step 21: Thread the dial and spindle through the dial ring and into the drive cam, and verify that the spindle was cut to the correct length. It should be no more than flush with the surface of the cam where it first comes through. It can be as many as four threads short of being flush. Turn the dial so that zero is at the opening index at the top of the dial ring. Holding the dial in this position, manually rotate the drive cam so that its gate is positioned at the lever nose (see arrow at right). In this position, two of the spindle's spline keyways will line up with two of the cam's spline keyways. You can now insert the stainless steel spline key so that one of its two screw holes lines up with the small screw hole in the cam (see small image).



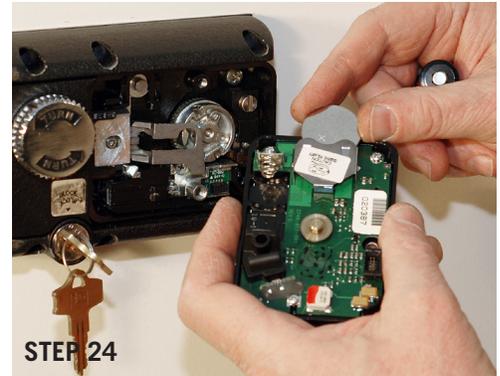
Step 22: Making sure the spline key won't press against the lever, use the cut piece of spindle against the top of the spline key so that you can carefully tap it into place in the cam. The underside of the cam should now be in contact with the surface of the lock's drive cam.



Step 23: Place a small amount (less than a drop) of Loctite 242 Threadlocker on the threads of the small 2-56 screw included in the lock kit. Place the screw through the opening in the spline key and thread it into the drive cam. Tighten until it is snug. Keep in mind that this is a very small screw, and it should not be over-tightened.



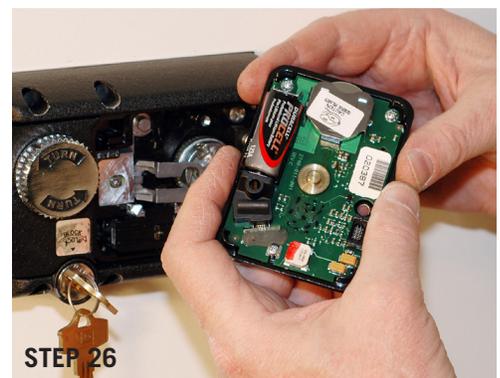
Step 24: Be sure you are wearing the grounding wrist strap, and that it is attached to bare metal on the door. Take the coin cell battery out of its package. Slide it POSITIVE SIDE UP into the battery holder on the underside of the cover. There is a large “+” on the battery to indicate the positive side.



Step 25: Place the CR123A camera-type battery into its holder on the lock cover's circuit board as shown at right. When this battery is installed, you will hear a beep. Wait. After about ten seconds, you should hear another beep, indicating that both batteries have been checked and found to be good. If you do not hear the second beep, remove both batteries for one minute, then repeat the battery installation process. If the second battery installation does not produce the two beeps, repeat the battery installation process using new batteries.



Step 26: This photo shows both batteries in place.



Step 27: Put the lock cover on the lock and install the cover screws. The screws are different lengths. The label on the back of the lock indicates which screw goes into which location.



Step 28: This is a good time to check the alignment of the lock to the strike and make any final adjustments in the strike location. When the lock and strike are in good alignment, mark, drill, and fasten at the remaining four screw locations as you did for the center screw.

*Tip: If the lock engages the strike biased toward the top of the strike, the lock will continue to work well if the door settles in the frame slightly over time.*



Step 29: If you turn the lock's dial, you will notice that it beeps three times, pauses, beeps three times, pauses, then beeps three times again. This signal indicates that the lock has not yet been calibrated.



Step 30: Follow the calibration procedure provided in the 2740 lock operating instruction document packaged with the 2890PDL kit. A 2740 setup module (shown at far right) is required for 2740A locks, and may be included in your 2890PDL kit. If not, it can be purchased from any S&G distributor under part number 2740-200. Model 2740B locks do not require a module for setup. Simply follow the calibration section of the lock's operating instructions.

Following calibration, slide the dust cover over the dial and ring, and use the included 4-40 screws and 3/32" hex wrench to attach it to the dial ring at the points indicated by the white arrows at right. Place a small amount of Loctite® 242 Threadlocker on the screw threads before installing.



Step 31: After the lock is calibrated right AND left, check the operation of the 2890PDL several times with the door open. Remember that you will need to manually depress the bolt trigger (see the arrow in the photo to the right) to get the 2890PDL to go into the locked condition. In normal operation, the strike depresses the trigger whenever the door is closed.

Once you are satisfied that everything is working as it should, you can check the 2890PDL operation by closing the door.



Step 32: Included in your lock kit is the orange label shown at right. Affix the larger label section near the lock on the inside surface of the door so that it is clearly visible to anyone using the secured area. It's not necessary to use the smaller label section.

This concludes the S&G Model 2890PDL installation.



## 2890PDL Dimensional Information

(all values in inches)

