Door Lock Series

PowerLever®

POWERSTAR™

INSTALLATION GUIDE

Models 1550, 4550/4560, PROX 9000

KABA®
TOTAL ACCESS

Trademarks

iButton is a registered trademark of Dallas Semiconductor.

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Patents

This product is covered by one or more of the following U.S. patents:

4,803,860	5,410,301	5,493,279	5,709,114	5,873,276	D366,822
5,170,431	5,451,934	5,511,401	5,774,058	5,881,589	D388,308
5,265,452	5,488,358	5,590,917	5,774,059	5,893,283	D388,309
5,271,253	5,488,660	5,592,838	5,870,914	5,896,026	

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Lock Description

The PowerLever® Door Lock is an advanced design electronic lock that operates using internally-generated power, "PowerStar™ technology", and includes a microprocessor and a cylindrical lock mechanism. Installation of the following lock models is covered in this manual:

- PowerLever 1550
- PowerLever 4550/4560
- PowerLever PROX 9000

Note: *Various lock models will be shown throughout the Installation Guide.*

The lock consists of the following major assemblies:

- **Outside cover assembly** - includes a keypad for entry of control data, a pair of LEDs (red and green) for visual feedback, a beeper for audio feedback, and the outside lever with a return of 1/2" (12.7mm) to the door (unassembled). Depending on which PowerLever lock model you are installing, the cover assembly may also include a Smart Key* reader (Model 45xx only) or a PROX card reader, along with a communication port for a handheld PDA (Personal Digital Assistant).

  * iButton™ memory device manufactured by Dallas Semiconductor.

- **Inside cover hardware -** includes system electronics and the inside lever with a return of 1/2" (12.7mm) to the door (unassembled).

- **Cylindrical lock hardware** - includes a Grade 1 lock mechanism with free-wheeling system and stainless steel retractor, a 6-pin standard key cylinder with tailpiece and two keys (unless prepared for interchangeable core), a 9/16" (14.3mm) throw latchbolt with adjustable bevel, and either a 2-3/4" (70mm) T-strike with box or a 4-7/8" (124mm) ASA strike, and a screw pack.

Self-Power Operation

The PowerLever lock is designed to operate using internally-generated power. The self-contained PowerStar generator is triggered by depressing the outside lever. Each 67-degree open and 67-degree restore rotation of the lever constitutes a charging cycle. A door open operation will require only one charging cycle if the period of door lever inactivity does not exceed a weekend (approximately 65 hours) when operating at normal room temperature. Periods of non-use beyond a weekend will require two charging cycles for a door open operation. One simultaneous flash of the green and red LEDs accompanied by a low volume beep indicates that the lock is powered. Extended operations such as audit data downloads will require a charging cycle approximately every 15 seconds. When lock power drops below a sufficient level for operation, the lock will continually beep and flash the red LED, prompting the user to depress the outside lever to provide additional power.

Door Handing

The PowerLever Door Lock can be installed as Right Hand Reverse or Left Hand Reverse.

Basic Tools and Materials Needed

Before beginning installation, be certain that you have the following tools readily available:
- Measuring tape
- Combination square
- Tape
- Center punch
- Electric hand drill
- 1/8" (3mm) drill bit
- 11/32" (9mm) drill bit
- 1" (25mm) hole saw
- 2 1/8" (54mm) hole saw
- File
- Wood chisel
- Hammer
- 1/4" or smaller slotted head screwdriver
- #1 Phillips head screwdriver
- #3 Phillips head screwdriver
- 1/4" hex driver handle
- T-15 security Torx bit
- Safety glasses
- Electrostatic Discharge (ESD) wrist band
- C-clamp (if using optional Drill Jig)

WARNING: **PowerLever locks are well protected from Electrostatic Discharge (ESD) damage once they are installed, but can be damaged during the installation process if proper precautions are not observed. Follow these precautions to avoid ESD damage when installing the lock:**
- **Do not remove the metal shield covering the system card on the inside backing plate.**
- **For the best protection, the use of a grounded ESD wrist band during installation is strongly recommended. The lock is protected to greater than 25,000 V when correctly installed.**

Illustrated Parts Breakdown
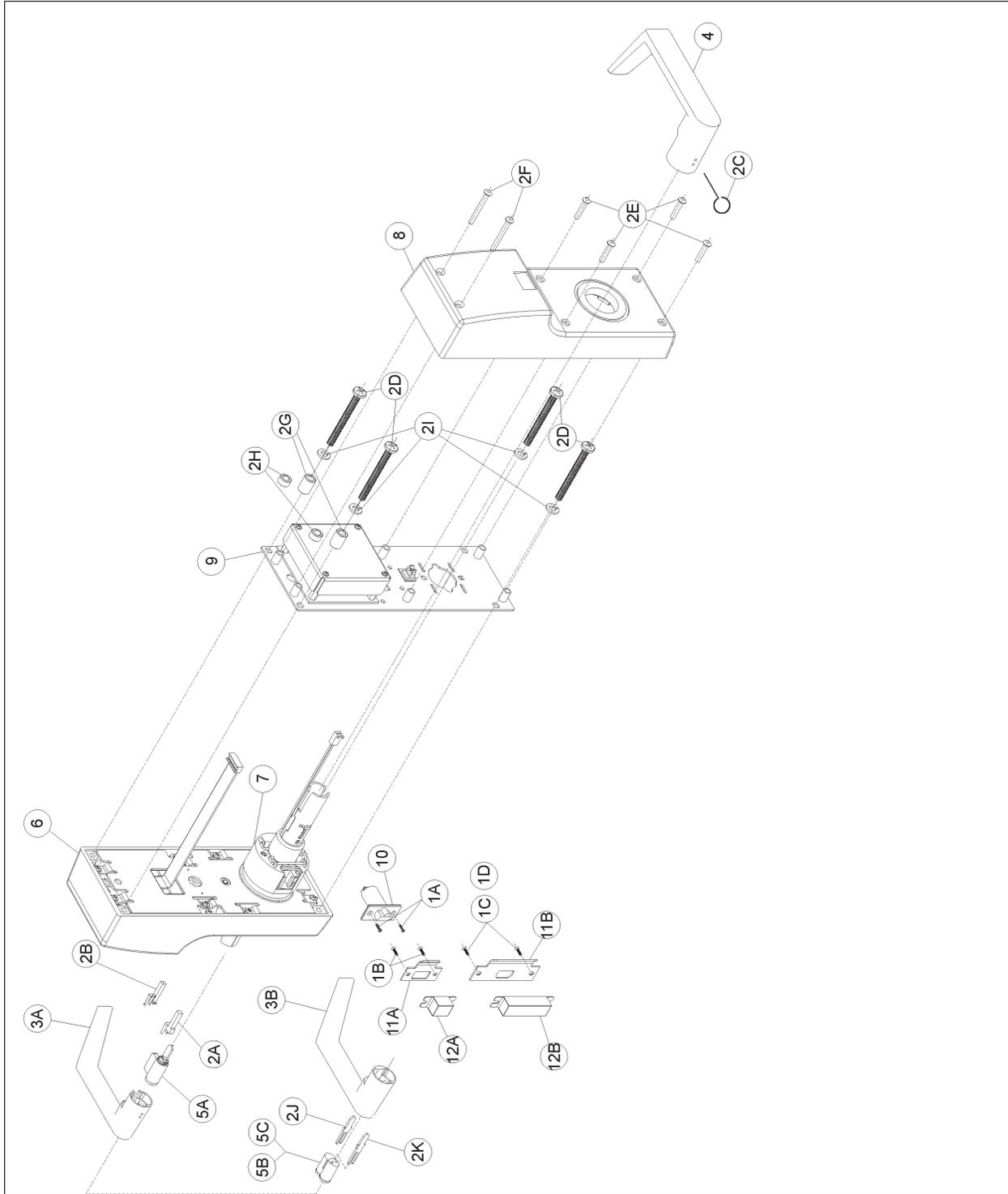
Figure 1

Item	Description
1	Screw packet for latchbolt assembly and strikes containing:
1A	• 2 - #8 x 3/4" Phillips head combination screws
1B	• 2 - #8 x 3/4" Phillips head combination screws
1C	• 2 - #12 x 3/4" Phillips head combination screws
2	Trim mounting packet for 1 3/8" - 2" door, containing:
2A	• Cylinder insert for door thickness greater than 1 1/2" (wide stop)
2B	• Cylinder insert for door thickness less than or equal to 1 1/2" (narrow stop)
2C	• Lever release tool
2D	• 1/4-28 x 2 1/2" Phillips round head screws (4)

Model 1550 or 45xx:

2E	• 8-32 x 1" Torx security screws (4)
2F	• 8-32 x 1 1/2" Torx security screws (2)

Model PROX 9000:

2E	• 8-32 x 1" Phillips round head screws (4)
	• 8-32 x 1 1/2" Phillips round head screws (2)
	• 8-32 x 1" Torx security screws (2)

2G	• 7/16" diameter x 5/8" long spacers for 1 3/8" door thickness (2)
2H	• 7/16" diameter x 1/4" long spacers for 1 3/4" door thickness (2)
2I	• 1/4" lock washers (4)
2J	• Tailpiece for IC key core for door thickness less than or equal to 1 1/2"
2K	• Tailpiece for IC key core for door thickness greater than 1 1/2"
3	Outside Levers
3A	• Lever to accept conventional key cylinder
	OR
3B	• Lever to accept interchangeable key core
4	Inside Levers
	• Lever
5	Key Cylinders
5A	• Conventional 6-pin
	OR
5B	• Interchangeable 6-pin core (not furnished with lock assembly)
5C	• Interchangeable 7-pin core (not furnished with lock assembly)
6	
6A	Model 1550 Outside lock case assembly
6B	Model 45xx Outside lock case assembly
6C	Model PROX 9000 Outside lock case assembly

Item	Description
7	
7A	Chassis assembly for levers using conventional (non-interchangeable) key cylinder
7B	Chassis assembly for levers using interchangeable key core
8	Inside case assembly
9	
9A	Inside backing plate/Electronics assembly - Model 1550
9B	Inside backing plate/Electronics assembly - Model 45xx
9B	Inside backing plate/Electronics assembly - Model 9000
10	Latchbolt assemblies
10A	• 9/16" (14.3mm) throw dead locking latchbolt
11	Strikes
11A	• 2 3/4" (70mm) T-strike (strike box included) **OR**
11B	• 4 7/8" (124mm) ASA-strike (strike box not included)
12	Strike Boxes
12A	• Strike box for 2 3/4" (70mm) T-strike (included with strike; refer to 11A)
12B	• Strike box for 4 7/8" (124mm) ASA strike (order separately)

INSTALLATION TEMPLATE

Caution: *The following installation template is not to scale and is meant to be used for reference only. It is not meant to be used for actual installation of the lock.*

HIGH BEVEL
FLAT,
NO BEVEL

LOW BEVEL

INSTALLATION
TEMPLATE

HIGH BEVEL
FLAT,
NO BEVEL

LOW BEVEL

11/32" DIA
(8.7mm)
4 THRU
HOLES

IMPORTANT
FOR HIGH BEVEL PLACE OUTSIDE
LINE AT HIGH EDGE OF DOOR
FOR FLAT DOORS PLACE CENTER
LINE AT EDGE OF DOOR
FOR LOW BEVEL PLACE INSIDE
LINE AT LOW EDGE OF DOOR

IMPORTANT
FOR HIGH BEVEL PLACE OUTSIDE
LINE AT HIGH EDGE OF DOOR
FOR FLAT DOORS PLACE CENTER
LINE AT EDGE OF DOOR
FOR LOW BEVEL PLACE INSIDE
LINE AT LOW EDGE OF DOOR

1 3/8"
(34.7mm)

1 3/8"
(34.7mm)

**PowerLever®
Door Lock
Series**

P/N 482.093

NOT TO SCALE

6 13/16"
(173mm)

LOCATE CENTER OF 1" DIA HOLE ON
CENTER LINE OF 2 1/8" DIA HOLE
AND IN CENTER OF DOOR THICKNESS

1" DIA (25.4mm)
THRU-HOLE

2 3/4"
(70mm)
BACKSET

2 3/4"
(70mm)
BACKSET

3 5/8"
(92 mm)

LOCATE CENTER OF 1" DIA HOLE ON
CENTER LINE OF 2 1/8" DIA HOLE
AND IN CENTER OF DOOR THICKNESS

2 1/8" DIA
(54mm)

1 5/8"
(41.3mm)

BORE 1" DIA
(25.4mm)
HOLE FOR
LATCH BOLT

BORE 1" DIA
(25.4mm)
HOLE FOR
LATCH BOLT

1 3/8"
(34.7mm)

1 3/8"
(34.7mm)

Mark the Door

Note: *Accurate door preparation, including drilling throughbolt holes, is essential for proper operation. The hand and bevel of the door affect template use. For doors already prepped, make sure the preparation correctly matches the templates provided before drilling throughbolt holes. If the door preparation does not match the template, redrill the door to match the template.*

To mark the door, complete the following steps:

1. Locate and mark the horizontal and vertical centerlines on the door at the desired height above the floor.

2. Fold the template on the dashed line as indicated on the template. **It is critical that the template be folded correctly on the proper dashed line to ensure proper hole alignment.** Place the fold on the edge of the door. Refer to Figure 2. The horizontal and vertical centerlines on the door should be clearly visible and aligned with the centerlines provided on the template.
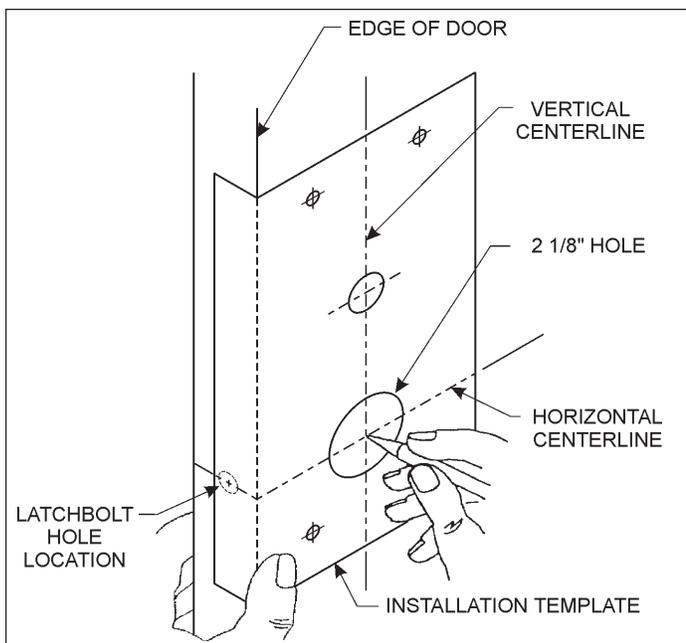
For non-prepped doors:

3. Locate and mark the centerline for the 1" (25.4mm) diameter latchbolt hole on the door edge based upon the door thickness and the desired height above the floor.

4. Locate and mark the centerline for the 2 1/8" (54mm) diameter hole at the height marked for the centerline of the latchbolt. Refer to Figure 2.

5. Locate and mark the centerline for the 1" (25.4mm) diameter strike hole on the door jamb at the same height as the latchbolt hole. Refer to Figure 3.
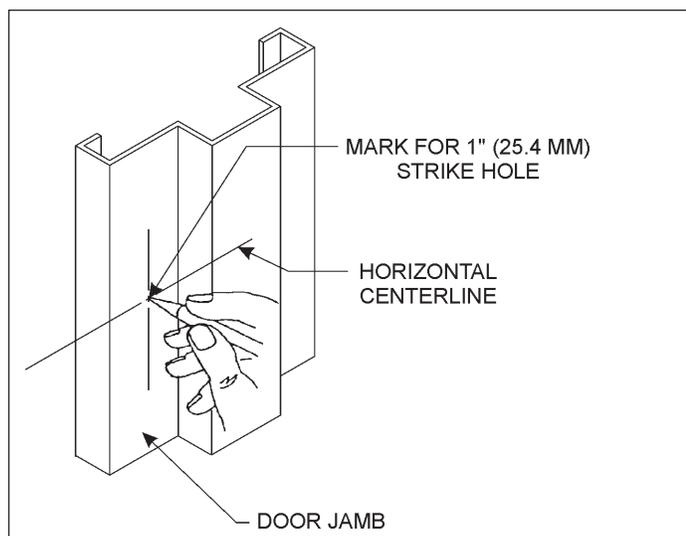
Figure 2

Figure 3

For all doors:

6. Locate and mark the center for the four 11/32" (8.7mm) diameter throughbolt clearance holes. Refer to Figure 4.

7. Locate and mark the center for the 1" (25.4mm) diameter thru-hole for the system cable.

8. Center punch all hole positions onto the door.

Drill the Holes

Refer to Figure 5 for summary drilling dimensions. An optional Drill Jig is available. Refer to Figure 6 on the following page.
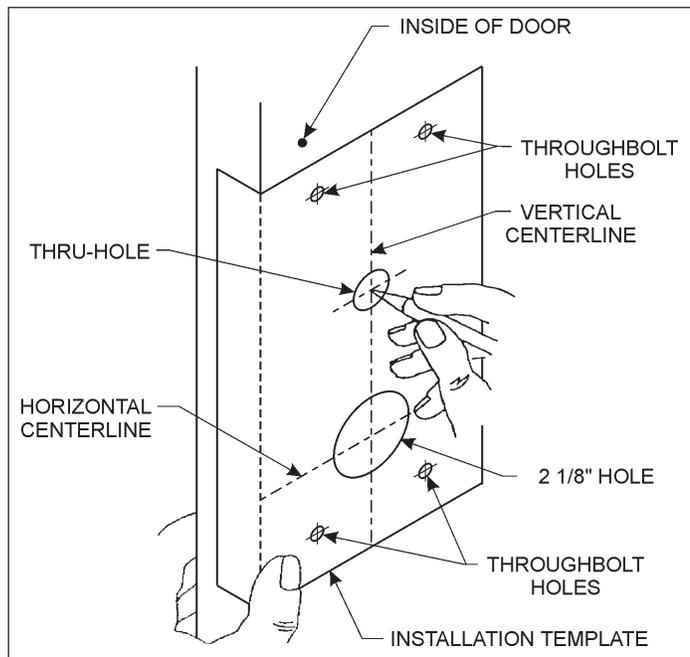
Figure 4

Note: *Make sure the holes are drilled level and straight. When drilling through the door, be careful not to damage the door finish. It is recommended that safety glasses be worn during the drilling process.*

For non-prepped doors:

1. Drill a 1/8" (3mm) diameter pilot straight through the door where you marked for the centerline of the 2 1/8" (54mm) diameter hole.

2. Using the pilot hole, drill a 2 1/8" (54mm) diameter hole straight through the door.

Note: *The 2 1/8" (54mm) diameter hole in a labeled door shall be drilled under licensed procedure.*

3. Drill a 1/8" (3mm) diameter pilot hole straight through the door edge where you marked for the centerline of the 1" (25.4mm) diameter hole for the latchbolt into the edge of the door. Make sure the latchbolt hole is level and perpendicular to the 2 1/8" (54mm) diameter hole.
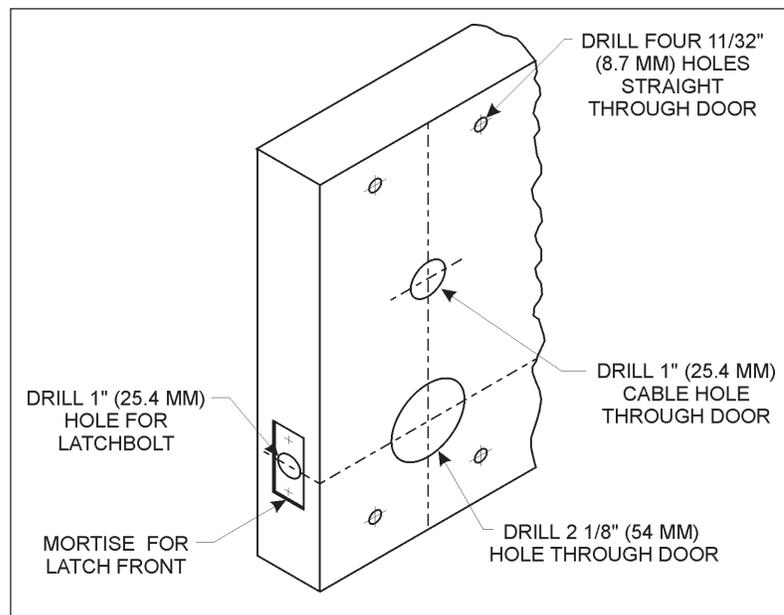
Figure 5

4. Using the pilot hole, drill a 1" (25.4mm) diameter hole for the latchbolt into the edge of the door. Make sure the latchbolt hole is level and perpendicular to the 2 1/8" (54mm) diameter hole.

5. Mortise the edge of the door 1 1/8" x 2 1/4" x 5/32" (29mm x 57mm x 4mm) for the latch front.

For all doors:

1. Drill four 11/32" (8.7mm) diameter holes straight through the door.

2. Drill a 1/8" (3mm) diameter pilot hole straight through the door where you marked for the centerline of the 1" (25.4mm) diameter hole for the system cable.

3. Using the pilot hole, drill the 1" (25.4mm) diameter hole for the system cable.

Note: *Remove any burrs from the inside and outside edges of the 1" (25.4 mm) diameter hole to prevent cutting of the system cable.*

Optional Drill Jig:

An optional Drill Jig, Part Number 404044, is available to ensure accurate locating and drilling of the four 11/32" (8.7mm) diameter mounting holes, and the 1" (25.4mm) diameter system cable hole.

1. For the best results, align the jig to the door with a combination square and clamp to the door before drilling. Refer to Figure 6.
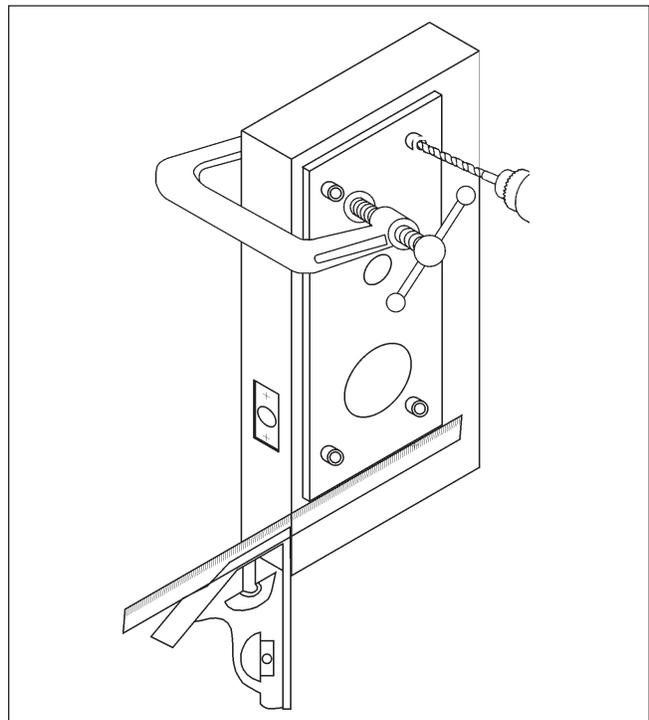
Figure 6

INSTALLATION

Install the Latchbolt

1. Check the door swing and orient the latchbolt to the hand of the door. Refer to Figure 7.

2. Insert the latchbolt into the hole in the door as shown in Figure 7. Using the latchbolt front as a template, centerpunch and drill two (2) 1/8" (3mm) mounting holes.

3. Using the #1 Phillips head screwdriver, secure the latchbolt with the two #8 combination screws provided.

LATCHBOLT

#8 COMBINATION SCREWS
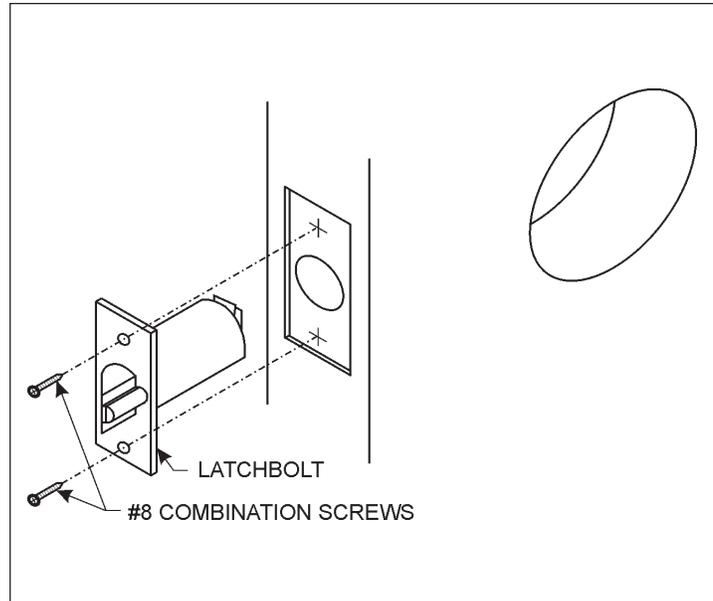
Figure 7

Adjust the Lockset for the Door Thickness

1. Screw the lock chassis assembly in or out of the outside case assembly to obtain dimension "A" as shown in Figure 8. The dimension "A" equals one-half of the door thickness as shown in the following chart.

Door Thickness	Dimension "A"
1 3/8" (35mm)	11/16" (17.5mm)
1 3/4" (44mm)	7/8" (22mm)
2" (51mm)	1" (25.5mm)

Using a tape measure, set/check dimension "A". This adjustment should result in the retractor being centered in the door.

Note: *This measurement should be made from the back plate of the lock case.*

OUTSIDE CASE ASSEMBLY

LOCK CHASSIS ASSEMBLY

SOLENOID CABLE

RETRACTOR C/L

A
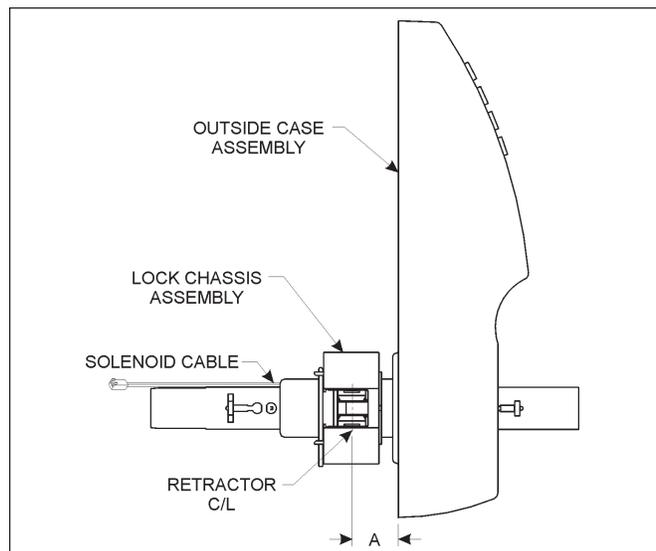
Figure 8

Install the Lock Chassis/Outside Case Assembly

If you are installing a Model 45xx lock or a PowerLever PROX 9000 lock, the outside case assembly includes a communication cable that exits the outside case assembly at the same location as the system cable (as shown in the photo.) The communication cable is a 6-conductor ribbon cable that carries communication signals from the RJ-12 connector on the outside case assembly through the door to the system card.

1. If your lock includes outdoor gaskets (P/N 405054 - Inside Gasket and P/N 405056 - Outside Gasket), you should at this time install the Outside Gasket.

   Warning: *For outdoor applications, you must install the gaskets. Otherwise, the product warranty will be voided. Gaskets are not for use on fire doors.*

   Refer to Figure 9 and identify the Lock Chassis/Outside Case Assembly and Outside Gasket (four holes at top and bottom). Remove the paper backing sheet from the adhesive on the Outside Gasket.

   Slide the gasket down over the Chassis Assembly and the cables, with the adhesive side toward the Case Assembly. Center gasket over Outside Case Assembly. Ensure the gasket is centered in all directions so that an equal amount of cover is visible around the perimeter of the gasket. Once the proper position of the gasket is verified, press the gasket firmly into place.
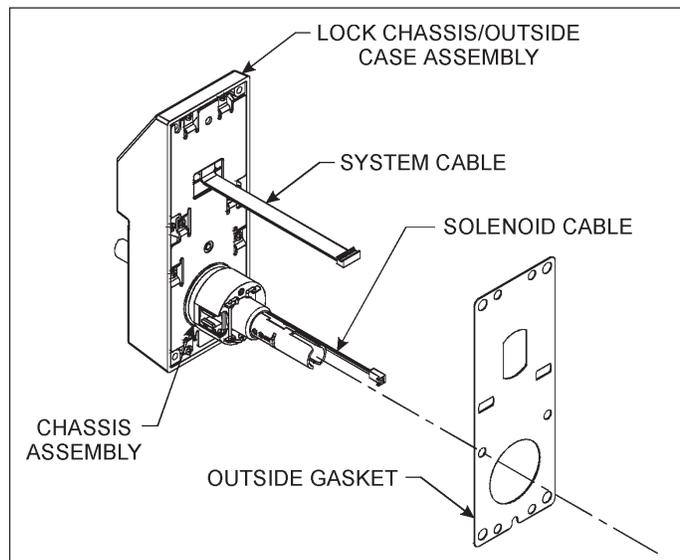
Figure 9 - Model 1550 shown
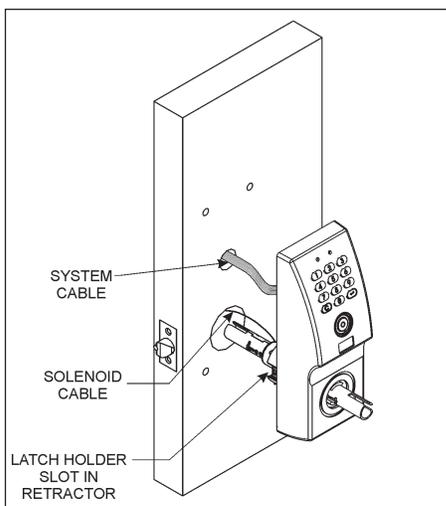
Figure 10 - Model 45xx shown

2. Refer to Figure 10. Make sure that the latch holder slot in the chassis assembly faces the front edge of the door.

Caution: *Handle the electrical wiring harness with care. Do not pinch the wires.*

---

3. From the outside of the door, feed the solenoid cable through the 2 1/8" (54mm) hole.

Caution: *Ensure that the solenoid cable does not get tangled in the latchbolt mechanism.*

4. From the outside of the door, feed the system cable and communication cable (if applicable) through the 1" (25.4mm) hole.

5. Insert the chassis assembly into the hole. Be sure that the chassis assembly engages the latch prongs and that the latch tail engages the retractor as shown in Figure 11.
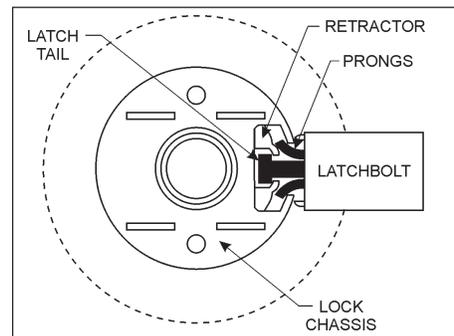
Caution: *Ensure that the solenoid cable does not get tangled in the latchbolt mechanism.*

Figure 11

Install the Inside Backing Plate/Electronics Assembly

1. If your lock includes outdoor gaskets, you should at this time install the Inside Gasket. Refer to Figure 12 and identify the Inside Backing Plate/ Electronics Assembly and Inside Gasket. Re- move the paper backing sheet from the adhesive on the Inside Gasket. Position the gasket, with the adhesive side toward the inside backing plate, so that the large hole in the gasket is centered over the four protrusions on the backing plate. Ensure that the four corner holes in the gasket are aligned with the matching four corner holes in the backing plate. When properly installed, the gasket will overhang the backing plate an equal amount on all four sides. Once the proper position of the gasket is verified, press the gasket firmly into place.
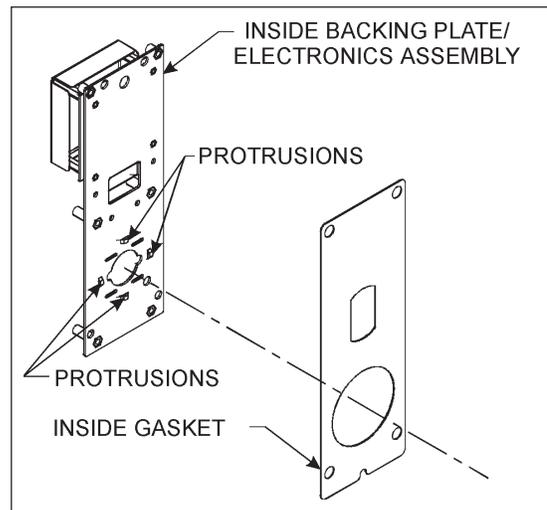
Figure 12

2. Guide the solenoid cable through the hole in the backing plate. Refer to Figure 13.

Note: *The phantom cable indicated in the drawing is the routing path of the solenoid cable for opposite handing.*

3. Guide the system cable (and communication cable if applicable) through the rectangular hole in the backing plate.
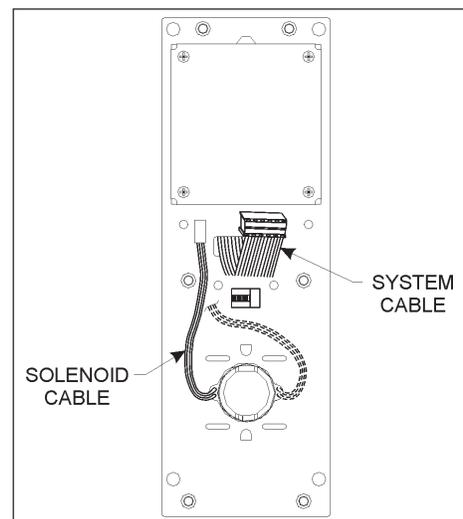
Figure 13

4. Refer to Figure 14. Install the two top 1/4-28 x 2 1/2" Phillips round head screws with the appropriate spacers to compensate for the door thickness, and with the lockwashers (Refer to note below). Do not tighten yet.

Note: *Use the two 7/16" dia. x 1/4" (short spacers) for a 1 3/4" door. Use the 7/16" dia. x 5/8" (long spacers) for a 1 3/8" door. No spacers are required for a 2" door.*

5. Install the two bottom 1/4-28 x 2 1/2" Phillips round head screws with the lockwashers.

6. Tighten all four screws.

SYSTEM CABLE

SOLENOID CABLE

SHORT SPACER
FOR 1 3/4" (44 MM) DOOR

OR

LONG SPACER
FOR 1 3/8" (35 MM) DOOR

LOCKWASHER

OR

NO SPACER
FOR 2" (51 MM) DOOR

1/4"-28 X 2.50" SCREW

LOCKWASHER
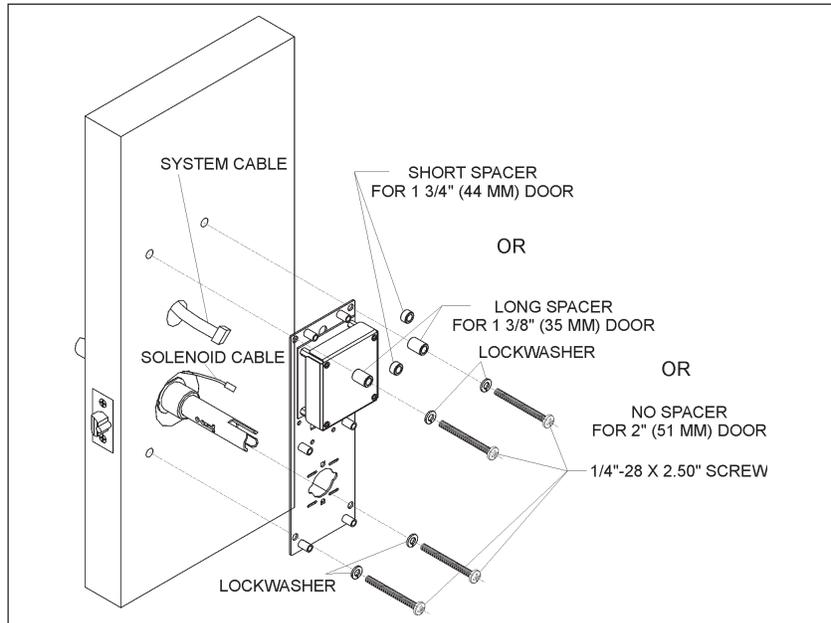
Figure 14

Install the Cables

Warning: *Do not remove the shield. This could cause damage to the system card.*

Warning: *Ensure that the solenoid cable is routed to the inside of the PEM nuts used for mounting the inside case. The solenoid cable will exit either the left or right hole in the backing plate depending on the latchbolt position.*

Note: *Refer to Figure 15.*

1. Plug the system cable into the system card.

2. Route the solenoid cable through the cable clip.

3. Plug the solenoid cable into the 2-pin connector on the system card.

4. If installing a Model 45xx or PowerLever PROX 9000 lock, you must also connect the communication cable to the system card. Plug the communication cable into the appropriate connector on the bottom edge of the system card, as shown in the photo.

SHIELD
(DO NOT REMOVE)

SYSTEM
CARD

INSIDE
BACKING PLATE

SYSTEM CABLE

PEM NUT
CABLE CLIP

PEM NUT   SOLENOID CABLE

Figure 15

SW2 - Factory
Reset Switch

Solenoid Cable
Connector

System Cable
Connector

Communication
Cable Connector
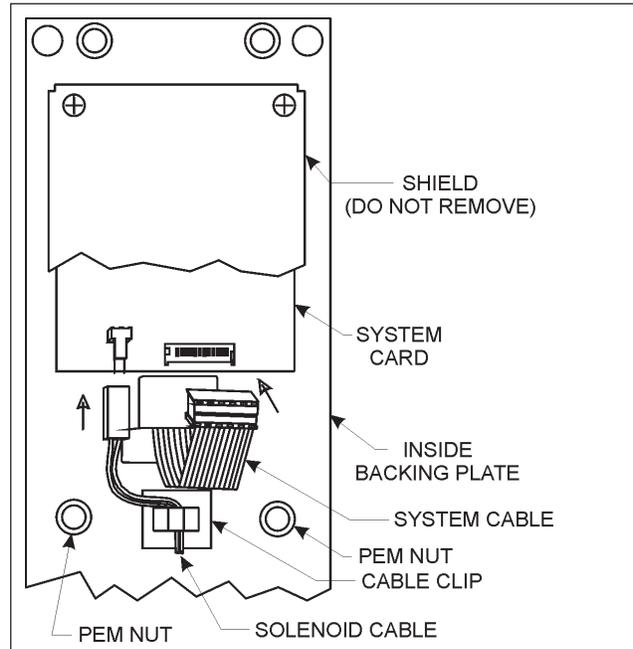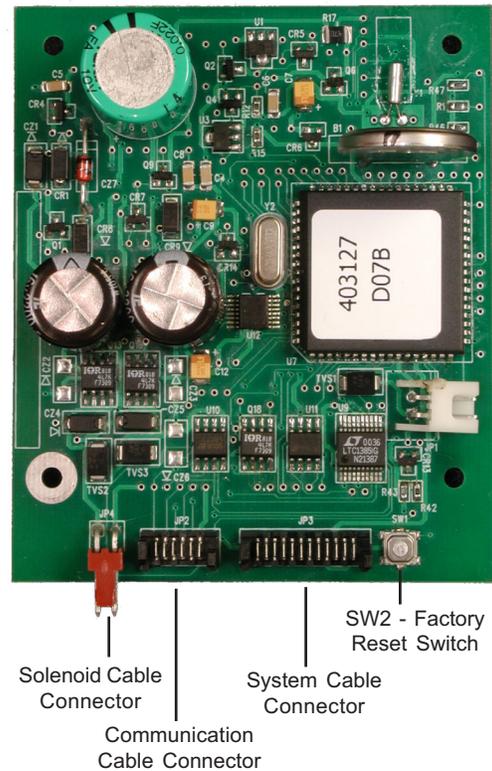
Install the Inside Case

Note: *Refer to Figure 16.*

1. Slightly wiggle and push the inside case assembly over the lock cylinder assembly, past the lever catch and against the door.

Note: *Ensure that the solenoid cable is not pinched and is routed through the cable clip.*

2. Install the two top long mounting screws.

3. Install the four bottom short mounting screws.

Note: *A Torx security screwdriver bit can be ordered as part number 404050. A Torx security screwdriver bit is supplied with the optional Drill Guide Jig, part number 404044.*
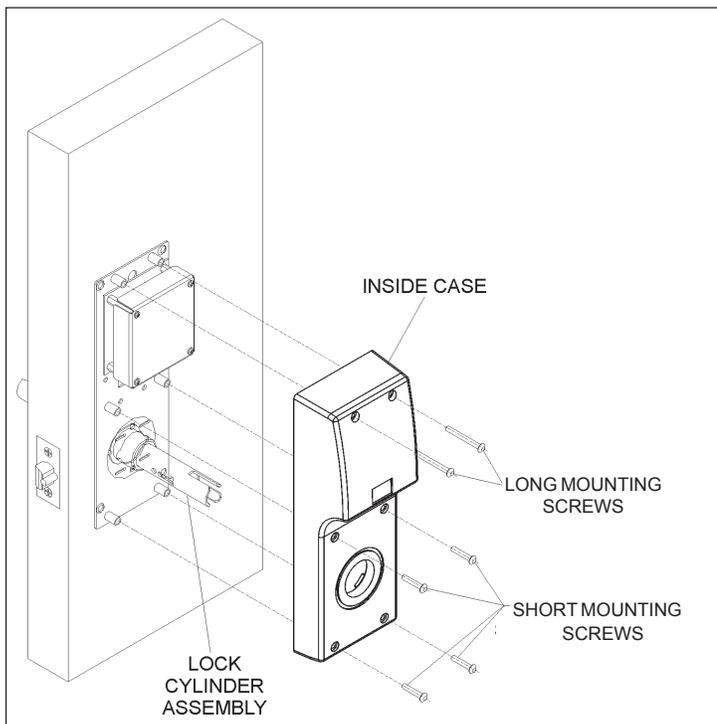
Figure 16

Attach the Inside Lever

Note: *Refer to Figure 17.*

1. Push the inside lever onto the lock tube. Slightly wiggle and push the inside lever until the lever engages the lever catch.

2. If the door thickness is greater than 1 1/2" (38mm), the attachment of the inside lever is complete and you can proceed to the "Attach the Outside Lever" section. If the door thickness is 1 1/2" (38mm) or less, go to Step 3.

3. Insert the lever release tool into the lever hole closest to the door. Push in the lever release tool.

4. While pushing in the lever, allow the lever to move to engage the lever catch. This second catch point ensures that the end of the lever is less than 1/2" (13mm) away from the door as required by many building codes.
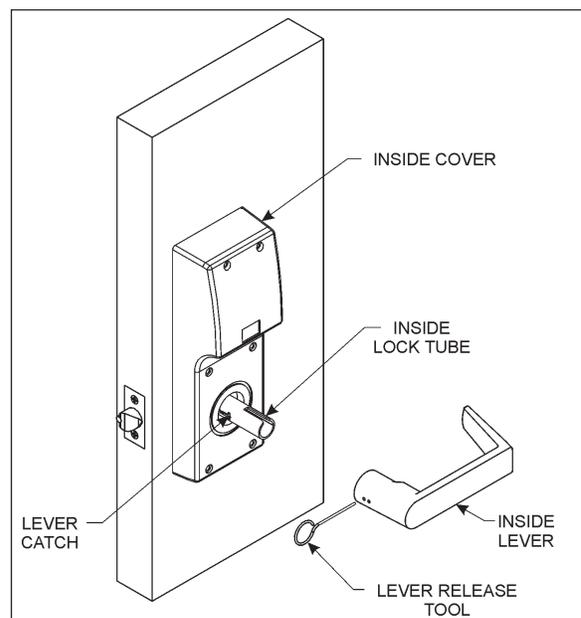
Figure 17

Attach the Outside Lever

Conventional (Non-Interchangeable) Key Cylinder

1. Refer to Figure 18. Make sure the cylinder tailpiece is aligned in the same direction as the cylinder bible. Slide the cylinder all the way into the lever.

2. Select the appropriate cylinder insert. Refer to Figure 19. If the door thickness is 1 1/2" (38mm) or less, use the cylinder insert with the narrow stop. If the door thickness is greater than 1 1/2" (38mm), use the cylinder insert with the wide stop.

Figure 18

3. Align and position the cylinder insert in the lever shank with the prongs facing toward the cylinder. Press the cylinder insert firmly into the lever shank securing the cylinder.
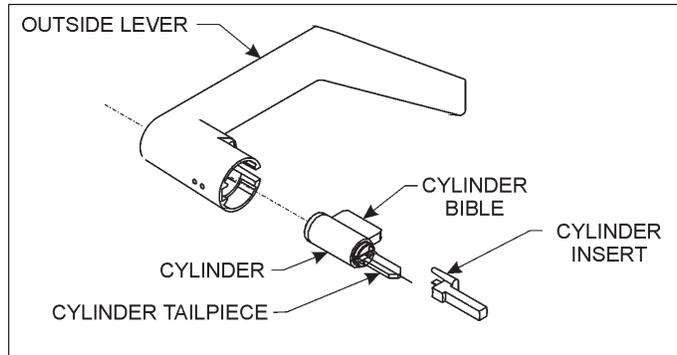
Note: *Refer to Figure 20.*

4. Ensure that the outside lock tube is oriented such that the lever catch is facing the same direction as the latchbolt.

5. With the key inserted in the cylinder, slide the outside lever onto the lock tube until the lever stops against the lever catch.

6. Turn the key 45 degrees clockwise.

7. Push the lever until it engages with the lever catch.

8. If the door thickness is greater than 1 1/2" (38mm), the lever installation is complete. If the door thickness is 1 1/2" (38mm) or less, complete the following steps.

9. With the key still turned 45 degrees, insert the lever release tool into the lever hole to depress the lever catch.

10. Push the lever further onto the lock tube until the lever engages the lever catch at the second catch position. This second catch point ensures that the end of the lever is less than 1/2" (13mm) away from the door as required by many building codes.
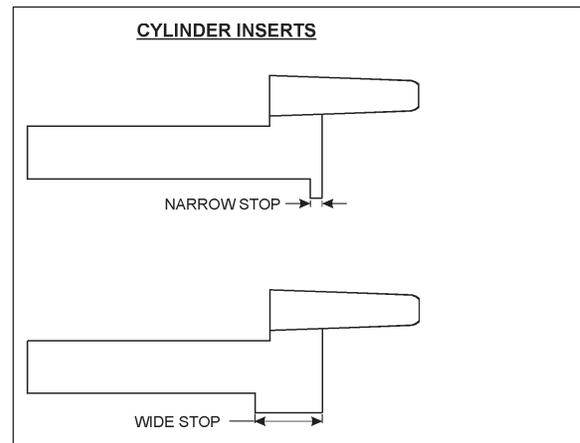
Figure 19
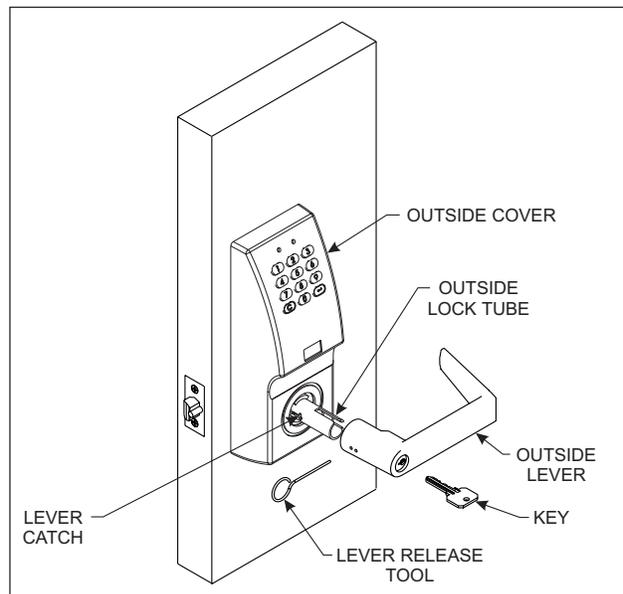
Figure 20 - Model 9000 shown

Tailpieces

Conventional Cylinder
The table below lists part numbers for tailpieces that must be used with other manufacturers' cylinders.

Part Number	Diagram	Cylinder Application
405458		Kaba Ilco
404078		Ilco® 705, Kaba 1539, ASSA® 65691, Abloy® 5477, Arrow™ 100C. Packed 10 per and contains part number 405350.
404079		Schlage™ 23-001, Schlage Primus™, ASSA 65611, Corbin Russwin® Key-in-lever. Packed 10 per and contains part number 405351.
N/A *		Cylinder assembly Part Number 20_200V1 – contains Medeco® CT-V01 ** Must be ordered through Medeco*
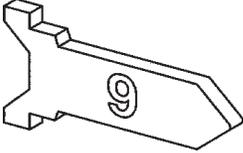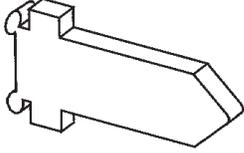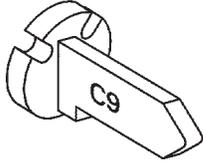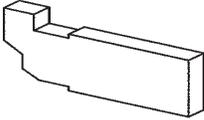
Interchangeable Core
PowerLever locks are designed for use with Arrow, Best®, Everest™, Falcon™, KSP™ and Keymark™ cores. Tailpieces furnished with lock must be used.

Part Number	Diagram	Cylinder Application
404077		Short tailpiece for 1-3/8" to 1-1/2" door thickness. Packed 10 per and contains part number 405292.
404080		Long tailpiece for door thicknesses greater than 1-1/2". Packed 10 per and contains part number 405355.
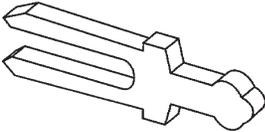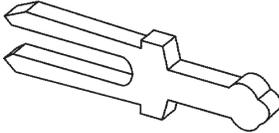
Interchangeable Key Core

Note: *Refer to Figure 21.*

1. Push the outside lever onto the lock tube. Slightly wiggle and push the lever until the lever engages with the lever catch.

2. If the door thickness is greater than 1 1/2" (38mm), the lever installation is complete. If the door thickness is 1 1/2" (38mm) or less, complete the following step.

OUTSIDE COVER

OUTSIDE LOCK TUBE

OUTSIDE LEVER
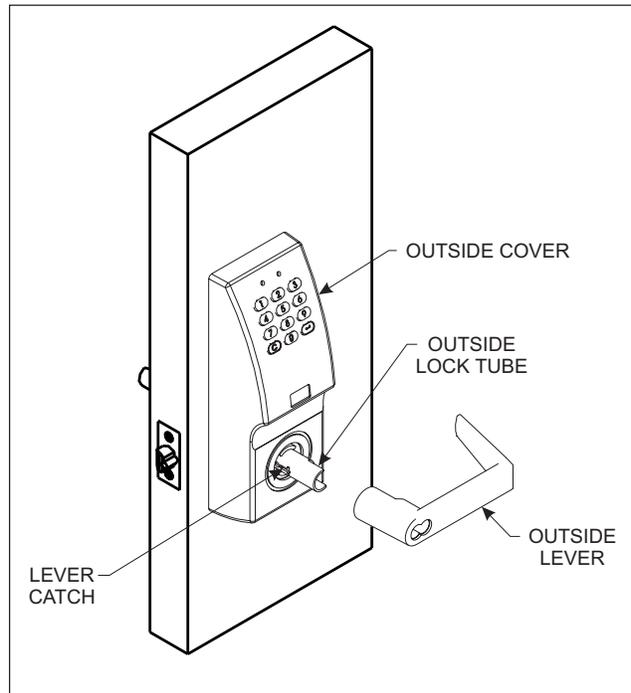
LEVER CATCH

Figure 21 - Model 9000 shown

3. Refer to Figure 22. With the screwdriver inside the lever, push the inside of the lever catch toward the door hinge and push on the lever so that it moves to the next catch position. This second catch point ensures that the end of the lever is less than 1/2" (13mm) away from the door as required by many building codes.

Note: *The lever catch is a thin plate. Be careful to engage only the lever catch and not the parts behind the catch.*

SCREWDRIVER

LEVER CATCH

DOOR HINGE DIRECTION
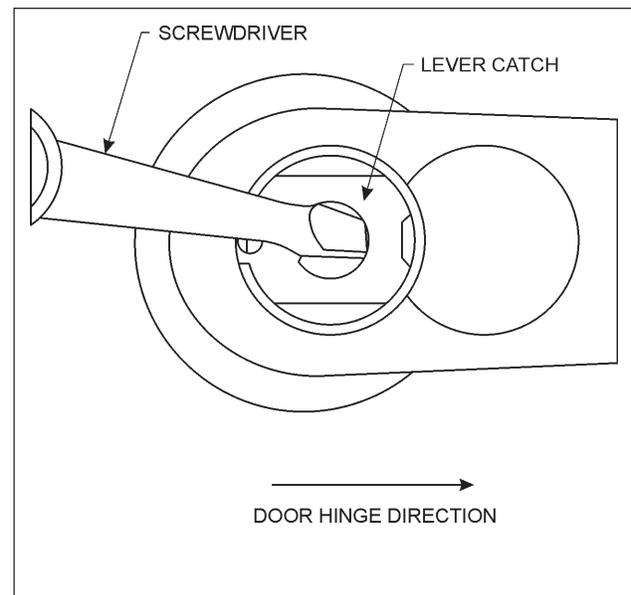
Figure 22

Install the Interchangeable Key Core

Note: *Two (2) tailpieces for the interchangeable core are included with the lock: one for door thickness 1 1/2" (38.1mm) or less, and one for door thickness greater than 1 1/2" (38.1mm) . The interchangeable core is not included with the lock.*

1. Insert the appropriate tailpiece prongs into the core. Refer to Figure 23.

Note: *Refer to Figure 24.*

2. Insert the control key into the core and turn the key clockwise until the catch disengages.

3. With the control key in the core, insert the core fully into the outside lever.

4. Turn the control key counter-clockwise, locking the core in the lever. Then remove the key from the core.
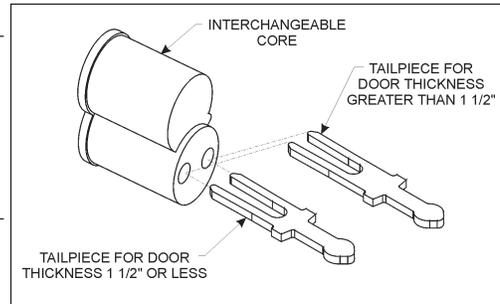
Figure 23
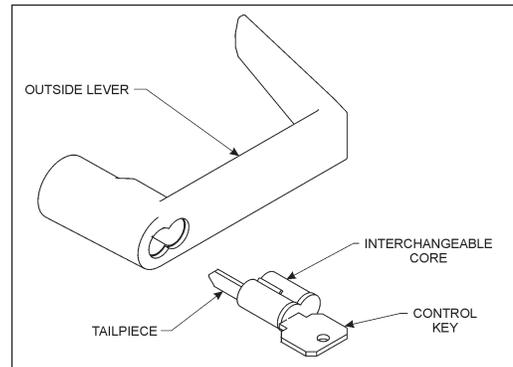
Figure 24

Locate and Install the Strike

For non-prepped doors:

1. Locate the centerline of the strike opening on the door jamb at the centerline of the latchbolt. Trace an outline around the strike on the door jamb.

2. Mortise the door jamb in alignment with the center of the latchbolt to accommodate the strike box and the 4 7/8"(124mm) ASA strike (refer to Figure 25) or the 2 3/4" (70mm) T-strike (refer to Figure 26).
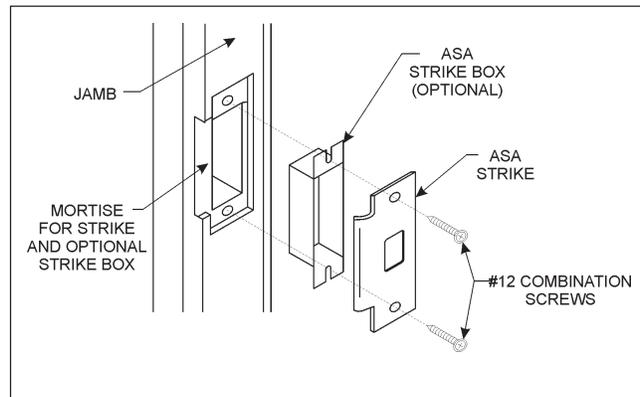
Figure 25

For all doors:

1. Insert the strike box and fasten the strike with the screws provided.

Note: *When the strike box is not used, the recess in the door jamb must be at least 9/16" (14mm) deep to allow the latchbolt to extend to its full free length.*
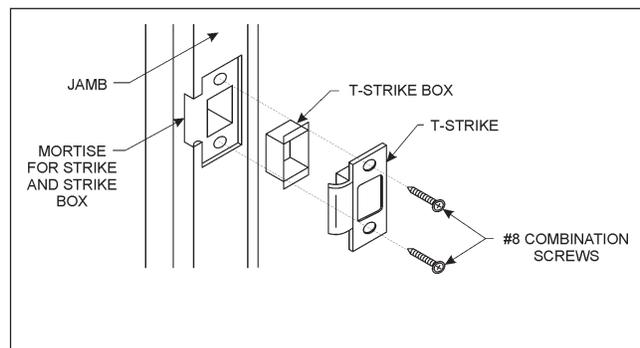
Figure 26

Test Procedure

After you have completed the installation of the lock, but prior to closing the door, you should perform the following test procedures to ensure that the lock is functioning properly.

1. Power the lock by depressing the outside lever. The lock should respond with one simultaneous flash of the green and red LEDs accompanied by a beep to indicate that the lock is powered. If the lock does not respond in this manner, refer to the Troubleshooting section.

2. After successfully completing Step 1 above, enter the default factory Master User PIN/combination on the lock keypad. (For a Model 1550 or 45xx, the default factory combination is "**000000**". For a PowerLever PROX 9000, the default factory Master User PIN is "**12345678**".) The lock should respond with three beeps/flashes of the green LED to indicate available entry. If the lock does not respond in this manner, repeat Step 1 above. If the lock does not operate properly after performing Step 1, refer to the Troubleshooting section.

3. After successfully completing Steps 1 and 2 above, rotate the outside handle down to retract the bolt. Ensure that the bolt retracts when the handle is rotated. If the bolt retracts properly, release the handle to restore the bolt. If the bolt does not retract properly, refer to the Troubleshooting section.

4. Wait approximately four seconds (the default time that the lock remains open before re-locking) until you hear the click of the solenoid indicating that the lock is re-locked.

Note: *The re-locking click of the solenoid is a very faint click that may be drowned out with minimal background noise.*

If you do not hear a click shortly after the four seconds have elapsed, refer to the Troubleshooting section in this guide. If you do hear a click, verify that the lock is re-locked by rotating the outside handle down to ensure that the bolt does not retract. If the bolt retracts, release the handle and attempt to rotate the handle again. If the bolt continues to retract, refer to the Troubleshooting section.

Note: *Successful completion of Steps 1-4 should verify normal operation of the lock.*

Remove the Outside Lever

Conventional (Non-Interchangeable) Key Cylinder

Note: *Refer to Figure 25.*

1. Insert the key and turn the key in the cylinder 45 degrees clockwise.

2. Push the lever release tool into the hole in the lever to depress the lever catch.

3. Pull the lever off of the tube.

4. If the lever was latched at the second latch point, it will be necessary to repeat Steps 1 and 2 with the lever release tool inserted in the second hole in the lever.

LEVER RELEASE TOOL
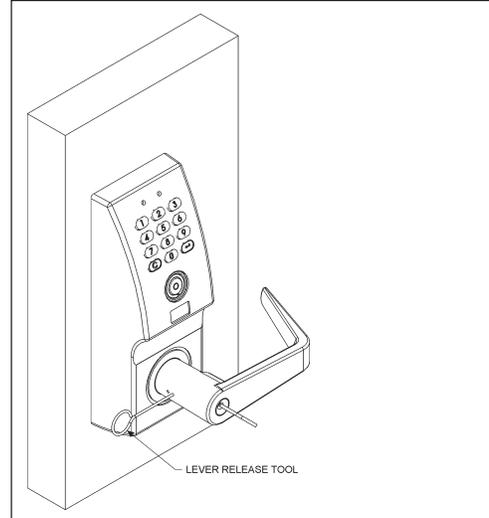
Figure 25 - Model 45xx Shown

Interchangeable Key Core

Note: *Refer to Figures 26 and 27.*

1. Insert the control key into the core and turn the key clockwise.

2. Pull out the core and tailpiece.

3. With a screwdriver positioned inside the lever, push the inside of the lever catch toward the hinge and pull the lever off of the tube.

Note: *The lever catch is a thin plate. Be careful to engage only the lever catch and not the parts behind the catch.*

OUTSIDE LEVER

INTERCHANGEABLE CORE

TAILPIECE

CONTROL KEY

Figure 26

SCREWDRIVER

LEVER CATCH

DOOR HINGE DIRECTION
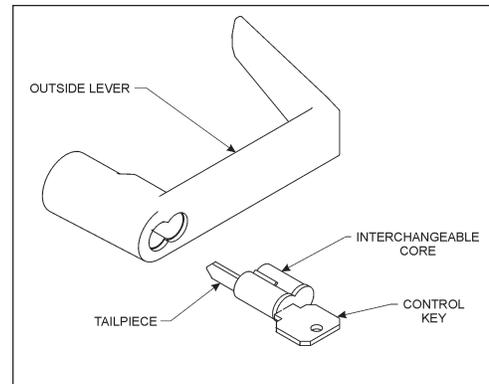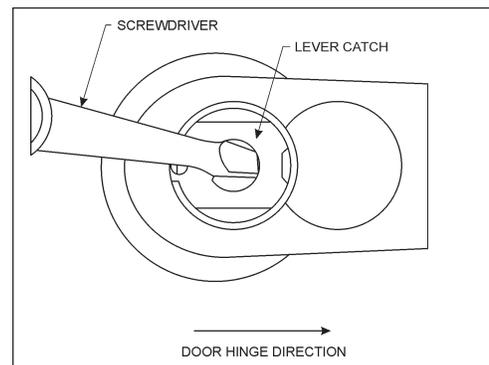
Figure 27

SPECIFICATIONS

Electronic Specifications

Power Unit: Solenoid

Power: Self power by pressing outside lever

Hardware Specifications

Dimensions: Outside case: 3 1/2" x 9 1/4" x 2 3/8" (89mm x 235mm x 60mm);
                    Inside case: 3 1/2" x 9 3/4" x 1 3/4" (89mm x 248mm x 44mm)

Cover Material: Cast zamak

Handing: Non-handed

Door Thickness: 1 3/8" - 2" (35mm-50.8mm)

Backset: 2 3/4" (70mm)

Latchbolt: 9/16" (14.3mm) throw (Optional 3/4" (19mm) throw also available.)

Strike: 2 3/4" (70mm) T-strike or 4 7/8" (124mm) ASA strike

Lever: Solid cast zamak, return to within 1/2" (12.7mm) of door face

Key Cylinder/Cores:

   Standard: 6-pin conventional (brushed chrome finish)

   Optional: IC Core, 6-pin (brushed chrome finish) - furnished by customer

       IC Core, 7-pin (brushed chrome finish) - furnished by customer

Keys: Nickel silver (2)

Finishes - BHMA:

   Covers: Black powder coat, satin chrome (US26D)

   Levers: Satin chrome (US26D)

Certifications/ ANSI/BHMA A156.2
Compliance: 3-hour UL/ULC Fire Door Rating
                    ADA

Shipping Weight: 14 lbs.

TROUBLESHOOTING

Problem	Solution
Lever pulls off.	Lever catch not fully engaged. Lock is not centered on door. Door too thick. Readjust the lockset for the door thickness. Refer to Step 1 under the "Adjust the Lockset for the Door Thickness" heading on page 10.
Unable to assemble outside lever.	Key and tailpiece orientation is incorrect. Wrong interchangeable tailpiece selected.
Latch will not fully retract.	Lock is not properly engaged with latch or mis-aligned. Lock is not centered on door.
Key binds in lock.	Lever catch not fully engaged. Lock is not centered on door. Check for proper tailpiece and proper orientation of tailpiece.
Lock fails to power up.	Check for secure connection of interconnect ribbon cable to polarized headers on the keypad control card and on the system card.
Lock fails to beep after keystrokes.	Check for secure connection of interconnect ribbon cable to polarized headers on the keypad control card and on the system card.
Interconnect cable is securely connected on both the keypad control card and on the system card, yet the lock still fails to power up or it fails to beep after keystrokes.	Check for continuity of the interconnect cable with a volt ohm meter (VOM). If cable does not have continuity, call technical support for assistance.
Solenoid fails to work properly.	Check for secure connection of solenoid two-conductor cable to polarized header on the system card.
Solenoid is securely connected, but it still fails to work properly.	Check the resistance of the solenoid with a VOM. The resistance should be about 6.5 ohms ± 20%. If the solenoid is reading an open circuit or the resistance is outside the range above, call technical support for assistance.

For technical assistance, contact PowerLever Technical Support at 1(800) 950-4744.

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