

INSTALLATION GUIDE

Solitaire 850L/850/950

Cylindrical Drive Version

PK2950



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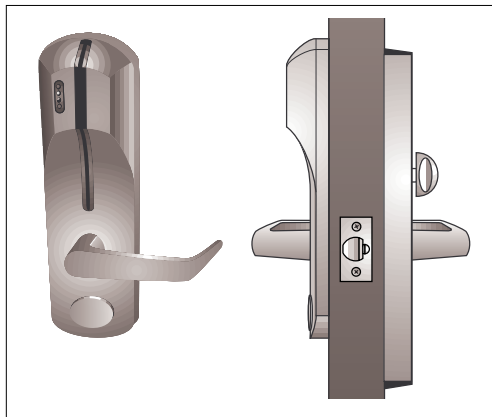
1.0 Introduction

The Kaba Ilco Solitaire Electronic Lock (see Figure 1) is designed to be installed over a standard cylindrical lock cutout. The cylindrical lock can be mounted on wood or metal doors. Door thickness 1 $\frac{3}{4}$ ".

Other than the standard latch and cylindrical drive cut-outs, the only additional door cutouts needed to mount the lock are four holes for the mounting screws, a hole for the reader cable, and a hole for the lock's override mechanism.

Cylindrical lock package contents:

- Outside lock housing assembly
 - Inside housing assembly
 - Inside housing cover assembly
 - Inside lever handle
 - Latch
 - Strike plate
 - Dust box
 - 4 combination screws
- Hardware bag containing the following:



- AA batteries (4)
- Battery holder (1)
- Bottom end cap (1)
- #6-32 X $\frac{1}{4}$ " hex socket cap screw (2) for bottom end cap
- #10-24 long mounting screws (2)
- #10-24 short mounting screws (2)
- $\frac{1}{4}$ -28 X $\frac{3}{8}$ " hex socket set screw (1) for inside lever handle
- $\frac{3}{8}$ " diameter nylon bearing (1) for inside lever handle
- Medallion (1)

Figure 1

Tools Needed:

- Phillips #2 screwdriver
- Allen keys: $\frac{1}{8}$ " for the set screw
 $\frac{3}{4}$ " for bottom end cap screw & medallion retaining screw
- Drill bits: $\frac{1}{4}$ " (6.5mm), $\frac{7}{16}$ " (11mm), $\frac{7}{8}$ " (22.5mm),
1" (25mm) and 1 $\frac{3}{8}$ " (35mm) if the lock has the mechanical
2 $\frac{1}{2}$ " (54mm) for the cylindrical cutout
- Chisel
- Hex socket $\frac{3}{16}$ " or adjustable wrench
- Pliers (for locks with the mechanical key override option)
- Steel file (medium or fine)

2.0 Checking the Door

Proper alignment of the door with the frame and the lock with the strike are crucial for the performance and durability of the lock. On pairs of doors with overlapping astragal* or rabbeted edges ensure that all auxiliary hardware, such as: flush bolts, vertical rod panic devices, door closers, and door coordinators, is installed correctly (see Figure 2). Rabbeted doors may require a different latch unit.*An astragal is a strip running the length of the passive door opposite the hinges. (see Figure 3).

Make sure the lock hand and door hand are the same (see Figure 4).

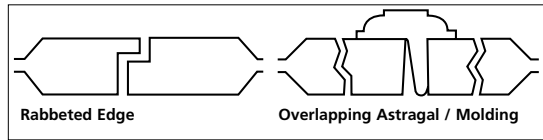


Figure 2

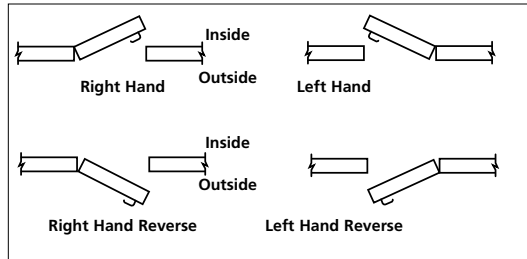


Figure 4

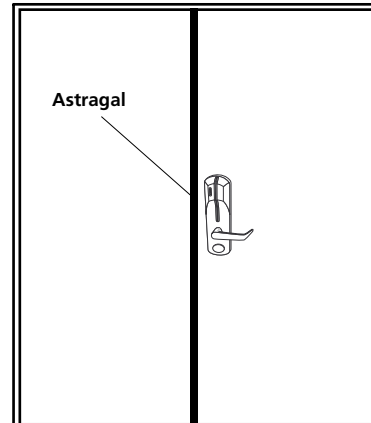


Figure 3

3.0 Marking the Door

- 1) Using the drilling template, establish the proper lock mounting height on the door according to local industry standards.
- 2) Place the template on the door edge and line up the centerline of the lock face on the template with the center of the door thickness.
- 3) Mark the outline of the latch face and the outline of the latch cutout (shaded area). If there is already a strike cutout on the frame, you must ensure that the center of the 1" (25mm) hole for the latch lines up with the strike.
- 4) Mark the axis of rotation so you can line up the template on the door face.
- 5) Remove the template, fold where indicated and reposition the template with the fold on the exterior corner of the door edge. Make sure the axis of rotation lines up with the axis of rotation marking on the door edge.
- 6) Mark the holes to be drilled with a punch on the exterior face of the door.
- 7) Remove the template, fold on the other fold line and reposition the template with the fold on the interior corner of the door edge. Make sure the axis of rotation lines up with the marking on the door edge.
- 8) Mark the holes to be drilled with a punch on the interior face of the door.

Keep the template aligned with the lock mounting height line at all times.

4.0 Making the Cylinder Cutouts

- 1) Make the 2 1/8" (54 mm) hole according to the template provided.
- 2) Bore a 1" (25 mm) hole for the latch straight into the edge of the door at the center point of the height line (see Figure 5).
- 3) Chisel out enough material to make the latch face plate flush with the door frame.

5.0 Making the Electronic Lock Cutouts

- 1) Starting on the inside of the door, drill the required holes on each side of the door as per the template.
- 2) Clean out the cylindrical unit cutout, so no objects interfere with its mechanism.

6.0 Installing the Latch

- 1) The bevel must face the direction the door swings to close.
- 2) Clean out the cylindrical cutout so no objects interfere with its mechanism.
- 3) Place the latch into the 1" (25 mm) cutout. Secure the latch with the two screws provided.
- 4) Make sure the latch moves freely.

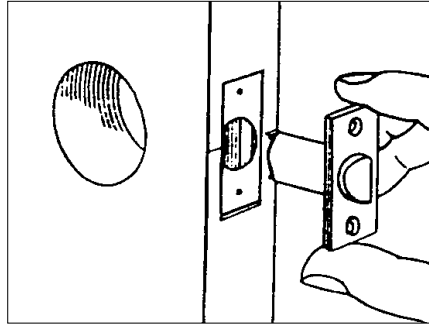


Figure 5

7.0 Installing the Electronic Lock

All locks have a mechanical override. The override is operated by a key and cylinder.

Lock Housing Preparation

- 1) Position the outside housing assembly on the outside of the door.
- 2) The override cylinder connecting bar (A) should extend $\frac{3}{8}$ " (3mm) from the inside surface of the door (see Figure 6). If necessary, measure and mark the connecting bar accordingly.
- 3) If necessary, remove the housing from the door and break the connecting bar, where marked, with pliers.
- 4) Rotate the cylinder connecting bar on the outside housing to a horizontal position.
- 5) Set the latch hub drive (C) on the inside housing to the proper position for the handing of the lock. Make sure the position of the spindle is as shown (see Figure 7).
- 6) With a screwdriver, rotate the override cam (D) on the inside housing counter clockwise, until it stops. Then return it to the horizontal position (see Figure 8).

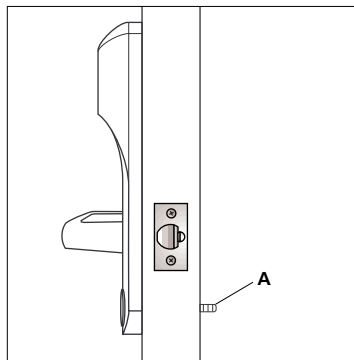


Figure 6

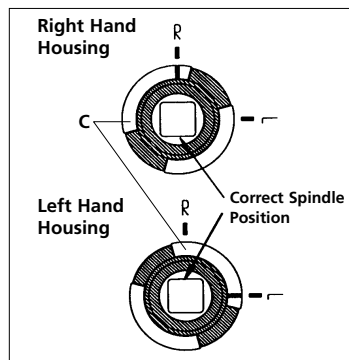


Figure 7

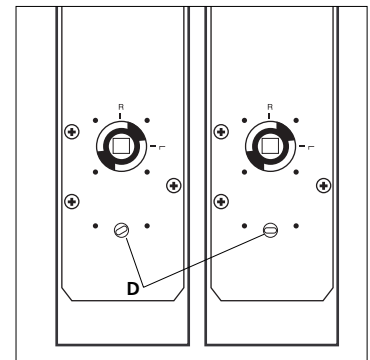


Figure 8

Installing the Lock on the Door

- 1) Thread the reader cable (F) through the reader cable hole, and mount the housing on the door (see Figure 9).
- 2) Engage the latch shoe and the retractor with the latch tailpiece.
- 3) Make sure the latch moves freely.
- 4) Connect the reader cable to the inside housing. Make sure the connector is fully engaged.
- 5) Guide the cylinder connecting bar on the outside housing into the override cam on the inside housing.
- 6) Mount the inside housing on the door. The entire reader cable should be inside the reader cable hole. Make sure it is not pinched between the door and the lock.
- 7) Using the inside lever to turn the inside spindle (G), retract the latch bolt. This will ensure the latch hub drive is properly engaged with the cylindrical unit hub (see Figure 9).
- 8) Using the two long #10-24 screws at the top of the lock and the two short ones at the bottom, secure the inside housing to the outside housing.
- 9) Install the removable core and test the operation of the mechanical keys. The rotation should be very smooth. When the key is rotated 180° verify that outside lever retracts the latch bolt. Rotate back the key to initial position and verify that outside lever does not retract latch bolt.
- 10) Install the inside housing cover assembly. The lever bushing (J) should line up with the hole in the cover (see Figure 10).
- 11) Install the medallion (K) on the outside housing. Position the medallion over the override cylinder and secure it with the retaining screw (L) at the bottom of the lock (see Figure 11).

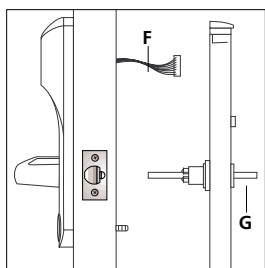


Figure 9

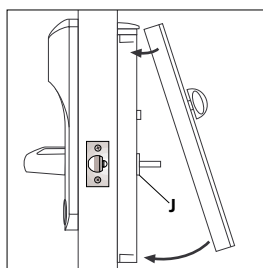


Figure 10

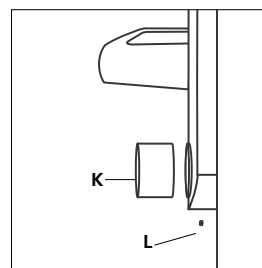


Figure 11

- 12) Install the nylon bearing (M). Secure inside lever (N) with the set screw (O) tighten the screw to 40 inch pounds or 4.5 Nm. Insert the battery holder assembly (P) into the housing and secure it with the 6-32 X 1/4" hex socket cap screw (R) (see Figure 12). When you connect the batteries, you should hear the motor run for a short period of time. If you do not, replace the batteries. Anytime the battery is disconnected from the lock, a 3 second pause is required before reconnection. If the lock motor runs constantly, disconnect and then reconnect the battery (do not forget the 3 second pause). If the lock motor runs constantly after the battery is reconnected, replace the lock.

8.0 Installing the T Strike

- 1) Make the 3/4" (19 mm) cutout for the dust box according to the template. On metal prefabricated frames, and when you are not using a strike box, make sure the recess in the jamb is deep enough, over 3/4" (19 mm)
- 2) Place the dust box in the cutout.
- 3) Place the strike plate on the dust box and, if necessary, draw a line around the strike and cut out enough material to make the strike plate flush with the door frame (see Figure 13).
- 4) Secure the strike plate with the two combination screws provided.

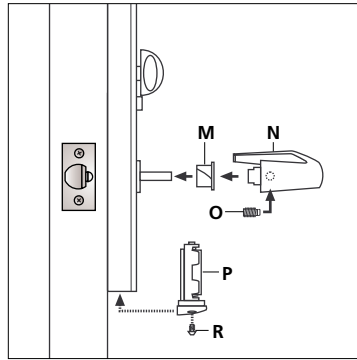


Figure 12

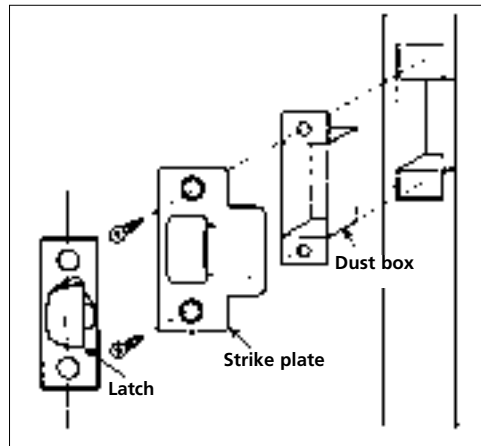


Figure 13

9.0 Installing the ASA Strike

The center of the strike lip (A) (see Figure 14) must line up with the axis of rotation of the lever handle. Once the position of the strike has been established, follow the steps below:

- 1) Make the 1" (25 mm) cutout for the dust box according to the template. On prefabricated metal frames or when you are not installing the dust box, make sure the recess in the jamb is deep enough, over 1" (25 mm).
- 2) Secure the strike plate with the two screws provided. If necessary, draw a line around the strike and use the line as a guide to cut out enough material to make the strike plate flush with the door frame.

10.0 Checking the Latch/Strike Alignment

Proper alignment of the door and frame is crucial for the performance and durability of the lock.

In a proper installation, the dead latch should rest against the strike plate (see Figure 15). If the dead latch slips into the strike opening, a total lockout may occur. This incorrect installation cancels our warranty of the entire lock mechanism.

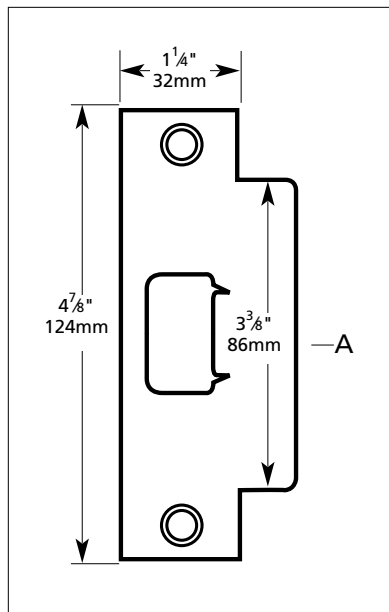


Figure 14

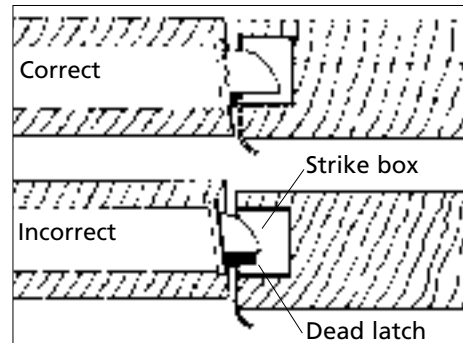


Figure 15

11.0 Testing the Operation of the Lock

Once the installation of the lock is complete, the lock should be tested for proper operation. **All testing procedures should be performed with the door open, unless otherwise specified.**

Inside Lever

- 1) Rotate the inside lever towards the floor. The latch bolt will fully retract if the lock is properly installed.

If the latch bolt does not retract check the hand setting of the latch hub drive on the inside housing, and its connection to the mortise.

If the lever does not rotate, the handing of the inside housing may be incorrect.

If the lever feels tight, the latch hub drive may be squeezed between the inside housing and the cylindrical unit. Check to make sure the lock is the correct one for the thickness of the door.

Outside Lever

Rotate the outside lever towards the floor. The latch bolt should not retract. If it does, check the batteries and the position of the override cam on the inside housing.

If the lever feels tight or you are encountering some friction, the lock components may not be aligned correctly. Loosen the mounting screws and try to shift the outside housing until the friction is eliminated. If the problem persists, check the position of the holes in the door.

To test the lock's response to keycards, a User keycard, and an Emergency keycard will be needed.

- 1) Program the lock.
- 2) Make sure the privacy function is disengaged (if available). Swipe the User keycard through the reader. The green LED should be flashing and the latch should fully retract as the outside lever is rotated.
- 3) Engage the privacy function (if available).
- 4) Swipe the User keycard through the reader again. If the User keycard was not programmed with the resident function the green LED should flash once followed by the red LED flash twice. The latch bolt should not retract as the outside lever is rotated.
If the User keycard was programmed with the resident function, the red LED should flash once followed by the green LED flashing for six seconds. The latch bolt should retract as the outside lever is rotated.
- 5) Swipe the Emergency keycard through the reader. The green LED should flash for six seconds. The latch bolt should fully retract as the outside lever is rotated.
- 6) Close the door and ensure that it is properly latched.
- 7) Open the door using the User keycard.
- 8) Stand inside the room, close the door, and then engage the privacy function (if available). Open the door several times by disengaging the privacy function with the thumbturn (if available).

Take note of any excess friction you encounter. Excess friction between the latch and the strike may necessitate filing the strike (refer to section 2.0, Checking the Door).

12.0 Changing the Handing of the Lock

In emergency situations, it may be necessary to convert a right hand lock for use on a left-hand door or vice versa. This is possible with the Solitaire Electronic Lock, but does involve some time and some skill. Both the outside and the inside housing must be converted. The following procedure is recommended in extreme cases only and should only be done by a certified installer or a professional locksmith.

Warning: Safety glasses must be worn to prevent eye injury from springs under tension that may be ejected from the lock.

Outside Housing Assembly (see Figure 16)

- 1) Remove the cylindrical drive.
- 2) Remove the spring screw (A).
- 3) Unhook the spring from the spring hook (B).
- 4) Remove the retaining ring (C).
- 5) Remove the stop plate (D).
- 6) Rotate the lever to the other side of the housing.
- 7) Reinstall the stop plate with the spring on the same side as the lever.
- 8) Reinstall the retaining ring.
- 9) Attach the spring to the spring hook on the same side of the lock as the lever.
- 10) Screw the spring into place.
- 11) Remove 4 screws from cylindrical drive with the $\frac{1}{8}$ " (3 mm) allen key. Rotate the cylindrical drive 180°. Reinstall 4 screws.
- 12) Reinstall the cylindrical unit.

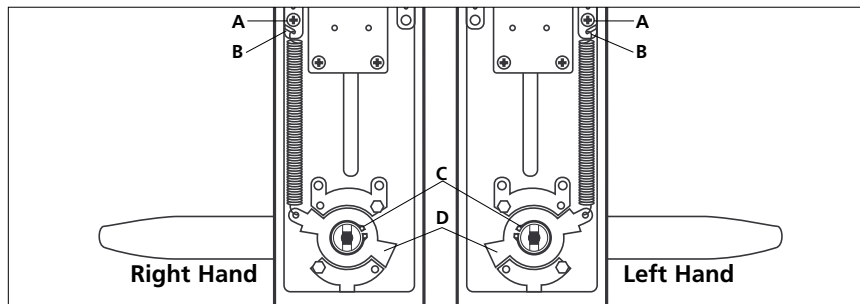


Figure 16

Inside Housing Assembly (see Figure 17)

- 1) Remove the access plate (A). The screw is located underneath the warning sticker.
- 2) Attach the inside lever to the shaft and rotate towards the bottom of the lock.
- 3) Remove the silver colored spacer (B).
- 4) Remove the lever.
- 5) Reposition the coil spring (C) (**the tip of the coil spring must be down**) and the hand siding pin (D) for the new handing of the lock, as shown. Before changing the hand siding pin make sure that the override cam (E) (see Figure 24) is turned completely clockwise, and that the spindle is straight. After changing the pin turn the override cam counter clockwise (see Figure 18 back to its original position).

- 6) Attach the inside lever to the shaft, corresponding to the new handing, and rotate towards the bottom of the lock.
- 7) Reinstall the silver colored spacer on the opposite side of the lock.
- 8) Remove the lever, reinstall the access plate and screw it into place.

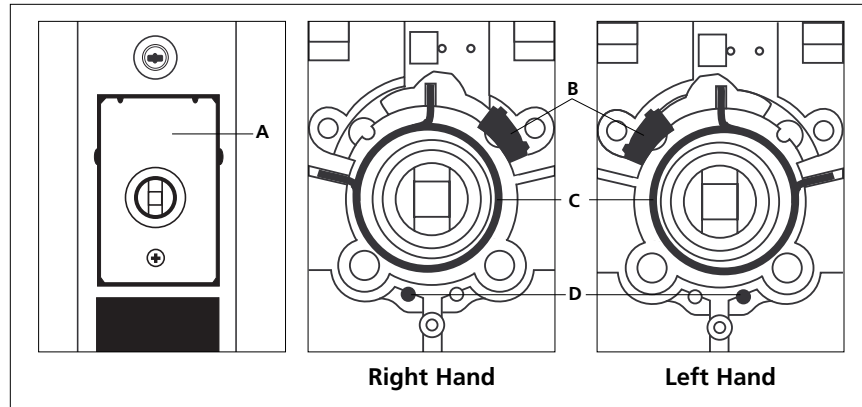


Figure 17

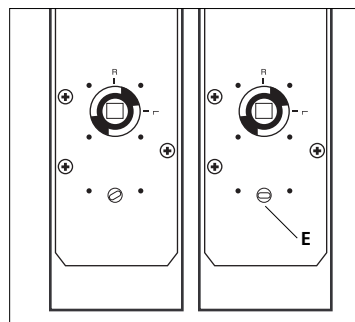


Figure 18

13.0 The Mechanical Key Override

In the event you need to open the door mechanically, or to remove the override cylinder, please follow the following instructions.

- 1) Remove the retaining screw from the bottom edge of the outside housing.
- 2) Remove the medallion from the housing.

You can now access the override cylinder to either use the entry key to open the door, or the control key to remove the cylinder.

To use the entry key:

- 1) Rotate the key 180° clockwise and activate the outside lever. The latch bolt must retract fully.
- 2) Rotate the key counter-clockwise to put the lock in lockout mode & remove the key.



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