Planning the installation

Contents

These installation instructions describe how to install your 93KQ Cylindrical Lock. Topics covered include:

Patents

Products covered by one or more of the following patents:

5,590,555 5,794,472 5,083,122 6,720,861

Site survey

Use the following survey to record information about the installation site. You need this information to determine how to prepare the door for the lock.

Door information

Door handing and bevel:
- ❑ Left hand (LH)
- ❑ Left hand, reverse bevel (LHRB)
- ❑ Right hand (RH)
- ❑ Right hand, reverse bevel (RHRB)

Door thickness: _____ inches (1 3/4″ to 2 1/4″)

Environment information

Ambient temperature:
- ❑ Is within specifications. See the tables below.

This product meets the following Locked Door Outdoor test requirements for ANSI/BHMA 156.25:

Side of door	Range
Outside	−31°F to +151°F (−35°C to +66°C)

This product meets the following Full Indoor test requirements for ANSI/BHMA 156.25:

Side of door	Range
Inside and outside	+32°F to +120°F (0°C to +49°C)

Components checklist

Use the following checklist to make sure that you have the items necessary to install your Electronic Wireless Cylindrical Lock.

Components provided in the box:
- ❑ Chassis with outside lever and outside rose liner assembly
- ❑ Top and bottom inside covers
- ❑ Fire plate
- ❑ Battery holder with batteries
- ❑ Inside rose liner
- ❑ Outside escutcheon assembly
- ❑ Inside lever
- ❑ Throw member package*
- ❑ Sleeve bushing*
- ❑ Latch
- ❑ Hub washers
- ❑ Trim hole insert package
- ❑ Plastic bushing package
- ❑ Escutcheon screw package
- ❑ Door status switch assembly
- ❑ Strike package
- ❑ Bar code ID sticker (for your records)
- ❑ Installation template and instructions
- ❑ **Other components:**
- ❑ Core and control key
- ❑ Temporary operator card

Special tools checklist

Use the following checklist to make sure that you have the special tools necessary to install your Electronic Wireless Cylindrical Lock.

- ❑ KD303 Drill jig
- ❑ T20 TORX® bit driver
- ❑ KD325 Strike plate locating pin
- ❑ KD315 Faceplate marking chisel

*Patent Pending

Figure 1   Positioning the template

Preparing the door and door jamb
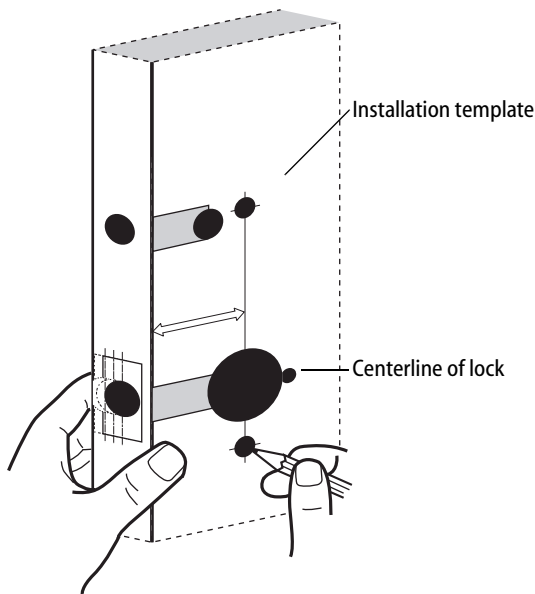
1   Position template and mark drill points

Note: If the door is a fabricated hollow metal door, determine whether it is properly reinforced to support the lock. If door reinforcement is not adequate, consult the door manufacturer for information on proper reinforcement. For dimensions for preparing metal doors, see the Q01 and G02 Templates—Installation Specifications for 93KQ Cylindrical Locks.

Note: If the door is a LH or RH door, mark the inside of the door. If the door is a LHRB or RHRB door, mark the outside of the door.

For uncut doors and frames

1   Measure and mark the horizontal centerline of the lever (the centerline for the chassis hole) on the door and door jamb. Mark the vertical centerline of the door edge.

Note: The recommended height from the floor to the centerline of the crossbore or chassis hole is 38″.

2   Fold the *Q05 Template—Installation Template for 93KQ Cylindrical Locks* on the dashed line and carefully place it in position on the high side of the door bevel.

Note: For steel frame applications, align the template's horizontal centerline for the latch with the horizontal centerline of the frame's strike preparation.

3   Tape the template to the door.

4   Center punch the necessary drill points. Refer to the instructions on the template.

For doors with standard cylindrical preparation

1   Fold the *Q05 Template—Installation Template for 93KQ Cylindrical Locks* on the dashed line. Looking through the hole from the opposite side of the door, align the template so that you see the template outline of the 2 1/8″ diameter chassis hole.

2   Tape the template to the door.

3   Center punch the necessary drill points. Refer to the instructions on the template.

Preparing the door and door jamb

2   Drill holes and mortise for latch face

1   Drill the holes listed below:

- upper and lower trim holes
  - ◆ 5/8″ diameter
  - ◆ through door
- harness hole
  - ◆ 3/4″ diameter
  - ◆ through door
- motor wire hole
  - ◆ 7/16″ diameter
  - ◆ through door
  - ◆ before drilling chassis hole
- chassis hole
  - ◆ 2 1/8″ diameter
  - ◆ through door
  - ◆ after drilling motor wire hole
- latch hole
  - ◆ 1″ diameter
  - ◆ meets chassis hole
- door status switch hole
  - ◆ 1″ diameter
  - ◆ meets harness hole
- anti-rotational hole, see "Use drill jig to drill through-bolt holes" on page 5.
  - ◆ 5/16" diameter
  - ◆ through door

Note 1: *To locate the center of a hole on the opposite side of the door, drill a pilot hole completely through the door.*

Note 2: *For holes through the door, it is best to drill halfway from each side of the door to prevent the door from splintering.*

2   Mortise the edge of the door to fit the latch face.

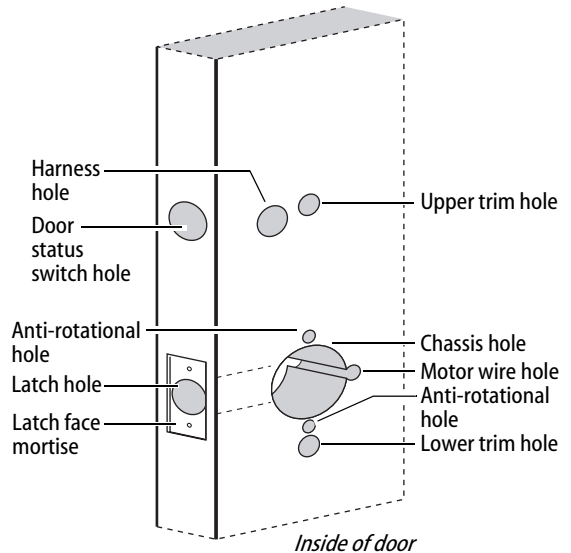3   Drill the holes for the screws used to install the latch.

Figure 2   Drilling holes and mortising for the latch face

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Preparing the door and door jamb

Figure 3   Installing the latch in the door
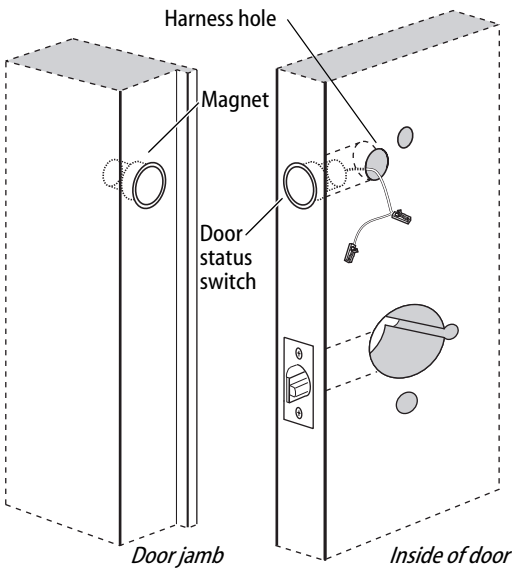
Figure 4   Installing the door status switch and magnet

3 Install latch

1   Install the latch in the door.

Note: The latch tube prongs should be centered and should project into the chassis hole.

2   Check that the door swings freely.

4 Install door status switch and magnet

1   On the door jamb, mark the drill point for the 1″ diameter magnet hole. This hole should be directly opposite the door status switch reader harness hole when the door is closed.

2   Drill a 1″ diameter hole for the magnet, at least 1 3/4″ deep.

3   Insert the magnet in the hole.

4   Insert the door status switch assembly into the door status switch hole in the edge of the door, feeding the connectors out the harness hole to the inside of the door, as shown in Figure 4.

Preparing the door and door jamb

5 Use drill jig to drill through-bolt holes

1 Press the drill jig (KD303) onto the door, engaging it with the latch tube prongs (see the close-up in Figure 5). Make sure the front edge of the jig is parallel with the door edge.

2 Drill the through-bolt holes (5/16″ diameter) halfway into the door.

3 Turn over the drill jig and repeat steps 1 and 2 from the opposite side of the door.

   Note: Replace the drill jig after 10 door preparations.

Drill upper through-bolt hole.

Latch tube prongs

Drill lower through-bolt hole.

Inside of door
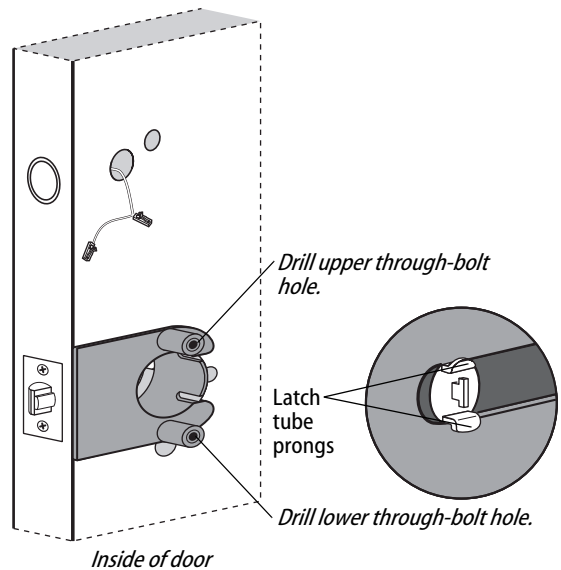
Figure 5   Installing the drill jig and drilling the through-bolt holes
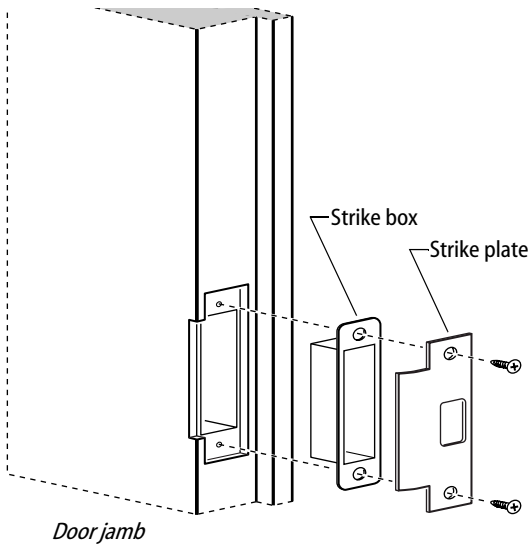
Preparing the door and door jamb

Figure 6a   Installing the strike box and strike plate
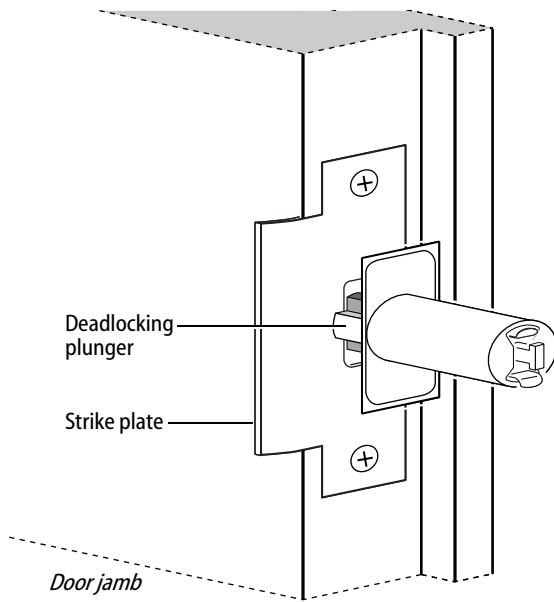
Figure 6b   Aligning the deadlocking plunger with the strike plate

6   Install strike box and strike plate

1   In alignment with the center of the latchbolt, mortise the door jamb to fit the strike box and strike plate.

2   Drill the holes for the screws used to install the strike box and strike plate.

3   Insert the strike box and secure the strike with the two screws provided.

4   Check the position of the deadlocking plunger against the strike plate.

Caution: **The deadlocking plunger of the latchbolt must make contact with the strike plate, as shown in Figure 6b. The plunger deadlocks the latchbolt and helps prevents someone from forcing the latch open when the door is closed.**

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Installing the lock

7   **Remove outside lever or knob**

1   Insert the control key into the core and rotate the key 15 degrees to the right.

2   Insert a flat blade screwdriver into the figure-8 core hole and into the lever.

3   Press the screwdriver blade in the direction of the arrow in Figure 7.

   Note: You cannot remove the lever if the screwdriver blade is inserted too far past the keeper.

4   Slide the lever or knob off of the sleeve.

   Caution: **Be careful that you do not disconnect the lever keeper spring.**

8   **Adjust for door thickness**

1   Determine the door's thickness.

2   Pull the rose locking pin and rotate the outside rose liner until the proper groove on the through-bolt stud lines up with the hub face.
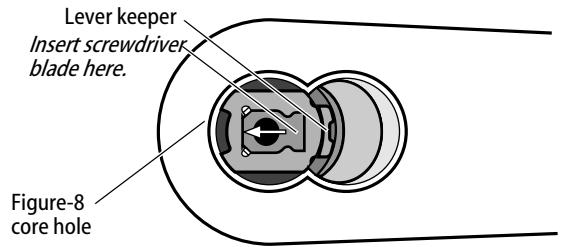
Figure 7   Removing the outside lever
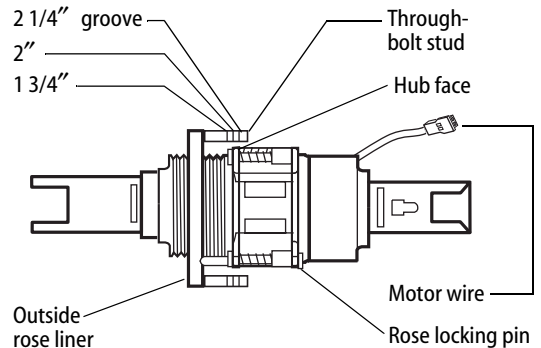
Figure 8   Adjusting the rose liner for the door thickness

Installing the lock

Inside of door

Figure 9   Installing the lock chassis and engaging the retractor in the latch

Outside of door

Figure 10   Installing the outside trim hole insert, bushing, and hub washer

9 **Install lock chassis and engage retractor in latch**

From the outside of the door, insert the lock chassis into the 2 1/8″ chassis hole, routing the motor wire through the notch.

Caution: **Make sure that the latch tube prongs engage the chassis frame and that the latch tailpiece engages the retractor.**

10 **Install the trim hole insert, bushing, and hub washer on outside of door**

1   On the outside of the door, insert the trim hole insert into the upper trim hole, as shown in Figure 10.

2   Insert the bushing into the harness hole.

3   Slide a hub washer over the chassis sleeve so it rests on the hub.

Installing the lock

11 Install fire plate

Position the fire plate on the inside of the door so that the chassis fits through the square opening in the fire plate, as shown in Figure 11.
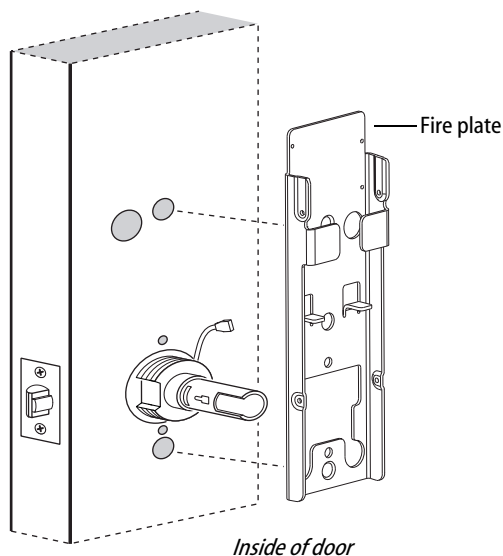

Fire plate

Inside of door

Figure 11   Installing the fire plate

12 Install through-bolts and inside rose liner

1 Place the inside rose liner on the chassis, aligning the holes in the rose liner with the holes prepared in the door, as shown in Figure 12.

  Caution: **Make sure that the motor wire is pulled toward the top of the fire plate and avoid routing it over any surface that could damage the sleeving or wire insulation.**

2 Install the through-bolts through the rose liner and door in the top and bottom holes.

  Caution: **Make sure that there is clearance for the motor wire between the rose liner and the door.**

3 Tighten the rose liner to the door and fire plate with the through-bolts.

4 Install the hub washer over the rose liner.

Motor wire

RQE connector

Rose liner with RQE

Through-bolt

Hub washer

Inside of door
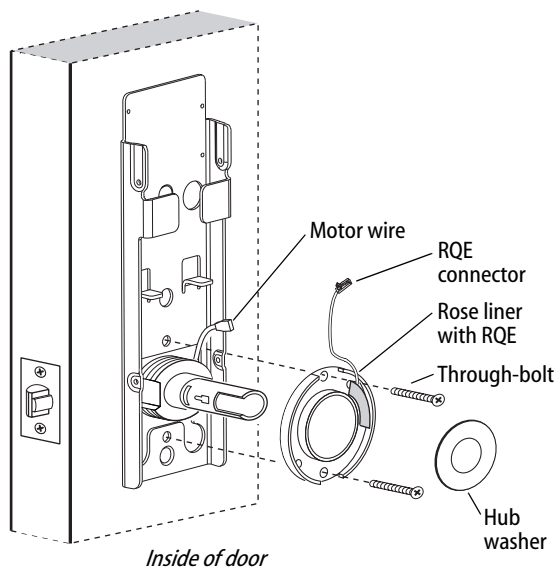
Figure 12   Installing the through-bolts and rose liner (9K shown)
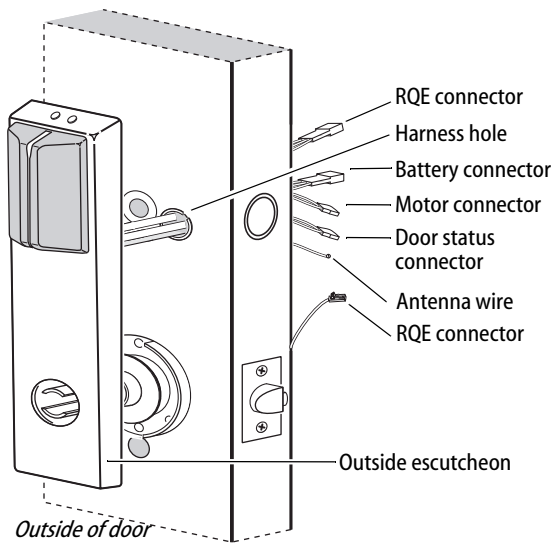
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Installing the lock

Figure 13   Feeding the wire harness connectors through the harness hole
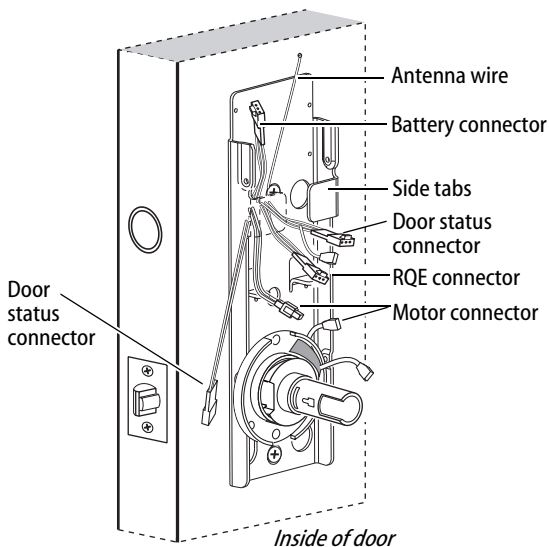
Figure 14   Routing the wires on the fire plate

13 Route wire harness and position outside escutcheon

1   From the outside of the door, feed the motor connector, battery connector, door status switch, and antenna wire, through the harness hole.

Caution: **When routing the connectors, make sure the wire harness is not routed across any sharp edges or over any surface that could damage its sleeving or wire insulation.**

2   On the inside of the door, insert the two countersunk mounting screws into the holes at the top and bottom of the fire plate.

3   Tighten the mounting screws until the fire plate is securely mounted to the door.

14 Route wires on fire plate

1   Route the motor connector wire, RQE connector, and door status connector underneath the side tabs as shown in Figure 14.

2   Route the battery connector and antenna wire above the side tabs. See Figure 15 for additional detail.

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Installing the lock

15 Connect motor wires, RQE, and door status switch

1 From the inside of the door, make the following connections:

- ◆ Motor
- ◆ RQE
- ◆ Door status switch

Wire connection	Color	No. of wires	No. of pins
Motor	Yellow-Gray	2	2
RQE	Orange-Brown	2	3
Door status	White	2	2

2 Insert the plastic wire tie through the mounting clip and secure the wires as shown in Figure 15. See Figure 15 for additional detail.

Caution: **When making the motor connection, make sure:**

- ◆ there are no loose wire connections where the wires are inserted into the connectors
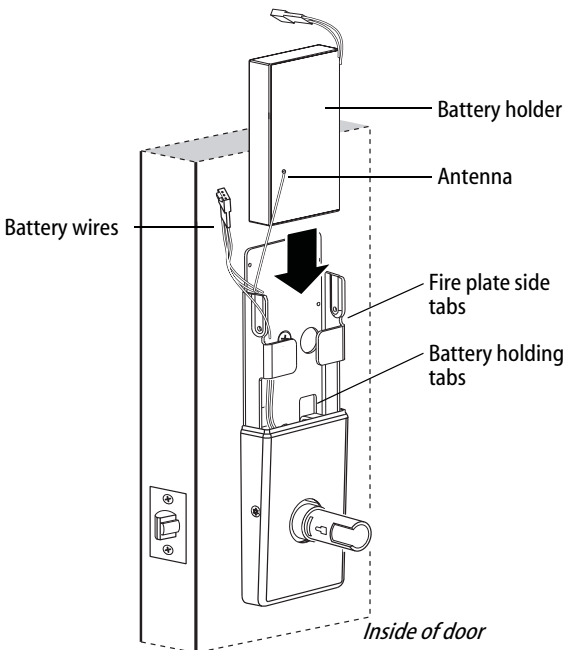- ◆ the connectors are firmly mated.
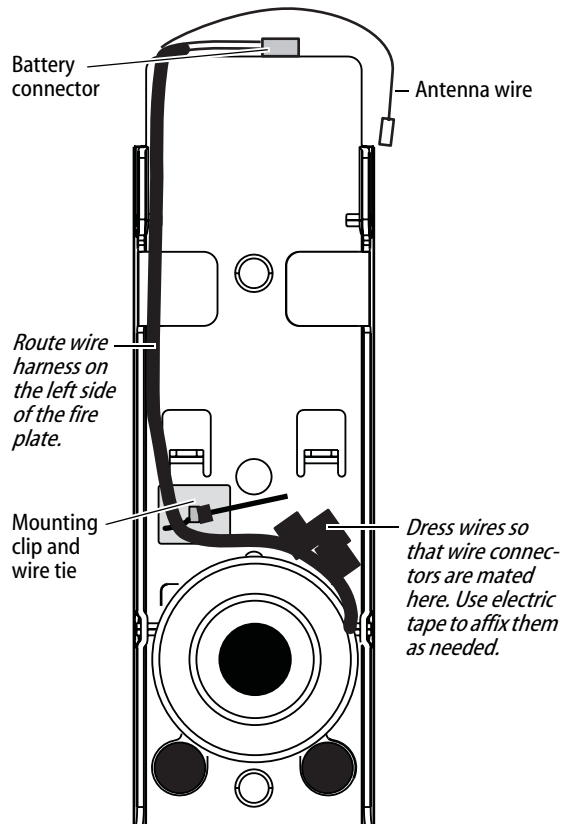
Figure 15 Routing the wires (view of the inside escutcheon)

Installing the lock

Figure 16   Installing the bottom cover

Figure 17   Installing the battery holder, eight-cell

16 Install bottom cover (inside escutcheon)

1 **Making sure that the cover does not pinch the wires**, guide the bottom cover over the chassis onto the fire plate.

2 Use two cover screws to secure the cover to the side of the fire plate, as shown in Figure 16.

Note: Phillips Type 2 and T20 Torx options are available for the cover mounting screws.

Caution: **Dress all wires away from possible pinch points before putting the bottom cover in place.**

17 Install battery holder

1 Position the battery wires against the fire plate side wall, as shown in Figure 17.

2 Slide the battery holder behind the fire plate side tabs until it rests on the bent battery holding tabs.

Caution: **When routing the battery wires, make sure the wires are not routed across any sharp edges or over any surface that could damage their sleeving or wire insulation.**

3 Connect the battery holder to the battery connector on the wire harness.

Caution: **When connecting the battery holder, make sure:**

◆ there are no loose wire connections where the wires are inserted into the connectors.

◆ the connectors are firmly mated.

Completing the installation

18 Install inside and outside levers

Note: To use a core and throw member from a manufacturer other than BEST with a Electronic Stand-alone Lock, see the Installation Instructions for 9K Non-interchangeable Cores & Throw Members *(T56093) and skip task 19.*

1 Insert the sleeve bushing into the outside sleeve.

2 **For the inside and outside levers.**

With the handle pointing toward the door hinges, position the lever on the outside sleeve and push firmly on the lever until it is seated. Repeat, placing the other lever on the inside sleeve.

3 Tighten the escutcheon mounting screws.

4 Turn the levers to check that they operate smoothly.

Outside of door
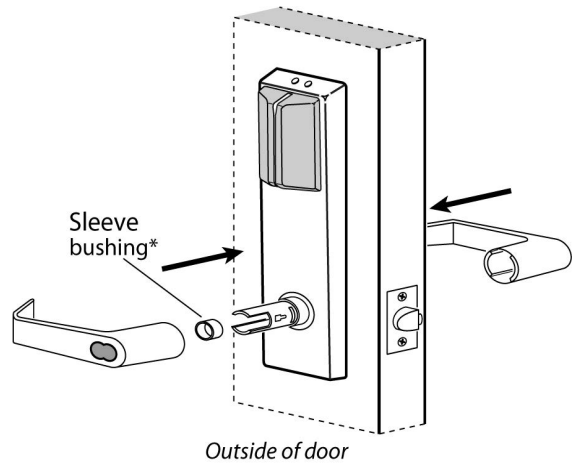
Figure 18   Installing the levers

19 Install core and throw member

1 Install the throw member into the back of the core.

2 Insert the control key into the core and rotate the key 15 degrees to the right.

Caution: **You must use the blocking plate when installing an 8K lockset to prevent unauthorized access.**

For 6-pin core users only: Install the plastic spacer (not shown, supplied with permanent cores).

3 Insert the core and throw member into the lever with the control key.

4 Rotate the control key 15 degrees to the left and withdraw the key.

Caution: **The control key can be used to remove cores and to access doors. Provide adequate security for the control key.**
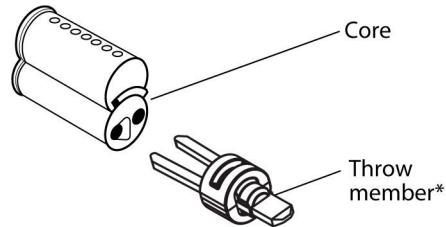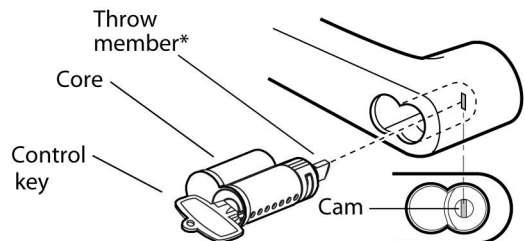

Figure 19a   Installing the throw member

Figure 19b   Installing the core
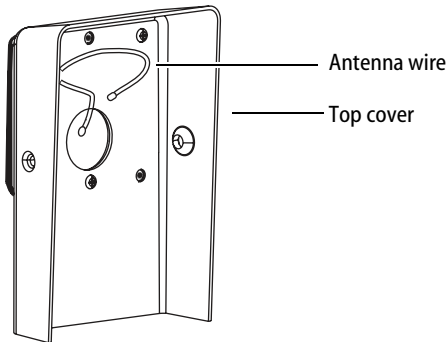
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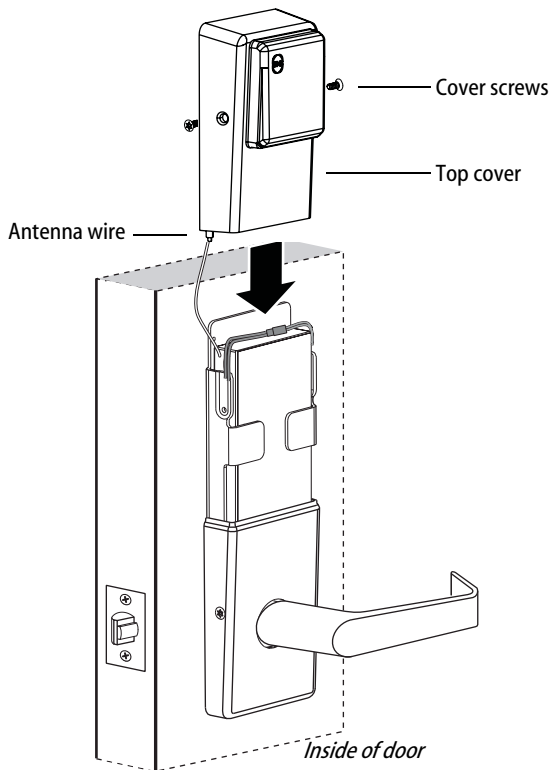# Completing the installation

Figure 20a Inside view of top cover

20 Install top cover (inside escutcheon)

1 Connect the antenna to its mating connector.

2 Place the top cover against the door and above the fire plate. Slide the top cover down toward the bottom cover as shown in Figure 20b.

   Caution: **As you slide the top cover onto the fire plate, feed the antenna wire down into the bottom cover. Be sure not to pinch the antenna wire on the bottom cover as you slide the top cover into place.**

3 Use two cover screws to secure the cover to the side of the fire plate, as shown in Figure 20b.

   Note: Phillips Type 2 and T20 Torx options are available for the cover mounting screws.

Figure 20b Installing the top cover

Completing the installation

21 Test lock

For 9KQ Locks with keypad:

To test the lock for proper operation before the lock is programmed, follow these instructions:

1   Press **1234**.

2   Press **#**.

The green light flashes and the locking mechanism unlocks.

3   Turn the lever and open the door.

For all other locks:

To test the lock for proper operation before the lock is programmed, use the temporary operator card that came with the lock. This card is for temporary use only. After permanent cards have been programmed for the lock, the temporary card should be deleted.

1   Use the temporary operator card to activate the lock.

Note: If the lock has a proximity card reader, it may have already been activated by the presence of an object near the card reader.

2   Use the temporary operator card to access the lock.

3   The green light flashes and the locking mechanism unlocks.

4   Turn the lever or knob and open the door.

5   With the door closed, insert and turn the key to unlatch the door.

If the mechanism doesn't unlock, refer to the following table. For additional troubleshooting instructions, see the Service Manual.

LEDs	Sounder	You should
Single red flash	—	Use the card at a moderate speed.
Red flashes	3 short tones	Use the temporary operator card provided with the lock.
Green flashes	—	Check the motor connection.
—	—	Check the battery connection.

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