Cover

Battery Housing
and Batteries

Support
Bracket

Main PCB

Hex Dogging
Adapter Post

Not included with RM

RU Undog Assembly

Push Pad
Guides

Wire Harness
Assembly

| Exit Devices | RU | RM |
|---|:---:|:---:|
| 33A/35A Rim | ✓ | ✓ |
| 33A/3527A | ✓ | ✓ |
| 33A/3547A | ✓ | ✓ |
| 33A/3549A | ✓ | ✓ |
| 98/99 Rim | ✓ | ✓ |
| 98/9927 | ✓ | ✓ |
| 98/9947 | ✓ | ✓ |
| 98/9949 | ✓ | ✓ |
| 98/9975 Mortise | - | - |
| EL (Electric Latch Retraction) | - | ✓ |
| QEL (Quiet Electric Latch Retraction) | - | ✓ |
| SS (Signal Switch) | - | - |

See page 24 for an explanation
of the Warnings and Cautions
used in this booklet.

# BOX CONTENTS

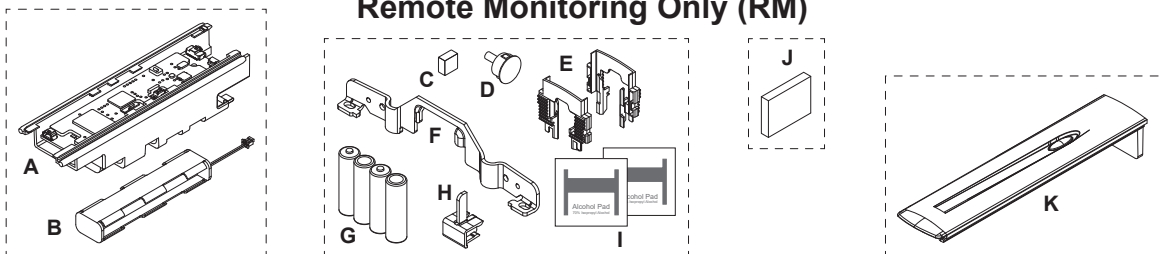## Remote Dogging / Remote Undogging (RU)
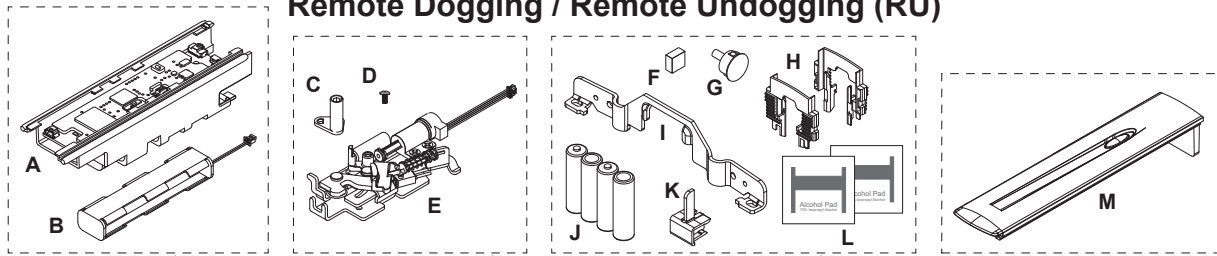


Main PCB and Battery Housing

Dogging Module Assembly

Miscellaneous Parts Kit

Mech. Case Cover Assembly

- **Confirm device length matches harness length**

Wire Harness Assembly



- **The RU retrofit kit must not be installed on fire rated doors.**
- **If the installation involves a fire rated door, the RM retrofit kit must be used.**
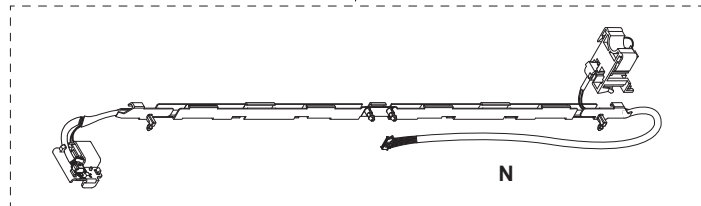
| | | | | | |
|---|---|---|---|---|---|
| **A** | Main PCB | **F** | Door Position Switch Double Door Magnet | **J** | AA Batteries (4) |
| **B** | Battery Housing | **G** | Door Position Switch Door Frame Magnet | **K** | LX Switch Actuator Finger |
| **C** | Hex Dogging Adapter Post | | | **L** | Alcohol Wipes (2) |
| **D** | Hex Dogging Adapter Post Screw | **H** | Push Pad Guides (2) | **M** | Cover |
| **E** | RU Undog Assembly | **I** | Support Bracket | **N** | Wire Harness Assembly |

## Remote Monitoring Only (RM)



Main PCB and Battery Housing

Miscellaneous Parts Kit

Mech. Case Cover Assembly

- **Confirm device length matches harness length**

Wire Harness Assembly



- **The RM retrofit kit is required on fire rated doors.**
- **Fire rated doors require the installation of intumescent (item J) in the end cap of the device.**
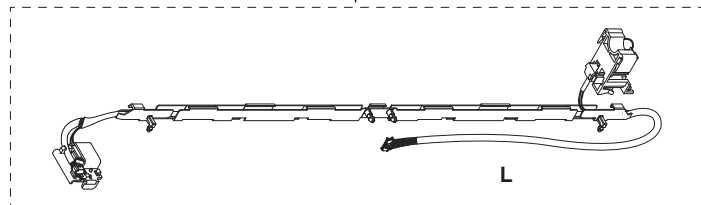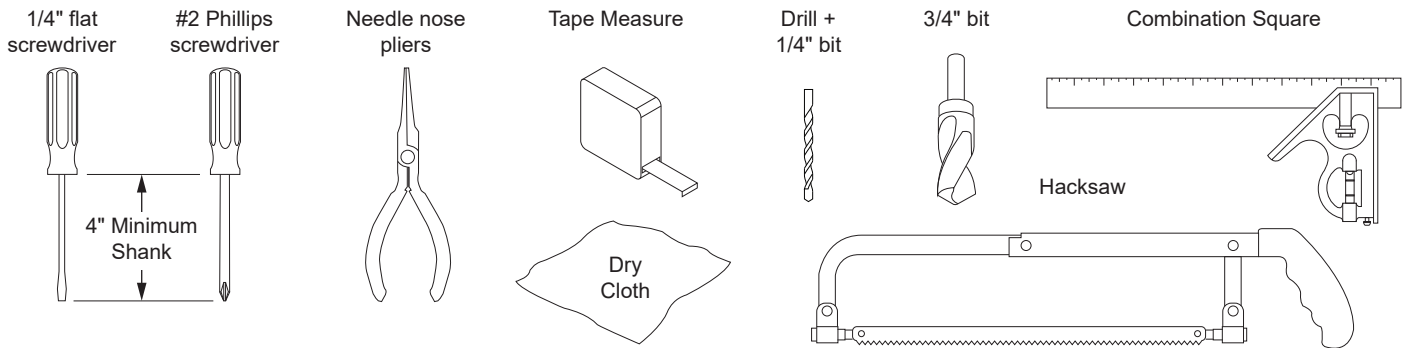
| | | | | | |
|---|---|---|---|---|---|
| **A** | Main PCB | **E** | Push Pad Guides (2) | **I** | Alcohol Wipes (2) |
| **B** | Battery Housing | **F** | Support Bracket | **J** | Mechanism Case End Cap Intumescent |
| **C** | Door Position Switch Double Door Magnet | **G** | AA Batteries (4) | **K** | Cover |
| **D** | Door Position Switch Door Frame Magnet | **H** | LX Switch Actuator Finger | **L** | Wire Harness Assembly |

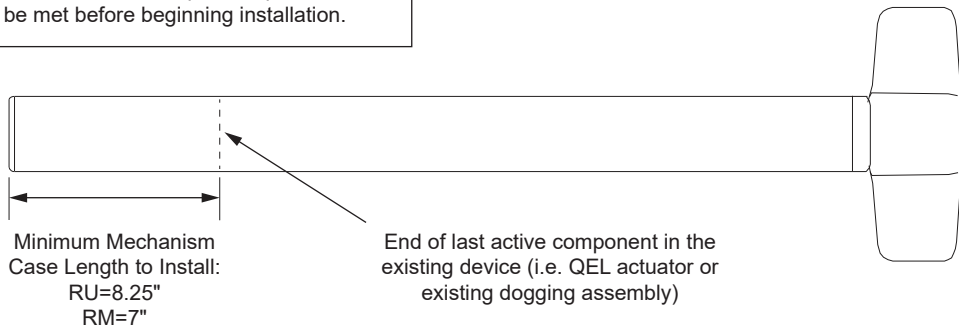## REPLACEMENT PARTS

| Description | Part Number |
|---|---|
| 3' LX, RX Replacement Wiring Harness | 47260754 |
| 4' LX, RX Replacement Wiring Harness | 47260870 |
| Replacement Cover | 47260753 |

## REQUIRED TOOLS

1/4" flat screwdriver

#2 Phillips screwdriver

4" Minimum Shank

Needle nose pliers

Tape Measure

Dry Cloth

Drill + 1/4" bit

3/4" bit

Hacksaw

Combination Square

## MINIMUM MECHANISM CASE LENGTH REQUIREMENT

Confirm minimum space requirement can be met before beginning installation.

Minimum Mechanism Case Length to Install:
RU=8.25"
RM=7"

End of last active component in the existing device (i.e. QEL actuator or existing dogging assembly)

ⓘ The instructions illustrate an existing exit device that must be removed from the door prior to installing the RU/RM functionality.

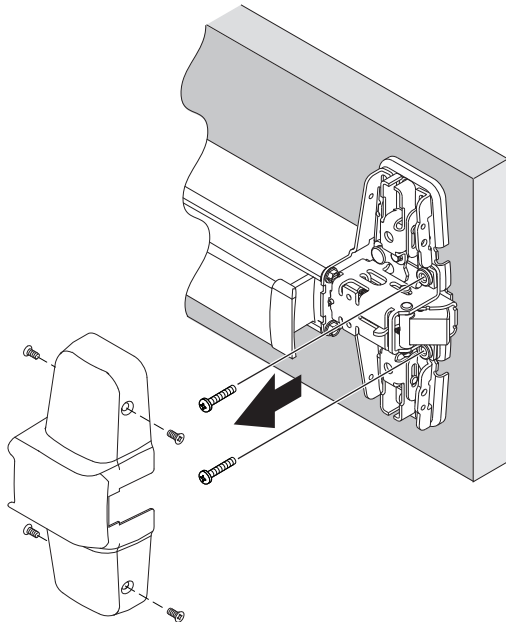## 1  Remove end cap and loosen bracket.

**✦ For Retrofit Only**



Loosen. Do not remove.

a

b
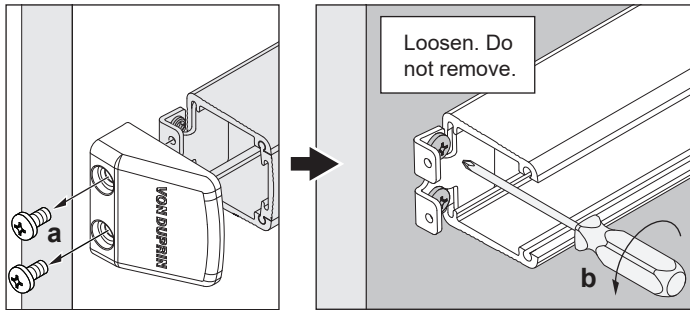
## 2  Remove center case cover and support screws.
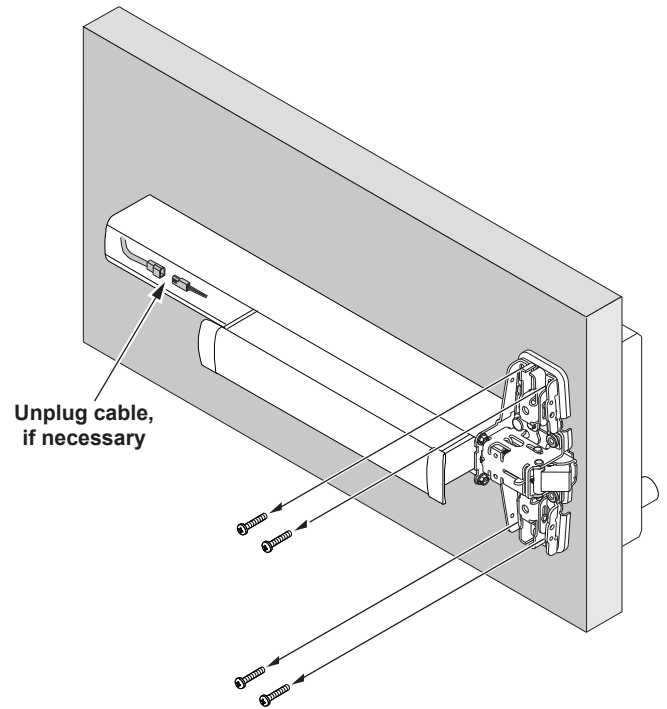
**✦ For Retrofit Only**



## 3  Remove device from door.

**✦ For Retrofit Only**

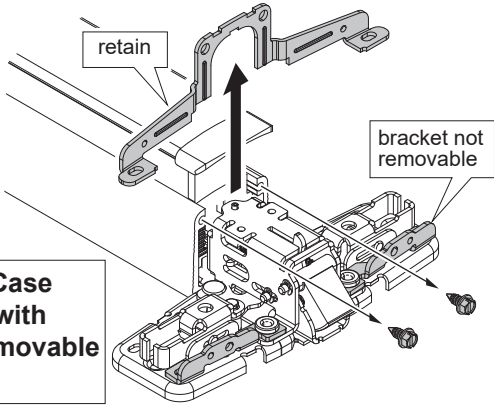### ⚠ CAUTION

Device and trim must be held securely while screws are being removed, to prevent dropping to the floor.



**Unplug cable, if necessary**

## 4  New installations only

Cut device to length per exit device instructions.

**5** Remove bracket(s)

retain

bracket not removable

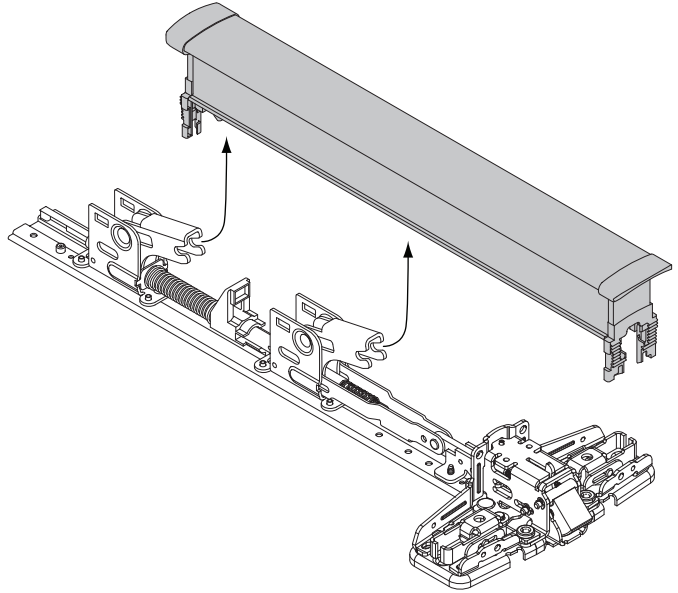**Center Case Design with Non-Removable Bracket**

retain
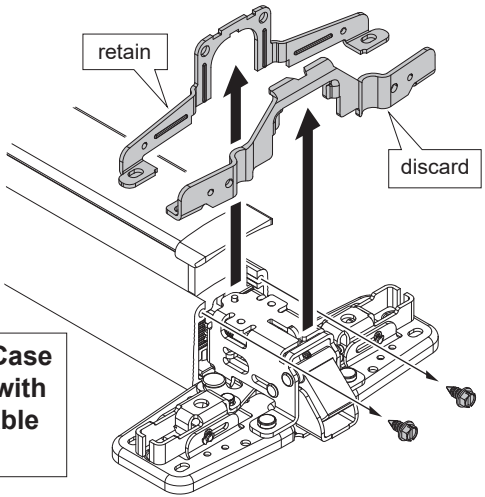
discard

**Center Case Design with Removable Bracket**

**6** Remove mechanism case body.
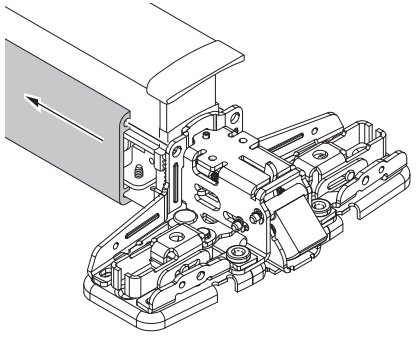
**7** Remove push pad.

**8** Remove and discard original (black) push pad guides.

Black (discard)
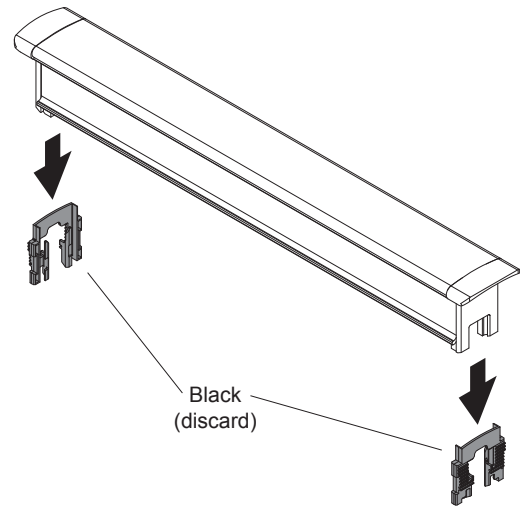
**9** Install provided gray push pad guides.

Gray
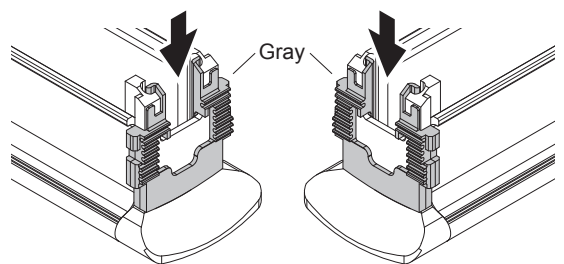
## 10 Remove (and discard) original manual dogging module. Drill out rivets if necessary.

⟡ **RU Only**

Remove two screws from dogging assembly (a).
If riveted, see below.

**a**
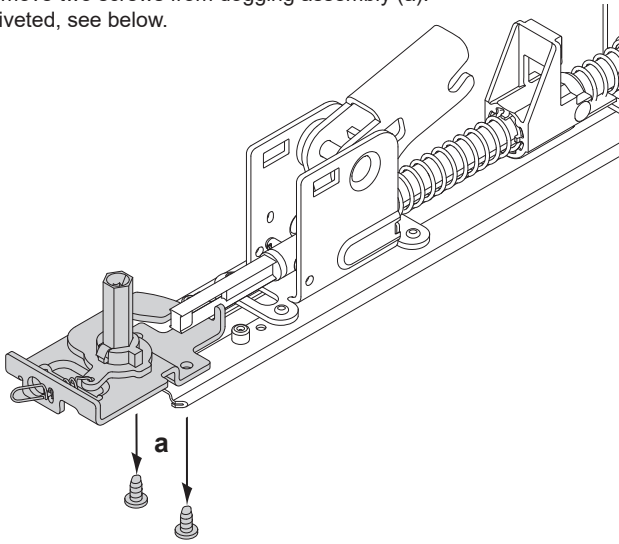
Drill or use center punch on two rivet heads until rivets can be removed from baseplate (b).

**1/4"**

**or**

**b**

ⓘ Do not drill through baseplate.
Rivet may tend to spin with drill bit.
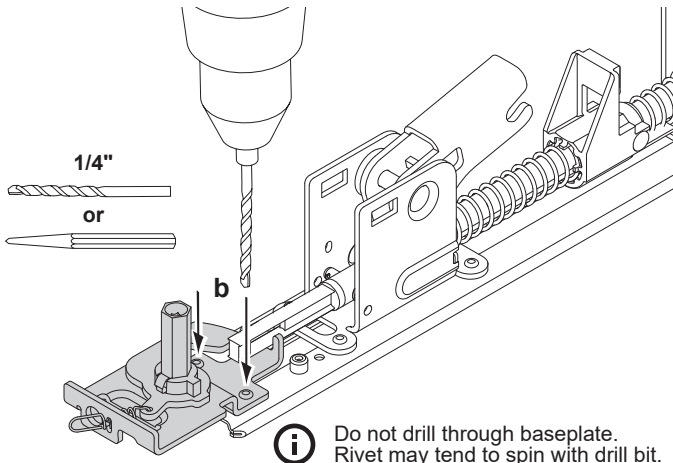
Remove and discard dogging assembly (c).

**c**

6
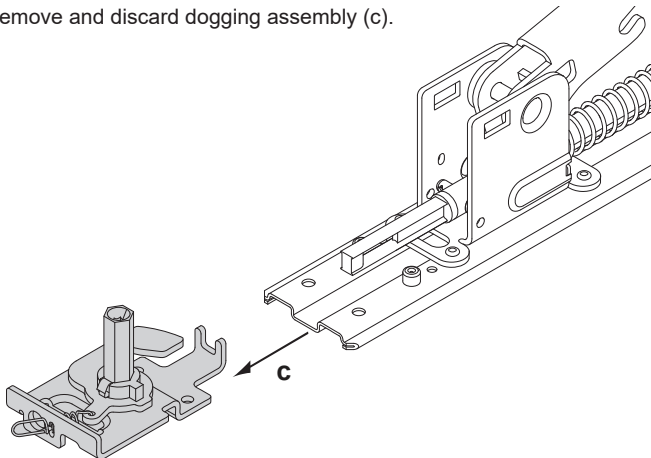
## 11 Install RU Undog assembly

⟡ **RU Only**

ⓘ Assembly must be in undogged position.

✓

**Undogged**          **Dogged**

Action rod extension

RU dogging module fits the
action rod extension as shown

Assembly is in
undogged position

**Topside**
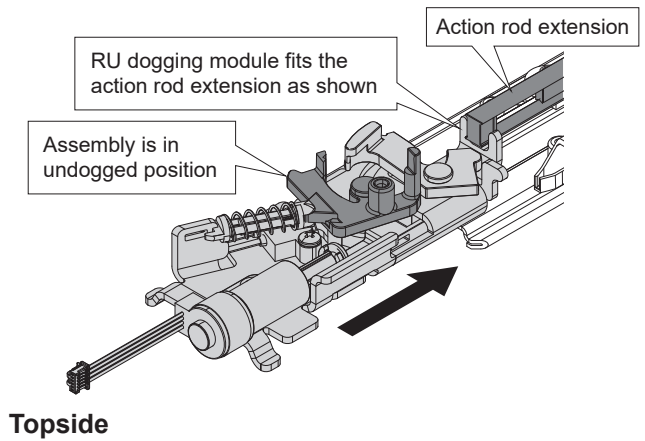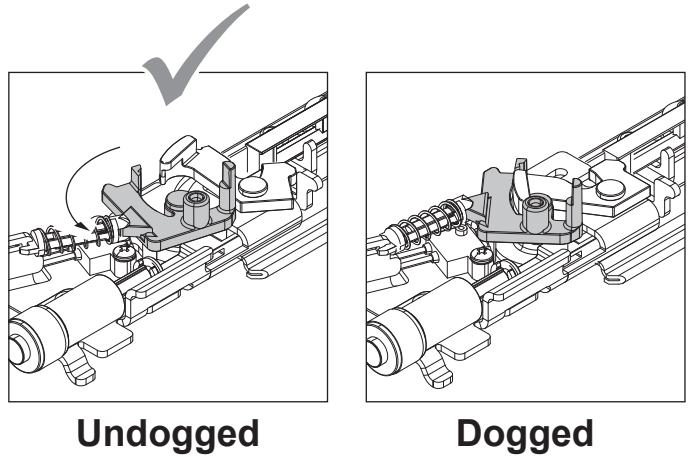
Remove and
discard old
screws. They
are too long
and can NOT
be reused.

New screw (actual
size) is item "L" in
box contents (page
2) and can be found
in assembly bag.

Screw goes
into this hole

**Underside**
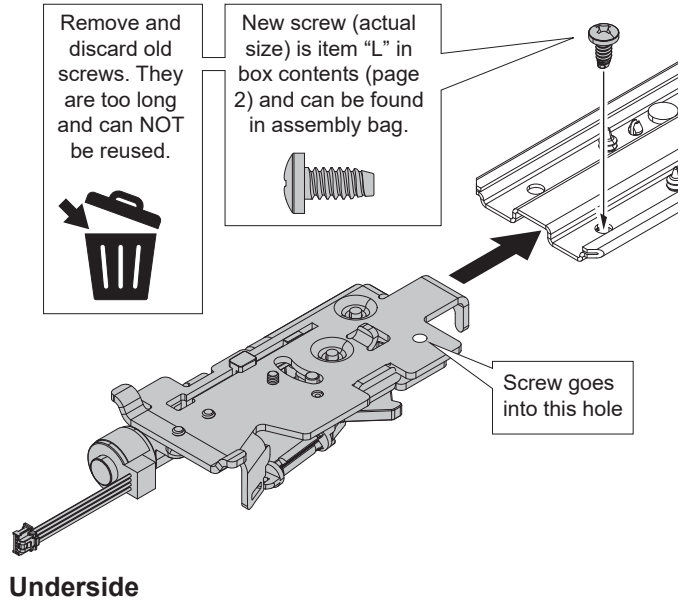
**12** For hex key dogging, install hex dogging adapter post.

◆ **RU Only**

ⓘ Not required for cylinder dogging.
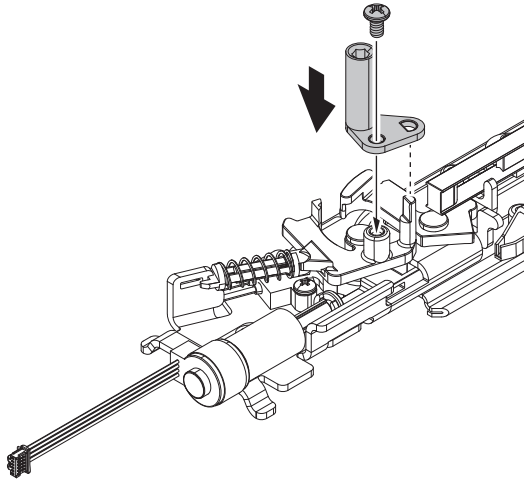


**13** Remove and discard existing RX/LX switch.

**14** Install raceway wiring harness (snaps into place).



7
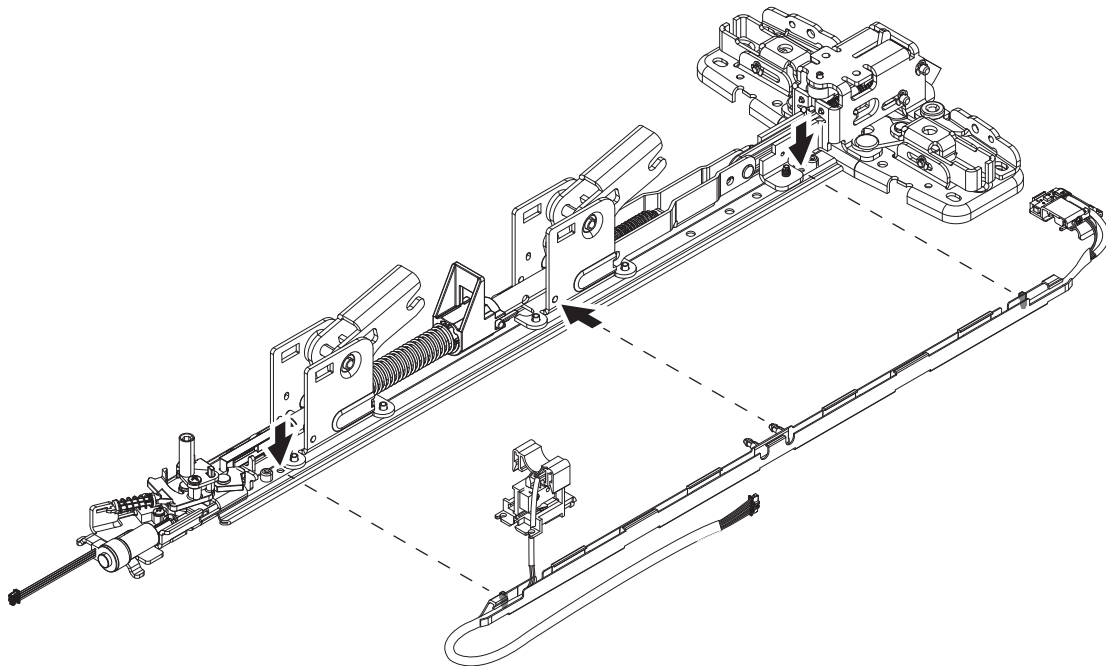
## 15  Install REX switch assembly (snaps into place).

**a**

locator

hole

**b**
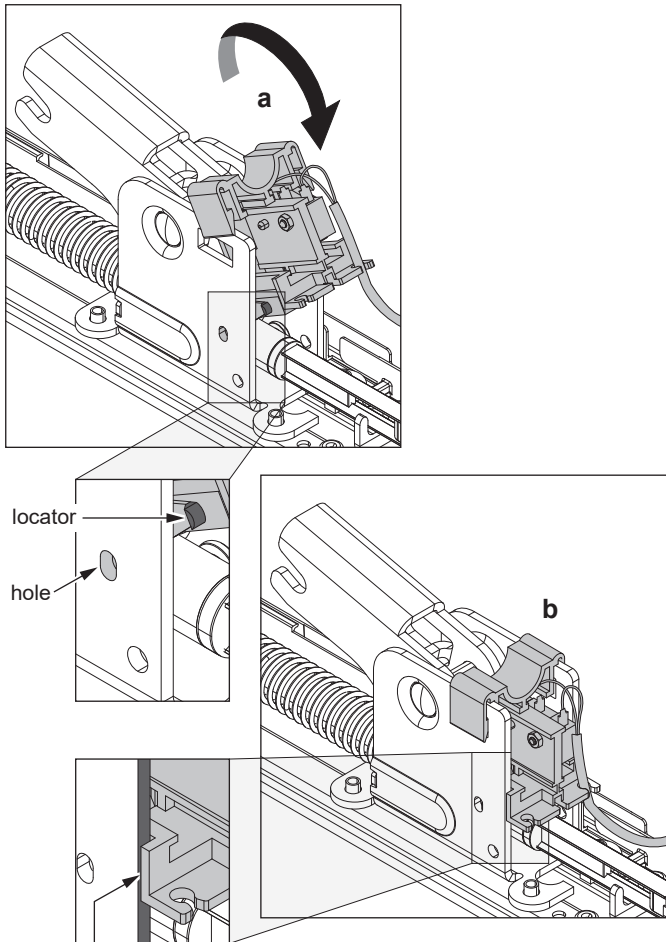
Proper installation will result in the flat edge
of the switch resting on the vertical guide.

## 16  Install LX switch actuator finger (n/a for rim devices).

If sail fin already
exists, skip this step.

99 rim
shown

**a**

**c**

original
(discard)

**b**

**e**

replace
with new
E-clip

provided

**f**

**d**

proper installation
results in a
"snapping" sound

9949 concealed vertical
cable center case shown
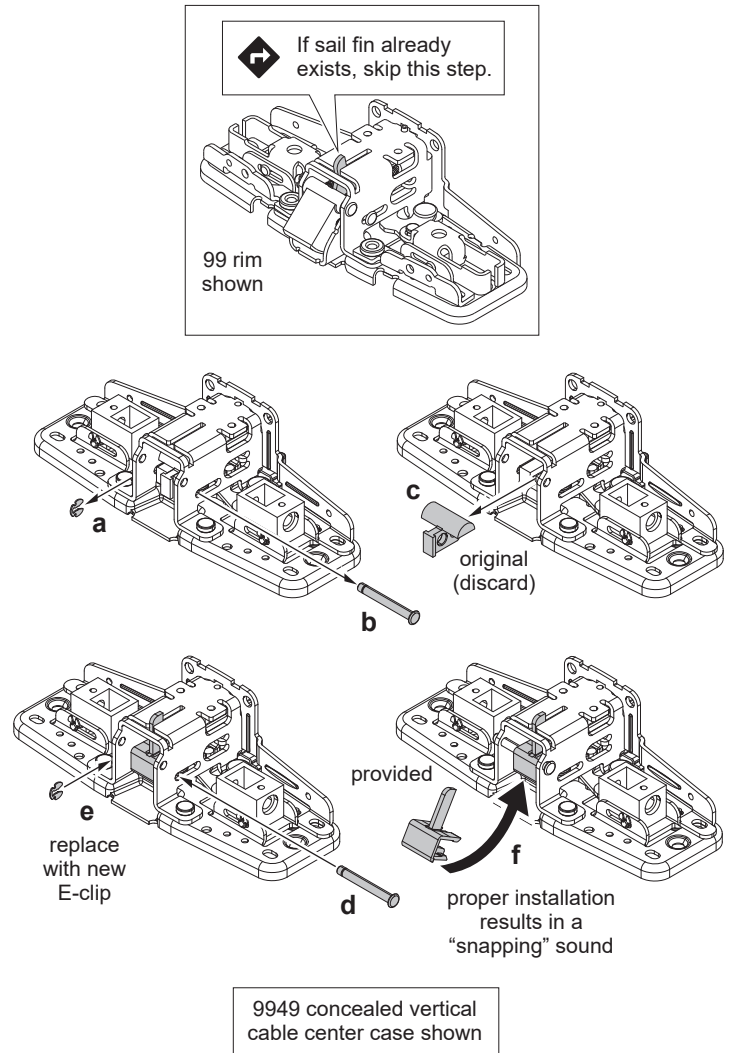
## 17  Install new front bracket (if required).

If device has a
removable bracket,
discard and replace
with provided
bracket.

If device has a
permanent bracket,
no action required.
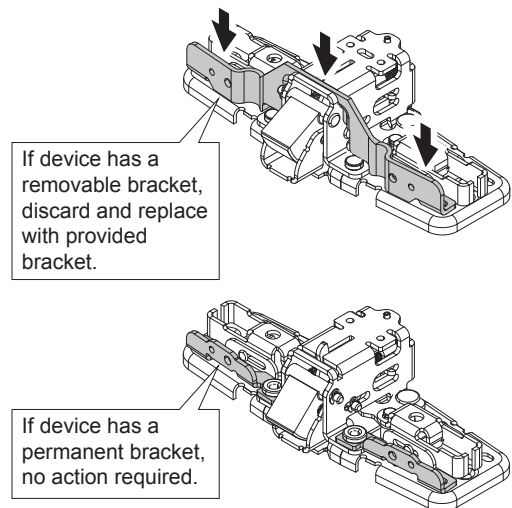
**18** Clean LX switch assembly mounting area with clean cloth.
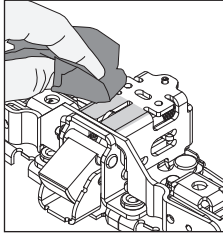
**19** Clean LX switch assembly mounting area with alcohol wipe (provided).
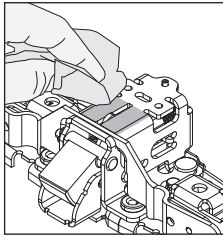
**20** Wash hands.

Wash hands to remove any traces of lubricant before handling LX switch assembly adhesive.

**21** Attach LX switch assembly.

(i) Device must warm to a minimum temperature of 10°C (50°F) before applying the LX Switch Assembly.

(i) Bracket must be in place before applying adhesive (Step 17).

(i) Before handling the LX Assembly, touch a metal surface of the building or a ground device to dissipate electrostatic charges from the installer.

a. Practice placement of the LX switch assembly several times before removing the adhesive (using Step C below as a guide).

b. Remove adhesive backing

**Be careful not to break leaf spring.**

b

b

lip

c
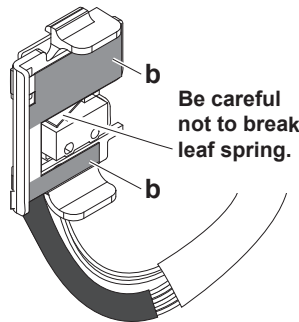
c. Carefully lower LX switch assembly into position over actuator finger, with lip against edge of device center case as shown.

lip against front edge

actuator finger
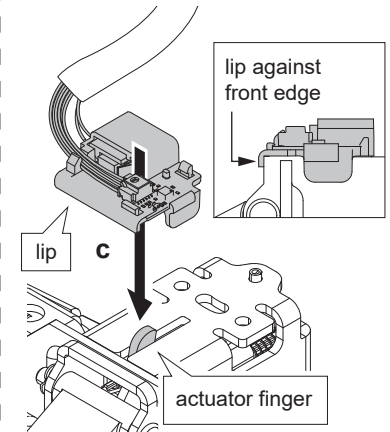
d. Press for 20 seconds to activate adhesive.

(i) Adhesive is NOT repositionable.

d

9
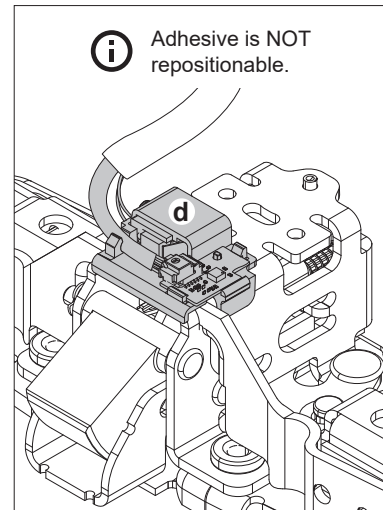
## 22  Make sure device is undogged.
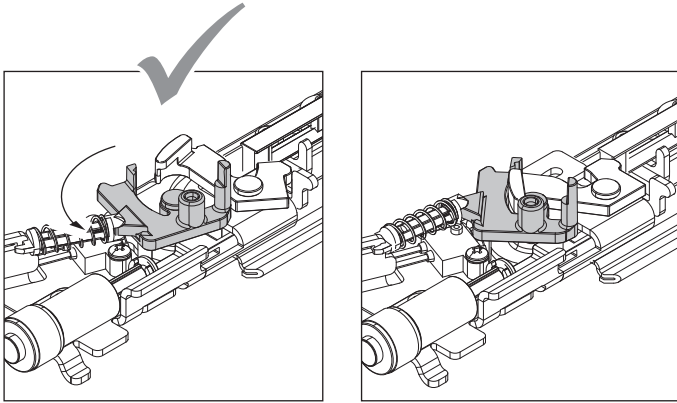


**Undogged**          **Dogged**

For clarity, module shown with hex
dogging adapter post removed.

## 23  Install push pad onto exit device baseplate.

Ensure push pad guides
are attached
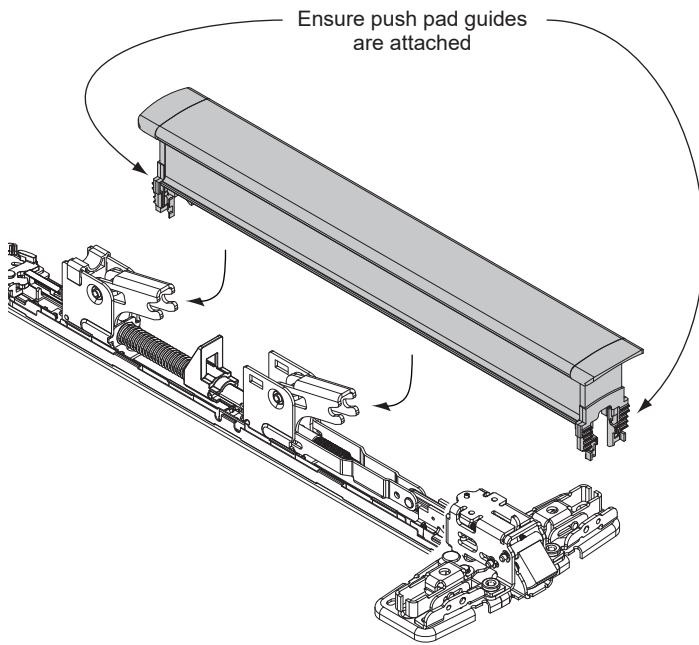


## 24  Install exit device baseplate assembly into mechanism case.

❖  **RU Only**

Guide dogging module into grooves of mechanism case (a), then
guide the baseplate assembly into the same grooves (b).

Guide wires up and
away from snag points

Place wire
assembly
beneath tabs

Top view

Align undog assembly (if
applicable) and baseplate to
notches in mechanism case



a

b

Underside view

Take special care
not to pinch wires
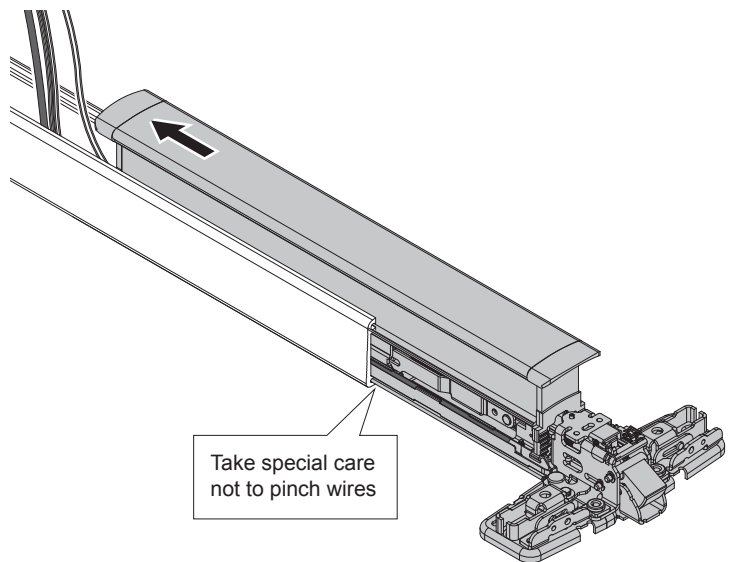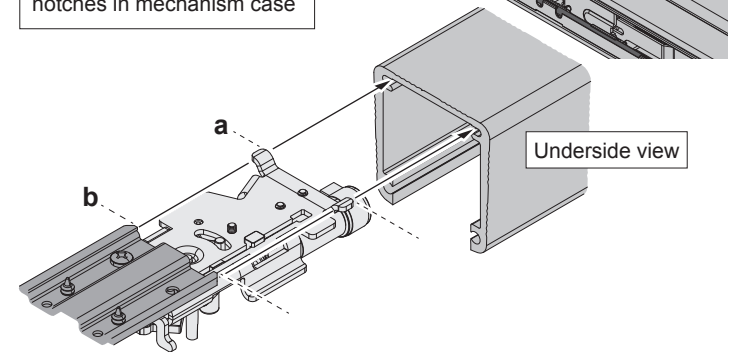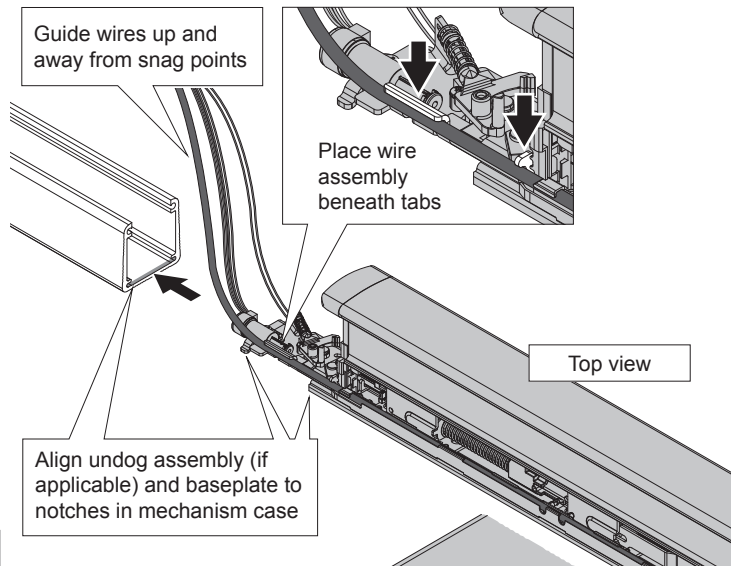
**25** Reinstall original center-case-to-mechanism-case support bracket.
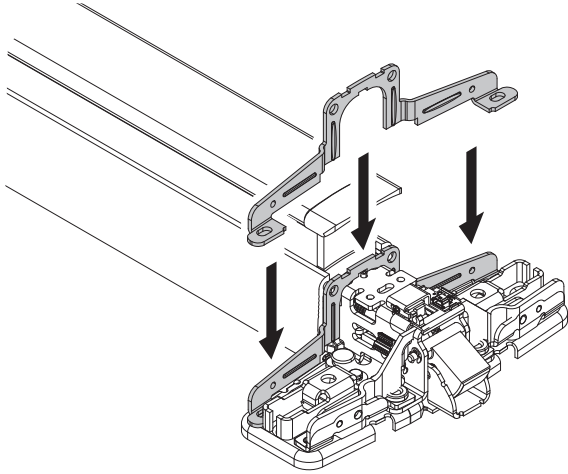
**26** Install center-case-to-mechanism-case screws.

⚠ **CAUTION**

Use long shank screwdriver to avoid interference with Main PCB.

4" Minimum Shank
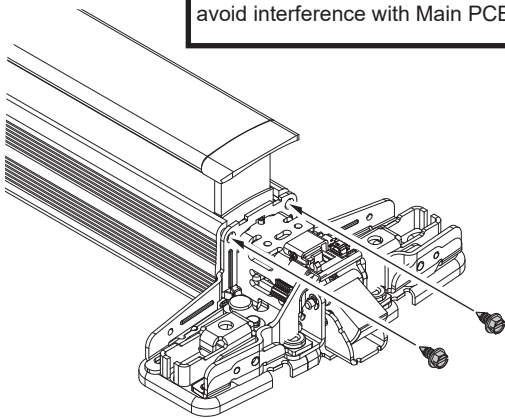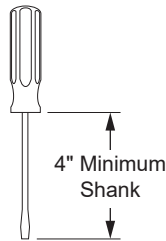
**27** Cut mechanism case cover.

a. Align edges of both covers as shown.
b. Mark line on mech case cover.
c. Slide anti-rattle clip away from cut line.
d. Cut mechanism case cover along line.
e. File down any rough edges.
f. Slide anti-rattle clip back into place.

a

b

ⓘ Do **NOT** cut from push pad side. Dogging hole must still align.

c

d

e    f
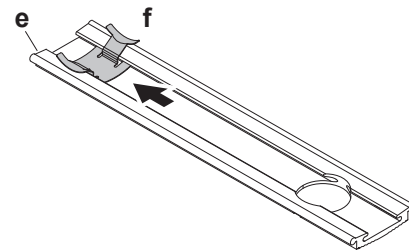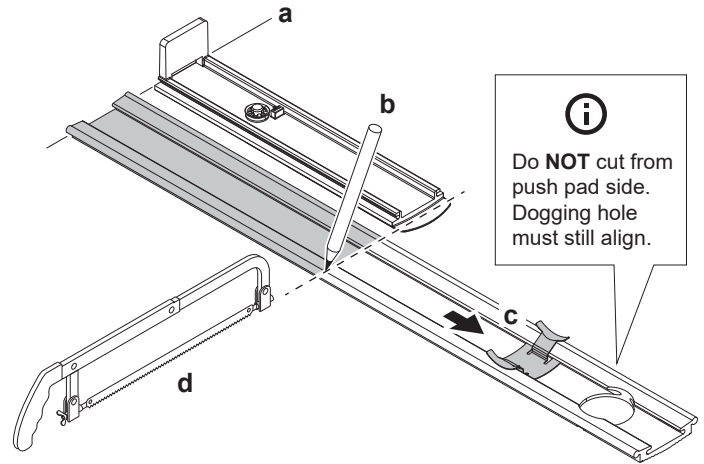
**28** Install key cylinder into mechanism case cover if applicable.
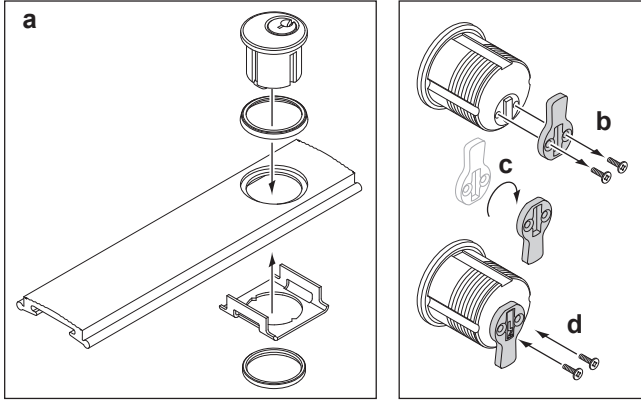


**29** Install mechanism case cover (push pad side first).
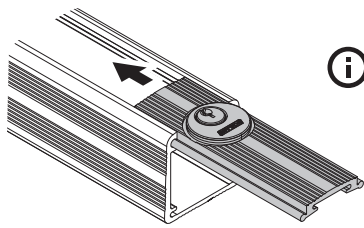


Cylinder must be in undogged position (as shown below with key removed) before sliding cover into mechanism case.

**30** Install Main PCB holder.
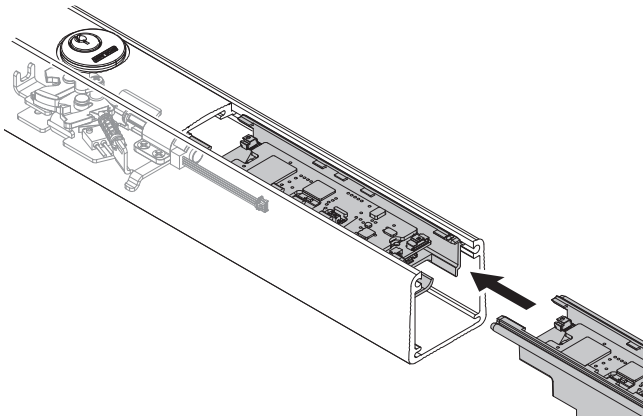


**31** Connect RU Undog assembly harness to Main PCB.

❖ **RU Only**



Main PCB

RU Undog assembly
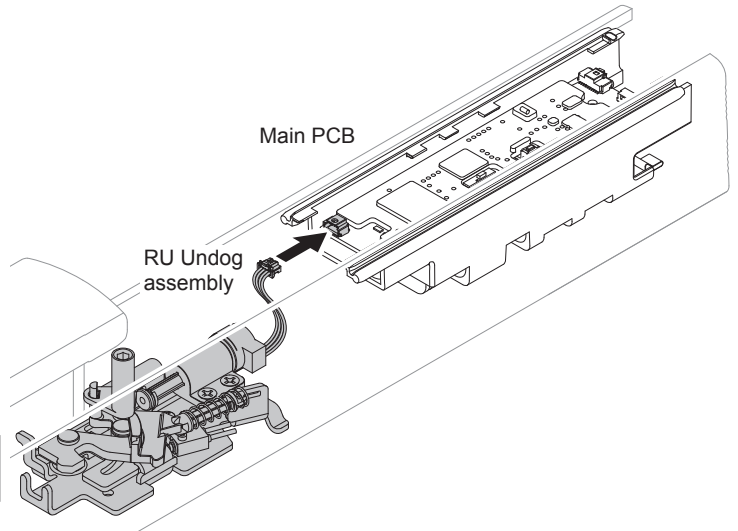
**32** Install batteries into battery holder.
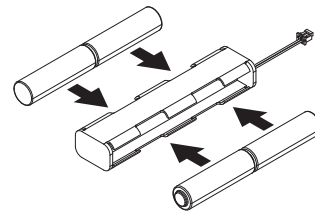


**33** Install battery holder into Main PCB holder.



Do not connect batteries to Main PCB at this time
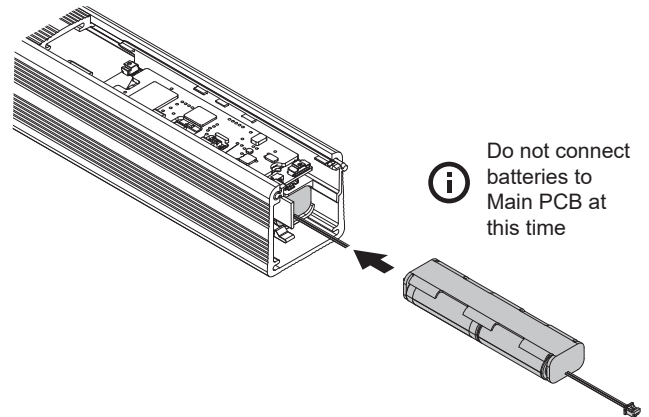
**34** Connect raceway wire harness to Main PCB.



Main PCB

Wire harness
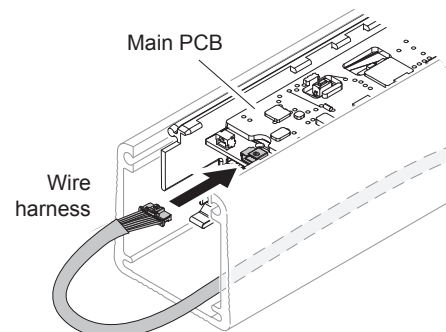
## 35 Slide device into bracket, then attach exit device to door.



a

c

**If cable is present, connect cable**

b
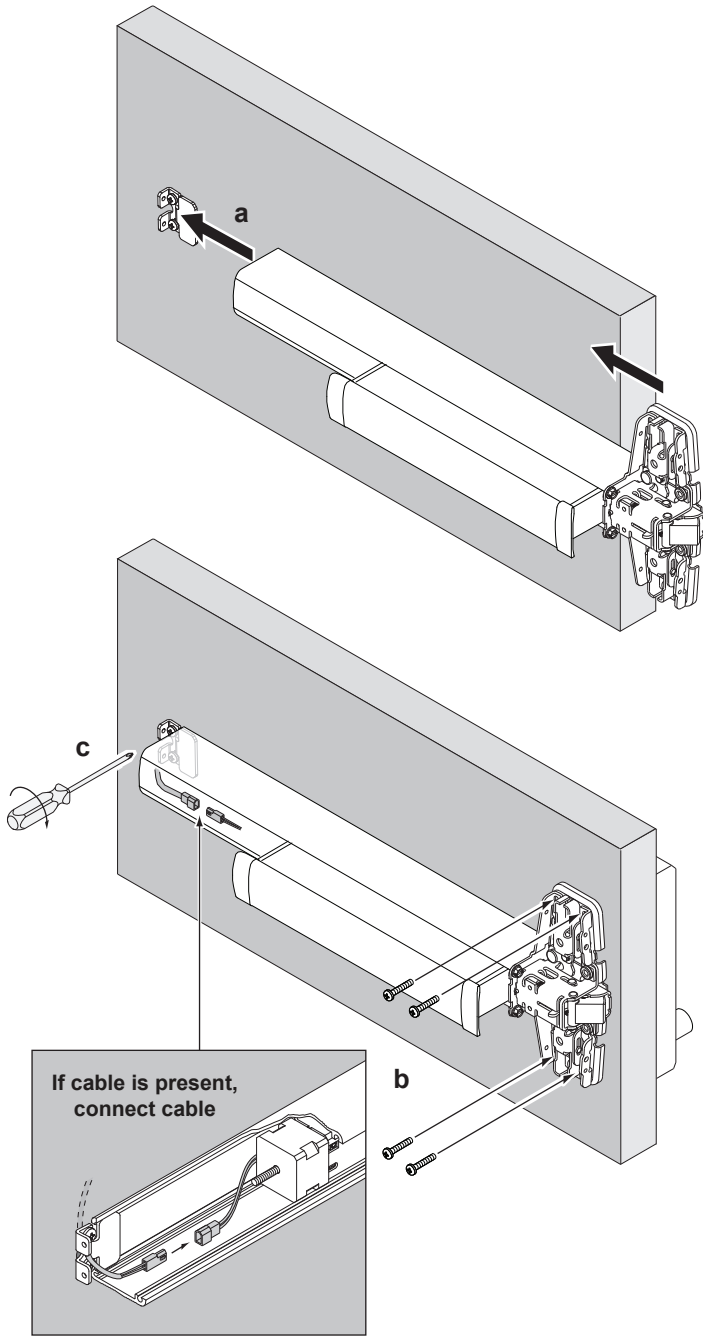
## 36 For double doors without mullion, install magnet.

⟷ **Double door without mullion only.**

### 98/99 Series

Magnet Positions for Dual
Doors Without Mullion
**(magnet is placed on opposite device)**



Center Case
RHR

Center Case
LHR
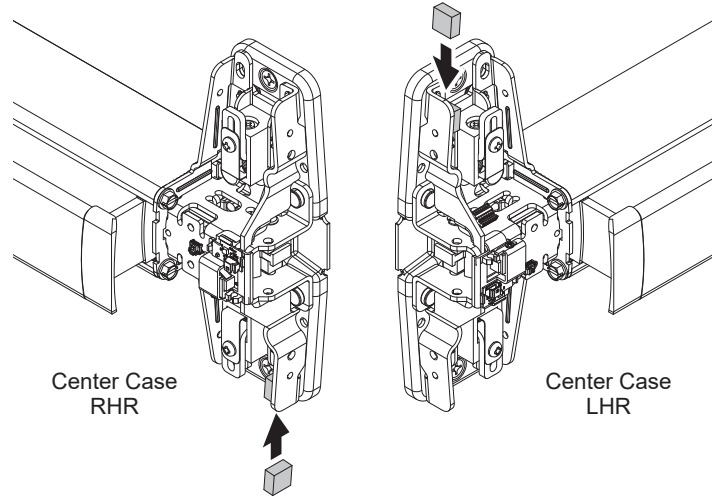
### 33A/35A Series

Magnet Positions for Dual
Doors Without Mullion
**(magnet is placed on opposite device)**

**Rim**



Center Case
RHR

Center Case
LHR

**Vertical**
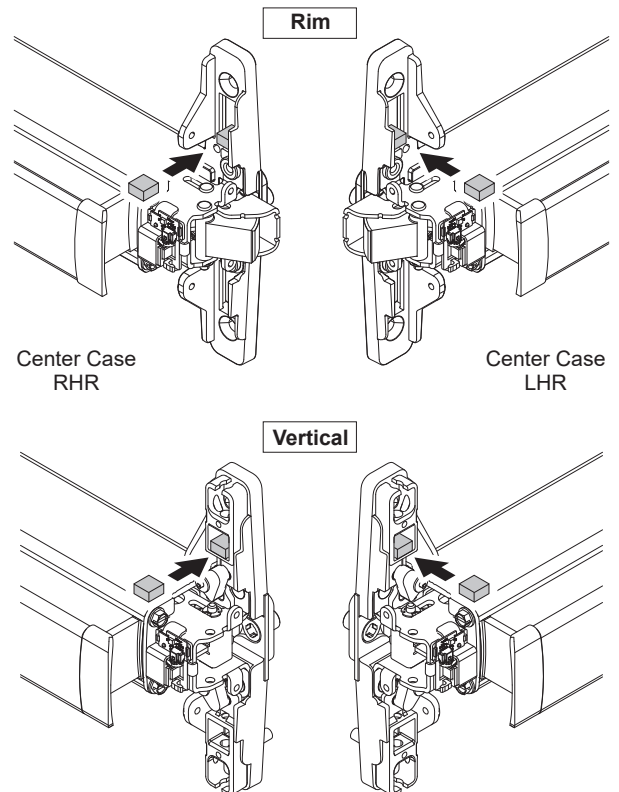
## 37 Install DPS magnet.

Recommended Strike Position for
Door Frames and Mullions



Internal

External
(Door Side)

Approx. 2"

Use ¾" drill

℄ Latch

℄ Frame

**LHR shown**
(RHR opposite)

## 38 Connect battery holder to Main PCB.



Main PCB

Battery holder

## 39 Perform power on self-test.

After powering up, (3) GREEN blinks with (3) BEEPS
indicate power on self-test passed. If self-test does not pass,
proceed to Troubleshooting Section.

## 40 Perform installation test.

❖ **Refer to page 15.**



It will snap
into position

14

## 41 Install intumescent.

❖ **RM Only**

    a. Peel adhesive backing from the Mechanism Case End Cap
       Intumescent.
    b. Affix to the inside of the Mechanism Case End Cap.



**a**

**b**

## 42 Install end cap.
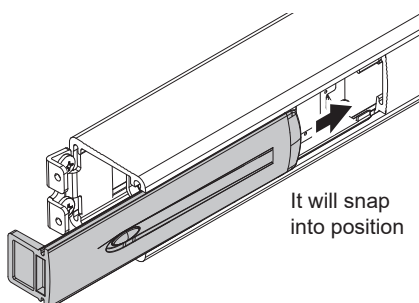


## 43 Install center case cover.
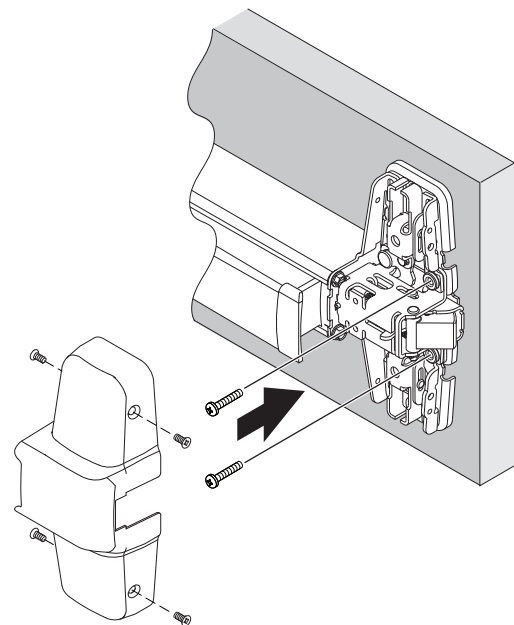
◈ **Need Help? See Troubleshooting Guide.**

## Testing

### Power On Self-Test
1. Disconnect the batteries and push the touch pad to fully discharge residual power.
2. Connect the batteries and allow RU to power up.
3. When RU moves the motor and beeps, push in the touch pad, RU will dog and hold in the touch pad briefly.
4. After a few seconds, the RU motor will move again and undog, releasing the touch pad.
5. The completion of the test is signaled with three beeps.

ⓘ This action confirms the RU motor assembly can dog and undog.

### Installation Test

The RU/RM device can easily be tested at the end of the installation process.

The installation test allows testing of the REX and LX switches for both the RU and RM configurations.

The installation test allows testing of the door position sensor.

The installation test allows testing of the Dogging functionality for both RU configurations.

ⓘ The installation testing sequence is only valid in the FDR mode of the RU/RM device.

The testing requires the installation to be complete.

ⓘ If the latch is not accessible, remove the center case cover to access the latching mechanism.

### Installation Test Sequence
1. Install the batteries or connect/energize the external power source.
2. (RU Configuration Only) After any power up: When the motor completes its movement and beep is heard, push in the push pad momentarily. The push pad should remain held in (dogged).
3. (RU Configuration Only) After a few seconds, the motor will move again and undog, releasing the push pad.
4. Allow the POST to complete.
5. In FDR mode, press in and hold the latch only. The LED should flash green.
6. Release the latch. The LED should flash green.
7. Press in and hold the push pad fully. The LED should flash red or amber.
8. Release the push pad. The LED should flash red or amber.
9. After a FDR power up: Open the door two inches. A beep should be heard indicating the Door Position Sensor (DPS) has detected the door opening.
10. Close the door. A beep should be heard indicating the Door Position Sensor (DPS) has detected the door has closed.
11. The DPS test is active for only 90 seconds after pressing the push pad. To repeat the DPS test, cycle power and repeat the Installation Test Sequence.

### Download the ENGAGE mobile application

Search for "Allegion ENGAGE" on the App Store (iOS) or Google Play Store (Android) to download the free ENGAGE mobile application.

The ENGAGE app is compatible with iPhone 4S and newer models running iOS 9 or newer. Android RU/RM devices require Android 4.4 or newer.

### Register with the new ENGAGE account

An account is required to use the ENGAGE cloud-based web and mobile tools.

Contact your software access control provider or integrator and request an invite to the service providers' site using this same ENGAGE email ID and password to register.

ⓘ The ENGAGE log in password must be at least 10 characters in length and contain three of the following: lower case letters (a-z), upper case letters (A-Z), numbers (0-9) and special characters (e.g. !@#$%^&*). No more than two identical characters in a row can be used.

When the email invite is received, use your email on an internet connected PC to register in by completing the required information. After registering for a new account, you will receive a verification email. **You must click on the link in the message to verify your account.** This is required to keep your account active.

### Commissioning the RU/RM Device with the ENGAGE Application

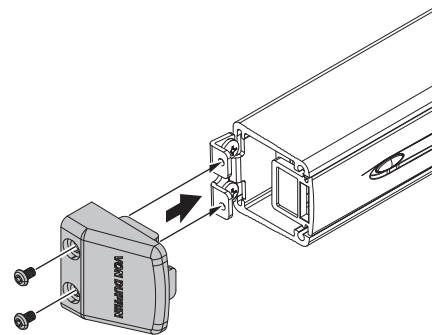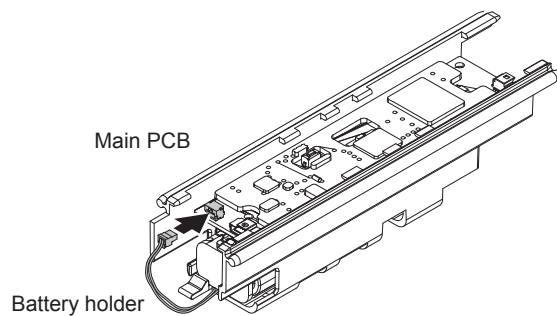ⓘ Before commissioning, the RU/RM device must be fully assembled with the batteries installed, the battery connector plugged in, the cover installed, and in Factory Default Reset mode (FDR).

ⓘ It is recommended to place the smart device in front of the RU/RM device at a distance no less than 12".

Android
1. Select "Connect to RU/RM devices" from the menu.
2. Select the "+" add icon in the upper right corner.
3. Follow the RU/RM device commissioning wizard to complete initial setup of the RU/RM device.

IOS
1. Select "Connect" from the menu.
2. Select the "+" add icon in the upper right corner.
3. Follow the RU/RM device commissioning wizard to complete initial setup of the RU/RM device.

The LED on the RU/RM device will begin blinking red to indicate connectivity with the mobile app. Select the RU/RM device type, and follow the Mobile app wizard to commission and configure the RU/RM device.

### Configure Wi-Fi

If the RU/RM will be linking to a Schlage Gateway, do not turn on Wi-Fi.

ⓘ This is not an ENGAGE Managed Device. This device only works with 3rd party software-managed access control systems.

Your RU/RM can be connected to a Wi-Fi network to receive updates automatically, overnight. Prior to configuring the Wi-Fi connection settings for the RU/RM device, consider contacting your network administrator to obtain the Wi-Fi network SSID, security type, password, and in some higher security configurations, the user ID.

Wi-Fi configuration can be set in the RU/RM device during the commissioning process or any time while connected to the RU/RM device from the "Connect" (iOS) or "Connect to RU/RM devices" (Android) menu.

**HINT**: Use the ENGAGE "Save Network" option so the ENGAGE mobile will remember the first Wi-Fi setup for use in later steps.

1. Connect to the RU/RM device.
   The RU/RM device must be visible when holding your mobile RU/RM device, so you can see to confirm the LED blink when the mobile RU/RM device is connected.
2. Select "Wi-Fi."
3. From the Wi-Fi menu, toggle Wi-Fi on.
4. Enter Wi-Fi SSID. Choose the correct security protocol.

## Factory Default Reset Mode

A Factory Default Reset (FDR) will return the RU/RM device settings to the original factory settings. A FDR removes configurations and schedules from the RU/RM device. A FDR will not remove the device from your ENGAGE account. The RU/RM device must be intentionally deleted from a site after completing a FDR.

If you wish to move the RU/RM device to a different ENGAGE site, you must login to the desired site and recommission the RU/RM device after completing the FDR process and removing the RU/RM device from the site.

1. Press and hold the FDR button for five seconds. The RU/RM device will respond with two green LED blinks and two beeps.



FDR
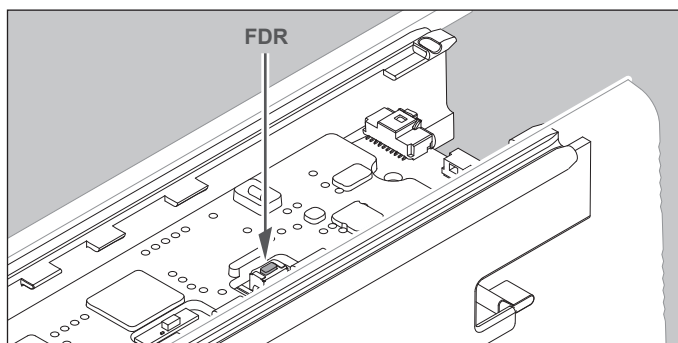
2. Push the RU/RM device push pad three times within 20 seconds. The LED will blink red and the RU/RM device will beep with each push indicating success.
3. The device will respond with three green LED blinks and beeps when the FDR process is complete.
4. Reinstall battery cover. You must now use the ENGAGE mobile app to again capture the RU/RM device.
   • Push the push pad. The RU/RM will communicate, via BLE, looking for your mobile RU/RM device for two minutes after each push when in FDR mode.

To verify if the RU/RM device is in Factory Default Reset mode (FDR), press the push pad. The device will indicate FDR mode is active with a beep. If the RU/RM is not beeping with a push pad push, a Factory Default Reset (FDR) will need to be performed again.

## Safe Mode

ⓘ Enter Safe Mode only as a last resort! Entering Safe Mode causes the RU/RM device to load a special version of firmware intended to be immediately updated with new versions. Once in Safe Mode, commission the RU/RM device with the ENGAGE mobile application and perform a firmware update.

To put the RU/RM device in Safe Mode:

1. Remove power from the RU/RM device.
2. Push the push pad 2 times.
3. Apply power to the RU/RM device.
4. When the LED inside begins to blink, push and hold in the push pad.
5. Press the FDR button 3 times to begin Safe Mode process.

**The RU/RM device will not perform the Safe Mode process if the above sequence is not completed within 10 seconds.**

**The completion of Safe Mode takes several minutes. During the safe mode process, it is common to witness several LED flashes.**

## Indicator Guide

| Mode | Indicators | Meaning |
| --- | --- | --- |
| FDR (Uncommissioned) | 1 Red LED Flash | Confirms installation/active state of Request to Exit (REX) switch (seen only on partial press of the push pad). |
| FDR (Uncommissioned) | 1 Green LED Flash | Confirms installation/active state of latch (LX) switch. |
| FDR (Uncommissioned) | 1 Amber LED Flash | Confirms installation/ simultaneous active states of Request to Exit (REX) and latch (LX) switches (seen when fully pressing the push pad). |
| FDR (Uncommissioned) | Long Beep | Confirms installation/DPS state transitions. Activated with Request to Exit (REX) switch press. Each DPS transition (open/close) will cause a long beep. Active for the first 60 seconds after power is applied. |
| Commissioned | Red LED on Solid | With battery cover removed, indication is the device is in the critical battery state. Replace batteries to make device functional. |
| Commissioned | Alternating Red/Green LED Continuous Blink | Device FW is being updated. |
| Commissioned | Continuous Amber LED Flash | Device Wi-Fi connection in progress |

| | | |
|---|---|---|
| Commissioned | Red LED Flash x4 every ~10 seconds | Device faulted |
| Commissioned | Red LED Flash x1 every ~10 seconds | Door secure (exit device undogged) [if enabled] |
| Commissioned | Green LED Flash x2 every ~10 seconds | Door not secure (exit device dogged) [if enabled] |
| Commissioned (GW Linking) | Red/Green LED Flash x3, off .5 sec repeating | Device attempting to link to GW |
| Commissioned (GW Linking) | Red/Green LED Flash x3 and 3 Beeps | Link attempt failed stop trying |
| Commissioned (GW Linking) | Continuous Green LED Flashes | Linking with GW in process |
| Commissioned (GW Linking) | Continuous Red LED Flashes | Connect with mobile app |
| Commissioned (GW Linking) | Green LED Flash x4 and 4 Beeps | GW linking successfully completed. |
| Commissioned (GW Linking) | Red LED Flash x4 and 4 Beeps | GW linking failure |
| N/A | Green LED Flash x3 and 3 Beeps | Successful POST |
| N/A | Red LED Flash x3 | Failed POST |

## Wired Outputs

The RU/RM device has optional wired outputs that monitor latch and Request to Exit activity. When RU/RM is wired to a line power supply, the wired output will signal latch (LX) and Request to Exit (REX) activity of the Von Duprin push pad.

### Application

Monitored doors on occasion need to signal the latch (LX) and Request to Exit (REX) states to both the access control system and local door hardware, like auto operators, magnetic locks, or local horns.

It is possible to power the RU/RM module from an external 12V or 24V source for installations that do not wish to manage battery replacement.

## Installation

### Wire Assembly

To interface with the RU/RM wired outputs, the ALLEGION CONNECT cable is required. The RU/RM can be ordered with the additional wired cable "CONN" option which includes two cable assemblies.

The RU/RM cable provides a connection between the RU/RM circuit board and the ALLEGION CONNECT door cable. The ALLEGION CONNECT door cable contains a specialized mating connector and pre-prepped wires for splicing to an EPT or electric hinge.
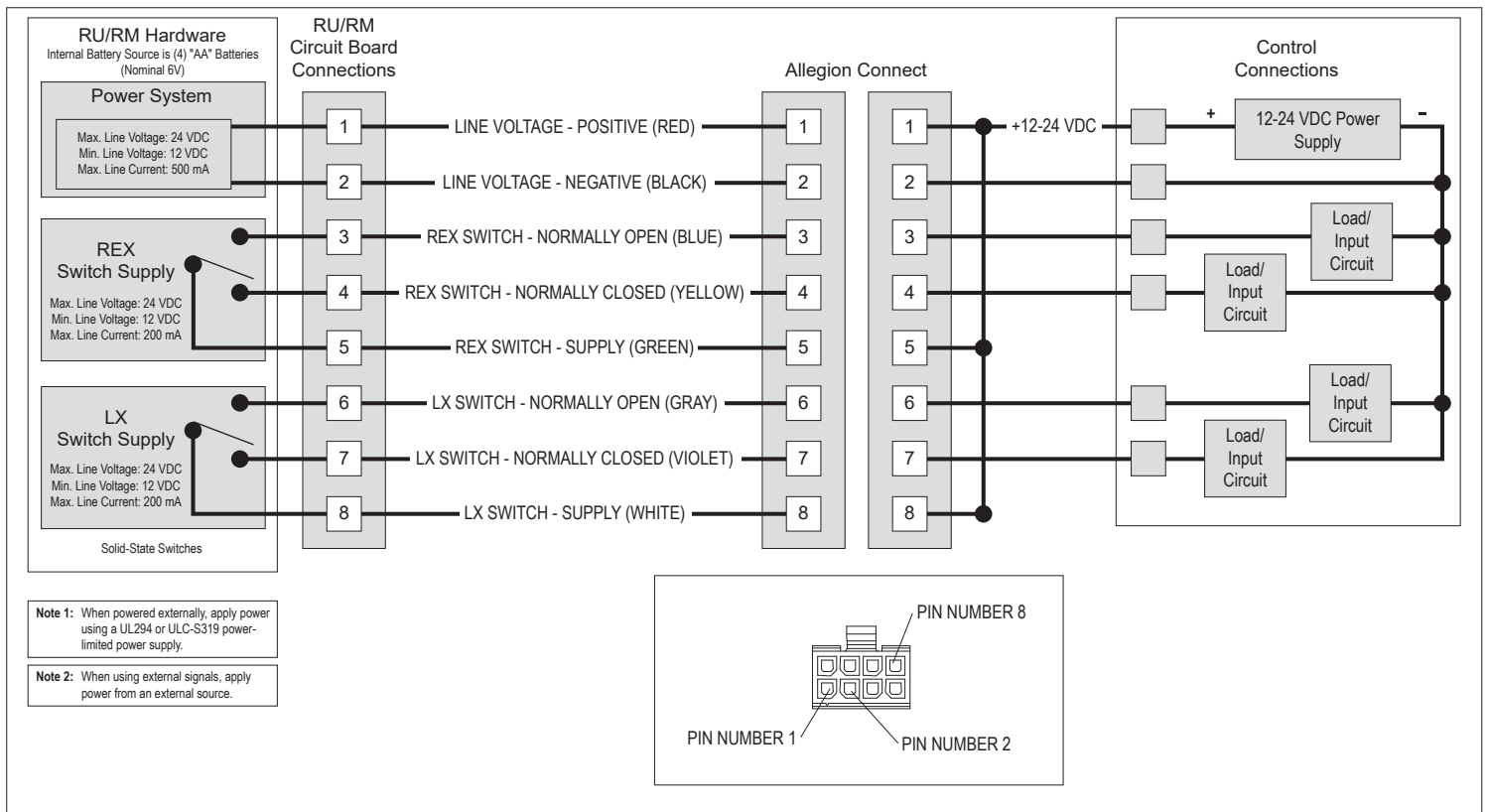
ⓘ The external connections cannot exceed 98.5 ft. (30 m).

**RU/RM Hardware**
Internal Battery Source is (4) "AA" Batteries (Nominal 6V)

**RU/RM Circuit Board Connections**

**Allegion Connect**

**Control Connections**

Power System
Max. Line Voltage: 24 VDC
Min. Line Voltage: 12 VDC
Max. Line Current: 500 mA

| | | | |
|---|---|---|---|
| 1 | LINE VOLTAGE - POSITIVE (RED) | 1 | 1 | +12-24 VDC |
| 2 | LINE VOLTAGE - NEGATIVE (BLACK) | 2 | 2 | |

12-24 VDC Power Supply

REX Switch Supply
Max. Line Voltage: 24 VDC
Min. Line Voltage: 12 VDC
Max. Line Current: 200 mA

3 — REX SWITCH - NORMALLY OPEN (BLUE) — 3 — 3
4 — REX SWITCH - NORMALLY CLOSED (YELLOW) — 4 — 4
5 — REX SWITCH - SUPPLY (GREEN) — 5 — 5

LX Switch Supply
Max. Line Voltage: 24 VDC
Min. Line Voltage: 12 VDC
Max. Line Current: 200 mA

6 — LX SWITCH - NORMALLY OPEN (GRAY) — 6 — 6
7 — LX SWITCH - NORMALLY CLOSED (VIOLET) — 7 — 7
8 — LX SWITCH - SUPPLY (WHITE) — 8 — 8

Load/Input Circuit

Solid-State Switches

**Note 1:** When powered externally, apply power using a UL294 or ULC-S319 power-limited power supply.

**Note 2:** When using external signals, apply power from an external source.

PIN NUMBER 8
PIN NUMBER 1
PIN NUMBER 2

## RSI Gateway Linking

When the access control system manages the Schlage Gateway with RS-485 and RSI commands, use this method to link the ENGAGE RU/RM device.

The access control software management system can command the RSI gateway into link mode, door number by door number or you can use the ENGAGE mobile app to link the RSI gateway and RU/RM device. Contact your access control integrator for command LINKING instructions.

## Linking

1. Make sure the Gateway and the RU/RM (all devices) you want to link are already commissioned in the same account. Before linking, the devices should all appear in the mobile app device list for the site.
2. Connect the ENGAGE mobile app to the RSI gateway. The gateway will blink a blue LED once every second when connected to the mobile app.
3. Select the "Manage Linked Devices" page when connected to the gateway
4. Select the "+" add device icon in the upper right of the "Manage Linked Devices" screen.
5. Set the door number you will use to manage the RU/RM (device) you will link.
6. Hit OK, the RSI gateway is now in link mode, with alternating red/blue LED as an indication.
7. At the RU/RM you want to link:
   a. Push in and hold the latch for 2 seconds.
      **Note:** For concealed latching mechanisms, the center case cover will need to be removed to activate the switching mechanism.
   b. While holding the latch in, push in and hold the push pad for 2 seconds.
   c. Release both the latch and push pad. Wait for 2 seconds.

   d. Push in and hold the latch.
   e. After 3 seconds, the RU/RM device LED will alternate red/green indicating an active link mode.
   f. Release the latch.
   g. A successful link is indicated with fast LED blinks and 4 beeps.

## De-Linking the Gateway Bluetooth (BLE) Link

It is necessary to de-link the gateway BLE link before a connection to the ENGAGE mobile app can be established.

To connect to a linked RU/RM with the ENGAGE mobile app, follow these steps:
1. Push in and hold in the latch. Wait for 2 seconds.
2. While holding in the latch, push and hold in the push pad. Wait for 2 seconds.
3. Release both the latch and push pad. Wait for 2 seconds.
4. Push in and release the latch. The LED will blink amber four times.
5. Using the ENGAGE mobile app, connect within 30 seconds to the RU/RM device (a time out will occur and the sequence must be repeated).
6. When the ENGAGE mobile app disconnects, the RU/RM will automatically establish a link with the original Schlage gateway.

## FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference

will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## FCC Radiation Exposure Statement

To comply with FCC/IC RF exposure requirements for mobile transmitting devices, this transmitter should only be used or installed at locations where there is at least 20 cm separation distance between the antenna and all persons.

## Industry Canada Statement

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

## Industry Canada Radiation Exposure Statement

This Device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

## UL Statement

- Panic/Fire Exit Hardware always allows free egress
- Fire Rating: UL 10C 3 Hour
- Listed UL294
- UL294 Performance Levels: Destructive Attack (I), Line Security (I), Endurance (IV), Standby Power (I)
- ULC-S319 Equipment class I

  These products are intended to be installed in accordance with the following:
- ANSI/NFPA 70 - National Electrical Code
- Local Authority Having Jurisdiction
- CSA C22.1, Canadian Electrical Code, Part 1

- Bluetooth capability was not evaluated by UL
- The Allegion ENGAGE App was not evaluated by UL
- Wi-Fi connectivity is supplemental and was not evaluated by UL

## How to Change the Batteries

a. Remove end cap.
b. Remove the Main PCB cover from the Main PCB holder by sliding the cover towards the end cap end of the device.
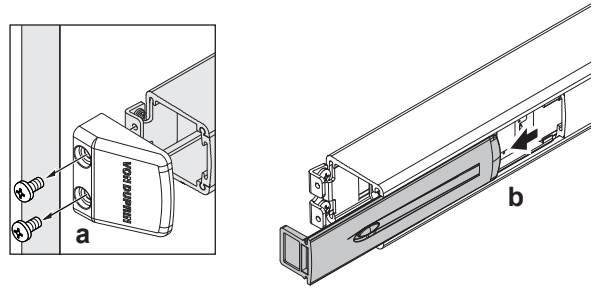


c. Disconnect battery connector from the Main PCB.
d. Pull the battery holder from the Main PCB holder.
e. Remove the four AA batteries from the battery holder and properly discard.
f. Install four AA batteries into the battery holder.
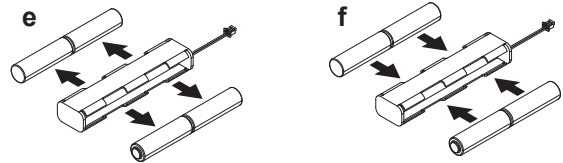


g. Install the battery holder into the Main PCB holder.
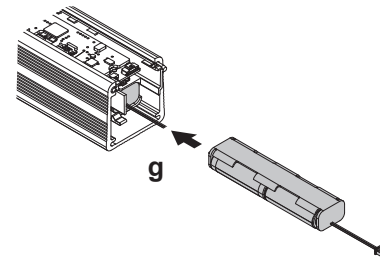


h. Connect the battery holder into the Main PCB.
i. Install the Main PCB cover into the Main PCB holder by sliding the cover towards the push pad end of the device.
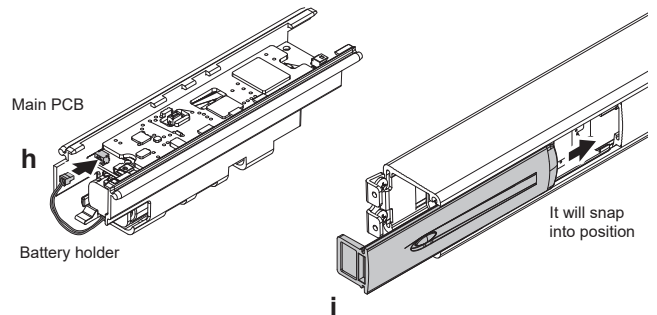


j. Install the end cap

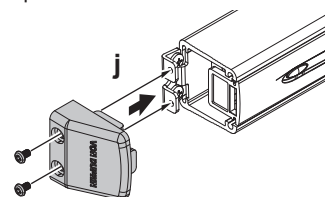| Problem | Visible Indication | Audit Entry (Details) | Cause | | Solution |
|---------|-------------------|----------------------|-------|---|----------|
| RU/RM is not powering up | No RU/RM LEDs upon application of power | Past audits can be reviewed for possible cause indications.<br>LVL_BATT - actual battery voltage (millivolts) recorded every 24 hours<br>LOW_BATT - active for battery voltage (millivolts) below 4.7V<br>CRIT_BATT - active for battery voltage (millivolts) below 4.0V | Battery powered | Batteries reversed<br>Batteries discharged<br>Damaged battery holder wires/ connectors<br>Battery holder contact corrosion | Check the battery connection.<br>Look for reversed batteries, replace all reversed batteries as reversed batteries are damaged.<br>Measure the battery voltage, each battery when new should be 1.5 VDC, all four batteries when new should be 6.0 VDC. |
| | | N/A | External power | External power source not active<br>External power source incorrect voltage<br>Damaged external conductors/ connectors<br>Incorrect terminations | Check external cable routing and terminations.<br>Measure voltage - ensure 12V or 24V source. |
| Low battery | RU/RM LED is on solid red with cover removed | LOW_BATT - active for battery voltage below 4.7V<br>LVL_BATT (millivolts) - actual battery voltage recorded every 24 hours<br>POST_RESULT (FAIL : Battery Health) | Battery voltage is less than 4.7 VDC | | Replace the four AA batteries. |
| Low external power level | RU/RM LED is on solid red | POWER_VOLTAGE (millivolts) - actual real-time battery voltage | External voltage range is less than 10.2 V<br>Nominal voltage set point is 12 or 24V. | | External voltage should be set at 12 VDC - 24 VDC. |
| Power On Self-Test (POST) failure | RU/RM red LED flash 3x at completion of POST | POST_RESULT (FAIL : BLE Module)<br>POST_RESULT (FAIL : DPS Module)<br>POST_RESULT (FAIL : Battery Health)<br>POST_RESULT (FAIL : Wi-Fi Module) | BLE module self-test failed<br>DPS module self-test failed<br>Battery module self-test failed<br>Wi-Fi module self-test failed | | Power cycle: Disconnect and reconnect battery pack or external power source |
| Not able to establish Bluetooth advertising | MAPP doesn't have device listed | POST_RESULT (FAIL : BLE Module) | BLE module self-test failed<br><br>REX switch is not activating when the push pad is depressed (No red LED blinks [when in FDR mode] when depressing the push pad)<br><br>When in Factory Default Reset mode LED will illuminate amber when the push pad REX is activated and retracts the latch. This confirms FDR mode. | | Remove power. Disconnect and reconnect main wiring harness. Reapply power.<br>Reposition REX switch. Verify plunger is pressed in when push pad is depressed. |
| | | N/A | RU/RM is commissioned in a different site | | Delete RU/RM from all possible sites and RU/RM is in FDR mode before commissioning. |

| ENGAGE mobile app is not connecting via a Bluetooth link to RU/RM | No continuous red LED blink | N/A | Latch switch is not activating when the latch is retracted (No green LED blink [FDR mode] when retracting the latch mechanism) | Remove power. Disconnect and reconnect main wiring harness. Reapply power.<br><br>Verify latch switch is closed when latch is pressed in (retracted). |
|---|---|---|---|---|
| | | N/A | Cover plate not installed | Make sure the cover plate is installed and there is no tamper indication. |
| | | N/A | Not in FDR mode<br>Not in Bluetooth advertising mode | Push and release the push pad so FDR mode with Bluetooth advertising starts. |
| | | N/A | Not in FDR mode | When in Factory Default Reset mode LED will illuminate amber when the push pad REX is activated and retracts the latch, confirming FDR mode. |
| | | N/A | Already commissioned | Be sure the RU/RM is not already commissioned in a different site. Make sure to delete RU/RM from all past sites and RU/RM is in FDR mode before commissioning. |
| | | N/A | Already linked, de-link RU/RM | If RU/RM is already linked to a gateway, temporary de-link in order to connect with the mobile app. De-linking steps are found in the "De-linking the Gateway Bluetooth (BLE) Link" section of this manual. |
| | | POST_RESULT (FAIL : BLE Module) | The BLE module could be defective | Confirm Bluetooth operation with a Bluetooth confirmation app. |
| RU/RM is not linking to the gateway | No link success confirmation<br>No continuous device green LED blink | N/A | Not commissioned | RU/RM must be commissioned to the same site as the gateway before they can link. Check that the CTE commission mode LED is on and commission CTE if necessary. |
| | RU/RM will not be shown in the "Add Link" list | N/A | Weak signal to gateway | RU/RM and gateway will only link when signal strength is adequate. If signal strength is weak, insure gateway is not near any signal obstructions, like metal, and closer to the RU/RM. |
| | RU/RM will not be shown in the "Add Link" list | N/A | Gateway may have old firmware | Update the gateway firmware. |
| | RU/RM will not be shown in the "Add Link" list | N/A | If already linked to the wrong gateway, the RU/RM will not show in the "Add Link" list | Using the mobile app, locate the device to remove from the gateway. Swipe left to display the delete button. Press the delete button to remove the device from the gateway. The RU/RM device will need to be placed in the FDR mode and then linked to the correct gateway. |

| | | | | |
|---|---|---|---|---|
| Not yet linked; How to IP link | RU/RM is listed in the "Connect" menu | N/A | Linking to an IP gateway | Linking the RU/RM to an IP gateway is easy by connecting the ENGAGE mobile to the gateway under "Manage Linked" device. Go to the ( + ) screen and select the "RURM" from the ready to link nearby list. No action is needed at the RU/RM to complete linking in IP gateway mode. |
| Not yet linked; How to RSI link | RU/RM is listed in the "Connect" menu | N/A | Linking to a RSI gateway | First with the mobile app, put the gateway in "link mode" for the assigned door number. Next, to put RU/RM in "link mode", push in the latch (LX) while holding in the latch push in the push pad, release both and again briefly push in the push pad (REX). The RU/RM will now alternate red/green indicating it is in link mode for 90 seconds. When linking is successful the RU/RM will blink fast green with four beeps. |
| Propped door fault | RU/RM red LED flash 4x every 10 secs. | PROPPED_DOOR | DPS magnet not installed | Single Door/ Double Door With a Mullion<br>Install the DPS magnet in the frame for a signal door as illustrated in the installation section of this manual.<br><br>Double Door Without a Mullion<br>Install the DPS magnet in the opposite door's center case as illustrated in the installation section of this manual. |
| | | PROPPED_DOOR | DPS module not calibrated | Per the instructions, confirm the properly installed DPS magnet; connect with the mobile app to the RU/RM and with the door closed select "Calibrate DPS" in the Connect screen. |
| | | PROPPED_DOOR | Door was propped open beyond the time setting | Close door |
| | | PROPPED_DOOR | Latch retracted exceeds timeout while door is closed | Release latch |
| Forced door fault | RU/RM red LED flash 4x every 10 secs. | FORCED_DOOR | DPS magnet not installed | Install the DPS magnet as suggested, in the frame for a single door and on the front bracket for dual panic doors. |
| | | FORCED_DOOR | Calibrate DPS | Per the instructions, confirm the properly installed DPS magnet; connect with the mobile app to the RU/RM and with the door closed select "Calibrate DPS" in the Connect screen. |
| | | FORCED_DOOR | Door opened without activating the push pad and latch switch | Close door |

| | | | | |
|---|---|---|---|---|
| Unexpected loss of dogged condition (device slips from dogged to undogged on next exit without command) | RU/RM red LED flash 4x every 10 secs. | MOTOR_TRANSITION_ FAILURE | Unexpected release of dogging | Press push pad to return the device to the dogged condition |
| Latch not extended when door is closed | RU/RM red LED flash 4x every 10 secs. | DPS_NO_LATCH_EXT | Retracted latch | 1. Resolve latch obstruction<br>2. Close the door |
| | | DPS_NO_LATCH_EXT | Stuck latch | 1. Resolve latch obstruction<br>2. Close the door |
| | | DPS_NO_LATCH_EXT | Blocked latch | 1. Resolve latch obstruction<br>2. Close the door |
| Door position sensor magnetic tamper alert activated | RU/RM red LED flash 4x every 10 secs. | DPS_TAMPER | Magnetic field increased by additional magnet | 1. Remove tamper conditions<br>2. Close the door<br>3. Recalibrate DPS |
| | | | Magnetic field decreased by removal of magnet | 1. Check for correct magnets and magnet locations<br>2. Close the door<br>3. Recalibrate DPS |
| | | | Magnetic field incorrect because magnet/magnet position | 1. Check for correct magnets and magnet locations<br>2. Close the door<br>3. Recalibrate DPS |
| Real time clock has become inaccurate | RU/RM red LED flash 4x every 10 secs. | RTCC_ERROR (Invalid Clock Time) | Power has been removed for an extended period of time | Connect to a gateway or mobile app to synchronize date and time |
| Cover tamper activated by removing cover | RU/RM red LED flash 4x every 10 secs. | TAMPER - generated when a tamper is pressed or released | Cover not in correct install position | Replace cover |
| | | | Cover magnet not installed in cover | Verify cover |
| | | | External magnet tamper on cover | Verify tamper attempt |
| Dogging mechanism's homing routine failed at power up | RU/RM red LED flash 3x at completion of POST | MOTOR_TRANSITION_ FAILURE | Motor winding connections | 1. Inspect motor wiring<br>2. Disconnect and reconnect motor connection<br>3. Cycle power |
| | | | Dogging mechanism bound | 1. Inspect dogging mechanism travel using hex dogging key<br>2. Cycle power |
| | | | Dogging module switch failure | 1. Inspect switch wiring<br>2. Disconnect and reconnect motor connection<br>3. Cycle power |
| Dogging mechanism movement failure | RU/RM red LED flash 4x every 10 secs. | MOTOR_TRANSITION_ FAILURE | Motor winding connections | 1. Inspect motor wiring<br>2. Disconnect and reconnect motor connection<br>3. Cycle power |
| | | DOG_ON_NEXT_EXIT_ FAILURE | Dogging mechanism failed to move to the "Dog On Next Exit" position | 1. Inspect switch wiring<br>2. Disconnect and reconnect motor connection<br>3. Cycle power |

Warnings look like this:

### ⬣! WARNING

Warnings indicate potentially hazardous conditions, which if not avoided or corrected, may cause death or serious injury.

Cautions look like this:

### ⚠ CAUTION

Cautions indicate potentially hazardous conditions, which if not avoided or corrected, may cause minor or moderate injury. Cautions may also warn against unsafe practices.

Notices look like this:

ⓘ Notices indicate a condition that may cause equipment or property damage only.

Directions look like this:

◆ Directions identify a step that may or may not apply to your product configuration. It also may direct you to another part of the instruction.

**Customer Service**

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