



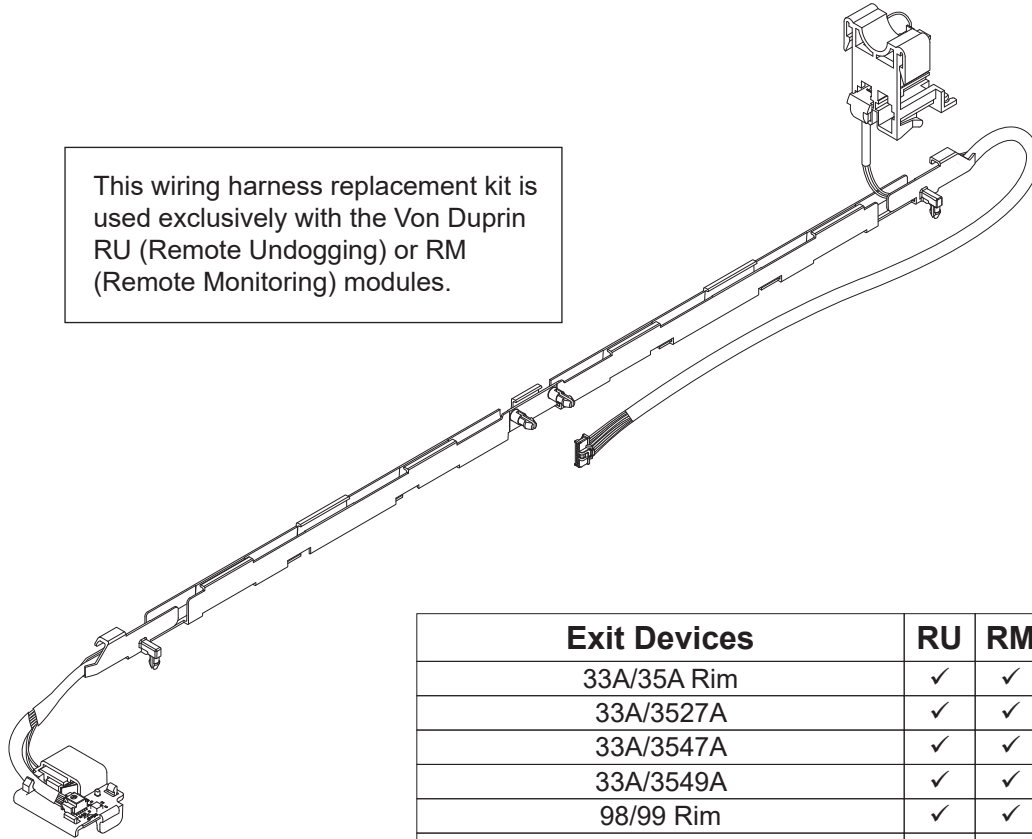
931005-00

# RU/RM RX/LX Wiring Harness Replacement

**VON DUPRIN®**

Installation Instructions

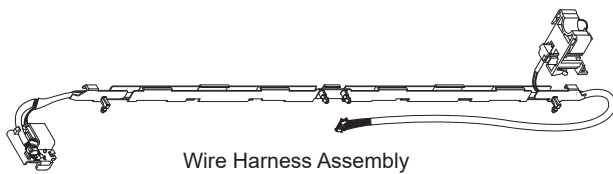
This wiring harness replacement kit is used exclusively with the Von Duprin RU (Remote Undogging) or RM (Remote Monitoring) modules.



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 12 for an explanation of the Warnings and Cautions used in this booklet.

## BOX CONTENTS



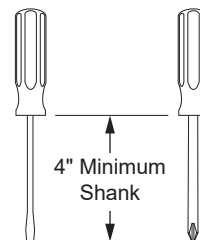
Wire Harness Assembly



Alcohol Wipes (2)

## REQUIRED TOOLS

1/4" flat screwdriver #2 Phillips screwdriver

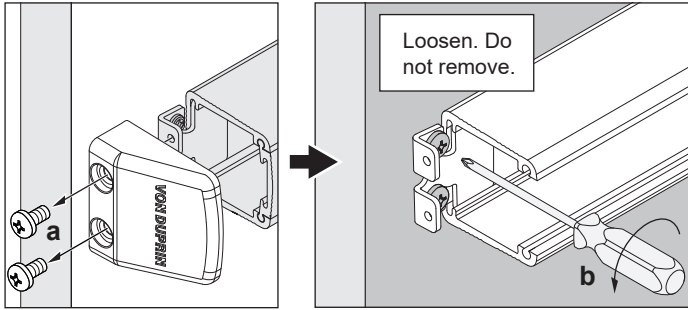


Adhesive Remover

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

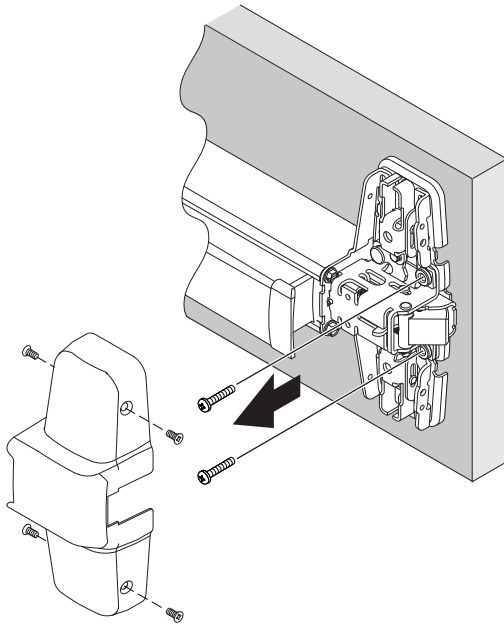
### 1 Remove end cap and loosen bracket.

◆ For Retrofit Only



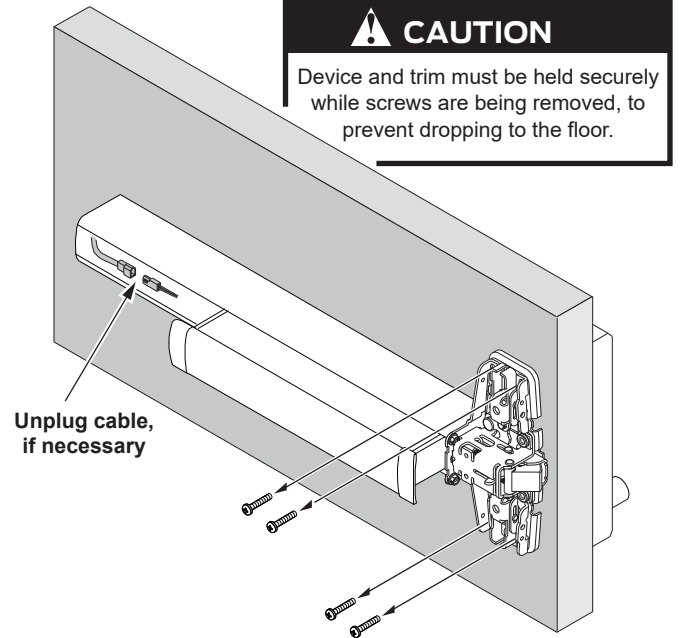
### 2 Remove center case cover and support screws.

◆ For Retrofit Only

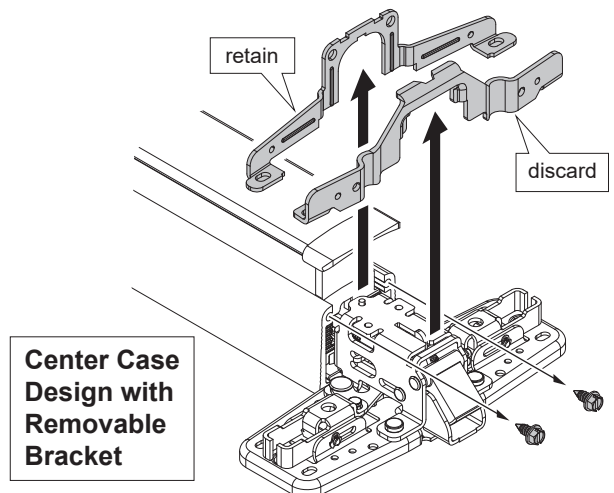
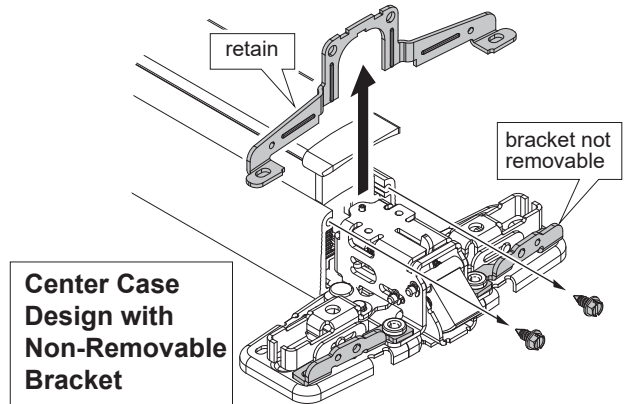


### 3 Remove device from door.

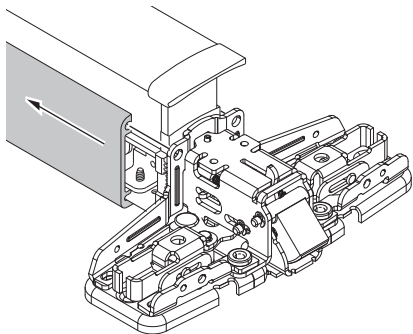
◆ For Retrofit Only



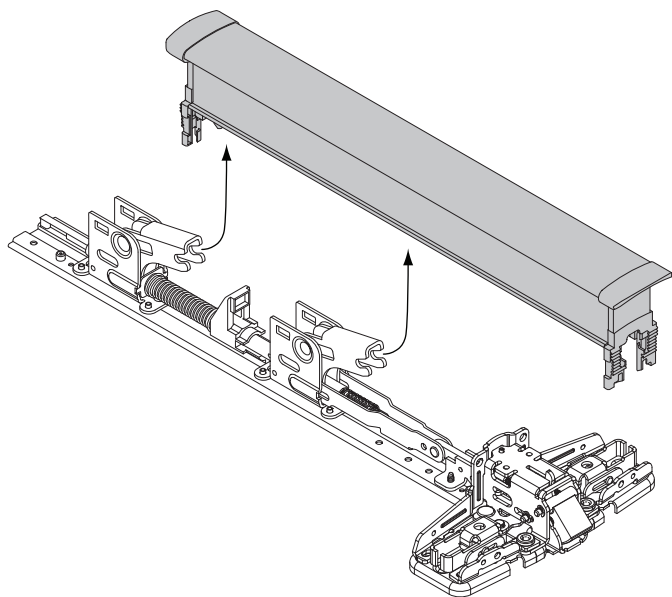
### 4 Remove bracket(s).



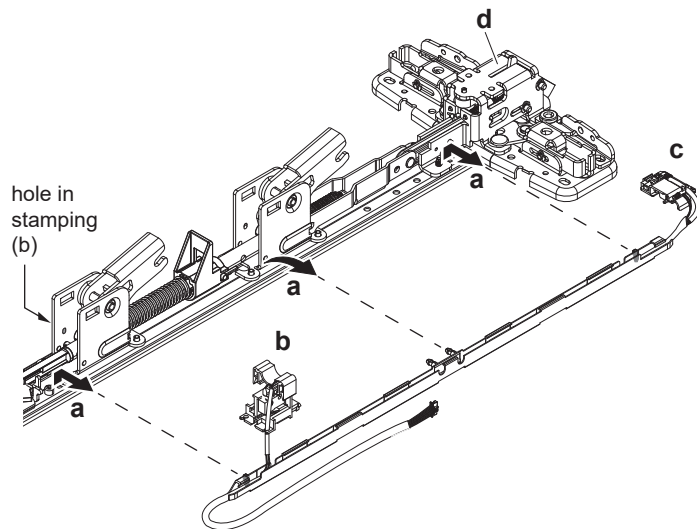
**5** Remove mechanism case body.



**6** Remove push pad.

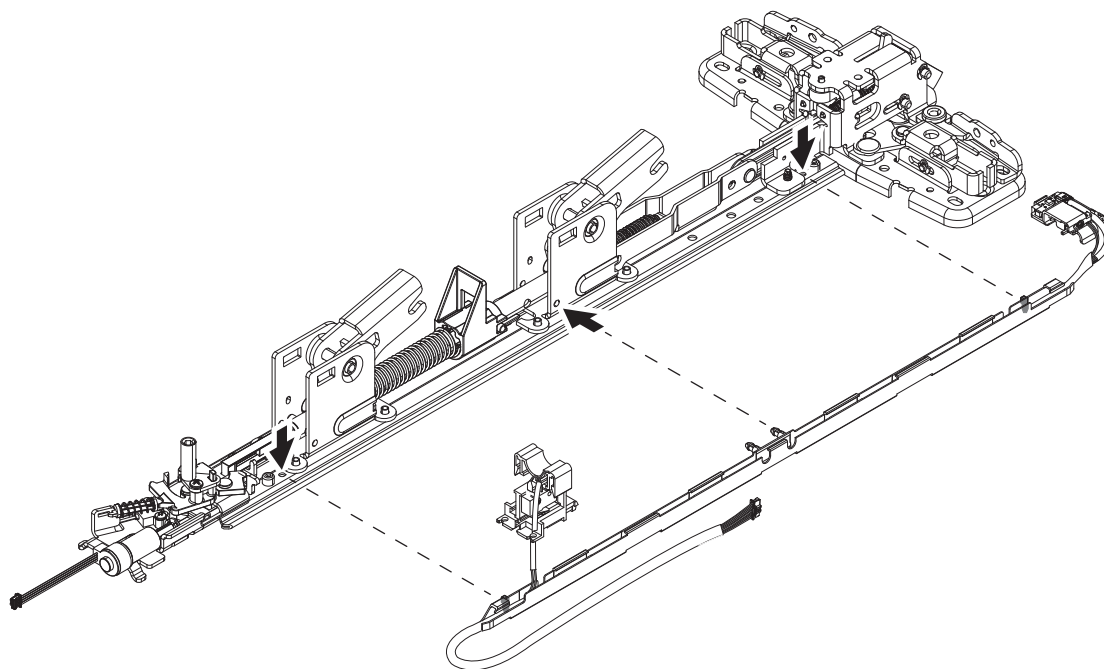


**7** Remove RX/LX wiring harness.

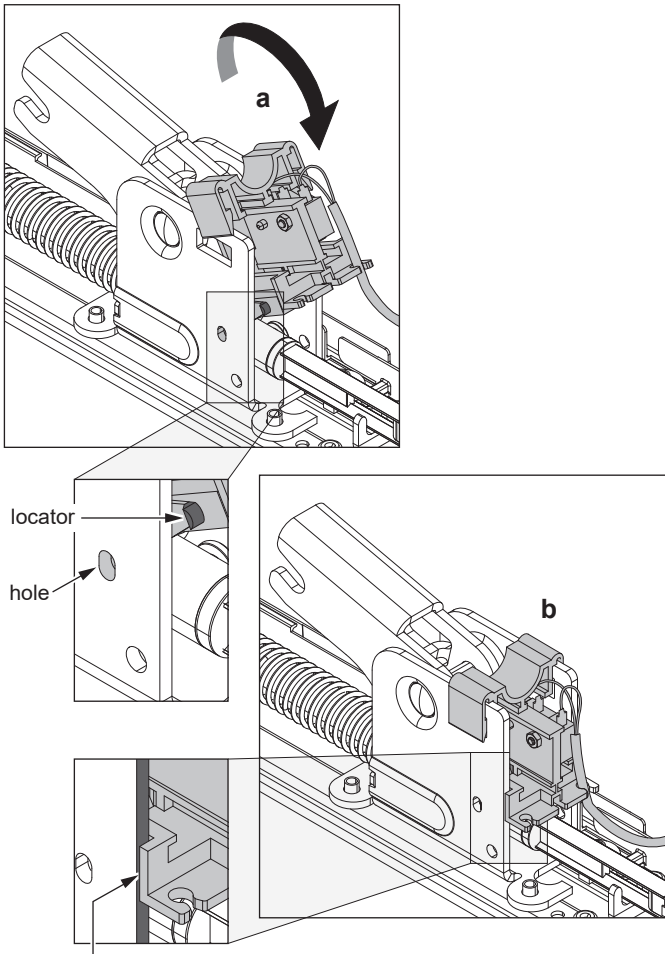


- a. Detach the existing wiring bracket.
- b. Remove the REX Switch Assembly by pressing on the plastic locator (in hole on side of stamping) while tilting the switch assembly up and away.
- c. Remove (pull off) the LX Switch Assembly.
- d. Scrape off remaining adhesive, and clean with an adhesive remover.

**8** Install new raceway wiring harness (snaps into place).

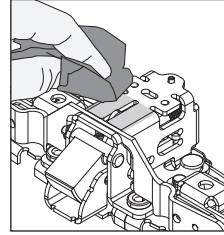


**9** Install REX switch assembly (snaps into place).

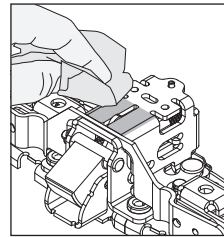


Proper installation will result in the flat edge of the switch resting on the vertical guide.

**11** Clean LX switch assembly mounting area with clean cloth.



**12** Clean LX switch assembly mounting area with alcohol wipe (provided).

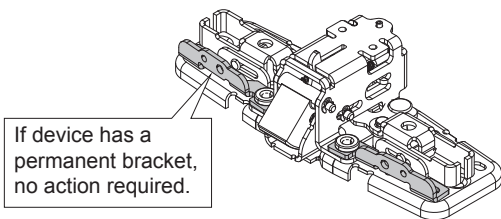
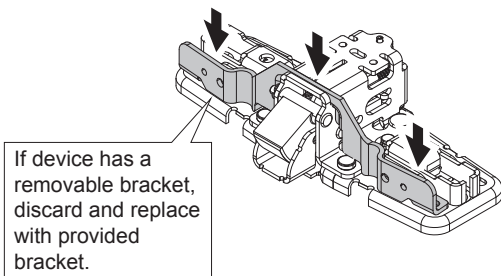


**13** Wash hands.



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

**10** Install new front bracket (if required).

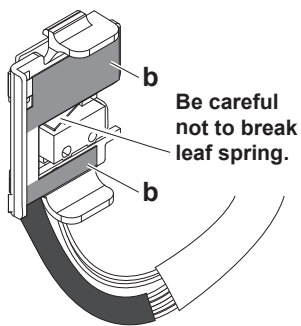


## 14 Attach LX switch assembly.

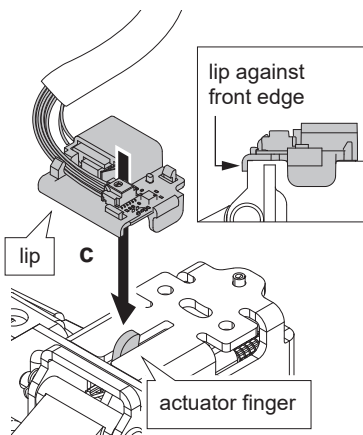
- i** Device must warm to a minimum temperature of 10°C (50°F) before applying the LX Switch Assembly.
- i** Bracket must be in place before applying adhesive (Step 10).
- i** Before handling the LX Assembly, touch a metal surface of the building or a ground device to dissipate electrostatic charges from the installer.

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

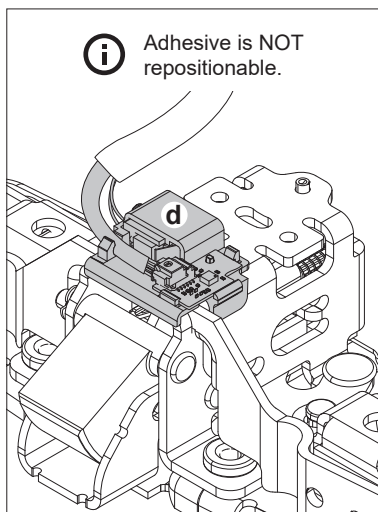
b. Remove adhesive backing



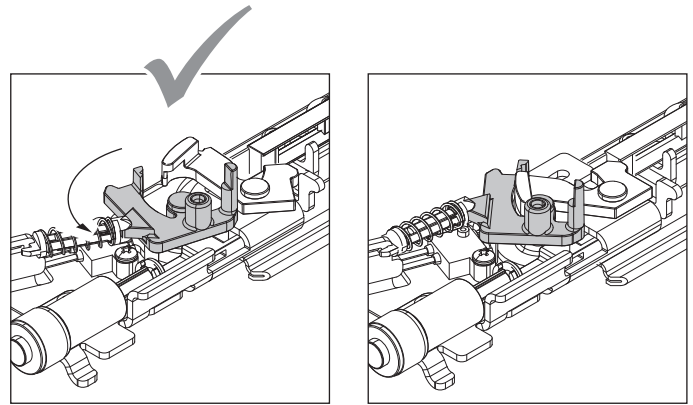
c. Carefully lower LX switch assembly into position over actuator finger, with lip against edge of device center case as shown.



d. Press for 20 seconds to activate adhesive.



## 15 Make sure device is undogged.

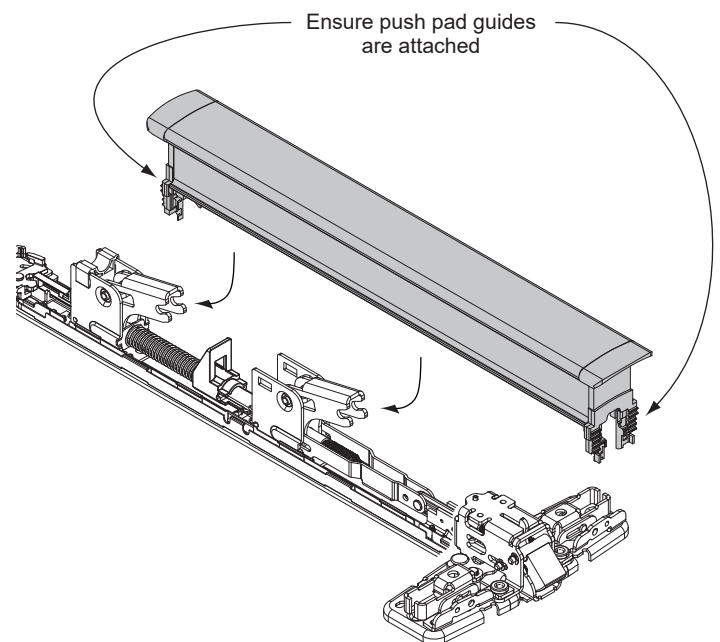


**Undogged**

**Dogged**

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

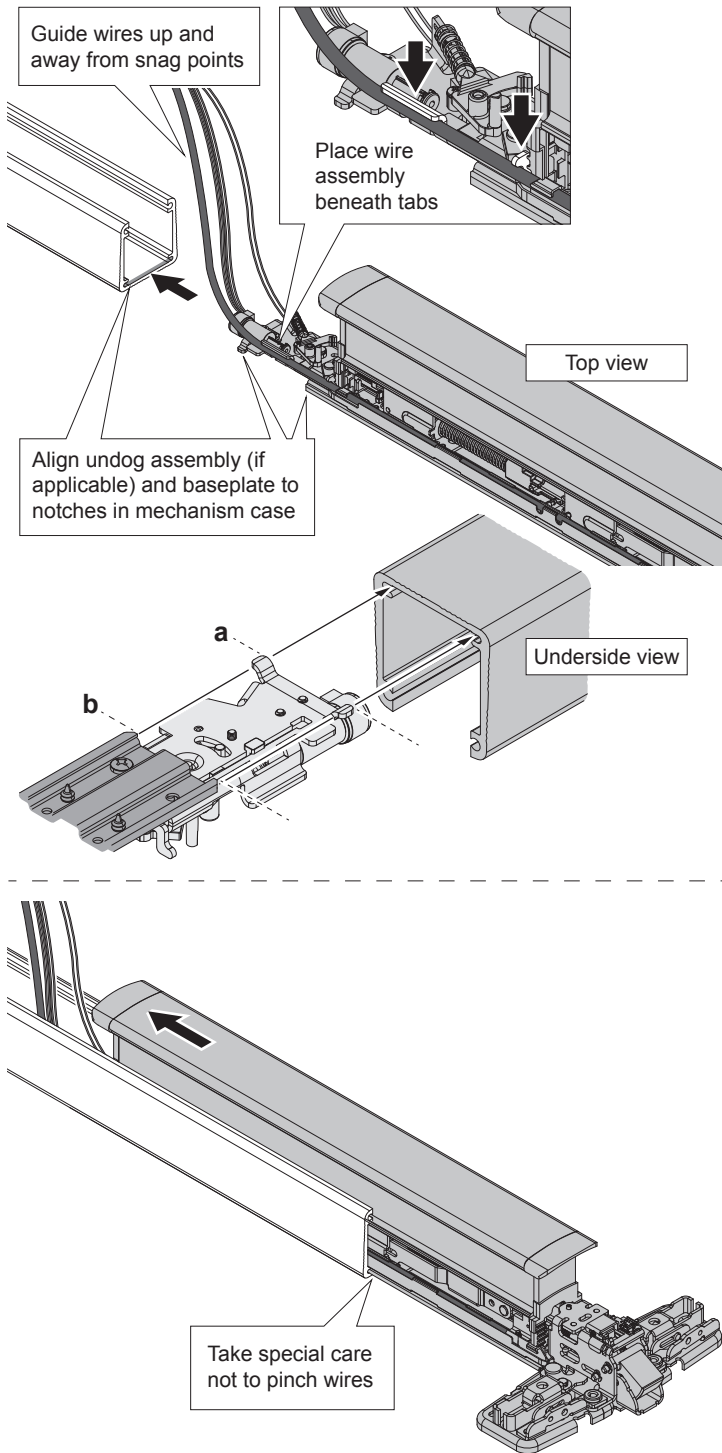
## 16 Install push pad onto exit device baseplate.



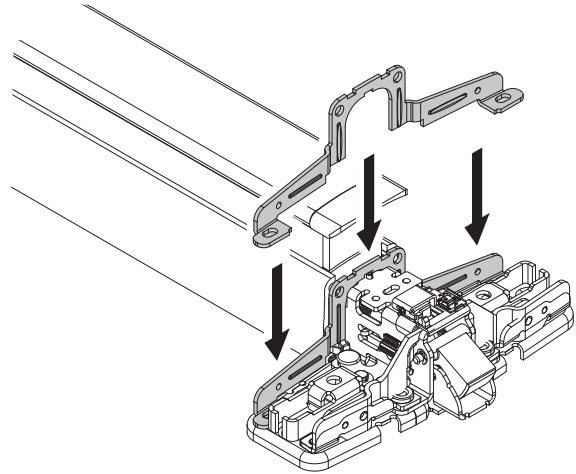
## 17 Install exit device baseplate assembly into mechanism case.

### RU Only

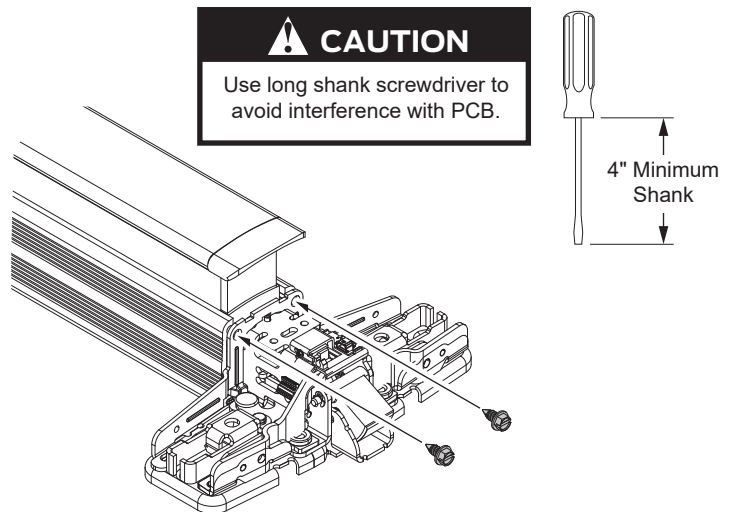
Guide dogging module into grooves of mechanism case (a), then guide the baseplate assembly into the same grooves (b).



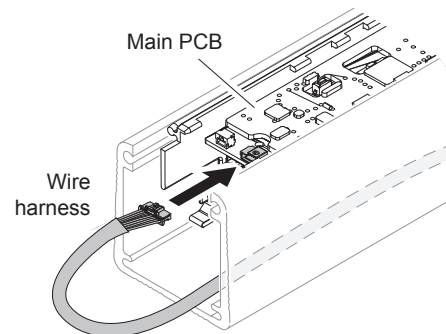
## 18 Reinstall original center-case-to-mechanism-case support bracket.



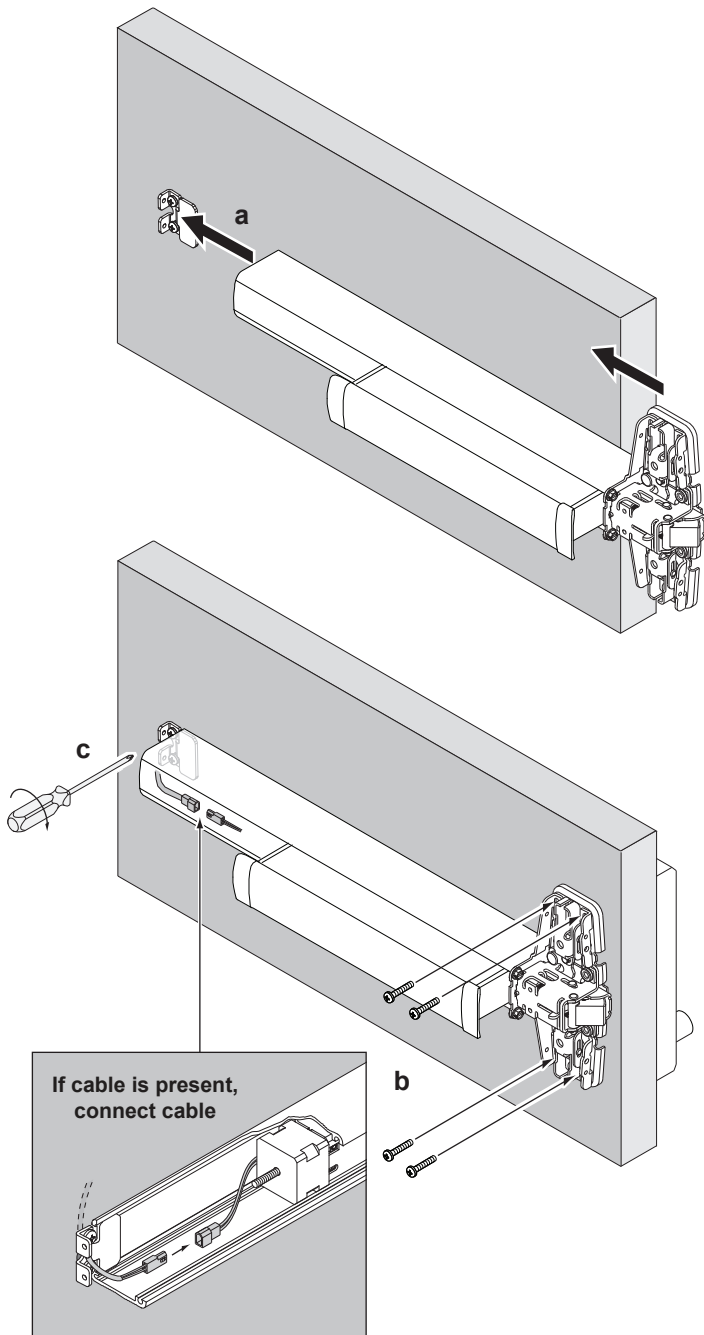
## 19 Install center-case-to-mechanism-case screws.



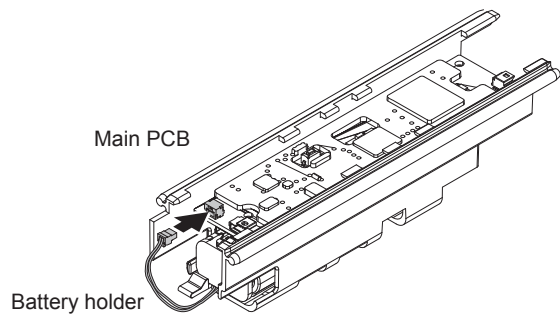
## 20 Connect raceway wire harness to Main PCB.



**21** Slide device into bracket, then attach exit device to door.



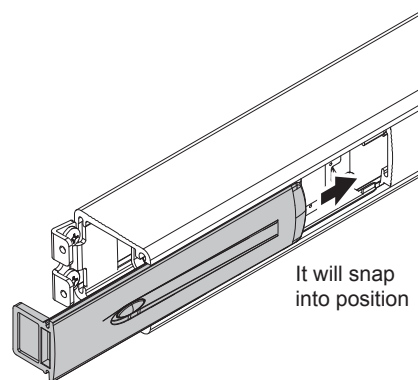
**22** Connect battery holder to Main PCB.



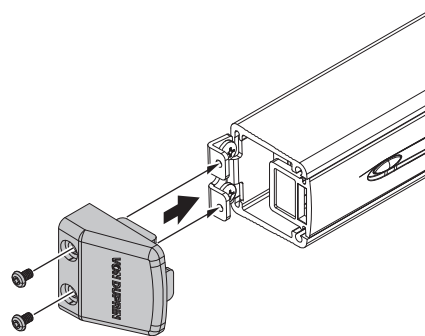
**23** Perform power on self-test.

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.

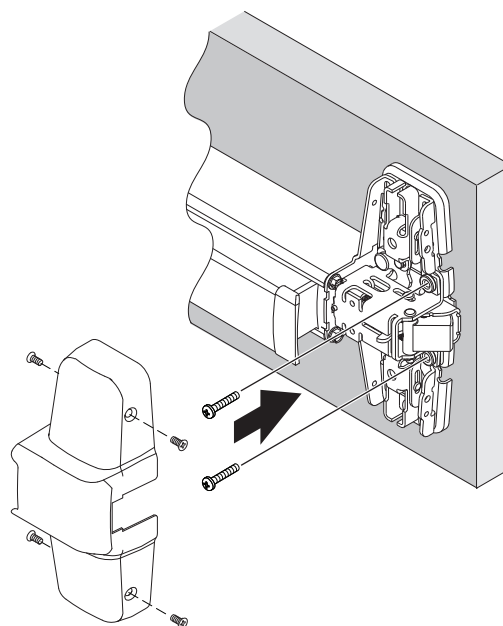
**24** Slide PCB cover into main PCB holder.



**25** Install end cap.



**26** Install center case cover.



ⓘ Need Help? See Troubleshooting.

## 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.

ⓘ 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 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

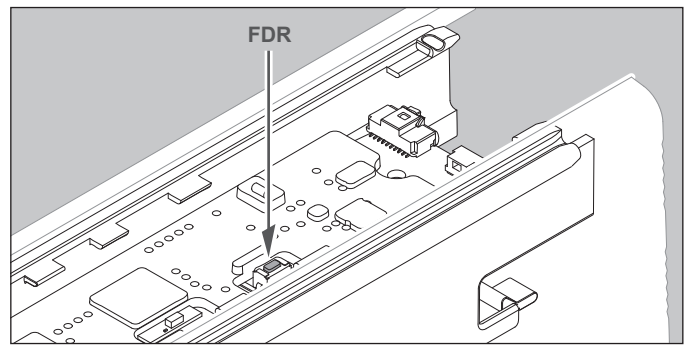
1. Install the batteries or connect/energize the external power source.
2. (RU Configuration Only) After any power up: When the motor completes its movement and beep is heard, push in the push pad momentarily. The push pad should remain held in (dogged).
3. (RU Configuration Only) After a few seconds, 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.

## 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.



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. 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.



## 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 Flash x4 every ~10 seconds	Device faulted
N/A	Green LED Flash x3 and 3 Beeps	Successful POST
N/A	Red LED Flash x3	Failed POST

### 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

## Troubleshooting Guide

Problem	Visible Indication	Audit Entry (Details)	Cause	Solution
Power On Self-Test (POST) failure	RU/RM red LED flash 3x at completion of POST	POST_RESULT (FAIL : BLE Module) POST_RESULT (FAIL : DPS Module) POST_RESULT (FAIL : Battery Health) POST_RESULT (FAIL : Wi-Fi Module)	BLE module self-test failed DPS module self-test failed Battery module self-test failed Wi-Fi module self-test failed	Power cycle: Disconnect and reconnect battery pack or external power source
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 2. Close the door
		DPS_NO_LATCH_EXT	Stuck latch	1. Resolve latch obstruction 2. Close the door
		DPS_NO_LATCH_EXT	Blocked latch	1. Resolve latch obstruction 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 2. Close the door 3. Recalibrate DPS
			Magnetic field decreased by removal of magnet	1. Check for correct magnets and magnet locations 2. Close the door 3. Recalibrate DPS
			Magnetic field incorrect because magnet/magnet position	1. Check for correct magnets and magnet locations 2. Close the door 3. Recalibrate DPS
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



## Warnings and Cautions

Warnings look like this:



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

Cautions look like this:



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**

1-877-671-7011 [www.allegion.com/us](http://www.allegion.com/us)



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