

How to retrofit a Rytec Spiral® door with the SmartSurround™ light curtains, Advanced³ light curtains and CAN bus cabling

Author: Sean C. Morrison


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Status: Active

IMPORTANT: Read this entire bulletin before proceeding.


Questions? Call Rytec Customer Support at 1-800-628-1909.

The meaning of signal words



Technical content produced by Rytec includes safety information which must be read, understood and obeyed to reduce the risk of death, personal injury or equipment damage. This information is boxed to set it apart from other text. The boxed text identifies the nature of the hazard and appropriate steps to avoid it.

The safety alert symbol identifies a situation that can result in personal injury. The accompanying signal word indicates the likelihood and potential severity of the injury. The meaning of the signal words is as follows:

	⚠ WARNING
	Warning indicates a hazardous situation that, if not avoided, could result in death or serious injury.

Safety icons used in this bulletin



Other icons used in this bulletin

IMPORTANT	Indicates instructions which, if not followed, could result in damage to the door or voiding of the warranty .	INSIDER'S TIP	Indicates best practice. This is how Rytec Technical Support does the job.
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Printing this manual

If printing this manual, ensure it's printed on 11' x 17' paper at **Actual Size** and not **Shrink to Fit** so that the included drilling templates are accurate.

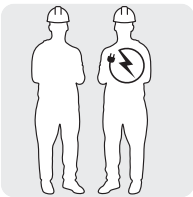
Get this manual on your device:



Retrofit safety

- **Do not service any Rytec product until** you have read and understood the safety information and instructions. Make sure all applicable regulations are observed and obeyed at all times.
- **Observe these precautions** while installing the door:
 - Only trained, qualified and authorized individuals are to service the door.
 - The service site comprises the physical area required to safely unpackage and stage components and service the door.
 - Make sure all personnel at the site have been informed of the date, time and location of the service.
 - Make sure there is no pedestrian or vehicular traffic within the service site for the duration of the service.
 - Make sure you have and use all required Personal Protective Equipment.
- Make sure you are aware of the location of all power lines, piping and HVAC systems within the installation site.

Requirements – Staffing



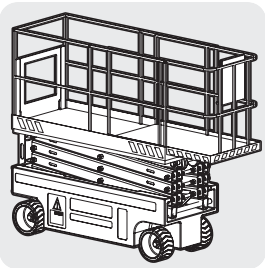
- Two service personnel are recommended.
- A licensed electrician is recommended for making all electrical connections

Requirements – Lifts

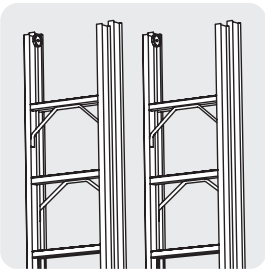
	⚠ WARNING
	Follow all safety instructions on all lifts and ladders used for this installation.

Scissor lift that meets the following specifications:


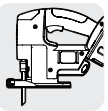
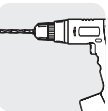


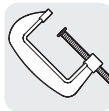


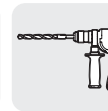


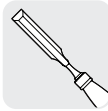
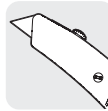

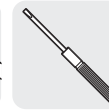
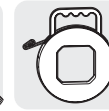

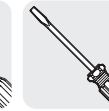



- Can hold both service personnel.
- Minimum height ability: door height



Alternatively, two ladders of sufficient height to safely access the door head assembly



Tools and supplies you will need

Tools				9.5mm 13mm 5/32" 3/16" 3/8" 7/16"							
	Angle grinder or jig saw		Power drill with these drill bits		File	(2) Saw horses	(2) C-clamps	Laser level	Tape measure	Cement drill	(2) Vise grips
Supplies											
	Cutting pliers	Chisel	Utility knife	Wire stripper	Precision screwdriver	Fish tape	#2 Phillips screwdriver	Flat head screwdriver	T40 Torx screwdriver	Socket or open wrench	Hex wrench

SmartSurround™ light curtains and CAN bus cabling: what you are installing during this retrofit

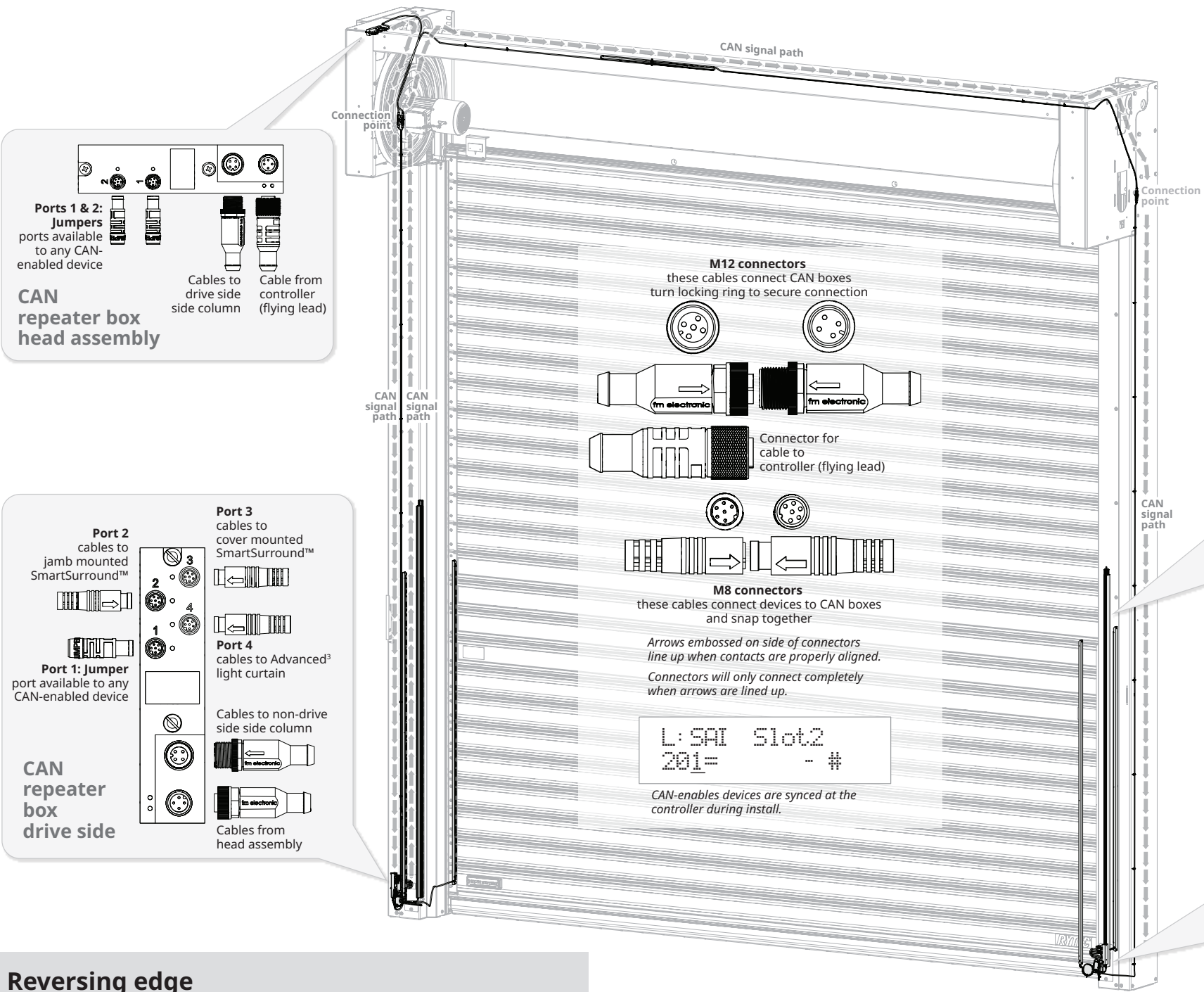
SmartSurround™ light curtains

The SmartSurround™ light curtains replace the Pathwatch LED strips, and combine the function of a light curtain and an alert system.

- When the retrofit is complete, the door will have three light curtain detection planes.
- You **remove** the current photo eyes or light curtains and **replace** them with the Advanced³ light curtains, which you install into the door track.
- In addition, you install **two sets of SmartSurround™ light curtains**. One set is mounted on the side column covers (cover mounted), the other is installed on the walls of the door opening (jamb mounted).
- The SmartSurround™ light curtains **also replace the Pathwatch LED strips**, which you remove. The SmartSurround™ LEDs are larger and brighter than the Pathwatch, and can display multiple colors and patterns.

CAN bus cabling

- CAN bus cabling is a **single chain (series) of cables** that replaces the multiple cables needed for the Pathwatch LED strips and light curtains or photo eyes.
- **The cabling starts at the controller** and runs through the CAN repeater box in the head assembly, then the CAN repeater box at the base of the drive side side column, then across the rear spreader to **terminate at the CAN distribution box** at the base of the non-drive side side column.
- It also replaces the X10 junction box in the head assembly.
- CAN-enabled Rytec devices **can plug into any available port in any CAN box**. During this retrofit, you will plug all six light curtains into the boxes you will install onto the baseplates of the side columns.
- **Ports must be jumpered** if they are not connected to a device so that the signal path remains unbroken until it terminates at the distribution box.



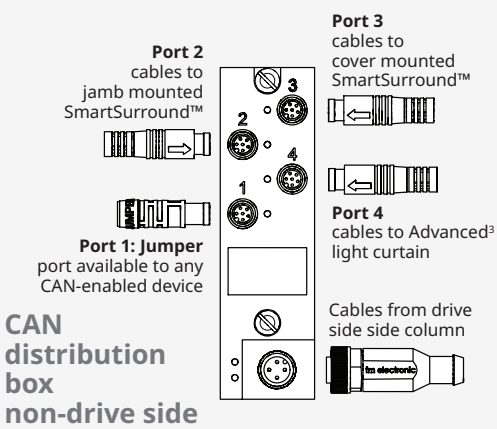
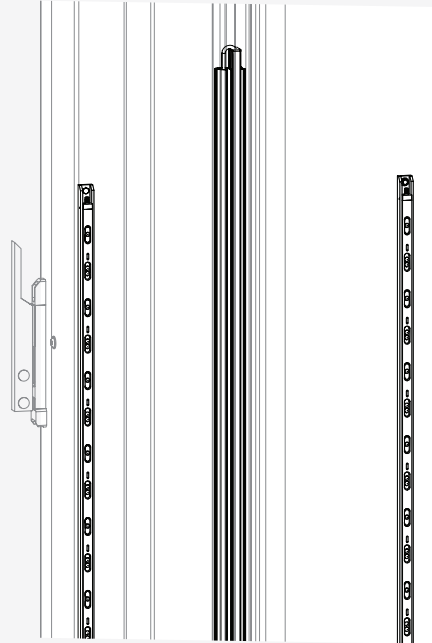
Reversing edge

The SmartSurround™ system, in combination with the Advanced³ light curtains located within the door line, meets the requirements for entrapment protection. SmartSurround™ offers a contactless method of object recognition that is an improvement over the reversing edge system; this makes the reversing edge system redundant. The reversing edge system is disabled as part of this retrofit.

The reversing edge system can be reenabled if a full height sensing system is required. See Page 38.

SmartSurround™ light curtains

SmartSurround™ light curtains mount on the side column covers (cover mounted) and the walls of the door opening (jamb mounted). The standard light curtain, now called the Advanced³, is still located inside the door track.



Before you begin – five (5) steps to make sure the door and kit are ready for the retrofit

1: Open the kit and stage the parts. Match components to hardware to location in the door where they will be installed. NOTE: drive side may be LH (left) or RH (right); LH components shown here.

Drive side console of head assembly
(may be left side or right side of door)

CAN repeater box
Mounts inside console
Mounting hardware:
(3) bolts and nuts

(2) CAN port jumpers

(2) M12 CAN cables
PN: 1210855-0X
one long, one short

(1) M12 CAN flying lead
Cable to controller
PN: 1210856-0

Drive side side column baseplate
(may be left side or right side of door)

(2) M8 CAN cables
PN: 1210800-0B
(0.3)
and
1210800-0E
(2.7M)

(1) M8 CAN cable with label
PN: 1210879-0
(0.3M)

(2) M12 CAN cables
PN: 1210855-0

Cable raceway
Mounts to rear of side column
Mounting hardware:
(3 pc) double-sided tape,
installed at Rytec

CAN port jumper

CAN repeater box and bracket
Mounts to baseplate
Mounting hardware: (2) screws

Drive side light curtains
(may be left side or right side of door)

FEIG TST LGDR-A190C LIGHT CURTAIN - TRANSMITTER
40 Channels - 1940mm PL 9 Cat. 2 24VDC 50mA VOM 2021

Mount Advanced³ transmitter on drive side
Mount SmartSurround™ receivers on drive side

RYTEC TST LGCAR-R165C SMARTSURROUND - RECEIVER
16 - IR Channels 16 - Warning Light Spots Range ±12 m 24VDC IP 67 325 mA VOM 2021

SmartSurround™ light curtain
Mounts to cover (cover mounted); cable is labeled
Mounting hardware: (2) bolts and nuts

Advanced³ light curtain
Mounts inside door track
Mounting hardware:
track clip/wire chase

SmartSurround™ light curtain
Mounts to wall (jamb mounted)
Mounting hardware:
(2) cement screws and anchors or self-tapping screws

(2) P-clips
Secure Smartsurround™ cable
Mounting hardware:
(2) cement screws and anchors or self-tapping screws

Access cover
Mounts to side column cover
Mounting hardware:
(2) self-tapping screws

BT44 user terminal (optional)

MS4 user terminal (optional)

Non-drive side light curtains
(may be left side or right side of door)

FEIG TST LGDR-A190C LIGHT CURTAIN - RECEIVER
40 Channels - 1940mm PL 9 Cat. 2 24VDC 50mA VOM 2021

Mount Advanced³ receiver on non-drive side
Mount SmartSurround™ transmitter on non-drive side

RYTEC TST LGCAR-R165C SMARTSURROUND - TRANSMITTER
16 - IR Channels 16 - Warning Light Spots Range ±12 m 24VDC IP 67 325 mA VOM 2021

SmartSurround™ light curtain
Mounts to cover (cover mounted); cable is labeled
Mounting hardware: (2) bolts and nuts

SmartSurround™ light curtain
Mounts to wall (jamb mounted)
Mounting hardware:
(2) cement screws and anchors or self-tapping screws

(2) P-clips
Secure Smartsurround™ cable
Mounting hardware:
(2) cement screws and anchors or self-tapping screws

Access cover
Mounts to side column cover
Mounting hardware:
(2) self-tapping screws

CAN distribution box and bracket
Mounts to baseplate
Mounting hardware: (2) screws

Controller

CAN Comm Board

USB drive
Holds updated system software

CAN 120Ω resistor
Used for troubleshooting

Heat shrink tubing
Used when wiring comm board

Cable ties, anchors and cable clips

Non-drive side side column baseplate
(may be left side or right side of door)

(2) M8 CAN cables
PN: 1210800-0B
(0.3M)
and
1210800-0E
(2.7M)

(1) M8 CAN cable with label
PN: 1210879-0
(0.3M)

(1) M12 CAN cable
PN: 1210855-0

Cable raceway
Mounts to rear of side column
Mounting hardware:
(3 pc) double-sided tape,
installed at Rytec

CAN port jumper

2: Check the cables connected to the junction box

IMPORTANT

All steps shown are for an **LH door (left-hand drive side)**. Reverse sides for a door where the motor is on the right side.

1

If the door has a hood cover, remove panels to access the head assembly.

Remove **all top cover panels** ① first, then the **drive side** ② and **non-drive side** ③ front cover panels, and set aside.

Flat hood cover

Slanted hood cover

The junction box is located here

②

T40

KEEP REUSE

③

2

Loosen the four screws and **remove** the front cover of the junction box.

IMPORTANT

- In a standard installation, there are four cables connected to the junction box: the cable from the proximity switch, the X10 cable to the controller, and two-four cables from the light curtains of photo eye.
- If additional accessories have been wired to the box, they will need to be rerouted directly to the controller
- Call Rytec technical support at 800-628-1909 before continuing if you have any questions about how to do this. **Make sure** you have correct cabling to complete all wiring.



#2

3

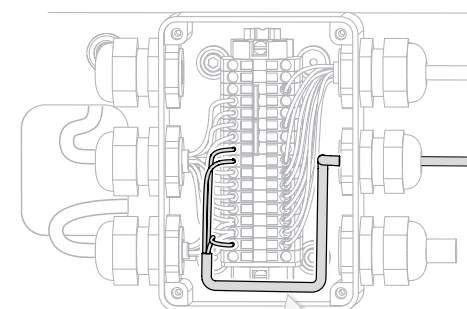
Make sure the standard cables are wired to the box, and that no additional cables are present.

If the cables are as shown below, continue to the next step. **If there are additional cables**, call technical support.

Standard cables and what you do with them - do not make changes until instructed to do so later in this manual

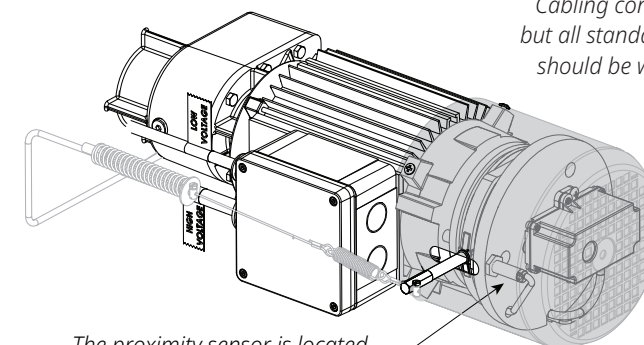
Proximity sensor

Wire colors: blue, brown, black



This cable remains.

It will need to be spliced and wired directly to the controller.

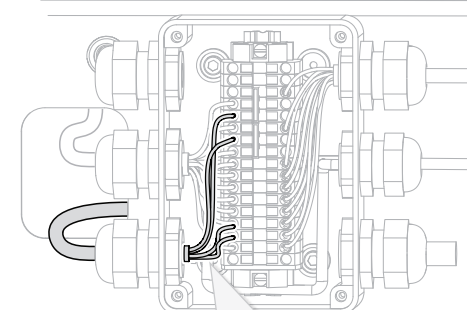


Cabling configuration may vary, but all standard cables shown here should be wired to junction box.

The proximity sensor is located inside the motor and tracks the position of the manual brake release to keep the brake disengaged when the release lever is in the down position.

Light curtain transmitter cable

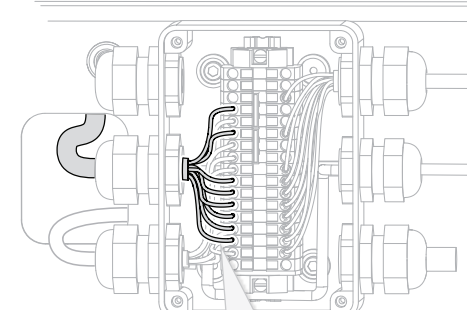
Wire colors: brown, blue, black, white



On doors with light curtains, this cable should be removed, then **spliced to the proximity sensor cable** and run to the controller.

Light curtain receiver cable

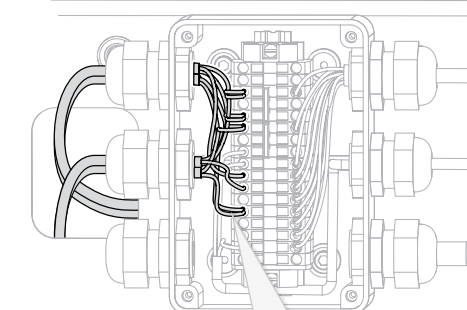
Wire colors: brown, blue, green, yellow, pink, gray, red, white



This cable is removed.

Photo eye cables

Wire colors: brown, blue, white, black



INSIDER'S TIP

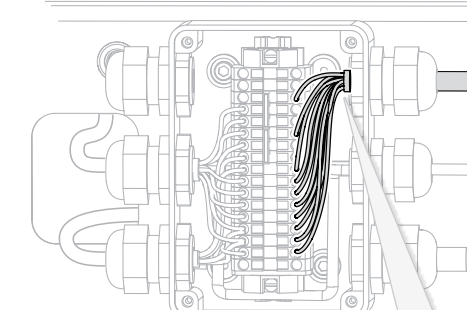
On doors with photo eyes, the **front, rear or both sets** may be wired to the junction box.

Both sets are shown here.

The photo eye cables are removed. Then **splice the longest cable** to the proximity sensor cable and run it to the controller.

X-10 cable

Wire colors: red, black, gray, orange, white, brown, blue, yellow, green, purple. Yellow and green may be terminated.



IMPORTANT

Make sure the X-10 cable runs through conduit to the controller.

If it is not used, you will need to use a **different cable** to fish the new cables through the conduit.

This cable should be used to fish the CAN bus cable and spliced proximity sensor cable through existing conduit.

3: Secure the door in the open position, then switch the controller to parameter mode and record the door profile and (wireless doors only) mobile address

1

Loosen the bolts and remove the side column covers on both side columns.

number of screws varies based on height of door

KEEP REUSE

T40

Do This

Result

2

Set the door in the fully open position.

IMPORTANT

Place vice grips in the door track below the bottom roller on both sides of the door to secure it in place.

You start in run mode

Spiral LH

[xxx] Cycles

1X to open the door

Door Is Opening

1X to stop the door in the fully open position

Door Is Stopped

Put the door in parameter mode and enter the passcode for Service level access

Do This

Result

1

until the parameter screen displays

P: Password

001=

[xxx] Cyc

You are in Parameter mode.

Do This

Result

3

1X to move cursor to the right (edit value)

P: Password

999=

0000. #

You can now change the value of parameter P:999.

Do This

Result

2

2X to reach parameter P:999

P: Password

999=

0000 #

The Password parameter P:999 screen displays.

Do This

Result

4

16X to set value to hexadecimal 10

P: Password

999=

0010? #

Set the value to 10 (Service level password).

Do This

Result

5

until question mark changes to checkmark (value saved)

P: Password

999=

0010. #

The Service level password is saved.

Do This

Result

6

1X to move cursor to left (parameters)

P: Password

999=

0010 #

You can now go to a different parameter.

Then go to parameter P:991 and (wireless doors only) P:F07 and record the values you find there.

Do This

Result

7

until you reach parameter P:991

P: Defaults

991=

44v #

This is the **profile (door model)** of the door

8

Write down the value you find here. You will re-enter it later.

Do This

Result

9

until you reach parameter P:F07

P: F5x-Address

F07=

D4A72 #

This is the **mobile address** for the mobile unit. It is a **hexadecimal number**, so it may contain alpha and numeric characters.

10

Write down the value you find here. You will re-enter it later.

4: Check if the door has an MS4 or BTA4 user terminal already installed, and if it does, prep it to be retrofit

1

Check the kit to see if an optional BTA4 or MS4 user terminal is included in this retrofit.

There may also be an updated circuit board for an existing MS4 user terminal.

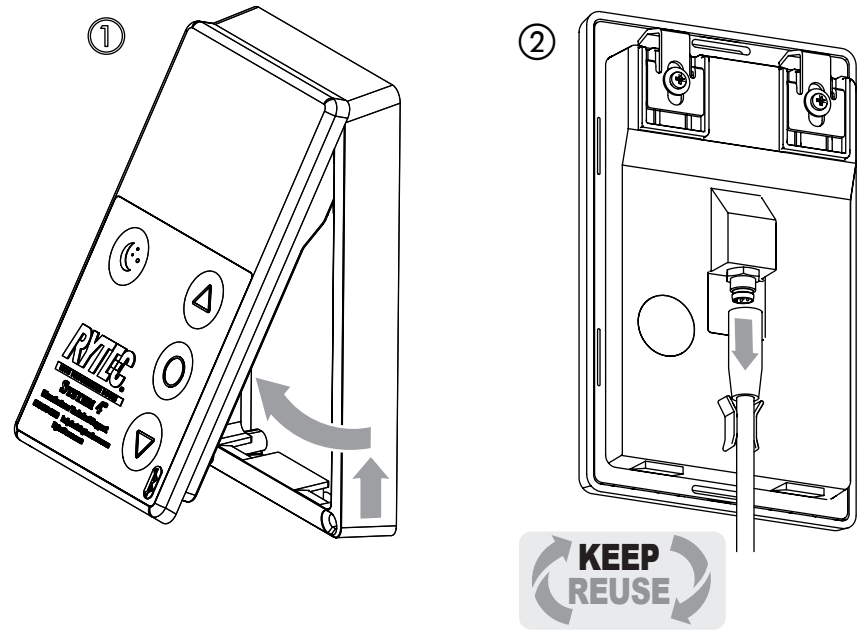
There are **additional, optional steps** to install or retrofit the BTA4 and MS4 terminal when setting up the side column covers, as well as additional steps when removing old cabling and installing the CAN bus cabling.

IMPORTANT

For a BTA4 user terminal:
push up, then swing out the user terminal to release it from the frame ①.

Unplug the quick connect cable from the connector on the rear of the unit ②.

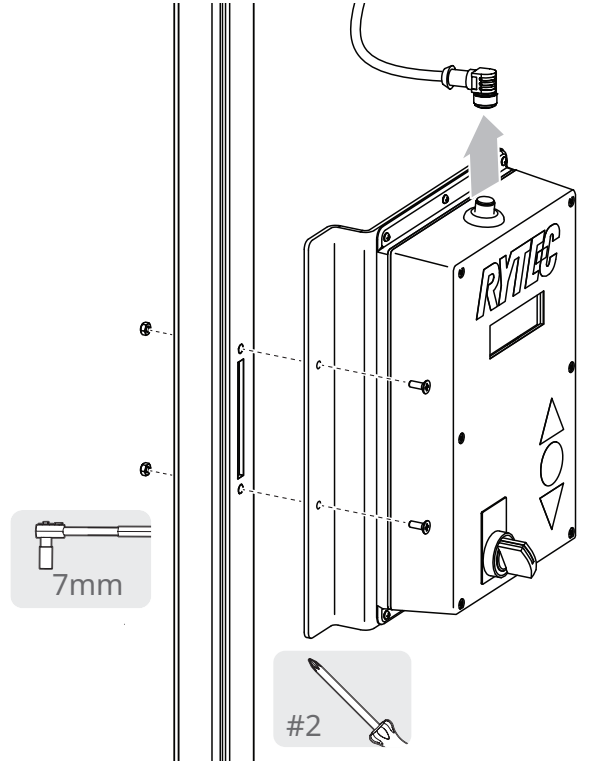
- The user terminal will be connected to the CAN bus later in this procedure.
- The cable will be removed later in this procedure.



For an MS4 user terminal that is being replaced by a BTA4, remove it.

The cable will be removed later at the controller.

Get the BTA4 user terminal and hardware from the small parts box.

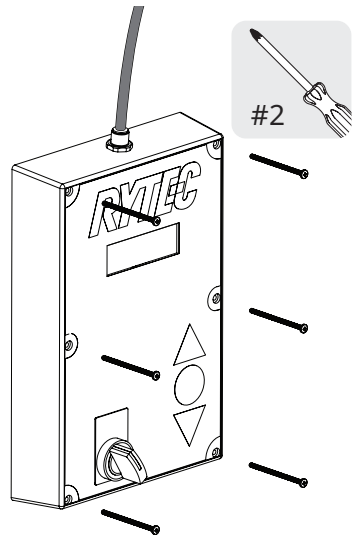


For an existing MS4 user terminal:

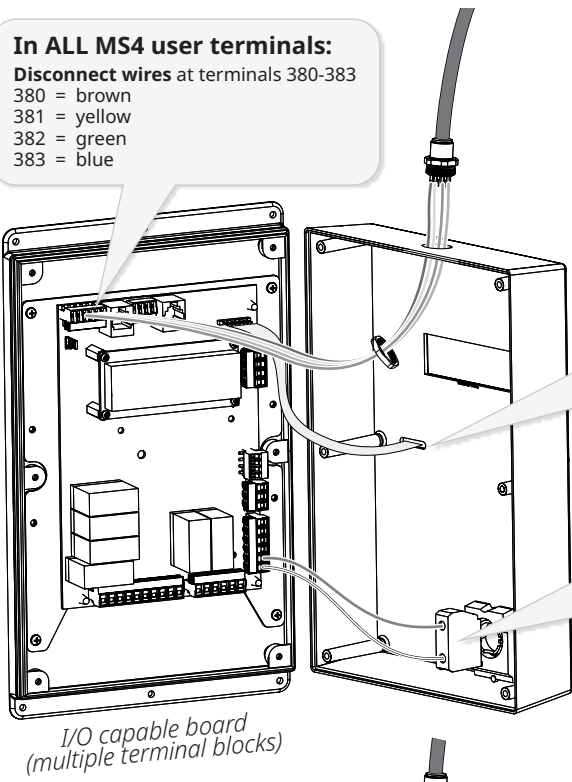
Loosen the six screws and remove the front cover.

Check two things: whether the circuit board is input/output capable (terminal blocks on all sides rather than a single block in the upper left corner), and whether there is an ON/OFF switch.

- The user terminal will be connected to the CAN bus later in this procedure.
- The cable and connector will be removed later in this procedure.



In ALL MS4 user terminals:
Disconnect wires at terminals 380-383
380 = brown
381 = yellow
382 = green
383 = blue



In ALL MS4 user terminals:
Leave the ribbon cable from the user interface to the circuit board in place

In MS4 user terminals with terminal blocks (input/output capable)
(if present): **leave** wires from ON/OFF switch to terminals 330-331 in place



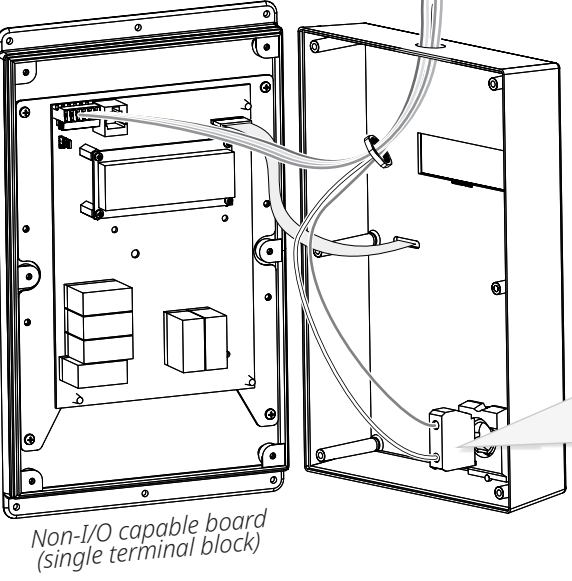
IMPORTANT

In MS4 user terminals with a single terminal block (NOT input/output capable)

If there is an ON/OFF switch, it connects directly to the red/white wires from the cable.

The switch must be connected to the circuit board or the switch will not function after the CAN bus is installed.

- ① **Check the kit** for a replacement circuit board (includes terminal blocks for input/output).
- ② **Disconnect** the ribbon cable from circuit board.
- ③ **Pop out** the old circuit board and snap in the replacement board.
- ④ **Reconnect** the ribbon cable.
- ⑤ **Cut** red and white wires near connector and **connect** ON/OFF switch to terminals 330 and 331 on the new board. **Either wire may be used in either terminal.**
- ⑥ **CALL RYTEC TECHNICAL SUPPORT** at 800-628-1909 if you do not find a replacement circuit board in the kit or if you have any questions.



5: Check the controller to make sure the microcontroller board has room for the CAN bus comm board; if it does, set up the controller for the CAN bus cabling

⚠ WARNING

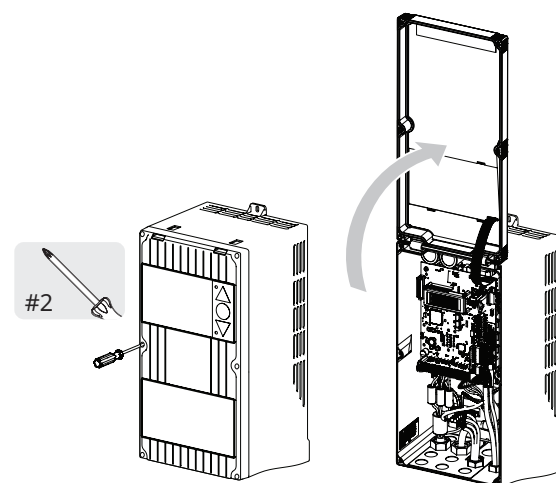


Set the fused disconnect to the OFF position and perform a lockout/tagout of the high-voltage disconnect before opening the control box. Do not set the disconnect switch to the ON position until told to do so by these instructions.

Failure to comply could result in shock, burns or death.



1 Loosen the six capture screws and **open** the control box.



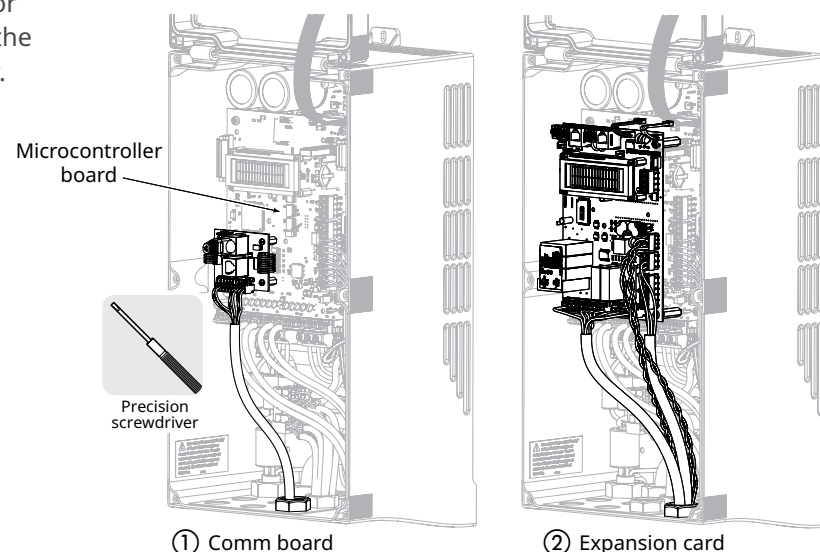
2 Look to see if there is a comm board or expansion card already installed onto the microcontroller board of the controller.

If there is a comm board already installed ①, loosen the wires and separate the cable. **There may also be** wires from the cable connected to other terminals: loosen them as well. You will **replace the cable** with the flying lead from the kit.

IMPORTANT

If there is an expansion card already installed ②, **STOP** and call Ryttec technical support before continuing.

If the microcontroller board is clear, continue to the next step.



If the controller has an older comm board installed, replace it with the comm board from the kit

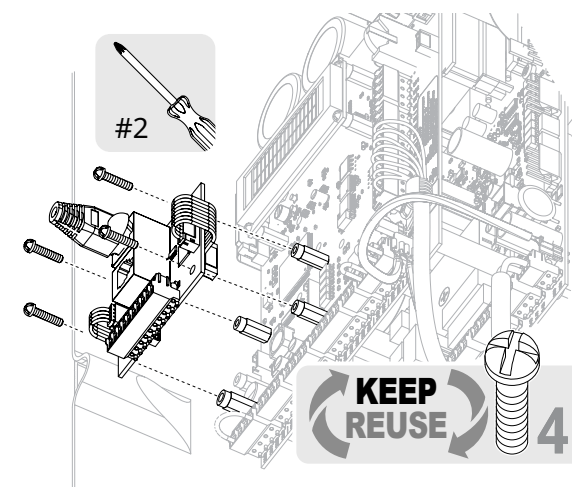
3 If this controller has an older comm board, **Get** the comm board from the kit.

Loosen the four plastic screws and **remove** the old board, **leaving the legs in place**.

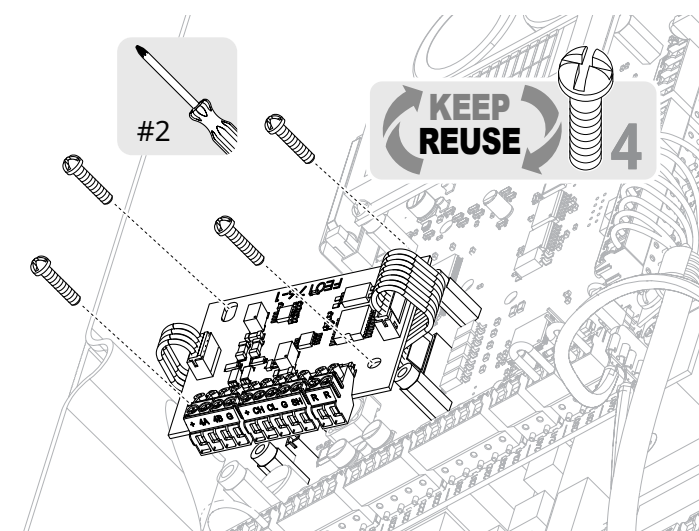
Pull out the four-wire and eight-wire connectors to free the board.

Discard the old board.

Remove the legs from the new board.

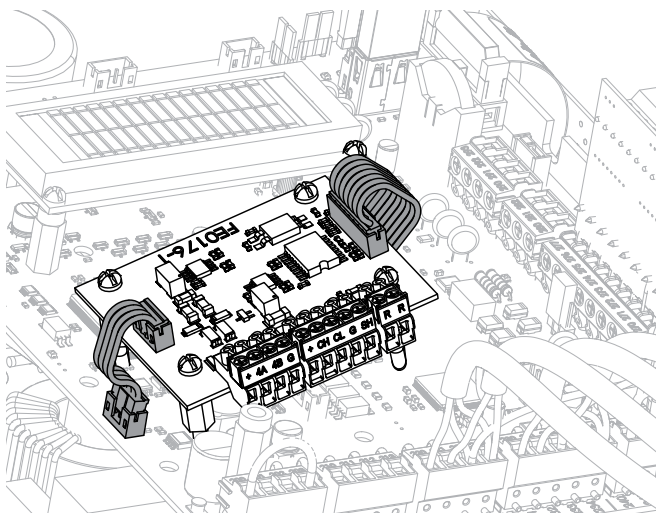


4 Plug in four-wire and eight-wire connectors on the new board, then reinstall the four plastic screws to secure the new board in place.

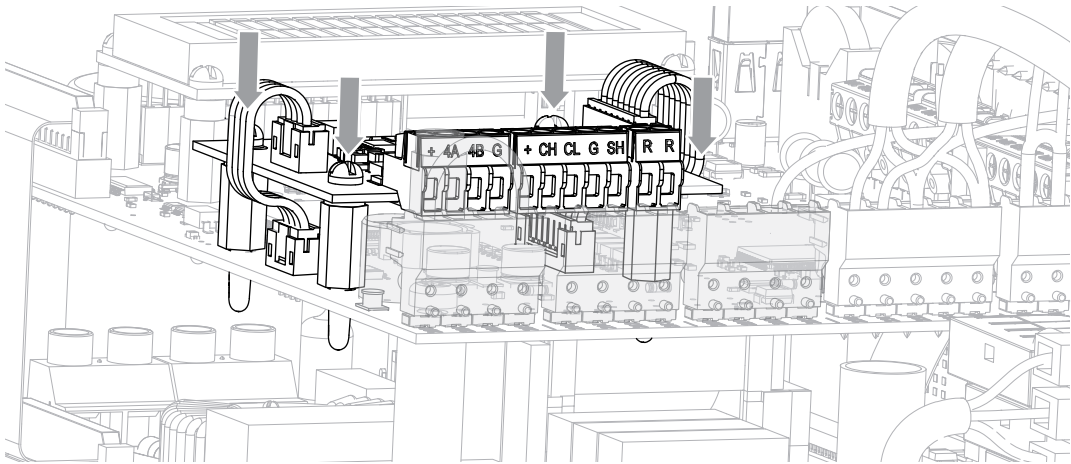


Otherwise, install the comm board from the kit

- 5** Get the comm board from the kit.
- Plug** the four-wire and eight-wire connectors into the matching receptacles on the board.

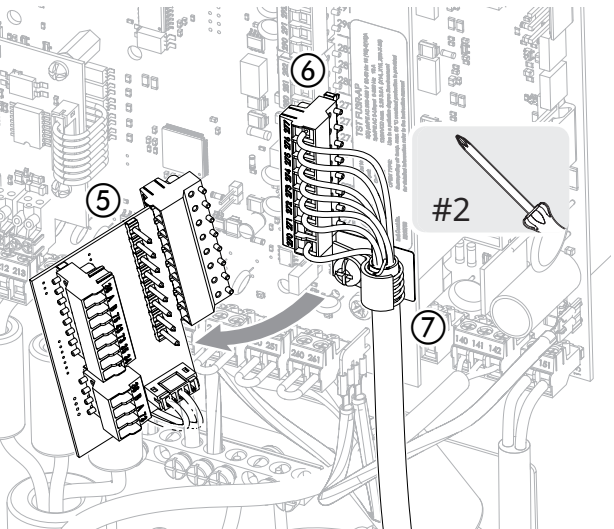
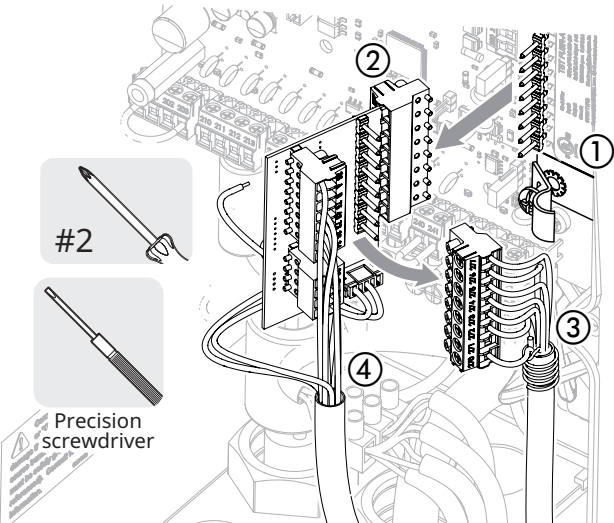


- 6** Line up the four legs and press down until the board snaps into place.

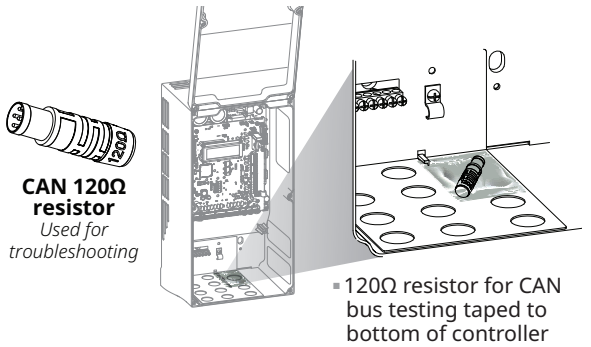


If the door has light curtains, remove the interface board

- 7** If the door has light curtains:
- There is an interface board plugged in to terminal block 270-277.
- The same terminal block is also on the board, and the encoder cable is wired to it.
- The terminal block on the board must be removed and connected directly to the microcontroller board.
- Loosen the P-clip ① that secures the encoder cable.
 - Loosen the wires from the interface board that connect to terminals 222, 232, 240 and 241.
 - Remove the interface board ② from terminal slots 270-277.
 - Remove terminal block 270-277 ③, and the attached encoder cable, from the interface board.
 - Loosen the wires and remove the X10 cable ④ from the interface board. Leave the cable in place until later in this procedure.
- Discard the interface board ⑤.
 - Plug the terminal block from the interface board, with the encoder cable wired to it ⑥, into slots 270-277.
 - Secure the cable with the P-clip ⑦.

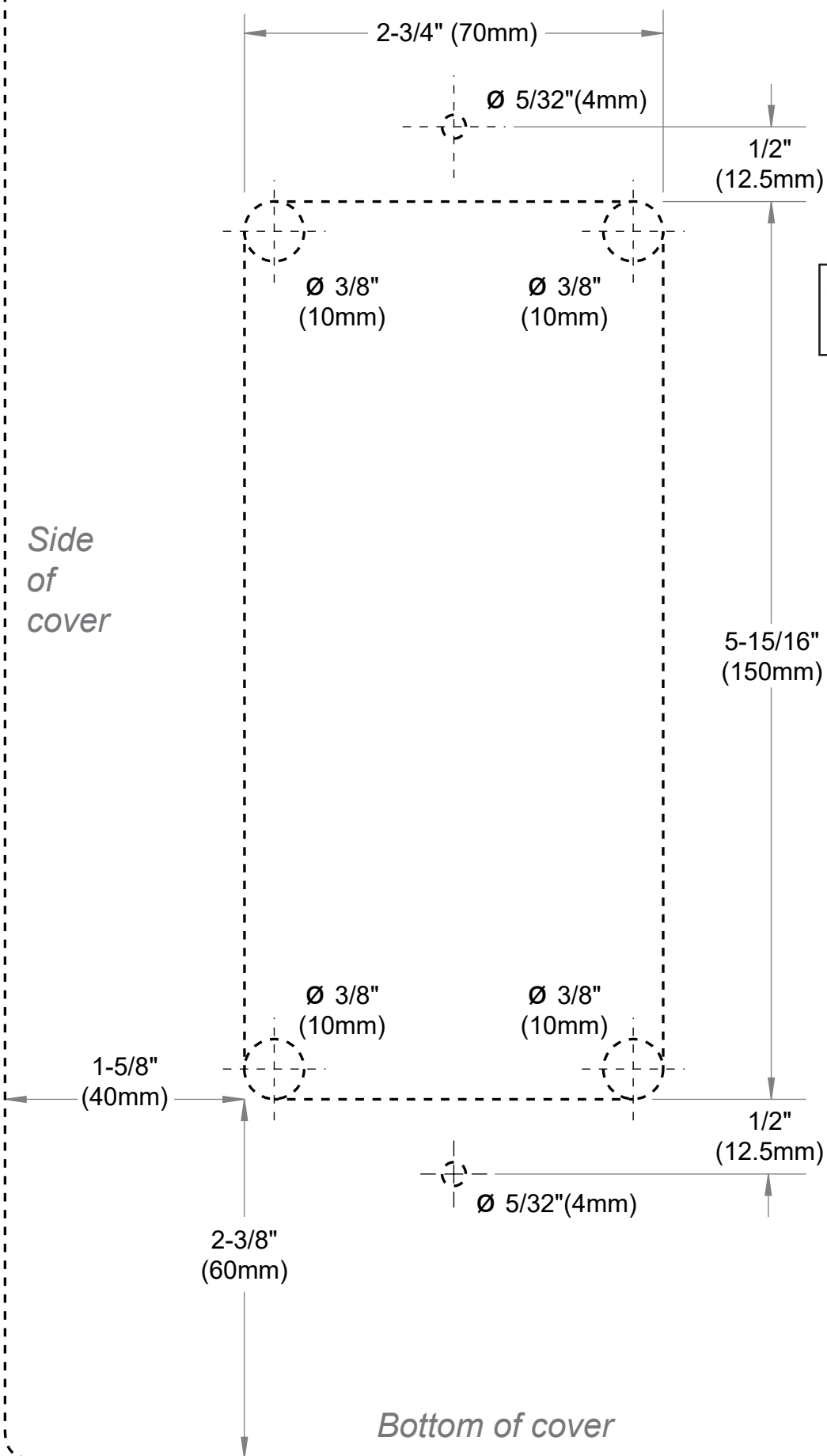


- 8** Get the 120Ω resistor from the kit.
- IMPORTANT** The resistor should be placed inside the controller so that it can be found if there is a need to troubleshoot the CAN bus system.
- Tape the resistor to the bottom of the controller.



- 9** The door is now ready for the retrofit.

Left side
side column cover

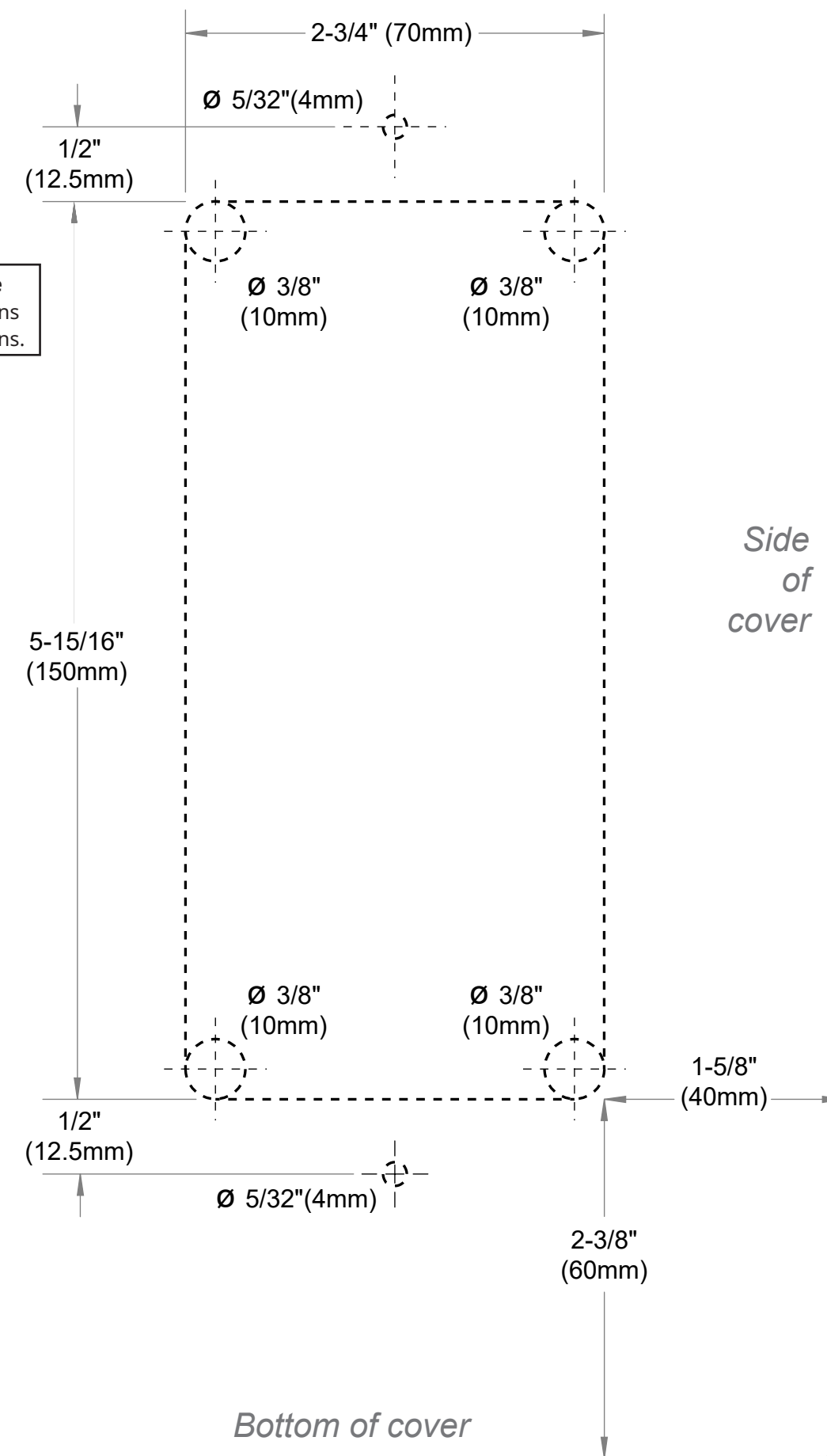


Template #1:
cutout for
side column
access port

This template is
used in
Step 2 on page 11

IMPORTANT Before using template
verify printed dimensions
match shown dimensions.

Right side
side column cover



Bottom of cover

Bottom of cover

Back of Template #1
Intentionally left blank

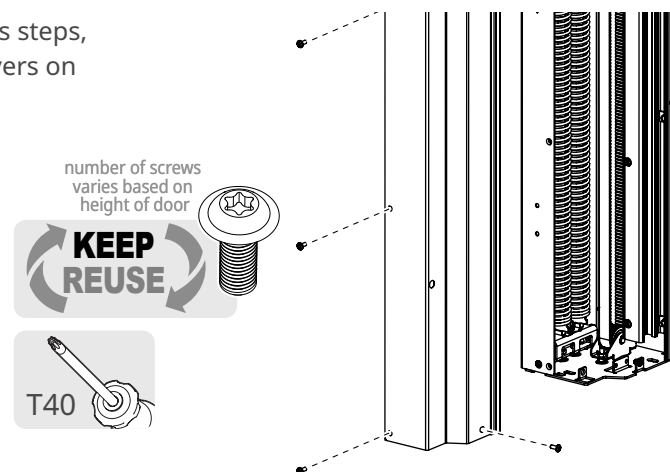
How to install the SmartSurround™ light curtains



If the side column is blocked so that the access cover would not be accessible, such as by a bollard positioned too close to the door, consult with the owner to see whether or not they want the access cover installed.

1 If side covers were put back in place after previous steps, **loosen** the bolts and **remove** the side column covers on both side columns.

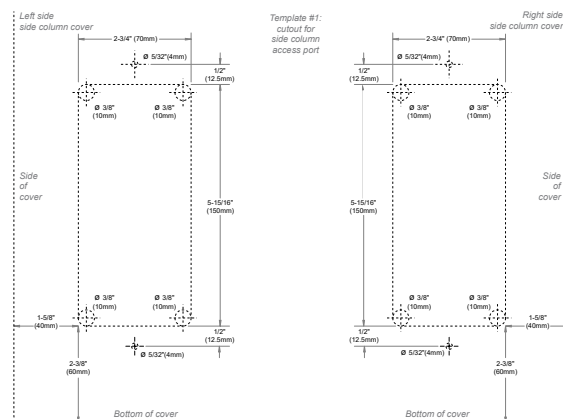
The **left side side column cover** is shown for these steps.



2 Remove the cutting templates (#1) from the previous page of this manual.

Separate the templates into left and right sides.

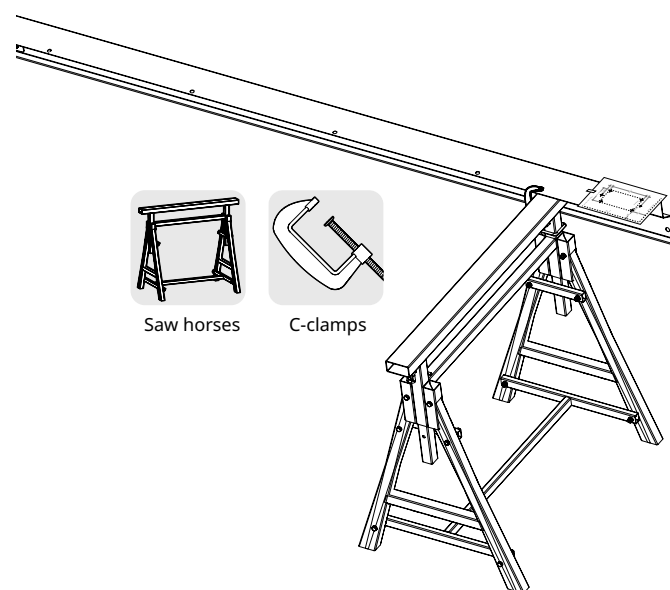
Tape the templates to the side columns.



 **Clamp** the cover to saw horses.

IMPORTANT

Make sure the c-clamps do not scratch the surface of the cover.



*Template #2:
holes for
side column
cover*

*This template is
used in
Step 7 on page 13*

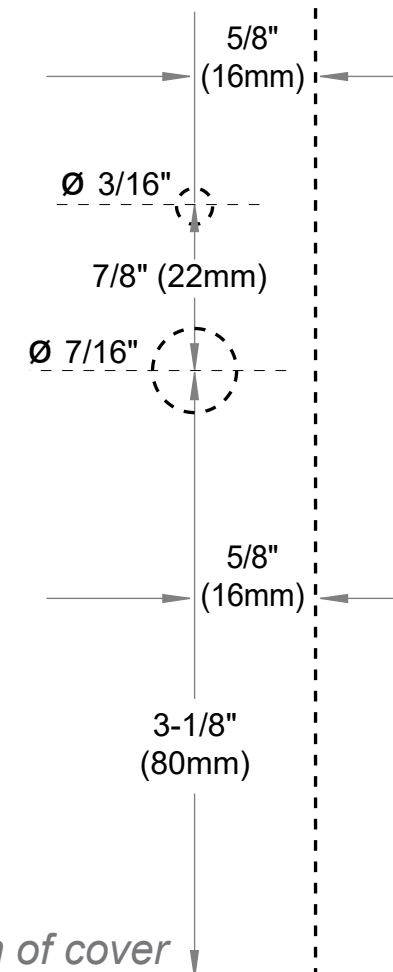
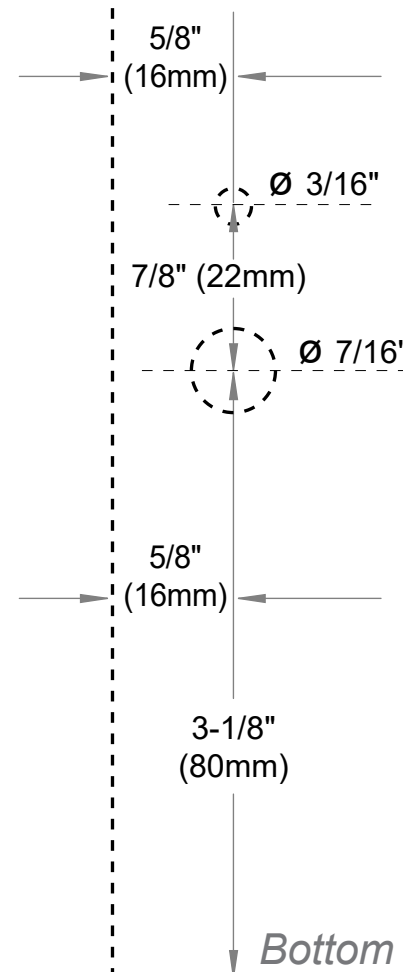
Left side side column

Right side side column

Side
of
cover

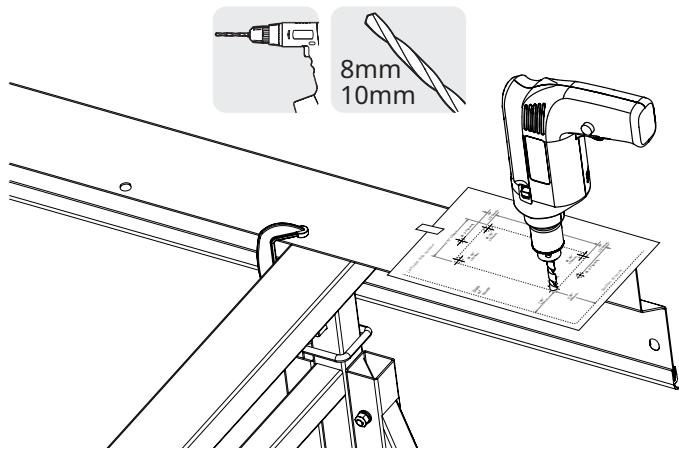
Side
of
cover

IMPORTANT Before using template
verify printed dimensions
match shown dimensions.

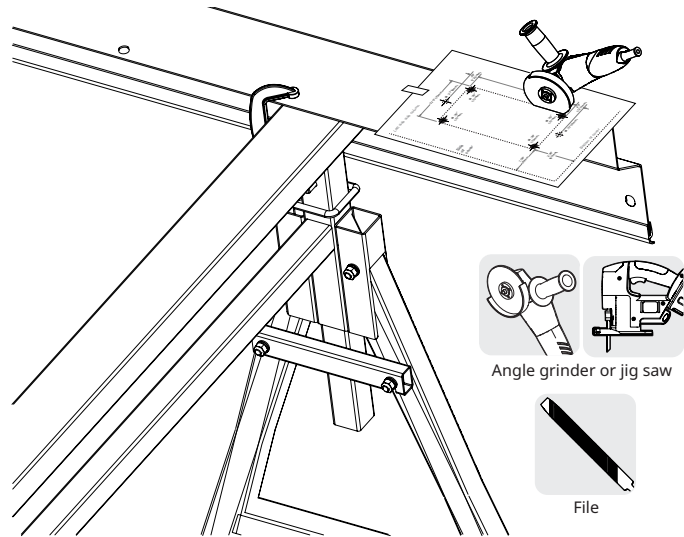


Back of Template #2
Intentionally left blank

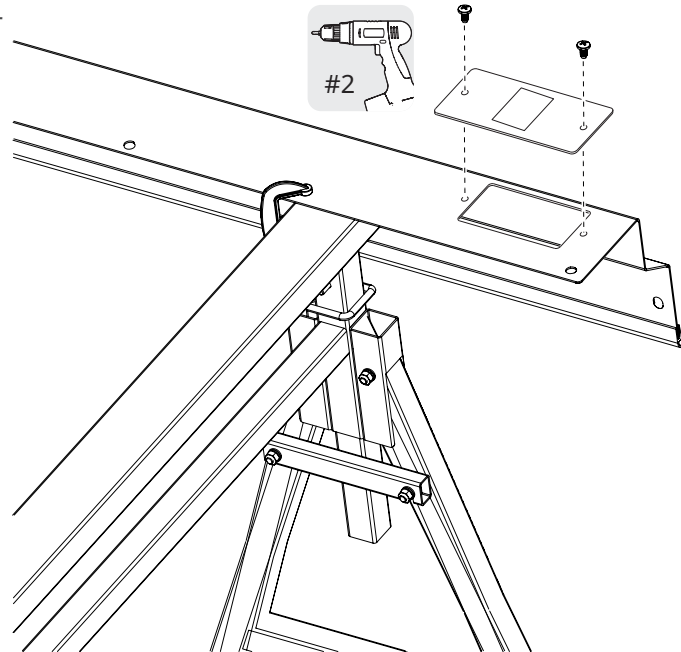
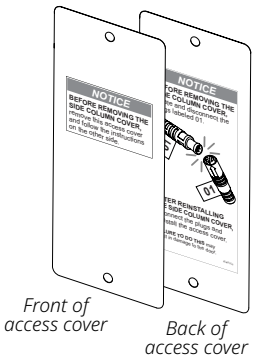
- 4 **Drill out** the four corners for the side column access port.
Drill out the two holes for the tek screws.



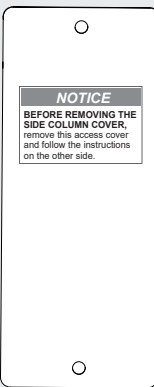
- 5 **Cut** between the corners with an angle grinder or jigsaw.
File all edges smooth when you are done



- 6 **Secure** the access cover in place with the two thread cutting screws from the kit.

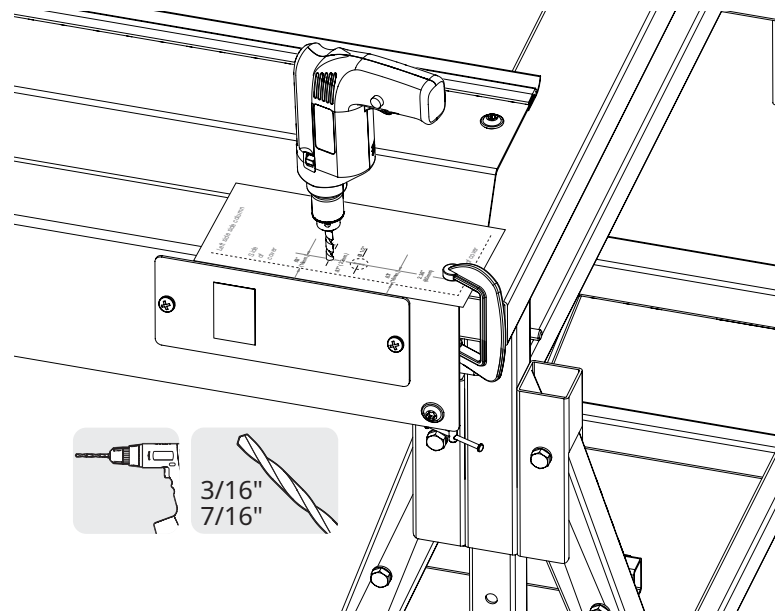


FROM KIT

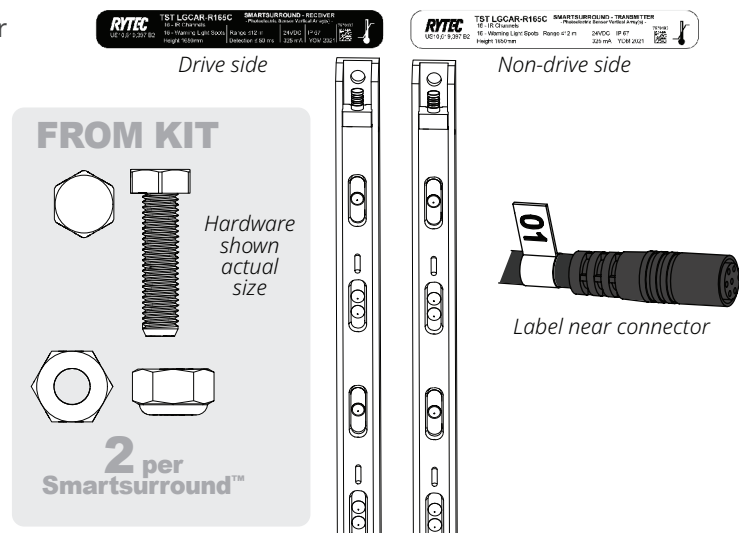


2 Hardware shown actual size

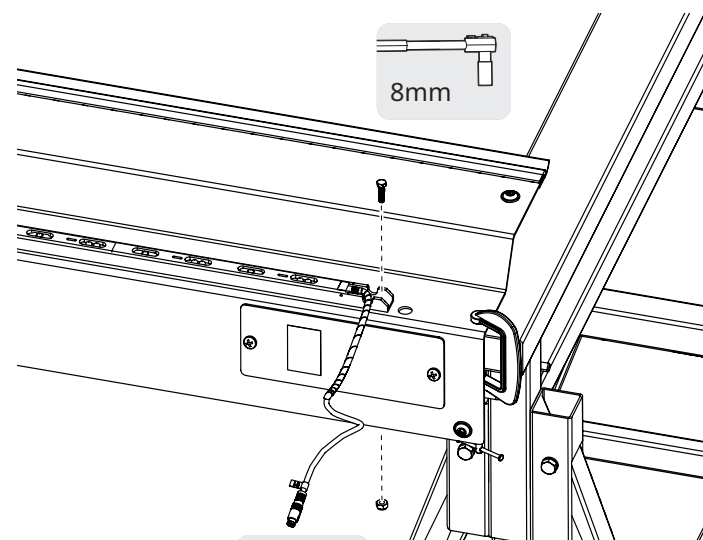
- 7 Flip and reclamp** the side column.
- Remove** the drilling templates (#2) from the previous page.
- Separate** into drive and non-drive side and **tape in place** on the side columns.
- Drill out** the holes for the bottom bolt and the SmartSurround™ cable.



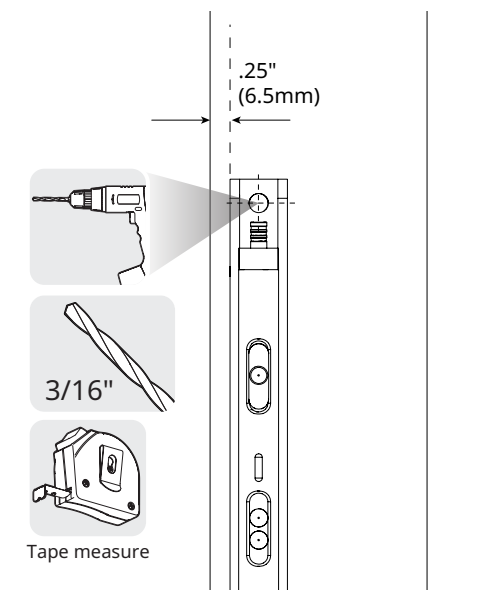
- 8 Get** the labeled SmartSurround™ transmitter and receiver, as well as the mounting hardware, from the kit.
- Check the labels** and make sure the receiver goes on the drive side cover and the transmitter goes on the non-drive side cover.



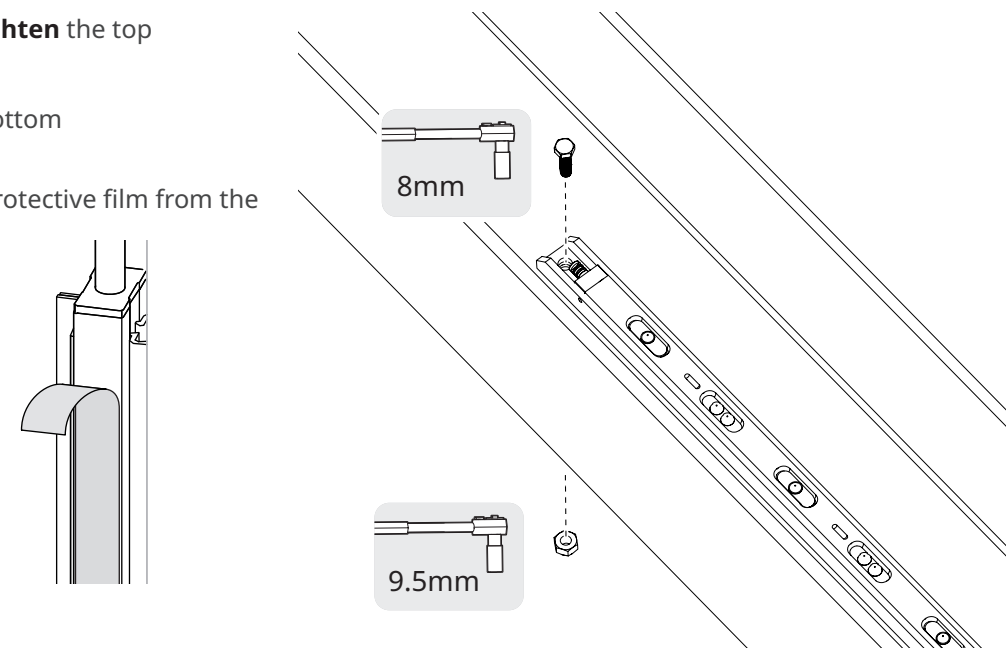
- 9 Install** the bolt and nut into the bottom hole in the SmartSurround™ mounting channel.
- Leave them loose** until you have installed the top bolt/nut combination.



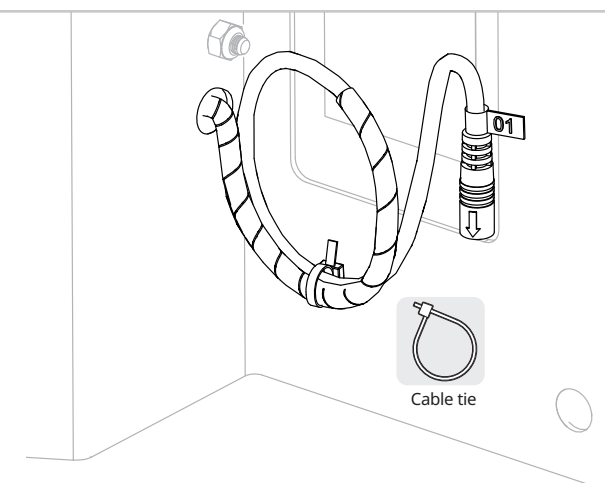
- 10 Line up** the SmartSurround™ mounting channel with the edge of the side column.
- There should be .25" distance from the edge the full length of the light curtain.
- Drill out** the top bolt hole through the top hole in the channel.



- 11 Install and tighten** the top bolt and nut.
- Tighten** the bottom bolt and nut.
- Remove** the protective film from the light curtains once they are installed.



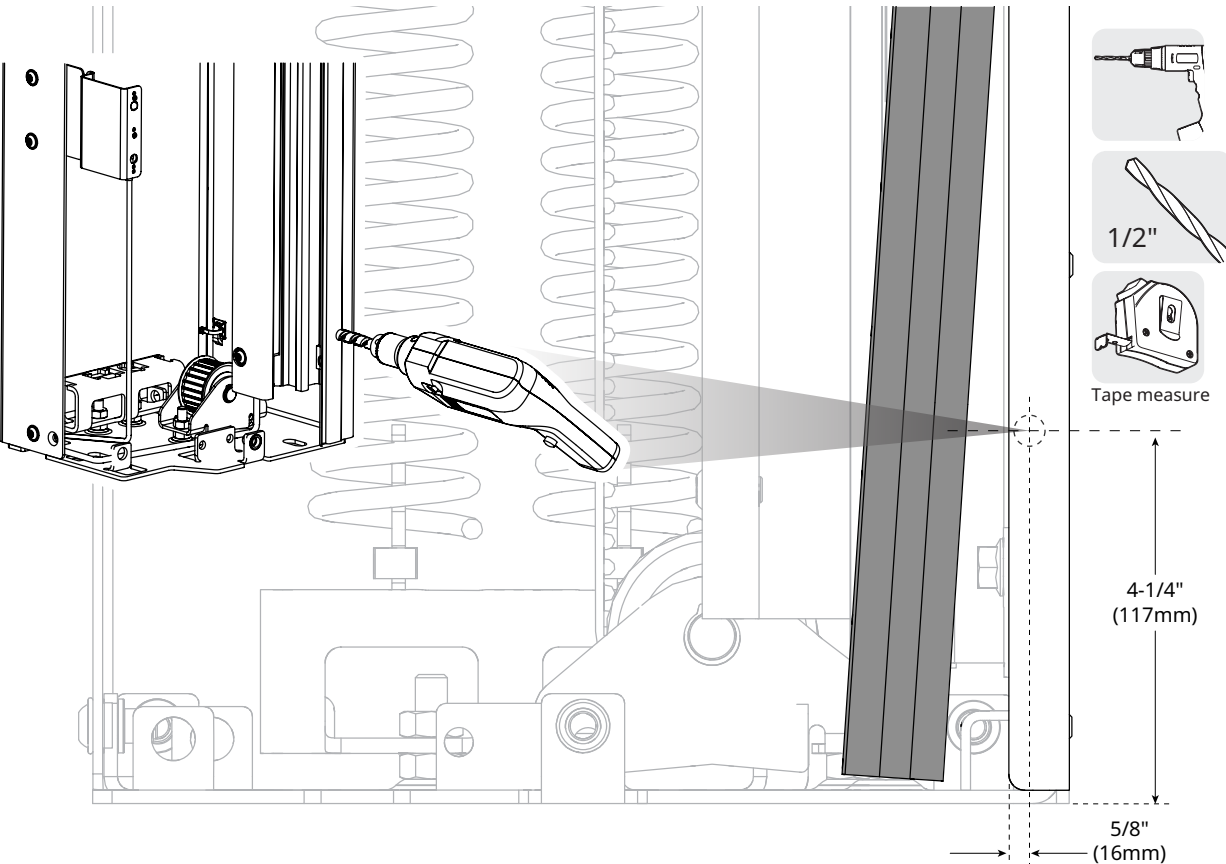
- 12 Thread** the cable through the hole in the side column cover.
- INSIDER'S TIP**
- Loop the cable** and cable tie the loop to minimize loose cabling in the side column.



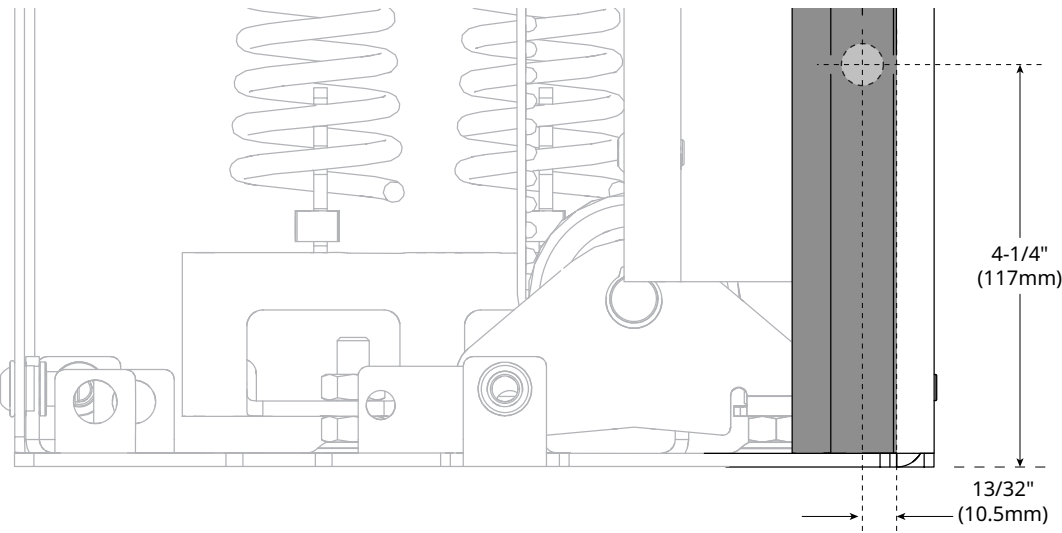
13 Drill out the hole in the rear of the side column for the cable from the jamb mounted SmartSurround™.

IMPORTANT Make sure there are no cables where you are drilling. If necessary, wait until you have removed the current cabling before doing this step.
Repeat these steps on both sides of the door.

1. First, pull back the bottom of the rear seal to expose the lip of the side column. Drill out the lip.



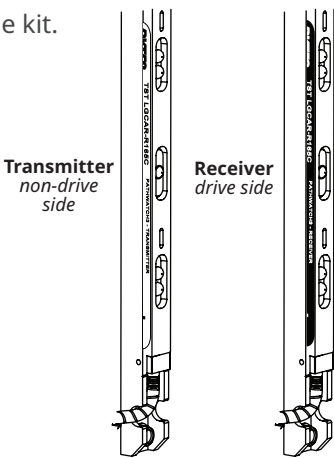
2. Mark the hole location on the seal, set it firmly back in place, and drill out the seal.



14 Get the jamb mounted SmartSurround™ transmitter and receiver from the kit.

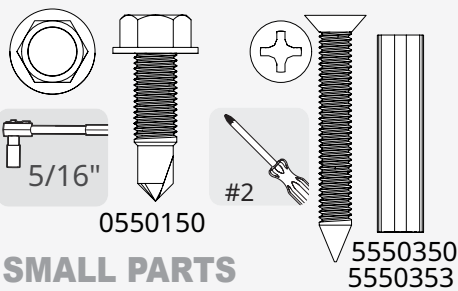
IMPORTANT

Make sure the jamb mounted and cover mounted SmartSurround™ transmitters are both on the **non-drive side of the door**.
Make sure the jamb mounted and cover mounted SmartSurround™ receivers are both on the **drive side of the door**.
Check the labels at the bottom of the light curtains to match.



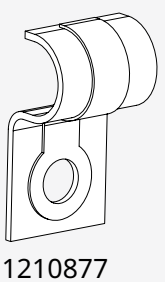
15 Install the jamb mounted SmartSurround™ light curtains and cables onto the drive side and non-drive side walls of the door opening.

Use supplied anchored or self-tapping screws to secure light curtains and P-clips.



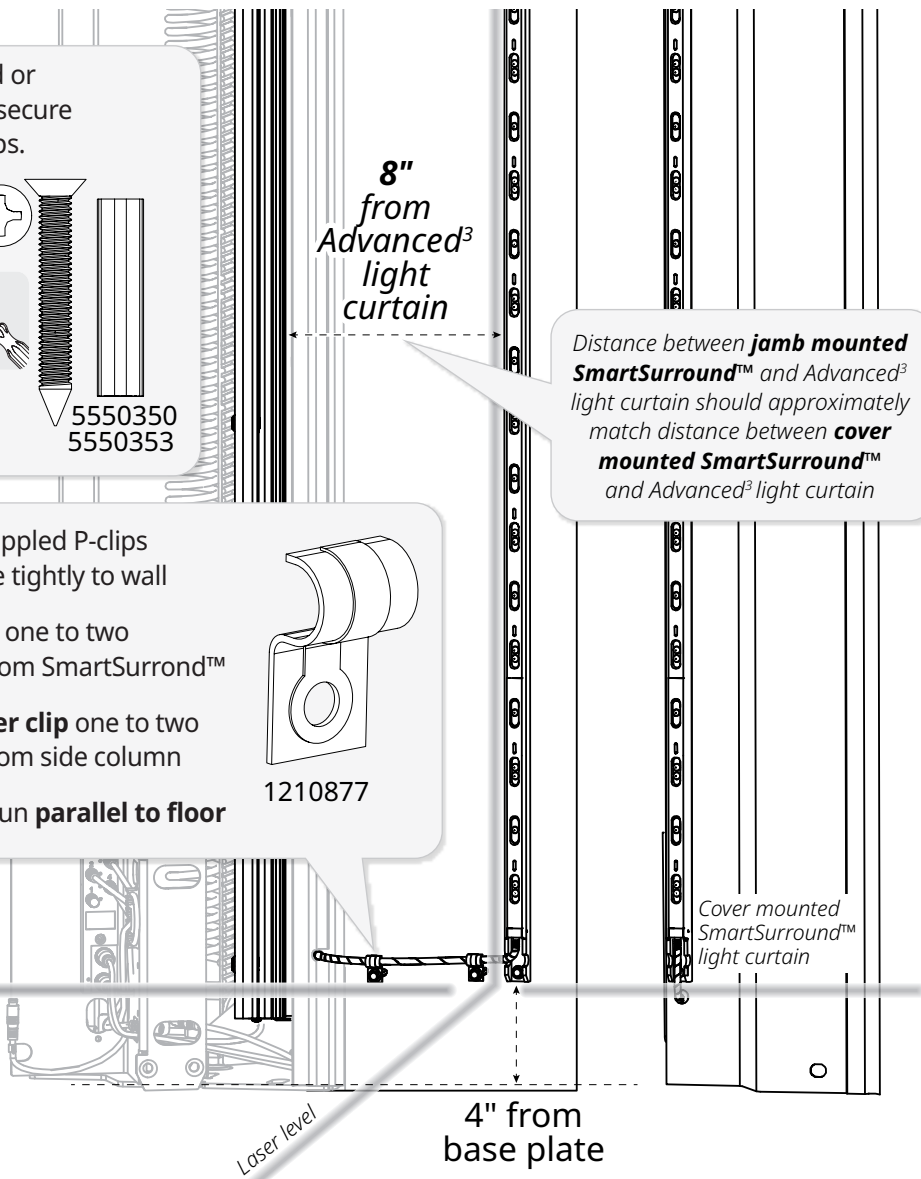
SMALL PARTS

Use two (2) supplied P-clips to secure cable tightly to wall
Place one clip one to two inches (1-2") from SmartSurround™
Place the other clip one to two inches (1-2") from side column
Cable should run **parallel to floor**



If the floor is level, use the cover mounted SmartSurround™ and a laser level to set the mounting height of the wall mounted light curtain.

The **bottom** of the aluminum retaining bracket should be **4" above base plate**.



OPTIONAL: How to install the BTA4 user terminal frame

IMPORTANT

Check with the door owner whether they want the BTA4 installed into the side column or remotely.

1 Cut out the drilling template on this page for the BTA4 unit.

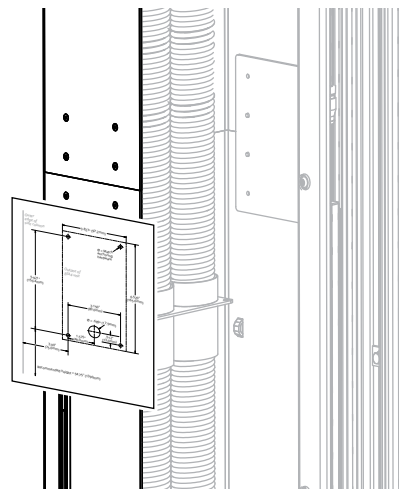
Position it on the drive-side side column.

Make sure there is a flat, unobstructed space on the column that is large enough to fit:

- the entire frame of the unit (4.5" x 6")
- a minimum of 3" clearance from the outer edge of the side column.

Make sure the area where the holes will be drilled is free of all cables, hardware and components inside the column.

If there is not enough free, unobstructed space, **install the frame into the wall next to the door.**



2 If the side column can fit the template, use the template to drill the four screw holes in the side column ①.

If the side column cannot fit the template, use the template to drill the four screw holes in wall near the door ②.

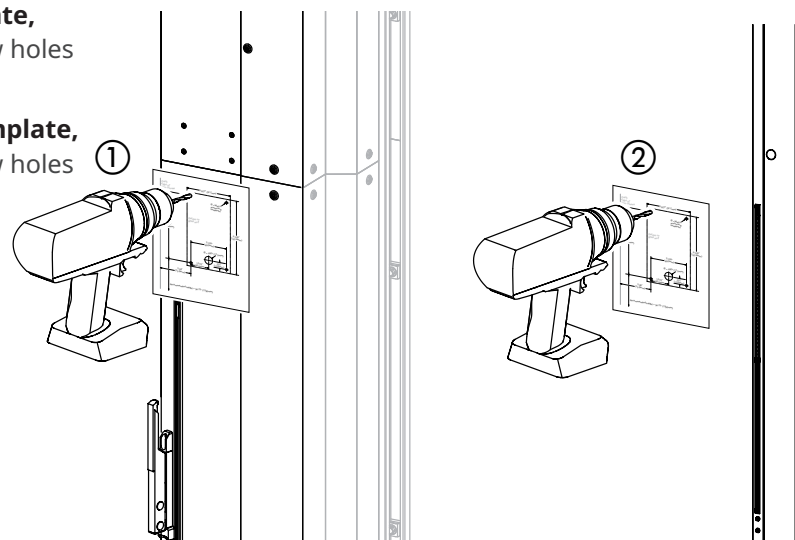
Match the drill bit to the supplied hardware or your own.

If mounting to the wall, **match** the correct depth for the hardware.

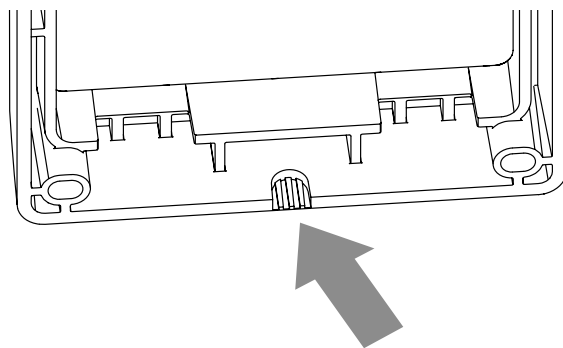
Use a step bit to drill the large hole for the cable.

IMPORTANT

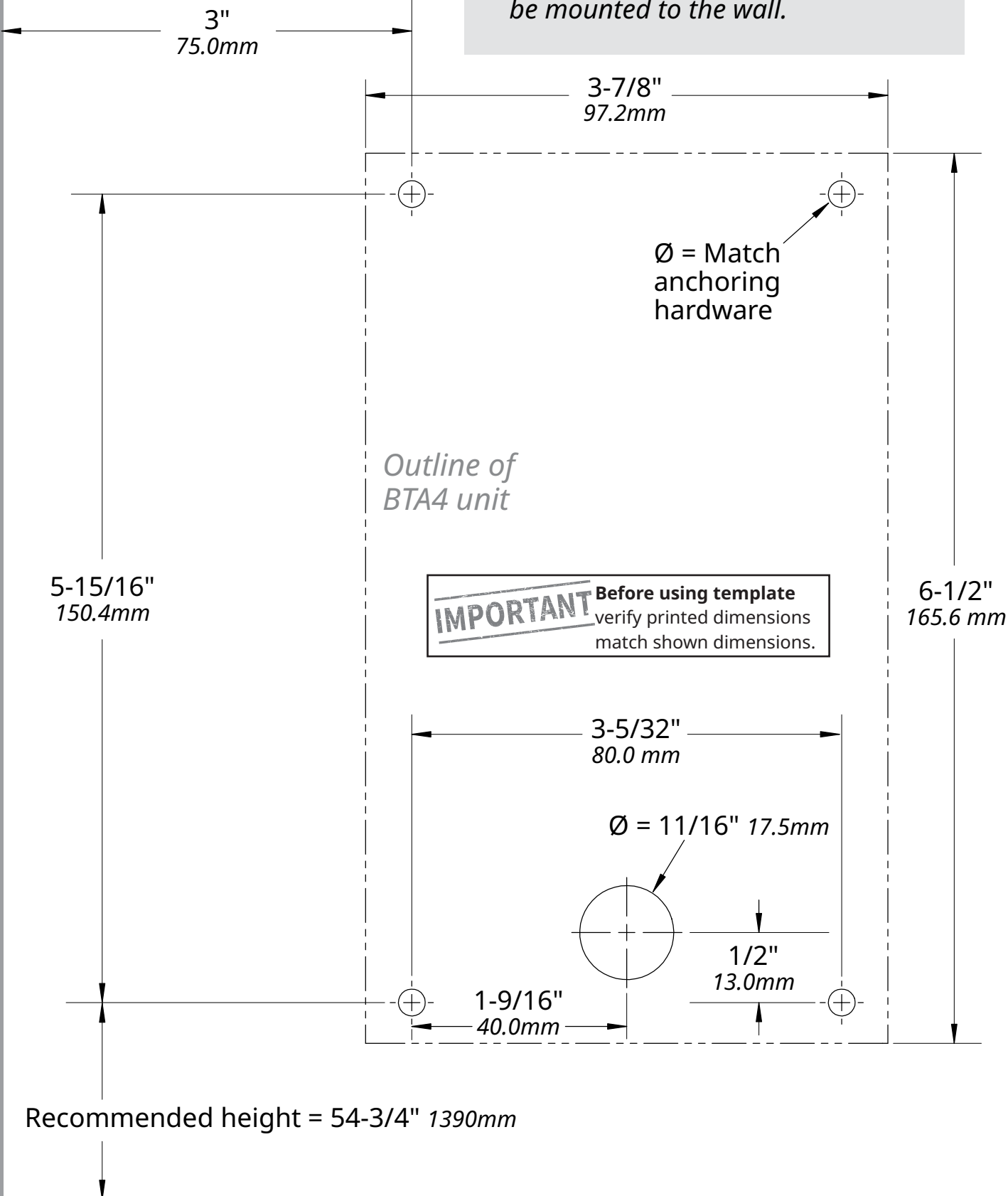
NOTE: if the wall mount does not make it possible to run the cable inside the wall, you can run the cable out of the bottom of the frame.



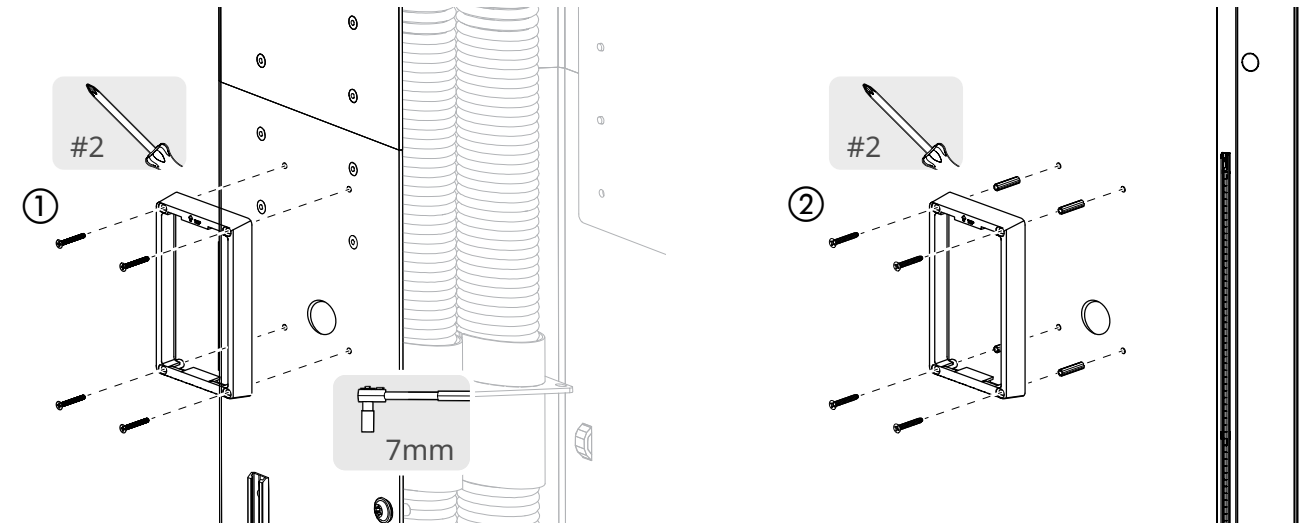
3 If you are mounting the unit to the wall and cannot run cable inside the wall, **snap off** the perforated tab at the bottom of the frame.



Outer edge of side column

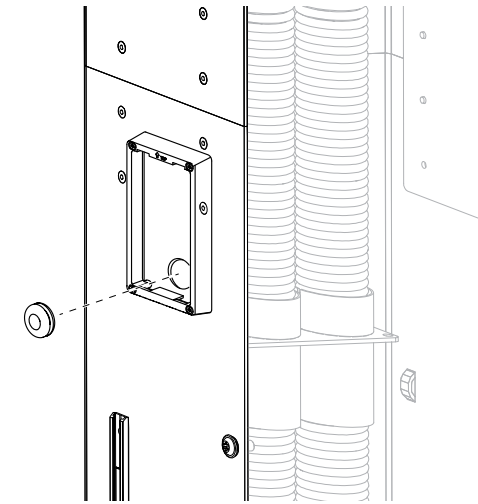


- 4** **Install** the BTA4 frame using the supplied hardware for side column ① or wall ② mounting, or your own.
If necessary, remove the side column cover to install the frame.



Back of BTA4 template
Intentionally left blank

- 5** For side column mounting, **install** the grommet into the cable access hole.



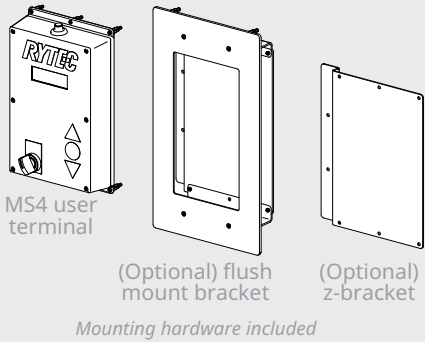
OPTIONAL: How to install the MS4 user terminal

IMPORTANT

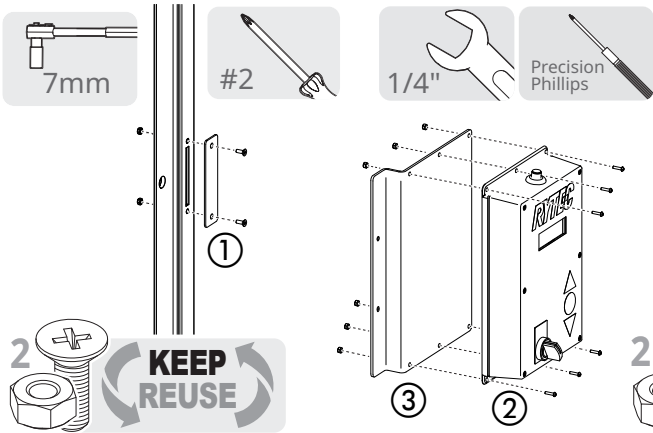
Check with the door owner whether they want the MS4 installed into the side column or remotely.

1 **Locate** the MS4 user terminal, mounting brackets and hardware in the small parts box.

SMALL PARTS



2 **Anchor the user terminal** at an easily accessible height using the included hardware. The user terminal can be mounted onto the wall, flush to the wall using the optional bracket, or onto the side column using the optional z-bracket.

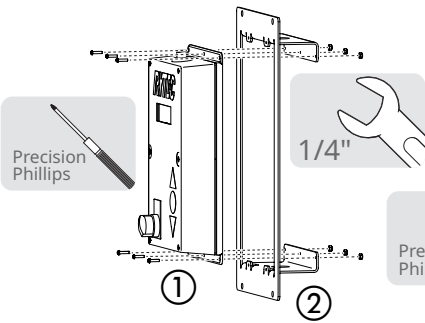


Side column mount

1. **Remove** plate ① from non-drive side column.
2. **Install** the user terminal ② onto the z-bracket ③ using supplied hardware.
3. **Install** bracket onto side column using screw holes from plate.

Flush mount (in-wall installation)

1. **Cut** hole: 6-3/8"W x 11-1/2"H.
2. **Install** the user terminal ① onto the flush mount bracket ② using supplied hardware.
3. **Anchor** bracket to wall using supplied hardware.
4. **Install** the cover plate ③.



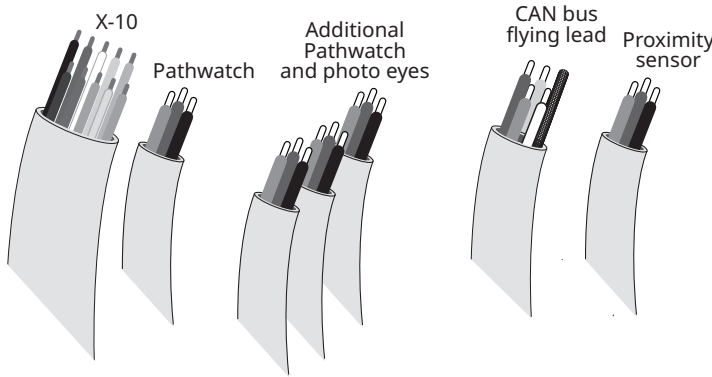
How to remove the Pathwatch, light curtains or photo eyes, and internal cabling

IMPORTANT

INSIDER'S TIP

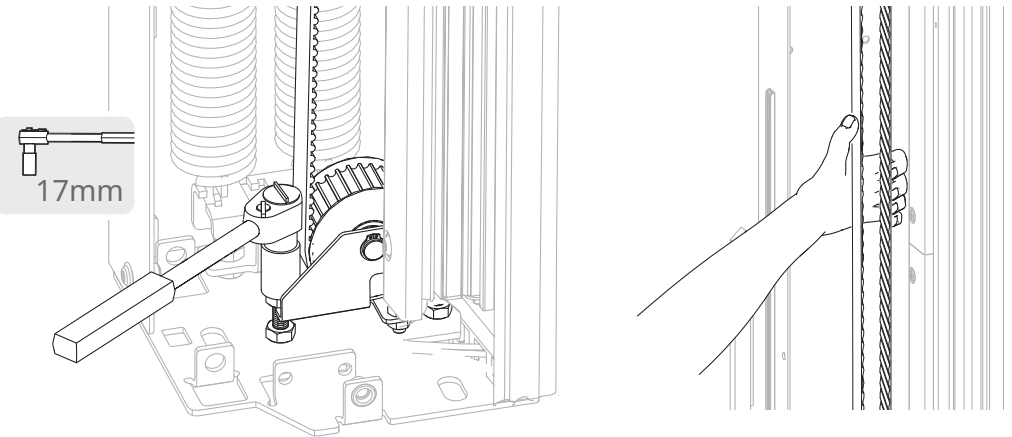
- **Keep cabling intact when you remove it.** At least one cable is needed to route the proximity sensor directly to the controller, and the controller may be some distance from the door. So cut cable ties, but not cable.
- **It should not be necessary to add conduit.** You will remove more cables than you add. You should be able to install the CAN bus flying lead and the spliced cable for the proximity sensor into the same conduit. **Call Rytec technical support if you have any questions.**

Cables removed from conduit Cables added to conduit



1 **Loosen** the secondary drive belt until there is considerable slack. This makes it easier to access the back of the side column.

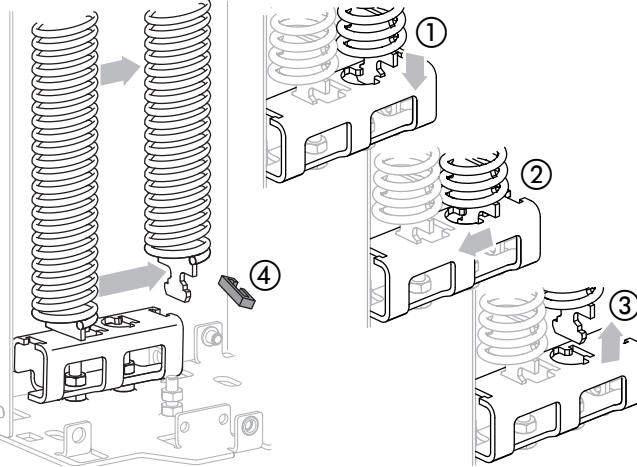
- You will need to **loosen** the screws and **move** the CAN bracket out of the way to access the pulley assembly.
- It should not be necessary to remove the pulley assembly from the mounting bolt.



2 **If necessary to freely access the back of the side column**, remove the springs from the baseplate tube.

If there are **locking collars on the spring tabs** ④, remove them first. You will reinstall them when the springs are reinstalled.

Push down on the bottom of the spring to release the tab ①, **slide** the spring through the narrow slot ②, then **pull out** of the wide slot ③.



First, remove the Pathwatch LED strips and cables

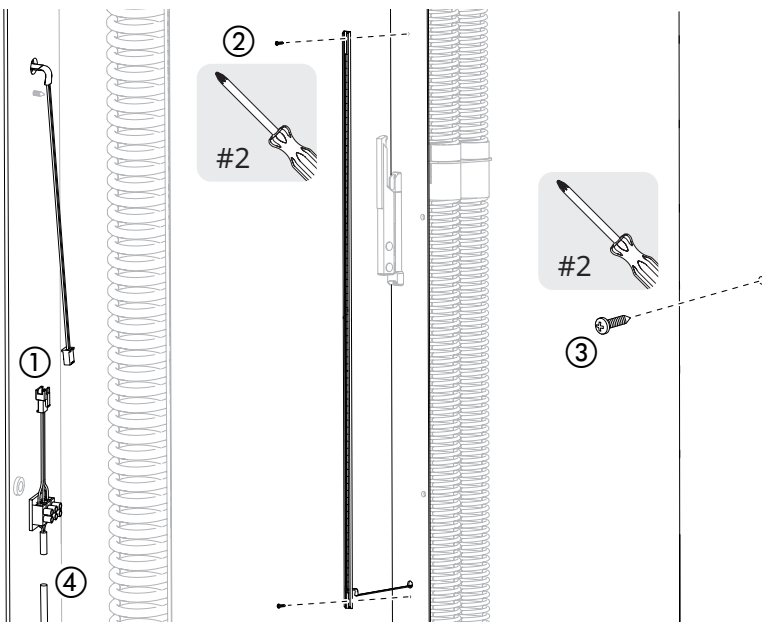
1

In both side columns, unplug the Pathwatch LED strips at the quick connect ①.

Remove the Pathwatch strips from the side columns ②.

Replace the screws ③ to maintain the appearance of the side columns.

Cut the cable below the jumper ④ and discard the jumper and quick connect.



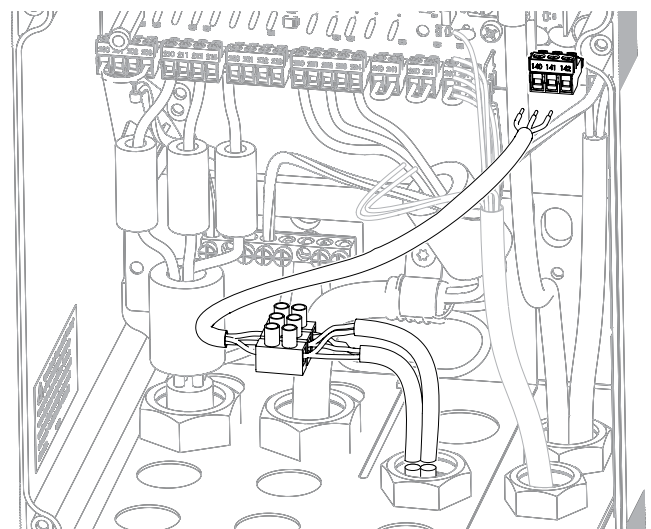
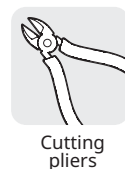
2

Inside the controller, disconnect the Pathwatch cable from terminal block 140-142.

Disconnect the wires from the terminal block, cut the cable or cables where they enter the conduit and remove.



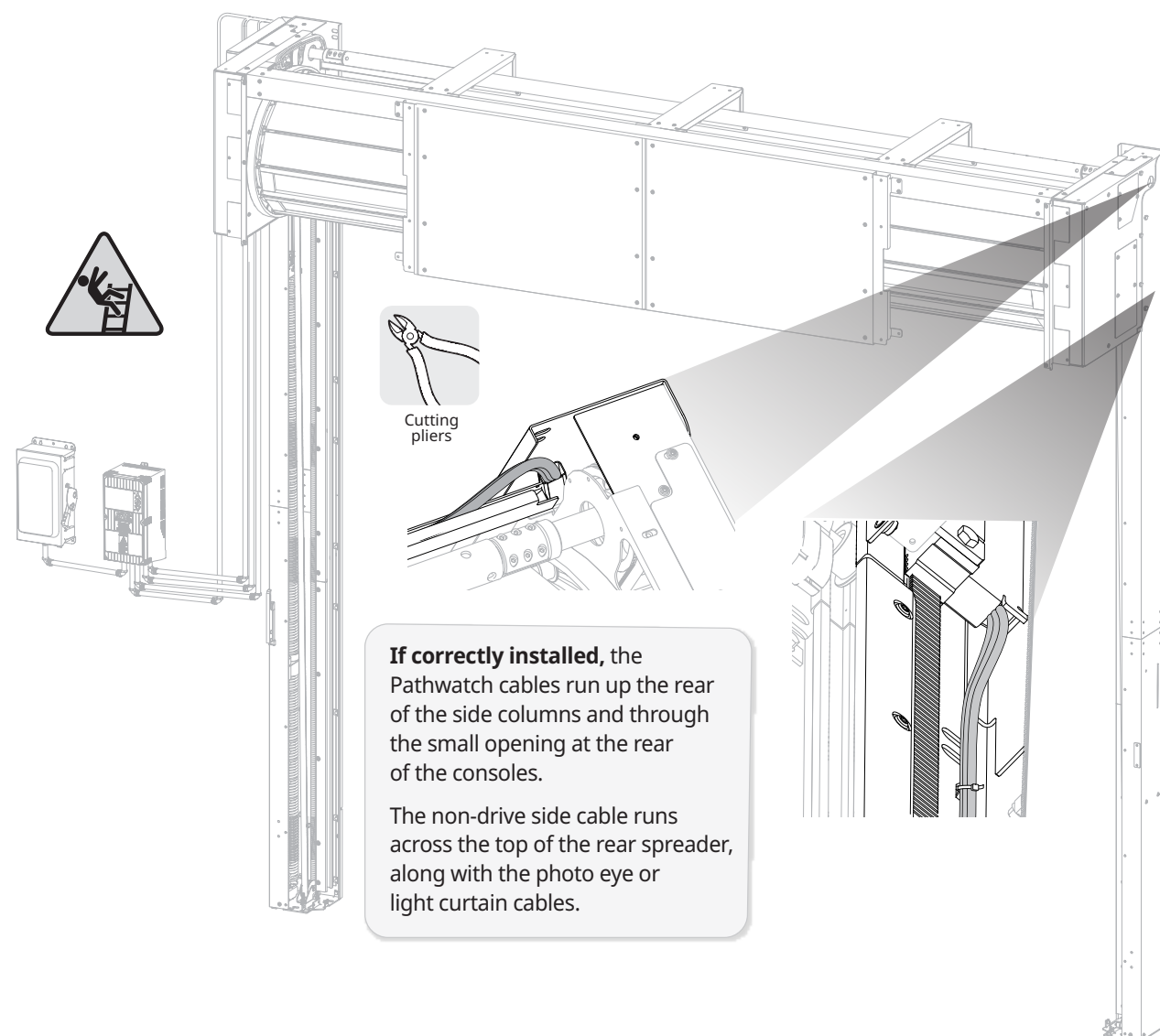
Pathwatch cables may be spliced at the door, or inside the controller, so there may be one, or multiple, cables at the controller.



3

Remove the Pathwatch cables from the drive side and non-drive side of the door.

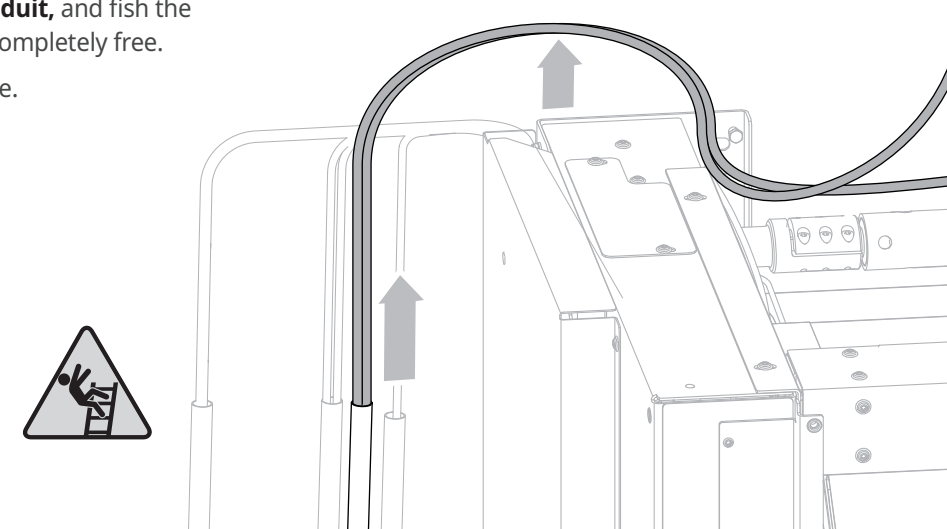
Cut cable ties, but leave the cables intact.



4

Follow the cable to its conduit, and fish the cable up and out until it is completely free.

Set aside for potential reuse.



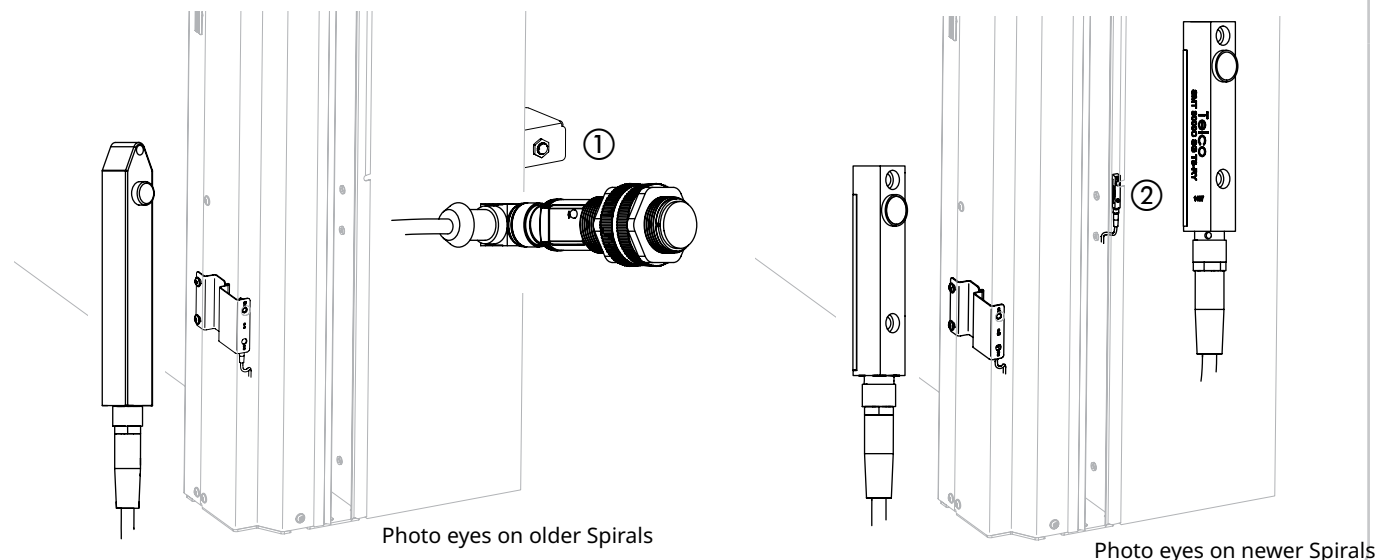
Then, on doors with photo eyes, remove the photo eyes and cables

- 1** Depending on the age of the door, the rear set of photo eyes (transmitter and receiver) on a Spiral may be mounted remotely, on the wall behind the door opening ①, or inside the side column ②.

Different sets of photo eyes have also been used at different times.

The front photo eyes have always been mounted inside the side column.

Each photo eye has a separate cable. The front and rear set of photo eye cables may route to the X-10 junction box, directly to the controller, or both.



- 2** Remove the photo eyes in both side columns.

For **front photo eyes** ①, remove the bracket and cut the cable below the connector. **Discard** the brackets and photo eyes.

For **rear photo eyes mounted in the side column** ②, cut the cable below the connector. You can leave the photo eyes in place.

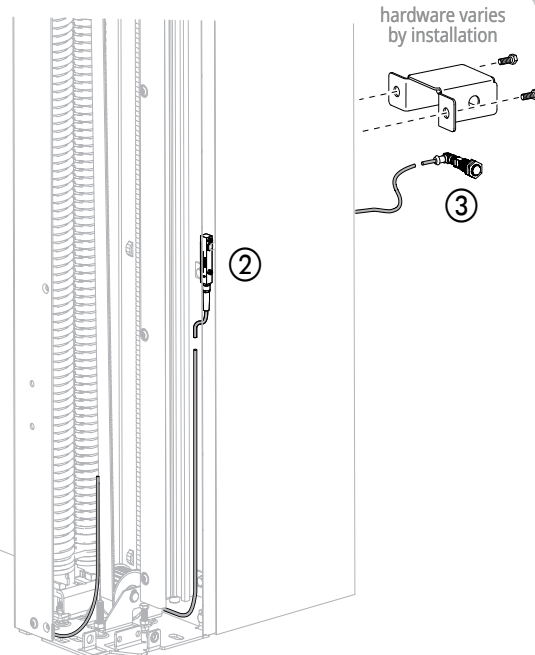
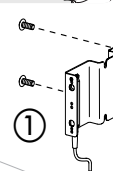
For **rear photo eyes mounted remotely** ③, remove the bracket and cut the cable below the connector. **Discard** the brackets and photo eyes.



Cutting pliers



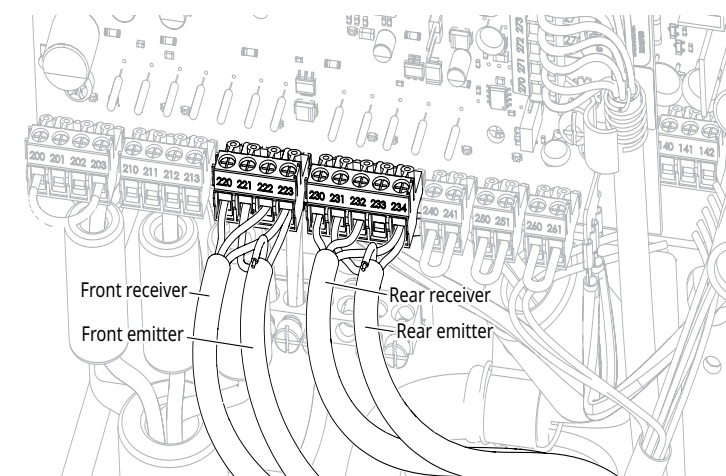
T40



- 3** Inside the controller, check for photo eye cables at terminal blocks 220-223 and 230-234.

Disconnect the wires, cut the cables where they enter the conduit and remove.

If all four cable are not in the controller, the remaining cables are connected to the X-10 junction box.



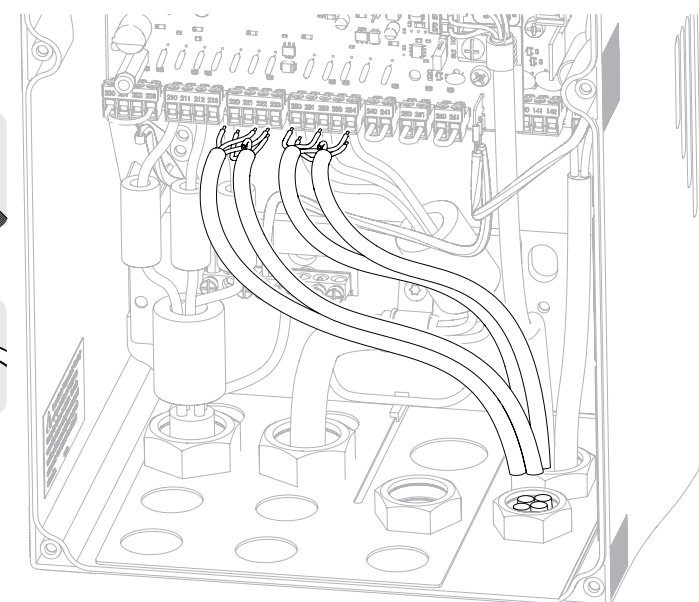
- 4** **Disconnect** the wires from the terminal block, **cut** the cable or cables where they enter the conduit and remove.



Precision screwdriver



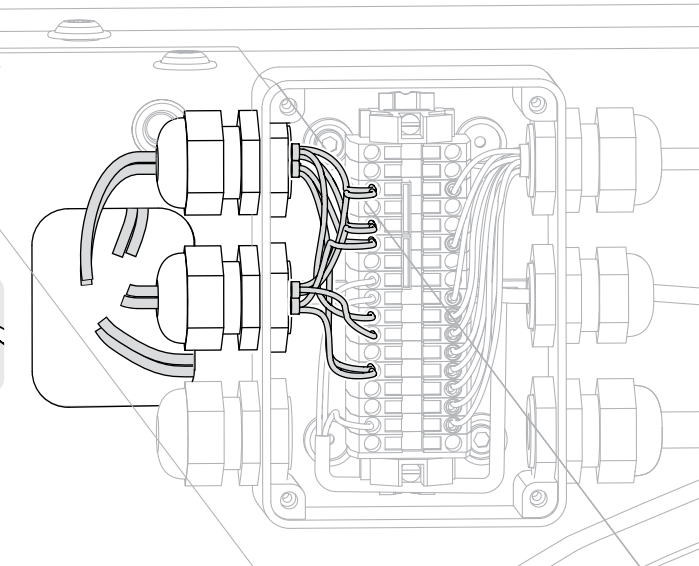
Cutting pliers



- 5** **Locate** any remaining photo eye cables at the X10 junction box and **cut** the cables.

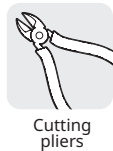


Cutting pliers



- 6 Remove the photo eye cables** from the drive side and non-drive side of the door.
Cut cable ties, but leave the cables intact.

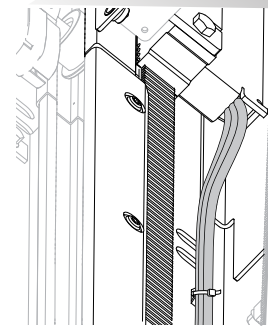
Cables may terminate at the X-10 junction box or the controller.



Cutting pliers

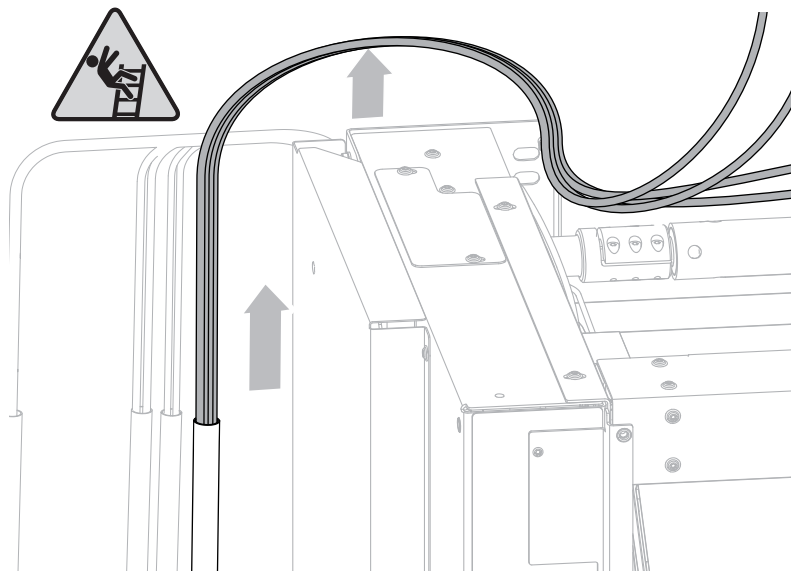
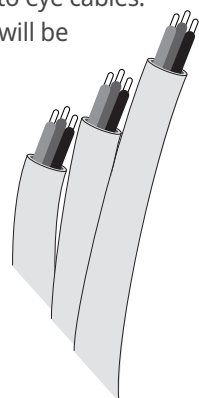
If correctly installed, the photo eye cables run up the rear of the side columns and through the small opening at the rear of the consoles.

The non-drive side cables run across the top of the rear spreader, along with the Pathwatch cable.



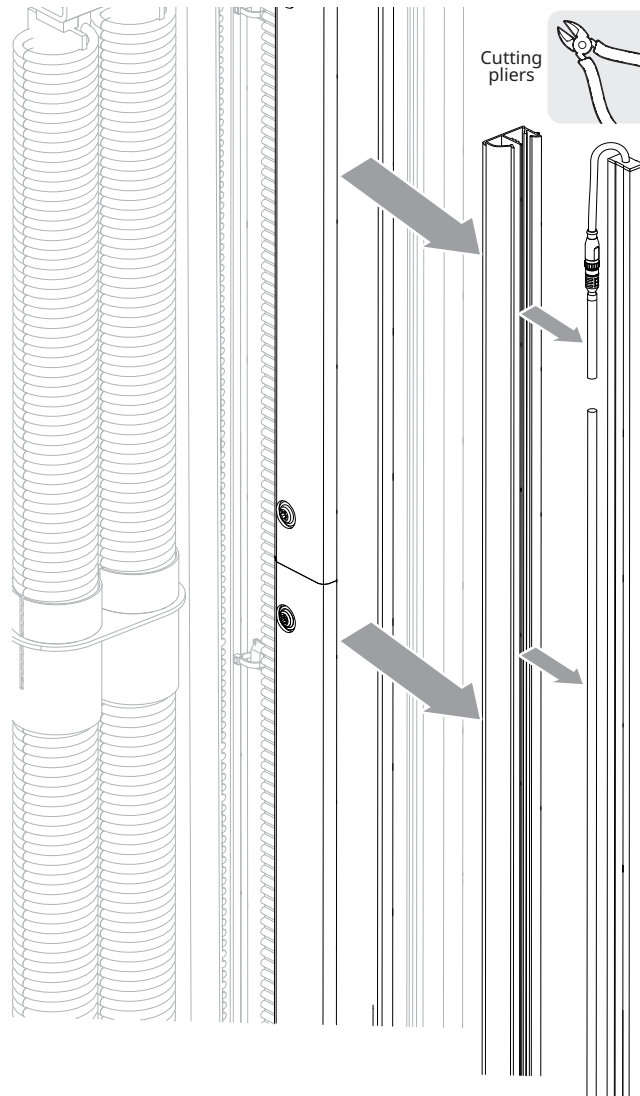
- 7 Follow the cables that run to conduit** to locate which conduit they run through, and fish them up and out until they are completely free.

Compare the photo eye cables. The longest cable will be spliced to the proximity sensor cable.



On doors with light curtains, remove the light curtains and cables

- 1 Remove** the light curtain transmitter and receiver from the door tracks. **Cut** the cables below the connectors.
Remove the track clip/wire chase that hold them in place.



Cutting pliers

There may be **one long** track clip or **multiple smaller** ones.

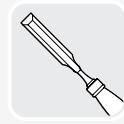
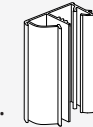
IMPORTANT

Service techs may have used additional strips of double sided tape or adhesive to secure the clips.

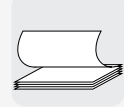
You may need to **use a chisel** to remove the clips from the door tracks.

Make sure the door tracks are not damaged, and **fully clean** the tracks to remove any adhesive residue.

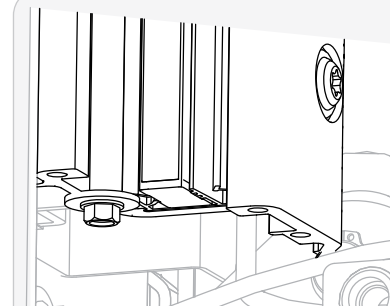
The new track clips are held in place by friction.



Chisel



Alcohol wipes



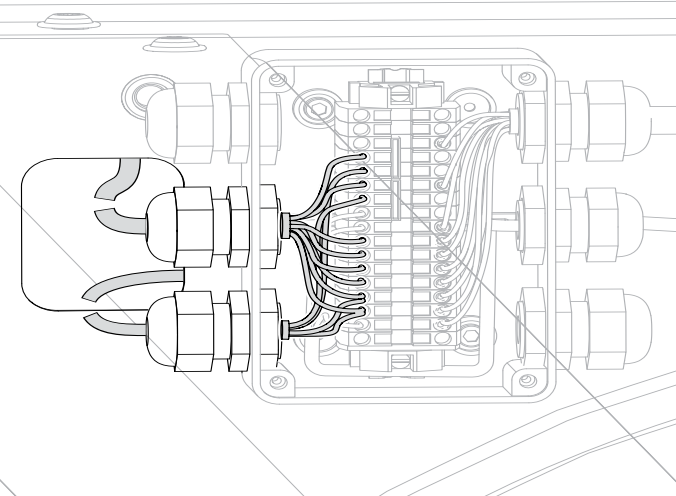
Some doors have **washers, bumpers or brackets** added to the bottom of the door track to prevent the clips from slipping.

These can **remain in place**.

- 2 Locate** the light curtain transmitter and receiver cables at the X10 junction box and **cut** the cables.



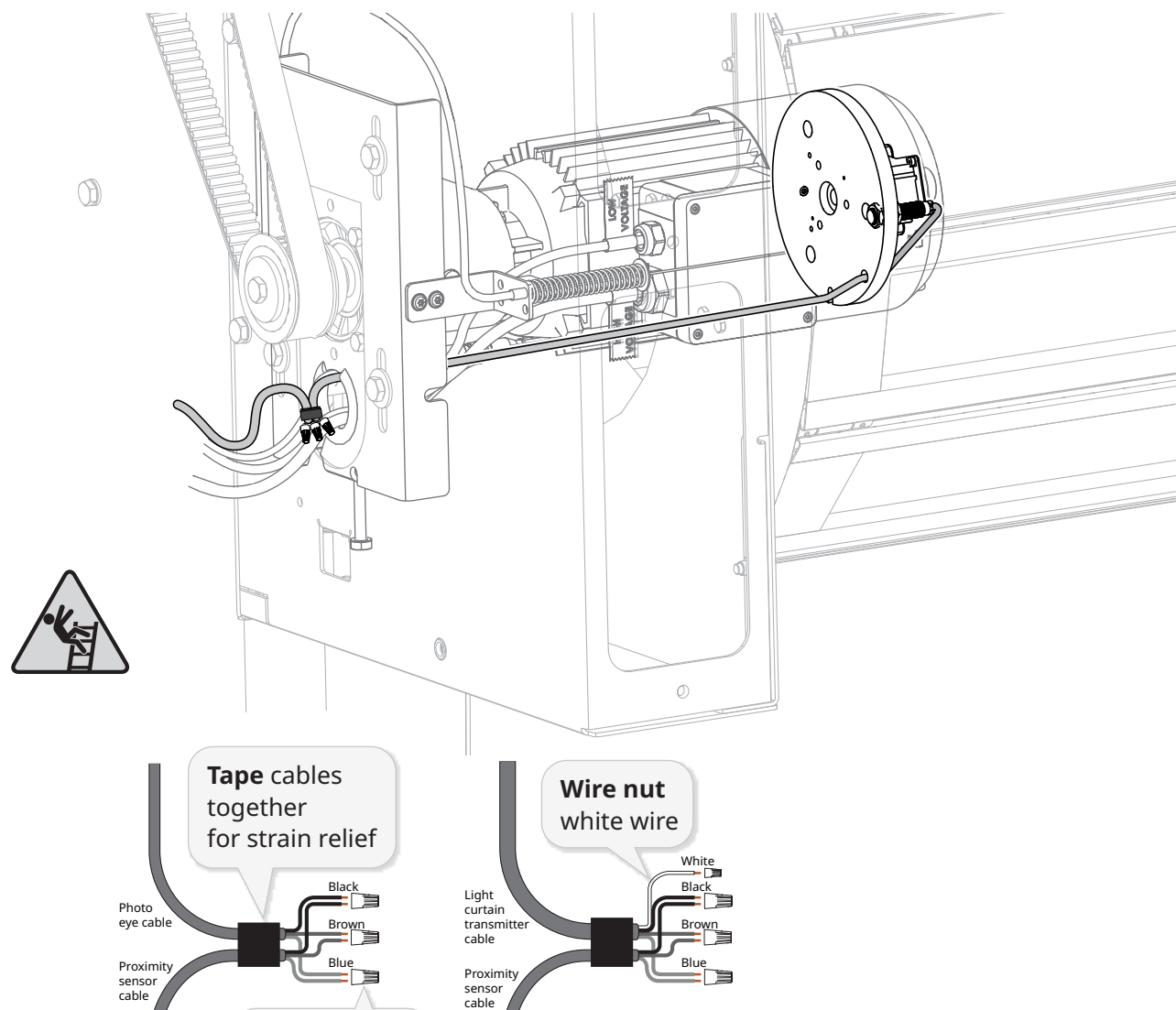
Cutting pliers



3

Splice the proximity sensor cable to the light curtain or photo eye cable.

- Splice the cables **just outside the motor mounting plate**, where the other cables pass through the edge protector.
- **Trim** the proximity cable to minimize slack within the console and to keep the cable clear of the primary drive belt.
- **Run** the light curtain or photo eye cable with the other cables to the conduit.



(Optional) If the door has a BTA4 or MS4 user terminal, remove the cable

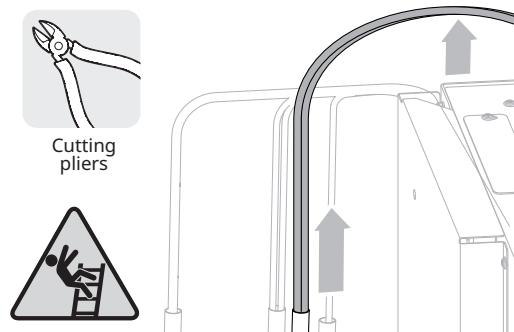
1

Follow the cable from the user terminal to its conduit, cut all cable ties, and fish the cable up and out.

Cable routing will vary based on location of the user terminal.



You may need to use the cable to fish the replacement cable to the user terminal for wall mounted terminals.



How to install the Advanced³ light curtain and side column CAN bus cabling

1

Get the two Advanced³ light curtains, track clips and 9-foot (1210800-E) M8 cable from the kit.

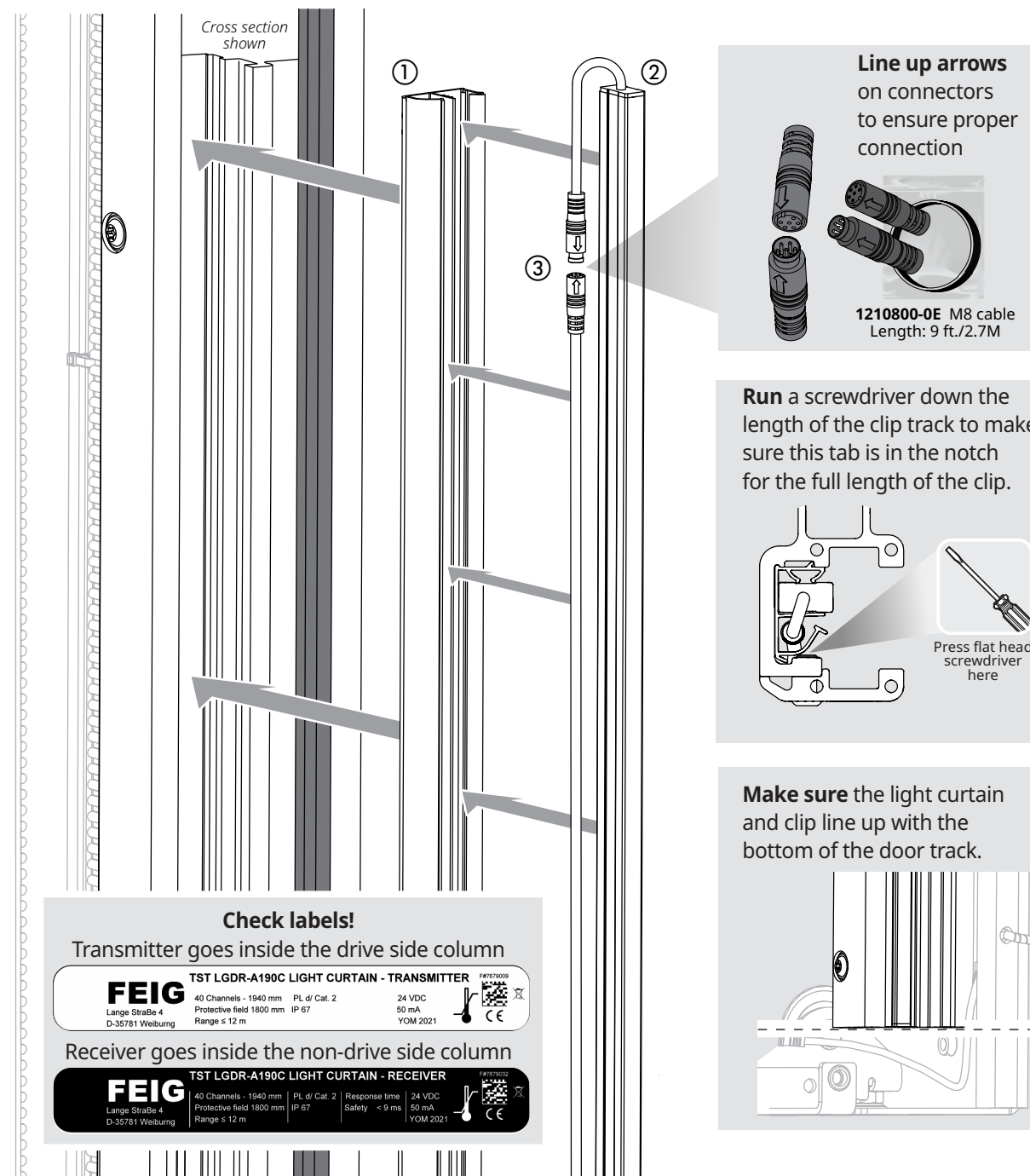
① **Install** the track clips into the door track. They are held in place by friction.

- **Line up** the bottom of the clip with the bottom of the door track
- **The fit is tight.** Run a flathead screwdriver down the length of the clip to ensure it is fully seated in the track.

② **Install** the Advanced3 light curtains into the clips. They are also held in place by friction.

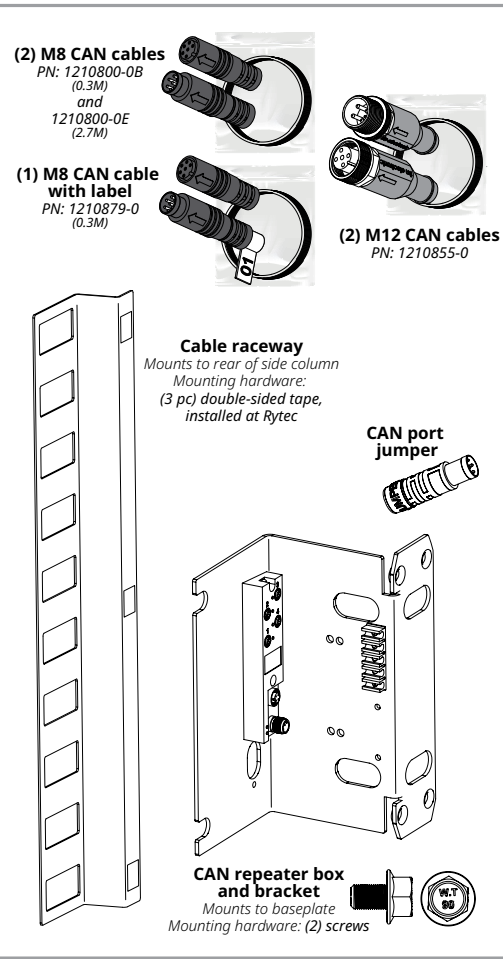
- **Make sure** the transmitter is installed into the drive side, and the receiver is installed into the non-drive side.
- **Line up** the bottom of the light curtain with the bottom of the track.

③. **Connect** the 1210800-E M8 cables to the light curtains and run the cables inside the length of the clip.

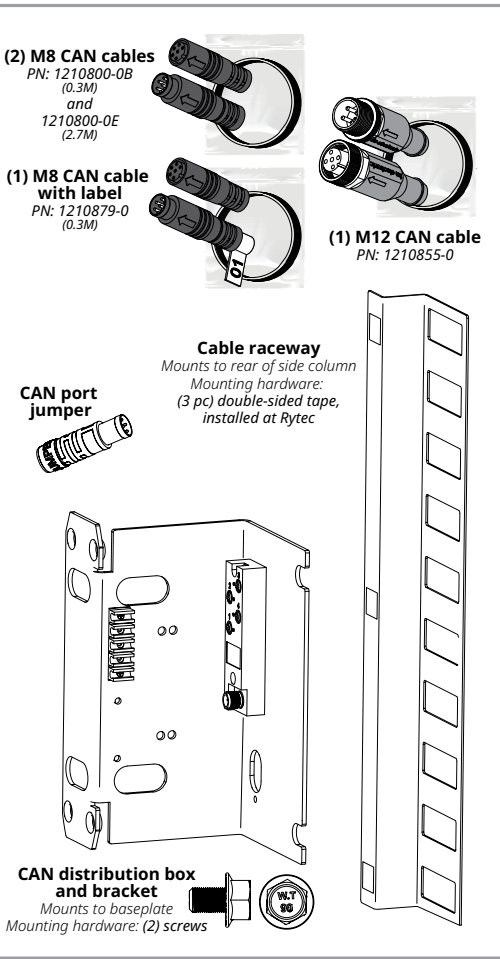


2 Get all parts from the kit for the drive side and non-drive side baseplates.

Drive side side column baseplate



Non-drive side side column baseplate



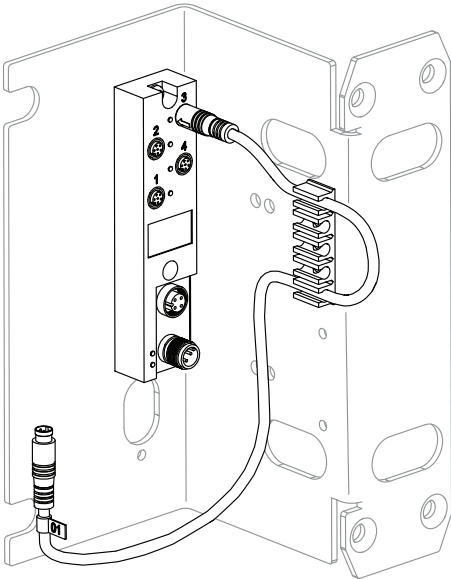
Parts shown are for a left-hand drive side door.

NOTE: CAN repeater boxes have two ports for M12 cables. In a Spiral, they are located on the drive side baseplate and the drive side console. The CAN distribution box has one port for an M12 cable and is located on the non-drive side baseplate.

3 Repeat all steps on the drive and non-drive side of the door.

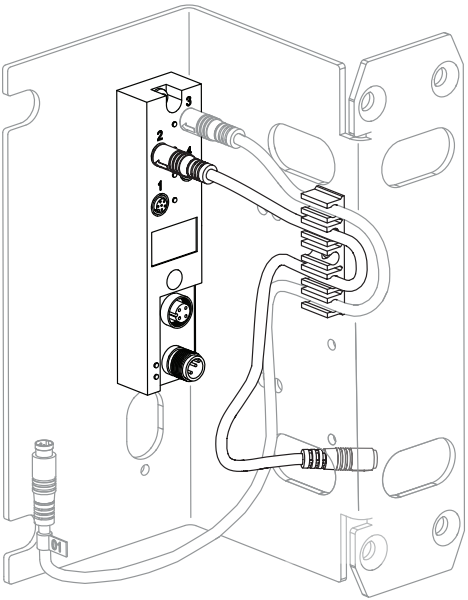
Do the next three steps **BEFORE** you install the brackets into the side column baseplates.

Install the labeled 1-foot M8 cable into **port 3** of the boxes on both brackets and through the top and bottom slots on the holders.

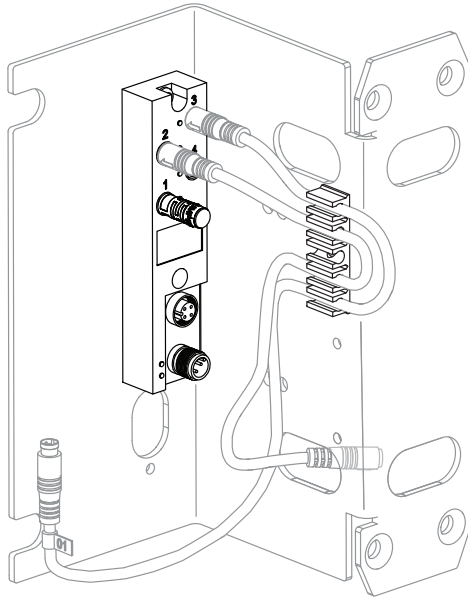


4 Install the other 1-foot M8 cables into **port 2** of the boxes on both brackets and through the second and fourth slots in the holders.

- This cable connects to the cable from the **jamb mounted SmartSurround™** light curtain.
- **Push** the connector through the opening in the bracket.



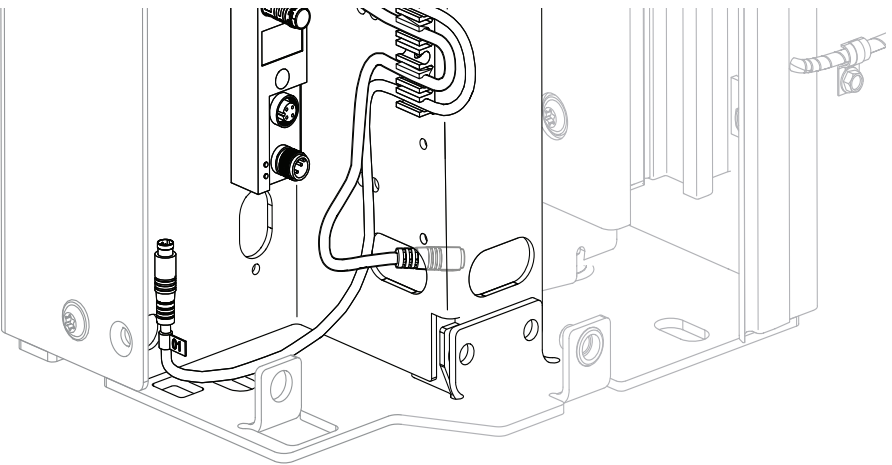
5 Install the jumper into **port 1** of the boxes on both brackets.



6 Place the brackets into the baseplates of the side columns.

IMPORTANT

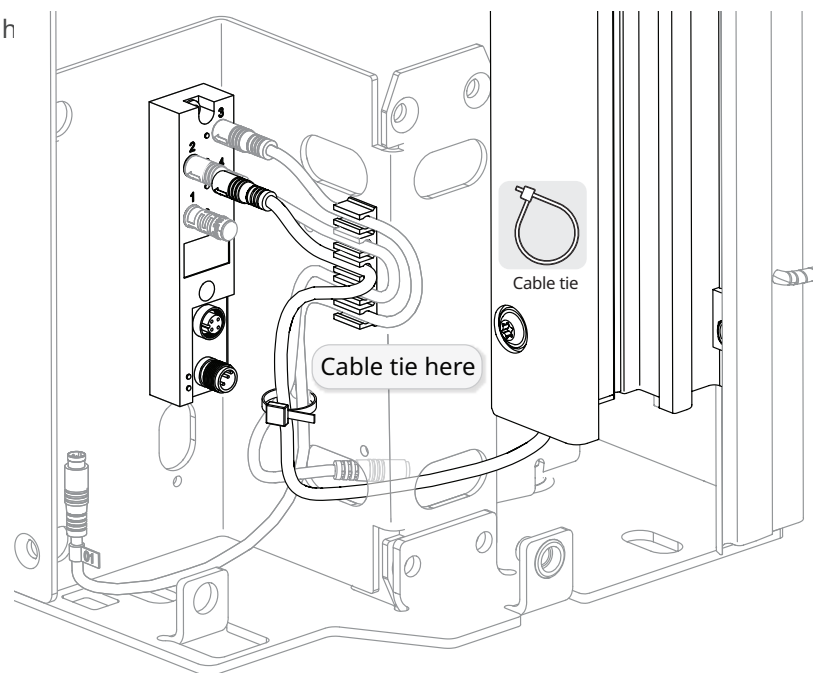
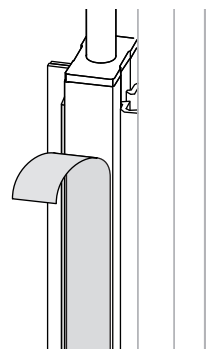
DO NOT bolt them in place.
You will secure them in place **later**.



7 Route the cable from the Advanced³ light curtains in both side columns through both openings in the brackets.

Plug the connector into port 4.

Remove the protective film from the Advanced³ light curtains once they are installed.



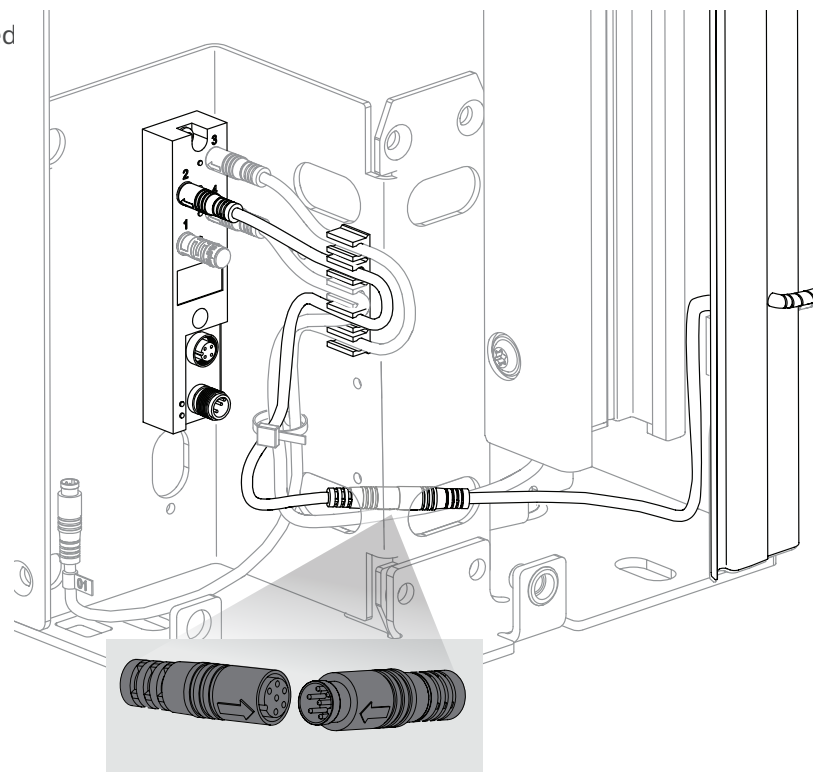
8 Route the cable from the jamb mounted SmartSurround™ light curtain down the back channel of the vertical track **BEHIND and separate from the door track** to the floor of the baseplate.

IMPORTANT

This routing keeps the cable clear of the door panel rollers when the door opens and closes.

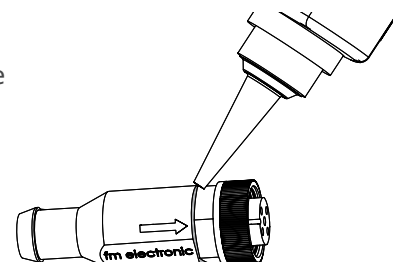
Line up the embossed arrows on the connectors to align the guide notch and contacts correctly, and **plug** the cable into the cable that connects to **port 2**.

Route the cables through both openings in the gasket.



For all M12 connections: on female connectors, a drop of WD-40 behind the nut on the locking ring makes it easier to turn the ring and fully secure the connection. **Spin** the ring to distribute evenly. **Do not overlubricate.**

INSIDER'S TIP



9 Place cable ties in the holes of the two flanges near the side of the baseplates in both side columns to route the cables running up the side columns.

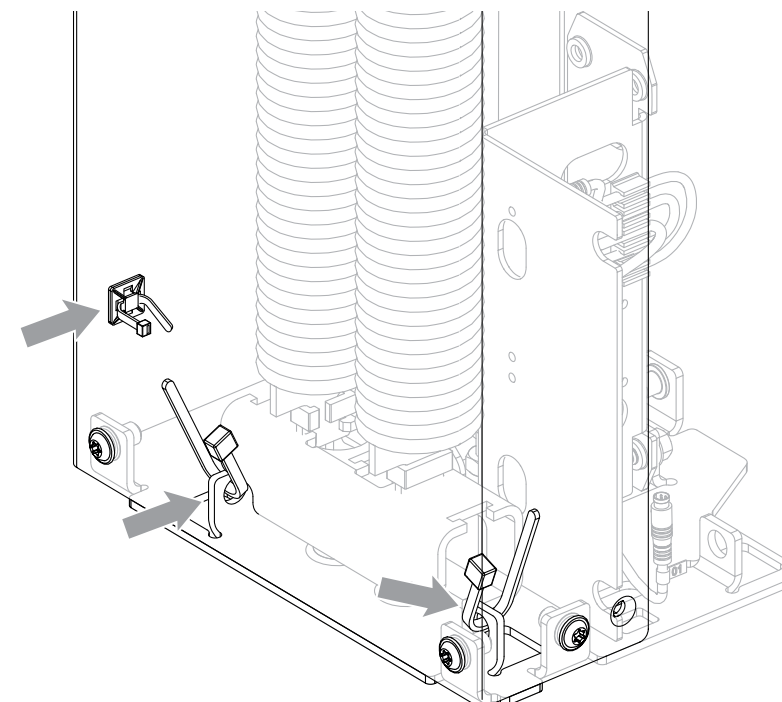
Also place a cable tie and anchor against the rear wall of each side column, near the outer wall and 4 inches above the base plate

IMPORTANT

Wipe area down with supplied alcohol wipes before placing cable tie anchors.

IMPORTANT

This routing keeps the cables clear of the spring assemblies.



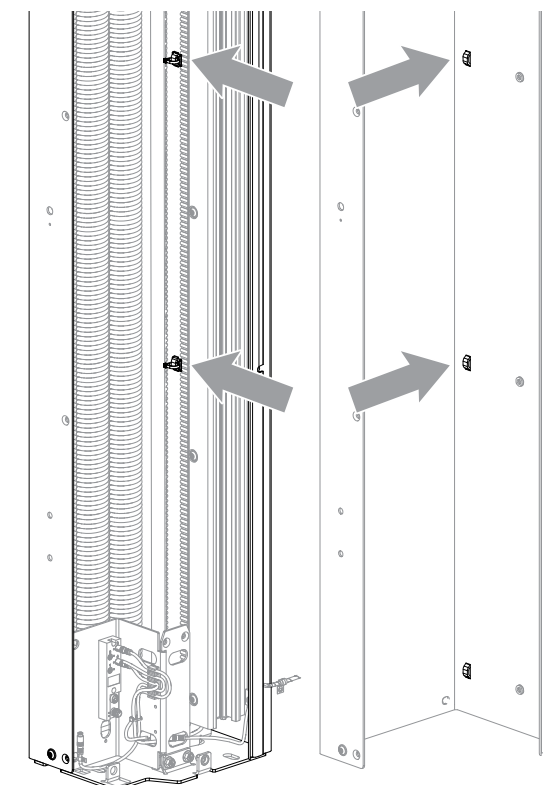
10 Space cable ties and anchors every two feet up the rear wall of each side column.

Make sure to wipe down the surface with supplied alcohol wipes before securing anchor.

If the side column has built-in cable tie anchors (lance bridges), use them and skip this step.

IMPORTANT

This routing keeps the cables tight to the rear wall.

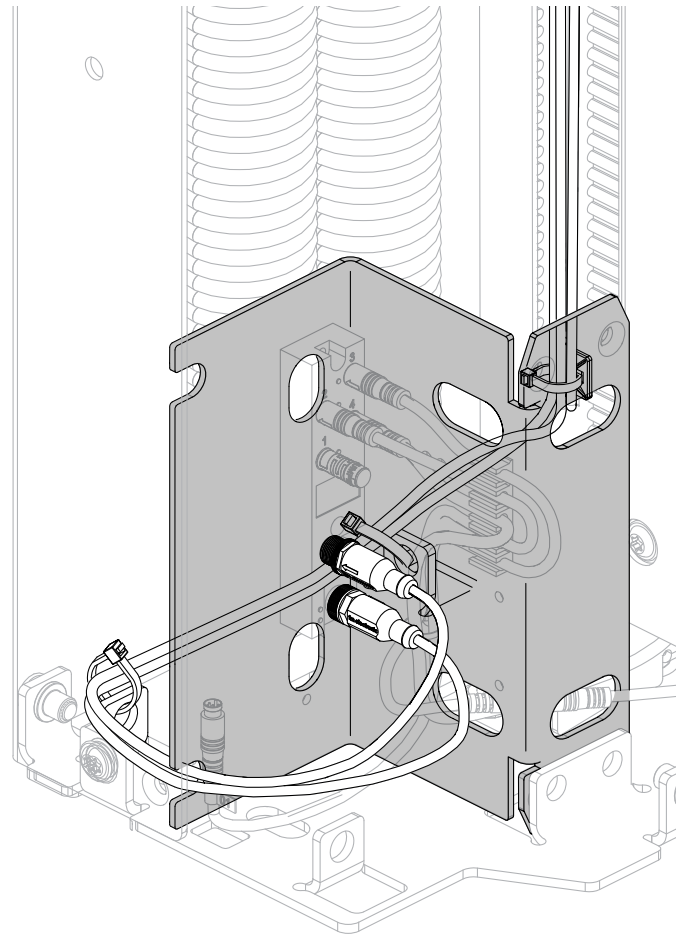
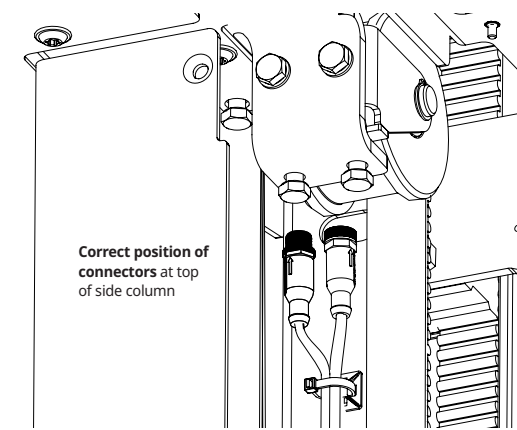


11 Plug in the two M12 cables, run them through the opening at the bottom front of the bracket, and through the cable ties to the top of the side column.

IMPORTANT

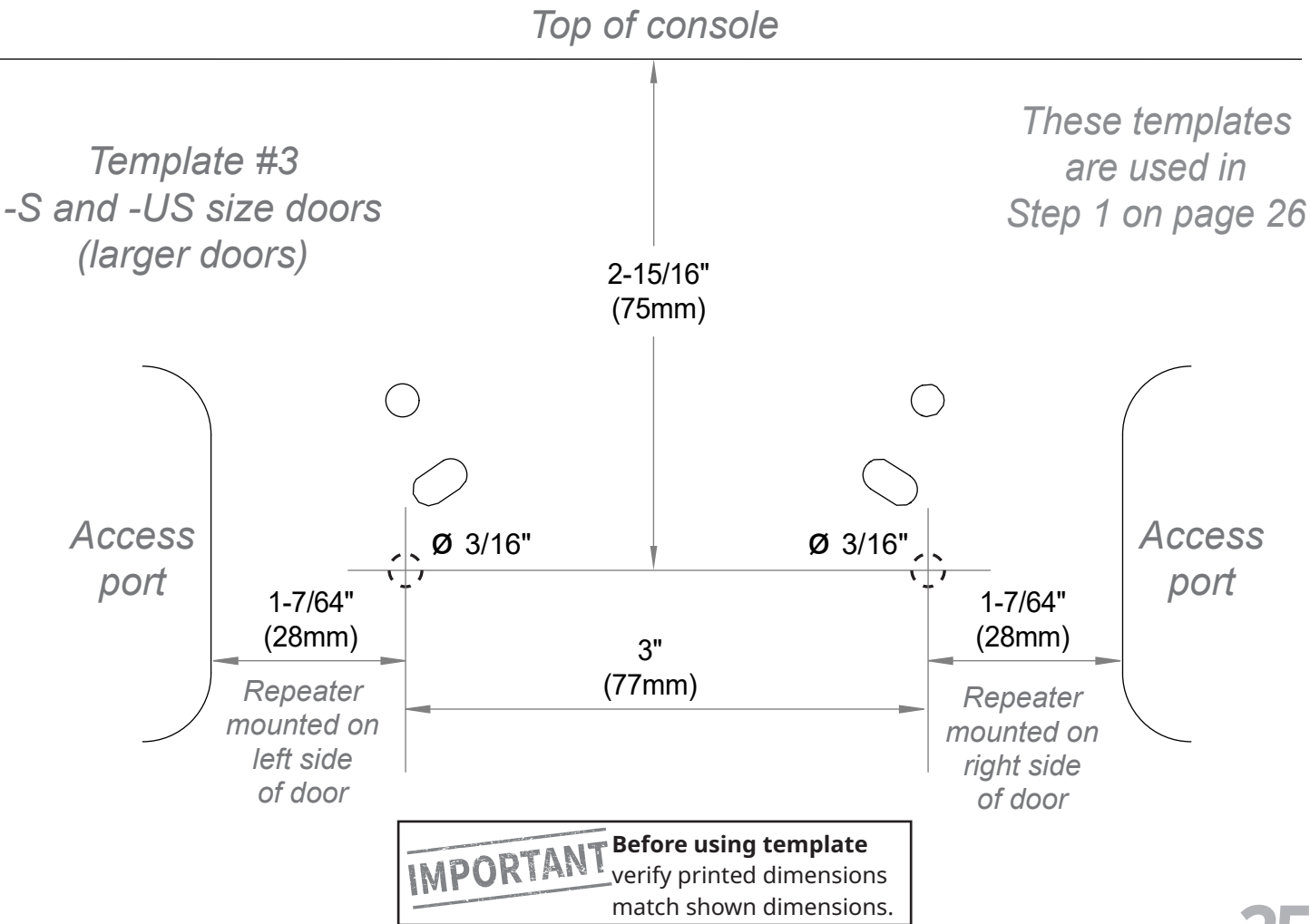
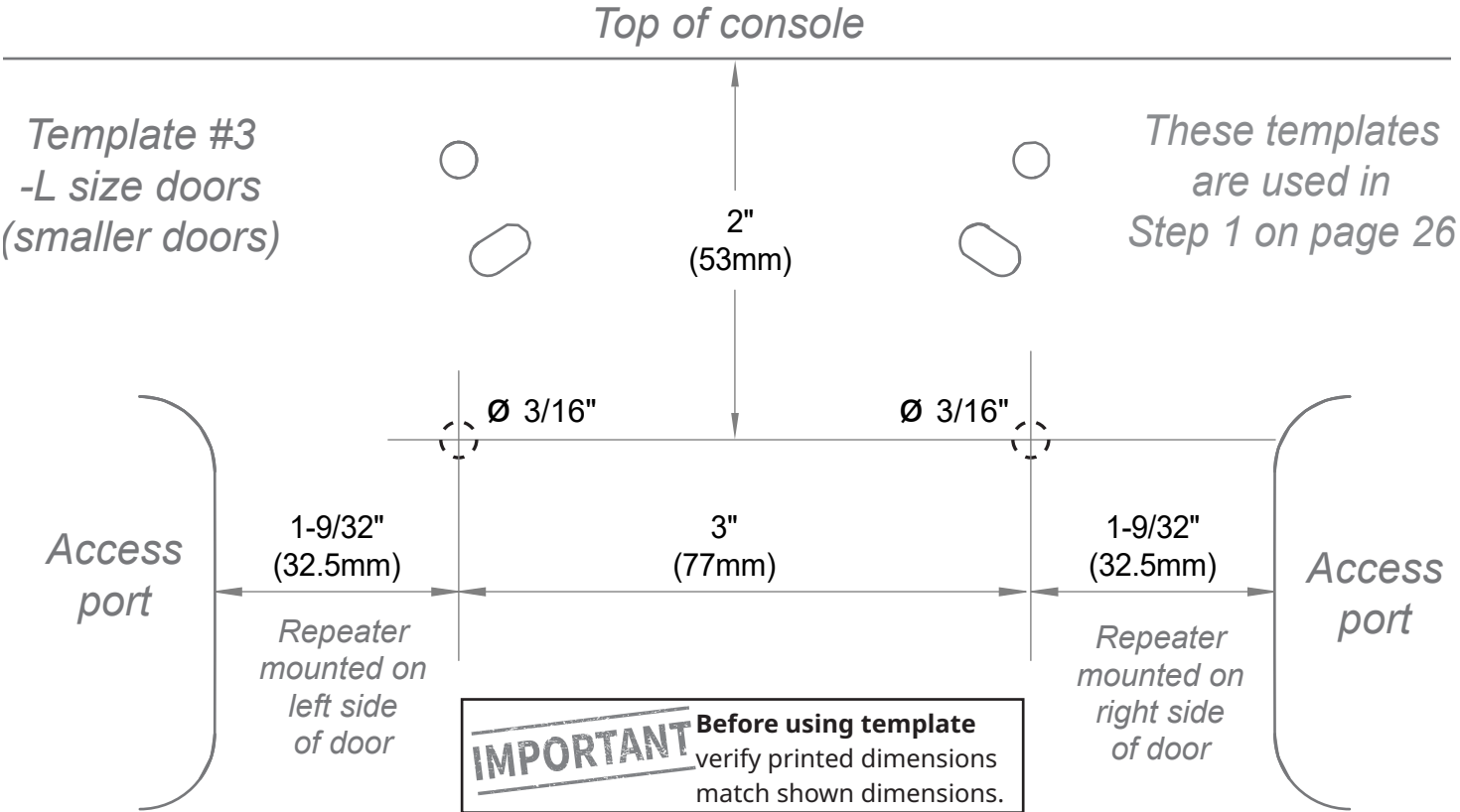
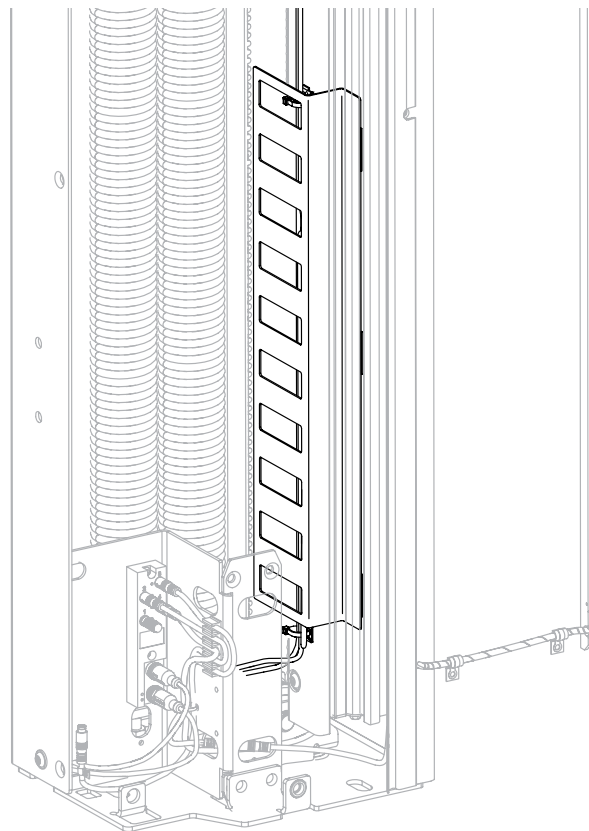
There are two cables on the drive side and one cable on the non-drive side.

- In the drive side, the cable that terminates in a **male connector** connects via the short M12 cable to the CAN repeater in the console.
- The cable that terminates in a **female connector** connects to the M12 cable across the rear spreader.



12 Peel the backing from the three strips of tape on the cable raceway, and install it against the rear of the side column just above the bottom anchor and touching the outer wall of the side column.

If there is extra length in the cables, fold it over and slide it behind the raceway.
Set all cable anchors tight.



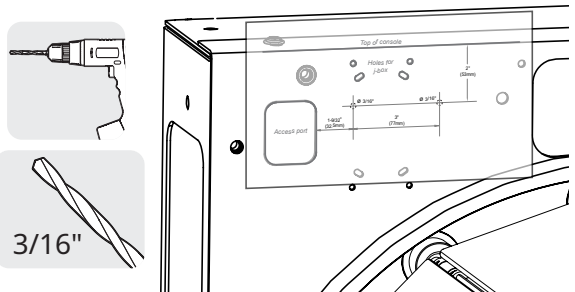
How to install the head assembly CAN components and connect the side column CAN bus cables across the rear spreader

Back of Template #3
Intentionally left blank

1 Cut out and line up template #3 from the previous page with the top of the drive side console and the rectangular access port.

Larger doors (-S and -US size) use the larger template.

Drill holes for the bolts that secure the CAN repeater box.



2 Get all parts from the kit for the drive side console.

NOTE: The kit includes an extra bolt and nut for the CAN repeater box in the console. Discard them if they are not needed.



The flying lead is the only M12 cable with a connector on one end and bare wires on the other.

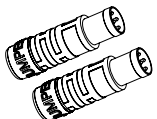
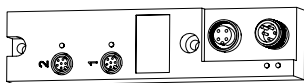
Drive side console

CAN repeater box

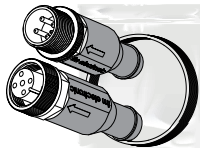
Mounts inside console

Mounting hardware:

(3) bolts and nuts



(2) CAN port jumpers



(2) M12 CAN cable
PN: 1210855-0X
one long, one short



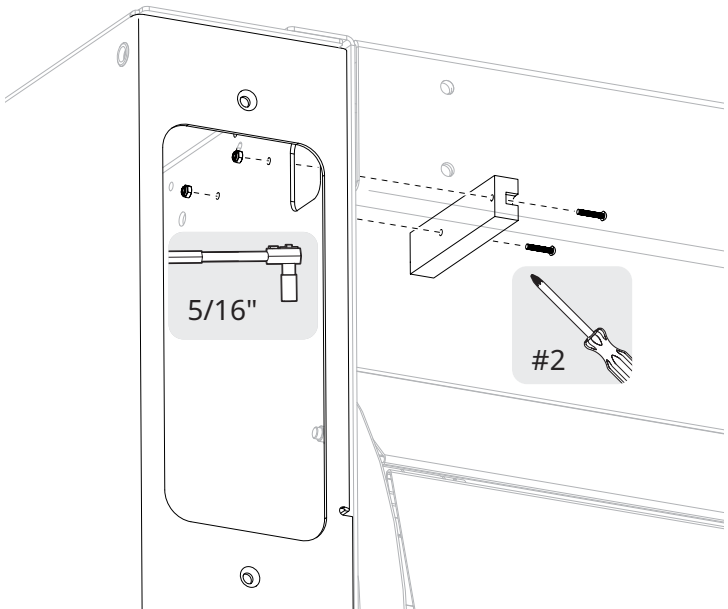
(1) M12 CAN flying lead
Cable to controller
PN: 1210856-0

3 Install the CAN repeater into the drive side console.

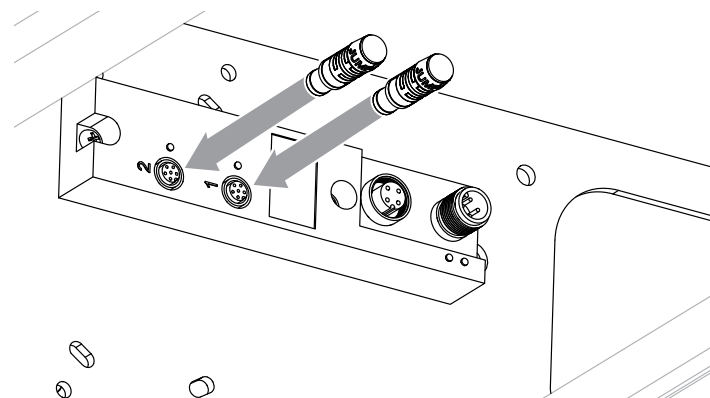


5/16"

#2



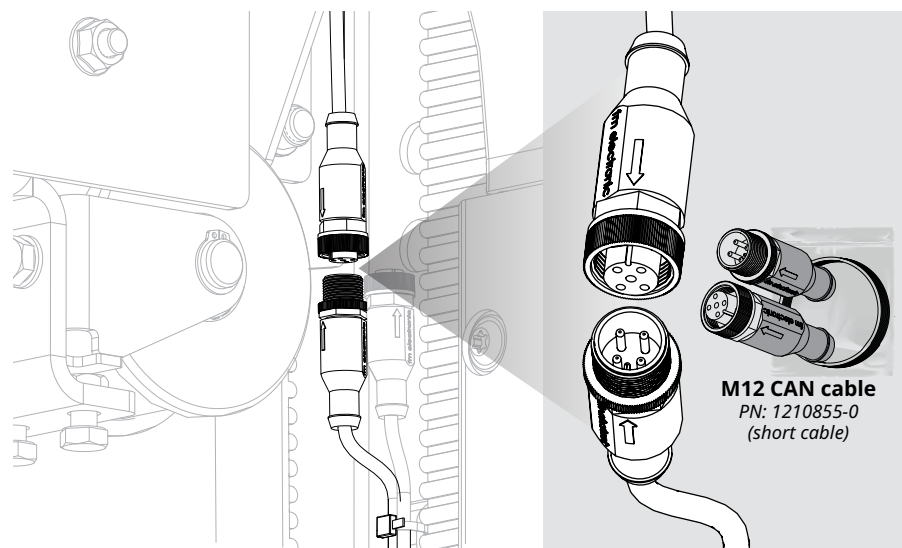
4 Plug the jumpers into **port 1** and **port 2**.



5 Get the short 1210855-0X M12 cable. Inside the **drive side console**, connect the female M12 connector for the cable to the male M12 connector for the cable running up the side column.

IMPORTANT

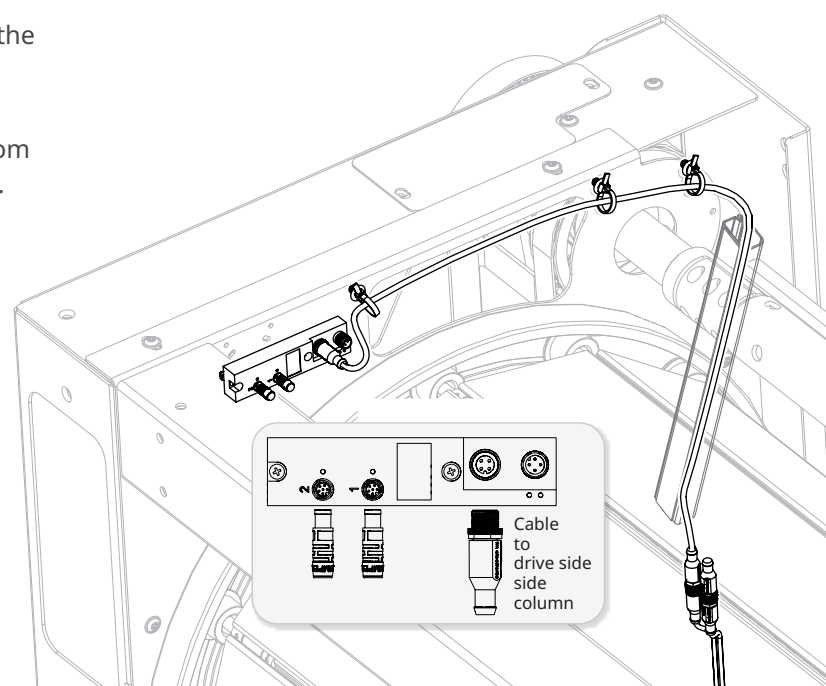
Line up the embossed arrows on the connectors to align the guide notch and contacts correctly. The connectors will only fully connect if they are aligned correctly.



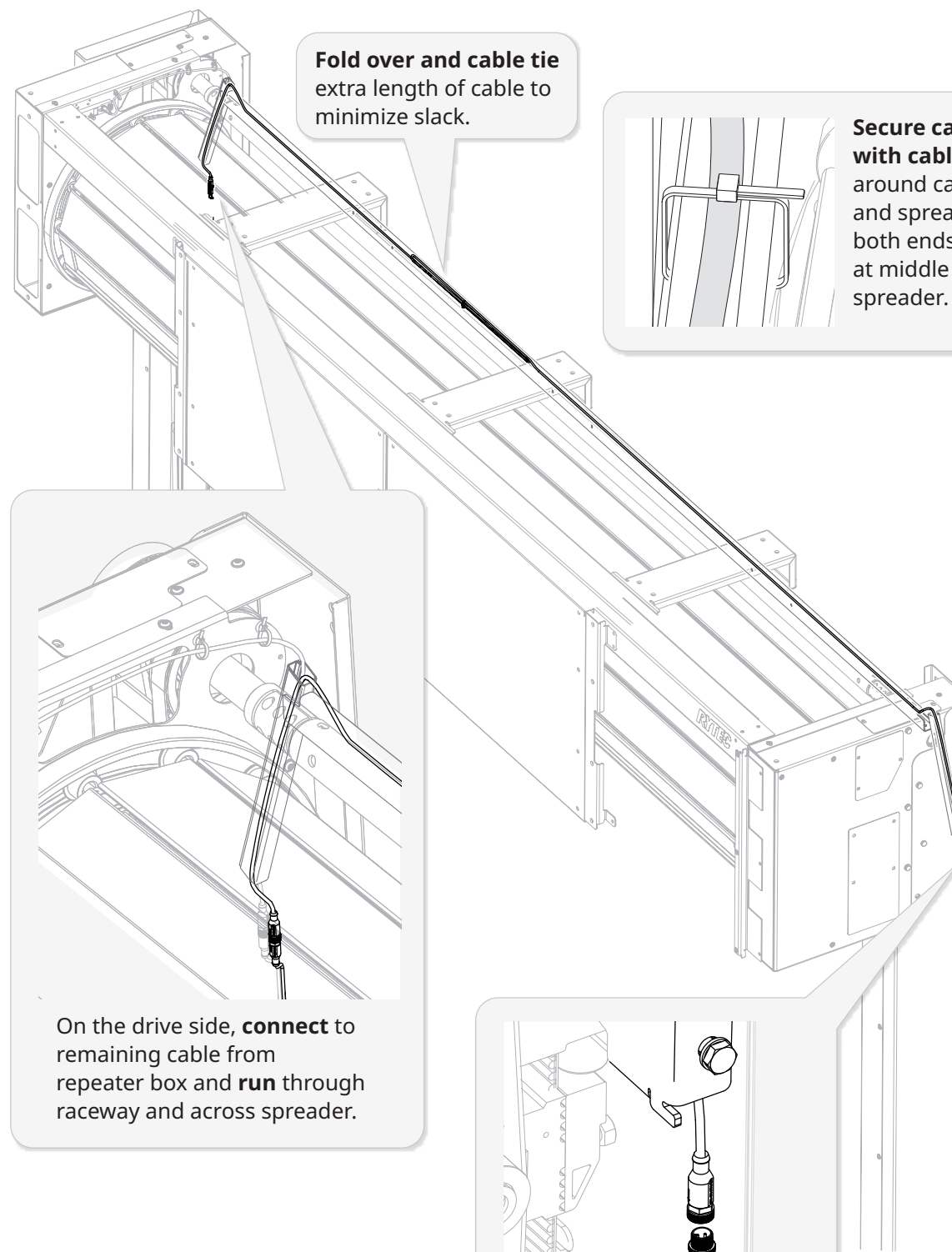
6 Connect the male M12 connector for the short cable to the CAN repeater in the head assembly

Run the cable through the raceway from the side column to the head assembly.

Use existing **cable ties** or place new cable ties to keep the cable close to the side of the console.



7 Get the longer 1210855-0X M12 cable. This cable connects the CAN bus cabling **across the rear spreader**.

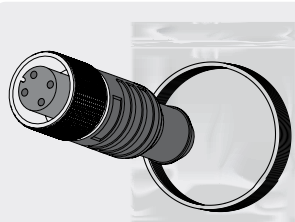
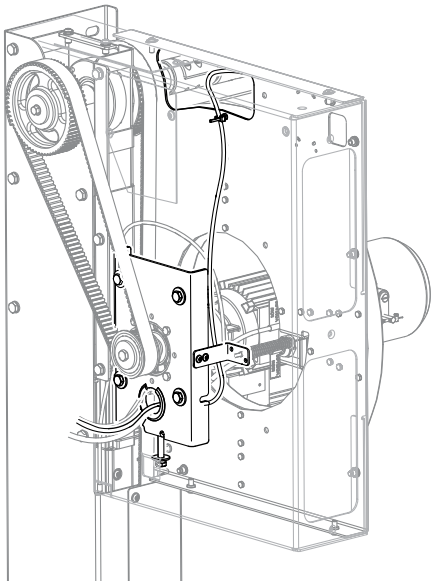


8

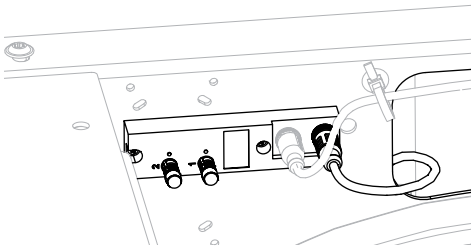
Get the flying lead cable to the controller.
Plug the cable into the CAN port in the repeater.
Run the cable through the access port, **tie** it against the side of the console, then run it **inside the motor mounting plate** and out the **edge protector** with the other cables.



Cable ties



M12 CAN flying lead
 Cable to controller
 PN: 1210856-0



9

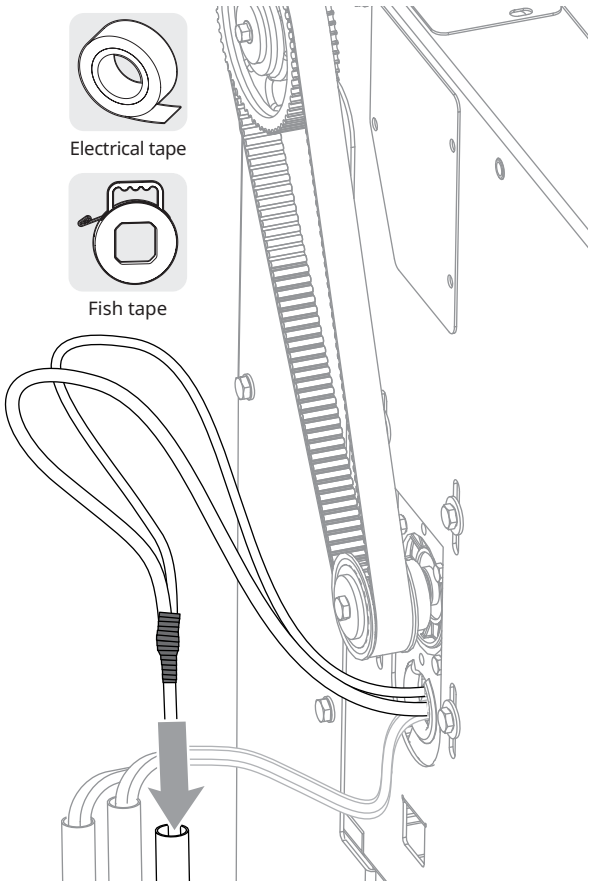
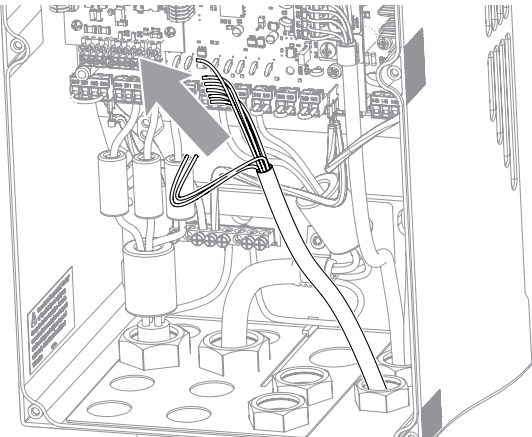
Tape the flying lead cable and proximity sensor cable securely to the X-10 cable.
Use the X-10 cable to fish the other two cables through the conduit and into the controller.
If necessary, loosen the conduit at curve points or connections so that the cables move freely.
If necessary, use a fish tape instead of the X-10 cable.
Discard the X-10 cable when done.



Electrical tape



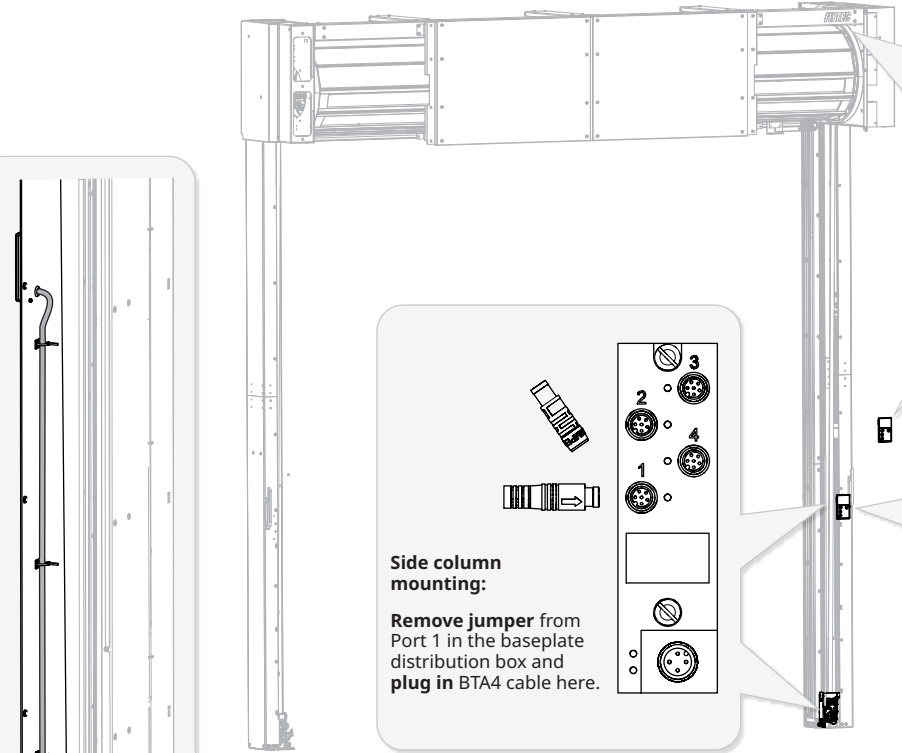
Fish tape



OPTIONAL: connect the BTA4 user terminal to the CAN bus system

1

Connect the BTA4 to the CAN bus system.



Side column mounting:

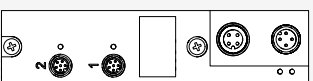
Remove jumper from Port 1 in the baseplate distribution box and **plug in** BTA4 cable here.

Side column mounting:

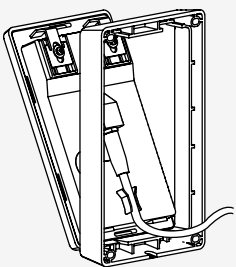
Place anchors 6" below BTA4 access hole, 6" above CAN bracket, and half-way in between.

Wipe surface with supplied alcohol wipes before applying anchors.

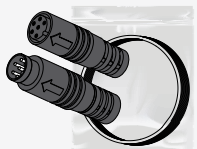
Route cable through anchors and upper notch in bracket.



Remote mounting:
Remove jumper from Port 1 in the head assembly repeater box and **plug in** BTA4 cable here.



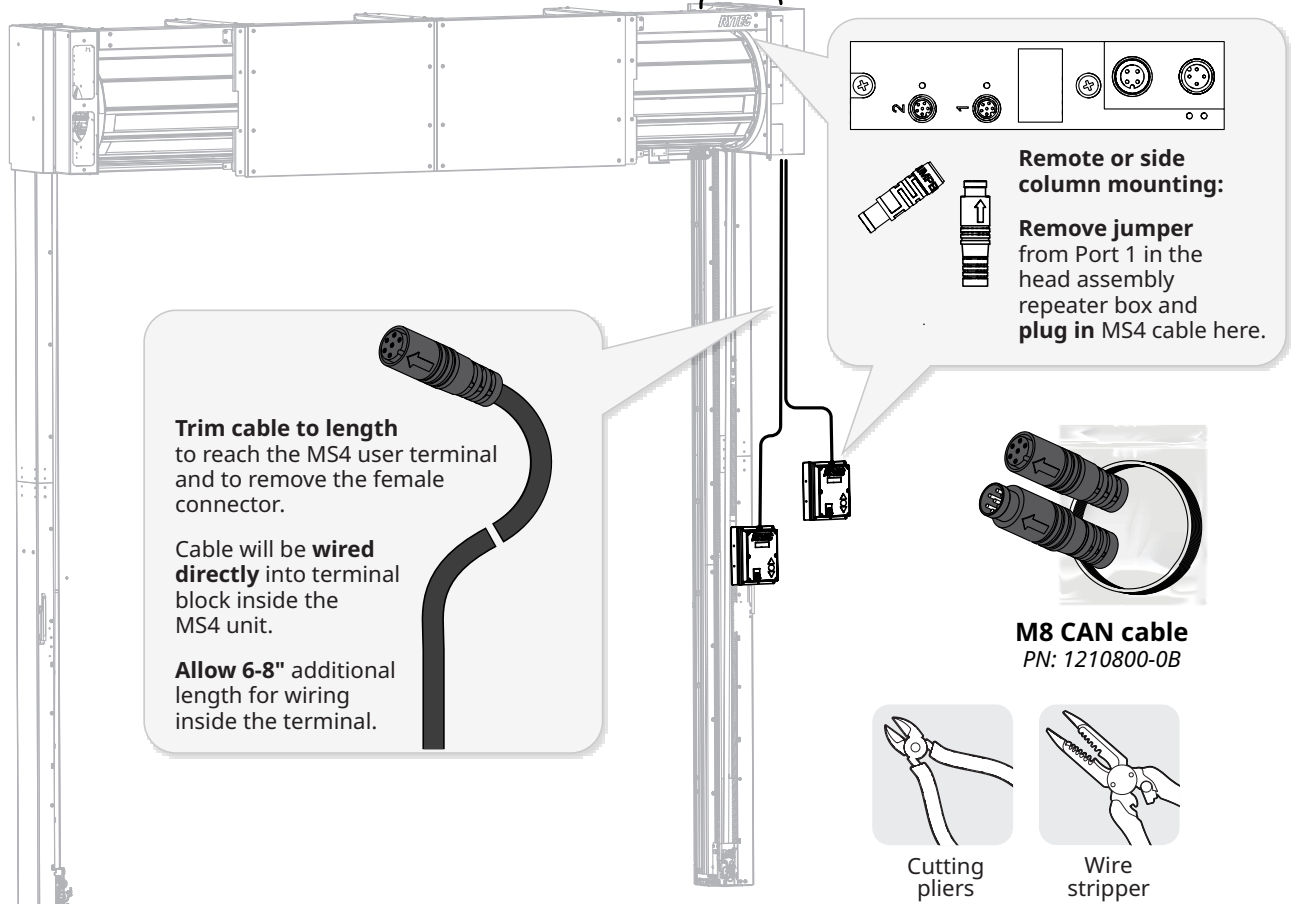
Plug in cable, then BTA4 terminal snaps into frame.



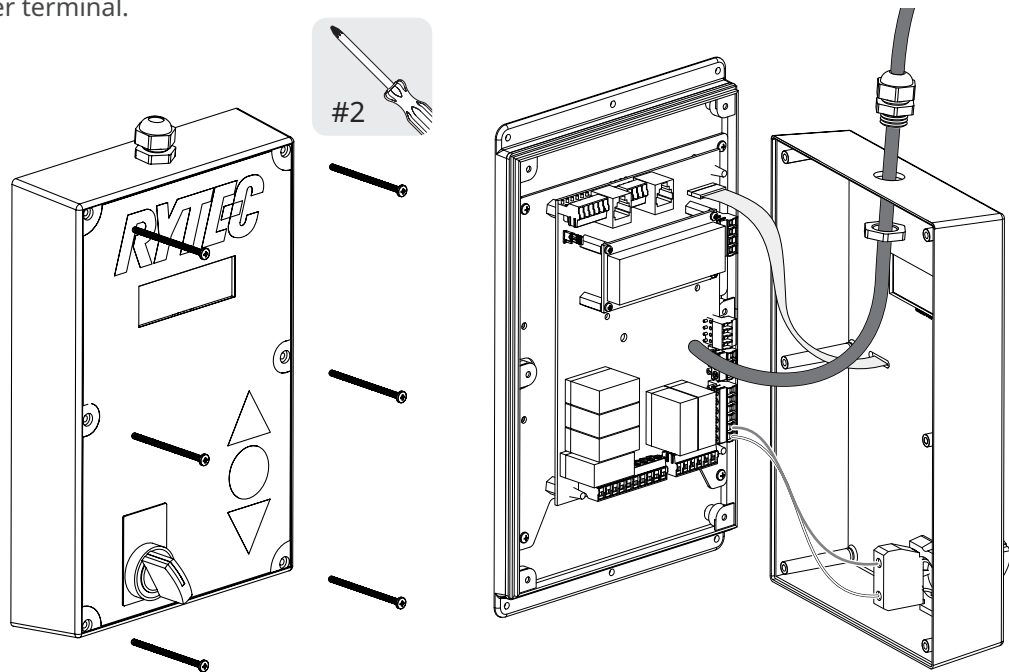
M8 CAN cable
 PN: 1210800-0B
 short for side column mounting
 or long for remote mounting

OPTIONAL: connect the MS4 user terminal to the CAN bus system

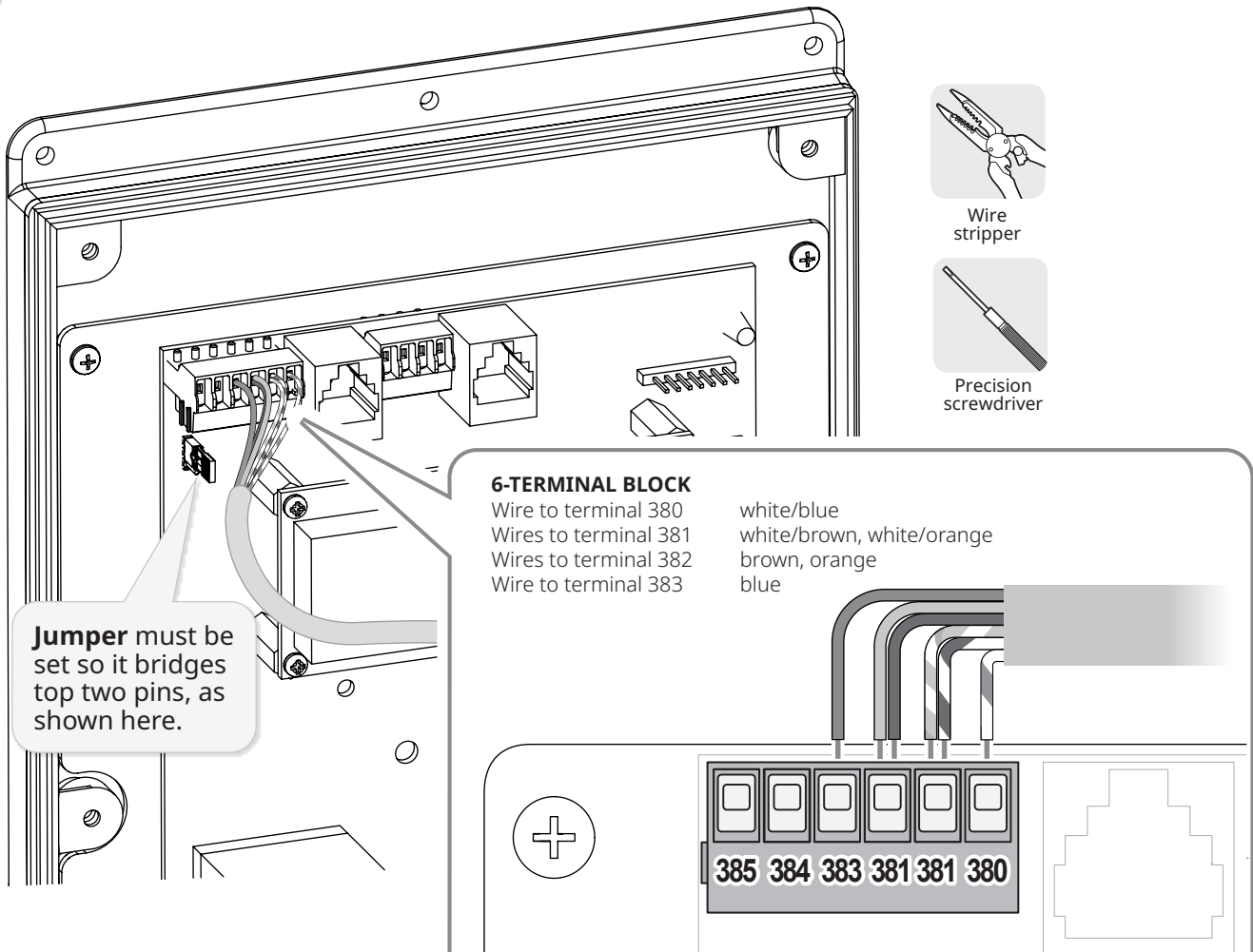
1 Connect the M8 flying lead cable to the head assembly repeater box and **route** it to the MS4 user terminal.



2 Loosen the six screws and **remove** the cover plate. Loosen the cord grip and **thread** the M8 flying lead into the user terminal.



3 Trim jacket on M8 flying lead to expose wires, and **connect** wires to terminals 380-383.

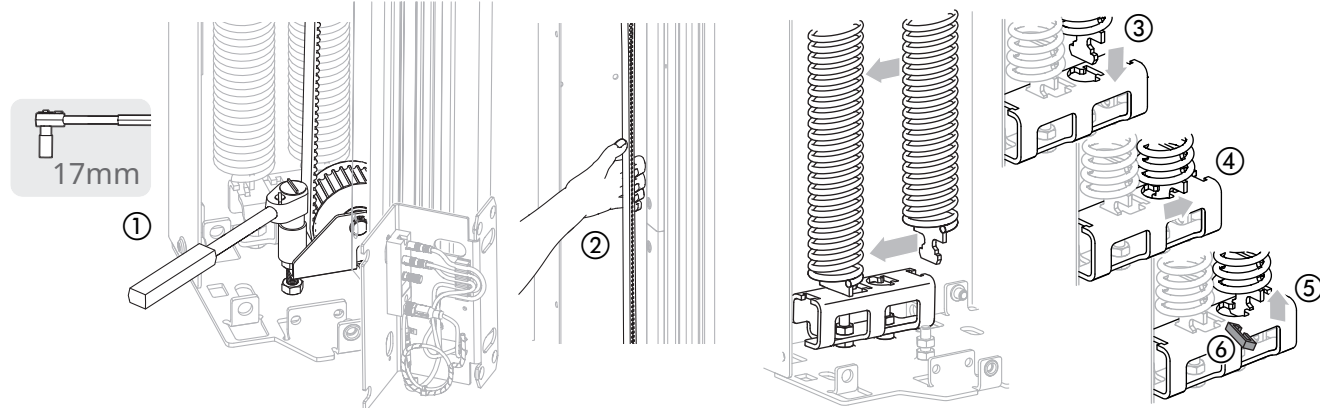


4 Tighten the cord grip, **replace** the cover and **reinstall** the six screws.

How to finish the installation

1 **Reset** the tension on the secondary drive belt and, if necessary, **reinstall** the spring.

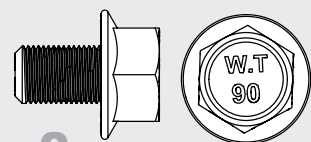
- 1: Tighten the top front nut to increase the tension a.
- 2: Press the front and rear legs of the belt together to test tension. Adjust the height of the top nut as needed until it requires considerable effort to manually bring the two legs of the belt together b.
- 3: **Push down** on the bottom of the spring, **slide** the spring tab into the wide slot ③ and through the narrow slot ④, then **push up** to set it into the retaining slot ⑤. **If door has tab collars ⑥**, reinstall.



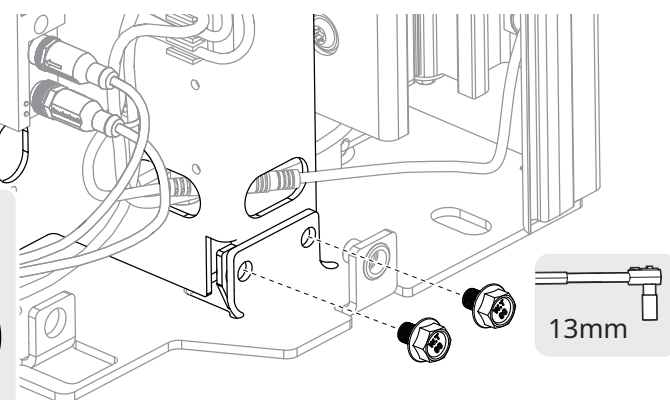
2 **Secure** CAN brackets in place

FROM KIT

Hardware shown actual size



2 per bracket



3

Reinstall the side column covers.

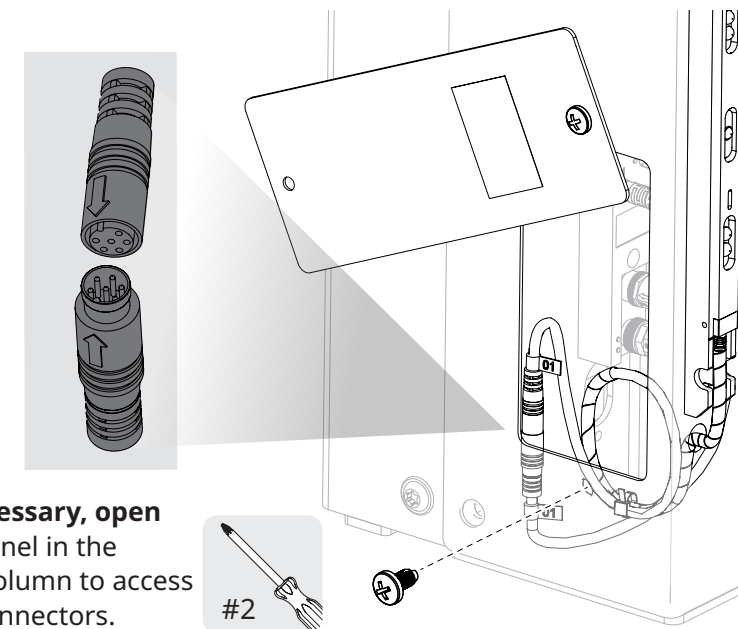
INSIDER'S TIP

- **Use one screw** each to hold them in place; it may be necessary to open them to make adjustments during testing.
- **Do not secure them fully** until all testing is complete.

Reconnect the two cables labeled "01".

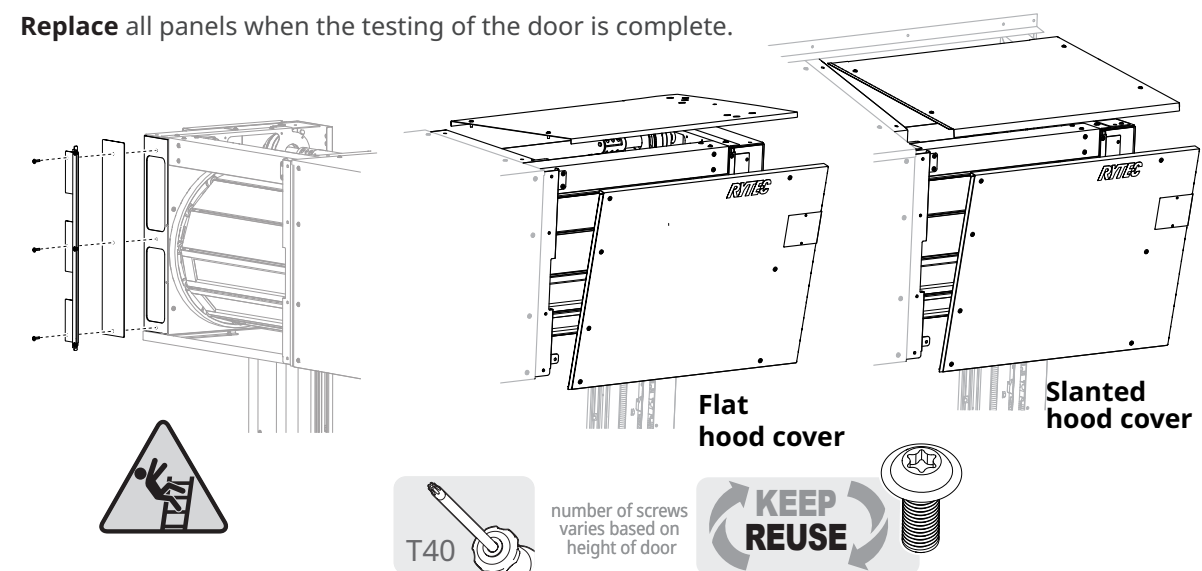
- **Line up** the embossed arrows on the connectors to align the guide notch and contacts correctly.
- **The connectors** will only fully connect if they are aligned correctly.

If necessary, open the panel in the side column to access the connectors.



4

Replace all panels when the testing of the door is complete.



How to wire the CAN bus and proximity sensor cables to the controller



⚠ WARNING

All electrical work must meet all applicable local, state and national codes. It is recommended that all electrical work be done by a certified electrician. Failure to wire the door correctly could result in shock, burns or death to the people who install, use or service the door.

Tools you will need

Precision screwdriver

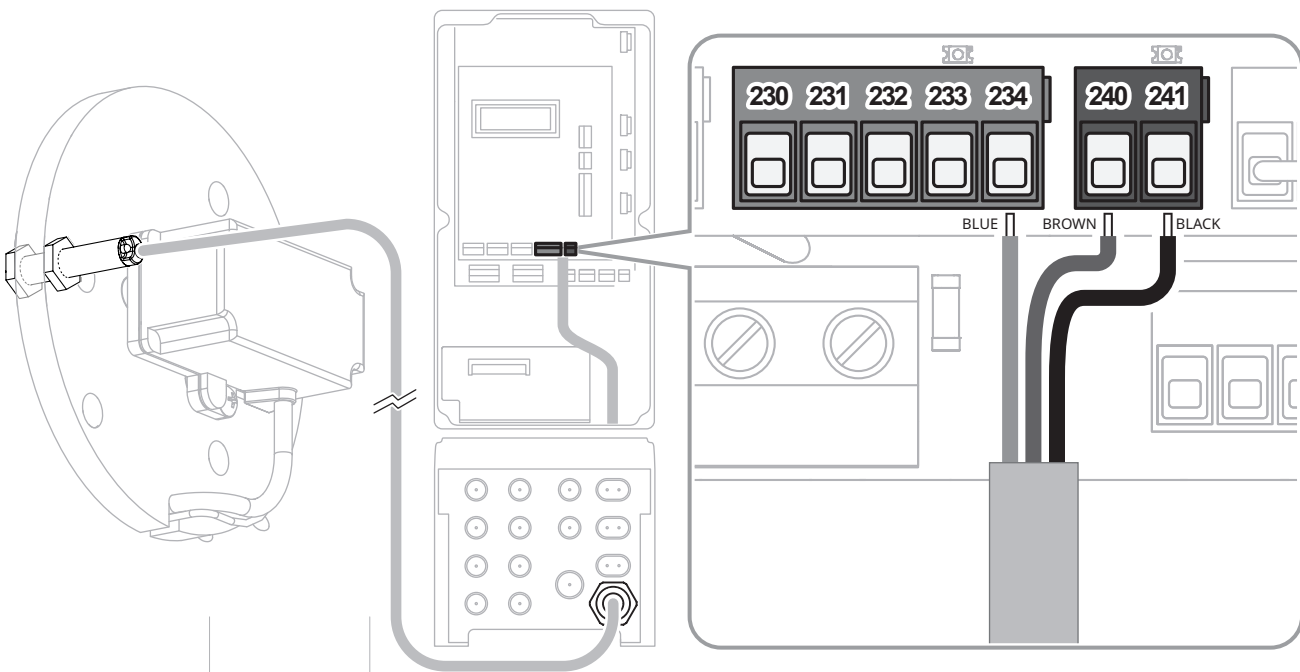
Wire tool

Cutting pliers

Utility knife

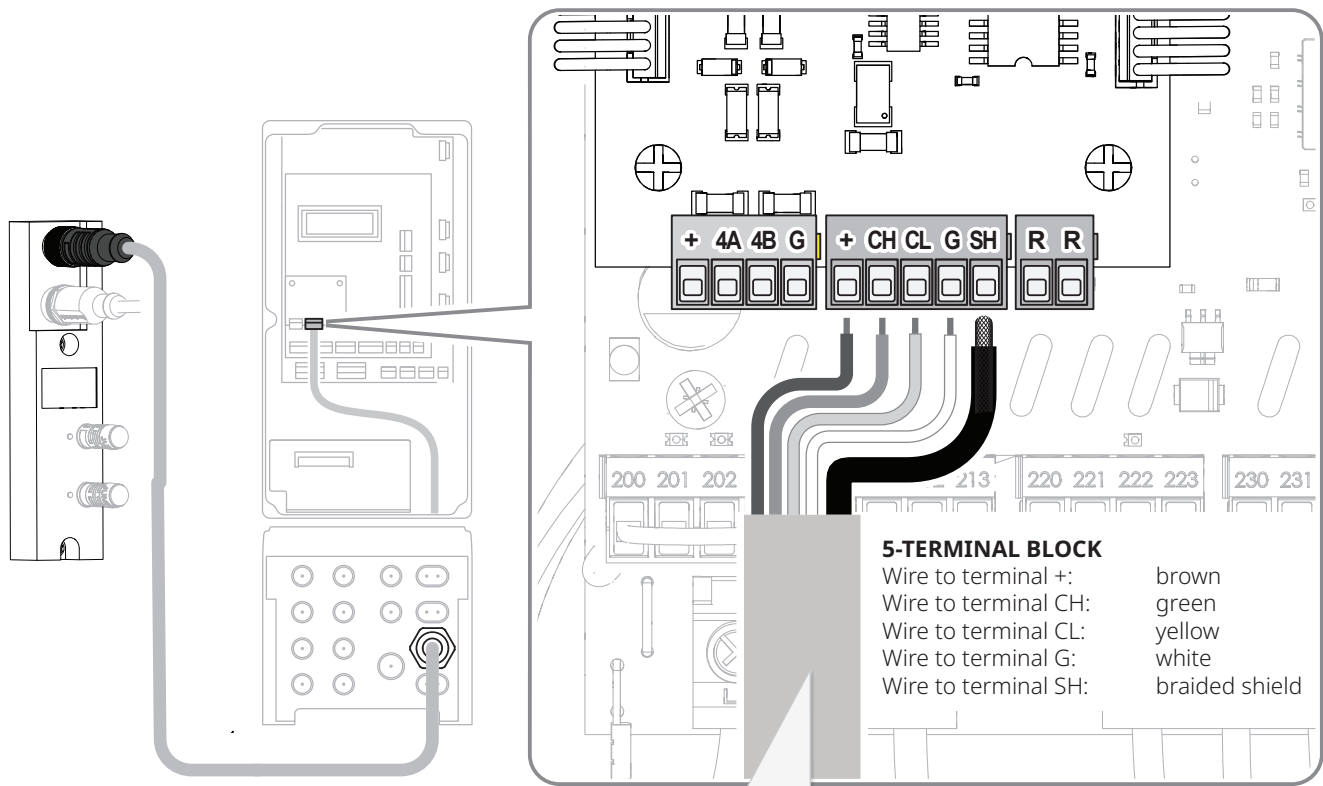
- 1 **Connect** the wires from the proximity sensor.
Shielding: unshielded

24 AWG

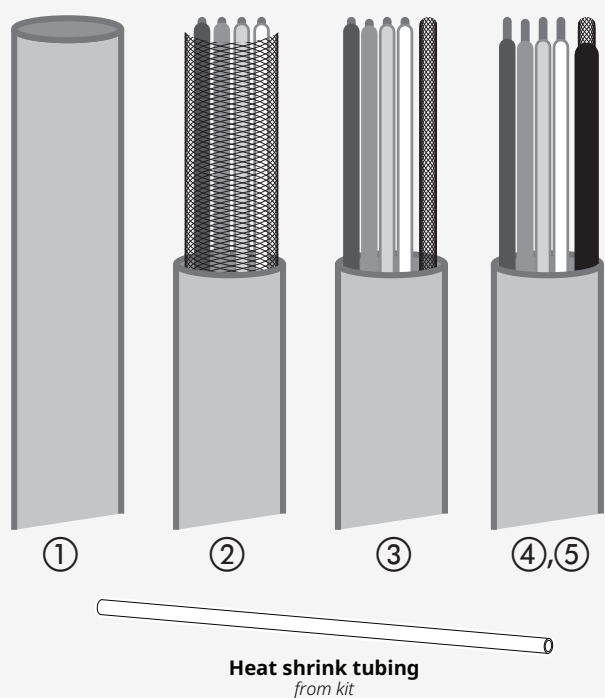


- 2 **Connect** the CAN bus wiring.
Shielding: wire mesh

20 AWG



5-TERMINAL BLOCK
Wire to terminal +: brown
Wire to terminal CH: green
Wire to terminal CL: yellow
Wire to terminal G: white
Wire to terminal SH: braided shield



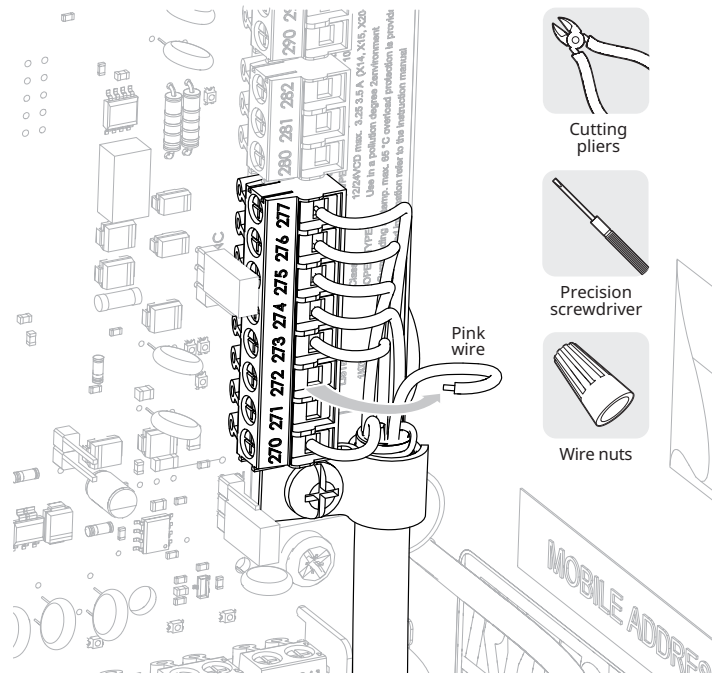
- The **shielding** (braided wire mesh) is used as a fifth "wire" and plugs into terminal SH.
- To ensure a tight contact:**
- 1 **Trim** CAN bus cable so it reaches com board, plus six inches (6") additional length.
 - 2 **Trim** jacket to expose wire mesh shielding.
 - 3 **Twist** shielding into fifth wire to terminal block.
 - 4 **Use** heat shrink tubing from kit to insulate the shielding so only one quarter inch (1/4") is exposed.
 - 5 **Trim** other wires to expose one quarter inch (1/4") of clean copper.
- IMPORTANT** DO NOT cut through sheilding.
- IMPORTANT** Make sure shielding is twisted tight enough to fit into terminal.

- Disable the reversing edge.**

Remove the pink wire from terminal 272

Trim the pink wire

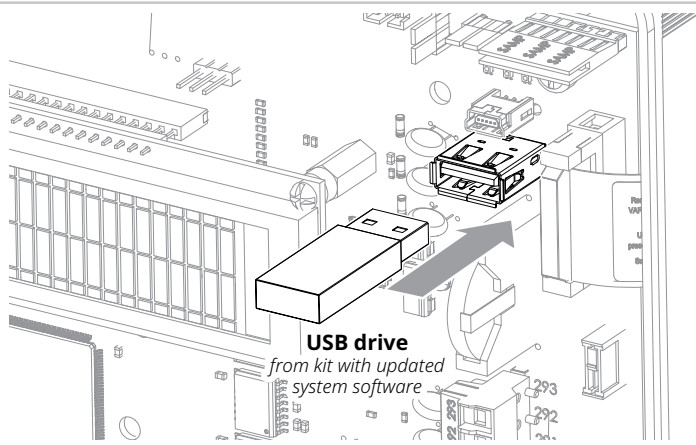
Terminate the pink wire with at a wire nut.



- Get** the USB drive with the updated system software from the kit.

Plug in the drive to the USB port in the controller. If there is a drive already in place, remove it.

Close and secure the front cover of the control box.

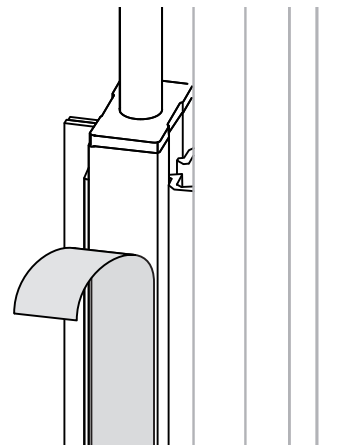


5 IMPORTANT

Make sure the protective film has been removed from ALL light curtains on both sides of the door before turning on power to the door.



Inform the door owner that Rain-X® 620036 Plastic Treatment applied to the light curtains reduces static and helps keep them clear of dirt and dust. Available at most hardware stores.



- Restore** power to the door.

How to update the system software, sync the SmartSurround™ system to the controller and set limits

First: set the controller to Parameter mode and access Service level parameters


Do This	Result
<p>1 Turn on power to controller</p> <p>The door starts in run mode.</p>	<p>Spiral [xxx] Cycles</p>
<p>2 until the parameter screen displays</p> <p>You are in Parameter mode. Go to parameter 999.</p>	<p>P: Password 0 999= [xxx] Cyc</p>
<p>3 2X to reach parameter P:999</p> <p>The Password screen displays.</p>	<p>P: Password 0 999= 0000 #</p>
<p>4 1X to move cursor to the right (edit value)</p> <p>You can now change the value of parameter P:999.</p>	<p>P: Password 0 999= 0000v#</p>
<p>5 16X to set value to hexadecimal 10</p> <p>Set the value to 10 (Service level password).</p>	<p>P: Password 0 999= 0010v#</p>
<p>6 until question mark changes to checkmark (value saved)</p> <p>The Service level password is saved.</p>	<p>P: Password 5 999= 0010v#</p>
<p>7 1X to move cursor to left (parameters)</p> <p>You can now go to parameter P:989 to update the system software.</p>	<p>P: Password 5 999= 0010 #</p>

Next: update the system software


Do This


Result

1




until you reach parameter P:989







2




1X to go to the value side







NOTE: the cursor may not respond immediately when you press the RESET button.
It can take up to several minutes for the USB drive to be recognized by the controller.

3



until the software version displays






The software update file name scrolls
Example: TST FUR3-RY V02-03.XX.bin


Do This


Result

4

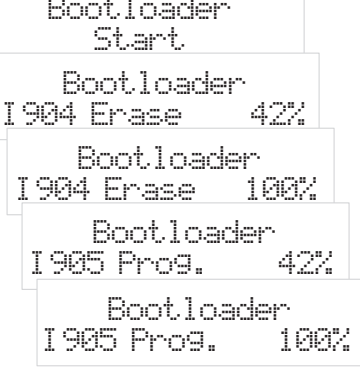


until download begins

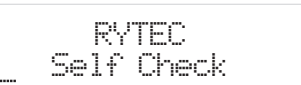





blinking dot indicates software is downloading, then



when update is complete, door returns to run mode



then controller displays an F:964 error you may also see an F:910 hardware error or an SPI:915 error for a few seconds before the F:964 error displays


THIS IS NORMAL


Next: go back parameter mode and re-enter the passcode for Service level access


Do This

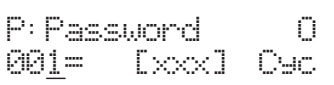
Result

1



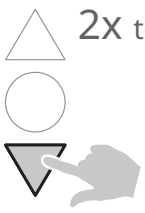
until the parameter screen displays







You are in Parameter mode.

2





2X to reach parameter P:999







1X to move cursor to the right (edit value)







16X to set value to hexadecimal 10





until question mark changes to checkmark (value saved)






The controller automatically moves to parameter P:990.

Next: reset defaults and parameter for the new system software


Do This


Result

1





1X to move cursor to the right (edit value)







1X to set the value to 1



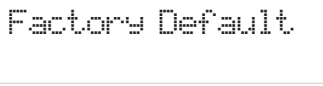


until question mark changes to checkmark (value saved)







The controller resets the factory defaults.



when reset is complete, the controller goes to parameter P:991



1X to move cursor to the right (edit value)





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Do This

Result

6





until you set the value back to the original value

P: Defaults

991=

44?#

7



until question mark changes to checkmark (value saved)



P: Defaults

991=

44✓#

This is the value to reset the system defaults.

8



The controller resets the factory defaults.

Factory Default

when reset is complete, the controller goes to parameter P:000 or P:001

P: Door Cycles



000#

[xxx] Cyc

The next steps vary based on the configuration of the door:

- Most doors have **additional custom parameter settings** that must be reset.
- One or more files to update these parameters** are included on the disk. You do this at parameter P:944.
- They are numbered 0001, 0002, etc. **Each file must be downloaded separately.**

9





until you reach parameter P:944

P: Para.<- USB

944=

0 #

10



1X to move cursor to the right (edit value)

P: Para.<- USB



944=

0✓#

Do This

Result

11



3X to go to the first file



P: Para.<- USB

944=

0001?#

- You pass by values 1 and 2 before you reach the first file. **These values are not involved in this process.**
- If there are no parameter files**, you won't be able to scroll pass the value of 2. Go to step 19.

12



until blinking dot displays

P: Para.<- USB

944=.

S

blinking dot indicates software is downloading, then



P: Para.<- USB

944=

0001✓#

checkmark indicates download is complete

13



1X to go to the next file



P: Para.<- USB

944=

0002?#

- If there are more files, **repeat the process until all files have been downloaded.**
- If there are no more parameter files**, the download is complete. Exit the parameter.

14



1X to move cursor to left (parameters)

P: Para.<- USB

944=

0001 #



Next: activate the SmartSurround™ system synchronization

IMPORTANT If you assign the wrong light curtains to parameters L:201, L:401 or L:501, return to parameter A:060, set the value to 0, save that value, then start again at Step 2.

Do This

Result

1





until you reach parameter A:060

A: AffD3

060=

0 #

2





1X to move cursor to the right (edit value)

A: AffD3

060=

0✓#

3



4X to set the value to 4



A: AffD3

060=

4?#

- This value activates the SmartSurround® and Advanced³ light curtains

4



to save the value

A: AffD3

060=

4✓#

the controller resets the defaults

Factory Default



then returns to parameter A:060

A: AffD3

060=

4✓#

5



1X to move cursor to left (parameters)

L: SA1 Slot2

201=

- #

the controller automatically goes to parameter L:201

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Next: assign the two Advanced³ light curtains to parameter L:201

NOTE: the values you will see at parameters L:201, L:401 and L:501 will be the IDs for the light curtains included in the kit, and will not match the values shown here.

Do This

Result

1

1X to show the first set of light curtains

L: SAI Slot2

201= 0932-9156?

2

Check the Advanced³ light curtains mounted in the door tracks of both side columns.

If all four LEDs are flashing (transmitter: green and yellow, receiver: blue and red), the door track light curtains are synced correctly.

If other light curtains light up, go to the next value.

Drive side

Non-drive side

Do This

Result

3

If the current selection does **NOT** light the LEDs:

1X to show the next set of light curtains

L: SAI Slot2

201= 0948-9147?

Re-check the light curtains.

4

If the current selection **DOES** light the LEDs:

until the setting is saved

L: SAI Slot2

201= 0948-9147✓

5

If the current selection DOES light the LEDs:

until the setting is saved

L: SAI Slot2

201= 0948-9147✓

6

The controller moves to parameter L:401.

L: SAI Slot4

401= - #

Next: assign the two inside SmartSurround™ light curtains to parameter L:401

On doors that are mounted to **interior walls**, the **cover mounted SmartSurrounds™** are considered to be the inside light curtains and are assigned to parameter L:401.

On doors that are mounted to **exterior walls**, the **jamb mounted SmartSurrounds™** are considered to be the inside light curtains and are assigned to parameter L:401.

Do This

Result

1

1X to show the first set of light curtains

L: SAI Slot4

401= 0932-9156?

2

Check the SmartSurround™ inside light curtains on both side columns.

If all LEDs are flashing, the cover mounted light curtains are synced correctly.

If other light curtains light up, go to the next value.

Drive side

Non-drive side

Do This

Result

3

If the current selection does **NOT** light the LEDs:

1X to show the next set of light curtains

L: SAI Slot4

401= 0992-9187?

Re-check the light curtains.

4

If the current selection **DOES** light the LEDs:

until the setting is saved

L: SAI Slot4

401= 0992-9187✓

5

The controller moves to parameter L:501.

L: SAI Slot5

501= - #

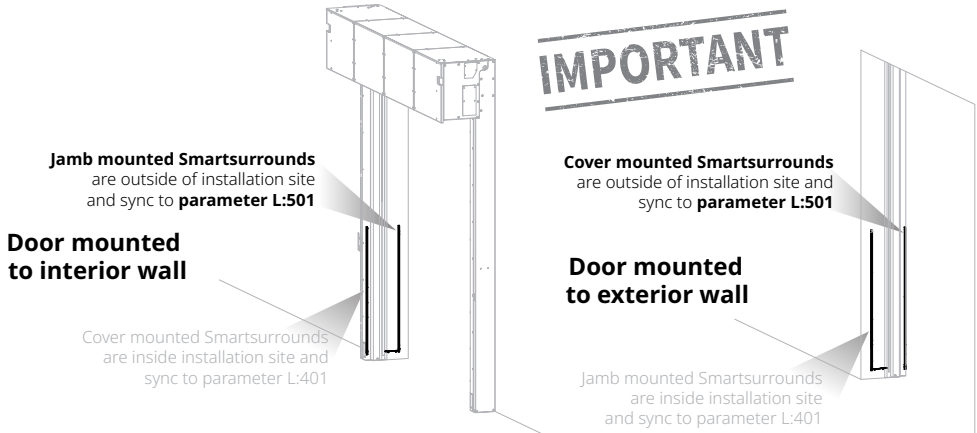
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Next: assign the two outside SmartSurround™ light curtains to parameter L:501

On doors that are mounted to **interior walls**, the **jamb mounted SmartSurrounds™** are considered to be the outside light curtains and are assigned to parameter L:501.

On doors that are mounted to **exterior walls**, the **cover mounted SmartSurrounds™** are considered to be the outside light curtains and are assigned to parameter L:501.



Do This

Result

1

1X to show the first set of light curtains

L: SAI Slot5
501= 0932-9156?

2

Check the SmartSurround™ outside light curtains on both side columns.

- If all LEDs are flashing, the cover mounted light curtains are synced correctly.
- If other light curtains light up, go to the next value.

Do This

Result

3

If the current selection does **NOT** light the LEDs:

1X to show the next set of light curtains

L: SAI Slot5
501= 0923-9126?

Re-check the light curtains.

4

If the current selection **DOES** light the LEDs:

until the setting is saved

L: SAI Slot5
501= 0923-9126✓

5

The controller ends at parameter P:000.

P: Door Cycles S
000# 0000 Cyc

To finish: set limits

Do This

Result

1

until the “Synchron.” screen displays

! Synchron. !
_0 Press Reset

Scrolling message:
Hold Reset button if position OK

2

1X to start sequence

➡ To Open Pos.
_0 Hold Reset

Scrolling message:
Hold Reset button if position OK

3

Set the open position.

until open height is correct

➡ To Open Pos.
_0 Hold Reset

The bottom of the reversing edge should line up with the lintel (top of the door opening).

Do This

Result

4

until “Open Limit Set” screen displays

Open Limit Set
_0

when quality check is complete, you see these screens:

LGx Qual. Check
_0

! Synchron. !
_0 Press Close

Scrolling message:
Press Close button to begin

5

1X to start. The door panel closes.

Search Edge
-1330_Auto Close

the door panel stops when it reaches the bottom of the light curtain, then you see:

!Auto Calibrate!
Press Open butto

6

1X to start auto-calibration

Door Is Opening
Act11 = 45Sec
Door Is Closing
Act11 = 45Sec
Spiral
[xxx] Cycles

- The door opens and closes automatically **up to 12 times**.
- The controller automatically sets the close limit position while the door calibrates.
- When calibration is complete, the door switches to Run mode.


IMPORTANT The door may not open or close **completely** during automatic calibration. This is normal.

When calibration is complete, the door will open and close correctly.

- You can manually adjust the close limit after calibration is complete by changing parameter P:275. See next page


If necessary, manually adjust the close limit

Do This


1 

Result


until the parameter screen displays




You are in Parameter mode.

2 

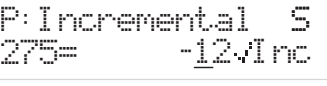
until parameter displays



The default value at P:275 is -12.

3 


1X to move cursor to the right (edit value)



You can now change the value.


- **The UP arrow** increases the value and raises the close limit position for the door.
- **The Down arrow** decreases the value and lowers the close limit for the door.
- Each press of an arrow changes the limit by a fraction of an inch, which gives you precise control of the value.

Do This


4 

Result

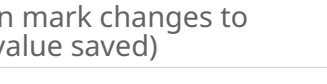
until new value displays




IMPORTANT Do not change the value by more than 5 increments. Then test the door.

5 

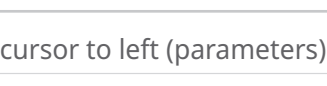
until question mark changes to checkmark (value saved)




The new value is saved.

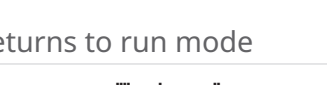
6 

1X to move cursor to left (parameters)



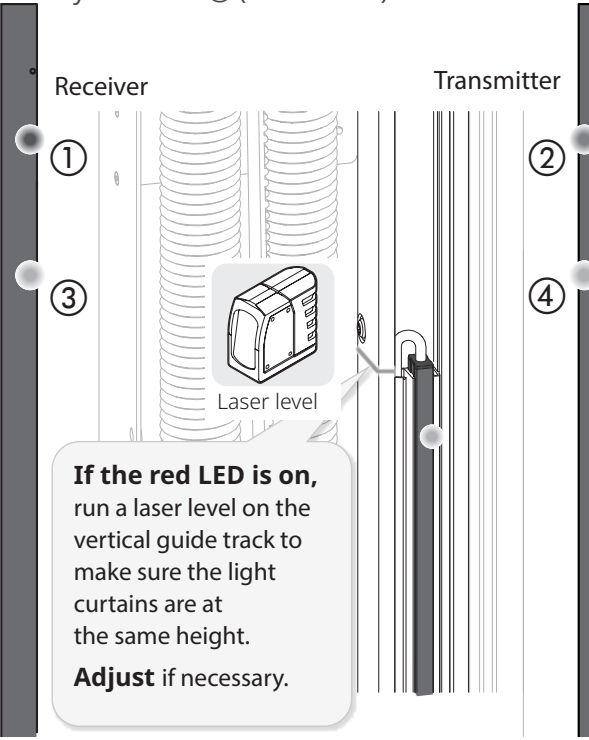
7 

until door returns to run mode



How to test the door

1 **Make sure** the blue LED ① (receiver) and green LED ② (transmitter) on the Advanced³ light curtains are flashing once every two second, and that the red LED ③ (receiver) and yellow LED ④ (transmitter) are **OFF**.



If the red LED is on, run a laser level on the vertical guide track to make sure the light curtains are at the same height. **Adjust** if necessary.

If the red light and yellow lights are on, or if you see a different combination of lights, call Rytec technical support at **800-628-1909**.

2 **Make sure** the SmartSurround™ operates correctly as the door opens and closes:

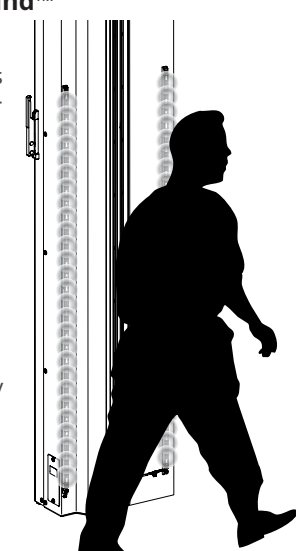
- **An upward cascade of red lights** while the door opens.
- **A sequence of blinking yellow lights** matching the delay to close timer before the door starts to close.
- **A downward cascade of red lights** while the door closes.

5 Any time a CAN bus cable is disconnected while the power is on, **you MUST do a soft reboot of the controller** to re-sync the CAN bus system when all cables have been reconnected.

- **Press and hold** all three buttons until the display goes blank.
- **Release the buttons.** You see Self-Check or the system software versions number.

3 **Test the SmartSurround™ system:**

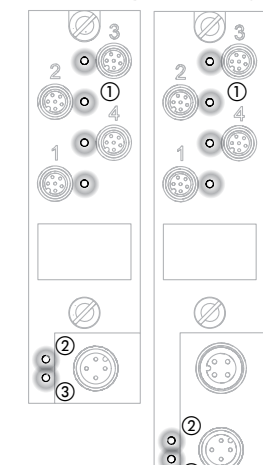
- **Make sure** the light curtains flash rapidly whenever either of the planes are broken.
- **If one plane is broken but the other is not,** the light curtains should reverse/hold the door, then the door should count down and descend at creep speed.
- **If all planes are broken,** the light curtains should reverse/hold the door, then the door should count down and descend at normal speed.



4 **LEDs on the CAN repeaters and distributor indicate if the system is working correctly**

- ① **LEDs next to the ports (blue)** should be ON steadily (no flashing).
- ② **The CAN status LED (yellow)** should be flashing one to four times per second.
- ③ **The power status LED (green)** should be ON steadily (no flashing).

Contact technical support if you do not see this.



OPTIONAL: How to enable the reversing edge on Spiral doors

The SmartSurround™ system, in combination with the Advanced³ light curtains located within the door line, meets the requirements for entrapment protection. SmartSurround™ offers a contactless method of object recognition that is an improvement over the reversing edge system; this makes the reversing edge system redundant. The reversing edge system is disabled as part of the retrofit.

The reversing edge system can be reenabled if a full height sensing system is required.



- **This procedure requires Rytec Level access to change the parameters.** To get the passcode for Rytec Level access, you must lock the cycle count, then contact Rytec technical support for a passcode.
- **The passcode changes if the cycle count changes, so make sure** the door does not open or close until you have used the passcode and gained access.

First: Connect the pink wire to terminal 272 in the controller

⚠ WARNING

Set the fused disconnect to the OFF position and perform a lockout/tagout of the high-voltage disconnect before opening the control box. Do not set the disconnect switch to the ON position until told to do so by these instructions.

Failure to comply could result in shock, burns or death.

1 Open the controller, **remove** the wire nut from the pink wire, and **connect** it to terminal 272.

2 **Restore** power to the door.

Next: set the controller to Parameter mode and lock the cycle count

Do This

1 Turn on power to controller
The door starts in run mode.

Result

Spiral
[xxx] Cycles

Do This

2 until the parameter screen displays
 if you don't start at parameter P:001
 1X to reach parameter P:001

Result

P: Door Cycles 0
000= 32321 Cyc

P: Password 0
001= 21073 Cyc

The cycle count at parameter P:001 is **from the last time it was locked**, so it may not match the current count for the door.

Do This

3 1X to move cursor to the right (edit value)

Result

P: Password 0
001= 21073 Cyc

Do This

4 until the cycle count updates and the check mark appears
 IMPORTANT

Result

P: Password 0
001= 32321 Cyc

Once the cycle count is locked, **make sure** the door does not open or close until you have received and entered the passcode.

Next: get and enter the passcode

1 Contact Rytec technical support by phone or e-mail:

- 800-628-1909
- support@rytectdoors.com


Be prepared to tell them the **cycle count** and the **reason you need** Rytec level access. Reference the **approval you have already submitted**.

2 The Rytec level passcode is a hexadecimal number. This means it uses the ten numeric characters (0-9), plus six letters (A-F), which represent the values from 10 through 15. It also means the passcode is a large number. For example a passcode of A6C3 equates to a value of 42,691.


Do This

Result

3



2X to reach parameter P:999



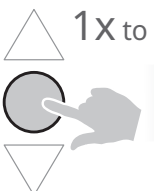
P: Password

999=


0000 #

0

4



1X to move cursor to the right (edit value)




P: Password

999=


0000v#

0

5



until you reach the value of the Rytec passcode



P: Password

999=


A6C3?#

0


Do This

Result

6



until question mark changes to checkmark (value saved)



P: Password


999=

A6C3v#


R

The “R” in the top right corner indicates you have Rytec level access

7



1X to move cursor to left (parameters)



P: Password

999=


A6C3 #

R


Do This

Result

6



until you reach parameter P:F07



P: FSx-Address

F07=

C3E64 #


S

- This is the **mobile unit address** that you recorded earlier.
- The software update restored the **ORIGINAL** address from when the door was purchased. This may or may not match the address for the **CURRENT** mobile unit.
- If the value displayed matches the value you recorded, go to step 11. Otherwise, change the value to the one you recorded using the following steps.


Do This

Result

11



until you reach parameter P:460



P: Rev Edge

460=


0 #

R


Do This

Result

12



1X to move cursor to the right (edit value)



P: Rev Edge

460=


0v#

R


Do This

Result

13



1X to change the value to 1



P: Rev Edge

460=


1?#

R


Do This

Result

14



until question mark changes to checkmark (value saved)



P: Rev Edge

460=


1v#

R


Do This

Result

15



1X to move cursor to left (parameters)



P: Rev Edge

460=

1 #

R

Do This

Result

16



until door returns to run mode



Spiral

[xxx] Cycles


Next: go to parameters P:F00, P:F07, and P:460 and set the values

NOTE: if the door has an **energy chain instead of a wireless system**, skip to step 11.


Do This

Result

1



until you reach parameter P:F00



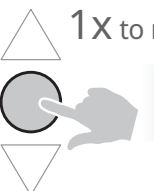
P: FSx-Activate

F00=


0 #

R

2



1X to move cursor to the right (edit value)




P: FSx-Activate

F00=


0v#

R

3



1X to change the value to 1



P: FSx-Activate

F00=


1?#

R


Do This

Result

4



until question mark changes to checkmark (value saved)




P: FSx-Activate

F00=


1v#

R

5



1X to move cursor to left (parameters)



P: FSx-Activate

F00=


1 #

R


Do This

Result

8



until you reset the value to the original value



P: FSx-Address

F07=

D4A72?#

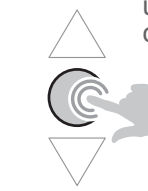
S

- The mobile address is a large number; for example, this value is 87,1026. So it will take a while to reach it.
- The speed of the change increases the longer you hold down the UP arrow.


Do This

Result

9



until question mark changes to checkmark (value saved)



P: FSx-Address

F07=


D4A72v#

S


Do This

Result

10



1X to move cursor to left (parameters)



P: FSx-Address

F07=

D4A72 #

S