

# FlexTec™T Installation Manual

## Rytec Installation Safety information

### The meaning of signal words

Summary



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.

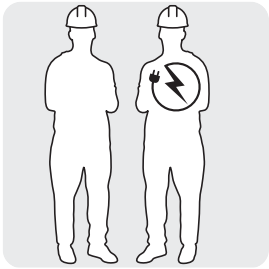
The safety alert symbol identifies a situation that can result in personal injury. The accompanying signal word indicates the likelihood and potential severity of the injury. The meaning of the signal words is as follows:

	<b>⚠ WARNING</b> Warning indicates a hazardous situation that, if not avoided, could result in death or serious injury.
	<b>⚠ CAUTION</b> Caution indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
<b>NOTICE</b> Notice is used to address practices not related to physical injury but which, if not followed, could result in damage to the door or other property.	

### Installation safety

- **Do not install 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 install the door and the control system.
  - The installation site comprises the physical area required to safely uncrate, stage and install the door.
  - Make sure that all personnel at the installation site have been informed of the date, time and location of the installation.
  - Make sure that there is no pedestrian or vehicular traffic within the installation site for the duration of the installation.
  - Make sure you have and use all required Personal Protective Equipment.
  - Make sure you have adequate personnel and equipment to safely perform all lifts.
  - Make sure that you have been informed of any hazardous conditions that exist within the installation site.
  - Make sure that the installation site is kept clear of obstructions and debris and that the floor is dry.
  - Make sure that you are aware of the location of all power lines, piping and HVAC systems within the installation site.
  - Make sure all accessories installed with the door are approved by the manufacturer.

### Requirements – Staffing



- Two installers
- A licensed electrician is recommended for making all electrical connections

### Electrician’s responsibilities

Refer to the Rytec System 4® Drive & Control Installation & Owner’s Manual for a complete list of the electrician’s responsibilities.

	<b>⚠ WARNING</b> <b>Electrical work must meet all applicable local, state and national codes.</b> Failure to wire the door correctly can cause shock, burns or death to the people who install, use or service the door. Failure to comply also voids the warranty for the door.
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### Requirements – Site Conditions

- Installers must have unrestricted access to the door opening at all times during the installation.
- Make sure there is no pedestrian or vehicular traffic within the installation site for the duration of the installation.

### Safety icons used in this manual



Shock hazard



Fall hazard



Crush hazard



Cut hazard

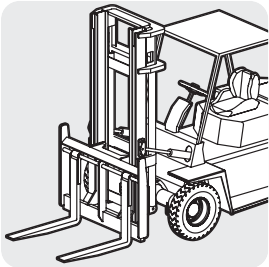


Forklift

### Requirements – Lifts

	<b>⚠ WARNING</b> <b>A forklift is mandatory</b> for the safe and proper installation of this door.
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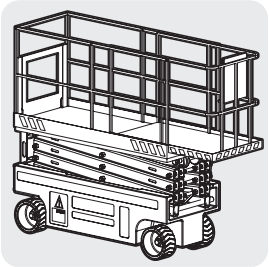
- **Forklift** that meets the following specifications:



- Minimum 4,000-pound lift capacity
- Minimum height ability: door height + 12"
- 48-inch wide fork
- Side shift capability

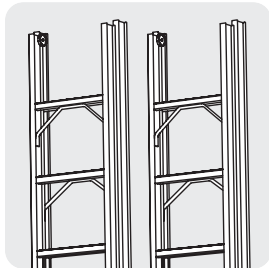
	<b>⚠ WARNING</b> <b>Follow all safety instructions</b> on all lifts and ladders used for this installation.
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- **Scissor lift** that meets the following specifications:



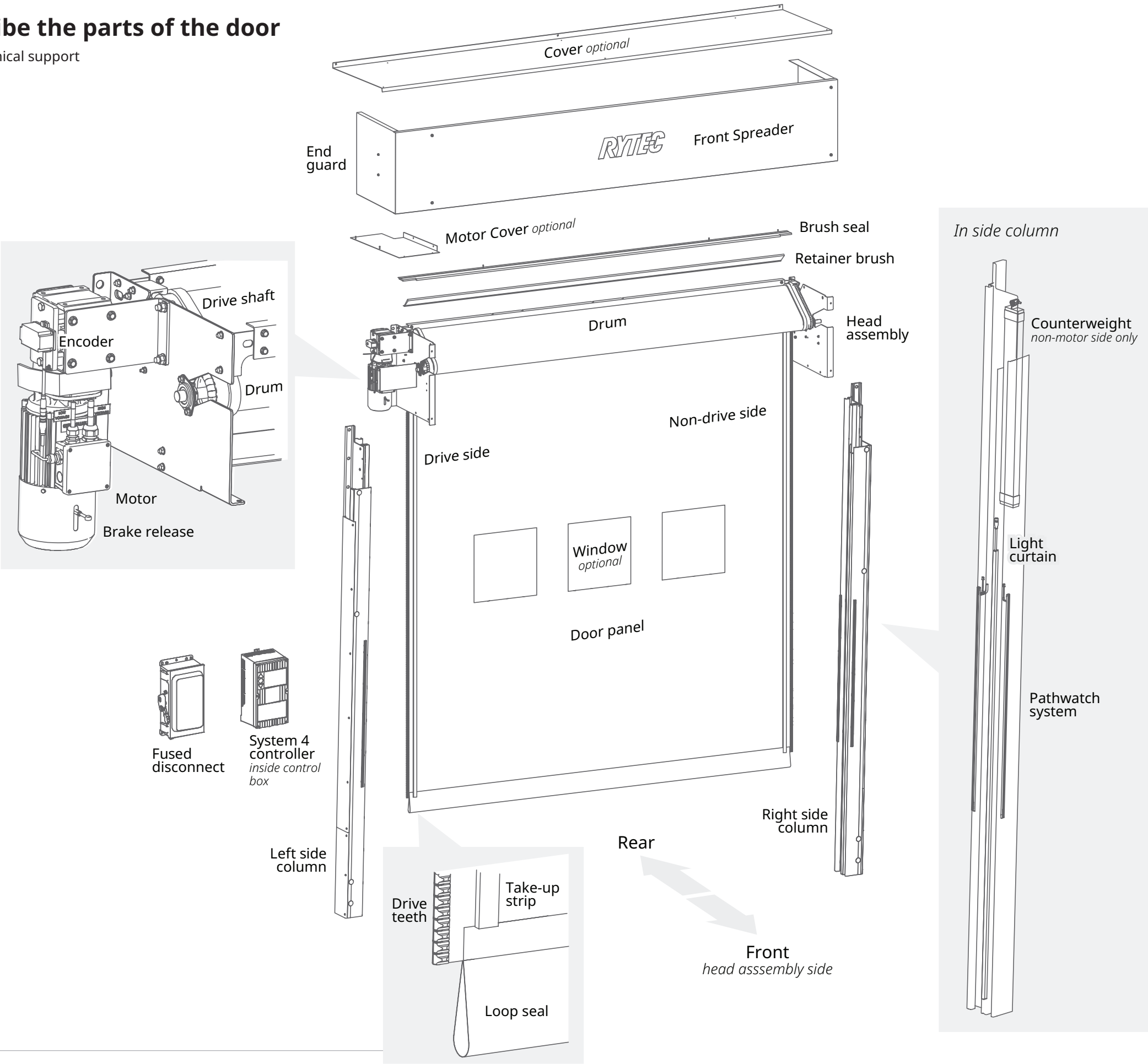
- Can hold both installers
- Minimum height ability: door height

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



Terms used by Rytec to describe the parts of the door

This illustration shows the terms used by Rytec technical support to refer to the major components of your door. Using these terms helps technical support provide assistance as quickly as possible.



# FlexTec™T Installation Manual

Call **800-628-1909**

or email **helpdesk@rytecdoors.com**

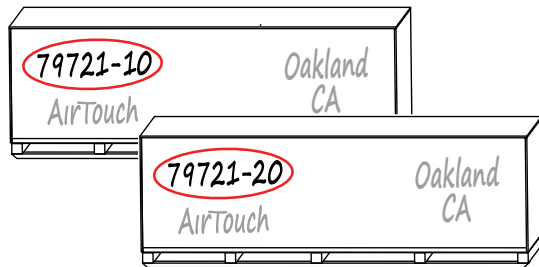
if you have any questions during this installation. See previous page for list of Rytec terms for the parts of the door.

## How to uncrate the door and inspect the installation site

### NOTICE

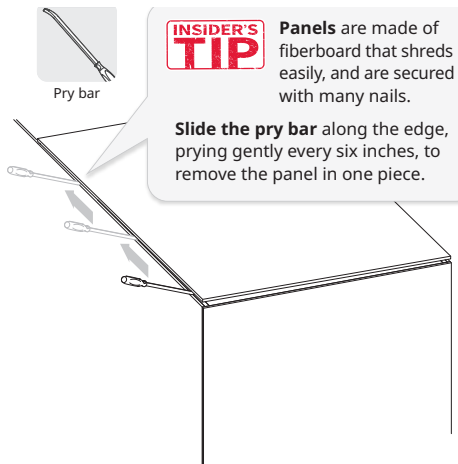
If more than one door is to be installed, **treat each crate as a separate installation.**

Each door is shipped in a separate crate, and **all parts for the door are in the same crate.** Each door has a unique serial number.



Using parts from different crates in the same door voids the warranty for all doors in the installation.

### 1 Remove the top panel.



### 2 Check the crate. Make sure all serial numbers match the number on the crate, and all visible parts have no shipping damage.

**Motor:** check the serial number on the attached tag.



**Head assembly:** drive side may be left (LH) or right (RH). LH is used for this manual.

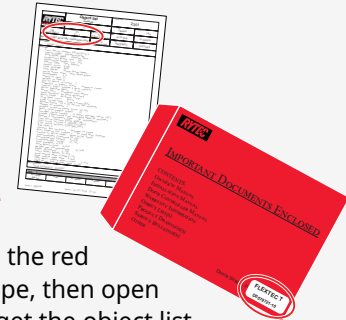
**Top cover (optional):** may be 1-piece, 2-piece or 3-piece, flat or slanted. Crated on top of the head assembly.

**Counterweight:** crated separately along back of crate.

**Small parts box:** check the serial number on side of box.

**IMPORTANT**

Open box, remove the red documents envelope, then open the envelope and get the object list. Check serial numbers on both.



**System 4 controller box:** check the serial number on side of box.

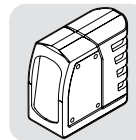
**Motor cover(optional):** crated with end guards.

**Side Columns:** check the serial number taped to top of columns. Read **IMPORTANT** section on side columns in this manual before installing.

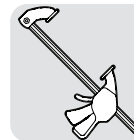
**Head assembly end guards:** Non-drive side guard has wider flanges than drive side guard.

### 3 Check your tools. Make sure you have all tools and supplies for the installation.

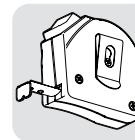
Tools you need



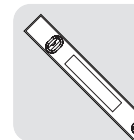
Laser level



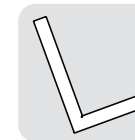
Bar clamp



Measuring tape

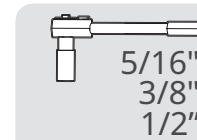


Spirit level

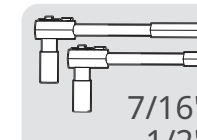


Carpenter's square

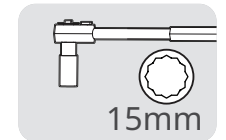
Hardware tools and sizes (manual or powered)



Socket wrench

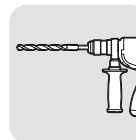


Two socket wrenches needed

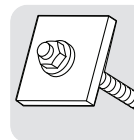


12-point socket wrench

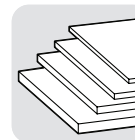
You also provide



Anchoring tools



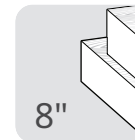
Anchoring hardware



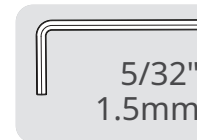
Shims



Caulk



8" Wood block



Hex wrench

4



Tape Measure

Check the measurements. Make sure the door will fit in the installation site.

Object list			Material number	
Duplicate			2302	
FLEXTEC T			Order number	2886902
			Order quantity	1 EA
MRP controller	Production scheduler	Order type	Start	Finish
100 MAIN ZMAT	T3 Tier 3	RYTEC MTO Order	01/25/2019	01/28/2019
Status	Plant	Reservation number	Creation Date	
REL MSPT PRT PCNF PRC	1000	0002256035	01/21/2019	
Serial number				
D0084193-010				
Configuration				
Door Serial Number D0084193-010				
Custom Order Standard Order				
DOOR MODEL NAME FlexTec Door				
Production Width (in) 144				
Production Height (in) 168				
Fabric type Iply Fabric				
Fabric Color Blue				
Line Voltage 460V				
Line Phase Three Phase Power				
motor mount side Left Hand Motor				
Horsepower 3.0				
width in feet 12				
height in feet 14				
Qty of doors in crate				
Domestic or Export case				
Control Logic System A				

①

②

Width to center = 1/2 ①

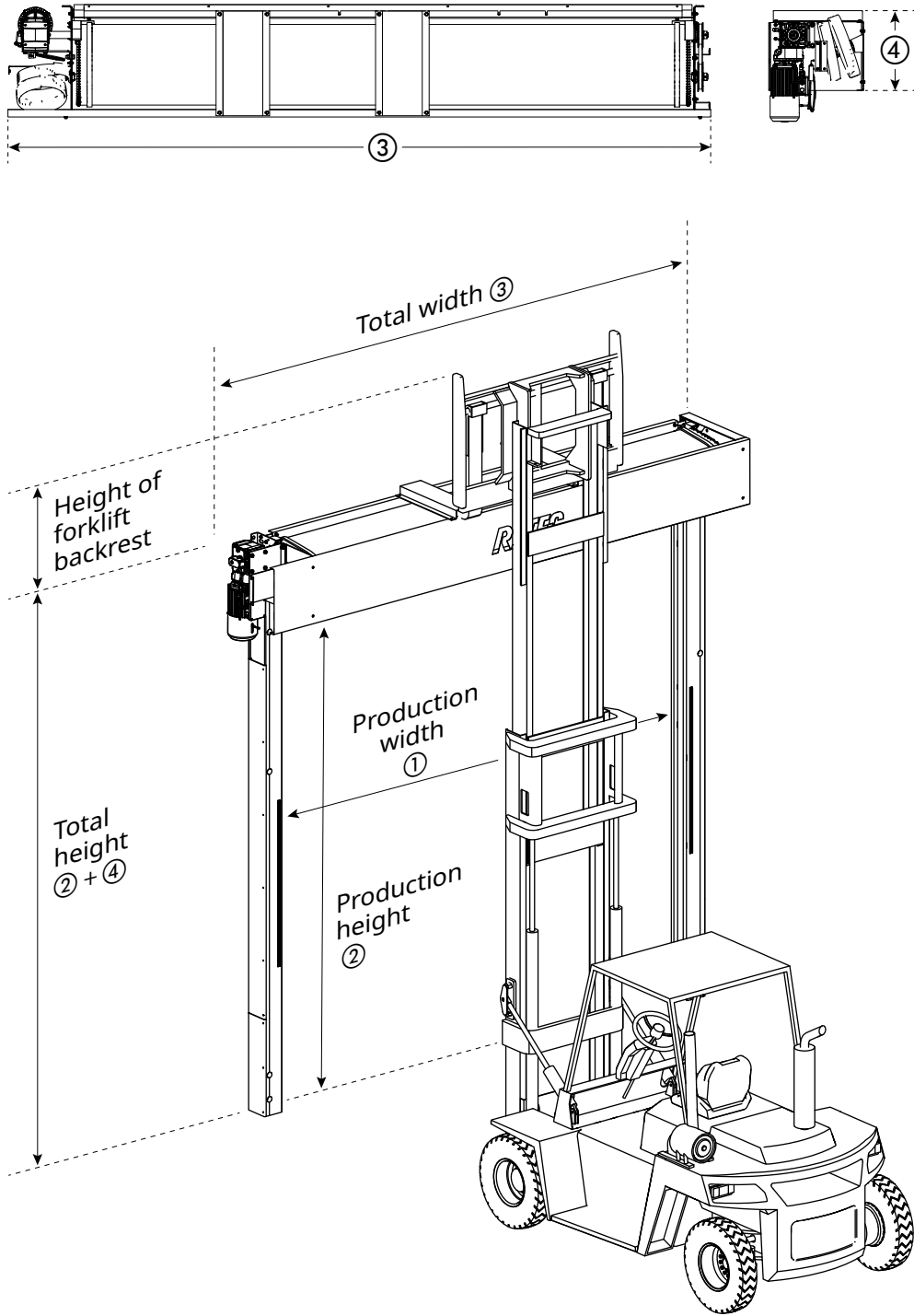
Total width = ③

Total height = ② + ④

Width to center = 1/2 ①  
Total width = ③  
Total height = ② + ④

1. **Locate** the production width ① and the production height ② on the object list.
2. **Measure the door opening** to make sure the height and width match the production width and production height on the object list.
3. **Calculate the width to center:** divide the production width ① by 2. **Write the result** on the object list. Use it when you center the door.
4. **Find the total width of the door:** measure the width of the front spreader ③. **Write the result** on the object list.
5. **Calculate the total height of the door:** measure the height of the front spreader ④. Add this to the production height ②. **Write the result** on the object list.
6. **Inspect the site around the door opening:** make sure the total width and height of the door will fit in the space, and that there are no obstructions.
7. **Make sure there is enough space to lift the door:** the head assembly is lifted from the top. Make sure the site has space for the total height of the door plus the height of the forklift backrest.

Call Rytec technical support at 800-628-1909 or email [helpdesk@rytecdoors.com](mailto:helpdesk@rytecdoors.com) if you have any questions about the measurements at the site.

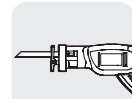


5

If all checks are good, finish uncrating the door. Starting at the center, remove the crossbars, then remove the front and side panels.



Mallet and crowbar or



Reciprocating saw



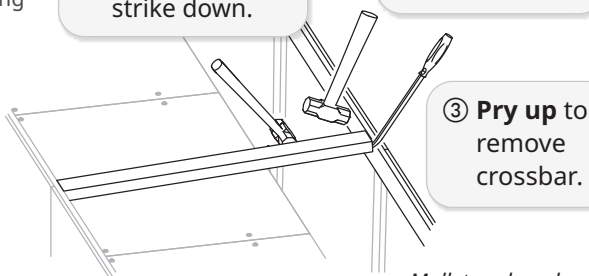
CAUTION

Flatten exposed nails as you go. Keep hands clear while striking or cutting.

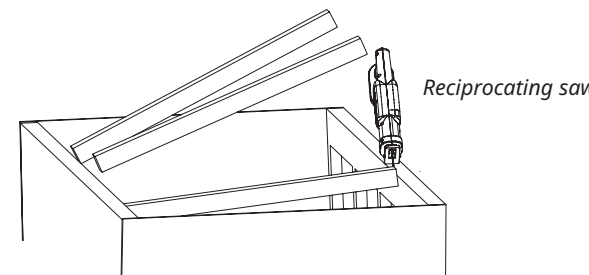
① Strike across the crossbar to loosen nails. Do not strike down.

② Strike the side panel to expose nails.

③ Pry up to remove crossbar.

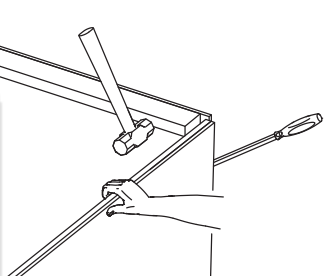


Mallet and pry bar

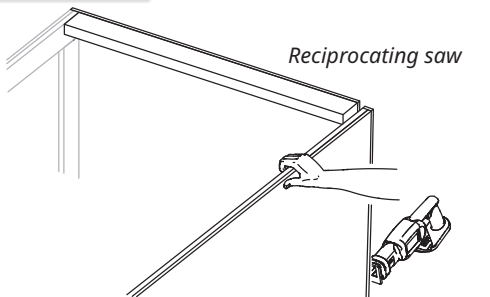


Reciprocating saw

End panels are nailed into the side panel. Strike crossbar and pry end panel to loosen nails. Pull side panel free from sides, then pull down to remove.



Mallet and pry bar



Reciprocating saw



How to install the encoder

1

1.5mm

SMALL PARTS

H1060618-0

1060618-0

3

SMALL PARTS

00141086

2

17mm

SMALL PARTS

2

JDF 8.8

1260320

How to center the door in the door opening

**IMPORTANT** Rytec doors are engineered to be centered in the door opening, so follow these steps even if the width of the opening and the production width match exactly.

1

Measuring tape

Carpenter's square

Object list		Material number	
Duplicate		2302	
Material description	FLEXTEC T	Order number	2886902
Order quantity	1 EA	Start	01/25/2019
End	01/28/2019	Production schedule	T3 Tier 3
Order type	ZP02 RYTEC MTO Order	Part	1000
Reservation number	0002256035	Creation Date	01/21/2019
REL MSPT PRT PCNF PRC GMPS RESA SETC	Rytec Corporation		
Serial number	D0084193-010		
Configuration	Door Serial Number D0084193-010		
Custom Order	Standard Order		
DOOR MODEL NAME	FlexTec Door		
Production Width (in)	144		
Production Height (in)	168		
Fabric Type	Iply Fabric		
Fabric Color	Blue		
Line Voltage	460V		
Line Phase	Three Phase Power		
motor mount side	Left Hand Motor		
Horsepower	3.0		
width in feet	12		
height in feet	14		
Qty of doors in crate	Domestic or Export crate		
Control Logic System			

Width to center =  $1/2$  ①

Total width = ④

Total height = ② + ⑤

1: Measure the width of the door opening ( $w$ ) and find the halfway point ( $1/2 w$ ). Mark the centerline there.

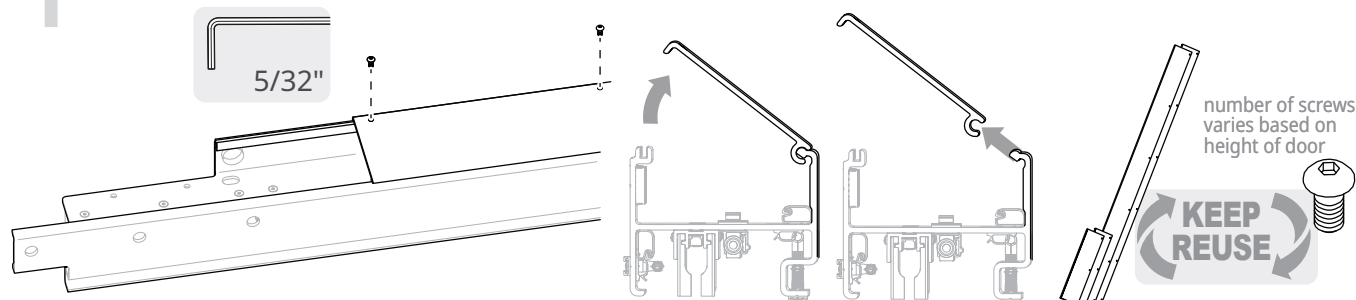
2: Use the width to center from the object list ( $1/2$  ①). Starting at the centerline, measure and mark the reference line for the first column.

# Plumb, level, square: how to position the door correctly as you install the side columns and head assembly

## NOTICE

Call 800-628-1909 immediately and stop the installation if you are not able to correctly position the door.

1 Remove the top and bottom front covers from both side columns.



1 Don't run anchors through the top two anchor points on the side columns until after the head assembly is installed. These points anchor both the side column and the head assembly.

## IMPORTANT SIDE COLUMNS

2 Washers must fit within the raised area around the anchor hole (dotted lines). Washers that extend beyond this will block the side column covers.



3 Make sure you remove the protective film from both light curtains before setting limits. Also, make sure the light curtains are level after the side columns are installed. The light curtains must be vertically aligned to work properly.

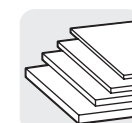
## Step 1: Level the site, then install and plumb the side columns

1 Plumb the door opening. If the wall is not plumb, or there is bowing or an obstruction in the wall, shim the columns.

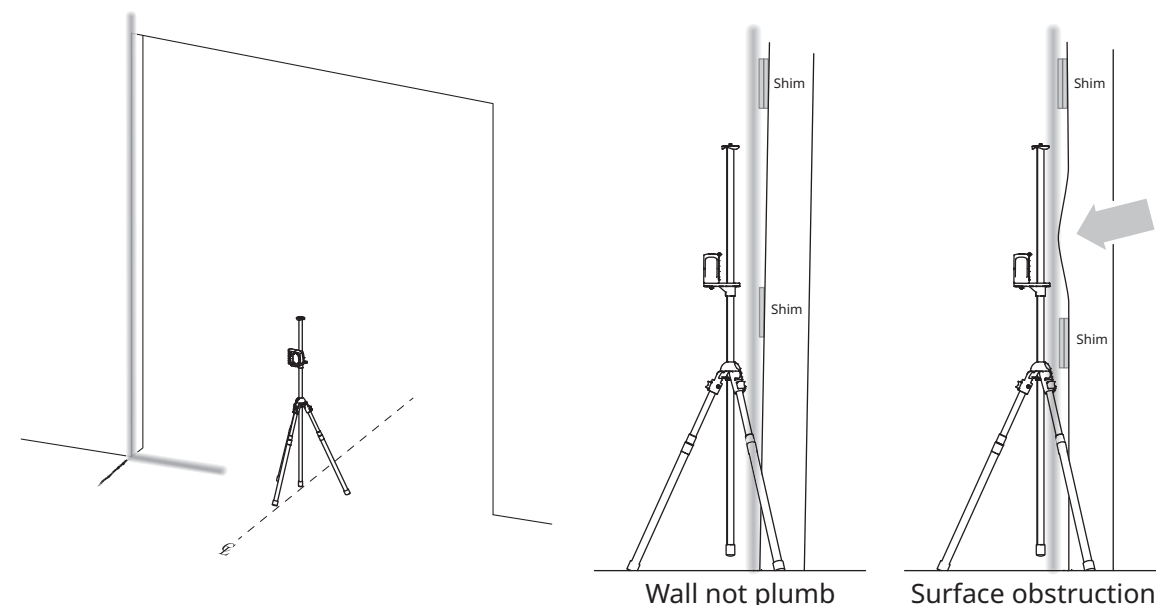
**IMPORTANT** To prevent column from bowing, shim as needed at each anchor point.



Laser level



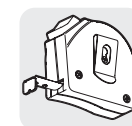
Shims



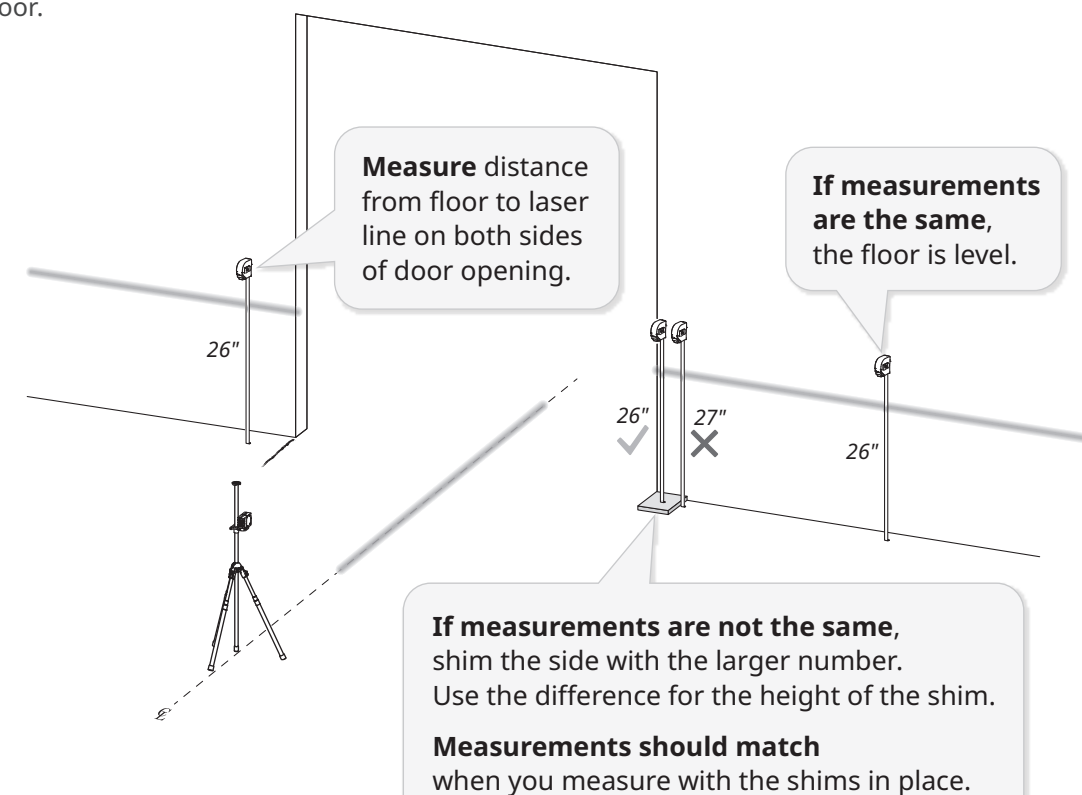
2 Level the floor.



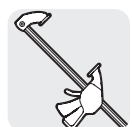
Laser level



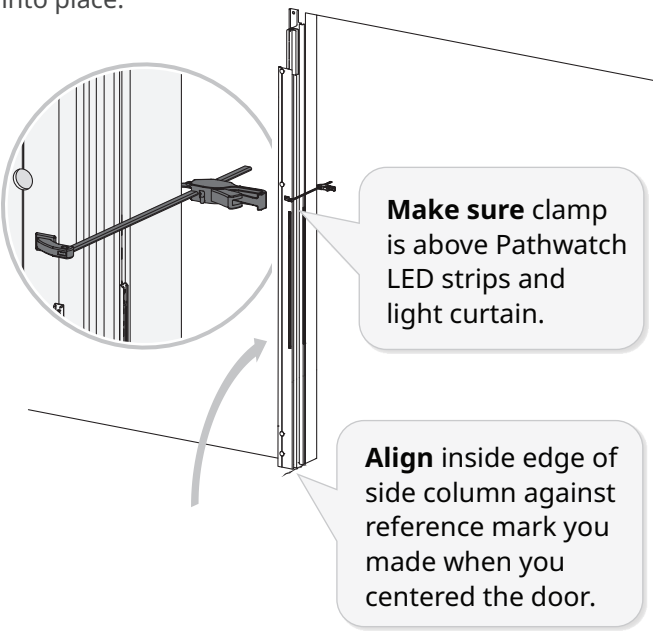
Measuring tape



3 Clamp the drive side column into place.



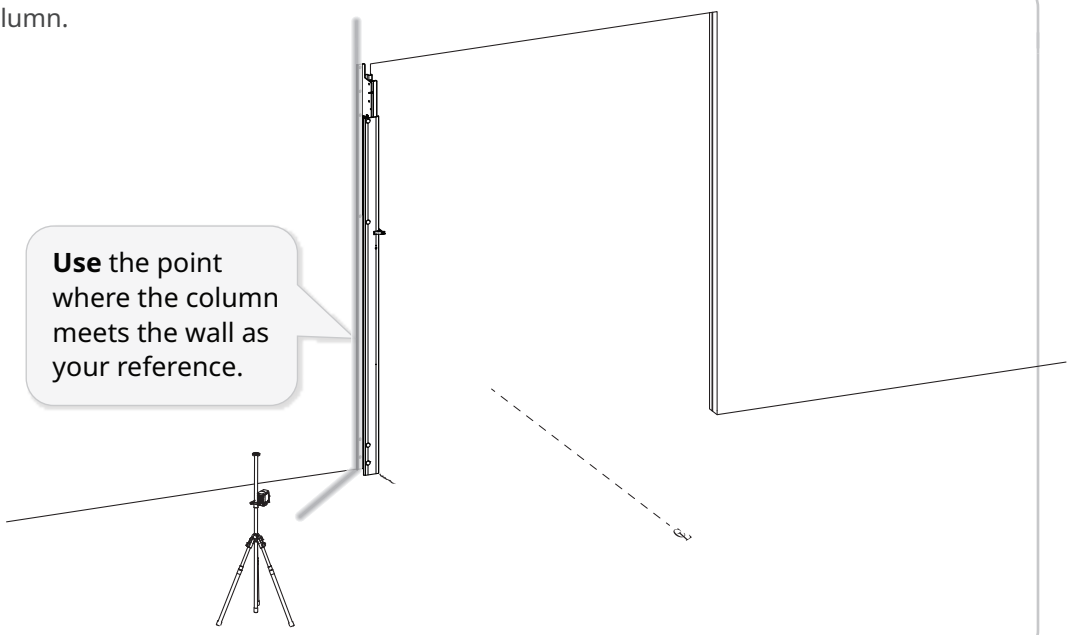
Bar clamp



4 Plumb the drive side column.



Laser level



5 Anchor the drive side column to the wall. Set anchors tight. Remove clamp.

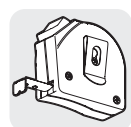


Anchoring hardware

**IMPORTANT**

- **Make sure** you use only the bottom four anchor points, and the washers are the correct size.
- Use **1/2" diameter through bolts, 1/2" diameter threaded rods** or equivalent to anchor side columns.
- Anchoring hardware and materials must be provided by the door owner or installer.
- **Make sure** anchors will not interfere with moving parts of the door.

6 Measure and mark the reference mark for the non-drive side column.



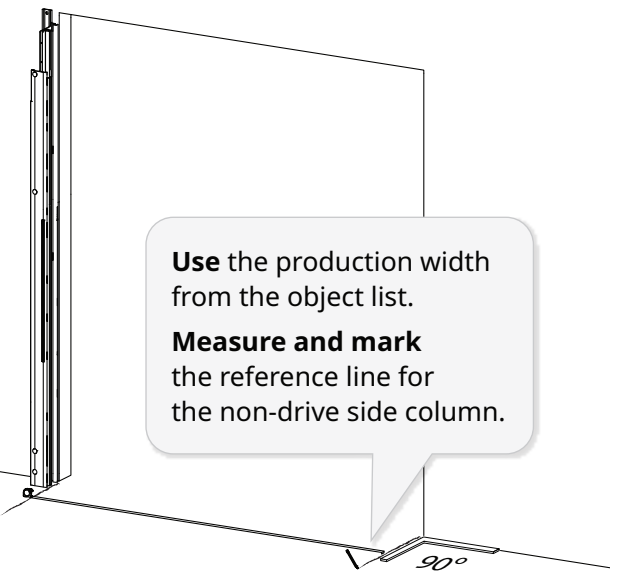
Measuring tape



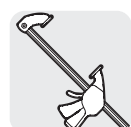
Carpenter's square

Object list			
Duplicate			
Material description		Order number	
FLEXTEC T		28869	
MRP controller	Production scheduler	Order type	Start
100 MAIN ZMAT	T3 Tier 3	ZP02 RYTEC MTO Order	01/25/2
Status	REL MSPT PRT PCNF PRC GMPS RESA SETC	Plant	Reservation number
		1000 Rytec Corporation	0002250
Serial number			
D0084193-010			
Configuration			
Door Serial Number D0084193-010			
Custom Order Standard Order			
DOOR MODEL NAME FlexTec Door			
Production Width (in) 144			
Production Height (in) 168			
Fabric Type Iply Fabric			
Fabric Color Blue			
Line Voltage 460V			
Line Phase Three Phase Power			
motor mount side Left Hand Motor			
Horsepower 3.0			
width in feet 12			
height in feet 14			
Qty of doors in crate 1			
Domestic or Export crate Domestic Crate			
Control Logic System 4 door control			
Motor Gearbox Ratio 8.64			
Motor Duty Standard Duty Motor			

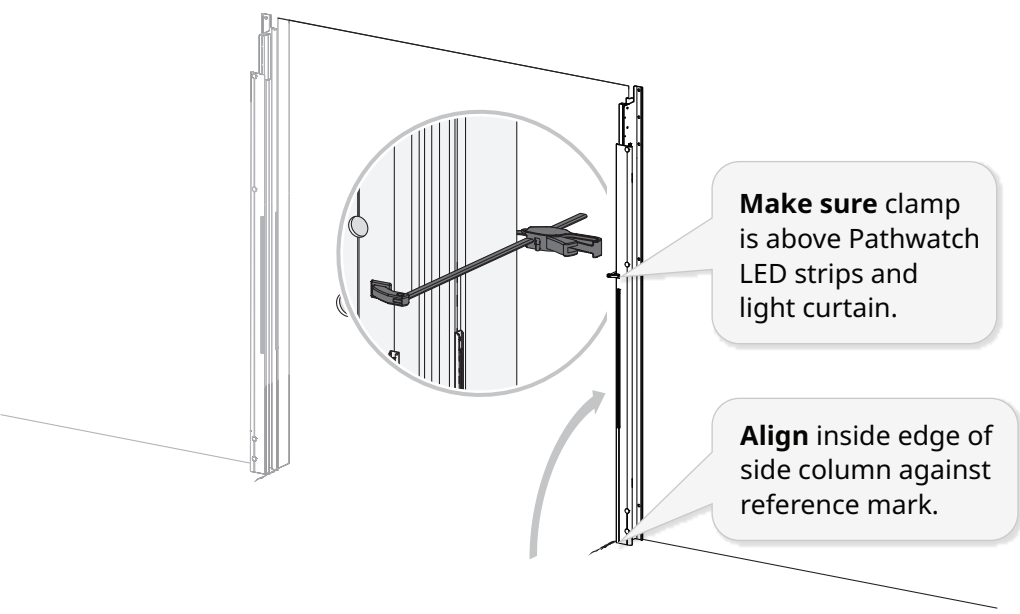
①



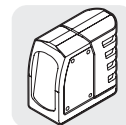
7 Clamp the non-drive side column into place.



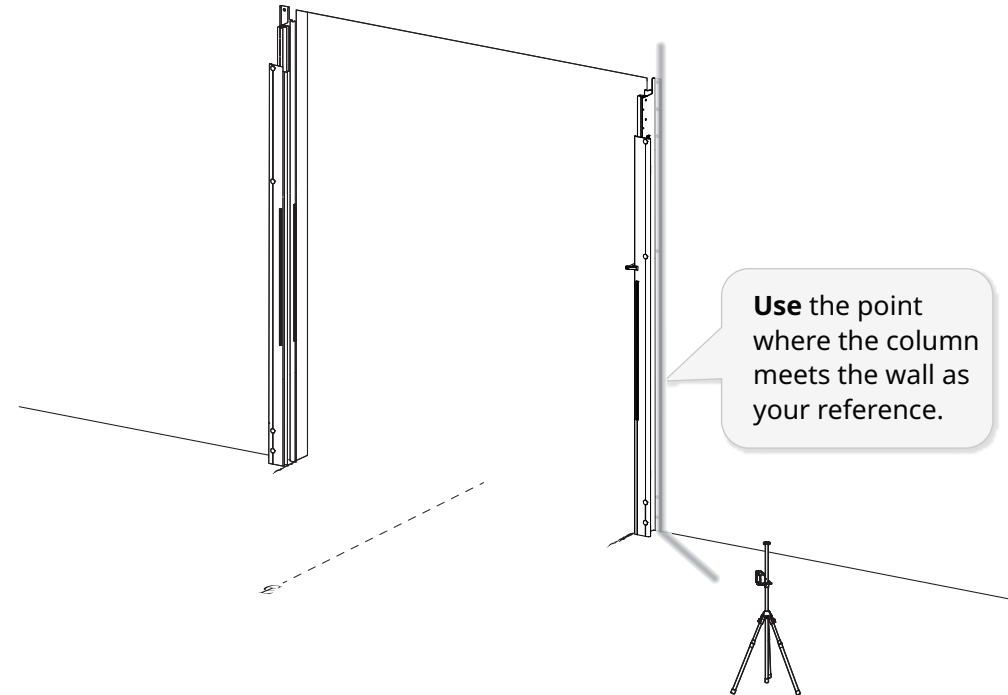
Bar clamp



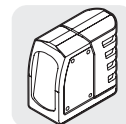
## 8 Plumb the non-drive side column.



Laser level



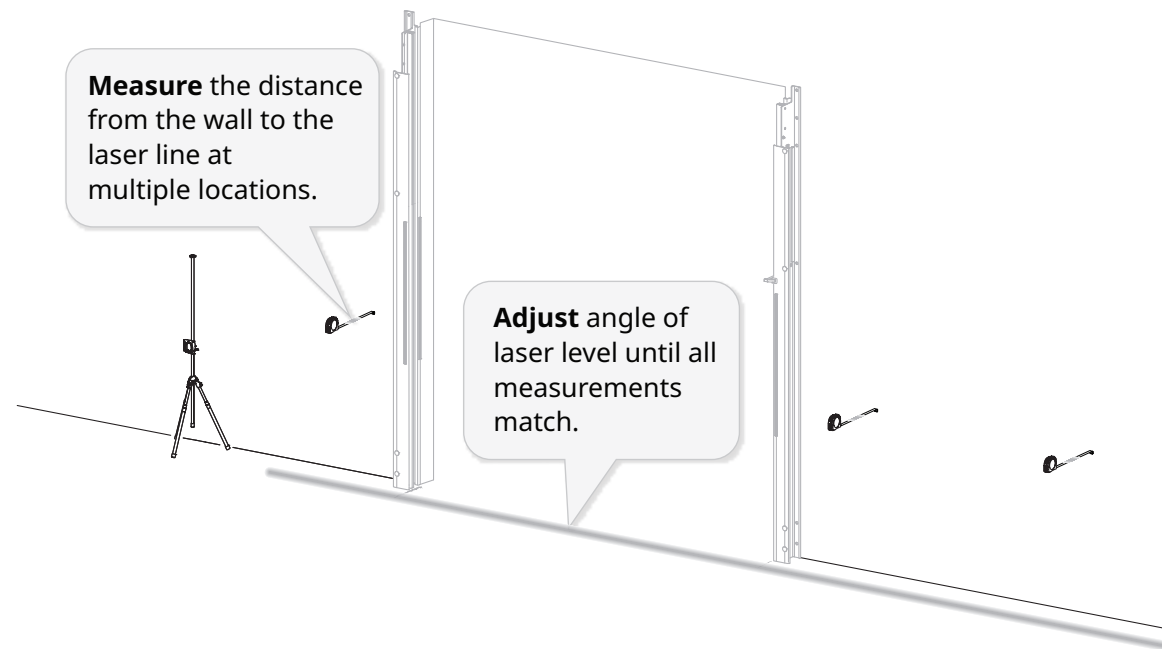
## 9 Set a laser line parallel to the wall 1" (one inch) in front of columns. **Make sure** the line is parallel to the wall.



Laser level



Measuring tape



## 10 Plumb the columns to each other: make sure distances from front of columns to laser line match.

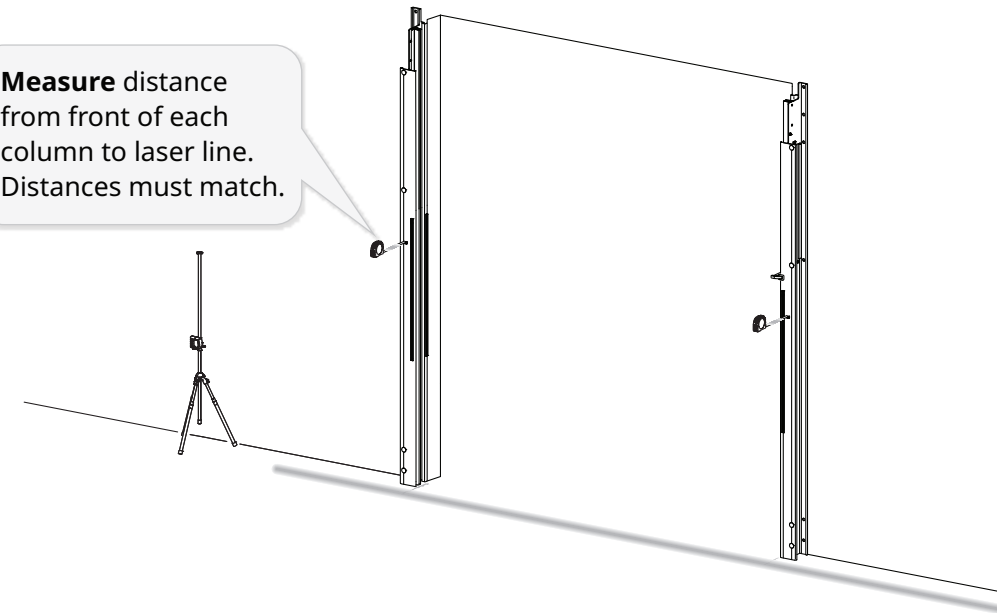


Laser level

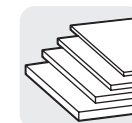


Measuring tape

**Measure** distance from front of each column to laser line. Distances must match.



## 11



Shims

**If necessary, shim** the side columns so they are plumb to each other.

## 12



Anchoring hardware

**Loosely anchor** the non-drive side column to the wall. **Remove** clamp.

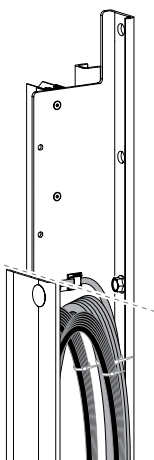
**IMPORTANT**

**Make sure** you use only the bottom four anchor points, and the washers are the correct size.

## 13

**Before installing the head assembly, make sure** the preinstalled cables for the light curtain (gray) and front and rear Pathwatch (black) are below the third anchor point (dotted line) so they are not pinched or crushed when the head assembly is installed.

**IMPORTANT**





## Step 2: Install the retainer brush

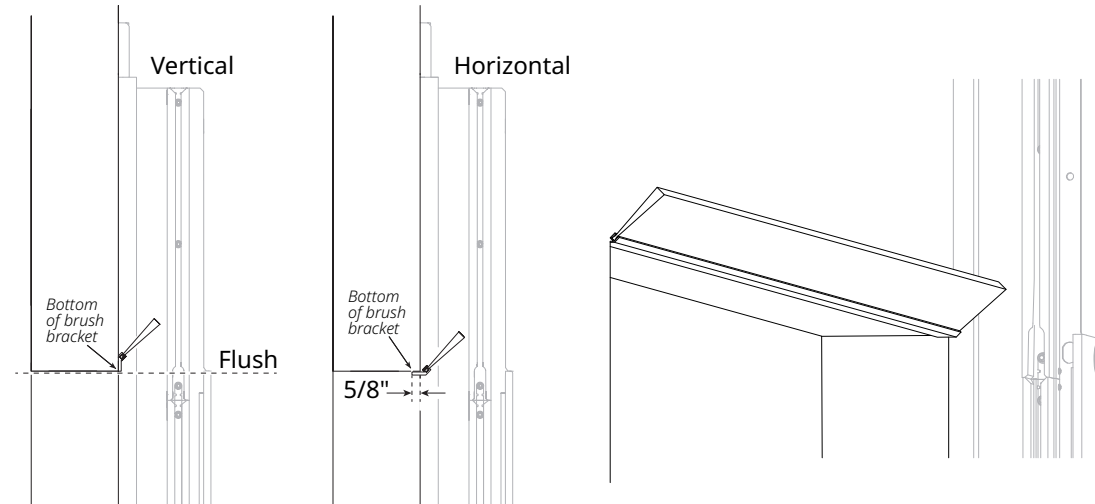
**1** Install the retainer brush against the top of the door opening so that the brush points forward and up.

The brush can be installed **vertically** or **horizontally**.

- To install vertically, align the bottom of the brush flush with the top of the door opening.
- To install horizontally, offset the brush 5/8" from the edge of the door opening.

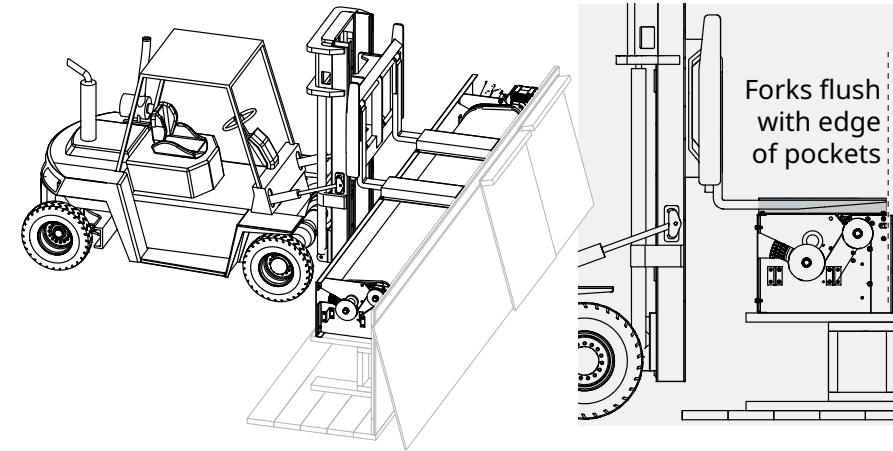


Self-tapping anchoring hardware

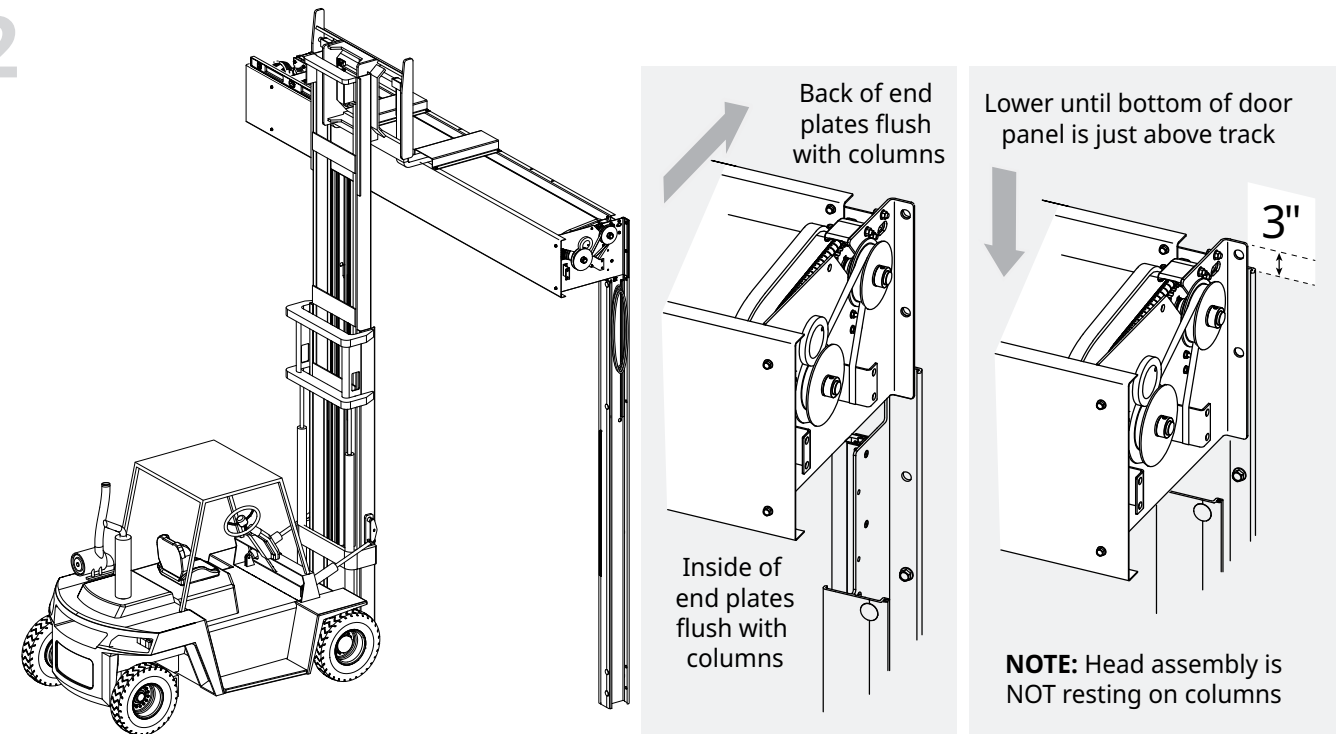


## Step 3: Install the head assembly

**1**

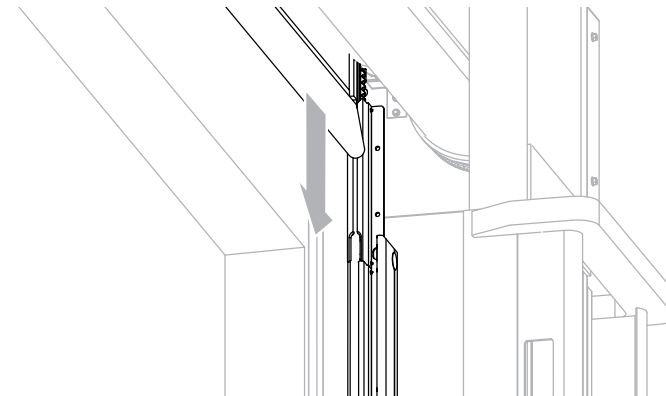


**2**



**3**

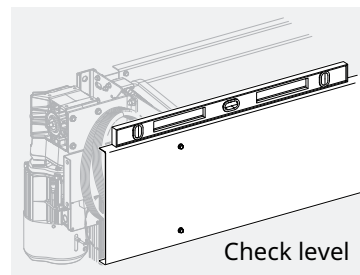
Manually pull the door panel into the drive tracks in both side columns. Then **finish lowering** the head assembly.



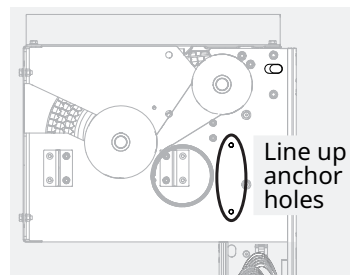
#### 4 Make sure the head assembly is aligned correctly.



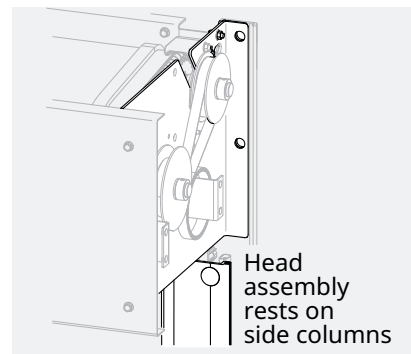
Spirit level



Check level

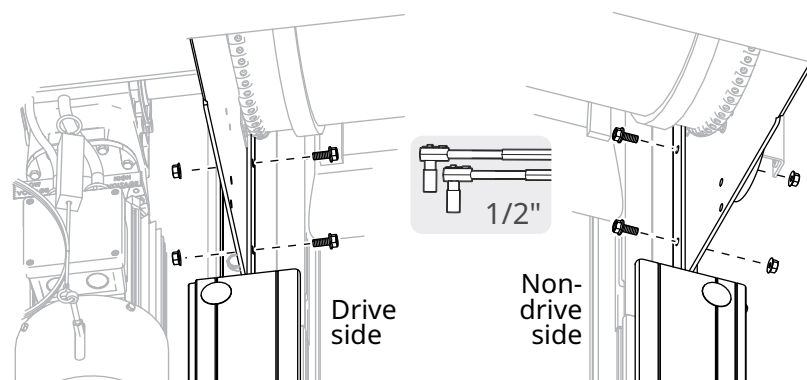


Line up anchor holes



Head assembly rests on side columns

#### 5 Anchor head assembly to columns.



Drive side

Non-drive side

##### SMALL PARTS

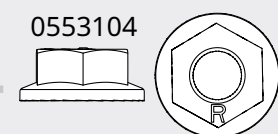
0550301

4



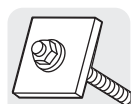
0553104

4

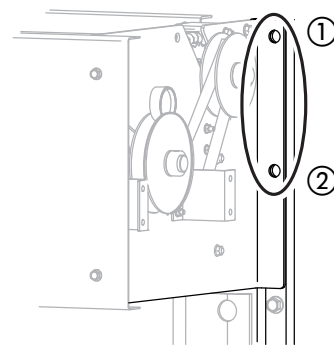
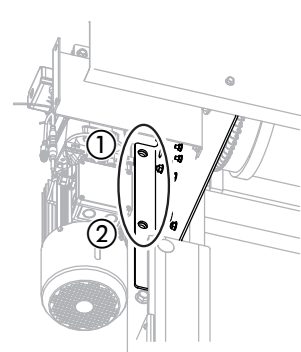


#### 6 Anchor both side columns to the wall using anchor points ① and ②.

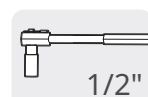
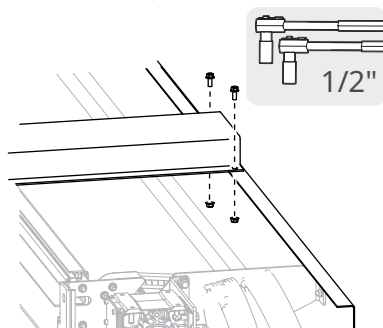
Set anchors tight.



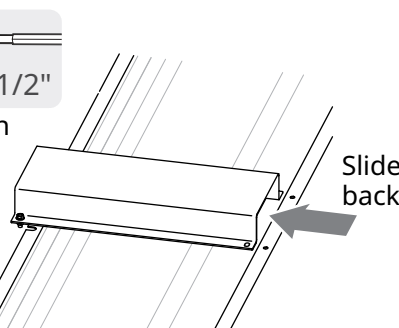
Anchoring hardware



#### 7 Remove lift pockets.

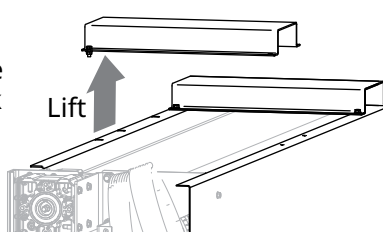


Loosen bolts on both sides



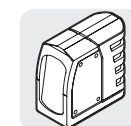
Slide back

Lift

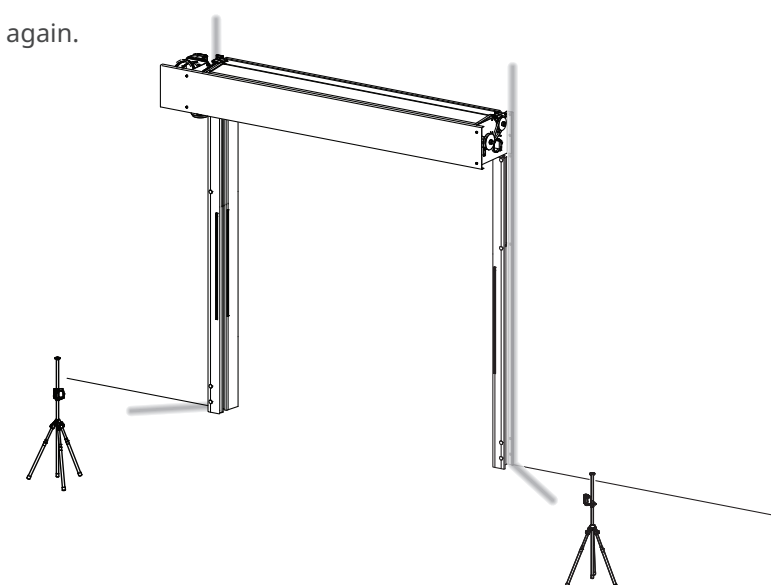


### Step 4: Replumb and square the door and finish anchoring the side columns

#### 1 Plumb both side columns from the front again. Realign if necessary.



Laser level

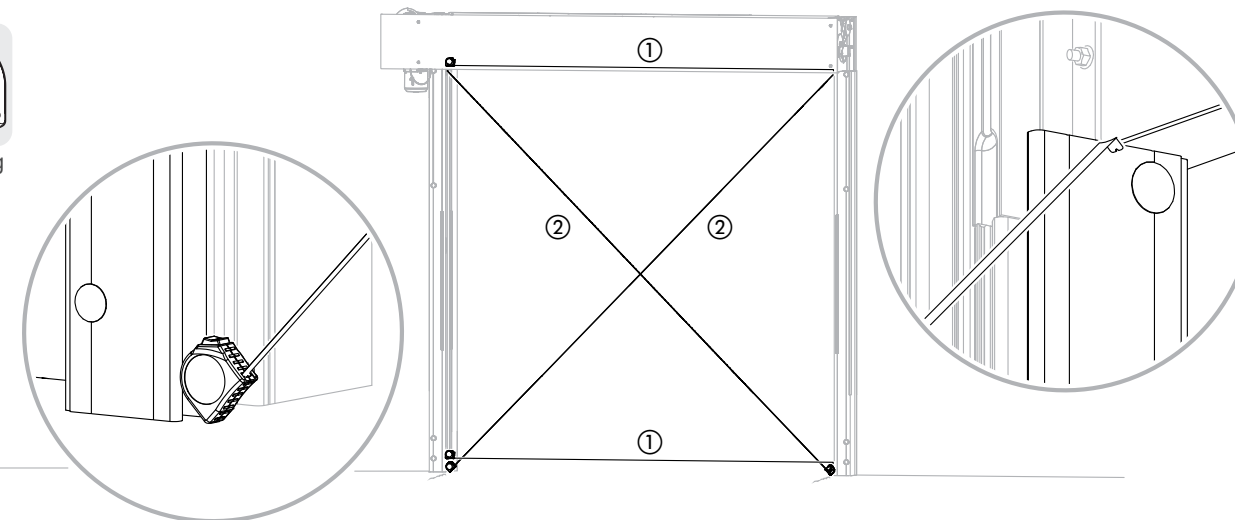


#### 2 Square the door:

- Measure distance between side columns at top and bottom of columns ①. Make sure the distances are the same.
- Measure distance from bottom corner of drive side to top corner of non-drive side, then from bottom corner of non-drive side to top corner of drive side ②. Make sure the distances are the same.



Measuring tape



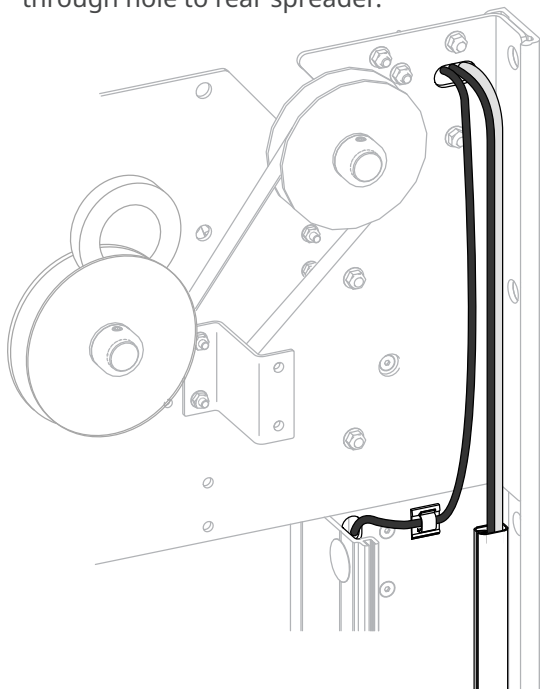
#### 3 Tighten all anchors.



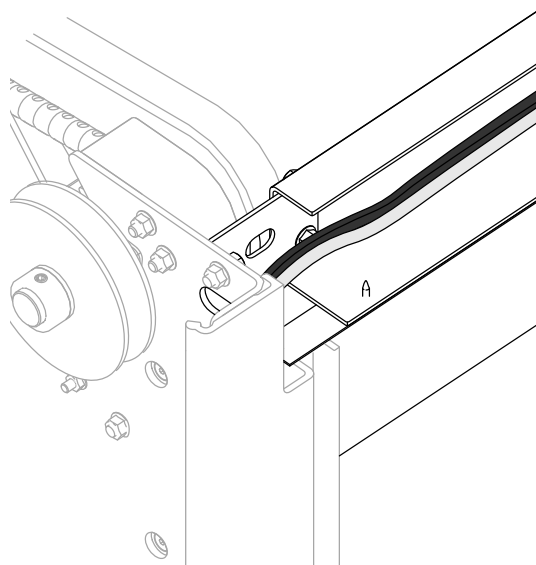
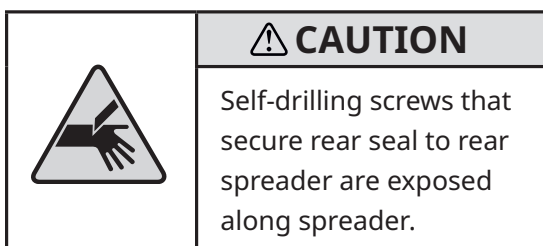
Anchoring hardware

## How to run the wires from the non-drive side column

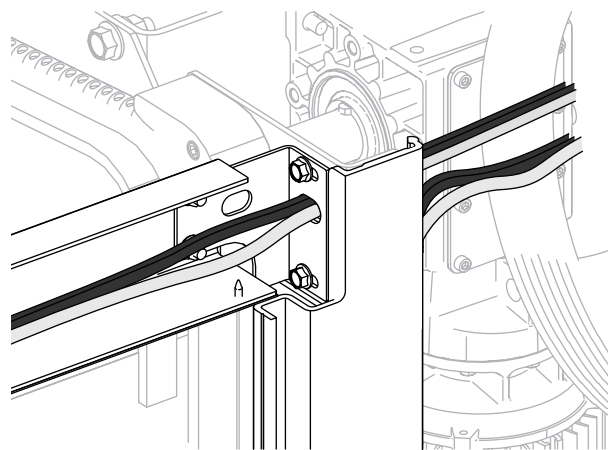
- 1** On the non-drive side: cut ties, run cables through hole to rear spreader.



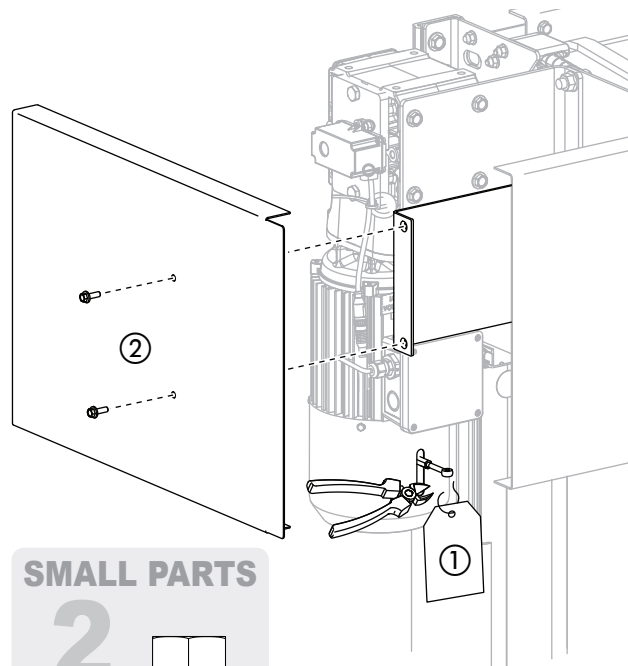
- 2** Thread cables through the rear spreader.



- 3** Thread cables through hole in drive side column. Run cables together with drive side cables.

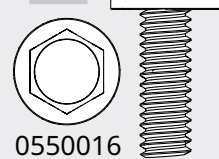


- 4** On the drive side, **remove** the motor tag ① and **install** the drive side end guard ②. This end guard has shorter flanges.

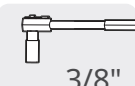


### SMALL PARTS

**2**



0550016



3/8"

## How to install the counterweight

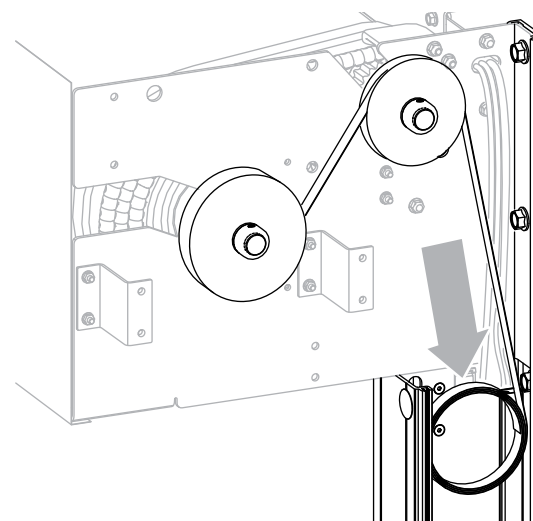
### NOTICE

**Do not unspool or trim the counterweight strap.** The strap is pre-cut and pre-spooled to match the door height.

### NOTICE

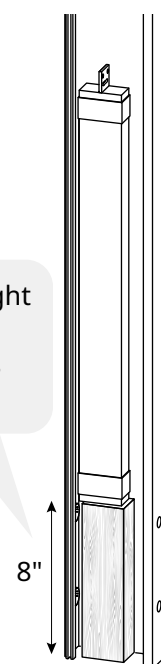
**Make sure door is in fully open position** before setting counterweight.

- 1** Cut tie to release strap. Roll strap down side column.

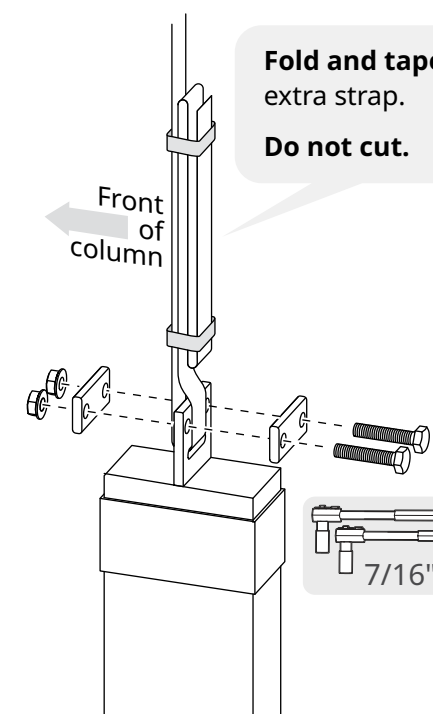


**2**

**Place** counterweight on 8-inch block of wood until strap is tightened.

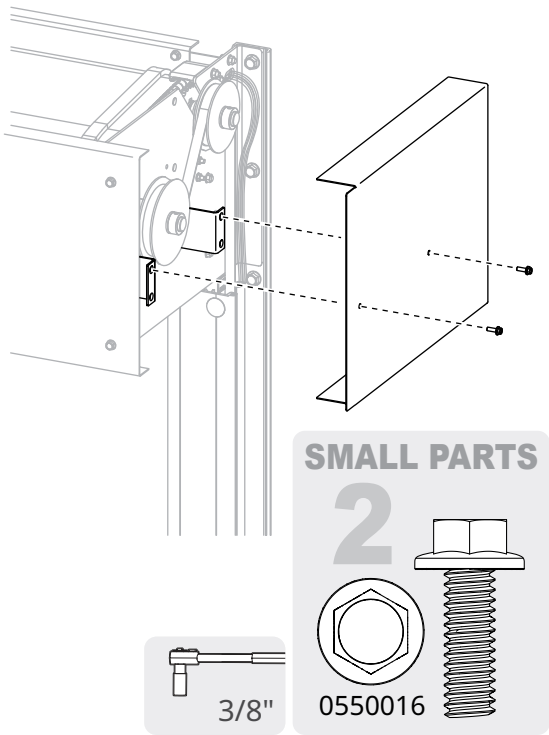


- 3** Loosen and remove bolts, nuts and retainers. Thread strap through top bracket from front to back and **pull** strap tight. Replace retainers, bolts and nuts and tighten to secure strap in place.

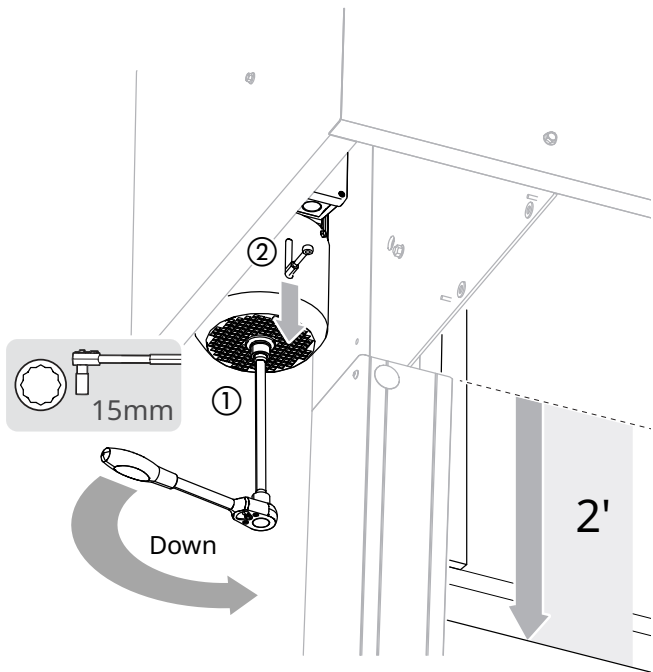


How to finish the installation

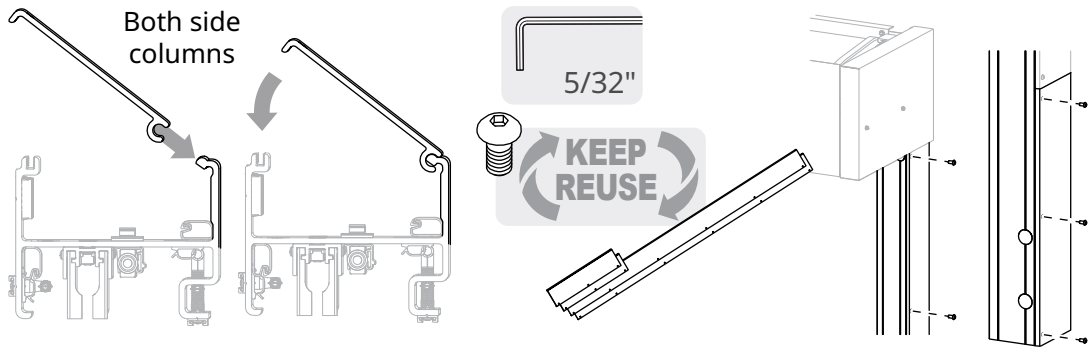
- 1 **Install** the non-drive side end guard.  
This end guard has wider flanges.



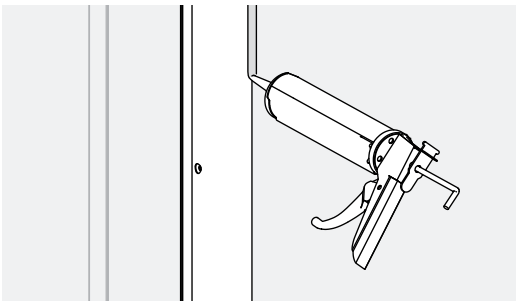
- 2 **Insert** a 12-point 15mm socket into the bottom of the motor ① and engage the manual axle.  
**Pull down** on the brake release lever ② to release the brake.  
**Turn** the wrench counterclockwise to lower the door panel two feet below head assembly, then **release** the brake release lever.



- 3 **Both side columns**



- 4 **Caulk** head assembly and side columns.  
**Install** dome plugs from small parts box.





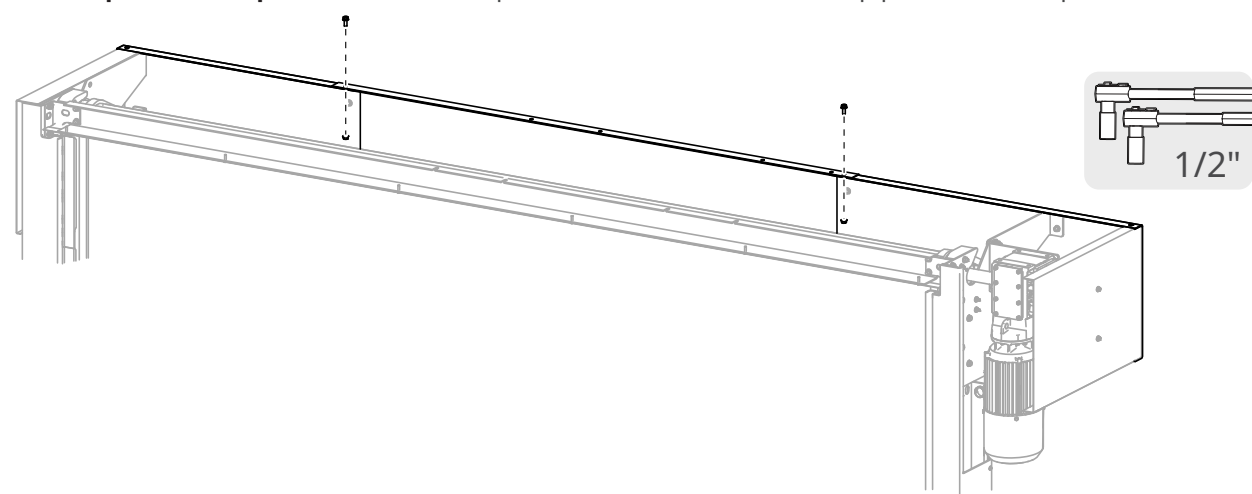
## How to install the top cover and motor cover (optional)

**NOTE:** The configuration of the front spreader and cover change based on the width of the door.

- The front spreader is 1-piece up to a production width of 121". It is 3-piece when the production width is greater than 121".
- The cover is 1-piece up to a production width of 97". It is 2-piece when the production width is greater than 97".
- The motor cover/cap are a separate option from the cover and may or may not be included. Check the object list.

### How to install the top cover

**1** If front spreader is 3-piece: remove the top bolt and nut from both overlap points so the top cover will lie flat.



**2** **Line up** the cover panel(s) so that the front lip overlaps the front spreader. **Install** self-tapping screws through all holes in cover. **Anchor** flange on top cover to wall.



Anchoring hardware

**SMALL PARTS**

0551050

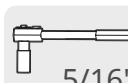


1-piece cover:

6

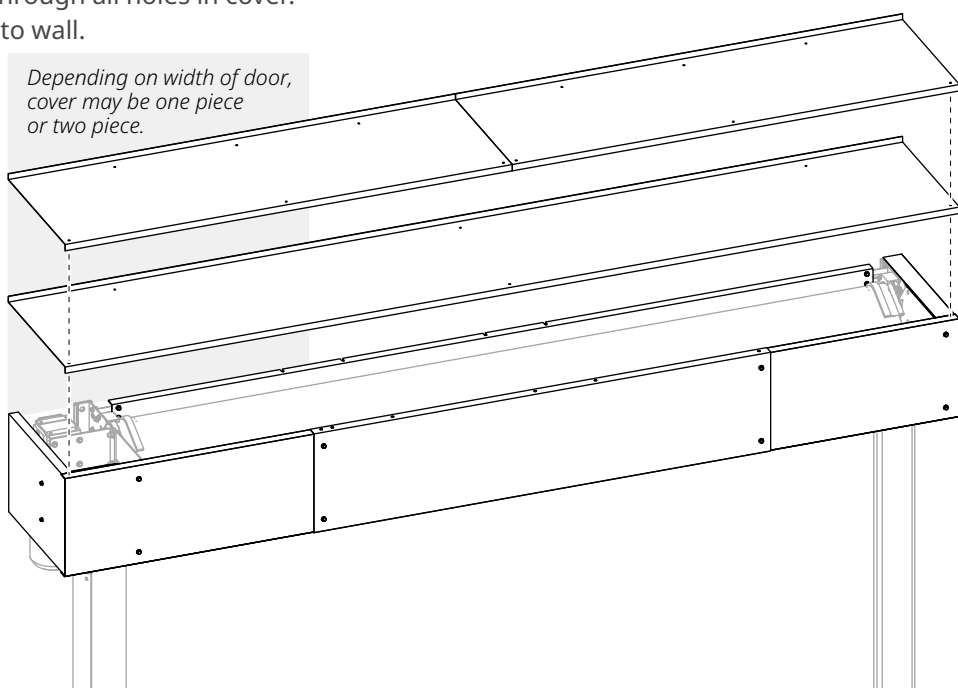
2-piece cover:

12



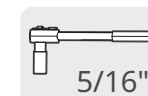
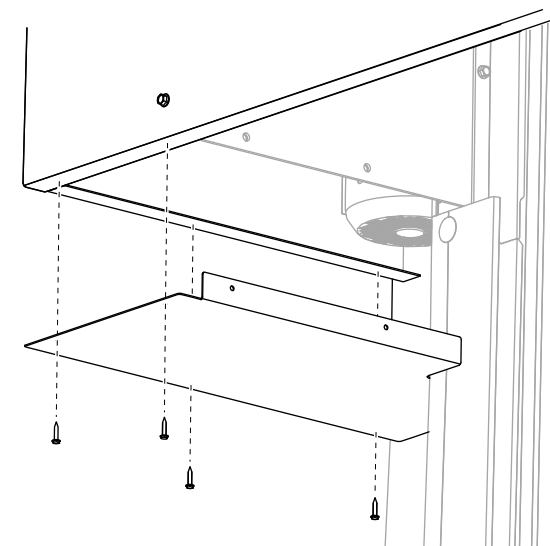
5/16"

Depending on width of door, cover may be one piece or two piece.



### How to install the motor cover

**1**



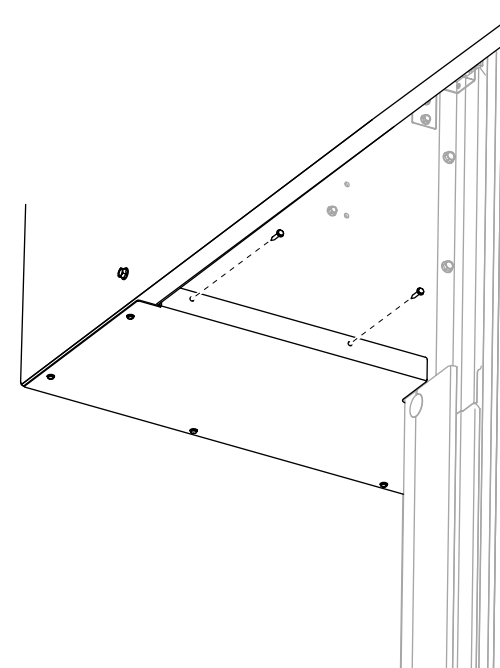
5/16"

**SMALL PARTS**

0551050



6



How to install the System 4 controller and wire the door



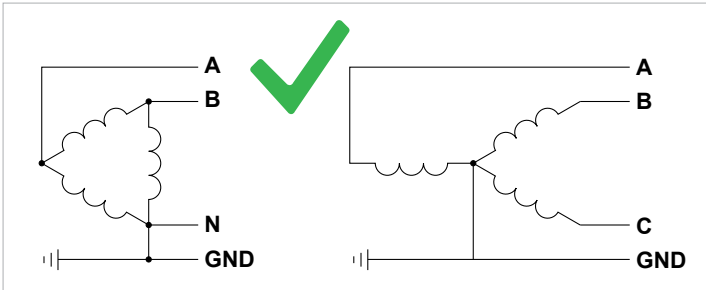
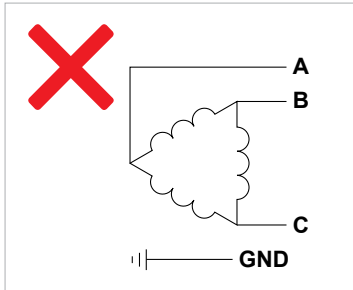
⚠ WARNING

**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.



⚠ WARNING

**The high-voltage power to the controller must be properly grounded.**  
Improper grounding could result in shock, burns or death to the people who install, use or service the door, as well as catastrophic motor failure.



- **If the service is floating, ungrounded or open delta type power,** an isolation transformer must be installed.
- Metal conduit entering the bottom left of the control box contacts the metal protection ground plate inside the controller. **If non-metallic conduit is used,** a protection ground conductor must be used.

NOTICE

**The System 4 installation must meet all of the standards and follow all of the steps shown in these instructions.** Failure to do so voids the warranty for the door.

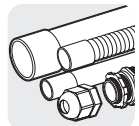
- **The high-voltage and low-voltage conduits must be separated** by a distance that meets all applicable federal, state and local codes and regulations.
- **Wires must be cut to length.** Do not loop wires or leave excess length untrimmed.
- **Use shielded wiring** where indicated in these instructions.
- **If you splice wires:**
  - **You must use** the same gauge wire for the entire length. Gauge is listed in the steps in these instructions.
  - **All spliced field wiring** must maintain the voltage and temperature rating supplied by Rytec.

**Contract Rytec Technical support at 800-628-1909 or email [helpdesk@rytecdoors.com](mailto:helpdesk@rytecdoors.com)** before starting the installation if you cannot meet any of these standards or have questions about how to implement them.

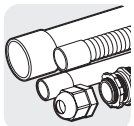
Before you begin

1 **Make sure** you have all supplies and tools.

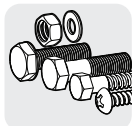
Supplies that you provide



Conduit for high-voltage wiring



Conduit for low-voltage wiring



Mounting hardware for controller (3 anchors)

Tools you will need



Power drill



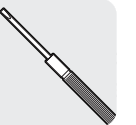
Step drill bit



#2 Phillips



T20 Torx



Precision screwdriver



Wire tool



Cement drill (if needed to mount controller)

2 **Check** the job site.

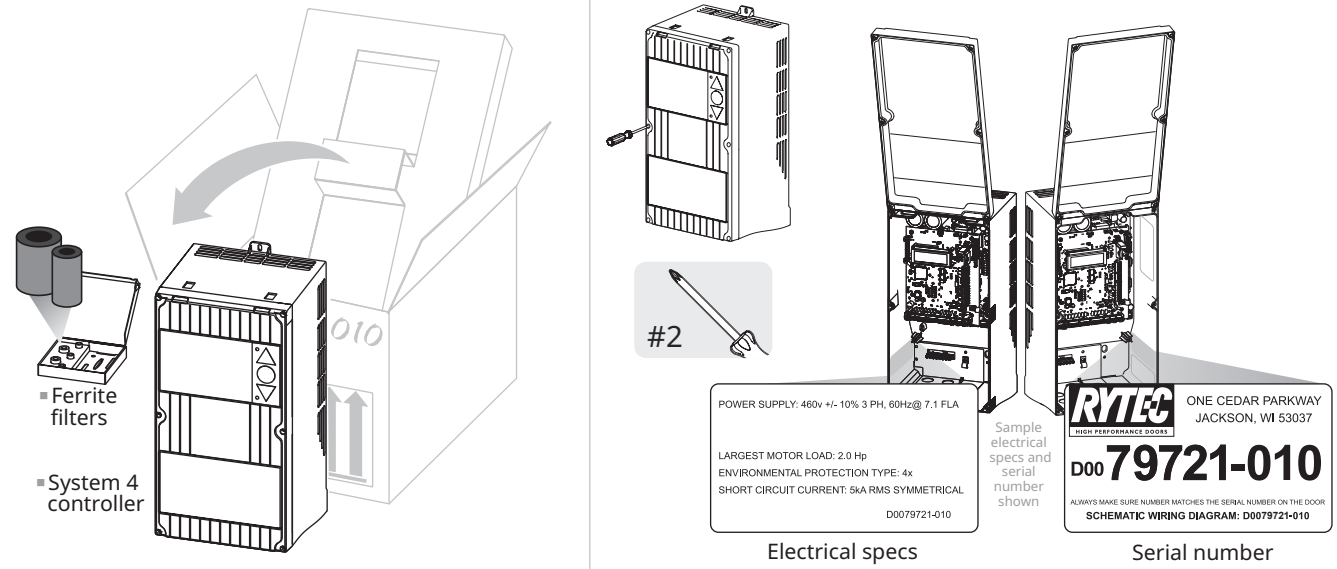
- **The ambient temperature** must be between **-4°F** and **149°F** at all times.  
**NOTE: for freezer doors,** the controller and fused disconnect must be mounted on the warm side of the door.
- **The mounting surface** for the System 4 controller and fused disconnect must be structurally sound and free of mechanical shock and vibration.

3 **Install** the high-voltage power supply.

- **Provide a high-voltage power supply** that matches the electrical spec for the System 4 controller.
- **A fused disconnect is recommended.** Fuses must meet NEC code for FLA listed on the electrical spec for the System 4 controller.

## How to install the System 4 controller

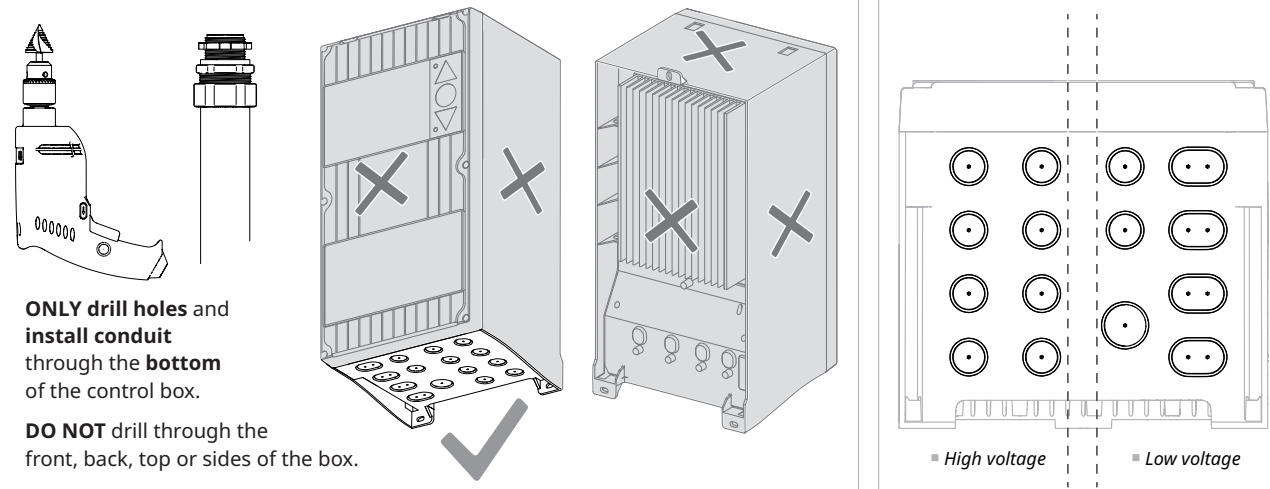
- 1 **Open** the System 4 controller box and get the controller and ferrite filters.  
**Loosen** screws on the control box and **open** the cover panel.



**Verify** that the serial number and electrical specs for the controller match the door.

- 2 **Install** the control box onto the wall using the hardware you have supplied.

- 3 **Drill** holes through the bottom of the control box for conduit.



### NOTICE

- **Conduit must enter through the bottom of the control box.** Drilling holes in the front, back top or sides of the control box voids the warranty.
- **High-voltage wires** must enter through the left side of the box bottom.
- **Low-voltage wires** must enter through the right side of the box bottom.
- **Holes must be drilled.** The indentations in the box bottom are not knockouts.

## How to install the high-voltage wiring

### ⚠ WARNING



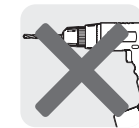
**Set the disconnect switch to the OFF position** and perform a lockout/tagout of the high-voltage disconnect before installing wiring to the controller. Do not set the disconnect switch to the ON position until the wiring installation is complete and the controller is fully earth grounded per instructions.

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



- 1 **Connect** the supply voltage wiring from the disconnect.

12 AWG



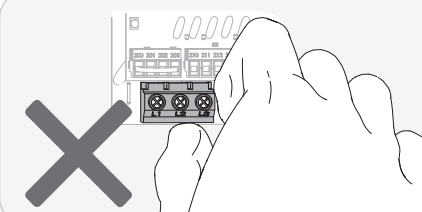
**DO NOT** use power tools



For ground bar



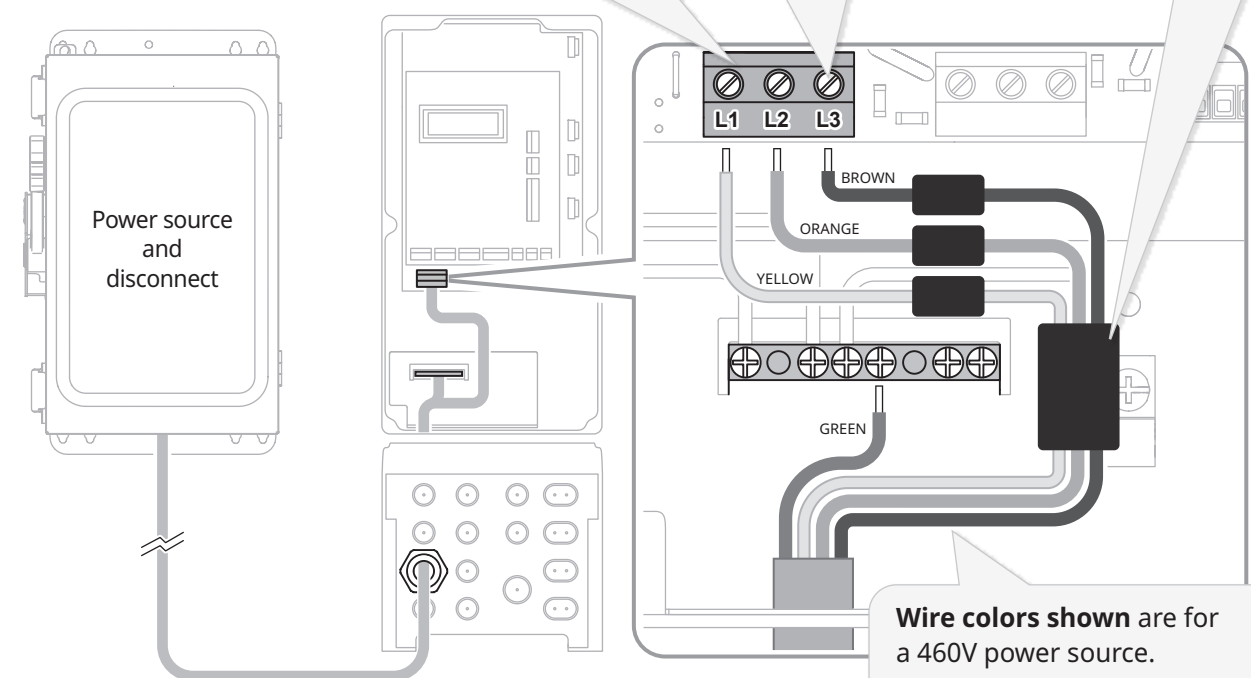
For terminals



**Do not try to remove** the green terminal block from the circuit board.  
**It is fixed in place and will break.**

**Maximum torque** for all screws is **2.5 in-lbs.**

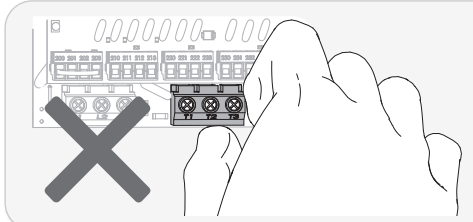
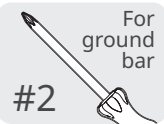
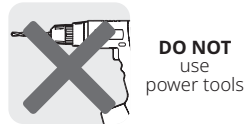
**Place one large ferrite filter** around all three wires, and **one small filter** around each individual wire.



**Wire colors shown** are for a 460V power source.  
**Wire colors for 230V power** are L1=red, L2=black, L3=blue.

2 Connect the high-voltage wiring from the motor.  
Shielding: braided copper mesh and drain wire

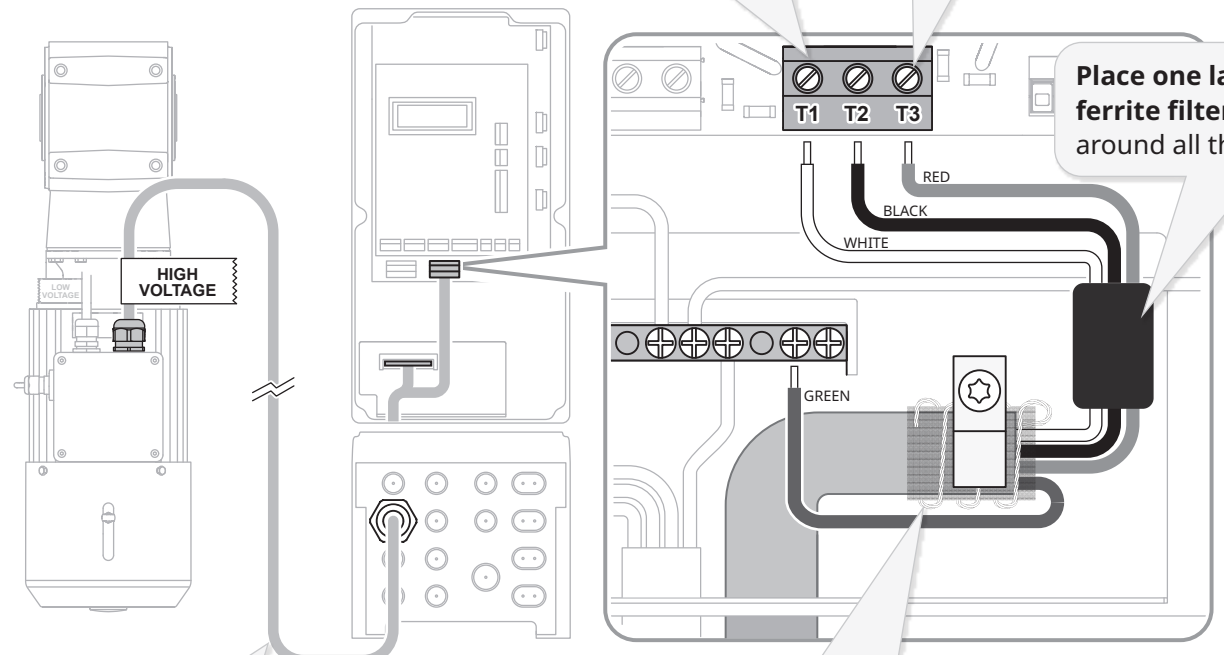
16 AWG



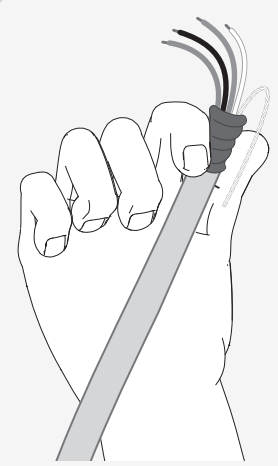
Do not try to remove the green terminal block from the circuit board.  
It is fixed in place and will break.

Maximum torque for all screws is 2.5 in-lbs.

Place one large ferrite filter around all three wires.



Maximum wire length between motor and controller: 100' (one hundred feet).



The **shield** (braided copper mesh) and **drain wire** (bare metal) must be in contact with the **P-clip**.  
**To ensure a tight contact:**  
1. Loosen the P-clip.  
2. Strip high-voltage cable jacket to expose braided shield, then pull back shield and wrap drain wire around it.  
3. Run wires, shield and wrapped drain wire under clip.  
4. Tighten clip.  
5. Trim excess drain wire.

How to install the low-voltage wiring

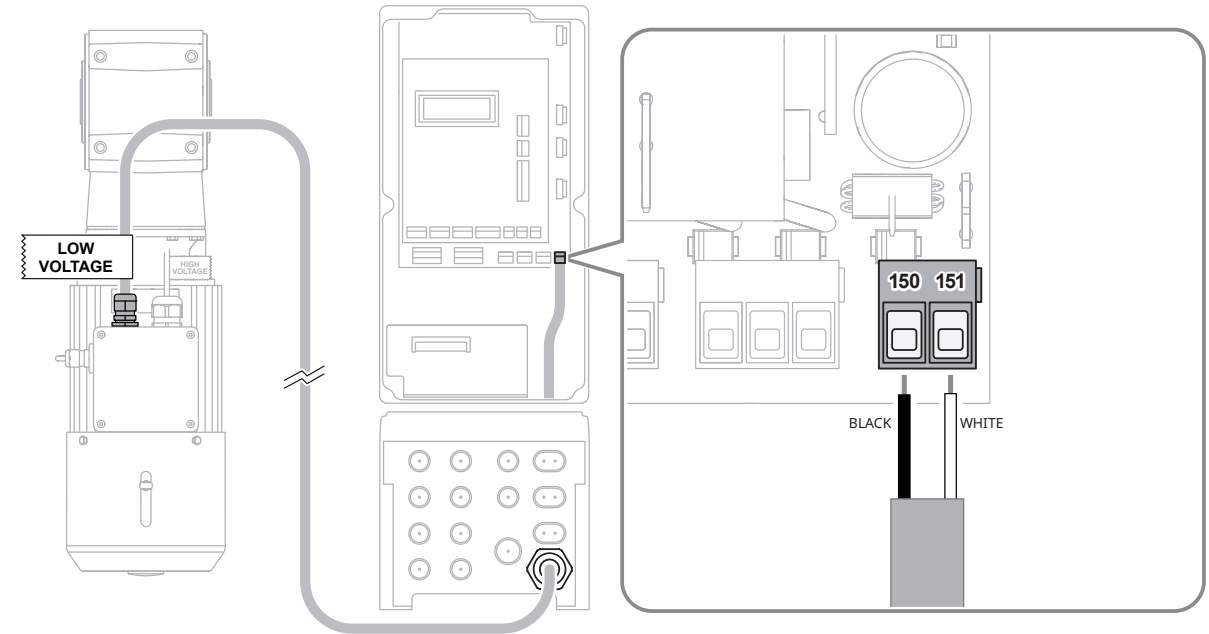
IMPORTANT



- Low-voltage wires can be run in the **same conduit**.
- All low-voltage wiring must be 24 VDC+ only, installed per NEC to Class II power supply requirements.
- Maximum torque for all System 4 controller screws is **2.5 in-lb**. **DO NOT use power tools.**

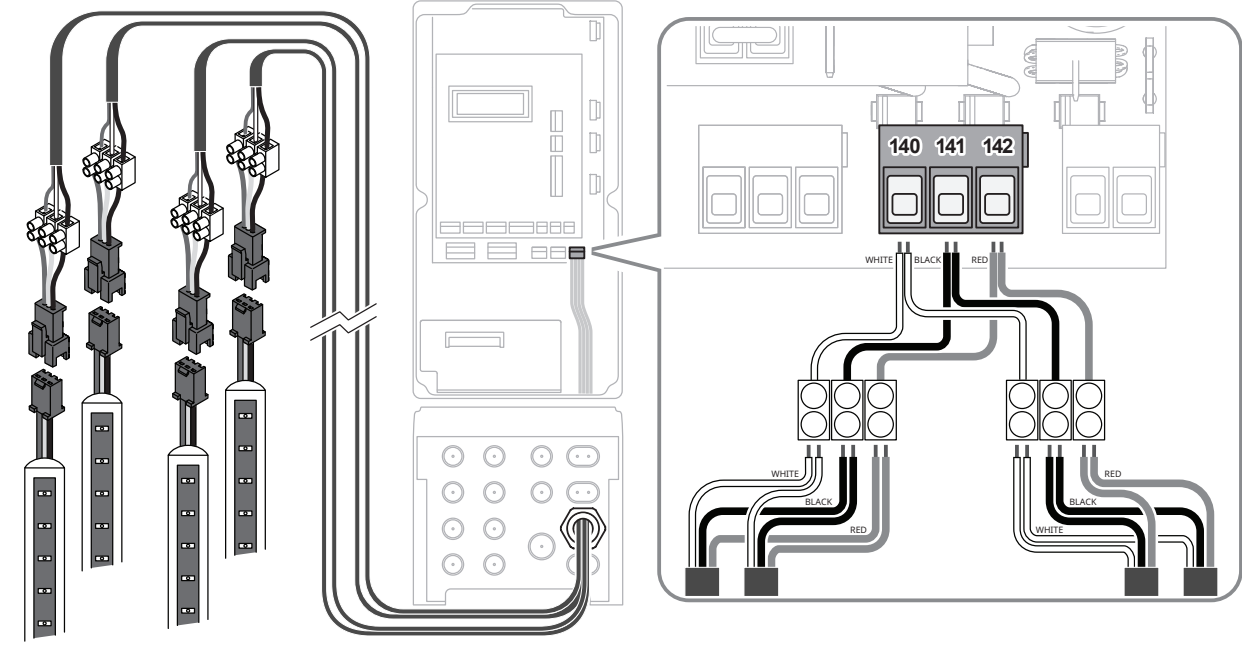
1 Connect the brake wiring from the motor.  
Shielding: unshielded

18 AWG



2 Connect the wiring from the Pathwatch LED strips.  
Shielding: unshielded

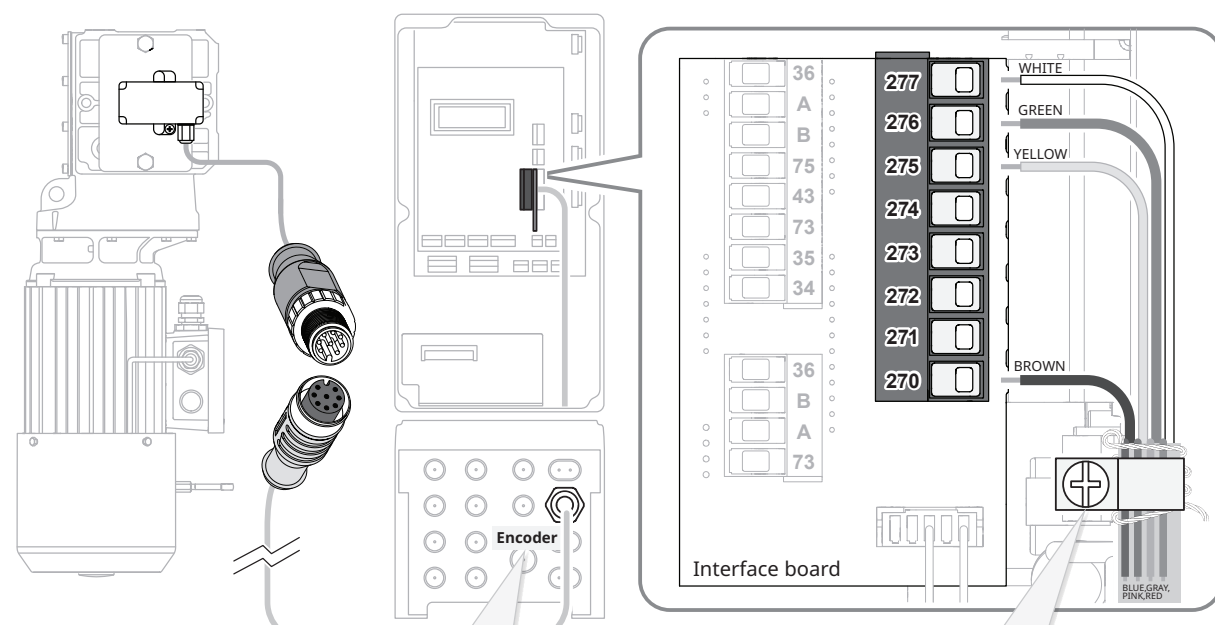
18 AWG



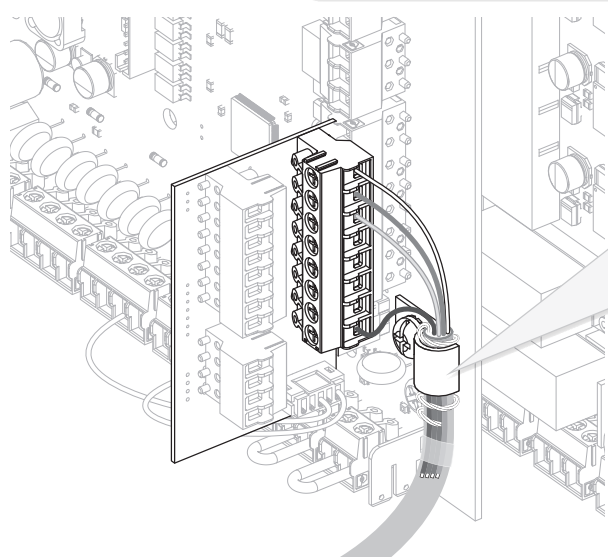


### 3 Connect the wiring from the encoder. Shielding: metal foil and drain wire

## 24 AWG



Mark controller end of cable as "Encoder"



The **drain wire** (bare metal) must be in contact with the **P-clip**.

**To ensure a tight contact:**

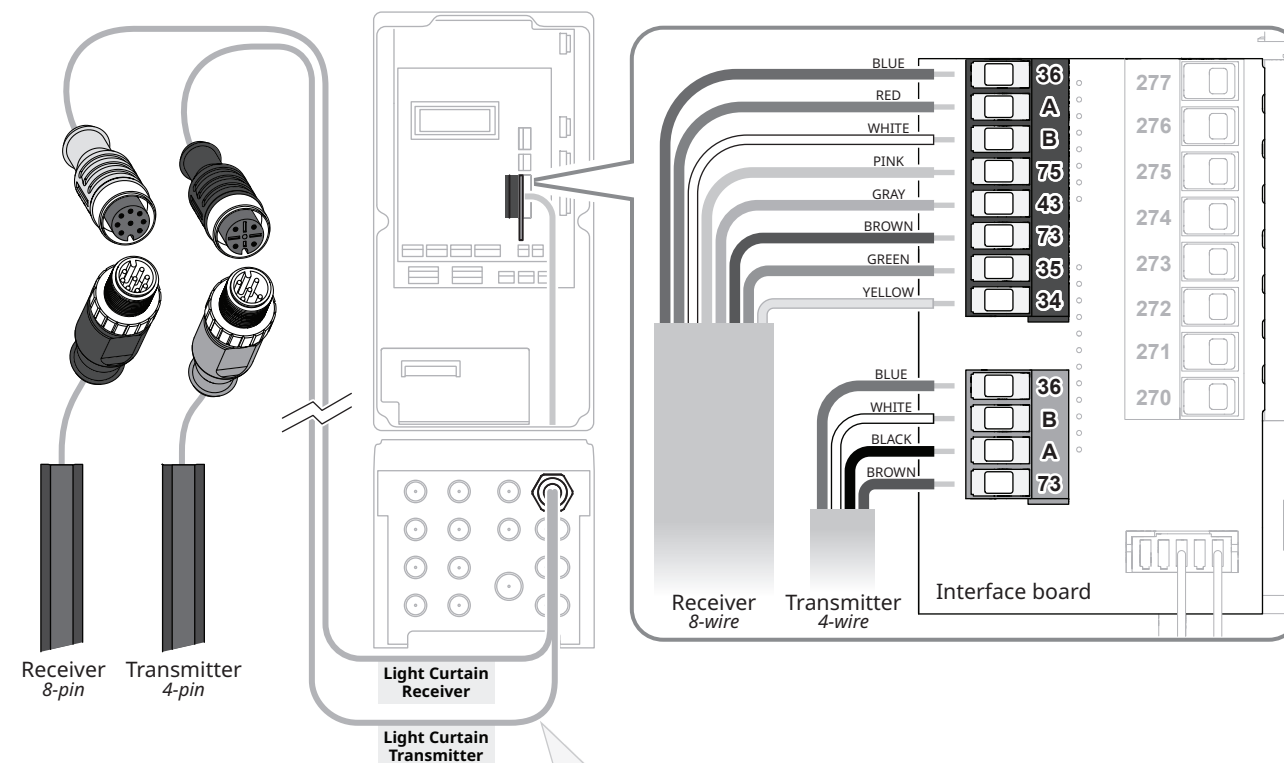
1. Loosen the P-clip.
2. Strip encoder cable jacket to expose wires.
3. Trim and bend red, pink, gray and blue wires. Tape to jacket.
4. Wrap drain wire around jacket and unused wires.
5. Slide cable under P-clip and tighten.  
**Make sure there is maximum contact** between clip and drain wire.
6. Trim excess drain wire.

### NOTICE

**Encoder wiring must not be spliced** unless you have consulted with Rytec technical support at 800-628-1909.

### 4 Connect the wiring from the light curtain. Shielding: metal foil and drain wire

## Receiver: 24 AWG Transmitter: 22 AWG



Mark controller end of receiver cable (8-wire, yellow connector) as "Light curtain receiver"

Mark controller end of transmitter cable (4-wire, black connector) as "Light curtain transmitter"

Before powering up the door

**WARNING**

It is recommended that this pretest be done by a certified electrician.

**1** Make sure the power to the door is correct.

- Open the System 4 control box and check the power supply listed on the label inside.
- Test the voltages at the disconnect. Test leg to leg and leg to ground.
- If power is correct, **power up** the door and start the set limits sequence.

How to set limits and test the door

**CAUTION**

Make sure that people and vehicles do not pass through the open doorway until the automatic calibration is complete. The door can open or close unexpectedly, resulting in injury.

**The Controller Display**

**Access level**

- 0 = Operator level
- S = Service level
- R = Rytec level

**Parameter name**

**Parameter number**

**Parameter value**

**Blinking cursor**

**The Controller Controls**

**UP Arrow**

**RESET Button**

**DOWN Arrow**

**Icon key**

Press

Press and hold

Press UP or DOWN arrow, as needed

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

Do This

1

Turn on power to controller

Result

! Synchron. !

\_0 Press Reset

The sequence starts. Scrolling message: Press Reset button to begin

2

1X to start sequence

! To Open Pos. \_0 Hold Reset

Scrolling message: Hold Reset button if position OK

3

until open height is correct

! To Open Pos. \_0 Hold Reset

The bottom of the loop seal should line up with the lintel (top of the door opening).

Do This

4

until "Open Limit Set" screen displays

Result

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 lower the door panel

Search Edge

\_330 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

Act1 = 4Sec

Object 232

Door Is Closing

1515 Limit Corr.

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 now **test the door**.


How to manually reset the close limit (optional)


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

Do This

Result


1


 until the parameter screen displays



You are in Parameter mode. Go to parameter 999.


2


 2X to reach parameter P:999



The Password parameter P:999 screen displays.


3

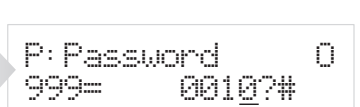
 1X to move cursor to the right (edit value)



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


4


 16X to set value to hexadecimal 10



Set the value to 10 (Service level password).


5


 until question mark changes to checkmark (value saved)



The Service level password is saved.

6

 1X to move cursor to left (parameters)




You can now go to parameter 275.


Next: navigate to parameter P:275 and change the value

Do This

Result


1

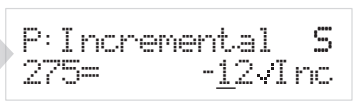
 until parameter displays



The default value is -12 (default at.

2


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

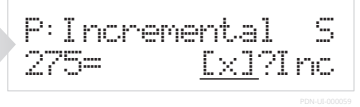


You can now change the value.

- 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.

3


 until new value displays




IMPORTANT

Do not change the value by more than 10 increments. Then test the door.


4

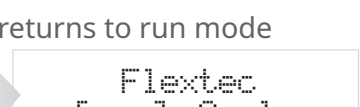
 until question mark changes to checkmark (value saved)



The new value is saved.

5

 until door returns to run mode




How to test the door and the safety features

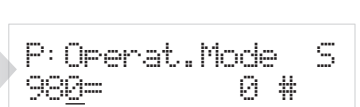
Navigate to parameter P:980 and set the value to 4 so the door will cycle continuously

Do This

Result


1

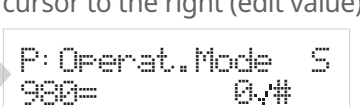
 until parameter displays



The default value is 0.


2


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




You can now change the value.

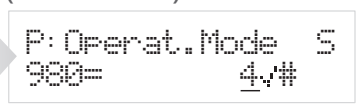
3

 4X to change the value to 4




4


 until question mark changes to checkmark (value saved)




The new value is saved.


5

 until door returns to run mode



6

 press either arrow to start cycling



1

Watch the door as it cycles.

- **Make sure** the door panel rises to the fully open position, remains in place for the standard time, then closes to the fully closed position.
- **Make sure** the fully open and fully closed positions remain at the set limits.
- **Make sure** the reversing edge is level when the door is fully closed.

IMPORTANT

- **Let the ACL timer** hold the door open through each cycle. Shortening the timer while the door is cycling can cause the motor to overheat.

2

While the door cycles, **look and listen** for:

- **Unusual noises** such as grinding, whining or excessive motor noise
- **Excess movement** by the motor, drive or drum.
- **Unexpected delay** in activation or unusually long time period before automatically closing.

3

Make sure the Pathwatch LED strips operate correctly as the door opens and closes:

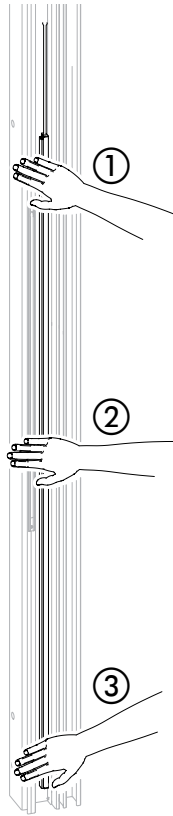
- **Continuous red light** while the door closes.
- **Three-second sequence** of yellow light before the door closes.
- **If the door also has a Pathwatch II** warning light at the top of the door:
  - There is also a continuous red light **while the door opens.**
  - The three-second sequence before the door closes is **red instead of yellow.**



- 4 Test the light curtain** by placing your hand flat across the light curtain in the path of the door at the top ①, middle ② and bottom ③ of the light curtain while the door panel closes.

**Make sure** the door panel returns to the fully open position each time the light curtain is activated.

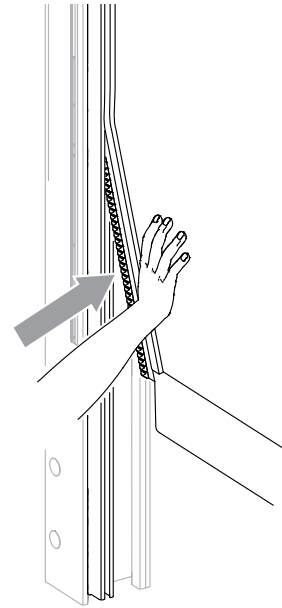
**Make sure** the door panel stops immediately when you place your hand at the top a of the light curtain, and gradually when you place your hand in the middle b or at the bottom c.



- 5 Test the reversing edge** by placing your arm in the path of the door while it is closing.

**IMPORTANT** **Make sure** you place your arm above the light curtains.

**The door panel should stop**, then reverse direction and rise to the fully open position.



- 6 IMPORTANT**

**Set the controller** to parameter mode.

**Set Parameter 980 back to 0** to take the door out of continuous cycle.

**Return** to run mode.

- 7 Activate** the door using each activating system at least three times per system.



**WARNING**

**Make sure you are standing clear** of the door panel while performing this test.