Spiral® LH® (Low Headroom) SSN and STN Installation Manual

Rytec installation safety information

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.

⚠ CAUTION

Caution indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

Safety icons used in this manual

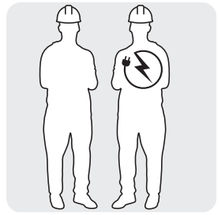
Installation safety

- **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 all personnel at the installation site have been informed of the date, time and location of the installation.
  - Make sure 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 you have been informed of any hazardous conditions that exist within the installation site.
  - Make sure the installation site is kept clear of obstructions and debris and that the floor is dry.
  - Make sure 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.

Other icons used in this manual

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.

Requirements – Staffing



- Two installers – three are recommended when the door panel is lifted.
- 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.

⚠ WARNING

Electrical work must meet all applicable local, state and national codes.

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.

Requirements – Site Conditions

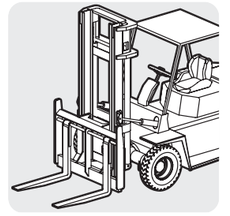
- Installers must have unrestricted access to the door opening at all times during the installation.
- Make sure there is no pedestrian or vehicular traffic within the installation site for the duration of the installation.

Requirements – Lifts

⚠ WARNING

A forklift is mandatory for the safe and proper installation of this door.

- **Forklift** that meets the following specifications:

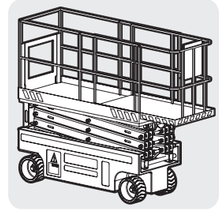


  - Minimum 4,000-pound lift capacity
  - Minimum height ability: door height + 12"
  - 48"–wide fork
  - Side shift capability

⚠ WARNING

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

- **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

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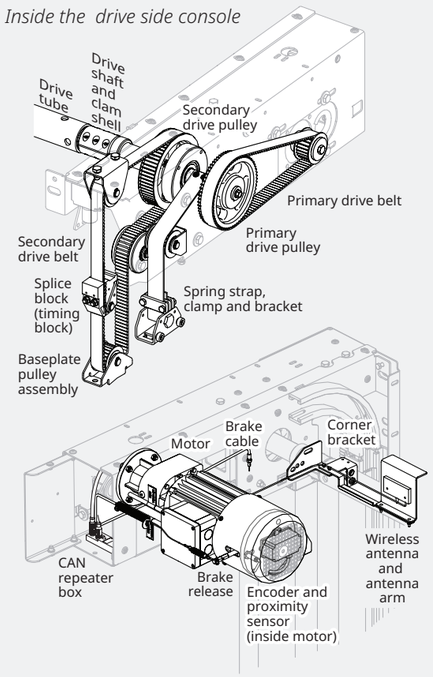
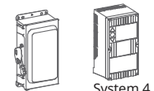
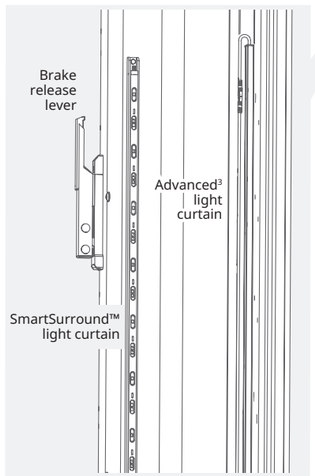
Inside the drive side console



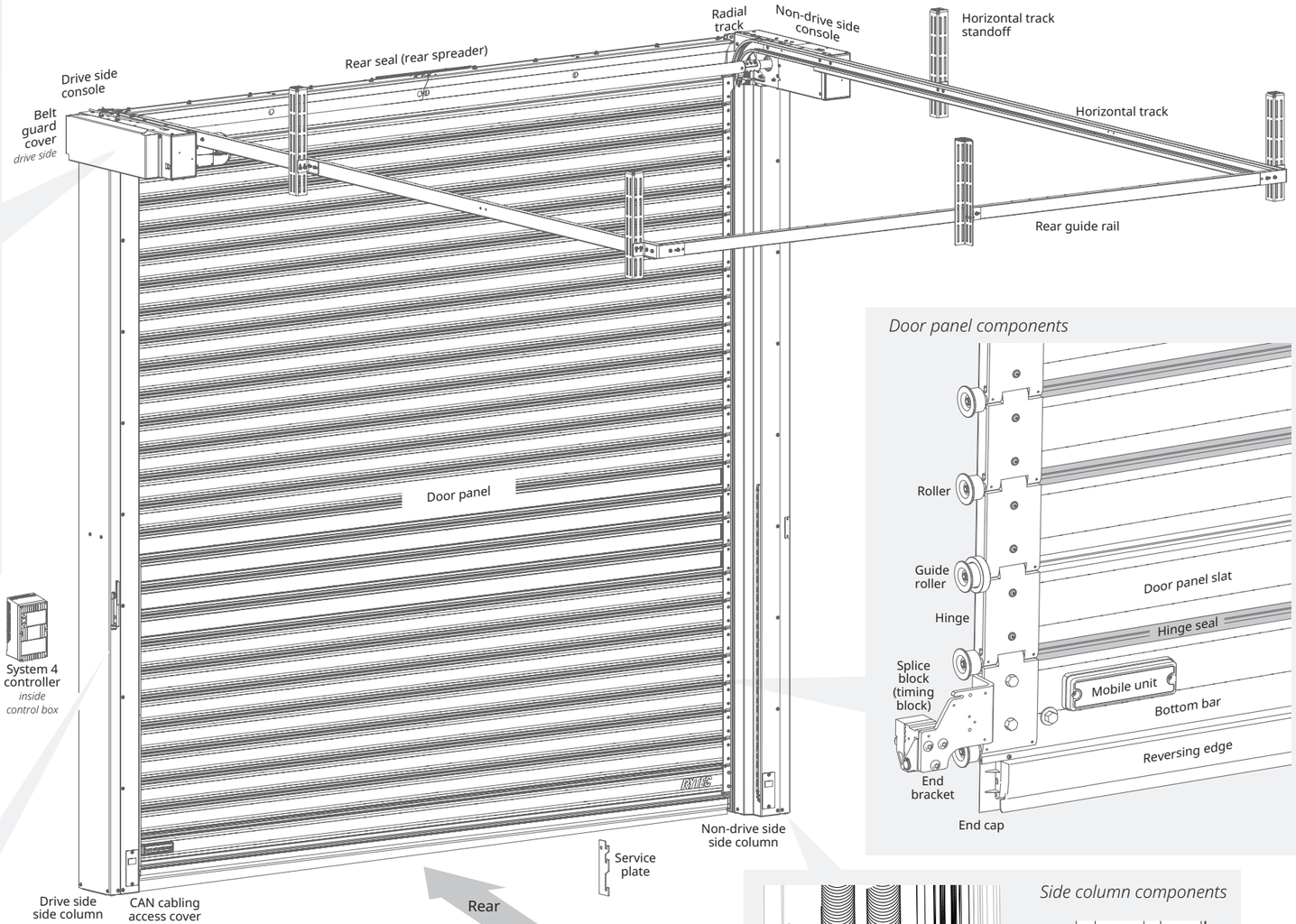




Terms used by Rytec to describe the parts of the door

This illustration shows the terms used by Rytec technical support to refer to the major components of your door.

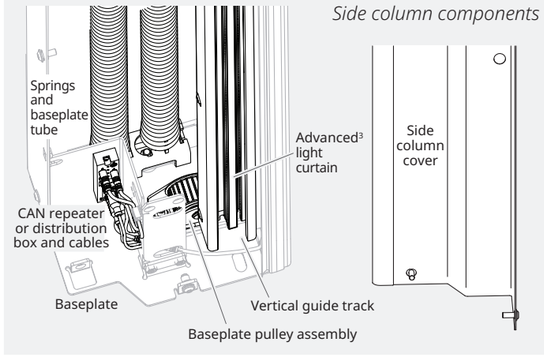
Using these terms helps technical support provide assistance as quickly as possible.



NOTE:
Drive side can be left (LH) or right (RH)

Door panel components

Side column components



NEW in 2022 Spirals: Smartsurround™ light curtains and CAN bus cabling

Two new features have been added to Spirals in 2022, both of which change the installation process.

CAN bus cabling

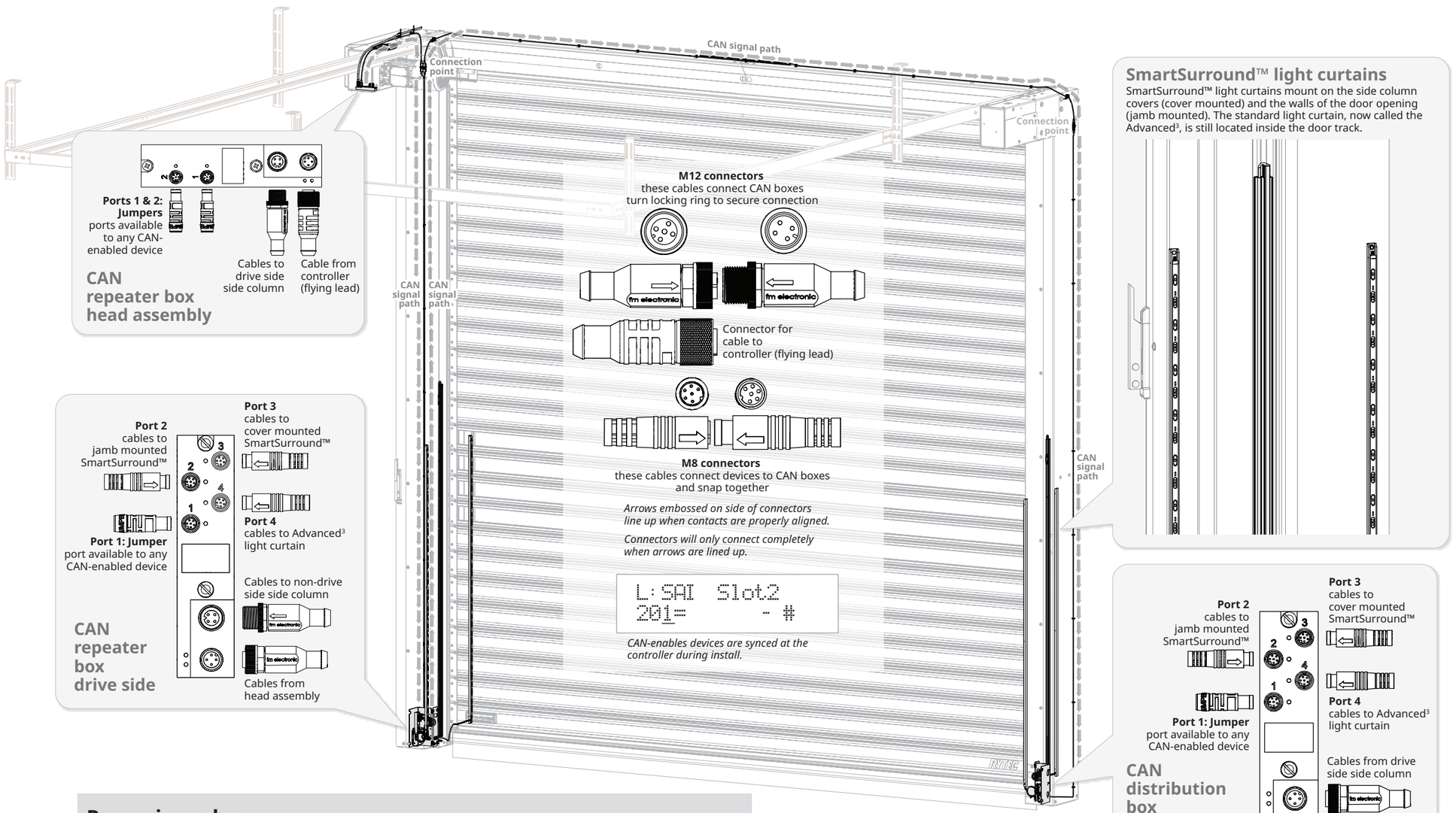
The CAN bus system simplifies cabling and minimizes internal field wiring during installation. the system works this way:

- CAN bus cabling **is a single chain (series) of cables** that connect ALL CAN-enabled devices to the controller.
- **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 colum.
- CAN-enabled Rytec devices **can plug into any available port in any CAN box**. For example the BTA4 can plug into a baseplate port if it is mounted to a side column, or a head assembly port if it is remotely mounted.
- **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.

SmartSurround™ light curtains

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

- Spiral doors now have **three sets of light curtains**:
  - The standard light curtains, now called the Advanced³, in the door track
  - One set of SmartSurrounds™ mounted on the side column covers (cover mounted)
  - Another set installed on the walls of the door opening (jamb mounted)
- The LEDs are larger and brighter than the Pathwatch, and display a sequence of lights that move up and down when the door opens. and closes, and that flash repeatedly whenever any of the detection planes are broken.



SmartSurround™ light curtains

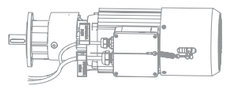
SmartSurround™ light curtains mount on the side column covers (cover mounted) and the walls of the door opening (jamb mounted). The standard light curtain, now called the Advanced³, is still located inside the door track.

Reversing edge

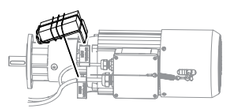
The SmartSurround™ system, in combination with the Advanced³ light curtains located within the door line, meets the requirements for entrapment protection. SmartSurround™ offers a contactless method of object recognition that is an improvement over the reversing edge system; this makes the reversing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

Standard installations of Spiral doors now have the reversing edge deactivated. Activation can be requested as an **option.**

Check the motor to see if a wireless antenna is attached. If it is, follow steps to install the antenna and bracket *(p.26)* and connect wire for reversing edge at controller *(p.36)*.



No wireless antenna: reversing edge deactivated (standard)



Wireless antenna included: reversing edge activated (optional)

Spiral® LH® (Low Headroom) Installation Manual for SSN (Solid Panel) and STN (Full Vision Panel) Models

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

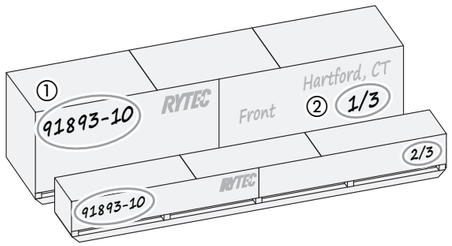
Spirals ship in **two crates.**

IMPORTANT

Each set of crates is marked with the unique serial number for the door ① and the number of crates used for the door ②.

All parts for the door are in these crates.

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



Mixing parts from different doors voids the warranty for all doors in the installation.

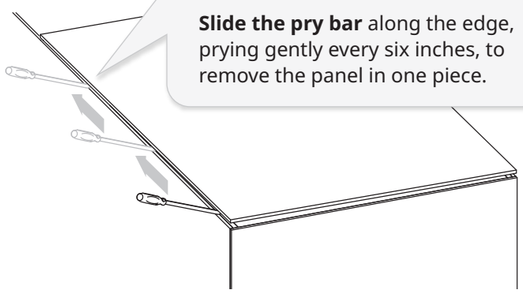
1 Remove all top panels.

Pry bar

INSIDER'S TIP

Panels are made of fiberboard that shreds easily, and are secured with many nails.

Slide the pry bar along the edge, prying gently every six inches, to remove the panel in one piece.



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

Small parts box(es): check the serial number on side of box. There may be two boxes.

IMPORTANT

Open box, remove the red documents envelope, then open the envelope and get the object list (also called the cut sheet). Check serial numbers on both.

SMALL PARTS

Parts and hardware that you find in the box(es) will be called out in this manual as they are needed.

Drive and non-drive consoles: shrink-wrapped and on separate pallet. **Requires forklift to remove.**

Indicate drive side: left (LH) or right (RH). LH is used for this manual.

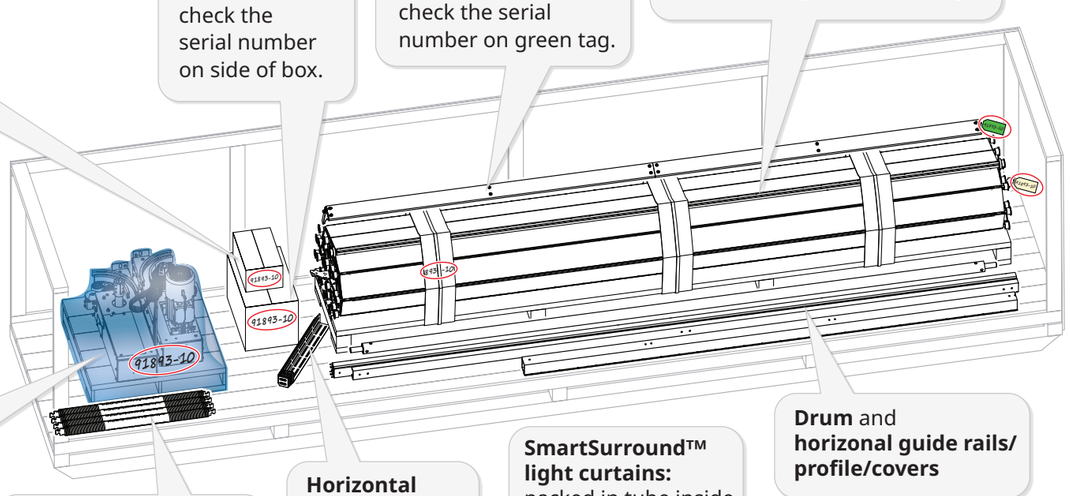
Check the serial number written on shrink wrap.

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

Rear seal (rear spreader): check the serial number on green tag.

Door panel: on separate pallet. **Requires forklift to remove.**

Check the serial number on foam padding and manila tag.

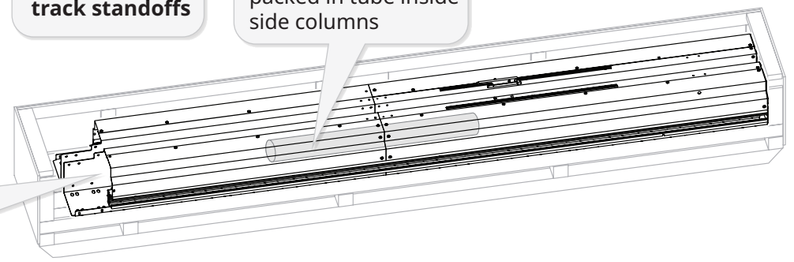


Springs: number varies from one to twelve based on size of door.

Horizontal track standoffs

SmartSurround™ light curtains: packed in tube inside side columns

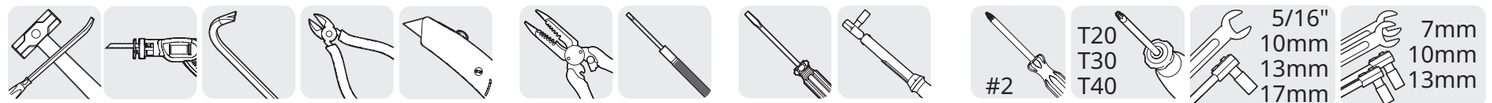
Drum and **horizonal guide rails/ profile/covers**



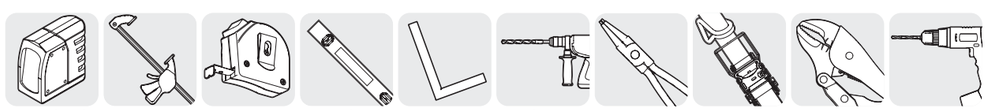
Side columns: check the serial number on the label.

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

Tools you need



Pry bar and mallet or reciprocating saw · Crowbar · Cutting pliers · Utility kinfe · Wire stripper · Precision screwdriver · Flat screwdriver · Torque wrench · Phillips screwdriver (#2) · Torx screwdriver (T20, T30, T40) · Socket or open wrench (5/16", 10mm, 13mm, 17mm) · (2) Sockets or wrenches needed (7mm, 10mm, 13mm)



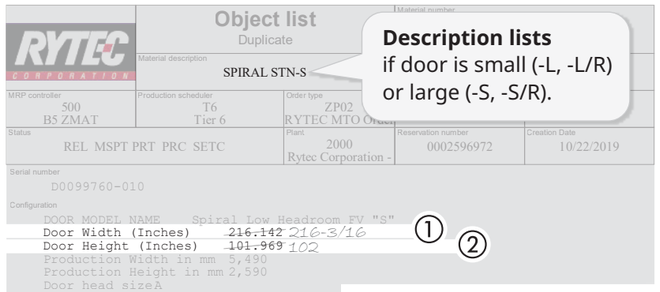
Laser level · (2) Bar clamps · Measuring tape · Spirit level · Carpenter's square · Anchoring tools · Snap ring pliers · (2) Ratchet straps · (2) Vise grips · Power drill

You also provide

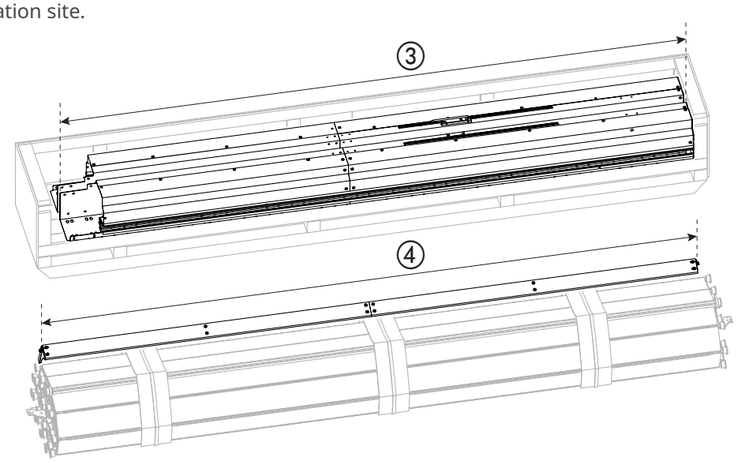
Anchoring hardware · Shims · Caulk · Cable ties and anchors · Electrical tape and wire nuts

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

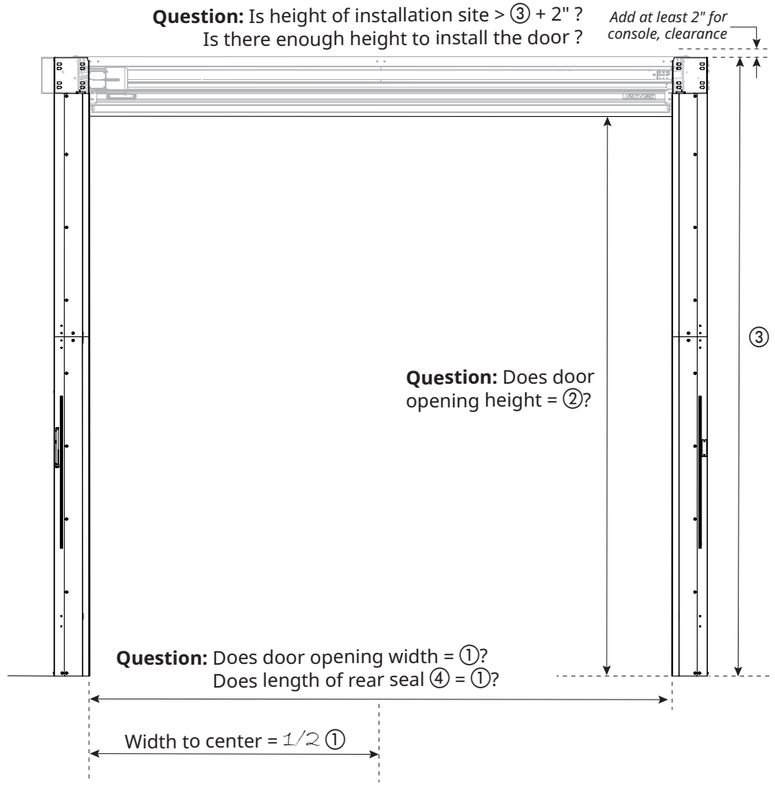
Tape measure



Write on object list:
① and ② as rounded fractions
Width to center = 1/2 ①
Total height = ③ + 2"



Question: Is height of installation site > ③ + 2" ?
Is there enough height to install the door ?



IMPORTANT **Spirals are built to metric specifications** to a very tight spec. Round the **Door Width** and the **Door Height** to nearest 1/16 inch.

Decimal	.063	.125	.188	.250	.313	.375	.438	.500
Fraction	1/16	1/8	3/16	1/4	5/16	3/8	7/16	1/2

Decimal	.563	.625	.688	.750	.813	.875	.938
Fraction	9/16	5/8	11/16	3/4	13/16	7/8	15/16

1. **Locate the Door Width ① and Door Height ② on the object list.**
   Round the numbers to the nearest 1/16 inch.
   Write these numbers on the object list.
2. **Measure the door opening to make sure:**
   - The opening width equals the number on the object list ①.
   - The opening height equals the number on the object list ②.
3. **Measure the rear seal (rear spreader) ④:**
   - The length should equal the Door Width ① in the object list..
4. **Calculate the total height needed for the installation:**
   - Measure the height of a side column ③ in the crate.
     - Add two inches (2") to account for the side consoles and at least one inch (1") of clearance.

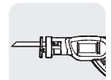
   Write this number on the object list.
5. **Make sure there is enough space to install the door:**
   make sure the site has space total height you calculated.
6. **Calculate the width to center:** divide the Door Width ① by 2.
   Write this number on the object list. **Use it** when you center the door.

Call Rytec technical support at 800-628-1909
or email 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 panel.

Mallet and pry bar

or



Reciprocating saw

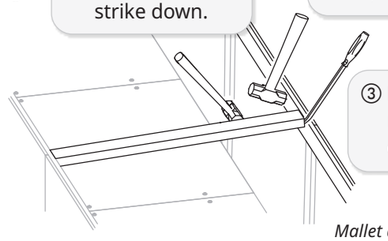
⚠ CAUTION

Flatten exposed nails as you go.

Keep hands clear while striking or cutting.

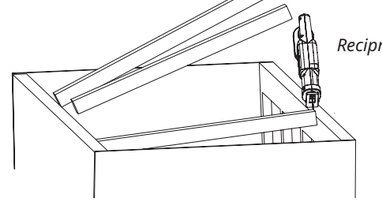
① **Strike across** the crossbar to loosen nails. **Do not** strike down.

② **Strike** the side panel to expose nails.



③ **Pry up** to remove crossbar.

Mallet and pry bar

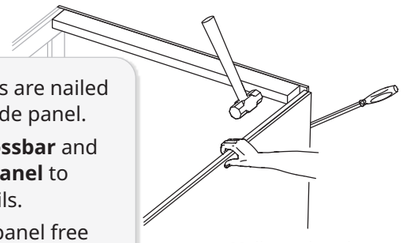


Reciprocating saw

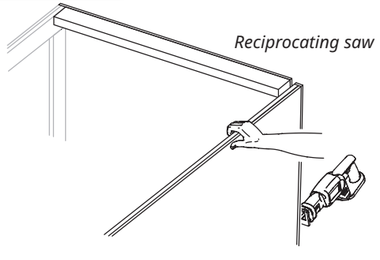
End panels are nailed into the side panel.

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 prep the consoles

1 **Cut ties** so you can move the springs, and any other parts that block clear access to the console pallet.

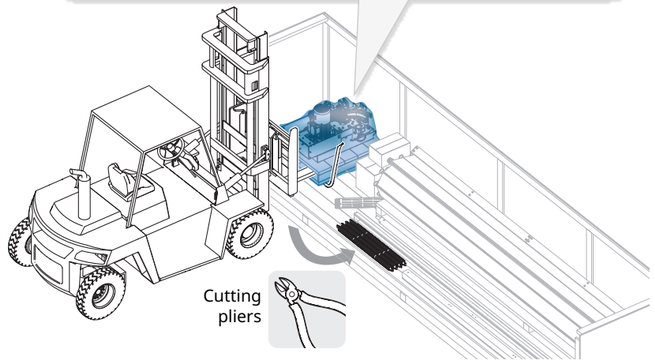
Use a forklift to move the consoles to an open space.

INSIDER'S TIP

After the consoles are removed, **use the crate** to stage parts until they are needed.

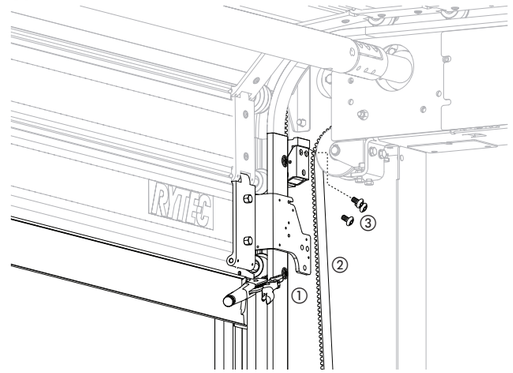
IMPORTANT

Pallet is nailed to crate. Use a crowbar to loosen the nails before lifting.



2 **Carefully cut** the shrink wrap and remove the drive side and non-drive side consoles.

3 **Drive side console: remove** the belt guard.



Things to know before you prep the drive side console

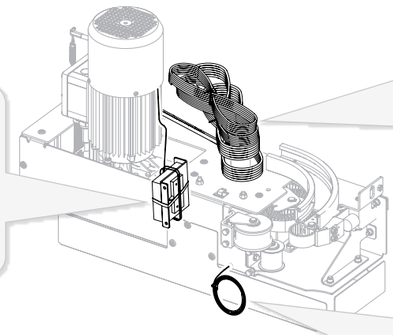
IMPORTANT

- The cables that are preinstalled in the drive side console **should not be repositioned, removed, or have the ties cut** until you are instructed to do so in these instructions.
- **Make sure** all preinstalled cables, belts and straps are clear of the side columns when you lift the console into place, so that they are not crushed or crimped.

Drive side console

Wireless antenna: this is prewired to the encoder (inside the motor) and crated next to the motor.

Leave in place until it is time to install it.

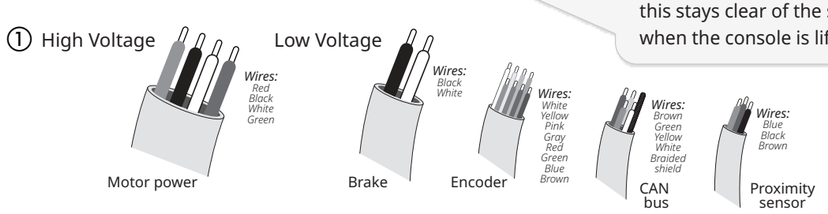


Power cables: these are preinstalled, cable tied and placed on the drive shaft when the door is crated.

Wire colors are shown below ①.

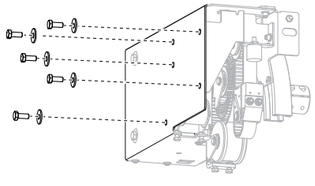
Leave the coils in place until the console in installed.

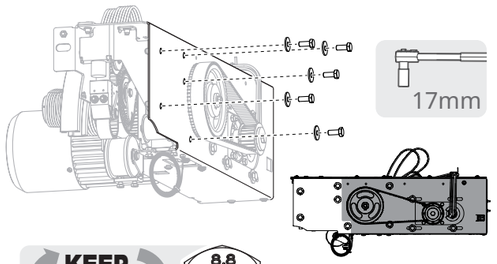
Brake release cable: make sure this stays clear of the side column when the console is lifted into place.



4 **Remove** the five preinstalled side column bolts and washers (located in the non-shaded area).

Do this on both consoles.

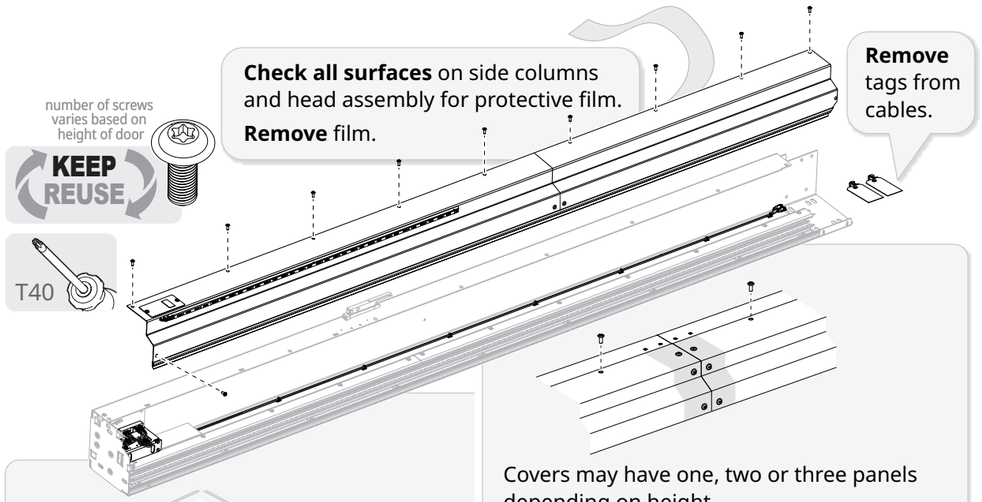


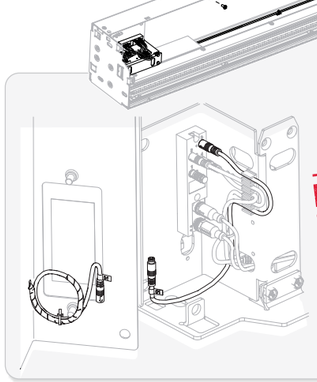


How to prep the side columns

1 **Remove** the covers on both side columns.

Screws for side column covers run in a vertical line. There is also one screw at the base of the column.





IMPORTANT

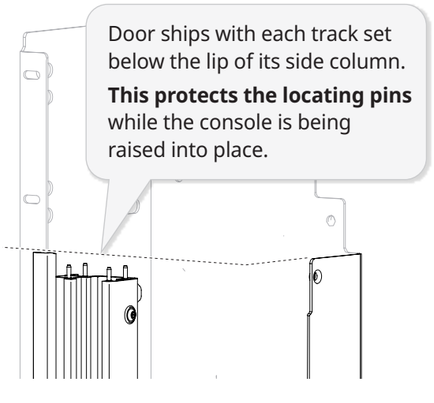
Covers may have one, two or three panels depending on height.

Keep covers intact – **DO NOT remove screws** that run horizontally (shaded area).

The SmartSurround™ light curtain on the side column cover connects through two cables labeled “01”.

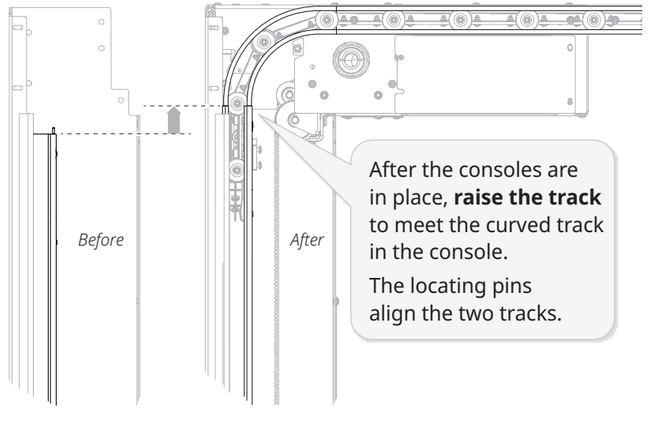
Make sure the cables are disconnected when you remove the cover. You will reconnect them later.

2 **Make sure** the vertical guide tracks for the door panels are in the fully lowered position.



Door ships with each track set below the lip of its side column.

This protects the locating pins while the console is being raised into place.



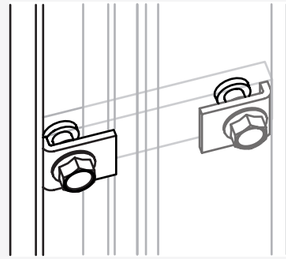
After the consoles are in place, **raise the track** to meet the curved track in the console.

The locating pins align the two tracks.

3 **Loosen** the holders on the vertical guide track.

If necessary, lower the track.

Do this for both columns.



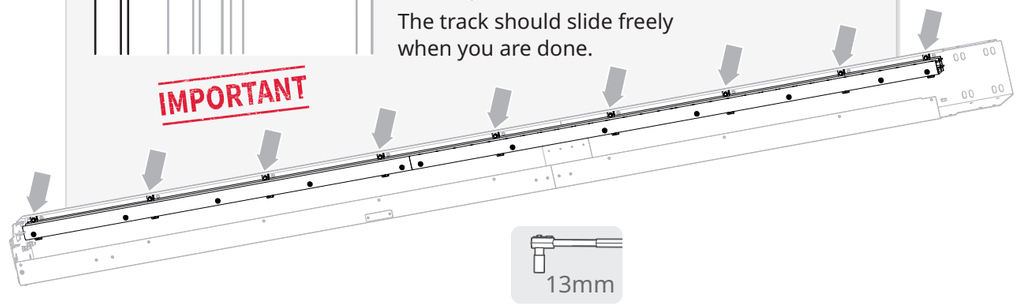
Loosen, but do not remove, each pair of track holders. The screws pass through a spacer and into holes in the wall of the column.

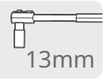
Do not loosen them so far that they come loose from their hole.

The number of holders varies based on the height of the column.

The track should slide freely when you are done.

IMPORTANT



4 

Select one holder at the halfway point of the side column and **hand tighten the screws** to secure the guide track in place.

Do this for both columns.

The tracks can now be repositioned easily after the side columns are installed, but will not slide while the columns are being lifted into place and leveled.

How to center the door in the door opening

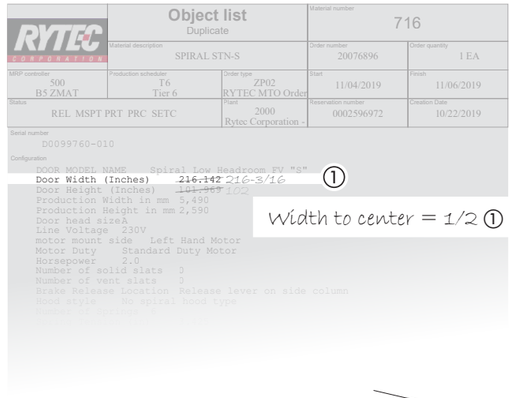
IMPORTANT

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

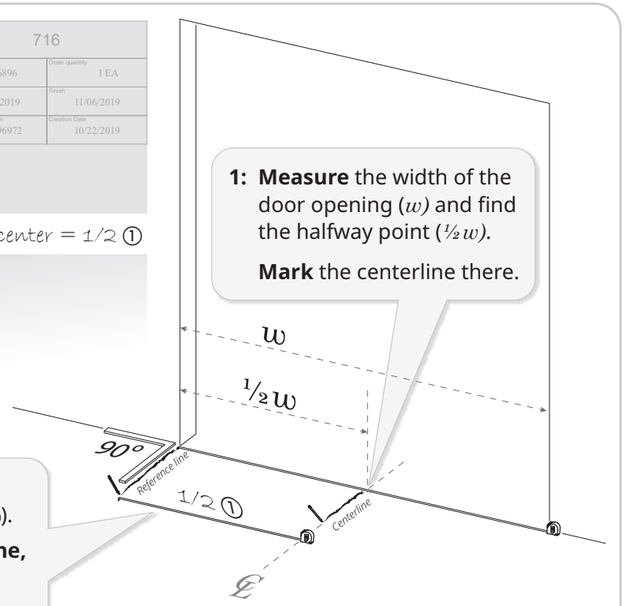
Measuring tape

Carpenter's square



1: Measure the width of the door opening (*w*) and find the halfway point (*½ w*).

Mark the centerline there.



2: Use the width to center from the object list (1/2 ①).

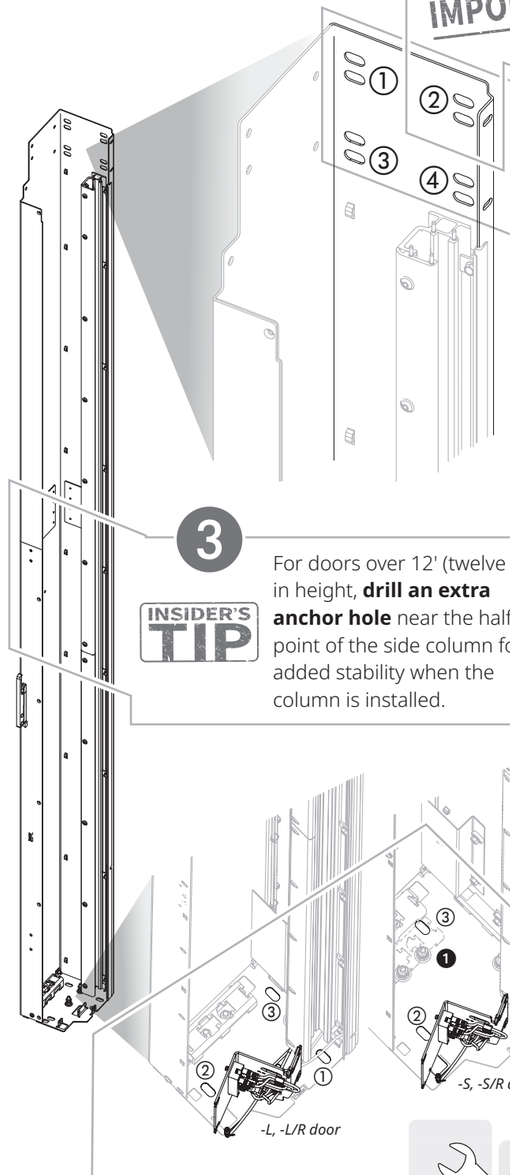
Starting at the centerline, measure and mark the reference line for the first column.

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

IMPORTANT

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

Before you begin: things to know before you anchor the side columns



IMPORTANT

Do not anchor the top anchor hole on the inside of the side column (above the guide track) until after the consoles have been installed and leveled.

This anchor passes through both the console and the side column.

1

There are four sets of anchor holes (①,②,③,④) at the top of each side column, with two holes in each set.

- **Use at least one anchor in each set of anchor holes: ①, ②, ③ and ④.** Anchor both holes unless conditions at the installation site prevent this.
- Position anchors at the **horizontal center** of the anchor holes.

2

How to anchor the door:

- **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 do not interfere with moving parts of the door.

3

INSIDER'S TIP

For doors over 12' (twelve feet) in height, **drill an extra anchor hole** near the halfway point of the side column for added stability when the column is installed.

4

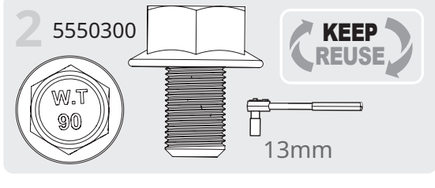
There are three anchor holes (①,②,③) in the baseplate of each side column.

You must use at least two baseplate anchors.

To access all three anchor holes:

- **Remove** the bolts and **move** the bracket and CAN terminal out of the way. **Make sure** you do not disconnect any cables when moving the bracket.

2 5550300



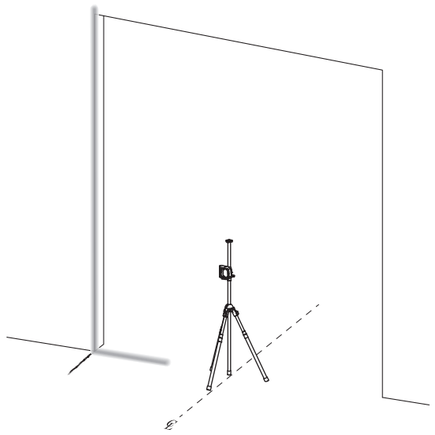
Step 1: Plumb and level the site, then install and plumb the side columns

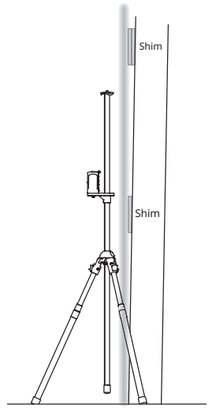
1 **Plumb** the door opening.
If the wall is not plumb, or there is bowing or an obstruction in the wall, **shim** the columns.

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

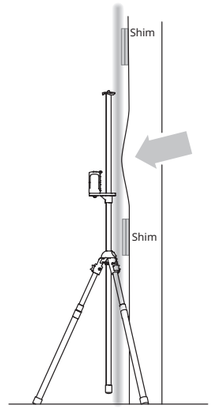

Laser level


Shims





Wall not plumb

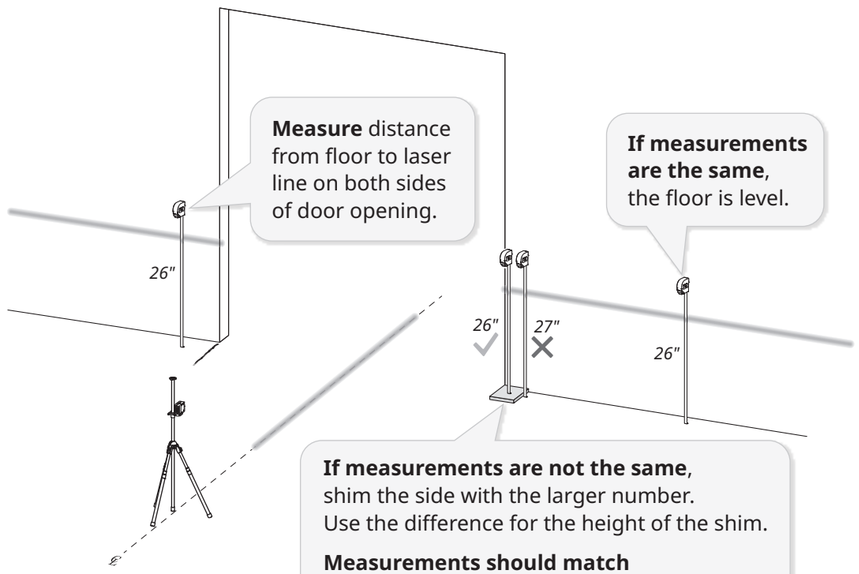


Surface obstructions

2 **Level** the floor.


Laser level

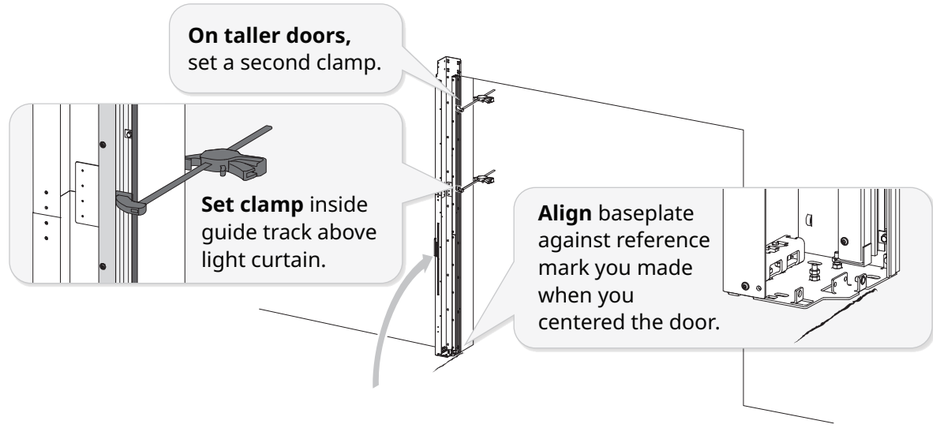

Measuring tape



3 IMPORTANT **If the floor is level,** install the drive side column first.
If the floor is not level, install the side column that is not shimmed first.

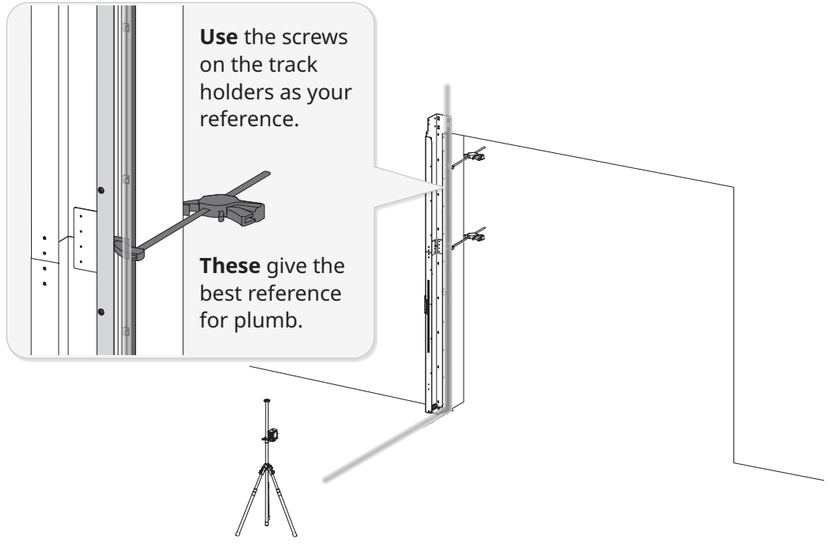
4 **Clamp** the first side column into place.


Bar clamp



5 **Plumb** the side column.


Laser level



6

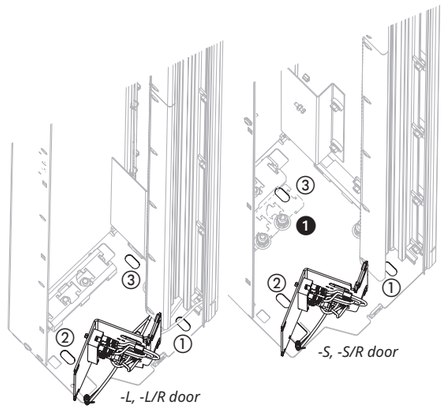
Remove the bolts and **move** the bracket and CAN terminal to allow access to all anchor holes ①,②,③.

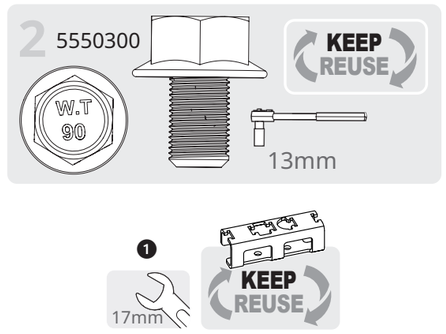
IMPORTANT

Make sure you do not disconnect any cables when moving the bracket.

Leave the brackets loose until the installation is complete.
See ***How to install the wall mounted (rear) SmartSurround™ light curtains*** on page 27.

- If the door is -S or -S/R size, and there are two baseplate spring tubes, **the front spring tube ❶ must be removed** to access the third hole ③. **Reinstall the spring tube** after anchoring.





Do this on both side columns before anchoring.

7

Anchoring hardware

Anchor the first side column to the wall at the **top of the column** and **baseplate**.
Set anchors tight. **Remove** clamp(s).

IMPORTANT

Make sure you have read *Before you begin* on page 8 before you start.

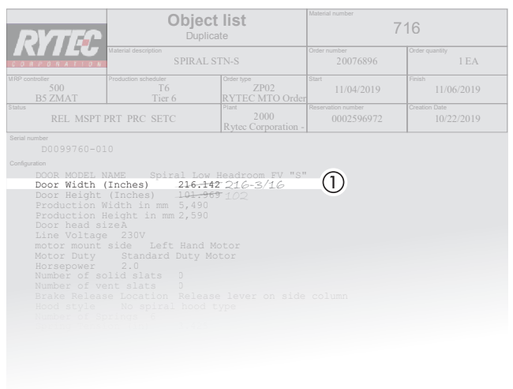
DO NOT ANCHOR the top anchor hole nearest to the door opening until the consoles have been installed and leveled.

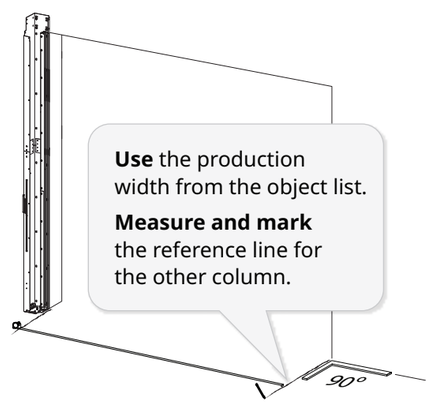
8

Measure and mark the reference mark for the second side column.

Measuring tape

Carpenter's square





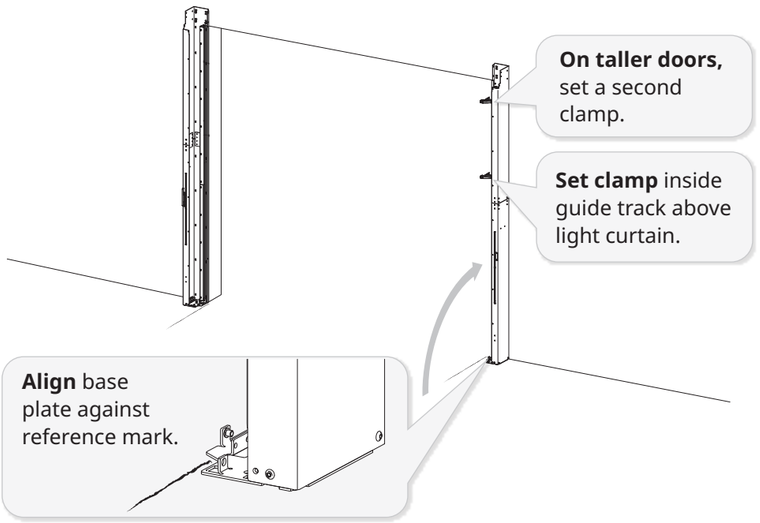
Use the production width from the object list.

Measure and mark the reference line for the other column.

9

Clamp the non-drive side column into place.

Bar clamp



On taller doors, set a second clamp.

Set clamp inside guide track above light curtain.

Align base plate against reference mark.

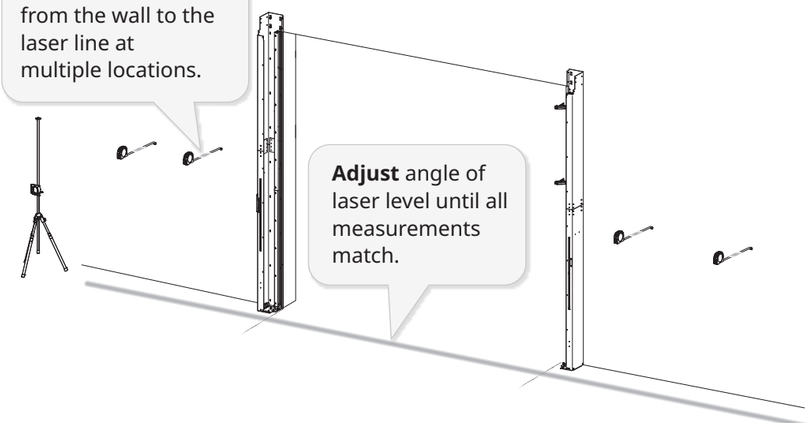
10

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

Measure the distance from the wall to the laser line at multiple locations.

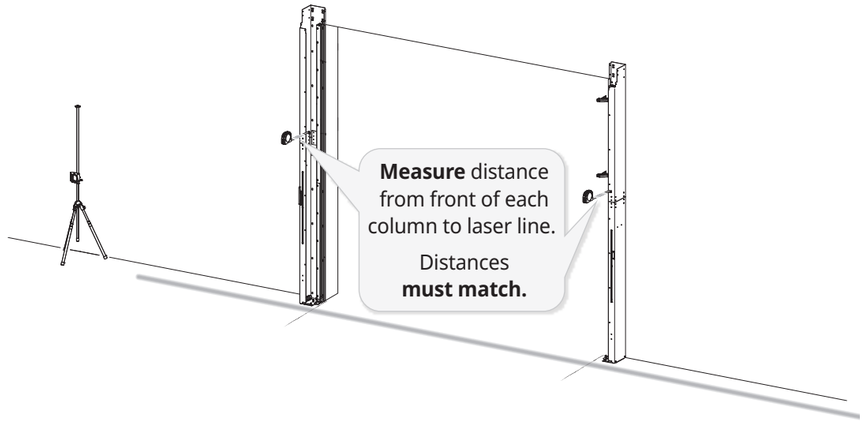


Adjust angle of laser level until all measurements match.

11 **Plumb** the side columns to each other.


Laser level


Measuring tape

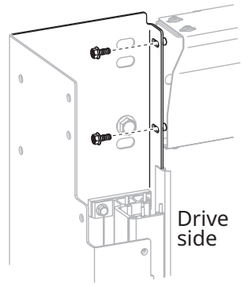


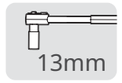
12 
Shims

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

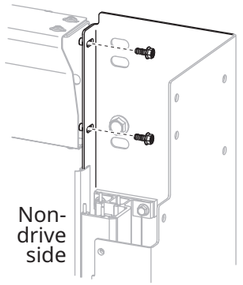
Step 2: Install the rear seal (rear spreader)

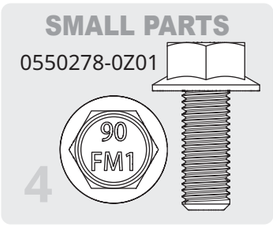
1 **Install** bolts on both sides of the seal and **hand tighten.**


Drive side




Hand tight

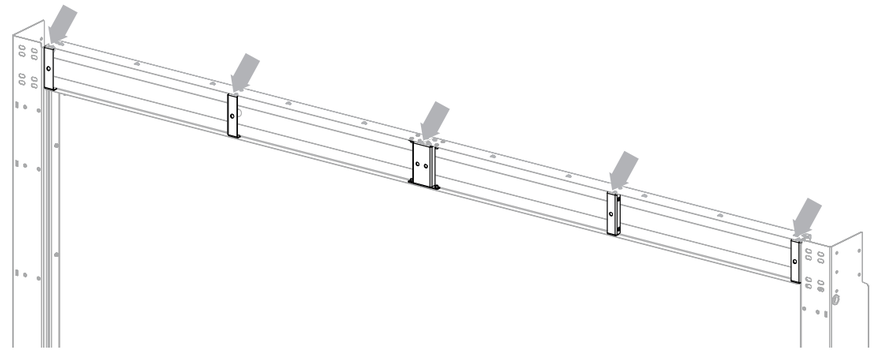

Non-drive side



2 **Make sure** all of the anchor points of the seal are making direct contact with the wall.

- If necessary, **shim the seal** at all anchor points that are not flush.

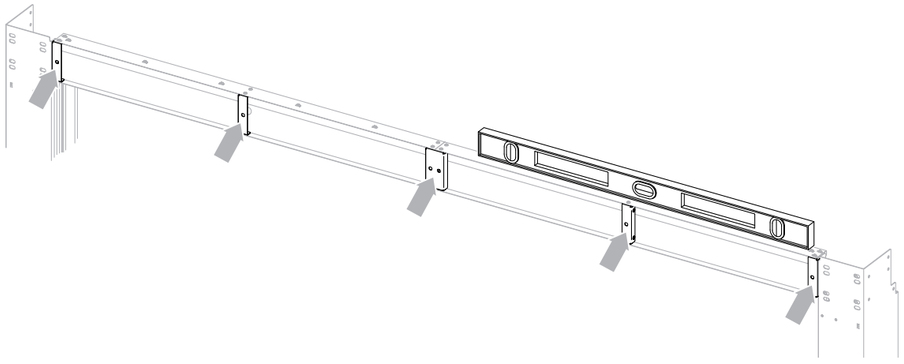

Shims

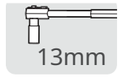


3 **Make sure** the rear seal is level, then .**anchor** the rear seal to the wall at all anchor points.


Spirit level


Anchoring hardware



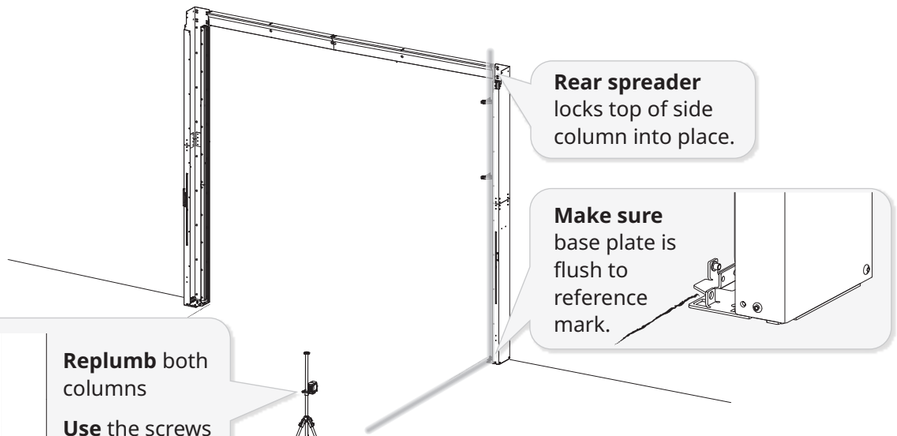
4 

Tighten the bolts on both sides of the seal.

Step 3: Replumb and square the door and finish anchoring the side columns

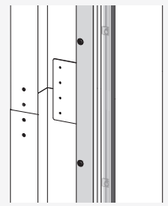
1 **Make sure**,the second side column is properly lined up, then **replumb** both side columns from the front.


Laser level



Rear spreader locks top of side column into place.

Make sure base plate is flush to reference mark.



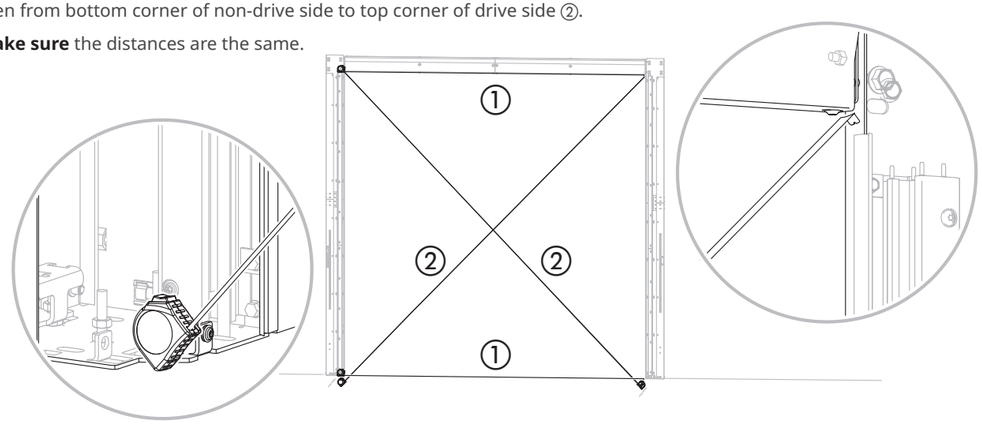
Replumb both columns

Use the screws on the track holders as your reference.

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 
Anchoring hardware

Anchor the second side column to the wall at the **top of the column** and **baseplate**.
Set anchors tight. **Remove** clamp(s).

IMPORTANT

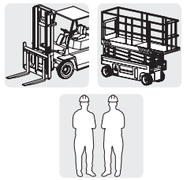
Make sure you have read *Before you begin* on the page 8.

DO NOT ANCHOR the top anchor hole nearest to the door opening until the consoles have been installed and leveled.

How to install the consoles

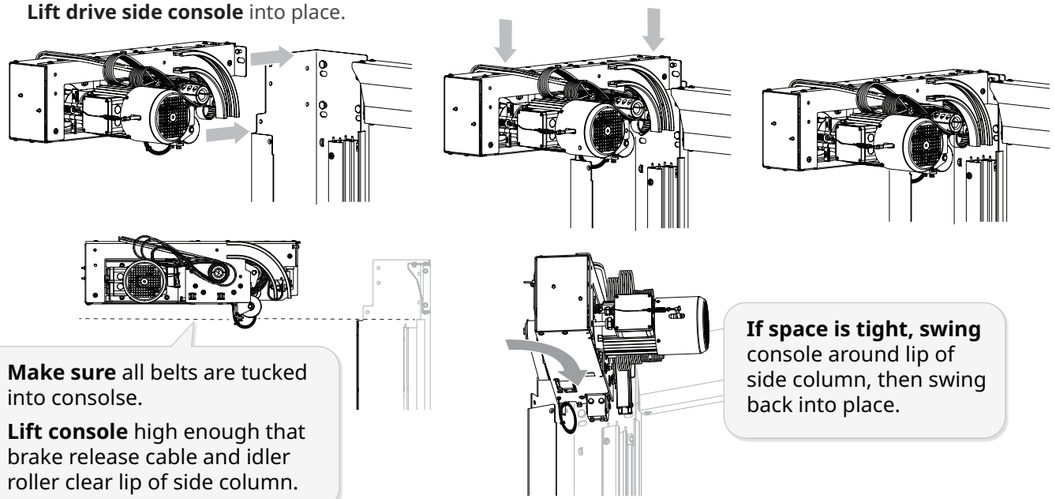
⚠ WARNING

The drive side console weighs up to 200 pounds.



- **Make sure** you use a forklift or mechanical lift that meets all requirements listed on page 1 of this manual.
- **Make sure** the console is secured to the lifting equipment.
- **Two-person lift** when console is placed on the side column.

1 **Lift drive side console** into place.



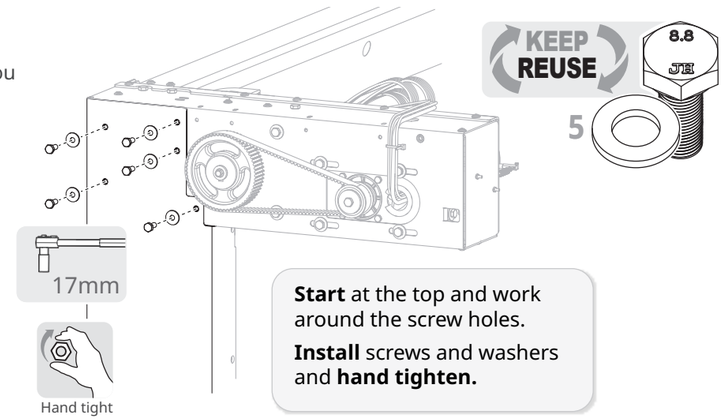
Make sure all belts are tucked into consolse.

Lift console high enough that brake release cable and idler roller clear lip of side column.

If space is tight, swing console around lip of side column, then swing back into place.

2 **Reinstall** the side column screws and washers.

Hand tighten only until you have leveled the console.



Start at the top and work around the screw holes.

Install screws and washers and **hand tighten.**

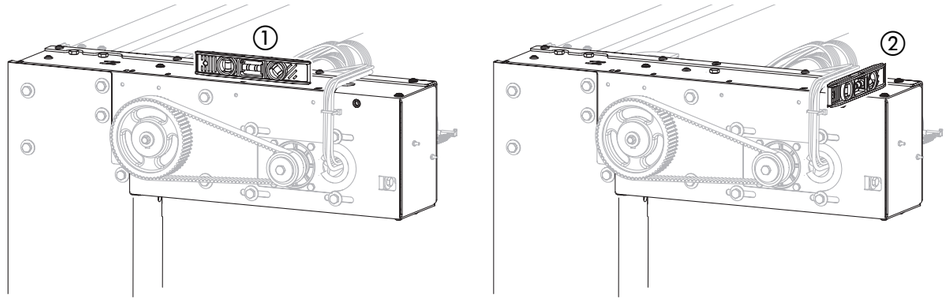
3 **Level the console** laterally ①.

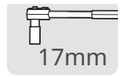
- If necessary, **loosen** the side column screws, **manually adjust** the position of the console, and **tighten** the screws.

Level the console horizontally ②.

- If necessary, **loosen** the side column screws, **manually adjust** the position of the console, and **tighten** the screws.


Spirit level



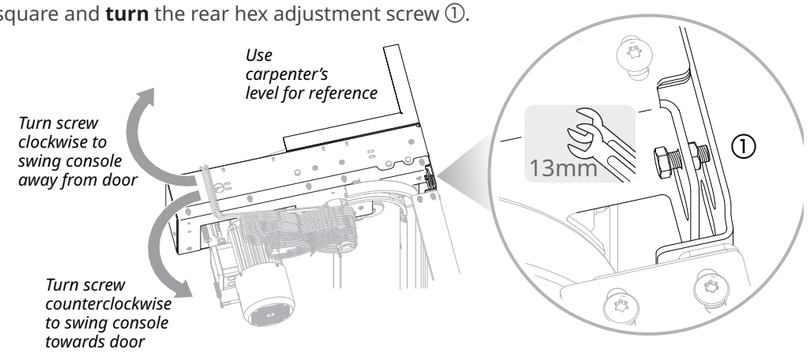
4 
17mm

Tighten the side column bolts.

5 **Square up** the console so it is perpendicular to the wall.

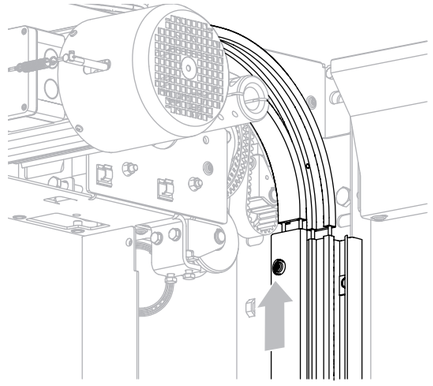
Use a carpenter's square and **turn** the rear hex adjustment screw ①.


Carpenter's square



6 To verify that the console is correctly aligned, **loosen** the screw on the vertical drive track and **raise** the track into place.

- The track pins should slide easily into their holes.



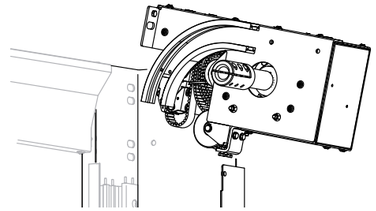
7 
Anchoring hardware

Anchor the side column to the wall in the hole below the adjustment screw.

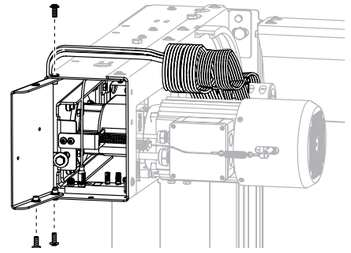
IMPORTANT

DO NOT torque the anchoring hardware so much that it bends the rear tab of the console.

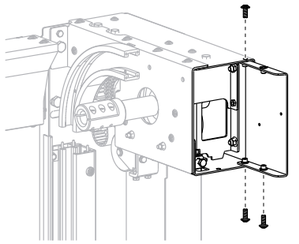
8 **Repeat these steps** for the non-drive side console.



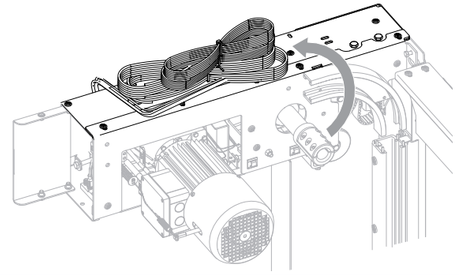
9 **Loosen or remove** the screws on the front panels of both consoles. Swing the panels to the open position and reinstall the screws.




T40



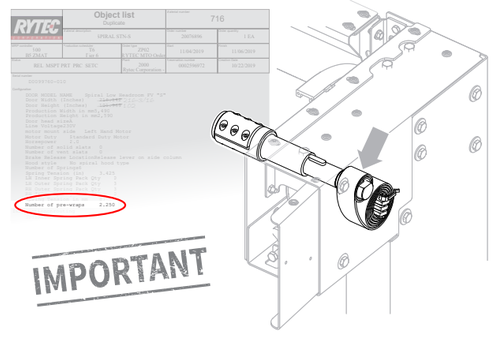
10 **Drive side: remove** the cables from the drive shaft and place them on top of the console.



How to set the wraps on the drive and non-drive side spring straps

Things to know before you set the straps

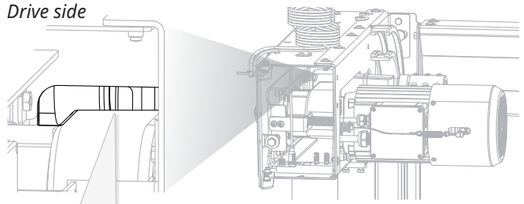
- **Springs** in the side columns balance the weight of the door panel when it is raised and lowered.
- The **spring straps** that connect them to the drive shafts have a **required minimum number of wraps** around the shafts.
- This number is listed in the **object list.**
- **Wraps are set at the factory,** but should be **checked** during the installation and, if necessary, **reset**.
- On the **drive side console**, the motor locks the strap in place.



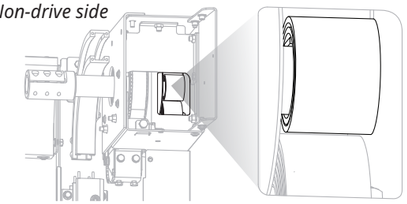
1

Check the spring strap wraps in both consoles. **Reset** if necessary.

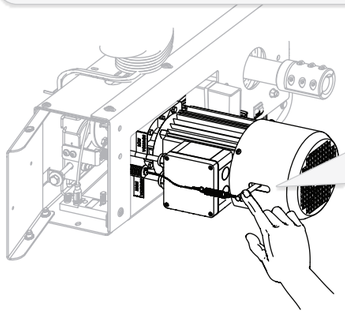
Drive side



Non-drive side

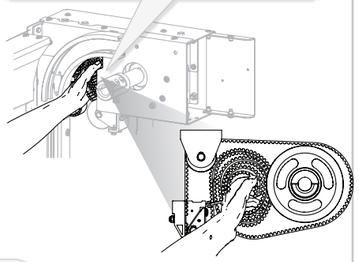


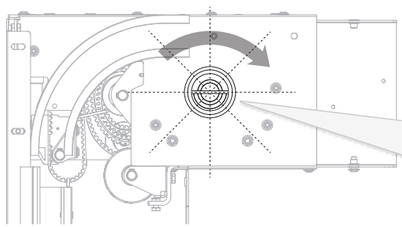
Look through the front panel to count the full wraps.
If necessary, **turn** the shaft to add or remove wraps.



To free up the drive side shaft so it can be turned, **push** the brake release lever towards the console.

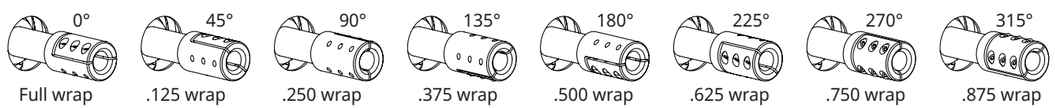
If necessary, on either side, **loosen** the secondary drive belt around the drive pulley to allow the drive shaft to turn.





Turn the shaft by hand.

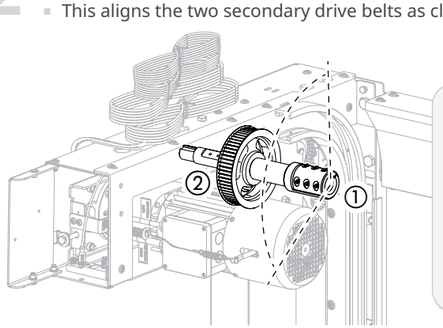
Match the full wraps, then set the angle of the shaft (as shown below) to match the partial wrap in the object list.



2

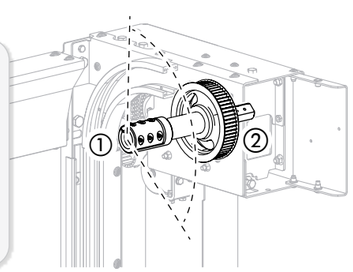
Make sure the angles of the drive side and non-drive side shafts mirror each other.

- This aligns the two secondary drive belts as closely as possible and makes it easier to level the door panel.



When the angle of the **drive shafts** ① match, the **drive pulleys** ② are fully aligned.

This also aligns the teeth on the **secondary drive belts.**

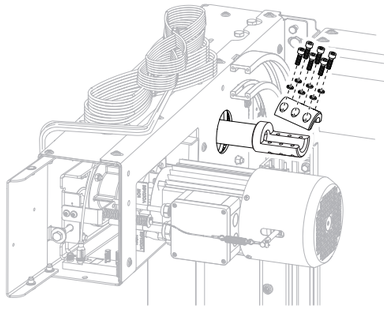


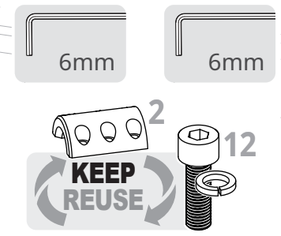
How to install the drive tube

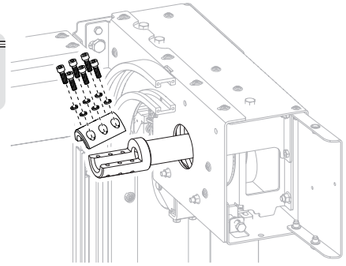
1

Remove the clam shell, bolts and washers from both side shafts.

- Based on the partial wraps from previous steps, shafts may be at an angle which makes the clam shell difficult to remove.

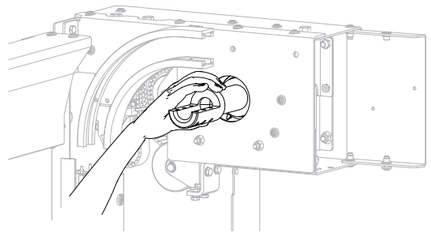






2

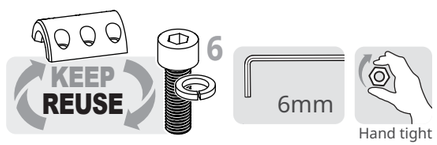
Push in the non-drive side shaft until it is tightly seated against the pulley wheel.

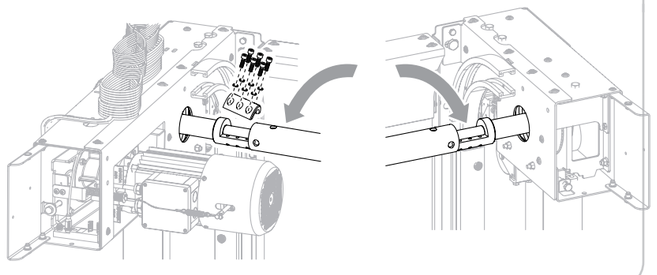


3

Lift the drive tube and **place** both ends into the drive shafts.

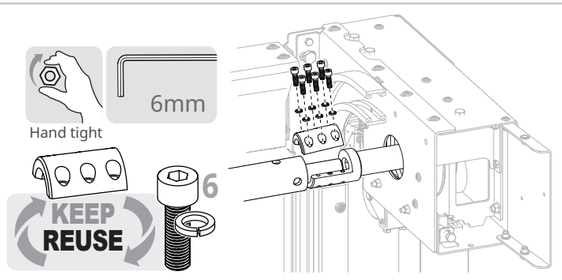
Immediately reinstall the drive side clam shell, bolts and washers and set hand tight to hold the tube in place.





4

Reinstall the non-drive side clam shell, bolts and washers and set hand tight.

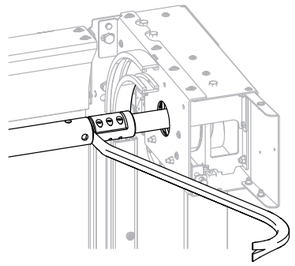


How to center the drive tube

1 **Set** a crowbar between the drum and the non-drive side shaft.

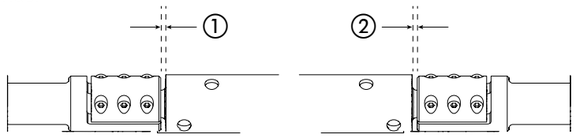
Use it to **tighten** the drive shafts against the pulleys in both consoles.


Crowbar



2 **Check** the gap between the drum and the drive shaft on both ends of the tube.
Adjust the tube until the gap is even on both ends.

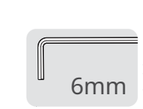

Crowbar



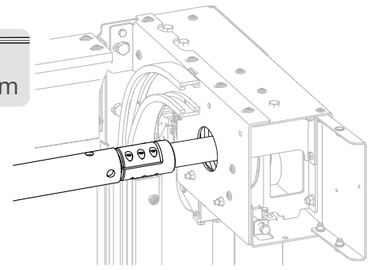
3 **Tighten** the screws on the non-drive side shaft.

IMPORTANT

- **Make sure** the wraps have not shifted before tightening.
- **Make sure** the angles of the shafts and the gaps match on both sides of the drum
- **Torque** bolts to 31 ft-lbs.



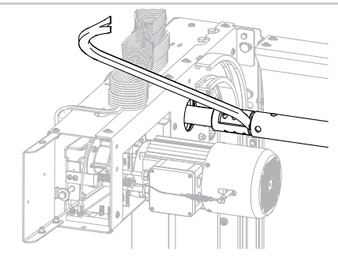

Torque wrench



4 **Set** the crowbar between the drum and the drive side shaft.

Use it to **re-tighten** the drive shaft against the pulley..

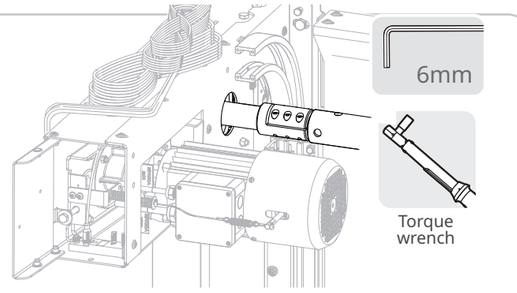

Crowbar



5 **Tighten** the screws on the drive side shaft.

IMPORTANT

- **Make sure** the wraps have not shifted before tightening.
- **Make sure** the angles of the shafts and the gaps match on both sides of the drum
- **Torque** bolts to 31 ft-lbs.



Torque wrench

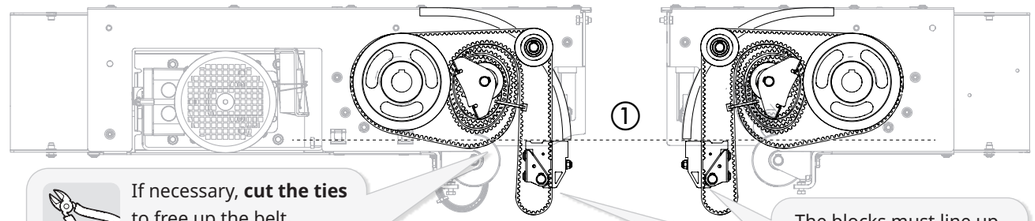
How to set the secondary drive belts so the door will be level

Things to know before you realign the belts

IMPORTANT

- The **splice blocks (timing blocks)** ① on the secondary drive belts connect to the door panel and are the points where the belts raise and lower the door.
- With the spring straps correctly wrapped and the drive pulleys locked in place by the motor and the drive shaft, **realign the secondary drive belts** on the drive pulleys to **level** the splice blocks..

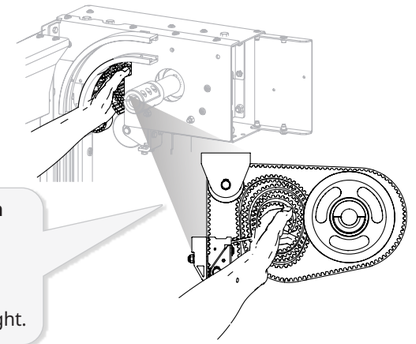
1 **Check** the position of each splice block and, if necessary, **realign** the belts.



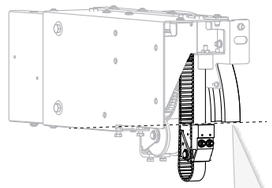
If necessary, **cut the ties** to free up the belt.

Leave the belt rolled up in the console.

The blocks must line up **EXACTLY** or the door will not operate correctly.



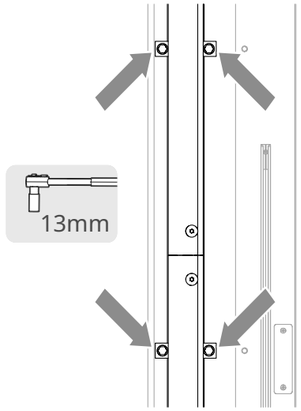
To move the block, **loosen** the belt around the drive pulley, then **"jump" one tooth at a time** until the block is at the correct height.



Jump the belt until the **top of the block** lines up with the **bottom of the radial track**.

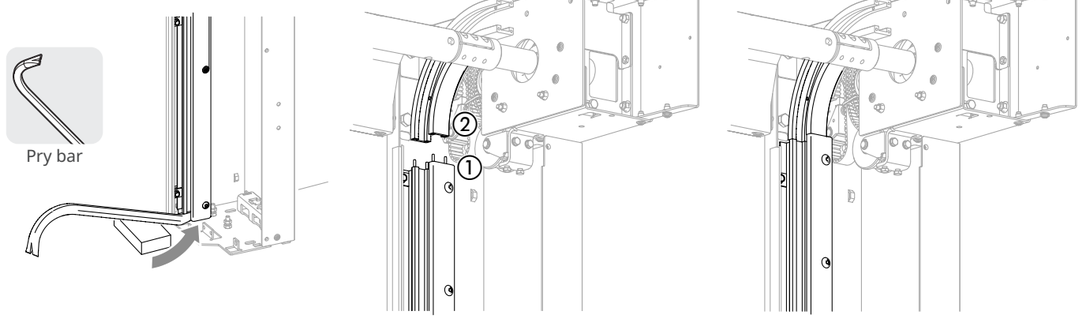
How to raise the vertical guide tracks into place

1 **Make sure** that all of the vertical guide track holders are loose enough to allow the track to move freely.
DO NOT remove any of the holders.



2 **Make sure** the pins at the top of the vertical guide track ① align with the holes in the radial track ② of the console.

INSIDER'S TIP **Use a pry bar** to lift and hold the vertical guide track in place.

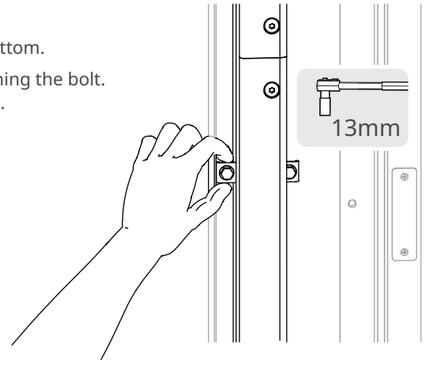


3 **Tighten** the bolts on the track holders.

- Start at the **middle of the track** and work toward the top and bottom.
- **Make sure** the holder is at a 90° angle to the track before tightening the bolt. **You will need to hold it in place** while tightening to keep it level.
- **Make two full passes** from top to bottom: tighten bolts to snug on the first pass, then fully tighten on the second pass.

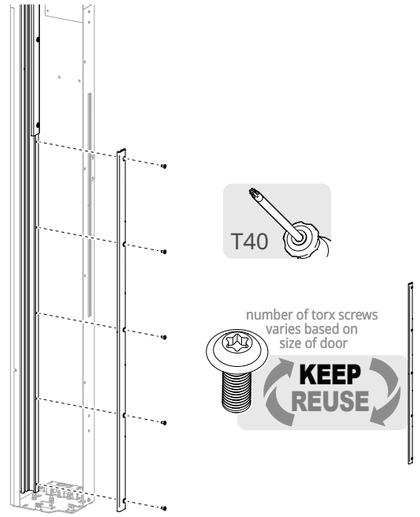
⚠ CAUTION

Make sure your fingers are clear of the bolt when tightening. Power tools are not recommended.



4 **Remove** the bottom section of the vertical guide track cover.

Do this in both side columns.

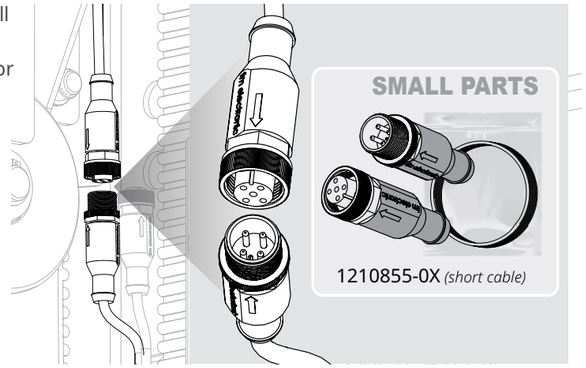


How to connect the CAN bus cables

1 **Get** the shortest 1210855-0X M12 cable from small parts. In the drive side side column, **connect the female M12 connector** to the male M12 connector for the cable in the side column.

IMPORTANT

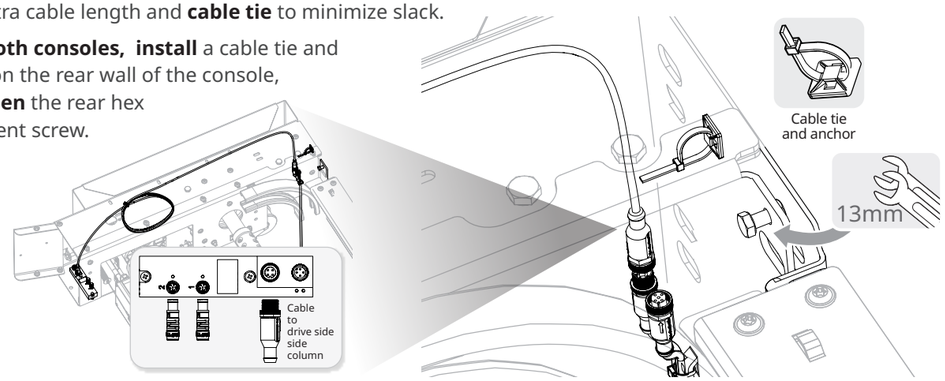
Line up the embossed arrows on the connectors to align the guide notch and contacts correctly. The connectors will only fully connect if they are aligned correctly.



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

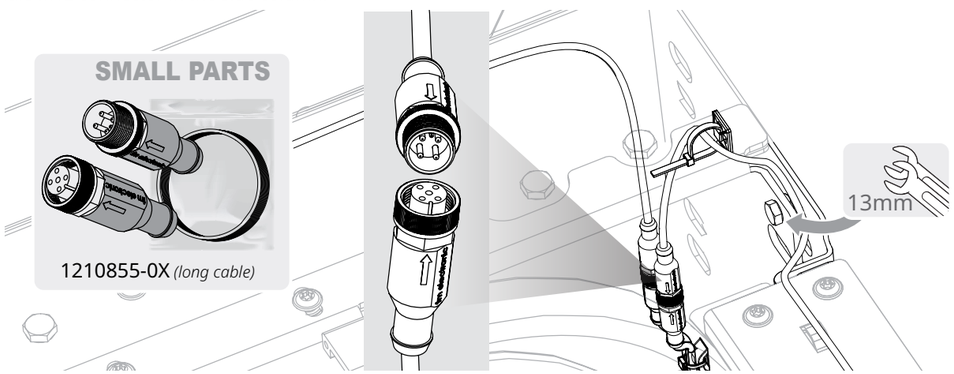
Loop extra cable length and **cable tie** to minimize slack.

Inside **both consoles, install** a cable tie and anchor on the rear wall of the console, and **loosen** the rear hex adjustment screw.



3 **Get** the longer 1210855-0X M12 cable from the small parts box. This connects the CAN bus cabling **across the rear spreader**.

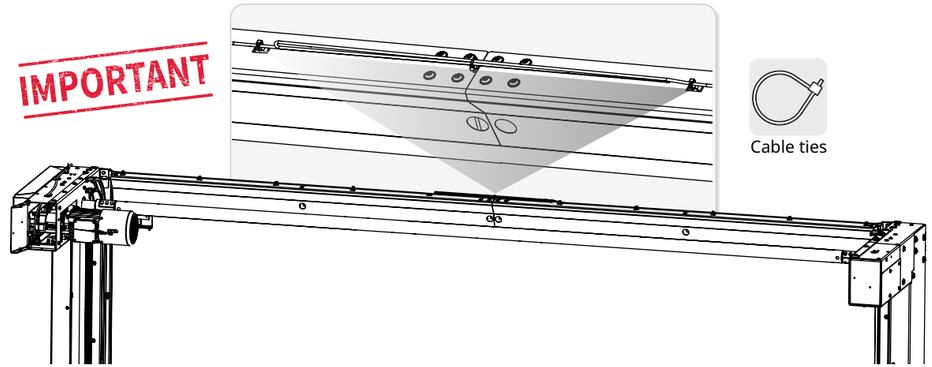
- Inside the drive side console, **push** the cable through the cable tie and **connect** the male M12 connector on the cable to the female M12 connector in the side column.
- **Loop** the cable over the rear hex adjustment screw and **re-tighten the screw** to original setting.
- **Follow these steps** inside the non-drive side console, connecting the female M12 connector on the cable to the male M12 connector in the side column.



4 **The 1210855 cable** will probably be longer than the rear spreader.

- **Leave a small amount of slack** in both console and **loop** the extra length at the center of the of the rear spreader.
- **Secure** the loops with cable ties, then **secure** the cable to the rear spreader at each anchor point on the spreader.

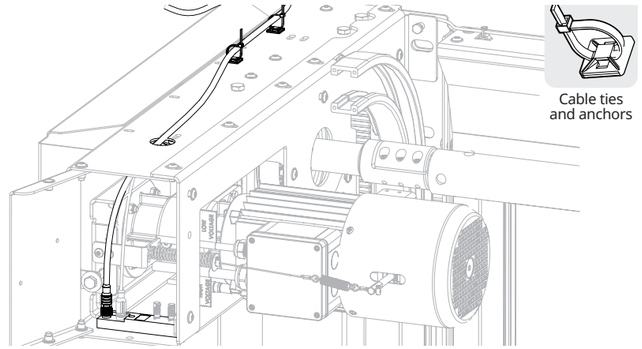
IMPORTANT



5 **Get** cable 1210856 from the small parts box.

Plug the cable into the CAN port in the drive side console.

Run the cable through the hole in the top of the console. **Use** anchored cable ties to secure it to the top of the console.

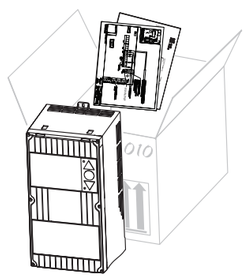


6 **Find the schematics for the door** in same box that holds the System 4® controller.

Check the crate and small parts boxes for accessories such as activators or safety devices and any schematics included with them.

If the schematics indicate the door has non-standard wiring, **follow the schematics** instead of this manual.

IMPORTANT

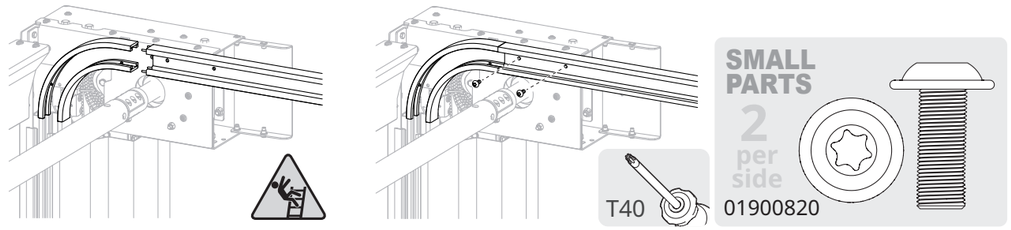


How to install the horizontal tracks

1 **Locate** the two horizontal tracks and track covers, and the rear guide rail, in the crate.

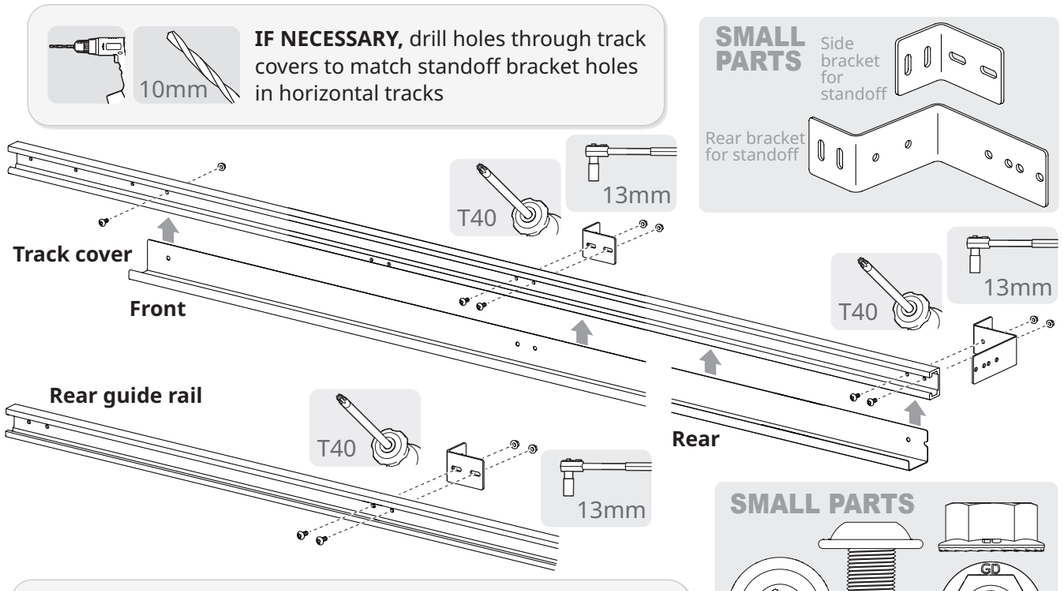
2 **Line up** the guide pins in the horizontal track with the holes in the radial track of the console and **install** the track.

Do this on both consoles



3 **Locate** the standoff brackets (side and rear), screws and nuts in the small parts box.

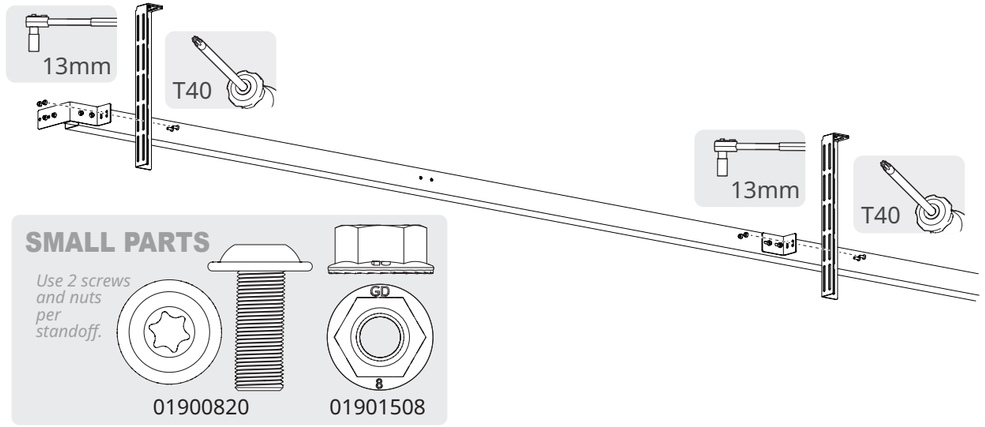
Install the covers and brackets onto the tracks. **Install** the bracket onto the guide rail.



IMPORTANT **ALL HARDWARE** must be installed fully tight so that screw heads are clear of the rollers when the door is operating.

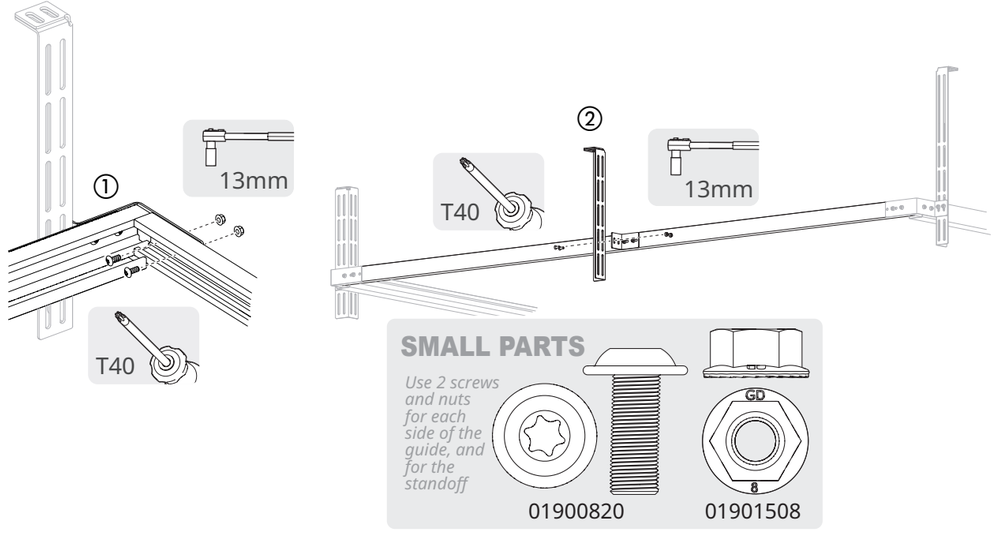
4 **Locate** and **install** the standoffs on both horizontal tracks.

Use the bolt holes that set the top of the standoffs flush with the ceiling.



5 **Install** the rear guide rail and the rear standoff.

Use the bolt holes that set the top of the standoffs flush with the ceiling.

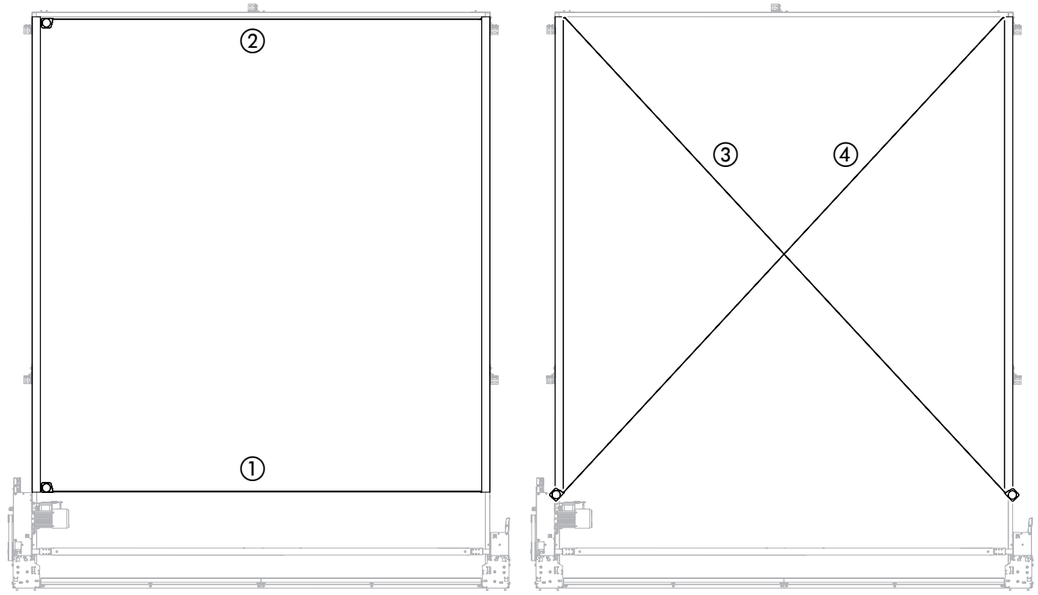


6

Square the horizontal tracks:


Measuring tape

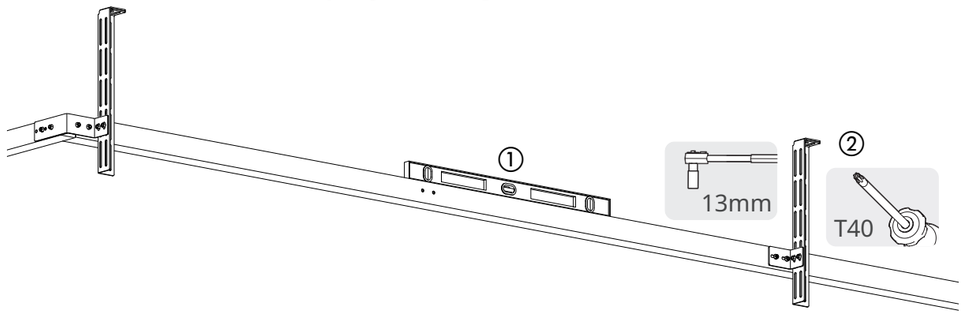
1. **Measure** between the tracks at the start ① and end ② points.
   - If the measurements do not match, adjust the rear guide until they do.
2. **Measure** diagonally across the tracks (③, ④).
   - If the measurements do not match, reposition the tracks until they do.
3. IMPORTANT When the tracks are square, **mark the position** of all of the standoffs and the anchoring holes in the ceiling.



7

Level the horizontal tracks ①. If necessary, **adjust** the height of the standoffs ②.


Spirit level



8


Anchoring hardware

Anchor the standoffs to the ceiling.

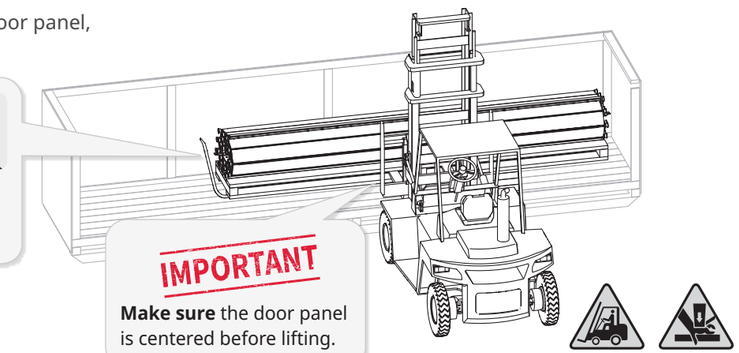
How to install the door panel

1

Use a forklift to remove the door panel, on its pallet, from the crate.

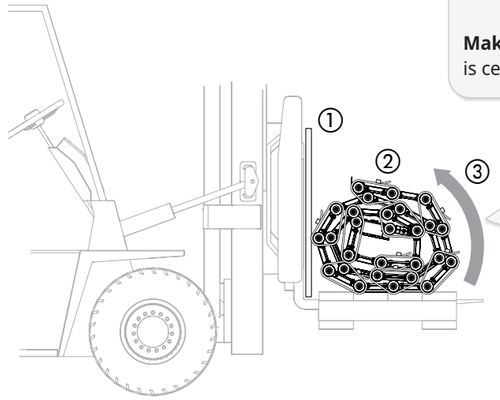
IMPORTANT

Pallet is nailed to crate. Use a crowbar to loosen the nails before lifting.



IMPORTANT

Make sure the door panel is centered before lifting.



① **Place** foam or cardboard against the backstop to protect the door finish.

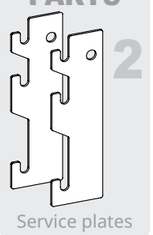
② **DO NOT** clip the ties around the rollers until you are raising the panel. The ties prevent the door panel from unraveling.

③ **Make sure** the door panels are wrapped **AWAY FROM** the door opening. If necessary, turn the pallet around.

Things to know about the service plates

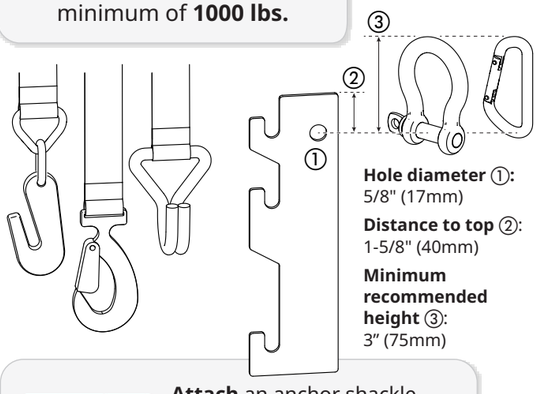
- **Attach** the plates to the ratcheted straps you use to lift the door panel.

SMALL PARTS 2


Service plates

IMPORTANT

ALL HARDWARE and STRAPS should be rated at a minimum of **1000 lbs.**



Hole diameter ①: 5/8" (17mm)

Distance to top ②: 1-5/8" (40mm)

Minimum recommended height ③: 3" (75mm)

INSIDER'S TIP

Attach an anchor shackle or caribiner to the service plate to accommodate all hook sizes and configuarions.

2

Hang a ratcheted strap from the drive tube next to each side column. **Attach** the service plates.

Ratcheted strap (2)

IMPORTANT

ALL STRAPS should be rated at a minimum of **1000 lbs.**

3

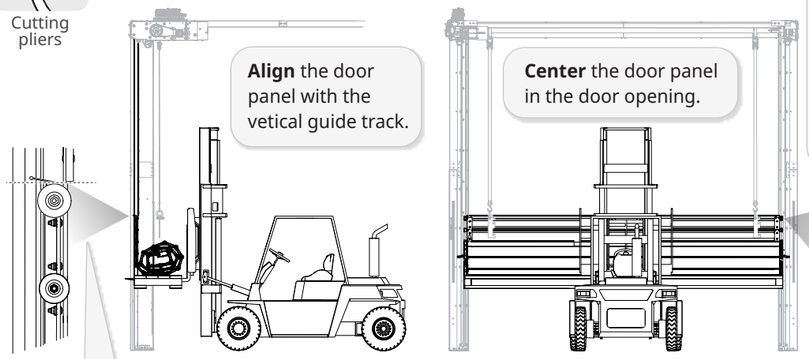
Use the forklift to **position** the door panel under the vertical guide track.

Cut the first ties to **free up** the first wrap of panels and **line them up** under the covered section of the track.

Cutting pliers

IMPORTANT

Constantly check the rollers throughout the lift to make sure they are not crushed, bent or pinched in the track.



Align the door panel with the vetical guide track.

Center the door panel in the door opening.

There are three **guide rollers** in the door panel, at the top, bottom and vertical center.

The large roller aligns with the outside of the track.

Make sure the guide rollers align on both sides of the door.

Align the front of the door panel with the track.

Cut the first set of ties to free the first wrap of panels.

Raise the fork so that the first panel is just below the covered section of the vetical guide track.

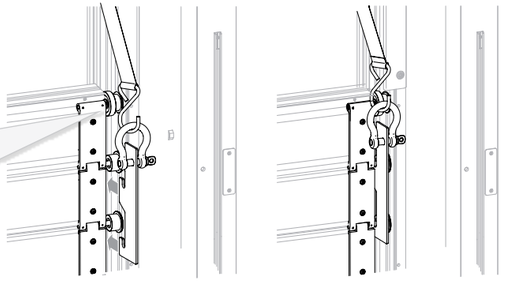
All **rollers** align with the groove in the track.

4

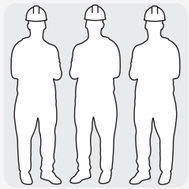
Hook the service plates under the first two **non-guide rollers** on both sides of the door.

IMPORTANT

DO NOT USE the guide rollers to lift the door panel.



Things to know about lifting the door panel



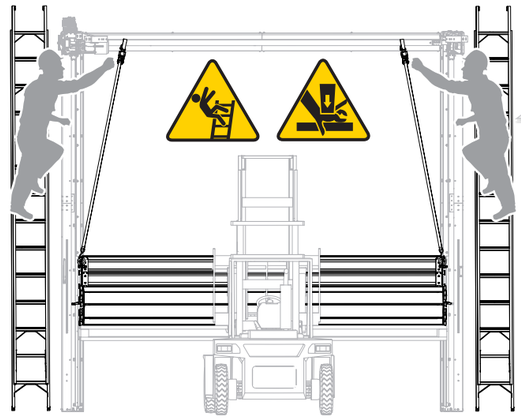
A three-person crew should be used to lift the door panel:

- Two (2) to operate the ratcheted straps
- One (1) to unroll the door panel and check the rollers.

For a two-person crew:

- Lift the door panel together, then unroll the next section together, then continue the lift.

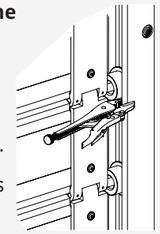
At the drive tube



Coordinate the lift between the two ratcheted straps so that the door panel remains level as it rises.

If you need to reset the straps, place vise grips under a non-guide roller in both tracks to temporarily hold the door panel in place.

Place the service plates at a lower set of rollers and continue the lift.



On the ground

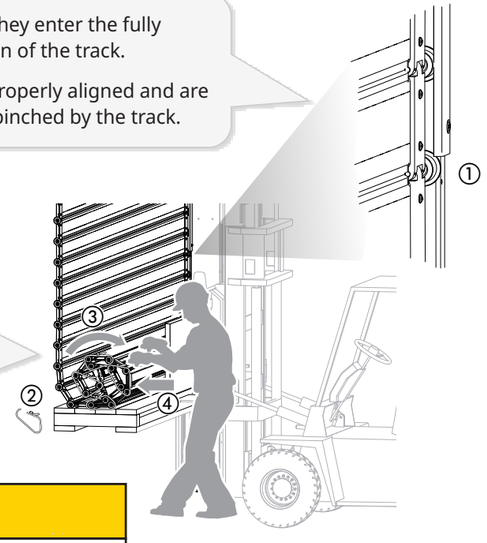
① **Watch** the rollers as they enter the fully enclosed upper section of the track.

Make sure they are properly aligned and are not crushed, bent or pinched by the track.

② **Clip** the next tie around the rollers on both sides of the door panel to free up the next section.

③ **Unroll** the next section of panel from the bottom of the roll.

④ **Push** the door panel on the pallet away from the backrest. As the door panel rises, **continue to push** so that the next panel lines up with the panels in the track.



⚠ CAUTION

Keep your hands flat on the panel slat and away from the hinge seal as you move the panels. **Panels can shift unexpectedly.**

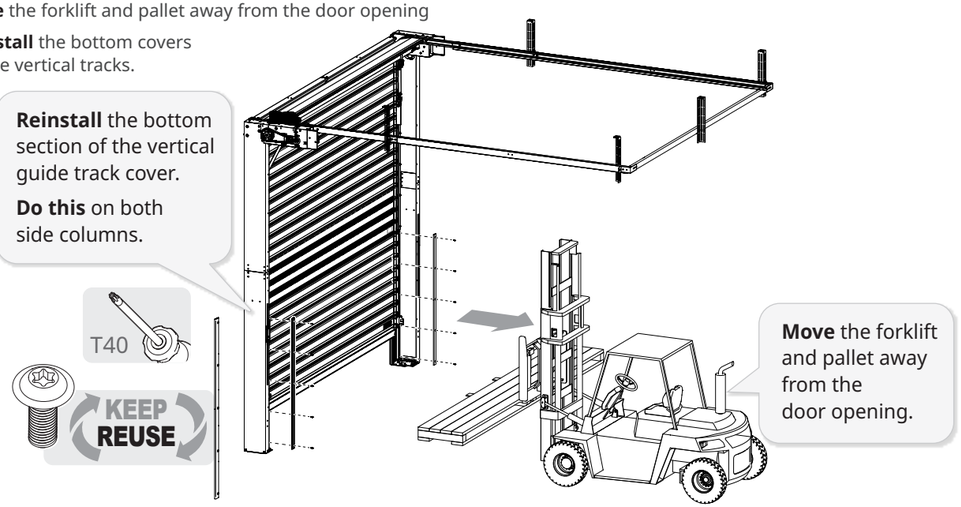
5

When the top of the door panel enters the horizontal track, the bottom bar is clear of the floor.

- **Unroll** the rest of the door panel
- **Move** the forklift and pallet away from the door opening
- **Reinstall** the bottom covers on the vertical tracks.

Reinstall the bottom section of the vertical guide track cover.

Do this on both side columns.



6

Continue to lift until the door panel is almost completely raised onto the horizontal track.

IMPORTANT

Make sure the door panel remains level throughout the lift.

If you need to reposition the ratchet straps, place vise grips under the bottom roller to hold the door panel in place, then reset the straps.

7

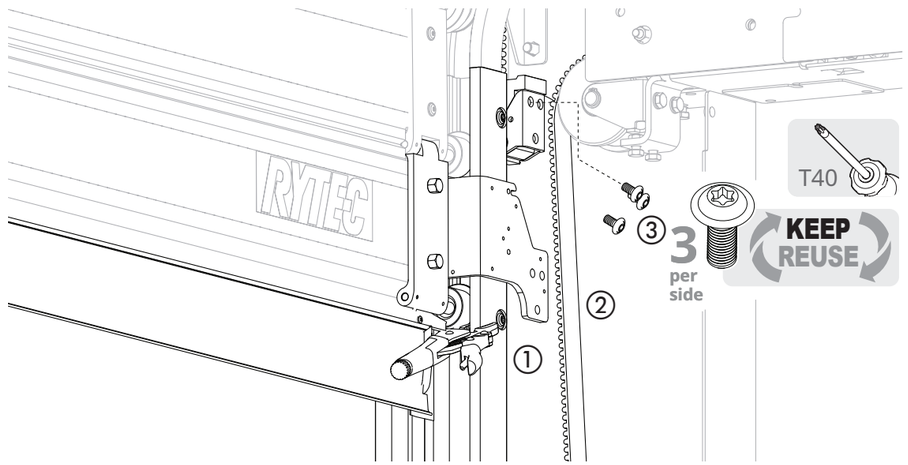
When the end tabs are just below the splice blocks:

① **Place** vise grips under the bottom roller on both sides of the door to hold the door panel in place.

② **Pull** the coiled secondary drive belts out of each console and lower them down the side column.

- On -L and -L/R Spirals, the baseplate pulley assembly is lowered with the belt.

③ **Remove** the three screws from each splice block.



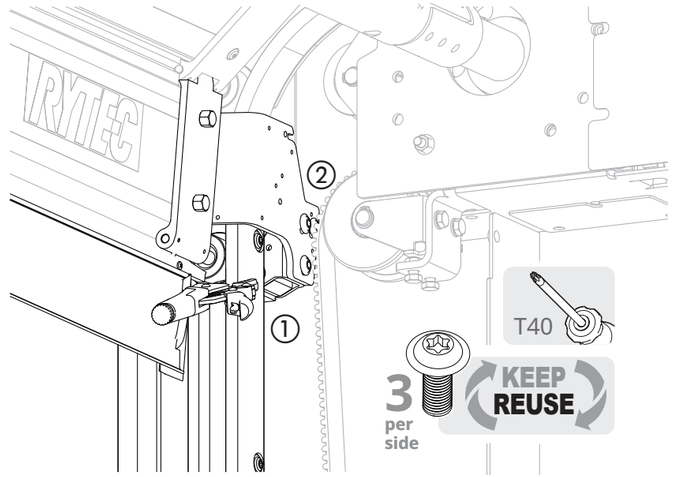
8

Lift the door panel until the holes in the end tabs are even with the holes in the splice block.

NOTE: if necessary, you should be able to lift the door manually when it is this near the top of the door opening.

① **Reposition** the two vise grips to secure the door panel in place.

② **Reinstall** the splice block screws to secure the end tabs to the splice blocks

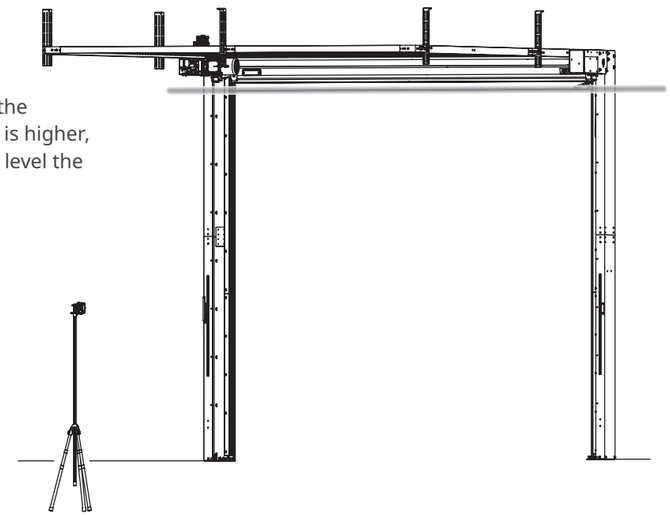


9

Make sure that the bottom bar of the door panel is level before moving to the next steps.

If the bar is not level, reposition the vise grip and strap on the side that is higher, then **"jump" a tooth** on the belt to level the door panel.

Laser level

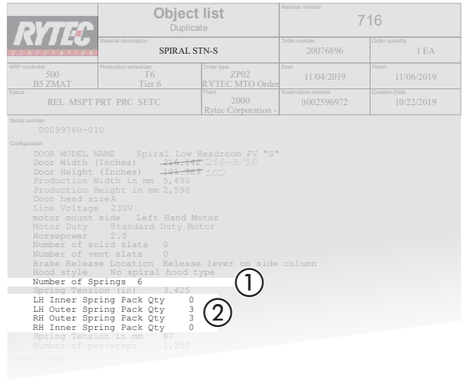


IMPORTANT **Do not remove** the ratchet straps or vice grips holding the door in place until after the secondary drive belt has been installed and tensioned.

How to install the springs

1 **Make sure** the total number of springs in the crate matches the number listed in the object list ①. The object list also shows how to divide the springs between the side columns ②.

Make sure the preinstalled spring straps on both sides of the head assembly match the table below ③ for the total number of springs in the door.



Object list
Duplicate
716

SPIRAL STN-S

20076896 — 1 EA

500 B5 ZMAT — 16 Tier 6 — ZP02 RYTEC MTO Order — 11/04/2019 — 11/06/2019

REL MSPT PRT PRC SETC — 2000 Rytec Corporation - — 0002596972 — 10/22/2019

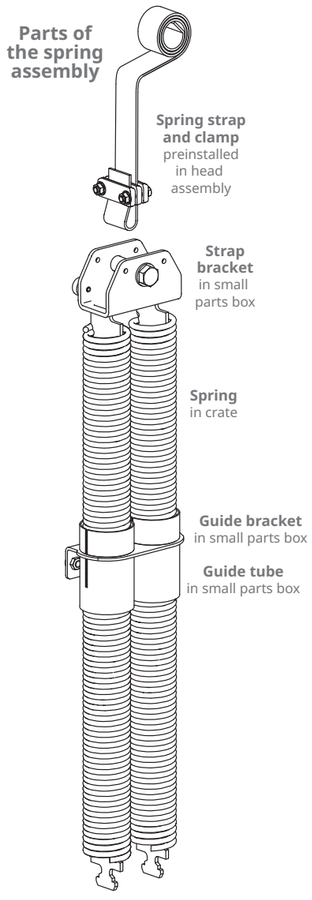
D0099760-010

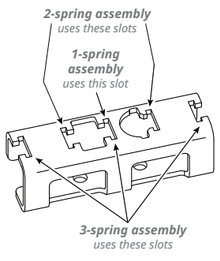
DOOR MODEL NAME Spiral Low Headroom FV "S"
Door Width (Inches) ~~216-1/2~~ 216-3/16
Door Height (Inches) ~~192-1/2~~ 192
Production Width in mm 5,490
Production Height in mm 2,590
Door head sizeA
Line Voltage 230V
motor mount side Left Hand Motor
Motor Duty Standard Duty Motor
Horsepower 2.0
Number of solid slats 0
Number of vent slats 0
Brake Release Location Release lever - side column
Hood style No spiral hood type
Number of Springs 6
Spring Tension (lbs) 2,420
LH Inner Spring Pack Qty 0
LH Outer Spring Pack Qty 3
RH Outer Spring Pack Qty 3
RH Inner Spring Pack Qty 0
Spring Tension (in mm) 427
Number of pre-wraps 1.250

① ②

Locate the parts and hardware for the spring assemblies in both side columns.

- **Each assembly includes:**
  - 1-3 springs
  - guide tubes
  - a guide bracket
  - a strap bracket
- When there are more than three springs in a side column, **two assemblies** are installed side by side and bolted together.
- **The table to the right** shows how to divide the parts and hardware found in the small parts box(es) and how to put together the assemblies.

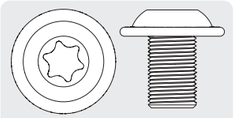




Total number of springs	Drive side: Springs	Drive side: Spring straps	Drive side: In small parts box: guide tube(s), strap bracket, guide bracket(s)	Non-drive side: Springs	Non-drive side: Spring straps	Non-drive side: In small parts box: guide tube(s), strap bracket, guide bracket(s)
1				1	1	1
2		③		2	1	2
3	1	1	1	2	1	2
4	2	1	2	2	1	2
5	2	1	2	3	1	3
6	3	1	3	3	1	3
7	3	1	3	4	2	4
8	4	2	4	4	2	4
9	4	2	4	5	2	5
10	5	2	5	5	2	5
11	5	2	5	6	2	6
12	6	2	6	6	2	6

Hardware (in small parts box)

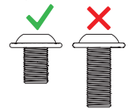
Hardware to attach outer guide brackets to side column wall



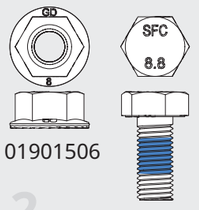
2 — 01900812

IMPORTANT

Match 01900812 screws to this illustration to make sure length is correct. Other screws used in the Spiral have the same head style, but are too long for the guide bracket nut and will damage the door.



Hardware to attach inner guide bracket to outer guide bracket



01901506 — 2 — 01260110

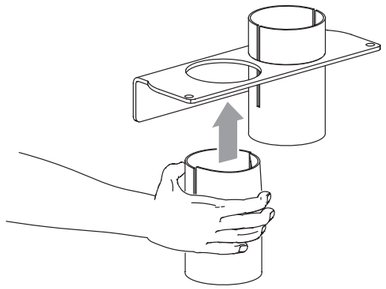
NOTE: a four-spring, two-assembly configuration is shown for these steps.

It is recommended that you **do not use power tools** for these steps.
Overtorquing screws can damage parts.

2

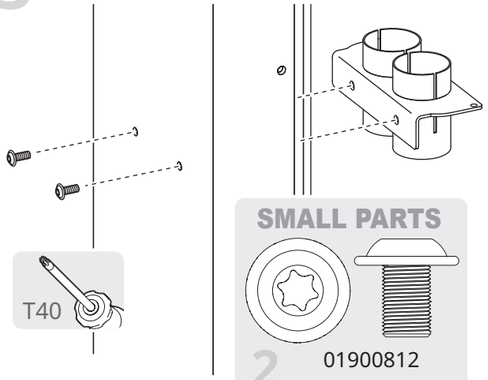
Install the guide tubes into the guide bracket.

Squeeze the top of the tube, then slide the tube into a guide hole until it clicks into place.



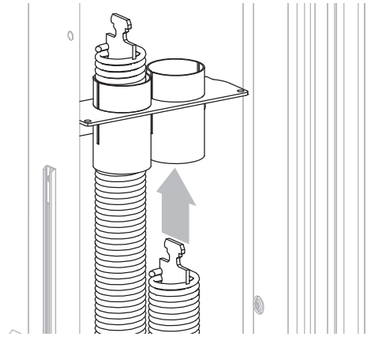
3

Install the bracket into the side column.



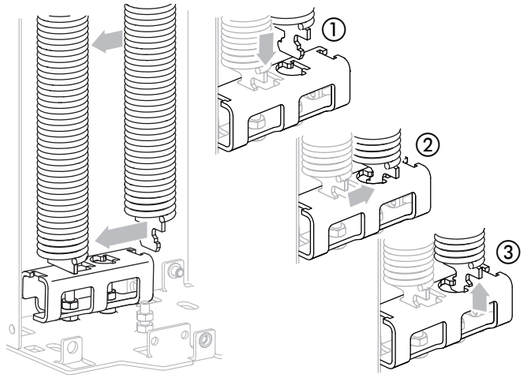
4

Slide the top of the springs into the bracket.



5

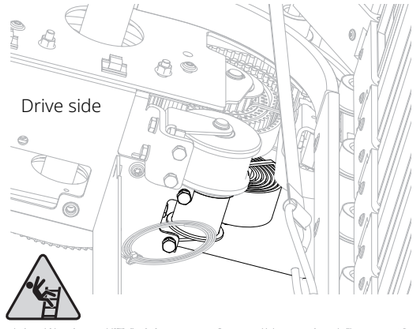
Slide the bottom spring tabs into the wide slot ①, through the narrow ②, then **pull up to lock** it into the retaining slot ③.
The spring should remain upright.

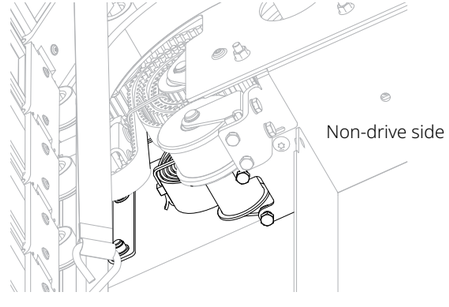


6

Locate the outer spring strap in each console. It is above the small white roller closest to the outers side of the console.

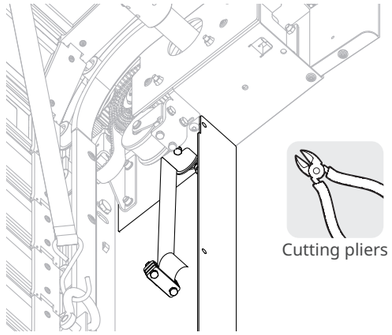
- You may need to push aside the secondary drive belt and reach inside to find it.





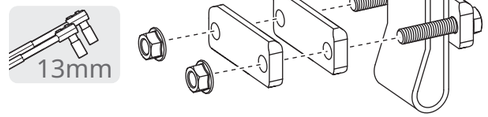
7

Cut the cable tie on the outer spring strap, **run** it around the outer roller and **let it drop.**



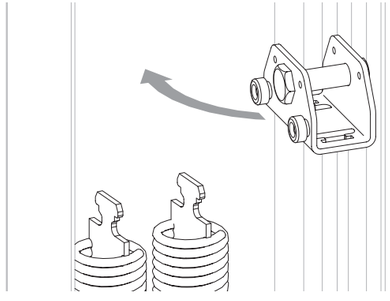
8

Loosen the clamp on the spring strap.



9

Position the spring bracket so that the bumpers and locking tab face the side wall.



10

Loop the spring strap around the bolt in the spring bracket.

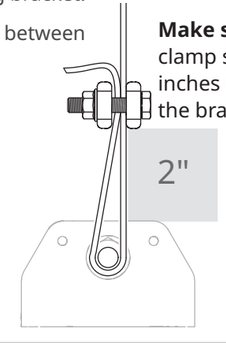
Thread the strap between two plates of the clamp.

Hand tighten the clamp nuts.

IMPORTANT

DO NOT trim the strap.

Make sure the clamp stays two inches (2") above the bracket.



11

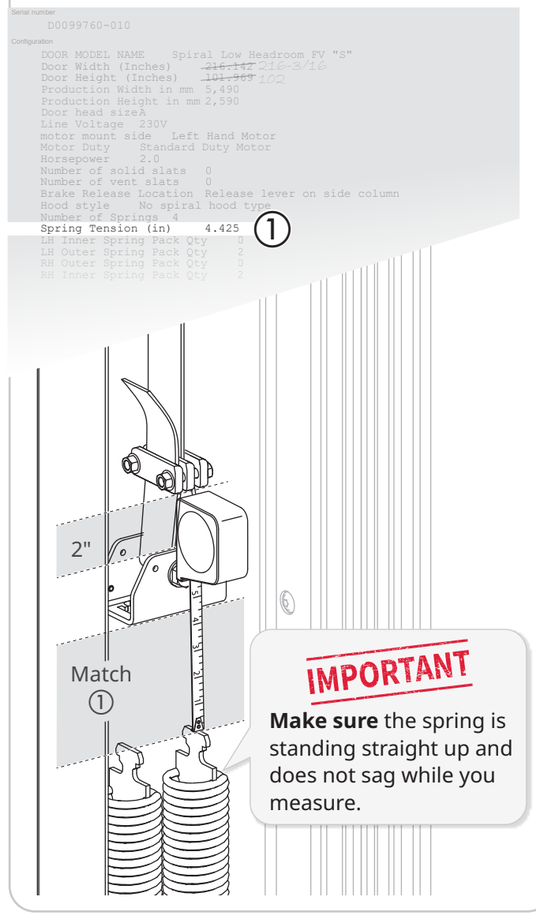
Set the spring tension. This is the distance the springs must be stretched to provide the correct tension for the door.

Measuring tape

Locate the spring tension ① on the object list.
Round to the nearest 1/16 inch.

Measure the distance between the bottom of the spring bracket and the top of the spring tab (shaded area).

.063	1/16	.313	5/16	.563	9/16	.813	13/16
.125	1/8	.375	3/8	.625	5/8	.875	7/8
.188	3/16	.438	7/16	.688	11/16	.938	15/16
.250	1/4	.500	1/2	.750	3/4		



IMPORTANT

Make sure the spring is standing straight up and does not sag while you measure.

12

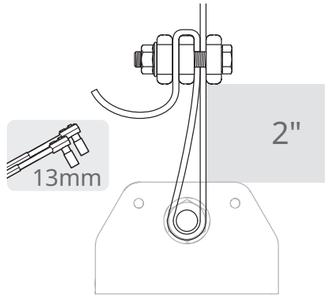
Adjust the strap until the measured distance matches the object list and the distance from the clamp to the bracket is two inches (2").

13 **Remove** the nuts and **retrieve** the third clamp plate.

Loop the spring strap down between the second and third clamp plate.

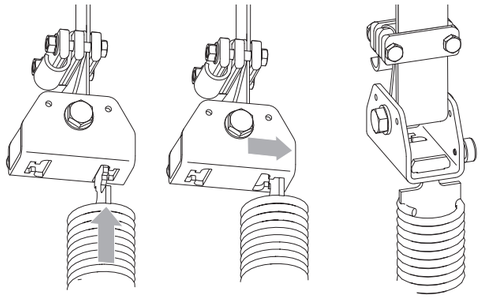
Tighten the nuts to secure the strap.

If necessary, **trim** excess strap length.



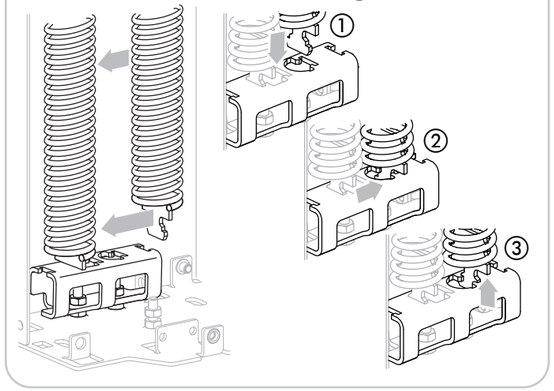
14 **Release** each spring from the baseplate tube.

Lift each spring and **slide** the spring tab into the slot in the spring bracket.



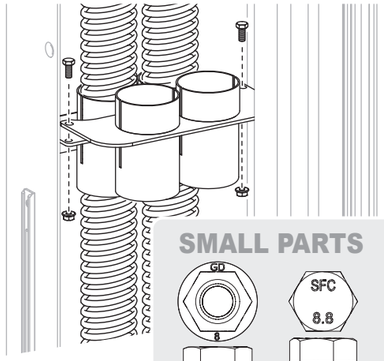
15 **Stretch** the springs downward.

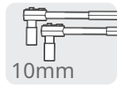
Slide the bottom spring tabs into the wide slot ①, through the narrow ②, then **pull up to lock** it into the retaining slot ③.

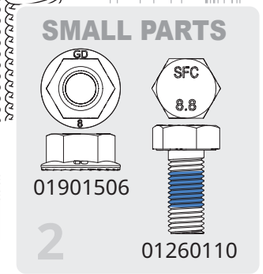


How to install a second spring assembly

1 **Install** the guide tubes into the second bracket.
Install the second bracket above the first.



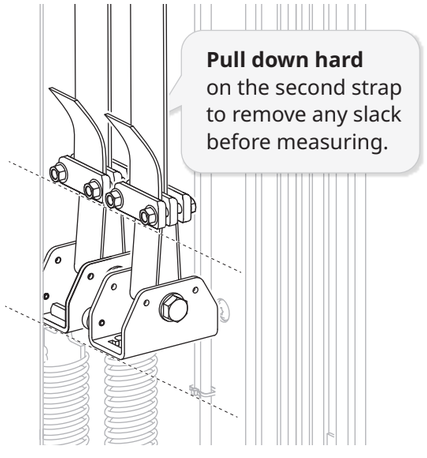




2 **Follow** steps 6-10 for the second spring strap.

Line up the second spring bracket and clamp with the first.

Make sure the spring bracket bumpers face out.

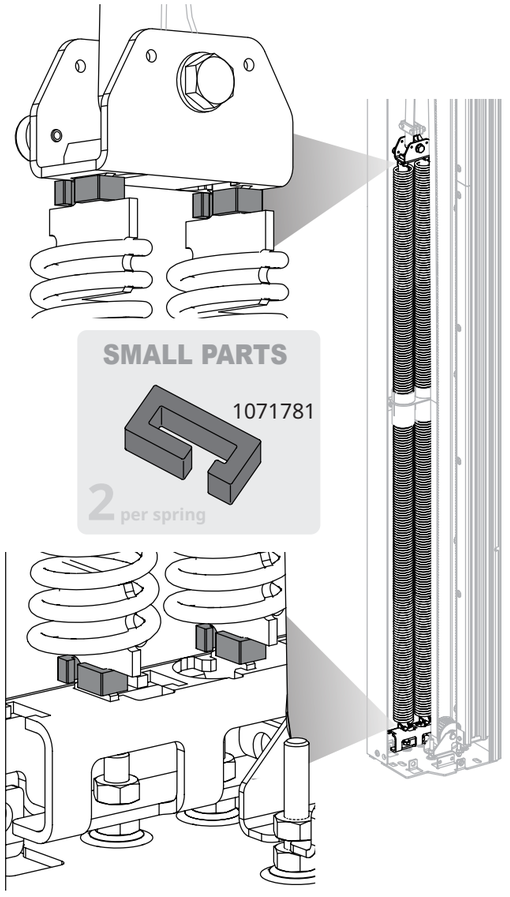


Pull down hard on the second strap to remove any slack before measuring.

3 **Follow** steps 14-15 to complete the installation.

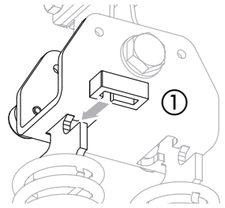
How to install the locking collars at the top and bottom of the springs

Install the locking collars onto the tabs at the top and bottom of each spring after the secondary drive belts have been tensioned.

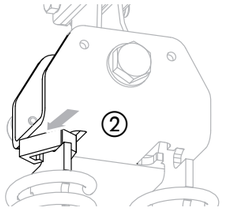


1 **Install** collar into the top tab:

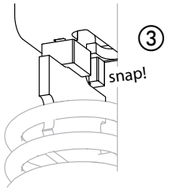
① **Slide** the opening in the collar onto the tab.



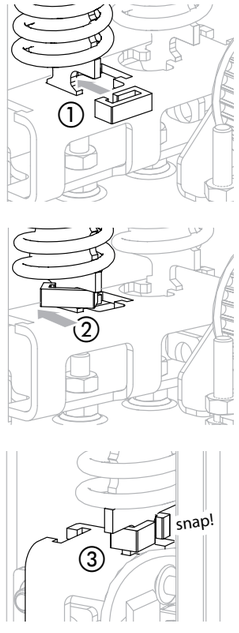
② **Twist, then push** the collar across the tab (the collar is flexible and will bend open enough to fit).



③ **Push** the short end around until it clicks into place.



2 **Follow the same steps** for the tab at the baseplate pulley assembly.

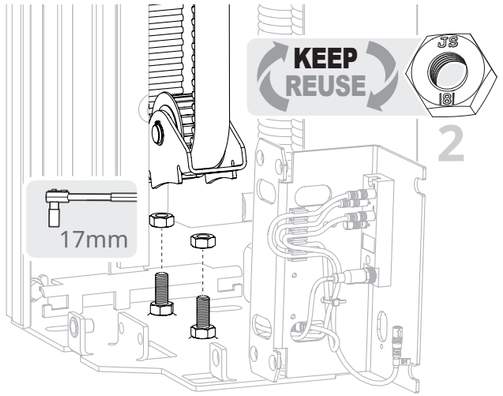


How to install the baseplate pulley assembly

IMPORTANT It may be necessary to decrease tension on the idler pulley bracket to allow the baseplate pulley assembly to reach the baseplate mounting posts. **See next page** to learn how to do this.

1 **Remove** the top nuts on the two baseplate mounting posts. **Keep** the nuts.

IMPORTANT **DO NOT loosen** the bottom nuts.



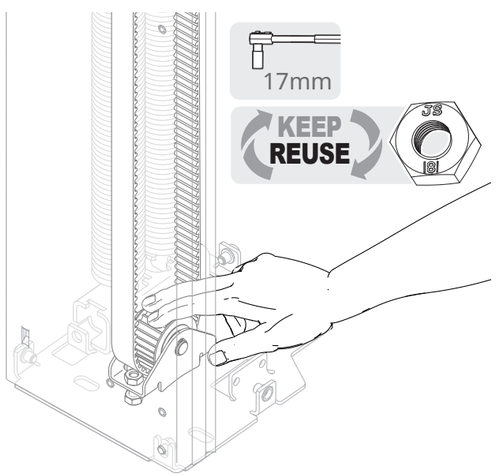
2 **Install** the pulley assembly onto the rear baseplate mounting post.

1: **Align** the holes in the assembly with the posts.

2: **Press down** on the pulley assembly as hard as you can.

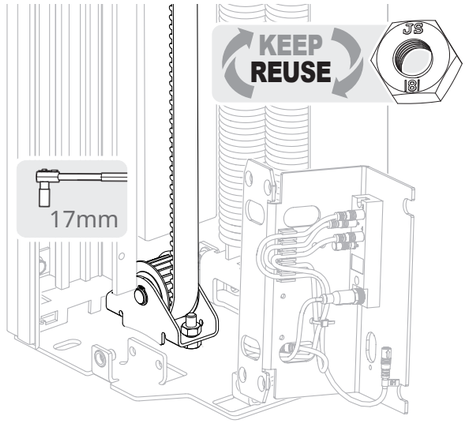
- You will need to see at least **three (3) threads of the mounting post clear** to reinstall the nut

3: **Install** the rear mounting nut and tighten it as much as you can.



3 **Reinstall** the front mounting nut.

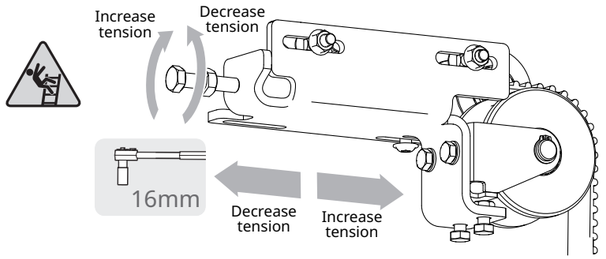
- **Tighten** the nut until the front of the assembly is tight to the bottom nut.



4 **Do this** in both side columns.

How to set the tension on the secondary drive belts

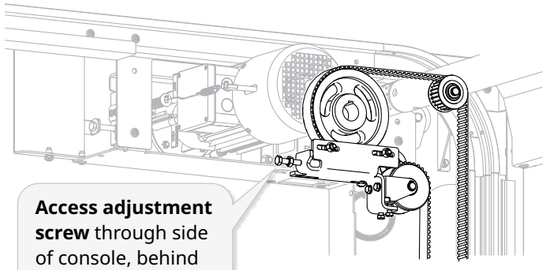
Things to know about tensioning the belt



Locate the idler pulley bracket in both consoles, below the drive shaft.

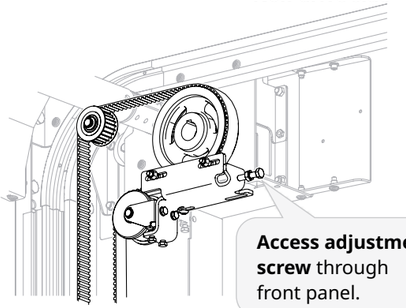
Adjust the tension by turning the adjustment screw.

Drive side

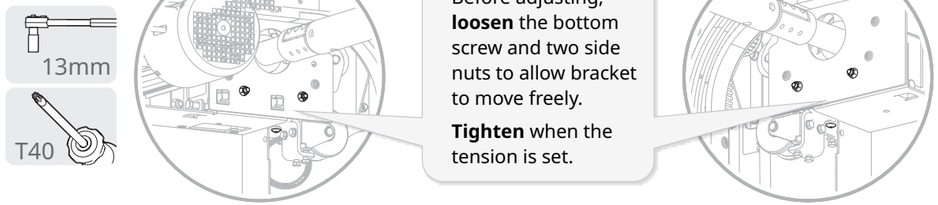


Access adjustment screw through side of console, behind the motor.

Non-drive side

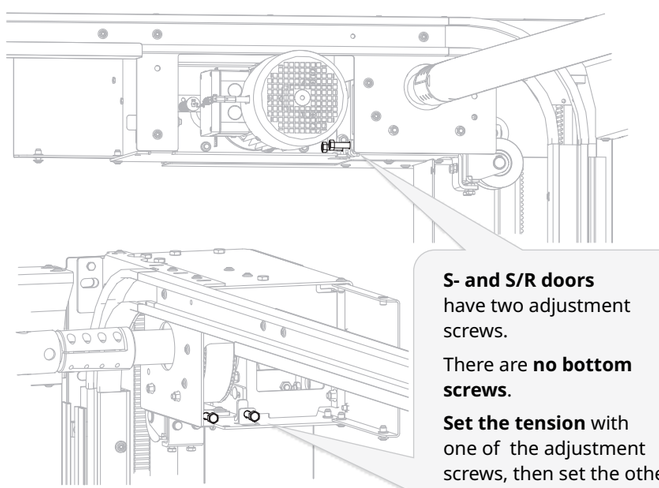


Access adjustment screw through front panel.



Before adjusting, **loosen** the bottom screw and two side nuts to allow bracket to move freely.

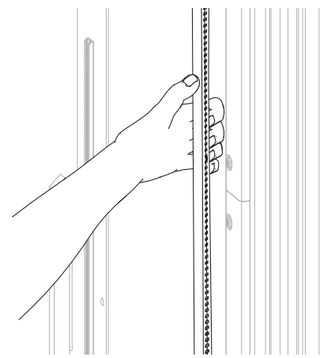
Tighten when the tension is set.



S- and S/R doors have two adjustment screws.

There are **no bottom screws**.

Set the tension with one of the adjustment screws, then set the other to match.



Test the tension by grabbing both legs of the belt near the midpoint.

Tension is correct when it requires **considerable effort** to bring the two legs together until they touch.

How to install the corner brackets and (optional) wireless antenna

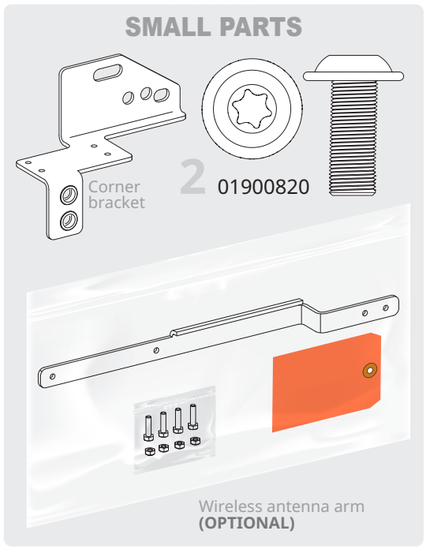
1 **Locate** the corner brackets, wireless antenna arm and hardware in the small parts box.

Install a corner bracket on each side column.

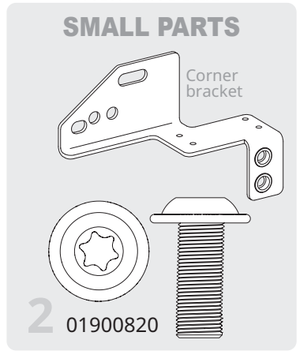
- **The drive side bracket** holds the wireless antenna arm and has an extra screw hole to secure the side panel cover.
- **The non-drive side bracket** has an extra screw hole to secure the side panel cover.

NOTE: depending on the configuration of the door, the drive side may be on the left (LH) or right (RH) side of the door. These steps show a left hand (LH) door.

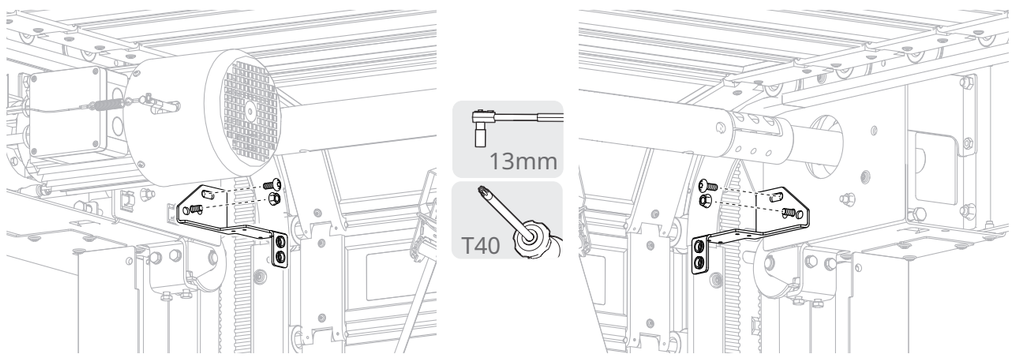
Drive side



Non-drive side

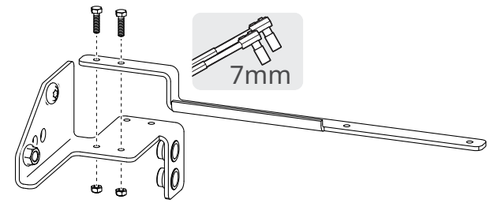


2 **Install** the corner brackets. Each bracket uses one nut from the console.



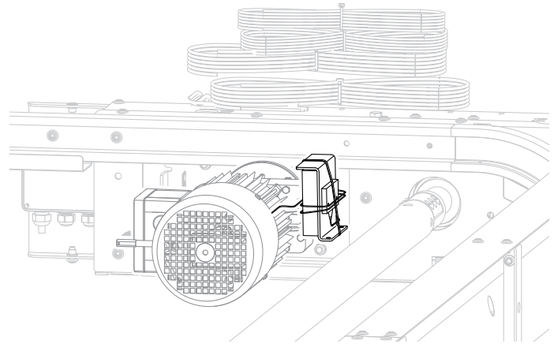
If the door has an optional wireless antenna (reversing edge activated)

3 **Install** the wireless antenna arm onto the drive side corner bracket using the included hardware.



4 **Reach** into the drive side compartment and **remove** the wireless antenna and antenna bracket from the top of the motor.

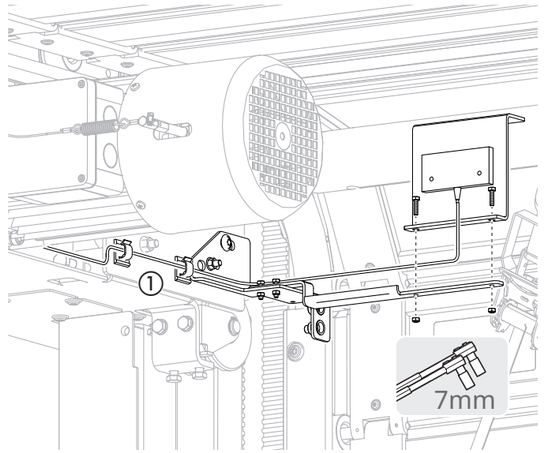
Unwrap the antenna cable.



5 **Install** the wireless antenna bracket onto the wireless antenna arm.

Use the hardware included with the arm.

Run the cable under the clips ① in the console.



How to install the jamb mounted SmartSurround™ light curtains

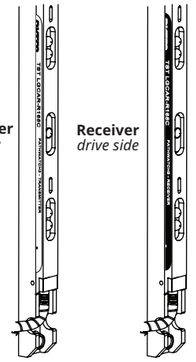
1 **Get** the jamb mounted SmartSurround™ transmitter and receiver from the kit.

IMPORTANT

Make sure the jamb mounted and cover mounted SmartSurround™ **transmitters** are both on the **non-drive side of the door.**

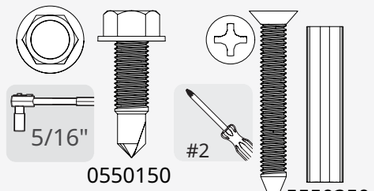
Make sure the jamb mounted and cover mounted SmartSurround™ **receivers** are both on the **drive side of the door.**

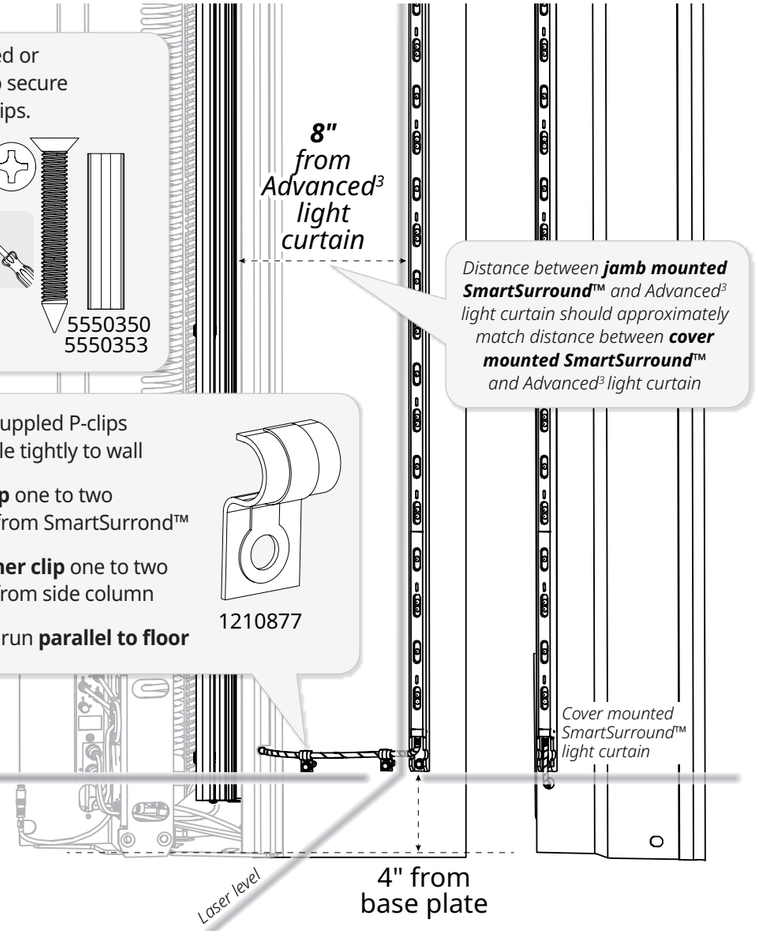
Check the labels at the bottom of the light curtains to match.



2 **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.





Use two (2) suppled P-clips to secure cable tightly to wall

Place one clip one to two inches (1-2") from SmartSurrond™

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 SmartSurrond™ and a laser level to set the mounting height of the wall mounted light curtain.

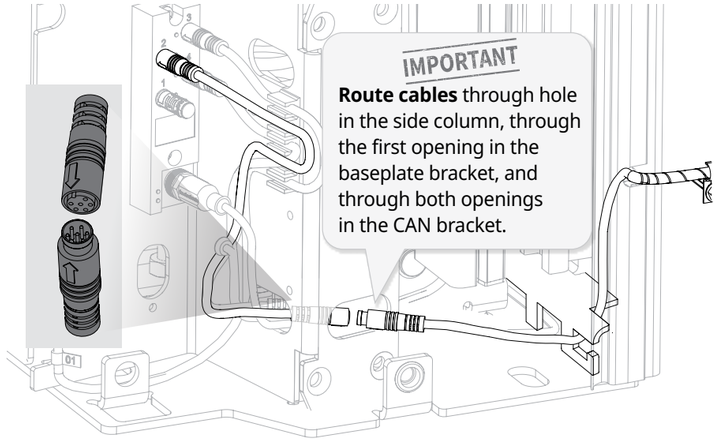
The **bottom** of the aluminum retaining bracket should be **4" above base plate**.

How to complete the installation of the CAN bus cables

1 **Connect** the two cables that connect the jamb mounted SmartSurround™ light curtain to the CAN port.

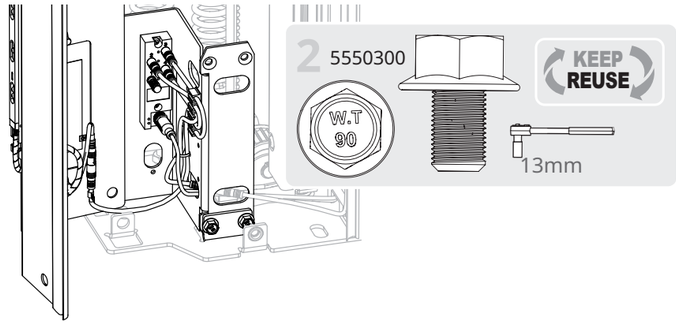
Line up the embossed arrows on the connectors to align the guide notch and contacts correctly.

The connectors will only fully connect if they are aligned correctly.



2 **Reinstall** the CAN bus brackets in both side columns.

- If possible, **reconnect** the cables labeled "01" before reinstalling the side colum covers.

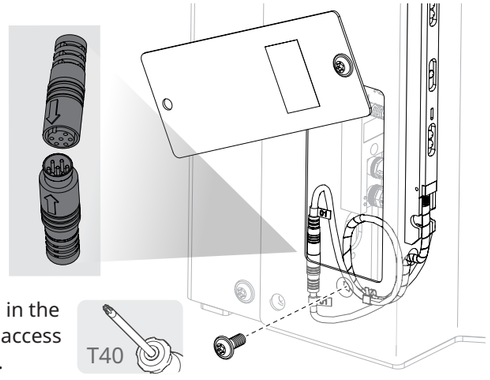


3 **Reinstall** the side column covers.

- **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.

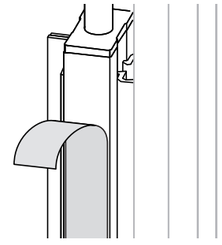
Reconnect the two cables labeled "01".

- **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 **Remove** the protective flim from the Advanced³ light curtains and the SmartSurround™ light curtains installed on the side column covers.

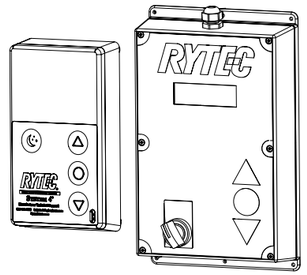


(Optional) Check if the door has an MS4 or BTA4 user terminal

1 **Check the small part box** to see if an optional BTA4 (shown at left) or MS4 (shown at right) user terminal is included in this installation.

Both terminals can be **mounted either on a side column or remotely,** and both connect to the CAN bus system.

The frame and cabling for **side column mounted BTA4 terminals** are preinstalled at Rytec.
All other mountings must be field installed.



How to install the BTA4 user terminal frame remotely

IMPORTANT **Check with the door owner** where they want the BTA4 installed remotely.

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

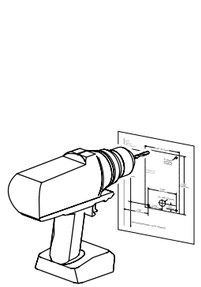
Use the template to drill the four screw holes in wall near the door.

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

Match the correct depth for the hardware.

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

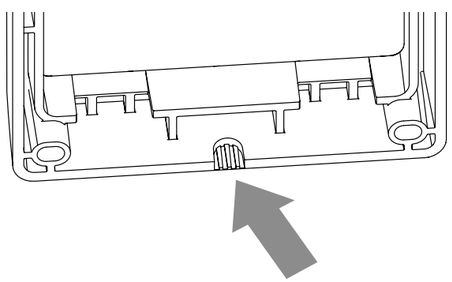
IMPORTANT

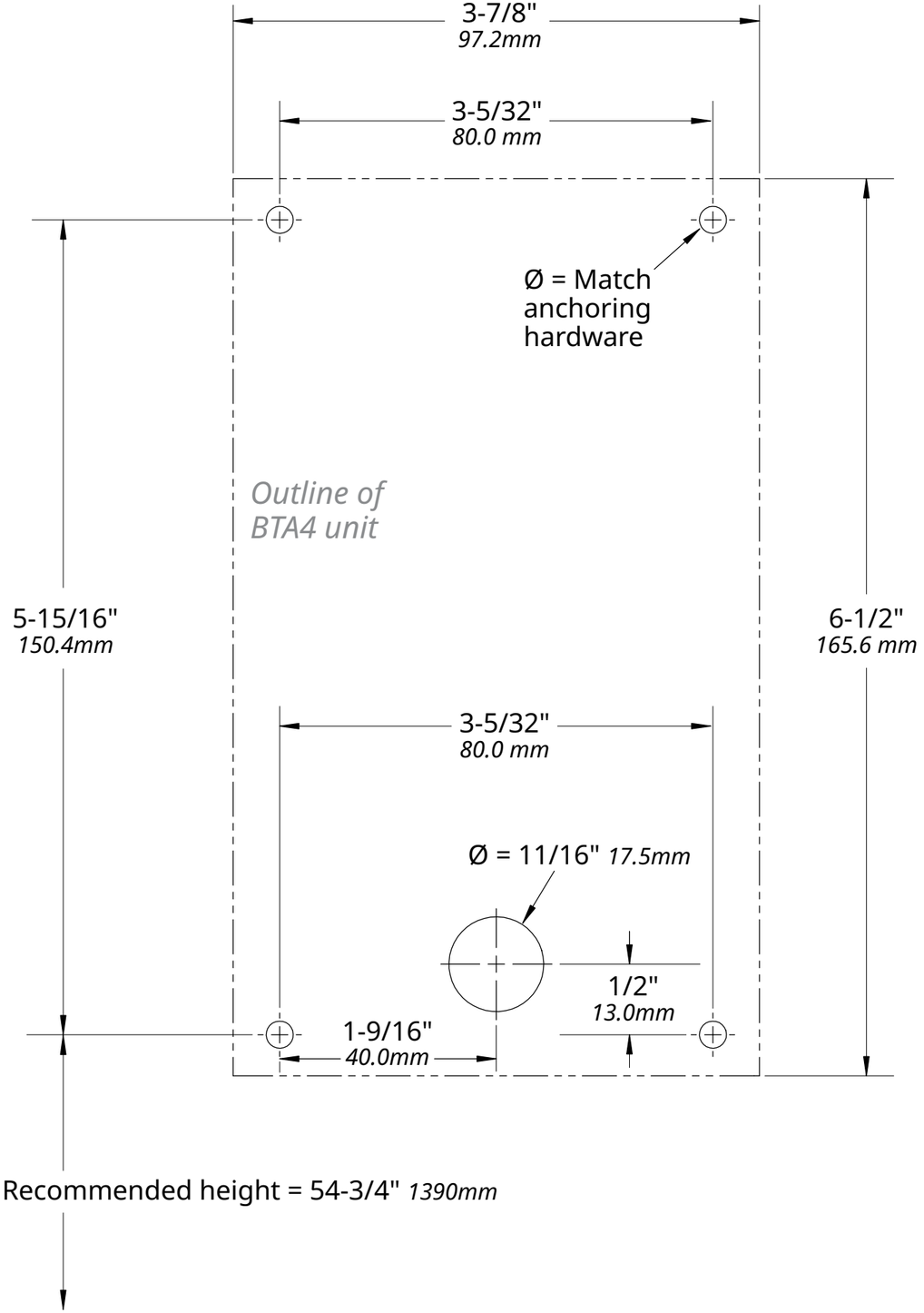


IMPORTANT

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.

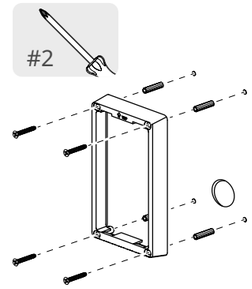
2 If you are mounting the unit to the wall and cannot run cable inside the wall, **snap off** the perforated tab at the bottom of the frame.

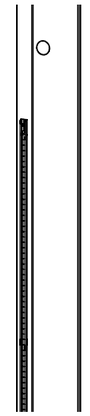




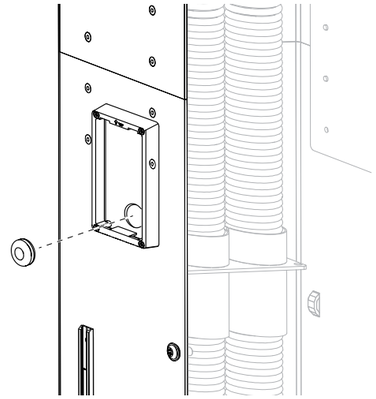
Back of BTA4 template Intentionally left blank

3 **Install** the BTA4 frame using the supplied hardware for wall mounting, or your own.



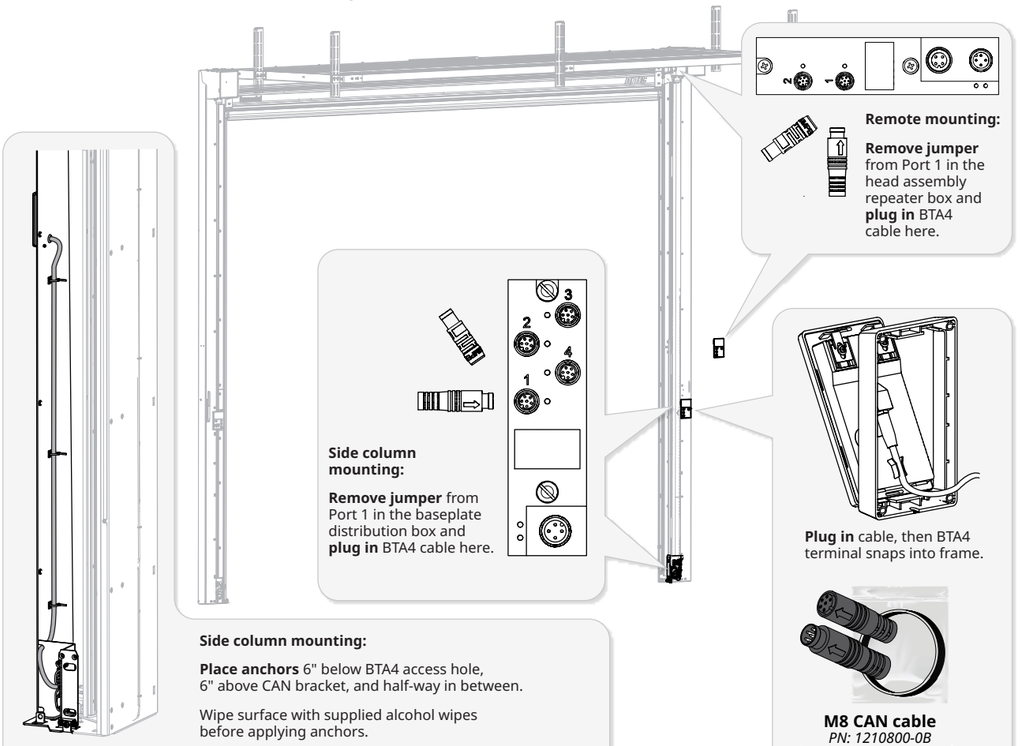


4 For side column mounting, **install** the grommet into the cable access hole.



How to connect the BTA4 user terminal to the CAN bus system

1 **Connect** the BTA4 to the CAN bus system.



Remote mounting:

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

Side column mounting:

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

Plug in cable, then BTA4 terminal snaps into frame.

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.

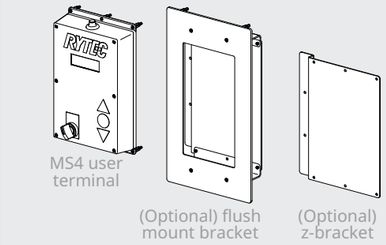
Route cable through anchors and upper notch in bracket.

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

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.



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

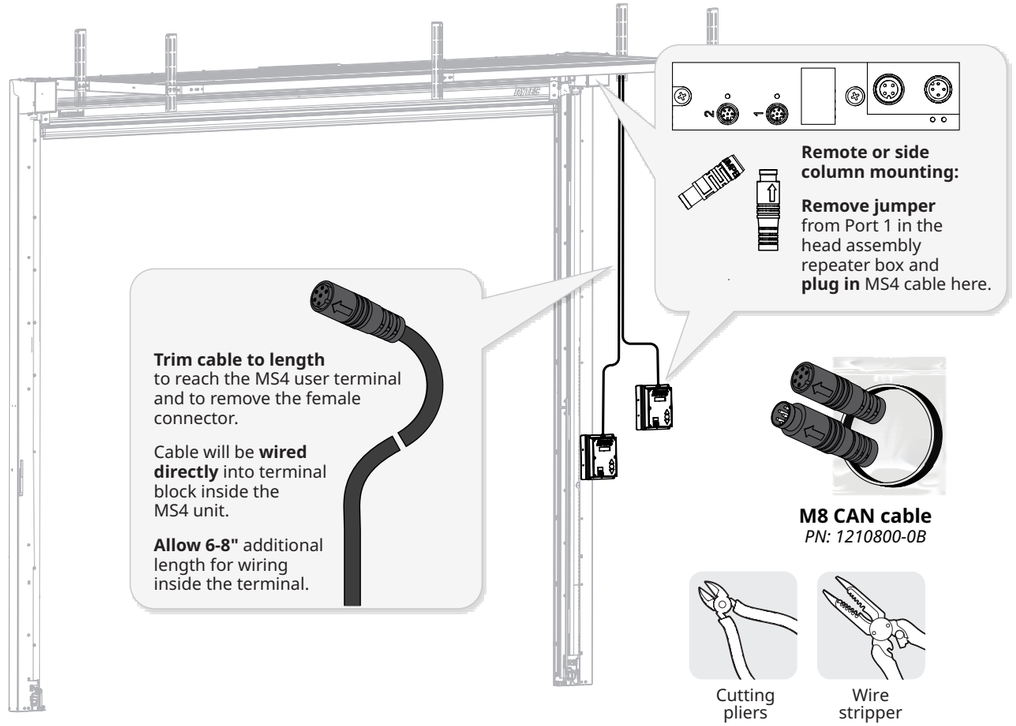
1. **Remove** plate ① from non-drive side column.
2. **Install** the user terminal ② onto the z-bracket ③ using supplied hardware.
3. **Install** bracket onto side column using screw holes from plate.

Flush mount (in-wall installation)

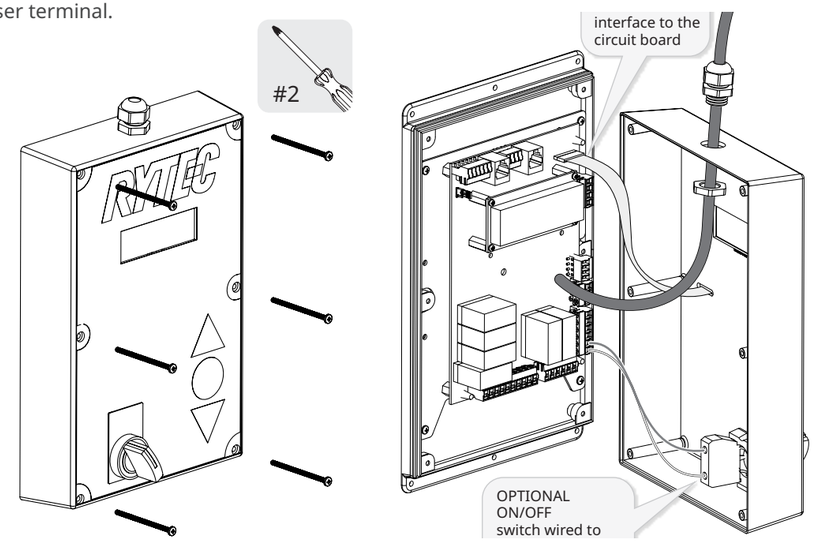
1. **Cut** hole: 6-3/8"W x 11-1/2"H.
2. **Install** the user terminal ① onto the flush mount bracket ② using supplied hardware.
3. **Anchor** bracket to wall using supplied hardware.
4. **Install** the cover plate ③.

How to connect the MS4 user terminal to the CAN bus system

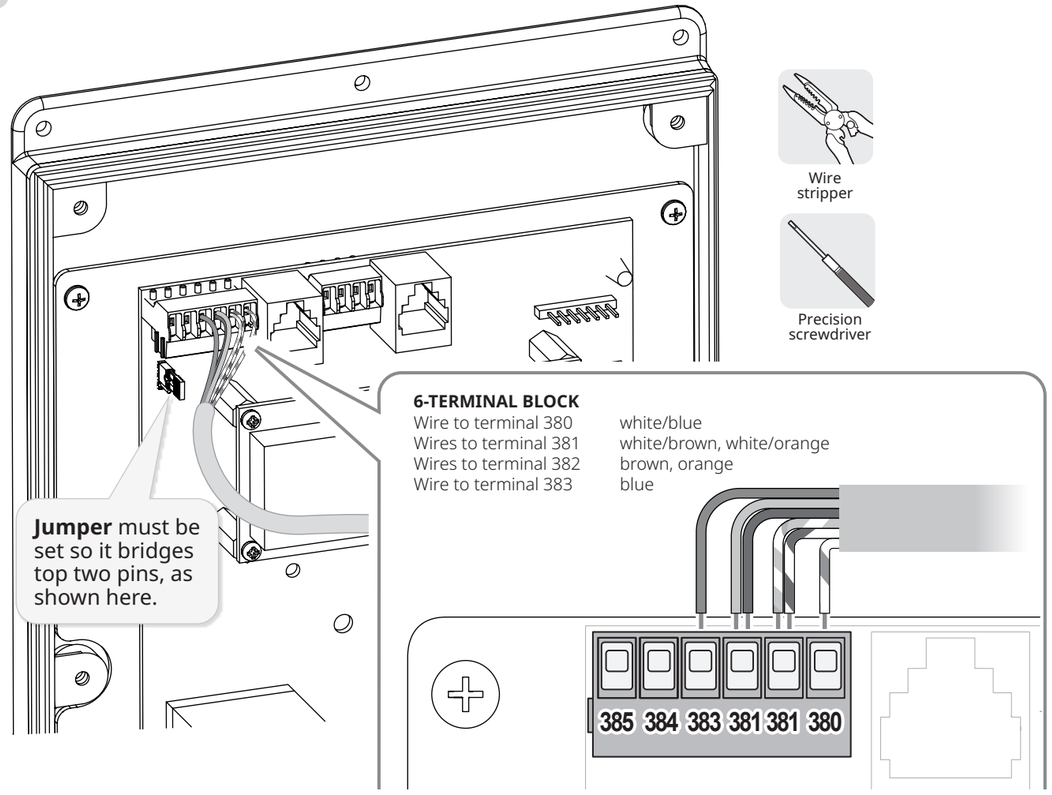
1 **Connect** the M8 flying lead cable to the head assembly repeater box and **route** it to the MS4 user terminal.



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.

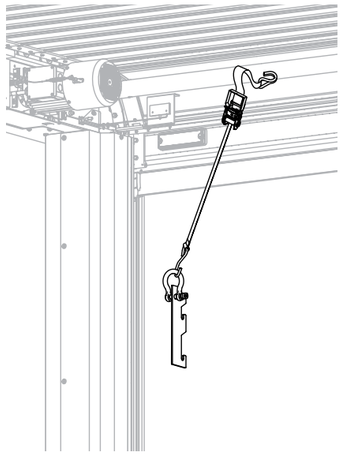


4 **Tighten** the cord grip, **replace** the cover and **reinstall** the six screws.

How to connect the brake release cable to the brake release lever

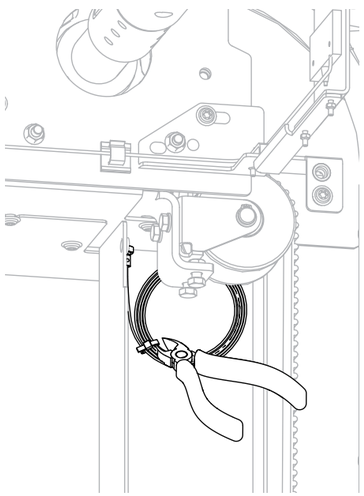
1 **Remove** the ratchet straps and any tools holding the door panel in place.

IMPORTANT



2 **Cut** the cable tie on the brake release cable.

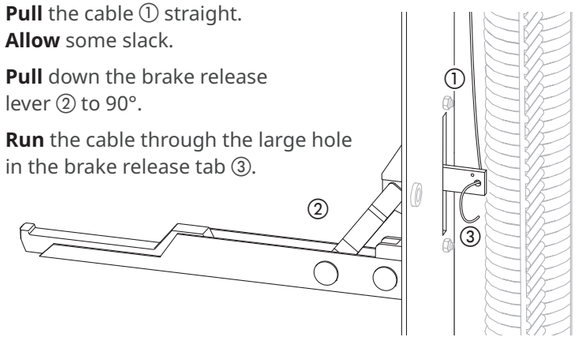
Run the cable down the side column to the brake release lever.



3 **Pull** the cable ① straight.
Allow some slack.

Pull down the brake release lever ② to 90°.

Run the cable through the large hole in the brake release tab ③.

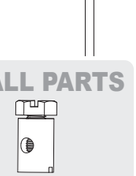


4 **Loosen** the screw on the cable stop clamp ④ until you can thread the cable through the clamp.

Slide the clamp against the lever tab and **tighten**.

Flat screwdriver

SMALL PARTS



Cable stop clamp (actual size)

IMPORTANT

Make sure the clamp is tight enough to hold when pressure is applied.

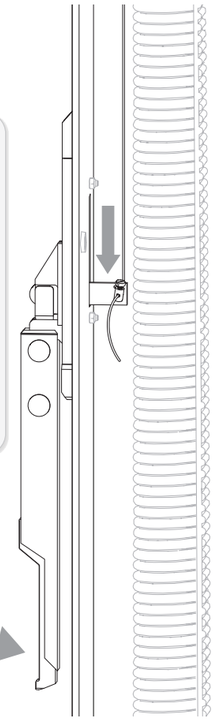
DO NOT trim the cable until the brake release has been fully tested.

5 **Pull down** the brake release lever to the fully released position.

IMPORTANT

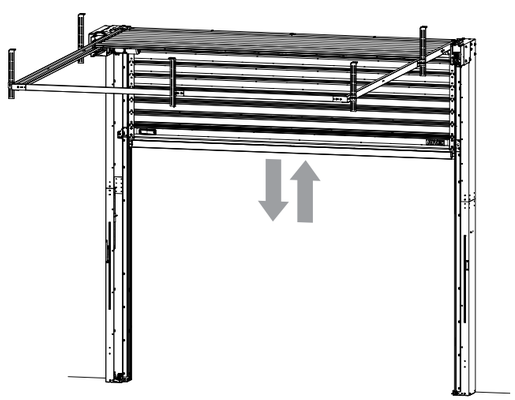
There will be some resistance when you push the lever down, but **it should not require excessive force** to reach the fully released position.

If you feel too much resistance, loosen the tension on the cable.

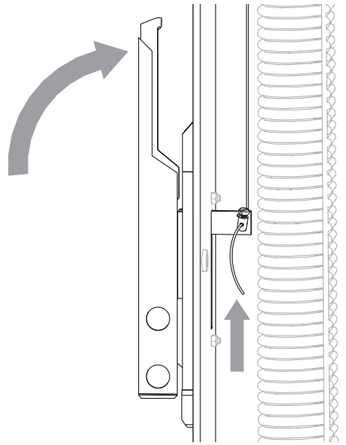


6 The door panel should **release** under its own weight and **drop or rise** to approximately 1/3 of the door height.

If it does not, **manually pull** the door panel to that height.

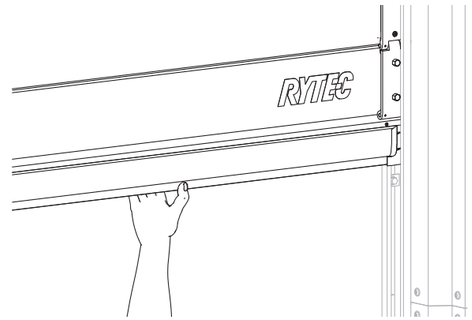


7 **Pull up** the brake release lever 180° to the fully engaged position.



8 Try to **manually move** the door panel up and down.

You should **NOT** be able to move the panel.



9 If necessary, **adjust the tension** on the cable until both conditions are met:

- The door moves freely when the brake release level is in the fully released position.
- The door does not move when the lever is in the fully engaged position.

10 **Release, then reengage,** the brake several times. **Test** after each time.

Make sure the cable does not loosen after multiple uses.

- If necessary, **adjust the tension** on the cable.
- When all tests are complete, you can **trim** the cable (minimum trim length = 4″).

How to install the System 4 controller and wire the door

⚠ WARNING

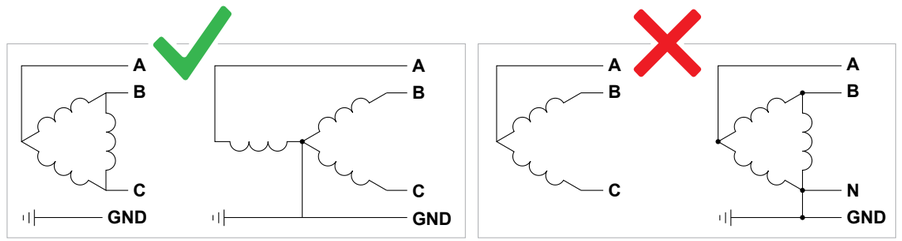
All electrical work must meet all applicable local, state and national codes.
It is recommended that all electrical work be done by a certified electrician.

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.

IMPORTANT

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.

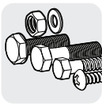
Contact Rytec technical support at 800-628-1909 or email helpdesk@rytecdoors.com before starting the installation if you cannot meet any of these standards or have questions about how to implement them.

Before you begin

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

Supplies that you provide

Conduit for high-voltage and low-voltage wiring



Mounting hardware for controller (3 anchors)

Tools you will need

Power drill

Step drill bit

#2 Phillips

T20 Torx screwdriver

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.

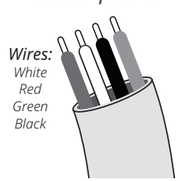
4 **Make sure** the high-voltage and low-voltage cables from the head assembly of the door are separate. **Cables may be routed** through the top ① or bottom ② port at the back of the belt guard cover.

INSIDER'S TIP

Label the controller end of the cables. **Label them again** if you cut or trim them.

High Voltage

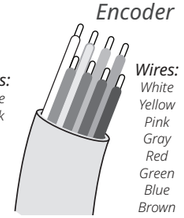
Motor power



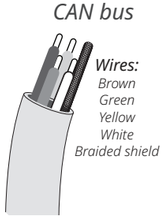
Low Voltage

Brake

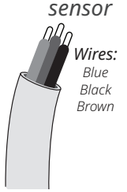
Encoder



CAN bus

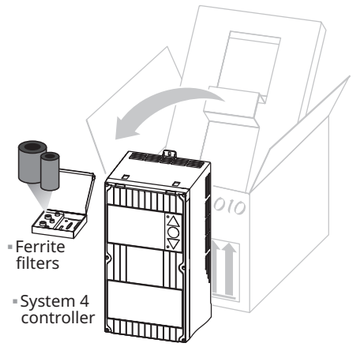


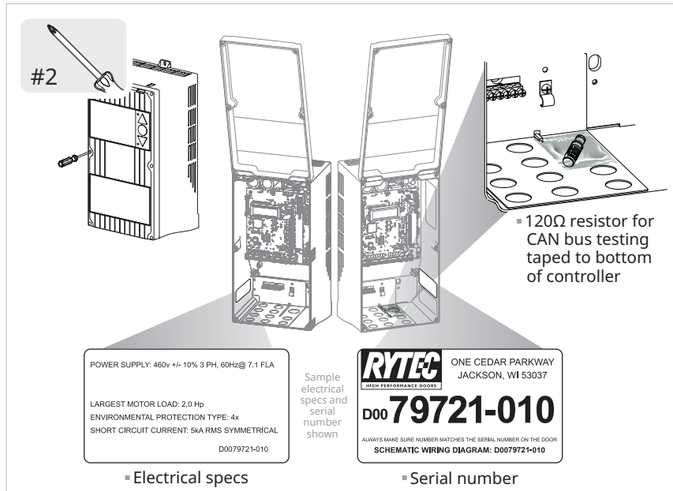
Proximity sensor



How to install the System 4 controller

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





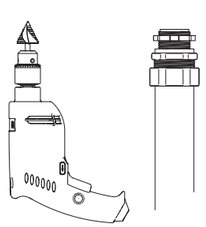
Verify that the serial number and electrical specs for the controller match the door.
Locate the 120Ω resistor for testing the CAN bus.

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 the conduit.

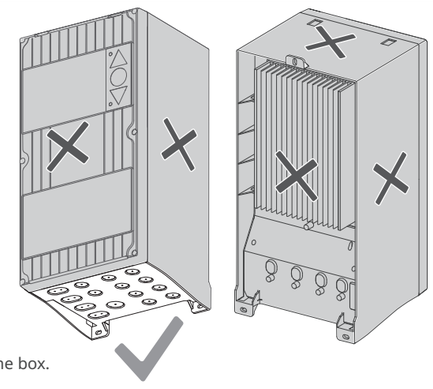
IMPORTANT

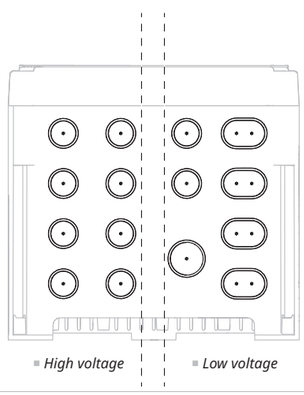
- **Conduit must enter through the bottom of the control box.**
  Drilling holes in the **front, back, top or sides** of the control box voids the warranty.
- **High-voltage wires** must enter through the left side of the box bottom.
- **Low-voltage wires** must enter through the right side of the box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



ONLY drill holes and **install conduit** through the **bottom** of the control box.

DO NOT drill through the front, back, top or sides of the box.





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.

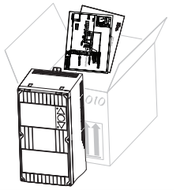
Failure to comply could result in shock, burns or death.

Find the schematics for the door in same box that holds the System 4® controller.

Check the crate and small parts boxes for accessories such as activators or safety devices and any schematics included with them.

If the schematics indicate the door has non-standard wiring, **follow the schematics** instead of this manual.

IMPORTANT



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

12 AWG

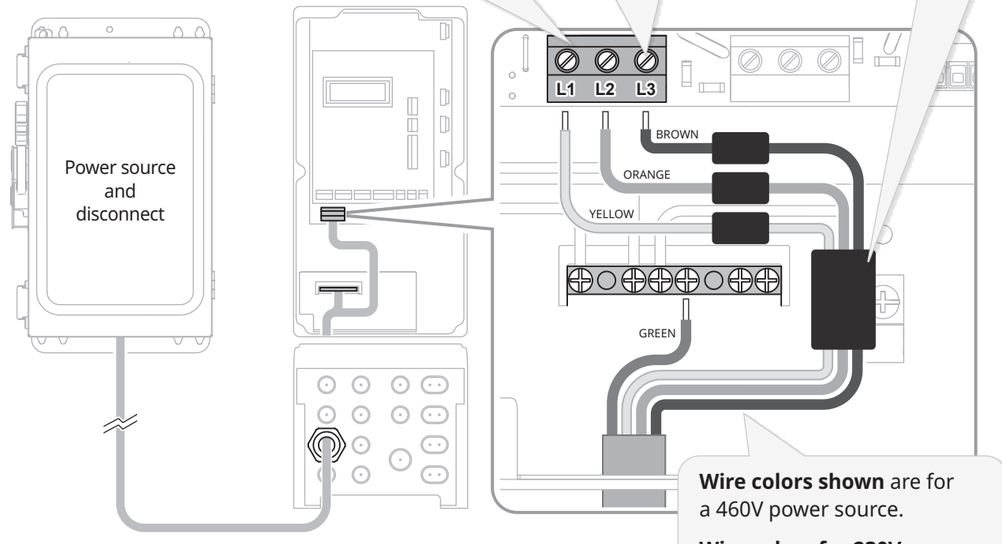
DO NOT use power tools

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.

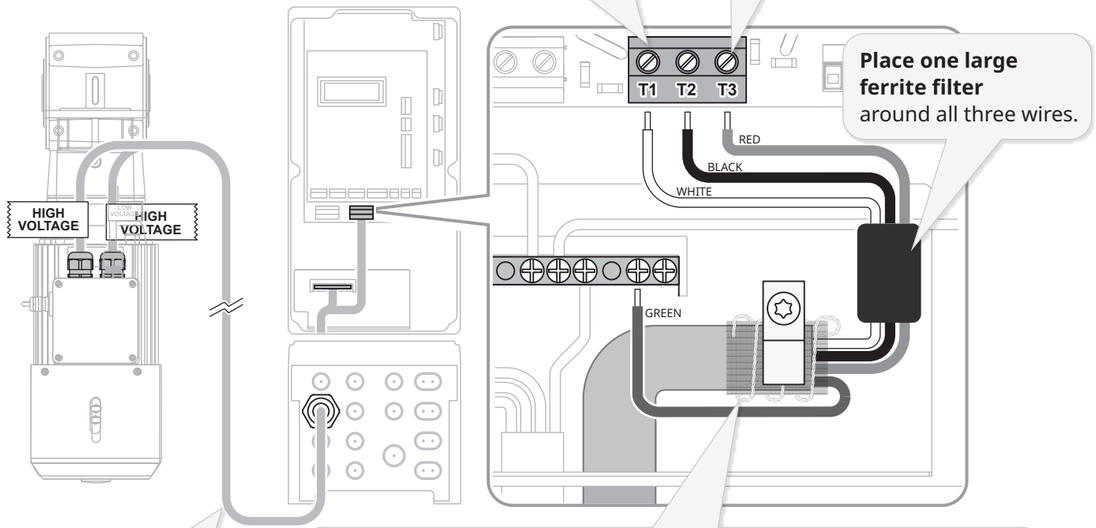
2 Connect the high-voltage wiring from the motor. 16 AWG

Shielding: braided copper mesh and drain wire

Do not try to remove the green terminal block from the circuit board.

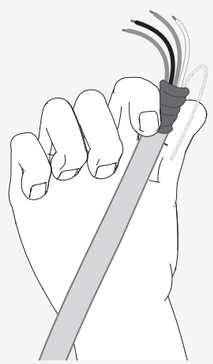
It is fixed in place and will break.

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.

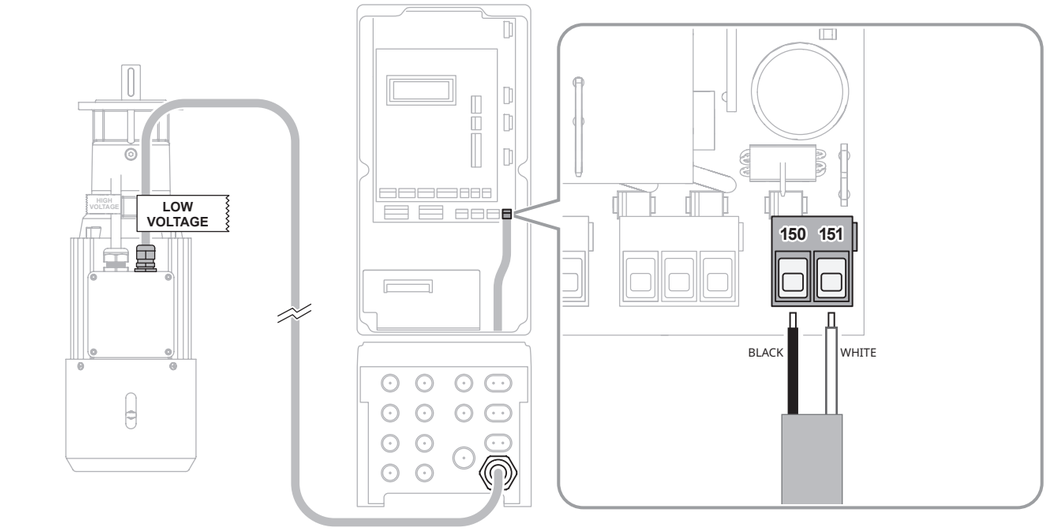
How to install the low-voltage wiring

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.**

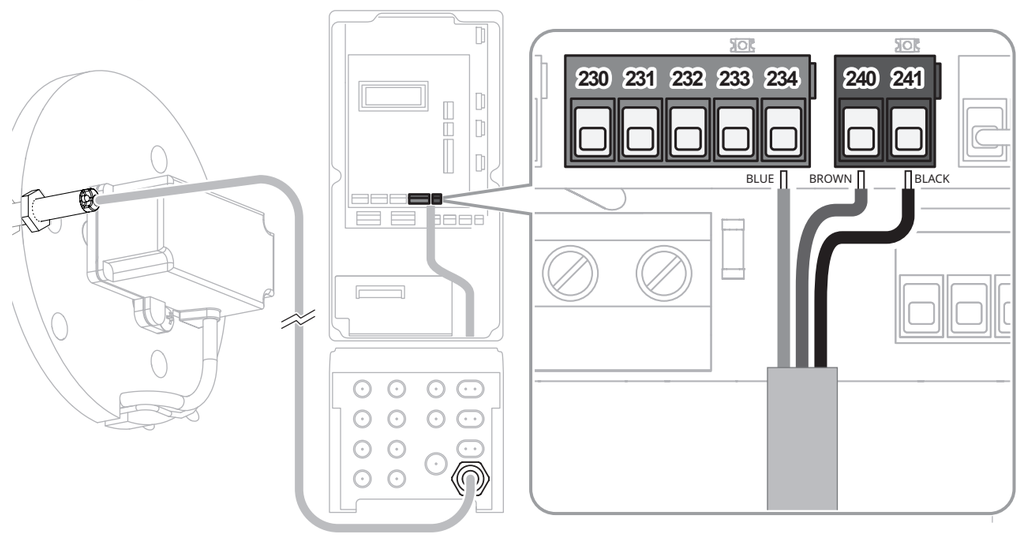
1 Connect the brake wiring from the motor. 18 AWG

Shielding: unshielded



2 Connect the wires from the proximity sensor. 24 AWG

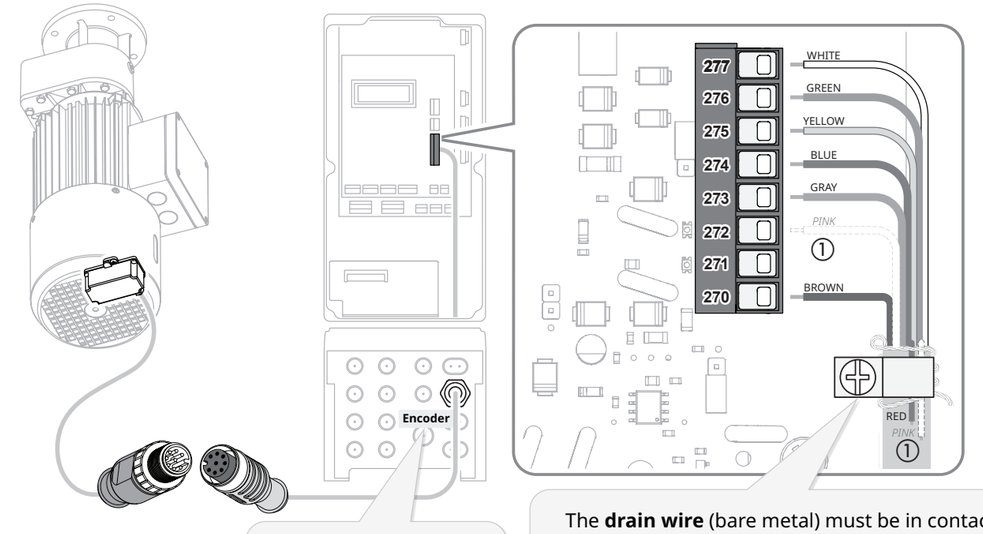
Shielding: unshielded



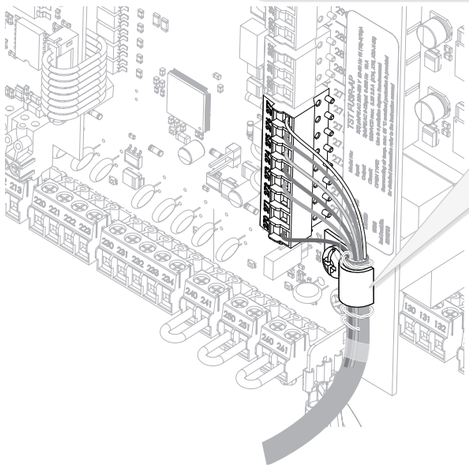
3 Connect the wiring from the encoder. 24 AWG

Shielding: metal foil and drain wire

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



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.

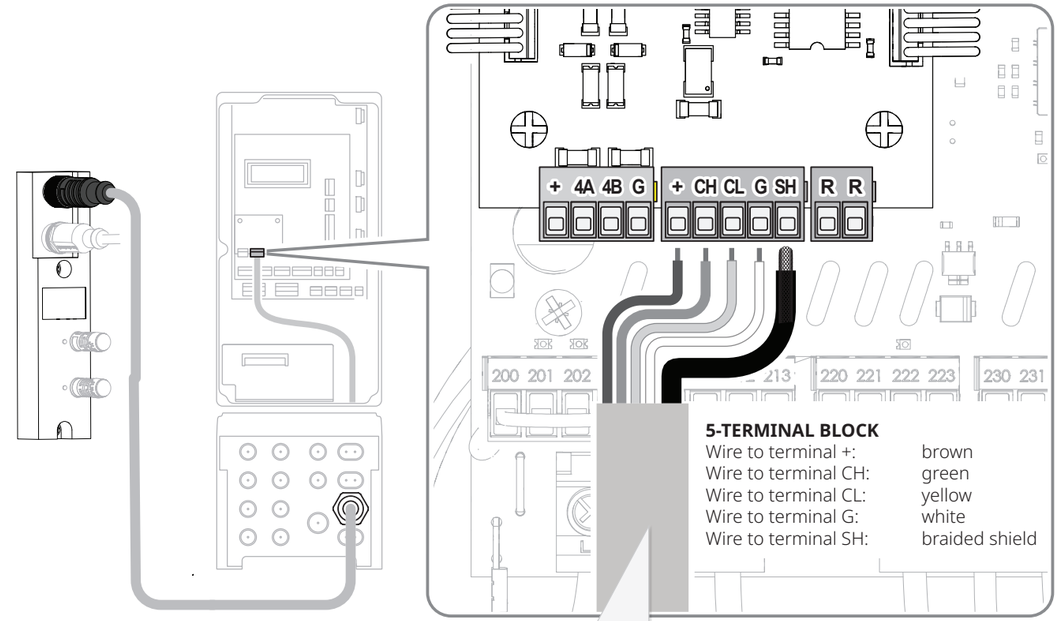
IMPORTANT

① **Pink wire in encoder cable** is trimmed and tied off if reversing edge is deactivated
(standard installation - no wireless antenna)

Pink wire connects to terminal 272 if reversing edge is activated
(optional - wireless antenna included)

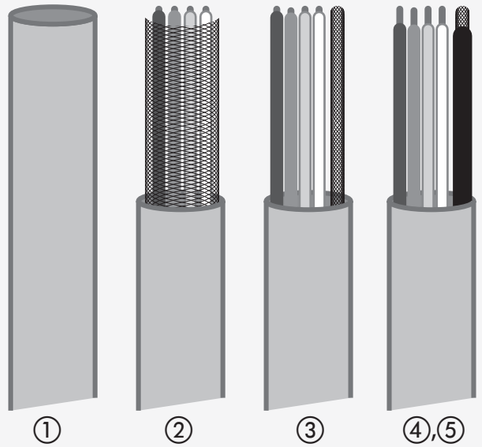
4 Connect the CAN bus wiring. 20 AWG

Shielding: wire mesh



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.

IMPORTANT **DO NOT** cut through sheilding.

③ **Twist** shielding into fifth wire to terminal block.

IMPORTANT **Make sure** shielding is twisted tight enough to fit into terminal.

④ **Use** heat shrink tubing or electrical tape 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.

Before powering up the door

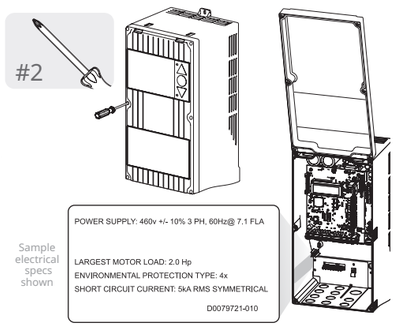
⚠ WARNING

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.

Multimeter



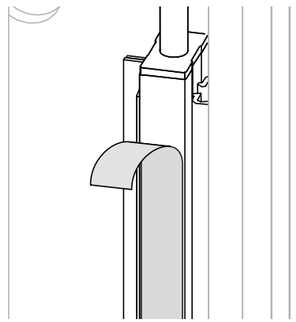
Sample electrical specs shown

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.

IMPORTANT

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 more hardware stores.

INSIDER'S TIP



How to sync the SmartSurround™ system to the controller, 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
Accesses more parameters
R = Rytec level
Accesses all parameters
Requires password from technical support

Parameter name

Parameter number
All three digits are hexadecimal

Parameter value
? = value being changed
√ = change saved

Blinking cursor
On left side of display: *press arrows to change parameter number*
On right side of display: *press arrows to change paramter value*

The Controller Controls

UP Arrow
- **Press** to increase a value or parameter number
- **Press and hold** to increase values or parameter numbers quickly

RESET Button
- **Press** to toggle the flashing cursor between parameters and values
- **Press and hold** to save changes to a value

DOWN Arrow
- **Press** to decrease a value or parameter number
- **Press and hold** to decrease values or parameter numbers quickly

NOTE: The System 4 display uses hexadecimal numbers to number parameters and for some values.

The display uses the ten numeric characters (0-9), plus six letters (A-F), which represent the values from 11 through 16.

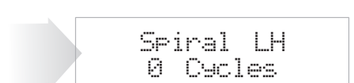
In some cases it will be necessary to press the UP arrow sixteen times to change a value from 0000 to 0010.

Icon key

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

Do This *Result*

1 ON / OFF — Turn on power to controller



The door starts in run mode.

2 until the parameter screen displays

You are in Parameter mode. Go to parameter 999.

3 2x to reach parameter P:999

The Password parameter P:999 screen displays.

Do This *Result*

4 1x to move cursor to the right (edit value)

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

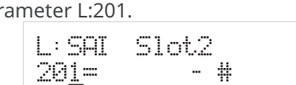
5 16x to set value to hexadecimal 10

Set the value to 10 (Service level password).

6 until question mark changes to checkmark (value saved)

The Service level password is saved.

7 The controller automatically moves to parameter L:201.

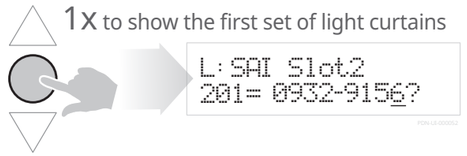


Next: to start the CAN bus synchronization, assign the two Advanced3 light curtains to parameter L:201

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.

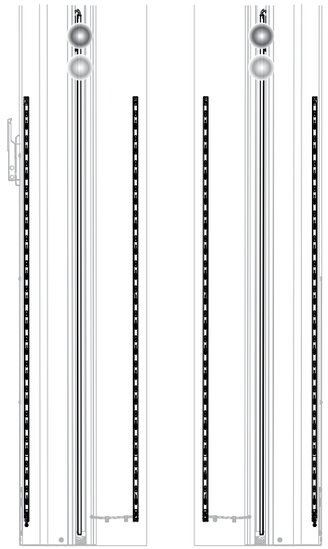
Do This *Result*

1 1x to show the first set of light curtains



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

Re-check the light curtains.

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

until the setting is saved

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

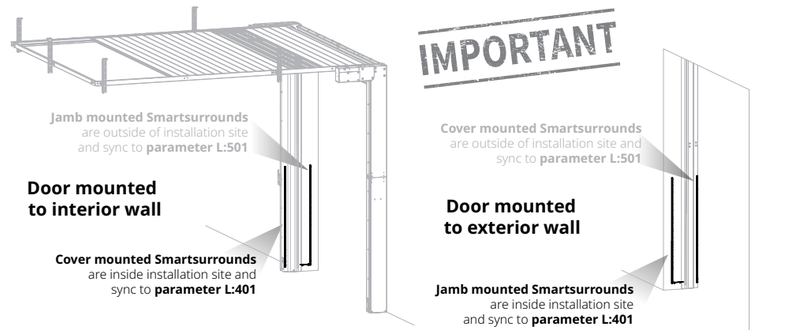
until the setting is saved

6 The controller moves to parameter L:401.

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

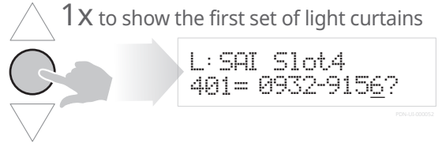
On doors that are mounted to **interior walls,** the **cover mounted SmartSurrounds™** are considered to be the inside light curtains and are assigned to parameter L:401.

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.



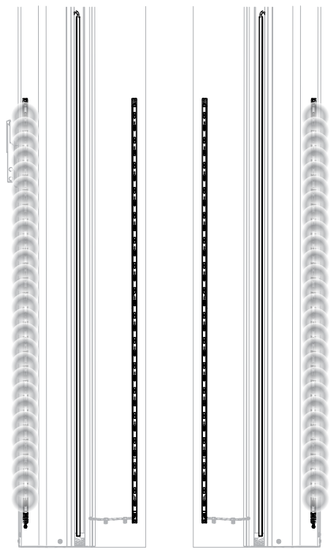
Do This *Result*

1 1x to show the first set of light curtains



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

Re-check the light curtains.

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

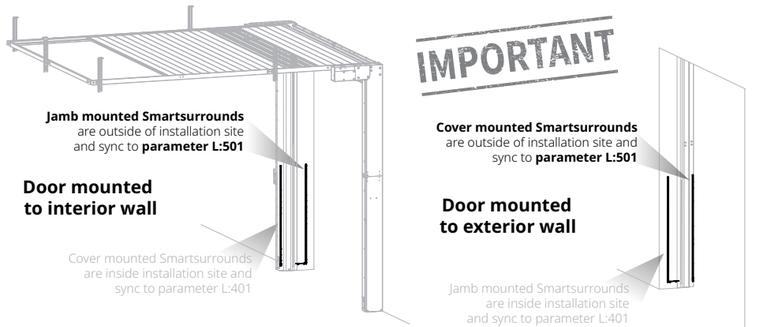
until the setting is saved

5 The controller moves to parameter L:501.

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.



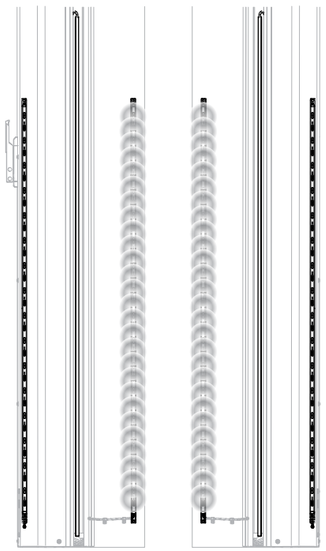
Do This *Result*

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.



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 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  5
0000#    0000 Cyc
```

Next: set limits

Do This *Result*

1 until the "Syncron." screen displays

```
! Syncron.  !
_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
```

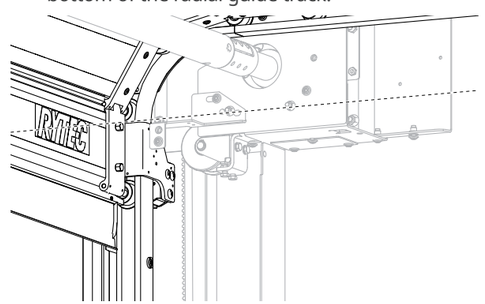
IMPORTANT **Interrupt the set limits sequence and run the tests** in ***What to test after powering up the door*** on this page.

3 **Resume** the sequence and set the open position.

until open height is correct

```
To Open Pos.
_0 Hold Reset
```

The top of the end brackets should align with the bottom of the radial guide track.



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
```

```
! Syncron.  !
_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
Acll     =   4Sec
Door Is Closing
Acll     =   4Sec
Spiral LH
[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 page 38.*

What to test after powering up the door

fully open and close door five times

Press and hold the arrows to fully open, then fully close the door five (5) times.

1 **Does the door panel move in the right direction?**

Test: The direction of the door should match the direction of the arrow on the controller.

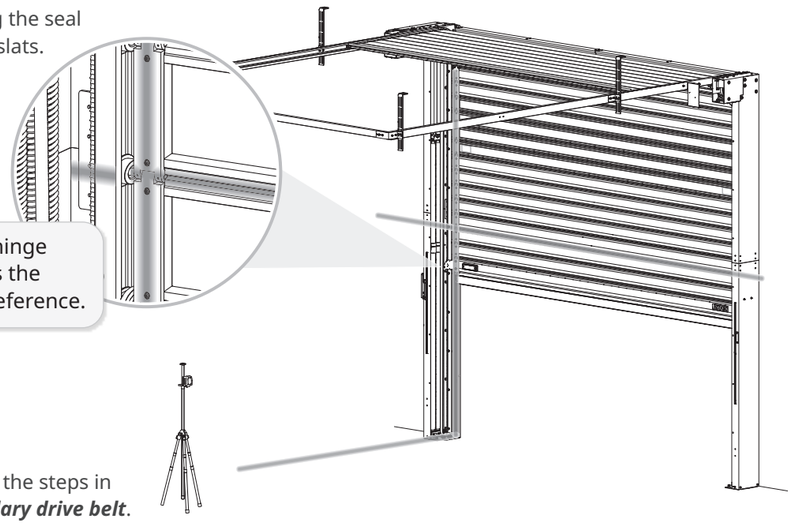
Yes: no action is needed.

No: follow the steps in ***How to reverse the rotation of the motor***.

2 **Is the door panel level and plumb?**

Test: laser the door along the seal between two door panel slats.

Laser level



Use the hinge screws as the vertical reference.

Yes: no action is needed.

Panel is not level: follow the steps in ***How to adjust the secondary drive belt***.

Panel is not plumb: contact Rytec technical support at **800-628-1909**.

3 **Is the manual brake release operating correctly?**

Test: pull down the lever to manually release the brake, then push the lever back up to reset it.

Release operating correctly: when the lever is down, the door panel moves freely and the controller displays an `F211 Emergency Stop` error. When the handle is reset, the controller displays `Door is Stopped` and you can close the door by pressing the DOWN arrow. **No action is needed.**

Release NOT operating correctly: the `F211 Emergency Stop` error stays on when the lever is reset, and the door cannot be closed. **Follow the steps in *How to adjust the proximity sensor.***

4 **Is the door operating correctly?**

Test: listen for grinding, whining or excessive motor noise. Watch for changes in speed or excessive movement of the motor or drum

Yes: no action is needed.

No: contact Rytec technical support at **800-628-1909**.

How to adjust the secondary drive belt

⚠ WARNING

Do not perform this procedure until the power disconnect is in the OFF position and a lockout/tagout is complete.

Contact with high-voltage wires, or the door being activated unexpectedly, can cause death or serious injury.

1

Laser level

IMPORTANT

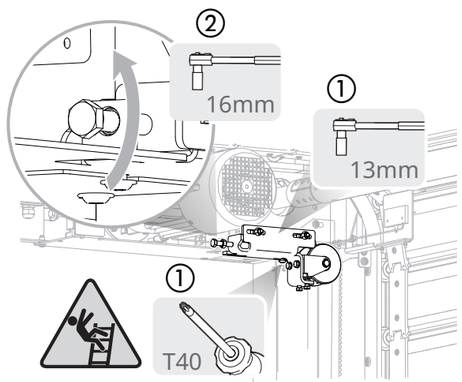
Always adjust the belt to **lower** the side of the door panel that is **higher.**

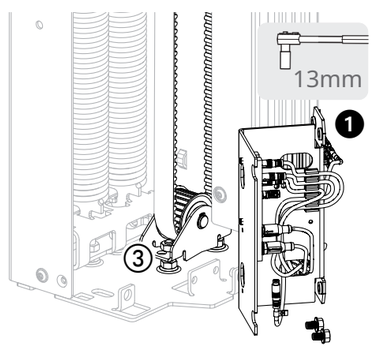
2 **Loosen** the secondary drive belt until there is considerable slack.

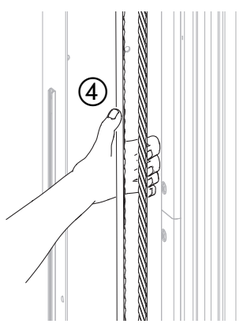
1: **Loosen** the restraining bolts on the idler bracket ①, then **turn** the adjustment screw ② **counterclockwise** until the bracket stops moving forward.

2: If necessary, **loosen** the screws and **move** the CAN bracket ❶ out of the way enough to access the baseplate pulley assembly, then **loosen** the front nut on the baseplate pulley assembly ③. **DO NOT remove** the nut.

3: **Check** the belt ④ for slack.

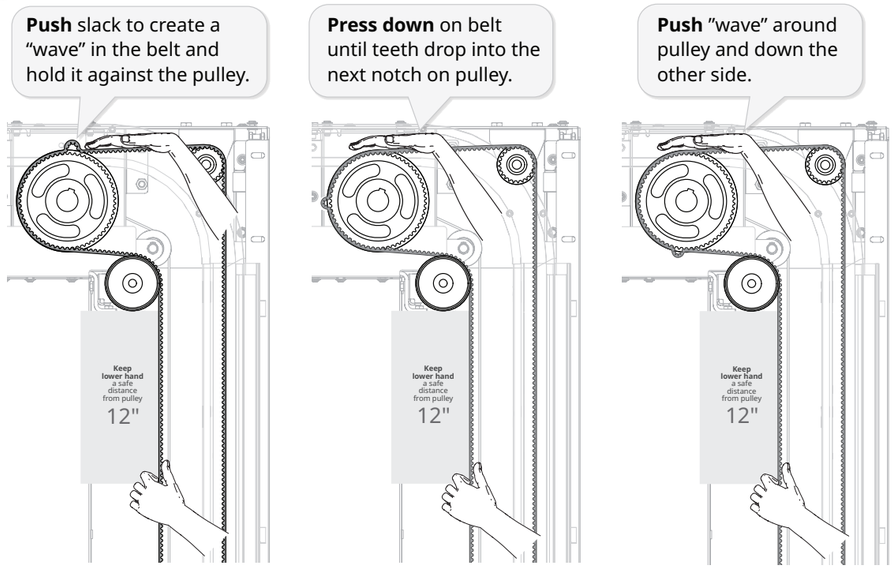






3 In the console with the higher belt, **"jump" the secondary drive belt** one notch in the pulley.

IMPORTANT Adjust the belt **one tooth at a time,** then recheck level.



4 **Level** the door panel again.

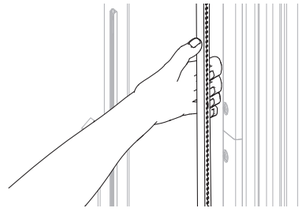
If the door panel is not level, repeat these steps and retest.

If the door panel is level, reset the tension on the belt.


Laser level

5 **Reset the tension** on the belt as described in ***How to set the tension on the secondary drive belts*** on page 25.

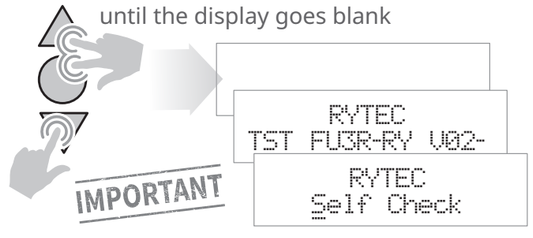
- **Tension is correct** when it requires considerable effort to bring the two legs of the belt, near the midpoint, together until they touch.



6 **Re-tighten** the baseplate pulley assembly and **reinstall** the CAN bracket.

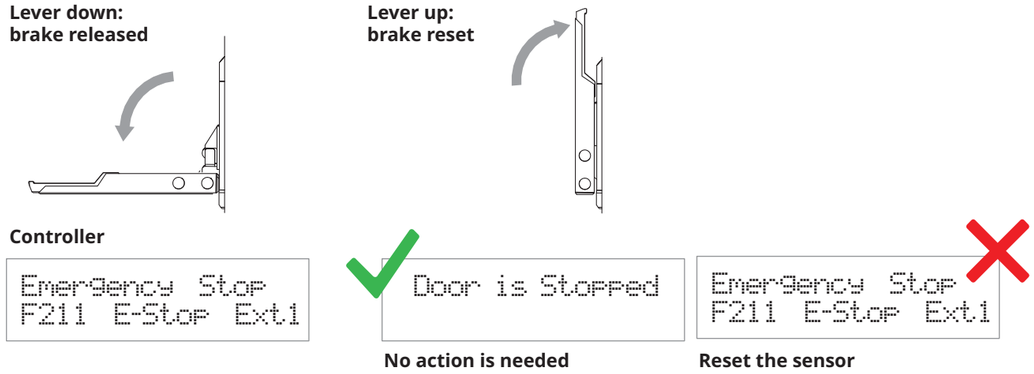
7 Any time a CAN bus cable is disconnected while the power is on, **you MUST do a soft reboot of the controller** to re-sync the CAN bus system when all cables have been reconnected.

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



How to adjust the proximity sensor

What's the problem? The controller tracks the position of the manual break release through a magnetic sensor located in the motor. In some installation environments, the sensor needs to be adjusted from the factory preset to correctly track the brake release.



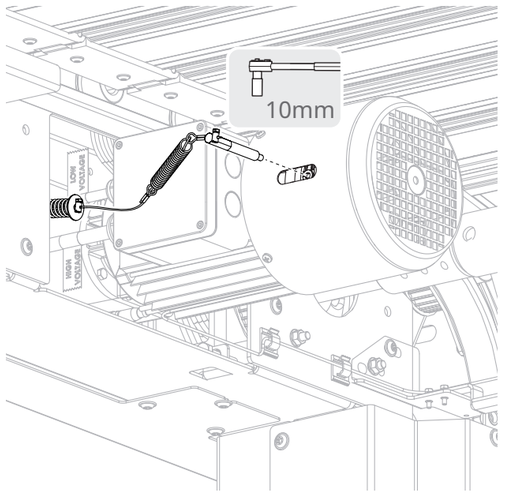
⚠ WARNING

Do not perform this procedure until the power disconnect is in the OFF position and a lockout/tagout is complete.

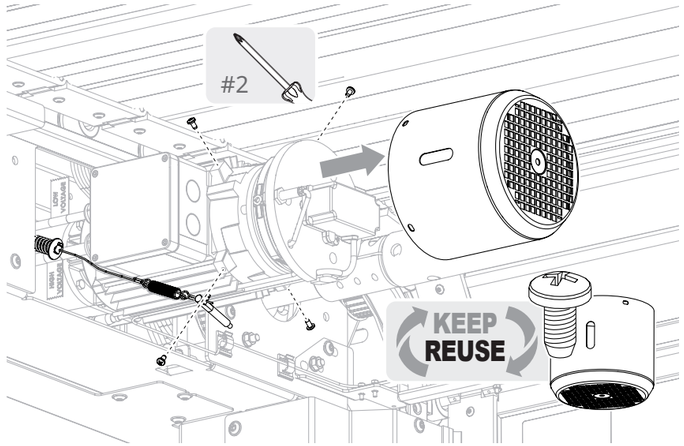
Contact with high-voltage wires, or the door being activated unexpectedly, can cause death or serious injury.

1 At the motor, **remove** the brake release lever.

DO NOT remove the cable. The play in the spring allows it to turn with the release lever until it is free of the motor.

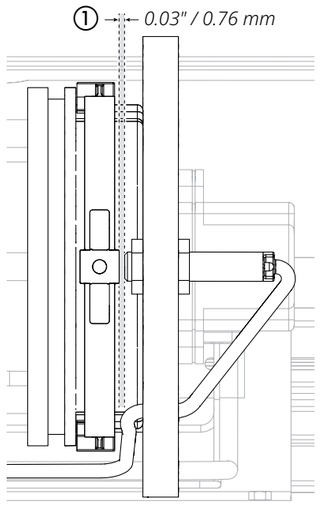


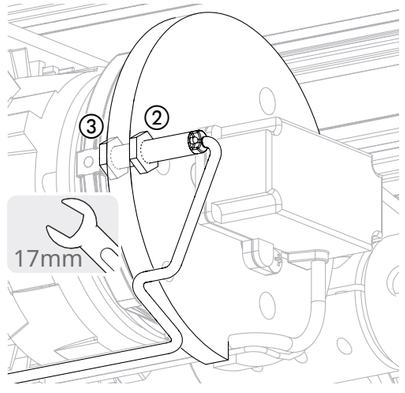
2 **Remove** the four screws and the bottom cover of the motor.



3 **Check** the distance between the sensor and the brake release arm ①.
It should be .03”/.76mm, which is the **thickness of a credit card.**

To adjust the sensor, first **loosen** the outer nut ②, then **tighten** the inner nut ③ to secure it in place.





4 **Test** the manual brake release again.

If the controller displays the F211 error on reset, repeat these steps and retest.

If the controller displays “Door Held Open”, the issue is resolved.
Reinstall the motor cover and the brake release lever.

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.

Do This *Result*

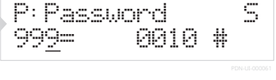
4 16x to set value to hexadecimal 10

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 P:275.

Next: navigate to parameter P:275 (parameter P:221 for doors with photo eyes) and change the value

Do This *Result*

1 until parameter displays

The default value at P:275 is -12.
The default value at P:221is 0.

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.

Do This *Result*

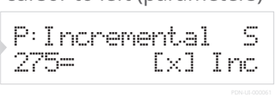
3 until new value displays

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

4 until question mark changes to checkmark (value saved)

The new value is saved.

5 1x to move cursor to left (parameters)



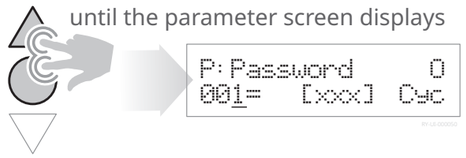
You can now return to run mode.

How to reverse the rotation of the motor

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 P:999.

2 2x to reach parameter P:999

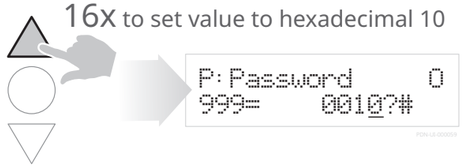
The parameter P:999 screen displays.

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

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

Do This *Result*

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.

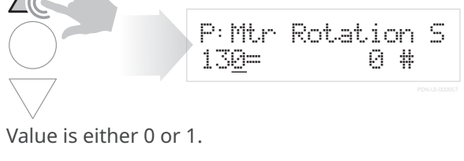
6 1x to move cursor to left (parameters)

You can now go to parameter P:130.

Next: navigate to parameter P:130 and change the value

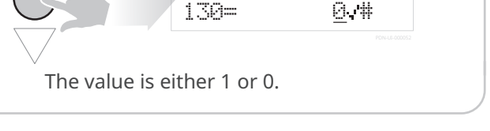
Do This *Result*

1 until parameter displays



Value is either 0 or 1.

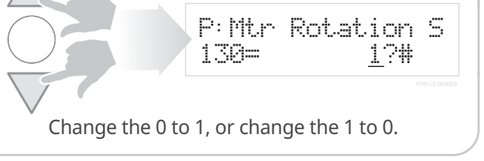
2 1x to move cursor to the right (edit value)



The value is either 1 or 0.

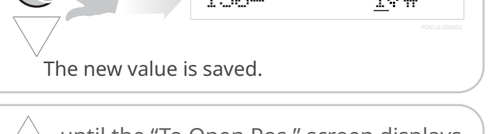
Do This *Result*

3 press either arrow to change value



Change the 0 to 1, or change the 1 to 0.

4



The new value is saved.

5 until the “To Open Pos.” screen displays

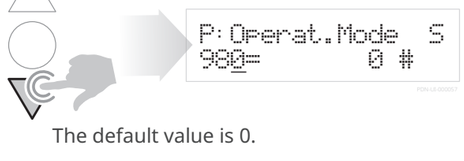
Reset the limits for the door.

How to finish testing the door and the safety features

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

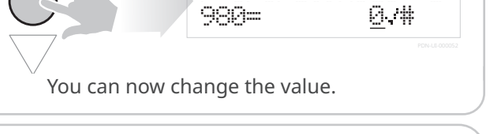
Do This *Result*

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.

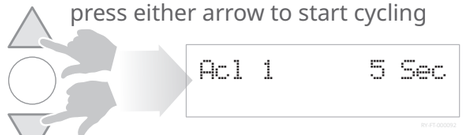
3 4x to change the value to 4

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.

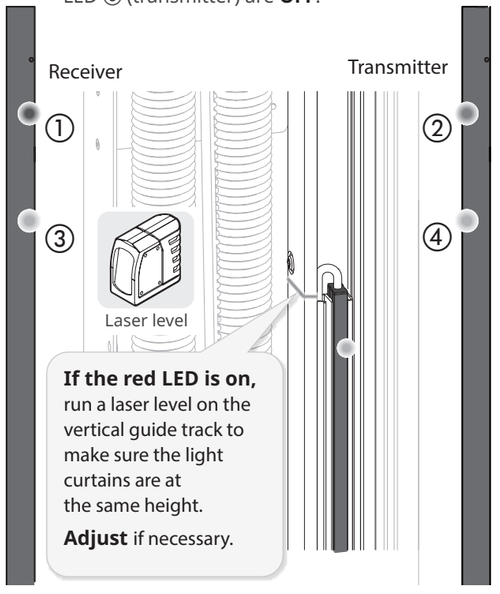
IMPORTANT

- **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 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 ③ (transmitter) are **OFF**.



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**.

4

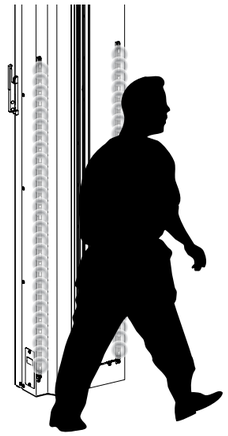
Make sure the SmartSurround™ operates correctly as the door opens and closes:

- **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

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.



6

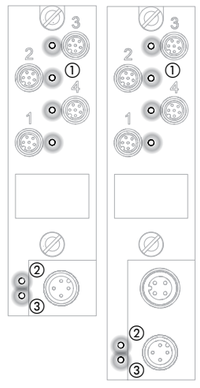
LEDs on the CAN repeaters and distributor indicate if the system is working correctly

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.



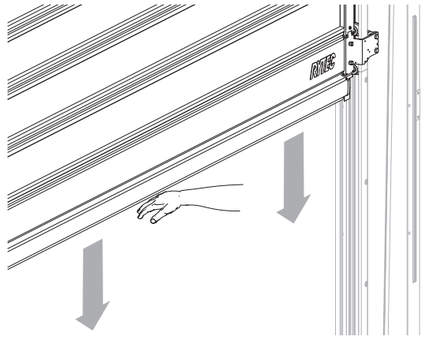
7

If the door has an active reversing edge (optional), 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.



⚠ WARNING

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

8

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.

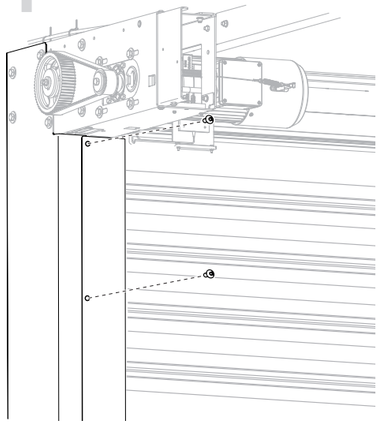
9

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

How to complete the installation

It is recommended that you **do not use power tools** for these steps.
Overtorquing screws can damage the riveted nuts that secure them.

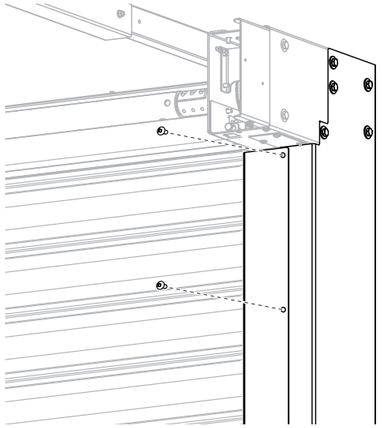
1 **Reinstall** both side column covers using ALL screws.



T40

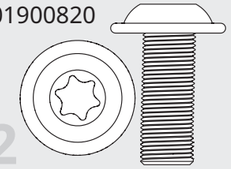
number of screws varies based on height of door

KEEP REUSE

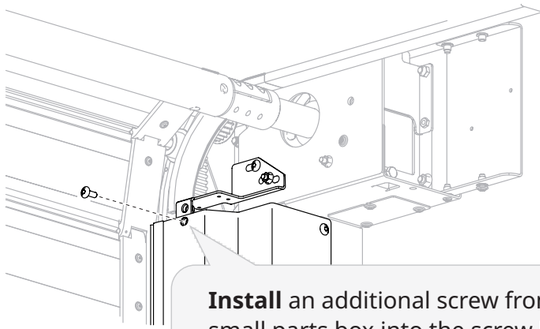


SMALL PARTS

01900820



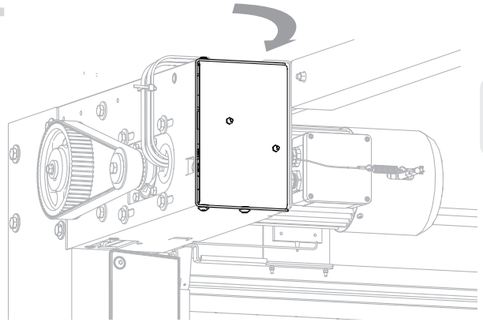
2



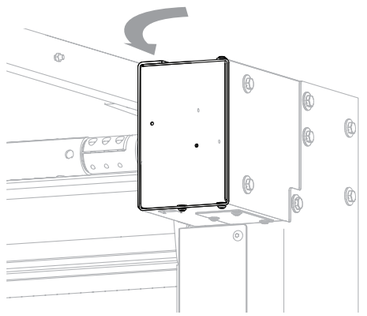
Install an additional screw from the small parts box into the screw hole in the corner bracket.

Do this in both side columns.

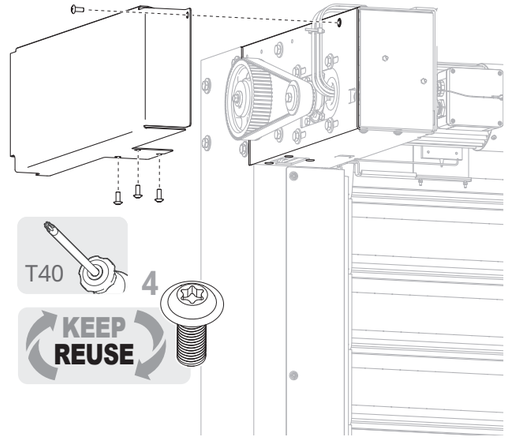
2 **Close and secure** the front panels on both consoles.



T40



3 **Reinstall** the belt guard cover.



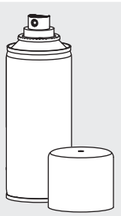
T40

4

KEEP REUSE

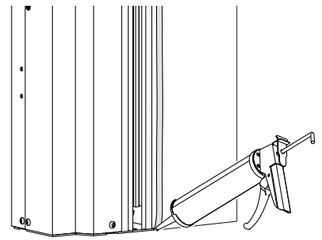
4 **If necessary, use** the spray paint to correct blemishes in the door finish.

SMALL PARTS

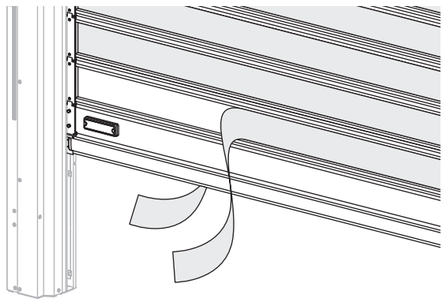


Spray paint

5 **Caulk** between the door opening and the door.



6 **Full vision doors: remove** the protective plastic film from both sides of each door slat.



⚠ CAUTION

Film can release a static charge when removed.