Spiral® SST and STT Installation Manual

Rytec® installation safety information

The meaning of signal words

Summary

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

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

⚠ 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

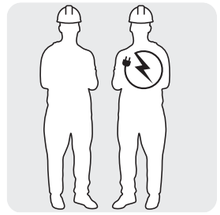
Installation safety

- **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
- 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

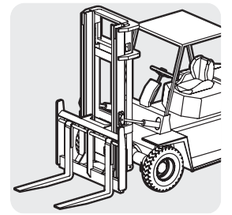
- Installers must have unrestricted access to the door opening at all times during the installation.
- Make sure there is no pedestrian or vehicular traffic within the installation site for the duration of the installation.

Requirements – Lifts

⚠ WARNING

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

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

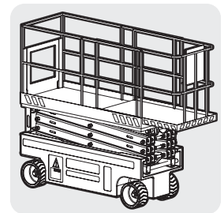


  - Minimum 4,000-pound lift capacity
  - Minimum height ability: door height + 12"
  - 48"–wide fork
  - Side shift capability

⚠ 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

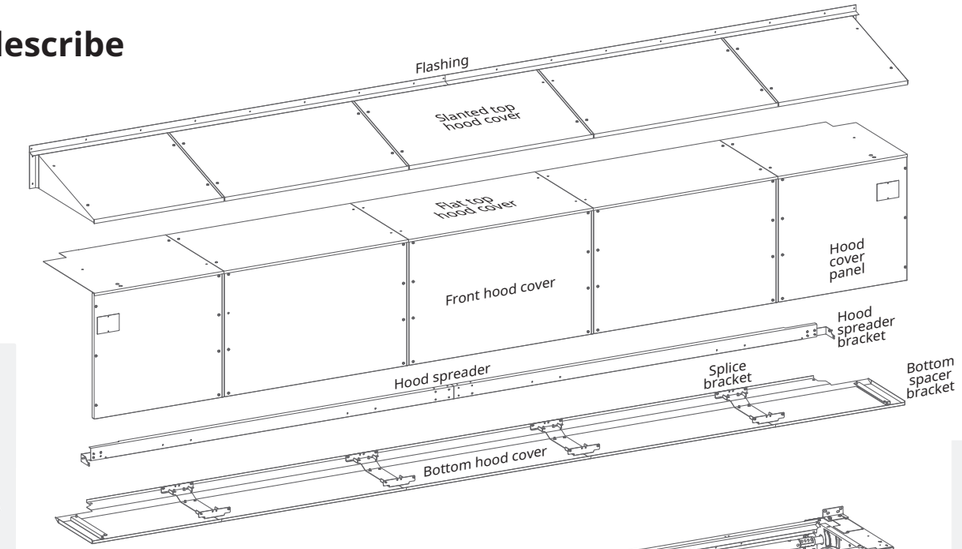
- **Alternatively, two ladders** of sufficient height to safely access the door head assembly

Table of Contents

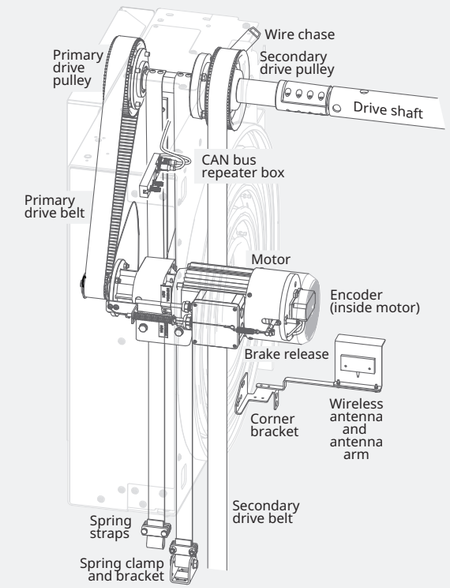
Terms used by Rytec to describe the parts of the door

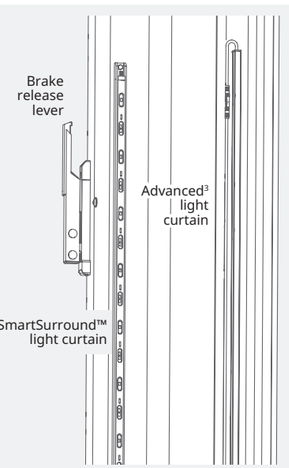
This illustration shows the terms used by Rytec technical support to refer to the major components of your door.

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

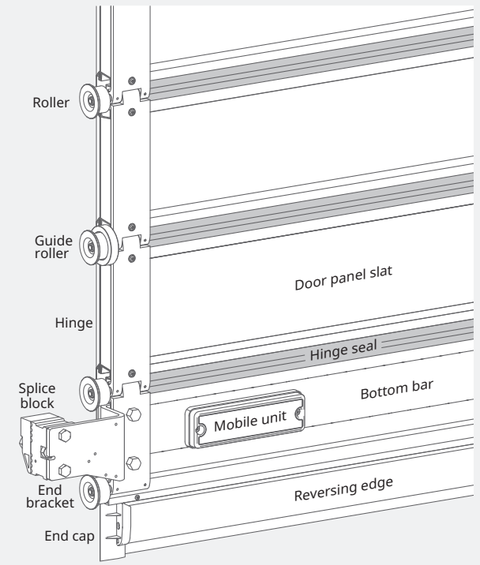


Inside the drive side console

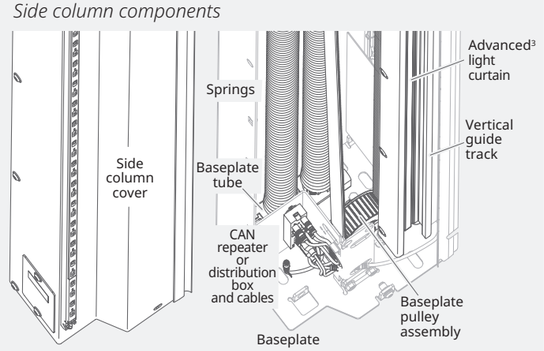




Door panel components



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

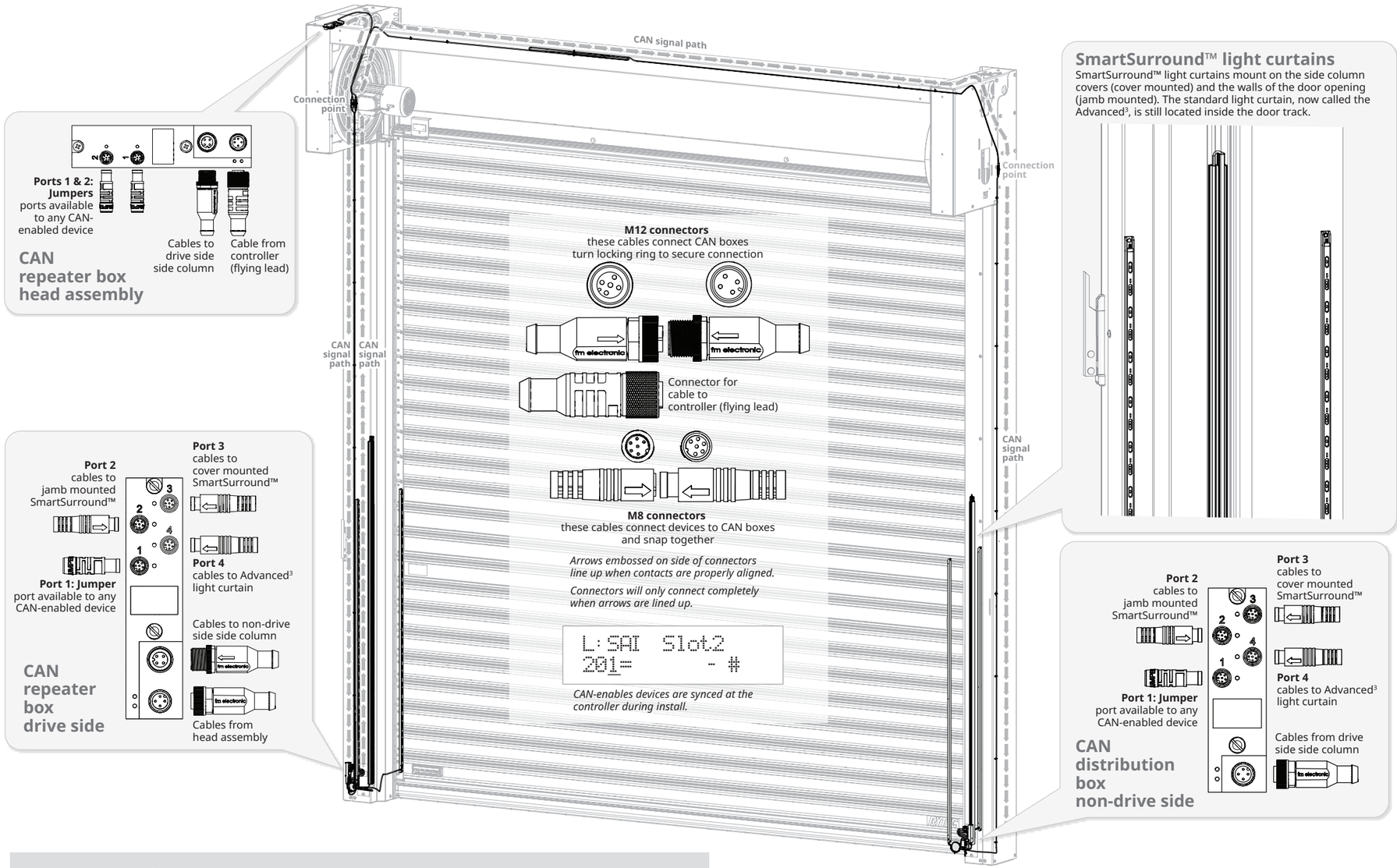
The CAN bus system simplifies cabling and minimizes internal field wiring during installation. the system works this way:

- 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 Advanced[3], 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.

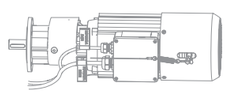


Reversing edge

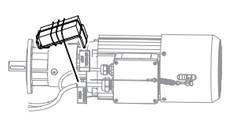
The SmartSurround™ system, in combination with the Advanced[3] light curtains located within the door line, meets the requirements for entrapment protection. SmartSurround™ offers a contactless method of object recognition that is an improvement over the reversing edge system; this makes the reversing 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 *(pp.19-20)* and connect wire for reversing edge at controller *(p.33)*.



No wireless antenna:
reversing edge deactivated
(standard)



Wireless antenna included:
reversing edge activated
(optional)

Spiral® Installation Manual for SST (Solid Panel) and STT (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

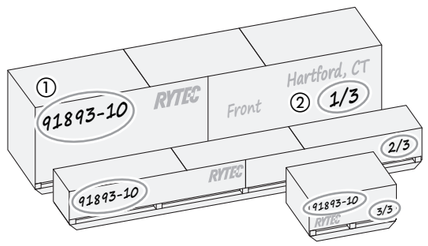
IMPORTANT

Spirals ship in two crates (three if there is a slanted hood cover).

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.

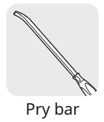
All parts for the door are in these crates.

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.

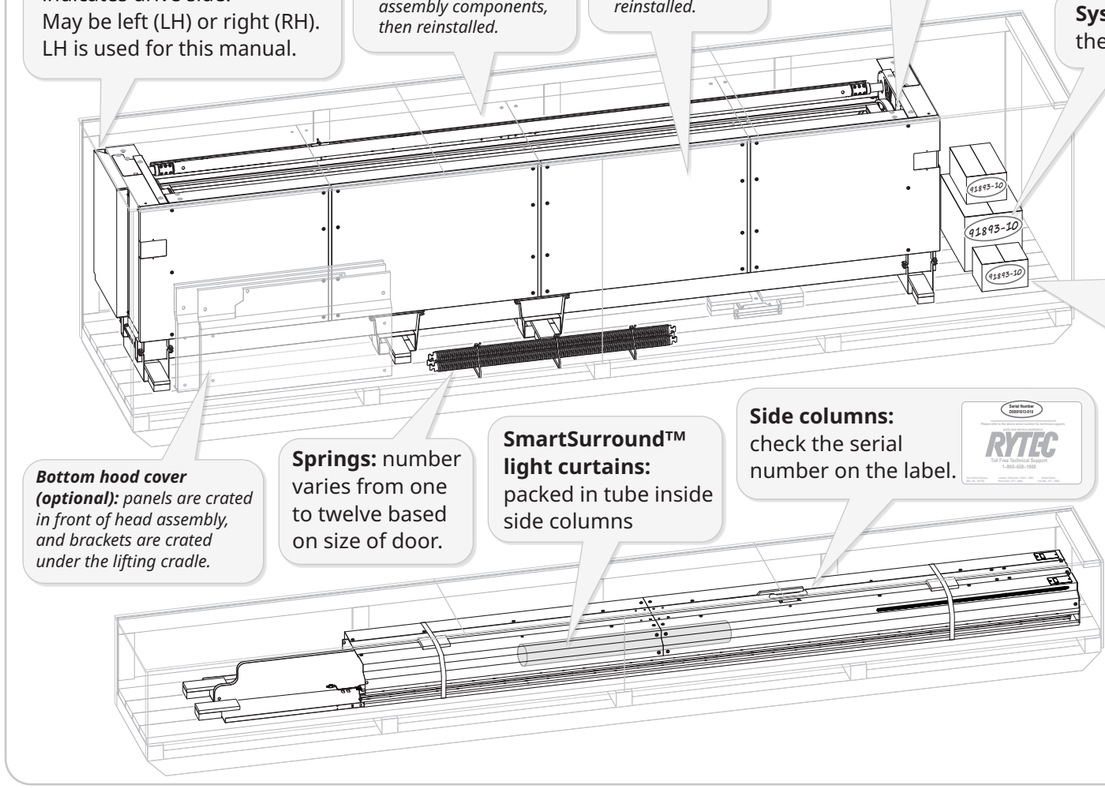
Drive belt guard cover: indicates drive side. May be left (LH) or right (RH). LH is used for this manual.

Flat top hood cover (optional): *preinstalled. Must be removed to access the head assembly components, then reinstalled.*

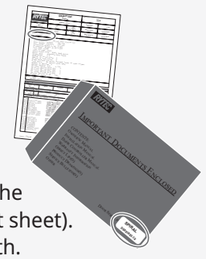
Front hood cover (optional): *preinstalled. Some panels must be removed, then reinstalled.*

Head assembly: check the serial number on the label (inside top, non-drive side).

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



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.

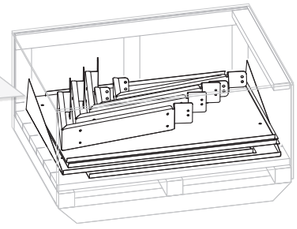
Bottom hood cover (optional): *panels are crated in front of head assembly, and brackets are crated under the lifting cradle.*

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

SmartSurround™ light curtains: packed in tube inside side columns

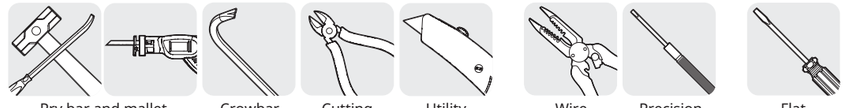
Side columns: check the serial number on the label.

Slanted top hood cover (optional): *third crate holds panels and brackets. Number varies based on size of door.*



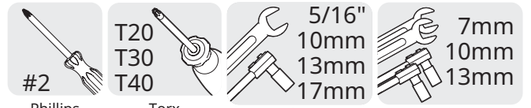
3 Check your tools. Make sure you have all tools and supplies for the installation.

Tools you need



Pry bar and mallet or reciprocating saw · Crowbar · Cutting pliers · Utility kinfe · Wire stripper · Precision screwdriver · Flat screwdriver

Laser level · (2) Bar clamps · Measuring tape · Spirit level · Carpenter's square · Anchoring tools



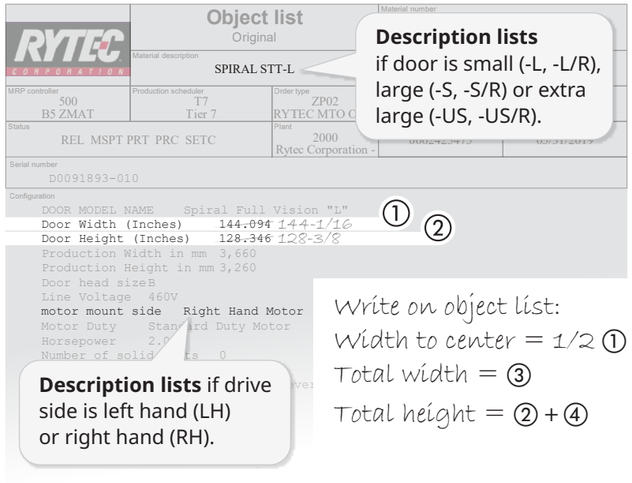
Phillips screwdriver · Torx screwdriver · Socket or open wrench · (2) Sockets or wrenches needed

You also provide

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

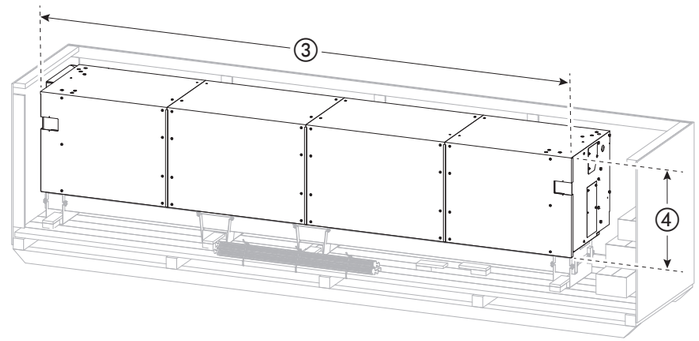
4 Check the measurements. **Make sure** the door will fit in the installation site.

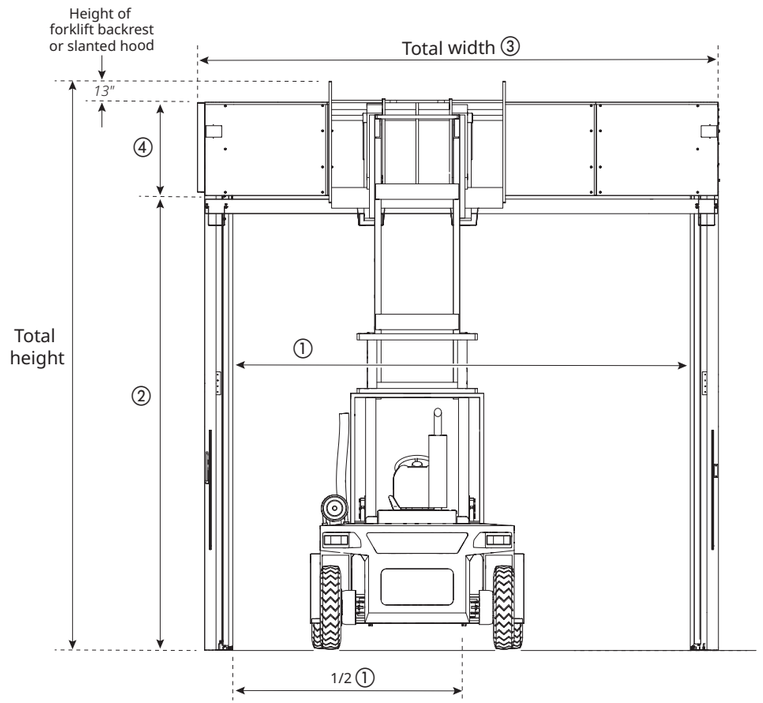
Tape measure



Description lists if door is small (-L, -L/R), large (-S, -S/R) or extra large (-US, -US/R).

Write on object list:
Width to center = 1/2 ①
Total width = ③
Total height = ② + ④





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 nearest 1/16 inch.
2. **Measure the door opening** to make sure the width and height match the numbers on the object list.
3. **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.
4. **Find the total width of the door:** measure the width of the head assembly ③ in the crate. **Write this number** on the object list.
5. **Calculate the total height of the door:**
   - Start with the Door Height ②.
   - Measure the height of the head assembly ④ in the crate. Add this to ②.
   - Add 13 inches (13") to account for the height of the forklift backrest or an optional slanted hood.

   Write this number on the object list.
6. **Make sure there is enough space to lift the door:** make sure the site has space for the total width and the total height you calculated.

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

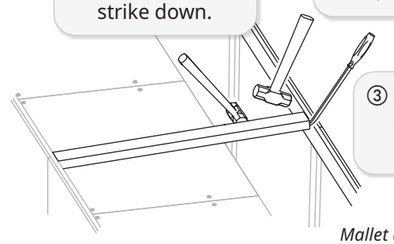
Flatten exposed nails as you go.

Keep hands clear while striking or cutting.

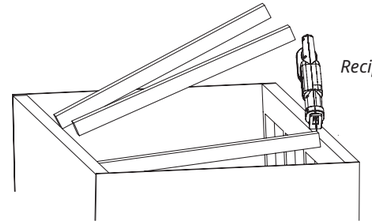
① **Strike across** the crossbar to loosen nails. **Do not** strike down.

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

③ **Pry up** to remove crossbar.



Mallet and pry bar

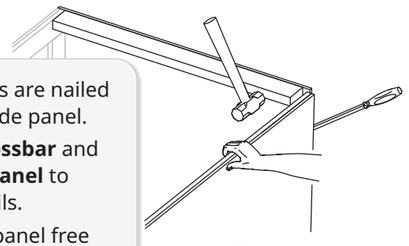


Reciprocating saw

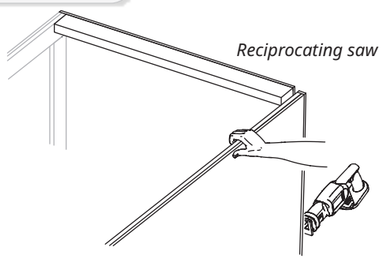
End panels are nailed into the side panel.

Strike crossbar and **pry end panel** to loosen nails.

Pull side panel free from sides, then pull down to remove.



Mallet and pry bar

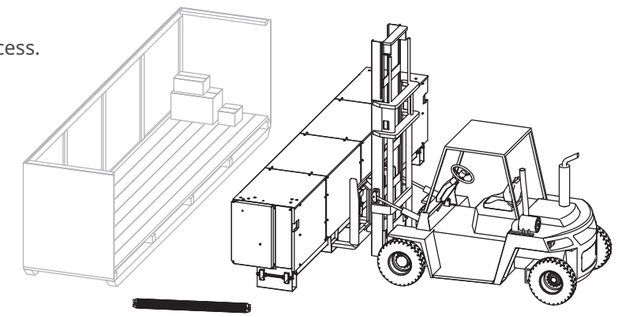


Reciprocating saw

How to prep the head assembly

1 **Remove** springs, blocks and (optional) hood cover panels for clear access.

Use a forklift to move the head assembly to an open space.



INSIDER'S TIP

After the head assembly is removed, **use the crate** to stage parts until they are needed.

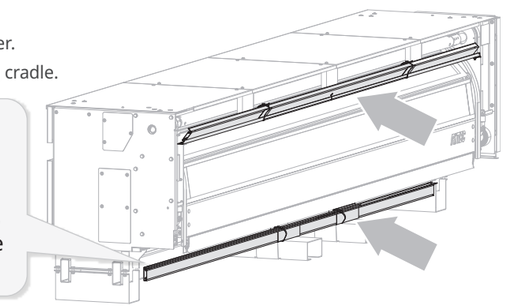
2 **Locate and remove** the rear seal (rear spreader).

- On smaller (-L and -L/R) doors, it is tied to the top rear spreader.
- On larger (-S and -S/R) doors, it is tied to the back of the lifting cradle.

Cutting pliers

If the door has a **slanted top hood cover,** the flashing will also be tied to the cradle.

If the door has a **bottom hood cover,** the bottom hood spreader will also be tied to the cradle.

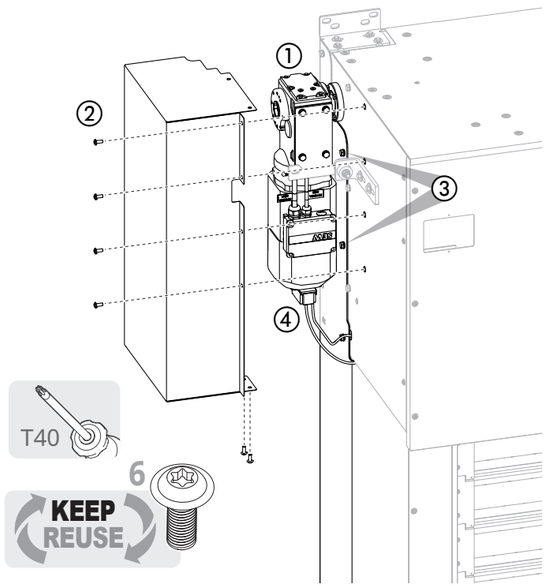


Before you begin: differences between the -US -US/R (extra large) doors and the -S -S/R (large) doors

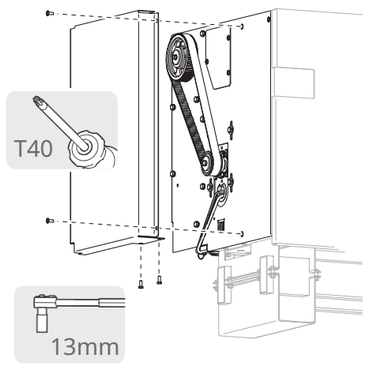
Extra large -S and -S/R doors are designated as -US and -US/R. **Note these differences:**

- **The motor and encoder** are located **outside** of the head assembly ①.
- The motor has an external cover ②. **Remove** this instead of the drive side console cover.
- There are **six preinstalled side column screws** and washers on each side of the door.

  On the drive side, two of these screws ③ will require a **wobble or swivel extension** to tighten when the head assembly is installed.
- The encoder cable is routed differently from other Spirals.

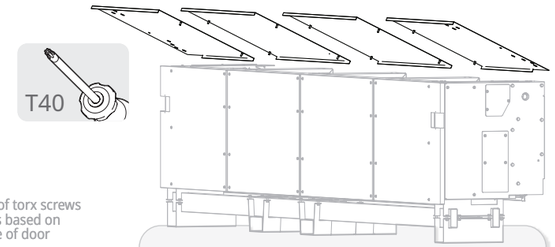


3 **Remove** the belt guard cover.



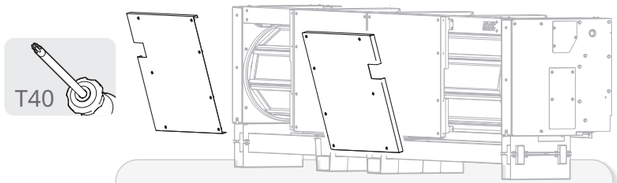
Note: *on -S and -S/R doors, all hardware requires a T40 torx screwdriver.*

4



number of torx screws varies based on size of door

If the door has a preinstalled flat top hood cover, **remove** the top panels.



Note: *-S and -S/R doors have both top and bottom front spreaders.*

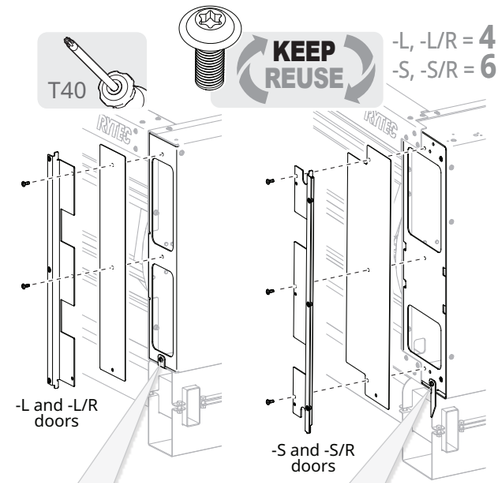
If the door has a preinstalled front hood cover, **remove** the panels in front of the side consoles.

For -L and -L/R doors with bottom hood covers, remove all of the front panels.

Note: *number of panels varies based on size of door.*

5 **Remove** the console cover and spacer bracket.

Do this on both sides of the head assembly.



IMPORTANT

The screw that secures the mounting cradle is preinstalled behind the cover and bracket.

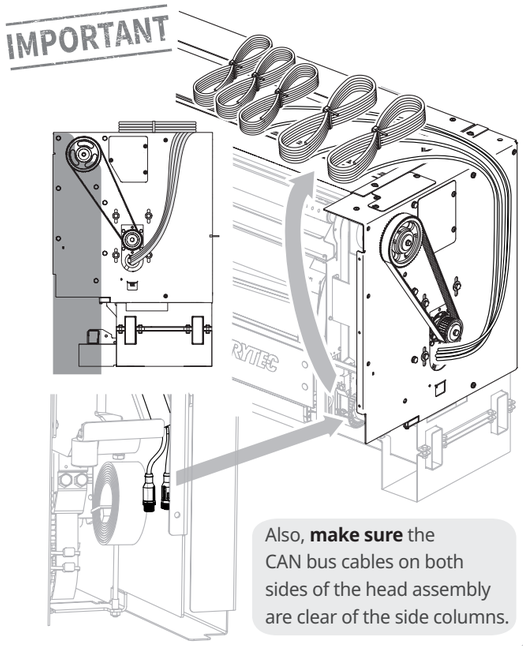
Do not remove it until the head assembly has been lifted into place.

6

Protect your cables! On the drive side, **reach** into the back of the console and place the five cables inside on top of the head assembly.

Make sure cables are clear of the side columns (shaded area).

Leave the pulley and spring strap in place.

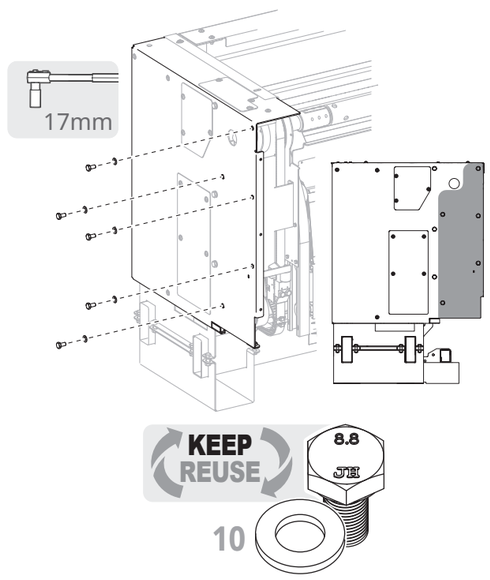


Also, **make sure** the CAN bus cables on both sides of the head assembly are clear of the side columns.

7

Remove the five preinstalled side column screws (located in the shaded area).

Do this on both sides of the head assembly.



8

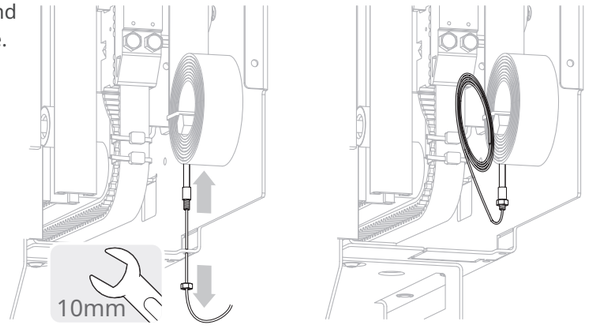
IMPORTANT **Protect the brake release cable!**

The cable is preinstalled, and can be damaged when the head assembly is raised onto the side columns. This extra step puts it out of harm's way.

Unscrew the retaining nut, cut the cable tie and slide the cable through the hole in the console.

Slide the nut up the cable and reattach.

Coil the cable inside the console.



9

-S and -S/R doors only: look for the wall mount brackets at the top rear corners of the head assembly.

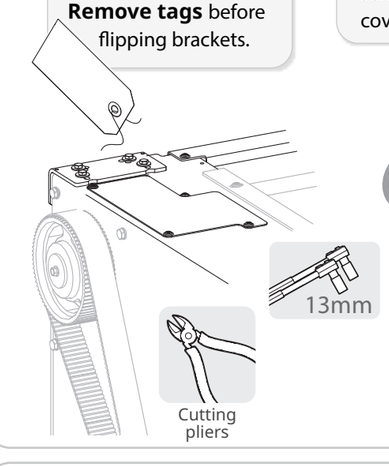
Remove the screws and washers and **flip** each bracket so the flange points up.

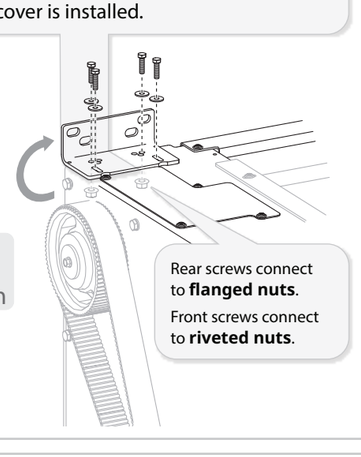
Line up bracket with the rear of the head assembly, then **reinstall** the screws and washers.

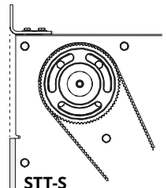
Brackets are labeled with yellow tags.

Remove tags before flipping brackets.

If the door has a slanted top hood cover, **do not reinstall** the outer screws and washers until the cover is installed.

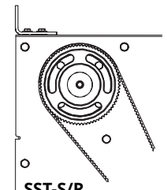






STT-S

Full vision doors have a spacer at the rear of the head assembly. ***Line up bracket*** *with spacer.*



SST-S/R

Solid panel doors have no spacer.

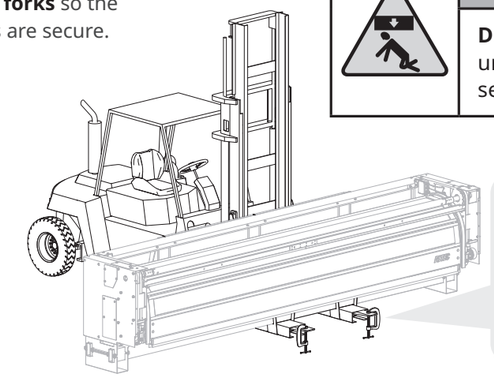
10

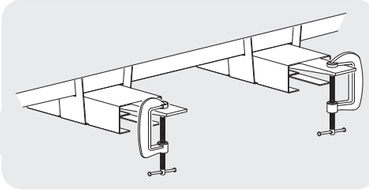
Before lifting the head assembly, **clamp both forks** so the fork pockets are secure.

C-clamp (2)

⚠WARNING

Do not lift the head assembly unless it has been clamped or secured to both forks of the forklift.



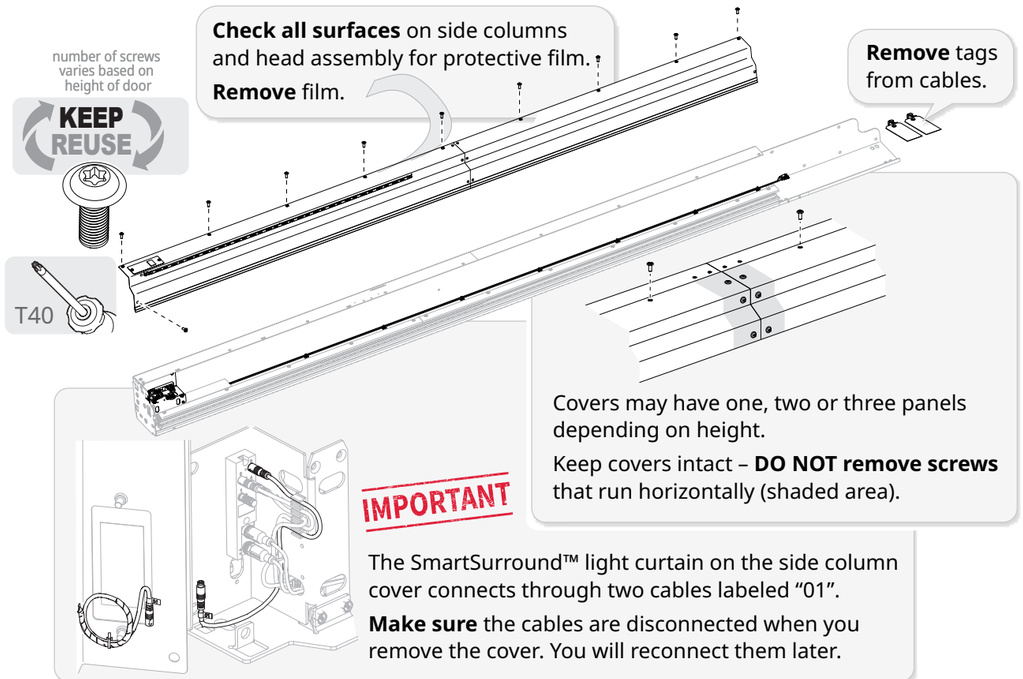


How to prep the side columns

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.



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

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

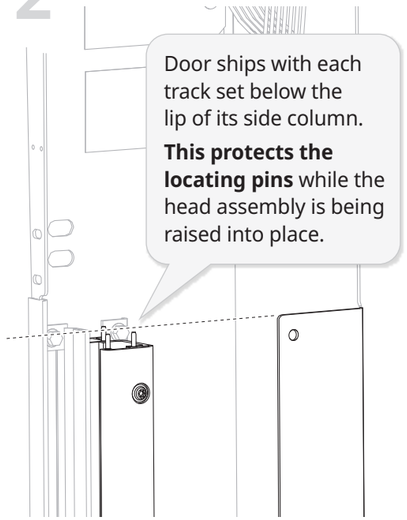
IMPORTANT

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.

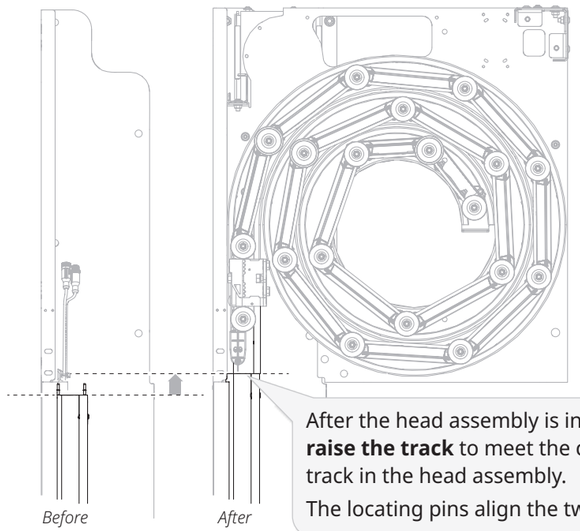
2

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 head assembly is being raised into place.



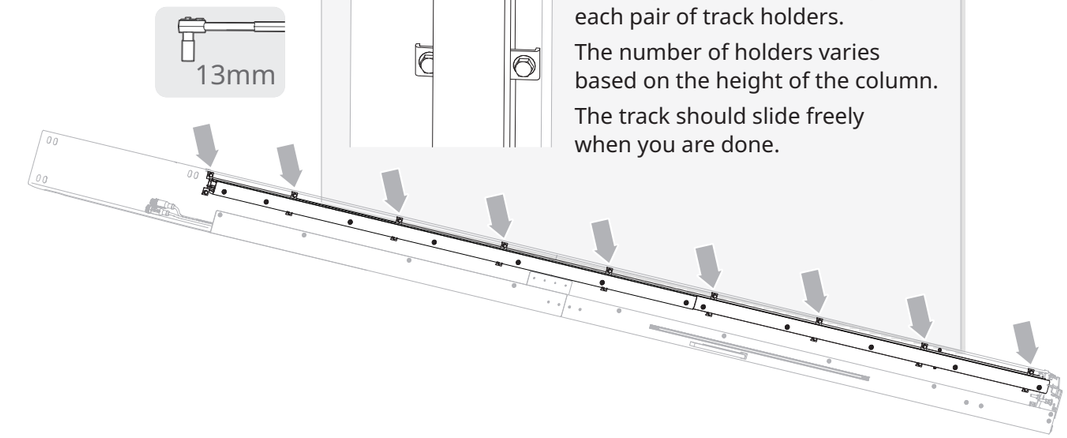
After the head assembly is in place, **raise the track** to meet the curved track in the head assembly.

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.

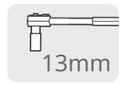


Loosen, but do not remove, each pair of track holders.

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

The track should slide freely when you are done.

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

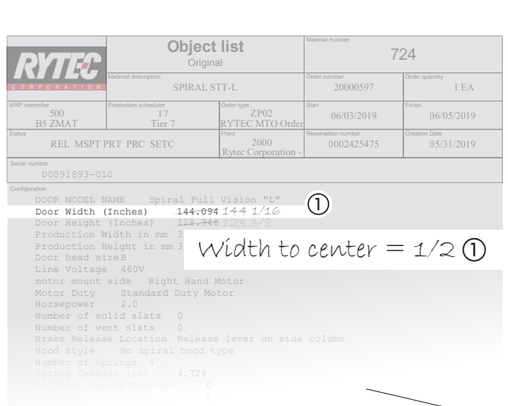
IMPORTANT

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

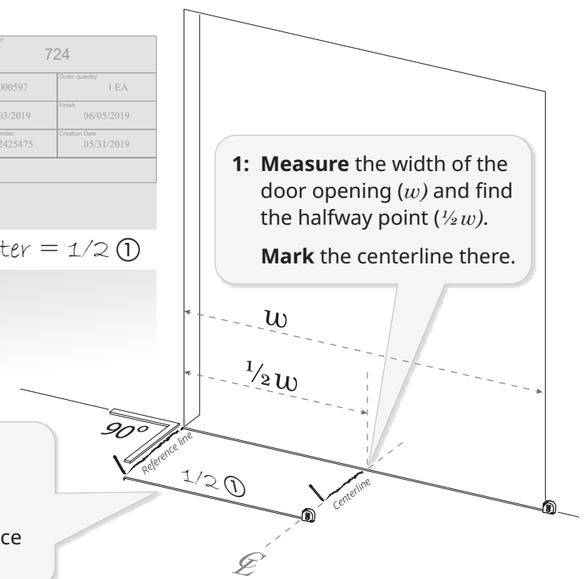
Measuring tape

Carpenter’s square



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

Mark the centerline there.



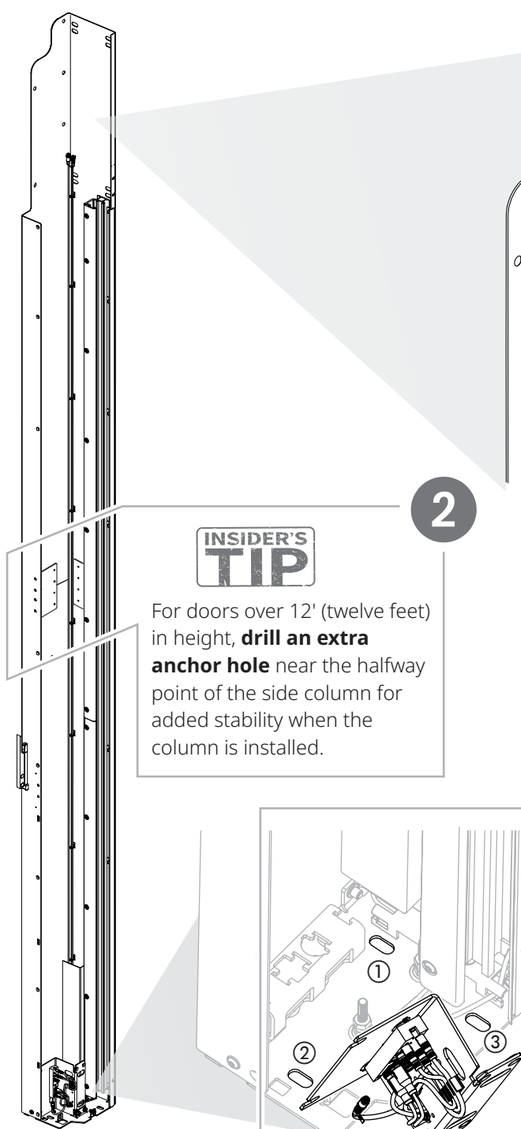
2: Use the width to center from the object list (*1/2 ①*).

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.

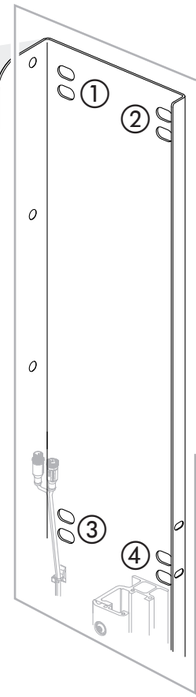
Before you begin: where to find the anchor points on the Spiral side columns



1

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

- **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.



How to anchor the door:

- **Use** 1/2" diameter through bolts, 1/2" diameter threaded rods or equivalent to anchor the side columns.
- Anchoring hardware and materials must be provided by the door owner or installer.
- **Make sure** the anchors do not interfere with the moving parts of the door.

2

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.

3

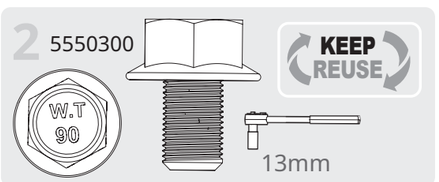
There are three anchor holes (①,②,③) in the baseplate of each side column.

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

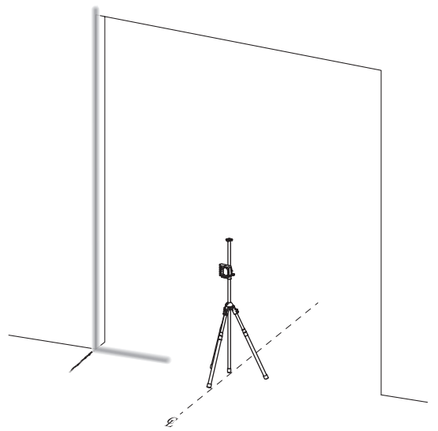
1

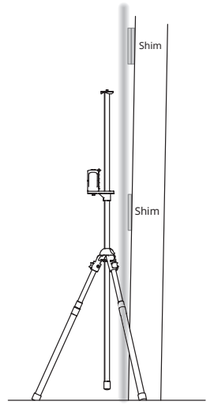
Plumb the door opening. **If the wall is not plumb,** or there is bowing or an obstruction in the wall, shim the columns.

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

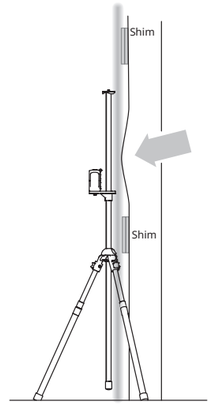
Laser level

Shims





Wall not plumb



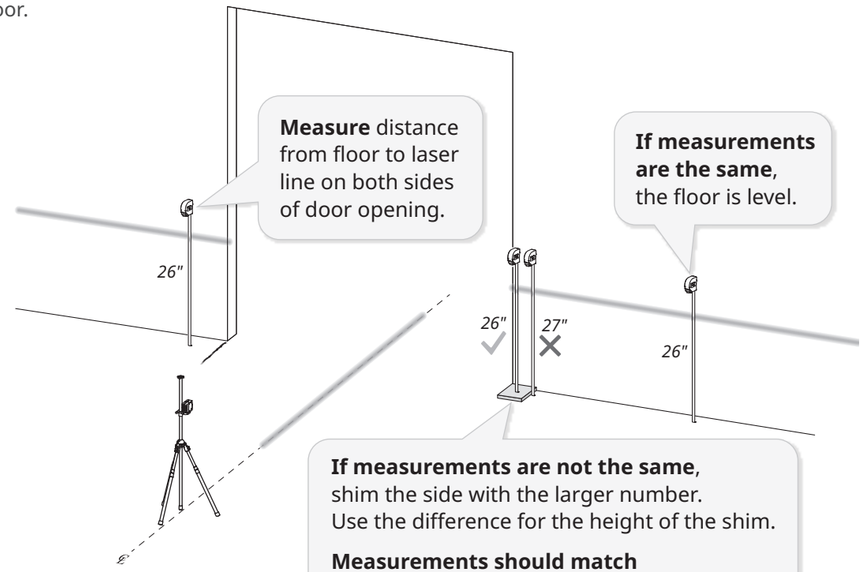
Surface obstructions

2

Level the floor.

Laser level

Measuring tape



3

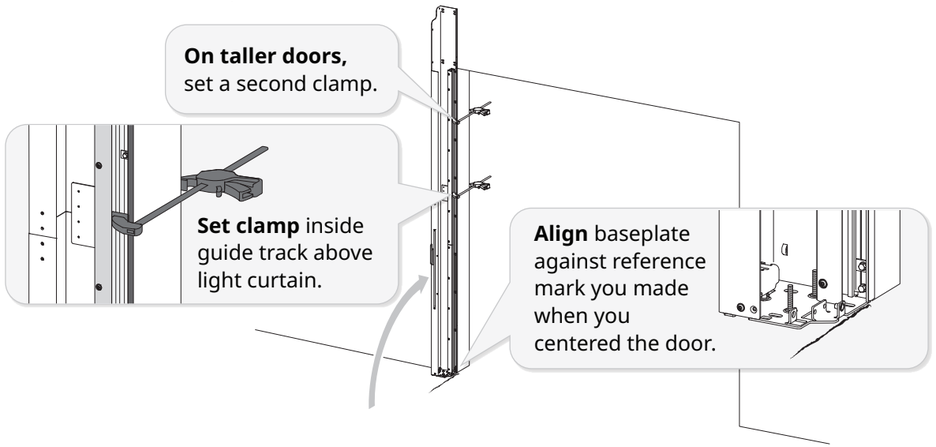
If the floor is level, install the drive side column first.

If the floor is not level, install the side column that is not shimmed first.

4

Clamp the first side column into place.

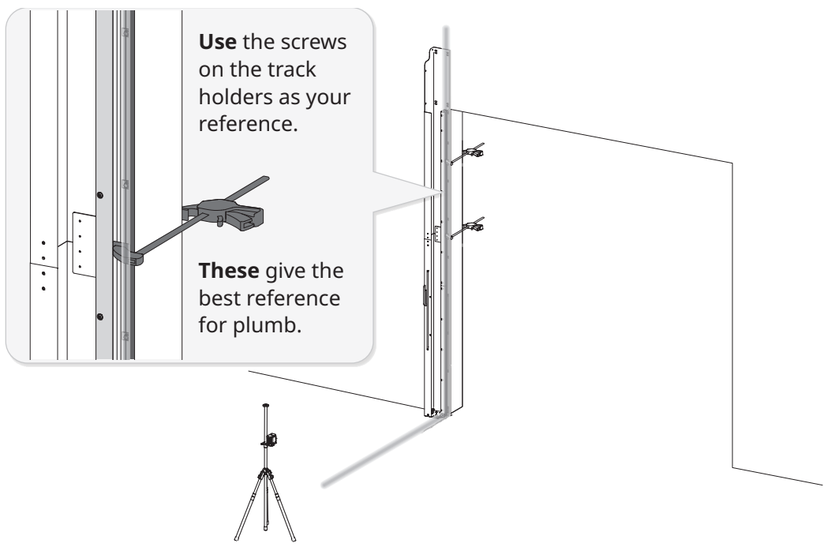
Bar clamp



5

Plumb the side column.

Laser level



6

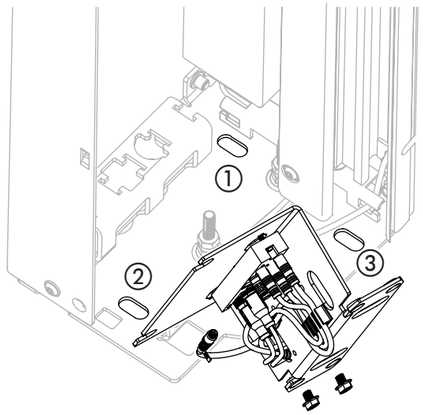
Remove the bolts and **move** the bracket and CAN terminal to allow access to all anchor holes ①,②,③.

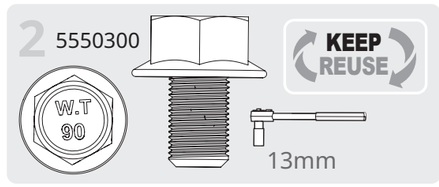
IMPORTANT

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

Leave the brackets loose until the installation is complete.

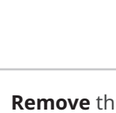
See ***How to install the wall mounted (rear) SmartSurround™ light curtains*** on page 21.





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**.

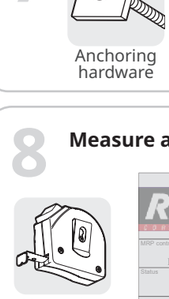
Set anchors tight. **Remove** clamp.

IMPORTANT

Make sure you have read *Before you begin* on page 9 before you start.

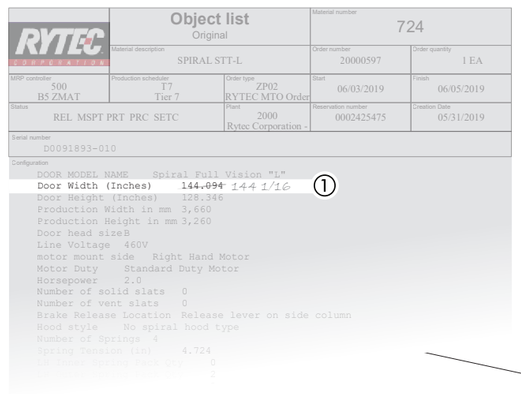
8

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



Measuring tape

Carpenter's square



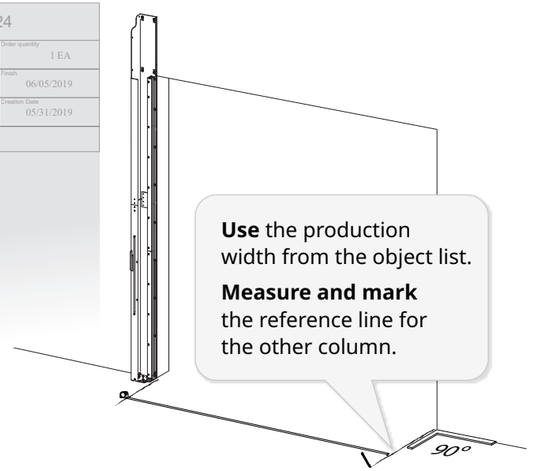
RYTEC — Object list (Original) — Material number 724

Material description: SPIRAL STT-L		Order number: 20000597	Order quantity: 1 EA
MRP controller: 500 BS ZMAT	Production scheduler: T7 Tier 7	Order type: ZP02 RYTEC MTO Order	Start: 06/03/2019
			Finish: 06/05/2019
Status: REL MSPT PRT PRC SETC		Plant: 2000 Rytec Corporation -	Reservation number: 0002425475
			Creation Date: 05/31/2019

Serial number: D0091893-010

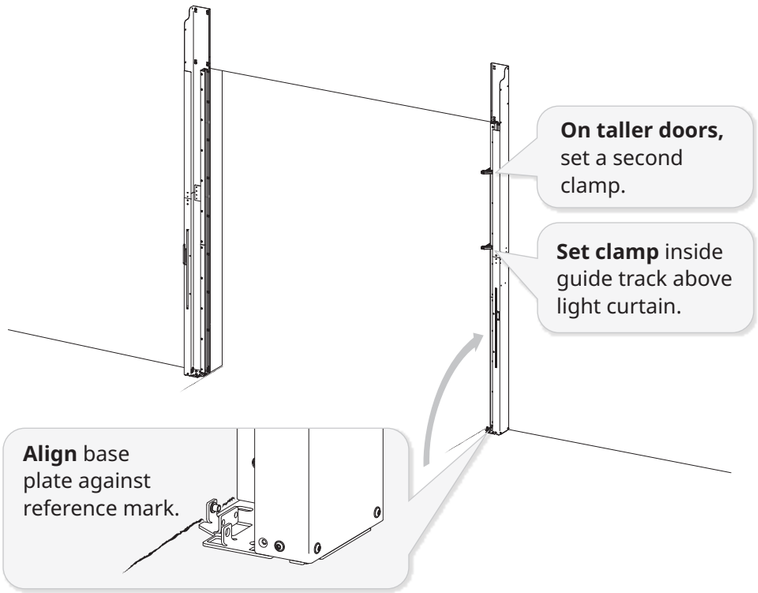
Configuration

DOOR MODEL NAME Spiral Full Vision "L"
Door Width (Inches) ~~144.094~~ 144 1/16 ①
Door Height (Inches) 128.346
Production Width in mm 3,660
Production Height in mm 3,260
Door head size B
Line Voltage 460V
motor mount side Right 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 on side column
Hood style No spiral hood type
Number of Springs 4
Spring Tension (in) 4.724



9 Clamp the non-drive side column into place.


Bar clamp



10 **Anchor** the second side column to the wall at the **top of the side column** and **baseplate**. **DO NOT SET ANCHORS TIGHT** until you have squared the door.

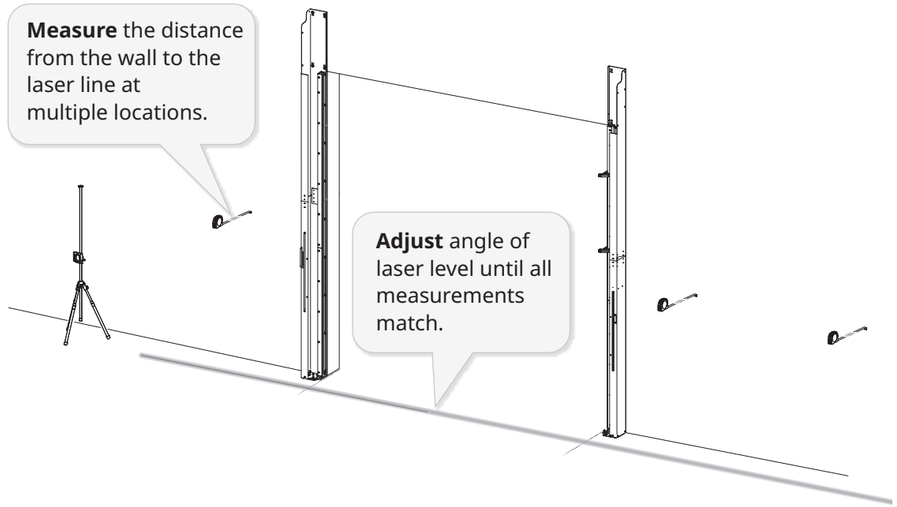

Anchoring hardware

IMPORTANT **Make sure** you have read *Before you begin* on page 9 before you start.

11 **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

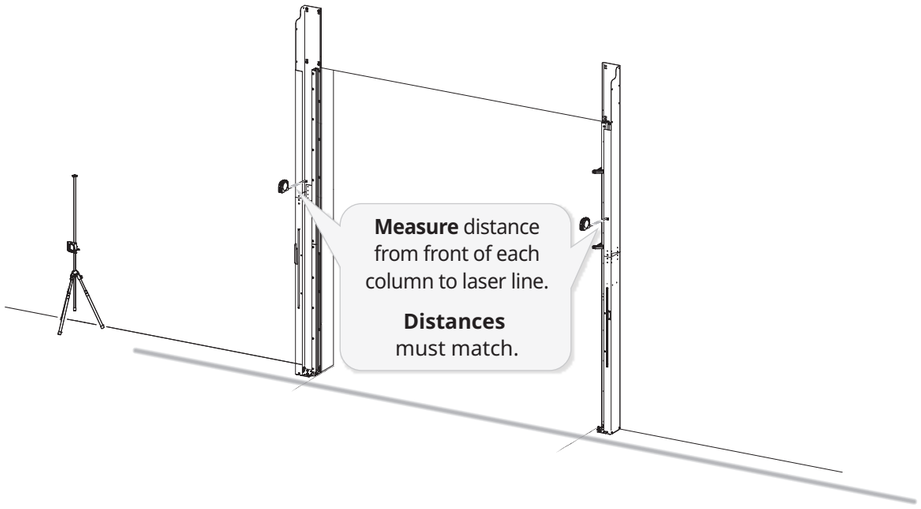

Measuring tape



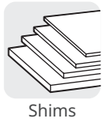
12 **Plumb** the side columns to each other.


Laser level


Measuring tape

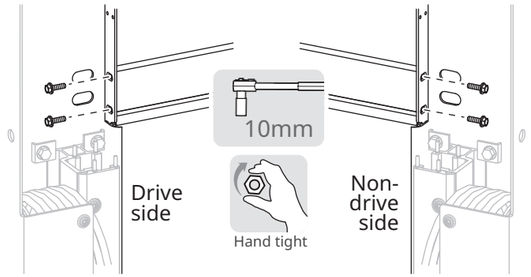


13 **If necessary, shim** the side columns so they are plumb to each other.

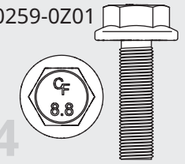

Shims

Step 2: Install the rear seal

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



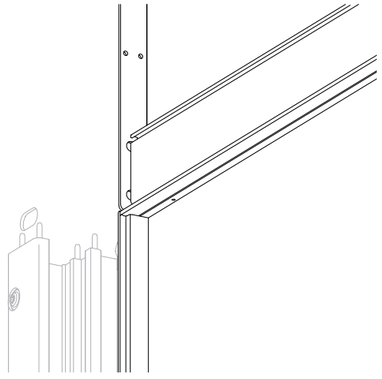
SMALL PARTS
0550259-0Z01
4



2 **Make sure** the back of the seal is flush with the back of the side column and that there is direct contact with the wall.

- If necessary, **shim the seal** where it meets both side columns and at the anchor point so that both conditions are met.

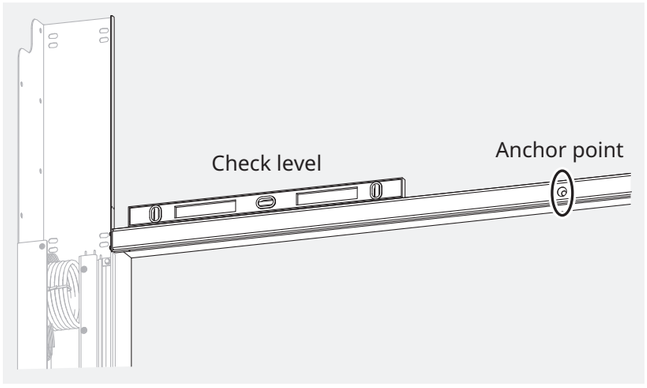

Shims



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


Spirit level


Anchoring hardware

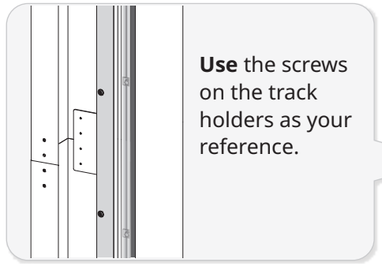


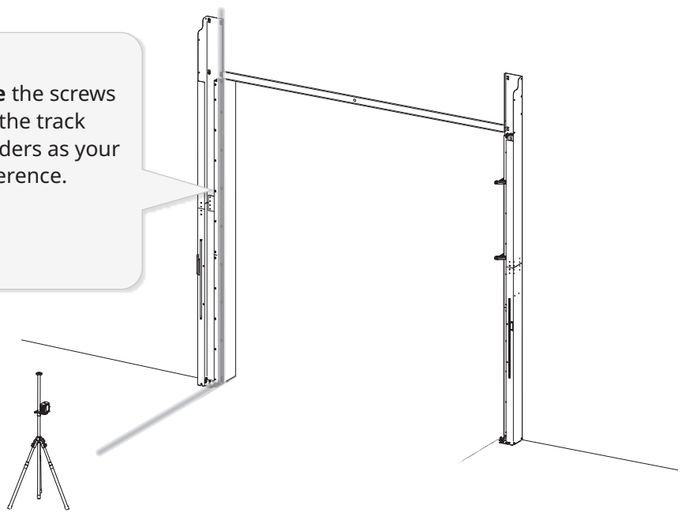
4 10mm **Tighten** the bolts on both sides of the seal.

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

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


Laser level

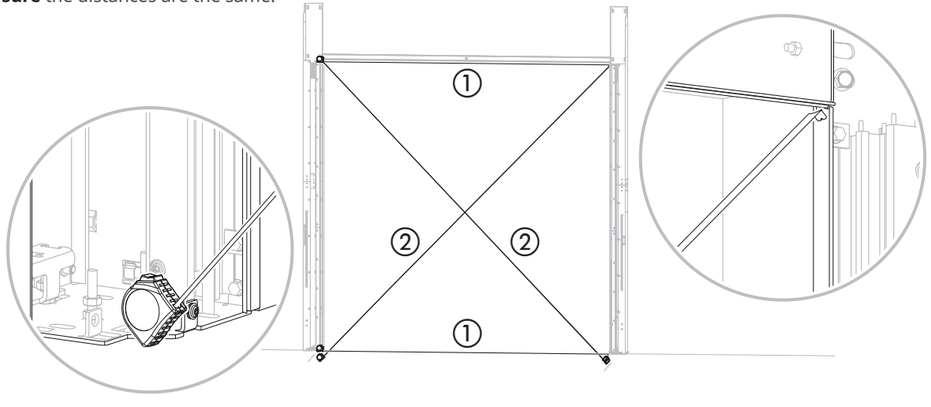




2 **Square** the door:

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


Measuring tape



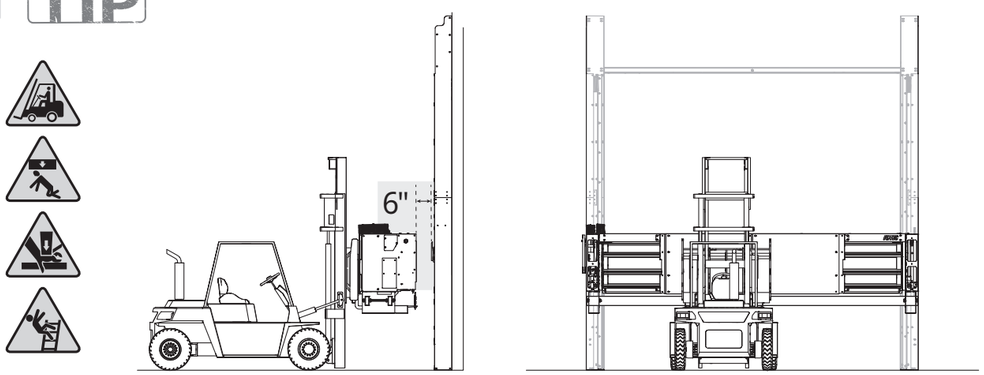
3 **Tighten** all anchors.


Anchoring hardware

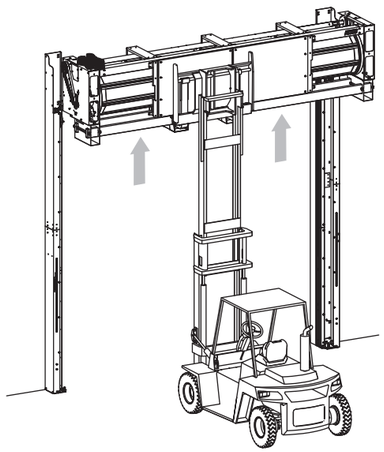
How to install the head assembly

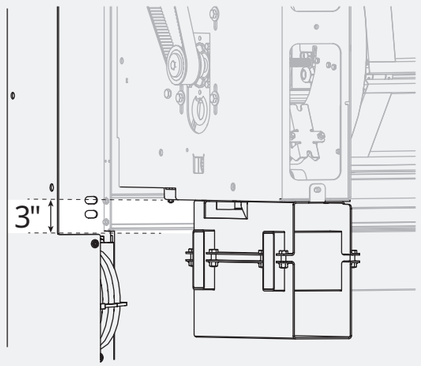
1 INSIDER'S TIP

Line up the head assembly with the side columns before lifting.



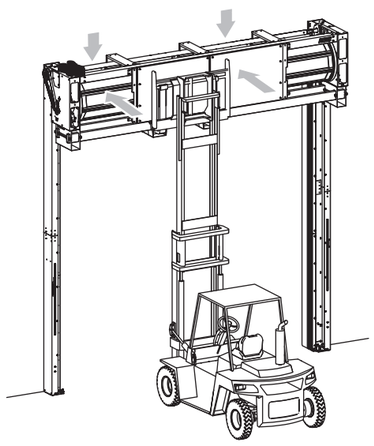
2



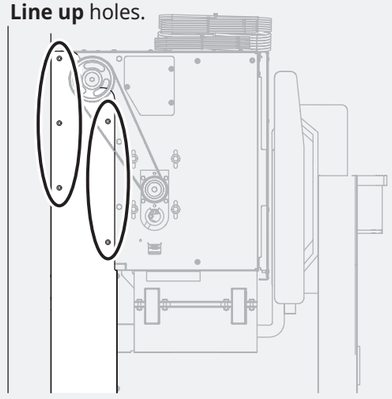


Make sure the area between the head assembly and side column is clear on both sides.

3



Line up holes.



4

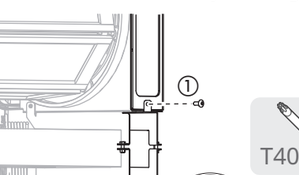
Secure the head assembly to the side columns.

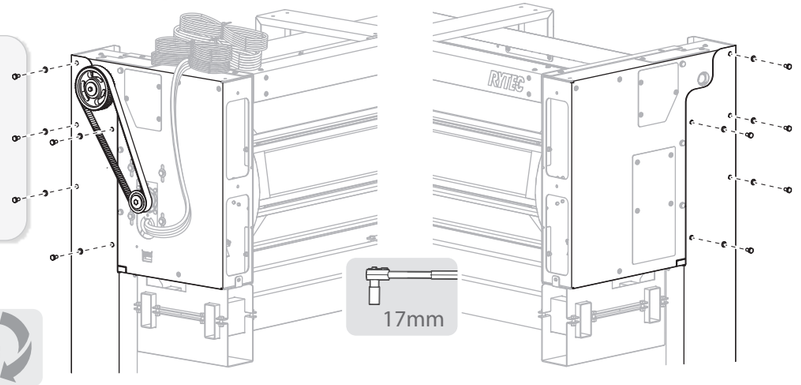
Do this on both sides of the head assembly.

Start at the top and work around the screw holes.

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

When all screws are seated, **tighten** screws.





5

Anchoring hardware

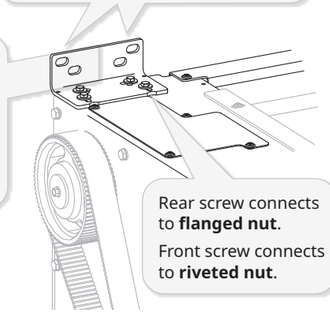
-S and -S/R doors only: loosen the screws on the wall mount brackets.

Place the brackets flush to the wall and **anchor** the brackets

If the door has a slanted top hood cover, **do not install the outer anchors** until the cover is installed.

Make sure the outer screws, washers and nut are not installed.

Use at least one anchor on each side of the bracket.



Rear screw connects to **flanged nut**.

Front screw connects to **riveted nut**.

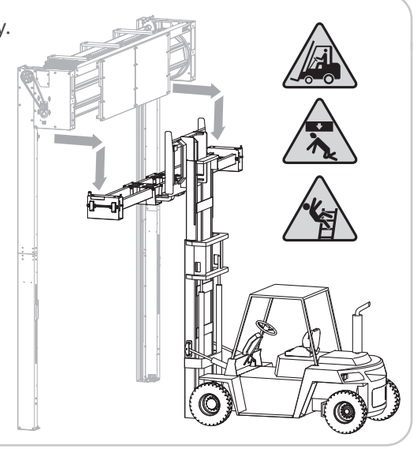
How to remove the cradle

1

Remove the two screws that attach the cradle to the head assembly.

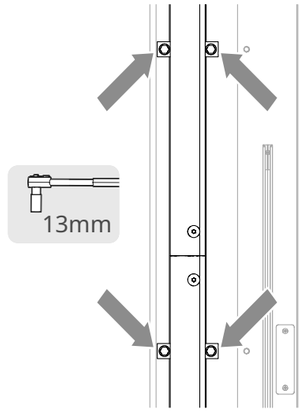
Do this on both sides of the head assembly.

Remove the cradle by backing up, then lowering.



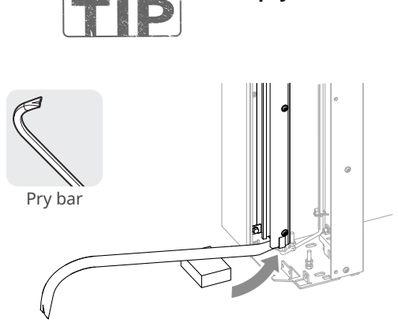
How to raise the vertical guide tracks into place

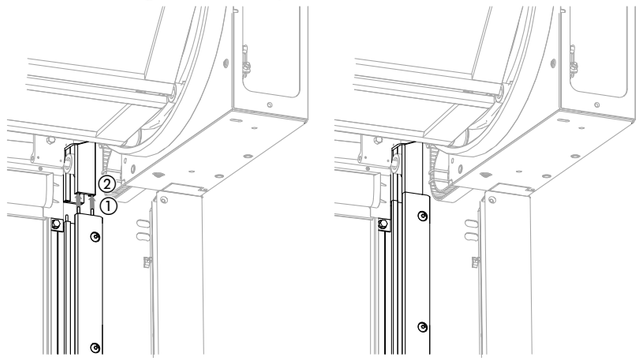
1 **Make sure** that all of the vertical guide track holders are loose enough to allow the track to move freely.
DO NOT remove any of the holders.



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

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

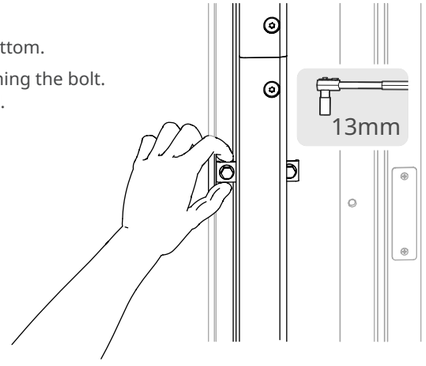




3 **Tighten** the bolts on the track holders.

- 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.

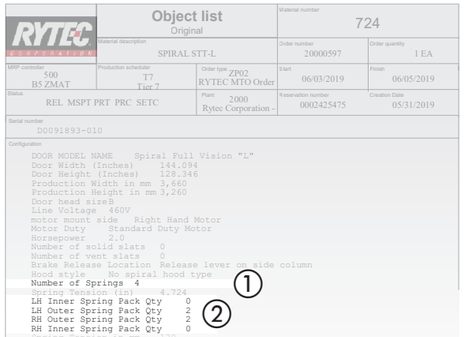
	⚠ CAUTION
	Make sure your fingers are clear of the bolt when tightening. Power tools are not recommended.



How to install the springs

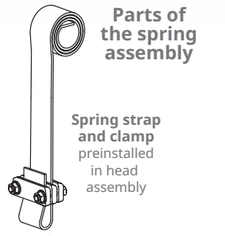
1 **Make sure** the total number of springs in the crate matches the number listed in the object list ①. The object list also shows how to divide the springs between the side columns ②.

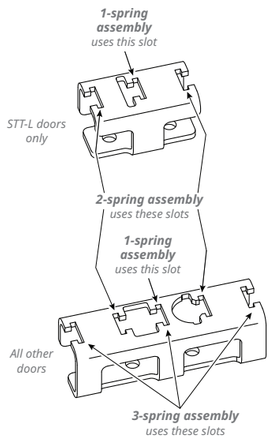
Make sure the preinstalled spring straps on both sides of the head assembly match the table below ③ for the total number of springs in the door.



Locate the parts and hardware the spring assemblies in both si

- **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.

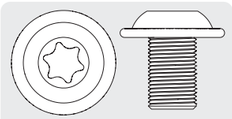




Total number of springs	Drive side: Springs	Drive side: Spring straps	Drive side: In small parts box: guide tube(s), strap bracket, guide bracket(s)	Non-drive side: Springs	Non-drive side: Spring straps	Non-drive side: In small parts box: guide tube(s), strap bracket, guide bracket(s)
1				1	1	1
2		③		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)

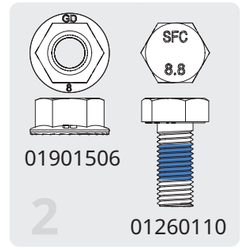
Hardware to attach outer guide brackets to side column wall



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



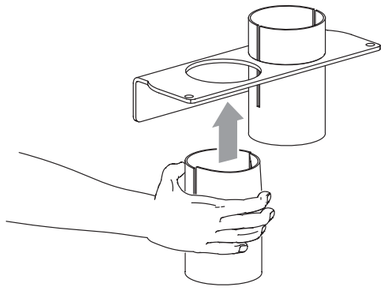
NOTE: a four-spring, two-assembly configuration is shown for these steps.

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

2

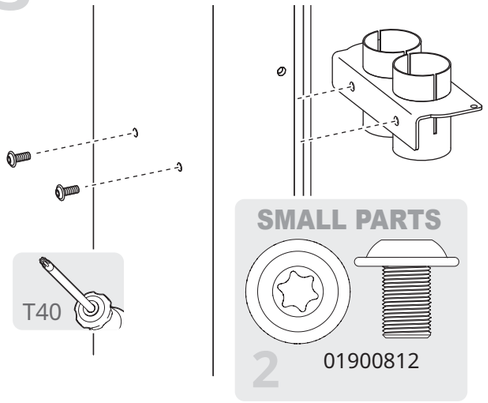
Install the guide tubes into the guide bracket.

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



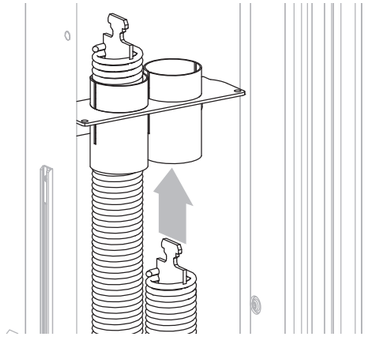
3

Install the bracket into the side column.



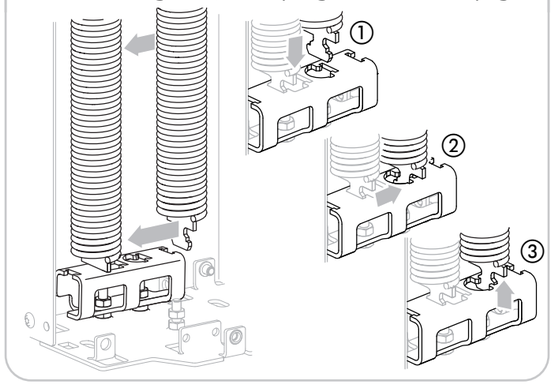
4

Slide the top of the springs into the bracket.



5

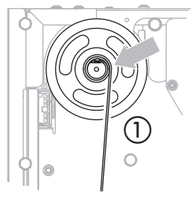
Slide the bottom spring tabs into the wide slot ①, through the narrow ②, then **pull up** into the retaining slot ③. The spring should remain upright.



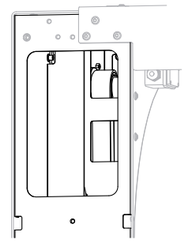
6

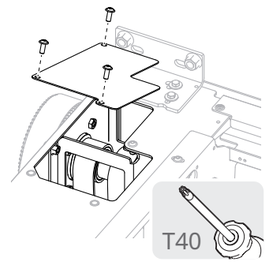
Make sure the number of wraps for the spring strap matches the object list ①.

Look through the front of the console or temporarily **remove** the top access cover.




```
Production Width in mm  3,660
Production Height in mm 3,260
Door head size      B
Line Voltag         460V
motor mount side    Right 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 on side
Hood style      No spiral hood type
Number of Springs       4
Spring Tension (in)     4.724
LH Inner Spring Pack Qty    0
LH Outer Spring Pack Qty    2
RH Outer Spring Pack Qty    2
RH Inner Spring Pack Qty    0
Spring Tension in mm    120
Number of pre-wraps     2.250  ①
```





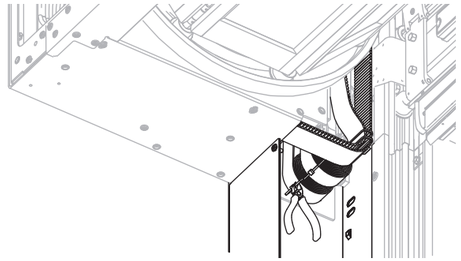
IMPORTANT

DO NOT unspool the strap or change the number of wraps unless you are in contact with Rytec technical support at **800-628-1909.**

The wraps are required for the door to operate correctly.

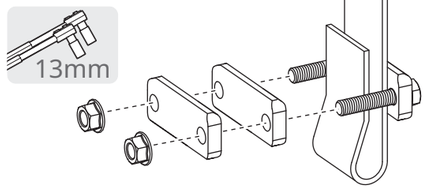
7

Cut the cable tie on the outer spring strap and let it drop.



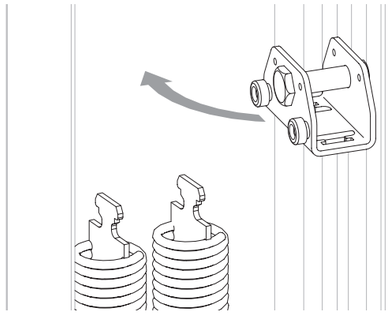
8

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.

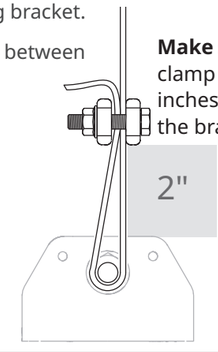
Thread the strap between two plates of the clamp.

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.

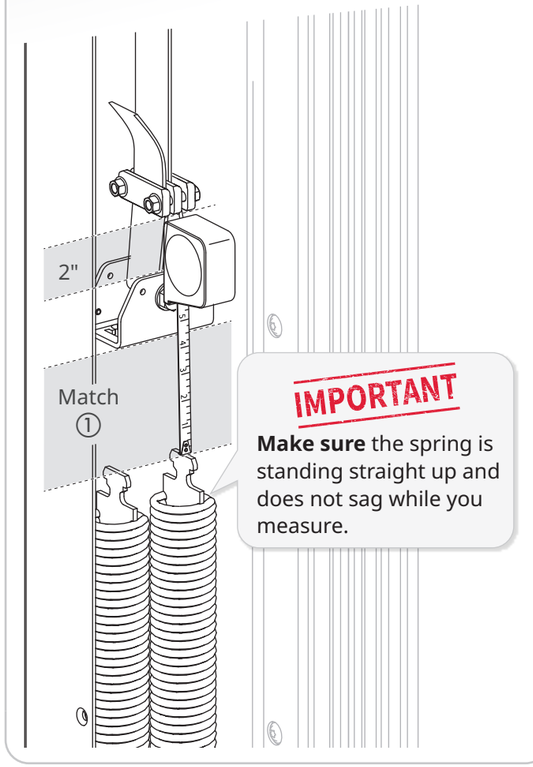
Measuring tape

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		

```
Configuration
    DOOR MODEL NAME    Spiral Full Vision "L"
    Door Width (Inches)     144.094
    Door Height (Inches)    128.346
    Production Width in mm  3,660
    Production Height in mm 3,260
    Door head sizeB
    Line Voltage   460V
    motor mount side    Right 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 on side column
    Hood style     No spiral hood type
    Number of Springs4
    Spring Tension (in)     4.724  4-3/4  ①
      LH Inner Spring Pack Qty     0
```



IMPORTANT

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

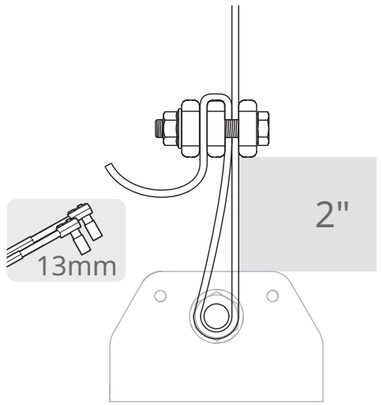
12 **Adjust** the strap until the measured distance matches the object list and the distance from the clamp to the bracket is two inches (2").

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

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

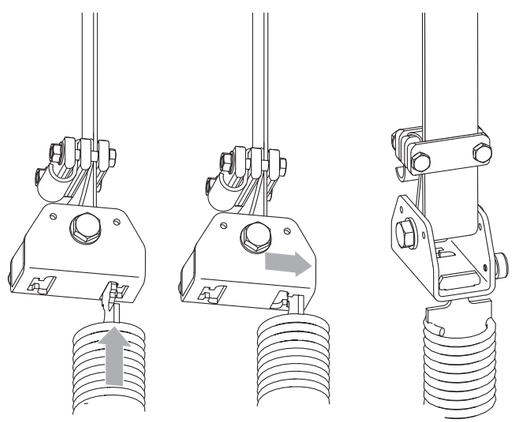
Tighten the nuts to secure the strap.

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



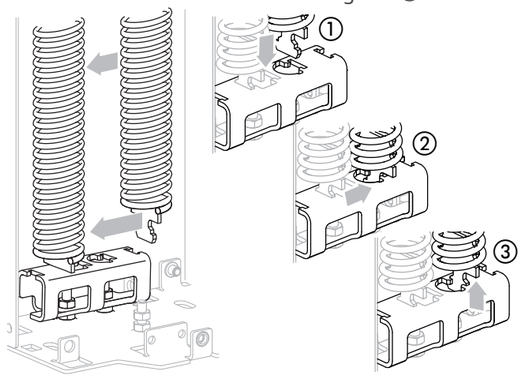
14 **Release** each spring from the baseplate tube.

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



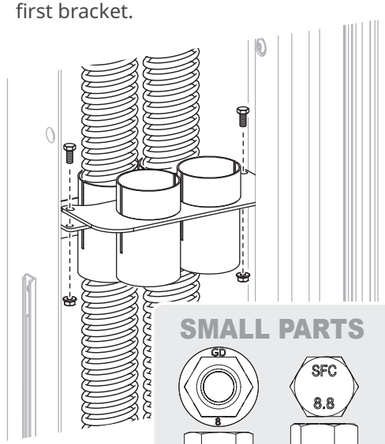
15 **Stretch** the springs downward.

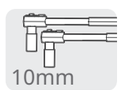
Slide the bottom spring tabs into the wide slot ①, through the narrow ②, then **pull up to lock** it into the retaining slot ③.



How to install a second assembly in the side column

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





SMALL PARTS

01901506

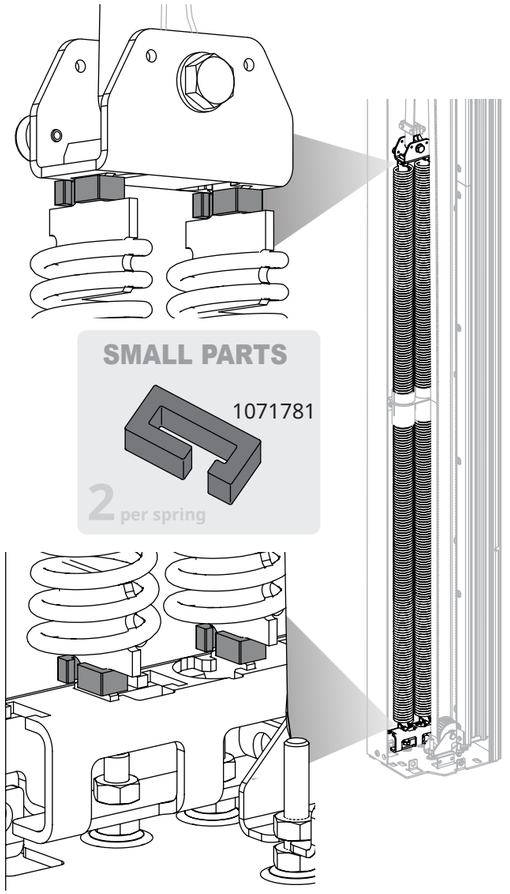
2 01260110

2 **Follow** steps 4-15 for installing the springs.

Make sure the spring bracket bumpers face out, toward the first spring assembly.

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.

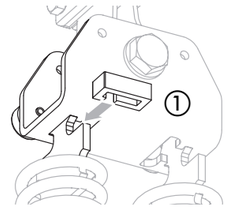


SMALL PARTS

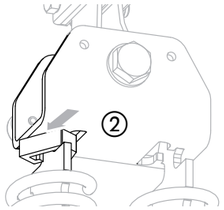
2 per spring

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

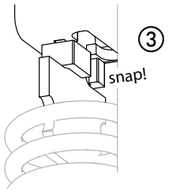
① **Slide** the opening in the collar onto the tab.



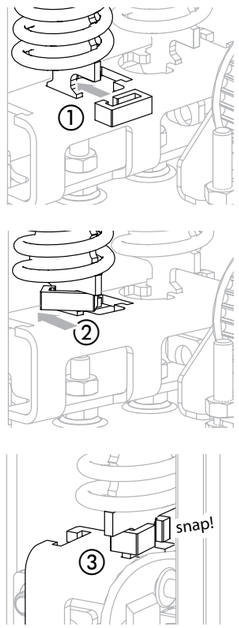
② **Twist, then push** the collar across the tab (the collar is flexible and will bend open enough to fit).



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



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



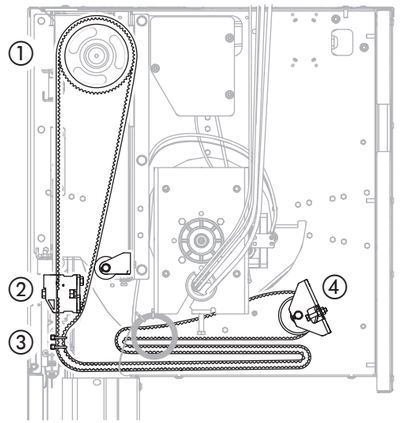
How to install the secondary drive belt

1

IMPORTANT **Make sure the secondary drive belt is kept taut throughout these steps.**

- The belt is preinstalled around the **pulley** ①.
- The **door panel end bracket** ② is connected at the precise height to keep the door panel level.
- The belt is kept taut to the pulley and end bracket during crating by **two cable ties** ③.
- **If the belt becomes loose** before it is secured to the baseplate, it can skip a tooth in the pulley. **This will cause the door panel to run crooked and damage the door.**

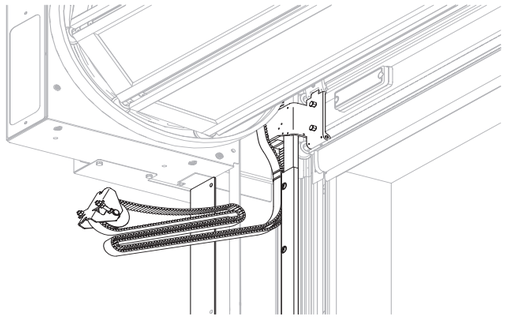
Keep downward pressure on the secondary drive belt until the baseplate pulley assembly ④ is installed and the belt has been properly tensioned.



2

Pull the secondary drive belt and baseplate pulley assembly out of the console.

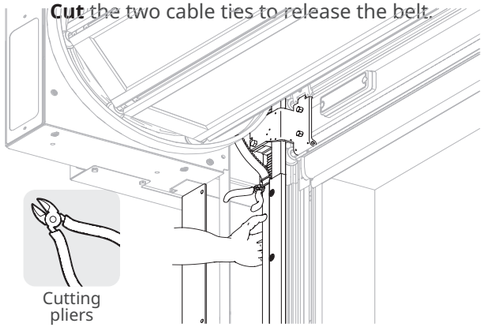
Lower them down the side column.



3

Grab the belt below the cable ties and pull gently downward to keep the belt tight.

Cut the two cable ties to release the belt.



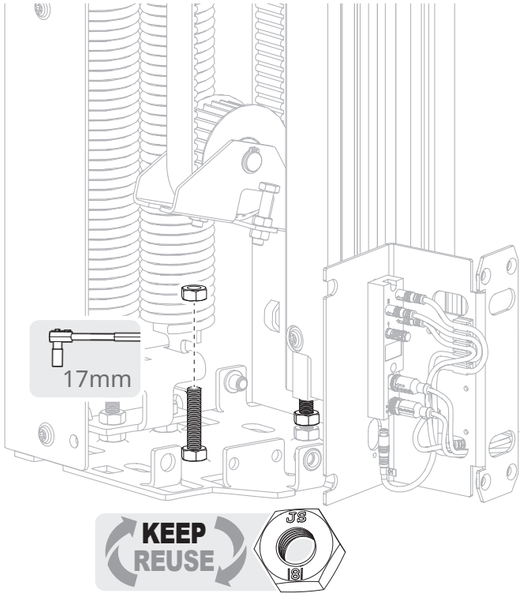
4

Remove the top nut on the front baseplate mounting post.

Keep the nut.

Loosen the top nut on the rear mounting post.

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



5

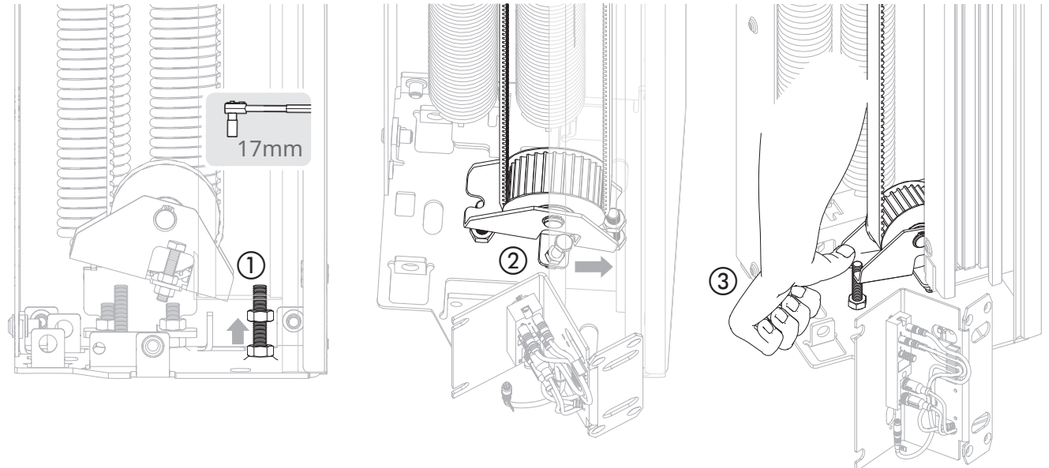
Set the height of the top nut on the rear baseplate mounting post ①.

1: **Slide** the rear flange of the baseplate pulley assembly ② **under the top nut** until it touches the post.

2: **Press down** on the front of the pulley assembly as hard as you can ③.

- The top nut is at the correct height when **three (3) threads of the front mounting post clear the front flange.**

3: **Adjust** the height of the nut as needed to reach the correct height.



6

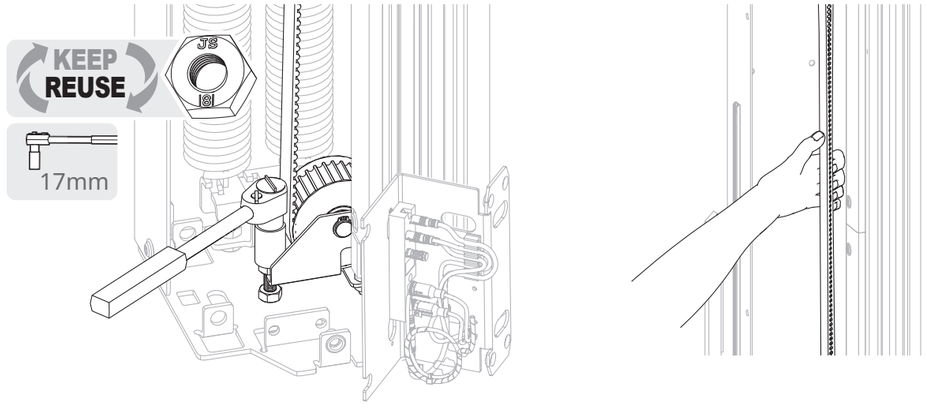
Set the tension of the belt.

1: **Replace** the top nut on the front mounting post. **Tighten** the nut to increase the tension on the belt.

2: **Grab** the belt as close as possible to the midpoint with one hand.
Press the front and rear legs of the belt together between your fingers and thumb.

- The tension is correct when it requires **considerable effort to bring the legs together.**

3: **Adjust** the height of the top nut as needed to reach the correct tension.



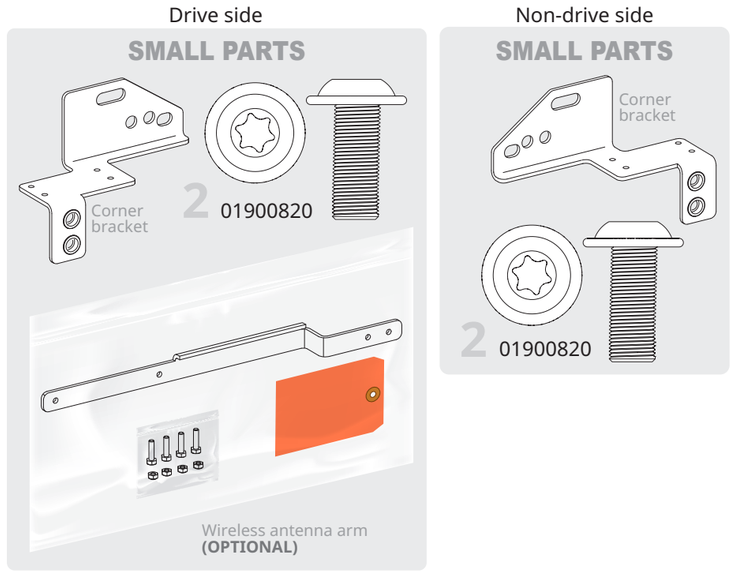
How to install the corner brackets, (optional) bottom hood spreader and (optional) wireless antenna

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.

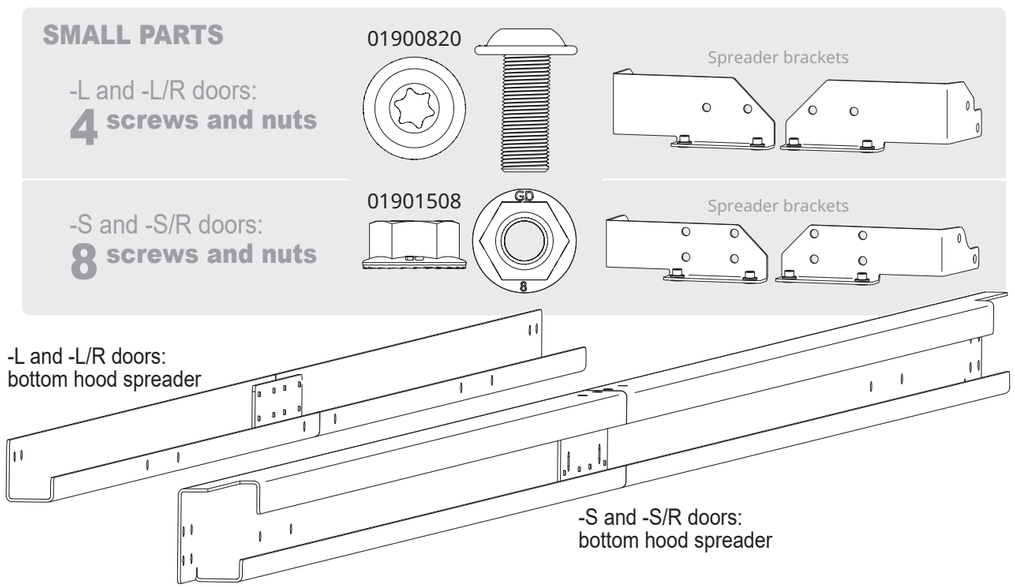
NOTE: depending on the configuration of the door, the drive side may be on the left (LH) or right (RH) side of the door. These steps show a left hand (LH) door.



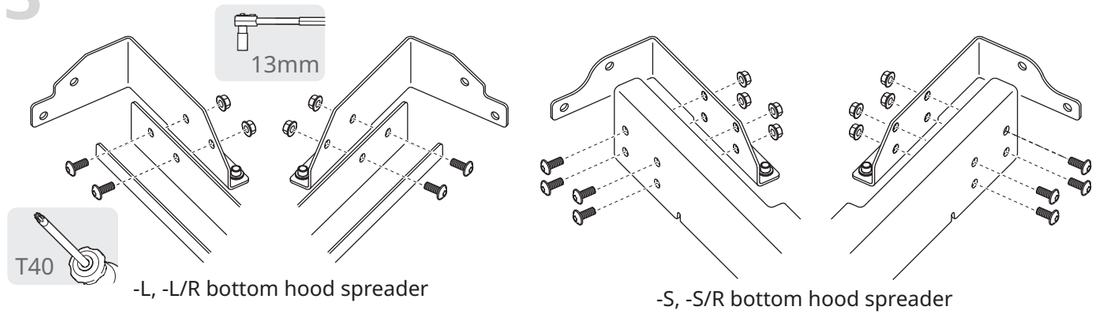
If the door has an optional bottom hood spreader

2 **If the door has a bottom hood cover:**

- **Locate** the two spreader brackets and hardware for the bottom hood spreader in the small parts box
- **Locate** the bottom hood spreader.



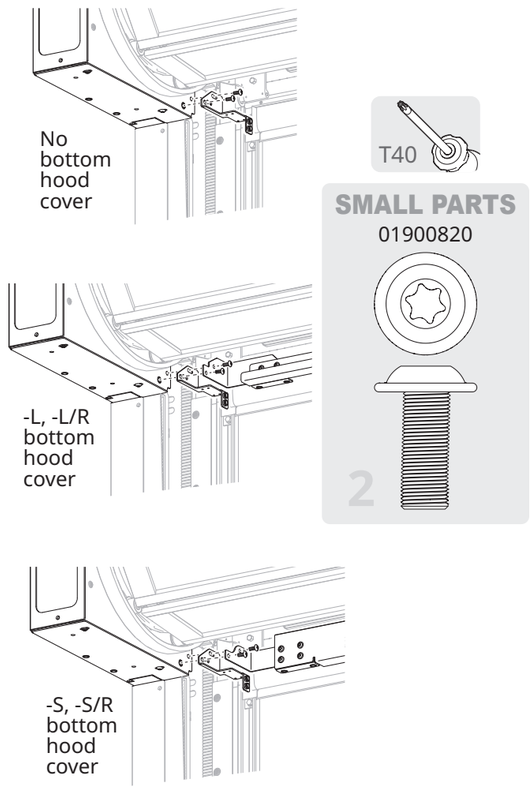
3 **Attach** the spreader brackets to the bottom hood spreader.



4 **Install** the corner brackets.

If the door has a bottom hood cover, install the bottom hood spreader inside the corner bracket, using the same screws.

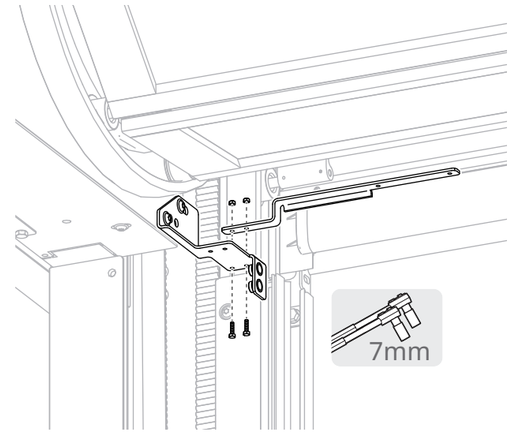
Do this on both sides of the head assembly.



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

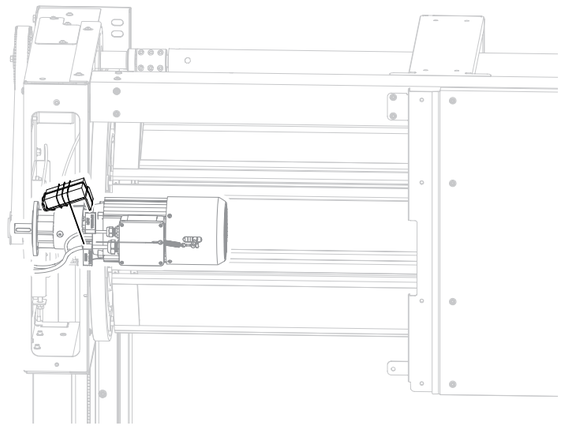
5 **Install** the wireless antenna arm onto the drive side corner bracket.

Use the hardware included with the wireless antenna arm.



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

Unwrap the antenna cable.

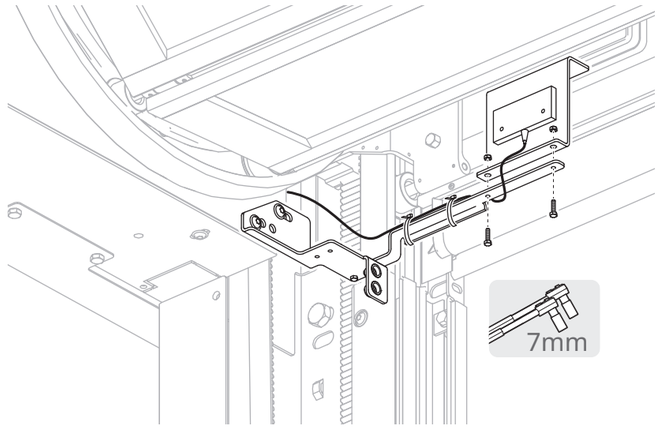


7 **Install** the wireless antenna bracket onto the arm.

Use the hardware included with the wireless antenna arm.

Secure the cable to the wireless antenna arm with cable ties.

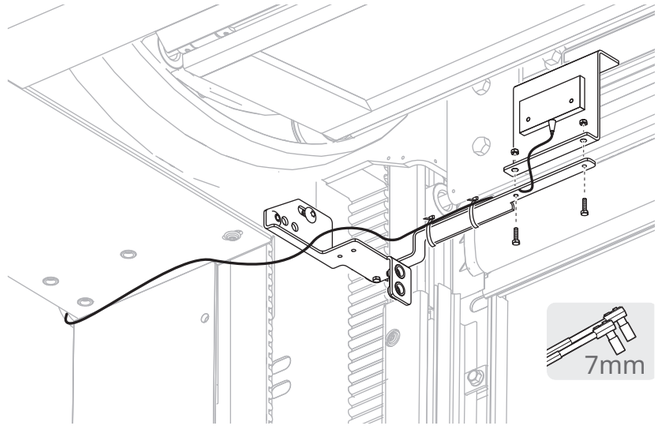
Cable ties



8 **-US and -US/R doors only:** rout the cable to the wireless antenna around the side column and through the gap between the drive side console and the side column.

Install the bracket and **secure** the cable.

Cable ties



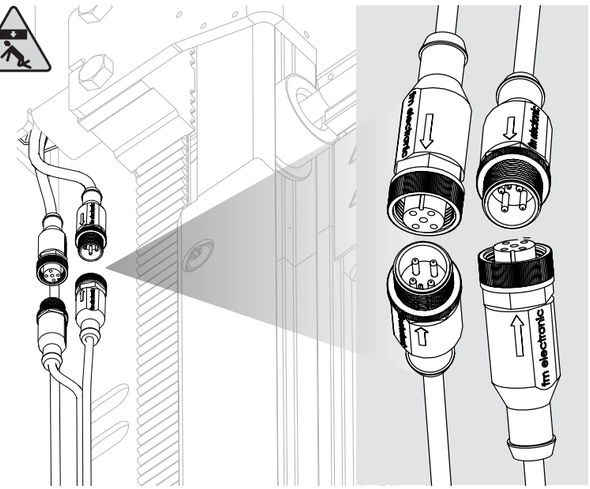
How to connect the CAN bus cables

1 Inside the **drive side console**, **connect** the M12 CAN connectors:

- The male M12 for the cable from the CAN port in the side column to the female M12 connector for the cable to the CAN port in the head assembly.
- The female M12 for the cable from the CAN port in the side column to the male M12 connector for the cable that crosses the rear spreader.

IMPORTANT

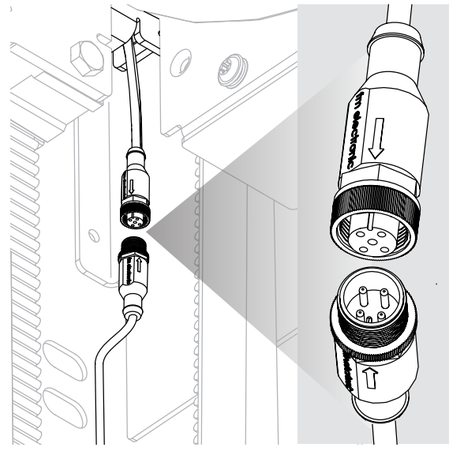
Line up the embossed arrows on the connectors to align the guide notch and contacts correctly. The connectors will only fully connect if they are aligned correctly.



2 Inside the **non-drive side console**, **connect** the M12 CAN connectors:

- The male M12 for the cable from the CAN port in the side column to the female M12 connector for the cable that crosses the spreader.

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.

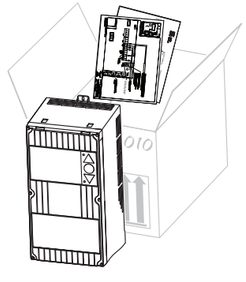


3 **Find the schematics for the door** in same box that holds the System 4® controller.

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 jamb mounted SmartSurround™ light curtains

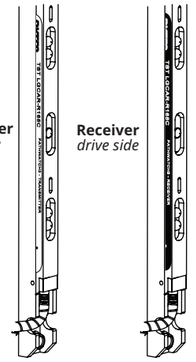
1 **Get** the jamb mounted SmartSurround™ transmitter and receiver from the kit.

IMPORTANT

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

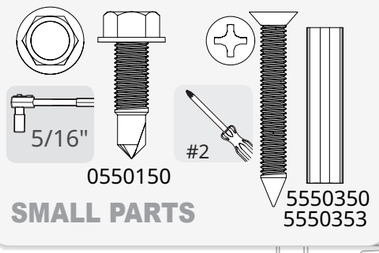
Make sure the jamb mounted and cover mounted SmartSurround™ **receivers** are both on the **drive side of the door.**

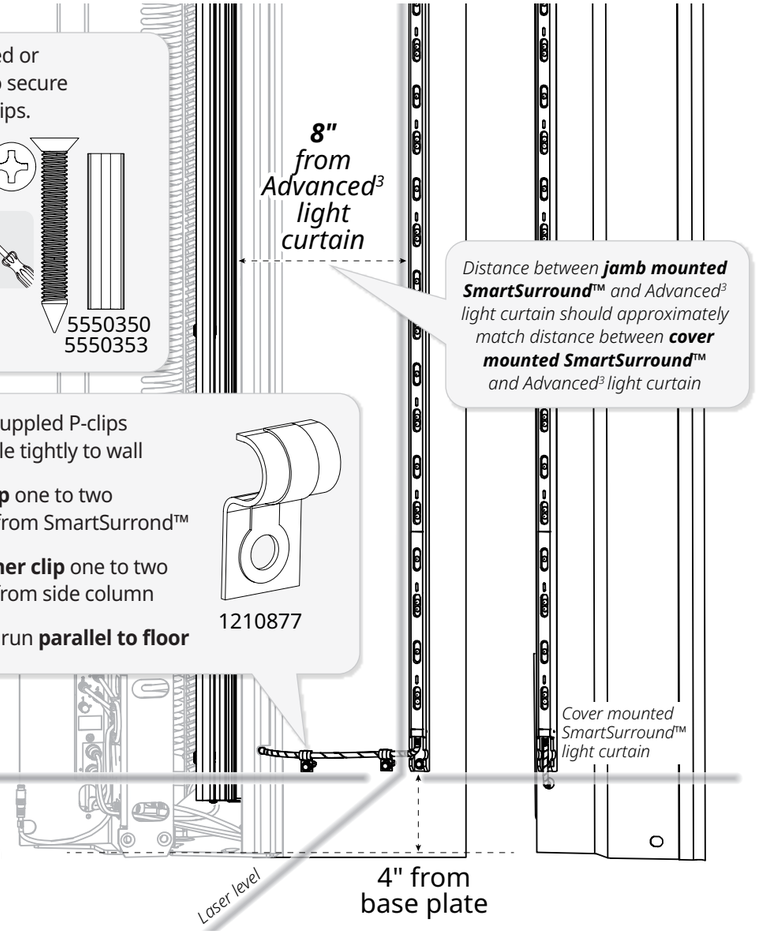
Check the labels at the bottom of the light curtains to match.



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.

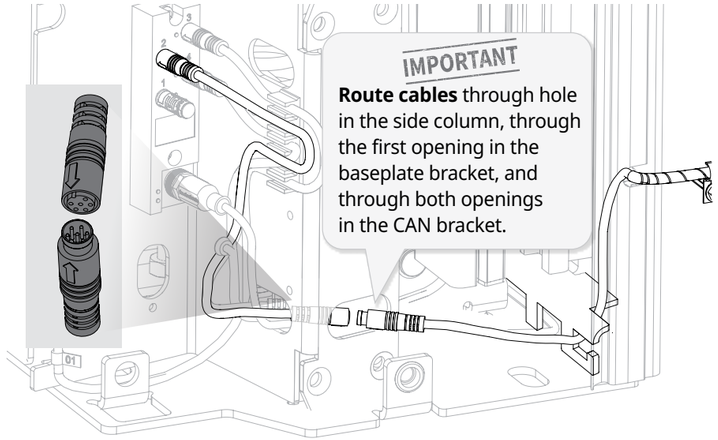
The **bottom** of the aluminum retaining bracket should be **4" above base plate**.

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.

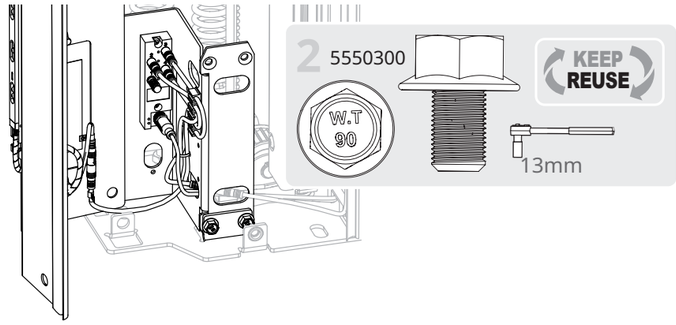
Line up the embossed arrows on the connectors to align the guide notch and contacts correctly.

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.

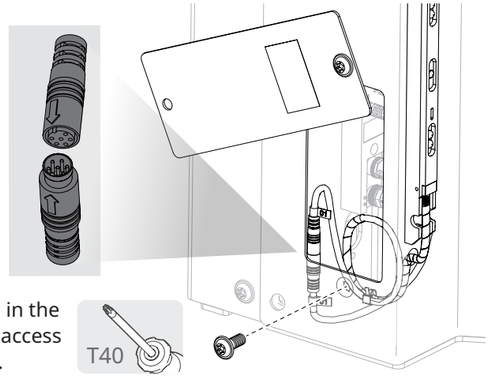


3 **Reinstall** the side column covers.

- **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.

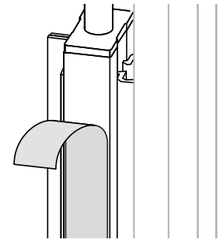
Reconnect the two cables labeled "01".

- **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.

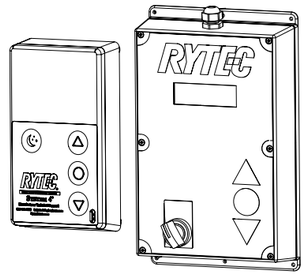


(Optional) Check if the door has an MS4 or BTA4 user terminal

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.**

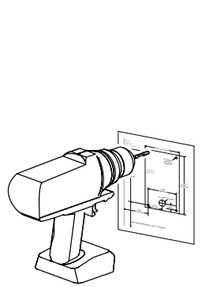
Use the template to drill the four screw holes in wall near the door.

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.

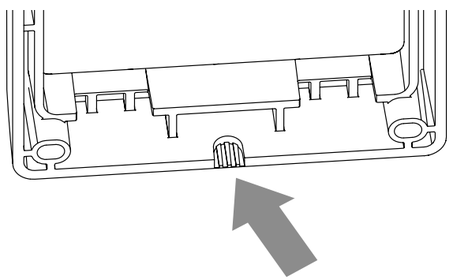
IMPORTANT

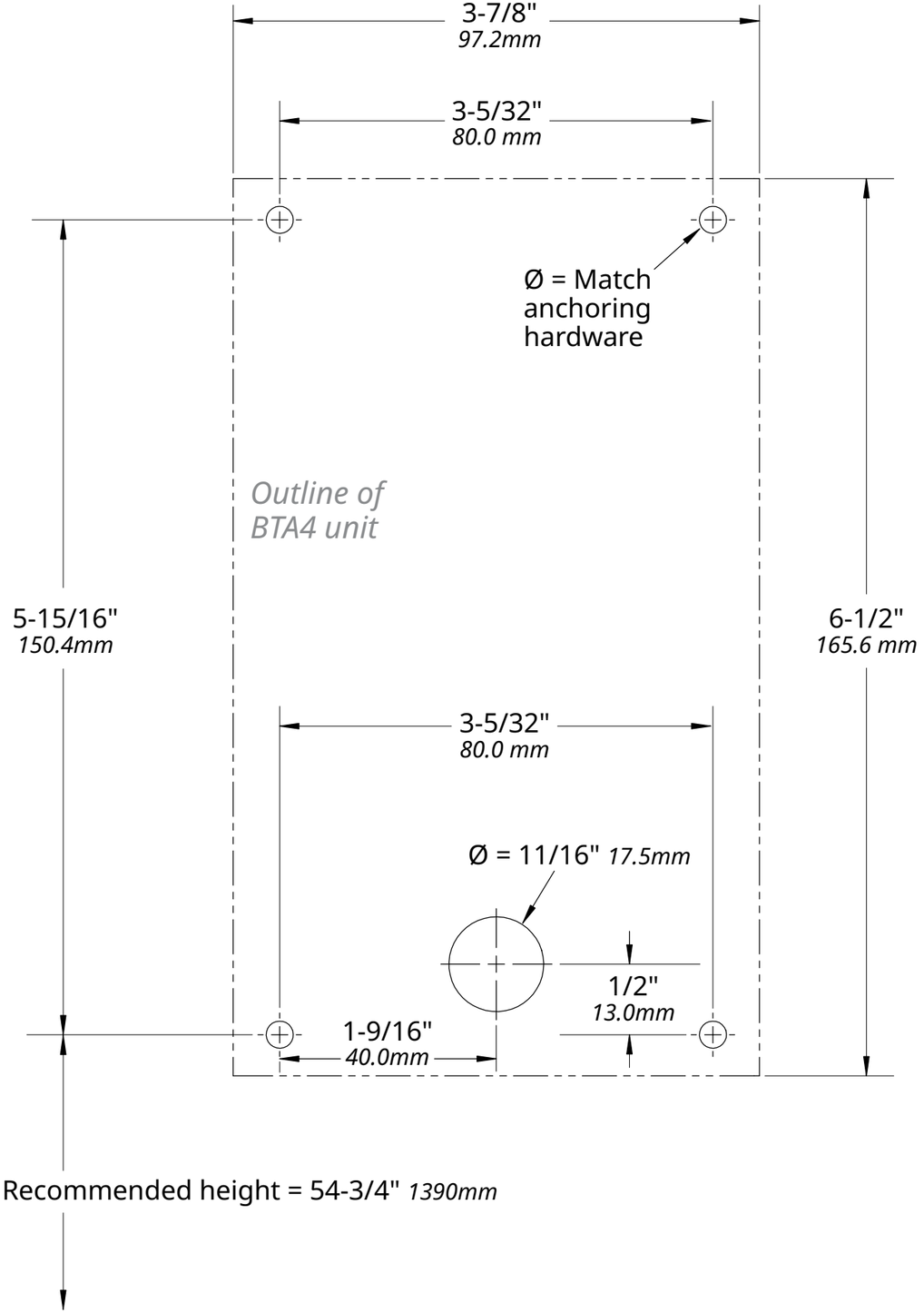


IMPORTANT

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.

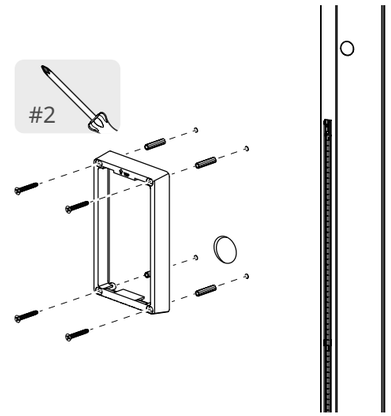
2 If you are mounting the unit to the wall and cannot run cable inside the wall, **snap off** the perforated tab at the bottom of the frame.



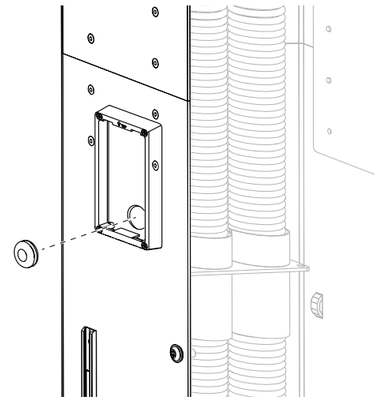


Back of BTA4 template
Intentionally left blank

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

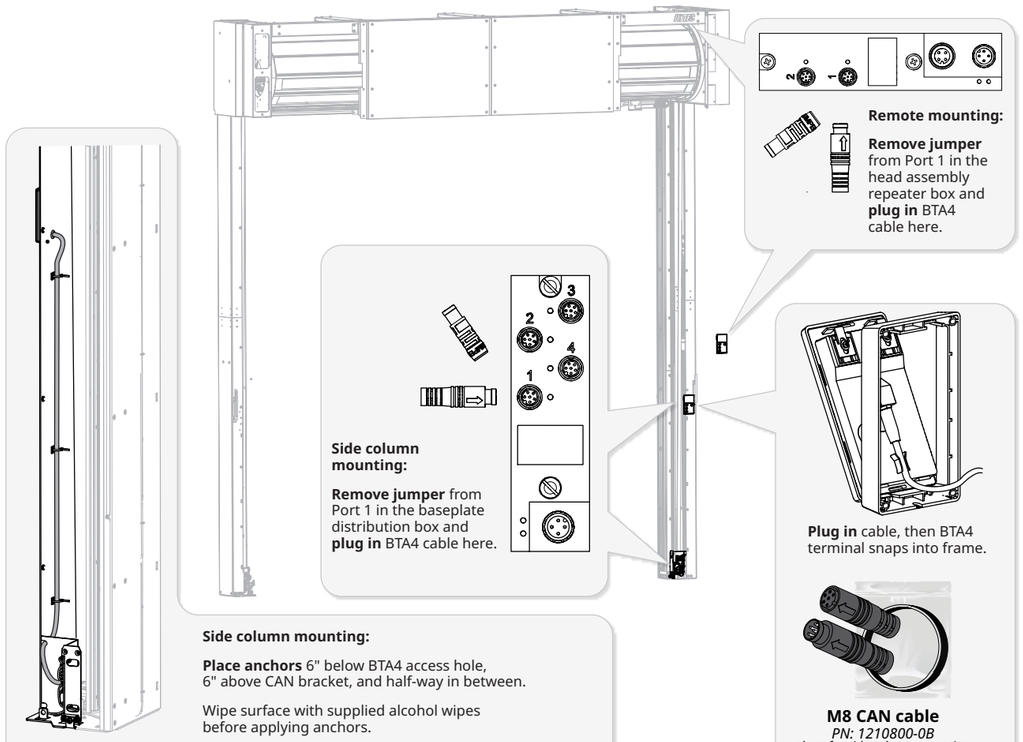


4 For side column mounting, **install** the grommet into the cable access hole.



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.

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

Side column mounting:

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

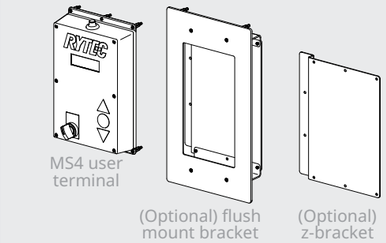
Wipe surface with supplied alcohol wipes before applying anchors.

Route cable through anchors and upper notch in bracket.

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

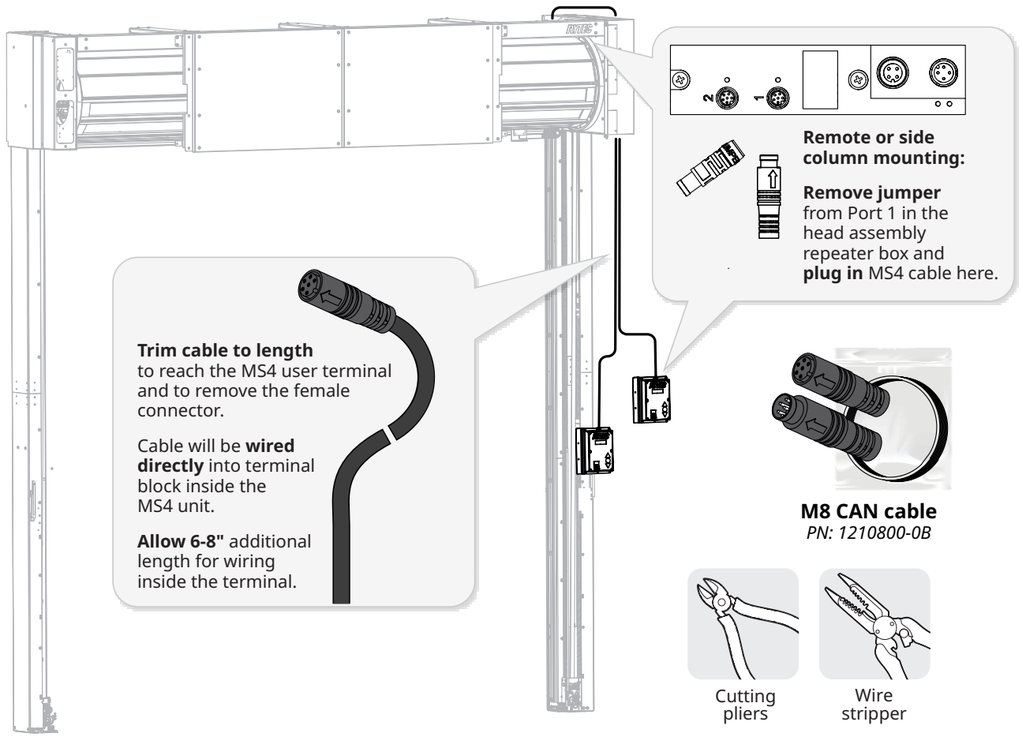
1. **Remove** plate ① from non-drive side column.
2. **Install** the user terminal ② onto the z-bracket ③ using supplied hardware.
3. **Install** bracket onto side column using screw holes from plate.

Flush mount (in-wall installation)

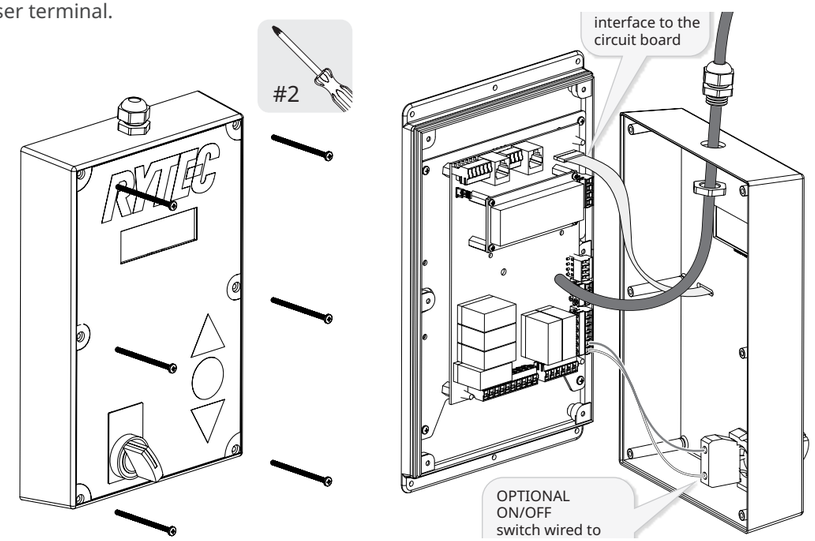
1. **Cut** hole: 6-3/8"W x 11-1/2"H.
2. **Install** the user terminal ① onto the flush mount bracket ② using supplied hardware.
3. **Anchor** bracket to wall using supplied hardware.
4. **Install** the cover plate ③.

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

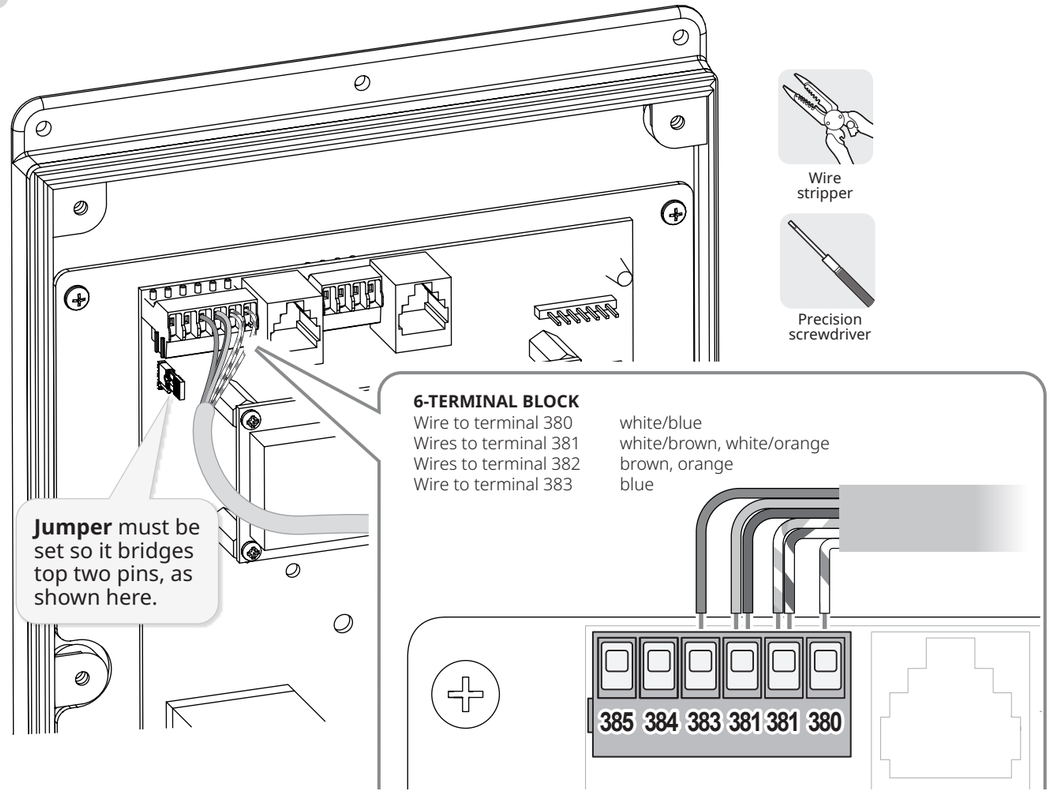
1 **Connect** the M8 flying lead cable to the head assembly repeater box and **route** it to the MS4 user terminal.



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.

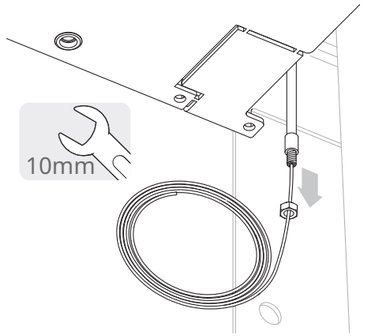


4 **Tighten** the cord grip, **replace** the cover and **reinstall** the six screws.

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

1 **Locate** the brake release cable in the console.

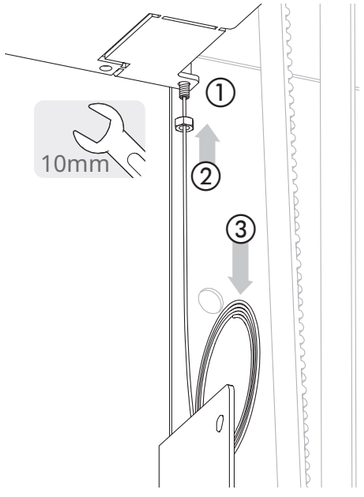
Loosen the retaining nut and slide it down the length of the brake release cable.



2 **Thread** the cable through the hole in the bottom of the console ①.

Thread the retaining nut ② up the cable and install into the bottom of the console.

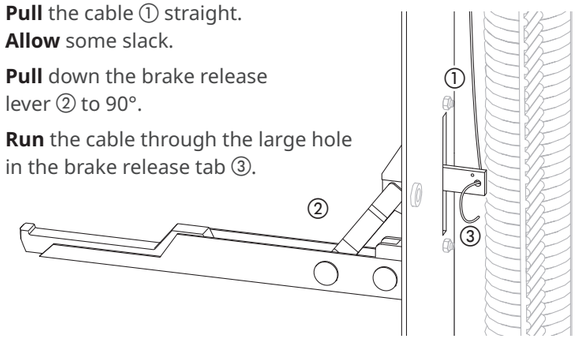
Run the cable ③ down the side column to the brake release lever.



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.

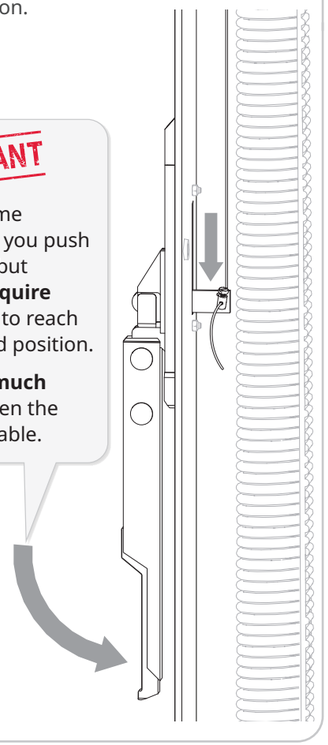
DO NOT trim the cable until the brake release has been fully tested.

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

IMPORTANT

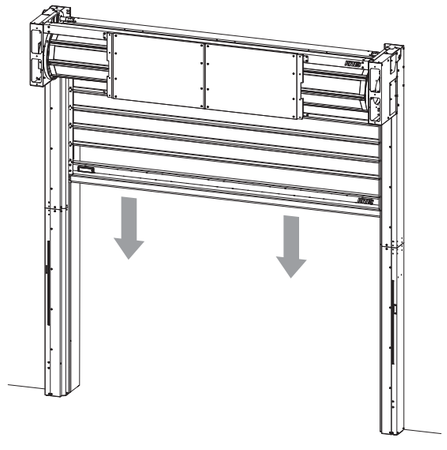
There will be some resistance when you push the lever down, but **it should not require excessive force** to reach the fully released position.

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

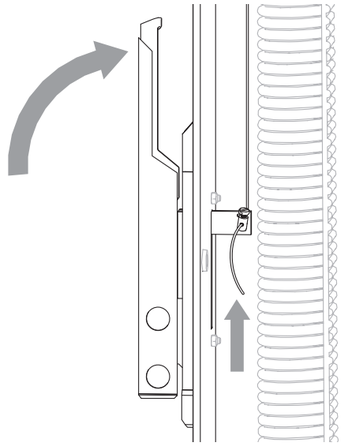


6 The door panel should **release** under its own weight and **drop** approximately 1/3 of the door height.

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

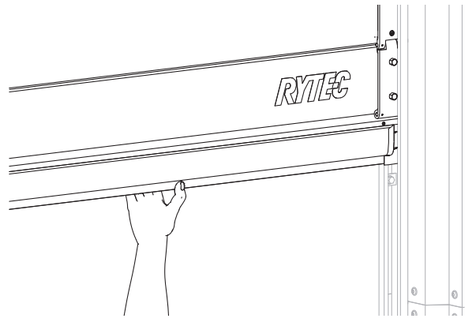


7 **Pull up** the brake release lever 180° to the fully engaged position.



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").

(optional) How to install the bottom hood cover

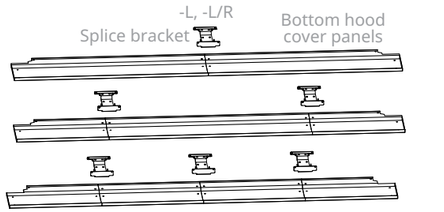
It is recommended that you **do not use power tools** for these steps.
Overtorquing screws can damage the riveted nuts that secure them.

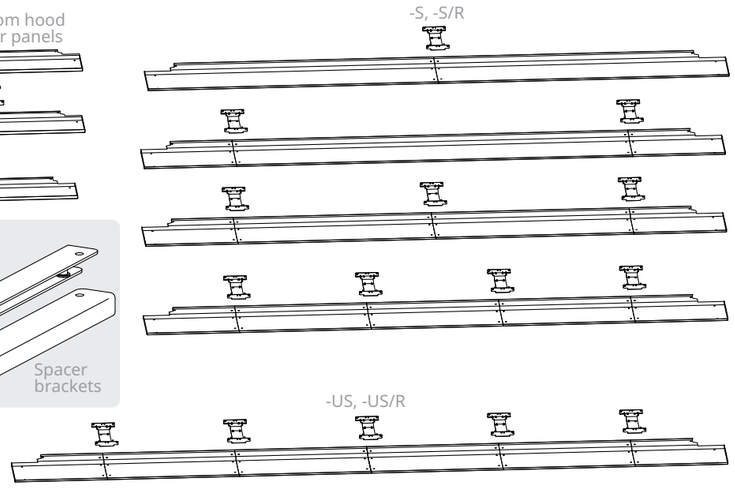
1

Locate the spacer brackets and hardware in the small parts box.

Locate the bottom hood cover panels and bottom splice brackets (mounting brackets) in the crate.

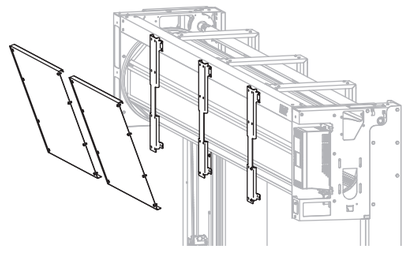
- -L and -L/R doors may have 2, 3 or 4 panels. -S and -S/R doors may have 2, 3, 4 or 5 panels, -US and -US/R doors have 6 panels.





2

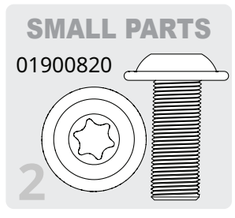
-L and -L/R doors only: if necessary, remove all front cover panels to access the front splice brackets.

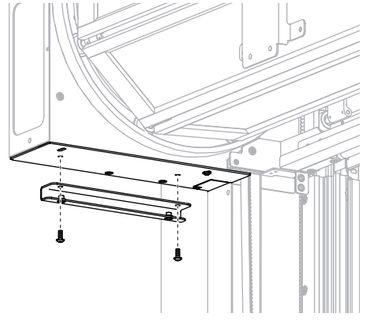


3

Install the spacer bracket from the small parts box onto the side console.

Do this on both sides of the head assembly.

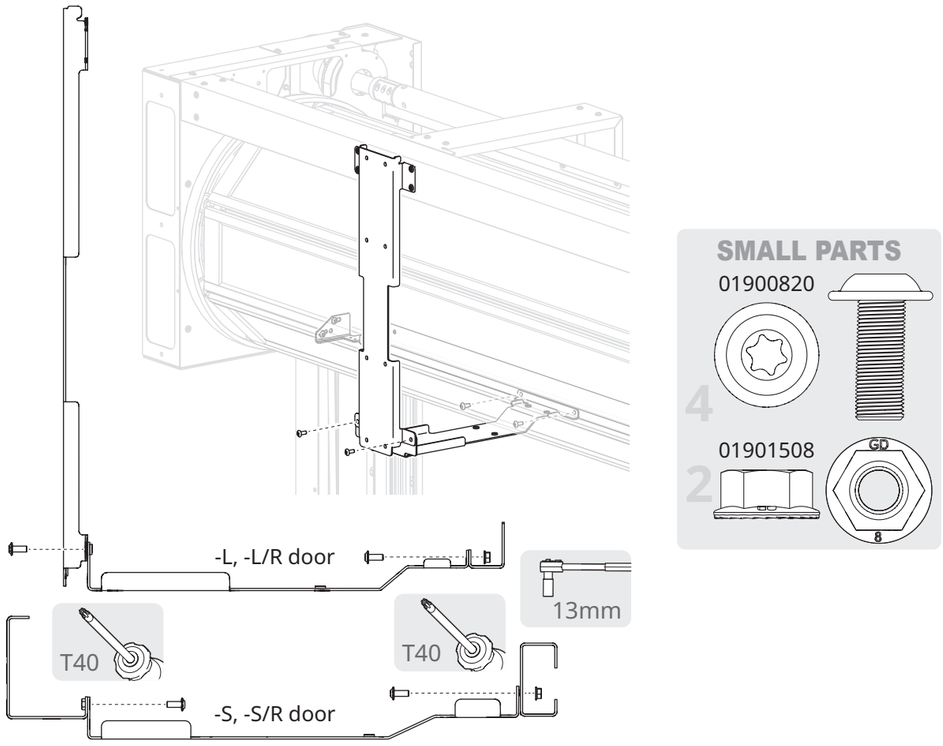




4

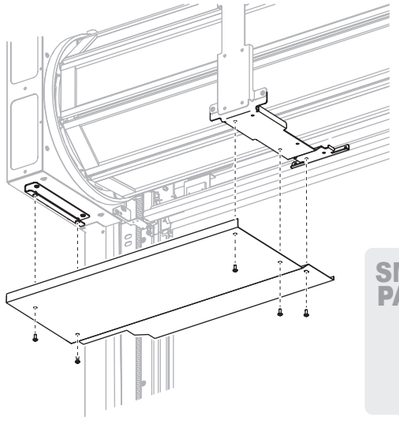
Install the splice brackets for the bottom hood cover panels.

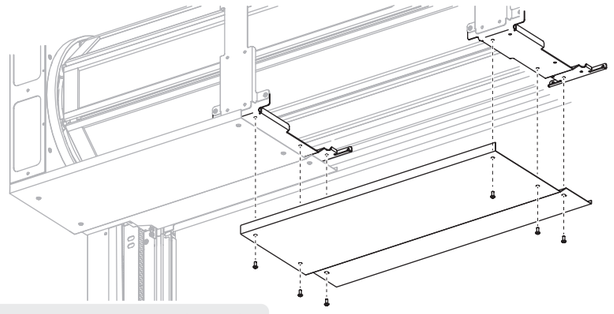
- On -L and -L/R doors, the brackets attach to the front splice brackets and the bottom hood spreader.
- On -S, -S/R, -US and -US/R doors, the brackets attach to the bottom front spreader and the bottom hood spreader.

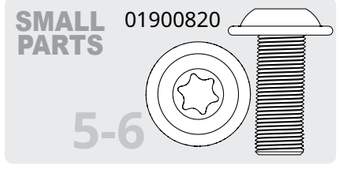


5

Install the bottom hood cover panels.







(optional) How to install the slanted top hood cover

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

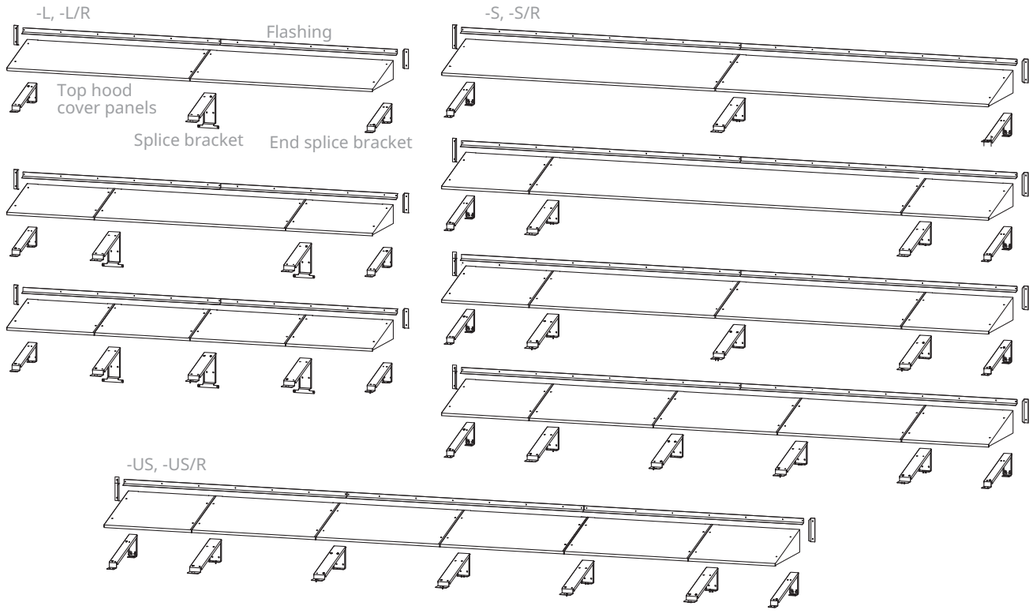
1

Locate the top hood cover panels and splice brackets in their crate.

- -L and -L/R doors may have 2, 3 or 4 panels. -S and -S/R doors may have 2, 3, 4 or 5 panels, -US and -US/R doors have 6 panels.

Locate the flashing. There should be two long segments (three for -US and -US/R) and two short side segments.

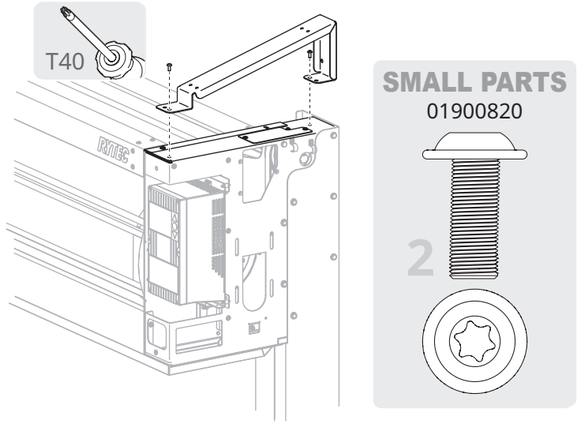
Locate the hardware in the small parts box.



2

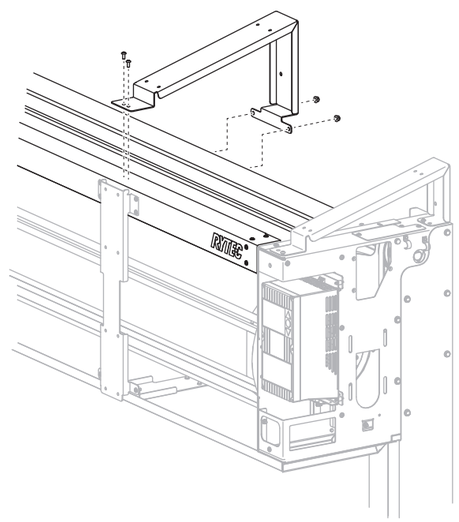
-L and -L/R doors: install the end splice bracket.

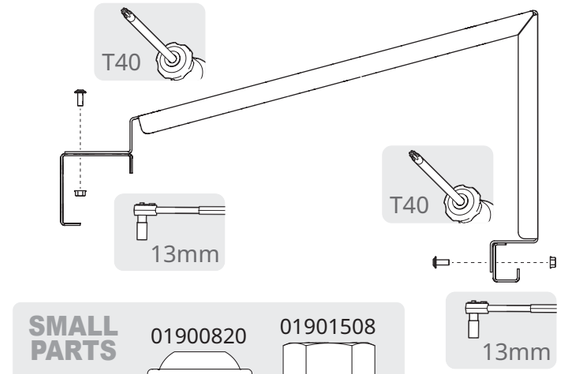
Do this on both sides of the head assembly.



3

-L and -L/R doors: install the rest of the splice brackets.

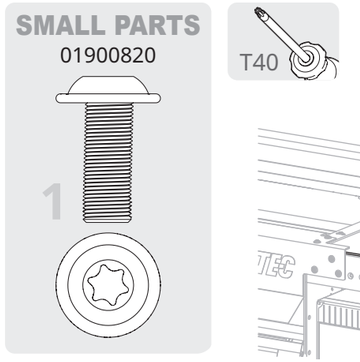




4

-S, -S/R, -US and -US/R doors: install the end splice bracket.

Do this on both sides of the head assembly.

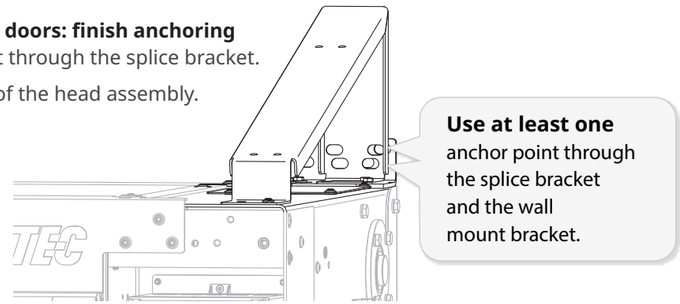


5

Anchoring hardware

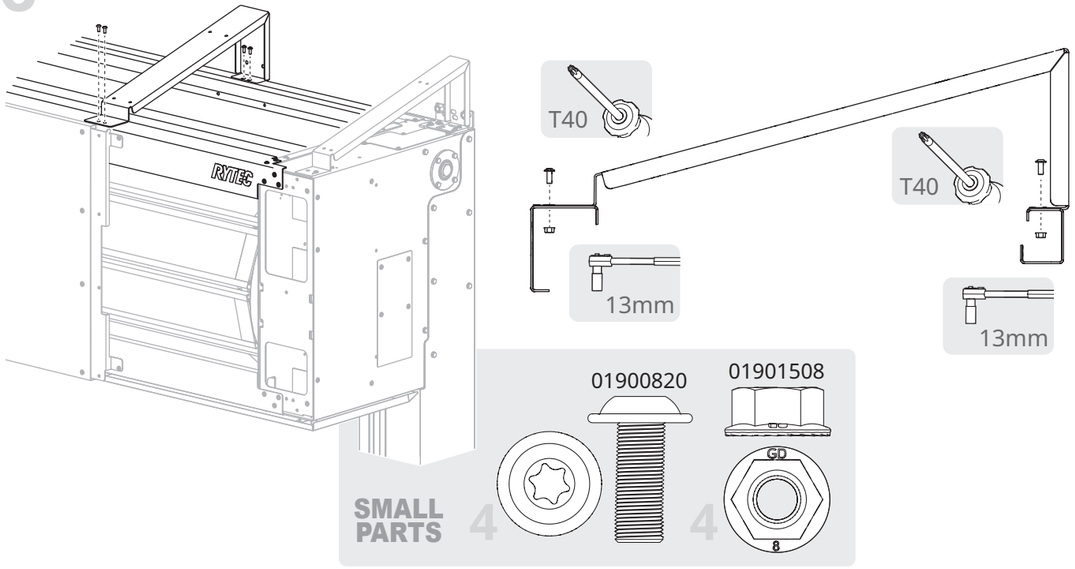
-S, -S/R, -US and -US/R doors: finish anchoring the wall mount bracket through the splice bracket.

Do this on both sides of the head assembly.



6

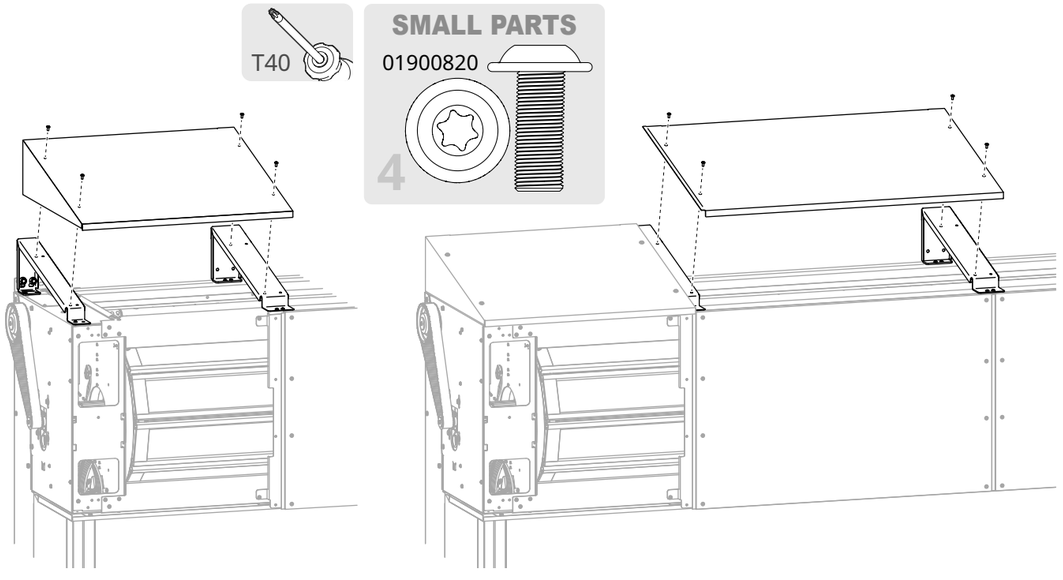
-S, -S/R, -US and -US/R doors: install the rest of the splice brackets.



7

All doors: install the top hood cover panels.

- **Install panels left to right:** each panel overlaps the panel to the left.

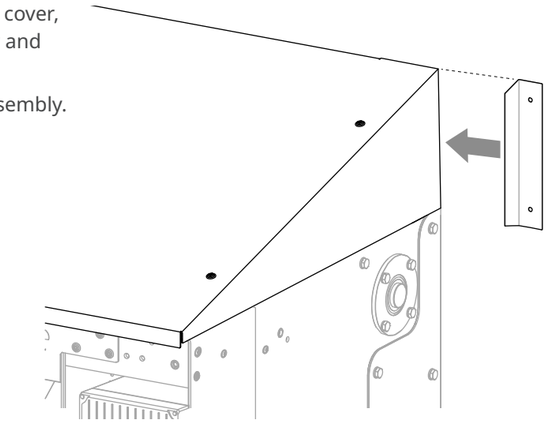


8

Anchoring hardware

Align side flashing with top of hood cover, place flashing tight against the cover and **anchor** in place.

Do this on both sides of the head assembly.

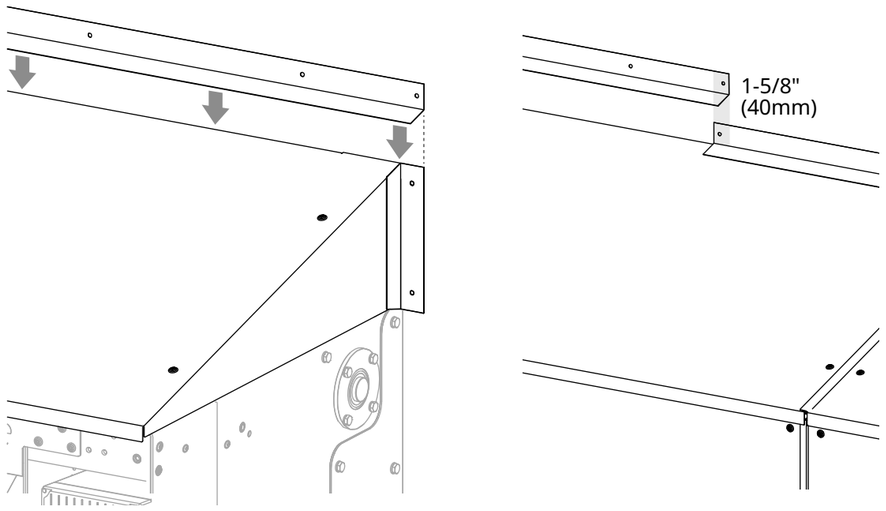


9

Anchoring hardware

Align top flashing with end of side flashing, place flashing tight against the cover and **anchor** in place.

- The two sections of top flashing overlap by 1-5/8” (40mm).



How to install the System 4 controller and wire the door

⚠ WARNING

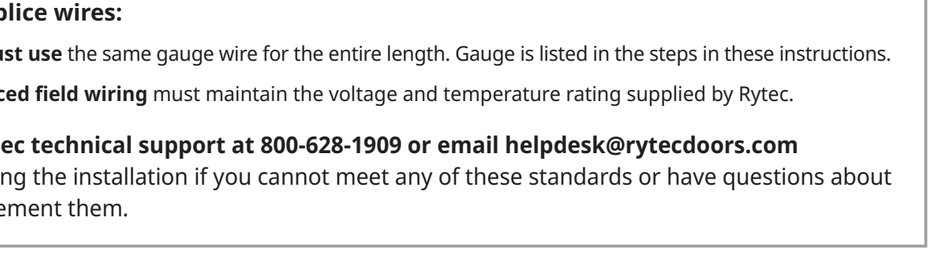
All electrical work must meet all applicable local, state and national codes.
It is recommended that all electrical work be done by a certified electrician.

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.

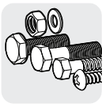
Contact Rytec technical support at 800-628-1909 or email helpdesk@rytecdoors.com before starting the installation if you cannot meet any of these standards or have questions about how to implement them.

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.

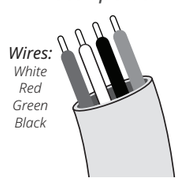
4 **Make sure** the high-voltage and low-voltage cables from the head assembly of the door are separate. **Cables may be routed** through the top ① or bottom ② port at the back of the belt guard cover.

INSIDER'S TIP

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

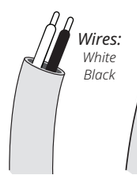
High Voltage

Motor power

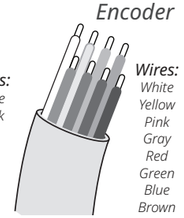


Low Voltage

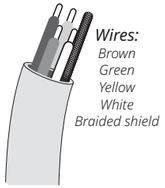
Brake



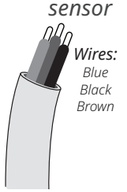
Encoder



CAN bus

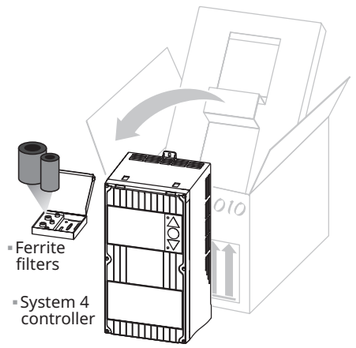


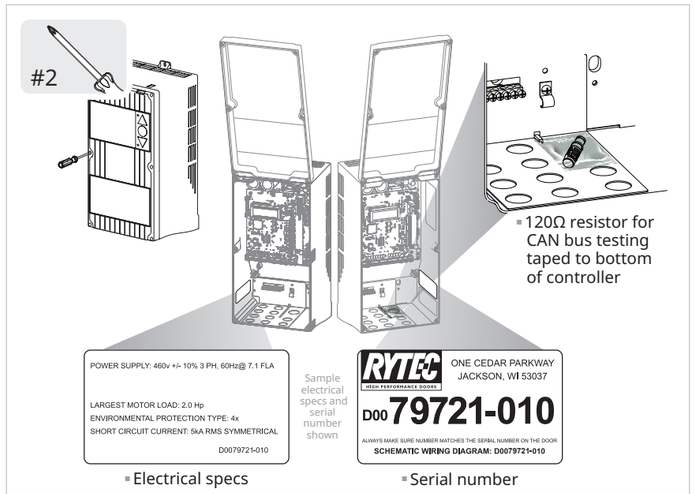
Proximity sensor



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.





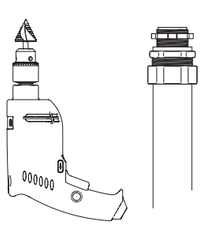
Verify that the serial number and electrical specs for the controller match the door.
Locate the 120Ω resistor for testing the CAN bus.

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.

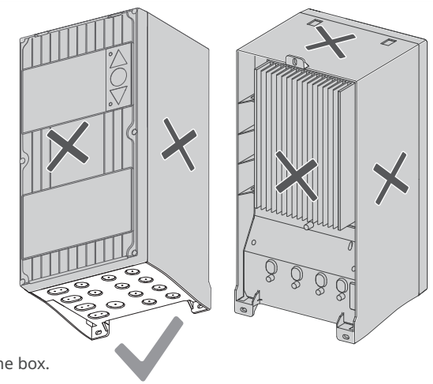
IMPORTANT

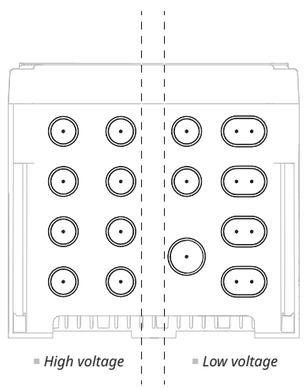
- **Conduit must enter through the bottom of the control box.**
  Drilling holes in the **front, back, top or sides** of the control box voids the warranty.
- **High-voltage wires** must enter through the left side of the box bottom.
- **Low-voltage wires** must enter through the right side of the box 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.

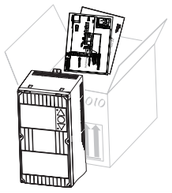
Failure to comply could result in shock, burns or death.

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



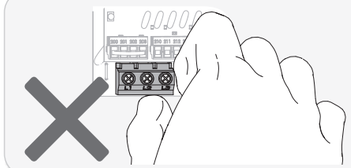
1 **Connect** the supply voltage wiring from the disconnect.

DO NOT use power tools

For ground bar #2

For terminals

12 AWG

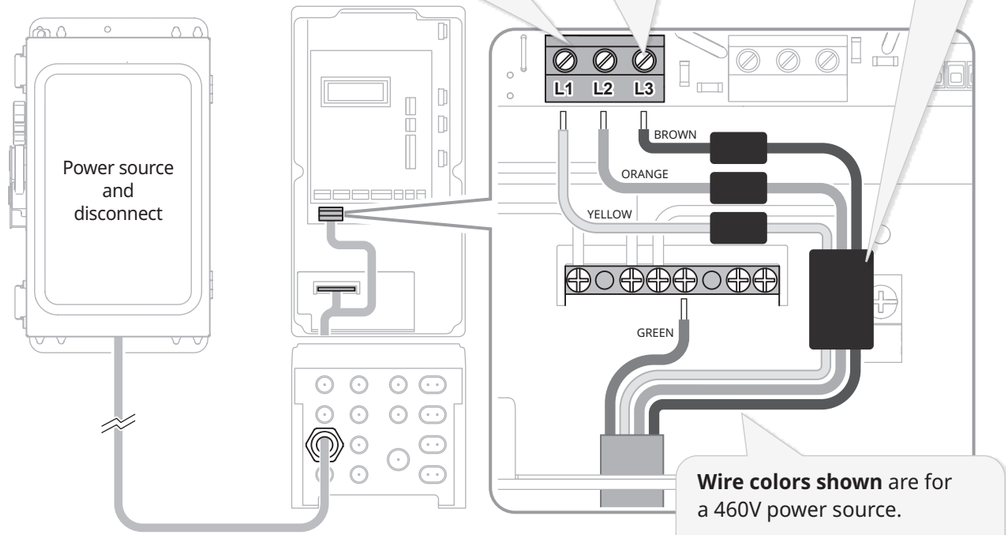


Do not try to remove the green terminal block from the circuit board.

It is fixed in place and will break.

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

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

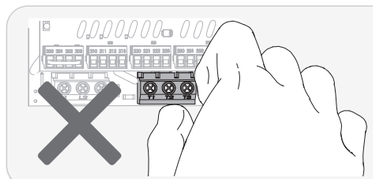


Wire colors shown are for a 460V power source.

Wire colors for 230V power are L1=red, L2=black, L3=blue.

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

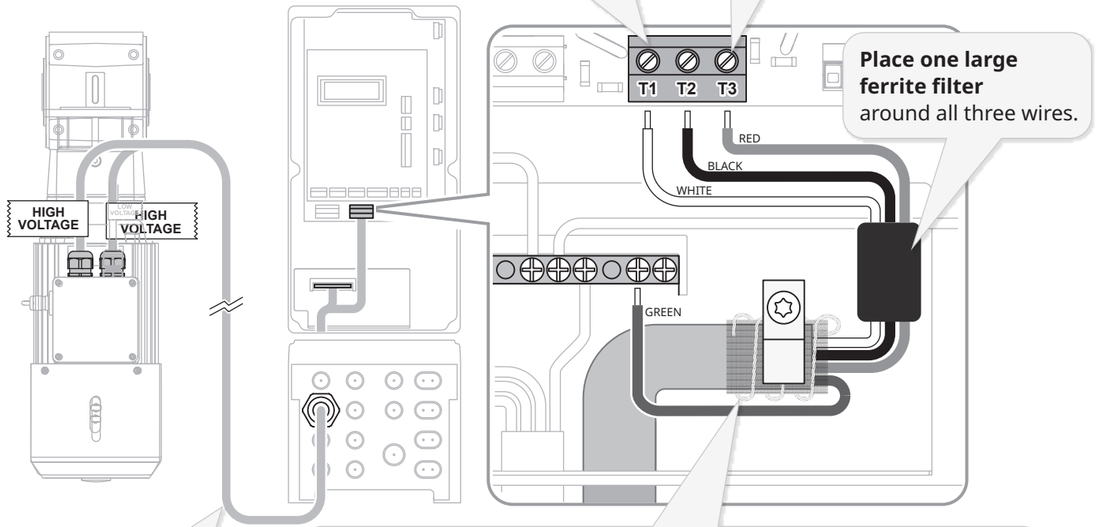
Shielding: braided copper mesh and drain wire



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

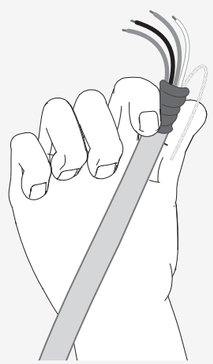
It is fixed in place and will break.

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.

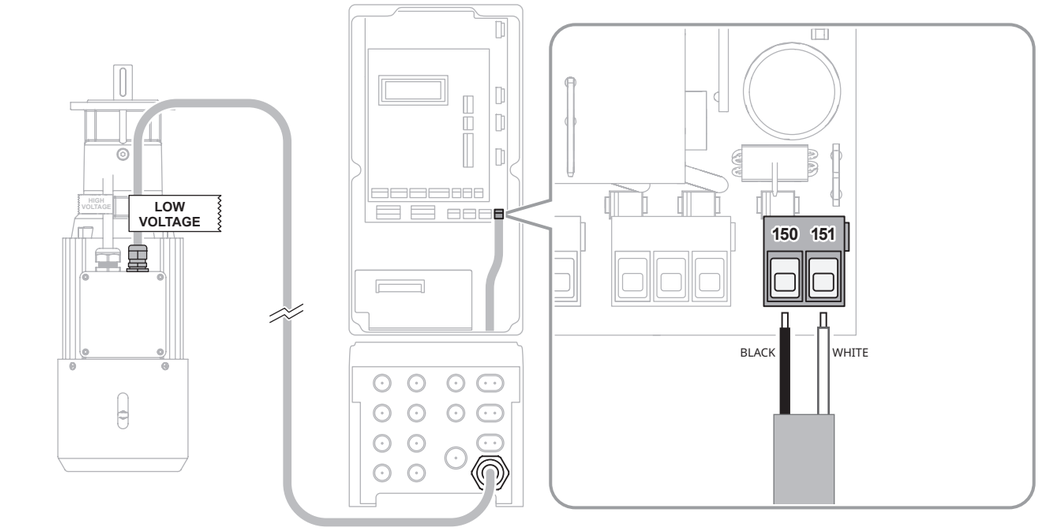
How to install the low-voltage wiring

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.**

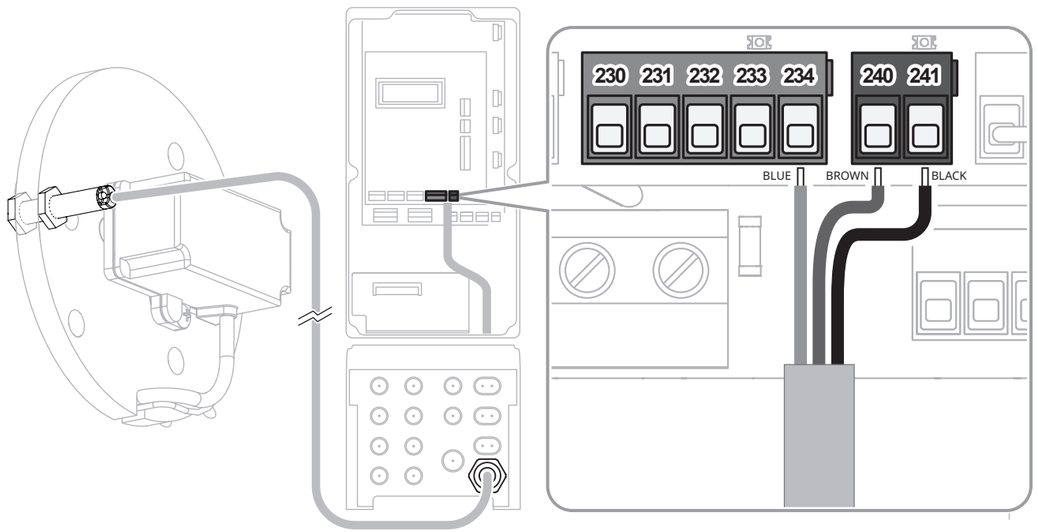
1 Connect the brake wiring from the motor. 18 AWG

Shielding: unshielded



2 Connect the wires from the proximity sensor. 24 AWG

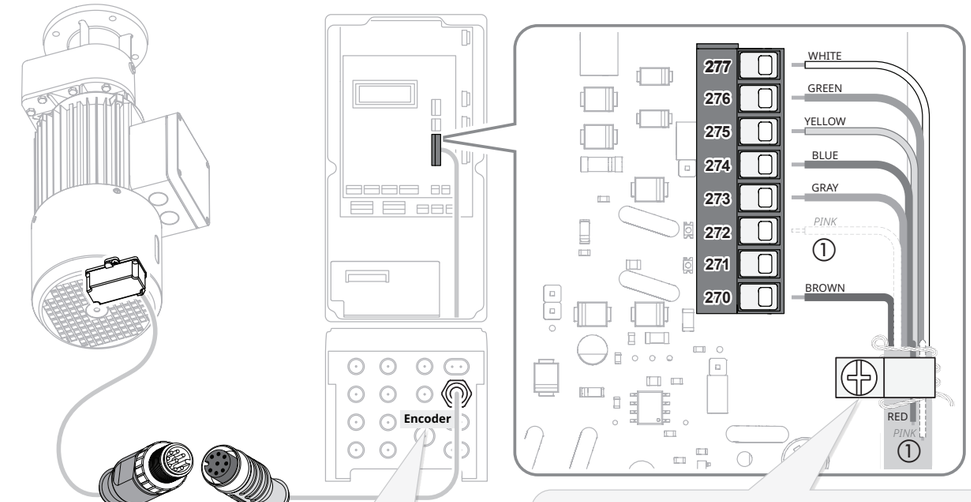
Shielding: unshielded



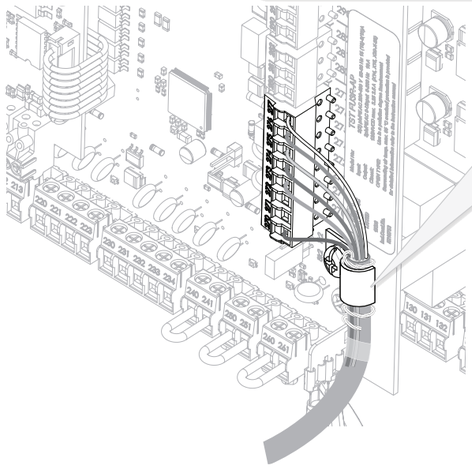
3 Connect the wiring from the encoder. 24 AWG

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.

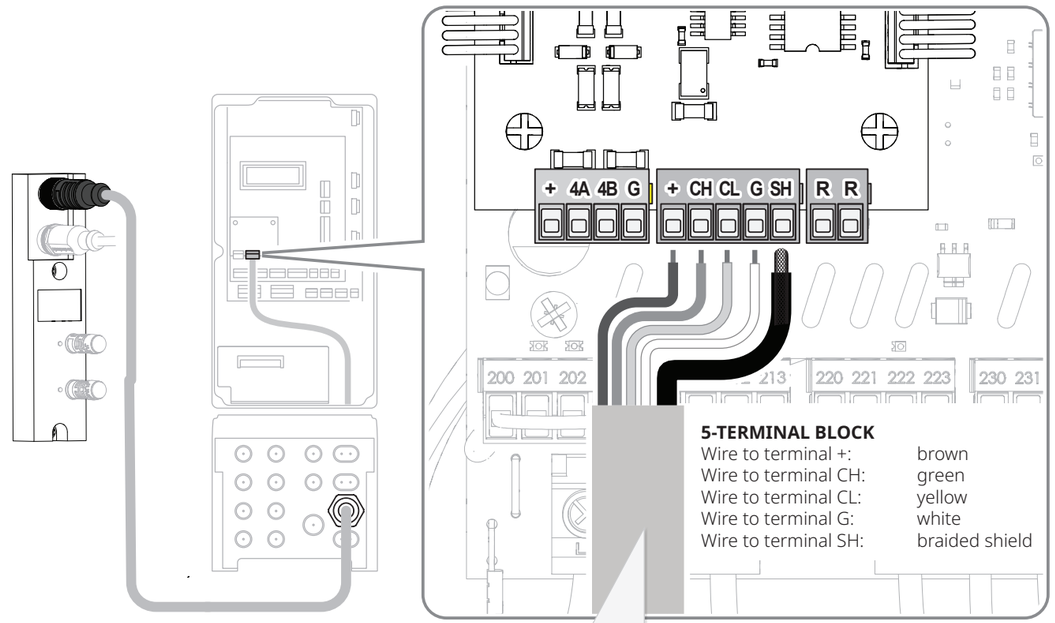
IMPORTANT

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)

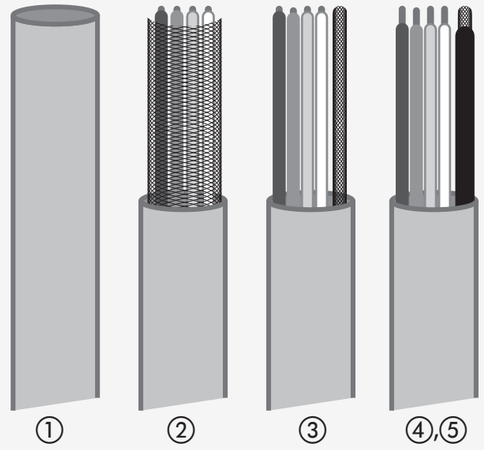
4 Connect the CAN bus wiring. 20 AWG

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

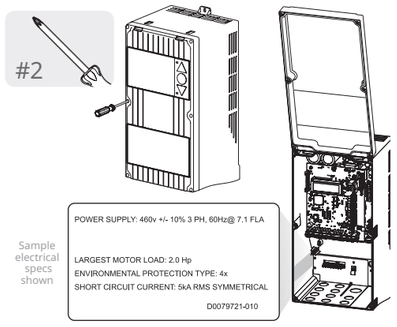
⚠ WARNING

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

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.

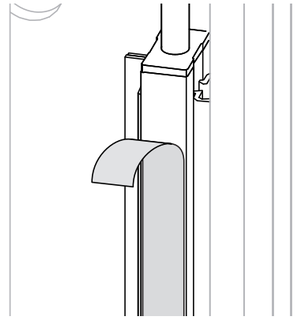
Icon key

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.

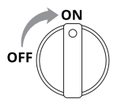
INSIDER'S TIP



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

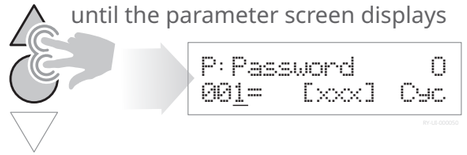
Do This *Result*

1 Turn on power to controller



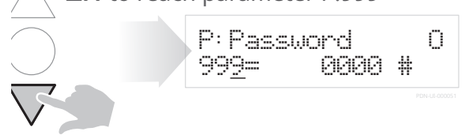
The door starts in run mode.

2 until the parameter screen displays



You are in Parameter mode. Go to parameter 999.

3 2x to reach parameter P:999



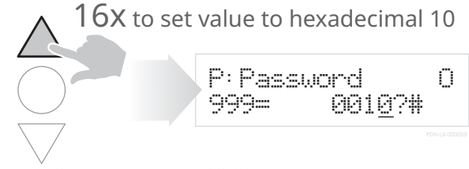
The Password parameter P:999 screen displays.

Do This *Result*

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

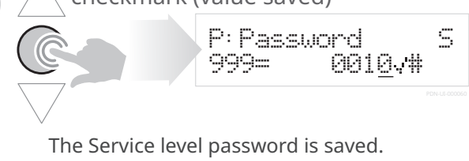
You can now change the value of parameter P:999.

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.

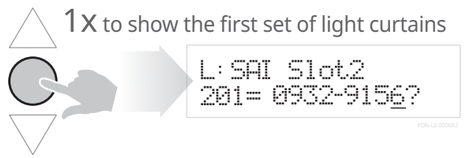
7 The controller automatically moves to parameter L:201.

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.

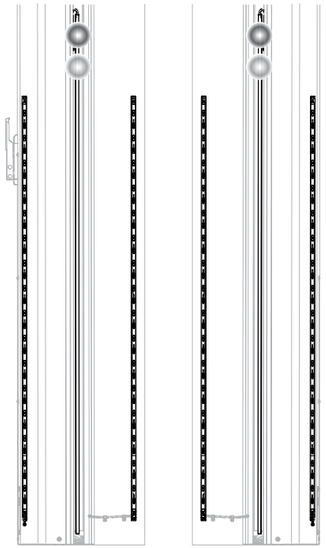
Do This *Result*

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:

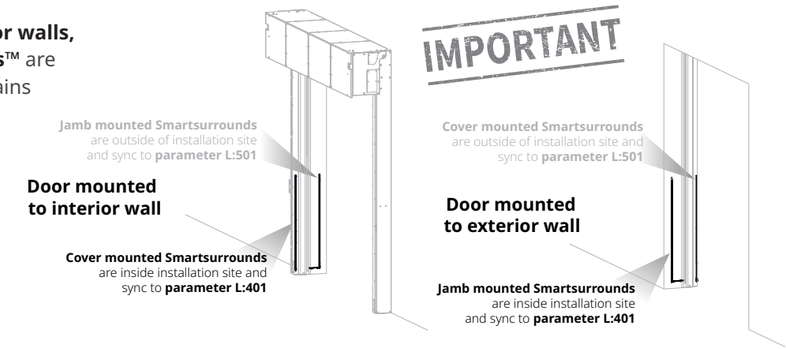
until the setting is saved

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.

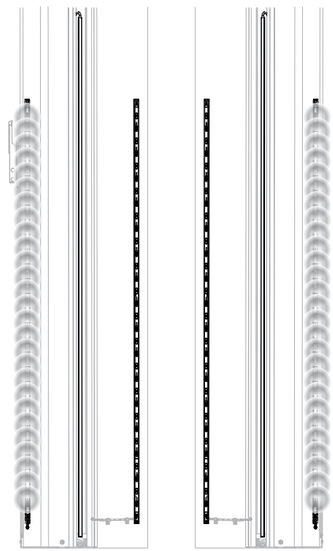


Do This *Result*

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:

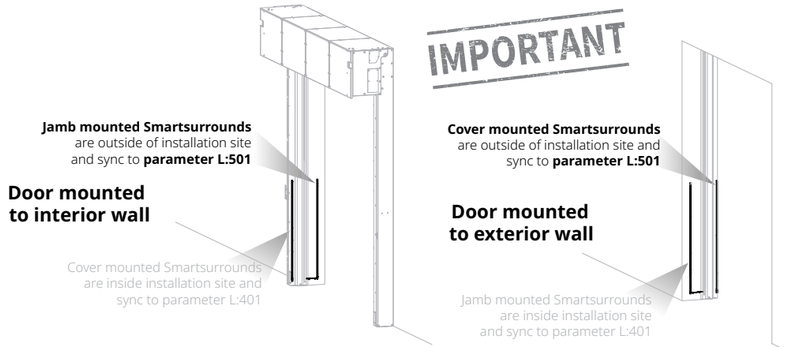
until the setting is saved

5 The controller moves to parameter L:501.

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

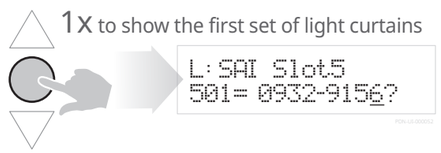
On doors that are mounted to **interior walls,** the **jamb mounted SmartSurrounds™** are considered to be the outside light curtains and are assigned to parameter L:501.

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.



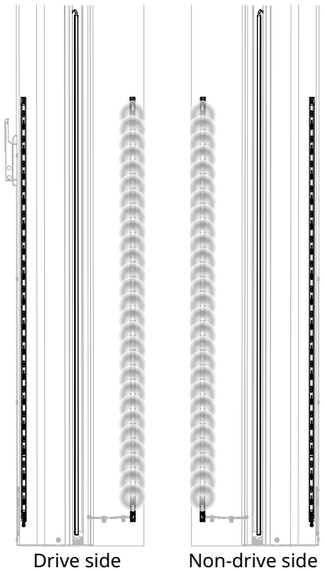
Do This *Result*

1 1x to show the first set of light curtains



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.

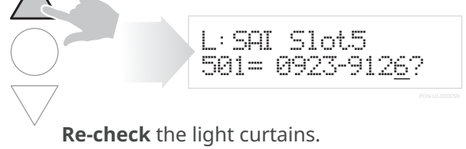


Drive side Non-drive side

Do This *Result*

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

1x to show the next set of light curtains

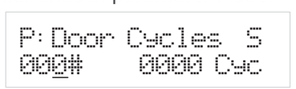


Re-check the light curtains.

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

until the setting is saved

5 The controller ends at parameter P:000.



Next: set limits

Do This *Result*

1 until the "Syncron." screen displays

Scrolling message:
Hold Reset button if position OK

2 1x to start sequence

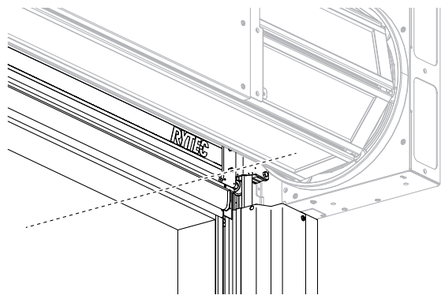
Scrolling message:
Hold Reset button if position OK

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

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

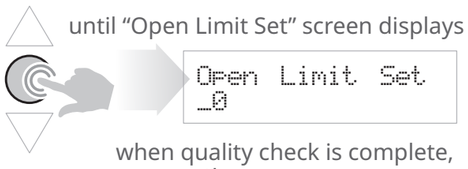
until open height is correct

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



Do This *Result*

4 until "Open Limit Set" screen displays



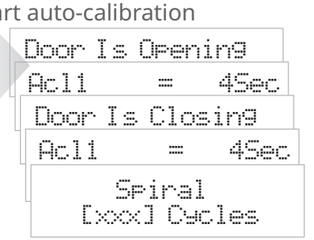
when quality check is complete, you see these screens:

Scrolling message:
Press Close button to begin

5 1x to start. The door panel closes.

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

6 1x to start auto-calibration



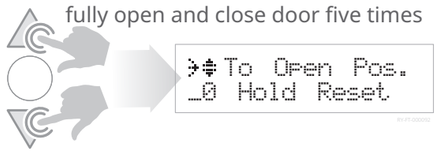
- The door opens and closes automatically **up to 12 times**.
- The controller automatically sets the close limit position while the door calibrates.
- When calibration is complete, the door switches to Run mode.

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 36.*

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.

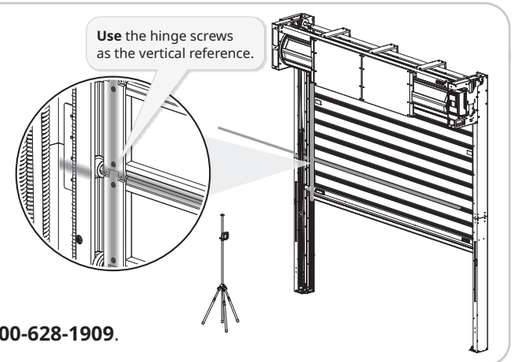
Yes: no action is needed.

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



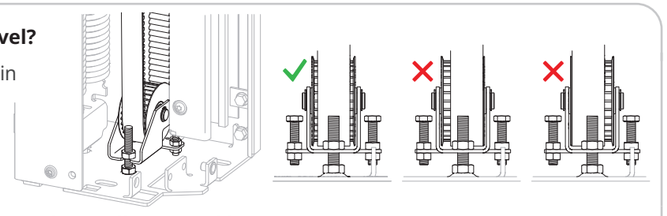
Yes: no action is needed.

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 **Are the drive belt pulley assemblies level?**

Test: make sure the secondary drive belts in both side columns are centered in the pulley assemblies after the door has been opened and closed several times.



Yes: no action is needed.

No: follow the steps in ***How to level the baseplate pulley assembly***.

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

Test: pull down the lever to 90° 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.***

5 **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 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.

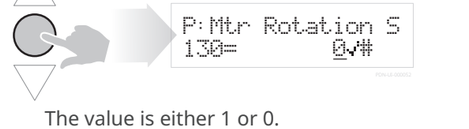
Next: navigate to parameter P:130 and change the value

Do This *Result*

1 until parameter displays

Value is either 0 or 1.

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



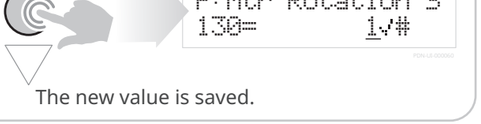
The value is either 1 or 0.

Do This *Result*

3 press either arrow to change value

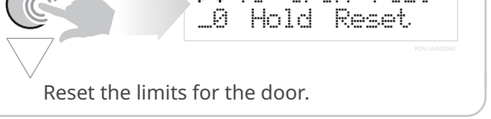
Chage the 0 to 1, or change the 1 to 0.

4



The new value is saved.

5 until the “To Open Pos.” screen displays



Reset the limits for the door.

How to 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.

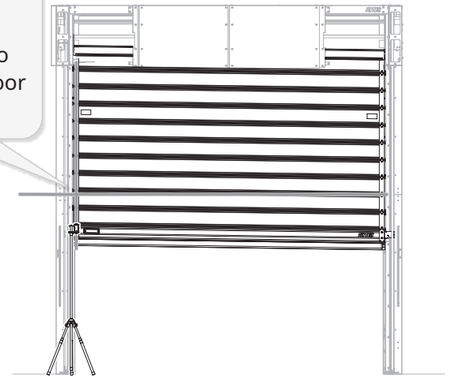
Contact with high-voltage wires, or the door being activated unexpectedly, can cause death or serious injury.

1

Laser level

IMPORTANT

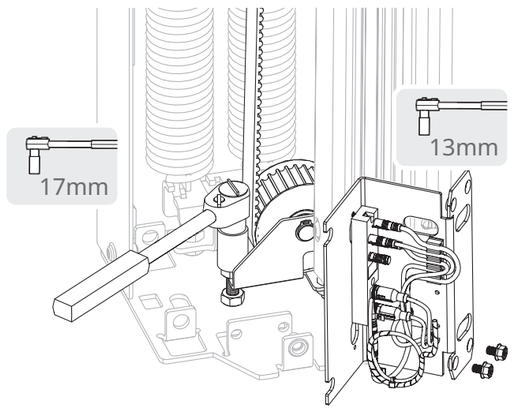
Always adjust the belt to **lower** the side of the door panel that is **higher.**

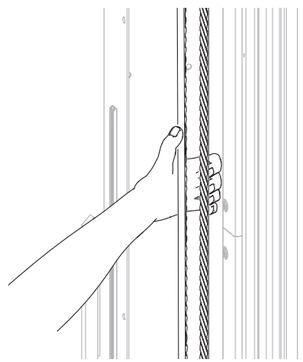


2

Loosen the top front nut on the baseplate pulley assembly until there is noticeable slack in the secondary drive belt.

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

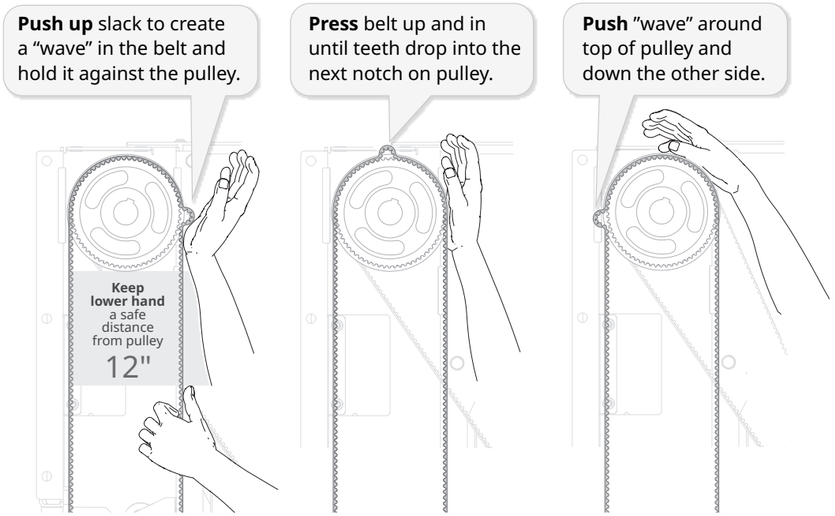




3

In the head assembly, **"jump" the secondary drive belt** one notch in the pulley.

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



4

Laser level

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.

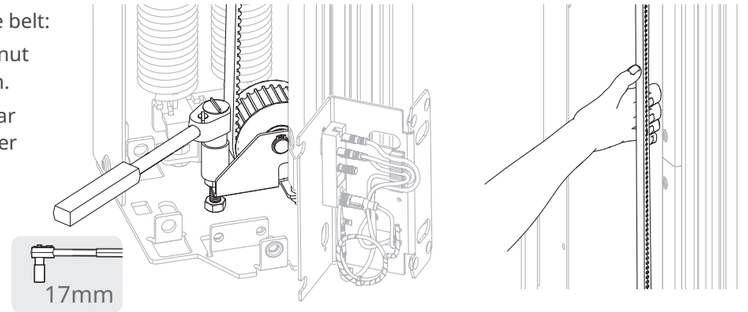
5

To reset the tension on the belt:

1: **Tighten** the top front nut to increase the tension.

2: **Press** the front and rear legs of the belt together to test tension.

3: **Adjust** the height of the top nut as needed to reach the correct tension.



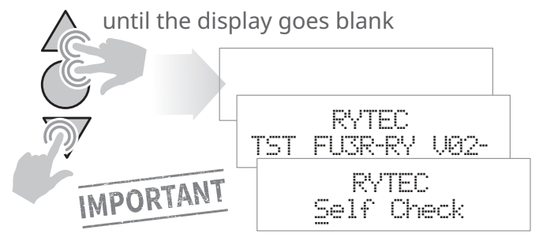
6

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.

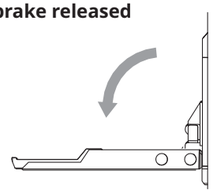
- **Press and hold** all three buttons until the display goes blank.
- **Release the buttons.** You see `Self-Check` or the system software versions number.



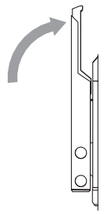
How to adjust the proximity sensor

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.

Lever down: brake released



Lever up: brake reset



Controller

Emergency Stop F211 E-Stop Ext1	Door is Stopped	Emergency Stop F211 E-Stop Ext1
	No action is needed	**Reset the sensor**

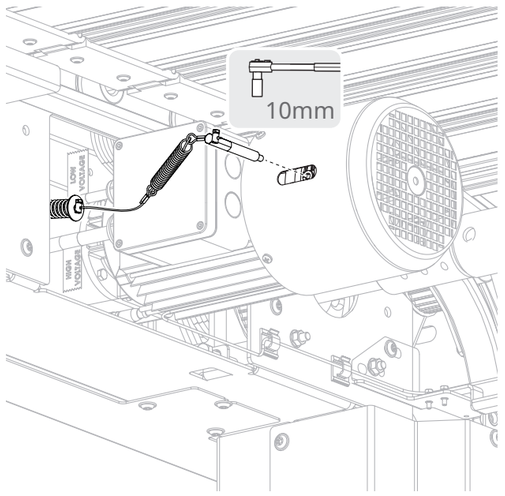
⚠ WARNING

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

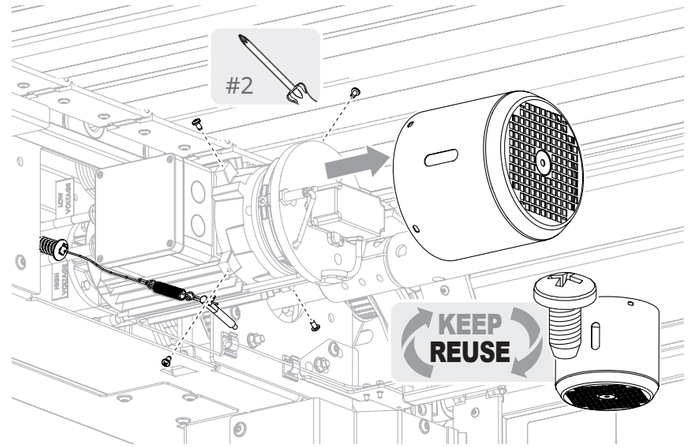
Contact with high-voltage wires, or the door being activated unexpectedly, can cause death or serious injury.

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.

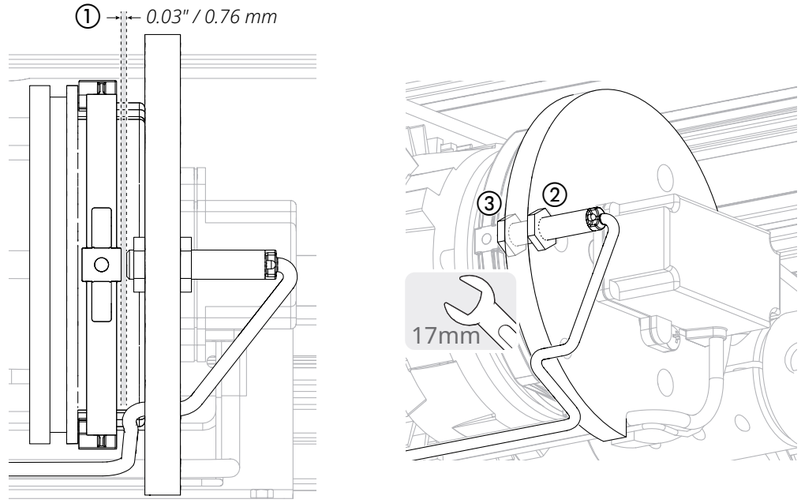


2 **Remove** the four screws and the bottom cover of the motor.



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.



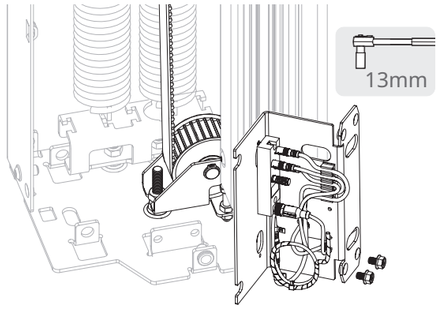
4 **Test** the manual brake release again.

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 level the baseplate pulley assembly

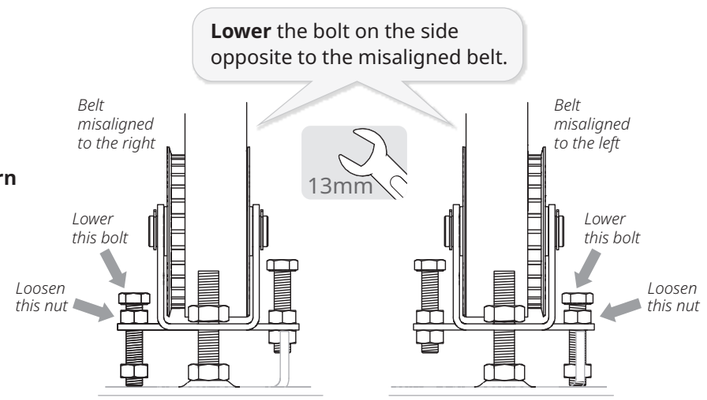
1 **Loosen** the screws and **move** the CAN bracket out of the way to access the pulley assembly.



2 **Loosen** the top nut of the bolt on the side opposite to the side the belt favors.

Lower the bolt until it touches the baseplate.

Turn the bolt **one more half-turn** to raise that side of the pulley assembly, then test the door.

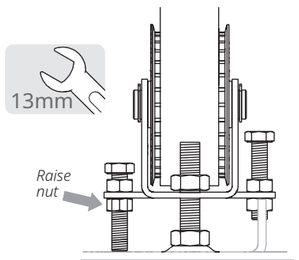


3 **Manually raise and lower** the door three (3) times.

4 **If the belt is not centered in the pulley assembly:** repeat these steps and retest.

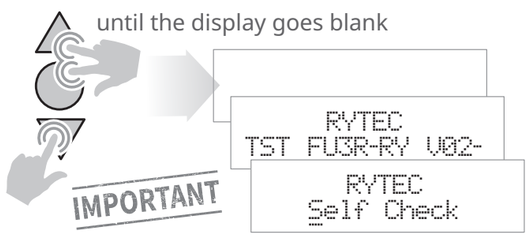
If the belt is centered: raise the lower nut to lock the assembly in place.

Reinstall the CAN bracket when you are done.



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

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



How to manually reset the close limit (optional)

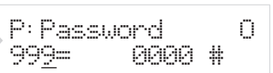
First: set the controller to Parameter mode and access Service level parameters

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.

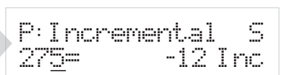
6 1x to move cursor to left (parameters)

You can now go to parameter 275.

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

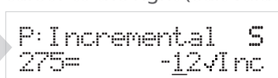
Do This *Result*

1 until parameter displays



The default value is -12 (default at.

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



You can now change the value.

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

Do This *Result*

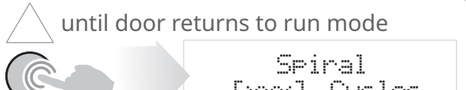
3 until new value displays

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

4 until question mark changes to checkmark (value saved)

The new value is saved.

5 until door returns to run mode

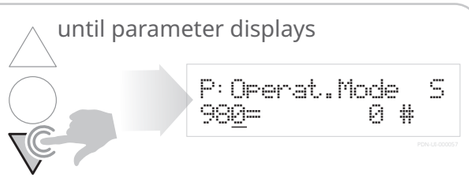


How to finish testing the door and the safety features

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

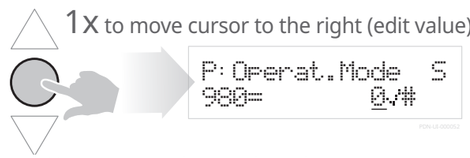
Do This *Result*

1 until parameter displays



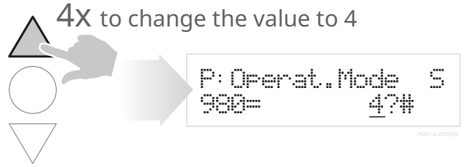
The default value is 0.

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



You can now change the value.

3 4x to change the value to 4

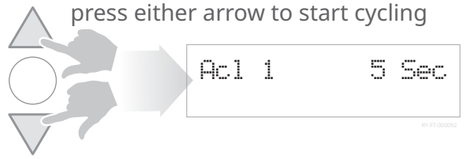


4 until question mark changes to checkmark (value saved)

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.

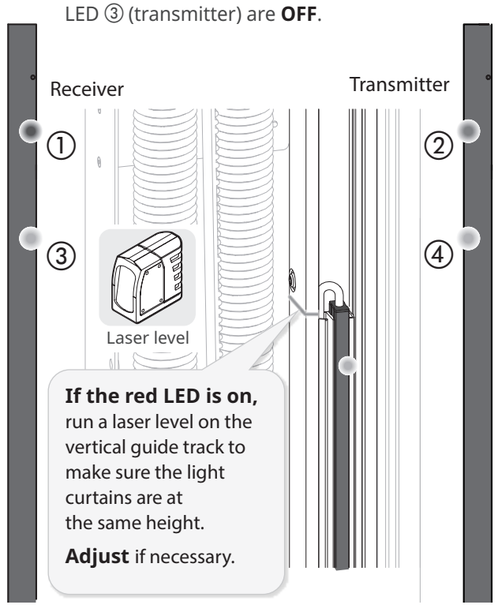
IMPORTANT

- **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**.



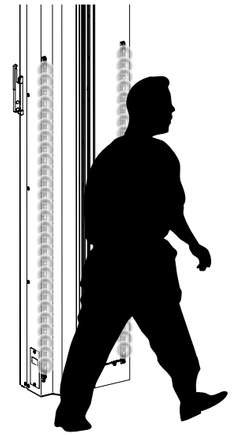
If the red light and yellow lights are on, or if you see a different combination of lights, call Rytec technical support at **800-628-1909**.

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.

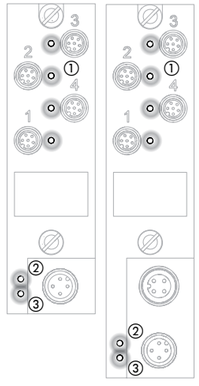


6 **LEDs on the CAN repeaters and distributor indicate if the system is working correctly**

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).

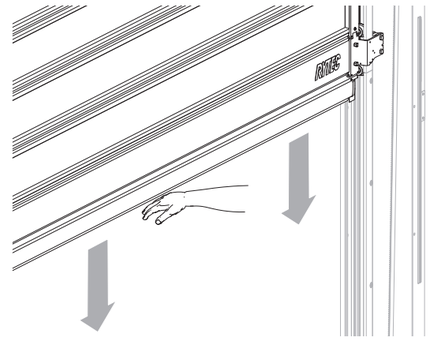


Contact technical support if you do not see this.

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.

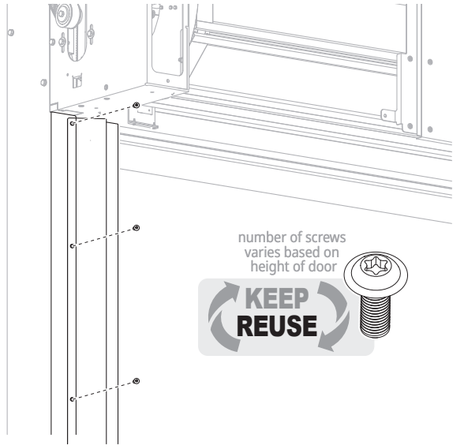
Return to run mode.

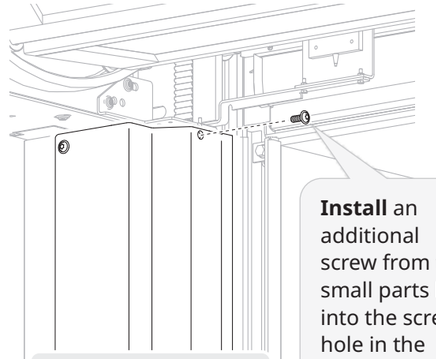
9 **Activate** the door using each activating system at least three times per system.

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.

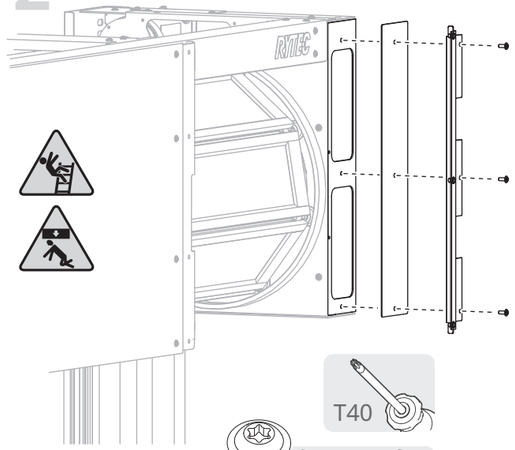


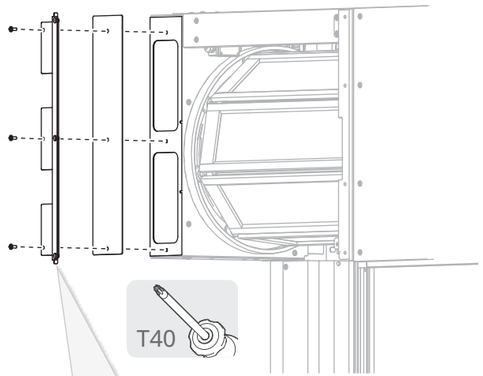


Install an additional screw from the small parts box into the screw hole in the corner bracket.

SMALL PARTS
01900820
2

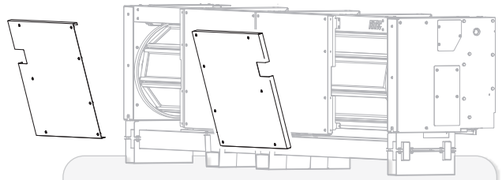
2 **Reinstall** both console covers.





If the door has a preinstalled front hood cover, **reinstall** the front spacer brackets in front of the console covers.

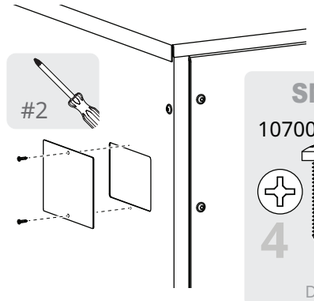
3



If the door has a preinstalled front hood cover, **reinstall** the front panels.

Locate the display covers and hardware in the small parts box and **install.**

If the door has a preinstalled flat top hood cover, **reinstall** the top panels.



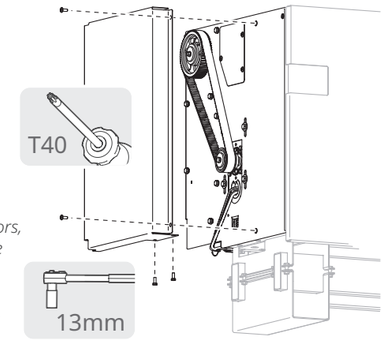
SMALL PARTS
10700100
4
Display covers

Notes:

Number of panels varies based on size of door.

-S and -S/R doors have both top and bottom front spreaders.

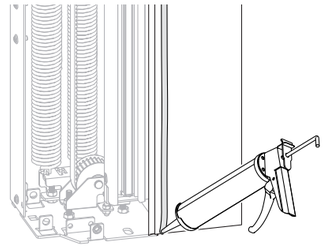
4 **Reinstall** the belt guard cover.



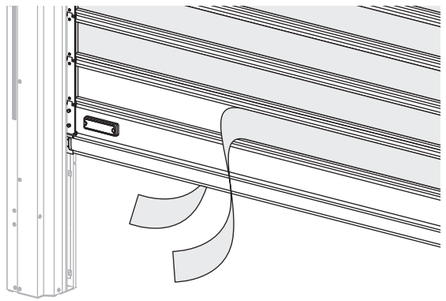
Note: *on -S and -S/R doors, all hardware requires a T40 torx screwdriver.*

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

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



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



⚠ CAUTION

Film can release a static charge when removed.