PredaDoor® NXT® 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

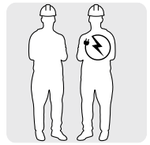
- **Do not install any Rytec product until** you have read and understood the safety information and instructions. Make sure all applicable regulations are observed and obeyed at all times.
- **Observe these precautions** while installing the door:
  - Only trained, qualified and authorized individuals 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

Installer's responsibilities

It is the responsibility of **the installer** to:

- **Evaluate** the mounting surface for the door at the installation site.
- **Verify** that the wall material is strong enough to support the weight of the door (door panel, side columns, head assembly and all anchors).
- **Select and use** the correct anchoring method and hardware based on site conditions.
- **Follow** the instructions in this manual and all required safety practices.

Contact Rytec technical support before you begin the installation if you have questions.

Electrician's responsibilities

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

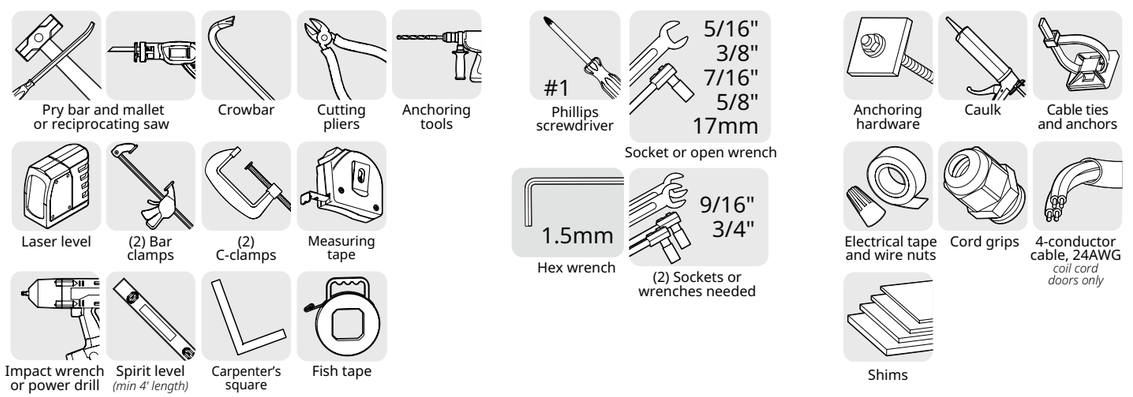
⚠ WARNING

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.

Required tools and supplies



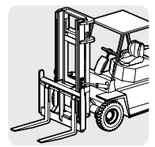
Requirements – Site Conditions

- 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 lb. lift capacity
  - Minimum height ability: door height + 12"
  - 48" wide fork
  - Side shift capability

⚠ WARNING

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

- **Scissor lift** that meets the following specifications:
  - Can hold both installers
  - Minimum height ability: door height

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

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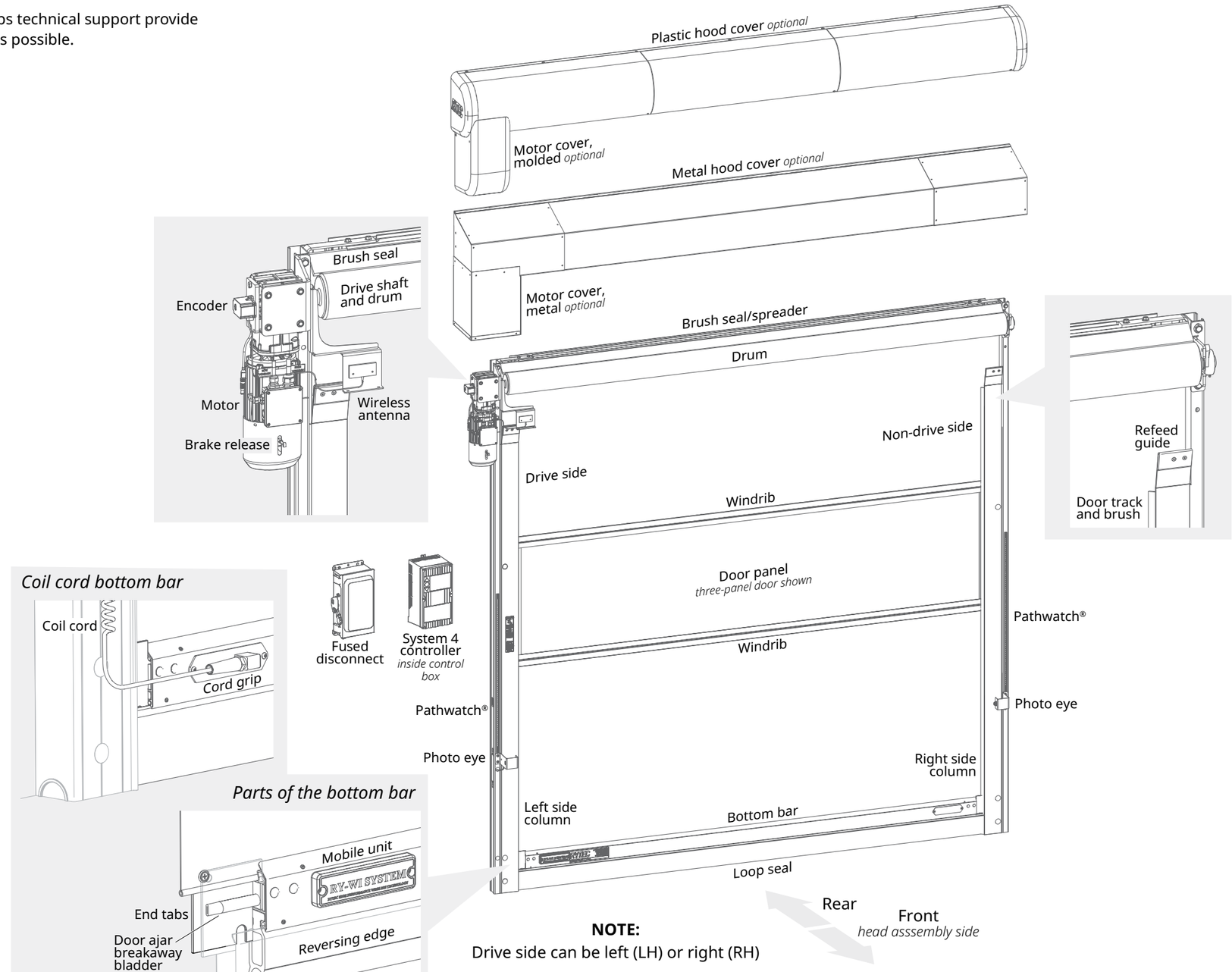
Terms used by Rytec to describe the parts of the door

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

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



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

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Call **800-628-1909** or email **rytec.helpdesk@nucor.com**
if you have any questions during this installation. See previous page for list of Rytec terms for the parts of the door.

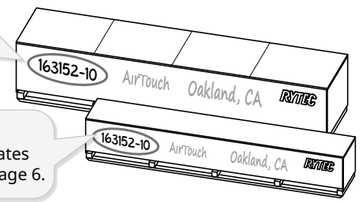
How to uncrate the door and inspect the site

1 Open the crate(s) and check the contents. Make sure all serial numbers match the number on the crate and all visible parts have no shipping damage.

IMPORTANT

Using parts labeled with different serial numbers in the same door **voids the warranty** for all doors in the installation.

Each PredaDoor arrives in a single crate. Check the unique serial number on crate against labels on all items inside.

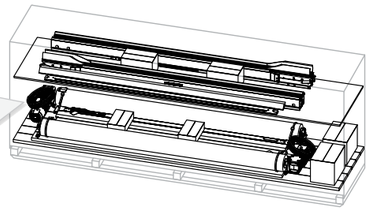


A second, smaller crate with the same serial number indicates the door has a **pullout.** See page 6.

If multiple doors are to be installed at the same site, two doors may be crated together.

Serial numbers will be -010, -020, -030, etc.

DO NOT mix components from different doors, even if they are crated together.

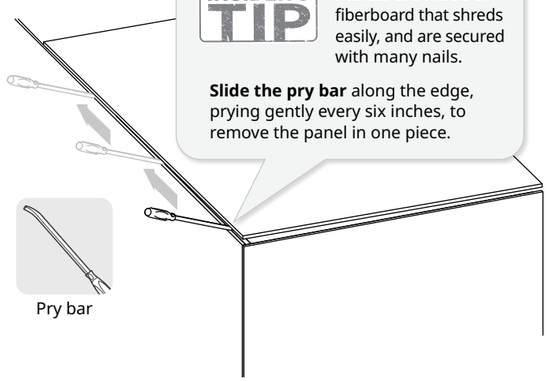


To start: remove ONLY the top panels.
Do not remove any other panels until the inspection is complete.

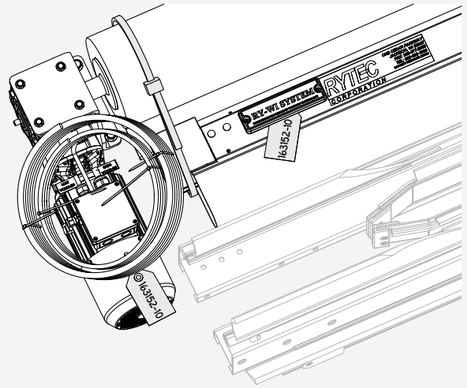
INSIDER'S TIP

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.



Pry bar



Head assembly: serial number label is attached to motor or mobile unit/coil cord in bottom bar.

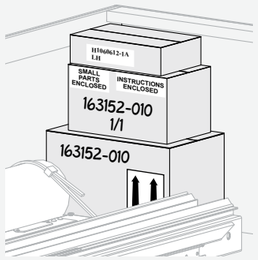
Check for damage to door panel and drum.

DO NOT cut the two tiedowns around the door panel until after the assembly has been lifted and secured in place.

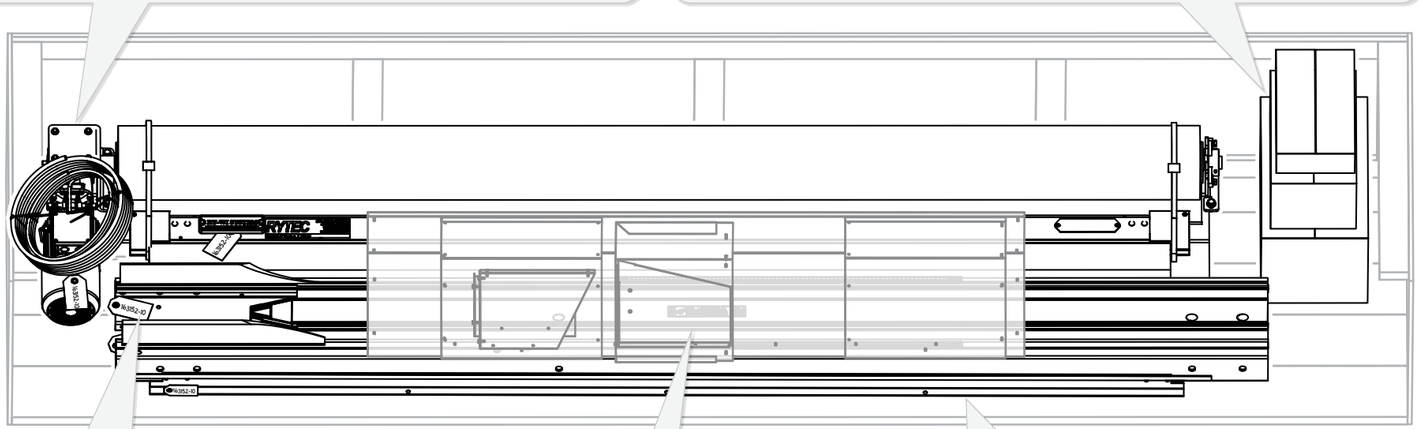
Boxes:
Encoder is labeled H1060612-1A with wireless antenna, H1060618-1 without (coil cord).

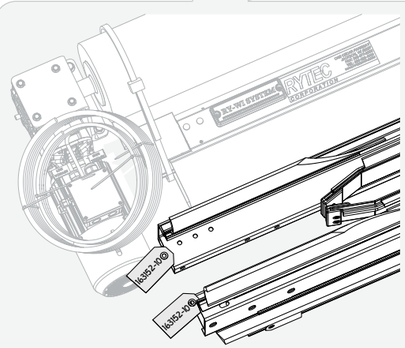
Spare parts box(es) *(numbered)* has serial number written on side.

System 4® controller (double arrows) has serial number written on side.



Open boxes, check contents *(see next page)*, then locate and open the red documents envelope in the small parts box and get the object list (also called the cut sheet). Check serial numbers on both.





Side columns: serial number label is attached at top of each column.

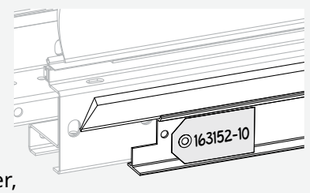
Check for damage.

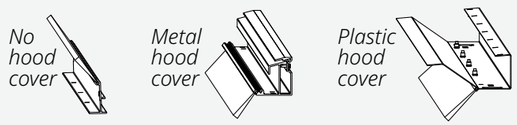
Hood cover: *Can be metal or plastic. Optional.*

Brush seal: serial number label is attached near top.

Check for damage.

Seal is different based on whether door has no hood cover, metal hood cover or plastic hood cover.

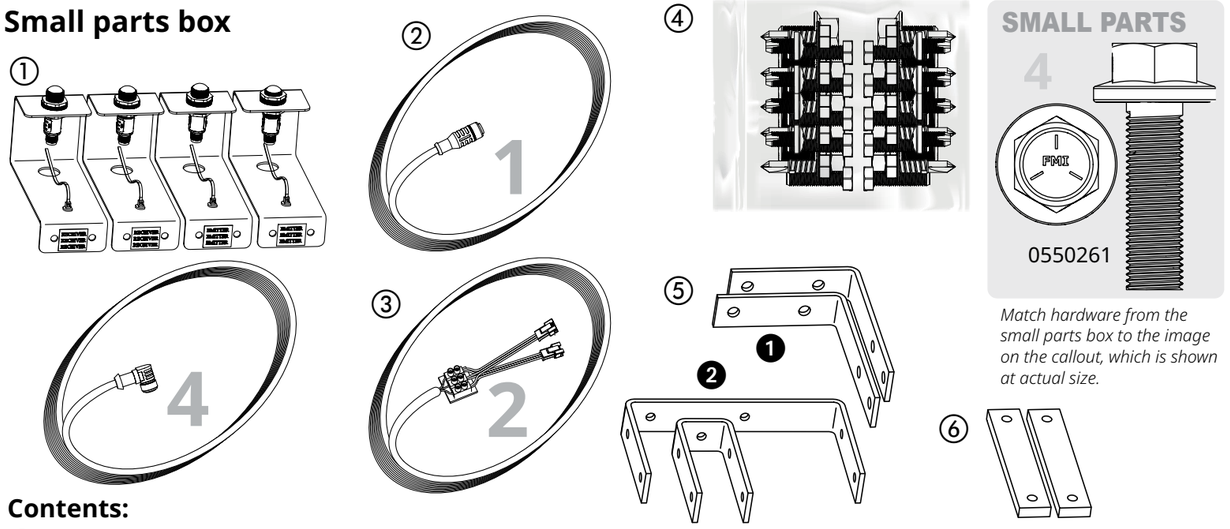




2 Open the boxes and check the contents. Also check the parts of any included hood cover.

NOTE: there may be optional accessory boxes in addition to the controller, encoder and small parts box.

Small parts box



Match hardware from the small parts box to the image on the callout, which is shown at actual size.

Contents:

① Four (4) photo eyes in mounting brackets, and four cables with 90° female M12 connectors (0012053)

IMPORTANT **MAKE SURE** the box holds two transmitters (emitters) and two receivers.

② One (1) encoder cable with straight female M12 connector (00141086)

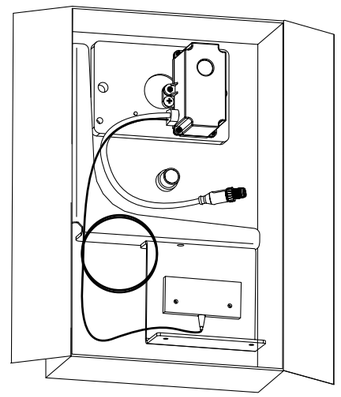
③ Two (2) Pathwatch® cables with terminal block and double quick connect connectors (1060496-0)

④ Hardware bag (hardware will be called out when used)

⑤ Mounting brackets for rear brush seal/rear spreader: either ❶ for door with no hood cover or plastic hood cover, or ❷ door with metal hood cover.

⑥ *(Optional)* Two (2) spacer bars used on larger doors. Placed between head assembly and side columns during installation.

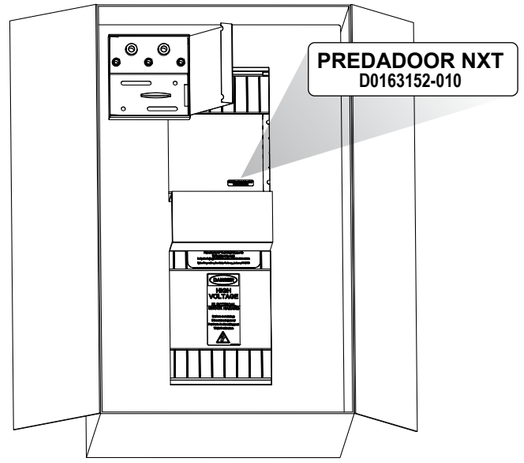
Encoder box



Contents: the encoder on its mounting plate, encoder magnet, and mounting hardware.

If the door is wireless, the wireless antenna and mounting bracket are also in the box, as well as hardware.

Controller box

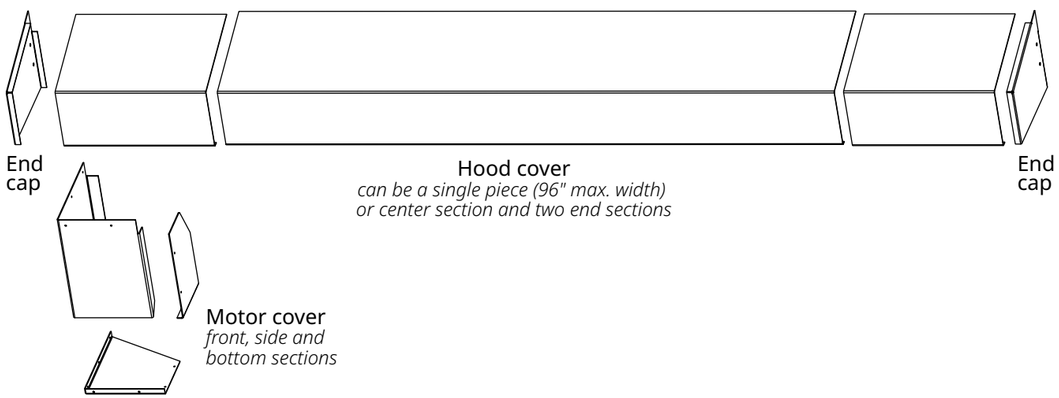


Contents: the controller and the box containing the ferrite filters.

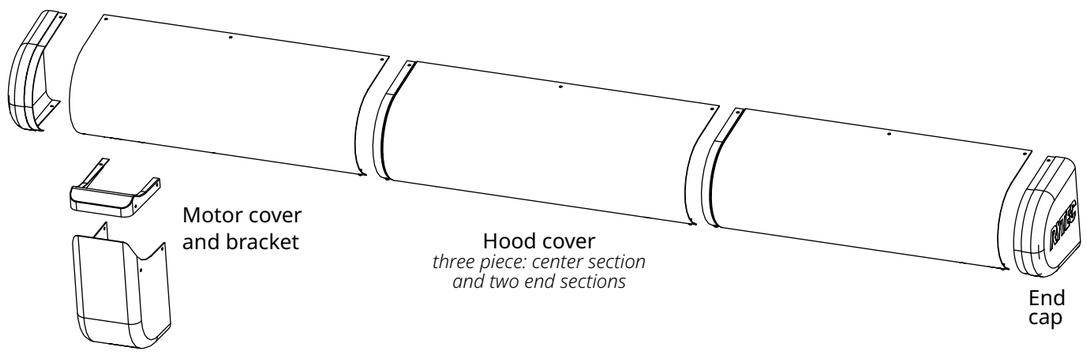
Check the door serial number on the label attached to the user interface on the controller.

Hood covers (optional) These parts are in addition to the rear spreader and mounting brackets.

Metal hood cover



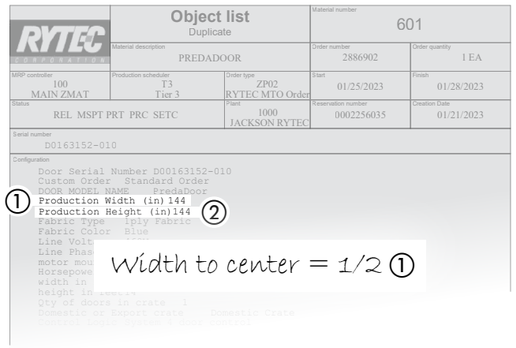
Plastic hood cover

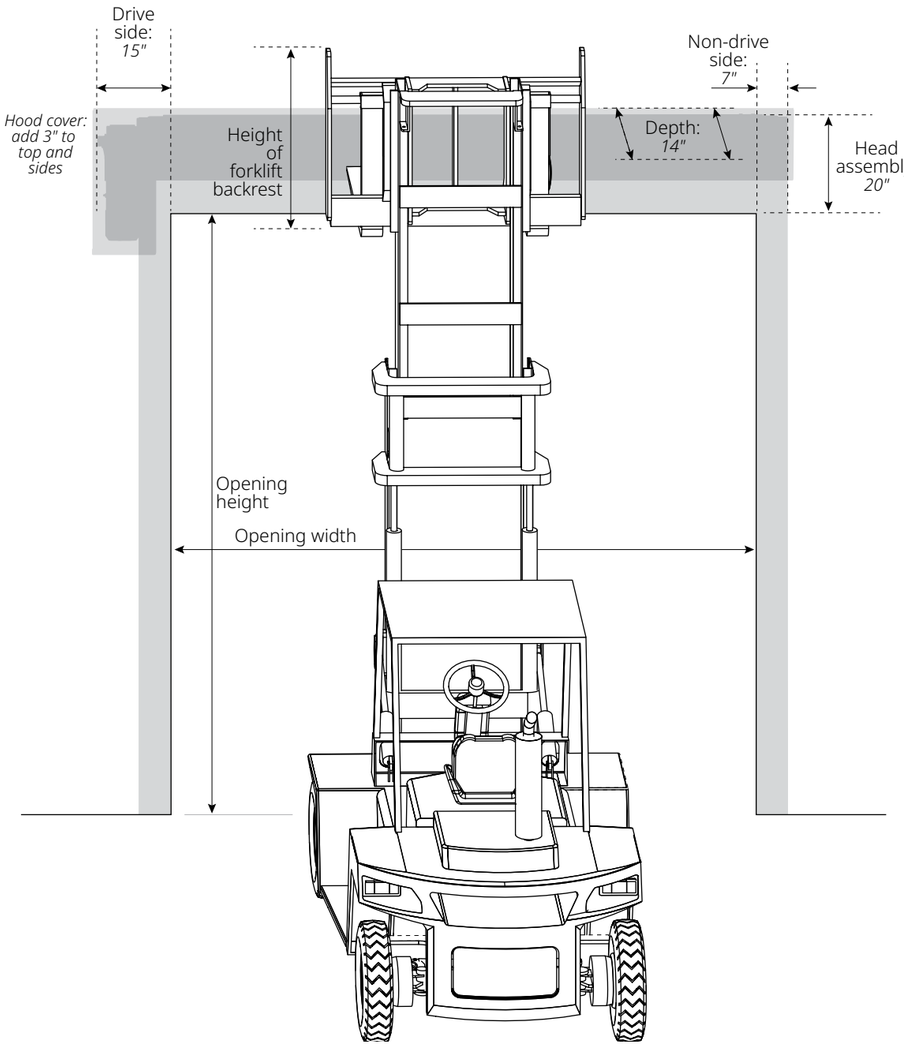


3 Check the measurements and clearance around the door opening.

Make sure the door will fit in the installation space without hitting obstructions such as electric conduit, HVAC ducting, gas lines, or other existing structures, when all parts and accessories have been installed, conduit has been run, and the controller has been wired.

Tape Measure





1. **Locate** the Production Width ① and the Production Height ② on the object list.
2. **Measure the door opening** height and width to make sure they match the Production Width ① and Production Height ② on the object list.
3. **Calculate the width to center.** Divide the Production Width ① by 2. **Write the result** on the object list. Use it when you center the door.
4. **Check the horizontal clearance** on both sides of the door opening.
   - Drive side = min. 33"
     (15" for head assembly and min. 18" for controller and conduit)
   - Non-drive side = 7″
5. **Check the vertical clearance** above the door opening = 20".
6. **Check the lateral clearance** in front of the door = 14″.

NOTE: *add 3" clearance in all directions if the door has a hood cover.*

7. **Make sure there is enough space to lift the door.**
   - The head assembly is lifted from the bottom.
   - There should be **enough clearance above the door** opening for the full height of the forklift backrest.

Call Rytec technical support at 800-628-1909 or email rytec.helpdesk@nucor.com
if you have any questions about the measurements or clearance at the site.

4 If all checks are good, **finish** uncrating the door.

Starting at the center, **remove** the crossbars, then **remove** the front and side panels.

Mallet and crowbar

or

Reciprocating saw

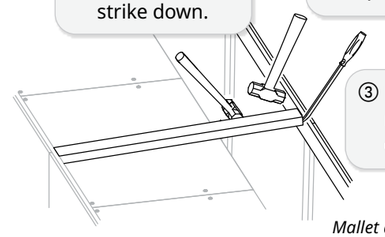
⚠ CAUTION

Flatten exposed nails as you go.

Keep hands clear while striking or cutting.

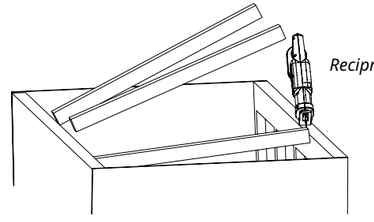
① **Strike across** the crossbar to loosen nails. **Do not** strike down.

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



③ **Pry up** to remove crossbar.

Mallet and pry bar

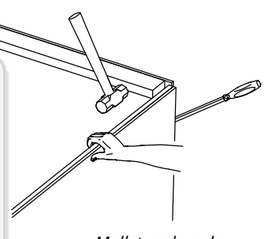


Reciprocating saw

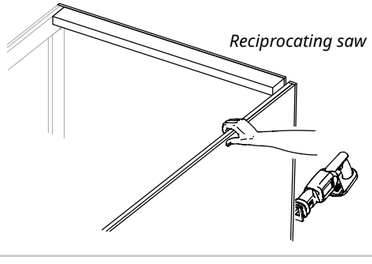
End panels are nailed into the side panel.

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

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



Mallet and pry bar



Reciprocating saw

How to install pullouts

Pullouts...a metal framework for mounting the door that extends out from the wall around the door opening...are used at installation sites where the PredaDoor must be offset from the wall.

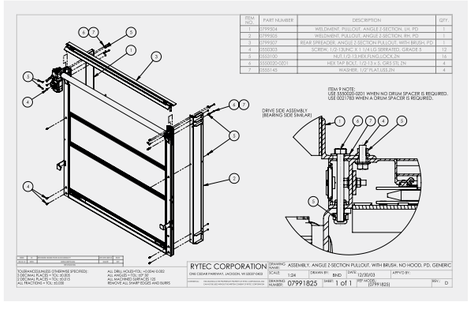
Examples include:

- The PredaDoor is being installed in front of a security door which will remain in place, instead of being replaced.
- There are obstructions above the door opening, such as HVAC ducting, gas lines, or ceiling braces, which cannot be moved.

IMPORTANT

Pullouts are **custom-engineered for each installation site,** and often have unique features. This is a general introduction and does not cover all parts you might find in the crate.

Locate the **engineering drawing** for the pullout in the **red envelope**. This shows all parts for the pullout and how they should be installed.



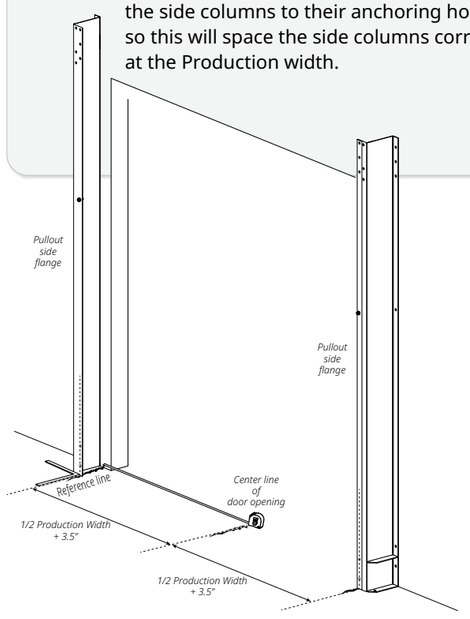
Call **Rytec Technical Support** if you have questions before beginning the installation.

Follow the same steps for centering, plumbing and anchoring the flanges that you use for the side columns.

Anchor the flanges first.

To space them correctly, use the mounting holes for the side columns as the reference mark, and measure **half (1/2) of the Production Width plus 3.5"** in each direction from the center line to place the marks.

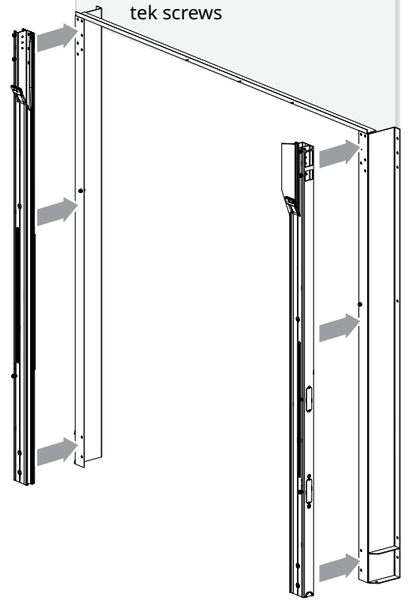
3.5" is the distance from the inside edge of the side columns to their anchoring holes, so this will space the side columns correctly at the Production width.



Basic pullout features a pair of side flanges and a rear extension of the brush seal.

Anchor holes in the side columns **align with mounting holes** in the flanges.

Brush seal extension is attached using supplied tek screws



After all points are anchored, two tap bolts are added to the side column on each side.

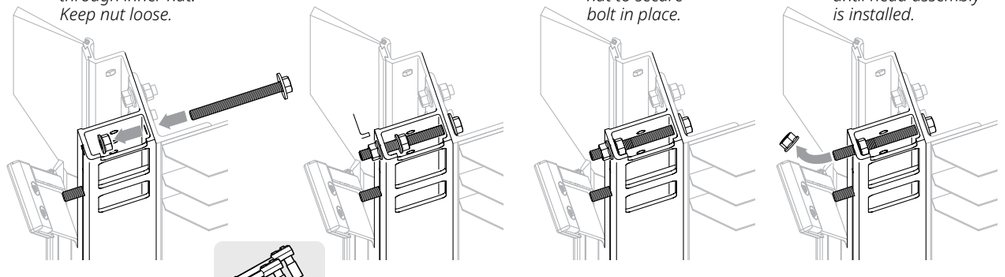
They secure both the side columns and the head assembly.

① *Thread 5" tap bolt through inner nut. Keep nut loose.*

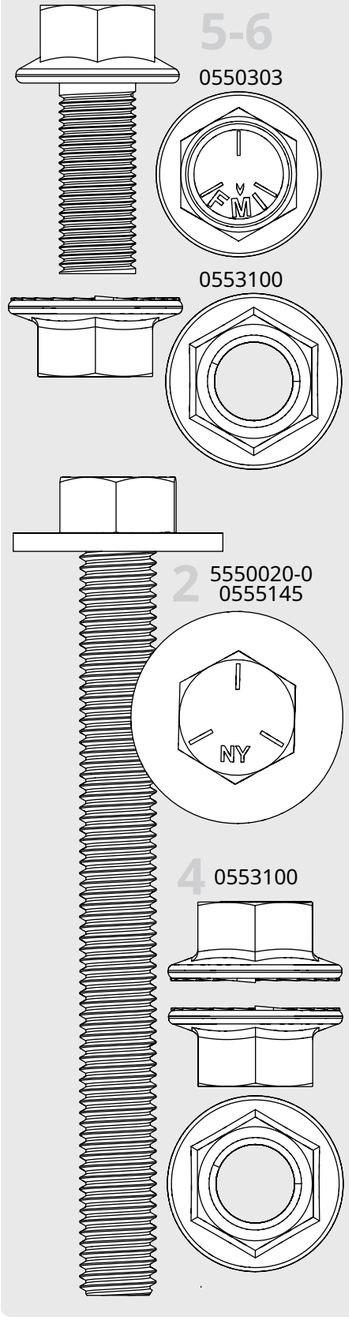
② *Tighten outer nut.*

③ *Tighten inner nut to secure bolt in place.*

④ *Remove outer nut until head assembly is installed.*

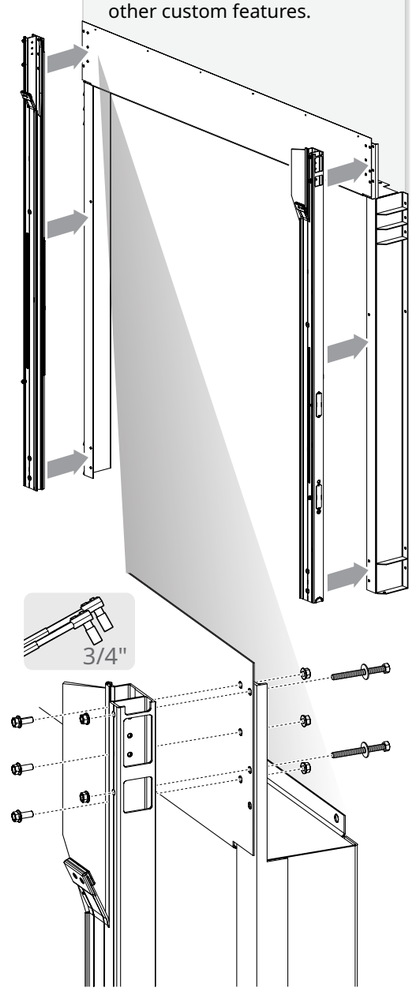


SMALL PARTS



Pullouts may also have a **filler sheet** to create a complete seal behind the door. It is installed between the flanges and side columns.

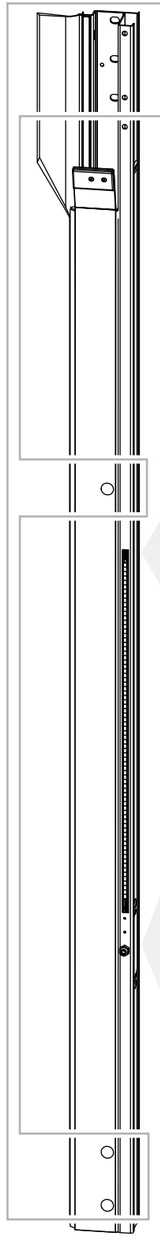
Pullouts may also include integrated brush seals and other custom features.



Filler sheet is installed between flanges and side columns

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

Before you begin: things to know about the side columns

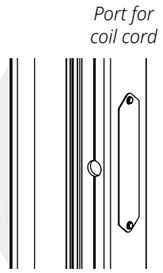


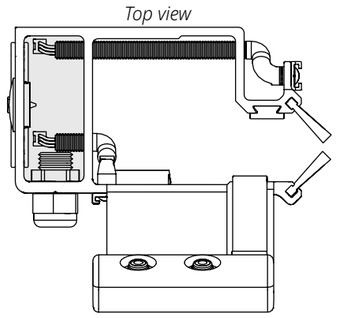
1

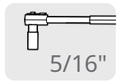
Anchors points

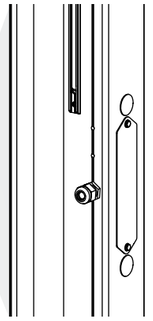
- There are **three anchor holes at the top** of the column, and **two holes at that bottom.**
- On doors taller than eleven feet (11') in height, there is an **additional hole** at the seven foot (7') mark.
- **All anchor holes are 3/4" diameter.**
  All anchor points should be used.
- Install dome plugs (from small parts box) to cover bottom and middle holes after columns are secure.

2









Port for photo eyes and Pathwatch

Side access ports

- In the PredaDoor, cable runs inside a channel in the side columns which is fully enclosed, unlike other doors that have a removable cover.
- You will need fish tape to run cable up the side column.

- There are covered access ports on both side columns, which give access to and allow routing of cabling for the photo eyes and Pathwatch LED strips.
- Coil cord doors also have an access port for the coil cord cabling.
- Holes above and below the access port (1" diameter) can be used to route external devices, such as the rear photo eyes, inside the side columns.

Step 1: find the centerline for the door opening and set the mark for the drive side column

IMPORTANT

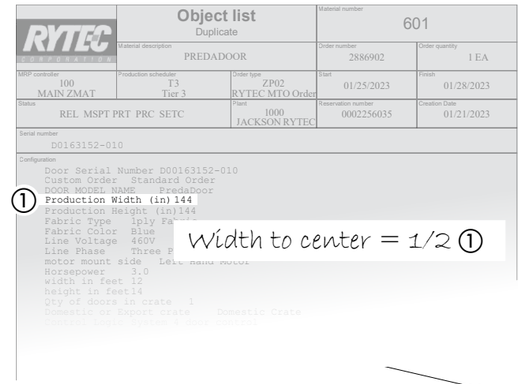
Rytec doors are engineered to be centered in the door opening, so follow all steps even if the width of the door opening and the Production Width match exactly.

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

1

Measuring tape

Carpenter's square

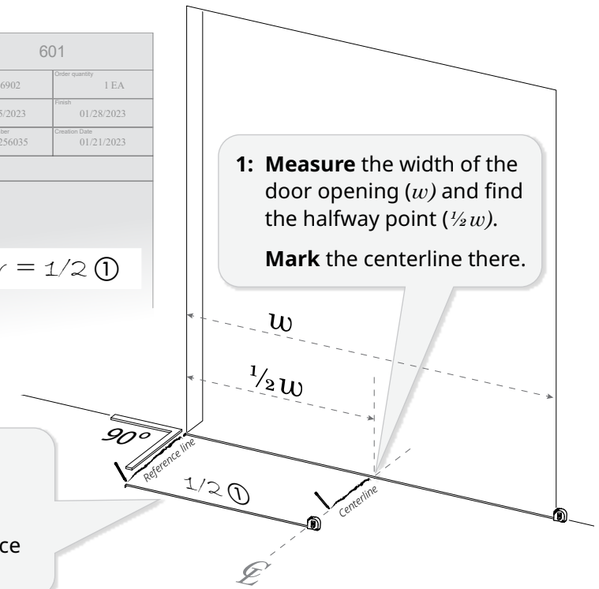


1: Measure the width of the door opening (*w*) and find the halfway point (*½ w*).

Mark the centerline there.

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

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



Step 2: Plumb and level the site, then install and plumb the side columns

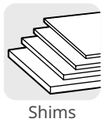
1

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

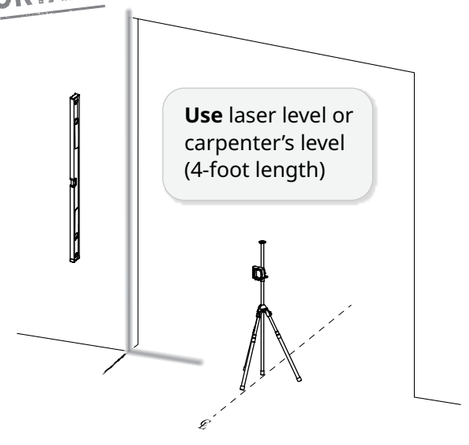
IMPORTANT To prevent column from bowing, shim as needed **at each anchor point.**

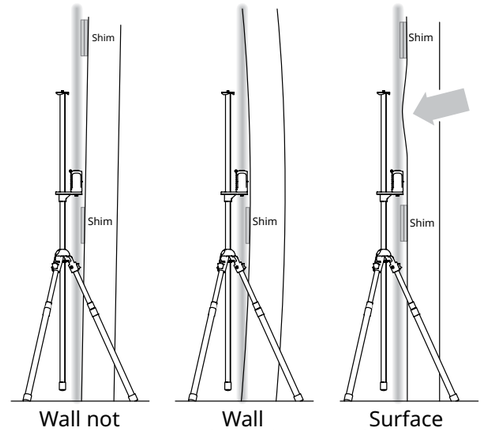
Laser level

Carpenter's level



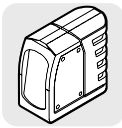
Shims

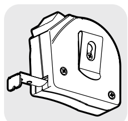


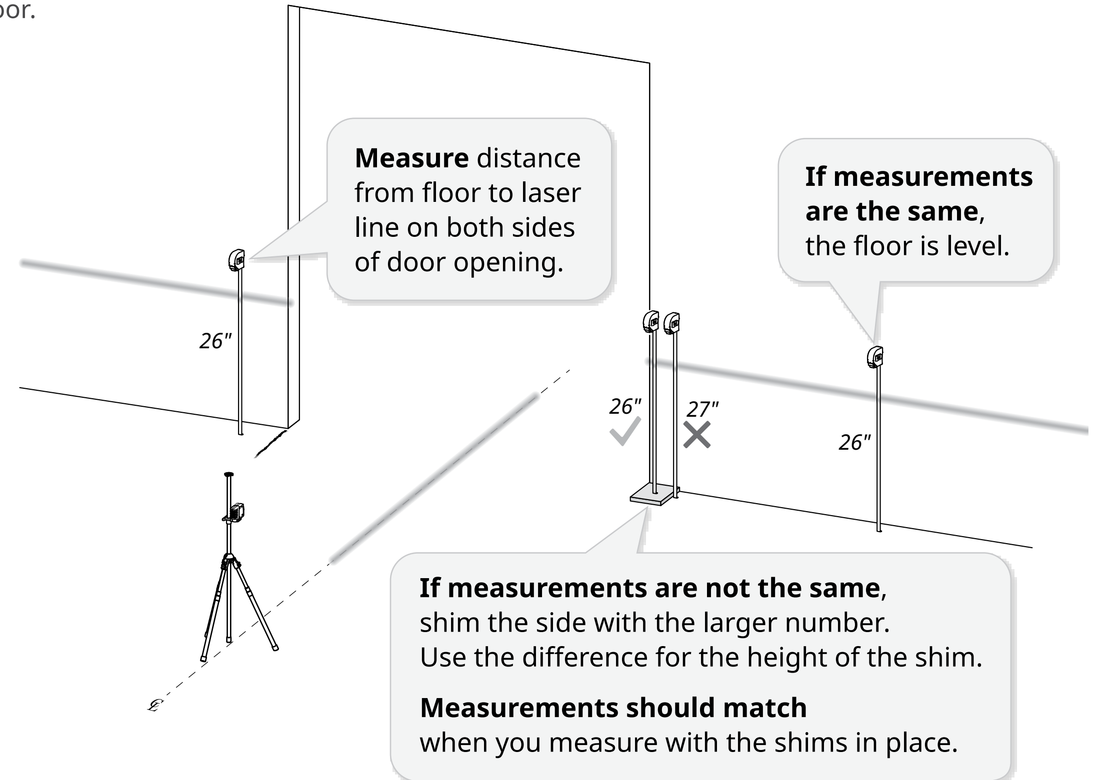


2 Level the floor.

Level the floor.


Laser level


Measuring tape



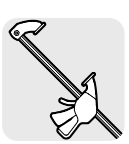
3

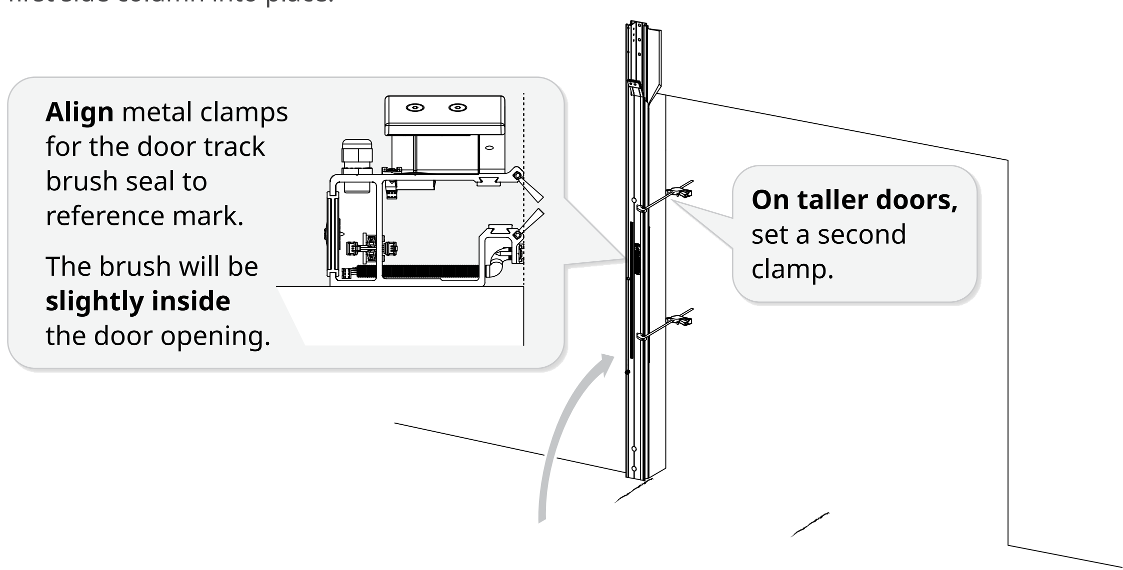
If the floor is level, install the drive side column first.

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

4

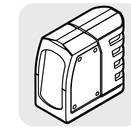
Clamp the first side column into place.

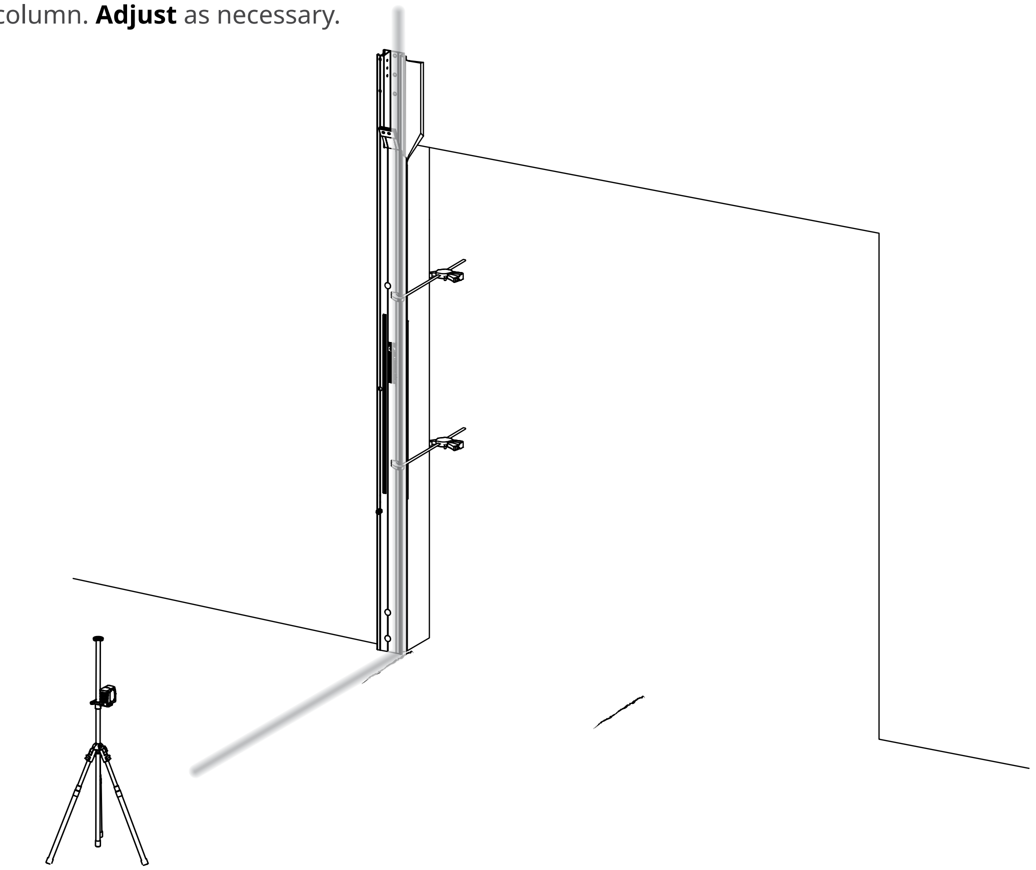

Bar clamp



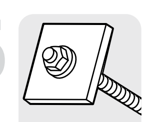
5

Plumb the side column. **Adjust** as necessary.


Laser level



6


Anchoring hardware

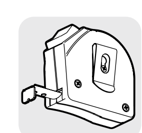
Anchor the first side column to the wall at **all anchor points**.

Set anchors tight. **Remove** clamp.

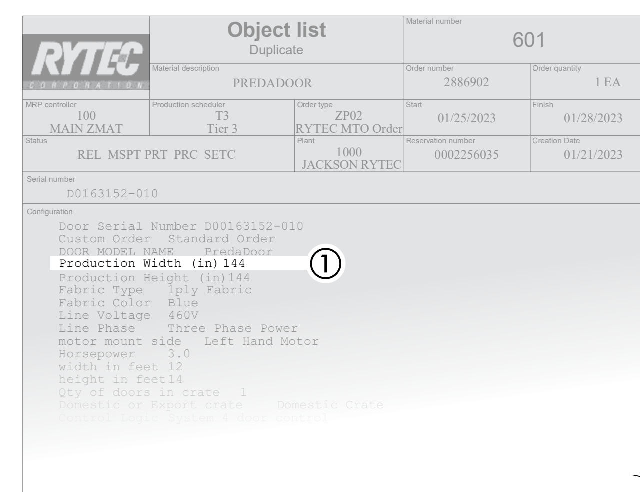
IMPORTANT **Make sure** you have read *Before you begin: things to know about the side columns* on page 7 before you start.

7

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


Measuring tape

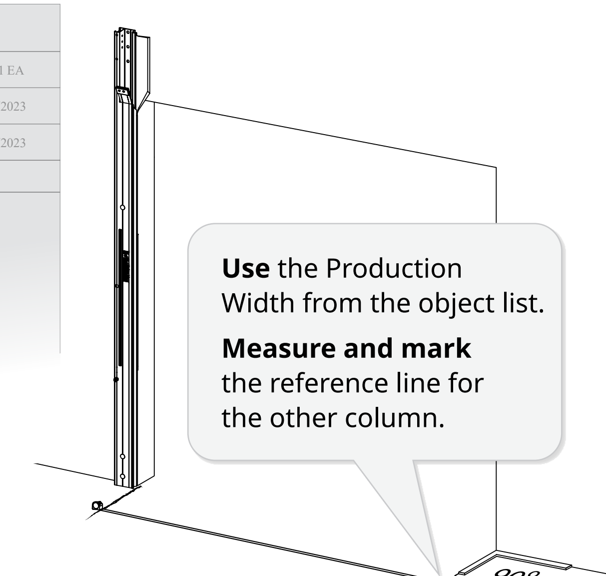

Carpenter's square


RYTEC CORPORATION

Object list Duplicate		Material number 601	
Material description: PREDADOOR		Order number: 2886902	Order quantity: 1 EA
MRP controller: 100 MAIN ZMAT	Production scheduler: T3 Tier 3	Order type: ZP02 RYTEC MTO Order	Start: 01/25/2023
Finish: 01/28/2023			
Status: REL MSPT PRT PRC SETC	Plant: 1000 JACKSON RYTEC	Reservation number: 0002256035	Creation Date: 01/21/2023

Serial number
D0163152-010

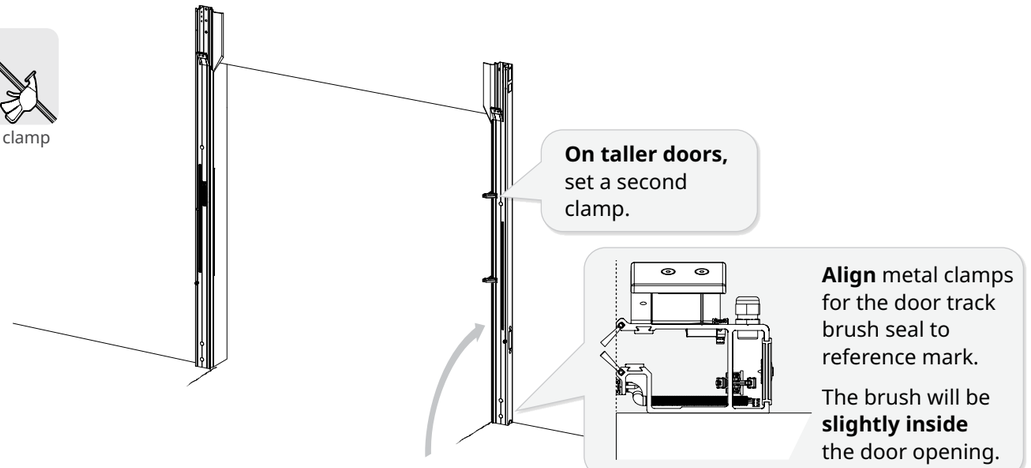
Configuration
Door Serial Number D00163152-010
Custom Order Standard Order
DOOR MODEL NAME PredaDoor
Production Width (in) 144 ①
Production Height (in) 144
Fabric Type 1ply Fabric
Fabric Color Blue
Line Voltage 460V
Line Phase Three Phase Power
motor mount side Left Hand Motor
Horsepower 3.0
width in feet 12
height in feet 14
Qty of doors in crate 1
Domestic or Export crate Domestic Crate
Control Logic System 4 door control



8

Clamp the non-drive side column into place.


Bar clamp



On taller doors, set a second clamp.

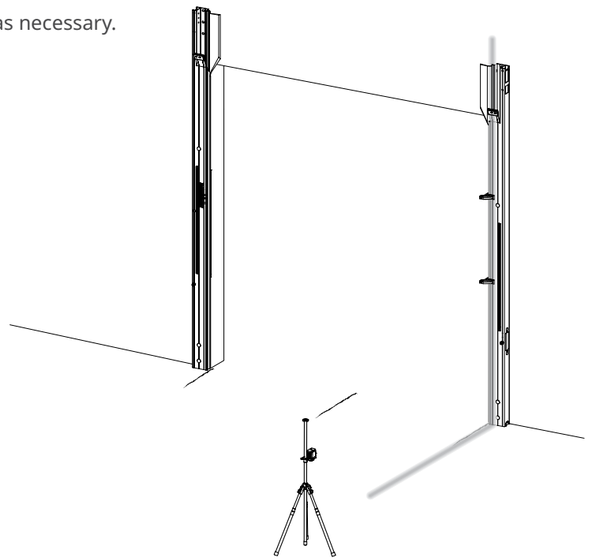
Align metal clamps for the door track brush seal to reference mark.

The brush will be **slightly inside** the door opening.

9

Plumb the non-drive side column. **Adjust** as necessary.


Laser level



10


Anchoring hardware

Anchor the second side column to the wall at **all anchor points**.

Set anchors hand tight so the column can still be adjusted. **Do not remove** clamp yet.

IMPORTANT

Make sure you have read *Before you begin: things to know about the side columns* on page 7 before you start.

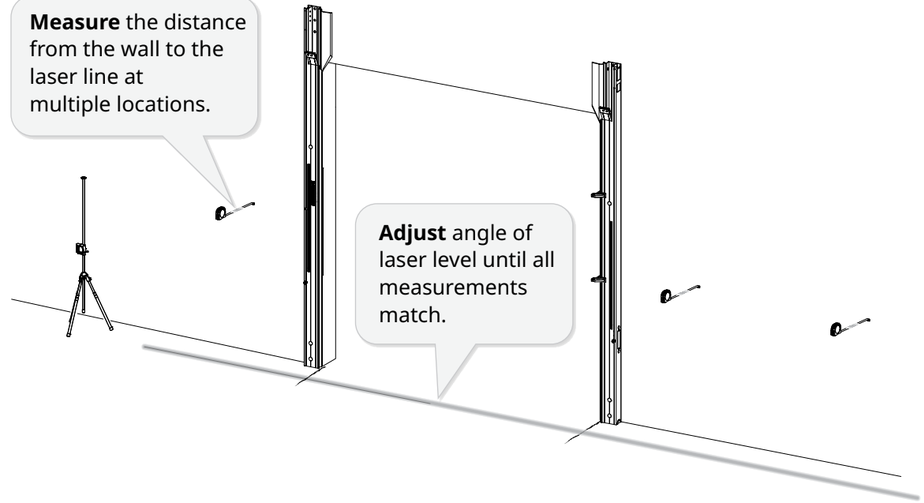
11

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

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



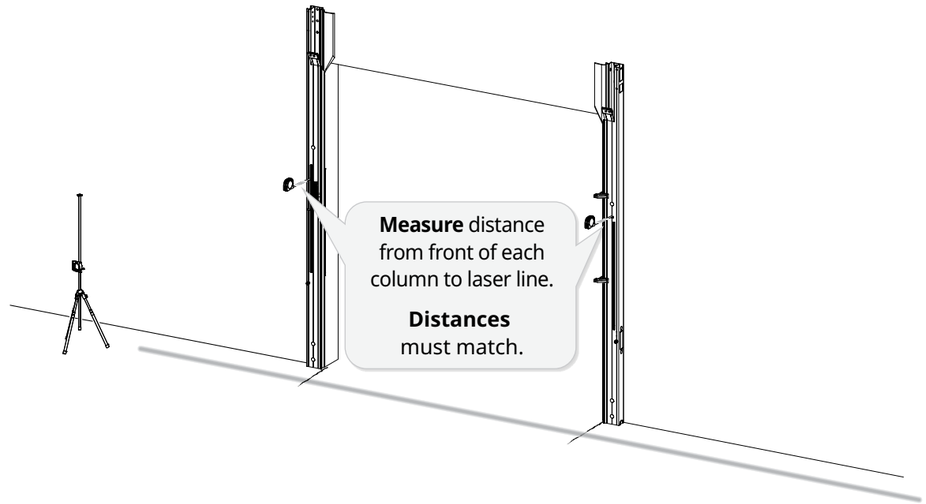
Adjust angle of laser level until all measurements match.

12

Plumb the side columns to each other.


Laser level


Measuring tape



Measure distance from front of each column to laser line.

Distances must match.

13


Shims

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

Step 3: Install the brush seal

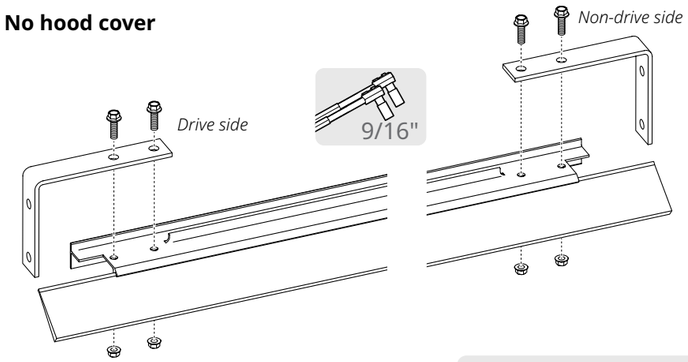
1 **Install** the mounting brackets into the rear brush seal.

SMALL PARTS

2 × 0702026

4 × 0550261
0553229

No hood cover

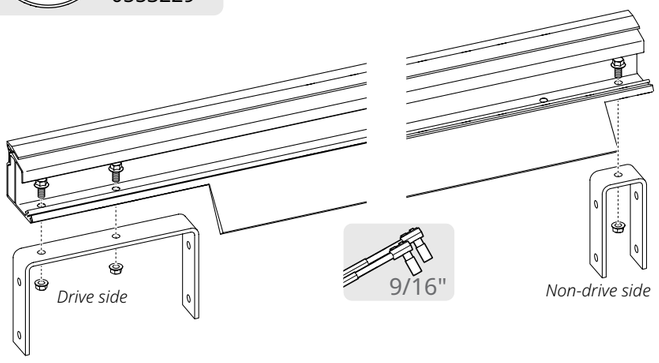


Metal hood cover

SMALL PARTS

2 × 0703827
0703024

4 × 0550254
0553229

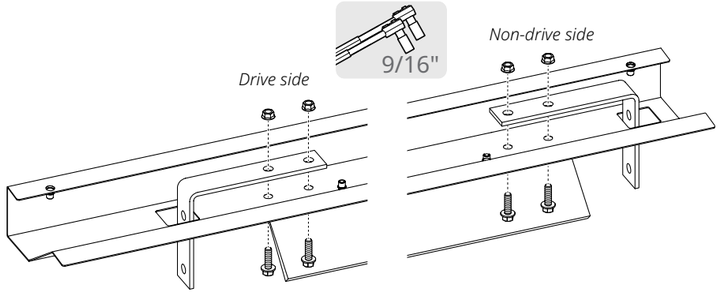


SMALL PARTS

2 × 0702026

4 × 5550215-0Z04
S553229

Plastic hood cover

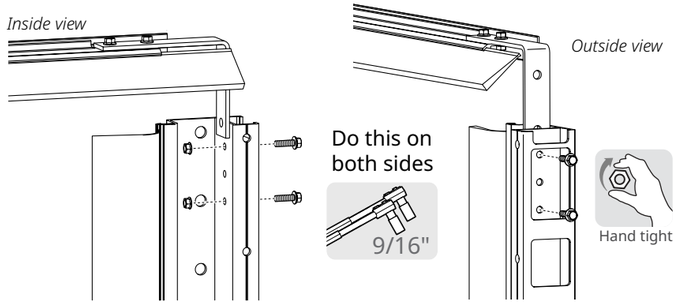


2 **Install** the brush seal onto the side columns. **Set bolts hand tight** so columns can be adjusted.

SMALL PARTS

4 × 0550261
0553229

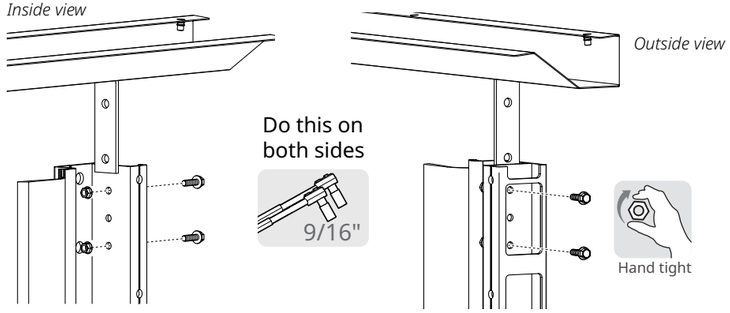
No hood cover



SMALL PARTS

4 × 5550215-0Z04
S553229

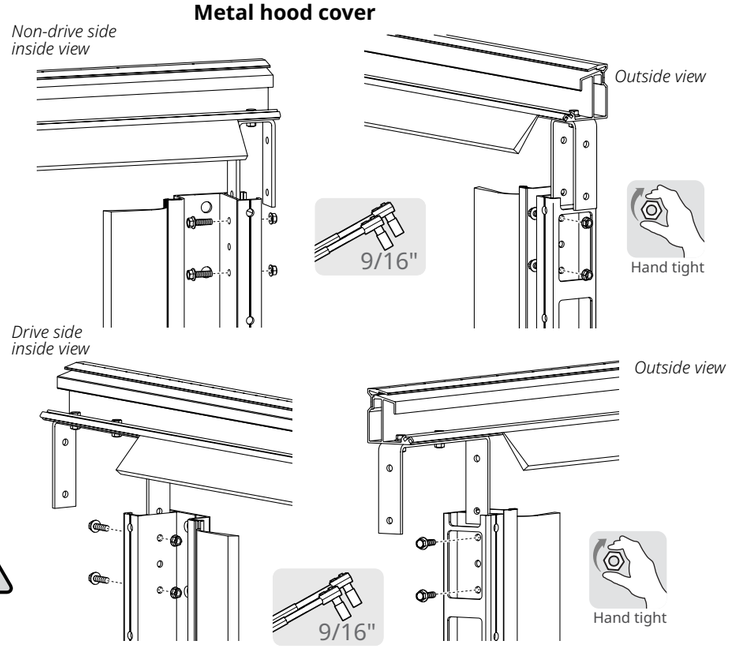
Plastic hood cover



SMALL PARTS

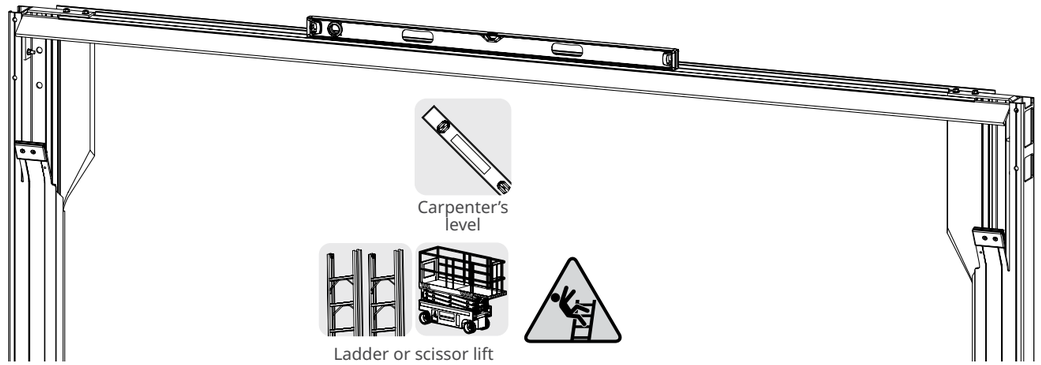
4 × 0550261
0553229

Metal hood cover



Ladder or scissor lift

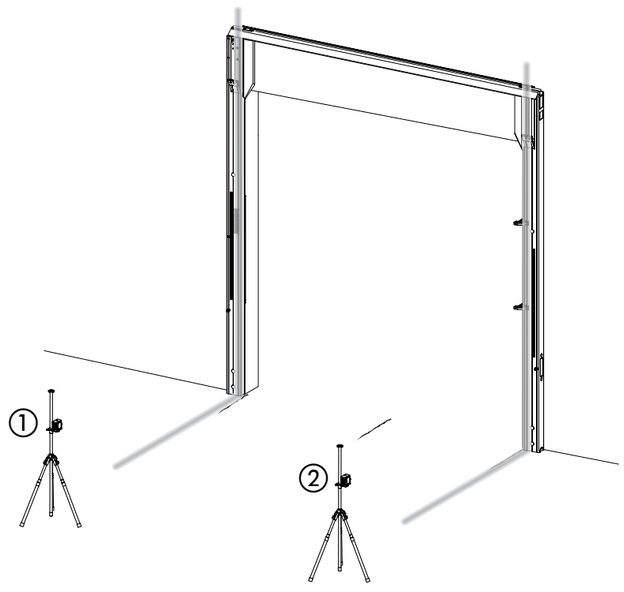
3 **Make sure** the brush seal is level.



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

1 **Plumb** the drive side side column ① and non-drive side side column ② from the front again.
Realign if necessary.


Laser level



2 **Square** the door:

① **Measure** the horizontal distance between side columns at a top and bottom reference point.


Measuring tape

- Use the **point below the refeed guide**, at the top of the door track brush, where the width of the column decrease, as your top reference.
- Use the **base of the side column** as your bottom reference.

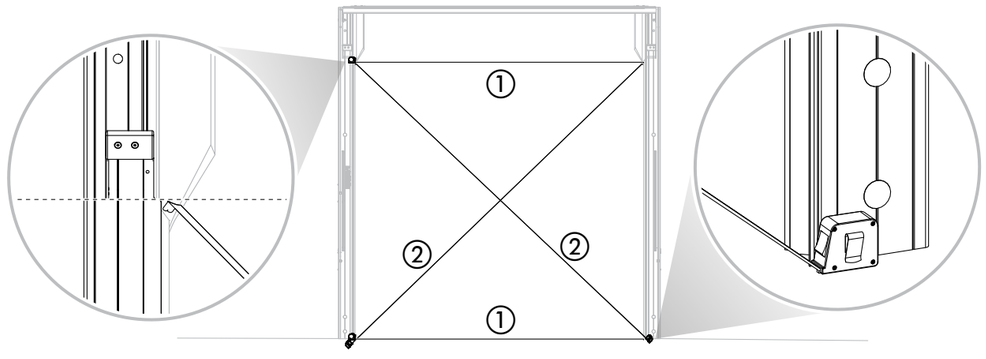
Make sure the horizontal distances are the same.

② **Measure** diagonally using the same reference points, this time going drive-side top to non-drive-side bottom, then non-drive-side top to drive-side bottom.

Make sure the diagonal distances are the same as well.

If either condition is not met, **adjust** the side columns.

When conditions ① and ② are met, **the door is square**.



3


Anchoring hardware

Tighten all anchors.

How to install the head assembly

1 **Place** the head assembly on the forks of the forklift and secure in place.

INSIDER'S TIP **Place** cardboard or foam on the forks so they don't scratch the bottom bar.

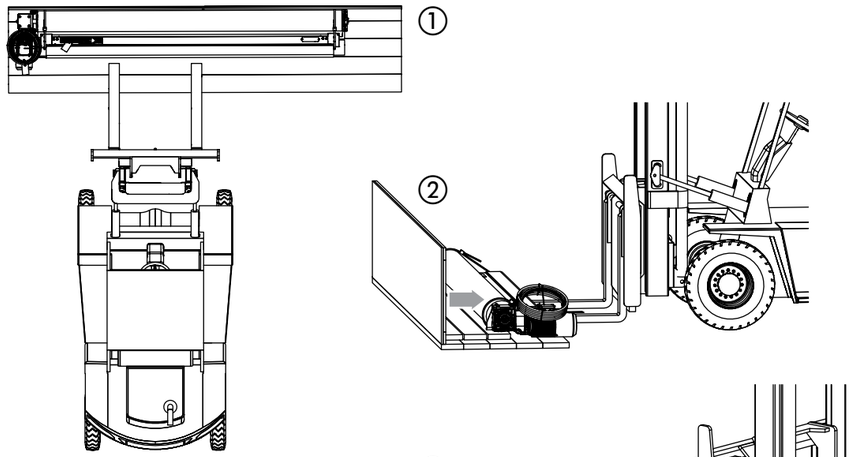
① **Line up** the forklift slightly off center, to account for the extra weight of the motor.

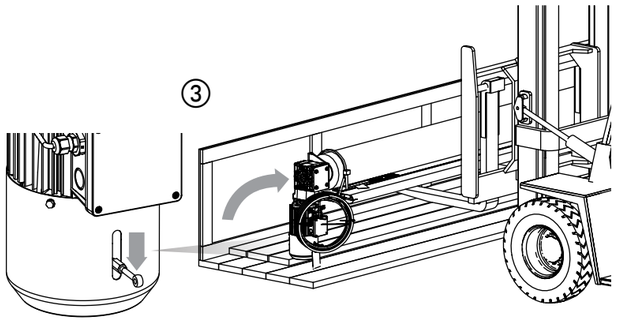
② **Slide** the head assembly onto the forks

③ **Flip** the head assembly so it is vertical, with the bottom bar lying flat.
If necessary, press down on the brake release of the motor to allow it to rotate freely to vertical.

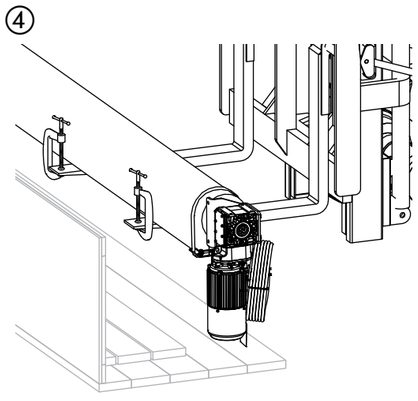
④ **Place** c-clamps on the end of both forks so the head assembly cannot slip off.

Forklift



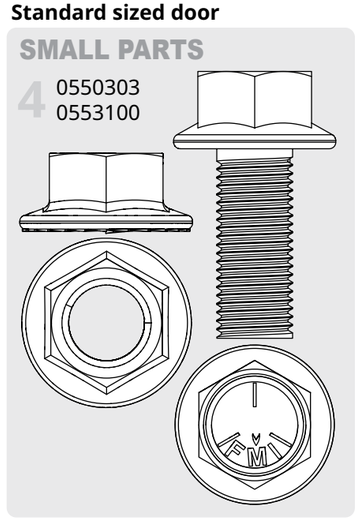


(2) C-clamps

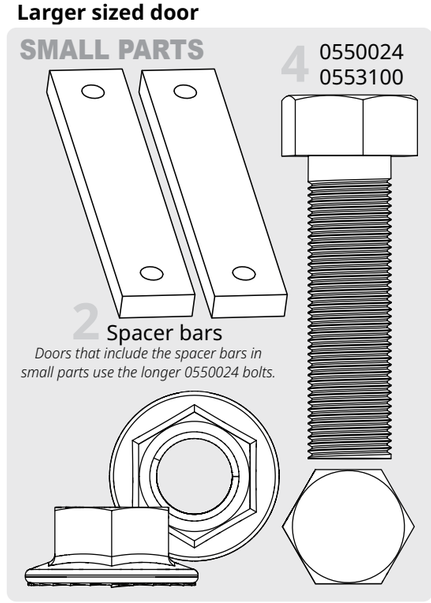


2 **Get** mounting hardware from the small parts box. If there are spacers for the head assembly in the box, **use the longer bolts.**

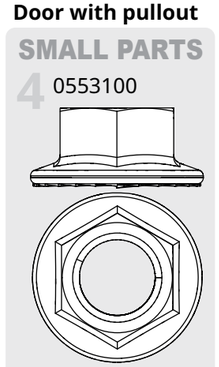
Standard sized door



Larger sized door

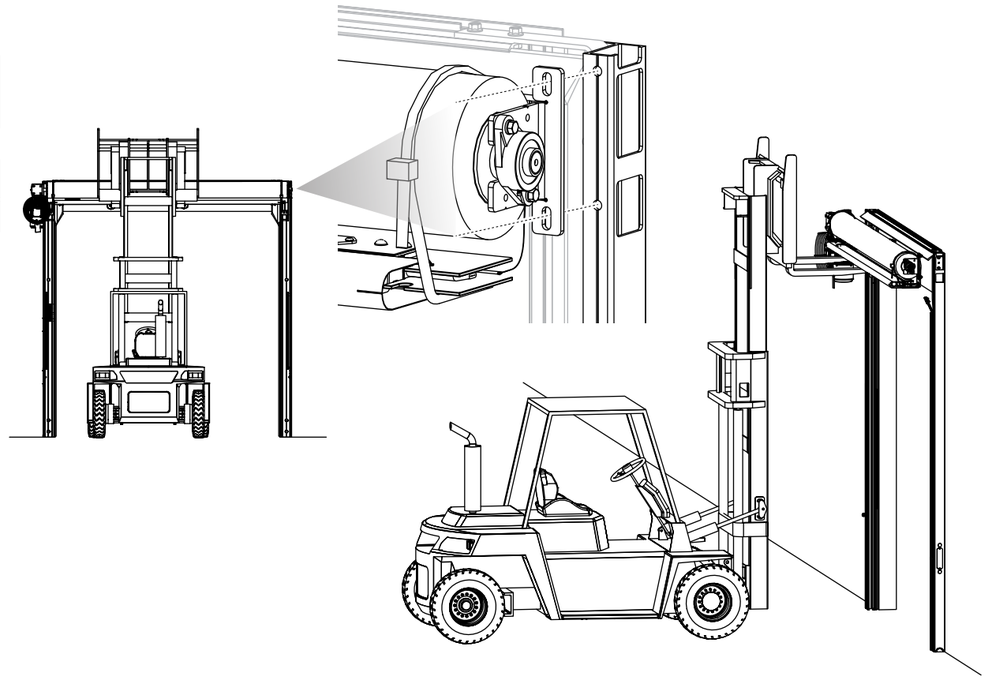


Door with pullout



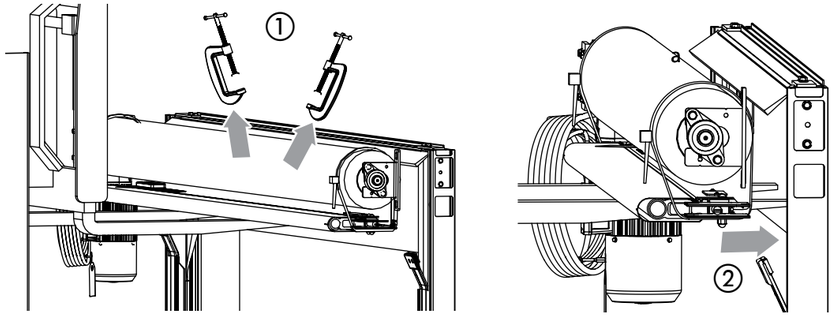
3 **Lift** the head assembly. **Line up** the mounting holes.

Ladder
or
Scissor lift



4

Remove the c-clamps ①, then slowly move the forks forward until they almost touch the wall above the door opening ②.



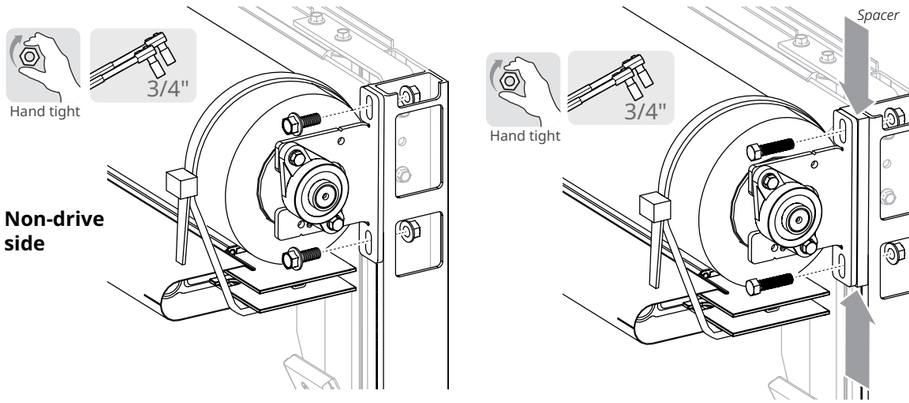
5

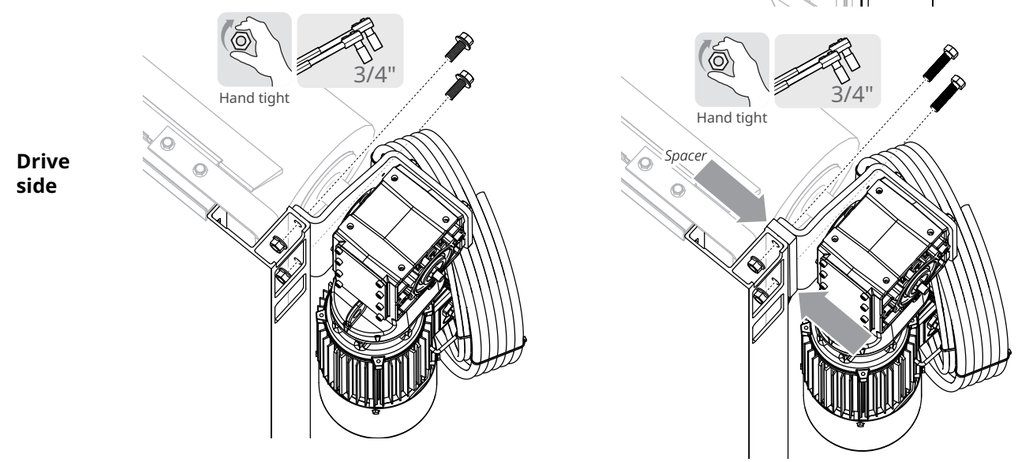
Install the head assembly onto the side columns. **Make sure to insert the spacer** between the head assembly and the side columns before installing hardware on larger size doors.

DO NOT fully tighten the bolts until after you have checked that the head assembly is level.

Standard size doors
Head assembly bolts directly into side columns.

Larger size doors
Insert spacer between head assembly and side columns before installing bolts and nuts

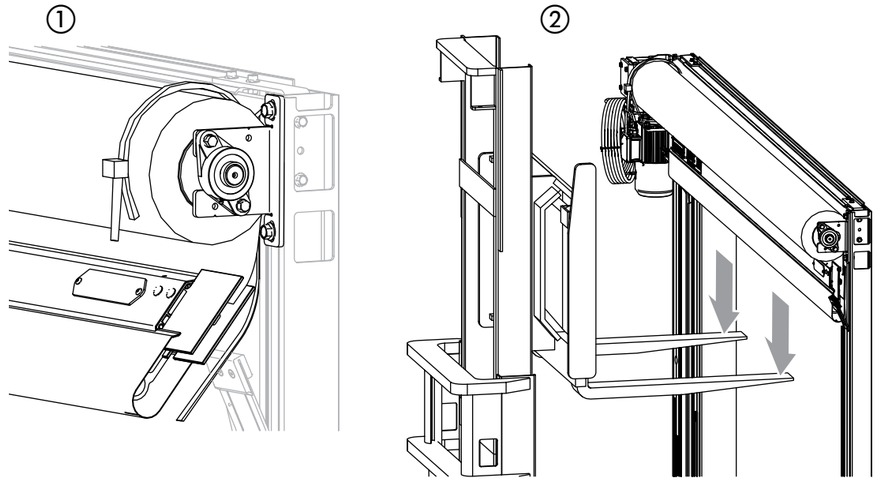




6

Cut and remove the two tiedowns on the door panel ①, **place** the bottom bar vertically behind the refeed guides, and **lower** the forks on the forklift ②.

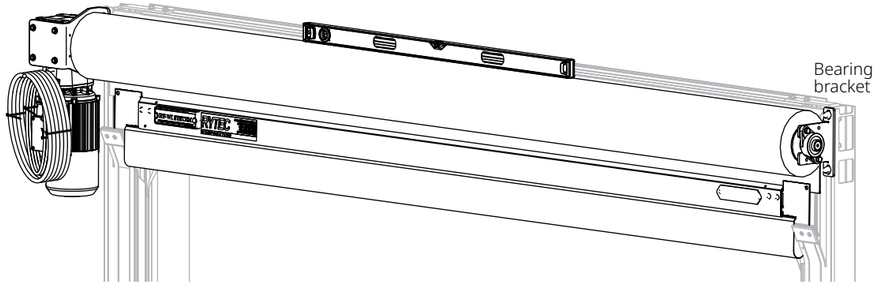

Cutting pliers



7

Check that the head assembly is level side to side. **Adjust** mounting on bearing bracket (non-drive side) if necessary.

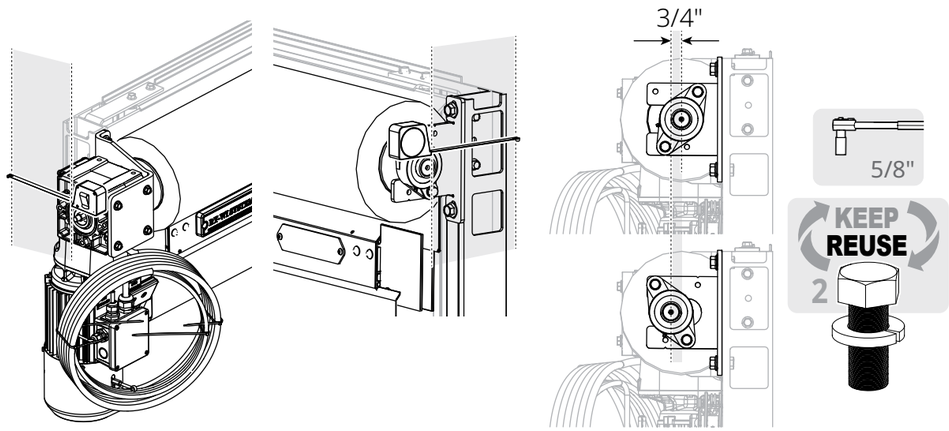

Carpenter's level



8

Check that the head assembly is level front to back. **Measure** from the center of the drive shaft to the wall. **Realign** the bearing bracket to move the non-drive side forward or backwards if necessary.


Carpenter's level

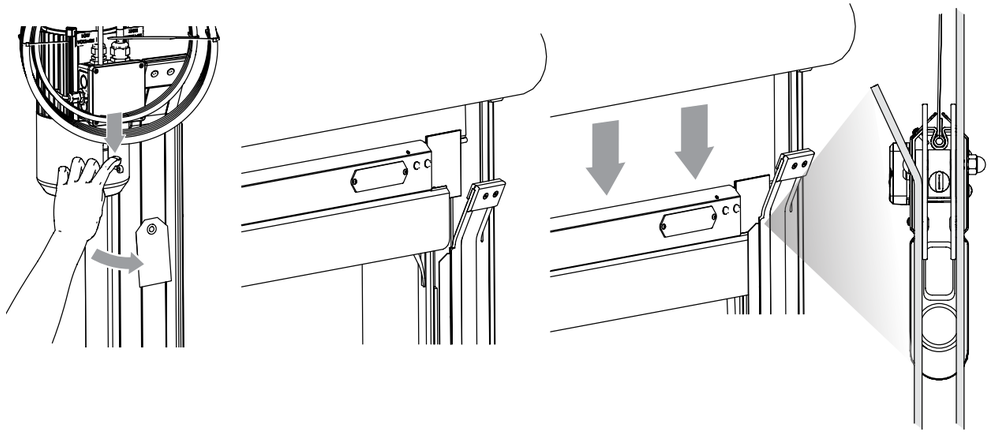


9 

When you have verified that the head assembly is level, **tighten** all hardware.

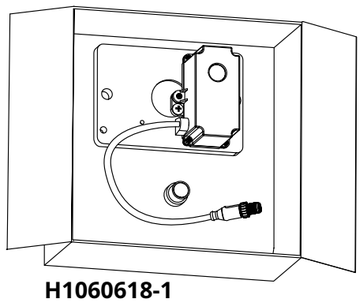
10 **Pull down** on the brake release on the motor and **pull** the door panel and bottom bar down into the door track. **Make sure** both end tabs are inside the track.

If you have not already done so, **remove** the serial number tag from the motor or mobile unit cover.

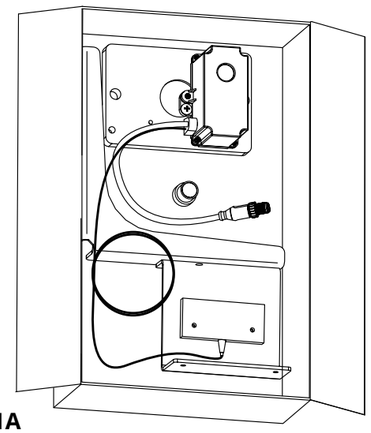


How to install the encoder

1 **Get** the encoder and other parts from the encoder box, and the **mounting hardware** from the small parts box. The mounting hardware for the **wireless antenna bracket** is attached to the bracket.

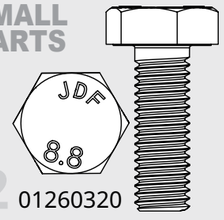


H1060618-1
Encoder, mounting plate, encoder magnet



H1060612-1A
Encoder, mounting plate, encoder magnet, wireless antenna and mounting bracket, hardware for antenna.

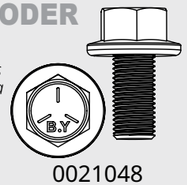
SMALL PARTS



2 01260320

ENCODER BOX

Wireless antenna doors only



2 0021048

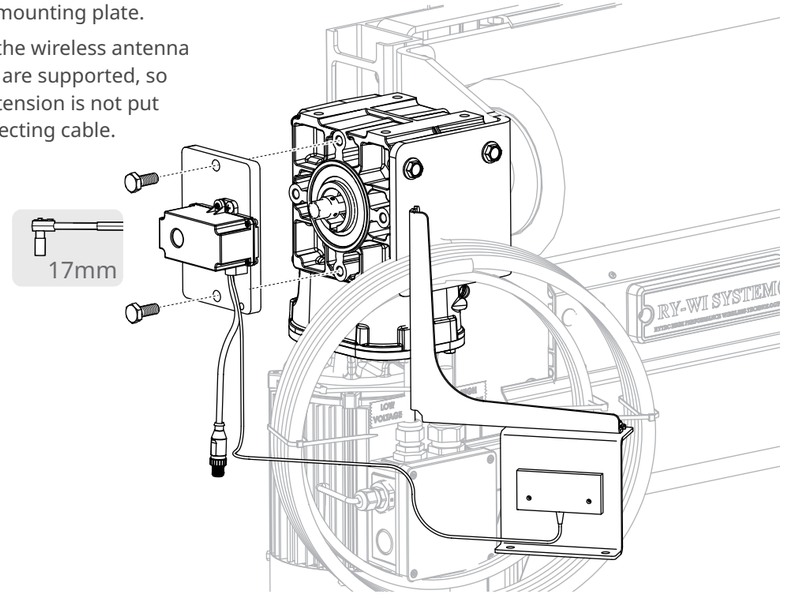
2 **Install** the encoder magnet onto the coupler shaft in the motor.

Ladder or Scissor lift

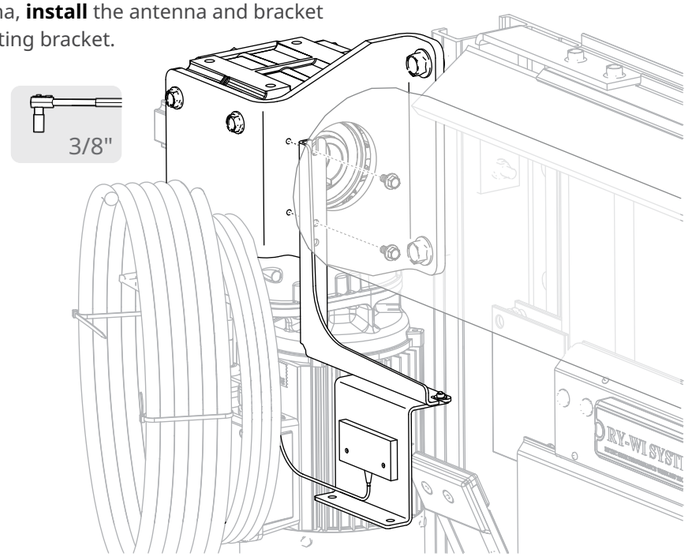
Before installing the magnet, **remove** the two hex lock nuts, **apply** a small amount of lock sealant, then **reinstall**.

3 **Install** the encoder and mounting plate.

IMPORTANT **Make sure** the wireless antenna and bracket are supported, so that excess tension is not put on the connecting cable.



4 If the door has a wireless antenna, **install** the antenna and bracket into the side of the motor mounting bracket.

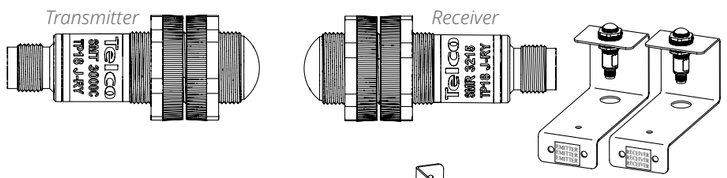


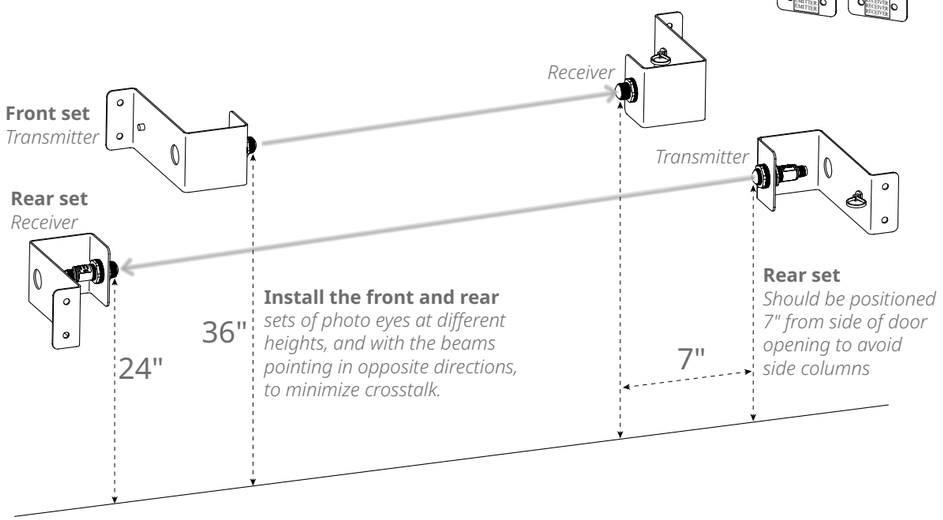
How to install the photo eyes

Photo eyes stop and reverse the door when an obstruction is detected while the door is closing.

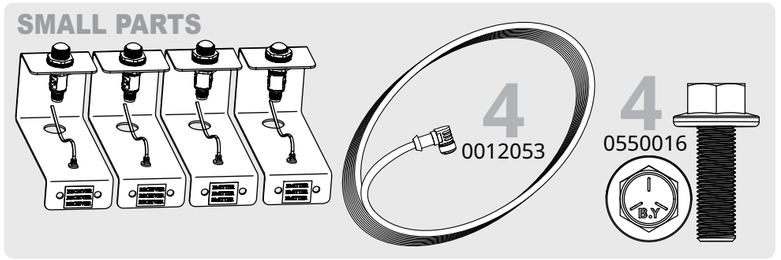
IMPORTANT They cannot be used to activate the door.

Install one set *(transmitter and reciever) into the side column at the front of the door, and one on the wall at the rear side of the door opening.*



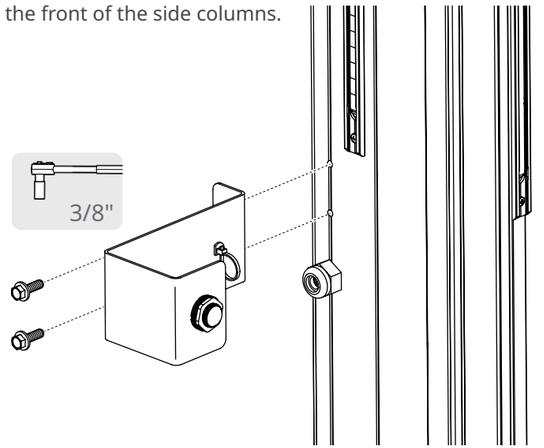


1 **Get** all necessary parts from the small parts box, as well as items supplied by installer.



For the rear set of photo eyes, you will also need **tools to drill** a hole in the wall to run the cable, **mounting hardware** and **caulk.**

2 **Install** the front set (transmitter and receiver) into the front of the side columns.



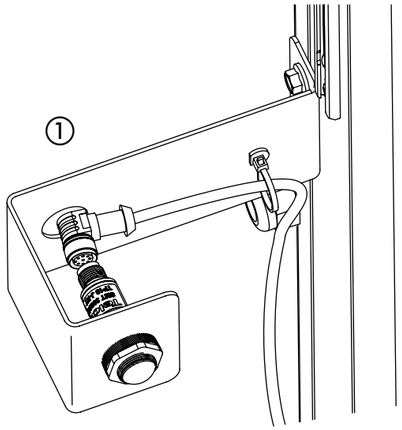
3

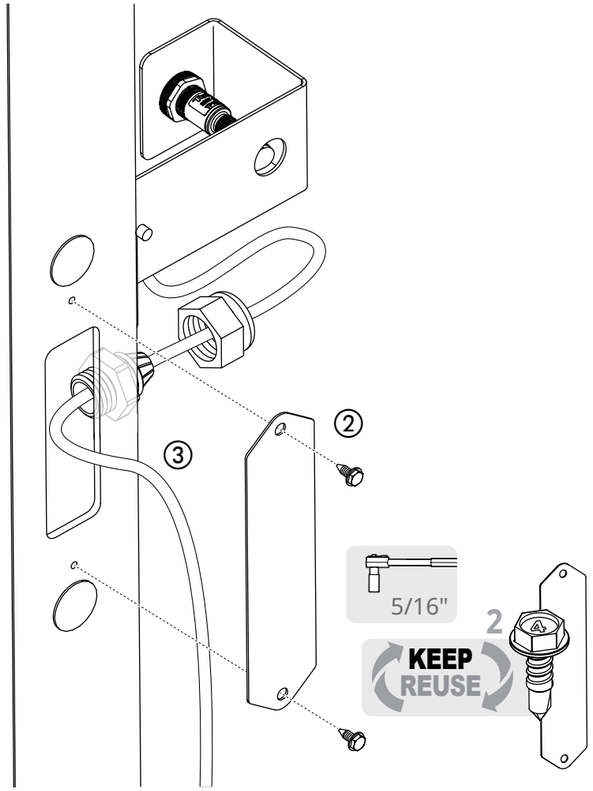
Attach and route the cables to the front set of photo eyes.

① **Attach** 90° connector of 0012053 cable to back of photo eye. **Turn** connector nut until the photo eye is secure. **Tighten** cable tie to secure cable to bracket.

② **Remove** side access cover. **Keep** the cover; you will reinstall it after the cable has been routed.

③ **Remove sealing nut** from the preinstalled cable grip. **Run** cable through sealing nut and body, then **tighten** sealing nut.



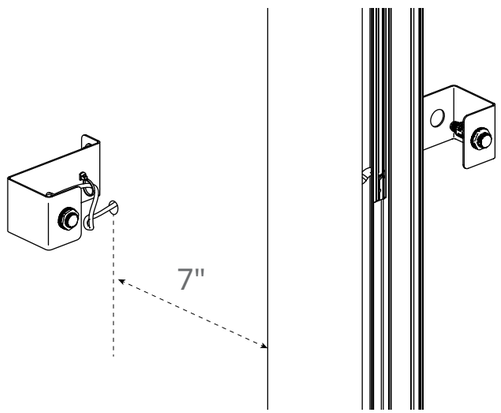


4

I**nstall** the rear set.

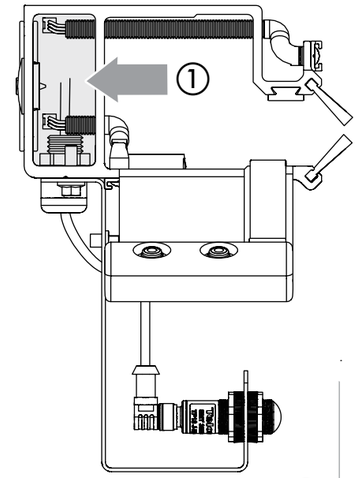
- Transmitter and receiver must face in **opposite direction** to the front set.
- Drill hole for cable **at least 7”** from side of door opening.
- **Use mounting hardware** you have supplied.
- **Attach** 90° connector of 0012053 cable to back of photo eye, **run** cable through hole, and **seal** hole with caulk.

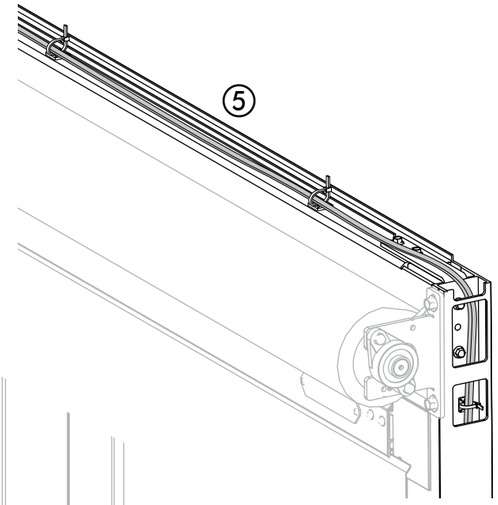
Drill, anchoring hardware and caulk

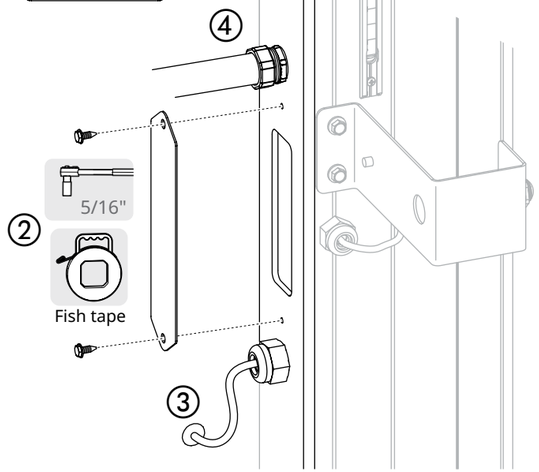


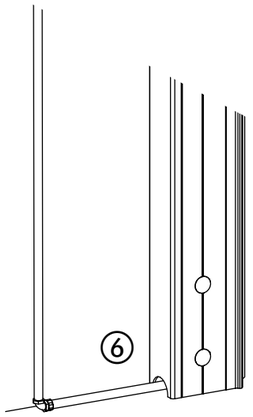
How to route the low voltage cables

- Low voltage cable from the photo eyes, Pathwatch LED strips and coil cord run inside an enclosed chamber in the side columns ①.
- This chamber can only be accessed from the top or bottom of the side column, and through access ports ② located next to the front photo eyes.
- On coil cord doors, there is a second access port next to where the coil cord enters the side column.
- There are 1" diameter holes above and below the access port which can be used to route cables into or out of the side columns.
- Use a 1" cord grip or grommet ③ to run cable, such as from the rear photo eyes, into the side column.
- Use fittings for 3/4" conduit ④ to route low voltage cables directly from the side columns to the controller. This gives maximum distance between low voltage cables and the high voltage motor cable.
- Use cable ties at the top of the column ⑤ and across the bracket for the brush seal.
- Conduit can also be run through the half moon opening ⑥ at the base of the side column.



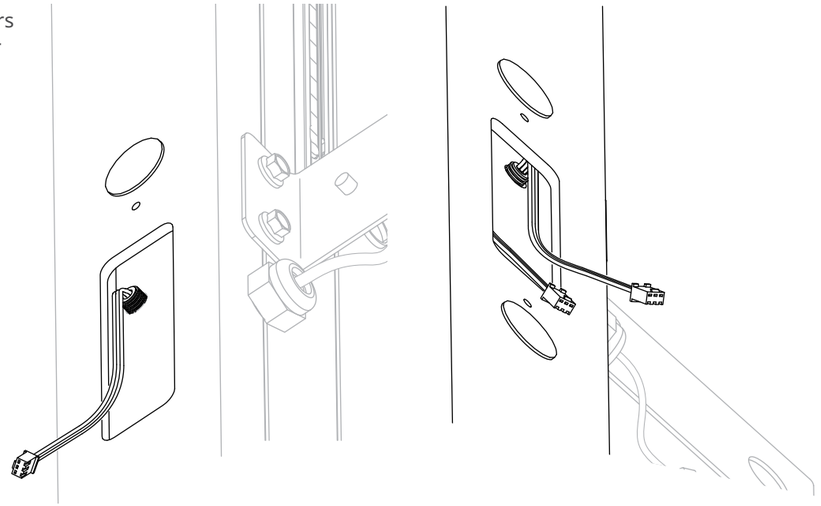






How to wire the Pathwatch LED strips

1 **Locate** the connectors for the front and rear Pathwatch through the access port.



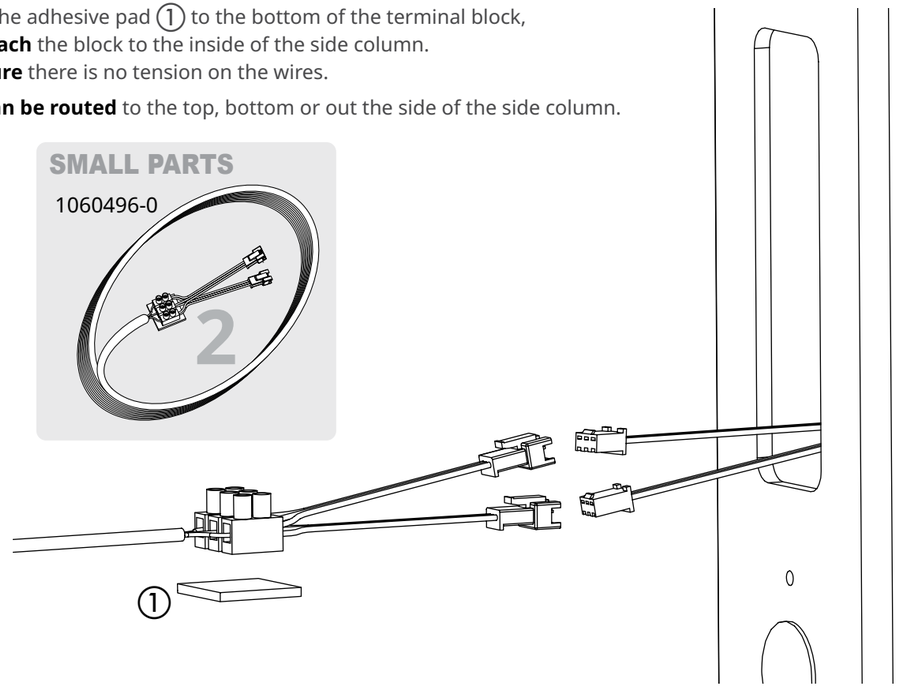
2 **Get** the two-connector Pathwatch cable from the small parts and connect both Pathwatch to it.

Attach the adhesive pad ① to the bottom of the terminal block, then **attach** the block to the inside of the side column.
Make sure there is no tension on the wires.

Cable can be routed to the top, bottom or out the side of the side column.

SMALL PARTS

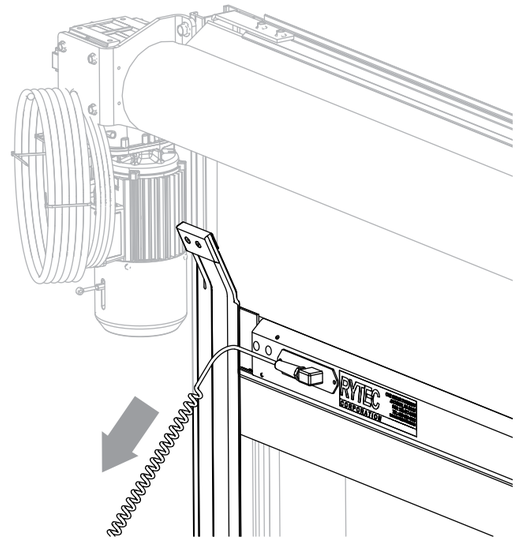
1060496-0



How to wire the coil cord (optional)

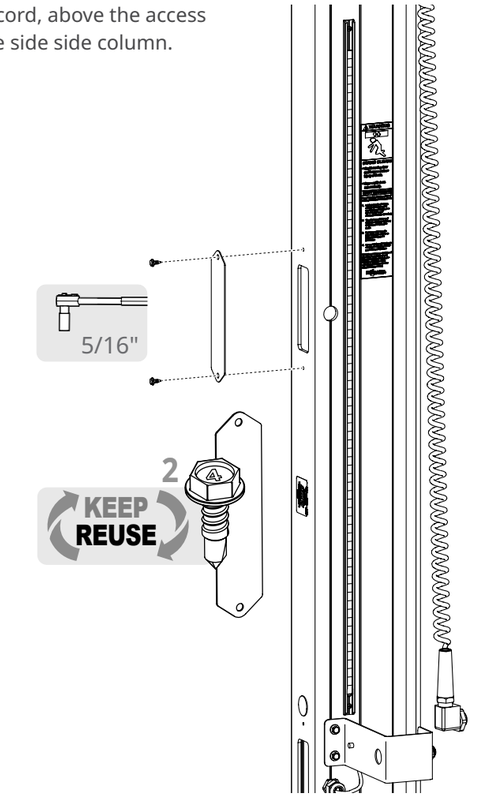
1 **Cut** the tie on the coil cord, which is located on the drive side of the bottom bar, and let the cord fall.

Cutting pliers



2 **Locate** the mounting hole and access port for the coil cord, above the access port for the other low-voltage components on the drive side side column.

Remove and retain the cover plate and screws.



3 **Unscrew** the retaining nut on the coil cord grip.

IMPORTANT

Four conductor cable to connect the coil cord to the controller must be supplied by the installer.

Excess length of one of the photo eye cables is commonly used where distance to the controller allows.

1: Route the four wires from the coil cord grip through the mounting hole, the retaining nut and the access port in the side column.

- The retaining nut must be **inside the side column.**

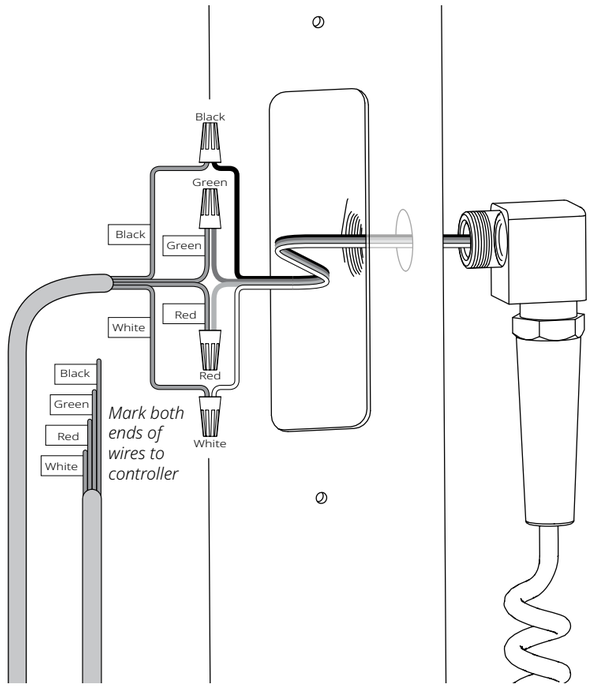
2: Use wire nuts to connect the four wires in the cable to the black, white, red and green wires from the coil cord.

IMPORTANT

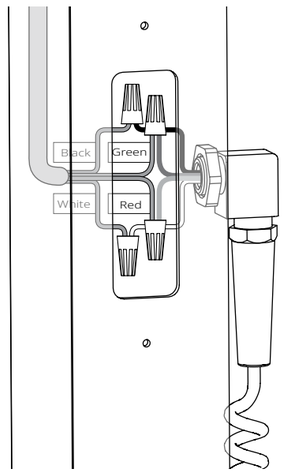
3: Mark the cable wires **ON BOTH ENDS** to indicate the original wire color from the coil cord.

- **THIS MUST BE DONE** in order to connect the coil cord correctly at the controller.

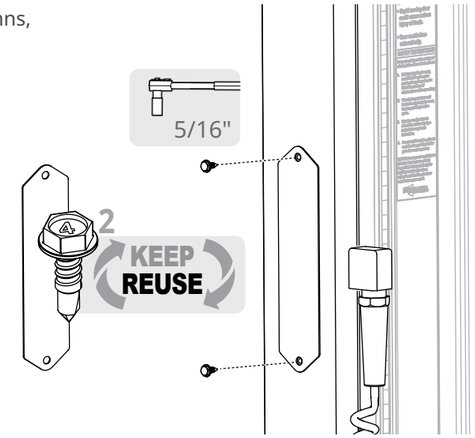
4: Cable can be routed up the side column to the top, down to the bottom, or down and out through the access holes by the drive side photo eye.



4 **Tighten** the retaining nut to secure the coil cord grip in place.



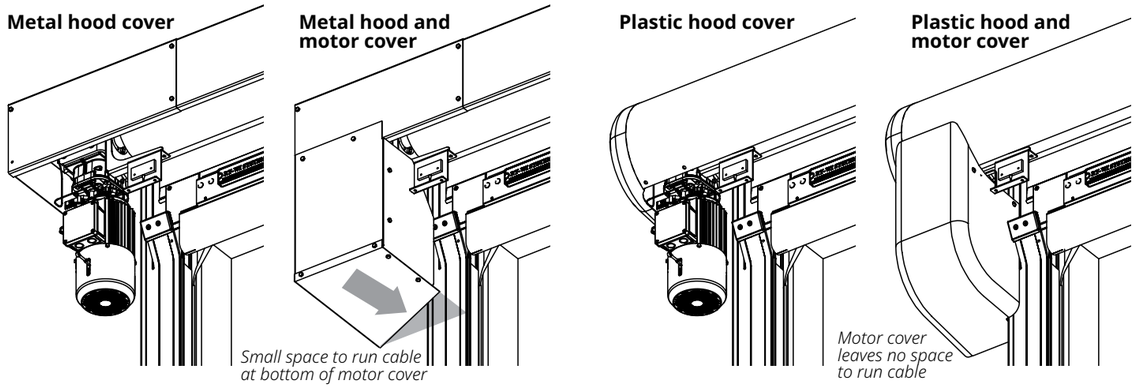
5 When all cables have been routed through the side columns, **reinstall** all cover plates.



How to install the hood covers (optional)

IMPORTANT

- **Do not install** the hood covers until all cables and conduit has been installed.
- The hood covers **restrict access** to the head assembly and **obstruct paths** to run cable from the head assembly to the controller.
- Check whether door includes **hood cover** or **hood cover and motor cover**.

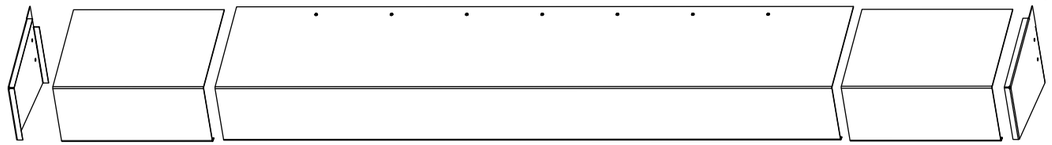


How to install the metal hood cover

1 **Get** parts and hardware from the crate. Door may have **hood cover** or **hood and motor cover.**

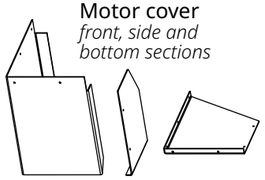
Hood cover
can be a single piece (96" max. width)
or center section and two end sections

End cap



End cap

Motor cover
front, side and bottom sections



SMALL PARTS

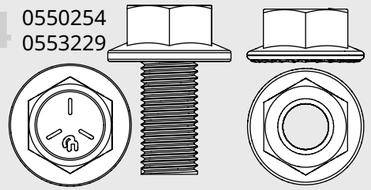
Number varies based on size of door

S550158

For all sections of hood and motor cover

SMALL PARTS

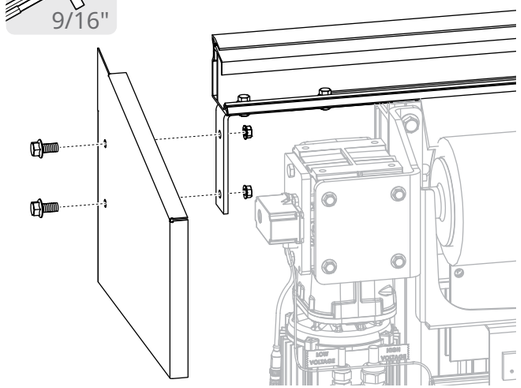
4 0550254
0553229



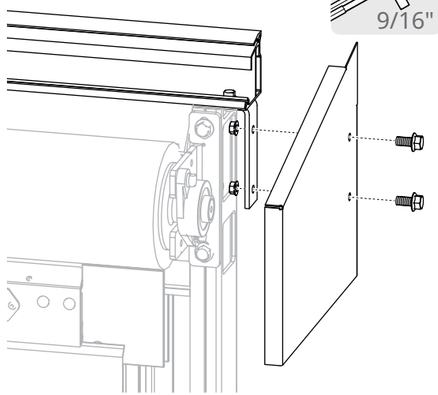
For end caps

2 **Install** the two end caps onto the bracket on the brush seal.

9/16"



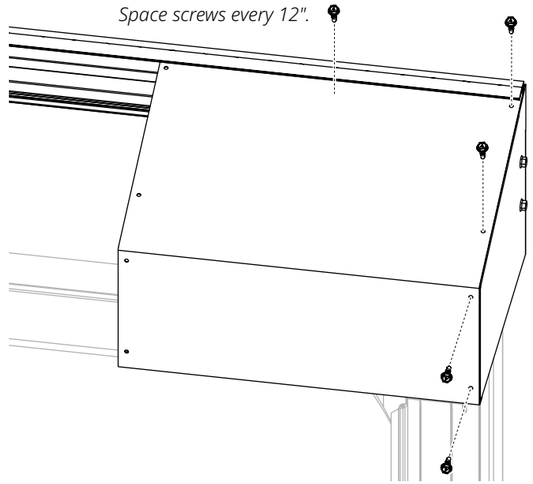
9/16"



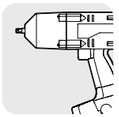
3 **Install** the first section onto end cap and brush seal.

Install self-tapping screws through the hood cover section, into the brush seal, at intervals of 12".

Install at least one screw into brush seal bracket.
Space screws every 12".



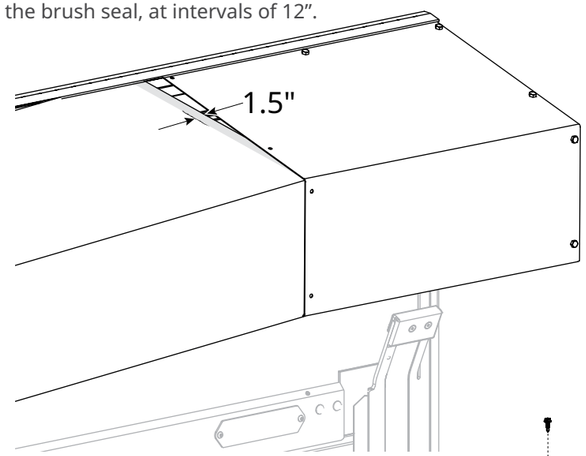
7/16"



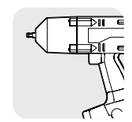
Impact wrench
or
power drill

4 **Mark** the middle section 1-1/2" from the end and slide it under the first section.

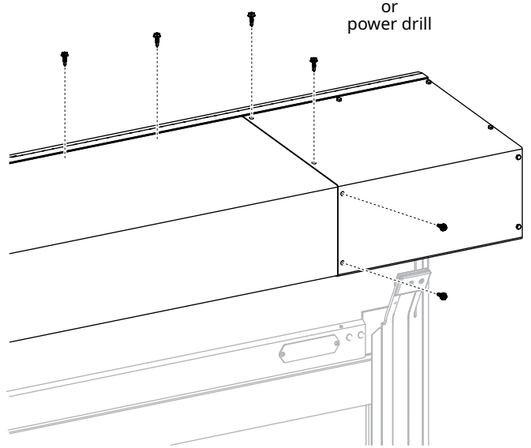
Install self-tapping screws into the holes where the sections overlap, and through the middle section, into the brush seal, at intervals of 12”.



7/16"

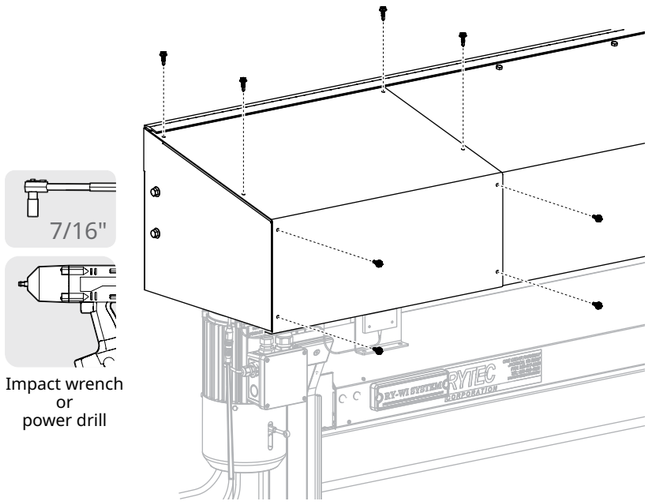


Impact wrench
or
power drill

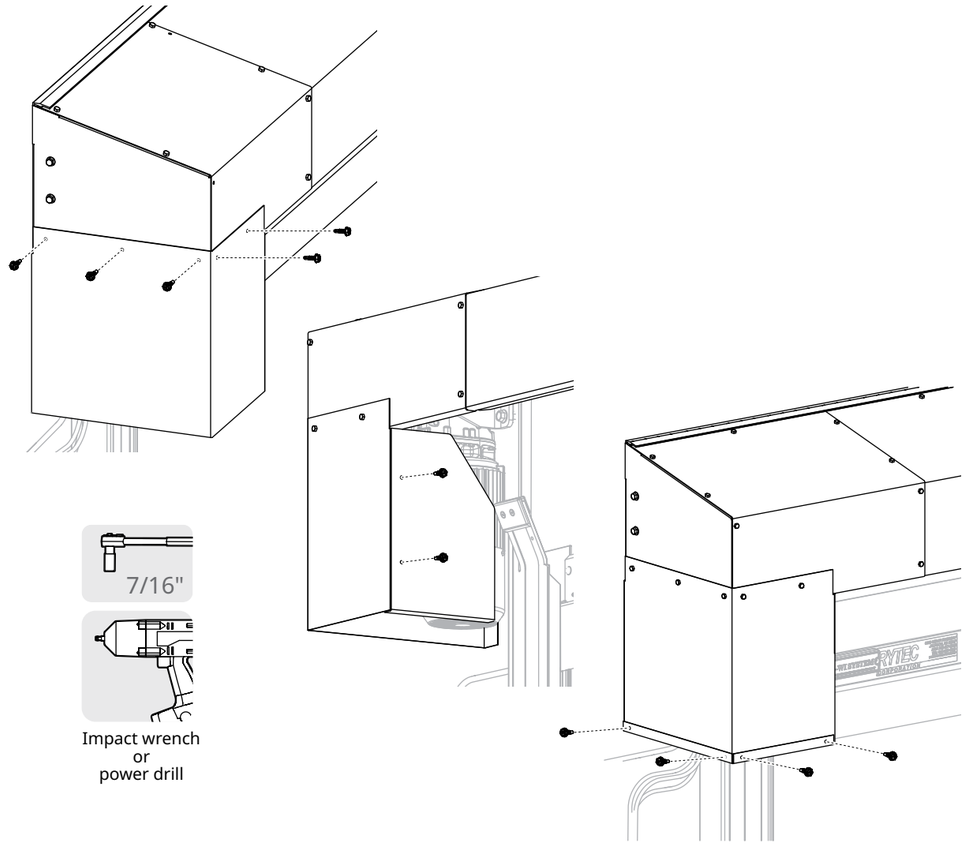


5 **Install** the third section onto the end cap and brush seal, overlapping the middle section.

Install self-tapping screws through the hood cover section.

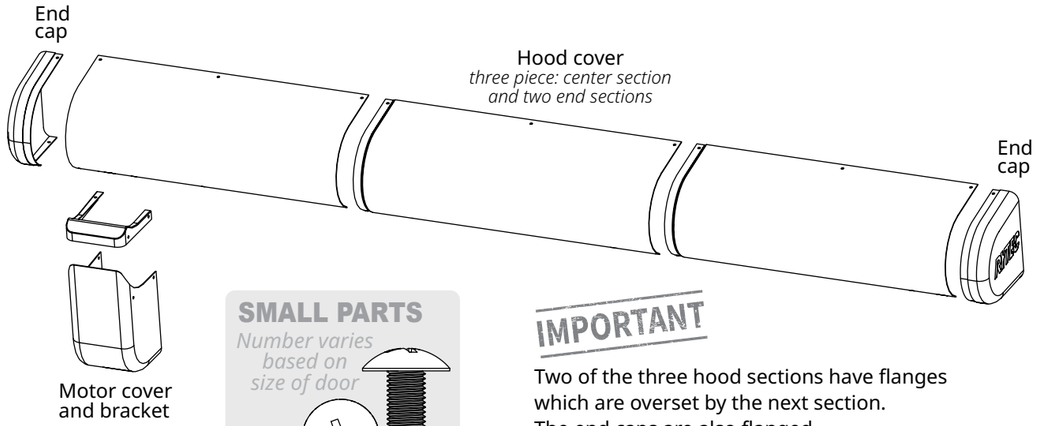


6 If the door has a motor cover in addition to the hood cover, **install** the front, side and bottom sections.



How to install the plastic hood cover

1 **Get** parts and hardware from the crate. Door may have **hood cover** or **hood and motor cover.**



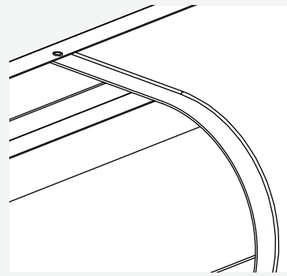
IMPORTANT

Two of the three hood sections have flanges which are overset by the next section.
The end caps are also flanged.

Install in the order shown in these steps.

2 **Install** the first end cap and flanged hood section onto the bracket on the brush seal.

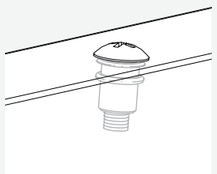
Hood sections slide **under** upper lip of brush seal.

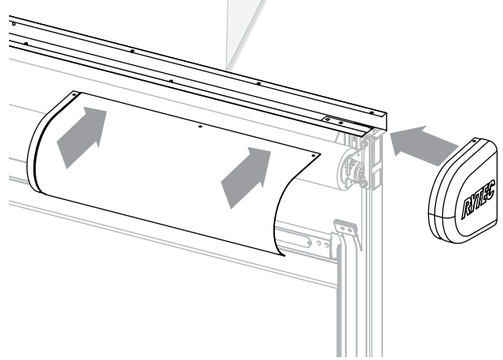


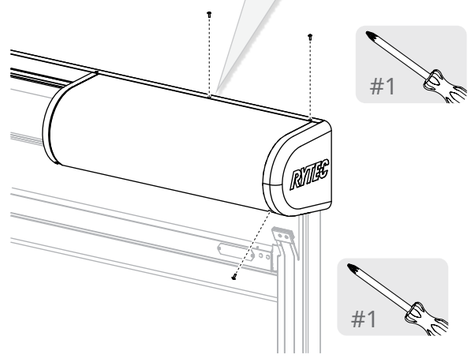
IMPORTANT

All connections on the plastic hood use screws and riv nuts, so **use hand tools on.**

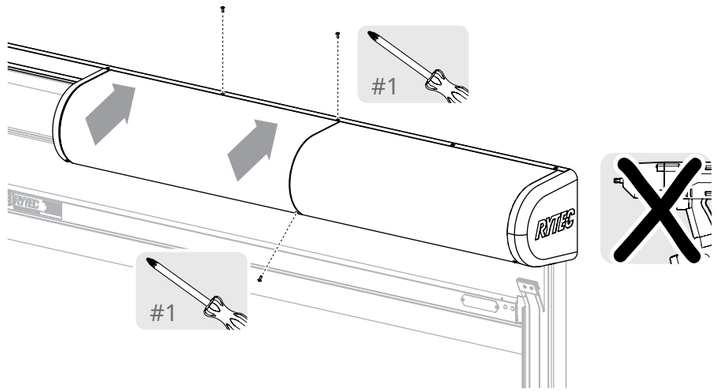
Power tools can strip out the riv nuts.



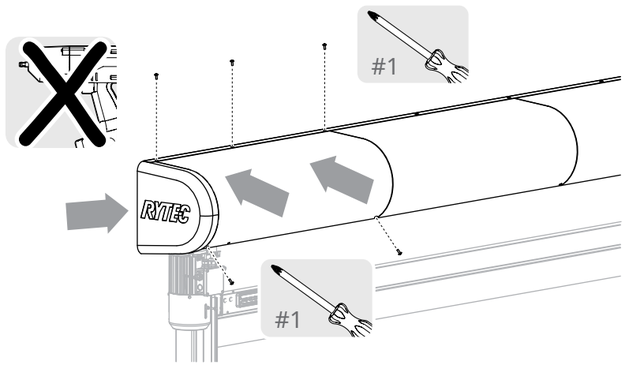




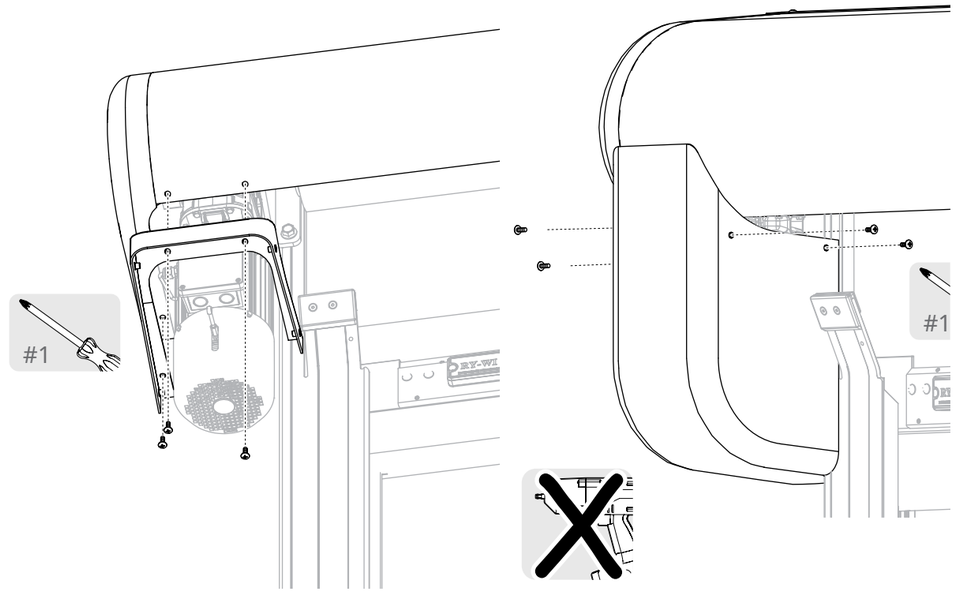
3 **Install** the middle section onto the brush seal, overlapping the flange on the first section.



4 **Install** the third section and second end cap, overlapping the flange on the middle section.



5 If the door has a motor cover in addition to the hood cover, **install** the mounting bracket (**remove, then reinstall** the bolt below the end cap), then **install** the motor cover.



How to install the System 4® controller and wire the door

⚠ WARNING

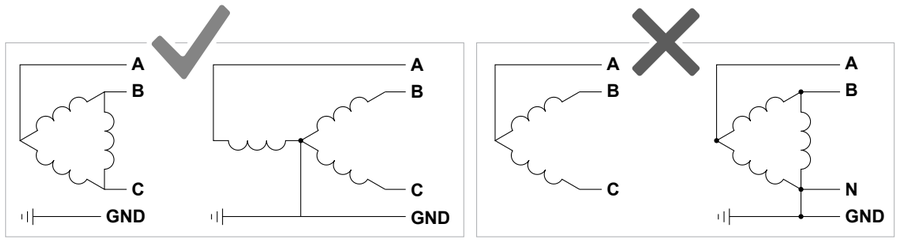
All electrical work must meet all applicable local, state and national codes.
It is recommended that all electrical work be done by a certified electrician.

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.

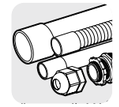
- **The high-voltage and low-voltage conduits must be separated** by a distance that meets all applicable federal, state and local codes and regulations.
- **Wires must be cut to length.** Do not loop wires or leave excess length untrimmed.
- **Use shielded wiring** where indicated in these instructions.
- **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.
  - **For shielded wiring,** the cable used must also be shielded and the shielding must be spliced..

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

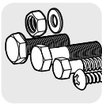
Before you begin

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.

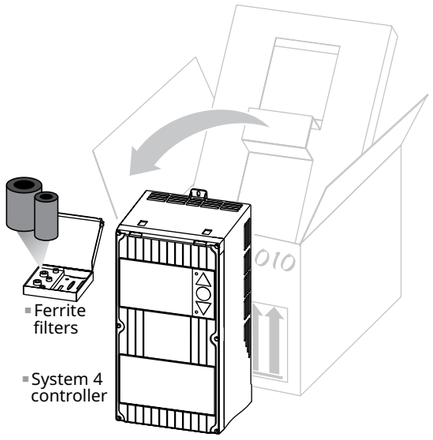
- **The ambient temperature** must be between **-4°F** and **149°F** at all times.
- **NOTE: for freezer doors,** the controller and fused disconnect must be mounted on the warm side of the door.
- **The mounting surface** for the System 4 controller and fused disconnect must be structurally sound and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

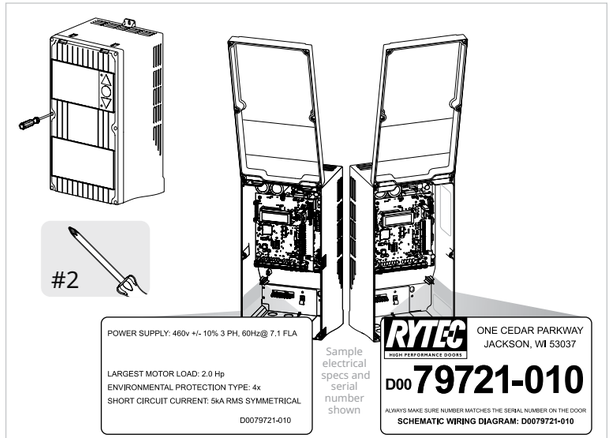
3 **Install** the high-voltage power supply.

- **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.

How to install the System 4 controller

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



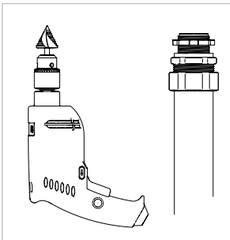


Electrical specs | Serial number

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

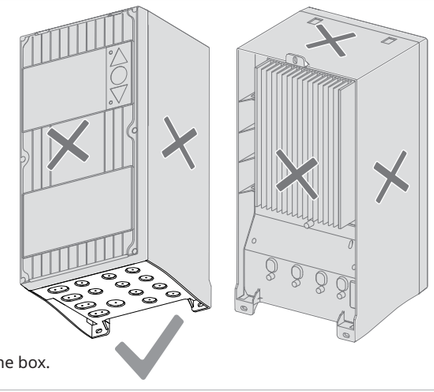
2 **Install** the control box onto the wall using the hardware you have supplied.

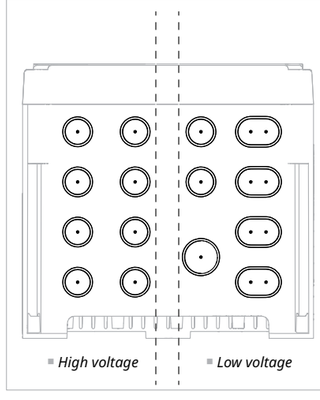
3 **Drill** holes through the bottom of the control box for conduit.



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.





NOTICE

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

How to install the high-voltage wiring

⚠ WARNING

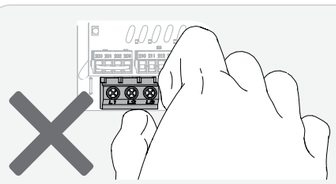
Set the disconnect switch to the OFF position and perform a lockout/tagout of the high-voltage disconnect before installing wiring to the controller. Do not set the disconnect switch to the ON position until the wiring installation is complete and the controller is fully earth grounded per instructions.

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

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

12 AWG

DO NOT use power tools

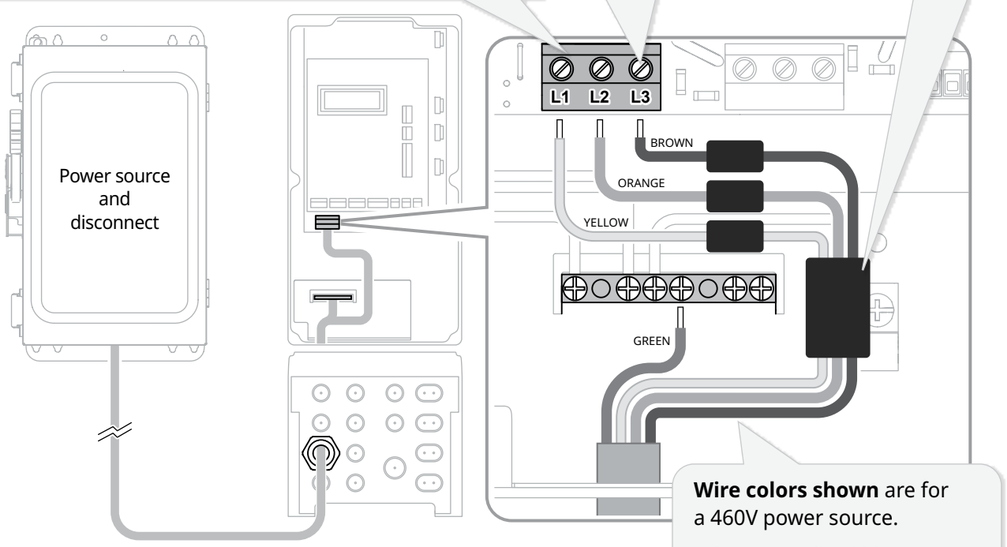


Do not try to remove the green terminal block from the circuit board.

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.

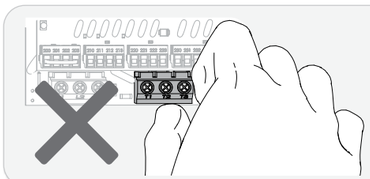


Wire colors shown are for a 460V power source.

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

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

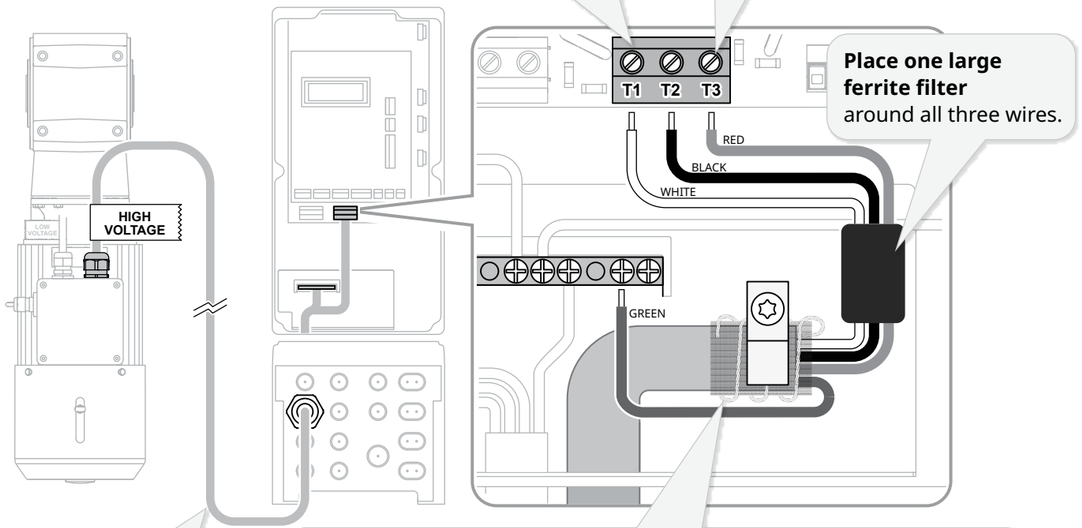
Shielding: braided copper mesh and drain wire



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

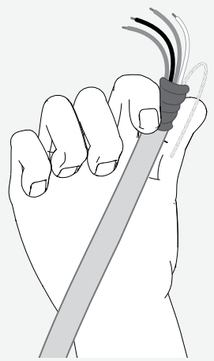
It is fixed in place and will break.

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:

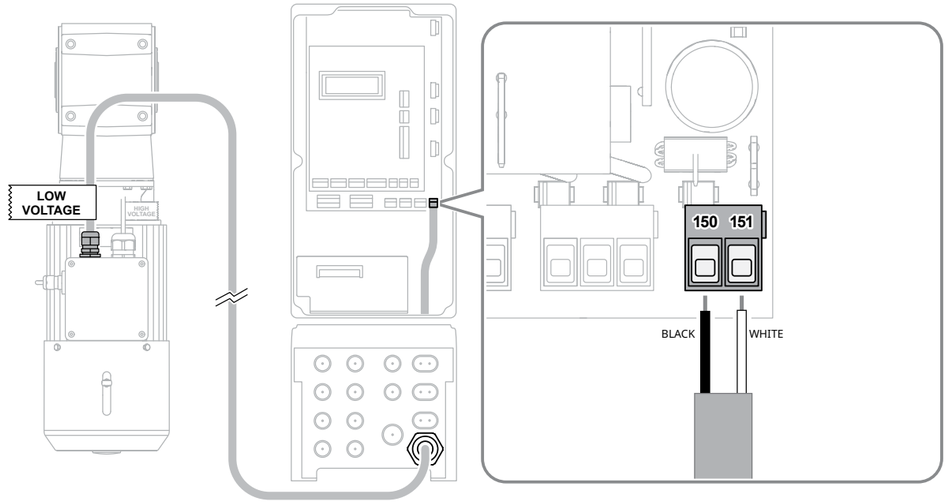
1. Loosen the P-clip.
2. Strip high-voltage cable jacket to expose braided shield, then pull back shield and wrap drain wire around it.
3. Run wires, shield and wrapped drain wire under clip.
4. Tighten clip.
5. Trim excess drain wire.

How to install the low-voltage wiring

- Low-voltage cables can be run in the **same conduit. They cannot share conduit** with high-voltage cables.
- 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.**

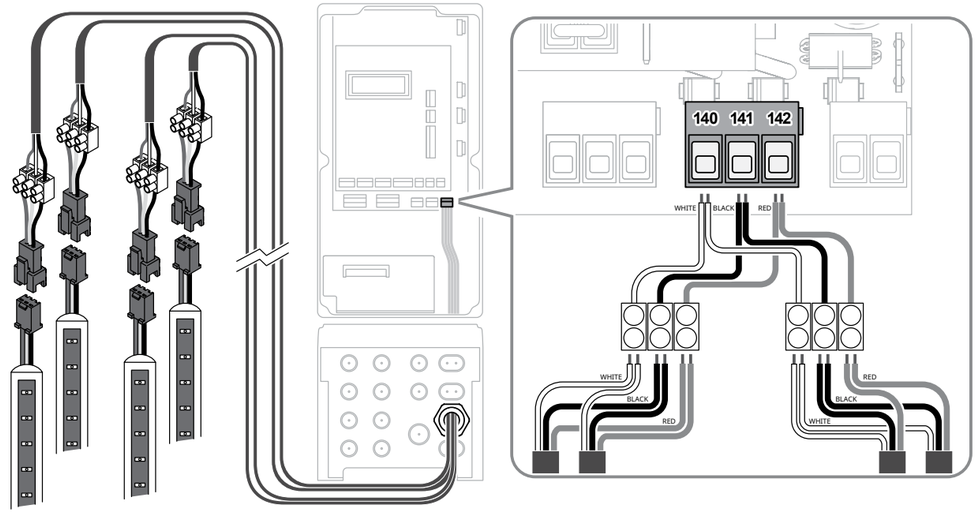
1 Connect the brake wiring from the motor. 18 AWG

Shielding: unshielded



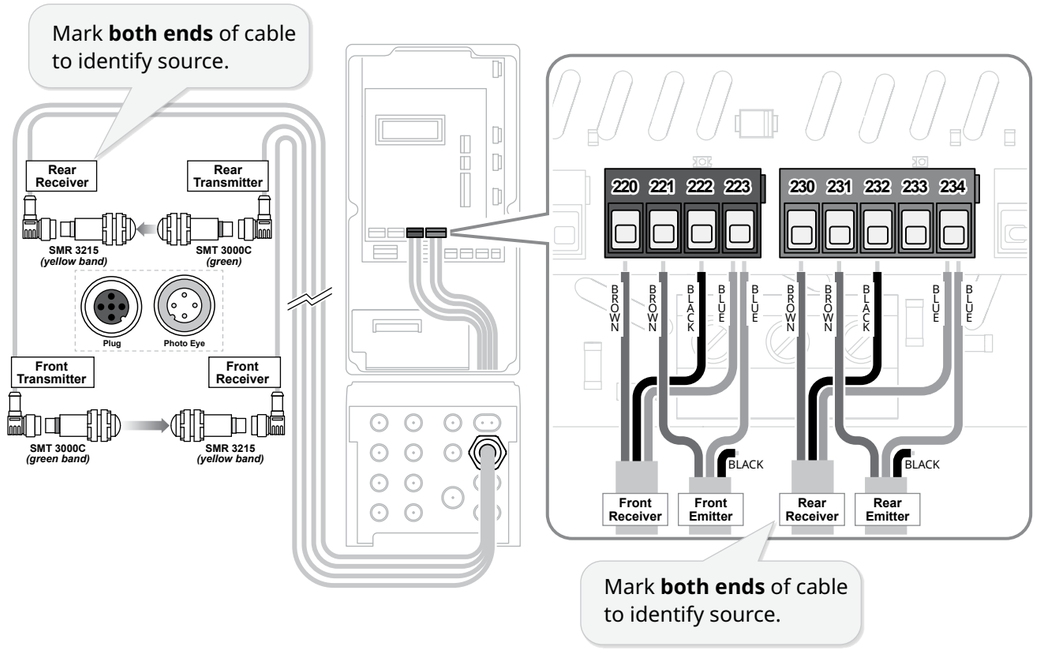
2 Connect the wiring from the Pathwatch LED strips. 18 AWG

Shielding: unshielded



3 **Connect** the wiring from the photo eyes.
Shielding: unshielded

18 AWG

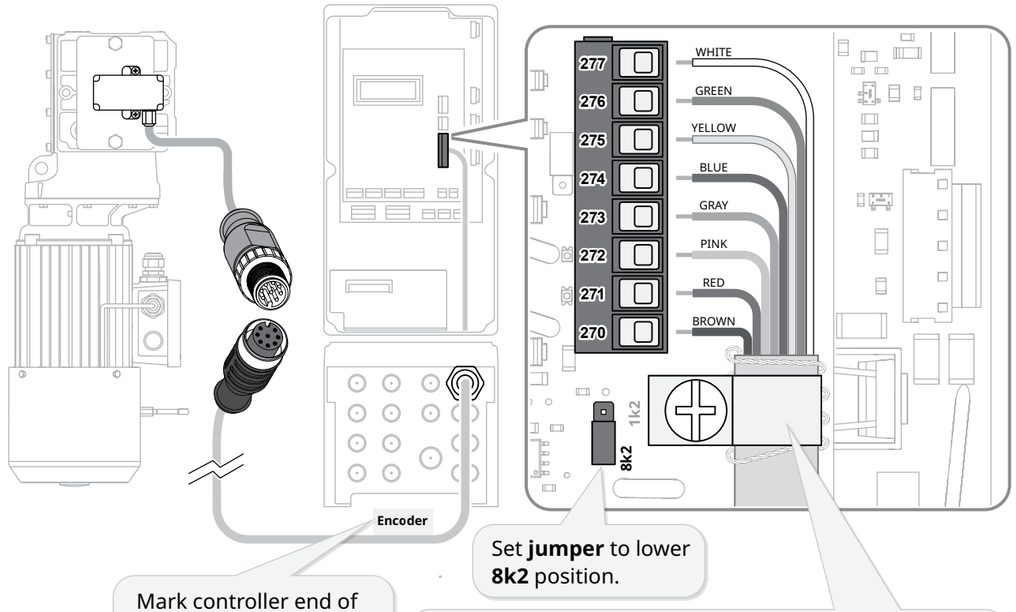


Encoder - door with a wireless antenna

On doors with a wireless antenna, the wires for the encoder, reversing edge and door ajar breakaway system run in the same cable.

4 **Connect** the wiring from the encoder.
Shielding: metal foil and drain wire

24 AWG



NOTICE

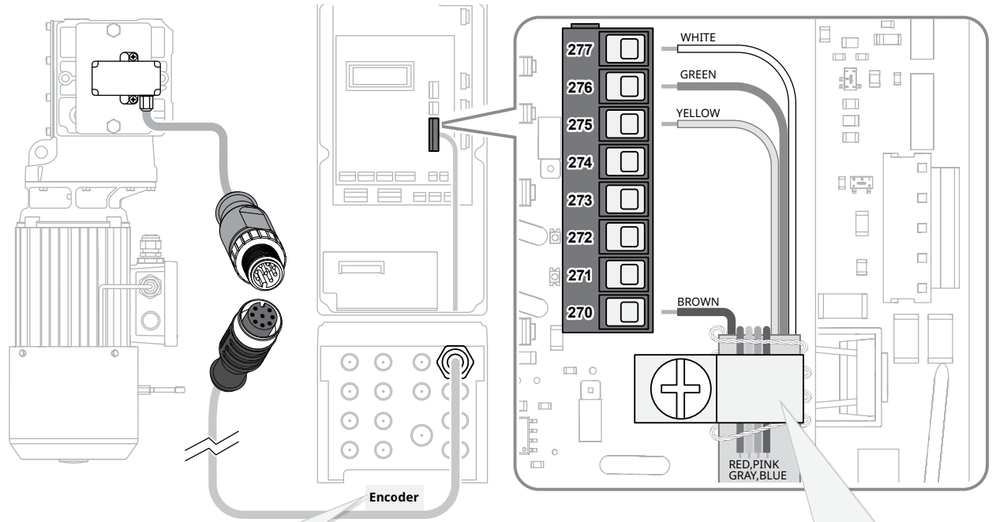
Encoder wiring must not be spliced unless you have consulted with Rytec technical support at **800-628-1909**.

Encoder - door with a coil cord

On doors with a coil cord, the wires for the encoder and the wires for the reversing edge and door ajar breakaway system run in the separate cables.

5 **Connect** the wiring from the encoder.
Shielding: metal foil and drain wire

24 AWG



Mark controller end of cable as **"Encoder"**

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

To ensure a tight contact:

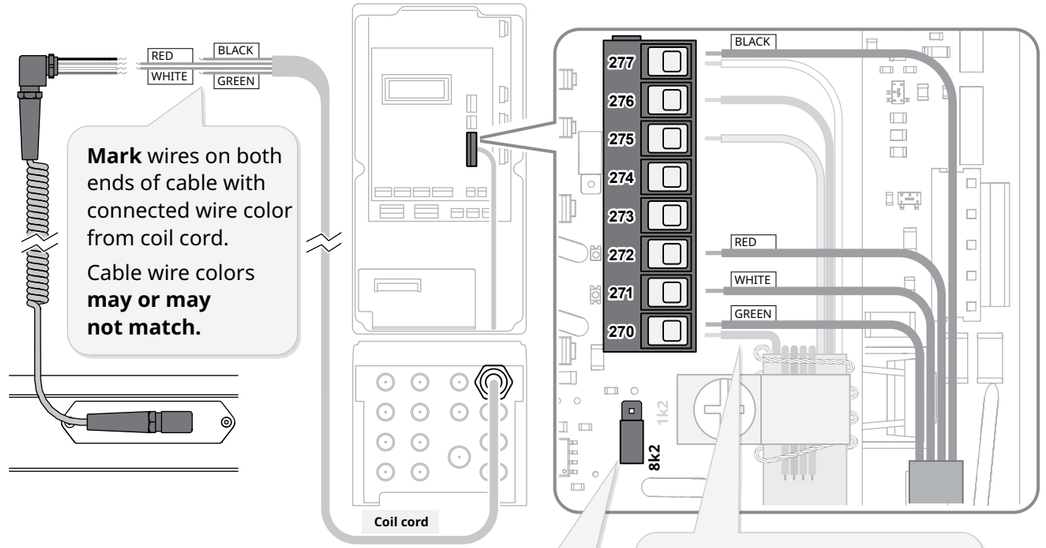
1. Loosen the P-clip.
2. Strip encoder cable jacket to expose wires.
3. Trim and bend red, pink, gray and blue wires. Tape to jacket.
4. Wrap drain wire around jacket and unused wires.
5. Slide cable under P-clip and tighten. **Make sure there is maximum contact** between clip and drain wire.
6. Trim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

NOTICE

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

6 **Connect** the wiring from the coil cord.
Shielding: unshielded

24 AWG



Mark wires on both ends of cable with connected wire color from coil cord.
Cable wire colors **may or may not match.**

Starting in 2023, ALL PredaDoors use an 8.2kΩ resistor, and the **jumper is set** to the lower **8k2** position.

Mark wires on both ends of cable with connected wire color from coil cord. Cable wire colors **may or may not match.**

Before powering up the door

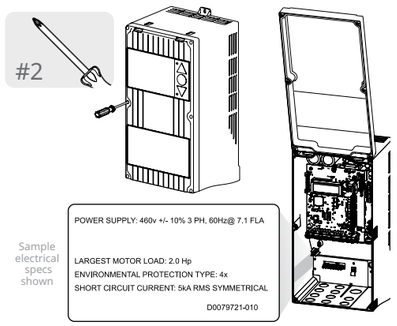
⚠ WARNING

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 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

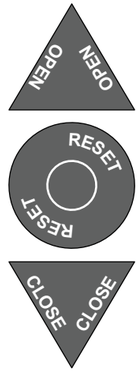
Blinking cursor
On left side of display: *press arrows to change parameter number*
On right side of display: *press arrows to change paramter value*

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

How to set limits

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

Do This *Result*

1 → PredaDoor NXT [xxx] Cycles

The door starts in run mode.

2 until the parameter screen displays → P:Password 0 / 001= [xxx] Cyc

You are in Parameter mode. Go to parameter 999.

3 2x to reach parameter P:999 → P:Password 0 / 999= 0000 #

The Password parameter P:999 screen displays.

4 1x to move cursor to the right (edit value) → P:Password 0 / 999= 0000✓#

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

5 16x to set value to hexadecimal 10 → P:Password 0 / 999= 0010?#

Set the value to 10 (Service level password).

6 until question mark changes to checkmark (value saved) → P:Password S / 999= 0010✓#

The Service level password is saved.

Next: navigate to parameter P:210 and set the closed and open position values

Do This *Result*

1 until 210 displays → P:New Limits S / 210= 0 #

The Limits parameter (210) screen displays

2 → P:New Limits S / 210= 0✓#

The cursor moves to the right side.

3 5x → P:New Limits S / 210= 5?#

Set the New Limits value to 5.

- This setting allows you to edit both the closed position limit and the open position limit.

4 5 sec. → P:New Limits S / 210= 5✓#

The New Limits value is saved

- **You must press and hold** the Reset button for five (5) seconds to save edits that you make to a parameter.

5 → P:New Limits S / 210= 5 #

The cursor moves to the left side.

Do This *Result*

6 5 sec.

```
!  Set Limits  !
Press  Reset  butt
```

The sequence to set the closed and open position limits begins.

7

```
To Closed Pos.
Hold Reset butto
```

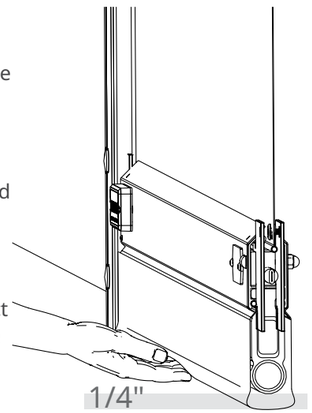
You can now set the value for the closed position limit

8 until closed height is correct

```
To Closed Pos.
Hold Reset butto
```

Set the closed position limit value

- Press the UP arrow or DOWN arrow to move the door to the correct position.
- Each press moves the door by a small increment. Press and hold to move the door more quickly.
- For PredaDoor, the door is at the correct close limit when the **loop seal dimples,** sealing the panel at the floor, and the **reversing edge is 1/4",** or roughly the width of your fingers when slid under the door panel, above the floor.



Do This *Result*

9 5 sec.

```
Close Limit Set
  0
To Open Pos.
Hold Reset butto
```

The closed position limit is saved

- **You must press and hold** the Reset button for five (5) seconds to save edits that you make to a parameter.

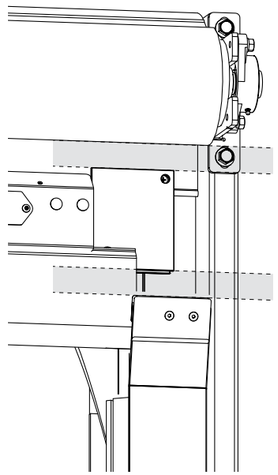
You can now set the value for the open position limit

10 until open height is correct

```
To Open Pos.
[xxx] Hold Reset
```

Set the open position limit value

- Press and hold the UP arrow to move the door to the correct position.
- Each press moves the door by a small increment. Press and hold to move the door more quickly.
- For PredaDoor, the end tabs should be in the **middle of the space** between the rolled-up door panel and the refeed guide.
- **Move at least ten feet** from the door to check the height.



11 5 sec.

```
Open Limit Set
  0
! Auto Calibrate!
Press Close butto
```

The open position limit is saved

- **You must press and hold** the Reset button for five (5) seconds to save edits that you make to a parameter.

Do This *Result*

12

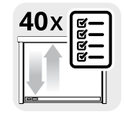
```
PredaDoor NXT
I555 Calib.Run
```

The automatic calibration sequence starts

- The door runs through several cycles of opening and closing.
- Initial cycles may not match the limits that you set. The final cycle should match your saved values for the closed and open position limits.
- The controller returns to Run mode when calibration is complete.

Do This *Result*

13



Test for these conditions while the door opens and closes:

- Door panel moves smoothly
- Door is not unusually noisy
- Bracket stays tight to motor and head assembly
- Drive shaft does not shake
- Door limits are correct

How to manually adjust the open or close limit (optional)

IMPORTANT This procedure is for making small adjustments (up to one inch) to the open or close limits. Reset limits using parameter P:210 for larger adjustments.

Go to parameter P:221 (Close Position) or P:231 (Open Position) and change the value ***(P:221 shown here)***

Do This *Result*

1 until parameter displays

```
P:Adj Cls Pos  S
221=         0 Inc
```

IMPORTANT Default value is 0 Inc

Inc (increment) is roughly 1/10 inch.

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

```
P:Adj Cls Pos  S
221          0√Inc
```

Checkmark indicates current value

3 until new value displays

```
P:Adj Cls Pos  S
221=       [x]?Inc
```

Press **UP ARROW** to increase Inc.

Press **DOWN ARROW** to decrease Inc.

The question mark indicates the value is changed but not yet saved.

Do This *Result*

4 IMPORTANT Do not change the value by more than 5 Inc before testing the door.

5 until question mark changes to checkmark (value saved)

```
P:Adj Cls Pos  S
221=       [x]√Inc
```

The new value is saved

6 1x to move cursor to the left (parameters)

```
P:Adj Cls Pos  S
221=       [x] Inc
```

You can now exit parameters

7 until door returns to run mode

```
PredaDoor NXT
[xxx] Cycles
```

How to test the door and the detection features

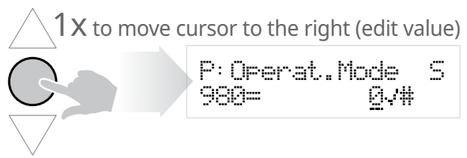
Navigate to parameter P:980 and set the value to 4 so the door will cycle continuously

Do This *Result*

1 until parameter displays

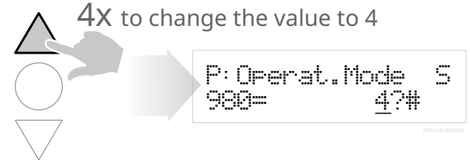
The default value is 0.

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



You can now change the value.

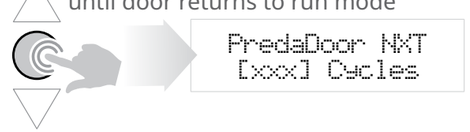
3 4x to change the value to 4



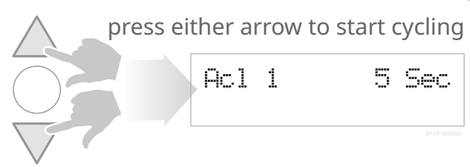
4 until question mark changes to checkmark (value saved)

The new value is saved.

5 until door returns to run mode



6 press either arrow to start cycling



Check the movement of the door

1 **Watch** the door as it cycles.

- **Make sure** the door panel moves 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 door panel 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.
- **Any indication** that the door is not moving freely.
- **Unexpected delay** in activation or unusually long time period before automatically closing.

3 **Observe** the Pathwatch LED strips on both side columns as the door opens and closes.

- **Before the door closes:** strips display a three-second sequence of combined red-yellow flashes
- **While the door closes or opens:** strips glow continuously red until the door stops.

4 IMPORTANT

Set the controller to parameter mode.

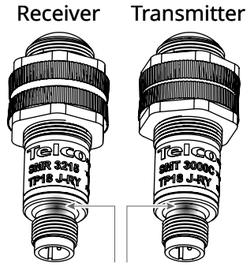
Set Parameter 980 back to 0 to take the door out of continuous cycle.

Return to run mode.

Test the photo eyes

1 **Check** the LED lights in the front and rear transmitters and receivers.

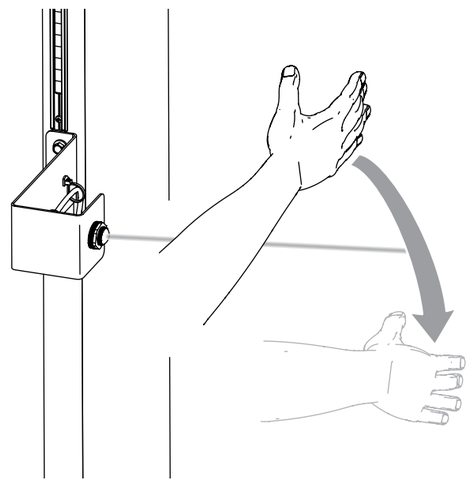
- **Transmitter:** green light indicates it is operational.
- **Receiver:** yellow light indicates it is correctly aligned with the transmitter.



LED in base
Receiver = yellow
Transmitter = green

2 While the door is closing, **break the beam** on each set of photo eyes.

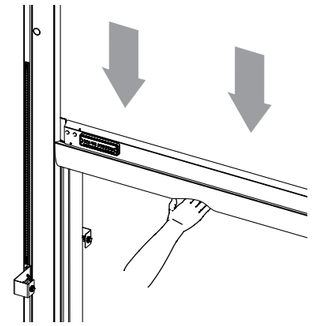
- **Door should stop, reverse,** and stay open as long as the obstruction remains in place.
- **Door should only close** when the obstruction is removed.



Test the reversing edge

1 **Place your hand** in the path of the closing door panel, above the photo eye beams, and allow the reversing edge to hit it.

- The door panel should stop, reverse, then run through the delay timers and close normally.

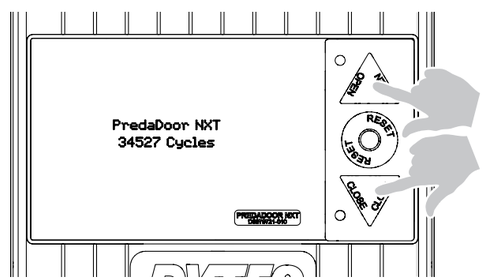


2 **If necessary,** adjust the sensitivity of the reversing edge. See *How to adjust the sensitivity of the reversing edge* on page 31.

Test the buttons on the controller

1 **Open, close and stop** the door using the buttons on the controller.

- **If the UP arrow and DOWN arrow** do not operate as expected, see the Troubleshooting procedure *How to reverse the rotation of the motor* on page 30.



Test the door ajar breakaway system

⚠WARNING

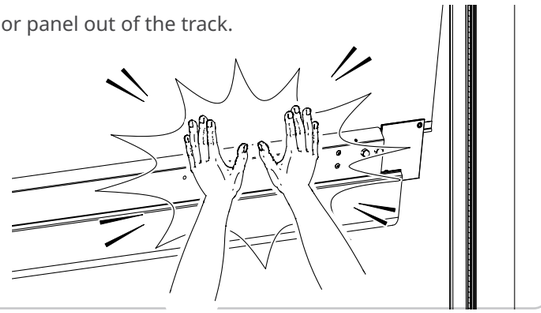
Activating the door ajar breakaway system requires you to strike the metal bottom bar hard enough to push the door panel out of the door track.

Do not attempt this procedure if you have a previous injury which might be aggravated by the force of the contact.

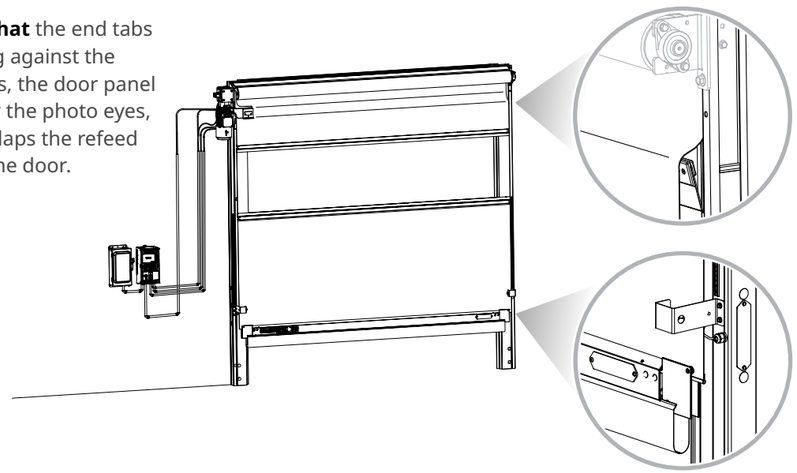
1 **Strike the bottom bar** hard enough to knock the door panel out of the track.

IMPORTANT

- **You can do this** while the door is closing or after jogging it to a working height.
- **This is most easily done** near a side column, rather than in the center of the door, and from the rear of the door rather than from the front.
- **Door should stop immediately.**
- **The controller** generates an F060 error.

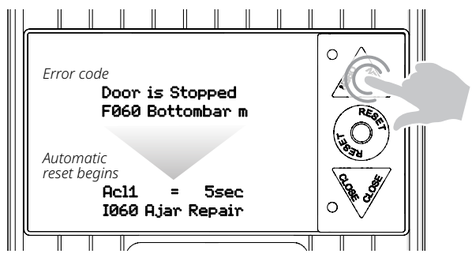


2 **Set the door panel so that** the end tabs on both sides are resting against the front of the side columns, the door panel is inside the brackets for the photo eyes, and the door panel overlaps the refeed guide on both sides of the door.



3 **Press and hold the UP arrow** until the door reaches the open limit.

- The controller should take command of the door, **stop it** at the open limit, **initiate** an automatic refeed, change the F060 error code to an I060 information code, and **close** the door in the track.
- **Watch** the controller display to see the error message change then the automatic refeed begins.



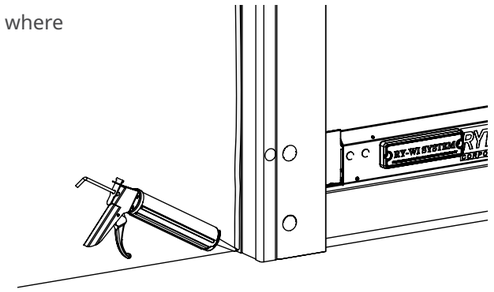
4 **If necessary,** adjust the sensitivity of the door ajar breakaway system. See *How to adjust the sensitivity of the door ajar breakaway system* on page 32.

Perform final tests and finish up

1 **Activate the door** using each additional activating system, if any have been installed.

2 **Caulk the door** on both sides along the outer edge where the side columns and brush seal meet the wall.

Caulk



Troubleshooting

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

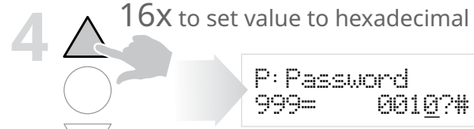
The parameter P:999 screen displays.

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.

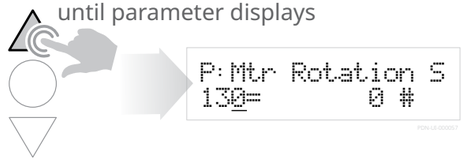
6 1x to move cursor to left (parameters)

You can now go to parameter P:130.

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

Do This *Result*

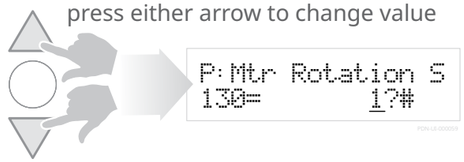
1 until parameter displays



Value is either 0 or 1.

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

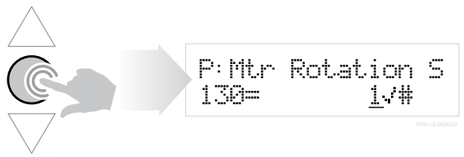
3 press either arrow to change value



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

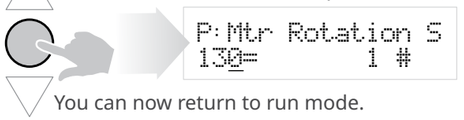
Do This *Result*

4



The new value is saved.

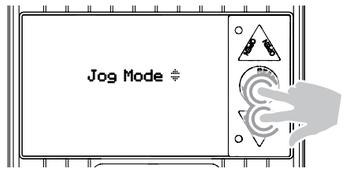
5 1x to move cursor to left (parameters)



You can now return to run mode.

How to adjust the sensitivity of the reversing edge

1 **Put the door in jog mode** and jog it to a comfortable working height.

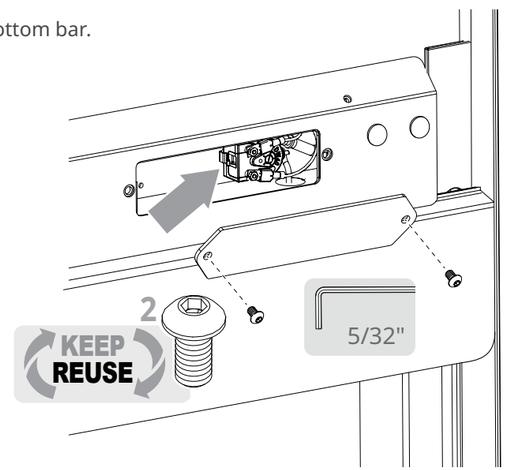


2 **Locate the cover plate** on the non-drive side of the bottom bar.

Remove the two hex screws and the plate.

Locate the red pneumatic reversing edge switch in the bottom bar. This switch is similar to the one that activates the door ajar breakaway system.

- The switch has a **small resistor** attached to it (gray arrow), and the attached wires are **red and black.**



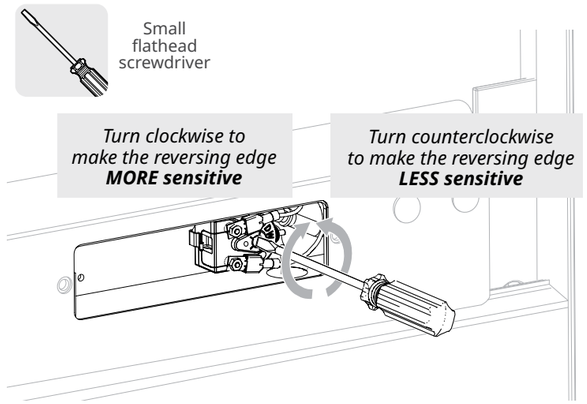
3 **Locate** the large white adjustment screw in the center of the switch.

Use a small flathead screwdriver to turn it:

Clockwise to make the reversing edge **MORE sensitive**, so less contact is required to stop the door.

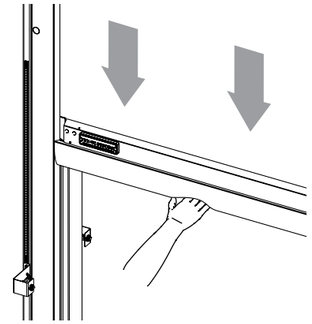
Counterclockwise to make the reversing edge **LESS sensitive**, so it requires harder contact to stop the door.

IMPORTANT Turn a half turn, then retest the door. **DO NOT** turn farther than half a turn before retesting.



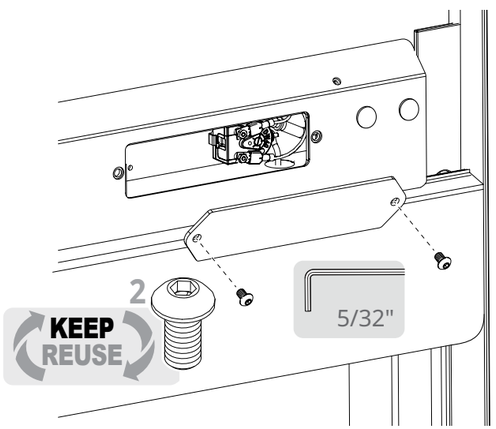
4 To retest the door, put the door back in run mode, **place your hand** in the path of the closing door panel, above the photo eye beams, and allow the door to hit it.

- You can swing your arm up or down as the reversing edge makes contact to simulate harder or softer contact.



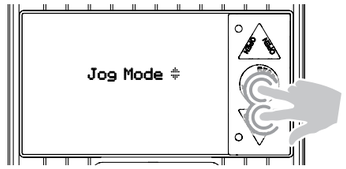
5 **If necessary,** repeat the process until you are satisfied with the response.

6 **Replace the cover plate** and hex screws when you are done.



How to adjust the sensitivity of the door ajar breakaway system

1 **Put the door in jog mode** and jog it to a comfortable working height.



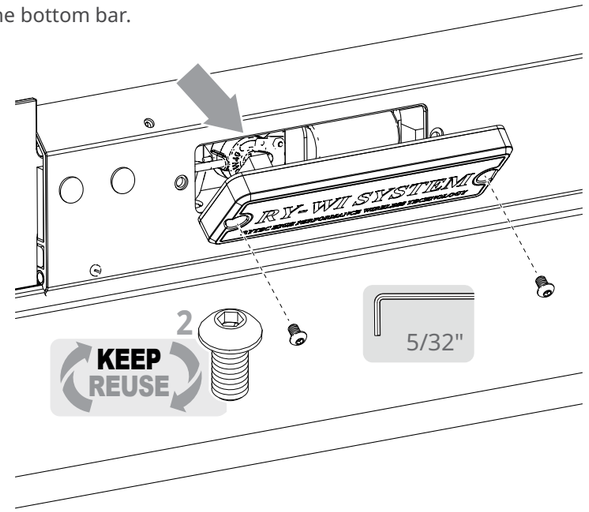
2 **Locate the Ry-Wi cover** on the drive side of the bottom bar.

Remove the two hex screws and the cover.

IMPORTANT **REMOVE CAREFULLY!** There are eight long, thin wires wound up behind the cover that can easily be damaged or pulled out of their connections.

Locate the red pneumatic reversing edge switch in the bottom bar. This switch is similar to the one that activates the reversing edge.

- The switch has **no resistor** attached to it, and the attached wires are **light blue.**



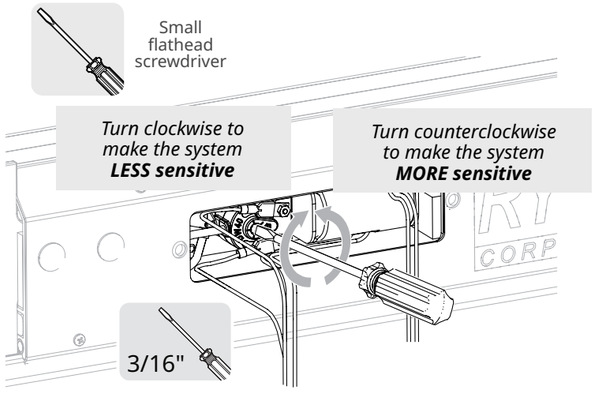
3 **Locate** the large white adjustment screw in the center of the switch.

Use a small flathead screwdriver to turn it:

Clockwise to make the system **LESS sensitive**, so harder contact is required to stop the door.

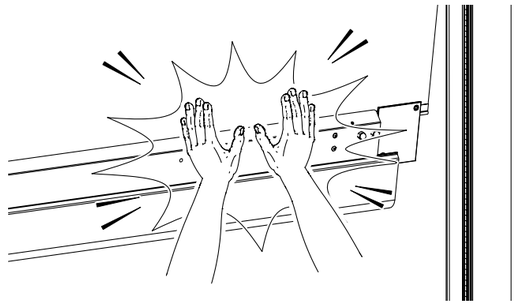
Counterclockwise to make the system MORE **sensitive**, so less contact is required to stop the door.

IMPORTANT Turn a half turn, then retest the door. **DO NOT** turn farther than half a turn before retesting.



4 To retest the door, put the door back in run mode and **repeat** the process to knock the door out of its track and reset it.

- You can vary the force you use to strike the bottom bar to simulate harder or softer contact.



5 **If necessary,** repeat the process until you are satisfied with the response.

6 **Curl up the wires** so they fit cleanly behind the Ri-Wi cover when it is replaced without being pinched or crimped, and **replace** the cover and hex screws.