DOOR ENGINEERING

A SENNECA COMPANY

FF30 Four-Fold Door

Installation Manual

1-30-000

Rev 4

12/20/2024

Table of Contents

Important Notice

Before Door Installation:

- **Read this Manual in its entirety.** Review with installation team.
- Verify required documents are correct (as built and E1, Operator Layout, etc.)
- Verify that installation equipment (Telehandler, Forklift, Crane, etc.) is rated to handle the weight of the door.
- Verify that the door has not been damaged during transportation.
- Verify that the door is the correct size for the opening (reference included as-built drawings).
- Verify all components listed in the provided ship-loose list are present.
- Ensure that work area is clear of dirt and debris.

Before Operator Installation:

- **All electrical wiring must be done by a Certified Electrician.**
- Read the *CW Automation Door Controller Setup Manual* provided with the control panel.
- Refer to all applicable local electrical codes.
- Always refer to National Electric Code (NFPA 70, ARTICLE 430 SECTION 4).
- Always disconnect Main Power before doing any electrical work.
- Verify that proper Over-Current and Short-Circuit prevention will be used.
- CW Automation Contact: (507)-665-4186

Operator Install:

- A door that is operating improperly could cause severe injury. Have qualified service personnel make repairs or adjustments to panels and other hardware before installing the Operator.
- Place and constrain door panels in the closed position **before** connecting Operator.
- Installation of door Operator must be done by a qualified installer.
- Install Door Operator at least 8 feet or more above the floor.
- Do not connect the Door Operator to the source of power until indicated in the instructions.
- Locate the Control Panel:
    - Insight of door system
    - At a minimum height of 5 feet from finished floor to bottom of Control Panel
    - Away from all moving parts of door system

Safety Practices:

- All labels are provided in the “Safety Label Kit”.
- Install the “Entrapment Warning” label next to the Control Station in a prominent location.
- Before operating, always check clearance around the door for any person or object that may be in the door(s)’s path. Never store items in or near the area of door travel.
- If you have any questions about the safety of the door operating system. Contact Door Engineering & Manufacturing at **1-800-959-1352.**

Tools Required for Installation (Installer supplied)

Tools	Notes
1/4” Impact Socket	
3/8” Impact Socket	
1/2” Impact Socket	
5/8” Impact Socket	
1” Impact Socket	
Appropriate Rigging	Blocking/Dunnage/Etc.
R/L Tin Snip	
Bubble Level	
Chalk	
Clevis Fastener	
Drill Bit for 1/2” Anchor	Concrete Embedment
Forklift/Telehandler	
Hammer Drill	Anchor Installation
Ladder	
Laser Level	
Needle Nose Pliers	
Non–Abrasive Shims	Wood, Plastic, etc. Not Provided
Padded Blocking	
Rubber Pad (For Lifting)	
Scissor Lift	Recommended

Bolt Sizes

1/4” TEK Screw
3/8” Hex Head Cap Screw
1/2” Anchor Bolt (Wedge Expansion or Epoxy)
1/2” Hex Head Cap Screw
1/2” Hex Nut
5/8” Hex Nut
1” Hex Head Cap Screw

Loading and Installation Equipment

Forklift Installation Tool (Fig. 1)

- Part # 1-85-020
- Load Capacity 1,600 lbs.

Install strap

- Load Capacity 1,600 lbs. (basket load)
- Recommend 10 ft. twisted-eye web slings

Installation Bracket (Fig. 2)

- Part # 1-85-013
- Load Capacity 2,100 lbs.

NOTE: DO NOT ATTEMPT TO LIFT LOADS THAT EXCEED INSTALLATION TOOL CAPACITY. FAILURE TO COMPLY MAY RESULT IN DAMAGE TO DOOR AND/OR FACILITY, BODILY HARM, OR DEATH.

Fig. 1

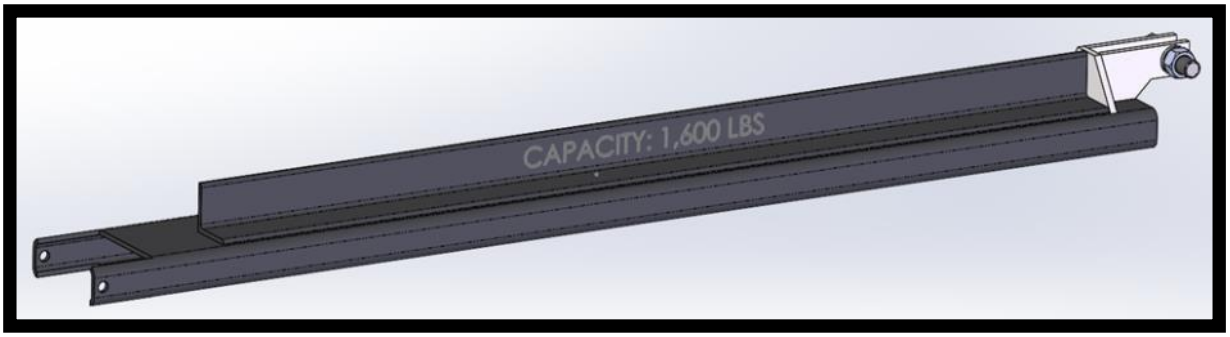
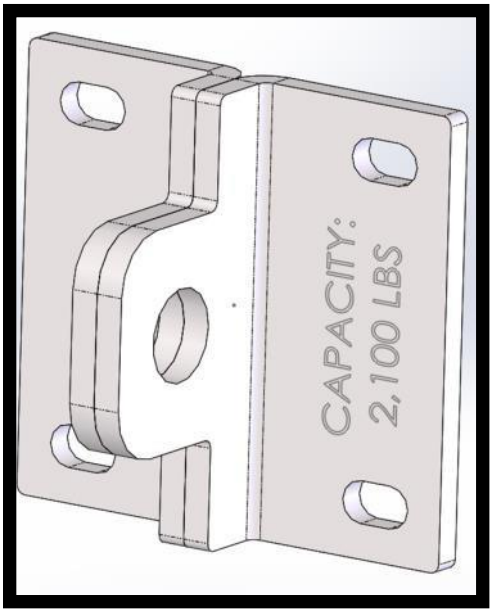
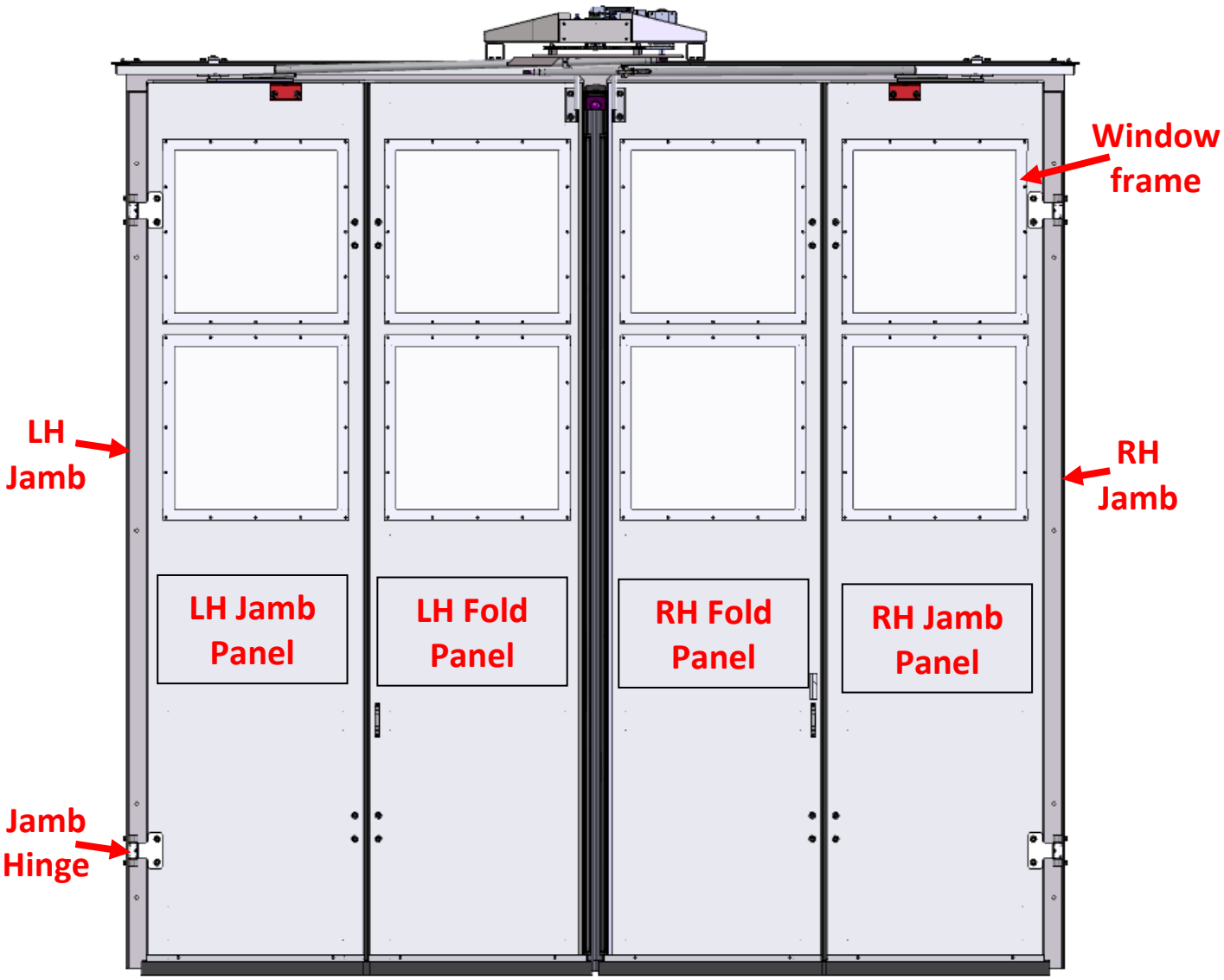


Fig 2

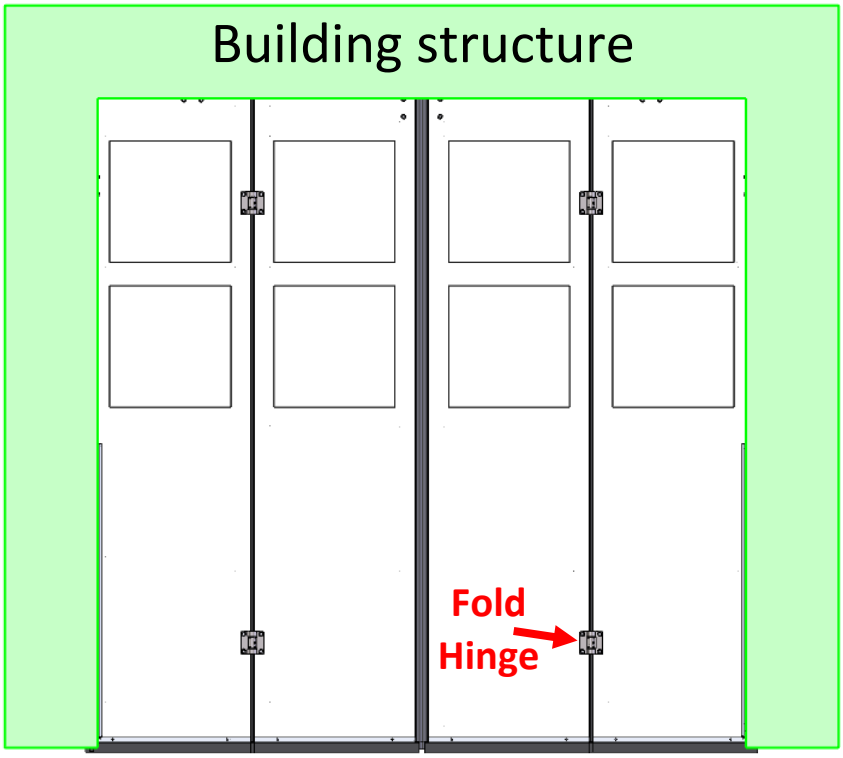


Anatomy of an FF30 door

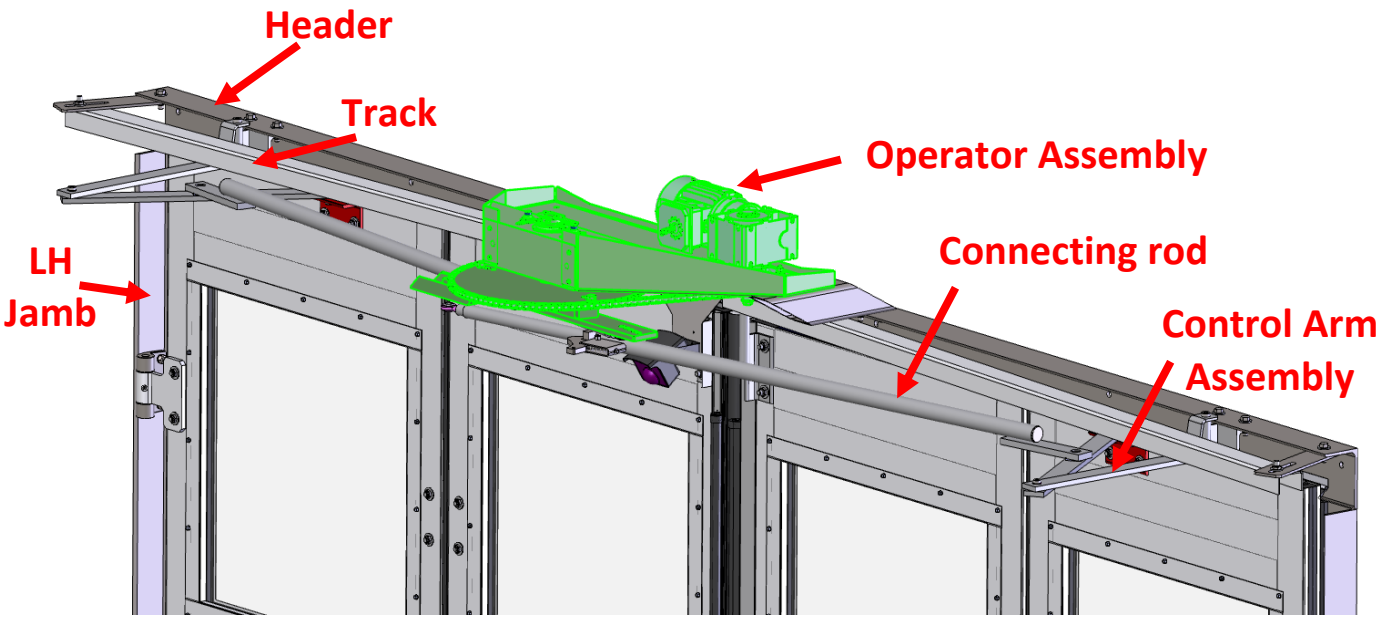
Interior view

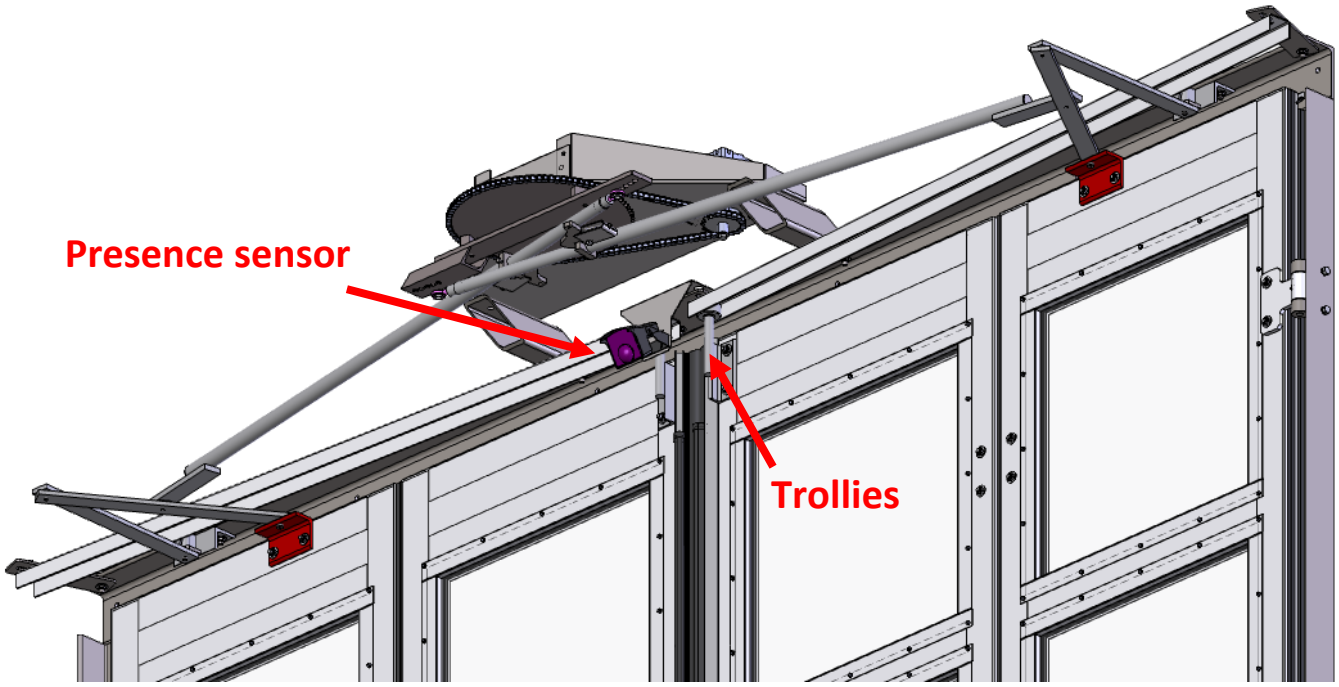


Exterior view



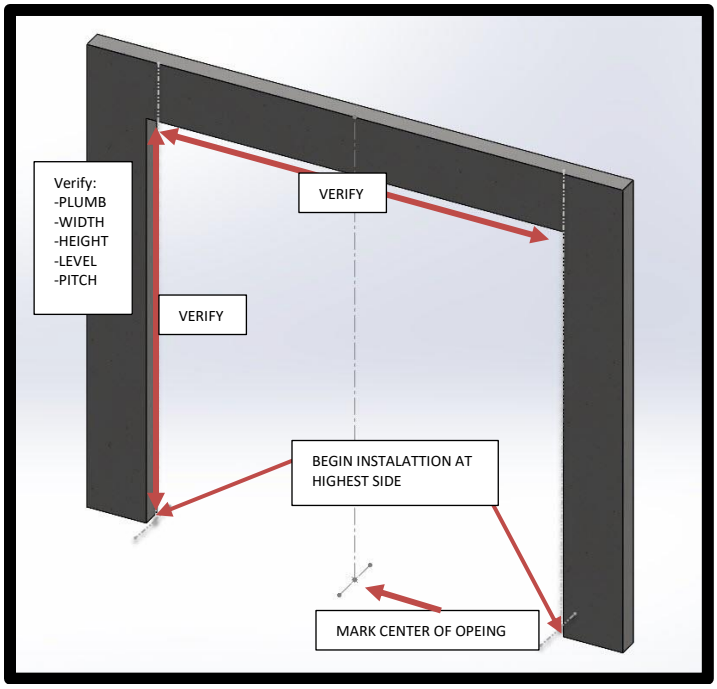
Isometric interior views




Presence sensor
Trollies

Installation Instructions

Step 1: Prep and setup



1. Verify dimensions of opening and mark the center of the opening on the floor. Angle frames should be centered in the jamb and set to 14’-0” from inside edge of jamb angles.

    a. If the floor is not level, start door installation at the higher side of opening, and shim adjacent frame to match.

****BE CAREFUL WITH GLASS. DO NOT REMOVE BANDING****

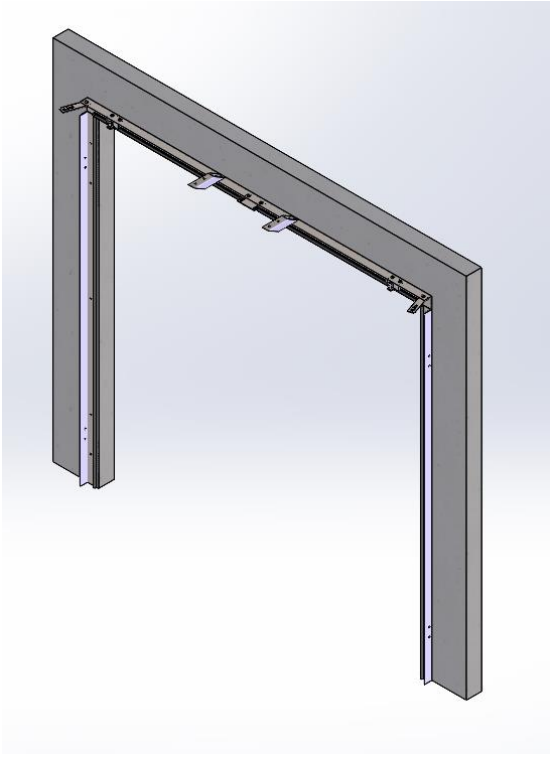
****DO NOT REMOVE BANDINGS THAT HOLD DOOR SECTIONS TOGETHER****

Step 2: Jamb installation

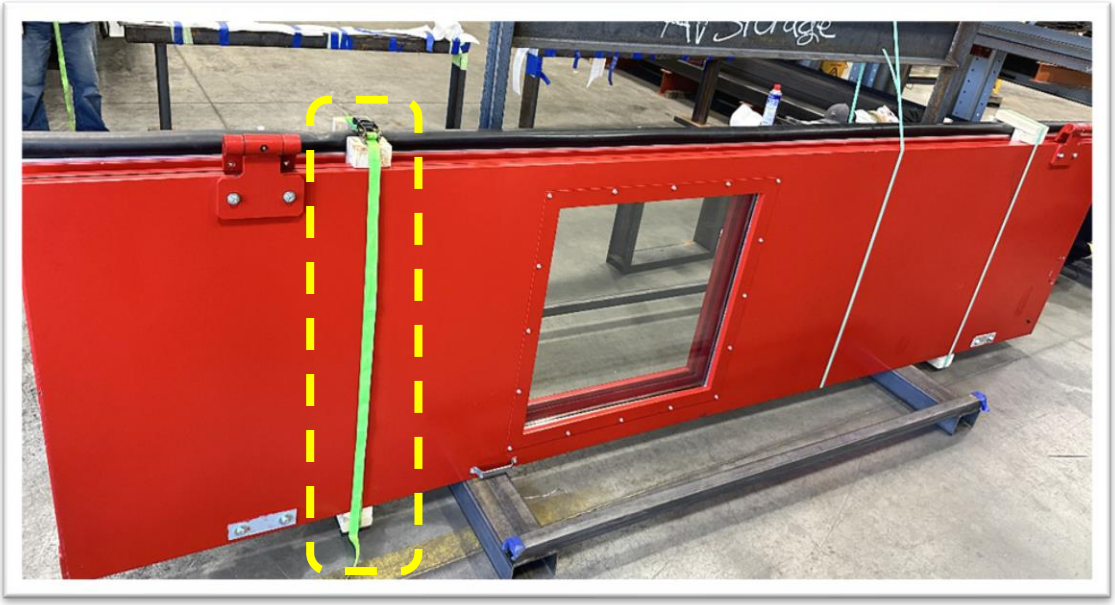
1. Install the Jambs on door opening ensuring the inside of the jambs are 14’ apart on the top and bottom and are leveled in all directions.
    a. For CMU or Precast: ½”x 5” Anchor
    b. For Steel: ½” Thread Forming Fastener
    c. For Wood: ½”x 6” Lag Bolt

Step 3: Header installation

1. Raise and place header above the jambs. Assure both ends of the header are aligned with the outsides of the Jambs and leveled in all direction. Install remaining anchorage.



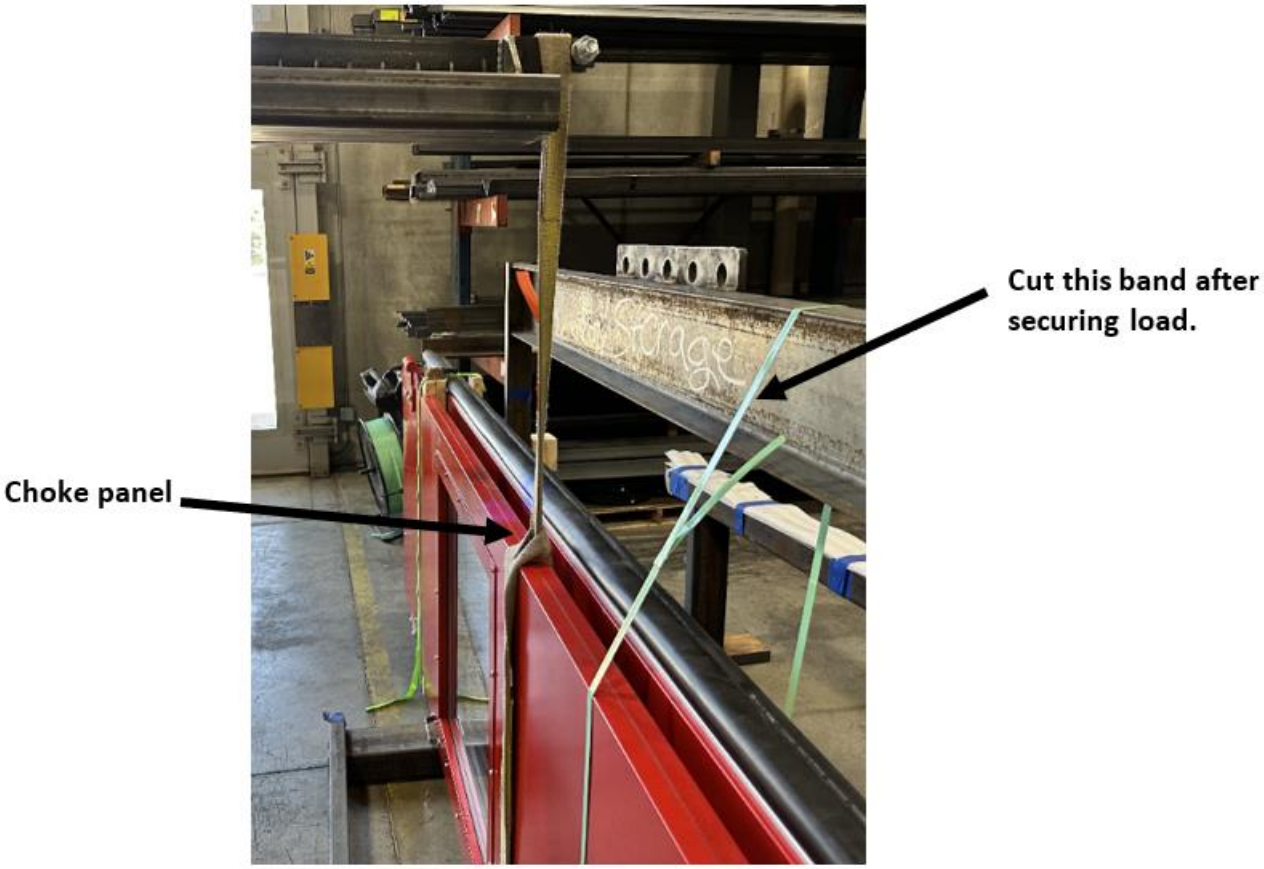
Step 4: Remove panels from shipping rack.



1. Apply ratchet strap around the nylon banding and wood at bottom of door.

2. Choke strap around jamb panel, securing the other end to the forklift install tool.

Note: Only cut bands once you have lifting strap in place.



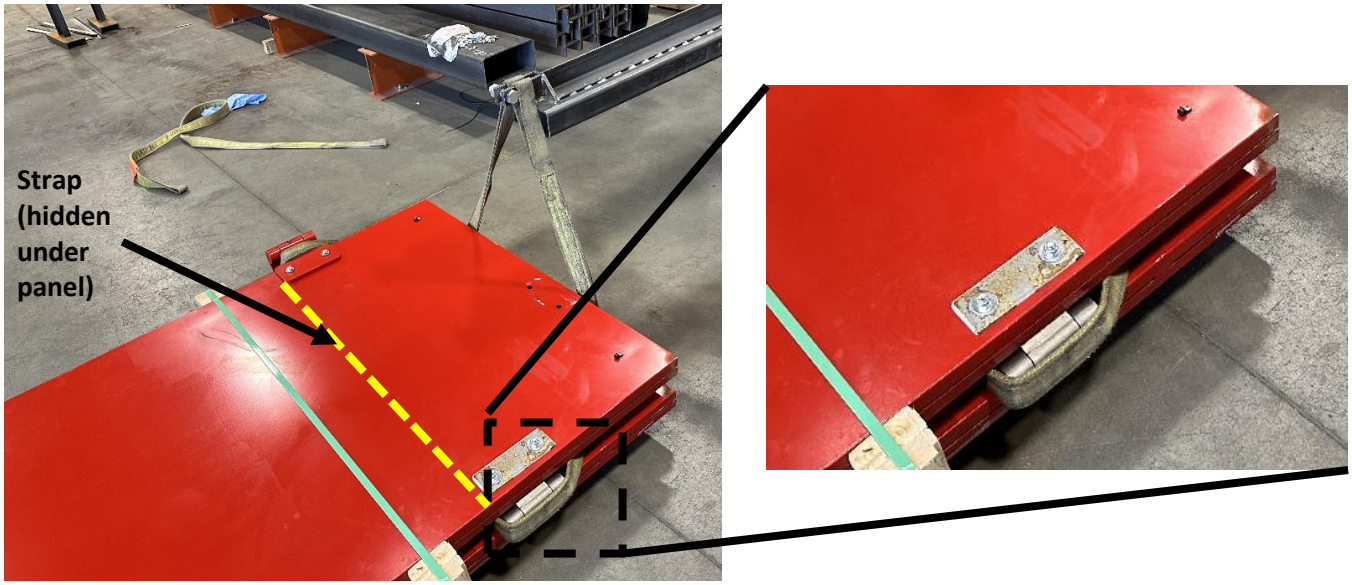
3. Cut safety band that secures panels to the shipping rack for removal.

4. Lay panel down, utilizing the pre-installed shipping wood. Position bottom of panel near and facing the door opening.

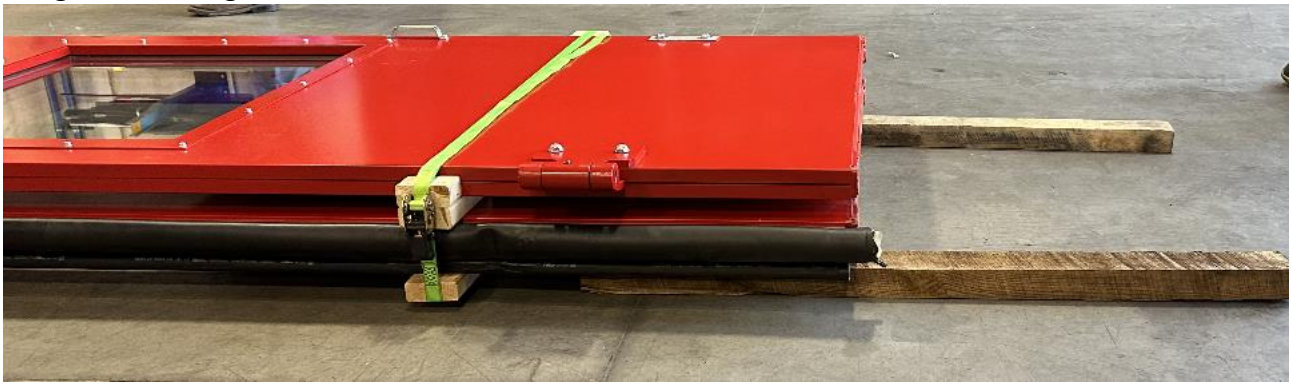
Step 5: Lifting panels

1. Utilizing a 10’ web sling, run strap through the center of the door panels and around both hinges.

2. Attach to forklift install tool.



3. Block bottom of door using two pieces of wood to protect the panel and safety edge from contacting the ground during lift.

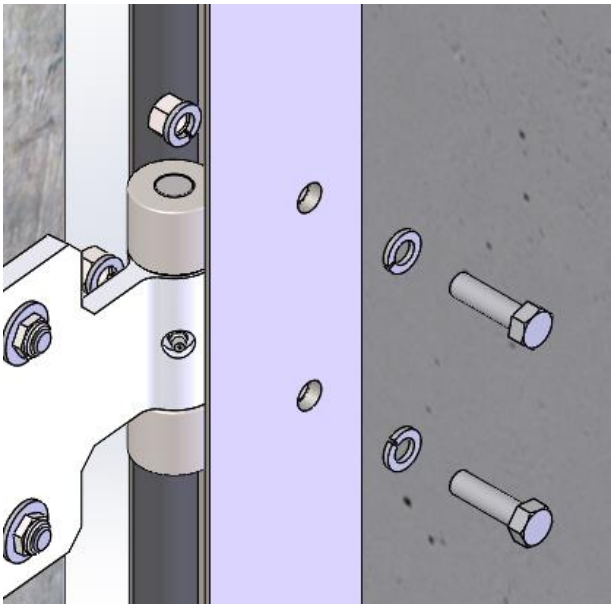


4. Lift panel into position and fasten door to jamb using supplied hardware.

Note: upper banding and wood may need to be removed to better position door

5. Secure the panel hinges to the jambs with the following hardware

    a. Install bolts outside in (HHCS .500-13x1.75 zc G5), secure with 2 lock washers (LW .500 zc) and 1 nut (HN .500-13 zc) per hinge hole

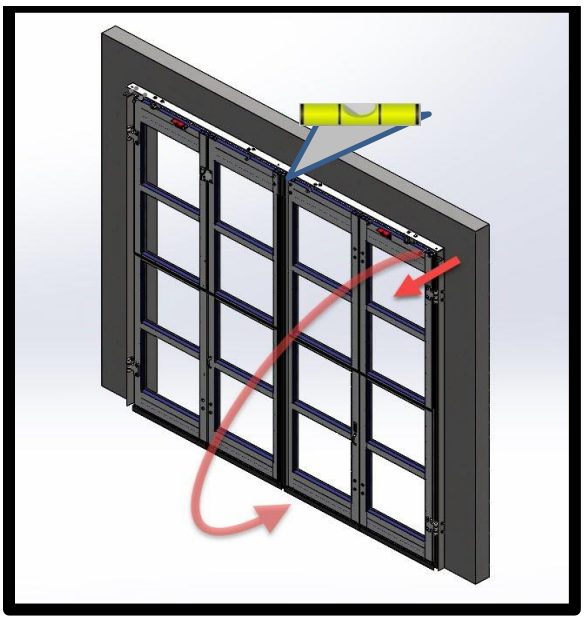
6. 

    a. Once door is secured to the frame, ratchet strap and banding can be removed.

****Repeat removal and lifting steps for other set of panels for the opening****

Step 6: Shimming

1. Shim underneath door Jambs to level the top of the door panels.
2. Shim between the jambs and wall as needed to twist the leading edge of both panels, so that they sit flush, and their reveal is consistent from floor to header.

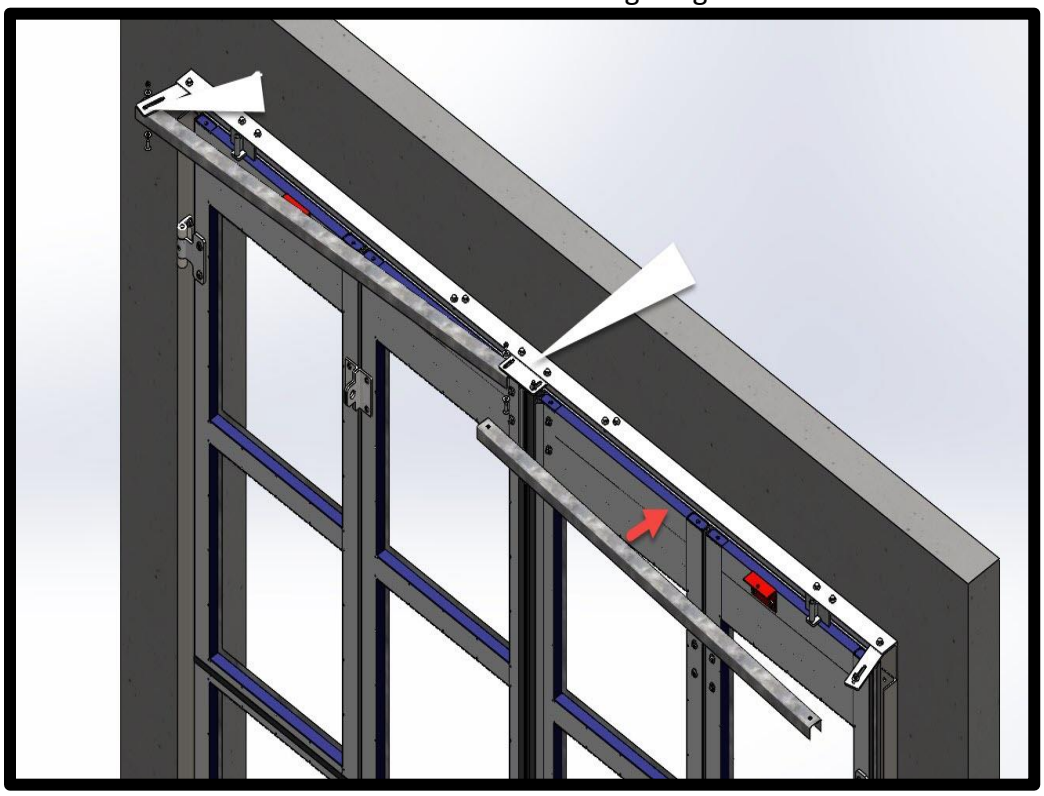


Note: Adding shims at the top right-hand (RH) corner will push the bottom of the RH lead panel towards exterior. Adding shims at the bottom RH corner will pull the bottom of the RH lead panel towards interior.

3. Once shimming is complete, install remaining frame hardware.

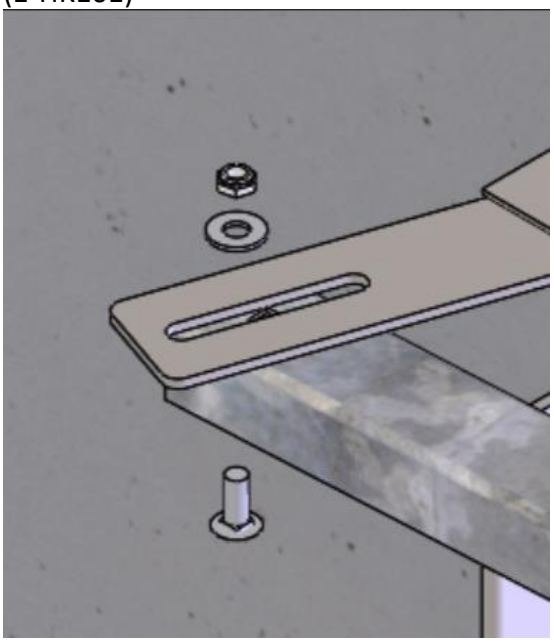
Step 7: Track & Accessories

1. Install track hardware finger tight.

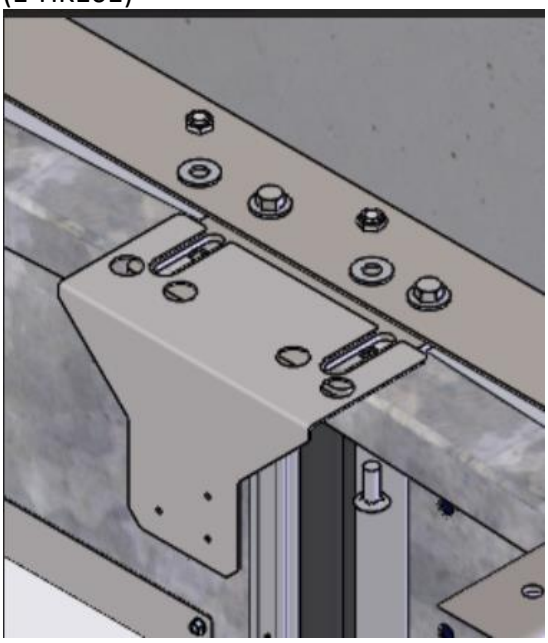


2. Install presence sensor bracket to center track hanger.

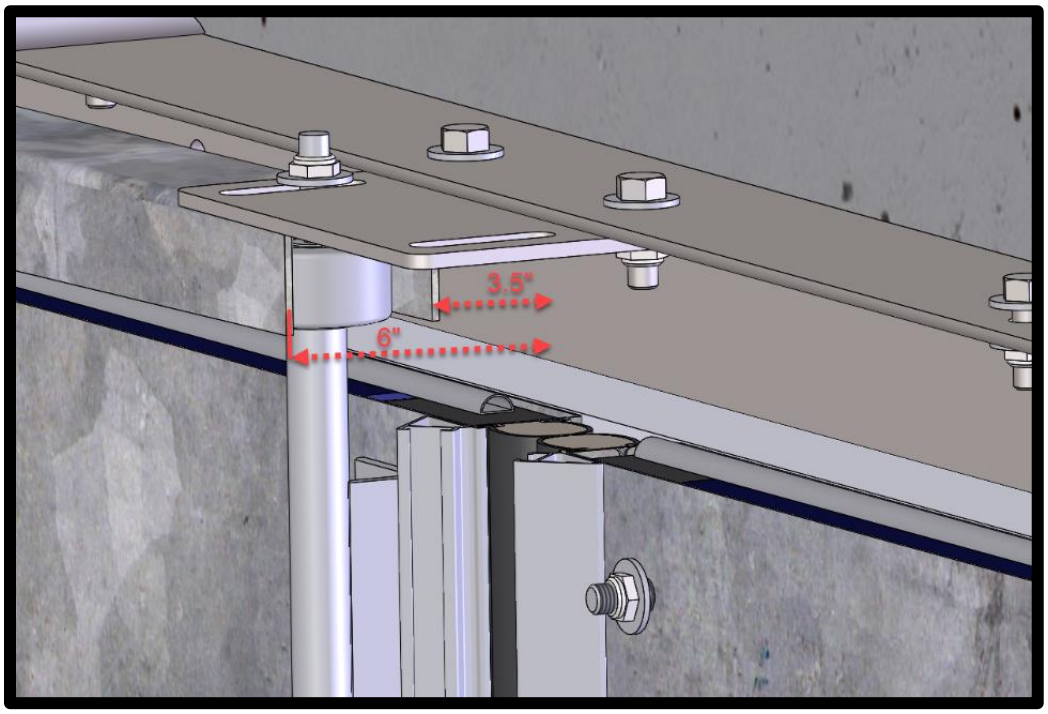
(1-HK101)



(1-HK101)

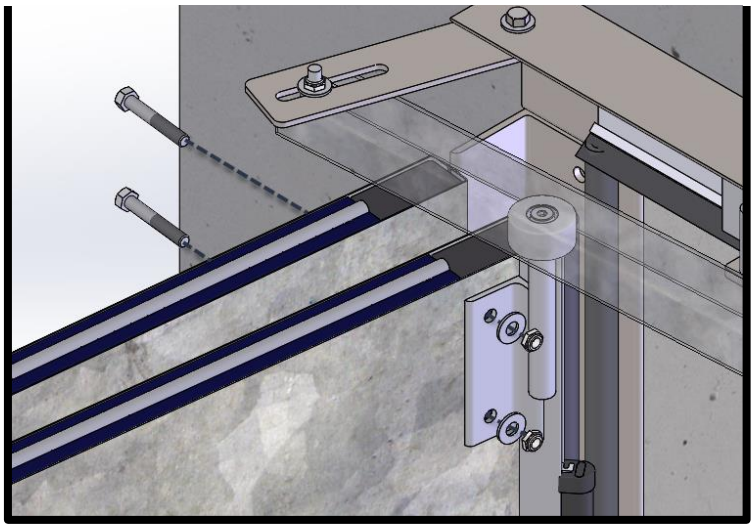


3. Track should be approximately 6” from exterior edge of Track Support to the Surface Mounted Frame or 3.5” from the interior edge of Track Support to the Surface Mounted Frame.



Step 8: Install Trollies

1. While door is opened, install Trolley onto top outer corner of door fold panel and bolt into place using hardware kit supplied (1-HK102)



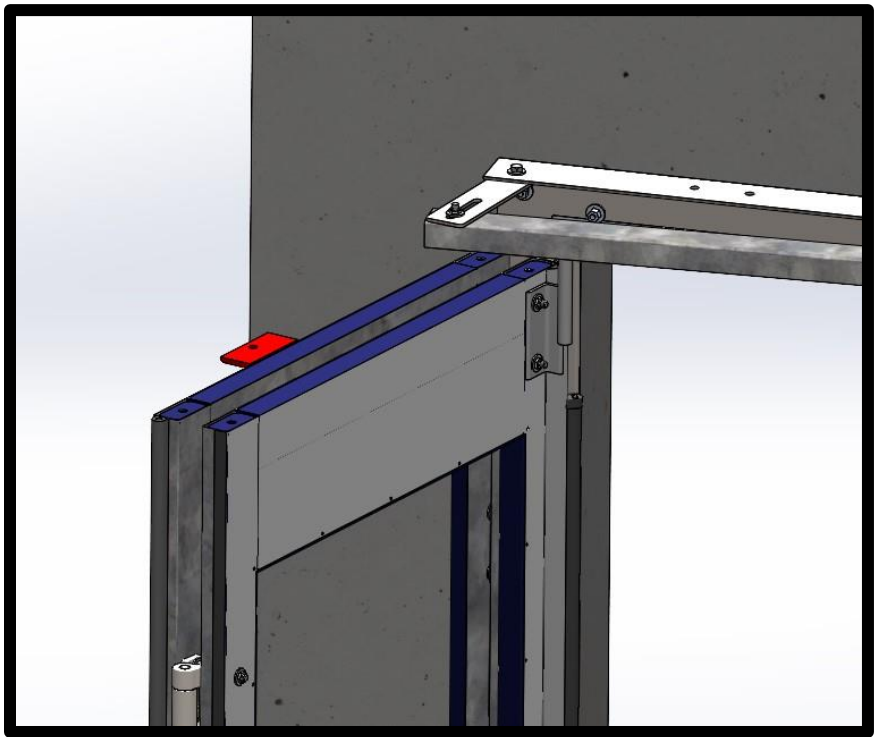
2. Door should open slightly past 90° for standard door (approximately 85° between the jamb panel and wall). (Reference as-built drawings for design intent)

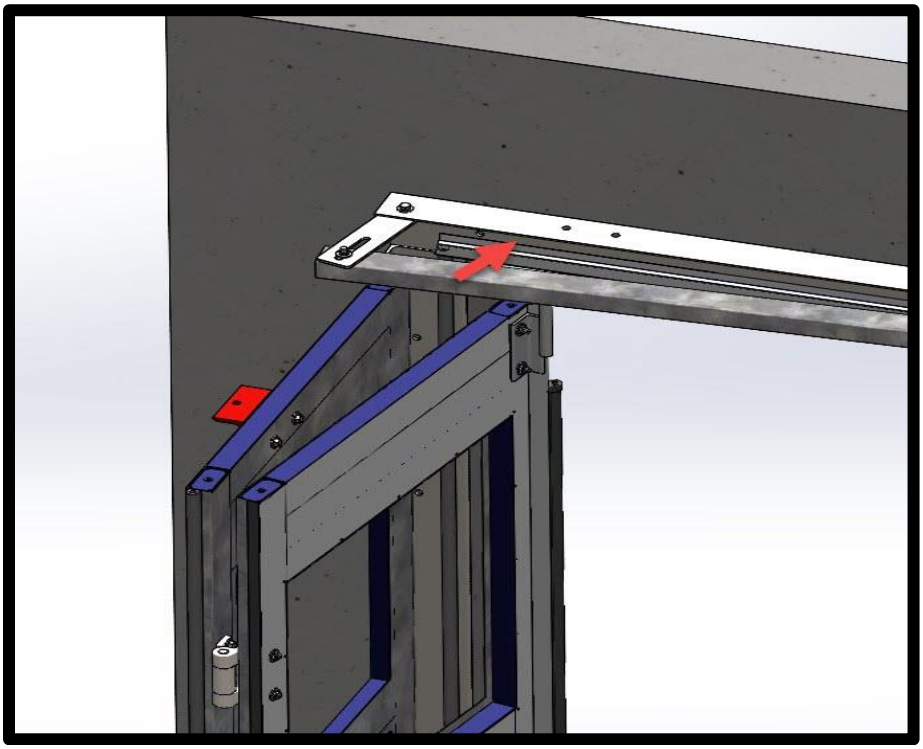
Note: this may need to be adjusted again after power is brought to door and door operator is in the “open” position.

Step 9: Panel Adjustment

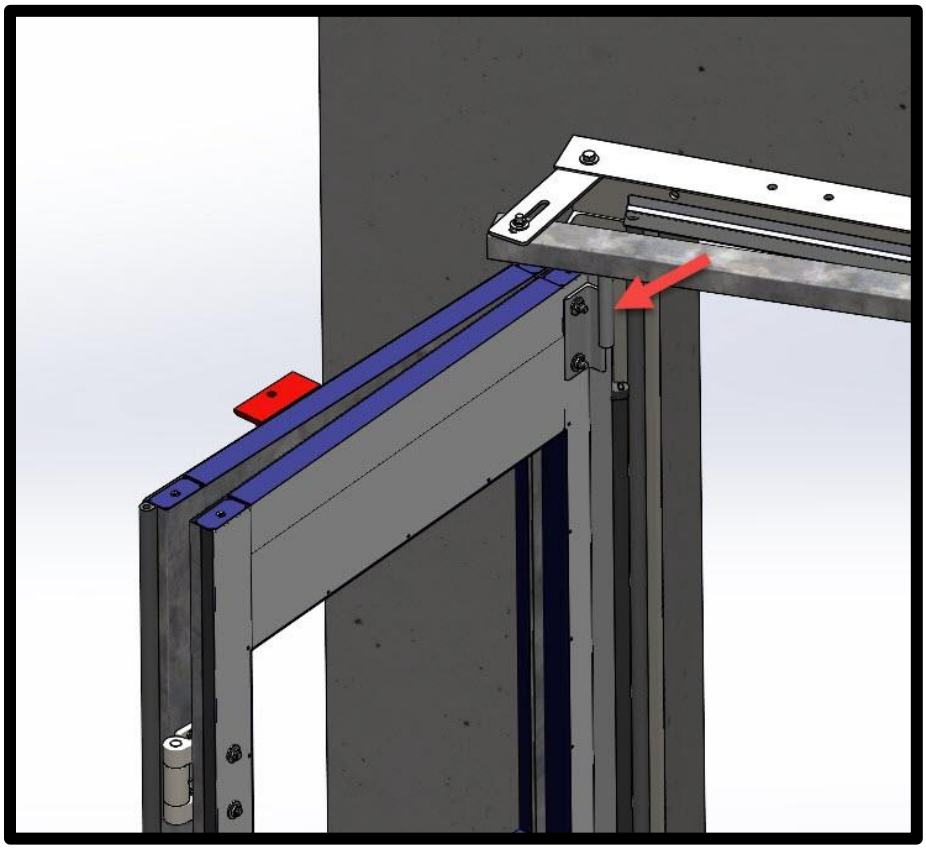
1. Adjust outside track in or out until panels are parallel. Then tighten fasteners.

Note: this may need adjusted again after power is brought to door and door operator is in the "open" position.





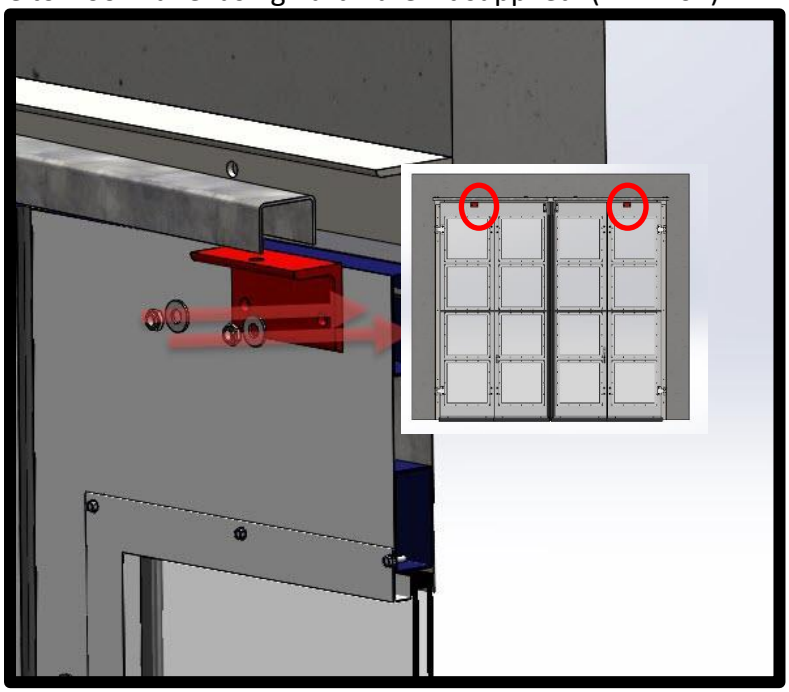
If panels form a “V” from the fold hinge, move the end of the track toward the building.



If the panels form an “A” from the fold hinge, move the end of the track away from the building.

Step 10: Control Arms

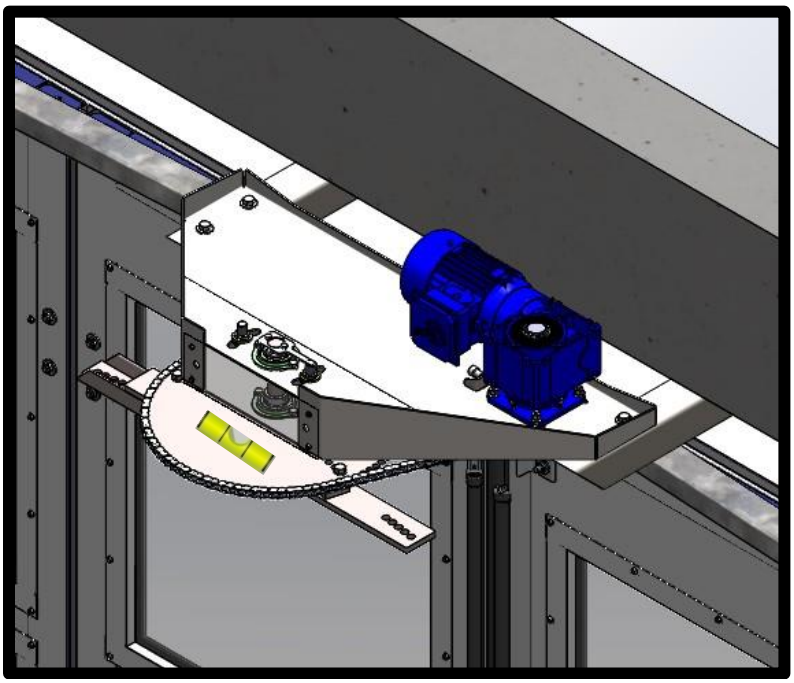
1. Bolt Control Arm Angle to Door Panel using hardware kit supplied. (1-HK102)

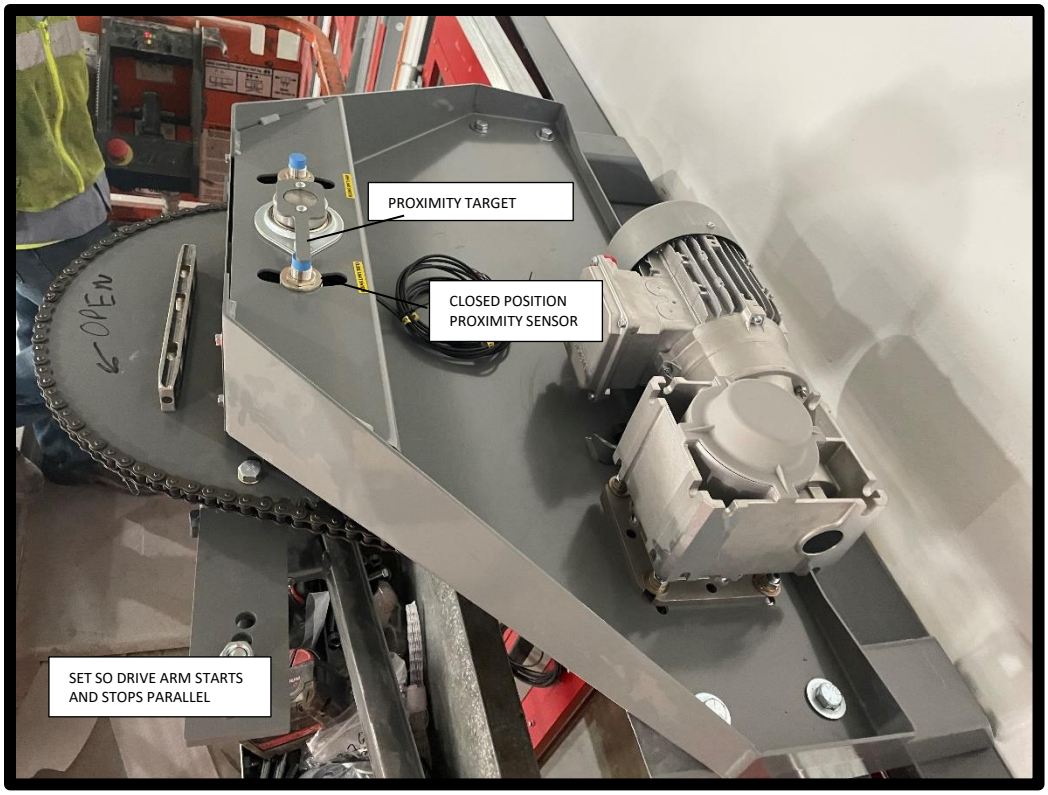


****FOR MANUAL OPERATED DOORS, SKIP TO STEP TITLED Step 14: Manual Operated Doors****

Step 11: Operator

1. Raise operator to header using a forklift or scissor lift and secure in place using supplied hardware kit (1-HK108)
2. Level operator sprocket in all directions.
    a. Shim as needed





3. Wire the Operator according to the provided schematic and electrical riser.

TEST THE OPERATOR ROTATION IN "HAND" MODE BEFORE INSTALLING CONNECTING RODS

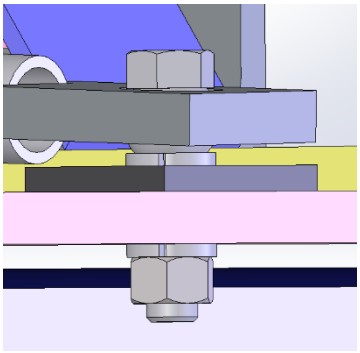
a. When looking up from below, the sprocket should rotate clockwise while opening the door.

b. If the Operator rotates the opposite direction when the "open" button is pressed, reverse polarity by switching leads T1 and T2 in the Control Panel.

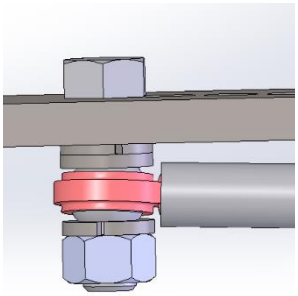
Step 12: Connecting Rods

1. Install the Connecting Rods. Refer to the provided Operator Layout Drawing Detail B & C (included with installation packet and in the appendix), for hardware and hole location. With the door and Operator in the closed position, tighten the set screws on the Connecting Rods. Test the door operation.

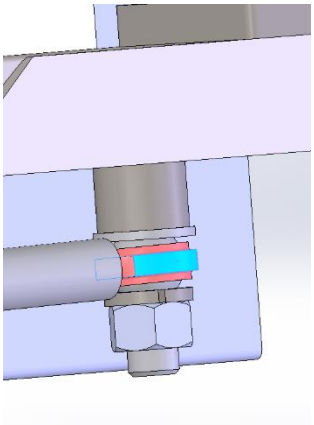
Make ALL adjustments with door in CLOSED POSITION.



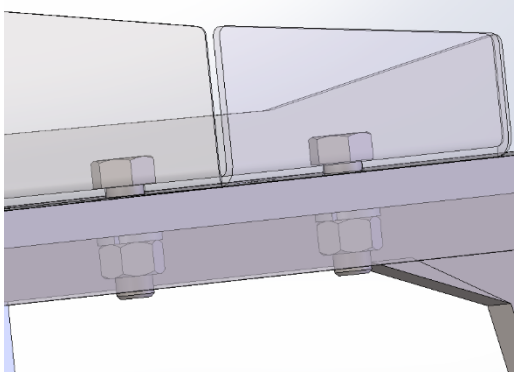
CONNECTING ROD TO CONTROL ARM
- HHCS .500-13X2.250 zc G5
- CONTROL ROD
- LW .500 zc
- CONTROL ARM
- LW .500 zc
- HN .500-13 zc



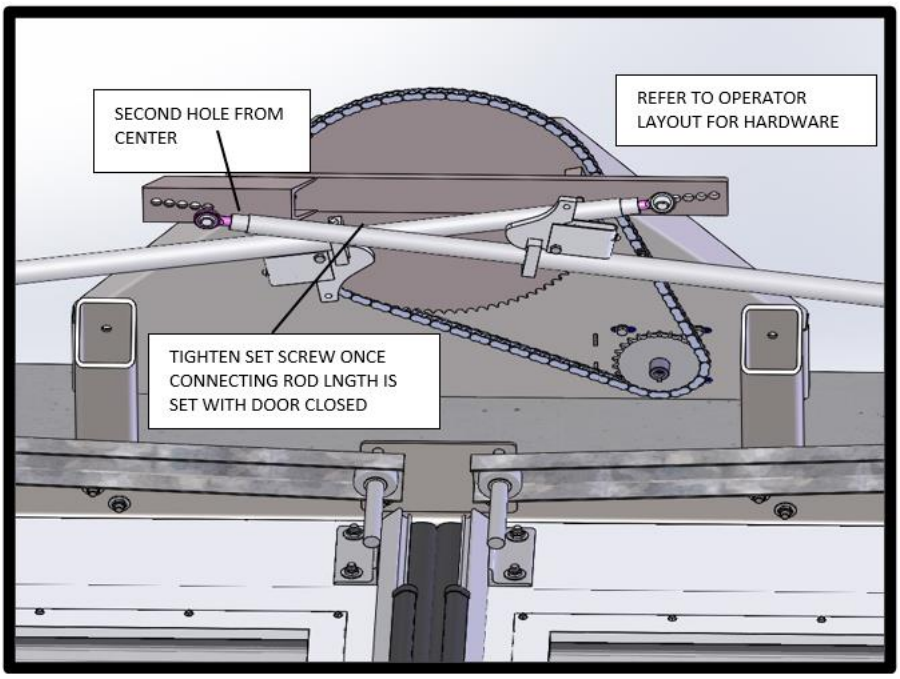
CONNECTING ROD TO DRIVE ARM (NON-RISER SIDE)
- HHCS .625-11X2.250 zc G5
- DRIVE ARM
- LW .625 zc
- LW .625 zc
- CONNECTING ROD
- LW .625 zc
- HN .625-11 zc



CONNECTING ROD TO DRIVE ARM (RISER SIDE)
- HHCS .625-11X3.00 zc G5
- DRIVE ARM
- 1-66-003 DRIVE ARM SPACER
- LW .625 zc G5
- CONNECTING ROD
- LW .625 zc G5
- HN.625-11 zc G5

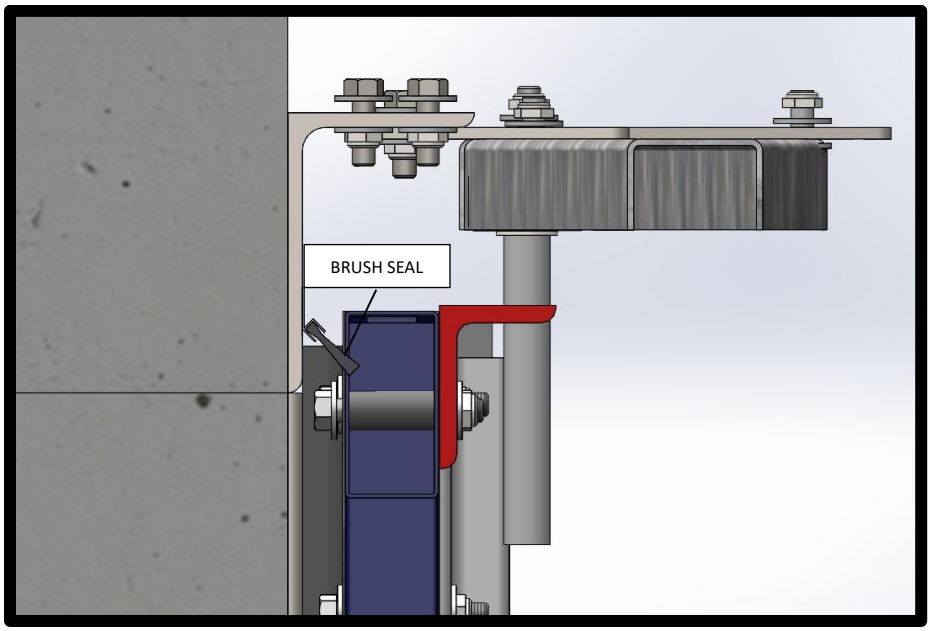


OPPERATOR TO MOUNTS
- HHCS .500X1.500zc G5
- OPPERATOR ASSEMBLY
- OPPERATOR SUPPORT
- LW .500 zc
- HN .500-13 zc

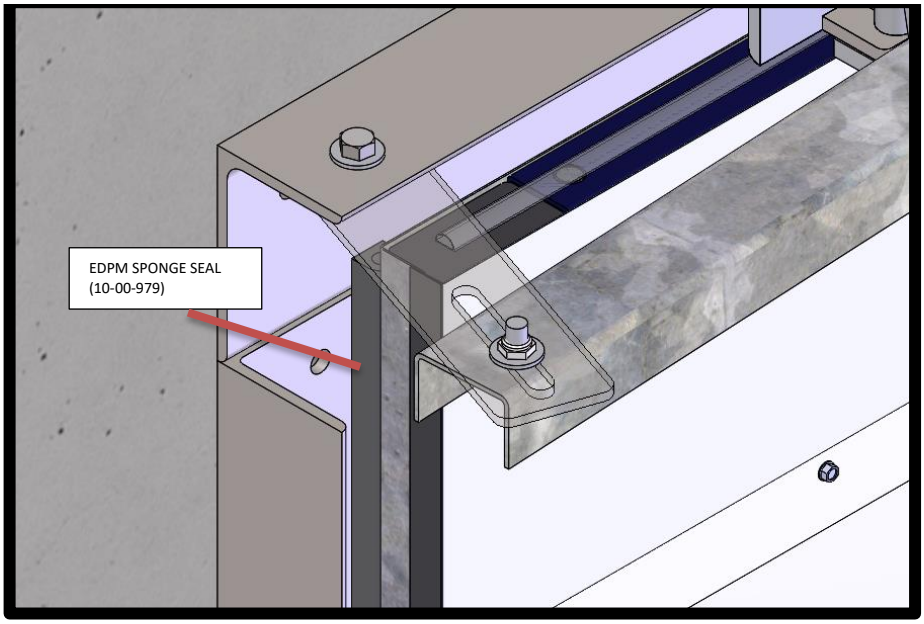


****NOTE: NEVER ADJUST PROMIXITY SENSOR POSITION UNLESS SPECIFICALLY INSTRUCTED BY DOOR ENGINEERING; DAMAGE TO DOOR MAY OCCUR****

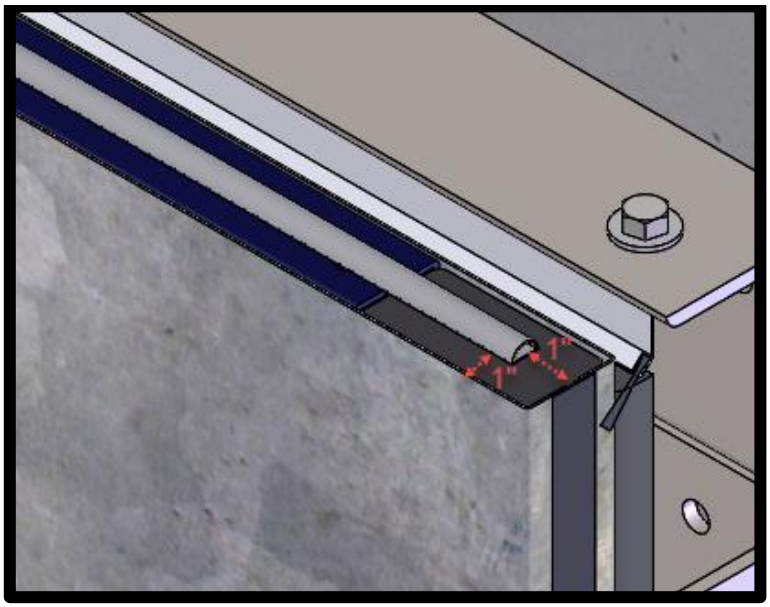
Step 13: Weathering Installation



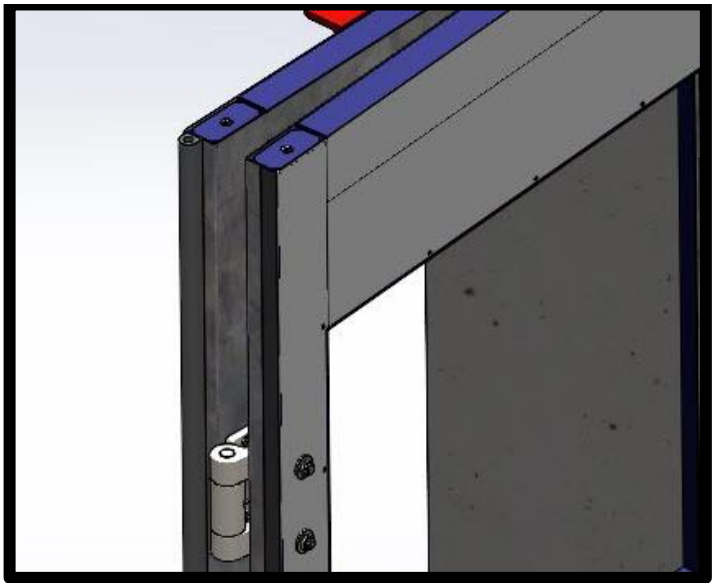
1. Install brush seal on header.
2. Clean jamb frame and Install EPDM sponge seal to the jamb.



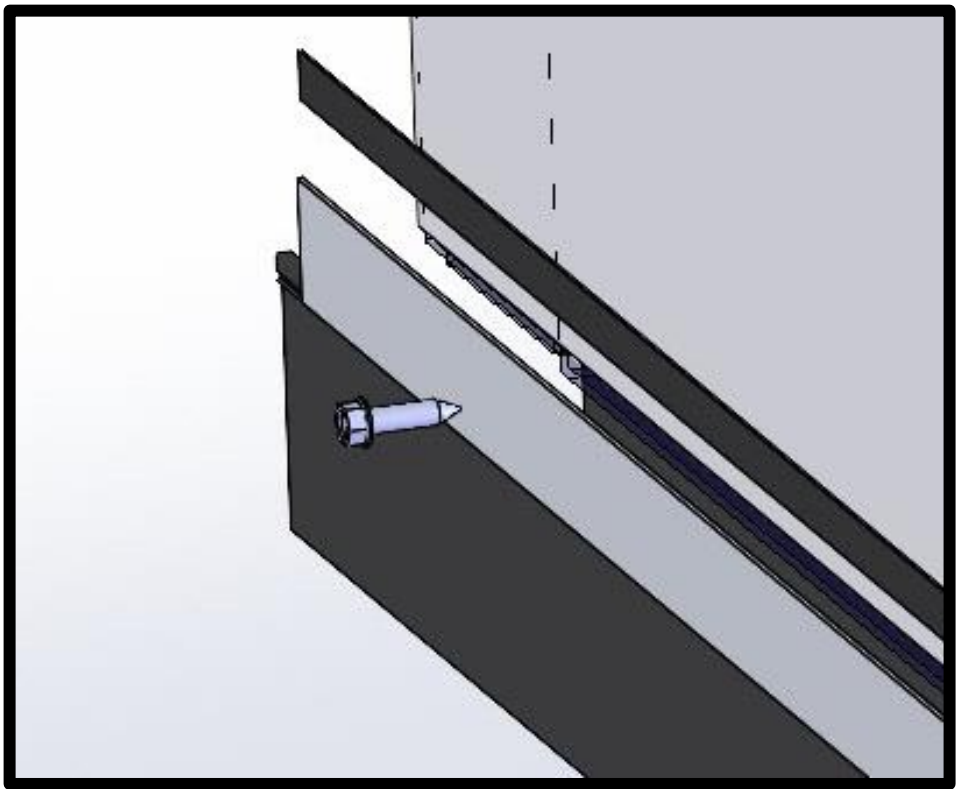
3. Wipe clean the top door surface, then peel and stick the Safety Channel Wire Raceway centered on the top of each door. Approximately 1” from each edge.



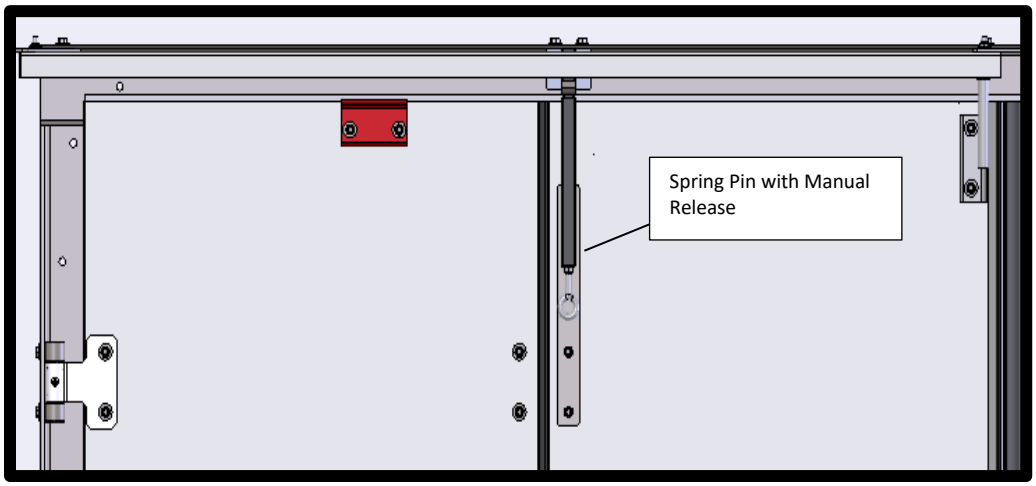
4. Install EPDM Seal on the jamb panel between the two panels.



5. Install floor weathering on interior and exterior as shown. Use two TEK screws per weathering assembly. Trim with a sharp blade or scissors down to ¼" past the floor.

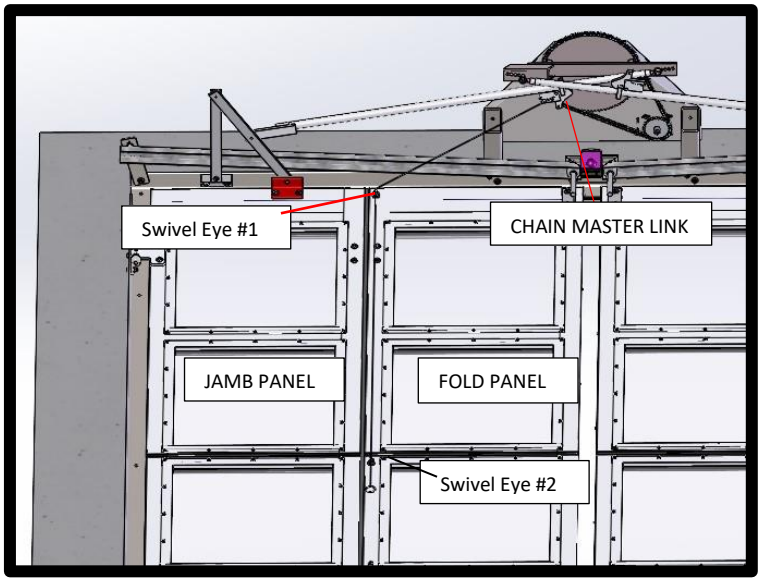


Step 14: Manual Operated Doors

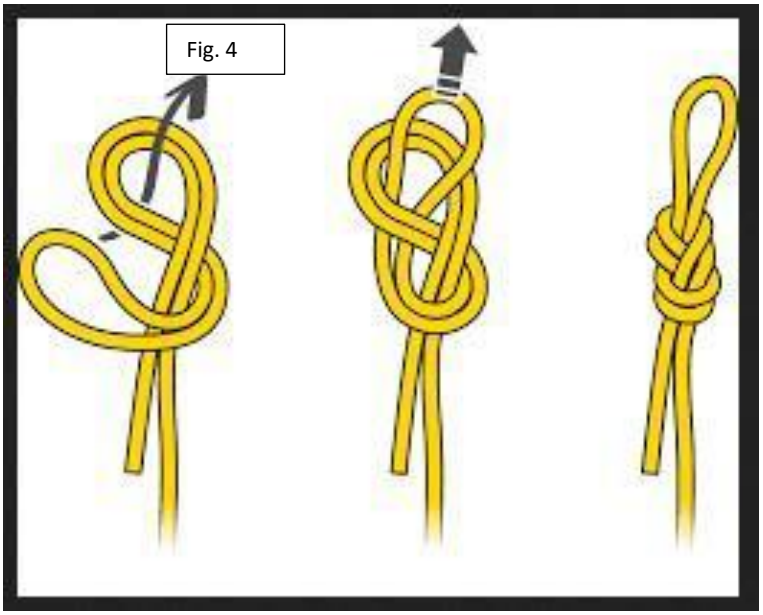


1. Manually operated doors use Spring Pin instead of Operator. Header will have Keeper to match the Spring Pin location.

Step 15: Installing Disconnects Kits to allow manual operation



1. BEGIN WITH DOOR CLOSED. Fasten first Swivel Eye to the top right or left corner of fold panel. Fig. 3 shows a left mounted door with Swivel Eye in upper left corner. Thread the end of rope up through first Swivel Eye (upper left).



2. Form a Figure 8 Knot. (Fig. 4). Attach Figure 8 Knot to Connecting Rod Disconnect with provided Chain Master Link. (Fig. 5)

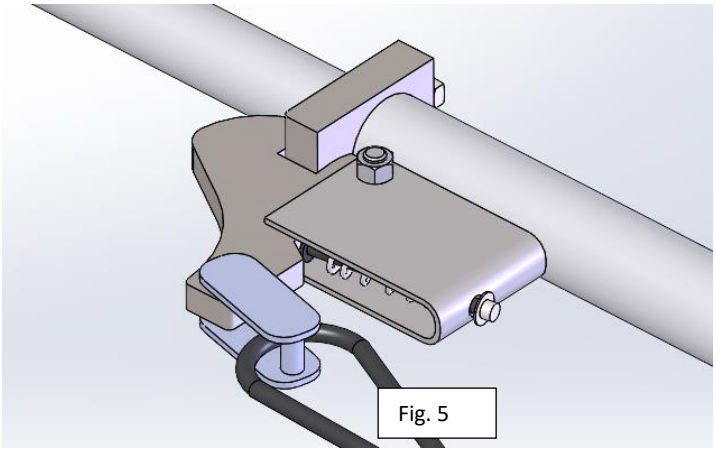
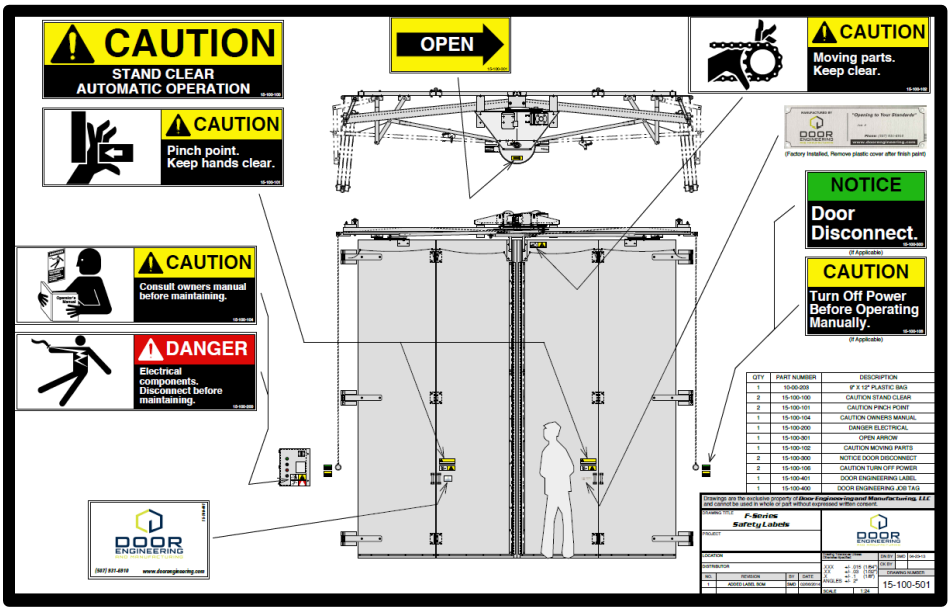


Fig. 5

3. Feed opposite end of rope through second Swivel Eye. Tie tail end of rope to Pull Handle at comfortable height. Open doorusing Operator.

CAUTION: MAKE SURE THE PATH IS CLEAR FIRST!

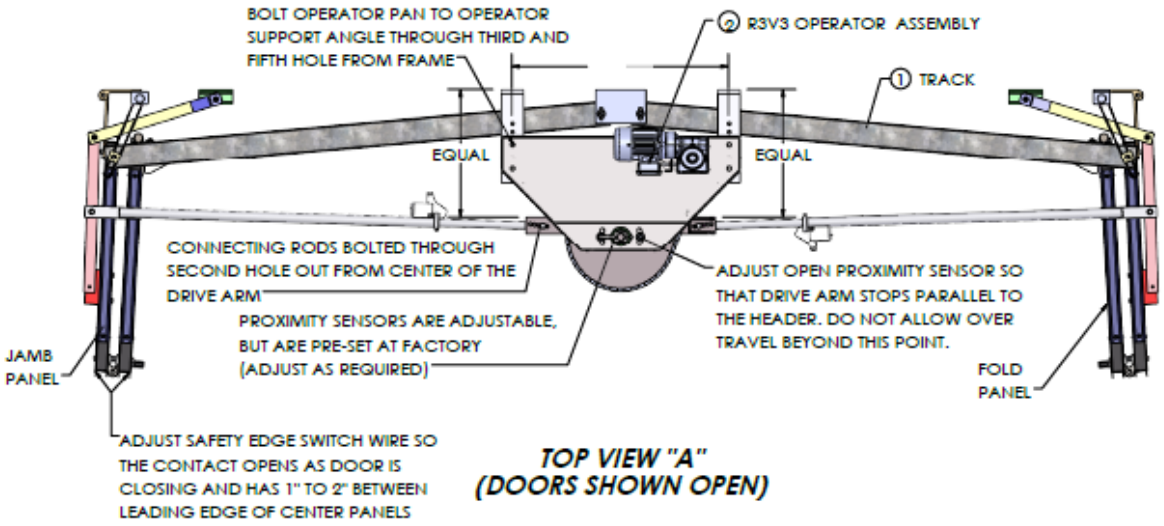
Observe rise and fall in the Pull Handle. Fasten second Swivel Eye to Steel Ring directly vertical of first Swivel Eye, minimum 5" above Pull Handle. Adequate distance determined in step 4. Burn rope ends. Verify there is no interference by opening the door both manually and automatically.



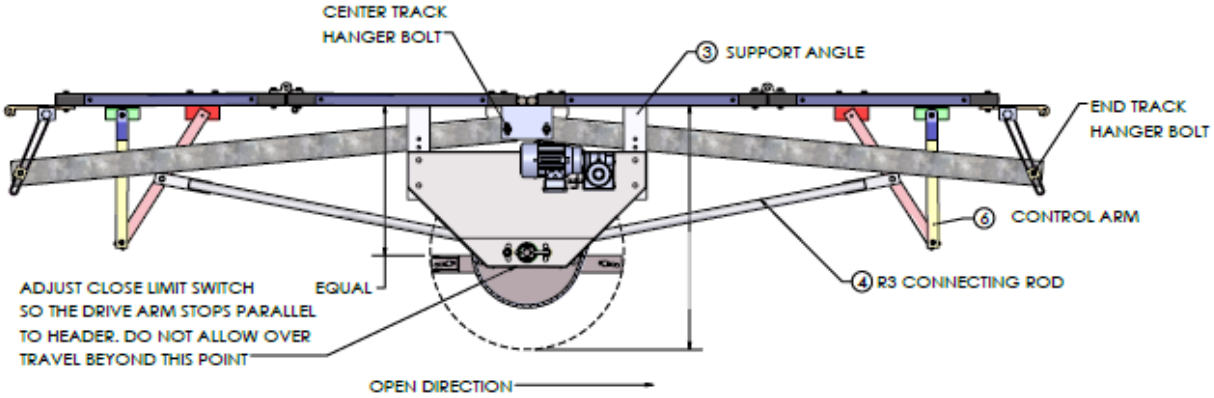
4. Install all Safety Labels as shown on Safety Label Kit Print 15-100-501.

INSTALL IS NOT COMPLETE UNLESS LABELS ARE INSTALLED ON THE PANEL

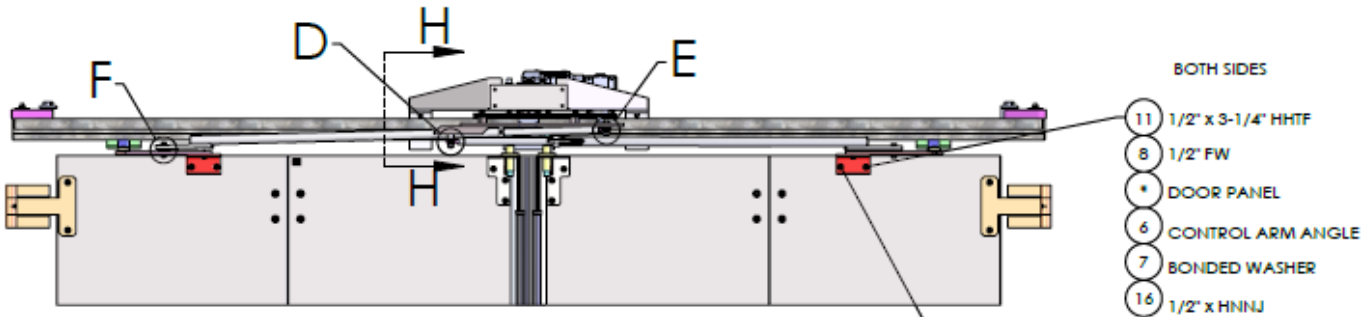
Appendix: Operator Layout Drawing reference



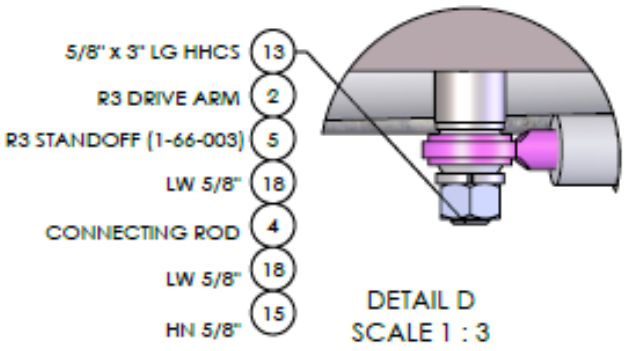
TOP VIEW "A"
(DOORS SHOWN OPEN)



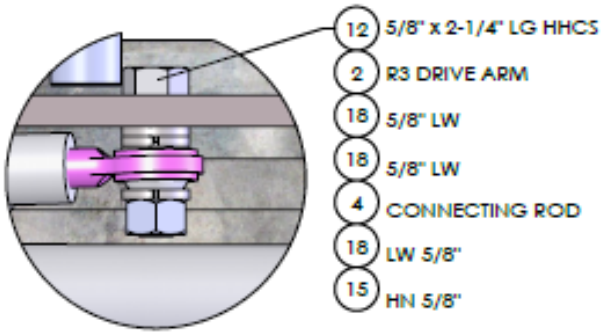
TOP VIEW "B"
(DOORS SHOWN CLOSED)



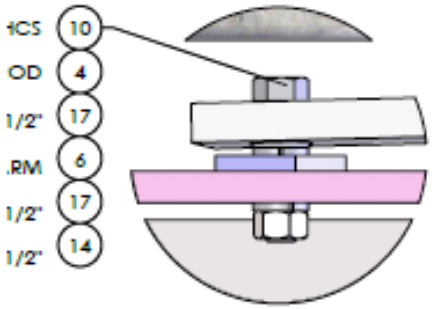
FRONT VIEW "C"
(DOORS SHOWN CLOSED)



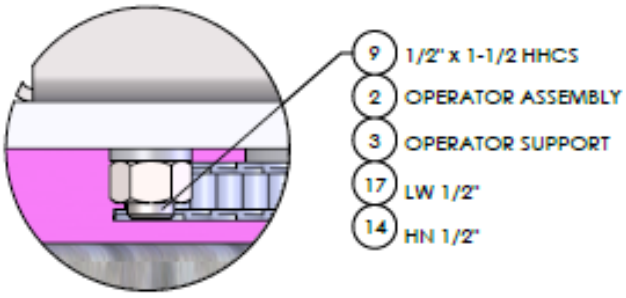
DETAIL D
SCALE 1 : 3



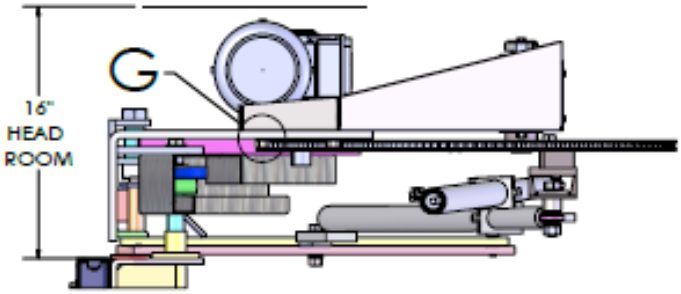
DETAIL E
SCALE 1 : 3



DETAIL F
SCALE 1 : 3



DETAIL G
SCALE 1 : 2



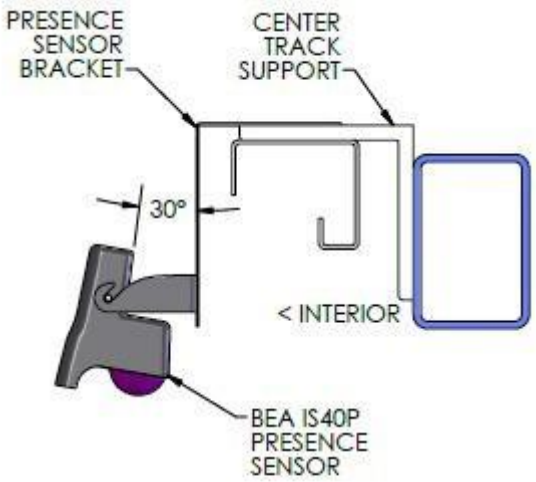
SECTION H-H
SCALE 1 : 12

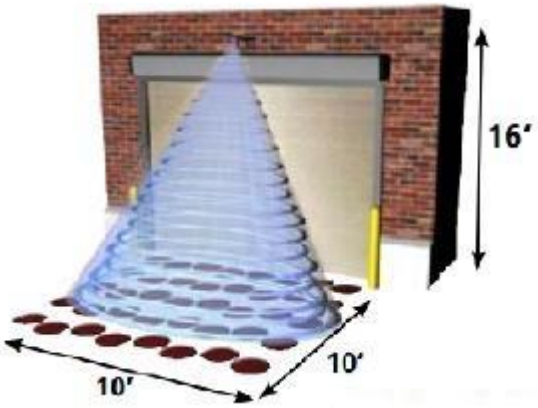
Electrical Equipment

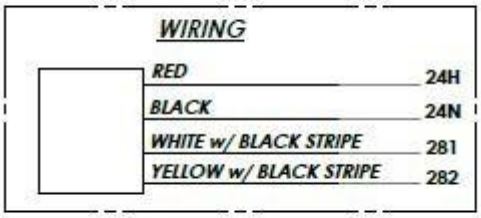
Equipment	Overview
BEA IS40P PRESENCE SENSOR	• **Infrared Presence Sensor** • **For use on doors between 8-16' tall**
LIGHT CURTAIN	• **Infrared Photo Sensor type Curtain** • **Maximum detection distance of 32'** **MODELS** **1. TELCO SG13** **2. TELCO SG17** **3. CEDES Grid Scan/ Pro**

BEA IS40P Presence Sensor

D.E. # 10-00-273 (BEA # IS40-P)







* 1 Remote Control per job site
* Activation stops a closing door and returns door to "open" position
* Mounting height from 8'-16'
* 30 degree recommended mounting angle
* Maximum detection area of 10'x10'

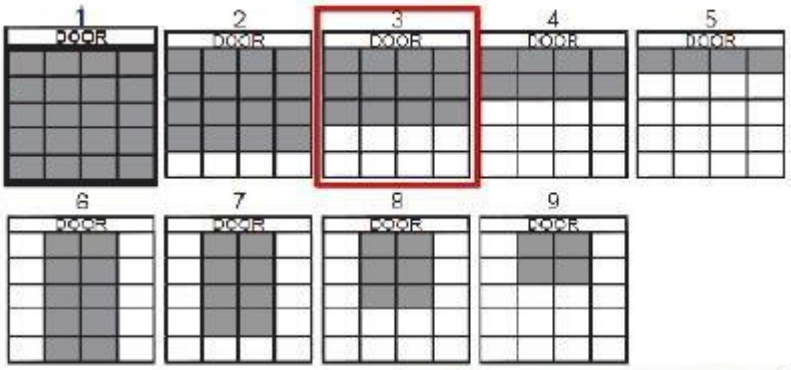
USING REMOTE TO SET PATTERN

1.) Press UNLOCK button

2.) Press PATTERN button

3.) Select pattern (#3 recommended for 14' wide doors)

4.) Press LOCK button *twice*



USING REMOTE TO SET IMMUNITY

1.) Press UNLOCK button

2.) Press IMMUNITY button

3.) Select IMMUNITY (#2/RAIN recommended)

4.) Press LOCK button *twice*

IMMUNITY SETTINGS AVAILABLE:
#1 LOW (DEFAULT)
#2 RAIN (RECOMMENDED)
#3 SNOW

Light Curtains (If equipped)

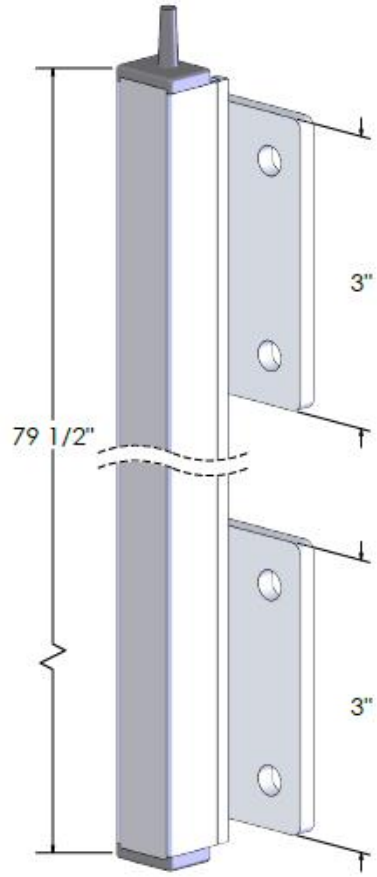
Installation notes differ with light curtain model please verify which model your door has been equipped with before starting the installation process.

SG13

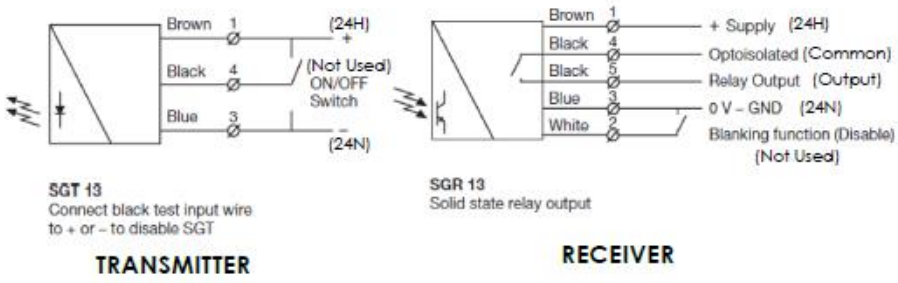
SPACEGUARD™ SERIES SG 13 LIGHT CURTAIN

- 1-10 METER SENSING RANGE
- 16 PARALLEL SCANNING BEAMS
- ACTIVE HEIGHT: 1800mm
- AUTOMATIC SENSITIVITY ADJUSTMENT
- COMPACT ALUMINUM IP67 DETECTOR HOUSINGS
- POWER, OUTPUT, AND SYSTEM STATUS INDICATORS

THE SG 13 LIGHT CURTAIN SYSTEM CONSISTS OF A SELF-CONTAINED TRANSMITTER, SGT AND RECEIVER, SGR, WHICH ARE TO BE POSITIONED OPPOSITE OF EACH OTHER. THE UNITS ARE HOUSED IN COMPACT, BUT STURDY, ALUMINUM PROFILES.



MOUNTING HEIGHT
4 3/16" FROM FLOOR



SGT 13
Connect black test input wire to + or – to disable SGT

TRANSMITTER

SGR 13
Solid state relay output

RECEIVER

Note: Wire is at top and runs back through Surface Mounted Frame. See Section E-E of as-builts.

- **Mounting Bracket: Part # 1-36-032**
- **M5 X 0.8 X 10mm FHMC (Mounting Light Curtain to Mounting Bracket): Part # 10-00-771**
- **Hex Head Tapcon Screw (Concrete/Masonry): Part # AB-.250 X 1.250**
- **1/4" Tek Screw (Steel): TEK .250-14x1.00 zc**

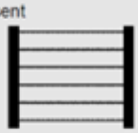
SG 17

SPACEGUARD™ SERIES — SG 17

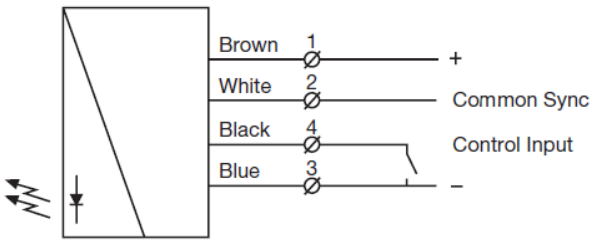
PERFORMANCE
- 1-10 METER (3.28-32.8 FT) SENSING RANGE
- 16 PARALLEL SCANNING BEAMS
- ACTIVE HEIGHT: 1800mm to 2340mm (70-92.1 INCH)
- AUTOMATIC SENSITIVITY ADJUSTMENT
- COMPACT ALUMINUM IP67 DETECTOR HOUSINGS
- POWER, OUTPUT, AND SYSTEM STATUS INDICATORS
- OPERATING TEMPERATURE: -20 to +55 C
- SEALING CLASS: IP 67
- LIGHT IMMUNITY @ 5DEG INCIDENCE: 100,000 LUX

Solid State Relay

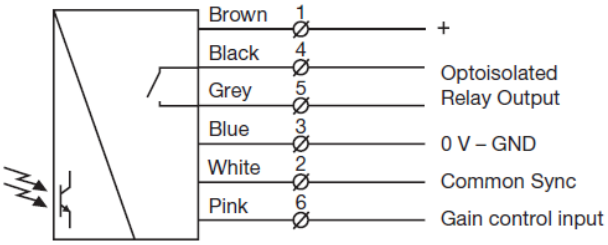
SGR Output Logic

Output Logic		
Detection	Output status	Output indicator (yellow led)
Present 	Open	Off
Absent 	Closed	On

ELECTRICAL SPECS
· SUPPLY VOLTAGE: 10-30 VDC
· CURRENT CONSUMPTION: 110 mA (PER CURTAIN)
· MAX OUTPUT LOAD(SOLID STATE RELAY: 100mA
· M8 PLUG CONNECTIONS



SGT 17
Control wire for test input and static blanking function (blanking function in C1 models only)



SGR 17
Solid state relay output

Note: Wire is at top and runs back through surface mounted frame. Frame hole may need resizing to .50 inch to allow M8 twist connector to pass through.

1) Using the light curtain as a guide, mark out the top, middle and base on the surface you wish to attach the curtain to. Make sure the foot of the light curtain is on the ground to aid with vertical alignment.

2) Mount clip style brackets to wall first then attach the light curtain.

Grid Scan/ Pro

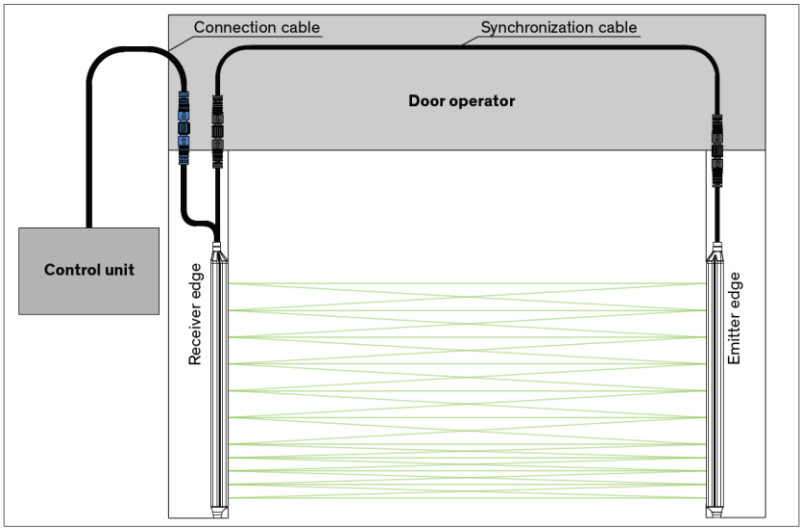
GridScan/Pro

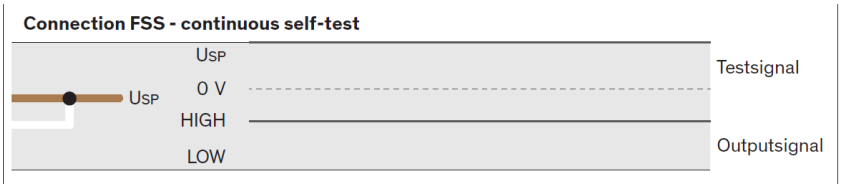
Technical data

OPTICAL:
RANGE: 1-10 M (3.28-32.8 FT)
MAX PROTECTION HEIGHT: 2.5 M (8.20 FT)
MAX AMBIENT LIGHT 100,000 LUX

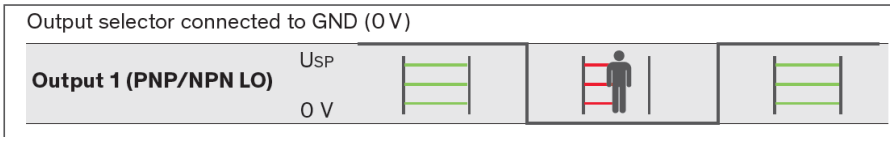
MECHANICAL:
CROSS SECTION 12 mm X 14.5 mm (.472in X .571in)
MATERIAL: ANODIZED ALUMINUM
TEMP RANGE: -40 to 60C

ELECTRICAL :
INPUT VOLTAGE : 10-30VDC
MAX CURRENT @ 24 V 50mA
OUTPUT: PNP/NPN(PUSH-PULL) and FFS
OUTPUT LOAD: 100mA
MAX RESPONSE TIME: 80ms
STATUS LED Rx:
OBJECT DETECTED- RED
NO OBJECT DETECTED- GREEN
POWER LED Tx:
POWER OKAY - GREEN

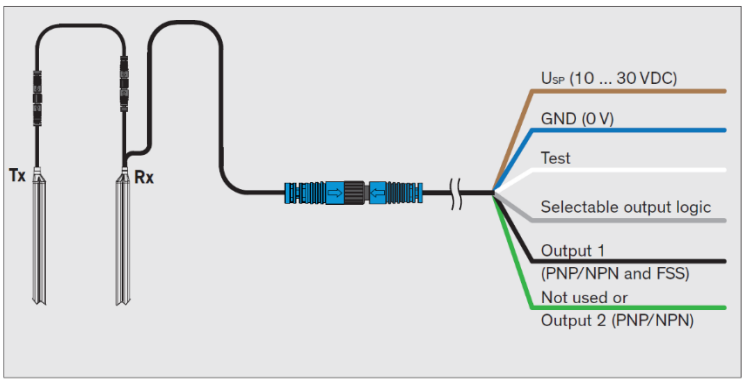




Selectable output logic



Electrical connection



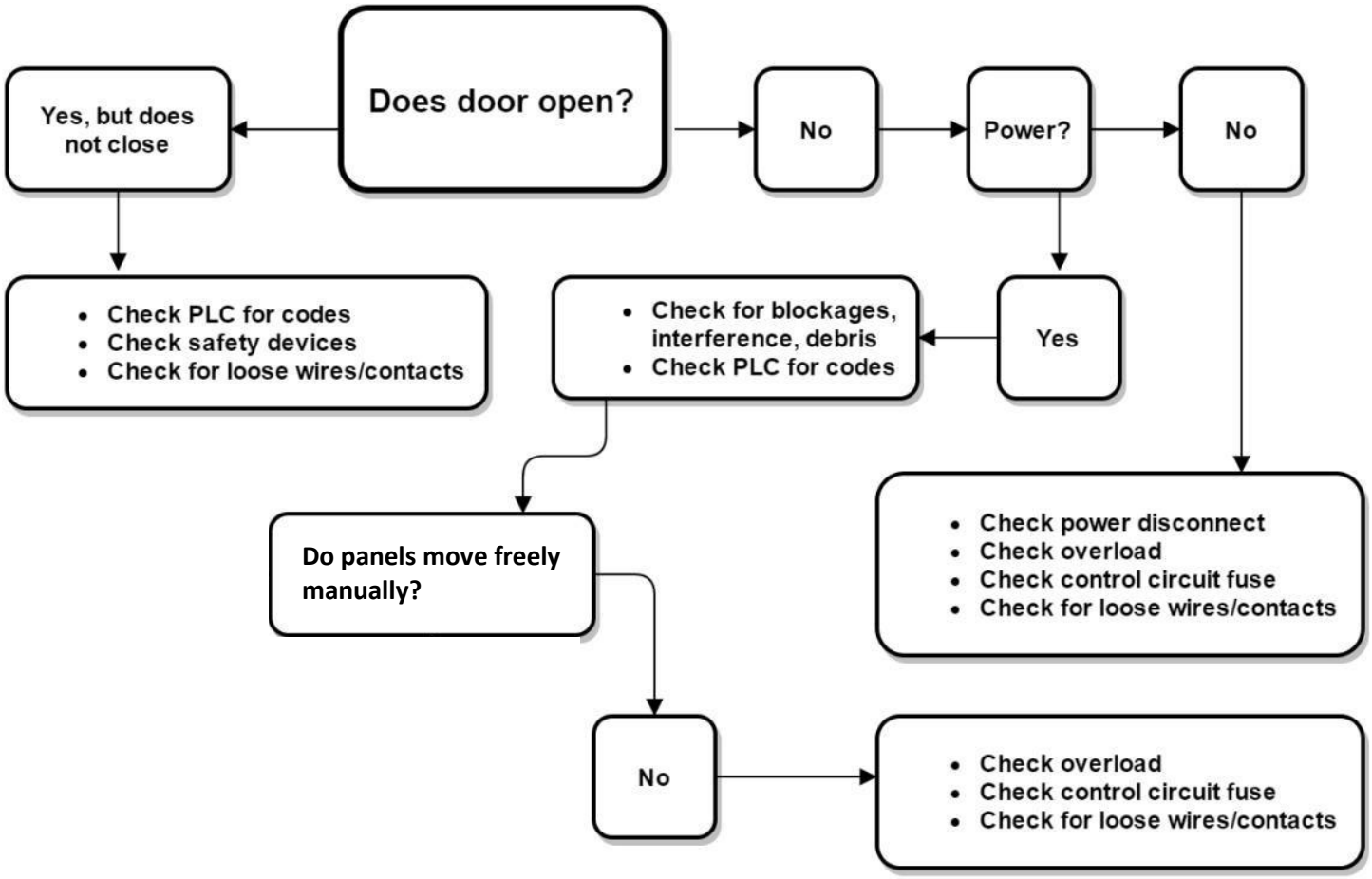
Note: Wire is at top and runs back through surface mounted frame. Frame hole may need resizing to .50 inch to allow M8 twist connector to pass through.

1) Using the light curtain as a guide, mark out the top, middle and base on the surface you wish to attach the curtain to. Make sure the foot of the light curtain is on the ground to aid with vertical alignment.

2) Mount clip style brackets to wall first then attach the light curtain.

Troubleshooting

For additional troubleshooting issues not listed, Tech support, Service, or Warranty please contact Door Engineering at 1-(800)-959-1352.



WARNING

To reduce the risk of SEVERE INJURY or DEATH to persons or damage to the door system

- **Safety precautions should be followed at all times.**
- **All electrical wiring must be done by a certified professional and performed according to regional electrical codes.**
- **When servicing, always disconnect Operator from main power supply.**
- **When servicing, always ensure proper use of "Lockout/Tagout" procedures.**
- **Ensure use of proper wire gauge being used for incoming power line as well as for all device connections.**
- **Install operator main circuit breaker next to control panel for easy power shut-off.**
- **The cord fitting for main power cable coming into control panel shall be separate from the motor or any other device.**
- **Always separate low and high voltage wires in separate conduits. High voltage frequencies may interfere with low voltage wires.**
- **The Operator should be properly grounded to the building ground and to the main power supply ground lug.**
- **Always use the appropriate rating circuit breakers for Operator protection.**
- **Before electrical connection, compare the incoming power supply voltage to the voltage on the Control Panel name plate. Failure to connect appropriate power supply voltage may cause serious damage to the Operator.**
- **Inspections, service, and repairs should be performed anytime a malfunction is observed or suspected.**
- **Only qualified persons should perform maintenance on a Door Operator and all safety precautions should be taken into consideration.**
- **Do not manually disconnect Connecting Rods unless power has been electrically disconnected.**
- **Do not attempt to disconnect Connecting Rods with the door in the open position.**
- **Do not attempt to make Limit Switch adjustments unless power has been electrically disconnected.**
- **Always test the door travel after adjustment with the controls in "Constant Pressure" mode to verify desired travel. Failure to do so may result in damage to the door or injury to persons.**

Limited Warranty

Door Engineering and Manufacturing, LLC warrants that all products manufactured by it shall be free fromdefects in materials and workmanship for a period of one (1) year from thirty (30) days of the date of shipment of product from Door Engineering and Manufacturing. Door Engineering and Manufacturing's obligation under said warranty is to cover the door and mechanical components for five (5) years, liquid & prime paint one (1) year (excluding fading and normal wear), electrical and safety components for one (1) year, weather seals and brake pads for one (1) year and labor one (1) year. Materials will be covered in the repair or replacement of products proven to be defective in material or workmanships.

Under said warranty, Door Engineering and Manufacturing must receive back supposed defective part within thirty (30) days of discovery and allowed to properly investigate part to determine if defective. If said part is proven to not be defective, said warranty will not be applicable and Partner will be responsiblefor all costs incurred. Said warranty excludes any materials which require repair or replacement due to normal wear and operation or abuse.

This limited warranty excludes any Product defects or failures caused after shipment by:

- Improper installation (including, without limitation, misalignment)
- Use in improper applications or conditions or in conjunction with improper materials (including,without limitation, improper lubricants, pastes, solvents or sealants)
- Contact with aggressive chemical agents
- Structural shifting of building
- U.V. Degradation
- Failure to adhere to Door Engineering and Manufacturing's instructions concerning the properhandling, installation, and use of the Product
- Failure to adhere to applicable standards set forth by local laws, codes, or regulations and theapplicable industry standards
- Any other improper activities not listed above or damage caused by the fault or negligence of anyone other than Door Engineering and Manufacturing

LIMITATION OF LIABILITY

THE WARRANTIES IN THIS LIMITED WARRANTY ARE THE ONLY WARRANTIES APPLICABLE TO THE PRODUCTS. THERE ARE NO OTHER WARRANTIES, REPRESENTATIONS OR CONDITIONS OF ANY KIND, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, WITH RESPECT TO THE PRODUCTS SUPPLIED HEREUNDER INDLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED. DOOR ENGINEERING AND MANUFACTURING SHALL NOT BE LIABLE IN THIS RESPECT NOTWITHSTANDING DOOR ENGINEERING AND MANUFACTURING'S ACTUAL KNOWLEDGE OF THE PRODUCT'S INTENDED USE ORANY ADVICE OR REPRESENTATIONS THAT MAY HAVE BEEN RENDERED BY DOOR ENGINEERING CONCERNING THE DESIGN, MANUFACTURE, FABRICATION, SALE, USE, INSTALLATION OR PROVISION OF THE PRODUCTS. NO STATEMENT, CONDUCT OR DESCRIPTION BY DOOR ENGINEERING AND MANUFACTURING OR ITS REPRESENTATIVES, IN ADDITION TO OR BEYOND THIS LIMITED WARRANTY, SHALL CONSTITUTE A WARRANTY.

THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF THIS LIMITED WARRANTY, AND THE SOLE AND EXCLUSIVE OBLIGATION OF DOOR ENGINEERING AND MANUFACTURING IN RESPECT OF ANY CLAIMS FOR BREACH OF THIS LIMITED WARRANTY, SHALL BE, AT DOOR ENGINEERING AND MANUFACTURING'S SOLE DISCRETION, (1) THE REPLACEMENT OF THE SAME TYPE, SIZE AND LIKE QUANTITY OF NON-DEFECTIVE PRODUCT, AT THE ORIGINAL POINT OF DELIVERY, OR CREDIT, OR A COMBINATION THEREOF, FOR THE WHOLESALE PURCHASE PRICE OF THE DEFECTIVE PRODUCT. IN NO EVENT SHALL DOOR ENGINEERING AND MANUFACTURING BE LIABLE FOR PERSONAL INJURY, LOST PROFITS, LOSS OF GOODWILL, LOSS OF BUSINESS OPPORTUNITIES, DAMAGE TO REPUTATION, SPECIAL DAMAGES, INDIRECT DAMAGES, DELAY DAMAGES, PUNITIVE DAMAGES, INCLUDING WITHOUT LIMITATION ANY COSTS INCURRED INCONNECTIONWITH THE REMOVAL OR REINSTALLATION OF ALLEGEDLY DEFECTIVE PRODUCTS.

Limited Warranty (Continued)

CLAIMS

Every claim under this warranty shall be void unless it is made in writing and received by Door Engineeringand Manufacturing within thirty (30) days of the date the defect was discovered and, in any event, within one (1) year of the date of invoice. Claims for Product defects that affect the appearance of the Product, such as U.V. degraded Product, however, must be made within thirty (30) days of the date of the receipt ofthe Product. No claim under this limited warranty will be valid unless:

- Proof of purchase with the date thereof as well as a description of the alleged defect in reasonable detail is presented to the satisfaction of Door Engineering and Manufacturing LLC,
- Written Permission and/or Return Material Authorization (RMA) is obtained from Door Engineering and Manufacturing LLC,
- Door Engineering and Manufacturing is given an opportunity to inspect the allegedly defective product, and
- At Door Engineering and Manufacturing's request, representative samples of the allegedly defective Product are returned to Door Engineering and Manufacturing in accordance with company instructions.

GENERAL

In the event that any provision of this limited warranty is held to be illegal or unenforceable by any court ofcompetent jurisdiction, the remaining provisions of this limited warranty shall remain in full force and effect. This limited warranty shall be governed by the laws of Minnesota, without regard to such state's conflicts of law principles that would require the application of the law of any other jurisdiction. Any and all disputes arising out of or relating to this limited warranty shall be subject to the exclusive jurisdiction ofthe state or federal courts located in the state of Minnesota or, at Door Engineering and Manufacturing's sole election, to binding arbitration before a single arbitrator pursuant to the American Arbitration Association's Commercial Dispute Resolution Procedures, with such arbitration to take place in the state ofMinnesota. Door Engineering and Manufacturing reserves the right to revise this Limited Warranty and Limitation of Liability without notice at any time.

This limited warranty may only be modified or altered in a writing signed by the President of Door Engineering and Manufacturing.

NOTES

Door Engineering and Manufacturing, LLC.
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Mankato, MN 56001

Phone: 1(800) 959-1352

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