

HERCULES®

Renowned, resilient doors. By Kingspan

HORIZONTAL SLIDING DOORS

INSTALLATION MANUAL

OUR COMPLETE LINE



Vertical Lift



Bi-Parting Sliding



Hinged-Infit & Overlap



Horizontal Sliding



TESTED & APPROVED



BUILDING
CERTIFICATION &
GREEN TARGETS



INDOOR
ENVIRONMENTAL
QUALITY



LIFE-CYCLED BENEFITS

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IMPORTANT NOTICE

Before beginning installation, please read this manual in its entirety.

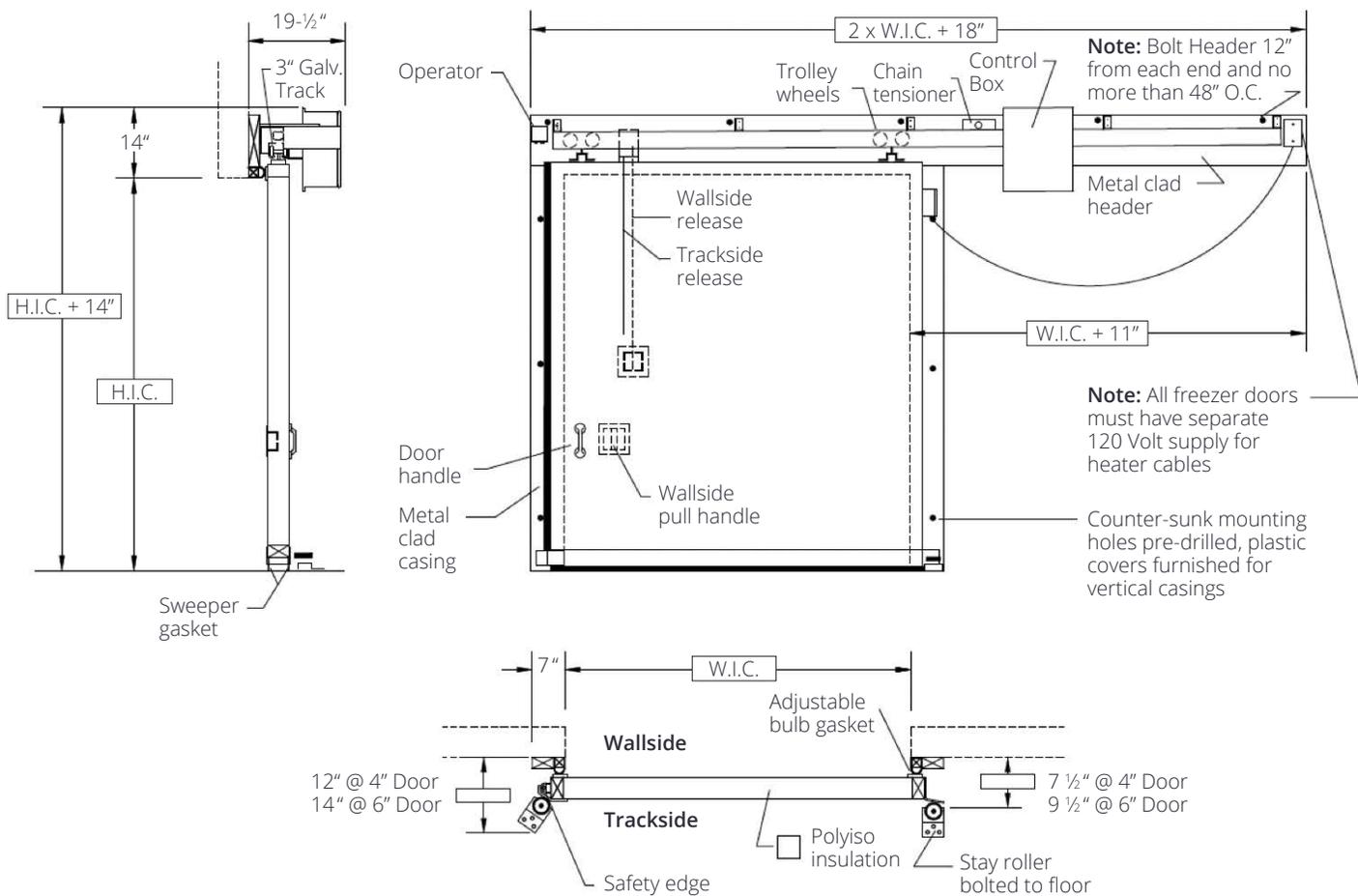
This door has been designed and built to provide years of trouble-free service in heavy duty commercial and warehouse operations. This Installation Manual may be used for all of the following door types:

- Electric Horizontal Sliding Door
- Manual Horizontal Sliding Door
- Electric Bi-Parting Sliding Door
- Manual Bi-Parting Sliding Door

Reference to **Figures 1-4** below will provide general specifications for your model. Sub-assemblies are provided for rapid installation and adjustment.

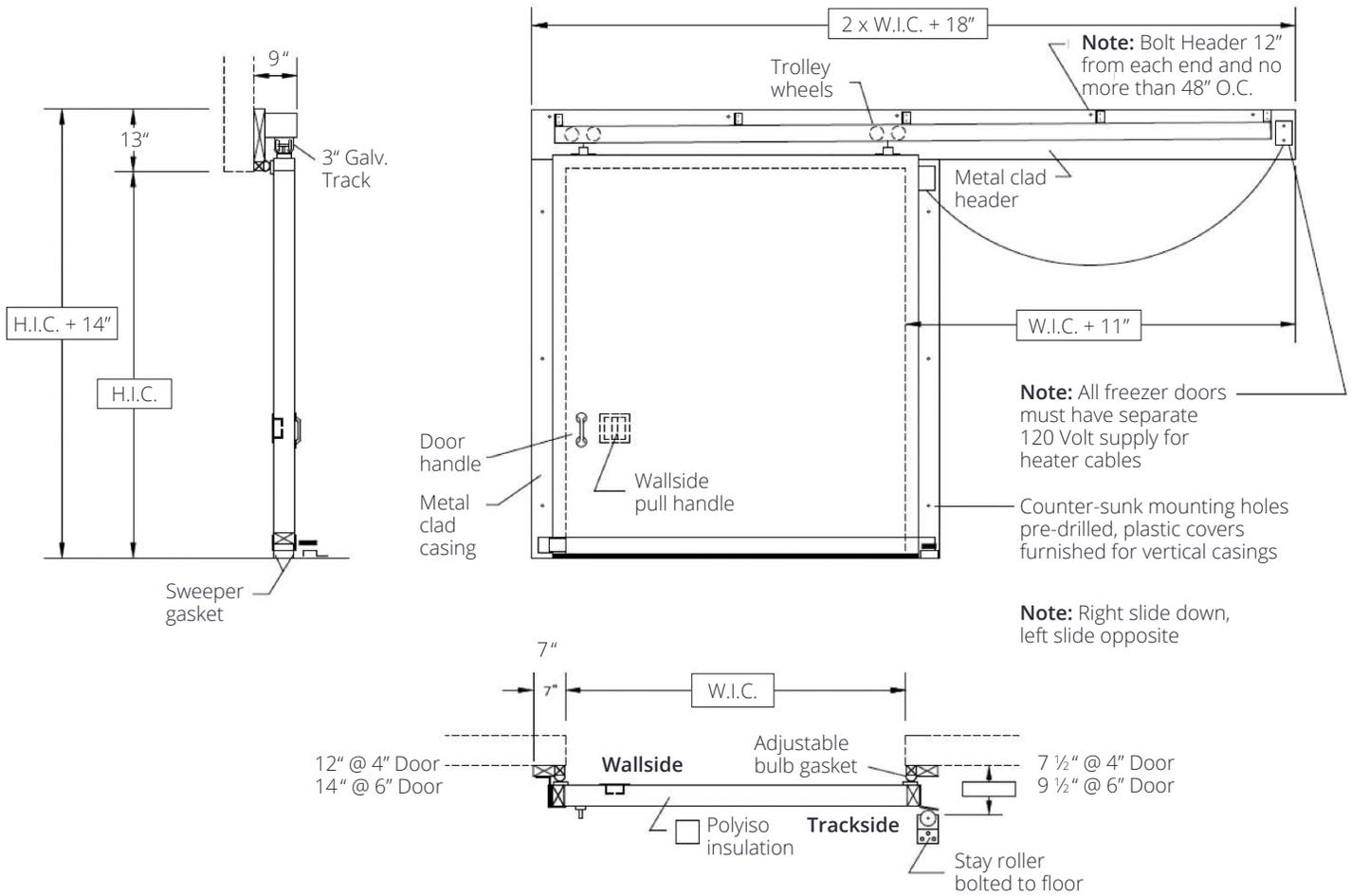
ELECTRIC HORIZONTAL SLIDING DOOR

Figure 1



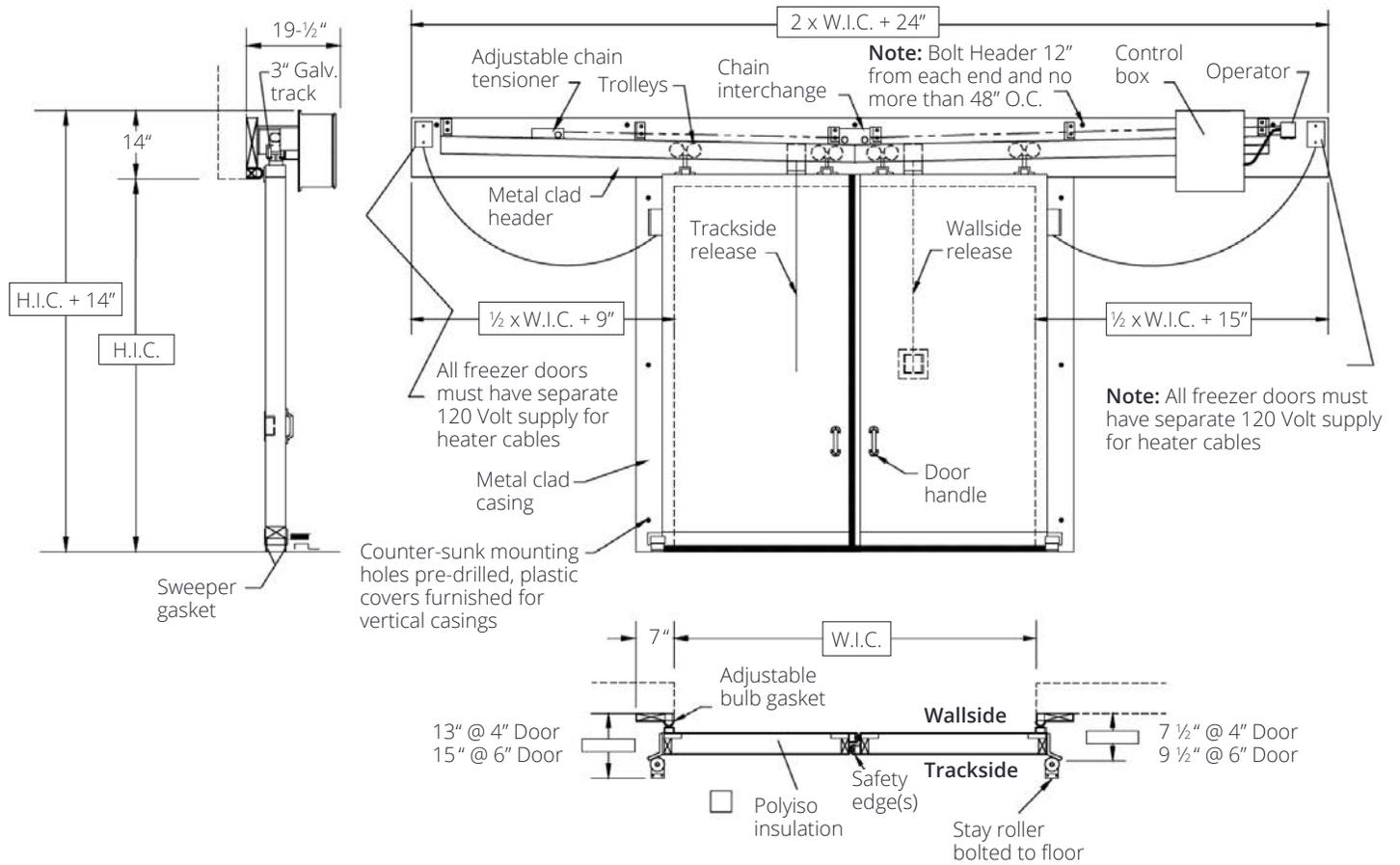
MANUAL HORIZONTAL SLIDING DOORS

Figure 2



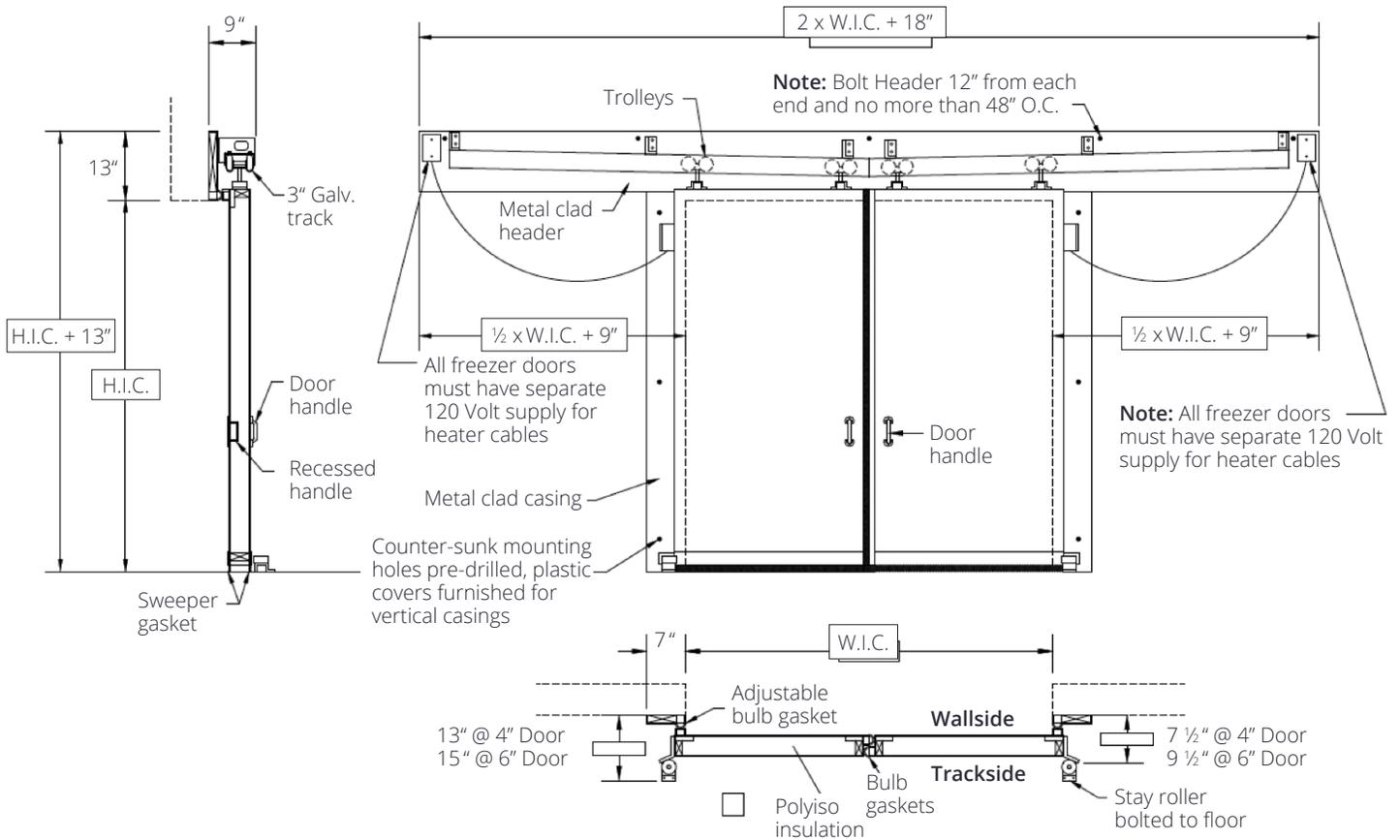
ELECTRIC BI-PARTING SLIDING DOOR

Figure 3



MANUAL BI-PARTING SLIDING DOOR

Figure 4







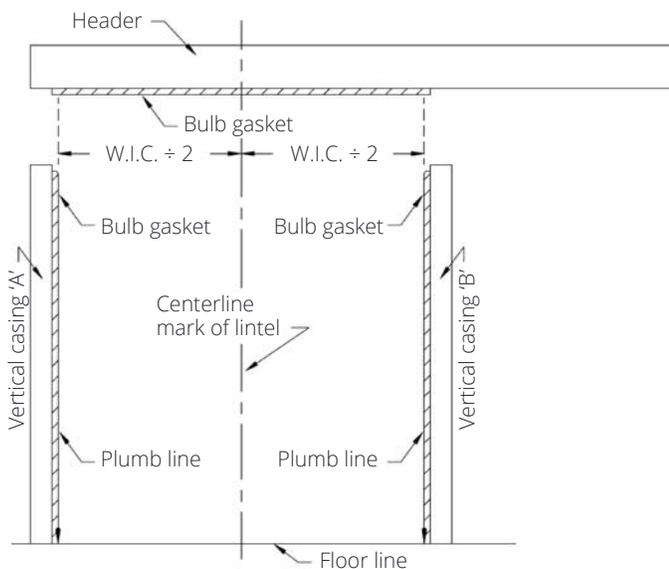
INSTALLATION PROCEDURE

The following steps must be performed in the installation of the door and casings to ensure proper functionality.

I. Vertical Casings

- 1) The casings must be plumb and parallel. See Figure 5.
Note: for Bi Parting doors the header will be centered on top of the vertical casings.

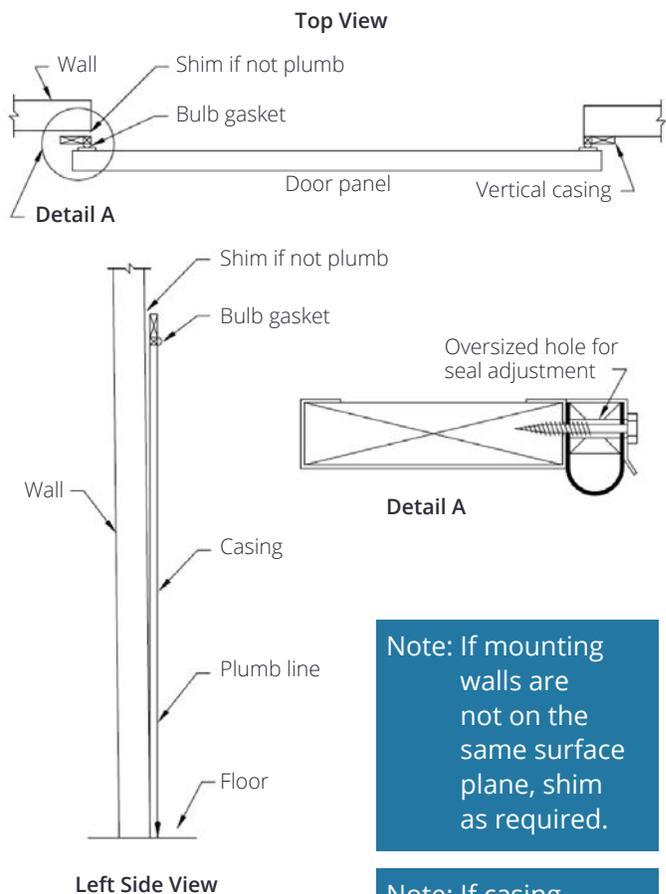
Figure 5
Door Frame Detail



- 2) If the floor is sloped, start by setting the high side first and shim the opposite side so that the top of the casings are level. Plumb as shown and attach securely to the wall using the provided fasteners as shown in **Figure 7**. If the wall is not plumb, shim as shown in **Figure 6**.

- 3) Use sealant to provide a vapor seal between the casings and the wall.

Figure 6
Shimming Instructions



Note: If mounting walls are not on the same surface plane, shim as required.

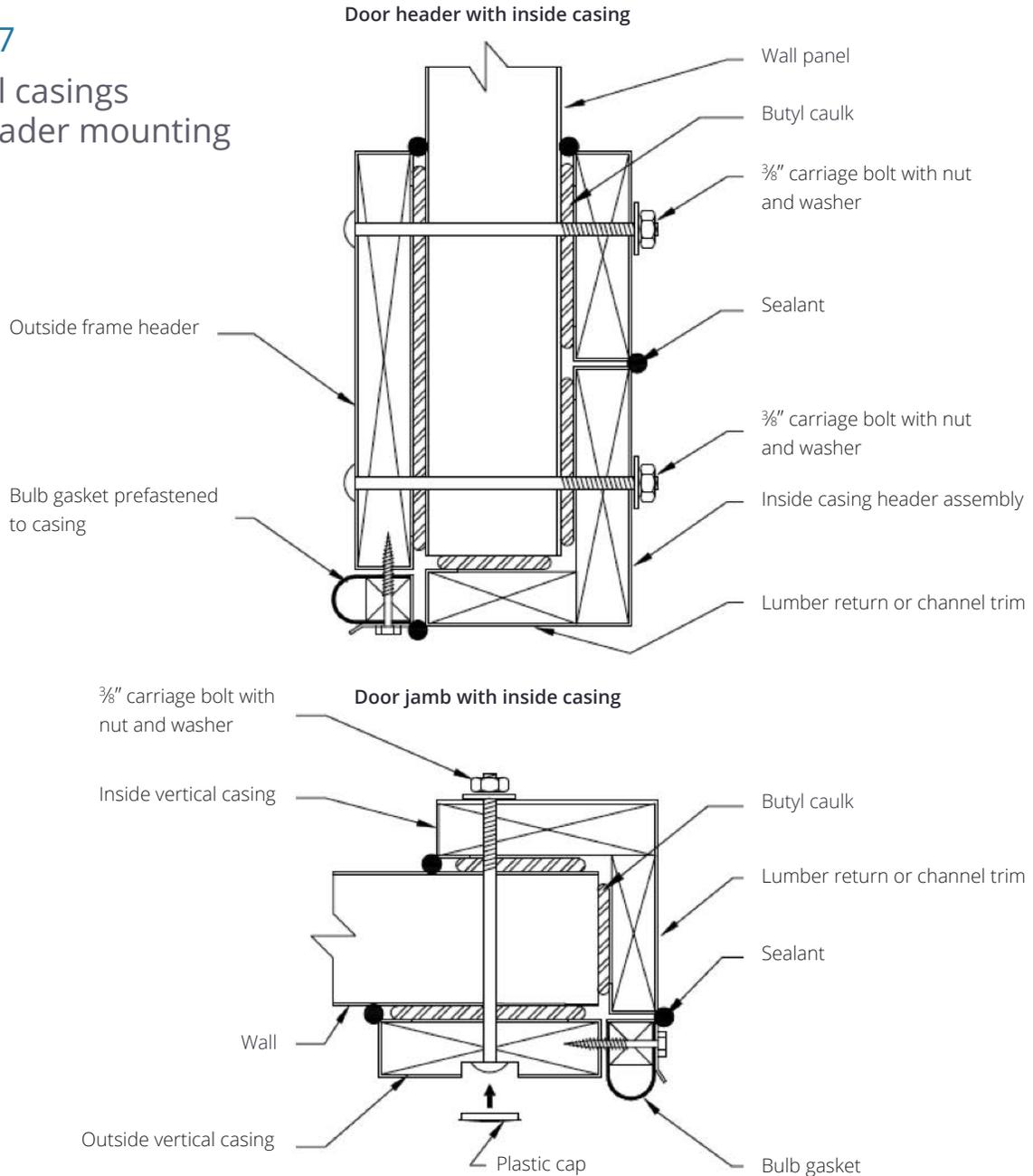
Note: If casing and header mounting walls are not plumb and parallel, shim as required.

2. Header

1) Place header on top of the vertical casings so that the bulb gasket fits between the vertical casings.
See **Figure 5**.

2) Seal and attach securely to wall using provided fasteners.
See **Figure 7**.

Figure 7
Vertical casings and header mounting



3) Tighten all fasteners on casings and header. Check that complete assembly is plumb and level.

4) **Note:** Compliance with Steps 1-3 above is essential in ensuring that proper contact is maintained between the door and gaskets.

3. Door Panels

- 1) Single door leaves with clear openings larger than 8' are shipped in two (2) parts. See **Figures 8-9** for assembly details.

Note: Door was pre-assembled at factory before shipping to ensure proper fit on job site.

Figure 8

Two piece door leaf

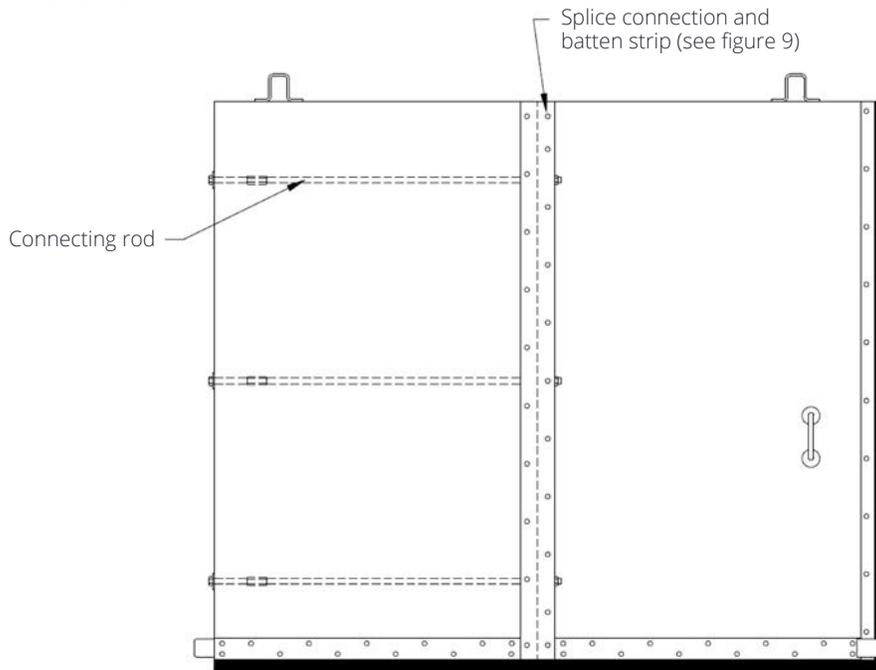
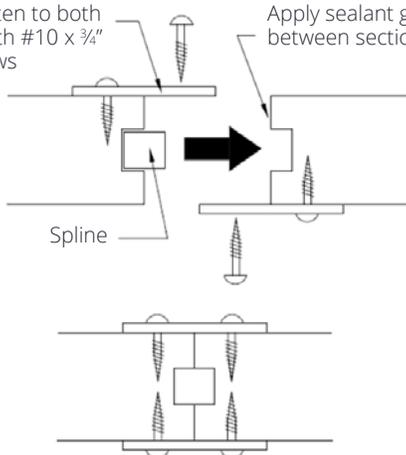


Figure 9

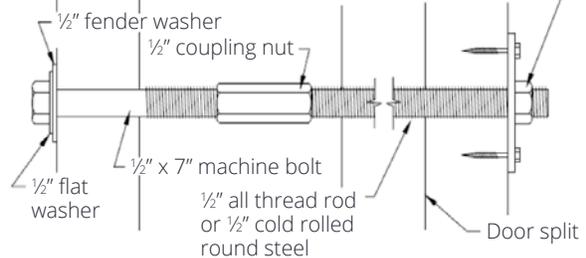
Spline detail view

Batten strip—fasten to both sides of door with #10 x 3/4" truss head screws

Apply sealant generously between sections



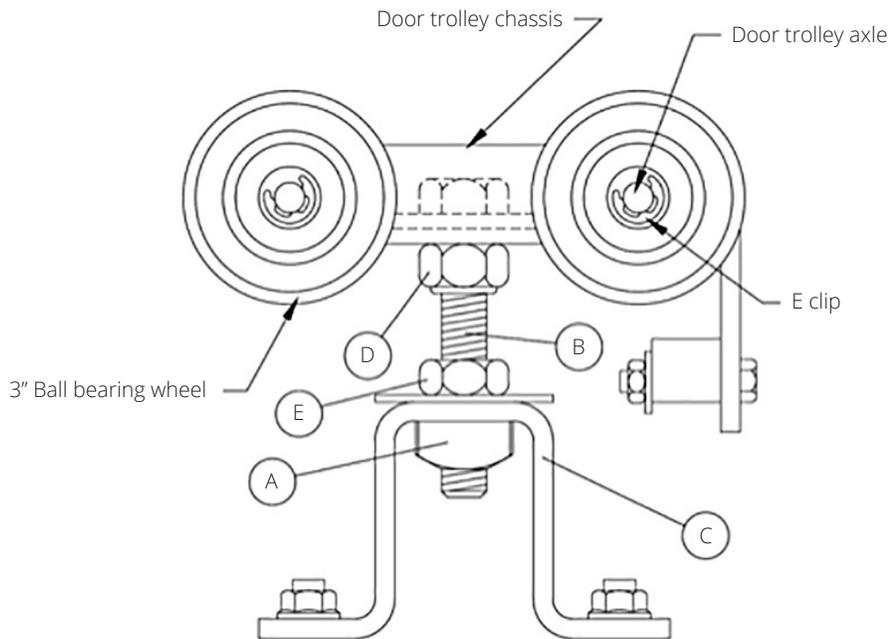
1/2" nut welded to 2" x 4" steel plate with pre-punched hole (plate fastened to inside of second door panel)



2) Remove square nut (A) from trolley assemblies and lift door in place. Secure door to hanger by inserting bolt (B) into top of hanger bracket (C) and insert square nut (A) into hanger bracket (C), as shown in **Figure 10**.

3) Thread bolt (B) into square nut (A) and raise door to maximum height. Repeat for all other trollies.

Figure 10
Trolley Assembly



4) Remove wooden gasket protectors from under door. Be careful to ensure that the gasket is not damaged. Do not damage heater wire on bottom of door between the gaskets (Freezer doors only).

5) Place door in closed position. Adjust bolt (B) to allow wiper gasket to seal against the floor (do not exceed $\frac{1}{4}$ " sweep). Tighten jamb nut and lock washer (D), leave nut (E) loose. See **Figure 10**.

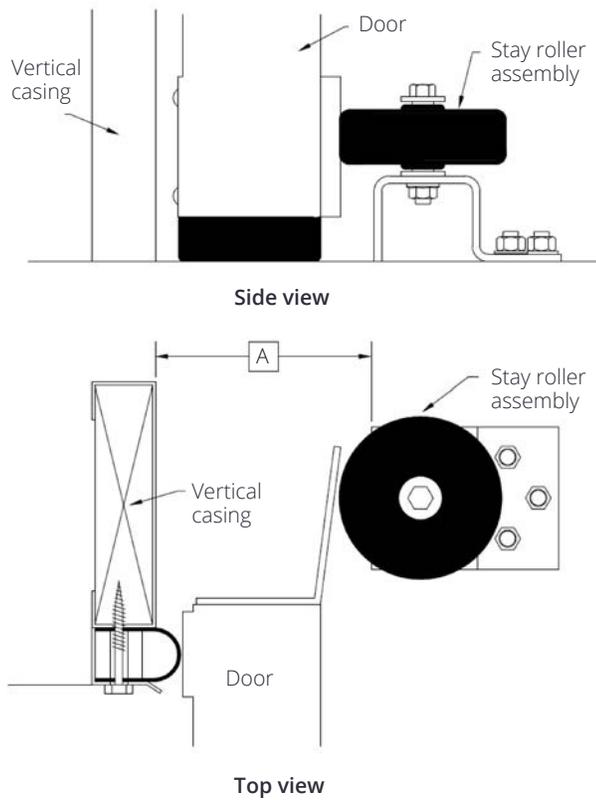
4. Door Seal Adjustment

- 1) Install stay roller assemblies. Position as shown in **Figures 11-12**. Note: for Bi Parting doors stay rollers like the ones shown in **Figure 11** are used at the trailing edge of each part of the door.
- 2) Position door(s) to obtain seal on header bulb gaskets.

Gaskets should compress approximately $\frac{1}{8}$ " to $\frac{1}{4}$ " maximum. Secure door in this position with jamb nut (E). See **Figure 10**.

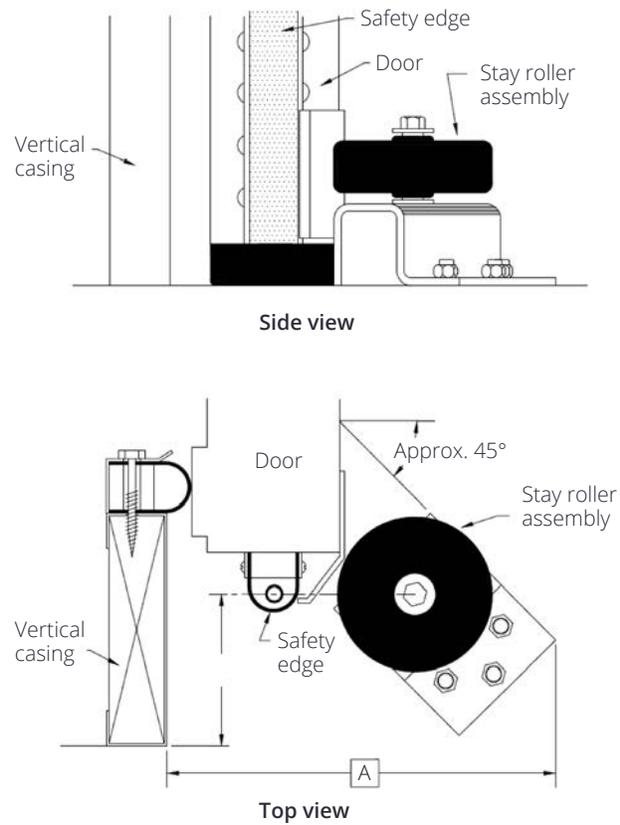
- 3) Adjust stay roller guide wheels to obtain $\frac{1}{8}$ " to $\frac{1}{4}$ " crush on vertical bulb gaskets.

Figure 11
Trailing Edge Stay Roller



| Door Thickness | A |
|----------------|----|
| 4" | 6" |
| 6" | 8" |

Figure 12
Leading Edge Stay Roller



| Door Thickness | A |
|----------------|---------|
| 4" | 10 1/2" |
| 6" | 12 1/2" |

5. Door Cord Attachment

Attach drop cords to junction boxes mounted on the trailing edge of the door(s). See **Parts Figures 10-11** for details.

6. Electric Wiring of Heat Circuits (for freezer applications only)

- 1) Before proceeding, check to see that available power supply (voltage and phase) matches that on name plate located on trailing edge of the door(s).
- 2) Consult local electric codes before proceeding with installation.
- 3) **Note:** This unit must be properly grounded. A separate power supply (120V) is needed for EACH door. Separate supplies are needed for each leaf of the Bi-Parting door.
- 4) Connect power supply (with voltage matching the voltage shown on name plate) to junction boxes mounted on end(s) of header.

7. Mechanical Connection of Electrically Operated Doors (Electrically powered doors only)

- 1) Attach chain drive release assembly to 3/8" studs on top of the door(s). Align chain drive release assembly

with chain and secure in place using 3/8" flange nuts. Ensure that chain is neither pulling nor binding and is in alignment with the sprocket on the operator motor. See **Figure 13**.

- 2) Adjust Drive Chain Retainer (Labeled 'F' in **Figure 13**) to proper height using 3/8" chain drive retainer adjustment bolts as follows:
 - a) Release chain drive assembly from double-link in chain drive.
 - b) Move door panel until chain drive retainer adjustment bolts are visible through access hole located in track.
 - c) Loosen chain drive retainer nuts and adjust chain drive retainer until chain is level.
 - d) Re-tighten chain drive retainer nuts and engage door panel back into double-link in chain drive.
- 3) Attach 1/8" chain drive release cable to chain drive release assembly using cable clamp provided. See **Figure 13**.
- 4) Adjust trolley stabilizer located on trolley assemblies as shown in **Figure 14**.
- 5) Once the trolley stabilizer is properly adjusted make sure to retighten all fasteners before operating the door.

Figure 13
Chain Drive Release Assembly

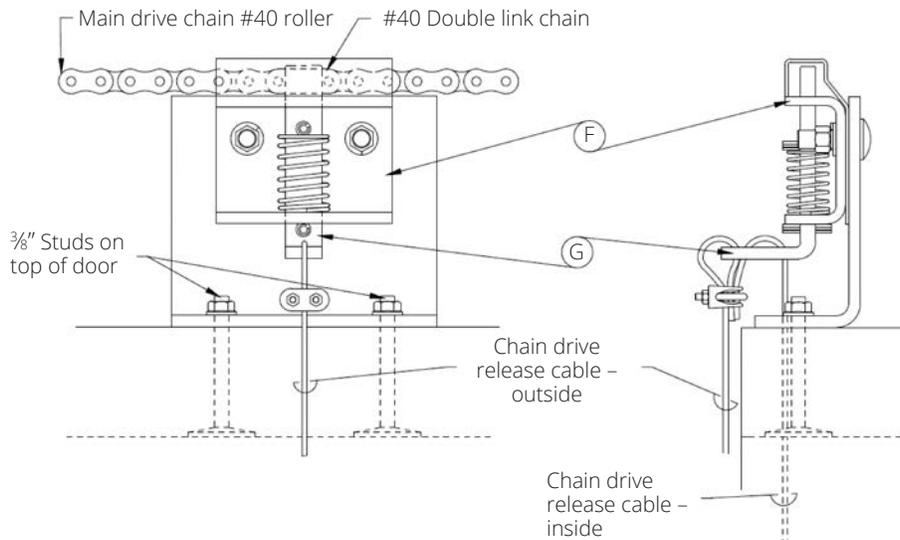
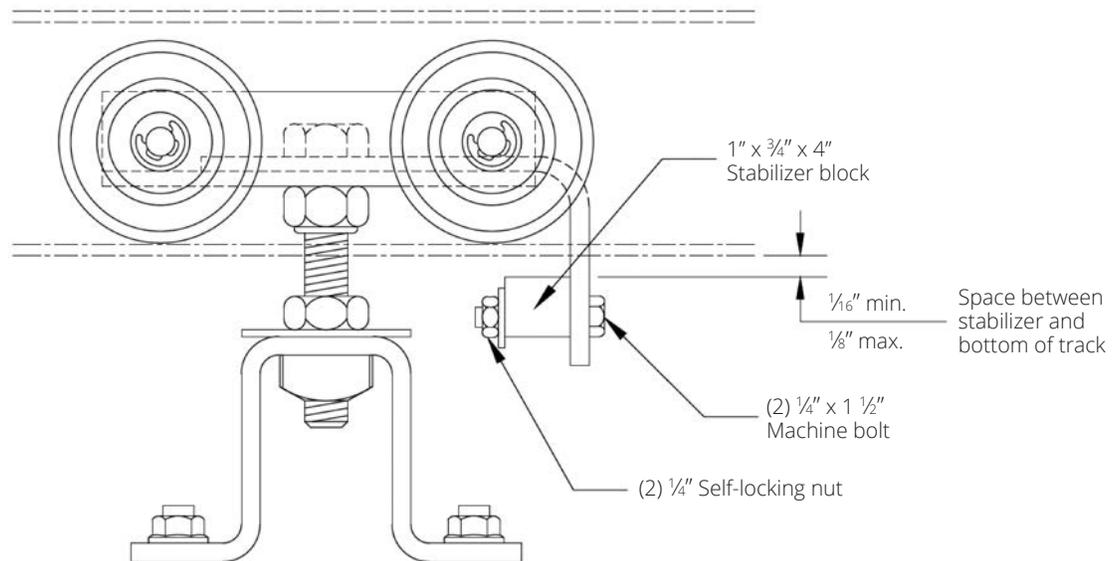


Figure 14
Trolley Stabilizer Instructions



Loosen $\frac{1}{4}$ " x $1\frac{1}{2}$ " machine bolts and adjust trolley stabilizer to allow for $\frac{1}{16}$ " to $\frac{1}{8}$ " clearance between stabilizer block and track.

8. Electrical - Important! (Electric powered doors only)

- 1) Before proceeding, make sure that available power supply (voltage and phase) matches that on the operator name plate located on the face of the control box. Make sure that the door(s) can travel freely (manually) from full closed to full open position without obstruction.
- 2) Installation should be performed by qualified personnel only. Consult local electrical codes before proceeding with installation.
- 3) This unit must be properly grounded.
- 4) All low voltage circuit accessory wiring must be UL listed or recognized, with a maximum rating of 600V.
- 5) For Freezer doors the operator and the heating wires should be run off separate supplies.

9. Electrical - Field Wiring (Electric powered doors only)

- 1) Wiring diagram with schematic is located on the inside of the control panel cover.
- 2) Caution: This operator is for use only on doors incorporating safety reversing switches, which are either electric or pneumatic. Before continuing, make sure that the drop cords are properly attached to the junction boxes mounted to the trailing edge of the door. This will connect the safety edge to the control box.
- 3) Operating Devices Installation: Install and connect operating devices as shown on the wiring diagram, e.g. pull cords, button stations, etc.
- 4) Connect primary power to the inputs labeled "AC in L1" and "AC in L2", located in the control box.

10. Door Size Calibration (Electric powered doors only)

- 1) Before applying power to the operator, check that the battery pack is connected to the "B" terminal of the control box.
- 2) From the main screen, press the **DOWN** button until the LCD displays "**Calibrate Now.**"
- 3) Press the **ENTER** button once.
 - The LCD displays "**Jog door open. Press enter to complete.**"
- 4) Hold the **UP** button until the door contacts the end stops in the track. Press the **ENTER** button once.
 - If the door moves towards the close position, press the **ENTER** button until "**Calibration error**" is displayed on the LCD. See the next section for instructions on changing door open direction.
- 5) The LCD displays "**Jog door closed, Press enter to complete.**"
- 6) Press and hold the **DOWN** button until the door contacts the end stop in the full close position.
- 7) Press the **ENTER** button.
 - The LCD will display "**Door size stored, cycle to complete.**"
- 8) The operator now requires an uninterrupted full open, followed by an uninterrupted full close cycle.
 - Once complete, the LCD screen will display "**Calibration Done.**"

11. Changing Open Direction (Electric powered doors only)

- 1) Press the **UP** or **DOWN** button until the LCD displays "**Enter Pswd.**"
- 2) Press the **ENTER** button once.
- 3) Enter the following sequence:
 - **ENTER, DOWN, DOWN, ENTER, ESCAPE, ESCAPE, ESCAPE, ESCAPE**
- 4) Press the **UP** or **DOWN** button until the display reads "Dir Flip." Press the **ENTER** button.
- 5) Press the **UP** button once so that the number displayed changes from a **0 to 1, or 1 to 0.**
- 6) Press **ENTER** to save the value.
- 7) Power down the system and begin the Door Size Calibration process again.

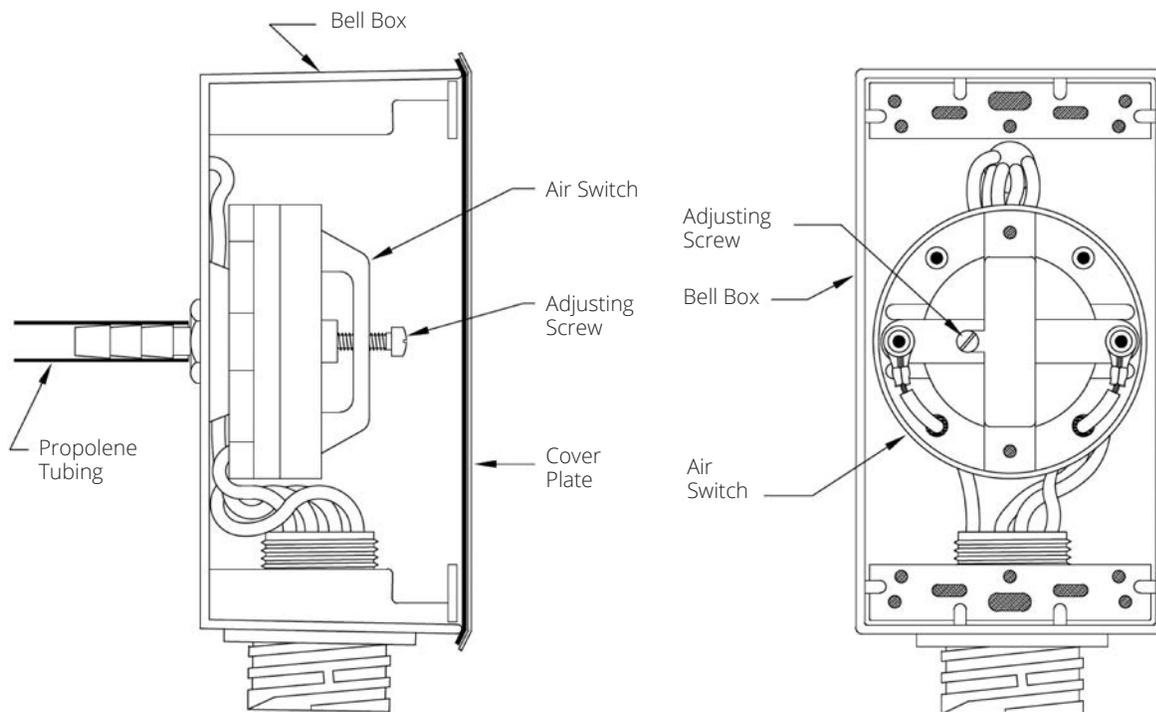
12. Safety Edge Adjustments (Electric powered doors only)

- 1) The door panel is equipped with a pneumatic safety reversing switch. The pneumatic safety reversing switch is activated by an air impulse, generated by impact to the safety bulb gasket on the leading edge of the door.
- 2) As a safety feature, if there is a break in the safety edge circuit, the operator will open the door and not allow the door to operate in the close direction until the circuit is repaired or adjusted properly.
- 3) To adjust the pneumatic reversing switch for more sensitivity, slightly turn the screw on the switch clockwise. For less sensitivity, turn the screw counter-clockwise.
See Figure 15.

13. Final Inspection

- 1) Re-check all of the previous steps. Inspect the door(s) and frame, and ensure that the door(s) can travel freely from full closed to full open without obstruction.
- 2) When installation is complete, store this manual in a safe location for future reference.

Figure 15
Safety Edge Adjustment





GENERAL MAINTENANCE

a) Maintenance on door parts should be performed as specified in the table shown below:

| Door Part | Time Frame | Maintenance |
|--|----------------|---|
| Lubrication | Every 6 months | The frequency of lubrication is governed by the environmental conditions at the location of the door. The self-lubricating bushings, in normal service, need not be lubricated. However, it is recommended that a few drops of light oil are periodically used on all moving parts. |
| Door gaskets and inner edge of door | Every 3 months | Clean gasket to allow for smooth contact between door and gaskets. Soap and water is recommended for cleaning. |
| Latches, strikes, fasteners (including all hardware) | Every 3 months | Check and re-tighten as required. |
| Sealant | Every 3 months | <p>During the life of the door it is possible for the factory sealant in the seams and joints to come loose, either from abuse or normal use. It is critical that all seams and joints be kept vapor-tight at all times.</p> <p>Inspect seams and joints (of door, window, and frame) for loose or missing sealant. Approved sealant must be applied if replacement is necessary. Failure to do so will affect water-tight integrity and cause deterioration of the door.</p> <p>Failure to maintain sealant will void the warranty.</p> |

Special care must be taken in areas that are washed down with de-greasing chemicals. Electrical components must be protected and lubricants must be washed from the operator and other moving parts immediately to prevent permanent damage.

IV TROUBLESHOOTING MALFUNCTIONS & PROBLEMS

Even though all operators and door assemblies are thoroughly tested and inspected before leaving the factory, certain malfunctions may occur, either during the installation process or otherwise. If a problem develops soon after installation is complete, it is recommended that the installation instructions be read through carefully to determine whether an error was made during the installation process.

1. General Troubleshooting

Included below is a list of the most common malfunctions, the possible cause of the malfunction, and suggested solutions. If you require further assistance, please contact us at the address and phone number below and ask for the Door Service Department.

Kingspan Insulated Panels, Inc.
 726 Summerhill Drive
 Deland, FL 32724-2024
 Phone (386) 626-6789
 E-Mail: info@kingspanpanels.us

Caution: Disconnect the power supply before servicing!

| Symptom | Possible Cause | Suggested Actions |
|--|---|---|
| Motor does not run when pull cord switch is activated. | Locking device hasp is in locked position. Locking device switch/wiring is defective or incorrect. | Move hasp to unlocked position. Check locking device circuit voltage indicated on wiring diagram. Check locking device switch for continuity when in unlocked position. |
| Motor runs but door does not move. | Door jammed or obstructed. Chain drive not engaged. | Manually operate door and check for obstructions or binding. Check that chain drive release is engaged. |
| Door starts to close then reverses to full open position without contact to safety edge. | “Normally Closed” safety edge circuit is open. | Check continuity across safety edge switch. If the circuit is open when switch is not engaged, rotate switch adjusting screw counter-clockwise until contact is made. Test and verify that the switch operates normally when the safety edge is struck. |

| Symptom | Possible Cause | Suggested Actions |
|---|--|--|
| Door starts to close, reverses to full open, starts to close again and continues this cycle until power is shut off or overload is tripped. | Pull cord switch is stuck in the closed position or there is a short in the pull cord circuit. | Disconnect the pull cord wires from terminals on the circuit board. Check for continuity across pull cord switch wires. If continuity exists and the pull cord switch is not engaged: Disconnect wires from pull cord switch. Check for continuity across switch terminals. If continuity exists, replace pull cord switch. |
| Door jumps violently when beginning motion. | Trolley stabilizers not properly adjusted. | Adjust stabilizers; refer to Figure 13 for details. |
| Door jumps violently at the end of motion. | Trolley stabilizers not properly adjusted. | Adjust stabilizers; refer to Figure 13 for details. |

2. Operator Troubleshooting

Further troubleshooting can be done through the LCD menu inside the operator control box. Listed below are some of the basic tools that can be used to troubleshoot problems through the operator as well as fixes to common error messages that appear on the LCD screen inside the operator control box.

Input Status

Input status is accessible from the LCD menu inside the control box. For each input, it displays the programmed activation (no activation displays **"Not used"** for the activation number)

From this menu the inputs can be tested as it indicates the status of each input.

The status of the input is either open or closed, and indicates whether there is a short (closed) between the two contacts of that input or whether it is open; meaning no connection present between the two contacts of that input.

The display for each input is updated in real time, such that an action to close or open the contact will be displayed immediately.

Note: The change of state of some activations may result in an action such as opening or closing a door system. If this is the case the input status screen will change to the appropriate screen message corresponding to the action triggered.

Accessing Input Status

- Press the **UP** or **DOWN** button until the display reads **"Input Status"**
- Press **ENTER**
Display should read **"In1, the activation number, input status"**
- Press the "Up" or "Down" button to display additional inputs
- To exit, press the **UP** or **DOWN** button until **"Exit"** is displayed
- Press **ENTER**

What each activation does can be found in the table below:

| Activation Number | What it does | Expected State | Notes |
|-------------------|---|------------------|---|
| Act1 | Safety (Prevents and interrupts closing) | Normally closed. | |
| Act2 | Open (opens door) | Normally open | |
| Act3 | Safety (Prevents and interrupts closing) | Normally open | |
| Act4 | x | x | Similar to Act2, use Act2 |
| Act5 | Close (closes the door) | Normally open | |
| Act6 | Opens the door when closed, closed the door when opened | Normally open | |
| Act7 | Partial open | Normally open | |
| Act8 | Stop | Normally close | Screen will display 'emergency sop' when activated. |

If the information from input status is not matching up with the information in the table for an input that input is likely the source of the problem. Check inside the control box to see what is wired into the input in question and check to be sure the wires are still connected properly and no shorts or damaged wires can be found. The location of each input can be found on the wiring diagram on the inside cover the control box and in **Figure 16** on page 25.

Note: If the close delay timer is active, the input status tool may not be used. In order to determine if a peripheral is interfering with operation an installer may use a voltage meter.

To determine if a circuit from a peripheral is either Open or Closed a voltage may be measure on the corresponding input. A measurement of 0 VDC indicates a closed circuit, and a measurement of 11 to 12VDC indicates an open circuit. Record these values prior to turning off power so that they may be checked against the chart above to determine possible issues.

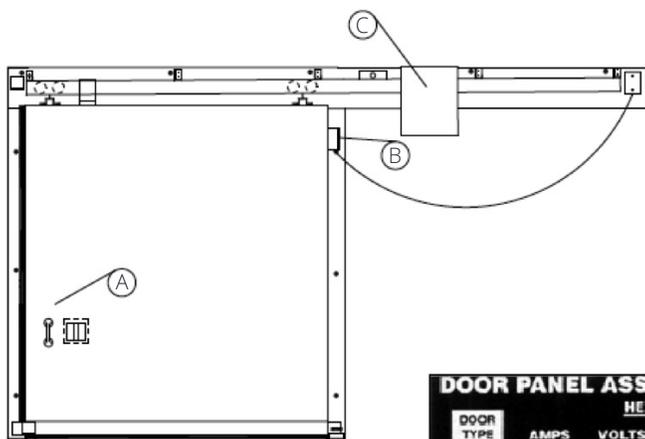
Common Control Box LCD Display Error Messages

| Error Message | Description | Fix |
|-------------------|--|---|
| Open Obstruction | This is a velocity check, if the system can-not move a pre-defined distance in a pre-defined amount of time during the open cycle or during opening movement the motor stops moving. | <ul style="list-style-type: none"> • Each operator has a specific range of power and similar operators may be able to be used in many different applications, however it is important to review the sprocket guide and door speed/weight. • Check for mechanical binding, the “calibrate now” command from the main screen is a great tool to assist in this action as that power level was used to set up the door initially (if this is not a new installation) and the door should be able to travel freely through the track using this option. • Wiring can also be a source of issue, as a connection error for the phase wiring (to the “H” connector) will prevent movement, so will a bad connection or connection error to the “C” connector (see sensor status document for additional information) |
| Core Flip Error | Sudden changes in direction or movement (when using manual calibrate) can result in this error. | <ul style="list-style-type: none"> • Power down the system for 20 seconds after the screen goes blank and power back on. |
| Calibration Error | This is an error due to incorrect calibration and/or creating a door size that is smaller than the minimum door size accepted by the operator. | <ul style="list-style-type: none"> • Power down the system for 20 seconds. After the screen goes blank power back on and re-attempt calibration. If the error persists check sensor status. |
| Emergency Stop | This is the result of pressing the stop button. | <ul style="list-style-type: none"> • If multiple stop buttons are being wired to one input ensure that they are wired in series (not parallel) as the connection is normally closed • Check wiring on the stop button, as it is expecting a normally closed contact (see the input status section for further information) |

V PARTS LIST

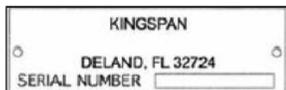
The Parts List is provided for your convenience when ordering replacement parts. Please use the model and serial number of your door when ordering parts, as this will expedite shipment of required parts and avoid unnecessary correspondence.

Parts Figure 1: Location of Labels

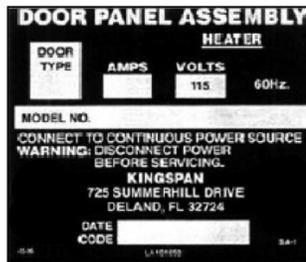


Provide the following information:

1. Part number and description
2. Model number
3. Serial number
4. Actual width in clear and height in clear



(A) Serial number located on inside of door above handle



(B) Heater cable information label (freezers only)

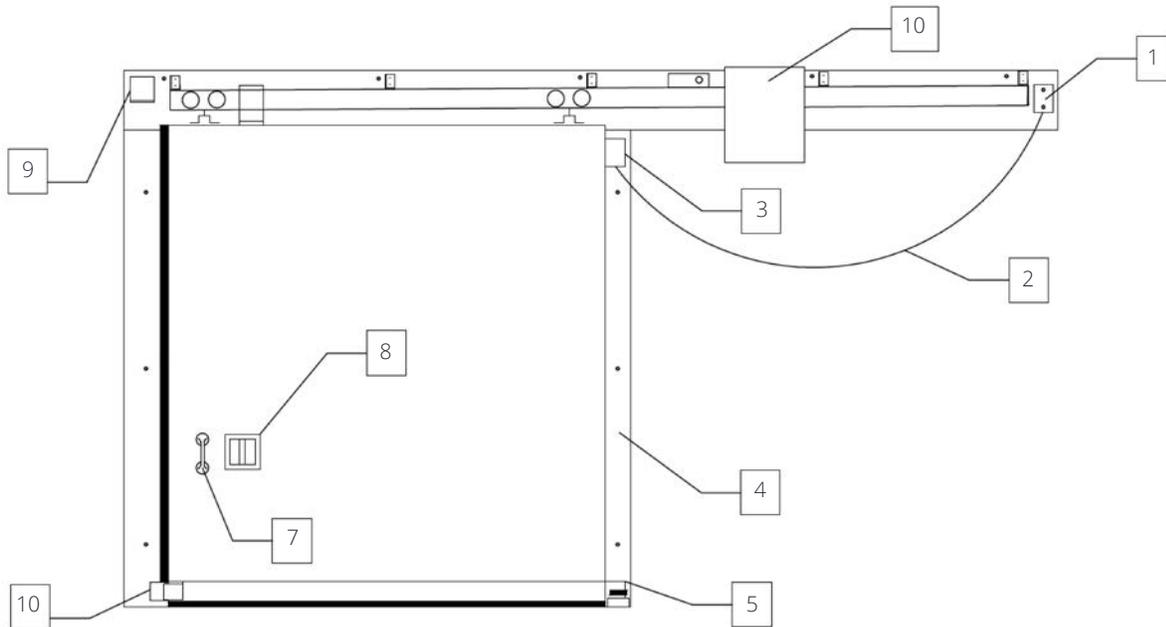


(C) Operator information label located on control box

Parts Figure 2: Door Parts - Horizontal Sliding

| No. | Part Description |
|-----|--|
| 1 | Junction box-header |
| 2 | Power cord (4-pin cooler, 16-pin freezer) |
| 3 | Junction box assembly (4-pin cooler, 16-pin freezer) |
| 4 | Vertical casing |
| 5 | Rear stay roller strike plate |

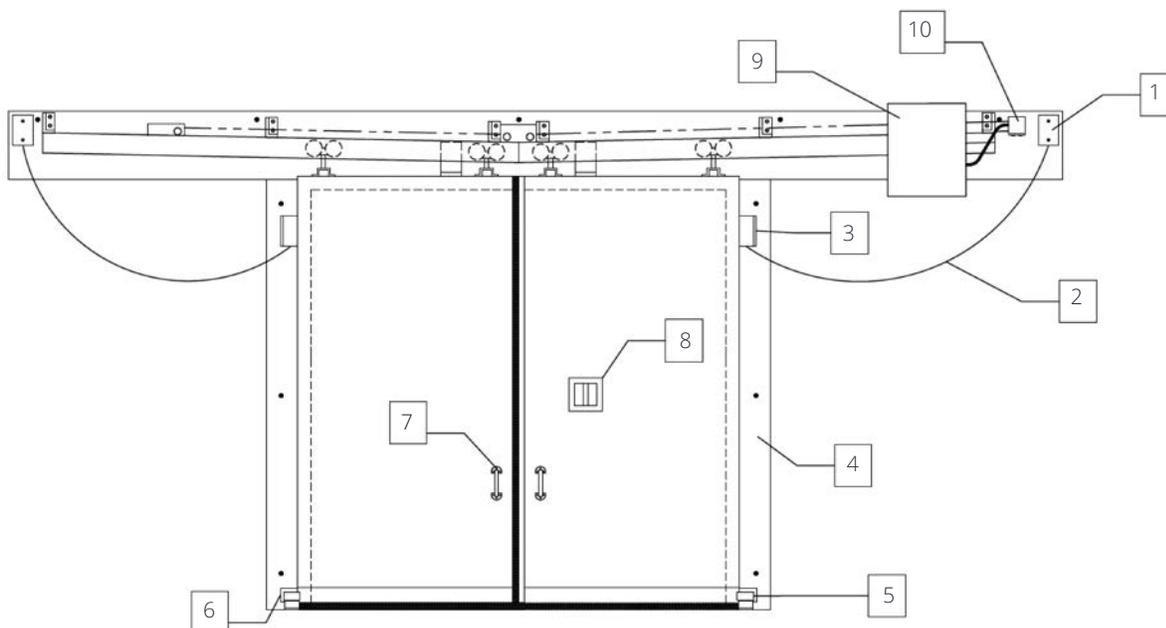
| No. | Part Description |
|-----|---|
| 6 | Front stay roller strike plate |
| 7 | Exterior handle |
| 8 | Interior handle |
| 9 | Operator motor - electric powered doors |
| 10 | Control box - electric powered doors |



Parts Figure 3: Door Parts - Bi-Parting Sliding

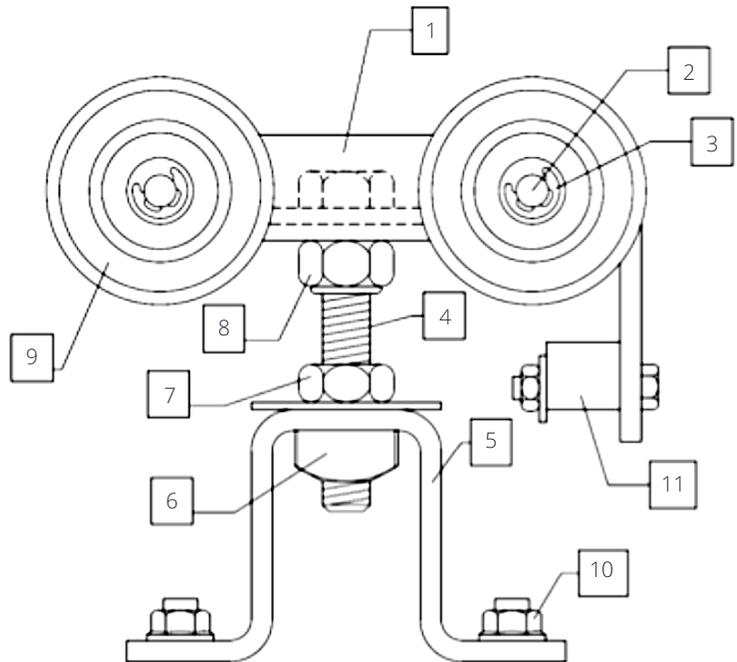
| No. | Part Description |
|-----|---|
| 1 | Junction box-header |
| 2 | Power cord (4-pin cooler, 16-pin freezer) |
| 3 | Junction box assembly (4-pin cooler, 16-pin freezer) |
| 4 | Vertical casing |
| 5 | Rear stay roller strike plate |

| No. | Part Description |
|-----|--|
| 6 | Left stay roller strike plate |
| 7 | Exterior handle |
| 8 | Interior handle |
| 9 | Control box - electric powered doors |
| 10 | Operator motor - electric powered doors |



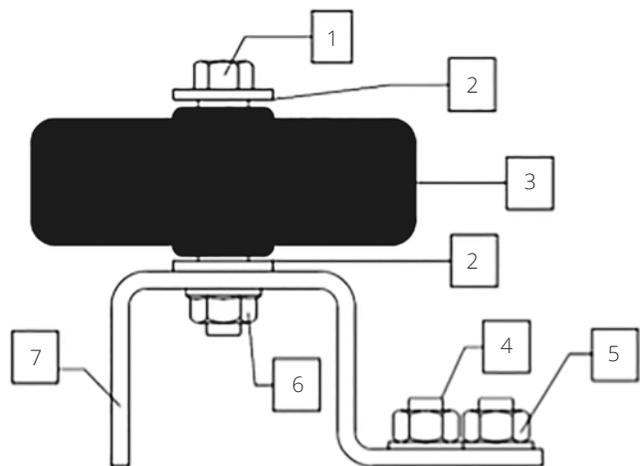
Parts Figure 4: Trolley / Bracket Assembly

| No. | Part Description |
|-----|--|
| 1 | Trolley chassis |
| 2 | Trolley axle |
| 3 | E-ring, 3/8" |
| 4 | 5/8" x 3" Cap bolt, front; and 5/8" x 3-1/2" Cap bolt, rear |
| 5 | Hangar bracket |
| 6 | 5/8" Square nut |
| 7 | 5/8" Hex jam nut |
| 8 | 5/8" Hex jam nut with lock washer |
| 9 | 3" Bearing wheel |
| 10 | 3/8" Locking flange nut |
| 11 | Trolley stabilizer |



Parts Figure 5: Stay Roller Assembly

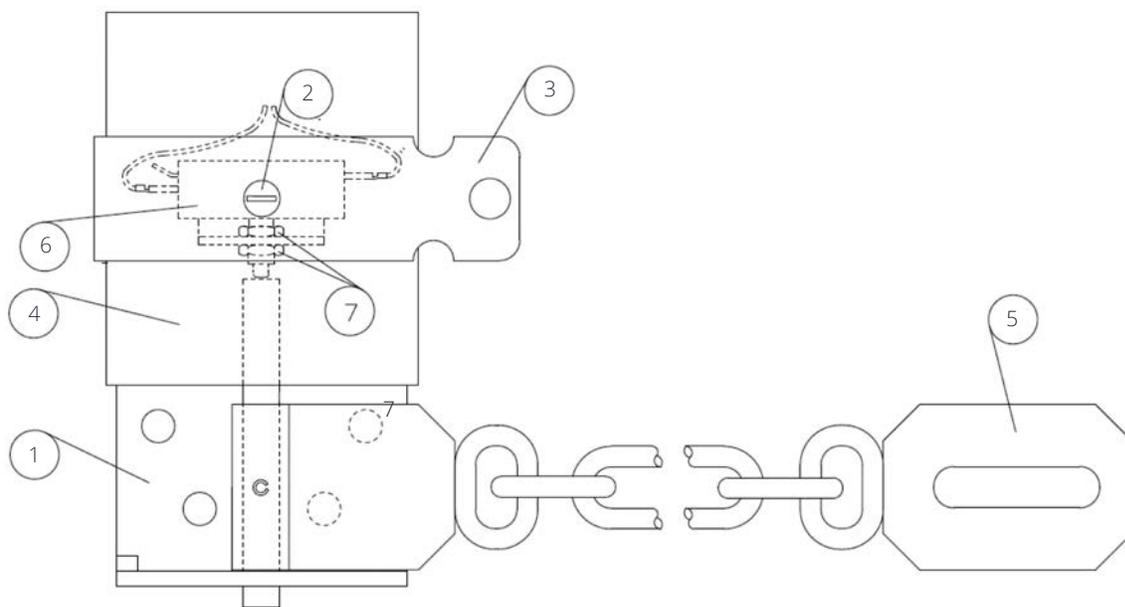
| No. | Part Description |
|-----|-----------------------------|
| 1 | 3/8" x 2-1/4" Cap bolt |
| 2 | 3/8" USS flat washer |
| 3 | Plastic roller with bushing |
| 4 | 3/8" Floor anchor |
| 5 | 3/8" Hex nut |
| 6 | 3/8" Flange nut |
| 7 | Stay roller bracket |



Parts Figure 6: Trackside Locking Device Assembly

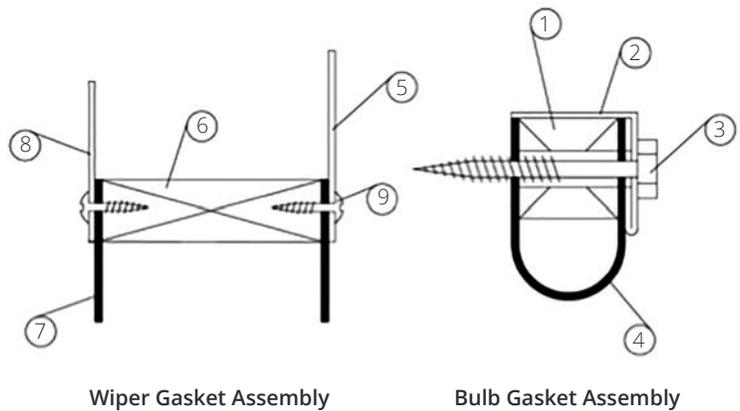
| No. | Part Description |
|-----|----------------------------------|
| 1 | Locking device body, left |
| 2 | ¼" x ⅜" Round head machine screw |
| 3 | Locking device hasp hanger |
| 4 | Locking device cover |

| No. | Part Description |
|-----|------------------------------|
| 5 | Locking device hasp |
| 6 | Locking device switch (N.C.) |
| 7 | Nut, ⅜" jam |



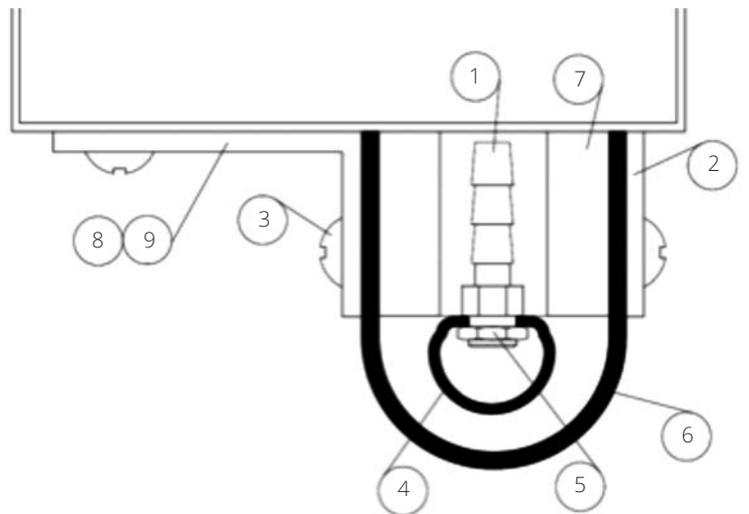
Parts Figure 7: Gasket Assembly

| No. | Part Description |
|------------------------------|-------------------------------------|
| Bulb gasket assembly | |
| 1 | Bulb gasket mounting plastic lumber |
| 2 | Bulb gasket retained |
| 3 | ¼" x 3" Lag |
| 4 | ⅛" x 5-½" Neoprene gasket |
| Wiper gasket assembly | |
| 5 | 16 Ga. Trim – 4" |
| 6 | Gasket mounting plastic lumber |
| 7 | ⅛" x 2" Neoprene gasket |
| 8 | 16 Ga. Trim – 3" |
| 9 | #10 x ¾" Truss head screw |



Parts Figure 8: Safety Edge Gasket Assembly – Electric Powered Doors

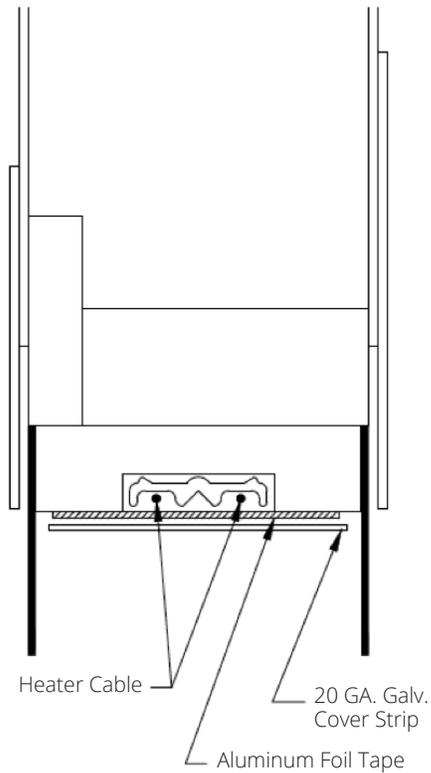
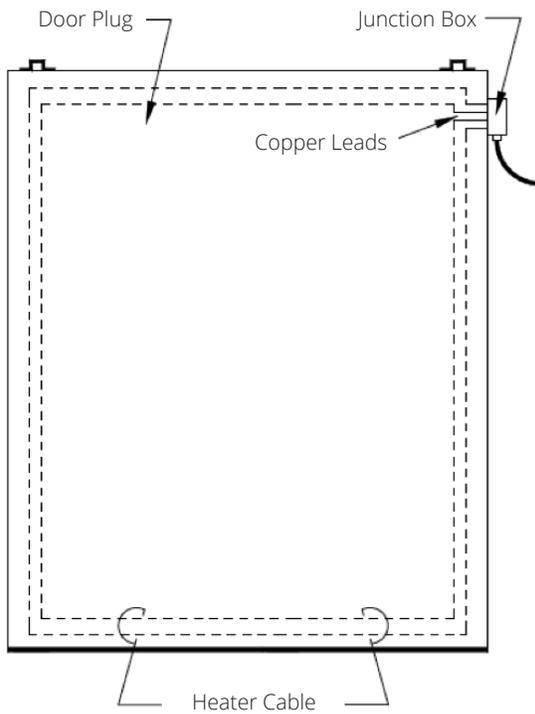
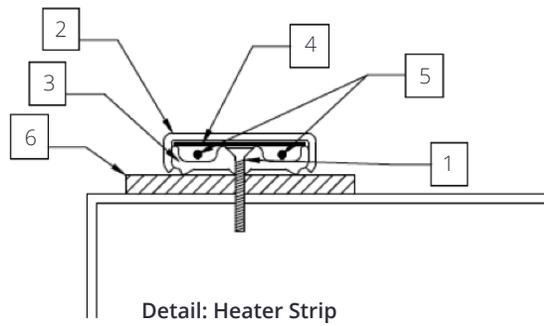
| No. | Part Description |
|-----|--------------------------------|
| 1 | Brass fitting |
| 2 | 16 Ga. x 1" Galvanized trim |
| 3 | #10 x ¾" Truss head screw |
| 4 | ⅝" Latex tubing |
| 5 | Brass nut |
| 6 | ⅛" x 5-½" Neoprene gasket |
| 7 | 1-¼" x 1" Plastic lumber |
| 8 | Angle trim 1" x 2-¼" - 4" door |
| 9 | Angle trim 1" x 4-⅛" - 6" door |



Parts Figure 9: Heater Strip & Cable Routing – Freezers

| No. | Part Description |
|-----|---------------------------|
| 1 | Screw, flat head #8 x ¾" |
| 2 | Heater cover extrusion |
| 3 | Heater retainer extrusion |

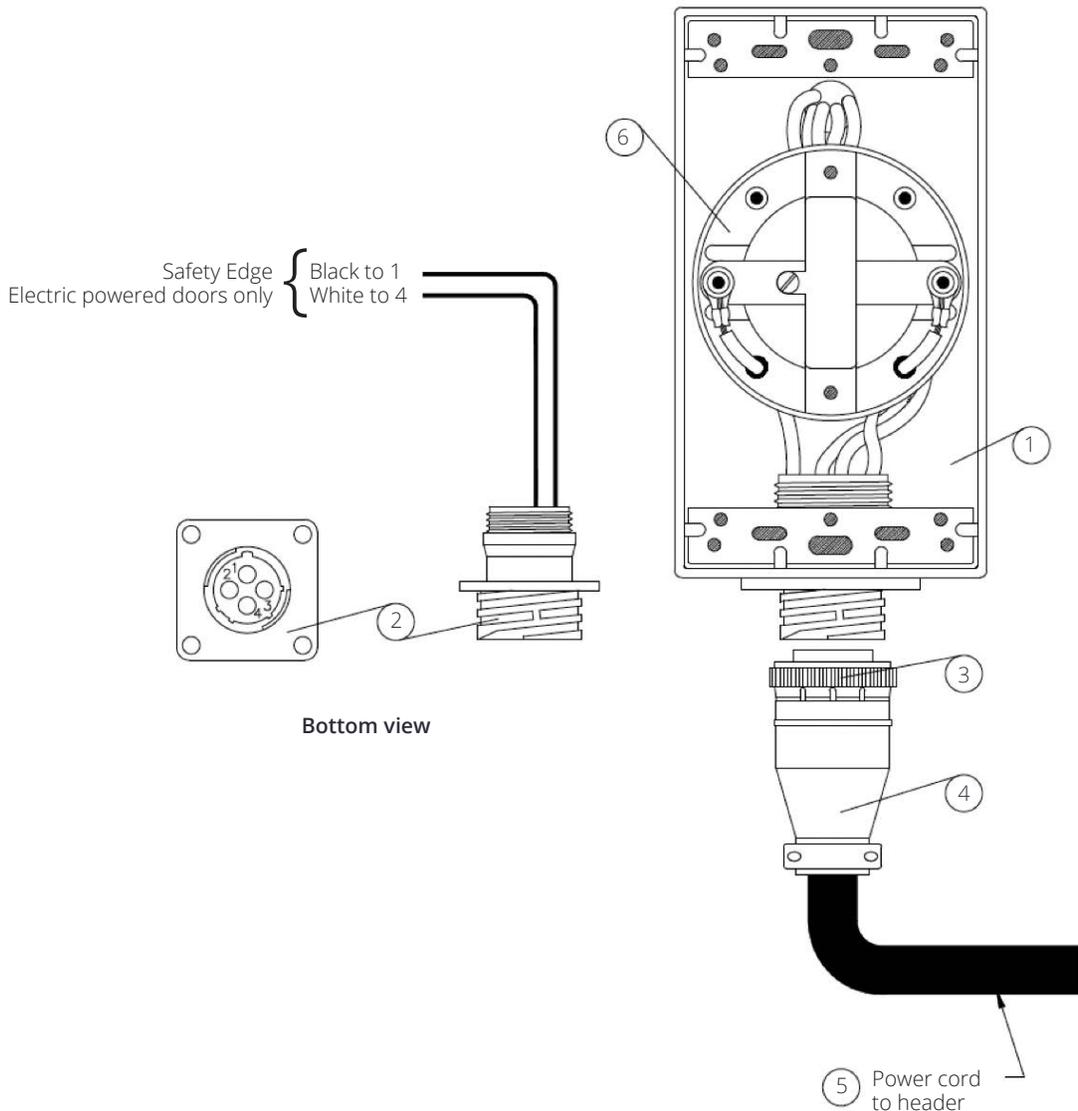
| No. | Part Description |
|-----|--------------------------|
| 4 | Aluminum foil tape |
| 5 | Heater cable |
| 6 | Neoprene gasket, ¼" x 2" |



Parts Figure 10: Door Panel Junction Box Assembly – Electric Powered Coolers

| No. | Part Description |
|-----|-------------------------|
| 1 | Bell box |
| 2 | Connector, Socket 4-pin |
| 3 | Connector, 4-pin |

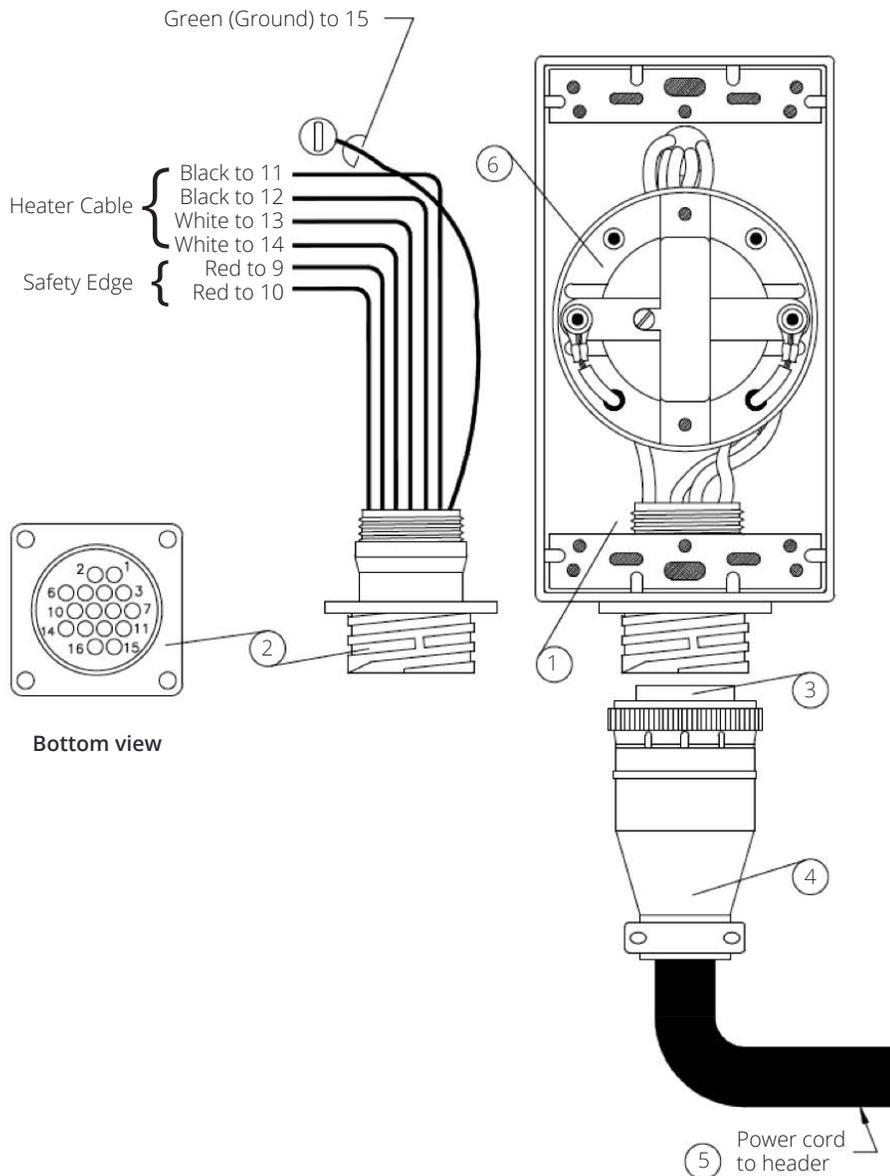
| No. | Part Description |
|-----|---------------------------|
| 4 | Cable clamp |
| 5 | Drop cord assembly, 4-pin |
| 6 | Air switch #161 |



Parts Figure 11: Door Panel Junction Box Assembly – Freezers

| No. | Part Description |
|-----|--------------------------|
| 1 | Bell box |
| 2 | Connector, Socket 16-pin |
| 3 | Connector, 16-pin |

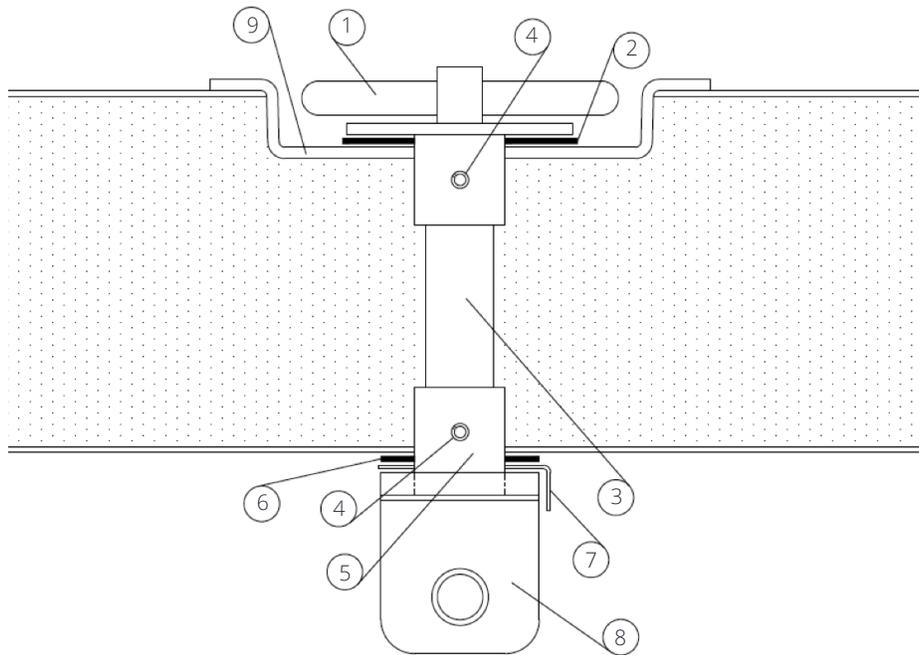
| No. | Part Description |
|-----|--------------------|
| 4 | Cable clamp |
| 5 | Drop cord assembly |
| 6 | Air switch #161 |



Parts Figure 12: Safety Release Assembly

| No. | Part Description |
|-----|-------------------------------------|
| 1 | Inside safety release ring assembly |
| 2 | Safety release round gasket |
| 3 | 3/4" Delrin rod |
| 4 | 3/16" x 1 Roll pin |
| 5 | 3/4" Galvanized nipple |

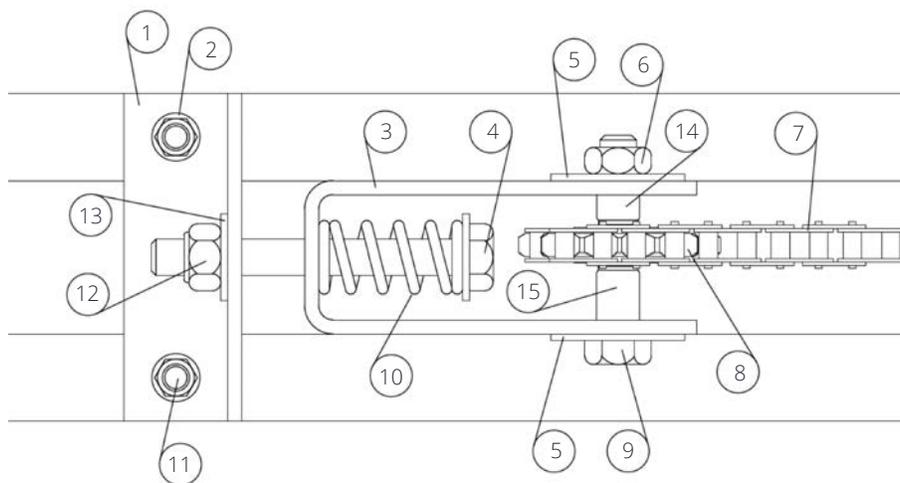
| No. | Part Description |
|-----|------------------------------|
| 6 | Safety release angle gasket |
| 7 | ISR Restraining angle |
| 8 | Inside safety release staple |
| 9 | Inside safety release pan |



Parts Figure 13: Chain Tensioner Assembly - Electric Powered Doors

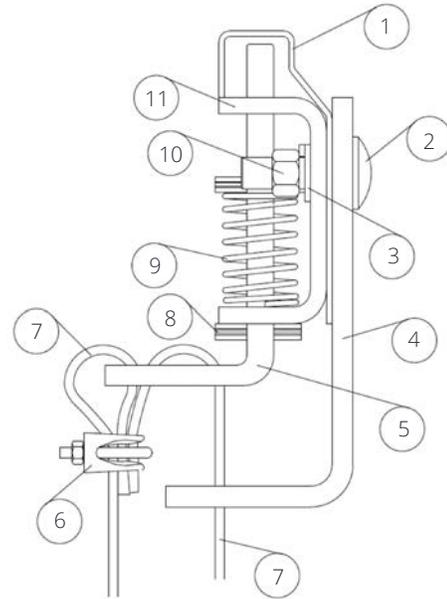
| No. | Part Description |
|-----|--------------------------------------|
| 1 | Chain tensioner assembly, center |
| 2 | $\frac{5}{16}$ " Locking flange nut |
| 3 | Chain tensioner yoke |
| 4 | $\frac{1}{2}$ " x 4" Cap bolt |
| 5 | Chain tensioner washer |
| 6 | $\frac{5}{8}$ " Self-locking jam nut |
| 7 | #40 Roller chain (state length) |

| No. | Part Description |
|-----|---|
| 8 | HB40A15 x $\frac{5}{8}$ " Bore sprocket |
| 9 | $\frac{5}{8}$ " x 3- $\frac{1}{2}$ " Cap bolt |
| 10 | 2" Tension spring |
| 11 | $\frac{5}{16}$ " Track bolt |
| 12 | $\frac{1}{2}$ " Self-locking full nut |
| 13 | $\frac{1}{2}$ " Flat washer |
| 14 | Spacer, $\frac{5}{8}$ " long x 0.635" ID x $\frac{7}{8}$ " OD |



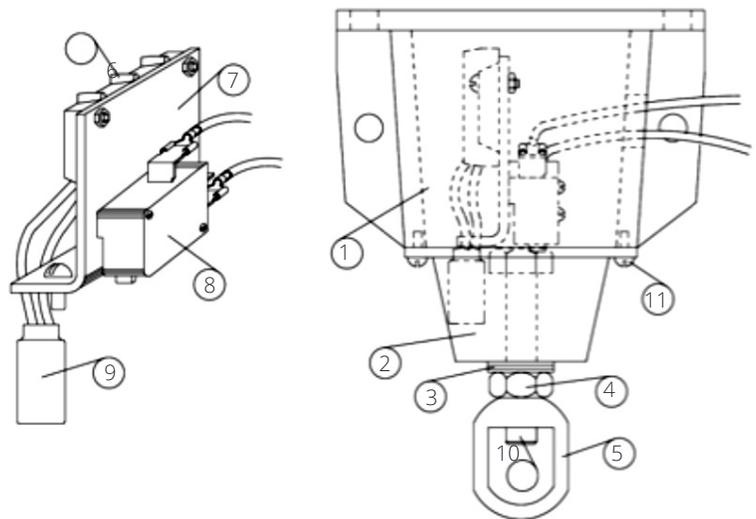
Parts Figure 14: Chain Drive Release Assembly – Electric Powered Doors

| No. | Part Description |
|-------------------------------------|--|
| Chain drive release assembly | |
| 1 | Chain drive release retained |
| 2 | $\frac{3}{8}$ " x 1- $\frac{1}{4}$ " SAE carriage bolt |
| 3 | $\frac{3}{8}$ " Lock washer |
| 4 | Chain drive release mounting plate |
| 5 | Chain drive release arm |
| 6 | Cable clamp, $\frac{1}{16}$ " |
| 7 | $\frac{3}{32}$ " Wire rope (state length) |
| 8 | $\frac{3}{16}$ " x 1" Roll pin |
| 9 | 1- $\frac{7}{8}$ " Release spring |
| 10 | $\frac{3}{8}$ " SAE nut |
| 11 | Guide body bracket |



Parts Figure 15: Pull Cord Switch Assembly – Electric Powered Doors

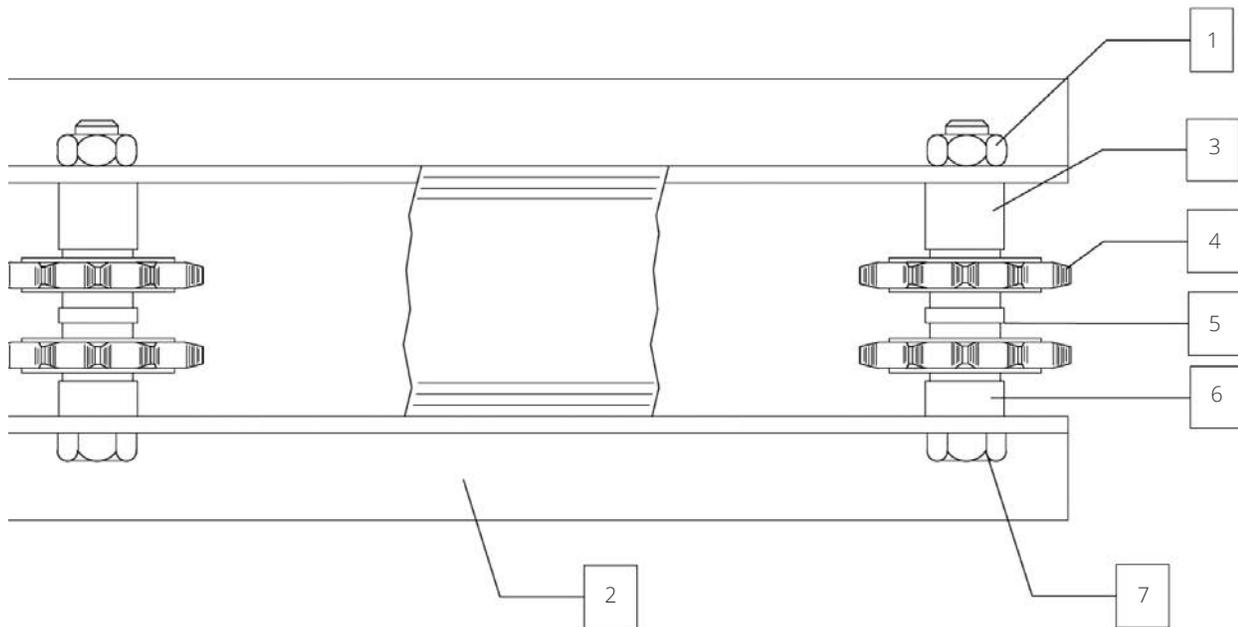
| No. | Part Description |
|---|---|
| Pull cord switch assembly, cooler Pull cord switch assembly, freezer | |
| 1 | Pull cord body |
| 2 | Pull cord cover |
| 3 | $\frac{3}{8}$ " Washer (3 rewired) |
| 4 | $\frac{3}{8}$ " Nut |
| 5 | $\frac{3}{8}$ " Eye nut |
| 6 | 2 pole terminal strip |
| 7 | Pull cord switch angle |
| 8 | Pull cord switch (normally open) |
| 9 | 10-Watt Heater cartridge (freezer only) |
| 10 | $\frac{3}{8}$ " x 2- $\frac{1}{2}$ " Hex bolt |
| 11 | #10 x $\frac{3}{8}$ " Machine screw |



Parts Figure 16: Chain Interchange Assembly - Electric Bi-Part

| No. | Part Description |
|-----|---|
| 1 | $\frac{5}{8}$ " Self-locking jam nut |
| 2 | Chain interchange body |
| 3 | Spacer, $\frac{5}{8}$ " long x 0.635" ID x $\frac{7}{8}$ " OD |
| 4 | Sprocket, HB40A15 x $\frac{5}{8}$ " |

| No. | Part Description |
|-----|---|
| 5 | Shim, $\frac{5}{8}$ " x 1" x 0.090" |
| 6 | Spacer, $\frac{3}{8}$ " long x 0.635" ID x $\frac{7}{8}$ " OD |
| 7 | Cap bolt, $\frac{5}{8}$ " x 3- $\frac{1}{2}$ " |



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