



600 ST DOOR

Installation Manual

Pioneer
PO Box 338
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Spring Hill, TN 37174

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Please Retain This Manual for Future Reference

1. Ratings and Specifications

- Motor Rating.....240 VAC, Three Phase, 1/2 hp
- Motor must be connected through controller. See ST SC-650 Manual (4801-5156).

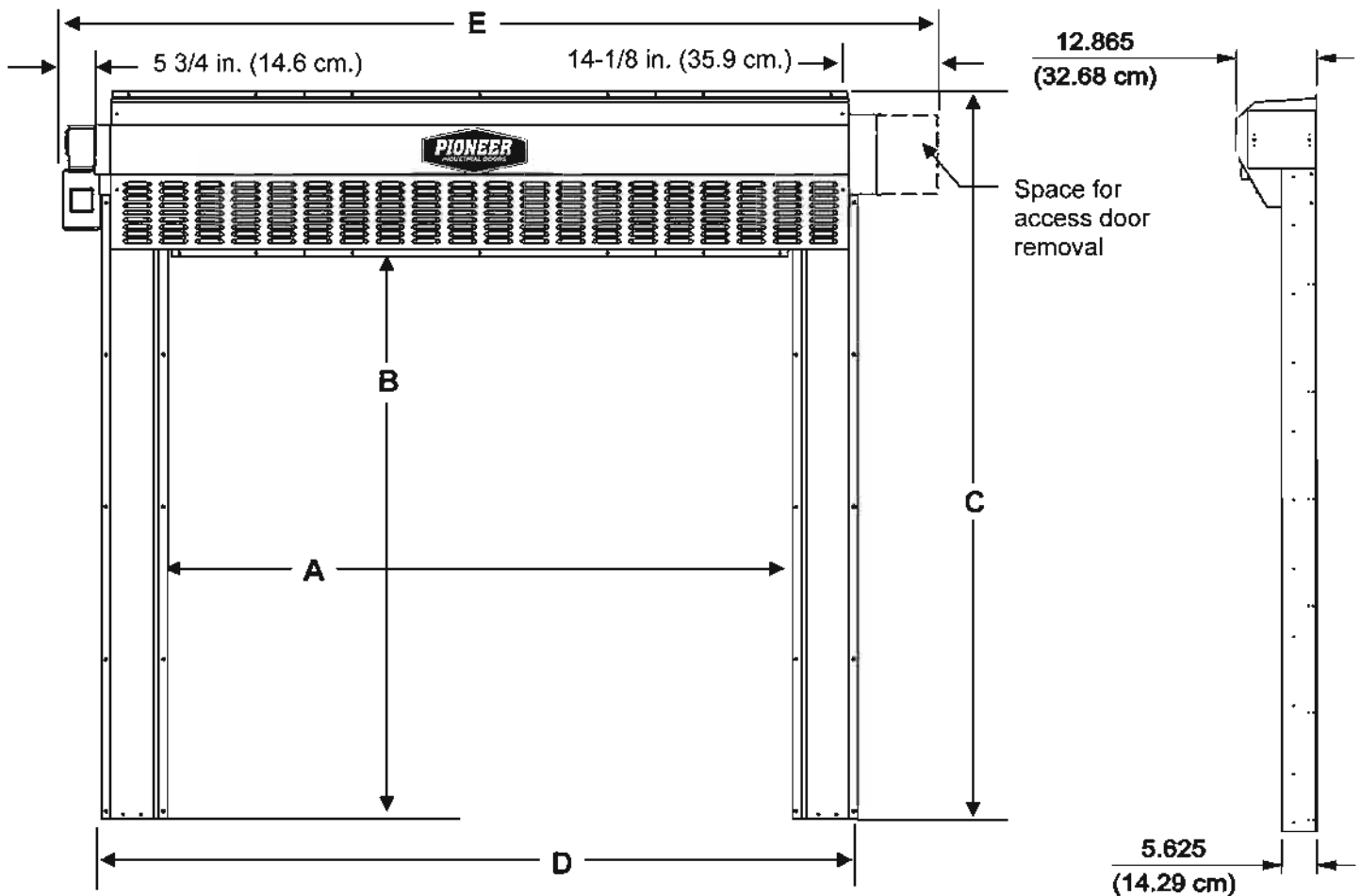


TABLE 1 600 ST Door Standard Dimensions:

WIDTH Related Dimensions

600ST Door Width	A			D			E		
	Ft.	In.	cm	Ft.	In.	cm	Ft.	In.	cm
4'(W)	4	0	122	5	4-13/32	164	6	8-15/16	206
5'(W)	5	0	153	6	4-13/32	194	7	8-15/16	236
6'(W)	6	0	183	7	4-13/32	225	8	8-15/16	267
7'(W)	7	0	214	8	4-13/32	255	9	8-15/16	297
8'(W)	8	0	244	9	4-13/32	286	10	8-15/16	328
9'(W)	9	0	274	10	4-13/32	316	11	8-15/16	358
10'(W)	10	0	305	11	4-13/32	347	12	8-15/16	388

HEIGHT Related Dimensions

600ST Door Height	B			C		
	Ft.	In.	cm	Ft.	In.	cm
7'(H)	7	0	214	8	8-11/16	266
8'(H)	8	0	244	9	8-11/16	296
9'(H)	9	0	275	10	8-11/16	327
10'(H)	10	0	305	11	8-11/16	357

2. Warnings

Warning!

Disconnect All Power Sources Before Installing This Equipment. Failure To Disconnect Power Source Can Result In Property Damage, Serious Injury Or Death!

Warning!

Dangerous Rotating Machinery!
Keep Hands, Clothing, Etc. Clear When Operating!
Do Not Operate Without All Guards And Covers In Place!

Warning!

All Wiring Should Be In Accordance with National Electrical Codes Or Other Local Codes.

Warning!

The Installer Is Responsible For Complying With All Relevant Regulations, Such As National Wiring Regulations And Accident Prevention Regulations. Particular Attention Must Be Given To The Cross-sectional Areas Of Conductors, The Selection Of Fuses Or Other Protection, And Protective Earth/Ground Connections!

Warning!

The Voltages In The Power Cables And Certain Parts Of The Drive Can Result In Death. Whenever The Drive Has Been Used It Must Be Isolated And Disconnected For 5 Minutes Before Any Work Commences.

Danger!

Only Qualified Electrical Personnel Familiar With The Construction And Operation Of This Equipment And The Hazards Involved Should Install, Adjust, And/Or Service This Equipment. Read And Understand This Manual In Its Entirety Before Proceeding. Failure To Observe This Precaution Could Result In Severe Bodily Injury Or Death!

3. Limited Warranty

All products are warranted to be free from defects in material and workmanship for a period of one (1) year or 100,000 cycles, whichever occurs first, from the date of purchase if installed and used in strict accordance with the installation instructions. Liability is limited to the sale price of any products proved to be defective or, at manufacturers' option, to the replacement of such products upon their return. No products are to be returned to the manufacturer, until there is an inspection and/or a return-goods authorization (RGA) number is issued.

All complaints should be directed first to the authorized distributor who sold the product. If satisfaction is not obtained or the name of the distributor is not known, write the manufacturer that appears below, directed to the attention of Customer Service Manager.

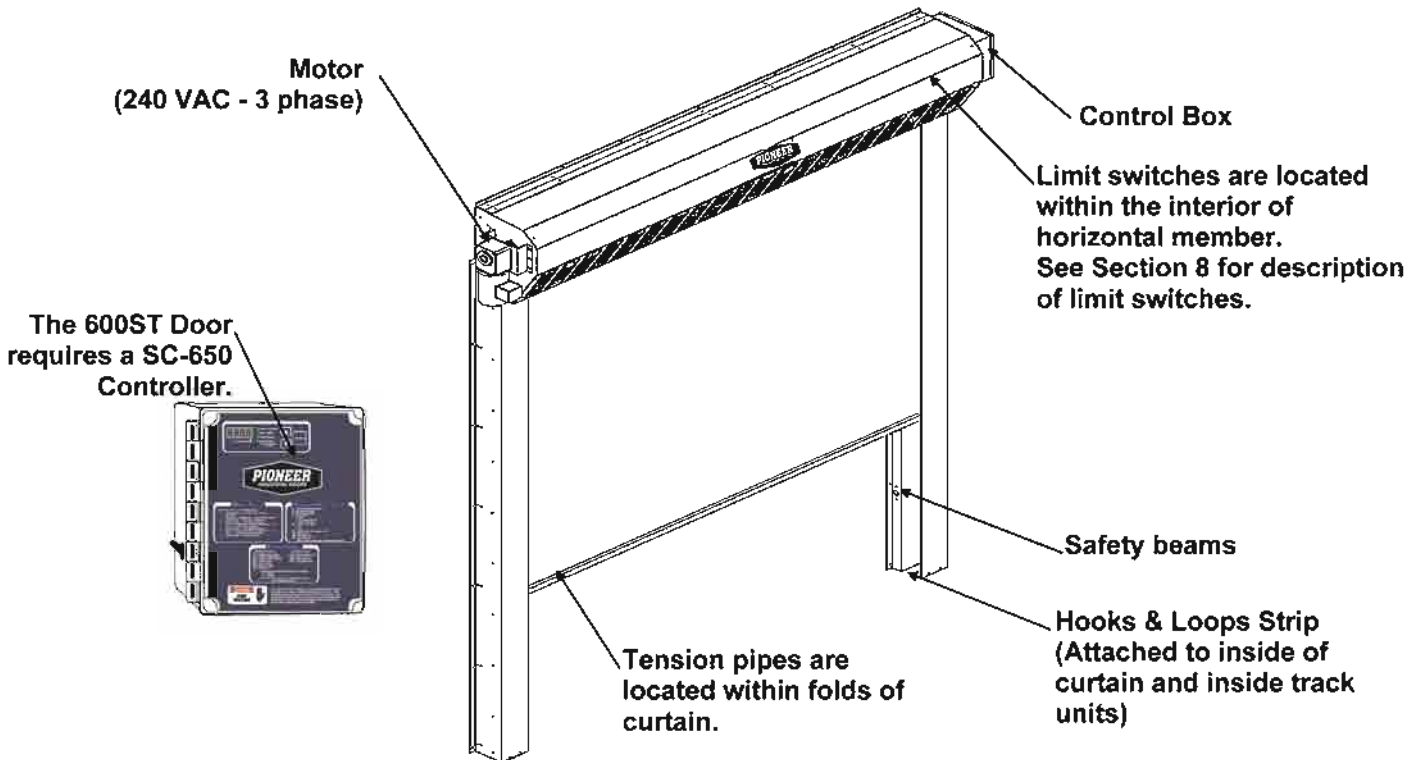
This limited warranty is expressly in lieu of any and all representations and warranties expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose. The remedy set forth in this limited warranty shall be the exclusive remedy available to any person. No person has authority to bind the manufacturer to any representation or warranty other than this limited warranty. The manufacturer shall not be liable for any consequential damages resulting from the use of our products or caused by any defect, failure or malfunction of our products. (Some areas do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.)

This warranty gives you specific legal rights and you may also have other rights that vary from area to area.

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4. Physical Description/Drawing

Installation of a Pioneer 600ST Automatic Door involves, at a minimum, connecting to the Smart Controller (SC)-650 that connects to the AC power, the door motor, the Up/Down button, and the safety beam. Other accessories can be added such as a remote IR sensor, a remote radio link, and door movement indicators such as lights and bells.



5. Use of Equipment

The Pioneer 600ST Door is an automatic motorized curtain enclosure for a doorway.

6. Installation

6.1 Tools Required

3/8 in. (10 mm) Power screwdriver (portable)	Socket
3/16 in. (5 mm) Drill bit and power drill	Hammer
3/8 x 1 in. Bolts and nuts (supplied)	Tape measure
	Carpenter's level
<i>NOTE: Other Tools May Be Required According To Installation.</i>	

6.2 Overview

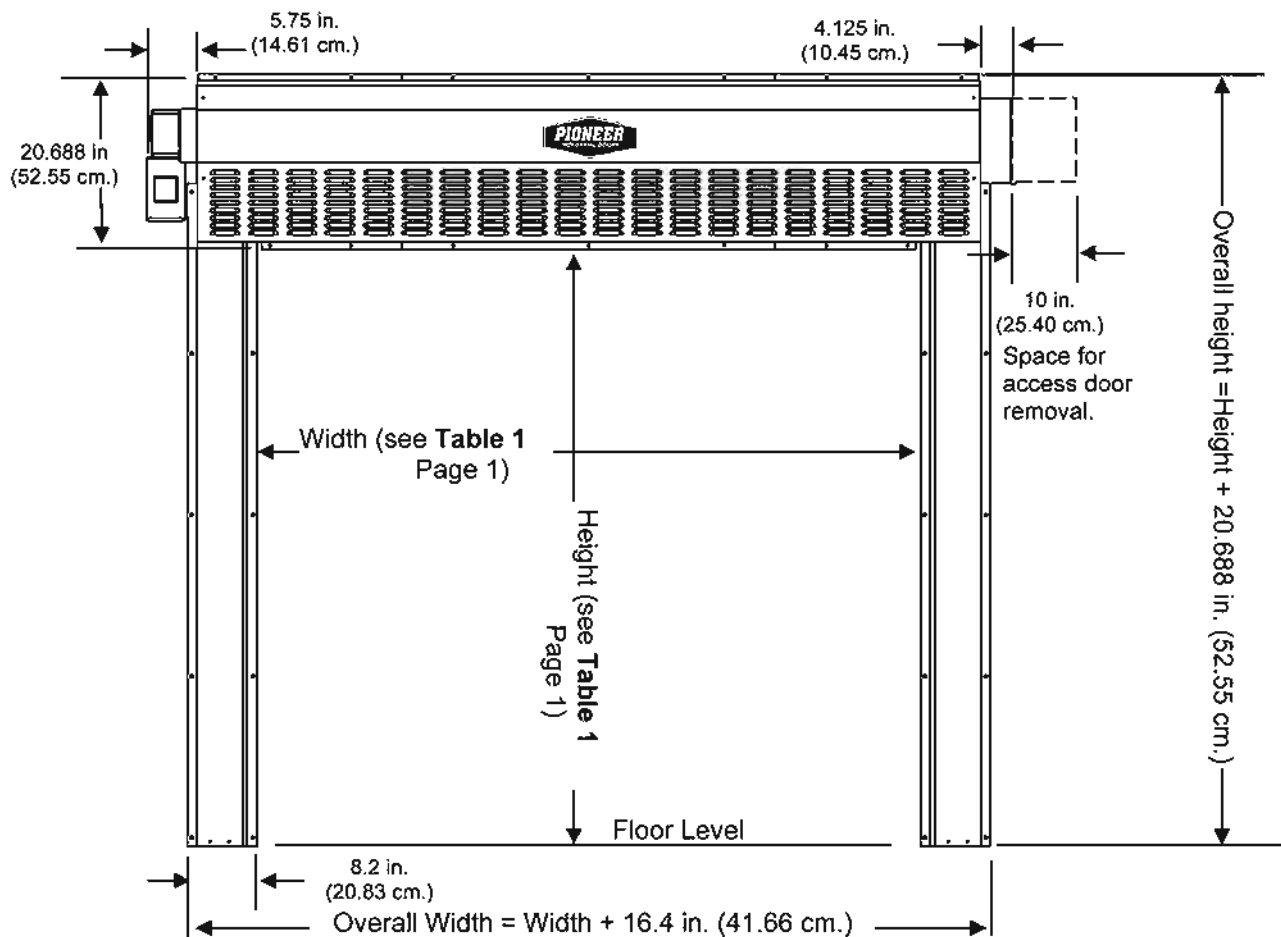
The 600ST door is shipped with pre-assembled vertical members (left track and right track), and a pre-assembled horizontal member (head unit). Identify components by the Parts/Assemblies section in back of this manual. When components are received, check for damaged or loose or missing parts. If there are damaged or missing parts contact your Pioneer distributor immediately. Please read and understand all instructions in this manual before beginning installation.

6.3 Adjusting the Clear Opening

Locate your particular system in **Table 1**, page 1. Read the value of height and width of the clear opening for the door size that you are installing. This gives the required dimensions of the clear opening. If necessary, adjust the dimensions of the mounting posts or framing members to the height and width of your 600ST door system as shown in **Diagram 1**. Refer to **Section 6.4 (page 8, Diagram 2)** for details of attaching door to framing members. Framing material must provide suitable support for attachment of screws.

Make sure that mounting posts or framing members are positioned so that the screw holes of the outer flanges of the vertical members will align with the mounting posts or framing members (**Section 6.4, page 8, Diagram 2**). Make sure that there is room for the motor and control box without encountering any obstructions.

Diagram 1
Front View (Curtain Side)

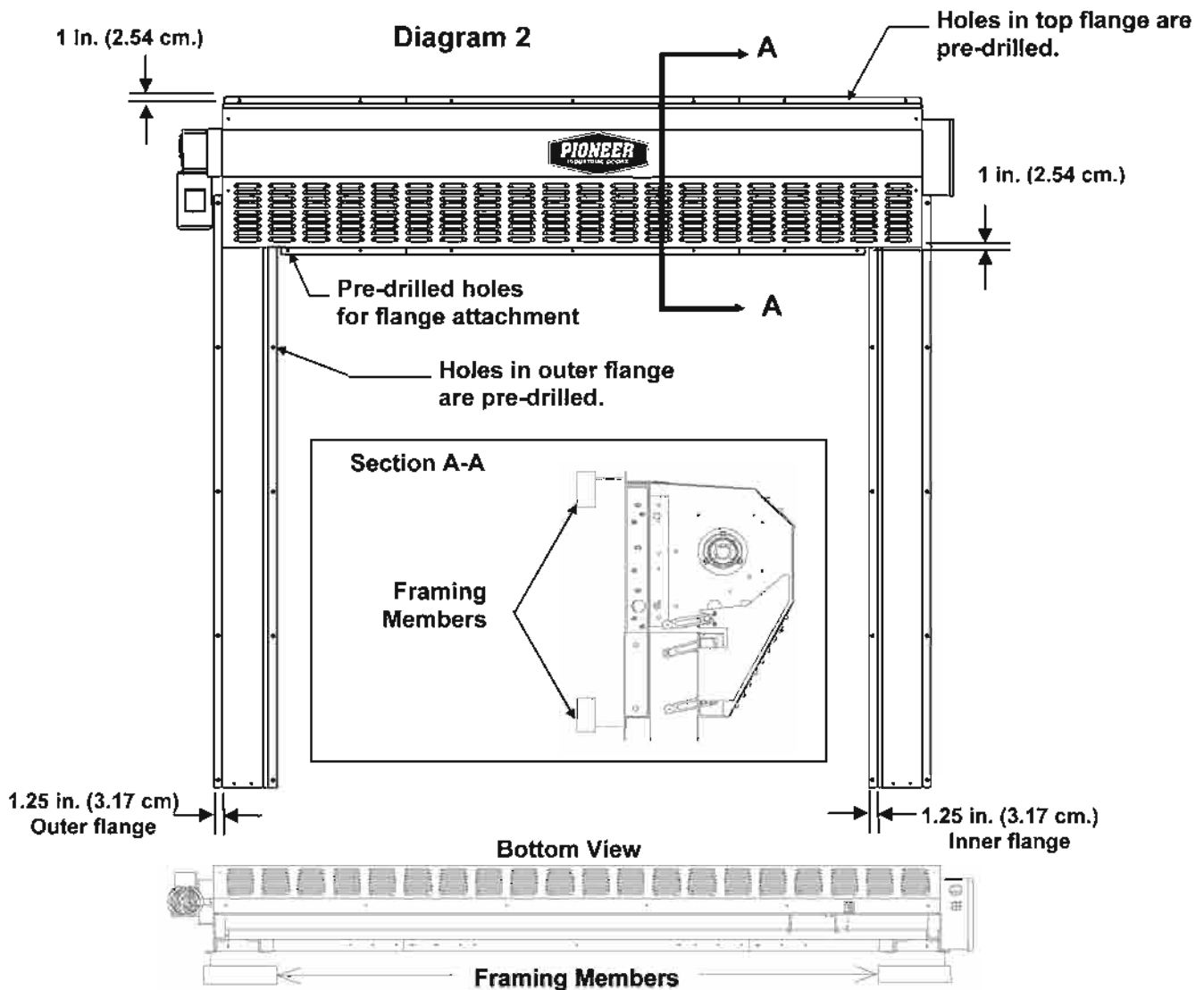


NOTE: Allow 1' (30.4 cm) minimum, preferably 18" (45.7 cm) clearance above the Head Unit for future panel maintenance or replacement.

6.4 Attachment Points of Door

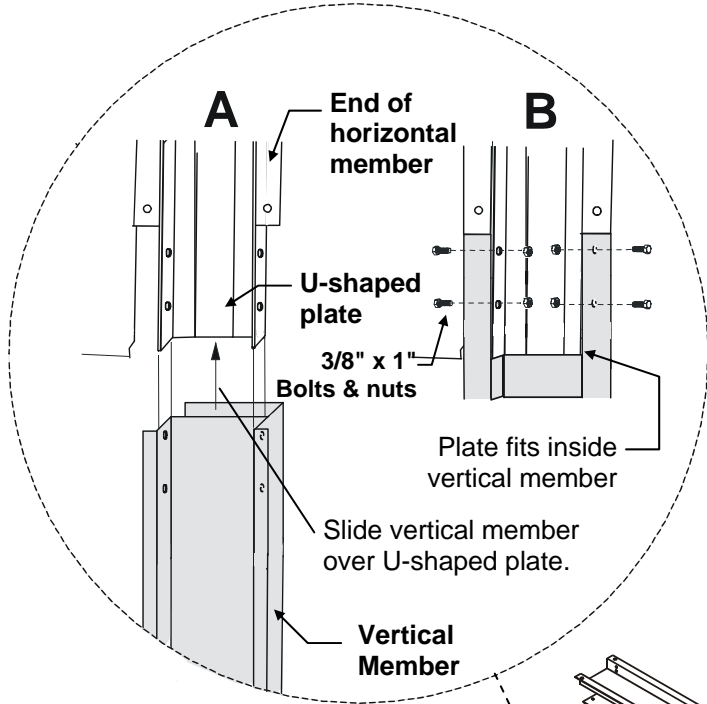
When sizing the clear opening for attachment of the door, pay close attention to the following guidelines. Door flanges have pre-drilled holes that serve as mounting points of door. Flange widths are shown in **Diagram 2**.

1. Make sure that door assembly is plumb & square.
2. The top unit has a top flange and a bottom flange. Make sure these flanges overlap framing.
3. The vertical members have inner flanges and outer flanges. The outer flanges have pre-drilled holes that serve as attachment points. Make sure the outer flanges overlap framing.
4. When door is raised in front of clear opening (**Section 6.7, page 10**), Diagram flanges must be flush against framing for attachment of screws.



6.5 Assembly of Parts

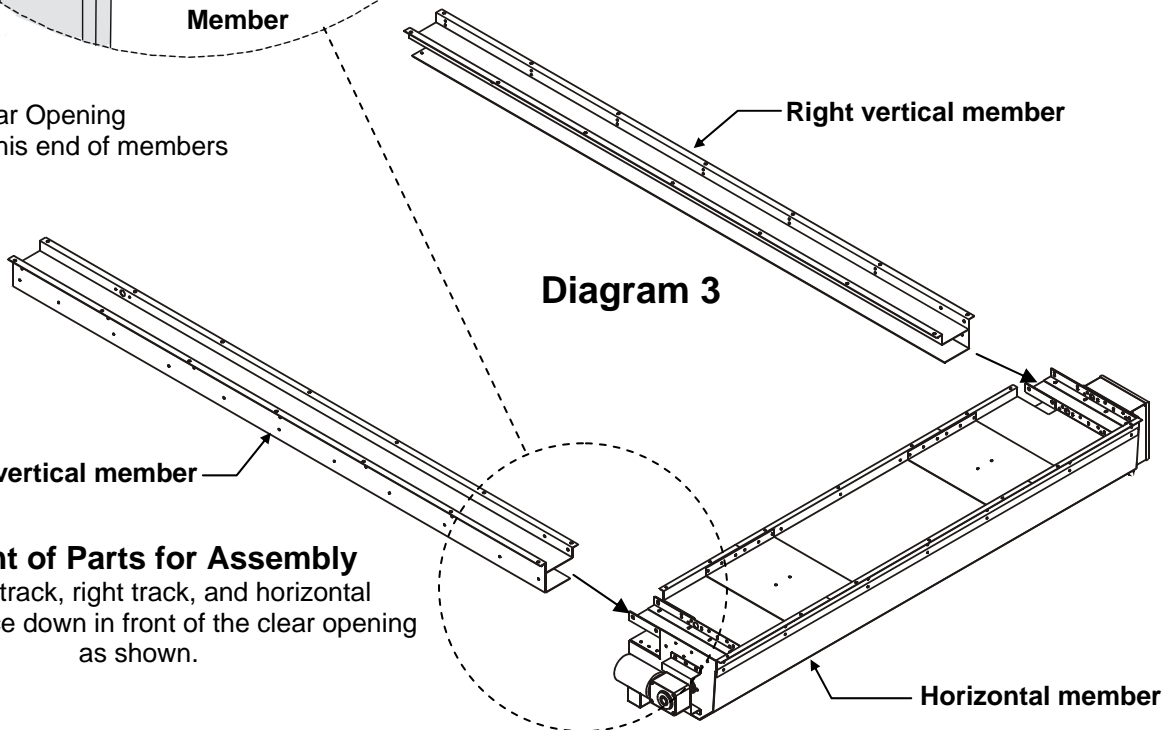
Arrange the horizontal member, left vertical member (left track), and right vertical member (right track) on the floor in front of the clear opening as shown in **Diagram 3**. The curtain side of the horizontal member and each vertical member faces down.



On each end of the horizontal member is a U-shaped plate that fits inside each vertical member. The U-shaped plate has four bolt holes, two on the inside and two on the outside flanges that match bolt holes in the vertical member. See diagram at left.

1. Align the vertical member with the U-shaped metal plate at end of horizontal member.
2. Slide the vertical member onto the outside of the U-shaped metal plate of the horizontal member as shown in A.
3. Insert bolts through bolt holes as shown in B. Install nuts. Tighten bolts & nuts securely.

Clear Opening
At this end of members



Placement of Parts for Assembly

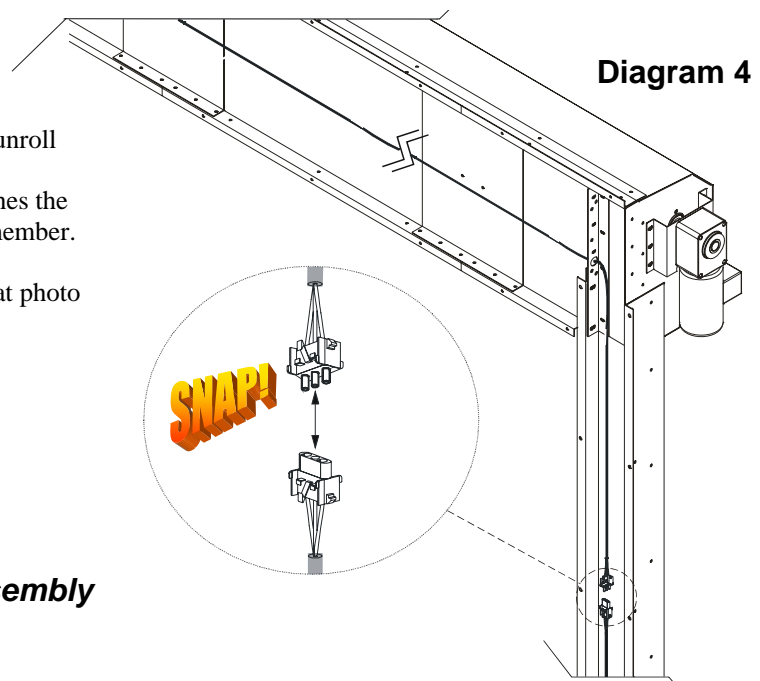
Lay left track, right track, and horizontal member face down in front of the clear opening as shown.

6.6 Infrared Sensor Connectors

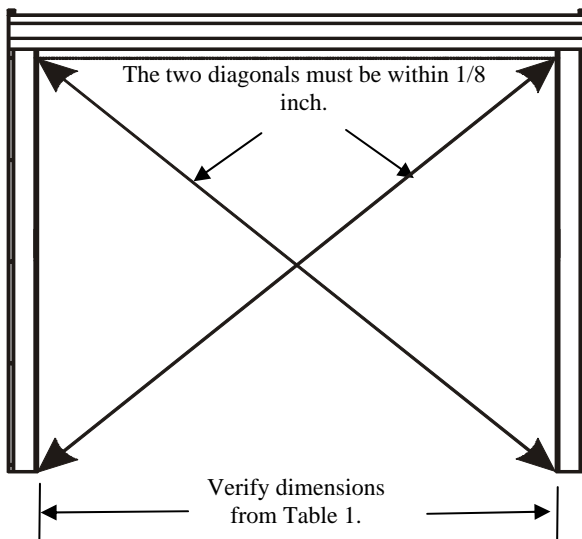
Located at the bottom of each vertical member is an infrared detector. The detector on each vertical member operates as a safety device if the infrared beam is interrupted. Door can be set to stop if beams are broken while closing or to stop and reverse to the full open position. Refer to the Pioneer SC-325 Controller Manual for more information.

1. Locate female connector on vertical member. This connector is attached to the infrared detector.
2. Locate male connector on horizontal member. Unroll cable until connectors meet.
3. Plug connectors together. Make sure connectors interlock.
4. Repeat for both infrared detectors.
5. Cable ties and adhesive mounts are supplied to secure wire to the inside of tracks.

NOTE: For each vertical member, unroll respective sensor cable attached to horizontal member until cable reaches the connector attached to the vertical member. Plug connectors together. It is recommended to leave some slack at photo eyes for replacement purposes.



6.7 Fastening Door Assembly to Clear Opening



1. Use a tape measure and make sure that the overall height and overall width of the clear opening meet the requirements: Overall Height = Height + 20.688 in. (52.55 cm), Overall Width = Width + 16.4 in. (41.66 cm). Reference **Table 1** and **Diagram 1**.
2. Make sure that door assembly is plumb & square. See Diagram 5.

- Center door assembly on clear opening. Align the bottom of each vertical member with the respective framing board or posts of the clear opening.
NOTE: The vertical members should be aligned so that their outer flanges will exactly overlap with the framing boards or posts when the door assembly is raised into position.

- Assemble workers and equipment into position on each side of the door assembly.
IMPORTANT: SLOWLY LIFT TOP OF DOOR ASSEMBLY TO RAISE THE DOOR. See Diagram 6.

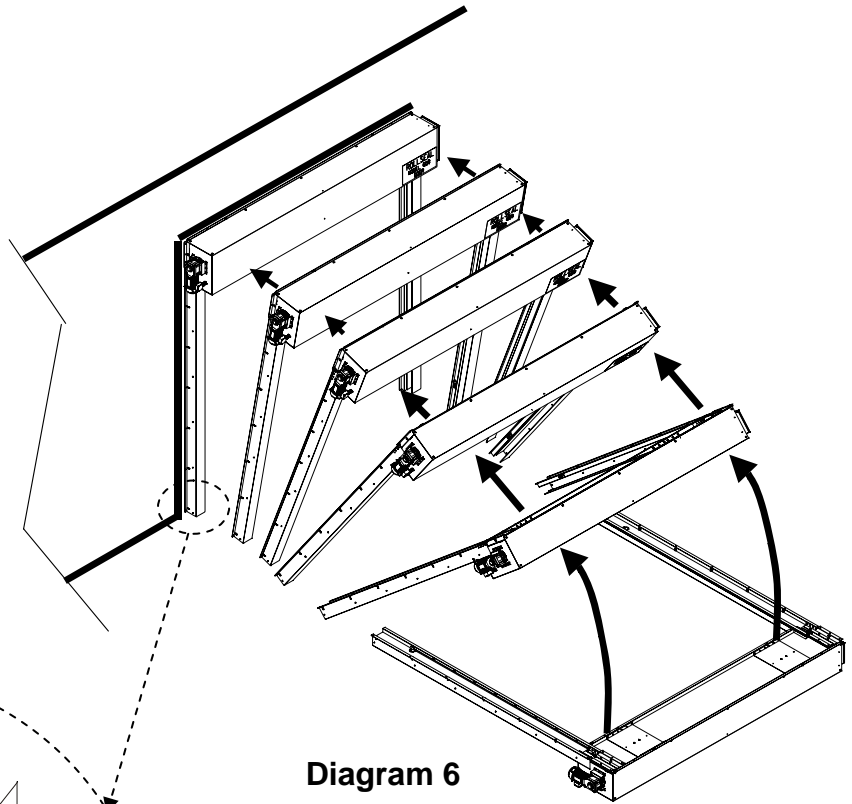


Diagram 6

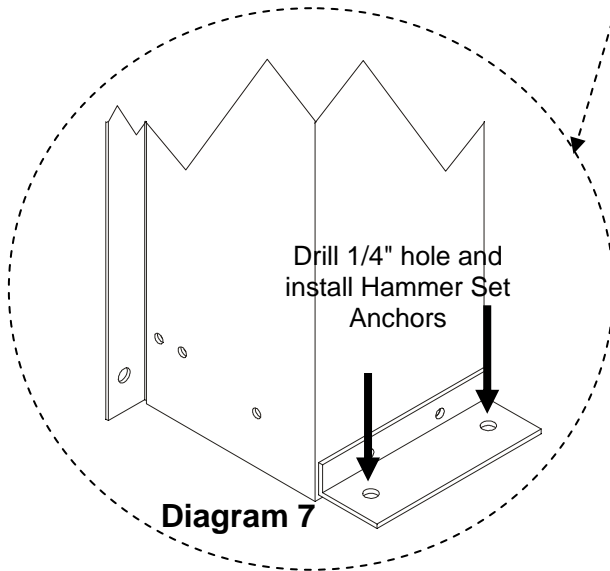


Diagram 7

- Lean door assembly upright against clear opening.
- Carefully press flanges of the door assembly flush against faces of framing boards or posts.
- Fasten Tek screws (in steel) or lag screws (in wood) through the flanges on sides of door assembly. Securely tighten all screws.
- On the lower and upper flanges of the horizontal member there are attachment points for fastening screws. Fasten Tek screws (in steel) or lag screws (in wood) through the holes. This secures the top of the door to the clear opening.
- Locate the two floor mounting holes at the bottom of the left & right tracks. See Diagram 7.
- Drill 1/4" hole and install Hammer Set Anchors (1002-6030) in each track. See Diagram 7.
- This completes fastening of the door assembly to the clear opening.

6.8 Connecting the Electrical Power

- Connect Pioneer SC-650 Controller to Door Control Box.
- Refer to Pioneer SC-650 controller manual (4801-5156) for instructions on wiring.

7. Operation of Door

Refer to the Pioneer SC-650 Controller Manual for initial setup. After wiring the controller to the door, connect electrical power to the controller. The door is now ready for operation.

The controller keeps track of the "open" and "closed" positions of the door by means of a mechanical encoder that is located in the control

box. The controller electronically counts steps as the wheel turns to keep track of the door position.

The door seals by means of 'hook & loop' strips along the edges of the door curtain and vertical members.

To Operate Door:

1. Depress manual control button. Door curtain will unroll to 'closed' position.
2. Depress manual control button. Door curtain will roll up to 'open' position.

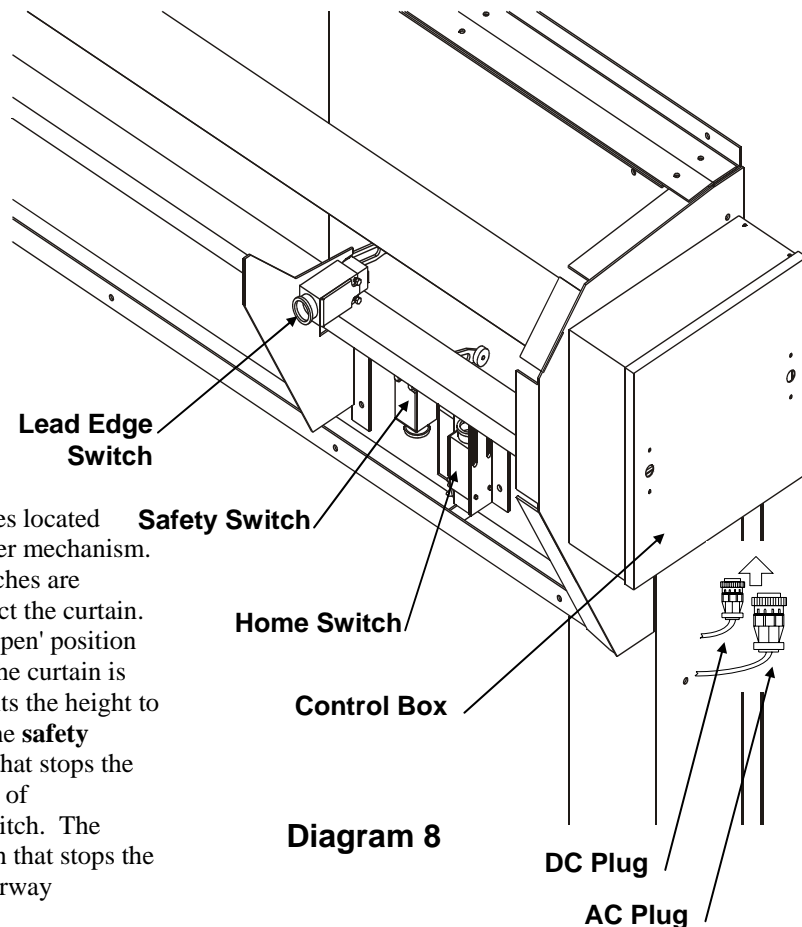
Depress button to open or close door as desired.

Open and close the door a few times to test door operation and remove any wrinkles in the door curtain.

If you detect any problems, STOP. Disconnect electrical power. Contact your distributor for assistance.

8. Limit Switches

There are three limit switches located within the horizontal member mechanism. See Diagram 8. These switches are attached to levers that contact the curtain. The **home switch** sets the 'open' position of the door curtain. When the curtain is raised, the home switch limits the height to which the curtain opens. The **safety switch** is a fail-safe switch that stops the curtain in the unlikely event of malfunction of the home switch. The **lead-edge switch** is a switch that stops the curtain in the event of a doorway obstruction.



9. Manual Operation of Door

9.1 Operating Instructions

The 600ST door can be operated manually in the event of a power outage or if there is a motor malfunction. To operate the door manually, perform the following instructions.



Warning!

Disconnect All Electrical Power To Motor Before Attempting To Operate The Door Manually!



Warning!

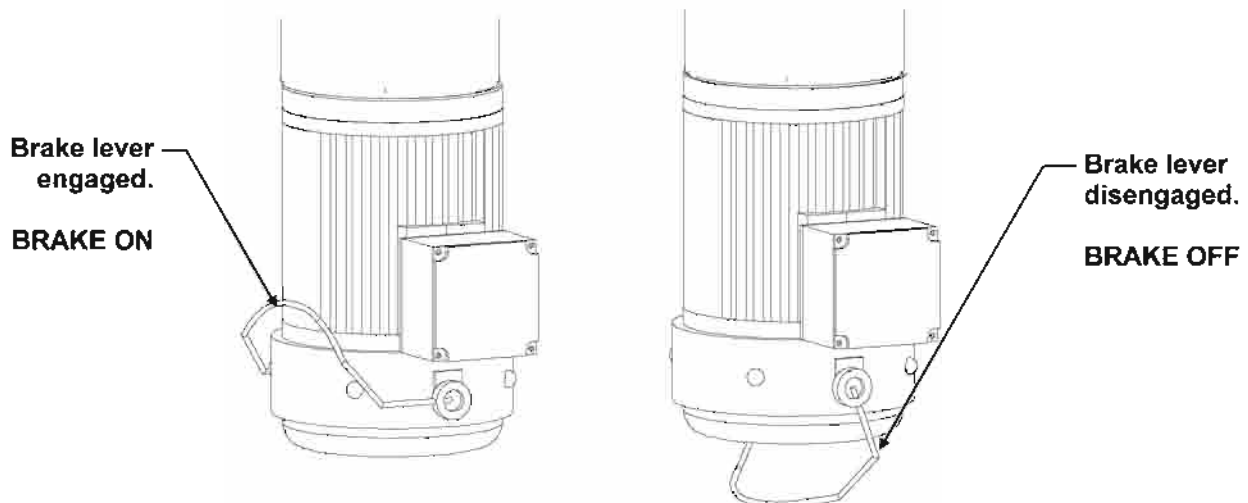
The Curtain Is Released When Brake Lever Is Disengaged. Do Not Disengage Brake Until Door Opening Is Clear!

If door is OPEN (door curtain raised) perform the following steps:

1. Locate brake lever at bottom of motor. (See diagram below).
2. Carefully release brake by flipping lever down. CAUTION: Curtain will drop when brake is released.

If door is CLOSED (door curtain lowered) perform the following steps:

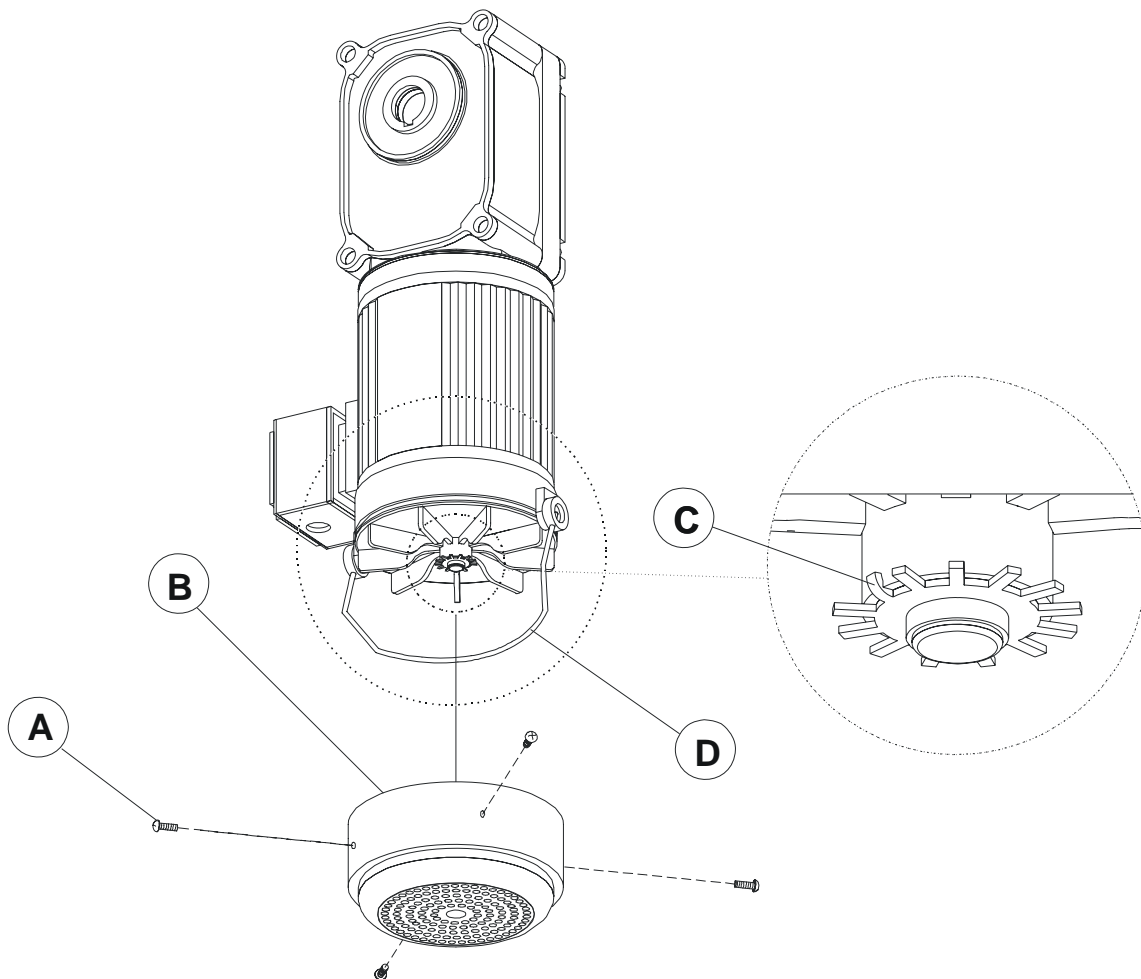
1. Locate brake lever at bottom of motor.
2. Carefully release brake by flipping lever down.
3. Motor shaft is accessible from bottom of motor. Use a suitable tool to rotate motor shaft.
4. Carefully turn motor shaft counterclockwise to raise door curtain.
NOTE: The drive (as viewed from the 'motor end' of door) is synchronized with clockwise or counterclockwise rotation of the motor shaft
5. When door curtain has been raised to desired height, flip brake lever up to engage brake.



9.2 Adjustment of Brake

After extended operation of the brake lever, the brake may become worn. As the brake wears, some adjustment to the brake is required. Lettered diagrams below correspond to lettered instructions. Follow instructions to adjust brake:

1. Close door curtain to fully lowered position.
2. Engage Brake lever.
3. Disconnect electrical power to motor.
4. Remove four Phillips screws (**A**).
5. Remove cover (**B**).
6. Straighten the bent tab (**C**) of spider nut.
7. Tighten spider nut (**C**) snugly against blower wheel. Make sure a tab of spider nut is aligned with a notch in the shaft
8. Bend tab (**C**) downward into notch of shaft.
9. Replace cover (**B**).
10. Replace four Phillips screws (**A**).
11. Disengage brake lever (**D**).
12. Adjustment complete.



10. Door Panel Adjustments

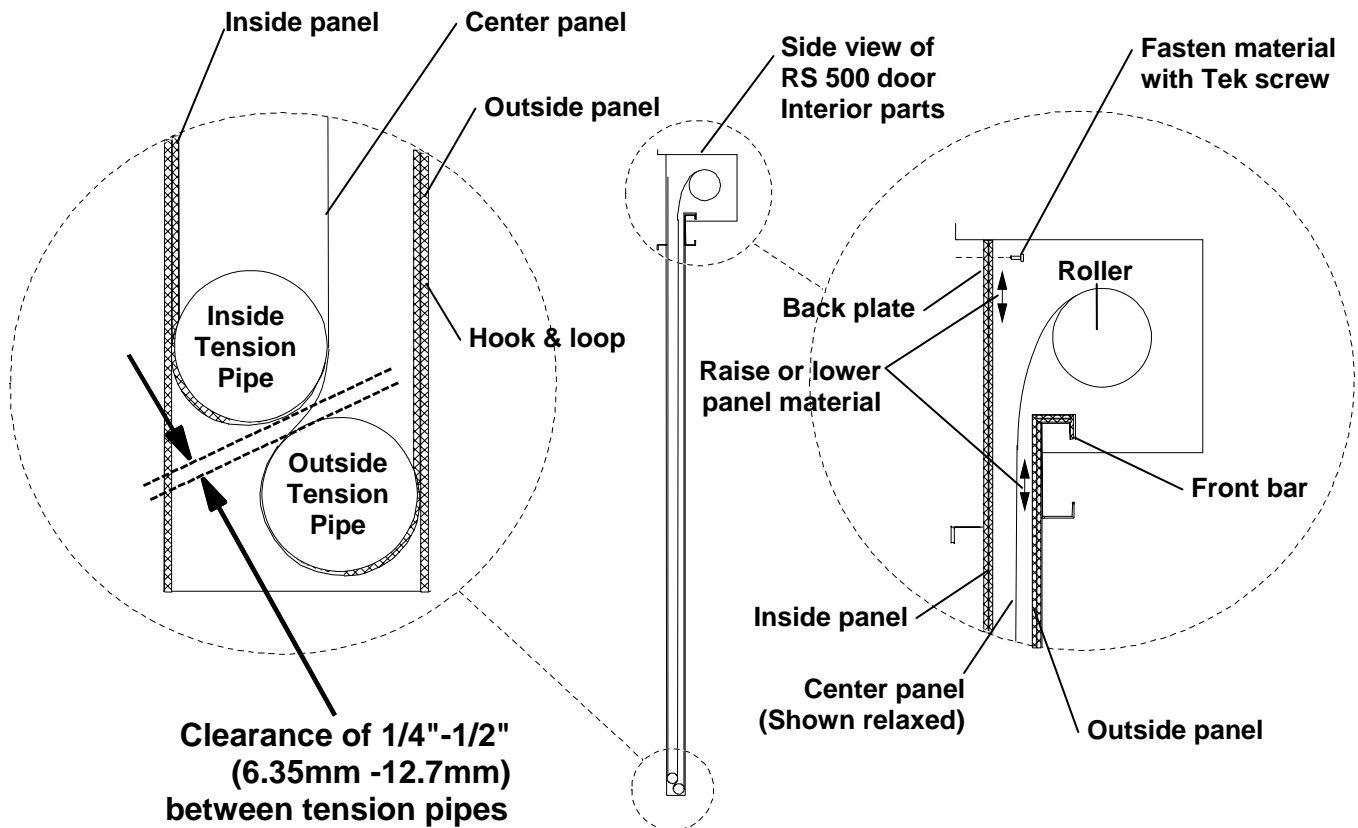
During normal operation, the tension pipes should run in close proximity of each other. The clearance between the tension pipes should normally be between 1/4" to 1/2" (6.35 mm - 12.7 mm). There are two situations pertaining to the tension pipes that may cause problems with door operation. If the tension pipes are too far apart, the tension pipes will not repel each other. This causes poor contact between the hook & loop. On the other hand, if the tension pipes are riding one another (i.e. touching one another), the door panel material does not flow evenly, thus leaving wrinkles in the panel instead of a stretched, smooth & even appearance.

Adjustment Procedures

The clearance between the tension pipes can be adjusted by raising or lowering the door panels. Each door has three panels: (1) The inside panel (panel facing the inside of building) is attached to the back plate. (2) The center panel is attached to the roller. (3) The outside panel (facing the outside of building) is attached to the front bar. Adjustments are made to the inside panel and/or the outside panel.

To adjust the height of the outside tension pipe, raise or lower the outside door panel by detaching the panel hook & loop from the front bar, and raising or lowering the panel. Then re-attach the panel loop to the hook on the front bar. Be sure to keep tension pipe level during this procedure.

To adjust the height of the inside tension pipe, raise or lower the inside door panel by detaching the panel hook & loop from the back plate, and raising or lowering panel. Then re-attach the panel loop to the hook on back plate. Be sure to keep tension pipe level during this procedure. Install Tek screws through the panel material and into the back plate to securely hold the material in place.



11. 600ST Door Wiring Diagram

