

R Y T E C

# Spiral VP<sup>TM</sup> Direct Drive (SVP-D)

---

## Installation Manual



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[Revision: September 22<sup>nd</sup>, 2016, R1071264-0, © Rytec Corporation 2016]



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## INTRODUCTION

The information contained in this manual will allow you to install your Rytec Spiral® VP Direct Drive Door in a manner which will ensure maximum life and trouble-free operation.

Any unauthorized changes in procedure, or failure to follow the steps as outlined in this manual, will automatically void the warranty. Any changes in the working parts, assemblies, or specifications as written that are not authorized by Rytec Corporation will also cancel the warranty. The responsibility for the successful operation and performance of this door lies with the owner of the door.

**DO NOT OPERATE OR PERFORM MAINTENANCE ON THIS DOOR UNTIL YOU READ AND UNDERSTAND THE INSTRUCTIONS CONTAINED IN THIS MANUAL.**

If you have any questions contact your Rytec representative or call the Rytec Technical Support Department at 800-628-1909. Always refer to the serial number of the door when calling the representative or Technical Support.

The wiring connections and schematics in this manual are for general information purposes only. A wiring schematic is provided with each individual door specifically covering the control panel and electrical components of that door. That schematic was shipped inside the cover of the System 4 control panel.

## HOW TO USE MANUAL

Throughout this manual, the following key words are used to alert the reader of potentially hazardous situations, or situations where additional information to successfully perform the procedure is presented:

### **WARNING**

**WARNING** is used to indicate the potential for personal injury, if the procedure is not performed as described.

### **CAUTION**

**CAUTION** is used to indicate the potential for damage to the product or property damage, if the procedure is not followed as described.

**IMPORTANT:** *IMPORTANT* is used to relay information **CRITICAL** to the successful completion of the procedure.

*NOTE: NOTE is used to provide additional information to aid in the performance of the procedure or operation of the door, but not necessarily safety related.*

## DOOR SERIAL NUMBER(S)

To obtain your DOOR SERIAL NUMBER, there are four universal locations that this information can be attained. These are on the left side column and right side column assemblies (at approximately eye level), on the motor-gear drive assembly, and inside the door of the System 4 control panel. (See Figure 1)

### **CAUTION**

**When installing multiple doors of the same model, verify & match the serial numbers of all the components for each door (i.e. control panel, side columns, drive assembly, etc.).**

*NOTE: The following illustration shows the front side of the door. Left and right sides are determined when viewing the front side of the door.*

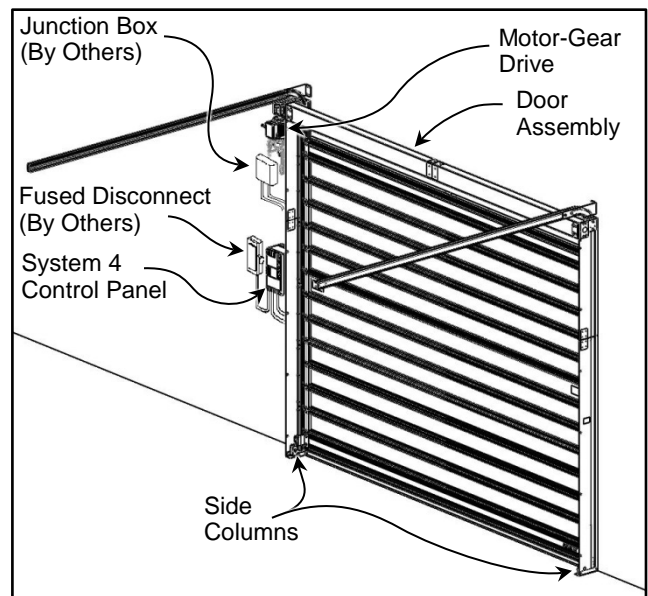


Figure 1

## INSTALLATION

### MATERIAL, TOOLS, AND EQUIPMENT

1. Threaded rod (Ø5/16-inch) and other various wall anchor hardware and material. Concrete. Anchor bolts (Ø5/16-inch). (See "ANCHORING METHODS" on page 3)
2. Assorted shim stock.
3. Double-sided tape.
4. Carpenters or spirit level (4-ft. minimum length).

## INSTALLATION-ADDITIONAL REQUIREMENTS

5. Carpenter's square.
6. Fish tape.
7. Hammer drill.
8. Masonry drill bit (for Ø5/16 inch anchors).
9. Three or four bar clamps (18-in. long).
10. Hammer or mallet and blocks of wood (2x4, etc.).
11. Crowbar or pry bar.
12. Assorted hand tools (pliers, tape measure, etc.).
13. Plumb bob with line.
14. Metric and U.S. socket and wrench sets.
15. T-25, T-30, and T-40 Torx drivers.
16. Water level, line level, transit, or laser level.
17. Scissors lift (see "Scissors Lift Requirements" on page 2).
18. Chisel-dull or equal. (See Figure 2)



Figure 2

19. 5" Shim material. (Wood or other)
20. White paint marker or Equal.
21. Two ladders (taller than height of door opening).

### ADDITIONAL REQUIREMENTS

#### Labor and Site Requirements

1. Two installers.
2. A licensed electrician is required for making all electrical connections. (See "Electrician's Responsibilities".)

*NOTE: All electrical work must be performed in accordance with local, state, and all applicable building codes.*

3. 100% accessibility to the door opening during the entire installation process. No traffic should be allowed to pass through the opening while the door is being installed.

#### Scissors Lift Requirements

A scissors lift supplied by the customer, dealer, or installer is mandatory for the safe and proper installation of this door. The scissors lift should have:

- Minimum height ability: 2X door height for high and vertical lift, door height for standard lift.
- 2-person capacity platform
- Side-shift platform extension capability (desired).

#### Electrician's Responsibilities

For complete details on the responsibilities of the electrician, refer to the Rytec System 4 Drive & Control Installation, & Owner's Manual.

1. Install fused disconnect and Rytec control panel. (See Figure 3 for typical installation.)
2. Install all necessary conduit tubing.

*NOTE: Separate conduit must be run for high and low voltage wiring.*

3. Run electrical power lines to disconnect.
4. Run power lines from disconnect to system 4 control panel.
5. Run power lines from disconnect to door operator control.
6. Run power lines from control panel to upper junction box.
7. Run power lines from control panel to door motor.
8. Run low-voltage cables from door to control panel.
9. Wire low-voltage safety devices and activators (if used).

Run high and low voltage wires/cables in separate metal conduit to the bottom of the System 4 control panel.

Wires/cables must be cut to length. **DO NOT** leave excess wire/cable loops on the door or in the control panel. Excess wires/cables can cause problems.

#### Floor-Loop Activator Requirements (If Used)

If a floor-loop activator shipped with your Rytec door, the following additional items are required.

*NOTE: Complete floor-loop installation instructions are shipped with the activator.*

## INSTALLATION-GENERAL ARRANGEMENT OF DOOR COMPONENTS

1. Concrete saw (with water-cooling attachment).
2. Water supply and garden hose.
3. Wet/dry shop vacuum.
4. 200–500 ft. of 16-gauge, 19-strand, type XLPE, copper, crosslink polyethylene jacket wire (or equivalent). The size of the floor loop will determine the length of wire required.
5. Bondo P606 Flexible Embedding Sealer (or equivalent) - required to fill saw cuts in floor after the activator is installed. For cold temperature applications, Bondo P610 Speed Set must be added to the P606 to ensure the sealer cures properly.

### GENERAL ARRANGEMENT OF DOOR COMPONENTS

Figure 3 shows the location of the major components of your Spiral VP Direct Drive door. This illustration should be used as *reference only* and should not be considered as part of the installation instructions.

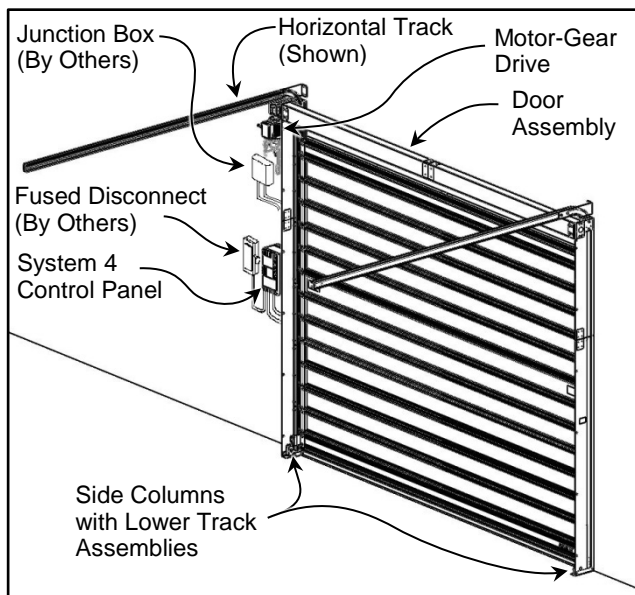


Figure 3

*NOTE: The above illustration shows the front side of the door. Left and right are determined when viewing the front side of the door.*

### ANCHORING METHOD

Correct anchoring of the side columns to the wall and floor is important for the smooth and safe operation of the door. The wall material should be strong enough to support the weight of the door and all wall anchors.

## WARNING

**The wall material should be strong enough to safely support the weight of the door and all wall anchors. Door wall anchors must have an individual ultimate rated Pull Out strength of #1500 minimum.**

Figure 4 details the wall load requirement for supporting the Rytec Spiral VP door. Figure 4 through Figure 7 show anchoring methods for various types of walls. Use the method best suited for your particular installation site.

All necessary anchoring and vertical hanging hardware & materials for the installation of this door are the responsibility of the door owner. If you have any questions, call your Rytec representative or the Rytec Technical Support Department at 800-628-1909.

*NOTE: Use Ø5/16-in. threaded through bolts or Ø5/16-in. threaded rods to anchor the door to all wall applications. Use Ø5/16-in. concrete anchor bolts to anchor the door to a concrete floor.*

### Concrete, Block, or Brick Walls

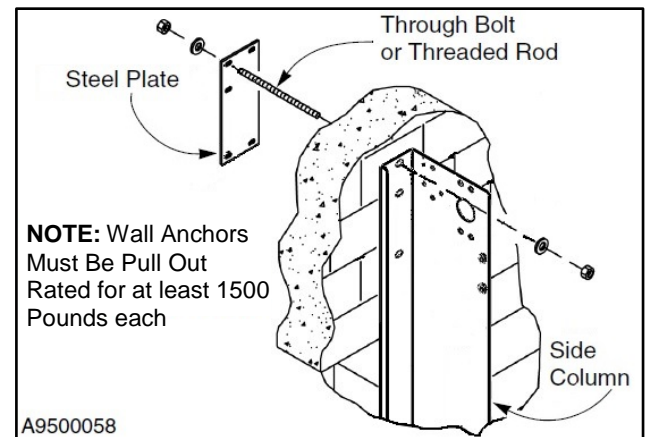


Figure 4

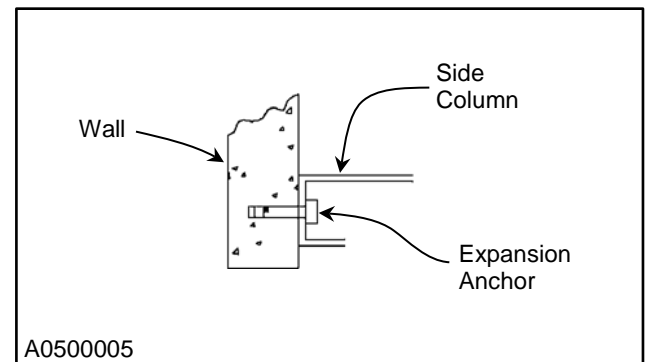


Figure 5

# INSTALLATION-UNCRATING

## Concrete, Block, Brick or Wood Wall

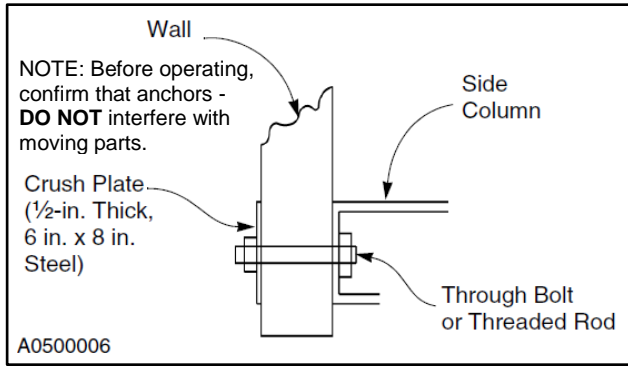


Figure 6

## Insulated Wall

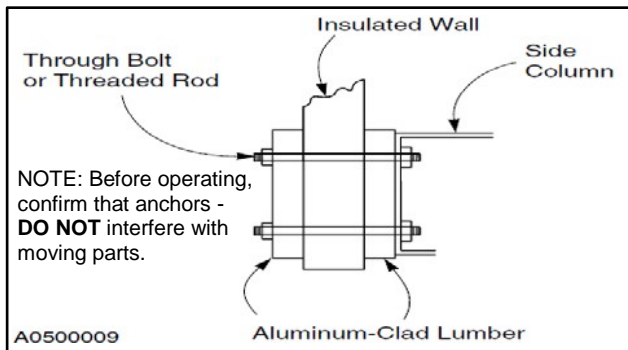


Figure 7

## UNCRATING

Your door assembly is packaged at our factory and shipped to you in our custom made crate. If it appears that any damage may have occurred contact our Customer Service Dept. Some of the door sub-assemblies and parts contain protective covering and will need to be removed during or after installation.



Figure 8

*NOTE: Remove parts and sub-assemblies from the shipping crate in the order directed throughout this manual.*

1. Carefully remove the two side column assemblies, track assemblies, Door Panel sections, and small parts carton, etc. from the shipping crate as they are needed for installation. (See Figure 8)

## DETAILS-SIDE COLUMN MOUNTING HOLES

The side column and assembly have anchor holes for anchor mounting to the wall. The anchor holes are slotted to allow for adjustment. Use all of these for anchoring the Side Column Assembly to the wall. (See Figure 9)

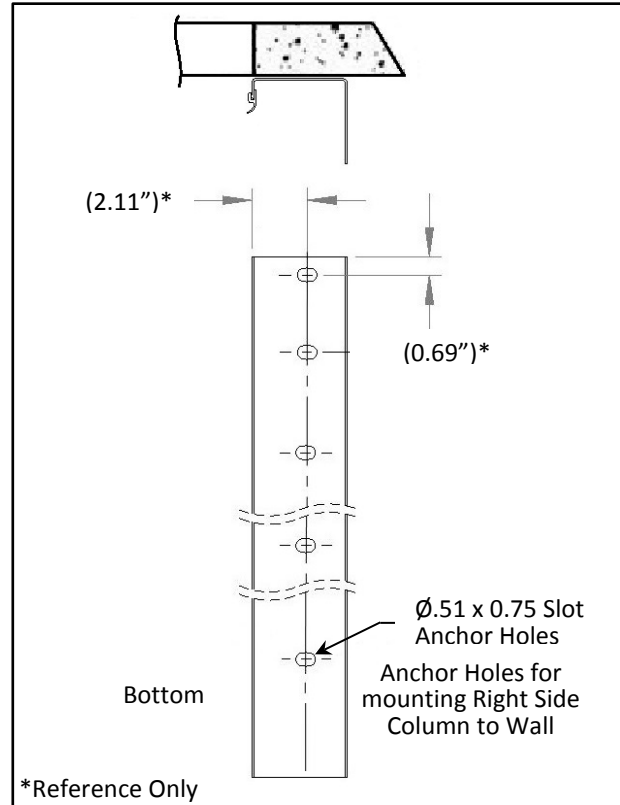


Figure 9



**SAMPLE OBJECT LIST**

Included with every door shipped is an Object List as shown in Figure 10 which is a sample version. This list contains key information specific to the door such as the model, serial number, door Production Size specifications, etc. Locate this document (it will be with the small parts for the door) as you will need

information on it which will be key for proper installation, operation, and maintenance. Keep this document along with the manuals in a safe place for future reference.


		<b>Object list</b>		Material number	
		Duplicate		714	
Material description		Order number		Order quantity	
SPIRAL VPD-FV		2399127		1 EA	
MRP controller	Production scheduler	Order type	Start	Finish	
500 B5 ZMAT	T8 Tier 8	ZP02 RYTEC MTO	07/14/2016	07/15/2016	
Status	Plant	Reservation number	Creation Date		
REL MSPT PRT PRC SETC	1000 Rytec Corporation	0001035474	06/22/2016		
Serial number					
D0032387-090					
Configuration					
Door Serial Number D0032387-090					
DOOR MODEL NAME Spiral VP Direct Drive -FV					
Door Width (Inches) 168.110					
Door Height (Inches) 144.094					
Head Lift Type Standard Lift					
motor mount side Left Hand Motor					
Line Voltage 208V					
Line Phase Single Phase Power					
Manual Chain Hoist No Chain hoist					
Number of Slats 17					
Number of solid slats 0					
Number of windows 15					
Number of vent slats 0					
Top Seal Height from floor -in 146.102					
Track to Track dimension (in) 170.610					
Information on routing					
DOOR ASSEMBLY, SPIRAL VPD-FV					

Figure 10

# INSTALLATION-BASE PLATE - ANCHOR LOCATIONS

## BASE PLATE - ANCHOR LOCATIONS

Each side column base plate has 1 anchor hole location and MUST be used. (See Figure 11)

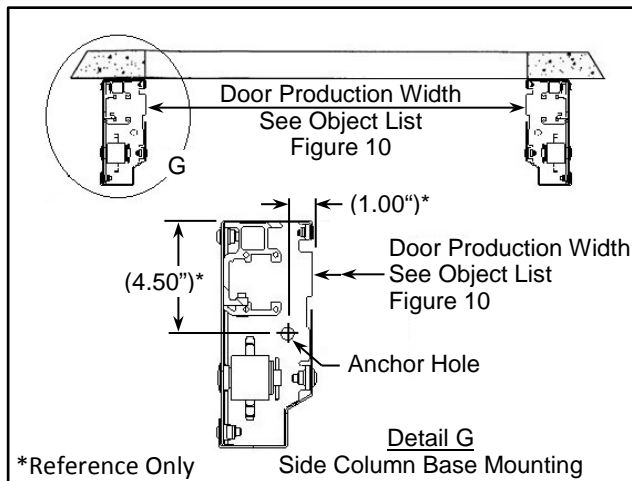


Figure 11

## DOOR OPENING CENTERLINE LOCATION

*NOTE: Accurate measurements are critical for the proper installation and operation of your Rytec door. Verify all measurements.*

1. Measure the width of the door opening. Then divide the measurement in half to locate the centerline. Mark the centerline along the floor. (See Figure 12)

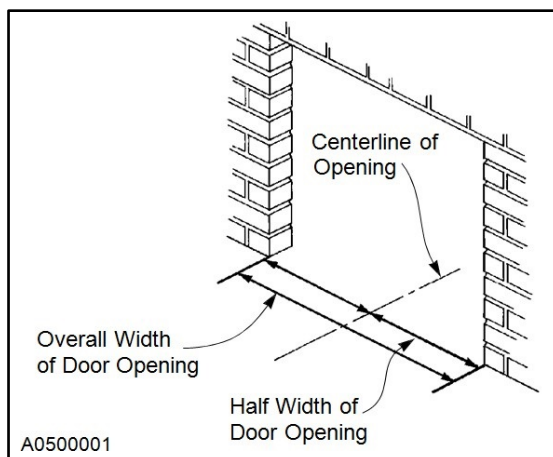


Figure 12

## LOCATING SIDE COLUMNS

1. Locate the Object List for the door. It is included with the small parts. This list contains the production width of your door and numerous other key information. (see "SAMPLE OBJECT LIST" section on page 6)
2. Using the centerline as a reference point, lay out and mark half of the door's production width along the floor. (See Figure 13)

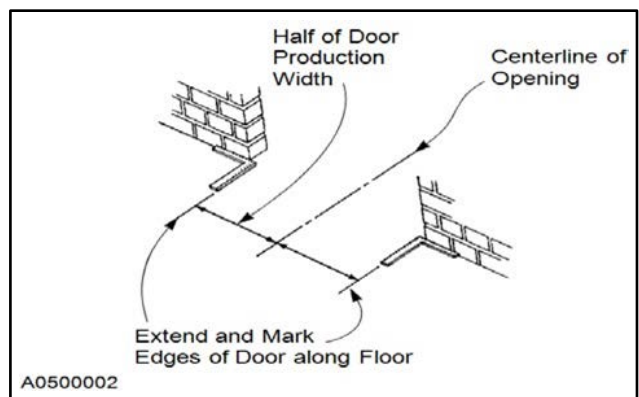


Figure 13

3. With a carpenter's square placed against the wall, mark both sides of the door along the floor. Extend the line along each edge.
4. Check the floor for level across the door opening. The floor must be level within 0.12 inch (3 mm) from side to side. If one side of the opening is higher than the other, a shim(s) will be required under the side column.

Figure 14 and Figure 15 show two recommended methods that can be used to ensure a level side column installation.

*NOTE: Contact the Rytec Technical Support Department if the floor is more than 1 inch out of level.*

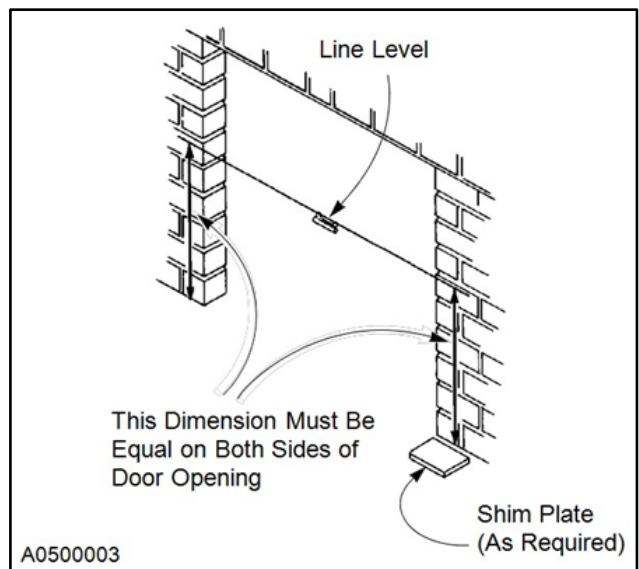


Figure 14

## INSTALLATION-SIDE COLUMN AND BASE PLATE ASSEMBLIES

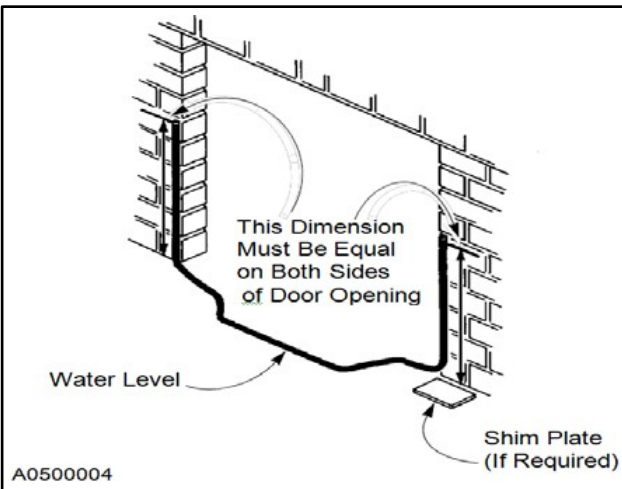


Figure 15

5. Use a plumb bob, laser level, or carpenter's level to check the wall for plumb in the areas where the side columns are to be mounted. Also, inspect the wall for any obstructions or inconsistencies.

If the wall is not plumb, use shims. If you find an obstruction, remove it, or shim the column to avoid the obstruction. (See Figure 16)

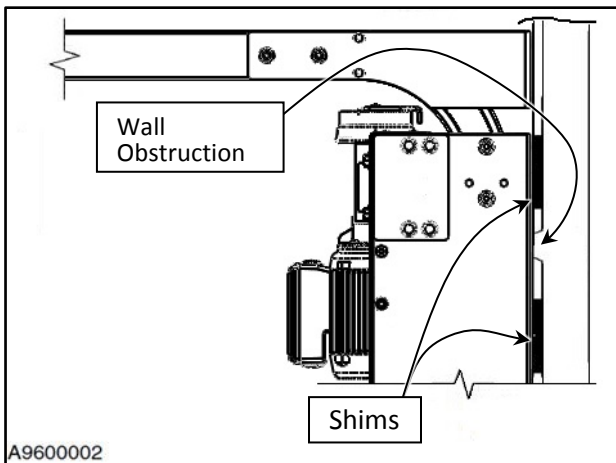


Figure 16

### SIDE COLUMN AND BASE PLATE ASSEMBLIES

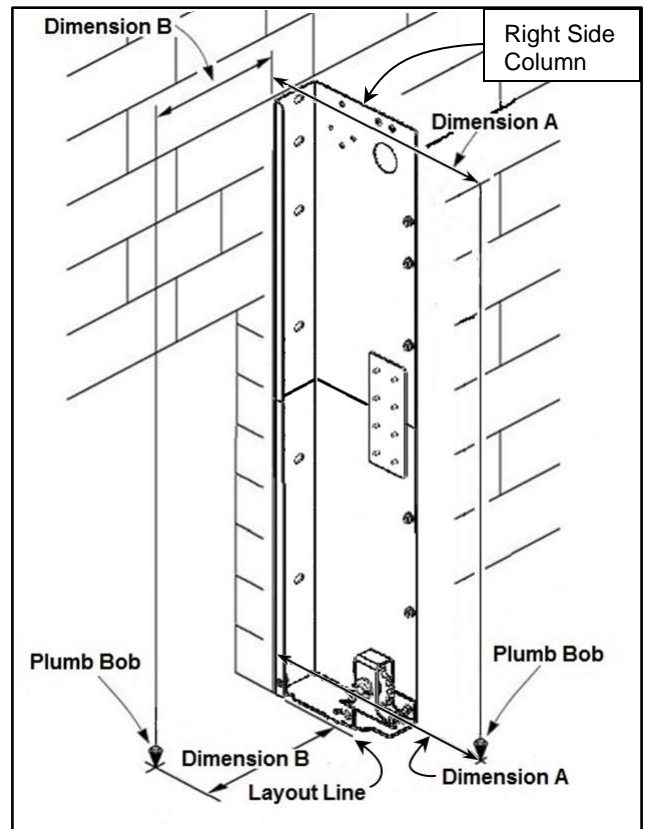
The Side Columns and Base Plate Assemblies come pre-assembled. They will need to be disassembled for the install process. It is up to the installer to keep track of where all parts were originally installed.

1. To install the first side column, first remove and retain the screws used to secure the side column cover to the side column assembly. Lift the cover away from the side column.
2. Stand the side column on the floor, with the back of the column firmly against the mounting wall. (See Figure 17)

**IMPORTANT:** Set the inside edge of the column flush with the door layout line.

3. Position the side column assembly so that it is plumb to the wall and vertical on the floor.

A plumb bob or carpenter's level are recommended for setting the column plumb and square. The use of bar clamps to temporarily secure the column to the wall during installation is also recommended. When required, shim behind the side column if the wall is out of plumb. Double-sided tape can be used to hold the shims in place on the wall or side column(s) until the side column(s) is/are secured to the wall. (See Figure 17)



### Using A Plumb Bob

To check for plumb measure a few inches away from the face of the side column near the top (Dimension A) and lower the plumb bob as shown. (See Figure 17)

Mark the floor where the plumb bob touches. Compare the upper measurement to the lower measurement. Shim the column toward or away from the wall, as required, until the two measurements are equal and the column is plumb to the wall.

## INSTALLATION-SIDE COLUMN AND BASE PLATE ASSEMBLIES

Also, measure a few inches away from the side of the column near the top (Dimension B) and lower the plum bob. (See Figure 17) Mark the floor where the plumb bob touches. Compare the upper measurement to the lower measurement. Lean the column to the left or the right until the two measurements are equal and the column is plumb with the floor (or shim plate).

### Using A Carpenter's Level

Hold the level firmly against the face and side of the column. Make the necessary adjustments to set the side column level.

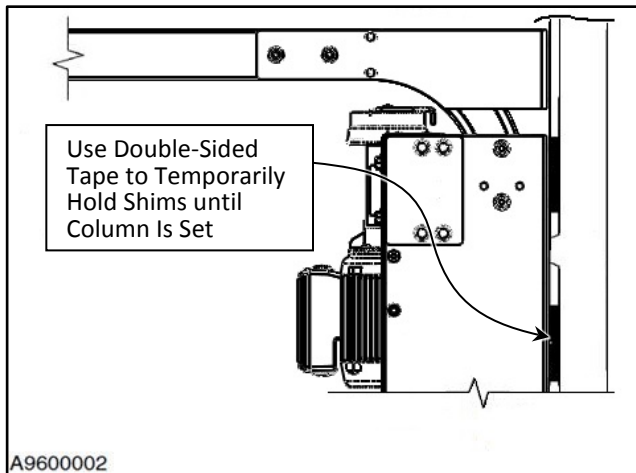


Figure 18

4. Temporarily clamp the side column to the wall once the column is properly positioned. (See Figure 19)



Figure 19

5. Using the predrilled anchor points in the back of the column as a reference, mark their location on the wall. (See Figure 20)

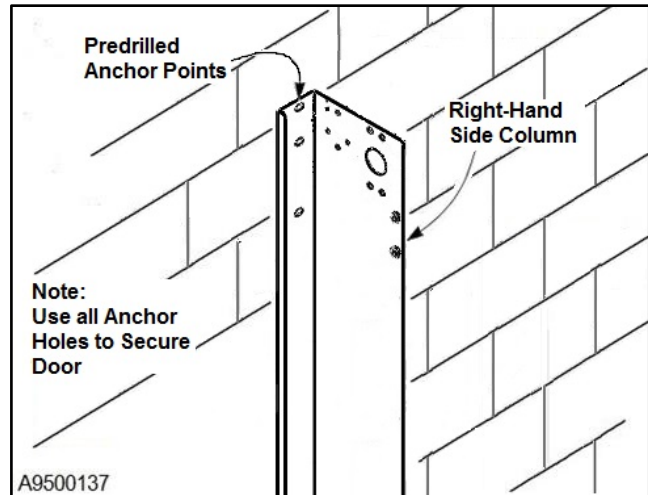


Figure 20

6. Using the predrilled anchor points in the base plate as a reference, mark their location on the floor. (See Figure 21)

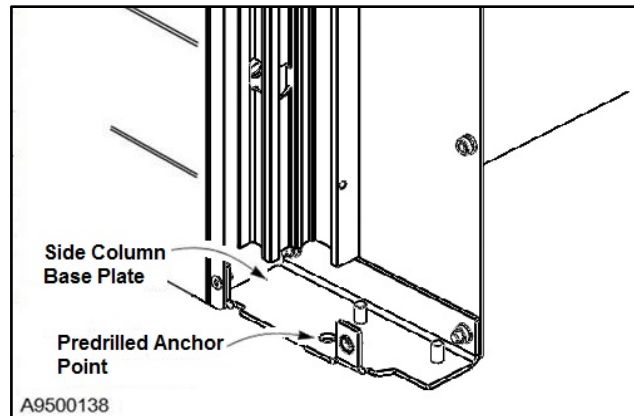


Figure 21

## **⚠ WARNING**

Before drilling any holes, ensure there are no electrical wires, water pipes, or gas lines, etc., buried in the floor or hidden in the wall.

**IMPORTANT: Locate and drill the holes in the center of each slot and hole.**

7. Drill holes into the wall and floor for all anchors.
8. Anchor the side column to the wall with the top 2 side column holes and base plate hole to the floor with the appropriate anchors. Use the anchors suggested. (see "ANCHORING METHOD" on page 4)



## INSTALLATION-SIDE COLUMN AND BASE PLATE ASSEMBLIES

- Recheck for plumb and level. Reposition the side column to the wall if needed. Do not fully tighten the anchors at this time.

### Lower Track & Cover Assemblies

The Lower Track Assemblies are right hand and left hand specific and they are not interchangeable. The Lower Track Assemblies come pre-assembled. They will need to be disassembled for the install process. It is up to the installer to keep track of where all parts were originally installed.

- Identify each Lower Track Assembly as shown. The track opening must face the door's center as shown. Select the assembly for mounting in the side column currently being installed. (See Figure 22)

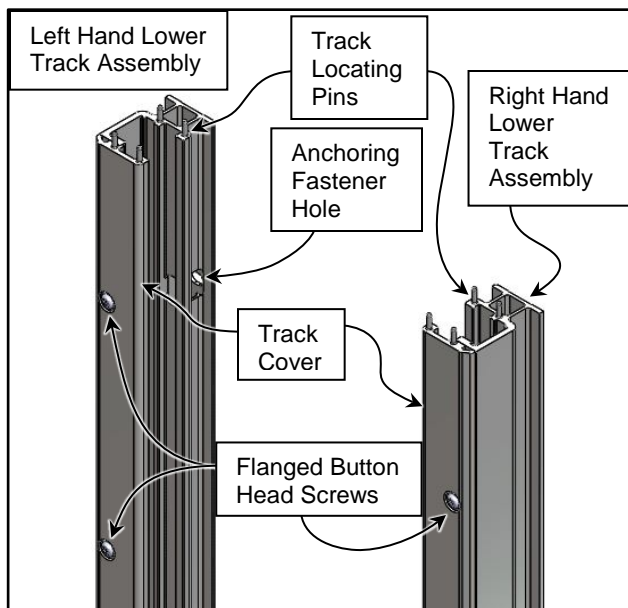


Figure 22

*NOTE: Take note of the top and the bottom of the assemblies to be installed. The track locating pins are only at the top of the lower track assembly.*

- Confirm the fit within each side column as shown. Confirm that the anchor fastener holes align w/ the holes in the track assemblies. (See Figure 23 and Figure 24)

## **⚠ WARNING**

**When installing fastening hardware to the Lower Track Assembly, make sure the fasteners do not encroach the wheel track or interference may cause damage to the door or personal harm when the door operates.**

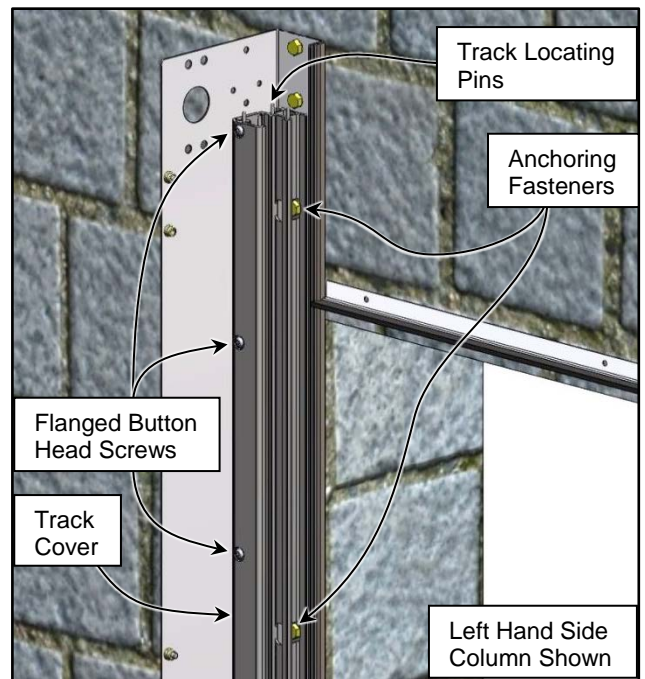


Figure 23

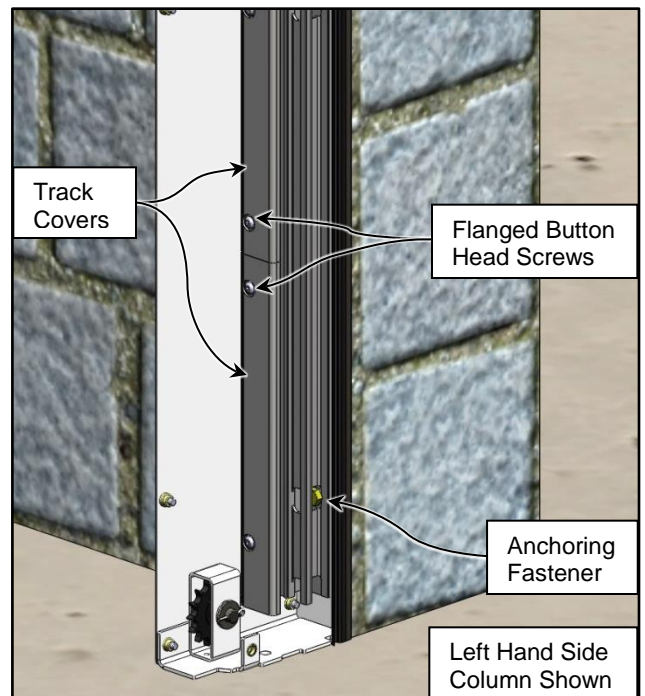


Figure 24

- Remove the Track Covers from the Lower Track Assembly by taking off the Button Screws. We suggest match marking the Track Covers to where they were originally installed on the Lower Track Assembly. This will aid in reassembly and ensure the covers are replaced properly. (See Figure 27)

## INSTALLATION-SIDE COLUMN AND BASE PLATE ASSEMBLIES

13. Mount the Lower Track to the Side Column and wall with the anchoring fasteners & snugly tighten them up. Use the anchors suggested. (see "ANCHORING METHOD" on page 4) Do not fully tighten the anchors at this time. They should just be snug. (See Figure 23, Figure 24, Figure 25, and Figure 26)

**IMPORTANT: The Lower Track Assembly must be on top of the Base Plate Assembly and in contact with the wall of the Side Column Assembly Outer walls as shown in Figure 25.**

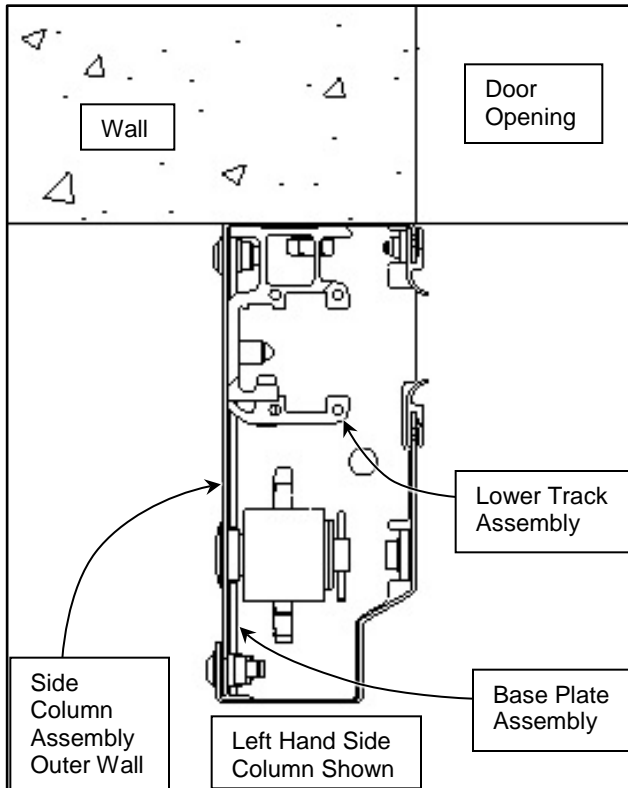


Figure 25

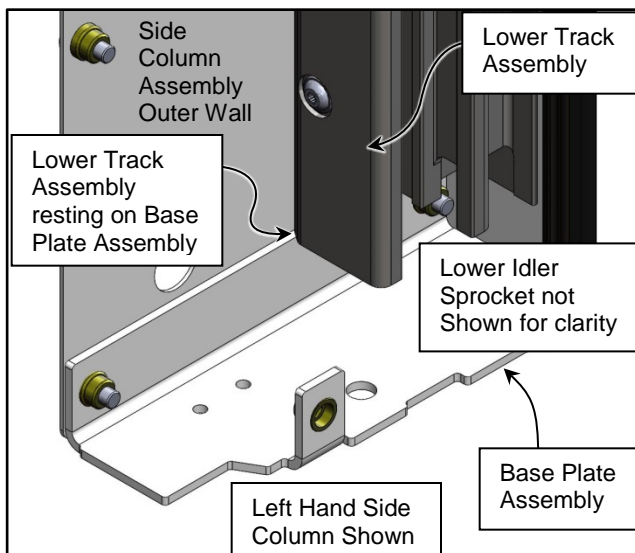


Figure 26

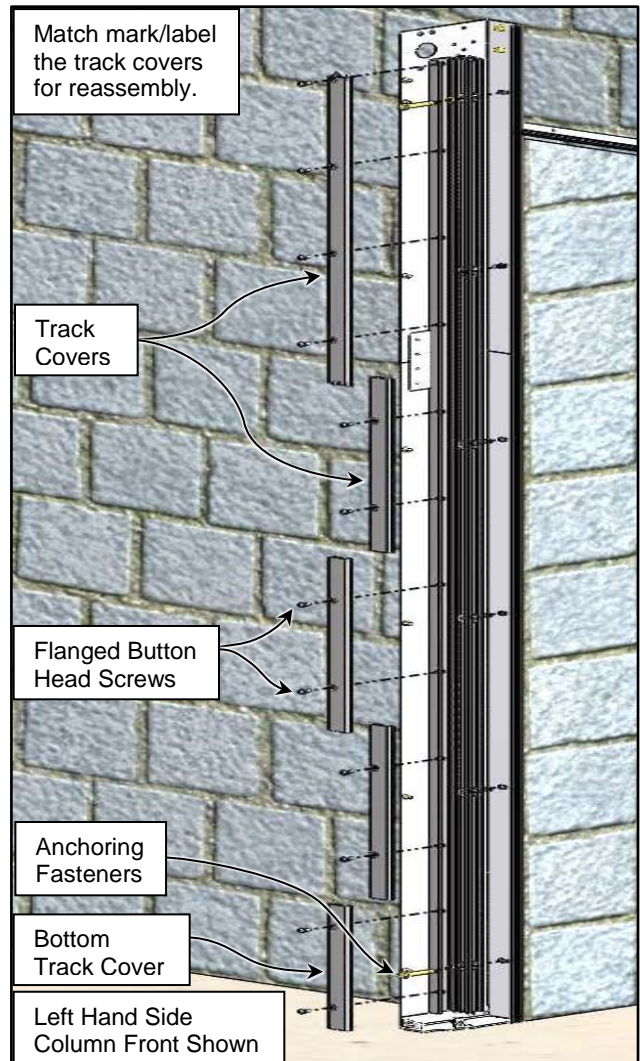


Figure 27

14. Check the Lower Track for plumb, vertical, & square. Adjust as necessary.

15. Make sure both the side column and lower track assembly are anchored to the wall using the anchors suggested (see "ANCHORING METHOD" on page 4) and in all anchor points. Do not fully tighten the anchors at this time. They should just be snug.

*NOTE: Allow approximately  $\frac{3}{4}$ "-1.00" of threaded rod fastener extension from the wall/mounting surface for the wall anchors of each side column (add for shim thickness).*

16. Mount the remaining side column and lower track assembly to the wall and floor in the same manner as outlined for the previous side column.

**IMPORTANT: Lower Track Assembly spacing is critical and they must be spaced as in Figure 28.**

## INSTALLATION-REAR TOP SEAL

*NOTE: To insure the side columns are positioned identically, take measurements for each column from similar points of reference.*

17. With both columns and lower track assemblies set and snugly bolted in place, check the overall plumb and square of the mounted columns and most importantly, the lower track assemblies. (See Figure 29)

Compare the diagonal measurements and the upper and lower horizontal measurements across the columns. The columns are square and parallel when the diagonal measurements are equal and the horizontal measurements are equal. (See Figure 29)

If either column requires slight repositioning (when the difference of either comparison is greater than  $\frac{1}{4}$  in.), use a block of wood and a mallet to move the column into position.

18. Check the alignment between both track assemblies and Track to Track width as given in the Object List. Adjust as necessary. (See Figure 10, Figure 28 and)

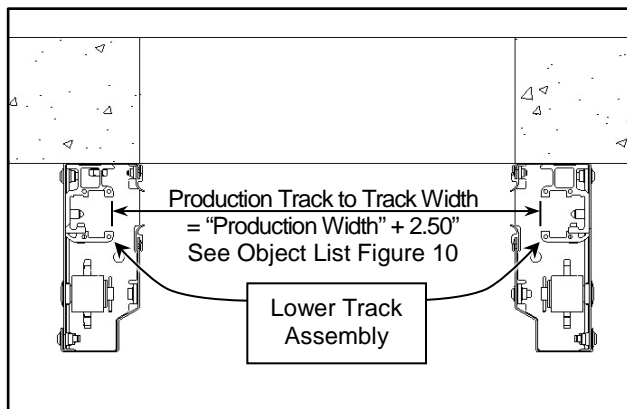


Figure 28



**The position and alignment of the track assemblies is most crucial to the door function and must be positioned accordingly. Also the track assemblies may be adjusted independently of the side column.**

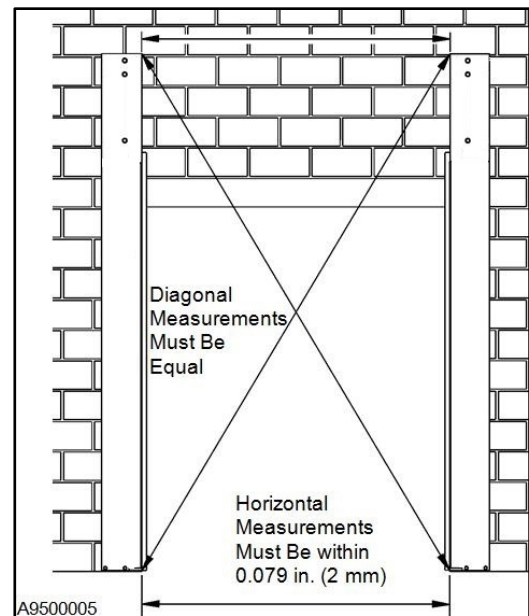


Figure 29

19. Double-check all measurements. Then firmly tighten all floor and wall anchors.

### REAR TOP SEAL

The Rear Top Seal provides a seal at the top of the door between the mounting wall and the door panel. It consists of a brush securely mounted in a track.

1. Locate the Rear Top Seal. This will likely consist of several brush-track assemblies depending on the door width.
2. Evenly space the seal assembly in between the side columns. Leave any space on the ends between the side columns and the seal and center the seal. There should be a gap between the door's lintel and the bottom of the brush. The approximate height will be listed in the door's Object List. (See Figure 10, and Figure 30)
3. With the top seal assembly oriented as shown, securely attach it to the wall with appropriate fasteners. Locate the fasteners as shown @ approximately 18" c/c spacing. (See Figure 30)



## INSTALLATION-DOOR PANEL ASSEMBLY

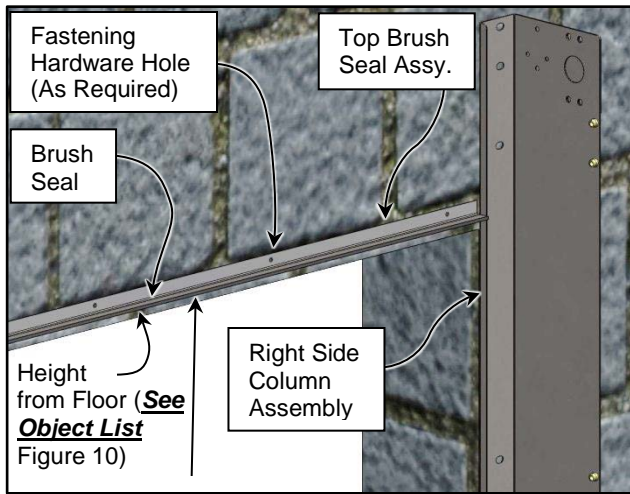


Figure 30

**NOTE:** When securing the top seal assembly to the wall, it will be necessary for you to make holes for the wall anchors. After drilling the required holes install the anchors and permanently secure the brush seal to the wall.

**IMPORTANT:** If shims or spacers were used to install the side columns, it will be necessary for you to shim and seal behind the spreader as well.

4. Check the alignment of the side columns and rear spreader-top seal with a level. Adjust as necessary.

### DOOR PANEL ASSEMBLY

The door panel comes in pre-assembled sections which will need to be finish assembled. This should be performed by 2 people. It is critical to assemble the door panel in the correct order. The panel sections will be number identified for reference to aid in the order of assembly.

**NOTE:** It is crucial that the panel sections are installed in the correct order.

1. Prior to installation, confirm that the side columns, rear door seal, and lower track assemblies are properly aligned, plumb, vertical and square, secure, and hardware is tightened.
2. Install the bottom Lower Track Assembly Covers on the Lower Track Assemblies as shown. (See Figure 31)
3. Locate and identify the bottom bar section for the panel assembly. It will be marked #1. Orient and place the bottom bar into the bottom section of the lower track assembly as shown. (See Figure 31)

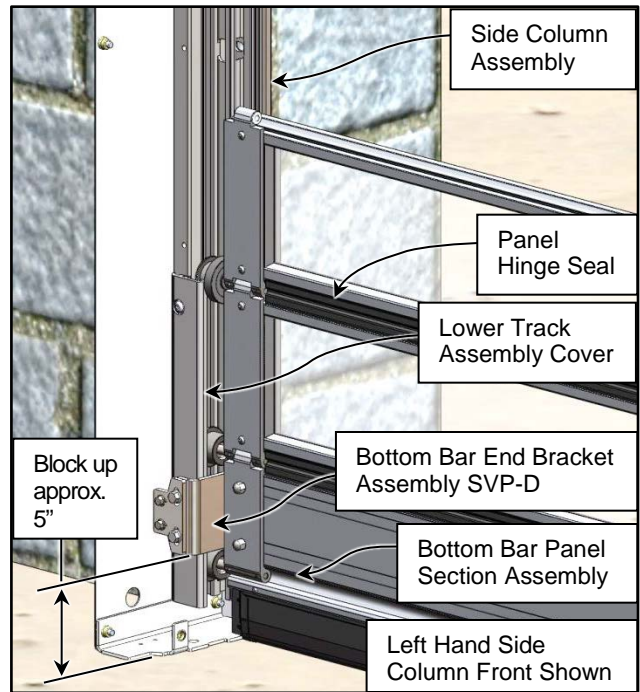


Figure 31

4. On the front side block up the bottom bar approximately 5" as shown. The bottom seal should just be touching the floor enough to create an adequate seal. The method shown is just a suggestion. (See Figure 31 and Figure 32)

### CAUTION

The bottom bar must be raised and blocked up during panel installation/assembly. Failure to securely raise and block the bottom bar assembly off the floor may result in damage to the bottom bar seal.

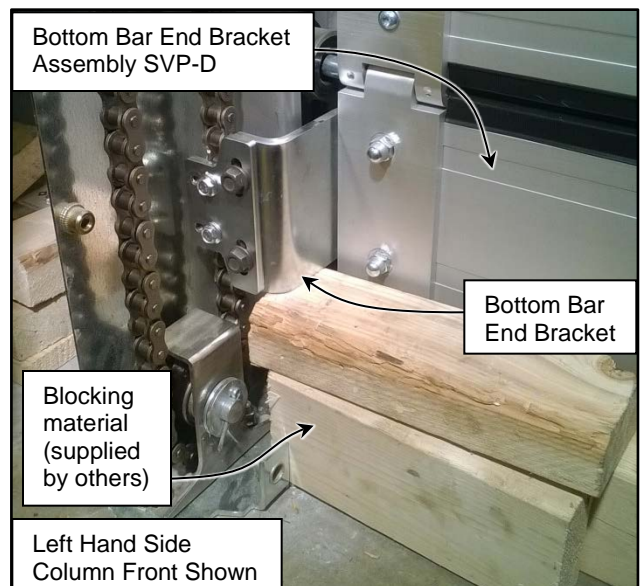


Figure 32



## INSTALLATION-HINGE SEAL ASSEMBLY

5. Allow the top panel section to lean back away from the door opening 90° from the panel assembly.
6. Locate and identify the next panel section assembly for the door panel assembly. Orient and mate the next panel section with the last installed panel section so the hinge assembly bracket holes are aligned as shown. (See Figure 33)

### **CAUTION**

It is crucial that the panel sections fit together correctly. If for any reason they do not slight adjustments may be necessary. They are assembled specifically to be square. Contact RYTEC Technical Support if they do not fit together.

7. Once the hinges of the panel sections are aligned insert the hinge axles as shown. The threaded end must be on the outside of the panel and the through hole on the panel inside. (See Figure 33)
8. Align the small  $\text{Ø}\frac{1}{8}$  hole in the hinge axles with the small holes through the inside ear of the hinge as shown. (See Figure 33 and Figure 34)

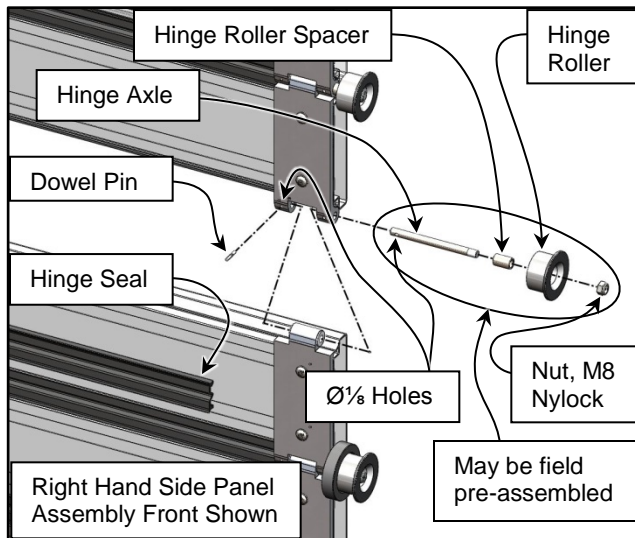


Figure 33

9. Insert the dowel pin into the hole of the panel hinge, all the way through the hinge axle and hinge until the pin is flush to the near surface. (See Figure 34)

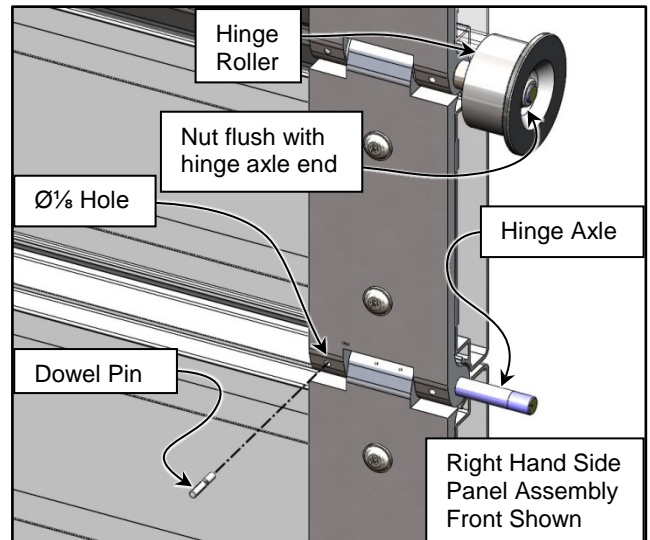


Figure 34

10. Install the Hinge Roller Spacer onto the Hinge Axle. (See Figure 33)
11. Install the Hinge Roller onto the Hinge Axle. (See Figure 33 and Figure 34)
12. Install the Nut onto the Hinge Axle. Screw the nut on until the hinge axle end is flush with the end of the nut. It should be tight enough to hold the axle in place. (See Figure 33 and Figure 34)
13. Hold up the newly installed panel section assembly and install the next lower track assembly cover to keep the panel in place.
14. Repeat steps 5-13 until the panel sections are all installed in the lower track assembly. The upper panel section assembly should be the last section installed with the top panel oriented accordingly.

### HINGE SEAL ASSEMBLY

The hinge seals are designed to prevent air infiltration and form a seal between the two sides of the door. They also allow for panel expansion and contraction and maintain the seal.

1. Locate the Hinge Seals in the shipping crate. They are cut specifically for each door.

*NOTE: It is crucial when installing multiple doors that the correct matching parts are installed on each specific door.*

2. Install the Hinge Seals between all the field installed door panel section assemblies. Start by making sure the gap/channel where the seal is to be installed is clean and free of debris.
3. Insert each end of the seal into the channel by butting the end up to the hinges as shown. Use the dull chisel tool to firmly press the first approximately 3" of the edges of the seal into the channel for proper seating. (See Figure 35)

## INSTALLATION-DRIVE SHAFT ASSEMBLY

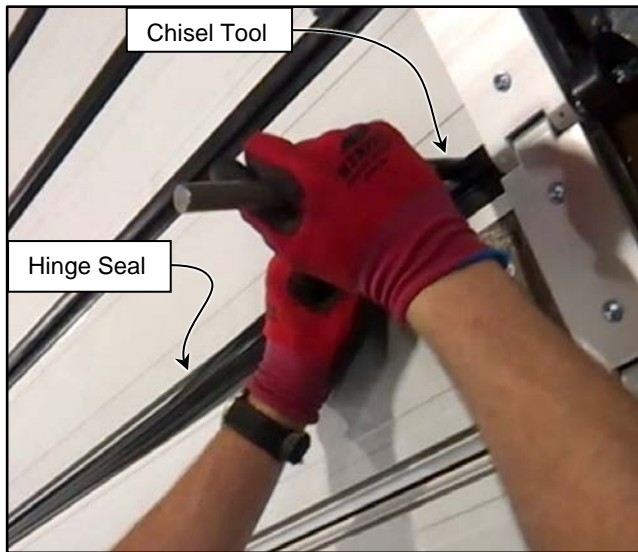


Figure 35

- Using the Convex-Rounded hand roller tool supplied, firmly press the edges of the outer 2-3 feet of the seal into the channel as shown. (See Figure 36)

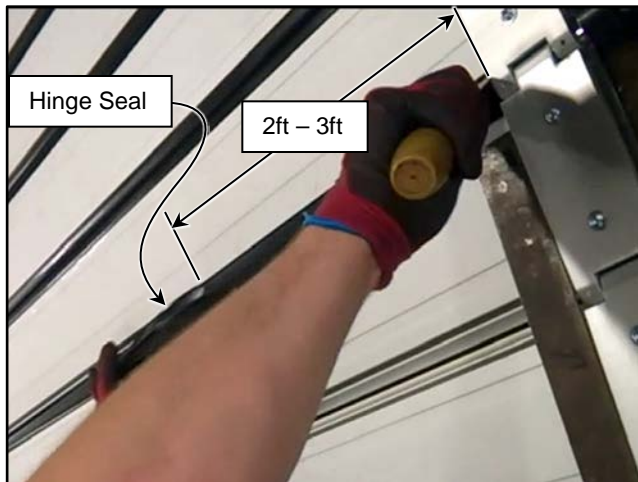


Figure 36

- Locate the center of the hinge seal and door panel. Insert the seal into the gap matching up the centers and firmly press the seal edges into the channel with the hand roller as shown. Press the center 2ft – 3ft into place. Repeat this process on both sides until the seal is completely inserted into the channel just as the pre-installed seals. (See Figure 37)



Figure 37

## DRIVE SHAFT ASSEMBLY

When assembled the drive shaft assembly is integrated with the drive motor and mounted into the side columns with brackets. This manual shows the typical Left Hand version door assembly. The right hand drive version of the door is opposite hand as shown.

- On the drive side remove the top two fasteners securing the side column to the wall on the drive side. Install the top bracket into the side column using the same two fasteners as shown. All holes will align between the bracket and side column plate when properly installed. (See Figure 38 and Figure 39)

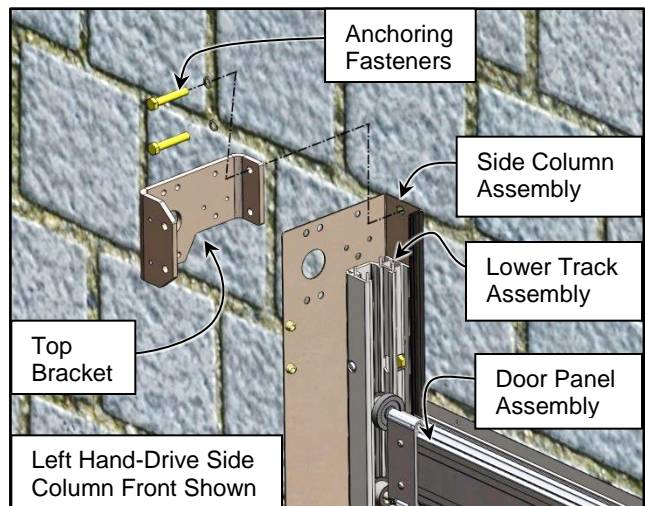


Figure 38



## INSTALLATION-DRIVE SHAFT ASSEMBLY

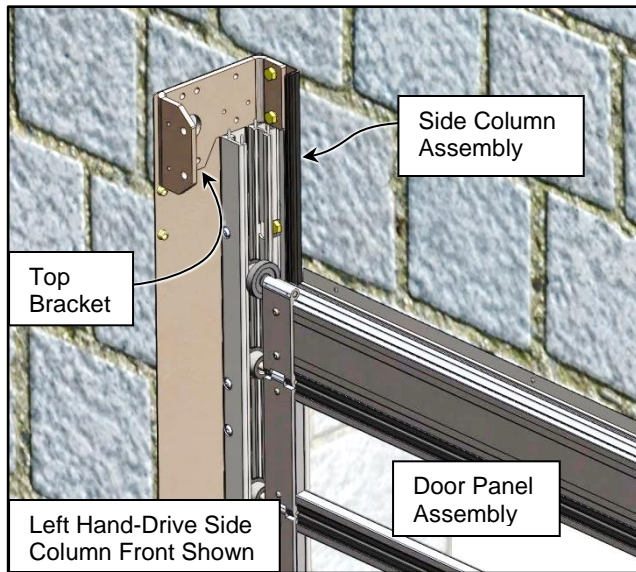


Figure 39

2. On the non-drive side, remove the top two fasteners securing the side column to the wall. Install the top bracket into the side column using the same two fasteners as shown. All holes will align between the bracket and side column plate when properly installed. (See Figure 40 and Figure 41)

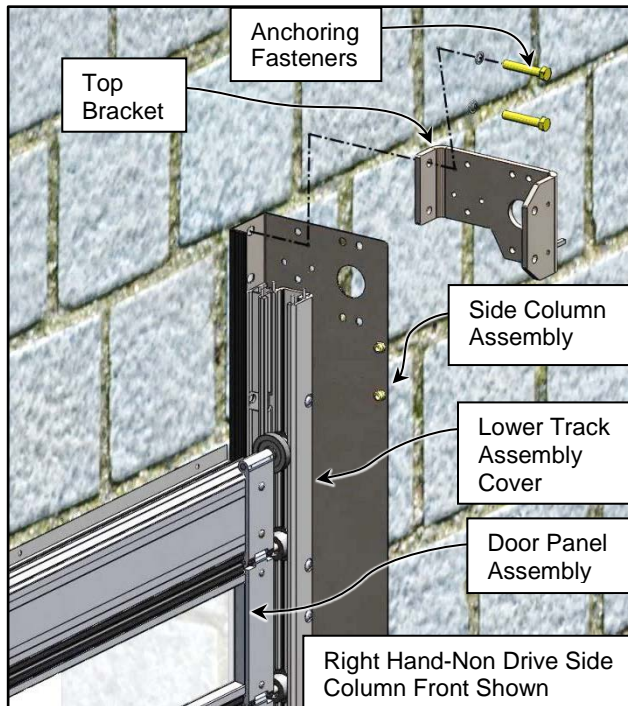


Figure 40

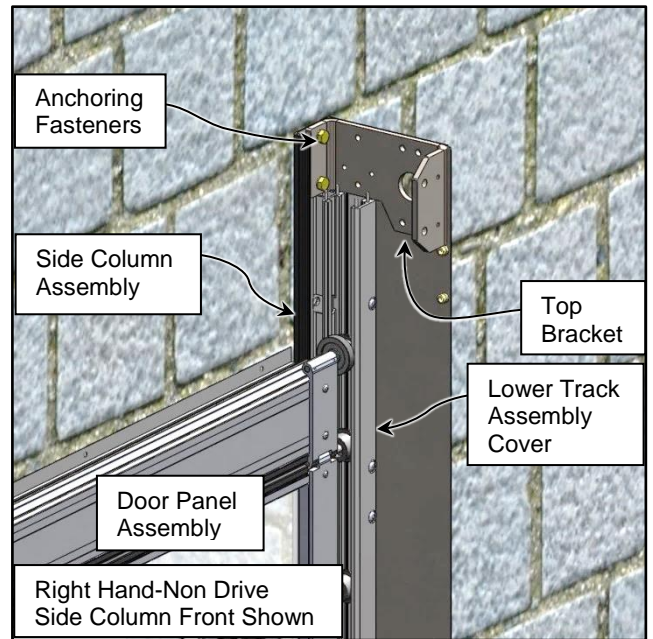


Figure 41

3. Pre-Assemble the Drive Shaft and mount into the Top Brackets as shown. (See Figure 42, Figure 43, and Figure 48)

*NOTE: Orient the bearings so the shaft bushing-collar set screws are facing toward the door assembly as shown.*

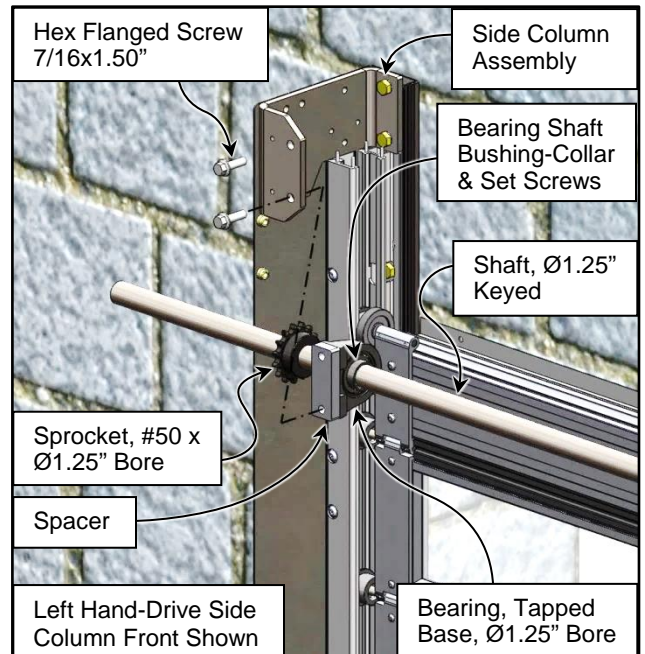


Figure 42



## INSTALLATION-MOTOR-GEAR DRIVE ASSEMBLY

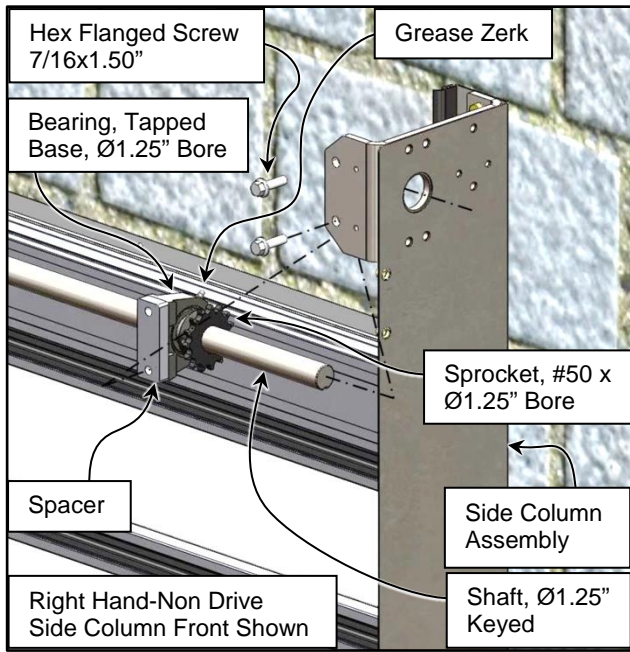


Figure 43

- Secure the Drive Shaft mounting bearings to the mounting brackets w/ the screws as shown. Adjust the drive shaft in the bearings so the non-drive end is approximately  $\frac{3}{8}$ " in from the outside of the non-drive side Side Column or the drive side end protrudes 6" from the drive side Side Column. *Do not* secure the sprockets to the shaft with the set screws or install the shaft keys. This will be done later. (See Figure 44 and Figure 45)

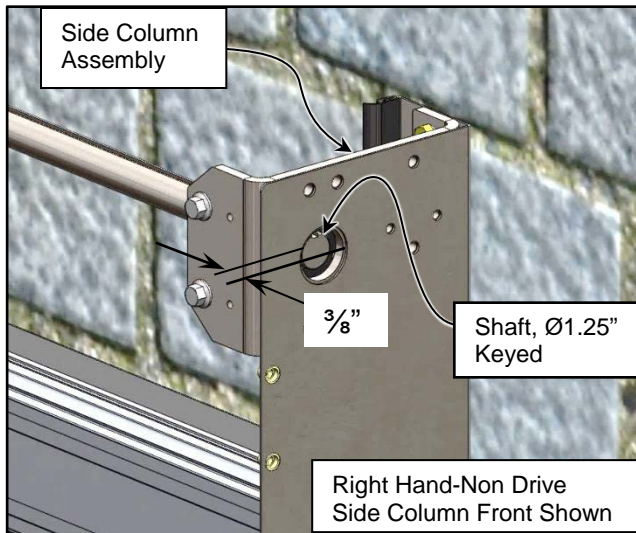


Figure 44

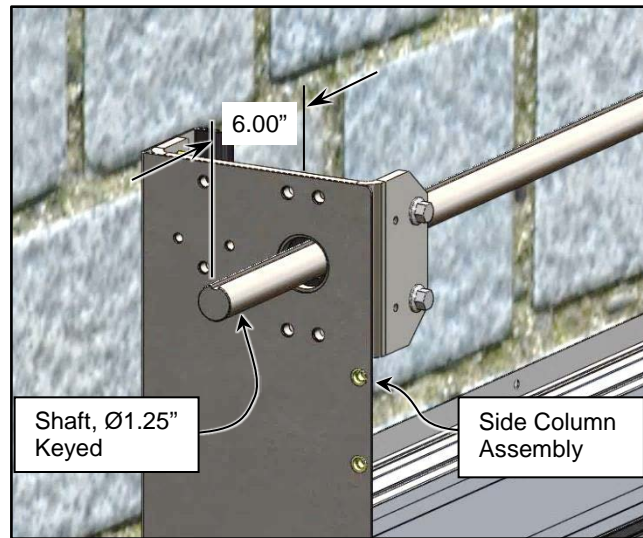


Figure 45

- Check the drive shaft for level using a laser level or carpenter's level.
- Secure the drive shaft in place with the set screws in the bearings as shown. Tighten them onto the drive shaft. They may need to be adjusted later. (See Figure 48)

### MOTOR-GEAR DRIVE ASSEMBLY

The motor-gear drive directly mounts to the drive shaft and side column assembly.

- Identify and locate the motor-gear drive, cover clip assembly,  $\frac{1}{4} \times \frac{1}{4} \times 7.64$  long key, and fasteners. Orient and assemble them onto the drive shaft/ drive side Side Column Assembly as shown. (See Figure 46)

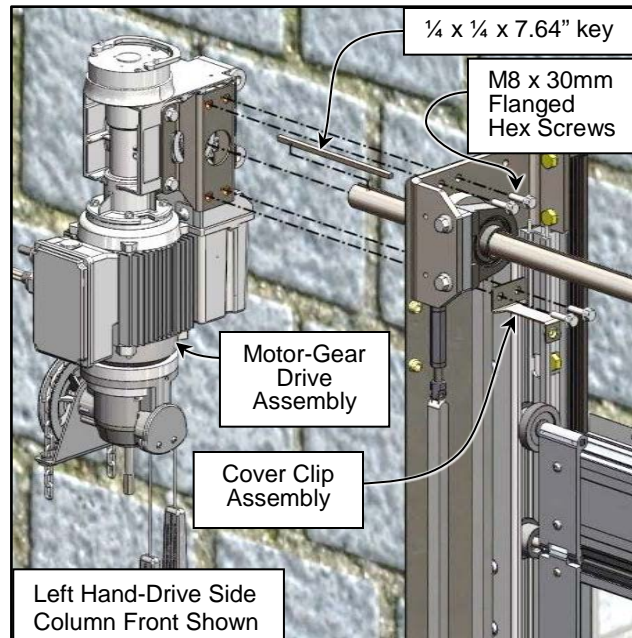


Figure 46

## INSTALLATION-CHAIN DRIVE ASSEMBLY

- Align the motor shaft keyway w/ the drive shaft keyway and key so it may be inserted properly. (See Figure 46)
- Adjust the drive shaft and key as necessary (loosen the drive shaft bearing collar set screws and retighten again when correctly placed). After the motor-gear drive is installed the shaft should protrude from the motor face as shown. (See Figure 47)
- The  $\frac{1}{4}$ " square key should be approximately flush with the face of the motor as shown when fully installed. (See Figure 47)

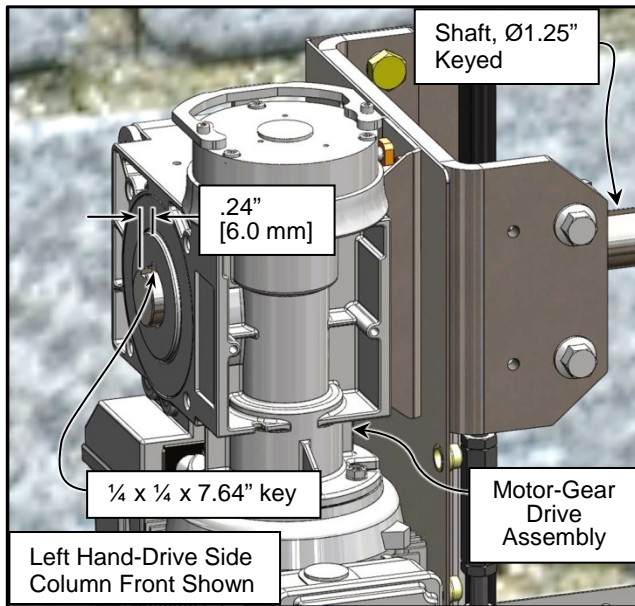


Figure 47

### CHAIN DRIVE ASSEMBLY

The chain drive system utilized to supply power to the door is a #50 roller chain with turnbuckle tensioner pre-attached to the chain at one end.

- Starting on the drive side, adjust the drive sprocket along the drive shaft so it is properly aligned w/ the bottom sprocket of the side column assembly. Secure the sprocket in place with the sprocket set screws as shown. Tighten them onto the drive shaft. (See Figure 48)

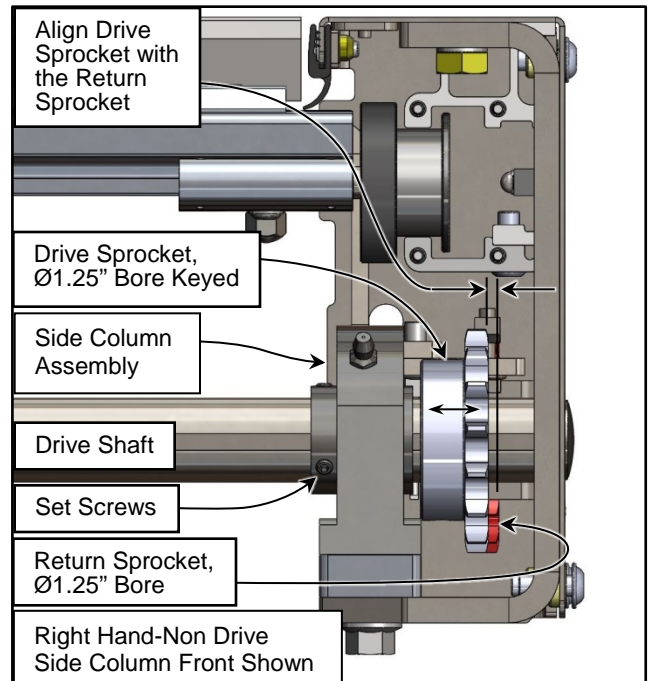


Figure 48

- Loosen and extend the chain turnbuckle. Install the chain between the two sprockets. Guide the chain around the sprockets as shown with the loose ends at the upper sprocket on the front side of the door as shown. The turnbuckle should be 1-2 links away from the drive gear. (See Figure 49 and See Figure 50)

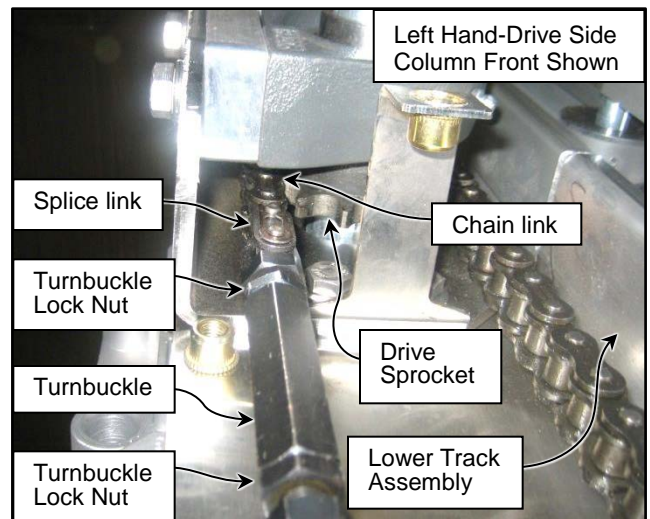


Figure 49



## INSTALLATION-CHAIN DRIVE ASSEMBLY

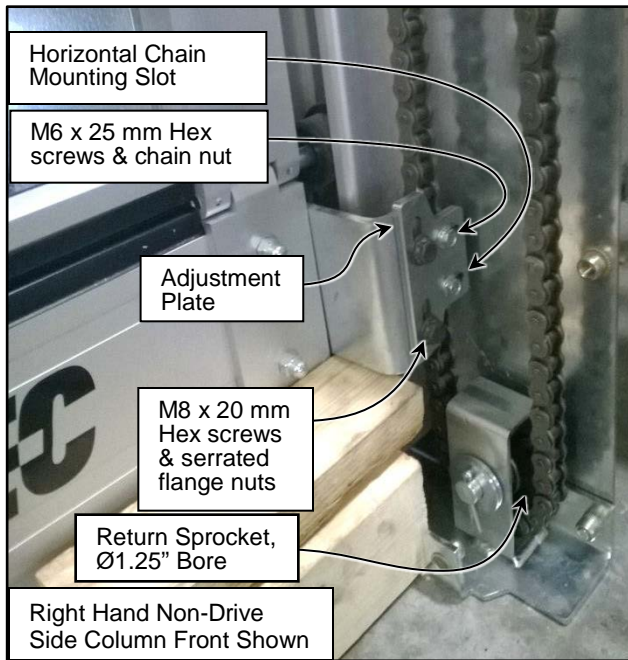


Figure 50

3. Remove the adjustment plate from the bottom bar end bracket on the drive side and remove the chain nut and screws. (See Figure 50)

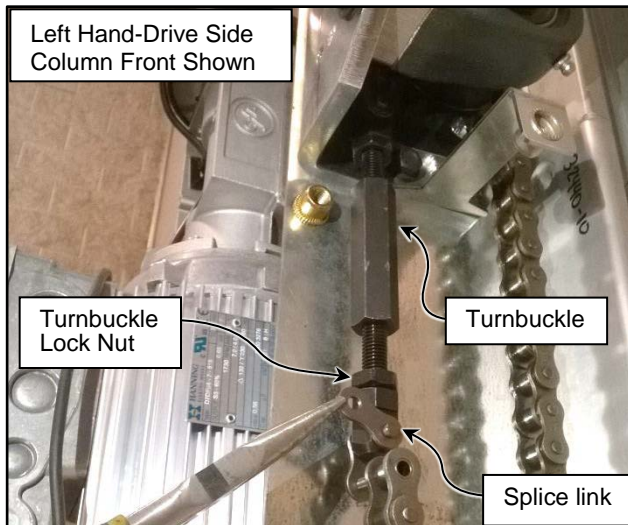


Figure 51

4. Connect the turnbuckle to each end of the chain with the splice links at the top drive sprocket as shown. Tighten up the turnbuckle by hand, then another 1-1/2 turns (with a wrench) until the chain is tight enough to prevent coming loose or jumping off the sprockets. (See Figure 51 and Figure 52)



**Do not over tighten the drive chain turnbuckle. Damage to the drive shaft, bearings, other components, or premature wear may occur.**

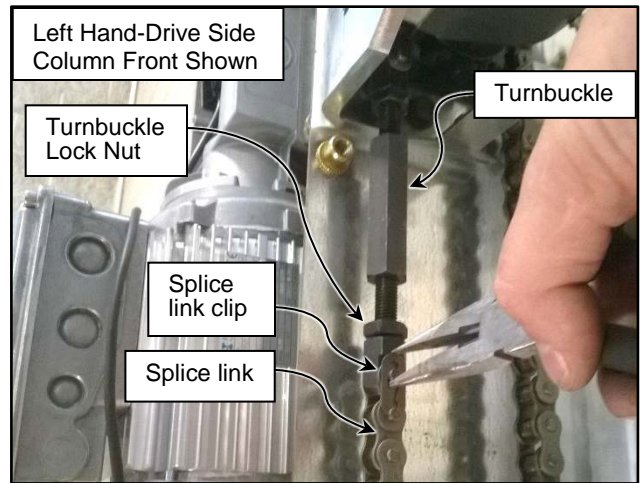


Figure 52

5. Reattach the adjustment plate to the bottom bar end bracket centering it in the slots as shown. Identify and mark the two pair of chain links which most closely match up to the horizontal chain mounting slots (we suggest using a white paint stick or equal). Then remove the adjustment plate from the bottom bar. (See Figure 53)

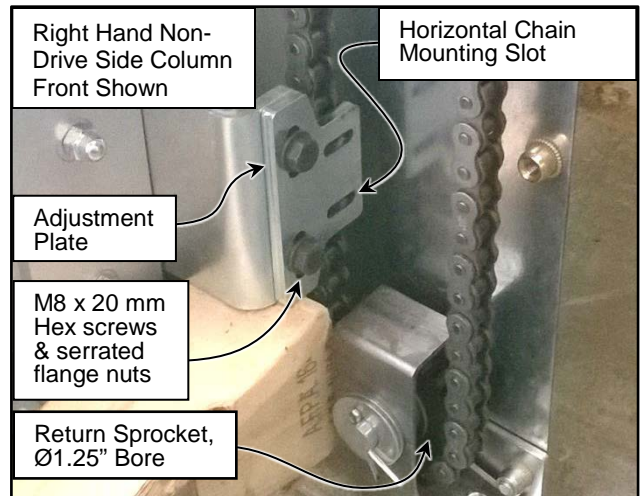


Figure 53

6. Loosen and extend the chain turnbuckle to allow slack in the chain.

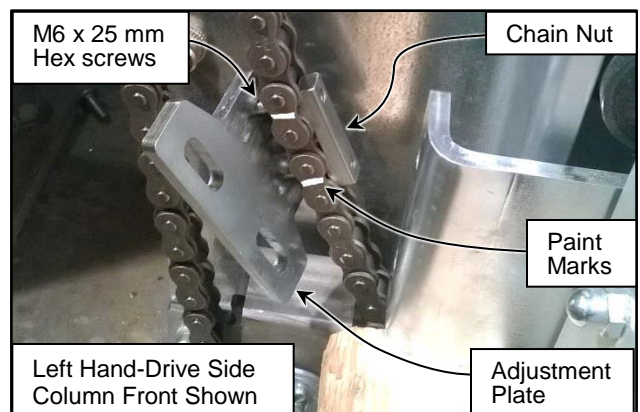


Figure 54

- Loosely fasten the adjustment plate to the marked drive chain links with the M6 x 25 mm Hex Flanged Screws and chain nut as shown. Do not fully tighten these fasteners yet. (See Figure 54, and Figure 55)

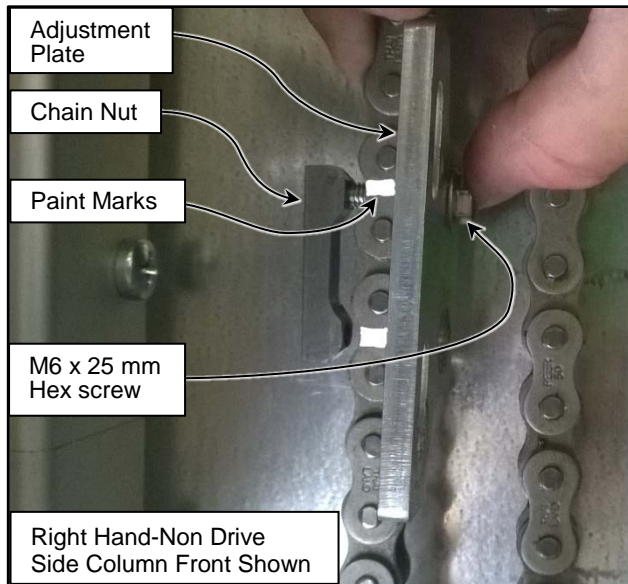


Figure 55

- Tighten up the turnbuckle by hand, then another 1-1/2 turns (with a wrench) until the chain is tight enough to prevent coming loose or jumping off the sprockets. (See Figure 51 and Figure 52)



**Do not over tighten the drive chain turnbuckle. Damage to the drive shaft, bearings, other components, or premature wear may occur.**

- Lock the turnbuckle in place with its jam nuts. (See Figure 49)
- On the non-drive side, align the keyways of the drive shaft and the non-drive side drive chain sprocket. Install the 1/4 x 1/4 x 1.00" key in the drive shaft and non-drive side drive chain sprocket. It must be flush mounted with the sprocket's edge as shown. (See Figure 56 and Figure 57)
- Adjust the non-drive side drive sprocket along the drive shaft so it is properly aligned w/ the bottom sprocket of the non-drive side Side Column Assembly. Secure the sprocket in place with the sprocket set screws as shown. Tighten them onto the drive shaft. (See Figure 48)

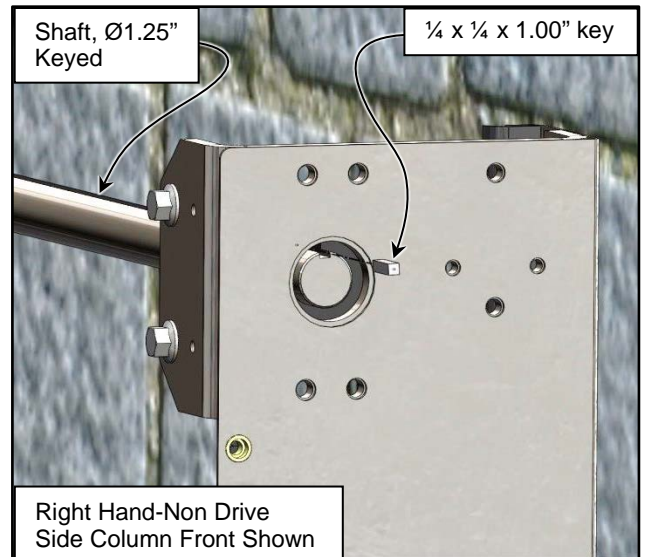


Figure 56

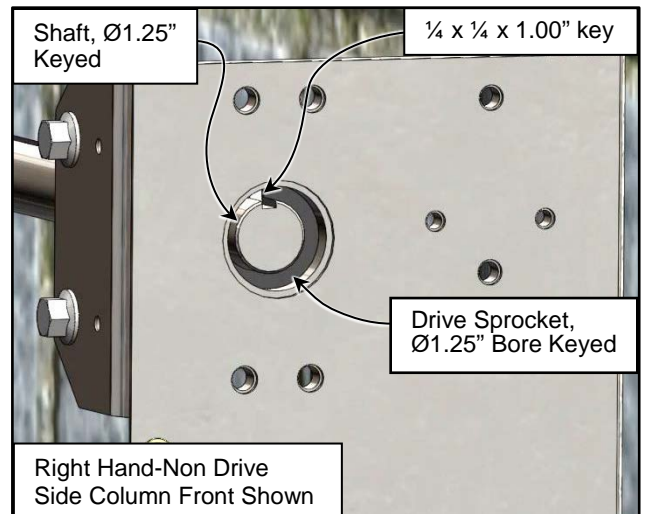


Figure 57

- Check/confirm the door panel/bottom bar for level, adjusting as required.
- Repeat steps 2-9 for the non-drive side drive chain. Duplicate the positions. The chain must be in the identical position as the opposite sides' drive chain.
- Reattach the adjustment plate to the end brackets and fully tighten the M8 x 20 mm Hex screws. Also fully tighten the M6 x 25 mm Hex Flanged Screws and chain nut securing the end bracket to the drive chain. (See Figure 50)
- Disengage the motor drive by pulling the motor cord with the red handle. Using the chain hoist manually raise the door panel assembly and remove the supports under the bottom bar end brackets. Engage the motor drive by pulling the motor cord with the green handle.



## INSTALLATION-NON-DRIVE END PLATE-COVER ASSEMBLY

### NON-DRIVE END PLATE-COVER ASSEMBLY

1. Identify and locate the cover clip assembly, end plate, and fasteners. Install the Cover Clip Assembly, End Plate, and fasteners on the non-drive side column assembly as shown. (See Figure 58)

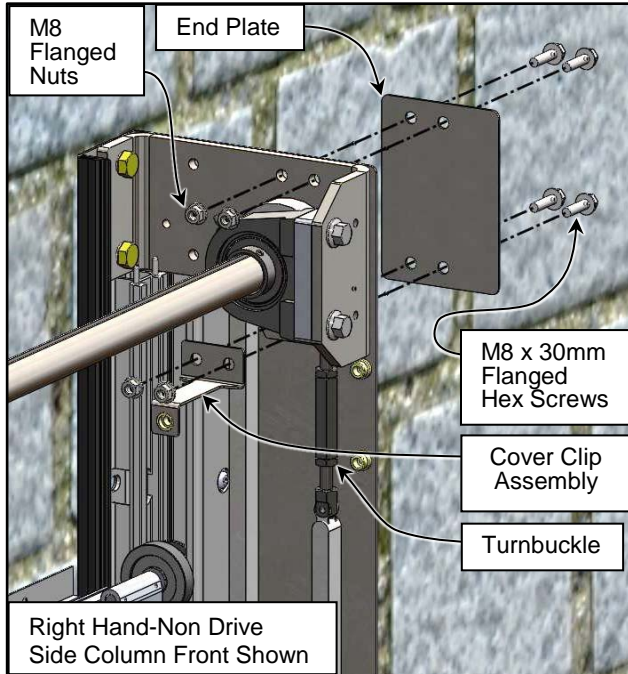


Figure 58

2. Tighten all fasteners.

### UPPER TRACK ASSEMBLY

The upper track assembly consists of the track guides which allow the door to open. There are three types that can be utilized, Standard, High, & Vertical Lift. See the appropriate type section which your door was designed and manufactured with.

#### Standard Lift Upper Track Assembly

The standard lift upper track assembly is designed for installation in low overhead ceiling conditions. All vertical support for the horizontal track assembly section is the responsibility of the installer and/or customer.

*NOTE: The door comes from the factory without any support mounting brackets designed for horizontal guide rail installation support. The installer/customer will be responsible for providing support(s) based on the requirements of the installation.*

1. Locate, identify, orient, and install the upper track side column spacer and fasteners in both side column assemblies as shown. (See Figure 59 & Figure 60)

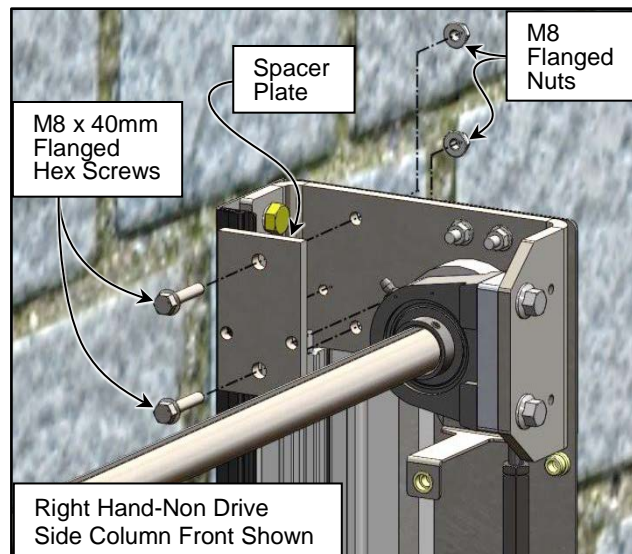


Figure 59

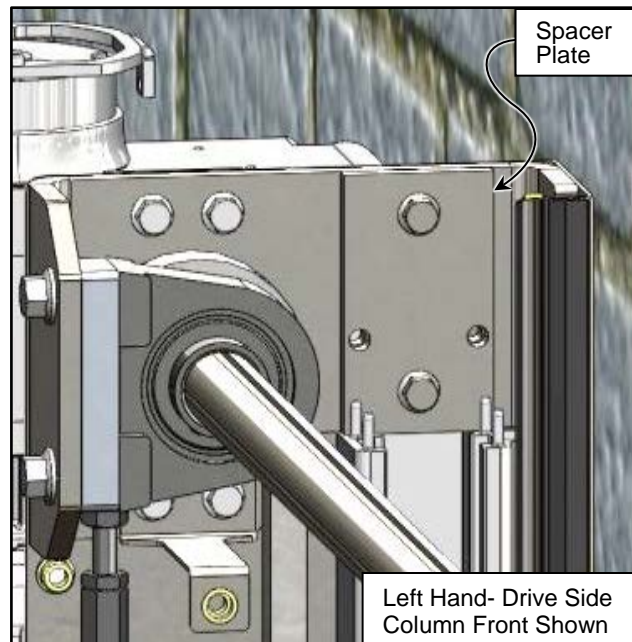


Figure 60

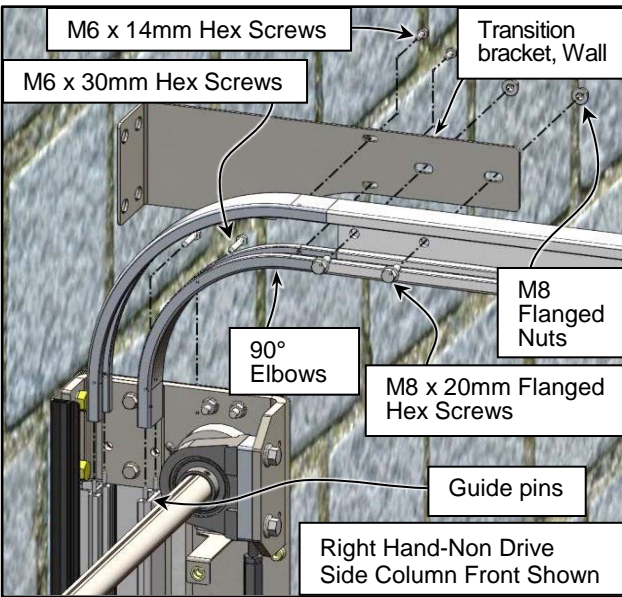
2. Identify, locate, and orient the Standard Lift Upper Track Assembly for each side which includes the upper track transition bracket, 90° upper inner and outer transition tracks, horizontal section track, transition brackets, locating pins, and fasteners. Install on both side column assemblies as shown. Shim the transition bracket to the wall as necessary. Disassemble as needed. (See Figure 61 & Figure 63)

### **CAUTION**

**When installing hardware, make sure the head of the bolt is inside the guide rail, or interference may cause damage to the rollers when the door operates.**



## INSTALLATION-UPPER TRACK ASSEMBLY

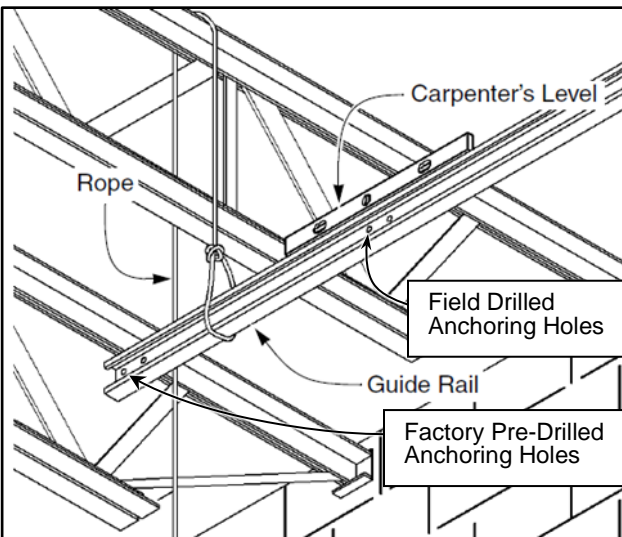


**Figure 61**

3. Confirm that guide pins are installed in the horizontal guide rail. (See Figure 61)

*NOTE: Support the opposite end of the track assembly while performing this installation.*

4. Support the end of the guide rail with rope or a mechanical device. Place a carpenter's level on top of the guide rail and secure the guide rail in a level position. (See Figure 62)



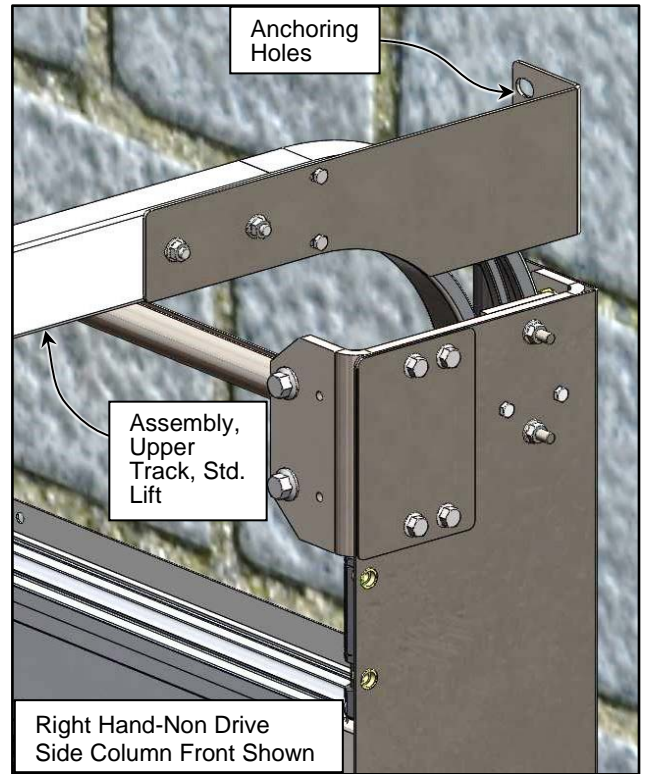
**Figure 62**

*NOTE: The horizontal guide rail has factory pre-drilled holes for mounting the ceiling brackets, two for each side. Custom fabrication of the brackets and drilling of extra mounting holes may be required to facilitate installation.*

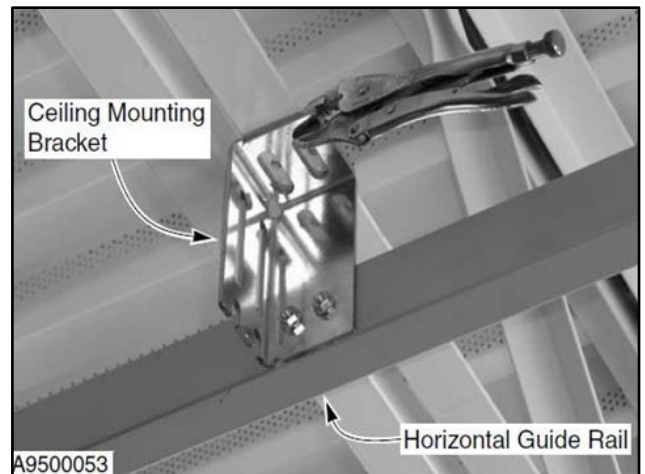
5. Check the "Track to Track" dimension at the start, end, and points in between to ensure track alignment. Adjust as necessary. (See Figure 10

and Figure 28)

6. Fasten the track assembly to the wall with anchors per "**ANCHORING METHOD**" section. (See Figure 63)



**Figure 63**



**Figure 64**

### **⚠ WARNING**

The ceiling supports should be strong enough to safely support the weight of the door and all tracks/brackets/supports. Door ceiling brackets must be capable of supporting #600 at a minimum each.

## INSTALLATION-UPPER TRACK ASSEMBLY

7. Install adequate ceiling mounting brackets to the horizontal track assembly. Must be provided by others. (See Figure 64)

### High Lift Upper Track Assembly

The high lift upper track assembly is designed for installation in overhead ceiling conditions which will not allow using the vertical lift option. All vertical support for the horizontal track assembly section is the responsibility of the installer and/or customer.

*NOTE: The door comes from the factory without any support mounting brackets designed for horizontal guide rail installation support. The installer/customer will be responsible for providing support(s) based on the requirements of the installation.*

1. Identify, locate, and orient the High Lift Upper Track Vertical Assembly for each side. This includes the upper track transition bracket, 90° upper inner and outer transition tracks, vertical section track, spacer, locating pins, and fasteners. Install on both side column assemblies as shown. Shim the transition bracket to the wall as necessary. (See Figure 65 & Figure 66)

### **CAUTION**

**When installing hardware, make sure the head of the bolt is inside the guide rail, or interference may cause damage to the rollers when the door operates.**

2. Confirm that guide pins are installed in the guide rail. (See Figure 65)

*NOTE: Support the opposite end if the track assembly while performing this installation.*

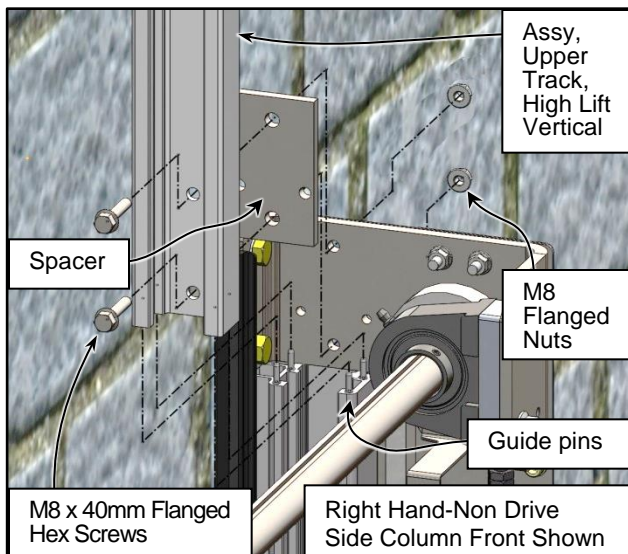


Figure 65

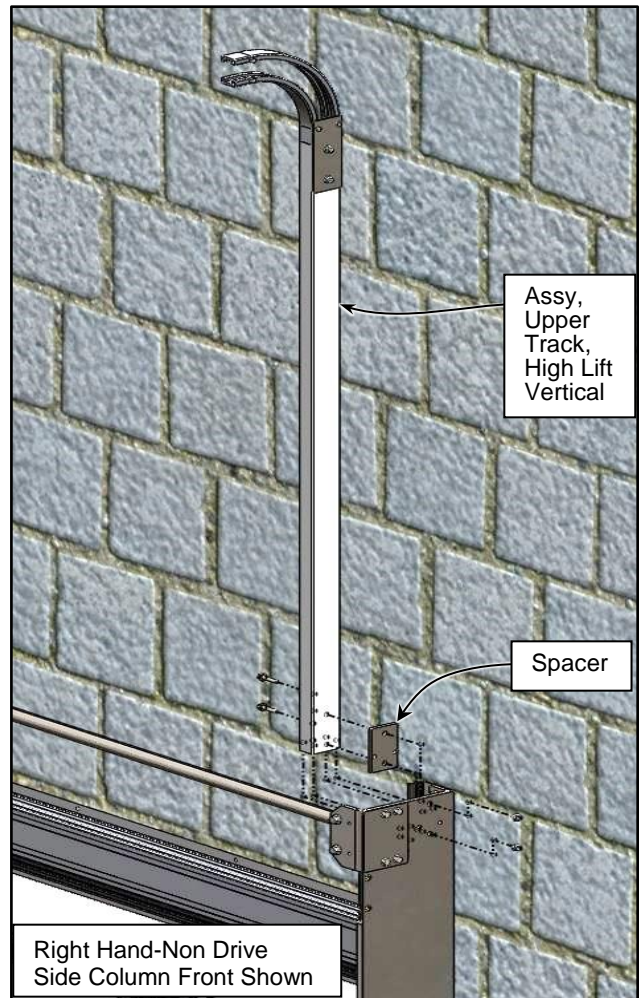


Figure 66

3. Identify, locate, and orient the High Lift Upper Track Horizontal Assembly for each side. This includes the upper track wall transition bracket, horizontal section track, locating pins, and fasteners. Install on both side column assemblies as shown. Shim the transition bracket to the wall as necessary. Disassemble as needed. (See Figure 67 & Figure 68)
4. Confirm that guide pins are installed in the guide rail. (See Figure 67)

*NOTE: Support the opposite end if the track assembly while performing this installation.*



## INSTALLATION-UPPER TRACK ASSEMBLY

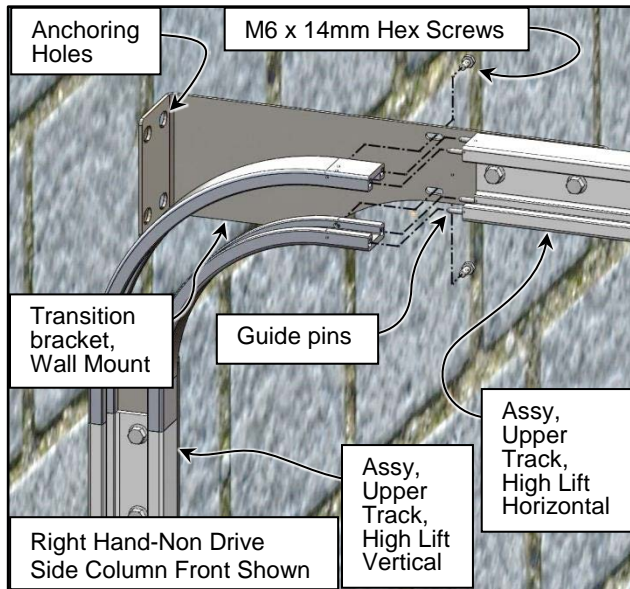


Figure 67

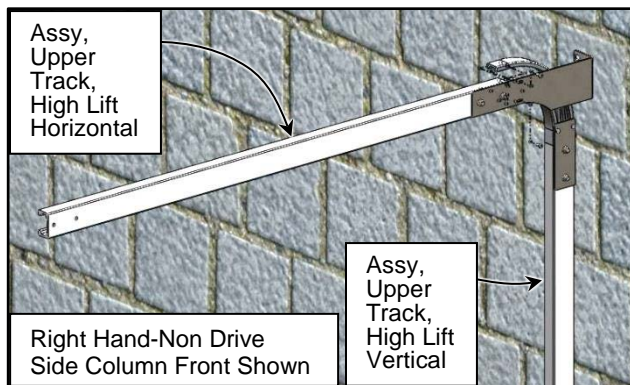


Figure 68

- Support the end of the guide rail with rope or a mechanical device. Place a carpenter's level on top of the guide rail and secure the guide rail in a level position. Must be provided by others. (See Figure 69)

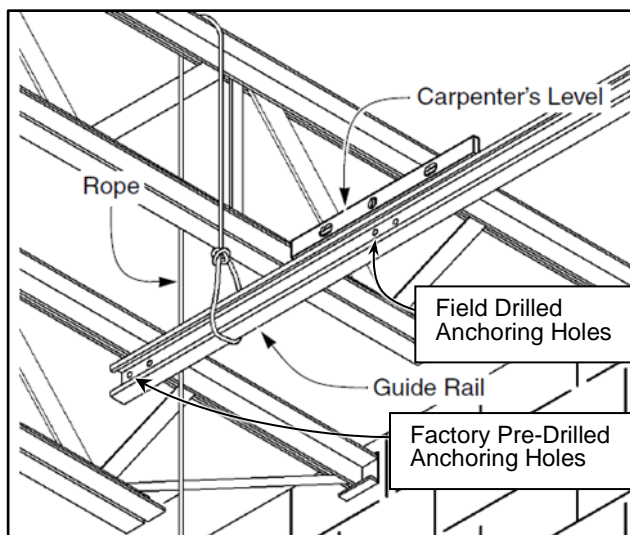


Figure 69

*NOTE: The horizontal and vertical guide rail has factory pre-drilled holes for mounting to ceiling and wall brackets, two for each side. Custom fabrication of the brackets and drilling of extra mounting holes may be required to facilitate installation.*

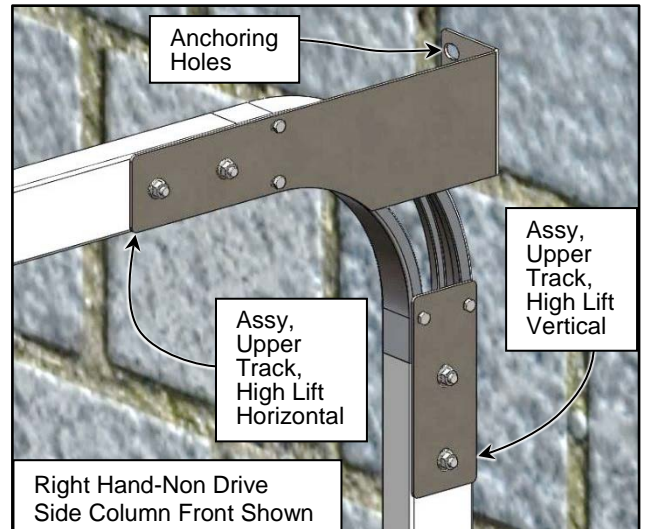


Figure 70

- Confirm the track is plum, level, vertical, and true to the lower track. Fasten the track assembly to the wall with anchors per "**ANCHORING METHOD**" section and shim as required. (See Figure 70)
- Check the "Track to Track" dimension at the start, end, and points in between to ensure track alignment. Adjust as necessary. (See Figure 10 and Figure 28)
- Install adequate ceiling mounting brackets to the horizontal track assembly. The installer/customer is responsible for this. (See Figure 71)

### **WARNING**

The ceiling supports should be strong enough to safely support the weight of the door and all tracks/brackets/supports. Door ceiling brackets must be capable of supporting #600 at a minimum each.

## INSTALLATION-UPPER TRACK ASSEMBLY

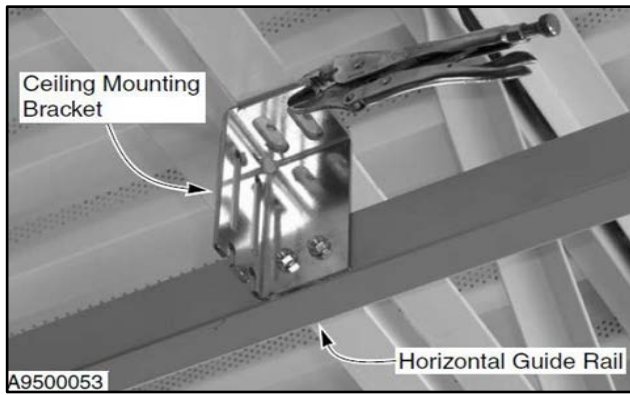


Figure 71

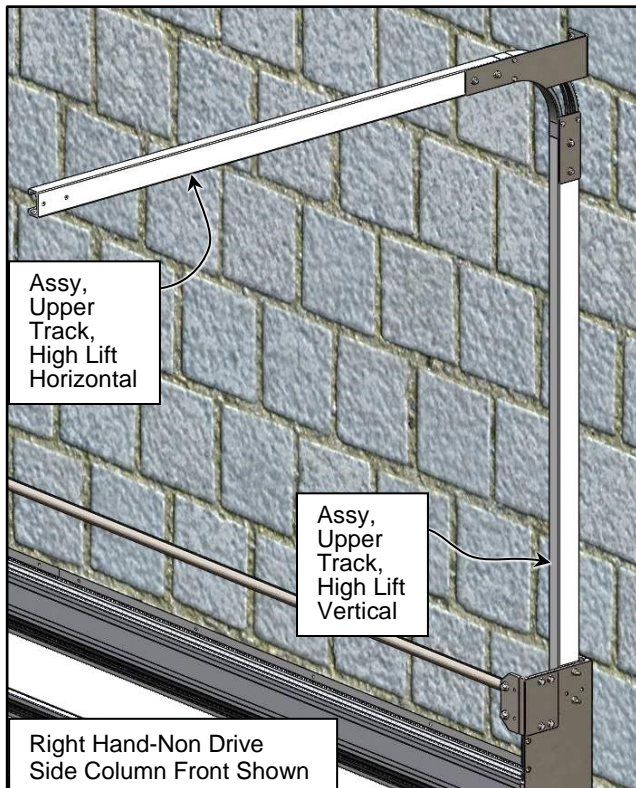


Figure 72

### Vertical Lift Upper Track Assembly

The vertical lift upper track assembly is designed for installation in overhead ceiling conditions with ample space for using this option. It is the most simple. All support for the track assembly is carried by the wall the doors installed on.

*NOTE: The door comes from the factory with support mounting brackets designed for vertical guide rail installation support. The installer/customer will be responsible for providing support(s) based on the requirements of the installation if these aren't sufficient.*

1. Identify, locate, and orient the High Lift Upper Track Vertical Assembly for each side. This includes the upper track transition bracket, 90°

upper inner and outer transition tracks, vertical section track, spacer, locating pins, and fasteners. Install on both side column assemblies as shown. Shim the transition bracket to the wall as necessary. (See Figure 73 & Figure 74)

### **CAUTION**

**When installing hardware, make sure the head of the bolt is inside the guide rail, or interference may cause damage to the rollers when the door operates.**

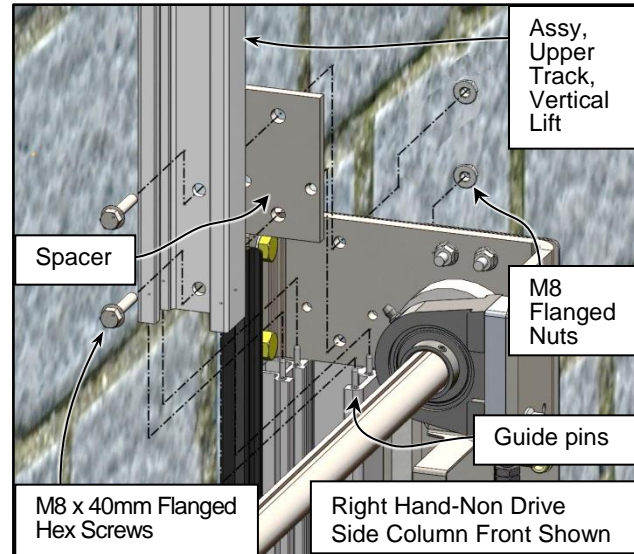


Figure 73

2. Confirm that guide pins are installed in the guide rail. (See Figure 73)

*NOTE: Support the opposite end if the track assembly while performing this installation.*

*NOTE: The vertical guide rail has factory pre-drilled holes for mounting to wall brackets, two for each side. Custom fabrication of the brackets and drilling of extra mounting holes may be required to facilitate installation.*



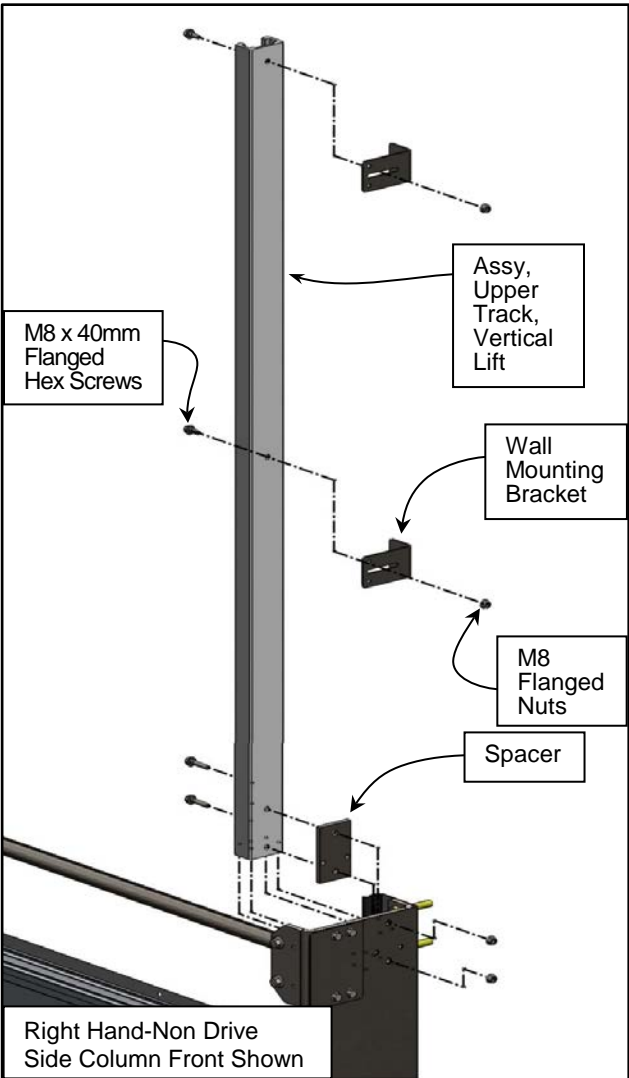


Figure 74

3. Confirm the track is plum, level, vertical, and true to the lower track. Fasten the track assembly to the wall with anchors per “ANCHORING METHOD” section and shim as required. (See Figure 75)
4. Check the “Track to Track” dimension at the start, end, and points in between to ensure track alignment. Adjust as necessary. (See Figure 10 and Figure 28)

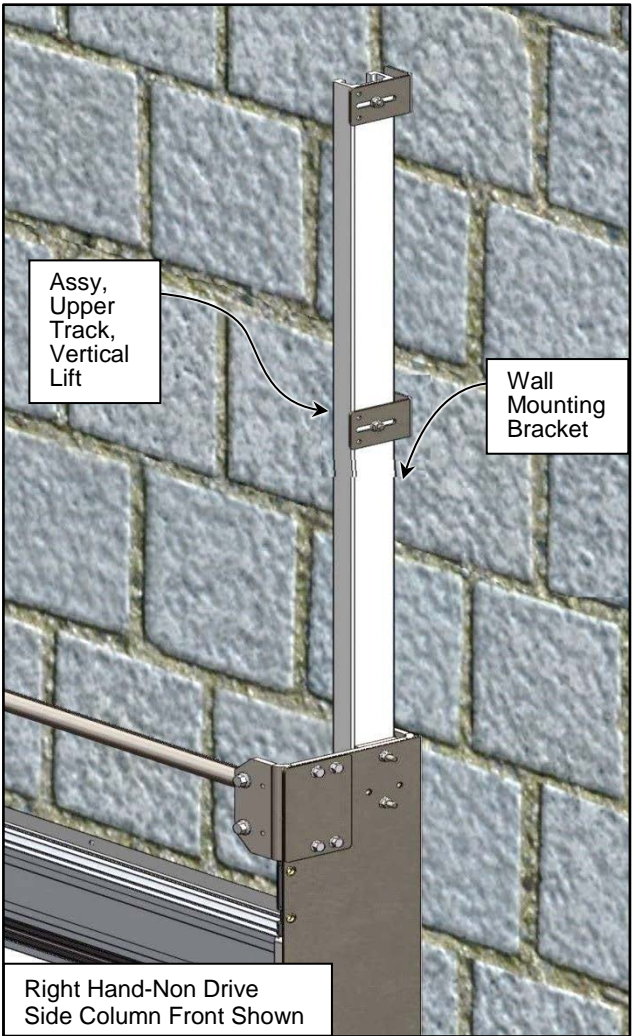
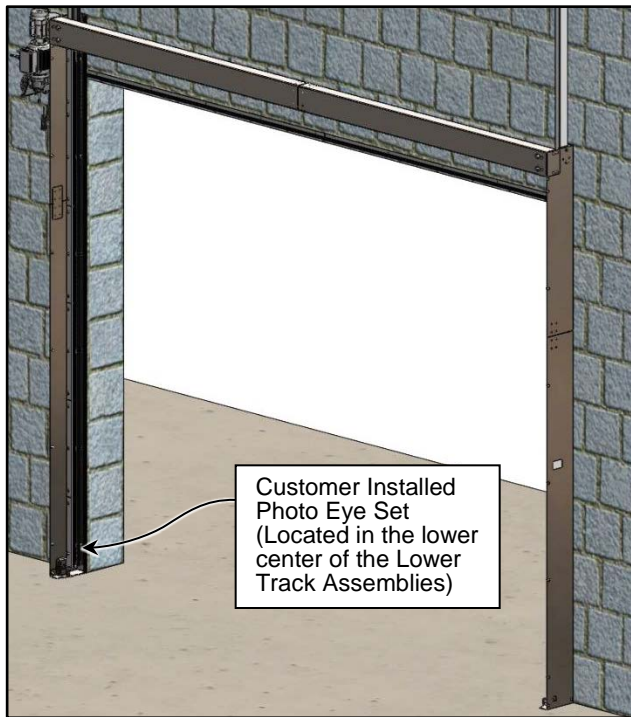


Figure 75

PHOTO EYES

The photo eyes are provided as a safety feature and monitor the center of the door. The set are to be field-installed in the lower left – center and lower right – center sections of the door’s lower track assembly. The set consists of one photo eye transmitter module and one receiver module. If the photo eyes are correctly installed, interrupting the photo eye set as the door is closing will reverse the direction of the door and hold it in the fully open position until the interruption is removed. (See Figure 76)

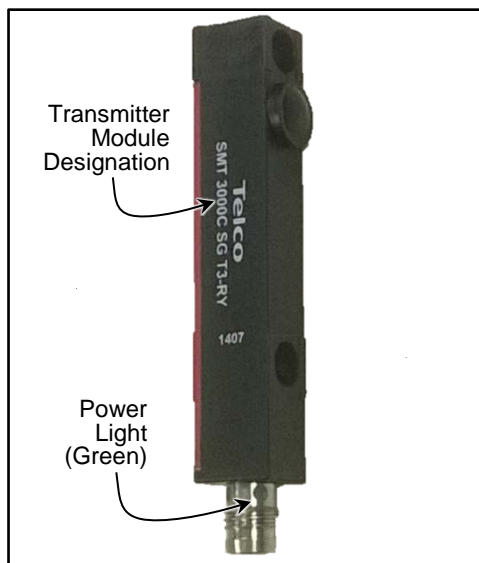
## INSTALLATION-PHOTO EYES



**Figure 76**

The transmitter and receiver can be identified in two ways. The transmitter is designated SMT 3000 on the white label or by a single green light that comes on at the clear end of the transmitter. (See Figure 77) The receiver is designated SMR 3215 on the white label or by a yellow light that illuminates only when it is in proper alignment with the transmitter. (See Figure 78)

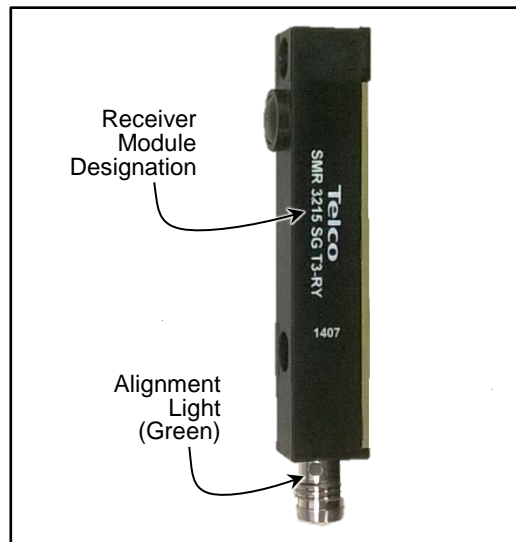
*NOTE: When the cable is connected to the photo eye, there is only a 1/4-inch window to see the green or yellow LED light.*



**Figure 77**

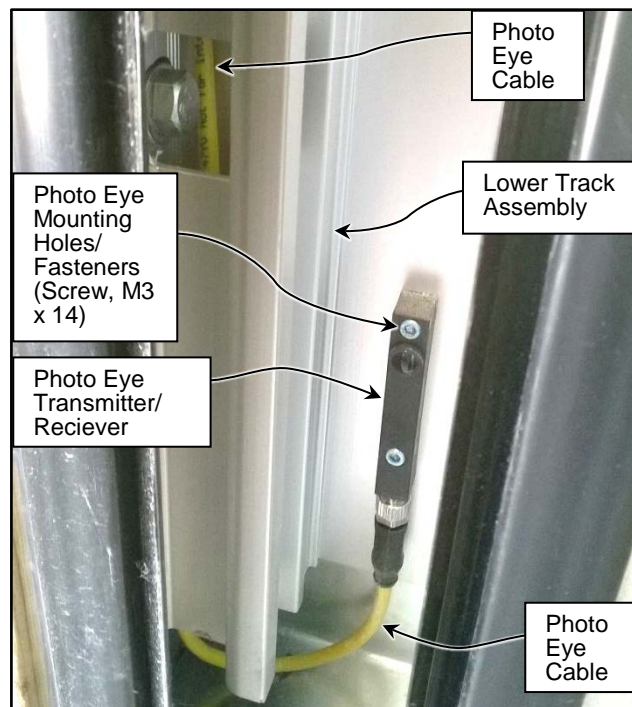
1. Manually move the door panel up to fully access the photo eye mounting position in the lower track assembly.

2. Locate each photo eye module and its required wire cable. (See Figure 77 and Figure 78)



**Figure 78**

3. Locate the holes for installing each photo eye @ the base of each lower track assembly. (See Figure 79)
4. Route each cable up through the vertical raceway of the side column lower track assembly as shown. (See Figure 79)



**Figure 79**

5. Route the non-drive side photo eye cable straight up to the top of the side column assembly, then across the rear spreader as shown. Secure the cable as shown or use a comparable method such as zip tie's. The rear spreader runs between the side columns along the top. (See Figure 80)

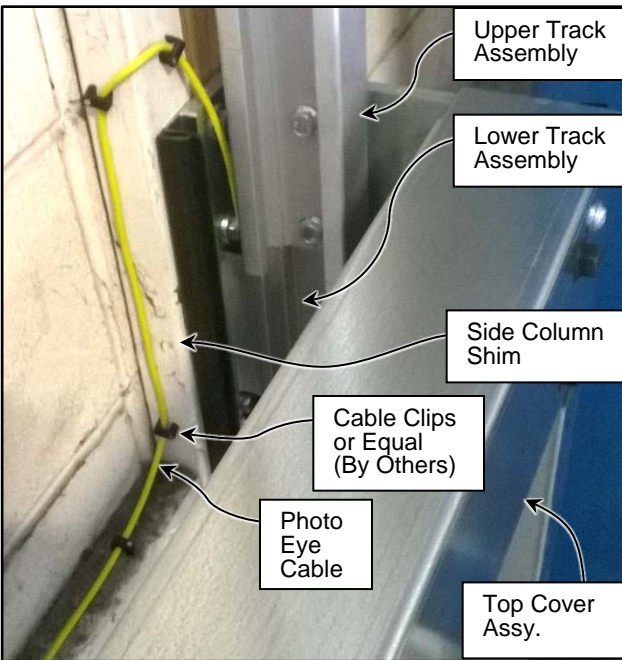


Figure 80

6. Continue routing this cable through to the drive side's side column assembly and over to the door junction box as shown. This should be located in the proximity behind the motor assembly on the drive side. (See Figure 81)

*NOTE: Route cable away from all chains, gears, drive shaft, and any moving part(s). Separate high – and low - voltage cables to prevent signal interference.*

7. Remove the junction box cover and save the hardware for later use. Pass the cable through the double-cable cord grip on the side of the junction box. Do not tighten the cord grip at this time. (See Figure 81)

*NOTE: Take note that the two available cord grips are different – one is a single-cable grip, the other a double grip.*

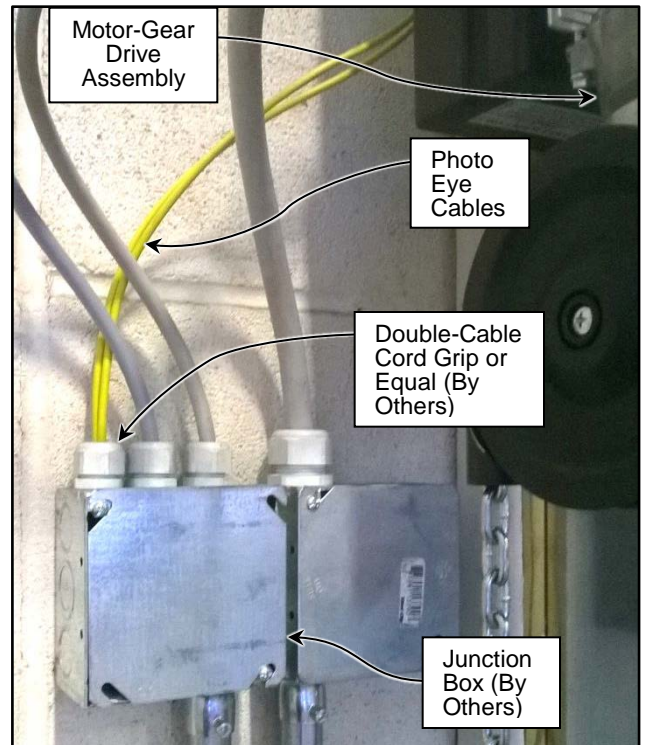


Figure 81

8. Route the drive side photo eye cable in the same fashion up and out the lower track assembly at the top. Also route it to the same junction box as shown. (See Figure 81)
9. Tighten the cord grip to lock both photo eye cables to the junction box.

*NOTE: Be sure the path through which the cables are routed hides and protects them from damage. If necessary, run conduit to each mounting bracket to protect the cables. Note the end of the cable intended for the photo eye. DO NOT connect the photo eye cables to the control panel at this time.*



## INSTALLATION-CONTROL SYSTEM

### CONTROL SYSTEM

Once the door has been assembled, see the Rytec System 4 Drive & Control Installation & Owner's Manual for information on control panel installation, electrical connections, and door limit settings.

*NOTE: To expedite the installation of this door, it is recommended that the electrical disconnect and control panel be installed prior to installing the door. Review the layout diagram shipped with your door to determine exactly where these major electrical components are to be located. The control panel and disconnect are typically mounted adjacent to the left side column.*

*If you have any questions regarding this installation, contact your Rytec representative or the Rytec Technical Support Department at 800-628-1909.*

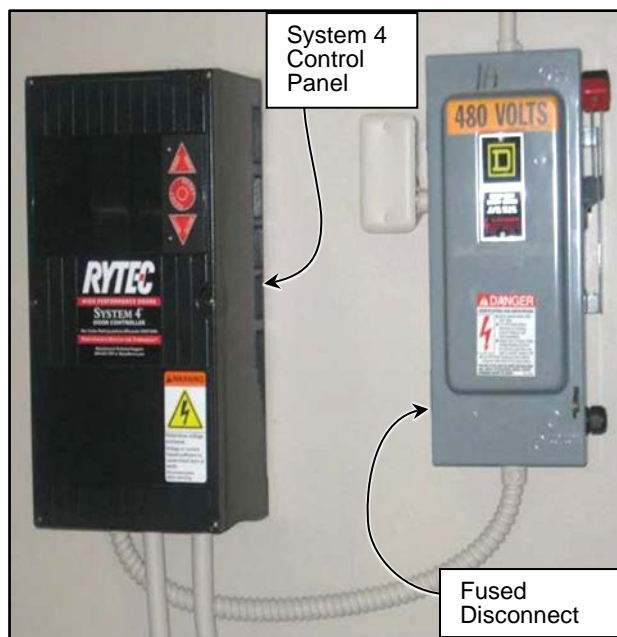


Figure 82

### **⚠ WARNING**

All electrical work must be performed by a licensed or certified electrician. All electrical work must be performed in accordance with all local and state building codes and requirements.

### **⚠ WARNING**

The disconnect must be in the OFF position and properly locked and tagged before performing the following procedure.

**IMPORTANT: All high and low voltage cables must be installed in separate conduit, cut to length with no excess or loops.**

*NOTE: All wiring and required conduit between the electrical disconnect and the control panel, between the control panel and the small junction box near the drive motor, and between the control panel and the floor, must be supplied by the owner of the door. All wiring and conduit must meet all local and state building codes and requirements. Wires provided with the door have been identified with terminal or contact numbers.*

*All conduit entering the control panel **MUST** enter from the bottom. **DO NOT** run any conduit into or through either the top or side of the control panel.*

*Protect the components inside the control panel from metal chips when installing the conduit. Seal the conduit where it enters the control panel – particularly if the conduit is routed from one area to another, where the two areas can have different ambient air temperatures. If the conduit is not sealed properly, condensation can form inside the control panel, which can lead to serious electrical problems.*

### CONTROL PANEL CONNECTIONS

#### Drive Motor to Control Panel

1. Route the drive motor/motor brake power cable, leading from the motor junction box, to the control panel. (See Figure 83)

*NOTE: To properly ground the outer shield of this cable, terminate the end of the cable to the control panel using the grounded cable clamp provided.*



## INSTALLATION-BRAKE RELEASE-HAND CHAIN OPERATORS

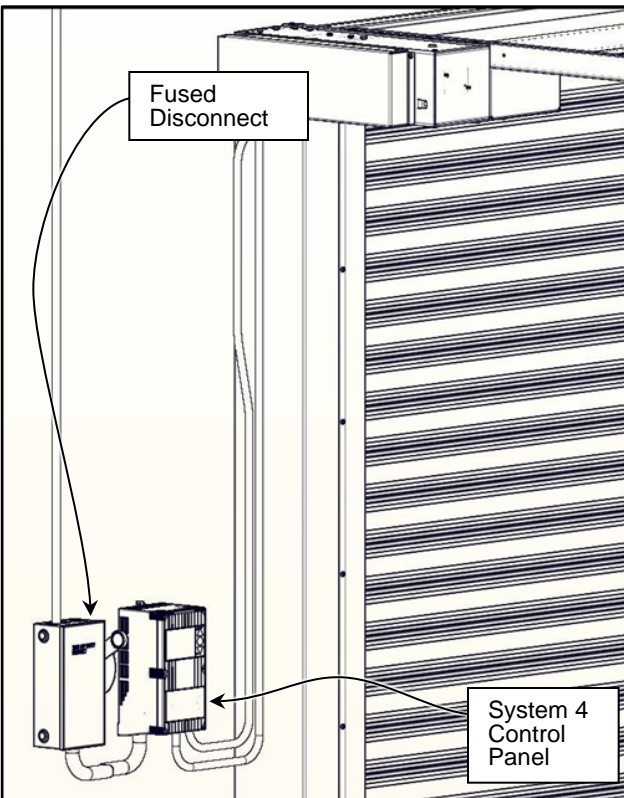


Figure 83

2. Connect the drive motor power supply lines to the control panel as indicated on the electrical schematic.
3. Connect the motor brake power supply lines to the control panel as indicated on the electrical schematic.

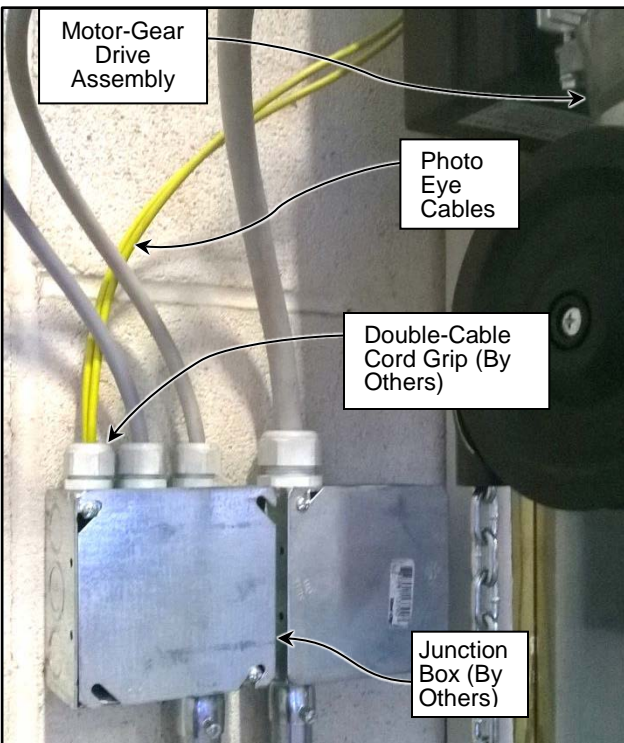


Figure 84

### Field-Installed Photo Eyes to Control Panel

1. The two control cables for the field-installed photo eyes must be routed from the Junction Box through the conduit to the control panel.
2. The control cables can be connected to the control panel as indicated on the electrical schematic shipped with the System 4 Control Panel. (See Figure 84)

### Activators

Rytec recommends setting the limits on the door and operate the door initially without the activators connected. When the limits have been established and the door operated 20 times, then turn OFF the disconnect power and install the activators. Establishing the limits and operating the door allow you to isolate any potential operating issues to the door without the activators connected. Often activators create problems at initial start-up. Connect activators as shown on the schematics provided in the System 4 control panel received with the door.

### BRAKE RELEASE-HAND CHAIN OPERATORS

This Rytec door is equipped with an electric motor brake system that stops the motor and doesn't allow it to freely travel when not running. It may be operated manually. The standard motor contains a shaft driver which may be inserted into the motor end as shown and turned w/ a wrench to move the door. Simply lock the drive into place into the motor and turn the desired direction. (See Figure 85)

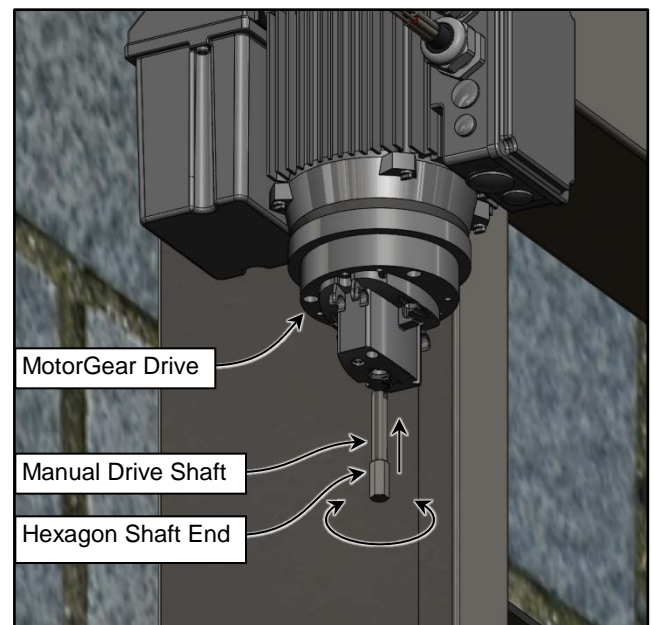


Figure 85

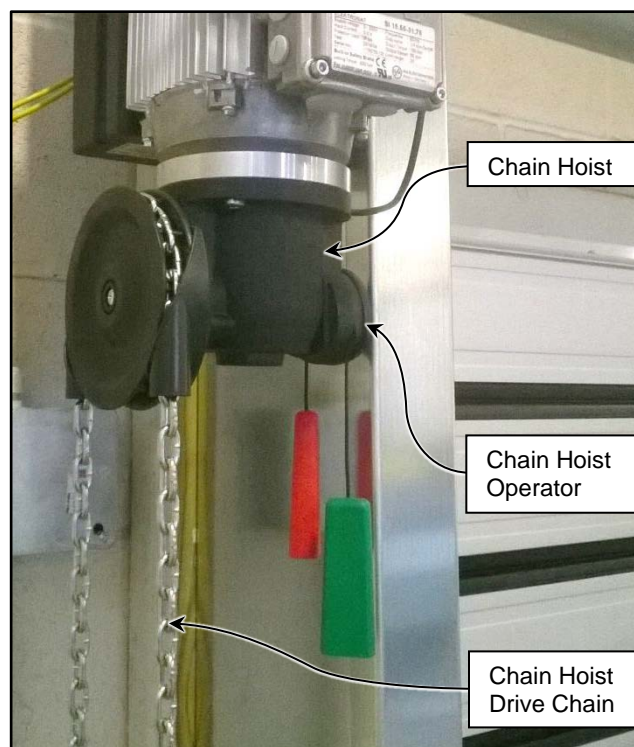
## INSTALLATION-OPERATING CONTROL SYSTEM

It is also equipped with a chain hoist that allows the door to be manually opened or closed in the event of an emergency or power outage. A release system on the motor assembly controls the operation of the chain hoist, located on the bottom end of the drive motor, which is mounted on the drive side of the drive shaft and side column.

### **⚠ WARNING**

**After operating the door manually the open and close settings of the System 4 Control Panel should be checked.**

1. Pull the red handle on the motor assembly to disengage the electric motor and engage the chain hoist. (See Figure 85)



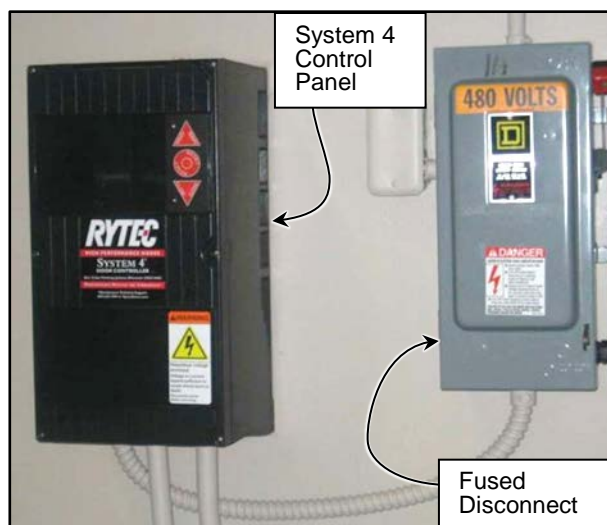
**Figure 86**

2. With the electric motor brake system disengaged and the chain hoist engaged, pull the chain in the direction required to either raise or lower the door panel. (See Figure 86)
3. Pull the green handle on the motor assembly to engage the electric motor/disengage the chain hoist. (See Figure 86)
4. Check the open and closed limit settings on the door. Confirm that they are correct. Refer to "Initial Start-Up" section of the manual as well as the System 4 Drive & Control Installation & Owner's Manual for information on door limit settings.

5. Adjust the limits as required. Cycle and test the door several times to confirm proper settings.
6. Resume operating the door.

## OPERATING CONTROL SYSTEM

The Spiral VP Door offers low-speed and simple design operation with the advantage of providing a secure barrier. All operator inputs and control functions are carried out by the "System 4" drive and control system. (See Figure 87)



**Figure 87**

## MODES OF OPERATION

The door may be operated in 1 way: Manually.

### Manual Mode of Operation

If a momentary contact activator such as a push-button, pull cord, radio control, etc., is used to operate the door:

- The door will open when the device is activated.
- After passing through the door, a similar type of device must be used to close the door.

In summary, in the manual mode, a manually-operated activator is used to open and close the door.

*NOTE: The System 4 control has separate inputs programmed with or without the use of timers. Any input utilizing a timer can be turned OFF by simply reducing the time to 0 seconds. (See the System 4 Drive & Control" manual)*

## INITIAL START-UP

*NOTE: Once you have set your door limits during this procedure they are permanently stored.*



**CAUTION**

Initial system start-up is only to occur once the door and control panel have been properly installed, wired, and all preliminary door adjustments made. Failure to follow the instructions as outlined in the installation manual that was provided with your door can result in damage to the door upon initial system start-up.

1. Pull the red handle on the motor assembly to disengage the electric motor drive. Using the chain hoist manually move the door to the fully-closed position.
2. Apply power to the control system. During the system initialization, the display will indicate that the door close and open limits must be set by displaying the associated fault codes (F700 and F762 will scrawl across the display). (See Figure 88)

Then the message Push ● [press reset (●) key] will appear on the display. (See Figure 89)

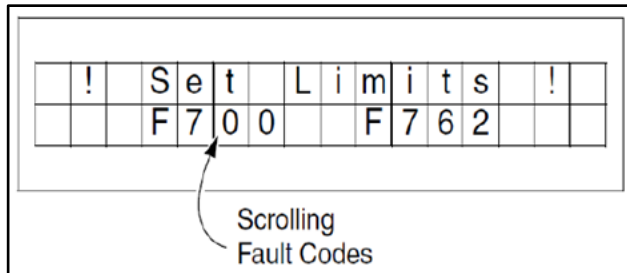


Figure 88

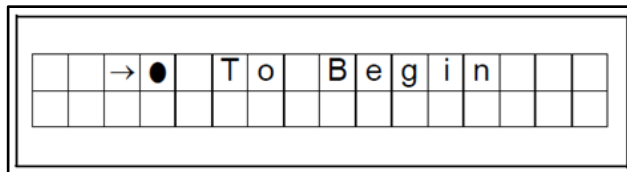


Figure 89

**CAUTION**

The door open and close limits are to be set only after verifying that the motor (door) operates in the proper direction when the up (▲) and down (▼) keys are pressed.

3. After the reset (●) key has been pressed one time, verify the motor rotation by briefly pushing the up (▲) and down (▼) keys on the control panel.

The door should open with the up (▲) key and close with the down (▼) key. If the door does not operate in this manner, reverse two of the motor wires (not the incoming three-phase supply

wires).

*NOTE: Reversing the incoming supply voltage lines will not solve the motor rotation problem. Switch the T1 and T2 motor leads.*

4. Now set the door close and open limits according to the instructions on the display.
5. The close limit must be set first, use the down (▼) arrow to position the bottom edge gently on the floor. (See Figure 90) DO NOT drive the edge into the floor. When the proper position is achieved push and hold the Reset (●) until the display reads, "Close limit Set, to open position".

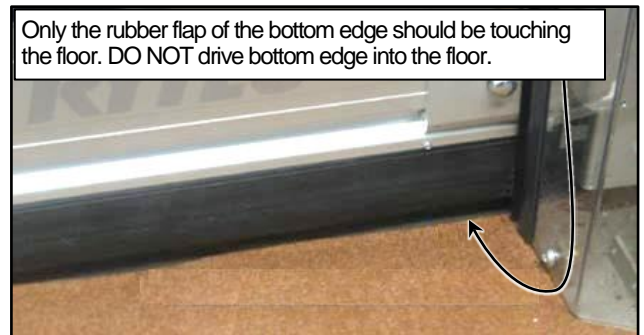


Figure 90

6. The control will prompt you to set the open position. Use the Open arrow (▲) to position the door in the open position. The open limit should be set at or slightly below the door's top lintel as shown. (See Figure 91)

*NOTE: If any error messages are displayed, some of the required input connections may be missing. Once the missing inputs are connected, perform the close and open limit set-up. Otherwise, refer to "FAULT CODES" section in the "System 4 Drive & Control" manual.*



## FINAL ADJUSTMENTS-SYSTEM RESET

Figure 91

7. After the limit positions have been set the door will automatically synchronize. During the automatic synchronization process the display will read "I:515, I:510" this is normal, **DO NOT** make any changes to the door until the 500 messages have left the screen, This could take up to 15 cycles to complete.

### SYSTEM RESET

#### Photo Eyes

If the set of photo eyes detects that an object has entered the door opening while the door is closing, the door will reverse direction and move to the fully open position. The door will remain parked in this position until the object has been removed from within the opening. If the photo eyes detect the interruption, the display will read "Photoeye Fr".

After the door is closed, the display will read "Spiral Door" and the control system will wait for operator input.

### FINAL ADJUSTMENTS

#### PHOTO EYES

##### Field Mounted Photo Eyes

The two modules that make up the set of photo eyes each have one indicator light. The eyes are receiving power and are aligned when the indicator on the emitter module is green and the indicator on the receiver module is yellow. If both indicators are green, the eyes are not aligned.

When the eyes are aligned and the beam of light between them is interrupted, the receiver module indicator will switch from yellow to green. Restoring the beam of light will cause the indicator to switch back to yellow.

#### TESTING PHOTO EYE SYSTEM



**To prevent injury to personnel and damage to equipment, the photo eye circuit must be thoroughly tested to make sure the photo eye system is operating correctly.**

1. With power applied to the control panel and the door in the fully-open position, press the door Close (v) button to activate the door.
2. When the door is about halfway closed, break the beam of light between the front set of eyes only.

The moment the beam of light is interrupted, the control panel should reverse the direction of the

door and park it in the fully-open position. When the beam of light is restored, the door may be closed after once again pressing the Close (v) button.

*NOTE: When the front beam of light is interrupted, the display on the control panel will read "Photo Eye – Fr".*

### INSTALLING COVERS



**The disconnect must be in the OFF position and properly locked and tagged before performing the following procedure.**

1. Check to make sure the side columns, track assemblies, and drive shaft assembly have remained plumb, square, and level. Also check that all floor and wall anchors have remained securely fastened.
2. Attach the left and right hand side column covers. (See Figure 92)
3. Install covers to the top drive shaft assembly as required. (See Figure 93)

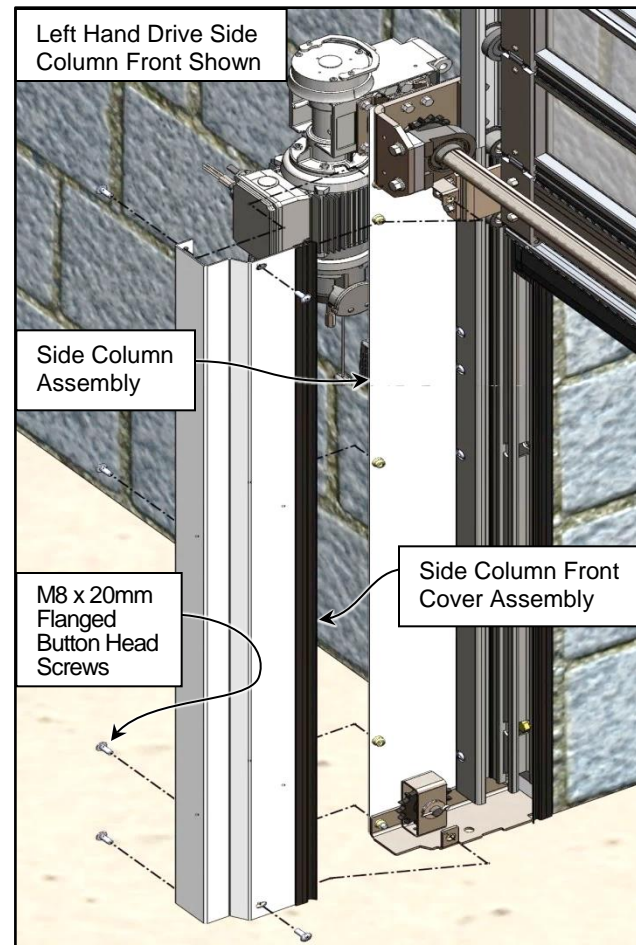


Figure 92

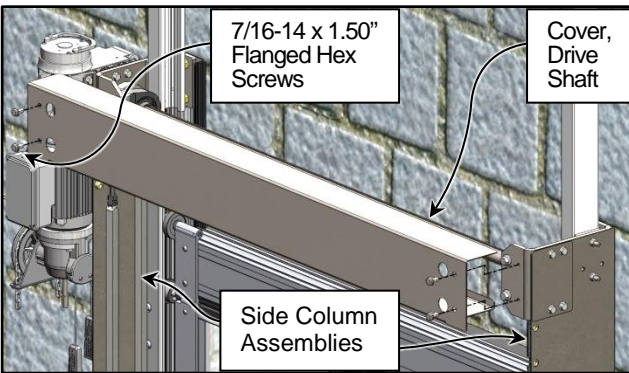


Figure 93

### FINAL CHECKS

*NOTE: Check all the following door components and systems once the door panel has been cycled at least 20 times.*

**Side Columns/Track Assemblies:** Check that side columns and track assemblies are plumb and square and that all anchor bolts are secure and tight.

**Drive Assembly:** Check that all components and mounting hardware are in place, properly tightened, and moving parts properly aligned and lubricated.

**Door Panel Track:** Check the alignment of each door track assembly, particularly where the tracks join up between the side columns and head assembly.

**Covers and Panels:** Check that all covers and panels are in place and securely fastened.

**Motor:** Check that the door travels in the proper direction when the button is pressed. Check that it is securely mounted, properly positioned, and drive

keys installed.

**Bottom Edge:** Check that it works/seals properly. As the door is closing, if the bottom edge makes contact with and seals against the floor as described in the "INITIAL START UP" section on page 29, it is operating properly. If not the limit settings should be checked and possibly readjusted. If this doesn't resolve the issue check the bottom bar for damage or defects.

**Photo Eyes:** Check that they work properly. As the door is closing, if the light beam between the set of photo eyes is interrupted, the door should return to the fully open position as described in the "FINAL ADJUSTMENTS-PHOTO EYE SYSTEM" section on page 31.

**Drive Chains:** Check that each drive chain is properly tensioned and that the ends of each chain are securely clamped to the bottom bar end bracket assembly. Ensure that the gear bracket assembly is level and that the chain runs true.

**Drive Chain Gears:** Make sure each gear bracket is properly secured to the base plate of the side column.

**Activators:** Check that they operate as specified by the manufacturer.

**Caulk:** Ensure that the side columns and head assembly are caulked where they meet the wall of the building. (Supplied by others)

