

R Y T E C

Spiral[®] HZ[®]

Installation Manual



P.O. Box 403, One Cedar Parkway, Jackson, WI 53037
Phone 262-677-9046 Fax 262-677-2058

Rytec website: www.rytecdoors.com Rytec On-line store: www.rytecparts.com,
Rytec E-mail: helpdesk@rytecdoors.com, Parts E-mail: parts@rytecdoors.com

[Revision: June 5, 2013 R0915016, ©Rytec Corporation 2009]

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APPROVAL DADE COUNTY

The following information is from the Building Code Compliance Office in Miami-Dade County, Florida. The Spiral Hurricane door has been designed to comply with the High Velocity Hurricane Zone of the Florida Building code.

The “Hilti Kwik Bolt II Mechanical Expansion anchor for Concrete and Masonry Elements” shall be supplied by Rytec Doors and approved by the Building Code Compliance Office in Miami, Florida. If there are any questions about the products in use, please contact:

Rytec Corporation
One Cedar Parkway
Jackson, WI 53037
Phone: 262-677-9046
Toll-Free: 888-GO-RYTEC (888-467-9832)
Fax: 262-677-2058

Or
Building Code Compliance Office
Metro-Dade Flagler Building
140 West Flagler Street, Suite 1603
Miami, Florida 33130
Phone: 305-375-2902
Fax: 305-372-6339



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION
NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599
www.miamidade.gov/economy

Rytec Corporation
One Cedar Parkway
Jackson, WI 53037

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER-Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Model Spiral HZ Aluminum Roll-up Door up to 16'-0" Wide

APPROVAL DOCUMENT: Drawing No. **9B963-R5**, titled "Spiral Rollup Door, Model Spiral HZ", Sheets 1 through 4 of 4, dated 10/02/2006, with revision dated 07/27/2012, prepared by HR Engineering, Inc, signed and sealed by Allen N. Reeves, P.E., bearing the Miami-Dade County Product Control renewal stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

LABELING: A permanent label with the manufacturer's name or logo, city, state, model/series number, the positive and negative design pressure rating, indicate impact rated if applicable, installation instruction drawing reference number, approval number (NOA), the applicable test standards, and the statement reading 'Miami-Dade County Product Control Approved' is to be located on the door's side track, bottom angle, or inner surface of a panel.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **renews NOA # 10-0913.03** and consists of this page 1 and evidence page E-1, as well as approval document mentioned above.

The submitted documentation was reviewed by **Carlos M. Utrera, P.E.**



[Signature]
11/27/2012

NOA No. 12-0917.05
Expiration Date: November 8, 2017
Approval Date: December 6, 2012
Page 1

APPROVAL DADE COUNTY NOTICE OF ACCEPTANCE

Rytec Corporation

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **9B963-R5**, titled "Spiral Rollup Door, Model Spiral HZ", Sheets 1 through 4 of 4, dated 10/02/2006, with revision dated 07/27/2012, prepared by HR Engineering, Inc, signed and sealed by Allen N. Reeves, P.E.

B. TESTS

1. Test report on Forced Entry Resistance Test per FBC, TAS 202-94 of a Model SST-S Roll up Door, prepared by Architectural Testing, Inc., Test Report No. **C1821.01-602-18**, dated 09/04/2012, signed and sealed by Shawn G. Collins, P.E.

"Submitted under NOA # 06-1017.07"

2. Test report on Large Missile Impact Test per FBC, TAS 201-94, Cyclic Wind Pressure Test per FBC, TAS 203-94 and Uniform Static Air Pressure Test per FBC, TAS 202-94 of Series/ Model Spiral-HZ overhead doors, prepared by ETC Laboratories, Test Report No. **ETC-05-844-16366.0**, dated 04/17/2006, signed and sealed by Joseph Labora Doldan, P.E.
3. Test report on Smoke Density per ASTM D2843, Rate of Burning per ASTM D 635 and Self Ignition per ASTM D 1929 of door plastic materials, prepared by ETC Laboratories, Test Report No. **ETC-06-844-17497.1**, dated 05/09/2006, signed and sealed by Joseph Labora Doldan, P.E.
4. Test report on Tension per ASTM E8, of door aluminum skin, prepared by ETC Laboratories, Test Report No. **ETC-06-844-17585.0**, dated 05/08/2006, signed and sealed by Joseph Labora Doldan, P.E.

C. CALCULATIONS *"Submitted under NOA # 08-1024.03"*

1. Calculations for Roll-up Door, Spiral SST-HZ, prepared HR Engineering, Inc, dated 10/31/2008, sheets 1 through 5, signed and sealed by Allen N. Reeves, P.E.

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER)

E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **11-0926.07**, issued to Dyplast Products LLC, for their Expanded Polystyrene Block Type Insulation, approved on 11/10/2011 and expiring on 01/11/2017.

F. STATEMENTS

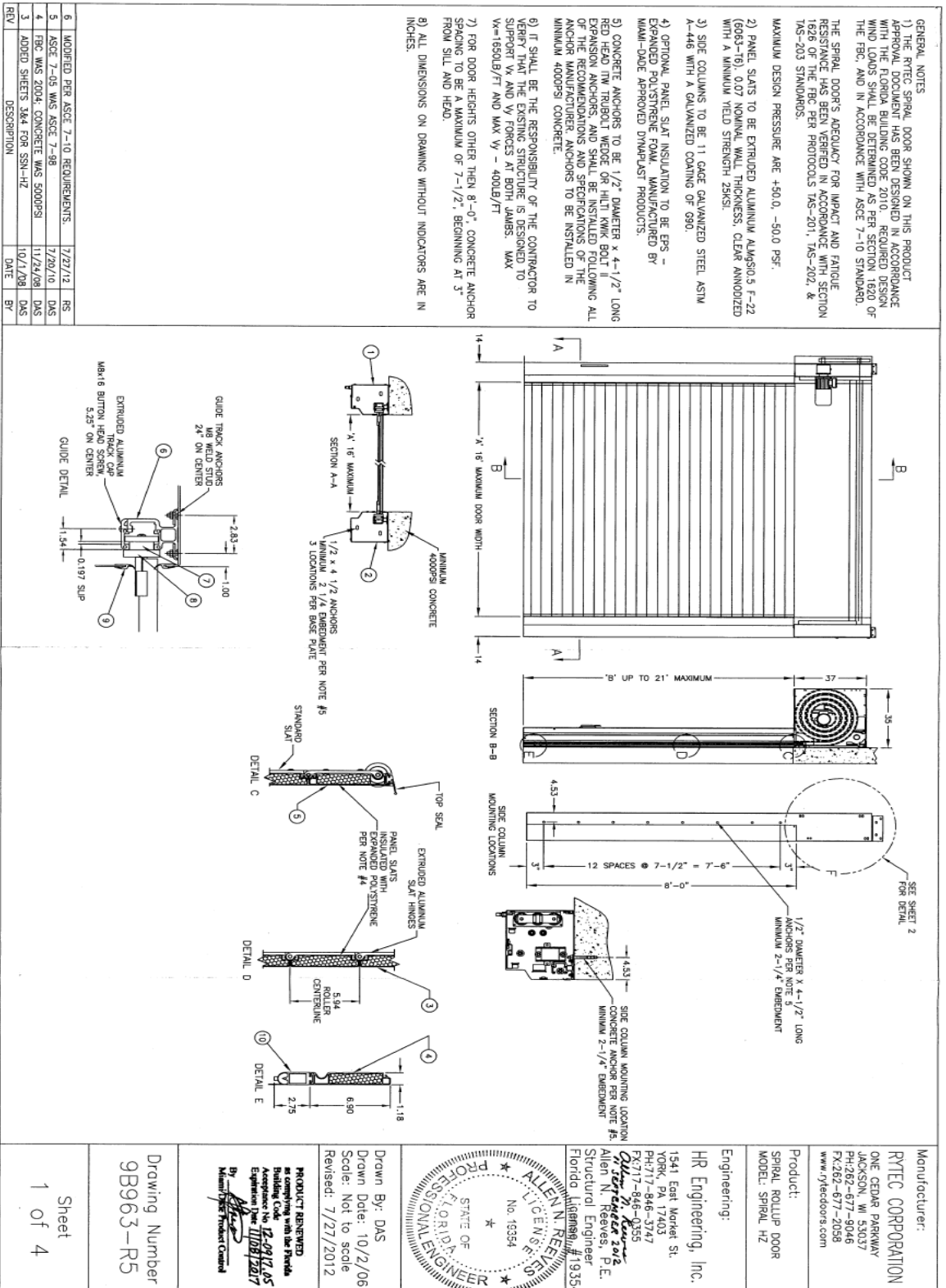
1. Statement letter of code conformance to 2010 FBC issued by HR Engineering, Inc., dated 07/30/2012, signed and sealed by Allen N. Reeves, P.E.
2. Statement letter of no financial interest issued by HR Engineering, Inc., dated 07/27/2012, signed and sealed by Allen N. Reeves, P.E.



11/27/2012

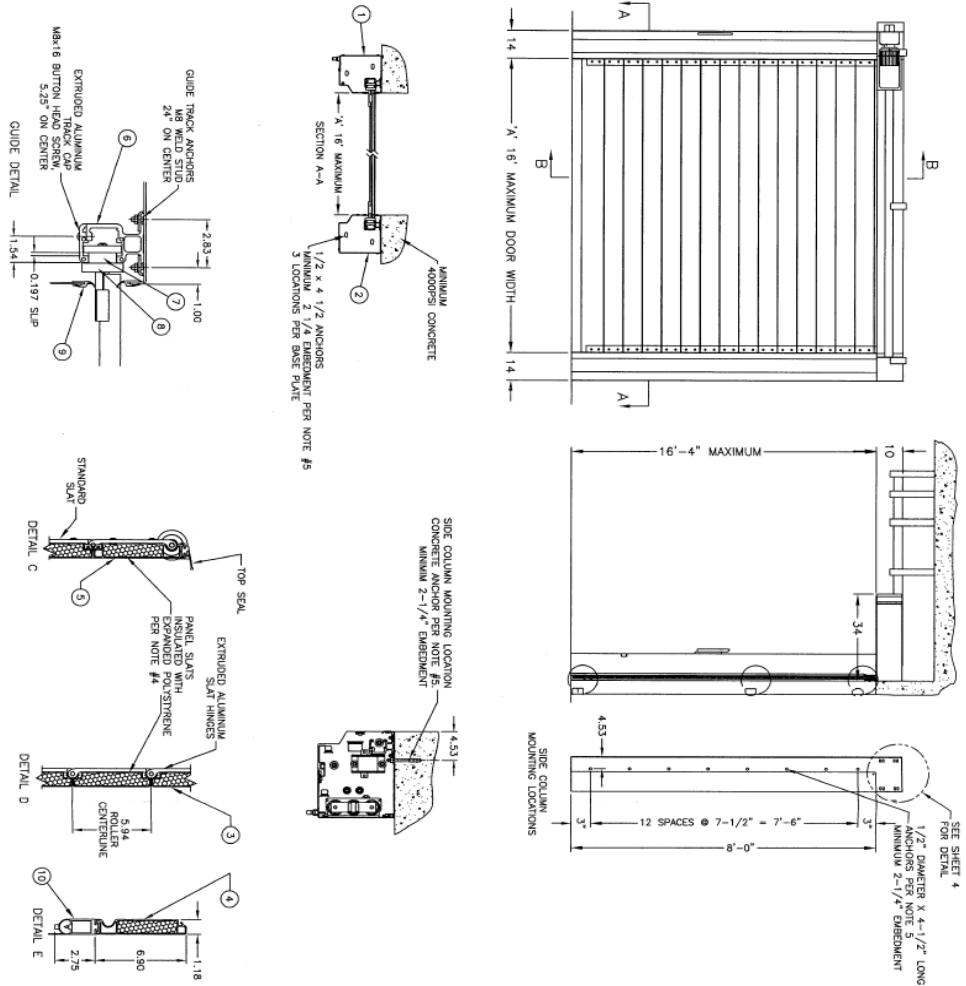
Carlos M. Utrera, P.E.
Product Control Examiner
NOA No. 12-0917.05
Expiration Date: November 8, 2017
Approval Date: December 6, 2012

APPROVAL DADE COUNTY – DOOR DIMENSION DRAWING



APPROVAL DADE COUNTY DOOR DIMENSION DRAWINGS

- GENERAL NOTES**
- 1) THE RYTEC SPIRAL DOOR SHOWN ON THIS PRODUCT APPROVAL DOCUMENT HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 2010. REQUIRED DESIGN AND CONSTRUCTION SHALL BE DETERMINED AS PER SECTION 1605 OF THE FBC, AND IN ACCORDANCE WITH ASCE 7-10 STANDARDS.
 - 2) THE SPIRAL DOOR'S ADEQUACY FOR IMPACT AND FATIGUE RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1626 OF THE FBC PER PROTOCOLS TAS-201, TAS-202, & TAS-203 STANDARDS.
 - 3) MAXIMUM DESIGN PRESSURE ARE +50.0, -50.0 PSF.
 - 4) PANEL SLATS TO BE EXTRUDED ALUMINUM ALMG30.5 F-22 (6063-T6), 0.07 NOMINAL WALL THICKNESS. CLEAR ANODIZED WITH A MINIMUM YIELD STRENGTH 25KSI.
 - 5) SIDE COLUMNS TO BE 11 GAGE GALVANIZED STEEL ASTM A-446 WITH A GALVANIZED COATING OF 090.
 - 6) OPTIONAL PANEL SLAT INSULATION TO BE EPS - MAH-DAC APPROVED DYNAPLAST PRODUCTS.
 - 7) CONCRETE ANCHORS TO BE 1/2" DIAMETER x 4'-1/2" LONG RED HEAD TITANIUM TUBUL W/ 1/2" DIA. HITCH W/ 1/2" DIA. EXPANSION ANCHORS. AND SHALL BE INSTALLED FOLLOWING ALL OF THE RECOMMENDATIONS AND SPECIFICATIONS OF THE ANCHOR MANUFACTURER. ANCHORS TO BE INSTALLED IN MINIMUM 4000PSI CONCRETE.
 - 8) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THE EXISTING STRUCTURE IS DESIGNED TO SUPPORT Vx AND Vy FORCES AT BOTH JAMBS. MAX Vx=1850LB/FT AND MAX Vy = 400LB/FT.
 - 9) FOR DOOR HEIGHTS OTHER THEN 8'-0", CONCRETE ANCHOR SPACING TO BE A MAXIMUM OF 7'-1/2", BEGINNING AT 3" FROM SILL AND HEAD.
 - 10) ALL DIMENSIONS ON DRAWING WITHOUT INDICATORS ARE IN INCHES.



Manufacturer:

RYTEC CORPORATION

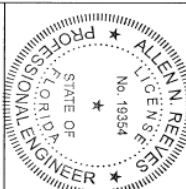
ONE CEDAR PARKWAY
JACKSON, WI 53037
PH:262-677-9046
FX:262-677-2058
www.rytecdoors.com

Product:

SPIRAL ROLLUP DOOR
MODEL: SPIRAL HZ

Engineering:

HR Engineering, Inc.
1541 East Market St.
YORK, PA 17403
PH:717-846-3747
FX:717-846-0355
Gregory H. Rutter
Allen R. Rutter, P.E.
Structural Engineer
Florida License #19354



Drawn By: DAS

Drawn Date: 10/2/06

Scale: Not to scale

Revised: 7/27/2012

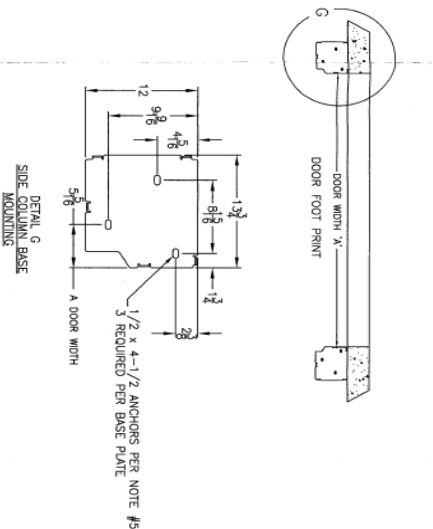
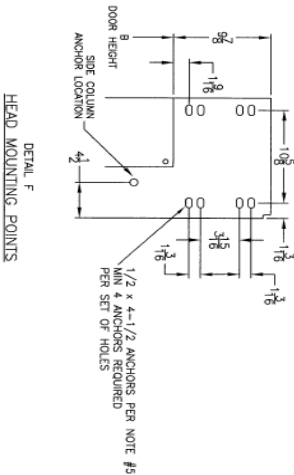
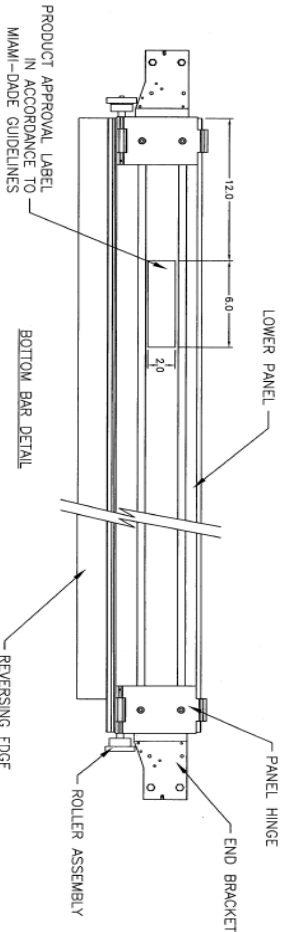
PRODUCT REVIEWED
in compliance with the Florida
Building Code 16-0912.05
Approved Date: 11/04/2017
By: *[Signature]*
Inspector: *[Signature]*

Drawing Number
9B963-R5

Sheet
3 of 4

BILL OF MATERIAL		
ITEM NO.	DESCRIPTION	MATERIAL
1	SIDE COLUMN, LH	GALVANIZED STEEL, ASTM A-446
2	SIDE COLUMN, RH	GALVANIZED STEEL, ASTM A-446
3	STANDARD PANEL SLAT	AS REQ. ALUMINUM, 6063-T6
4	LOWER PANEL SLAT	1 ALUMINUM, 6063-T6
5	UPPER PANEL SLAT	1 ALUMINUM, 6063-T6
6	GUIDE TRACK	2 ALUMINUM, 6063-T6
7	ROLLER	AS REQ. UHMW-PE (2) 6900ZZ RADIAL BEARINGS
8	GUIDE ROLLER	4 NYLON
9	WEATHERSEAL	4 TPE
10	REVERSING EDGE	1 EPDM

DESIGN PRESSURE RATING	IMPACT RATING
+50 PSF, -50 PSF	LARGE AND SMALL MISSILE IMPACT RESISTANT



Manufacturer:
RYTEC CORPORATION
ONE CEDAR PARKWAY
JACKSON, WI 53037
PH:262-677-9046
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www.rytecdors.com

Product:
SPIRAL ROLLUP DOOR
MODEL: SPIRAL HZ

Engineering:
HR Engineering, Inc.
1541 East Maple St.
XORR, PA 17403
PH:717-846-3747
FX:717-846-0355
Allen N. Reeves
Allen N. Reeves, P.E.
Structural Engineer
Florida License #19354



Drawn By: DAS
Drawn Date: 10/2/06
Scale: Not to scale
Revised: 7/27/2012

PRODUCT REVIEWED
in compliance with the Florida
Building Code
Acceptance By: *10-0917-05*
Expiration Date: *10/08/2017*
By: *[Signature]*
Miami-Dade Product Council

Drawing Number
9B963-R5

INTRODUCTION—DOOR SERIAL NUMBER(S)

INTRODUCTION

The information contained in this manual will allow you to install your Rytec Spiral® HZ 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 control panel.

DOOR SERIAL NUMBER(S)

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

IMPORTANT: *When installing multiple doors of the same model but in different size, verify the serial number in the control panel with the left side column.*

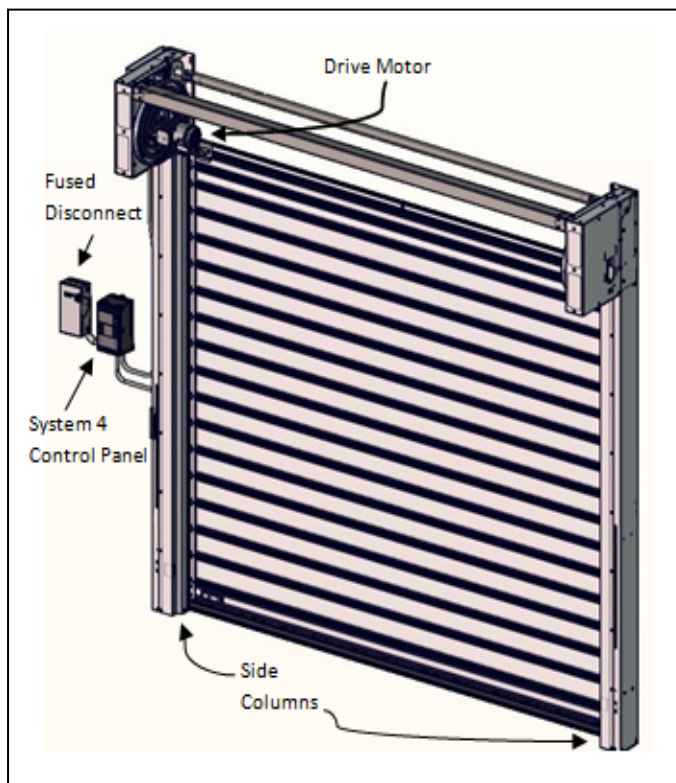


Figure 1

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.

INSTALLATION

MATERIAL, TOOLS, AND EQUIPMENT

1. Rytec provided approved anchors ($\frac{1}{2}$ -in. diameter)
(See “ANCHORING METHODS” on page 3.)
2. Assorted shim stock.
3. Double-sided tape.
4. Package of oversize plastic cable ties.
5. Mounting hardware for field-installed photo eye brackets.
6. Carpenter’s or spirit level (4-ft. minimum length).
7. Carpenter’s square.
8. Hammer drill.
9. Masonry drill bit (for $\frac{1}{2}$ -in. diameter anchors).
10. Three or four bar clamps (18-in. long).
11. Hammer or mallet, and block of wood.
12. Crowbar or pry bar.
13. Assorted hand tools (pliers, tape measure, etc.).
14. Plumb bob with line.
15. Metric and U.S. socket and wrench sets.
16. T-30, T-40, and T-50 Torx drivers.
17. Water level, line level, or transit.
18. Two ladders (taller than height of door opening).
19. Forklift (See “Forklift Requirements” on page 2).

ADDITIONAL REQUIREMENTS

Labor and Site Requirements

1. Two installers.
2. A licensed electrician is required for making all electrical connections.

NOTE: All electrical work must be performed in accordance with local and state 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.

Electrician’s Responsibilities

NOTE: See “CONTROL SYSTEM” on page 19, for complete details on the electrical work to be performed.

1. Install fused disconnect and Rytec control panel.
(See Figure 2 for typical installation.)
2. Install all necessary conduit tubing.
NOTE: Separate high and low voltage conduit.
3. Run electrical power lines to disconnect.
4. Run power lines from disconnect to control panel.
5. Run power lines from control panel to upper junction box.
6. Run power lines from control panel to door motor.
7. Run low-voltage cables from door to control panel.
8. Mount rear photo eyes.
9. Wire low-voltage safety devices and activators (if used).

Forklift Requirements

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

- 4,000-pound lift capacity
- minimum height ability — door height, plus 12-in.
- 48-in. wide fork
- side-shift capability (desired)

Floor-Loop Activator Requirements (If Used)

If a floor-loop activator was ordered and shipped with your Rytec door, the following additional items will be required to install the activator:

NOTE: For complete floor-loop installation instructions, refer to the manual shipped with the activator.

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.

TYPICAL INSTALLATION

Figure 2 shows the location of the major components of your Spiral HZ door. This illustration should be used as reference only and should not be used as part of the installation instructions.

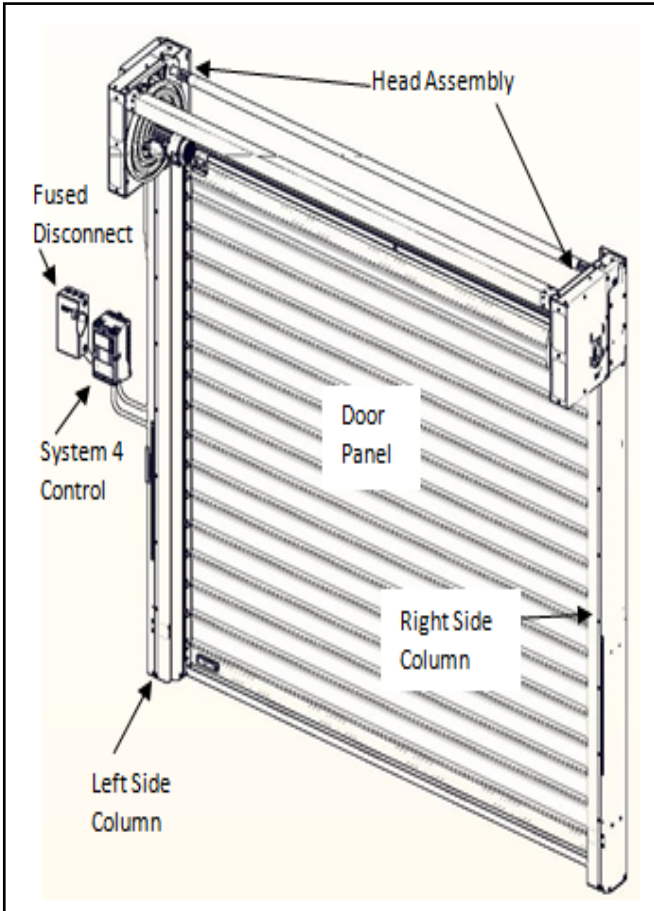


Figure 2

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

MINIMUM CONCRETE REQUIREMENT

Minimum 4000 PSI concrete required for installation. (See Figure 3.)

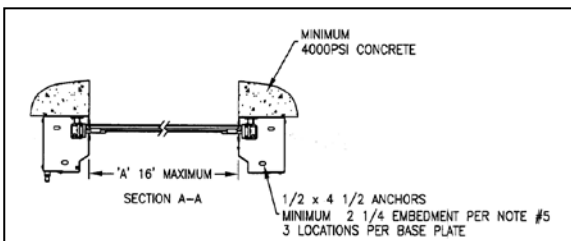


Figure 3

ANCHORING METHODS

The Rytec Spiral HZ has been designed in accordance with the Florida building code 2010. Required design wind loads determined as per section 1620 of the FBC (Florida Building Code) and in accordance with ASCE 7- 10 standards.

The Spiral HZ door's adequacy for impact and fatigue resistance has been verified in accordance with section 1626 of the FBC per protocols TAS-201, TAS-202, & TAS-203 standards.

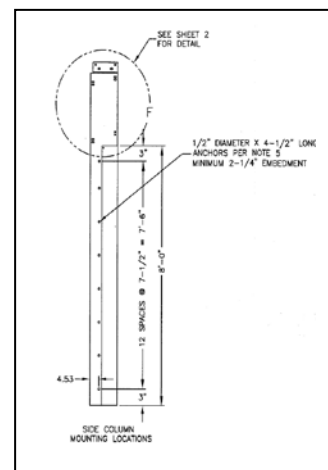
Maximum design pressures are +50.0, -50.0 PSF.

To maintain the hurricane rating the door **MUST** be installed on a concrete wall minimum 4000 PSI.

The anchor hardware has been provided by Rytec to meet the specifications of the hurricane rating. Failure to use the provided hardware and install in the specific method will void the warranty.

The anchors are $\frac{1}{2}$ " x $4\frac{1}{2}$ " and must have a minimum embedment of $2\frac{1}{4}$ " into the concrete. All anchor hole locations must be filled. There are 3 anchor locations in the base of the side columns.

Starting 3 inches from the floor and every $7\frac{1}{2}$ " in the side columns, located 4.53 inches from the inside edge of the side column. (See Figure 4.)



Right hand side column shown.

Figure 4

*NOTE: Rytec Corporation provides the approved anchors for installation. These anchors **MUST** be use. Hilti Kwik bolt II expansion anchors $\frac{1}{2}$ " diameter x $4\frac{1}{2}$ " long.*

DETAILS - TOP OF SIDE COLUMN

The top of the side column has a number of anchor holes. The anchor holes are located very near each other. One inside and one outside hole must be used in each location at the top of the side column. A minimum of 2 anchors at each location will be used. (See Figure 5.)

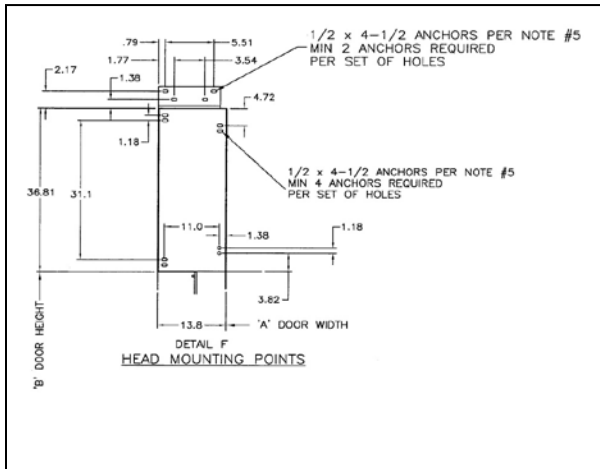


Figure 5

BASE PLATE - ANCHOR LOCATIONS

Each side column base plate has 3 anchor hole locations and all 3 MUST be used. (See Figure 6.)

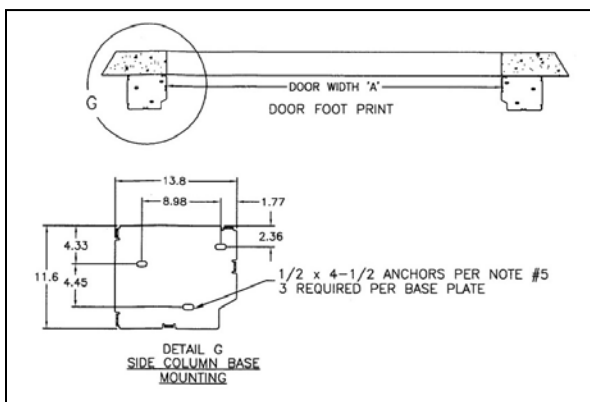


Figure 6

NOTE: 2 ¼" Embedment required for anchor holes.

UNCRATING

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

1. Remove the two side column assemblies, spring pack assemblies, and the small parts carton from the shipping crate. (See Figure 7.)

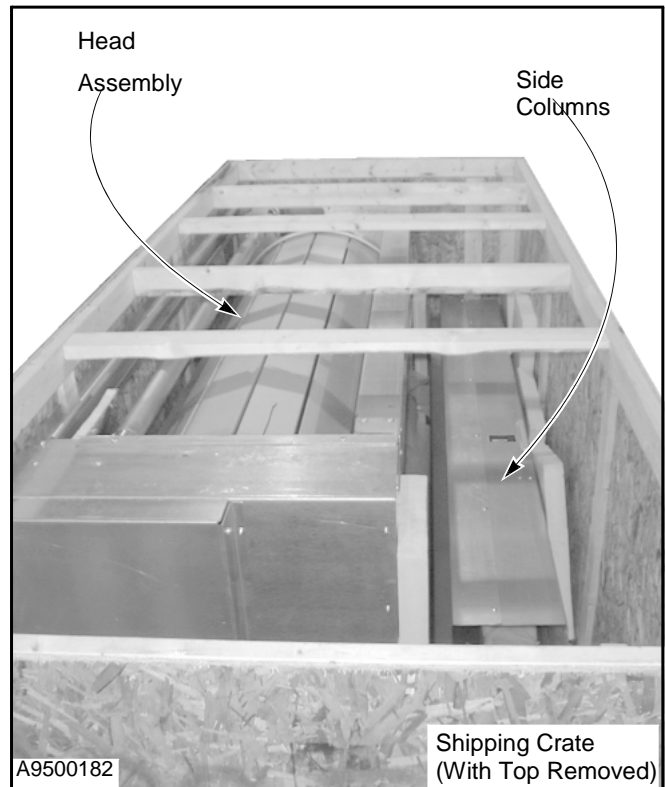


Figure 7

LOCATE CENTERLINE OF DOOR OPENING

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 8.)

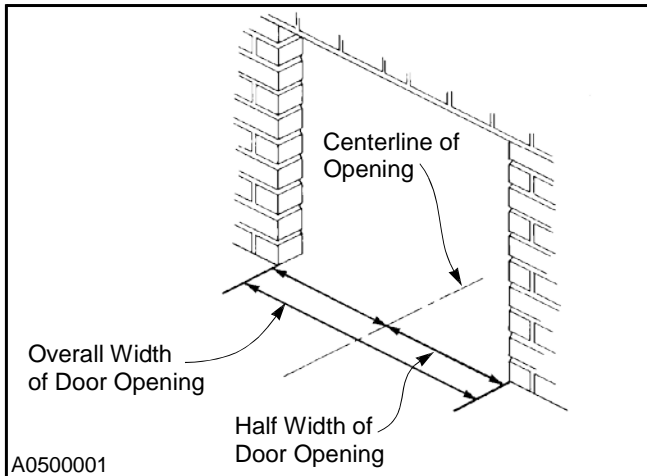


Figure 8

LOCATING SIDE COLUMNS

1. Locate the layout drawing of the door. It should be attached to the small parts carton. This drawing identifies the production width of your door.
2. Using the centerline as a reference point, lay out and mark half of the door's production width along the floor. (See Figure 9.)

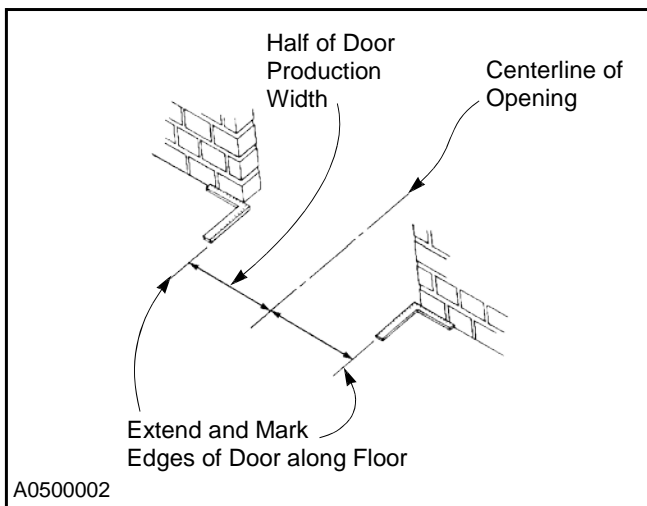


Figure 9

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 that the floor is level across the door opening. The floor must be level within 0.12 in. (3 mm) from side to side. If one side of the opening is higher than the other, a shim under the side column will be required.

Figure 10 and Figure 11 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 in. out of level.

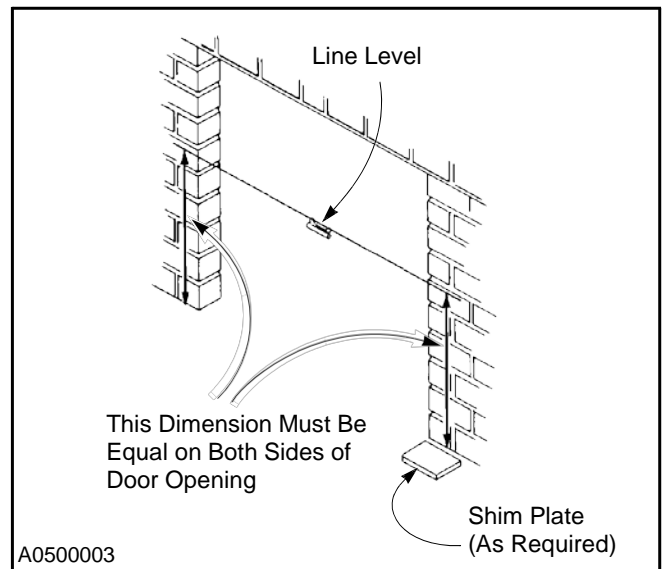


Figure 10

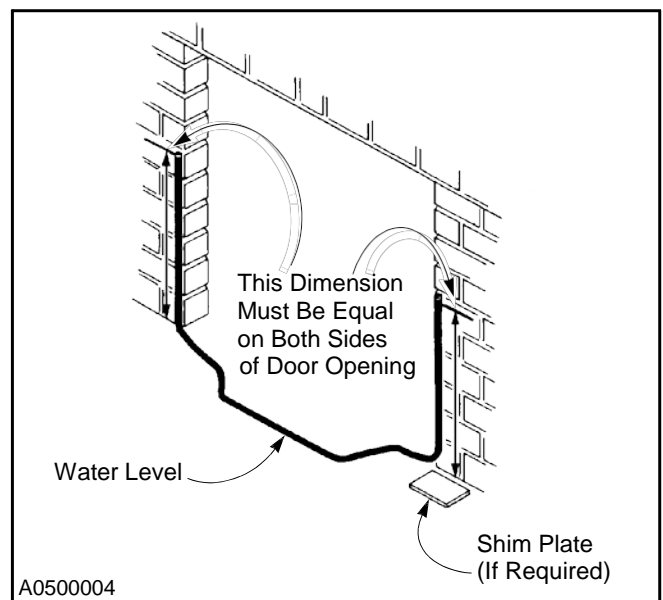


Figure 11

INSTALLATION—SIDE COLUMNS

5. Use a plumb bob 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.

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 12.)

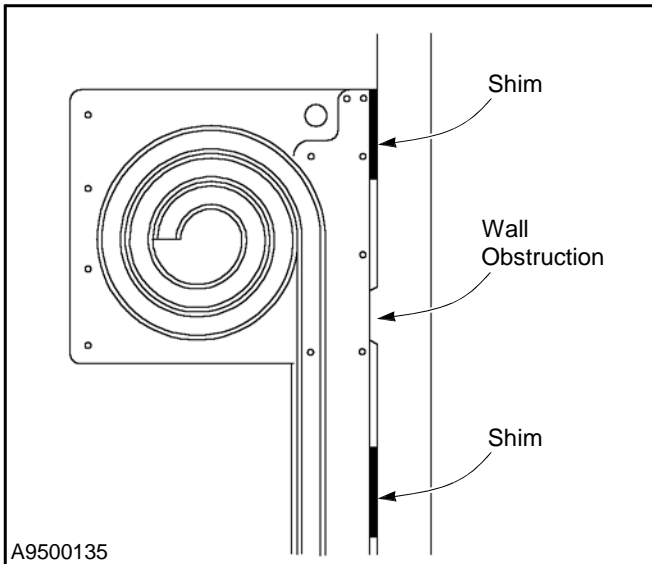


Figure 12

SIDE COLUMNS

1. To install the first side column, first remove and retain the screws used to secure the column cover to the side column assembly. Lift away the cover.
2. Stand the side column assembly on the floor, with the back of the column firmly against the wall. (See Figure 13.)

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

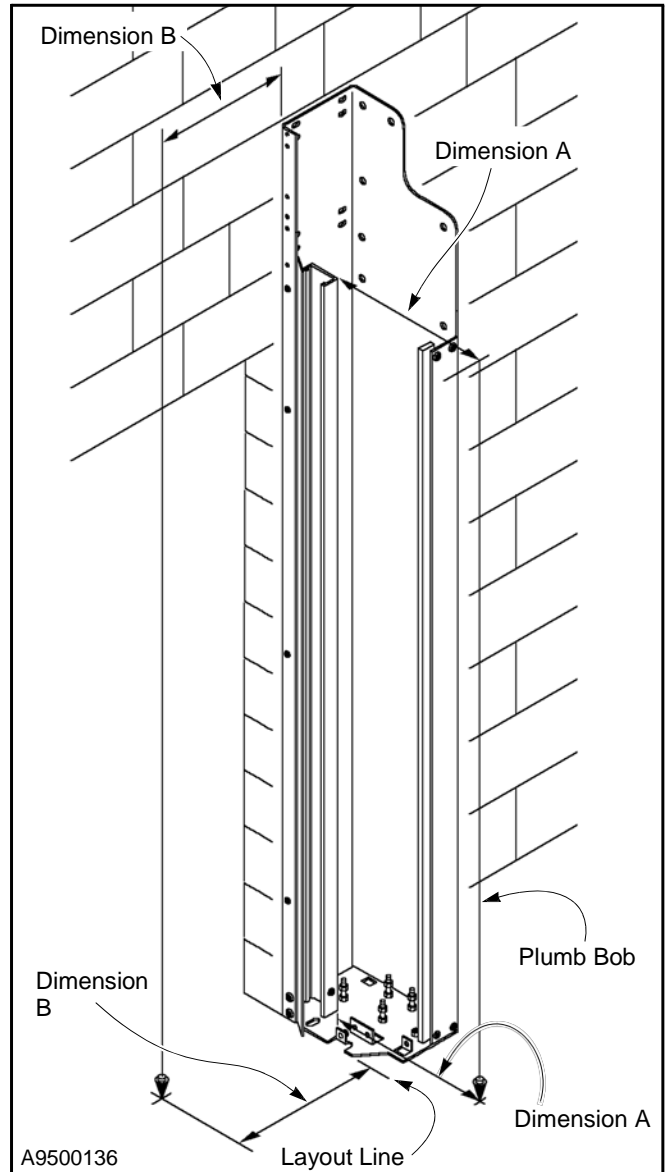


Figure 13

3. Position the column so that it is plumb to the wall and square with 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. To hold the shims in place until the column is secured, attach them to the wall or column with double-sided tape. (See Figure 14.)

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 drop the plumb bob. (See Figure 13.)

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.

Also, measure a few inches away from the side of the column near the top (Dimension B) and drop the plumb bob. (See Figure 13.) 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.

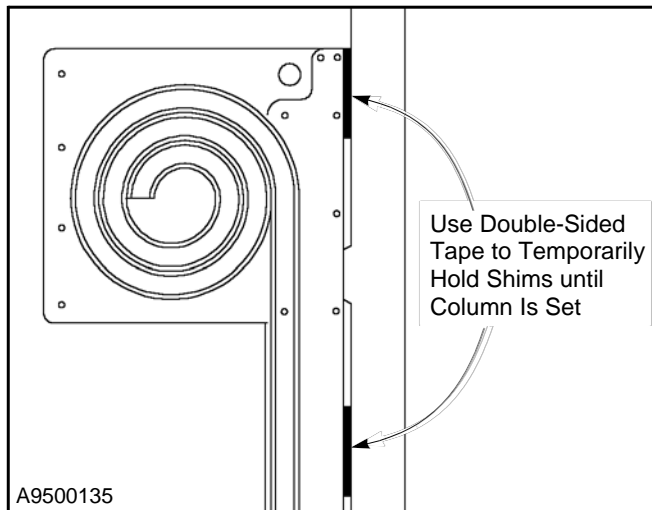


Figure 14

4. Temporarily clamp the side column to the wall once the column is properly positioned.
5. Using the predrilled anchor points in the back of the column as a reference, mark their location on the wall. (See Figure 15.)

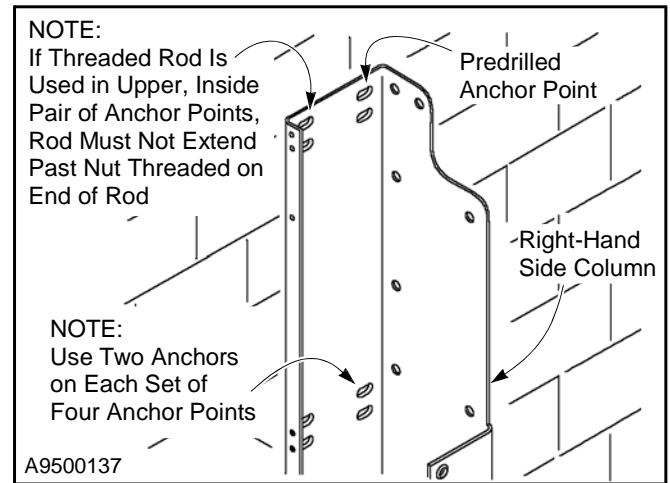


Figure 15

6. Using the predrilled anchor points in the base plate as a reference, mark their location on the floor. (See Figure 16.)

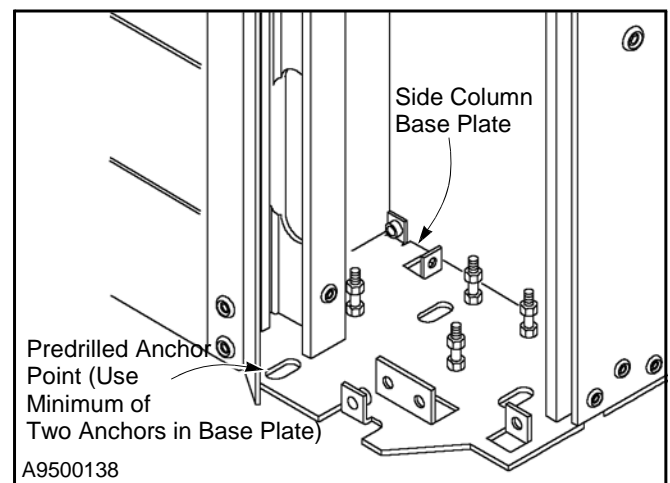


Figure 16

Unclamp and set the column aside. Drill holes into the floor and through the wall for all anchors.

⚠ 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.

7. Reposition and reclamp the side column to the wall. Secure the base plate to the floor with the appropriate anchors. Do not over-tighten the anchors at this time.

INSTALLATION—SPREADER BAR

- Anchor the side column to the wall using the appropriate anchoring method (see “ANCHORING METHODS” on page 3) and all drilled anchor points. Do not tighten the anchors at this time. They should just be snug.
- Mount the remaining side column to the floor and wall in the same manner as outlined for the previous side column.

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

- With both columns set and snugly bolted in place, check the overall squareness of each column. (See Figure 17.)

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.

If either column requires a 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.

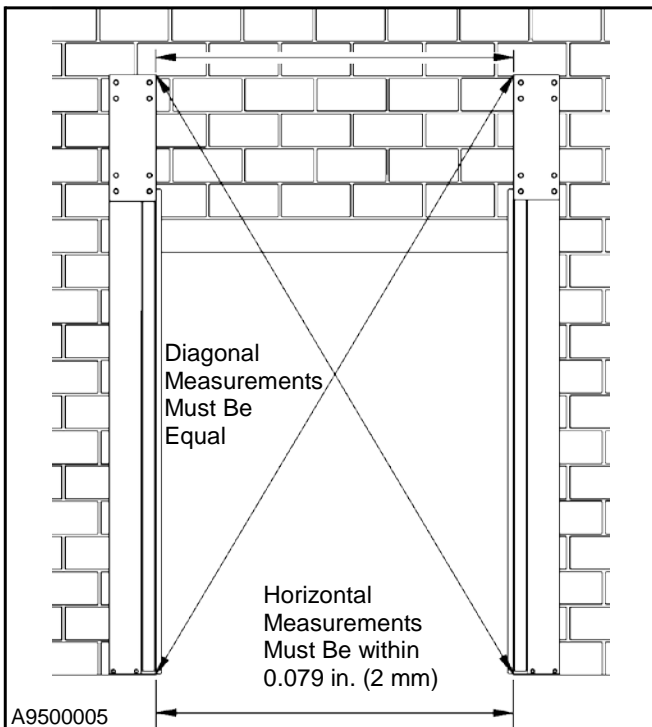


Figure 17

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

SPREADER BAR

To make it possible to install the spreader bar, and the head assembly later on, the door track running along the inside edge of each side column must first be released and slid out of the way.

- Each section of door track is attached to the side column by a series of aluminum clips that are bolted to the back of the column. Loosen the hex nut that locks each clip in place.
- Once each clip is loose, slide the door track to the bottom of the side column.
- With the flat side of the spreader bar facing away from the wall, attach the ends of the spreader to the side columns. Use two M6 x 820 T-30 Torx head screws at each end. The screws are located in the small parts carton. (See Figure 18.)

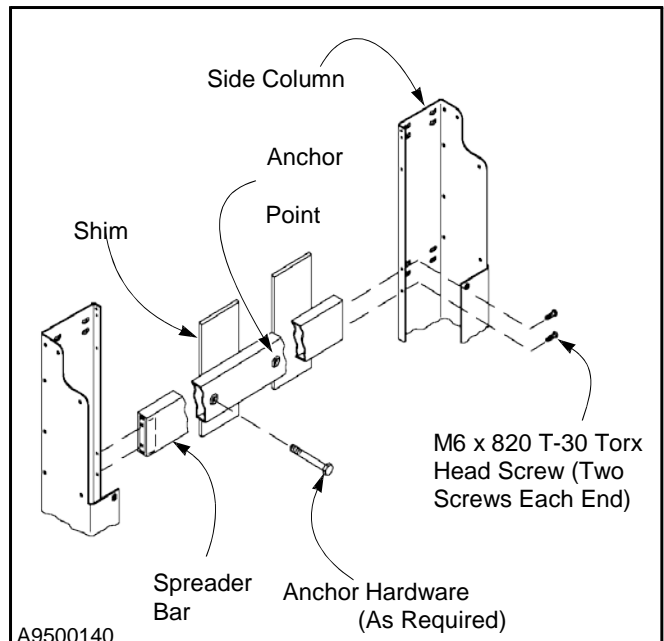


Figure 18

- Using the appropriate hardware, secure the spreader bar to the wall at the two anchor points in the center of the spreader.

NOTE: When securing the spreader to the wall, it will be necessary for you to mark the location of the wall anchors using the holes in the spreader as reference. After drilling the required holes and installing the anchors, permanently secure the spreader bar to the wall.

Also, if shims or spacers were installed behind the side columns, it will be necessary for you to shim behind the spreader as well.

HEAD ASSEMBLY

CAUTION

Lifting pockets are provided on the shipping cradle for some models. (See Figure 19.) If lifting pockets are not provided, place the forks under the cradle and clamp the cradle to each fork.

DO NOT lift the cradle without clamping it to both forks. Failure to securely fasten the head assembly to the forklift can result in property damage and personal injury.

The head assembly is heavier at the motor end. If lifting pockets are not provided, offset the forklift to counterbalance the load.

1. Using a forklift, carefully lift and remove the head assembly from the shipping crate. (See Figure 20.)

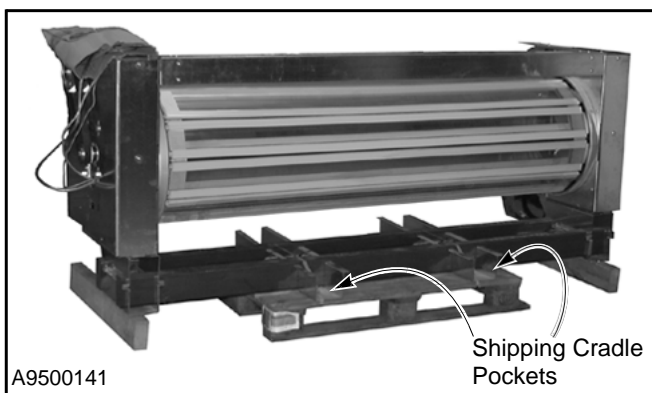


Figure 19

2. Before lifting the head assembly into position, remove the two end caps and the primary drive belt guard. Retain all fasteners. Then remove, rotate, and re-attach the wall attachment bracket at each end of the head assembly. (See Figure 20.)

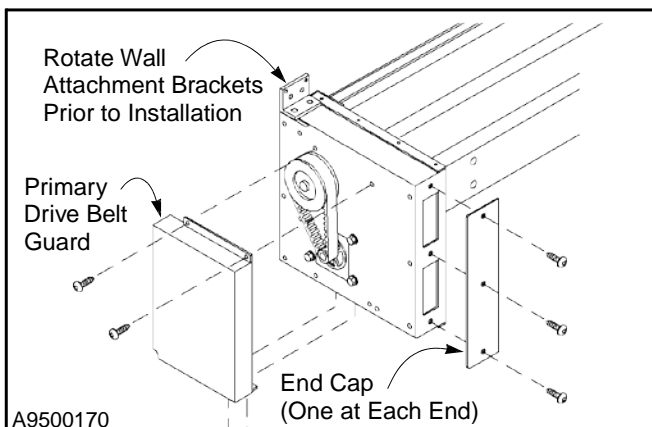


Figure 20

3. Raise and position the head assembly above each side column. Position the head so that it is parallel to the wall and level with each side column. Then carefully lower the head assembly onto the side columns. (See Figure 21.)

NOTE: Use extreme care when lowering the head assembly into position.



Figure 21

4. Attach the head assembly to the two side columns. Use five 10 x 25 mm hex head screws (bolts) and five flat washers to secure each end of the head assembly to a column. The mounting hardware is located in the small parts carton. (See Figure 22.)

Also, secure both wall attachment brackets at each end of the head assembly using the appropriate anchor hardware for your particular wall. Use all available holes in both brackets and make sure they are tightly secured to the head assembly.

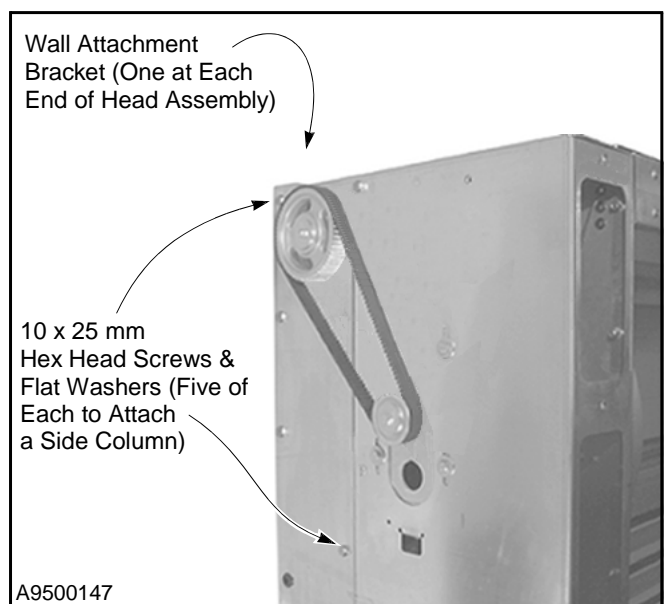


Figure 22

- Before lowering the forklift, disconnect the steel cradle assembly from the head assembly. To do this, simply remove the two pairs of screws securing the ends of the cradle to the ends of the head assembly. (See Figure 23.)

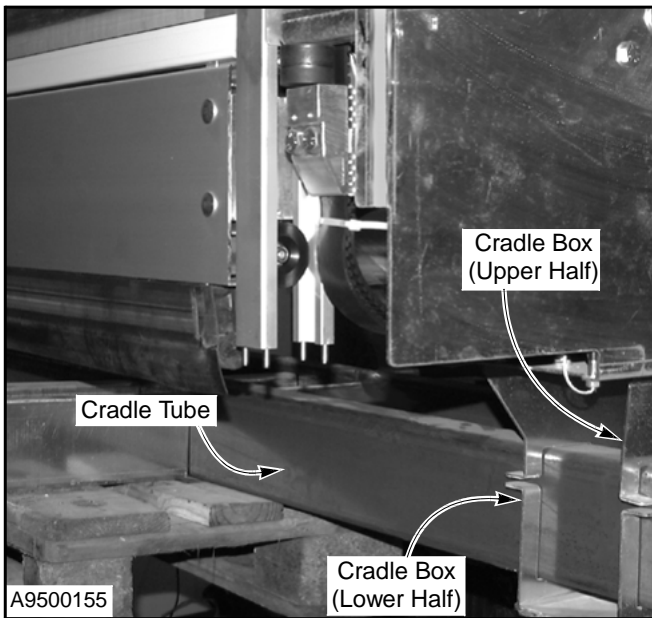


Figure 23

- Discard the cradle once it has been removed.
- Now the straight length of door track in each side column can be slid into position. Located in the upper end of each track is a grouping of four holes. These holes mate with a set of alignment pins that are located on the end of each spiral track. (See Figure 24.)

Slide each length of straight track up tight against the spiral track. To secure the track to the side column, lock the retaining clips tight against the track by threading the hex nut tight against the clip.

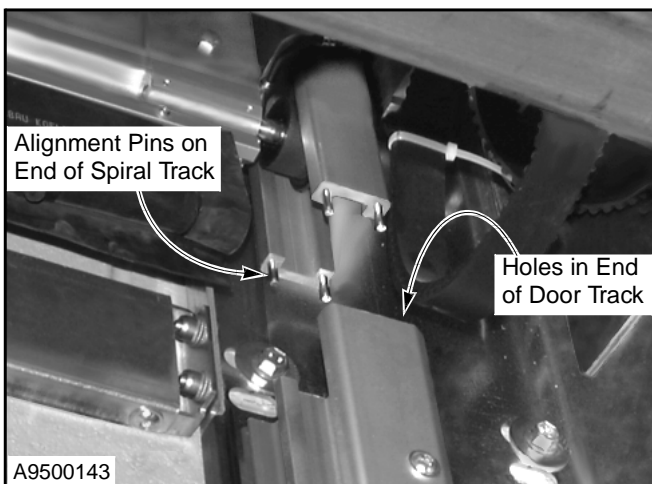


Figure 24

SPRING PACK AND DRIVE BELT

The mechanism that assists the motor with raising and lowering the door consists of a specially-designed spring system and drive belt system.

Spring System

The spring system only assists the motor with opening the door.

Depending on the size of your door, up to 12 springs are used. Springs are arranged in spring pack assemblies consisting of one, two, or three springs. The first six springs are installed in the right-hand side column. All remaining springs are installed in the left-hand column. A nylon strap attached to the upper end of each spring pack connects the pack to the drive shaft located in the head assembly. (See Figure 25.)

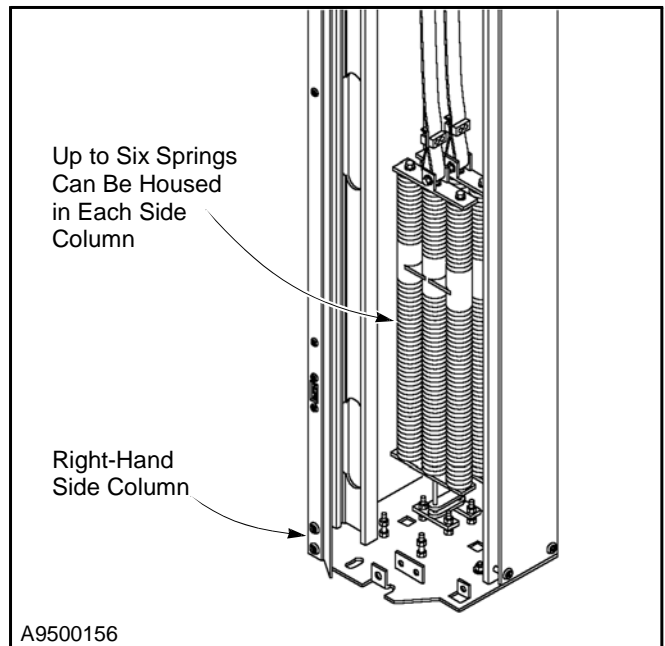


Figure 25

NOTE: Leave the door panel in the position it was shipped when installing each spring pack. If the door is repositioned at any time prior to the completion of the entire installation, the door may not work properly and damage can result.

- Locate the nylon spring strap(s) on the end(s) of the drive shaft. They are located inside the head assembly. To lower the strap through the side column, first carefully cut the plastic cable tie securing the strap to the drive assembly. (See Figure 26.)

NOTE: Each spring pack has its own dedicated nylon spring strap. Do not unwind any of the strap from around the drive shaft.

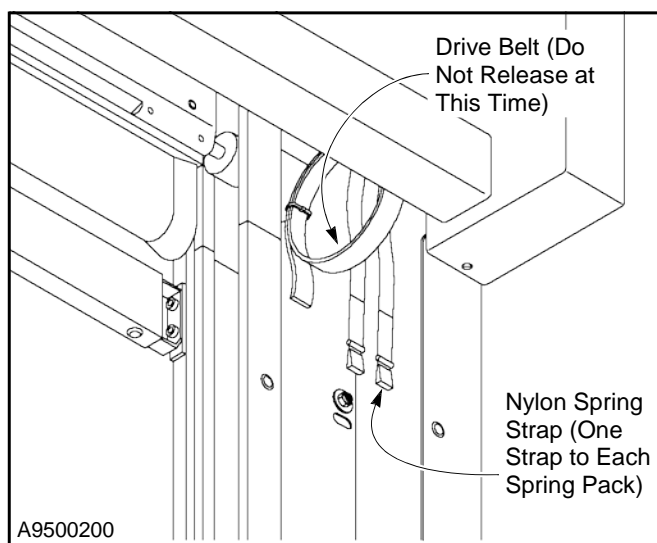


Figure 26

2. Hang each spring pack assembly from its associated spring strap. Make sure the straps are not twisted. Use the hardware provided with the spring pack to attach the strap to the pack. (See Figure 27.)

NOTE: Arrange spring packs in the side column with the largest packs in the back of the column. Also, outside-facing spring packs have a special guide bracket for mounting the spring pack to the side column.

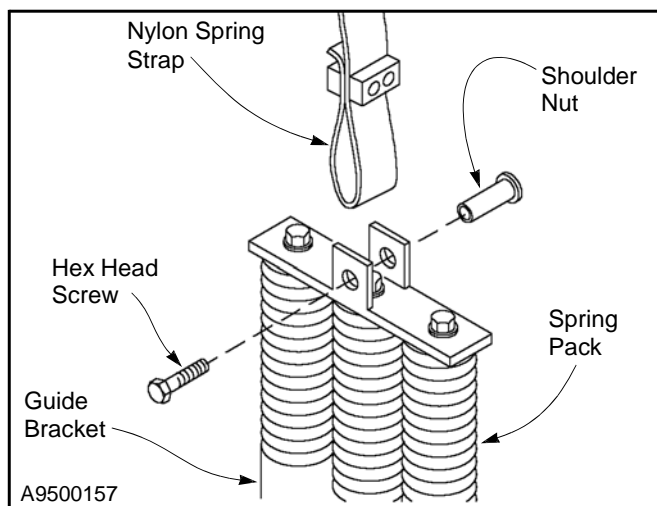


Figure 27

3. With the spring packs attached to the straps, mount the outside-facing spring pack (with the guide bracket) to the side column. The two Torx head screws used to attach the spring pack to the side column are located in the small parts carton.

4. Before a spring pack can be attached to the base plate, it must first be preloaded (sized) for your particular door. The preload information you will need for this procedure is provided on the Preload Information Sheet packed in the small parts carton.

Preload is the measured distance from the base plate to the forked plate of the spring pack. To preload a spring pack, spin the adjustment rod until the rod assembly is the correct length.

(See Figure 28.)

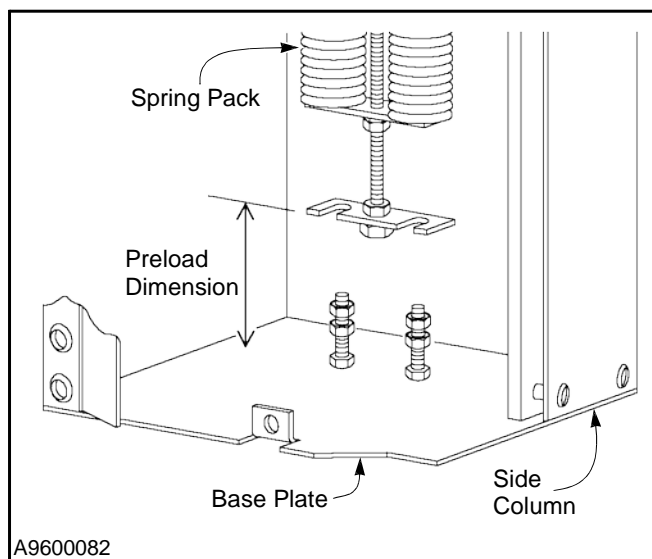


Figure 28

5. On the end of the adjustment rod is a forked mounting plate. It is used to attach the spring pack to a pair of mounting posts on the base plate. A pair of nuts on each post lock the spring pack to the plate. (See Figure 29.)

NOTE: If two spring packs are installed in a side column, be sure the spring straps are hanging straight and not tangled. Also, face the forked mounting plates toward each other and use plastic cable ties to help pull the plates tight against the posts.

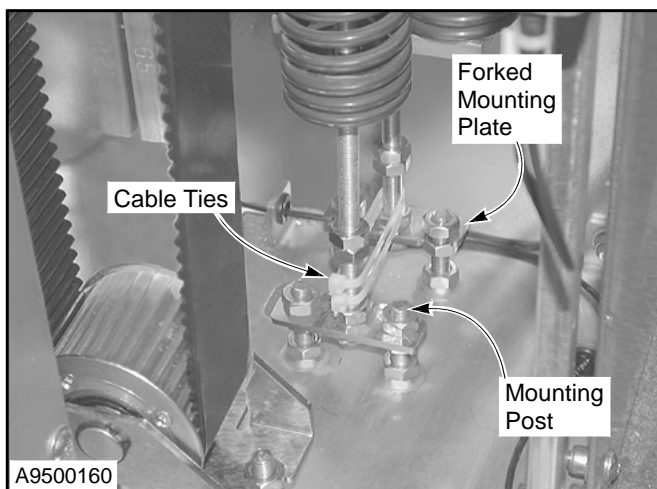


Figure 29

Drive Belt and Guide Pulley System

A drive belt used to raise and lower the door can now be installed in each side.

1. Each drive belt has been factory mounted to a drive pulley and a guide pulley. Also, each belt has been packed for shipping inside its respective drive assembly. Carefully cut the plastic cable tie that is temporarily securing the belt to the drive assembly. (See Figure 30.)

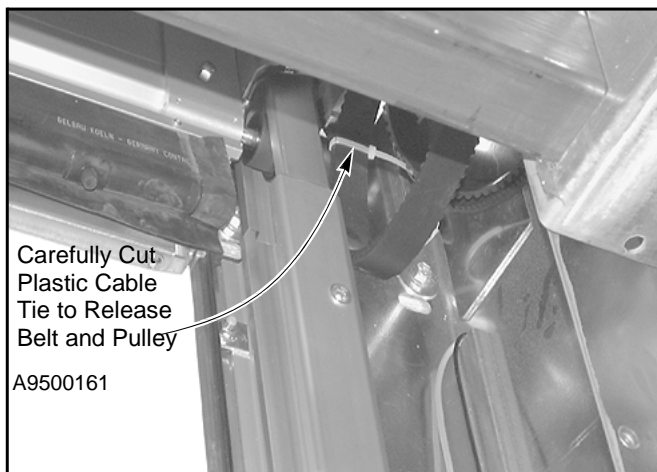


Figure 30

NOTE: Leave both drive belts on the drive shaft pulley in the position found. Do not reindex either drive belt on the drive shaft. Otherwise, the “timing” of the door travel will be affected, which could result in damage to the door.

2. Pass the belt, along with the guide pulley, down the side column.
3. The nearest pair of mounting posts on the base plate are used for mounting the guide pulley. Remove the two upper nuts from this set of posts to make it possible to place the pulley. (See Figure 31.)

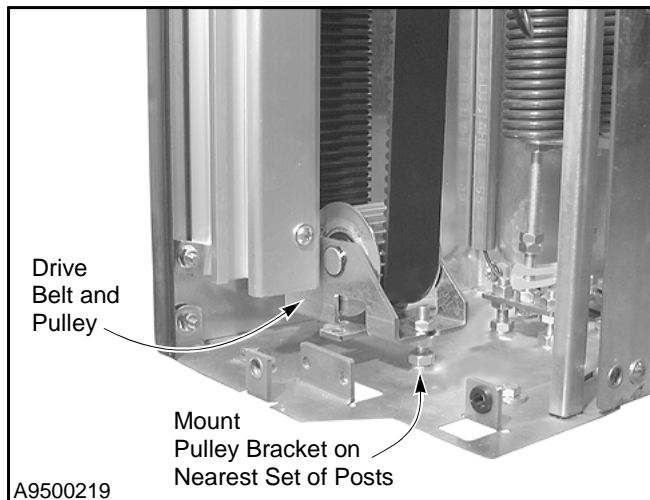


Figure 31

4. Secure the pulley bracket to the base plate using only the back post. Position that end of the pulley as close to the base plate as possible.
Depending on the length of the drive belt, the position of the lower nut along the back post can vary. Tighten the upper nut against the pulley bracket to lock the back of the pulley to the base plate.
5. The front post is used to set the tension on the drive belt. Thread the upper nut down against the pulley bracket until the belt is properly tensioned. Tighten the lower nut against the bottom of the pulley to lock in the tension. (See Figure 31.)

NOTE: If you find it difficult to reach the front post with the pulley, give the belt some slack by repositioning the pulley bracket on the back post. Also, it is important that the pulley bracket be level.

6. To make the belt run true, level the pulley assembly by installing one bolt and two nuts, which can be found in the small parts carton, on each tab of the guide pulley bracket. (See Figure 32.)

Note: Loosely Install Hardware and Adjust Accordingly.

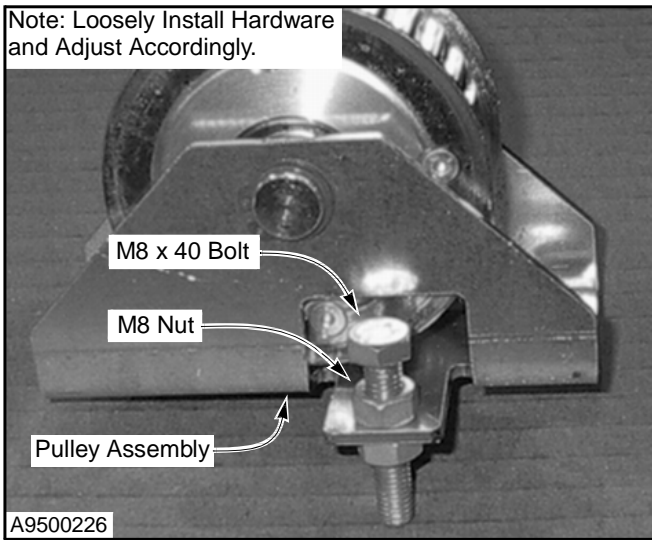


Figure 32

- Level pulley assembly as required and tighten hardware. (See Figure 33.)

CAUTION

Ensure that the guide pulley bracket is level when the door is in operating mode. Damage to the belt or pulley components may occur if guide pulley bracket isn't level.

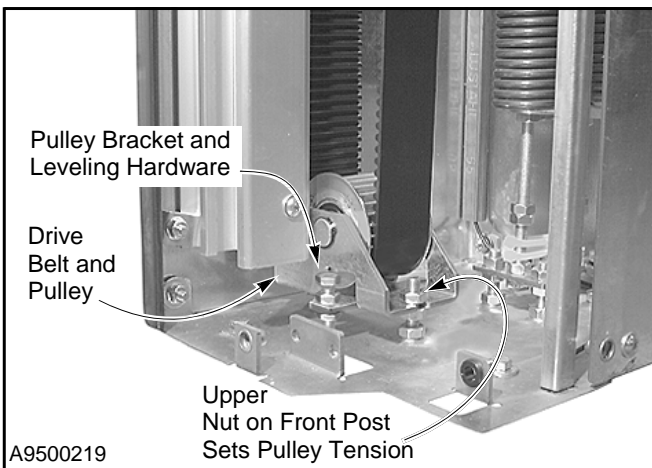


Figure 33

BRAKE RELEASE

This Rytec door is equipped with a brake override system that allows the door to be manually opened or closed in the event of an emergency or power outage. A steel cable links the electric brake mechanism, located just above the drive motor, to a brake release handle mounted on the left-hand side column.

- One end of the steel cable was connected to the brake mechanism at the factory. For shipping, the other end has been routed out through the side of the left drive assembly. Pull the cable back through the drive assembly and route it down through the side column to the brake release handle. (See Figure 34 and Figure 35.)

NOTE: Tug on the free end of the cable to check that it is not caught or hung up.

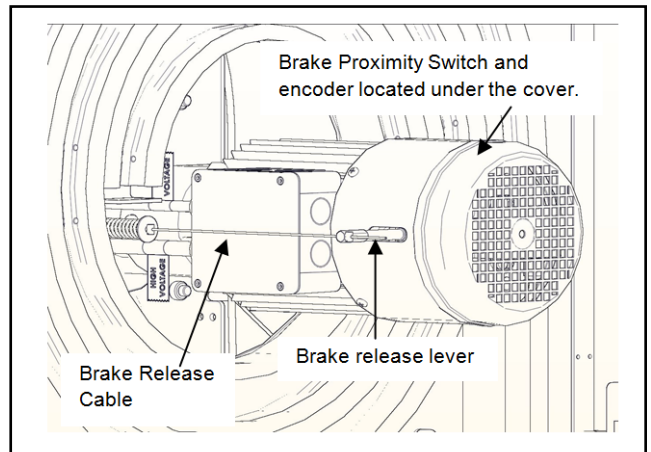


Figure 34

- With the brake release handle fully extended out or at 90 degrees, feed the cable through the eyelet in the bottom of the handle. Slide a crimp nut over the end of the cable with the nut tight against eyelet. Then tighten down the setscrew — with the majority of slack removed from the cable. The crimp nut is located in the small parts carton. (See Figure 35.)

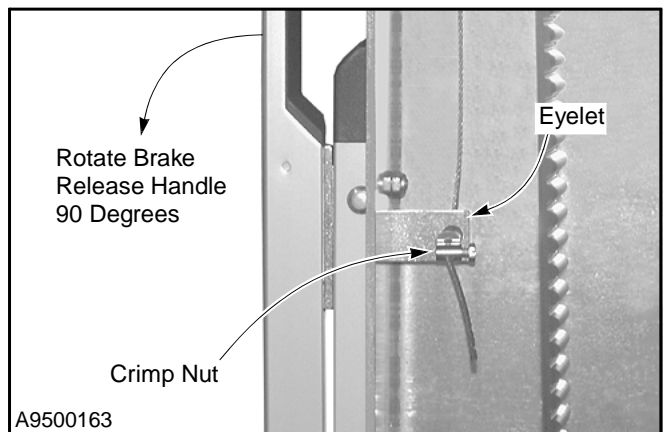


Figure 35

- Pull the handle several times to stretch the cable and remove any slack. Check the action of the lever on the brake mechanism for proper travel. If necessary, reposition the crimp nut.

NOTE: Ensure that the cable isn't so tight that the brake mechanism cannot re-engage once the lever is released and put back in place.

INSTALLATION—PHOTO EYES

4. Cut the cable to length, an inch or two after the crimp nut.
5. Disengage the electric brake by pulling the brake release handle. Then by, hand, manually lower the door a few inches to verify that the door is not bound or caught up in the head assembly.
6. To re-engage the electric brake to lock the door in place, place the brake release handle back against the side column.

PHOTO EYES

This door uses two sets of photo eyes to monitor the front and back sides of the door. Each set consists of two photo eye modules. The factory-installed eyes are located in the left-front and right-front corners of the door. The customer-installed eyes are to be located in the left-rear and right-rear corners of the door. (See Figure 36.)

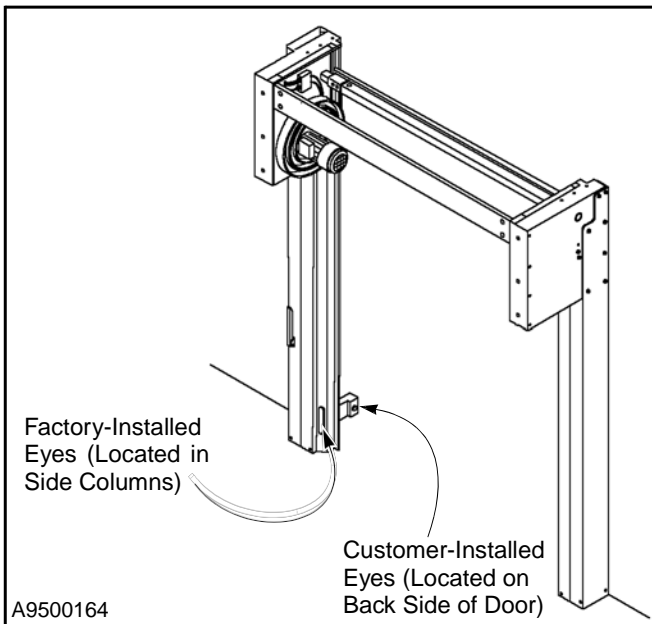


Figure 36

Factory-Installed Eyes

1. Locate each factory-installed photo eye module and its required wire cable. (See Figure 37.)

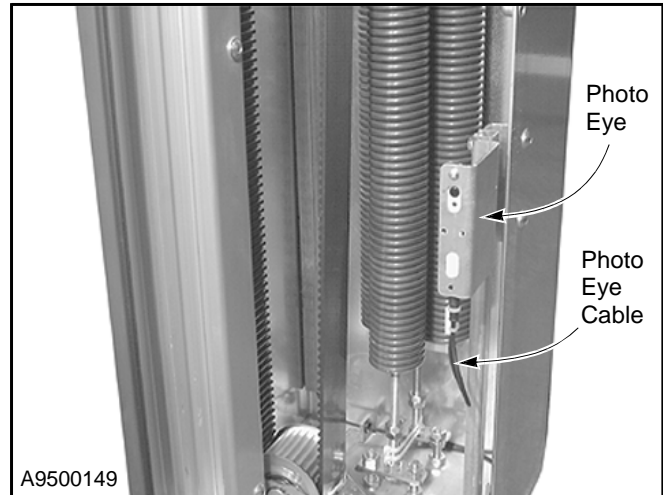


Figure 37

2. Each cable has been routed up through a vertical raceway located in the corner of the side column. Locate the free end of each photo eye cable. (See Figure 38.)

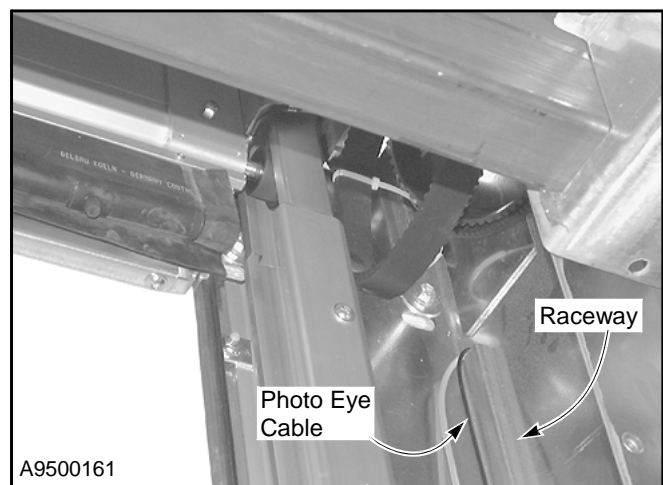


Figure 38

3. Route the right-front photo eye cable straight up into the right drive assembly, then across the head assembly by way of a U-channel. This U-channel runs along the back of the head assembly, near the top edge. (See Figure 39.)

Check to make sure the cable is lying in the bottom of the U-channel. Later, once all wiring is complete, the top of the channel will be closed off with plastic cable ties to keep the cables in the channel.

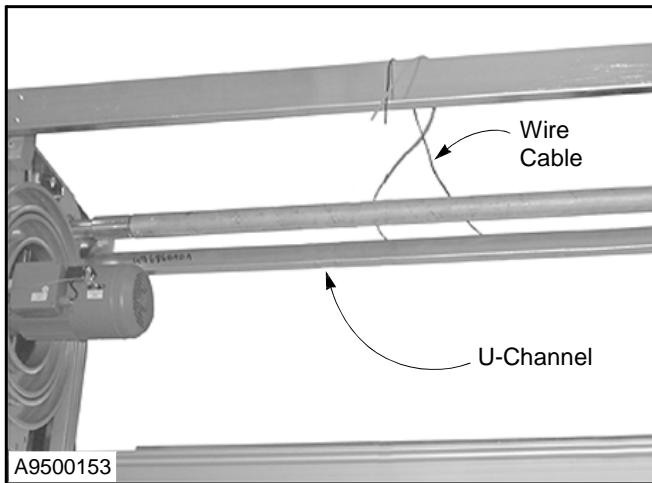


Figure 39

4. Continue routing this cable through to the left drive assembly and over to the door head junction box, located just above and to the left of the drive motor.

NOTE: Route the cable away from all belts and pulleys.

5. Remove the junction box cover and save the hardware for later use. Then 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 40.)

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

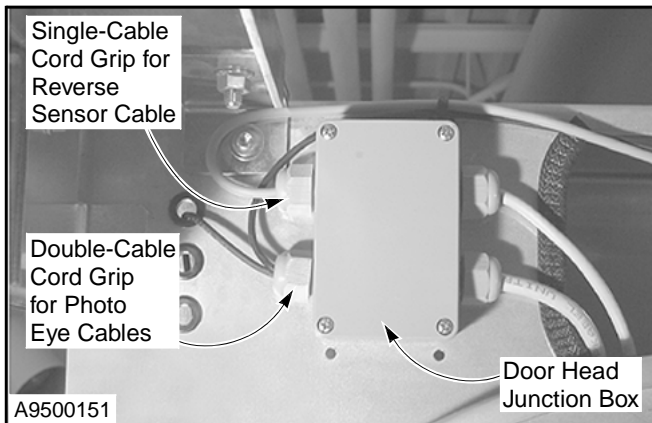


Figure 40

6. Route the left-front photo eye cable out the hole that is lined with the rubber grommet. This hole is located just above the raceway. (See Figure 41.)

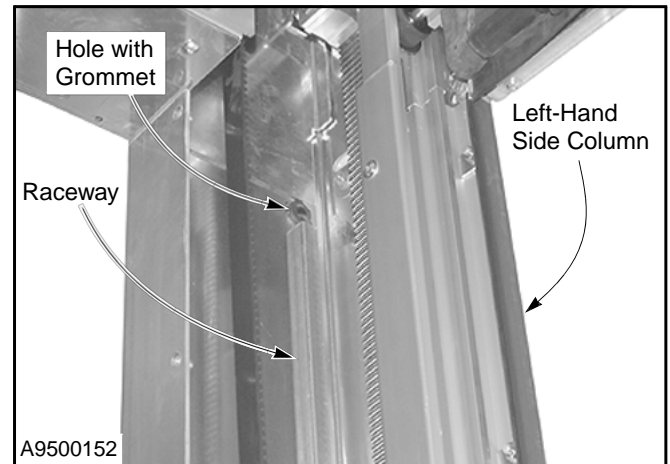


Figure 41

7. From the hole near the back of the side column, pass the photo eye cable into the left drive assembly and over to the door head junction box. (See Figure 42.)

NOTE: Make sure to route the wire cable away from all belts and pulleys.

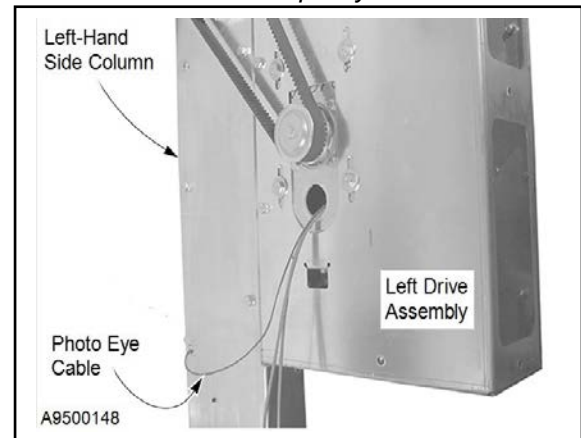


Figure 42

8. Pass the second photo eye cable through the double-cable cord grip. Tighten the cord grip to lock both photo eye cables to the junction box. (See Figure 42.)
9. Connect the control lines for the factory-installed photo eyes to the door head junction box as indicated on the electrical schematic.

NOTE: Do not install the junction box cover at this time.

INSTALLATION—CUSTOMER INSTALLED PHOTO EYES

Customer-Installed Eyes

To monitor the back side of the door, a second set of photo eyes must be installed. These eyes, their required cables, and two mounting brackets are located in the small parts carton. You must provide the necessary hardware to install the brackets on your particular wall.

NOTE: The rear set of eyes is to be located on the back side of the door, approximately 12 in. above the front set of eyes and as close to the door opening as possible. It is also important that the eyes are mounted directly across from each other.

In addition, note that the front and rear sets of eyes and their associated cables are of different styles. The eyes and cables are not interchangeable.

1. After the mounting brackets are in place, mount the emitter module in the left-rear mounting bracket and the receiver module in the right-rear bracket.

The receiver module can be identified by the SMR and yellow LED lit when aligned. The emitter module SMT has a green LED when powered. (See Figure 43.)

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.

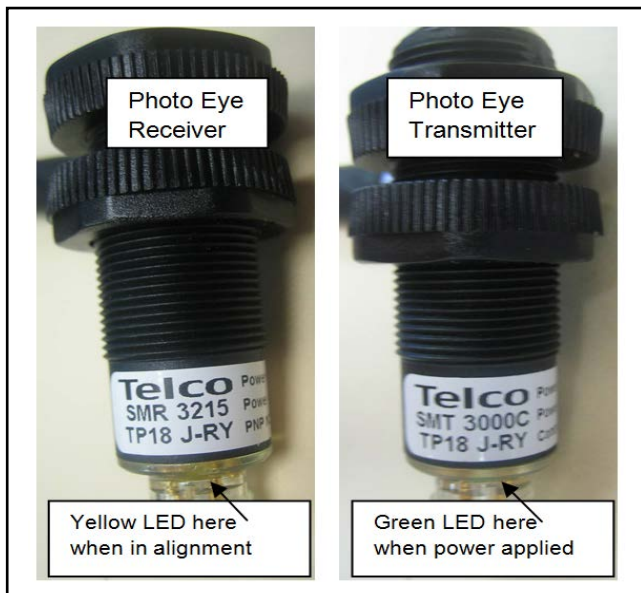


Figure 43

2. Using the two cables provided, route one cable from each photo eye to the control panel. At the factory, a string was routed through each side column to help you pull the cables through the side columns. Remove both strings once the cables are routed.

INSTALLATION – WIRELESS ANTENNA

WIRELESS ANTENNA BRACKET

The Spiral is equipped with a wireless reversing edge. The antenna is cable tied to the motor junction box with a piece of foam over the antenna quills for protection. (See Figure 44.)

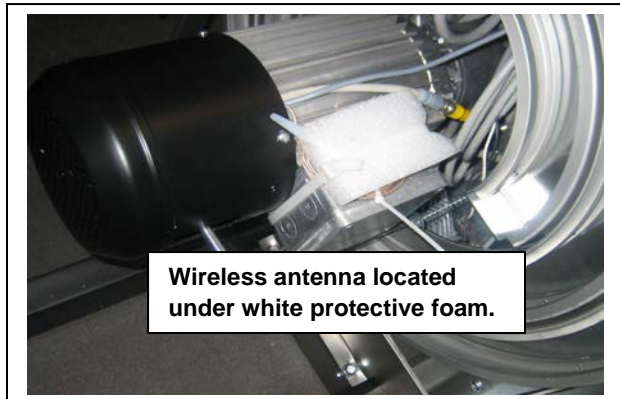


Figure 44

1. Pre-assemble the Z shaped bracket to the larger wireless bracket. Use the shorter 12mm screws and standard M4 hex nuts to attach. (See Figure 45 & 46.)

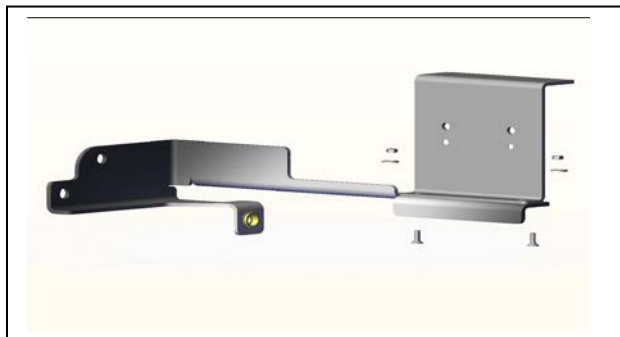


Figure 45

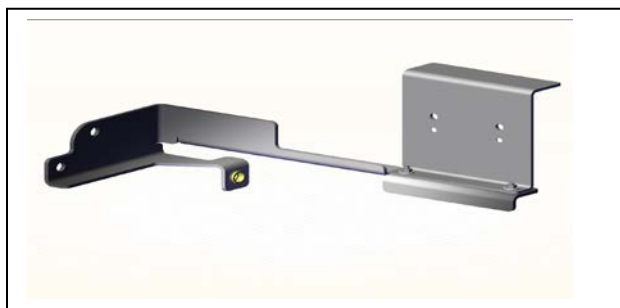


Figure 46

Note: Right hand drive opposite of left.

2. Attach the assembled bracket to head assembly with 2 of the M8 1.25x20MM, T40 screws. (See Figure 47.)

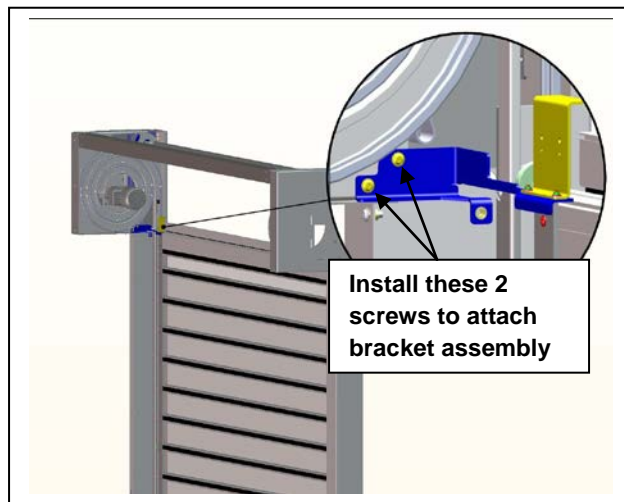


Figure 47

3. At this time find the wireless antenna attached to the motor junction box and cut it free from motor junction box. The antenna must be routed back through the head assembly. Pass the antenna through the opening near the motor and exit out the top of the side column. The tan cable needs to follow closely to the inside of the head assembly. Use cable ties to hold the cable away from moving objects. (See Figure 48.)

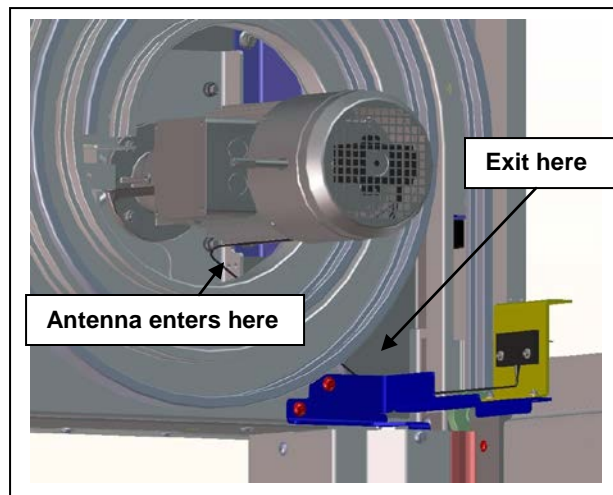


Figure 48

4. Attach the wireless antenna to the Z bracket using the M4 16MM screws provided with the washers and M4 locking nut. DO NOT over tighten the screws or damage to the antenna could occur. Simply secure the antenna to the bracket. The tan cable MUST exit towards the floor, from the antenna, as shown in figure 48.

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 49

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 cable 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 through a removable knockout plate. **DO NOT** run any conduit into or through either the top or the 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.

The wiring diagrams and schematics provided in this manual are for informational purposes only. Due to customer requirements for individual installations, a schematic diagram has been prepared for your particular door and installation. That schematic diagram has been shipped with the control panel and must be referred to during this installation.

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 50.)

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.

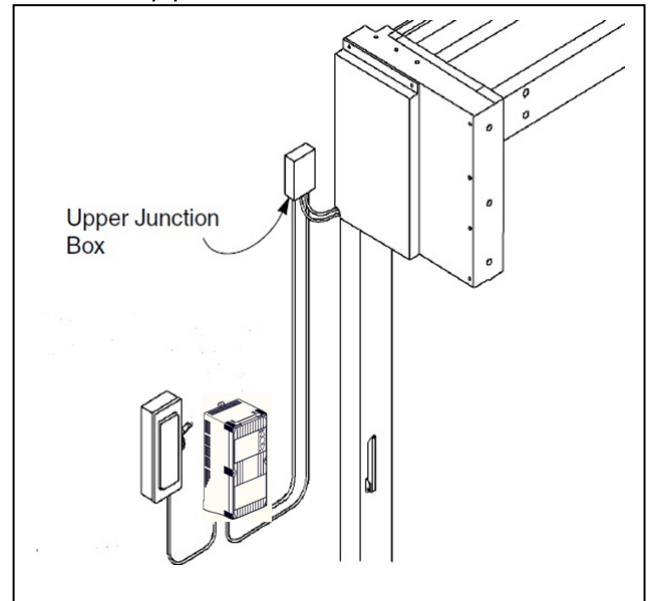


Figure 50

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.

BRAKE RELEASE SENSOR TO CONTROL PANEL

1. Route the brake release sensor cable, leading from the motor junction box, to the control panel. (See Figure 51.)

CONTROL SYSTEM—REVERSING EDGE AND FACTORY-INSTALLED PHOTO EYES

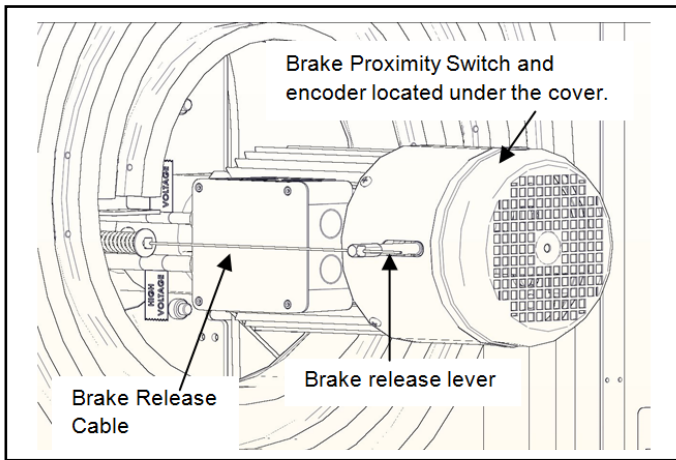


Figure 51

2. Connect the brake release sensor control lines to the control panel as indicated on the electrical schematic.

REVERSING EDGE AND FACTORY-INSTALLED PHOTO EYES TO CONTROL PANEL

1. Route the reversing edge and photo eye control cable, leading from the door head junction box, to the control panel. (See Figure 52.)

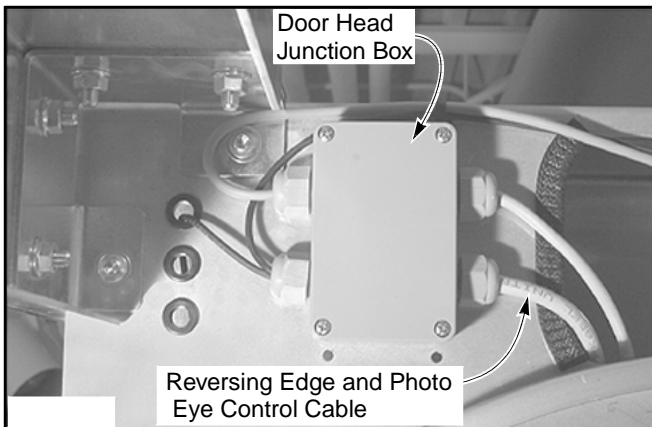


Figure 52

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.

2. Connect the reversing edge control lines to the control panel as indicated on the electrical schematic, received with the System 4 control.

3. Connect the control lines for the factory-installed encoder/photo eyes to the control panel as indicated on the electrical schematic, received with the System 4 control.

CUSTOMER-INSTALLED PHOTO EYES TO CONTROL PANEL

1. Earlier, the two control cables for the customer-installed photo eyes were routed from the eyes to the control panel. Now these control lines can be connected to the control panel as indicated on the electrical schematic.

ACTIVATORS

Install all activators as shown in the schematic provided with each door in the door's control box.

OPERATING CONTROL SYSTEM

The Spiral Door offers high-speed 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 53.)



Figure 53

Modes of Operation

AUTOMATIC AND NON-AUTOMATIC MODES OF OPERATION

Automatic Mode

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

- The door will open when the device is activated.
- A timer, internal to the control system, will start up once the door reaches the full open position.
- When the internal timer clocks out, the door will automatically begin to close.

If a *maintained* contact activator device such as a floor loop, motion detector, etc., is used to activate the door:

- The door will open and remain open for as long as the device is active.
- Once the device becomes inactive, the internal timer will start up.
- When the internal timer clocks out, the door will automatically begin to close.

In the automatic mode, while the timer is running, at any time the activator device or another activator in the system is enabled, the timer will reset and the door will not be allowed to close. It is only when the timer clocks out that the door will begin to close. (To change the timer setting, see the “System 4 Drive & Control” manual.)

In summary, in the automatic mode, an externally installed activator device is used to open the door and an internal timer is used to close the door.

Non-Automatic Mode

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 non-automatic mode, a manually-operated activator is used to open and close the door.

NOTE: When the door is configured to operate in the non-automatic mode of operation, the internal timer must be off (zero). (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.



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. Release the brake with the handle located on the side column and manually move the door to the half-open position.
2. Apply power to the control system. During the system initialization, the display will indicate that the door open and close limits must be set by displaying the associated fault codes (F700 and F762 will crawl across the display). (See Figure 54.)

Then the message Push ● [press reset (●) key] will appear on the display. (See Figure 55.)

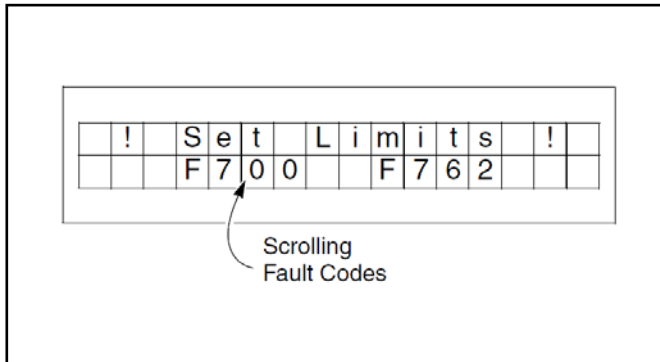


Figure 54

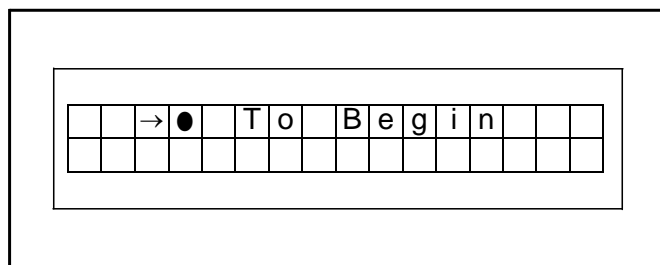


Figure 55



The door open and door 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.

- 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 problem if the motor is running in the wrong direction. Switch the T1 and T2 motor leads.

- Now set the door open and close limits according to the instructions on the display.

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

5. After the close and open 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 — Door Reversing Edge

Any time the door is closing and the reversing edge along the bottom bar makes contact with an object, the display will read “**F.361**” (Edge Trip) and the door will move to the fully open position. With “**F.361**” displayed, the door will begin to countdown to close. If the reversing edge is impacted three consecutive times the door will remain open until the system is reset.

- To reset the control system with “**F.361**” displayed, first make sure the area directly below the path of the door is clear of all objects and personnel.
- Then press and hold the reset (●) button until the control reads automatic.
- Press the door close (▼) button to move the door to the fully closed position.

System Reset — Photo Eyes

If either set of photo eyes detects that an object has entered the door opening while the door is closing, the door will immediately 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 front set of photo eyes detects the interruption, the display will read “**Photoeye - Fr**”. If the rear set of eyes detects the interruption, the display will read “**Photoeye - Rr**”.

The door will remain parked in the fully open position for as long as the object is in the path of the door opening. If the timer is set, the door will close when the timer clocks out. If the timer is off, the door close (▼) must be pressed.

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

Automatic Door Close Timer

See “Setting Automatic Delay Timers” in the “System 4 Drive & Control” manual.

FINAL ADJUSTMENTS

LEVELING DOOR PANEL

1. To check a door panel for level, first position the panel so that it is approximately four or five feet off the floor. Then check the bottom edge of the door panel for level. (The panel is considered level when both sides are within 1/4 in. of each other.)

NOTE: Do not check the door panel for level by visually observing how it rests on the floor. Level is referred off the two side columns and the head assembly.

2. Before making any adjustment to the door, remove all electrical power to the control panel.



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

3. Mounted on the bottom corner of the door is an end bracket (one in each corner). This bracket is clamped around the two ends of the drive belt. (See Figure 56.)

NOTE: If the door requires adjustment, always lower the high side of the door and never lower the door more than two notches at a time. Also, a reference mark on the drive belt will make it easier to return the end bracket to its original location, should that become necessary.

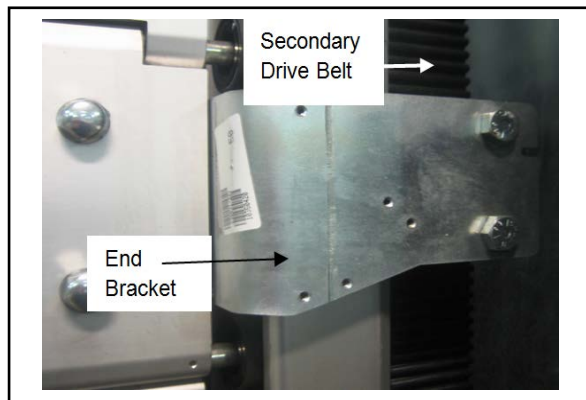


Figure 56

4. On the side that needs to be lowered, place your hand on the smooth side of the secondary drive belt and begin moving your hand up the belt towards the head assembly. When you're near the top, a wave will form and the belt will slip or jump on the sprocket. Perform this process until the panels have reached level. **DO NOT** place your hand between the belt and the sprocket while performing this task. (See Figure 59.)

5. Restore power to the control panel and cycle the door several times. Recheck the panel for level and repeat the above steps, as necessary, until the panel is level.

TESTING REVERSING EDGE



Take precautions to prevent someone else from operating the door as you perform the following procedure. Also, be cautious around the moving parts that are exposed in the side columns.

With the door fully open, press the door close (▼) button. As the door begins to come down, test the door reversing edge by hitting the bottom (rubber) edge of the door. (See Figure 57.)

The reversing edge sensor is working correctly when the door reverses direction to the fully open position. If the reversing edge is impacted three consecutive times the door will remain open until the system is reset.



Figure 57

1. To reset the control system with "F.361" displayed, first make sure the area directly below the path of the door is clear of all objects and personnel.
2. Then press and hold the Reset (●) button until the control reads automatic.
3. Press the door close (▼) button to move the door to the fully closed position.

NOTE: Avoid tripping the photo eye sensors when testing the reversing edge.

FINAL ADJUSTMENTS—CHECKING PHOTO EYES

CHECKING PHOTO EYES

Front Set of Eyes

The two modules that make up the front set of photo eyes each have one indicator light. The eyes are receiving power and are aligned when the indicator on the emitter module (right-front eye) is green and the indicator on the receiver module (left-front eye) is red. 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 red to green. Restoring the beam of light will cause the indicator to switch back to red.

Rear Set of Eyes

The rear set of eyes is powered up when the power indicator on each eye is lit (green). The eyes are aligned when the alignment indicator on the receiver module is lit (yellow). When the beam is interrupted, the alignment indicator will go out. Restoring the beam relights the indicator. (See Figure 58.)

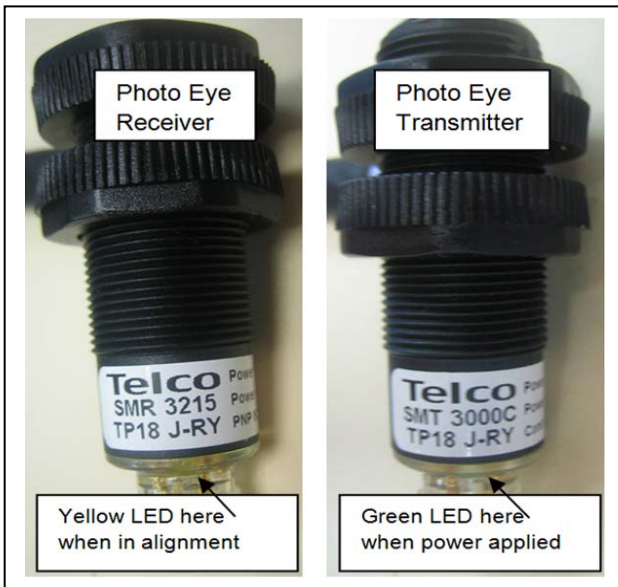


Figure 58

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 (▼) 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 immediately reverse the direction of the door and park it in the fully-open position. When the beam of light is restored, the door should automatically move to the closed position.

NOTE: When the front beam of light is interrupted, the display on the control panel will read “(Photo Eye - Fr)”. When the rear beam of light is interrupted, the display will read “(Photo Eye - Rr)”.
3. Repeat the above procedure on the rear set of photo eyes.

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 and head assembly have remained plumb, square, and level. Also check that all floor and wall anchors have remained securely fastened.
2. Mount the left and right end caps to the head assembly. Each end cap is held in place with three, 20-mm-long, Torx head screws. (See Figure 59.)
3. Mount the primary drive belt guard. It is held in place with four, 20-mm-long, Torx head screws.

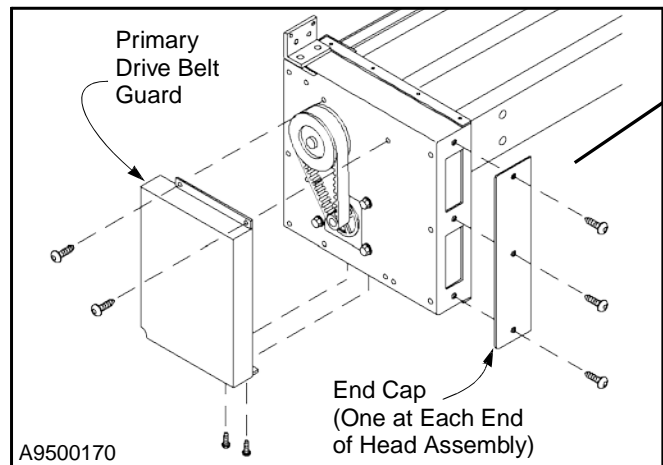


Figure 59

4. Mount the left- and right-hand cover brackets to the side columns. These brackets are located in the small parts carton and are held in place with two, 12-mm-long, Torx head screws. (See Figure 60.)

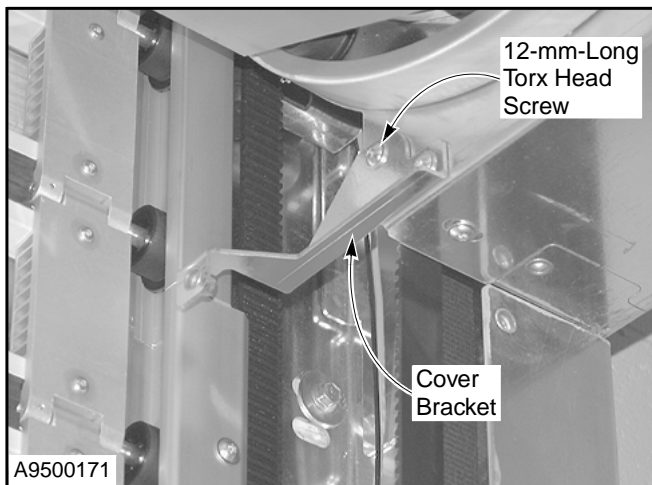


Figure 60

5. Attach the left- and right-hand side covers. Each cover is attached to the side column using nine, 20-mm-long, Torx head screws. (See Figure 61.)

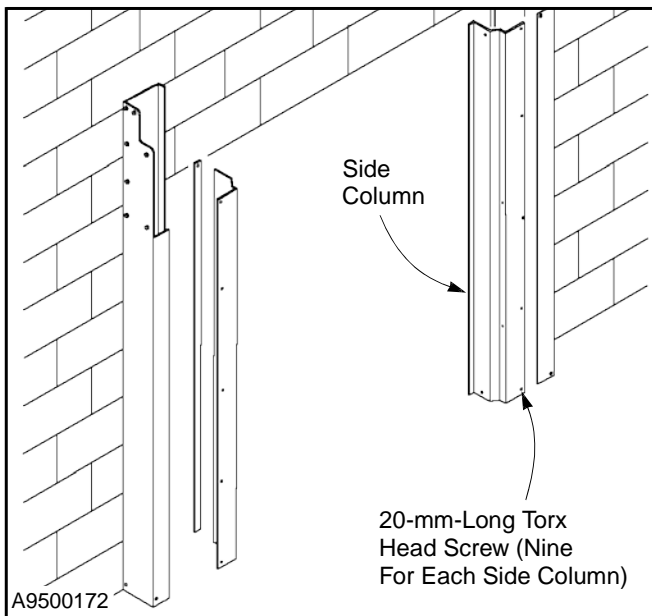


Figure 61

FINAL CHECK

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

Side Columns: Check that side columns are plumb and square and that all anchor bolts are secure and tight.

Head Assembly: Check that all mounting hardware is in place and tight.

Door Panel Track: Check the alignment of each door track — particularly where the tracks join up between the side columns and the 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. Measure the amperage draw of the motor. It should not exceed the amount listed on the schematic or the motor nameplate.

Reversing Edge: Works properly. As the door is closing, if the reversing edge makes contact with an object, the door should immediately return to the fully open position as described in “” on page 24.

Photo Eyes: Work properly. As the door is closing, if the light beam between either set of photo eyes is interrupted, the door should immediately return to the fully open position as described in “TESTING PHOTO EYE SYSTEM” on page 25.

Spring Packs: Check that all spring packs are securely fastened to the bottom plate of the side column. Also make sure that each nylon spring strap is securely fastened to the clevis bracket at the top of the spring pack.

Nylon Spring Straps: Make sure each spring strap is securely fastened to the drive shaft and its respective spring pack.

Drive Belts: Check that each drive belt is properly tensioned and that the ends of each belt are securely clamped to the bracket assembly. Ensure that the pulley assembly is level and that the belt runs true.

Drive Belt Pulleys: Make sure each pulley bracket is properly secured to the base plate of the side column.

Timers: Automatic timers must be set to ensure that the door closes properly as described in the “System 4 Drive & Control” manual.

Activators: Operate as specified by manufacturer.

Caulk: Ensure that the side columns and head assembly are caulked where they meet the wall of the building.

