R Y T E C

Fast-Seal[®]

Installation Manual



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INTRODUCTION

The information contained in this manual will allow you to install your Rytec Fast-Seal[®] Door in a manner that 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 UNDER-STAND 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 serial number plate is located inside one of the side columns.

The wiring connections 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.

HOW TO USE MANUAL

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



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



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)

Your **DOOR SERIAL NUMBER** information can be found in three universal locations. These are at the inside of the left side column (approximately eye level), on the drive motor, and on the inside of the System 4 control panel. (See Figure 1.)

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



Figure 1

INSTALLATION

MATERIAL, TOOLS, AND EQUIPMENT

- 1. Threaded rod (¹/₂-in. diameter) and other various wall anchor hardware and material.
- Concrete anchor bolts (1/2-in. diameter) (see "ANCHORING METHODS" on page 3).
- 3. Assorted shim stock.
- 4. Double-sided tape.
- 5. Carpenter's or spirit level (4-ft. minimum length).
- 6. Carpenter's square.
- 7. Hammer drill.
- 8. Masonry drill bit (for 1/2-in. diameter anchors).
- 9. Three or four 18-in.-long bar clamps.
- 10. Three or four C-clamps (6-in. throat).
- 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. Socket and wrench sets.
- 16. Water level, line level, or transit.
- 17. Two ladders (taller than height of door opening).
- 18. Forklift (see "Forklift Requirements" on page 2).

ADDITIONAL REQUIREMENTS

Labor and Site Requirements

- 1. Two installers.
- 2. An electrician is required for making all electrical connections.
- NOTE: All electrical work must be performed in accordance with local and state building codes.
- 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.

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:

- 2,000-pound lift capacity
- Minimum height ability door height, plus 12 in.
- Side-shift capability (desired)

Welder Requirements

A gas or arc welder is required for welding the optional strapless windbar stops to the windbar guides. The welder should be made available at the start of the installation.

Electrician's Responsibilities

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

- 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).

Floor-Loop Activator Requirements

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 that was 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.
- 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 2 shows the location of the major components of the door and the general placement of the associated sub-assemblies for a typical installation.

This illustration is provided to you for informational purposes only. It should not be relied upon solely during the installation of your door and its sub-assemblies.



ANCHORING METHODS

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

Figure 3 through Figure 6 show anchoring methods for various types of walls. Use the method that is best suited for your particular installation site.

All necessary anchoring hardware and material required 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 ¹/₂-in. diameter threaded through bolts or ¹/₂-in. diameter threaded rods to anchor the door to all wall applications. Use ¹/₂-in. diameter concrete anchor bolts to anchor the door to a concrete floor or wall. If expansion anchors are used, a quarterly inspection should be implemented for safe and secure door operation.

Concrete, Block, or Brick Walls



U

Wood, Block, Brick, or Insulated Walls









Figure 5

UNCRATING

Your Rytec door has been crated to allow for minimal handling of assemblies during the installation process.

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

Open the crate by removing the top panel. Then remove the front panel. (See Figure 6.)



Figure 6 LOCATING CENTERLINE OF DOOR OPENING

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

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 7.)





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.



This door is equipped with a breakaway bottom bar assembly. In order for this assembly to work properly, the width of the door opening must not be smaller than the production width of the door. If the width of the opening is smaller than the width of the door, do not proceed with the installa- tion. Contact your Rytec representative or Rytec Technical Support Department at 800-628-1909.

 Using the centerline as a reference point, lay out and mark half of the door's production width along the floor. (See Figure 8.) Half of Door



Figure 8

- 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 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 9 and Figure 10 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 2 in. out of level.



Figure 9



Figure 10

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 11 and Figure 12.)



Figure 11



Figure 12

SIDE COLUMNS

1. Lift and remove the left side column from the shipping crate. (See Figure 13.)



Figure 13

2. Place the side column on the floor against the wall. Align inside edge of the side column with the production width line. Set the side column square and plumb with the wall (shim if necessary). (See Figure 14.)



Figure 14

IMPORTANT: It is critical that the side columns are mounted square and plumb with the wall, and level across the door opening. Using a 4-ft. level and carpenter's square will help ensure the columns are set correctly.

> Additionally, the use of bar clamps will allow you to temporarily secure the columns to the wall, while allowing you to make slight adjustments during the installation procedure. If steel shims are used, tack weld them to the rear of the column to keep them from shifting around.

Incorrectly positioned shims can cause the base plate to distort, which in turn can result in premature strap wear.



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

- 3. Once the left side column is positioned, anchor the column to the wall and floor using the anchor holes provided in the column. To allow the column to be repositioned later, loosely tighten anchor bolts.
- NOTE: Use ¹/₂-in. expansion shell or stud-type anchors for a poured concrete wall. Use through bolts for a brick wall or other similar applications where expansion bolts will not work. (See Figure 15 and Figure 16.)



Figure 15





- 4. Mount the right side column to the wall and floor in the same manner used to mount the left 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 overall squareness of each column. (See Figure 17.)

Compare diagonal measurements and upper and lower horizontal measurements across columns. Columns are square and parallel when diagonal measurements are equal and horizontal measurements are equal. If either column requires a slight repositioning (when the difference of either comparison is greater than 1/4 in.), use a block of wood and a mallet to nudge the column into position.



Figure 17

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

HEAD ASSEMBLY

- Before the head assembly can be installed, first remove the upper and lower mounting bolts securing the windbar guide to each side column. Discard the upper mounting bolts and replace them with two ⁷/₁₆-14 x 1-in. bolts and lock washers. The bolts and washers were shipped in the small parts carton. (See Figure 19.)
- NOTE: Discard the shipping plate used to mount the windbar guide to the side column. (See Figure 18))



Figure 18

- 2. Label the left and right windbar guides and set them aside for later use.
- 3. If the small parts carton, control panel (if not already installed), and counterweights are interfering with the removal of the head assembly, remove them from the shipping crate and set them aside for later use.

 Remove six ¹/₂-13 x 1¹/₂-in. serrated-flange bolts and six ¹/₂-13 serrated-flange hex nuts from the small parts carton. This hardware will be used to attach the head assembly to side columns.



A block has been installed between the drive chain and the drum sprocket to prevent the door panel from shifting during shipment. The block must be removed before operating the door. Failure to do so will prevent the door from opening.

- 5. Remove the head assembly from the shipping crate. (See Figure 19.)
- NOTE: If the head assembly contains the optional hood, remove the two side covers prior to its installation. (See Figure 19.)



Figure 19



Secure the head assembly to the forklift with C-clamps prior to lifting it to the top of the side columns. (See Figure 20.)



Figure 20

6. Place the head assembly on top of the side columns. Two locator pins along the bottom of the head assembly, at each end, will help align the head assembly to the side columns. (See Figure 21.)



When setting the head assembly, do not pinch any wires or cables between the head assembly and either side column.



Figure 21

- Bolt the head assembly to the side columns with six ¹/₂-13 x 1¹/₂-in. serrated-flange bolts and six ¹/₂-13 serrated-flange hex nuts. Use the holes that are shown in Figure 21.
- 8. After the head assembly is secured to the side columns, tighten the anchor bolts holding the side columns to the floor and wall.
- NOTE: Check the side columns after the anchor bolts have been tightened to ensure that the side columns are plumb and square. Adjust as required.
- 9. Remove the C-clamps.

FRONT WINDBAR GUIDES

- Attach the left and right windbar guides to their respective side column. Use two ⁷/₁₆-14 x 1-in. bolts and lock washers to attach each guide. (See Figure 22.)
- NOTE: The top mounting lug on the windbar guide must be placed on top of the bottom plate of the head assembly. (See Figure 22)



Figure 22

 Check that there is a 1³/₄-in. gap between the front and rear windbar guides — along the entire length of the two windbars. (See Figure 23.)



Figure 23

- 3. If an adjustment to the gap is necessary, first loosen the two bolts at each end of the front windbar guide.
- 4. Carefully pry the front windbar guide away from the rear windbar guide until the $1^{3}/_{4}$ -in. gap is achieved.
- 5. Tighten the bolts and recheck the gap. Make sure the gap is even along the entire length of each set of windbars.

COUNTERWEIGHTS



A counterweight can weigh 100 pounds or more. Make sure that safe lifting procedures are followed and that the counterweights are securely supported during installation.

If not handled properly, a counterweight can damage door components and cause personal injury. Make sure the counterweights do not make contact with the photo eye modules — damage can result.

- 1. Remove the tape from around the yellow counterweight straps located along the bottom of the head assembly. Allow the straps to fall free and unwind.
- NOTE: The straps are shipped with two initial wraps around the counterweight spool. DO NOT add or remove any wraps from around the spool at any time.
- 2. Remove the clevis pin and cotter pin from both counterweights. (See Figure 24.)



Figure 24

- 3. Install counterweights:
 - For doors with 14-in.-wide side columns, see "Counterweights — 14-In. Side Columns"
 - For doors with 17-in.-wide side columns, see "Counterweights — 17-In. Side Columns"
- IMPORTANT: Once the counterweights are installed, you will need to remove a large plastic block from between the drive chain and the drum sprocket (located in the head assembly) to move the door to the closed position This block can be identified by the blaze-orange tag that is tied to it.

Also, untie and unroll the motor brake release cable. It should hang out along the side column.

Counterweights — 14-In. Side Columns

 Remove the side slide from each counterweight (leave the rear slide in place). They are each held in place by three ³/₈-16 x ³/₄-in. serrated-flange screws. (See Figure 25.)



Figure 25

- b. With the door fully open, place a counterweight in each side column.
- c. Slip the rear slide of each weight over the front windbar guide.
- d. With each counterweight installed on the front windbar guide, support and position each weight at the height shown. (See Figure 26.)



Figure 26

e. Place the counterweight slide that was removed earlier over the front windbar guide. Attach the slide to the counterweight using the existing hardware. (See Figure 27.)



Figure 27

f. Proceed to step 4 on page 18.

Counterweights — 17-In. Side Columns

Remove four counterweight T-slides, eight ¹/₄-20 x 3¹/₂-in. screws, and eight ¹/₄-20 serrated-flange hex nuts from the small parts carton. (See Figure 28.)



Figure 28

b. With the door fully open, place a counterweight in each side column. The retaining brackets along the side of each counterweight must face the windbar guide in the side column. c. Support and position each counterweight at the height shown. (See Figure 29.)



Figure 29

d. Place two counterweight T-slides over the T-guide in each side column. The T-guide is located on the front windbar guide. (See Figure 30.)



Figure 30

- e. Position the T-slides between the retaining brackets on the counterweight. Fasten each T-slide to the counterweight with the screws and hex nuts pulled earlier from the small parts carton. (See Figure 30.)
- 4. Place the counterweight strap between the clevis bracket. Secure the strap by installing the clevis pin and cotter pin. Connect the other counterweight to its strap in the same manner. (See Figure 31.)



Figure 31

- 5. Adjust the counterweight strap and then tighten the strap clamp plate assembly to secure the strap. The strap has been properly routed through the clamp at the factory. The routing should not be altered.
- 6. Remove the support from under each counterweight to allow the weight to hang free. If necessary, readjust the strap.
- NOTE: The 20–24 in. dimension is adequate for proper operation of most doors manufactured by the Rytec Corporation. However, for some very wide or short doors the counterweight may have to be moved closer to the bottom of the side column (special counterweights with side weights may be above the 20–24 in. dimension).

Release the brake and manually move the door to the fully closed position. Check the distance between the top of the strap clamp plate assembly and the upper guide roller — it should be no less than 1 or 2 in. (See Figure 32.) Move the door to the fully open position. Check the position of the counterweight. It should be above the H-bracket located in the bottom of the side column. Also, both slides on a 17-in. side column counterweight must be on the counterweight guide. Adjust the strap as necessary only after placing the appropriate support under the counterweight.



Figure 32



NOTE: DO NOT cut off any excess strap at this time.

END BRACKET

- 1. Remove the shipping tape from the blue tension straps and allow the straps to drop to the bottom of the side column. The tension straps are located at each end of the head assembly, adjacent to the counterweight straps.
- NOTE: The tension straps are shipped with the correct number of initial wraps around the strap spool. FS-1000 and FS-1500 doors, 14 ft. or shorter, have two wraps; doors 14 ft. and taller have four wraps.



DO NOT add or remove any wraps from around the strap spool at any time.

- 2. Release the motor brake by pulling on the brake cable and position the door panel so that the bottom bar assembly is at a comfortable working height. Release the cable to lock the door in place.
- 3. Remove the steel cover plates. (See Figure 34.)
- NOTE: Any door over 24 ft. wide and any door with strapless windbars, will be non-breakaway and will have steel cover plates on both ends of the bottom bar.



Figure 34

4. Insert the end bracket into the end of the bottom bar assembly. They are properly connected when a spring plunger on the end of the bottom bar assembly snaps into the end bracket. (See Figure 35.)



Figure 35

- 5. Release the motor brake and manually move the door up and down a few times. Make sure the end brackets are not binding between the windbar guides as the door travels up and down. If an adjustment between the windbar guides is necessary, see "FRONT WINDBAR GUIDES" on page 9.
- 6. **Single and Dual Strapless Windbar Options Only:** Reattach the steel plates with the saved hardware.

TENSION STRAP

1. Starting with the left side column, pull out the left tension strap (blue strap) to remove any kinks or twists.



DO NOT add or remove any wraps from around the strap spool at any time.



The spring release handle is under tension and may rapidly move downward when pulled. Keep hands and fingers away from the underside of the handle to prevent them from getting pinched. Carefully release the tension spring by pulling down on the spring release handle. This will release the H-bracket assembly located in the bottom of the column and allow it to freely travel up and down. (See Figure 36 and Figure 37.)



Figure 36

3. Route the blue tension strap under the H-bracket from the front roller to the rear roller. Make sure the strap is not twisted. (See Figure 37.)



Figure 37

4. Using a wood block, prop the H-bracket so that the front roller is approximately 7–8 in. off the bottom of the side column. (See Figure 38.)



Figure 38

NOTE: Taller doors are equipped with an idler roller in each side column. If your door uses idler rollers, route each tension strap as shown in Figure 39.



Figure 39



Figure 40

5. Loosen the two bolts that secure the tension strap clamp. The clamp is located on the end bracket that is mounted on each end of the bottom bar assembly. Route the tension strap through the strap clamp as shown. (See Figure 41.)



Figure 41

6. Remove any slack from the tension strap. Tighten the bolts on the strap clamp to secure the strap to the end bracket.

IMPORTANT: DO NOT cut off any excess strap at this time.

- 7. Remove the block from under the H-bracket.
- 8. Tighten the tension strap by placing the spring release handle in the latched position. Tension is locked in place when the handle is all the way back and latched. (See Figure 42.)



Figure 42

9. Repeat steps 2 through 8 above on the tension strap in the right side column.

TENSION STRAP — PRELIMINARY ADJUSTMENT

After both tension straps are in place, they are ready to be tested and, if necessary, adjusted.

- 1. Release the motor brake.
- 2. Manually open and close the door several times to work each tension strap and H-bracket system.
- 3. Position the door panel with the bottom bar about halfway up in the door opening.
- 4. Release the brake cable to lock the door panel in place.
- 5. Check the height position of the front roller on each H-bracket. The rollers should have dropped below the 7- to 8-in. mark that was established earlier. But, they should not have dropped any lower than the 3- to 4-in. mark.
- If either roller is below the 3- to 4-in. mark, readjust the tension strap as described in "TENSION STRAP" on page 14.

- 1. When the preliminary tension adjustment has been completed, operate the door several times with the side column covers open and examine the tension throughout the travel of the door.
- 2. The H-bracket should move up and down throughout the travel of the door. The Fast Seal door is designed to have the maximum tension when the door is fully closed or open. The least amount of tension will occur when the door is half open. (See Figure 43).



Figure 43

NOTE: Very important that the tension strap remains under tension throughout the travel of the door. Failure to have adequate tension on the blue tension strap could cause the strap to slip off the rollers and damage the straps. If the strap does not have the required tension re-adjust the tension by pulling additional blue strap trough the clamp on the end bracket and test the door again. The tension MUST be equal on both sides failure to equalize the tension may cause the door to roll up too much to one side. (See Figure 44).



Figure 44

SEAL DOOR

Use a good-quality caulk to seal all the areas where the side columns and head assembly meet the wall of the building.

OPTIONAL WINDBAR ASSEMBLY

The optional windbar assembly is used to keep the door panel within the channel in a high-wind application. There are two types of optional windbars: "strapped" and "strapless."

Each of these windbars can be installed on either side of the door panel, and it is acceptable to use them in combination. When used in combination, strapped and strapless windbars cannot be installed together on the same side of the door panel. In addition, with strapless windbars, it is acceptable to install two of them together on the same side of the door panel. But with strapped windbars, only one strapped windbar is allowed on either side of the panel.

Refer to the installation procedure that matches your particular windbar configuration.

If your door is equipped with a strapped windbar, proceed to "Strapped Windbar" below.

If your door is equipped with a strapless windbar, proceed to "Strapless Windbar" on page 19.

If your door does not have a windbar, go directly to "PHOTO EYES" on page 24.

Strapped Windbar

INSTALLING STRAPPED WINDBAR ON FRONT SIDE OF DOOR

- 1. Move the door panel to the fully closed position.
- Slip the ends of the windbar into the front windbar guides. Use the slot located 36 in. from the bottom end of each guide to install the windbar. Place the groove that runs around the cap on the track of the guide. (See Figure 45.)
- Raise the windbar to the approximate midpoint of the door panel (halfway between the fabric drum and the bottom bar assembly). Temporarily secure it at this position by placing a C-clamp across each guide. (See Figure 46.)



Figure 45

4. Locate the two front windbar strap brackets. These brackets may have been attached to the head assembly at the factory. Or, for larger doors, the brackets were shipped in the small parts carton. If the brackets were shipped loose, bolt them to the head assembly. (See Figure 46.)



Figure 46

5. Locate the front windbar straps — one end of each strap is connected to the center of the fabric drum. Release the shipping ties to allow the free end of each strap to drop straight down. (See Figure 47.)



Figure 47

- Remove any twists and slack from each strap. Route the straps under the front windbar and up through the clamp plates of the front windbar strap bracket.
- 7. Pull out any remaining slack from each strap and tighten the clamp bolts. (Pulling too hard on the straps will lift the windbar.) Remove the C-clamps to free the windbar.

INSTALLING STRAPPED WINDBAR ON BACK SIDE OF DOOR

1. Move the door to the fully closed position.



To avoid damaging the rear set of photo eyes when installing the windbar, first remove the rear set of photo eyes from the rear windbar guides.

2. Remove the rear set of photo eyes from the rear windbar guides.

3. Slip the ends of the windbar into the rear windbar guides. Use the slot located 26 in. from the bottom end of each guide to install the windbar. Place the groove that runs around the cap on the track of the guide. (See Figure 48.)



Figure 48

4. Raise and clamp the windbar to the approximate midpoint of the door panel (halfway between the fabric drum and the bottom bar assembly). Temporarily secure it at this position by placing a C-clamp across each guide. (See Figure 49.)



Figure 49

 Locate the rear windbar straps — one end of each strap is connected to the center of the fabric drum. Release the shipping ties to allow the free end of each strap to drop straight down. (See Figure 50.)



Figure 50

- 6. Remove any twists and slack from each strap. Route the straps under the rear windbar and up through the rear strap clamps located on the under- side of the rear spreader bar.
- Pull out any remaining slack from each windbar strap and tighten down the clamp plates. (Pulling too hard on the straps will lift the windbar.) Remove the C-clamps to free the windbar.

Strapped Windbar Adjustment

- 3. To adjust a strapped windbar that is installed on either side of the door panel, first release the motor brake by pulling on the brake cable. Then manually move the door panel to the fully open position.
- 2. Release the cable to lock the door in place.

3. A front windbar should fall between the bottom of the fabric drum and the top of the bottom bar. A rear windbar should fall between the upper end of the rear windbar guide and the top of the bottom bar. (With front and rear windbars installed, once the front windbar is properly positioned, the rear wind- bar should fall directly behind it.) (See Figure 51.)



Figure 51

- If a windbar is out of position or not level, reposition it by sliding the corresponding windbar strap(s) up or down through the strap clamp(s). Tighten the clamp plates to lock in the adjustment.
- 5. Manually operate the door panel several times. Ver- ify the windbar straps are working correctly and that the windbars are tracking properly.

IMPORTANT: DO NOT cut off any excess strap at this time.

Strapless Windbar

NOTE: Any door over 24 ft. wide and any door with strapless windbars will be nonbreakaway and will have steel cover plates on both ends of the bottom bar.

The strapless windbar option is available in single or dual configurations. Refer to the installation procedure that matches your particular configuration.

SINGLE STRAPLESS WINDBAR CONFIGURATION

- 1. Move the door panel to the fully open position.
- Remove the windbar stop from each windbar guide. Save the stops and hardware for later use. (See Figure 52.)



Figure 52

3. Move the door panel to the fully closed position.

ACAUTION

If installing a windbar in the rear set of windbar guides, to avoid damaging the rear set of photo eyes, first remove the rear set of photo eyes from the rear windbar guides

4. Slip the ends of the windbar into the windbar guides. Use the slot in each guide to install the windbar. (On the front set of guides, the slot is located 36 in. up from the bottom end of the guide. On the rear set, the slot is 26 in. from the end.) Place the groove that runs around the cap on the track of the guide. (See Figure 53.)



Figure 53

5. Raise the windbar to near the top of the windbar guides. Temporarily secure it at this position by placing a C-clamp across each guide. (See Figure 54.)



Figure 54

- 6. Reinstall the windbar stop in each windbar guide. Use the same hardware and mounting holes the stops were removed from earlier (near the halfway mark of the door opening). Tighten all hardware.
- 7. Position the door panel so that the bottom bar assembly is at a comfortable working height.

 Remove the two upper screws from each end of the bottom bar (on the side adjacent to the windbar). Save the screws. (See Figure 55.)



Figure 55

9. Using the existing holes and saved screws, install a pick-up bracket on each end of the bottom bar assembly. The pick-up brackets were shipped in the small parts carton. (See Figure 56)



Figure 56

 Install a third pick-up bracket in the center of the bottom bar (using the pre-drilled holes provided). Use two ⁵/₁₆-18 x 2¹/₄-in. serrated-flange cap screws and nuts. The screws and nuts were shipped in the small parts carton. (See Figure 57.)



Figure 57

- 11. Manually open the door panel until the pick-up brackets just lift the windbar. Remove the C-clamps to free the windbar.
- 12. Manually move the door panel to the floor. As the windbar travels down the length of the guides, the stops should catch and cradle the windbar at the halfway mark of the door opening.
- 13. Manually operate the door several times to verify the windbar travels smoothly up and down the windbar guides. Make sure the stops consistently catch and cradle the windbar.

DUAL STRAPLESS WINDBAR CONFIGURATION

- 1. Move the door panel to the fully open position.
- Remove the lower windbar stop from each windbar guide. Save the stops and hardware for later use. (See Figure 58.)



Figure 58

IMPORTANT: For a dual configuration installation, the upper windbar having the large-diameter neck must be installed first. (See Figure 59.)



If installing a windbar in the rear set of windbar guides, to avoid damaging the rear set of photo eyes, first remove the rear set of photo eyes from the rear windbar guides.

3. With the upper windbar going in first, slide the upper and lower windbars into the windbar guides. Use the slot (or notch) cut into each guide to place the windbars. (On the front pair of guides, the slot is located 36 in. from the bottom end of each guide On the rear set of guides, the notch is 26 in. from the bottom.) (See Figure 59.)



Figure 59

4. Slide both windbars up until the upper windbar is near the top of each guide. Temporarily secure them at this position by placing a C-clamp across each guide. (See Figure 60.)



Figure 60

- 5. Reinstall the lower windbar stop in each windbar guide. Use the same mounting holes the stops were removed from earlier (they are located near the lower one-third mark of the door opening). Tighten all hardware. (See Figure 58.)
- 6. Locate four upper windbar stops (flat steel plates with two corners notched). The stops were shipped in the small parts carton. (See Figure 61.)



Figure 61

7. Locate the two notches that were cut into the windbar guide at the factory; located approximately twothirds of the way up on each guide. Then weld a windbar stop in each notch.(See Figure 62.)

ACAUTION

Use extreme caution when welding. Use care to protect counterweights, tension straps, and door panel material from heat and open flames.

NOTE: If using an arc welder, place the ground electrode as close to the area to be welded as possible. Remove electrical conduit from door to control panel as damage could occur to the System 4 control.



Figure 62

- 8. Grind smooth all rough surfaces from the weld area. Touch up the bare metal using the spray paint that was provided with the door.
- 9. Position the door panel so that the bottom bar assembly is at a comfortable working height.
- 10. Remove the two upper screws from each end of the bottom bar assembly (on the side adjacent to the windbar). Save the screws. (See Figure 63.)





11. Using the existing holes and saved screws, install a pick-up bracket on each end of the bottom bar assembly. The pick-up brackets were shipped in the small parts carton. (See Figure 64)



Figure 64

12. Install a third pick-up bracket in the center of the bottom bar. Use two ⁵/₁₆-18 x 2¹/₄-in. serrated-flange cap screws and nuts. The screws and nuts were shipped in the small parts carton. (See Figure 65.)



Figure 65

- 13. Manually open the door until the pick-up brackets just lift the lower windbar. Remove the C-clamps to free the upper and lower windbars.
- 14. Manually move the door panel to the floor. As the windbars travel down the guides, the upper windbar should stop on the upper pair of stops and the lower windbar should stop on the bottom pair of stops.
- 15. Manually operate the door several times to verify each windbar smoothly travels up and down the track of the windbar guides. Make sure the stops consistently catch and cradle each windbar.

PHOTO EYES

NOTE: Your Fast-Seal door is equipped with two sets of photo eyes. The front set of eyes monitors the front side of the door — the photo eye modules that make up the front set of eyes are each mounted on a support post located in the side columns. The rear set of eyes monitors the back side of the door — they are mounted in holes located in the rear windbar guides.

The photo eyes are provided as a safety feature. If the photo eyes are correctly installed, interrupting either set of eyes as the door is closing will reverse the direc- tion of the door and hold it in the fully open position until the interruption is removed.

 Locate the photo eye cables in the head assembly. For shipping, two cables each have been coiled and tied near each end of the head assembly. One end of each cable has already been routed and secured to the junction box located in the center of the head assembly. The other end of each cable must be routed down through the head assembly and into

the adjacent side column. (See Figure 66.)

NOTE: Route cables away from moving parts and sharp corners.



Figure 66

- Route each pair of cables down through the top of the 1¹/₄-in. diameter conduit channel that has been welded to the back corner of the side column.
- From the bottom end of the conduit channel, route each cable over to its associated photo eye module. A label on the end of each cable identifies the photo eye to which that cable is assigned. (See Figure 67.)



Figure 67

- 4. Attach each cable to its assigned photo eye by screwing the connector on the end of the cable to the socket on the end of the photo eye module.
- 5. Secure each cable to the support post using the cable ties that were installed at the factory. Once each cable is secured, cut off the excess end of each tie.

REVERSING EDGE AND KILL SWITCH

The Rytec Fast-Seal® Door has incorporated a wireless reversing edge into the control system. The wireless system has two main assemblies: the mobile unit, located in the bottom bar under the plastic cover, and the stationary antenna, located in the head assembly. The wireless antenna and mobile unit are installed at Rytec prior to shipping. The antenna has a tan-colored cable which runs to the encoder that is mounted to the back of the motor, and a black cable from the encoder, which carries the signals for the reversing edge and the breakaway back to the System 4 control board.

CONTROL PANEL AND ELECTRICAL CON-NECTIONS

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, door limit settings, and initial door start-up procedure.

OPEN AND CLOSE DOOR LIMIT POSITIONS

See the Rytec System 4 Drive & Control Installation & Owner's Manual for the proper procedure for setting the open and close door limits. The open and close limit door positions are detailed below.

Close-Limit Position

The close limit should be adjusted so that the door travel allows the yellow vinyl loop located along the bottom bar assembly to gently seal against the floor. (See Figure 68.)

NOTE: The lower rubber bumper on each end bracket should be 1/2 to 1in. from the bottom of the side column. (See Figure 68.)



Figure 68

Open-Limit Position

The open limit should be adjusted so that the door travel allows the yellow vinyl seal on the bottom bar assembly to clear the top of the door opening — without the upper rubber bumper on each end bracket contacting the top of the side column. (See Figure 69.)



Figure 69

REVERSING EDGE SWITCH TEST AND ADJUSTMENT

Reversing Edge Switch Test



Do not stand under the door panel while testing the door reversing function. If the reversing edge switch is not working properly, the door could strike the person performing the test. Also, do not continue to use the door if the reversing edge is not operating properly.

- To test the reversing edge switch, close the door. As the door is closing, hit the reversing edge. If the reversing edge switch is operating correctly, the door will reverse direction and move to the fully open position and the countdown timer to close the door will begin to countdown. The System 4 controller is set to three reversing edge impacts before opening and remaining open, requiring the door to be reset. The number of reversing edge impacts is adjustable through the System 4 parameters and can be lowered if needed. Please contact Rytec Technical support if necessary.
- 2. If the door does not reverse direction, proceed to "Reversing Edge Switch Adjustment" on page 26.

Otherwise, reset the control panel and proceed to the "KILL SWITCH TEST" on page 27.

NOTE: Anytime the reversing edge is activated, remove the object in the door opening, then reset the control panel by pressing the enter key.

Reversing Edge Switch Adjustment



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

- 1. Turn off power to the door.
- 2. The reversing edge switch is a normally open contact. It is located inside the bottom bar assembly. To inspect and adjust the switch, first remove the Ry-Wi cover from the face of the bottom bar assembly. (See Figure 70.)



Figure 70

3. Inspect the switch by ensuring that the clear PVC hose is tightly connected to the lower air input post. The connection must be tight enough to avoid air leakage and prevent the hose from falling off due to vibration. (See Figure 71.)



Figure 71

- 4. The air bleed was set at the factory and should not require adjustment. If air bleed adjustment is necessary, first turn the air bleed adjustment screws fully clockwise, but not too tight. (See Figure 71.) Then adjust each screw counterclockwise, one full turn.
- 5. To adjust the reversing edge sensitivity switch, remove the wires and resistor from the contact terminals. Then place an ohmmeter across the two terminals. (See Figure 72.)



Figure 72

- Turn the small adjustment screw, located on the face of the switch, clockwise or counterclockwise until continuity is achieved. The ohmmeter should no longer show continuity. Turning the screw counterclockwise decreases sensitivity; turning it clockwise increases sensitivity.
- 7. Reattach all wires to the switch and double-check the PVC hose.
- 8. Replace the access cover.
- 9. Apply power to the control panel and repeat the "REVERSING EDGE SWITCH TEST AND ADJUSTMENT" on page 26.
- NOTE: If the reversing edge switch is set too sensitive, the door may reverse direction without coming in contact with an object. If this occurs, readjust the switch as required.

KILL SWITCH TEST

A kill switch has been mounted in each end of the bottom bar assembly. The purpose of this switch is to prevent the door from operating if the breakaway bottom bar becomes separated from either side column.



Take precautions to prevent the door from being operated as you perform the following procedure.

- 1. Position the door panel so that the bottom bar assembly is at head or chest height.
- 2. Push on one end of the breakaway bottom bar to disconnect the bar from the end bracket. It should not be possible to restart the door.

If the kill switch operated properly: Reattach the bottom bar assembly to the end bracket. (See "RESETTING BOTTOM BAR ASSEMBLY" on page 28.)

If the kill switch did not operate properly: Check the kill switch and all associated wiring for damage. Repair or replace if necessary. Ensure the magnet in the breakaway assembly is in place. Replace if necessary. (See Figure 73.)

3. Repeat the kill switch test on the other end of the bottom bar assembly.



Figure 73

RESETTING BOTTOM BAR ASSEMBLY

NOTE: The following procedure applies to both ends of the bottom bar assembly.



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

- 1. Turn off power to the door.
- 2. Open the side column cover.
- 3. Slide the door panel fabric back between the seals in the side column. (See Figure 74.)



Figure 74

NOTE: Moving the bottom bar assembly and door panel slowly back and forth through the door opening will help work the fabric, from the top down, back in place between the seals in the side column. 4. Unlatch the release handle on the spring tension assembly. Then disconnect the tension spring from the J-hook. (See Figure 75.)



Figure 75



When the spring tension assembly is stretched tight, it could rapidly move downward when released. When releasing the handle, make sure to keep your hands and fingers out from under the handle to prevent them from getting pinched.

- 5. If the end bracket is in front of the spring tension assembly, release the motor brake and reposition the door panel (as required) until it is possible to reconnect the end bracket to the bottom bar.
- 6. Insert the end bracket into the end of the bottom bar assembly. They are properly connected when the spring plunger on the end of the bottom bar assembly snaps into the end bracket. (See Figure 76.)
- NOTE: If you have trouble connecting the end bracket to the bottom bar assembly, the spring plunger on the end of the bottom bar might require an adjustment. Refer to "SPRING PLUNGER ADJUSTMENT" on page 29.



Figure 76

7. Check the tension strap and spring strap to ensure they are not twisted or out of alignment with the guide rollers. Then reconnect the spring to the J-hook. (Figure 77.)



Figure 77

- 8. Reapply tension to the tension strap by raising the spring release handle and locking it in place.
- 9. Check the alignment of the end bracket and the bottom bar assembly. They must be flush at the front and back edges. (See Figure 78.)



Figure 78

- 10. Close and fasten the side column cover.
- 11. Reset the control system by reapplying power.
- NOTE: Anytime the bottom bar breaks away from either end bracket, a kill switch is activated. After the end brackets are reattached, the control panel must be reset before the door will operate again.
- 12. Operate the door a few times to make sure it is working correctly.

SPRING PLUNGER ADJUSTMENT

The bottom bar assembly is equipped with a spring plunger at each end. The plungers aid in holding the bottom bar to the end brackets. (See Figure 79.)

The tension on each plunger has been set at the factory and should not require field adjustment. If the door is subject to severe wind loading, the plungers may need to be readjusted to prevent the bottom bar assembly from inadvertently releasing from either end bracket.



Figure 79

- 1. To adjust either plunger, first position the door panel so that the bottom bar assembly is at a comfortable working height.
- 2. Turn off power to the door.



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

- 3. Push on the end of the bottom bar assembly to disconnect the bar from the end bracket.
- 4. To adjust the tension of the spring plunger, use a ⁵/₁₆-in. wrench to move the plunger in or out. Moving the plunger in will decrease the tension; moving it out will increase the tension. (If the plunger is moved too far out, you might have difficultly reconnecting the end bracket to the bottom bar.)
- 5. After the plunger is adjusted, reconnect the bottom bar assembly to the end bracket. (See "RESET-TING BOTTOM BAR ASSEMBLY" on page 28.)
- 6. Reapply power and operate the door a couple of times to make sure it is working correctly.

PHOTO EYE TESTING AND ADJUSTMENT



Take precautions to prevent the door from being operated as you perform the following procedure. Your Rytec Fast-Seal® Door is equipped with two sets of photo eyes that monitor the front and back sides of the door. The purpose of these photo eyes is to hold the door open or, if the door is closing, reverse the direction of the door if a person or object crosses the path of either photo eye beam. After the obstruction breaking the photo eye beam is removed:

- If the door was originally opened by an automatic activator, the door will close automatically.
- If the door was originally opened by a non-automatic activator, the door will remain open until it is closed by the non-automatic activator.
- NOTE: The photo eyes are not intended to be used as door activators and will not open the door when it is closed.

Each set of photo eyes consists of a transmitter module and a receiver module. To prevent one set of photo eyes

from interfering with the other set, the transmitter and receivers have been mounted diagonally across from each other — each side column has a transmitter module and a receiver module from each set of eyes. (See Figure 80.)



Figure 80

The transmitter and receiver can be identified 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 81.) 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 82.)

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. (See Figure 82.)



Figure 81



Figure 82

Testing Photo Eye Modules

With power on, the green light indicates the photo eye module is powered up. When the yellow light on the receiver module is also lit, the transmitter and receiver modules are properly aligned.

Placing your hand in front of the receiver breaks the light path and causes the yellow light to go out. Removing your hand causes the yellow light to go back on.

Troubleshooting

If any of the green lights are not lit, check to make sure power is turned on, and that all wiring has continuity and is installed and connected correctly. If the green lights are on, but the yellow light is off, check the alignment of the transmitter and receiver modules. Also, clean the lens of each eye using window cleaner and a soft, clean cloth.

FINAL ADJUSTMENTS

COUNTERWEIGHT STRAP



Securely support the counterweight when making any adjustments. A counterweight can weigh 100 pounds or more. If not handled properly, a counterweight can damage the door and cause personal injury.

- 1. Move the door to the fully open position.
- 2. Turn off the power to the door.



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

- 3. Make sure the motor brake is locked. The brake release lever must be in the locked position.
- 4. Securely support the counterweight at the position shown in Figure 83.
- 5. Adjust the length of the counterweight strap as required to achieve the position shown in Figure 83.
- 6. Remove the support from the counterweight and allow it to hang free. If required, readjust the strap to position the counterweight as shown in Figure 83.



Figure 83

NOTE: The 20–24 in. dimension is adequate for proper operation of most doors manufactured by the Rytec Corporation. However, for some very wide or short doors, the counterweight may have to be moved closer to the bottom of the side column (special counterweights with side weights may be above the 20–24 in. dimension).

> Release the brake and manually move the door to the fully closed position. Check the distance between the top of the strap clamp plate assembly and the upper guide roller — it should be no less than 1 or 2 in. (See Figure 84 and Figure 85.)

> Move the door to the fully open position. Check the position of the counterweight. It should be above the H-bracket located in the bottom of the side column. Also, both slides on a 17-in. side column counterweight must be on the counterweight guide. Adjust the strap as necessary only after placing the appropriate support under the counterweight.



Figure 84

7. After all adjustments are complete, cut off any excess strap to within 6 in. of the strap clamp plate assembly. Then fold and tape the loose end of the strap to the main length of strap. (See Figure 85.)



Figure 85

8. Turn on power to the door.

9. Repeat the above procedure on the counterweight in the other side column.

TENSION STRAP

- 1. After the door panel has been cycled approximately 20 times, move the door to the half-open position.
- 2. Turn off power to the door.



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

- 3. Open the side column cover.
- Check the position of the H-bracket forward roller in each side column. They should both be 3–4 in. above the side column base plate. (See Figure 86.)



Figure 86

- If the H-bracket does not travel as expected, readjust the tension strap as required. (See "TEN-SION STRAP — PRELIMINARY ADJUSTMENT" on page 16.)
- 6. If the H-bracket travels up and down as shown in Figure 86, trim off any excess strap to within 6 inches of the strap clamp. Tape the loose end of each strap to the main length of the strap.

STRAPPED WINDBAR (IF INSTALLED)

- 1. Move the door panel to the open position.
- 2. Turn off power to the door.



The disconnect must be in the OFF position and properly locked and tagged before performing the following procedure. 3. A front, strapped windbar should fall between the bottom of the fabric drum and the top of the bottom bar. A rear, strapped windbar should fall between the upper end of the rear windbar guide and the top of the bottom bar. (With front and rear windbars installed, once the front windbar is positioned, the rear windbar should fall directly behind it.) (See Figure 87.)



Figure 87

4. If a strapped windbar is out of position or not level,

reposition it by sliding the corresponding windbar strap(s) up or down through the strap clamp(s). Retighten each clamp to lock in the adjustment.

- 5. Manually operate the door panel several times. Verify the windbar straps are operating correctly and that the windbars are tracking properly.
- 6. Once all strapped windbars are correctly adjusted, trim off any excess strap to within 6 inches of the strap clamp. Tape the loose end of each strap to the main length of strap.

FINAL CHECKS

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.

Bottom Bar:Travels smoothly up and down within the side columns.

Door Limit Settings: Set properly. Downward travel of door panel must stop when the yellow vinyl loop seals against the floor as shown in Figure 68. Upward travel should be as shown in Figure 69.

Motor: Check that the door travels in the proper direction when the button is pressed.

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 "REVERSING EDGE SWITCH TEST AND ADJUSTMENT" on page 26.

Timers: Automatic timers must be set to ensure that the door closes properly, as described in the Rytec System 4 Drive & Control Installation & Owner's 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.

Counterweight Straps: Check the routing of all counterweight straps. Ensure that the straps are in full contact with all rollers.

Counterweights: Counterweights should be adjusted as shown in "COUNTERWEIGHT STRAP" on page 30.

Kill Switches: When the bottom bar assembly is separated from either end bracket, the kill switch at each end of the bracket must operate as described in "KILL SWITCH TEST" on page 27.

Photo Eyes: Make sure the photo eyes are working as described in, "PHOTO EYE TESTING AND ADJUST-MENT" on page 30.

Tension Straps: Check the tension strap in each side column. Both H-brackets should work as described in "TENSION STRAP" on page 33.

Strapped Windbar: Positioned as described in "STRAPPED WINDBAR (IF INSTALLED)" ON PAGE 33.

Strapless Windbar: Moves freely within the windbar guides and rests on designated windbar stops.