R Y T E C

Fast-Seal®

Owner's Manual

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FAST SEAL MODELS (FS1000 & FS1500) LIMITED WARRANTY

Rytec Corporation ("Seller"), an Illinois corporation with its principal place of business at One Cedar Parkway, PO Box 403, Jackson, WI 53037, warrants to the original registered end-user commercial purchaser ("Buyer") that the **Fast Seal® Models FS1000 & FS1500** ("Product") sold to the Buyer will be free of defects in materials and workmanship (ordinary wear and tear excepted) for the time periods set forth below:

- **Mechanical** components for a period of **One (1) Year** from the date of shipment of the Product from the Seller's plant ("Shipment").
- **Electrical** components for a period of **One (1) Year** from Shipment.
- **Standard door panels**, including **FS1000 Standard 2-ply Rilon**, for a period of **Three (3) Years** from Shipment.
- **Standard door panels**, including **FS1500 Standard 3-ply Rilon**, for a period of **Five (5) Years** from Shipment.
- **Optional door panels**, including **Optional Screen**, for a period of **One (1) Year** from shipment.
- **Coil Cords**, **Vinyl Loop Seal**, **Vision Windows**, **Wireless Mobile Unit Batteries**, **Velcro™** are considered wear items and are not covered under this Limited Warranty.
- **Aftermarket parts**, **accessories** and **assemblies** for a period of ninety (90) days from the date of Shipment.

Remedies. Seller's obligation under this Limited Warranty is limited to repairing or replacing, at Seller's option, any part which is determined by Seller to be defective during the applicable warranty period. Such repair or replacement shall be the Seller's sole obligation and the Buyer's exclusive remedy under this Limited Warranty.

Labor. Except in the case of aftermarket parts, accessories and assemblies, labor is warranted for one year. This means that Seller will provide warranty service without charge for labor in the first year of the warranty period. Thereafter, a charge will apply in to any repair or replacement under this Limited Warranty. In the case of aftermarket parts, accessories and assemblies, Seller will provide replacement parts only.

Claims. Claims under this Limited Warranty must be made (i) within 30 (thirty) days after discovery and (ii) prior to expiration of the applicable warranty period. Claims shall be made in writing delivered to the Seller at the address provided in the first paragraph of this warranty. Buyer must allow Seller and Dealer, or their agents, a reasonable opportunity to inspect any Product claimed to be defective and shall, at Seller's option, either (x) grant Seller and Dealer or their agents access to Buyer's premises for the purpose of repairing or replacing the Product or (y) return of the Product to the Seller, f.o.b. Seller's factory.

Original Buyer. This Limited Warranty is made to the original Buyer of the Product and is not assignable or transferable. This Limited Warranty shall not be altered or amended except in a written instrument signed by Buyer and Seller.

Not Warranted. Seller does not warrant against and is not responsible for, and no implied warranty shall be deemed to cover, damages that result directly or indirectly from: (i) the unauthorized modification or repair of the Product, (ii) damage due to misuse, neglect, accident, failure to provide necessary maintenance, or normal wear and tear of the Product, (iii) failure to follow Seller's instructions for installation, operation or maintenance of the Product, (iv) use of the Product in a manner that is inconsistent with Seller's guidelines or local building codes, (v) movement, settling, distortion, or collapse of the ground, or of improvements to which the Products are affixed, (vi) fire, flood, earthquake, elements of nature or acts of God, riots, civil disorder, war, or any other cause beyond the reasonable control of Seller, (vii) improper handling, storage, abuse, or neglect of the Product by Buyer or by any third party.

DISCLAIMERS. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER REPRESENTATIONS AND WARRANTIES, EXPRESS OR IMPLIED, AND THE SELLER EXPRESSLY DISCLAIMS AND EXCLUDES ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PURPOSE. SELLER SHALL NOT BE SUBJECT TO ANY OTHER OBLIGATIONS OR LIABILITIES, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORIES OF LAW, WITH RESPECT TO THE PRODUCTS SOLD OR SERVICES RENDERED BY THE SELLER, OR ANY UNDERTAKINGS, ACTS, OR OMISSIONS RELATING THERETO.

LIMITATION OF LIABILITY. IN NO EVENT WILL SELLER BE RESPONSIBLE FOR, OR LIABLE TO ANYONE FOR, SPECIAL, INDIRECT, COLLATERAL, PUNITIVE, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, EVEN IF SELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Such excluded damages include, but are not limited to, personal injury, damage to property, loss of goodwill, loss of profits, loss of use, cost of cover with any substitute product, interruption of business, or other similar indirect financial loss.

Product Descriptions. Any description of the Products, whether in writing or made orally by the Seller or the Seller's agents, including specifications, samples, models, bulletins, drawings, diagrams, engineering or similar materials used in connection with the Buyer's order, are for the sole purpose of identifying the Product and shall not be construed as an express warranty. Any suggestions by the Seller or the Seller's agents regarding the use, application, or suitability of the Product shall not be construed as an express warranty unless confirmed to be such in writing by the Seller.

Limited Warranty Void. This Limited Warranty shall be void in its entirety if:

a. The Product is modified in a manner not approved in writing by Seller; or

b. Buyer fails to maintain the Product in accordance with instructions contained in the Owner's Manual for the Product.

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INTRODUCTION

The information contained in this manual will allow you to operate and maintain your Rytec Fast-Seal® 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 serial number plate is located inside one of the side columns.

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.

DOOR SERIAL NUMBER(S)

Your ***DOOR SERIAL NUMBER*** information can be found in three universal locations. These are at the inside of either side column (approximately eye level), on the drive motor, and on the inside door 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.

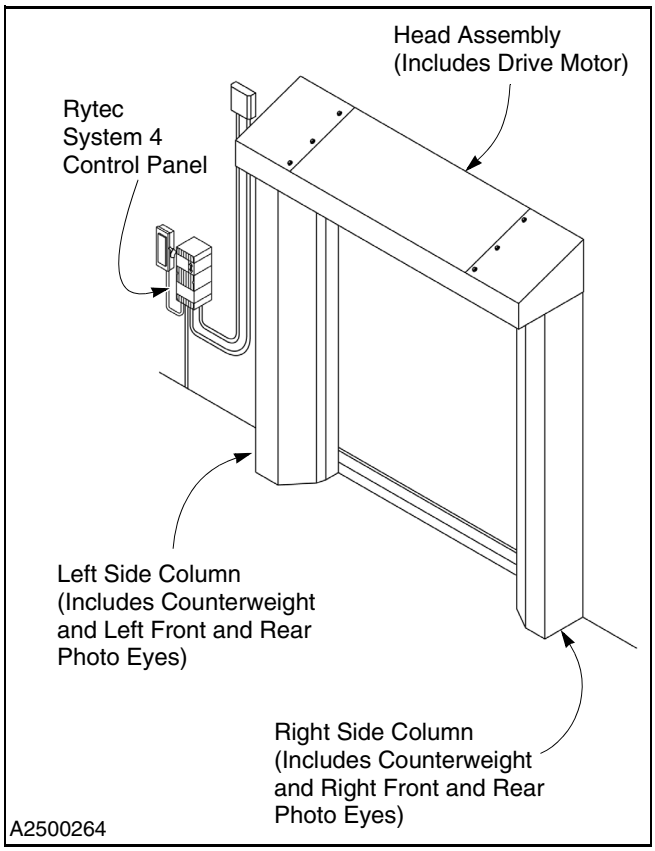


Figure 1

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.

GENERAL ARRANGEMENT OF DOOR COMPONENTS

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

This illustration is provided to you for general information purposes only. It should not be relied upon solely for operating or performing maintenance on your door and its sub-assemblies.

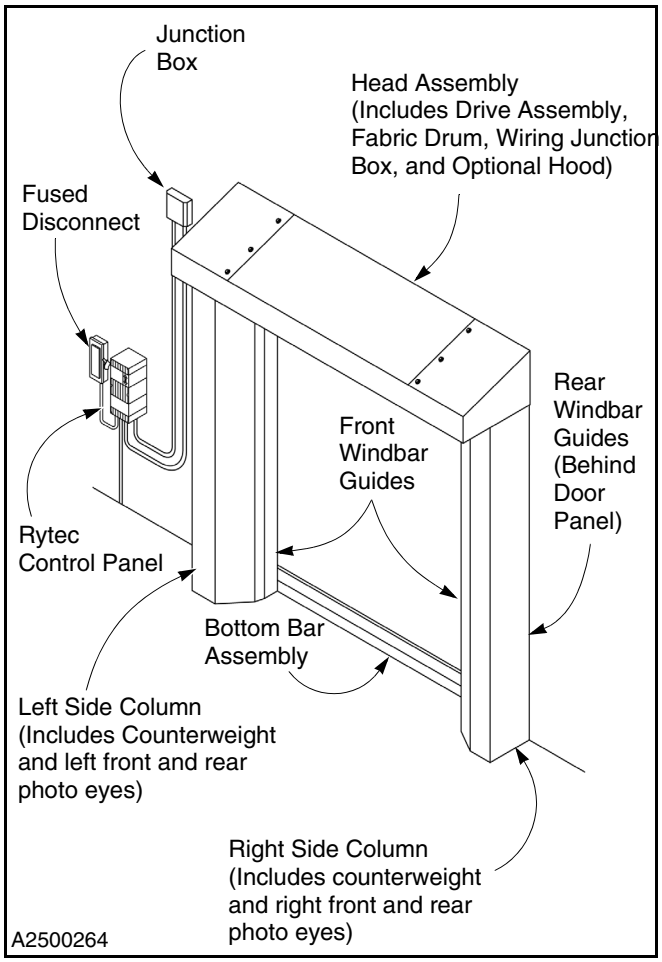


Figure 2

NOTE: The illustration above shows the front of the door. Left and right are determined as seen facing the front of the door.

OPERATION

CONTROL PANEL

The Fast-Seal door is equipped with the Rytec System 4 Drive & Control, a solid-state, microprocessor-based control system designed exclusively to operate Rytec high-performance doors. It provides connections for multiple activators, close delay timers, and status indicators. All command functions to operate the drive and control system are software controlled. For information on control panel operation, see the Rytec System 4 Drive & Control Installation & Owner's Manual.

PHOTO EYES

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 safety 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 eyes from interfering with the other set, the transmitters 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 3.)

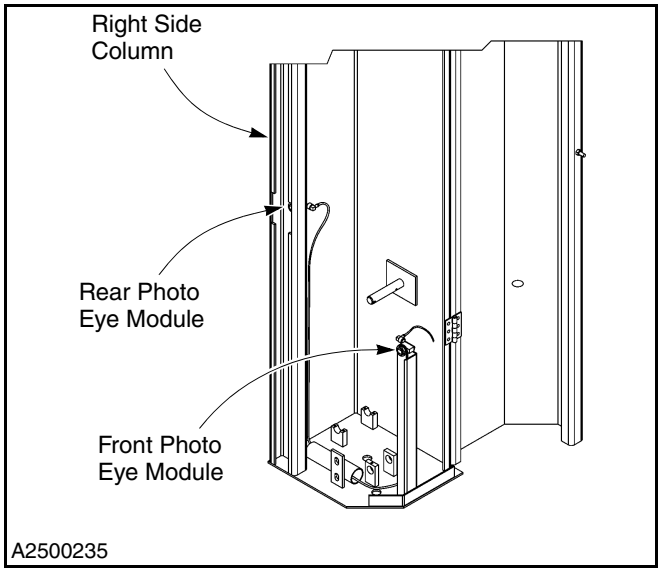


Figure 3

BOTTOM BAR ASSEMBLY

The bottom bar assembly provides two functions: breakaway capability and reversing edge.

NOTE: Any door over 24 feet wide or any door with strapless windbars will be non-breakaway and will have steel cover plates on both ends of the bottom bar.

Breakaway Capability

At each end of the bottom bar assembly is an end bracket. These end brackets support the bottom bar during normal operation. However, upon impact, the assembly is designed to allow the bottom bar to separate from either end bracket if the door is struck by a vehicle or load passing through the door.

A kill switch located at each end of the bottom bar will immediately remove all electrical power to the door when the bar has separated from either end bracket. Not only does this help prevent the bottom bar from becoming bent or damaged, it also helps prevent damage from occurring to the door panel. (See Figure 4.)

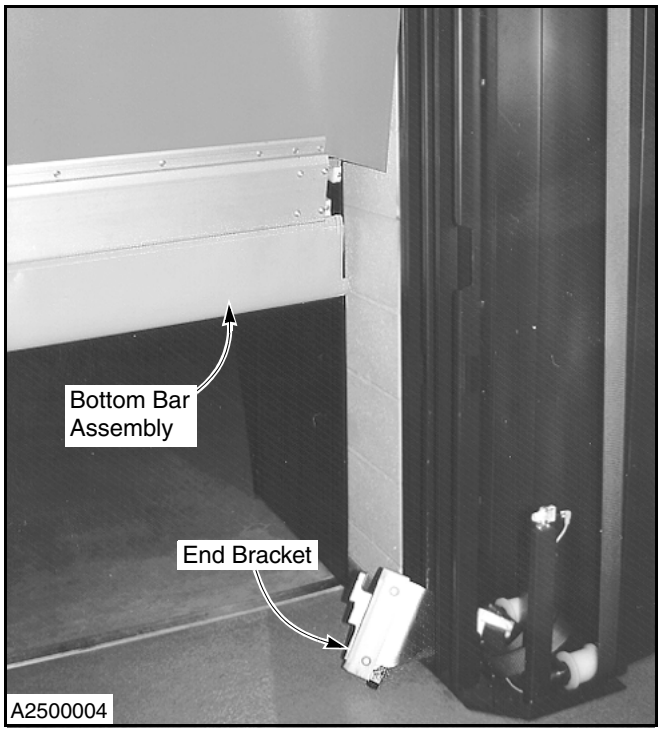


Figure 4

Resetting Bottom Bar Assembly

⚠ WARNING

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

1. Turn off the 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 5.)

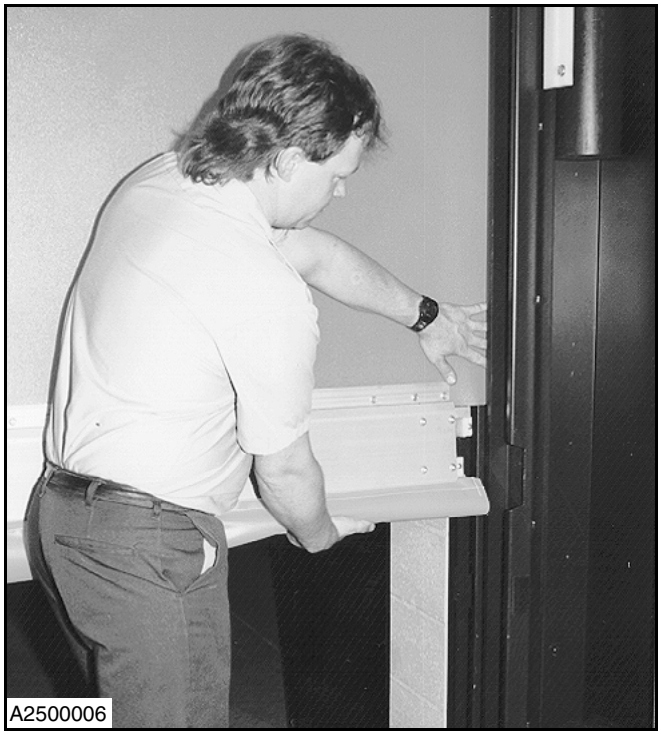


Figure 5

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 6.)

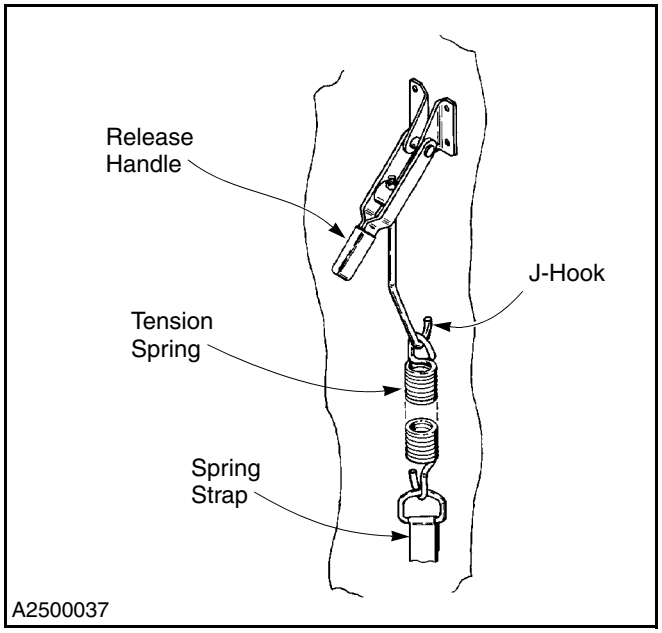


Figure 6

⚠ WARNING

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 7.)

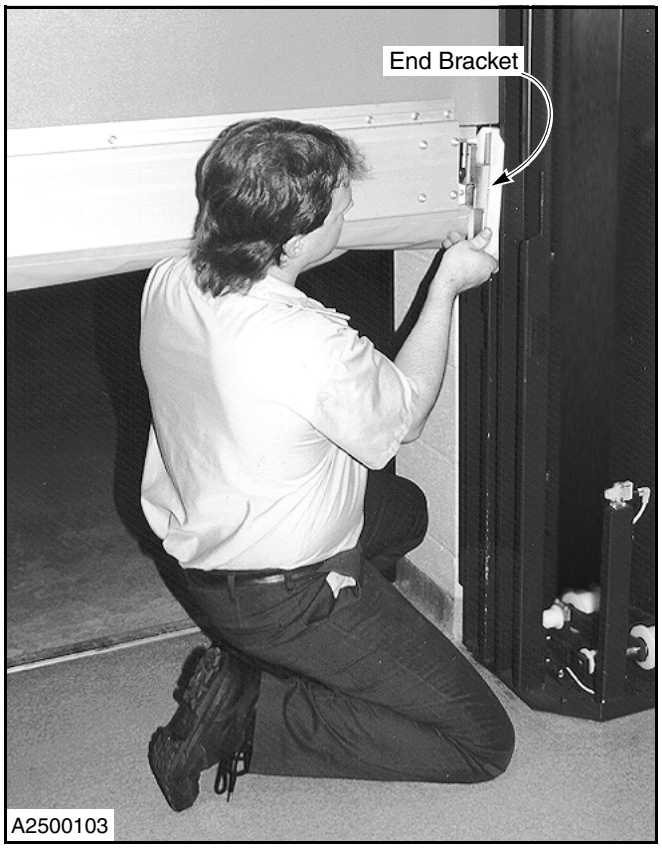


Figure 7

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.
8. Reapply tension to the tension strap by raising the spring release handle and locking it in place. (See Figure 8.)

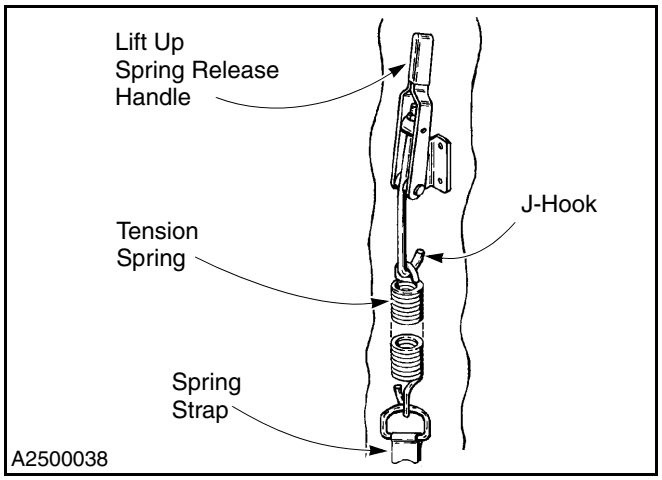


Figure 8

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 9.)

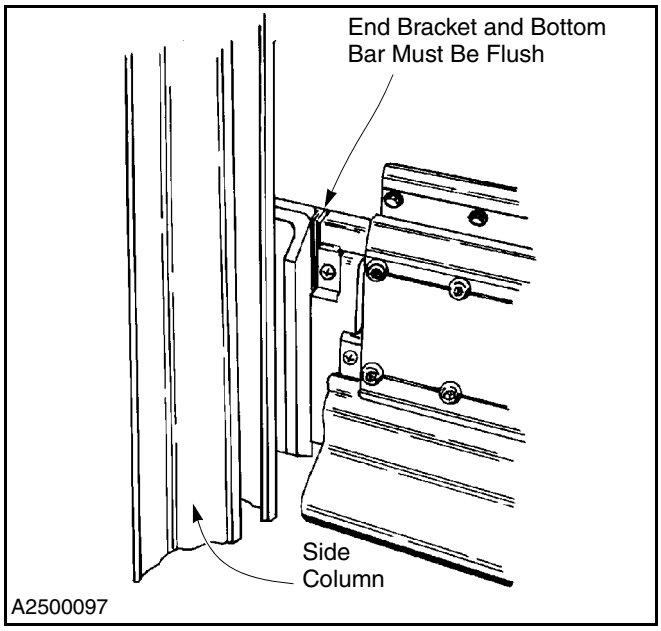


Figure 9

10. Close and fasten the side column cover.
11. Reset the control system by turning on the 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.

Reversing Edge

A pneumatically operated reversing edge is mounted along the lower edge of the bottom bar assembly. (A few models of the Fast-Seal Door are fitted with an electrically operated reversing edge. It performs the same function as a pneumatic edge.)

If this pressure-sensitive edge comes in contact with an object in the path of the door panel as it is closing, the control system will immediately reverse the door and move it to the full-open position, where it will remain until the control system is reset. (See Figure 10.)

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

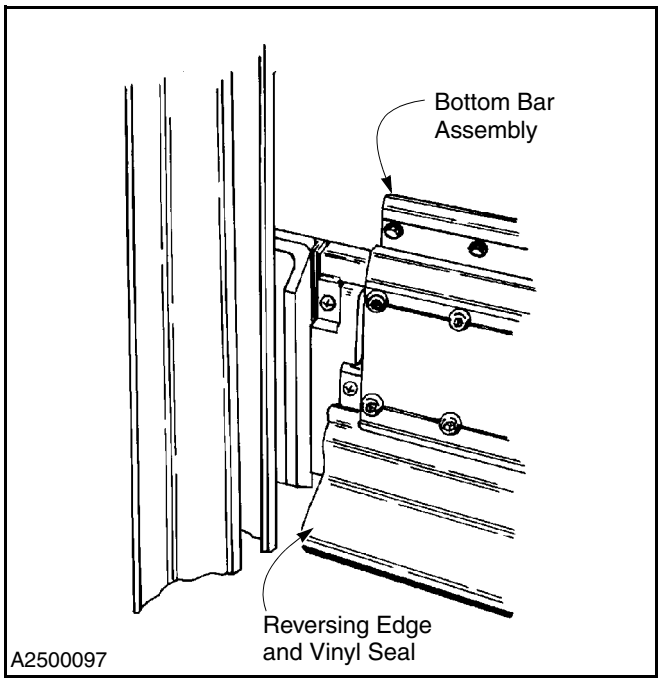


Figure 10

POWER DRIVE SYSTEM

The Fast-Seal power drive system consists of an electric motor/brake assembly and a gearbox. The power drive system can be mounted on either the left or right end of the fabric drum.

The electric motor is used to drive the fabric drum. The brake mechanism prevents the motor (fabric drum) from turning when electrical power to the motor is turned off or during a power interruption. A release cable leading from the end of the motor/brake assembly is provided to override the brake mechanism. Pulling the cable will release the brake and allow you to manually reposition the door panel. Releasing the cable sets the brake, which locks the panel in place.

A drive chain connects the gearbox to the fabric drum, by way of a pair of sprockets. The tension of the drive chain is adjusted by repositioning a sliding plate assembly that the drive system is mounted on.
(See Figure 11.)

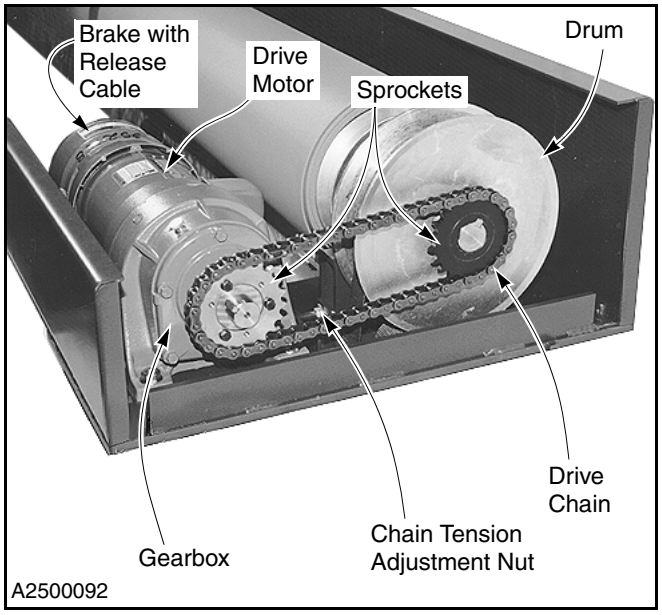


Figure 11

COUNTERBALANCE SYSTEM

The door is counterbalanced by means of counterweights. The counterweights are located in the side columns. They reduce the load against the drive motor by assisting the motor with opening and closing the door panel. (See Figure 12.)

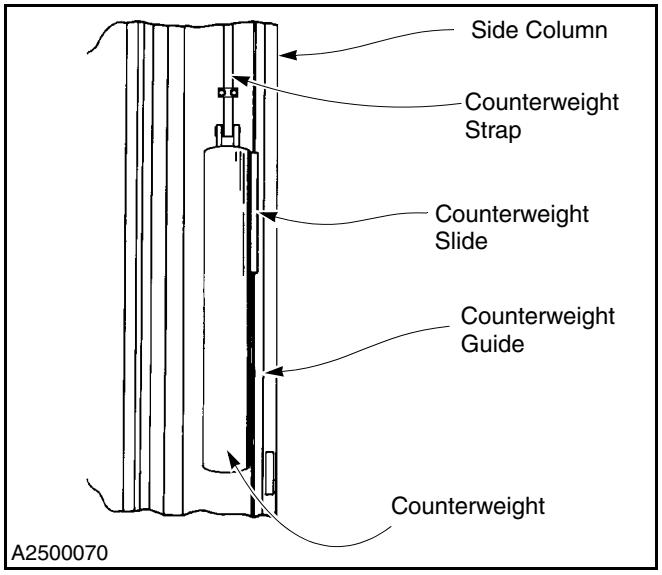


Figure 12

PLANNED MAINTENANCE

RECOMMENDED SCHEDULE

NOTE: The following maintenance schedule is recommended. (See Table 1.)

Table 1

	Daily	Quarterly
Damage Inspection		
Door Operation		
Reversing Edge Switch Test		
Photo Eye Test		
Mounting Hardware		
Fabric Panel Inspection		
Weather Seal Inspection		
Door Open- and Close-Limit Position Inspection		
Drive Chain Inspection		
Bottom Bar Inspection		
Kill Switch Inspection		
Breakaway Assembly and End Bracket Inspection		
Counterweight Inspection		
Door Tension Inspection		
Windbar Inspection (Windbars Are Optional)		
Control Panel and Activator Inspection		
Electrical Connection Inspection		
Lubrication		
Wall Anchor Inspection		
Safety Decal Inspection		

DAILY INSPECTION

Damage Inspection

Visually inspect the door for damaged components such as torn fabric panel, dented side column, bent bottom bar, or damaged photo eyes. (See Figure 13.)

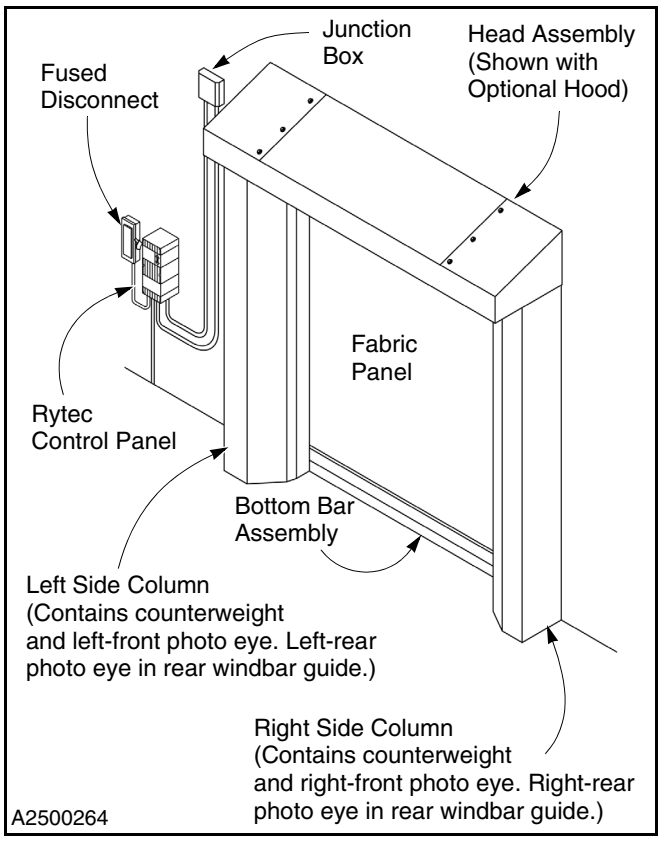


Figure 13

Head Assembly: Inspect for dents or damage that may prevent the door from opening or closing properly.

Door Panel: Inspect panel for holes, tears, and worn areas. If equipped with windows, inspect them for damage or dirt that may impair vision — clean or replace as required.

Door Panel Seals: Inspect door panel seals between windbar guides for holes, tears, and worn areas.

Side Columns and Covers: Inspect for damage that may prevent the door from operating properly.

Photo Eyes: Inspect the lens of each photo eye for damage or dirt that may prevent the photo eyes from working properly — clean or replace as required.

Bottom Bar: Inspect the bottom bar for damaged, missing, or loose hardware. Inspect the yellow vinyl seal along the lower edge of the bottom bar for tears and holes. Inspect the edge itself.

Inspect all counterweight components such as rollers, springs, and straps for damage and wear. Clean components as required to ensure proper operation of the door. (See Figure 14.)

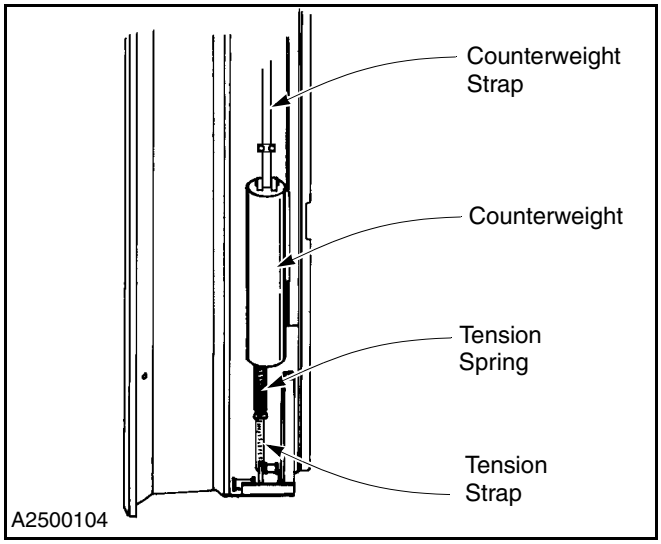


Figure 14

Counterweights and Straps: Counterweights must be properly adjusted. Counterweight straps must be in good working condition, securely attached to the counterweights and the drum assembly, and tracking properly on all rollers.

Tension Straps: Tension straps must be in good working condition, securely attached to the end brackets and drum assembly, and tracking properly on all rollers.

Spring Tension Assembly: Inspect each spring tension assembly to make sure that the spring straps are not worn or damaged, that each strap is securely fastened to the tension spring and the H-bracket, and that the tension springs are not stretched. (See Figure 15.)

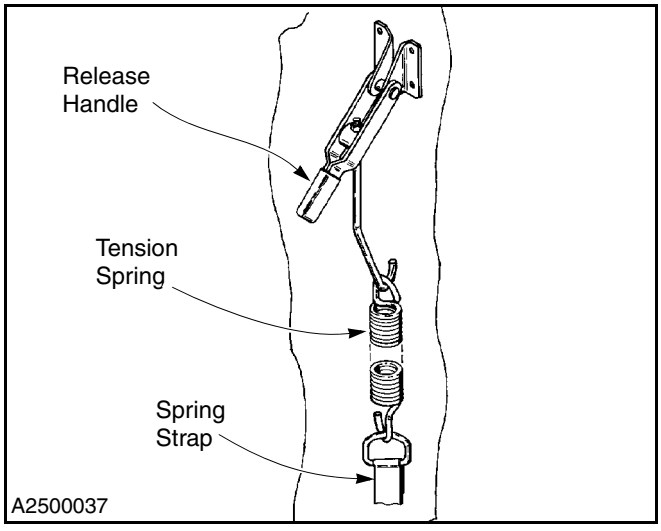


Figure 15

Door Operation

Run the door through four or five complete cycles to make sure that it is operating smoothly and efficiently with out binding or unusual noises. DO NOT continue to operate the door if it is not running properly, as this could cause additional damage.

Reversing Edge Switch Test

⚠ WARNING

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

1. To test the reversing edge switch, first close the door. As the door is closing, hit the bottom of the reversing edge. If the reversing edge switch is operating correctly, the door will immediately reverse direction and move to the full-open position, where it will remain parked until the control panel is reset.
2. If the door does not reverse direction, proceed to "Pneumatic Reversing Edge Switch Adjustment" on page 20.

   Otherwise, reset the control panel and close the door.

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

Photo Eye Test

NOTE: Two sets of photo eyes have been provided with the Fast-Seal door. They are factory installed in the side columns and are used as a safety device to prevent the door from closing if an object is in the path of the door panel. The photo eyes are not meant to be used as door activators. Both sets of eyes must be working correctly for the door to operate.

1. Raise the door to the full-open position by pressing the down key on the control panel.
2. Place an object between the front photo eyes.
3. Press the down key on the control panel. The door should not operate.
4. Remove the object and cycle the door to verify that the front set of eyes is working properly. If the front set of photo eyes is not working properly, the photo eyes may be dirty. Clean the lens of each eye as required, using window cleaner and a clean, soft cloth. If cleaning does not resolve the problem, see "PHOTO EYE ADJUSTMENT" on page 18**.**
5. Repeat the above steps on the rear set of photo eyes.

QUARTERLY INSPECTION

Mounting Hardware

1. Turn off the power to the door.

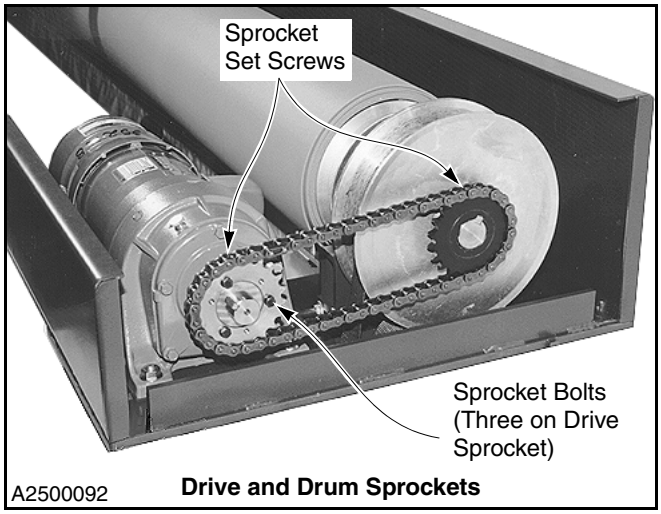
⚠ WARNING

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

2. Make sure all nuts, bolts, and set screws are tight throughout the door. Example: motor mounting bolts, through-wall mounting bolts, floor anchors, sprocket set screws, etc.
   (See Figure 16 through Figure 19.)

FABRIC DRUM

NOTE: On a door equipped with a hood, it may be necessary for you to remove the hood to gain access to all components inside the head assembly.



A2500092 **Drive and Drum Sprockets**

Figure 16

HEAD ASSEMBLY

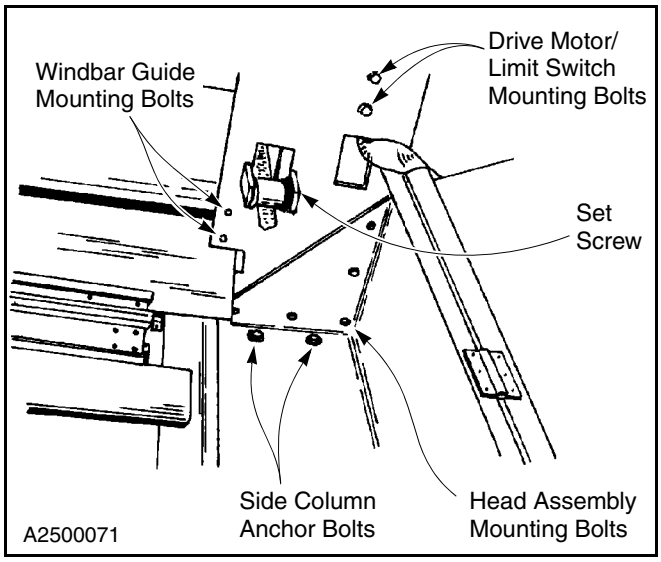


Figure 17

SIDE COLUMN

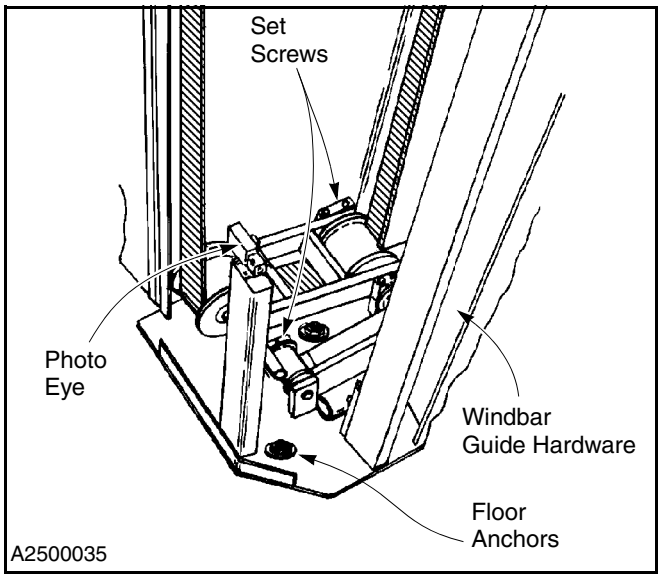


Figure 18

BOTTOM BAR

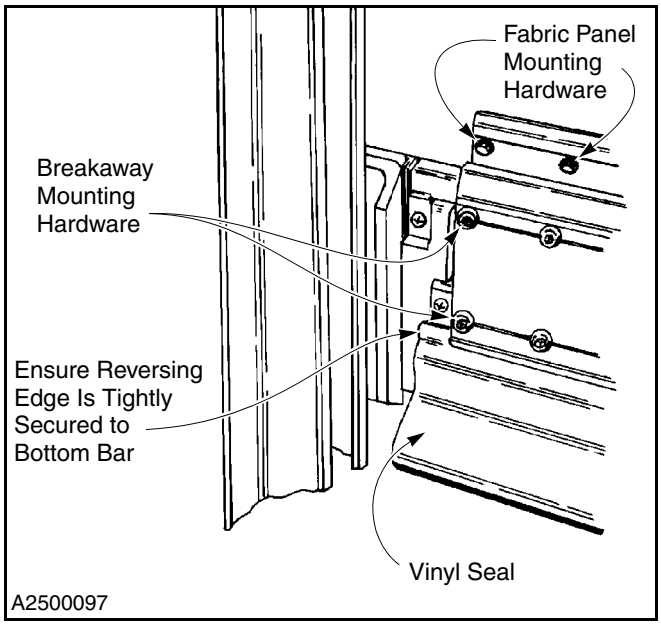


Figure 19

3. Turn on the power to the door.

Fabric Panel Inspection

1. Turn off the power to the door.

⚠ WARNING

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

2. Inspect the entire surface of the fabric panel for tears and holes. Repair or replace as required.
3. If equipped with windows, inspect them for damage or dirt that may impair vision — clean or replace the windows as required.

NOTE: When cleaning the windows, use any good brand of household window cleaner. Do not use an abrasive cleaner or a petroleum-based solvent.

4. Check to ensure that the fabric panel is securely fastened to the bottom bar assembly. Tighten or replace hardware as required.
5. Turn on the power to the door.

Weather Seal Inspection and Replacement

1. Turn off the power to the door.

⚠ WARNING

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

HEAD ASSEMBLY

NOTE: The weather seal is mounted on the underside of the head assembly, behind the fabric drum.

Inspect the weather seal for wear or damage. Replace if necessary.

SIDE COLUMNS

Inspect the weather seal in each side column for tears and holes. Replace if necessary. (See Figure 20.)

NOTE: The weather seal is held in the track by crimping the ends of the track.

To replace the weather seal, loosen each crimp and slide a new seal in the track. Then recrimp the track to secure the seal.

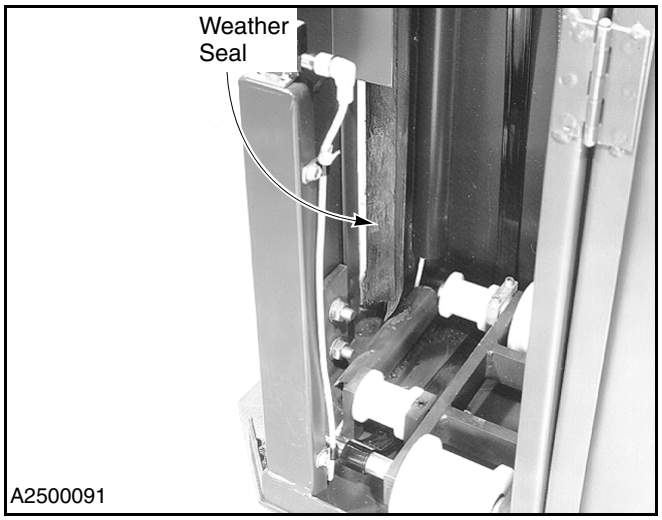


Figure 20

2. Turn on the power to the door.

Door Open- and Close-Limit Position Inspection

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 21.)

NOTE: The lower rubber bumper on each end bracket should be ½ to 1 in. from the bottom of the side column. (See Figure 21.)

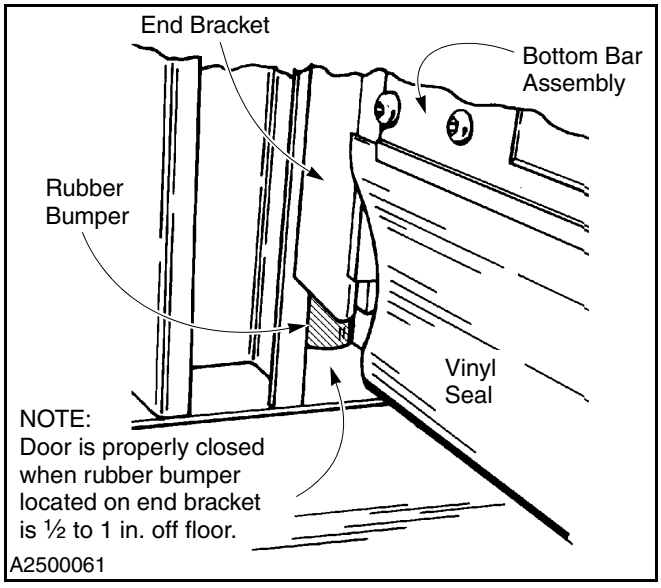


Figure 21

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 22.)

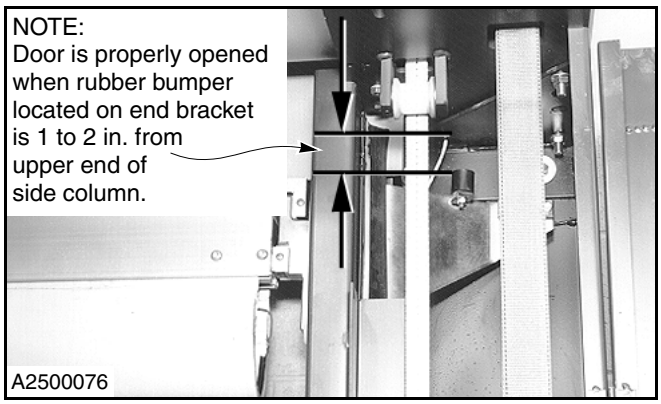


Figure 22

Drive Chain Inspection

1. Turn off the power to the door.

⚠ WARNING

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

When adjusted properly, the drive chain should have a maximum deflection of ¼ in. at the center of the chain. Also, the master link should be properly secured with the retainer clip. (See Figure 23.)

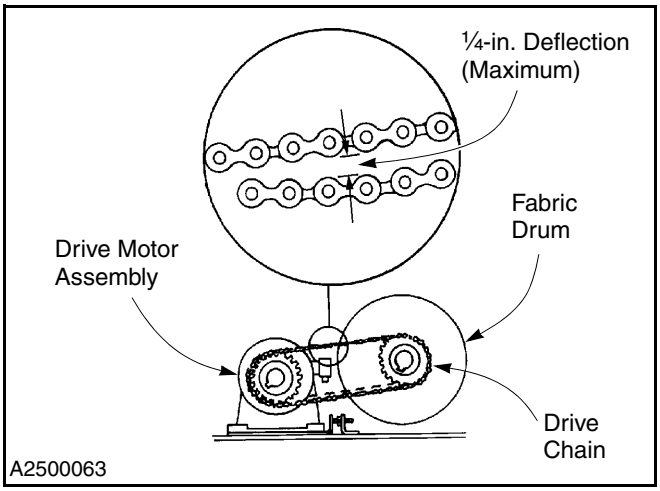


Figure 23

If the drive chain requires adjustment, see “DRIVE CHAIN ADJUSTMENT” on page 22.

2. Turn on the power to the door.

Bottom Bar Assembly Inspection

1. Turn off the power to the door.

⚠ WARNING

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

2. Check the hardware used to secure the breakaway assembly to the bottom bar. Tighten as required. (See Figure 24.)

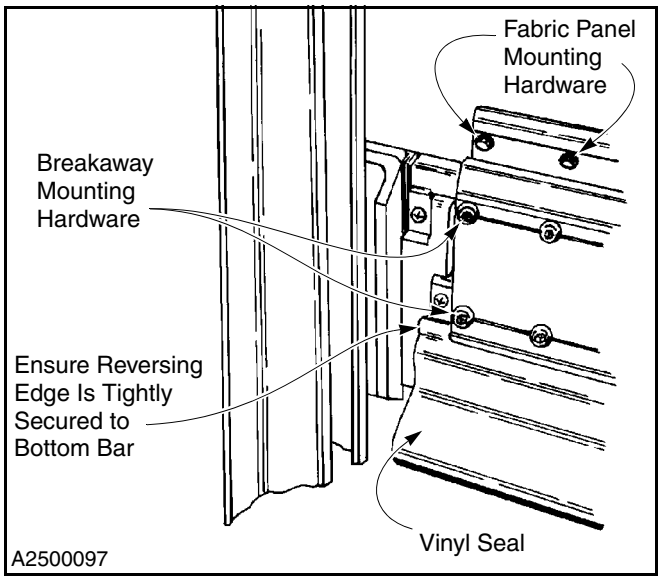


Figure 24

3. Check the reversing edge to see that it is tightly secured to the bottom bar.
4. Inspect the vinyl loop on the bottom bar for abrasions or tears. Replace if required.
5. Turn on the power to the door.

Kill Switch Inspection

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.

⚠ WARNING

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 a comfortable working height.
2. Push on one end of the bottom bar assembly to disconnect it from the end bracket. It should not be possible to operate the door through the control panel.

   If the kill switch operated correctly: Reconnect the bottom bar assembly to the end bracket and repeat the procedure on the other end of the bottom bar. (See “Resetting Bottom Bar Assembly” on page 3.)

If the kill switch did not operate correctly:
Ensure the magnet in the end bracket is in place. Also check that the kill switch is installed in the end of the bottom bar assembly and that it is not cracked or damaged. If a magnet or kill switch is replaced, use Loctite®[1] 495, or an equivalent adhesive to secure them in place. (See Figure 25.)

To troubleshoot a kill switch, see “Kill Switch Troubleshooting” on page 21.

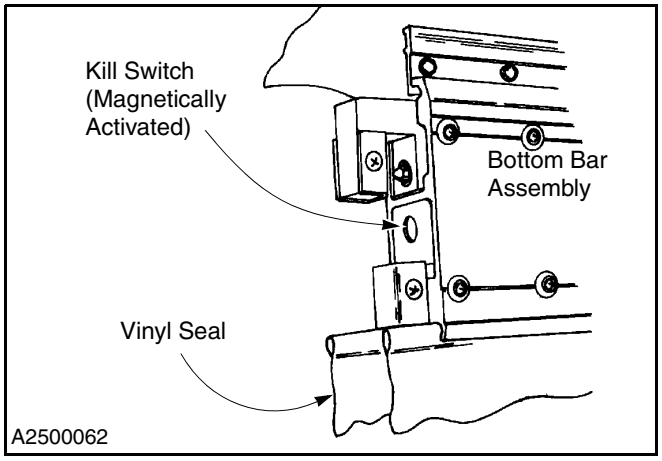


Figure 25

Breakaway Assembly and End Bracket Inspection

1. Turn off the power to the door.

⚠ WARNING

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

2. With both end brackets disconnected from the bottom bar assembly, check the wear pads on each end of the bottom bar for excessive wear or damage. Replace pads if required. (See Figure 26.)

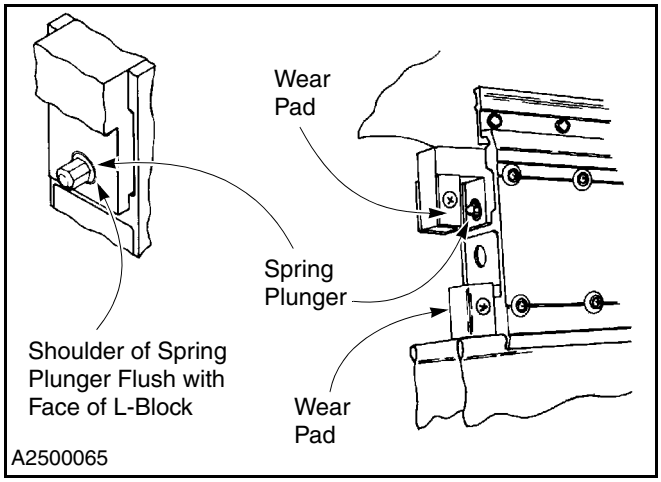


Figure 26

3. Check the adjusted position of each spring plunger located on the ends of the bottom bar assembly. The shoulder of each plunger should be flush with the L-block on the end of the bottom bar. If adjustment is necessary, see “Spring Plunger Adjustment” on page 20.

NOTE: The normal position of the spring plunger is as shown in Figure 26. If your door is subject to high wind conditions, increase the holding strength of the plunger by adjusting it out a few turns. (Moving it too far out could make it difficult for you to reassemble the bottom bar.)

4. Check the rubber bumpers on each end bracket. The bumpers must be in place and tightly secured to the top and bottom of each bracket. Replace if necessary. (See Figure 27.)

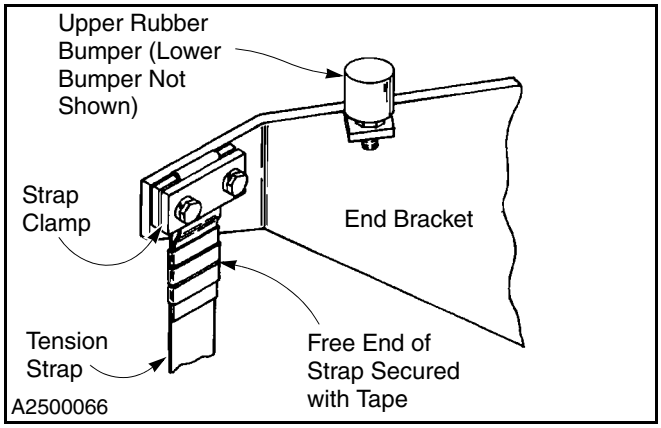


Figure 27

5. Make sure the tension straps are tightly secured to the end brackets. The loose end of each strap should be secured with tape.

1. Loctite® is a registered trademark of Loctite Corporation.

6. Inspect the bottom bar slides and mounting hardware on each end bracket for wear. Replace as required. (See Figure 28.)

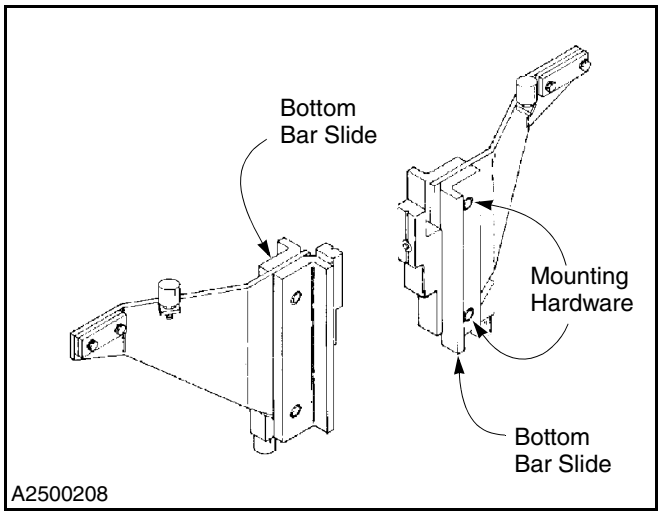


Figure 28

7. After the inspection of the bottom bar assembly and both end brackets is complete, reattach the end brackets. (See "Resetting Bottom Bar Assembly" on page 3.)
8. Turn on the power to the door.

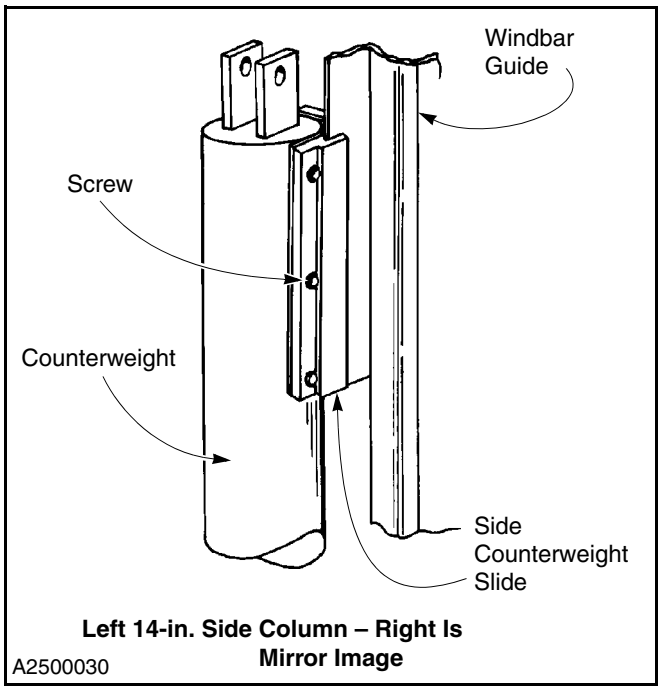
Counterweight Inspection

1. Turn off the power to the door.

⚠WARNING

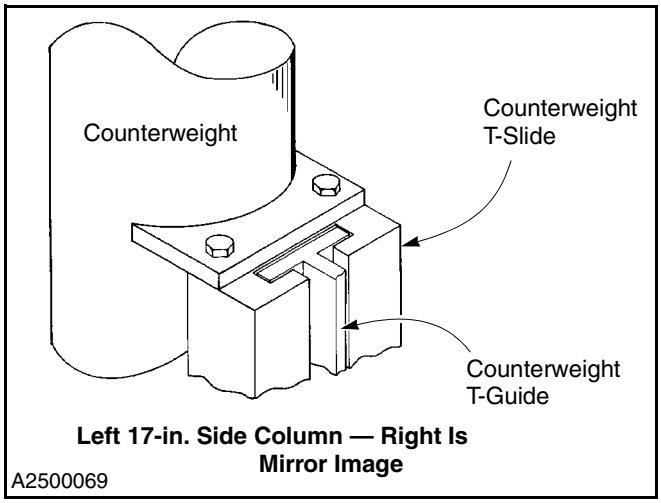
The disconnect must be in the OFF position and properly locked and tagged before performing the following procedure.

2. Check to ensure that all counterweight slides are properly attached and correctly placed in their respective mounting brackets.
(See Figure 29 and Figure 30.)



Left 14-in. Side Column – Right Is Mirror Image

Figure 29



Left 17-in. Side Column — Right Is Mirror Image

Figure 30

3. Inspect the counterweight straps for stretch. With the door in the full-open position, the counterweights will hang at their lowest point in the side column. The distance from the bottom of the counterweight to the base of the side column should measure 20 to 24 in. (See Figure 31.)

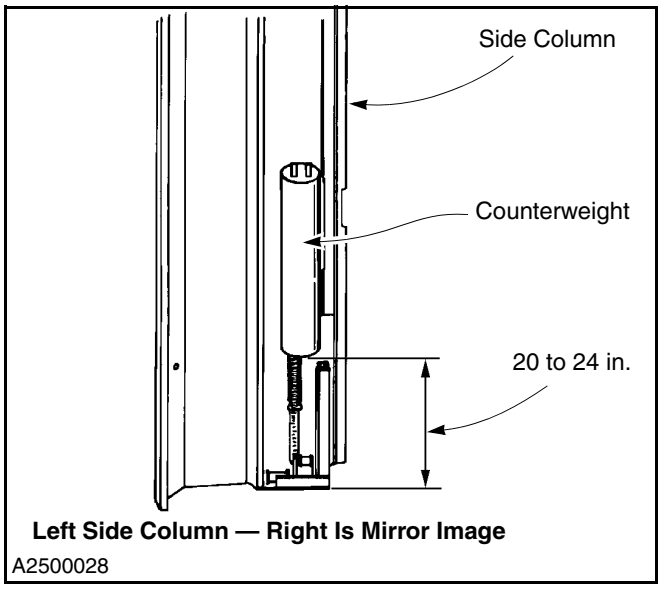


Figure 31

4. If a strap has stretched to the point where the counterweight is not in the position as shown in Figure 31, reposition the counterweight by adjusting the strap. (See "COUNTERWEIGHT STRAP ADJUSTMENT" on page 23.)
5. Inspect each counterweight strap for wear and tear. Make sure the straps track smoothly and evenly on all rollers. Replace straps as required. (See "COUNTERWEIGHT STRAP REPLACEMENT" on page 31.)
6. Turn on the power to the door.

Door Tension Inspection

⚠ WARNING

Take precautions to prevent the door from being operated as you perform the following procedure. Also, be cautious around moving parts exposed in side columns.

1. Move the door to the half-open position.
2. Check the position of the H-bracket forward roller in each side column. They should both be 3 to 4 in. above the side column base plate. (See Figure 32.)

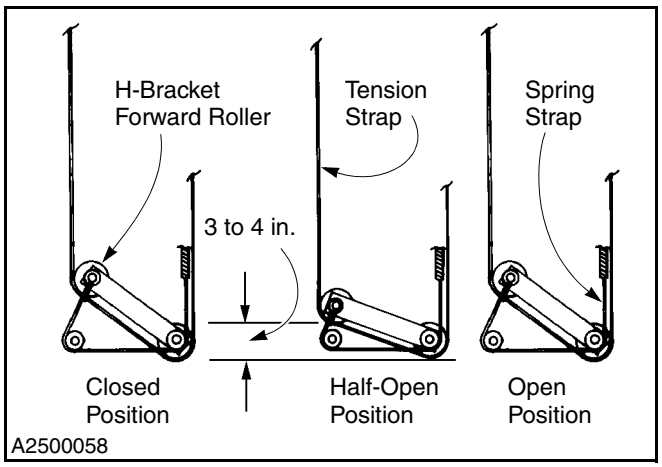


Figure 32

3. Run the door through a complete cycle. Check the position of the H-brackets when the door reaches the full-open and -closed positions. If either H-bracket is not as shown in Figure 32, adjust the tension strap. (See "TENSION STRAP ADJUSTMENT" on page 24.)

NOTE: Taller doors are equipped with an idler roller in each side column. If your door uses idler rollers, the tension strap should be routed as shown in Figure 34.

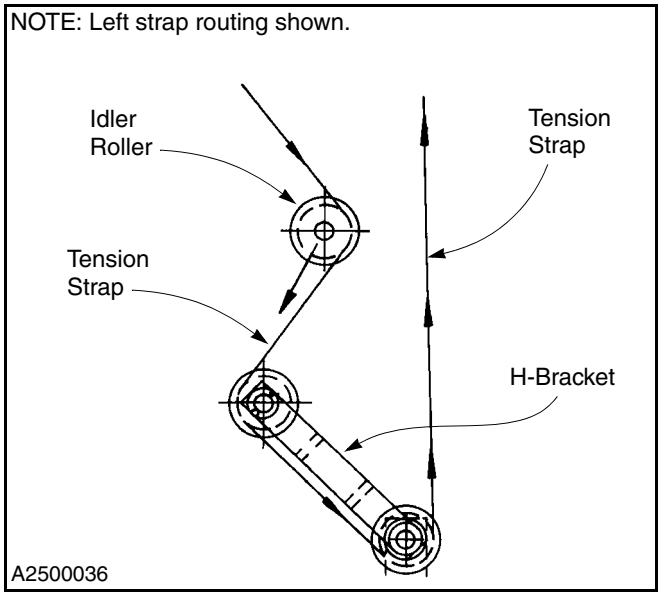


Figure 33

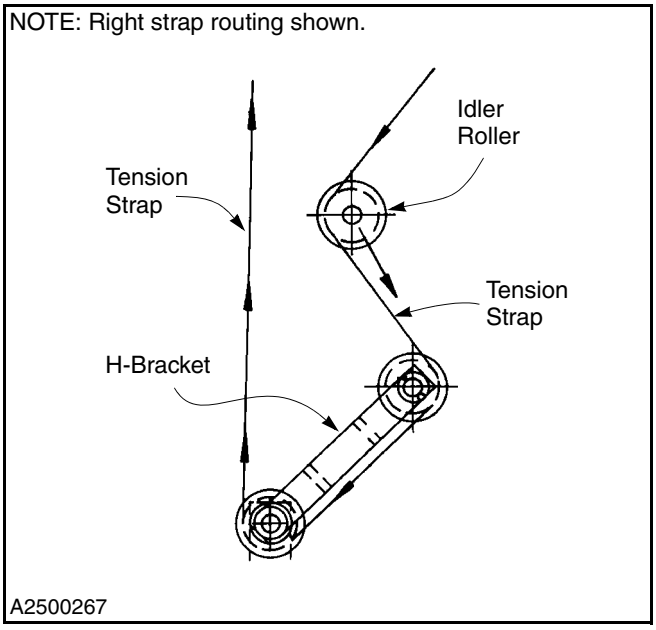


Figure 34

4. Inspect each tension strap for wear and tear, and frayed edges. Replace if required. (See “TENSION STRAP REPLACEMENT” on page 30.)
5. Inspect each spring strap for wear and tear, and frayed edges. (See Figure 35.) Replace if required. (See “SPRING STRAP REPLACEMENT” on page 29.)

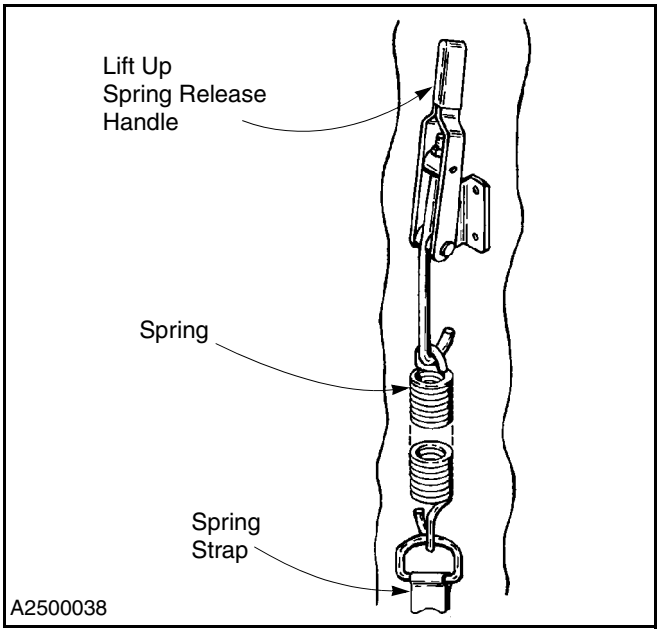


Figure 35

Windbar Inspection

STRAPPED WINDBAR (IF INSTALLED)

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

⚠ WARNING

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

3. Inspect all strapped windbars (if installed). 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 36.)
4. If a strapped windbar is out of position or not level, adjust the windbar. (See “STRAPPED WINDBAR ADJUSTMENT (OPTIONAL SYSTEM)” on page 26.)
5. Inspect each windbar strap for wear and tear, and frayed edges. Replace as required. (See “WINDBAR STRAP REPLACEMENT” on page 27.)
6. Check the windbar end caps. They should each be tightly secured to the end of the windbar. Replace damaged end caps and any loose rivets holding the end caps in place.

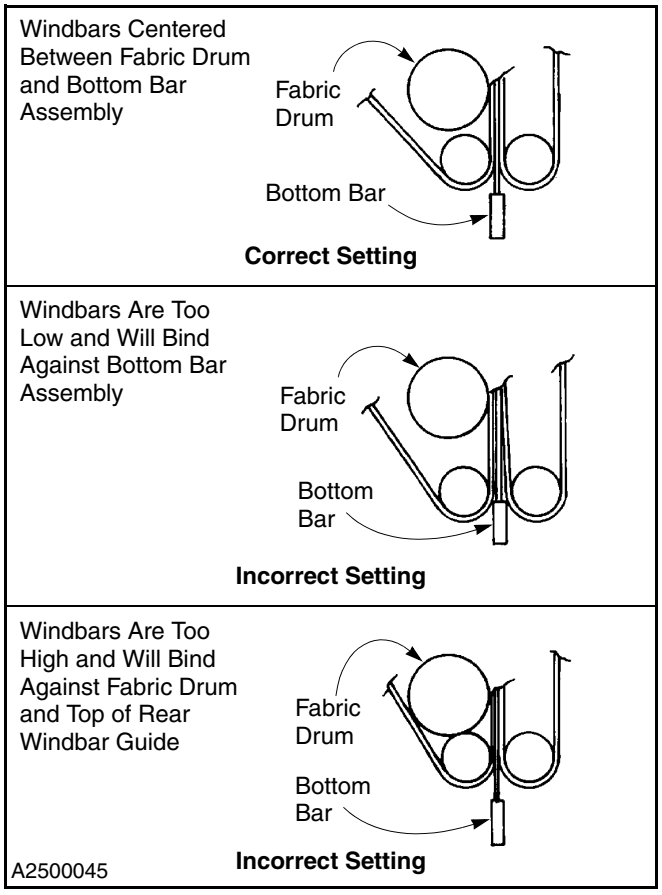


Figure 36

7. Turn on the power to the door.

STRAPLESS WINDBAR (IF INSTALLED)

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

⚠ WARNING

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

3. Inspect the strapless windbars (if installed). Check the windbar end caps. They should each be tightly secured to the end of the windbar. Replace damaged end caps.
4. Check the pickup brackets along the bottom bar assembly. Also check the windbar stops located in the windbar guides. Replace any worn, damaged, or missing hardware as required.
5. Turn on the power to the door.

Control Panel and Activator Inspection

1. Ensure all associated warning and safety labels are intact, clean, and easy to read. Replace as needed.
2. Check the control panel for proper operation. If any adjustments or repairs are necessary, refer to the Rytec System 4 Drive & Control Installation & Owner's Manual. The manual was shipped with the control panel.
3. Operate the door five or six complete cycles with each activator installed and used with the door. A typical activator may be a floor loop, pull cord, push button, motion detector, radio control, etc.

   The open cycle is controlled by an activator. The close cycle is controlled by an activator or by a programmable timer internal to the control panel.

Electrical Connection Inspection

1. Turn off the power to the door.

⚠ WARNING

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

2. Inspect control panel wiring. See Rytec System 4 Drive & Control Installation & Operation Manual.
3. Inspect all electrical connections inside the head assembly junction box. Connections must be tight.
4. Inspect all electrical connections pertaining to the power drive system. Connections must be tight.
5. Turn on the power to the door.

Lubrication

1. Turn off the power to the door.

⚠ WARNING

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

2. ***Drive Chains:*** The drive chains should be lubricated with a good-quality grade of heavy lubricating oil. (See Figure 37.)

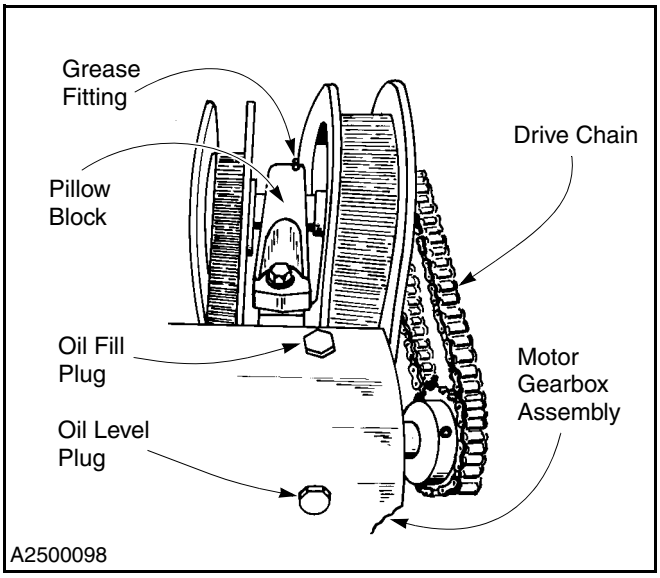


Figure 37

3. ***Pillow Block Bearings:*** Each end of the fabric drum is supported by a pillow block bearing. At the grease fitting on each bearing, lubricate the bearings using a lithium-based grease conforming to NLGI, Grade 2 Standard. Use a medium-viscosity, low-torque grease with an approved operating temperature range of –30° to +200°F. (See Figure 37.)
4. ***Upper Rollers:*** The upper end of each tension strap travels on an upper roller. These rollers, located near the ends of the head assembly, each spin on a shaft that must be lubricated with a good-quality grade of heavy lubricating oil. (See Figure 38.)

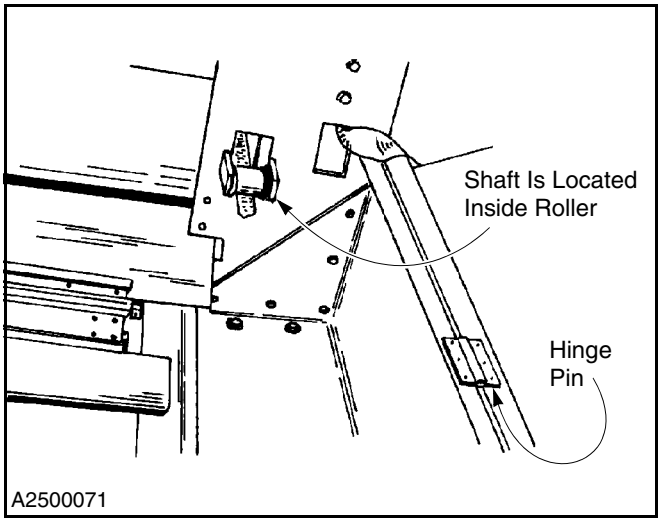


Figure 38

5. ***Hinge Pins:*** All side cover hinge pins must be lubricated with a good-quality penetrating oil to prevent the hinges from rusting. (See Figure 38.)
6. ***Tension, Spring, and Idler Rollers:*** The lower end of each tension strap and both spring straps each travel on a pair of rollers located in the bottom of the side columns. These rollers spin on shafts that must be lubricated with a good-quality grade of heavy lubricating oil. (See Figure 39.)

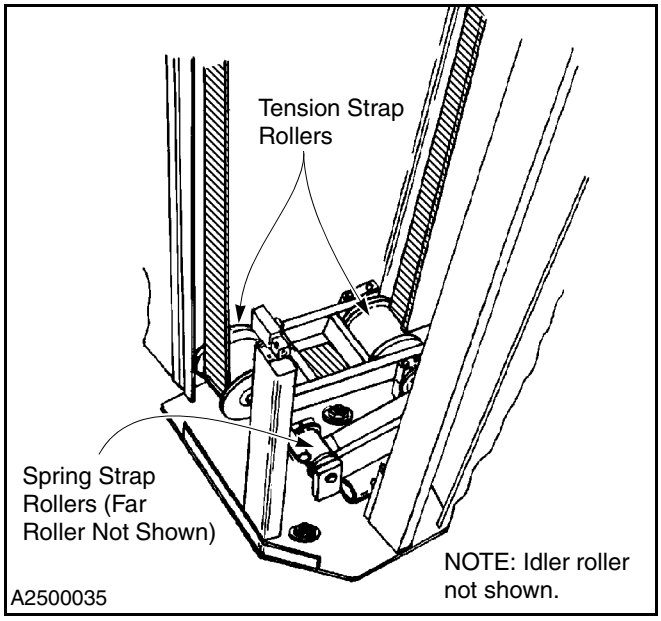


Figure 39

7. ***Spring Plungers:*** A spring plunger at each end of the bottom bar assembly must be lubricated with a good-quality penetrating oil. (See Figure 40.)

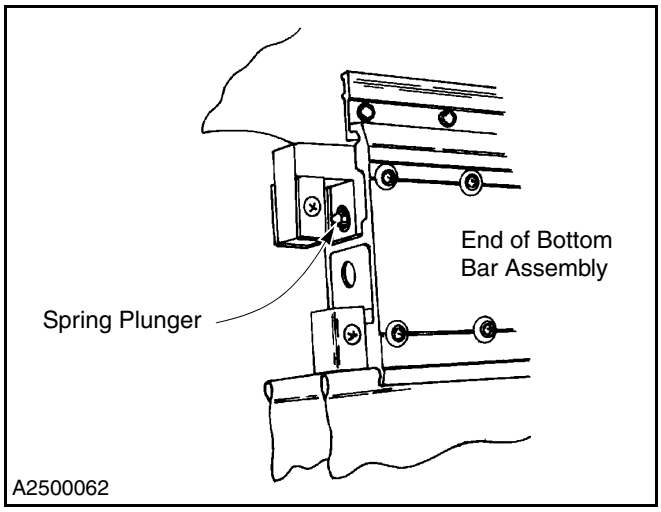


Figure 40

8. Turn on the power to the door.

Wall Anchor Inspection

1. Turn off the power to the door.

⚠ WARNING

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

2. Gain access to wall anchors. See appropriate section in the manual(s).

3. Inspect for loose or worn wall anchor(s).

4. Tighten, repair, or replace wall anchor(s) as needed.

NOTE: Restrict access to the area around the door and remove it from service if any repairs are needed. All repairs must be done in accordance with building codes.

5. When all repairs and adjustments have been made, restore power to the door and return to service.

Safety Decal Inspection

Safety decals are vital to the door. This is to inform the owner and operators of procedures, proper operation, and possible hazardous situations. See Figure 21 for a sample of how a safety decal should look at all times.

1. Check text on safety decals. It must be clear and readable. Replace decals as necessary.
2. Check for worn-out safety decals. Replace if they are ripped, torn, or missing information.

NOTE: Notify building maintenance of any safety decal discrepancies.

Figure 41

ADJUSTMENTS

PHOTO EYE ADJUSTMENT

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 42.) The receiver is designated SMR3215 on the white label or by a yellow light that illuminates only when its in proper alignment with the transmitter. (See Figure 43.)

NOTE: When the cable is connected to the photo eye, there is only a ¼-inch window to see the green or yellow LED light.

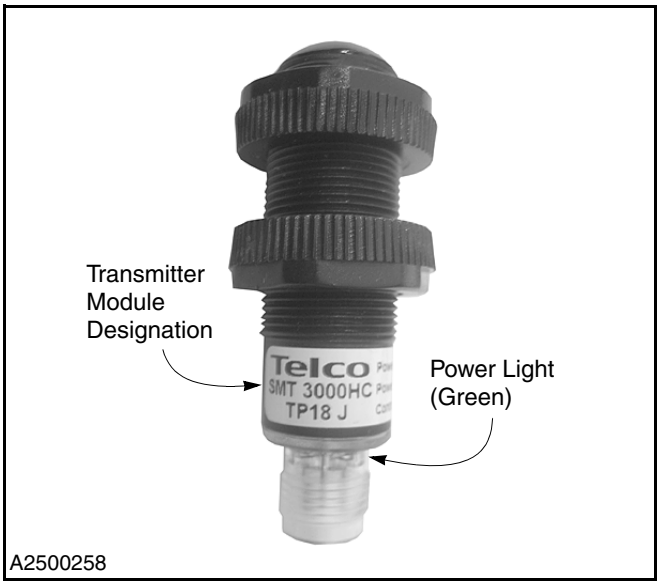


Figure 42

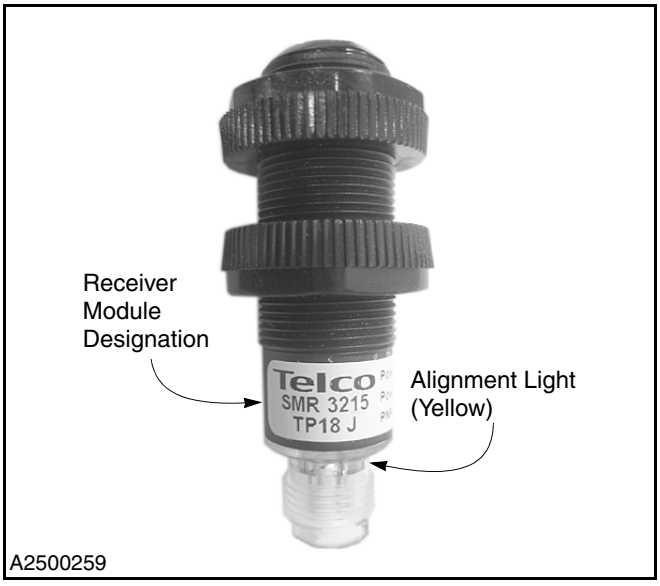


Figure 43

Testing Photo Eyes

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

1. Turn on the power to the door.
2. Move the door to the half-open position.

⚠ WARNING

Take precautions to prevent the door from being operated as you perform the following procedure. Also, be cautious around moving parts exposed in side columns.

3. Open the side column covers and locate the front set of photo eye modules. At the factory, they were mounted on a tall, heavy-duty bracket that is located in the front, inside corner of each side column. (See Figure 44.)

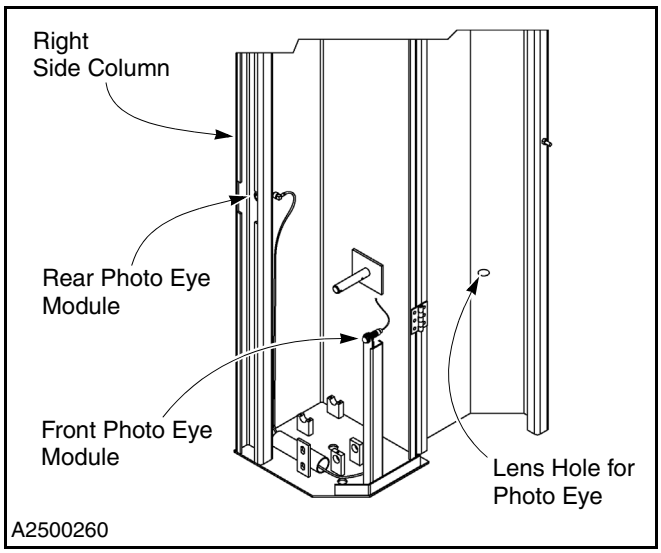


Figure 44

4. If either bracket appears bent or out of position, adjust the bracket until the photo eye lens is aligned with the lens hole in the side column cover. (The rear set of photo eyes are mounted directly to the rear windbar guides — it is unlikely that these eyes will ever require aligning, unless serious damage to either windbar guide occurs.)
5. Observe the indicator lights to verify that both sets of photo eyes are aligned. The green light indicates the transmitter photo eye is powered up. When the yellow light on the receiver module is also lit, the transmitter and receiver modules are properly aligned.

BOTTOM BAR ASSEMBLY ADJUSTMENT

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 45.)

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.

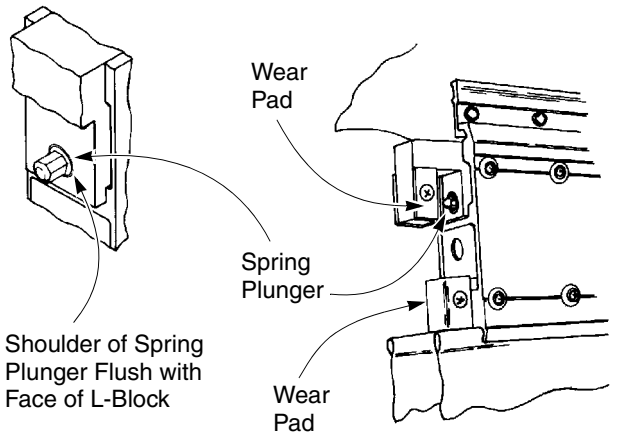


Figure 45

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 the power to the door.

⚠ WARNING

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 will not be able to reconnect the end bracket to the bottom bar.)
5. After the tension is adjusted, reconnect the bottom bar assembly to the end bracket. (See “Resetting Bottom Bar Assembly” on page 3.)
6. Turn on the power to the door. Then operate the door several times to make sure it is working correctly.

Pneumatic Reversing Edge Switch Adjustment

⚠ WARNING

Do not stand under the door panel when making this adjustment. If the reversing edge switch is not working properly, the panel could strike the person performing the adjustment.

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 full-open position and the countdown timer to close the door will begin to count down. 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.

If the door does not reverse, check the air bleed and sensitivity of the reversing edge switch. The switch is in the bottom bar on the side opposite the door motor.

REVERSING EDGE SWITCH AIR BLEED CHECK

1. The reversing edge switch is located under the Ry-Wi cover inside the bottom bar assembly. To inspect or adjust the switch, remove the access cover from the face of the bottom bar assembly. (See Figure 46.)

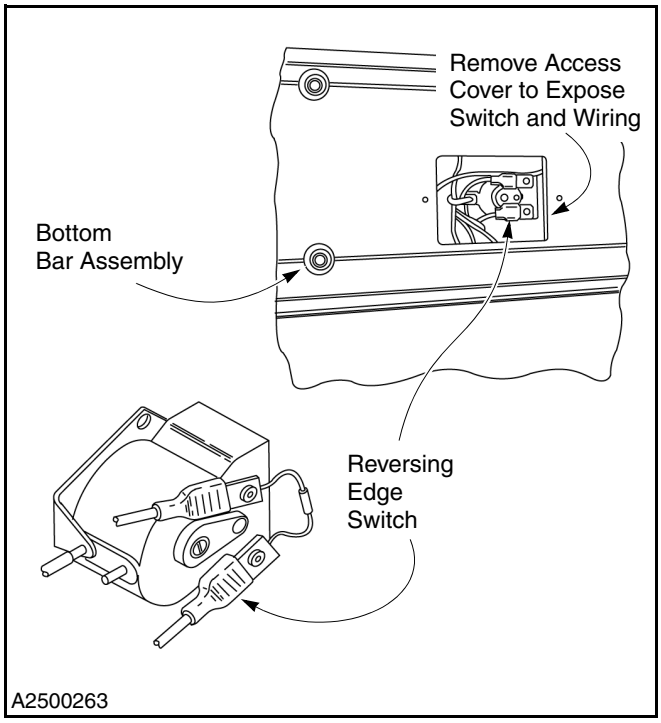


Figure 46

2. Make sure the clear PVC hose is in tight contact with the air input post so that air leakage cannot occur and that vibration will not cause the hose to fall off. Make sure the hose is not kinked. (See Figure 47.)
3. The air bleed has been set at the factory and should not require adjustment. To check the air bleed, turn the air bleed adjustment screws located on the front and back of the switch fully clockwise but do not overtighten. Then turn the screws back counterclockwise one full turn. (See Figure 47.)

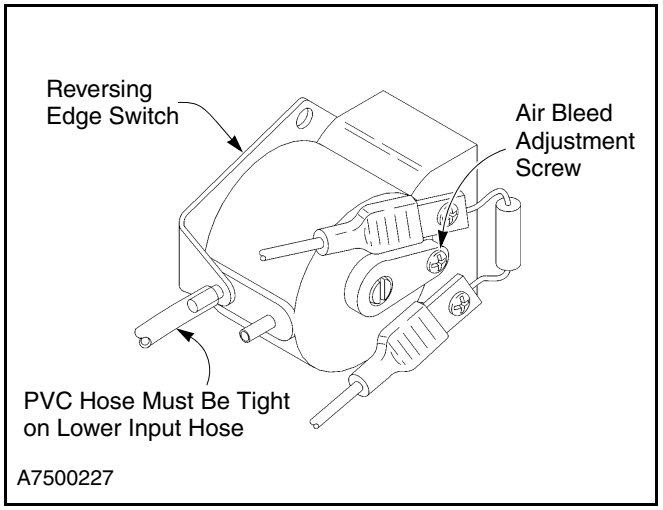


Figure 47

REVERSING EDGE SWITCH SENSITIVITY ADJUSTMENT

1. The reversing edge switch is a normally-open contact. The PVC hose is on the lower air input post. To adjust the switch, first remove the wires and resistor from the contact terminals and attach an ohmmeter across the two terminals. (See Figure 48.)
2. Turn the adjustment screw, located on the face of the switch, clockwise or counterclockwise until continuity is achieved. Ohmmeter should no longer show continuity. Turning the screw counterclockwise decreases sensitivity. Turning the screw clockwise increases sensitivity. (See Figure 48.)

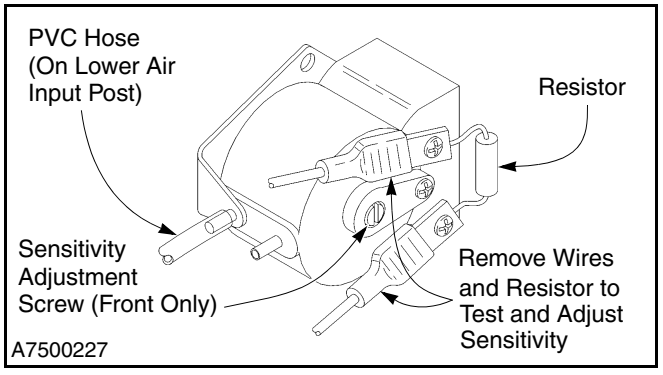


Figure 48

3. Reattach resistor and wires and then replace the access cover on the bottom bar.

NOTE: If the reversing edge switch is too sensitive, the door may reverse direction during the closing cycle without the reversing edge coming in contact with an object. If this occurs, adjust the sensitivity of the switch.

Kill Switch Troubleshooting

1. Remove the access cover from the bottom bar assembly. Retain all hardware.
2. Locate and disconnect the two wires that connect each kill switch to the kill switch coil cord.
3. Using an ohmmeter, measure the resistance across each switch by placing the ohmmeter across each pair of wires — one set of wires at a time.

   Magnet directly in front of switch: Ohmmeter indicates circuit has continuity — meter reads nearly zero ohms.

   Magnet away from switch: Ohmmeter indicates circuit has no continuity — meter reads open line (OL) or infinite ohms.
4. Reconnect both sets of wires once any necessary repairs are made. Then reattach the access cover.
5. Repeat kill switch inspection as necessary.

MOTOR BRAKE ADJUSTMENT

1. Remove the manual brake release lever.
2. Loosen hex-head bolts retaining the dust cover to the motor assembly. Remove the cover. (See Figure 49.)

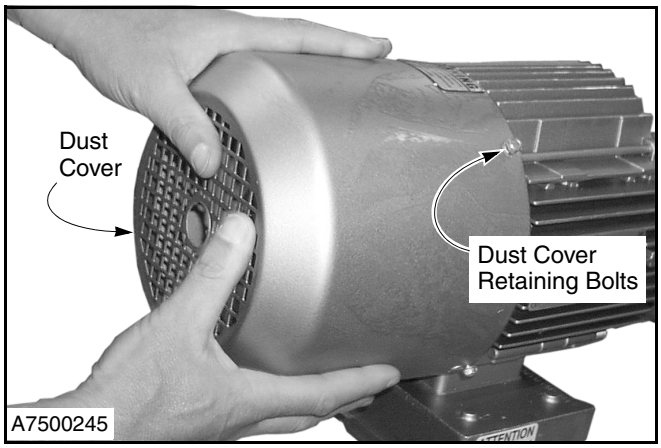


Figure 49

3. Remove sealing band. (See Figure 50.)

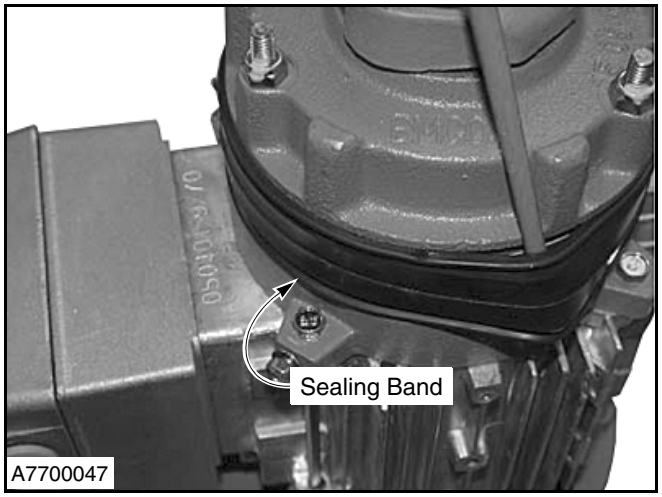


Figure 50

4. Using a feeler gauge and a nut driver, adjust the retaining nuts until you achieve the proper air gap (0.010–0.024-in.). (See Figure 51 and Figure 52.)

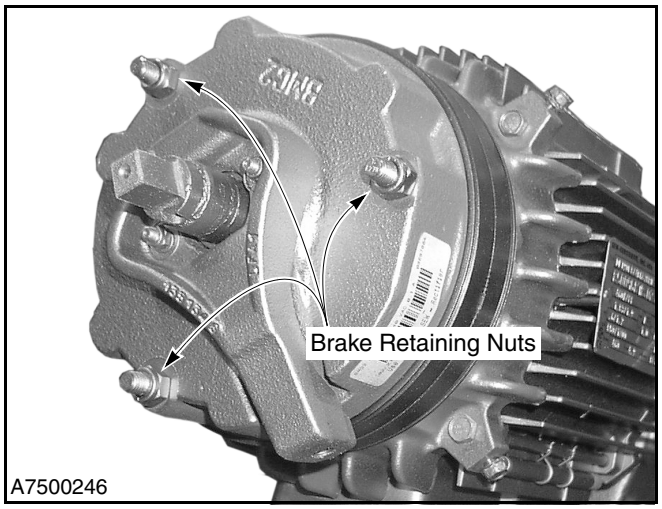


Figure 51

⚠ CAUTION

All retaining nuts and air gap must be equally set throughout the entire circumference of the brake, or the parts will wear unevenly.

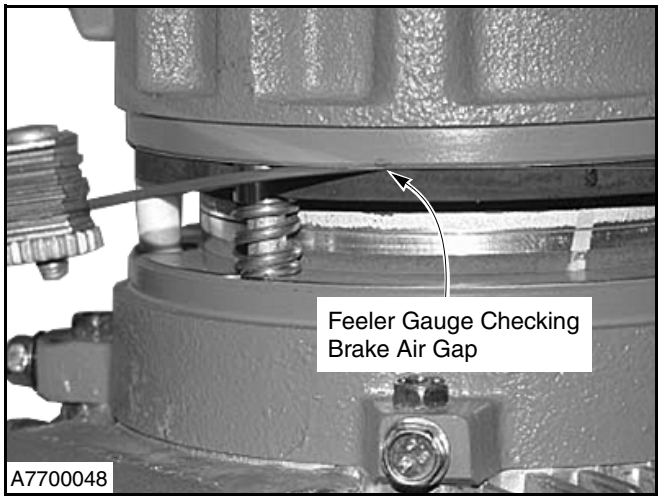


Figure 52

5. Reinstall the dust cover and the manual brake release lever.
6. Restore power to the door and perform an operations check.

DRIVE CHAIN ADJUSTMENT

1. Turn off the power to the door.

⚠ WARNING

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

2. Verify the amount of tension in the drive chain. A correctly tensioned chain will deflect no more than ¼ in. (See Figure 53.)

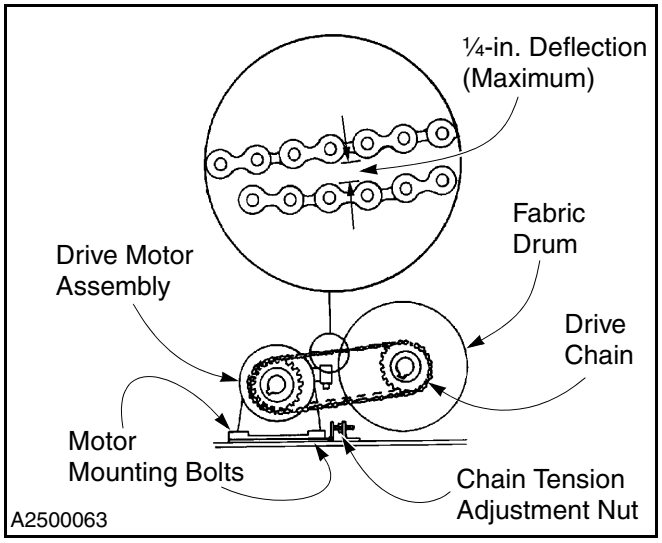


Figure 53

3. Loosen the four motor mounting bolts securing the motor mounting plate to the base of the head assembly.
4. Release the motor brake by pulling on the brake release cable. Continue pulling on the cable to keep the brake disengaged.
5. To adjust the tension of the chain, turn the chain tension adjustment nut in the appropriate direction to increase or decrease tension.
6. With the chain tension set, release the brake cable and tighten the motor mounting bolts to secure the motor and lock in the adjustment.

NOTE: Make sure the sprockets on the end of the drive motor and the fabric drum are aligned with each other prior to securing the mounting plate.

7. Turn on the power to the door.

COUNTERWEIGHT STRAP ADJUSTMENT

⚠ WARNING

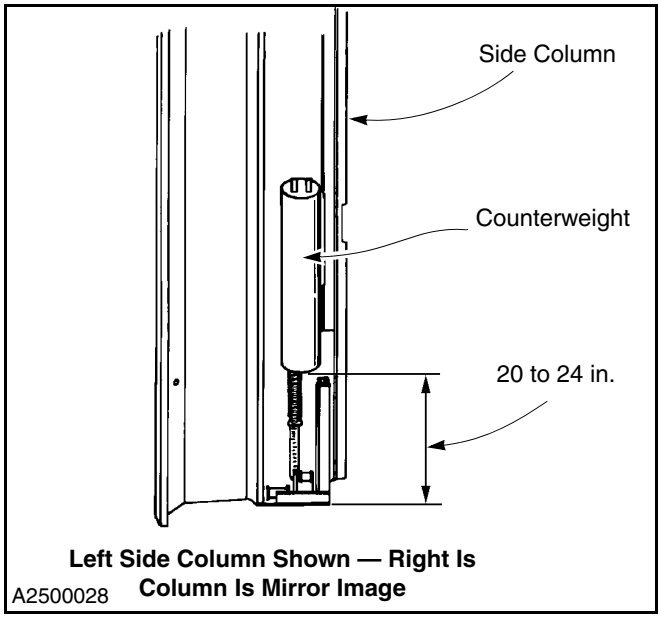
Securely support the counterweight when making any adjustments. A counterweight can weigh 100 pounds or more. If not handled properly, a counterweight can damage the door and cause personal injury.

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

⚠ WARNING

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 54.



A2500028 **Left Side Column Shown — Right Is Column Is Mirror Image**

Figure 54

5. Adjust the length of the counterweight strap as required to achieve the position shown in Figure 54.
6. Remove the support from the counterweight and allow it to hang free. If required, readjust strap to position the counterweight as shown in Figure 54.

NOTE: The 20 to 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 to 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 inches. (See Figure 55.)

Move the door to the full-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.

The barrel roller assembly is slotted to make adjustments. Simply loosen the two bolts mounting the roller bracket and rotate the bracket in the appropriate direction to ensure proper tracking of the counterweight strap. (See Figure 55)

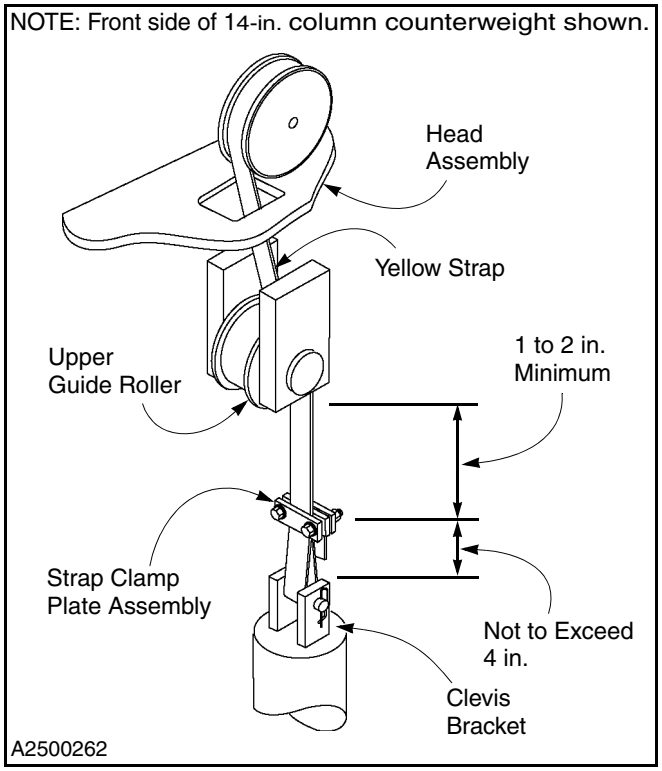


Figure 55

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 56.)

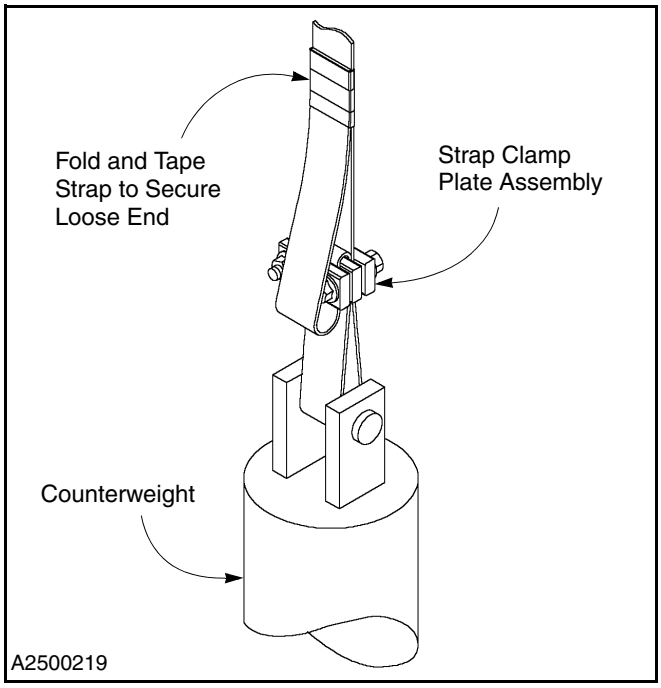


Figure 56

8. Turn on the power to the door.
9. Repeat the above procedure on the counterweight in the other side column.

TENSION STRAP ADJUSTMENT

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

⚠ WARNING

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. Remove tension from the strap by moving the handle of the spring tension assembly down.

⚠ WARNING

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. (See Figure 57.)

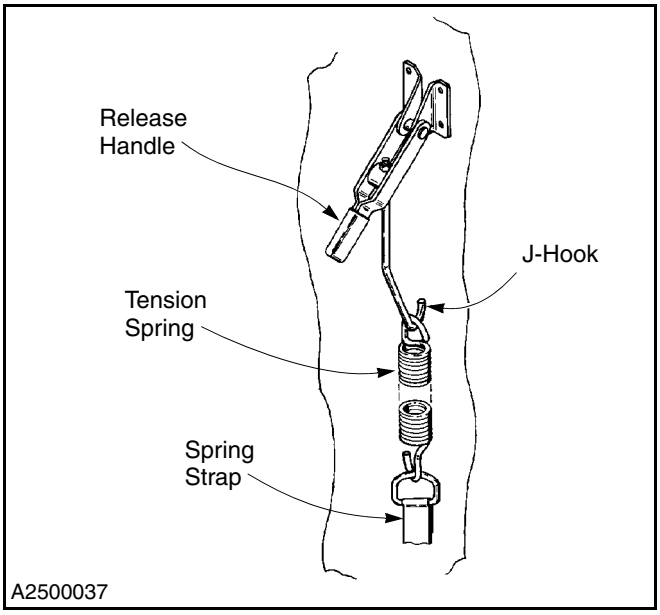


Figure 57

5. Raise and block the front H-bracket roller approximately 7 to 8 in. off the bottom of the side column. (See Figure 58.)

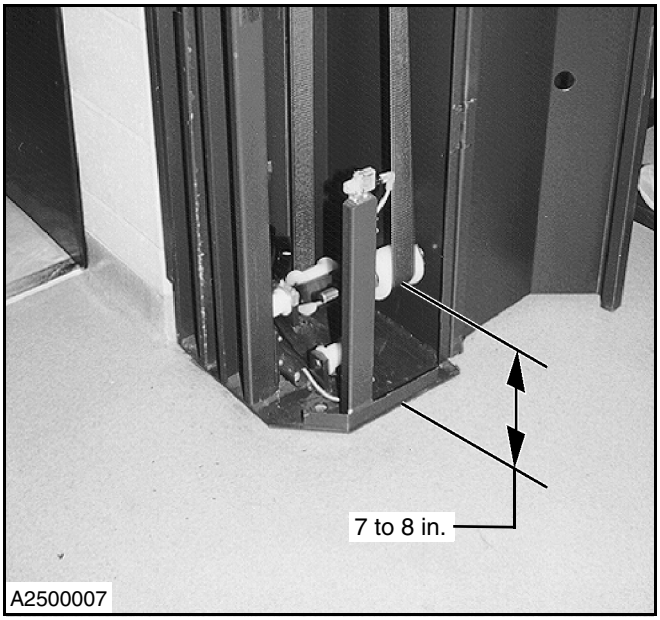


Figure 58

6. Remove the tape from the end of the tension strap.
7. Loosen the tension strap clamp bolts. (See Figure 59.)

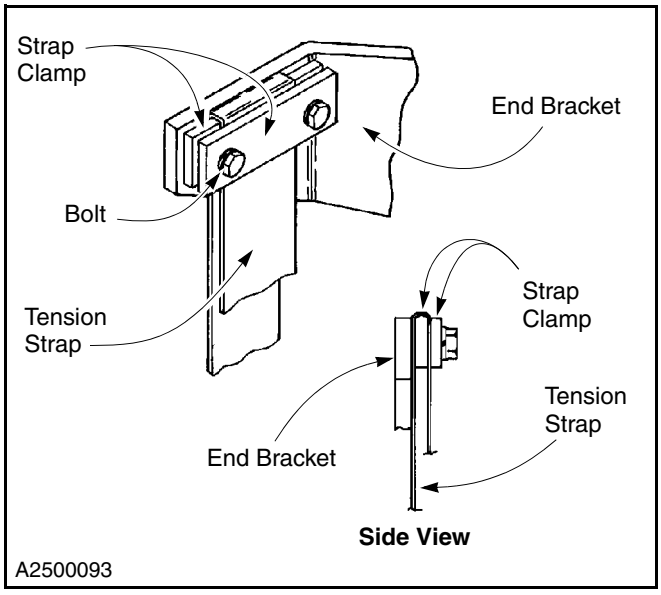


Figure 59

8. Pull the tension strap through the end bracket strap clamps, as required, to position the front H-bracket roller as shown in Figure 58.
9. Tighten the strap clamp bolts.
10. Remove the blocking.
11. Add tension to the strap by moving the handle of the spring tension assembly to its full up position. (See Figure 60.)

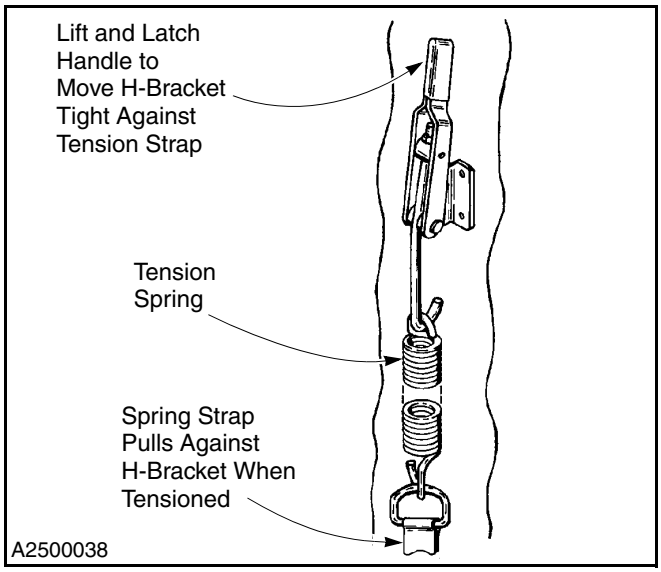


Figure 60

12. Turn on the power to the door.
13. Cycle the door three or four times to verify that it is operating correctly.

⚠ WARNING

Take precautions to prevent the door from being opened or closed while performing the following inspection. Moving parts are exposed when the side column cover is open.

14. Check the height of the H-bracket forward roller when the door is at the half-open position. It will have dropped below the 7 to 8 in. described in step 5, but should not drop below 3 to 4 in. above the side column base plate. The H-bracket should also be in the positions shown in Figure 61 as the door moves up and down. It should never go below the 3 to 4 in. position. Readjust as required.

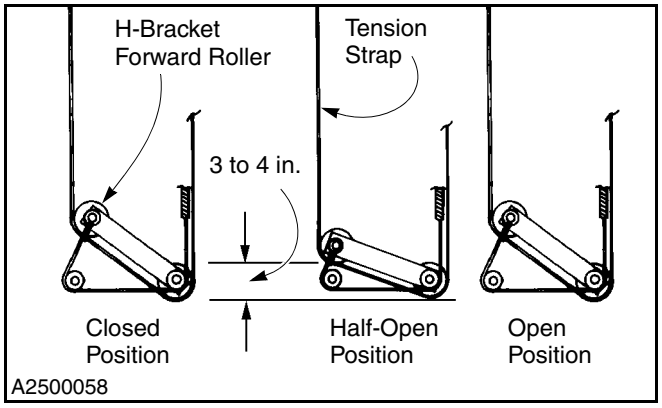


Figure 61

15. Turn off the power to the door.

⚠ WARNING

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

16. Retape the end of the tension strap.
17. Turn on the power to the door.

STRAPPED WINDBAR ADJUSTMENT (OPTIONAL SYSTEM)

1. Raise the door to the full-open position.
2. Turn off the power to the door.

⚠ WARNING

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

3. The windbar(s) should be in the position shown in Figure 62.

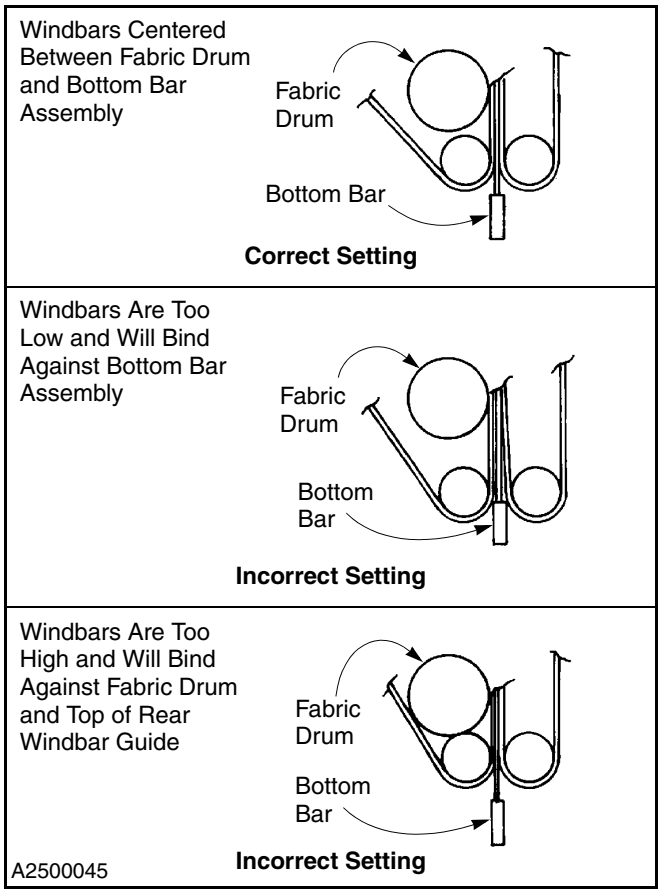


Figure 62

⚠ CAUTION

Keep tension on the windbar straps when adjusting. The windbar is free to fall when not retained by the clamp plates.

4. To adjust the rear windbar, loosen the rear strap clamp bolts and move the windbar up and down, as required, by moving the strap up or down through the clamps. Retighten the strap clamp bolts when the windbar is in the correct position. (See Figure 63.)

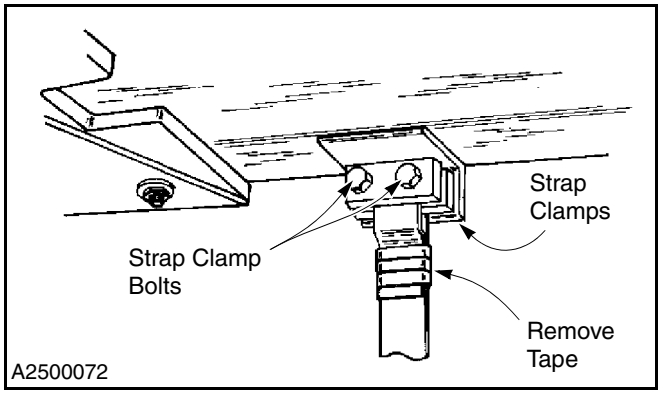


Figure 63

5. To adjust the front windbar, loosen the front strap clamp bolts and move the windbar up and down, as required, by moving the strap up or down through the clamps. Retighten the strap clamp bolts when the windbar is in the correct position. (See Figure 64.)

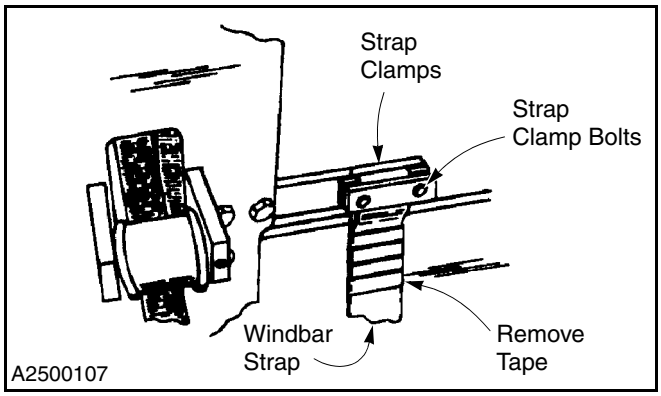


Figure 64

6. Turn on the power to the door.

REPLACEMENT PROCEDURES

WINDBAR STRAP REPLACEMENT

1. Move the door to the fully closed position. The panel mounting strap should be visible along the front of the fabric drum.
2. Turn off the power to the door.

⚠WARNING

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

3. Remove the rivets securing the panel mounting strap to the fabric drum — only remove the rivets from within the area of the mounting strap that is directly over, and adjacent to, the windbar straps. (See Figure 65.)

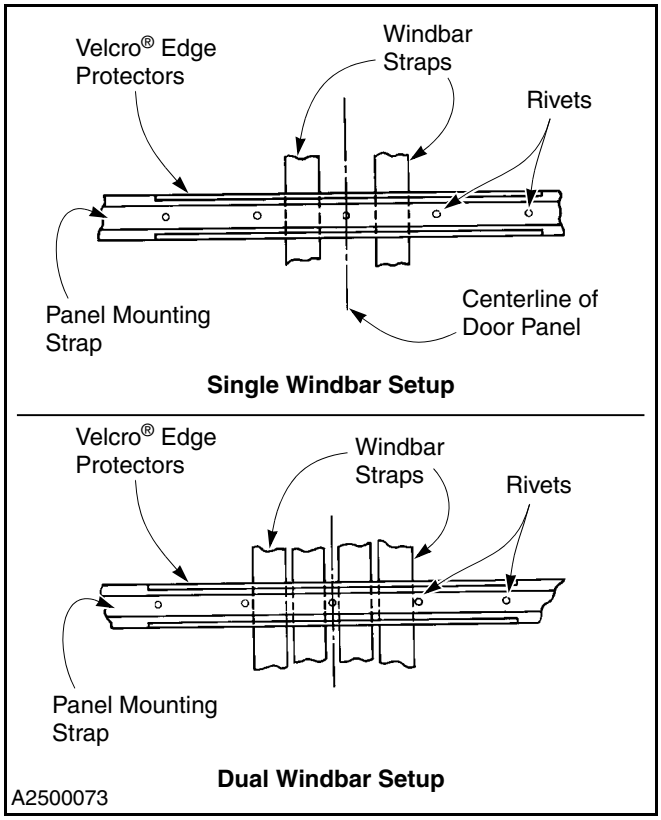


Figure 65

4. Remove the old strap. Then install the new strap by first wrapping it around the panel mounting strap three times, as shown in Figure 66. Make sure the Velcro®[1] edge protectors are in place. (See Figure 66.)

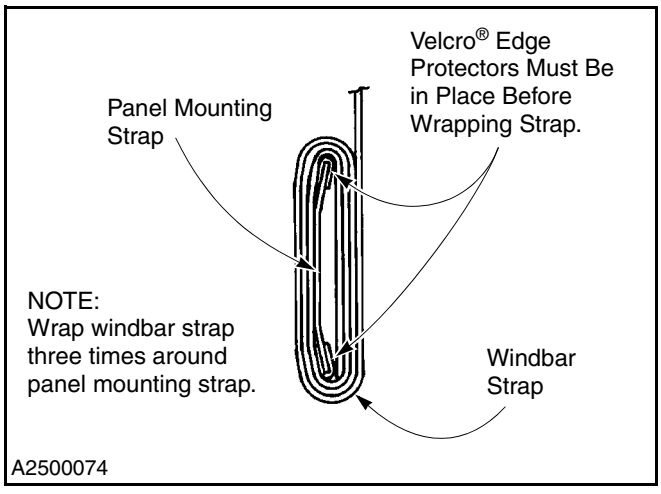


Figure 66

1. Velcro® is a registered trademark of Velcro Industries B.V.

5. Route the windbar strap for a front and rear windbar as shown in Figure 67.

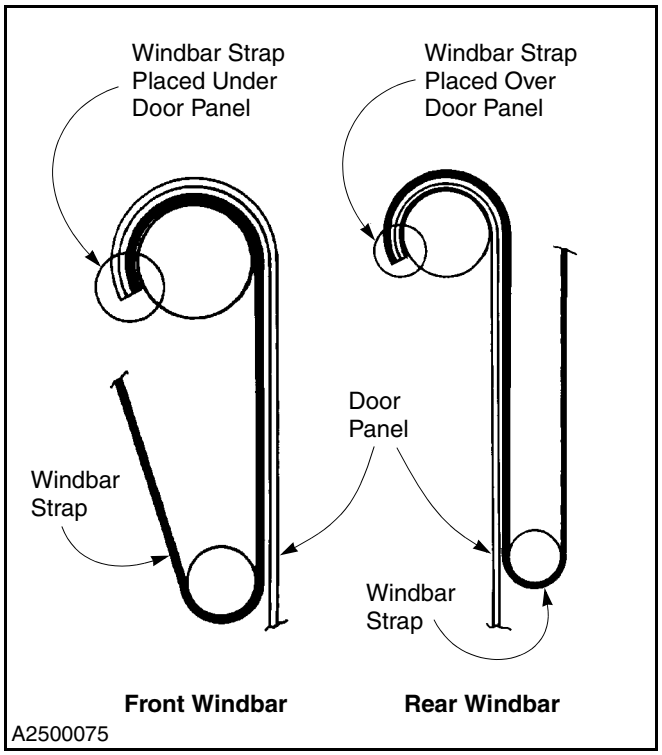


Figure 67

6. To secure the windbar straps to the fabric drum, replace the rivets that were removed from the panel mounting strap.
7. **Front Windbar:** Route the straps under the front windbar and up through the clamp plates of the front windbar strap bracket. (See Figure 68.)

   Rear Windbar: Route the straps under the rear windbar and up through the rear clamp plates located on the underside of the rear spreader bar. (See Figure 69.)

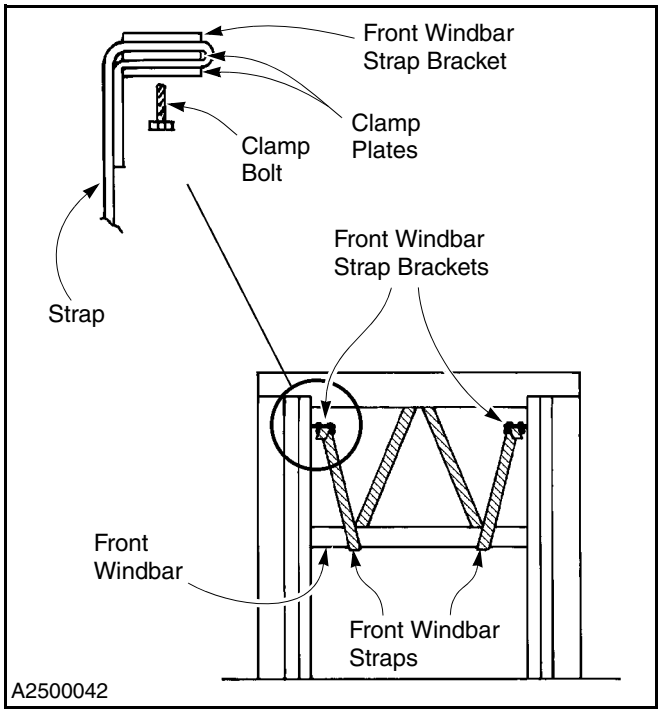


Figure 68

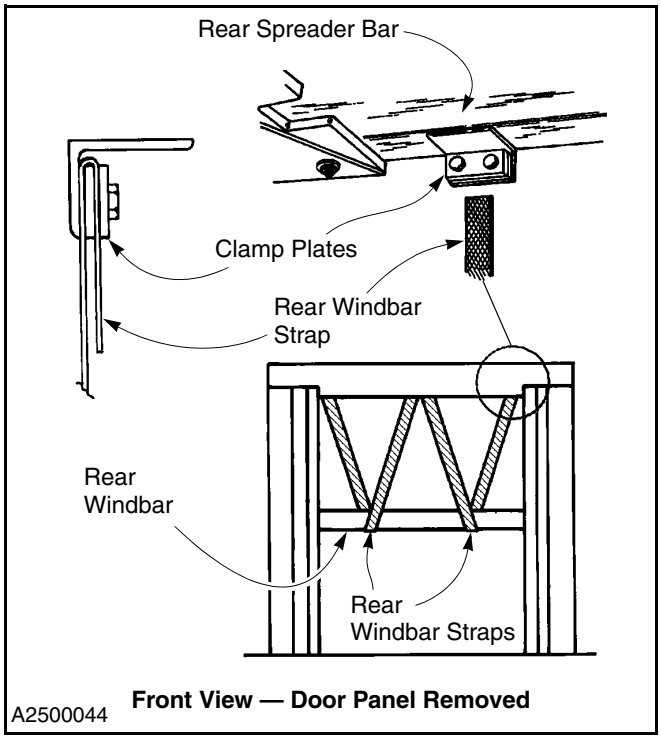


Figure 69

8. Adjust the windbar. (See “STRAPPED WINDBAR ADJUSTMENT (OPTIONAL SYSTEM)” on page 26.) Once the windbar is correctly positioned, tighten the clamp plates to secure the straps.

9. Once all strapped windbars are correctly adjusted, trim off any excess strap to within 6 in. of the strap clamp.
10. Tape the loose end of each strap to the main length of strap.
11. Turn on the power to the door.

SPRING STRAP REPLACEMENT

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

⚠WARNING

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

⚠WARNING

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.

3. Carefully release the tension spring by pulling down on the spring release handle. If the end bracket is in front of the spring tension assembly, release the brake and raise or lower the door as required. (See Figure 70.)

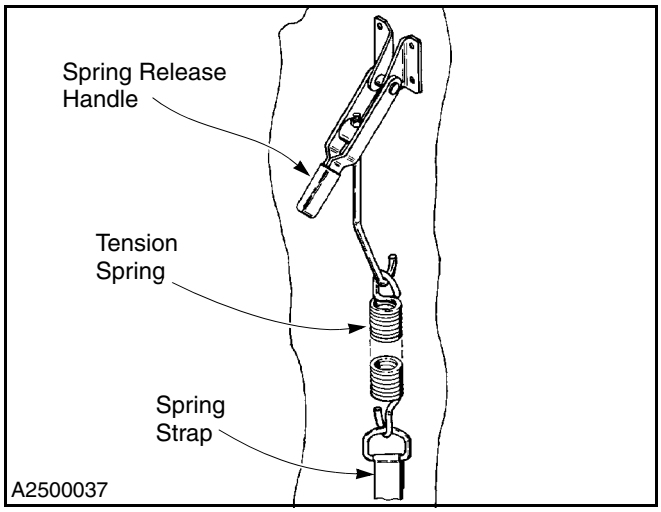


Figure 70

4. Remove the existing spring strap by unhooking one end from the spring release handle. Then release the other end from the tension roller shaft. (See Figure 71.)

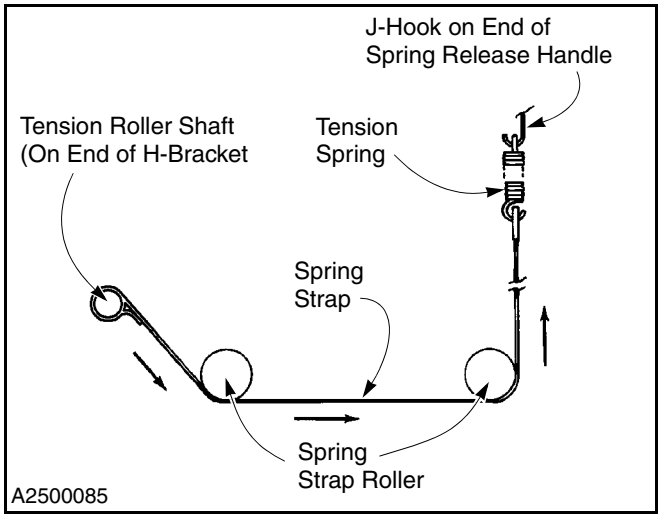


Figure 71

5. Install the new spring strap in the reverse order the old strap was removed. Route the strap in the direction as shown in Figure 71.
6. 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 72.)

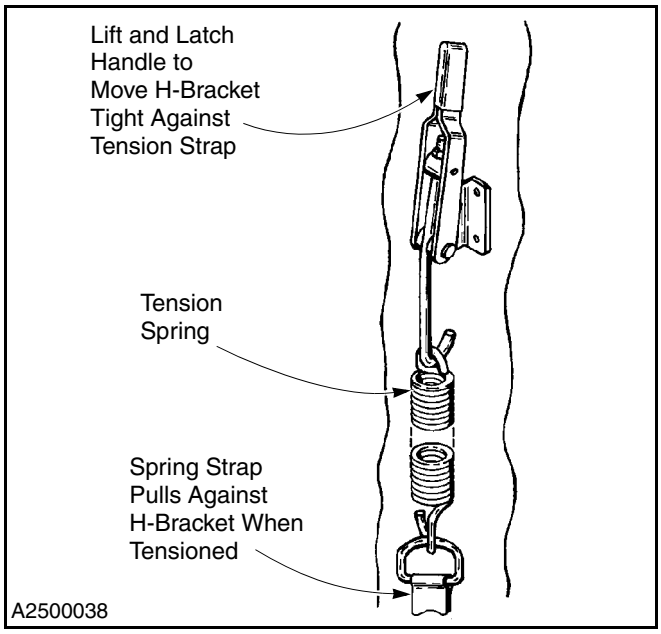


Figure 72

7. Turn on the power to the door.

TENSION STRAP REPLACEMENT

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

⚠ WARNING

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

3. Loosen the two bolts to release the blue tension strap from the strap clamp. The clamp is at the end of the end bracket. (See Figure 73.)

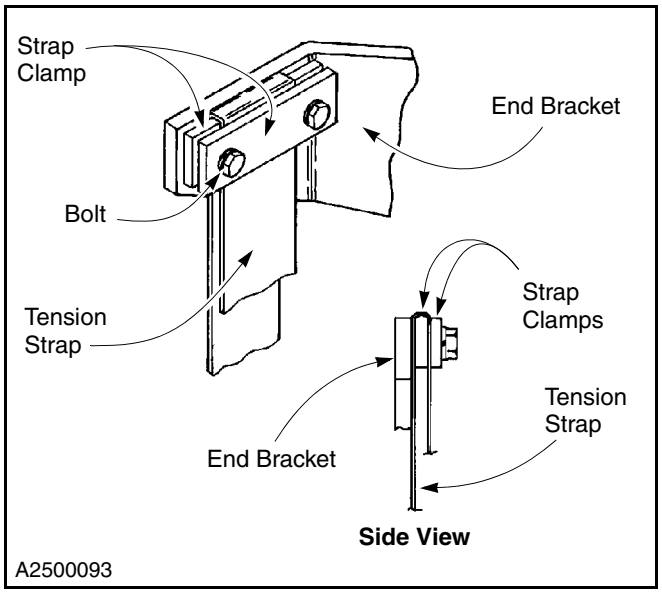


Figure 73

4. Disconnect the tension strap from the tension spool. The tension spool is located on the end of the fabric drum located in the head assembly. Retain all hardware.
5. Attach the new tension strap to the tension spool in the same manner in which the old strap was attached to the spool. Use the saved hardware.

⚠ CAUTION

When installing a new tension strap, refer to Table 2 to determine the initial number of times the strap must be wrapped around the spool. Additionally, it is important to wrap the strap around the spool with the door panel in the full-open position. Also, it is critical to wrap the new strap around the spool so that it hangs off the front of the spool.

Table 2

Door Model	Door Height	Initial Wraps Around Spool
FS-1000/1500	Less than 14 ft.	4
FS-1000/1500	14 ft. to 22 ft.	6
FS-1000/1500	22 ft. and Taller	8
Special		Consult Factory

6. Route the tension strap as shown in Figure 74. If the door is equipped with an idler roller, route the strap around the idler as shown in Figure 75 and Figure 82.

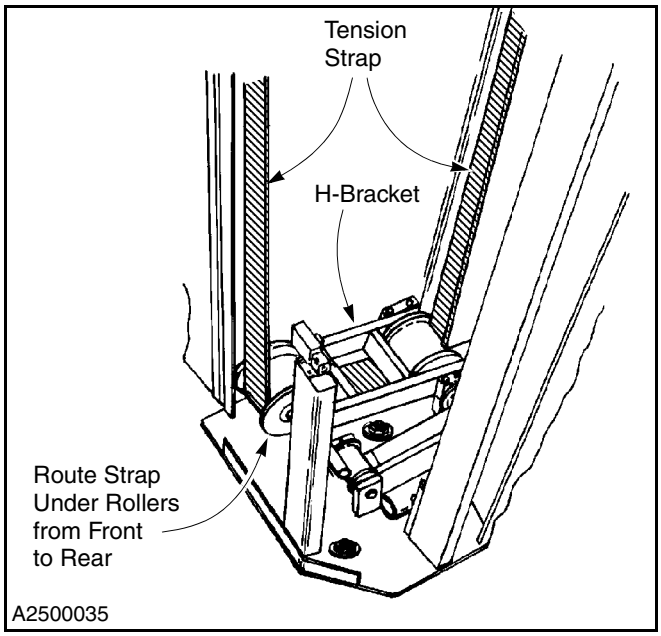


Figure 74

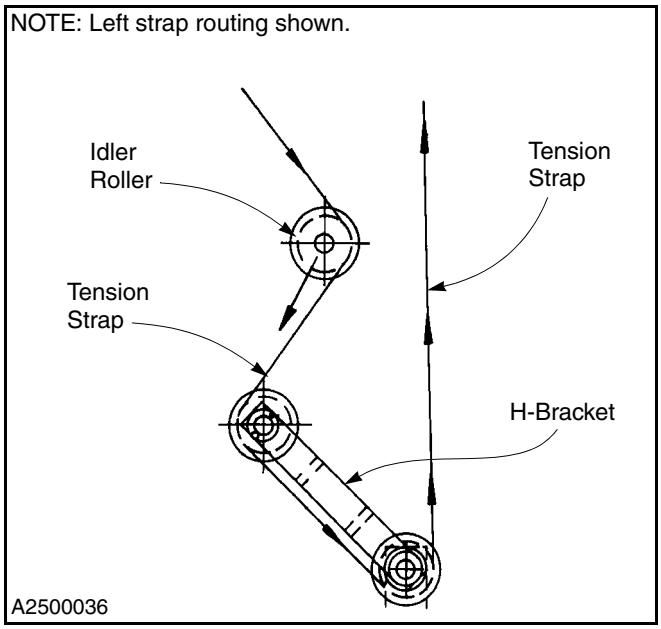


Figure 75

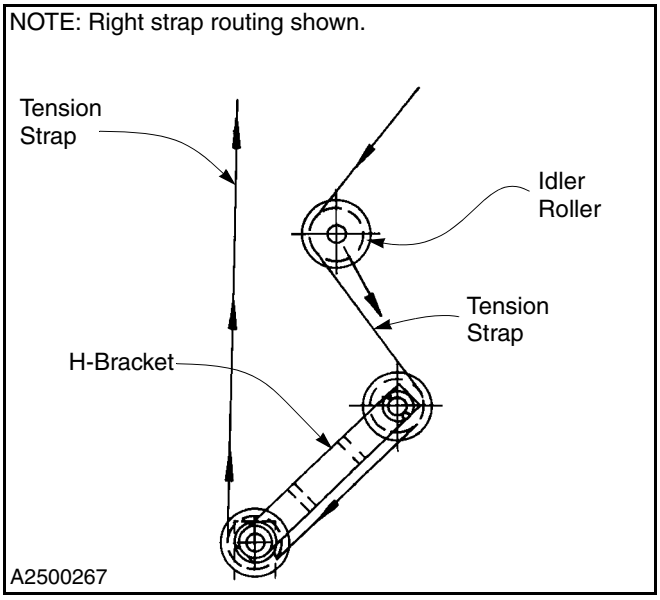


Figure 76

7. Attach the strap to the end bracket. (See Figure 77.)
8. Adjust the tension straps. (See "TENSION STRAP ADJUSTMENT" on page 24.)
9. After adjusting the tension strap, trim off the excess strap to within 6 in. of the clamp. Tape the free end of the strap to the main length of strap.

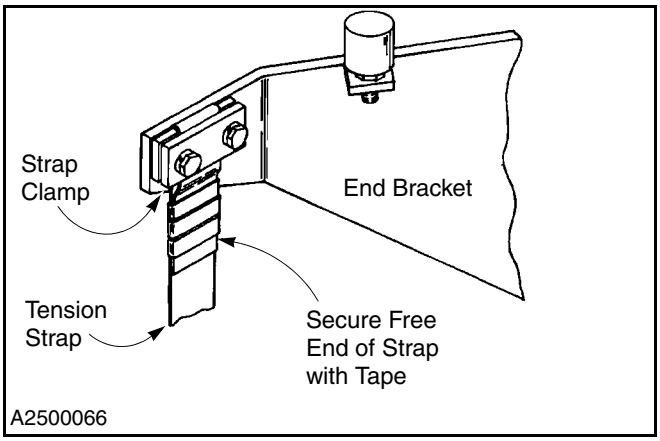


Figure 77

10. Turn on the power to the door.

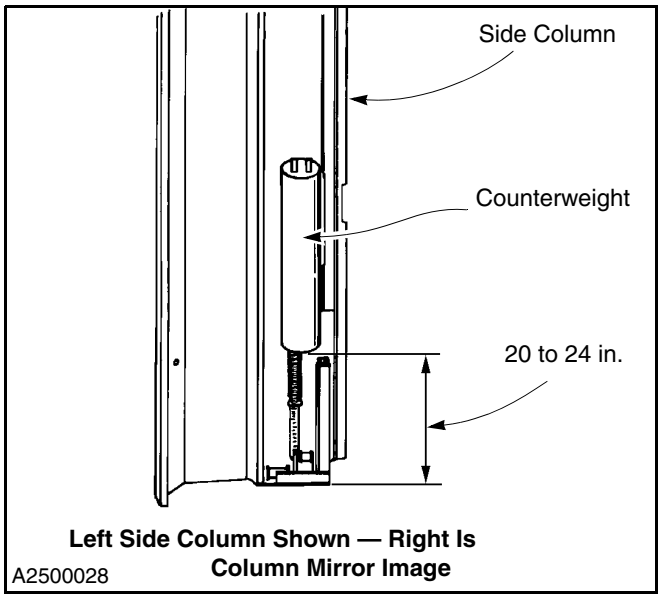
COUNTERWEIGHT STRAP REPLACEMENT

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

⚠ WARNING

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

3. Make sure the motor brake release lever is in the locked position (brake release cable is slack).
4. Place a wood block under the counterweight to support it at the height shown in Figure 78.



Left Side Column Shown — Right Is Column Mirror Image

Figure 78

⚠ WARNING

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.

Make sure the counterweights do not make contact with the photo eyes — damage can result.

5. Release the yellow counterweight strap from the counterweight by removing the clevis pin. (See Figure 79.)

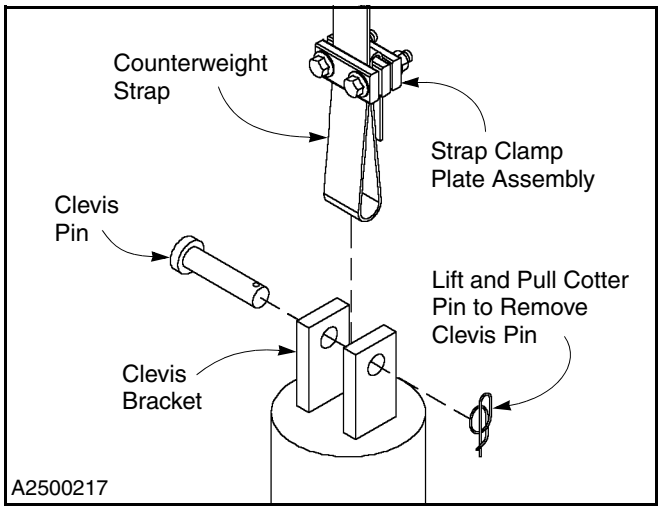


Figure 79

6. Disconnect the counterweight strap from the counterweight spool located on the end of the drum in the head assembly. (The counterweight spool is the smaller of the two spools.) Retain all hardware.
7. Attach the new counterweight strap to the counterweight spool in the same manner that the old strap was attached to the spool. Use the saved hardware.

⚠ CAUTION

When installing a new counterweight strap, the strap must be installed with two initial wraps around the spool. Additionally, it is important to wrap the strap around the spool with the door panel in the full-open position. And it is critical to wrap the new strap around the spool so that it hangs off the front of the spool.

8. Remove the strap clamp plate assembly from the old strap. Then weave the free end of the new strap through the plate assembly as shown in Figure 80.
9. Once the strap clamp plate assembly is in place, connect the counterweight strap to the counterweight. Make sure the cotter pin is correctly and securely installed in the clevis pin.

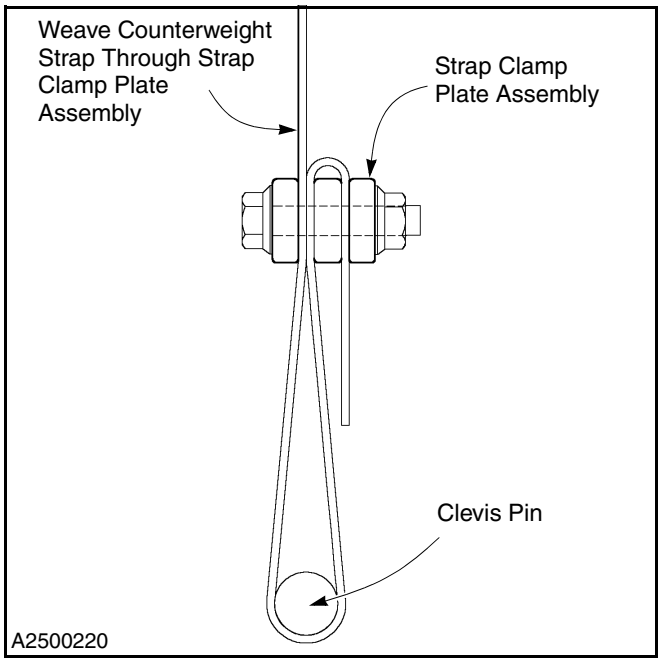


Figure 80

10. Adjust the counterweight strap and then tighten the strap clamp plate assembly to secure the strap. (See “COUNTERWEIGHT STRAP ADJUSTMENT” on page 23.)
11. After all adjustments are complete, trim 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 81.)

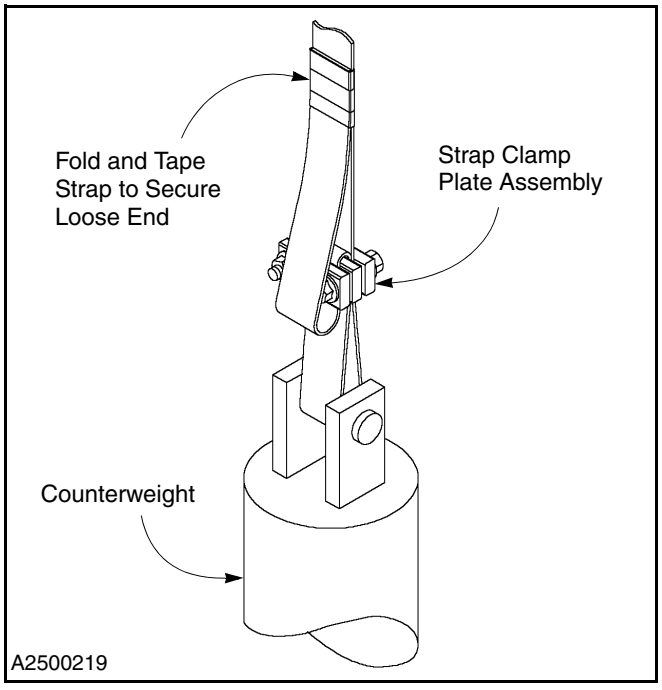


Figure 81

12. Turn on the power to the door.

PARTS LIST

PARTS ORDERING INFORMATION

How to Order Parts

1. Identify the parts required by referring to the following pages for part numbers and part descriptions.
2. To place an order, contact your local Rytec representative or the Rytec Technical Support Department at 800-628-1909 or 262-677-2058 (fax).
3. To ensure the correct parts are shipped, please include the serial number of your door with the order. The serial number plate is located inside the left-hand side column, just above the tension spring. (See Figure 82.)

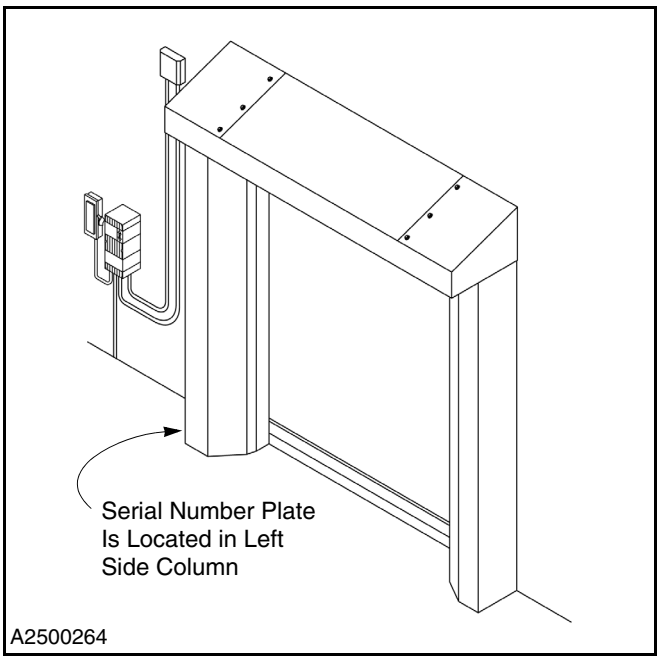


Figure 82

DOOR SERIAL NUMBER(S)

Your ***DOOR SERIAL NUMBER*** information can be found in three universal locations. These are at the inside of either side column (approximately eye level), on the drive motor, and on the inside door of the System 4 control panel. (See Figure 82.)

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.

Substitute Parts

Due to special engineering and product enhancement, the actual parts used on your door may be different from those shown in this manual.

Also, if a part has been improved in design and bears a revised part number, the improved part will be substituted for the part ordered.

Return of Parts

Rytec will not accept the return of any parts unless they are accompanied by a Return Merchandise Authorization (RMA) and an incident number.

Before returning any parts, you must first contact the Rytec Technical Support Department to obtain authorization and an RMA number.

IMPORTANT: Obtain an incident number from the Rytec Technical Support Technician.

END BRACKET ASSEMBLIES

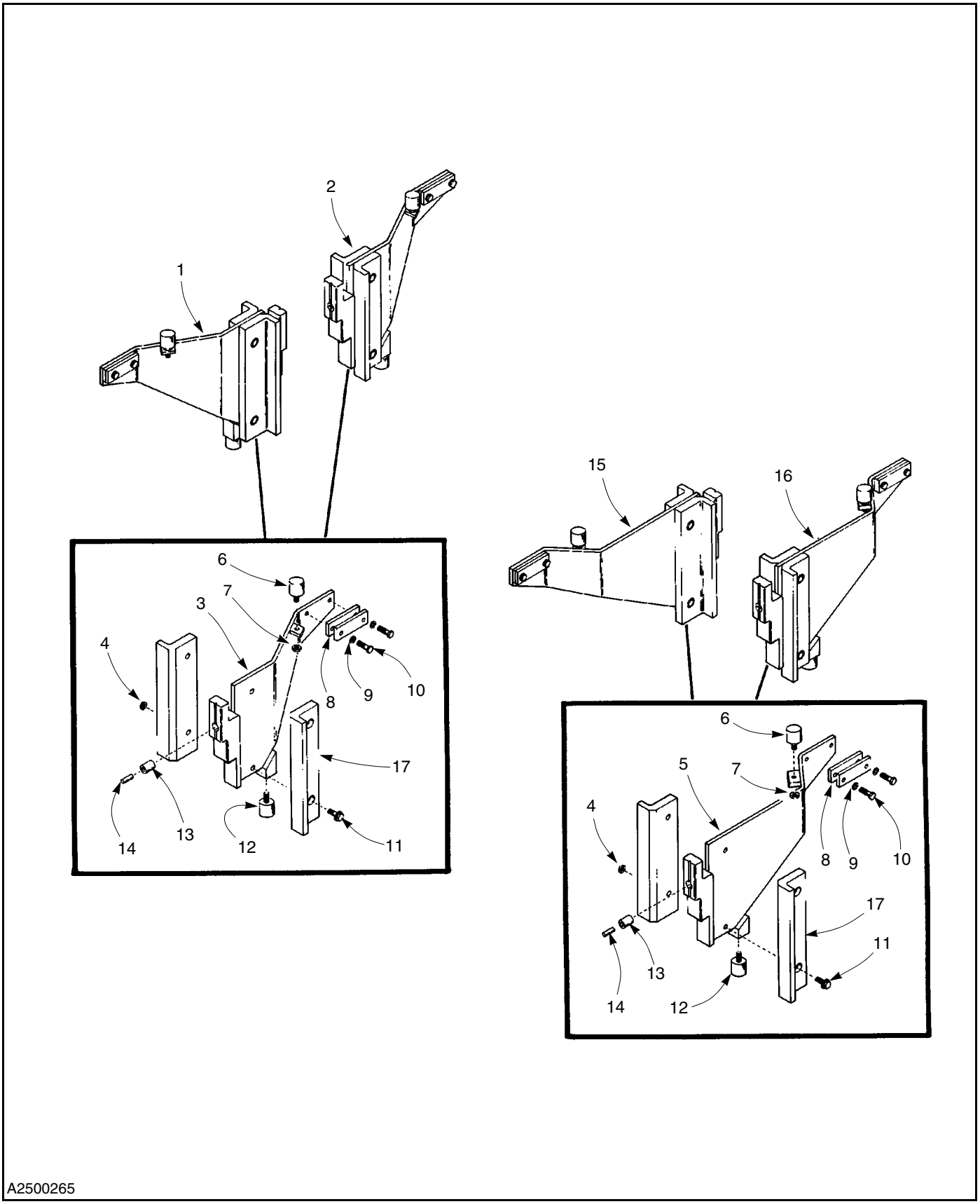


Figure 83

ITEM	QTY.	PART	DESCRIPTION
1	1	0299652	End Bracket Assembly, L.H. 14-in. Side Column
2	1	0299651	End Bracket Assembly, R.H. 14-in. Side Column
3	1	0299395	End Bracket Weldment, R.H. 14-in. Side Column
	1	0299394	End Bracket Weldment, L.H. 14-in. Side Column (not shown)
4	2	0021564	Nut, Hex, 3/8-16 Nylon
5	1	0299656	End Bracket Weldment, R.H. 17-in. Side Column
	1	0299660	End Bracket Weldment, L.H. 17-in. Side Column (not shown)
6	1	0013013	Bumper, Rubber
7	1	0553090	Nut, 5/16-18 Hex
8	2	0203138	Clamp, Tension Strap
9	2	0554117	Lock Washer, 5/16-in.
10	2	0550008	Screw, 5/16-18 x 1 1/4-in., Grade 5
11	2	0021568	Screw, 3/8-16 x 7/8-in. Serrated Flange
12	1	0013090	Bumper, Rubber 1-in. x 1/2-in.
13	1	0205015	Holder, Magnet 3/8 o.d. x 1/2-in. long
14	1	0204031	Magnet,
15	1	0299654	End Bracket Assembly, L.H. 17-in. Side Column
16	1	0299653	End Bracket Assembly, R.H. 17-in. Side Column
17	2	0205014	Slide, Bottom Bar, 14-in. and 17-in. Side Column

NOTE: Side column variations (14- and 17-inch wide columns), can be determined by measuring the actual width of the column frame. Also, unless noted otherwise, all quantities indicated are for one side column only.

A/R = as required

** Items are produced based on manufactured height and width of door.*

*** Items are only used on non-breakaway doors.*

ALWAYS INCLUDE SERIAL NUMBER OF DOOR WHEN PLACING ORDER

To ensure you receive the correct parts when placing an order, always include the serial number of your door. Also, due to product enhancement, the actual parts on your door may be different from those shown in this manual.

BOTTOM BAR ASSEMBLIES

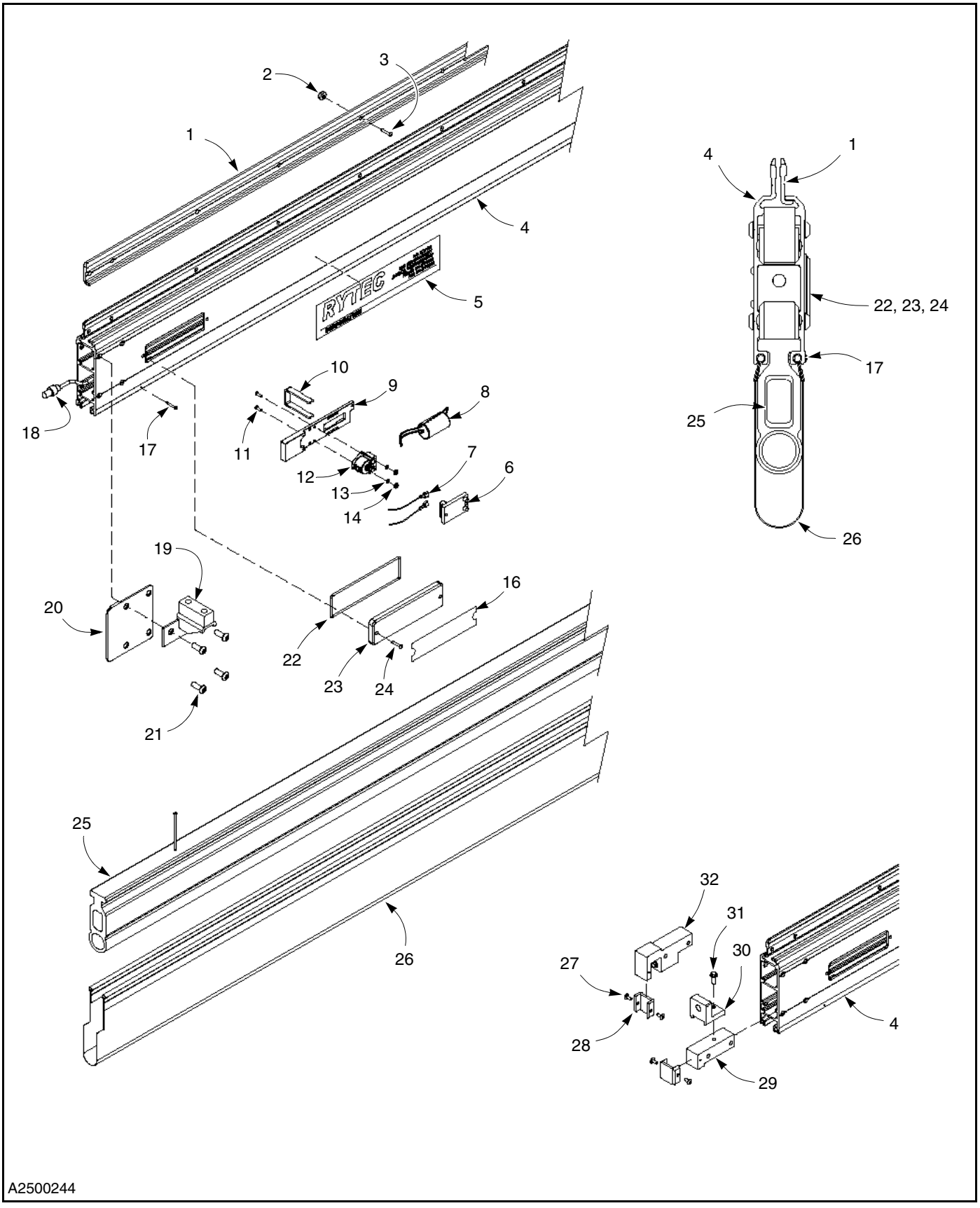


Figure 84

ITEM	QTY.	PART #	DESCRIPTION
1	1	0203134*	Clamp Strip
2	A/R	0553103	Nut, ¼-20 Serrated Flange
3	A/R	0550016	Screw, ¼-20 x ¾-in. Serrated Flange
4	1	02031188*	Extrusion, Bottom Bar
5	1	N000392	Decal, Rytec
6	1	00141058	Mobile Unit, Wireless
7	2	0012010	Terminal, Wire Slip-On, Female
8	1	00111193	Battery, Lithium, 3.6 volt, 19 AH
9	1	1060113-1	Holder, Pressure Switch/ Battery, L.H.
10	1	10601250	Holder, Battery
11	2	0021029	Screw, Machine, #8-32 x ½-in., STL ZN
12	1	0211397	Switch, Pressure
13	2	0554179	Washer, Split Lock, #8 STL ZN
14	2	0553180	Nut, Hex, #8-32, STL ZN
15	1	00141122	Resistor, 0.25 Watt, 8.2K (not shown)
16	1	1060162-0	Decal, Cover, Wireless
17	2	0551056	Screw, #6-32 UNC x 1, Pan Head, Self-Tapping
18	1	0204018	Kill Switch, 3-Wire Short (Left End of Bottom Bar)
	1	0204019	Kill Switch, 3-Wire Long (Right End of Bottom Bar, not shown)
19	3	02992077	Bracket, Pick-Up (Strapless Windbar Only)
20	4	02992797**	Plate, Steel
21	16	0550014	Hex Head Cap Screw, ⅜-16 x 1¼-in. Button Head
22	1	1060119-0	Gasket, Cover, Wireless
23	1	1060116-0	Cover, Wireless
24	2	0550322	Screw, #10-32 x ⅜-in. Phillips Pan Self-Tapping
25	1	02992750*	Sub-Assembly, Air Flow Edge
26	1	02992774*	Loop Seal, Bottom Bar, Vinyl
27	8	0550317	Screw, #10-24 x ½-in. Phillips Truss-Head
28	4	0205017	Slider Pad
29	2	0203132	Lower L-Block
30	2	0205016	Kill Switch Holder
31	2	0550016	Screw, ¼-20 x ¾-in. Serrated Flange
32	2	0203131	Upper L-Block

NOTE: Side column variations (14- and 17-inch wide columns), can be determined by measuring the actual width of the column frame. Also, unless noted otherwise, all quantities indicated are for one side column only.

A/R = as required

** Items are produced based on manufactured height and width of door.*

*** Items are only used on non-breakaway doors.*

ALWAYS INCLUDE SERIAL NUMBER OF DOOR WHEN PLACING ORDER

To ensure you receive the correct parts when placing an order, always include the serial number of your door. Also, due to product enhancement, the actual parts on your door may be different from those shown in this manual.

COUNTERWEIGHT ASSEMBLIES

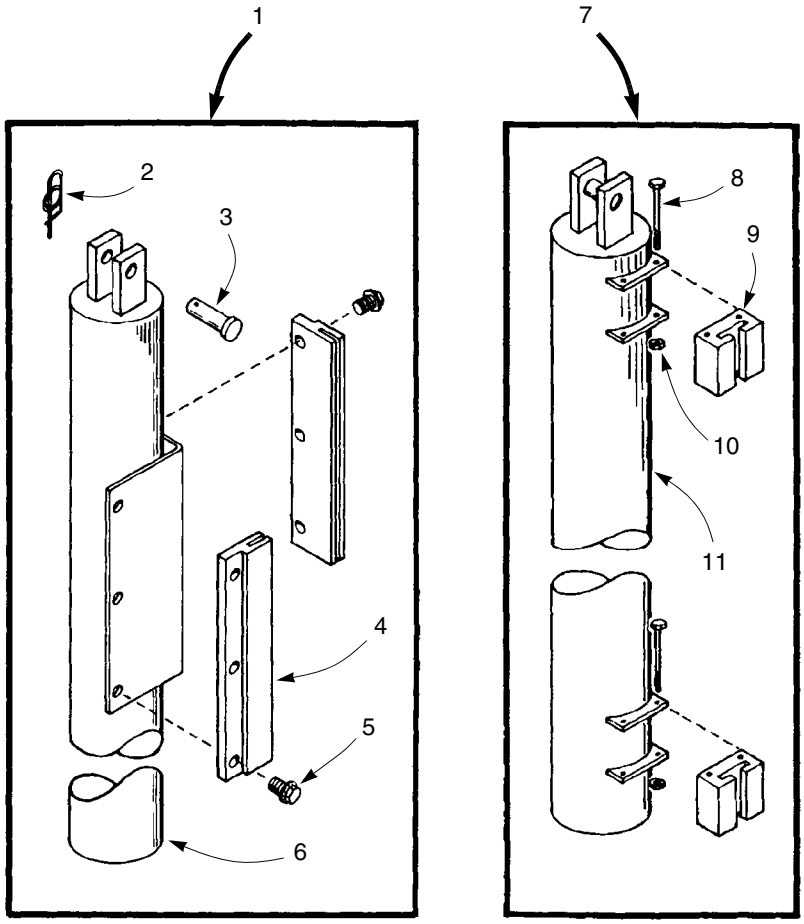


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Figure 85

ITEM	QTY.	PART	DESCRIPTION
1	1	0299577*	Counterweight Assembly Complete, 14-in. Side Column L.H.
	1	0299576*	Counterweight Assembly Complete, 14-in. Side Column R.H. (not shown)
2	1	0552001	Pin, RUE Cotter (RUE - 40)
3	1	0552260	Pin, Clevis
4	2	0205004	Slide, Counterweight Guide, 14-in. Side Column
5	6	0550254	Screw, 3/8-16 x 3/4-in. Serrated Flange
6	1	0299580*	Counterweight Weldment, 14-in. Side Column L.H.
	1	0299575*	Counterweight Weldment, 14-in. Side Column R.H. (not shown)
7	1	0299165*	Counterweight Assembly Complete, 17-in. Side Column
8	4	0550153	Screw, 1/4-20 x 3 1/2-in. HHGS
9	2	0205506	Slide, Counterweight Guide, 17-in. Side Column
10	4	0553103	Nut, 1/4-20 Serrated Flange
11	1	0299808*	Counterweight Weldment, 17-in. Side Column

NOTE: Side column variations (14- and 17-inch wide columns), can be determined by measuring the actual width of the column frame. Also, unless noted otherwise, all quantities indicated are for one side column only.

A/R = as required

** Items are produced based on manufactured height and width of door.*

*** Items are only used on non-breakaway doors.*

ALWAYS INCLUDE SERIAL NUMBER OF DOOR WHEN PLACING ORDER

To ensure you receive the correct parts when placing an order, always include the serial number of your door. Also, due to product enhancement, the actual parts on your door may be different from those shown in this manual.

14-INCH SIDE COLUMNS

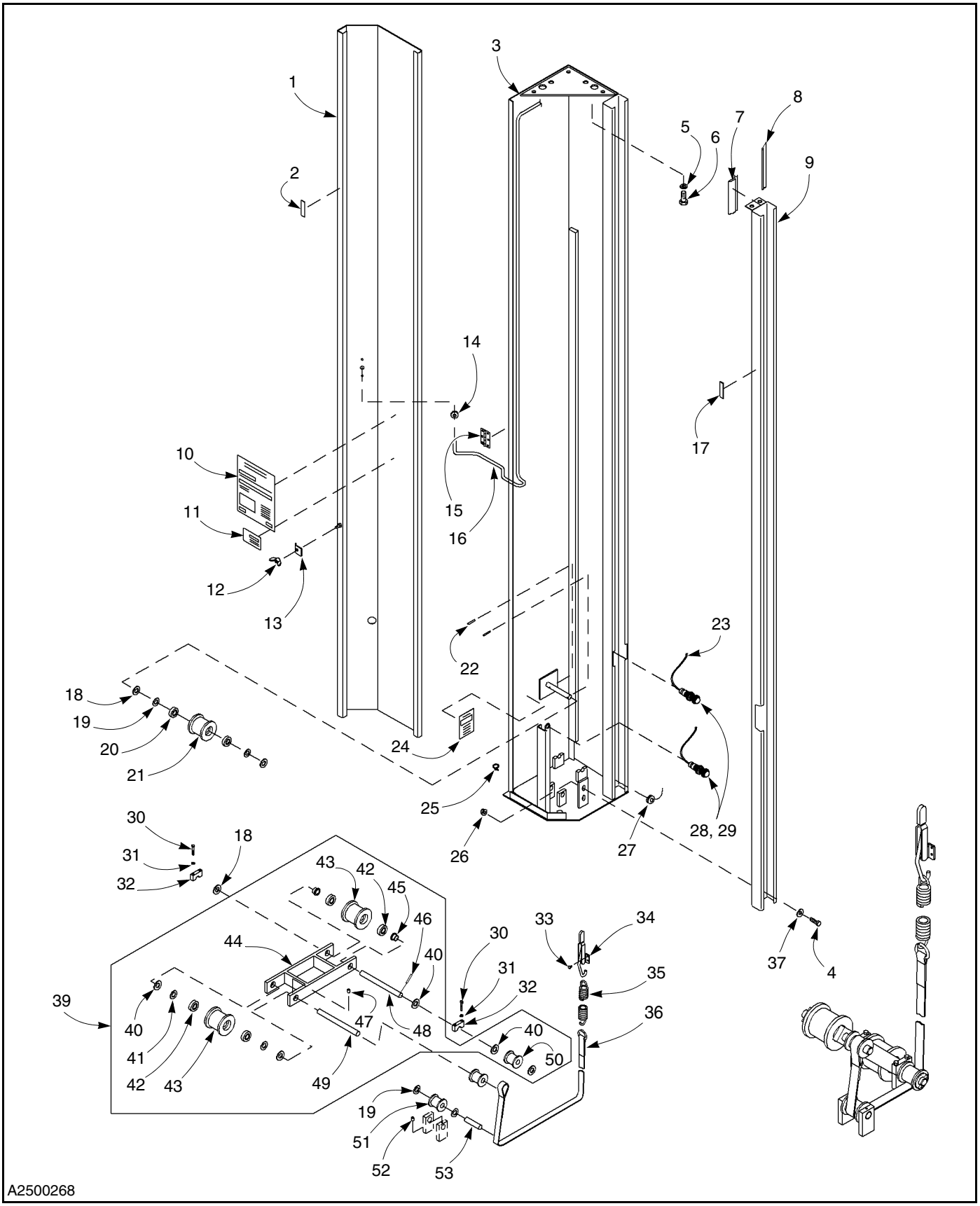

Figure 86

ITEM	QTY.	PART	DESCRIPTION
-	1	02992273	Side Column Assembly, 14-in. Left-Hand, Telco, Hinged
-	1	02992274	Side Column Assembly, 14-in. Right-Hand, Telco, Hinged (not shown)
1	1	0202290*	Cover, Left-Hand Side Column
	1	0202291*	Cover, Right-Hand Side Column
2	2	0007199	Velcro - Loop ¾-in. x 3-in.
3	1	02991850*	14-in. Side Column Weldment, Full Length Left-Hand Hinged
	1	02991856*	14-in. Side Column Weldment, Full Length Right-Hand Hinged
4	A/R	0550018	Bolt, ½-13 x 1½-in.
5	2	0555119	Washer, 7⁄16-in. Lock
6	2	0550011	Bolt, 7⁄16-14 x 1-in.
7	2	0009176	Brush Retainer, 1-in. 45° Aluminum (Length A/R)
8	2	0007178	Weatherseal, 1¼-in. Vinyl (Length A/R)
9	1	0299248*	Windbar Guide, Left-Front
	1	0299249*	Windbar Guide, Right-Front
10	1	0016657	Decal, Breakaway Reassembly
11	1	0016333	Plate, Serial Number (Left-Hand Side Column Only)
12	1	0553108	Nut, ⅜-16 Wing
13	1	0202317	Door Latch
14	1	0004415	Grommet, ⅜-in. I.D. x ⅝-in. O.D. Neoprene (Left Side Column Only)
15	3	0552068	Hinge, 1-in. x 3-in. Loose Pin
16	1	00141094	Cable, 3-Conductor (Left-Hand Side Column Only, Standard Bottom Bar Assembly)
	1	0014013	Cable, 6-Conductor (Left-Hand Side Column Only, ESP Bottom Bar Assembly)
17	2	0007198	Velcro - Hook ¾-in. x 3-in.
18	3	0555144	Washer, ¾-in. Flat
19	4	0003068	Washer, Bronze
20	2	0204039	Bearing, Roller
21	1	0205038	Roller, Tension Strap
22	2	0552066	Roll Pin, 3⁄16 x 1½-in.
23	2	0012153	Cable, Photo Eye
24	1	0016656	Decal, Fast-Seal Strap Routing
25	2	0005401	Cable Tie, Push Stud
26	2	0553100	Nut, ½-13 Serrated
27	1	0004651	Grommet, ½-in. I.D. x 1 1⁄16-in. O.D.
28	1	00141087	Photo Eye, Transmitter Telco, Space Master
29	1	00141088	Photo Eye, Receiver Telco, Space Master
30	4	0550272	Screw, Socket Head ¼-20 x 1½-in.
31	4	0554116	Washer, ¼-in. Flat
32	2	0203305	Block, Top Mounting Tension Shaft
33	4	0553021	Screw, #10-24 x ⅜-in. Phillips, Round Head
34	1	0218009	Clamp, J-Hook
35	1	0204043	Spring, Tension
36	1	02992414	Spring Strap Assembly, w/ Bushing
37	2	0555145	Washer, ½-in. Flat
38	2	0550018	Bolt, ½-13 x 1½-in.

Parts list continued on page 43.

NOTE: Side column variations (14- and 17-inch wide columns), can be determined by measuring the actual width of the column frame. Also, unless noted otherwise, all quantities indicated are for one side column only.

A/R = as required

** Items are produced based on manufactured height and width of door.*

*** Items are only used on non-breakaway doors.*

ALWAYS INCLUDE SERIAL NUMBER OF DOOR WHEN PLACING ORDER

To ensure you receive the correct parts when placing an order, always include the serial number of your door. Also, due to product enhancement, the actual parts on your door may be different from those shown in this manual.

14-INCH SIDE COLUMNS—CONTINUED

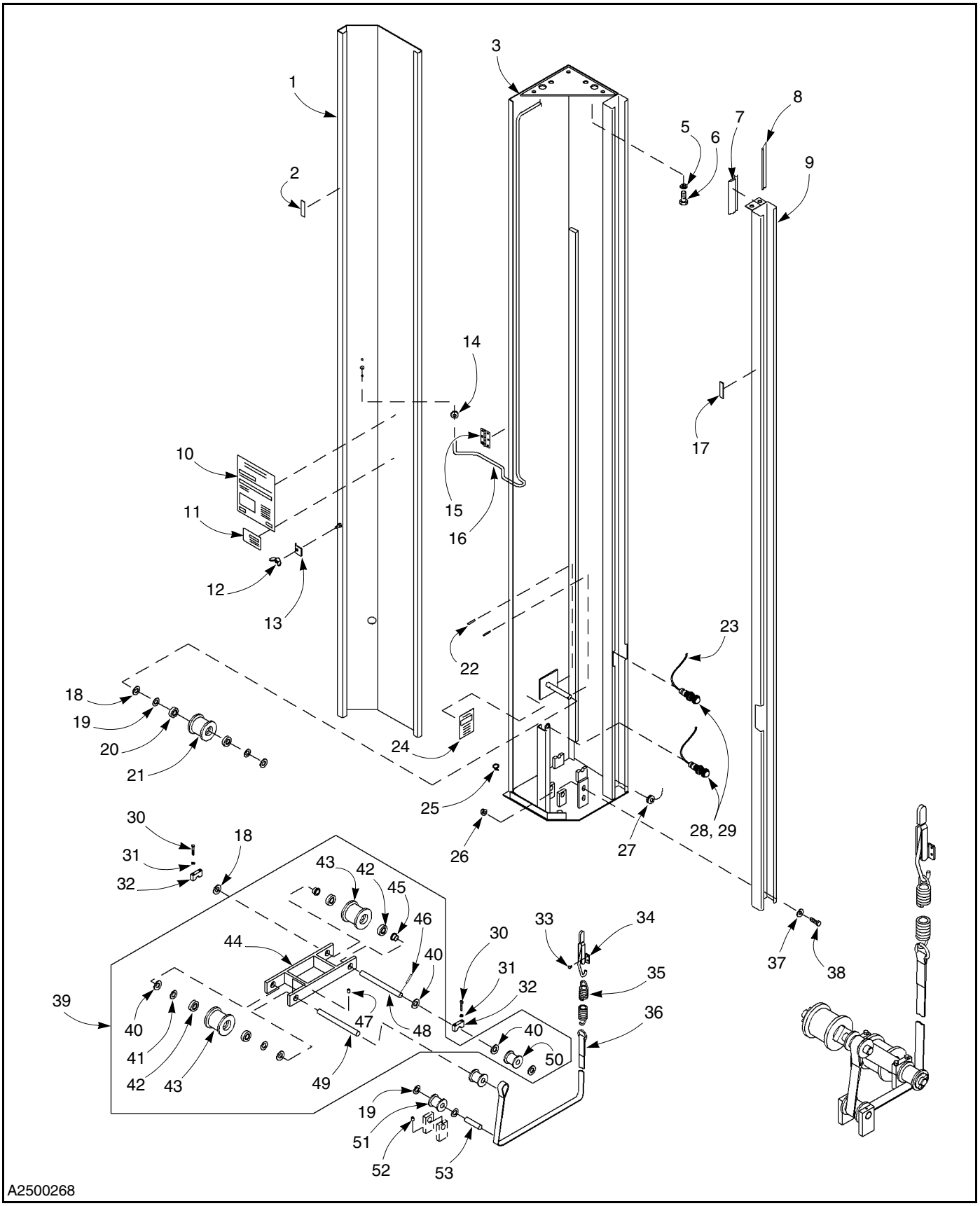

Figure 87

Parts list continued from page 41.

ITEM	QTY.	PART	DESCRIPTION
39	1	0299819	H-Bracket Assembly, 14-in. Side Column (Includes Items 40 thru 50)
40	5	0555144	Washer, ¾-in. Flat
41	2	0003068	Washer, Bronze
42	4	0204039	Bearing, Roller
43	2	0205038	Roller, Tension Strap
44	1	0203214	H-Bracket
45	2	0003067	Bushing, ¾-in. I.D. Brass
46	1	0552066	Roll Pin, 3⁄16 x 1½-in.
47	1	0551044	Setscrew, 5⁄16-18 x ⅜-in.
48	1	0203035	Shaft, Tension Roller (with Hole)
49	1	0203036	Shaft, Tension Roller (w/o Hole)
50	1	0205037	Roller, Spring Strap
51	1	0205037	Roller, Spring Strap
52	1	0551044	Setscrew, 5⁄16-18 x ⅜-in.
53	1	0203034	Shaft, Spring Tension Roller
54	A/R	0099059	Limit Switch, FS-3000 (not shown, FS-3000 Only)

NOTE: Side column variations (14- and 17-inch wide columns), can be determined by measuring the actual width of the column frame. Also, unless noted otherwise, all quantities indicated are for one side column only.

A/R = as required

** Items are produced based on manufactured height and width of door.*

*** Items are only used on non-breakaway doors.*

ALWAYS INCLUDE SERIAL NUMBER OF DOOR WHEN PLACING ORDER

To ensure you receive the correct parts when placing an order, always include the serial number of your door. Also, due to product enhancement, the actual parts on your door may be different from those shown in this manual.

17-INCH SIDE COLUMNS

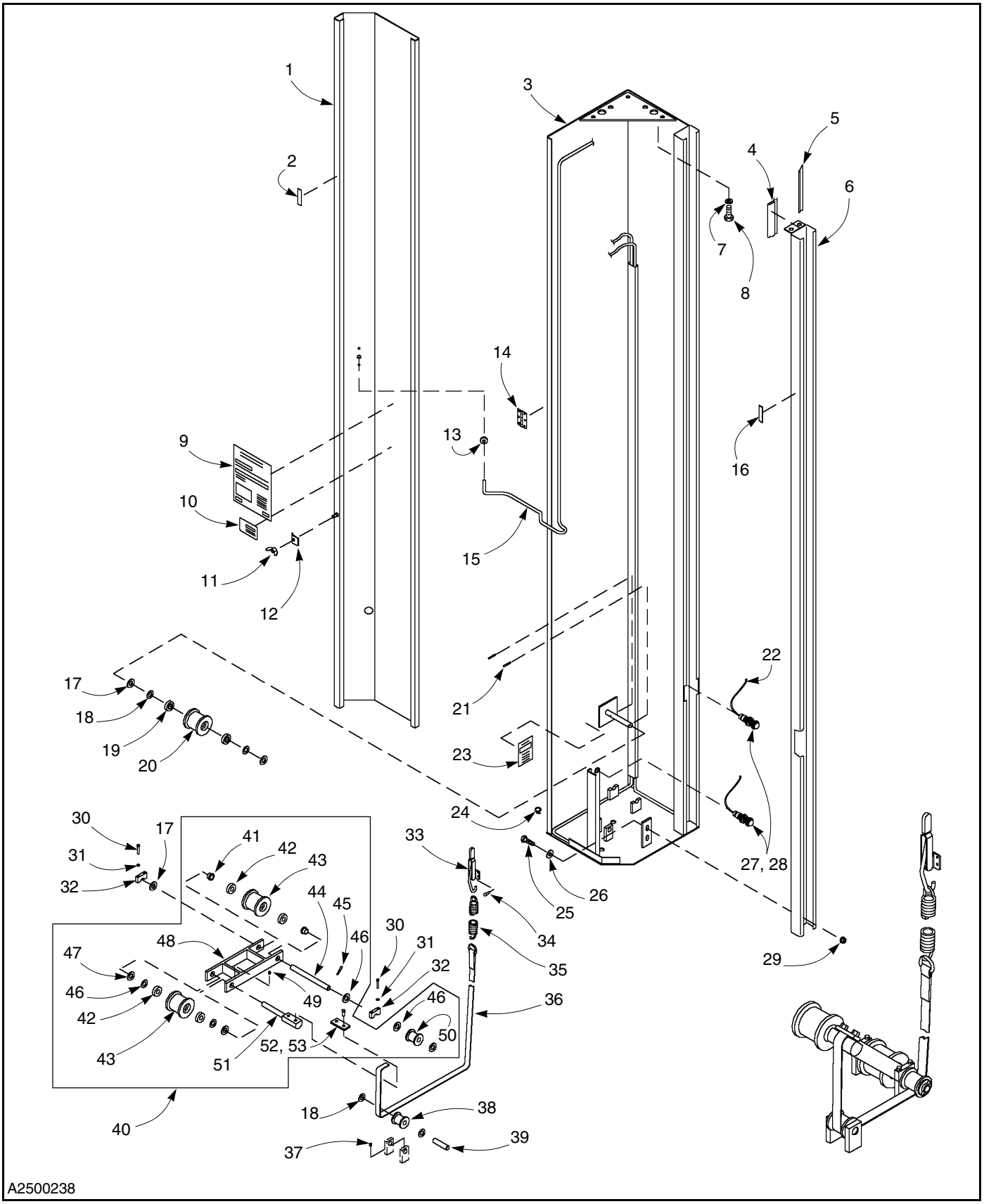

Figure 88

ITEM	QTY.	PART	DESCRIPTION
-	1	02992276	Side Column Assembly, 17-in. Left-Hand, Telco, Hinged
-	1	02992277	Side Column Assembly, 17-in. Right-Hand, Telco, Hinged (not shown)
1	1	0202241*	Side Column Cover, L.H.
	1	0202310*	Side Column Cover, R.H.
2	2	0007199	Velcro - Loop ¾-in. x 3-in.
3	1	02992262*	17-in. Side Column Weldment, Full Length Left-Hand Hinged
	1	02992264*	17-in. Side Column Weldment, Full Length Right-Hand Hinged
4	2	0009176	Brush Retainer, 1-in. 45° Aluminum (Length A/R)
5	2	0007178	Weatherseal, 1¼-in. Vinyl (Length A/R)
6	1	0299806*	Windbar Guide, Left-Front
	1	0299807*	Windbar Guide, Right-Front
7	2	0555119	Washer, 7⁄16-in. Lock
8	2	0550011	Bolt, 7⁄16-14 x 1-in.
9	1	0016657	Decal, Breakaway Reassembly
10	1	0016333	Plate, Serial Number (Left-Hand Side Column Only)
11	1	0553108	Nut, ⅜-16 Wing
12	1	0202317	Door Latch
13	1	0004415	Grommet, ⅜-in. I.D. x ⅝-in. O.D. Neoprene (Left Side Column Only)
14	3	0552068	Hinge, 1-in. x 3-in. Loose Pin
15	1	00141094	Cable, 3-Conductor (Left Side Column Only – Standard Bottom Bar Assembly)
	1	0014013	Cable, 6-Conductor (Left Side Column Only – ESP Bottom Bar Assembly)
16	2	0007198	Velcro - Hook ¾-in. x 3-in.
17	3	0555144	Washer, ¾-in. Flat
18	4	0003068	Washer, Bronze
19	2	0204039	Bearing Roller
20	1	0205038	Roller, Tension
21	2	0552066	Roll Pin, 3⁄16 x 1½-in.
22	2	0012153	Cable, Photo Eye
23	1	0016656	Decal, Fast-Seal Strap Routing
24	2	0005401	Cable Tie, Push Stud
25	2	0550018	Bolt, ½-13 x 1½-in.
26	2	0555145	Washer, ½-in. Flat
27	1	00141087	Photo Eye, Transmitter Telco, Space Master
28	1	00141088	Photo Eye, Receiver Telco, Space Master
29	2	0553100	Nut, ½-13 Serrated
30	4	0550272	Screw, Socket Head ¼-20 x 1½-in.
31	4	0554116	Washer, ¼-in. Flat
32	2	0203305	Block, Top Mounting Tension Shaft
33	1	0218009	Clamp, J-hook
34	4	0553021	Screw, #10-24 x ⅜-in. Phillips, Round Head
35	1	0204507	Spring, Tension
36	1	0207716	Strap, Spring
37	1	0551044	Setscrew, 5⁄16-18 x ⅜-in.
38	1	0205037	Roller, Spring Strap

Parts list continued on page 47.

NOTE: Side column variations (14- and 17-inch wide columns), can be determined by measuring the actual width of the column frame. Also, unless noted otherwise, all quantities indicated are for one side column only.

A/R = as required

** Items are produced based on manufactured height and width of door.*

*** Items are only used on non-breakaway doors.*

ALWAYS INCLUDE SERIAL NUMBER OF DOOR WHEN PLACING ORDER

To ensure you receive the correct parts when placing an order, always include the serial number of your door. Also, due to product enhancement, the actual parts on your door may be different from those shown in this manual.

17-INCH SIDE COLUMNS—CONTINUED

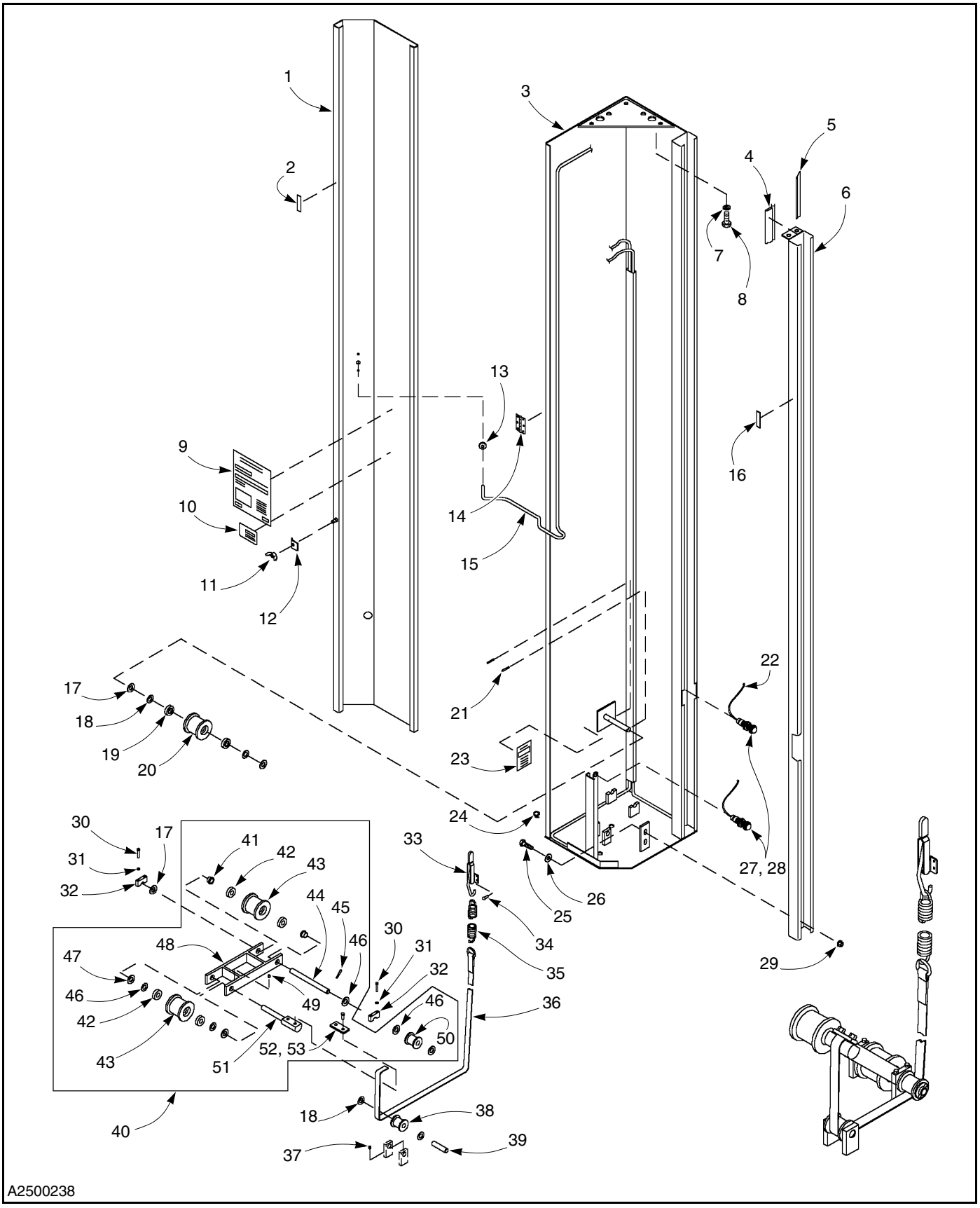

Figure 89

Parts list continued from page 45.

ITEM	QTY.	PART	DESCRIPTION
39	1	0203034	Shaft, Spring Tension Roller
40	1	0299503	Left-Hand H-bracket Assembly, 17-in. Side Column (Includes Items 41 thru 53)
	1	02992214	Right-Hand H-bracket Assembly, 17-in. Side Column (Includes Items 41 thru 53)
41	2	0003067	Bushing, 3/4-in. I.D. Brass
42	4	0204039	Bearing, Roller
43	2	0205038	Roller, Tension Strap
44	1	0203035	Shaft, Tension Roller (with Hole)
45	1	0552066	Roll Pin, 3/16 x 1 1/2-in.
46	5	0555144	Washer, 3/4-in. Flat
47	2	0003068	Washer, Bronze
48	1	0203504	H-bracket
49	1	0551044	Setscrew, 5/16-18 x 3/8-in.
50	1	0205037	Roller, Spring Strap
51	1	0203429	Shaft, Tension Roller (w/o Hole)
52	1	0203430	Clamp Plate, Tension Strap
53	2	0550330	Screw, Hex Head 3/8-16 x 1-in.

NOTE: Side column variations (14- and 17-inch wide columns), can be determined by measuring the actual width of the column frame. Also, unless noted otherwise, all quantities indicated are for one side column only.

A/R = as required

** Items are produced based on manufactured height and width of door.*

*** Items are only used on non-breakaway doors.*

ALWAYS INCLUDE SERIAL NUMBER OF DOOR WHEN PLACING ORDER

To ensure you receive the correct parts when placing an order, always include the serial number of your door. Also, due to product enhancement, the actual parts on your door may be different from those shown in this manual.

HEAD ASSEMBLY (14-INCH SIDE COLUMNS)

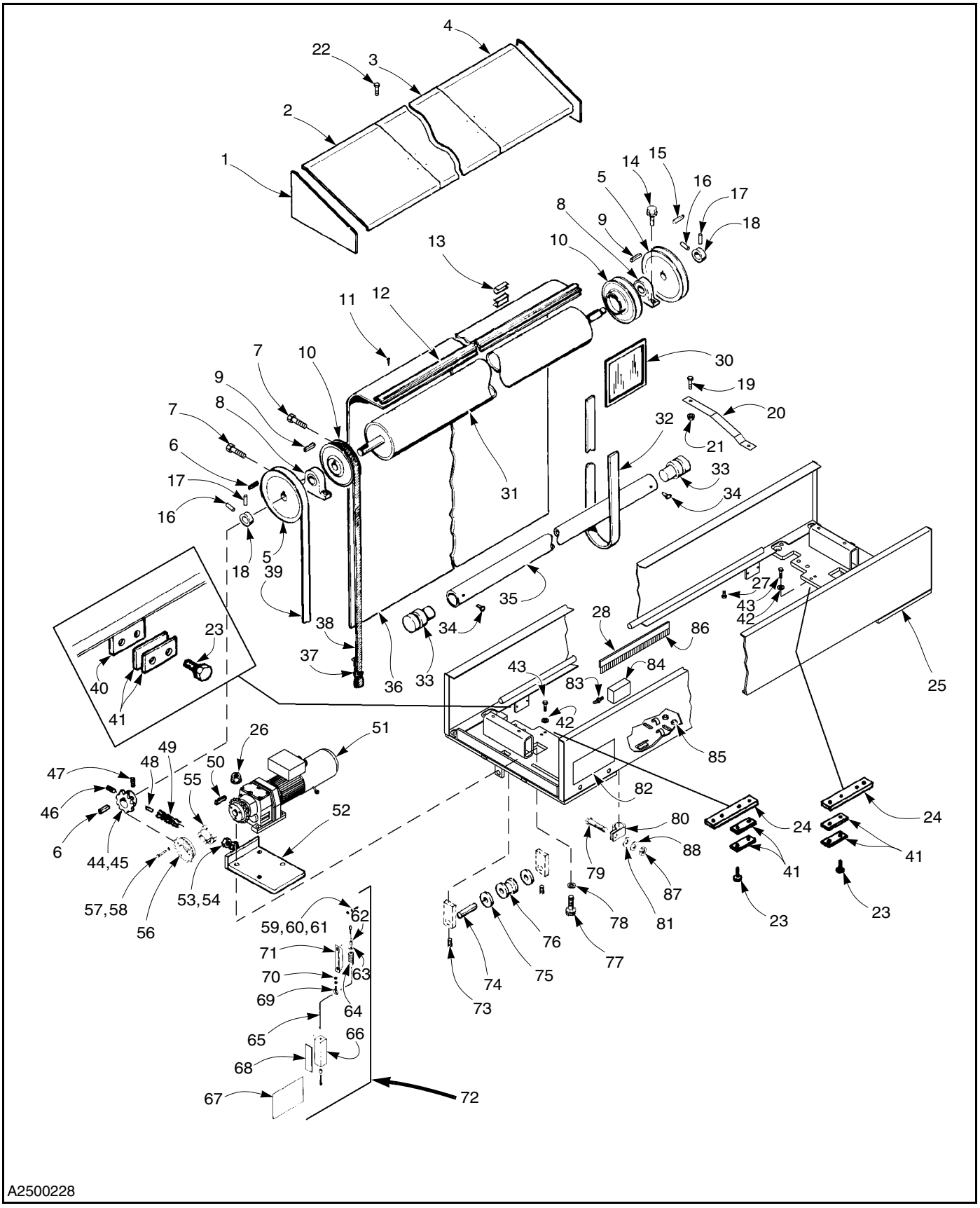

Figure 90

ITEM	QTY.	PART	DESCRIPTION
1	2	0205282	Cover Slant, End Clear
	2	0205310	Cover Flat, End Clear (not shown)
2	1	02021340	Cover Slant, Left
	1	02021429	Cover Weldment, Flat Left (not shown)
3	A/R	02021341*	Cover Slant, Centers
	A/R	02021432*	Cover Weldment, Flat Center (not shown)
4	1	02021342	Cover Slant, Right
	1	02021430	Cover Weldment, Flat Right (not shown)
5	2	0208399	Spool, Tension
6	1	02031092	Key, 3/8-in. x 4.38-in. Tension Spool Drive-Side
7	4	0551049	Screw, 5/16-18 x 1/2-in. Round-Head Phillips
8	2	0204395	Bearing, Pillow Block
9	2	0203376	Key, 3/8-in. x 2.44-in. Counterweight Spool
10	2	0208396	Spool, Counterweight
11	A/R	0556167	Rivet, 3/16-in. Stainless
12	1	0202009*	Mounting Strap, Panel
13	A/R	0007199	Velcro, 1 1/2-in.
14	4	0550041	Screw, 1/2-13 x 1 1/4-in. Serrated Flange
15	1	0203359	Key, 3/8-in. x 2.94-in. Tension Spool Non-Drive Side
16	2	0021033	Socket Head Set Screw, 5/16-18 UNC x 1/2-in.
17	2	0551057	Set Screw, Cone Point, 5/16-18 UNC x 5/8-in.
18	2	0203028	Tension Collar
19	A/R	0550070	Screw, 5/16-18 x 1-in. Hex-Head Cap
20	A/R	02021348	Head Support Bracket
21	A/R	0553104	Nut, 5/16-18 Serrated-Flange Hex
22	4	S551041	Screw, 1/4-20 x 1-in. Self-Tapping, SS
23	8	0550060	Screw, 5/16-18 x 1 1/4-in. Serrated Flange
24	2	0203279	Bracket, Front Windbar Strap
25	1	Consult Factory*	Head Weldment
26	4	0553100	Nut, 1/2-13 Serrated
27	A/R	0551041	Screw, 1/4 x 1-in. TEK
28	1	0009008*	Track, 1-in. Straight Aluminum
29	1	0203028	Collar, Locking
30	A/R	0207129	Window 17-in. x 17-in.
	A/R	0207010	Window 24-in. x 24-in.
	A/R	0207926	Window, 24-in. x 24-in., USDA Low Temperature
31	1	02992589*	Drum Weldment
32	A/R	0007089	Strap, Windbar (Gray) 1 1/2-in.
33	A/R	0205290	End Cap, Windbar
34	A/R	0556065	Rivet, 1/8-in.
35	A/R	0001083*	Windbar Tube
36	1	Consult Factory*	Door Panel Assembly
37	2	02992412	Clamp Plate, Counterweight Strap
38	2	0007088*	Strap, Counterweight (Yellow) 1-in.
39	2	0007086*	Strap, Tension (Blue) 2-in.
40	2	0203280	Bracket, Rear Windbar Strap
41	4	0203138	Clamp, Strap
42	4	0554117	Lock Washer, 5/16-in.
43	4	0550008	Screw, 5/16-18 x 1 1/4-in.
44	1	0204931	Sprocket, Drum
45	1	0204933	Bushing, Drum
46	1	0550034	Setscrew, 3/8-16 x 5/8-in. Cone Point
47	1	0550077	Setscrew, 3/8-16 x 5/8-in. Knurled
48	1	0004038	Master Link, #60 x 5/8-in. Pitch
49	1	0204934	Chain, #60 x 3/4-in. Pitch
50	1	0204545	Keystock, 5/16-in. Step

Parts list continued on page 51.

NOTE: Side column variations (14 and 17-inch wide columns), can be determined by measuring the actual width of the column frame.

A/R = as required

** Items are produced based on manufactured height and width of door.*

*** Items only used on doors 16 feet and taller.*

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HEAD ASSEMBLY (14-INCH SIDE COLUMNS)—CONTINUED

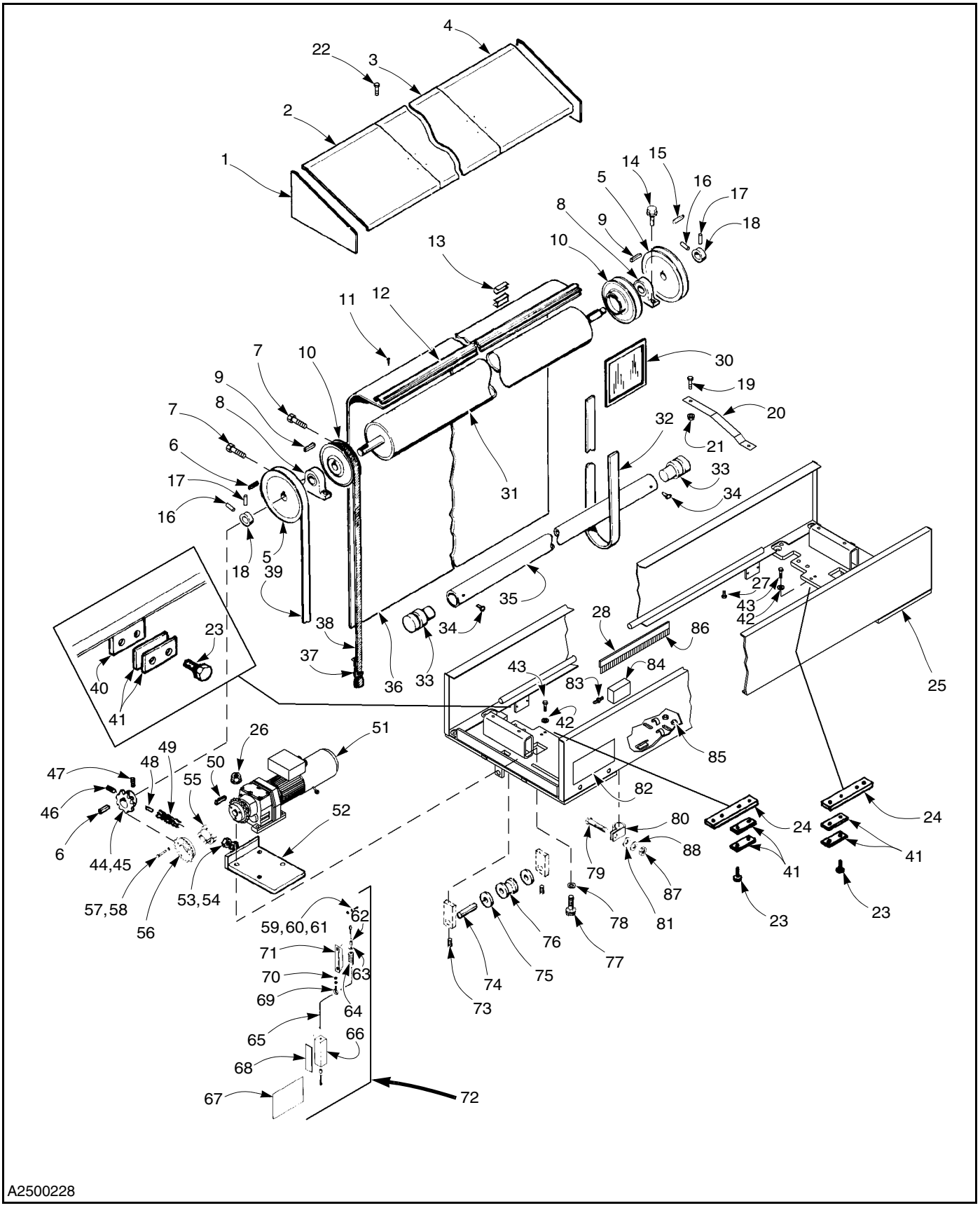

Figure 91

Parts list continued from page 49.

ITEM	QTY.	PART	DESCRIPTION
51	1	Consult Factory	Motor, Assembly
52	1	0299246	Motor Mount, US 56-5
53	1	0555146	Washer, 3/8-in. Flat
54	1	0553091	Nut, 3/8-16 Hex
55	1	0204932	Bushing, QD Type, SDS 1 1/4-in.
56	1	0204931	Sprocket, 21-Tooth QD Taperlock
57	3	0554116	Lock Washer, 1/4-in.
58	3	0550039	Bolt, 1/4-20 x 1 1/2-in. Hardened
59	2	0553180	Nut, #8-32
60	2	0554187	Lock Washer, #8
61	2	0550178	Screw, #8-32 x 1/2-in.
62	2	0204560	Sleeve Loop for Cable
63	1	0021014	Washer, #8 Flat
64	1	0204561	Spring, 0.48 Dia. x 2-in. Compression
65	1	0204815	Pull Cord, Brake Release
66	1	0805222	Handle, Brake Release
67	1	0299710	Sign, Brake Release
68	1	0804230	Magnet, Brake Release Flexible Strip
69	1	0021018	Bolt Eye 1/4-20 x 1-in.
70	2	0553103	Nut 1/4-20
71	1	0203562	Housing, Spring Brake
72	1	0299288	Manual Brake Release, Kit Complete (Includes Items 59 thru 71)
73	2	0551057	Setscrew, 5/16-18 x 1/4-in.
74	2	0203034	Shaft, Roller
75	4	0003068	Washer, Brass
76	2	0205037	Roller, Spring Strap
77	4	0550024	Screw, 1/2-13 x 2-in.
78	4	0555145	Washer, 1/2-in. Flat
79	1	0550237	Screw, #10-32 x 1-in.
80	1	0904030	Clamp, Coil Cord
81	1	0555238	Washer, #10 Flat
82	1	0016105	Decal, Rytec
83	4	0014171	Cord Grip
84	2	0104840	Junction Box
85	2	0553103	Nut, 1/4-20 Serrated Flange
86	1	0009177*	Brush, 3-in.
87	1	0553087	Nut, #10-32, Hex
88	1	0554115	Lock Washer, #10

NOTE: Side column variations (14 and 17-inch wide columns), can be determined by measuring the actual width of the column frame.

A/R = as required

** Items are produced based on manufactured height and width of door.*

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HEAD ASSEMBLY (17-INCH HEAVY DUTY SIDE COLUMNS)

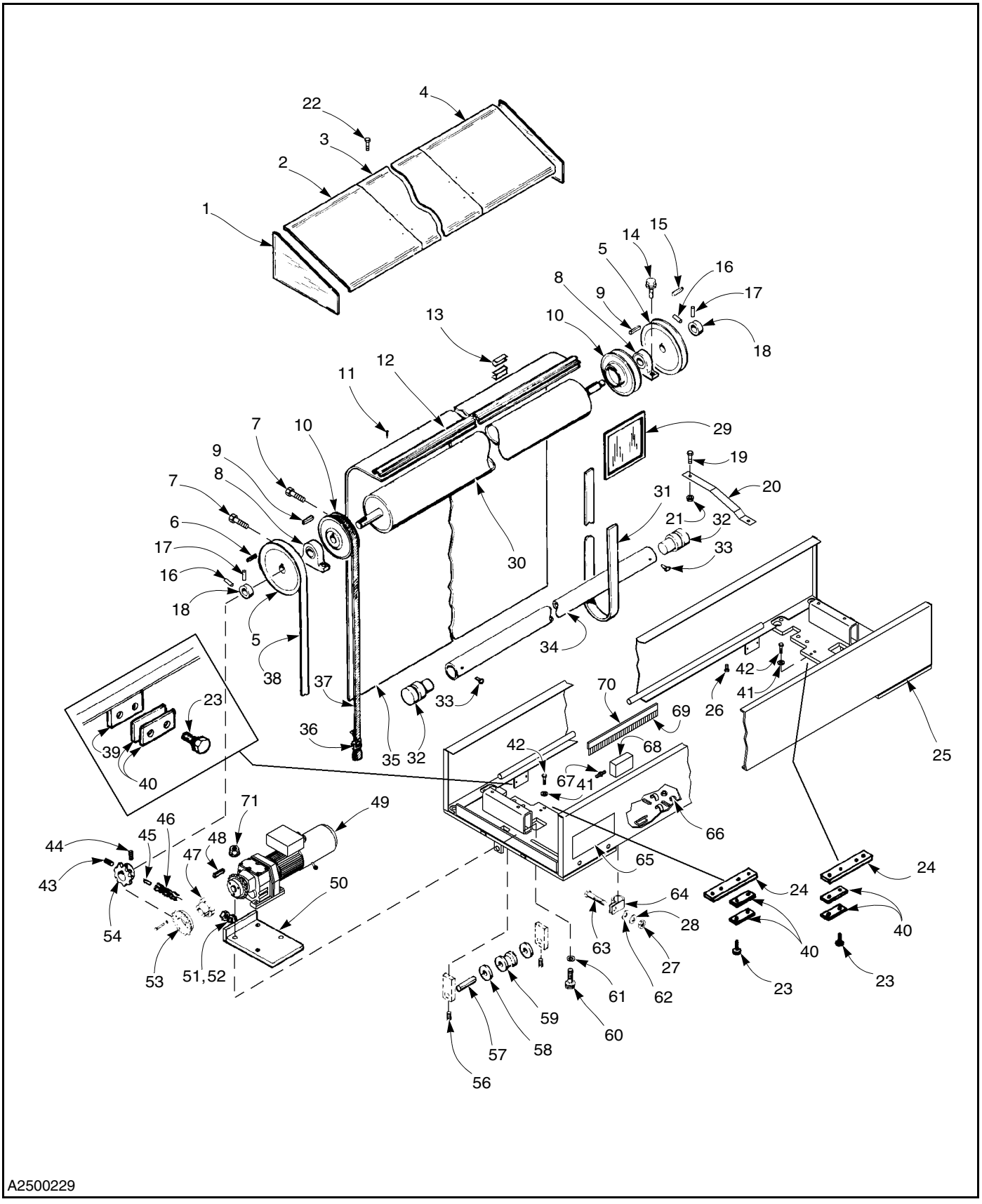

Figure 92

ITEM	QTY.	PART	DESCRIPTION
1	2	0205280	Cover Slant, End Clear
	2	0205019	Cover Flat, End Clear (not shown)
2	1	02021349	Cover Slant, Left
	1	02021437	Cover Weldment, Flat Left (not shown)
3	A/R	02021350*	Cover Slant, Center
	A/R	02021437*	Cover Weldment, Flat Center (not shown)
4	1	02021351	Cover Slant, Right
	1	02021438	Cover Weldment, Flat Right (not shown)
5	2	0208399	Spool, Tension
6	1	02031092	Key, 3/8 x 4-in. Tension Spool Drive-Side
7	4	0551049	Screw, 5/16-18 x 1/2-in. Round-Head Phillips
8	2	0204002	Bearing, Pillow Block
9	2	0203075	Key, 3/8-in. x 2-in. Counterweight Spool
10	2	0218001	Spool, Counterweight
11	A/R	0556167	Rivet, 3/16 Stainless
12	1	0202009*	Mounting Strap, Panel
13	A/R	0007138	Velcro, 1 1/2-in.
14	4	0550041	Screw, 1/2-13 x 1 1/4-in. Serrated Flange
15	1	0203227	Key, 3/8-in. x 3 1/8-in. Tension Spool Non-Drive Side
16	2	0021033	Socket Head Set Screw, 5/16-18 UNC x 1/2-in.
17	2	0551057	Set Screw, Cone Point, 5/16-18 UNC x 5/8-in.
18	2	0203028	Tension Collar
19	A/R	0550070	Screw, 5/16-18 x 1-in. Hex-Head Cap
20	A/R	02021348	Head Support Bracket

ITEM	QTY.	PART #	DESCRIPTION
21	A/R	0553104	Nut, 5/16-18 Serrated-Flange Hex
22	4	S551041	Screw, 1/4-20 x 1-in. Self-Tapping, SS
23	8	0550060	Screw, 5/16-18 x 1 1/4-in. Serrated Flange
24	2	0203279	Bracket, Front Windbar Strap
25	1	Consult Factory*	Head Weldment
26	A/R	0551041*	Screw, 1/4 x 1-in. TEK
27	1	0553087	Nut, #10-32 Hex
28	1	0554115	Lock Washer, #10
29	A/R	0207129	Window 17-in. x 17-in.
	A/R	0207111	Window 24-in. x 24-in.
	A/R	0207926	Window, 24-in. x 24-in., USDA Low Temperature
30	1	02992561*	Drum Weldment
31	A/R	0007089	Strap, Windbar (Gray) 1 1/2-in.
32	A/R	0205290	End Cap, Windbar
33	A/R	0556065	Rivet, 1/8-in.
34	A/R	0001012*	Windbar Tube
	A/R	Consult Factory*	Dual Strapless Windbar (not shown)
35	1	Consult Factory*	Door Panel Assembly
36	2	02992412	Clamp Plate, Counterweight Strap
37	2	0007088*	Strap, Counterweight (Yellow) 1-in.
38	2	0007086*	Strap, Tension (Blue) 2-in.
	2	217872*	Strap, Tension Heavy Duty (Blue)
39	2	0203280	Bracket, Rear Windbar Strap
40	4	0203138	Clamp, Strap
41	4	0554117	Lock Washer, 5/16-in.
42	4	0550008	Screw, 5/16-18 x 1 1/4-in.
43	1	0550034	Setscrew, 3/8-16 x 5/8-in. Cone Point
44	1	0550077	Setscrew, 3/8-16 x 5/8-in. Knurled

Parts list continued on page 55.

NOTE: Side column variations (14 and 17-inch wide columns), can be determined by measuring the actual width of the column frame.

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HEAD ASSEMBLY (17-INCH HEAVY DUTY SIDE COLUMNS)—CONTINUED

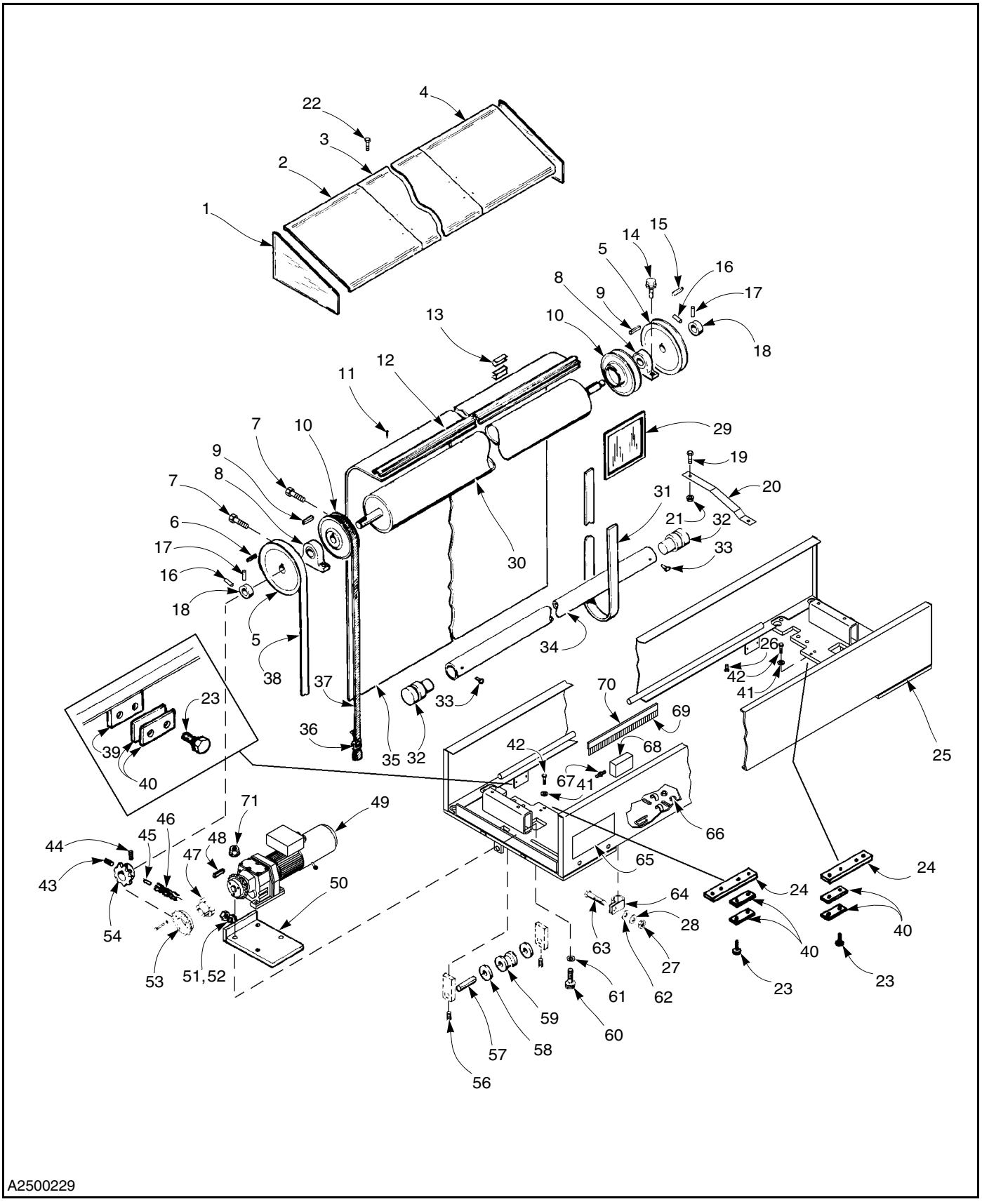

Figure 93

Parts list continued from page 53.

ITEM	QTY.	PART	DESCRIPTION
45	1	0004038	Master Link, #50 x 5/8-in. Pitch
46	1	0204934	Chain, #60 x 5/8-in. Pitch
47	1	0204932	Bushing, QD Type, SDS 1 1/4-in.
48	1	0204545	Keystock, 5/16-in. Step
49	1	Consult Factory	Motor, Assembly
50	1	0299042	Motor Mount
51	1	0555146	Washer, 3/8-in. Flat
52	1	0553091	Nut, 3/8-16 Hex
53	1	0204391	Sprocket, 21-Tooth QD Taperlock
	3	0554116	Lock Washer, 1/4-in. (Included with Item 53)
	3	0550039	Bolt, 1/4-20 x 1 1/2-in. Hardened (Included with Item 53)
54	1	0204931	Sprocket, Drum
55	1	0204933	Bushing, Drum
56	2	0551057	Setscrew, 5/16-18 x 1/4-in.
57	2	0203034	Shaft, Roller
58	4	0003068	Washer, Brass
59	2	0205037	Roller, Spring Strap
60	4	0550024	Screw, 1/2-13 x 2-in.
61	4	0555145	Washer, 1/2-in. Flat
62	1	0555238	Washer, #10 Flat
63	1	0550237	Screw, #10-32 x 1-in.
64	1	0904030	Clamp, Coil Cord
65	1	0016105	Decal, Rytec
66	2	0553103	Nut, 1/4-20 Serrated Flange
67	4	0014171	Cord Grip
68	2	0104840	Junction Box
69	1	0009398*	Brush, 5-in.
70	1	0009399*	Track, 2-in. Straight Aluminum
71	1	0553100	Nut, 1/2-13 Serrated
	-	Consult Factory	Brake Release (not shown)

NOTE: Side column variations (14 and 17-inch wide columns), can be determined by measuring the actual width of the column frame.

A/R = as required

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STRAPLESS WINDBAR

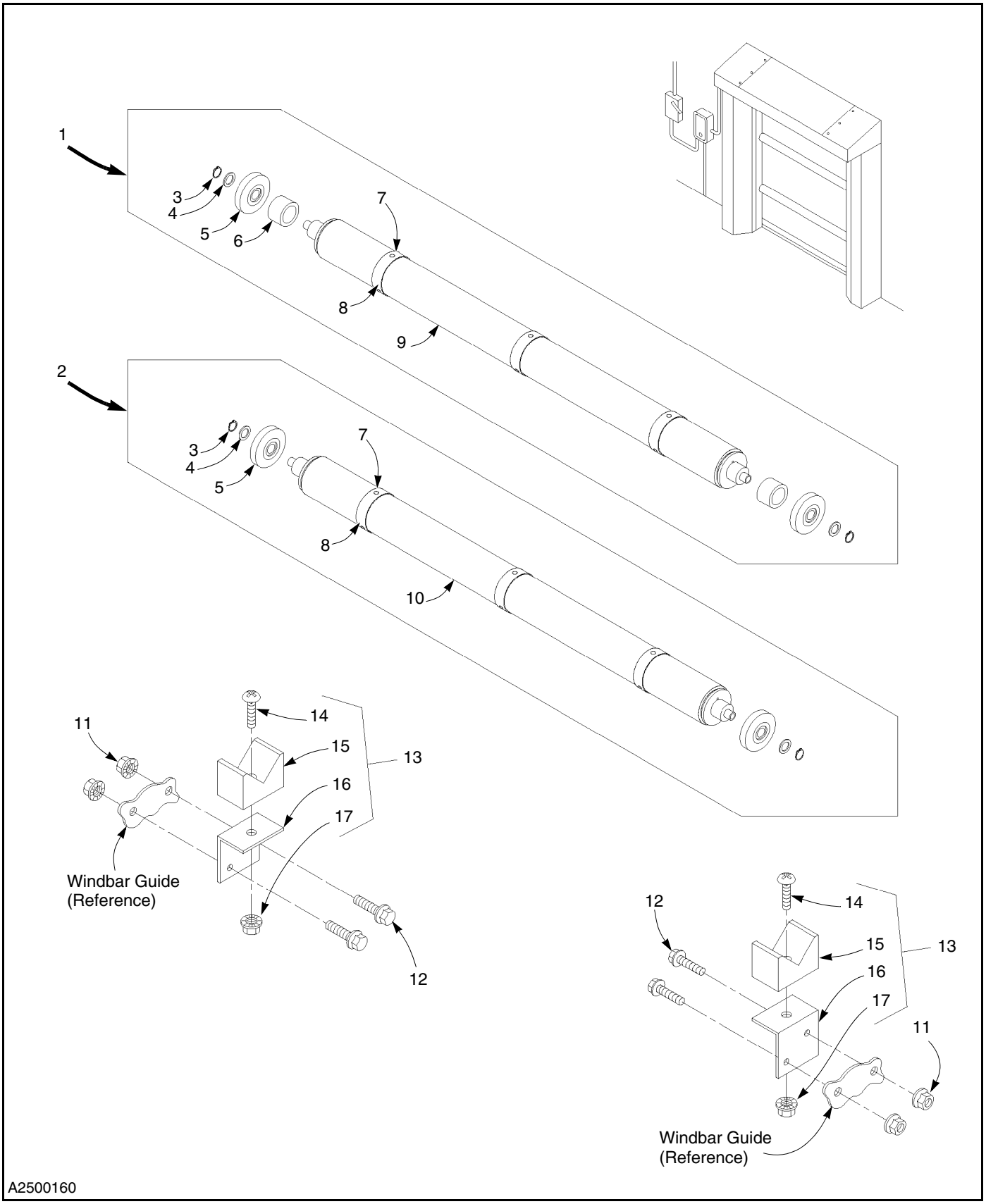

Figure 94

ITEM	QTY.	PART	DESCRIPTION
1	1	0299098	Windbar Assembly, Upper (Includes Items 3 thru 9)
2	1	0299097	Windbar Assembly, Lower (Includes Items 3, 4, 5, 7, 8, and 10)
3	2	0558168	Retaining Ring
4	2	0555152	Shim, 1⅛-in. O.D. x ¾-in. I.D. x 0.063-in. Steel
5	2	0205020	End Cap, Windbar Wheel
6	2	0205358	Roller, End Cap
7	9	0556167	Rivet, 3⁄16-in. Dia. x ½-in. Grip
8	3	0205001	Strip, UHMW w/ Adhesive
9	1	Consult Factory*	Windbar Weldment, Upper
10	1	Consult Factory*	Windbar Weldment, Lower
11	4	0553104	Nut, 5⁄16-18 Serrated-Flange
12	4	0550070	Screw, 5⁄16-18 x 1-in. Hex-Head Cap
13	2	02992164	Cushion Assembly (Includes Items 14 thru 17)
14	2	0021036	Screw, ¼-20 x 1½-in. Round-Head
15	2	0213361	Cushion
16	2	0203411	Bracket
17	2	0553104	Nut, 5⁄16-18 Hex

A/R = as required

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MOTOR ASSEMBLY

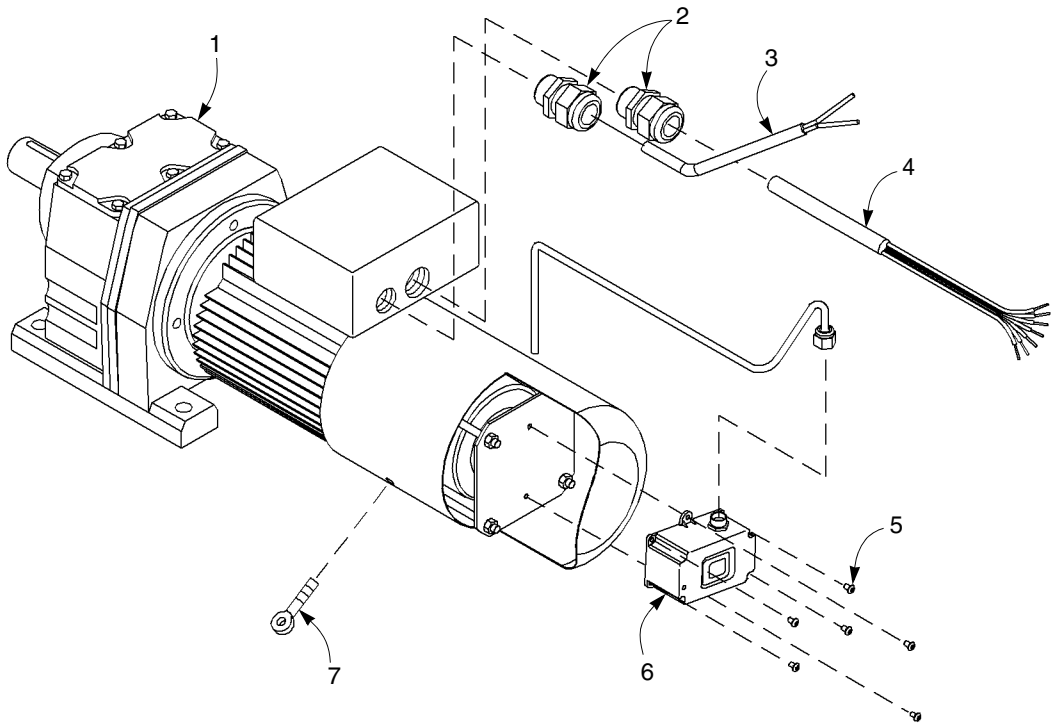

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Figure 95

ITEM	QTY.	PART	DESCRIPTION
1	1	Consult Factory	Motor/Gearbox Assembly
2	2	0014791	Cord Grip, ½ NPT
3	1	0014435	SO Cord, 18/2, (Motor Heater Only)
4	1	00141007	Cable, 16 Ga., 6 Conductor Shielded, 600 V, 90 C
5	4	0021744	Screw, M3-0.5 x 5 mm
6	1	00141028	Encoder, (Coil Cord Doors Only)
	1	00141057	Encoder, TST-PD, Wireless
7	1	0550278	Eye Bolt, Brake Release

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ANTENNA ASSEMBLY

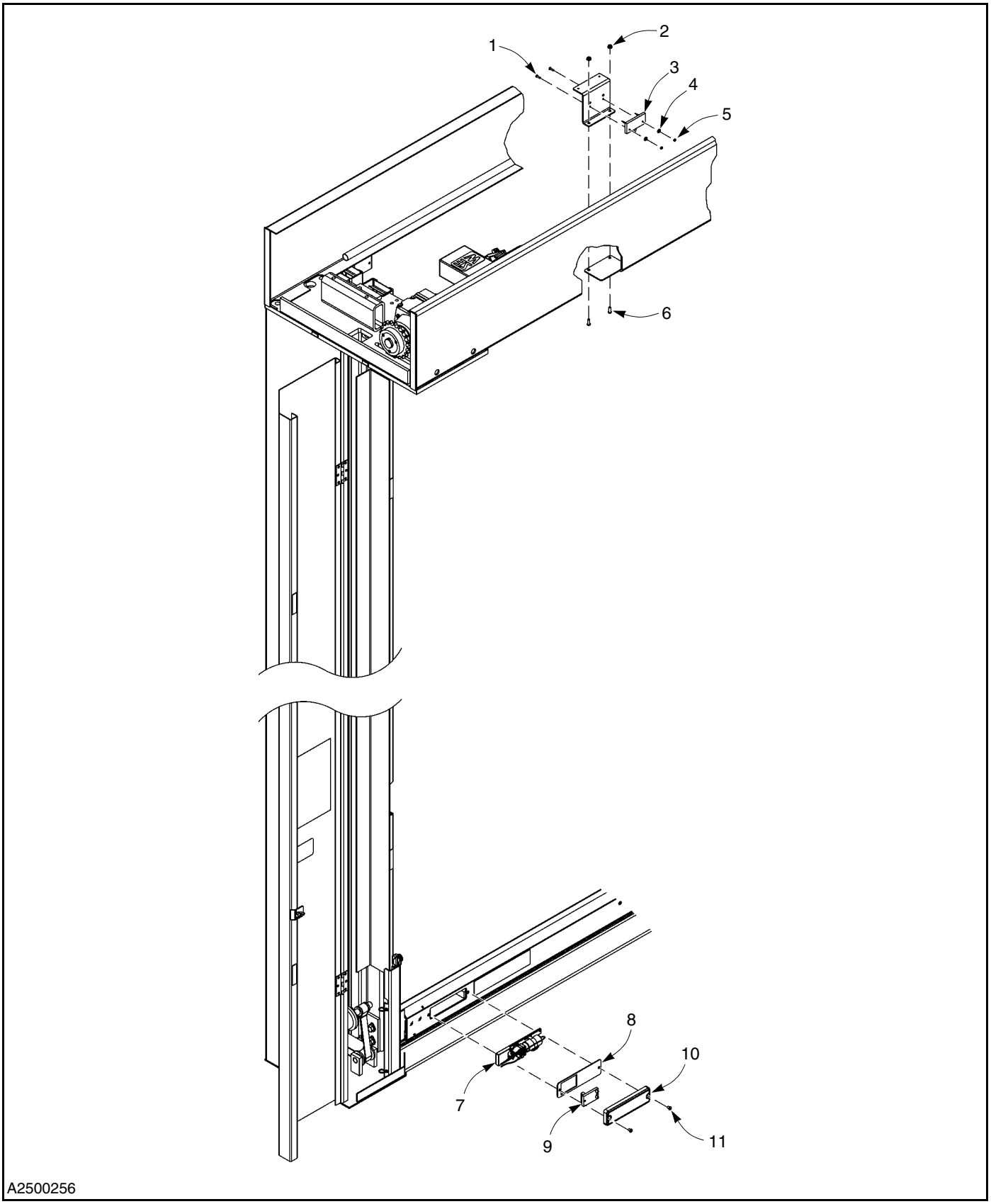

Figure 96

ITEM	QTY.	PART #	DESCRIPTION
1	2	555002-0Z04	Screw, Machine, Phillips Flat, M4 x 0.7 x 16 mm, ZN
2	2	5550057-0Z04	Nut, M4 x 0.7, Hex Head, Locking
3	1	00141057	Encoder, TST-PD, Wireless
4	2	5550055-0Z04	Washer, Flat, M4, ZN
5	2	5550054-0Z04	Nut, M4, Hex Head, ZN
6	2	5550054-0Z04	Screw, Machine, Phillips Flat, M4
7	A/R	A/R	Holder, Pressure Switch (See Figure 84)
8	1	1060119-0	Gasket, Cover, Wireless
9	1	00141058	Mobile Unit, Wireless
10	1	1060116-0	Cover, Wireless
11	2	5550025-0z04	Screw, Button Head Socket, 1/4-20 x 3/8 in., SS