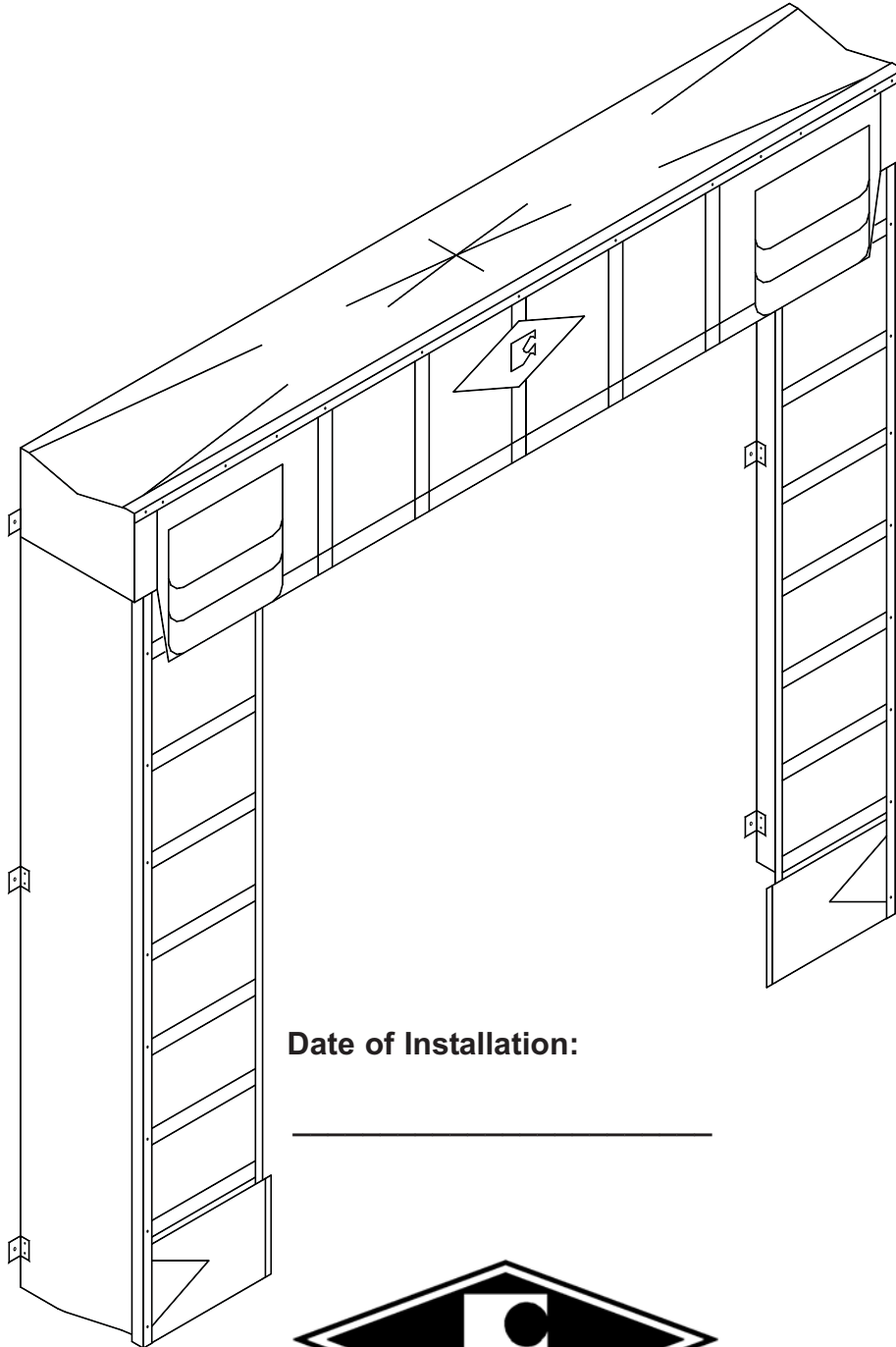


# Frommelt® SURVIVOR™

## 450S Series Impactable Dock Shelter Installation Instructions & Owner's Manual



Date of Installation:

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**This Manual Covers All Units Shipped 04/10 to Date**

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## File Information

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## General Precautions

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### WARNING

Post safety warning and barricade work area, at dock level and ground level to prevent unauthorized use of the dock position while service work is being performed.

## Introduction

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Thank you for purchasing a Frommelt 450S Series Shelter. For other applications, please contact your local Rite-Hite Sales Representative.

The following installation instructions are complete for all standard applications of the 450S Series Shelter. These instructions assume that the installer is outside the building facing the loading dock position.

Any application of the 450S Series Shelter that is outside of the normal application guidelines should be referred to Order Engineering for installation instructions.

## Preparation

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Remove all of the contents from the containers and check for damage. If any of the contents show signs of damage, contact Frommelt Products Corporation or your local sales representative.

## Illustrations

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Illustrations for this document are contained on drawing #450S0009

## Care & Maintenance

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No regular maintenance is required to keep the Survivor 450S Shelter operating efficiently. At times, it may be necessary to remove excess snow buildup from on top of the header.

# INSTALLATION INSTRUCTIONS

## 1. Steel Bumper Installation

Measure the dock door opening. Divide this measurement in half and mark the centerline of opening at dock level to locate bumpers. See Figure 1.

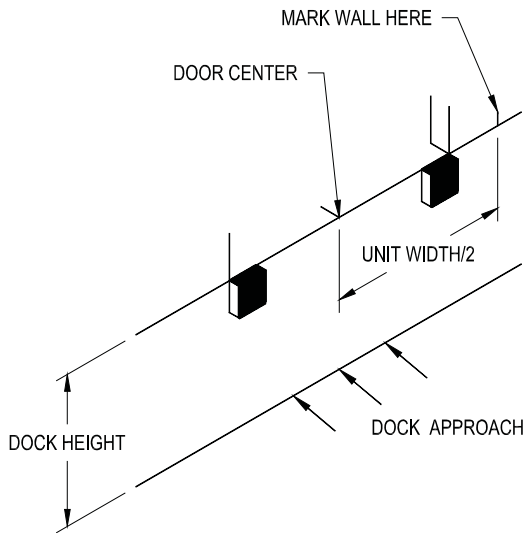


FIGURE 1

**Note:** Bumpers are optional. If bumpers are not used, skip to Step 2.

Mark mounting holes from bumper backplate on wall. See Figure 2.

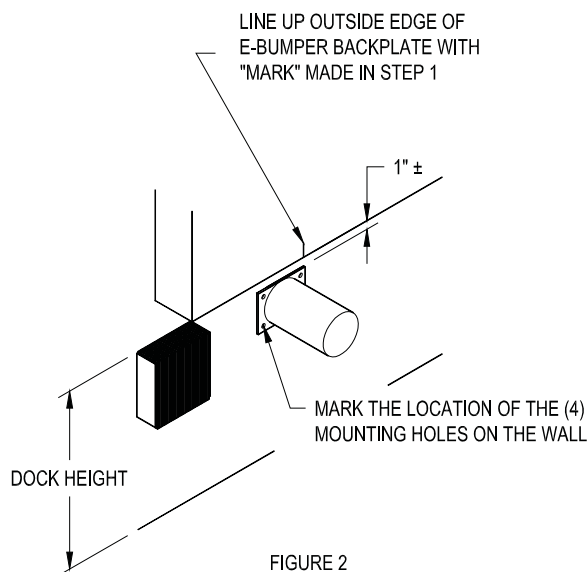


FIGURE 2

Drill holes and fasten bumper to foundation. See

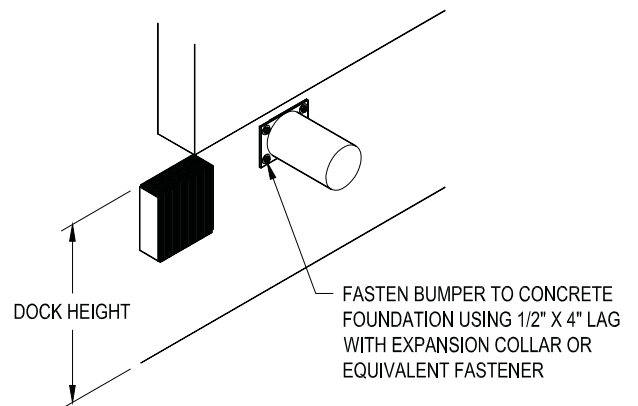


FIGURE 3

Figure 3.

Repeat mounting procedure for bumper on opposite side of door opening. See Figure 4.

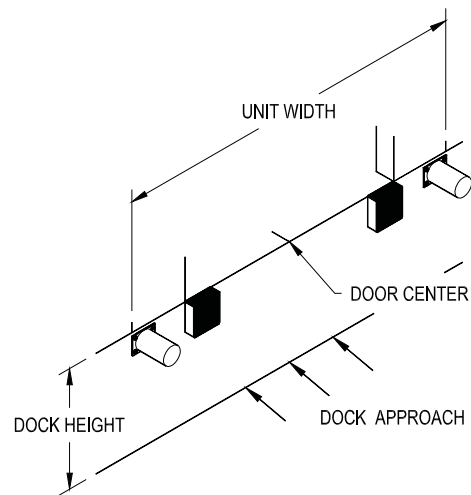


FIGURE 4

## 2. Mount Side Members to Building Wall

Reference the Product Application Form (PAF) or consult the sales representative for the appropriate mounting height. Typically, the bottom of the side pad/side frame is mounted at dock height, but some applications may require mounting them at a different location. (Example: When dock bumpers are mounted above dock height or above the pit floor on vertical leveler applications, it may be required to mount the bottom of the side pads/side frames at a height even with the top of the bumpers.

Position side member so the outboard edge of the side member sits flush with the outside edge of the "mark" made on wall in Step 1. (If bumper option was chosen, locate outboard edge of side member flush to outside edge of bumper.

Be sure the frame is plumb top to bottom and at the correct overall unit width and height. Outer fabric panel and square tube are to be located to "outboard" side of unit.

Fasten each side frame to the building wall with a minimum of (6) "clip" brackets. (See Fastening Methods Section of Installation Instructions).

Repeat for other side. See Figure 5.

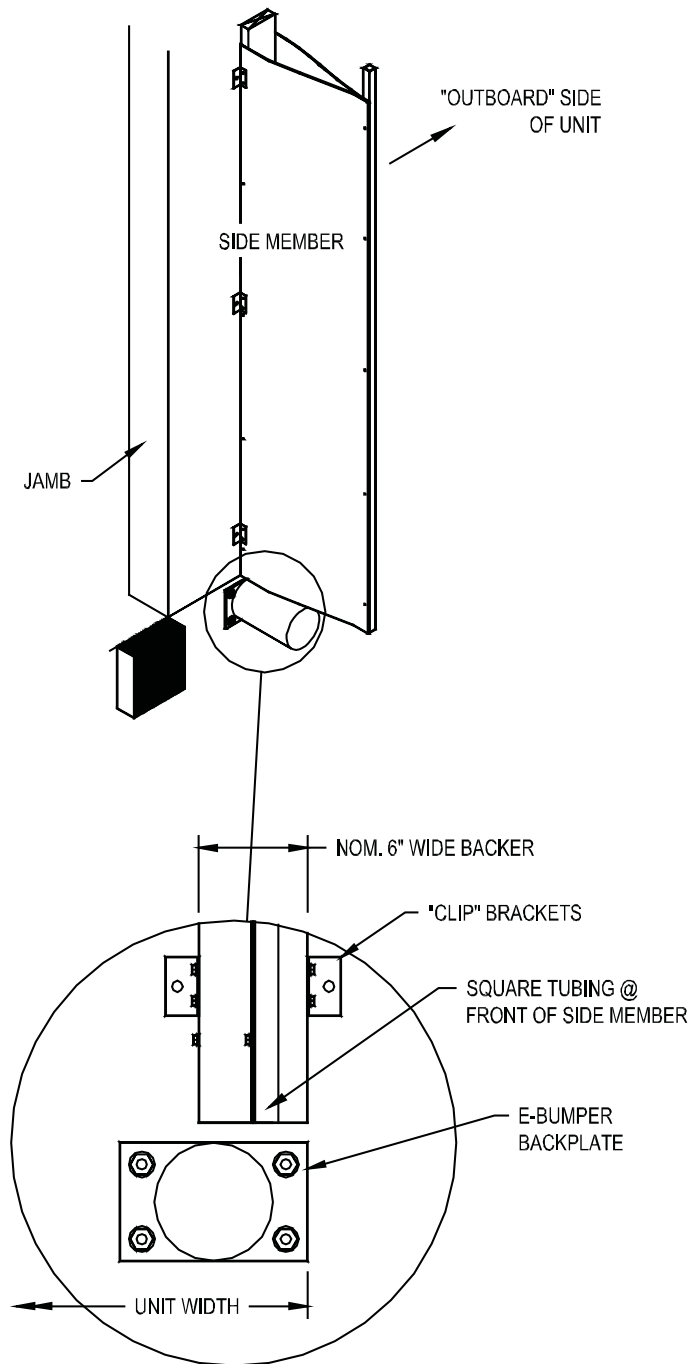


FIGURE 5

### 3. Mount Side Curtains to Side Members

Side member tubing, side curtain and trim angle are all to be located flush to the bottom of the side member.

Trim is pre-punched and will align with the pockets and "stays" sewn into the side curtain (except bottom hole which has no "stay").

Side curtains for Survivor units are shipped with a special "L" plate attached to the uppermost "stay" in each side curtain. This "L" plate must remain with the side curtain at installation and will provide a "backer" for a second self-drill/tap screw that is needed to prevent the top of the side curtain from sagging. See Figure 6.

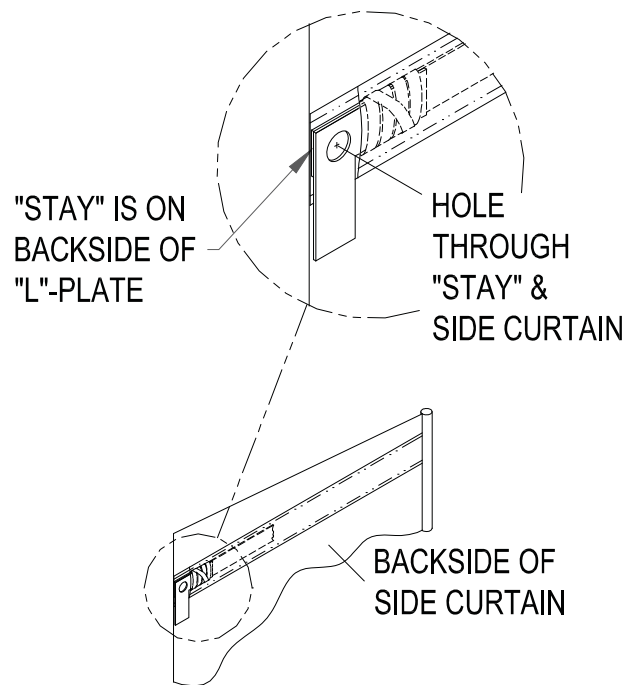
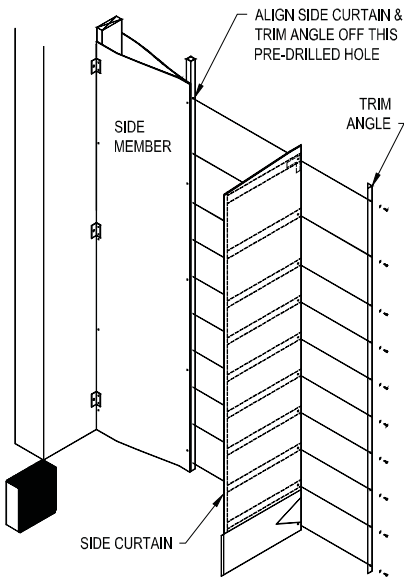


FIGURE 6

Using one of the #14 x 1 1/4" self-drill/tap screws and s/s flat washers provided, align the top hole in the trim angle with the top hole in the side curtain and the pre-drilled hole near the top of the side member (screw should pass through oversize hole in "L" plate). Loosely fasten this screw so that the entire side curtain and trim hangs from this screw. Loosely fasten through the remaining pre-punched holes in the trim using the same screws and washers provided. Be careful to align each of the stays so that they are centered on the trim angle hole when running screws through.

Go back and tighten all screws, being careful not to strip screws out. See Figure 7.



NOTE:  
SIDE CURTAIN & TRIM ANGLE ARE NOT FLUSH TO TOP OF SIDE MEMBER TUBING ON APPLICATIONS USING THE V-FLOW HEADER

FIGURE 7

## IMPORTANT

Now that all screws are fastened securely, add a second screw (with washer) through the front of the side curtain, the top "stay" and into the "L" plate. Repeat for other side. See Figure 8.

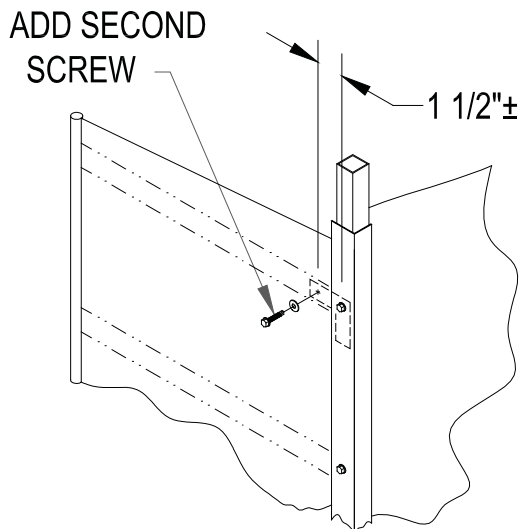


FIGURE 8

#### 4. Secure Head Member to Building Wall and to Side Members

Set the head member backer on top of the side members so that the head member is centered over the side members and flush on outside edges.

Secure the "backer" to building wall in a minimum of (3) places as shown. (See Fastening Methods)

Attach top of side member tubing to the head member front bar tubing, in location shown, using the flexible connector plate preinstalled on the front bar tubing using the #12 x 3/4 pan head tek-screws and 1/4" washers provided.

Side member tubing must be located at 2 3/4" from end of header front bar tubing as shown in detail. Header and side member tubing to be flush to each other at the front side. See Figure 9 & 10.

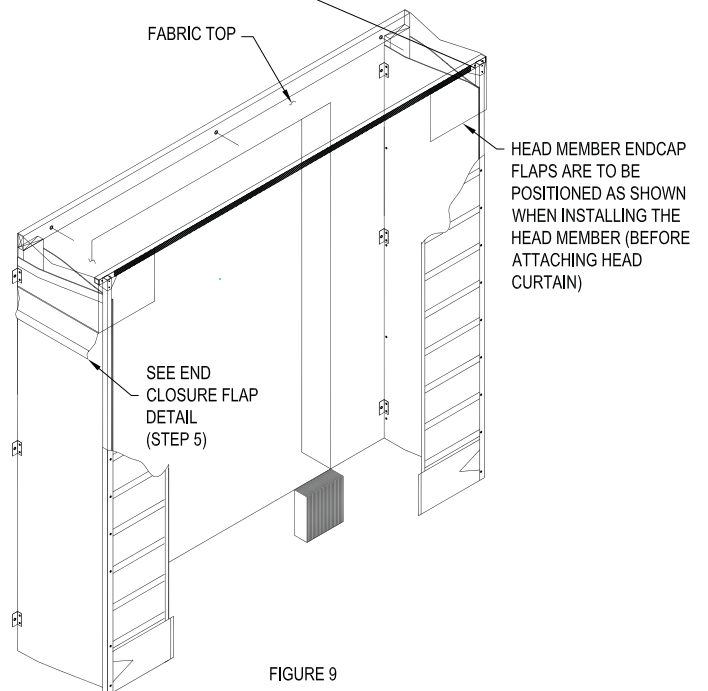
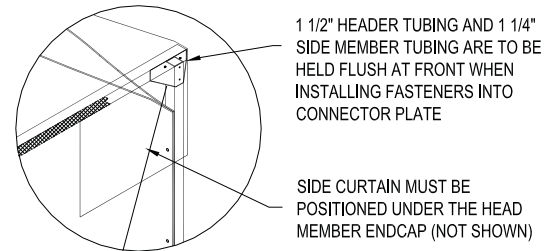
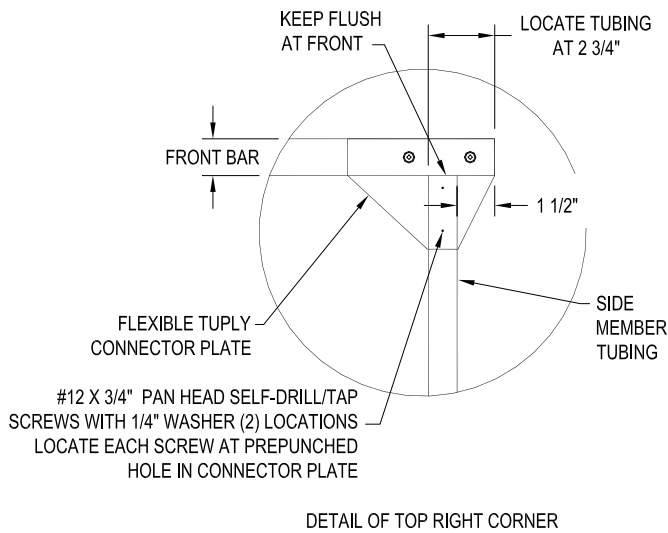
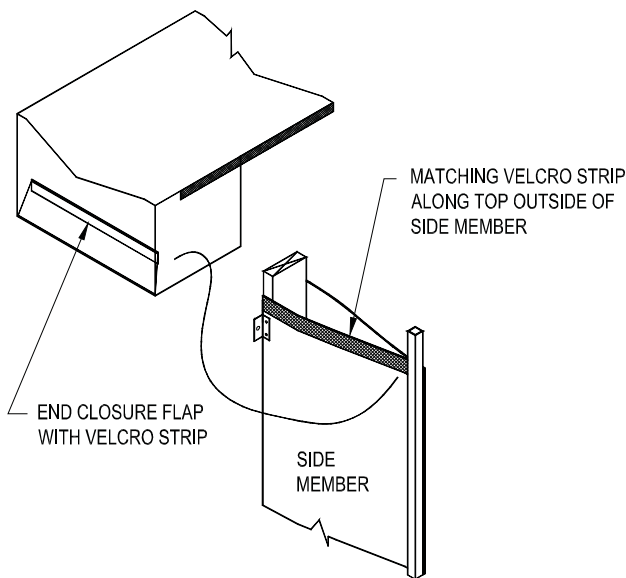


FIGURE 9



## 5. Secure Velcro on End Closure Flap

Once head member is in place, end closure flap "velcro" must be joined together as shown to seal out air infiltration at each end of unit. See Figure 11.



END CLOSURE FLAP DETAIL  
(CURTAINS REMOVED FOR CLARITY)

FIGURE 11

## 6. Install Head Curtain and Trim

Center head curtain on unit width and temporarily hold in place with velcro strip sewn along top edge of head curtain (backside). Top edge of curtain should be flush with top edge of front bar tubing.

Locate trim angle so that it is centered on unit width. Pre-punched holes on trim must line-up with curtain "stays".

Fasten through all trim angle holes with #14 x 1 1/4" self-drill/tap screws and s/s flat washers provided, so that head curtain is securely fastened to front bar. See Figure 12.

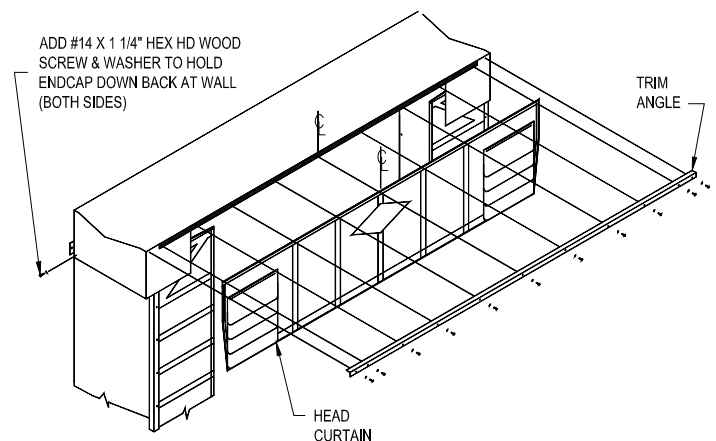


FIGURE 12

## 7. Install fiberglass stay under center of canopy fabric.

A fiberglass stay must be inserted under the fabric at the center of the V-flow header to hold the fabric at the desired elevation.

From under the header, insert the fiberglass stay so one end is resting on top of the 2x4 backer at the rear of the header and the other end is resting on top of the steel tubing at the front of the header, the stay should be centered on the width of the unit and must be located under the fabric.

Secure the stay in place at the front and back edges of the header by screwing from the top side of the header, down through the trim angle, through the canopy fabric, through

prepunched hole in the stay, and into the 2x4 at the rear of the unit or the square tubing at the front of the unit. See Figure 13.

**8. Attach Draft Pads to Side Members**

Mark a line on inside surface of side member at 15 1/2" up from bottom of side member.

Align draft pad to side member so that top edge of draft pad lines up flush with marked line.

Attach at backer first by fastening through grommet with #14 x 1-1/4" hex hd wood screw. Align draft pad once again with marked line and add a #14 x 1-1/4" self-drill/tap screw at front edge of draft pad through grommet and into the side member front tube. Now add another wood screw through grommet on underside of pad (fabric flap).

Add (3) of the self-piercing #12 x 3/4" hex hd screws down the center of the 1-1/2" fabric strip that is located along the top edge of the draft pad (as shown). Attach draft pad Velcro to side curtain Velcro. See Figure 14.

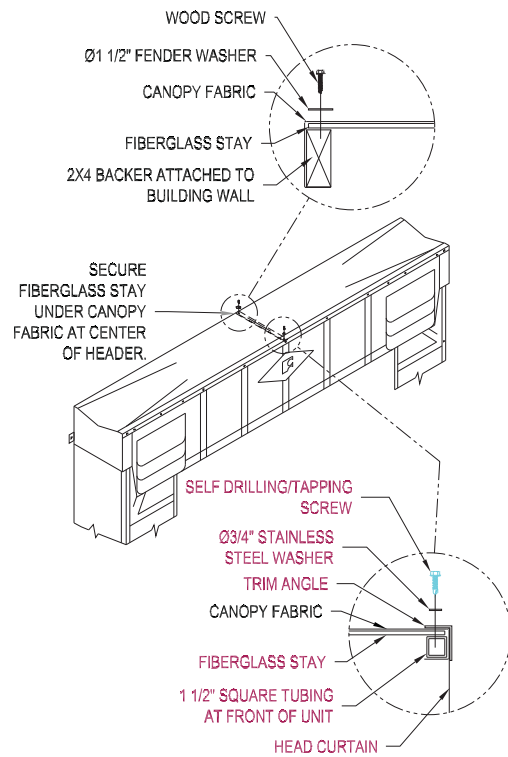


FIGURE 13

**9. Caulk Unit**

Caulk all along the top edge of the head frame where it meets the wall and down the sides of the side frames as needed. Use a good grade of flexible caulk and follow manufacturers recommendations when applying.

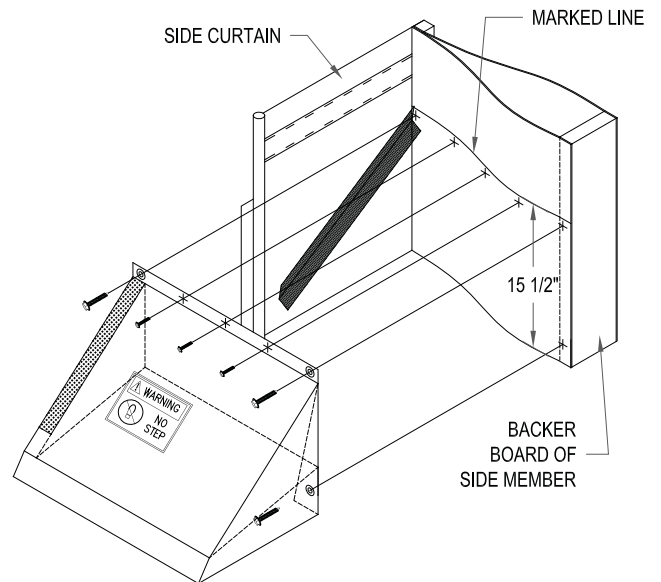


FIGURE 14

## **FASTENING METHODS**

### **Concrete Block or Brick Wall**

Through bolt fastening is required. Bore a hole through the building wall. Use a 3/8" diameter threaded rod with a washer, nut, and jam nut on each end - it will be necessary to install a back-up plate inside the building wall when the wall will not support the bolt.

### **Concrete Tilt-Up Walls (Precast)**

Use 3/8" lag bolts with expansion shields, 3/8" one piece anchor bolts with expansion collar, or equivalent fastener. If building wall is too thin to effectively hold the lag bolt or anchor bolt, the through bolt method of attachment is required.

\* See anchor manufacturer's recommendation for minimum anchor embedment to determine appropriate anchor length.

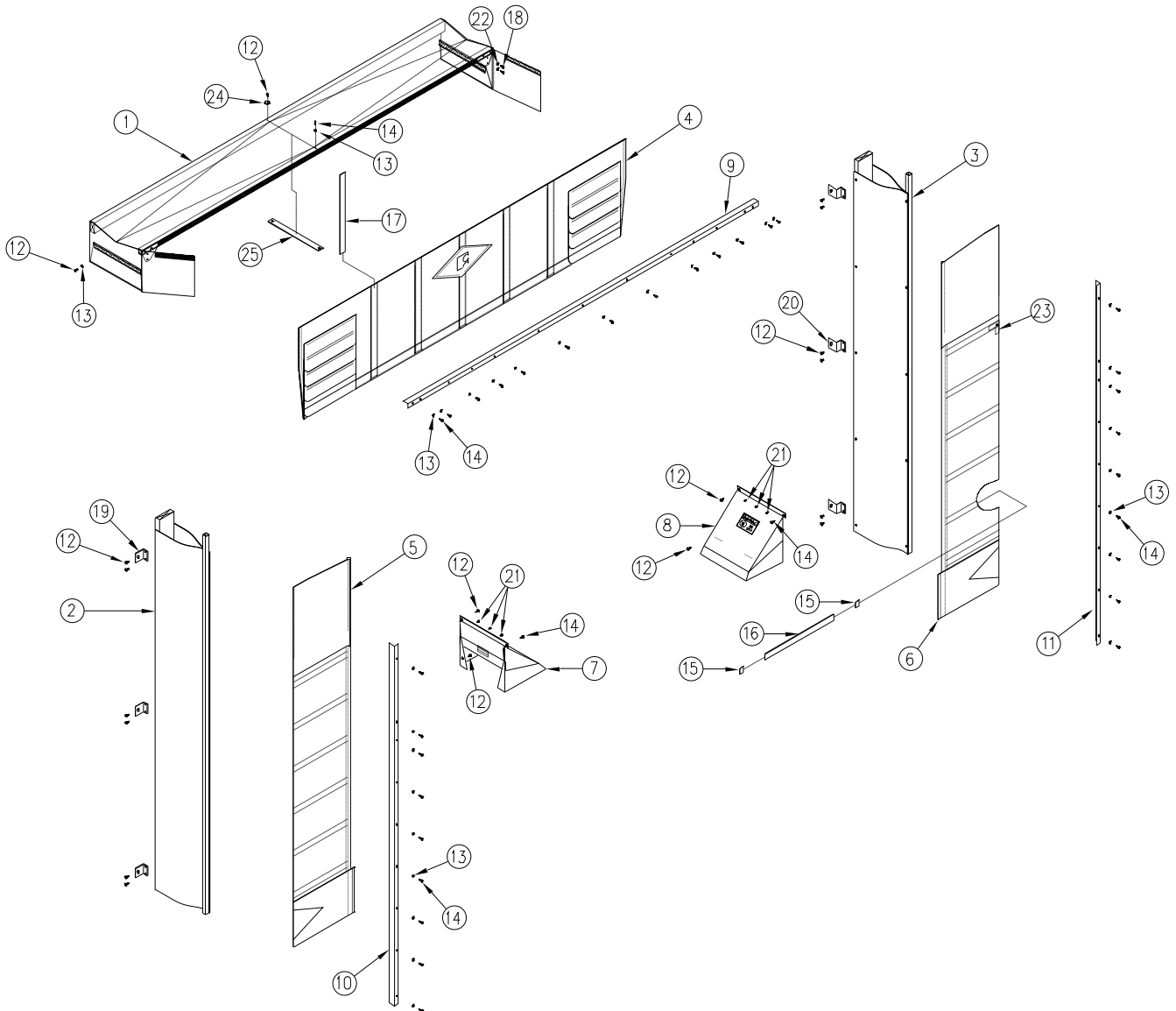
### **Metal Sided Building**

Through bolt method of attachment is required for this building style. It will be necessary to install a back-up plate that is fastened directly to structural members when it is not possible to fasten directly to structural building members. Use a 3/8" diameter bolt with a washer and lock nut to fasten the unit to the structural members of the building or to the back-up plates. If necessary, use a 3/8" diameter threaded rod with a washer and lock nut on each end.

**EXPLODED VIEW**

This exploded view represents a standard configuration of the 450S Survivor. The shipped unit may have configurations not shown in this exploded view depending on options chosen and application of unit.

- |                                     |  |
|-------------------------------------|--|
| 1. V-FLOW HEADER                    | 14. SCREW, HWH SELF DRILL/TAP #14 X 1 1/4", ZINC |
| 2. LEFT SIDE MEMBER                 | 15. CAP, VINYL                                   |
| 3. RIGHT SIDE MEMBER                | 16. STAY, SIDE CURTAIN                           |
| 4. C4 HEAD CURTAIN                  | 17. STAY, C4 HEAD CURTAIN                        |
| 5. LEFT SIDE CURTAIN                | 18. SCREW, PPH TEK # 12x1", ZNC                  |
| 6. RIGHT SIDE CURTAIN               | 19. BRACKET, L "CLIPS"                           |
| 7. LEFT DRAFT PAD                   | 20. BRACKETS, Z-STYLE                            |
| 8. RIGHT DRAFT PAD                  | 21. SCREW, HWH, #12 X 3/4", ZINC, SELF-PIERCING  |
| 9. HEAD MEMBER TRIM ANGLE           | 22. WASHER, 1/4" X 3/4" ZNC, FLAT                |
| 10. LEFT SIDE CURTAIN TRIM ANGLE    | 23. L-PLATE (ATTACHED TO STAY)                   |
| 11. RIGHT SIDE CURTAIN TRIM ANGLE   | 24. WASHER, 1 1/2" FENDER                        |
| 12. SCREW, HWHSMS #14 X 1 1/4" ZINC | 25. STAY, V-FLOW HEAD MEMBER                     |
| 13. WASHER, 5/16" STAINLESS, FLAT   |  |



**NOTES**



## **WARRANTY POLICY**

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Frommelt warrants that a **SURVIVOR™ 450S** Dock Shelter will be free of defects in design, materials, and workmanship for a period of 365 days from the date of shipment. All claims for breach of this warranty must be made within 30 days after the defect is or can, with reasonable care, be detected and in no event more than 395 days after shipment. In order to be entitled to the benefits of this warranty, the product must have been properly installed, maintained, operated within its rated capacity, and not otherwise abused.

**Frommelt expressly disclaims all implied warranties including the implied warranties of merchantability and fitness.**

In the event of any defects covered by this warranty, Frommelt will remedy such defects by repairing or replacing any defective parts, bearing only the cost of the parts and transportation of those parts. This shall be the exclusive remedy for all claims whether based on contracts, negligence, or strict liability.

**Frommelt shall not in any event be liable for any loss of use of any equipment or incidental or consequential damages of any kind.**

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**“Our mission is to improve industrial safety, productivity and security worldwide through quality and innovation.”**

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