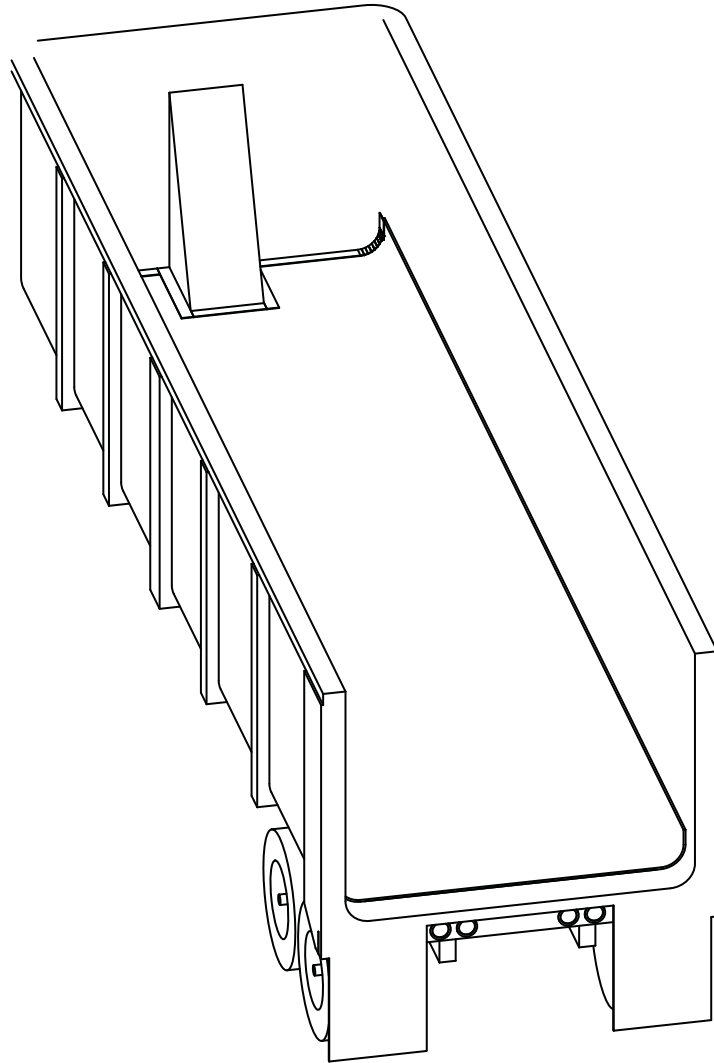




# AVALANCHE LINERS



## **AVALANCHE LINERS**

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## **Installation Instructions & Preventative Maintenance**

**Attention Dealers:** Please give this owners manual to the customer when the product is delivered.

Call (877) 522-2382 | [www.polymerindustries.com](http://www.polymerindustries.com)

3273 West 5th Court Oxford, WI 53952 USA



# AVALANCHE LINERS

This manual explains how to install and perform preventative maintenance of your Avalanche Liner. Be sure to read all safety warnings and the entire manual before beginning your installation.

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# AVALANCHE LINERS

## HIGH TEMPERATURE LINER LIFETIME WARRANTY

The High Temperature industrial dump body liner material is warranted to the original purchaser to be free from defects in material and workmanship, including the fusion weld seam, under normal use and service from the date of proper installation for the lifetime of the liner down to within 1/8" remaining liner material. For asphalt applications, High Temperature liners must be a minimum **1/2"** thickness and are warranted for any temperature asphalt. Liners less than **1/2"** thickness are not suitable for hauling asphalt and will not be warranted. This warranty does not apply to the design or workmanship of the installation or application performance.

## HEAVY DUTY LINER FIVE YEAR WARRANTY\*

The **1/2"** Heavy Duty industrial dump body liner material is warranted to the original purchaser to be free from defects in material and workmanship, including the fusion weld seam, under normal use and service period of **60 months** from the date of proper installation, or within 1/8" remaining liner material, whichever comes first. **3/8"** Heavy Duty liners have a **24 month** warranty and **1/4"** Heavy Duty liners have **12 month** warranty. Heavy Duty liners are not designed for the use in asphalt applications. This warranty does not apply to the design or workmanship of the installation or application performance. \* **1/2" Heavy Duty Only.**

## GENERAL MANUFACTURER'S WARRANTY FOR HIGH TEMPERATURE AND HEAVY DUTY LINERS

The warranty is expressly limited to the replacement or repair for High Temperature or Heavy Duty liners at an authorized dealer location, or such other place as Polymer Industries ALD may designate. All liners or parts of liners returned to Polymer Industries ALD, or to a location designated by Polymer Industries ALD, for factory inspection of possible defects in workmanship or material, shall be sent with all transportation charges prepaid.

This warranty does not apply to any High Temperature or Heavy Duty liner material of Polymer Industries ALD which has been repaired or altered outside of Polymer Industries ALD or which has been installed or used other than in accordance with the printed instructions of liners from Polymer Industries ALD. NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY.

This warranty does not obligate Polymer Industries ALD to bear the cost of labor in replacing defective parts. No other obligation is assumed or authorized to be assumed with respect to other products of Polymer Industries ALD other than herein set forth.

OTHER THAN STATED ABOVE, POLYMER INDUSTRIES ALD DOES NOT ASSUME AND OTHER LIABILITY, INCLUDING BUT NOT LIMITED TO, LIABILITY FOR SECONDARY CHARGES, EXPENSES FOR INSTALLATION OR REMOVAL, OR ANY OTHER CONSEQUENTIAL LOSSES OR DAMAGES.

POLYMER INDUSTRIES ALD MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE.

## Supplemental Avalanche Liner Warranties

### Asphalt Application

Liners used in an asphalt application must possess all of the following to qualify for warranty:

- 1) Material must be High Temperature.
- 2) Thickness must be a minimum of **1/2"**.
- 3) Liner must have rear hold down plate.

Any exception shall void the warranty.

### Securing and Maintaining the Liner

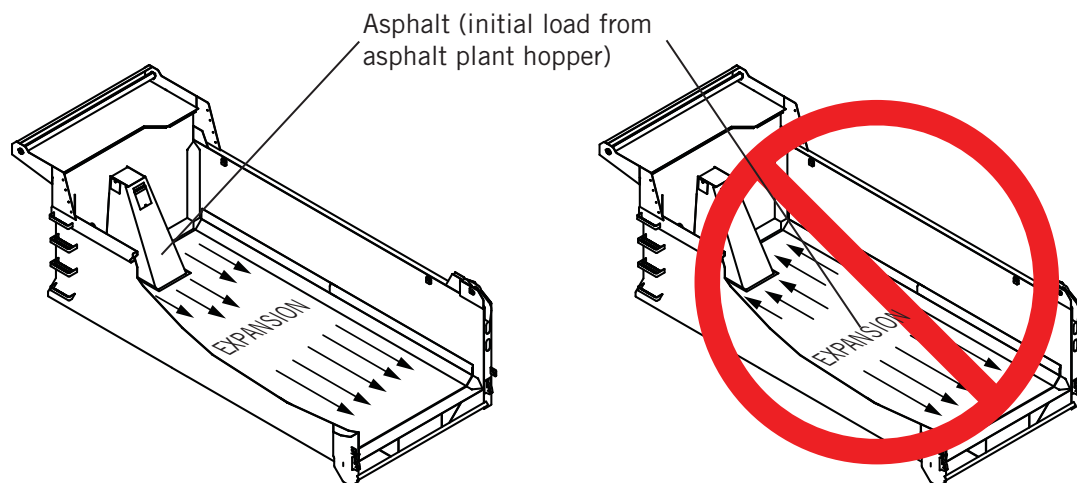
High Temperature and Heavy Duty liners are warranted for normal use and service from the date of proper installation, which foremost requires proper securement. Correct bolt quantities, location and spacing are required for the warranty to apply. (See STEP 8). Normal use includes preventative maintenance and attention to loading. (See Preventative Maintenance on Page 4).



# AVALANCHE LINERS

Proper Installation, attention to loading, and completing preventive maintenance of your Avalanche Liner will help maintain performance and extend the life of your liner.

- All materials should be loaded front to back. Liner can buckle (see drawing below) due to incorrect loading patterns of hot products can cause liner failure. Dropping the first load in the center can cause buckling of the liner towards the front.
- Check for asphalt emulsion build-up on liner. Emulsion used as an asphalt binder can accumulate on the liner. Bulk materials can stick to emulsion build-up. Use a chemical release agent (check local regulations for proper usage), or rotate asphalt with abrasive loads to wear away the buildup.
- Check daily for fines under the liner and remove them. Material Trapped under Liner Material can cause accelerated wear and can cause holes in the liner. Fines can accumulate during unloading or tailgate closing.
- It's also important to remove bulk materials that may have become lodged between the protector and liner. These conditions could trap the liner, preventing movement needed for thermal expansion.
- Periodically check leading edge and front liner retaining strip to make sure liner can expand and contract. Replace damaged leading edge or front liner retaining strip and straighten bends, dents or kinks.





# AVALANCHE LINERS

## Explanation of Safety Messages

**⚠ DANGER:** Risk of death or serious injury to operator or bystander will result.

**⚠ WARNING:** Risk of death or serious injury to operator or bystander could result.

**⚠ CAUTION:** Risk of injury to operator or bystander could result.

**! IMPORTANT:** Contains information critical to installation

**NOTICE:** Risk of product or vehicle being damaged.

**NOTE:** Contains information critical to the installation or operation of this product.

## Safety Messages

**⚠ DANGER:** Read this entire manual before installing this product.

**⚠ WARNING:** Use appropriate safety equipment during installation and maintenance.

**⚠ WARNING:** Be sure that your working platform is secure as you work on the truck. Use OSHA approved ladders or scaffolding to work above ground level.


**⚠ WARNING:** Always wear safety glasses during installation and operation.

**⚠ CAUTION:** Keep all clothing clear of moving parts.

## Liner and Trailer/Body Preparation

- 24 hours before installation: Flatten the liner before use, uncoil and place the curled edge down so the sheet will flatten. Uncoil and lay out sheet 24 hours before installation or blow heat under liner to flatten out.
- Clean and dry the trailer bed thoroughly.
- Repair the dump body. Patch all holes and thin metal. NOTE: Waves or dents can cause accelerated liner wear. Repair floor waves or dents greater than 1/2" (12.7 mm). Welding should be done on body parts directly touching installed liner.
- Remove the tailgate and safely store away from the installation.
- Have the capability to raise the block and dump body for access to the underside.

## Suggested Tools for Installation

Safety Glasses	Hand Router
Tape Measure (length of dump body)	3/8" diameter (3/16" radius) round nose bit
Wood Blocks	
China Marker	
Chalk Line	Reciprocating saw, or Saber saw and Wood blades
5' (1524 mm) Straight Edge	C-clamps or Vise Grips
Scribe	Loading jacks
Hammer	1/2" (12.7 mm) Drill/Driver
Portable Grinder or Wire Wheel	Drill Bits: 5/16", T (.358"), 3/8", 1"
Welding Equipment: Aluminum/Steel	Wrench or Drivers: T 40, T45, 1/2", 9/16"



# AVALANCHE LINERS

## STEP 1

### Measure Trailer/Body and Cut Liner Length

1) See **Figure 1**. Measure inside length of trailer/body.

**NOTICE:** *Liners expand due to heat and loading and must be cut to allow expansion gap at the front and rear of the trailer/body.*

Expansion gap for 'Normal Loads'

For liner cut length subtract 1" for every 10' of floor length.

Expansion gap required for 'Hauling Asphalt'

For every 10' (3 m) of floor length subtract 1-1/2" (25 mm) for the cut length.

3) Subtract front gap and expansion gap from floor length.

Example: Floor length - Front gap - Expansion gap = Liner cut length

10' normal load            10' - 1/2" - 1" = 9' 9-1/2"

15' normal load            15' - 1/2" - 1-1/2" = 14' 10"

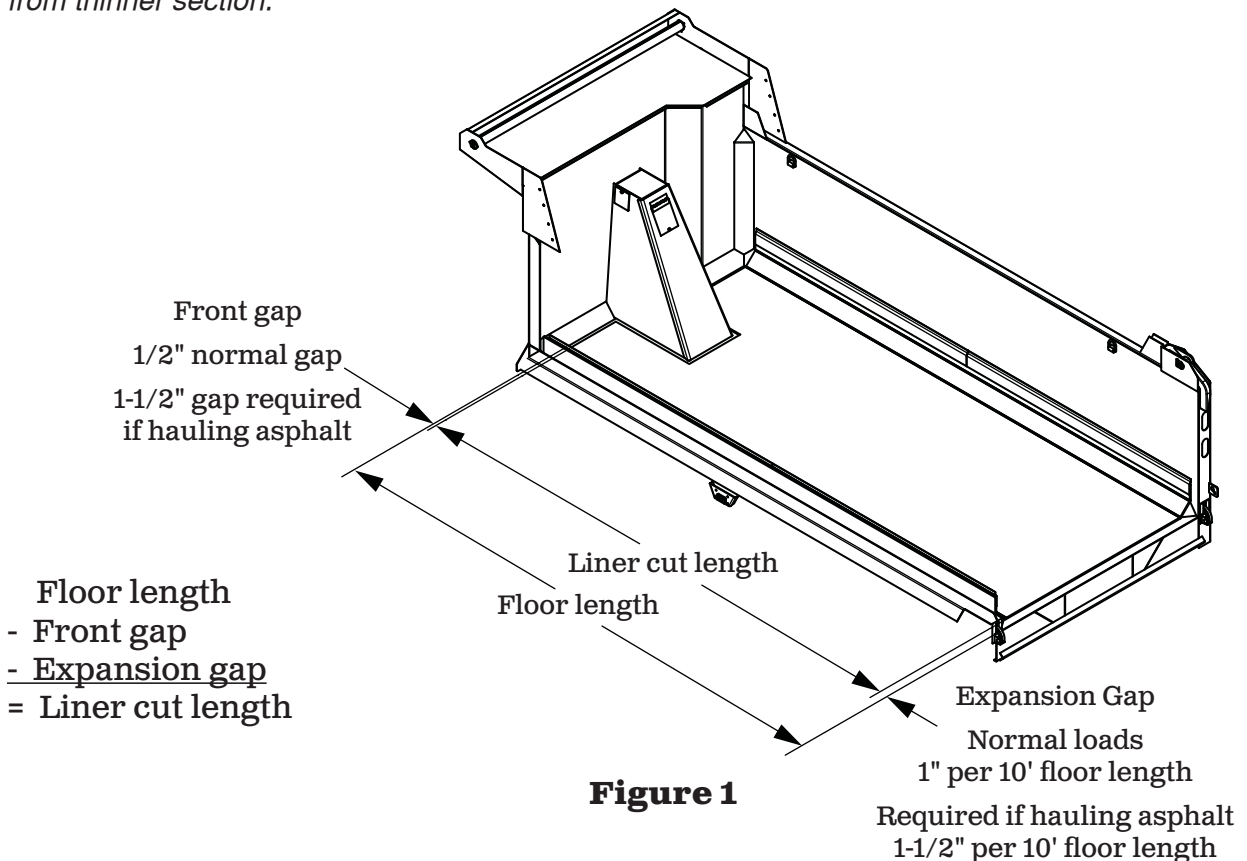
10' asphalt load            10' - 1-1/2" - 1-1/2" = 8' 9"

15' normal load            15' - 1-1/2" - 2-1/4" = 13' 8-1/4"

4) Measure and cut liner to length.

**! IMPORTANT:** *Liner must be 100% flat and shiny side is up.*

**NOTICE:** *If cutting a thicktail liner, measure length from the back of the thick portion and cut excess from thinner section.*





# AVALANCHE LINERS

## STEP 2

### Cut Out for the Doghouse/Bulkhead

**NOTE:** Make a cardboard or vinyl template for one side of the doghouse, flipping the template over should match the other side of the doghouse. (Vinyl is more durable and can be rolled up to store for future use.)

**NOTICE:** Liner sheet should be laid flat for 24 hours before installation.

**NOTICE:** For Normal Loads the liner will spaced 1/2" from the front where the flat bottom of the trailer/body transitions into the bulkhead. For Asphalt Loads the liner is required to be spaced 1-1/2" from the front where the flat bottom of the trailer/body transitions into the bulkhead.

1) With flattened liner and shiny side up mark center line of both the liner and trailer/body floor at both front and rear.

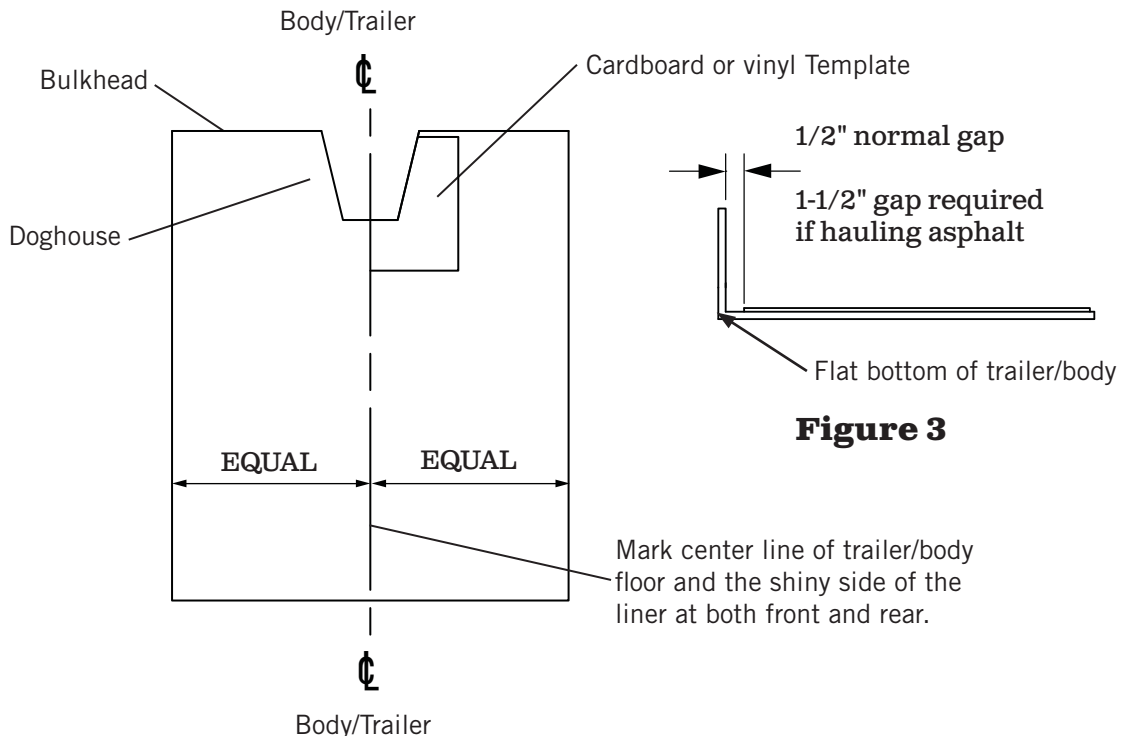
**! IMPORTANT:** Make sure liner is 100% flat and shiny side is up.

2) See Figures 2, & 3. Make a cardboard template from center line of the doghouse (flipping the template over should match the other side of the doghouse). For normal loads the template should be spaced 1/2" doghouse/bulkhead and for asphalt loads the template should be spaced 1-1/2" from doghouse/bulkhead.

3) Align your cardboard template with the center line and front edge of liner and doghouse markings and draw your pattern to cut from.

4) Cutout your doghouse/bulkhead pattern with a circular saw or reciprocating saw.

**⚠ CAUTION:** Follow safety instructions for saw when sawing liner.



**Figure 2**

**Figure 3**



# AVALANCHE LINERS

## STEP 3

### Measure, Mark, and Score Liner

**NOTE:** If you ordered your Avalanche Liner scored for the shedder skip to STEP 4

**NOTE:** 1/4" Liner is not scored.

**TOOL REQUIRED:** You will need a 3/8" round nose router bit.

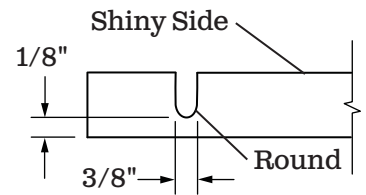
**! IMPORTANT:** Liner must be 100% flat when scoring. Lay out 24 hours before with the curled side down.

**! IMPORTANT:** Liner must be scored from the shiny side.

**! IMPORTANT:** See Figure 4. Router depth (all material thicknesses) must be so 1/8" of material is remaining. Routed too deep the liner may tear. Not Routed deep enough the liner may not conform to the interior shape of the dump.

**! IMPORTANT:** Route a scrap piece of liner to check for correct depth.

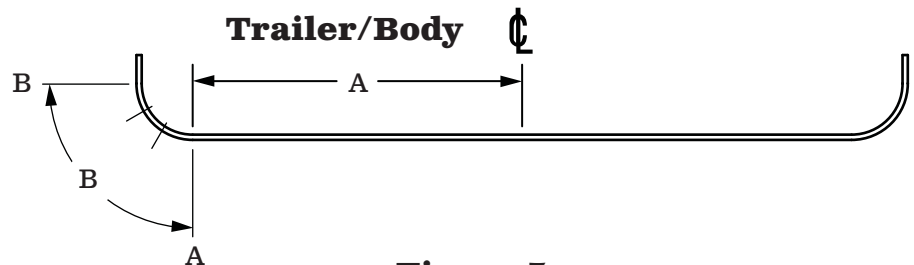
**NOTE:** Thicketail liners are scored the same, 1/8" of material remaining.



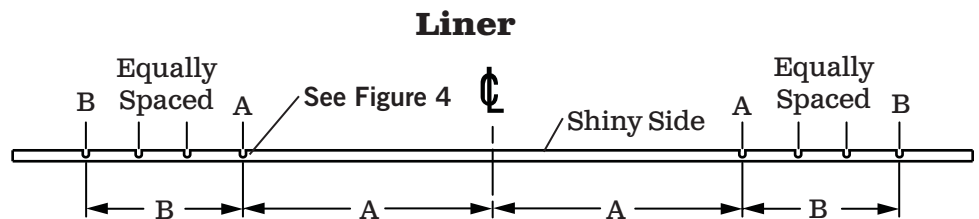
**Figure 4**

## Round Corner

- 1) See Figures 4, 9, & 10. Trailer/body, measure the distance from the center line mark (in STEP 2) to point A (beginning of shedder) and transfer measurement to shiny side of liner from center line. Mark both sides of liner at front and back.
- 2) Trailer/body, measure the length of the surface of the shedder (from point A to point B) and transfer measurement to shiny side of liner from center line. Mark both sides of liner at front and back.
- 3) Liner, between marks and point A and point B mark for 2 equally spaced scores. Mark both sides of liner at front and back.
- 4) Strike a chalk line using the marks.
- 5) See Figure 4. Score liner along chalk mark. There should be a total of 8 scores.



**Figure 5**  
**Round Corner Shedder**



**Figure 6**



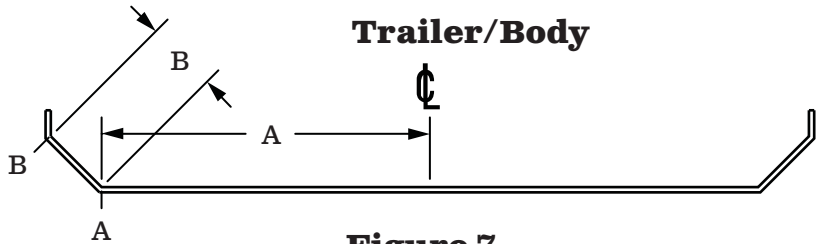


# AVALANCHE LINERS

## Angled Corner

1) See Figures 4, 7, & 8. Trailer/body, measure the distance from the center line mark (in STEP 2) to point A (beginning of shedder) and transfer measurement to shiny side of liner from center line. Mark both sides of liner at front and back.

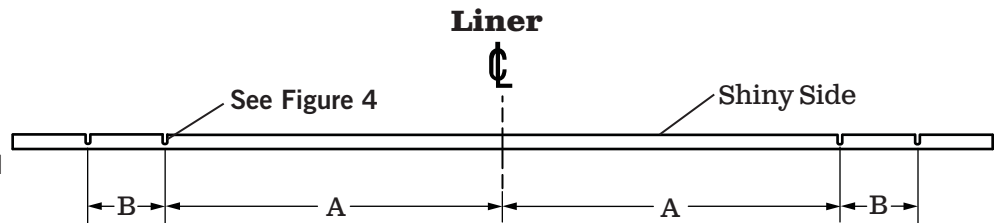
2) Trailer/body, measure the length of the shedder (from point A to point B) and transfer measurement to shiny side of liner from center line. Mark both sides of liner at front and back.



**Figure 7**  
**Angled Corner Shedder**

3) Strike a chalk line using the marks.

4) See Figure 4. Score liner along chalk mark. There should be 4 total scores.



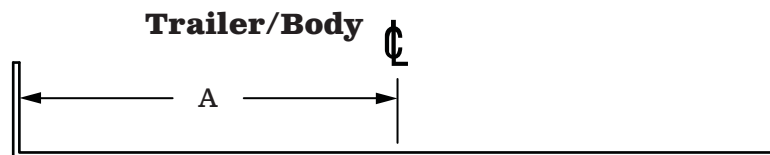
**Figure 8**

## Square Corner

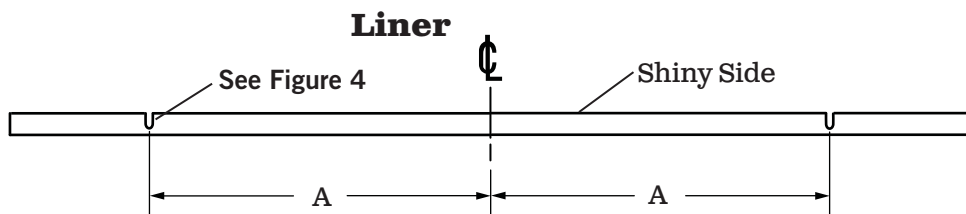
1) See Figures 4, 5, & 6. Trailer/body, measure the distance from the center line mark (in STEP 2) to point A and transfer measurement to shiny side of liner from center line. Mark both sides of liner at front and back.

2) Strike a chalk line using the marks.

3) See Figure 4. Score liner along chalk marks. There should be 2 total scores.



**Figure 9**  
**Square Corner Shedder**



**Figure 10**



# AVALANCHE LINERS

## STEP 4

### Place Liner in Trailer/Body

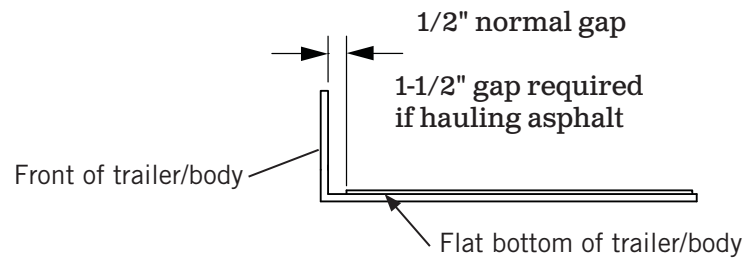
**⚠ DANGER:** The liner is very heavy, take necessary precautions when lifting and moving.

- 1) Ensure scores are facing up and cut outs are oriented correctly.
- 2) Place liner into trailer/body.
- 3) **See Figures 11.** Line up center marks on trailer/body and liner with marks made in STEP 2, leave an appropriate gap between the liner and bulkhead.
- 4) On each side of the doghouse drill a hole using T (.358") bit and secure the liner with 3/8-16 x 2" elevator bolts or 3/8-16 x 1-1/2" Torx button head cap screw.

**! IMPORTANT:** *Ensure that bolts are placed according to the guidelines in Securing liner to the floor.*

Center liner in trailer/body

Secure with 2 bolts



**Figure 11**



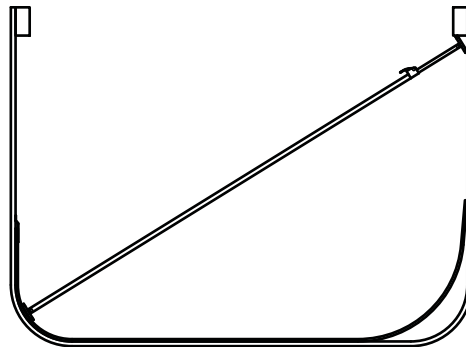
# AVALANCHE LINERS

## STEP 5

### Install Leading Edge Protector

- 1) See **Figure 12**. Compress the liner (one side at a time) to the floor, the length of the body/trailer.
- 2) See **Figures 13 & 14**. Weld the leading edge protector to the sidewall of the trailer/body. For proper placement use the diagrams below.
- 3) Repeat on opposite side of body/trailer.

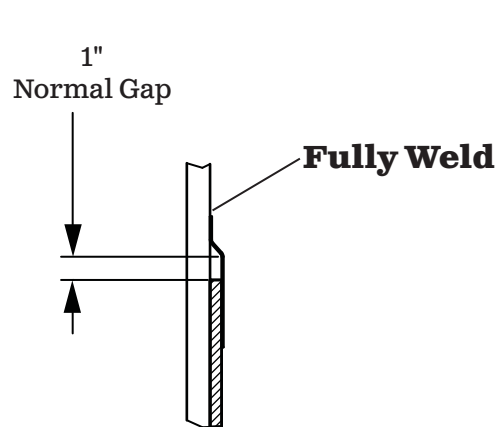
Press liner to conform to trailer/body



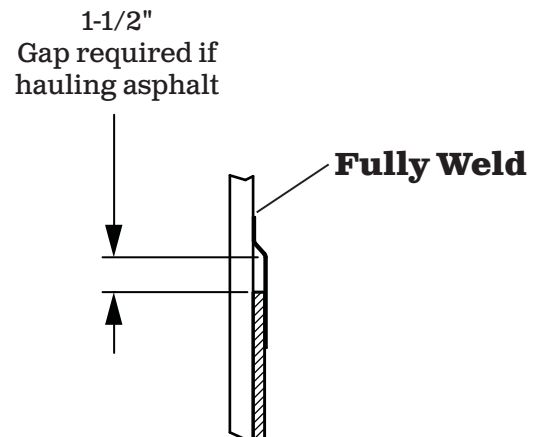
**Figure 12**

**! IMPORTANT:** See **Figures 13 & 14**. Liner must be able to expand. A gap is required between the liner and the inside of the leading edge. 1" gap for normal loads 1-1/2" is required if asphalt will be hauled. If not enough gap is allowed the liner may be damaged.

Locate and weld leading edge protector



**Figure 13**



**Figure 14**



# AVALANCHE LINERS

## STEP 6

### Securing Liner to the Floor

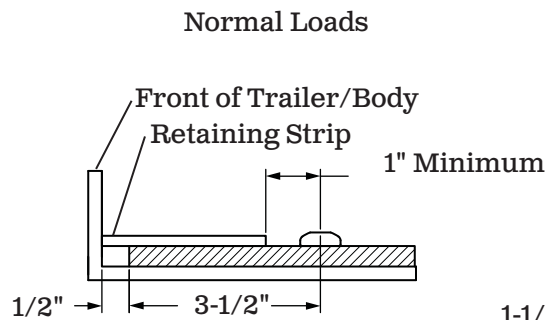
Index	Description	Qty	Index	Description	Qty
1	3/8-16 x 1-1/2" Torx Self-tapping	30	3	3/816 Nylon Hex Nut	12
2	3/8-16 x 2" Elevator Bolt	12	4	3/8 Lock Washer	12

**! IMPORTANT:** For warranty purpose the minimum number of bolts and pattern must follow these guidelines.

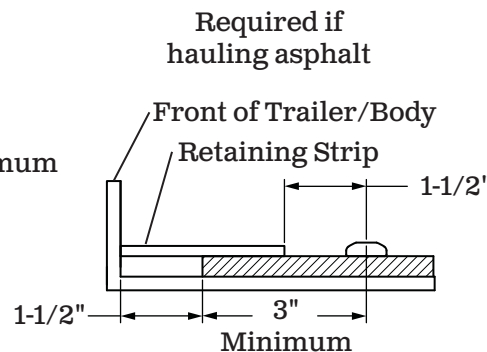
**! IMPORTANT:** There must be a minimum of (10-12) 3/8 elevator bolts or (25) 3/8 self-tapping screws. When using a combination of the two there should be (2) 3/8 self-tapping screws for every 3/8 elevator bolts not use. Example: Using (7) elevator bolts and (10) self-tapping screws or (5) elevator bolts and (14) self-tapping screws.

**! IMPORTANT:** See Figures 15, 16, & 17. It is **IMPORTANT** that all bolts are a minimum of 3" from the edge of the liner and 3" from any score line. Also all bolts should be 4" for normal loads and 4-1/2" for asphalt loads from the front of the trailer as to not interfere with the front retaining strip.

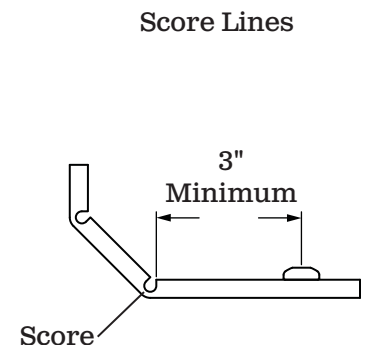
**NOTE:** The type and make of the trailer/body will determine the exact pattern for securing the liner.



**Figure 15**

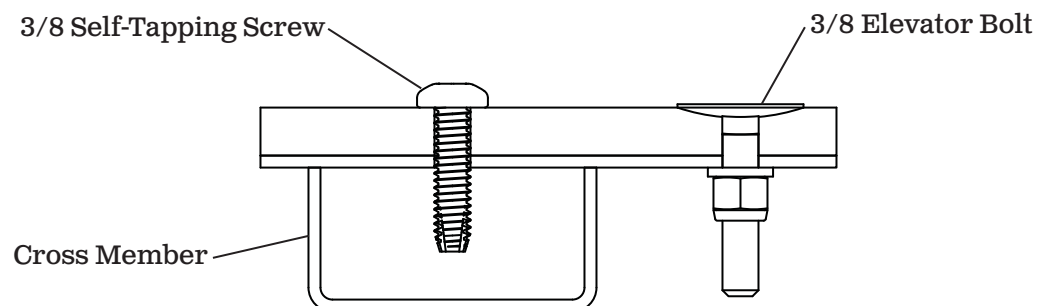


**Figure 16**



**Figure 17**

1) **Figure 18.** Measure from bulkhead to cross members and mark the location on the liner. Use 3/8 self-tapping screws into cross members to hide screws from the outside. If 3/8 elevator bolts are used, access to the bolt from underneath is needed to install the lock washer and nylon nut.



**Figure 18**



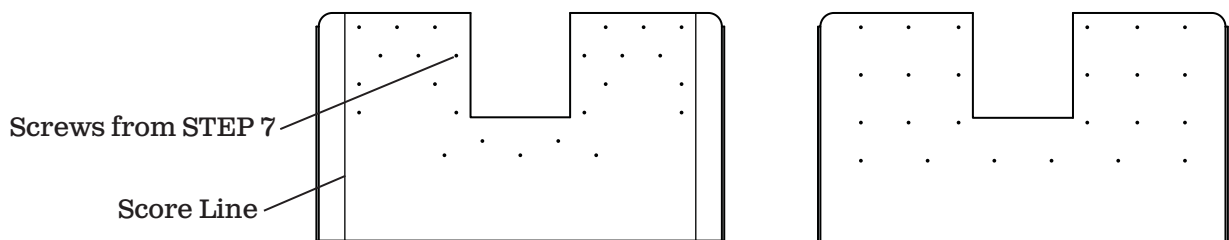
# AVALANCHE LINERS

## Example of Bolt Patterns

Using only 3/8" self-tapping Torx screws

**NOTICE:** This bolt pattern below should be used were freezing loads may stick to liner.

- 1) **Figure 19.** Must use a minimum of (25) 3/8" self-tapping screws. Lay out and mark pattern for bolts across the bulkhead and beside and behind the doghouse in staggered pattern at a minimum of 6" apart making sure holes are in cross members. Also place screws along score lines.
- 2) Drill T (.358") holes through liner and trailer.
- 3) Secure liner to the floor of the trailer/body with 3/8" self-tapping screws.

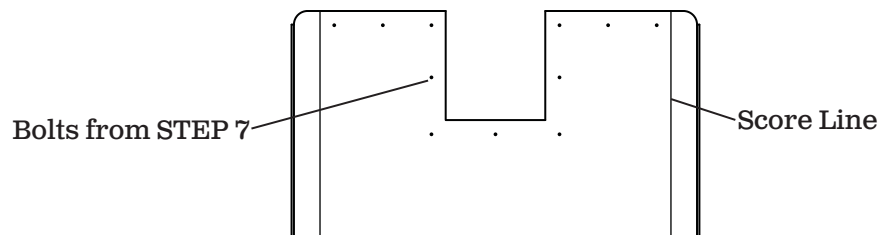


**Figure 19**

Using only 3/8" elevator bolts

**NOTICE:** This bolt pattern below can be used where freezing loads are not a concern.

- 1) **Figure 20.** Must use a minimum of (10-12) 3/8" elevator bolts. Lay out and mark pattern for bolts across the bulkhead and behind the doghouse at a minimum of 6" apart making sure holes are NOT in cross members.
- 2) Drill 3/8" holes through liner and trailer.
- 3) Secure liner to the floor of the trailer/body with 3/8" elevator bolts, lock washers and nylon nuts.



**Figure 20**

Using a combination of 3/8" elevator bolts and self-tapping screws

- 1) **Figures 19 & 20.** When using a combination of the two for every elevator bolts not used, use two self-tapping screws. Lay out and mark pattern across the bulkhead and around the doghouse at a minimum of 6" apart. Minimum distance from edge of liner and location of cross members will determine bolt pattern.
- 2) Drill holes for screw or bolt being used. Mark hole to remember correct fastener.
- 3) Secure liner to the floor of the trailer/body.

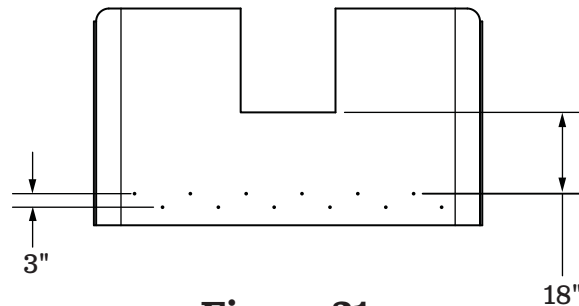


# AVALANCHE LINERS

## Example of Bolt Patterns

### Alternate pattern for hauling asphalt

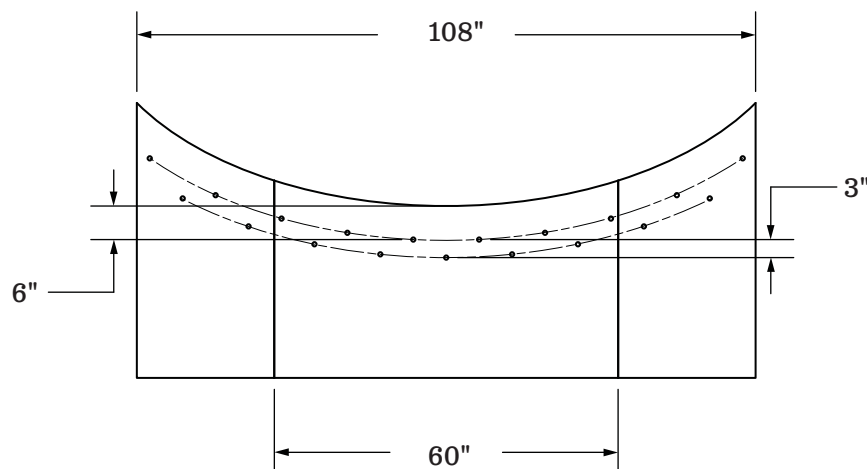
- 1) **Figure 21.** When hauling asphalt an alternate pattern using (12) 3/8" elevator bolts or 3/8" self-tapping screws is acceptable. Check location of cross members and lay out and mark a line a minimum distance of 18" from behind the doghouse and another row 3" further based on type of screw or bolt used. Fasteners must be staggered and a minimum 6" apart and 3" from the first score line.
- 2) Drill holes for screw or bolt being used. Mark hole to remember correct fastener.
- 3) Secure liner to the floor of the trailer/body.



**Figure 21**

### Half Round Trailer pattern

- 1) **Figure 22.** Two rows of screws or bolts, the first is a minimum of 6" from the edge of the liner part and the second is 3" from the first row. 3" from the out side edge of the liner stagger the screws every 6" across the trailer. Patterns for 5' and 9' are shown.
- 2) Drill holes for screw or bolt being used. Mark hole to remember correct fastener.
- 3) Secure liner to the floor of the trailer/body.



**Figure 22**



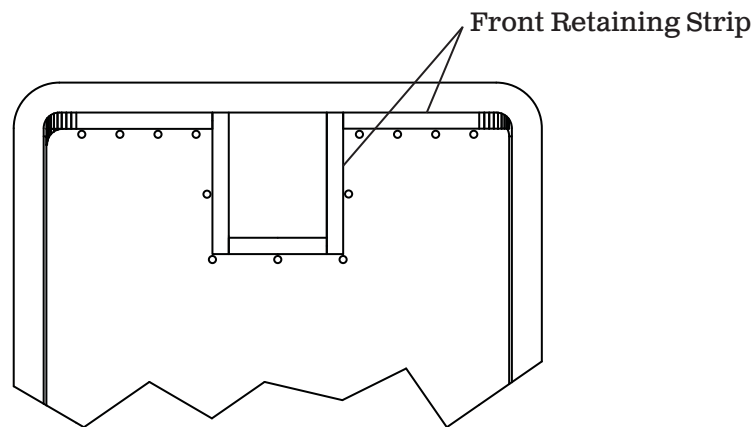
# AVALANCHE LINERS

## STEP 7

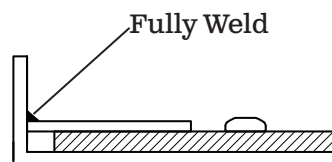
### Weld Front Retaining Strip at front of liner

- 1) See **Figure 23 & 24**. Use 3/16" x 3" wide flat-stock to fit along the floor around the bulkhead/doghouse on top of the liner. Use same material as body/trailer material.
- 2) Cut front retaining strip for shedder, use smaller pieces for radius corners. Using smaller pieces will lessen the need to form the retaining strip.
- 3) Weld front retaining strip to bulkhead/doghouse.

Cut retaining strip to fit and weld



**Figure 23**



**Figure 24**



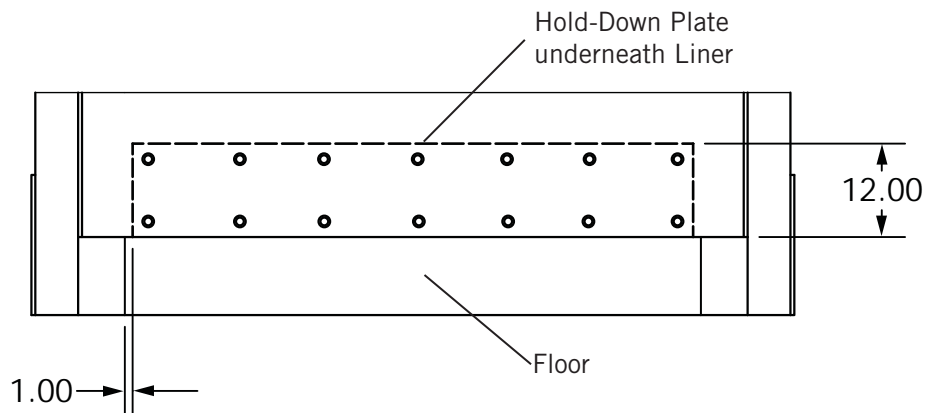
# AVALANCHE LINERS

## STEP 8

### Installation of Asphalt Hold-Down Plate

Index	Description	Qty	Index	Description	Qty
1	Rear Hold Down Plate	1	3	Liner Plug - Rear Hold Down	14
2	Washer, Steel Weld	14			

- 1) See **Figure 25**. Use 14 gauge (.0747") steel sheet to construct the hold-down plate.
  - 2) The length of the plate should be 2" (72" is supplied from factory) less than the overall floor width.
  - 3) The width of the hold-down plate is always 12".
  - 4) See **Figure 26**. Trace the rear hold down plate (1) onto the liner. Drill (14) 1" diameter holes equally spaced through liner.
- NOTICE:** Raise liner and prop up when drilling holes to avoid damaging bits.
- 5) Use the counterbore tool and bore each hole to the same depth as the thickness of the liner plug (3).
  - 6) Place the rear hold down plate underneath the liner.
  - 7) Set the steel weld washer (2) into the hold and weld to the steel plate.
  - 8) Insert the liner plug (3) into the holes. Flush them with the liner.



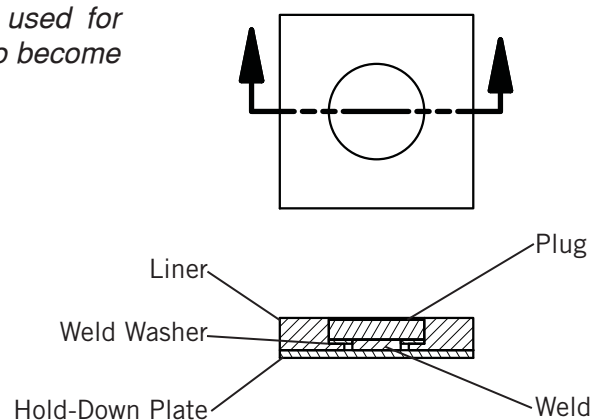
**Figure 25**

**! IMPORTANT:** Rear hold down plate must be used for hauling asphalt. Failure to do so will cause liner to become deformed will void warranty.

#### Asphalt Checklist

Liners used in an asphalt application must:

- 1) Material must be LavaSlide.
  - 2) Thickness must be a minimum 1/2".
  - 3) Liner must have a rear hold down plate.
- Any exception shall void the warranty.



**Figure 26**





# AVALANCHE LINERS

## STEP 9

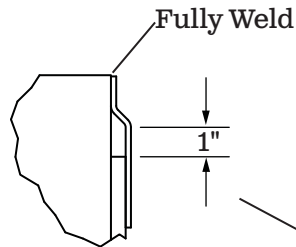
### Install Side Wall Liner

- 1) Measure and cut liner to match length of main liner.
- 2) See **Figure 27, 28, & 29**. Side wall liner should cover the upper section of the leading edge protector holding the main liner.

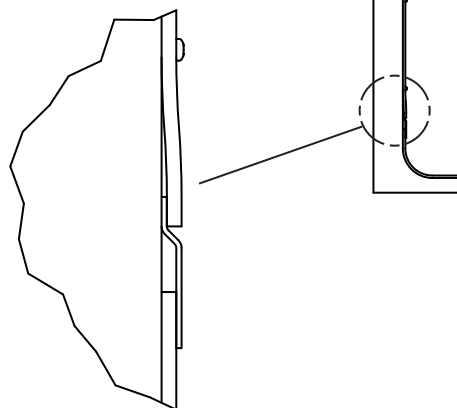
If the trailer has single wall make sure screws will be going into posts or voids so they don't go on the outside of the trailer. Screws should be 6" from edges of liner and 24" on center. If posts are further apart the center to center distance can be 36" maximum.

- 3) Mark and drill T (.358") holes through liner and trailer.
- 4) Secure liner to the floor of the trailer/body.
- 5) Place the leading edge protector at the top of the side wall liner leaving a 1" gap for expansion and weld in place. Leading edge protector may not be at the top of the trailer.

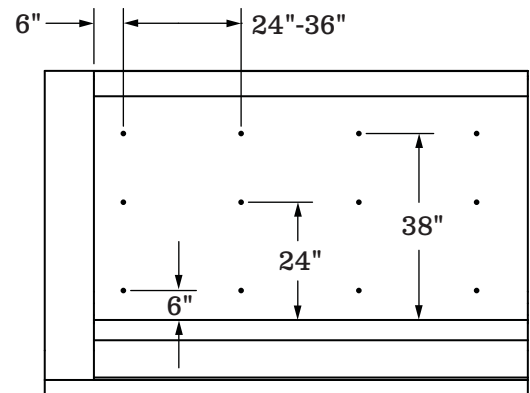
**NOTICE:** See **Figures 28**. Liner must be able to expand. A gap is required between the liner and the inside of the leading edge of 1".



**Figure 28**



**Figure 29**



**Figure 27**



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## **STEP 10a**

### Install Front Wall Liner (External Hoist)

- 1) Measure and cut liner to fit front wall.
- 2) Bottom edge of liner will set just above the front retaining strips. Bolts should be 6" from edges of liner and 24" on center from side to side and 18" on center from bottom to top.
- 3) Mark and drill 5/16" holes through liner and trailer.
- 4) Secure liner to front wall with minimum of 15 bolts. Use 5/16-18 x 1-1/2" stainless steel bolts through the liner and 5/16 stainless steel bond washer and 5/16-18 stainless steel nylon hex nuts.
- 5) Place the leading edge protector at the top of the front wall liner leaving a 1" gap for expansion and fully weld in place. Leading edge protector may not be at the top of the trailer.

## **STEP 10b**

### Install Front Wall Liner (Internal Hoist)

- 1) Measure and cut liner to fit front wall on both sides of the doghouse.
- 2) Bottom edge of liner will set just above the front retaining strips. Bolts should be 6" from edges of liner and 24" on center from side to side and 18" on center from bottom to top.
- 3) Mark and drill 5/16" holes through liner and trailer.
- 4) Secure liner to front wall with minimum of 16 bolts. Use 5/16-18 x 1-1/2" stainless steel bolts through the liner and 5/16 stainless steel bond washer and 5/16-18 stainless steel nylon hex nuts.
- 5) Measure and cut liner to fit the sides of the doghouse.
- 6) Secure the liner on the sides with minimum of 4 fasteners on each side.
- 7) Measure and cut liner to fit the front of the doghouse and overlap the liner on the sides.
- 8) Secure the liner on the front with minimum of 6 fasteners.
- 9) Cut the leading edge protector to fit around the top of the front wall liner leaving a 1" gap for expansion and fully weld in place. Leading edge protector may not be at the top of the trailer.



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## **STEP 11**

### Install Tail Gate Liner

- 1) Measure and cut liner to fit tail gate. Make sure liner will not interfere with opening or closing of tail gate.
- 2) Bottom edge of liner will set above the floor of the trailer. Bolts should be 6" from edges of liner and 24" on center. Minimum of 15 fasteners should be used. Use 3/8 x 1-1/2 self-tapping screws into post or hollow sections and 5/16-18 x 1-1/2" stainless steel bolts through the liner and 5/16 stainless steel bond washer and 5/16-18 stainless steel nylon hex nuts for through the tail gate.
- 3) Mark hole locations and drill T (.358") holes for self-tapping screws or 5/16" holes for bolts through liner and trailer.
- 4) Secure liner to the tail gate with the appropriate fasteners.
- 5) Place the leading edge protector at the top of the tail gate liner leaving a 1" gap for expansion and fully weld in place. Leading edge protector may not be at the top of the tail gate.



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