REVISION LIST

CHAPTER 12 : VERTICAL CLOSEOUT

The following list of revisions will allow you to update the Legacy construction manual chapter listed above.

Under the “Action” column, “R&R” directs you to remove and replace the pages affected by the revision.
“Add” directs you to insert the pages shows and “R” to remove the pages.

PAGE(S) AFFECTED	REVISION # & DATE	ACTION	DESCRIPTION
12-1 through 12-9	0/02-15-02	None	Current Revision is Correct
12-1	3/12-15-04	R&R	Updated table of contents with page numbers.
12-1	3/12-15-04	R&R	Updated parts list.
12-7	3/12-15-04	R&R	Updated rivets from MSC-32 to MSC-34.

Chapter 12: Vertical Closeout

Contents

1. INTRODUCTION

2. PARTS LIST

#	PART NO. (P/N)	QTY	DESCRIPTION	OPTIONAL ITEM *(not included with kit)*
1)	4044	1	Vertical Stabilizer/Rudder Skin, Left side	
2)	4460	2	Access Panel, Left/Right Elevator Weldment	
3)	4656	1	Lead Counterweight, Rudder	
4)	K1000-08	14	Nutplates	
5)	MSC-34	28	Rivets	
6)	MS24694-S3	14	Screw, Machine	

Note:

Optional Parts available through :
(*) Lancair Avionics
(**) Kit Components, Inc.

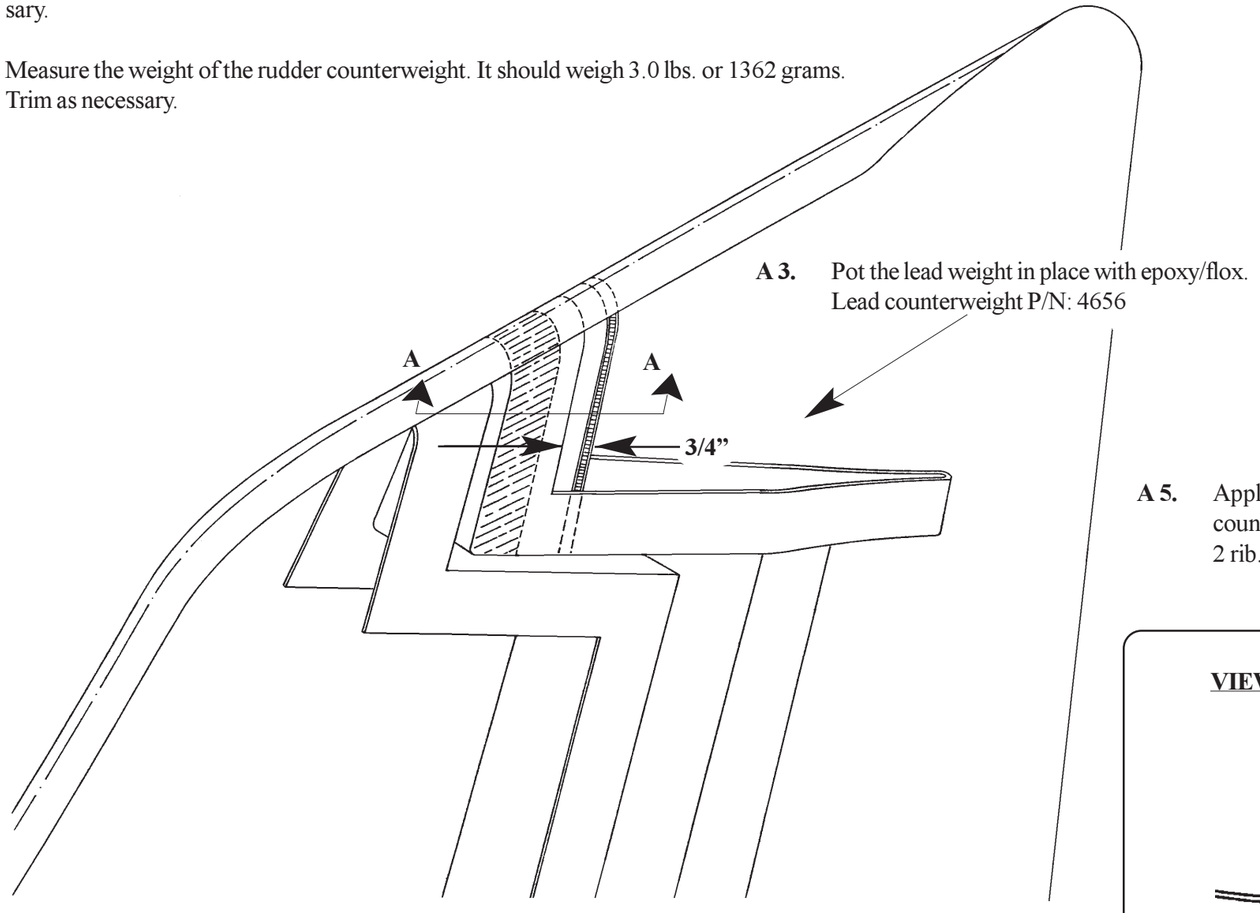
3. CONSTRUCTION PROCEDURES

A. Counterweight Installation

A 1. Fit the rudder counterweight as far forward as possible. Some trimming of the counterweight may be necessary.

A 2. Measure the weight of the rudder counterweight. It should weigh 3.0 lbs. or 1362 grams. Trim as necessary.

Rudder Counterweight Installation
Fig. 12:A:1

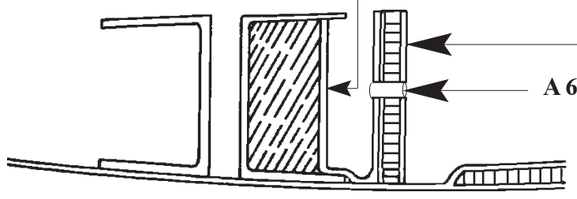


A 3. Pot the lead weight in place with epoxy/flox. Lead counterweight P/N: 4656

A 4. Install and fit a piece of 2 core 2 3/4” aft of the rib. The purpose of the compartment is to leave room for adding lead if necessary.

A 5. Apply a 2 BID reinforcement extending from the lead counterweight onto the rudder skin and onto the 2 core 2 rib.

VIEW AA

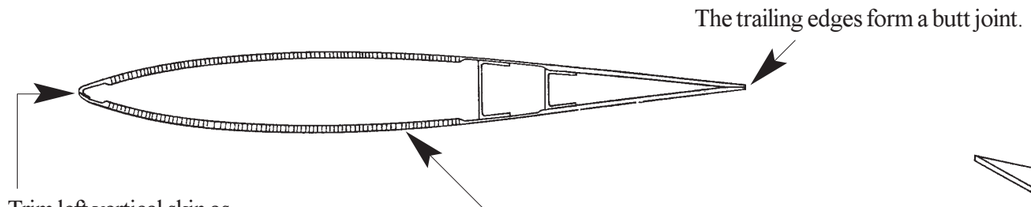


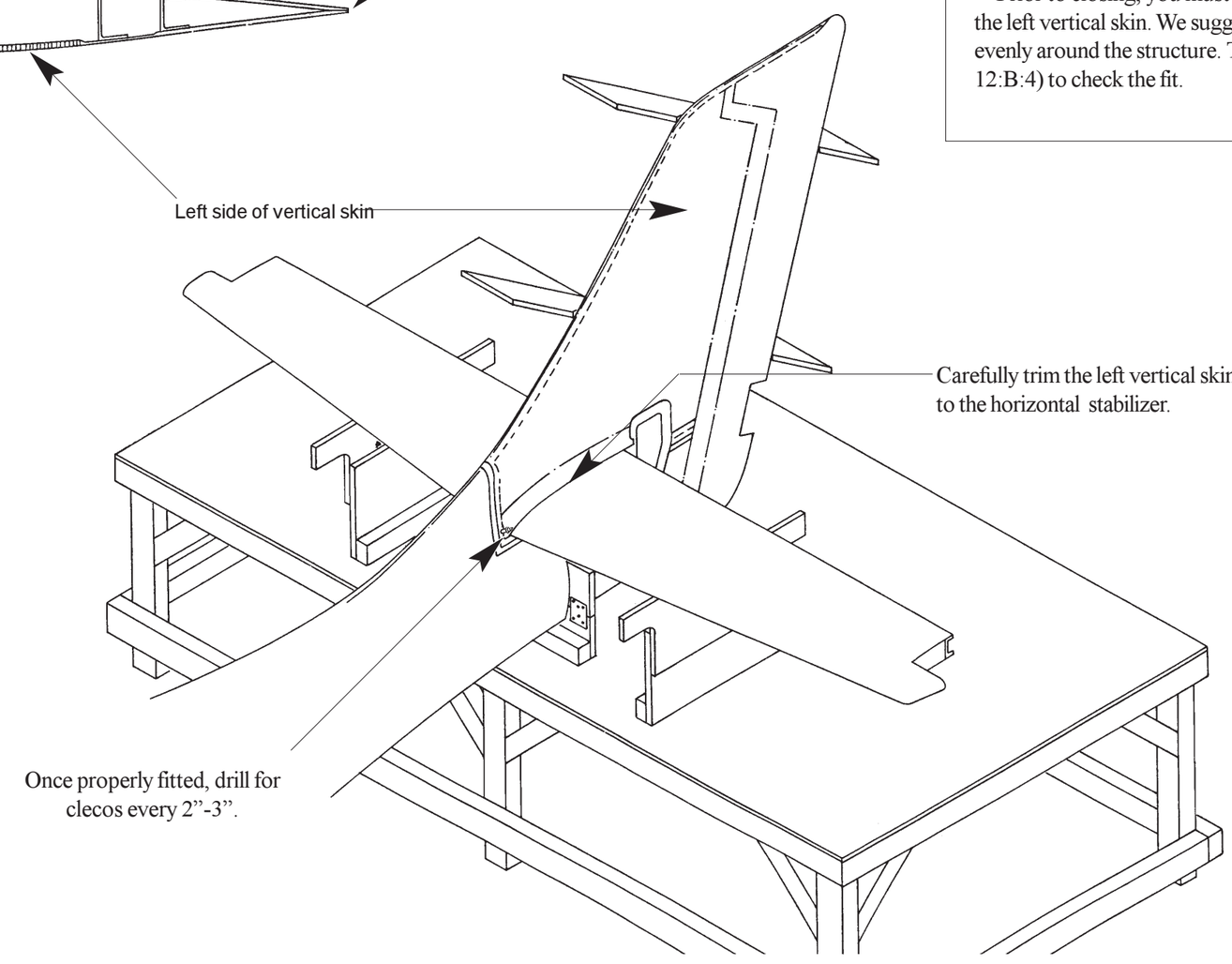
A 6. Drill a 3/16” dia vent hole.

B. Left Vertical Skin Installation

Fitting Left Vertical Skin
Fig. 12:B:1

Typical Vertical Tail Cross Section

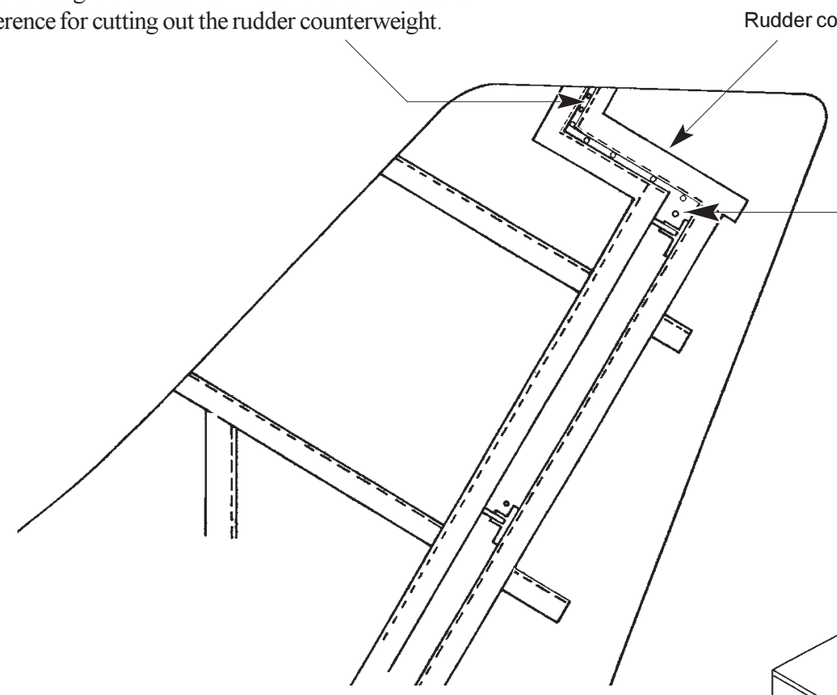


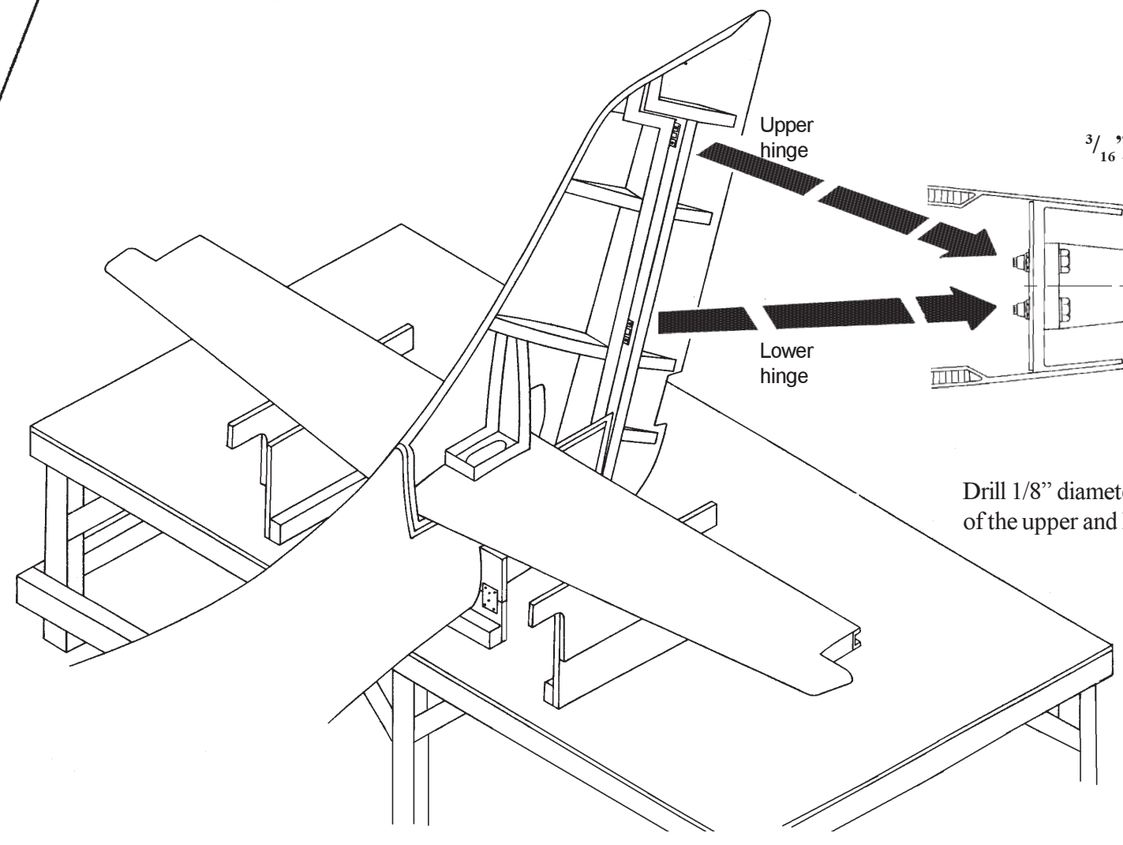


Prior to closing, you must carefully check the fit of the ribs and spars to the left vertical skin. We suggest using small pieces of play dough distributed evenly around the structure. Then practice the closing process (refer to figure 12:B:4) to check the fit.

Rudder Trim Line Reference Holes
Fig. 12:B:2

Drill a series of 1/8” dia. holes close to the rudder counterweight closeout rib. These holes will be used as reference for cutting out the rudder counterweight.



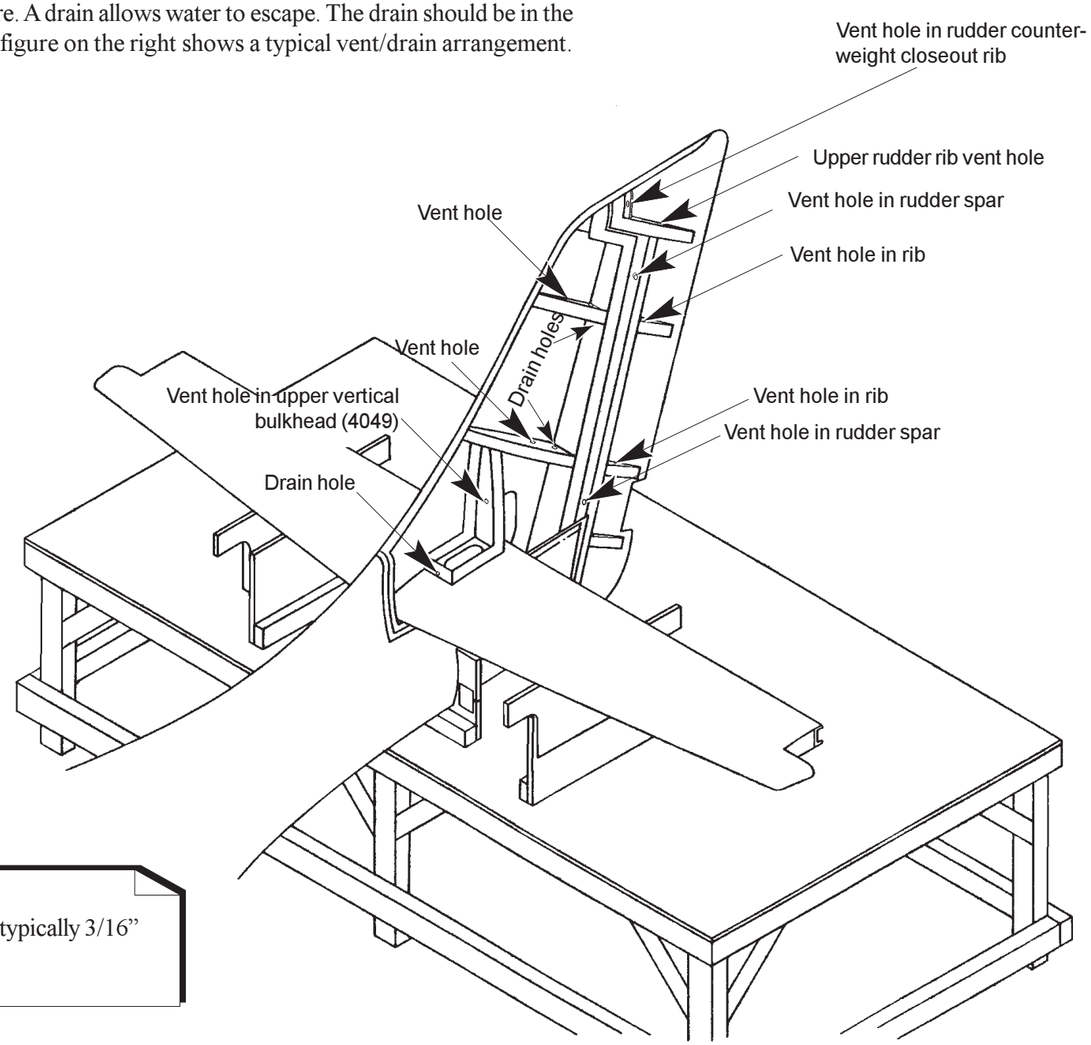


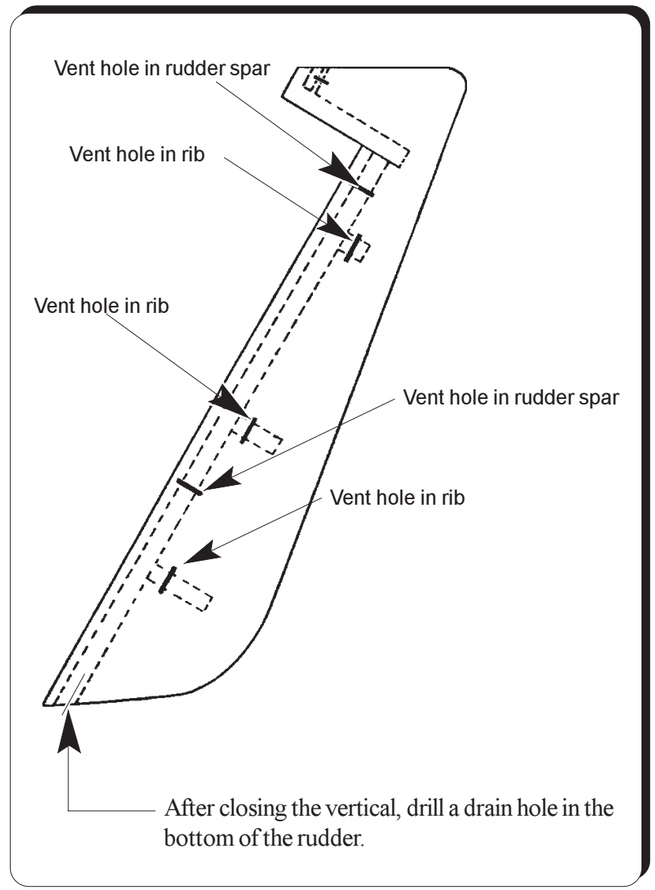
Drill 1/8” diameter holes 3/16” aft of the pivot point of the upper and lower hinges.

NOTE:
DRILL HOLES IN BOTH LEFT AND RIGHT VERTICAL SKINS.

Vertical Tail Vent Holes
Fig. 12:B:3

All compartments within the structure must have both a way to vent and a drain. A vent allows a passage for air with changing pressure. A drain allows water to escape. The drain should be in the lowest area of the compartment. The figure on the right shows a typical vent/drain arrangement.

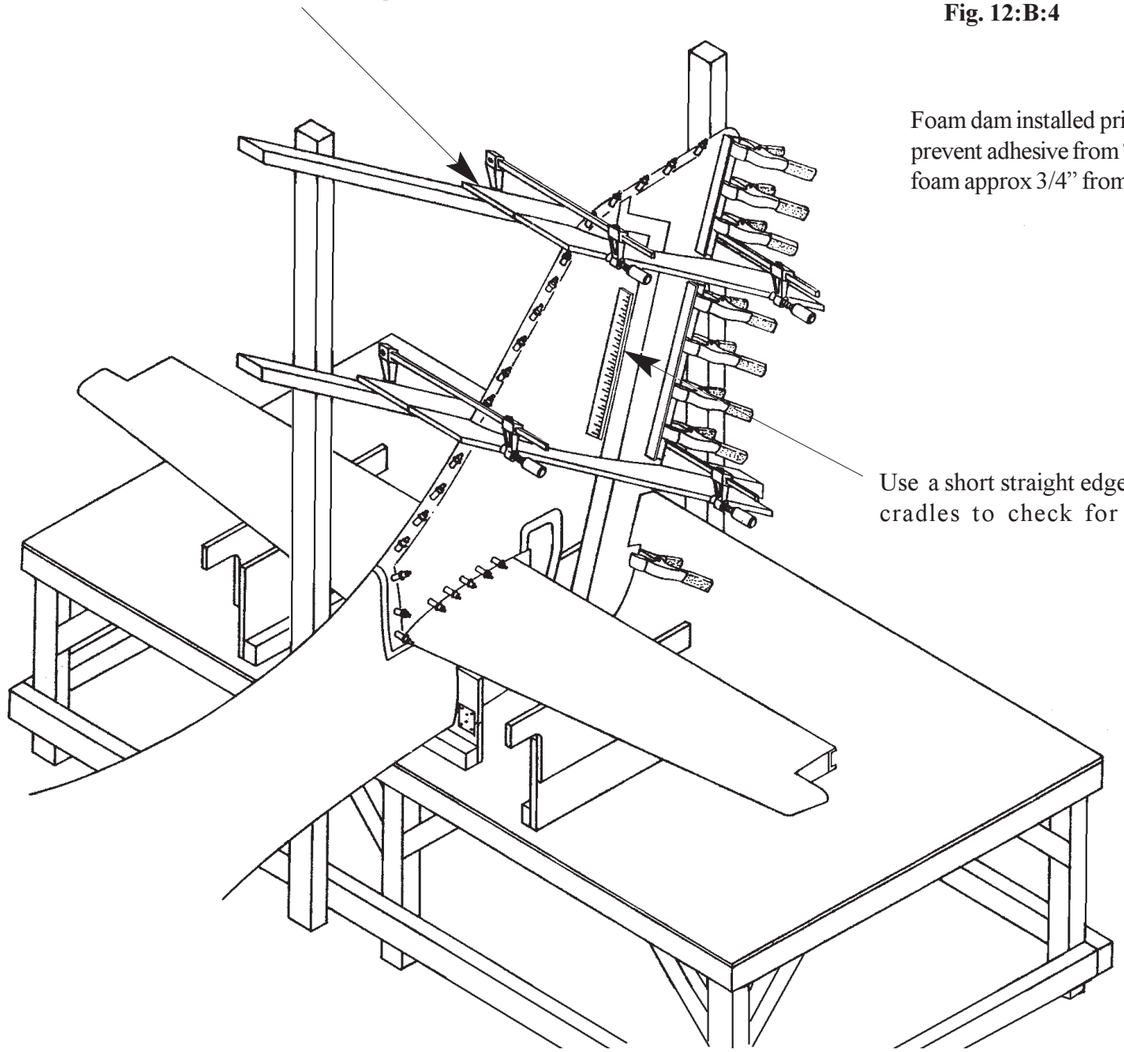




Vent and drain holes are typically 3/16" in diameter.

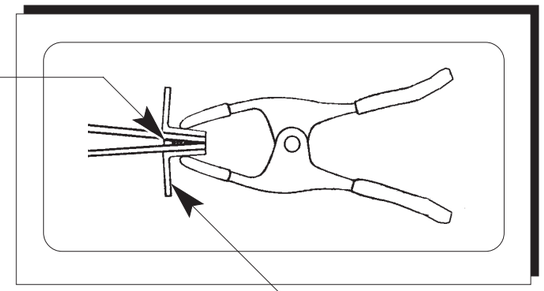
Closing Vertical Stabilizer
Fig. 12:B:4

Use the left side of the vertical cradles for this step.



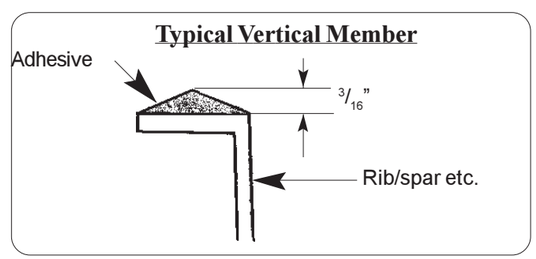
Use a short straight edge in between the cradles to check for straightness.

Foam dam installed prior to closing to prevent adhesive from "running away". Install foam approx 3/4" from trailing edge.



Clamp short pieces of preferably angled aluminum to ensure a straight trailing edge.

Typical Vertical Member

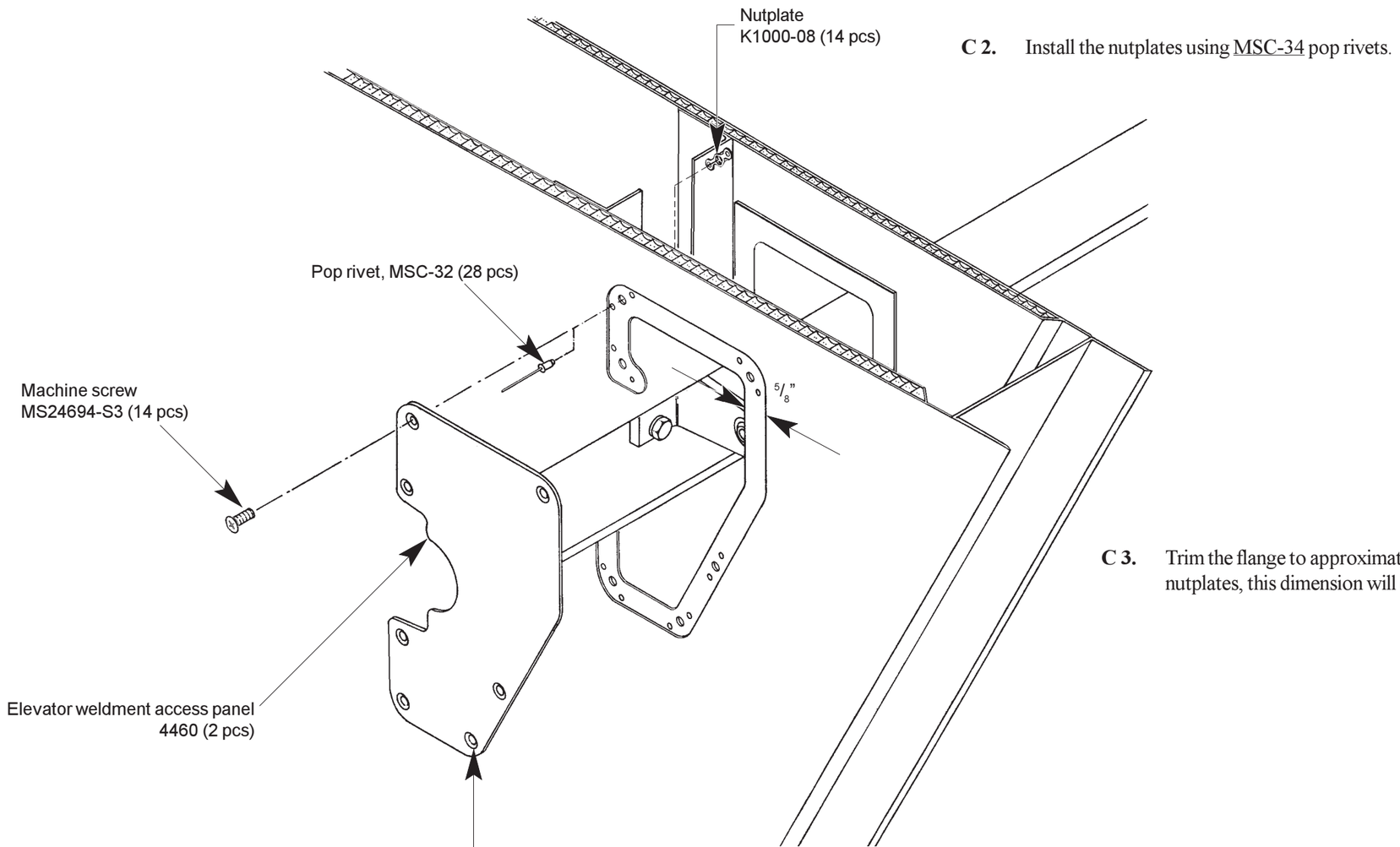


Use epoxy/flox or other approved adhesive for the closing process. Follow proper bonding procedures!

C. Elevator Weldment Access Panel

C 1. Center the elevator weldment access panel in the joggle. Drill the holes for the screws using the inspection panel as a drill guide. Use a #20 drill.

Elevator Weldment Access Panel
Fig. 12:C:1



C 2. Install the nutplates using MSC-34 pop rivets.

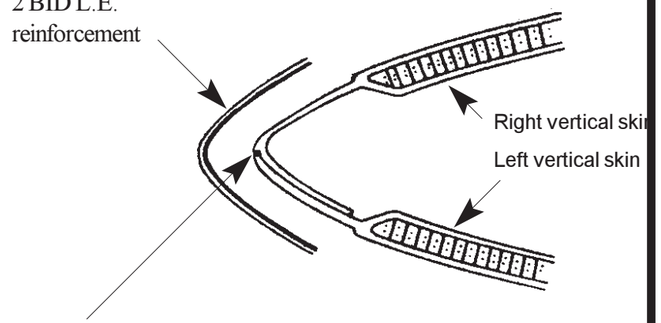
C 3. Trim the flange to approximately 5/8". Around the nutplates, this dimension will increase as necessary.

C 4. Countersink the holes for the elevator access panels using a 100 degree countersink.

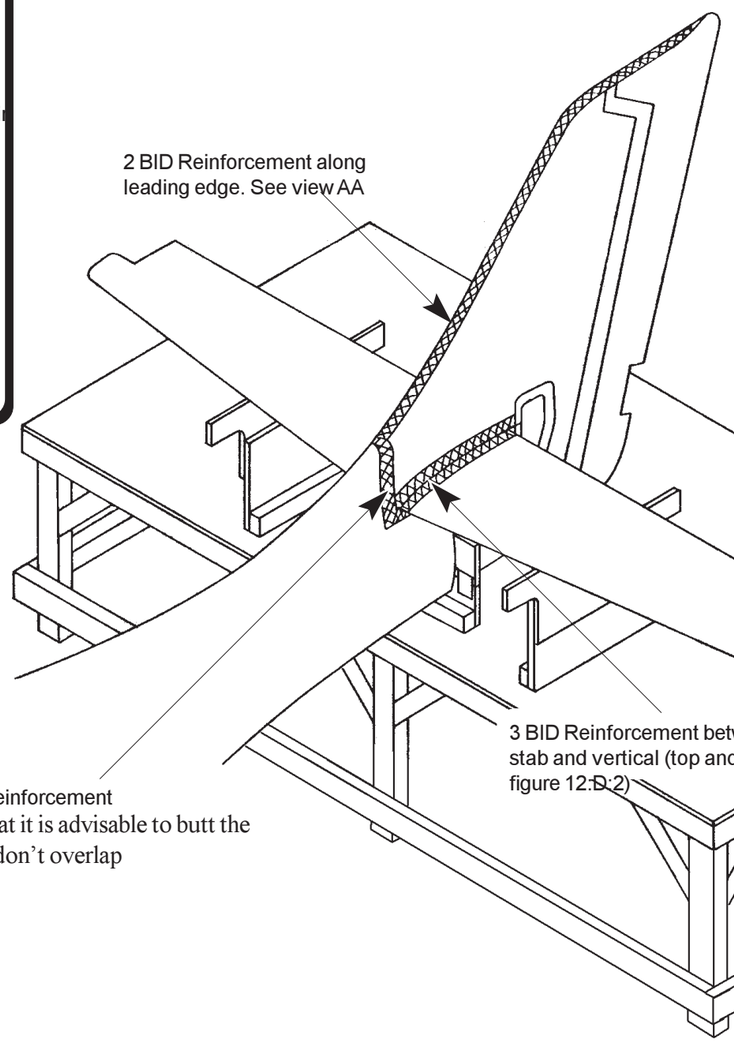
D. Bonding the Vertical Stabilizer

Leading edge of Vertical Stabilizer

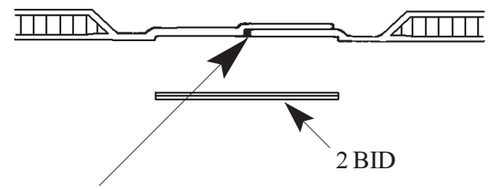
VIEW AA



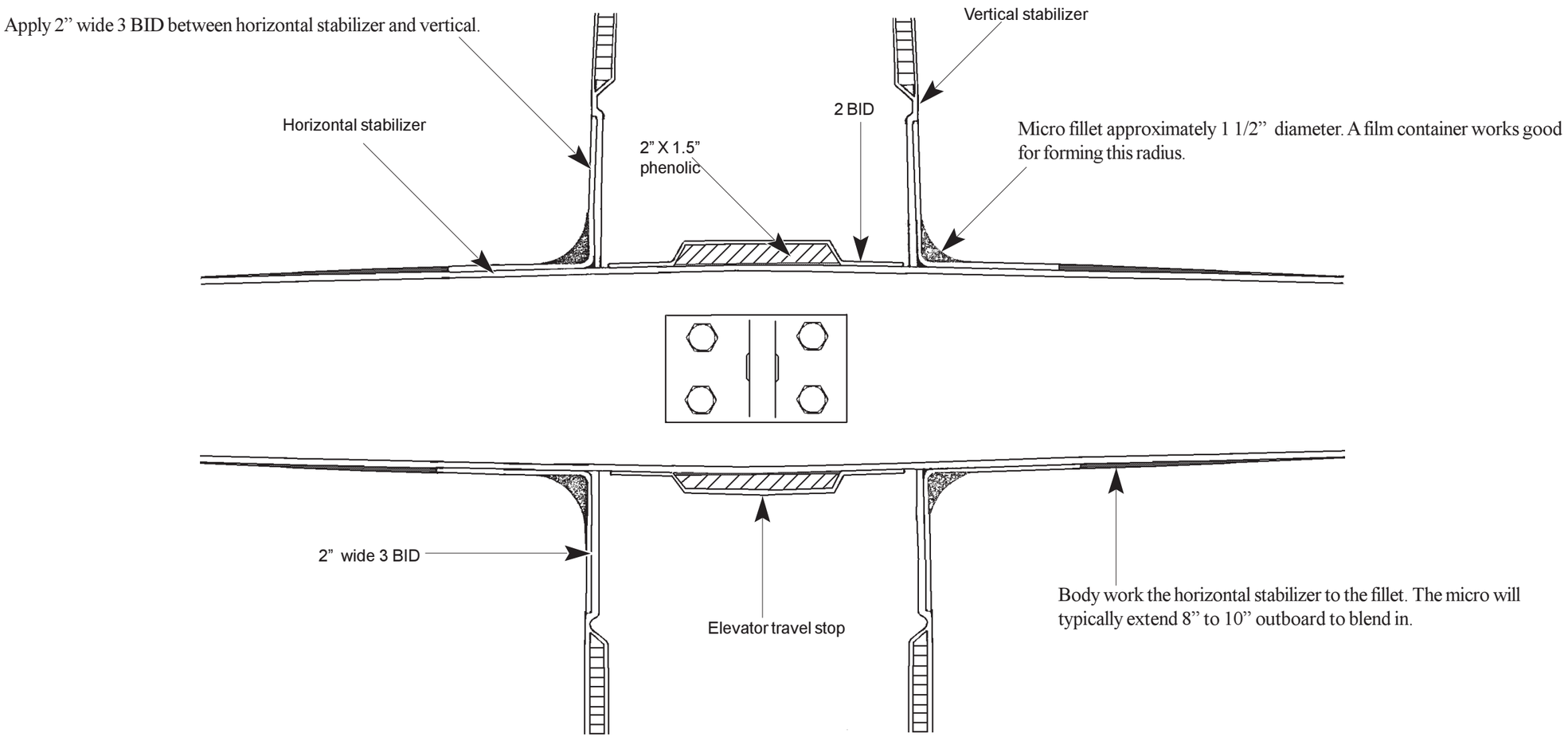
BID Reinforcemenrts
Fig. 12:D:1



VIEW BB



BID Reinforcements Securing Horizontal Stabilizer
Fig. 12:D:2



CROSS SECTIONAL VIEW LOOKING FORWARD