

# REVISION LIST

## CHAPTER 9: CANOPY

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.

<u>PAGE(S) AFFECTED</u>	<u>REVISION # &amp; DATE</u>	<u>ACTION</u>	<u>DESCRIPTION</u>
9-1 through 9-3	1/09-18-02	R&R	Part # Correction
9-4 through 9-8	0/02-15-02	None	Current revision is correct
9-9	1/09-18-02	R&R	Corrected Figure 9:B:1
9-10 through 9-16	0/02-15-02	None	Current revision is correct
9-17	1/09-18-02	R&R	Text correction
9-18	1/09-18-02	R&R	Corrected Fig. 9:C:2
9-19 through 9-23	0/02-15-02	None	Current revision is correct
9-24	1/09-18-02	R&R	Corrected Fig. 9:D:2
9-25 through 9-28	0/02-15-02	None	Current revision is correct
9-29 through 9-30	1/09-18-02	R&R	Part # correction
9-31 through 9-35	0/02-15-02	None	Current revision is correct
9-36	1/09-18-02	R&R	Text correction
9-37 through 9-39	0/02-15-02	None	Current revision is correct
9-40	1/09-18-02	R&R	Part # correction. Figure 9:J:2 correction
9-3	2/06-30-04	R&R	Updated part number.
9-23	2/06-30-04	R&R	Deleted instructions D3 and D4 and View AA graphic.
9-24	2/06-30-04	R&R	Updated figure 9:D:2 and corrected detail view.
9-30	2/06-30-04	R&R	Changed parts.
9-1	3/12-15-04	R&R	Updated table of contents with page numbers.
9-2	3/12-15-04	R&R	Updated parts list.
9-17	3/12-15-04	R&R	Updated rivets from MSC-32 to MSC-34.
9-23	3/12-15-04	R&R	Updated figure 9:D:1.
9-35	3/12-15-04	R&R	Updated figure 9:H:1 and added parts.
9-36	3/12-15-04	R&R	Updated figure 9:H:2 and added instructions.

<b><u>PAGE(S) AFFECTED</u></b>	<b><u>REVISION # &amp; DATE</u></b>	<b><u>ACTION</u></b>	<b><u>DESCRIPTION</u></b>
9-2, 9-3, 9-5, 9-9, 9-18, 9-24	6/08-10-07	R&R	Part numbers changed.



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Chapter 9: Canopy

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1. INTRODUCTION

The Legacy canopy consists of three major pieces, the canopy frame, the windshield and the canopy stiffener.

The forward hinging canopy is standard on the Legacy. The hinges bolt directly to the stiffener. The gas struts attach directly to the hinges. The other end of the gas strut mounts to the firewall.

To obtain a good fit it is essential that you understand the assembly. We suggest reading this section before starting the construction.

A protective film is supplied by the manufacturer. This is a waterbase protectant and should be left on the windows until your aircraft is painted to avoid scratches.

2. PARTS LIST

#	PART NO. (P/N)	QTY	DESCRIPTION	OPTIONAL ITEM
(not included with kit)				
CANOPY LATCH MECHANISM				
1)	4455	1	Bushing	
2)	4608	4	Hook	
3)	4609	1	Torque Tube, Left	
4)	4610	1	Torque tube, Right	
5)	4618	2	Delrin Striker, Canopy	
6)	4619	2	Striker Plate, Canopy Latch	
7)	4620	2	Receptacle, Canopy Latch	
8)	1100-31	1	Bearing Block	
9)	F34-14	4	Bearing, Rod End	
10)	AN3-3A	2	Bolt, Undrilled	
11)	AN3-4A	8	Bolt, Undrilled	
12)	AN3-5A	4	Bolt, Undrilled	
13)	AN3-7A	1	Bolt, Undrilled	
14)	AN3-10A	4	Bolt, Undrilled	
15)	AN3-10	2	Bolt, Undrilled	
16)	AN3-11A	2	Bolt, Undrilled	
17)	1100-07	1	Bushing, Delrin	
18)	1100-11	1	Clamp	
19)	1100-04	1	Collet	
20)	MS24665-132	3	Cotter Pin	
21)	1100-01	1	Handle	

**Note:**


**Optional Parts available through :**

**(\*) Lancair Avionics**

**(\*\*) Kit Components, Inc.**



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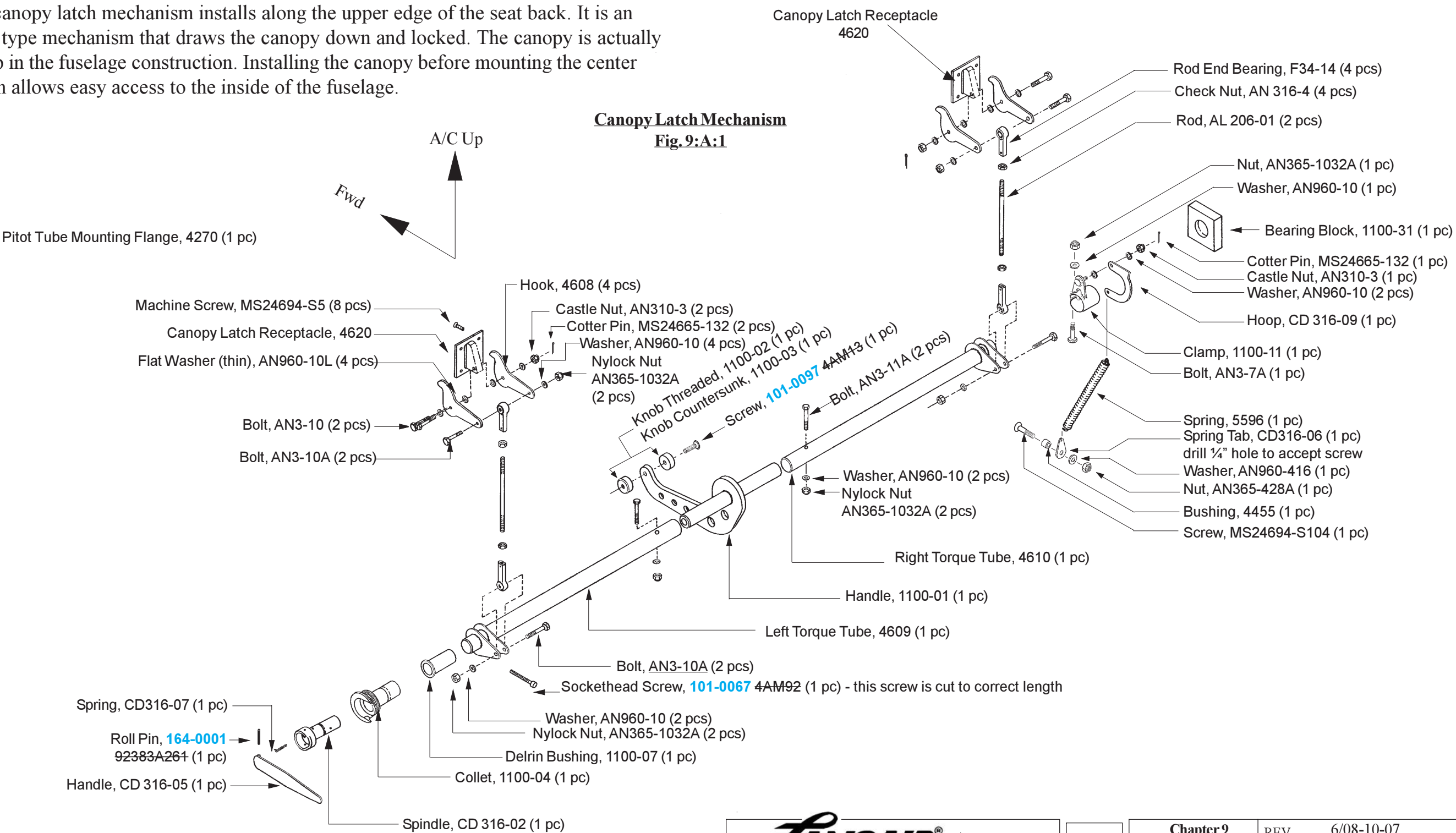
#	PART NO. (P/N)	QTY	DESCRIPTION	OPTIONAL ITEM (not included with kit)	#	PART NO. (P/N)	QTY	DESCRIPTION	OPTIONAL ITEM (not included with kit)
22)	CD316-05	1	Handle		18)	4625	1	Ring Seal, Canopy	
23)	CD316-09	1	Hoop		19)	4626	1	Pattern	
24)	1100-02	1	Knob, Thread		20)	AN3-11A	2	Bolt, Undrilled	
25)	1100-03	1	Knob, Countersink		21)	AN3-4A	4	Bolt, Undrilled	
26)	AN310-3	3	Nut, Castle		22)	AN4-7	4	Bolt, Drilled Shank	
27)	AN316-4	4	Nut, Check		23)	AN4-7A	4	Bolt, Undrilled	
28)	AN365-428A	1	Nut, Nylock		24)	AN5-5A	2	Bolt, Undrilled	
29)	AN365-1032A	13	Nut, Nylock		25)	<del>198-0002</del> 9416K66	4	End fork	
30)	K1000-3	8	Nutplates		26)	MS24665-140	4	Cotter Pin	
31)	K1000-08	8	Nutplates		27)	K1000-03	4	Nutplates	
32)	MSC-34	32	Rivets		28)	K2000-4	4	Nutplates	
33)	<del>164-0001</del> 92383A261	1	Roll pin		29)	AN310-4	4	Nuts, Castle	
34)	AL206-01	2	Rod		30)	AN363-1032	4	Nuts, Lock (all metal)	
35)	MS24694-S5	8	Screw, Machine		31)	AN363-1032A	6	Nuts, Lock	
36)	MS24693-S48	8	Screw, Machine		32)	AN365-1032A	2	Nuts, Nylock	
37)	MS24694-S104	1	Screw, Machine		33)	AN426A3-8	8	Rivets	
38)	<del>101-0097</del> 4AM13	1	Screw, Socket Head		34)	MSC-34	8	Rivets	
39)	<del>101-0067</del> 4AM92	1	Screw, Socket Head		35)	MS24693-(AR)	4	Screws, Machine	
40)	CD316-02	1	Spindle		36)	MS24694-S9	2	Screws	
41)	CD316-07	1	Spring		37)	MS24694-S54	2	Screws	
42)	5596	1	Spring		38)	<del>160-0003</del> 9416K165	2	Strut, Gas	
43)	CD316-06	1	Tab, Spring		39)	AN960-10	10	Washer, Flat	
44)	AN960-10	19	Washer, Flat		40)	AN960-10L	4	Washer, Flat (thin)	
45)	AN960-10L	8	Washer, Flat (thin)		41)	AN960-416	8	Washer, Flat	
46)	AN960-416	1	Washer		42)	AN960-616	2	Washer, Flat	
<b>CANOPY</b>					43)	AN960-616L	4	Washer, Flat	
1)	4010	1	Canopy Skin		44)	AN970-3	2	Washer, Flat - large area washers	
2)	4011	1	Canopy Stiffener		45)	SWS-951	1	RTV Silicone	
3)	4015-01	1	Canopy Hinge Support, Outboard, Left		46)	4028-01	1	Glare shield	
4)	4015-02	1	Canopy Hinge Support, Outboard, Right		47)	561-2	1	Defroster inlet flange	
5)	4016-01	1	Canopy Hinge Support, Inboard, Left		<b>INFLATABLE CANOPY SEAL (optional)</b>				
6)	4016-02	1	Canopy Hinge Support, Inboard, Right		1)	4940-01	1	Optional Inflatable Canopy Seal	**Yes
7)	4600	1	Windshield		2)	3814-6	1	Air Line	**Yes
8)	4603	2	Shim, Canopy Hinge		3)	MS21919-DG14	1	Clamp	**Yes
9)	4605-01	1	Canopy Hinge, Left		4)	4LD-061-D00	1	Check Valve	**Yes
10)	4605-02	1	Canopy Hinge, Right		5)	326-0-12	1	Electric Door Seal Pump	**Yes
11)	4606	2	Bracket, "T" Attach		6)	237-4-2	1	Fitting, "T"	**Yes
12)	4607	1	Support Tube, Canopy Hinge	**Yes	7)	28-4-2	1	Fitting	**Yes
13)	4611	4	Bushing, Hinge		8)	MJTV-3	1	Pneumatic Door Seal Switch	**Yes
14)	4621	2	Alignment Plate, Canopy		9)	01664080-032	1	Pressure Switch	**Yes
15)	4622	2	Striker Plate, Canopy Alignment		10)	22-4	1	Union	**Yes
16)	4623	2	Striker Plate, Delrin		<div>  <div> <div>9-2</div> <div>Chapter 9</div> <div>Canopy</div> </div> </div>				
17)	4624	2	Screws, Machine (drilled)						



### 3. CONSTRUCTION PROCEDURES

#### A. Canopy Latch Mechanism

The canopy latch mechanism installs along the upper edge of the seat back. It is an over-center type mechanism that draws the canopy down and locked. The canopy is actually the first step in the fuselage construction. Installing the canopy before mounting the center wing section allows easy access to the inside of the fuselage.





The first step in installing the canopy latch mechanism is to install the bearing block on the right side of the fuselage. On each side of the fuselage there is a 1/8" alignment hole. At this point locate the pilot holes.

**A 1.** Drill a 1/8" hole all the way through the block. The 1/8" hole must be centered in the existing hole.

**A 2.** Drill out the 1/8" pilot hole on the left side of fuselage to 1 1/2" diameter using a hole saw. Angle the hole so that it points towards the hole on the other side of the fuselage. This will give the best fit.

**A 3.** Install the spindle, collet and delrin bushing.

**A 4.** Install the handle 1100-01.

Don't drill the handle yet!! This will be explained in a later step.

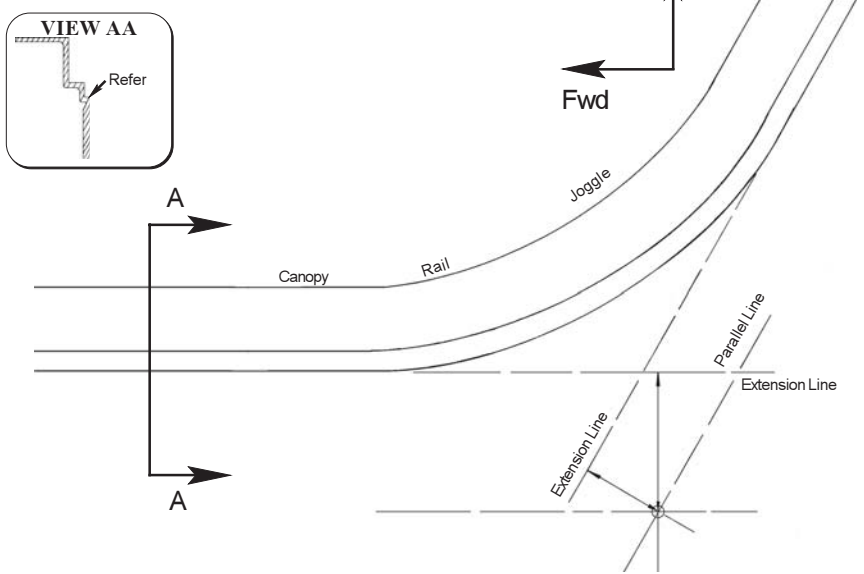
**Bearing Block, 1100-31**

This corner should touch the fuselage. You will notice a gap between the rest of the block and the fuselage. This space will be filled with epoxy/flox during bonding.

Installing Bearing Block  
Fig. 9:A:2

Checking Alignment Hole Location

1. Use masking tape or a ruler to extend the horizontal canopy rail line aft along the fuselage.
2. Do the same for the angled canopy roll over.
3. Draw a line parallel to the horizontal, 3.35" below.
4. Draw a line parallel to the angled canopy rollover, 1.95" aft.
5. Drill the 1/8" hole where these 2 lines cross.



**Bearing Block, 1100-31**

**Torque Tube, 4610**

**Factory installed 1/8" alignment hole.**

**Use the 1/8" dia hole to align the bearing block**

**Epoxy/flox fillet**

**A 5.** Bond the bearing block using approved bonding procedures.

**A 6.** Apply a 2 BID reinforcement extending 1" past the flox fillet.

**Spindle CD 316-02**

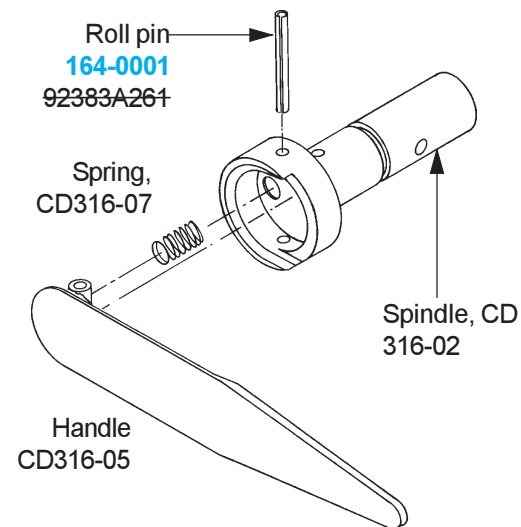
**Collet, 1100-04**

**Delrin Bushing, 1100-07**

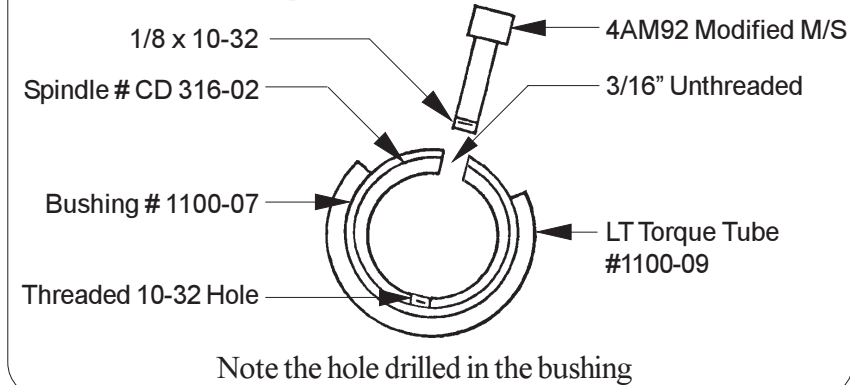
**Torque Tube, 4609**

# Installing the Collet Fig. 9:A:3

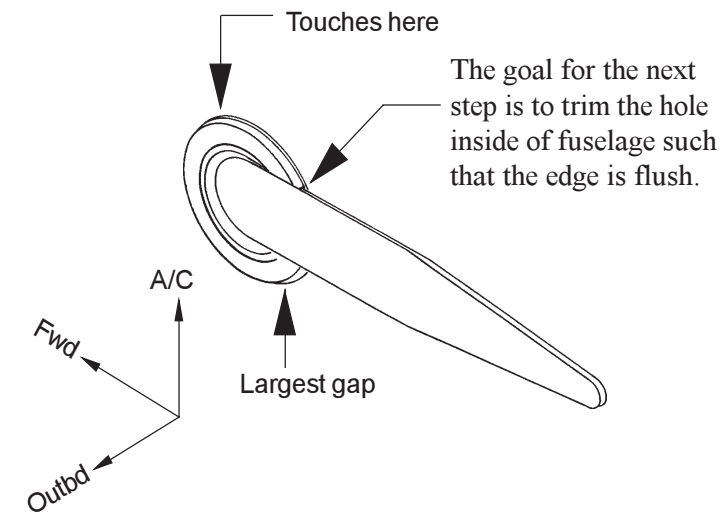
**A 7.** Assemble the handle to the spindle.



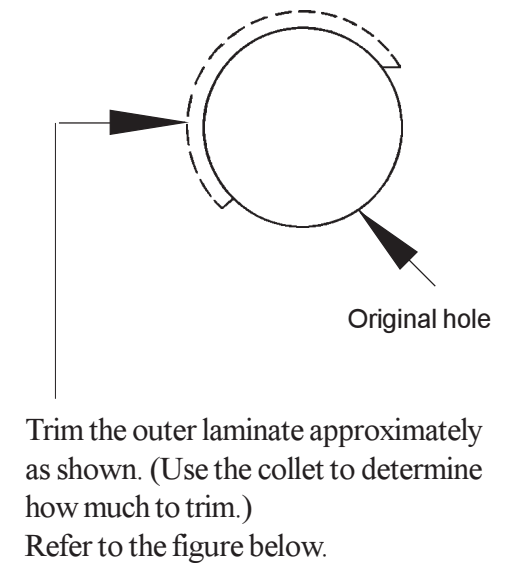
**A 8.** Move handle so that the unthreaded hole in spindle aligns with the bushing hole.  
- The 4AM92 socket head machine screw must be modified before it is installed. Screw an AN315-3 nut onto the 4AM92 screw as far as it will go. Cut off the excess threads and dress with file. Remove the AN315-3 nut. There should be slightly less than 1/8" threads remaining.  
- Insert the modified 4AM92 bolt through the torque tube, bushing and spindle.



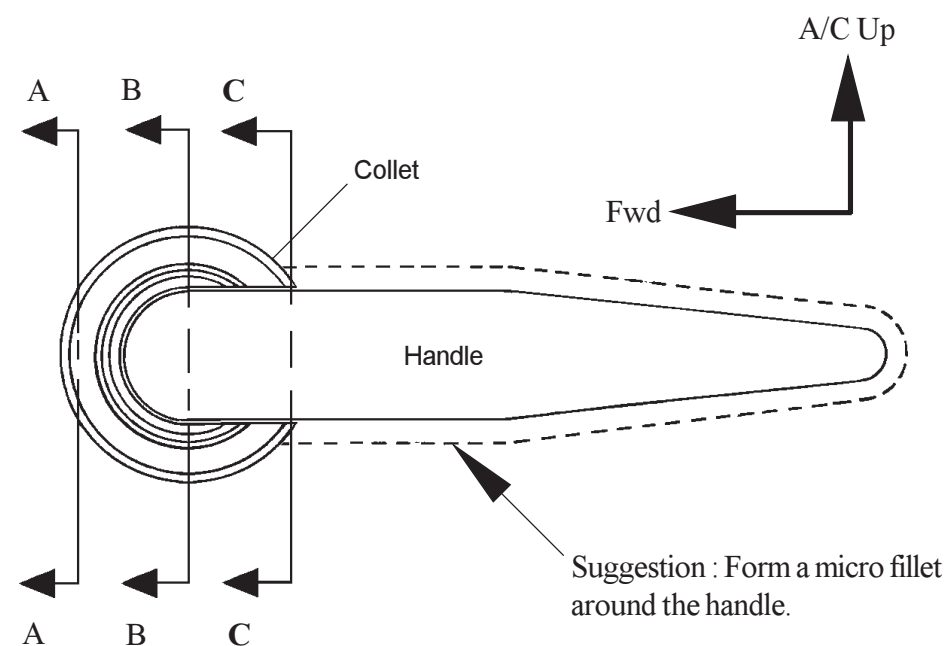
**A 9.** Install the assembly back into the collet and onto the torque tube. Note how the assembly is not flush with the side of the fuselage. In the next step you will trim the hole in the fuselage to get a better fit.



**A 10.** Trim the outer laminate of the hole to get a better fit.

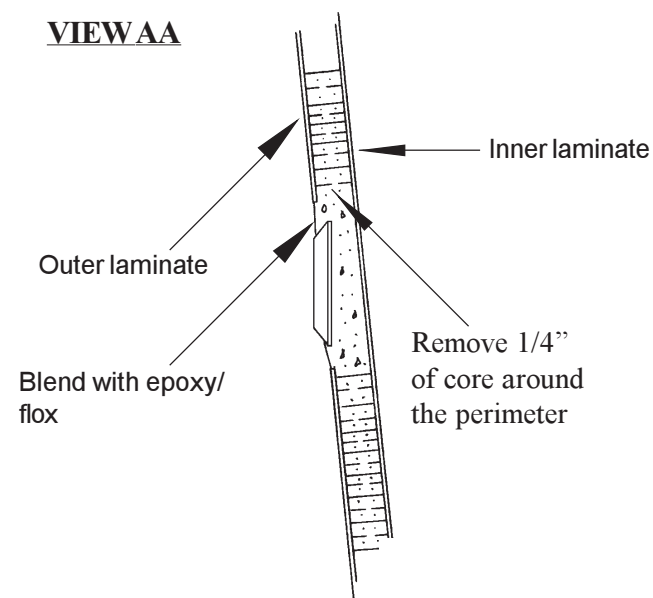


## VIEWS LOOKING STRAIGHT AT HOLE FROM OUTSIDE

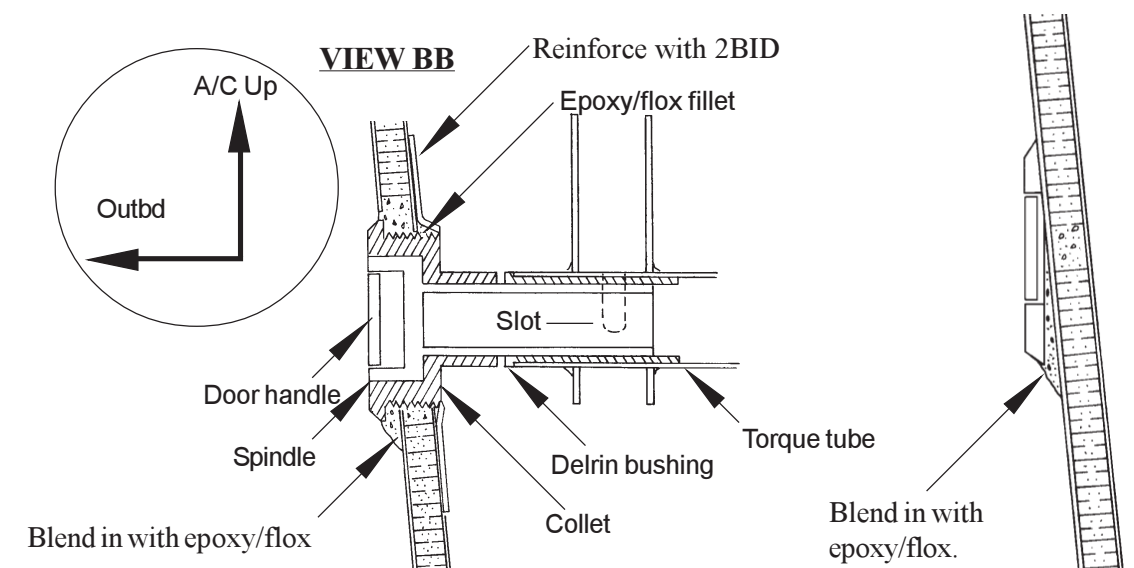


**A 11.** Install the handle with epoxy/flox using approved bonding procedures. Use epoxy/flox. Reinforce with 2 BID on inside.

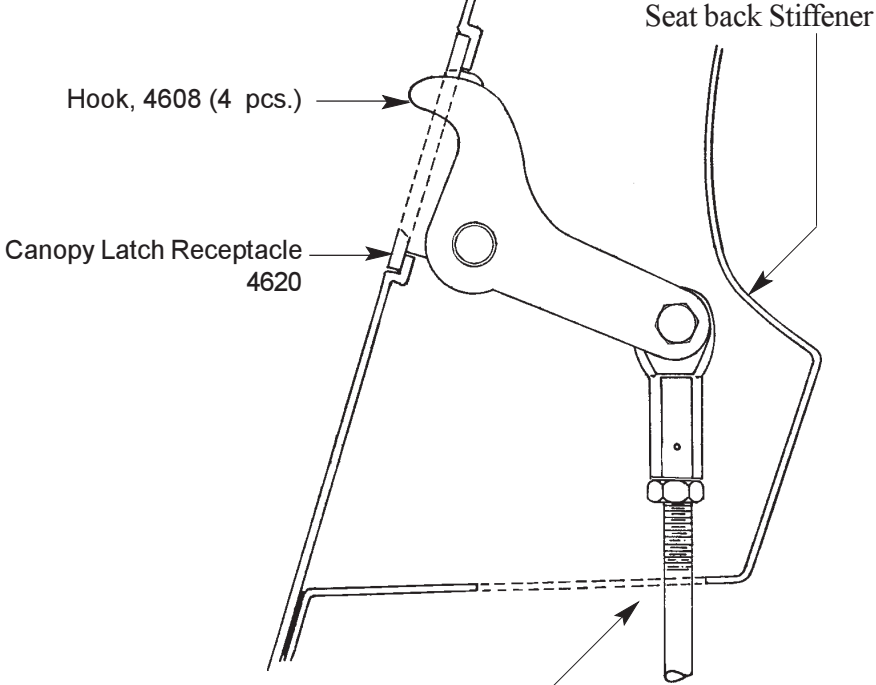
## VIEW AA



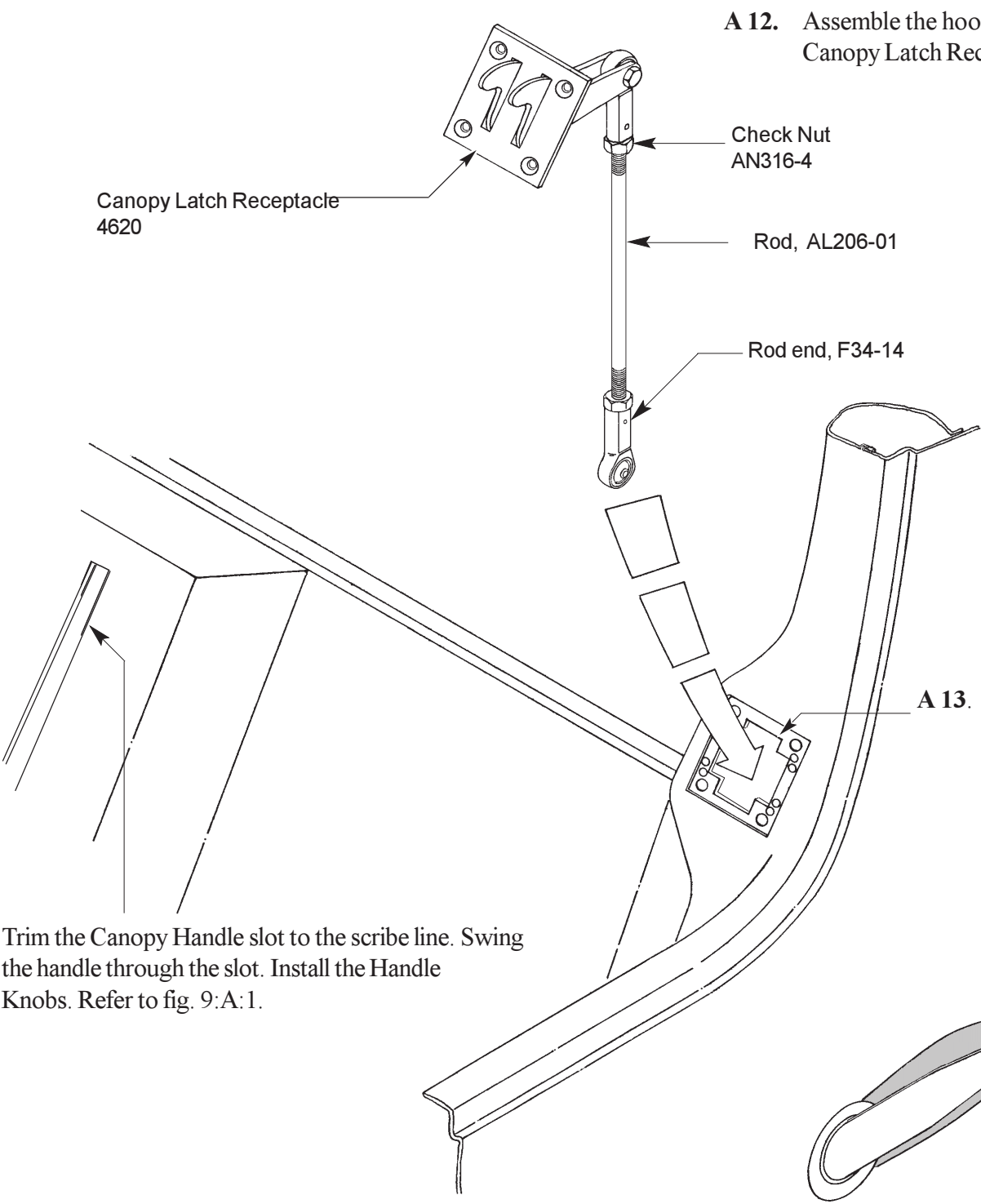
## VIEW BB



# Canopy Latch Installation Fig. 9:A:4



**A 11.** Create a hole in the Seat back Stiffener for the rod. Estimate initial location then size and enlarge as required.



**A 12.** Assemble the hooks, rod ends and rods onto the Canopy Latch Receptacle. Refer to figure 9:A:1.

**A 14.** Trim the Canopy Handle slot to the scribe line. Swing the handle through the slot. Install the Handle Knobs. Refer to fig. 9:A:1.

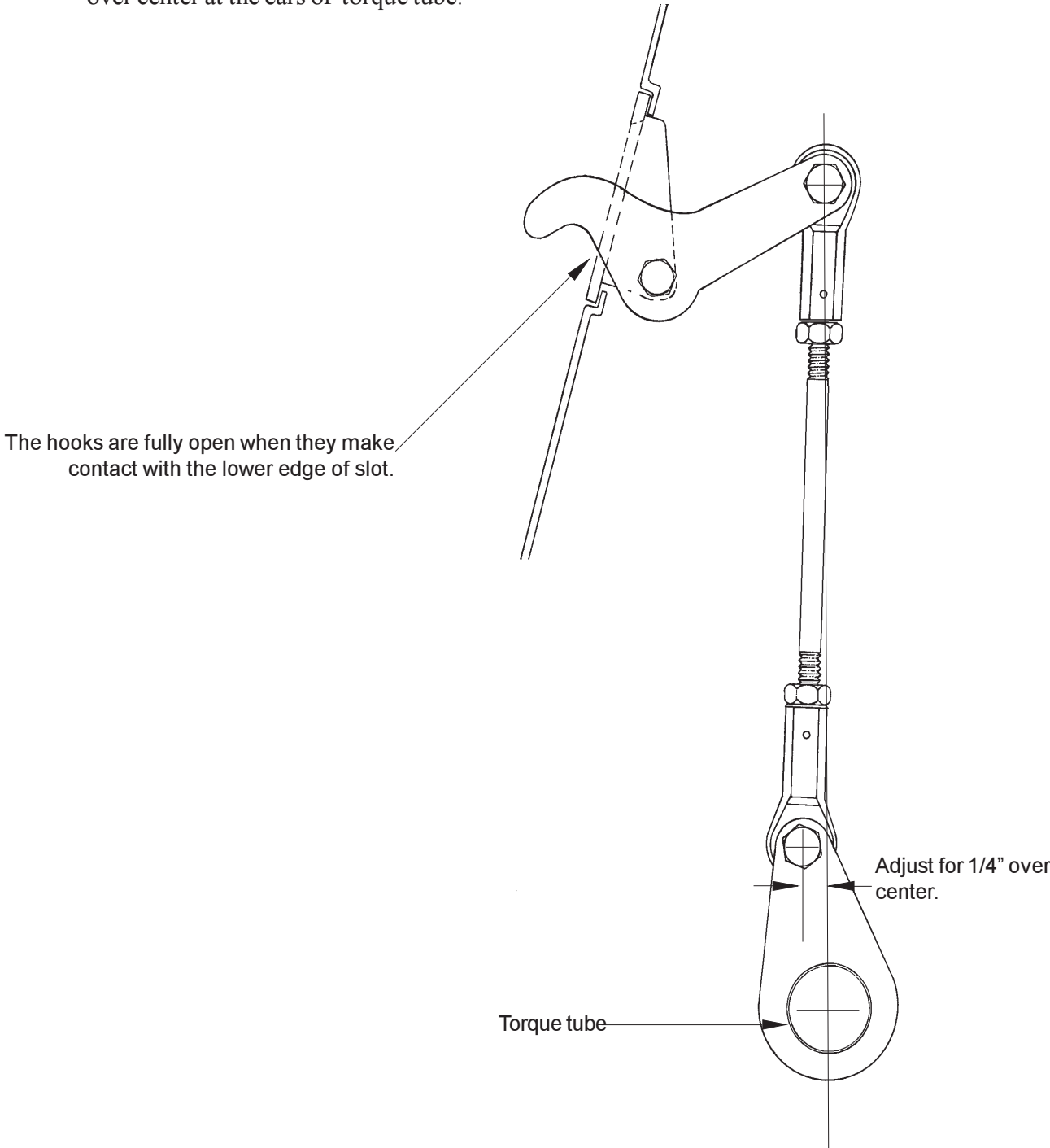
**A 13.** Trim the mounting pad to the scribe lines provided. Enlarge as required. ( Install latches in both sides.)

Suggested fillet for Canopy handle



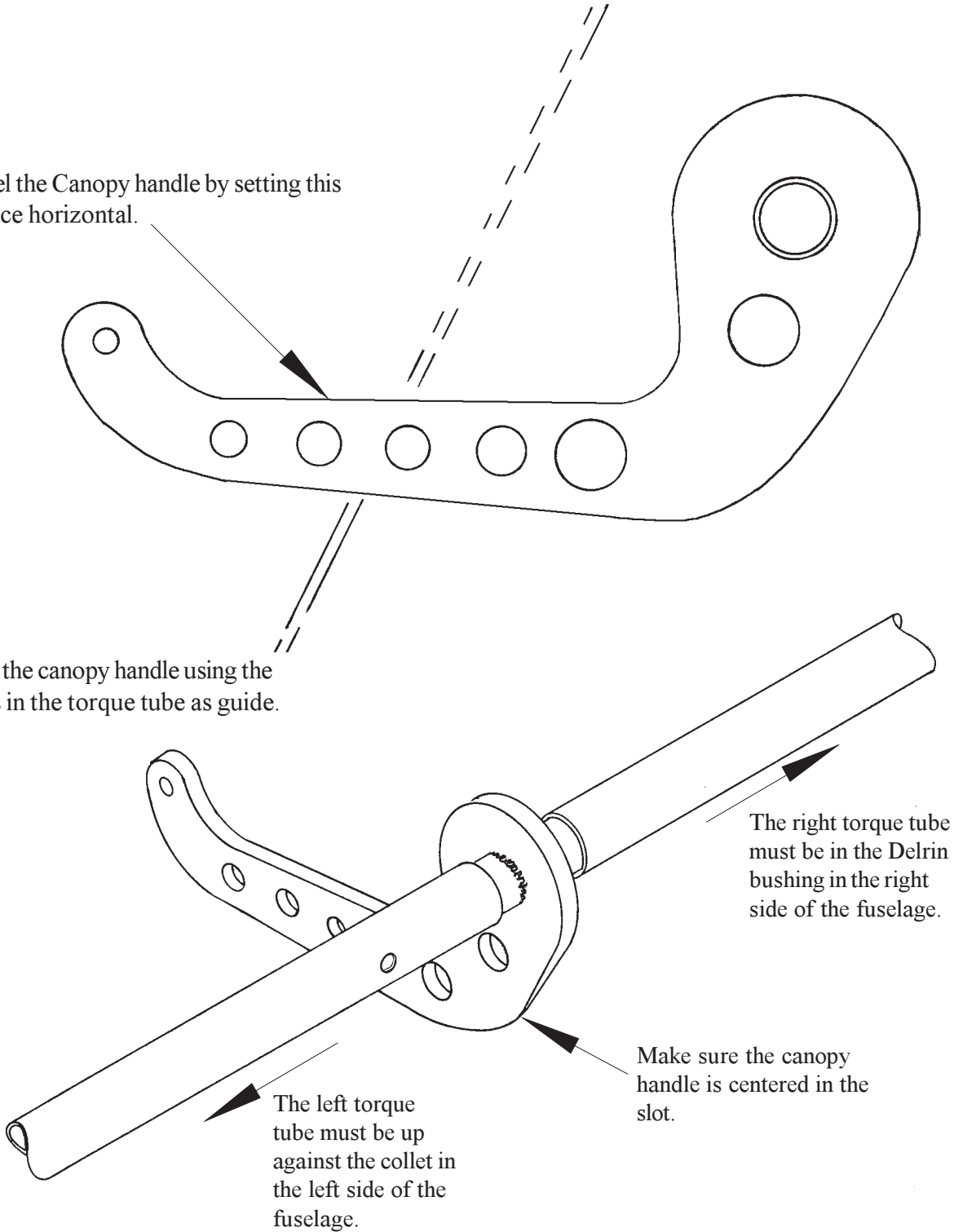
Aligning and Drilling Canopy Torque Tubes  
Fig. 9:A:5

**A 15.** Adjust the rod ends so that the hook is fully open and the mechanism is about 1/4" over center at the ears of torque tube.

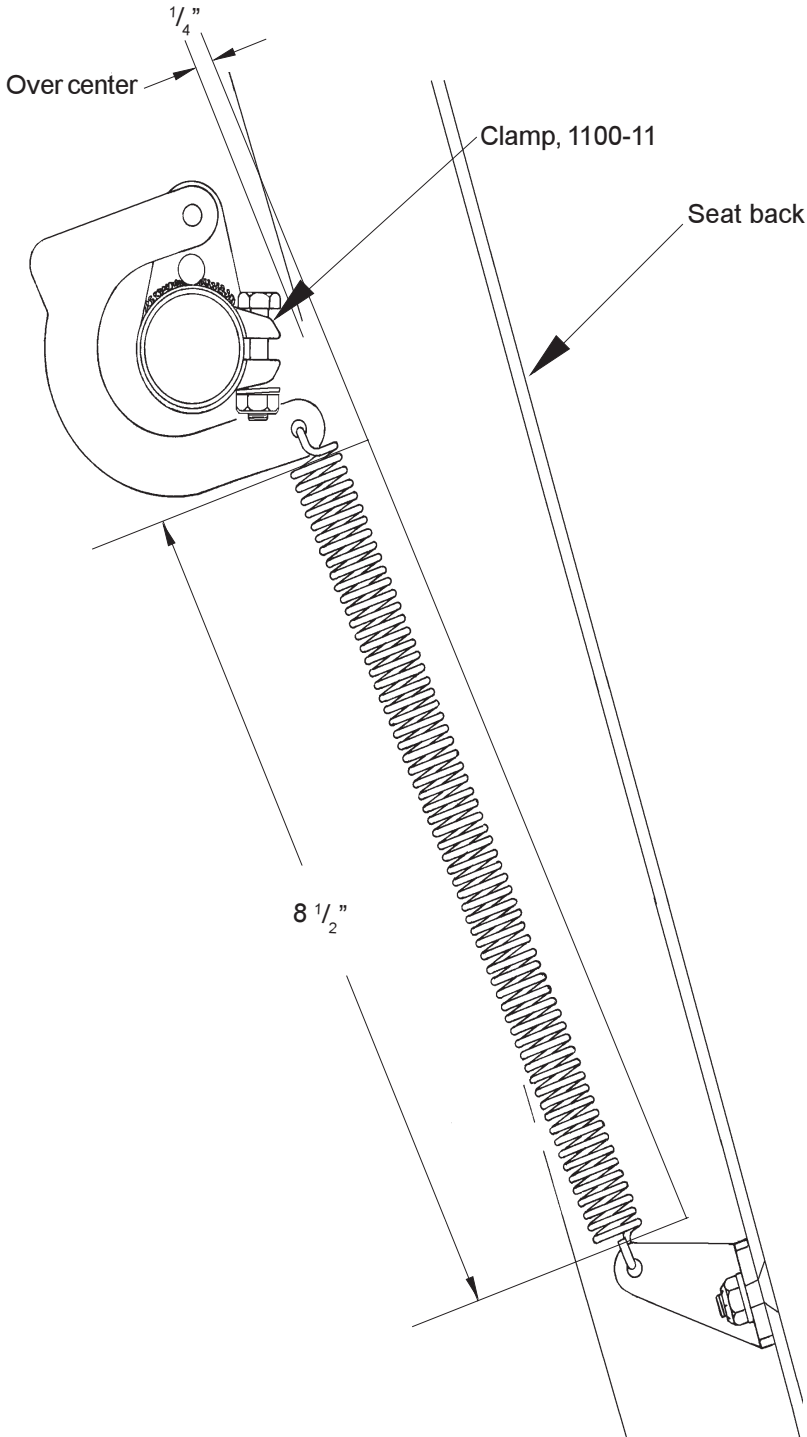
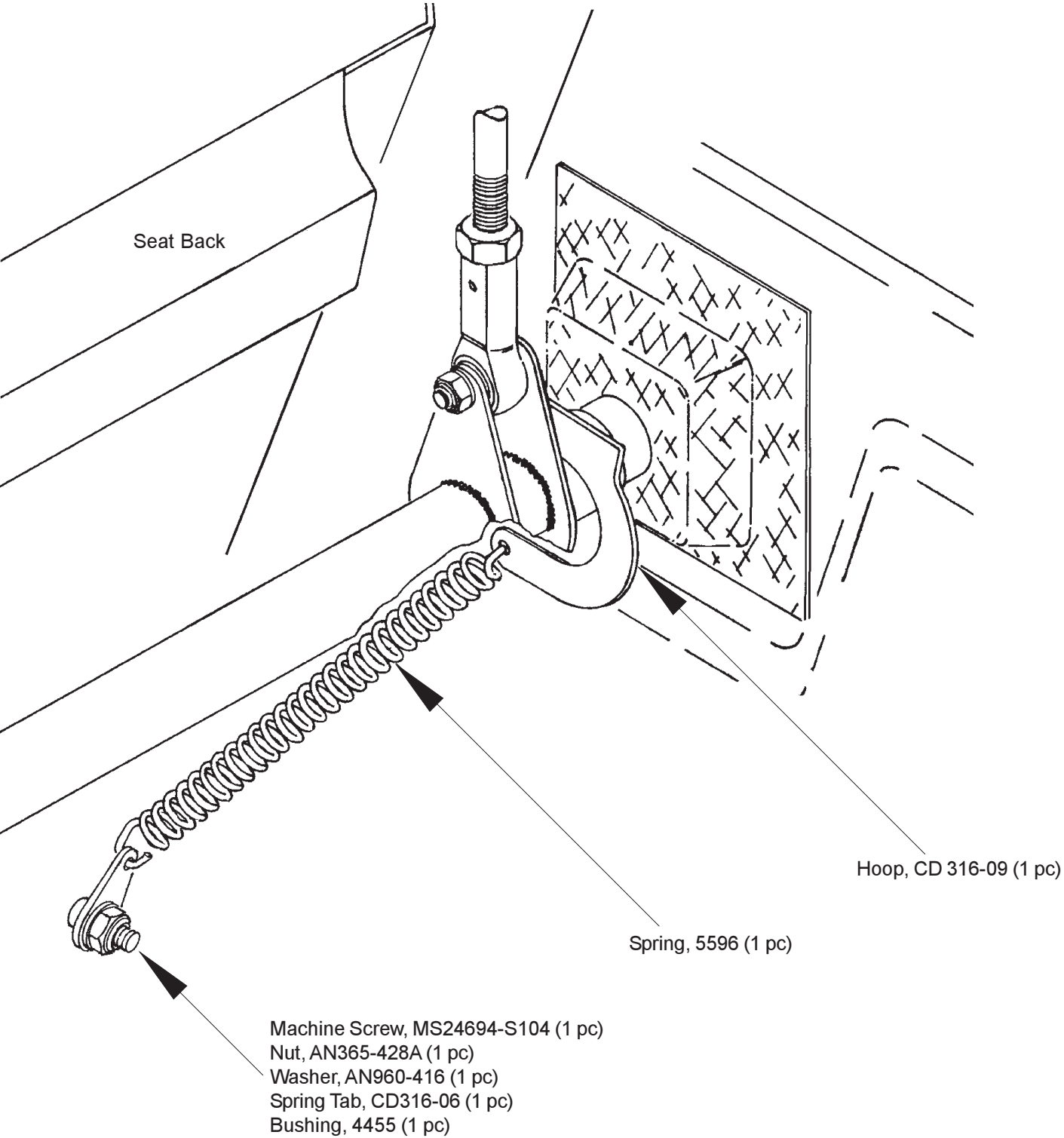


**A 16.** Level the Canopy handle by setting this surface horizontal.

**A 17.** Drill the canopy handle using the holes in the torque tube as guide.

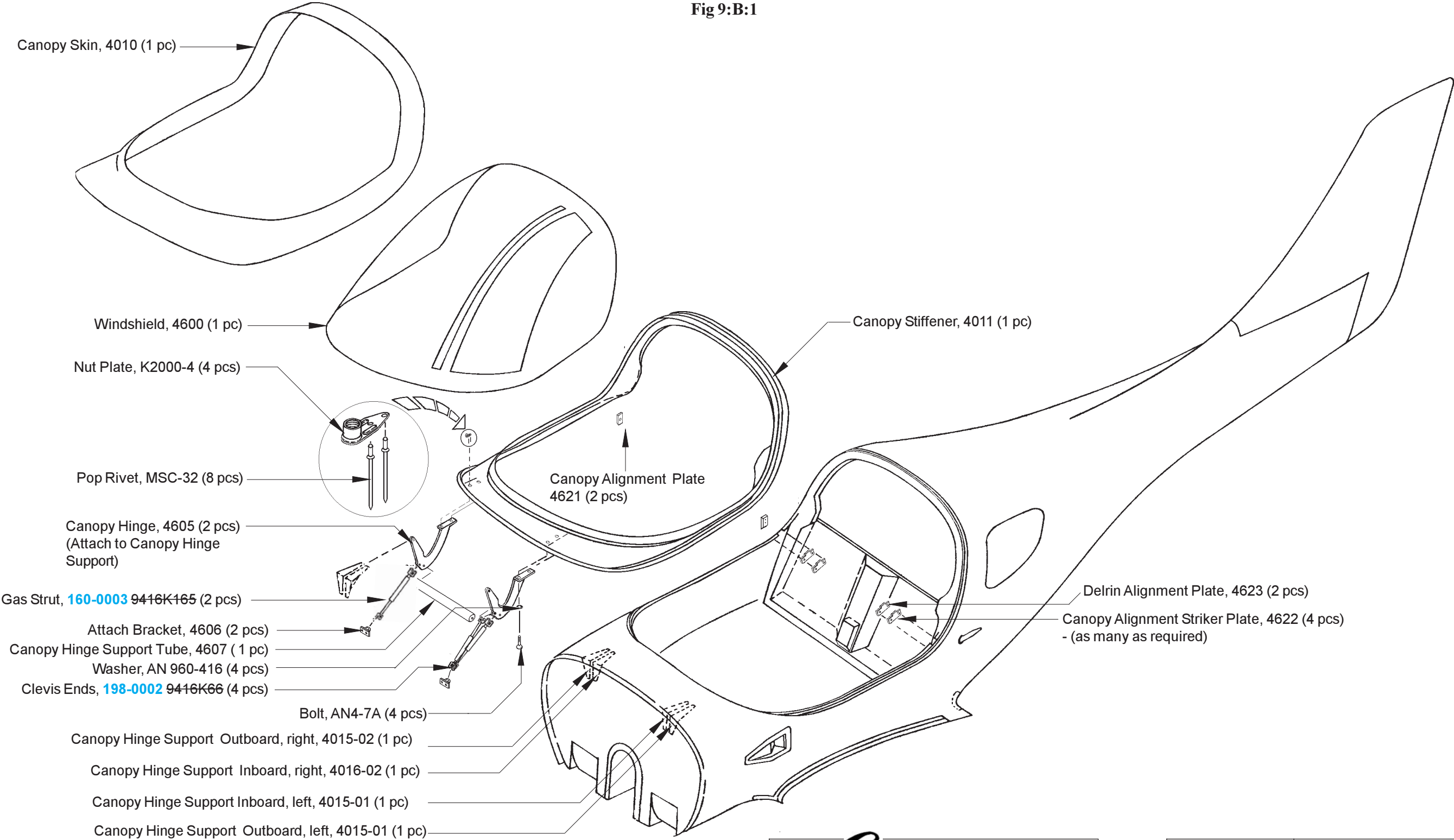


Canopy Over Center Spring Mechanism  
Fig. 9:A:6

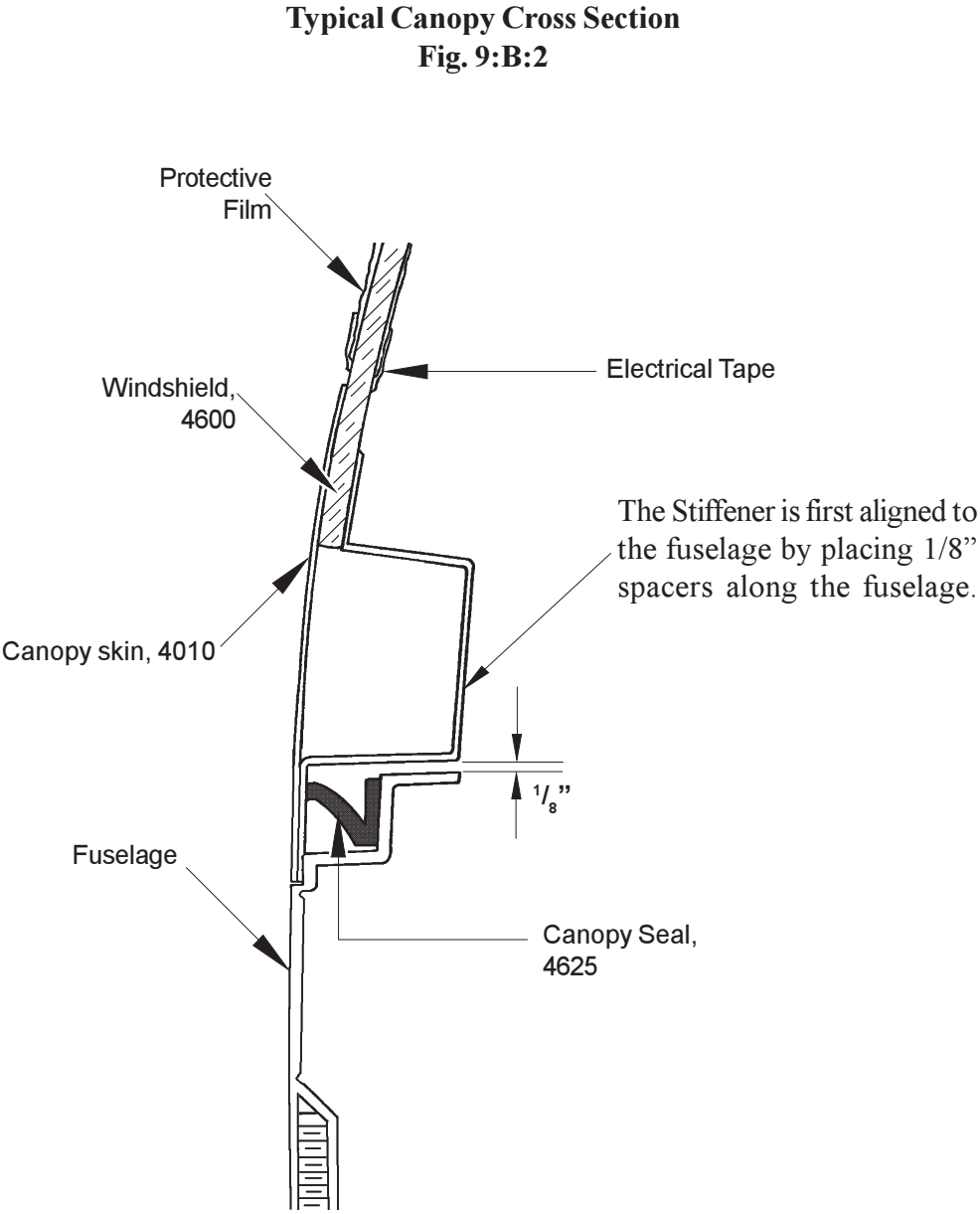


**B. Canopy Stiffener Alignment**

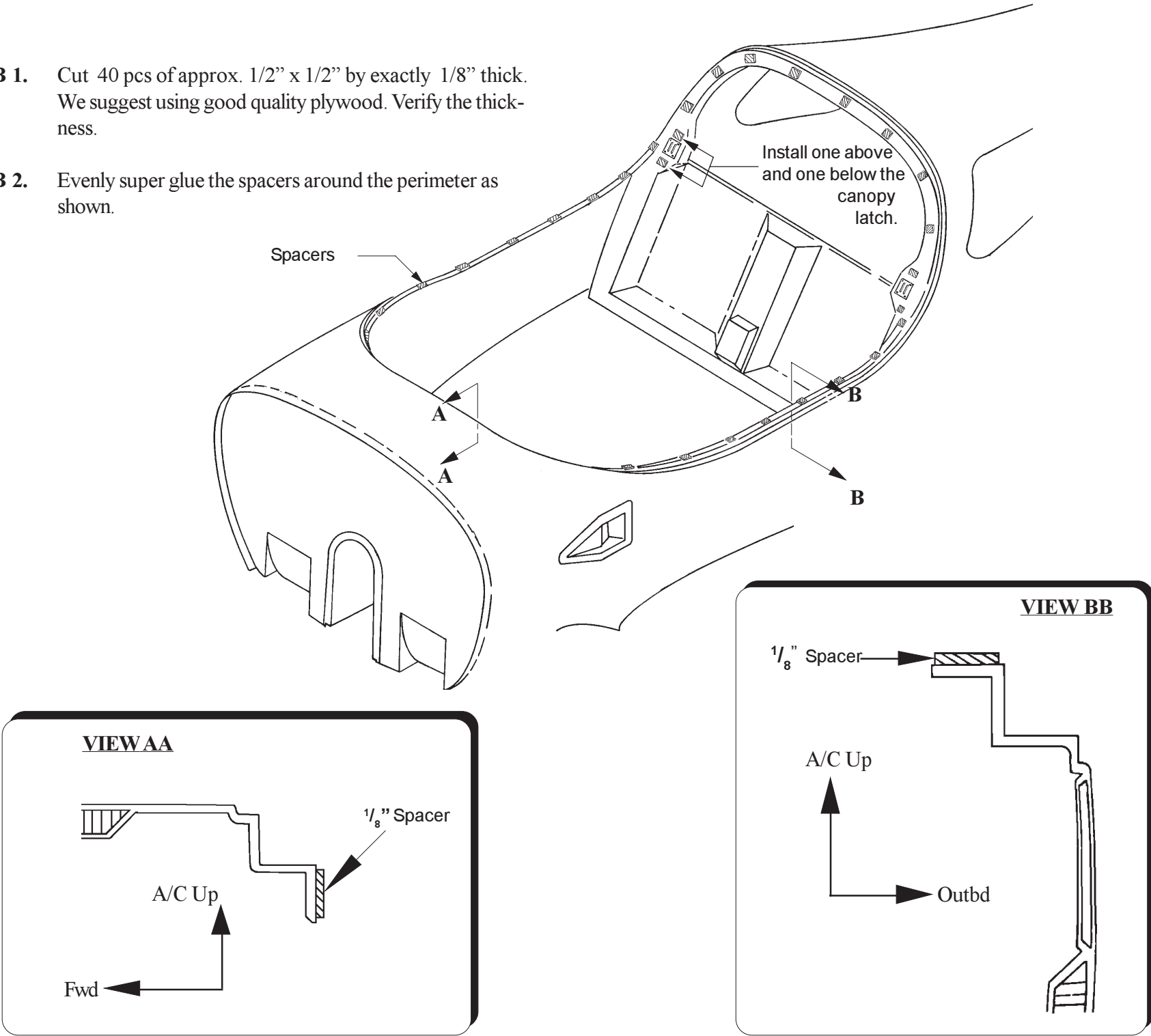
**Canopy Exploded View  
Fig 9:B:1**



To understand the canopy assembly, study figure 9:B:2



- B 1.** Cut 40 pcs of approx. 1/2" x 1/2" by exactly 1/8" thick. We suggest using good quality plywood. Verify the thickness.
- B 2.** Evenly super glue the spacers around the perimeter as shown.

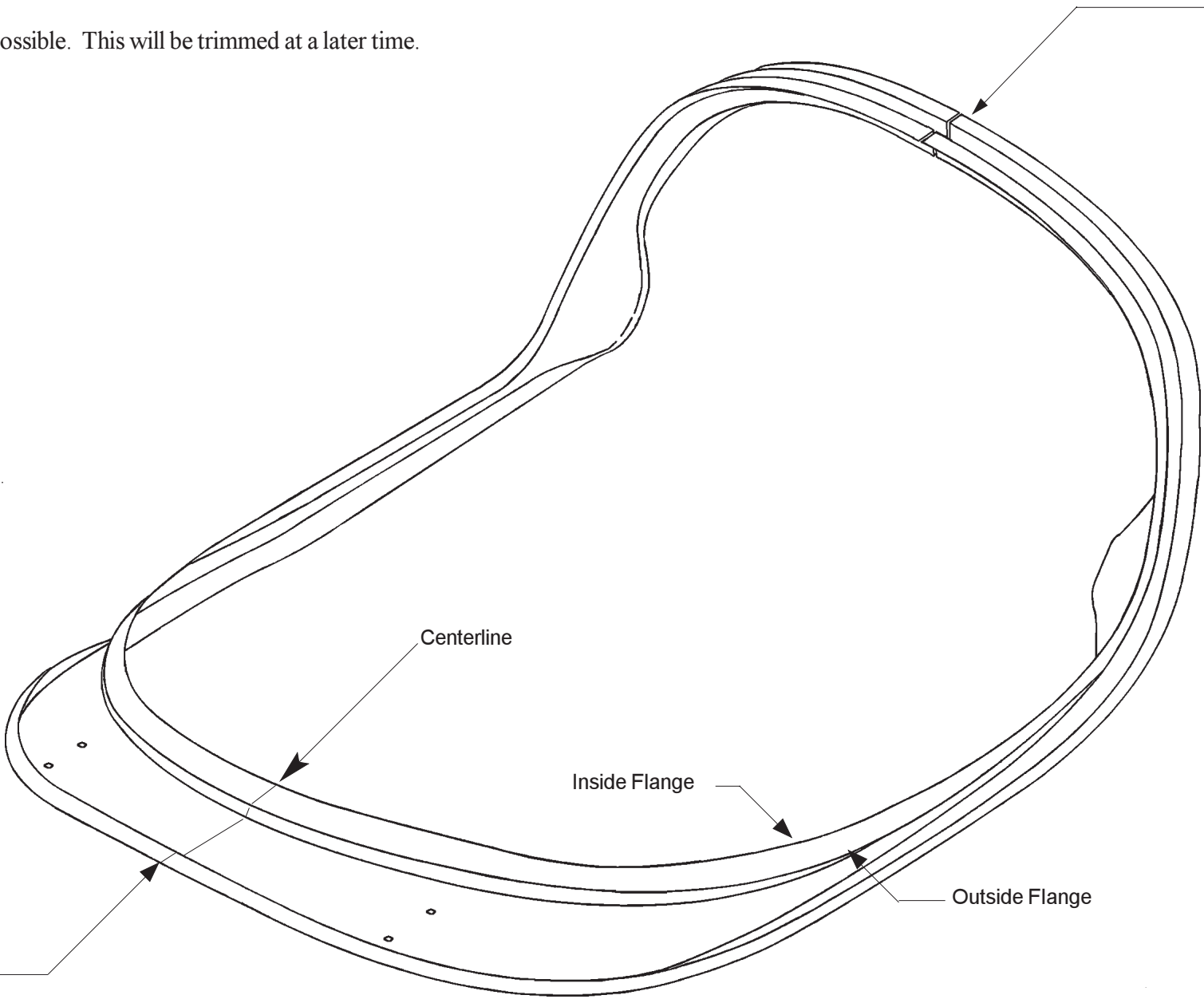


Canopy Stiffener Preparation  
Fig. 9:B:4

**B 3.** Prepare the canopy stiffener by removing the peel ply and lightly sanding all edges.

Note: Leave the outside flange as long as possible. This will be trimmed at a later time.

**B 4.** Make a fine cut along the center of the canopy stiffener. The width of this gap will be opened up as required in the next steps. The cut gives the stiffener the flexibility required to custom fit the fuselage.



**B 5.** Transfer the scribe line of the canopy stiffener from the mold side to the outside. This is for the initial alignment.



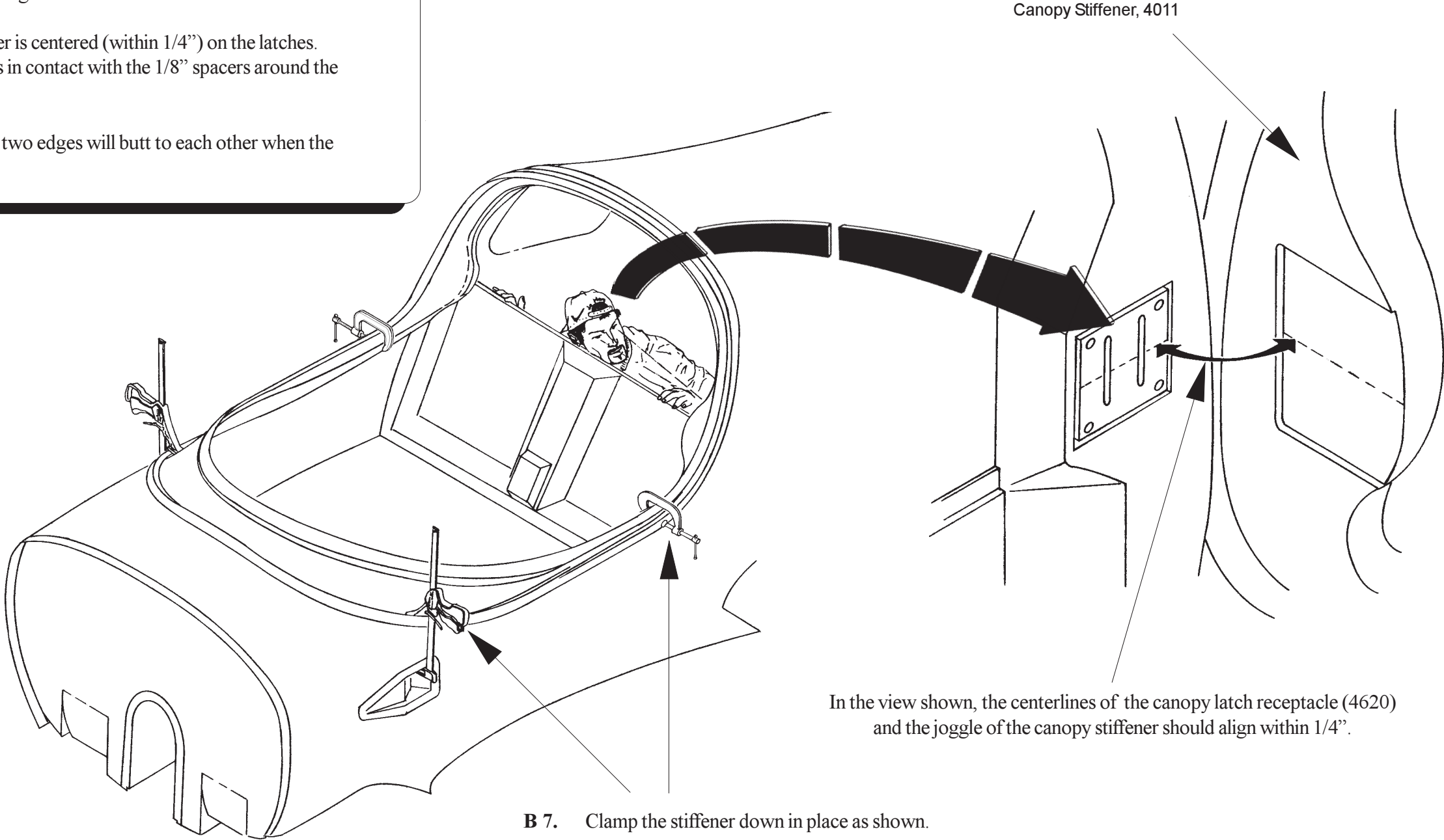
**Canopy Stiffener Alignment**  
**Fig. 9:B:5**

**B 6.** Align the canopy stiffener using the suggestions of figure 9:B:5.

Aligning the canopy stiffener:

- 1) Initially center the stiffener by aligning the center referenced to the aircraft center line.
- 2) Verify that the joggle of the stiffener is centered (within 1/4") on the latches.
- 3) Visually inspect that the stiffener is in contact with the 1/8" spacers around the perimeter.

Increase cut width as required. Ideally the two edges will butt to each other when the canopy is aligned.

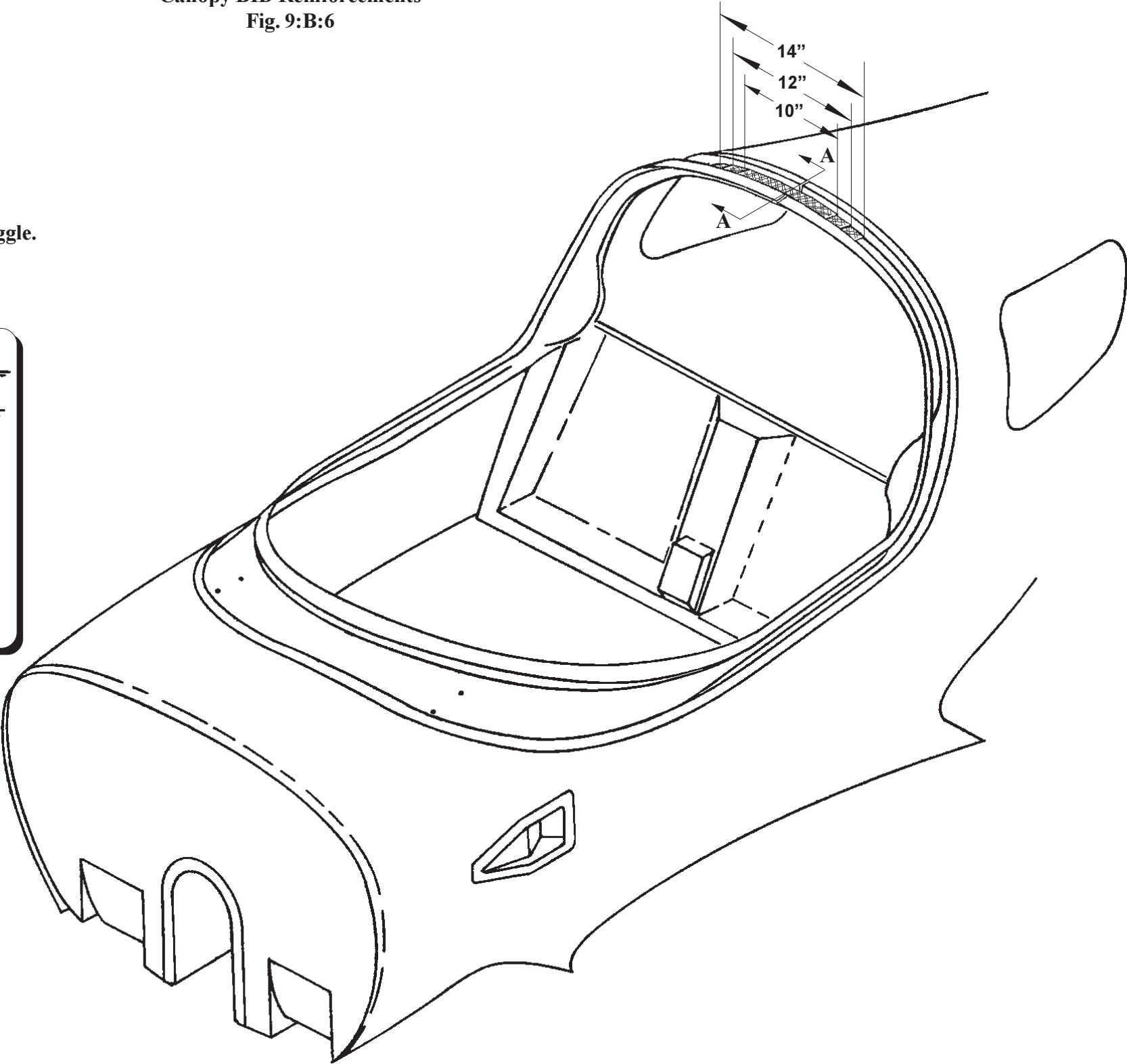
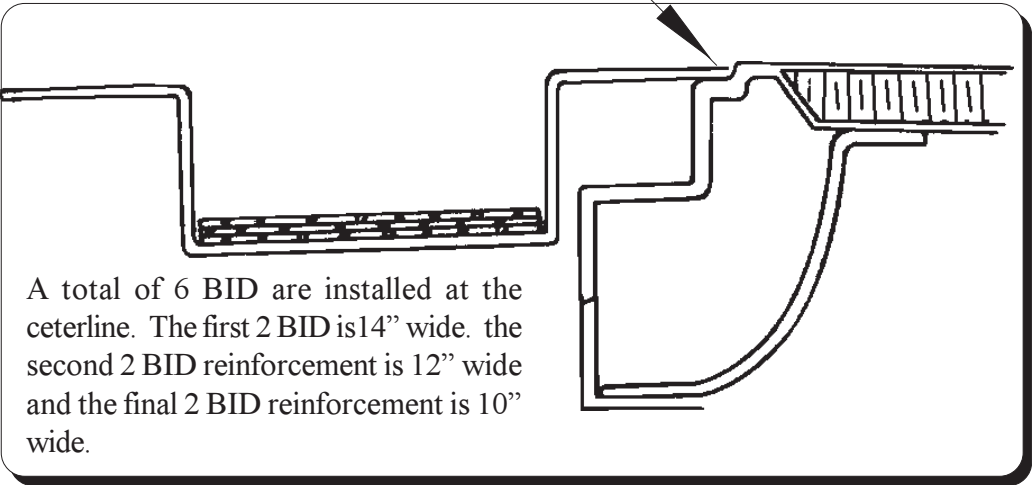


**B 7.** Clamp the stiffener down in place as shown.

Canopy BID Reinforcements  
Fig. 9:B:6

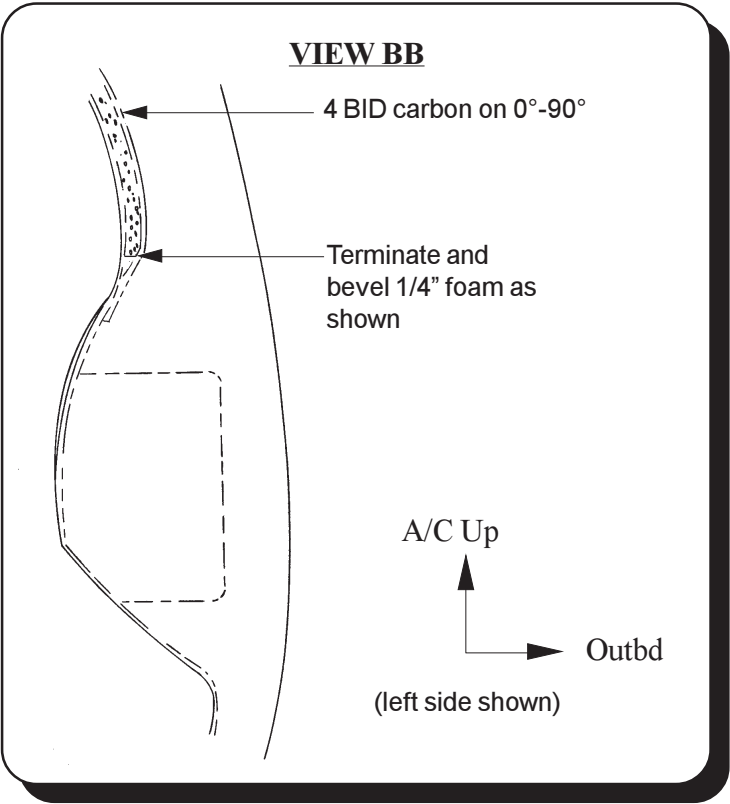
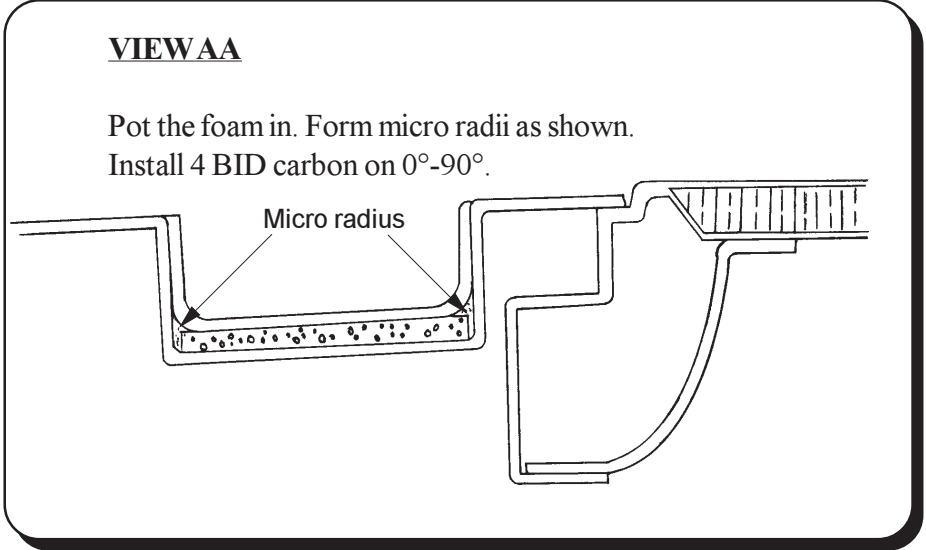
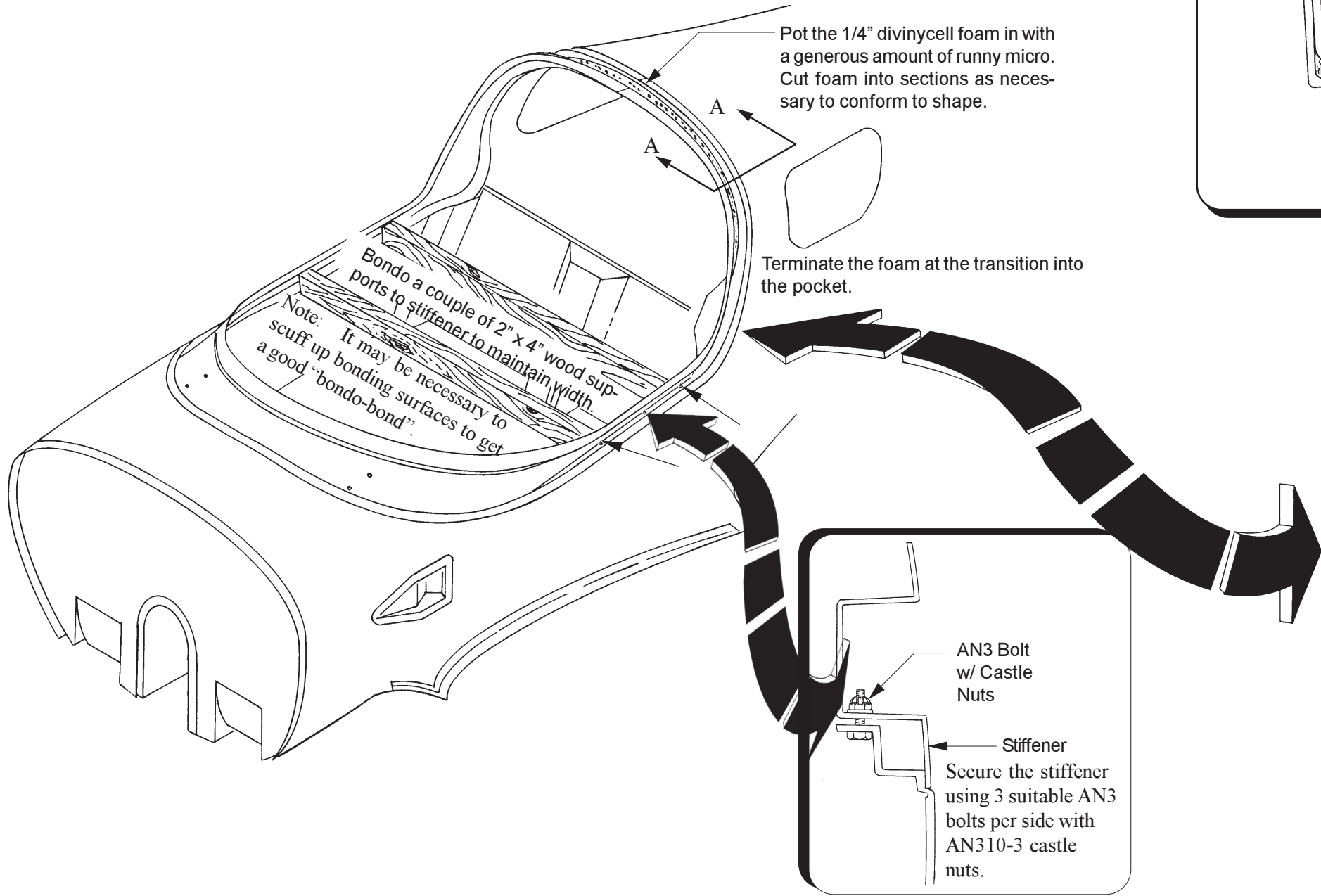
**TYPICAL CROSS SECTION AA**

**IMPORTANT:**  
Prior to installing the BID ensure that the stiffener is firmly in its joggle.  
Use any combination of weights, clamps, clecoes as necessary.



The canopy stiffener will now be custom fit to the fuselage. Once BID is secured loosen screws up and inspect the fit. Without applying any force to the stiffener, it should naturally rest on the 1/8" spacers.

Canopy BID Reinforcements  
Fig. 9:B:7



# Trimming Canopy Skin Fig. 9:B:8

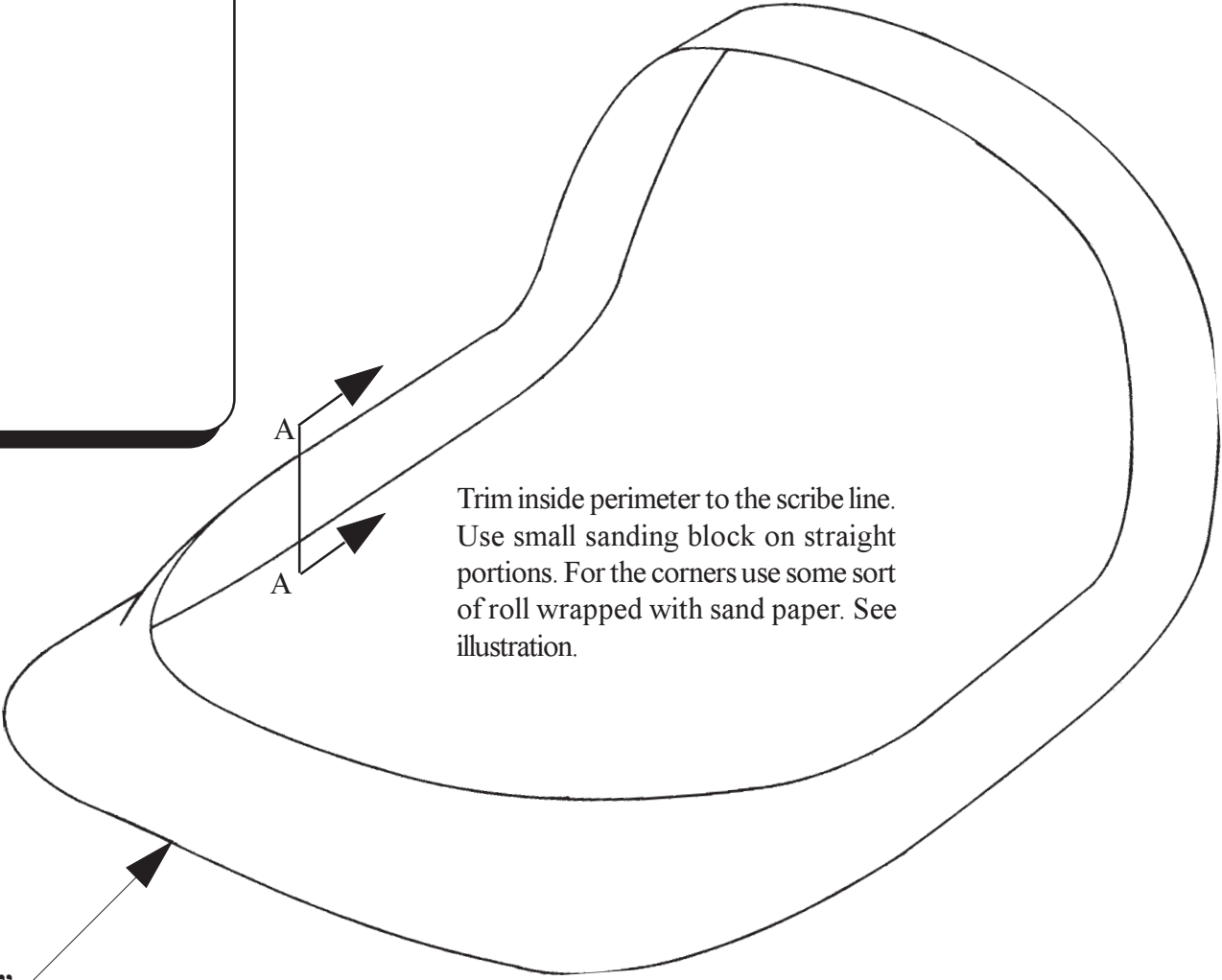
## VIEW AA

Bevel window cutout on the outer edges for a smoother fit.

Sand as shown  
(not to a sharp edge)

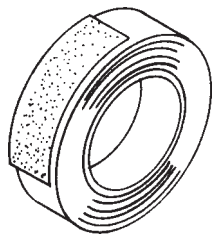
Outboard

Note: Trim to the scribe line and final sand before beveling.



Trim inside perimeter to the scribe line. Use small sanding block on straight portions. For the corners use some sort of roll wrapped with sand paper. See illustration.

Leave the outside perimeter  $\frac{3}{16}$ " long for now.

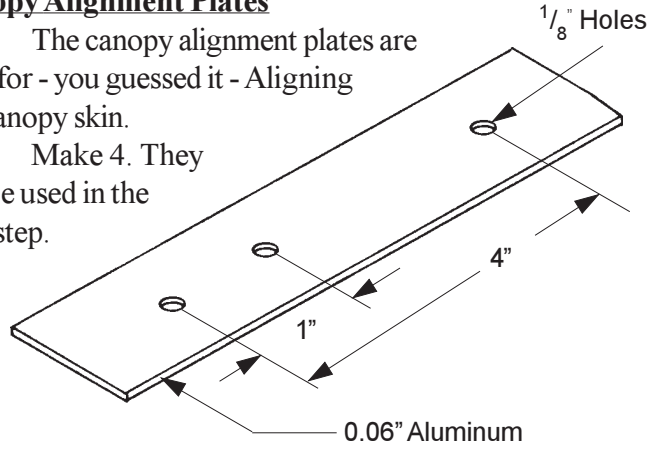


A roll of tape (Approx. 5" dia.) with stickback sand paper is a great tool for sanding the corners.

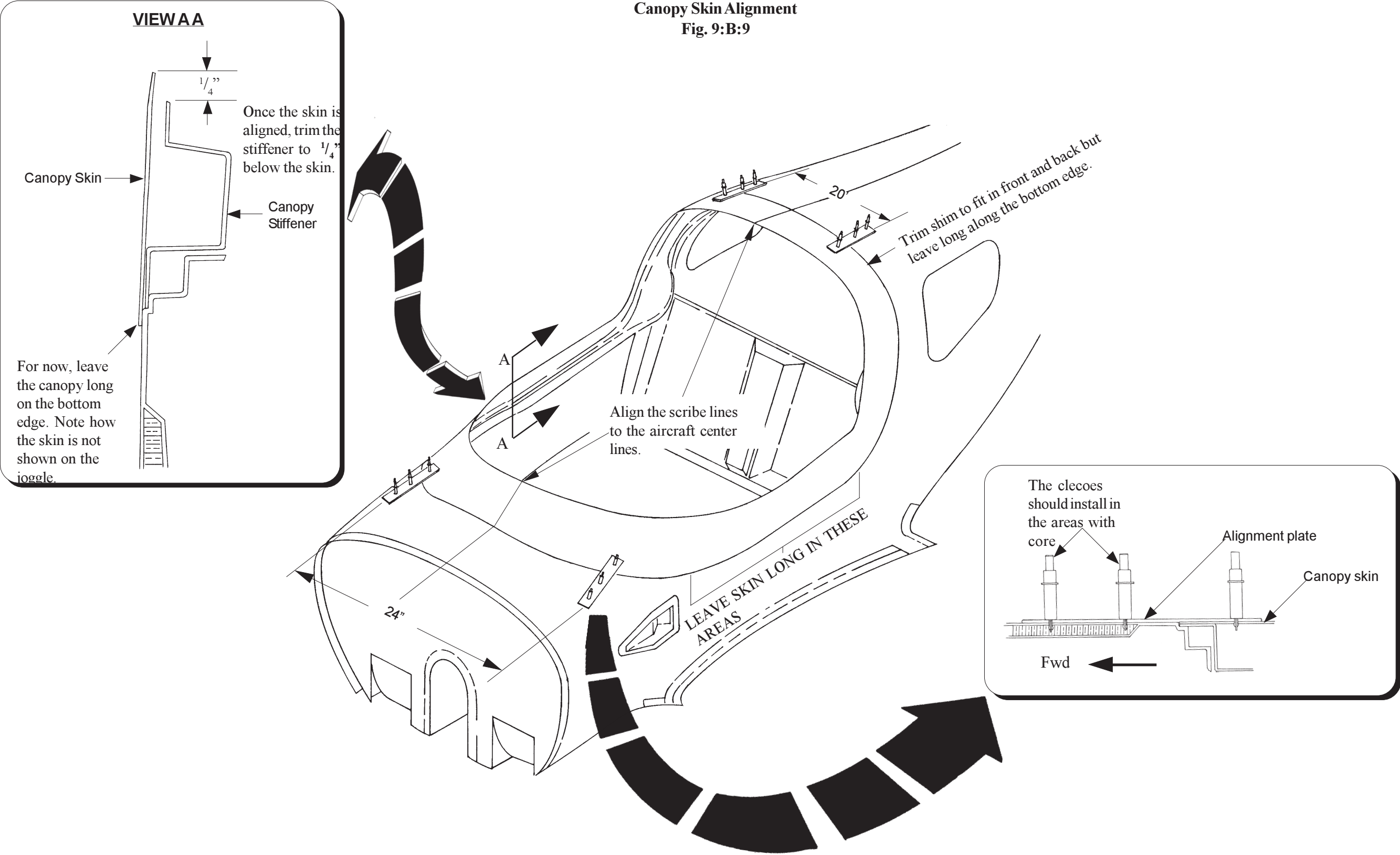
## Canopy Alignment Plates

The canopy alignment plates are used for - you guessed it - Aligning the canopy skin.

Make 4. They will be used in the next step.



Canopy Skin Alignment  
Fig. 9:B:9

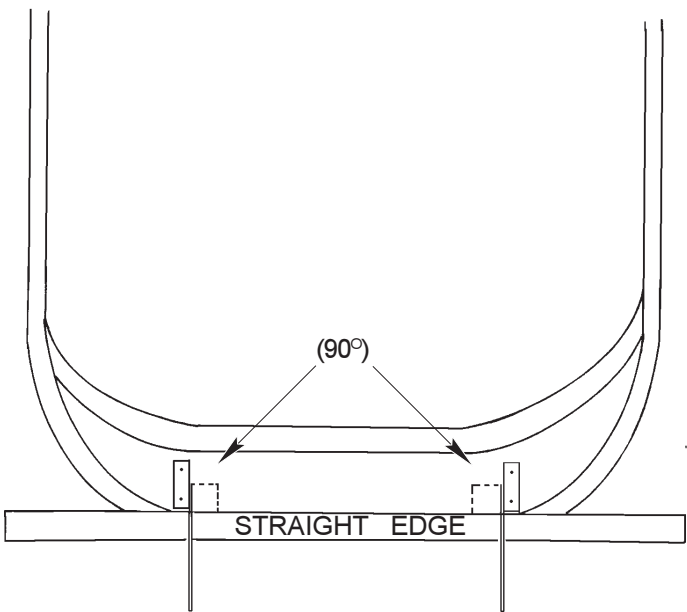




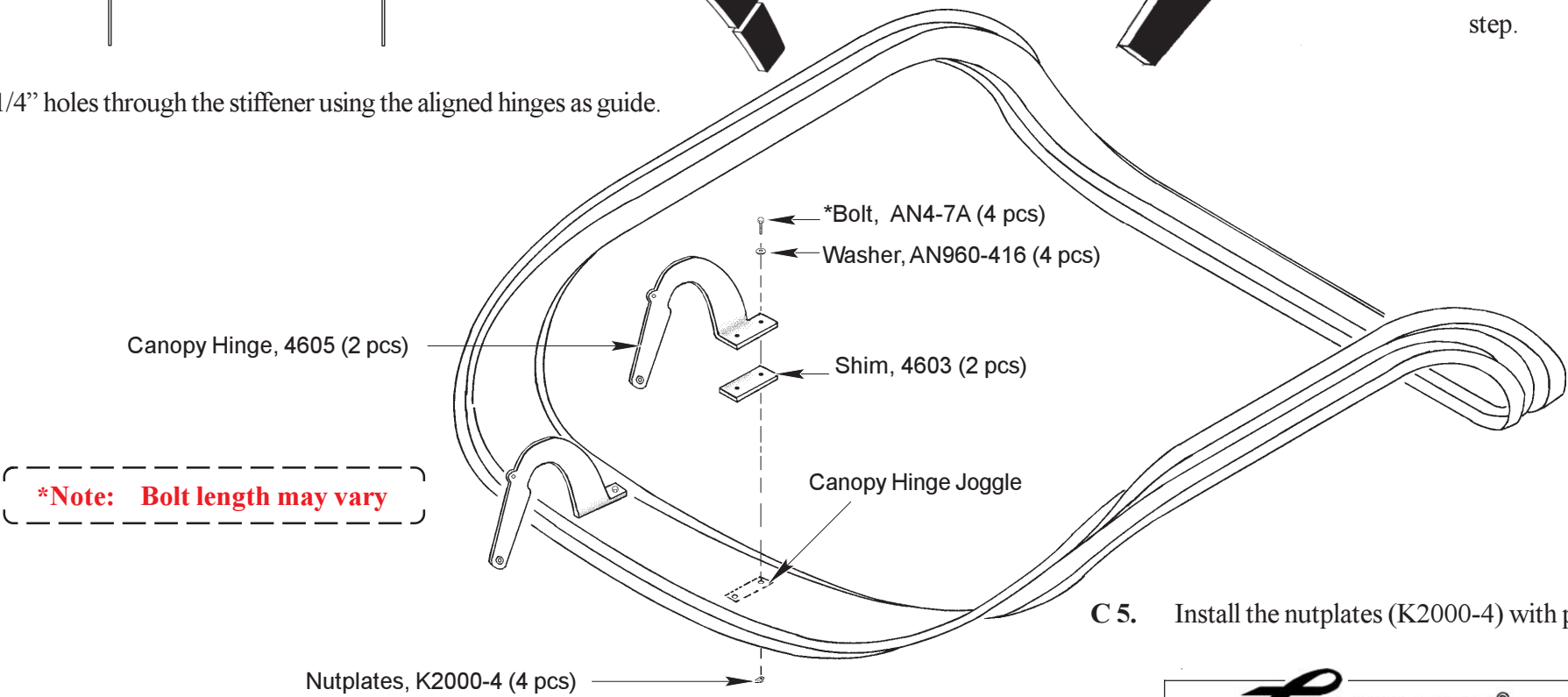
C. Canopy Hinge

Alignment

- C 1. Initially align the hinges by fitting them into the canopy hinge joggles.
- C 2. Check that the hinges are parallel by using a straight edge and a square.

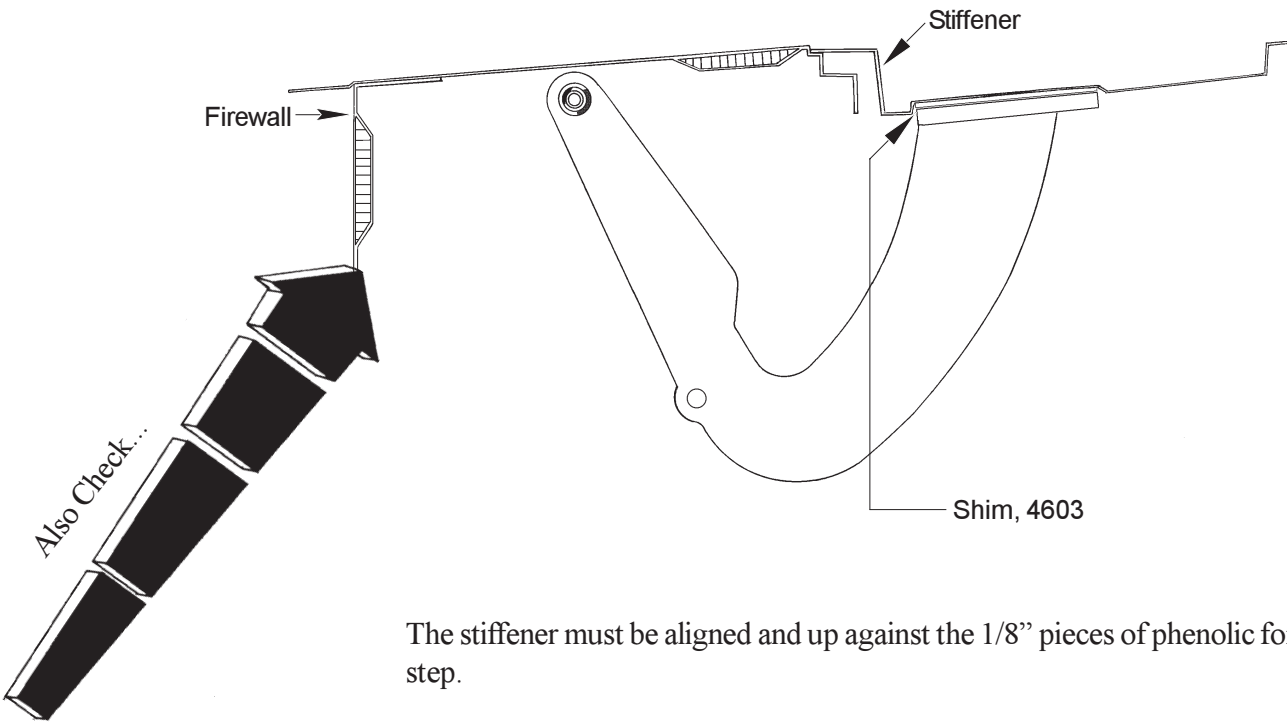


- C 3. Drill 1/4" holes through the stiffener using the aligned hinges as guide.



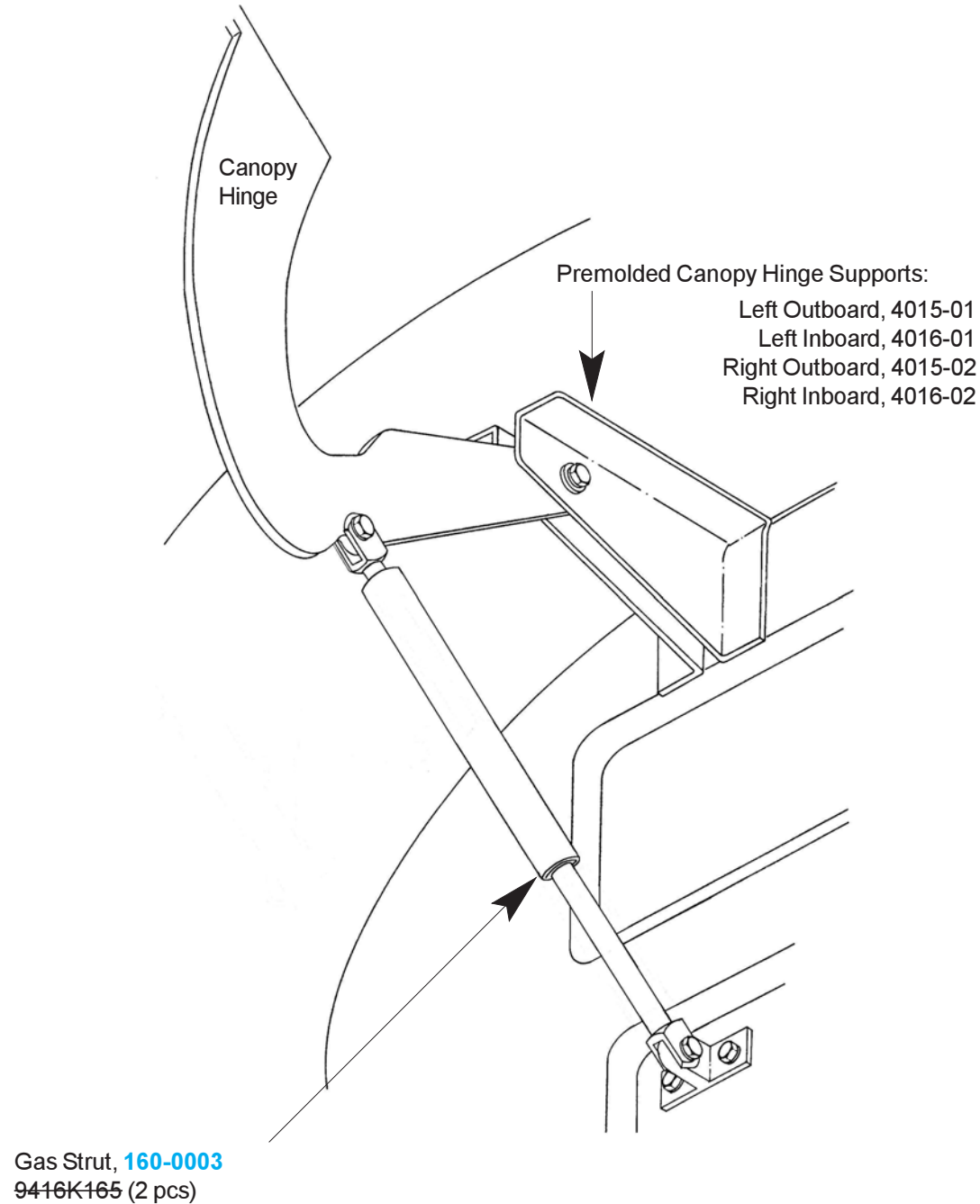
Canopy Hinge Installation  
Fig. 9:C:1

- C 4. For the initial installation of the canopy, the canopy hinge shim is used. This allows for adjustment later on. The purpose of the shim is to compensate for the force exerted by the gas struts. You will notice that the force of the gas struts tend to lift the canopy up and out of the joggle. Removing the shims allows you to compensate for the force of the gas struts. For now leave the shims in place.



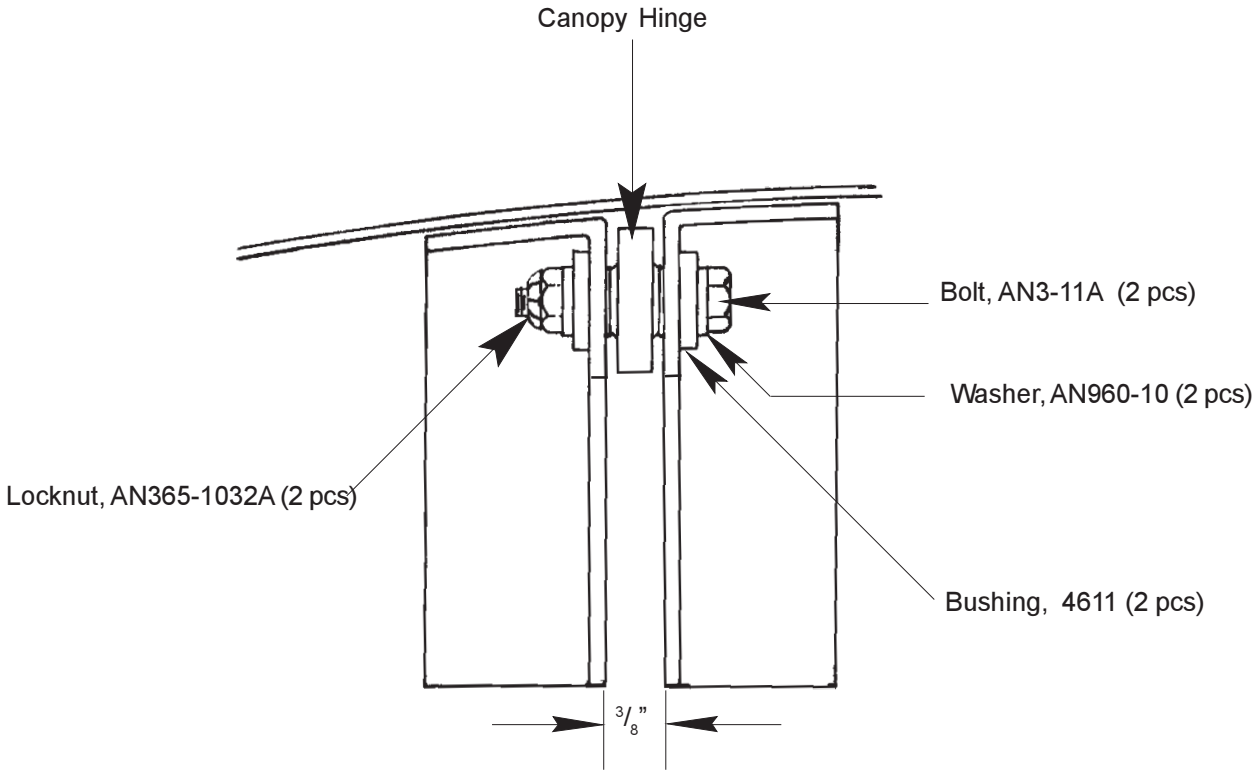
- C 5. Install the nutplates (K2000-4) with pop rivets (MSC-34).

Canopy Hinge Mounting  
(Assembled View)  
Fig. 9:C:2

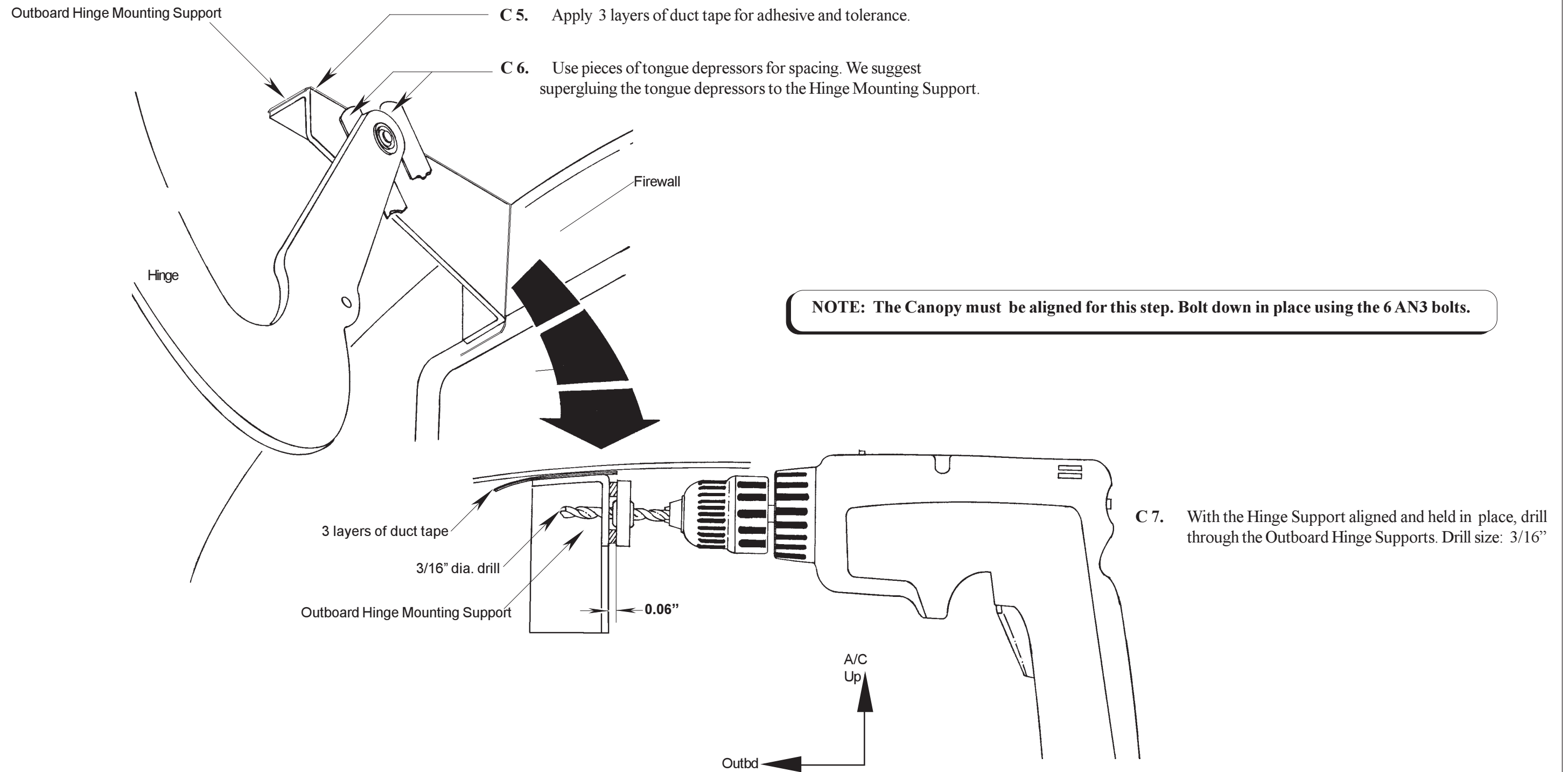


To explain the next few steps, we decided to show the finished installation first.

Note how the Canopy hinge mounts between the two premolded Canopy Hinge Supports.

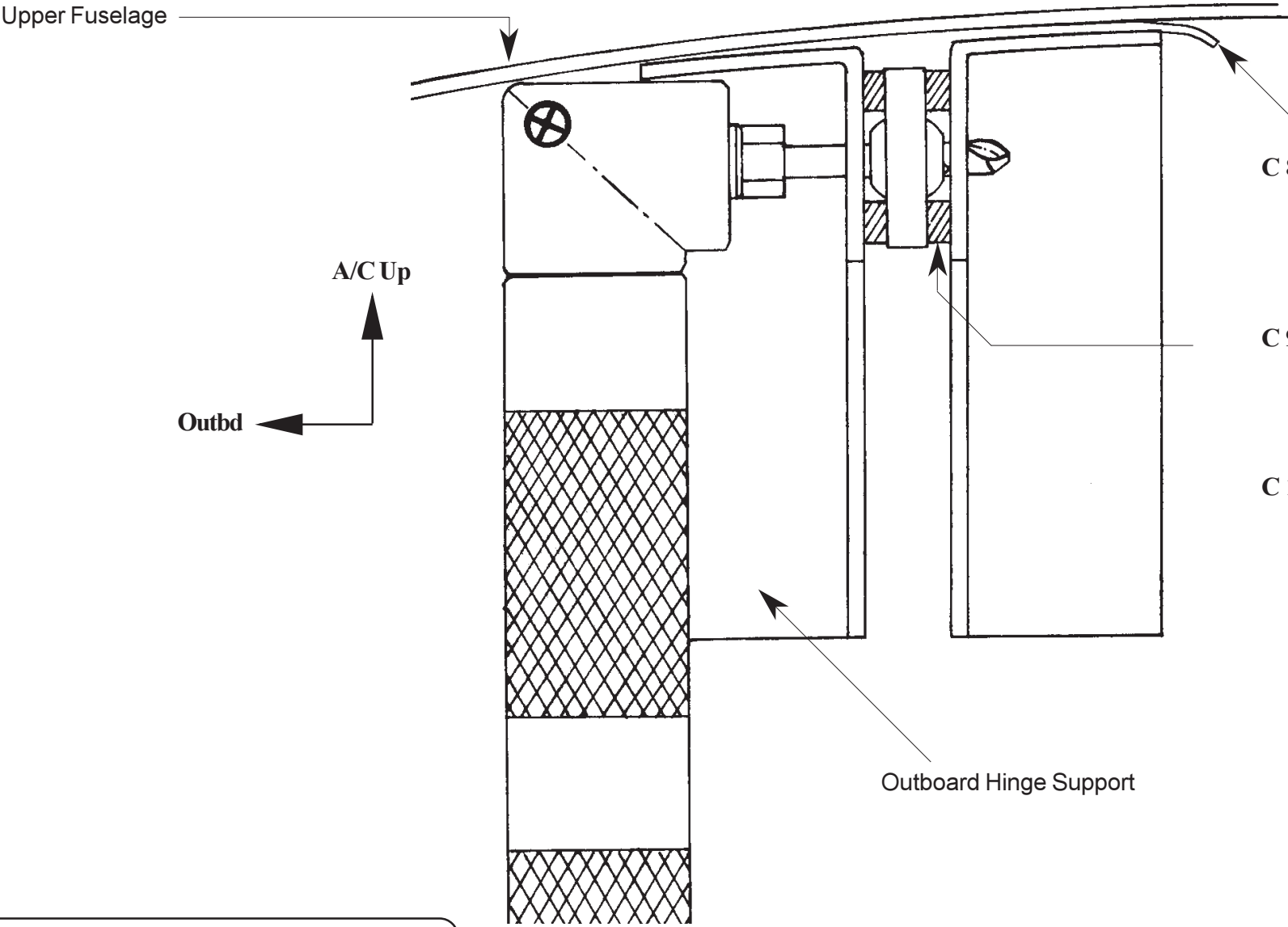


**Canopy Hinge Mounting Support Alignment**  
**Fig. 9:C:3**



Canopy Hinge Mounting Support Alignment  
Fig. 9:C:4

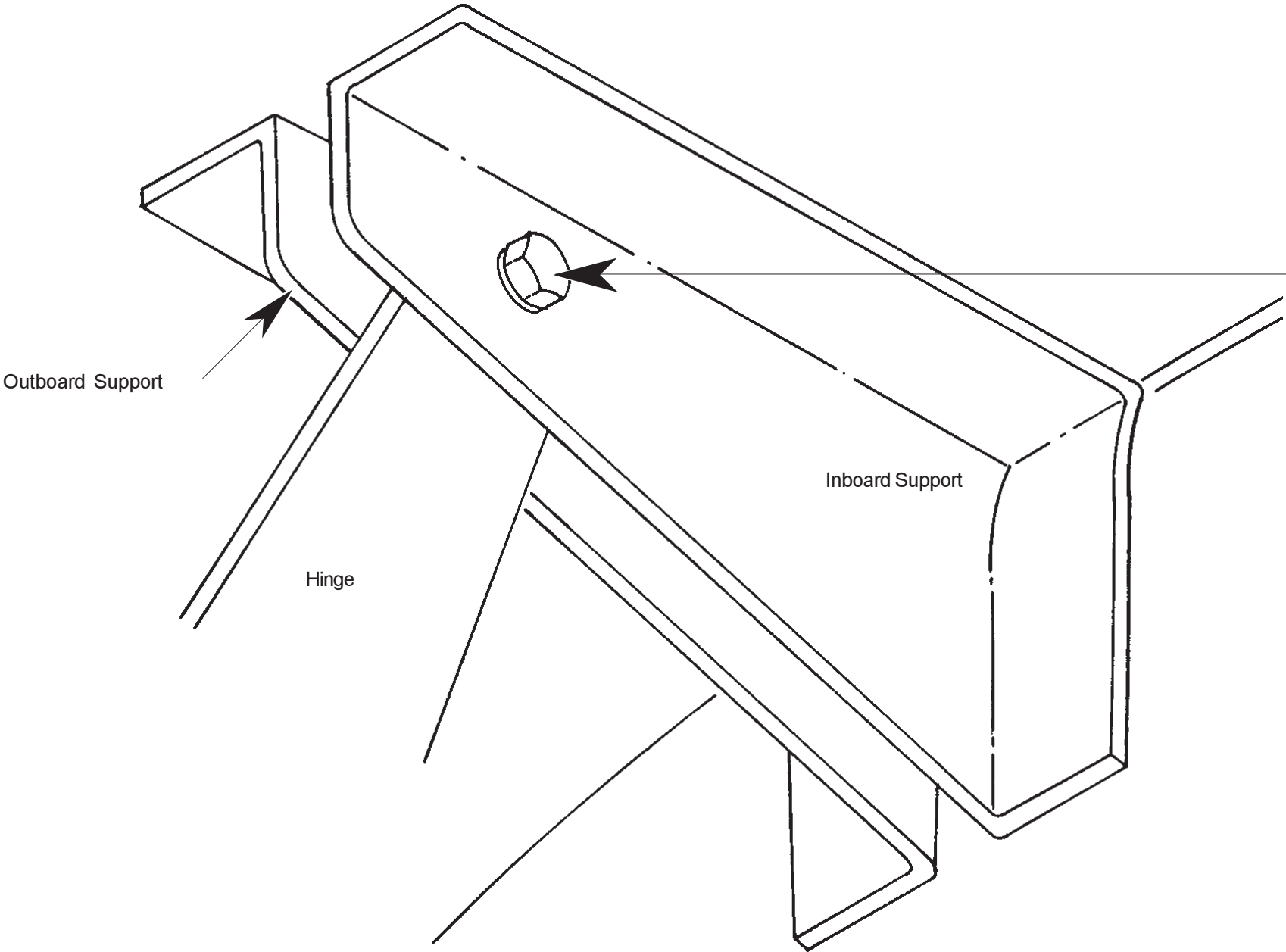
( LEFT SIDE SHOWN )



- C 8. Apply 3 layers of duct tape to the Inboard Hinge Support. The duct tape should be between the Support and Upper Fuselage, and between the Support and the firewall (just like the Outboard Support).
- C 9. Install the 0.06" spacers.
- C 10. With the Inboard Hinge Support aligned and held in place, drill through the Inboard Hinge Support. Use a Tight angle drill.

**NOTE:** You may not have enough room to position the drill as shown. Second option is to clamp everything together, remove the canopy and drill. Another method is to accurately mark the Inboard Hinge Support, remove and end drill.

Bonding Canopy Hinge Supports  
Fig. 9:C:5



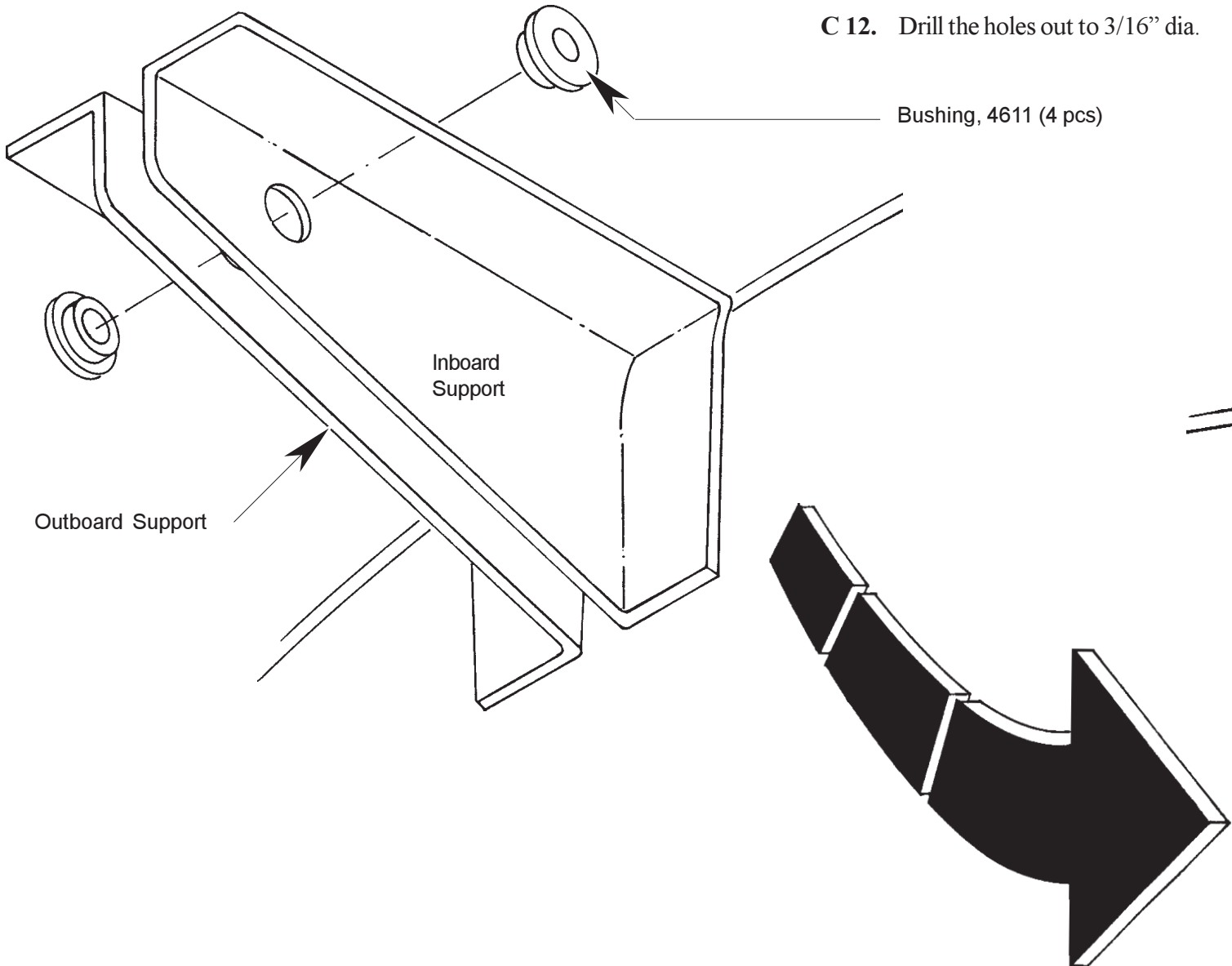
C 11. Bond the Hinge Supports.

**IMPORTANT:**

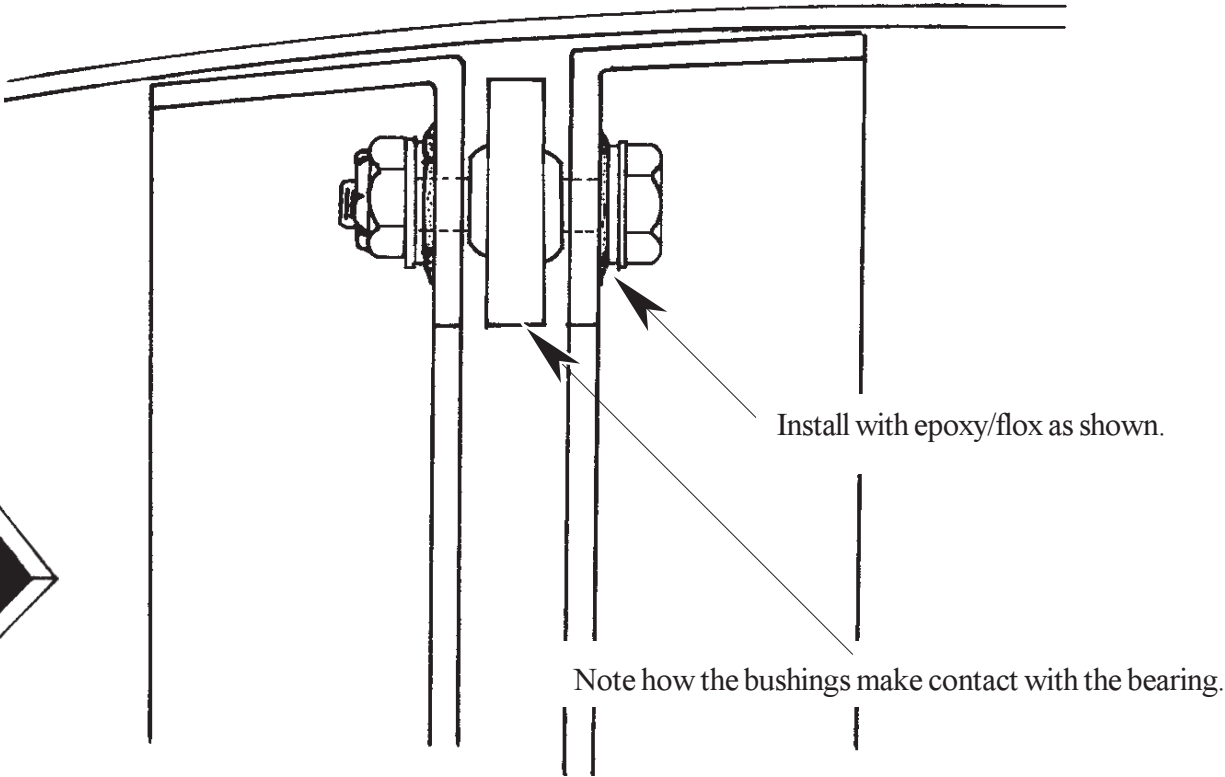
- 1) The 0.06” spacers must be in place.
- 2) The whole assembly must be clamped together - we suggest using a bolt.



Canopy Hinge Bushing Installation  
Fig. 9:C:6

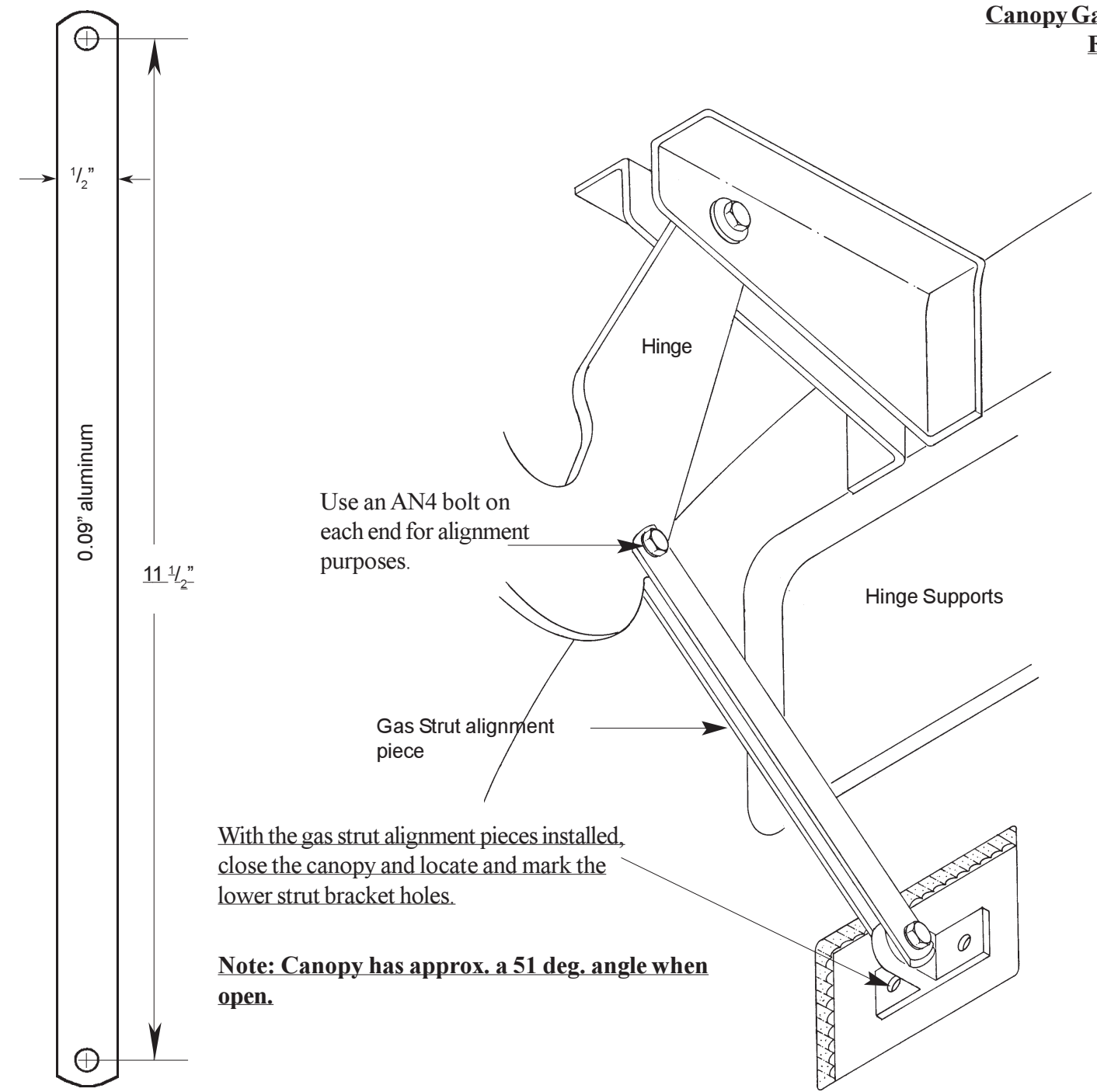


**C 13.** Install the Bushings.



**D. Gas Strut**

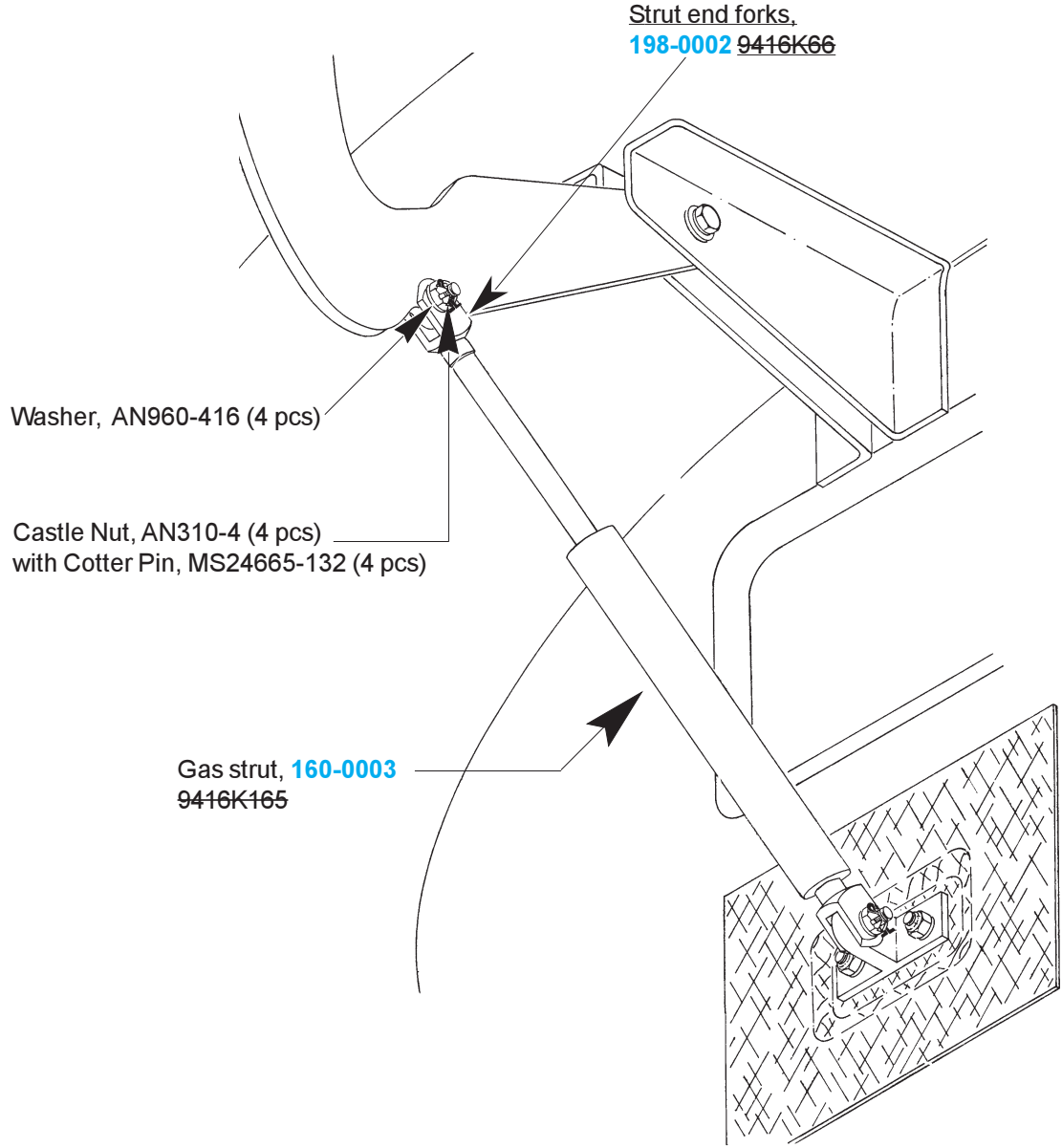
**D 1.** Make the gas strut alignment pieces as shown. The length is identical to the compressed length of the gas strut plus 1/8" for tolerance.



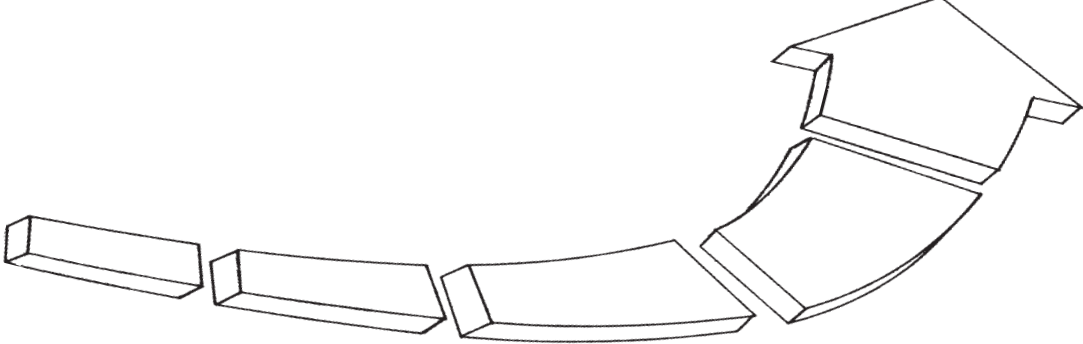
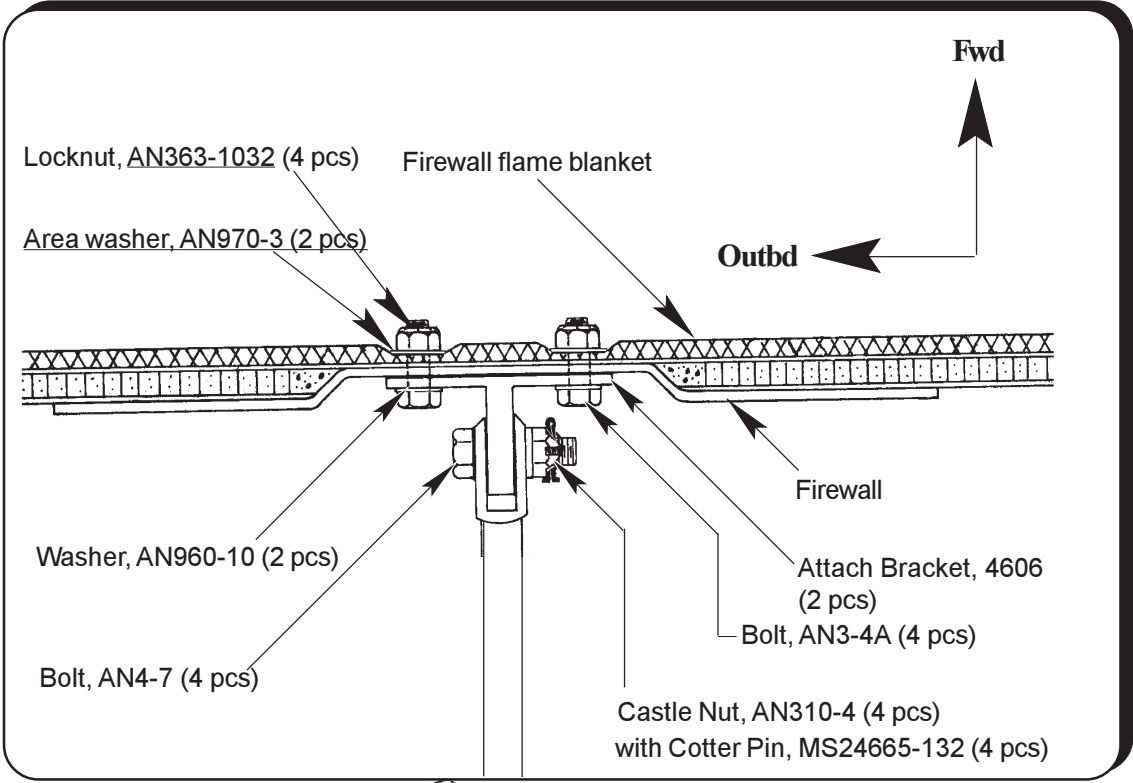
**Canopy Gas Strut Installation**  
**Fig. 9:D:1**

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DUE TO UPDATE REV. 2/06-30-04**

**Canopy Gas Strut Completion**  
**Fig. 9:D:2**

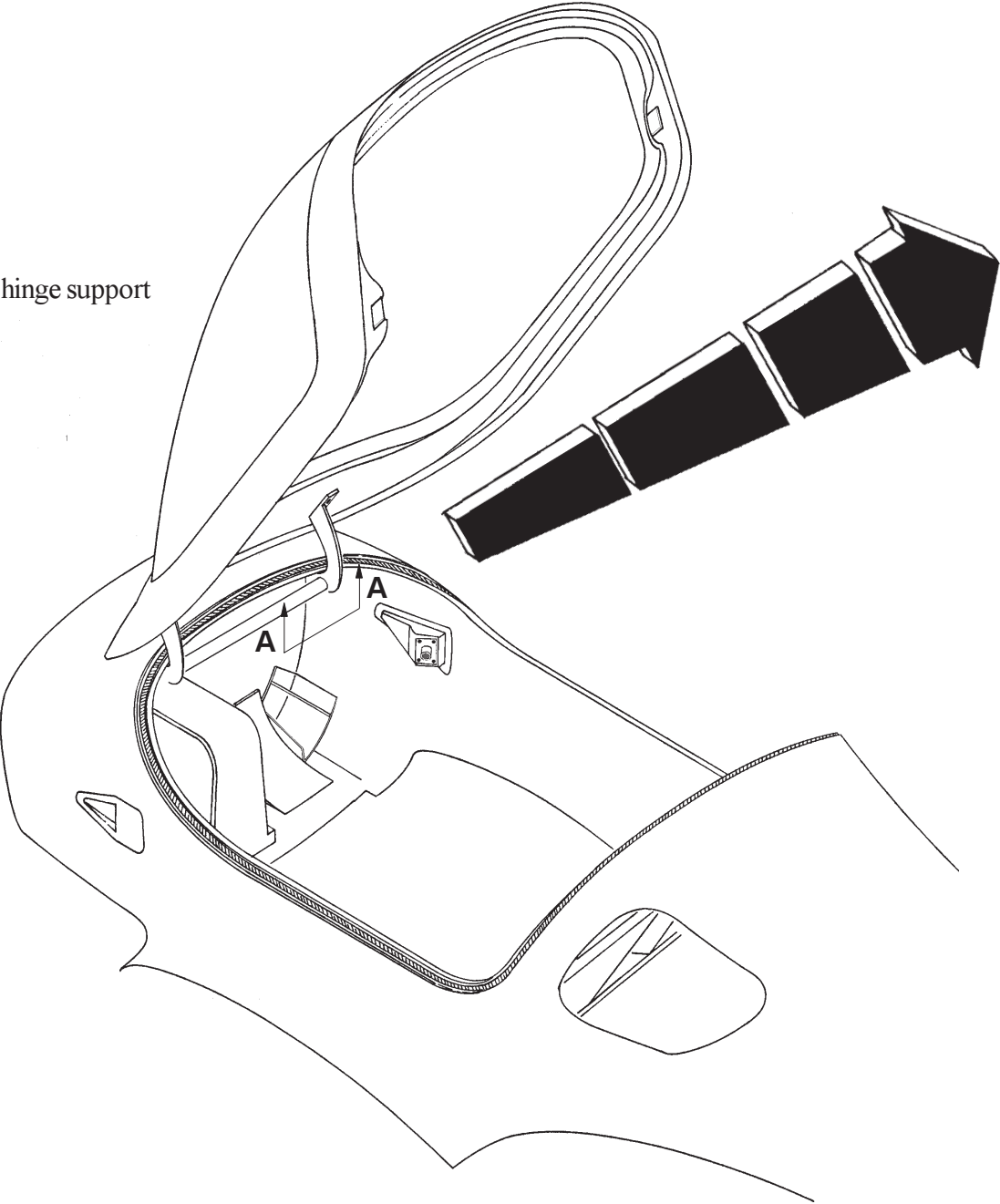


**LEFT SIDE SHOWN**

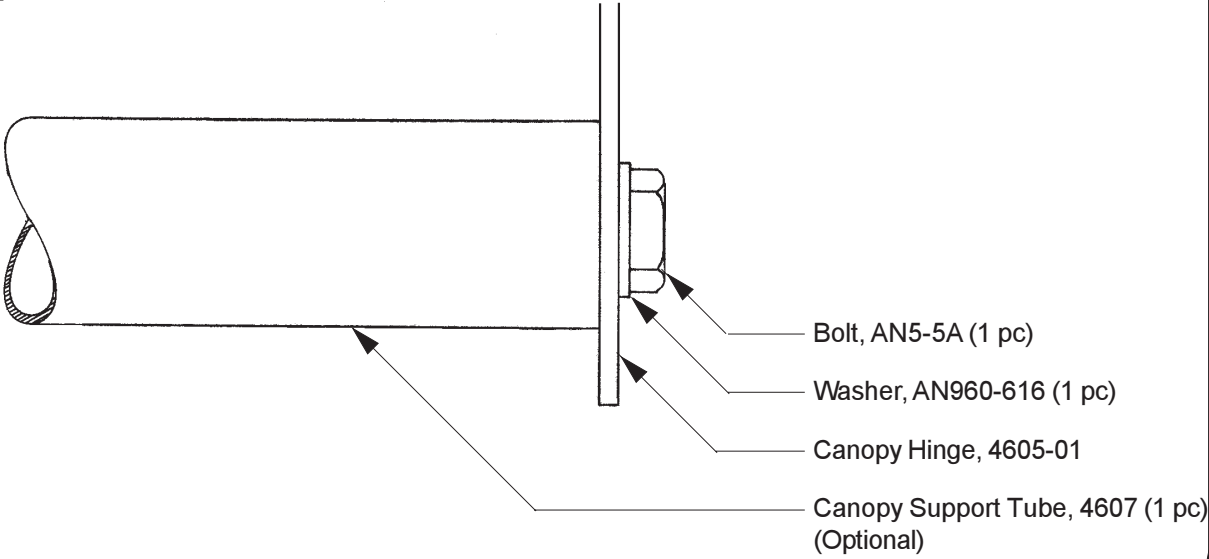


Canopy Hinge Support  
Fig. 9:D:3

Install the canopy hinge support  
as shown:



View A A

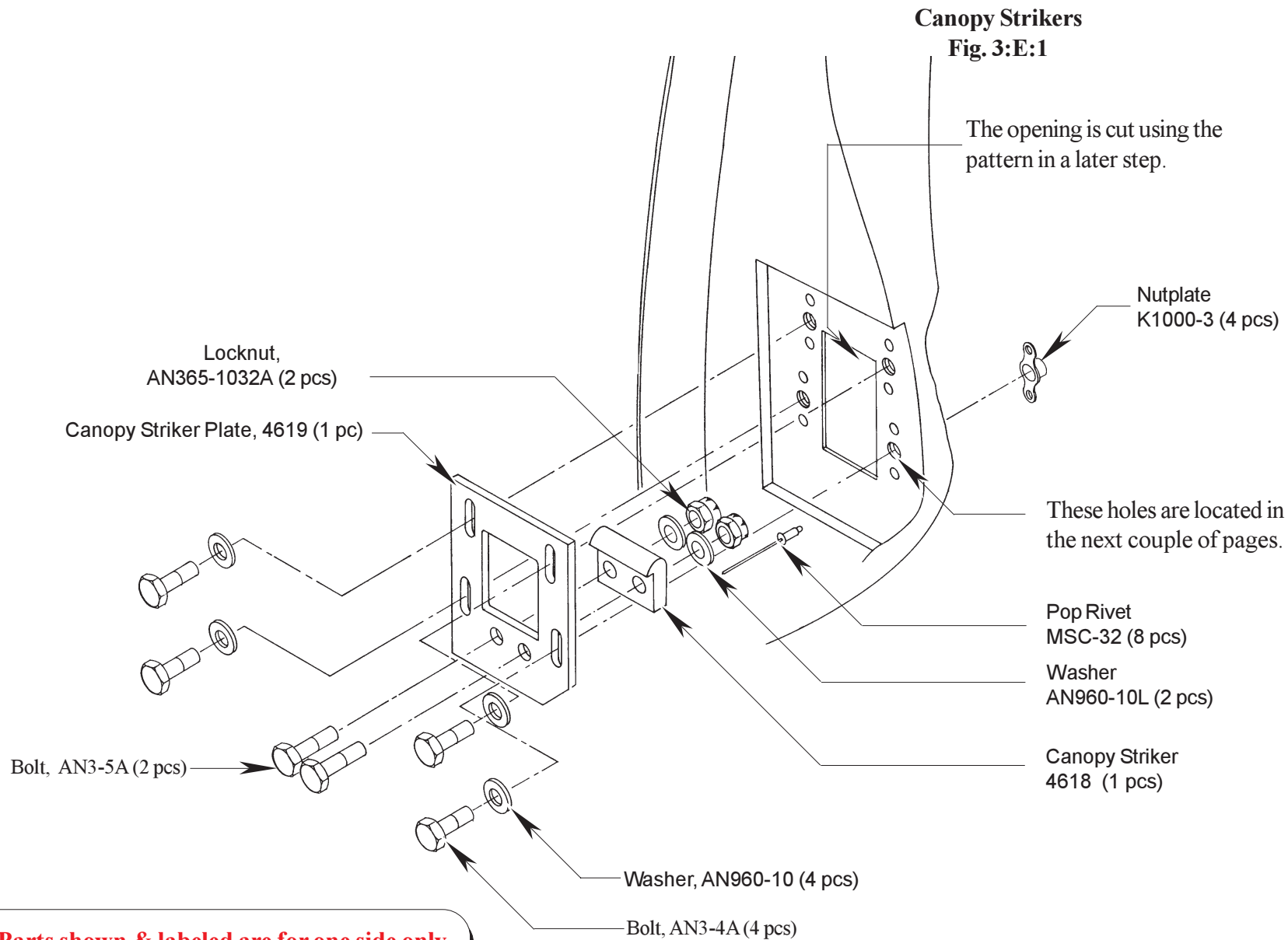


**NOTE:** The canopy hinge support increases the stiffness of the canopy hinges.  
However, the tube may cause clearance problems with the radios and  
other equipment.

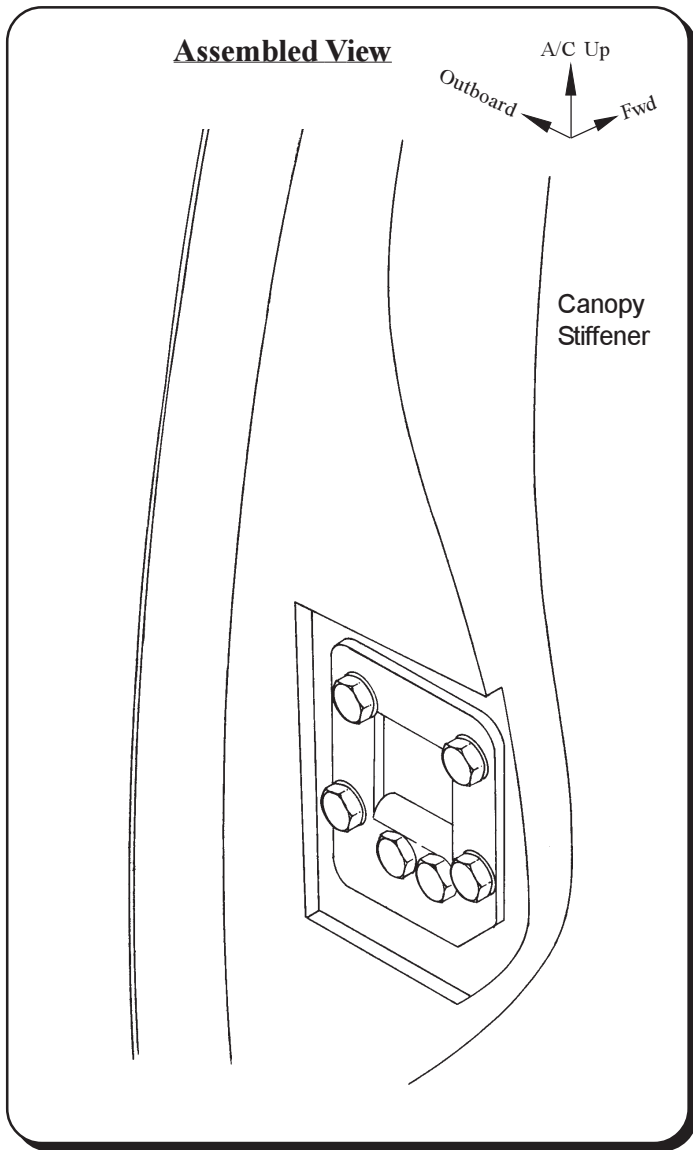
## E. Canopy Stricker Metchanism

In section A you installed the canopy latch mechanism in the fuselage. When closed the canopy hooks move out of their slots and “grab” a catch in the canopy stiffener. The alignment of this catch is obviously critical to properly locking the canopy down. We will refer to this “catch” as the canopy striker mechanism.

We supply two parts used to properly align the canopy striker mechanism. The first is a screw that has a #40 hole drilled through the center. This is used to transfer a reference hole in the canopy stiffener by back drilling through the canopy latch receptacle. The second alignment tool is a drill template. The drill template serves two functions, the first

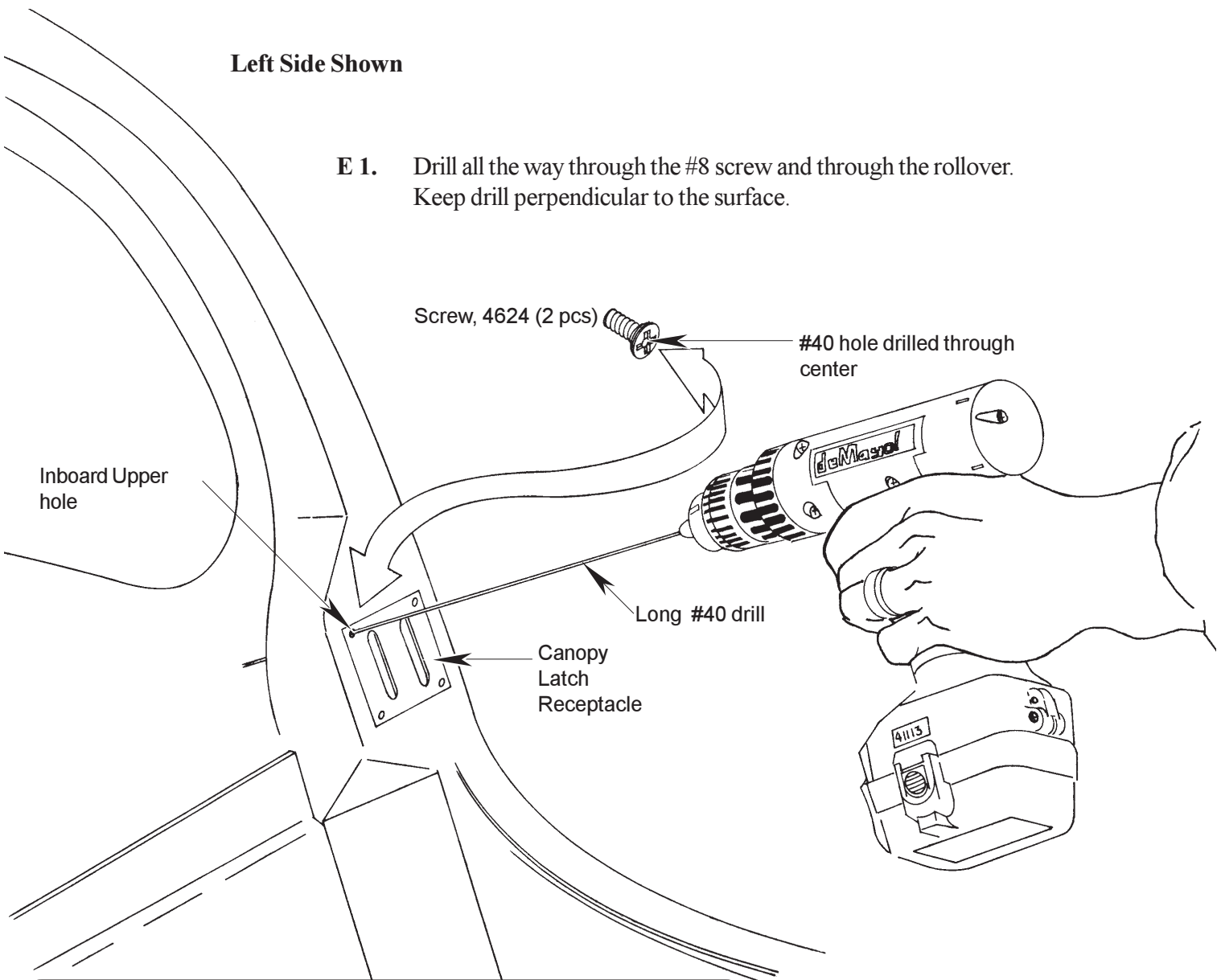


**Note: Parts shown & labeled are for one side only.**



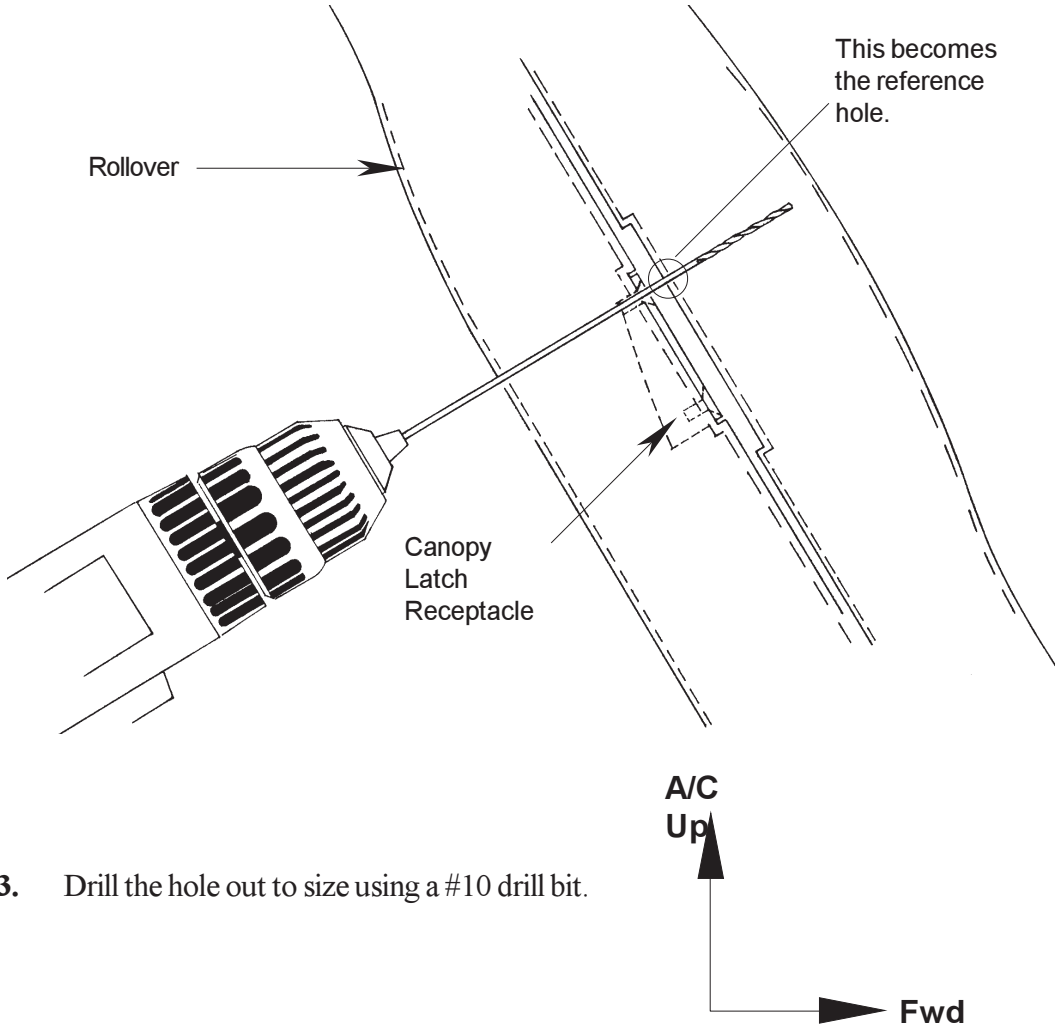


Canopy Stiffener Reference Hole  
Fig. 9:E:2



**Note:** Parts shown & labeled are for one side of the airplane only.

- E 2.** Drill through the backside of the rollover and into the Stiffener. Repeat process on the other side.

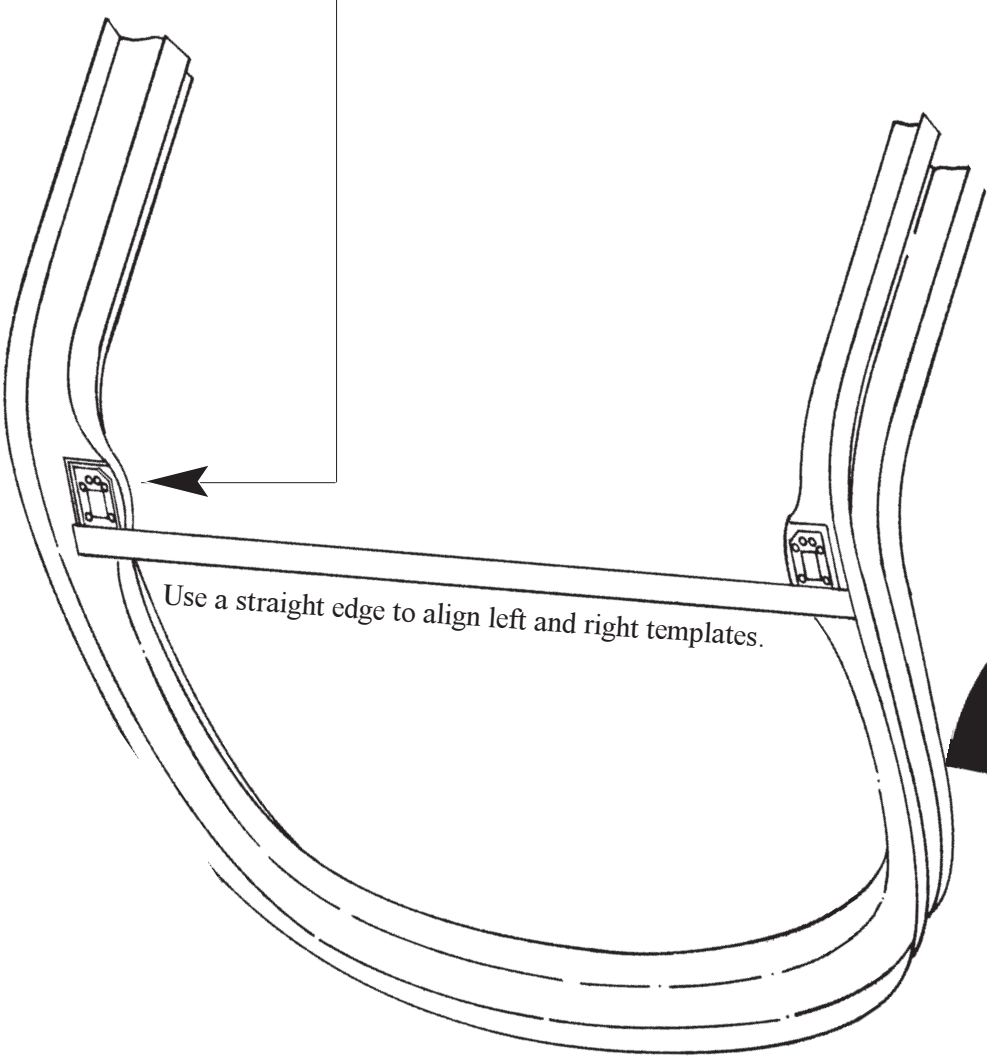


- E 3.** Drill the hole out to size using a #10 drill bit.

**Note:** View is looking outboard at left side.

Canopy Striker Alignment  
Fig. 9:E:3

E 4. Insert an AN3 bolt through upper inboard hole.



Use a straight edge to align left and right templates.

E 5. Drill out the remaining hole and trim the clearance slot using the pattern.

Reference hole

Drill template, 4626

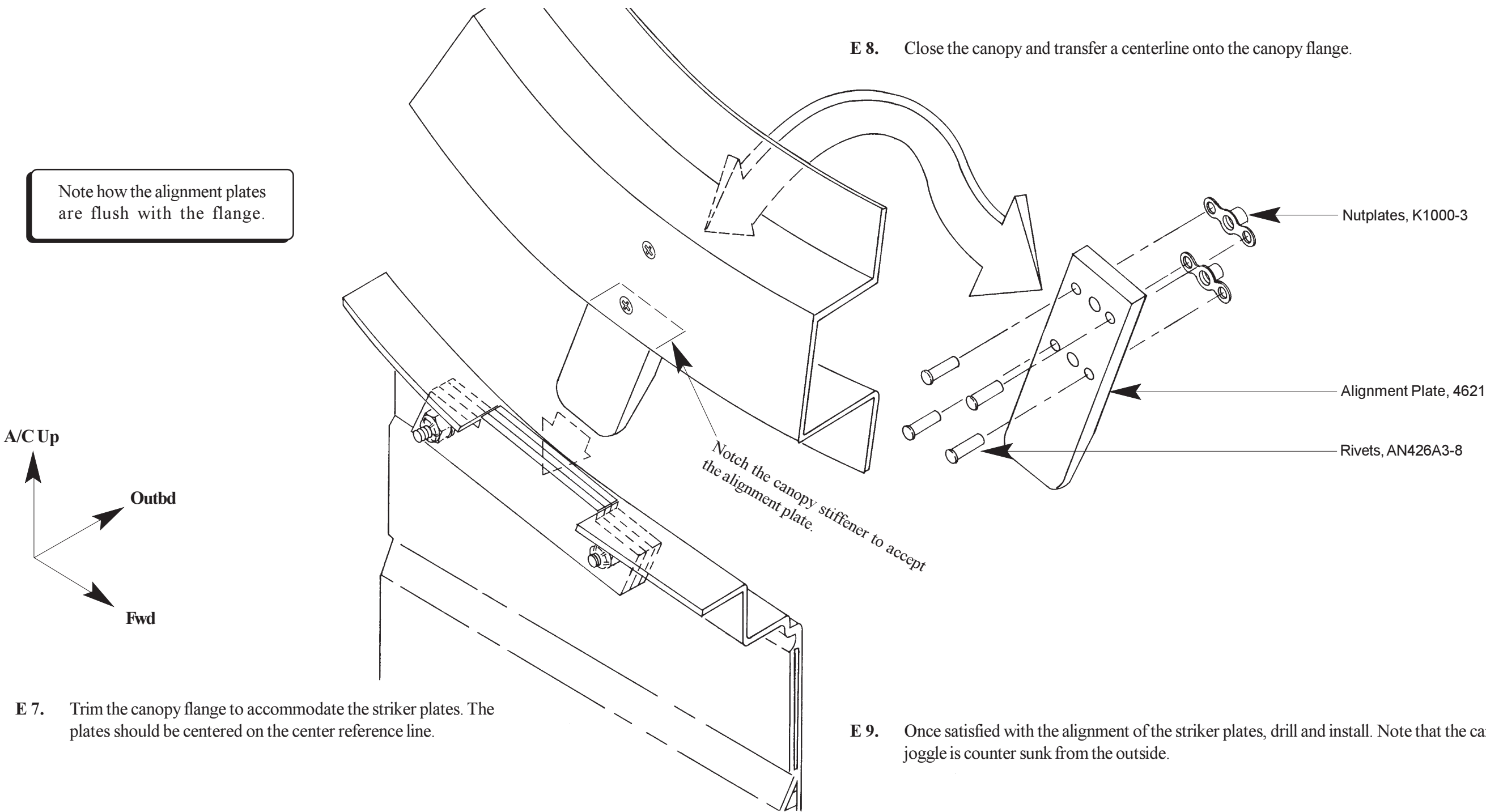
Clearance slot

A/C  
Up

E 6. Assemble and install the mechanism as shown in fig. 9:E:1.

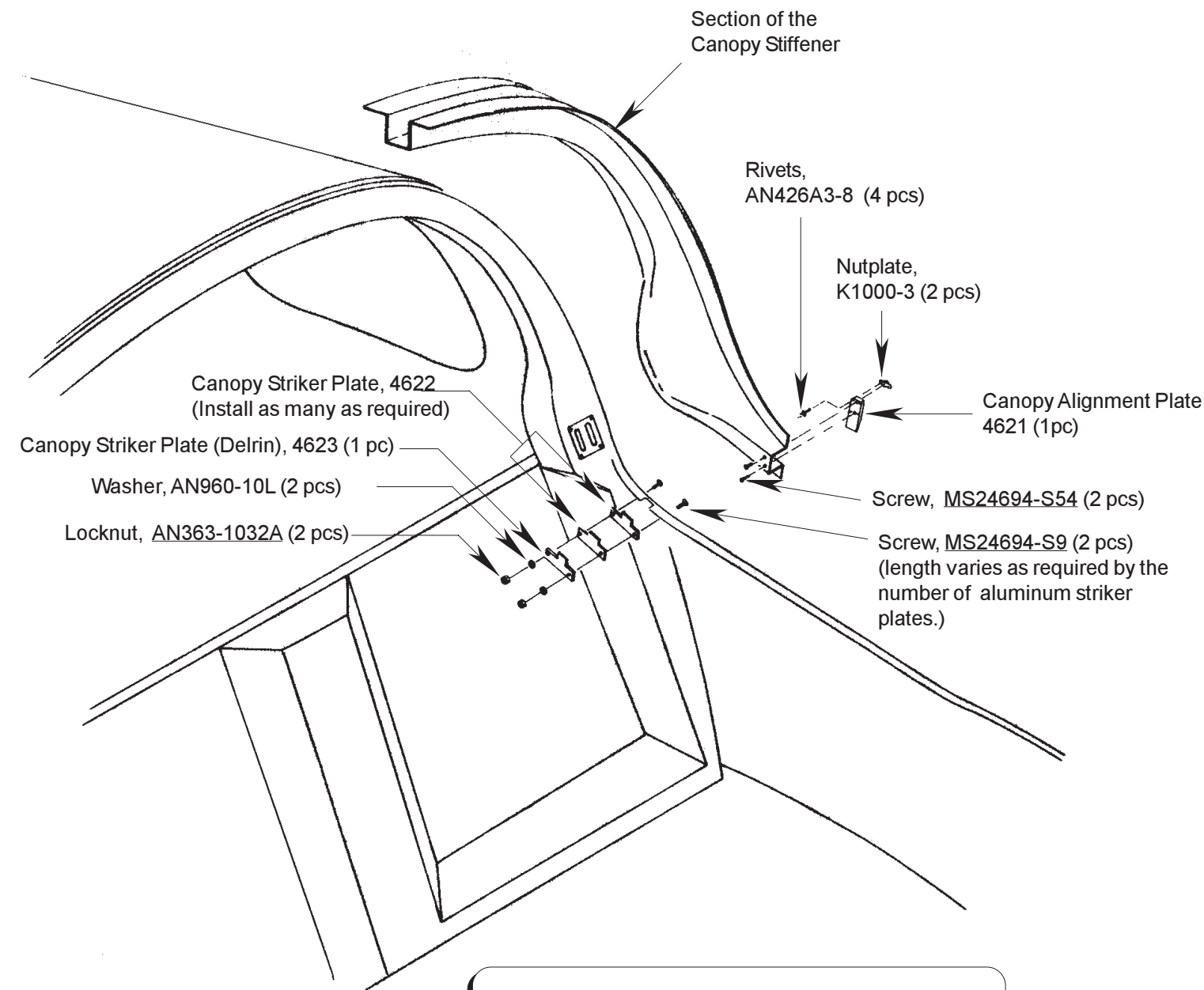
**NOTE: The final adjustment is done after door seal is installed.**

Canopy Striker Plate Installation  
Fig. 9:E:4

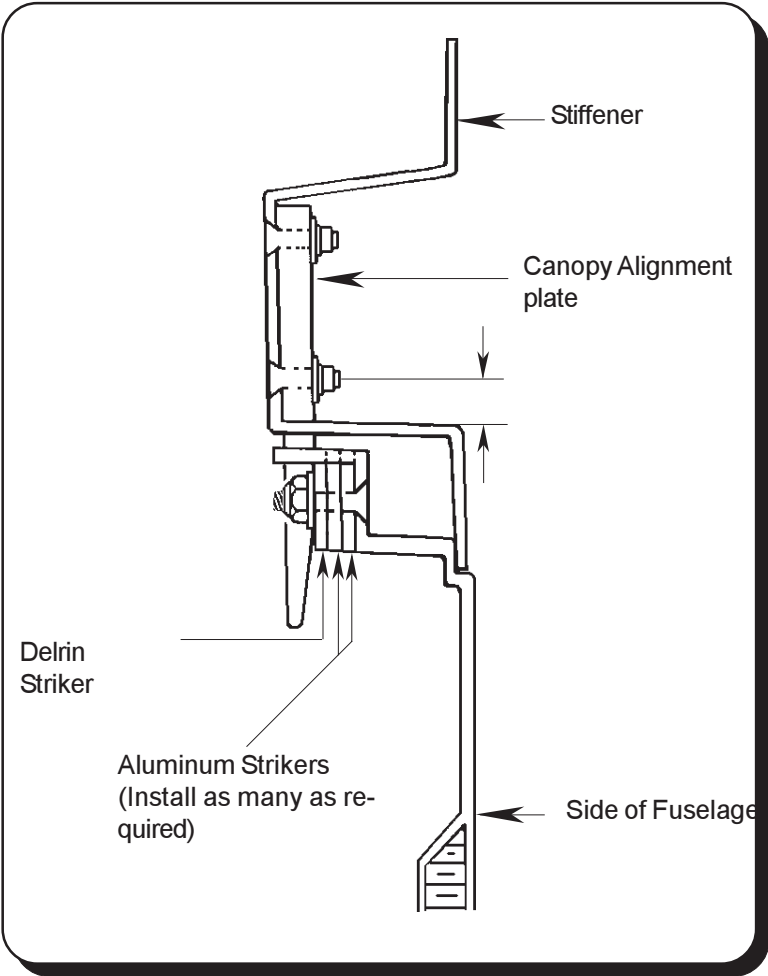


# F. Canopy Alignment Mechanism

Canopy Alignment Mechanism  
Fig. 9:F:1

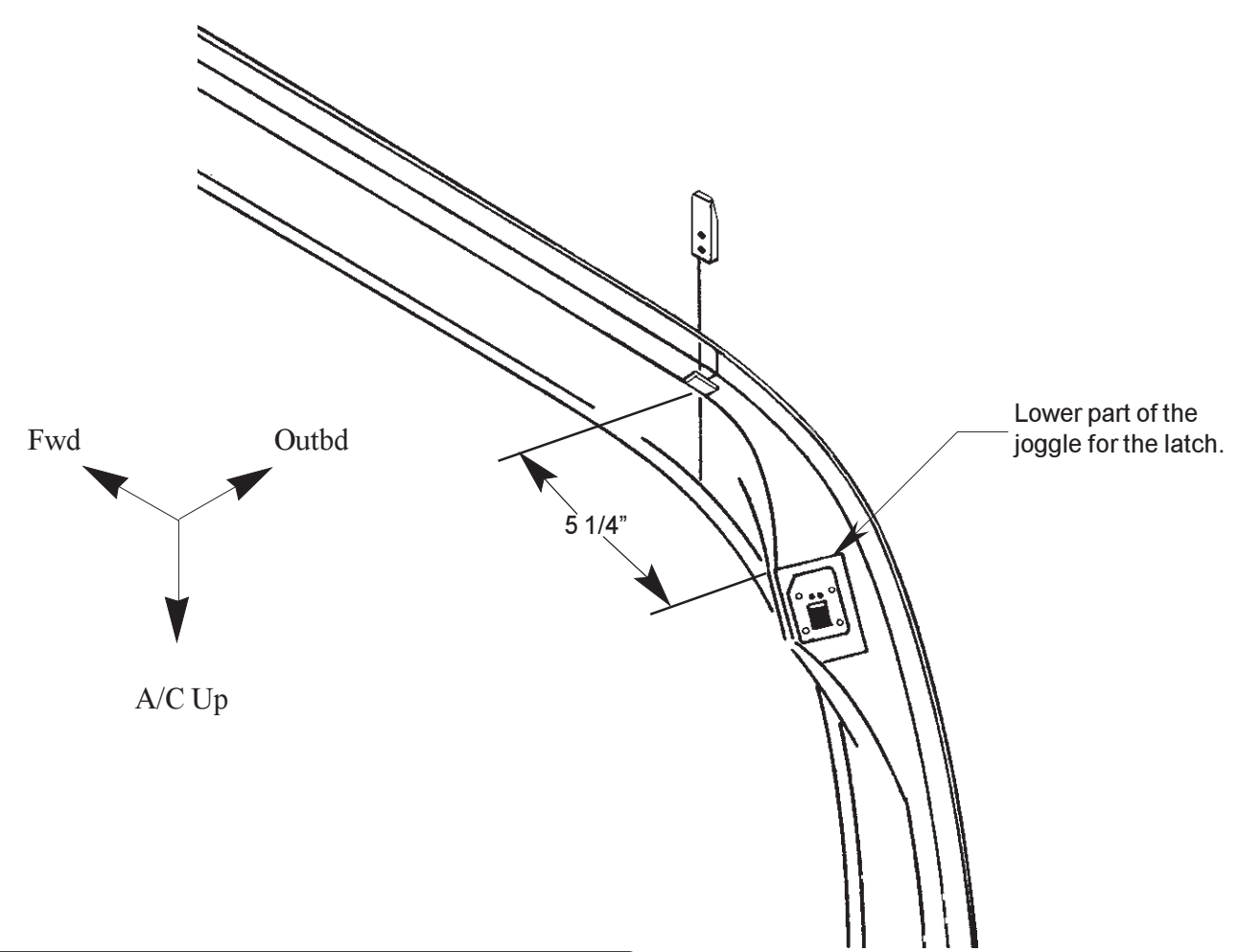


The purpose of the alignment mechanism is to guide the canopy in place and to keep it there.



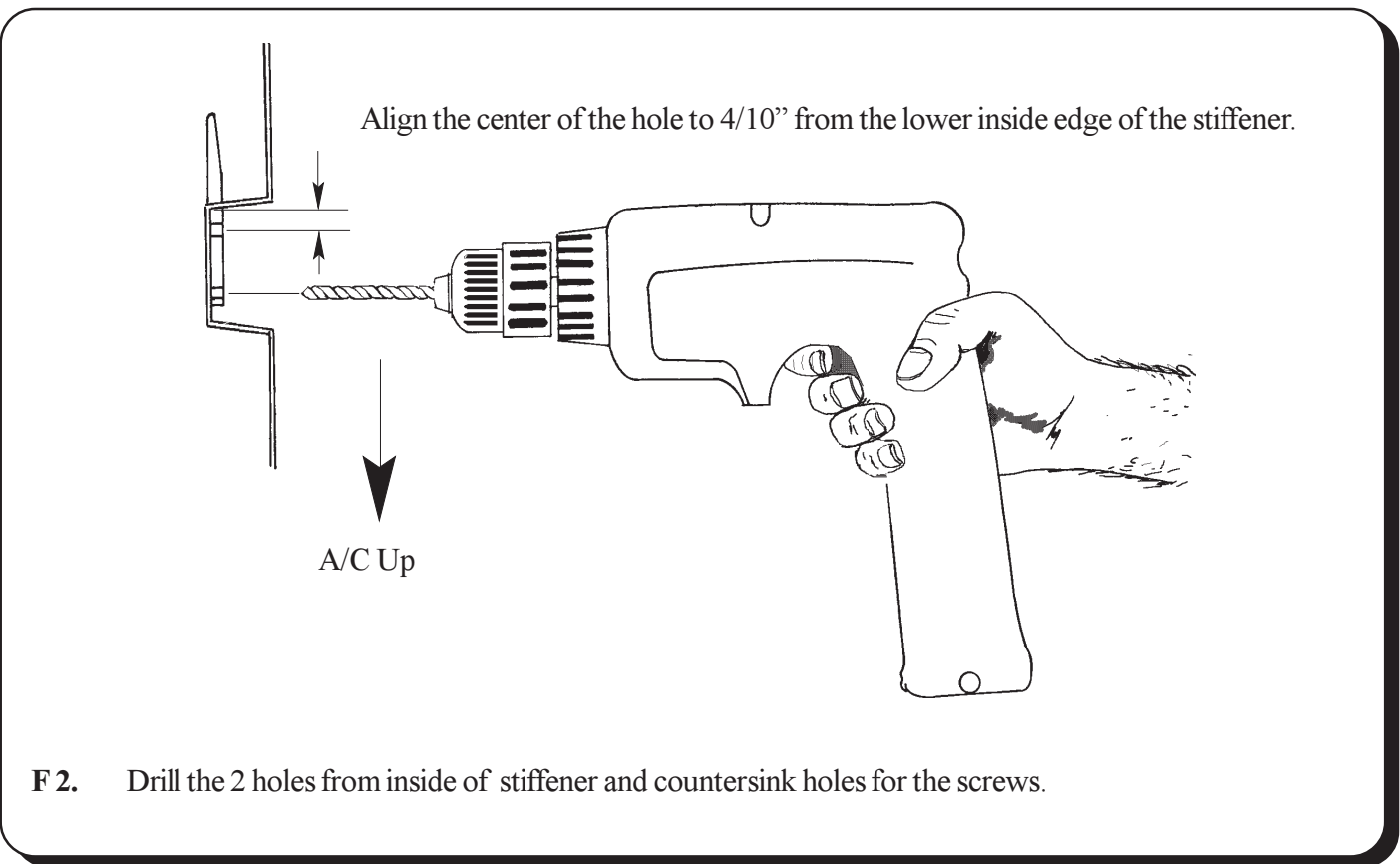
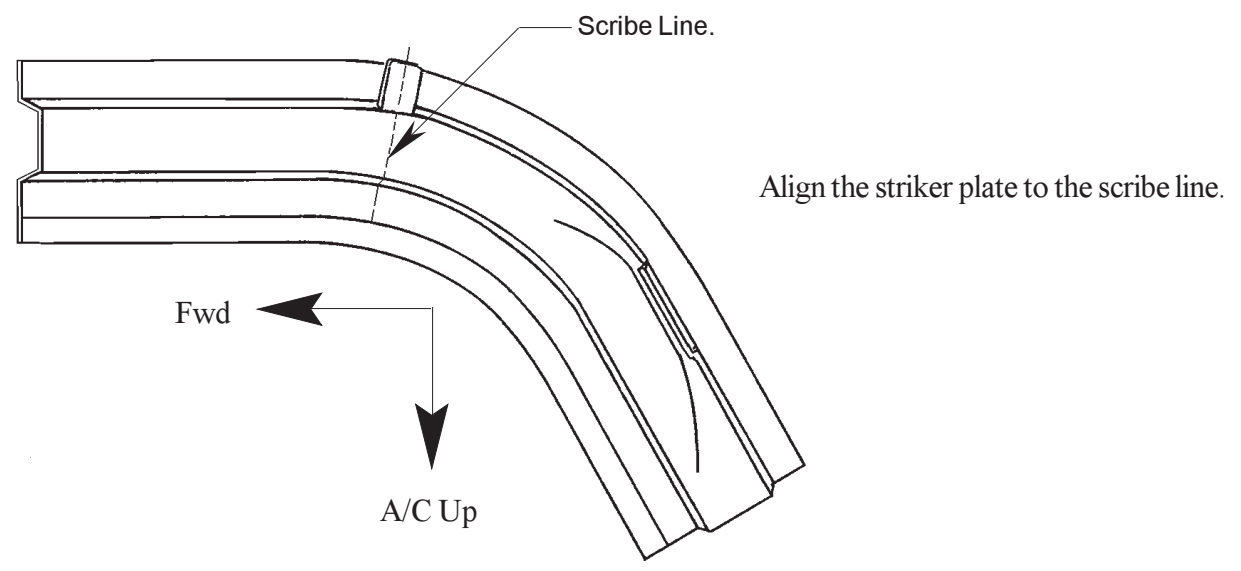
**Note: Quantities shown are for one side only.**

# Canopy Alignment Plate Installation Fig. 9:F:2



**NOTE:** If your scribe line is missing, the center of the scribe line is 5 1/4" from the lower part of the canopy latch joggle.

**F 1.** Cut a 1" x 15/32" slot centered on the scribe line. The opening is large enough to accommodate the striker with nutplates.



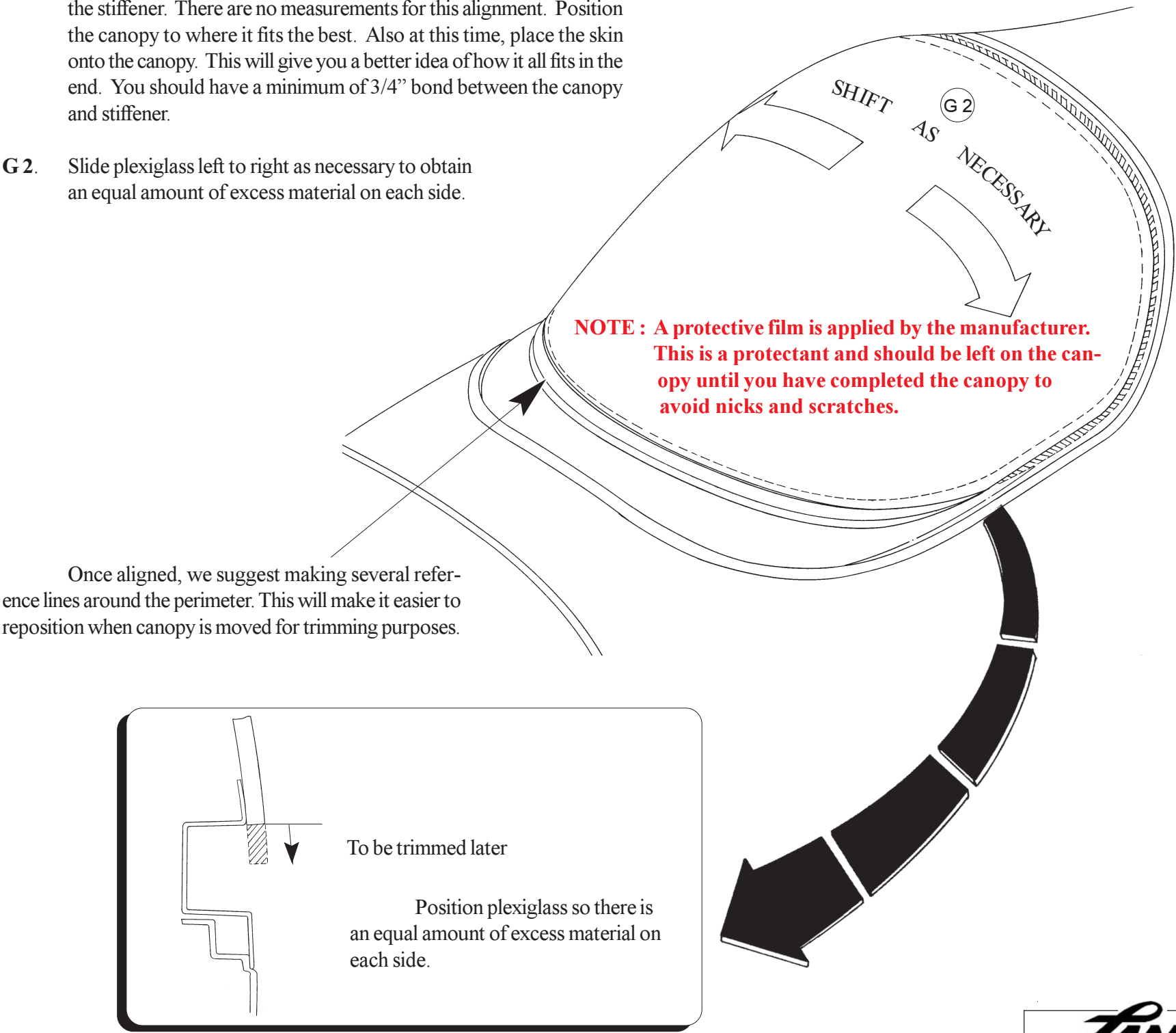
**F 2.** Drill the 2 holes from inside of stiffener and countersink holes for the screws.

# G Windshield Installation

## Canopy Alignment

- G 1.** Before trimming any material off the canopy, position the canopy onto the stiffener. There are no measurements for this alignment. Position the canopy to where it fits the best. Also at this time, place the skin onto the canopy. This will give you a better idea of how it all fits in the end. You should have a minimum of 3/4" bond between the canopy and stiffener.
- G 2.** Slide plexiglass left to right as necessary to obtain an equal amount of excess material on each side.

Canopy Alignment  
Fig. 9:G:1



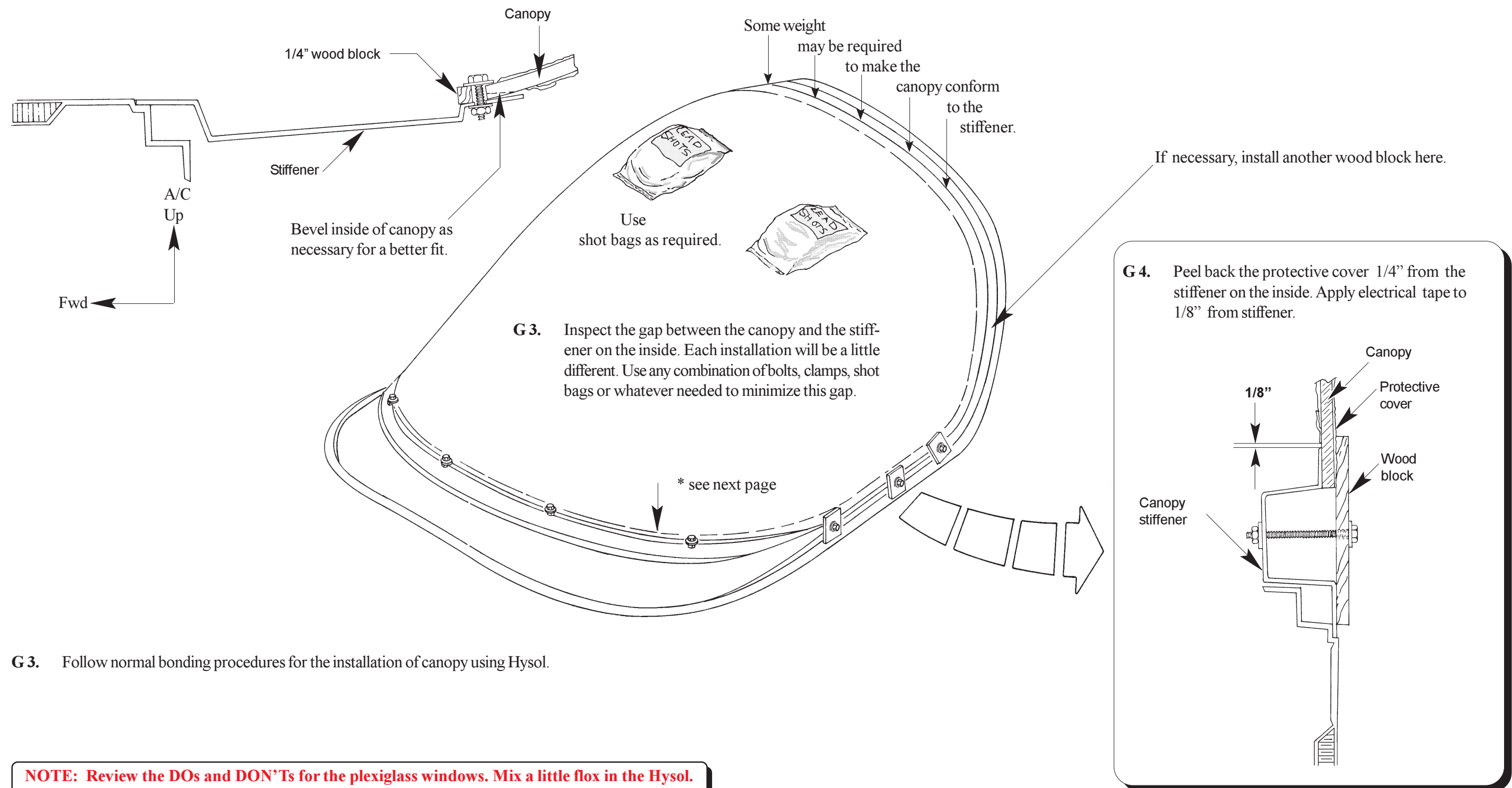
Here are some DOs and DON'Ts for handling plexiglass that have been learned from much (\$\$) experience.

- DO:** Leave the protective barrier on as much of the windows as possible for as long as possible.
- DO:** Cut the plexiglass with a bandsaw or an angle grinder. The bandsaw should have a fine tooth blade and be set on low speed.
- DO:** Always keep the plexiglass held firmly against the working surface when cutting or trimming. An old section of carpet on your workbench lessens the danger of scratching the plexiglass.
- DON'T:** Cut the plexiglass with a reciprocating blade, like a sabersaw.
- DON'T:** Drill holes through the plexiglass. It's too easy to crack.
- DON'T:** Clean plexiglass with acetone or MC. They may not seem to affect the surface, but these chemicals dry out the plexiglass and cause later discoloration. Cleaning should be done with isopropyl (rubbing) alcohol.
- DON'T:** Clean the plexiglass window with rubbing alcohol in the bonding areas *after sanding*. The plexiglass may absorb the rubbing alcohol if sanded. Never clean the edges. The edges are rough and may absorb the rubbing alcohol.

The correct method of cleaning the plexiglass window is to first clean the (unsanded) bonding surface with rubbing alcohol. Apply with a soft cloth such as a T-shirt. Sand the bonding areas thoroughly so no glossy areas remain. Using high pressure air or clean cloth, remove the sanding dust from the surface. Don't touch the bonding surfaces prior to bonding.



Securing Canopy  
Fig. 9:G:2

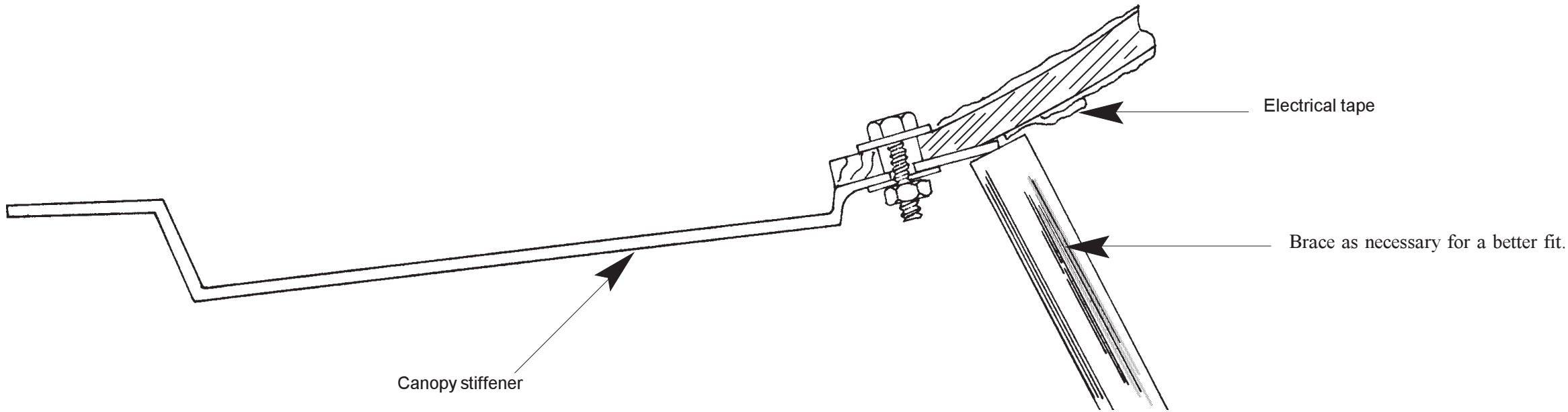


**G 3.** Follow normal bonding procedures for the installation of canopy using Hysol.

**NOTE:** Review the DOs and DON'Ts for the plexiglass windows. Mix a little flox in the Hysol. Snug the bolts up just enough to get the canopy to make good contact with the stiffener.

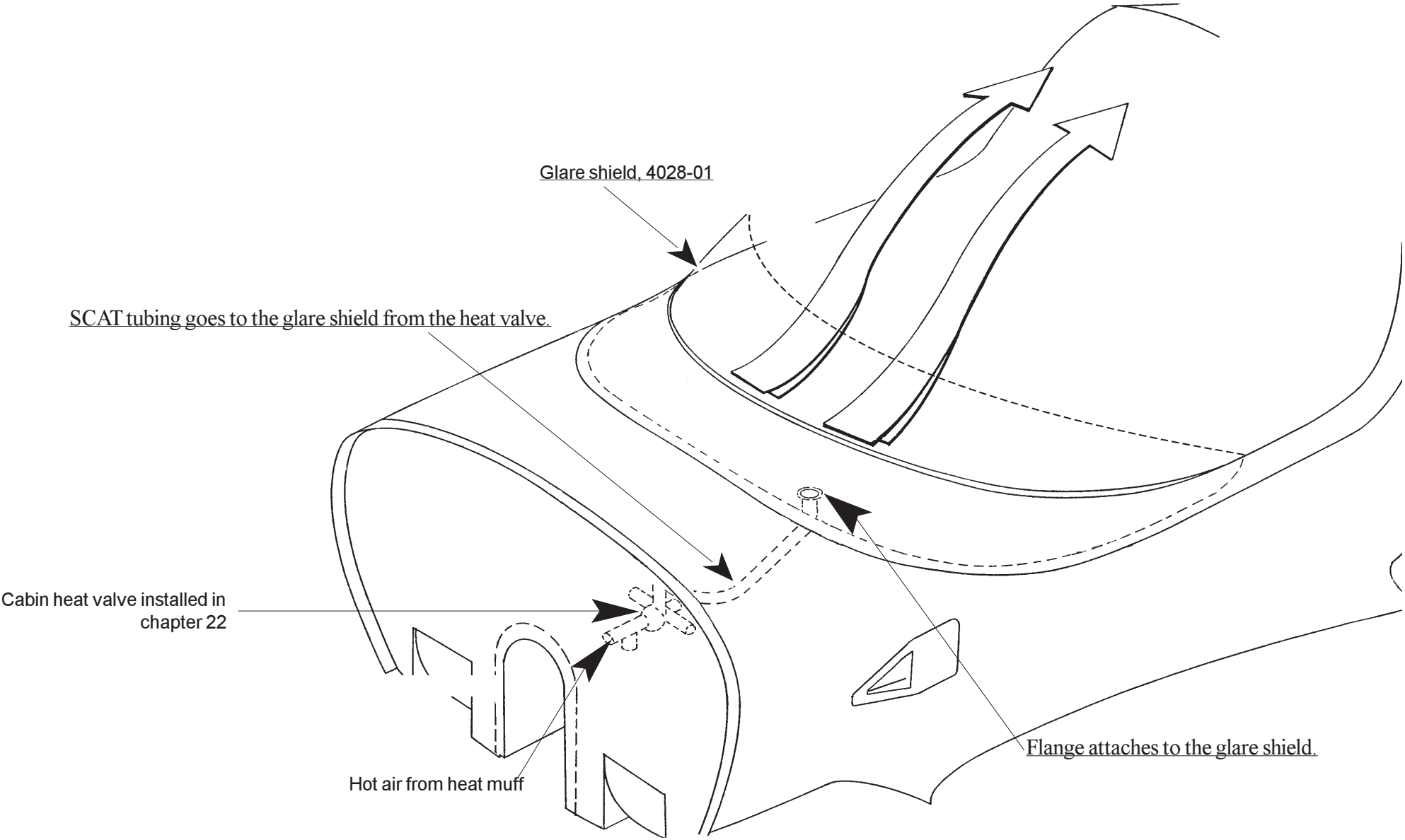
The left front side and back tend to be problem areas for a proper fit . During bonding you may want to brace a stick up against the stiffener to get a better fit.

Bracing During Bonding  
Fig. 9:G:3



H. Canopy Defroster

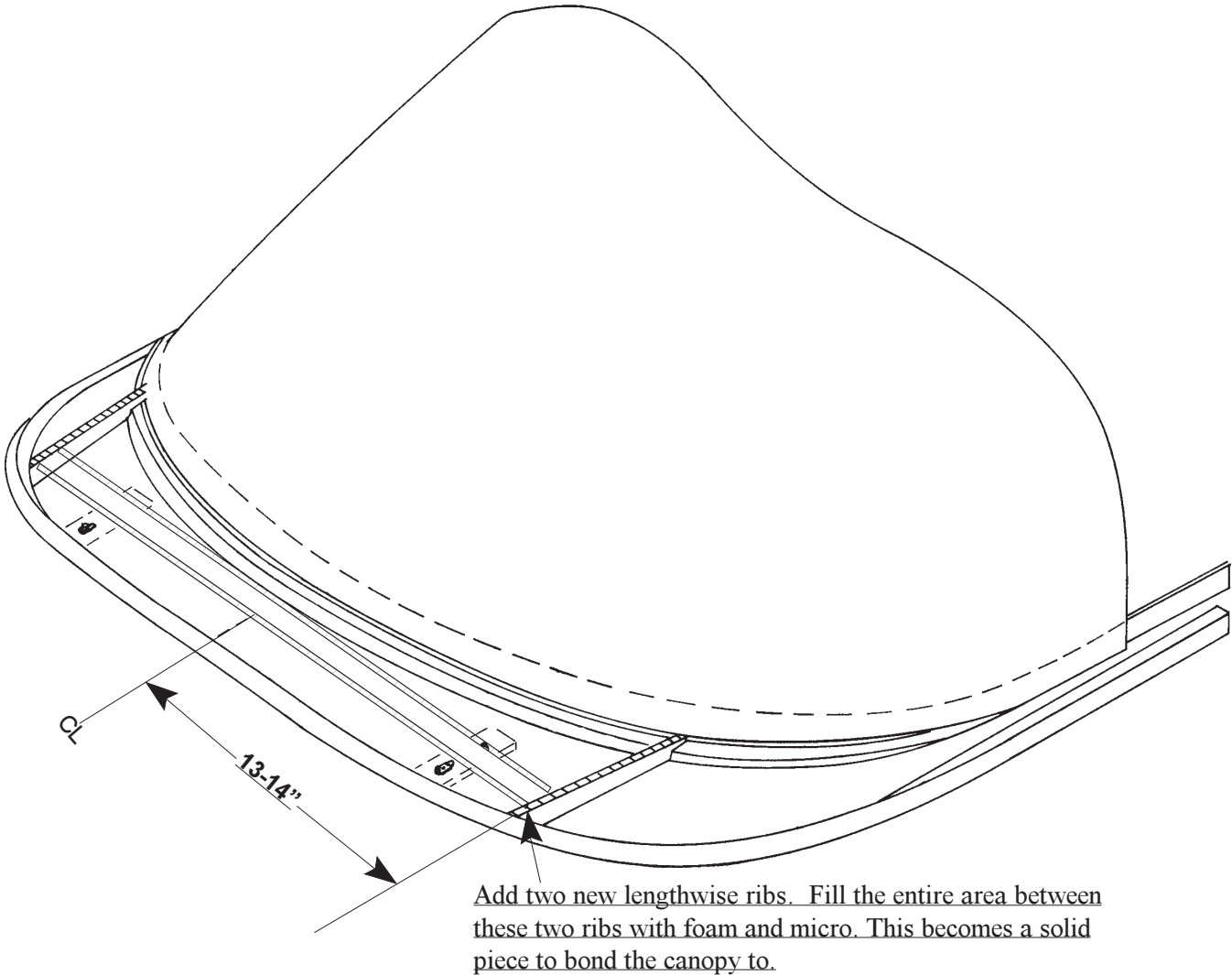
Canopy Defroster  
Fig. 9:H:1



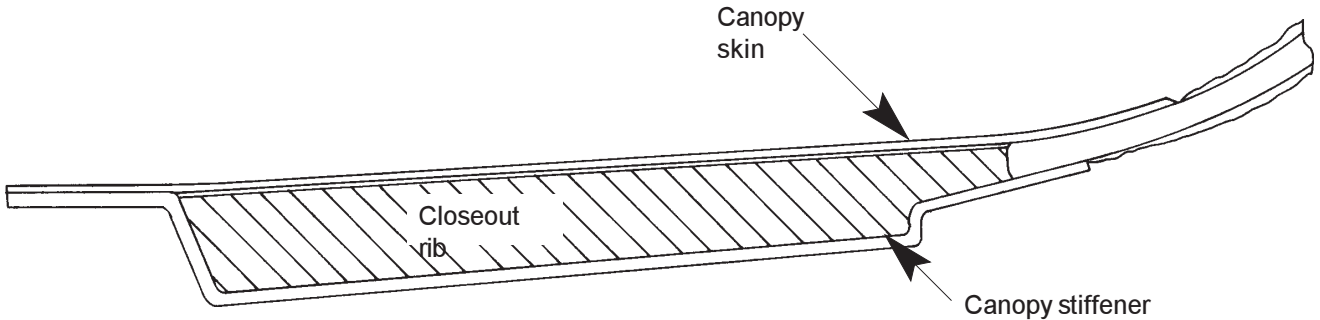
**Defroster Construction**

**Fig. 9:H:2**

- H 1.** Add two ribs lengthwise between the cross ribs.
- H 2.** Fill the area between the left and right ribs using foam and micro.

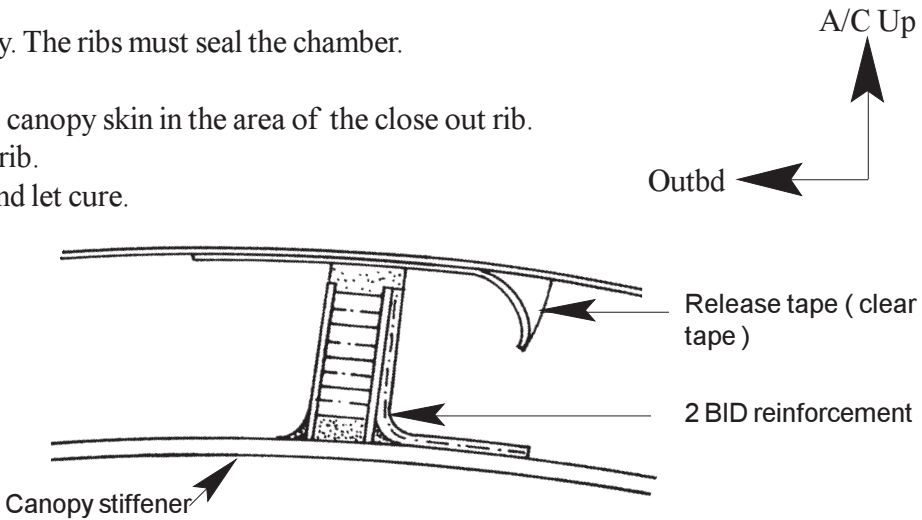


- H 3.** Install the 2 pcs prepreg ribs about 13-14" from centerline. Make pattern and trim to fit.



- H 4.** Release as necessary. The ribs must seal the chamber.

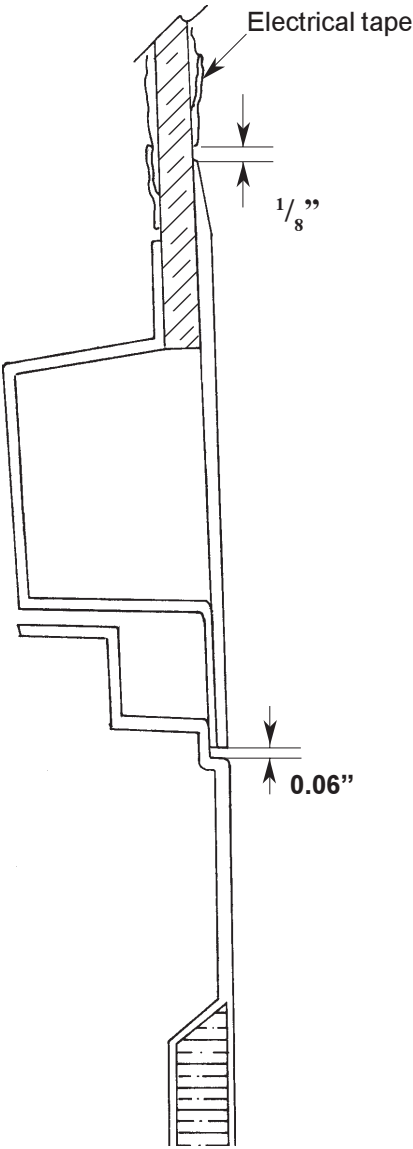
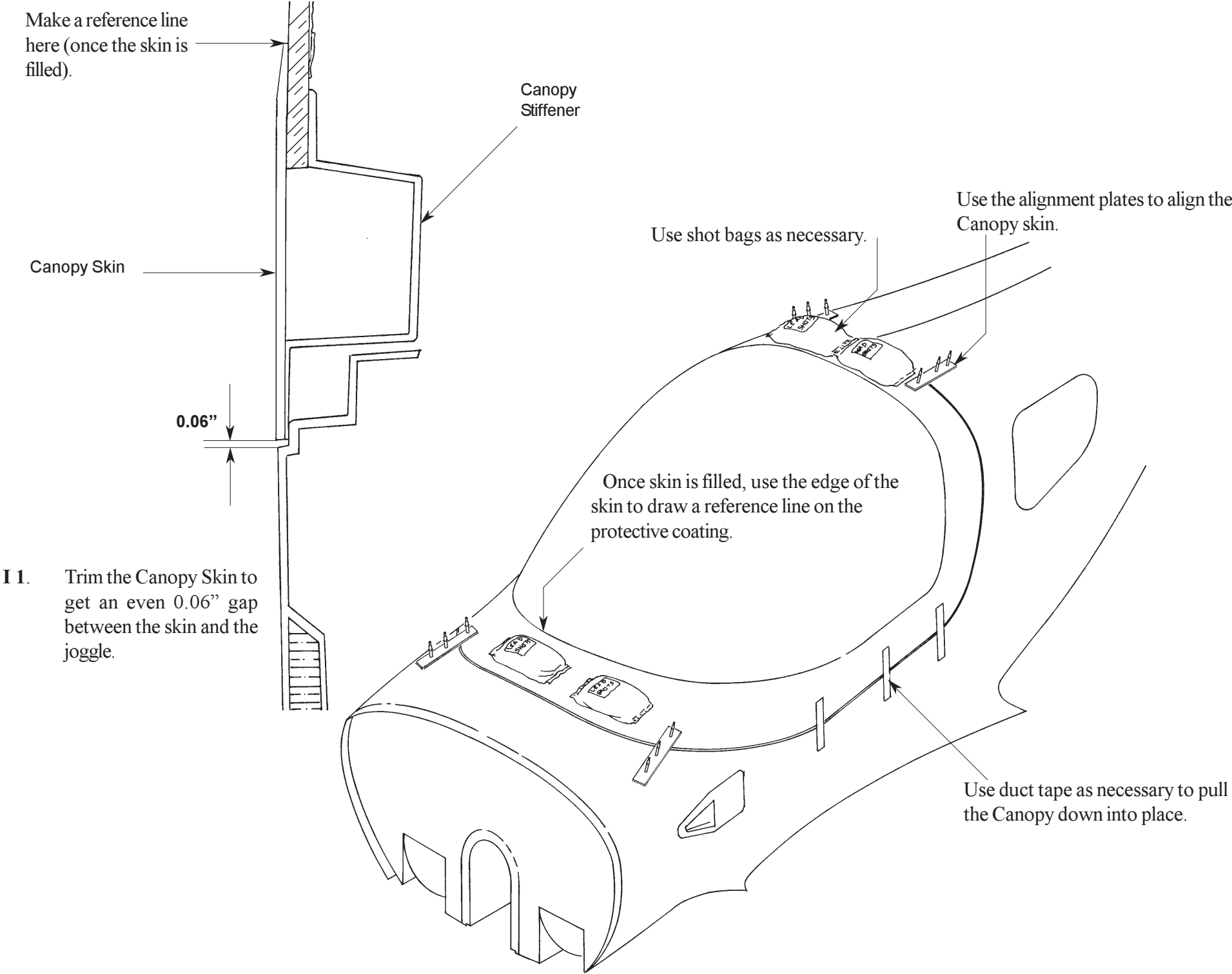
1. Apply release tape to the canopy skin in the area of the close out rib.  
Apply epoxy/flox to the rib.
2. Lower the skin in place and let cure.



3. After the release is cured remove the skin and clean up the excess epoxy/flox.

**I. Canopy Skin Bonding**

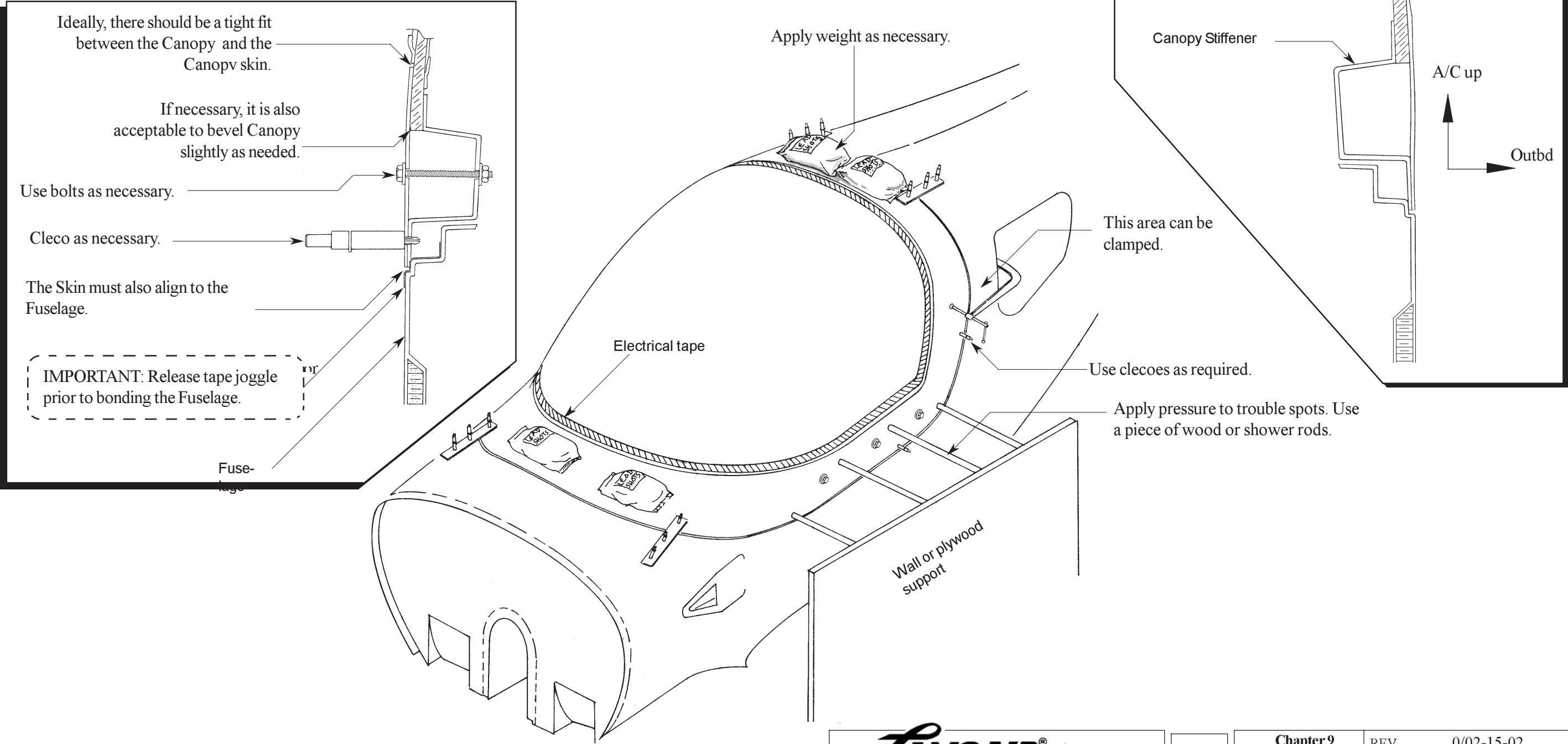
Canopy Skin  
9:I:1



**I 2.** Peel away the protective material on the outside of the canopy approx 1/4" inside of the reference line. Apply 1/2" wide electrical tape to the outside of the canopy. The edge of the tape should be 1/8" short of the canopy skin.

By now you have a good idea of how your particular Canopy skin fits. You may have noticed a couple of areas that perhaps could fit better. The end goal is to have a minimum bond gap between the Canopy and the Canopy Skin. The skin should also be flush with the fuselage. Use any combination of the suggestions and whatever also works. The key is to have a method worked out prior to Canopy skin installation. The bonding itself is at least a two-man job!

Bonding Canopy Skin  
Fig. 9:I:2





**J. Canopy Seal**

After paint a canopy seal should be installed. The purpose of the canopy seal is to reduce the wind noise and keep the rain out. The canopy seal provided is an extruded “V” shape of silicon rubber. The canopy seal installs in a joggle provided in the fuselage.

Also available is an optional inflatable canopy seal. The inflatable canopy seal is inflated with air from a pump regulated by a pressure switch. The option is available through KCI. The inflatable seal mounts much the same way. Before staring the installation we suggest masking off the area surrounding the joggle simply to protect the paint from the adhesive.

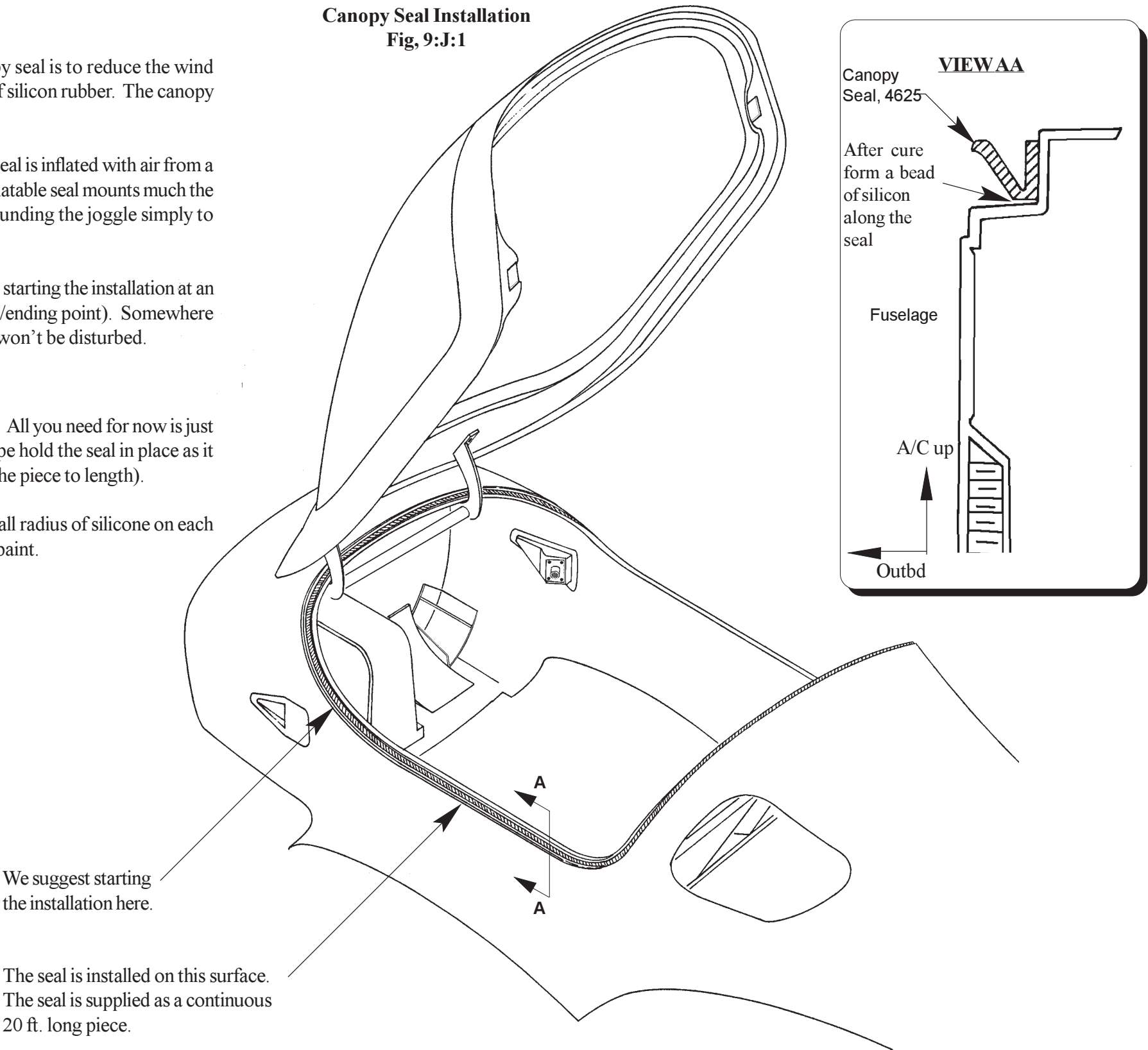
The canopy seal is supplied as a continuous 20 foot long piece. We suggest starting the installation at an area where water is least likely to accumulate. (There will be a seam at the starting/ending point). Somewhere along the longerons would be the best- perhaps towards the front where the seal won’t be disturbed.

**Proper Orientation**

Start by applying a small bead centered on the foot print of the canopy seal. All you need for now is just a small amount of the adhesive to hold in place. Using small pieces of masking tape hold the seal in place as it is curing. Continue around the perimeter and join the two halves at the end (Cut the piece to length).

Once the silicone has cured remove the smaller pieces of tape. Form a small radius of silicone on each side of the seal. Once applied, remove the masking tape you used to protect the paint.

**Canopy Seal Installation  
Fig. 9:J:1**



Optional Inflatable Canopy Seal

Fig. 9:J:2

The pneumatic expandable cockpit seal expands to fill a gap of 3/4". The seal is kept at 20 psi by a remotely mounted air pump. In this system a pressure switch activates the pump when the seal pressure falls below 20 psi.

