

STOL CH 801 WING ASSEMBLY

SECTION 14

“Installing the Inboard Wing Tip (Root End Tip)”

Compass Check

1. Prepare the attachment strip.
2. Install strip.
3. Install root skin.
4. Make a rivet hole transfer template.
5. Wrap skin and drill nose rib holes.
6. Trim and rivet.

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Helpful Building Tips

1. Time spent aligning the flanges on the root rib and the attachments will be rewarded with a nice-fitting skin.
2. Use the template to transfer the rivet holes in the root nose rib to the skin.
3. Work carefully. A nicely fitted root skin will provide a real sense of accomplishment.

SECTION 14: Installing the Inboard Wing Tip



file V1-58

Photo V12-1

Press and slide the hammer do not beat the part.

The "L" 8V9-4 is used to attach the root tip skin to rib #1.

The first step to install the root tip skin is to prepare part 8V9-4.

Use a plastic hammer or wood block to flatten part 8V9-4 for a length of 450mm as shown in photo V12-1.

The angle varies along the length of 8V9-4. Take a look at photo V12-5 & V12-6 which show how the part is installed. Adjust the flattening process accordingly.



file V1-60

Photo V12-2

The uncrimped edge will slide between the skin and the nose rib.

The flattened end will be placed towards the trailing edge of the wing. Crimp the forward end of 8V9-4 to match the shape of the nose rib at station #1.



file V1-63

Photo V12-3

Mark a centerline along the length of the uncrimped flange of 8V9-4.



file V1-61

Photo V12-4

Slide the "L" in place and align its centerline with the rivet holes.



file V1-66

Photo V12-5

Use a 3/32" drill bit.

To prevent misdrilling holes in ribs at station #1 proceed as follows:

- Hold the strip in place and mark the rivet hole closest to the tip of the nose rib.
- Remove the strip, drill the hole and replace it in the wing and cleco.
- Hold the strip in position and mark the position of the third hole by drilling half way through the strip.
- Remove the strip and complete the drilling then re-cleco it in position, and mark the fifth hole.
- Repeat the process until the strip is completely located in position, then drill out the balance of the holes in the leading edge and rear top skin locations.



file V1-64

Photo V12-6



file V1-68

Photo V12-7

The nose rib flanges will need adjusting also.

Use a straight edge to confirm the angle of rib and strip flanges. Adjust the flanges with crimping and flanging pliers to provide a nice smooth line from the root ribs to the ribs at station #1. The "L" angle at the tip of the nose rib will also likely need a small adjustment. Mark the centerline along the exposed flange of 8V9-4.



file V200-98

Photo V12-8

The wing root end skin is supplied with the rear rib rivet holes predrilled and the shape to which it is to be trimmed, traced onto it. Trim the skin approximately 3 to 6mm oversize. Lay the skin in position centering the predrilled holes over the centerlines on the root rib and "L" 8V9-3. The rear edge is to be flush with the rear surface of the rear spar.



file V1-78

Photo V12-9

Use a 3/32 drill while fitting the root skin.

With the skin held in its correct position drill every third hole in both the root rib and the "L" at station # 1 rivet lines. Cleco every hole drilled as drilling progresses.

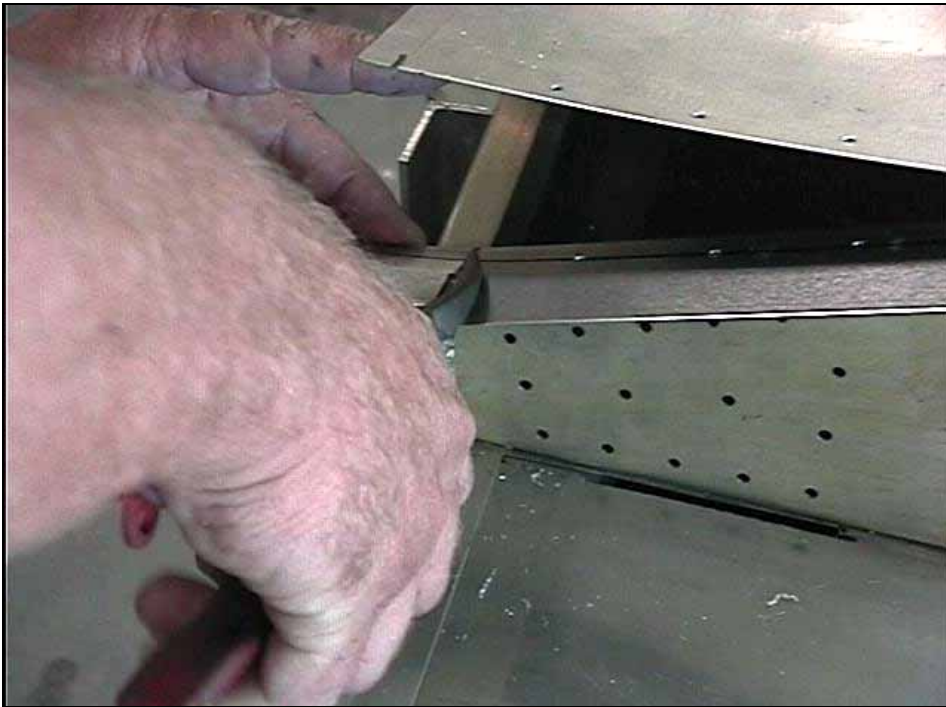


file V1-75

Photo V12-10

The pitch at the rear spar is the same along its entire length.

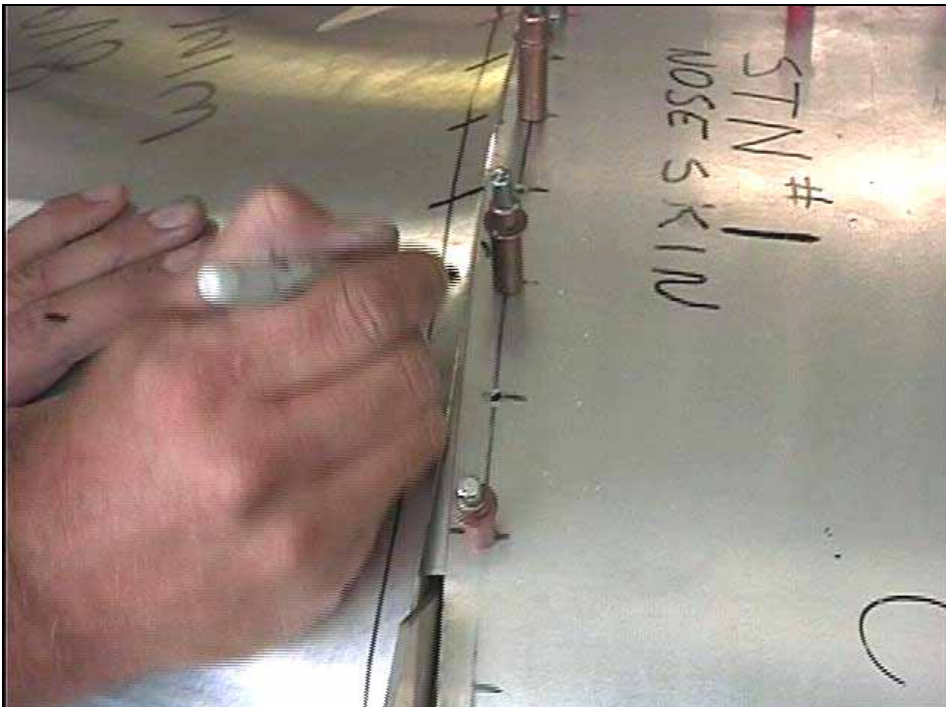
Drill one or two evenly spaced holes in the rear spar and cleco.



file V1-67

Photo V12-11

If not already done trim the strip at the end of the rear rib.



file V1-70

Photo V12-12

Wrap the skin around the nose ribs and mark for rivet position.

When wrapping the skin make sure adequate contact is maintained on both the rib and station number one (the root rib). Also, keep in mind the fact that the skin was trimmed oversized when laying out the rivet holes.



file V1-72

Photo V12-13

There is no need to attempt to tuck the skin into the bottom of the nose skin at this time.

Maintain good contact with the ribs and drill the hole to the end of the “L” on station #1.

- The next step is to locate and drill the rivet holes in the root nose rib.
- The skin sets against the rib at an angle that changes around the tip of the rib. This makes measuring and drilling from the skin to the rib centerline somewhat difficult. The chance of error is present. The method we recommend involves pre-drilling the rib, making a template and transferring the holes to the outside of the skin in much the same manner as was done for the forward strut attachment doubler (section 7)



file V1-79

Photo V12-14

Drill 3/32" holes in nose rib as shown.



file V1-80

Photo V12-15

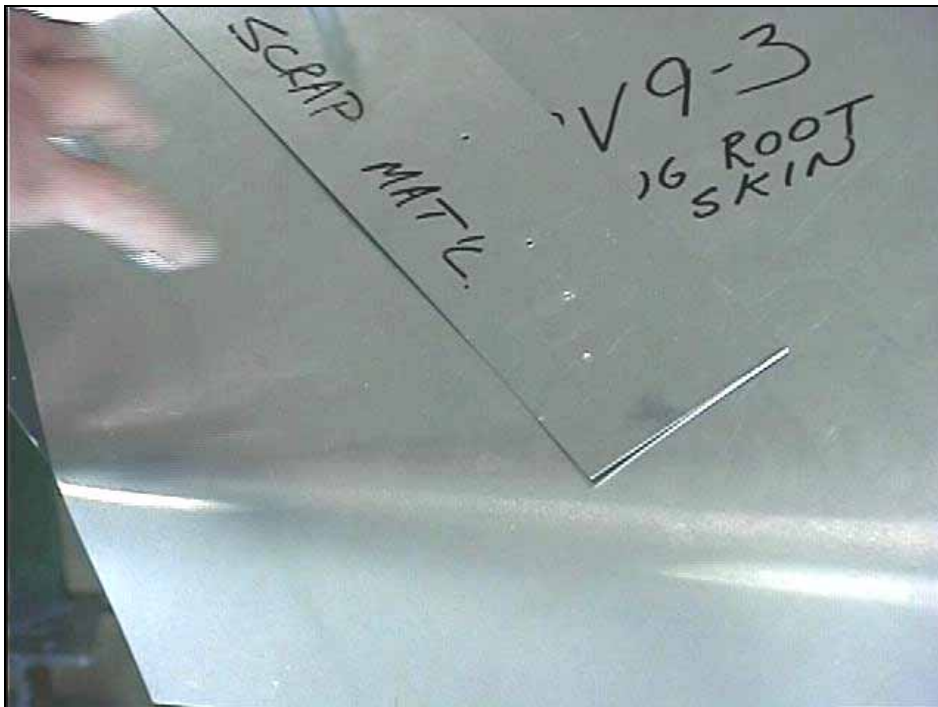
Note: The alternative method is to layout the rib location on the skin when it is rolled on rib and drill. Exercise caution to ensure the holes are placed correctly. The rib will have a tendency to skid sideways when drilling. When wrapping the strip for transferring the holes, strive to keep it on approximately the same angle as the root tip skin sits.

A template is required to transfer the holes in the nose rib to the skin. Use a piece of .025 scrap long enough to pickup 6 - 7 rivet holes in the rear rib.

Drill the rear rib holes in the strip and cleco the strip under the skin as shown.

Wrap the strip around the nose rib and mark the rivet holes on the underside of the strip - Remove the strip from the wing and drill those holes - 3/32".

Re-install the strip and "test cleco" it to the nose rib.



file V1-82

Photo V12-16

With the skin in the open position lay the template on top of the skin. Cleco to rear rib rivet holes, drill the nose rib rivet holes 3/32.



file V1-69

Photo V12-17

Wrap the skin. This time with the edge tucked inside the lower skin.



file V1-71

Photo V12-18

Masking tape is like a second pair of hands.



file V1-93

Photo V12-19

Root tip skin clecoed in place.



file V1-85

Photo V12-20

Re-mark the trim line.
Leave sufficient material to run a line of rivets along the edge of the lower portion of the nose skin.



file V1-94

Photo V12-21

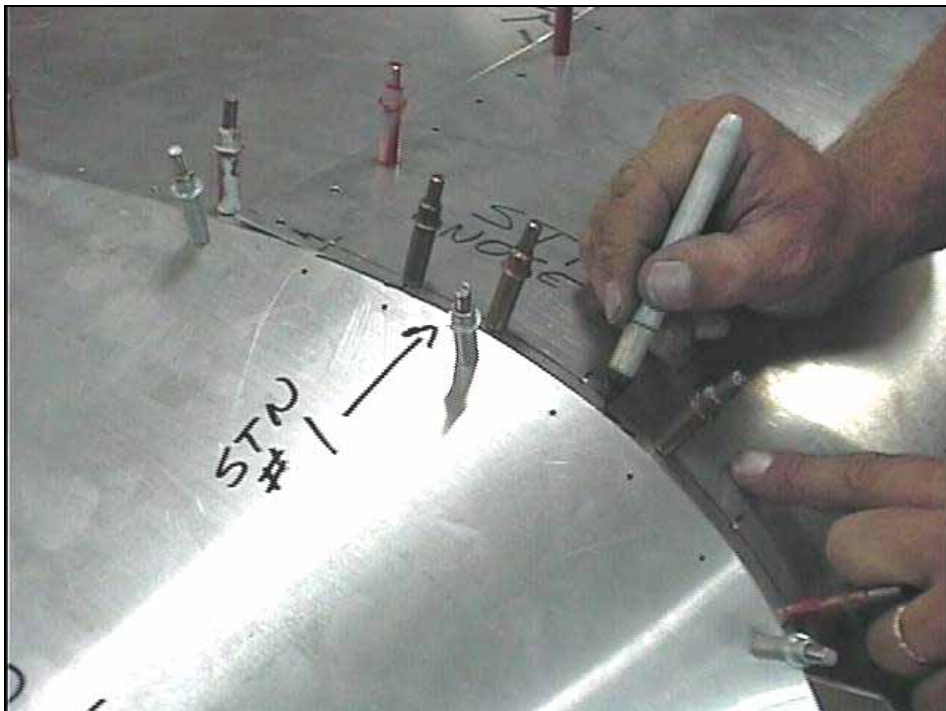
Wrap and cleco nose skin in place.
Layout a rivet line on the lower edge - 40 pitch and drill.



file V1-76

Photo V12-22

Drill all the remaining holes in rib #1 and the root ribs with a 3/32 drill.



file V1-95

Photo V12-23

Mark skin for final trimming.
Open all 3/32 holes with a #30 drill.
Remove the skin and trim to its final size, deburr.



file V100-91

Photo V12-25

A simple block of wood with a saw cut will help you put a slight crease along the edge of the skin.

Make up the wood bending block as shown in the photo.



file V100-92

Photo V12-26

Bend up and slide block along edge to produce crease.

Crease the edge of the nose skin where it joins the root rib skin to provide a tight seam when the two skins are riveted together.

Re-install the skin and rivet in place.

The final trimming of the most inboard edge of the root skin is done when the wing is installed on the aircraft.

I have checked my work and parts list and confirm to myself, that all items listed in this portion of the elevator hinge have been installed.

Signed: _____ Date: _____

Revision List:

| Revision | Summary | Revised By: | Date: |
|-----------------|----------------|--------------------|--------------|
| 3.0 | Reformat | SH | 8/18/1999 |
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