

Squaring and Skinning the Wings

Instruction No. SNX-W07-02
Reference Drawing SNX-W07
05/16/06

Fitting the Aft Wing Skins

Before fitting the aft skins the wing structure MUST be squared and levelled so no twist or wash-out is built into the wing. One method for accomplishing this is shown here:

1. On saw horses or a workbench, shim the wing spars until a carpenter's level placed across the spars at the root and the tip show the spars are level with each other. The levels at each end of the wing MUST agree with each other. If they do not, add shims as necessary to eliminate the twist.



While two levels speeds the job, a single level can be used, checking each end of the wing structure for level.



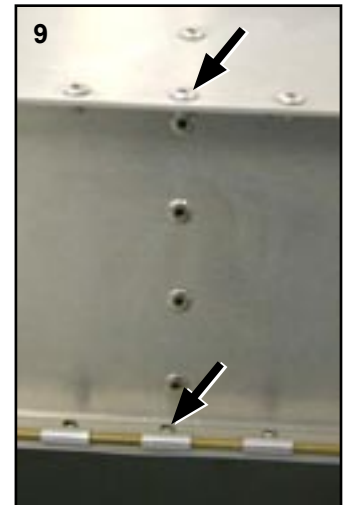
The spars are shimmed off the workbench as needed to get them level at both the tip and root.

2. Establish the proper location for the hole in the aft spar attach plate relative to Wing Station 0.0. This dimension is provided on the plans. See photo, next column.



A carpenter's square works well for setting the rear spar's position relative to wing station 0.0. (See step 2)

3. Align the upper aft skin so the pilot holes for the ribs are aligned directly above the rivets which hold the ribs to the aft spar.
4. Clamp the trailing edge of the aft skin to the flange on the rear spar, aligning the edge of the skin to the edge of the rear spar as you go.
5. Pilot drill and cleco the wing skin to the aft spar.
6. Make sure the wing is still twist-free and begin to drill and cleco the skin to the wing ribs, aligning the ribs as needed and working forward toward the main spar.
7. Pilot drill and cleco the front edge of the upper aft skin to the main spar.
8. Turn the wing over and re-level the assembly as described in step 1. While the spars are now locked straight and in the correct position, the structure can still twist. The structure MUST have any twist removed prior to installing the lower aft skin.
9. Position the lower aft skin so the pilot holes in the aft edge of the skin are DIRECTLY above the holes in the upper aft skin. This is important to assure a proper fit of the leading edge.



The pilot holes in the upper and lower aft wing skins MUST be in vertical alignment to get the leading edge to fit properly.

10. Pilot drill and cleco the skin as described in steps 5 through 7.

Fitting the Leading Edge Skin

1. Cleco the top of the leading edge to the main spar.
2. Working toward the leading edge, center the ribs under the pilot holes and pilot drill (#40 drill) and cleco the leading edge skin to the forward ribs.
5. Working forward from the spar to the leading edge, center the ribs under the pilot holes and pilot drill (#40) and cleco the leading edge skin to the forward ribs.

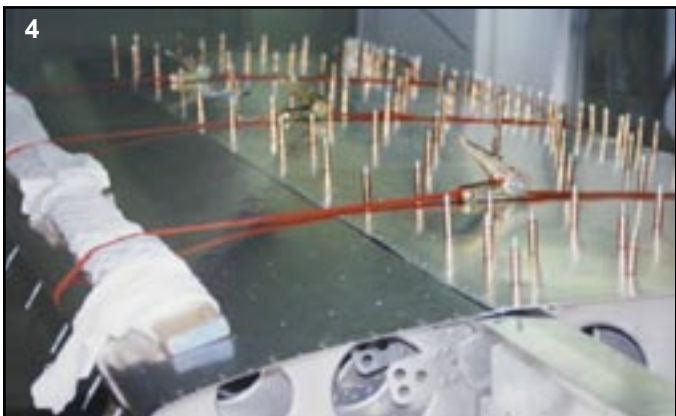


With the lower surface of the leading edge hanging free, drill and cleco the upper surface of the leading edge working from the spar forward.

3. After the top of the leading edge is clecoed, flip the wing over.
4. Using ratchet straps and a padded piece of wood to distribute the pressure, pull the leading edge skin back until you can cleco its aft edge to the matching holes in the aft skin and main spar.

Important: To keep the ratchet straps from deforming the rear spar you must place a board in the channel of the rear spar so the straps tighten against the board and not the spar/trailing edge.

Important: Cleco the leading edge to the main spar beginning in the center of the spar and working toward each end.



Ratchet straps and a padded 1 x 2 work well to pull the leading edge down, and into position at the forward spar.