

STOL CH 801 WING ASSEMBLY

SECTION 4

“Mounting Wing Ribs to Main Spar”

Compass Check

1. Identify the proper locations for those ribs with attachment brackets.
2. Position and drill the nose ribs.
3. Un-cleco the nose ribs and place them aside.
4. Position and drill the rear ribs.
5. Re-install the nose ribs keeping the rear ribs in place.
(the same cleco's holds the nose rib, rear rib and spar together)
6. Open the rivet holes to the correct rivet hole size.
7. Rivet the nose and rear ribs to the spar.

STOL CH 801 WING ASSEMBLY

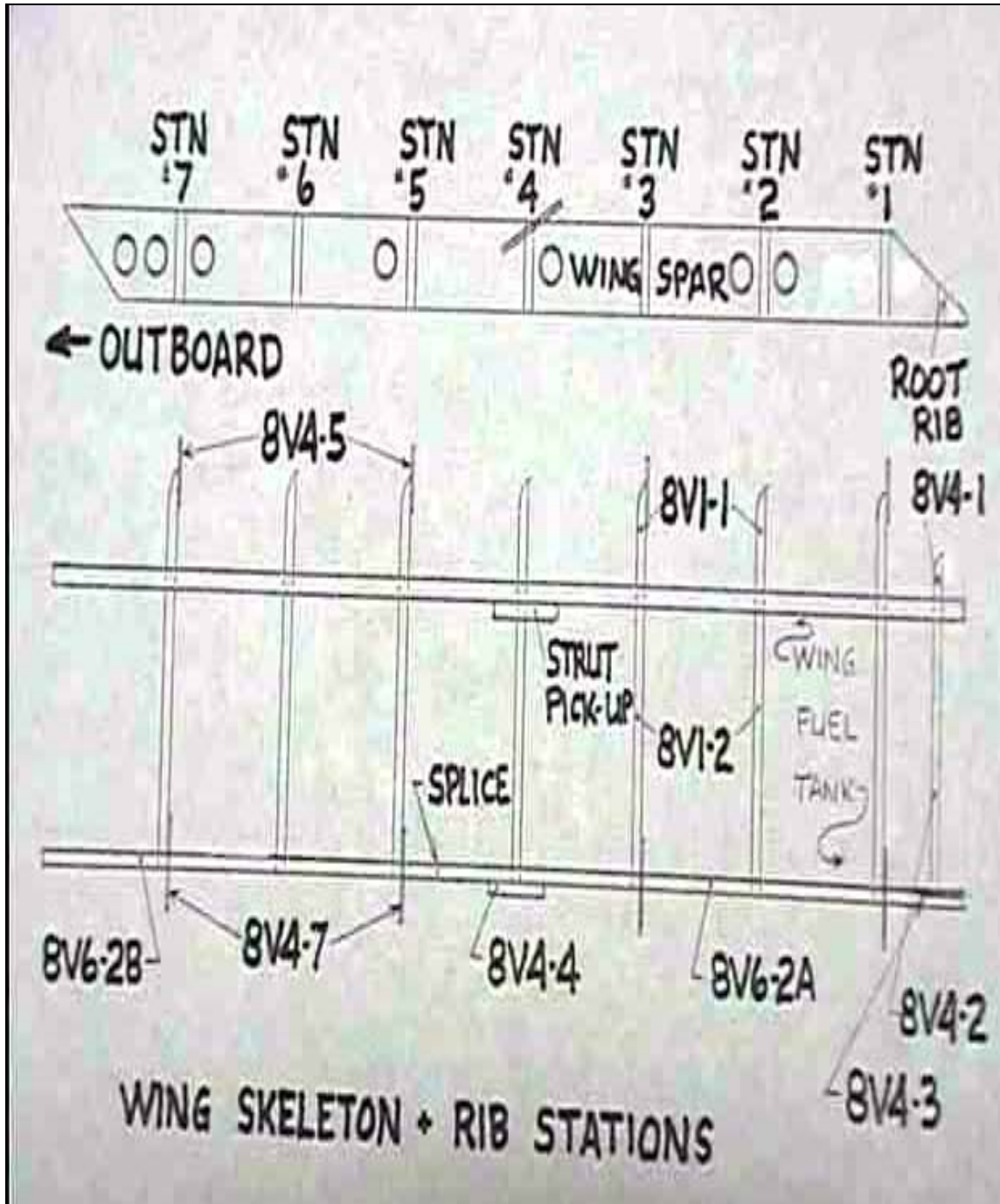
SECTION 4

“Mounting Wing Ribs to Main Spar”

Helpful Building Tips

1. Refer to photo V4-1 before starting this work.
2. Do use the wooden jigs to clamp the spar in place. It will make things easier.
3. Using a 3/32” drill bit to do the initial drilling will allow for some adjustments of the parts prior to opening the holes to the correct rivet size.
4. Clamping rather than holding the rib when drilling will increase the accuracy of part placement.

Section 4: Mounting Wing Ribs to Main Spar



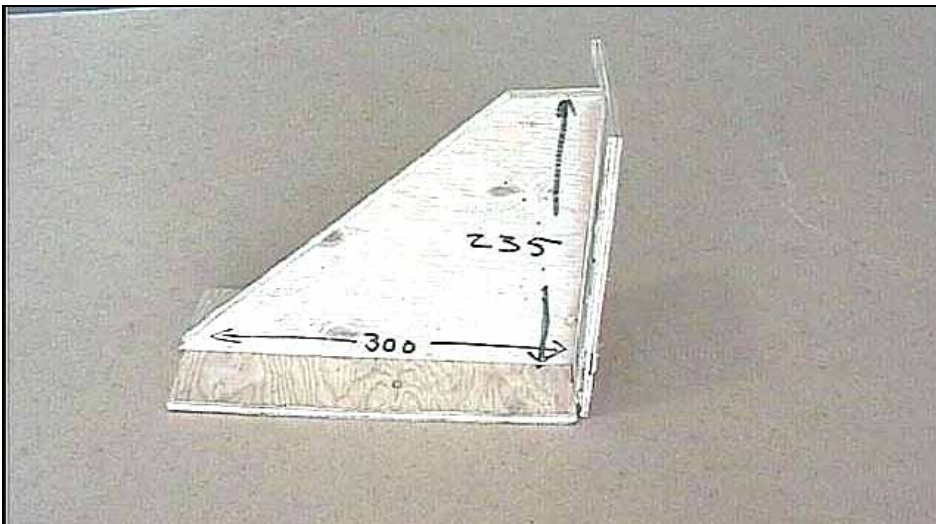


file V-35

Photo V4-1

The photo shows the main spar for the right wing located in its correct position to assemble the ribs, upside down.

The general location of parts.

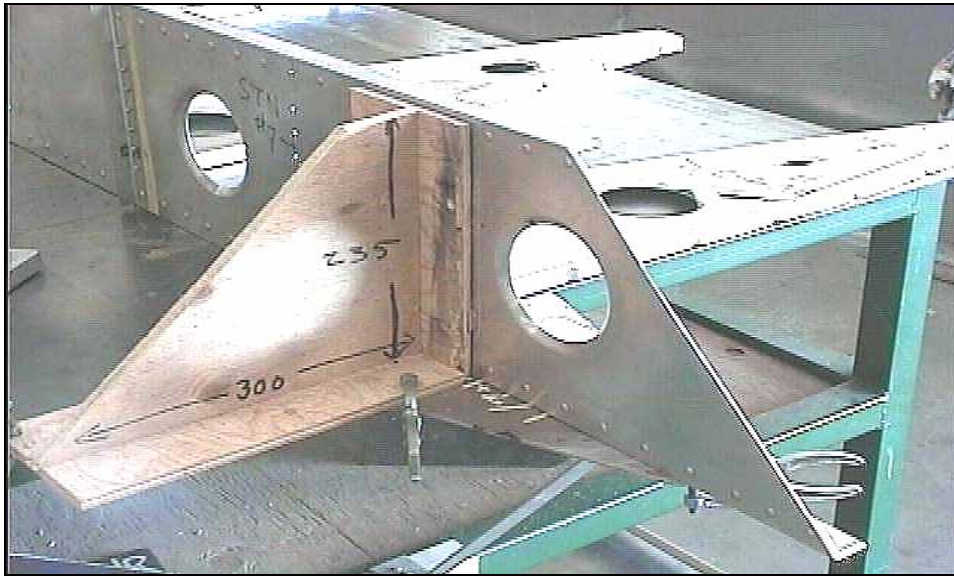


file V-37

Photo V4-2

The size is not critical, only the 90 degree angle is important.

Three of these simple braces can be used to secure the spar to the work bench, holding it at 90°.

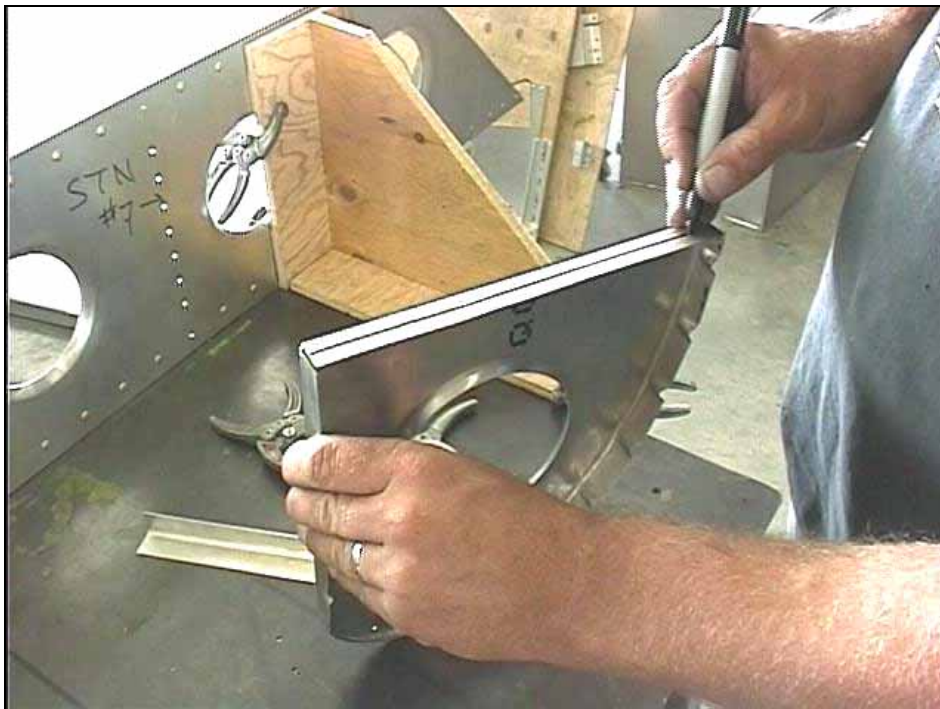


file V-38

Photo V4-3

A thread pulled tight close along but not touching the edge of the spar makes an excellent straight edge.

The spar is placed on the bench with a bottom edge up. When placing the wood braces take care to keep the spar straight.



file V-39

Photo V4-4

The rivet center line is drawn using the index finger as a guide.

There is no need to measure. Your eye can easily judge center within $\pm 1\text{mm}$.

Use a fine point felt marker. Do not use a scribe or anything which scratches the surface of the material.

Mark flange center line on the nose rib. Measuring by eye and finger is fine. Keeping the line consistently straight is important.



file V-40

Photo V4-5

All ribs are positioned with the flanges pointing towards the outboard wing tip.

Remember the wing is built upside down therefore the nose ribs must also be inverted.

A small piece of material clamped to the flat edge (bottom) will help in aligning the rib flange on the spar flange.



file V-41

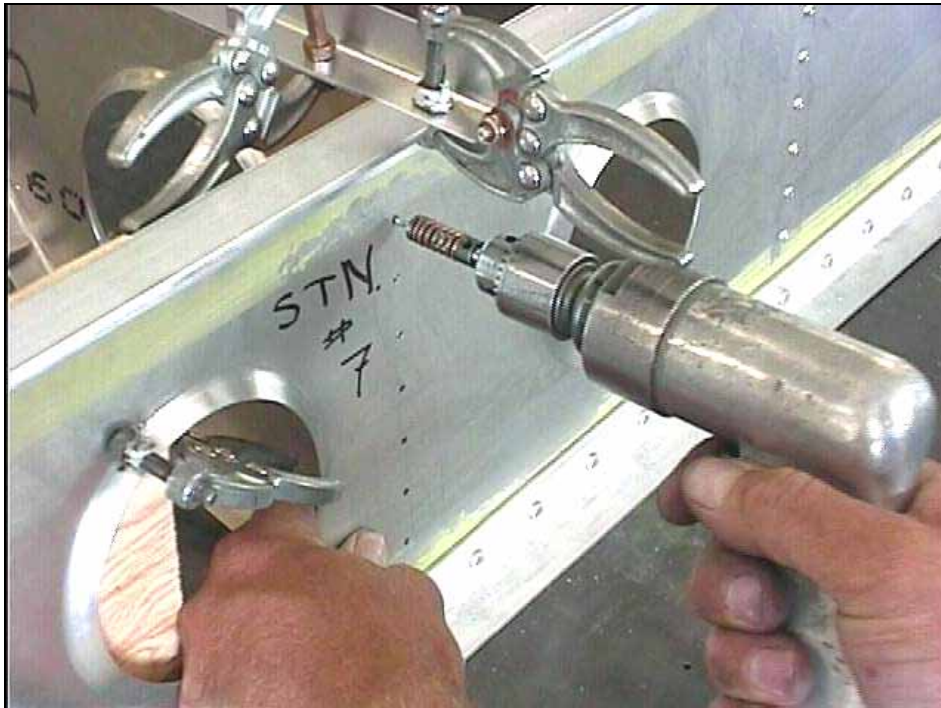
Photo V4-6

Clamping like this greatly increases the ease of installation.

Install ribs at stations 1,3,5,7 first. These are locations of the ribs with the slat attachment brackets.

Take another look at the skeleton plan photo V4-1.

Check the flange alignment at the lower edge of the spar.



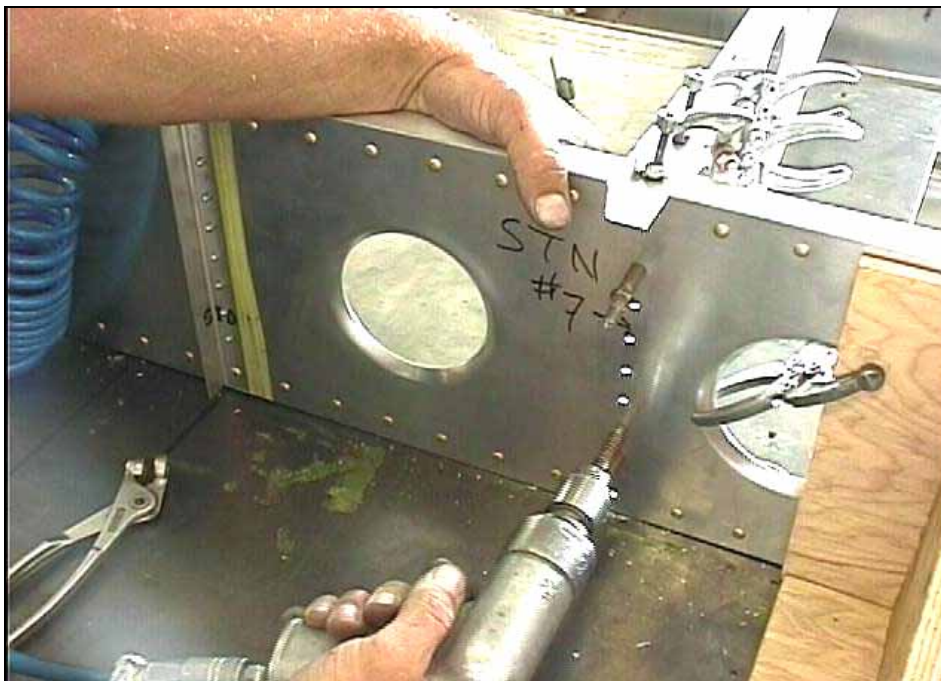
file V-42

Photo V4-7

Sight through the holes in the spar, align the center line marked on the rib with the holes.

First drill the hole closest to the bench top with a 3/32 drill. Cleco, drill the top hole, cleco. Drill the balance of the holes in the rib flange. Use a felt marker and record the wing station and wing (left, right) on each rib.

Remove the nose ribs.

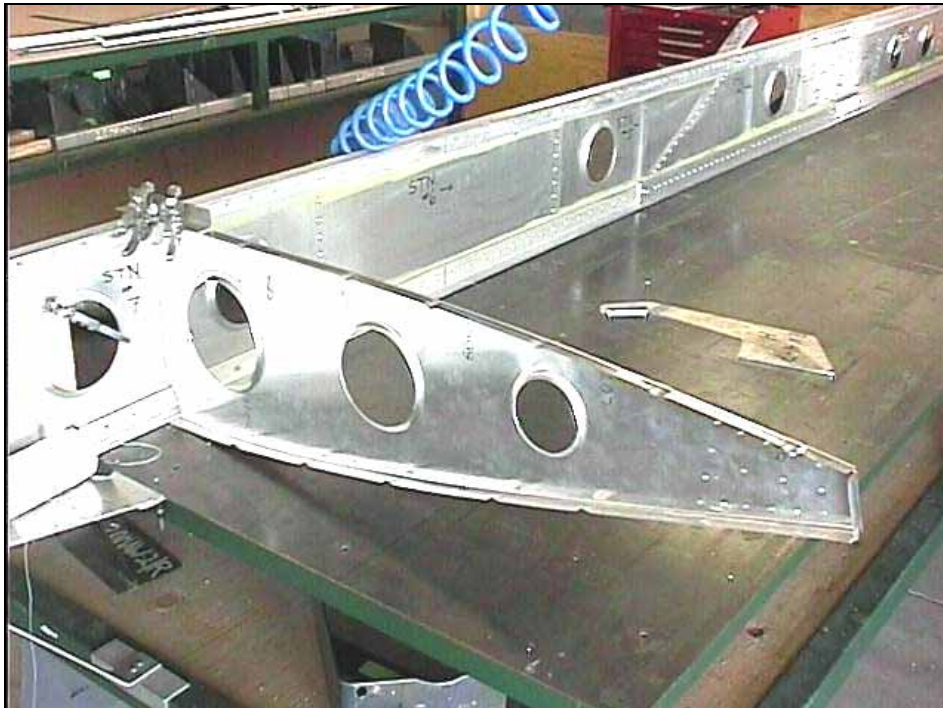


file V-43

Photo V4-8

The process is the same as for the nose ribs except you will drill from the front side of the spar. Drill size is 3/32"

With the nose ribs removed the spar is now ready to have the rear ribs fitted.

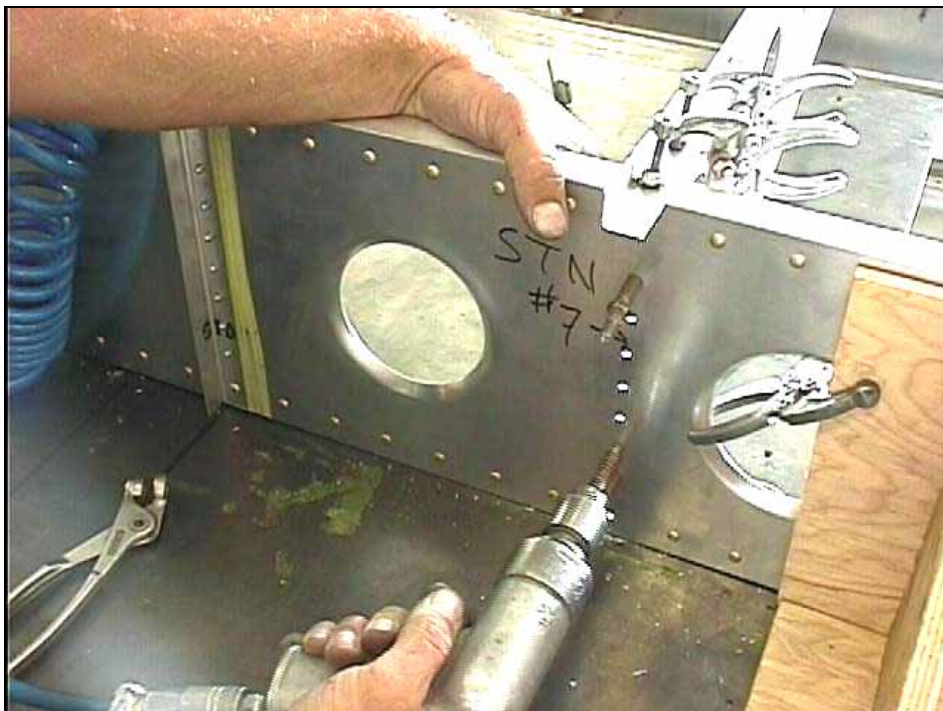


file V-44

Photo V4-9

Remember the wing is built in an upside down position, therefore also place the rear ribs upside down.

The top edge of the rib is the edge with the greatest curvature. It is also the edge that when measured within 6 inches of the rear flange is 90° to the flange. It is this edge which is placed closest to the bench top.



file V-46

Photo V4-10

Install the rear ribs with the flap bracket first. Then install the balance of the ribs.

Identify each rib with the wing station and an arrow indicating which way the rib is to be oriented.

Proceed with drilling as you did with the nose ribs. All drilling is with a 3/32 drill.



file V-47

Photo V4-11

See next page before photo riveting

Re-cleco the nose ribs in place.
 Check the alignment of all the ribs to the spar. Confirm each rib is in the correct location.
 Open the 3/32 holes with a #20 drill.
 Deburr, re-assemble and rivet the ribs in place.



file V-52

Photo V4-12

One A6 rivet is required at station # 4.

Note: 1 - A6 rivet is required due to the thickness buildup of the parts.

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	8/17/1999