

Photo of the XL rear rib blanks (1 through 9) stack together (for illustration purposes).

CRITICAL DIMENSION:
The wing has no twist when the spar is at 9 degrees and the ends of the ribs are equal distance to the workbench. Reference top middle diagram on drawing 6-W-6 and bottom left diagram on drawing 6-W-8

The purpose for this section of the photo sequence is to emphasize how to support the wing skeleton to assure there is no twist in the wing.

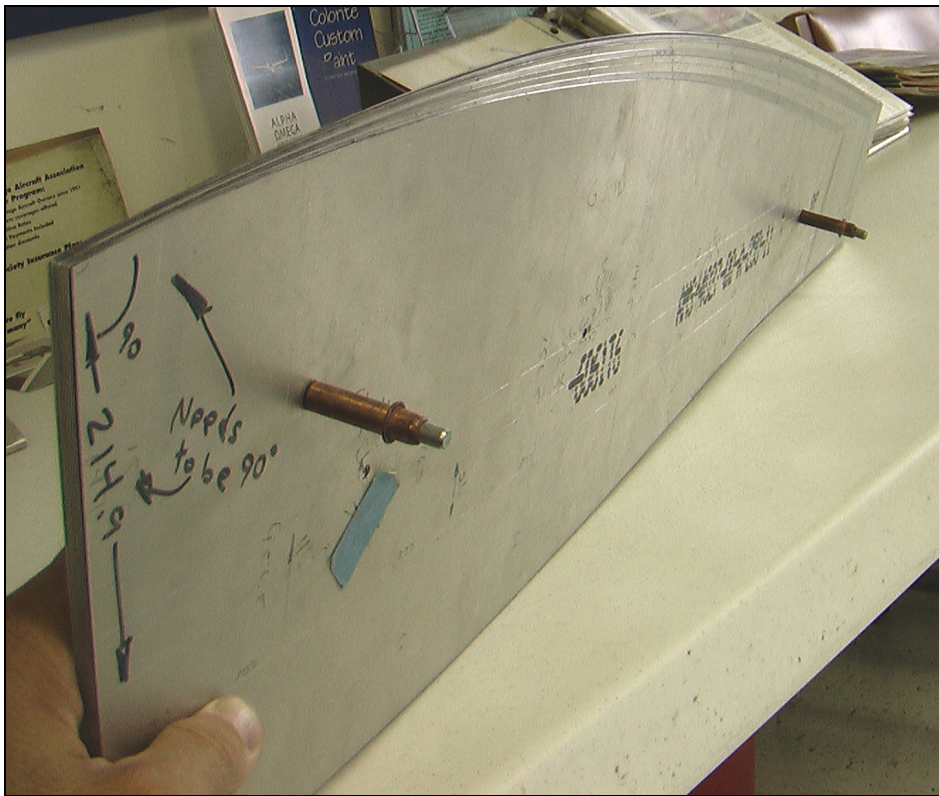


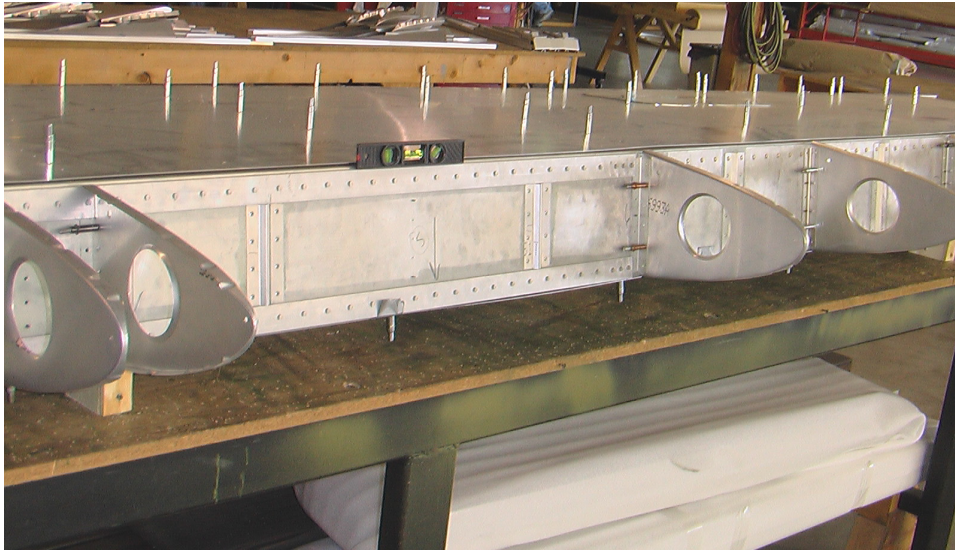
Photo of rib blanks for illustration purposes:

The front edge of the rib blanks are stacked evenly (flush). Notice how the ribs are tapered:

By design, the line connects point A on each rib is level only when the main spar is level and 9 degrees to the vertical. Ref. drawing 6-W-6

OBSEVATION: Notice the change in curvature on the top and bottom of the ribs. Work with the wing supported under the main spar and under the rear channel.

Pages 2 to 6: Rear ribs are tapered. Add block under the spar & channel.
 Pages 7 to 8: Nose ribs are identical: No twist in the spar.
 Page 9: Looking underneath the wing and the workbench (wing upside down)



TIP: Position the wing assembly with the front of the nose ribs over the edge of the workbench (to install the leading edge skin 6W8-1).



Cleco the Nose Ribs to Spar.
(The wing tanks 6K1-1 will fit between NR#3 & NR#4)

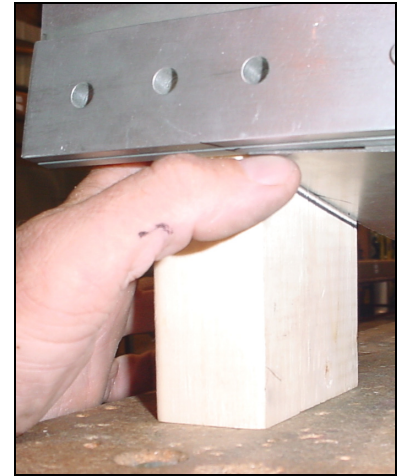
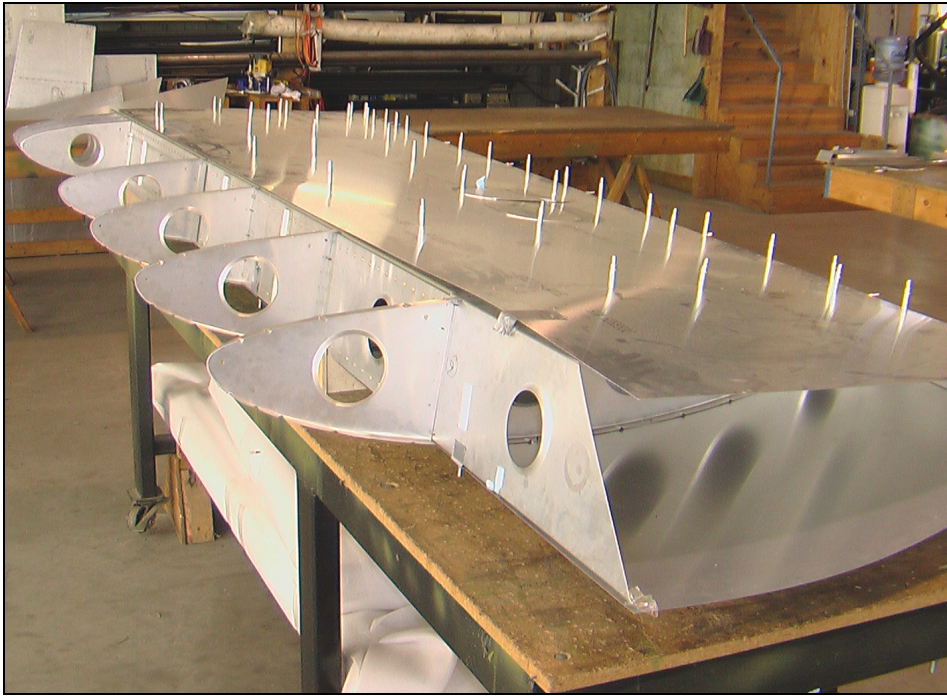
Once again, check that the main spar is level (span wise).



Check that the main spar is at 9 degrees. Use a level across the 81 degrees plywood template shown on drawing 6-B-14.

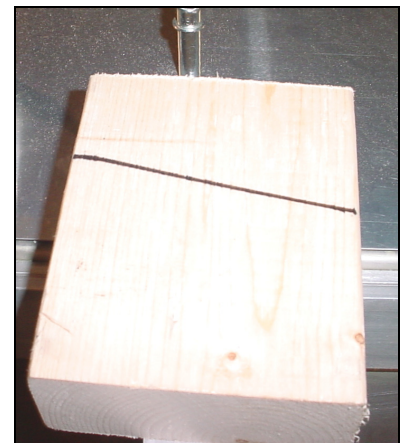
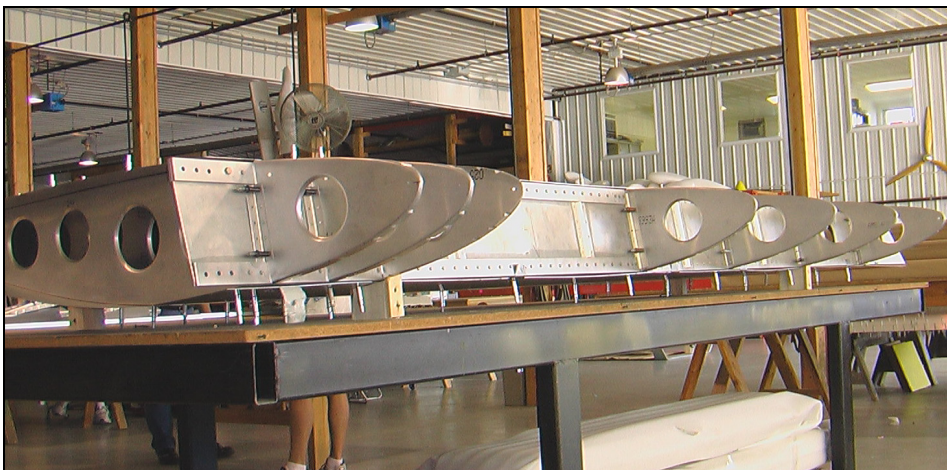


Check that the rear spar is level.



Detail of how to make a support block to fit between the workbench and the bottom of the main spar. Trace the bottom inboard edge of the bottom skin on a short piece of 2x4 beam.

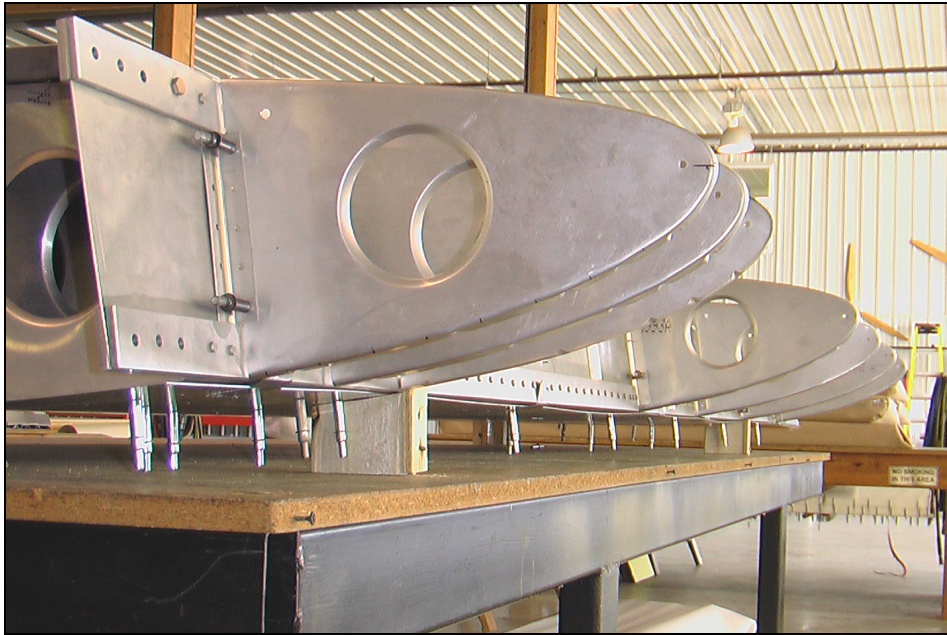
At this point it is a good idea to replace the support beams (stacked up) with custom cut block to fit the curvature of the wing.



On a band saw cut the support block. The angle cut will fit the curvature of the wing and will keep the wing from slipping off the top of the block.

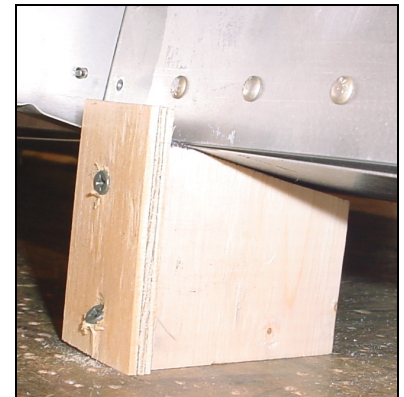
LAYOUT: diagonal cut
On a 2x4 beam:
79mm , 65mm up from bottom

The spar is raised off the workbench, minimum of 2 bock required.



Screw a piece of plywood along the front face of the blocks, to keep the spar from sliding forward on the blocks.

On a level workbench, the 2 blocks are identical (same height).



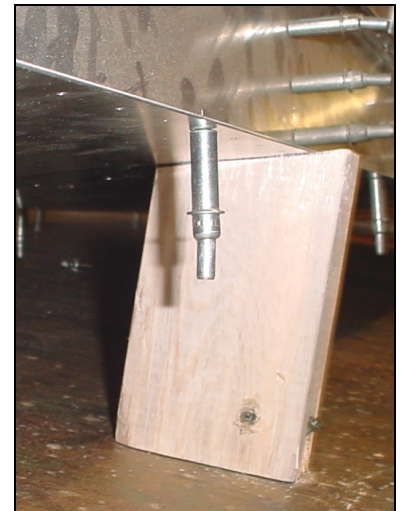
Screw the support block to the workbench.

Detail of the support lock between the workbench and the wing.



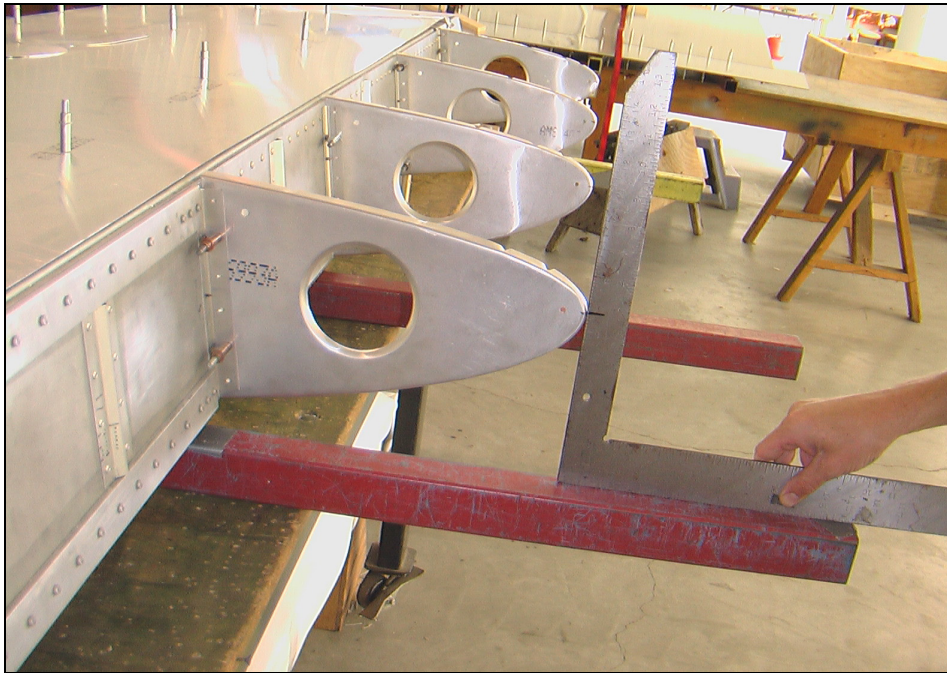
2x4 board
162mm, and 142mm
measured up from bottom.

Support block under the rear channel.



Screw the block to the
workbench.

Check that the rear channel is level.



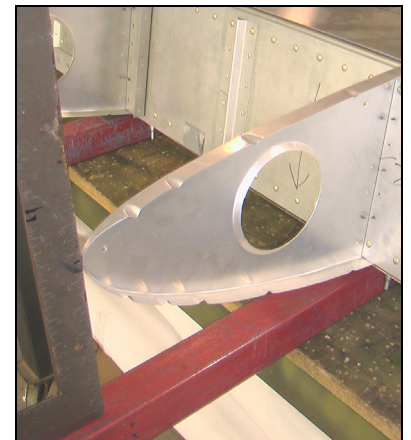
The nose ribs are all identical. Check that they all line up:
Slide a 2x2" steel beam between the bottom of the wing and the workbench. Set a square on the beam.



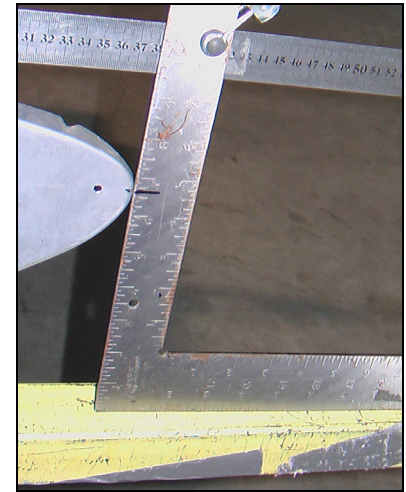
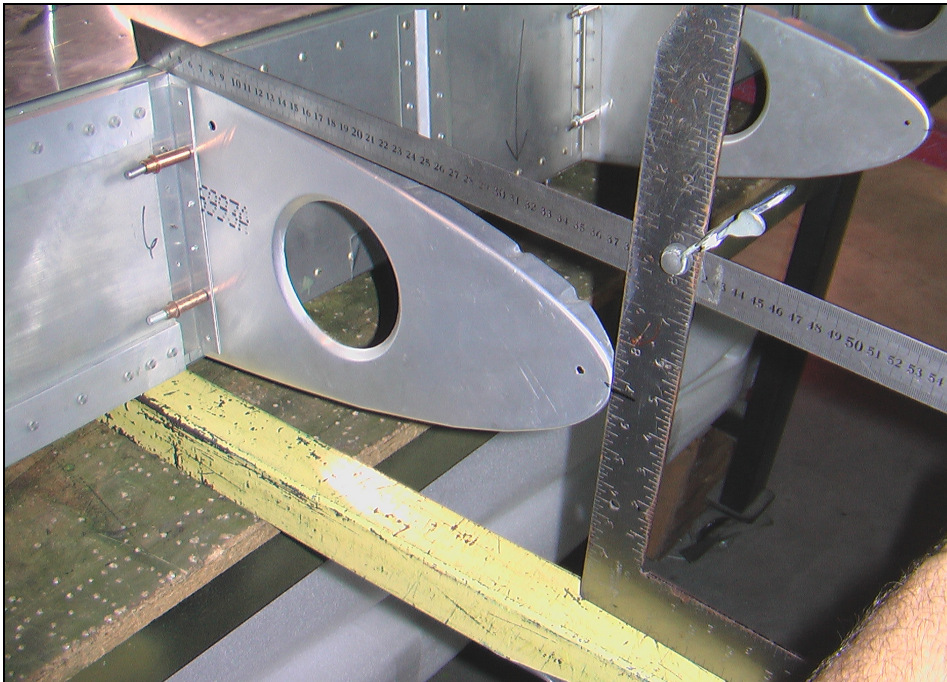
Mark the point of contact between the front of the wing and a square (Mark the leading edge of the ribs).



The vertical distance from the beam to the leading edge of the nose ribs is the same for all the nose ribs.
Check that the leading edges are all in line.

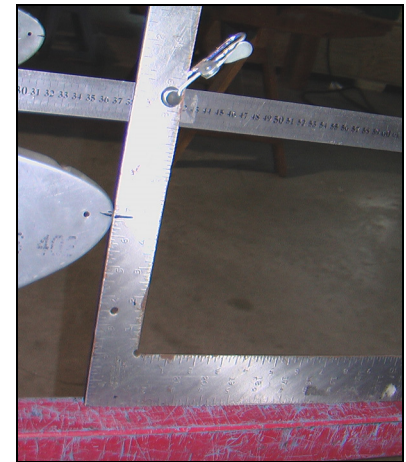


Mark the front of each nose rib.



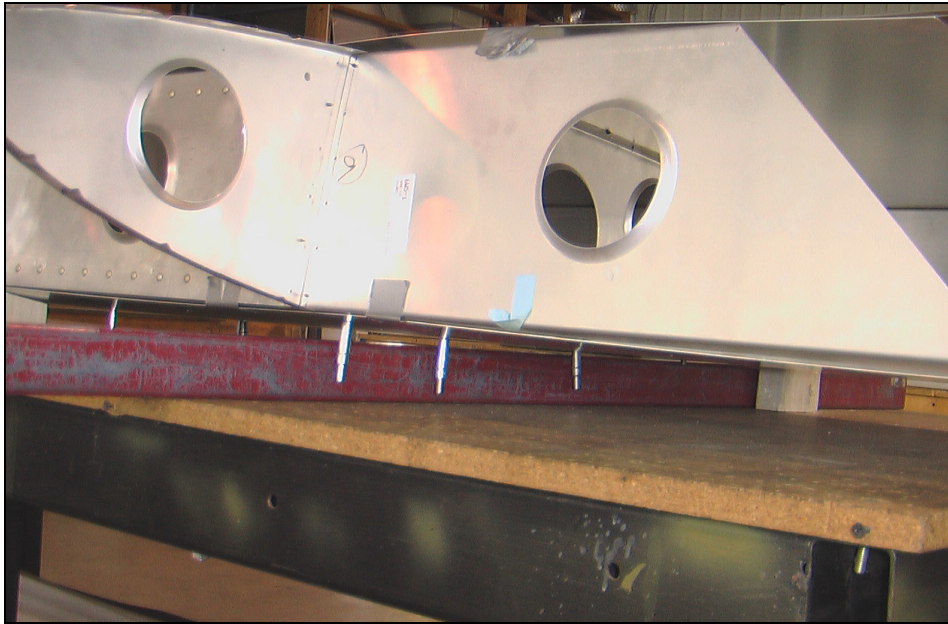
CHECK: The horizontal distance from the spar rivet line to the leading edge of the nose rib (square) is the same for all the ribs.

There is no twist in the main spar: the top of the spar is level, the web is at 9 degrees to the vertical.



Approximately 381mm for the top side and 351mm for the bottom

The nose ribs and spar make a "D" section with the leading edge skin. The leading edge is horizontal (level with the main spar), the horizontal distance from the leading edge to the spar rivet line is equal distance at the wing tip and at the root.



Note the visible gap between the top of the beam at rear rib #9 and the bottom skin.

INTERESTING OBSERATION: With the wing upside down on the workbench, the curvature at rear rib #9 is much more pronounced than at rear rib #1.



At rear rib #1 the 2" steel beam does not fit between the workbench and the skin.

Detail of curvature of the top skin at rear rib 1.