

PHOTO ASSEMBLY GUIDE - Section C75-RA-1

PART A: Rudder Skeleton

PART B: Rudder skin



This manual has been prepared for assembly of the Rudder supplied with finished hole size, match drilled parts. This photo assembly manual is intended as a supplement to the drawings. If there is any discrepancy between this manual and the drawings, the drawings supersede this manual. For information on building standards and tolerances see "Construction Standards for Zenair Light Aircraft" available from Zenith Aircraft Co.



2" (or taller) beams are required to lift the Rudder off the table so the clecos won't dent or damage the thin Skin. Set the beams approximately 400mm apart.



A 1" spacer block is required under the bottom trailing edge to remove twist from the Rudder when installing the Skin.

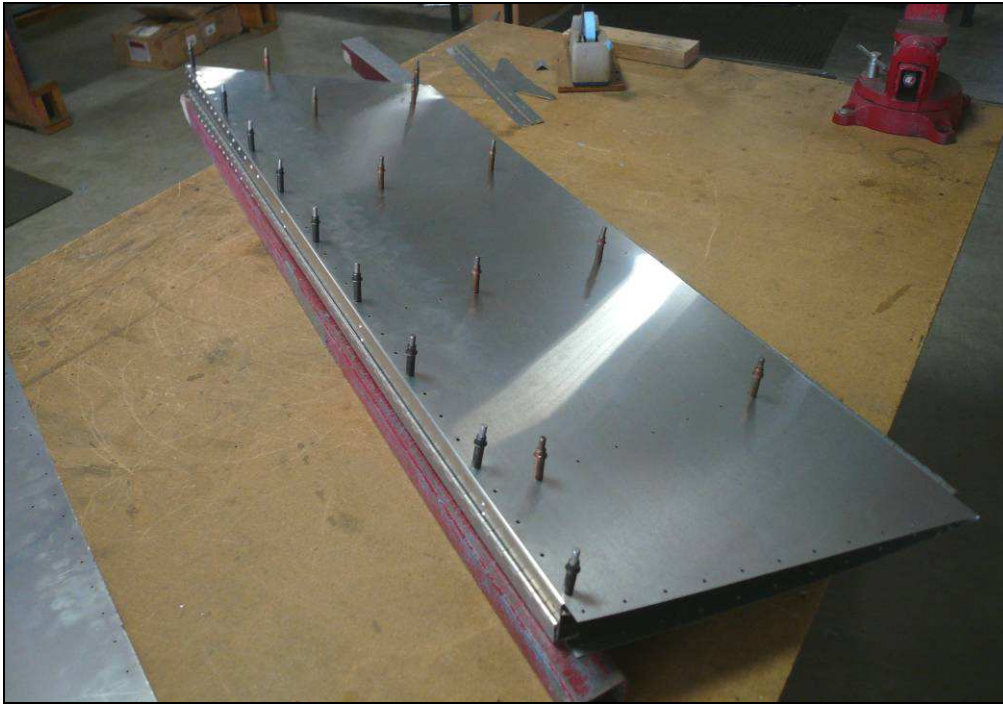


P/N: C75R3-1
Rudder Skin

Deburr the holes in the Rudder Skin with a large drill bit. Also deburr the edges of the Skin with the edge deburring tool



Set the Skin on the beams and insert the Skeleton between the halves of the Skin. Position the 1" spacer at the **BOTTOM TRAILING EDGE** of the Rudder under the beam.



Cleco the Skin to the Skeleton. Flip the Rudder over, remember to reposition the spacer block to remain under the bottom trailing edge corner, and to cleco both sides.



Notice the 1" block under the beams on the bottom trailing edge.



P/N: C75R3-2
Rudder Horn

Deburr the Rudder Horn holes and edges. Cleco the Horn to the Bottom Rib and wait to rivet until the very end.

Orientation: The Horn has a slight bend upward at the bolt holes at each end.



P/N: C75R3-3
Rudder Top Cap

Check that Cap is level from side to side. If not, trim or put on a belt sander to level the tip side to side.



Measure and mark a 10mm line on both side.



P/N: C75R1-1
Top Rudder Tip Rib

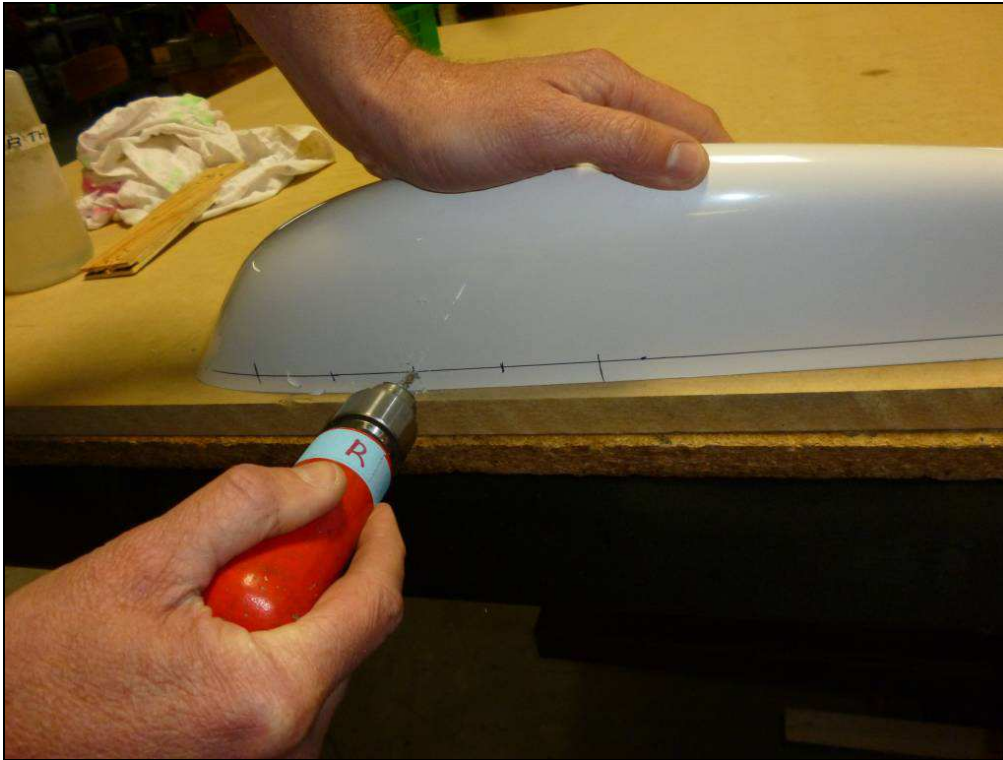
P/N: C75R3-3
Rudder Top Cap

Position the Top Rudder Tip Rib inside the Rudder Top Cap.

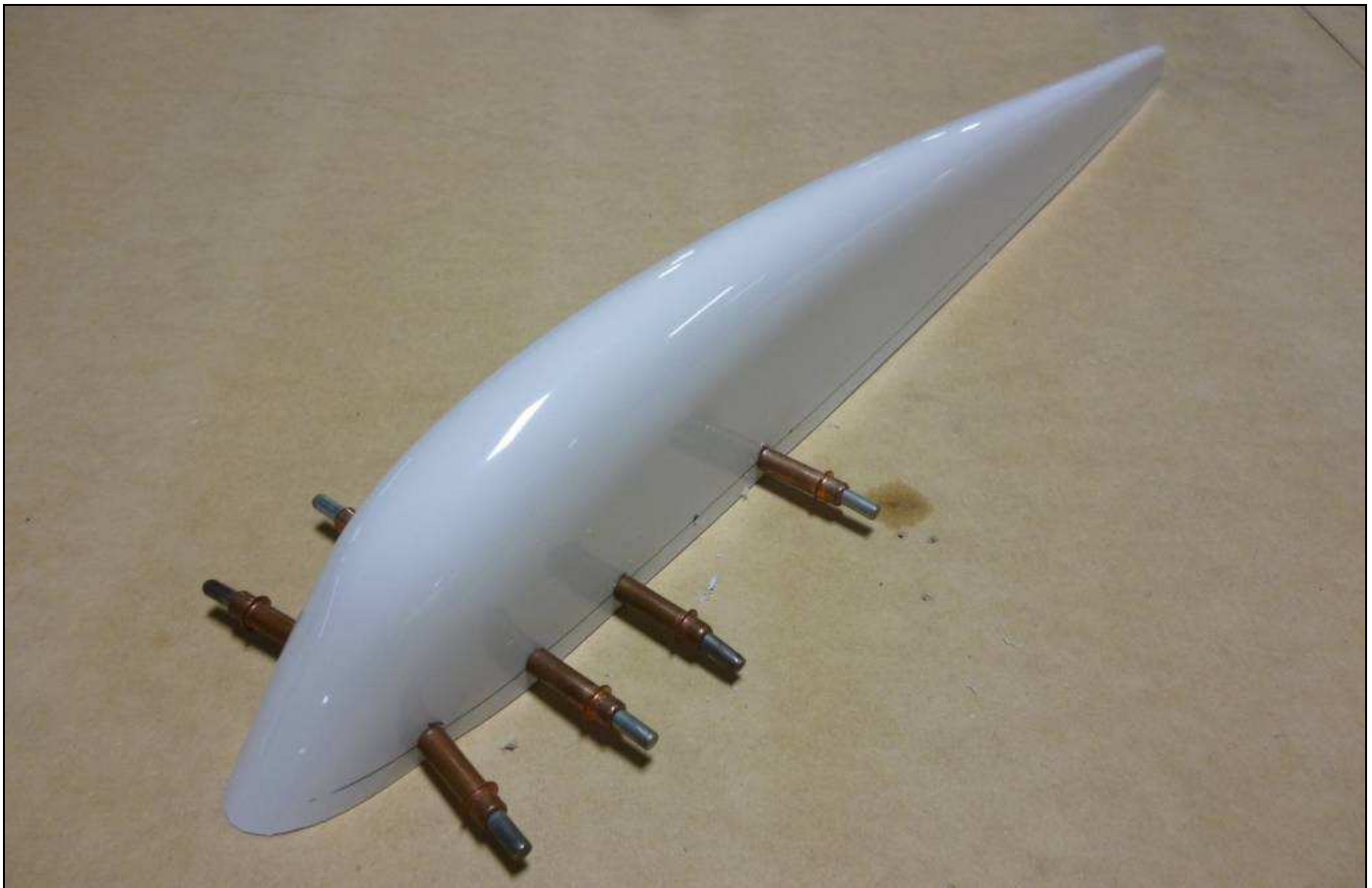


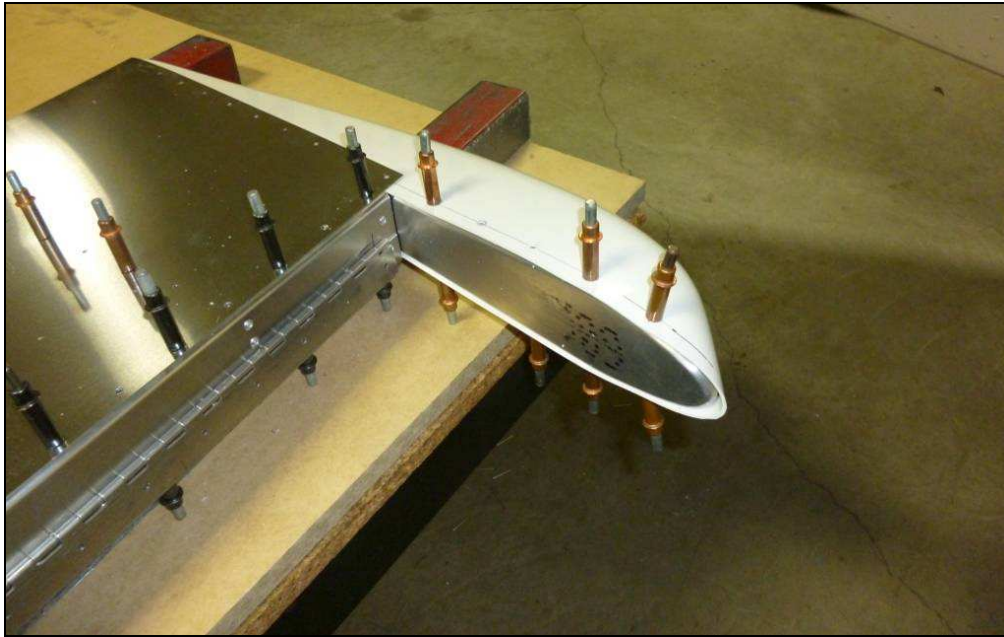
Layout 5 evenly spaced holes on the front section. The first hole is position 60mm from the front of the tip, and last hole is 230mm from the tip. Then, evenly space three holes between the front and back hole. These holes are located in front of the Rudder Spar. Drill and cleco the tip rib to the rudder rib.





Bring the assembly to the edge of the workbench, drill and cleco.

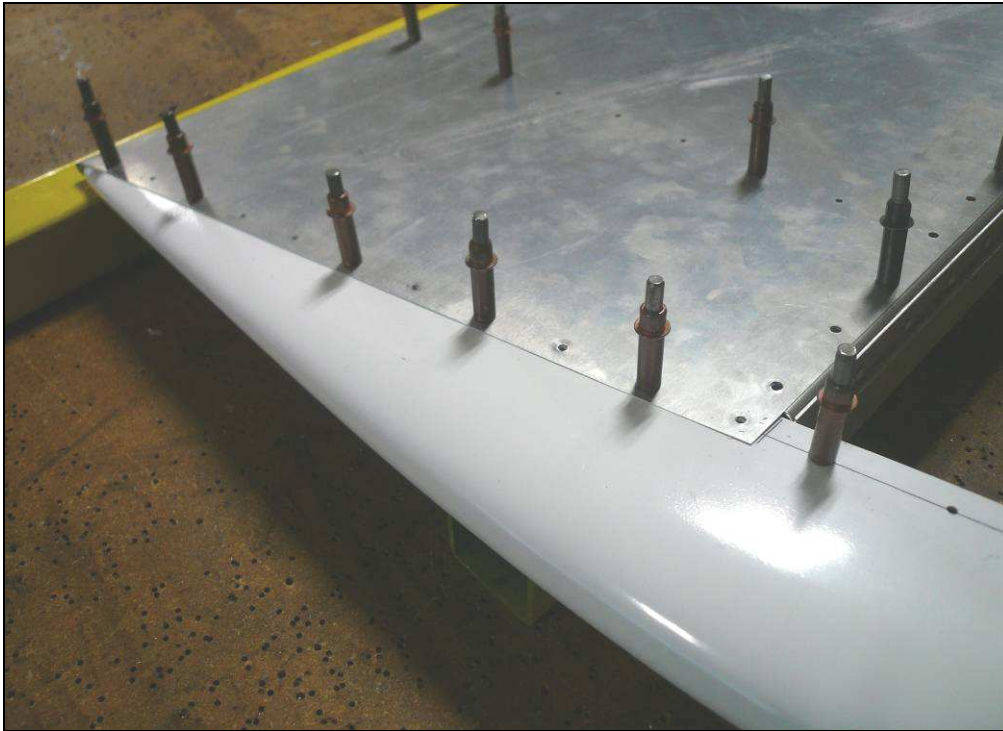




Position the Rudder Top Cap on to the Rudder Section



The distance from the spar to tip is 253mm ref. C75-RA-1



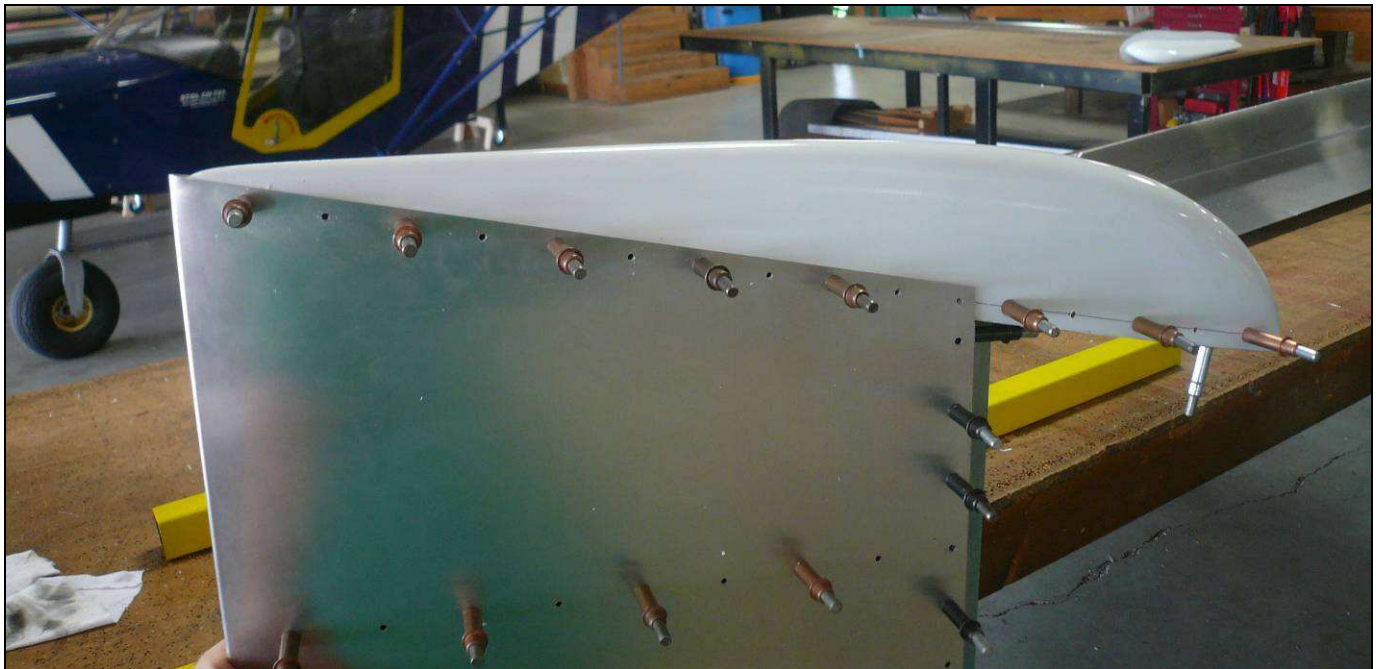
When the line is visible thru the holes, drill and cleco the skin to the Top Cap. Repeat on the other side.



Cleco C75R1-1 Top Rudder Tip Rib to the skin and use any material to use as a spacer. Recommend shim should be from .050 to .070 thick. This will allow the rib to be centered and will represent the plastic tip. Layout two evenly spaced rivet holes on the Rib to the Rudder Tip Angle that is behind the Rib. You may need to remove the Rudder Tip Rib to locate the center line on the Tip Rib. Or extend the Spar Rivet line on each side.



Drill and Cleco the Top Rudder Tip Rib to the Rudder Tip Angle from the rivet holes that were marked.
2 rivets A4, Rivet the tip rib to the angle.



Cleco the Rudder Top Cap back on the Rudder and check to make sure nothing has moved.



Deburr any holes that have not been done. Rivet the Skin to the Skeleton starting on the trailing edge. Remember to change rivet gun nose pieces when changing rivet size. **Don't forget to position the 1" spacer at the Bottom Trailing Edge of the Rudder under the beam.**



Vertical tail assembly