

C75-RA-1 Rudder Skeleton



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.

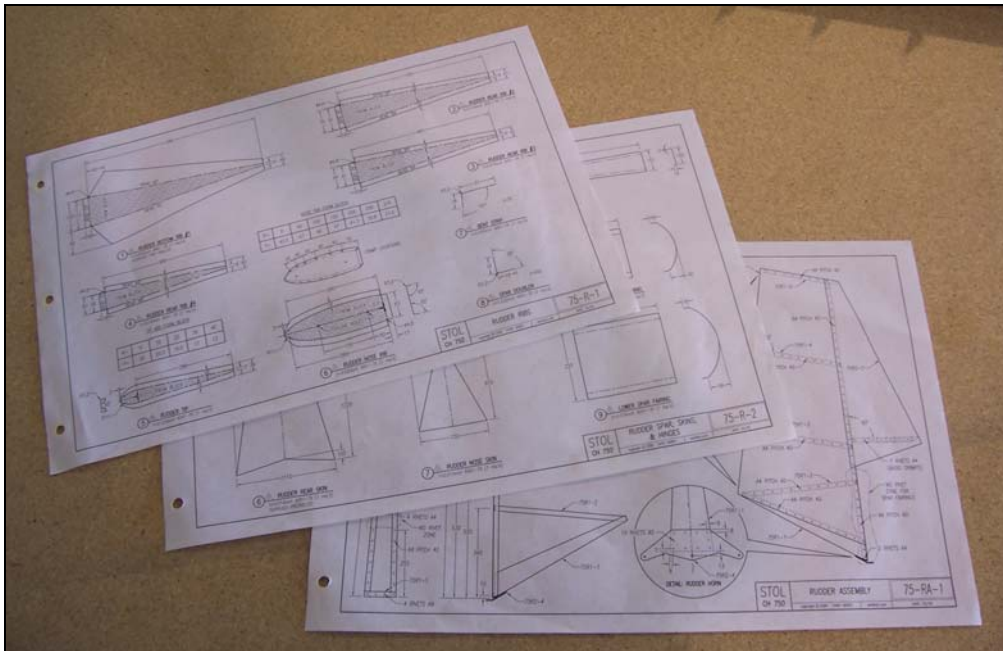


Zenith CH 750 Cruiser Rudder Assembly

Parts are labeled for easy identification with a part number and description:

Part number example:
C75R2-1 Rudder Spar

- C** - Cruiser
- 75** - CH 750 model.
- R** - Rudder section of the aircraft drawings.
- 2** - Page 2 of the Rudder drawings.
- 1** - Part 1 on page 2.



In addition to the photo assembly guide, also refer to drawings 75-R-1, 75-R-2, and 75-RA-1 (drawing number in right bottom corner of the title block). Always refer to the drawings for technical information: material thickness, part dimension, part orientation, layout distances, and rivet sizes, location and spacing.

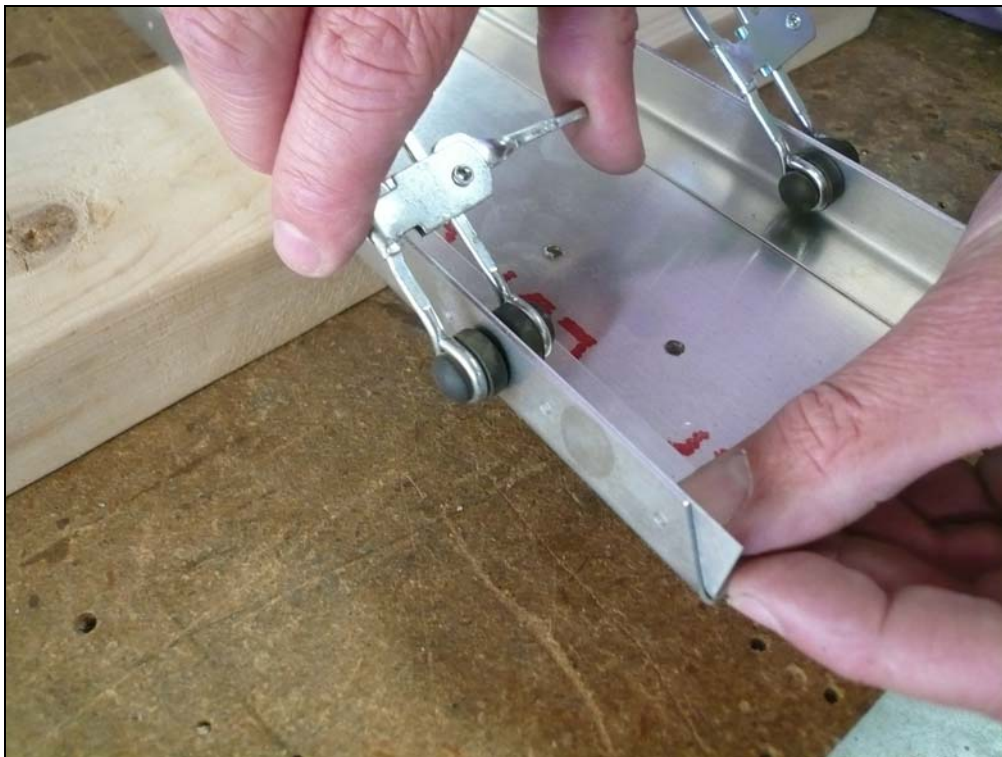


P/N: C75R2-1
Rudder Spar

Spar Web - term used to refer to the flat area between the flanges.

Tool: half round 6" fine (smooth) double cut hand file.

Use a file to remove any burrs on the edges of the parts and lightly round off corners. To remove the parts label it is best to use lacquer thinner.



P/N: C75R2-2
Rudder Spar

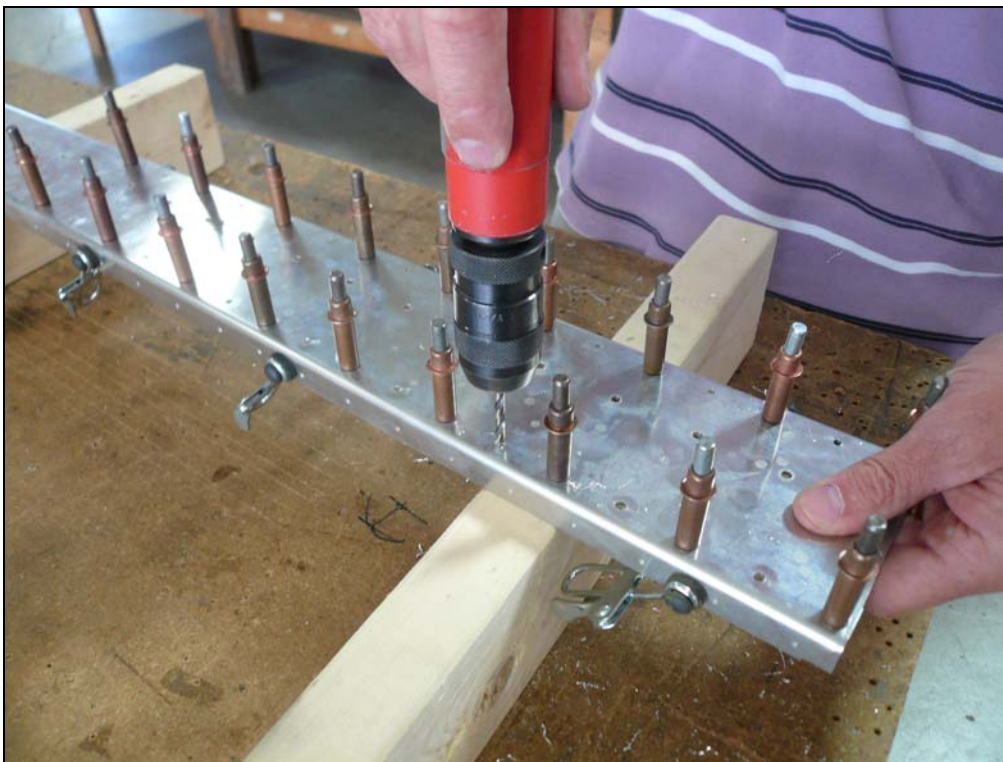
P/N: TP640HC
Handi-Clamp

U.S. Industrial Tool
1-800-521-4800

Position the Spar Doublers inside the Spar, flush with the bottom of the Spar. Clamp the Doublers to the Spar using three clamps on each Doubler.



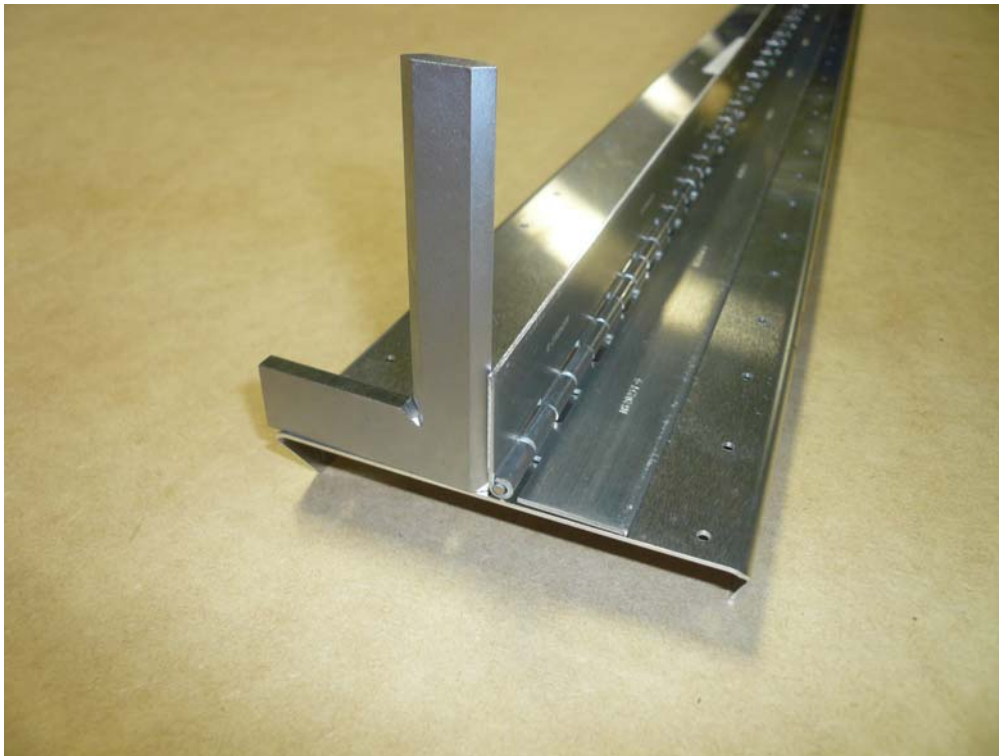
Flip the Spar over and back drill through the pilot holes for the Doublers with a #30 drill bit and cleco every other hole.



Switch to a #20 drill bit and expand the holes for the Doublers and cleco. Remove the #30 clecos and expand those holes with a #20 drill bit.

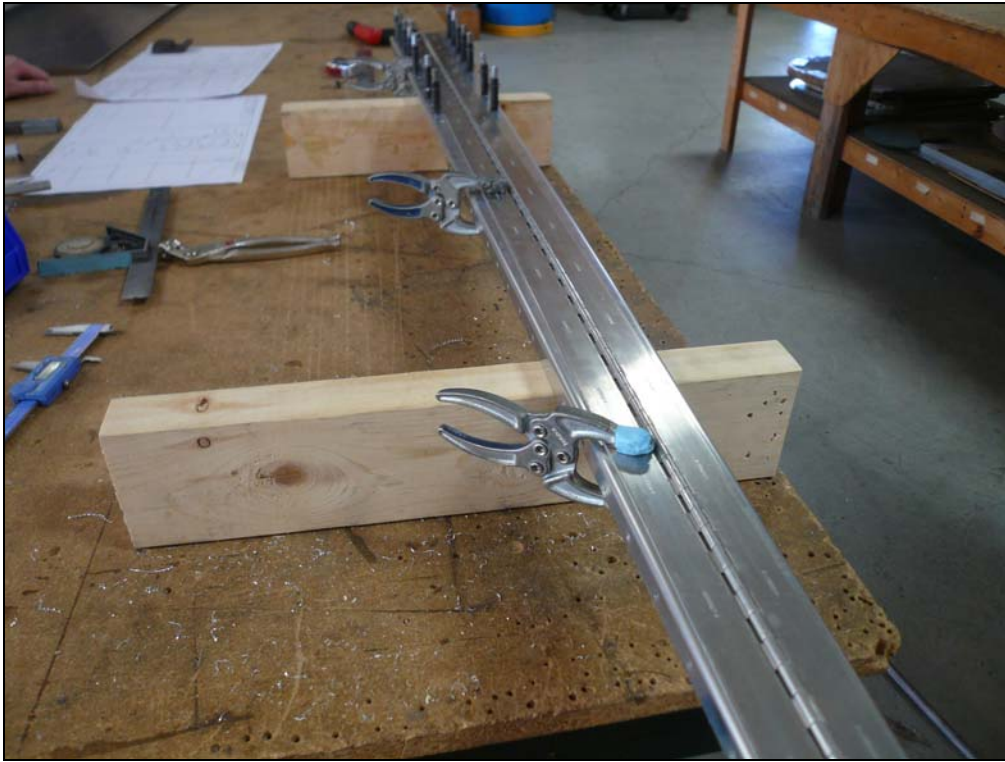


Mark the end of the Spar on the flange of the Doublers. The Doublers will be trimmed along this line later.



P/N: C75R2-3
Piano Hinge

The Spar is already marked in the center for the Piano Hinge from the Factory. Double check the measurement on the top and bottom. Use a small square to center the flange side to the center of the Spar.



Clamp the Piano Hinge to the Spar at each end and a several places in the center. When clamping the hinge, make sure to keep it straight.



Flip the Spar over and back drill into the Hinge with a #30 drill bit and cleco. Expand the holes with a #20 drill bit and cleco.



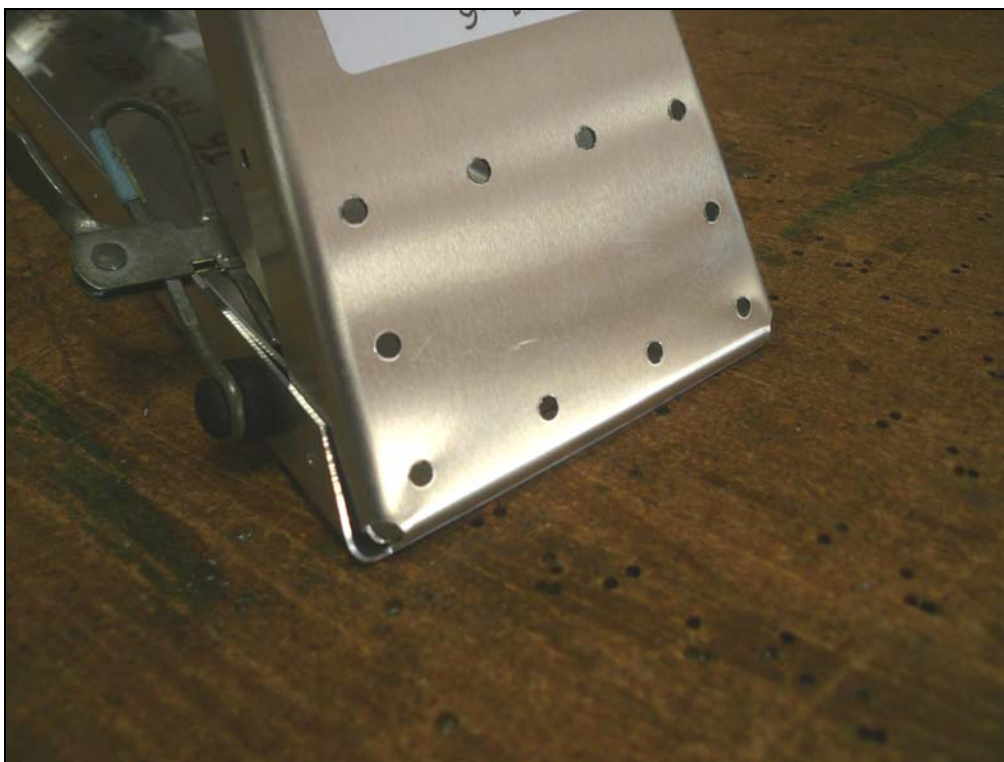
Use a #30 drill bit to back drill through the Spar into the Doublers on the side flange and cleco. Then expand the holes with a #20 drill bit to match the holes in the Spar above the Doublers.



Remove the Doublers from the Spar. Use a pair of Snips to trim the Doublers along the line. Be careful to not fully close the snips when making a cut, doing so will kink the material. Use a file to smooth the cut edge.



Use a large drill bit to deburr the holes in all the Rudder parts, including the ribs. A couple quick turns with light pressure will remove the burrs. Be careful not to countersink the holes!



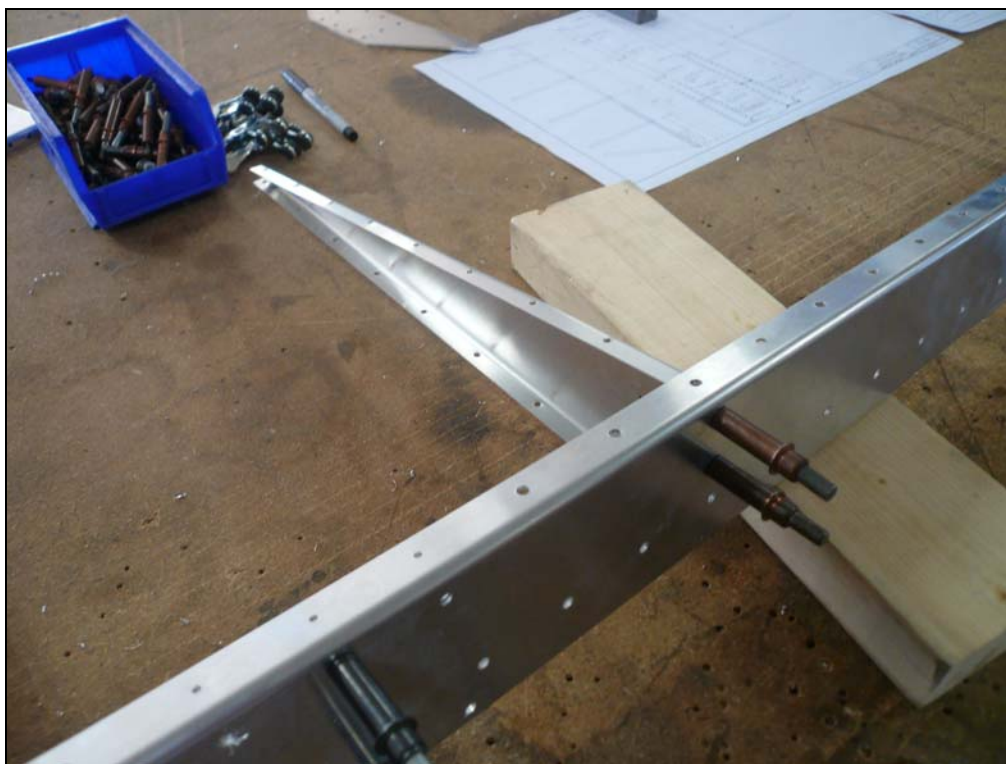
P/N: C75R1-6
Bottom Rudder Rib

The Bottom Rudder Rib is position between the Spar and Doubler. All the holes on the Rib will have to be clecoed for the holes to line up to the Spar. Using a Punch will help line up the holes.



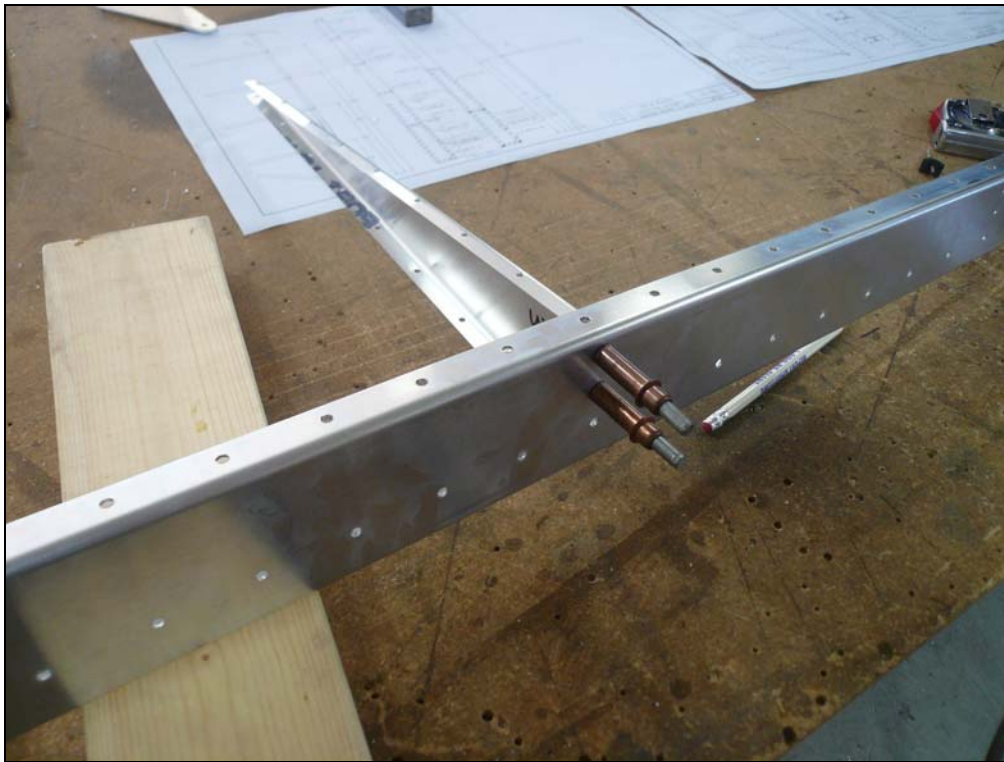
P/N: C75R1-2
Rudder Rib #1

Slide Rib #1 between the flanges of the Spar up from the bottom. Cleco Rib #1 to the holes in the Spar 314mm up from the bottom of the Spar.



P/N: C75R1-3
Rudder Rib #2

Slide Rib #2 into position between the flanges of the Spar. Cleco Rib #2 to the holes in the Spar 609mm from the bottom of the Spar.



P/N: C75R1-4
Rudder Rib #3

Slide Rib #3 into position between the flanges of the Spar. Cleco Rib #3 to the holes in the Spar 904mm from the bottom of the Spar.



P/N: C75R1-5
Rudder Rib #4

Slide Rib #4 into position between the flanges of the Spar. Cleco Rib #4 to the holes in the Spar 1200mm from the bottom of the Spar.



Rivet the Skeleton together on the web of the Spar. The Piano Hinge will have to be removed, to be able to rivet the Rear Ribs. Then cleco the Piano Hinge back on and rivet the Hinge to the Spar. **The Spar flanges get riveted with the Skin in the next section.** Don't forget to change the rivet gun nose piece when switching rivet sizes from A4 to A5 rivets.