

## Section 75-ZA-2 Rudder Mounting

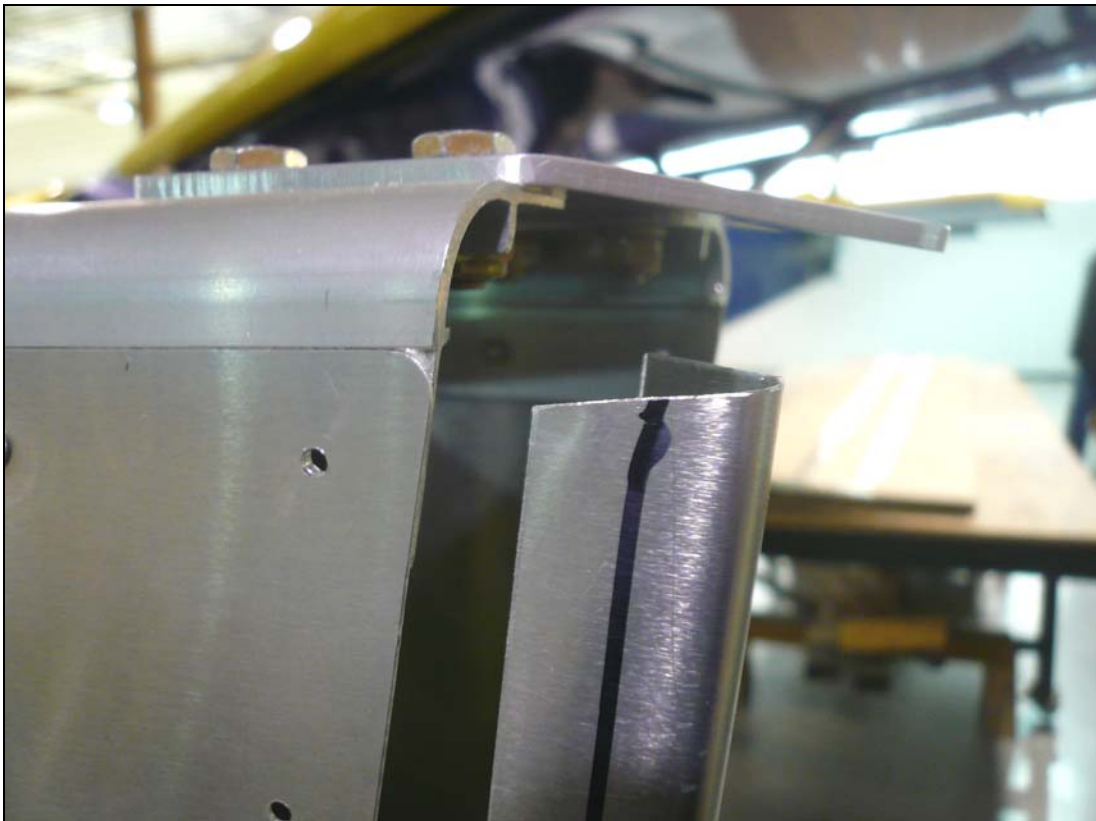


This manual has been prepared for installation of the Rudder. This photo assembly manual is intended as a supplement to the drawings. If there is any discrepancy between this manual and the drawings, the drawings supersede this manual. For more information on building standards and allowable tolerances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



**P/N: 75Z1-1**  
Rear Fuselage Angle

Draw a center line on one flange of the Rear Fuselage Angles.



Trim the top of the flange for clearance on around the tab on the Longeron. Clamp the Angle on the Rear Fuselage with the center line visible through the predrilled holes on the Skin.



Back drill through the Skin into the Angle with a #30 drill bit and cleco. Deburr and rivet the Angles to the Rear Fuselage.



**P/N: 75R2-4**  
Rudder Horn

Deburr and rivet the Rudder Horn to the Rudder. Expand the hole in the center of the Horn with a 6.5mm drill bit.



**P/N: 75F2-7**  
Upper Rudder Hinge  
Plate

Use a 6.5mm drill bit to expand the holes in the Upper Rudder Hinge Plate.



Position the Rudder on the Fuselage with the Horn centered vertically between the Lower Rudder Hinges. Mark the Upper Rudder Hinge Plate location on the Rudder Spar.



Mark a line extending the rivet lines along the edge of the web of the Rudder Spar. Mark a line across the Rudder Spar 5mm above and 5mm below the mark for the Upper Rudder Hinge Plate.

**Note:** DO NOT use a square along the side of the Spar as the sides of the Rudder Spar taper towards the tip.



**P/N:** 75R2-5  
Upper Rudder Hinge  
Angles

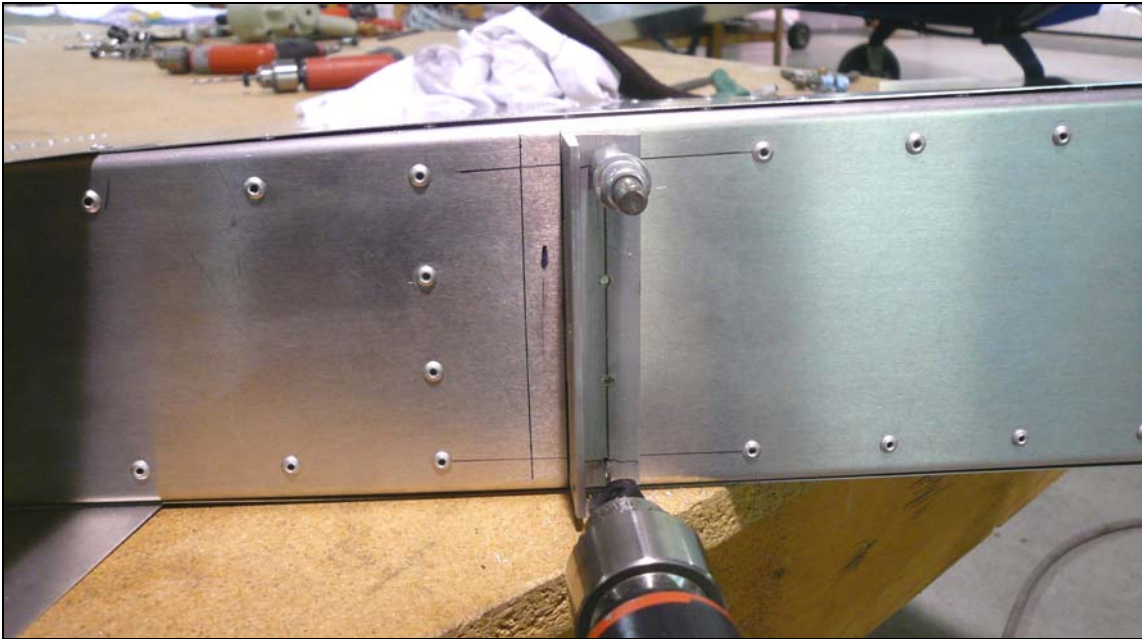
Clamp two flanges of the Upper Rudder Hinge Angles together. Mark the center of the Hinge Angles. Mark the bearing hole location 9mm from the front edge of the Hinge Angles. Use a #40 drill bit to drill the hole. Expand the hole with a #12 drill bit.



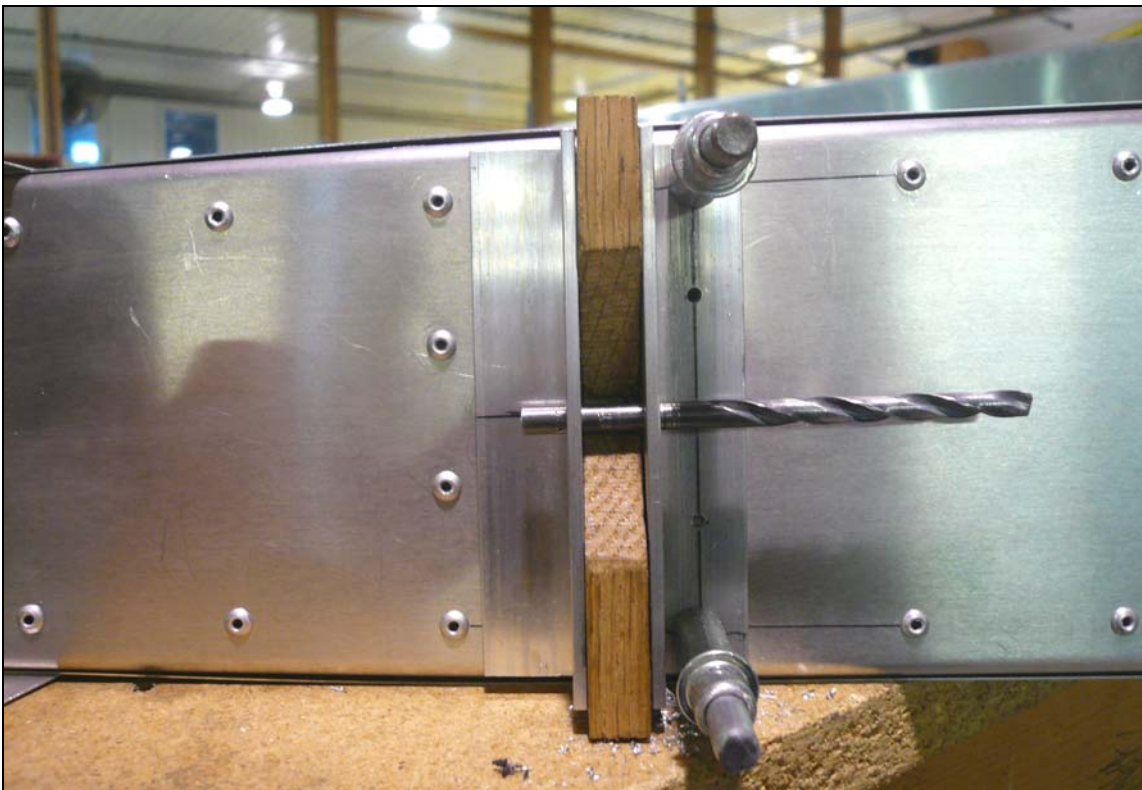
Mark the center line on the opposite flange as previously drilled. Layout 4 rivet locations, 10mm from each end and 2 evenly spaced between and predrill the holes with a #40 drill bit. Then repeat the procedure on the other Hinge Angle.



Mark a point 37mm from the ends of the Hinge on the flange with the bearing hole. Draw a line from the point to the corner of the Hinge. Use a hacksaw or band saw to cut the excess material off of the Hinge. Use a file to smooth out the saw tooth marks on the Hinge.



Position the Hinge Angle so the edge of the top flange is flush with the line and the lines are visible through the predrilled holes. Back drill through the Hinge Angle into the Rudder Spar and Cleco. Expand the holes with a #20 drill bit and Cleco.



Use a 10mm spacer or P/N 75R2-1 to position the second Hinge Angle. Use a #12 drill bit or a 3/16" bolt to align the bolt holes in the Hinge Angles. Back drill through the holes in the Hinge Angle into the Rudder Spar and Cleco. Expand the holes with a #20 drill bit and Cleco. Deburr the holes in the Hinge Angles and rivet them to the Spar.



**P/N: 75R2-1**  
Upper Rudder  
Bushing

**P/N: 75R2-2**  
Lower Rudder  
Bushing



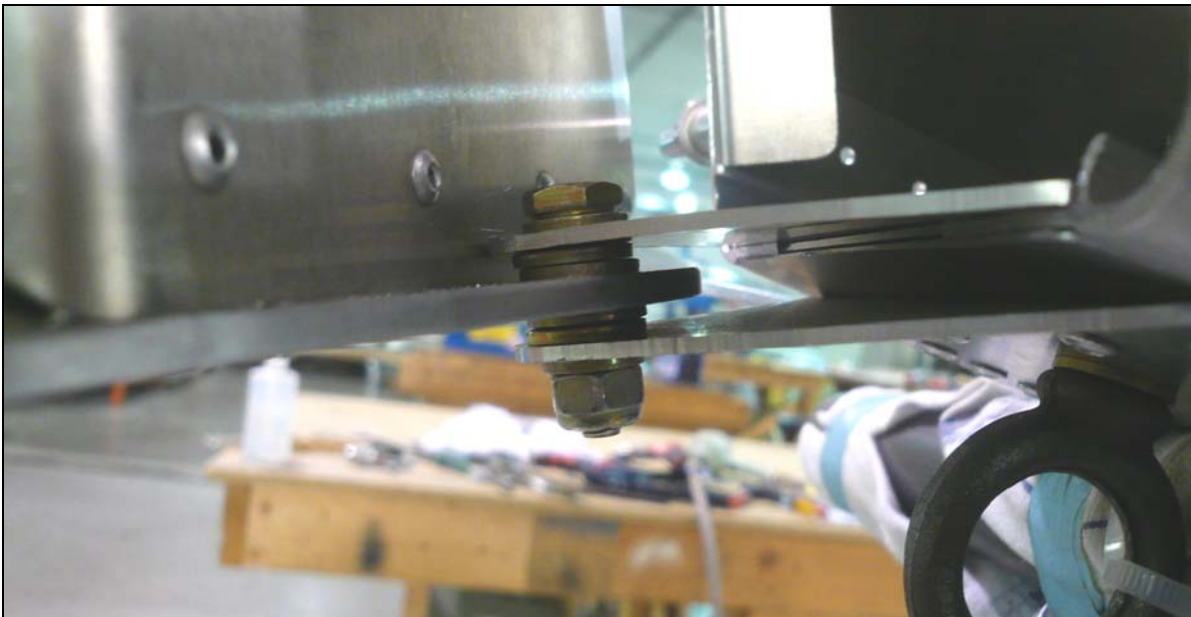
Bolt the Rudder to the Fuselage using the following steps to install the Bushings.





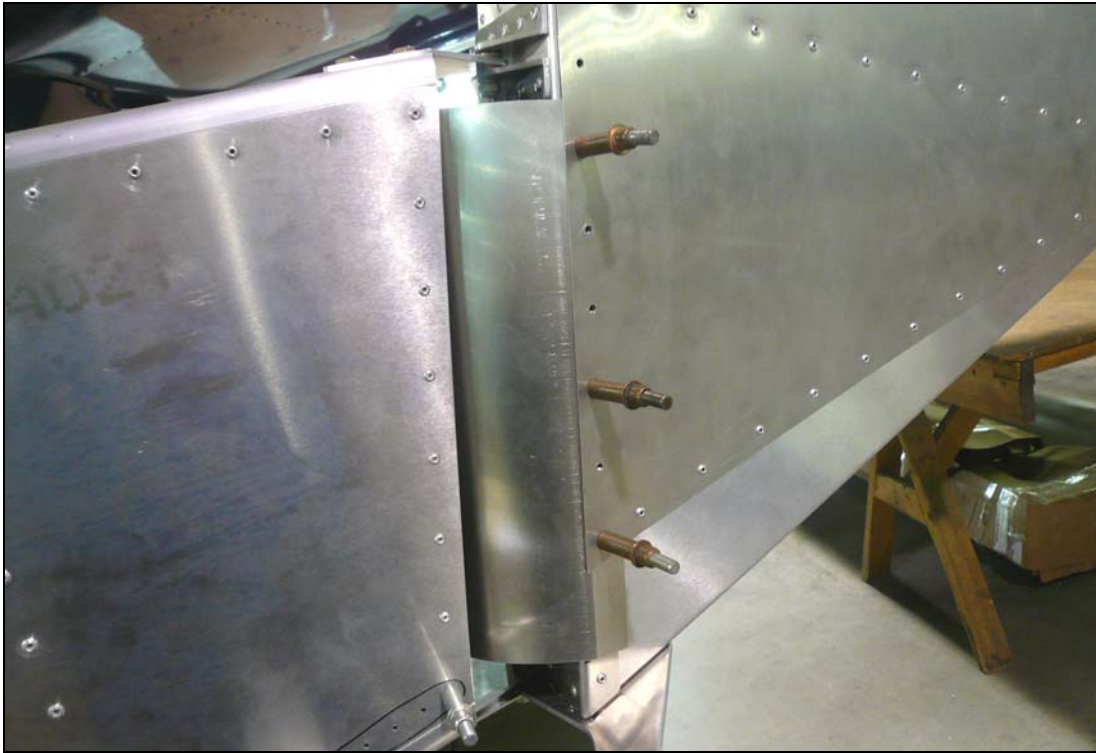
Insert the Bushing in the Upper Rudder Hinge. Slide two AN4 washers on each side of the Bushing. Slide the Bushing between the Hinge Angles and install an AN3 bolt.

**Note:** Grease the outer surface of the Bushing before final assembly.



Insert the Lower Rudder Bushing in the Rudder Horn. Slide two AN4 washers on the Bushing on each side of the Rudder Horn. Position the Horn between the Hinge Brackets on the Fuselage and install an AN3 bolt.

**Note:** Grease the outer surface of the Bushing before final assembly.



**P/N: 75R2-9**  
Lower Spar Fairing

Position the Lower Spar Fairing between the Rear Skin and the Spar. Set the distance the Fairing is inserted so there is clearance between the Fairing and the Fuselage and so there is at least minimum edge distance for the rivets. Back drill with a #30 drill bit through the Rear Skin into the Fairing and cleco.



Use a "hole finder" tool to drill the bottom hole in the Fairing. Remove the Fairing and deburr the holes. Install the Fairing on the outside of the Rear Skin; rivet the Fairing on the Rudder.