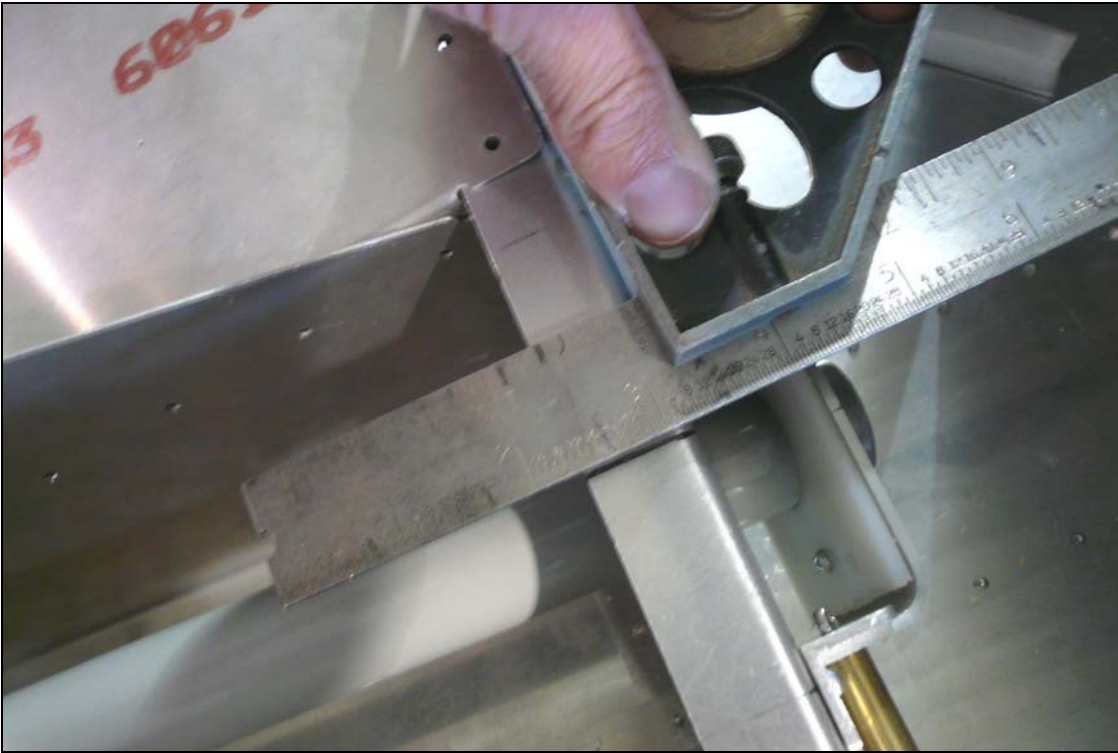


Section 75-DS-1 Dual Controls Stick Option



This manual has been prepared for assembly of the dual stick option. 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.

(The chrome-moly steel parts shown in this manual have been powder-coated).



Mark the center of the Seat Channel on the top flange.



P/N: 75DS1-3
Hinge Plate

P/N: 75DS1-4
Gusset

Cleco the Hinge Plate to the Gusset. With a #30 drill bit expand the holes and Cleco, then use a #20 drill bit to further expand the holes and Cleco. Wait to drill the aft most hole until the assembly is installed to the Upright.

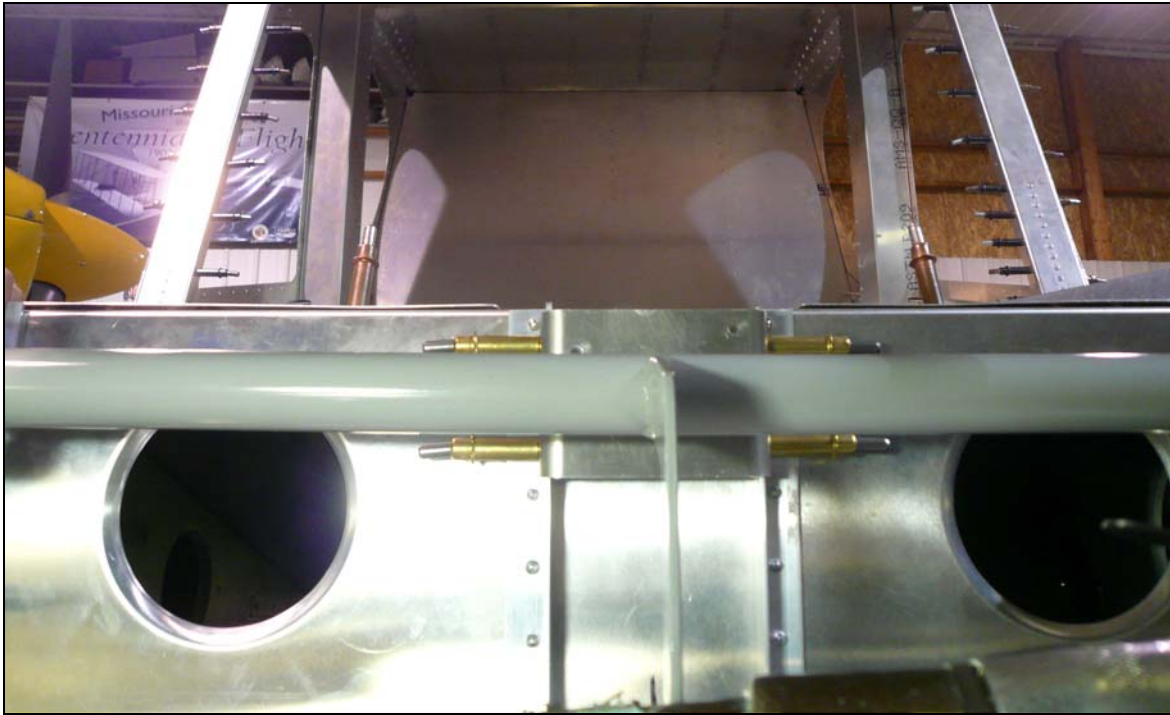


P/N: 75DS1-1
Elevator Torque
Tube

P/N: 75DS1-2
Control Bushing

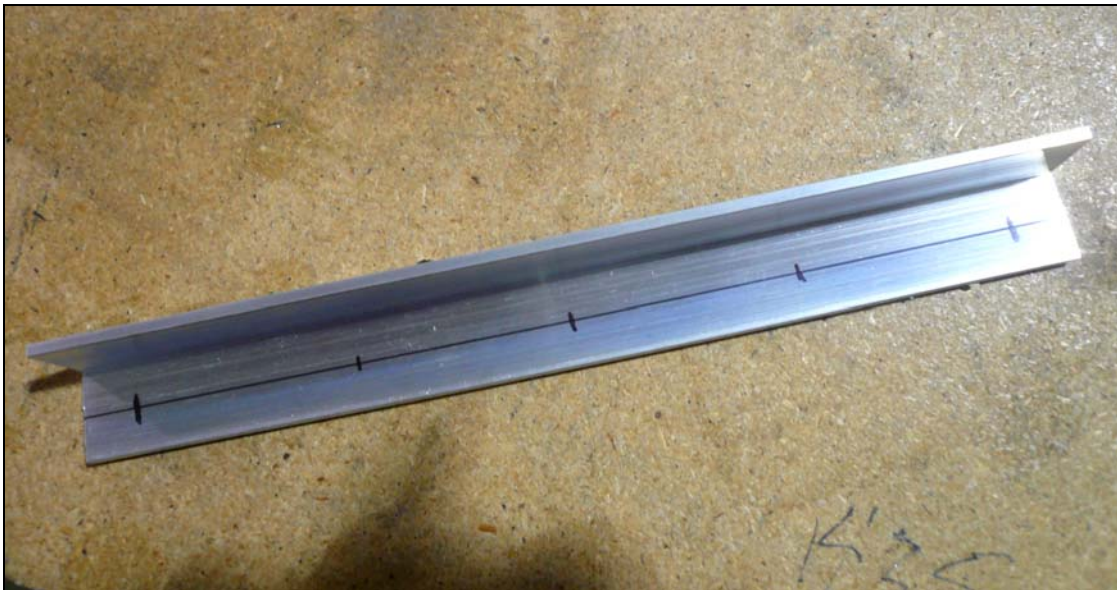


Slide the Bushing on the bolt welded to the Elevator Torque Tube. Install one 1/4" washer, followed by the Hinge Plate and Gusset, a 1/4" washer, and a 3/16" washer and nut. Before final assembly, grease the outside of the Bushing to prevent excessive wear.



Position the Elevator Torque Tube in the Fuselage. The arm welded on the Torque Tube should be centered on the aircraft, visually center the arm on the center line marked on the Seat Channel. Vertically, center the Elevator Torque Tube on the Torque Tube. Back drill through the Gusset into the Seat Channel and Cleco (not shown in the above photo).

Orientation: The arm welded to the Elevator Torque Tube angles aft toward the Seat Channel.



P/N: 75DS1-5
Upright

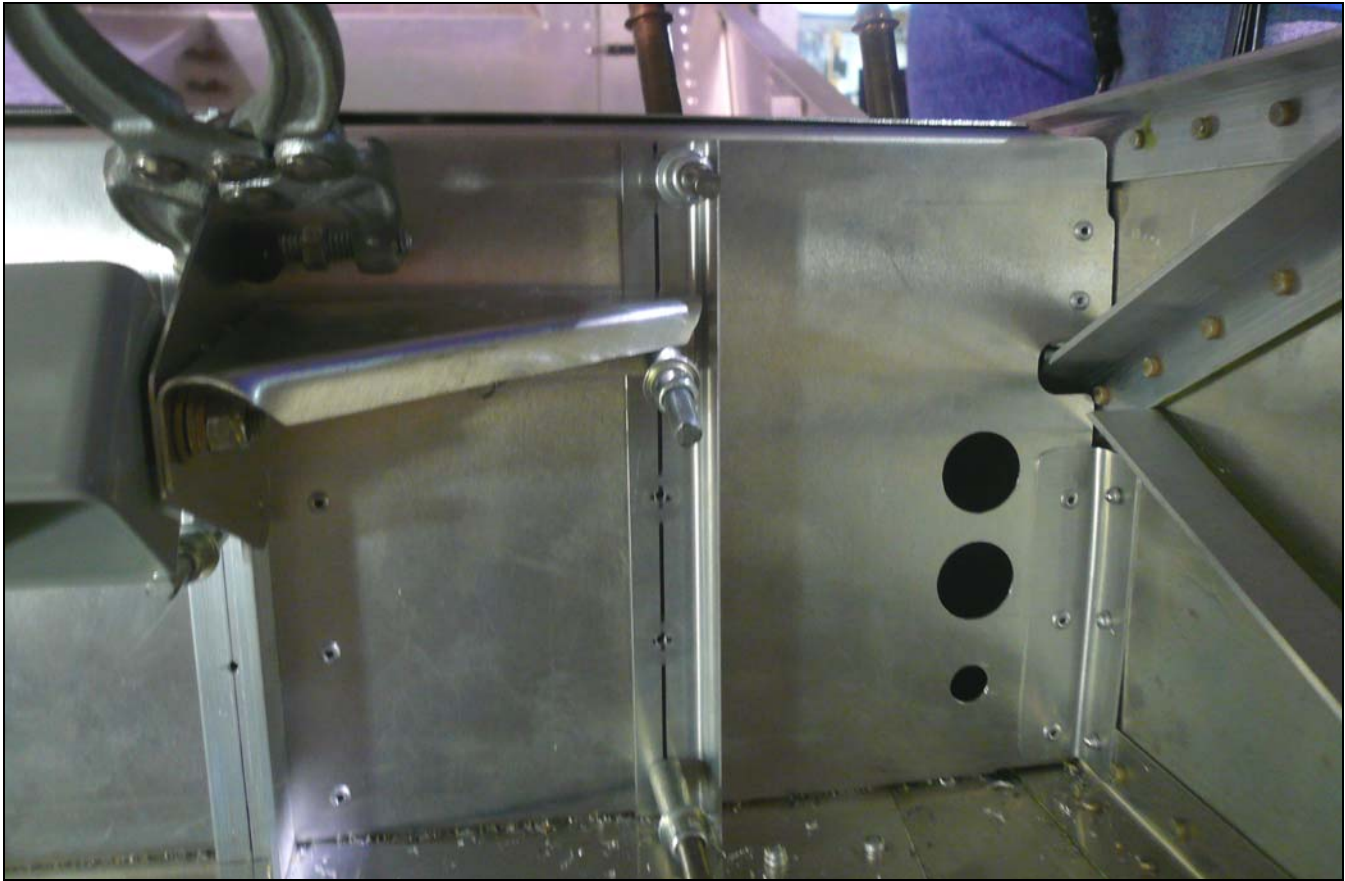
Draw a center line down one flange of the Upright. Mark rivet locations 10mm from each end and evenly space three more rivet locations. Use a #40 drill bit to predrill the holes in the Upright.



Clamp the Upright to the Hinge Plate. Back drill through the Upright into the Seat Channel and Cleco. Use a #30 drill bit to expand the holes, then expand the holes with a #20 drill bit and Cleco. Then, back drill through the Gusset and Hinge Plate into the Upright. The ends of the Upright can be cropped at the same angle as the Hinge Plate (not shown in the photo above).



Cut an L angle 180mm long. Draw the center line on one flange of the L Angle. Layout a rivet location 10mm from each end and one rivet location in the center of the L Angle. Layout a fourth rivet location half way between one end and the center rivet locations. Use a #40 drill to predrill the rivet locations.

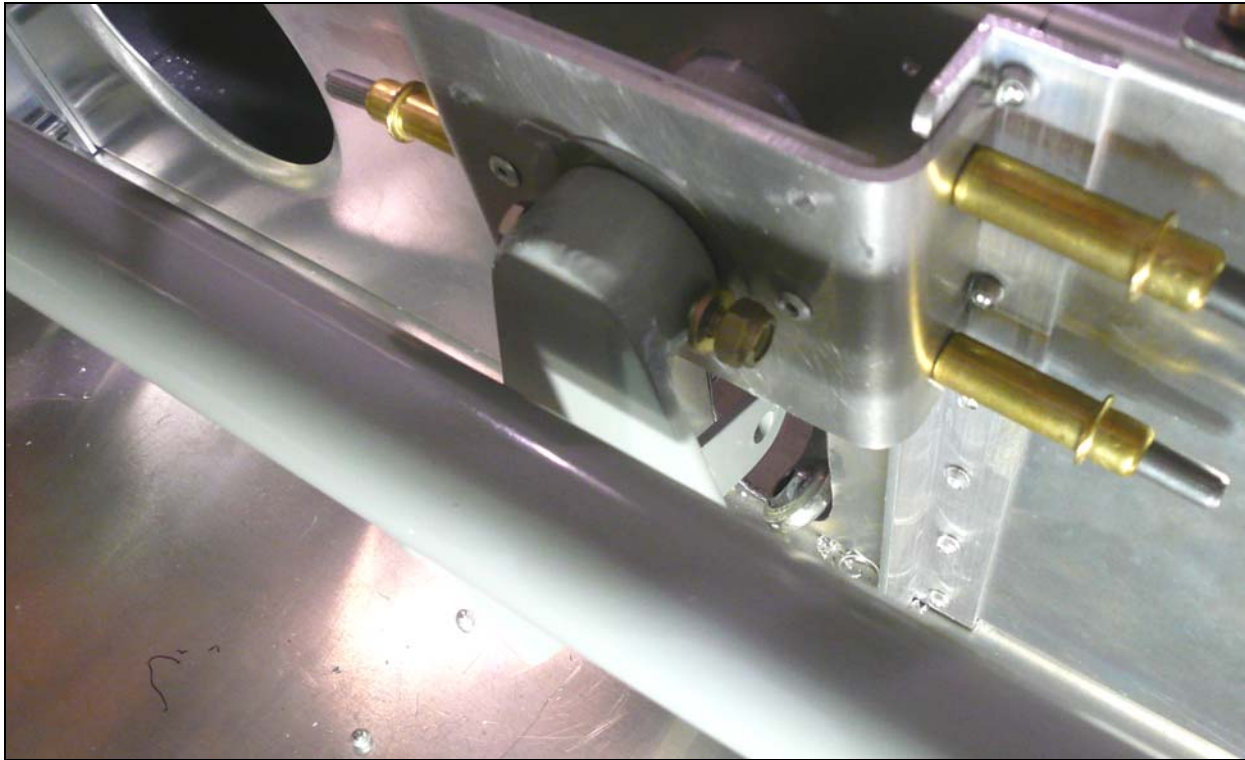


Position the L Angle under the end of the Gusset. The space that didn't get a hole predrilled in the L Angle goes under the Gusset. With a #30 drill bit, back drill through the L Angle into the Seat Channel and Cleco. Use a #20 drill bit to back drill through the Gusset into the L Angle and Seat Channel.



P/N: 75DS2-1
Flaperon Control
Horn

P/N: 3088A417
Stainless Steel
Shim



Slide the Stainless Steel Shim on the Torque Tube followed by the Flaperon Control Horn. Bolt the Flaperon Control Horn to the Torque Tube.



P/N: 75DS2-2
Flaperon Rod

P/N: 75C2-2
Control Rod
Bushing

P/N: CW5-12
Rod End

Install the Jam Nut on the end of the Flaperon Rod followed by the Rod End.



Bolt the Flaperon Rods to the Flaperon Control Horn with a Control Bushing in between.



P/N: 75DS2-3
Control Stick
Bushing

P/N: 75DS2-4
Control Stick

Slide the Bushing in the welded tube on the Stick. For final assembly, grease the outside of the Bushing.



Install the Sticks on the Elevator Torque Tube. Adjust the Rod Ends on the Flaperon Rods until both Sticks are vertical with the Torque Tube in the neutral position. Then bolt the Flaperon Rods to the bottom of the Stick. Use a Control Bushing between the Rod End and the Washer and Nut. See drawing 75-DS-3 for details.



P/N: 75DS2-5
H.T. Rod



Install the H.T. Rod through the access on the bottom of the Rear Fuselage. Bolt the Rod to the Elevator Bellcrank. With the Elevator in the neutral position, adjust the Rod End on the H.T. Rod for a comfortable Stick neutral position. Bolt the H.T. Rod to the Elevator Torque Tube.